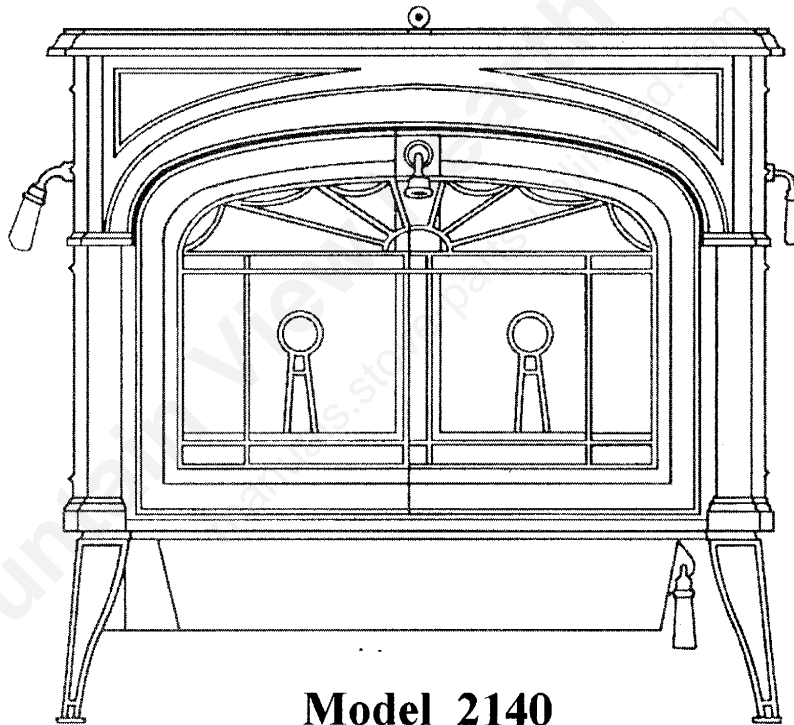


Defiant ENCORE[®]

Owner's Guide



Model 2140

SAFETY NOTICE: IF YOUR DEFIANT ENCORE 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.

VERMONT CASTINGS, INC.

Mountain View Hearth Products
manuals.stove-parts-unlimited.com

Save These Instructions.

This manual describes the installation, operation and maintenance of the Vermont Castings Defiant Encore model catalytic equipped wood burning heater. This heater meets the U.S. Environmental Protection Agency's emission limits for wood heaters sold after July 1, 1990. Under specific test conditions this heater has been shown to deliver heat at rates ranging from 9,000 to 41,300 Btu/hr.

The Defiant Encore has been tested and is listed by Warnock Hersey International, Middleton, Wisconsin. The test standards are ANSI/UL-1482 and ANSI/UL-737 for the United States, and ULC S627 and CAN/CSA-B366.2 for Canada. The Defiant Encore is listed for burning wood. Do not burn other fuels. The Defiant Encore is not listed for installation in mobile homes.

Welcome

The Fire on the Hearth

Your new Defiant Encore has been constructed to provide you with many pleasurable years of comfortable radiant warmth, quiet joy from contemplation of the fire, and pride in your contribution to preservation of the environment.

The classic exterior of the Vermont Castings Defiant Encore encloses the latest in wood-burning technology. The catalytic combustion system, using a high-temperature refractory material originally developed for space exploration, provides the cleanest burning characteristics of any environmentally certified woodstove, and one of the highest efficiency ratings ever achieved.

Combining this advanced technology with unmatched convenience features and beautifully designed and crafted cast iron, the Vermont Castings Defiant Encore is the world's finest wood-burning stove.

How to Use This Manual

We have tried to make this manual as easy to use as possible, by organizing it into two parts, Operation and Installation.

If your stove is already correctly installed, you will need to familiarize yourself with the Operation section, so that you can properly use and enjoy the stove. Before you light your first fire, please study the Operation section thoroughly.

However, if you are installing the stove yourself, become familiar with the Installation section of the Guide first. The quality and safety of your installation is extremely important for your family's security, and for pleasurable and efficient use of your Defiant Encore. Please read the entire manual at least once before you make the final installation connection.

Your Vermont Castings Authorized Dealer, with his knowledge of local conditions, is a valuable source of information should you need further assistance.

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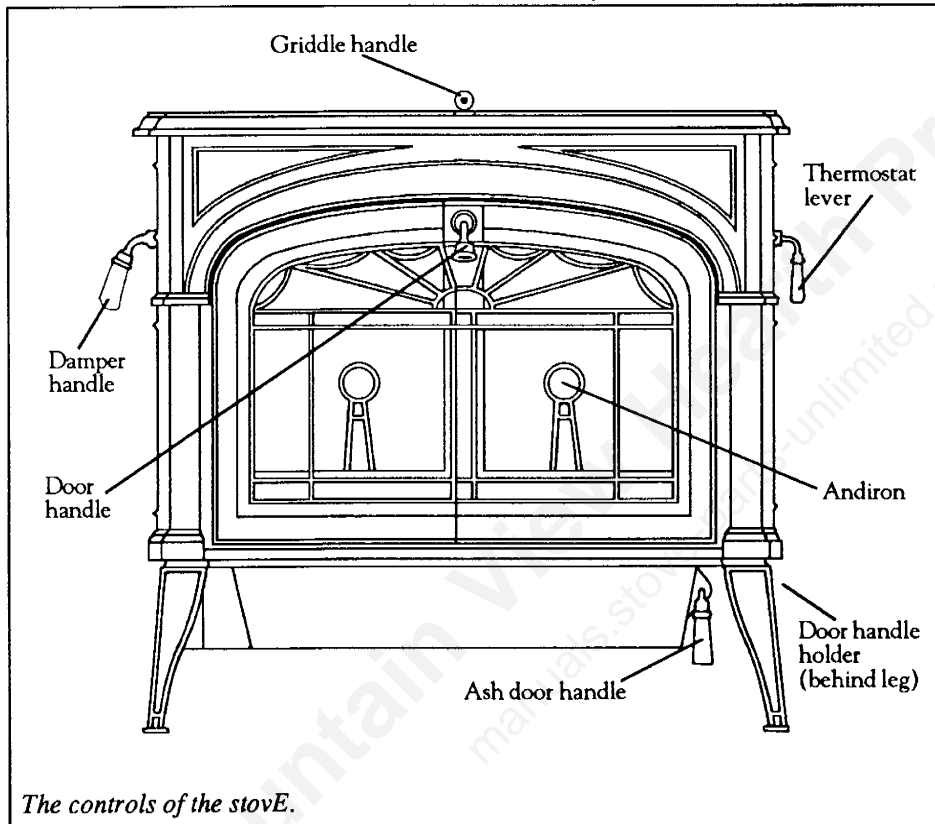
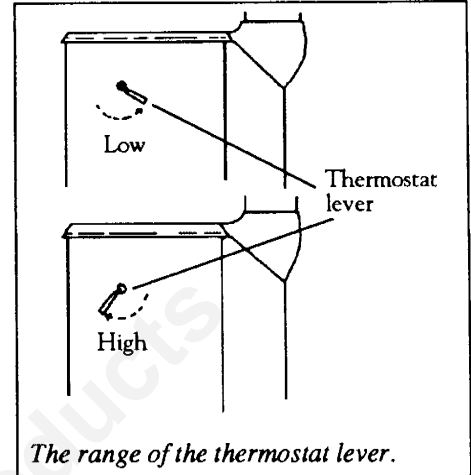
Operation

Stove Controls

Two controls, the damper handle and the primary air thermostat lever, are used to operate the stove. Internationally recognized symbols cast into the stove body assist the operator in their use. (Directions assume operator is facing the front of the stove.)

- When the damper handle is down and to the front, the damper is open, allowing the smoke to pass directly into the chimney. The stove is operating in the "Updraft Mode." The damper must be open when starting a fire, and whenever the griddle or doors are opened.

- When the damper handle points to the rear, the damper is in the closed position. The smoke from the fire is directed through the catalytic combustion system and from there into the chimney. The stove is operating in the "High Efficiency Mode".



increase the stove's heat output.

- Move the lever toward the rear of the stove to decrease the supply of primary air to the fire.

- The handle may be positioned anywhere between the two extremes, for a wide range of heat outputs.

- The precise position for a particular output of heat will vary, depending on fuel and on temperature differentials between inside and outside the house, and especially on the specific characteristics of your installation.

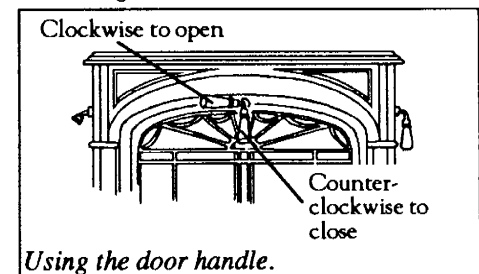
- In addition to manual control of the primary air supply, a bimetallic coil provides automatic thermostatic control by reacting to the heat of the stove. As the stove cools, the coil slowly opens the air shutter to maintain the rate of combustion. This action of the coil continues throughout the burn cycle, encouraging an even heat output from the stove.

Using the Doors

- Always open the damper before opening the doors or the griddle.

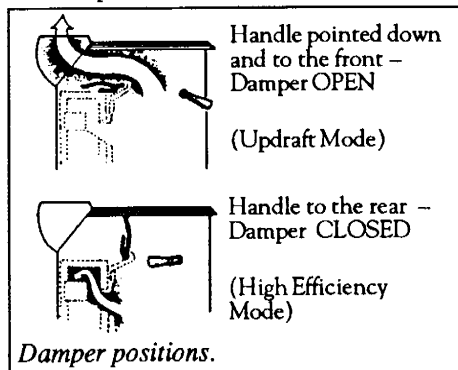
- To open the door, insert the handle into the door latch stub. Turn it to the left and up.

- To close the door, first close the left door. Then, with the handle in place on the right door, turn it to the left and



Using the Damper

The damper handle, located on the left side of the stove, controls the position of the damper.



- When closing the damper, be sure to push firmly enough to snap it into the locked position, thus ensuring the stove will remain in the high efficiency mode.

- There are no intermediate damper positions.

Using the Thermostat Lever

The primary air thermostat lever, located on the right side of the stove, regulates the flow of primary air to the fire, and thereby controls the heat output of the stove.

- Move the lever forward to increase the supply of primary air to the fire, and

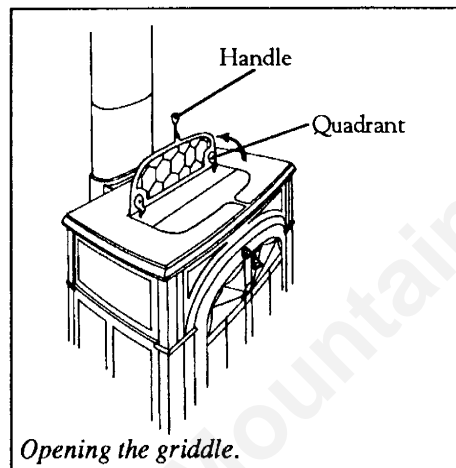
up (to the open position) and close the door. Applying pressure to the door, turn the handle to the right and down. The doors will draw in slightly, and the handle should offer some resistance as you turn it to the closed position.

- Avoid striking the glass or slamming the doors, to reduce risk of breaking the glass.
- When it is not in use, you may store the door handle in the handle holder on the right front leg of the stove.

NOTE: ALWAYS USE A SPARK SCREEN WHILE OPERATING YOUR STOVE AS A FIREPLACE (DOORS OPEN OR REMOVED).

Using the Griddle

- Always open the damper before opening the griddle or doors.
- The griddle swings upward and to the rear, hinging on quadrants at its rear corners. The griddle may be raised to rest in an open position, or removed from the stove by lifting straight up from the open position.

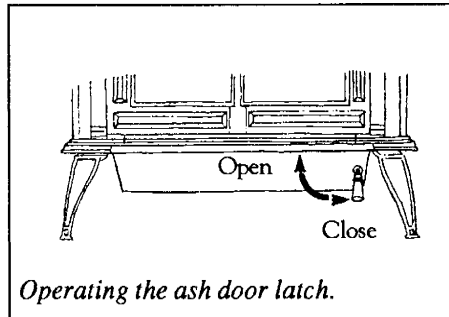


Opening the griddle.

- For most installations, loading wood through the griddle will be neater and more convenient than using the front doors.

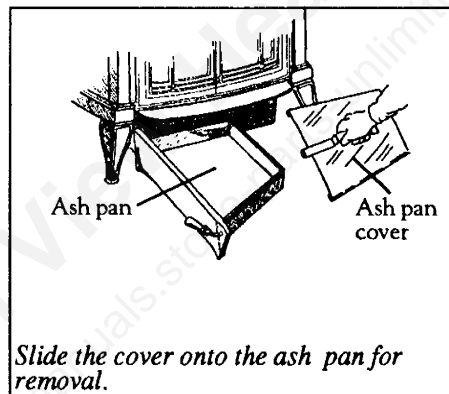
Using the Ash Pan

- Open the damper.
- Open the griddle or front doors, and using a shovel or poker, stir excess ashes through the ash slots in the grate down into the ash pan.
- Close the griddle or doors, and unlatch the ash door. It will pivot, swinging the ash pan out of the stove.



Operating the ash door latch.

- Slide the cover onto the pan, making sure it is securely closed.
- Remove the ash pan and properly dispose of the ashes. **If the stove is in operation, close the ash door while disposing of the ashes.**
- Return the ash pan to its original position in the stove, and close and latch the ash door.
- Do not operate the stove with the ash door fully or partially open. This will result in overfiring, and could cause damage to the stove, void the warranty, or even lead to a house fire.



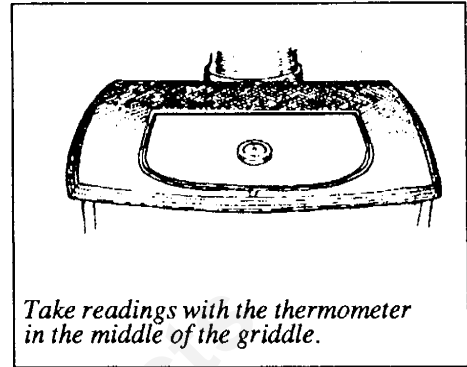
Slide the cover onto the ash pan for removal.

Using a Surface Thermometer

An optional surface thermometer is helpful in learning how to operate your stove properly.

We urge you to get one, and to make a habit of using it to assess your stove's operation.

- Readings in the 350-500° F. (175-260 C) range indicate low to medium heat output.
 - 500-600° F. (260-315 C) readings indicate medium heat output.
 - Readings of 600-750° F. (315-400 C) indicate high heat output.
- Operating your Defiant Encore continuously at griddle temperatures of 750° F. (400 C) or higher may damage the cast iron or enamel finish.
- A surface thermometer also helps the operator decide when to adjust the



Take readings with the thermometer in the middle of the griddle.

controls. During start-up and after reloading, when the thermometer registers at least 450° F. (230 C), the stove is hot enough to begin catalytic combustion. Close the damper to direct the smoke through the catalytic combustion system.

- Readings lower than 350° F. (175C) indicate it is time to adjust the thermostat lever for a higher burn rate, or to reload the stove. Readings over 750° F. (400 C) call for slowing the burn rate.

Breaking in Your Stove

Cast iron is a superior material for solid fuel stoves but it must be treated with respect. Cast iron is extremely strong, but can be broken with a sharp blow from a hammer or from the thermal shock of rapid and extreme temperature changes.

The cast plates expand and contract with changes in temperature. Allow them to adjust gradually during a break-in fire to minimize any stresses.

Building the First Fire

- Open the damper, and fully open the primary air thermostat lever.
- Lay some crumpled newspaper on the bottom grate. Place some dry, finely split kindling on top of the paper, followed by two or three pieces of 1- 2" (25-50mm.) split, dry wood.
- Light the fire. If your chimney is cold, you may need to prime it by inserting a crumpled piece of paper up into the flue collar area behind and above the damper, then igniting it.
- Gradually build up the fire by adding a few 3- 5" (80-120mm.) diameter splits.
- Allow the fire to burn brightly, but not to exceed a stove-top temperature of 500° F. (260 C), and then let it die out.

- Control the fire by re-positioning the primary air thermostat lever.
- Some odor, from paint and cement, is normal for the first few fires.

Daily Operation

Once your stove has been properly broken in, follow this procedure:

1. Set the controls.

Open the damper and fully open the primary air thermostat lever.

2. Kindle a fire.

Place several sheets of loosely crumpled newspaper and several dry splits of kindling in the stove. Do NOT use glossy advertisements or colored paper, as they can poison the catalyst. Light the newspaper and kindling. Allow the fire to establish itself, then add larger pieces of kindling.

Once the kindling fire is well established, add a few pieces of small cordwood. Close the door and let the fire rebuild itself before closing the damper and setting the thermostat lever for moderate heat output.

Never build a roaring fire in a cold stove.

CAUTION: NEVER USE GASOLINE, 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 OPERATION.

3. Build a bed of charcoal.

Continue loading wood on the briskly burning fire, gradually building a thick bed of hot coals. This procedure may take an hour or more depending on the type and size of the logs, their moisture content, and the strength of draft in the chimney. Use moderately sized split logs, 3-4" (75-100 mm.) thick, and develop a bed of glowing charcoal at least 3" (75 mm.) deep.

IMPORTANT: a large mass of hot coals will help achieve effective operation of the catalytic system.

4. Refuel the stove.

You will lessen the time required for stove tending if you reload your stove while the

stove is still hot and there is plenty of glowing charcoal to re-ignite the fire. Including some smaller pieces of wood in the new load of fuel will help the stove quickly rebuild its operating temperature.

Follow this procedure when you reload your stove:

- Wear stove gloves.
- Open the thermostat lever.
- Open the damper.
- Check the ash level in the ashpan; empty if necessary, and replace the pan.
- Open the griddle.
- Load wood - smaller, split pieces first. Increase the amount of fuel you load into the stove as you become familiar with your stove and the heating requirements of your home.
- Close the griddle. Leave the damper and thermostat lever in the open position, until the surface temperature reaches 450°F. (230 C).

5. Close the damper.

When the griddle temperature reaches 450° F. (230 C), close the damper. Leave the thermostat lever in an open position for approximately 15 minutes, allowing the hot smoke to heat the secondary combustion chamber thoroughly.

6. Adjust the thermostat.

After the stove has run with the damper closed for approximately 15 minutes, and the catalytic combustion system is thoroughly heated, adjust the thermostat lever to provide the desired heat output.

NOTE: If the remaining charcoal bed is relatively thick and if your fuel is well seasoned, it is possible to add fresh fuel (smaller pieces first), close the door and damper, and reset the primary air thermostat within 5 minutes.

WARNING: OPERATE YOUR DEFIANT ENCORE ONLY WITH DOORS FULLY OPEN OR DOORS FULLY CLOSED

Do not overfire your stove. Overfiring may damage the stove, and may cause a hazardous condition. If any part of the stove or chimney connector glows red, you are overfiring. Reduce the air supply, and slow the rate of combustion. Failure to operate the stove according to these instructions could cause damage to your stove, void the warranty, or even result in a house fire. Always observe the cautions and follow the procedures outlined in this Owner's Guide.

CAUTION: THE DEFIANT ENCORE WILL BE HOT WHILE IN OPERATION. KEEP CHILDREN, CLOTHING AND FURNITURE AWAY. CONTACT MAY CAUSE SKIN BURNS.

Ash disposal

You should remove ashes before they reach the top of the ashpan. Check at least once a day. Every few days clear ash from the outer edges of the firebox. Most of the ashes will fall through the grate. Slice or stir the ashes with a shovel or poker to encourage any remaining ash to fall through the grate slots.

IMPORTANT: Check the level of ashes in the ashpan before reloading the stove. If the ashes are close to the top edge of the pan, empty the pan.

Every two weeks, ashes and wood chips should be cleared away from the exit slot in the fireback.

OVERFIRING WILL RESULT IF THE STOVE IS OPERATED WITH THE ASH DOOR OPEN.

Ashes should be placed in a metal container used exclusively for ashes, with a tight fitting lid. The closed container of ashes should be placed outdoors, 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.

Before replacing the ashpan, clear away any ash which has spilled over the sides and back of the ash pan.

CAUTION: Never use a vacuum cleaner to remove ash from the stove; always remove and dispose of the ashes properly.

The Combustion Process

Notwithstanding all the technical and scientific advancements in woodstove design, the optimal burning of wood for heat remains an acquired skill. Most household appliances and machines use electricity, or fuels processed to a very consistent quality, and are relatively insensitive to the elements outside. They turn on and off with a switch, and are expected to operate completely automatically and predictably while on.

A woodstove, on the other hand, is very close to Nature. Operating with elemental natural forces, it is fueled by wood, a renewable natural resource

varying in size, moisture content and other characteristics. As basic and simple as the burning of wood for heat appears to be, the combustion of wood is actually a complex process.

It is important to have an understanding of the natural forces that act together in a controlled fire. This description breaks the process down into discrete stages; in reality these stages usually occur simultaneously.

Primary Combustion

1. The evaporation of moisture.

The amount of moisture in wood affects the rate at which it burns. The higher the moisture content, the more energy required to dry it and the slower the rate of initial combustion. Energy is consumed during this drying process, and must be supplied from other burning wood or kindling.

2. The release of volatile materials.

A large percentage of wood's energy is contained in the gaseous and liquid/vapor materials released from wood as the wood's temperature reaches the 500-600° F.(260-315 C) range. These gases and vaporized tars (commonly referred to as smoke) contain molecules composed of various combinations of carbon, hydrogen and oxygen.

3. Charcoal combustion.

When the volatiles have been driven from the wood, the remaining material is mainly carbon, or charcoal. The combustion of this material occurs on its surface and is recognized by an orange glow, indicating combustion of carbon and oxygen at a temperature above 1300° F.(700 C). The charcoal contains as much as two-thirds of the wood's energy. The material left after the charcoal is consumed (ash) is mainly inorganic material that cannot be burned.

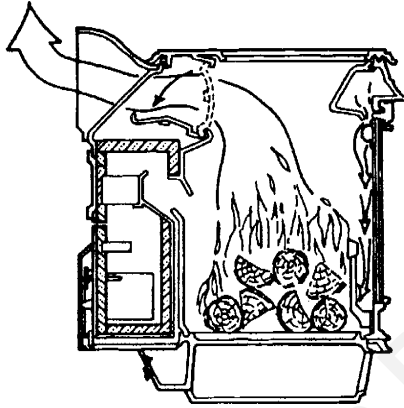
Secondary Combustion

The volatile materials released from wood during combustion must be burned in order to obtain the best possible heating efficiency and the greatest reduction in creosote formation and air pollution.

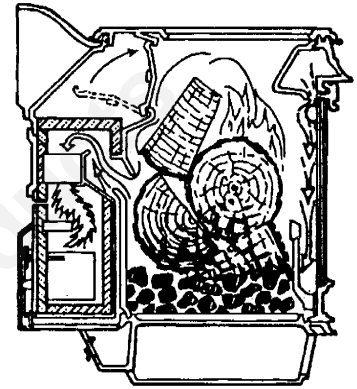
The process of burning these materials is called secondary combustion.

Secondary combustion occurs in conventional stove designs when fresh air is available and sufficiently high temperatures (in excess of 1100°F.or 600 C) are generated by the fire. The flaming you

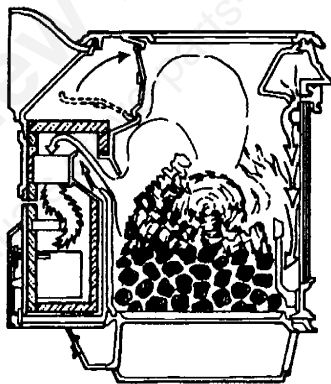
The Stages of Combustion During Daily Operation



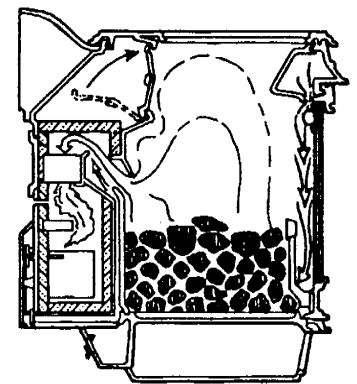
1. **Kindle a fire.** Damper is open. Set primary air thermostat lever to full open. Warm up the stove and establish a charcoal bed. Griddle temperature: 500-600 F.(260-315 C)



2. **Charcoal bed is well established.** Load stove (smaller pieces on bottom), set thermostat lever to full open. Close damper when griddle temperature regains 450-500 F.(230-260 C) Volatiles released from fuel begin to burn in the catalytic combustion system.



3. **Fuel burning briskly.** Griddle temperatures 500-600 F.(260-315 C) Adjust primary air to desired heat output level. Combustion of volatiles in catalytic combustion system continues. Flaming visible through glass doors at medium heat output level and above. Glowing coals at base of fire are visible at lower heat output levels.



4. **Charcoal burning phase.** Almost all volatiles have been released and burned. Steady heat output continues for several hours. Orange glow visible through glass. Stove should be reloaded when charcoal bed burns down to a depth of approximately 3" (80mm.). Open damper and thermostat. Reload stove as described in step 2.

see above the logs burning in your stove is an uncontrolled type of secondary combustion.

Secondary combustion can occur at much lower temperatures and in a much more controlled manner in a stove with a properly designed and operated catalytic combustion system.

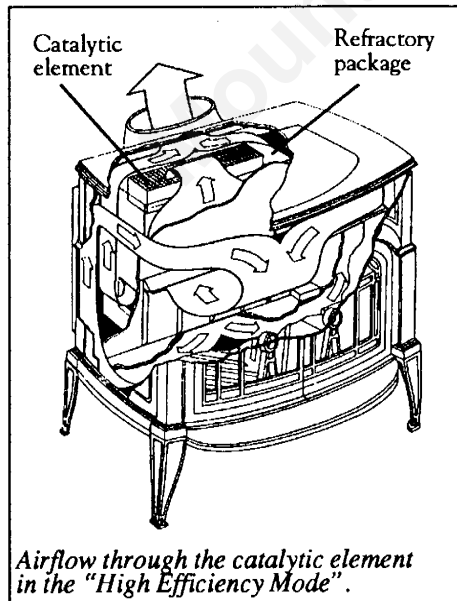
Inside the Stove

The Catalytic System

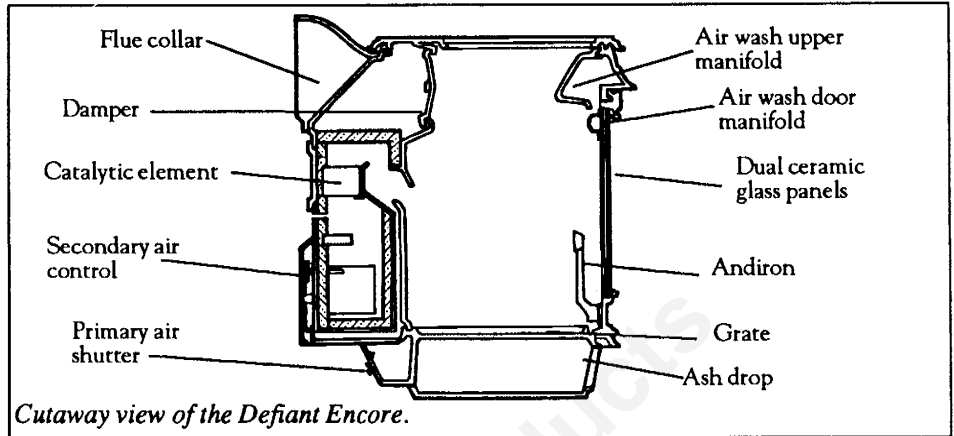
The components of the catalytic combustion system in your Defiant Encore work together to produce optimum conditions for secondary combustion.

When the stove's damper is closed, smoke is directed through the catalytic element, which causes ignition of smoke at temperatures of 500-600°F. (260-315 C), half the temperature normally required for unaided secondary combustion. An automatic factory-set secondary air control meters the appropriate amount of air into the secondary air passageway, one wall of which is a stainless steel heat exchanger. Once catalytic combustion begins, heat is transferred by the exchanger to heat both the incoming secondary air and the smoke.

The catalytic element is a ceramic "honeycomb" coated with the catalytic material. The element is located in the secondary combustion chamber, molded from a special high-temperature insulating refractory material. The design of the chamber provides the correct environment necessary for secondary combustion of the fuel (smoke).



Airflow through the catalytic element in the "High Efficiency Mode".



Cutaway view of the Defiant Encore.

Fuel

The fuel you use is important to successful operation. You will experience the best performance and lowest emissions by burning 18-20" (400-500 mm.) hardwood that has been split, stacked and air-dried under cover for at least one year. Burning inadequately seasoned "green" wood will lower the performance level of your stove and make more work for the stove tender.

If you are burning primarily softwood, you will need to inspect and clean the catalyst and refractory package more frequently, as softwoods produce more fly ash than do hardwoods.

Wood should be stored outside under cover until needed. For temporary storage inside just prior to use, keep fuel away from the stove (48" [1220 mm.] is recommended).

The Defiant Encore is listed for burning wood. Do not burn other fuels. Do not burn pressure-treated, painted or stained wood, processed charcoal, colored paper, plastic, trash, or coal in your stove. Burning these materials in your stove may release toxic fumes, and can damage the catalytic combustor.

The Clean Glass System

Clear fireviewing is promoted by three design features of the clean glass system which greatly reduce the accumulation of carbon and creosote on the glass door panels.

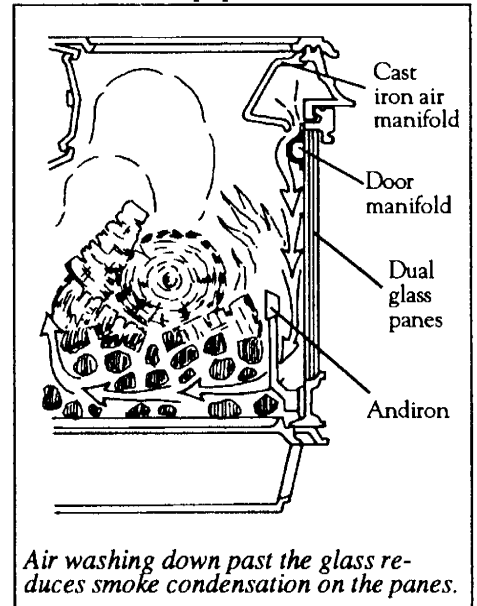
1. Air Wash

Primary air entering the stove is pre-heated by a series of cast iron air manifolds, then guided into a reservoir above the doors. From there a uniform sheet of air flows down over the glass door panels and into the fire. The smoke and gases then exit at the rear of the stove, through

the catalyst if it is engaged, otherwise directly out the flue collar.

2. Dual Glass Panels

The dual glass panels use a trapped air system similar to the thermal insulating glass used in homes. The innermost surface is maintained at a more elevated temperature than the outer surface. In combination with the pre-heated airwash, this helps provide clear fireview-



ing over the entire operating range of the stove.

3. Andirons

Your stove is equipped with andirons to keep logs away from the glass panels. The andirons are essential to maintain clear fireviewing, and should be left permanently in place. Since the andirons may slightly hinder re-fueling through the front doors, most stoveowners will prefer the convenience of top loading through the griddle.

Chimneys and Draft

As we suggested in the section on Combustion, your new Defiant Encore is responsive to the natural elements in its environment. Wood supply, outside temperature, wind force and direction all have direct effects on the operation of the stove. And they all affect the stove through the chimney.

The chimney itself, in its location, height and configuration, is a very important part of the combustion system. Understanding how your chimney contributes to stove operation is essential if you are to obtain optimum performance from your Defiant Encore. The chimney provides a safe pathway for hot smoke and exhaust gases to exit from the stove. In addition, the chimney strongly influences the "draft" which is essential for operation of your stove.

Your Defiant Encore does not come equipped with "draft". Draft is the force of warm buoyant gases rising up and out of the chimney, which draws fresh combustion air into the stove. Draft results from a difference in weight (due largely to a difference in temperature) between the gases inside the chimney, and the gases outside the chimney. Because gas expands when heated, warm gases inside the chimney weigh less than the cooler gases outside. Therefore the gases in the chimney rise, creating as they do a suction within the stove to replace the rising gases with fresh combustion air.

(When starting a fire in a cold stove on an unheated chimney, it may be necessary to provide a little assistance by inserting several sheets of crumpled newspaper into the flue collar area and igniting them.)

Effects on Operation

A strong draft will allow you to fine-tune the Defiant Encore's performance by adjusting the primary air supply to regulate the rate of combustion and heat output. With a strong draft, you can restrict the primary air supply and lower the heat output without risk of suffocating the fire.

You can maintain a strong draft by operating your stove so that combustion gases entering the chimney are hot, and stay hot. No air should be allowed to enter the chimney without first having passed through the stove. Make sure that any clean-out doors and thimbles are sealed tightly, and that the chimney is structurally sound.

Weak draft situations are characterized by smoking and odor problems in the

house, low heat output, and difficulty maintaining a fire, especially at low thermostat settings. The reverse situation, overdraft, is rare, but can be recognized by short burn time, poor response when trying to slow down the fire, or by any part of the stove glowing red. (The more common cause of these symptoms is poor maintenance. Following recommended maintenance procedures will help ensure consistent stove performance.)

Following the stove manufacturer's recommendation on both chimney size and height will also help ensure adequate chimney flow capacity. Flow capacity measures the ability of the chimney to evacuate combustion gases quickly. Even the strongest draft cannot overcome an insufficient flow capacity; the result is a back-up of combustion gases in the chimney which forces smoke out of chimney connector joints or the stove itself.

Remember, the Defiant Encore and the chimney must function together as a system. A chimney that is either oversized or under-sized for a particular stove model, can cause problems. For optimum performance, stove and chimney must be sized properly for each other. Your Vermont Castings Authorized Dealer can help you assess your existing chimney or plan a new one for best stove operation.

Maintenance

Regular maintenance is essential to keep your stove operating safely and efficiently. Follow these guidelines and the Maintenance Schedule.

The fire must be out and the stove should be cool before starting maintenance. A strong light will be helpful in inspecting and maintaining your stove. For help in identifying parts, refer to the Exploded View at the back of this Guide.

Cleaning

Painted cast iron: An occasional dusting with a dry rag usually is all that is necessary to keep your Defiant Encore looking new.

If your stove's paint needs retouching, allow the stove to cool completely. Brush areas needing to be painted with a wire brush. Remove the griddle and set it aside. Touch up the stove with Vermont Castings High Temperature Stove Paint. Apply the paint sparingly. Two light coats are better than one heavy one.

Porcelain enamel: Before cleaning the stove make sure that it is completely cool. To remove spills or stains from porcelain surfaces, use a dry or slightly damp rag or soft brush. Use only a kitchen appliance cleaner or polish recommended for use on enamel surfaces.

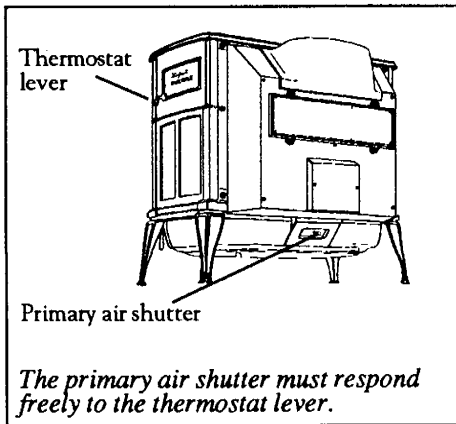
Glass. The Defiant Encore glass system is designed so that during normal stove operation you may enjoy the view of the fire for extended periods without cleaning the glass. Any carbon deposits which accumulate on the glass will usually burn off during hot fires.

However, the ash residue which accumulates on the glass surface should be removed regularly to prevent etching. To clean the glass, follow this procedure:

- Be sure the glass is completely cool.
- Clean the glass with water or a cleaner made especially for this purpose. Do not use abrasive cleaners.
- Rinse the glass thoroughly.
- Dry the glass completely.

Inspection & Adjustment

The primary air shutter is located at the back of the ash drop and is visible from the back of the stove. The shutter must open and close freely when you move the thermostat lever. If it doesn't, remove any obstruction. If you need assistance, call your local Vermont Castings Authorized Dealer.



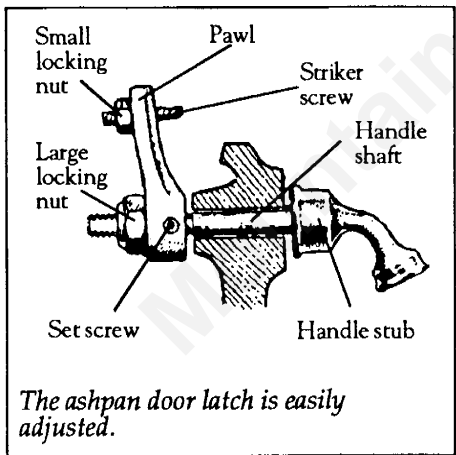
Do not change the adjustment of the cable in an attempt to gain increased firing.

Door Latches

The front doors of the stove and the ash pan access door should close securely (to prevent accidental opening) and tightly (to prevent air from leaking into the stove) when the handles are in the closed position. For both handles, the closed position is down.

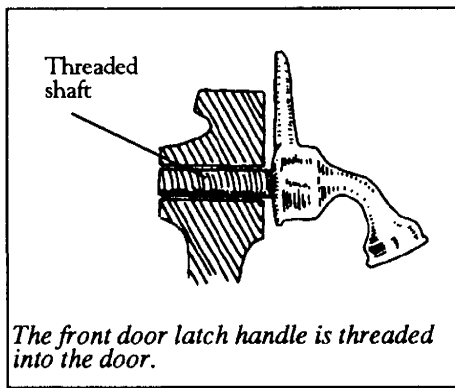
The handles should resist slightly as they are turned to the closed position and the doors should pull in a little.

Over a period of time, gasketing around the doors will compress and the latch may need adjustment. The procedures for the two handles are different.



To adjust the ash pan door handle, loosen the small locking nut, extend the striker screw one turn, and re-tighten the small locking nut while preventing the striker screw from turning. Keep making adjustments a little at a time until the setting is right.

To adjust the handle on the front doors, open the door on which the handle is mounted and turn the handle one full turn in the counter-clockwise direction.



The handle is threaded into the front door. Turning the handle one full turn counter-clockwise will adjust the handle so the doors close more tightly.

Damper Handle

The damper is controlled by a handle on the left side of the stove. The handle is attached to the damper actuator rod with a set screw. Check the set screw periodically for tightness and tighten as necessary. Primary Air Shutter Damper Handle

Glass Replacement

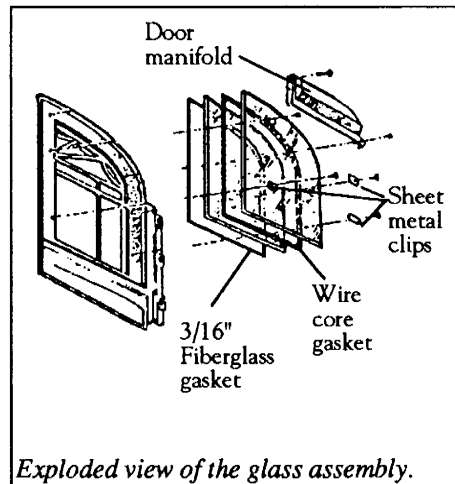
If it is necessary to replace glass, use only the high temperature ceramic glass supplied by Vermont Castings. Do not use substitutes.

Do not operate your stove if the glass in the doors is damaged.

To Remove the Glass:

The left and right doors differ slightly, although the glass is the same for all four panes. The left door is illustrated. On the right door, one retainer clip is located under the door manifold. Differences in procedures are noted in the instructions.

- Remove the right and left door



assemblies. Raise the door until the lower hinge pin clears its drilling; angle the door bottom slightly outward and pull down, releasing the upper hinge pin. Place the doors on a padded work surface, inner side up.

- On the right door, remove the Phillips head machine screw that secures the door manifold to the upper right of the door (as it faces you). Swing the door manifold out of your way.

- Remove the screws holding the retainer clips in place and remove the clips.

- Carefully lift the top glass pane from the door.
- Remove the formed wire gasket.
- Remove the bottom glass pane.

To Replace the Glass:

Be sure the gasket around the window opening is in good condition. It must be soft and resilient so the glass will seal properly against the door and prevent air from leaking into the stove. Your local Vermont Castings Authorized Dealer can supply replacement gasket material if it is needed.

- Center the first pane of glass on the gasket. Clean the inner side of the glass carefully. When the installation is complete, the inner sides of the glass panes will not be accessible for cleaning.

- Place the formed wire gasket on top of the glass. The gasket may be shaped by hand, if necessary, to make it sit properly at the edge of the opening.

- Clean one side of the second pane of glass and place the glass clean side down, on the gasket.

- Secure the glass, LEFT DOOR: secure the glass in position with four retainer clips. Leave the screws a little loose.

- Secure the glass, RIGHT DOOR: Place the clip which is located under the door manifold, in position. Secure the glass with the other three clips. Leave the screws a little loose.

- Swing the door manifold back into position on the right door; be sure the screw passing through the end of the manifold nearest the center of the door also passes through the retainer clip.

- Replace the door on the stove. Remove the griddle so you can reach in through the opening to position the manifold. Move the door manifold as high as possible without actually touching the upper air manifold, and as far toward the center of the stove as possible

without hitting the door manifold on the other door. Tighten the screws.

- Open and close the doors to check that the door manifold does not interfere with either of the other manifolds.

The Catalytic Element

Inspection and Cleaning

This wood heater contains a catalytic combustor, which needs periodic inspection and replacement for proper operation. In The United States it is against the law to operate this wood heater in a manner inconsistent with operating instructions in this manual, or if the catalytic element is deactivated or removed.

Under normal operating conditions, the catalytic element should remain active for 2-6 years (depending on the amount of wood burned). The element should be inspected three times per year without removing it from the refractory assembly, and removed and cleaned annually or when decreased performance indicates, as described below. (If your fuel supply is mostly softwood, the catalytic element and refractory package should be examined and cleaned more frequently: softwoods produce more fly ash than do hardwoods.)

An increase in creosote deposition in your chimney or chimney connector may indicate a problem with the catalytic element. Creosote may form as dry flakes or as a sticky tar-like material, and tends to concentrate in elbows and horizontal sections of connector.

Another test of performance is to compare the amount of smoke from the chimney when the stove damper is closed (catalytic element engaged), with the amount of smoke produced with the stove damper open.

Significantly more smoke should be evident when the damper is open, as the catalytic element is bypassed. Be careful not to mistake steam from wet wood for smoke.

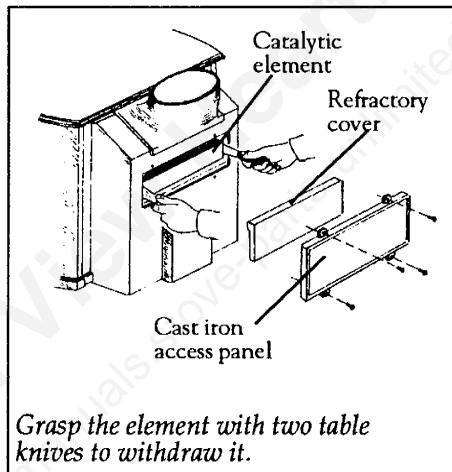
If you notice reduced performance in your Defiant Encore, and suspect the catalyst may not be functioning properly, follow these steps to determine the cause of the changed stove performance:

1. Assess your present operating conditions. In Spring or Fall, draft may be less than in the middle of winter, and there may be a change in stove performance. Small hot fires work well in moderate weather.

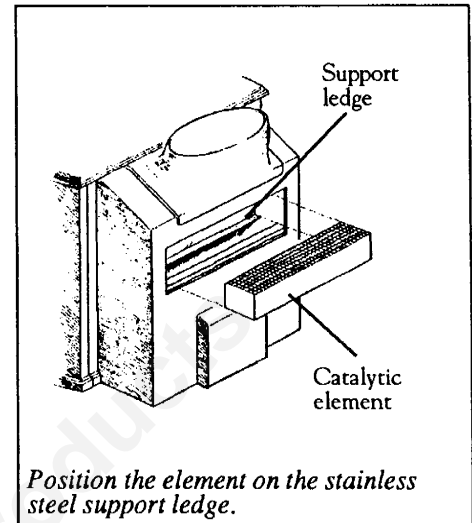
2. Burning insufficiently seasoned (green) wood will result in lower performance levels than burning properly seasoned fuel. Has your fuel supply changed? You may have to run your stove hotter (more air) to achieve good performance. Also, any changes in operating routines should be considered at this time as a possible reason for changed stove performance.

3. If you still cannot account for the decline in performance, remove and inspect the catalytic element using the following procedure:

- Wear a dust mask, safety glasses and gloves.
- Remove the four Phillips head fasteners which secure the cast iron catalyst access panel to the rear of the stove. Remove the panel.
- Gently pry the refractory catalyst cover out with a flat blade table knife.



- Carefully remove the catalytic element. (Note: The element is contained within a stainless steel jacket.) You may have to grasp the element with two flat bladed table knives at the element ends to withdraw the element from the stove.
- Check the element for a build-up of fly ash. Loss of performance may be due to a build-up of fly ash on the catalyst surface.
- If the honeycomb is clogged, take the element outside for cleaning. A sizable quantity of ash may be removed from the element. Blow gently through the honeycomb.
- Inspect the element. Although small hairline cracks will not affect performance, the element should be essentially intact. If the element is broken in pieces or has sections missing, it should be replaced. Call your local



Vermont Castings Authorized Dealer for a replacement element.

- If the element is in good condition and clean, re-install the element in your stove. Slide the element into the opening, making sure that it is resting on the stainless steel support ledge which is visible before installation of the element.

- Center the element so that approximately the same space is visible on either side. Gently re-install the refractory catalyst cover. The "U" shaped ridge should be toward the stove with the open end down. The refractory cover should be nearly flush with the other refractory surfaces if properly installed.

- Replace the cast iron catalyst access panel and securely tighten the fasteners. Make sure the gasketing on the access panel is in good condition.

- Clean the chimney and chimney connector.

- Operate the stove in typical manner for two weeks. Inspect the chimney and chimney connector frequently during this period.

- A significant reduction in the observed creosote build-up rate is a good indicator that the performance change was due to fly ash deposits on the catalytic element. Continue with regular chimney system inspections to ensure proper performance is being maintained.

- Continued observation of significant creosote build-up or excessive smoke indicates that the catalytic element needs to be replaced. Contact your nearest Vermont Castings Authorized Dealer for information about a replacement element.

NOTE: Use only the replacement catalyst supplied by Vermont Castings.

Gaskets

Inspection of the gaskets and their occasional replacement is an important part of routine maintenance.

Light colored streaks on the inside of the stove near the door or griddle openings may indicate air leaks due to worn or damaged gasketing. Check for other leaks by shining a strong light inside gasketed seams to see if the light leaks through. Your local Vermont Castings Authorized Dealer can supply the appropriate replacement gaskets.

The gasket seals between operating parts of the stove, and also the seals which are necessary to preserve the stove's air-limited quality, must be checked regularly for wear or deterioration:

- the 5/16" diameter wire reinforced gasket sealing the griddle to the stove top;
- the 3/8" diameter gasket sealing the ash door to the front of the ash drop;
- the 3/16" diameter gasket sealing the outer glass panes to the doors, and the preformed wire core gasket between the panes;
- the 5/16" diameter gasket sealing between:
 - the catalyst access panel and the stove back;
 - the damper and the upper fireback;
 - the front doors and the stove front, and the door halves to each other.

Additional gaskets form seals between non-moving parts. If your Defiant Encore is disassembled, check the following gaskets and replace as necessary:

- the 5/16" diameter gasket sealing between:
 - the flue collar and the stove back;
 - the ash drop and the bottom;
 - the lower fireback and the sides;
 - the upper fireback and the lower fireback and wear plates;
 - the back and the ends and top.

Follow this procedure to replace worn gaskets:

- Remove the old gasketing.
- Clean the gasket channel or groove with a wire brush. Remove stubborn deposits of cement with a cold chisel if necessary.
- Clean all parts to be gasketed. Place on a level clean surface.
 - Select the appropriate gasket. Cut to the recommended length plus a 1" - 2" (25mm.-50mm.) excess.

- Place an unbroken 1/8" (3mm.) bead of gasket cement in the channel or groove.

- Starting at one end, press the gasket into the channel. Where gasket meets itself, ensure a good joint before trimming any excess. Do not overlap or leave ragged edges.

- Place the gasketed part firmly against its normal mating surface to seat the gasket evenly in its channel or groove. Remove the gasketed part and clean away any excess gasket cement before placing the part aside to dry.

The Chimney System

Creosote

Your Defiant Encore has been designed to reduce creosote build-up significantly. However, regular chimney inspection and maintenance must be still be performed. For safety, good stove performance, and to protect your chimney and chimney connector, inspect your chimney and chimney connector on a regular schedule. Clean the system if necessary. Failure to keep the chimney and connector system clean can result in a serious chimney fire.

If you do experience a chimney fire, act promptly to:

- Close the damper and thermostat lever.
- Get everyone out of the house.
- Call the Fire Department.

As a safety precaution, you should also contact your local fire authority for information on how to handle a chimney fire, and have a clearly understood plan to deal with one.

When wood is burned slowly, it produces tar, organic vapors and moisture which combine to form creosote. The creosote vapors condense in the relatively cool chimney flue of a slow-burning fire. As a result, creosote residue accumulates on the flue lining. When ignited, this creosote makes an extremely hot fire within the flue system which can damage the chimney and overheat adjacent combustible material. If a significant layer of creosote has accumulated (1/8" [3 mm.] or more), it should be removed to reduce the risk of a chimney fire.

To minimize creosote accumulation, try to burn small hot fires instead of large smoldering ones.

You should inspect the system every two weeks during the heating season as part of a regular maintenance schedule.

To inspect the chimney, let the stove cool completely. Then, using a strong light, sight up through the flue collar into the chimney flue. If it is not possible to inspect the flue system in this fashion, the stove must be disconnected to provide better viewing access.

Clean the chimney using a brush the same size and shape as the flue liner. Flexible fiberglass rods are used to run the brush up and down the liner, causing any deposits to fall to the bottom of the chimney where they can be removed through the clean-out door.

The chimney connector should be cleaned by disconnecting the sections, taking them outside, and removing any deposits with a stiff wire brush. Reinstall the connector sections after cleaning, being sure to secure the individual sections with sheetmetal screws.

If you feel any uncertainties about chimney inspection, contact your local Vermont Castings Authorized Dealer, or engage a professional chimney sweep in your area to perform the inspection and cleaning of the chimney.

Annual Maintenance

Every Spring, at the end of the heating season, a thorough cleaning, inspection and repair should be performed:

- Thoroughly clean the chimney and chimney connector.
 - Inspect the chimney for damage and deterioration. Replace weak sections of prefabricated chimney. Have a mason make repairs to a masonry chimney.
 - Inspect the chimney connector and replace any damaged sections.
 - Check gasketing for wear or compression, and replace if necessary.
 - Inspect and clean the catalytic element, and clean the refractory assembly that houses the element. Be careful not to damage the refractory material, which is very fragile.
 - Check door and damper handles for tightness. Adjust if needed.
 - Check heat shield screws. Tighten as necessary.
 - Clean dust from the inner sides of bottom, rear and connector heat shields.
 - Remove ashes from the ashpan and replace with moisture absorbing material (such as cat litter) to keep the stove interior dry.
 - Touch up the paint on black stoves.

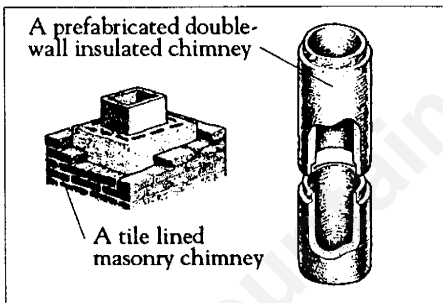
Installation

Chimney Guidelines

New Chimneys

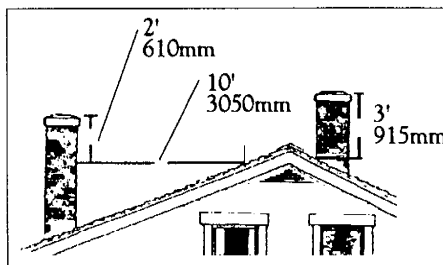
Both masonry and prefabricated metal chimneys work well. A new masonry chimney should be constructed to conform to the standards of your local building code or a recognized national code. Masonry chimneys must be lined with code-approved masonry or pre-cast refractory tiles, stainless steel pipe, or a code-approved poured-in-place liner. The chimney must have a tight sealing clean-out door.

A prefabricated metal chimney must be one tested and listed for use with solid-fuel burning appliances to the High-Temperature (H.T.) Chimney Standard UL 103 1985 (2100° F.) for the United States or High Temperature (650 C.) Standard ULC S629 for Canada. If you must pass the chimney through a combustible wall or ceiling, be sure to follow the chimney manufacturer's instructions precisely. Special accessories may be necessary for this type of installation, and can be obtained from the chimney manufacturer.



Use either a masonry or a prefabricated metal chimney

The chimney should extend at least 3 feet (915mm.) above the highest point where it passes through a roof, and at



The 2/3/10 rule for chimneys.

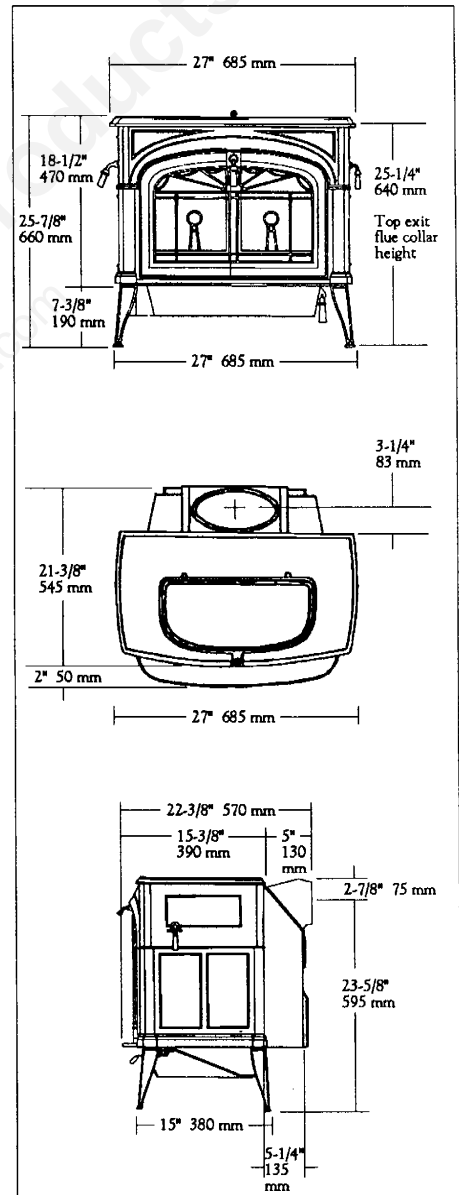
SAFETY NOTICE: IF YOUR DEFIANT ENCORE IS NOT PROPERLY INSTALLED, OPERATED AND MAINTAINED, A HOUSE FIRE MAY RESULT. FOR SAFETY, FOLLOW ALL INSTALLATION, OPERATION AND MAINTENANCE DIRECTIONS. CONTACT LOCAL BUILDING OFFICIALS ABOUT RESTRICTIONS AND INSTALLATION INSPECTION REQUIREMENTS IN YOUR AREA.

Specifications

Size and type of fuel	18" - 20" wood logs 450 mm. - 500 mm.
Fuel capacity	40 lbs. 18 kg.
Range of heat output,*	9,000 - 41,300 BTU/hr.
Maximum heat output**	47,000 BTU/hr.
Average area heated**	950-1900 sq. ft. 90 - 175 m ²
Weight	350 lbs. 159 kg.
Glass panels	High temperature ceramic, 5 mm.
Loading	Top or front
Flue size	8" 200 mm.
Flue exit positions	Reversible, top or rear.
Primary air control	Thermostatically maintained, manually adjusted.
Secondary air control	Self-regulating
Width (leg to leg)	27" 685 mm.
Depth (leg to leg)	15" 380 mm.
Height:	
w/ regular legs, top exit:	25-1/4" 640 mm.
rear exit:	26-1/2" 675 mm
w/ plinth, top exit:	23-1/4" 590 mm.
rear exit:	24-1/2" 620 mm.

*These values can vary depending on how the stove is operated, the type and moisture content of the fuel used, as well as the design, construction, and climatic location of your home. Figures shown are based on maximum fuel consumption obtained under laboratory conditions and on average wood stove efficiencies.

**These values are based on operation in building-code conforming homes under typical winter climate conditions in New England. If your home is of non-standard construction (e.g. unusually well-insulated, not insulated, built underground, etc.) or if you live in a more severe or more temperate climate, these figures may not apply. Since so many variables affect stove sizing, consult your Vermont Castings Authorized Dealer to determine realistic expectations for your home.



Specifications include dimensions for planning purposes only. Before beginning your installation, consult your Vermont Castings Authorized Dealer for final specifications. For clearance requirements, metric dimensions have been rounded to the nearest ten millimeters on the Clearance Chart.

least 2 feet (610 mm.) higher than any portion of a building within 10 feet (3050 mm.).

For proper draft and good performance, any chimney used with a Vermont Castings wood or coal burning stove should extend at least 16 feet (5 m.) above the flue collar of the stove.

Existing Chimneys

An existing masonry chimney may work well, but it must be inspected before use.

- Check to see that the chimney has a lining. Do not use an unlined chimney.
- Look for and repair any defects such as those illustrated below.
- Make sure the chimney is thoroughly cleaned before use.

Your local Vermont Castings Authorized Dealer or a chimney sweep can help you with inspection, cleaning, relining and repair needs and options.

Potential defects in a masonry chimney.

Masonry chimney flues may have two or more openings through the chimney wall, used to connect stoves in different rooms to the same flue.. Unused openings must be sealed with masonry to the thickness of the chimney wall. Openings sealed with pie plates or wallpaper are a hazard. In the event of a chimney fire, flames and smoke may be forced out of these unused thimbles.

DO NOT CONNECT YOUR STOVE OR INSERT TO A CHIMNEY FLUE SERVING ANOTHER APPLIANCE.

Chimney Size

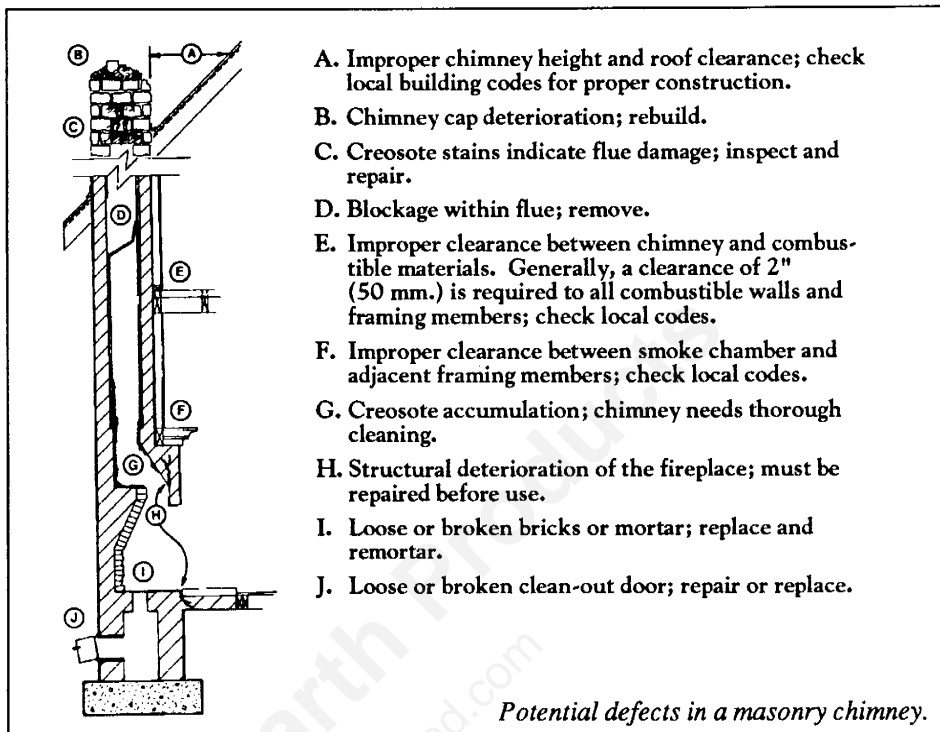
The Vermont Castings Defiant Encore is designed to perform well when vented through flues which have these dimensions:

Masonry:

Square Liner	8" x 8" (200 mm.x 200 mm.) (nominal)
Rectangular Liner	8" x 12" (200 mm.x 300 mm.) (nominal)
Round Liner	8" (200 mm.) (inside dimension)

Prefabricated:

Round Liner	8" (200 mm.) (inside dimension)
-------------	------------------------------------



- A. Improper chimney height and roof clearance; check local building codes for proper construction.
- B. Chimney cap deterioration; rebuild.
- C. Creosote stains indicate flue damage; inspect and repair.
- D. Blockage within flue; remove.
- E. Improper clearance between chimney and combustible materials. Generally, a clearance of 2" (50 mm.) is required to all combustible walls and framing members; check local codes.
- F. Improper clearance between smoke chamber and adjacent framing members; check local codes.
- G. Creosote accumulation; chimney needs thorough cleaning.
- H. Structural deterioration of the fireplace; must be repaired before use.
- I. Loose or broken bricks or mortar; replace and remortar.
- J. Loose or broken clean-out door; repair or replace.

Potential defects in a masonry chimney.

Chimneys with liners larger than 8" x 12" (200 mm.x 300 mm.) may experience rapid cooling of smoke and reduction in draft, especially if they are located outside the home. These large chimneys may need to be insulated or have their flues re-lined for proper stove performance.

Accessories to help make the connection between stainless steel chimney liners and our stoves and FirePlace Inserts are available through your local Authorized Dealer.

Outside Air

A source of fresh air must be provided into the room or the stove. In some modern, super-insulated homes, the air necessary for combustion is inadequate due to restricted air infiltration into the dwelling. (Infiltrated air is simply that air which finds its way into a home through various cracks and openings which are not weathertight.) Kitchen or bath exhaust fans competing with the stove for available air will aggravate the situation.

Where poor draft is the result of a low infiltration rate, opening a ground floor window on the windward side of the house and in the vicinity of the stove, or installing a permanent outside air supply, will usually alleviate the problem.

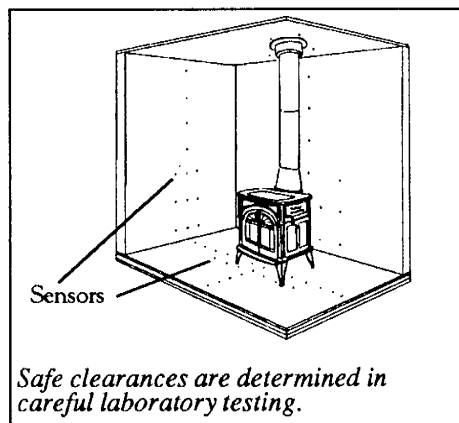
Bringing combustion air from outside the home directly to the air inlet of the stove is required for some new construction. When the air supply for the fire is brought directly from the outside, it is not

affected by variations in pressure within the house, and improved stove performance often results. An Outside Air Adaptor Kit is available from your local Vermont Castings Authorized Dealer.

Clearances

Your stove and chimney connector radiate energy in all directions when in operation. An essential element of a safe installation is to be sure combustible materials near your stove do not overheat due to inadequate clearance.

Clearance is the distance between your stove and chimney connector, and nearby walls, ceiling, floors, and other combustible materials. A considerable distance must also be maintained to moveable items, such as furniture, newspapers, or



Safe clearances are determined in careful laboratory testing.

Defiant Encore Clearance Chart

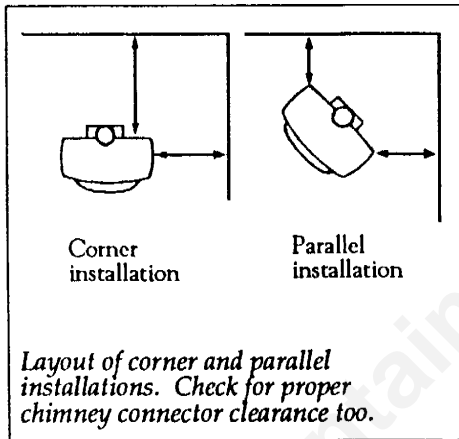
Metric dimensions are rounded to the nearest ten millimeters

clothes left to dry near the stove: 48" (1220 mm.) is recommended. Keeping those clearance areas empty assures that nearby surfaces and objects will not overheat. Do not store firewood within the clearance distance, or where it will interfere with fuel loading or ash removal.

The clearances approved for your Defiant Encore have been established by testing to UL and ULC standards to determine safe distances between your stove, its venting system, and combustible surfaces. In testing, heat sensors installed in all surfaces near the stove and chimney connector, including floors and ceilings, show the temperatures reached during a variety of combustion situations. Clearance distances are accepted only when the sensors show the stove is far enough from nearby surfaces to meet strict UL and ULC standards.

Using the Clearance Chart

Separate tests are done for parallel and corner installations, for installations using stove heat shields and chimney connector heat shields, and for installations using ventilated wall shields.



If your stove will be parallel to the wall behind it (parallel installation), use the columns of the chart labelled "side" and "rear".

If your stove will be installed in a corner (corner installation), use the columns labelled "corner". Use only the part of the chart that applies to your installation. Note: Side clearances do not apply to corner installations.

Measure clearance between the bottom edge of the stove's top plate and the nearby combustible surface. It is important to double check all installations for proper chimney connector clearance, as well as stove clearance.

The clearance distance must be empty except for non-combustible heat shields as described in the next section

Clearance from stove to:	Unprotected surfaces			Protected surfaces		
	Parallel installations		Corner installations	Parallel installations		Corner installations
	Side	Rear	Corner	Side	Rear	Corner
No heat shields	24" 610 mm	31" 790 mm	24" 610 mm	8" 200 mm	15" 380 mm	8" 200 mm
Rear exit, rear heat shield only ¹	24" 610 mm	19" 480 mm	24" 610 mm ⁵	8" 200 mm	11" 280 mm	8" 200 mm ⁵
Top exit, rear and connector heat shields ^{2,3}	24" 610 mm	18" 480 mm	17" 430 mm	8" 200 mm	11" 280 mm	7" 180 mm

Clearance from chimney connector to:	Unprotected surfaces		Protected surfaces	
	All installations		All installations	
No heat shields	24" 610 mm		8" 200 mm	
Chimney connector heat shields ²	12" 300 mm		4" 100 mm ⁴	

Clearance for fireplace installations:	To unprotected surfaces			To protected surfaces		
	Mantel	Top trim	Side trim	Mantel	Top trim	Side trim
	39" 990 mm	39" 990 mm	10" 250 mm	18" 460 mm	18" 460 mm	8" 200 mm

Clearance for fireplace installations:	All installations	
		48" 1220 mm

¹ Rear exit - horizontal from flue collar directly back through wall.

² Shielding for a top exit stove must include the stove rear heat shield insert to protect the area behind the flue collar.

³ A ceiling heat shield 24" (610 mm) in diameter suspended 1" (25 mm) from the ceiling MUST surround the chimney connector in installations in which the chimney connector penetrates the ceiling. The chimney connector shield extends only to 28" (710 mm) above the flue collar.

⁴ The ceiling heat shield required when chimney connector shields are used should meet the wall protector. This will require trimming the ceiling shield along the line of intersection with the wall protector.

⁵ Chimney connector clearance guidelines must be observed as well.

Clearance Reductions

When no shields are used, distance alone provides protection against overheating. When shields are used, it is usually possible to reduce the required clearance. Clearances may be reduced only by means approved by the regulatory authorities, such as the methods described here.

Shields may be attached directly to:

- the stove
- chimney connector
- wall surfaces
- or a variety of different type shields may be used together.

When shields are attached to the stove or chimney connector, they are mounted 1" - 2" (25 mm.- 50 mm.) away from the stove or connector surface on non-combustible spacers.

Air flowing between the stove (and/or chimney connector) and nearby shields carries away heat. Do not block the air flow by filling this empty space with any insulating material.

The shiny shield surface facing the heat source must be left unpainted, enabling it to reflect heat back towards the stove or connector and away from the wall.

The greatest clearance reductions usually result from using both stove and chimney connector shields in conjunction with wall shields.

Illustrations are provided, to show a variety of installations in each of four clearance alternatives:

- no shields
- wall shielding only
- stove & connector shielding only
- wall, stove & connector shielding combined

With No Heat Shields

If the Defiant Encore is installed parallel to the rear wall ("parallel installation") and no shields are used, the stove must be at least 31" (790 mm.) from the wall behind it, and at least 24" (610 mm.) from walls beside it.

If the Defiant Encore is installed in a corner ("corner installation") and no shields are used, the corners of the stove must be at least 24" (610 mm.) from nearby walls.

With Stove Heat Shield Only

For rear-exiting stoves, clearance is determined primarily by heat from the stove (provided that the chimney connector does not pass near a combus-

tible surface). Installing a rear heat shield on the stove protects the wall behind the stove, so that clearance may be reduced to 19" (480 mm.). Side clearance remains the same at 24" (610 mm.). ("Rear exit" means horizontal exit from the flue collar directly back into a fireplace or through a wall. A horizontal exit into an elbow and then upward, requires chimney connector protection as for a regular top exit stove.)

For top-exiting stoves, there usually will be no advantage to using a stove rear heat shield without an accompanying chimney connector heat shield, because the chimney connector radiates heat toward the wall just as does the stove. Using a rear shield on the stove but no shield on the connector means that safe clearance to the rear wall will be determined by heat from the unshielded connector, rather than by heat from the shielded stove. Since an unshielded chimney connector must be a minimum of 24" (610 mm.) from the rear wall, the distance from the stove's top plate to the wall will still be 31" (790 mm.).

The side clearance requirement is not reduced by use of stove or connector shields, and remains at 24" (610 mm.).

For corner installations, there is no reduction in the required clearance, when using only a stove heat shield.

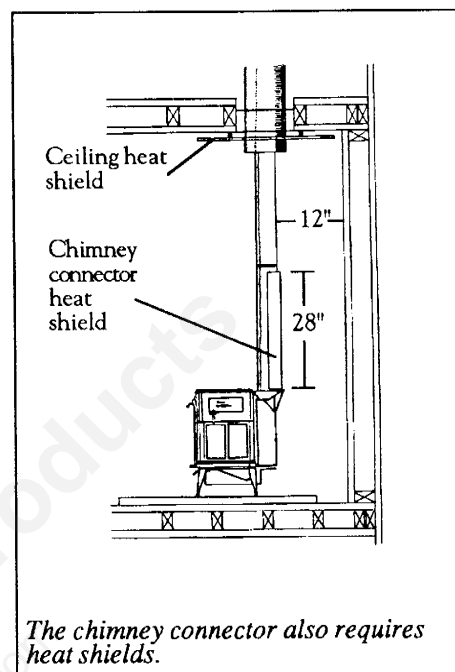
NOTE: These clearances were determined using Vermont Castings Rear Heat Shields on the Defiant Encore.

With Chimney Connector Heat Shields

The Defiant Encore listing is for installations using single-wall chimney connectors. The rows of the clearance chart labelled "Chimney Connector Clearance" give clearances measured from the chimney connector to nearby walls and ceilings. "Ceilings" is underlined to remind you that ceiling clearances are important and sometimes overlooked. Be sure to double-check chimney connector clearances before completing your installation.

When installing chimney connectors for a Defiant Encore installation in which the chimney connector is connected vertically to a prefabricated chimney system, the chimney connector heat shields must not extend to the ceiling. The connector shielding must stop exactly 28" (710 mm.) above the flue collar. From that point upward, the unshielded connector may safely be 12" (300 mm.) from the unshielded wall.

A ceiling heat shield 24" (610 mm.) in diameter must be installed 1" (25 mm.) below the ceiling. The ceiling shield



The chimney connector also requires heat shields.

must be constructed of 24 gauge or heavier sheetmetal, and be centered on the chimney.

In an installation with a vertical run, an elbow, and a horizontal run, the connector shield must extend to the elbow OR 28" (710 mm.), whichever is less.

WARNING:

DO NOT USE DOUBLE-WALL CHIMNEY CONNECTORS WITH THE DEFIANT ENCORE, UNLESS THEY HAVE BEEN SPECIFICALLY TESTED AND LISTED FOR USE WITH THIS APPLIANCE. USE OF DOUBLE-WALL CHIMNEY CONNECTORS WHICH HAVE NOT BEEN TESTED AND LISTED FOR USE WITH THE DEFIANT ENCORE MAY RESULT IN TEMPERATURES EXCEEDING THE LIMITS ESTABLISHED BY THE TEST STANDARD ANSI/UL 1482. A POTENTIAL HAZARD MAY RESULT, INCLUDING A HOUSE FIRE.

IN THE UNITED STATES, SEE YOUR VERMONT CASTINGS AUTHORIZED DEALER FOR INFORMATION ON DOUBLE-WALL CONNECTORS WHICH HAVE BEEN SUCCESSFULLY TESTED AND LISTED FOR USE WITH THE DEFIANT ENCORE.

USE OF DOUBLE-WALL CHIMNEY CONNECTORS WITH THE DEFIANT ENCORE IS PROHIBITED IN CANADA.

With Stove and Chimney Connector Heat Shields

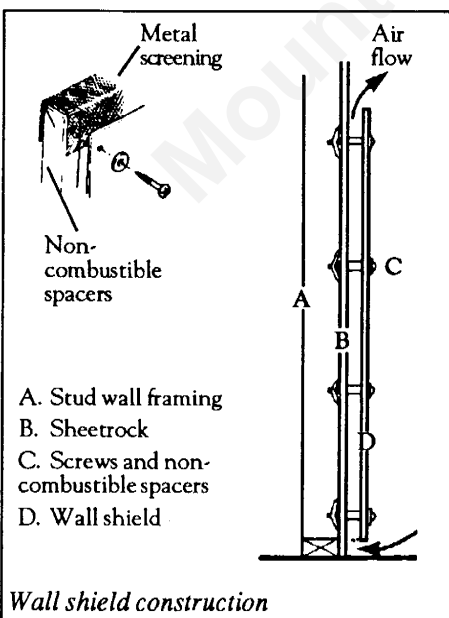
Use of both stove and chimney connector heat shields reduces the required clearance as shown on the clearance chart, and in the diagrams on succeeding pages.

With Wall Shields

A properly constructed ventilated wall shield may be used to transform a standard wall into a protected wall. Consult the right half of the Clearance Chart for the appropriate clearances when wall shields are used. The diagrams show correct placement and size of wall shields required for reduced clearances in some of the more common installations.

Wall shields should be constructed of 24 gauge or heavier sheetmetal, any noncombustible material such as 1/2" (13 mm.) insulation board, or common brick laid on flat (3 1/2" side down). Shields must be spaced out from the combustible wall or ceiling 1" (25 mm.) on noncombustible spacers. The spacers should not be directly behind the stove or chimney connector.

Air must be able to flow between the wall and the shield. At least one-half (50%) of the bottom 1" (25 mm.) of the shield should be open and the shield must be open at the top. Protect the top opening with metal screening to prevent objects from falling behind the shield.



The shield for the stove must extend 10" (250 mm.) above the top of the stove. The shield for the chimney connector must be 30" (760 mm.) wide, centered behind the pipe, and must stop 1" (25 mm.) below the ceiling.

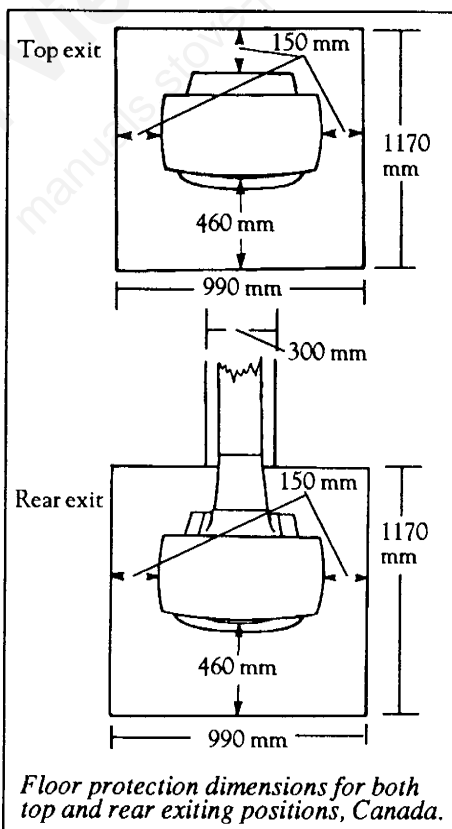
Floor Protection

Free-Standing Installations

With the exception of bare concrete over earth, every floor should be considered combustible. Installation over a combustible floor requires a non-combustible floor protector to guard against spilled coals and embers. If carpeting is present, it must be removed before installation of the floor protector.

If you are constructing a new hearth, we recommend using a base of 1/4" non-asbestos mineral board under your hearth's decorative surface. This sometimes is required by local codes. When using brick, tile, or stone for the decorative surface, individual pieces must be mortared so sparks cannot fall through.

Spark protection must also be provided under the full length of any horizontal run of chimney connector. For the 8" (200 mm.) connector used with the Defiant Encore, the protector must be a minimum of 12" (300 mm.) wide, centered under the connector.



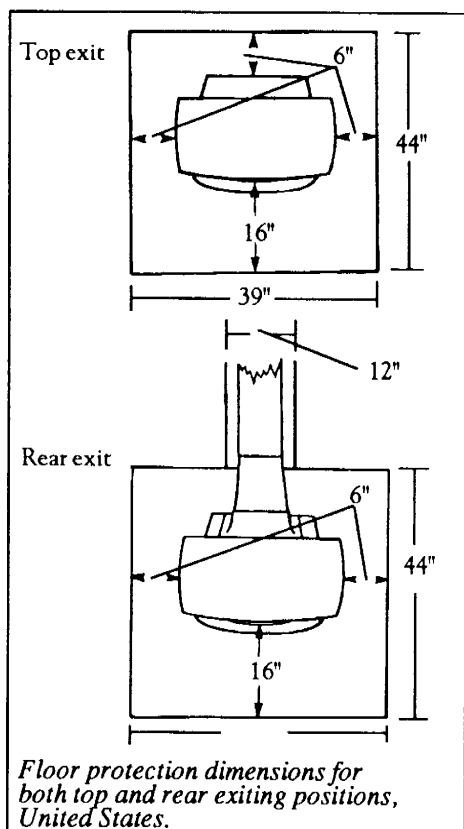
IN CANADA, the Defiant Encore stove must be equipped with the Bottom heat shield and Ash Door heat shield to assure protection against heat radiated from the stove bottom and ash door area. With those two shields in place, it is necessary only to provide spark and ember protection for the floor, using a floor protector of non-combustible material. The protector must be a minimum of 990 mm. wide and 1170 mm. deep, to extend under the stove, beyond it 150 mm. on each side and at the rear, and 460 mm. at the front (not including the ashlip).

IN THE UNITED STATES, the required floor protection is 39" wide x 44" deep, under the unit and extending 16" in front (disregarding the ashlip) and 6" to the sides and rear.

With Bottom and Ash Door Heat Shields:

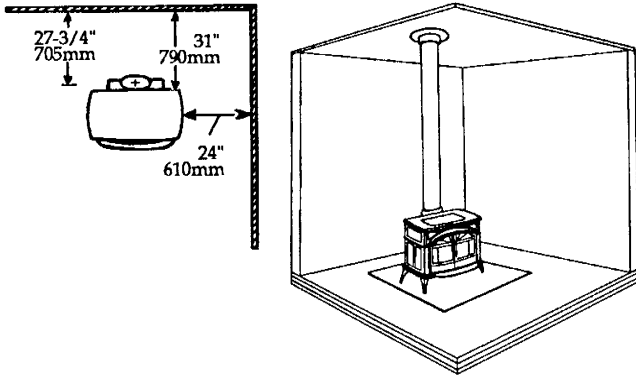
With Bottom and Ash Door heat shielding in place, the floor protector may be any non-combustible material, so long as the minimum hearth dimensions of 39" x 44" are met.

When using brick, tile, or stone, individual pieces must be mortared so sparks cannot fall through.



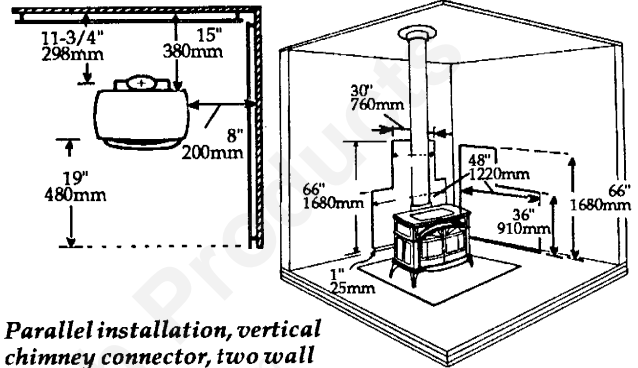
Shield requirements for Minimum Stove Clearances

Clearances when using no shielding

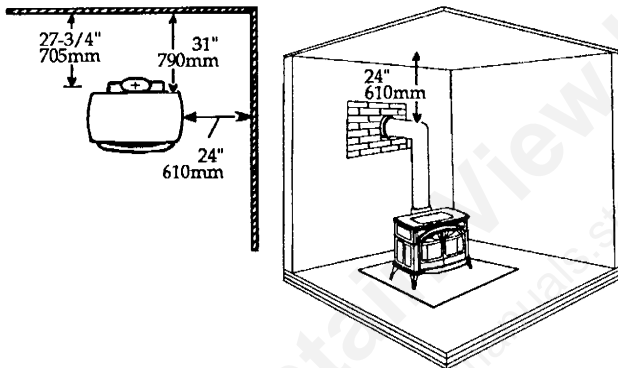


Parallel installation, vertical chimney connector. No shields of any type.

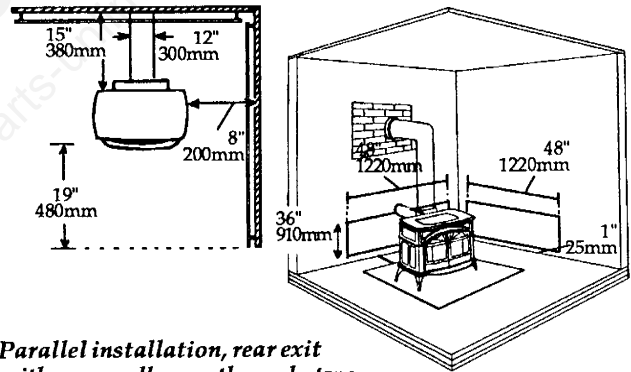
Clearances when using wall shields only



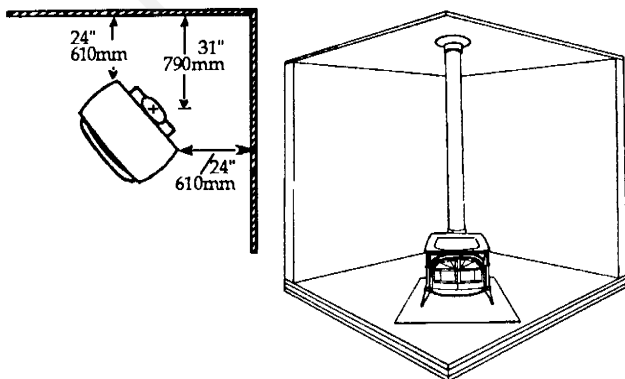
Parallel installation, vertical chimney connector, two wall shields. Reduced clearances for both rear and side walls. Wall shields may meet at corner if desired. Shielding for connector is centered behind connector.



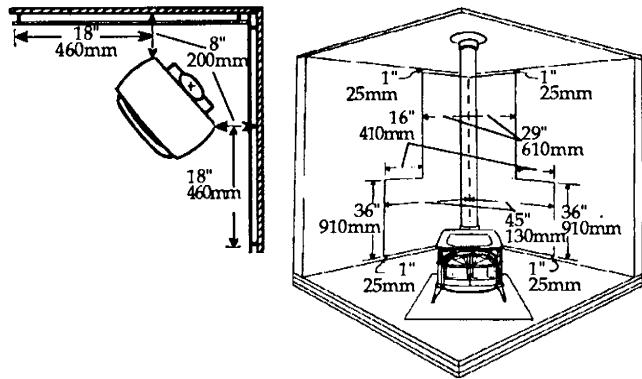
Parallel installation with rear wall pass-through. No shields of any type. Wall pass-through must comply with codes. See "Special Installations".



Parallel installation, rear exit with rear wall pass-through, two wall shields. Reduced clearances to both rear and side walls. Wall shields may meet at corner if desired. Shielding for connector is centered behind connector. Wall pass-through must comply with codes. See "Special Installations".



Corner installation, vertical chimney connector. No shields of any type.

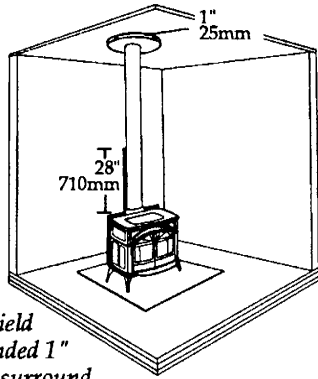
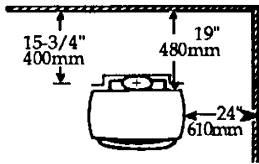


Corner installation, vertical chimney connector, two wall shields. Reduced side clearances. Wall shields MUST meet at corner.

Shield requirements for Minimum Stove Clearances

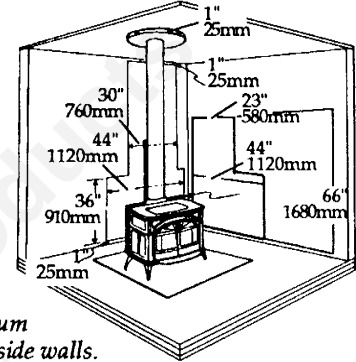
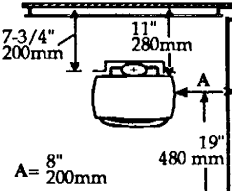
Clearances when using stove and chimney connector shields only

8"
200mm

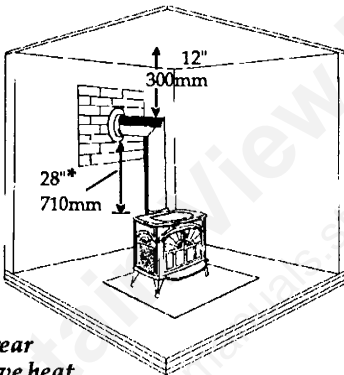
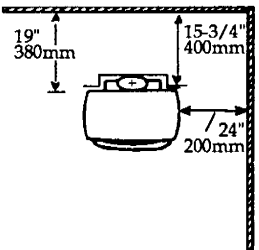


Parallel installation, vertical chimney connector, rear stove shield and connector shields. Reduced clearance to rear wall only. A ceiling heat shield 24" (610mm) in diameter suspended 1" (25mm) from the ceiling **MUST** surround the chimney in this installation. Connector shield extends only to 28" (710mm) above the flue collar.

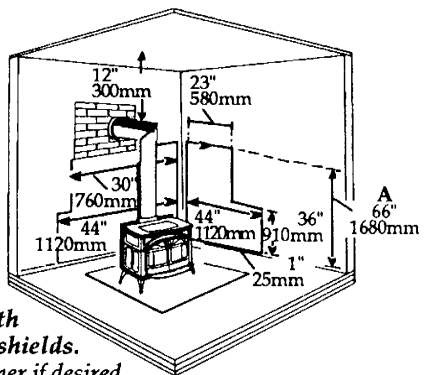
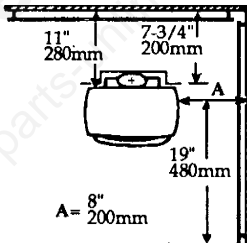
Clearances using wall, stove and chimney connector shields



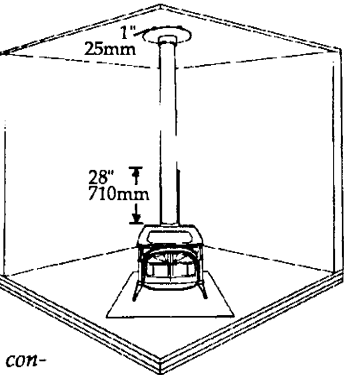
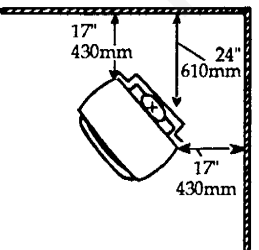
Parallel installation, vertical chimney connector, stove, connector and wall shields. Maximum reduction for both rear and side walls. Wall shields may meet at corner if desired. A heat shield 24" (610mm) in diameter suspended 1" (25mm) below the ceiling must surround the chimney.



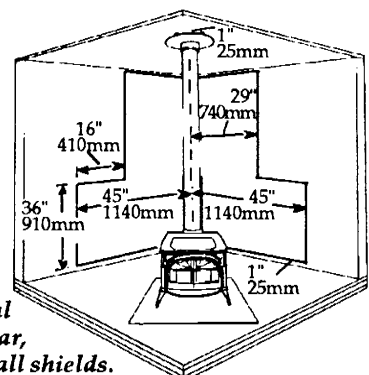
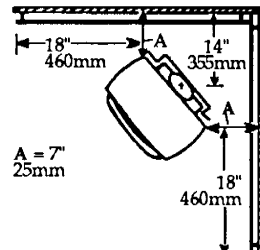
Parallel installation with rear wall pass-through, rear stove heat shield and connector heat shields. Reduced clearance to rear wall. *Connector shield extends to 28" (710mm) above flue collar or to elbow, whichever is less. Wall pass-through construction must comply with codes. See "Special Installations".



Parallel installation with rear wall pass-through with stove, connector and wall shields. Wall shields may meet at corner if desired. Connector shield extends 28" (710mm) above flue collar, or to the elbow, whichever is less. Height "A" must be 66" (1680mm) or reach the thimble. Pass-through must comply with codes. See "Special Installations."



Corner installation, vertical chimney connector, with rear stove heat shield and connector heat shields A 24" (610mm) diameter ceiling heat shield **MUST** surround the chimney and be suspended 1" (25mm) below the ceiling. Connector shield extends only to 28" (710mm) above flue collar.



Corner installation, vertical chimney connector, with rear, stove and connector and wall shields. Wall shields **MUST** meet at corner. Connector heat shield extends 28" (710) above flue collar. A 24" (610mm) diameter ceiling heat shield must surround the chimney and be suspended 1" (25mm) from ceiling.

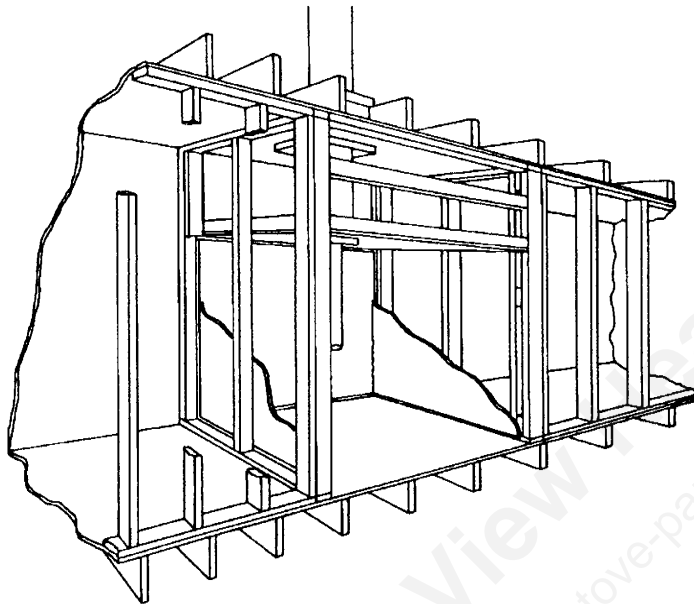
Alcove Installations

Because of their restricted air flow and heat retention characteristics, specific construction requirements and special clearances apply to installations into alcoves. Refer to the diagrams on this page, and contact your Vermont Castings Authorized Dealer for details before beginning an alcove installation.

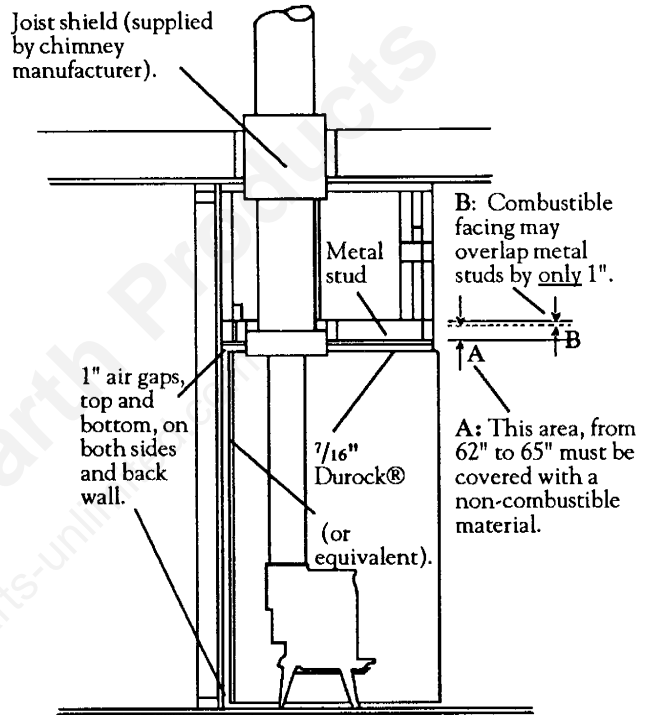
NOTE: ALCOVE INSTALLATION OF THE INTREPID II IS NOT PERMITTED IN CANADA.

Construction Requirements

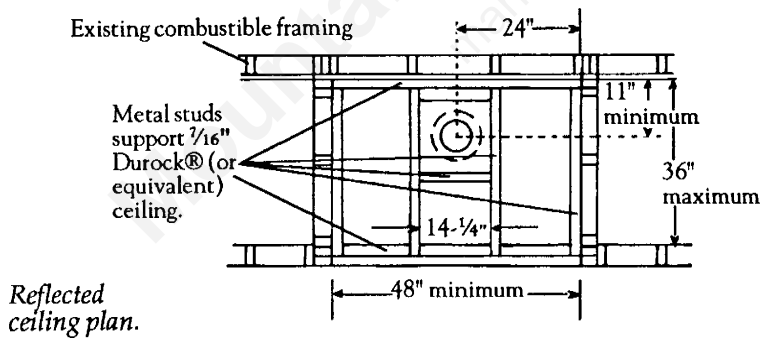
Showing non-combustible ceiling framing and maximum and minimum permitted dimensions.



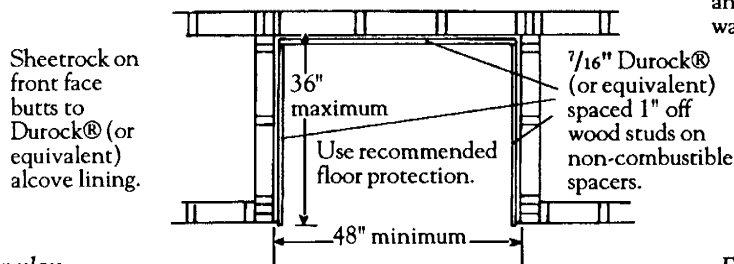
Cutaway perspective of alcove installation.



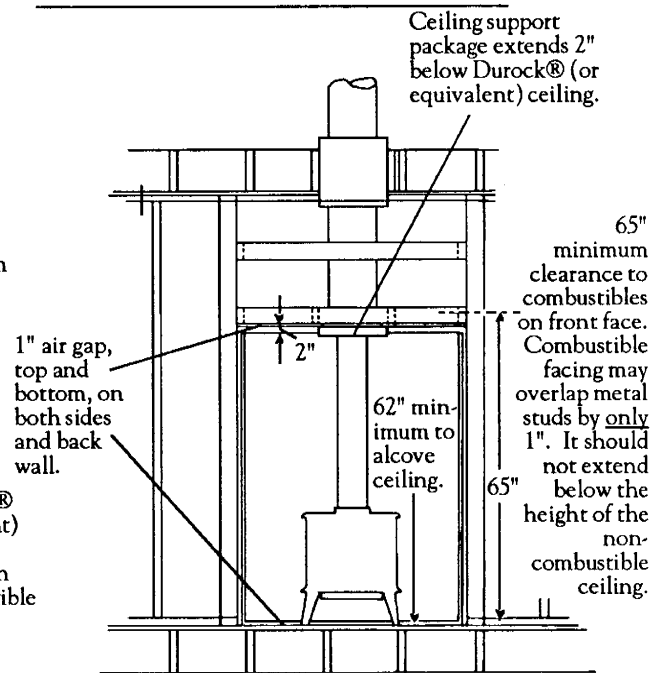
Side section.



Reflected ceiling plan.



Floor plan.



Front section.

Without Bottom and Ash Door Heat Shielding:

The Defiant Encore may be installed without Bottom and Ash Door heat shields only in the U.S.A., and there only if the location is over a completely non-combustible floor such as a bare, unpainted, concrete basement floor with nothing but earth beneath.

NOTE: In Canada, NO installation without bottom heat shield is permitted.

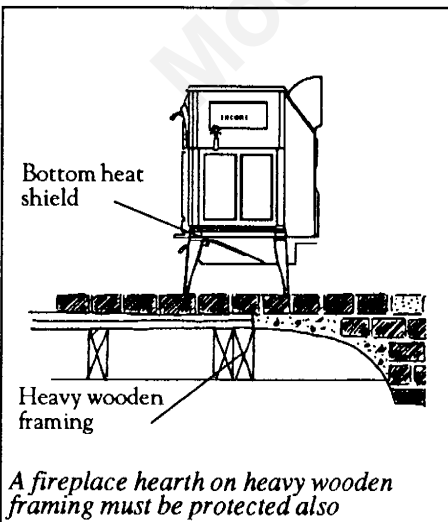
Plinth

An optional plinth can be used to reduce total height by 2" (50 mm.). Except for installation in the U.S.A. over a totally non-combustible floor as described above, a plinth installation must include the special Plinth Heat Shield Package and the Defiant Encore Rear Heat Shield, plus the standard non-combustible floor protection 39" (990 mm.) wide and 44" deep (46"[1170 mm.] in Canada), with the required 6" (150 mm.) extending beyond the stove to each side and the rear, and 16" (18"[460 mm.] in Canada) in front of the stove.

Special Installations

Fireplace Installations

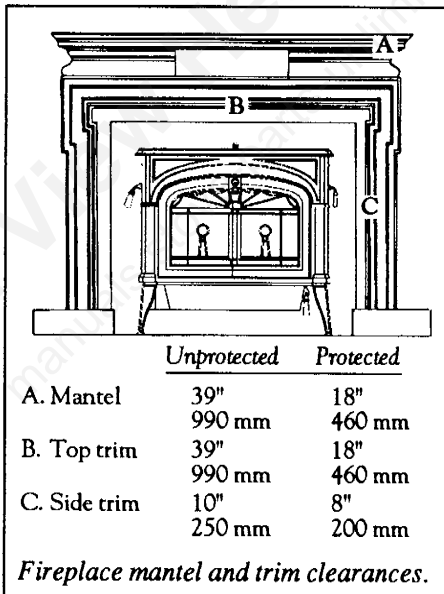
In some fireplaces the hearth is "concrete over earth"; in others the brick or concrete hearth in front of the fireplace opening is supported by heavy wooden framing. Bricks and concrete are not good insulators, so heat radiated to the hearth under the stove will pass through the hearth directly to the wooden framing. Such fireplace hearths must be protected like any other combustible floor.



Standard Legs

If the bottom heat shield and ash door heat shield are used, the existing fireplace hearth may provide adequate spark and falling ember protection provided it meets the necessary size requirement of 39" x 44" (990 mm. x 1170 mm. in Canada). It is still essential that the hearth, or approved spark protection, extend 16" (460 mm. in Canada) in front of the stove, and 6" (150 mm.) on each side.

For fireplace installation of the Defiant Encore without both bottom heat shield and ash door heat shield, the hearth construction must meet the guidelines outlined in the previous section, i.e.: bare concrete over earth. (In Canada, the shields must be used even if the hearth is concrete over earth.). The fireplace itself must be constructed in accordance with the guidelines outlined in the National Fire Protection Association 211 standard in the U.S., and CSA B365 in Canada. The fireplace must have a hearth exten-

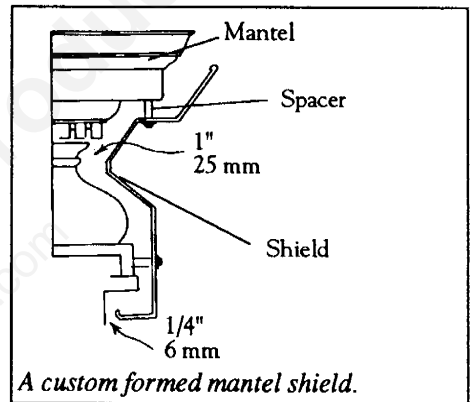


sion which extends a minimum of 16" in front of the fireplace face; it must be constructed of brick, concrete, or other non-combustible material properly supported and with no combustible material against the underside. The stove must sit entirely over this hearth extension. If using the optional Plinth, the Plinth Heat Shield Package and Encore Rear Heat Shield must be used.

The area in front of the stove must be further protected against falling sparks and embers for an additional 16" in the U.S. and 460 mm. in Canada.

Fireplace and Mantel Trim Shields

If your installation will use an existing fireplace and its masonry chimney built to code, you must check your fireplace mantel and trim clearances. Ventilated shields (non-combustible shields installed on non-combustible spacers 1" (25 mm.) away from the combustible surface) may be used to reduce clearances as shown below. Mantel and top trim shields for the Defiant Encore must be at least 48" (1220 mm.) long, centered over the



stove; side trim shields must extend the full length of the trim.

Refer to the figure below. An unprotected mantel (A) must have a minimum clearance of 39" (990 mm.), measured from the stove's top plate; with a ventilated shield the clearance may safely be reduced to 18" (460 mm.).

Unprotected top trim (B) protruding 9" (230 mm.) or less from the face of the fireplace must be a minimum of 39" (990 mm.) from the stove's top surface; with a ventilated trim shield the clearance may safely be reduced to 18" (460 mm.).

Unprotected side trim (C) which protrudes 2" (50 mm.) or less from the face of the fireplace must have a minimum 10" (250 mm.) of clearance, measured from the stove's top side edge; with a ventilated trim shield, the clearance may safely be reduced to 8" (200 mm.).

Wall Pass-throughs

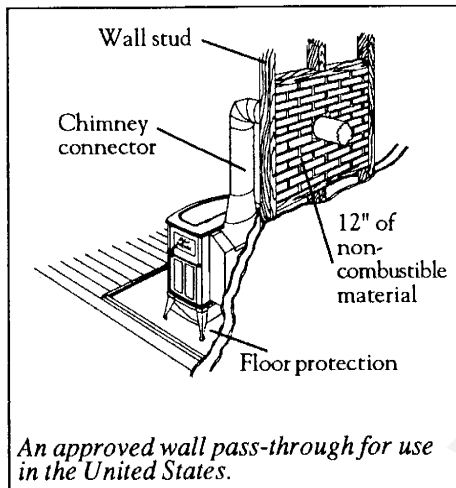
Whenever possible, design your installation so that the connector does not pass through a combustible wall. If you are considering a wall pass-through in your installation, be sure you check with your building inspector before you begin, and check with the chimney connector

manufacturer for any specific requirements.

Accessories are available for use as wall pass-throughs. If you are using one of these, make sure it has been tested and listed for use as a wall pass-through.

IN THE UNITED STATES, the National Fire Protection Association (NFPA) has established guidelines for passing chimney connectors through combustible walls. Many building code inspectors follow these guidelines when approving installations.

The illustration shows one NFPA recommended method, in which all combustible material in the wall is cut away from the single wall connector a sufficient distance to provide the required 12" clearance for the connector. Any



material used to close up the opening must be non-combustible.

Three other methods are also approved by the NFPA. These are:

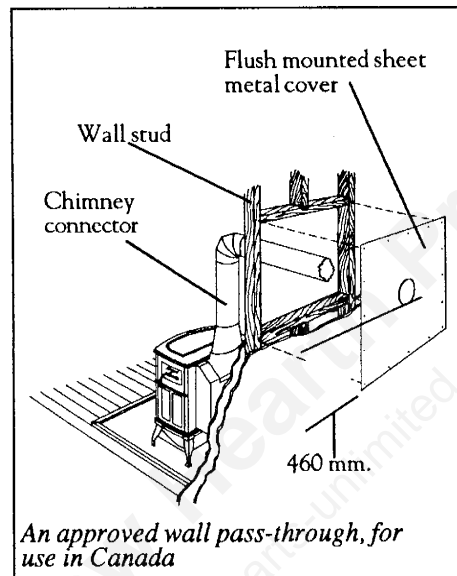
1.) Using a section of double-wall chimney with a nine-inch clearance to combustibles;

2.) Placing a chimney connector pipe inside a ventilated thimble, which is then separated from combustibles by six inches of fiberglass insulating material; and

3.) Placing a chimney connector pipe inside a section of eight-inch diameter solid insulated factory-built chimney, with two inches of airspace between the chimney section and combustibles.

IN CANADA, The Canadian Standards Association has established different guidelines for Canadian conditions. The illustration shows one method, in which all combustible material in the wall is cut away to provide the required 460 mm. clearance for the connector. The resulting space must remain empty. A flush mounted sheetmetal cover may be used on one side only. If covers must be

used on both sides, each cover must be mounted on non-combustible spacers at least 25 mm. clear of the wall. Your Vermont Castings Authorized Dealer, or your local building inspector can provide details of other approved methods of passing a chimney connector through a combustible wall. In Canada, this type of installation must conform to CAN/CSA-B365, Installation Code for Solid Fuel-Burning Appliances and Equipment.



Chimney Connectors

The chimney connector should be made of 24 gauge or heavier sheetmetal, and should be 8" (200 mm.) in diameter. Do not use galvanized chimney connector. When exposed to temperatures reached by smoke and exhaust gases, galvanized pipe may release toxic fumes.

- The chimney connector should be as short and direct as possible, with no more than two 90 degree turns.

- Horizontal runs of chimney connectors should slope upward 1/4" per foot (20 mm. per metre) going from the stove toward the chimney. The recommended maximum length of a horizontal run is 3 feet (1 metre).

- The total length of chimney connector should be no longer than 8 feet (2.5 metres). In cathedral ceiling installations, a prefabricated chimney should be brought down to within 8 feet (2.5 metres) of the stove.

- The whole chimney connector should be exposed and accessible for inspection and cleaning. Do not pass the chimney connector through a combustible ceiling, or through an attic, a closet or similar concealed space.

- If passage through a combustible wall is unavoidable, follow the recommendations in the section on Wall Pass-Throughs.

- To establish the positioning of a prefabricated chimney, or the thimble for a direct rear exit stove, these measurements will be helpful:

1. On a rear exit Defiant Encore with regular legs, the center of the oval flue collar is 23-5/8" (600 mm.) from the floor. If you are using the plinth, the center is 21-5/8" (550 mm.) from the floor. (See the specification illustrations on page 13.)

2. For a top exit Defiant Encore, the center of the oval flue collar is 3-1/4" (85 mm.) behind the bottom edge of the top plate.

In a parallel installation, the center of the oval flue collar will therefore be 3-1/4" (85 mm.) closer to the rear wall than will be the stove.

3. For a corner installation, locate the center of the flue collar by adding 7" (175 mm.) to the clearance distance from stove corner to wall. From the corner where the two walls meet, mark off the resulting distance along both walls. From these two points measure the same distance perpendicular to each wall. The last two measurements will meet at a point representing the center of the flue collar. (Refer to diagrams on pages 18 and 19 for illustrations.)

Dimensions can vary slightly for individual castings, and any particular stove may not precisely match specifications. Check your own specific stove if possible; if not, you may need to make slight adjustments when making the actual installation. Adjustments are most easily and safely made if the thimble hole for a rear exit installation is slightly higher than necessary rather than too low, or, for a top exit situation, if the hole for the prefabricated chimney is farther than necessary from the wall, rather than too close.

Codes and Listings

Conforming to local building codes will be an important part of your planning. Local authorities make the final decision on whether or not an installation will be approved. They need to know that your installation is safe and meets local and state codes.

The metal label permanently attached to the back of every Vermont Castings stove indicates that the stove has been tested to current UL and ULC standards, and gives the name of the testing labora-

tory. Clearance and installation information is also printed on the label. In most cases, local authorities 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.

However, codes vary in different areas. Be sure to review your installation plans with your local authority before starting the installation. Check with your local Vermont Castings Authorized Dealer for help in providing the necessary information to local officials.

This manual will answer clearance and construction questions for almost all installations. Your Vermont Castings Authorized Dealer will also be able to help. For questions left unanswered, we recommend that you refer to the National Fire Protection Association ANSI/NFPA 211 *Standard for Chimneys, Fireplaces, Vents and Solid Fuel Burning Appliances*. For 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 accepted by most local authorities. Your Vermont Castings Authorized Dealer, or your local building official may have a copy.

Remember, your local building official makes the final decision on approvals of installations.

Installation Procedures

Before you begin, review your plans to see that:

- Your stove and chimney connector will be far enough from combustible material to meet all clearance requirements.
- The floor protector is large enough and constructed properly to meet all requirements.
- You have all necessary permits from local authorities.

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.

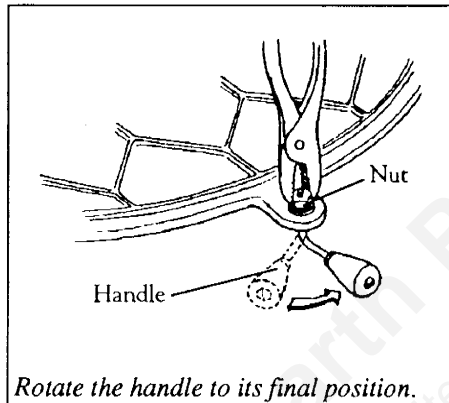
Set up Your Stove

- Cast iron stoves are heavy. Have the assistance of at least one other person as you move your stove into position.
- Use soap and warm water to wash

the protective coating of oil from the griddle. Dry the griddle thoroughly.

- To install the handle on the griddle, place the griddle upside down at the edge of a flat surface and assemble the handle as shown.

- With the handle pointing 45 degrees from its final position, tighten the nut as far as possible with the pliers. Holding the nut with the pliers, move the handle to its final position.



• Bottom Heat shield

- Remove the four hex head screws from the corners of the ash drop recess.
- Screw the four spacers into the holes from which you removed the cap screws. Tighten finger tight.
- Align the bottom heat shield against the spacers with the stepped side toward the rear.
- Secure the shield with the hex head screws removed earlier. Tighten securely.

Ash door heat shield:

- Remove the two Phillips screws from the ash door.
- Insert the screws through the ash door heat shield from the painted side; place the spacers over the screws; thread carefully back into the original holes. The curved lip should be upward. Tighten securely.

- To adjust the leg levellers, lift the stove slightly so there is no weight on the leg while making the adjustment.

- The primary air thermostat handle is the smaller of the two black handles. Use a slot head screwdriver to secure the handle to the stub on the right side of the stove, using the 8-32 x 2" machine screw.

- Attach the damper handle, using the 1/4" -20 x 3" screw, to the damper stub on the left side.

- The white removable insert handle is used to open or close the front doors. After it has been used, it is removed so it won't get hot. It may be stored in the

handle holder installed behind the right leg. Assemble by passing the 3-3/8" screw through the ceramic shaft and into the bright metal nub. Tighten carefully, and only until snug.

- The flue collar may be reversed by removing the two screws which attach the collar to the back of the stove. Be sure the gasketing around the flue collar opening is in position when you screw the collar back onto the stove.

The Chimney Connector

SAFETY NOTE: Always wear gloves and safety goggles when drilling, cutting or joining sections of chimney connector.

Assembly

- Assemble the chimney connector beginning at the flue collar of the stove, keeping the crimped ends towards the stove. Using the holes in the flue collar as guides, drill 1/8" (3 mm.) holes in the bottom of the first section of chimney connector, and secure it to the flue collar with three #10 x 1/2" sheetmetal screws.

- Align the seams of the individual sections. Secure each joint between sections of chimney connector, including telescoping joints, with at least three sheetmetal screws. The pre-drilled holes in the top of each section of Vermont Castings Chimney Connector serve as guides when you drill 1/8" (3 mm.) holes in the bottom of the next section.

- Secure the chimney connector to the chimney. Instructions for various installations follow.

- Be sure the installed stove and chimney connector are correct distances from nearby combustible material.

Note: Vermont Castings offers Slip Pipes and Thimble Sleeves which can be used to form telescoping joints between sections of chimney connector. When telescoping joints are used, it is often unnecessary to cut individual sections of connector.

Securing the Connector To a Prefabricated chimney

Follow the installation instructions of the chimney manufacturer exactly, as you install the chimney. The manufacturer of the chimney will supply the accessories to support the chimney, either from the roof of the house or at the ceiling of the room where the stove is installed.

The connection between the prefabricated chimney and the chimney connector can be made with the Vermont Castings Enamel-to-Prefab Connector. This accessory is used with both black

and enamel chimney connectors. The top of the Connector attaches directly to the chimney or to the chimney's ceiling support package. The bottom of the Connector is screwed to the chimney connector.

The Connector is designed so the top end will fit outside the inner wall of the chimney, and the bottom end will fit inside the first section of chimney connector. In this way, any soot or creosote falling from the inner walls of the chimney will stay inside the chimney connector.

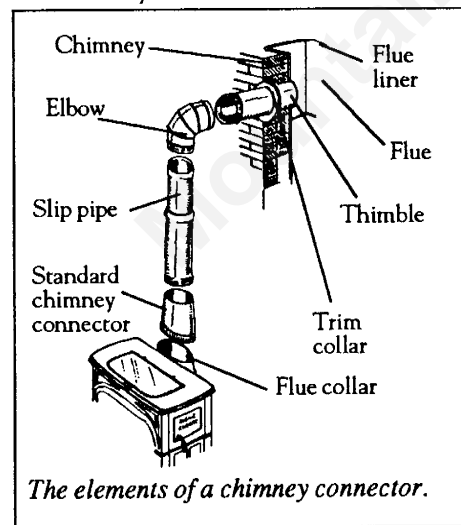
NOTE: For double-wall chimneys whose outside dimension is more than 10-1/4" (260 mm.) check with the manufacturer of the chimney for details on finishing these larger diameter systems.

Securing the Connector To a Masonry Chimney

Both freestanding masonry chimneys and fireplace masonry chimneys may be used for installation of your Defiant Encore.

Freestanding: If the chimney connector must pass through a combustible wall to reach the chimney, follow the recommendations in the Wall Pass-Through section.

The opening through the chimney wall to the flue (the "breach") must be lined with either a ceramic or metal cylinder, called the "thimble", which is securely cemented in place. Most chimney breeches incorporate thimbles, but check to be sure the fit is snug and the join between thimble and chimney wall is firmly cemented.



The elements of a chimney connector.

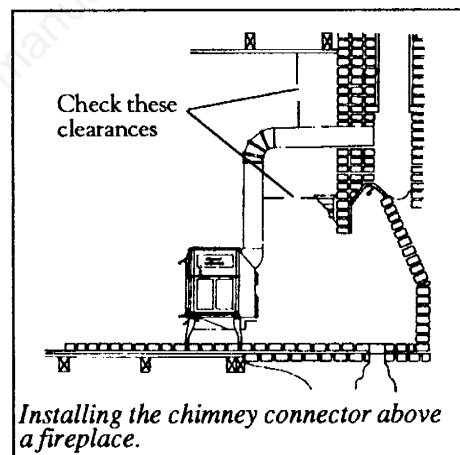
A Vermont Castings Thimble Sleeve will facilitate the removal of the chimney connector system for inspection and cleaning. The Thimble Sleeve is slightly smaller in diameter than standard connector pipe and most thimbles. Slide

the Thimble Sleeve into the breach until it is flush with the inner flue wall. (Don't extend it into the actual flue passage, as this can interfere with proper draft.) The Thimble Sleeve should protrude 1" - 2" (25mm.-50 mm.) into the room. Use furnace cement and thin gasketing to seal the Sleeve in place in the thimble. Secure the chimney connector to the outer end of the Sleeve with sheetmetal screws.

Lacking a thimble, a suitable length of chimney connector can be extended through the breach to the inner face of the flue liner, and securely cemented in place. Additional pieces of connector are then attached with sheetmetal screws

Above the fireplace: In this installation, the chimney connector goes up from the stove, turns 90 degrees, and goes back into the fireplace chimney. The liner of the fireplace chimney should extend at least to the point at which the chimney connector enters the chimney. Follow all the guidelines for installing a chimney connector into a freestanding masonry chimney, and watch these additional points:

- If there is a combustible mantel or trim, check the stove and chimney connector clearances. Use the necessary combination of mantel, trim, and connector heat shields to provide the required clearances.
- Double check connector clearance from the ceiling.
- The fireplace damper must be closed and sealed to prevent room air



Installing the chimney connector above a fireplace.

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.

Through the fireplace: When installed through a fireplace opening, the chimney connector goes back from the stove, enters the fireplace cavity, turns upward,

and passes through the fireplace damper opening and smoke chamber, and finally to the chimney flue

Watch these points:

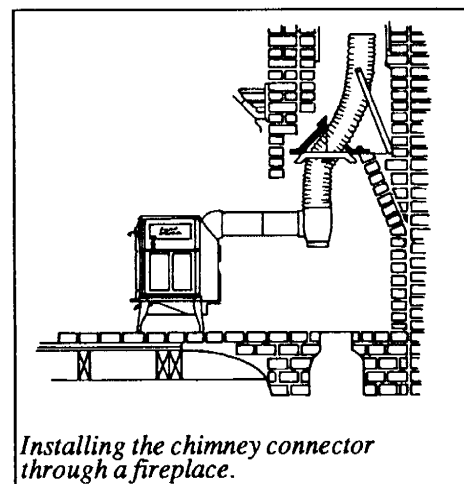
- If there is a combustible mantel or trim, check the stove and chimney connector clearances. Use the necessary combination of mantel, trim, and connector heat shields to provide the required clearances.

- When passing the chimney connector through the damper opening it may be necessary to "ovalize" the connector pipe. Do not make the narrowest width less than 5 1/2" (140mm.).

- The damper should be removed if possible, or sealed in the open position if removal is impossible.

- A seal must be provided so that room air is not drawn into the fireplace and up the chimney, reducing draft. The Vermont Castings Flex Connector System provides a convenient method for making the required seal and offers a flexible stainless steel chimney connector which can be bent to allow passage through most narrow damper openings.

NOTE: Do not vent your Vermont Castings stove into a factory-built (zero-clearance) fireplace. Zero-clearance fireplaces and their chimneys are specifically designed as a unit for use as fire-



Installing the chimney connector through a fireplace.

places. It may void the listing or be hazardous to adapt them for any other use.

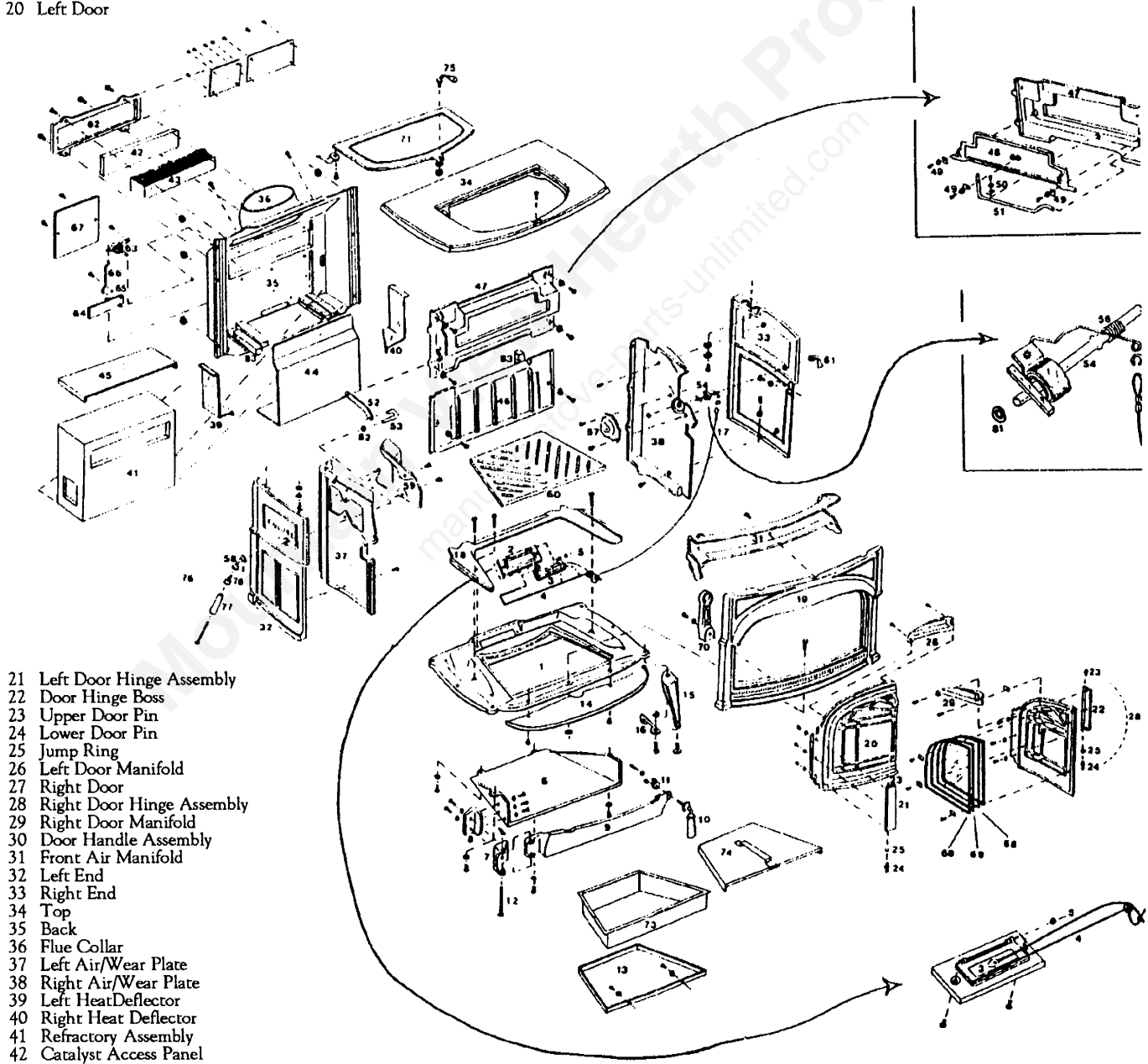
DO NOT CONNECT THE DEFIANT ENCORE TO ANY AIR DISTRIBUTION DUCT OR SYSTEM.

Parts List and Exploded View

- 1 Stove Bottom
- 2 Primary Air Frame
- 3 Primary Air Valve
- 4 Primary Air Rod
- 5 Primary Air Rod Clip
- 6 Ash Drop
- 7 Ash Drop Split Hinge
- 8 Ash Drop Split Hinge
- 9 Ash Door
- 10 Ash Door Handle
- 11 Pawl
- 12 Clevis Pin
- 13 Ash Pan Bracket
- 14 Ash Lip
- 15 Legs
- 16 Door Handle Insert Holder
- 17 Cable Assembly
- 18 Primary Air Tube
- 19 Front
- 20 Left Door

- 43 Catalyst Block
- 44 Heat Exchanger
- 45 Refractory Cover
- 46 Lower Fireback
- 47 Upper Fireback
- 48 Damper
- 49 Damper Tab
- 50 Torsion Bar Clip
- 51 Torsion Bar
- 52 Actuator Link
- 53 Damper Handle Rod
- 54 Thermostat Coil and Rod Assembly
- 55 Jump Ring
- 56 Friction Spring
- 57 Thermostat Access Cup
- 58 Damper and Stub
- 59 Damper Link Access Panel
- 60 Flat Grate
- 61 Thermostat Handle Assembly
- 62 Catalyst Access Panel
- 63 Secondary Air Probe Assembly

- 64 Secondary Air Flap
- 65 Shim Ring
- 66 Secondary Air Link
- 67 Secondary Air Cover Plate
- 68 Glass Pane
- 69 Gasket Assembly
- 70 Andiron
- 71 Griddle
- 72 Griddle Quadrant
- 73 Ash Pan
- 74 Ash Pan Cover
- 75 Griddle Handle Assembly
- 76 Ceramic Handle w/Insert
- 77 Ceramic Handle
- 78 Steel Handle Insert
- 79 U.S. Operation Manual (Not Shown)
- 80 Sparkscreen Assembly (Not Shown)
- 81 Flat Washer
- 82 Flat Washer
- 83 Kaowool (Not Shown)



- 21 Left Door Hinge Assembly
- 22 Door Hinge Boss
- 23 Upper Door Pin
- 24 Lower Door Pin
- 25 Jump Ring
- 26 Left Door Manifold
- 27 Right Door
- 28 Right Door Hinge Assembly
- 29 Right Door Manifold
- 30 Door Handle Assembly
- 31 Front Air Manifold
- 32 Left End
- 33 Right End
- 34 Top
- 35 Back
- 36 Flue Collar
- 37 Left Air/Wear Plate
- 38 Right Air/Wear Plate
- 39 Left Heat Deflector
- 40 Right Heat Deflector
- 41 Refractory Assembly
- 42 Catalyst Access Panel

Appendix

Catalytic Combustor

In any chemical reaction, including the combustion process, there are certain conditions which must be met before the reaction can take place. For example, a reaction may require a certain temperature, or a certain concentration of the reactants (the combustion gases and oxygen), or a certain amount of time. Catalysts, though not changed themselves during the reaction, have the ability to act at a molecular level to change these requirements. In the secondary combustion chamber of the Defiant Encore, the catalyst reduces the temperature at which secondary combustion can occur from the 1000° F. - 1200° F. (540 C - 650 C) range to the 500° F. - 600° F. (260 C - 315 C) range, increasing efficiency, and reducing creosote and emissions.

The catalytic reaction, though advantageous, does have some limitations of its own. Primary among these is that the reactants (the gases) must come into close physical contact with the catalyst itself.

To ensure the necessary contact, the catalytic element in your Defiant Encore is composed of a ceramic base in the shape of a honeycomb. On each of the honeycomb's many surfaces a coating of the catalyst (usually a noble metal such as platinum or palladium) is applied. The large surface area exposed in this configuration ensures that the combustion gases have the greatest opportunity to come in contact with the catalyst.

Loss of catalytic activity will be apparent in several ways. First you may notice an increase in fuel consumption. Second, there will be a visible increase in the rate at which creosote builds up in your chimney connector system. You may also notice a heavy discharge of smoke from the chimney. There are a number of catalytic problems which can cause loss of activity:

Blockage

While the honeycomb pattern ensures good contact, it also increases the resistance to flow of the combustion gases, and, because of the many surfaces, provides more places for creosote and fly ash to deposit. It is important to follow the operating instructions in order to minimize these deposits, and to periodically inspect your catalyst for signs of blockage.

Masking and Poisoning

While the catalyst itself does not enter into the combustion process, it is possible for certain elements, such as lead and sulfur, to attach to the active sites on the surface of the honeycomb. Though the catalyst is still there, it is covered, or masked, by the contaminant, and cannot function. To avoid this situation, it is important not to burn anything in your Defiant Encore which is a source of these contaminants. Particularly avoid painted or treated wood, coal, household trash, colored papers, metal foils, or plastics. Chemical chimney cleaners may also contain harmful elements. The safest approach is to burn only untreated, natural wood.

Flame Impingement

The catalytic element is not designed for exposure to direct flame. If you continually overfire your Defiant Encore, the chemistry of the catalyst coating may be altered, inhibiting the combustion process.

Thermal degradation of the ceramic base may also occur, causing the element to disintegrate. Stay within the recommended guidelines of the Operation section.

Mechanical Damage

If the element is mishandled, damage may occur. Always treat the element carefully. Remember the catalyst is made of a ceramic material; treat it as you would fine china. Hairline cracks will not affect the performance of the catalyst, as long as the steel sleeve holds the element in the proper position.

Peeling

Peeling of the surface coat may occur if the catalytic element is frequently subjected to excessive temperatures. Follow the operating instructions carefully to avoid this type of damage.

Every Vermont Castings product is equipped with either a Corning Catalytic Combustor, or an element manufactured by Technical Glass Products. The products are equivalent. If for any reason you must ship your catalytic element, remember its fragile nature. Place the element in a plastic bag, and package it with a generous amount of shock absorbing material.

WARRANTY

Limited 3 Year Warranty

Vermont Castings, Inc. warrants that this Defiant Encore® will be free of defects in material and workmanship for a period of three years from the date you receive it, except that the catalyst, thermostat assembly, 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 when the Defiant Encore® is returned with shipping charges prepaid to 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 stove 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 Defiant Encore® 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 1 Year Warranty

The following parts of the Defiant Encore® are warranted to be free of defects in material and workmanship for a period of one year from the date you receive it. These parts are the thermostat assembly, handles, glass door panels, cement, and 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.

Any part 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 Catalyst Warranty

The catalyst will be warranted for a six year period as follows: If the original catalyst or a replacement catalyst proves defective or ceases to maintain 70% of its particulate emission reduction activity (as measured by an approved testing procedure) within 24 months from the date the Defiant Encore® is received, the

catalyst itself will be replaced free.

From 25 - 72 months a pro-rated credit will be allowed against a replacement catalyst and the cost of labor necessary for its installation at the time of replacement.

For stove purchases made after June 30, 1990, a third year (25 - 36 months) of no charge replacement will be made when combustor failure is due to thermal degradation of the substrate (crumbling of ceramic material). The customer must pay for any in-home travel fees, service charges, or transportation costs for returning the Defiant Encore® to the Authorized Dealer.

Amount of Time Since Purchase	Credit Towards Replacement Cost
0 - 24 months	100%
25 - 36 months	50 %
37 - 48 months	30%
49 - 60 months	20%
61 - 72 months	10%

Any replacement catalyst will be warranted under the terms of the catalyst warranty for the remaining term of the original warranty. The purchaser must provide the following information in order to receive a replacement catalyst under the terms of this limited warranty:

1. Name, address and telephone number.
2. Proof of original purchase date.
3. Date of failure of catalyst.
4. Any relevant information or circumstances regarding determination of failure.
5. In addition, the owner must return the failed catalyst.

Exclusions & Limitations

1. This warranty is transferable; however, proof of original retail purchase is required.
2. This warranty does not cover misuse of the Defiant Encore®. Misuse includes overfiring which will result if the Defiant Encore® is used in such a manner as to cause one or more of the plates to glow red. Overfiring can later be identified by warped plates and areas where the paint pigment has burned off. Overfiring in enamel fireplaces is identified by bubbling, cracking, chipping and discoloration of the porcelain enamel finish. Vermont Castings offers no warranty on chipping of enamel surfaces. Inspect your Defiant Encore® prior to accepting it for any damage to the enamel.
3. This warranty does not cover misuse of the Defiant Encore® Fireplace as described in the Owner's Guide, nor does it

cover an Defiant Encore® which has been modified unless authorized by a Vermont Castings representative in writing. This warranty does not cover damage to the Defiant Encore® caused by a salt environment or from burning salt saturated wood, chemically treated wood, or any fuel not recommended in the Owner's Guide.

4. This warranty does not cover an Defiant Encore® repaired by someone other than a Vermont Castings Authorized Dealer.

5. Damage to the unit while in transit is not covered by this warranty but is subject to a claim against the common carrier. Contact the Vermont Castings Authorized Dealer from whom you purchased your Defiant Encore® or Vermont Castings if the purchase was direct. (Do not operate the Defiant Encore® as this may negate the ability to process the claim with the carrier.)

6. Claims are not valid where the installation does not conform to local building and fire codes or, in their absence, to the recommendations in our 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 or Vermont Castings if the purchase was direct 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 inside of the load door.
4. Nature of the defect or damage.
5. Any relevant information or circumstances, e.g., 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.

Mountain View Hearth Products
manuals.stove-parts-unlimited.com



CFM Corporation

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For more information on your Vermont Castings products,
please visit us online at www.cfmcorp.com