

Vermont Castings

Radiance

CATALYTIC VENT FREE GAS HEATER

Model RVF33

Tested and listed to ANSI Z21.11.2 1996 by International Approval Services.

WARNING: If the information in this manual is not followed exactly, a fire or explosion may result causing property damage, personal injury or loss of life.

Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.

WHAT TO DO IF YOU SMELL GAS

- Shut off the gas supply.
- Do not try to light any appliance.
- Do not touch any electrical switch; do not use any phone in your building.
- Immediately call your gas supplier from a neighbor's phone.
Follow the gas supplier's instructions.
- If you cannot reach your gas supplier, call the fire department.

Installation and service must be performed by a qualified installer, service agency or the gas supplier.

WARNING: Improper installation, adjustment, alteration, service or maintenance can cause injury or property damage. Refer to this manual for correct installation and operational procedures. For assistance or additional information consult a qualified installer, service agency, or the gas supplier.

THIS IS AN UNVENTED GAS-FIRED HEATER. IT USES AIR (OXYGEN) FROM THE ROOM IN WHICH IT IS INSTALLED. PROVISIONS FOR ADEQUATE COMBUSTION AND VENTILATION AIR MUST BE PROVIDED.



SAVE THIS MANUAL FOR FUTURE REFERENCE.

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ATTENTION CONSUMER:

IN ORDER TO ENSURE SAFE AND EFFECTIVE INSTALLATION, THIS UNIT MUST BE INSTALLED ONLY BY A QUALIFIED AGENCY, INDIVIDUAL, FIRM, CORPORATION, OR COMPANY THAT IS EXPERIENCED IN THE INSTALLATION, REPAIR AND SERVICING OF THIS TYPE OF APPLIANCE AND IS FAMILIAR WITH THE BUILDING CODES AND INSTALLATION TECHNIQUES APPROPRIATE IN YOUR AREA. CONTACT YOUR HEARTH PRODUCTS DEALER OR LOCAL GAS SUPPLIER FOR THE NAME OF A QUALIFIED SERVICE PERSON.

INSTALLER:

PLEASE READ THIS MANUAL CAREFULLY BEFORE YOU BEGIN THE INSTALLATION PROCEDURES. FAILURE TO FOLLOW INSTRUCTIONS MAY RESULT IN PROPERTY DAMAGE, BODILY INJURY OR LOSS OF LIFE. THIS MANUAL CONTAINS IMPORTANT USER INFORMATION. KEEP THIS MANUAL WITH THE FIREPLACE AFTER INSTALLATION IS COMPLETE.

3. Add the BTU/Hr ratings of all fuel-burning appliances installed in the same space, including the following:

- | | |
|--------------------|-----------------------|
| Gas Water Heater | Gas Furnace |
| Gas Fireplace Logs | Vent Free Gas Heater |
| Vented Gas Heater* | Other Gas Appliances* |

* Do not include Direct Vent appliances as these utilize outside air for combustion and vent to the outdoors.

Example:

Gas Range	55,000 BTU/Hr
Vent Free Heater	+33,000 BTU/Hr
Total	88,000 BTU/Hr

4. Compare the maximum BTU/Hr rating the space can support with the total BTU/Hr used by the appliances.

Example:

76,800 BTU/Hr - max. the space can support
 88,000 BTU/Hr - total used by appliances

In this example, the maximum BTU/Hr that the space can support is less than the total used by the appliances, the space is considered to be **Confined space**. Additional air must be provided to meet the requirements of the Vent Free heater.

A confined space may be ventilated in two ways:

A) Open up or provide at least two ventilating grills to an adjoining unconfined space. Use any of the options illustrated in Fig. 3.

Each of the two grills must provide an opening of at least 50 square inches, with all opening dimensions being at least 3". One grill must be located within 12" of the ceiling; the other within 12" of the floor. (If the total exceeds 100,000 BTU/Hr, additional grills will be required.)

B) Vent the room directly to the outdoors. (Provide one square inch of opening for each 4,000 BTU/hr.

If the total BTU/Hr used by the appliances is less than the maximum BTU/Hr the space is able to support, the room meets the **Unconfined space** criteria and no further ventilation is required.

For further information on ventilation guidelines and sizing specifications follow the National Fuel Gas Code NFPA 54/ANSI Z223.1 Section 5.3.

⚠ WARNING

THIS HEATER SHALL NOT BE INSTALLED IN A CONFINED SPACE UNLESS PROVISIONS ARE PROVIDED FOR ADEQUATE COMBUSTION AND VENTILATION AIR.

IF THE AREA IN WHICH THE HEATER MAY BE OPERATED IS SMALLER THAN THAT DEFINED AS AN UNCONFINED SPACE, PROVIDE ADEQUATE COMBUSTION AND VENTILATION AIR BY ONE OF THE METHODS DESCRIBED IN THE NATIONAL FUEL GAS CODE, ANSI Z223.1, 1992, SECTION 5.3.

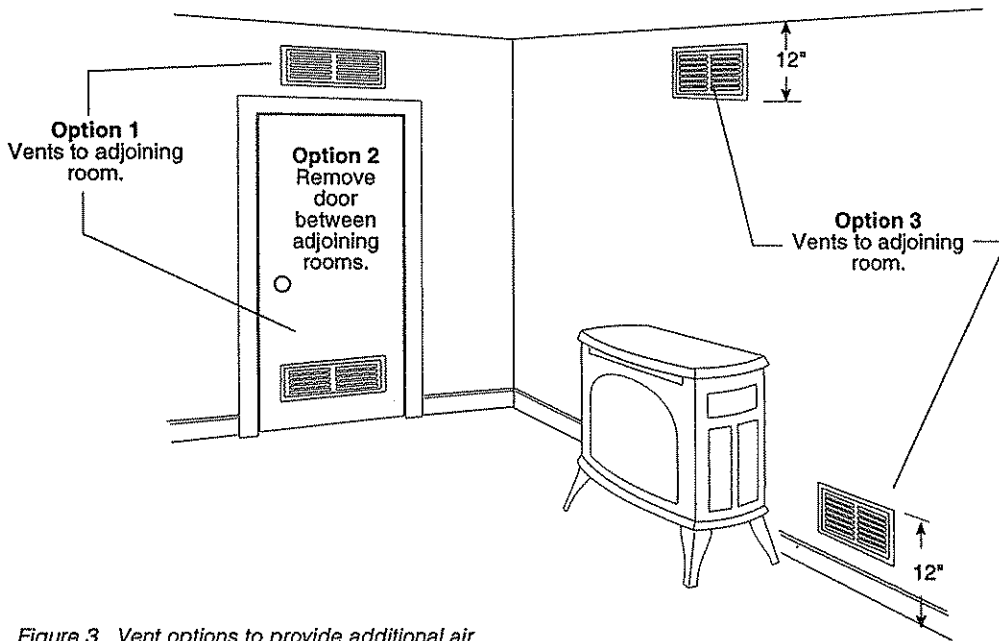


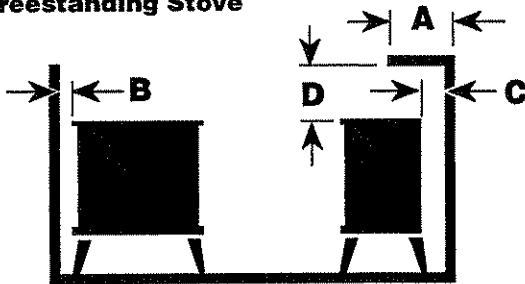
Figure 3. Vent options to provide additional air.

Clearance Requirements

Minimum Clearances to Combustible Materials

Maintain clearance, (empty space), between combustible materials and the heater as specified below.

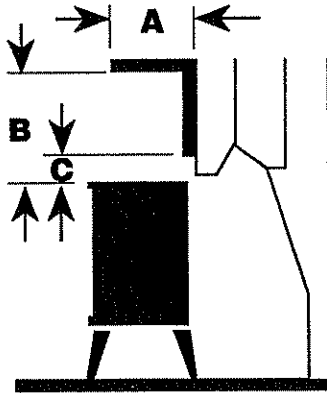
Freestanding Stove



- A:** Maximum Mantel Depth 7 1/2"
B: To Side Wall / Trim* 2"
C: To Rear Wall 4"
D: To Mantel / Trim* 16" / 2"
 * Trim is 1" thick max.

Figure 4. Freestanding Clearances.

Figure 5. Mantel Clearances.



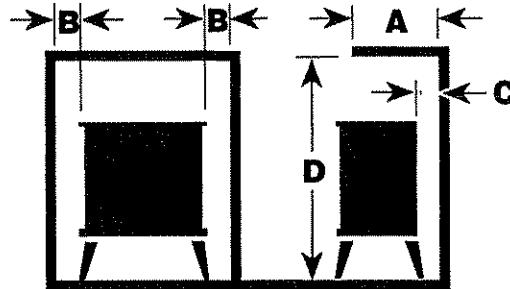
- A** = Depth, Mantel and/or Top Trim
B = Height from top of heater
C = Min. 10"

When:

- A = 7 1/2" max.
 B = 16" min.
 A = 6" max.
 B = 14 1/2" min.
 A = 4 1/2" max.
 B = 13" min.
 A = 3" max.
 B = 11 1/2" min.
 A = 1 1/2" max.
 B = 10" min.

Alcove Clearances

The Radiance vent free heater may be installed in an alcove constructed to maintain the clearances specified below.



- A:** Maximum Alcove Depth 24"
B: To Side Wall 2"
C: To Rear Wall 4"
D: To Ceiling 60"

Figure 6. Alcove Clearances.

Hearth Requirements

The Radiance Vent Free heater must be installed on rigid flooring. If the appliance is installed on any combustible surface other than wood flooring, such as carpet or tile, a metal or wood panel must be installed to extend the full length and width of the unit. There are no other hearth or floor protection requirements.

WARNING

- DO NOT INSTALL THIS HEATER IN A BATHROOM OR BEDROOM.
- INSTALLATION OF THIS HEATER MUST CONFORM WITH LOCAL CODES OR, IN THE ABSENCE OF LOCAL CODES, WITH THE NATIONAL FUEL GAS CODE, ANSI Z223.1.
- THIS HEATER CREATES WARM AIR CURRENTS. THESE CURRENTS MOVE HEAT TO WALL SURFACES NEXT TO THE HEATER. INSTALLING THE HEATER NEXT TO VINYL OR CLOTH WALL COVERINGS OR OPERATING THE HEATER WHERE IMPURITIES IN THE AIR SUCH AS TOBACCO SMOKE EXIST, MAY DISCOLOR WALLS.
- DO NOT USE A BLOWER INSERT, HEAT EXCHANGER INSERT OR OTHER ACCESSORY NOT APPROVED FOR USE WITH THIS HEATER.

General Information

Vent Free Features

The Radiance RVF33 is an unvented gas heating appliance tested and listed to the ANSI standard Z21.11.2 19956 This appliance is specifically configured to burn either Natural Gas or Propane fuel, as indicated on the metal rating plate attached to the rear shroud (Fig. 1). The Radiance RVF33 is not fuel convertible.

The Radiance burner controls are conveniently located and easy to operate. As illustrated in Fig. 1, the front lip of the heater swings down to reveal the gas valve controls and piezo pilot ignitor. Once the standing pilot is lit, the heater can be set for either manual or thermostatic operation using the convenient toggle switch (Fig. 2.) at the rear of the unit. A variable regulator allows you to adjust burner heat output between HIGH, (33,000 BTU), and LOW, (20,000 BTU). See the Operation section for details.

A push button Piezo ignitor is used to light the standing pilot. The pilot incorporates an Oxygen Depletion System (ODS/pilot) which will shut off gas flow to the burner in the event that sufficient fresh air becomes unavailable for continued safe operation.

Complete Combustion

The catalytic combustor, located at the top of the firebox, ensures complete combustion of all flue products released from the primary fire at the burner. Typical Radiance CO emissions are less than 5 ppm.

Quick Installation

Your Radiance Vent Free heater is shipped completely assembled and ready for installation. You must, however, locate the heater in accordance with the specifications detailed in the next section of this manual. **Connection to the gas supply must be made only by a qualified gas technician and only after verification that the minimum combustion air and ventilation requirements have been met.**

Easy Disassembly

If necessary, the heater body can be disassembled to ease handling. See page 12 for details.

Optional Fan Kit #2766

This accessory will help distribute heated air from within the firebox out into the room. The fan is controlled by a snapstat that turns power on and off as the firebox temperature rises above and falls below a preset temperature. A rheostat provides for variable fan speeds up to 160 cfm.

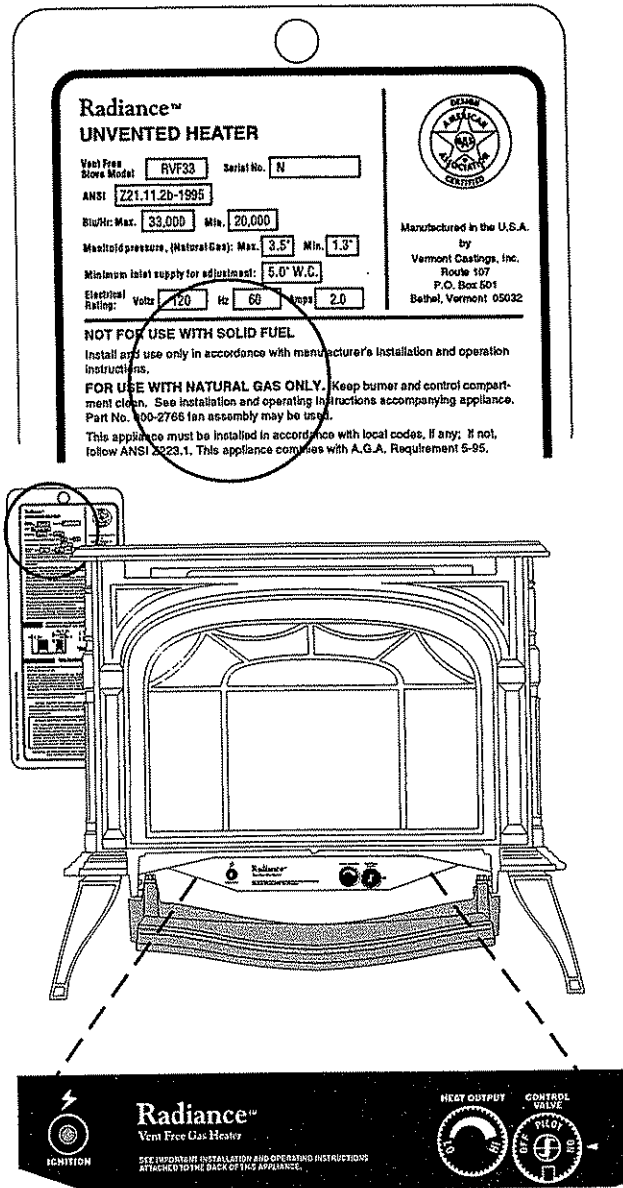


Figure 1. Radiance rating plate and control panel.

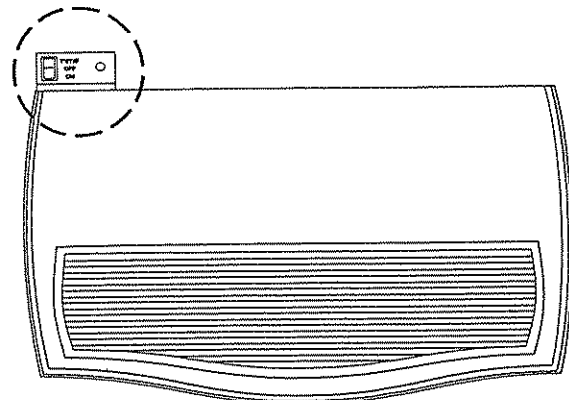


Figure 2. Remote burner switch.

Installation Requirements

⚠ WARNING

THIS HEATER MUST HAVE FRESH AIR FOR PROPER OPERATION. IF NOT, POOR FUEL COMBUSTION COULD RESULT. READ THE FOLLOWING INSTRUCTIONS TO INSURE PROPER FRESH AIR FOR THIS AND OTHER FUEL-BURNING APPLIANCES IN YOUR HOME.

Fresh Air Requirements for Combustion and Ventilation

Modern construction standards have resulted in homes that are highly energy-efficient and that allow little heat loss. Your home needs to breathe, however, and all fuel-burning appliances within it require fresh air in order to function properly and safely. Exhaust fans, clothes dryers, fireplaces, and other fuel burning appliances all use the air inside the building. If the available fresh air is insufficient to meet the demands of these appliances, problems can result.

The Radiance Vent Free heater has specific fresh air requirements. **You must determine that these fresh air requirements will be met within the space where the appliance will be installed.** The following information will help you insure that adequate fresh air is available for the heater to function properly.

Provide For Adequate Ventilation

Any space within a home can be classified in the following categories:

- 1) Unusually Tight Construction
- 2) Confined Space
- 3) Unconfined Space

First, determine which classification defines the intended space.

Unusually Tight Construction

You must provide additional fresh air if the space falls into this classification. *Unusually Tight Construction* is defined as construction wherein:

a. walls and ceilings exposed to the outside atmosphere have a continuous water vapor retarder with a rating of one perm or less with openings gasketed or sealed *and*

b. weather stripping has been added on openable windows and doors *and*

c. caulking or sealants are applied to areas such as joints around window and door frames, between sole plates and floors, between wall-ceiling joints, between wall panels, at penetrations for plumbing, electrical, and gas lines, and at other openings.

If your home meets all of the three criteria above, you must provide supplemental fresh air for the appliance from outside the home as detailed on page 5, B.

If your home does not meet the above criteria, follow the procedure below.

Determine if You Have a Confined or Unconfined Space

Use the following formula to determine if you have a confined or unconfined space.

Space is defined as the room in which you will install the heater plus any adjoining rooms with doorless passageways or ventilation grills between the rooms.

The National Fuel Gas Code defines a confined space as a space whose volume is less than 50 cubic feet per 1,000 BTU per hour, (4.8 m³ per kw), of the aggregate input rating of all appliances installed in that space and an unconfined space as a space whose volume is not less than 50 cubic feet per 1,000 BTU per hour, (4.8 m³ per kw), of the aggregate input rating of all appliances installed in that space. Rooms communicating directly with the space in which the appliances are installed, through openings not furnished with doors, are considered a part of the unconfined space.

1. Determine the volume of space, (length x width x height). Include adjoining rooms connected by doorless passageways or ventilating grills.

Example:

A room that is 18' x 12' x 8' has a volume of 1728 cubic feet, (length x width x height). An adjoining open kitchen that is 10' x 12' x 8' has a volume of 960 cubic feet. An adjoining open dining room is 12' x 12' x 8' with a volume of 1152 cubic feet. The total space volume is 3840 cubic feet. (1728 + 960 + 1152).

2. Divide the volume of space by 50 cubic feet. The result is the maximum BTU/Hr that the space can support.

Example:

3840 divided by 50 = 76.8 or 76,800 BTU/Hr.

Specifications

Radiance Vent Free Gas Heater RVF33

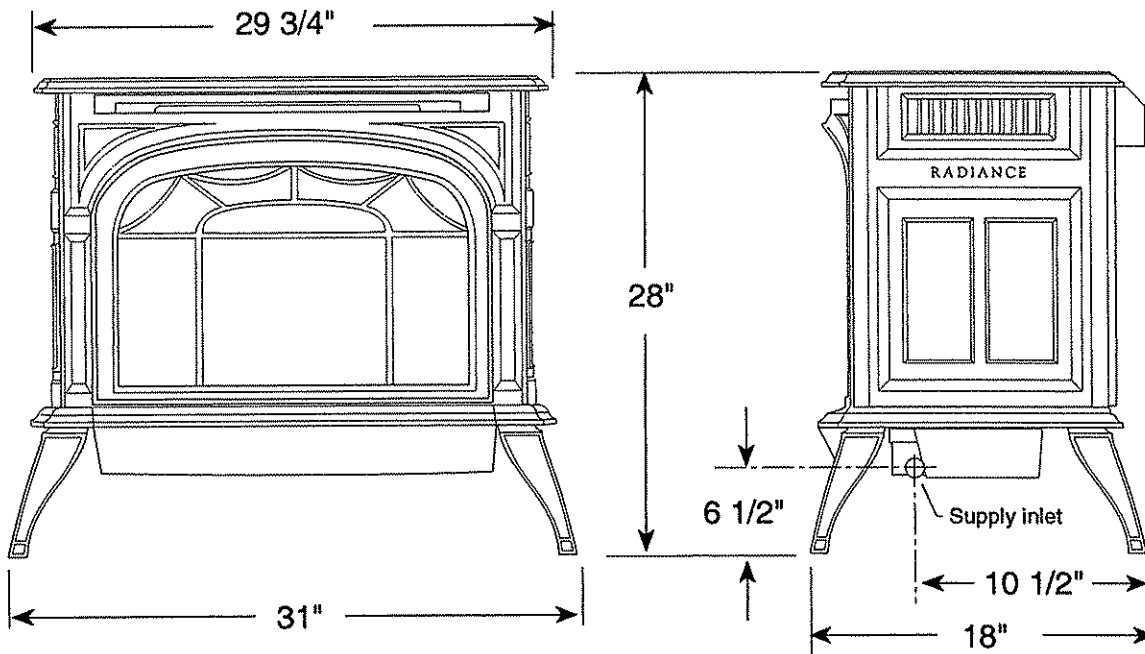
Fuel Type:	NG	LP
Manifold Pressure; Min. / Max.:	1.3" / 3.5"	3.6" / 10.0"
Min. Inlet Supply Pressure for adjustment:	5.0" W.C.	11.0" W.C.
Max. Inlet Supply Pressure for adjustment:	8.0" W.C.	12.0" W.C.
Min. Output, BTU/hr:	20,000	20,000
Max. Output, BTU/hr:	33,000	33,000
Ignition :	Piezo	
Firebox Weight / shipping:	175 lbs.	

This appliance may be installed in an aftermarket* manufactured (mobile) home, where not prohibited by state or local codes.

This appliance is to be used only with the type of gas specified on the rating plate which is attached to the rear panel. This appliance is not convertible for use with other gases.

An optional Fan Kit #2766 is available to enhance circulation of heated air into the living area.

*Aftermarket: Completion of sale, not for purpose of resale, from the manufacturer.



DRAWING NOT TO SCALE.

Safety Information

WARNINGS

IMPORTANT: READ THIS OWNER'S MANUAL CAREFULLY AND COMPLETELY BEFORE TRYING TO ASSEMBLE, OPERATE, OR SERVICE THIS HEATER. IMPROPER USE OF THIS HEATER CAN CAUSE SERIOUS INJURY OR DEATH FROM BURNS, FIRE, EXPLOSION, ELECTRICAL SHOCK, AND CARBON MONOXIDE POISONING.

DANGER

CARBON MONOXIDE POISONING MAY LEAD TO DEATH!

Carbon Monoxide Poisoning: Early signs of carbon monoxide poisoning resemble the flu, with headaches, dizziness, or nausea. If you have these signs, the heater may not be working properly. Get fresh air at once! Have the heater serviced. Some people are more affected by carbon monoxide than others. These include pregnant women, people with heart or lung disease or anemia, those under the influence of alcohol, and those at high altitudes.

Make certain you read and understand all Warnings. Keep this manual for reference. It is your guide to safe and proper operation of this heater.

1. Use only Natural Gas with RVF33 2740. Use only Propane with RVF33 2746. Do not use any other fuels.
2. Install only in accordance with National Fuel Gas Code, ANSI Z223.1 - latest edition. (Exception: Do not derate this appliance for altitude. This appliance has been tested and listed for use in altitudes up to 10,000 feet. Maintain the manifold pressure at 3.5 inches W.C. for Natural Gas and 10 inches W.C. for LP gas.)
3. Use only the installation instructions provided by the manufacturer for this appliance. Installation and repair should be done by a qualified service person. The appliance should be inspected before use and at least annually by a professional service person. More frequent cleaning may be required due to excessive lint from carpeting, bedding material, etc. It is imperative that control compartments, burners and circulating air passageways of the appliance be kept clean.
4. **WARNING:** Any change to this heater or its controls can be dangerous. **DO NOT** make modifications to any heater or associated parts.
5. **DO NOT** install this heater in a bedroom or bathroom.
6. Due to high surface temperatures, **DO NOT** install this heater
 - in a recreation vehicle,
 - where curtains, furniture, clothing, or other flammable objects are less than 36 inches from the front, top, or sides of the heater,
 - in high traffic areas,
 - in windy or drafty areas.
7. **DO NOT** place clothing or other flammable material on or near the appliance.
8. This heater needs fresh, outside air ventilation to operate properly. See Fresh Air Requirements on pages 4 and 5.
9. If heater shuts off, heater may not have enough fresh air ventilation. Provide more fresh air. If heater keeps shutting off, see Troubleshooting, page 18.
10. **DO NOT** operate this heater
 - where flammable liquids or vapors are used or stored
 - under dusty conditions.
11. The heater becomes very hot when operating. Alert children and adults to stay away from hot surfaces to avoid burns or clothing ignition. The heater will remain hot for a time after shut-down. Allow surface to cool before touching.
12. Carefully supervise young children when they are in the room with the heater.
13. Do not use the heater if any part has been exposed to or under water. Immediately call a qualified service technician to inspect the room heater and to replace any part of the control system and any gas control which has been under water.
14. **DO NOT** operate the heater if any log is broken or damaged.
15. Turn heater off and let cool before servicing. Only a qualified service person should service and repair heater.
16. **DO NOT** operate this appliance with the glass panel removed. If the glass panel is removed from the appliance for service or cleaning, it must be replaced before operating the heater.

Installation

The Radiance Vent Free heater is shipped mounted to a wooden pallet on its back. It is fully assembled, although packing materials must be removed from the firebox. Connection to the gas supply must be performed only by a qualified gas technician who should also verify that adequate ventilation is available to support proper burner function.

Optional installation procedures, such as thermostat connection and fan kit installation, are most easily accomplished *before* the gas supply is connected to the heater. Read and familiarize yourself with the instructions in this section before beginning the installation.

Disassembly for transport

In cases where the heater must be carried up or down stairways, it may be helpful to partially disassemble the unit to ease handling. See page 12 for this procedure.

Unpacking the Radiance

If you have not already done so, inspect the heater for damaged or loose parts. The log set, burner, valve assembly and glass are all part of the firebox assembly and should be secure as one unit. Do not install this appliance if any parts are loose or if there is any visual or suspected damage from shipping or handling. Report damage to your dealer/distributor immediately. Please note that the brown coloration of the catalytic container is a normal characteristic of the catalyst manufacturing processes.

The parts bag contains two thermostat wire connectors and a wire tie for connection to a wall thermostat if desired.

The ember log is shipped in its own box. The top plate grille and screen are packed together in a separate box. Both boxes are shipped on the pallet floor.

You will need a phillips screwdriver and knife or scissors to remove the packing material from the firebox. Follow these steps:

1. Cut the shipping straps and, with an assistant, carefully lift the heater into an upright position off of the pallet. Remove the front plate by lifting it up to disengage the two tabs from the notches in the legs. You can then pull it away from the heater body. See Fig. 7. Set it out of the way. Handle porcelain enamel castings carefully to avoid chipping.
2. Cut and remove the plastic wire ties from the two upper glass retainer clips. Fig. 8, (A). Slip the clips off of the firebox frame. Do not remove the lower glass retaining bracket (B). Carefully lift the glass off of the lower bracket and place the panel well out of the way on a towel or blanket.

Figure 7. Remove the front plate.

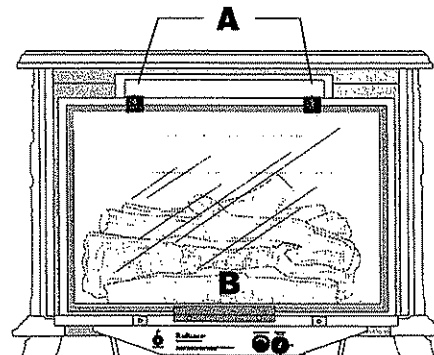
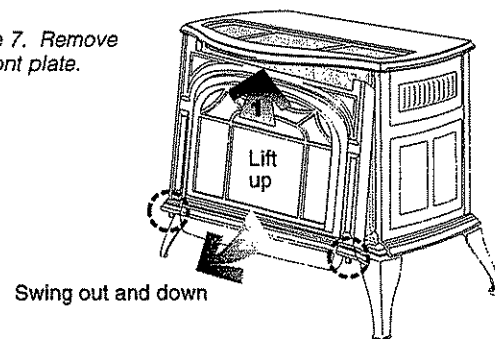


Figure 8. Remove the glass panel.

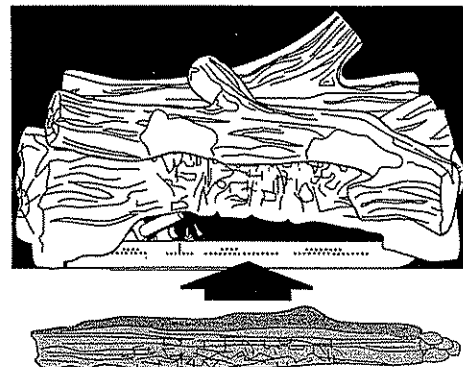


Figure 9. Install the ember log.

3. Remove all packing material from the log set. Unpack the ember log and position it on the front ledge of the firebox. Fig. 9
4. With the help of an assistant, move the heater close to its final location and confirm that all clearance requirements are maintained as specified on page 6.
5. Replace the glass panel behind lower bracket. Replace the two upper retainer clips. It is not necessary to replace the wire ties.
6. To replace the front, engage the upper edge of the front plate under the lip of the top plate, then swing the lower end down to engage the notches at each side.
7. Hang the metal rating plate on the hook on the rear shroud and adjust the leg leveller in each leg as necessary.

Fan Kit Installation

Install only Vermont Castings Fan Kit #2766.

Confirm that the kit contains the following items:

- Fan assembly with rheostat and snapstat
- 1/4-20 x 3/4" hex head screws, (4)
- 1/4-20 hex nuts • #10 sheet metal screws, (2)
- 1/4" star washers, (2) • #8 star washer, (1)
- wire tie • Control Knob • Retaining collar
- Mounting Bracket

Tools needed:

- stub handled, flat blade screwdriver
- phillips screwdriver • 7/16" open end wrench

This procedure allows installation of the fan kit without moving the heater body or firebox, as would be the case if the gas line is already connected. An assistant will be helpful. If the gas line has not yet been connected, access can be improved by pulling the firebox out of the heater body as detailed on page 12.

1. Remove the front plate. Lift to disengage the bottom and then pull it out and away.

2. Remove the top plate. Fig. 10.

Use the 7/16" open end wrench and reach through the front opening to remove the two hex nuts and washers that secure the top plate to each side plate.

3. Install the Mounting Bracket. Secure it to the blower assembly with two 1/4-20 x 3/4" hex head screws and one of the 1/4" star washers. Fig. 11.

4. Attach the fan assembly. Fig. 11.

Have your assistant position the fan under the firebox and align the mounting bracket with the two holes in the center of the bottom plate. Secure the fan assembly to the bottom plate with the two 1/4-20 x 3/4" phillips screws and the remaining 1/4" star washer.

5. Attach the snapstat. Fig. 11a.

Use the two sheet metal screws and single #8 star washer to secure the snapstat to the back of the firebox.

6. Disengage the switch box. Figs 12 & 13.

- A)** Remove the sheet metal screw from the left side (as you face the rear of the stove) of the switch box.
- B)** Loosen the upper phillips screw on the right side and disengage the switch box from the rear shroud.
- C)** Remove the hole plug from the switch box.

7. Install the rheostat. Fig. 14.

Pull the rear shroud out enough to feed the rheostat wire harness through the cut-out. Insert the rheostat control shaft through the switchbox hole being careful to align the locator pin with the smaller hole. Install the retaining collar and control knob onto the control shaft.

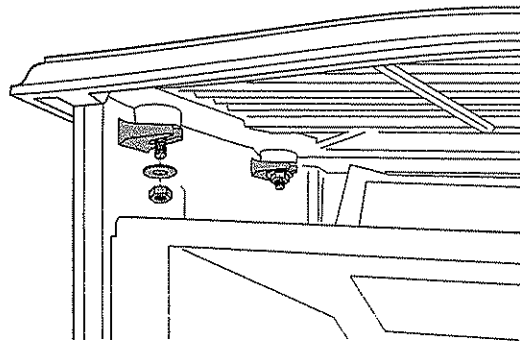


Figure 10. Remove the nuts that secure the top plate.

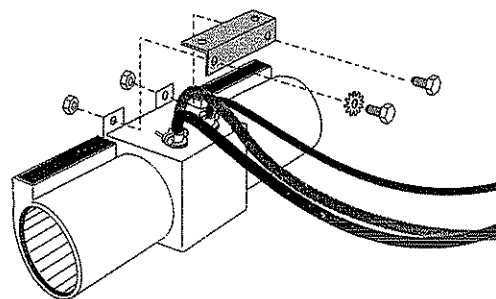


Figure 11. Attach the mounting bracket to the blower assembly.

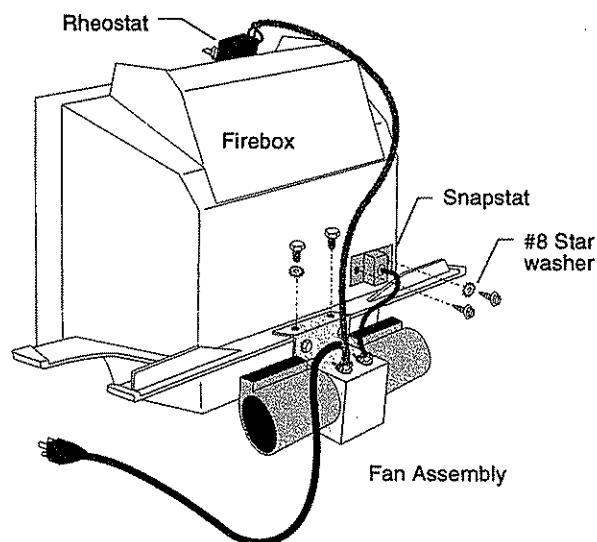


Figure 11a. The fan assembly and snapstat attach to the rear of the firebox / bottom plate assembly.

8. Replace the switch box.

Reattach the switch box to the back of the heater using the original screws.

9. Replace the wire tie. Fig. 15.

Secure the two wire harnesses together with the new wire tie.

10. Replace the top. You do not need to reinstall the nuts and washers onto the studs in the top plate.

11. Plug the power cord into a grounded three-prong outlet, and turn the speed control to the ON position. The fan will turn on and off as the temperature at the snapstat ranges above and below approximately 95°F. The speed control regulates air flow up to 160 cfm.

Figure 12. Disengage the switch box.

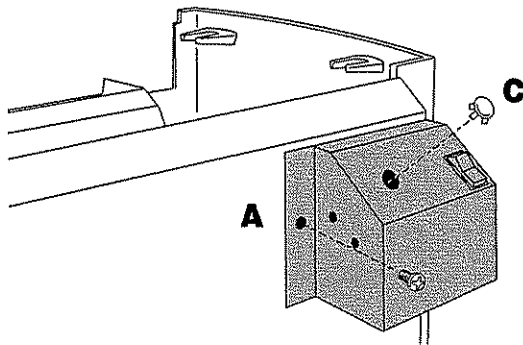


Figure 13. Disengage the wire harness.

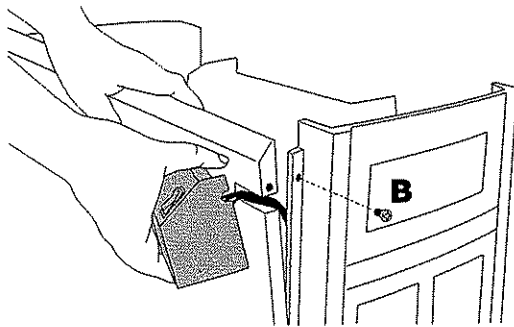


Figure 14. Install the rheostat.

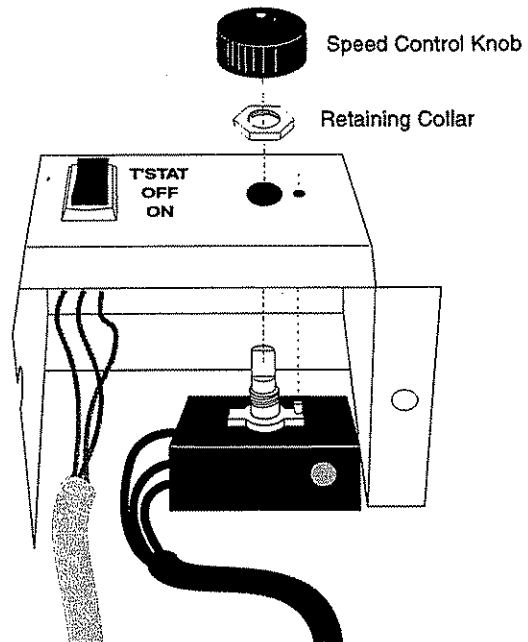
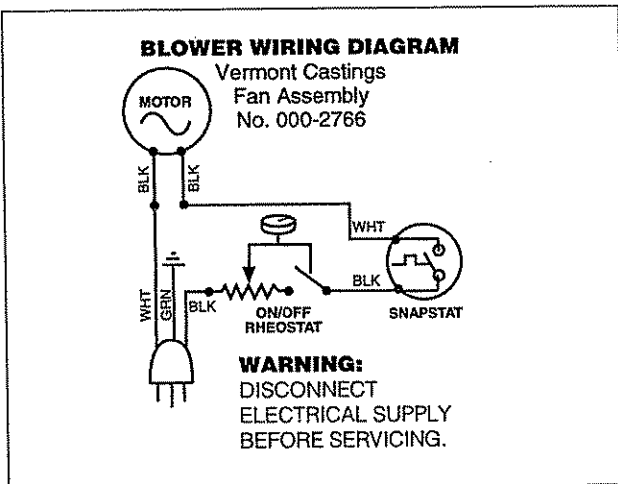
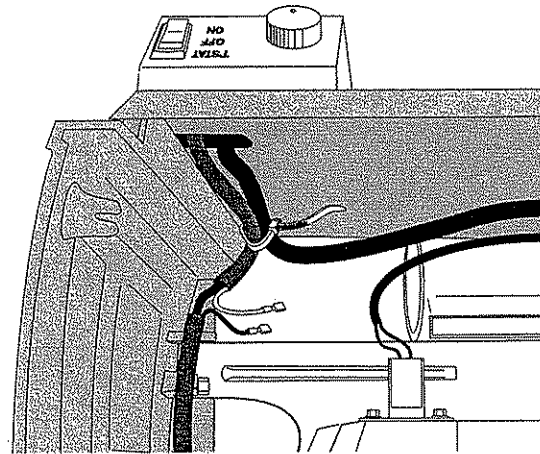


Figure 15. Install the wire tie.



⚠ WARNING

THIS APPLIANCE WITH OPTIONAL FAN KIT IS EQUIPPED WITH A THREE-PRONG (GROUNDING) PLUG FOR YOUR PROTECTION AGAINST SHOCK HAZARD AND SHOULD BE PLUGGED DIRECTLY INTO A PROPERLY GROUNDED THREE-PRONG RECEPTACLE. DO NOT CUT OR REMOVE THE GROUNDING PRONG FROM THIS PLUG.

Thermostat Connection

1. Use only a thermostat rated for 500 millivolts. Follow the installation recommendations and procedures in the instructions supplied by the thermostat manufacturer. Note the wire gauge specifications in the chart below.
2. Run the thermostat leads from the wall thermostat location to the heater.
3. Locate the two loose thermostat wires leading from the wire harness, (A, Fig. 16). Crimp the wall thermostat leads (B) to the spade connectors included in the parts bag.
4. Place the control switch on the rear of the appliance in the T'STAT position and set the wall thermostat to the lowest setting until the heater is ready for operation.

Thermostat Wire Gauge / Maximum Total Length

18 ga.	/	40'
20 ga.	/	25'
22 ga.	/	16'

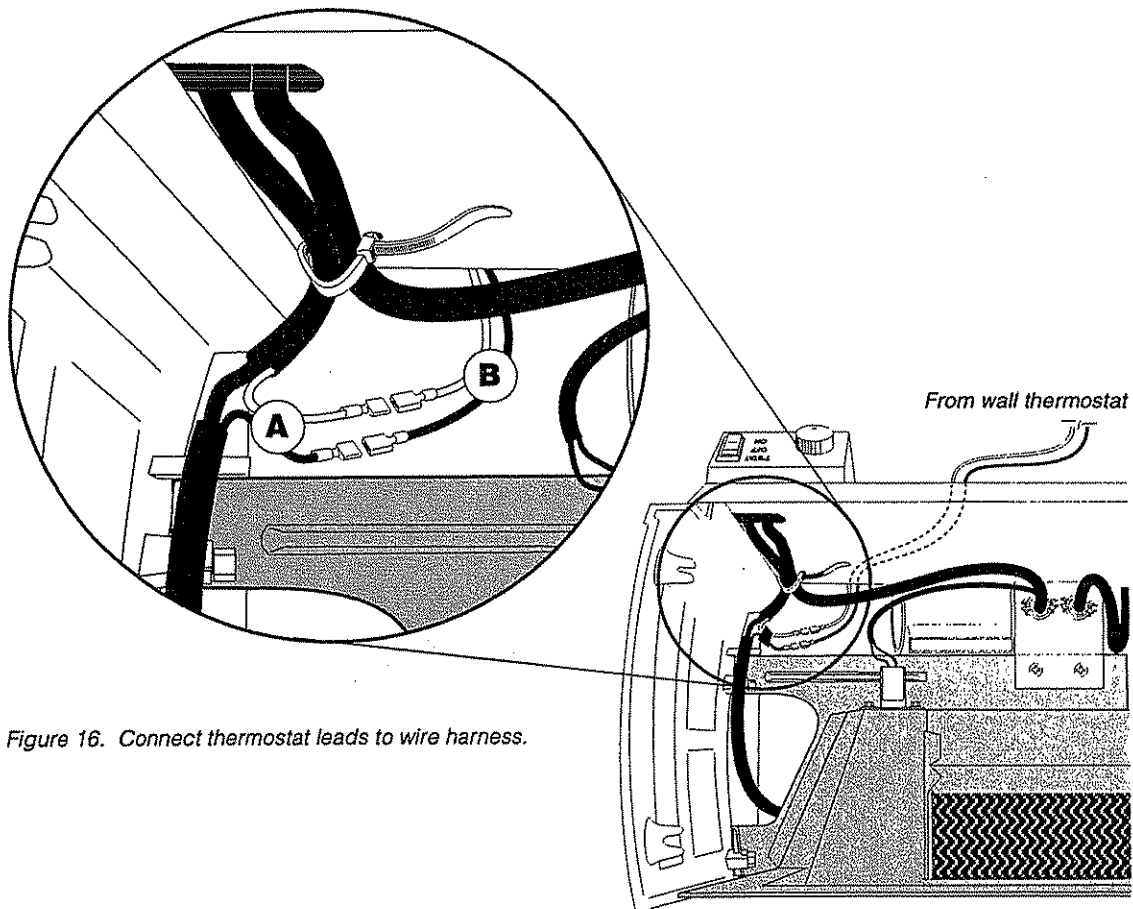


Figure 16. Connect thermostat leads to wire harness.

Connecting the Gas Supply

Check the rating plate on the back of the heater to confirm that you have the appropriate burner for the type of fuel to be used.

The RVF33 gas heater and its individual shut-off valve must be disconnected from the gas supply piping system during any pressure testing of that system at test pressures in excess of 1/2 psig (3.5 kPa).

The RVF33 gas heater must be isolated from the gas supply piping system by closing its individual manual shut-off valve during any pressure testing of the gas supply piping system at test pressures equal to or less than 1/2 psig.

An 1/8-inch N.P.T. plugged tapping, accessible for test gauge connection, must be installed on the inlet gas connection.

1. Connect the gas supply line to the inlet at the right side of the control valve as required by local codes. This may be a flexible line, (not supplied), or hard plumbing. Fig. 17.
2. Test all fittings and joints for leaks using a gas sniffer or a solution of soapy water.

NOTICE

THIS APPLIANCE SHOULD BE CONNECTED TO THE GAS SUPPLY ONLY BY A QUALIFIED GAS SERVICE TECHNICIAN. INSTALL ONLY IN ACCORDANCE WITH NATIONAL FUEL GAS CODE, ANSI Z223.1 - LATEST EDITION. (EXCEPTION: DO NOT DERATE THIS APPLIANCE FOR ALTITUDE. THIS APPLIANCE HAS BEEN TESTED AND LISTED FOR USE IN ALTITUDES UP TO 10,000 FEET. MAINTAIN MANIFOLD PRESSURES AS SPECIFIED BELOW.) FOLLOW ALL LOCAL CODES.

CAUTION

- Install a gas shut-off valve between this appliance and the supply.
- **For Natural Gas:** Use a 3/8" or 1/2" natural gas supply line with an input of 33,000 BTU/Hr at a manifold pressure of 3.5" and minimum inlet supply for adjustment of 5.0 W.C.
- **For Propane:** Use a 3/8" or 1/2" supply line suitable for use with propane with an input of 33,000 BTU/Hr at a manifold pressure of 10" and minimum inlet supply for adjustment of 11" W.C.

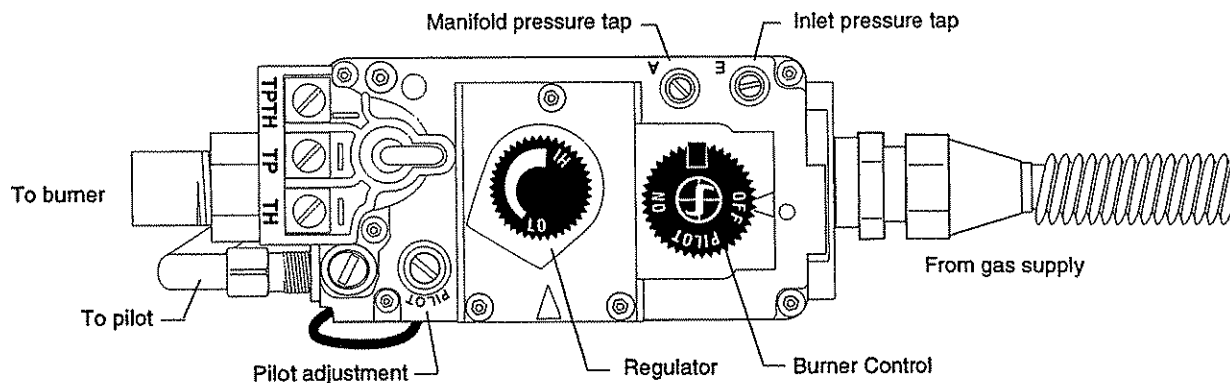


Figure 17. The S.I.T. Control Valve, (front panel removed).

Heater Disassembly

Tools needed:

- phillips screwdriver
- 7/16" open end wrench

1. Remove the front plate. Fig. 18.

2. Remove the top plate. Fig. 19.

Use the 7/16" open end wrench and reach through the front opening to remove the two hex nuts that secure the top plate to each side plate.

3. Remove the switch box. Fig. 20

- Remove the two screws (A & B) that secure the switch box to the rear shroud.
- Pull the shroud panel out enough to allow you to disengage the switch wire harness from the panel cutout (C) and place the switch box on top of the firebox.
- Detach the wire tie from the rear shroud.

4. Remove the firebox. Fig. 21.

Pull the firebox forward and slide it out from the heater body.

5. Detach the rear shroud.

Loosen the remaining phillips screws enough to disengage the shroud from the side plates. Fig. 22.

Figure 18.

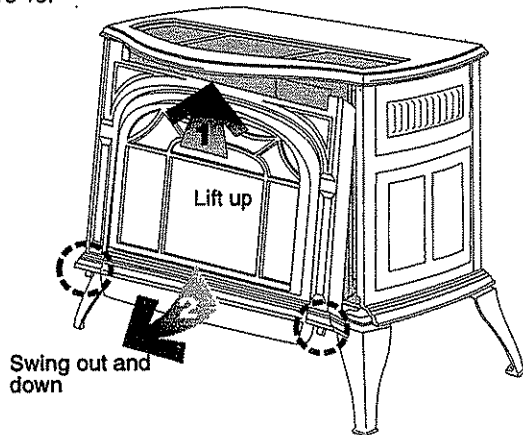


Figure 19.

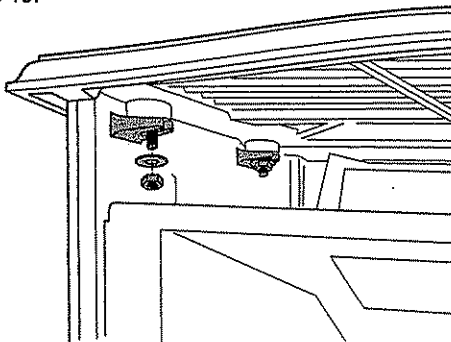


Figure 20.

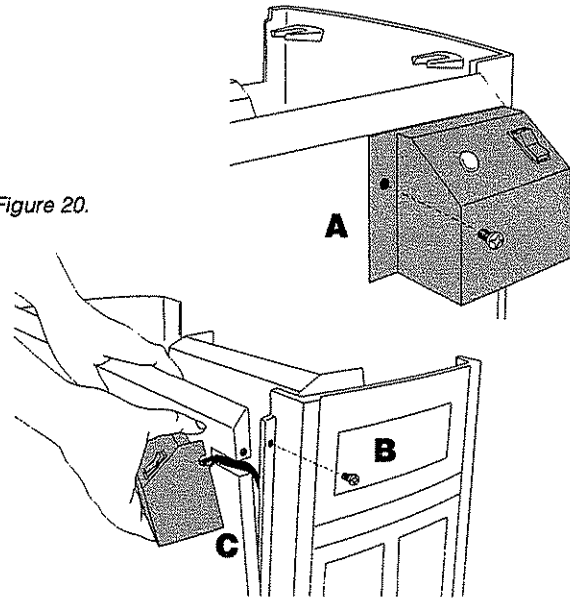


Figure 21.

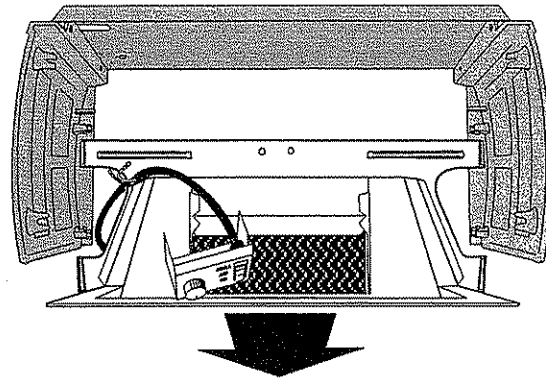
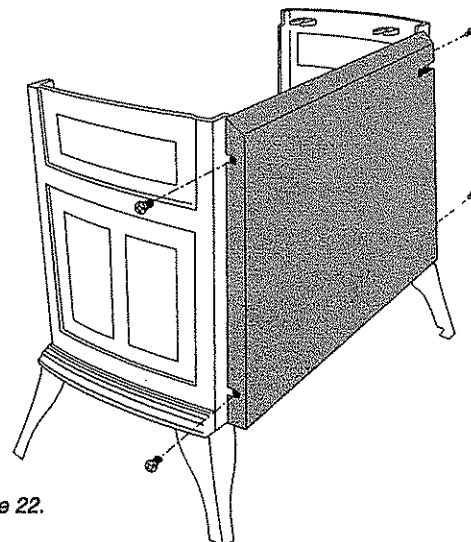


Figure 22.



Assembly

1. Attach the rear shroud to each side plate.

Do not tighten the upper left screw.

2. Replace the firebox. Fig. 23.

Be certain to push the firebox all the way back until the bottom plate butts against the rear stops cast into the side plates.

3. Replace the switch box. See Fig. 20.

Pull the left corner of the rear shroud out enough to feed the wire harness back through the cutout in the panel. Reattach the switch box to the rear shroud using the original screws. Replace the wire tie that secures the wire harness to the rear shroud.

4. Replace the top. Fig. 24. The top plate simply rests level on the sides. You do not need to reinstall the nuts and washers onto the studs in the top plate. Place the screen and grille into the recess.

5. Replace the front. Fig. 24. Engage the upper edge of the front plate under the lip of the top plate, then set the lower end down. The two steel tabs should engage the notches at each side.

WARNING

FAILURE TO POSITION THE PARTS IN ACCORDANCE WITH THESE DIAGRAMS OR FAILURE TO USE ONLY PARTS SPECIFICALLY APPROVED FOR USE WITH THIS HEATER MAY RESULT IN PROPERTY DAMAGE OR PERSONAL INJURY.

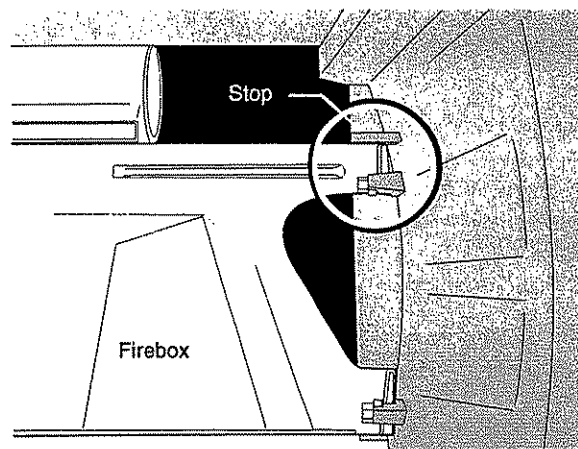


Figure 23. Correct firebox position.

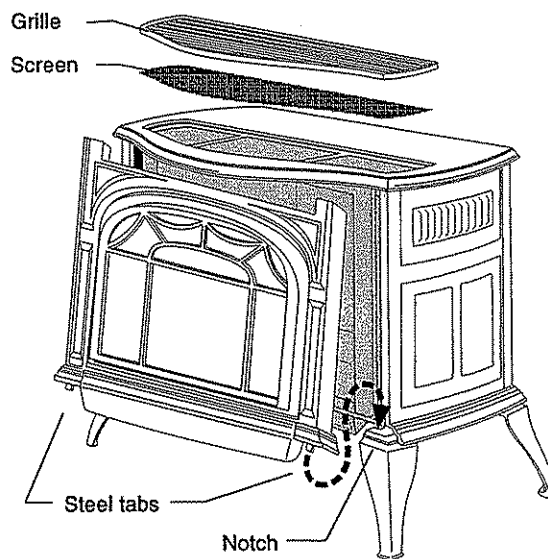


Figure 24. Install the screen, grille, and front plate.

Operation

Your First Fire

Read these instructions carefully and familiarize yourself with the burner controls of this heater.

The Radiance uses a S.I.T. control valve that allows thermostatic regulation. A separate Piezo ignitor generates a spark at the pilot orifice when the button is pushed. Figures 25 - 28 illustrate the operating positions for the RVF 33 controls.

Set the 3-way burner control switch on the back of the appliance to the OFF position (midpoint). Locate the Pilot assembly on the left side under the front log, Fig. 30. Follow the lighting instructions on page 13 exactly. Use the regulator control to adjust heat output.

During the first fire, it is not unusual to smell some odor associated with new logs, paint and metal being heated. Odors should dissipate within a few hours or so, however, you can open a window to provide plenty of fresh air to alleviate this condition.



Figure 25. Pilot position. Pilot can be lit.

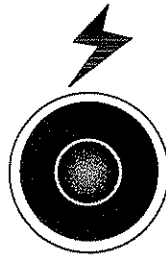


Figure 26. Piezo button.

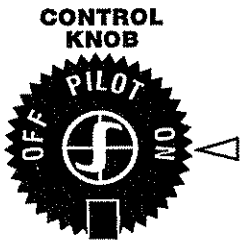


Figure 27. Burner is functional.



Figure 28. Burner control switch.

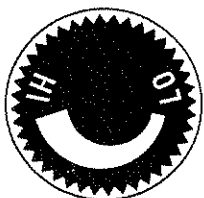


Figure 28. Regulator range.

Pilot and Burner Inspection

Each time you light your Radiance, check that the pilot flame and burner flame pattern appear as in Fig. 31 and 32. If flame patterns are incorrect, turn the heater off and use the procedures in the Troubleshooting section of this manual to determine a solution. Do not operate the heater until the pilot flame is correct.

Follow regular maintenance procedures as described on page 16.

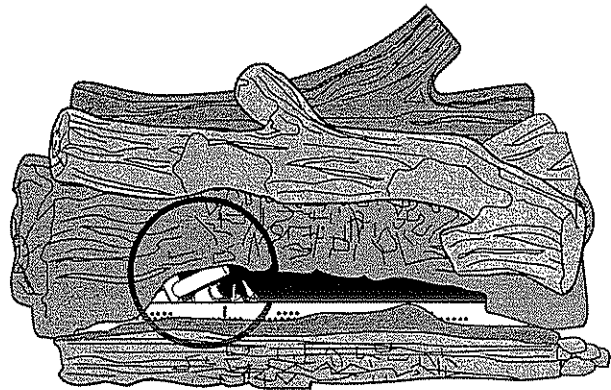


Figure 30. Pilot Assembly Location.

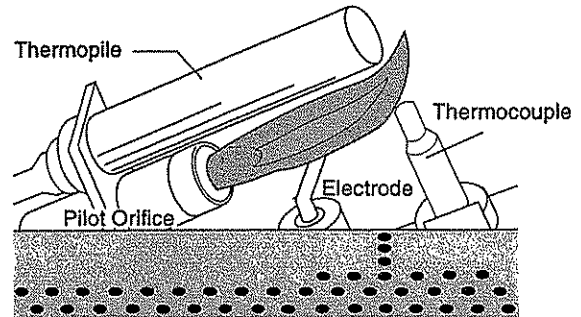


Figure 31. Correct Pilot Flame (Natural gas pilot assembly shown. LP assembly thermocouple is different than that depicted above).

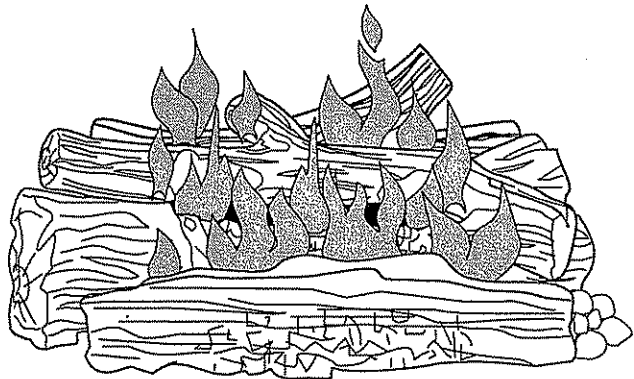


Figure 32. Proper flame pattern with Regulator in HIGH position.

FOR YOUR SAFETY READ BEFORE LIGHTING

WARNING: IF YOU DO NOT FOLLOW THESE INSTRUCTIONS EXACTLY, A FIRE OR EXPLOSION MAY RESULT CAUSING PROPERTY DAMAGE, PERSONAL INJURY, OR LOSS OF LIFE.

- A. This appliance has a pilot. When lighting the pilot, follow these instructions exactly.
- B. **BEFORE OPERATING** smell all around the appliance area for gas. Be sure to smell next to the floor because some gas is heavier than air and will settle on the floor.


WHAT TO DO IF YOU SMELL GAS.

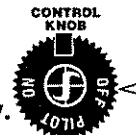
- Shut off the gas supply.
- Do not try to light any gas appliance.
- Do not touch any electric switch; do not use any phone in your building.
- Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.
- If you cannot reach your gas supplier, call the fire department.

C. Use only your hand to turn the gas control knob. Never use tools. If the knob will not turn by hand, don't try to repair it. Call a qualified service technician. Force or attempted repair may result in a fire or explosion.

D. Do not use this appliance if any part has been under water. Immediately call a qualified service technician to inspect the appliance and to replace any part of the control system and any gas control that has been under water.


LIGHTING INSTRUCTIONS

1. **STOP!** Read the safety information above on this panel.
2. If applicable, turn thermostat to lowest setting or set burner switch to "OFF" position.
3. Push in gas control knob slightly and turn clockwise  to "OFF."




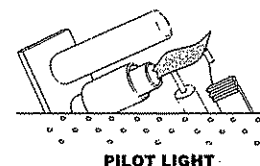
NOTE: Knob cannot be turned from "PILOT" to "OFF" unless knob is pushed in slightly. Do not force.

4. Wait five (5) minutes to clear out any gas. If you then smell gas, **STOP!** Follow "B" in the safety information above on this panel. If you don't smell gas, go to the next step.

5. Turn knob on gas control counter-clockwise  to "PILOT." Push in control knob all the way and hold in. Immediately light the pilot by pushing the red ignitor button. Continue to hold the control knob in for about one (1) minute after the pilot is lit. Release knob and it will return back up. Pilot should remain lit. If it goes out, repeat steps 3 through 5.

6. • If knob does not pop up when released, stop and immediately call your service technician or gas supplier.


• If the pilot will not stay lit after several tries, turn the gas control knob clockwise  to "OFF" and call your service technician or gas supplier.



7. Turn gas control knob counter-clockwise  to "ON."

8. Set the burner control switch to "ON" or set to "T'STAT" and adjust wall thermostat.

TO TURN OFF GAS TO APPLIANCE

1. Set the burner control switch to "OFF" if service is to be performed.
2. Push in gas control knob slightly and turn clockwise  to "OFF." **NOTE:** Knob cannot be turned from "PILOT" to "OFF" unless knob is pushed in slightly. Do not force.

Maintenance

Your Radiance Vent Free heater will provide years of service with minimal upkeep. The following procedures will help ensure that your heater continues to perform safely and efficiently.

Firebox Cleaning and Inspection

Cleanliness is critical to correct operation of the heater. The log set, burner, valve controls and air circulation areas must all be kept free of dust and unobstructed by debris. Inspect these areas before each use and clean whenever accumulation is evident. Follow the simple procedure outlined below.

Frequent cleaning may be necessary in living environments subject to excessive carpet lint or pet hair. For example, if you live with a dog that sheds continuously, you will need to inspect the burner area frequently and clean it as often as the accumulation requires. **In extreme conditions, it may be necessary to clean the burner and log set monthly or bi-weekly.**

This appliance should be inspected and thoroughly cleaned annually by a qualified gas technician.

Cleaning Procedure

1. Turn the burner OFF and let the heater cool completely before cleaning.
2. Lift the Front plate up and then swing the bottom out to disengage it from the heater shell. See Fig. 7, pg. 7.
3. Remove the glass panel by removing the two upper retainer clips (A) and then loosening the lower retainer bracket (B). Lift the glass panel up and off of the firebox frame. See Fig. 33.
4. Carefully inspect the log set for damage. Contact your local dealer if any damage is evident. **DO NOT OPERATE THE HEATER WITH A DAMAGED OR LOOSE LOG SET.**

Use a soft-bristled brush vacuum cleaner attachment to remove dust or debris from the log set, pilot and burner. Use care as the log set is fragile.

5. Inspect the catalytic combustor at the top of the firebox. Replace the combustor if any damage or deterioration is evident.
6. Replace the glass panel and front plate. **DO NOT OPERATE THE HEATER WITH THE GLASS PANEL OR FRONT PLATE REMOVED.**

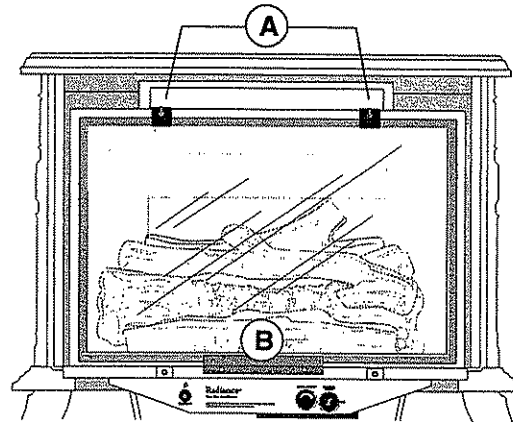


Figure 33. Remove the glass panel.

Glass Replacement

Do not operate this appliance with the glass panel cracked, broken, or removed. Replace damaged glass only with Vermont Castings ceramic glass panel Part No. 160-1290. Follow the Cleaning Procedure instructions regarding parts removal.

Care of Cast Iron

An occasional dusting with a dry rag will help keep the *painted surfaces* looking new. Use high-temperature stove paints, available through your local dealer, to touch-up areas as needed. Clean areas to be painted with a wire brush and be sure to cover the log set, burner and valve assembly. Apply the paint sparingly; two light coats of paint will give better results than a single heavy coat.

Porcelain enamel surfaces should be cleaned with a soft, damp cloth. Do not use abrasive cleaning agents. If necessary, use only a cleaning agent formulated specifically for use on porcelain enamel surfaces.

WARNING

TURN THE BURNER PILOT OFF BEFORE APPLYING PAINT.

WARNING

DUST AND DEBRIS ACCUMULATION CAN RESULT IN POOR PERFORMANCE. INSPECT THE VALVE COMPARTMENT, BURNER PARTS AND LOG SET FREQUENTLY AND CLEAN THESE PARTS MONTHLY OR AS OFTEN AS ACCUMULATION WARRANTS.

Catalytic Combustor

The combustor should be cleaned annually to ensure optimal performance. Follow the procedure below.

Tools / Materials:

- 7/16" wrench
- rubber gloves
- baking soda
- tap water
- white vinegar
- distilled water

Remove the combustor module

1. Be sure that the heater is COLD.
2. Remove the front and glass panel as described on the previous page.
3. Use the wrench to remove the four 1/4-20 x 1/2" hex head cap screws that secure the combustor module to the top of the firebox. Fig. 34. Pull the module down out of the cutout in the firebox.

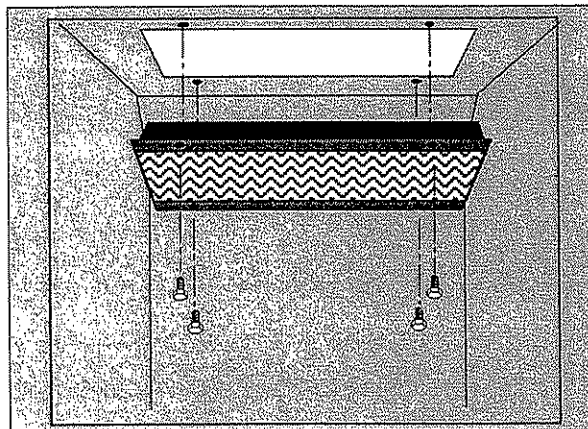


Figure 34. Remove the catalytic combustor module.

Clean the combustor module

1. Obtain a container large enough to completely submerge the combustor module.
2. Fill the container with 13 cups of tap water.
3. Measure 11 tablespoons baking soda and slowly pour it into the water, mixing thoroughly.
4. Place the combustor into the solution and allow to soak for fifteen (15) minutes. If the module is not completely covered, follow steps 1-3 to prepare enough solution to fully submerge the combustor.
5. Rinse the combustor with tap water.
6. Dump the solution and thoroughly rinse the container.
7. Fill the container with enough white vinegar to submerge the combustor module.
8. Place the module into the container and allow it soak for fifteen (15) minutes.
9. Rinse the module with **distilled water**.
10. Lightly shake the catalytic module to expel excess water.
11. Replace the module into the stove.

Replace the combustor module

1. Insert the combustor module into the cutout and secure with the four original hex head screws.
2. Replace the glass panel and front .

Troubleshooting

Follow these procedures in the order presented.

⚠ WARNING

TURN OFF HEATER AND ALLOW TO COOL COMPLETELY BEFORE SERVICING.

CONDITION	POSSIBLE CAUSE	SOLUTION
No spark at pilot when Ignitor is operated.	1. Ignition Electrode is disconnected from Ignition wire, broken, or incorrectly positioned.	1. Inspect and reconnect, replace or repair as necessary.
	2. Piezo Ignitor nut is loose.	2. Tighten the nut to establish secure contact to the valve bracket.
	3. Ignitor wire is broken.	3. Replace wire.
	4. Bad Piezo Ignitor.	4. Replace Piezo Ignitor.
The Ignitor Electrode sparks, but Pilot does not light.	1. Gas supply is turned off or supply line shut-off valve is closed.	1. Turn on gas supply or open supply line shut-off valve.
	2. Control Knob is not in PILOT position.	2. Turn Control Knob to PILOT.
	3. Control Knob not pressed in while in PILOT position.	3. Press Control Knob in while in the PILOT position.
	4. Air present in gas lines.	4. Continue holding in Control Knob and repeat ignition procedure until air is bled from the lines.
	5. Inlet supply pressure is not within correct settings.	5. Call local gas supplier. Adjust inlet supply pressure to specification: NG; 5" W.C. - 8" W.C. (5" W.C. - 7" W.C. at elevations over 8000 ft.). LP; 11" W.C. - 12" W.C.
	6. Other conditions that should be identified only by a qualified gas technician.	6. Call qualified gas technician.

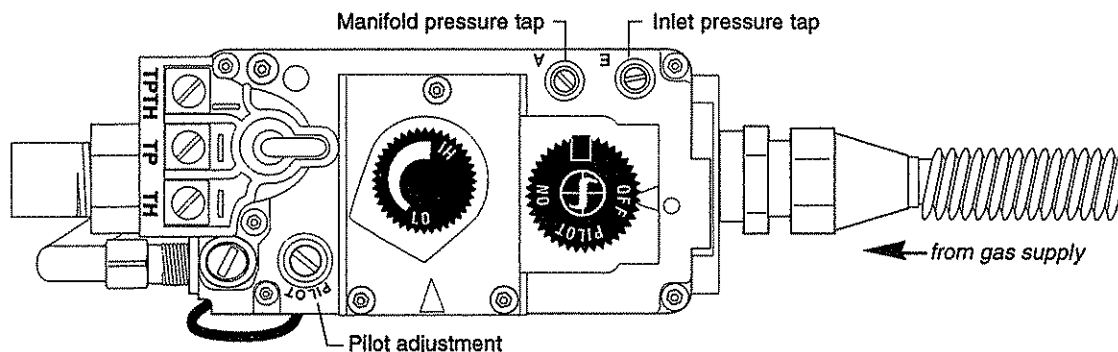


Figure 35. RVF33 / S.I.T. Control Valve Assembly.

CONDITION	POSSIBLE CAUSE	SOLUTION
Pilot lights but flame goes out when Control Knob is released.	1. Control Knob not fully depressed or held in long enough.	1. Depress Control Knob fully and hold in for a full 30 seconds.
	2. Gas supply line shut-off valve is not fully open.	2. Fully open gas supply line shut-off valve.
	3. Thermocouple connection is loose at the Control Valve.	3. Inspect and tighten securely.
	4. Pilot flame does not touch the Thermocouple. Figs. 36, 37. This can be caused by: A) Incorrect gas pressure, and / or B) other conditions that should be identified only by a qualified service technician.	4. A) Contact the local gas company. Inlet supply pressure should be between 5" W.C. and 8" W.C. for NG (5" W.C.- 7" W.C. over 8000 ft. elevation) and 11" W.C. -12" W.C. for LP . Adjust as necessary. B) Call local gas service technician.
	5. Thermocouple is damaged.	5. Call local gas service technician.
	6. Control Valve is damaged.	6. Call local gas service technician.

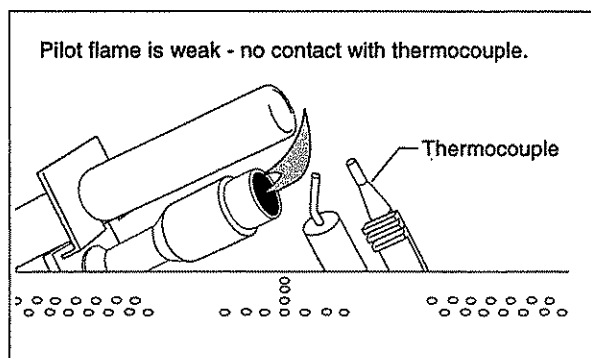


Figure 36. Incorrect pilot flame (Natural gas pilot assembly)

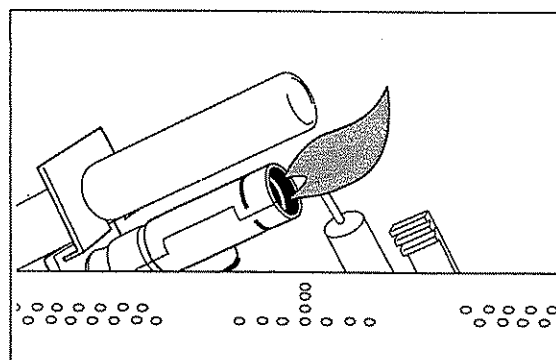


Figure 38. Correct LP pilot flame

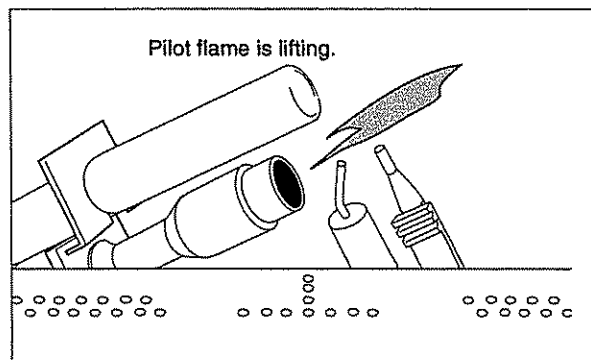


Figure 37. Incorrect pilot flame (Natural gas pilot assembly)

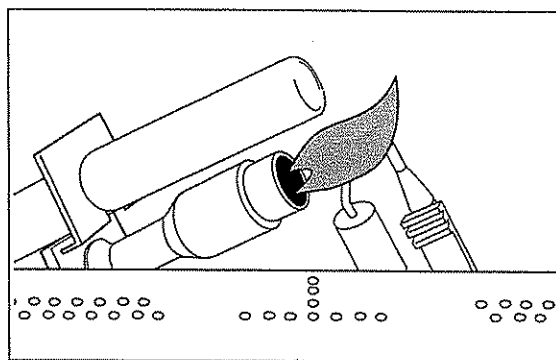


Figure 39. Correct Natural gas pilot flame.

CONDITION	POSSIBLE CAUSE	SOLUTION
Pilot lights but Main Burner does not.	<ol style="list-style-type: none"> 1. Gas supply line shut-off valve is not fully open. 2. Foreign material is blocking Burner ports. 3. Main Burner orifice is clogged. 4. Thermostat or remote switch not activated on RVF33. 	<ol style="list-style-type: none"> 1. Fully open gas supply line shut-off valve. 2. Inspect and clear debris away from Burner ports. 3. Call local gas service technician. 4. Set thermostat to higher temperature or check remote switch.
Main Burner shuts off and Pilot flame goes out while in operation.	<ol style="list-style-type: none"> 1. Insufficient fresh air. 2. Incorrect inlet supply pressure. 	<ol style="list-style-type: none"> 1. Determine that adequate ventilation exists to provide sufficient fresh air. Open a window or provide additional ventilation. (See <i>Fresh Air Requirements</i>, Pages 4-5.) 2. Contact the local gas company. Adjust inlet supply pressure to specification: NG; 5" W.C. - 8" W.C. (5" W.C. - 7" W.C. at elevations over 8000 ft.) LP; 11" W.C. - 12" W.C.



WARNING

IF YOU SMELL GAS:

- **SHUT OFF GAS SUPPLY**
- **DO NOT TRY TO LIGHT ANY APPLIANCE.**
- **DO NOT TOUCH ANY ELECTRICAL SWITCH; DO NOT USE ANY PHONE IN YOUR BUILDING.**
- **IMMEDIATELY CALL YOUR GAS SUPPLIER FROM A NEIGHBOR'S PHONE. FOLLOW THE GAS SUPPLIER'S INSTRUCTIONS.**
- **IF YOU CANNOT REACH YOUR GAS SUPPLIER, CALL THE FIRE DEPARTMENT.**

ODOR DURING OPERATION

Neither natural gas nor LP gas give off an odor when burned. The nature of a vent free combustion system, however, is such that odors may occasionally be produced during heater operation when impurities exist in the immediate area. Cleaning solutions, paint, solvents, cigarette smoke, adhesives, new carpet or textiles, etc., all can create fumes. These fumes may mix with combustion air and can create odor. Such odors will disappear over time, however, the condition can be alleviated by opening a window or otherwise providing additional ventilation to the area.

If odors persist and you are unable to locate the source, contact a qualified gas service technician.

Parts List

Radiance Vent Free Gas Heater RVF33

1.	RVF33 Firebox Assembly / NG	000-2740
	RVF33 Firebox Assembly / LP	000-2746
2.	Grille	130-1192
3.	Screen, Grille	160-1933
4.	Top	130-1186
5.	End, Left	130-1188
6.	End, Right	130-1189
7.	Rear Shroud	140-9106
8.	Switch Box	140-8791
9.	Switch, ON/OFF/T'STAT	160-1597
10.	Rheostat Plug	160-0561
11.	Wire Tie, wire harness/rear shroud	120-1504
12.	Wire Harness, Burner/Thermostat	160-1913
13.	Catalytic Combustor	160-1925
14.	Ember Strip	160-1916
15.	Gas Log Set	500-3082
16.	Burner Assembly, Natural gas	500-3083
	Burner Assembly, Propane	500-3088
17.	Bottom	130-1191
18.	Control Panel	140-9105
19.	Knob, Extension, HI/LO	160-1918
20.	Knob, Extension, ON/OFF/PILOT	160-1919
21.	Piezo Ignitor	160-1304
22.	Electrode wire	160-1661
23.	Control Valve, NG / S.I.T.#820.648	160-1921
	Control Valve, LP / S.I.T.#820.647	160-1926
24.	Glass Panel	160-1290
25.	Gasket, 3/4" Flat, glass panel	700-0902
26.	Glass bracket, upper (2)	140-9104
27.	Glass retainer, lower	140-8637
28.	Front	130-1187
29.	Cable, Control Door	160-1924
30.	Spring, Control Door	120-1842
31.	Control Door	130-1190
32.	Damper Tab (6)	160-1488
33.	1/4-20 x 3/8" Phillips Screw (15)	120-0993
34.	1/4-20 x 1/2" Hex Head Screw (5)	120-1338
35.	1/4-20 x 1 1/4" Stud, top plate (4)	120-4212
36.	Flat Washer, Top to Sides (4)	120-2470
37.	1/4-20 x Hex nut , Top to Sides (4)	120-3210
38.	Flat Washer, 1/4", Spring / Front	120-2474
39.	1/4-20 x 1" Leg Levelling bolt (4)	120-1745
40.	1/4-20 x 3/8" Blk (4)	120-1997
41.	16 x 1/2" TEK Screw	120-1704

For replacement parts, or for information about parts or service, contact your local Vermont Castings Authorized Dealer. For the name of the dealer nearest you, call or write:

The Majestic Products Company
1000 East Market Street
Huntington, IN 46750-2579
219-356-8000

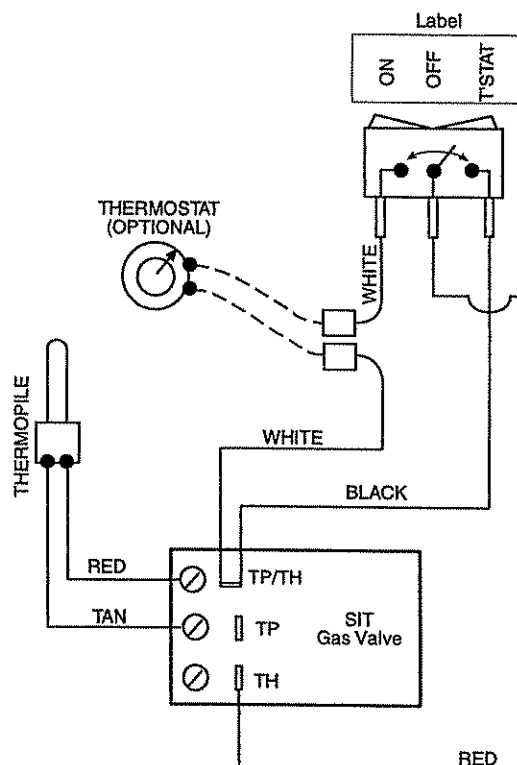


Figure 40. RVF33 Wiring Diagram

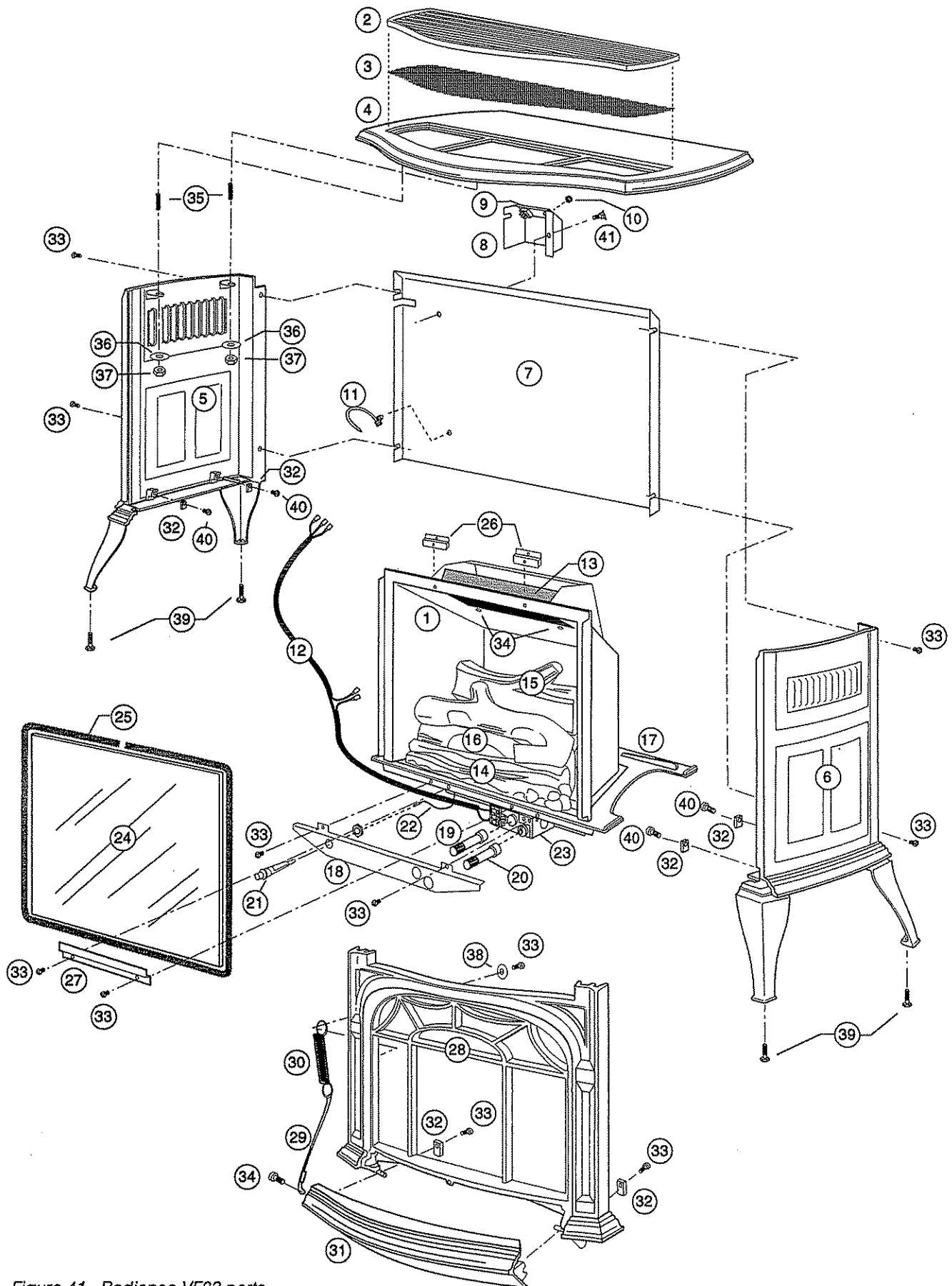


Figure 41. Radiance VF33 parts.

Warranty

Limited Three Year Warranty

Vermont Castings, Inc. (Manufacturer) warrants that this Radiance Vent Free Gas Heater, Model RVF33, will be free of defects in material and workmanship for a period of three years from the date you receive it, except that the glass panel and ceramic logs shall be warranted for one year as described below.

The Manufacturer will repair or replace, at its option, any part found to be defective upon inspection by an Authorized Dealer. The customer must return the defective part or the stove, with shipping prepaid, to the Authorized Dealer or pay for any Authorized Dealer in-home travel fees or service charges for in-home repair work. It is the dealer's option whether the repair work will be done in the customer's home or in the dealer's shop. 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 Radiance Vent Free Gas Heater or part thereof that is repaired or replaced during the limited warranty period will be warranted for a period not to exceed the remaining term of the original limited warranty or six (6) months, whichever is longer.

Limited One Year Warranty

The following parts of the Radiance Vent Free Gas Heater 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 glass panel and the ceramic logs. Any of the logs found to be defective will be repaired or replaced at no charge, upon the return of said part to an Authorized Dealer with postage prepaid.

Exclusions and Limitations

1. This warranty is transferable; however, proof of original purchase is required.
2. The Manufacturer offers no warranty on chipping of enamel surfaces. Inspect your heater prior to accepting it for any damage to the enamel surfaces.
3. This warranty does not cover misuse of the appliance as described in the Owner's Guide, nor does it cover a heater that has been modified unless authorized by a Manufacturer's representative in writing.
4. This warranty does not cover a stove repaired by someone other than either an Authorized Dealer or an authorized, qualified gas agency.
5. Damage to the unit while in transit is not covered by this warranty but is subject to claim against the common carrier. Contact the Authorized Dealer from whom you purchased your Radiance Vent Free Gas Heater. (Do not operate the appliance 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 the Owner's Guide.
7. The Manufacturer shall have no obligation to enhance or update any unit once manufactured.

IN NO EVENT SHALL THE MANUFACTURER BE LIABLE FOR INCIDENTAL AND CONSEQUENTIAL DAMAGES. ALL IMPLIED WARRANTIES, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS, ARE LIMITED TO THE DURATION OF THIS WRITTEN WARRANTY. THIS WARRANTY SUPERSEDES ALL OTHER ORAL OR WRITTEN WARRANTIES.

Some states do not allow the exclusion or limitations of incidental and consequential damages or limitations on how long an implied warranty lasts, so the above limitations may not apply to you. This warranty gives you specific rights and you may have other rights which vary from state to state.

How To Obtain Service

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

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

A warranty claim process will then begin. The Manufacturer reserves the right to withhold final approval of a warranty claim pending a visual inspection of the defect by authorized representatives.

INSTALLER:

Please record the following information for future reference.

Appliance Serial No. _____

Appliance Type: NG ____ LP ____

Inlet Supply Pressure: _____

Manifold Pressure: _____

Dealer _____

Phone _____

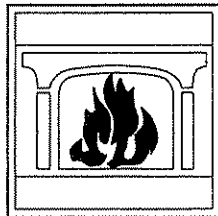
Installer _____

Phone _____

Date Installed _____

**INSTALLER:
PLEASE KEEP THIS MANUAL
WITH THE HEATER AFTER
INSTALLATION.**

**IT CONTAINS IMPORTANT
OPERATION, MAINTENANCE,
AND
WARRANTY INFORMATION.**



VERMONT
CASTINGS

THE
MAJESTIC
PRODUCTS COMPANY

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