

OWNER'S INSTALLATION AND OPERATING INSTRUCTION BOOK

# Blaze<sup>®</sup> King

WOOD STOVES

ROYAL HEIR, Model RHT-2250

**OM-11A**

SAVE THESE INSTRUCTIONS

BLAZE KING ROYAL HEIR OWNER'S MANUAL  
RHT-2250

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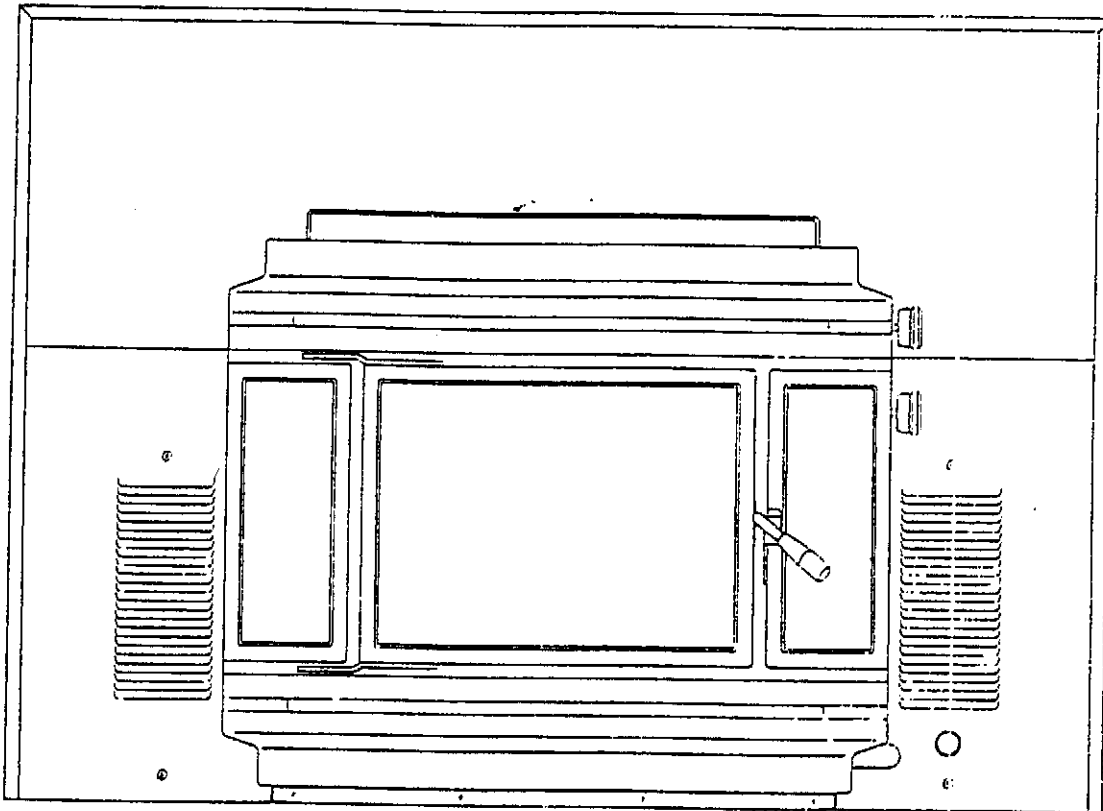
SAFETY NOTICE:

IF THE ROYAL HEIR FIREPLACE INSERT IS NOT PROPERLY INSTALLED, A HOUSE FIRE MAY RESULT. FOR YOUR SAFETY, FOLLOW THE INSTALLATION DIRECTIONS. CONTACT LOCAL BUILDING OR FIRE OFFICIALS ABOUT RESTRICTIONS AND INSTALLATION INSPECTION REQUIREMENTS IN YOUR AREA.

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WARNING

IMPROPER ASSEMBLY, INSTALLATION, MAINTENANCE OR OPERATION OF THIS APPLIANCE CAN CAUSE DAMAGE TO PROPERTY, SERIOUS INJURY OR DEATH. READ THESE INSTRUCTIONS.



SAVE THESE INSTRUCTIONS

DM-11A  
12/04/86  
RCR

11/03/86

Dear Customer:

Thank you for purchasing the Royal Heir, a catalytic wood-burning fireplace insert (hereafter referred to as "insert") by BLAZE KING. The innovative design of the Royal Heir, which includes a catalytic combustor, makes this wood-burner one of the cleanest and most efficient inserts on the market. The Royal Heir's contemporary elegance, complementary trim and decorator colors make it the first choice for improving your life style and enhancing the decor of your home.

This owner's manual explains the steps required to safely assemble, install, operate, and maintain your new insert. Be a responsible insert owner; carefully read these requirements for safe installation and proper operation BEFORE installing and using your insert.

Obtain permits from the building inspector or fire department, if local laws require. Check local building and fire codes before installing your insert. When you have completed the installation, have it checked by your local inspector. Disregarding inspection and code requirements may jeopardize your homeowner's insurance. Since some insurance carriers require notification of an insert installation, contact your insurance agent. We want your Royal Heir to give you a lifetime of trouble-free operation.

Please complete and mail the insert warranty card and combustor warranty card. Doing so will make processing a warranty claim easier.

While we have made every effort to make these instructions as complete as possible, some installation or operating conditions may not be covered. If you have any questions that are not answered here, contact your BLAZE KING dealer, Local Building Inspector, Fire Department, or our customer service department (509-529-9820).

The Management and Employees of  
BLAZE KING

KEEP THIS MANUAL FOR FUTURE REFERENCE.

Blaze King offers a five-year limited insert warranty and a six-year combustor warranty. Copies of these warranties are packaged with the insert.

To register your warranties, fill out and return the warranty registration cards included with this insert. You will find the model number and serial number on the tag under the removable panel on the top of the insert. If the warranty cards are missing, you can obtain them from your local dealer.

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#### DISCLAIMER OF WARRANTIES AND LIMITATION OF LIABILITY

THERE ARE NO UNDERSTANDINGS, AGREEMENTS, REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OTHER THAN THOSE SPECIFICALLY SET OUT BY THE "BLAZE KING LIMITED WARRANTY" AND THE "LIMITED CATALYTIC COMBUSTOR WARRANTY". THESE WARRANTIES STATE THE ENTIRE OBLIGATION OF THE MANUFACTURER AND SELLER. THE CONTENTS OF THIS DOCUMENT SHALL NOT BECOME PART OF, OR MODIFY, THESE WARRANTIES.

The information, recommendations, descriptions and safety notations in this document are based on Woodcutters Mfg., Inc.'s judgement and experience regarding woodstoves. THIS INFORMATION SHOULD NOT BE CONSIDERED TO BE ALL-INCLUSIVE OR COVERING ALL CONTINGENCIES. In no event will Woodcutters Mfg., Inc. be responsible to the user in contract, in tort (including negligence), strict liability or otherwise for any special, indirect, incidental or consequential damage or loss whatsoever resulting from the use of the information, recommendations, descriptions and safety notations contained herein. If further information is required, consult your local building or fire officials, your Blaze King dealer or Woodcutters Mfg., Inc.

**OTHER LEGAL RIGHTS OF THE PURCHASER.** This warranty gives you specific legal rights, and you may also have other rights which may vary from state to state. If you do not agree to the purchase of the woodstove on the terms and conditions set out in this warranty, then you must return the woodstove to the dealer prior to use or installation, and the purchase price will be refunded.

\*\*\*\*\* Index of Sections and Illustrations \*\*\*\*\*

12/04/86

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#### BYPASS DOOR KNOB

Moving the Bypass Door Knob back opens the Bypass doors and moving the knob forward closes them.

#### CATALYST

Technically, the coating on the ceramic 'cells' of the Catalytic Combustor. See Catalytic Combustor.

#### CATALYST THERMOMETER

Installed through a hole in the top of the firebox. Monitors the combustor temperature. Temperature is an indicator of combustor performance. Indications in the 'INACTIVE' area imply that the combustor is not up to operating temperature yet. Indications above the 'active' area for any significant period of time are reason for concern. Contact your Blaze King dealer. See Catalytic Combustor definition below, operation instructions, and the troubleshooting guide for further information.

#### CATALYTIC COMBUSTOR

In this manual, referred to as 'Combustor'. A ceramic 'honeycomb' base with a catalyst coating. When operated at temperatures in the 500-1800 degree F range, it helps keep the air and the chimney clean. The Royal Hair combustor performs this function by burning the emission components in the smoke. By burning these components, which otherwise form creosote deposits in your chimney, the Royal Hair combustor also reduces the risk of a chimney fire. The combustor begins cleaning the smoke's emission components when the combustor temperatures reach approximately 500 degrees F.

#### CHIMNEY

One or more passageways, vertical or nearly so, for sending flue gases (smoke) to the outside atmosphere. The chimney must be a Masonry Chimney.

#### COMBUSTION AIR INTAKE

Located about under the front of the insert, on the centerline. Combustion air is drawn into this opening, through the thermostat 'flipper', and into the firebox. The air intake must be kept open at all times to maintain a source of combustion air.

#### FANS

Two variable speed axial fans (195 CFM each). The fans circulate room air around the firebox and back into the home.

#### FAN CONTROL KNOB

Located on the RIGHT Shroud and operates the Fan Speed Control which regulates the speed of the fans.

#### FAN SPEED CONTROL

Located in the RIGHT Shroud and operated by the Fan Control Knob. Controls the fan speed; from a warm, subtle breeze to a room-filling current of heated air.

## FIREBOX

1/4" steel lined with firebrick. The maximum length log that should be used in this firebox is 18".

## FLOOR PROTECTOR

A noncombustible floor protector is used as an extension to the hearth ONLY if the hearth extension does not cover the area 16" in FRONT of the Loading Door opening and 8" to both sides of the Loading Door opening. A floor protector is not provided with the insert.

FLOOR PROTECTION MATERIAL: 3/4" thick millboard or a Listed floor protector or a non-combustible material equal to 3/4" thick millboard having a thermal conductivity of  $K=0.84$  BTU-in/hr-sq ft-degrees F.

## FLUE CONNECTOR

USE ONLY LISTED FLUE CONNECTOR.

A metal connector which seals the flue exit from the insert to the liner of a masonry chimney. Sometimes referred to as a 'Positive Flue Connector' since it connects the two units together. The flue connector provides a path for creosote deposits that may form in the chimney to liquify, fall back into the firebox, and be consumed. The damper in the masonry chimney must be removed or blocked open to allow the installation of a flue connector. A flue connector can sometimes improve performance where the face of a fireplace is very rough and a good air-tight seal around the shroud is difficult to achieve. In this case, the flue connector only allows air to go up the chimney AFTER it has gone through the air intake, thermostat control, and firebox. A flue connector may also improve performance in very large, cold chimneys. Relining may also improve performance.

## HEARTH

The bottom of the firebox, lined with firebrick. Build the fire directly on the hearth. Also the floor area inside the opening of a fireplace.

## HEARTH EXTENSION (Floor Protector)

1. (definition) The noncombustible material applied to the combustible floor area located beneath the product (this insert) and extending beyond the front and sides and to the rear of the product.
2. A brick, masonry or similar non-combustible product built onto the area in front of the fireplace opening to prevent sparks and/or burning components from coming in contact with the combustible floor or carpet.

## MASONRY CHIMNEY

A chimney made of solid masonry units, such as bricks, stones, or reinforced Portland Cement concrete. It must be assembled on the site and be lined with suitable chimney flue liners built in accordance with applicable building code requirements.

## CHIMNEY FIRE

In the event of a fire in the chimney:

- a. Turn the thermostat to its lowest setting.
- b. Check the loading door to be sure it is tightly closed.
- c. Call the Fire Department immediately.

After the fire is out, have your chimney inspected by a certified chimney sweep. Any damaged chimney components should be replaced before the insert is used again. A masonry chimney that is damaged should be repaired or rebuilt.

Contact your Fire Department for further advice. Your family should have a prearranged plan so that each person will know what to do and will act immediately if such an emergency arises.

## SMOKE DETECTORS

Install at least one smoke detector on each floor of your home to ensure your safety. It should be located away from the woodstove and close to the sleeping areas. Locating a smoke detector too close to a woodstove can cause the smoke detector alarm to sound if a puff of smoke is emitted while the woodstove door is open during reloading. Follow the smoke detector manufacturers placement, installation, and maintenance instructions. Your local Fire Department may provide assistance in selecting smoke detectors, or contact the Consumer Product Safety Commission, Washington, D.C. 20207.

## FIRE EXTINGUISHERS

Every home should have at least one fire extinguisher. An approved "Class A-B-C" extinguisher should be mounted on the wall, near an exit and close to the hazard areas -- but not so close that accessibility to the extinguisher could be blocked by a fire. Your local fire department can advise you concerning the most appropriate location.

## BUILDING AND FIRE CODES, PERMITS, AND INSPECTIONS

The installation of this woodstove must comply with your local building and fire codes. Always contact your local Building Inspector and/or Fire Department before beginning the installation process. If required, obtain a permit before installation and have the completed installation inspected. Remember that noncompliance with building and/or fire codes may jeopardize your homeowner's insurance.

## CLEARANCES TO COMBUSTIBLE MATERIALS

For a safe installation, proper clearances to combustible materials must be observed (see page 13). Failure to follow these guidelines voids the certification and warranty, is illegal, and can result in a fire causing property damage, injury, or death. Keep combustible (burnable) materials at least as far away from the woodstove as the table on page 13 indicates. Combustible materials include items such as plasterboard or wood-paneled walls, furniture, wooden mantels, bookshelves, carpets and drapes. Also, firewood should not be stored within the specified clearances.

## FUEL

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 use.

Do not burn materials soaked in flammable liquids, trash, garbage, artificial or paper logs, plastics, gift wrappings, coal, charcoal, naphtha, chemical cleaners, chemical fire starters, treated or painted wood, driftwood, railroad ties, plywood, particle board, metal foil or foil-backed paper such as gum wrappers or cigarette packages. Burning materials other than natural wood may considerably shorten the life of the combustor and will void the six-year limited combustor warranty.

Do not burn sawdust, wood shavings or chips in this woodstove. Such materials can cause an excessively hot fire and may also impair combustor operation.

## ASH REMOVAL

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### WARNING

REMOVE ASHES ONLY WHEN THEY ARE COLD. NEVER STORE HOT ASHES IN A GARAGE OR BASEMENT. HOT ASHES WILL GENERATE CARBON MONOXIDE AND/OR FLAMMABLE GASES. THESE GASES MAY CAUSE SUFFOCATION.

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## DISPOSAL OF ASHES

Ashes should be placed in a metal container with a tight fitting lid. The closed container of ashes should be placed on a noncombustible floor or on the ground, well away from all combustible materials, pending final disposal. If the ashes are disposed of by burial in soil or otherwise locally dispersed, they should be retained in the closed container until all cinders have thoroughly cooled.

Do not store other waste in the ash container.

## CHIMNEYS

Before connecting any wood-burning unit to an existing chimney, inspect the chimney to be sure it is in good condition. There should be no cracks or holes. Often it is impossible to see these from the outside. A chimney sweep should inspect your chimney and give you an accurate assessment of its condition. The cross-sectional area must not be less than that of the 6" diameter flue collar (28.27 square inches). Relining or rebuilding may be necessary to make the chimney safe. A proper chimney is most important for safe, satisfactory operation of any wood heating system.

Inspect the chimney and flue connector (if installed) at least twice each month during the heating season. Any leak must be repaired. A chimney fire or deterioration can enlarge the hole. This will admit more air and cause exhaust gasses to condense and form creosote. Patches of creosote in your chimney indicate that such leaks are present.

If a significant amount of creosote has accumulated, it should be removed to reduce the risk of a chimney fire. (Refer to "Creosote and Soot -- Formation and Need for Removal" below).

Never intentionally start a chimney fire to clean the flue.

## CREOSOTE and SOOT -- FORMATION AND NEED FOR REMOVAL

When wood is burned slowly, it produces tar and other organic vapors which combine with expelled moisture 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.

The chimney connector and chimney should be inspected at least once each month during the heating season to determine if a creosote or soot buildup has occurred.

If creosote has accumulated, it should be removed to reduce the risk of a chimney fire.

## ICE FORMATION AND REMOVAL

Water vapor is a major component of woodstove exhaust. In cold weather, ice may form in the chimney. If the chimney is still open enough to allow adequate woodstove performance, build a hot fire in the woodstove and try to melt the ice. If this is not successful, the ice will have to be cleaned from the chimney manually. Do not continue to operate the woodstove if the chimney is plugged with ice or the ice accumulation is significantly hindering woodstove performance. If the chimney is not drawing adequately, smoke can be drawn into your home and may cause death due to smoke inhalation.

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### WARNING

WORKING ON A SNOW- OR ICE-COVERED ROOF IS EXTREMELY DANGEROUS. A CHIMNEY CAN ALSO BE DAMAGED BY IMPROPER ICE-REMOVAL METHODS. IF NECESSARY, CONTACT A CHIMNEY SWEEP FOR ASSISTANCE.

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## LOADING DOOR

Do not operate this insert with the loading door open. This insert is not designed or intended to be operated with the loading door open. Do not leave your Blaze King Royal Heir unattended when the loading door is not tightly closed, such as when starting a fire. Leaving the loading door open AFTER the fire is well started can cause premature failure of the combustor and/or overheating of the insert. Such overheating can cause the insert to warp.

Check the loading door gasket for deterioration at least twice each heating season.

## CHILDREN

Do not allow children to play near the insert or with the operating knobs. Severe burns may be inflicted by touching some of the parts of the insert and can be inflicted by opening the loading door. Train children to stay away from the insert and never leave children unattended in the room when the insert is in operation.

\*\*\*\*\* SECTION 3 - SPECIFICATIONS \*\*\*\*\*  
 ROYAL HEIR SPECIFICATIONS 11/03/86

	RHT-2250
Heat Output, BTU/Hour (Oregon DEQ) - - - - -	31,060
Wood Capacity (Approximate)	
White Oak - - - - -	45 lbs.
Fir - - - - -	30 lbs.
Recommended Wood Length - - - - -	18"
Insert Weight - With Firebrick - (Approximate) - - -	324 lbs.
Minimum Fireplace Opening	
Width - - - - -	34"
Height - - - - -	22-1/2"
Depth - - - - -	16-1/2"
Minimum Chimney Cross-Sectional Area - - - - -	28.27 Square inches
Width - - - - -	25-5/8"
Depth (in front of shroud) - - - - -	7-1/2"
Depth (behind the shroud) - - - - -	15-1/2"
Height - - - - -	21"
Door Opening Width - - - - -	14"
Door Opening Height - - - - -	9-3/4"
Shroud Width - - - - -	42"
Shroud Height - - - - -	29-3/4"
Flue Size - - - - -	6" Diameter
Fans, Variable Speed, 105 CFM each - - - - -	2
Firebox - - - - -	1/4" steel, lined with firebrick.
Glass - - - - -	Clear ceramic, tested for continuous use above 1200 degrees Fahrenheit.

Tested to U.L. 1482. Listed by Underwriters laboratories, Inc.

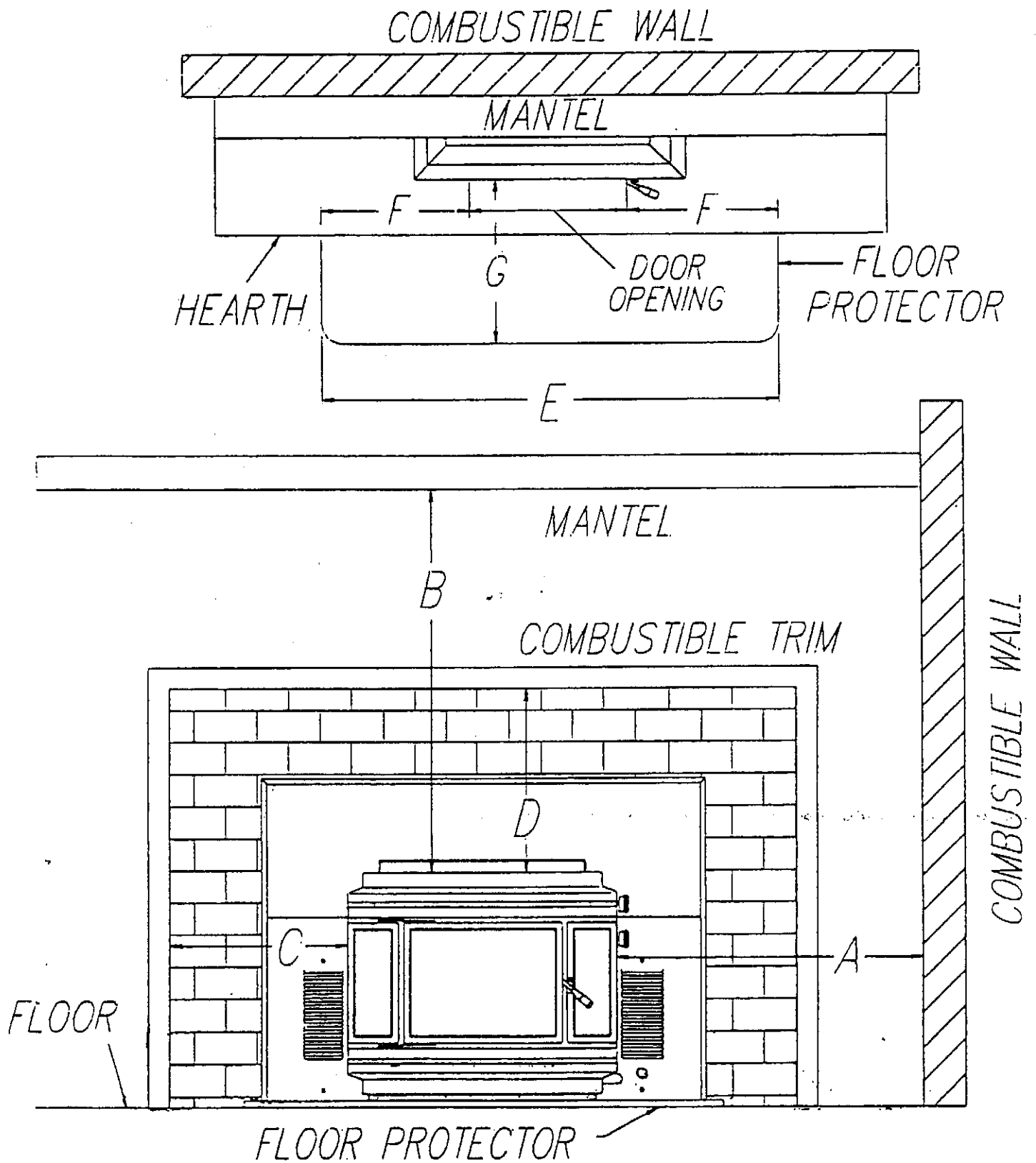


Figure A: Clearances to Combustible Materials

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 WARNING  
 FAILURE TO ALLOW THE REQUIRED CLEARANCES TO COMBUSTIBLE MATERIALS OR TO PROVIDE  
 ADEQUATE FLOOR PROTECTION CAN CAUSE A HOUSE FIRE. SUCH A FIRE CAN RESULT IN  
 DAMAGE TO PROPERTY AND SERIOUS INJURY OR DEATH.  
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ROYAL HEIR, Model RHT-2250

Minimum Clearances to Combustible (Burnable) Materials (See Fig. A)

	Standard Clearance	Reduced Clearance
A. Side Wall to Insert Side - - - - -	18"	18"
B. Mantle to Insert Top - - - - -	41"	24"
C. Combustible Trim to Insert Side - - - - -	13"	13"
D. Combustible Trim to Insert Top - - - - -	22"	20"
E. Floor Protector Width - - - - -	30"	30"
F. Floor Protector from side of Loading Door Opening - -	8"	8"
G. Floor Protector in front of Loading Door Opening - -	16"	16"

Minimum Floor Protection: 23-1/2" x 30".  
 Must extend a minimum of 16" in front of the door opening and 8" on either  
 side of the door opening. Center the insert on the width of the protection.

Floor Protection Material: 3/4" millboard or a Listed floor protector or a  
 non-combustible material equal to 3/4" thick millboard having a thermal  
 conductivity of K=0.84 BTU-in/hr-sq ft-degrees F.

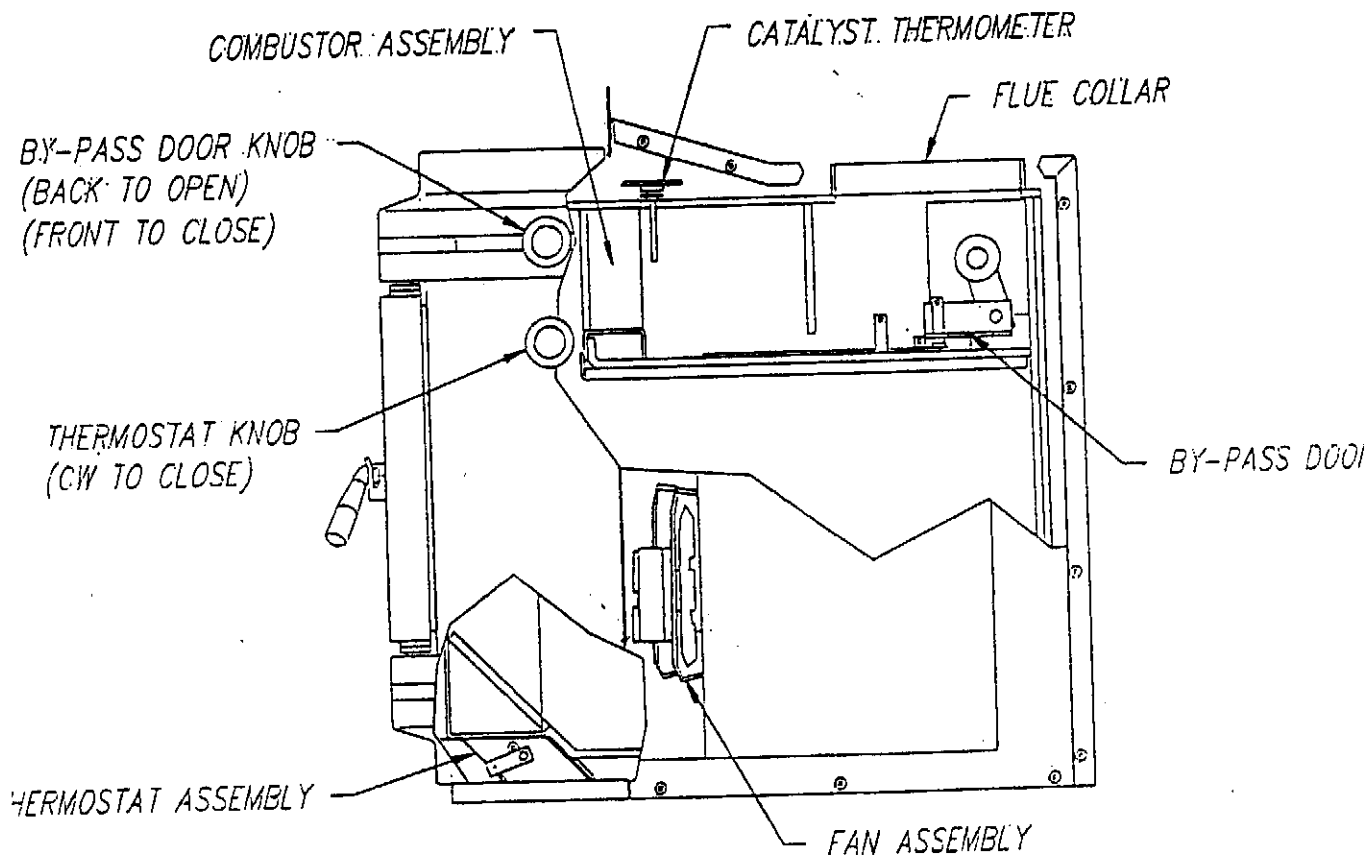


Figure B: Location of major components

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WARNING

IMPROPER ASSEMBLY AND/OR INSTALLATION OF YOUR BLAZE KING ROYAL HEIR CATALYTIC FIREPLACE INSERT, OR FAILURE TO OPERATE IT ACCORDING TO THE GUIDELINES DETAILED IN THESE INSTRUCTIONS, WILL VOID THE INSERT AND COMBUSTOR WARRANTIES, CAN CAUSE A HOUSE OR CHIMNEY FIRE, AND MAY ENDANGER YOUR FAMILY. FOR YOUR SAFETY, FOLLOW THE ASSEMBLY AND INSTALLATION INSTRUCTIONS CAREFULLY. CONTACT LOCAL BUILDING OR FIRE OFFICIALS ABOUT RESTRICTIONS AND INSTALLATION INSPECTION IN YOUR AREA.

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BEFORE PROCEEDING FURTHER, BE SURE YOU HAVE READ THE FOLLOWING:

SAFETY INFORMATION: Section 2, pages 7-10.

INSTALLATION CLEARANCE INFORMATION: Section 4, pages 12 and 13.

FLOOR PROTECTION INFORMATION: Section 4, pages 12 and 13.

INSTALLATION DIAGRAM, Figure A, page 12.

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This Fireplace Insert is Listed by Underwriters Laboratories, Inc. ONLY if: (a) it is connected to a suitable masonry fireplace, and (b) minimum clearances to combustible (buntable) materials are observed.

DO NOT CONNECT THIS UNIT TO A CHIMNEY FLUE SERVING ANOTHER APPLIANCE.  
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A-1. TOOLS NEEDED FOR INSTALLATION

If you are planning to install this Fireplace Insert yourself, you will need the tools listed below. Other tools may be needed to install a Flue Connector System. Consult the manufacturer's installation instructions for the Flue Connector.

- a. #2 Square Drive Bit (included with this Insert) - requires 1/4" driver.
- b. 1/4" Wrench, 1/4" Nutdriver, or 1/4" Socket with Handle.  
(for use with #2 Square Drive Bit, item 'a' above)
- c. 8" Adjustable (Crescent) wrench.
- d. Medium Flat Blade Screwdriver.
- e. Tape Measure.
- f. Carpenter's Level.

A-2. INSERT PLACEMENT

As you plan your installation, consider the following:

- a. Clearances to Combustible (Buntable) Materials (section 4).
- b. Electrical Power. The insert is equipped with a seven-foot electrical cord. Do not route this cord in front of this insert. See Step E-14 for more detail.
- c. Hearth Extension and its effect on the Floor Protector requirements. See Figure A, page 12.

- d. Floor Protection if Hearth Extension is not long enough to provide coverage of the area in front, and to the sides of, the insert.
- e. The possibility of needing a Flue Connector. The Flue Connector, if installed, connects the Insert exhaust and Chimney Flue Liner. (See Figure C, page 18).

### A-3. CHECK YOUR CHIMNEY

Before connecting any wood-burning unit to an existing chimney, inspect the chimney to be sure that it is in good condition. There must be no cracks or holes. The cross-sectional area must not be less than that of the 6" diam. flue collar (28.27 square inches). A proper chimney is crucial for safe, satisfactory operation of any wood heating system. Relining or rebuilding may be necessary to make the chimney safe, efficient, and in conformity with local codes.

Chimneys that have a very large cross-section (100 square inches or more) may experience some poor draft problems and may require relining to reduce the cross-section and provide a proper draft.

This is also an ideal time to clean the existing chimney. For peak efficiency, a clean chimney flue is essential. A qualified professional chimney sweep can perform both inspection and cleaning. If you choose to clean your own chimney, use the proper tools. Homemade cleaners, such as chains, may damage your chimney.

Be sure the Ash Clean-Out Door for the fireplace is closed tightly. This door may be in the wall below the fireplace, in the room below the fireplace, or outside near the ground level of the chimney. This is a frequently overlooked area that can cause severe drafting problems in insert installations.

### A-4. CHIMNEY HEIGHT AFFECTS DRAFT

Tall chimneys usually provide a strong, dependable draft. The chimney should be kept warm to enhance the draft. This will also reduce creosote accumulation caused by smoke and a condensation of water vapor. A buildup of creosote can reduce the draft and will become a potential fire hazard.

Chimney tops should NEVER be near trees or other tall objects that might cause downdrafts.

In new homes, or homes that have been weatherized and are very air-tight, exhaust fans, such as those installed in kitchens and bathrooms, can create a downdraft in a chimney when the fans are operating. Smoke may be drawn into the room, particularly when the loading door is open while the insert is being loaded. If this problem arises, open a window while the exhaust fan is being used or do not operate the exhaust fan while reloading the insert.

#### A-5. FLUE CONNECTORS

USE ONLY LISTED FLUE CONNECTORS. Refer to Fig. C, page 18.

While it is not required for insert installations in all areas of the country, a flue connector between the insert flue exit and the chimney flue liner is highly recommended. The flue connector completes a sealed connection between the insert flue exit and the bottom of the chimney liner. The damper in the masonry chimney will have to be removed or blocked open to use a flue connector. Flue connectors are available from several manufacturers. If you will install your insert using a flue connector, it must be installed before proceeding further. The flue connector generally:

- a. Keeps the chimney warmer, thus enhancing the draft and overall performance.
- b. Allows creosote which may accumulate to fall back into the insert and be consumed, rather than collecting behind, or on top of, the insert.
- b. Reduces the requirement for an air-tight fit around the shrouds.

#### A-6. INSERT APPLICATIONS

DO NOT USE THIS INSERT IN ANY ZERO CLEARANCE INSTALLATION.

In Two Story House Installations, place the insert in the lower level, if possible, for maximum heat distribution.

If you have a forced-air heating system, you can use the existing ducts and furnace fan to circulate air through the house, but DO NOT connect the Insert duct directly to the heating system ducts or any other air-distribution ducts.

DO NOT ASSEMBLE YOUR INSERT NOW. It is much easier to assemble the Insert in place than to move an assembled insert into position. Proceed to 5. INSTALLATION - ASSEMBLY, page 19.

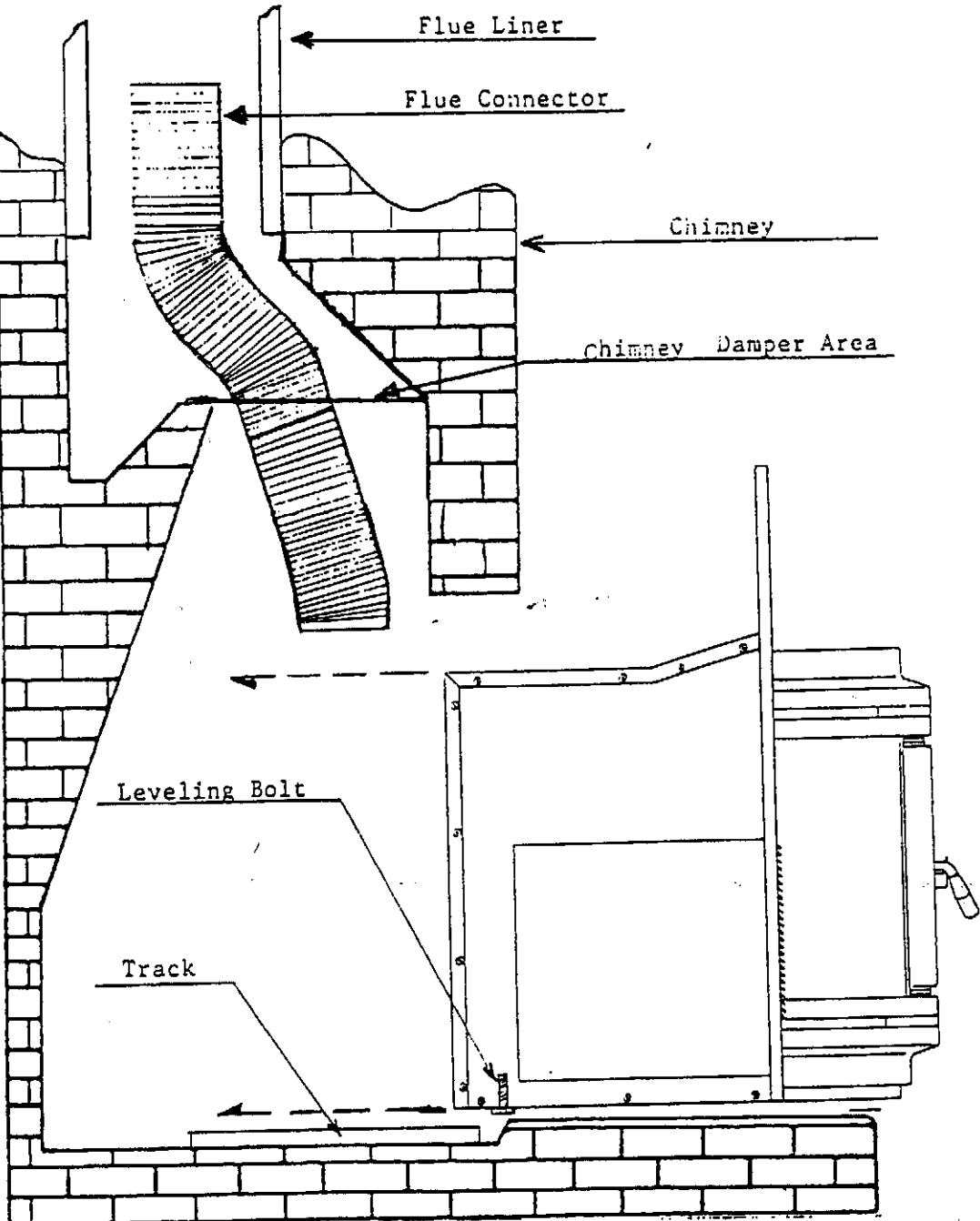


Figure C : Flue Connector Installation

\*\*\*\*\* ASSEMBLY AND INSTALLATION \*\*\*\*\*  
 B. INSERT ASSEMBLY and INSTALLATION INSTRUCTIONS

B-1. UNPACKING YOUR NEW INSERT

Before taking the insert into the house, cover the area in front of the intended installation area with something to protect the floor/carpet/etc. from any dirt or oil that might be on the pallet. Remove the box from the insert shipping pallet. Do NOT remove the insert from the pallet at this time, it provides a much better gripping and lifting area than the insert itself.

B-2. Remove all items packed in the firebox - - trim kit, brick box, etc..

IF YOU HAVE NOT ALREADY DONE SO, PLEASE TAKE A FEW MINUTES TO COMPLETE THE WARRANTY CARDS FOUND IN THE FIREBOX AND MAIL THEM TODAY.

B-3. BLAZE KING Stoves and Inserts are known for their quality materials and construction. However, no one is perfect and mistakes occasionally occur. Inspect all parts for damage due to shipping and to be sure that all needed parts are enclosed. If you discover a part is missing or damaged, contact your dealer immediately for replacement or repair. Refer to the part number listed here and the model and serial numbers of your insert (see the tag under the removeable panel on the top of the insert).

Quantity	Item	Part Number
1	Firebox Assembly (with fans installed)	----
2	1/4" x 3/4" Sheet Metal Screw	0106
2	1/2-13 x 1-1/2" Levelling Bolts	0140
24"	5/8" Basket Rope	0182
10 ft.	Fiberglass Shroud Insulation	0193
* 10	#10 x 1/2" Square Drive Screw	0295
* 1	7/16" Teflon Washer	0492
1	#2 Square Drive Bit	0509
2	Tracks	3708
1	Insert Top Panel	3720
* 4	Rear Corner Clips	3771
* 4	Front Corner Clips	3873
* 1	Loading Door Assembly	3205
* 1	Loading Door Handle Assembly	3006
* 1	Left Side Panel Window Assembly (#)	3108
* 1	Right Side Panel Window Assembly (#)	3109
1	Box of Firebrick	3135
1	Top Shroud Assembly	3202
1	Left Side Shroud Assembly	3203
1	Right Side Shroud Assembly	3204

\* These items may already be installed.

# Check with your dealer for available glass side panel patterns.

#### B-4. REMOVAL FROM THE SHIPPING PALLET

The insert assembly is mounted to the shipping pallet and weighs approximately 324 pounds. With plenty of assistance, set the insert and pallet near the intended installation area.

- a. To remove the insert assembly, reach under the pallet and remove the two 1/4" x 2" screws and washers that hold the unit to the pallet. Discard the screws but retain the washers.
- b. Tilt it back and install two 1/4" x 3/4" sheet metal screws, with the washers removed above, in the holes which held the insert to the shipping pallet.
- c. Install the two 1/2-13 x 1-1/2" long adjusting bolts on the back corners of the insert. These will be used to level the insert by adjusting the height of the back for a lower hearth in the fireplace. NOTE: If the hearth of the fireplace is very low, longer leveling bolts may be required and they may have to be installed AFTER the insert is placed part way into the fireplace.
- d. Remember, the insert weighs approximately 324 pounds and may be hard to grip when it is removed from the pallet. With plenty of assistance, lift the firebox assembly off the pallet and carefully set it in position on the hearth extension.

#### B-5. INSTALLATION TRACKS

Place the installation tracks in position on the Fireplace Hearth (the floor of the fireplace). Place the insert about half way into the fireplace. Extend the Adjusting Bolts into the tracks. Tighten the lock nuts.

#### B-6. LOADING DOOR ASSEMBLY

If the loading door, door handle, side panel windows and corner clips have not been installed, continue to the following procedure. If they have been installed, proceed to step B-8.

---

#### WARNING

FAILURE TO PROPERLY INSTALL THE LOADING DOOR AND DOOR HANDLE ASSEMBLY AS DESCRIBED BELOW WILL VOID THE INSERT'S U.L. LISTING AND THE INSERT AND COMBUSTOR WARRANTIES AND CAN CAUSE EXCESSIVELY HIGH STOVE TEMPERATURES, WARPAGE OF THE FIREBOX, AND A HOUSE FIRE.

---

- a. Loosen, but DO NOT REMOVE the two #10 x 3/4" round head screws in the underside of the top left corner of the insert top. This will allow the top pivot pin to move UP far enough to get the top door hinge into position. The top pivot pin is mounted in a slotted opening to allow adjustment of the door.

- b. Place the 7/16" TEFLON washer from the trim pack on the lower pivot pin. Place the hole for the door's lower hinge over the lower pivot pin.
- c. Hold the top pivot pin UP and swing the door's top hinge into position. Allow the top pivot pin to drop into the hole in the door's top hinge.
- d. Tighten the two #10 x 3/4" round head screws until they are just tight enough to hold the pin in position so an alignment evaluation can be made.
- e. Close the door and observe the alignment of the top of the door frame compared with the top of the insert. Move the pivot pin right or left as required to align. Tighten the two round head screws to hold the pivot pin in that location.
- f. Install the right and left side panel windows with four #10 x 1/2" square drive screws provided. DO NOT tighten the screws at this time. The mounting for these windows is a slot with enough adjustment space to allow you to align the window with the sides of the insert and the top edge of the door frame. When the alignment is correct, tighten the screws to hold the windows in place.
- g. Remove the handle bracket on the right side of the door frame and insert the machined surface of the steel door handle in the appropriate opening. Remount the handle bracket to the right side of the door frame.
- h. Check the fit of the door gasket by inserting a piece of paper into the door opening and closing and latching the door. Obvious resistance should be felt when pulling the paper out. Repeat this check several times around the perimeter of the door. If the gasket does not seal, remove and reinstall it. See Section 7, page 33, for gasket installation instructions.

#### B-7. CORNER CLIPS

If they are not already installed, the corner clips are in the package of items that came with the glass door box. The symmetrical clips are for the front corners and are pushed on. Place your index fingers at opposite ends of the clip and thumbs at the center. Gently spread the clip just enough to clear the porcelain and snap it into place. The small clips are for the back corners and should be installed by placing the front bend in the air opening and rotating the clip toward the firebox until it snaps into place. It is held in place by its own tension as well as the shroud (when installed).

## B-8. SHROUD ASSEMBLY

Assemble the shrouds to the insert with two #10 x 1/2" Square Drive Screws in each panel. Mount the sides first but do not tighten the screws yet. Mount the top shroud, center it on top of the insert, and tighten the mounting screws. Be sure the alignment clips on the back of the shroud hook over the structural flanges to keep them straight. Align the side shrouds to the top shroud and tighten the screws. Refer to Figure D.

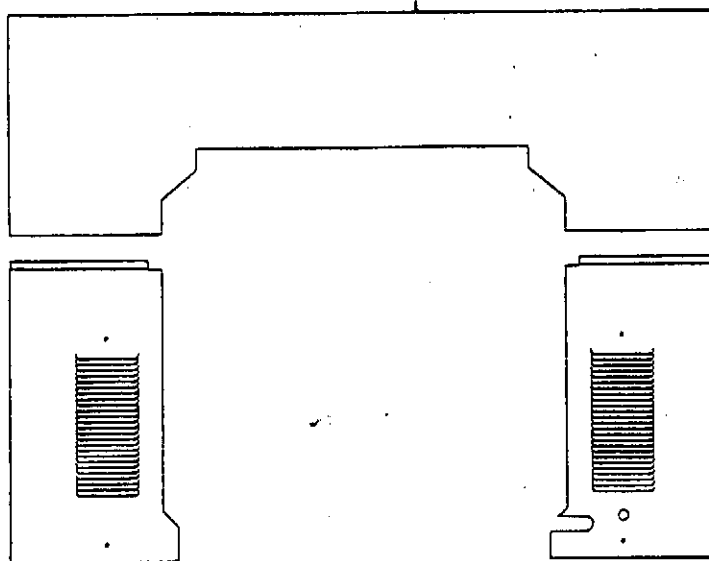


Figure D - Shroud assembly

## MANTLE HEAT SHIELD

If a Mantle Heat Shield is needed, use Woodcutters part # 6730. Slip it over the top flange of the shroud, center it on the insert, and tighten the set screw on each end of the shield. Use REDUCED CLEARANCE installation figures in Sect. 4, page 13.

## B-9. SHROUD INSULATION

The insulation which is furnished with the insert must be placed around the entire perimeter of the back of the shroud to form an air-tight seal between the shroud and the fireplace face. Using a high temperature silicone sealant such as "G.E. Silicone Sealant" or the equivalent, run a small bead about 1" in from the edge of the shroud, around the entire outer perimeter of the back of the shroud (refer to Figure E). Apply the insulating material just in from the edge of the shroud, sticking it to the silicone sealant. Allow no gaps or skips. A complete seal must be obtained between the shroud and the fireplace face or the insert will not obtain combustion air properly. This can cause smoking, and inefficient burning conditions among other problems. When the insulation application is complete, push the insert back into the fireplace until the insulation forms a good seal against the fireplace face. Install the 24" length of 5/8" fiberglass rope under the front of the insert. Use the entire length, do not stretch it or cut it any shorter. With a ruler or similar device, press it back against the rail running across the bottom of the insert, just behind the air intake (about 6" from the front of the insert). BE SURE THE 5/8" ROPE DOES NOT BLOCK THE AIR INTAKE IN ANY WAY. This will complete the seal around the insert. Install the Brass Trim (Optional) around the perimeter of the shroud.

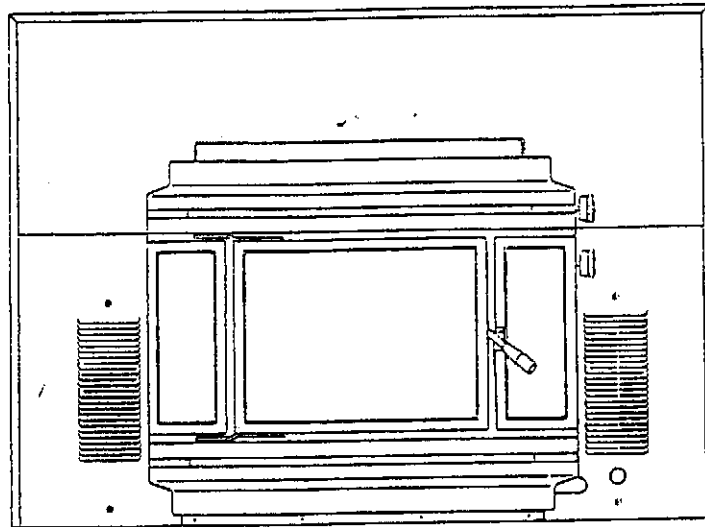


Figure E - Shroud Insulation

## B-10. FIREBRICK

The firebricks are packed in a separate box (removed from the firebox in step B-2). The brick must be installed in the Royal Heir's firebox BEFORE the first fire is built. Refer to Fig. F, for the shape, size, and position of the various bricks.

### Parts required:

7 "A" Brick	4-1/2" x 9"
3 "B" Brick	4-1/2" x 6-1/2"
1 "C" Brick	4-1/2" x 9" with one side cut at an angle.
1 "D" Brick	4-1/2" x 4-1/2" with one side cut at an angle.
2 "E" Brick	4-1/2" x 5-3/4" with one cut-off corner.

- a. Install the "A" and "E" bricks along the sides of the firebox. Be sure the two "E" bricks are placed with the angle cuts toward the front with the cut DOWN.
- b. Install the "A" bricks at the back
- c. Install the floor bricks with the long sides parallel to the back of the firebox. Note that the "A" and "B" bricks are alternated to reduce the possibility of unacceptably large gaps between the brick.
- d. Install the "C" and "D" bricks across the front of the firebox.

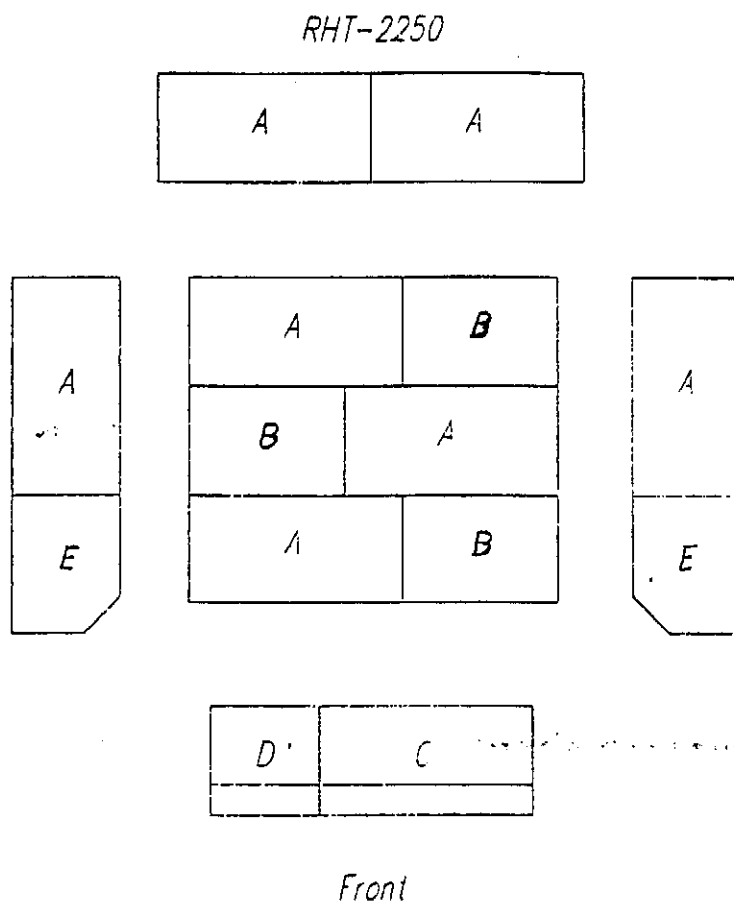


Figure F - Brick position and shapes

#### B-11. CHECK THE COMBUSTOR

Remove the catalytic combustor's cardboard retainer, located just above the inside of the loading door. Do not worry if some cardboard sticks in the insert. It will burn out with the first fire. Check the combustor to be sure it is seated squarely in the housing.

#### B-12. RECHECK ALL CLEARANCES

#### B-13. FLOOR PROTECTION

Floor protection is required if the Hearth Extension does not provide the coverage required in Figure A, page 12. If Floor Protection is required, be sure it does NOT cover the 1/2" high x 21" wide combustion air intake opening under the front of the insert.

#### B-14. ELECTRICAL CONNECTION

Your insert is equipped with a three-prong (grounded) plug to decrease shock hazard. THIS PLUG SHOULD BE INSERTED DIRECTLY INTO A PROPERLY GROUNDED, THREE-HOLE RECEPTACLE. DO NOT CUT OR REMOVE THE GROUNDING PRONG FROM THIS PLUG. Do not route the power cord in front of this insert.

#### 15. INSERT INSPECTION

We recommend that your insert installation be inspected by your building inspector or fire department official. In some areas, this inspection is required by law.

\*\*\*\*\* SECTION 6 - OPERATION \*\*\*\*\*  
OPERATION INSTRUCTIONS 12/04/86

Your insert's performance (including its efficiency, pollutant emission level and serviceable lifetime) depends largely on how it is operated. You, then, are the most important factor affecting performance. Read these operation instructions carefully.

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BEFORE PROCEEDING FURTHER, be sure you have read the following sections:

SAFETY INFORMATION: Section 2, pages 7-10.  
INSTALLATION CLEARANCE INFORMATION: Section 4, pages 12 and 13.  
FLOOR PROTECTION INFORMATION: Section 4, pages 12 and 13.

-----  
WARNING - PROVIDE ADEQUATE AIR CIRCULATION

In extremely tight houses, it is essential that a source of fresh air for combustion be provided at all times when this woodstove is in operation. A partially open window near the woodstove should be adequate.

-----  
NEVER USE A GRATE IN THIS WOODSTOVE.

Never use a grate or other method of supporting the firewood in this woodstove. Build the fire directly on the firebox hearth bricks.

FUEL

THIS WOODSTOVE IS FOR USE WITH SOLID WOOD FUEL ONLY. 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 USE.

When selecting wood for a catalytic woodstove, it is preferable that you not use extremely dry or small pieces of wood. Dry or small pieces of fuel will release too many volatiles early in the burn and flood the combustor, keeping it from reaching the clean burn stage. In extreme cases, the combustor may not reach clean burn for up to three hours. Extremely wet wood, or freshly cut wood, may not burn well enough to get the combustor to operating temperature at all. There is no problem with mixing the very wet and very dry wood together to achieve good performance. The wood for the Royal Heir Insert should be cut to lengths that are not more than 18" long.

## STARTING A FIRE IN YOUR ROYAL HEIR.

### 1. INITIAL START-UP.

#### a. SET THE THERMOSTAT KNOB.

Turn knob in the direction of the arrow, to the warmest setting, see Figure G. As the insert warms up, the thermostat MUST be adjusted to a warmer setting. This adjustment will have to be made about 5 minutes after lighting the fire.

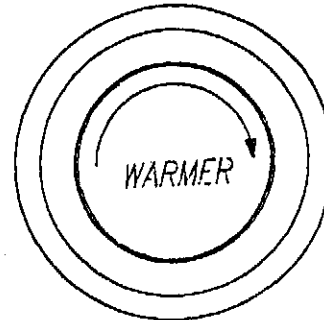


Figure G Thermostat Decal

#### b. OPENING THE LOADING DOOR.

Open the ByPass by sliding the ByPass Knob toward the back of the insert. Now open the Loading Door by rotating the loading door handle counter-clockwise (up) to release the door latch.

#### c. STARTING THE FIRE

Place several balls of newspaper near the FRONT of the firebox and put a fairly large quantity of kindling on top of the paper. Next, lay two or three pieces of wood on top of the kindling. Load the wood in a front-to-back orientation with the ends of the logs toward the front and back of the insert. Light the paper, partially close the Loading Door so that the latch touches the insert, but do not latch it. Allow the Kindling and most of the larger logs to get started, then latch the Loading Door. Close the ByPass by pulling the ByPass Knob toward the front of the insert. If you close the loading door too soon, a new fire may go out. NEVER LEAVE ANY WOODSTOVE UNATTENDED WHEN THE DOORS ARE NOT TIGHTLY CLOSED!

The first fire should be long and medium-hot to cure as much of the firebox paint as possible.

#### d. LOADING THE FIREBOX

When the larger wood pieces are well started, adjust the thermostat to the warmest setting, open the ByPass, then open the Loading Door and completely load the firebox. Close and latch the Loading Door. Close the ByPass. Do not abuse the glass door by slamming it or striking it. Do not force the door closed if there is wood in the firebox that is obstructing it. The best efficiency is obtained when the firebox is fully loaded and left to burn for the longest possible time undisturbed.

When the Combustor Thermometer indicates that the combustor is operating in the 'Active' area, you may adjust the thermostat in small increments to achieve the desired room temperature. See Thermostat Adjustments below.

#### e. FAN OPERATION

Once the insert is warm, you can turn on the fans to begin circulating the warm air into the room.

### 2. THERMOSTAT ADJUSTMENT - OPTIMUM SETTING AFTER LOADING OR RELOADING

#### a. THERMOSTAT POSITION

Leave the thermostat in the fully open position (the warmest setting) for at least fifteen minutes or until the catalyst thermometer indicates that the combustor is active (whichever is longer) before making further adjustments. IF AT ANY TIME THE CATALYST THERMOMETER INDICATES THAT THE CATALYTIC COMBUSTOR IS INACTIVE (Except at the very end of a burn period, just before reloading), CREOSOTE FORMATION CAN OCCUR IN THE CHIMNEY AND CAN ALSO PLUG THE COMBUSTOR.

#### b. TEMPERATURE ADJUSTMENTS

Adjustments to achieve the desired room temperature should be made in small increments for the most effective clean-burning operation. Even a small change may increase emissions slightly for 10-15 minutes.

Changes should be made as few times each day as possible. The combustor temperature will begin to rise as the fire intensity builds up and moisture is driven from the wood. Do not confuse Catalyst Thermometer temperature with Insert Temperature. As emission components are released from the wood as it burns, the combustor temperature may indicate large changes. The actual insert temperature may not change appreciably during these brief periods. This is normal and should not require any thermostat adjustment.

#### c. THERMOSTAT TAMPERING

The thermostat is adjusted at the factory and should not be tampered with. If the thermostat breaks, the air intake will close automatically.

### 3. RELOADING THE FIREBOX

#### a. MAINTAINING AN EFFICIENT FIRE

A bed of hot coals is the most important requirement for keeping an efficient fire. A bed of hot coals will help the insert maintain a more even temperature as well as getting the new load of wood started easily. Let each full load burn down to a coal bed before reloading. Many new woodstove users hesitate to load enough wood to sustain a fire fearing that a full woodstove automatically means a hot fire. This is not true with the Royal Heir catalytic insert. The automatic thermostat permits a low fire even with the firebox full.

Frequent reloading will cause major fluctuations in the firebox temperature and the wood/air mixture, thereby reducing combustor efficiency. At each reloading, load the insert fully, because every time the door is opened, more creosote is deposited in the chimney. Four or five 5" to 6" diameter logs may burn up to 12 hours. This will vary considerably for many reasons, including type of wood, how well the wood is "seasoned", the thermostat setting, the position of the insert in the house, and how well the house is insulated.

- b. SET the THERMOSTAT KNOB to the warmest setting.
- c. OPEN the BYPASS DOOR
- d. OPEN the LOADING DOOR

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#### WARNING

ALWAYS OPEN THE BYPASS BEFORE OPENING THE LOADING DOOR. IF THE LOADING DOOR IS OPENED WHEN THE BYPASS IS CLOSED, THE SUDDEN INTRODUCTION OF AIR CAN CAUSE THE FIRE TO FLARE AND DISCHARGE SMOKE AND FLAME INTO THE ROOM. SUCH A DISCHARGE CAN BURN PERSONS WHO ARE NEAR THE WOODSTOVE.

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#### e. LOAD THE FIREBOX

FULLY LOAD THE FIREBOX. Put the wood in the firebox in a front-to-back orientation with the ends of the logs pointing toward the FRONT and BACK of the insert. The firebox will accept logs up to 18".

#### f. CLOSE THE LOADING DOOR

Close the Loading Door and latch it. Close the ByPass Door. Do not abuse the glass door by slamming it or striking it. Do not force the door closed if there is wood in the firebox that is obstructing it.

#### g. THERMOSTAT ADJUSTMENT

Leave the thermostat in the fully open position (the warmest setting) for at least fifteen minutes or until the catalyst thermometer indicates that the combustor is active (whichever is longer) before making further adjustments. If the Combustor Thermometer does not reach the 'Active' temperature, see TROUBLESHOOTING, Section 9.

## ASH DISPOSAL

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### WARNING

REMOVE ASHES ONLY WHEN THEY ARE COLD. NEVER STORE HOT ASHES IN A GARAGE OR BASEMENT. HOT ASHES WILL GENERATE CARBON MONOXIDE AND/OR FLAMMABLE GASES. THESE GASES MAY CAUSE SUFFOCATION.

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The ashes must be removed any time they come within one inch of the door's lower sill. A thick bed of ashes will significantly limit the amount of wood you can get in the firebox. Wood burns best in a bed of ashes 1/2 inch to one inch thick. It is not necessary or advisable to completely remove all of the ashes when cleaning the insert.

### DISPOSAL OF ASHES

Ashes should be placed in a steel container with a tight-fitting lid. Do not place other waste in this container. The closed container of ashes should be placed outdoors on a noncombustible floor, or on the ground, well away from all combustible materials, pending final disposal. If the ashes are disposed of by burial in soil or otherwise dispersed, they should be retained in the closed container until all cinders have thoroughly cooled.

#### AUTHORIZED SERVICE REPRESENTATIVE

Your local BLAZE KING dealer is your authorized service representative. Should you have any problems with operating or maintaining your BLAZE KING Royal Heir Catalytic Fireplace Insert (insert), contact him as soon as possible. The dealer will help you solve operating problems, provide replacement parts, and/or arrange warranty service repairs as required. Dealers will need information such as model, serial number, date of purchase, and a summary of the problem.

#### CREOSOTE and SOOT -- FORMATION AND NEED FOR REMOVAL

##### FORMATION

1. When wood is burned slowly, it produces tar and other organic vapors which combine with expelled moisture 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.
2. The design of this combustor-equipped woodstove should reduce the accumulation of creosote to a very low level if the woodstove is operated properly (see Operation Instructions, Section 6, page 26). The catalytic combustor burns the smoke, burning most of the matter that would otherwise be deposited on the flue lining. Even so, some creosote will eventually accumulate and must be dealt with. The frequency of start-up operations and the temperatures at which the woodstove is usually operated will affect the rate of accumulation. If significant creosote buildup occurs, re-examine your fire-building and burning procedures. Consult the troubleshooting guide at the end of these instructions.

##### REMOVAL

1. The chimney connector and chimney should be inspected at least once each month during the heating season to determine if a creosote or soot buildup has occurred.
2. If creosote has accumulated, it should be removed to reduce the risk of a chimney fire. Hire a chimney sweep, or clean the chimney yourself with a tight-fitting chimney brush. Makeshift equipment - hoses, tire chains, etc. - can damage the flue and/or do an unsatisfactory cleaning job. The insert and the fireplace chamber should be inspected at this time and cleaned if needed.

3. To inspect the fireplace chamber and the insert, remove the shrouds. If a flue connector is installed, there should be no creosote buildup in the fireplace chamber around the insert. If cleaning is needed, move the insert out from the fireplace. Clean the chamber inside the insert, immediately below the flue exit, with a vacuum cleaner. Remove as much creosote and fly ash as possible from the area around the Bypass. Accumulation of creosote and ash in the heat exchanger chamber can interfere with the operation of the Bypass. It can also insulate the insert heat exchange area, thus causing the insert heat output to gradually diminish.
4. While the shrouds are off, this is a good time to clean off the fan blades and clean the area around the inside of the fireplace chamber as well.
5. Re-install the insert. Refer to Installation, Section 5, pages 22 and 23.

#### CATALYTIC COMBUSTOR INSPECTION

The combustor should be inspected at least once each year. DO NOT REMOVE THE COMBUSTOR. The combustor may have some stress cracks. These do NOT affect the combustor performance as long as it is not disturbed. The combustor is usually cleaned simply by burning the insert at a fairly high COMBUSTOR TEMPERATURE. In many installations, a coating of light fly ash will coat the combustor face and reduce its efficiency. If it is to be cleaned, clean the combustor by using a vacuum cleaner with a VERY soft brush. DO NOT scrape the combustor or clean it with a wire brush. DO NOT use detergents or solvents to clean the combustor. If the combustor needs to be removed, proceed as follows:

#### REPLACING THE COMBUSTOR

1. If the combustor is removed, replace it only with Blaze King part no. 6500. To remove the combustor, proceed as follows:

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- - - NOTE - - -

If the used combustor is to be re-installed, be sure you have a replacement combustor seal gasket. The insulating material (part no. 6588) used for the combustor gasket can be obtained from your Blaze King dealer. Wrap the gasket around the combustor band and use masking tape to tape the back-edges of the gasket to the combustor band. This will facilitate inserting the assembly into the opening. Any tape that overlaps the back of the combustor will burn off. If the combustor is replaced without a new gasket, inefficient operation will result, with a subsequent increase in creosote buildup, which may cause a chimney fire.  
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2. Allow the fire to burn out and the insert to cool down.
3. Reach up through the open loading door and carefully pry (with a screwdriver) behind the stainless steel edging around the combustor. Pull the combustor forward and remove it. This may not be easy, primarily because the insulating material will have expanded.
4. Clean the chamber behind the combustor and the opening where the combustor sets.
5. Hold the combustor assembly with the flanges toward the FRONT, and the insulating material on the outside of the band. (This insulating material will expand when heated and will seal the combustor in place). Push the combustor into the combustor opening, taking care not to destroy the gasket. Make sure it is fully inserted into the opening. DO NOT HANDLE THE COMBUSTOR ASSEMBLY ANY MORE THAN NECESSARY FOR INSTALLATION.
6. Wash your hands with soap and water after handling the combustor.

#### LOADING DOOR GASKET MAINTENANCE

Safe and efficient operation of any airtight woodstove depends greatly on the integrity of the gaskets. Check the loading door gasket at the beginning of the heating season and at least twice during the heating season. When the gasket is frayed or no longer seals, it must be replaced (see your dealer for part no. 0182). Inspect the gasket for physical deterioration, missing sections or obvious leakage. To check the gasket further, insert a piece of paper into the door opening and close and latch the door. Obvious resistance should be felt when pulling the paper out. Repeat this check several times around the perimeter of the door.

#### REPLACING THE DOOR GASKET

1. If the door gasket is to be replaced, be sure you have a replacement part (#0182) ready to re-install. See your Blaze King dealer.
2. Be sure the fire is out and the insert has cooled down. The door does not have to be removed from the insert.
3. With a pair of pliers, pull the old door gasket out of the channel and dispose of it.
4. Clean out the channel so the new gasket can fit smoothly.
5. Run a small bead of a high temperature silicone adhesive (such as G.E. Silicone Sealer, or the equivalent) along the center of the channel.
6. Start the new gasket in the lower right corner. Do not stretch or cut the gasket. Distribute the gasket evenly around the frame.
7. Close the Loading door and allow the adhesive to dry.

Section 7

## FAN ASSEMBLY REMOVAL AND REPLACEMENT

Routine maintenance of the fan assemblies in the side shrouds is not required. However, if you need access to the components for replacement of motors, fan speed control, etc., follow this procedure:

1. Unplug the power cord from the wall outlet.
2. Remove the two #10 x 1/2" square drive sheet metal screws holding the top shroud in place. Retain these screws. Remove the top shroud.
3. If removal of the RIGHT SHROUD is required for access to the RIGHT Motor or the Motor Speed Control, proceed as follows. If not, proceed to #4 now.
  - a. Remove the Fan Speed Control Knob by pulling straight out from the shroud.
  - b. Remove the two #10 x 1/2" square drive sheet metal screws holding the RIGHT shroud in place. Retain these screws. Remove the RIGHT shroud.
  - c. If replacement of the power cord (P/N 1712) is required, remove the 1/4" x 3/4" SEMS hex-head sheet metal screw holding the ground wire to the fan assembly frame. Retain this screw. Disconnect the power leads. Remove the strain relief. Remove the cord assembly. Replace the power cord and install the strain relief. Connect the power leads and reconnect the GREEN ground wire with the 1/4" x 3/4" SEMS Screw.
  - d. If replacement of the Fan Speed Control rheostat is required, disconnect the rheostat wires. Remove the nut from the rheostat shaft and remove the rheostat. Install the new rheostat, ensuring that the alignment tab fits into the small hole in the assembly frame. Tighten the mounting nut and reconnect the wires.
  - e. If replacement of the fan motor is required, proceed to #5.
4. If only removal of the LEFT SHROUD is required, remove the two #10 x 1/2" square drive sheet metal screws holding the LEFT shroud in place. Retain these screws. Remove the LEFT shroud.
5. (Is the entire assembly to be replaced?) If removal of a fan motor is required, disconnect the power leads and remove the four #10 x 1/2" square drive sheet metal screws holding the fan in the housing. Save these screws. Remove the fan motor. Install the new fan motor with the four #10 x 1/2" square drive sheet metal screws. Reconnect the power leads.
6. Install the side shroud (s) with the #10 x 1/2" Square Drive Screws.
7. Install the Top Shroud with the two #10 x 1/2" Square Drive Screws. Be sure the alignment brackets engage the structural flanges on the back side of the shrouds. Be sure the Shroud Insulating material has not been damaged or the insert may experience some drafting problems.
8. Carefully reinstall the rheostat knob.
9. Plug the power cord into a properly grounded receptacle and test the new fans and the fan control.

## CLEANING THE GLASS

While the glass may coat during a low (overnight) burn, turning the thermostat to the warmest setting after reloading each morning will usually allow the glass to clean. Heavier deposits may require hand cleaning. Manual glass cleaning should be done when the insert and glass are cool. DO NOT CLEAN THE GLASS WHILE IT IS HOT. Use a soft cloth and Blaze King Glass Cleaner, available from most Blaze King dealers. Other NONABRASIVE household cleaners may also work. After using any cleaner, thoroughly rinse the glass with water to remove any deposits left by the cleaner. Failure to remove all traces of glass cleaner will result in the glass cleaner residue baking on. This residue will be very difficult to remove.

## LOADING DOOR GLASS REPLACEMENT

BLAZE KING's Royal Heir Insert is equipped with a door which uses a strong, heat-resistant ceramic glass intended to withstand extremely high temperatures. However, this glass can be broken through improper use. If glass replacement becomes necessary, use only Blaze King part no. 1741. DO NOT SUBSTITUTE ANY OTHER MATERIAL FOR THIS PURPOSE.

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### WARNING

BROKEN DOOR GLASS IS SHARP. ALWAYS WEAR EYE PROTECTION AND PROTECTIVE GLOVES WHEN HANDLING GLASS. DISCARD THE GLASS IN A CLOSED CONTAINER INACCESSIBLE TO CHILDREN.

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1. Allow the fire to completely burn out and the insert to cool down.
2. Retain all parts for re-installation.
3. Remove the two #10 x 1/2" square drive screws holding the left side panel window assembly to the insert. (This assembly must be removed to gain access to the door frame screws on the left side of the door.) These screws are located in the center (top and bottom) of the window frame. Remove the side panel window assembly.
4. While the door is still closed, remove the two 6-32 x 3/16" round head screws on the left side of the loading door.
5. Open the door and remove the two 6-32 x 3/16" screws holding the door handle bracket on the right edge of the door. Mark the inner door frame so it can be reinstalled in the same direction. Remove the remaining 6-32 x 3/16" screws from the frame.
6. Remove the damaged glass and the old glass gasket.

Section 7

7. The replacement glass should have the gasket installed on it's outer perimeter. Place the glass in the door frame. Be sure the "Blaze King" etched in the glass reads correctly when the door is closed.
8. Install the inner door frame with the 6-32 x 3/16" round head screws. Do not tighten the screws at this time.
9. Install the door handle bracket and tighten all 6-32 x 3/16" screws.
10. Install the left side panel window assembly with the two #10 x 1/2" square drive screws.
11. Check the fit of the door gasket. Insert a piece of paper into the door opening and close and latch the door. Obvious resistance should be felt when pulling the paper out. Repeat this check several times around the perimeter of the door.

#### SIDE WINDOW GLASS REPLACEMENT

The side panel windows are specially made to withstand high temperatures. If replacement becomes necessary, use only Blaze King part no. 1742. DO NOT SUBSTITUTE ANY OTHER MATERIAL FOR THIS PURPOSE.

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#### WARNING

BROKEN DOOR GLASS IS SHARP. ALWAYS WEAR EYE PROTECTION AND PROTECTIVE GLOVES WHEN HANDLING GLASS. DISCARD THE GLASS IN A CLOSED CONTAINER INACCESSIBLE TO CHILDREN.

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1. Remove the two #10 x 1/2" square drive screws holding the broken side panel window assembly to the insert. These screws are located above and below each window. Remove the side panel window assembly.
2. Remove the two 6-32 x 3/16" screws on each side of the window frame. Remove the window frame.
3. Remove the broken glass and the old gasket.
4. The replacement glass should have the gasket already installed around the perimeter. Place the glass in the window frame.
5. Reassemble the window frame with the four 6-32 x 3/16" screws removed in step 2 above.
6. Place the window frame back on the insert and secure with the two #10 x 1/2" square drive screws removed in step 1. Be sure it is aligned before tightening the screws.

#### 4. CHIMNEY DRAFTS

If you suspect a draft problem in an existing chimney, determine the draft by using a water manometer (draft gauge). The draft should be measured with the insert at medium burn. After the measurement is completed, fill any holes that were made to take the reading. The draft should measure between .02" and .10" of water. If the draft is outside these limits, the insert may not operate properly. Drafts below .02" will cause excessive smoke spillage, incomplete combustion and fire start-up problems. Drafts above .10" may cause premature failure of the combustor. A draft near the upper limit will contribute to the door glass staying clean. CONSISTANT USE OF DRAFTS HIGHER THAN .10" MAY NEGATE YOUR CATALYTIC COMBUSTOR WARRANTY.

\*\*\*\*\* SECTION 8 - Replacement Parts \*\*\*\*\*  
 REPLACEMENT PARTS for RHT-2250 12/04/86

Listed below are some of the more common replacement parts.

ITEM	PART #	NOTES
1/4" x 3/4" Sheet Metal Screw	0106	
1/4" Flat Washer	0145	
Door Gasket	0182	
BLAZE KING Catalytic Thermometer	0342	
Door Handle	0481	
Rheostat Knob	0498	
Power Cord Assembly	1712	
Fan Speed Control Rheostat Assembly	1717	
RHT-2250 Motor Assembly	1740	
RHT-2200/2250 Door Glass Assembly	1741	
RHT-2200/2250 Window Glass Assembly	1742	Specify Glass Panel Pattern (Contact your Blaze King Dealer)
RHT Thermostat Label	1930	Use with #8014
RHT By-Pass Knob Label	1931	Use with #8014
RHT Fan Speed Control Knob Label	1932	
RHT Combustor Assembly (RHT-2250)	6500	
RHT Combustor Seat Gasket	6588	
Mantel Shield	6730	
Control Knob Assembly	8014	Thermostat or By-Pass Knob

Your Blaze King Royal Heir is designed to allow a wide selection of heat output levels. If you begin to lose control of the amount of heat the insert is emitting, determine the problem early so that major problems can be avoided.

The five major needs of a well-controlled fire are:

1. Knowledgeable operator.
2. Adequate air supply.
3. Firewood of good quality and proper size.
4. Combustor in good condition.
5. Clean chimney, properly sized and installed.

Considering all of the above, number one is the most important for the safe and efficient operation of any woodstove. Please study the operation instructions carefully (Section 6, page 26). Consult your BLAZE KING dealer or call the Customer Service Department at Woodcutters Mfg., Inc. (509-529-9820) if you have any questions not answered in this manual.

All of the five above-mentioned needs are interrelated. A deficiency in any one will effect all of the others. If you encounter a problem, determine the source of the problem and then follow-up by checking the other needs for possible problems.

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 PROBLEM: Chimney fire.

CAUSE	SOLUTION
Act immediately regardless of cause.	Turn thermostat to lowest setting, check loading door to be sure it is tightly closed. Call Fire Department.

After the fire is out, have your chimney and flue connector inspected by a certified chimney sweep. A masonry chimney that is damaged should be repaired or rebuilt. Any damage to the flue connector should be corrected before the system is used again.

Possible causes for a chimney fire, and remedies for those causes, can be found in the PROBLEM sections: "Excessive Creosote Formation", "Spots of Creosote Accumulation in Chimney or Flue Connector", and Combustor not Reaching Operating Temperature".

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PROBLEM: Not enough heat.

CAUSE	SOLUTION
Green or wet wood.	Use seasoned wood.
Obstruction in chimney or cap screen.	Remove obstruction.
Heat exchange chamber filled with ash.	Clean heat exchanger chamber. (see Section 7, page 32)
Combustor plugged or coated.	Clean combustor. (see Section 7, page 32)
Combustor not functioning.	Replace combustor (see Section 7, page 32)
Thermostat set too low.	Raise thermostat setting.
Thermostat not operating properly.	Consult your Blaze King dealer.
Poor draft caused by an oversize flue, etc.	Measure draft with Manometer. See DRAFTS, Section 7, page 37. See CHECK YOUR CHIMNEY, page 16. See ASH DOOR, page 16. Consult your Blaze King dealer or a chimney sweep. Install wind-resisant chimney cap.
Strong, gusting winds causing downdraft in chimney	
Tightly sealed house, inadequate air supply.	Open a window near the insert slightly.
Reloading too much wood on top of too few coals.	Allow a larger bed of coals to build up. (see Section 6, page 29).

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PROBLEM: Too much heat.

CAUSE	SOLUTION
Thermostat set too high.	Lower thermostat seting.
Thermostat not operating properly.	Consult your Blaze King dealer.
Loading door gasket leaking, admitting excess air into firebox	Replace door gasket and/or adjust door. (see Section 7, page 33).
Excessive draft in the chimney.	Measure draft with a Manometer. See DRAFTS, Section 7, page 37. Consult your Blaze King dealer or a chimney sweep. Install a cap.
Wood is too dry.	Replace wood or mix with not-so-dry pieces.
Wood in too small pieces.	Use 5" to 8" diameter pieces.

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PROBLEM: Fans minimum speed is too fast or maximum speed is too slow.

CAUSE	SOLUTION
Fan speed control out of adjustment.	Consult your Blaze King dealer.

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PROBLEM: Catalytic Combustor is not reaching operating temperature.

CAUSE	SOLUTION
Improper operation.	Check thermostat setting and operating procedures. (See Section 6, page 28).
Obstruction in chimney or cap. Poor draft caused by an oversize flue, etc.	Clean chimney, remove obstructions. Measure draft with Manometer. See DRAFTS, Section 7, page 37. See CHECK YOU CHIMNEY, page 16. See ASH DOOR, page 16. Consult your Blaze King dealer or a chimney sweep.
Faulty Catalyst Thermometer.	Replace thermometer and recheck combustor operating temperature.
Wood too green or wet.	Use seasoned wood.
Wood in too small pieces.	Use 5" to 8" diameter pieces.
Combustor plugged or coated.	Clean combustor. (See Section 7, page 32).
Combustor not functioning.	Replace combustor. (See Section 7, page 32).
Thermostat not operating properly. Bypass doors leaking or not closing completely.	Consult your Blaze King dealer. Inspect bypass doors. Adjust or repair as necessary. Consult your Blaze King dealer.

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PROBLEM: Excessive creosote formation.

CAUSE	SOLUTION
Improper operation.	Check thermostat setting and operating procedures. (See Section 6, page 28).
Wood too green or wet.	Use seasoned wood.
Wood in too small pieces.	Use 5" to 8" diameter pieces.
Poor draft caused by an oversize flue, etc.	Measure draft with Manometer. See DRAFTS, Section 7, page 37. See CHECK YOUR CHIMNEY, page 16. See ASH DOOR, page 16. Consult your Blaze King dealer or a chimney sweep.
Chimney too cold or poorly insulated.	Upgrade chimney system. Consult your Blaze King dealer or a chimney sweep.
Bypass doors leaking or not closing completely.	Inspect ByPass Door. Adjust or repair as necessary.

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PROBLEM: Spots of creosote accumulation in chimney or flue connector.

CAUSE	SOLUTION
Air leaks in chimney or flue connector.	Inspect chimney and/or flue connector. Repair or replace as necessary. Check to be sure that the flue connector is installed correctly. CAUTION: a leaking flue connector is a fire hazard and demands immediate attention.
Poor draft caused by an oversize flue, etc.	Measure draft with Manometer. See DRAFTS, Section 7, page 37. See CHECK YOUR CHIMNEY, page 16. See ASH DOOR, page 16. Consult your Blaze King dealer or a chimney sweep.

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PROBLEM: Door glass quickly becomes coated with soot.

CAUSE	SOLUTION
Low thermostat setting.	Turn the thermostat to the warmest setting during the first 15-20 minutes after each reloading.
Lowering the thermostat setting too far, too quickly.	Turn the thermostat to the warmest setting during the first 15-20 minutes after each reloading.
Poor draft caused by an oversize flue, etc.	Measure draft with Manometer. See DRAFTS, Section 7, page 37. See CHECK YOUR CHIMNEY, page 16. See ASH DOOR, page 16. Consult your Blaze King dealer or a chimney sweep.
Obstruction in chimney or cap screen.	Remove obstruction. Clean chimney and/or cap screen.
Heat exchanger chamber filled with ash.	Clean heat exchanger chamber. (See Section 7, page 32).
Poor draft caused by oversize flue, etc.	Measure draft with a Manometer. See DRAFTS, Section, 7, page 37. Some chimneys may need to be retined. Consult your Blaze King dealer or a chimney sweep.
Strong, gusting winds causing downdraft in chimney.	Install wind-resistant chimney cap.
Tightly sealed house, inadequate air supply.	Open a window slightly near the insert.
Burning poorly seasoned wet wood, or wood with high pitch content, such as some types of Pine.	Use seasoned wood with low pitch content.

OWNER'S INSTALLATION AND OPERATING INSTRUCTION BOOK

# Blaze<sup>®</sup> King

WOOD STOVES

ROYAL HEIR, Model RHT-2250

**OM-11A**

SAVE THESE INSTRUCTIONS