

VOLCANO AND MASTER'S CHOICE

INSTALLATION

AND

OPERATING INSTRUCTIONS

WOOD AND COAL STOVES

BY:

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*Master's Choice Model #32 Serial #010E084
INCLUDES AUTOMATIC ELEC. BLOWER.*

Purchased & Installed November 1981

*Testing Lab Serial #52360 Report #239 on March 7, 1980
PFSCorp. 2402 Daniels St., Madison, Wisconsin
53704*



Defiance

THE DEFIANCE VOLCANO AND MASTER'S CHOICE

We at THE DEFIANCE COMPANY congratulate you on your decision to reenter the age of woodburning! You, along with thousands of others, are feeling the impact of our soaring fuel prices and threats of fuel cutoffs. You can now share in the independence and economy of wood heat, our only renewable solid fuel. You have selected a durable, high quality, high technology piece of equipment which, when properly operated and maintained, will allow you to realize economy, security, comfort and peace-of-mind in the years to come.

Through reading, talking and listening, you already know that heating with wood is not for everyone. It is a challenging and interesting task. You know that wood fires are by nature uneven, and that they inherently require more care than the fossil fuels commonly used. A wood fire, very much like a living thing, is complex and beautiful, requiring feeding and care, cleanup and attention. In return, it provides savings, healthful exercise, increased self-sufficiency, and the good feeling of participating more fully in the basics of your own life.

This booklet will assist you in the proper installation, burning and care of your unit which, in turn, will allow you greater satisfaction and ease of operation. We urge you to carefully read it before beginning actual installation work.

INSTALLATION OF YOUR
DEFIANCE WOODBURNER

Important: These instructions are intended as general guidelines. For your safety and peace of mind, we strongly urge that a professional install this heater.

The installation must conform with the requirements of any local, state or insurance requirements or codes having jurisdiction.

Failure to follow installation instructions and governing code authorities will void your warranty.

CAUTION

Not for use in mobile homes! Stove is hot when in use! Both a non-combustible base and an "all fuel chimney" are required.

Read through all instructions carefully before starting the installation,

CAUTION

In event of power failure pull secondary combustion air draft control handles to the full forward position.

POSITIONING OF HEATER

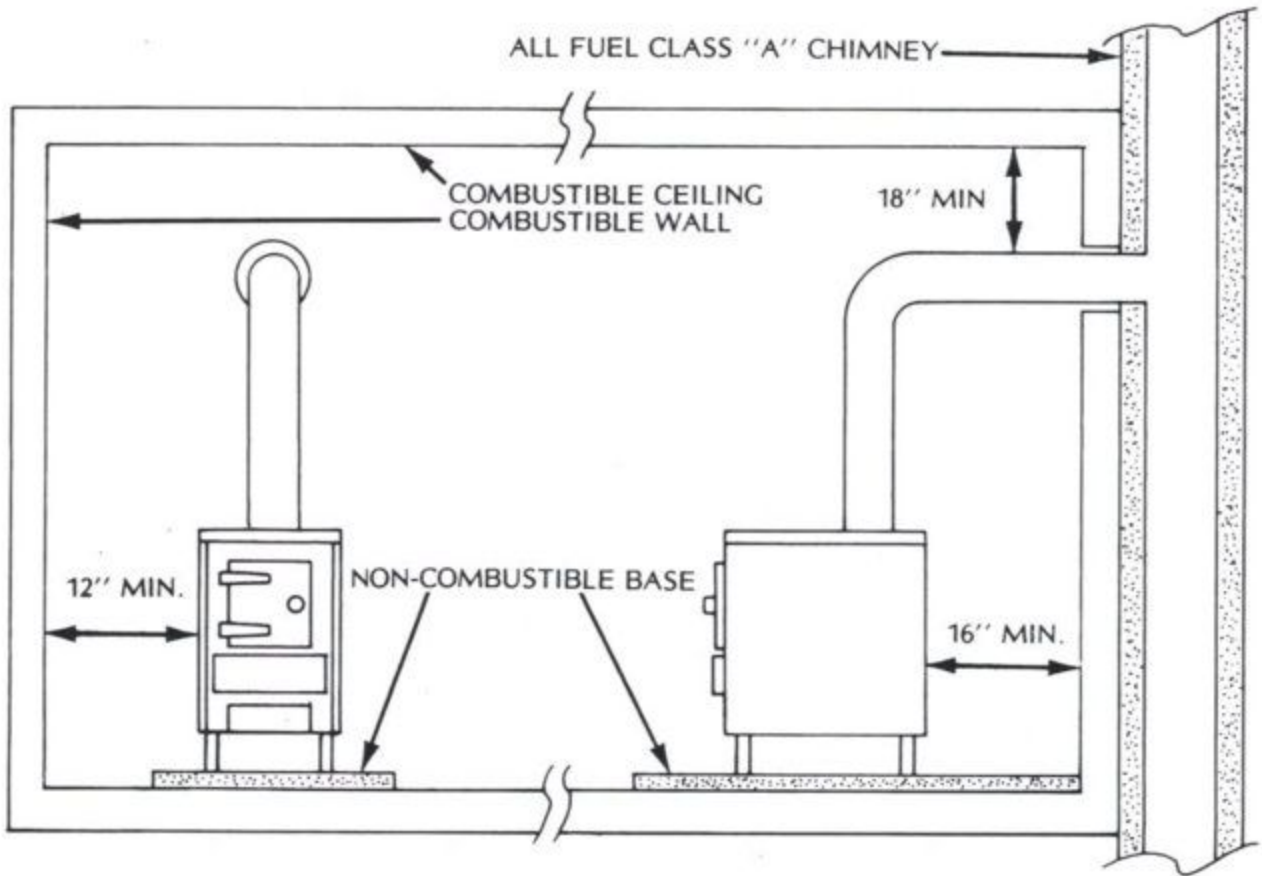
In positioning your heater, the clearances on Chart A must be maintained from combustible surfaces.

CHART A

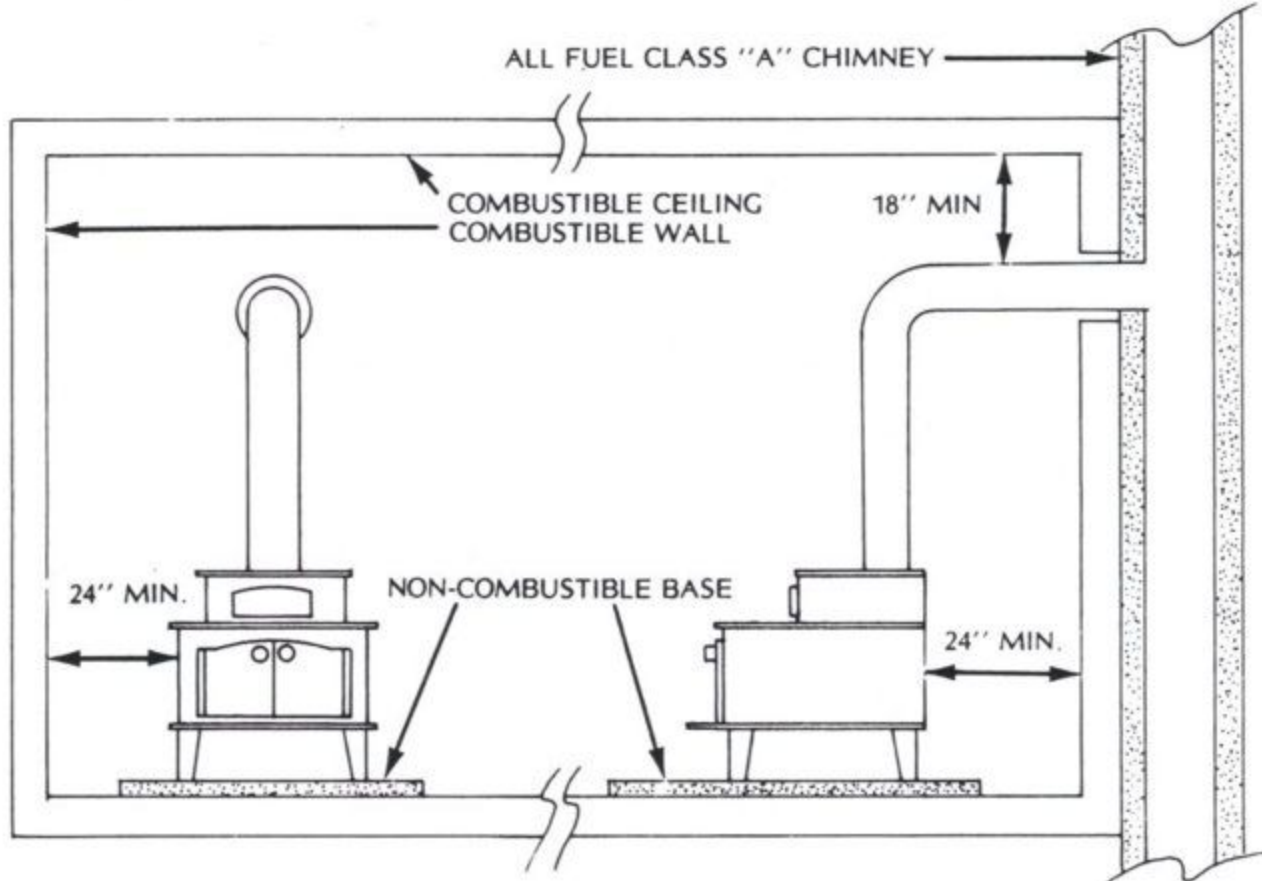
Minimum clearances from combustible surfaces

<u>Model</u>	<u>From Sides of Heater</u>	<u>From Back of Heater</u>	<u>From Chimney Pipe</u>
Master's Choice 26	24 in.	24 in.	18 in.
Master's Choice 32	24 in.	24 in.	18 in.
Master's Choice Fireplace Insert	23 in.		
Volcano II	12 in.	16 in.	18 in.

MINIMUM CLEARANCES VOLCANO II

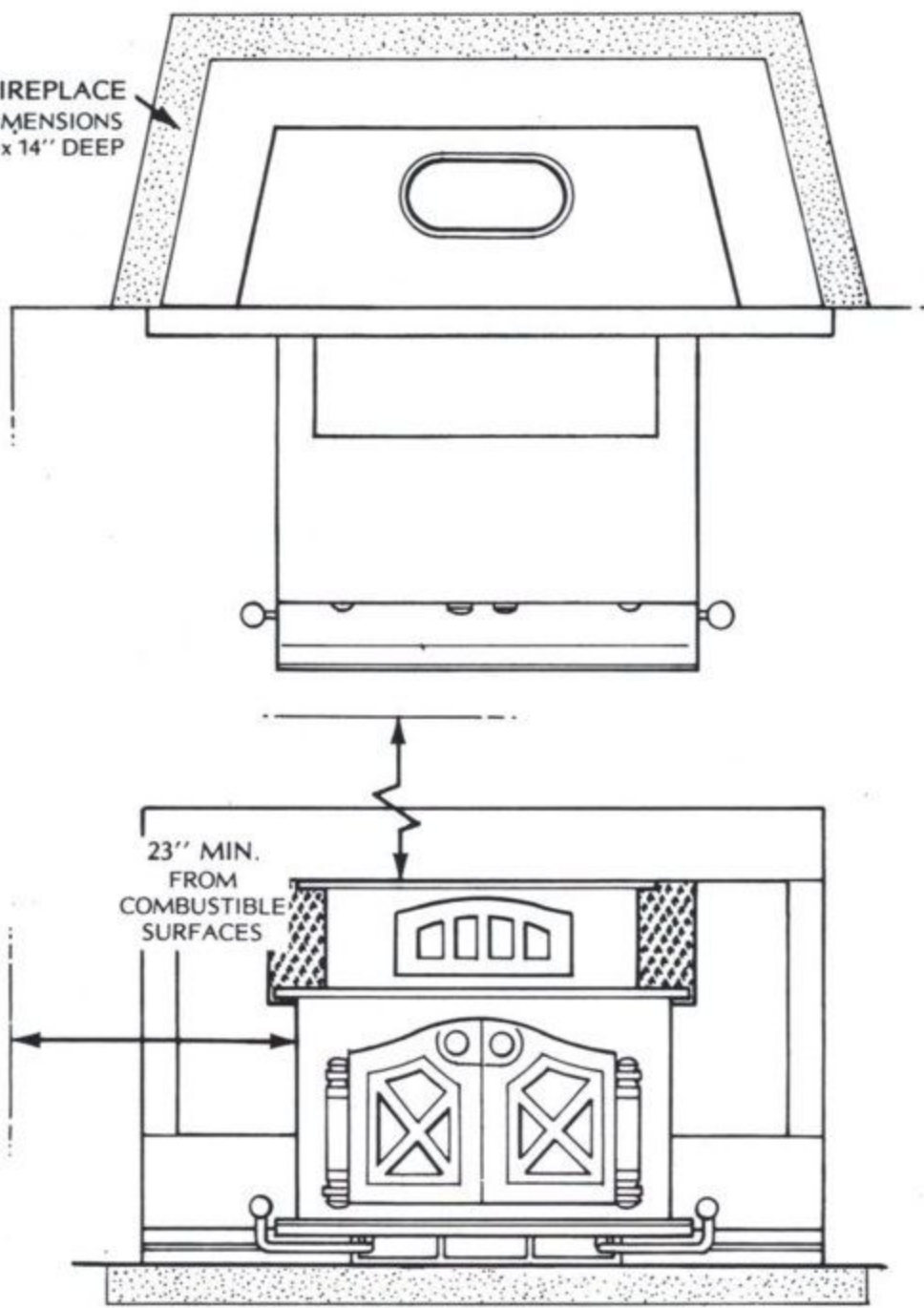


MINIMUM CLEARANCES MASTER'S CHOICE MODELS 26 AND 32

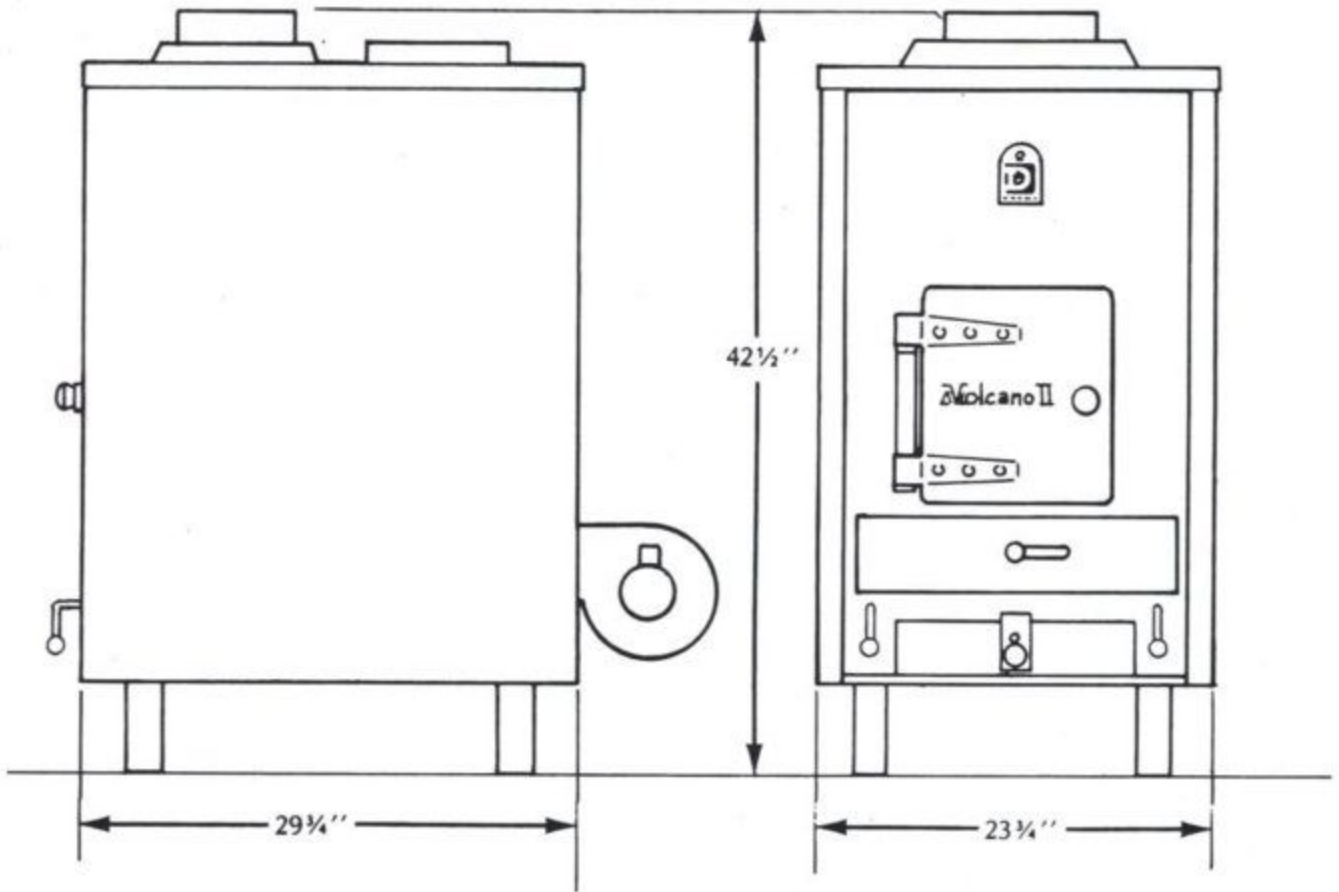


MINIMUM CLEARANCES MASTER'S CHOICE FIREPLACE INSERT

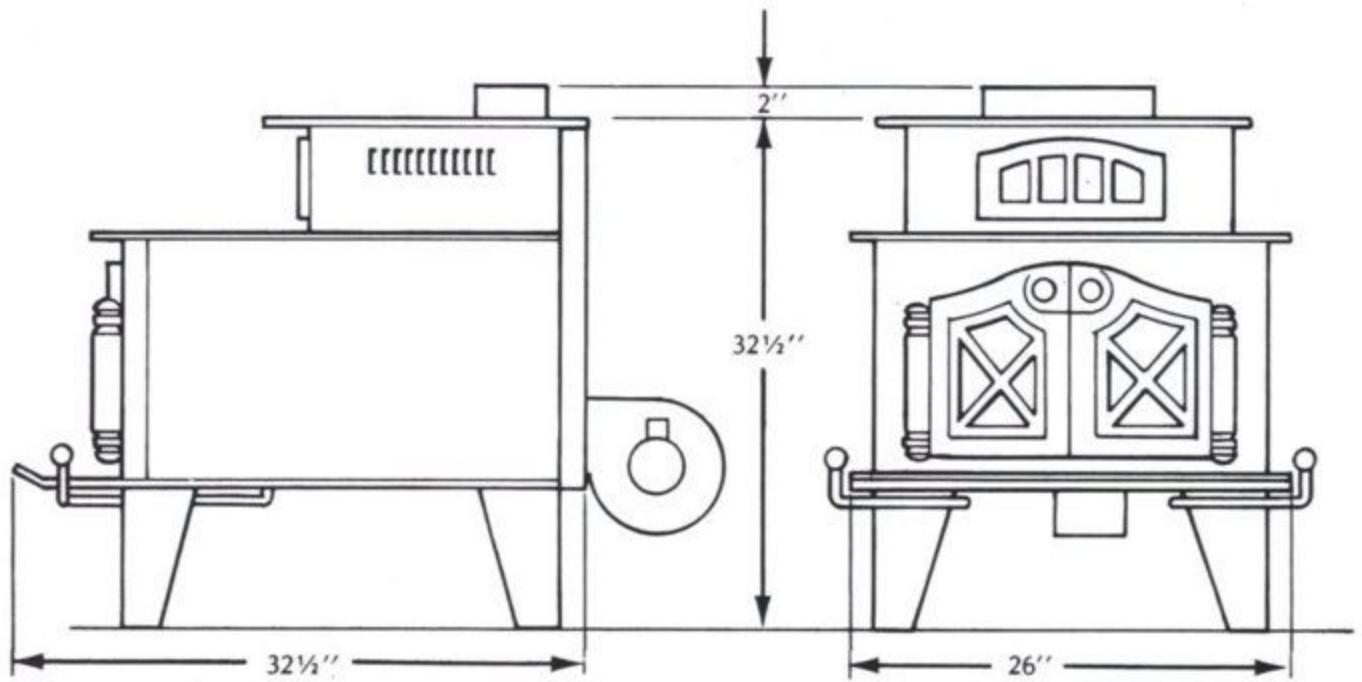
EXISTING FIREPLACE
MINIMUM DIMENSIONS
24" H x 32" W x 14" DEEP



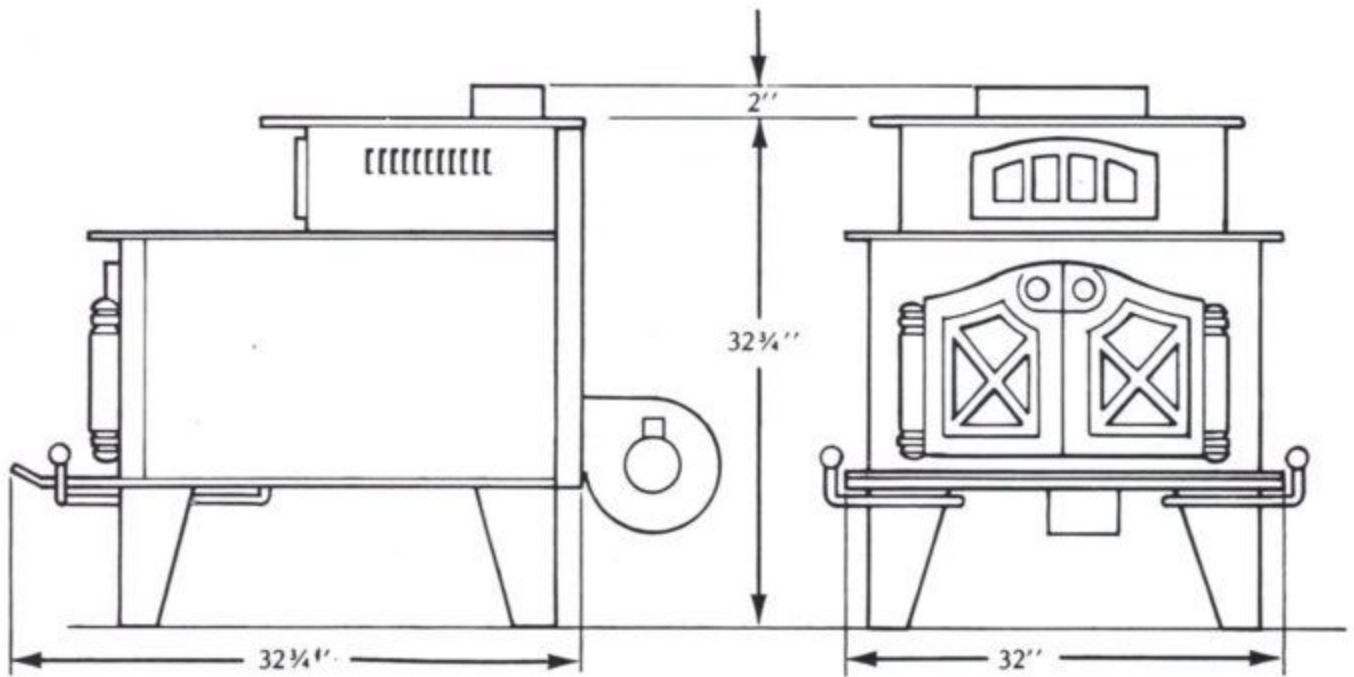
GENERAL DIMENSIONS VOLCANO II



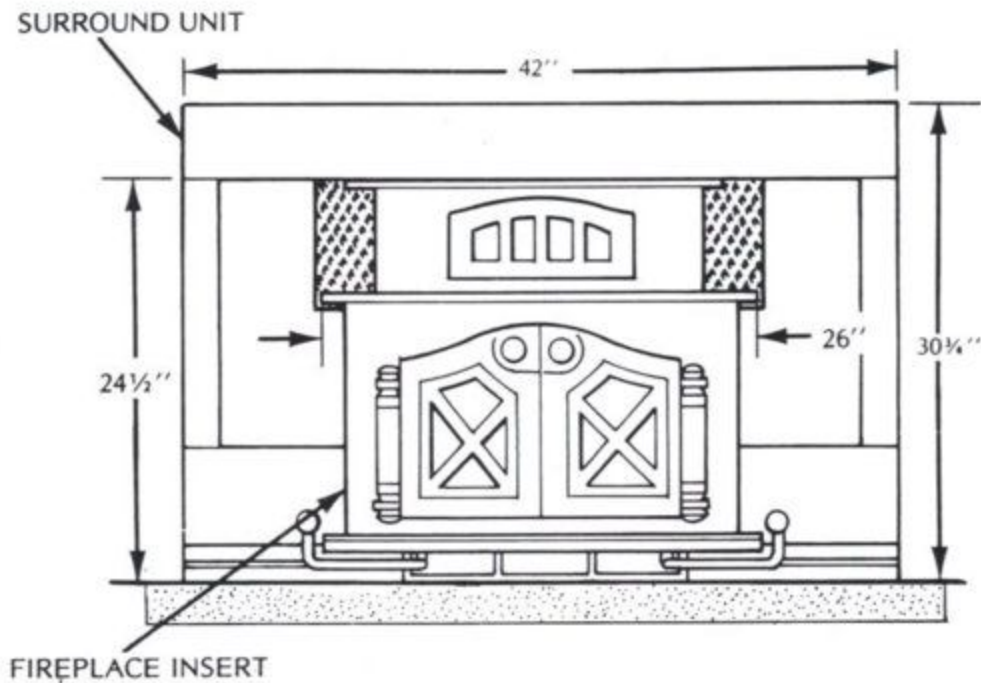
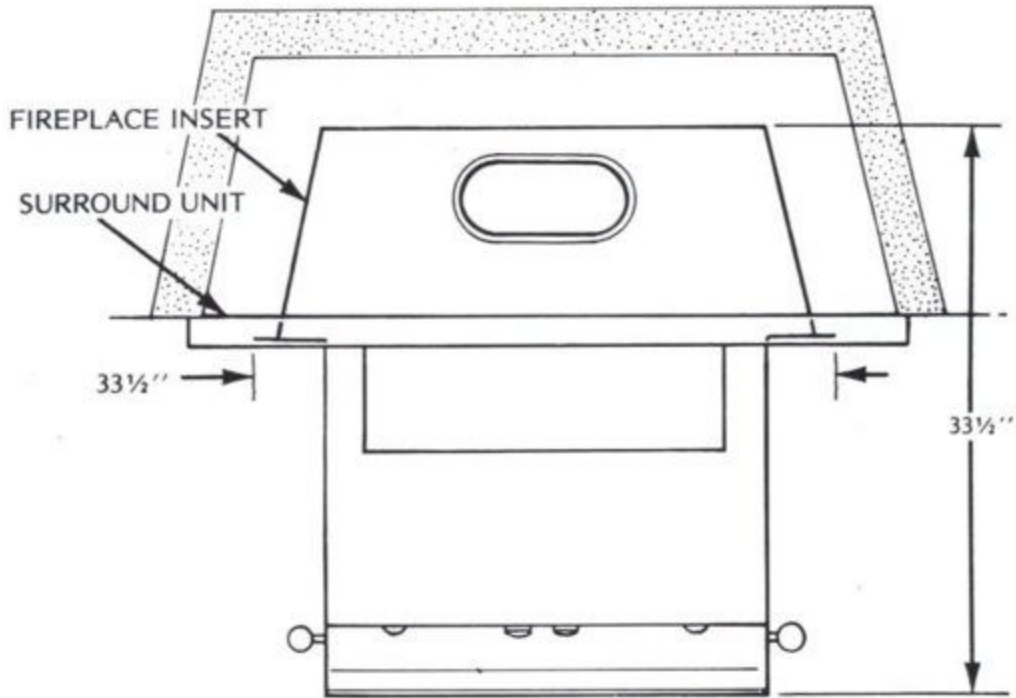
GENERAL DIMENSIONS MASTER'S CHOICE MODEL 26



GENERAL DIMENSIONS MASTER'S CHOICE MODEL 32



GENERAL DIMENSIONS MASTER'S CHOICE FIREPLACE INSERT WITH SURROUND UNIT INSTALLED



HEATER BASE
(Floor Protector)

A non-combustible base (floor protector) must be prepared upon which to set your heater. The minimum areas to be covered and their relation to the heater are shown on Chart B.

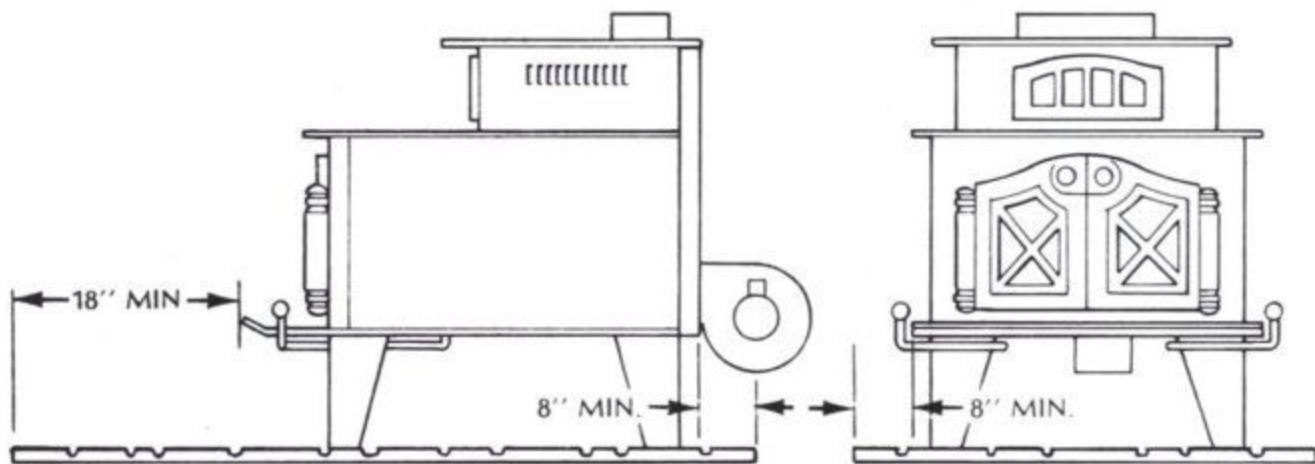
CHART B

Minimum areas to be covered by floor protector

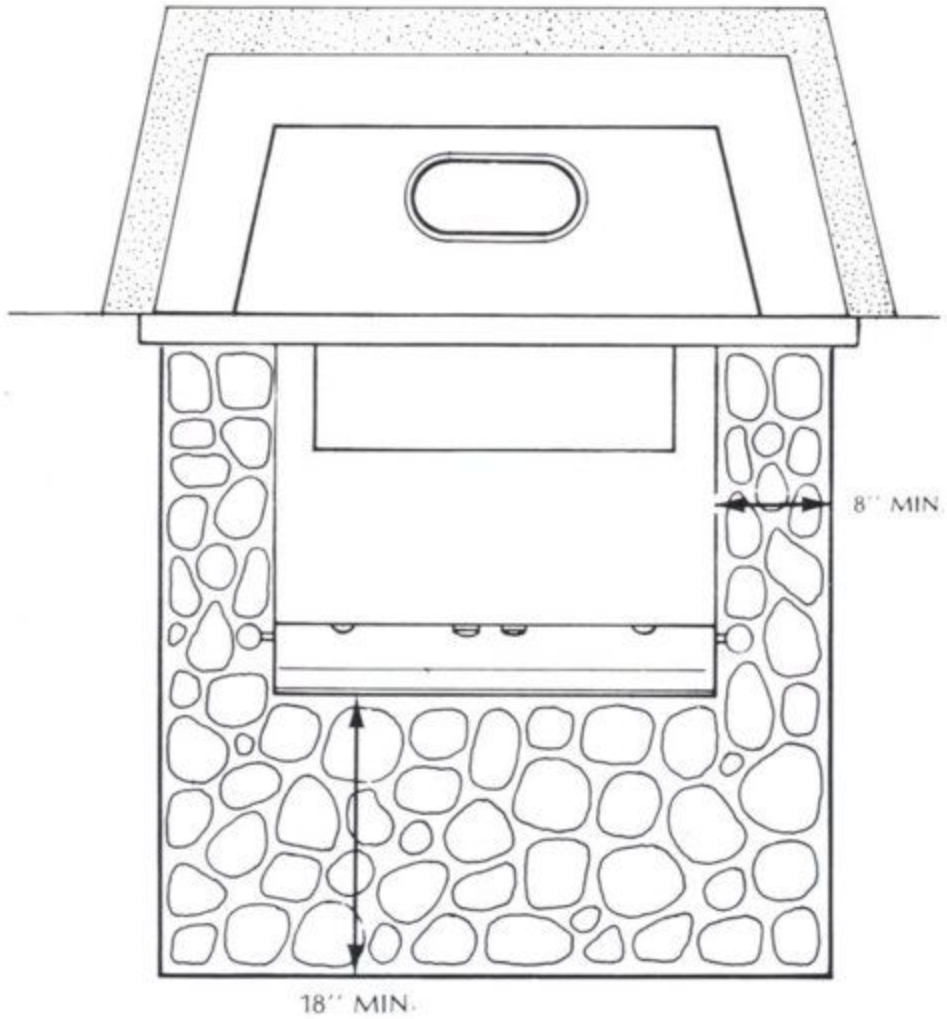
<u>Model</u>	<u>Beyond Sides</u>	<u>Beyond Front</u>	<u>Beyond Back</u>
Master's Choice 26	8 in.	18 in.	8 in.
Master's Choice 32	8 in.	18 in.	8 in.
Master's Choice (Fireplace Insert)	8 in.	18 in.	
Volcano II	8 in.	18 in.	8 in.

Your non-combustible base may be an approved, commercially purchased floor protector of adequate size and construction or it can be made up of a non-combustible material such as brick, concrete, block, etc.

HEATER BASE (FLOOR PROTECTOR) MASTER'S CHOICE MODELS 26 AND 32



HEATER BASE (FLOOR PROTECTOR) MASTER'S CHOICE FIREPLACE INSERT



MAKING YOUR CHIMNEY CONNECTION

Your chimney is a very important part of your heating plant. No wood-fired appliance, however efficient its design, can perform satisfactorily if the chimney that serves it is inadequate. Check your chimney to make certain that it is properly sized, constructed and in sound condition. (Consult with your heating contractor.) Make sure that there are no obstructions or overhanging trees, etc., to interfere with the chimney draft.

READ "CHIMNEY CHECK CHART" CAREFULLY

CHIMNEY CONNECTION INSTRUCTIONS

Master's Choice Parlor Models and Volcano Models: Make all connections to the chimney with 24 gauge or thicker 8 inch diameter galvanized black or blue chimney pipe.

Place the 8 inch pipe with the crimped end down into the flue opening of the woodburner.

For best results keep chimney pipe runs as SHORT as possible with as few elbows as possible. (One 90° elbow is equal to 9 feet of straight pipe.) All chimney pipe runs should be angling upwards at 3 inches of vertical to every 1 foot of horizontal run. Sheet metal screws must be used on all chimney pipe joints!

Install an 8 inch stack damper in chimney pipe approximately 12 inches from the woodburner for more control of your heater. A .06 to .10 draft is necessary to eliminate smoking when the loading door is opened. If your chimney has an extremely good draft you will find it difficult to control your fire using just the stack damper and your woodburner's draft control.

A barometric draft control installed in your chimney pipe and set to allow a .03 to .04 draft to your woodburner will give you much longer and more efficient burns from your charge of wood. (NOTE: It is extremely important to have good, dry wood for maximum efficiency; 20% or less moisture content.)

If you have been burning with a poor draft or burning wood with a high moisture content, or a combination of the two, you will increase the chance of creosote buildup.

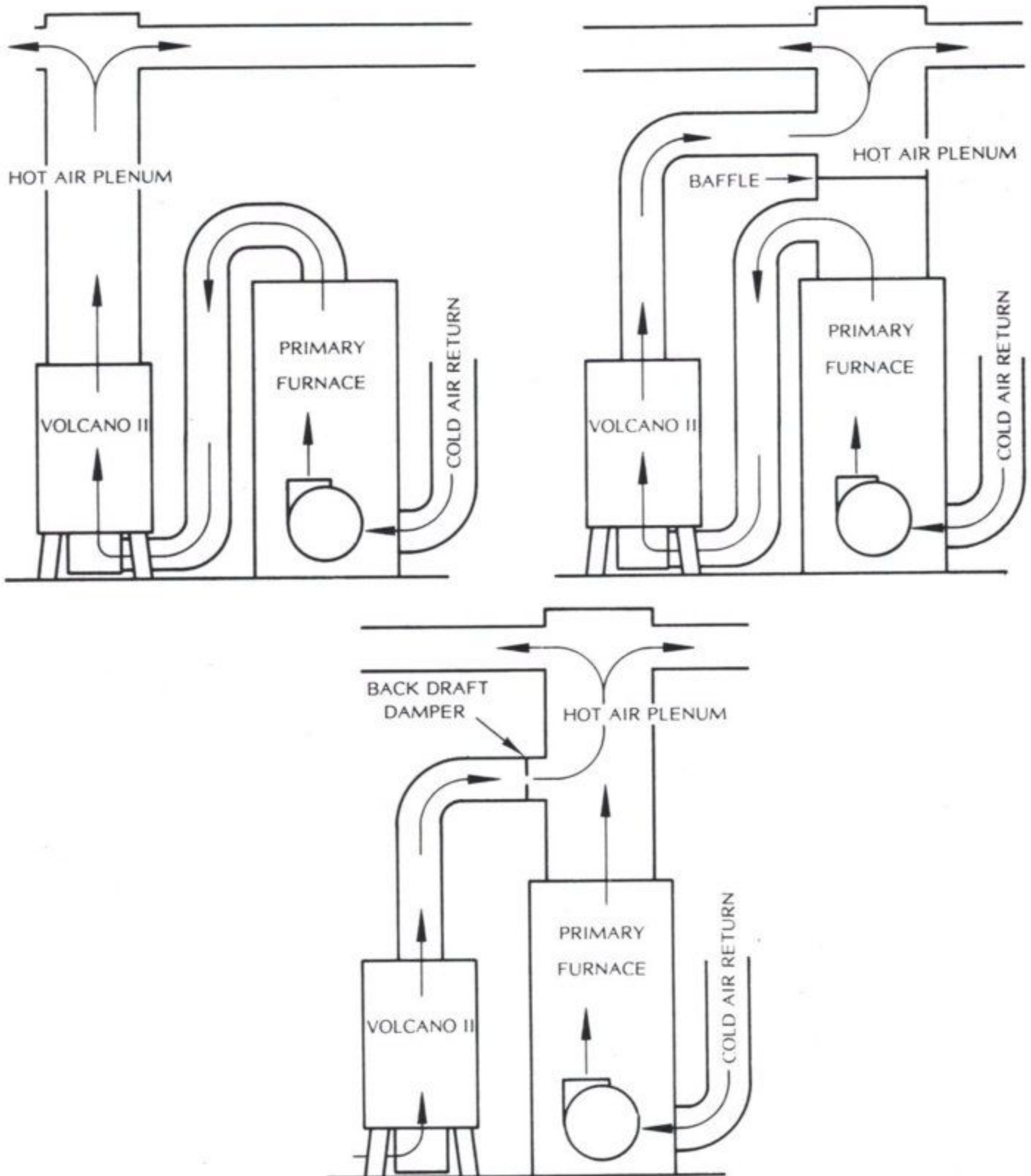
The chimney connector and chimney should be inspected at least twice monthly to determine if a creosote buildup has occurred. If creosote has accumulated, it should be removed to reduce the risk of a chimney fire. Should creosote build up, there are many chimney cleaning agents on the market that loosen creosote deposits. It would be wise to use these continually when burning with wood.

CAUTION

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.

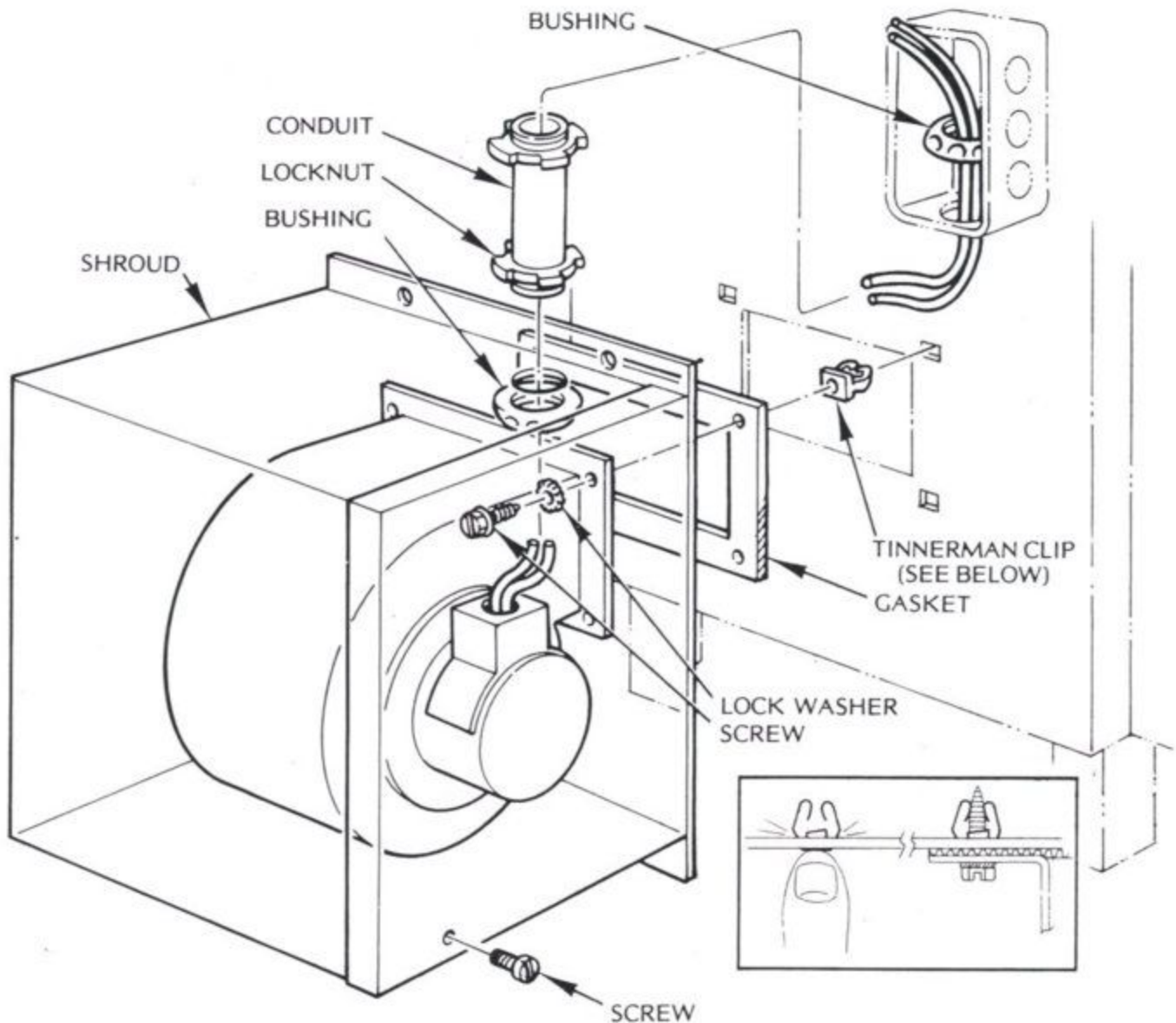
VOLCANO II DUCT SYSTEMS

For adding to an existing hot air system, connect an 8" x 14" duct to the furnace plenum. (Rely on your heating contractor to recommend proper installation.) Here are typical installations:



BLOWER INSTALLATION VOLCANO II

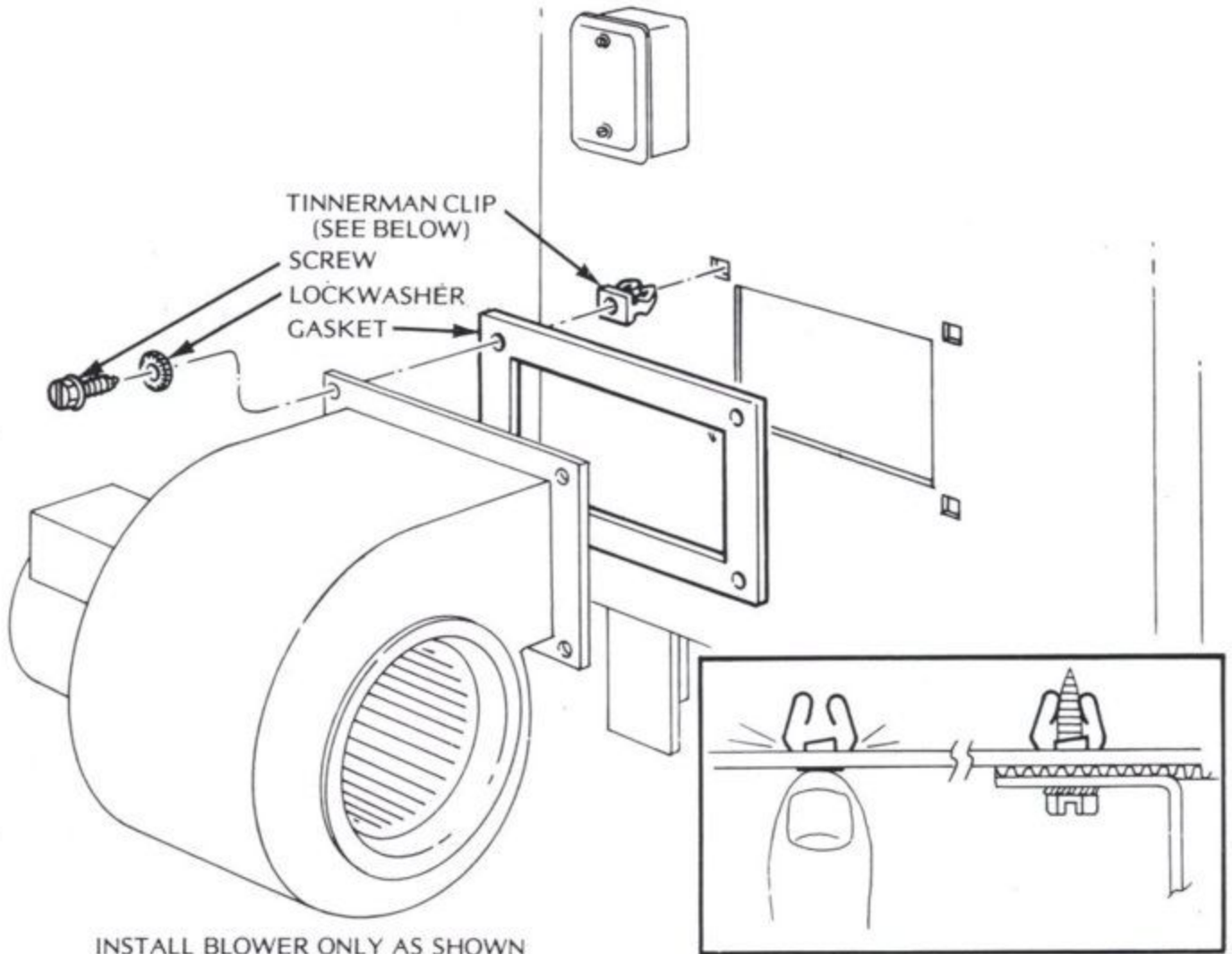
Secure the blower assembly to the back of your unit with the 4 screws and tinnerman clips provided. The squirrel cage should be down as depicted. Be sure to put the fiber gasket between the woodburner and the blower. The two pieces of the blower intake shroud are to be assembled together with the six 8-32 $\frac{1}{2}$ -inch long machine screws provided. This shroud can then be mounted with the open return air side to either the left or right, whichever is most convenient, if you are going to hook up a cold air return from an existing furnace.



INSTALL BLOWER ONLY AS SHOWN

BLOWER INSTALLATION MASTER'S CHOICE MODELS 26 AND 32

Secure the blower to the back of your unit with the 4 screws and tinnerman clips provided. The squirrel cage should be down as depicted. Be sure to put the fiber gasket between the woodburner and the blower.



INSTALL BLOWER ONLY AS SHOWN

INSTALLATION OF YOUR MASTER'S CHOICE FIREPLACE INSERT

Now that you own the best, let's put it to use. Installation is not difficult if you use the following instructions.

Before you begin working with the stove, please be certain that at least these minimum standards exist at the installation site:

1. Your chimney must be a Class A all fuel chimney.
2. You must be able to keep combustible materials at least 23 inches away from the unit in all directions.
3. Your unit will use 120 volts, 3 amps.
4. Your hearth extension must project 18 inches to the front and 8 inches beyond the sides of the unit.

Now, before moving the stove, it is advisable to remove all the firebrick. This makes the stove lighter and eliminates the chance of bricks breaking while the unit is being moved. Please note the location of each brick before it is removed. You will want the same general configuration when they are replaced.

Move the stove in and as close to your fireplace as possible. A moving dolly is usually preferred for this job.

You may want to use some protective material on the fireplace hearth to prevent damaging its brick while installing your unit. Make sure the fireplace opening is clean and the chimney damper is open.

WIRING INSTRUCTIONS

This equipment must be wired per the national electrical code, state codes and local codes, and all other applicable authorities or the warranty will be voided.

We recommend that all connections described below be performed by a licensed electrician.

Keep all electrical wires away from moving parts. Route them in such a manner as to protect them from heat! Use a minimum of 18 gauge wire.

It may help to tip the stove on its back. A draft pan with a hole in each side is welded to the bottom of the unit. Thread the two blue wires through the pan and then slide the flexible conduit around the wires, or the conduit may be installed and the wires threaded through it.

The three-piece fireplace insert surround that was provided with the unit is now ready to be fastened to the fireplace insert. Slide the right and left sides up to the sides of the unit and tighten the set screw bolts located at the bottom of the surround on either side. Also, install the bolts in the top holes in the side panels and through the outside slots in the angle iron stop. Now lay the top piece of the surround on top of the stove and butt it up to the angle iron. Align it flush with the side pieces of the surround and lock it down with bolts through the inside slots in the angle iron stop.

The two circulating fans must be installed and wired into the side panels of the surround. Install the fans with the motors pointing away from the firebox. The motor side of the frame butts up against a short 90° fold of metal on the side of the fan opening away from the stove.

The bottom of the fan frame slides under a metal bracket and is secured by small jack screws from beneath. Turn this screw quite tight because it completes the electrical grounding path for both the fans and the unit.

Install the switch into the top hole on the surround side panel. Using the supplied wire clamp, also install the cord and plug. Allow 6 to 8 inches of the cord to extend into the side panel. The holes on the opposite side panel should be plugged with snap-in plugs.

For the proper wiring connections refer to the wiring diagrams.

You will find an electrical plug with a cord containing three wires. One is black, one white, and the ground wire is green.

Thread the cord through the box connector and up through the bottom of the fan compartment. Connect the ground wire to the near corner of the fan frame with the screw provided.

Connect the white wire to one of the black wires from the fan and one of the two blue wires which run to the opposite side of the insert through the conduit you installed earlier. Secure this connection with a screw-on connector.

Connect the black wire from the power cord to one of the black wires from the switch. Secure this connection with a screw-on connector, also.

Now, connect the other switch wire to the second fan wire and the second blue wire from the conduit. Secure this connection with another screw-on connector.

On the opposite side of the insert connect one blue wire to each of the black fan wires and seal the connections with screw-on connectors.

When you have checked all your connections to assure safe and proper completion, install the access grills on the ends of the fan compartments.

Now that the wiring is complete, place the stove before the fireplace in line with the fireplace opening. Lift the Master's Choice Fireplace Insert onto the hearth. Do not slide the unit into the fireplace opening, yet. Make sure the surround is fastened securely to the fireplace insert using the bolts already on the unit.

Peel off the paper from the fiberglass sealing tape to expose the adhesive back. Stretch the tape out and attach it flush to the outside edge of the back of the surround.

The unit is now ready to be slid into the fireplace opening. You may wrap the insert with fiberglass insulation (blanket type) which will help retain heat within the unit, if you wish.

Slide the unit in until the fiberglass seal is pressing firmly against the face of the fireplace. Now slide the protective covering out from under the stove.

If the surround does not lie flat against the face of the fireplace, raise the front or rear legs of the stove, as required, to eliminate any gaps. Be sure the seal you get is as airtight as possible. It will affect the efficiency of your unit. Adjust the S-clips to remove any visible gap beneath each side panel.

Also, make sure the white fiber baffle located inside the firebox is seated flat and slid all the way forward, leaving a 3 to 4 inch gap between it and the back of the firebox. Replace the firebrick. If you have a poor draft in your chimney, removing this baffle will help.

Before you fire up, please refer to the sheets containing stove break-in information and general operating instructions.

Some final words of advice and caution:

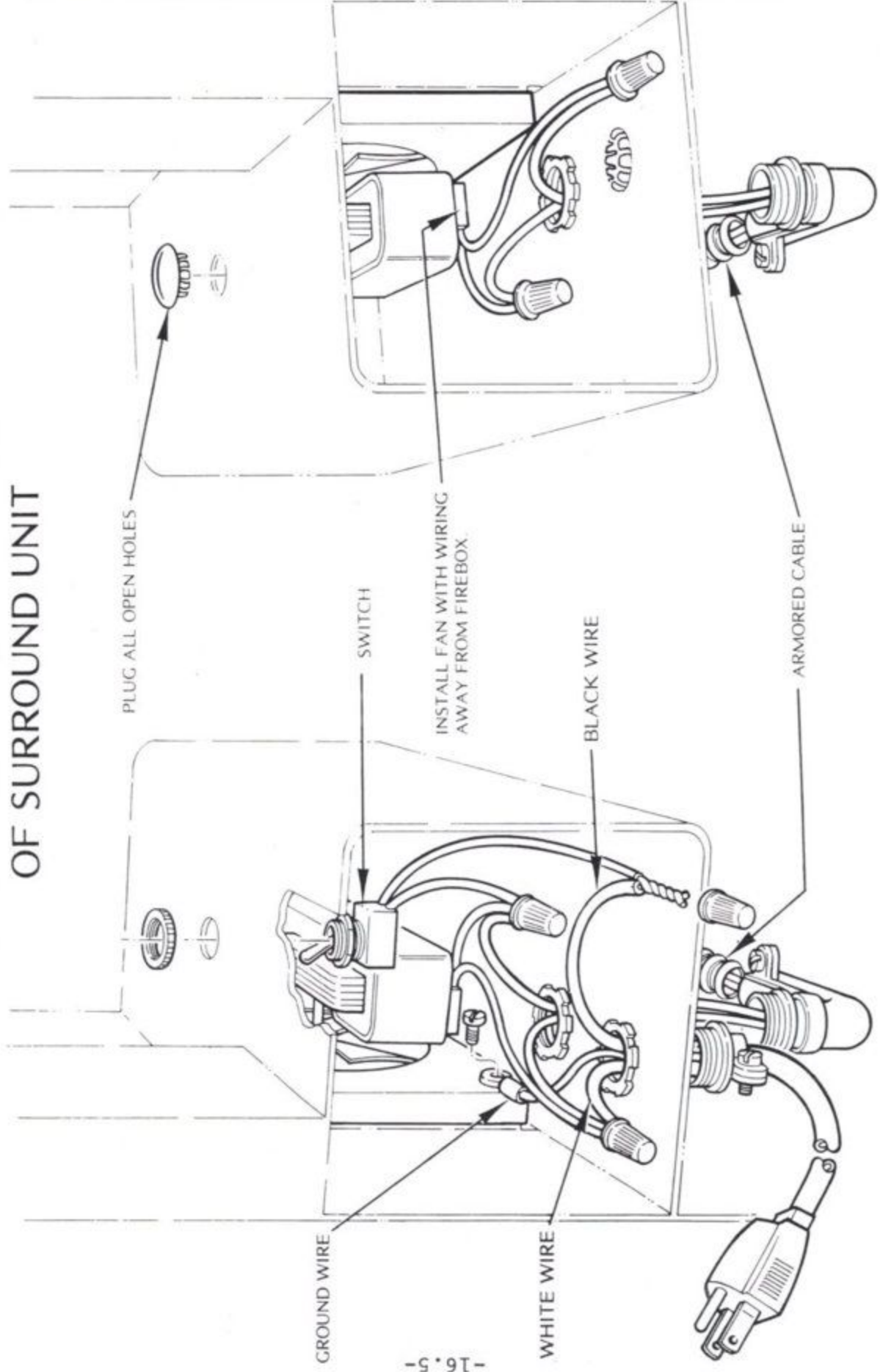
You may burn wood or coal. If you burn coal, do not elevate the fire; burn it directly on the hearth.

Do not overfire the unit.

IN CASE OF POWER FAILURE, PULL SECONDARY COMBUSTION AIR DRAFT CONTROL HANDLES TO THE FULL FORWARD POSITION!!

Enjoy the finest fireplace insert made.

WIRING INSTALLATION WITH POWER CORD ON LEFT SIDE OF SURROUND UNIT



PLUG ALL OPEN HOLES

SWITCH

INSTALL FAN WITH WIRING
AWAY FROM FIREBOX

BLACK WIRE

ARMORED CABLE

GROUND WIRE

WHITE WIRE

LEFT SIDE

RIGHT SIDE

WIRING YOUR BLOWER

This equipment must be wired per the national electrical code, state codes, and local codes.

We recommend that all connections described below be performed by a licensed electrician.

Keep all electrical wires away from moving parts. Route them in such a manner as to protect them from heat! Use a minimum of 18 gauge wire.

Volcano II: Thread the power cord wires (black, white, and green ground) through the top hole on the side of the heat sensor box.

Thread the two wires from the blower through the bushing and the hole in the top panel of the shroud. Continue it through the straight galvanized metal conduit, up through the bottom of the heat sensor box and through another bushing. The locknuts should be on the conduit before beginning the wiring process. The bushings will screw onto the conduit at each end and tighten against the locknuts.

Master's Choice Models 26 and 32: Thread the power cord wires (black, white, and green ground) through the top hole in the side of the heat sensor box.

Thread the two wires from the blower through the atomic connector and flexible conduit. If there is a short ground wire run it into the conduit as far as it will go. Run the wires through the top atomic connector and the bottom hole in the heat sensor box.

Volcano II and Master's Choice Models 26 and 32: Remove the two blade terminals from the heat sensor. Secure a wire end from the blower to one of the blade terminals and replace it on the heat sensor. Secure one hot wire from the power cord to the other connector and replace it on the heat sensor. Connect the remaining blower wire to the remaining power cord wire using a screw-on connector. Connect the green ground wire from the power cord to the green grounding screw which screws into the back of the heat sensor box and be sure all connections are proper and tight. Close the strain relief connector around the power cord and pop the connector through the hole in the heat sensor box.

On the Master's Choice Models 26 and 32, slip the wings of the atomic connectors through the holes in the bottom of the heat sensor box and the top of the fan motor box and tighten them around the ends of the flexible conduit, locking everything in place. (Refer to the wiring diagram)

For field connection, provide wire suitable for 90° minimum temperature.

Secure the cover to the heat sensor box with the screws provided.

STARTING A FIRE

Important: Upon initial firing of your woodburner, due to painted surfaces, you may get strong paint odors. We recommend firing slowly with windows open for the first hours.

Open your stack damper (in the smoke outlet pipe) and the inlet draft. On the Volcano II and III, push both secondary draft control rods (left and right) fully in.

Inlet Draft:

Volcano II - Primary Air: Turn the knob on the control box immediately below the firebox door fully counterclockwise to allow full primary air to your fire. (This is automatically controlled and will begin to close as your woodburner gets hot.) If your home is too warm, simply turn the knob slightly clockwise to increase the restriction of the primary draft. Continue this until your home is staying at the temperature you wish.

Secondary Air: The two lower knobs (one on the right and one on the left) control the amount of air reaching the secondary combustion chamber. Both knobs (in) allow very little air to reach the secondary chambers.

After the fire is burning well and the woodburner is hot, pull both knobs out slowly while looking into the secondary combustion chamber inspection port. Pull the secondary draft control knobs out until maximum ignition of the gases in the secondary combustion chamber is achieved. (Bright flame and the least amount of smoke out of chimney.) IN THE EVENT OF POWER OUTAGE, PULL BOTH SECONDARY KNOBS FULLY OUT!!

Master's Choice Parlor Models and Fireplace Insert - On your Master's Choice you will find two draft control knobs (one on each side). With these knobs pulled fully toward you (to the front of the stove) both the primary and secondary draft is closed. By advancing both knobs toward the back of the stove equally to the starting position, you now have an equal amount of primary and secondary combustion air being admitted to the combustion chambers. By pushing both draft control knobs to the rear, you will obtain maximum efficiency and yet achieve a long burn. By pulling both knobs to the front, you minimize both primary and secondary air thereby achieving a very low burn. By pulling them all the way to the front, your fire may go out completely.

Put both draft control knobs at the starting position. Lay in 2 quarter splits of dry wood, 2 to 4 inches apart. Crumple several sheets of newspaper in the center, add dry kindling and several small splits or rounds on top of this. Light the paper and close the loading door. Soon the fire will be going nicely, the draft will be established, and the unit will be ready to load. As you use your woodburner and become familiar with it you will learn to custom load it to do whatever you wish. You will learn to make and keep various types of wood around for various purposes, sometimes reaching for small dry splits to perk up the fire, sometimes for medium large pieces to maintain it. You will learn that wood type, size and moisture content are enormous variables, enabling the fire-tender to mix-match and create fires with many different personalities. For all loading in a warm unit, open the stack damper and close the inlet draft just before opening the loading door. This will greatly help to avoid any smoking out of the door. With a proper chimney draft (.06 to .10 inches of water draft reading) smoking problems are virtually eliminated.

HOLDING A FIRE OVERNIGHT

There are three essential steps in extending the useful life cycle of a charge to hold overnight.

1. Allow the evening fire to fall to a point where there are enough coals to make sure the load will ignite, but not so many that the entire charge will be set alight at once. Rake the coals to one rear corner and load the fire-box.
2. Select out and use the right wood. Large pieces will burn more slowly than small ones, hardwoods more slowly than softwoods, whole rounds more slowly than split pieces, pieces freshly brought indoors more slowly than wood thoroughly house-warmed. Experience will be your best instructor on the best combination of these variables to extend the burn. Load the fire-box intelligently, (matching two flat split faces together to maximize the load, for example) and load it full.
3. Close the draft and damper down as much as experience tells you is possible without smoking or killing the fire. You want a limited portion of the surface area burning so that the fire moves through the load (as opposed to lighting the entire load and dampering down). You will develop a "feel" for the unit as you live with it.

Our tests and experience here indicate that extended burns of up to 23.5 hours have been achieved by following these three steps. Tests also indicate that by choosing the wrong mix of variables, using small sticks of split softwood, for instance, it is possible to shorten the burn tremendously. Fire tending is both an art and a science, probably tending toward the art side.

SAFETY

For information on using your woodburner safely, we suggest that you obtain a copy of the National Fire Protection Association Publication, "Using Coal and Wood Stoves Safely," N.F.P.A. No. HS-8-1974. The address is 470 Atlantic Avenue, Boston, MA 02210.

With the advice of the experts you obtained to install the unit, your basic installation shows awareness of good safety practices. Safe operating procedures would also include the following:

1. Do not store any combustibles (clothing, boxes, firewood, etc.) any closer than 36 inches.
2. Use no flammable liquids in or near your woodburner.
3. Purchase, install, use and maintain one or more of the inexpensive smoke alarms on the market.
4. Never leave the loading door or ash drawer ajar while the unit is unattended.

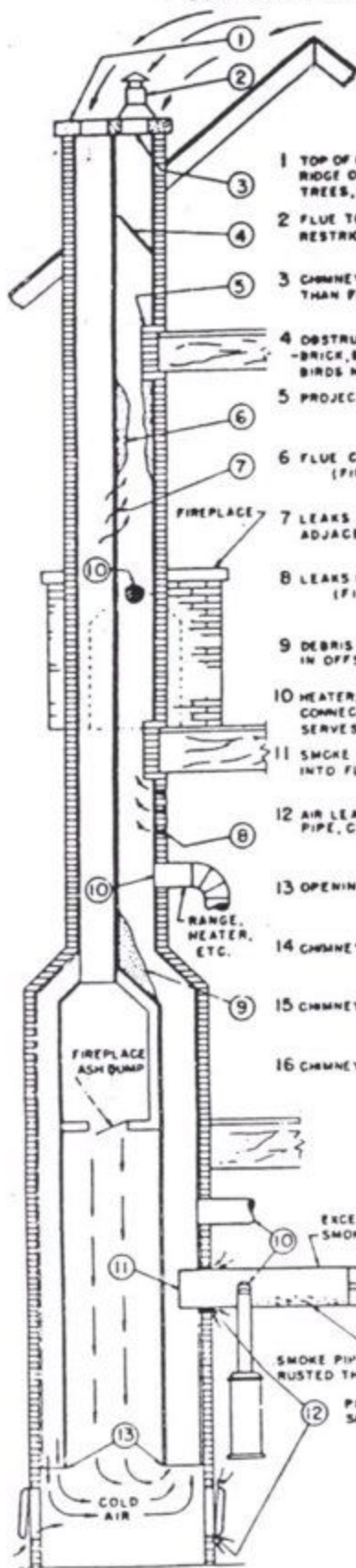
5. Always have a plan for evacuating the house. (A good idea regardless of the heat source.)
6. Learn all about chimney fires - what causes them, what to do about them, and how to prevent them. Your secondary combustion chamber goes a long way toward avoiding creosote formation, but creosote is ALWAYS a consideration in woodburning and you should continually be aware of its real or potential presence.
7. Use sheet metal screws in joining pipe sections; don't rely on the slip fittings provided.
8. When cleaning out the ashes, put them in a covered metal container outdoors. Be careful because small coals can remain hidden in the ashes for days.
9. Keep a fire extinguisher near the unit.
10. Keep your fire-tending tools (poker, shovel, handle, grip mitt, etc.) up, away from children, and handy for your use.
11. Occasionally inspect your system for any unusual signs and attend to anything that appears to be out of the ordinary.
12. Never run the unit "red hot". The woodburner was designed to be run with the blower on and should be used in this manner. The unit may be run with the blower off in the event of a power outage but care should be exercised so the unit does not run too hot.

TRUBLE SHOOTING GUIDE

1. Stove smokes on loading:
 - A. Check on loading that the stack damper has been opened and inlet draft closed, so that draft will be entering only through the loading door.
2. Stove smokes at the other times:
 - A. Stop operation until the cause is found and corrected; there is restriction somewhere in the exhaust system of the unit. Refer to your chimney check chart. Disconnect the flue and inspect the entire system for creosote and soot buildup: clean the flue, assure yourself that the chimney is not obstructed by creosote, animal nests, or anything else. See that there are no tall overhanging trees and that your chimney is the proper height.
3. Excessive creosote buildup:
 - A. Check wood - A complete diet of wood, with a high moisture content (over 35 %), particularly when run in a low-fire condition, will increase creosote formation. Creosote formation is more a problem in the spring and fall, when heating requirements are low and the temptation is to smolder a log at low heat for a long period of time. This presents no problem as long as you "fire-up" occasionally.

CHIMNEY CHECK CHART

COMMONLY ENCOUNTERED DEFECTS WHICH CAUSE INSUFFICIENT CHIMNEY DRAFT
- HOW TO LOCATE AND CORRECT THEM -



TROUBLE

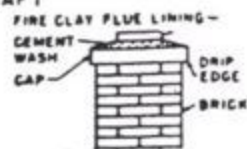
DISCLOSED BY

REMEDY

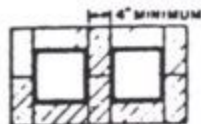
- 1 TOP OF CHIMNEY LOWER THAN RIDGE OF ROOF, OR NEARBY TREES, BUILDINGS, ETC
- 2 FLUE TOP, CAP OR EXTENSION RESTRICTS AREA.
- 3 CHIMNEY OPENING SMALLER THAN FLUE
- 4 OBSTRUCTION LODGED IN FLUE - BRICK, BROKEN TILE, MORTAR, BIRDS NEST, ETC
- 5 PROJECTION INTO CHIMNEY
- 6 FLUE CHOKED WITH SOOT (FIRE HAZARD)
- 7 LEAKS BETWEEN ADJACENT FLUES
- 8 LEAKS IN CHIMNEY WALL (FIRE HAZARD)
- 9 DEBRIS ACCUMULATED IN OFFSET.
- 10 HEATER, STOVE, OR FIREPLACE CONNECTED TO FLUE WHICH SERVES BOILER
- 11 SMOKE PIPE PROJECTS INTO FLUE.
- 12 AIR LEAKS AROUND SMOKE PIPE, CLEANOUT DOOR, ETC.
- 13 OPENING BETWEEN FLUES.
- 14 CHIMNEY AREA TOO SMALL.
- 15 CHIMNEY AREA TOO LARGE
- 16 CHIMNEY HEIGHT TOO LOW

- OBSERVATION.
- OBSERVATION AND MEASUREMENT.
- MEASUREMENT.
- LOWERING LIGHT OR WEIGHT DOWN CHIMNEY, OR MIRROR (SEE DETAIL D).
- LOWERING LIGHT OR WEIGHT DOWN CHIMNEY, OR MIRROR.
- LOWERING LIGHT DOWN CHIMNEY, OR MIRROR
- SMOKE TEST (START SMOKY FIRE, THEN CLOSE TOP OF BOILER FLUE - SEE DETAIL E).
- SMOKE TEST OR FLAME TEST (SEE DETAIL F).
- LOWERING LIGHT OR WEIGHT DOWN CHIMNEY
- OBSERVATION
- MEASUREMENT OR MIRROR
- OBSERVATION FLAME TEST OR SMOKE TEST.
- OBSERVATION.
- MEASUREMENT
- MEASUREMENT
- MEASUREMENT

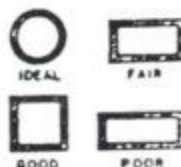
- EXTEND CHIMNEY WELL ABOVE RIDGE OF ROOF OR SURROUNDING OBJECTS
- REMOVE, AND EXTEND CHIMNEY
- ENLARGE TO SAME SIZE AS FLUE.
- USE WEIGHT ON ROPE, OR ROD, TO BREAK AND DISLodge OBSTRUCTION
- HAVE PROJECTION REMOVED BY MASONRY CONTRACTOR
- CLEAN OUT BY LOWERING CHAIN OR BAG OF SAND ON ROPE
- HAVE LEAKS CORRECTED BY MASONRY CONTRACTOR
- RECEMENT JOINTS BETWEEN BRICKS AND BETWEEN LENGTHS OF FLUE LINING
- DISLodge WITH WEIGHT ON ROPE, OR ROD REBUILD TO ELIMINATE OFFSET, IF NECESSARY.
- REMOVE OTHER CONNECTIONS AND SEAL OPENINGS. USE FLUE FOR BOILER ONLY.
- MAKE END FLUSH WITH INSIDE OF FLUE
- SEAL TIGHTLY WITH BOILER PUTTY OR CEMENT
- EXTEND PARTITION TO FLOOR
- REBUILD (SEE BOILER MANUFACTURER'S CATALOG FOR RECOMMENDED DIMENSIONS).
- REBUILD, OR INSTALL FIRE CLAY FLUE LINING OF RECOMMENDED DIMENSIONS.
- EXTEND TO RECOMMENDED HEIGHT



DETAIL A
RECOMMENDED TYPE OF CHIMNEY TOP



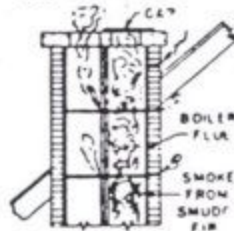
DETAIL B
RECOMMENDED DIVISION WALL BETWEEN ADJACENT FLUES



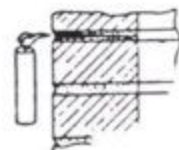
DETAIL C
COMPARISON OF COMMON SHAPES OF FLUES



DETAIL D
EXAMINING INTERIOR OF FLUE WITH MIRROR



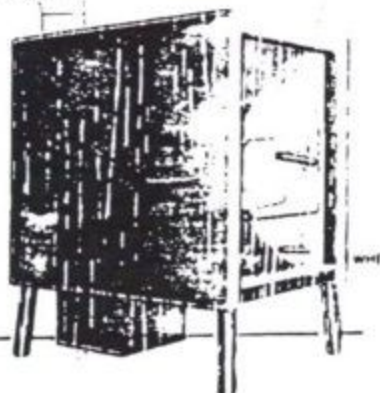
DETAIL E
SMOKE TEST FOR LOCATING LEAKS IN CHIMNEY



LOCATING WITH GAS

DRAFT HANDICAPS AT BOILER

- EXCESSIVELY LONG SMOKE PIPE
- SMOKE PIPE SLOPES DOWN
- UNNECESSARY BENDS IN SMOKE PIPE
- LOOSE FITTING DOORS
- SMOKE PIPE RUSTED THROUGH
- LEAKS AT PIPE JOINTS
- PIPE SEAM SEPARATED



GRATE INSTALLATION VOLCANO II

