

YUKON EAGLE

OWNER'S MANUAL

- **Assembly**
- **Installation**
- **Operation**
- **Repair Parts**

**Model No.
LWE-020**

CAUTION:
Read Rules And
Instructions
Carefully For
Safe Operation

IMPORTANT:

Installation must be made in accordance with state and local ordinances which may differ from this installation manual.



YUKON EAGLE III WOOD/COAL ELECTRIC FIRED CENTRAL FURNACE

FOR YOUR SAFETY:

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



DANGER

RISK OF FIRE OR EXPLOSION

Do not burn garbage, gasoline, drain oil, kerosene, thinners, etc.

WARNING

RISK OF FIRE

- Firing door and ash door must be tightly closed during operation.
- Do not operate with flue draft exceeding .03" W.C.
- Do not store flammable materials within marked installation clearances.
- Frequently inspect and clean heat exchanger, smoke pipe, and chimney of soot and/or creosote.
- Do not connect this unit to a chimney flue serving another appliance.

CAUTION

BLACK SURFACES ARE HOT

Keep children away. Do not touch.

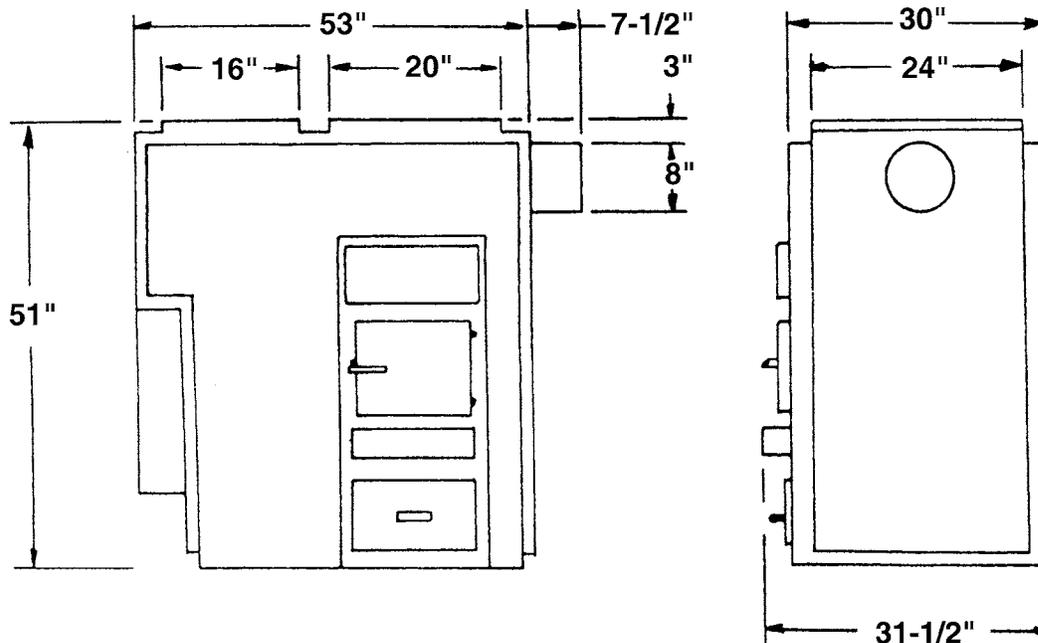


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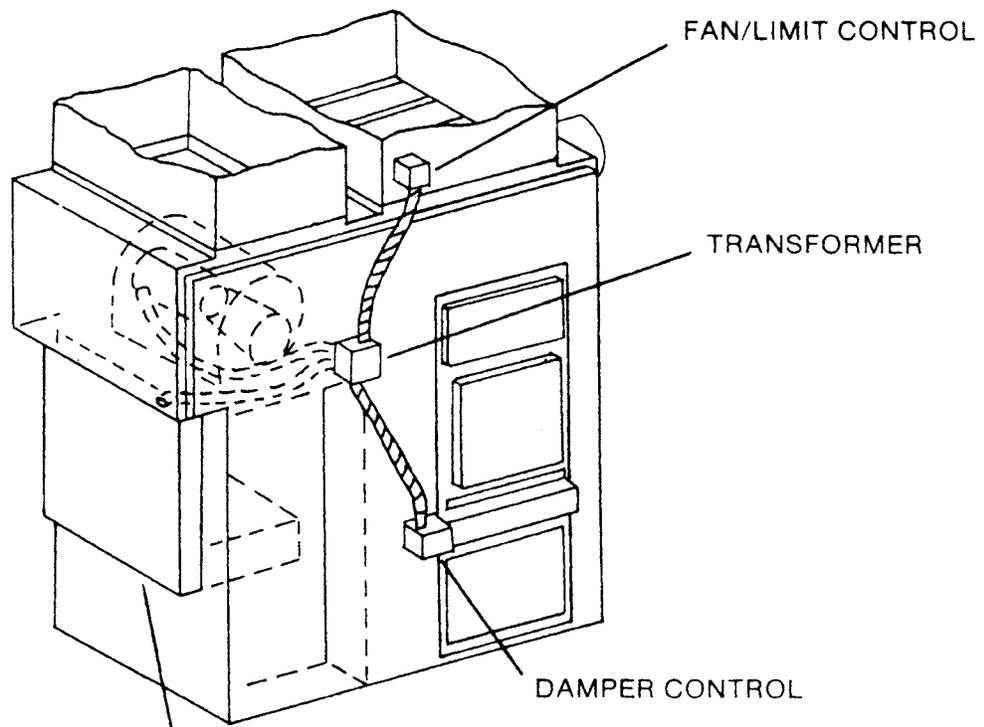
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**Areas of this manual refer to
Underwriters Laboratories (UL)
and the National Fire Protection
Association (NFPA).**

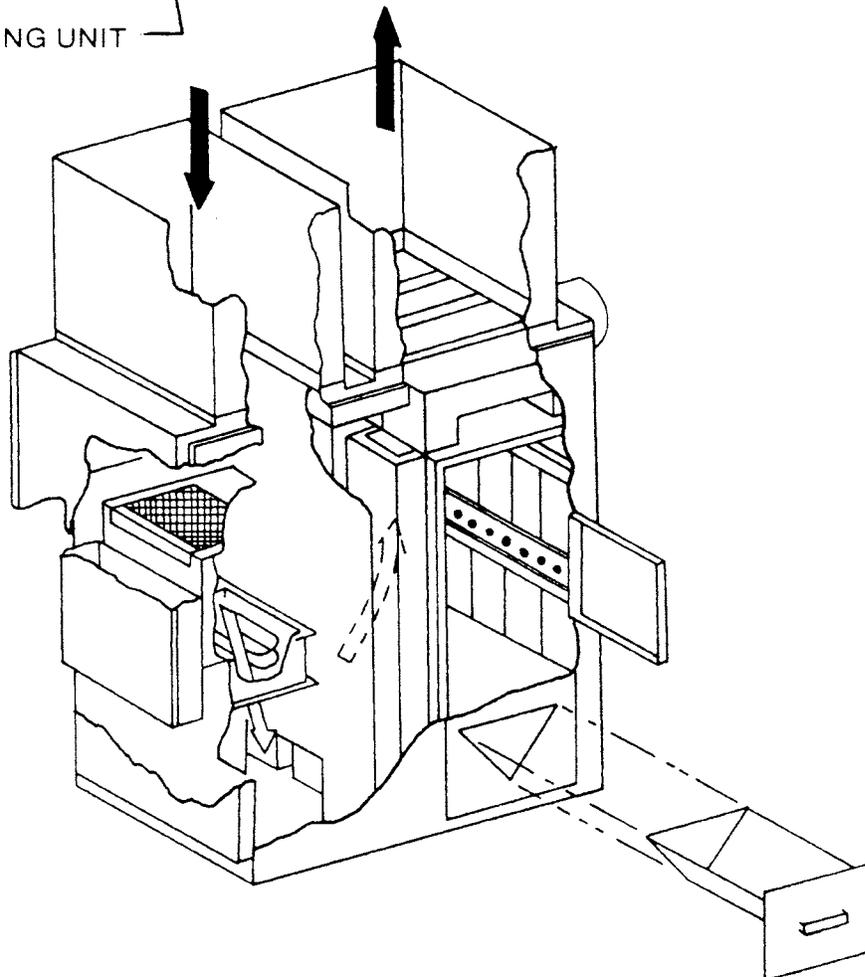
UL & NFPA are non-profit organizations.

UL is the oldest and largest public safety testing laboratory in the world. All furnaces in this manual are Listed by UL. They have passed all of the safety requirements in both the U.S. and Canada. The UL Listing label is also your assurance that UL employees inspect our furnaces during the manufacturing process several times a year on an unannounced basis.

NFPA Codes, Standards, recommended practices, and guides referred to in this document have been developed through a consensus process approved by the American National Standards Institute. State and local codes are adopted from these standards.



ELECTRIC HEATING UNIT



INTRODUCTION

This manual provides installation, operation and maintenance instructions and parts ordering information for the combination electric/solid fuel fired furnace.

IMPORTANT

Please read all instructions carefully before attempting installation of this unit. Installation should only be done by a qualified installer.

UNPACKING AND INSPECTION

Inspect the unit for visible damage. The furnace is shipped in two cartons. Contents of items shipped is as follows:

- 1. Carton One:** The basic furnace comes in this crate with the electric duct heater pre-installed. Inside the furnace wood-firing door, the primary air draft tube and a bag containing the wood firing door latch assembly and handle, the ash door latch handle and the ash door pull handle. Remove these items and set aside for later installation.
- 2. Carton Two:** This accessory package contains the thermostat, subbase, barometric damper, fan and limit control, damper control unit, transformer, wiring and owner's manual.

RULES FOR SAFE INSTALLATION AND OPERATION

1. Read these rules and the instructions carefully. Failure to follow these rules and instructions could cause a malfunction of the furnace. This could result in death, serious bodily injury and/or property damage.
2. Check your local codes. The installation must comply with them.
3. Use only the type of fuel approved for this furnace. Over-firing will result in failure of heat exchanger and cause dangerous operation .
4. You must have a sufficient supply of combustion air to the area in which the furnace is located. (page 16)
5. Factory Built Chimneys: Connect this furnace to a chimney that complies with NFPA 211 3-1.2. Factory built chimneys for use with wood-burning appliances shall comply with the HT requirements of UL 103 or CAN/ULC-S629-M87. This means you must install what is referred to as type HT all fuel chimney.
Masonry Chimneys: Connect this furnace to a chimney that complies with NFPA 211 3-1.2. A field constructed chimney of solid masonry units, bricks, stones, listed masonry chimney units, or reinforced Portland cement concrete that is lined with suitable chimney flue liners and built in accordance with the provisions of Chapter 4 of this standard.
6. Follow a regular service and maintenance schedule

for efficient and safe operation.

7. Before servicing, allow furnace to cool. Always shut off electricity and fuel to furnace when working on it. This will prevent electrical shocks or burns.

FURNACE SPECIFICATIONS

Electric Heating Element	4-stage, 20 Kilowatt
Input Rating	68,260 BTU/HR.
Blower Size	10" x 10"
Blower C.F.M.	800 - 1800
Motor Size	1/3 - 1/2 - 3/4 HP
Firebrick Lined	2" THICK
Cast Iron Grates	YES
Wood Fire Door	11" x 10"
Wood Combustion Chamber Size	24" x 16"

LOCATING THE FURNACE

Locate the furnace as close to the chimney and flue as possible and near the center of the heat distribution center.

Furnace should be located so that sufficient air is available for proper combustion and ventilation. Location must comply with minimum clearances required for fire protection and accessibility. See Fig. 1, page 6 for typical installation. See Combustion Air, page 16.

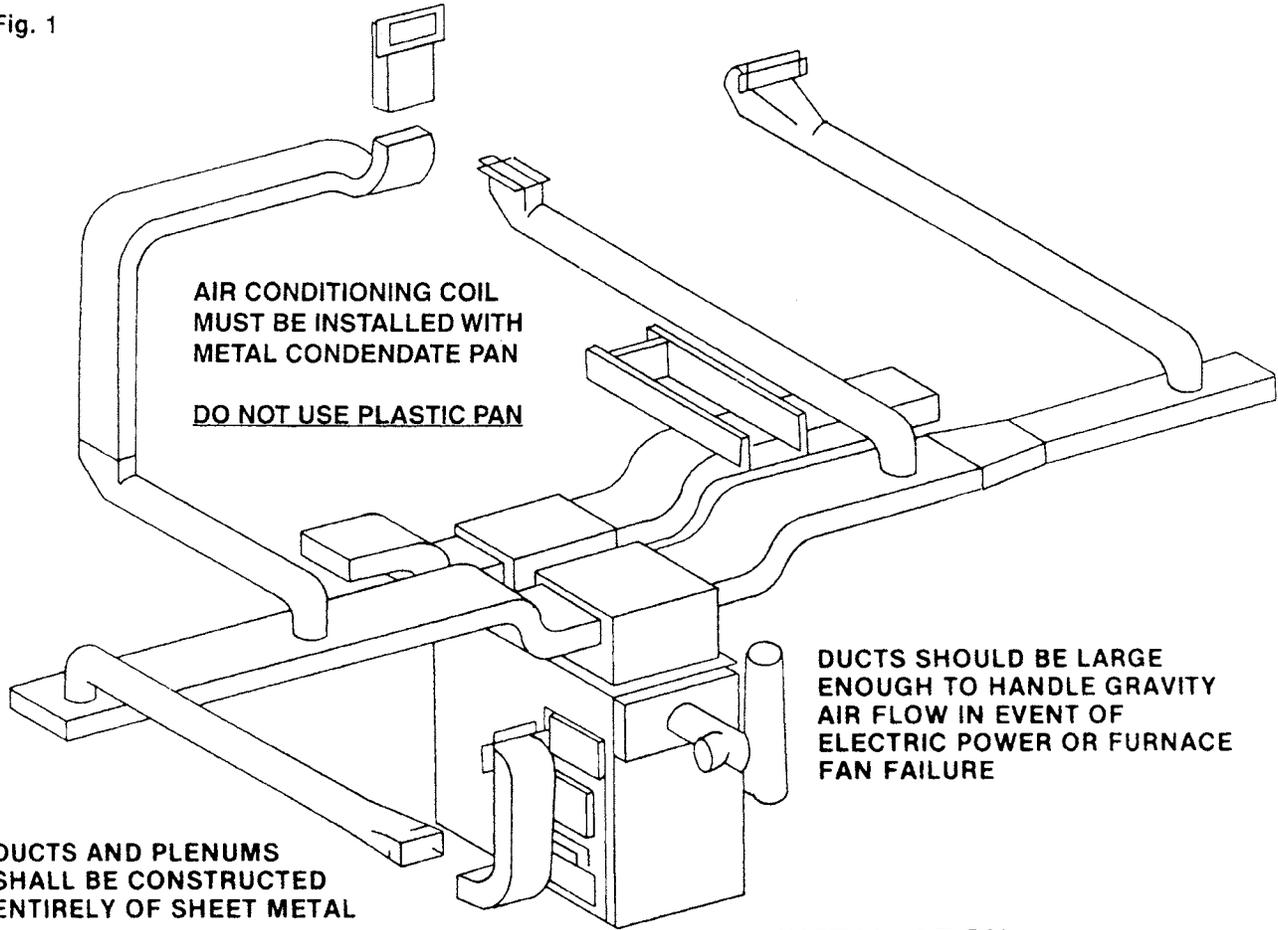
NOTE

It is recommended that a 2", noncombustible raised pad be used for the furnace. This will prevent moisture from getting under the furnace and causing corrosion.

DANGERS - CAUTION - FIRE HAZARDS (Burn wood logs or coal only)

- Do not install a power humidifier on the warm air plenum.
- Do not load wood above the top of the bottom row of bricks. Doing so will cause over-fire and damage to combustion chamber will result.
- Do not install on combustible floor.
- Load wood or coal carefully or damage may result to fire brick.
- If an over-fire situation should occur, be sure ash door and fire door are closed. Turn thermostat down to close primary air damper.
- In the event of a power failure, be sure ash door and fire door are closed.
- In the event of a soot fire, call your fire department immediately. Turn thermostat down to close primary air damper and make sure ash door and fire door are closed.

Fig. 1



TYPICAL INSTALLATION

INSTALLATION

Typical furnace installation is shown in Fig. 1. Place your furnace in the pre-selected location, making sure it is level. Proceed as follows:

READ ALL INSTRUCTIONS BEFORE INSTALLING

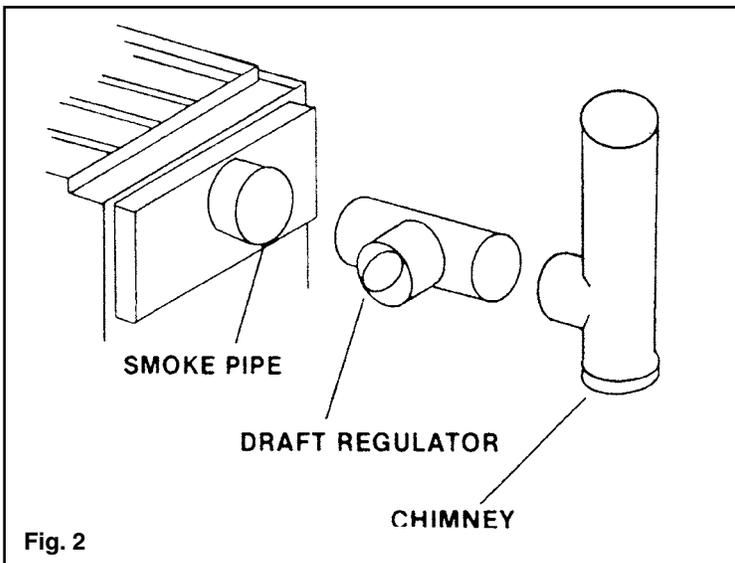


Fig. 2

NOTE

If barometric damper control is installed horizontally, as illustrated, it must be at least 18" from furnace flue outlet. See Fig. 2.

LOWER FIREBRICK

1. Three 6" firebricks are set along lower rear of firebox.
2. Four 6" bricks are set in lower left and lower right of firebox. These bricks should be pushed to the rear of the firebox. See Fig. 6, page 9.

UPPER FIREBRICK

1. Three 6" firebricks are set along upper rear of firebox.
2. Four 6" bricks are set along upper left and upper right of firebox.
3. All bricks should fit tightly together with no gaps between them.
4. Brick retainers are tightened to hold bricks securely in place.

SECONDARY AIR SHUT OFF

1. Remove round secondary air shut off disc from plastic bag.
2. Screw disc to the intake cover just installed

Opening the disc when burning wood provides room air to the round perforated tubes between the top and bottom row of fire-brick, thereby causing secondary combustion of the unburned wood gases as they leave the initial flame. This patented feature increases wood burning efficiency up to 40% while reducing smoke and creosote.

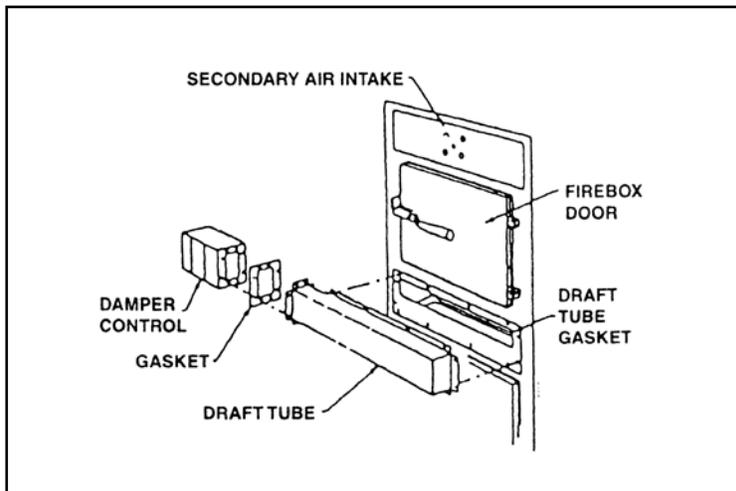
DOOR HANDLE

Install door handle as follows: See page 9.

1. Remove handle assembly, machine screw and washer from plastic bag.
2. Place machine screw through handle assembly.
3. Place washer over machine screw and fasten the handle assembly to the door.

SECONDARY AIR INTAKE COVER

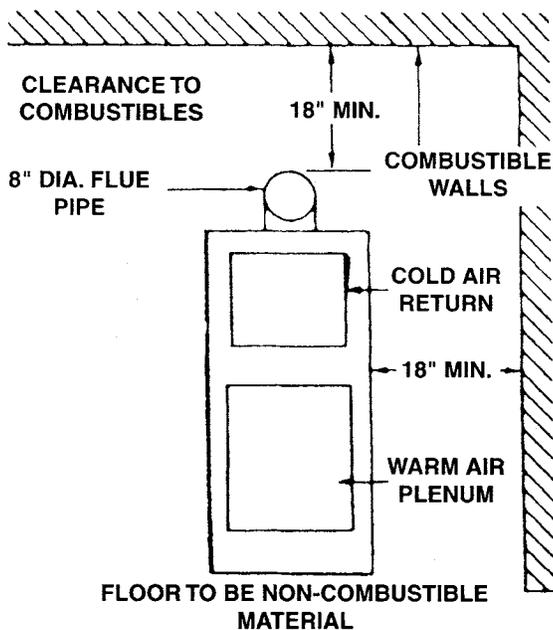
1. Remove secondary air intake cover from accessory package and align over mounting holes located above fire door assembly on face of furnace.
2. Insert 12 number 10 x 3/4 hex HD drill screws (furnished with cover) through mounting holes and tighten.



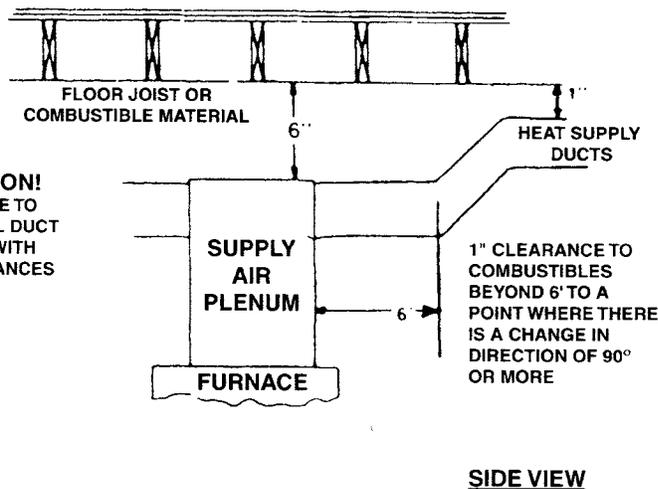
CLEARANCES TO COMBUSTIBLES

Above Top of Warm Air Plenum	From the Front	From Sides and Back	From Chimney Connector	6 Ft. of Plenum	6 Ft. of Plenum
6"	48"	18"*	18"	6"	1"

Rear clearance of 24" min. required to service blower.



CAUTION!
BE SURE TO
INSTALL DUCT
WORK WITH
CLEARANCES
SHOWN

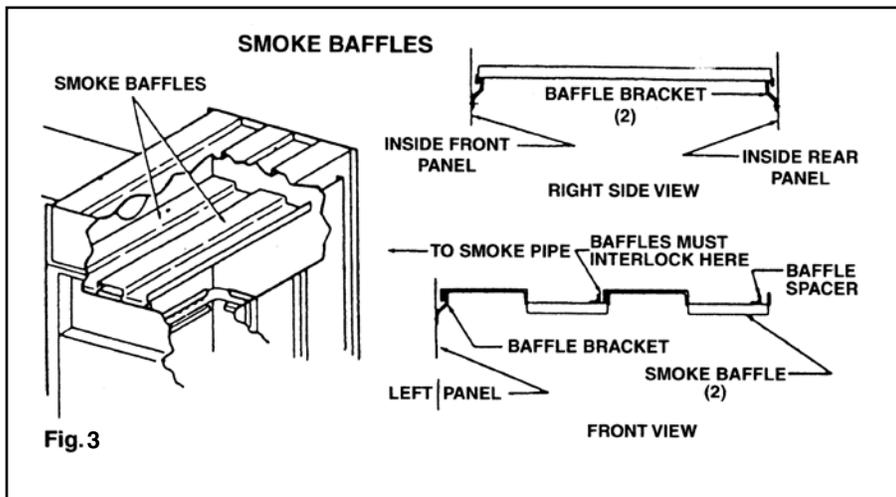


Up to 50% less clearance between combustible walls and chimney connector to furnace and ducts is allowed if insulated according to NFPA Standard 90B or your local building code. This copyrighted book is available from the National Fire Protection Association Inc. P.O. Box 9101, Quincy, MA 02269-9101.

SMOKE BAFFLES

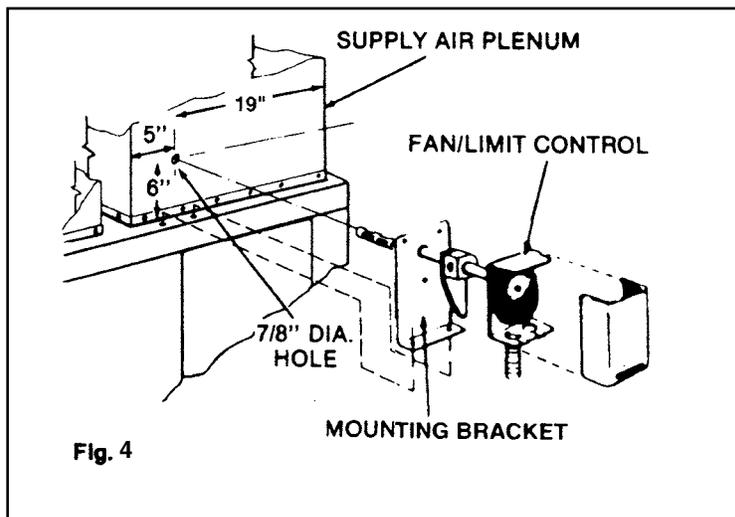
The smoke baffles are factory installed and **must** be checked to see that they have not become dislodged during shipping. Refer to Fig. 3 for proper installation and, if necessary to reposition, proceed as follows:

1. Holding baffle in proper position, tilt rear up to clear baffle mounting brackets.
2. Push baffle up to top of combustion chamber above all three brackets, level off, slide left and lower onto mounting brackets.
3. Check to see that all three brackets are engaged.
4. Repeat with second baffle, making sure baffles interlock as shown in Fig. 6. When properly installed, baffles will not move more than 1/4" in any direction. Failure to have baffles properly installed will severely affect combustion efficiency.



INSTALLING THE HONEYWELL FAN/LIMIT CONTROL

1. After attaching the warm air sheet metal plenum to the furnace, using the fan/limit control white mounting flange as a template, place it on the top edge of the furnace casing above the fire door so that the holes in the furnace casing and the flange are aligned with each other. Attach the screws to secure the flange. (See Fig. 4)
2. Using the flange as a template, mark the center of the large hole and the two smaller holes, remove the bracket and drill a 7/8" hole and two 1/8" holes in the sheet metal plenum.
3. Replace the flange and reattach it with the mounting screws.
4. Mount the fan/limit control ridged bracket (furnished with the fan/limit control) with two 1/2 x 7 sheet metal screws.
5. Insert the fan/limit control into the bracket. Align so that it is straight. Tighten setscrew to secure control.



MOUNTING THE THERMOSTATS

The thermostats must be mounted on an interior centrally located wall away from direct sunlight and drafts and approximately 5 feet above the floor. It is not required that they be level. Place them right next to each other.

Two Honeywell digital thermostats are furnished with all multi-level furnaces. The larger thermostat controls your gas, oil or electric, whichever back-up fuel you have. It offers one setting for the temperature you want the burner started in the event your wood supply is not adequate to keep your home at its temperature setting. It also has a night setback feature that allows you to keep a lower temperature at desired times. This thermostat also controls the air conditioning, if applicable.

The smaller thermostat controls the wood/coal room temperature. It does not have a night setback feature.

If you have no plans for air conditioning now or in the future, you will need a 3-wire thermostat cable from your furnace to your thermostat. If you intend to install air conditioning either now or in the future, a 5-wire thermostat cable is required.

TYPICAL THERMOSTAT SETTINGS

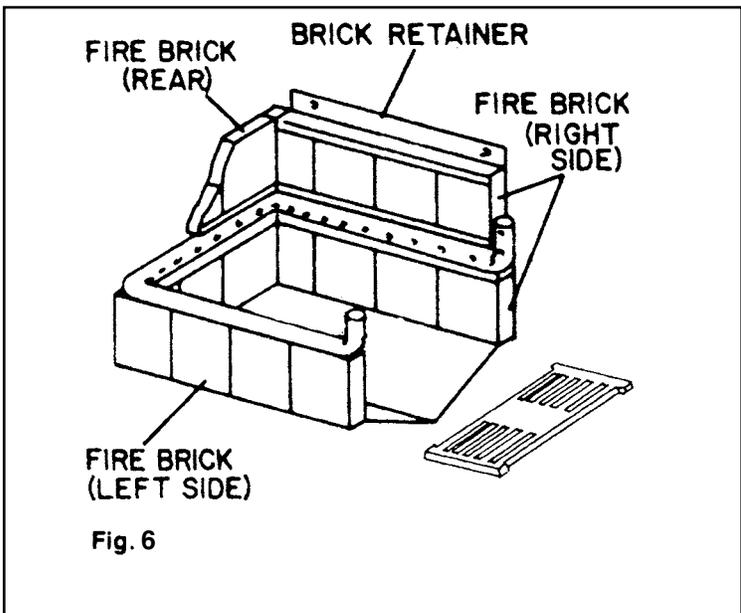
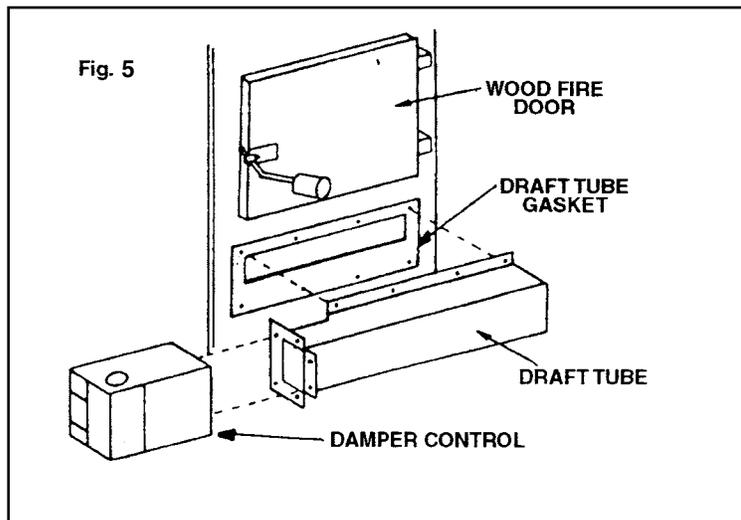
The wood thermostat (the smaller one) is set on 74 degrees. The larger thermostat is set at 70 degrees. The night setback on the larger thermostat is set at 66 degrees. The wood thermostat calls for heat first by opening the air to the wood fire. It opens and closes automatically to keep the temperature at 74 degrees. If you run low or out of wood, the burner will come on automatically when the temperature in the home reduces to 70 degrees, or if the thermostat were in the set-back mode, the burner would not start until it is called on at 66 degrees.

When the expensive fuel is burning, the wood thermostat goes blank.

DAMPER CONTROL

Remove control from accessory box and install as follows:

1. Remove the four screws that hold the gasket to the DS-103 panel.
2. Mount the DS-103 to the draft tube using screws removed above. Make sure gasket stays in place. (see Fig. 5, page 9)
3. Loosen the two screws located at slotted end of draft tube, and remove remaining 10 screws. Make sure gasket stays in place.
4. Mount DS-103 control and draft tube assembly to furnace as shown in Fig. 5 (page 9.)



INSTALLING AIR CONDITIONING COIL

The coil should always be installed in the warm air plenum. The metal condensate pan should be at least 2 inches above the fan limit control probe so that the heated air flow direction is not changed. The air flow needed for gravity operation in the event of an electric power or furnace fan failure must not be restricted. It is recommended that you install manual dampers along side of the condensate pan that can be manually removed or opened for winter operation.

DS-103 DAMPER CONTROL

The T&T terminals are connected to the T&T terminals on the oil burner. The R terminal is not used. The C terminal is connected to the C terminal on the 24-volt transformer. Terminal 1 is connected to the wood thermostat. Terminal 2 is connected to the burner thermostat. When terminal 1 is energized by the wood thermostat, a relay on the circuit board energizes a solenoid that opens a damper that supplies air to the wood fire. When terminal 2 is energized, it closes this damper and energizes the T&T terminals, which in turn energizes the burner.

ELECTRIC WIRING

All electrical wiring must be done in accordance with the National Electrical Code and the code legally authorized in the area where the installation is being made. The circuit protector device must be located in a convenient place near the furnace. No lighter than No.14 wire should be used in the furnace power supply circuit. All furnaces covered by this manual and installed in the United States of America operate on 115 Volts, 60 Cycle, 1-Phase Alternating Current with a 15 amp Circuit Protector device.

WARNING

Turn off electric power at circuit protector device before making any line voltage connections.

WIRING THE FURNACE

The furnace wiring is provided in harness form.

Mount the 4 x 4 junction box on 7/8 inch diameter opening on front of blower compartment and secure with conduit connector and lock-nut for blower motor lead conduit and least one screw.

Connect components as shown in wiring diagrams on pages 10-11.

CAUTION

This furnace is not approved for use with aluminum wire.

ELECTRIC HEATING UNIT

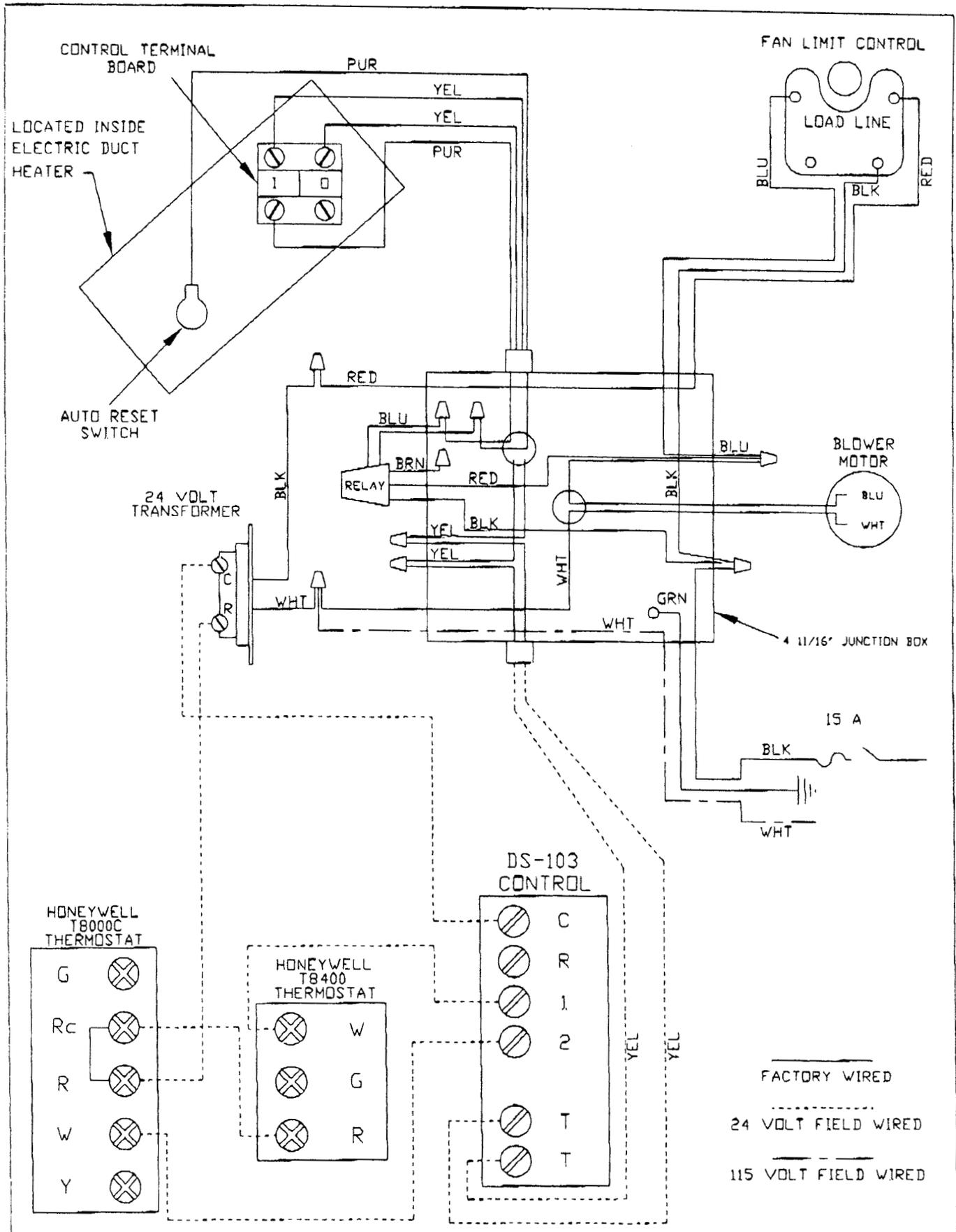
The electric heating element circuit come pre-wired and assembled in a metal chassis in the furnace blower compartment, Fig. 8. Make sure the wiring from the junction box is connected to the control terminal board and automatic reset switch as shown in Fig. 8 and 8A.

Connect a 240 volt power supply to the power distribution panel as in Fig. 8. Provide a good equipment ground.

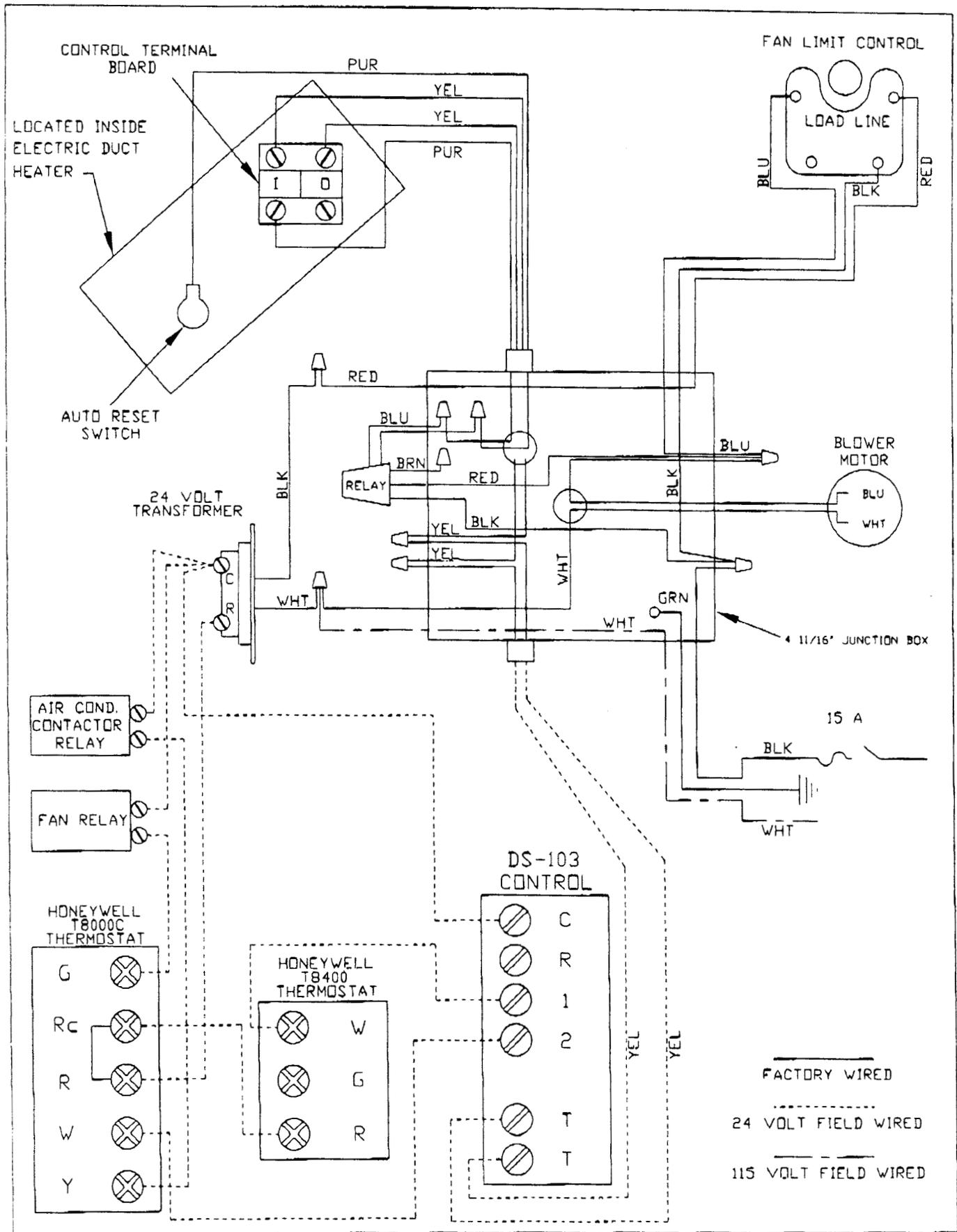
NOTE

24 volt wires from a transformer to DS 103 and from thermostat to versatrol need not be enclosed in conduit unless required by local codes.

LWE 020 ELECTRIC/WOOD HEATING ONLY



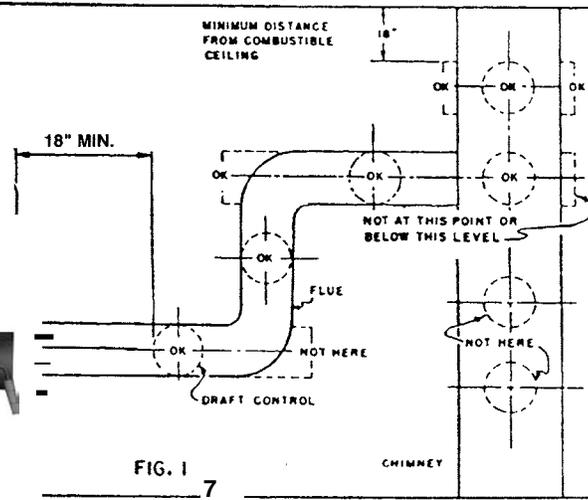
LWE 020 ELECTRIC/WOOD HEATING WITH AIR CONDITIONING



INSTRUCTIONS FOR INSTALLING

FIELD R-C BAROMETRIC DRAFT CONTROLS CHOOSING THE LOCATION

Do not attach draft control to top or bottom of flue pipe, nor in room separated from appliance. Best location is as close to appliances as possible.



INSTALLATION

Important: Make these adjustments when installing.

VERTICAL FLUE:

1. Adjustment weight must be in RIGHT HAND SLOT (marked "V") in bracket on gate.
2. The arrow on flap at bottom of gate must line up with letter "V" on lower right part of gate. If it does not, remove flap, turn over and snap on to gate again.

Flap can be removed by inserting small screw driver at the back side of the gate between the gate and the flap, then pulling downward on flap.

HORIZONTAL FLUE:

1. Adjustment weight must be in LEFT HAND SLOT (marked "H") in bracket on gate.
2. The arrow on flap at bottom of gate must line up with letter "H" on lower left part of gate. If it does not, remove flap, turn over and snap on to gate again.

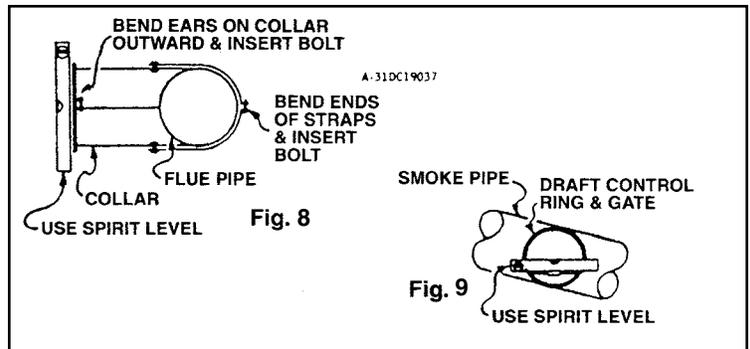
Bend outward the two ears at the front corners of collar and insert clamping screw. Bolt the remainder of the collar together. See Figure 8. Hold the collar against the flue in the EXACT position and mark the outline of the collar on the flue. Cut a hole in the flue about half an inch smaller than the marks.

Then cut a series of short slits (about 3/8" or 1/2" deep) around the edges of the opening. After the collar is strapped on the flue the cut edges can be bent outward into the collar and thus make a better joint. WHEN FINISHED, THE OPENING INTO THE FLUE MUST BE EQUAL IN SIZE TO THE COLLAR OF THE DRAFT CONTROL. If flue pipe is made of material too heavy to bend out

into the collar, the opening into the flue must be within 1/4" of the same diameter as the collar.

Strap the collar to the flue pipe and place the draft control into the collar, fastening it there by tightening the clamping screw in the collar.

Use a spirit level to make sure that the control does not lean forward or backward but instead is plumb in both directions, regardless of whether the flue is horizontal, vertical or sloping. See Fig. 9.



INITIAL SETTING OF BAROMETRIC CONTROL

Set the control at a maximum of .03 or as low a draft as will give good combustion and meet the requirements for heat. Turn adjustment weight counter-clockwise to loosen, then slide in slot to proper position and tighten. Bracket is marked 2, 4, 6, and 8, which indicates draft settings of .02, .04, etc. (These are drafts in flue adjacent to control, not over-fire drafts.) A monometer must be used to accurately adjust flue draft.

CAUTION

Do not use any smoke pipes less than 24 gauge between furnace and chimney.

CONNECTING SMOKE PIPE

Set the smoke pipe end of the furnace as close to the chimney as possible. For every foot of lateral pipe, the rise of the smoke pipe toward the chimney must be at least one inch. Do not exceed 10 feet in length. A cleanout tee should be installed for removal of soot and fly ash. (See Fig. 2, page 6 and Fig. 7, page 12)

Do not install the smoke pipe longer than necessary to reach the chimney for purposes of trapping heat. The smoke outlet temperature is designed so that the heat emitted is needed to carry the by-products of combustion out through the chimney.

The smoke pipe must not pass through any combustible material.

WARNING

No damper, heat saver or automatic vent damper device except the barometric draft regulator should be installed in or on the smoke pipe.

The smoke pipe entrance into a masonry chimney should be at least 2 feet above the cleanout. The smoke pipe must not extend into the chimney beyond the inner face of the chimney liner.

LESSER CLEARANCES TO COMBUSTIBLE MATERIALS ALLOWED

This furnace is UL Listed thus requiring 18 inches from the smoke pipe to a combustible surface. A reduction of 9 inches from a combustible ceiling and 12 inches from a combustible wall is allowed if the space is insulated according to NFPA 90B, table 6-5.1.2.

DO NOT CONNECT THIS FURNACE TO A CHIMNEY SERVING ANOTHER APPLIANCE

The chimney should be no less than 8 inches inside diameter or equal.

WARNING

Check your chimney. The chimney is a very important part of your heating system. It must be the right size, properly constructed and in good condition. No furnace can function properly with a bad chimney. The chimney must supply a draft of at least .03 Water Column. If possible, use a 15 foot or higher chimney. Add an additional foot to the chimney for each 1,000 feet of elevation above sea level.

PROPER CHIMNEYS

The National Fire Protection Association (NFPA) requires that all factory built chimneys be Listed and installed in accordance with conditions of the Listing in the manufacturers instructions. NFPA also requires that your chimney extend at least three (3) feet above the highest point when it passes through the roof and at least two (2) feet higher than any portion of the building within ten (10) feet of the chimney. (See Fig. 10)

Factory built chimneys must be what NFPA refers to NFPA 211 1-5.2.17.4* as Type HT. HT is an abbreviation meaning high temperature.

Masonry Chimneys as referred to in NFPA 211 1-5.2.17.6, a field constructed chimney of solid masonry units, bricks, stones, listed masonry chimney units, or reinforced concrete that is lined with suitable chimney flue liners and built with the provisions of Chapter 4 of this standard.

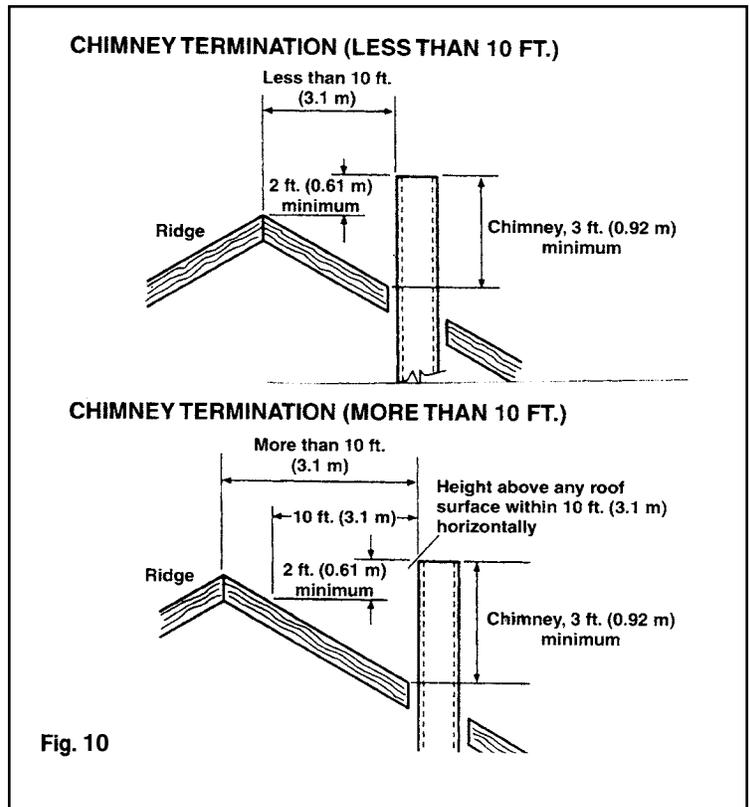


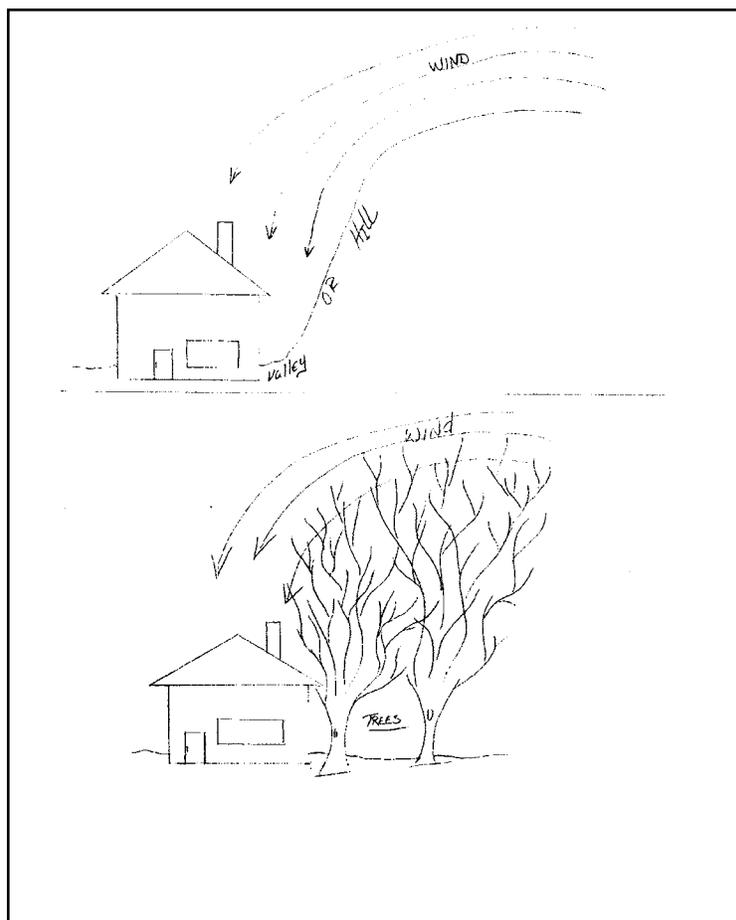
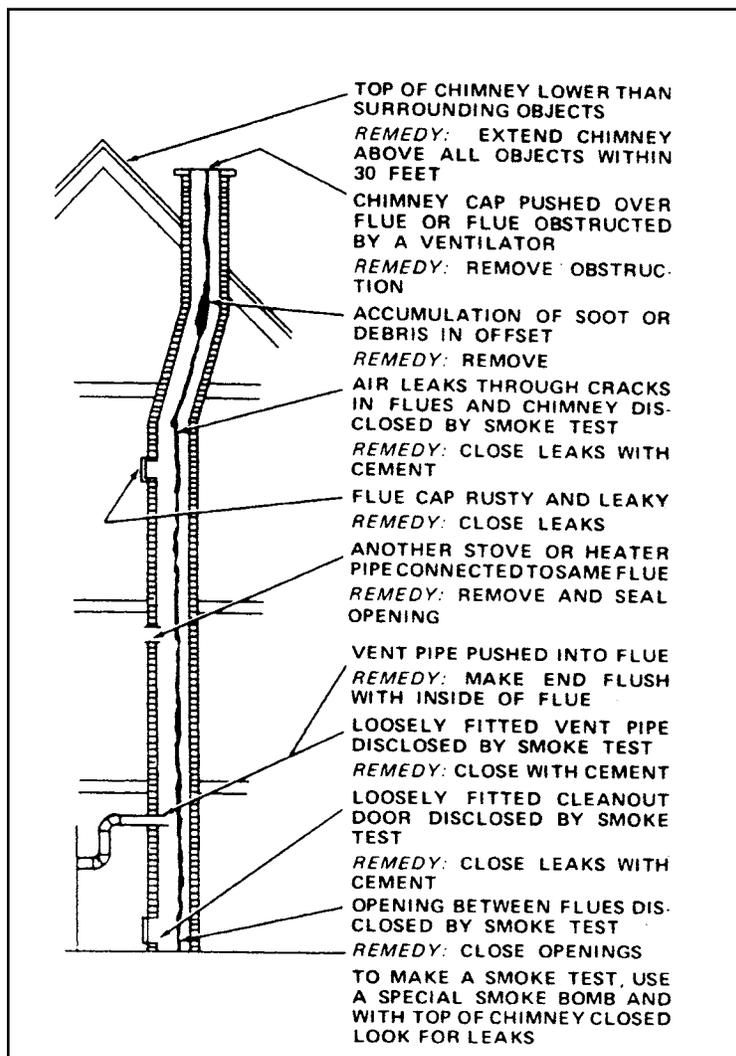
Fig. 10

FAULTY CHIMNEY AND/OR DRAFT PROBLEMS - CAUSES AND CURES

A sound chimney system is imperative, especially when burning wood. Indoor chimneys, either masonry or type "HT" metal chimneys are best. Because warm air rises, a warm chimney allows the smoke and other by-products of combustion a natural exit up and out the chimney. Outdoor chimneys should be your last choice. Cold air naturally falls right down the cold chimney. Until the heat from the furnace warms the chimney, there is no natural draft to allow the smoke and by-products of combustion to rise naturally up the chimney. Outdoor class "A" triple wall is not acceptable because their thermo-siphon design will not allow the chimney to heat up, causing heavy creosote build-up and possible chimney fires.

If you know your chimney is sound and you still have downdraft problems such as smoke or smell in the room in which the furnace is located, your chimney may not be operating properly. One or more of the following suggestions may be necessary.

1. Barometric draft control- This control must be set at .03. This is just a guide. It must be set with a draft gauge to prove that the chimney is drawing .03.
2. Combustion air -You must have outdoor combustion air introduced into the room where the furnace resides in the manner described on page 17. This method supplies air for combustion as well as replacing air that is drawn out by the chimney. Leaky doors and windows will not provide acceptable results.
3. Cold outdoor chimney -Sometimes in the spring or fall, or if you live in a mild climate, your heat demands are small and your chimney just does not heat up enough to induce a natural exit up draft, you may want to consider a power vent to force a draft up the chimney. A Model D-3 or AD-1 power venter is available from Tjernland Manufacturing Co. in White Bear Lake, Minnesota or Model D1-2 is available from Field Controls Co., Kinston, North Carolina.
4. Chimney not tall enough -Your chimney must terminate at least 2 feet above the peak of the roof. Adding more chimney height sometimes cures the problem. (See Fig. 12, page 14)
5. Home located on side of hill- When the wind blows over a hill toward your home, the wind will fall. This could cause a downdraft into your chimney. Some common solutions to correct downdrafts are to add a chimney cap with a weather vane, add height to the chimney or add a power venter.
6. Tall trees near your home -If you have trees that are near and higher than your home, a downdraft can occur when the wind blows. Correct the same way as if you live on the side of a hill or in a valley.
7. Chimney too large -Your chimney should not be more than 8 inches in diameter or the equivalent. If too large, the sides of the chimney may not heat up to create a natural draft. When this happens, the smoke and gases cool. They become heavy and other gases from the fire try to penetrate this heavy column of cool air. This results in back puffing, poor combustion or burning and may cause odors in your home. The solution is to improve your chimney or line it with 8-inch type 304 stainless steel flue liner. If your large chimney is outside masonry, insulate between the masonry and 8-inch flue pipe.



CAUTION

DON'T INSTALL THIS FURNACE OR ANY FURNACE UNLESS YOU PROVIDE COMBUSTION AIR AS DESCRIBED IN THESE INSTRUCTIONS.

NOTE

If you use your fireplace or use a kitchen or bathroom exhaust fan, you should install an outside air intake. These devices will draw off the furnace combustion air.

WARNING

Enough air insures proper combustion and assures that no hazard will develop due to the lack of oxygen.

FURNACE ROOM INSTALLATION

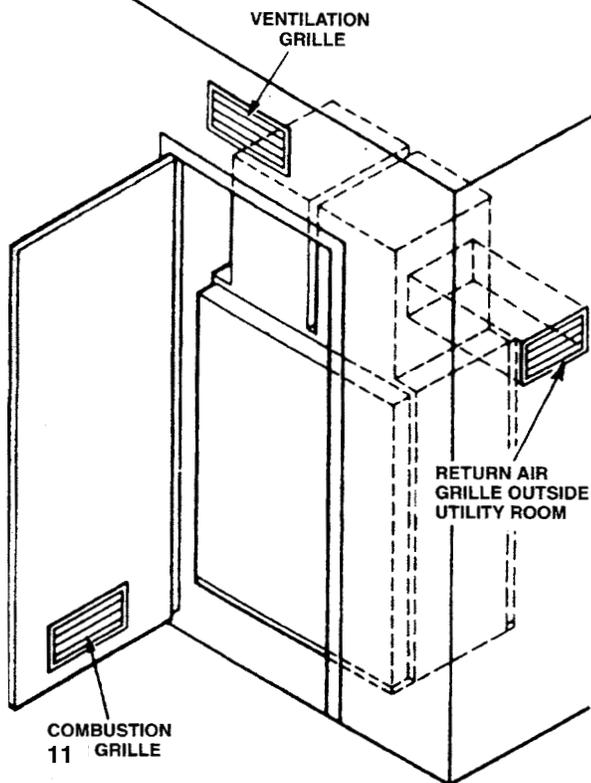


Fig. 16

COMBUSTION AIR

Make-up outside air to the furnace for proper fuel combustion must be provided by openings to the outside of the building. The openings of ducts supplying such make-up air shall have unobstructed areas not less than the area of the flue pipe.

You must provide for enough fresh air to assure proper combustion. The fire in the furnace uses oxygen and must have a continuous supply. The air in a house contains only enough oxygen to supply the burner for a short time. Outside air must enter the house to replace that used by the furnace. See page 16

FURNACE LOCATED IN CONFINED SPACE

A. When the furnace is in a utility room, install two open grilles in a wall or door opening to the rest of the house. One grille will supply combustion air. Locate it near the floor. The other grille is for ventilation. Locate it close to the ceiling. Each grille must have a free area of not less than one square inch for each 1000 BTU/hr. of the total input rating of all the appliances in the confined space.

FOR EXAMPLE: Your furnace is rated at 150,000 BTU per hour. The water heater is rated 30,000 BTU per hour. The total is 180,000 BTU per hour.

You need two grilles, each with 180 square inches of free opening. Metal grilles have about 60% free (open) area, so you need two metal grilles with 300 square inches each of louvered area. The height should be about half the width.

Refer to Fig. 11 which shows grille installation. Note also that the return air duct starts from outside the confined space, extends all the way to the furnace and is securely attached. This is important.

B. Install a duct or pipe from a point near the burner to a ventilated attic or crawl space or the outside where fresh air is freely available. (Fig. 12, page 16). The duct should have a net free area of 1 square inch for each 5,000 BTU/hr. input of all appliances. Screen the opening to keep animals or birds from entering. The following chart (page 16) shows the BTU per hour capabilities of ducts with several screening methods.

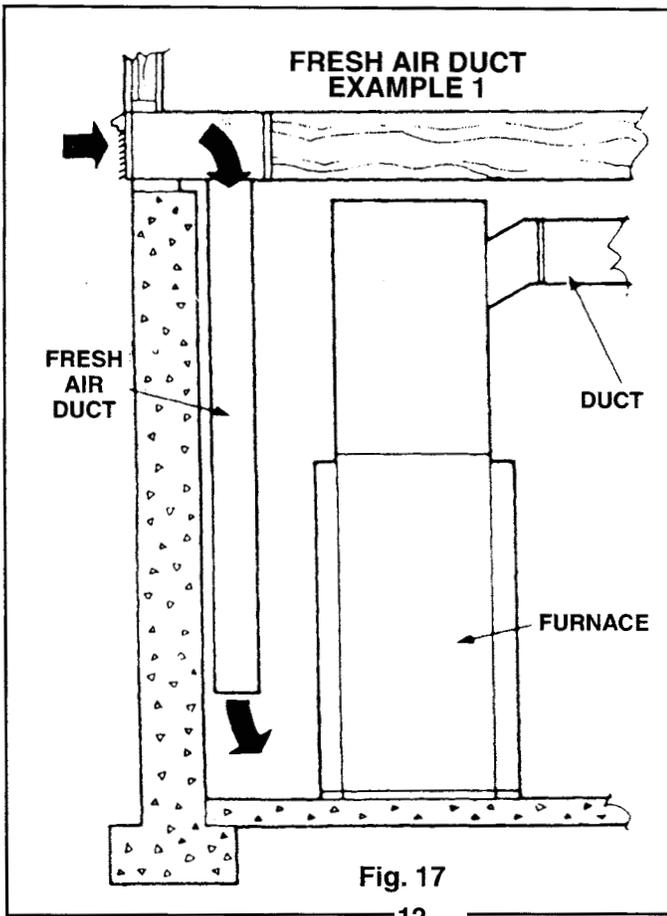
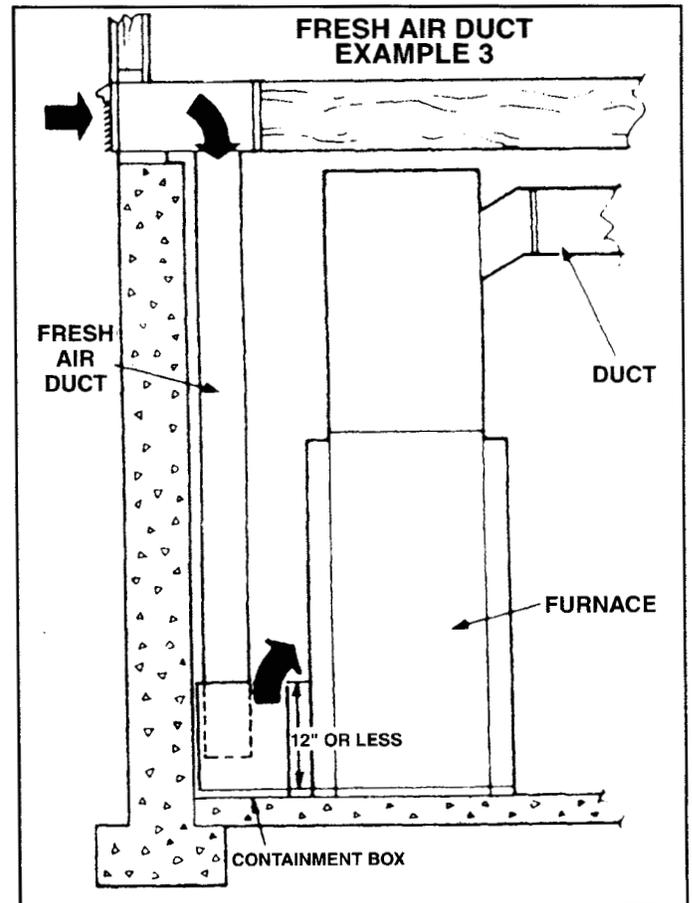
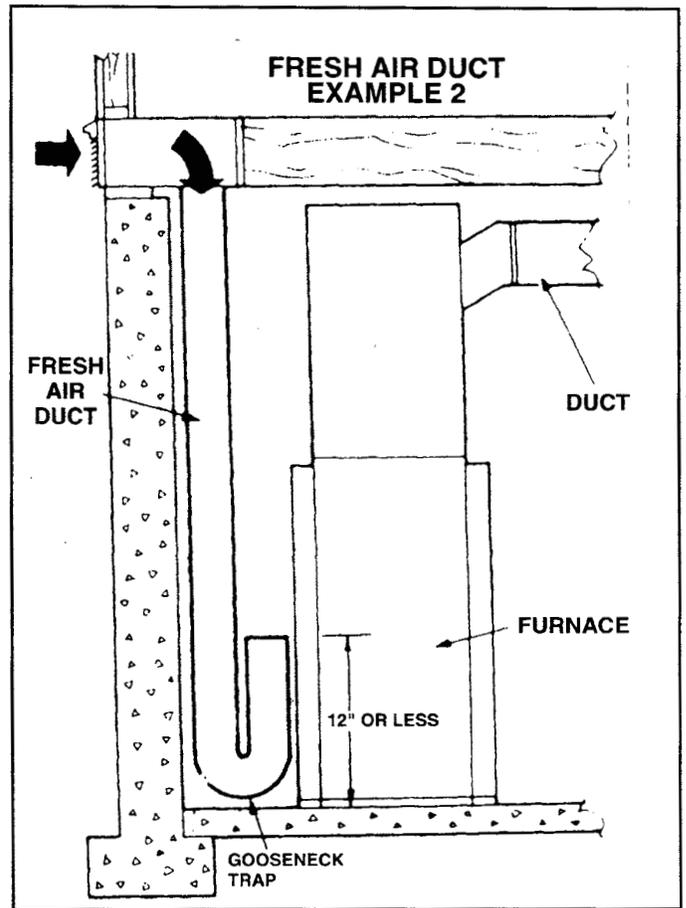


Fig. 17

12



NOTE

Lack of make-up combustion air will cause a negative pressure or vacuum to occur within the home. This negative pressure will cause cold air to be drawn into the home from around doors and windows which will create drafts. It will also cause incomplete combustion of the wood. Incomplete combustion of wood will tend to increase the possibility of creosote build-up in the heat exchanger, flue pipe and chimney. This will have an insulating effect which will cause more heat to be lost up the chimney and less heat available to the heating distribution system.

FRESH AIR DUCT CAPACITIES

Fresh air duct capacities for duct supplying fresh air to furnaces in tightly constructed houses.

BTU Per Hour Input*

Size	1/4 in. Mesh Screen BTU	Wood Louvers BTU	Metal Louvers BTU
3-1/4 x 12 in.	144,000	36,000	108,000
8 in. round	200,000	50,000	150,000
8 x 12 in.	382,000	96,000	288,000
8 x 16 in.	512,000	128,000	384,000

* Based on opening covered by 1/4 inch mesh screen, wood or metal louvers.

OPERATION

ELECTRIC HEATING UNIT

To start electric heating unit, proceed as follows:

1. Be sure electrical fuses are in good condition and that any circuit breakers are in "on" position.
2. Be sure duct heater is placed properly in blower compartment.
3. Set thermostat about 10 degrees higher than room temperature to make sure thermostat contacts are made. (Remember "H" lever on thermostat is for electric heat). If wiring is properly done and all controls properly installed and adjusted, the blower motor will start and the heating elements begin to heat up.

IF ELECTRIC HEATING UNIT FAILS TO OPERATE

Refer to Fig. 8

WARNING

Always shut off all power to the furnace before working on it!!

1. Recheck all fuses and circuit breakers to be sure power is available to the furnace.
2. See that the temperature limit control manual reset switch is "on".
3. Repeat OPERATION steps. If furnace does not operate, have a qualified technician inspect the furnace.

NOTE

Whenever the access door to the duct heater is opened the door interlock switch opens, removing power to the heating elements. **The duct heater will not operate with this door open.**

SEQUENCE OF OPERATION

When the room temperature drops below the temperature at which the "H" lever is set, 24 volt current from the damper control passes through the control terminal board. This closes a circuit in the control terminal board, permitting 115 volts to pass through the relay mounted on the junction box. This activates the blower motor, sending air through the heat distribution system.

As the blower motor warms up to full speed, the airflow switch in the duct heater closes, sending current to the heating elements. Air from the blower motor passes through the heating elements and is then forced through the heat distribution system, maintaining the house at the thermostat setting.

The four heating elements in the duct heater are separated by 45 second time delays. Whenever the electric furnace goes into operation the heating elements are automatically activated, one at a time, with a 45 second interval between each element until all four elements are giving off heat.

WOOD FIRING THE UNIT

Place 3 or 4 split, dried pieces of wood in the firebox with paper and kindling as you would in a fireplace. Set the thermostat a few degrees above room temperature to open the automatic draft. Light the paper and when the fire has started, set thermostat to desired room temperature. Thermostat will then open and close damper as heat is required.

Proceed slowly on initial firing of the wood firebox. Avoid high firing or damage to the heat exchanger may occur.

CAUTION RESTRICTED USE DURING ELECTRIC POWER OR FURNACE FAN FAILURE

Furnace may be converted to a gravity system. Directions must be followed carefully to avoid an over-fire situation.

Remove access door to blower compartment and remove air filter. Then replace access door. Keep ash drawer tightly closed. Do not tamper with wood primary air control. Load wood to half the recommended normal height, approximately 4 inches above grate.

Do not overload, as no furnace fan is available to rapidly carry away the heat. Load small amounts of wood frequently until power is restored.

Open all air registers and remove all obstructions near them. Keep children away from air registers or burns could result. Primary air damper and burner will operate automatically when electric power is restored.

IMPORTANT

Keep ash drawer empty. Primary air to the wood chamber travels under the grate. Also, if ashes are permitted to build up above the grates, the grates will warp and eventually burn out.

CAUTION OVERLOADING WITH WOOD

Do not overload your furnace with wood. Failure or damage to the firebox could result. Never allow the hot coals to build up above the lower firebricks.

DANGER

Never burn materials other than coal or wood logs, preferably split and dried. A chimney fire or heat exchanger failure could result. This includes large amounts of corrugated boxes, wood shavings, paper scraps, dried Christmas trees, coke, garbage, tires or other burnable products.

Know what types of wood to burn. Wood is a safe, clean and economical fuel. Freshly felled wood is not suitable due to the moisture content of the wood. Well seasoned wood is best for the proper production of heat. The following table will give you some relative values of the heating content of some of the more readily available types of wood.

Type	Pound Weight per Cord	BTU's Per Cord Air Dried Wood	Equivalent Value #2 Fuel Oil Gallons
White Pine	1800	17,000,000	120
Aspen	1900	17,500,000	125
Spruce	2100	18,000,000	130
Ash	2900	22,500,000	160
Tamarack	2500	24,000,000	170
Soft Maple	2500	24,000,000	170
Yellow Birch	3000	26,000,000	180
Red Oak	3250	27,000,000	195
Hard Maple	3000	29,000,000	200
Hickory	3600	30,500,000	215

The thermostat always calls for heat from the wood side of the furnace first. When the "C" lever on the thermostat anticipates the need for heat, the thermostat opens the damper which allows primary air to the wood fire which allows the wood fire to increase its burning rate. When the thermostat is satisfied, the damper closes, removing primary air to the wood fire causing the fire to be banked until needed again. This sequence of operation will continue as long as there is a sufficient supply of wood in the firebox to maintain the temperature at thermostat setting.

When the wood burns down to the point where it can't handle the load, the temperature in the home will drop to the temperature as which the "H" lever is set. (The "H" lever controls the electric heating elements.) At this point the primary damper in the damper assembly will close and the electric heater will take over. The electric elements will maintain this temperature setting until either the "H" lever is moved up or the firebox is loaded again.

IMPORTANT

During normal operation, fire door and ash pan must be kept tightly closed. Air leakage will cause loss of efficiency resulting in higher heating costs. If door gaskets become worn, replace with 1/2" asbestos rope available from local sources.

CAUTION

REMOVE AIR CONDITIONING COIL FROM WARM AIR PLENUM IF USING FURNACE DURING FAN FAILURE OR ELECTRIC POWER FAILURE.

NOTE

If for any reason there should be an electric power failure, either from high limit cutoff or electrical power outage, the damper will automatically close, preventing over-fire with no blower, thus preventing heat exchanger damage.

BURNING COAL ON 1/2-INCH OPENING GRATES GENERAL INFORMATION

This section contains the instructions for burning various types of coal, storage of coal, and the cleaning of the furnace.

Some coal is oil-treated at the mine and some users have indi-

cated that it tends to make the coal more difficult to start.

Burning coal requires some patience and a regular procedure. With improper tending, a coal fire can go out in a short time. Once the fire starts to go out, it is almost impossible to reverse. After a coal fire goes out, all the coal must be removed from the furnace before the starting process can be repeated.

Our coal burning instructions are general, as coal comes in various sizes and types. Anthracite coal is most recommended as it burns with little smoke when burning properly.

OPERATING INSTRUCTIONS FOR BURNING COAL GENERAL INFORMATION

CAUTION

Burn Anthracite - Bituminous - Lignite coals only

DO NOT BURN

Petroleum - Coke - Cannel Coals

IGNITION TEMPERATURE OF COAL AND WOOD

How hot does coal have to get to ignite? Following are examples of the ignition points of various materials:

Paper ignites @ 350° F

Wood ignites @ 435° F

COAL:

Western lignite ignites @ 630° F

Low volatile bituminous ignites @ 765° F

High volatile bituminous ignites @ 870° F

Anthracite ignites @ 925° F

WHAT SIZE COAL SHOULD I BURN?

The air space between the furnace grates is 1/2"; therefore, coal smaller than 1/2 inch can fall through the grates into the ash pan.

Pea size coal ranges from 9/16 to 11/16 inches.

Nut size coal ranges from 1-3/16 to 1-5/8 inches.

Stove size coal ranges from 1-5/8 to 2- 7/16 inches.

Nut size is preferred by most people and is recommended for use in this furnace.

Anthracite coal is hard and burns like the charcoal that is used in your barbecue grill. The coals must touch each other to ignite. Therefore, the smaller the coal, the easier to ignite. Stove coal is not as likely to touch each other because of its size.

Bituminous coal is soft and not as desirable as hard coal. It creates dust when handled and produces large amounts of smoke and soot when burned at a slow rate. Also, soft coal from some areas of the country contains higher sulfur content, but a large portion of it may be removed if the coal is cleaned.

HOW TO START A COAL FIRE

CAUTION

Do not use kerosene, gasoline, thinners, etc. to start a coal fire.

To start a coal fire, place a small amount of crumpled paper and sticks of kindling wood on the ash-covered grates.

Ignite the paper and after the wood is burning briskly, cover with

a thin layer of coal. As the first layer of coal becomes ignited, add more coal gradually until the fire bed is built up to approximately 6 inches deep. As fresh coal is added always leave some of the glowing coal uncovered.

Draw the top red coals toward the front of the firebox and pile fresh coals toward the back.

The grates must be protected from direct contact with the fire by a layer of ash, one (1) or two (2) inches thick. The ash left on the grate will help prevent overheating of the cast iron grates and coal from falling through the grate's opening.

MAINTAINING A COAL FIRE

Bituminous coal should be built into a cone shape once the fire has started. When refiring, break up the cone a little using a poker, especially if it has caked over to form a crust. Be careful not to mix the coal as this increases the chance of forming clinkers.

Western lignite coal should be burned the same way you would burn wood. (Refer to wood burning instruction.)

SHAKING THE GRATES

Shaking a fire should only be done if room is needed for fresh coal or if the ash accumulation on the grates is excessive. Generally, the grates need only be shaken once or twice a day.

Shake the grates using a few short strokes and stop when the first red coals appear in the ash pan. Under-shaking restricts the amount of air that reaches the fire and over-shaking may cause the fire to go out.

A coal fire should never be poked or broken up as this serves to bring ash to the surface of the coal bed where it may fuse into lumps or clinkers which interfere with proper burning.

IMPORTANT

Never smother fire when adding fresh coal.

Anthracite Coal — To bank the fire for the night, pile the coal higher to the back of the firebox and allow it to slope toward the fire box door. Always leave some red or burning coals uncovered in the front of the firebox.

Bituminous Coal — To bank the fire for the night, shake the fire and add coal, forming the center cone. Allow enough time for the volatiles to burn off before closing the fire door.

GRATE CARE — ASH REMOVAL

It is necessary that ashes be removed from the ash pan on a daily basis and should never be allowed to accumulate high enough to come in contact with the grates. Such a condition could cut off necessary air circulation and could also result in a warping or burnout of the grates.

ASH DISPOSAL

Unlike wood ashes, coal ash should not be spread on the garden. The minerals in coal ash contain several chemicals which could be harmful to plant life.

RECOVERING UNBURNED COAL

Screen coal ashes through a piece of 1/4 inch or 3/8 inch mesh hardware cloth to recover any unburned coal that has fallen through the grates.

STORAGE OF COAL

Coal may be stored indoors or outdoors, with some precautions:

1. The storage area must be free of materials that are easily burned, such as paper, wood, rags and leaves.
2. Alternate wetting and drying of coal should be avoided. Outside storages should be protected from rain or snow. Wet coal should not be piled on dry coal.
3. Locate the storage area in a cool, 75Q F or lower, area.
4. Nut coal weighs approximately 58 Lbs. per cu. ft. A storage bin 4-feet square by 4-feet high will hold 2 tons.

CLEANING FURNACE AND CHIMNEY FLUE PIPES

Be sure to check and clean the furnace heat exchange flue pipes and chimney on a frequent basis. Soot and fly ash should not be allowed to build up on any of these surfaces. Chimneys are best cleaned professionally.

CHECKS AND ADJUSTMENTS

If you have installed your own furnace, we ask that you call for an inspection by a Service Technician. The peace of mind and assured performance are well worth the cost involved. A technician has the proper instruments to make the necessary checks and adjustments.

FURNACE BLOWER ADJUSTMENT

Set adjustable motor pulley so blower will give approximately 90° F temperature rise through furnace. After pulley has been adjusted check bolt as follows: (see Fig. 18)

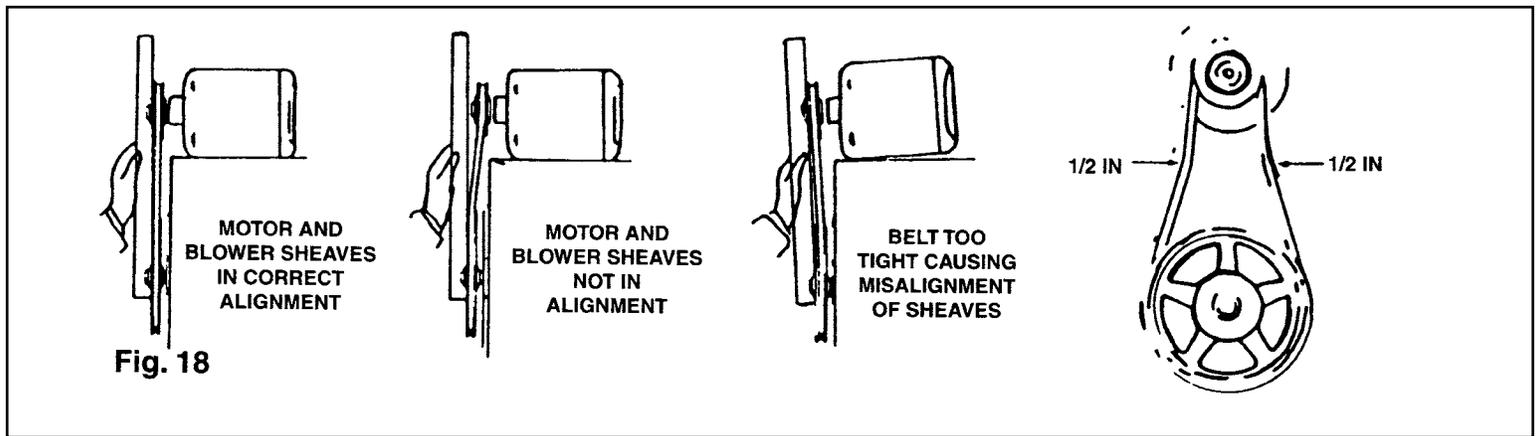
The belt is drawn tight during shipment; therefore both belt tension and sheave alignment must be rechecked by the installer when the furnace is placed in service.

Improper belt tension and pulley misalignment are the major causes of furnace fan noise and failure of belts and bearings.

Sheave alignment is easily determined with a straight edge held across the outer face of the fan sheave. The face of the motor sheave should also be parallel to the straight edge at all points.

Proper belt tension is more difficult to determine accurately. Too little tension will permit slippage causing belt wear and may cause noise or squealing when the motor starts. Excessive tension increases motor load and may cause the oil film between shaft and bearing to fail. This, in turn, causes the bearing to seize or burn out.

The proper belt tension is the minimum which will drive the blower without slippage. This varies with sheave diameter, fan size, and motor starting torque characteristics. The practical belt tension can best be determined by actual experience, but when in doubt it is better to have the belt too loose rather than too tight. Belt tension can be judged by grasping the belt as shown. The belt should be deflected approximately one inch when moderate pressure is applied.



AIR CONDITIONING

Existing motor and pulley will handle up to 42,000 BTU cooling. For 48,000 BTU cooling, blower motor must be changed to 1/2 HP. For 60,000 BTU cooling, blower motor must be changed to 3/4 HP.

DUCT WORK AND BLOWER SPEED ADJUSTMENT

Supply and return duct system should be sized properly for efficient operation. Normal air temperature rise through the furnace should be adjusted to approximately 90° F. Proper blower speed adjustment, in conjunction with adequate duct work are necessary to achieve this.

A high temperature rise will result in excessive fuel usage, due to the high stack temperature that always accompanies a high air temperature rise. It can also cause premature heat exchanger failure.

To perform temperature rise check, start furnace and let it run a minimum of 10 minutes (be sure all duct work is complete and furnace is in its normal operating condition) .Place #1 thermometer in the return near the furnace. Place #2 thermometer in the supply duct near the furnace, but not in the plenum. After 10 minutes or more operation, take thermometer readings. Supply air temperature should be no more than 90Q higher than return air temperature.

Air temperature rise can be lowered by:

1. Increasing blower speed.
2. Additional supply or return outlets.
3. Lowering firing rate.

TESTING INSTALLATIONS FOR EFFICIENCY

IMPORTANT

Draft gauge must be used. Draft in smoke pipe must be set at .03 Water Column updraft. Failure to set properly will cause fuel to be wasted, heating will not be satisfactory, fast build-up of creosote in heat exchanger and chimney may occur, and cause damage to your heating system.

In preparation for this test, the following should be checked. The Draft Regulator as installed should be:

- plumb and level
- in the same room as the unit
- on the side of a vertical, sloping or horizontal smoke pipe
- located close to the furnace

TEST PROCEDURE

Using the draft gauge manufacturer's instructions, set the Draft Regulator so that there is .03 Water Column Draft in the smoke pipe between the flue outlet and Draft Regulator.

MAINTENANCE INSTRUCTIONS

CAUTION

Before cleaning chimney, smoke pipe furnace, be sure to turn off electrical power to furnace. Be sure wood fire is out and inside of furnace is cool.

At the start of the heating season:

1. It is advisable to have a service technician inspect and service your furnace for the coming heating season.
2. Furnace, smoke pipe and chimney should be cleaned and checked for repairs.

Emergency stops:

Cut off all electrical current to the furnace by turning off electrical power in main fuse panel.

Air filter:

Check and clean monthly. Change filter at least twice a year.

Blower motor:

Check belt for proper tension.

Grates:

Keep ash drawer emptied. Failure to do this will cause grates to warp.

Smoke Pipe, Chimney and Furnace Heat Exchanger:

Do not burn green or freshly felled wood. If you do, creosote and soot may build up in the chimney, smoke pipe and furnace heat exchanger. This should be checked and cleaned several times each heating season. Soot will act as an insulator which will cause less heat to be transferred into your duct system thus reducing the efficiency of the wood being burned.

HOW TO PREVENT RUST AND CORROSION

At the end of each heating season, clean heat exchanger and ash pan thoroughly. Paint the inside of the heat exchanger with automobile crankcase oil. This will decrease rusting caused by summer moisture.

If black paint on firing door area wears or burns off , it can be repainted with a high temperature, flat black, air-drying paint.

CLEANING THE CHIMNEY, SMOKE PIPE AND HEAT EXCHANGER

Avoid chimney fires. On a regular schedule, check for creosote and soot buildup in the chimney, smoke pipe and heat exchanger. They must be kept clean. Keep a professional chimney sweep in mind if you have access to one.

Steel brushes are the safest for cleaning metal surfaces. Salt solutions and some chemicals may damage metal surfaces. Do not overfire your furnace. Do not burn anything that combusts in seconds. Excessive flue temperatures may result, thereby igniting creosote.

To clean the chimney, obtain a stiff brush with an extendible handle and insert the brush into the chimney from the top. Continue brushing and sweeping downward until entire length of chimney is cleaned.

After cleaning, the debris will be at the bottom of the chimney at the clean-out opening. Open the clean-out door and sweep the debris out into a metal container.

CLEANING THE SMOKE PIPE AND HEAT EXCHANGER

Turn off electrical power to furnace to prevent electric elements from operating. Disconnect the smoke pipe from the furnace and clean the inside of the pipe with an 8" diameter or smaller steel brush.

Open the secondary heat exchanger clean-out door and clean the inside of the heat exchanger. A 4" x 6" steel brush is provide for this purpose. The primary heat exchanger may be cleaned with steel brush. A furnace vacuum cleaner may be used.

CREOSOTE — 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 twice monthly during the heating season to determine if a creosote buildup has occurred.

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

SERVICE HINTS

If floors are cold...

POSSIBLE CAUSE

Return (cold) air grilles blocked

Air filter is dirty

System is out of balance

If blower/motor is noisy...

Check motor bearings

Check blower bearings

Air filter is dirty

IN CASE OF CHIMNEY FIRE CALL THE FIRE DEPARTMENT IMMEDIATELY!

EXTINGUISH THE FIRE IN FURNACE BY SETTING THE THERMOSTAT ALL THE WAY TO THE LEFT TO CLOSE PRIMARY AIR DAMPER. EMPTY FIRE CHAMBER AND ASH PAN INTO SAFE, FIREPROOF CONTAINER.

DO NOT USE YOUR FURNACE UNTIL A PROFESSIONAL INSPECTION HAS BEEN MADE OF YOUR FURNACE, SMOKE PIPE AND CHIMNEY.

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.

WHAT TO DO

Check to make sure rugs and carpets are not covering return air grilles.

Clean or replace air filter, as necessary.

Check supply pipe dampers or registers to balance system.

Replace motor if necessary

Replace bearings if necessary

Clean or replace air filter, as necessary

Smoke puffs out through doors...

Chimney draft incorrect

Check chimney draft. With normal wood fire, chimney should draw .03 inch water column between furnace and barometric control

Soot and creosote buildup in heat exchanger or chimney

Clean if necessary.

Chimney too low

Increase chimney height.

Obstruction in chimney

Check for obstruction such as loose mortar, bird nests and squirrel nests. Clean chimney to eliminate obstructions.

Not enough fresh air to furnace room

Check for obstructions in combustion air inlet. See page 14.

Chimney diameter too large

Too cold a chimney will chill flue gases as they rise up the chimney. As this gas cools, it becomes heavy and other gases from the fire try to penetrate this heavy column of cool air. This results in back puffing, and may cause odors in your home. Obviously, the solution lies in improving your chimney.

If your furnace is not giving you enough heat...

Thermostat not set correctly

Make sure chimney clean-out door is tightly closed.

No electric power to furnace

Install separate chimney.

Using excessive amount of wood, but not heating

Reset thermostat above room temperature.

Chimney clean-out door partially open

Check fuse or circuit breaker. If fuse is blown, replace. If breaker is tripped, reset. Check to make sure that electrical switch is on.

Other fuel burning device connected to same chimney

Baffles in firebox out of place or barometric damper set too high. Check baffle position, page 6, Fig. 6. Set barometric control to .03 or less.

Damper control fails to open...

Improper thermostat wiring

Recheck field wiring against wiring diagram.

No power to damper control

Check 24 Volt side of transformer, check 115 Volt power to transformer. Check for burn spot on damper control relay. Replace board if defective.

Damper does not open

Check power to solenoid. Replace if defective.

If you don't seem to be getting enough air circulation...

Air filter is dirty

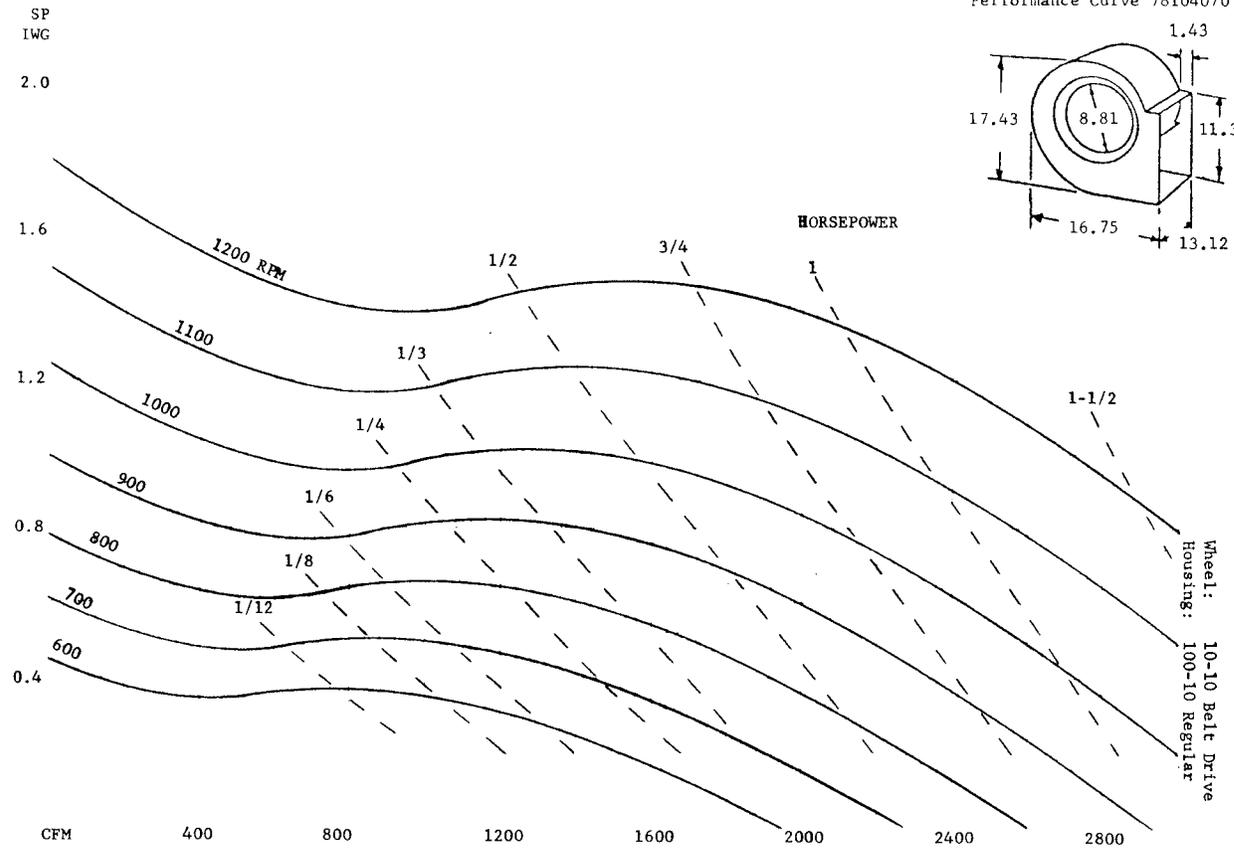
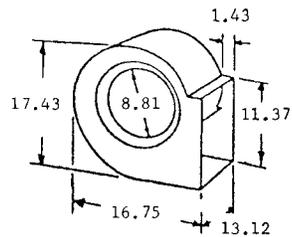
Clean or replace filter, as necessary.

Registers and grilles are obstructed

Check supply pipes or damper positions. Check registers and grilles to make sure they are not closed or obstructed by carpet, draperies, furniture or clothing. Remove obstructions.

NOTE

Multiple coats of paint on registers and grilles may reduce the amount of free air opening causing restriction of air flow and reduction of warm air circulation. Registers and grilles in this condition should be replaced.



THIS CIRCULATING FAN PERFORMANCE CURVE CHART IS FOR DETERMINING MOTOR HORSEPOWER NEEDS FOR THE LWE-020 ELECTRIC-SOLID FUEL FURNACE

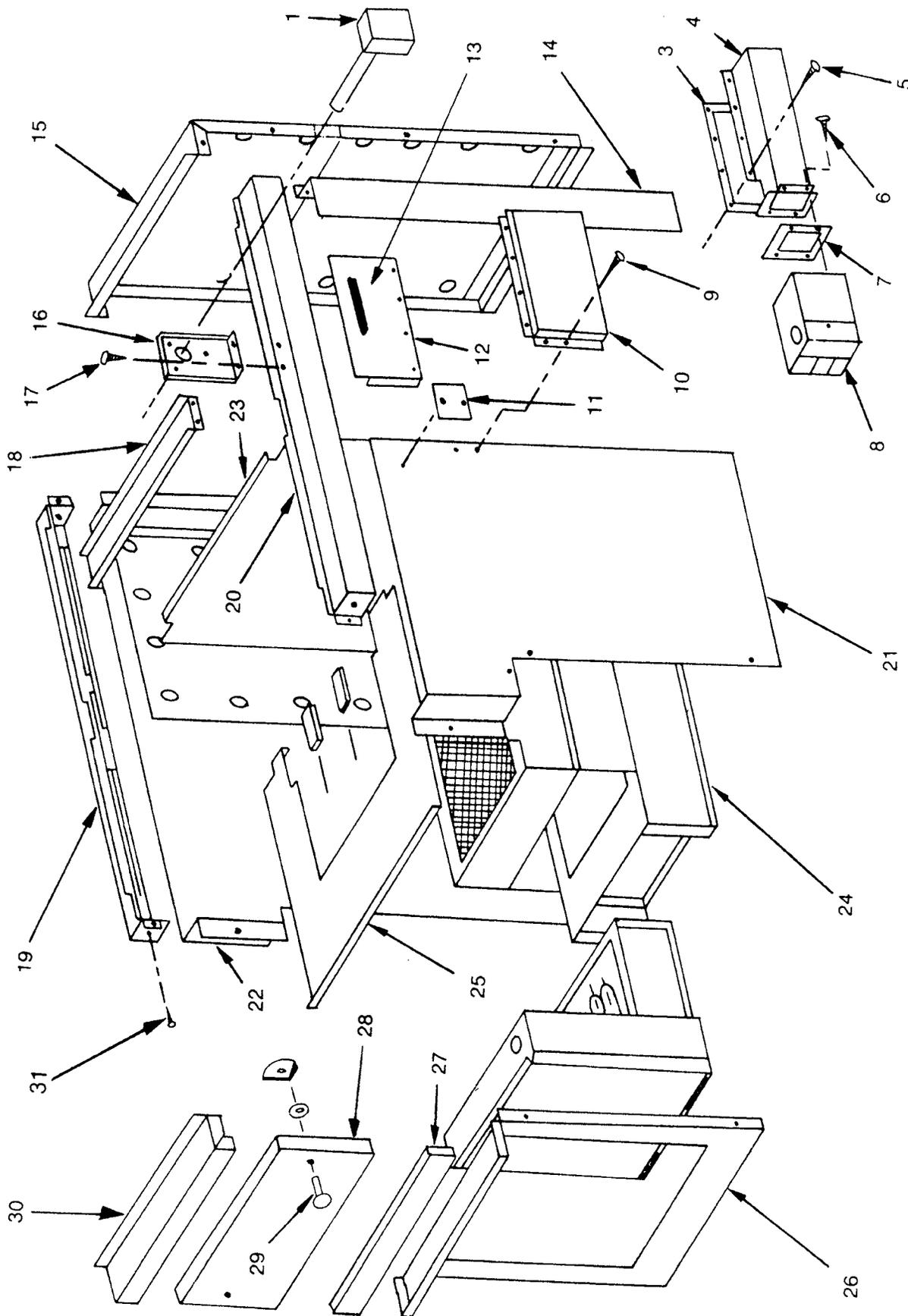
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Installation Date: _____ **Contractor:** _____

Service Calls: _____

Notes: _____

repair parts CASING ASSEMBLY



repair parts

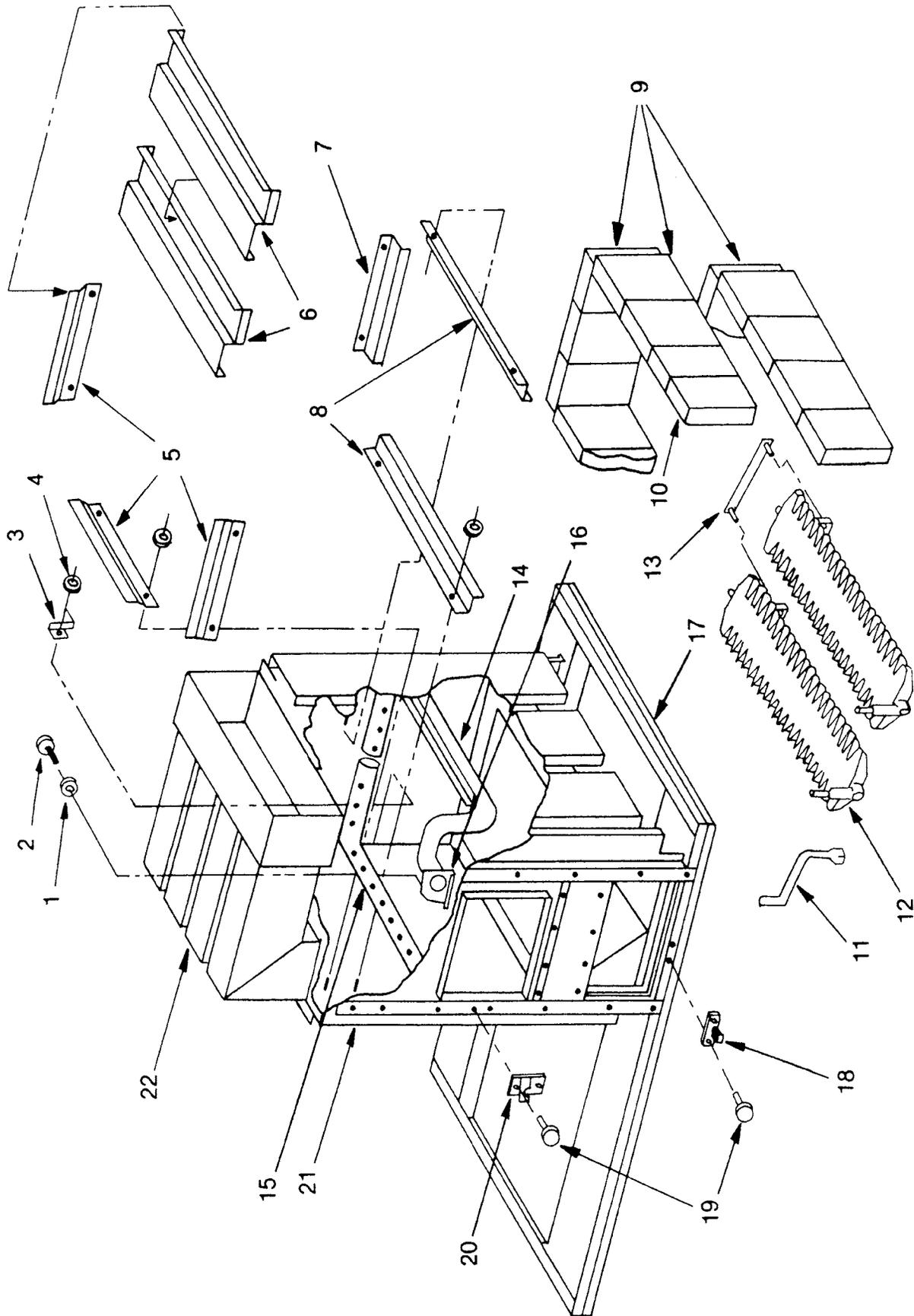
CASING ASSEMBLY

Key	Left Hand	Right Hand	Description
20	40402732	41402732	Top Front Panel
21	40402592	41402592	Front Panel Ass'y
22	40402492	41402492	Rear Panel Ass'y
23	40403300	40403300	Divider
24	40402300	40402300	Electric Element Housing
25	40401700	40401700	Horizontal Divider
26	40400601	40400601	Left Side Panel
27	40404000	40404000	Divider Panel
28	40402991	40402991	Access Door Ass'y
29	10101400	10101400	Access Door Latch
30	40403200	40403200	Top Left Panel
31	10106400	10106400	Screw, Drill-In Hex Hd. Washer, 1 x 1/2"
.	10138600	10138600	Owner's Manual
.	10106600	10106600	Barometric Damper, 8"
.	10119400	10119400	Wood Thermostat
.	10109400	10109400	Electric/AC Thermostat
.	10109500	10109500	Access Door Tag
.	10140600	10140600	Circuit Board, DS103
.	10140700	10140700	Solenoid DS103

* Not Illustrated

Key	Left Hand	Right Hand	Description
1	10107000	10107000	Switch, Fan and Limit-L4064
2	10103700	10103700	Draft Tube Gasket
3	20105603	20105603	Draft Tube
4	10104900	10104900	Screw, Thread Cutting, Hex Hd. 1/4-20 x 3/4 (12 Req'd)
5	10111400	10111400	Screw, Pan Hd. 10-32 x 3/4 (4 Req'd)
6	10103600	10103600	Gasket, Draft Control
7	10140500	10140500	Damper Control, DS103
8	10106300	10106300	Drill Screw, Hex Hd. 10 x 3/4 (22 Req'd)
9	30101203	30101203	Intake Cover
10	10109600	10109600	Caution Tag
11	30402502	30402502	Upper Panel
12	10107200	10107200	Nameplate,
13	40402602	41402602	Corner Panel
14	40400500	40400500	Right Panel
15	20403501	20403501	Bracket, Mounting, Fan and Limit Switch
16	10106400	10106400	Drill Screw-8 x 1/2 (31 Req'd)
17	40400301	40400301	Plenum Divider
18	40402742	41402742	Top Rear Panel
19			

repair parts COMBUSTION CHAMBER ASSEMBLY

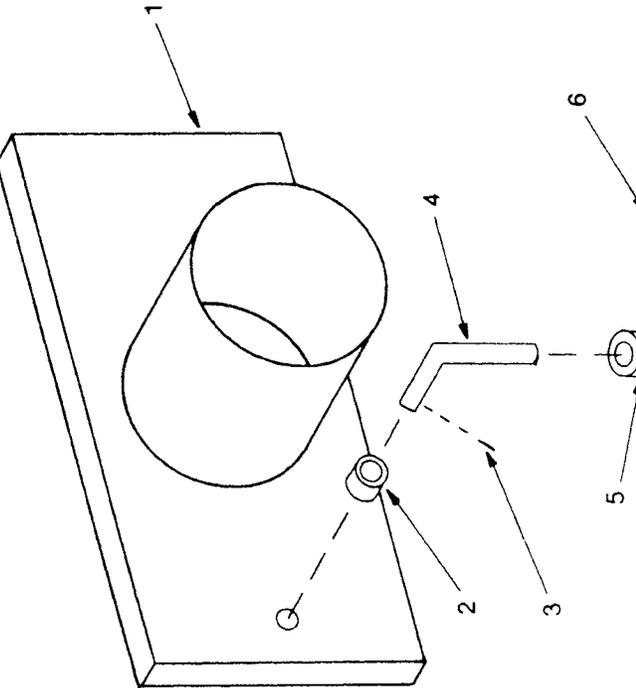


repair parts

COMBUSTION CHAMBER ASSEMBLY

Key	Left Hand	Right Hand	Description
*	10122500 10123200 30103600	10122500 10123200 30103600	Grate Frame (2 Req'd) Coal Shaker Grate Ass'y, Complete Secondary Air Tube Ass'y (Includes Items 14 + 15)
14	30105010	30105010	Secondary Air Tube, Right
15	30105020	30105020	Secondary Air Tube, Left
16	10110700	10110700	Secondary Air Tube Gasket
17	40300690	41300690	Base Weldment
18	20107003	20107003	Latch, Ash Pan
19	10105000	10105000	Screw, Machine, Rd. Hd. 1/4-20 X 3/4"
20	10139700	10139700	Door Latch
21	40105700	41105700	Combustion Chamber Weldment
22	40200800	40200800	Secondary Heat Exchanger Weldment
*	10103990	10103990	Gasket, Ash Pan 1/2" Thermocord 42"
*	10100900	10100900	Wood Grates (3 Req'd)

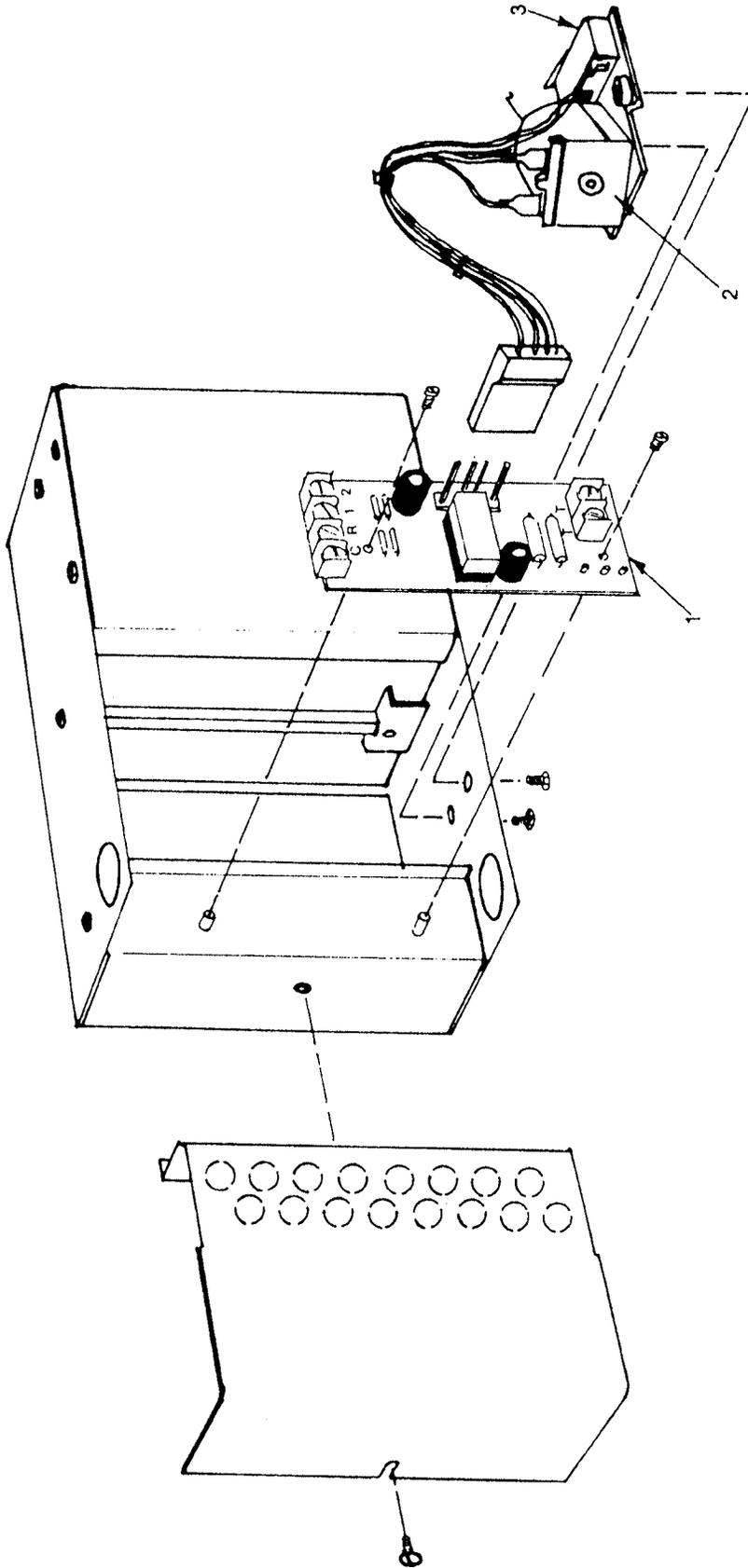
Key	Left Hand	Right Hand	Description
1	10110500	10110500	Fender Washer (4 Req'd)
2	10104900	10104900	Screw, Thread Cutting, Hex Washer Hd. 1/4-20 X 3/4 (4 Req'd)
3	20106300	20106300	Bracket, Tube Support
4	10105300	10105300	Hex Nut 1/4-20 (12 Req'd)
5	20102200	20102200	Bracket, Baffle (3 Req'd)
6	20105900	20105900	Baffle, Smoke (2 Req'd)
7	20102640	20102640	Top Brick Retainer, Rear
8	20102650	20102650	Top Brick Retainer, Side (2 Req'd)
9	10100700	10100700	Fire Brick 9 X 6 X 2 (18 Req'd)
10	10100800	10100800	Fire Brick 9 X 4-1/2 X 2 (4 Req'd)
11	40107003	41107003	Combustion Chamber Assy
11	10122900	10122900	Coal Grate, Handle
12	10122400	10122400	Coal Grate (2 Req'd)
13	20108400	20108400	Connecting Rod Assy (Includes 2-5/16" Locknuts)



repair parts CLEANOUT DOOR ASSEMBLY

Key No.	Part No.	Description
*	20201800	Cleanout Door, Complete
1	20201700	Cleanout Door Weldment
2	10139100	Collar, Set Screw
3	10139200	Latch Pin
4	20109300	Handle, Rod
5	10139300	Handle, Wood
6	10139500	Groove Pin

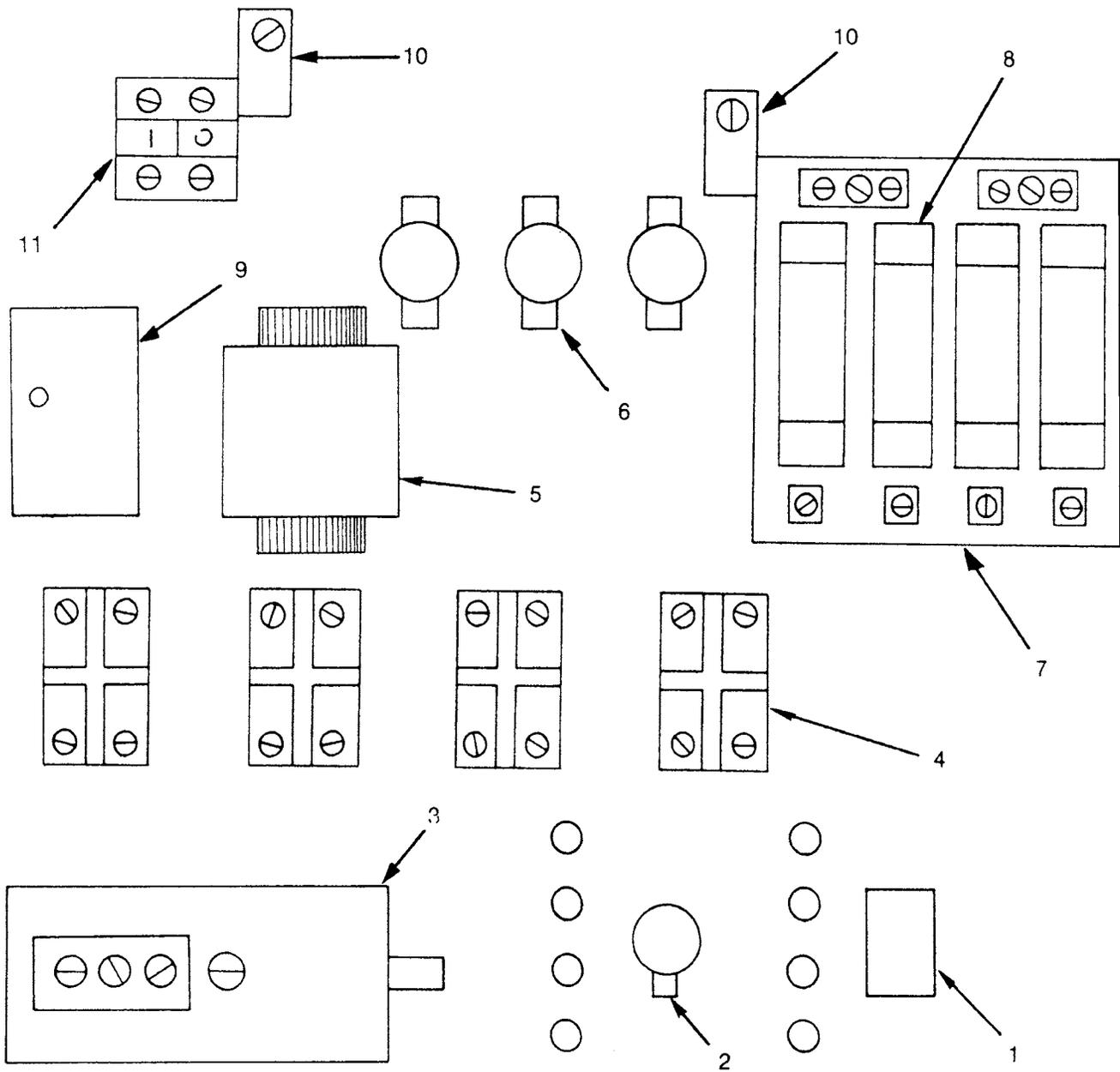
repair parts DS103



Key No.	Part No.	Description
1	10140600	DS103 Circuit Board
2	10140700	DS103 Solenoid
.	10140500	DS103 Complete

repair parts

ELECTRIC DUCT HEATER



Key No.	Part No.	Description
1	08-1602	Manual Reset Switch TMR
2	08-0261	Automatic Reset Switch TCO
3	08-0703	Air Flow Switch
4	08-0484	Primary Contactor (4 Req'd)
5	08-1124	Transformer
6	08-1606	Time Delay Relay (3 Req'd)
7	08-1012	Power Distribution Panel

Key No.	Part No.	Description
8	08-0340-60	Fuse, 60 Amp (4 Req'd)
9	03-6791-00	Door Interlock Switch
10	08-0990	Ground Lug
11	08-0219-2 12	Control Terminal Board
*	10-0908-01 10139000	Element, 5000 Watt (4 Req'd) Electric Duct Heater, Complete

YUKON EAGLE

OWNER'S MANUAL

**Model No.
LWE-020**

CAUTION:
Read Rules And
Instructions
Carefully For
Safe Operation

IMPORTANT:

Installation must be made in accordance with state and local ordinances which may differ from this installation manual.

YUKON EAGLE III WOOD/COAL ELECTRIC FIRED CENTRAL FURNACE

Now that you have purchased your electric/solid fuel furnace, should a need ever exist for repair parts or service, simply contact any HVAC service organization or our company. Be sure to provide all pertinent facts when you call or visit.

The model number of your electric/solid fuel furnace will be found on the model number plate on the inside of the blower compartment.

HOW TO ORDER REPAIR PARTS

**WHEN ORDERING REPAIR PARTS,
ALWAYS GIVE THE FOLLOWING INFORMATION:**

- PART NUMBER
- PART DESCRIPTION
- MODEL NUMBER
- NAME OF ITEM

**ALL PARTS MAY BE PURCHASED FROM ANY
HEATING CONTRACTOR, OR DIRECT FROM THE
FACTORY.**

PHONE: 1-800-358-0060
FAX: 1-800-440-1994
E-MAIL: yukon@mlecmn.net
WEBSITE: www.yukon-eagle.com