



Model 1300/1400
OWNERS MANUAL
SOLID FUEL
WARM AIR FURNACE

***FOR PARALLEL INSTALLATION WITH
EXISTING FORCED AIR-GAS OR OIL
FIRED FURNACE (U.S. ONLY)**

***FOR INSTALLATION AS A CENTRAL FURNACE**

***CERTIFIED UNDER ANSI/UL 391 & CAN/CSA-B366.1-M91**

**CAUTION:
READ ALL INSTRUCTIONS CARE-
FULLY BEFORE STARTING THE
INSTALLATION OR OPERATING
THE FURNACE**

**IMPROPER INSTALLATION MAY VOID
YOUR WARRANTY**

**DO NOT USE THIS FURNACE
IN A MOBILE HOME OR TRAILER**



UNITED STATES STOVE COMPANY
227 Industrial Park Road
P.O. Box 151
South Pittsburg, TN 37380
(423) 837-2100



CONGRATULATIONS!

You've purchased one of America's Finest Wood and Coal Burning Furnaces. By heating with wood and coal you're helping CONSERVE AMERICA'S ENERGY! Wood is our Renewable Energy Resource. Please do your part to preserve our wood supply. Plant at least one tree each year. Future generations will thank you.

NOTE: YOUR UNIT MUST BE INSTALLED BY A QUALIFIED FURNACE INSTALLER.

TOOLS AND MATERIALS NEEDED

TOOLS	MATERIAL
Pencil	6" Pipe, 6" Elbow, Collar and Thimble; as required (24 gauge min.)
6 Foot Folding Rule or Tape	1/2" Sheet Metal Screws
Tin Snips	6" Inside diameter Listed Residential Type or Building Heating Appliance Chimney or existing masonry chimney
Drill, Hand or Electric	Electrical Wiring
Drill Bit- 1/8" Dia. (For Sheet Metal Screws)	6" Draft Regulator
Screw Driver (Blade-Type)	1/2" Conduit (Conduit Connectors)
Gloves	Furnace Cement (Manufacturer Recommends: Rutland Black-Code 78 or Equivalent)
Sabre Saw	Plenum and Duct work as required.
5/16" Nut Driver or 5/16" Socket w/Ratchet	

Caution Labels

Your Furnace has the following labels. Read and Obey all labels.

DANGER: RISK OF FIRE OR EXPLOSION.

DO NOT burn garbage, gasoline, drain oil, or other flammable liquids.

WARNING: FIRE HAZARD.

DO NOT operate with fire draft exceeding .06 inches w.c.

DO NOT operate with fuel loading or ash removal doors open.

DO NOT store fuels, paints, thinners, flammable liquids, or other highly volatile substances in the furnace room.

CAUTION: HOT SURFACES

Keep children away.

Do not touch during operation.

CAUTION!

INSPECT FLUE PIPES, FLUE PIPE JOINTS AND FLUE PIPE SEALS REGULARLY TO ENSURE THAT SMOKE AND FLUE GASES ARE NOT DRAWN INTO, AND CIRCULATED BY, THE AIR CIRCULATION SYSTEM.

CAUTION!

CLEANOUT OF THE HEAT EXCHANGER, FLUE PIPE, CHIMNEY, AND DRAFT INDUCER (IF USED), IS ESPECIALLY IMPORTANT AT THE END OF THE HEATING SEASON TO MINIMIZE CORROSION DURING THE SUMMER MONTHS, CAUSED BY ACCUMULATED ASH.

SAFETY NOTICE: If this heater is not properly installed, a house fire may result. For your safety, follow the installation directions. Contact local building or fire officials about restrictions and installation inspection requirements in your area.
If not already installed, we recommend that smoke detectors be installed.

Rules for safe installation and operation

Read these rules and the instructions carefully. Failure to follow them will cause a hazard that could result in death, serious bodily injury, and/or property damage.

1. Check your local codes. The installation must comply with their rulings.
2. Do not install this furnace in a mobile home or trailer.
3. Always connect this furnace to a chimney and vent to the outside. Never vent to another room or inside a building.
4. Do not connect this furnace to an aluminum Type B gas vent. This is not safe and is prohibited by the National Fire Protection Association Code. This furnace requires a masonry or a UL/ULC Listed Factory Built Chimney for residential type or Building Heating Appliance Chimney. Use a 6" diameter chimney or larger, that is high enough to give a good draft. (See page 7)
5. Be sure that if a masonry chimney is used, it is safely constructed and in good repair. Have the chimney inspected by the Fire Department or an inspector.
6. Inspect chimney connector and chimney before and frequently during the heating season for any deposit of creosote or soot which must be removed (See Chimney Maintenance, page 18).
7. Provide air for combustion into the room where the furnace is located. If the intake is not in the same room, air must have free access to the room.
8. CAST IRON PARTS MUST BE "SEASONED" TO AVOID CRACKING, BUILD ONLY SMALL FIRES ON FIRST USE.
9. To prevent injury, do not allow anyone to use this furnace who is unfamiliar with the correct operation of the furnace.
10. For further information on using your furnace safely, obtain a copy of the National Fire Protection Association (NFPA) publication "Chimney's, Fireplaces and Solid Fuel Burning Appliances" NFPA 211. The address of the NFPA is Batterymarch Park, Quincy, MA 02269. For more information on Canadian installation, obtain a copy of CAN/CSA-B365-M91 Installation Code for Solid-Fuel-Burning Appliances and Equipment.
11. Keep the ashpit section free of excess ashes. Do not allow ashes to stack higher than the sides of the ash pan.
12. DISPOSAL OF ASHES- Place ashes in a metal container with a tight fitting lid. Keep the closed container on a noncombustible floor or on the ground, well away from all combustible materials. Keep the ashes in the closed container until all cinders have thoroughly cooled. The ashes may be buried in the ground or picked up by a refuse collector.
13. CAUTION- The special paints used on your furnace may give off some smoke while they are curing during first few fires., Build small fires at first. The metal used in construction of the furnace and duct work has a light coating of oil. This could give off smoke and/or odor from registers when furnace is used for the first time. This should disappear after a short period of time. Once this burn-off has occurred, it should not reoccur.
14. CARING FOR PAINTED PARTS- This furnace has a painted outside jacket, which is durable, but it will not stand rough handling or abuse. When installing your furnace, use care in handling. Clean with soap and warm water when furnace in not hot. DO NOT use any acids or scouring soap, as these wear and dull the finish. DISCOLORATION WILL OCCUR IF THE FURNACE IS OVERHEATED. FOLLOW OPERATING INSTRUCTIONS CAREFULLY.
15. Keep the feed and ash doors closed at all times except while tending the furnace.

Your Furnace is designed to be installed in a parallel air flow arrangement with a gas or oil-fired forced air upflow-type central furnace, or it may be installed as a central furnace.

HOW THE FURNACE FUNCTIONS

Your HOTBLAST Furnace is designed to be a supplemental or central heating source for your home. This Solid Fuel Furnace may be installed in conjunction with a properly operating central furnace that is listed or certified in accordance with nationally recognized safety standards and equipped with the required controls and other safety features and which has been installed in accordance with appropriate standards of the National Fire Protection Association with installation clearances specified in the furnace nameplate marking. The installation must be accomplished by a qualified agency (one who is engaged in, and is responsible for, or is thoroughly familiar with the installation and operation of the gas, oil, and solid fuel burning heating appliances, who is experienced in such work, familiar with all the requirements of the authority having jurisdiction.) The installation shall be in strict accordance with the manufacturer's installation instructions furnished with the solid fuel furnace.

The chimney connector of the furnace is to be installed to provide clearances to combustible material not less than specified in the individual classifications and marked on the furnace. The chimney connector must be connected to a chimney suitable for use with residential type or building heating appliances which burn solid fuel.

The Furnace is designed to operate in either parallel or series air flow arrangement with the central furnace or as a central furnace.

CENTRAL FURNACE INSTALLATION: As a central furnace, the unit functions independently of any other system. The blower will come on when the plenum temperature reaches the setting on the blower control.

PARALLEL INSTALLATION: (U.S. ONLY) (See Optional Wiring Diagram, Page 16, Fig. 15) The design is such that when the blower comes on, the blower on the central system also comes on. The blower will only come on when the temperature in the plenum has reached the setting on the blower control. This is to insure that there is sufficient warm air in the system to make it efficient for the unit to operate. When the central system thermostat calls for heat, the central system will operate by the burner igniting and the blower coming on. It is possible that both systems will operate simultaneously. It is recommended that for the most efficient use of your HOTBLAST Furnace, that it be fired as much as possible in order to reduce the demand on your existing central heating system. This unit has an optional forced draft kit that operates from a wall thermostat. When the temperature falls below the setting on the wall thermostat, the forced draft will come on (U.S. Stove Option 11/DKU)

The warm air supply outlet of the HOTBLAST Furnace shall not be connected to the cold air return of the central furnace, because the possibility exists of components of the central furnace overheating and causing the central furnace to operate other than is intended.

SERIES INSTALLATION: (U.S. & CANADA) This type of installation uses only the blowers of the existing central furnace. The solid fuel fan/limit control must also control the functions of the existing furnace. All electrical power must come from a single branch circuit (See Fig. 15).

DIMENSIONS OF FURNACE

Figure 1A
1300

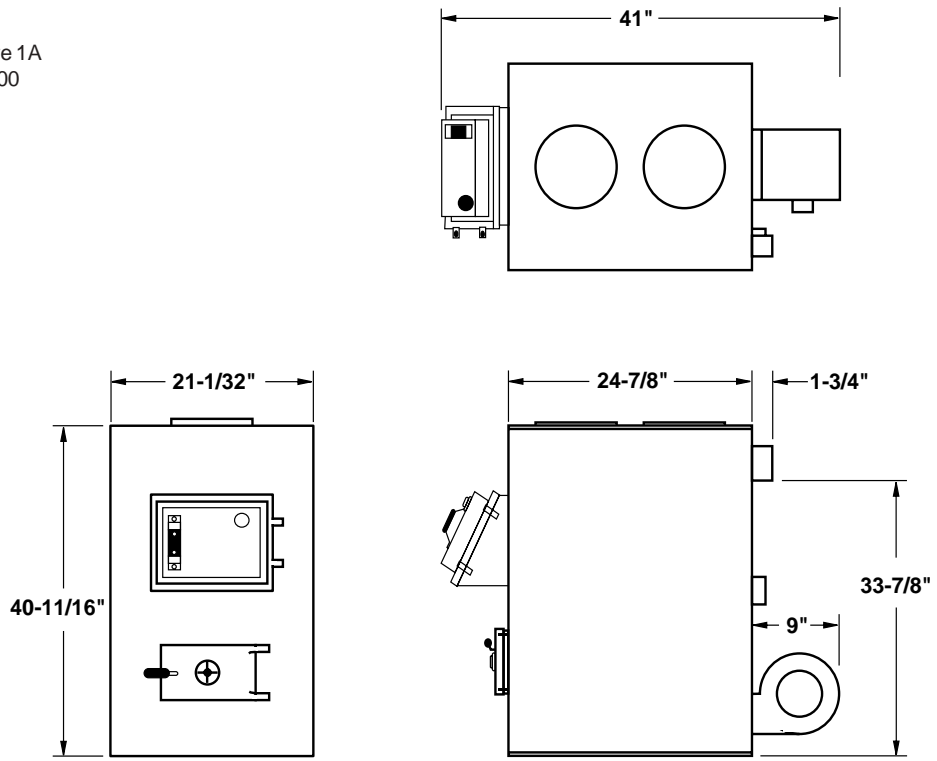
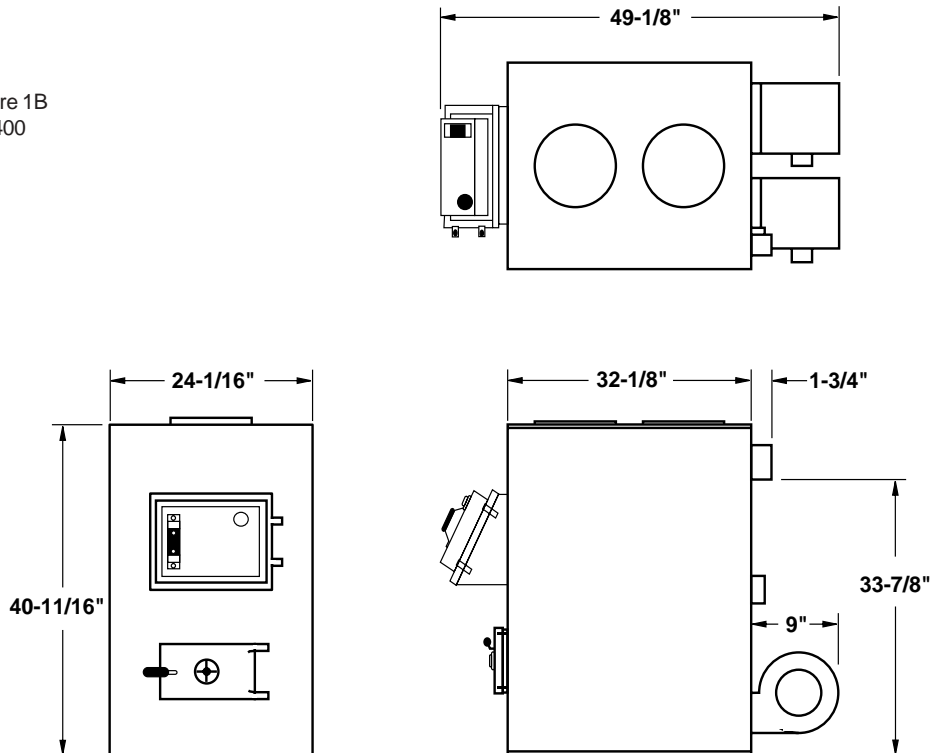


Figure 1B
1400



Locating the Furnace

1. The furnace should be located in the same room as the central system and as close as possible, but not closer than 9". There should be no wall between the furnace and the warm air outlet duct that is connected directly to the warm air outlet plenum of the central furnace. (See Fig. 2)
2. The unit will require installation with the following clearances:
 Unit to sidewall.....12"(305mm)
 Unit to backwall.....30"(760mm)
 Chimney connector pipe to sidewall18"(460mm)
 Chimney connector pipe to backwall18"(460mm)
 Hot air ducts to combustibles6"(150mm)
 (Refer to Fig. 2 & 3)

3. Place the furnace on a noncombustible floor.
4. Check figures 2 and 3. Be sure you have the clearances shown from the furnace and the connector pipe to combustible surfaces. If you have a solid brick or stone wall behind your furnace, you can place the furnace as close as you wish to the wall. If the wall is only faced with brick or stone, treat it as a combustible wall.

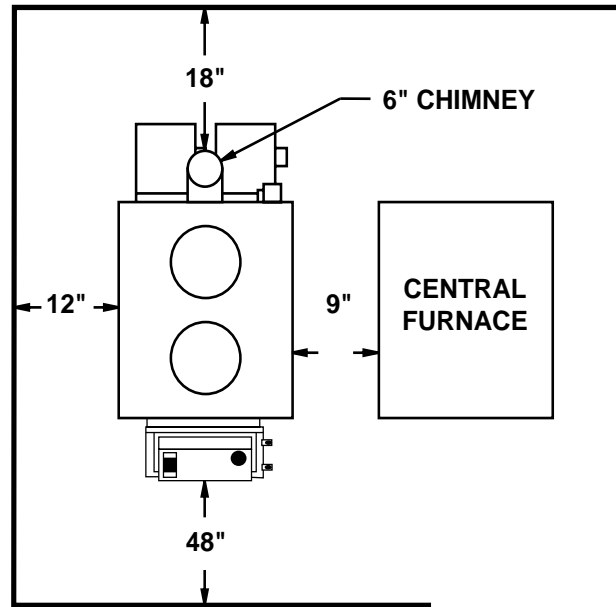


Figure 2

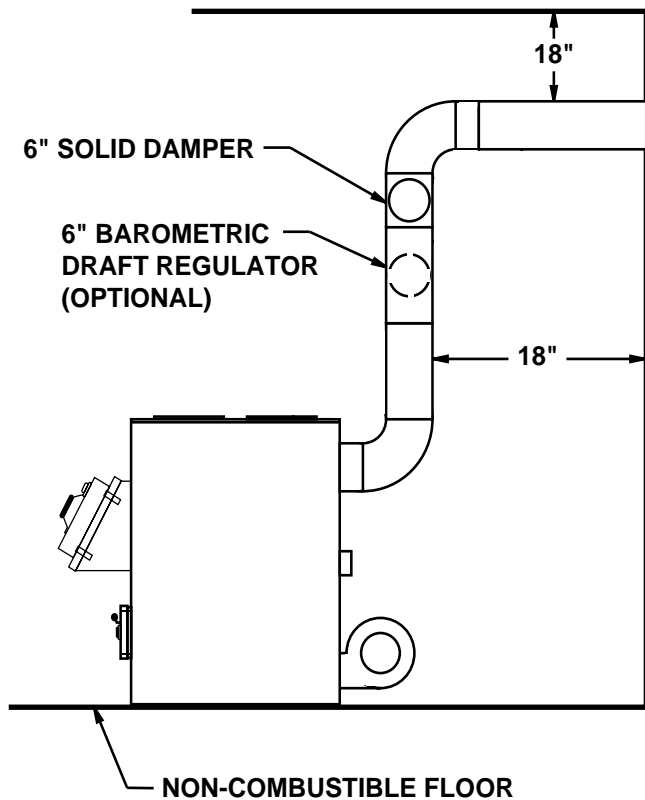


Figure 3

Chimney Connection

MASONRY CHIMNEY

Before using an existing masonry chimney, clean the chimney and inspect the flue liner to be sure it is safe to use. Make repairs before attaching the furnace. See page 4, item 5. Look at Fig. 4. The connector pipe and fittings you will need to connect directly to a masonry chimney are shown. The chimney connection should be as short as possible.

If the connector pipe must go through a combustible wall before entering the masonry chimney, consult a qualified mason or chimney dealer. The installation must conform to local fire codes, and N.F.P.A. 211.

DO NOT CONNECT THIS FURNACE TO A CHIMNEY FLUE SERVING ANOTHER APPLIANCE.

The chimney used for a furnace must not be used to ventilate the cellar or basement. If there is a cleanout opening at the base of the chimney, close it tightly.

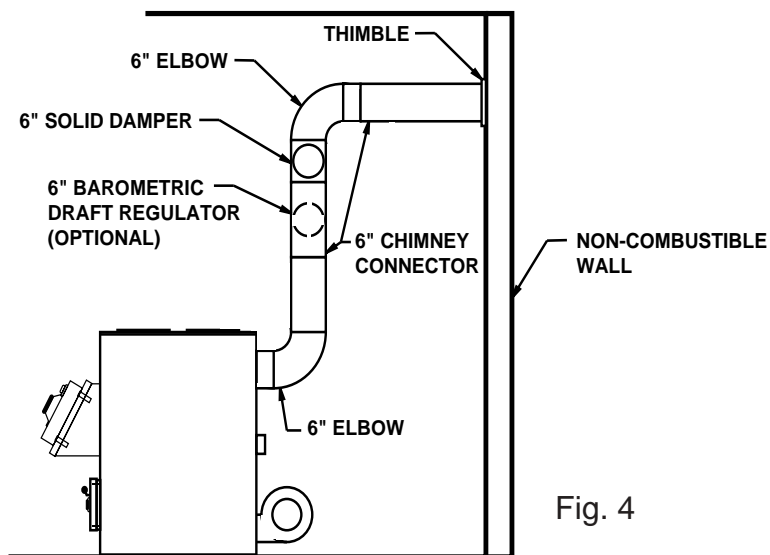


Fig. 4

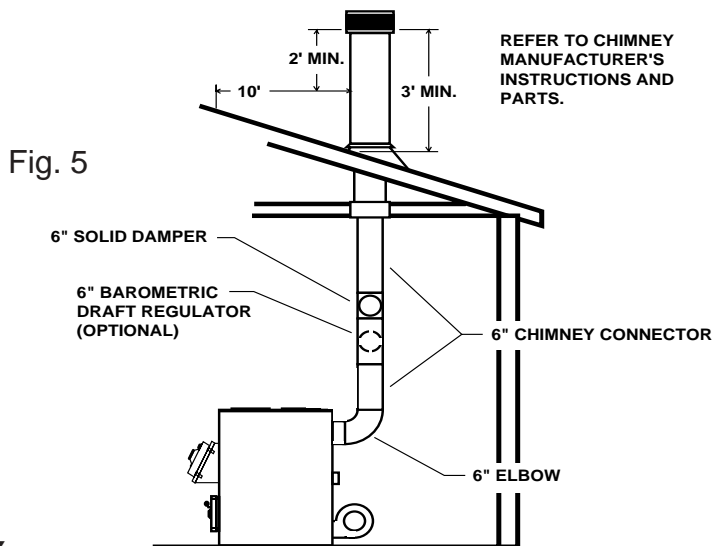


Fig. 5

LISTED FACTORY BUILT CHIMNEY

Carefully follow chimney manufacturer's instructions. Use only a Listed Residential Type or Building Heating Appliance Chimney. If your chimney starts at the ceiling (Fig. 5), you will need enough 6" pipe to reach the ceiling.

The top of the chimney must be at least 3 feet above the roof and be at least 2 feet higher than any point of the roof within 10 feet (Fig. 5).

Rules for Connector Pipe Installation

1. The crimped end of the chimney connector fits inside the furnace flue collar. Install additional chimney connectors and elbow with the CRIMPED END TOWARD THE FURNACE. This will allow any condensation in the flue to run back into the furnace. Use 6" dia. steel pipe and elbows for connection to chimney. Never use less than 26 gauge and although blued steel is satisfactory, high temp painted black is much more desirable.
2. Slope any horizontal pipe upward toward the chimney at least 1/4 inch for each foot of horizontal run.
3. You must have at least 18 inches of clearance between any horizontal piping and the ceiling. (See Fig. 3)
4. The chimney connector must not extend into the chimney flue. (See Fig. 6)
5. Seal each chimney connector pipe joint with furnace cement. Also seal the pipe at the chimney.
6. Use 3 sheet metal screws at each chimney pipe joint to make the piping rigid.
7. The chimney connector may include a section for a barometric draft regulator between the furnace and the chimney (Fig. 4,5, &7). The barometric draft regulator must be installed in the same room (same pressure zone) as the furnace.
8. Install the barometric draft regulator strictly in accordance with the instructions that are provided with the barometric draft regulator.
9. A solid damper must be used in the chimney connecting pipes between the flue collar and the chimney. When used in conjunction with a barometric draft regulator, the solid damper must be placed between the barometric and the chimney. (See Fig. 4,5,7)

Adjusting the Barometric Draft Regulator

1. Drill a hole in the chimney connector within 18" of the flue collar below the barometric draft regulator just large enough for the tube of the manometer.
2. Build a fire after all chimney connections have been made.
3. Use a manometer to measure the draft in the flue.
4. Adjust the Barometric Draft Regulator to obtain a draft of 0.05 - 0.06" W.C. under stable fire conditions.

NOTE:

A flue pipe shall not pass through an attic, roof space, closet or similar concealed space, a floor or ceiling of combustible construction. Where passage through a wall or partition is desired, installation must conform with UL standards.

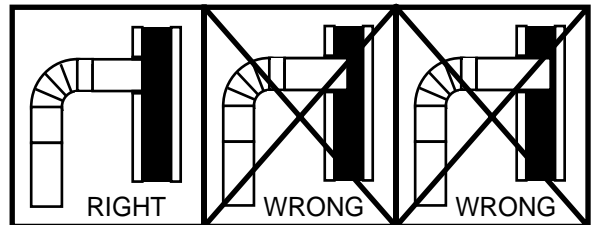


Fig. 6

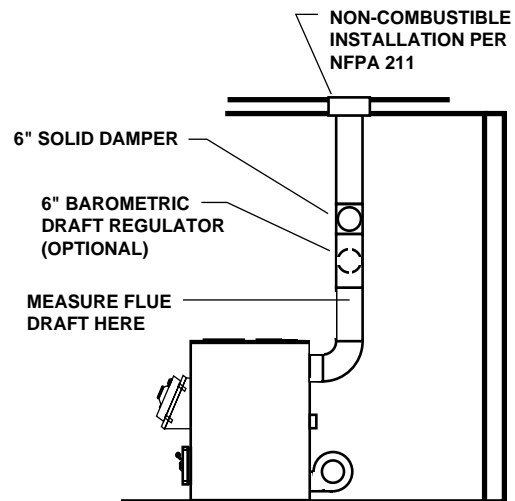
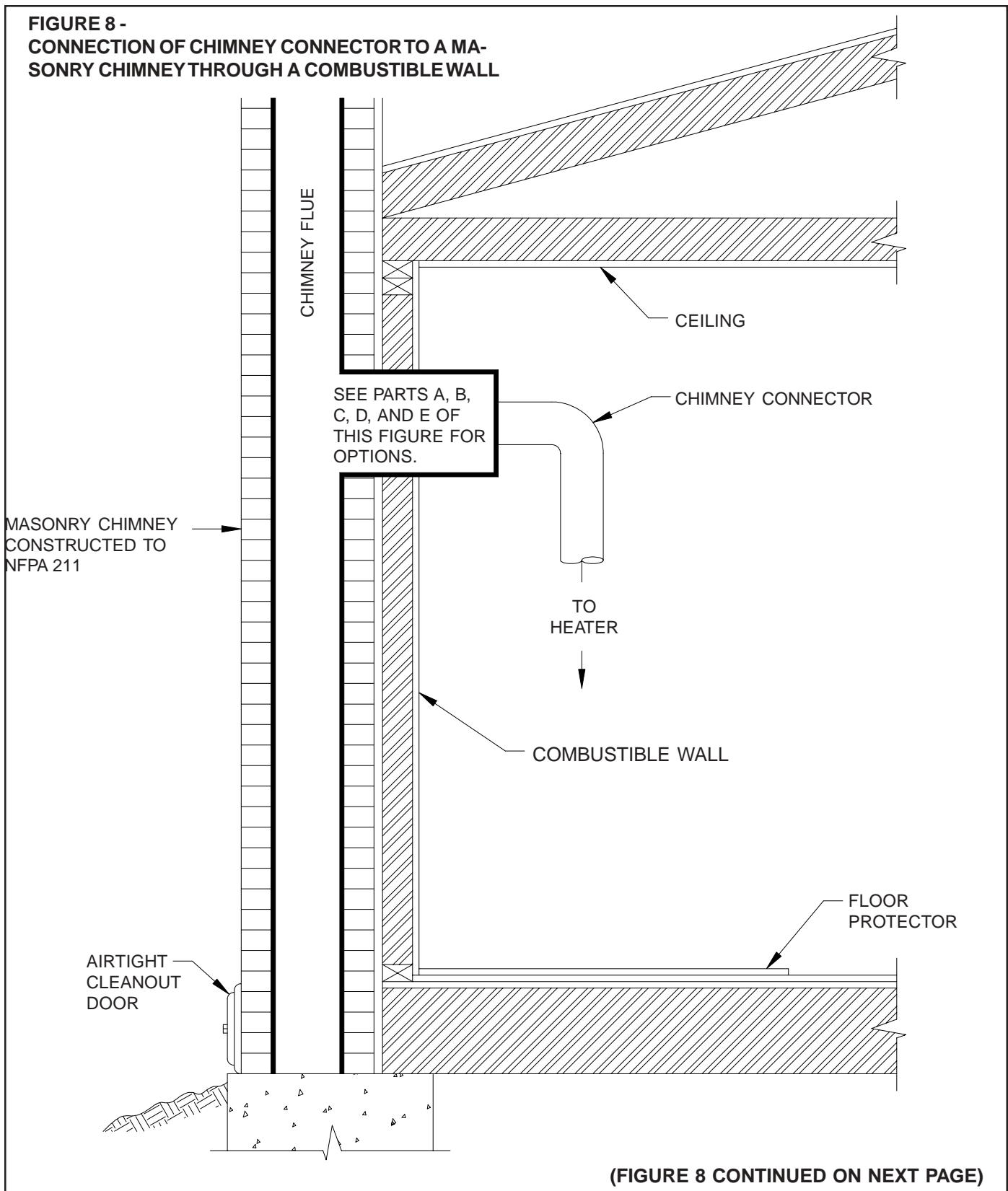


Fig. 7

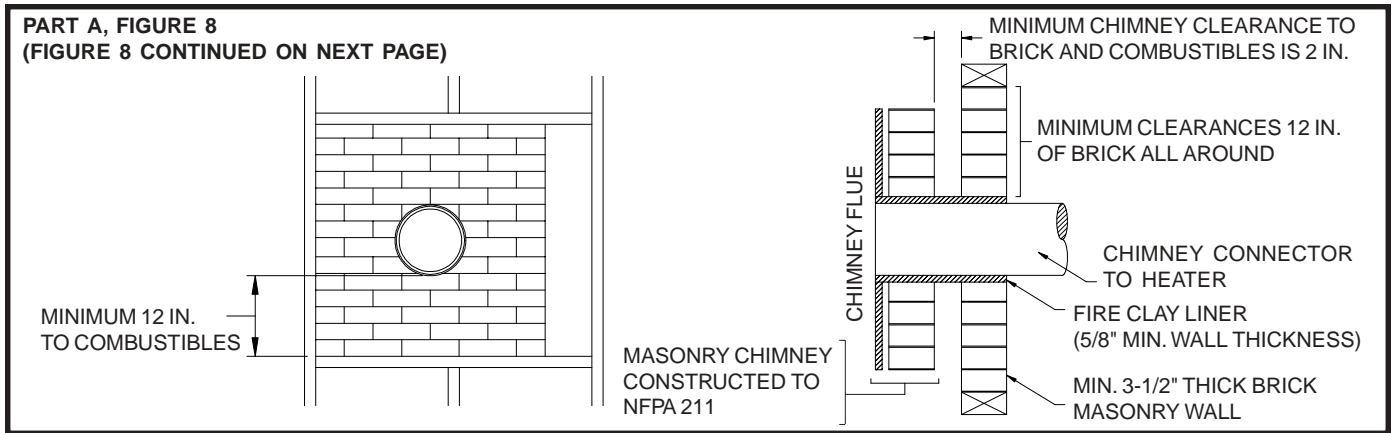
CONNECTION OF CHIMNEY CONNECTOR TO A MASONRY CHIMNEY THROUGH A COMBUSTIBLE WALL

Figure 8 shows how to connect the chimney connector of a heater to a masonry chimney through a combustible wall.

There are five allowable ways that a chimney connector can be connected to a masonry chimney by passing through a combustible wall. NFPA Standard 211 allows the following wall pass-through systems.



PART A, FIGURE 8
(FIGURE 8 CONTINUED ON NEXT PAGE)

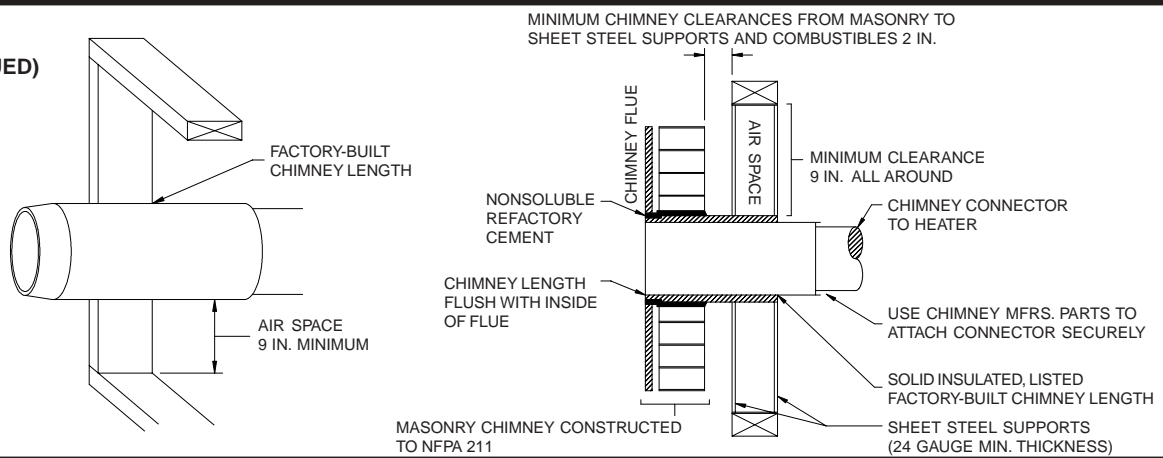


1. Use a minimum 3-1/2" thick brick masonry wall framed into the combustible wall. A fireclay liner (ASTM C315 or equivalent) having a 5/8" minimum wall thickness must be used and it must be at least 12" away from any material that could catch fire. The inside diameter of the fireclay liner shall be sized for the proper snug fit of a 6" diameter chimney connector pipe. The fireclay liner shall run from the outer surface of the brick wall to, but not beyond, the inner surface of the chimney flue and shall be firmly cemented in place. See Part A of Figure 8.
2. Use a solid insulated listed factory-built chimney length having an inside diameter of 6" and having 1" or more of solid insulation. There must be at least a 9" air space between the outer wall of the chimney length and any combustible materials. The inner end of the chimney length shall be flush with the inside of the masonry chimney flue shall be sealed to the flue and to the brick masonry penetration with nonwater-soluble refractory cement. Sheet steel supports which are at least 24 gauge(0.024") in thickness shall be securely fastened to wall surfaces on all sides. Fasteners between supports and the chimney length shall not penetrate the chimney liner. See Part B of Figure 8.
3. Use a 10" diameter ventilated thimble made of at least 24 gauge(0.024") steel having two 1" air channels. The ventilated thimble must be separated from combustible materials by a minimum of 6" glass fiber insulation. The opening in the combustible wall shall be covered and the thimble supported with sheet steel supports which are at least 24 gauge (0.024") in thickness. The sheet steel supports shall be securely fastened to wall surfaces on all sides and shall be sized to fit and hold the chimney section. Fasteners used to secure chimney sections shall not penetrate chimney flue liner. See Part C of Figure 8.
4. Use an 8" inside diameter solid insulated listed factory-built chimney length which has 1" or more of solid insulation. The minimum length of this chimney section shall be 12" and will serve as a pass-through for the 6" diameter chimney connector. There must be at least a 12" air space between the outer wall of the chimney section and any combustible materials. The chimney section shall be concentric with and spaced 1" away from the chimney connector by means of sheet steel support plates on both ends of the chimney section. The opening in the combustible wall shall be covered and the chimney section supported on both sides with sheet steel supports which are at least 24 gauge (0.024") in thickness. The sheet steel supports shall be securely fastened to wall surfaces on all sides and shall be sized to fit and hold the chimney section. Fasteners used to secure chimney sections shall not penetrate chimney flue liner. See Part C of Figure 8.
5. A listed factory-built wall pass-through system may be purchased and installed according to the instructions packaged with it to provide a safe method of passing the chimney connector through a combustible wall for connection to a masonry chimney.

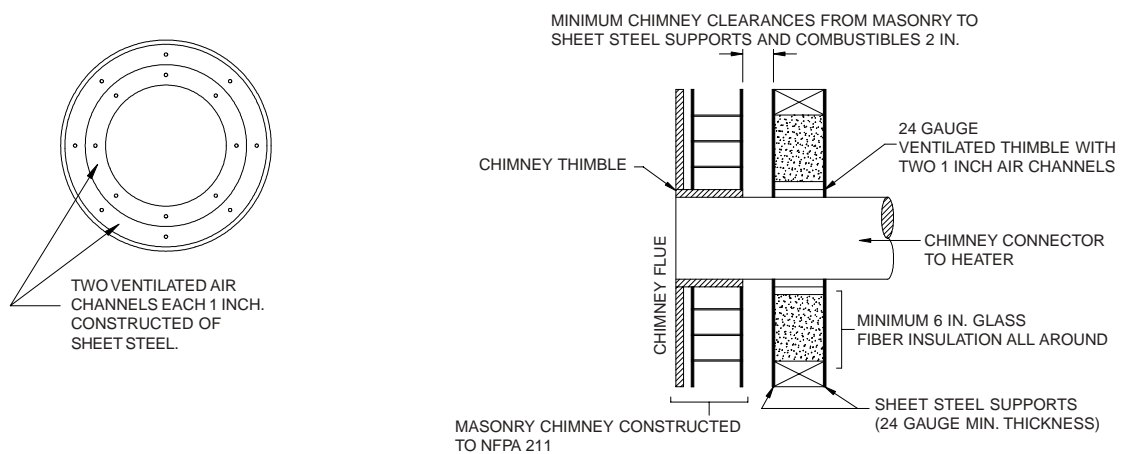
Additional requirements pertaining to Figure 8 and the above wall pass-through systems:

1. Insulation material used as part of wall pass-through system shall be of noncombustible material and shall have a thermal conductivity of 1.0 Btu • in./ft.² • °F (4.88 kg • cal/hr • m² • °C) or less
2. All clearances and thicknesses are minimums: larger clearances and thickness are acceptable.
3. A chimney thimble, as shown for 3" and 4" above (Parts C and D respectively of Figure 8) shall be for types "3" and 4" connections to facilitate removal of the chimney connector for cleaning. The chimney thimble shall be of ASTM C315 fireclay with 5/8" minimum wall thickness, or material or equivalent durability. The inside diameter of the thimble shall be sized for the proper snug fit of a 6" diameter chimney connector pipe. The thimble shall be installed without damage to the chimney flue. The thimble shall extend through the chimney wall to, but not beyond, the inner surface of the chimney flue and shall be permanently cemented in place with high temperature cement.
4. A chimney connector to a masonry chimney, except for 2" above (Part B of Figure 8), shall extend through the wall pass-through system to the inner face of the chimney flue, but not beyond. It does not have to be fastened in place so long as it cannot accidentally be pulled out of the chimney or shoved into the chimney flue. If fasteners are used to secure the chimney connector to a masonry chimney, the fasteners shall not penetrate the chimney flue liner.
5. Any material used to close up any opening for the connector shall be noncombustible.

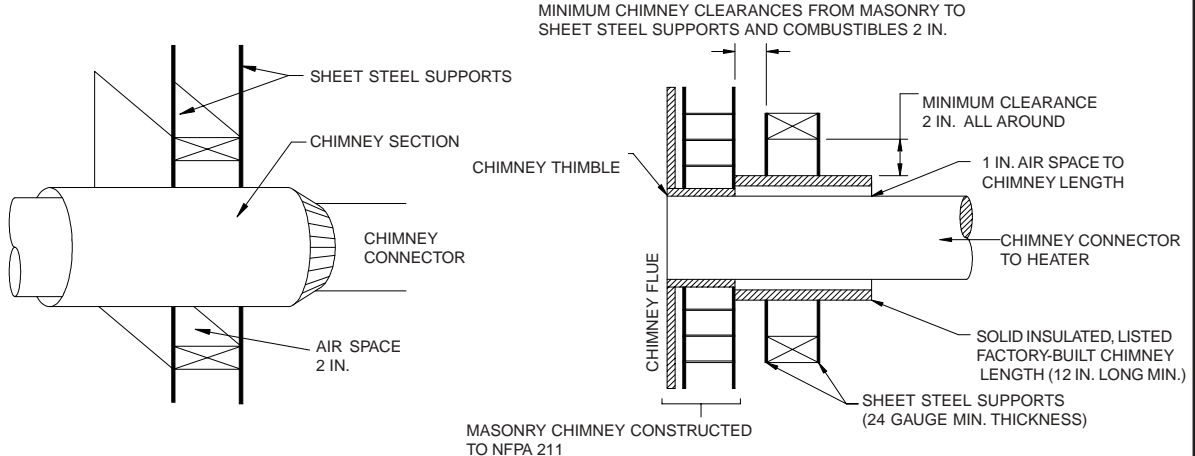
**PART B
FIGURE 8 -
(FIGURE 8 CONTINUED)**



**PART C
FIGURE 8**



**PART D
FIGURE 8**



PART E - (Figure 8)

In addition to the methods shown by A, B, C, and D of Figure 8, a listed factory-built wall pass-through system may be purchased and installed according to the instructions packaged with it to provide a safe method of passing chimney connector through a combustable wall for a connection to a masonry chimney.

CONNECTION OF CHIMNEY CONNECTOR TO A MASONRY CHIMNEY WHEN CHIMNEY CONNECTOR DOES NOT PASSTHROUGH A COMBUSTIBLE WALL

If the chimney connector does not have to pass through a combustable wall to get to a masonry chimney, simply connect the chimney connector directly to the masonry chimney's chimney thimble as described and shown by parts C and D of Figure 8. Remember, the chimney connector should extend into the chimney thimble to the innerface of the chimney flue but not beyond; if the chimney connector is extended through the chimney thimble into the chimney flue, resistance to the flow of smoke and gases up the chimney will occur; that flow resistance will have an adverse affect on the operation and performance of the heater and venting system.

Assembly of Furnace

Your furnace requires the following items to be assembled or installed by the service person:

Feed Door Pull Handle
 Feed Door Locking Handle
 Blower(s) and Blower Controls
 Electrical Connections

1. Remove all parts from inside the furnace and inspect for damage, including the firebrick as some breakage could occur during shipment.
2. Assemble the feed door pull handle as shown in Figure 9. Install thermostat assembly and cover (complete with handle) as illustrated in Figure 9.
3. Align thermostat control knob with flat on thermostat control shaft and press onto shaft. (See Fig. 9)
4. Attach feed door locking handle as in Figure 10 with screws and nuts provided. Note: Slotted holes are for adjustment of handle. Adjust handle until some pressure is required to lock feed door during firing sequence.
5. Install Honeywell Fan/Limit Control on rear of furnace cabinet as shown in Figure 11.
6. Remove blower(s) from carton(s). Remove junction box cover. Attach clip nuts as in Figure 10. Install blower(s) and gasket(s) with 1/4"-20x3/4" bolts as shown.
7. Wire right side blower first (See wiring diagram, Fig. 12 & 13) and replace cover on junction box on blower.
8. Wire left blower same as above and replace cover. Check operation of shaker grates with grate handle before operating furnace.

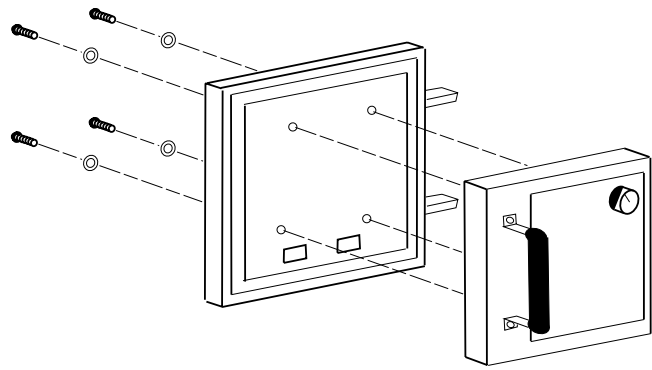


Fig. 9

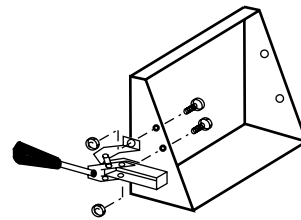
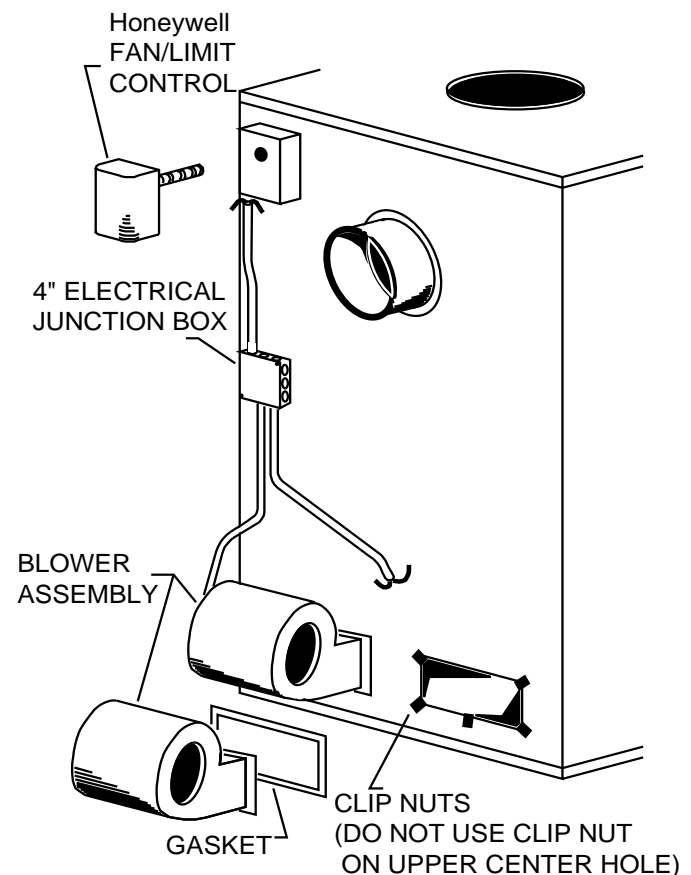
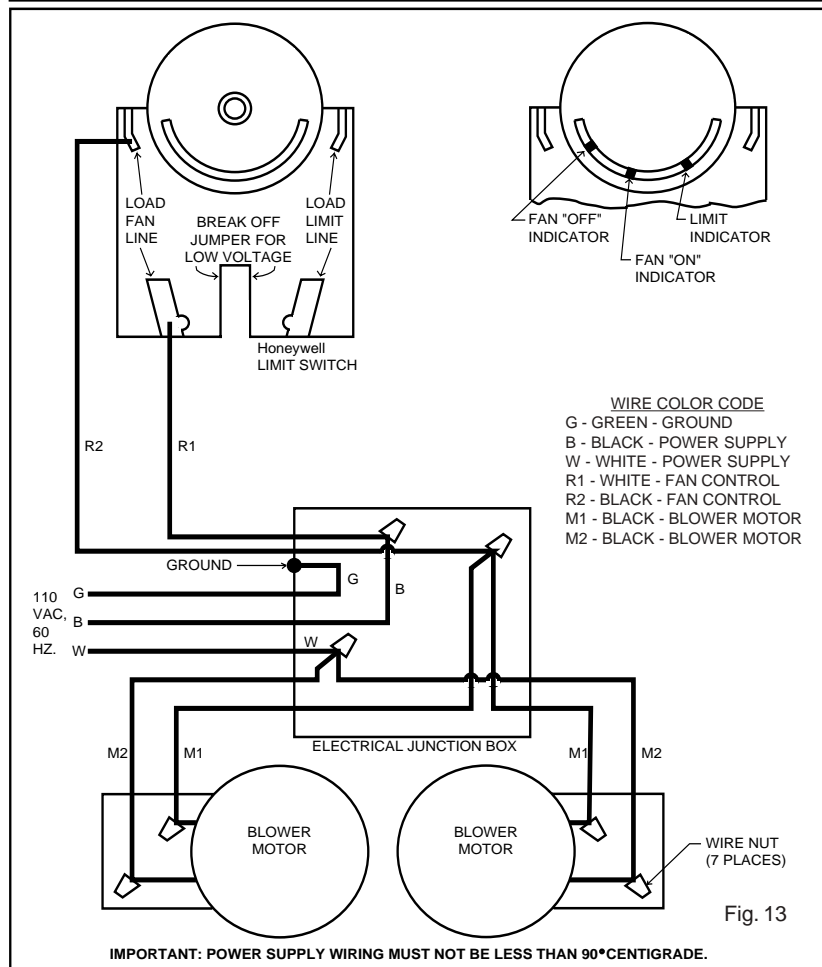
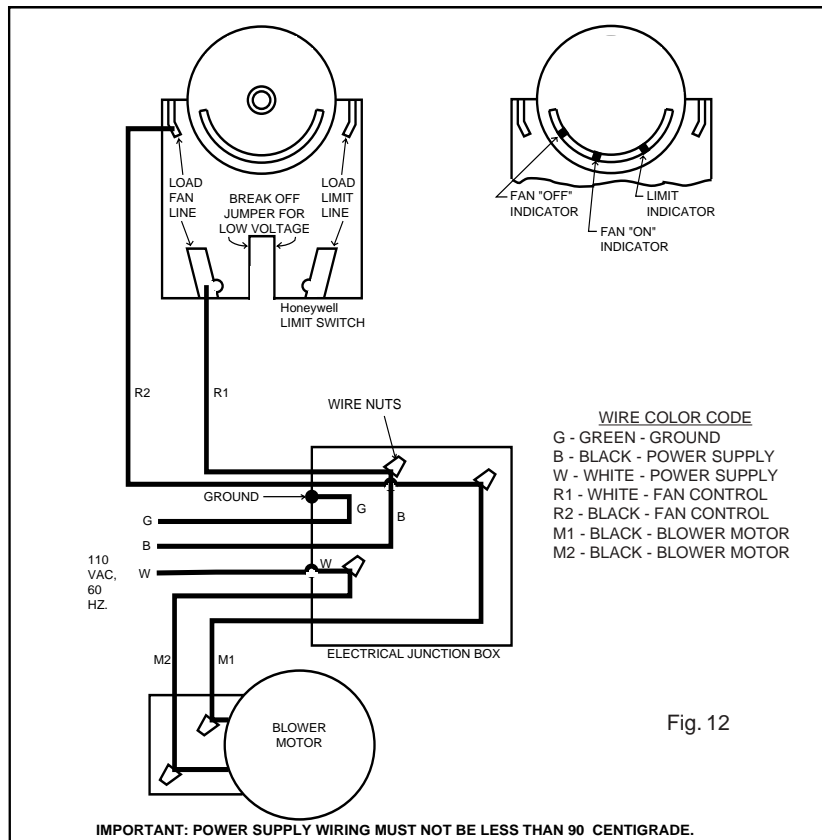


Fig. 10



(MODEL 1300 - 1 BLOWER,
 MODEL 1400 - 2 BLOWERS)

Fig. 11



Installation

Please see all methods of Installation in Appendix at the rear of this booklet.

This is a furnace, not a free standing stove. You must direct heated air from 8" outlets away from the furnace, or it will not function properly.

1. This installation must be done by a qualified heating equipment installer.
2. The installation is to be done in compliance with National Fire Protection Association installation standards: No. 89M, 90B, 211, 70 (National Electrical Code) and Uniform Mechanical Code 913, 6-4, in the states where applicable. (Their code offers connecting smoke pipe connectors into chimney with other fuel burning appliances.)
3. Rooms large in comparison with size of the appliance:
 - a) Wood or Coal Burning Furnace needs air for combustion and circulation to house.
 - b) Provision must be made to make up this air and not starve gas or oil furnace of combustion air.
 - c) Have "Authority Having Jurisdiction" determine that air is of adequate makeup. (Reference N.F.P.A. Nos. 30&54, Code for Installation of Gas & Oil Equipment).
4. Have "Authority Having Jurisdiction" is to inspect all chimneys and installations for adequate venting and for compliance with standard and local codes and regulations regarding installation of wood burning appliances.
5. Installation for Supplemental Heat Application to Existing Central System. (See Fig. 2 for typical installation.)
 - a) Place Wood or Coal Burning Furnace so that the chimney connector will be as short as practical and avoiding unnecessary sharp turns in the smoke pipe connector and the installation of devices that would create excessive resistance to the flow of flue gases.
 - b) Locate the Wood or Coal Burning Furnace as close as practical to the existing central hot air heating system, maintaining clearances as stated on the label on the fuel door.
 - c) Clearance from combustible materials must comply with those stated on the label on the fire door:

Unit to combustible:
Front: 48"(900mm)
Back: 30"(760mm)
Sides: 12"(305mm)
Plenum to Ceiling: 6"(150m)

Pipe to combustible:
Sides: 18"(460mm)
Back: 18"(460mm)

The installation must be made only on a noncombustible floor.

d) Install the smoke pipe connector to the chimney with 26-gauge pipe and elbows (to be purchased separately), maintaining the proper clearances for the specific model. Seal the smoke pipe in the chimney with furnace cement. (The chimney connector shall be securely supported, and joints fastened with sheet metal screws or rivets.)

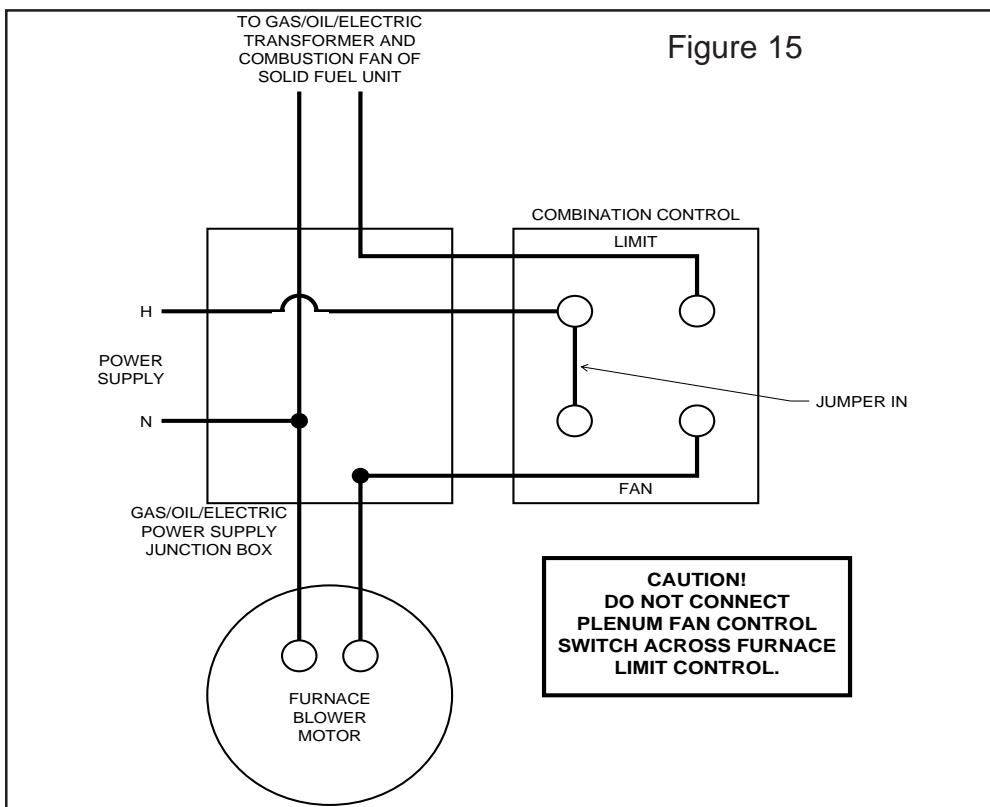
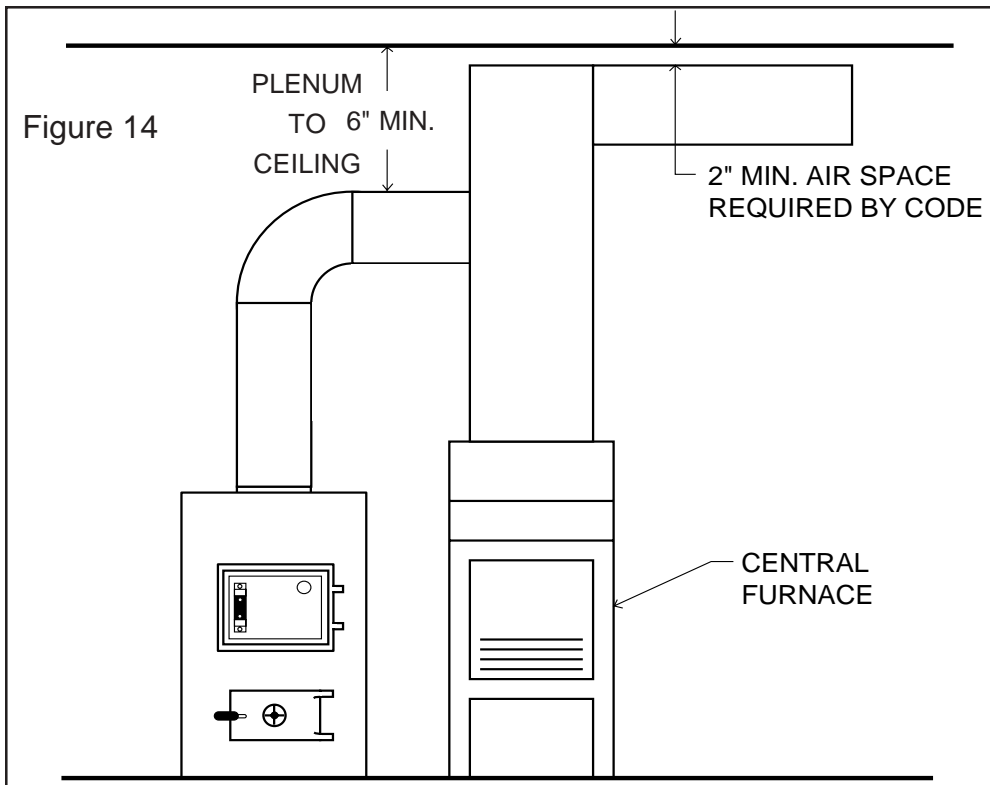
e) Install 8" diameter heat pipe to plenum of the central hot air furnace. Use 26-gauge pipe and connectors (to be purchased separately). (See Fig. 14) If central air conditioning is installed in the plenum, install heat pipe above the air conditioning unit. Secure heat pipe connection with supports and sheet metal screws.

f) Connect electrical supply in the electrical junction box that is mounted on the back of the Furnace. See Wiring Diagram (Fig. 12 or Fig. 13). Remove the cover from electrical junction box and connect power supply wires to wires designated, using wire nuts. The power cord supplied may be used for installation, if permitted by local codes and regulations. If the power cord supplied cannot be used, the power supply wiring must be 90 degrees centigrade in a metal cable and should be completed by a qualified installer complying with NFPA Standard No. 70 and local codes.

g) Optional Plenum Fan Control Switch (Part No. 11PCS) is available for installation on the plenum of central hot air heating furnace. The purpose of this switch is to activate the circulating fan of the central hot air heating furnace when the temperature in the plenum exceeds 120 degrees F., and shut off the fan when the temperature in the plenum is reduced to 100 degrees F. This avoids overheating the plenum.

The electrical supply for operation of this fan control switch is to be obtained from the same electrical supply as the central hot air heating system. Follow the instructions of the wiring diagram (Fig. 12 or 13) Do not make connections across Limit Control in the furnace.

Make electrical wire connections in accordance with NFPA Standard No. 70 and local codes in the power supply junction box (See Fig. 15). The wiring to complete the connections should be 18 AWG minimum copper and 90 degrees centigrade in a cable.



Power Failure Instructions:

Operation after loss of power--

1. Remove filter if provided
2. Do not expect to keep home at normal temperatures.
3. Do not load fuel above bottom of feed door.

Operating Instructions

FUEL, Model 1300

Egg size (1-3/16" or larger) bituminous coal for residential furnaces, or any of the specially packed fireplace coals can be used. Coal with a low ash content (2% to 6%) is recommended.

FUEL, Model 1400

Hardwood, 18" to 26" should be split and air dried (seasoned) for 6 months.

LIGHTING

1. Set the thermostat on "HIGH" for maximum draft.
2. Open the feed door and place paper and kindling on the grate for starting the fire.
3. Light the fire and close the feed door.
4. Add wood or about 15 lbs. of coal (depending on which model) after fire is burning briskly. Set thermostat for desired temperature.
5. "MEDIUM" setting is normally satisfactory. Set higher or lower for your comfort.

ADDING FUEL

When starting a fire, add small amounts of fuel instead of adding large quantities of fuel. This will give more complete combustion and less buildup of tars or soot in the chimney.

1. Set thermostat to HIGH before opening feed door.
2. Wood fire - Model 1400.
Add wood to a convenient level.
3. Coal Fire - Model 1300.
 - a. Never smother the fire when adding coal (See Caution). Gas accumulation and a mild smoky explosion will occur. Add fresh kindling if the bed of coals has cooled.
 - b. Add up to 20 lbs. of coal per loading. Never add coal above the bottom of feed door opening. Stir the coal and watch the fire. Be sure the
 - c. new coal is burning briskly before you close the doors and turn the thermostat down. Shake grates vigorously 1/2" left to right to spill
 - d. ashes into the ash pan. Do this at least once every 12 hours of operation. Empty ash pan regularly. Do not allow ashes to buildup to grate as grate will warp and burnout, and you might spill the ashes when removing the pan. Dispose of hot ashes properly (See note 12 on page 4).
Rotation of the handle (5 o'clock to 7 o'clock)
 - e. position will agitate coals and spill ashes into ash pan.
It is advisable for you to get familiar with the
 - f. shaker grate operation before firing.

CAUTION
GASES THAT ARE DRIVEN FROM FRESH COAL MUST BE BURNED OR THEY WILL ACCUMULATE AND EXPLODE. NEVER SMOTHER A FIRE WHEN ADDING FRESH COAL.

CAUTION
DO NOT OPERATE WITH THE FEED AND/OR ASH DOOR OPEN. THIS FURNACE IS DESIGNED FOR THERMOSTATIC OPERATION. OPERATION WITH ANY OF THESE DOORS OPEN WILL OVERHEAT AND DAMAGE THE FURNACE.

CAUTION
NEVER USE GASOLINE, GASOLINE-TYPE LANTERN FUEL, KEROSENE, CHARCOAL LIGHTER FLUID, OR FLAMMABLE LIQUIDS TO START OR "FRESHEN UP" A FIRE IN THE FURNACE.

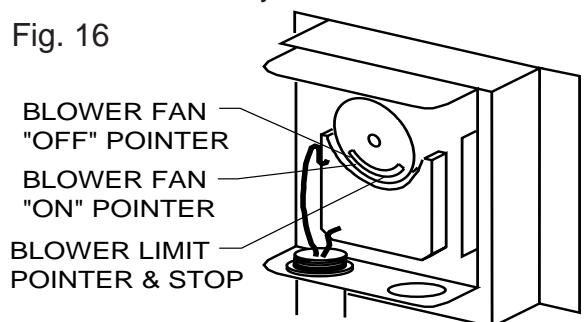
WARNING
NEVER STORE FLAMMABLE LIQUIDS, ESPECIALLY GASOLINE, IN THE VICINITY OF THE FURNACE.

ADJUSTING BLOWER LIMIT CONTROL SETTINGS.

The temperature in the plenum of the warm air furnace at which the blower turns on or turns off, is controlled by the setting of the pointers in the blower limit control. These pointers may be adjusted through their entire range of settings to achieve the desired warm air output from furnace. (See Fig. 16 below)

Move both pointers towards the right (counter clockwise) - this increases the temperature setting at which the blower will turn on and off. Move both pointers towards the left (clockwise) - this decreases the temperature setting at which the blower will turn on and off. Move pointers away or apart from each other - this increases the time that the blower will run on each warm air cycle.

Fig. 16



Service Hints

Do not expect a furnace to draw. It is the chimney that creates the draft. Smoke spillage into the house or excessive buildup of water or creosote in the chimney are warnings that the chimney is not functioning properly. Correct the problem before using furnace. Possible causes are:

1. The connector pipe may be pushed into the chimney too far, stopping the draft (Fig. 6)
2. Do not connect two furnaces or a stove and furnace into the same chimney flue.
3. The chimney used for a furnace must not be used to ventilate the cellar or basement. If there is a cleanout opening at the base of the chimney, it must be closed tightly.
4. If the chimney is operating too cool, water will condense in the chimney and run back into the furnace. Creosote formation will be rapid and may block the chimney. Operate the furnace at a high enough fire to keep the chimney warm, preventing this condensation.
5. If the fire burns well, but sometimes smokes or burns slowly, it may be caused by the chimney top being lower than another part of the house or a nearby tree. The wind blowing over a house or a tree, falls on top of the chimney like water over a dam, beating down the smoke. The top of the chimney should be at least 3 feet above the roof and be at least 2 feet higher than any point of the roof within 10 feet (Fig. 5).
6. See page 29 for list of trouble shooting tips.

A draft reading of .05 to .06 w.c. is suggested for proper burning of this unit when using wood or bituminous coal as fuel. When using anthracite coal, this draft reading is a minimum reading.

Chimney Maintenance

Creosote and Soot - Formation and Need for Removal

When wood is burned slowly, it produces tar and other organic vapors, which combine with expelled moisture to form creosote. The creosote vapors condense in the relatively cool chimney flue of a slow-burning fire. As a result, creosote residue accumulates on the flue lining. When ignited, this creosote makes an extremely hot fire.

When coal is burned, the products of combustion combine with moisture to form a soot residue which accumulates on the flue lining. When ignited, this soot makes an extremely hot fire.

The chimney should be inspected at least twice monthly during the heating season to determine if a creosote or soot build up has occurred.

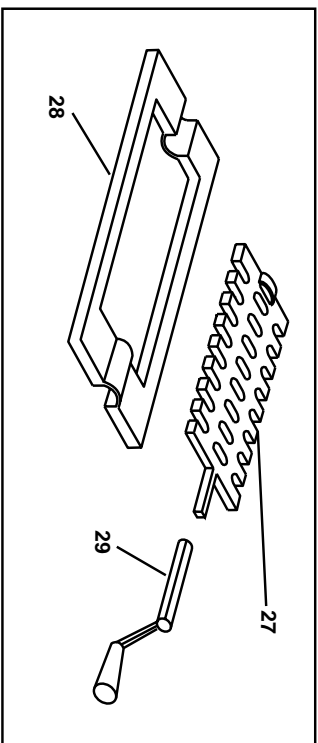
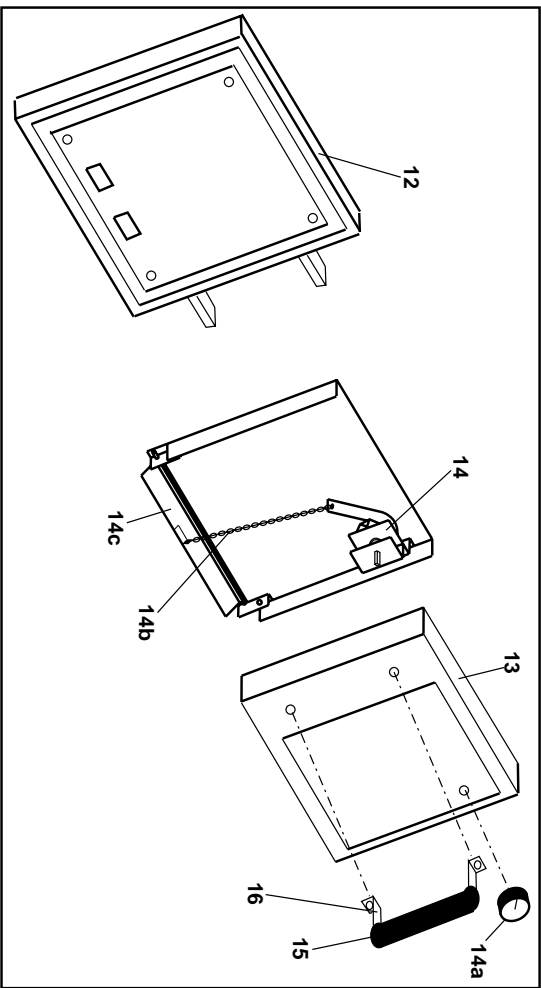
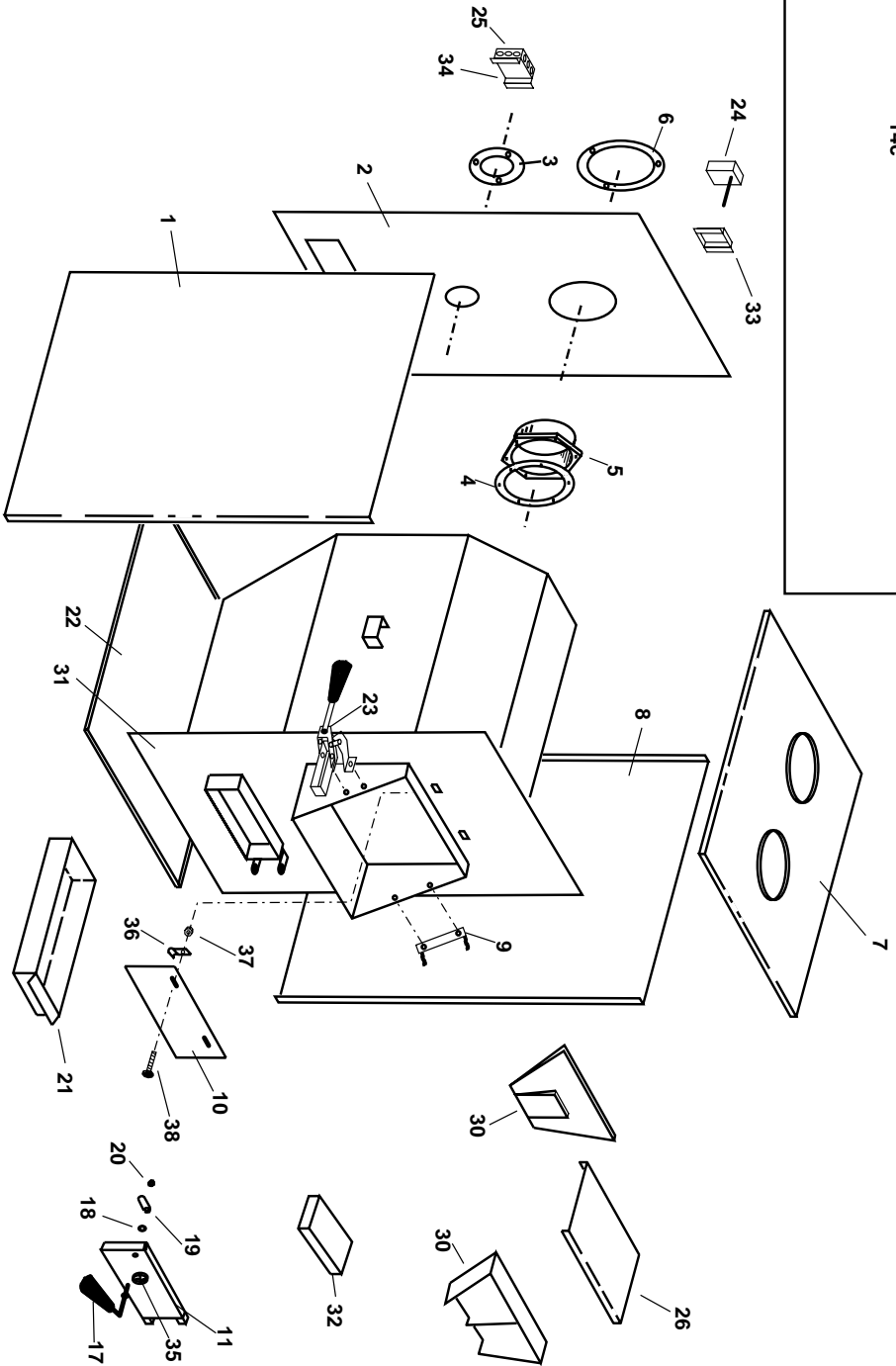
If creosote or soot has accumulated, it should be removed to reduce the risk of a chimney fire.

Chimney fires burn very hot. If the chimney catches fire, immediately call the fire department, then reduce the fire by closing the inlet air control. Pour a large quantity of coarse salt, baking soda or cool ashes on top of the fire in the firebox.

CAUTION

A chimney fire may cause ignition of wall studs or rafters which you thought were a safe distance from the chimney. If you have a chimney fire, have your chimney inspected by a qualified person before using again.

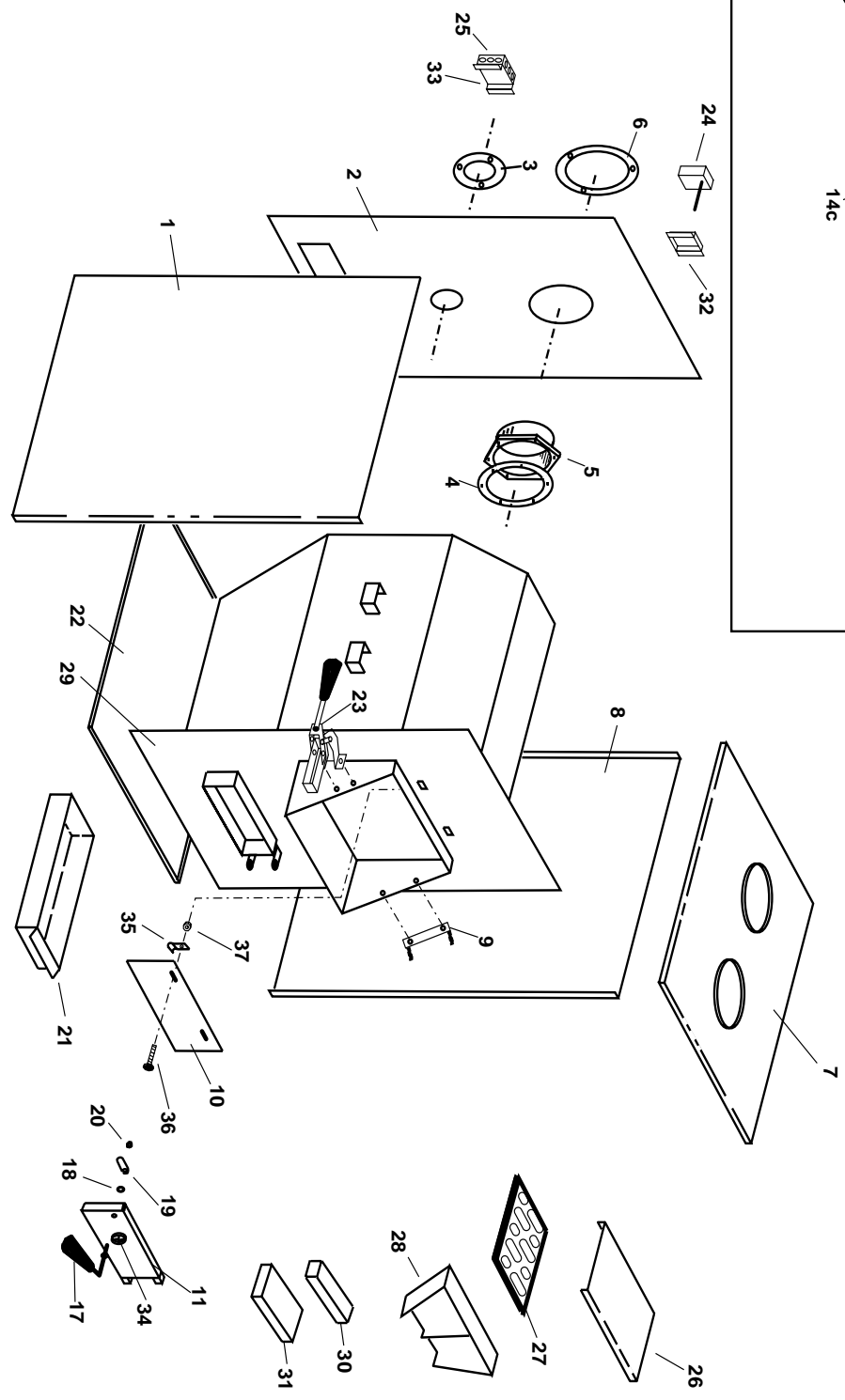
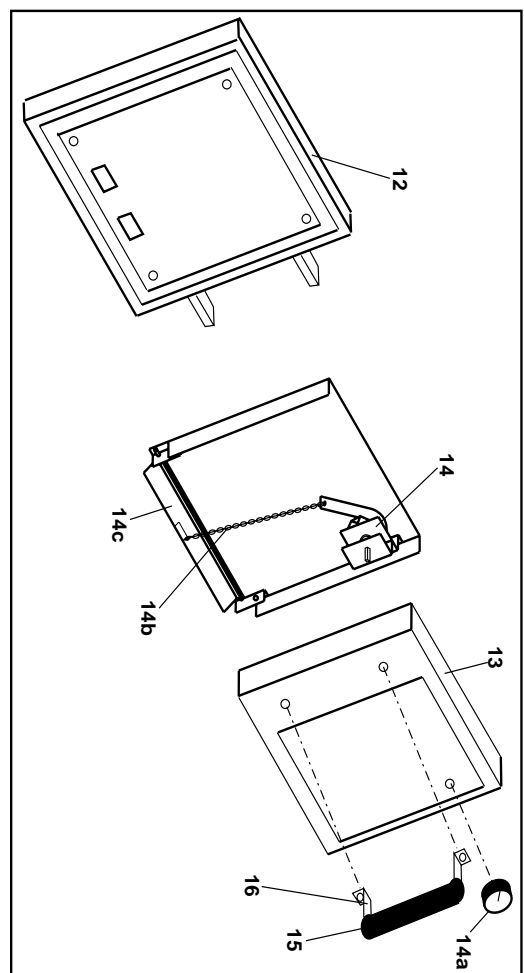
Model 1300 Repair Parts



**PARTS LIST
MODEL 1300
(SEE DIAGRAM, PAGE 19)**

KEY	PART #	DESCRIPTION	QTY.
1	22684	CABINET LEFT SIDE	1
2	22682	CABINET BACK PANEL	1
3	22762	FORCED DRAFT RING	1
4	88032	FLUE COLLAR GASKET	1
5	40246	FLUE COLLAR	1
6	22761	FLUE COLLAR RING	1
N/S	83227	BOLT (1/4-20 X 1)	6
N/S	83250	KEP NUT (1/4-20)	6
7	22683	CABINET TOP PANEL	1
8	22685	CABINET RIGHT SIDE	1
9	22662	FEED DOOR HINGE BRACKET	1
10	23800	SMOKE CURTAIN	1
N/S	83337	BOLT (5/16-18 X 1)	2
N/S	83338	LOCKNUT (5/16-18)	2
11	68218	ASH DOOR ASSEMBLY	1
12	68217	FEED DOOR ASSEMBLY	1
13	68733	THERMOSTAT COVER ASSEMBLY	1
14	68598	THERMOSTAT ASSEMBLY	1
14a	89175	THERMOSTAT CONTROL KNOB	1
14b	86318	THERMOSTAT DAMPER CHAIN	1
14c	68721	THERMOSTAT DAMPER FLAP ASSEMBLY	1
15	89520	WOODEN HANDLE	1
16	23425	HANDLE BRACKET	2
N/S	83106S	SCREW (#10-24 X 1/2")	2
17	89354	ASH DOOR HANDLE	1
18	83045A	WASHER (3/32 THK)	1
19	23445	DOOR LATCH	1
20	83274	NUT (3/8-16)	1
21	68238	ASH PAN	1
22	22686	CABINET BOTTOM	1
23	89308	FEED DOOR LOCKING MECHANISM	1
N/S	83339	BOLT (1/4-20 X 3/4")	2
N/S	80230	BLOWER MOTOR	1
N/S	83339	BOLT (1/4-20 X 3/4")	5
N/S	83340	BLOWER CLIP NUT (1/4-20)	5
N/S	89319	BLOWER GASKET	1
N/S	68231	FAN CONTROL CORD ASSEMBLY	1
N/S	68232	BLOWER CONDUIT ASSEMBLY	1
N/S	80154	CORD STRAIN RELIEF	1
24	80145	BLOWER LIMIT CONTROL	1
25	80231	JUNCTION BOX	1
N/S	80232	POWER SUPPLY CORD	1
26	23397	FLUE BAFFLE	1
27	40257	SHAKER GRATE	1
28	40256	SHAKER FRAME	1
29	40260	SHAKER HANDLE	1
30	40264	FRONT AND REAR LINER	1
31	68225	FIREBOX ASSEMBLY	1
32	89066	FIREBRICK	10
33	68234	BLOWER THERMOSTAT BRACKET	1
34	22140	RELAY BOX SUPPORT BRACKET	1
35	22824	DRAFT KNOB	1
36	23787	SMOKE DOOR CLIP	2
37	83250	KEP NUT (1/4-20)	2
38	83445	BOLT (1/4-20 X 1-1/4")	2

Model 1400 Repair Parts



**PARTS LIST
MODEL 1400
(SEE DIAGRAM, PAGE 21)**

KEY	PART #	DESCRIPTION	QTY.
1	23461	CABINET LEFT SIDE	1
2	23459	CABINET BACK PANEL	1
3	22762	FORCED DRAFT RING	1
4	88032	FLUE COLLAR GASKET	1
5	40246	FLUE COLLAR	1
6	22761	FLUE COLLAR RING	1
N/S	83227	BOLT (1/4-20 X 1)	6
N/S	83250	KEP NUT (1/4-20)	6
7	23457	CABINET TOP PANEL	1
8	23461	CABINET RIGHT SIDE	1
9	22662	FEED DOOR HINGE BRACKET	1
10	23800	SMOKE CURTAIN	1
11	68218	ASH DOOR ASSEMBLY	1
12	68217	FEED DOOR ASSEMBLY	1
13	68733	THERMOSTAT COVER/PANEL ASSEMBLY	1
14	68598	THERMOSTAT ASSEMBLY	1
14a	89175	THERMOSTAT CONTROL KNOB	1
14b	86318	THERMOSTAT DAMPER CHAIN	1
14c	68721	THERMOSTAT DAMPER FLAP ASSEMBLY	1
15	89520	WOODEN HANDLE	1
16	23425	HANDLE BRACKET	2
N/S	83106S	SCREW (#10-24 X 1/2")]	2
17	89354	ASH DOOR HANDLE	1
18	83045A	DOOR LATCH WASHER (3/32 THK)	1
19	23445	DOOR LATCH	1
20	83274	DOOR LATCH NUT (3/8"-16)	1
21	68228	ASH PAN	1
22	23458	CABINET BOTTOM	1
23	89308	FEED DOOR LOCKING MECHANISM	1
N/S	83339	BOLT (1/4-20 X 3/4")	2
24	80145	BLOWER LIMIT CONTROL	1
25	80231	JUNCTION BOX	1
N/S	80232	POWER SUPPLY CORD	1
N/S	68231	FAN CONTROL CORD ASSEMBLY	3
26	23398	FLUE BAFFLE	2
27	40263	FURNACE GRATE	3
28	40258	FRONT LINER	1
29	68215	FIREBOX ASSEMBLY	1
30	23887	HALF FIREBRICK	2
31	89066	FIREBRICK	12
32	68234	BLOWER THERMOSTAT BRACKET	1
33	22140	RELAY BOX SUPPORT BRACKET	1
34	22824	DRAFT CONTROL KNOB	1
N/S	68229	BLOWER MOTOR ASSEMBLY	2
N/S	83339	MOUNTING BOLT (1/4-20 X 3/4")	10
N/S	83340	CLIP NUT (1/4-20)	10
N/S	89319	BLOWER GASKET	2
N/S	80154	CORD STRAIN RELIEF	1
35	23787	SMOKE CURTAIN CLIP	2
36	83445	BOLT (1/4-20 X 1-1/4")	2
37	83250	KEP NUT (1/4-20)	2

Central Installation (U.S. ONLY)

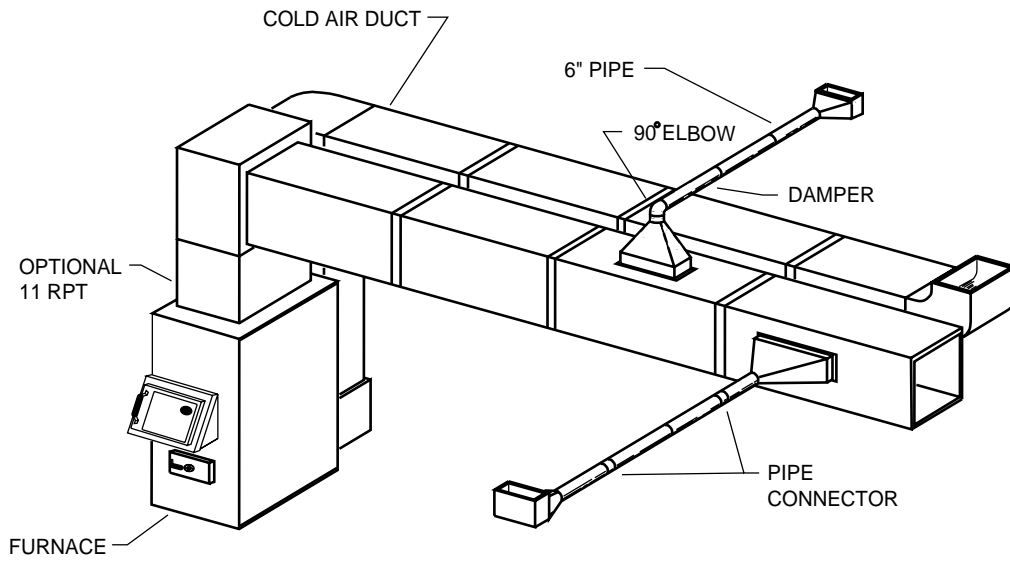


Fig. 17-1

Add-On Installation (U.S. ONLY)

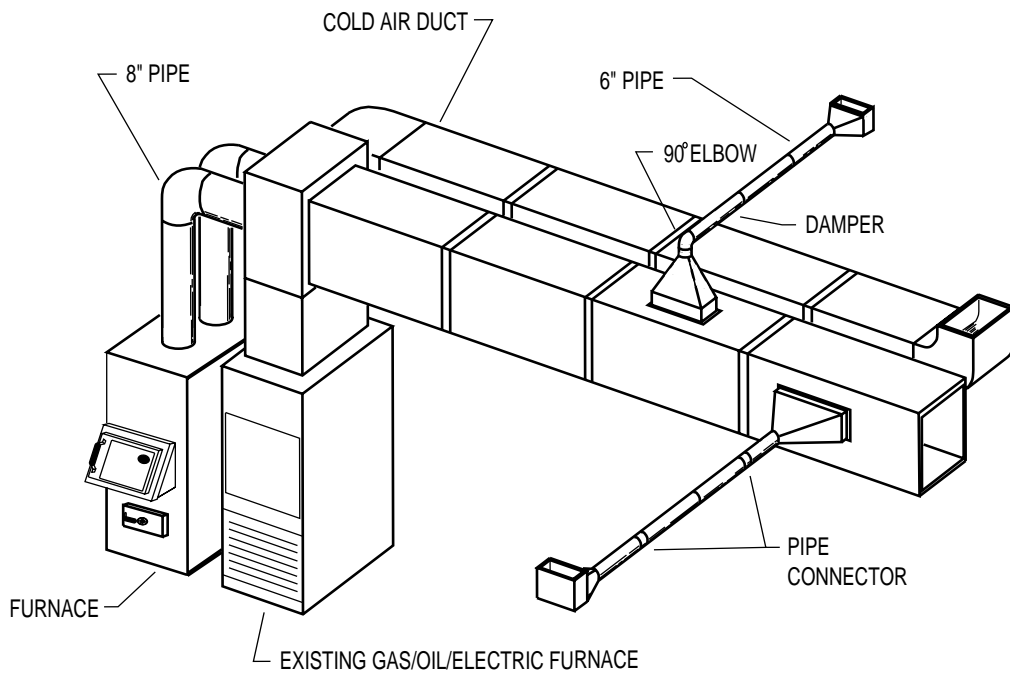
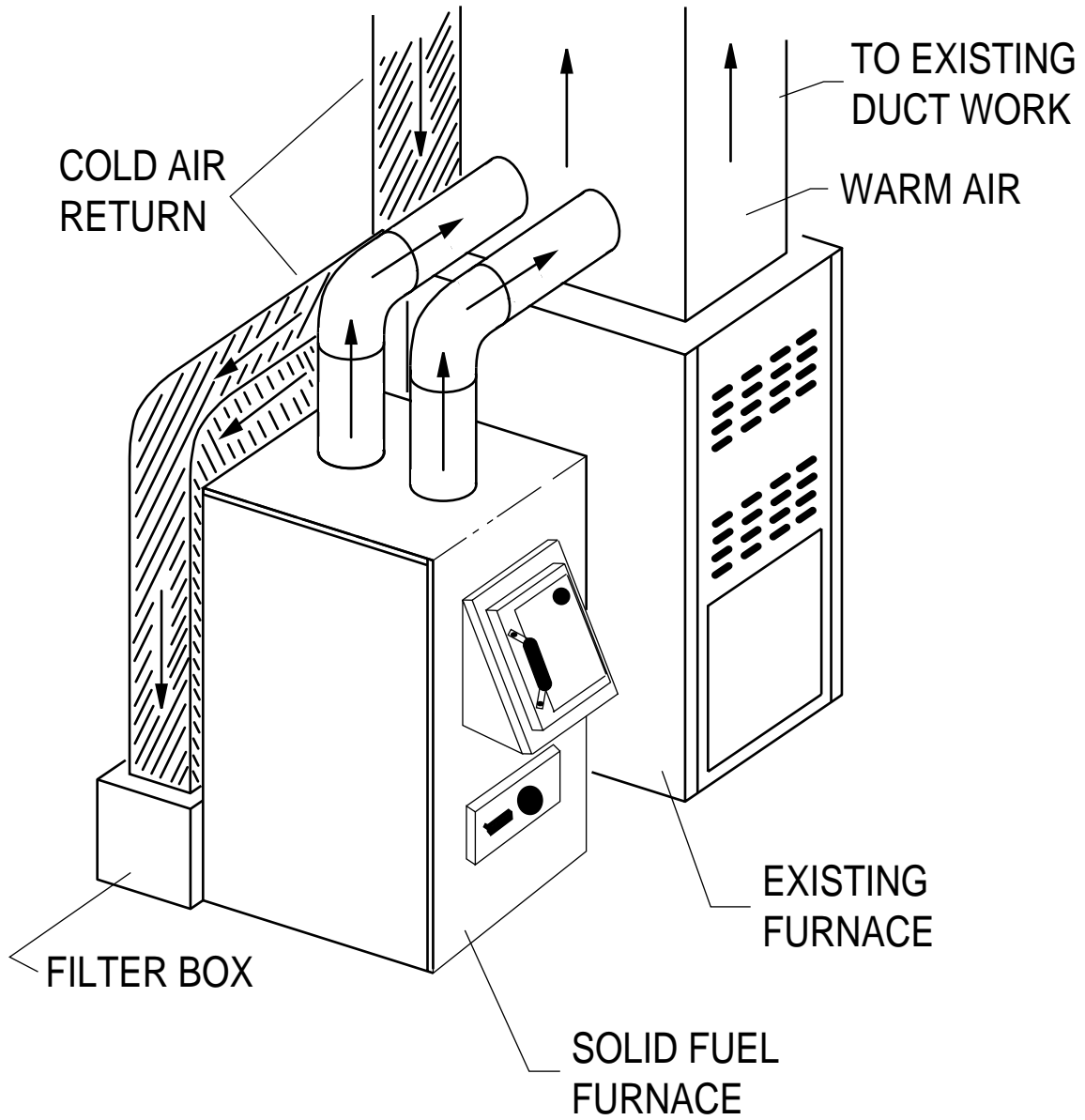


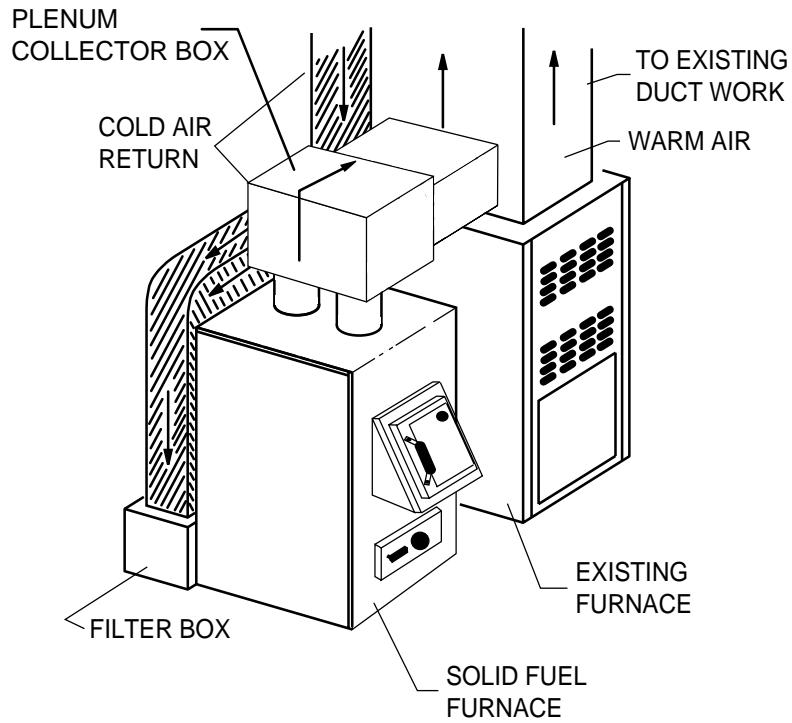
Fig. 17

APPENDIX

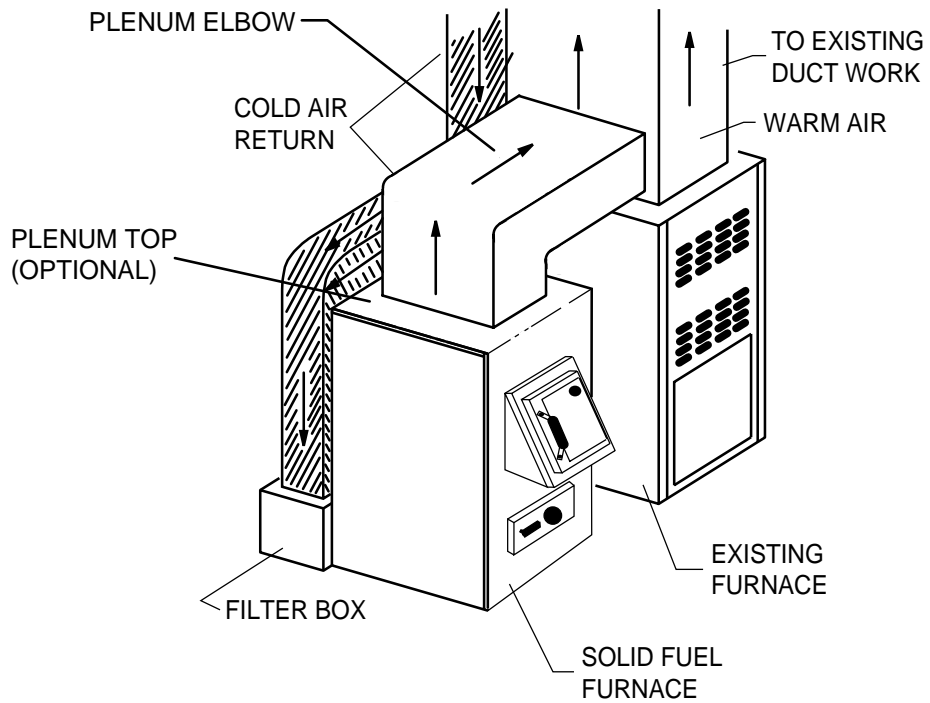
INSTALLATION A (U.S. ONLY)



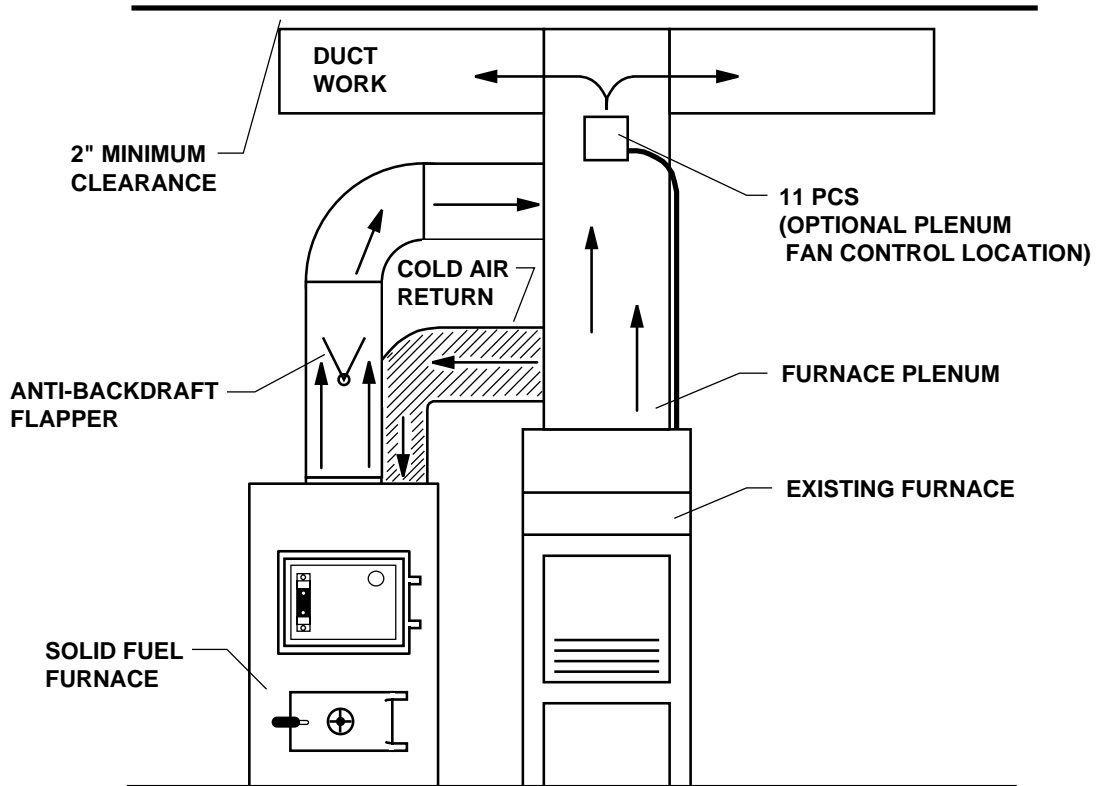
INSTALLATION B (U.S. ONLY)



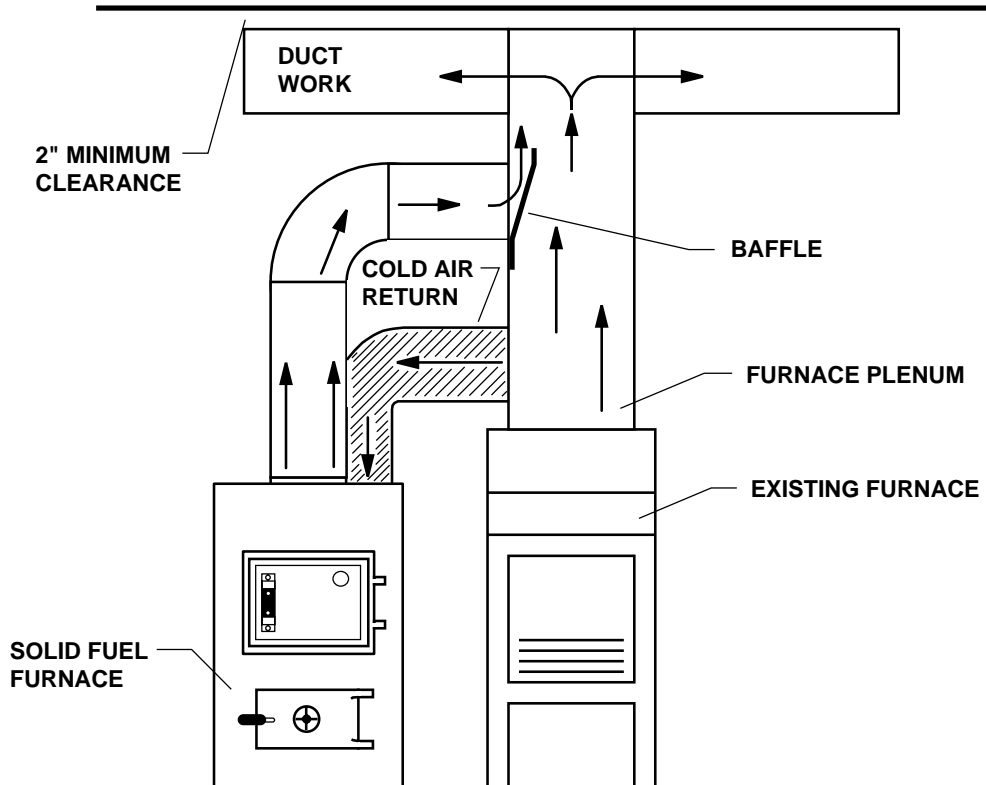
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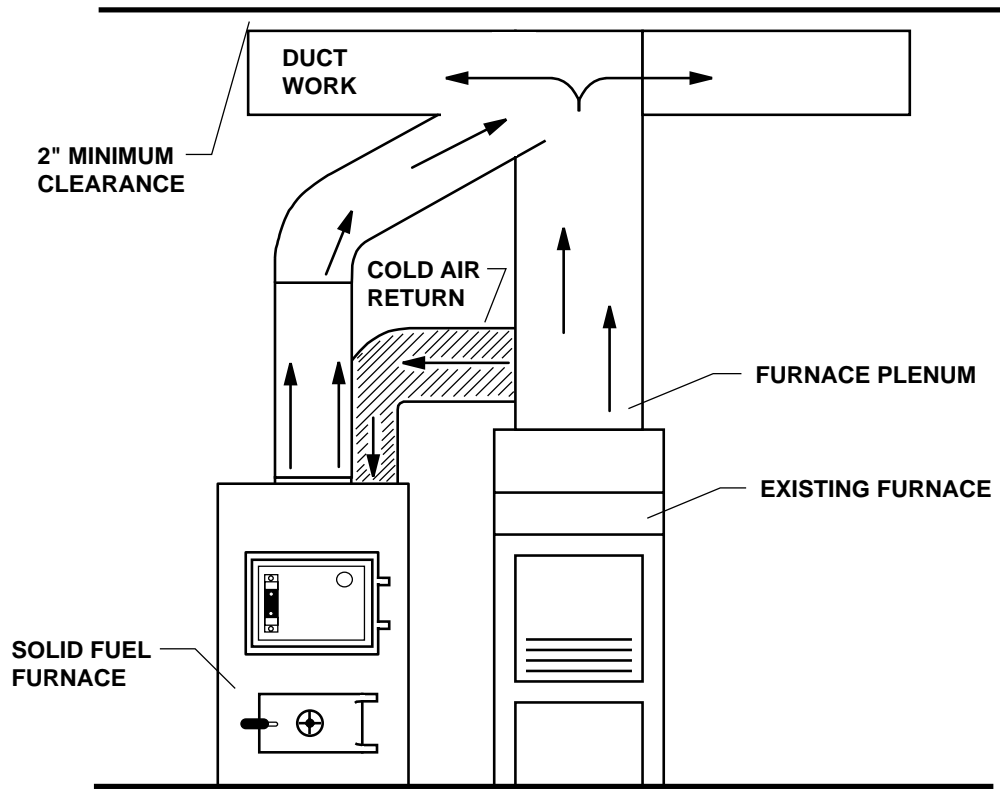
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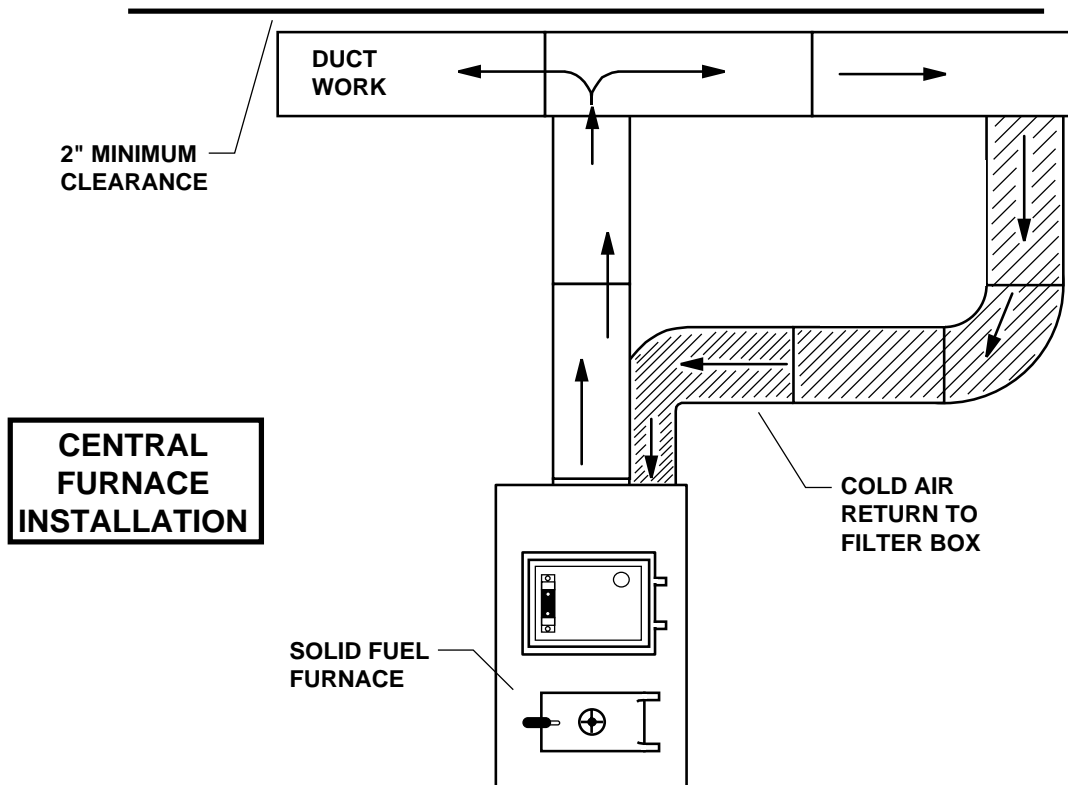
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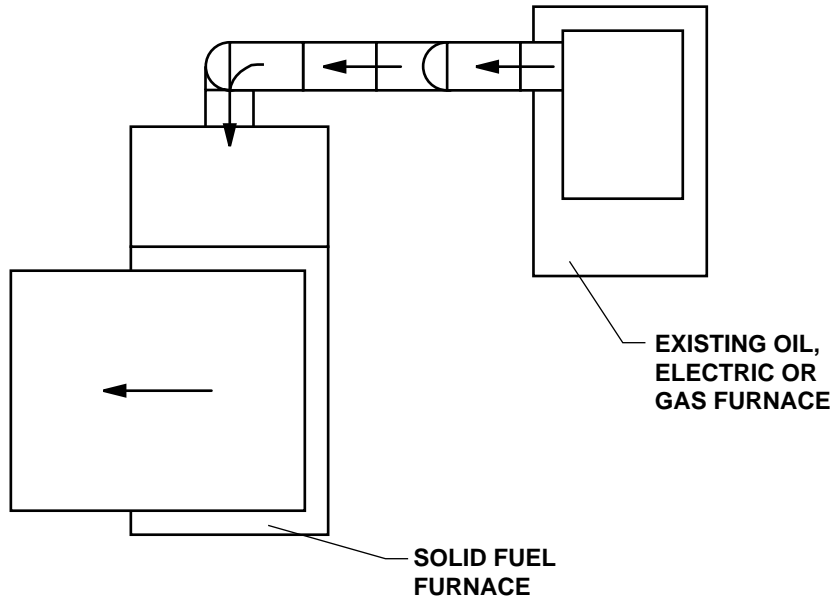
INSTALLATION F



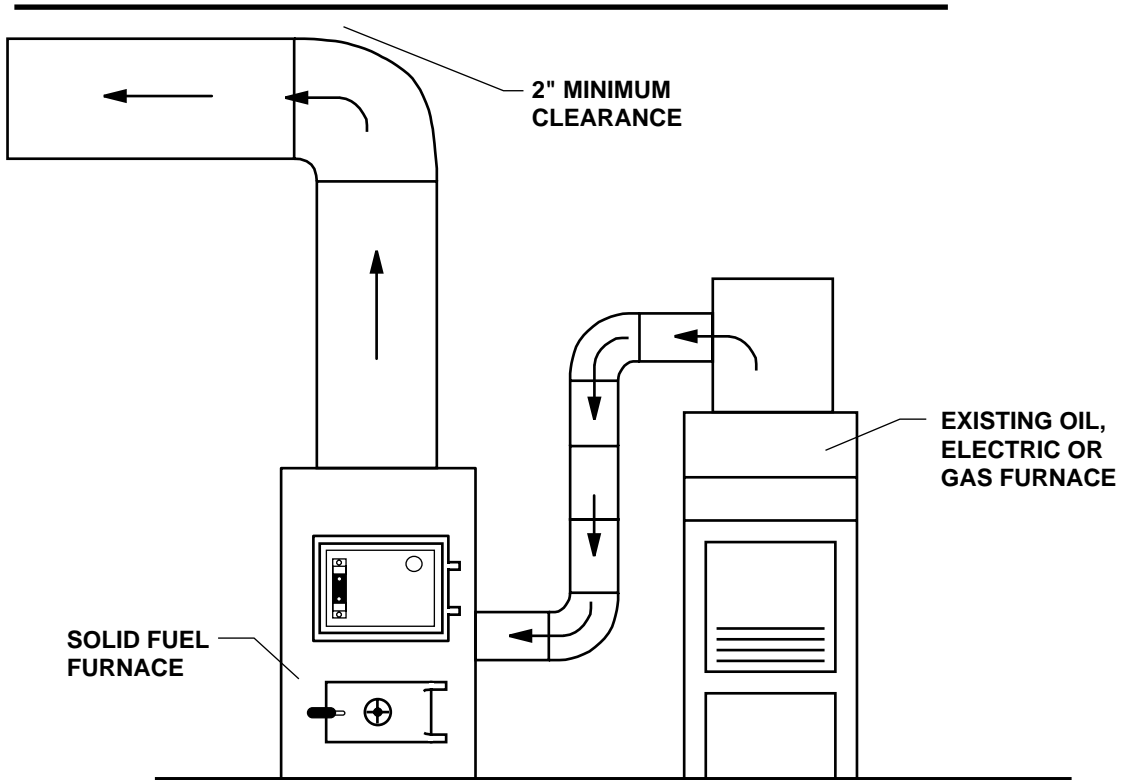
INSTALLATION G



INSTALLATION H



(TOP VIEW)



(FRONT VIEW)

Trouble Shooting Tips for Warm Air Furnace

LIST OF PROBLEMS	POSSIBLE CAUSE	SOLUTIONS
1. Smoking when feed door is open.	<ul style="list-style-type: none"> a) Insufficient Draft. b) Clogged chimney or chimney connector. c) Down draft in chimney. 	<ul style="list-style-type: none"> a) Set Thermostat higher. b) Clean Chimney. c) Add raincap to chimney.
2. Furnace does not heat.	<ul style="list-style-type: none"> a) Wood not seasoned and dry. b) Blower control set too low. c) Insufficient flue draft. 	<ul style="list-style-type: none"> a) Allow wood to season in a dry area for six months. b) Set blower control to higher temperatures. (See P. 17) c) Set flue draft. (See P. 9)
3. Blower Does not run.	<ul style="list-style-type: none"> a) Improperly wired. b) Bad blower control. c) Bad relay. d) Bad blower motor 	<ul style="list-style-type: none"> a) Wire unit properly. b) Replace blower control. c) Replace relay. d) Replace blower.
4. No air from registers- fan running.	<ul style="list-style-type: none"> a) Registers are closed. b) Duct work improperly installed. c) Improper wiring between central furnace and this unit. 	<ul style="list-style-type: none"> a) Open registers. b) Correct duct work install. c) Wire unit properly.
5. Air from Registers is not hot	<ul style="list-style-type: none"> a) Blower control is set too low. b) Bad blower control. 	<ul style="list-style-type: none"> a) Adjust blower control to higher setting. (See P. 17) b) Replace blower control.
6. Blower runs too long.	Blower control cut off set too low.	Set blower control cut off to higher setting. (See P. 17)
7. Blower does not run long enough.	<ul style="list-style-type: none"> a) Blower control cut off set too high. b) Bad blower motor. 	<ul style="list-style-type: none"> a) Set blower control cut off to lower setting. (See P. 17) b) Replace Blower.
8. Smoke and/or odor from registers when furnace is used for first time.	Oil from furnace and duct work.	The metal used in construction of the furnace and duct work has a light coating of oil. This should disappear after a short period of time. Once this burnoff has occurred, it should not reoccur.
9. Creosote build-up.	<ul style="list-style-type: none"> a) Burning green wood (not seasoned or dry). b) Thermostat setting too low for type fuel. 	<ul style="list-style-type: none"> a) Burn only seasoned wood. b) Set thermostat higher to attain higher flue temperatures. This will aid in preventing buildup of creosote.
10. Flame spillage when feed door is open.	<ul style="list-style-type: none"> a) Insufficient draft. b) Smothering fire when adding fresh fuel. 	<ul style="list-style-type: none"> a) Set thermostat higher. b) Add fuel so as not to smother fire.

NOTES

NOTES

HOW TO ORDER REPAIR PARTS

THIS MANUAL WILL HELP YOU OBTAIN EFFICIENT, DEPENDABLE SERVICE FROM THE HEATER, AND ENABLE YOU TO ORDER REPAIR PARTS CORRECTLY.

KEEP IN A SAFE PLACE FOR FUTURE REFERENCE.

WHEN WRITING, ALWAYS GIVE THE FULL MODEL NUMBER WHICH IS ON THE NAMEPLATE ATTACHED TO THE BACK OF THE HEATER.

WHEN ORDERING REPAIR PARTS, ALWAYS GIVE THE FOLLOWING INFORMATION AS SHOWN IN THIS LIST:

1. The PART NUMBER
2. The PART DESCRIPTION
3. The MODEL NUMBER: 1300 1400
4. The SERIAL NUMBER: _____

**UNITED STATES STOVE COMPANY
227 Industrial Park Road
P.O. Box 151
South Pittsburg, TN 37380
(423) 837-2100
www.USSTOVE.com**