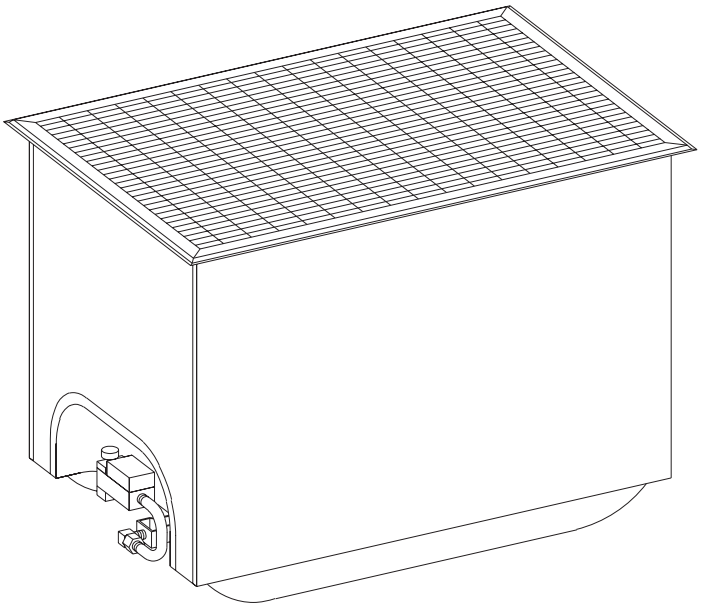
INSTALLATION INSTRUCTIONS



FLOOR FURNACE

MODELS

3588XLP-1	5088XLP-1	7088XLP-1
3588XNAT-1	5088XNAT-1	7088XNAT-1

INSTALLER:
Leave this manual with the appliance.

CONSUMER:
Retain this manual for future reference.

⚠ WARNING

FIRE OR EXPLOSION HAZARD
If the information in these instructions is not followed exactly, a fire or explosion may result causing property damage, personal injury or loss of life.

— Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.
— WHAT TO DO IF YOU SMELL GAS
  - Do not try to light any appliance.
  - Do not touch any electrical switch; do not use any phone in your building.
  - Leave the building immediately.
  - Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.
  - If you cannot reach your gas supplier, call the fire department.
— Installation and service must be performed by a qualified installer, service agency or the gas supplier.

⚠ WARNING

If not installed, operated and maintained in accordance with the manufacturer's instructions, this product could expose you to substances in fuel or from fuel combustion which can cause death or serious illness.

Introduction

Always consult your local Building Department regarding regulations, codes or ordinances which apply to the installation of a floor furnace.

Instructions to Installer

1. Installer must leave instruction manual with owner after installation.
2. Installer must have owner fill out and mail warranty card supplied with furnace.
3. Installer should show owner how to start and operate furnace.

⚠ WARNING

Any change to this furnace or its control can be dangerous. This is a heating appliance and any panel, door or guard removed for servicing an appliance must be replaced prior to operating the appliance.

General Information

This series is design certified in accordance with American National Standard Z21.86 by the Canadian Standards Association as a gravity type Floor Furnace and must be installed according to these instructions.

Any alteration of the original design, installed other than as shown in these instructions or use with a type of gas not shown on the rating plate is the responsibility of the person and company making the change.

Qualified Installing Agency

The installation must conform with local codes, in the absence of local codes, with the National Fuel Gas Code ANSI Z2231*

**Available from the American National Standards Institute, Inc. 11 West 42nd St., New York, N.Y. 10018.*

Commonwealth of Massachusetts: The installation must be made by a licensed plumber or gas fitter in the Commonwealth of Massachusetts.

Important

All correspondence should refer to complete Model Number, Serial Number and type of gas.

NOTICE: During initial firing of this furnace, its paint will bake out and smoke will occur. To prevent triggering of smoke alarms, ventilate the room in which the furnace is installed.

To Conserve Gas: Turn off pilot when heater is not in use.

The flue pipe diameter must be as large as the flue collar on the draft diverter and run as directly as possible to the chimney at least 1/4" rise per foot of run properly supported by metal straps, and enter the chimney so the end of the flue pipe is flush with the inner wall of the chimney. Any flue pipe passing through walls and roof must be "B" type vent. The chimney must extend at least two feet above the roof and any object or building within 10 feet of the chimney. The flue pipe must NOT have any open tees or be connected to the chimney of an existing fireplace.

When an existing Category 1 heater is removed or replaced, the original venting system may no longer be sized to properly vent the attached appliances. Instructions shall also indicate effects of an improperly sized venting system (formation of condensate, leakage, spillage, etc.) and shall specify the following test procedure:

⚠ WARNING

CARBON MONOXIDE POISONING HAZARD

Failure to follow the steps outlined below for each appliance connected to the venting system being placed into operation could result in carbon monoxide poisoning or death. The following steps shall be followed for each appliance connected to the venting system being placed into operation, while all other appliances connected to the venting system are not in operation:

1. Seal any unused openings in the venting system.
2. Inspect the venting system for proper size and horizontal pitch, as required in the *National Fuel Gas Code*, ANSI Z223.1/NFPA 54 or the *Natural Gas and Propane Installation Code*, CSA B149.1 and these instructions. Determine that there is no blockage or restriction, leakage, corrosion and other deficiencies which could cause an unsafe condition.
3. As far as practical, close all building doors and windows and all doors between the space in which the appliance(s) connected to the venting system are located and other spaces of the building.
4. Close fireplace dampers.
5. Turn on clothes dryers and any appliance not connected to the venting system. Turn on any exhaust fans, such as range hoods and bathroom exhausts, so they are operating at maximum speed. Do operate a summer exhaust fan.
6. Follow the lighting instructions. Place the appliance being inspected into operation. Adjust the thermostat so appliance is operating continuously.
7. Test for spillage from draft hood equipped appliances at the draft hood relief opening after 5 minutes of main burner operation. Use the flame of a match or candle.
8. If improper venting is observed during any of the above tests, the venting system must be corrected in accordance with *National Fuel Gas Code*, ANSI Z223.1/NFPA 54 and/or *Natural Gas and Propane Installation Code*, CSA B149.1.
9. After is has been determined that each appliance connected to the venting system properly vents when tested as outlined above, return doors, windows, exhaust fans, fireplace dampers and any other gas-fired burning appliance to their previous conditions of use.

THIS IS A HEATING APPLIANCE

DO NOT OPERATE THIS APPLIANCE WITHOUT FLOOR REGISTER INSTALLED

- **Due to high temperatures the appliance should be located out of traffic and away from furniture and draperies.**
- **Children and adults should be alerted to the hazards of high surface temperatures and should stay away to avoid burns or clothing ignition.**
- **Young children should be carefully supervised when they are in the same room as the appliance.**
- **Clothing or other flammable material should not be placed on or near the appliance.**
- **Any safety screen or guard removed for servicing an appliance must be replaced prior to operating the appliance.**
- **Installation and repair should be done by a QUALIFIED SERVICE PERSON. The appliance should be inspected before use and at least annually by a qualified service person. More frequent cleaning may be required due to excessive lint from carpeting, bedding materials, etc. It is imperative that control compartments, burners and circulating air passageways of the appliance be kept clean.**
- **DO NOT use this heater if any part has been under water. Immediately call a qualified service technician to inspect the heater and to replace any part of the control system and any gas control which has been under water.**
- **Floor furnace must not be connected to a chimney flue serving a separate solid fuel burning appliance.**
- **The draft hood shall be installed so as to be in the same atmospheric pressure zone as the combustion air inlet to the appliance.**
- **A burn hazard can occur in the use of the floor furnace when the temperature control (limit) is in the manual override position.**
- **Contact of bare skin with the hot air register may result in burns when the floor furnace is in operation.**

Specifications			
Models	3588	5088	7088
Input BTU/HR	32,500	45,000	65,000
Dimensions			
Register Length & Width	33 3/4" x 22 3/4"	36 3/4" x 24 3/4"	36 3/4" x 32 3/4"
Casing Length & Width	32" x 20"	34" x 22"	34" x 30"
Overall Length Including Diverter	40"	43 1/2"	45 1/4"
Floor Opening, Length & Width	32 5/16" x 20 5/16"	34 5/16" x 22 5/16"	34 5/16" x 30 5/16"
Height	24"	25 1/2"	25 1/2"
Minimum Clearance to Combustibles			
Top Must Be Open and Clear of ALL OBJECTS and Covering Each Side to:			
Nearest Wall	6"	6"	6"
Bottom of Unit for Air	6"	6"	6"
Draft Diverter and Vent Connector	6"	6"	6"
Two Adjoining Sides to Walls to Provide a Walkway	18"	18"	18"
Gas Inlet			
Iron pipe Size (N.P.T.)	1/2"	1/2"	1/2"
Inlet to Floor	18 1/2"	20 1/4"	20 1/4"
Venting			
Floor to Top of Diverter Shield	10"	12 1/4"	12 1/4"
Center of Flue (Horizontal) to Floor Covering	17 1/4"	18 3/4"	17 3/4"
Size of Flue Collar	4" Dia.	4" Dia.	5" Dia.

CONVERSION KITS		
Part Number	**Description**	**Used On**
17095	Propane to Natural	3588XLP-1
17094	Natural to Propane	3588XNAT-1
17097	Propane to Natural	5088XLP-1
17096	Natural to Propane	5088XNAT-1
17099	Propane to Natural	7088XLP-1
17098	Natural to Propane	7088XNAT-1

SAFETY INFORMATION FOR USERS OF PROPANE GAS

Propane is a flammable gas which can cause fires and explosions. In its natural state, propane is odorless and colorless. You may not know all the following safety precautions which can protect both you and your family from an accident. Read them carefully now, then review them point by point with the members of your household. Someday when there may not be a minute to lose, everyone's safety will depend on knowing exactly what to do. If, after reading the following information, you feel you still need more information, please contact your gas supplier.

PROPANE GAS WARNING ODOR

If a gas leak happens, you should be able to smell the gas because of the odorant put in the Propane Gas. That's your signal to go into immediate action!

- Do not operate electric switches, light matches, use your phone. Do not do anything that could ignite the gas.
- Get everyone out of the building, vehicle, trailer, or area. Do that IMMEDIATELY.
- Close all gas tank or cylinder supply valves.
- Propane Gas is heavier than air and may settle in low areas such as basements. When you have reason to suspect a gas leak, keep out of basements and other low areas. Stay out until firefighters declare them to be safe.
- Use your neighbor's phone and call a trained Propane Gas service person and the fire department. Even though you may not continue to smell gas, do not turn on the gas again. Do not re-enter the building, vehicle, trailer, or area.
- **Finally,** let the service man and firefighters check for escaped gas. Have them air out the area before you return. Properly trained Propane Gas service people should repair the leak, then check and relight the gas appliance for you.

NO ODOR DETECTED - ODOR FADE

Some people cannot smell well. Some people cannot smell the odor of the chemical put into the gas. You must find out if you can smell the odorant in propane. Smoking can decrease your ability to smell. Being around an odor for a time can affect your sensitivity or ability to detect that odor. Sometimes other odors in the area mask the gas odor. People may not smell the gas odor or their minds are on something else. Thinking about smelling a gas odor can make it easier to smell.

The odorant in Propane Gas is colorless, and it can fade under some circumstances. For example, if there is an underground leak, the movement of the gas through soil can filter the odorant. Odorants in Propane Gas also are subject to oxidation. This fading can occur if there is rust inside the storage tank or in iron gas pipes.

The odorant in escaped gas can adsorb or absorb onto or into walls, masonry and other materials and fabrics in a room. That will take some of the odorant out of the gas, reducing its odor intensity.

Propane Gas may stratify in a closed area, and the odor intensity could vary at different levels. Since it is heavier than air, there may be more odor at lower levels. Always be sensitive to the slightest gas odor. If you detect any odor, treat it as a serious leak. Immediately go into action as instructed earlier.

SOME POINTS TO REMEMBER

- Learn to recognize the odor of Propane Gas. Your local Propane Gas Dealer can give you a "Scratch and Sniff" pamphlet. Use it to find out what the propane odor smells like. If you suspect that your Propane Gas has a weak or abnormal odor, call your Propane Gas Dealer.
- If you are not qualified, do not light pilot lights, perform service, or make adjustments to appliances on the Propane Gas system. If you are qualified, consciously think about the odor of Propane Gas prior to and while lighting pilot lights or performing service or making adjustments.
- Sometimes a basement or a closed-up house has a musty smell that can cover up the Propane Gas odor. Do not try to light pilot lights, perform service, or make adjustments in an area where the conditions are such that you may not detect the odor if there has been a leak of Propane Gas.
- Odor fade, due to oxidation by rust or adsorption on walls of new cylinders and tanks, is possible. Therefore, people should be particularly alert and careful when new tanks or cylinders are placed in service. Odor fade can occur in new tanks, or reinstalled old tanks, if they are filled and allowed to set too long before refilling. Cylinders and tanks which have been out of service for a time may develop internal rust which will cause odor fade. If such conditions are suspected to exist, a periodic sniff test of the gas is advisable. **If you have any question about the gas odor, call your Propane Gas dealer. A periodic sniff test of the Propane Gas is a good safety measure under any condition.**
- If, at any time, you do not smell the Propane Gas odorant and you think you should, assume you have a leak. Then take the same immediate action recommended above for the occasion when you do detect the odorized Propane Gas.
- If you experience a complete "gas out," (the container is under no vapor pressure), turn the tank valve off immediately. If the container valve is left on, the container may draw in some air through openings such as pilot light orifices. If this occurs, some new internal rusting could occur. If the valve is left open, then treat the container as a new tank. Always be sure your container is under vapor pressure by turning it off at the container before it goes completely empty or having it refilled before it is completely empty.

INSTALLATION PLANNING

Plan the furnace installation with three questions in mind:

1. Where is the heat most needed in the house?
2. Where should the furnace be so that it will vent properly?
3. Where should it be placed so that it is not in home traffic areas or walkways?

Remember! Good Venting is essential to Good Heating.

VENTING

The installer must consider all of the following venting rules. They will help plan where and how to install the furnace.

1. Flue pipe MUST always have an upward slope (1/4 inch per foot minimum). **See Figure 1.**

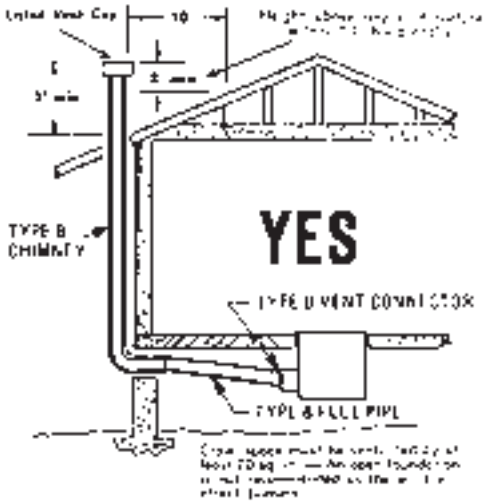


Figure 1

2. Flue pipe MUST NOT have any downward sloping sections, dips or sags. **See Figures 2 and 3.**
3. Flue pipe MUST be Type B (double wall insulated).

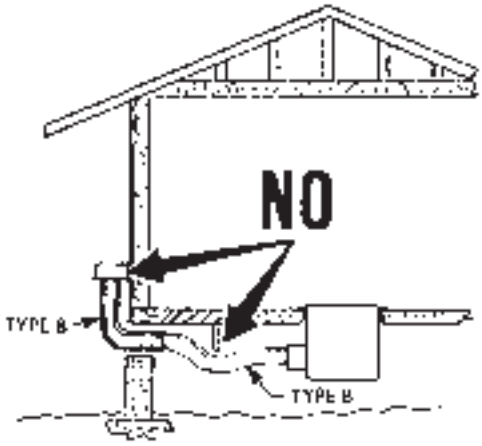


Figure 2

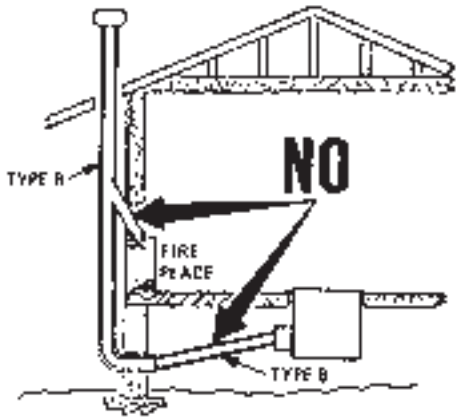


Figure 3

NOTICE: Do not use Type C single wall flue pipe. **Uninsulated single-wall metal pipe shall not be used outdoors in cold climates for venting gas utilization equipment.**

4. For flue pipe running through walls, roof and within one (1) inch of combustible construction, use B-1 (one inch clearance to combustibles) vent pipe. **See Figure 4**. Any combustible material that is within 6 inches of the vent connection or the draft diverter must be shielded with a non-combustible material.

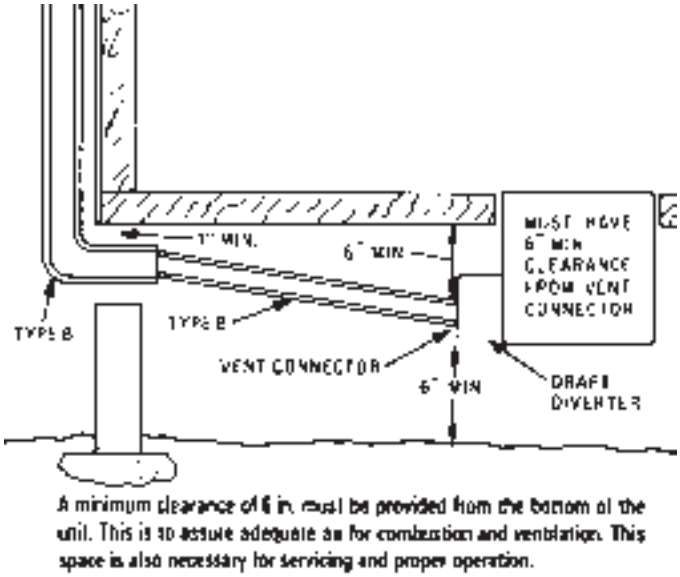


Figure 4

5. Flue pipe MUST run as directly as possible and have as few elbows as possible.
6. Flue pipe MUST be as large as the flue collar on the draft diverter. **See Figure 5.**
7. The flue pipe MUST be on the outside of the draft diverter collar. **See Figure 6.**
8. Each new piece of flue pipe that is connected when getting farther away from the furnace MUST connect on the outside of the previous one. **See Figure 6.** Remember, the exhaust must flow "into" the next pipe.
9. The flue pipe MUST NOT be connected to a chimney that has a fireplace connected to it. **See Figure 3.**

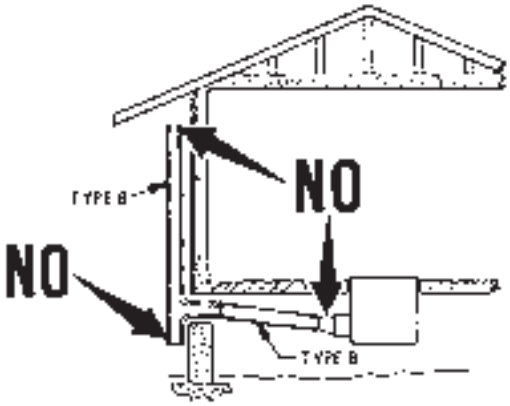


Figure 5

10. When connecting the flue pipe to the chimney, the pipe MUST go fully in and be cemented. **See Figure 7.** The flue pipe MUST NOT go too far into the chimney. It should be cut off as it will interfere with normal venting. **See Figure 7.**
11. The flue pipe MUST be sealed. No open "Tees." **See Figure 5.**

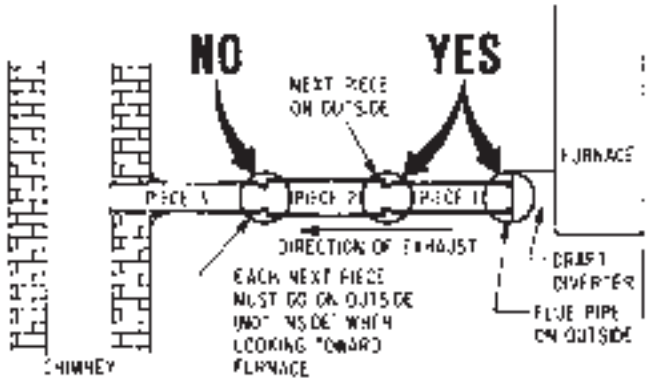


Figure 6

12. The flue pipe's vertical rise MUST always be at least twice the length of the horizontal run.

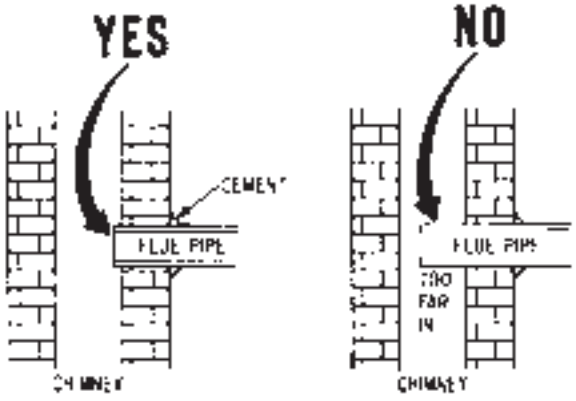


Figure 7

Here are some suggestions.

1. If you have a choice, select a location close to the chimney.
2. If there is no chimney, you will have to run a flue pipe from the furnace, up to and above the house roof. **See Figure 1.** Select a location permitting the most direct run. Try going up to the roof through a closet. Remember that the flue pipe must slope upwards at least 1/4 of an inch for each foot and you may find floor joints in our path, so it is important to plan the run carefully. **See Figure 8.**

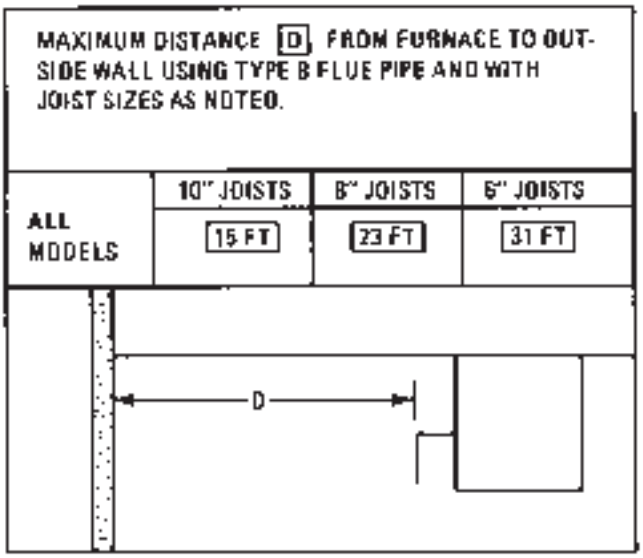


Figure 8

3. If you have decided to go up to the roof through a closet, remember that you MUST keep a minimum distance of 1 inch between Type B vent pipe and any combustible material. **See Figure 9**. Run it through a single wall pipe that is 2 inches larger in diameter than the flue pipe. Use thimbles when going through floor and ceiling and flashing when going through roof.

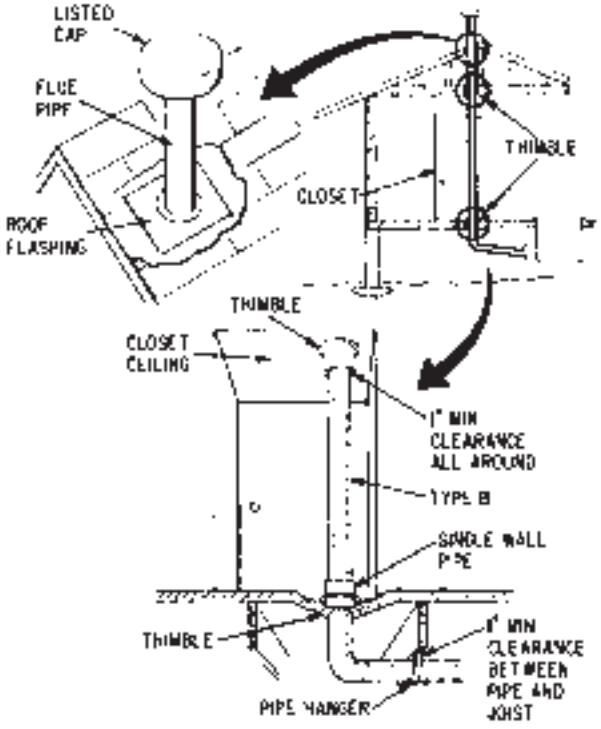


Figure 9

4. Position the furnace so that the long sides are running the same way as the floor joists **(See Figure 10)**, so that you will only have to cut one joist. Be sure you install headers or cross supports between each joist next to the one you cut.**See Figure 10.** If the furnace is narrow, you will have to also run an additional furnace support between the two headers or cross supports you add. **See Figure 10**. There is a "Cutout Template" in the box the furnace came in. It is the exact size for the opening needed in the floor to fit the furnace. Use the cardboard template when preparing and cutting the floor **but always double check the dimensions** (see table on next page). HINT: When you cut the joist, don't forget to allow for the thickness of the two headers you will install. Each one is about 1-1/2 inches thick. Since you will be using two of them, that is a total of 3 inches.

5. If the house has a sealed or unventilated foundation, an opening will have to be provided to admit air for burning at the burner. The opening or vent MUST BE at least 1 square inch per thousand BTUs. (The owner will also have to provide a gate or door as an entrance to the crawl space so that the serviceman can get to the bottom of the furnace for making any necessary adjustments). The furnace must have at least 6 inches clearance at the bottom.

6. If you have a completely open foundation strong winds will cause your burner to flutter, make noise and cause the pilot to go out. The best setting for a furnace is an enclosed but ventilated foundation with an access door or gate.

CUTTING THE FLOOR

HERE'S HOW TO DO IT

1. Place the template on the floor where you want the furnace and draw an outline on the floor around the template. Recheck the dimensions carefully.

2. Remove the template and drive a long nail through the floor within the outline. If you hit a joist instead of going through, try another spot within the outline.

3. Go below and find where the nail came through, so you will know where the furnace will be located downstairs.

4. If the furnace location does not have to be exact, plan on placing the furnace against one of the joists. **See Figure 10.**

5. Cut out some of the floor along the joist so that you can look through and see where you are. Use that joist and cutout as a guide by laying the template along it, and draw a new outline.

6. Cut away the flooring around the outline but do not cut the joist yet. Remember that the joist has to be cut back farther than the flooring to make room for the headers. **See Figure 10.**

7. Place jacks or supports under the joist that is to be cut. This will prevent the joist sagging and pinching the saw when you are cutting.

8. Move any heavy furniture, or appliance (refrigerator) away from the area where the joist is being cut. If not properly supported, the floor could sag and furniture could fall on you.

9. Cut through the joist at each end and remove. Put the header in place and jack it up against the floor. **See Figure 10.** Make sure it is butted up against the end of the joist you have just cut. Use the template to make sure the header is square to the two joists on each side of it.

10. Drive three large nails through each of the joists and into each end of the header. Now drive three large nails through the header and into the end of the joist just cut. Install the other header in the same way. **See Figure 10.**

11. Use the template to position the additional furnace support and then nail the support in place by driving three nails into each end of it, through the headers. **See Figure 10.**

12. Remove the jacks and supports.

13. Make sure the furnace is facing the way you want it with draft diverter closet to the vent pipe chimney. Then, with someone helping you, slowly lower it into the opening.

14. Drive two nails through each side and at least one nail through each end of the furnace from the inside into each joist and header that surrounds it.

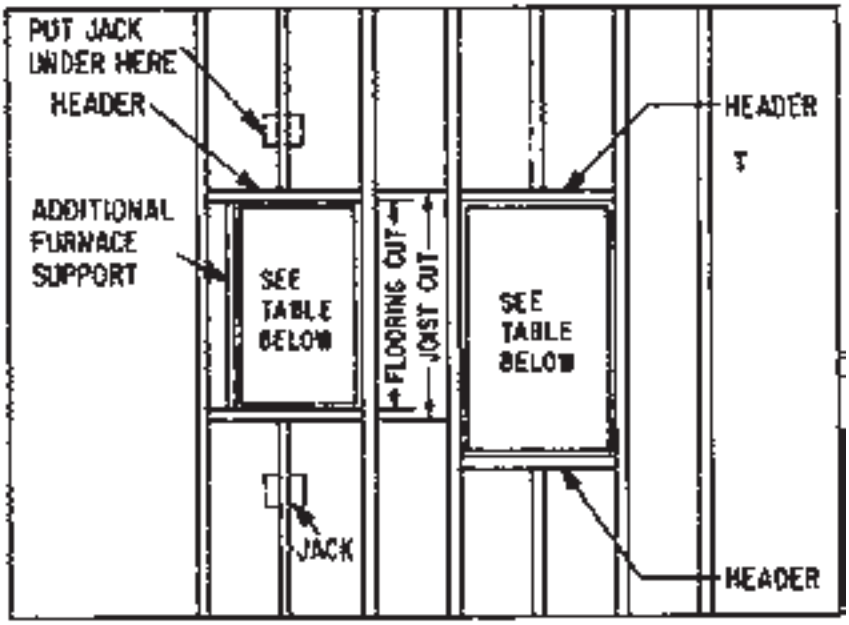
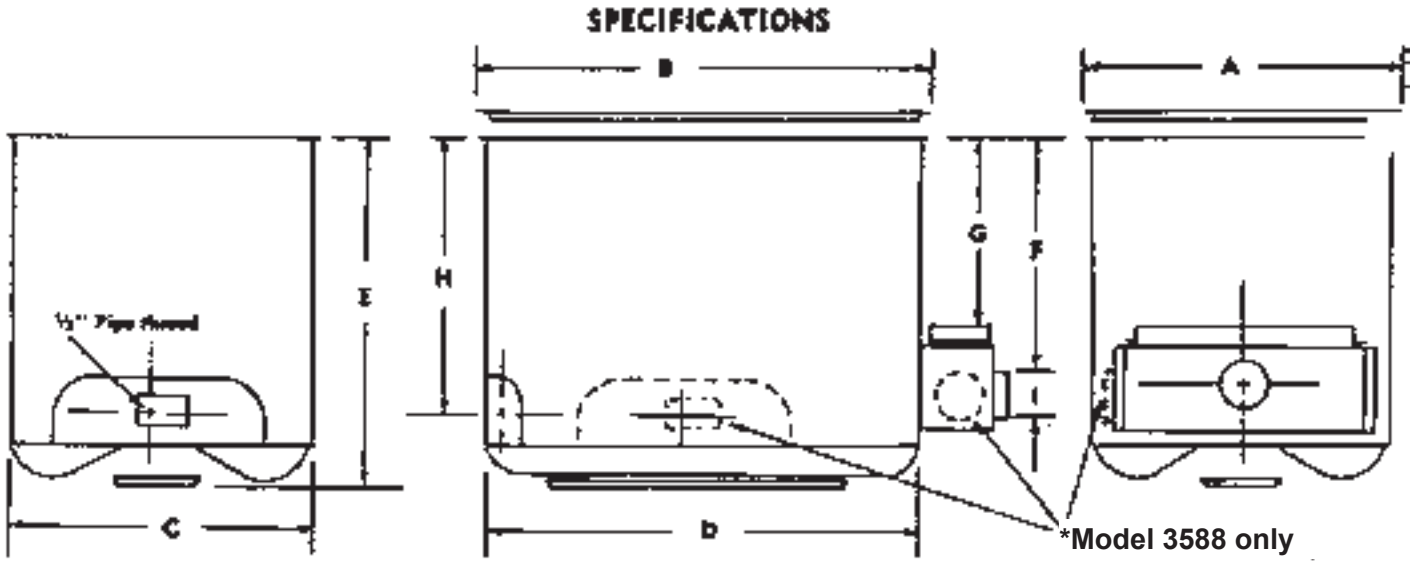


Figure 10



*Dotted lines show the gas valve and flue collar for Model No. 3588 only. (Same side)

Figure 11

Model No.	Register width	Register length	Casing width	Casing length	Overall height	Floor to Flue C.	Floor to shield	Floor to gas inlet	Flue C. size
	A	B	C	D	E	F	G	H	I
3588	22 3/4	34 3/4	20	32	24	15 1/4	10	18 1/2	4 D.
5088	24 3/4	36 3/4	22	34	25 1/2	16 3/4	12 1/4	20 1/4	4 D.
7088	32 3/4	36 3/4	30	34	25 1/2	15 1/4	12 1/4	20 1/4	5 D.

Floor joists are on 16-inch centers. If you cut away one joist, the next two are then on 32-inch centers. Because of the thickness of the joists, that means there is about 30 1/2 inches of space between them—just enough for the biggest floor furnace, Model 7088, which is 30 inches wide. The smaller furnaces will need an additional support along the one side, or on both sides if you are centering the furnace between two joists because location is critical. **See Figure 10.** If the location is not critical, it is easier for you to put the furnace against a joist and then fill in with one additional support.

INSTALLING DRAFT DIVERTER

The draft diverter mounts on the exhaust end of the furnace with four #10 x 1/2" sheet metal screws. The holes are already drilled in the furnace and the screws are supplied with the furnace. Make sure collars of the diverter go outside the collars on the furnace.

When the diverter is tightened against the furnace, its collars should be embedded into the gasket in the recesses.

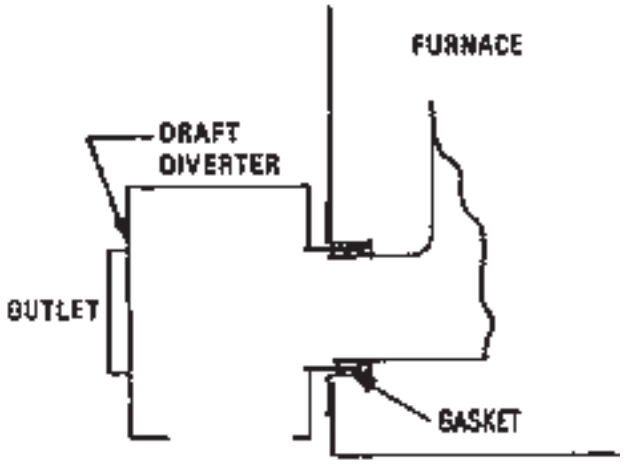


Figure 12

After the installation of the diverter as shown, do not install walls or partitions that would place the diverter in a different pressure zone than the combustion air for the main burner.

DEBRIS PAN

A flat rectangular burner pan (debris pan) is attached to the burner. This pan is designed to catch hot particles that might drop from the combustion chamber. SEE LABEL ON SIDE OF FURNACE.

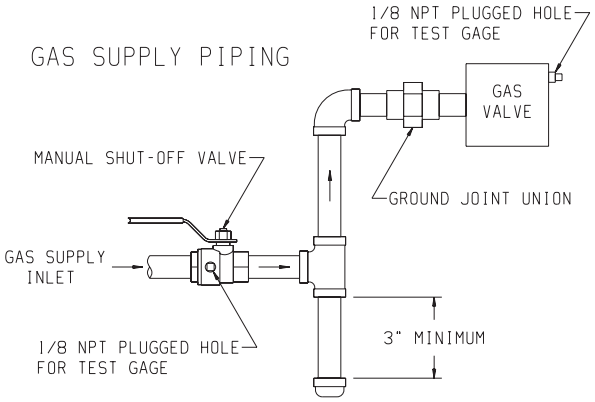


Figure 13

Method of Installing a Tee Fitting Sediment Trap

In the state of Massachusetts the gas shut-off valve must be a T handle type.

To check the inlet pressure to the gas valve, a 1/8" N.P.T. plugged tapping, accessible for test gauge connection must be placed immediately upstream of the gas supply connection to the appliance.

GAS CONNECTIONS

1. A manual valve and ground-joint type union should be installed close to the furnace for servicing.
2. A "drip" shall be put in the gas line to collect condensate or dirt. This can be a "tee" fitting near the furnace inlet with an extension downward that is capped.
3. Use a large enough pipe to prevent excessive pressure drop. The pipe should be at least the size of the opening on the furnace inlet.

The Commonwealth of Massachusetts requires that a flexible appliance connector cannot exceed three feet in length.

The gas inlet to the furnace is 1/2 inch nominal pipe thread. Use at least 1/2 inch pipe to avoid excessive pressure drop; check local codes. Install the piping in accordance with the requirements described in Installation Planning.

Compounds used on threaded joints of gas piping shall be resistant to the action of liquefied petroleum gases. The gas lines must be checked for leaks by the installer. This should be done with a soap solution watching for bubbles on all exposed connections and, if unexposed, a pressure test should be made. NEVER USE AN EXPOSED FLAME TO CHECK FOR LEAKS. Appliance must be disconnected from piping at inlet of control valve, and pipe capped or plugged for pressure test. NEVER PRESSURE TEST WITH APPLIANCE CONNECTED; CONTROL VALVE WILL SUSTAIN DAMAGE.

TESTING THE SUPPLY PIPING

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

The appliance must isolated from the gas supply piping system by closing its individual manual shut off valve during any pressure testing of the gas supply piping system at test pressures equal to or less than 1/2 psig (3.5 kPa).

ATTENTION! If one of the above procedures results in pressures in excess of 1/2 psig (14 in. w.c.) (3.5 kPa) on the appliance gas valve, it will result in a hazardous condition.

Installing the ON/OFF Device

To install an ON/OFF device (such as a wall switch, remote, toggle switch, or thermostat), remove the wire nut from the two wires from the valve. Run additional wire from the valve wires to the ON/OFF device. Install the ON/OFF device in the same room as the furnace following the installation instructions supplied with it. In the absence of instructions, install the ON/OFF device 4 to 5 feet above the floor on an interior wall not affected by another heating source (i.e. stove or water heater) or the temperature of an adjoining room.

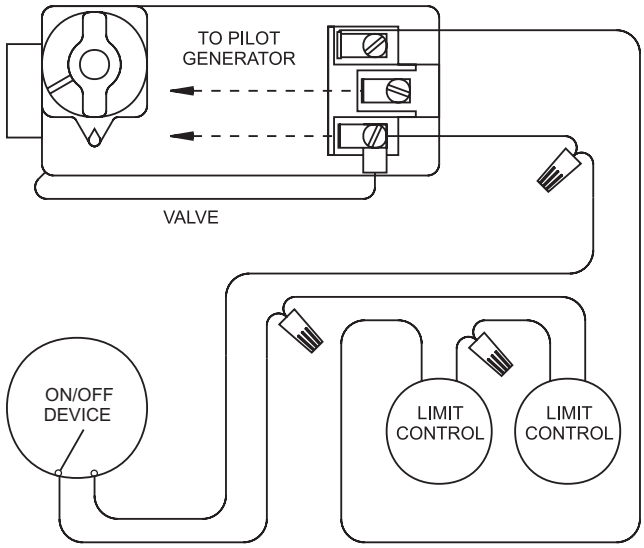


Figure 14

OPERATING INFORMATION

PIEZO LIGHTING INSTRUCTIONS

This unit is equipped with a Piezo (spark) for lighting the pilot without removing the lighter hole cover. A lighter rod is supplied and can be used to see if the pilot is getting gas and also for faster lighting when there is excessive air in the lines.

REGISTER TEMPERATURE CONTROLS

The register temperature control has two positions. LOW HEAT (Black) output and FULL HEAT (Red) output. Use the low position when children are present. This will cause your furnace to turn off and on several times before the living area is completely comfortable. This is normal and limits the register temperature to a maximum of 235°F.

⚠ CAUTION

Contact of bare skin on the hot air register may result in burns when the appliance is in operation. KEEP CHILDREN OFF!

You can reduce the heat of the register by moving the register temperature control.

MILLIVOLT INFORMATION

500 average with the heater OFF.
225 average with the heater ON.

140 minimum for valve to open.
65 minimum for pilot to stay on.

⚠ CAUTION

Label all wires prior to disconnection when servicing controls. Wiring errors can cause improper and dangerous operation. Verify operation after servicing.

SOME HELPFUL WARNINGS

- Use low heat output when children are nearby.
- Do not cover the floor register when the furnace or pilot is turned on.
- Do not restrict the flow of air around the register by placing a screen under it.
- Do not dry clothes or any objects by putting them on floor register because this creates a fire hazard.

Figure 15

- Do not hang clothes or any object above or over floor register because this too creates a fire hazard.
- During warm weather months, turn to full OFF position before you cover the register with a rug, because this too creates a fire hazard.

⚠ WARNING

NEVER run your furnace with the lighter hole open or with a broken lighter hole window. Exhaust gases can get into the living area through an open lighter hole and be fatal.

TROUBLESHOOTING INFORMATION

A. All units have been fire-tested to check the operation of the furnace. This includes the BTU input, main burner flame, pilot flame, limit controls and automatic operation. If problems are encountered on initial installation the following should be checked
   1. Is the unit equipped for the gas being used?
   2. Are all of the wires connected to the gas valve properly?
   3. Is the venting system functioning? Check for spillage at the diverter.
   4. Is the gas inlet pressure proper? Read instructions for minimum pressure.

B. It is necessary to use a millivolt meter to determine if the power from the generator is adequate. 500 millivolts is normal with the heater off and 140 millivolts minimum with heater on.

C. This floor furnace cannot be expected to function properly if exposed to wind as found when installed in a house supported by pillars (open foundation). The wind is most harmful if it can go beneath the front of the draft diverter and produce a pressure directly on the outlet of the chamber. This wind can result in pilot outage and a reduction in millivolts, causing the valve not to open.

D. Good operation of the system is dependent on the pilot and generator working properly. It is possible for the pilot to require cleaning yearly. Replace pilot assembly if cleaning does not produce proper flame. Replacement on generator alone is not recommended.

E. Gas Valve will not open. To determine problem area:
   1. By-pass ON/OFF Device.
   2. By-pass ON/OFF Device at the valve.
   3. By-pass limit and ON/OFF Device at the valve.
   4. Check millivolts.

PROPER MAIN BURNER FLAME AND PILOT FLAME 3588

INTERMITTENT PILOT LIGHTING INSTRUCTIONS

FOR YOUR SAFETY READ BEFORE LIGHTING

⚠ WARNING

If you do not follow these instructions exactly, a fire or explosion may result causing property damage, personal injury or loss of life.

A. This appliance has a pilot which must be lighted by hand. When lighting the pilot, follow these instructions exactly.

B. BEFORE LIGHTING smell all around the appliance area for gas. Be sure to smell next to the floor because some gas is heavier than air and will settle on the floor.

WHAT TO DO IF YOU SMELL GAS

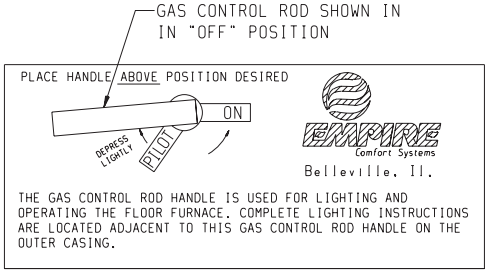
- **Do not try to light any appliance.**
- **Do not touch any electrical switch; do not use any phone in your building.**
- **Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.**
- **If you cannot reach your gas supplier, call the fire department.**

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

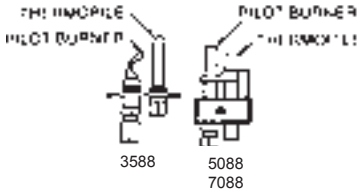
D. Do not use this appliance if any part has been under water. Immediately call a qualified service technician to inspect the appliance and to replace any part of the control system and any gas control which has been under water.

LIGHTING INSTRUCTIONS

1. **STOP! Read the safety information above.**
2. **Remove floor register.**
   NOTE: The gas control rod is attached to the gas control knob.
3. **Push in gas control rod slightly and turn clockwise to "OFF."**



   NOTE: Rod cannot be turned from "PILOT" to "OFF" unless rod is pushed in slightly. Do not force.
4. **Remove the pilot access cover located on the combustion chamber.**
5. **Wait ten (10) minutes to clear out any gas. Then smell for gas, including near the floor. If you smell gas, STOP! Follow "B" in the safety information above. If you don't smell gas, go to the next step.**
6. **Find pilot - the pilot is adjacent to the center portion of the main burner in the area directly below the pilot access opening.**
7. **Turn gas control rod counterclockwise to "PILOT."**
8. **Push and hold control rod in and repeatedly push the ignitor button until pilot is lit (or use match and lighter rod to light.) Continue to hold the control rod in for about one (1) minute after the pilot is lit. Release rod and it will pop back up. Pilot should remain lit. If it goes out, repeat steps 3 through 8.**
   - **If rod does not pop up when released, stop and immediately call a qualified service technician or gas supplier.**
   - **If the pilot will not stay lit after several tries, turn the gas control rod to "OFF" and call your service technician or gas supplier.**



9. **Replace pilot access cover.**
10. **Turn gas control knob counterclockwise to "ON."**
11. **Replace floor register.**

TO TURN OFF GAS TO APPLIANCE

1. **Remove floor register.**
2. **Push in gas control rod slightly and turn clockwise to "OFF." Do not force.**
3. **Replace floor register.**

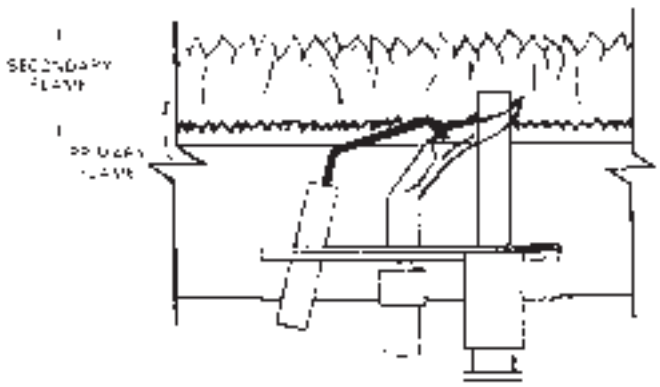


Figure 16

The correct pilot flame will be blue and extend past the thermopile as shown in the drawing. Propane Gas models do not require adjusting. The input of Natural Gas models will require adjusting if the inlet pressure to the valve is above 5" w.c.

PROPER MAIN BURNER FLAME
5088, 7088

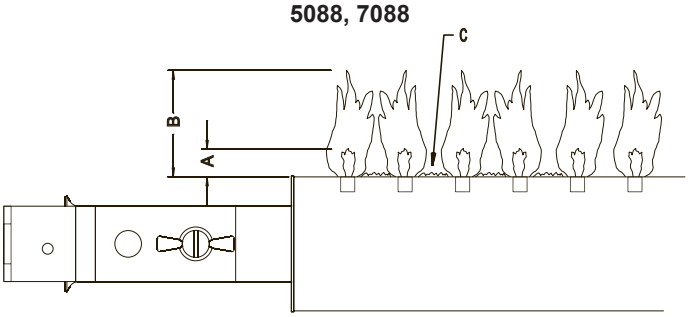


Figure 17

Model	Gas	Inner Cone	Outer Cone	Carry Down Flame
		(A) Dark Blue	(B) Light Blue	(C) Blue
7088	Natural	1 inch	2-1/2 inches	1/4 inch
	Propane	3/4 inch	2 inches	small cone
5088	Natural	3/4 inch	2 inches	3/16 inch
	Propane	1/2 inch	1-1/2 inch	small cone

DO NOT MISTAKE AN ORANGE FLAME CAUSED BY PARTICLES IN THE AIR FOR THE UNDESIRABLE YELLOW FLAME.

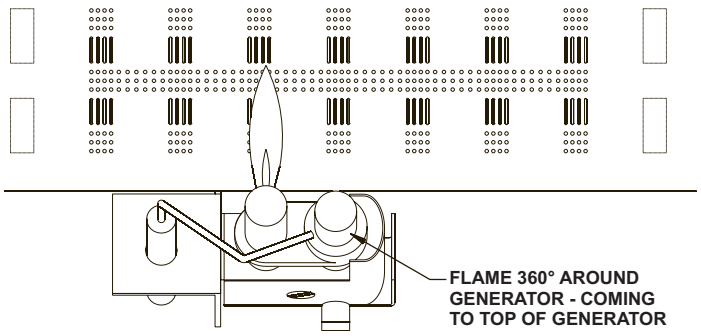


Figure 18

PROPER PILOT BURNER FLAME 5088, 7088

A blue flame shooting toward the main burner with an inner blue cone and a larger light blue outer flame. The generator will be surrounded by a blue flame that terminates near the top of the generator.

HIGH ALTITUDES

Orifice size must be reduced for high altitude use, or carbon monoxide may be generated and excessive heat will seriously damage the unit. When altitudes over 2,000 feet are specified, in the United States, main burner spuds will be furnished to reduce input 4% for each 1,000 feet of altitude above sea level. Contact the manufacturer or your gas company before changing spud sizes.

CHECKING MANIFOLD PRESSURE

Both Propane and Natural Gas valves have a built-in pressure regulator in the gas valve with factory-set adjustment. Natural Gas models should have a manifold pressure of approximately 3.5" w.c. at the valve outlet with the inlet pressure to the valve from a minimum of 5.0" w.c. for the purpose of input of input adjustment to a maximum of 7.0" w.c. Propane Gas models will have a manifold pressure approximately 10.0" w.c. at the valve outlet with the inlet pressure to the valve from a minimum of 11.0" w.c. for the purpose of input adjustment to a maximum of 13.0" w.c.

An 1/8" N.P.T. plugged tapping, accessible for test gage connection, is located on the outlet side of the gas control.

CLEANING THE MAIN BURNER

Remove the burner and apply air pressure inside the throat of the burner and down into the ports.

Check for proper burner and pilot flame before and during each heating season.

SERVICING

INSTALLATION AND REPAIR SHOULD BE DONE BY A QUALIFIED SERVICE PERSON. The appliance should be inspected before use and at least annually by a professional service person. More frequent cleaning may be required due to excessive lint from carpeting, bedding material, etc. It is imperative that control compartments, burners and circulating air passageways of the appliance be kept clean.

Floor furnace must not be connected to a chimney flue servicing a separate solid-fuel burning appliance.

DON'T put anything around the furnace that will obstruct the flow of combustion and ventilation air.

DO keep the appliance area clear and free from combustible material, gasoline and other flammable vapors and liquids.

DO examine venting system periodically and replace damaged parts.

DO examine burners periodically. Clean and replace damaged parts.

MAKE periodic visual check of pilot and burner flame.

MASTER PARTS DISTRIBUTOR LIST

To Order Parts Under Warranty, please contact your local Empire dealer. See the dealer locator at www.empirecomfort.com. To provide warranty service, your dealer will need your name and address, purchase date and serial number, and the nature of the problem with the unit.

To Order Parts After the Warranty Period, please contact your dealer or one of the Master Parts Distributors listed below. This list changes from time to time. For the current list, please click on the Master Parts button at www.empirecomfort.com. Please note: Master Parts Distributors are independent businesses that stock the most commonly ordered Original Equipment repair parts for Heaters, Grills, and Fireplaces manufactured by Empire Comfort Systems Inc.

Dey Distributing
1401 Willow Lake Boulevard
Vadnais Heights, MN 55101

Phone: 651-490-9191
Toll Free: 800-397-1339
Website: www.deydistributing.com
Parts: Heater, Hearth and Grills

F. W. Webb Company
200 Locust Street
Hartford, CT 06114

Phone: 860-722-2433
Toll Free: 800-243-9360
Fax: 860-293-0479
Toll Free Fax: 800-274-2004
Websites: www.fwwebb.com & www.victormfg.com
Parts: Heater, Hearth and Grills

East Coast Energy Products
10 East Route 36
West Long Branch, NJ 07764

Phone: 732-870-8809
Toll Free: 800-755-8809
Fax: 732-870-8811
Website: www.eastcoastenergy.com
Parts: Heater, Hearth and Grills

HOW TO ORDER REPAIR PARTS

Parts Not Under Warranty

Parts can be ordered through your Service Person, Dealer, or a Master Parts Distributor. See this page for the Master Parts Distributors list. For best results, the **service person or dealer** should order parts through the distributor. Parts can be shipped directly to the **service person/dealer**.

Warranty Parts

Warranty parts will need a proof of purchase and can be ordered by your Service Person or Dealer. Proof of purchase is **required** for warranty parts.

All parts listed in the Parts List have a Part Number. When ordering parts, first obtain the Model Number and Serial Number from the name plate on your equipment. Then determine the Part Number (**not** the Index Number) and the Description of each part from the following illustration and part list. Be sure to give all this information . . .

Appliance Model Number _____ Part Description _____

Appliance Serial Number _____ Part Number _____

Type of Gas (Propane or Natural) _____

Do not order bolts, screws, washers or nuts. They are standard hardware items and can be purchased at any local hardware store.

Shipments contingent upon strikes, fires and all causes beyond our control.

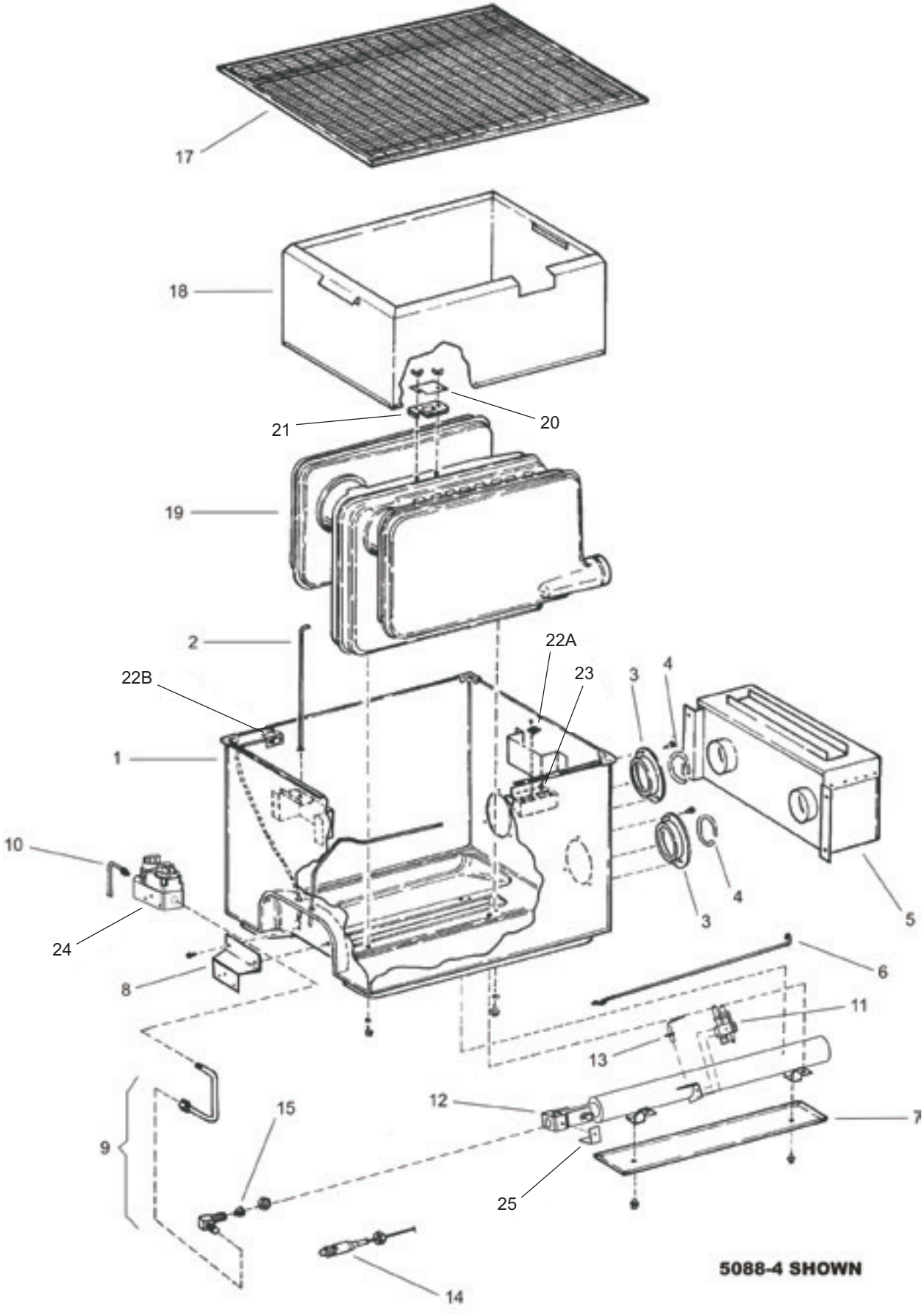
PARTS LIST

PLEASE NOTE: When ordering parts, it is very important that part number and description of part coincide.

INDEX NO.	PART NO.			DESCRIPTION
	3588	5088	7088	
1	FF139	23226	23225	OUTER CASING
2	FF294	23216	23216	CONTROL ROD
3	FF038	FF016	FF038	FLANGE TUBE OUTLET
4	FF252	FF251	FF252	GASKET FLANGE TUBE OUTLET
5	FF066	FF032	FF027	DRAFT DIVERTER
6	FF169	FF169	FF169	LIGHTER ROD
7	FF078	FF077	FF077	DEBRIS PAN
8	FF293	FF293	FF293	VALVE BRACKET
9	P261	P262	P262	MANIFOLD ASSEMBLY
10	FF296	FF297	FF297	PILOT TUBING WITH FERRELLS
11	*	R715N	R715N	PILOT BURNER WITH THERMOPILE - NATURAL GAS
11	*	R715L	R715L	PILOT BURNER WITH THERMOPILE - PROPANE GAS
11	R1228	*	*	PILOT BURNER WITHOUT THERMOPILE - PROPANE GAS
11	R1227	*	*	PILOT BURNER WITHOUT THERMOPILE - NATURAL GAS
11	R942	*	*	THERMOPILE
Not Shown	17094	17096	17098	NATURAL TO PROPANE CONVERSION KIT
Not Shown	17095	17097	17099	PROPANE TO NATURAL CONVERSION KIT
12	FF159	23218	23217	BURNER
13	R6120	FF250	FF250	ELECTRODE AND WIRE
14	R9760	R2313	R2313	PIEZO IGNITOR
15	P8637	P8631	P8625	BURNER ORIFICE - NATURAL GAS
15	P8652	P8648	P8643	BURNER ORIFICE - PROPANE GAS
17	R5624	R5625	R5626	REGISTER
18	FF291	FF268	FF270	INNER CASING
19	FF003	FF272	FF273	COMBUSTION CHAMBER
20	DV064	DV064	DV064	PLATE FOR OBSERVATION HOLE COVER
21	DV781	DV781	DV781	OBSERVATION HOLE COVER WITH MICA
22A	R1820	R1822	R1822	REGISTER LIMIT SWITCH
22B	R1821	R1821	R1821	PRIMARY LIMIT SWITCH
23	FF298	FF299	FF300	CAUTION PLATE ASSEMBLY
24	R5605	R5605	R5605	VALVE - PROPANE GAS
24	R5606	R5606	R5606	VALVE - NATURAL GAS
25	-	FF292	-	AIR SHUTTER (PROPANE ONLY)
Not Shown	R1081	R921N	R921N	PILOT ORIFICE - NATURAL GAS
Not Shown	R1089	R921L	R921L	PILOT ORIFICE - PROPANE GAS

* Not Field Serviceable

EXPLODED VIEW



WARRANTY

Empire Comfort Systems Inc. warranties this space heating product to be free from defects at the time of purchase and for the periods specified below. Space heating products must be installed by a qualified technician and must be maintained and operated safely, in accordance with the instructions in the owner's manual. This warranty applies to the original purchaser only and is not transferable. All warranty repairs must be accomplished by a qualified gas appliance technician.

Limited Ten-Year Parts Warranty – Combustion Chamber

Empire promises to the owner that if the combustion chamber (see parts list) fails because of defective workmanship or material with ten years from the date of purchase, Empire will repair or replace at Empire's option.

Limited One-Year Parts Warranty – Remote Controls, Accessories, and Parts

Should any remote control, accessory, or other part fail because of defective workmanship within one year from the date of purchase, Empire will repair or replace at Empire's option.

Duties Of The Owner

The appliance must be installed by a qualified installer and operated in accordance with the instructions furnished with the appliance. A bill of sale, cancelled check, or payment record should be kept to verify purchase date and establish warranty period. Ready access to the appliance for service.

What Is Not Covered

Damages that might result from the use, misuse, or improper installation of this appliance.
Travel, diagnostic costs and freight charges on warranted parts to and from the factory.
Claims that do not involve defective workmanship or materials.
Unauthorized service or parts replacements.
Removal and reinstallation cost.
Inoperable due to improper or lack of maintenance.

How To Get Service

To make a claim under this warranty, please have your receipt available and contact your installing dealer. Provide the dealer with the model number, serial number, type of gas, and purchase verification. The installing dealer is responsible for providing service and will contact the factory to initiate any warranted parts replacements. Empire will make replacement parts available at the factory. Shipping expenses are not covered.

If, after contacting your Empire dealer, service received has not been satisfactory, contact: Consumer Relations Department, Empire Comfort Systems Inc., PO Box 529, Belleville, Illinois 62222, or send an e-mail to info@empirecomfort.com with "Consumer Relations" in the subject line.

Your Rights Under State Law

This warranty gives your specific legal rights, and you may also have other rights, which vary from state to state.

EMPIRE
COMFORT SYSTEMS
SINCE 1932

Empire Comfort Systems Inc.
Belleville, IL

If you have a general question about our products, please e-mail us at info@empirecomfort.com.

If you have a service or repair question, please contact your dealer.

www.empirecomfort.com