



# **GAS FURNACE OWNERS INFORMATION MANUAL**

## **FOR YOUR SAFETY**

**If you smell gas:**

1. Open windows
2. Don't touch electrical switches
3. Extinguish any open flame
4. Immediately call your gas supplier

## **FOR YOUR SAFETY**

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

**BARD MANUFACTURING COMPANY**  
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## GENERAL

The warnings shown on the cover of this manual and the information on the following pages are very important and should be fully read and understood by the operator of this equipment. Please take the few minutes necessary to completely read this booklet, and if there are any questions when you are through, ask your installer to review them with you.

## CLEARANCES

There are certain minimum installation clearances from the furnace cabinet and sheet metal plenum attached to the top of the furnace to any combustible materials. These clearances for each model of furnace are shown on the furnace rating plate (located in the burner compartment) and are the responsibility of the furnace installer during the installation of the appliance.

It is the owner's responsibility to make sure these clearances are always maintained thereafter. Since some installations have the furnace setting in an open area, such as a large basement area with no defined boundaries, the following minimum guidelines should be adhered to:

- 6 inches between sides of furnace and combustible material
- 6 inches between rear of furnace and combustible material
- 24 inches between front of furnace and combustible material
- 6 inches between the drafthood and vent pipe in any direction from combustible material

The "G" Series Lo-Boy furnaces should also have 24 inch clearance at the rear of the furnace for access to blower compartment and air filters.

## BE SURE TO OBSERVE THE FOLLOWING RULES:

- A. **DO NOT** allow any cardboard, newspapers, or any other combustible material (this includes wood, 2x4's, etc.) within the above specified minimum clearances. This includes placing any combustibles on or against the sheet metal plenum attached to the top of the furnace.
- B. The furnace area is to be kept clear of gasoline, solvents, painting supplies, and any other flammable vapors or liquids.

## COMBUSTION AND VENTILATING AIR

Whether your furnace is installed in a closet, basement, garage or other location as dictated by the particular application, an adequate source of fresh outside air has been provided by the installer to allow proper combustion and venting of the products of combustion to the outside of the building.

*It is again the responsibility of the owner to assure that this important flow of combustion and ventilating air is not obstructed from reaching the furnace.*

## LIGHTING AND SHUT-DOWN INSTRUCTIONS

- A. **Intermittent Pilot** - This is an electric ignition system which lights and proves the pilot flame presence before allowing the main burner to open.
- B. **Standing Pilot** - This system has the pilot flame burning all the time and lights the main burner on thermostat demand.

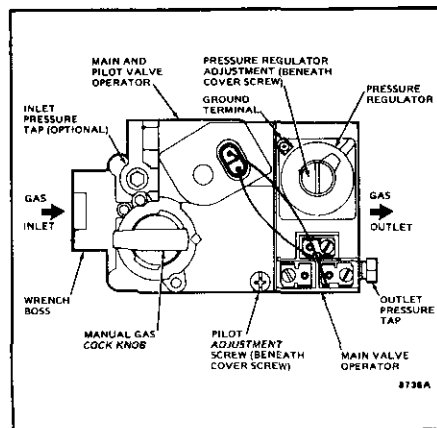
## INTERMITTENT PILOT

### TO SHUT DOWN FURNACE:

1. Set thermostat, lowest setting.
2. Turn gas valve to OFF position.
3. Switch off electric supply to furnace.

## OPERATING INSTRUCTIONS:

1. Set the thermostat to lowest setting, electric supply and gas valve to OFF position and wait five minutes.
2. If furnace has a vent damper, check damper position to assure it is open for the five minute shut off period.
3. Turn gas valve ON, restore electric power and set room thermostat. Setting must be above room temperature to start burner operation.
4. DO NOT attempt to manually light the pilot, it will light automatically.
5. If the burner fails to ignite, repeat steps 1 through 4 of the operating instructions.
6. If the burner again fails to ignite, shut down the furnace and have qualified service personnel investigate the problem.



Top view of VR844 Intermittent Pilot Dual Valve Combination Gas Control.

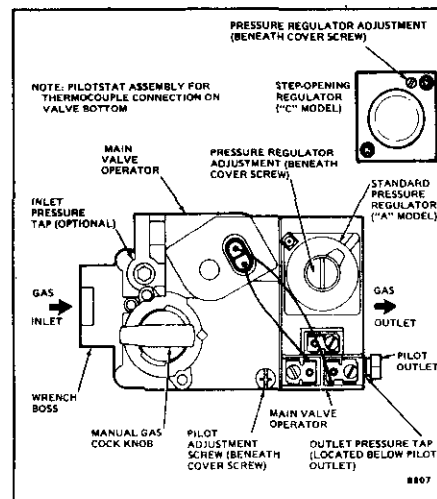
## STANDING PILOT

### TO SHUT DOWN FURNACE:

1. With control knob at the ON position, push down slightly and turn the knob to the OFF position.

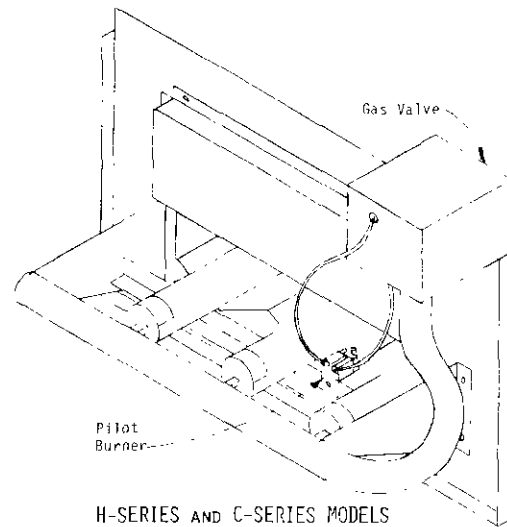
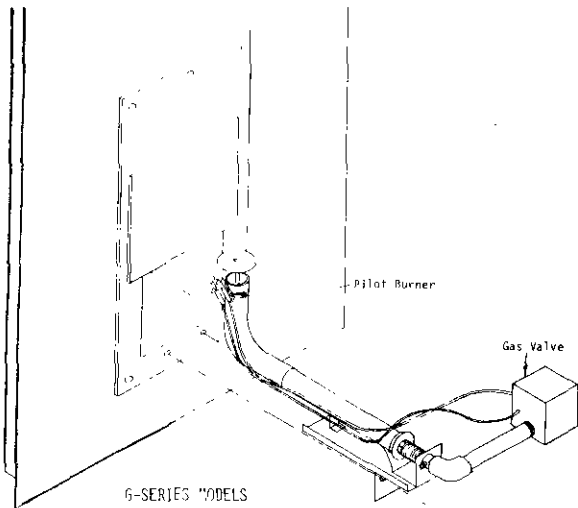
### TO START FURNACE:

1. Make sure that the electric switch is OFF and that the main gas valve and pilot valve have been closed at least five minutes before proceeding. Set thermostat at lowest setting.
2. Depress control knob slightly and turn to pilot position, then depress fully and light pilot with match or taper.
3. The control knob must be held down about one minute and then released. If pilot flame does not continue to burn, repeat steps 1, 2 and 3.
4. Turn the control knob to ON position, turn the electric switch ON and set the thermostat at the desired temperature.



Top view of VR800 gas control.

## PILOT BURNER LOCATIONS



### AIR FILTERS

It is the owner's responsibility to check the condition of the air filters on at least a monthly basis when the furnace is in use and to clean or replace whenever it is necessary.

Permanent Type Filter (usually foam type) are washable. Use a solution of soapy water, followed by a rinse in clear water and then dried by tapping the frame against a solid object.

Throwaway Type Filter (usually fiberglass) can be vacuumed off *once* to extend filter life if they are not allowed to get too dirty or clogged. Otherwise, replace with another of the same size.

**NEVER OPERATE A FURNACE WITHOUT A FILTER  
NEVER SUBSTITUTE A THROWAWAY (FIBERGLASS)  
FOR A PERMANENT (FOAM) TYPE**

### FILTER LOCATIONS — REMOVAL AND REPLACEMENT PROCEDURES

#### ALL H-SERIES HI-BOY FURNACES

To remove filters from ALL sectional hi-boys, first remove the upper burner door and then the lower blower compartment door by grasping top of door and pull up and away from the furnace. Then, remove the "S" clip and spring by pulling the clip towards the front of the furnace.

The filter may now be removed simply by pulling it towards the center of the furnace and outward.

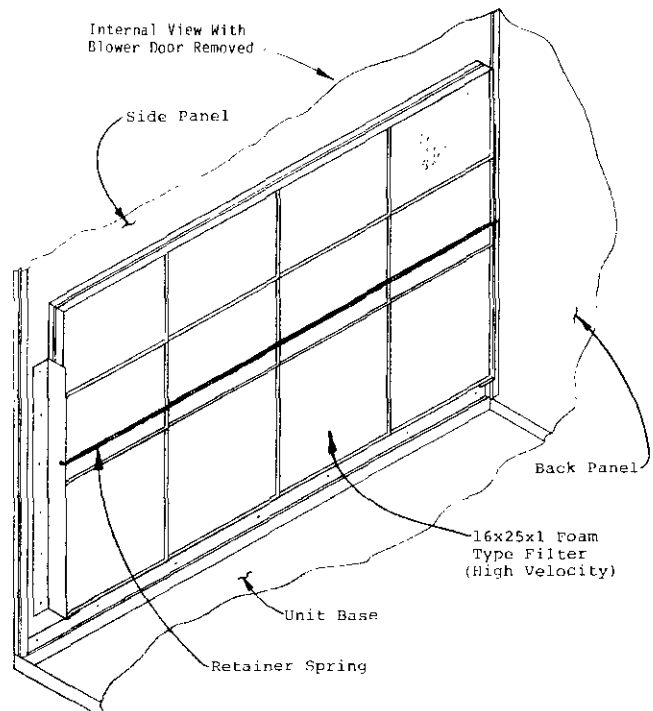
The location may vary, depending on which side the installer located the return air duct.

This filter is the permanent high velocity type foam filter which may be washed and used over and over. *Do not replace it with a fiberglass filter of the same size.*

To replace filter, reverse the above process.

FILTER SIZES FOR GAS FURNACES		
MODEL		SIZE
H61SD2, H61SD2E		(1) 16 x 25
H81SD2, H81SD2E		(1) 16 x 25 P
H81SD3, H81SD3E		(1) 16 x 25
H106S, H106SE		(1) 16 x 25 P
H106SD2, H106SD2E		(1) 16 x 25
H106SD3, H106SD3E		(1) 16 x 25 P
H121S, H121SE		(1) 16 x 25 P
H121SD4, H121SD4E		(1) 16 x 25 P
H141S, H141SE		(1) 16 x 25 P
H161S, H161SE		(1) 16 x 25 P
H201S, H201SE		(2) 16 x 25 P
C61SD2, C61SD2E		(1) 15 x 20 P
C81SD2, C81SD2E		(1) 15 x 20 P
C106S, C106SE	(1) 15 x 20	(1) 10 x 20 P
C106SD3, C106SD3E	(1) 15 x 20	(1) 10 x 20 P
C121S, C121SE	(1) 15 x 20	(1) 10 x 20 P
C141S, C141SE	(1) 15 x 20	(1) 10 x 20 P
C161S, C161SE	(1) 15 x 20	(1) 10 x 20 P
G101, G101E		(1) 20 x 20 x 1
G127, G127E		(1) 20 x 25 x 1
G152, G152E		(2) 16 x 25 x 1

P = Permanent, otherwise are throwaway type.



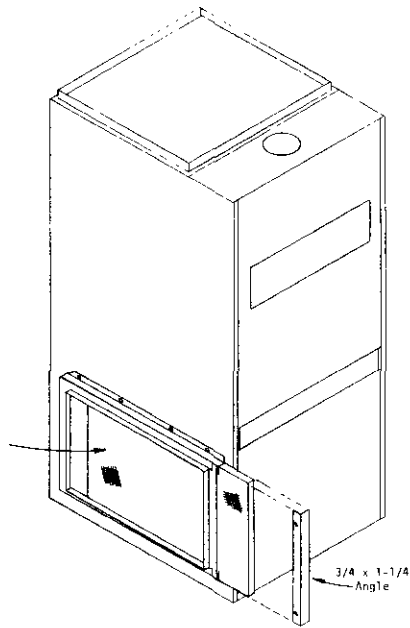
H-SERIES WITH STANDARD BUILT-IN  
FILTER ARRANGEMENT

To remove filter from the optional external filter rack, pull forward on the 3/4 x 1-1/4 angle and disengage from the tension piece holding it in place. The filter may now be pulled from the filter rack.

The location may vary, depending on which side the installer located the return air duct.

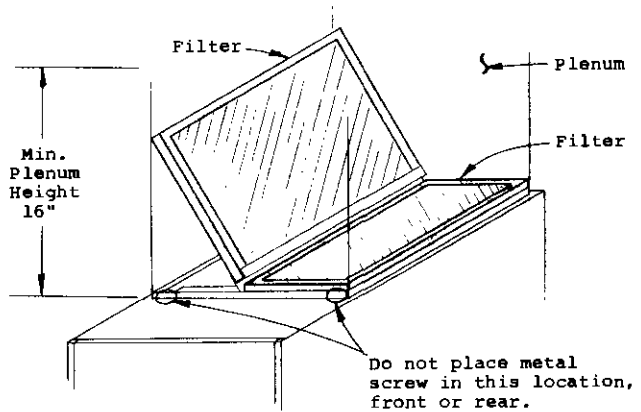
This filter is the permanent high velocity type foam filter which may be washed and used over and over. Do not replace it with a fiberglass filter of the same size.

To replace filter, reverse the above process.



**C-SERIES COUNTERFLOW FURNACE FILTER REPLACEMENT**  
MODELS C106S, C106SE, C106SD3, C106SD3E, C121S,  
C121SE, C141S, C141SE, C161S, C161SE

Filters may be installed as shown or be reversed to place the upper sloping filter to the opposite side of the return air plenum. Attach filter support with sheet metal screws to the furnace plenum as shown. The filters can be installed and removed through the blower compartment door located on right or left side of furnace.



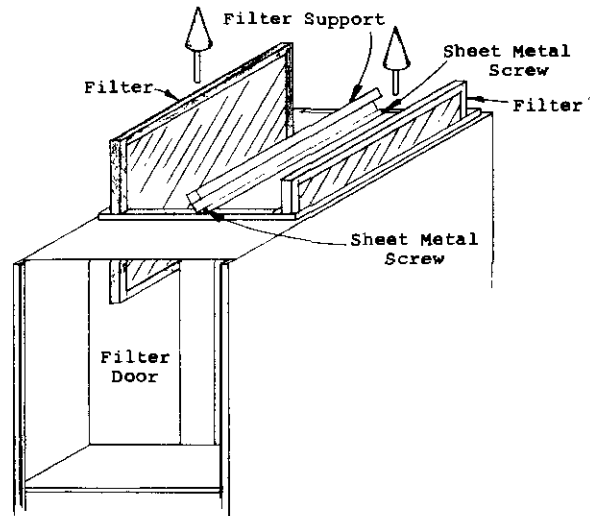
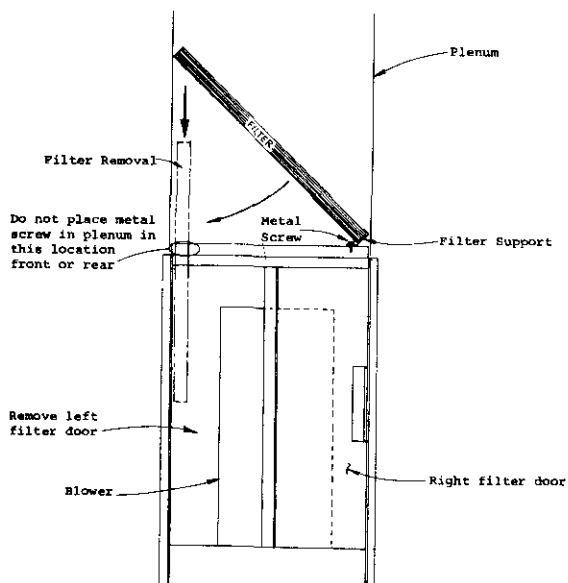
**C-SERIES COUNTERFLOW FURNACE FILTER REPLACEMENT**  
MODELS C61SD2, C61SD2E, C81SD2, C81SD2E

To remove filters from counterflow models, you must first remove top front outer panel. This will expose the blower compartment in which the lefthand filter door is located. The filter door itself is held in place by friction. To remove, grasp door and pull outward.

To remove filter, push filter straight up and toward the left side of the furnace. Then pull filter down into opening. The filter size is 15x20 permanent.

To remove filters from these models, first remove top front panel. This will expose the filter doors. Remove these doors and reach up and lift filter off the filter support bracket. Then slide filters down and out through the filter door openings to the right and left of the blower.

The size of the filters for these models are: (1) 10x20 and (1) 15x20. They are of the permanent type which may be washed and used again.



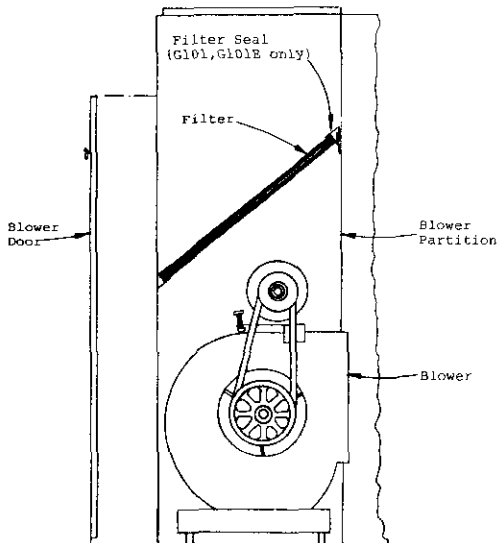
## GAS LO-BOY FURNACE FILTER REPLACEMENT

### MODELS G101, G101E, G127, G127E

On Lo-Boy models G101, G101E, G127 and G127E, the filters are accessible through the rear blower compartment door. Remove door and lift filter from its frame.

The filters used on these models are disposable (fiberglass) filters and the sizes are:

G101 - 20x20x1      G127 - 20x27x1  
G101E - 20x20x1    G127E - 20x27x1

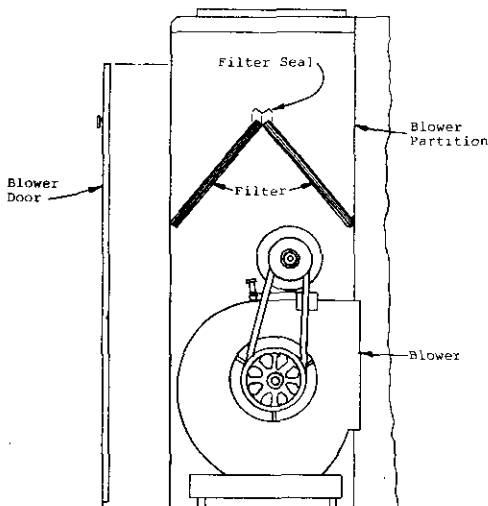


### MODELS G152, G152E

On Lo-Boy models G152 and G152E, the filters are accessible through the rear blower compartment door. Remove door and lift filter seal up from the filters, then remove filters.

**CAUTION:** When replacing filter note which direction air flow is passing through. Air flow is down through the filters.

The filters used on this model are disposable (fiberglass) filters and the size is: (2) 16x25x1.



## LUBRICATION REQUIREMENTS

- A. **DIRECT DRIVE MODELS** (All model numbers that have "D" after the "S"). Motors are permanently lubricated, no maintenance required.
- B. **BELT DRIVE MODELS** - Oil the blower and motor bearings twice per heating season (every two months if CAC, constant air circulation, is used) with 5-6 drops of SAE20 motor oil. **DO NOT USE** a light lubricating oil such as 3-in-1 oil or sewing machine oil.

## FAN BELT ADJUSTMENT

On belt drive models, check the fan belt for cracks or breaks each time the motor and bearings are lubricated, and replace with same type and length if necessary.

Belt tension is adjusted by loosening locking nut on adjuster bolt and turning bolt in or out as required. Proper tension will allow approximately one inch deflection with light finger pressure.

## FURNACE EXAMINATION

The furnace and the vent system (commonly called flue pipe, smoke pipe, chimney, etc.) should be inspected yearly by a qualified service agency, generally prior to the heating season. Detailed procedures for this inspection are contained in the instructions booklet and should be handled by the qualified service agency only.

Periodic examinations of the combustion area and vent system should also be conducted by the owner on a regular basis, preferably every month but at least every two months, during the heating season.

The following procedure should be followed for the periodic inspection as conducted by the owner:

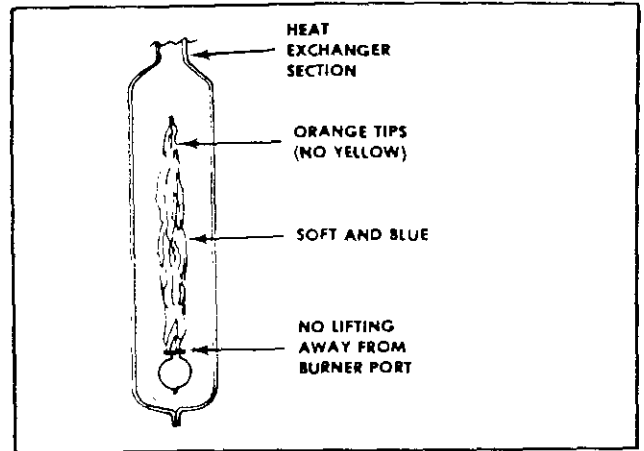
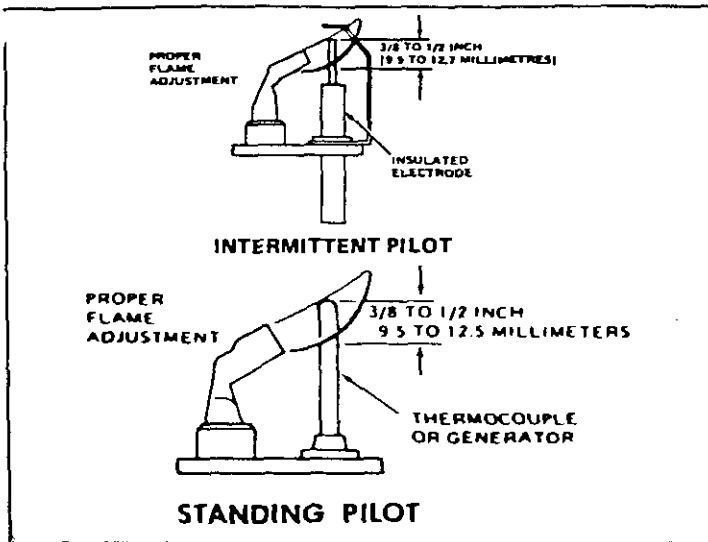
1. Set the wall thermostat to the "OFF" position or lower the set point lever to a temperature well below the existing room temperature. Shut off electric power to the furnace. A switch should be mounted either on the outside of the furnace or adjacent to the furnace for this purpose.
2. Remove the furnace door exposing the burner compartment. This is accomplished on the H-Series and C-Series by sliding door upwards to unhook the top and disengaging the bottom offset.

On the G-Series, models that have a door pull only are removed by sliding the door upwards, disengaging clips at bottom and back top of door, then pulling forward. Models with door pull and handle latches at the bottom are removed by turning the bottom latches 1/4 turn, pulling up on door pull disengaging top hook, and then pulling forward.

3. Using a flashlight or trouble light, observe the burner compartment and where the burner(s) extend into the heat exchanger. There should be very minimal scaling or sooting in this area. Some loose debris may have fallen down on to the floor of the heat exchanger from the upper flue passageways, and this may be vacuumed out. Also observe the sides of the heat exchanger for "hot spots" due to improper burner alignment or overfiring and give particular attention to any area where it looks like there may be any deterioration from corrosion or rusting. On the C-Series and H-Series multiple burners, observe for any corrosion on the burners themselves. Should anything appear questionable, contact your service agency.

- If your furnace is a standing pilot model (burns all the time), observe the pilot flame. The pilot flame should be a "soft blue flame" enveloping or covering approximately 1/2 inch of the tip of the thermocouple.

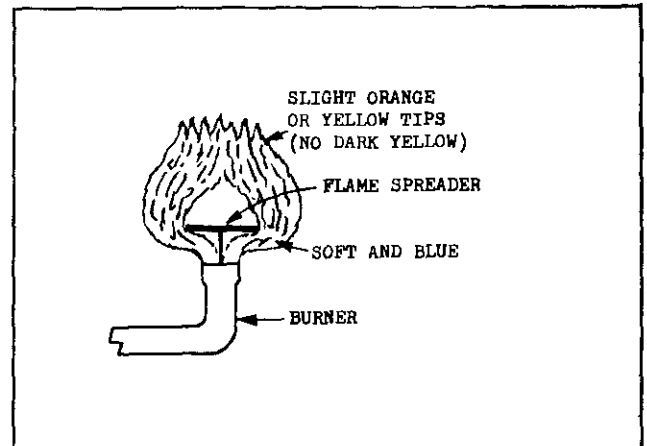
- Observe the main burners in operation viewing through the combustion air slots. The flame should be mostly "blue" with possibly a little "yellow" at the tips of the flames. The flames should be in the center of the heat exchanger compartments and not impinging on the heat exchanger surfaces themselves.



On intermittent pilot models, the pilot lights only when the thermostat calls for heat and the main burner lights within a few seconds thereafter. It is recommended that any observation of pilot or main burner operation be done only with the burner compartment door in place and viewing through the combustion air slots. Any adjustments to the pilot flame should be done by competent service agency.

H-SERIES and C-SERIES  
(Multiple Section Type)

- With the use of flashlight and possibly with the aid of a small mirror, look into the upper flue passageways and outlet of the heat exchanger, viewing through what is called the "draft diverter." This is the upper air opening on the furnace, not too far below the point where the external flue pipe connects on to the furnace. Proper main burner adjustment should result in no soot accumulation in this area, but there may be some scaling due to oxidation. It is not uncommon to experience some loose scale laying in the bottom area of the draft diverter opening. This usually comes from the flue pipe above the furnace and can be easily wiped out. Sooting of any degree in this area will require the attention of the service agency for evaluation.
- Inspect the flue pipe the full distance from furnace to chimney or to exit point from the building, observing for corrosion and possible leakage that might result in products of combustion entering the living area.



G-SERIES  
(Single Port Burner)

**WARNING: LEAKAGE OF PRODUCTS OF COMBUSTION INTO THE LIVING AREA MAY RESULT IN ASPHYXIATION.**

Any questionable flue pipe should be replaced. Considering its importance, it is relatively cheap insurance to protect your family. Consult your service agency.

- Replace the burner compartment access doors by reversing the procedure as outlined under step 2 above.
- Restore the electrical power to the furnace by turning the switch back on. Adjust the thermostat to call for heating operation.

- Observe the fire until the blower starts (there is a normal delay period until the heat exchanger warms up). There should be no change in the size or shape of the flame. If there is any wavering or blowing of the flame on blower start-up, it is an indication of a possible leak in the heat exchanger. Turn off the main electrical switch to the furnace and the gas valve in the gas line leading to the furnace, and call your service agency.

# Limited Warranty



Bard Manufacturing Company ("Bard") warrants Bard equipment to the original retail purchaser when subjected to normal use and service to be free from defects in material and workmanship for a warranty period of one (1) year from date of original installation, as evidenced by receipt at Bard of the warranty registration card.

Bard further warrants the heating elements originally installed in electric furnaces, air conditioning units, and heat pump units, to be free of defects in material and workmanship when subjected to normal use in service for a warranty period of one (1) year from the date of original installation.

Bard further warrants to be free from defects in material and workmanship for the following warranty periods as specified, the following parts:

1. Hermetic Compressor - Five (5) years from the date of original installation.
2. Steel Heat Exchangers (used in the following equipment):
  - (a) All gas-fired Hi-Boy, Counterflow and Horizontal furnaces, ten (10) years pro-rated from the date of original installation.
  - (b) All gas-fired Lo-Boy furnaces - twenty (20) years pro-rated from the date of original installation.
  - (c) All oil furnaces except "S" series, Horizontal - twenty (20) years pro-rated from the date of original installation.
  - (d) All "S" series, Horizontal oil furnaces - ten (10) years pro-rated from the date of original installation.

After the first year, Bard will furnish a replacement steel heat exchanger at a pro-rated charge to the purchaser of one-tenth (1/10) or one-twentieth (1/20) (as may be appropriate) of the latest list price of such heat exchanger for the full year from the date of original installation.

Should any parts prove defective in use, the purchaser shall promptly notify Bard of the defect and shall return the defective part to Bard, Evansport Road, Bryan, Ohio 43506, or such other place as the parties may mutually agree upon. Bard, at its option, will repair or replace the defective part and return it to the purchaser, F.O.B. Bryan, Ohio. The buyer shall be responsible for all labor, service charges, and transportation charges incidental to the removal and replacement of the defective part. The warranty period for any repair part or replacement part is limited to the unexpired portion of the original warranty period as herein provided.

THIS WARRANTY IS IN LIEU OF ANY EXPRESS WARRANTIES RELATIVE TO THESE PRODUCTS IN THE PRECEDING PARAGRAPHS. HOWEVER, THE DURATION OF ANY IMPLIED WARRANTIES, INCLUDING WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY AND FITNESS FOR ANY PARTICULAR PURPOSE, IS LIMITED TO A PERIOD OF ONE (1) YEAR EXCEPT FOR THOSE PARTS WITH LONGER WARRANTY PERIODS IN WHICH CASE THE DURATION OF IMPLIED WARRANTIES SHALL BE LIMITED TO THE SPECIFIED WARRANTY PERIOD FOR EACH SUCH PART. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

# Limited Warranty

BARD SHALL NOT BE LIABLE, IN ANY EVENT, FOR ANY INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES, LOSSES OR INJURIES IN CONNECTION WITH ANY USE OR FAILURE OF THIS UNIT, INCLUDING WITHOUT LIMITATION, LIABILITY FOR YOUR EXPENSES WHILE ANY BARD EQUIPMENT IS OUT OF OPERATION AND FAILURE OF PRODUCT TO CONFORM WITH ANY EXPRESS, IMPLIED, OR STATUTORY WARRANTIES. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

This warranty covers defects in workmanship and materials. It does not apply if the damage or defect does not result from workmanship or materials but results from such things as: misuse of equipment; improper installation; negligence; accident in transit; negligent servicing; operation of equipment contrary to limitations stated on rating plate, etc.; alteration; improper repair; and operation and maintenance contrary to Bard's printed instructions.

Bard shall not be liable for any default or delay in performance under this warranty, caused by any contingency beyond its control, including but not limited to war, insurrection, government restrictions or restraint, strikes, floods, fire, a short or reduced supply of materials, or Acts of God.

The completion and return of the warranty registration card is a condition precedent to warranty coverage and performance. This warranty is not valid unless the card is completed and mailed to the factory within thirty (30) days of the date of original installation by or for the purchaser.

This warranty will be considered void if the Bard equipment is (a) tampered with, (b) improperly serviced, maintained or repaired, (c) removed from the original place of installation, or (d) damaged by an event beyond Bard's control.

No change in this warranty, or the terms and conditions hereof, shall be valid unless made in writing and signed by an officer of Bard.

Bard's liability is expressly limited to the replacement of defective equipment as set forth above and does not cover:

1. Labor or transportation costs.
2. Cost of labor for any adjustment or service calls.
3. Cost of labor for replacing defective parts or components.
4. If the equipment in the good faith judgment of Bard has been subjected to misuse, negligence, transportation damage, tampered or altered, effaced, or removed.
5. Any unit or parts thereof which have not been installed and operated in accordance with the installation and operation instructions furnished by Bard.
6. Cleaning and replacement of filters.

This warranty applies only to Bard equipment installed within the United States.

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



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