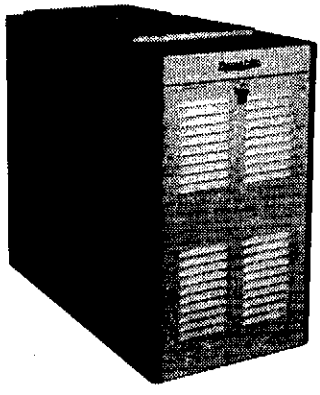
Thermo Pride

GAS FURNACE

-FOR YOUR SAFETY-	-FOR YOUR SAFETY-
DO NOT STORE OR USE GASOLINE OR OTHER FLAMMABLE VAPORS AND LIQUIDS IN THE VACINITY OF THIS OR ANY OTHER APPLIANCE.	IF YOU SMELL GAS: 1. OPEN WINDOW. 2. DON'T TOUCH ELECTRICAL SWITCHES. 3. EXTINGUISH ANY OPEN FLAME. 4. IMMEDIATELY CALL YOUR GAS SUPPLIER.

MODELS

HIGHBOYS	COUNTERFLOW	LOWBOYS
GH3-80	GC5-100	GL5-100
GH5-100		GL11-125
GH11-125		GL16-160



-SERVICING-
SERVICE TO THIS UNIT MUST BE PERFORMED BY QUALIFIED SERVICE PERSONNEL.

PLEASE READ THESE INSTRUCTIONS PRIOR TO INSTALLATION, INITIAL FIRING, AND BEFORE PERFORMING ANY SERVICE OR MAINTENANCE. THESE INSTRUCTIONS MUST BE LEFT WITH THE HOMEOWNER AND SHOULD BE RETAINED FOR FUTURE REFERENCE BY QUALIFIED SERVICE PERSONNEL.

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CONTENTS

NOTE: With the exception of the homeowner section, all installations and services must be performed by qualified service personnel.

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THESE INSTRUCTIONS TO BE AFFIXED ON OR ADJACENT TO THE FURNACE UPON COMPLETION OF INSTALLATION

GH3-80, GH5-100, GH11-125
GC5-100
GL5-100, GL11-125, GL16-160

OPERATING AND INSTALLATION MANUAL

These instructions must be read in their entirety before installing the furnace. It is the installers responsibility to do the following:

1) Inform and demonstrate to the user the correct operation and maintenance of the appliance, as explained in the Installer's Instructions to Homeowner. (Gas Conversion Burner Manual).

2) Inform the user of the hazards of flammable liquids and vapors and remove such liquids and vapors from the vicinity of the appliance.

General:

These units are shipped completely assembled and wired (internally). For parts shortage or damage, see the Dealer Responsibility Section of the green catalog supplementary. Installation to be adjusted to obtain temperature rise through furnace of from 70° F to 100° F. Installation must conform with local building codes or, in the absence of local codes, with the National Fuel Gas Codes ANSI Z223.1-1984 and with these instructions.

Codes & Clearances:

The following items must be considered when picking the size and location of the furnace.

1) All local codes and/or regulations take precedence over the instructions in the manual and should be followed accordingly. In the absence of local codes, installation must conform with these instructions, regulations of the National Fire Protection Association, provisions of the National Electrical Code (ANSI/NFPA 54-1984), and the National Fuel Gas Code (ANSI Z223.1-1984).

2) The BTU output capacity of the furnace proposed for installation should be based on a heat loss calculation made according to the manuals provided by the Air Conditioning Contractors of America (ACCA) or ASHRAE.

All installations and services must be performed by qualified service personnel.

3) The furnace installed is to be level in a central location with respect to outlet registers, and should be located near the chimney to minimize any horizontal run of connecting flue pipe which may be required.

4) Definitions of "COMBUSTIBLE MATERIAL" and "NON-COMBUSTIBLE MATERIAL", as issued by NFPA-Z11-1-3.

COMBUSTIBLE MATERIAL:

Material made of or surfaced with wood, compressed paper, plant fibers, plastics, or other material that will ignite and burn whether flame proof or not, or whether plastered or unplastered.

NON-COMBUSTIBLE MATERIAL:

Material which will not ignite and burn; such materials consisting entirely of steel, iron, brick, concrete, slate, asbestos, glass or plaster or combination thereof.

-MINIMUM CLEARANCES TO COMBUSTIBLE MATERIALS-

Abbreviated Model No.	From sides of furnace	Front	Top & Sides of plenum	From the flue or vent	Rear
GL5-11-16	6"	24"	2"	18"	6"
GH3-5-11	6"	24"	2"	18"	6"
GC5	1"	8"	1"	9"	1"

The GH3-5-11 furnaces may be installed on combustible flooring. The GL5-11-16 and GC5 furnaces are to be installed on non-combustible flooring only. A combustible floor base is available for the counterflow furnace to allow their installation on combustible flooring. (Model No. 125 for GC5).

The minimum clearances are listed for fire protection. Clearance for servicing the front of the furnace and to all points on the furnace requiring access must be 24".

Equipment must be installed in accordance with regulations of the National Board of Fire Underwriters. Authorities having jurisdiction should be consulted before installations are made.

Warning: The TPB75-160 Series Conversion Burner should be used only with the gas specified on the nameplate of the burner.

All installations and services must be performed by qualified service personnel.

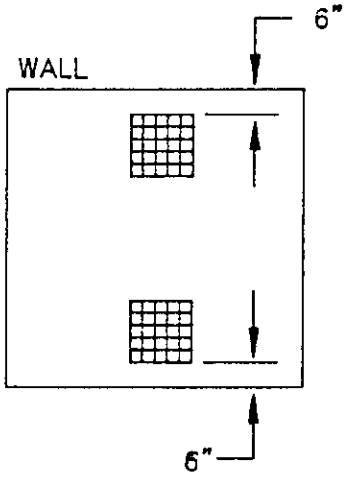
Furnace Location & Combustion Air:

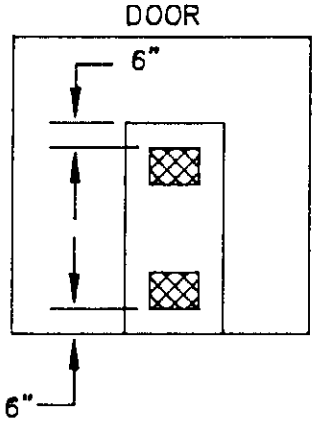
A furnace installed in a residential garage must be installed so the burners and the ignition source are located not less than 18 inches above the floor. Also the furnace must be located or protected to avoid physical damage by vehicles.

Whenever possible the furnace should be centralized with respect to the duct system. The furnace must be located on a level dry surface. If the surface becomes wet or damp at times, the furnace should be supported above the floor using a concrete base, bricks, etc.

The area in which the furnace is located must have an adequate supply of air for combustion and draft. Open non-partitioned basements, below grade utility rooms without storm windows, or rooms with loose access doors will generally permit adequate air infiltration. However, if the furnace is located in an area of the building with tight doors and windows, outside ventilation or an opening into another room is recommended. This can be accomplished with two rectangular openings located in a wall or door one 6" from the ceiling or at the top of the door and one 6" from the floor, or at the bottom of the door each having a free area of not less than 1 square inch per 1,000 BTUH input. These openings must be free and unobstructed. Maintain a minimum 24" clearance to ventilation openings, which provide combustion air to the furnace.

EXAMPLE: 100,000 BTU input furnace requires "two" openings of 100 square inches each.





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If the "entire" building is unusually tight and/or has an exhaust fan installed, which could create a negative pressure zone, air for combustion and draft must be supplied from outdoors or from spaces freely communicating with the outdoors. Under these conditions, a permanent opening or openings having a total free area of not less than 1 square inch per 5,000 BTUH of the total input rating of all the appliances located in the area should be provided. These openings must remain free and unobstructed. service personnel.

EXAMPLE: 100,000 BTU input furnace plus a 40,000 input water heat requires an opening or openings totaling 28 sq inches.

More information may be obtained from the National Fuel Gas Code Z223.1-1984.

Venting:

The TPB75-160 Series Conversion Burner installed in a Thermo Pride furnace must be vented to an acceptable chimney in accordance with these instructions or an agency approved chimney assembly. An acceptable chimney is one that is sealed and lined with the capability of producing a .04" water column draft and a free area capacity able to handle the amount of flue gas that is introduced into it. The TPB75-160 Conversion Burner design does not required a special venting system, such as that required by a condensing gas furnace.

The following items are general recommendations and requirements:

1) Flue or vent connection materials must meet requirements of all applicable local codes and the National Fuel Gas Code (ANSI-Z223.1-1984).

2) Flue connection pipe must be at least as large as the flue outlet on the furnace. No reduction in size is permissible.

3) A PVC pipe is not an acceptable substitute for a chimney or flue pipe connector. A chimney with an internal construction of corrosion resistant tile, stainless steel or some other material that will withstand the flue gas temperature is required. A type B venting system is acceptable as described by the National Fuel Gas Codes (ANSI-Z223.1-1984).

4) The inside area of the chimney must at least equal the area of the flue pipe exiting the furnace -

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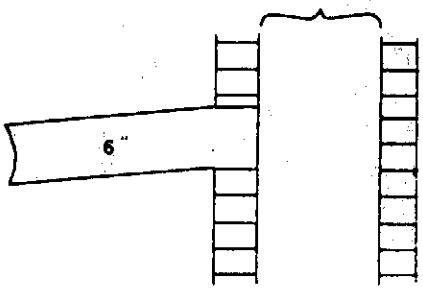
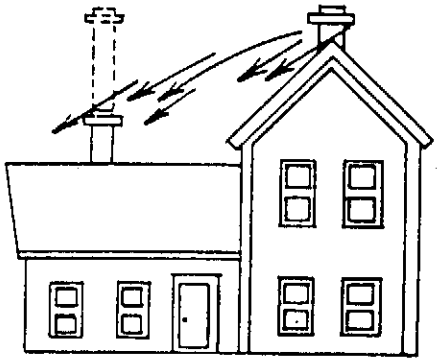
EXAMPLE: $\pi x r^2$ = Area of Pipe (Sq. in)
r^2 = radius of pipe
π = 3.1416
flue pipe DIA= 6"
$\pi x\ 3^2$ = 28 sq. in.

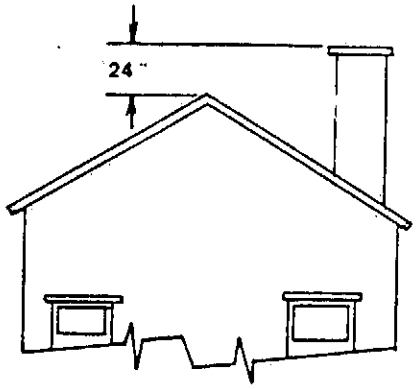
AREA INSIDE CHIMNEY



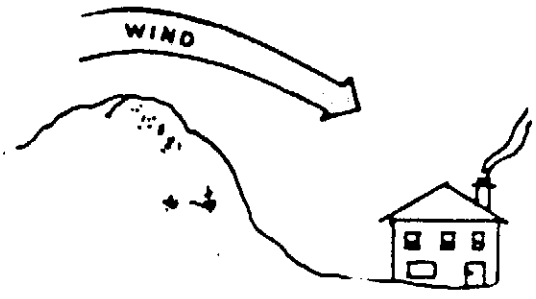
NOTE: This calculation gives the minimum inside area of requirement of the chimney. If more than one flue pipe is connected to the chimney, such as a water heater, the minimum inside area of the chimney would be equal to the area of the larger flue pipe plus one half the area of any additional flue pipes.

5) The chimney height is determined by the height of surrounding trees, roof, buildings, and terrain. The chimney should extend 24" above any surrounding obstructions within a 10' radius.





Trim or remove nearby trees which could interfere with chimney draft.



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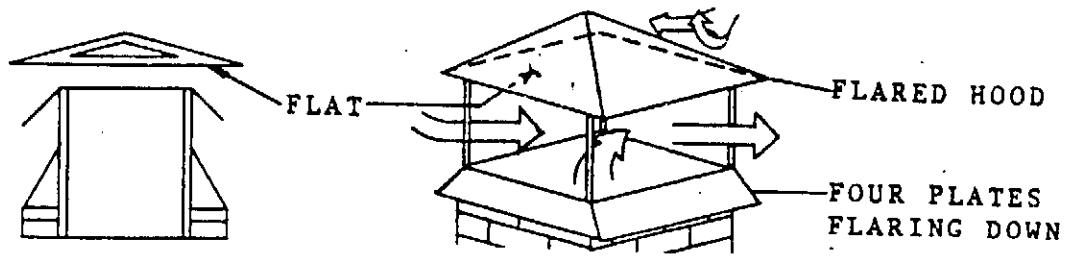
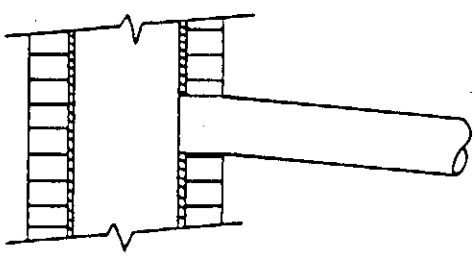
When altering the surrounding obstructions is not possible, a Flared Hood or other approved chimney caps can be constructed or placed on the top of the chimney to avoid down drafts. (See Illustration following).

The Flared Hood should be pyramid shaped on the top with a perfectly flat surface immediately above the chimney outlet. The hood should be attached by four (4) iron supports. Four plates flaring down, can be added to help insure the wind will pass straight over the chimney outlet. The four iron supports should be equal in height to the width of the chimney opening.



6) The vent pipe should extend only as far as (and not beyond) the inside wall of the chimney. A thimble should be used to connect the flue pipe to the chimney so the flue pipe may be readily removed in case of inspection or replacement.



7) In cases where the chimney flue extends to the basement floor, the draft can usually be improved by filling the base of the chimney with sand to within 12" of the flue pipe after relocating the cleanout cover.

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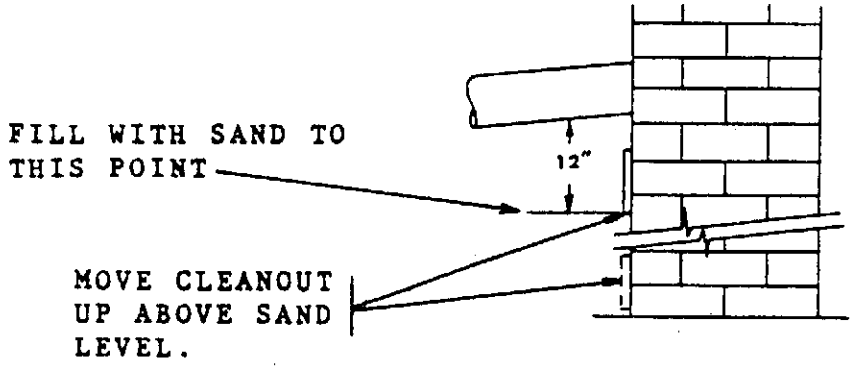

8) All joints of the chimney must be tightly sealed. The inside of the chimney should be free of all obstructions, such as loose brick or broken pieces of tile.

9) All chimney cleanout doors and flue connections must fit tightly to avoid air leaks.

10) If chimney flues are divided within one chimney, be sure there are no openings in the partition which separates the divided flues.

11) All flue pipes connecting the furnace to the chimney must be ridgidly supported with hangers and straps, in order to prevent movement after installation. The flue pipe connection must be supported for the design and weight of the material used, to maintain clearances, and to prevent physical damage.

12) Flue pipes connecting the furnace to the chimney cannot be run through floors, ceilings, and walls without the proper protective construction. This construction must be in accordance with the requirements of the National Fuel Gas Code (ANSI Z223.1-1984).

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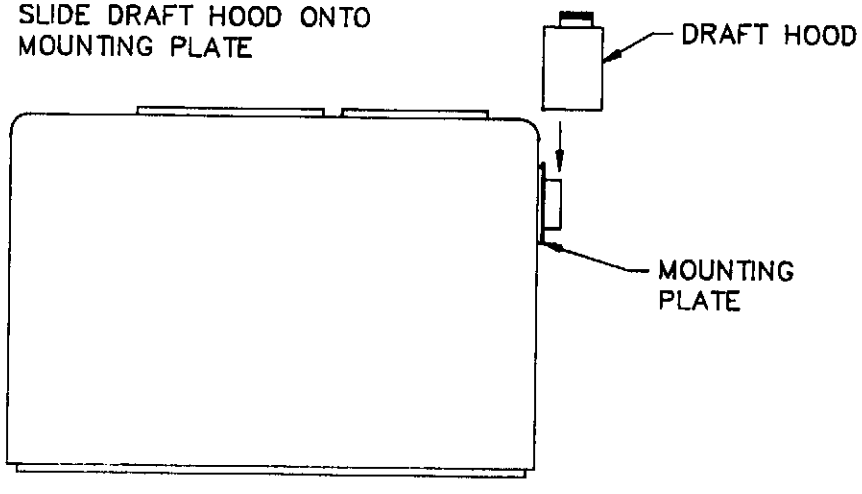
Draft Hood:

Model GL5-100, GL11-125 and GL16-160 are shipped from factory with the draft hood disassembled. Draft hood is packed inside front vestibule of furnace.

Draft hood to be mounted as follows:



Duct Work:

The duct system should follow the design standards of Air Conditioning Contractors of America (ACCA) or ASHRAE. The duct system should be sized for the maximum CFM capability of the furnace, whether it be heating or cooling as shown in the important section on page

To achieve this air movement the main trunk lines, take offs, registers and grills of the supply and return air duct system must have an adequate square inch area to move the desired CFM. The following chart shows the CFM air movement different square inch areas are capable of handling - based on .1" SP loss in the supply duct system.

All installations and services must be performed by qualified service personnel.

DUCT SIZES FOR HOMES, QUIET OFFICES, OR SIMILAR INSTALLATIONS

CHART SIZED FOR VELOCITY OF APPROXIMATELY 800 FEET PER MINUTE

CFM	DIAM	SQ. IN	RECTANGULAR DUCT DIMENSIONS -- INCHES					
45	4	12.5						
65	5	19.6						
100	6	28					6x6	9x4
150	7	38					8x6	12x4
200	8	50					10x6	14x4
250	9	63				8x8	12x6	18x4
300	9	63				9x8	14x6	20x4
400	10	78				12x8	16x6	25x4
500	12	113			10x10	14x8	19x6	30x4
600	12	113			12x10	16x8	22x6	38x4
700	12	113			14x10	18x8	26x6	
800	14	154		12x12	15x10	20x8	28x6	
900	14	154		14x12	17x10	22x8	32x6	
1000	16	201		15x12	18x10	24x8	36x6	
1100	16	201	14x14	16x12	20x10	26x8	40x6	
1200	16	201	15x14	17x12	22x10	28x8	42x6	

All trunk lines, take offs, registers and grill free areas must be figured when determining the air handling capacity of a duct system. By using the above chart you can obtain the necessary duct system as in the following example -

The return air duct system should equal the warm air duct system in CFM capabilities. Use a supplier's catalog for proper sizing of outlet and return air registers to insure that the register will meet the CFM requirements of the run to which it is connected.

NOTE: When a return air register is located in the same room as the furnace, the register must be at least 20' away from the furnace.

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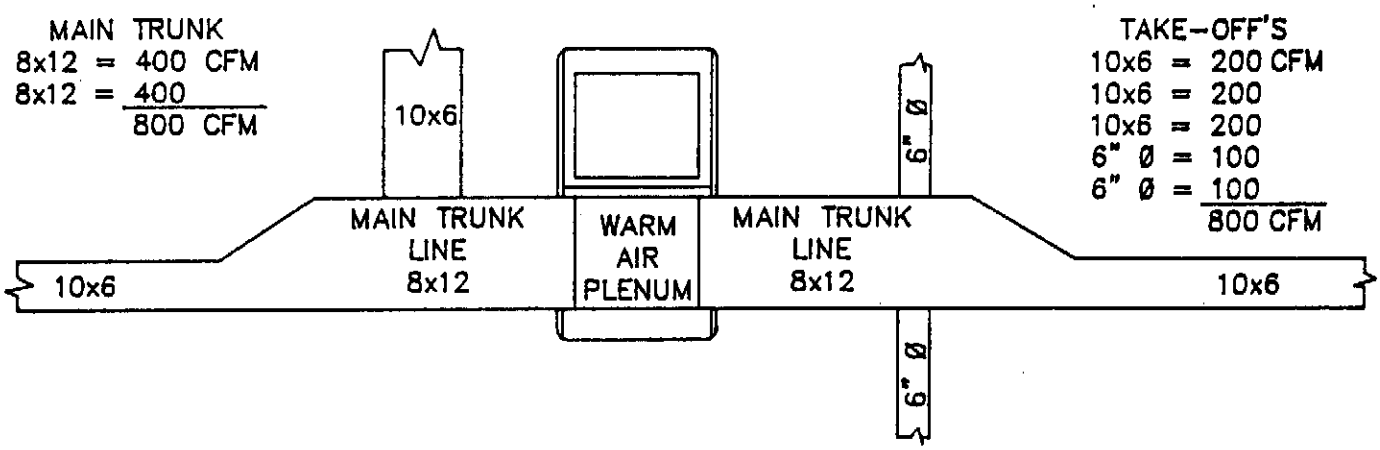


Note: When a return air register is located in the same room as the furnace, the register must be at least 20' away from the furnace.

When supply ducts carry air circulated by the furnace to areas outside the space containing the furnace, the return air should also be handled by a duct(s) sealed to the furnace casing and terminating outside the space containing the furnace.

Ductwork / Air Conditioning:

If the furnace is used in connection with summer Air Conditioning (cooling), the furnace should be installed parallel with or on the upstream side of the evaporator coil to avoid condensation in the furnace heat exchanger. If the cooling unit is installed with a parallel flow arrangement, dampers or other means used to control flow of air should be adequate to prevent chilled air from entering the furnace. If such a damper is manually operated, it must be equipped with a means to prevent operation of either unit, unless the damper is in the full heat, or cool position.

The duct system should again follow the design standard of Air Conditioning Contractors of America (ACCA) or American Society of Heating, Refrigeration, and Air Conditioning Engineers, Inc. (ASHRAE). (Ref. 1981 Fundamentals Volume).

All installations and services must be performed by qualified service personnel.

To obtain the proper CFM with Air Conditioning installed, the size of the blower motor may have to be changed (depending upon the size of the Air Conditioning and the static resistance of the duct system). Two common rules used in determining the CFM requirement for heating and cooling are:

1) 400 CFM / ton (12,000 BTU's) of cooling

2) 1 CFM / 100 BTU's output of heating

Example: Heating output of furnace = 100,000 BTU's, 1,000 CFM is required for heating. Air Conditioning installed = 3 Ton (36,000 BTU's), 1,200 CFM is required.

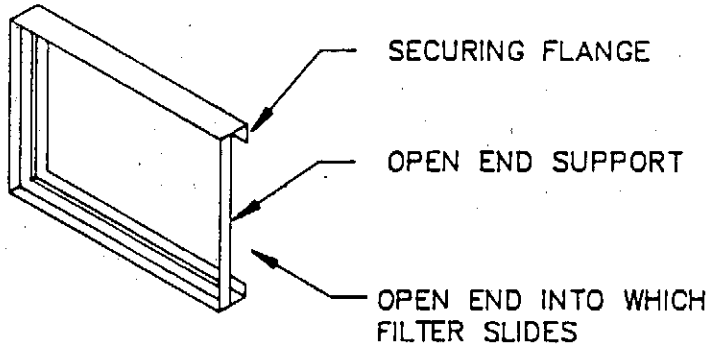
Note: Size the duct system for the larger of the two CFM requirements which, in the above example, is the 1,200 CFM required for cooling.

Filter Racks:

Highboys

On the highboy furnaces it is necessary to cut the return air opening in the side or rear casing, depending upon the needs of the specific installation.

The filter rack provided with the furnace will serve as a template to scribe a mark for the return air opening on the casing. Place the filter rack on the casing one inch up from the bottom of the furnace and centered from side to side. Place the securing flange against the casing for locating the return air opening.



Connect the return plenum to the filter rack and slide the filter into place.

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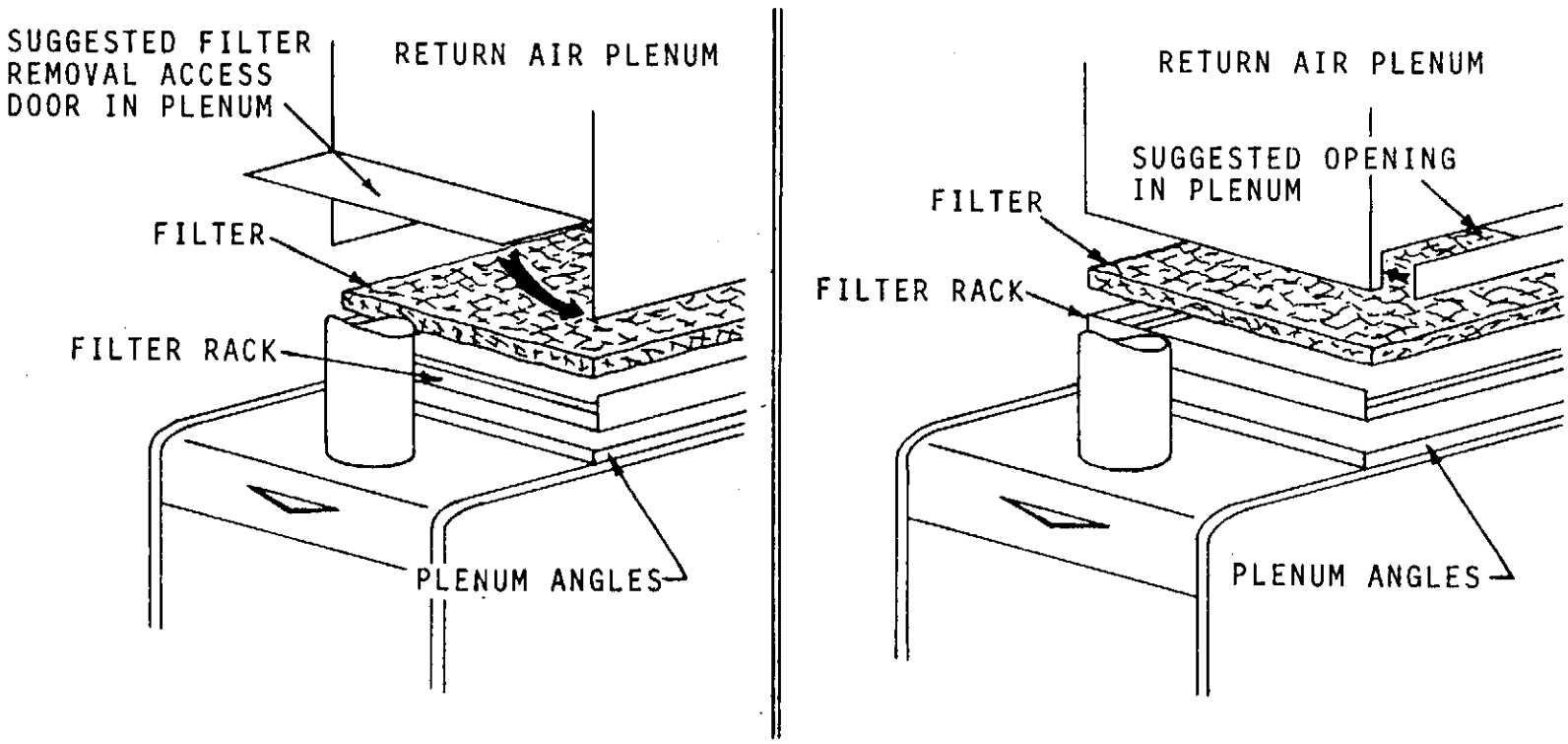
Counterflow

The GC5 filters are a permanent type mounted on the return air plenum opening on the top of the furnace. An access door must be cut in the return air plenum to allow the removal of the filter for cleaning. This door may be cut in either the front or side of the plenum depending on which is most convenient. Example: The open side of the filter rack will face the access door. The closet model may need the access door in the front, putting it on the side may be inexcessible (also refer to the Homeowner Section Figure 1 on Page 28.



All installations and services must be performed by qualified service personnel.

Remove the filter rack and cut the return air opening in casing. Now the filter rack can be attached to the furnace with screws or pop-rivets along the securing flange of the filter rack as necessary.

Connect the return plenum to the filter rack and slide the filter into place.

IMPORTANT

Care must be taken to prevent wetting the electronic components during the leak test. Wetting of the primary control may cause permanent damage to its circuitry and a possible hazardous situation to occur. If accidental wetting occurs, be sure to dry moisture from all leads and terminals and wait 24 hours for the circuit to completely dry before reenergizing the burner circuit.

The furnace and its individual shutoff on the gas valve must be disconnected from the gas supply piping system during any pressure testing of that piping system at test pressures in excess of 1/2 psig (3.45 kpa). The furnace must be isolated from the gas supply piping system by closing its individual manual shutoff supply piping system at test pressures equal to or less than 1/2 psig. (3.45 kpa).

WIRING

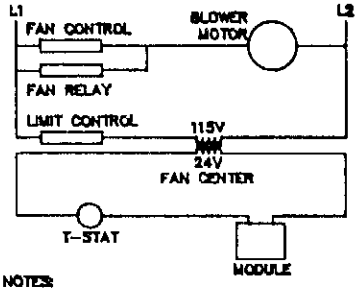
All wiring must conform to the provisions of local codes or in the absence of these codes with the provisions of the National Electrical Code, ANSI/NFPA No. 54-1984.

The following diagrams illustrate the electrical wiring schematic for the TPB 75-160 series Conversion burner and the Thermo Pride furnaces that the Conversion Burner is to be installed in.

All installations and services must be performed by qualified service personnel.

WIRING DIAGRAM – GH3,5,11 GL5,11,16
HONEYWELL IID & FAN CENTER

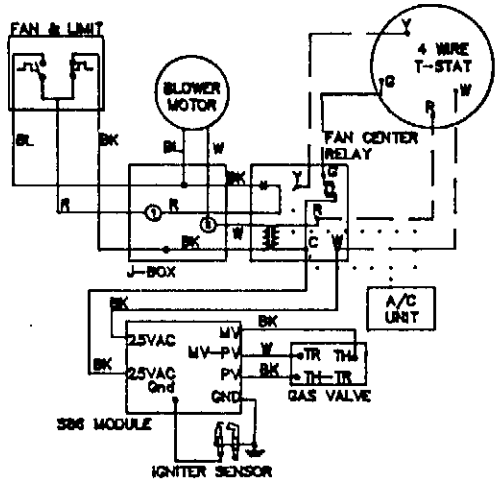
LADDER DIAGRAM



NOTES:
1. REPLACEMENT IGNITER SENSOR WIRE MUST BE TYPE 150°C OR EQUIVALENT (UL3217).
2. OTHER REPLACEMENT WIRE MUST BE TYPE 105°C OR EQUIVALENT.
3. CONNECT HOT TO 1 AND GND TO 2.

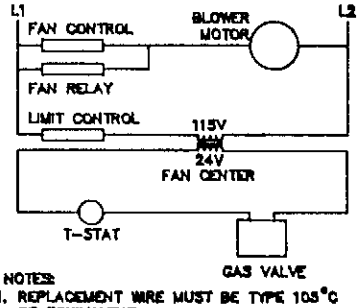
LEGEND
- – – – FIELD WIRING
- ——— FACTORY WIRING
- . . . . AIR CONDITIONING WIRING

ELECTRICAL SCHEMATIC



WIRING DIAGRAM – GH3,5,11 GL5,11,16
STANDING PILOT & FAN CENTER

LADDER DIAGRAM



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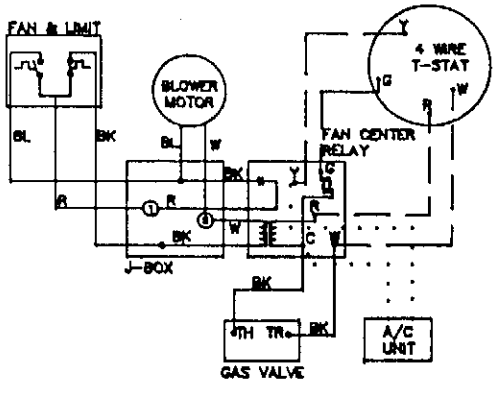

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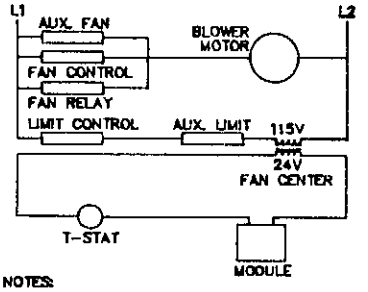
WIRING DIAGRAM GC5
HONEYWELL IID & FAN CENTER

LADDER DIAGRAM



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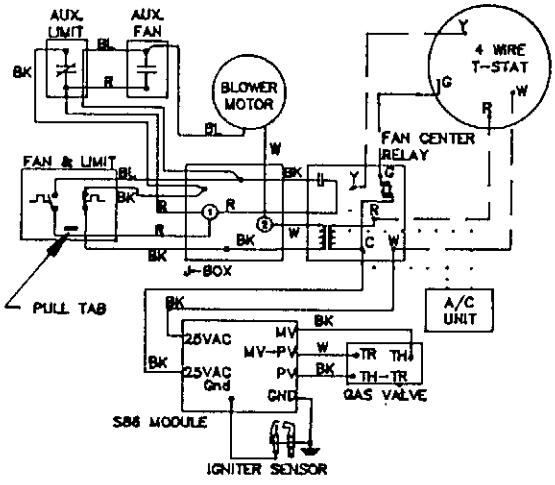
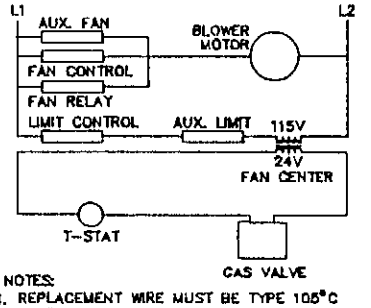


WIRING DIAGRAM GC5
STANDING PILOT & FAN CENTER

LADDER DIAGRAM



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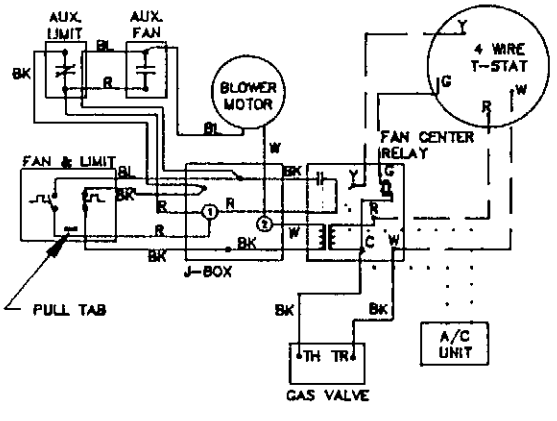


All installations and services must be performed by qualified service personnel.

The following items are guidelines to complete the wiring portion of the installation:

1) The power supply for the furnace should be from an independent circuit separately fused at 15 amps. The service should be made in conduit, or BX cable as codes specify. Connect the power to the leads labeled 1 and 2 in the J-Box as shown in the previous wiring diagrams.

2) A fuse disconnect switch should be part of the service supply circuit.

3) Install the room thermostat according to instructions provided with the thermostat. When the furnace is operating, use a milli-amp meter to take an amp reading on the sub-base of the thermostat terminals W & R and set the heat-anticipator on the thermostat accordingly.

4) The furnace must be grounded in accordance with local codes, and with the National Electrical Code, ANSI/NFPA 54-1984, when an external electrical source is utilized.

II. STARTING THE UNIT

WARNING: Heat exchanger paint will burn off on initial firing, creating an unpleasant odor. To prevent future occurances of this odor, it is suggested that:

1) a window (s) be opened

2) the thermostat be set at highest setting and

3) the furnace remain running at conditions 1 & 2 for 30 minutes or until smell has dissipated.

All installations and services must be performed by qualified service personnel.

FURNACE CHECK-OUT PROCEDURE

Before any system of gas piping is finally put into service, it shall be carefully tested to assure that it is gas tight.

CONTROLS

Controls on the unit should be checked for proper functioning prior to the qualified service personnel leaving the job sight.

A) All units are equipped with 100% safety shut-off. Check operation as follows:

Pilot must first be in operation.

1. Turn off electrical power.
2. Extinguish pilot light.
3. Listen for audible "click" as valve closes on 100% safety.
4. With main valve in "on" position, restore power.
5. Turn thermostat to point above room temperature calling for heat.
6. Valve should not allow gas to enter. If gas should enter, valve is defective. Replace valve.

B) With furnace in normal heating operation, check to make certain blower will start and stop automatically under control of fan switch.

C) Check the safety limit control as follows:

1. Shut off electrical power.
2. Remove the belt from blower and motor.
3. Restore power to the furnace.
4. Set thermostat above room temperature calling for heat.
5. When the limit setting temperatures are reached across the fan and limit element the burner should shut off.
6. Shut off the electrical power, replace the belt and restore power.

NOTE: On the counterflow model the automatic reset should click off before the manual reset.

If more convenient, the limit control may be checked with the unit operating by placing cardboard or paper over the filter of the furnace therefore blocking off the return air. The limit control should function to shut off the main burner.

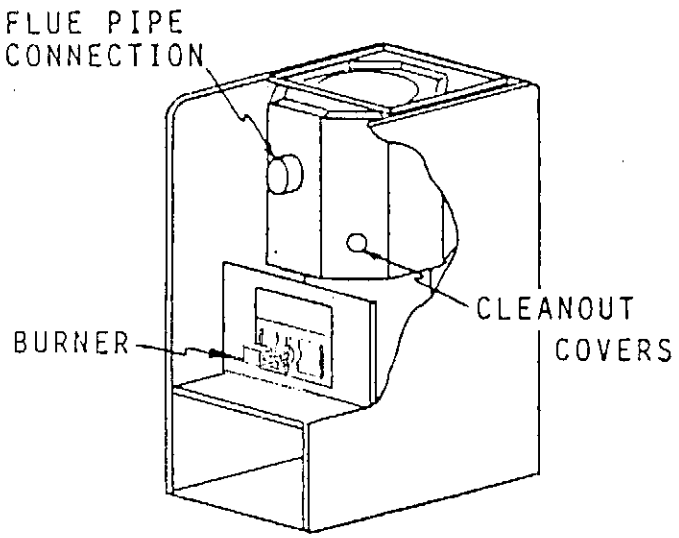
D) Make certain thermostat will automatically start and stop burner.

All installations and services must be performed by qualified service personnel.

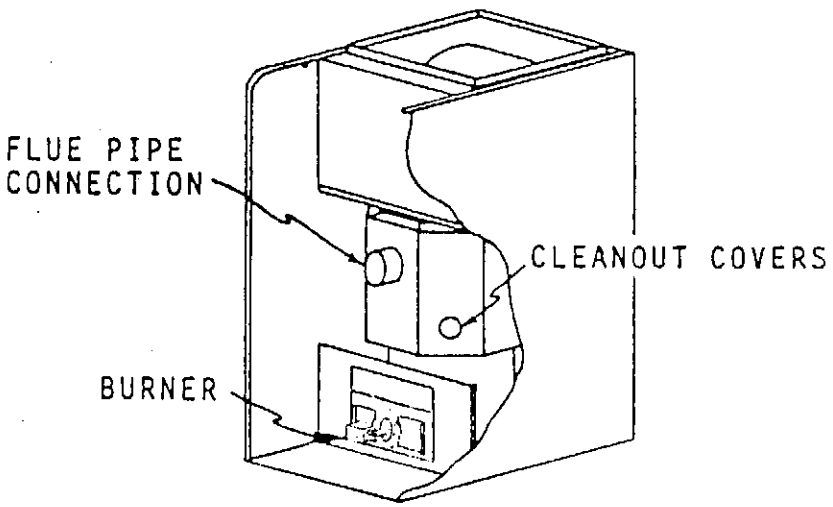
MAINTENANCE INSTRUCTIONS

Cleaning Heat Exchanger: It is recommended that a qualified service person examine and clean the furnace and check the burner annually. To thoroughly clean and inspect the heat exchanger the burner should be removed.

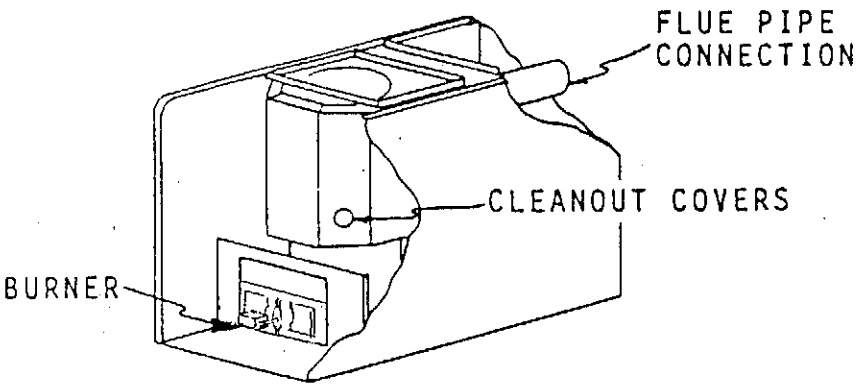
With the burner, cleanout covers, and flue pipe connection removed from the heat exchanger, clean any build-up found during inspection. All components must be reinstalled to the original factory produced state. A suggested means for removing any build-up would be brush or an industrial type vacuum cleaner.



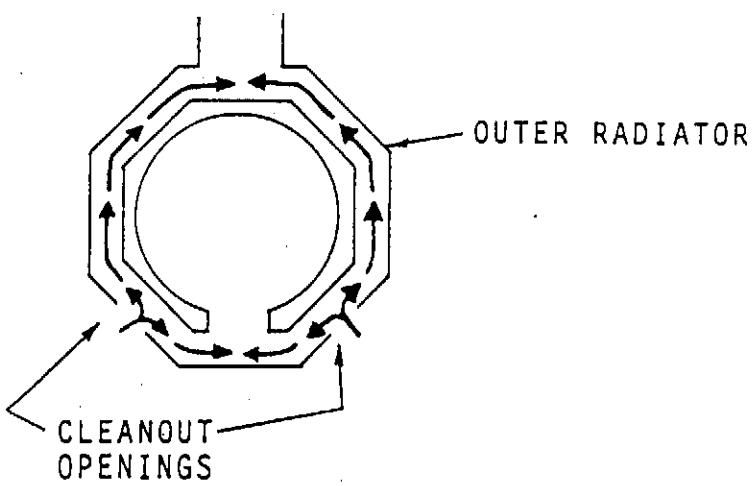
HIGHBOY FURNACE



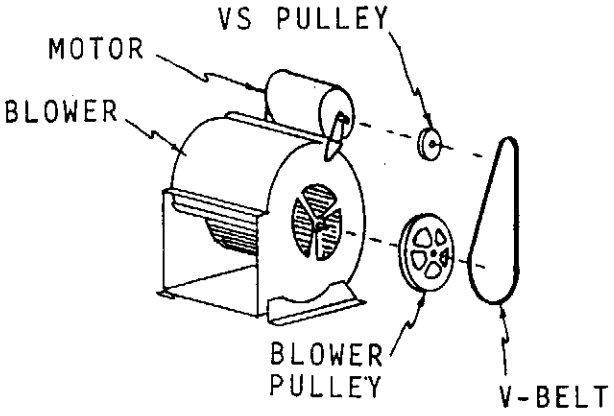
COUNTERFLOW FURNACE



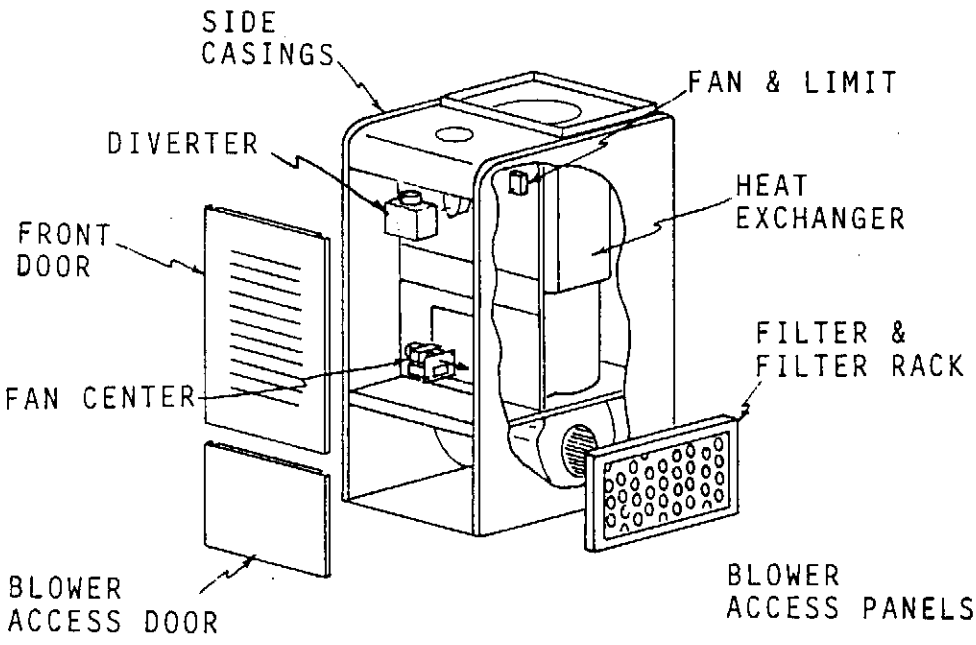
LOWBOY FURNACE



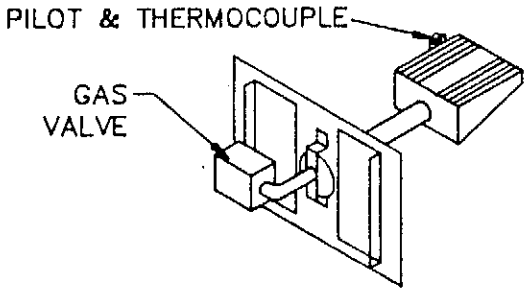
All installations and services must be performed by qualified service personnel.



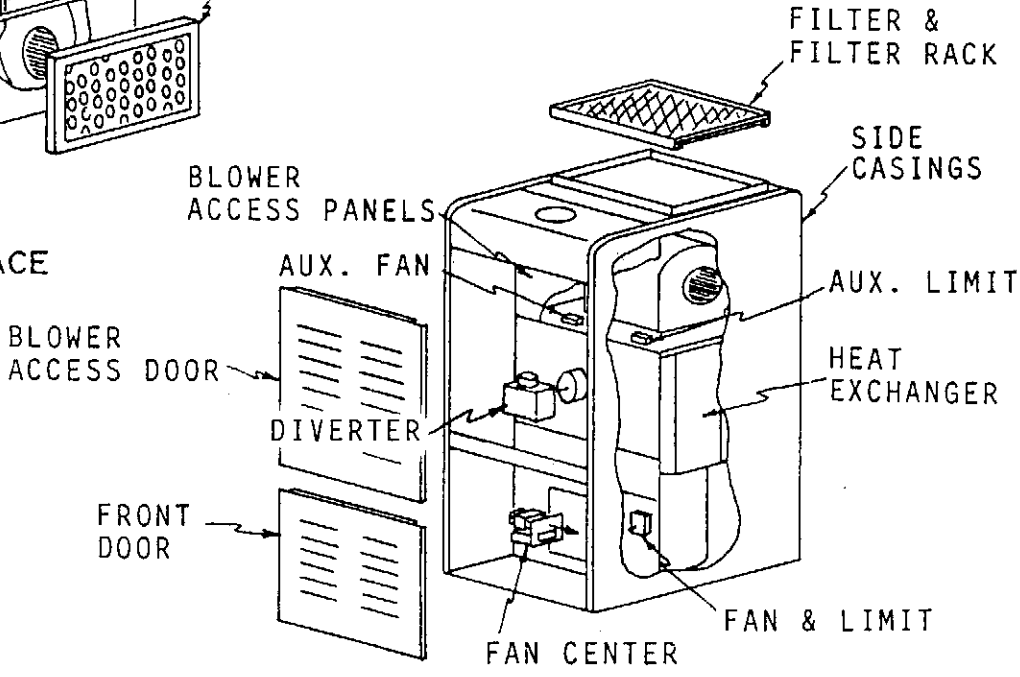
BLOWER SUB-ASSEMBLY



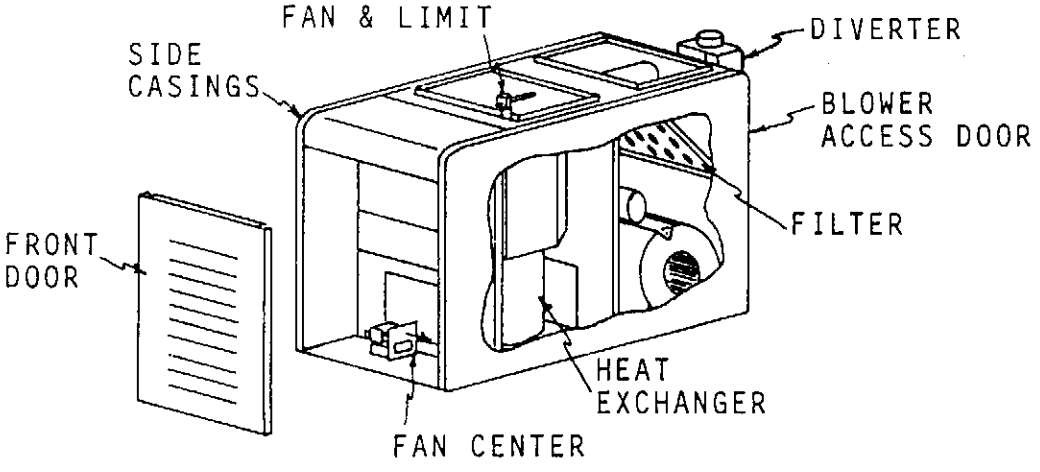
HIGHBOY FURNACE



BURNER ASSEMBLY



COUNTERFLOW FURNACE



LOWBOY FURNACE

All installations and services must be performed by qualified service personnel.

REPLACEMENT PARTS

All burners, valves, valve orifices, motors, controls, blower assemblies, and casing parts are available for order from the North Judson Plant or the Denton Plant listed below:

Thermo Products, Inc.
P.O. Box 217
North Judson, IN. 46366

Thermo Products, Inc.
P.O. Box 237
Denton, N.C. 27239

The following list of replacement parts and part numbers pertains to units equipped with standing pilot. See the preceeding page for a pictorial drawing showing the parts designation and assembly. For ignition systems other than standing pilot, see the installation supplementary page pertaining to the specific ignition system.

THERMO PRODUCTS PART NO.	DESCRIPTION
340001	9-9 BLOWER
340004	10-10 BLOWER
340007	12-12 BLOWER
340101	35" V-BELT
340104	38" V-BELT
340107	41" V-BELT
340201	3 1/4X 1/2 V.S. PULLEY
340203	5 X 3/4 BLOWER PULLEY
340204	6 X 3/4 BLOWER PULLEY
340205	7 X 3/4 BLOWER PULLEY
340207	7 X 1 BLOWER PULLEY
350124	FAN & LIMIT CONTROL (L4064B-1592)
350125	AUX. FAN CONTROL (L4068C-1026)
350126	AUX. LIMIT CONTROL (L4029E-1029)
350303	1/3 HP 115V MOTOR
350398	FAN CENTER (R8325A-1008)
370005	14 X 25 X 1 FILTER
370006	16 X 20 X 1 FILTER
370007	16 X 25 X 1 FILTER
370008	20 X 20 X 1 FILTER
370022	20 X 20 X 1 PERMANENT FILTER
380027	GAS VALVE 1/2 X 1/2 (NAT)
380123	PILOT (5-CH6-6)
380126	THERMO COUPLE (T465)

NOTE: The pilot rate under conditions set forth by ANSI Z21.47-1978, Paragraph 2.5.4 is 860 BTUH. The indirect ignition system draws .4 amps for a maximum of 90 seconds for each ignition.

All installations and services must be performed by qualified service personnel.

OCTATHERM FURNACES - COMPONENT PART NUMBERS

COMPONENT DESCRIPTION	GL5	GL11	GL16	GH3	GH5	GH11	GC5
SIDE CASING	*	*	*	*	*	*	*
HEAT EXCHANGER	*	*	*	*	*	*	*
FRONT DOOR	*	*	*	*	*	*	*
BLOWER ACCESS DOOR	*	*	*	*	*	*	*
BLOWER ACCESS PANEL	*	*	*	*	*	*	*
FILTER RACK	*	*	*	*	*	*	*
FAN & LIMIT CONTROL	350124	350124	350124	350124	350124	350124	350124
AUX FAN CONTROL	------	------	------	------	------	------	350125
AUX LIMIT CONTROL	------	------	------	------	------	------	350126
FAN CENTER	350398	350398	350398	350398	350398	390398	390398
FILTER	370008	370010	(2 REQ'D) 370005	370006	370007	370010	370022
DIVERTER	*	*	*	*	*	*	*
GAS VALVE	380027	380027	380027	380027	380027	380027	380027
PILOT	380123	380123	380123	380123	380123	380123	380123
THERMOCOUPLE	380126	380126	380126	380126	380126	380126	380126
BLANK ORIFICES	380132	380132	380132	380132	380132	380132	380132
BLOWER	340001	340004	340007	340001	340001	340004	340004
BLOWER MOTOR	350303	350303	350303	350303	350303	350303	350303
V.S. PULLEY	340201	340201	340201	340201	340201	340201	340201
BLOWER PULLEY	340204	340205	340207	340204	340204	340205	340203
V-BELT	340101	340104	340107	340101	340101	340104	340104

* ORDER PARTS BY NAME

HOMEOWNER'S SECTION

OPERATING INSTRUCTIONS

When operating your Thermo Pride Gas Unit, there are several directions to be followed:

A) The furnace area must be kept clear and free of combustible materials, gasoline and other flammable vapors and liquids.

B) A flow of combustion and ventilating air must not be obstructed from reaching the furnace.

A furnace located in an attic or other insulated space must be kept free and clear of insulating material. Examine furnace area when the furnace or additional insulation is added to assure clearances are met because insulating material may be combustible.

WARNING:
If excessive gas escapes when purging the supply at the union, allow the area to ventilate for at least 15 minutes before attempting to start the burner. LP gas is especially dangerous because the specific gravity of LP gas allows it to accumulate at floor level at a dangerous concentration.

WARNING:

Should overheating occur, or the gas supply fail to shut off, shut off the manual gas valve to the appliance before shutting off the electrical supply.

If your unit is equipped with a standing pilot -

C) **TO LIGHT PILOT**

1. Handle of combination main and pilot valve must be in "off " position at least 5 minutes.

2. Depress and turn handle of combination main and pilot valve to "pilot" position and depress while lighting pilot. Hold handle down approximately 30 seconds. Figure 1 & 2 on page 24.

3. Turn on electric power.

4. Set room thermostat at desired temperature.

If furnace fails to light and operate, shut off power for at least two minutes, then repeat steps 1 thru 4 under "To Light Burner". If furnace fails to operate; consult a qualified serviceman. Only trained personnel should attempt diagnosis and repair.

TO SHUT DOWN:

1. Depress and turn handle of combination main and pilot valve to "Off" position. Fig. 4 on page 24.

2. Turn off electric power.

If your furnace is equipped with a spark ignition system, follow these lighting instructions:

Knob on gas valve must be in "Off" position for at least 5 minutes before prceeding.

TO LIGHT BURNER:

1. Set room thermostat at lowest temperature on dial.

2. Turn knob on combination gas valve to "ON" position.

3. Turn on electric power.
4. Set room thermostat at desired temperature, furnace will respond to operate on call for heat by thermostat. If furnace fails to light and operate, shut off power for at least five minutes; then repeat steps 1 thru 4 under "TO LIGHT BURNER".

5. If the furnace repeatedly fails to ignite, shut down the furnace and have a qualified serviceman investigate the problem.

TO SHUT DOWN:

1. Depress knob on combination gas valve and turn to "OFF" position.

2. Turn off electric power.

Do not attempt to manually light intermittent or interrrupted pilot systems.

HOMEOWNER'S SECTION

For Conversion Burners

FOR UNITS UTILIZING OCTATHERM HEAT EXCHANGERS SEE FIG. AS SHOWN BELOW.

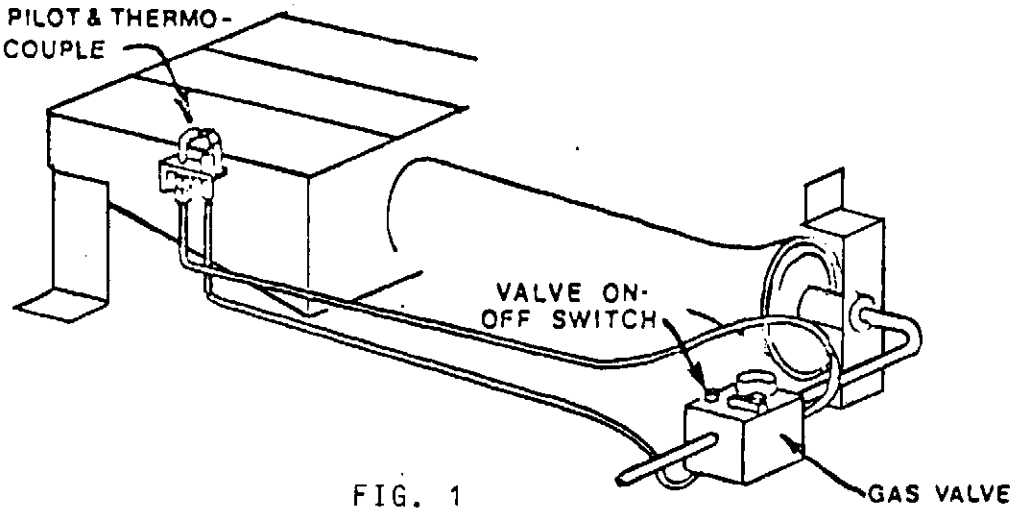


FIG. 1

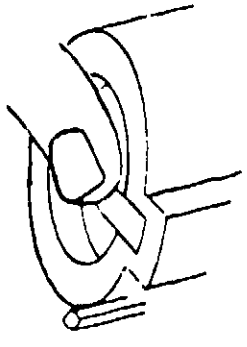


FIG. 2

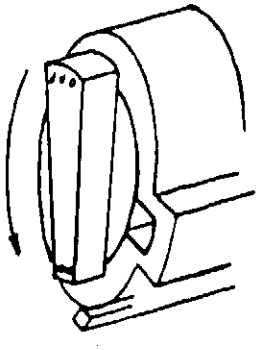


FIG. 3

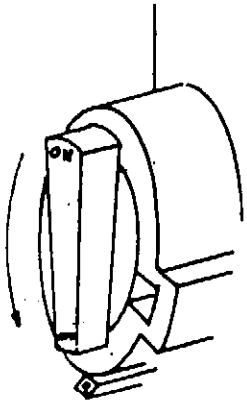


FIG. 4

Maintenance Instructions (Routine Maintenance)

The following maintenance procedures should be performed at the beginning of each heating season. **Warning:** Homeowners attempting service other than covered in this special section may cause conditions which could void the warranty or result in personal injury.

CAUTION:

To avoid injury from moving parts, shut off the power to the furnace before removing blower compartment door.

1. House Air Blower: Check and clean the blower wheel. Lubricate the blower motor as specified on the motor name plate, or oiled annually using 3 drops of 20 wt oil.

NOTE: Some motors are permanently lubricated and should not be oiled.

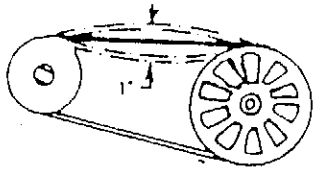
2. Return Air Filter: The air filters should be replaced periodically depending on furnace use. Inspect furnace air filters frequently to avoid contaminates from going through the furnace and causing damage. Follow the replacement procedure for permanent and non-permanent filters on the next page.

3. Flue Pipe Connection & Chimney:
   Check flue pipe and chimney connections for tightness, blockage and corrosion. If blockage or corrosion is suspected to be a problem, contact your dealer.

4. Do not allow any objects to obstruct the flow of combustion and ventilation air to the burner.

5. Keep the area around the burner clear and free of combustible materials, gasoline and other flammable vapors and liquids.

6. Inspect the blower belt for excessive wear and play. When the belt is adjusted for proper tension or tightness, the belt should be able to move an inch up and down between the pulleys-



Filter Replacement

The Non-Permanent Filters

Filters for these furnaces should be inspected each month, and replaced when necessary. Replace the dirty filter with an identical new filter. Replace filter with the correct filter size as follows:

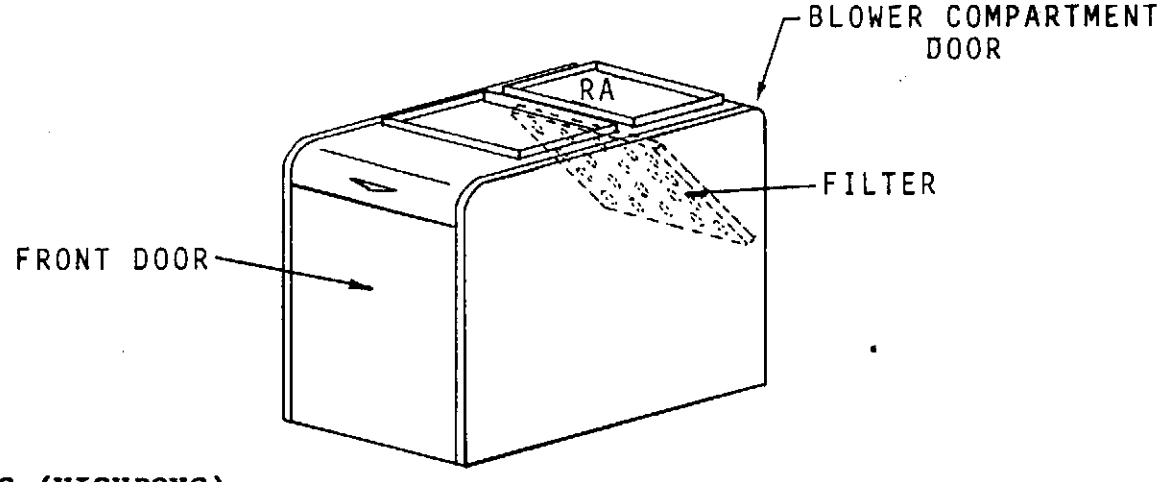
Filter Size	20x20	16x20	16x25	14x25	20x25
-Lowboys-					
GL5-100	*				
GL11-125					*
GL16-150				**	
-Highboys-					
GH3-80		*			
GH5-100			*		
GH11-125					*
-Counterflows-					
GC5-100 (permanent)	*				

** DENOTES THE USE OF 2 FILTERS

Follow the filter replacement instructions for the configuration of the furnace your have.

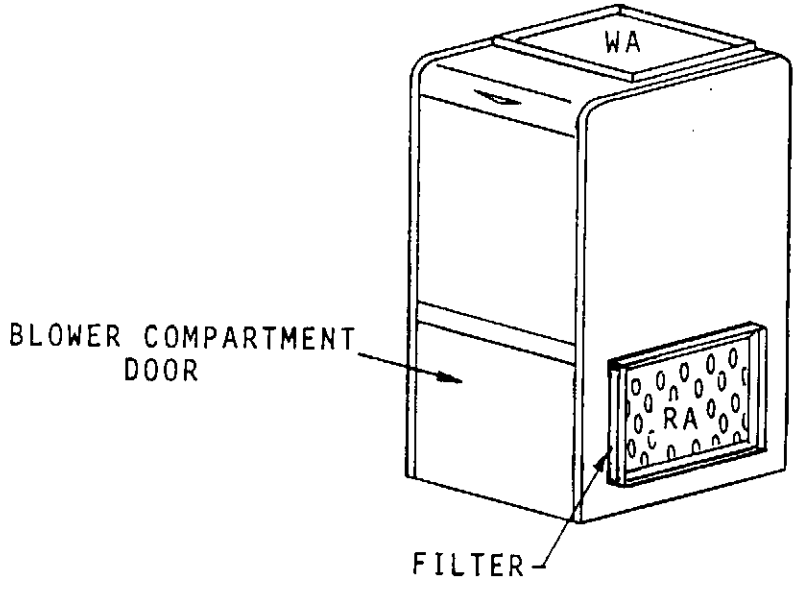
GL SERIES (LOWBOYS)

To replace dirty filter first remove the blower compartment door at the rear of the furnace. Remove dirty filter from the filter rack and replace with properly sized clean filter. Put blower compartment door back into place.



GH SERIES (HIGHBOYS)

The filter rack will be located between the return air plenum and the return air opening on the furnace. Slide the dirty filter out of the filter rack and replace with properly sized clean filter.



GC SERIES (COUNTERFLOWS)

For removal of the filter remove access door in plenum, then remove dirty filter. Clean filter by vacuuming, tap-water rinsing, hosing, or dipping in an ordinary detergent solution. After cleaning, replace the completely dry filter mesh side down.

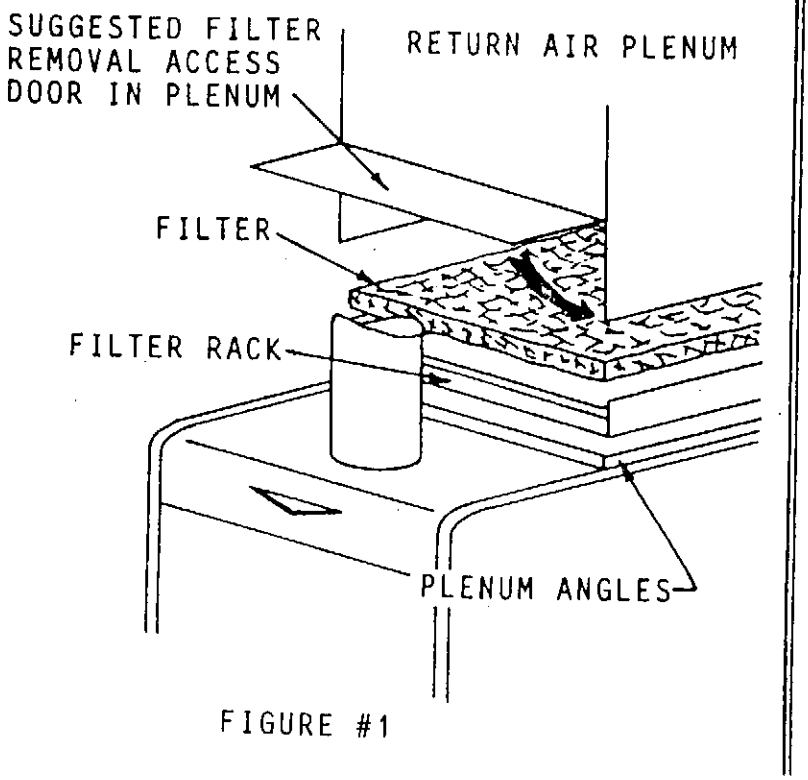


FIGURE #1

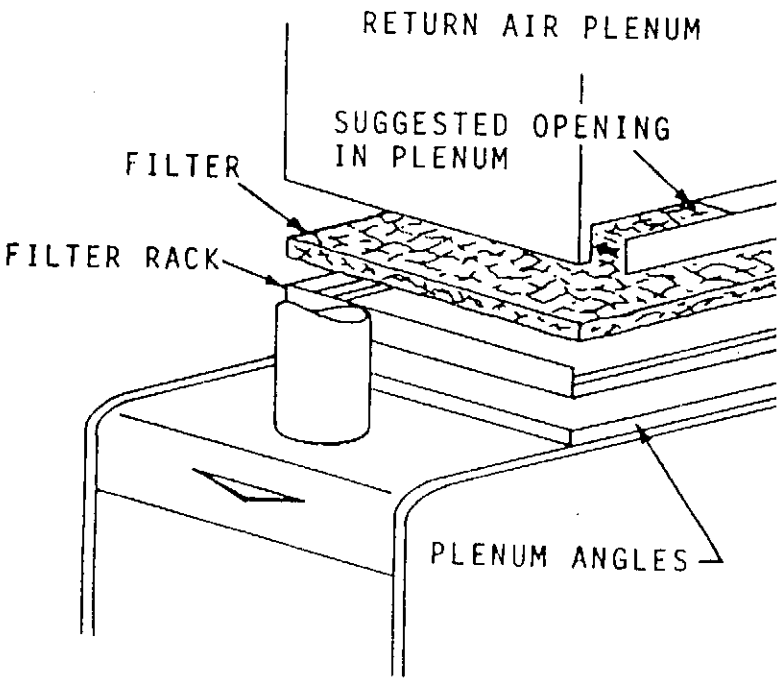


FIGURE #2