

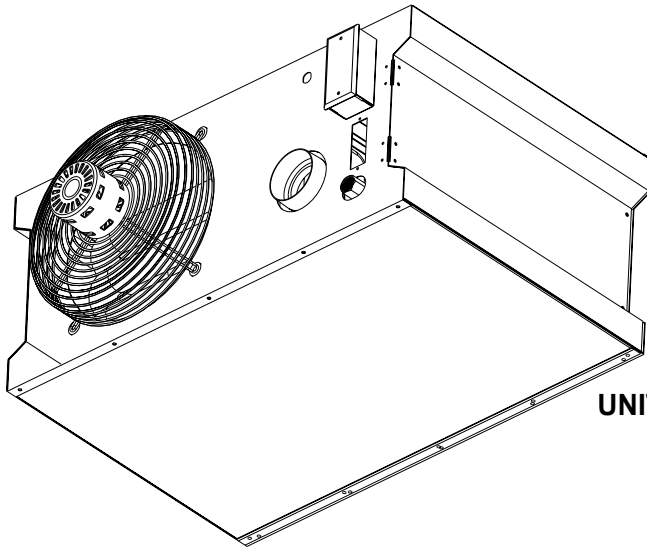


OPERATING INSTRUCTIONS AND OWNER'S MANUAL

Model # GUH50NE/LE • GUH80NE/LE

READ INSTRUCTIONS CAREFULLY: YOUR SAFETY IS IMPORTANT TO YOU AND TO OTHERS. Read and follow all instructions. Place instructions in a safe place for future reference. Do not allow anyone who has not read these instructions to assemble, light, adjust or operate the heater.

GAS UNIT HEATER FOR RESIDENTIAL/COMMERCIAL USE



ANS Z83.8-2016 • CSA 2.6-2016
UNIT HEATER FOR INDUSTRIAL/COMMERCIAL USE
UTILITY HEATER FOR RESIDENTIAL USE

Check State/Provincial and
local codes for permitted uses.

⚠ WARNING: FIRE OR EXPLOSION HAZARD. Failure to follow safety warnings exactly could result in serious injury, death or property damage. Be sure to read and understand the installation, operation and service instructions in this manual. Improper installation, adjustment alteration, service or maintenance can cause serious injury, death or property damages.

- 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 an electrical switch, do not use any phone in your building.
 - Leave the building immediately.
 - Immediately call your gas supplier from a phone remote from the building. 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 the information in this manual is not followed exactly, a fire or explosion may result causing property damage, personal injury, or loss of life.

CONSUMER: Retain this manual for future reference.

Questions, problems, missing parts? Before returning to your retailer, call our customer service department at 877-447-4768 8:30 a.m. – 4:30 pm CST, Monday – Friday or email us at customerservice@ghpgroupinc.com

⚠ WARNING: YOUR SAFETY IS IMPORTANT TO YOU AND TO OTHERS, SO PLEASE READ THESE INSTRUCTIONS BEFORE YOU OPERATE THIS HEATER.

⚠ WARNING: FIRE OR EXPLOSION HAZARD
 Failure to follow safety warnings exactly could result in serious injury, death or property damage. Be sure to read and understand the installation, operation, and service in this manual. Improper installation, adjustment, alteration, service or maintenance can cause serious injury, death or property damages.

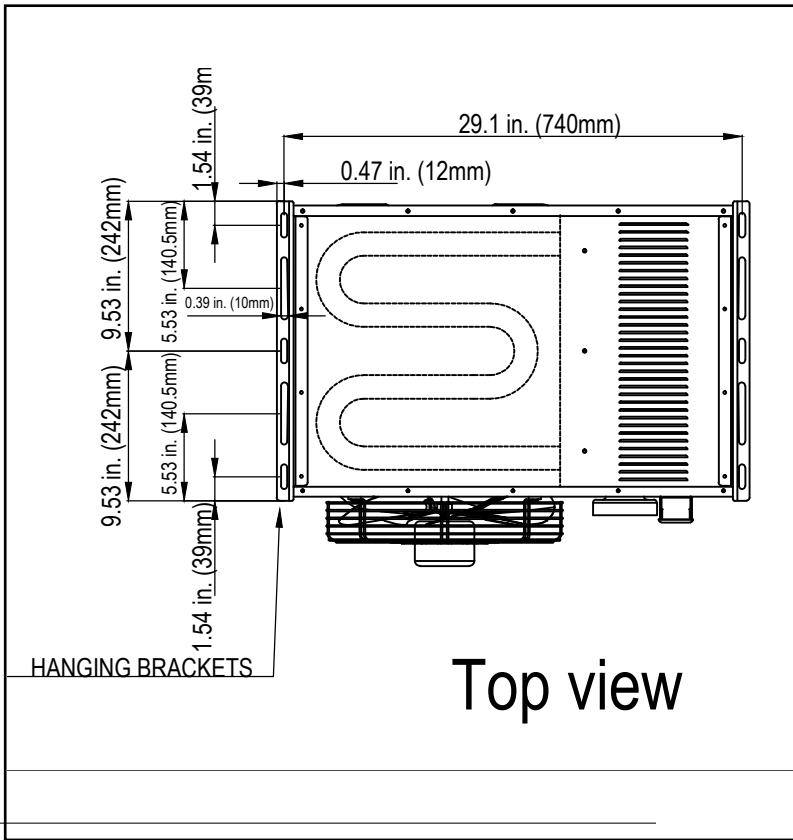
⚠ WARNING: FIRE, BURN, INHALATION, AND EXPLOSION HAZARD. KEEP SOLID COMBUSTIBLES, SUCH AS BUILDING MATERIALS, PAPER, OR CARDBOARD, A SAFE DISTANCE AWAY FROM THE HEATER. AS RECOMMENDED BY THE INSTRUCTIONS NEVER USE THE HEATER IN SPACES WHICH DO OR MAY CONTAIN VOLATILE OR AIRBORNE COMBUSTIBLES, OR PRODUCTS SUCH AS GASOLINE, SOLVENTS, PAINT THINNER, DUST PARTICLES OR UNKNOWN CHEMICALS.

	GUH80NE/LE	GUH50NE/LE
V / A / H / Phase	120v / 3A / 60Hz / 1Ø	120v / 3A max / 60Hz / 1Ø
BTU Input	80,000 Btu/hr	50,000 Btu/hr
BTU Output	64,000 Btu/hr	40,000 Btu/hr
Efficiency %	80%	80%

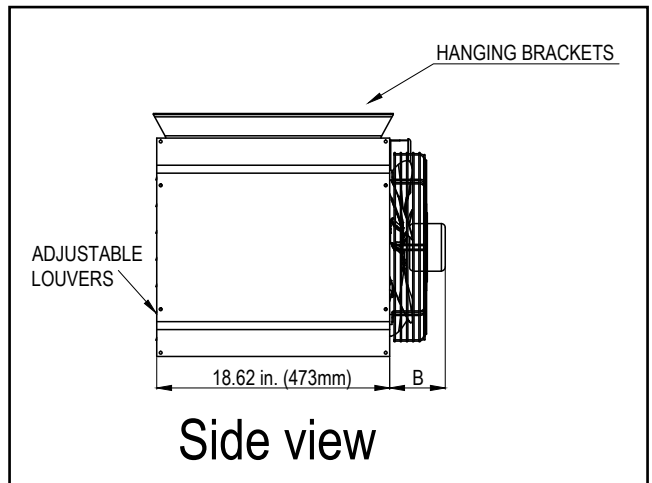
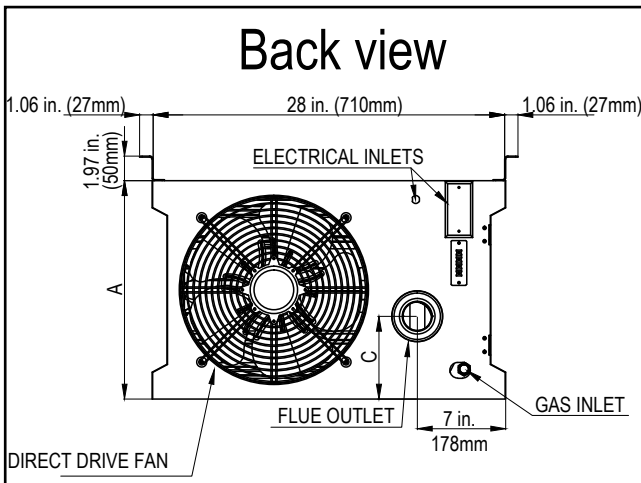
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UNIT DIMENSIONS



BACK VIEW & SIDE VIEW, VARIABLE DIMENSIONS		
	50	80
A	12" (313mm)	17" (441mm)
B	5.9" (150mm)	6.5" (135mm)
C	4" (102.5mm)	6.75" (167.5mm)



START-UP AND PERFORMANCE CHECK LIST

Job Name: _____ Job No.: _____ Date: _____
 Job Location: _____ City: _____ State/Province: _____
 Installer: _____ City: _____ State/Province: _____
 Unit Model No.: _____ Serial No.: _____ Service Technician: _____
 Electrical Connections Tight? _____ Flue Connections Tight? _____
 Supply Voltage _____ Fan Timer Operation Checked? _____
 Gas Piping Connections Tight & Leak-Tested? _____ THERMOSTAT Calibrated? _____
 Motor Amps _____ Heat Anticipator Properly Set? _____
 BTU/hrinput _____ Level? _____
 Line Pressure _____
 Manifold Pressure W.C. _____

SHIPPING

The heater is completely assembled. Installation instructions, two mounting brackets (shipped loose), and a flue transition are included. Check the unit for shipping damage. The receiving party should contact the last carrier immediately if any shipping damage is found.

REQUIREMENTS - CSA IN THE USA

Installation of gas unit heaters must conform with local building codes or, in the absence of local codes, with the current National Fuel Gas Code ANSI Z223.1.

Installation in aircraft hangers must be in accordance with the current Standard for Aircraft Hangers ANSI/NFPA No. 409.

Installation in parking structures must be in accordance with the current Standard for Parking Structures ANSI/NFPA No. 88A.

Installation in repair garages must be in accordance with the current Standard for Repair Garages ANSI/NFPA No. 88B.

These units are approved for residential applications. For installation in a residential garage these units must be installed so that the bottom of the heater is located no less than 8 feet (2.438m) above floor. Heater must be located or protected to avoid physical damage by vehicles. Refer to the National Fuel Gas Code, ANSI Z223.1, current edition.

Authorities having jurisdiction should be consulted before NFPA installation. Air for combustion and ventilation must conform to the methods outlined in ANSI Z223.1, section 5.3, Air for Combustion and Ventilation, or applicable provisions of local building codes. The National Fuel Gas Code is available from:

American National Standard Institute Inc.
11 West 42nd Street
New York, NY 10036

These units are CSA International design certified. These unit heaters are certified for clearances to combustible material as listed in table 1 and on unit rating plate. Accessibility and service clearances must be observed in addition to fire protection clearances.

All electrical wiring and ground for unit must be in accordance with the regulations of the current National Electric Code ANSI/No. 70.

The National Electric Code is available from:

National Fire Protection Association
1 Batterymarch Park
PO Box 9101
Quincy, MA 02269-9101

**TABLE 1
UNIT CLEARANCES**

Top		Sides		Front/Access Panel	
in	mm	in	mm	in	mm
2	50.8	1	25.4	18	457.2
Bottom		Rear			
in	mm	in	mm		
0	0	18	457.2		

REQUIREMENTS - CSA IN CANADA

The instructions are intended only as a general guide and do not supersede local codes in any way. Authorities having jurisdiction should be consulted before installation. The installation must conform with local building codes or in the absence of local codes, with the current CSA B149.1, Natural Gas and Propane Installation Code. All electrical wiring and grounding for the unit must also comply with the Canadian Electrical Code CSA C22.1, current edition.

These heaters are CSA International certified for the clearances to combustible material listed on the rating plate and table 1. Provide adequate clearance around air openings into the combustion chamber, clearances from combustible material, and provisions for accessibility and for combustion and ventilation air supply. Provision shall be made for service accessibility to the heater. Note that fire protection clearances may be exceeded to provide additional space for service and accessibility.

GARAGE INSTALLATIONS

Installation in parking structures must be in accordance with the current Standard for Parking Structures ANSI/NFPA No. 88A.

Installation in repair garages must be in accordance with the current Standard for Repair Garages ANSI/NFPA No. 88B.

1. In a storage area, clearance from heaters to combustible materials must be such that the material shall not attain a temperature above 160°F / 71°C by continuous operation of the unit.
2. Eight foot / 2.44m minimum clearance from the floor to the bottom of the heater must be maintained. Refer to the CSA B149.1, Natural Gas and Propane Installation Code.

AIRCRAFT HANGAR INSTALLATIONS

Installation of gas unit heaters must conform with local building codes or, in the absence of local codes, with the current National Fuel Gas Code ANSI Z223.1.

1. In an area where aircraft are housed or serviced, 10' / 3.05m minimum clearance from highest surface of aircraft to bottom of the heater must be maintained.
2. In other areas, 8' / 2.44m minimum clearance from the floor to bottom of heater must be maintained.
3. Heaters should be located so as to be protected from damage from aircraft or other appliances needed for servicing of aircraft. Refer to requirements of the enforcing authorities.

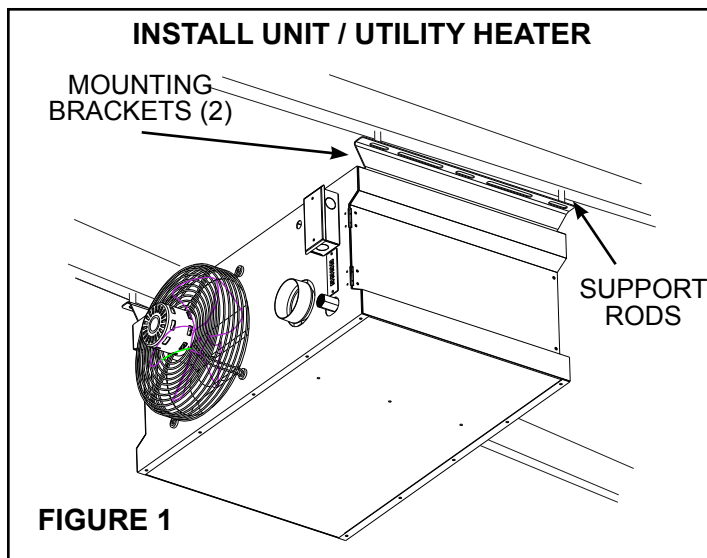
These units are certified for residential applications. For installation in a residential garage, these units must be installed so that burners and ignition source are located no less than 8 feet (2.44m) above floor. Heater must be located or protected to avoid physical damage by vehicles. Refer to CSA B149.1, Natural Gas and Propane Installation Code current edition.

IN CANADA: In a confined area, the heater must be installed in accordance with the CSA B149.1, Natural Gas and Propane Installation Code. Be sure to check with local codes and ordinances for additional requirements.

UNIT HEATER INSTALLATION

Unit is shipped ready for installation. Unit may be installed as shown in figure 1 depending on desired location as governed by clearances, vent connection, air direction, gas supply, electrical supply and service accessibility. The appliance shall not be installed downstream from evaporative coolers, air washers, or cooling units of refrigerating systems.

1. Choose location for mounting brackets.
2. Remove and retain three screws along top edge of front of unit.
3. Align screw holes on mounting bracket with holes along top edge (either upright or inverted) of unit. Secure one mounting bracket to front of unit with retained screws. Secure other mounting bracket to back of unit with screws retained on the back of unit.
3. To support unit, secure mounting bracket to ceiling joist or truss. Unit may also hang on rods as shown in figure 1.



COMBUSTION & VENTILATION AIR

Adequate facilities for supplying air for combustion and ventilation must be provided in accordance with the latest edition of section 5.3, Air for Combustion and Ventilation, of the National Fuel Gas Code, ANSI Z223.1, in the U.S.A., CSA B149.1 Natural Gas and Propane Installation Code, or applicable provisions of local building codes.

All gas fired appliances require air to be used for the combustion process. In many buildings today, there is a negative indoor air pressure caused by exhaust fans, etc. If sufficient quantities of combustion air are not available, the heater or another appliance will operate in an inefficient manner, resulting in incomplete combustion which can result in the production of excessive carbon monoxide.

CAUTION: Insufficient combustion air can cause headaches, nausea, dizziness, asphyxiation or death

If indoor air is to be used for combustion, it must be free of the following substances or the life of the heat exchanger will be adversely affected: chlorine, carbon tetrachloride, cleaning solvent, halogen refrigerants, acids, cements and glues, printing inks, fluorides, paint removers, varnishes, or any other corrosives.

VENTING

A - GENERAL RECOMMENDATIONS AND REQUIREMENTS

NOTE: The vent is a passageway, vertical or nearly so, used to convey flue gases from an appliance, or its vent connector, to the outside atmosphere. The vent connector is the pipe or duct that connects a fuel-gas burning appliance to a vent or chimney.

Unit heaters must be vented in compliance with all local codes or requirements of the local utility, the current standards of the (American) National Fuel Gas Code, ANSI Z223.1 or (Canada) CSA B149.1 Natural Gas and Propane Installation Code, and the following instructions.

Do not intermix different vent system parts from different manufacturers in the same venting system.

Vent connectors serving Category I and Category II Appliances shall not be connected into any portion of mechanical draft systems operating under positive pressure.

A metal stamped/extruded transition is supplied with this certified unit. It must not be modified or altered and must be installed on the outlet of the induced draft blower assembly prior to the installation of the vent or vent connector. Failure to comply with this requirement will void the certification of the unit by the approval agencies.

The heater and the venting system shall be inspected once a year by a qualified service agency.

B - VERTICAL VENTS USING METAL VENT PIPE - COMMERCIAL & RESIDENTIAL INSTALLATIONS

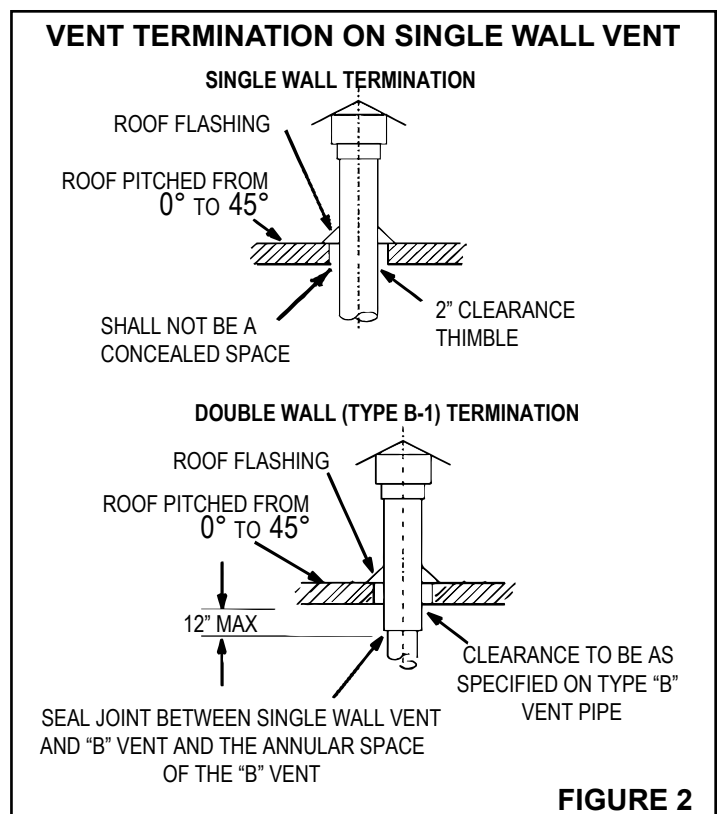
GHP compact unit heaters are listed as Category I appliances for vertical vent installations.

1. US: GHP unit heaters are to be used with NFPA- or ANSI-approved chimneys, U.L. listed type B-1 gas vents, single wall metal pipe, or listed chimney lining system for gas venting where applicable, as well as the modifications and limitations listed in figure 2. Seal single wall vent material according to the section A - General Recommendations and Requirements.

Canada: Listed Category I Unit Heaters are to be used with Type B gas vent. Minimum clearances of gas vent from combustible material: 1 inch (25 mm)

2. The vent connector shall be 3" (76.2 mm) diameter on the 50 unit and 4" (102 mm) diameter on the 80 unit. In all cases, a flue transition piece (supplied) is required to fit over the outlet of the induced draft assembly on the appliance.

3. Keep the vent connector runs as short as possible with a minimum number of elbows. Refer to the (American) National Fuel Gas Code ANSI Z223.1 or (Canada) CSA B149.1 Natural Gas and Propane Installation Code for maximum vent and vent connector lengths. Horizontal run of the vent connector from the induced draft blower to the chimney/vent cannot exceed the values in **table 2**.
NOTE: All joints shall be secured with at least two corrosion resistant screws. All joints must be checked for gas tightness after installation.
4. When the length of a single wall vent, including elbows, exceeds 5 feet (1.5m), the vent shall be insulated along its entire length with a minimum of 1/2" thick foil faced fiberglass 1-1/2# density insulation. If a single wall vent is used in an unheated area it shall be insulated. Failure to do so will result in condensation of flue gases.
5. The unit may be vented vertically as a single appliance or as a common vent with other gas-fired appliances. In common venting situations, vent connectors for other appliances must maintain a 4" (100mm) vertical separation between the vent connectors. Refer to common venting tables in the (American) National Fuel Gas Code ANSI Z223.1 or (Canada) CSA B149.1 Natural Gas and Propane Installation Code for proper vent size.
6. Clearance to combustible material is 6" (152mm) for single wall vent material except where a listed clearance thimble is used. Clearance to combustible material for type B-1 vent or factory-built chimney is per manufacturer's instructions.
7. The vent connector shall be supported without any dips or sags. Vertical vents shall be supported in accordance with their listing and manufacturers' instructions. All horizontal vent connector runs shall have a slope up to the vertical vent of at least 1/4" per foot (1mm per 50mm).
8. All vertical type B-1 vents, single wall vents, or listed chimney lining system must be terminated with a listed vent cap or listed roof assembly.
9. The vent must extend at least 3' (1m) above the highest point where it passes through a roof of a building and at least 2' (0.6m) higher than any part of a building within a horizontal distance of 10' (3.05m) unless otherwise specified by the (American) National Fuel Gas Code, ANSI Z223.1 or (Canada) CAN/CGA-B149 Installation Code. The vent must extend at least 5' (1.6m) above the highest connected equipment flue collar.



C - HORIZONTAL VENTING - GENERAL

Due to changes to Z83.8/CSA 2.6, the use of single wall B-Vent is no longer permitted as an acceptable material when venting horizontally, this change covers both residential and commercial installations. All horizontally vented units manufactured after July of 2011 must be vented as a Category III Unit/Utility Heater in compliance with UL 1738 & ULS636. Common venting is not allowed when horizontally venting the unit heater. The minimum horizontal vent length is 3 feet (914mm).

1. If possible, do not terminate the horizontal vent through a wall that is exposed to prevailing wind. Exposure to excessive winds can affect unit performance.
2. Vent termination must be free from obstructions and at least 12" (306mm) above grade level and maximum snow height.
3. Do not terminate vent directly below roof eaves or above a walkway, or any other area where condensate dripping may be troublesome and may cause some staining. Avoid windows where steam may cause fogging or ice buildup.
4. When horizontally vented, minimum clearance for termination from any door, window, gravity air inlet, gas or electric meter, regulators, and relief equipment is 4 ft. (1.2m) for U.S. installations. Refer to NFPA 54/ANSI Z223.1 in the U.S.A. and CSA B149.1 Natural Gas and Propane Installation Code in Canada or with authorities having local jurisdiction. In Canada, vent termination must have a minimum 6 ft. (1.8 m) horizontal clearance from gas and electric meters and relief devices as specified in the Canadian B149.1, Natural Gas and Propane Installation Code.

TABLE 2 MAXIMUM HORIZONTAL VENT LENGTHS		
No. of Elbows	Feet	m
1	25	7.6
2	20	6.1
3	15	4.6
4	10	3.0
5	5	1.5
Maximum length of vent connector not to exceed 30 ft. (9.1m)		

5. Vent termination must be a minimum of 4' (1.2m) below or 4' (1.2m) horizontally from any soffit vent or under-eave vent.
6. Vent must be a minimum of 6' from an inside corner formed by two exterior walls. If possible, leave a 10' clearance.
7. Vent termination must be a minimum of 10' (3m) from any forced air inlet (includes fresh air inlet for other appliances, such as a dryer).
8. When termination is routed through an exterior combustible wall the vent must be supported using a listed clearance thimble. Seal the connection between the single wall and double wall pipes and the annular space of the double wall pipe as shown in figure 2. Inside edge of vent termination tee must be at least 18 inches from outside wall as shown in figure 3.
9. For horizontal venting, the vent pipe shall be supported with hangers no more than 3ft. (1m) apart to prevent movement after installation.

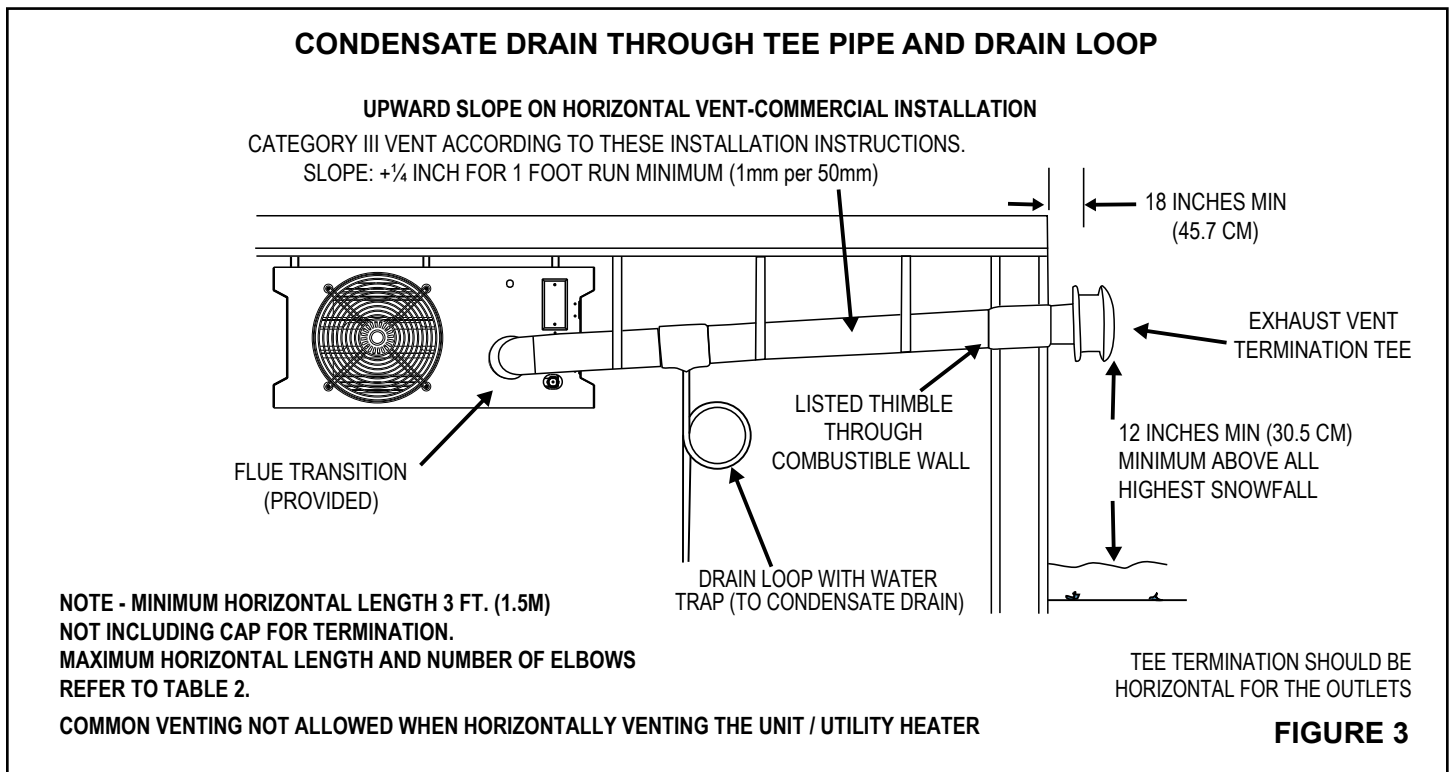
D - HORIZONTAL VENTING - COMMERCIAL

1. Horizontal commercial installations are for buildings which are not attached to living spaces. The vent may be stainless steel sealed single walled cat III vent material and must be installed according to the sections
 - A - General Recommendations and Requirements, &
 - C - Horizontal Venting General, and
 - D - Horizontal Venting - Commercial.
 Refer to figure 3.
2. The vent pipe diameter for horizontal commercial installation shall be 3" (76.2 mm) for the 50 unit and 4" (101.6 mm) for the 80 unit. A transition piece has been supplied and is already attached to your heater.

3. Select a wall termination point that will maintain 1/4" rise per foot slope of horizontal run of vent pipe.
4. For upward sloped vent a condensate tee and drain must be installed within the first 5' (1.5m) from the unit heater to protect the appliance. If a flexible condensate drain line is used, the drain line must include a loop entering the structure. If the unit is shut down for an extended period of time and will be exposed to sub-freezing temperatures, the condensate may freeze.

E - HORIZONTAL VENTING - RESIDENTIAL

1. For horizontal residential installations these units are certified as Category III appliances. Venting A - General Recommendations and Requirements and C - Horizontal Venting General and E - Horizontal Venting - Residential. Refer to figure 5.
2. The vent pipe diameter for horizontal installation shall be 3" (76.2 mm) for the 50 unit and 4" (101.6 mm) for the 80 unit. A transition piece has been supplied and is already attached to your heater.
3. The maximum vent length is 25' (7.6m) plus one 90-degree elbow. The minimum length is 3'(1m).
4. The vent must maintain a 1/4" rise per foot of slope (1mm per 50mm). upwards toward the termination.



HORIZONTAL VENTING - RESIDENTIAL INSTALLATION

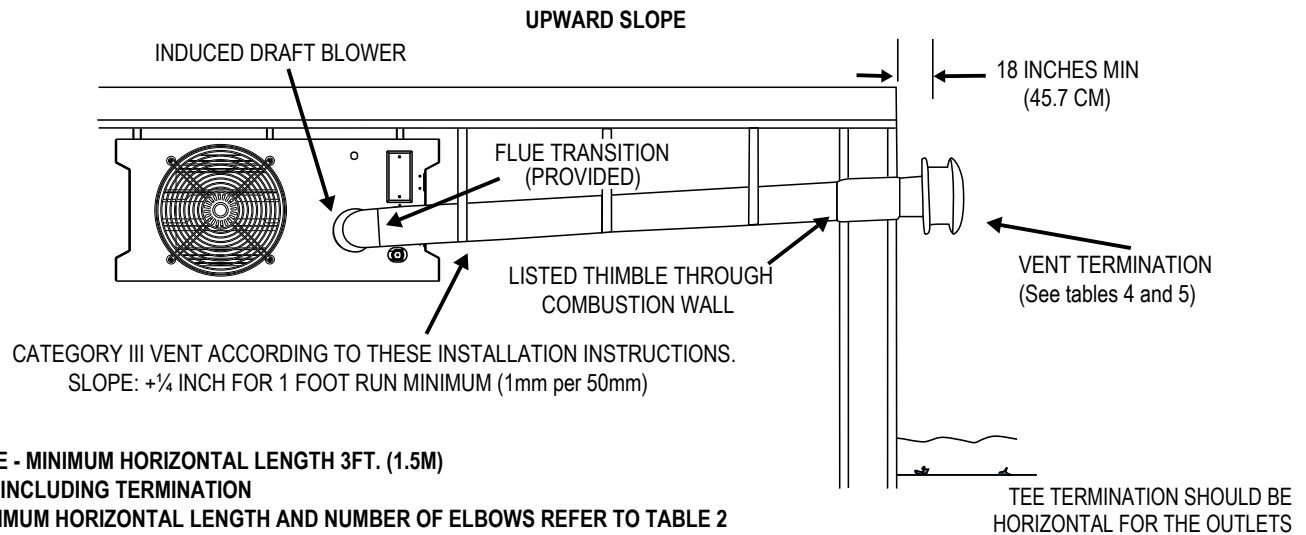


FIGURE 5

F - VENTING USING A MASONRY CHIMNEY

The following additional requirements apply when a lined masonry chimney is being used to vent the compact unit / utility heater.

1. Masonry chimneys used to vent Category I units heaters must be either tile-lined or lined with a listed metal lining system or dedicated gas vent. Unlined masonry chimneys are prohibited. A category I appliance must never be connected to a chimney that is servicing a solid fuel appliance. If a fireplace chimney flue is used to vent this appliance, the fireplace opening must be permanently sealed.
2. A fan assisted unit heater may be commonly vented into an existing lined masonry chimney provided:
 - The chimney is currently serving at least one draft-hood equipped appliance.
 - The vent connector and chimney are sized in accordance with venting tables in the (American) National Fuel Gas Code ANSI Z223.1 or (Canada) CSA B149.1 Natural Gas and Propane Installation Code.

IMPORTANT Single appliance venting of a fan assisted unit heater into a tile lined masonry chimney (interior or outside wall) is prohibited. The chimney must first be lined with either type B-1 vent or an insulated single wall flexible vent lining system, sized in accordance with venting tables in the (American) National Fuel Gas Code ANSI Z223.1 or (Canada) CSA B149.1 Natural Gas and Propane Installation Code.

3. A type B-1 vent or masonry chimney liner shall terminate above the roof surface with a listed cap or a listed roof assembly in accordance with the terms of their respective listings and the vent manufacturer's instructions.
4. Do not install a manual damper, barometric draft regulator, or flue restrictor between the unit heater and the chimney.
5. If type B-1 double-wall vent is used inside a chimney, no other appliance can be vented into the chimney. Outer wall of type B-1 vent pipe must not be exposed to flue products.

6. Insulation for the flexible vent pipe must be an encapsulated fiberglass sleeve recommended by the flexible vent pipe manufacturer.
7. The space between liner and chimney wall should NOT be insulated with puffed mica or any other loose granular insulating material.
8. If type B-1 vent or an insulated flexible vent pipe cannot be used as liners, the chimney must be rebuilt to accommodate one of these methods or some alternate approved method must be found to vent the appliance. When inspection reveals that an existing chimney is not safe for the intended purpose, it shall be rebuilt to conform to nationally recognized standards, lined or relined with suitable materials or replaced with a gas vent or chimney suitable for venting unit heaters. The chimney passageway must be checked periodically to ensure that it is clear and free of obstructions.

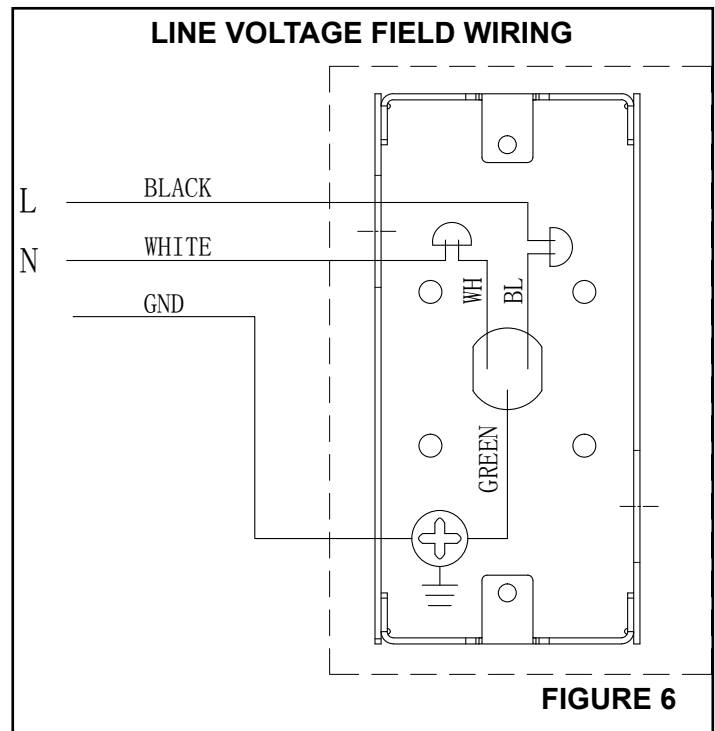
G - REMOVAL OF UNIT FROM COMMON VENT

In the event that an existing unit heater is removed from a venting system commonly run with separate gas appliances, the venting system is likely to be too large to properly vent the remaining attached appliances. The following test should be conducted while each appliance is in operation and the other appliances are not in operation, yet remain connected to the common venting system. If the venting system has been installed improperly, the system must be corrected.

1. Seal any unused openings in the common 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. Verify that there is no blockage or restriction, leakage, corrosion and/or other deficiencies that could cause an unsafe condition.
3. If practical close all building doors and windows and

all doors between the space in which the appliances remaining connected to the common venting system are located and other spaces of the building. Turn on clothes dryers and any appliances not connected to the common venting system. Turn on any exhaust fans, such as range hoods and bathroom exhausts, so they will operate at maximum speed. Do not operate a summer exhaust fan. Close fireplace dampers.

4. Follow the lighting instructions. Place the appliance being inspected in operation. Adjust thermostat so appliance will operate continuously.
5. Test a draft hood equipped utility heater for spillage at the draft hood relief opening after 5 minutes of main burner operation. Use the flame of a match or candle.
6. After it has been determined that each appliance remaining connected to the common venting system properly vents when tested as outlined above, return doors, windows, exhaust fans, fireplace dampers and any other gas-burning appliance to their previous condition of use.
7. If improper venting is observed during any of the above tests, the common venting system must be corrected. The common venting system should be re-sized to approach the minimum size as determined by using the appropriate tables.



ELECTRICAL CONNECTIONS

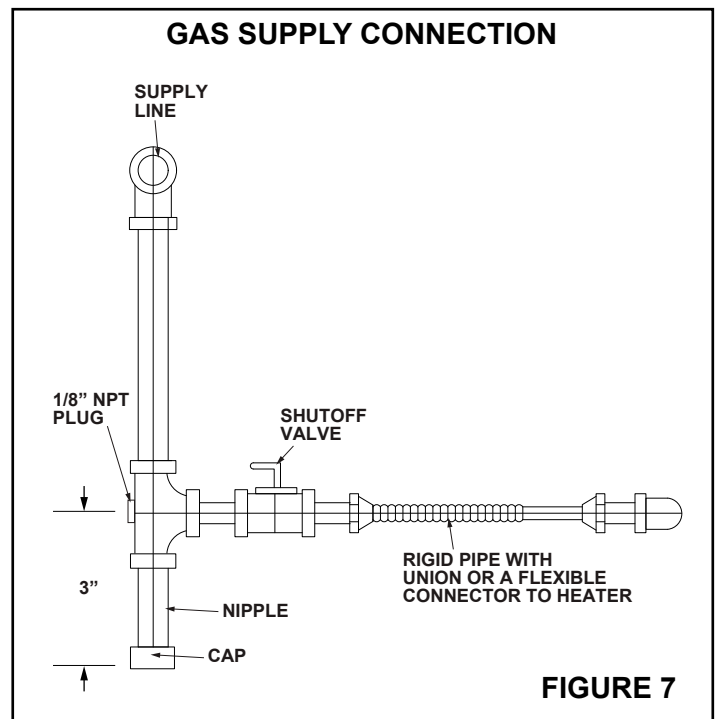
NOTE: The GHP series unit/utility heaters use a direct spark ignition system. There is no pilot necessary as the spark lights the main burner as the gas valve is turned on. The direct spark ignition control board emits radio noise during burner ignition. The level of energy may be enough to disturb a logic circuit in a microprocessor controlled thermostat. It is recommended that an isolation relay be used when connecting the unit heater to a microprocessor controlled thermostat. Select circuit protection and wire size according to the unit rating plate. Install a separate disconnect switch (protected by either fuse or circuit breaker) near the unit so that power can be turned off for servicing. Remove electrical junction box cover and connect wiring through knockout on the junction box located on the side of the heater. Refer to heater wiring diagram for connection information. Use 18 gauge wire or larger for line power connections. Make sure to connect line power to wires located in the external electrical junction box behind junction box cover. **DO NOT CONNECT LINE POWER TO THERMOSTAT TERMINAL STRIP ON OUTSIDE OF HEATER.**

Electrically ground the unit in accordance with local codes or in the absence of local codes, in accordance with the current National Electrical Code (ANSI/NFPA No. 70) in the USA, and in Canada with the current Canadian Electrical Code, Part 1 CSA C22.1

NOTE: Un-insulated ground wire must be wrapped in electrical tape to avoid damage to the electrical system.

Make line voltage connections as shown in figure 6. Connect field wiring as shown on wiring diagram on unit. Also, refer to typical diagram in this manual.

To use the blower for air circulation only, your thermostat must have a "fan only" or fan selection setting. In case your thermostat has this option, an additional wire should be run to the "G" terminal on the thermostat connection block. See wiring schematic on page 13.



NOTE: The unit heater is compatible with most programmable and WiFi thermostats.

⚠ WARNING: Electric shock hazard. Can cause injury or death. Do not use this heater if any part has been under water. Immediately call a qualified service technician to inspect the furnace and to replace any part of the control system and any gas control which has been under water.

⚠ WARNING: Danger of explosion. Can cause injury or product or property damage. If overheating occurs or if gas supply fails to shut off, shut off the manual gas valve to the appliance before shutting off electrical supply.

⚠ WARNING: Electric shock hazard. Can cause injury or death. Before attempting to perform any service or maintenance, turn the electrical power to unit OFF at disconnect switch(es). Unit may have multiple power supplies.

⚠ WARNING: Danger of explosion and fire. Can cause injury or product or property damage. You must follow these instructions exactly.

GAS CONNECTIONS

When connecting gas supply lines, the length of the piping run from the meter to the heater must be considered in determining the pipe size to avoid excessive pressure drop. A line pressure of 7" WC (178mm WC) for natural gas should be maintained when sizing the piping.

A line pressure of 13" WC (330mm WC) should be maintained for propane (LP) gas. NOTE: Compounds used on threaded joints or gas piping must be resistant to the actions of Liquefied petroleum gasses.

⚠ WARNING: TO PREVENT HEATER DAMAGE. WHEN USING A PROPANE TANK TO SUPPLY HEATER, A MINIMUM 11"W.C. LOW PRESSURE REGULATOR TO A MAXIMUM 14"W.C. LOW PRESSURE REGULATOR IS REQUIRED. THIS REGULATOR MUST BE INSTALLED BETWEEN THE TANK AND THE HEATER. Regulator not supplied with heater.

For correct sizing of piping, refer to the (American) National Fuel Gas Code ANSI Z223.1, or (Canada) CSA B149.1, National Gas and Propane Installation Code or consult the utility having jurisdiction.

A drip leg should be installed in the vertical pipe run to the unit. In some localities, codes may require that a manual main shutoff valve and union (furnished by installer) be installed external to the unit. Union must be of the ground joint type. A drip leg should be readily accessible to permit cleaning and emptying. See figure 7.

NOTE: Leave a min of 4" clearance to the electrical connections box on the back of the heater to allow for access.

A 1/8" NPT plugged tap shall be installed immediately upstream of the gas supply connection to the heater. The purpose of this is to be able to check for proper gas pressure entering the heater.

LEAK CHECK

CAUTION DO NOT use matches, candles, flame or other sources of ignition to check for gas leaks.

After gas piping is completed, carefully check all piping connections, (field and factory), for gas leaks. Use a 50/50 soap solution or other preferred means.

Due to the natural heating cycles and vibration of this unit it is recommended, as part of its annual maintenance, to check these connections for proper tightness and leak-check with a soap solution or other preferred means prior to putting into service.

IMPORTANT The heater and its individual shut off 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 (3.45kPa).

The appliance must be isolated from the gas supply piping system by closing its individual manual gas shutoff valve during any pressure testing of the gas supply system at test pressures equal to or less than 1/2 psig (3.45kPa). See figure 8.

NOTE In case emergency shutdown is required, shut down main gas valve and disconnect main power to unit. These devices should be properly labeled by the installer.

START-UP OPERATION

UNIT START-UP

FOR YOUR SAFETY READ BEFORE LIGHTING

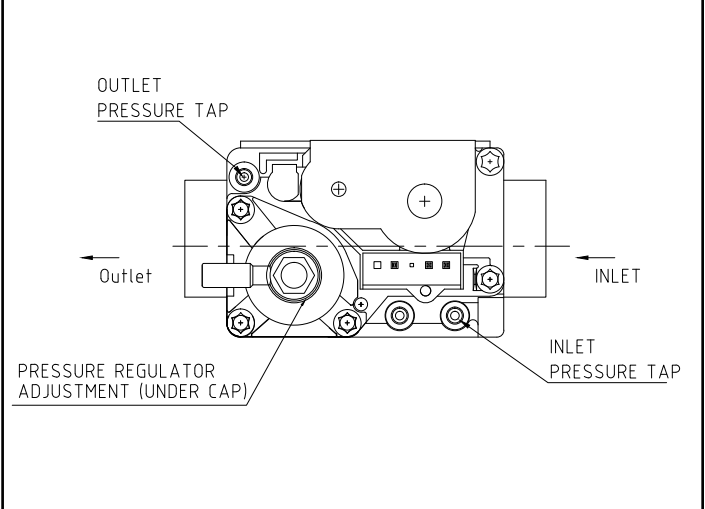
BEFORE LIGHTING smell all around the appliance area for gas. Be sure to smell next to the floor because some gas is heavier than air and will settle on the floor.

GHP 50/80 unit heaters are equipped with an automatic spark ignition system. There is no pilot. In case of a safety shutdown, move thermostat switch to OFF, then return the thermostat switch to HEAT position.

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.

GAS VALVE OPERATION FOR ERCO VALVE

FIGURE 9



1. STOP! Make sure you have read and understand all of the safety information regarding the operation of this gas appliance. Any and all service should be performed by a licensed installer
2. Set the thermostat to lowest setting.
3. Turn off all electrical power to appliance.
4. This appliance is equipped with an ignition device which automatically lights burner. DO NOT attempt to light the burners manually.
5. Wait five minutes to clear out any gas. If you then smell gas, STOP! Immediately call your gas supplier from a phone remote from the building. Follow the gas supplier's instructions. If you do not smell gas go to next step.
6. Turn on electrical power to unit.
7. Set the thermostat to desired setting.
8. The combustion air blower will start. The burners will light within 30 seconds.
9. If unit does not light first time (gas line not fully purged) it will attempt up to two more ignitions before locking out.
10. If lockout occurs, repeat steps 1 through 9.
11. If appliance still will not operate, follow the instructions "TO TURN OFF GAS TO UNIT" and call your service technician or gas supplier.

TO TURN OFF GAS TO UNIT

1. Set thermostat to lowest level.
2. Turn off all electrical power to unit if service is to be performed.

HEATING SEQUENCE OF OPERATION

1. When the thermostat calls for heat, the combustion air blower starts immediately.
2. Combustion air pressure switch proves blower operation before allowing power to the ignition controller. This switch is factory set and no adjustment is necessary.
3. After pre-purge of approximately 30 seconds, the spark ignition is energized and the solenoid valve opens in the gas valve.
4. The spark then ignites the gas, the ignition sensor proves the flame and the combustion process continues.
5. In the event that the flame is not detected after the first 10-second trial for ignition, the controller will repeat steps 3 and 4 an additional two times before locking out the gas valve. Refer to ignition control board table 3. Ignition control will then automatically repeat steps 3, 4, and 5 after 60 minutes.
To interrupt the 60-minute lockout period, move thermostat from "HEAT" to "OFF" then back to "HEAT." Heating sequence then restarts at step 1.
6. The burners shall light without noticeable crossover delay. There shall be no flame lifting from the burner heads, flashback or burning within the burner. The flames shall be predominantly blue in color and shall be approximately centered in the tubes with no apparent impingement taking place.

7. The ignition control will energize the fan approximately 45 seconds after ignition is established.
8. After the thermostat demand is satisfied the gas valve is closed; 5 seconds after the demand is satisfied the combustion air blower is shut off.
9. The control center shall shut off the system fan approximately 150 seconds after the gas valve is de-energized.

IGNITION CONTROL LED

The ignition control board contains a green LED which indicates the following:

TABLE 3 - DIAGNOSTIC FAULT CODES

LED INDICATION	FAULT MODE
Slow Flash	Normal Operation - No call for heat.
Fast Flash	Normal Operation - Call for heat
2 Flashes	Ignition Lockout - No flame detected
3 Flashes	Airflow Fault - Pressure switch open or closed
4 Flashes	High limit or rollout switch open
5 Flashes	Flame Sense Error - Gas valve not energized
Steady On	Internal control failure

LIMIT CONTROL

The limit control switch is factory set and not field adjustable.

LOUVER VANE ADJUSTMENTS

Rotate louver vanes to direct airflow upward, downward, straight, or any combination of these directions.

COMBUSTION AIR PRESSURE SWITCH

This pressure switch checks for proper combustion air blower operation before allowing an ignition trial. The switch is factory set and no field adjustment is necessary. If a 3 flash LED occurs Please make sure your venting is not blocked. Next, remove the end of the pressure switch tubing from the EXHAUST FAN hose barb. There might be an obstruction in the hose barb opening clear out the opening with a thin object that will fit inside the hose barb. Push that through the length of the hose barb PLUS at least another 1/2 inch, into the exhaust fan housing. This will clear out anything stopping the vacuum from engaging the pressure switch.

FLAME ROLLOUT SWITCH

The flame rollout switch is located on the burner box top, behind the ignition control board. This normally closed switch opens on a temperature rise. Check for adequate combustion air before manually resetting switch.

HIGH ALTITUDE

Units may be fired at full input up to 2000 ft. (610m) above sea level. Above 2000 ft. (610m), manifold pressure must be adjusted on some units. Adjust pressure regulator to pressure shown in table 4 for natural gas and table 5 for LP/propane gas.

TABLE 4 NATURAL GAS MANIFOLD PRESSURES - IN. W.C. (KPA)		
GHP 50/80	ALTITUDE FT. (M)	
	0-2000 (0-610)	2000-4500 (610-1370)
GHP 50/80	3.5 (0.872 KPA)*	2.8" (0.697 KPA)
*NO ADJUSTMENT REQUIRED		

TABLE 5 LP/PROPANE GAS MANIFOLD PRESSURES - IN. W.C. (KPA)		
GHP 50/80	ALTITUDE FT. (M)	
	0-2000 (0-610)	2000-4500 (610-1370)
GHP 50/80	10"WC (2.62 KPA)*	8.5"WC (2.12 KPA)
*NO ADJUSTMENT REQUIRED		

GAS FLOW

To check for proper gas flow to the combustion chamber, determine the Btu input from the appliance rating plate. Divide this input rating by the Btu per cubic feet of available gas. Result is the required number of cubic feet per hour. Determine the flow of gas through the gas meter for two minutes and multiply by 30 to get the hourly flow of gas.

GAS PRESSURE

1. Check gas line pressure with unit firing at maximum rate. A minimum of 5.0" w.c. for natural gas or 11.0" w.c. for LP/propane gas should be maintained for proper unit operation.
2. After line pressure has been checked and adjusted, check manifold pressure. Correct manifold pressure is shown on the unit rating plate. See figure 9 for gas pressure adjustment screw location. A natural gas to LP/propane gas changeover kit is required to convert unit. Refer to installation instructions provided with changeover kit for conversion procedure.

SERVICE

CAUTION Turn off gas and electrical power to unit before performing any maintenance or service operations on this unit. Remember to follow lighting instructions when putting unit back into operation after service or maintenance.

If any of the original wire as supplied with the appliance must be replaced, it must be replaced with wiring material having a temperature rating of at least 105°C. Do not use this appliance if any part has been under water. Immediately call a qualified service technician to inspect the appliance and replace any gas control which has been under water.

BURNERS

1. Periodically examine burner flames for proper appearance during the heating season.
2. Before each heating season examine the burners for any deposits or blockage that may have occurred.
3. Clean burners as follows:
 - Turn off both electrical and gas supplies to unit.

- Disconnect gas supply piping, high tension and sensor leads. Remove gas manifold. Remove burner tray.
- Clean burners as necessary. Make sure that burner heads line up properly to ensure flame crossover. Check spark gap on electrode and adjust if required. The gap should be between 0.110 inch and 0.140 inch (2.79mm to 3.56mm). The gap may be checked with appropriately sized twist drills or feeler gauges.
- Reinstall burner tray, gas manifold, high tension and sensor leads. Reconnect gas supply piping.
- Restore electrical power and gas supply. Follow lighting instructions to light unit. Check burner flame.

FLUE PASSAGEWAY AND FLUE BOX

The flue passages and flue box should be inspected and cleaned prior to each heating season. The sequence of operation should be as follows:

1. Turn off both electrical and gas supply to unit.
2. Disconnect combustion air blower wiring.
3. Remove screws securing flue box to unit. Remove flue box. If necessary, remove blower assembly from flue box. Clean flue box with wire brush.
4. Remove turbulator retention bracket and turbulators. Clean turbulators with wire brush.
5. Remove burners as described in section "BURNERS" section.
6. Clean tubes with a wire brush.
7. Reassemble unit. The combustion air and flue box gaskets will need to be replaced during reassembly.
8. Restore electrical power and gas supply. Follow lighting instructions to light unit. Check operation of unit.

COMBUSTION AIR BLOWER

Under normal operating conditions, the combustion air blower should be checked and cleaned prior to the heating season with the power supply disconnected. Use a small brush to clean blower wheel.

ELECTRICAL

1. Check all wiring for loose connections.
2. Check for correct voltage at unit (unit operating).
3. Check amperage draw.

FLUE AND CHIMNEY

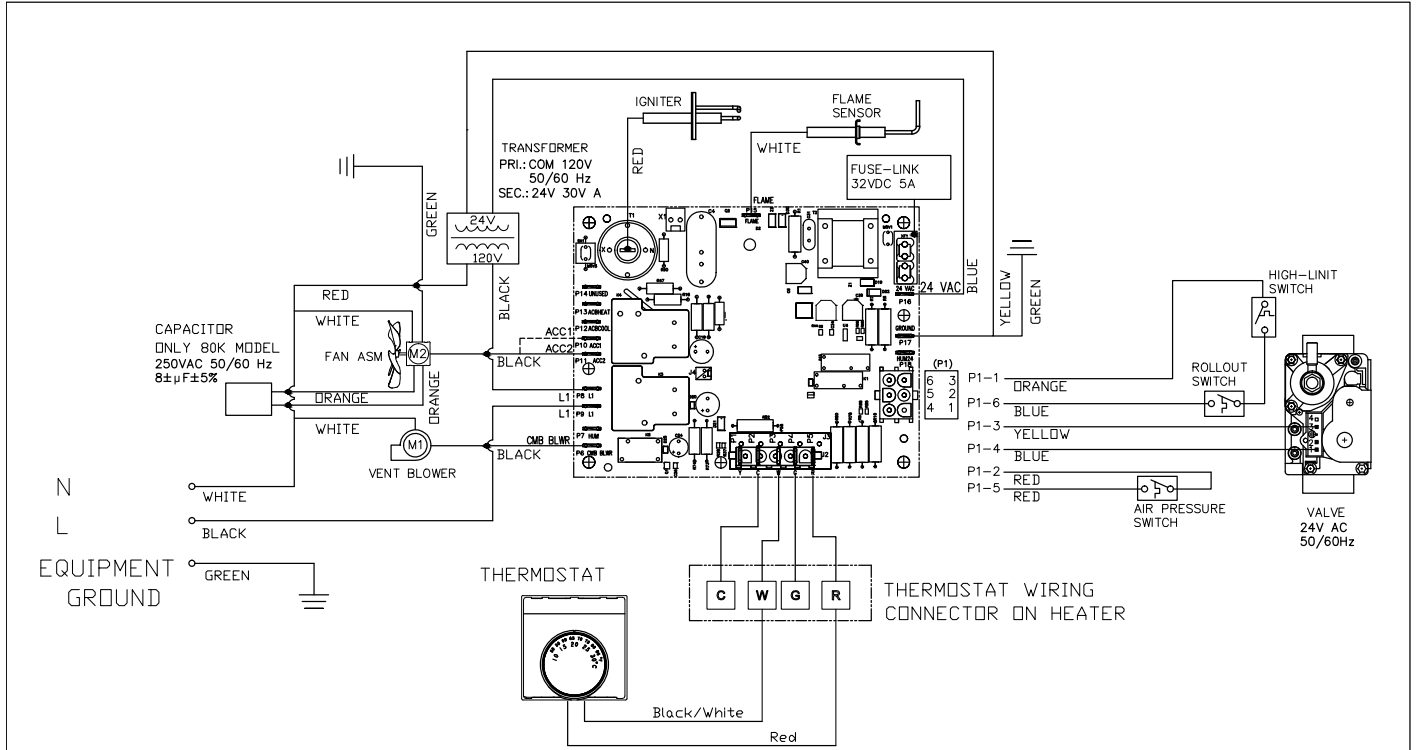
Check all vent and vent connector joints for tightness. Ensure that connections are sealed and that there are no blockages.

FAILURE TO OPERATE

If unit fails to operate check the following:

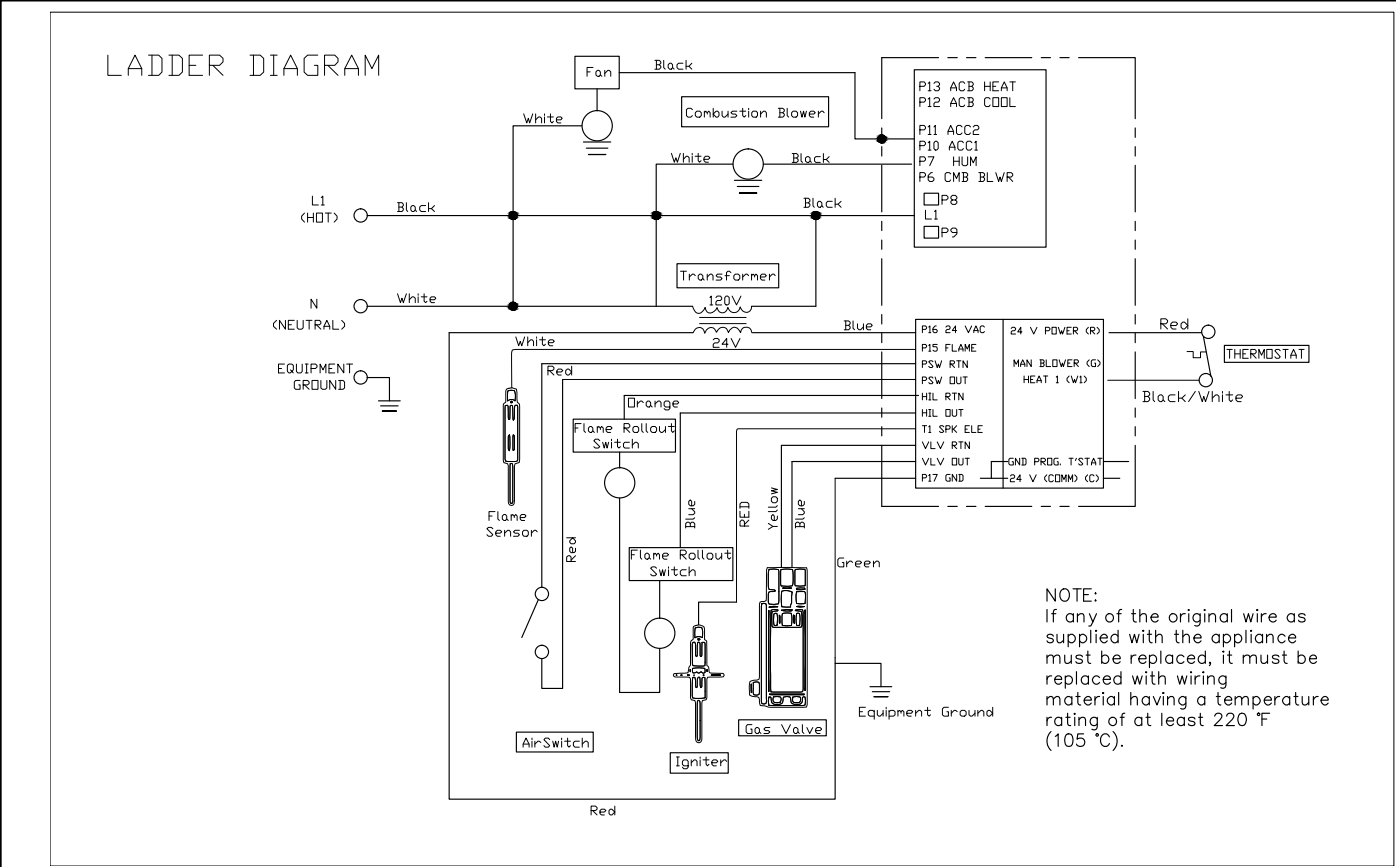
1. Is thermostat calling for heat?
2. Is main disconnect closed?
3. Is there a breaker tripped or a fuse blown?
4. Is gas turned on at meter?
5. Is manual shutoff valve open?
6. Is unit ignition system in lock out? If unit locks out again, call service technician to inspect unit.
7. Is pressure switch closed? Obstructed flue will cause unit to shut off at pressure switch. Check flue passage and outlet.

WIRING DIAGRAM



NOTE: The unit heater is compatible with most programmable and WiFi thermostats.

LADDER DIAGRAM



NOTE: If any of the original wire as supplied with the appliance must be replaced, it must be replaced with wiring material having a temperature rating of at least 220 °F (105 °C).

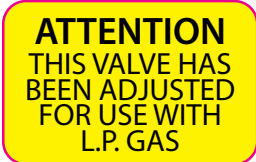
FUEL CONVERSION INSTRUCTIONS

FUEL CONVERSION Section 1: FUEL CONVERSION KITS

For Converting from Natural Gas to LP Gas

Model Number (MODELE No)	This appliance was converted on _____ (D/M/Y) to _____ Gas
Serial Number (Numero de serie)	with Kit No. _____ by _____
Manufacturer (Presseur d'Admission)	(name and address of organization making this conversion), which accepts the responsibility that this conversion has been properly made.
Rated Pressure (Pression d'Admission)	Cet appareil a été converti le _____ (jour-mois-année) pour fonctionner au gaz _____ a l'aide de la trousser n _____ par _____
Conversion Kit (Conversion de gaz)	(nom et adresse de l'organisme qui effectue la conversion), qui accepte l'entière responsabilité de la conversion.
Notes (Notes)	

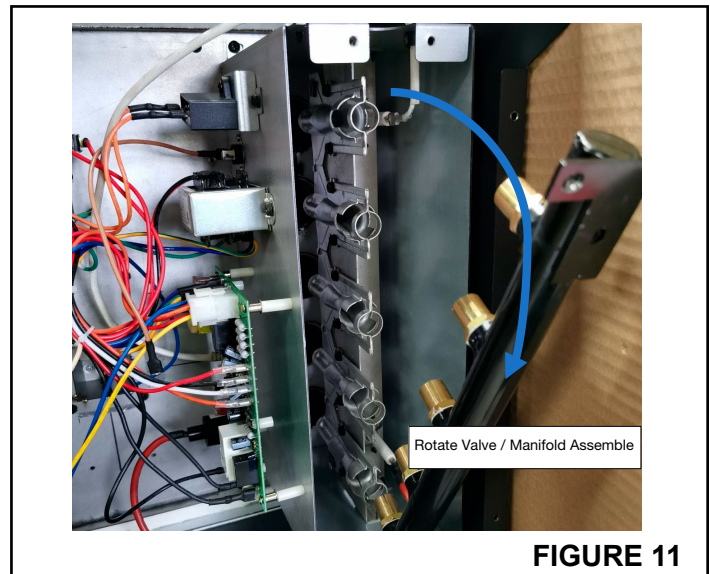
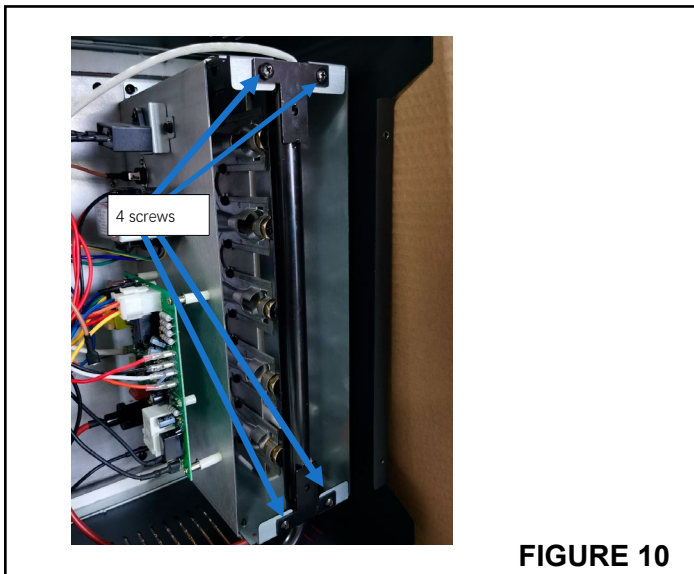
Gas Conversion Labels



Control Conversion Labels

Part Number	Description	50	80
GCLUH50/80-(210827)	Gas conversion label	1	1
CRTUH50_(210827)	Converted rating tag	1	
CRTUH80_(210827)	Converted rating tag		1
UH50K-11(LP)	LP Orifice	3	5
CLYH50/80-(210827)	Control conversion label	1	1

FUEL CONVERSION Section 2: FUEL CONVERSION INSTRUCTIONS



⚠ WARNING: Explosion Hazard

Turn off the gas supply to the heater before performing any service or maintenance.

Failure to follow these instructions will result in death, injury or property damage.

⚠ WARNING: Electrical Shock Hazard

Unplug the electrical cord from the outlet before performing any service maintenance.

Failure to follow these instructions will result in death, injury or property damage.

The electrode and sensor are not adjustable. DO NOT change location or position as part of this conversion kit.

⚠ WARNING

This conversion kit shall be installed by a qualified service agency in accordance with the manufacturer's instructions and all applicable codes and requirements of the authority having jurisdiction. If the information in these instructions is not followed exactly, a fire, explosion or production of carbon monoxide may result causing property damage, personal injury or loss of life. The qualified service agency performing this work assumes responsibility for the proper conversion of this appliance with this kit.

Step 1

CAUTION: THE GAS SUPPLY SHALL BE SHUT OFF PRIOR TO DISCONNECTING THE ELECTRICAL POWER, BEFORE PROCEEDING WITH THE CONVERSION

Step 2

Remove and retain the four screws holding the manifold on to the burner box (Figure 10). Rotate the valve/ manifold assembly, away from the burners (Figure 11). The valve/ manifold assembly holds the orifices (3 orifices on unit GUH50NE/LE, 5 orifices on unit GUH80NE/LE). This will allow access to the orifices on the manifold, and also the adjustment screw in the valve/regulator.

Step 3

Remove the adjustment screw cap from gas valve/ regulator with a 1/2" (12mm) wrench by turning the screw counterclockwise. Place conversion label supplied with the conversion kit on the valve near the adjustment screw cover opening.

Step 4

Remove and discard the orifices (3 orifices on unit GUH50NE/LE, and 5 orifices on unit GUH80NE/LE) from the manifold with using a 1¹/₁₆" open end wrench. Turn them counter-clockwise to remove. Take the new orifices from the conversion kit and before installing, confirm that the number stamped on the side of the orifice matches the number for the kit being installed. If it does not, immediately contact GHP Group, Inc. for the correct kit. If they are the correct orifices, install them in the manifold using caution not to cross thread.

Step 5

Rotate the valve/ manifold assembly back up into the burner box, making sure that all the orifices are indexed into the burners and are not caught on the locating ring on the back of each burner. Secure the manifold to the burner box with the four screws removed in step 2.

Step 6

Following the instructions in the unit heaters operations manual mount the heater and connect the gas supply (making sure to leak check all connections with soapy water).

Step 7

Using a flat bladed screwdriver, turn the screw in the outlet pressure port counterclockwise. Connect a water-filled U-tube manometer to the test port. Use a manometer because test gauges are not reliable and may give a false reading.

Step 8

Connect main electrical power supply, and turn main gas supply on.

Step 9

Turn up the thermostat to call for heat, thereby starting the ignition sequence for the heater.

Step 10

When the burners light, set the manifold gas pressure by turning the adjustment screw under the regulator adjustment cap.. Once the pressure has been adjusted, replace the adjustment screw cover.



**Decrease Pressure
Counter-Clockwise**



**Increase Pressure
Clockwise**

Refer to Table 6 for inlet pressure requirements, and set manifold pressures according to gas type and altitude (See Table 4 and Table 5).

Step 11

Turn down the thermostat and allow the heater to complete a cool down cycle. Then disconnect main electrical power, and turn the main gas supply off to appliance.

Step 12

Disconnect the manometer from appliance and fully tighten the screw in the outlet pressure port by turning it clockwise.

FUEL CONVERSION Section 3: RATE TAG CONVERSION INSTRUCTIONS

Step 13

Connect main electrical power, and turn main gas supply back on. Turn up thermostat to call for heat. When the main burners light using soapy water check all connections thoroughly for gas leaks. Allow the heater to operate for at least 5 minutes, then observe the main burner flame. A hard blue flame extending into the tube is normal. Slight yellow tipping is acceptable. There is no air adjustment to the burner.

Step 14

Remove the data tag for their respective gases. Remove label and place over the existing portion of the tag. This tag is preprinted with all the correct information for the converted heater.

Step 15

Remove the converted information tag from the kit and fill in the information. Then place this tag below the updated rating tag on the unit.

Step 16

Replace any panels and operate heater following all warnings/cautions and instructions in the operator's manual and labels.

TABLE 4 NATURAL GAS MANIFOLD PRESSURES - IN. W.C. (KPA)		
GUH50 / GUH80	ALTITUDE FT. (M)	
	0-2000 (0-610)	2000-4500 (610-1370)
GUH50 / GUH80	3.5" WC (0.872 KPA)*	2.8" WC (0.697 KPA)
*NO ADJUSTMENT REQUIRED		

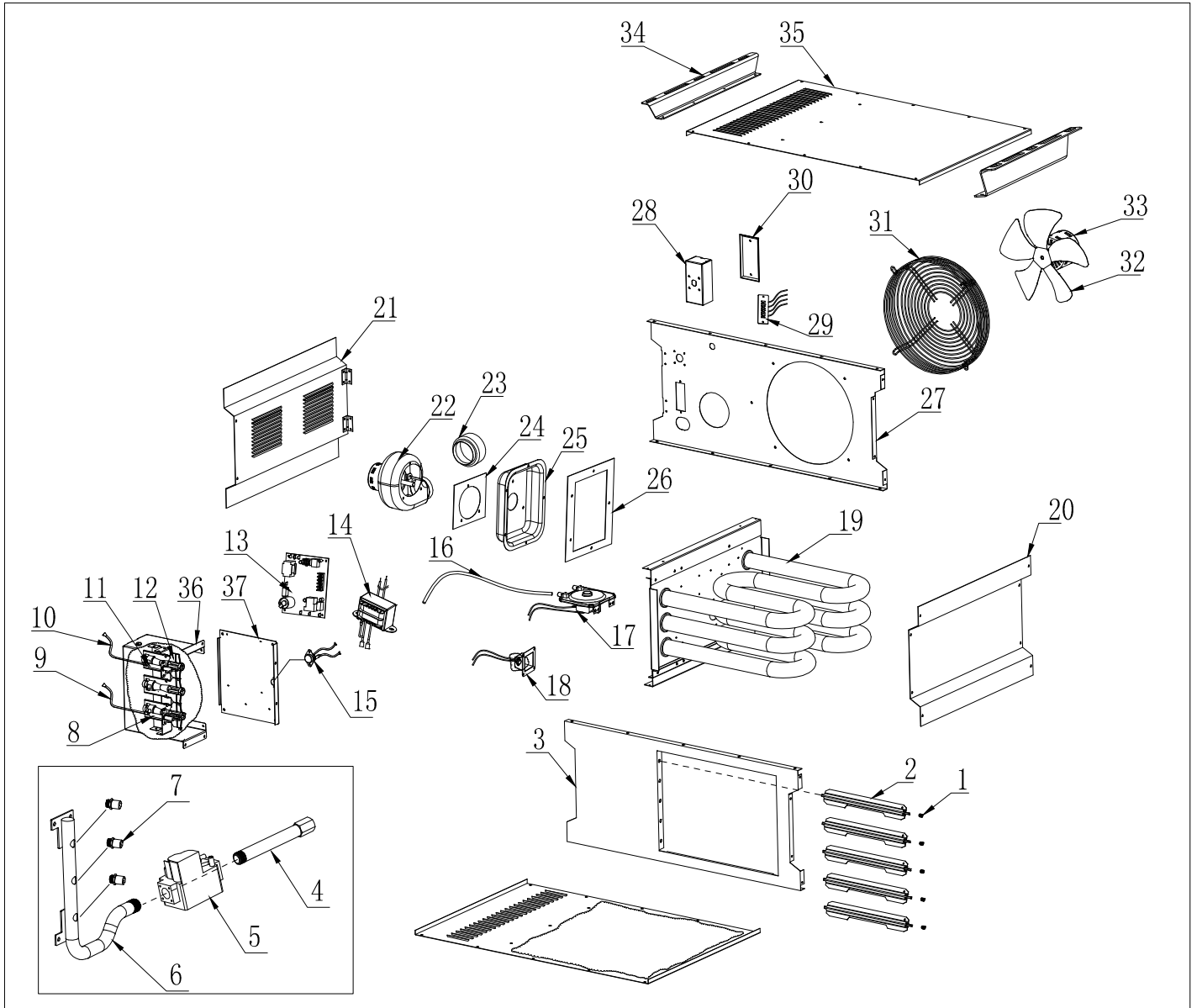
TABLE 5 LP/PROPANE GAS MANIFOLD PRESSURES - IN. W.C. (KPA)		
GUH50 / GUH80	ALTITUDE FT. (M)	
	0-2000 (0-610)	2000-4500 (610-1370)
GUH50 / GUH80	10"WC (2.62 KPA)*	8.5"WC (2.12 KPA)
*NO ADJUSTMENT REQUIRED		

TABLE 6 INLET PRESSURES	
Natural Gas	MAX - 14" WC (3.49 kPa)
	MIN - 5" WC (1.25 kPa)
Propane	MAX - 14" WC (3.49 kPa)
	MIN - 11" WC (2.74 kPa)

REPAIR PARTS

When ordering parts include the complete unit model number listed on the unit rating plate.

DYNA-GLO • GAS UNIT HEATER • GUH50NE/LE - GUH80NE/LE



PARTS LIST

Item #	Description	GUH50	QTY	GUH80	QTY
1	LOUVER SPINGS	UH50K-44	5	UH50K-44	7
2	LOUVER	UH50K-43	5	UH50K-43	7
3	FRONT PANEL	UH50K-03	1	UH80K-02	1
4	INLET PIPE	UH50K-07	1	UH50K-07	1
5	GAS VALVE	UH50K-08(ER)	1	UH50K-08(ER)	1
6	MANIFOLD	UH50K-10	1	UH80K-05	1
7	ORIFICES				
7-1	ORIFICE(NG)	UH50K-11(NG)	3	UH50K-11(NG)	5
7-2	ORIFICE(LP)	UH50K-11(LP)	3	UH50K-11(LP)	5
8	ELECTRODE IGNITER	UH50K-16	1	UH50K-16	1
9	IGNITION LEAD	UH50K-46	1	UH50K-46	1
10	SENSOR LEAD	UH50K-51	1	UH50K-51	1
11	ELECTRODE SENSOR	UH50K-17	1	UH50K-17	1
12	BURNER	UH50K-12	3	UH50K-12	5
13	CIRCUIT BOARD	UH50K-18(C)	1	UH50K-18(C)	1
14	TRANSFORMER	UH50K-19	1	UH50K-19	1
15	FLAME ROLLOUT SWITCH(125°)	UH50K-48	1	UH50K-48	1
16	PRESSURE SWITCH TUBE	UH50K-50	1	UH50K-50	1
17	PRESSURE SWITCH	UH50K-20	1	UH50K-20	1
18	HIGH LIMIT SENSOR HEAT EXCH	UH50K-21 (80)	1	UH80K-18 (75)	1
19	HEAT EXCHANGER	UH50K-31	1	UH80K-11	1
20	RIGHT SIDE DOOR	UH50K-04	1	UH80K-04	1
21	ACCESS DOOR	UH50K-05		UH80K-03	1
22	INDUCED DRAFT MOTOR	UH50K-23	1	UH50K-23	1
23	VENT ADAPTER	UH50K-52	1	UH80K-19	1
24	INDUCED DRAFT MOTOR GASKET	UH50K-24	1	UH50K-24	1
25	FLUE BOX	UH50K-22	1	UH80K-09	1
26	FLUE BOX GASKET	UH50K-37	1	UH50K-20	1
27	BACK PLATE	UH50K-02	1	UH80K-01	1
28	WIRING JUNCTION BOX	UH50K-26	1	UH50K-26	1
29	THERMOSTAT TERMINAL	UH50K-25	1	UH50K-25	1
30	COVER, JUNCTION BOX	UH50K-27	1	UH50K-27	1
31	FAN GUARD	UH50K-36	1	UH80K-14	1
32	FAN ASSEMBLY	UH50K-38	1	UH80K-15	1
33	FAN MOTOR	UH50K-35	1	UH80K-13	1
34	MOUNTING BRACKET	UH50K-53	2	UH50K-53	2
35	TOP/BOTTOM PLATE	UH50K-01	2	UH50K-01	2
36	COMBUSTION SYSTEM BOX	UH50K-14	1	UH80K-07	1
37	COVER, COMBUSTION SYSTEM BOX	UH50K-15	1	UH80K-08	1

*Item/Version not shown in exploded parts diagram

Optional Installation Components

24V Thermostat.....	UH50K-25
3" Vertical Vent Kit (50).....	GUHVK3V
3" Horizontal Vent Kit (50).....	GUHVK3H
4" Vertical Vent Kit (80).....	GUHVK4V
4" Horizontal Vent Kit (80).....	GUHVK4H

Gas Conversion Kits

Natural Gas to Propane

GUH 50/80.....UH50K-57

Propane to Natural Gas

GUH 50/80.....UH50K-56

IF SERVICE IS REQUIRED

PLEASE DO NOT RETURN THIS APPLIANCE TO YOUR STORE

For information regarding service, please call our Toll-Free Number:
1-877-447-4768.

Our office hours are 8:30 a.m. – 4:30 p.m. CST, Monday – Friday.

Please include the model number, date of purchase, and description of problem in all communication.

WARRANTY

LIMITED WARRANTY:

1 Year Limited Warranty and a 10 year Warranty on any defects in the Heat Exchanger. This limited warranty is extended to the original retail purchaser of this Heater and warrants against any defect in materials and workmanship for a period of one (1) year on parts and (10) years on the heat exchanger from the date of retail sale. GHP Group, Inc., at it's option, will either provide replacement parts or replace or repair the unit, when properly returned to the retailer where purchased or one of our service centers as directed by GHP Group, Inc., within the said period of retail purchase. (Shipping costs, labour costs, etc. are the responsibility of the purchaser.)

DUTIES OF THE OWNER:

This heating appliance must be operated in accordance with the written instructions furnished with this heater. This warranty shall not excuse the owner from properly maintaining this heater in accordance with the written instructions furnished with this heater. A bill of sale, canceled check or payment record must be kept to verify purchase date and establish warranty period. Original carton should be kept in case of warranty return of unit.

WHAT IS NOT COVERED:

1. Damage resulting from use of improper fuel.
2. Damage caused by misuse or use contrary to the owners manual and safety guidelines.
3. Damage caused by a lack of normal maintenance.
4. Fuses
5. Use of non-standard parts or accessories.
6. Damage caused in transit. Freight charges on warranty parts or heaters to and from the factory shall be the responsibility of the owner.

This warranty does not imply or assume any responsibility for consequential damages that may result from the use, misuse, or the lack of routine maintenance of this heating appliance. A cleaning fee and the cost of parts may be charged for appliance failures resulting from lack of maintenance. This warranty does not cover claims which do not involve defective workmanship or materials. **FAILURE TO PERFORM GENERAL MAINTENANCE (INCLUDING CLEANING) WILL VOID THIS WARRANTY.**

THIS LIMITED WARRANTY IS GIVEN TO THE PURCHASER IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY OF FITNESS FOR A PARTICULAR PURPOSE. THE REMEDY PROVIDED IN THIS WARRANTY IS EXCLUSIVE AND IS GRANTED IN LIEU OF ALL OTHER REMEDIES. IN NO EVENT WILL GHP GROUP, INC. BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES.

Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you. 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.

CLAIMS HANDLED AS FOLLOWS:

1. Contact your retailer and explain the problem.
2. If the retailer is unable to resolve the problem, contact our Customer Service Dept. detailing the heater model, the problem, and proof of date of purchase.
3. A representative will contact you. **DO NOT RETURN THE HEATER TO GHP GROUP, INC.** unless instructed by our Representative. This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

TO REGISTER THE WARRANTY ON YOUR HEATER, PLEASE FILL OUT THIS CARD COMPLETELY
AND MAIL WITHIN 14 DAYS FROM DATE OF PURCHASE OR REGISTER ON-LINE AT www.ghpgroupinc.com

NAME: _____ PHONE: () _____ EMAIL: _____
ADDRESS: _____ CITY: _____ STATE: _____ ZIP: _____
MODEL: _____ SERIAL #: _____ DATE PURCHASED: _____
DEALER PURCHASED FROM: _____ TYPE OF STORE: _____
CITY & STATE WHERE PURCHASED: _____ PRICE PAID: _____

Please Take a Minute To Give Us Your Answers To The Following Questions.

All Responses Are Used Solely For Market Research And Are Held In Strict Confidence.

Who primarily decided this purchase? Male Female 18-24 25-39 40-59 60 and over
Purpose of Purchase? _____

Do you own any other portable heaters? Yes No If yes, type _____ brand _____

How do you intend to use your new heater? Construction Site Farm Warehouse/Commercial Garage/Outbuilding Other

How did you become aware of this heater? In-Store Display Newspaper Ad Magazine Ad Friend/Relative

TV Commercial Store Salesperson Other _____

What made you select this heater? Style Size/Portability Price Package Brand Other _____

Do you: own rent Would you recommend this heater to a friend? Yes No

Please give us your comments: _____

THANK YOU FOR COMPLETING THIS FORM!
Information will be held confidential.

WARRANTY REGISTRATION

IMPORTANT: We urge you to fill out your warranty registration card within fourteen (14) days of date of purchase. You can also register your warranty on the internet at www.ghpgroupinc.com. Complete the entire serial number. Retain this portion of the card for your records.



GHP Group Inc.
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Niles, IL 60714-3302
www.ghpgroupinc.com

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Stamp
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