

Installer: Leave this manual with the appliance. Consumer: Retain this manual for future reference.



OPERATING INSTRUCTIONS AND OWNER'S MANUAL

MODEL#
MHU50
MHU80
MHU125

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.



COMPACT UNIT HEATER FOR RESIDENTIAL/COMMERCIAL USE

WARNING: Improper installation, adjustment, alteration, service or maintenance can cause injury or property damage. Refer to this manual. For assistance or additional information consult a qualified installer, service agency or the gas supplier.

-WHAT TO DO IF YOU SMELL GAS

- o DO NOT try to light appliance.
- o DO NOT touch any electrical switch, do not use any phone in your building
- o Leave the building immediately
- o Immediately call your gas supplier from a phone remote from the building. Follow the gas suppliers instructions
- o 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.

FOR YOUR SAFETY:

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

WARNING: If the information in these instructions are not followed exactly, a fire or explosion may result causing property damage, personal injury or loss of life.

⚠ 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 damage.

⚠ 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.

	MHU125	MHU80	MHU50
V/A/H/Phase	120v / 3a / 60hZ / 1Ø	120v / 2.3a / 60hZ / 1Ø	120v / 2.3a / 60hZ / 1Ø
BTU Input	125,000 BTU	80,000 BTU	50,000 BTU
BTU Output	100,000 BTU	64,000 BTU	40,000 BTU
Efficiency %	80%	80%	80%

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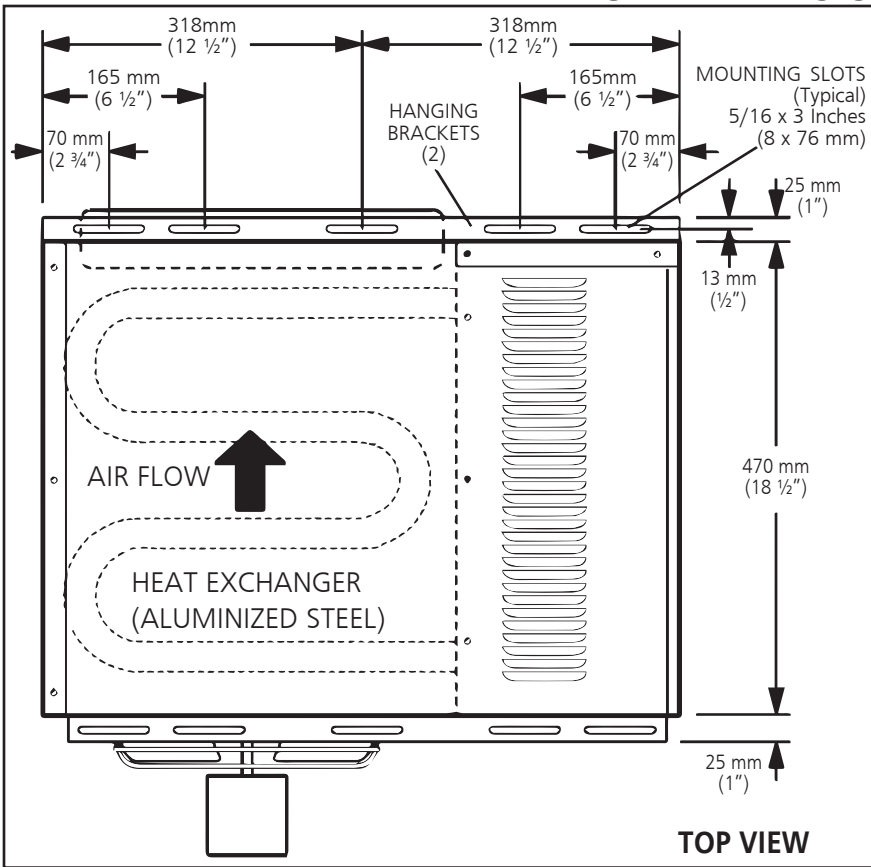
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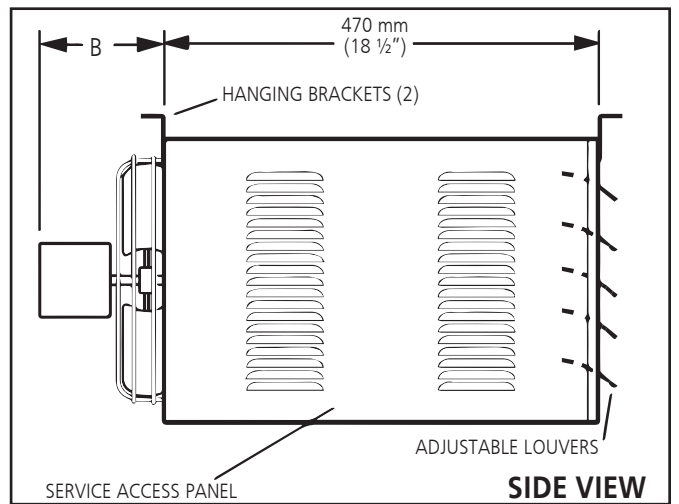
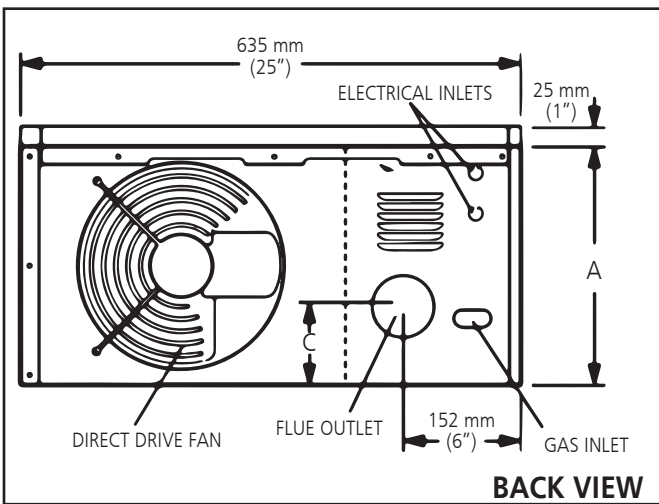
PARTS LIST 19

UNIT DIMENSIONS



BACK VIEW & SIDE VIEW, VARIABLE DIMENSIONS

	50	80	125
A	12" (305)	17" (432)	24.67" (626.8)
B	5.5" (140)	6.5" (165)	8.08" (205.25)
C	4.25" (108)	6.75" (171)	9.43" (239.61)



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? _____
 Furnace BTU input _____ 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

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.

**TABLE 1
UNIT CLEARANCES**

Top		Sides		Access Panel	
in	mm	in	mm	in	mm
1	25	1	25	18	457
Bottom		Rear			
in	mm	in	mm		
0	0	18	456		

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 by continuous operation of the unit.
2. Eight foot 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 HANGER 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' minimum clearance from highest surface of aircraft to bottom of the heater must be maintained.
2. In other areas, 8' 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.

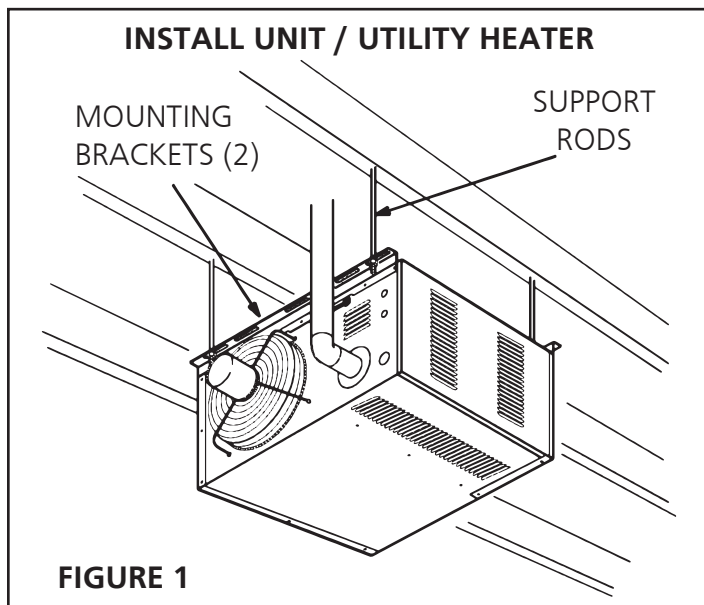
These units are certified for residential applications. For installation in a residential garage, these units must be installed so that burners and ignition source are located no less than 18" (457mm) above floor. Heater must be located or protected to avoid physical damage by vehicles. Refer to CSA 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** or inverted 180° depending on desired location as governed by clearances, vent connection, air direction, gas supply, electrical supply and service accessibility.

1. If installing unit in an inverted position: Remove and retain screws securing door and rotate door 180°. Secure with retained screws. Rotate louvers directing airflow as desired.
2. Choose location for mounting brackets.
3. Remove and retain three screws along top edge (bottom edge when inverted) of front of unit.
4. 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.
5. 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. All joints shall be secured with at least two corrosion resistant screws. All joints must be checked for gas tightness after installation.

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 AND RESIDENTIAL INSTALLATIONS

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

1. **US:** MHU 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 4" (102 mm) diameter on 50 & 80 & 125k units. 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**.

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.

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).		

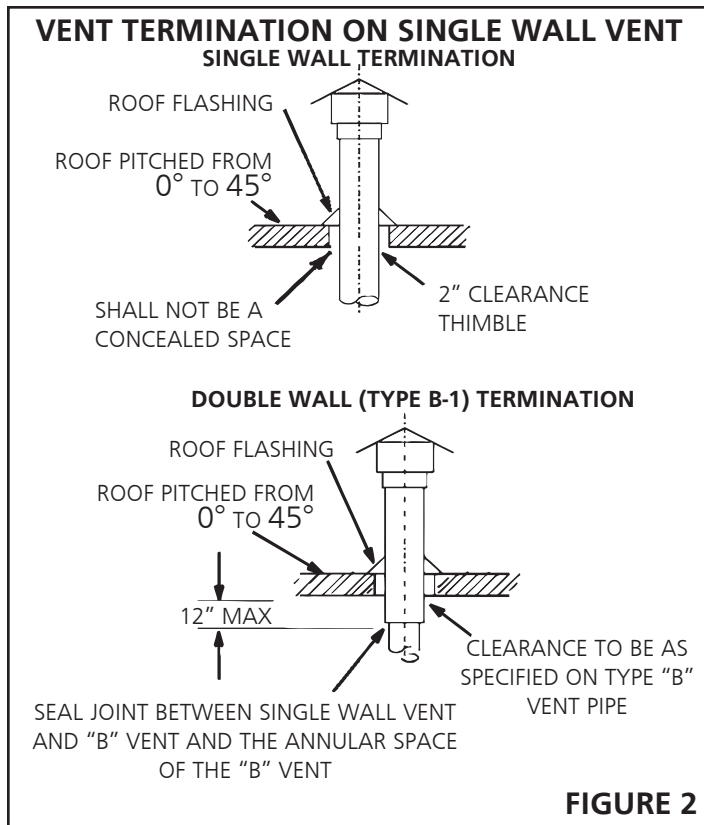


FIGURE 2

C – HORIZONTAL VENTING – GENERAL

Due to changes to Z83-8 2009 CSA2.6-2009, 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 Caterory 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 and .2 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 Installation Code.
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 12 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, and
 - C - Horizontal Venting General, and
 - D - Horizontal Venting - Commercial.
 Refer to figure 3.
2. The vent pipe diameter for horizontal commercial installations shall be 4" (76mm). a transition piece has been supplied and is already attached to your heater. Refer to figure 4
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 residential installations shall be 4" on all units. A transition piece has been supplied and is already attached to your heater. Refer to figure 4
3. The maximum vent length is 25' (7.6m) plus one 90-degree elbow. The minimum length is 5'(1.5m).
4. The vent must maintain a 1/4" rise per foot of slope (1mm per 50mm). upwards toward the termination.

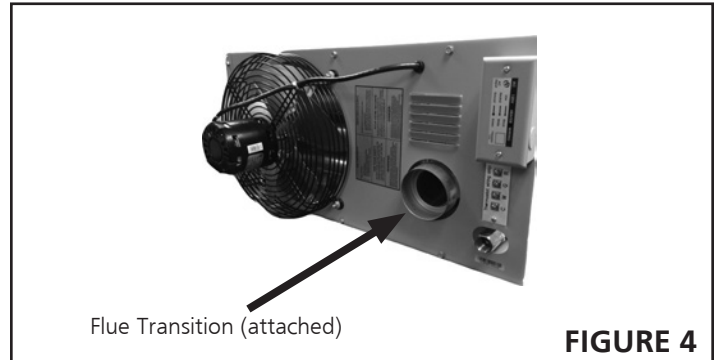


FIGURE 4

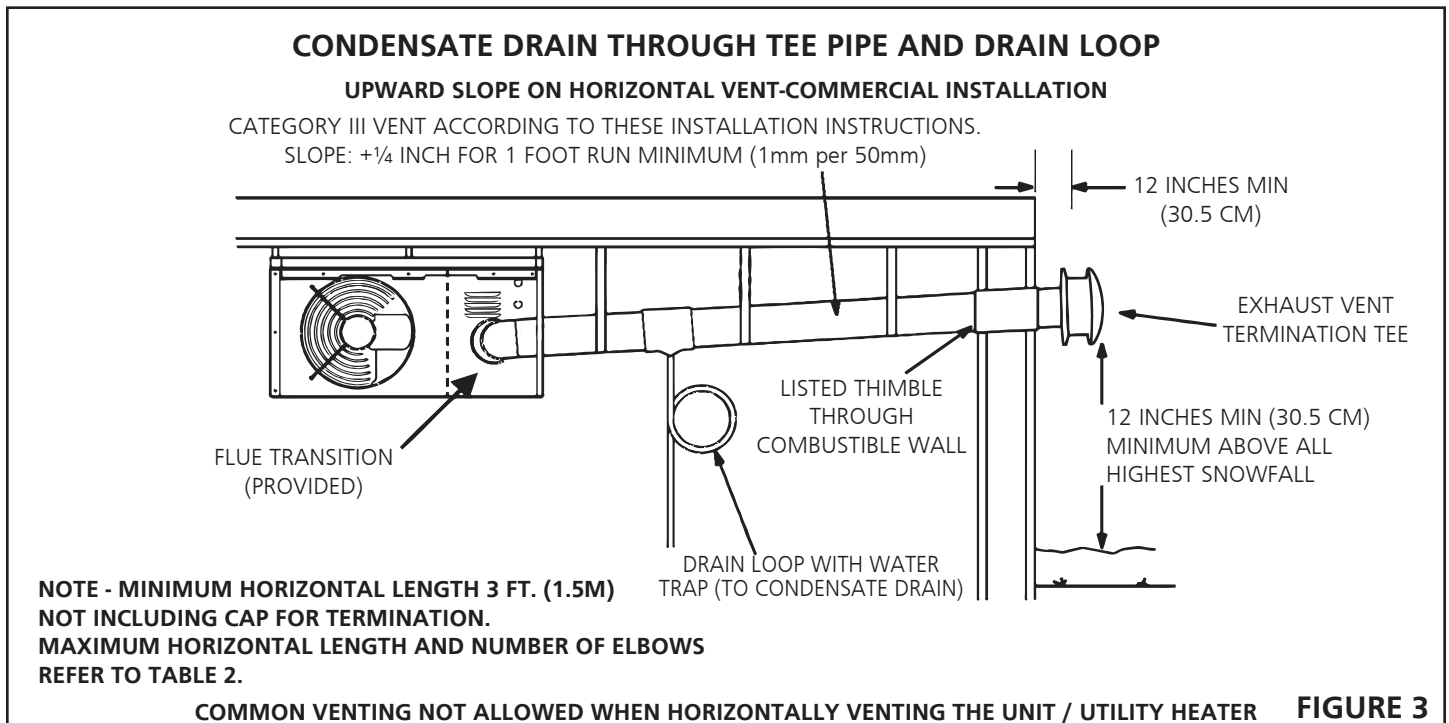
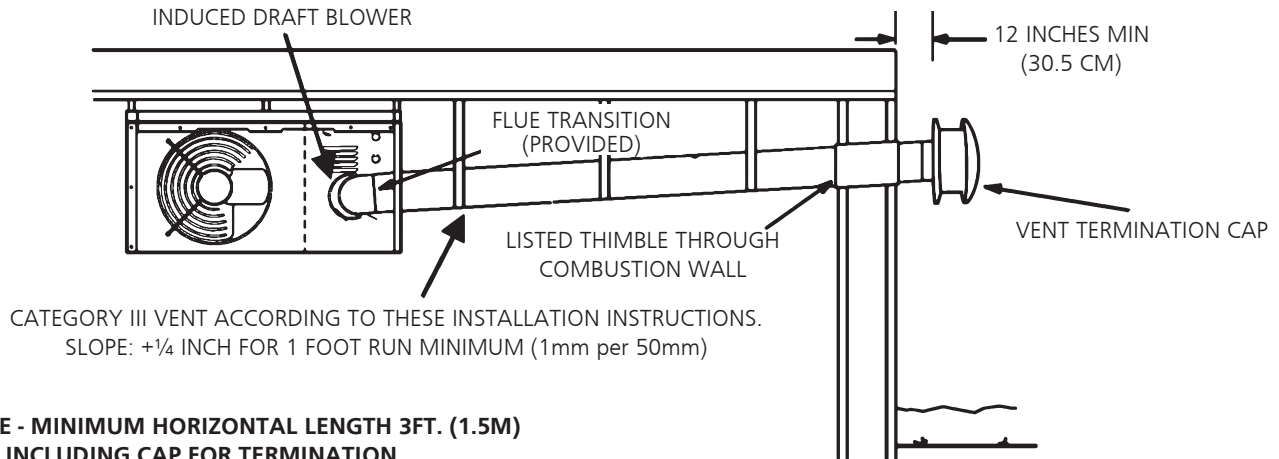


FIGURE 3

HORIZONTAL VENTING - RESIDENTIAL INSTALLATION

UPWARD SLOPE



CATEGORY III VENT ACCORDING TO THESE INSTALLATION INSTRUCTIONS.
SLOPE: + $\frac{1}{4}$ INCH FOR 1 FOOT RUN MINIMUM (1mm per 50mm)

**NOTE - MINIMUM HORIZONTAL LENGTH 3FT. (1.5M)
NOT INCLUDING CAP FOR TERMINATION**

MAXIMUM HORIZONTAL LENGTH AND NUMBER OF ELBOWS REFER TO TABLE 2

COMMON VENTING NOT ALLOWED WHEN HORIZONTALLY VENTING THE UNIT / UTILITY HEATER

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. Visually inspect the venting system for proper size and horizontal pitch. Determine there is no blockage or restriction, leakage, corrosion, or other deficiencies which 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 for spillage at the draft hood relief opening after five minutes of main burner operation. Use the flame of a match or candle, or smoke from a cigarette, cigar, or pipe.
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 MHU 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.

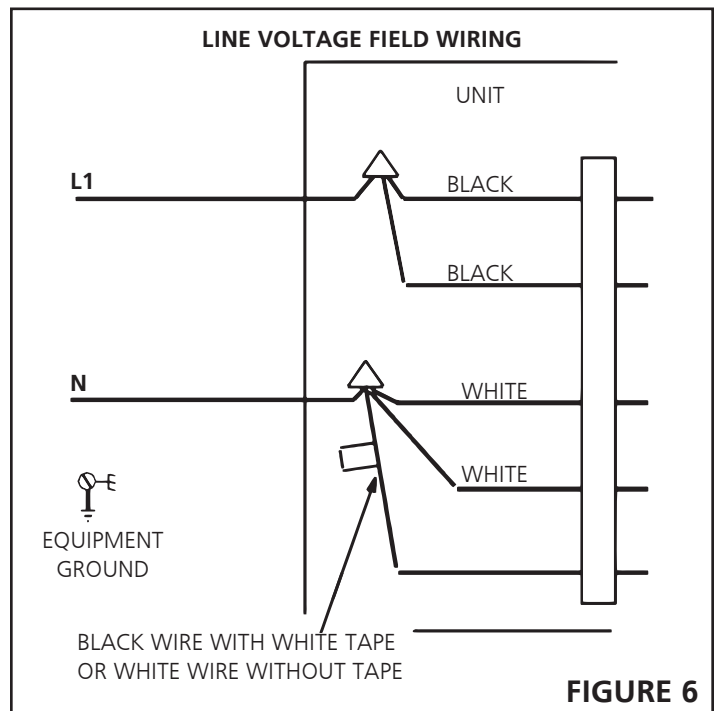


FIGURE 6

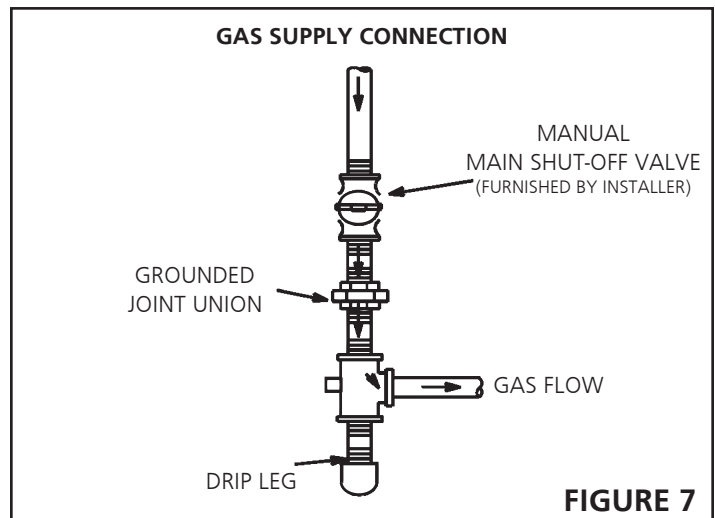


FIGURE 7

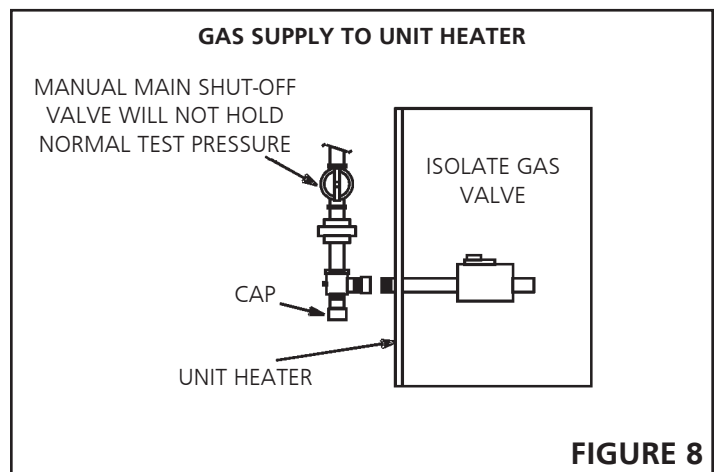






FIGURE 8

⚠ 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 over-heating 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 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.

Use only your hand to move the gas control knob to the on position. Never use tools. Do not use excessive force to switch valve from off to on position. Force or attempted repair may result in a fire or explosion.

MHU 50/80/125 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 HONEYWELL VR8205M SERIES VALVE

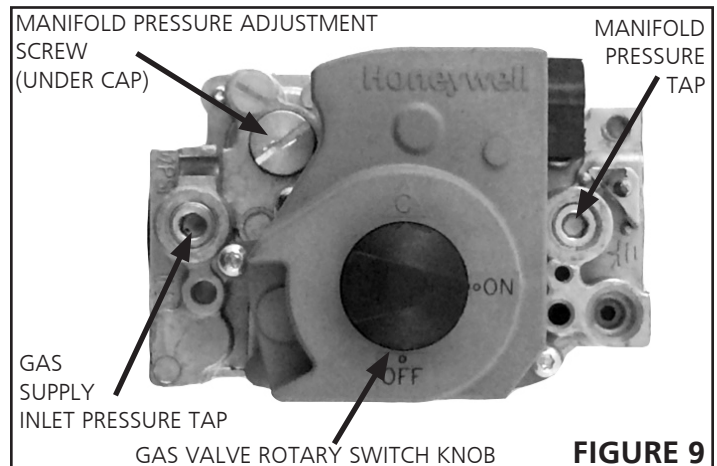


FIGURE 9

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. There is a black rotary switch knob that can be moved between the on and off position. Rotate the switch knob to the off position. (See Figure 9)
6. Wait five minutes to clear out any gas. If you then smell gas, **STOP!** Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions. If you do not smell gas go to next step.
7. Rotate the black switch knob to ON.
8. Turn on electrical power to unit.
9. Set the thermostat to desired setting.
10. The combustion air blower will start. The burners will light within 30 seconds.
11. If unit does not light first time (gas line not fully purged) it will attempt up to two more ignitions before locking out.
12. If lockout occurs, repeat steps 1 through 9.
13. 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.
3. Rotate black knob to OFF position.

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. If your burner characteristics

do not match those described above. Refer to the trouble shooting sections.

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 IGNITION CONTROL LED

LED	UNIT OPERATION
Slow Flash	Normal Operation - No call for heat.
Fast Flash	Normal Operation - Call for heat Current signal at FLAME terminal 0.6 to 1.0 microamps
2 Flashes	System lockout - failed to detect or sustain flame Current signal at FLAME terminal <0.6 microamps
3 Flashes	Pressure switch failed closed before CAB is energized or failed open after CAB is energized
4 Flashes	High limit or rollout switch open
5 Flashes	Flame sensed and gas valve not energized
Steady Off	Loss of power/Check 3AMP Fuse on circuit board
Steady On	Ignition control failure
*When thermostat is placed in continuous fan mode LED will slowly flash	

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. When unit is installed in an inverted position, louvers may be positioned in the same manner.

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 up. 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(es) are 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)		
MHU 50/80/125	ALTITUDE FT. (M)	
	0-2000 (0-610)	2000-4500 (610-1370)
MHU 50/80/125	4.0"WC (0.99 KPA)*	3.6"WC (0.89 KPA)
*NO ADJUSTMENT REQUIRED		

Table 5 LP/PROPANE GAS MANIFOLD PRESSURES - IN.W.C.. (KPA)		
MHU 50/80/125	ALTITUDE FT. (M)	
	0-2000 (0-610)	2000-4500 (610-1370)
MHU 50/80/125	10"WC (2.62 KPA)*	8.5"WC (2.12KPA)
*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 10.9" 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 should also 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.

⚠ MAXIMUM LOAD NOT TO EXCEED
20VA AT 24V, CLASS 2

⚠ (2) S47 USED IN
75, 80 AND 125 ONLY

NOTE -

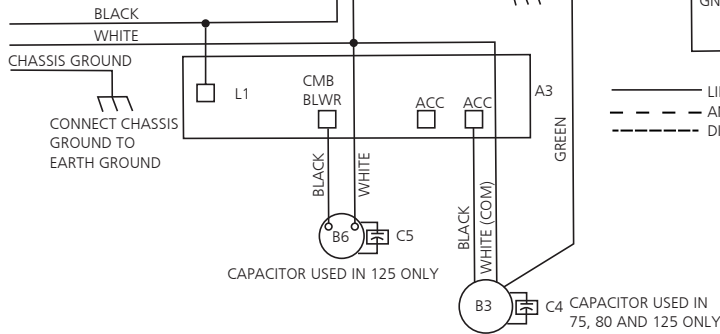
IF ANY WIRE IN THIS APPLIANCE IS REPLACED,
IT MUST BE REPLACED WITH WIRE OF LIKE SIZE,
RATING AND INSULATION THICKNESS.

WARNING -

ELECTRIC SHOCK HAZARD CAN CAUSE INJURY
OR DEATH. UNIT MUST BE GROUNDED IN
ACCORDANCE WITH NATIONAL AND LOCAL
CODES.

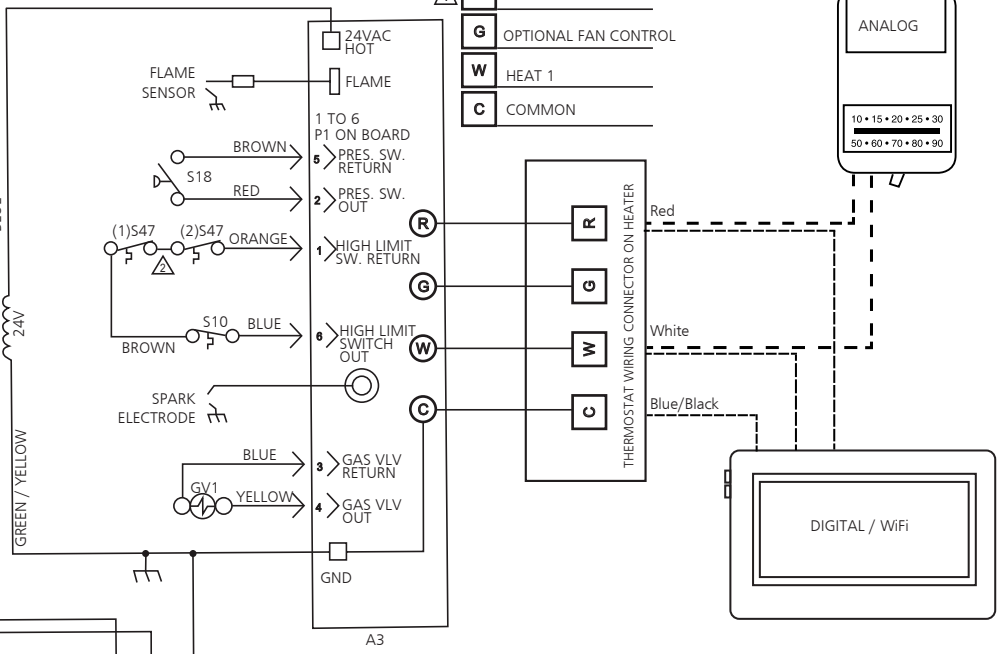
DISCONNECT ALL POWER BEFORE SERVICING!

DESCRIPTION	KEY	COMPONENT
	A3	CONTROL BOARD (PCB)
	B3	MOTOR CIRCULATION
	B6	MOTOR-COMBUSTION AIR INDUCER
	C4	CAPACITOR-BLOWER MOTOR 1
	C5	CAPACITOR-INDUCED DRAFT MOTOR
	DL36	RELAY-RELAY (N/A TO THESE MODELS)
	GV1	VALVE-GAS
	S10	SWITCH-PRIMARY GAS
	S18	SWITCH-COMB AIR BLOWER
	S47	SWITCH-FLAME ROLLOUT
	T1	TRANSFORMER-CONTROL



WIRING DIAGRAM

- R** 24 Vac POWER
- G** OPTIONAL FAN CONTROL
- W** HEAT 1
- C** COMMON



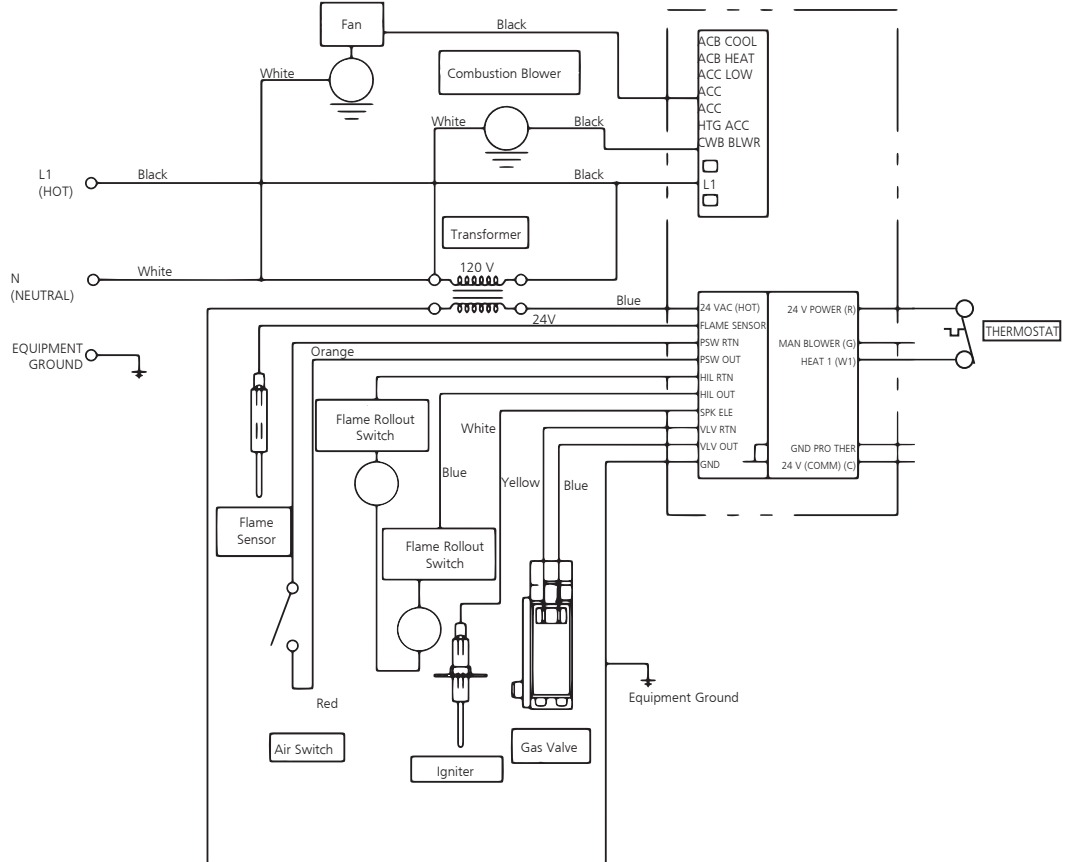
- LINE VOLTAGE FIELD INSTALLED
- - - ANALOG THERMOSTAT WIRING
- · - · - DIGITAL / WiFi THERMOSTAT WIRING

OPTIONAL THERMOSTAT INSTALLATION

IT IS RECOMMENDED TO USE 18AWG WIRE WHEN INSTALLING THE THERMOSTAT. CONNECT ANALOG THERMOSTAT WIRING TO TERMINALS 'R' AND 'W' AS ILLUSTRATED ON THE SCHEMATIC DIAGRAM OR CONNECT A DIGITAL/WiFi THERMOSTAT TO 'R' 'W' 'C' AS ILLUSTRATED. NOTE: THERMOSTAT TERMINAL CONNECTIONS ARE MOUNTED ON THE BACK PANEL OF THE HEATER.

EXTERNAL THERMOSTAT TERMINAL STRIP WARNING: **DO NOT** CONNECT LINE POWER TO THE THERMOSTAT TERMINAL STRIP.

LADDER DIAGRAM



FUEL CONVERSION INSTRUCTIONS

FUEL CONVERSION Section 1: FUEL CONVERSION KITS

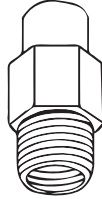
For Converting from Natural Gas to L.P. Gas

Distributor Number _____ This appliance was converted on _____ (MM) to _____ Gas
 Model # _____ with Bt. No. _____ by _____
 Name of Installer _____ (Name and address of organization making this conversion), which accepts the responsibility
 that this conversion has been properly made.
 Address _____
 City _____ State _____ Zip _____
 Date _____
 Conversion Fee _____
 Conversion Fee per _____
 Total per. (Please see information on page 15) _____
 Note: _____

Gas Conversion Labels

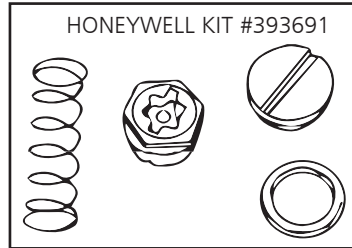
This control valve has been converted for use with _____ (L.P. Gas)
 Cette commande a été convertie pour fonctionner au gaz _____

Control Conversion Labels



Orifice

(See P/N Table Below)



Fuel Conversion Part Numbers		
Model #	BTU/HR	Natural - To - LP F260163
MHU 50	50,000	
MHU 80	80,000	
MHU 125	125,000	

Part Number	Description	50	80	125
13575	Gas conversion label	1	1	1
60232	Converted Rating tag	1		
60233	Converted Rating tag		1	
60234	Converted Rating tag			1
11727	Spring - gas valve (label inc.)	1	1	1
60156	L.P. Orifice	3	5	8
13576	Control Conversion Label	1	1	1

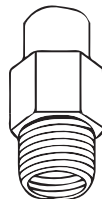
For Converting from L.P. Gas to Natural Gas

Distributor Number _____ This appliance was converted on _____ (MM) to _____ Gas
 Model # _____ with Bt. No. _____ by _____
 Name of Installer _____ (Name and address of organization making this conversion), which accepts the responsibility
 that this conversion has been properly made.
 Address _____
 City _____ State _____ Zip _____
 Date _____
 Conversion Fee _____
 Conversion Fee per _____
 Total per. (Please see information on page 15) _____
 Note: _____

Gas Conversion Labels

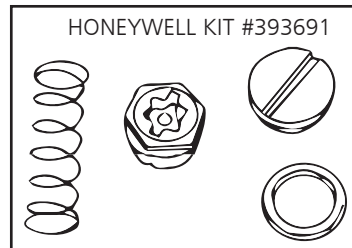
This control valve has been converted for use with _____ (Natural Gas)
 Cette commande a été convertie pour fonctionner au gaz _____

Control Conversion Labels



Orifice

(See P/N Table Below)



Fuel Conversion Part Numbers		
Model #	BTU/HR	LP - To - Natural F260164
MHU 50	50,000	
MHU 80	80,000	
MHU 125	125,000	

Part Number	Description	50	80	125
13575	Gas conversion label	1	1	1
60235	Converted Rating tag	1		
60236	Converted Rating tag		1	
60237	Converted Rating tag			1
11727	Spring - gas valve (label inc.)	1	1	1
60049	L.P. Orifice	3	5	8
13576	Control Conversion Label	1	1	1

FUEL CONVERSION Section 2: FUEL CONVERSION INSTRUCTIONS

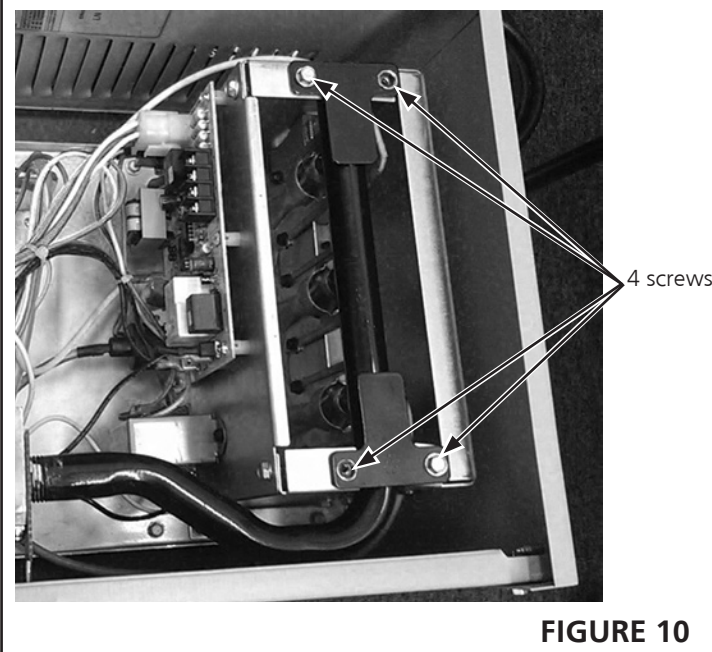


FIGURE 10

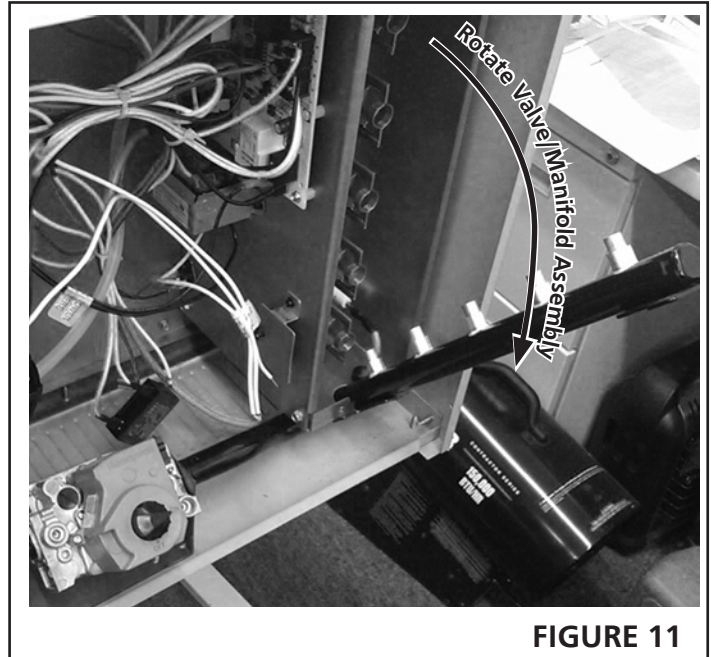


FIGURE 11

⚠ 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 UNIT MUST NOT BE CONNECTED TO EITHER THE GAS SUPPLY OR THE ELECTRICAL POWER SUPPLY, BEFORE PROCEEDING WITH 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 MHU50, 5 orifices on unit MHU80, 8 orifices on unit MHU125). This will allow access to the orifices on the manifold, and also the adjustment spring in the valve/regulator.

Step 3

Remove and discard the adjustment spring cap from gas valve/ regulator with a flat blade screw driver by turning the screw counter-clockwise. Remove and discard the regulator adjustment screw found under the cap. Remove and discard the spring that is located under the adjustment screw. Take the spring kit from the conversion kit, and compare the part number of the kit to the parts list on page 3. If it does not match, immediately contact Mr. Heater, Inc. for the correct kit. After confirming the spring kit is correct for the heater model you are converting, install the new spring and adjustment screw. Turn spring adjustment screw clockwise (in) until the screw stops, then turn it counter-clockwise (back) 1 ½ turns. Place conversion label supplied with the spring kit on the valve near the adjustment screw cover opening.

Step 4

Remove and discard the orifices (3 orifices on unit MHU50, 5 orifices on unit MHU80, 8 orifices on unit MHU125) from the manifold with using a ½ " 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 Mr. Heater, Inc. for the correct kit. If they are the correct orifices, install them in the manifold using caution not to cross thread.

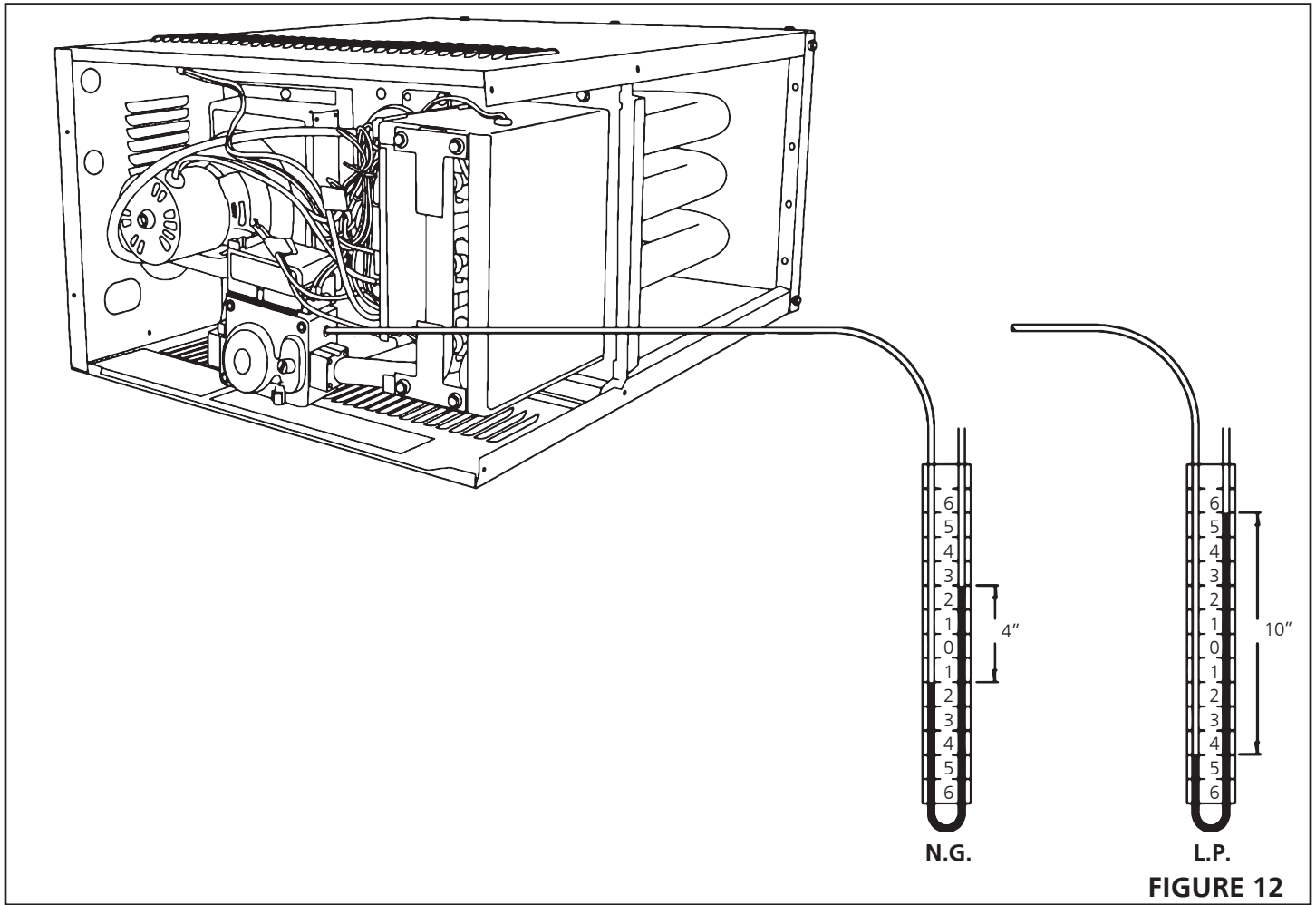


FIGURE 12

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

Remove valve pressure test plug and retain for later use. Connect a water-filled U-tube manometer to the test port. See Figure 12. 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 to the regulator spring that was replaced in step 6. Once the pressure has been adjusted, replace the adjustment screw cover with a new one from the conversion kit.



**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). The manometer illustration (See Figure 12) shows each of the pressure readings.

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 replace the test plug on valve removed in step 6.

FUEL CONVERSION Section 3: RATE TAG CONVERSION INSTRUCTIONS

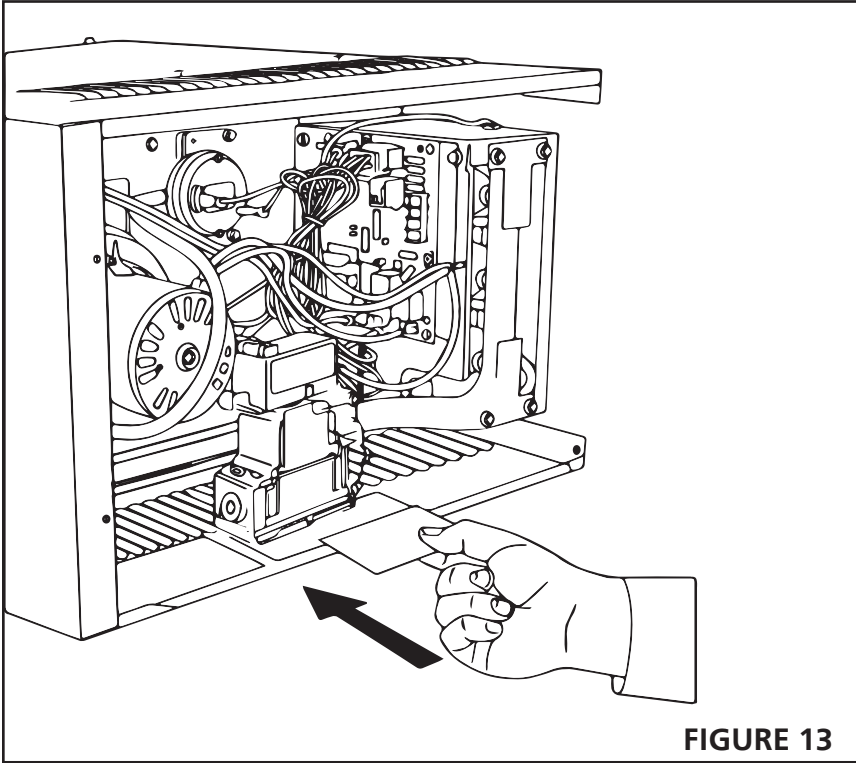


FIGURE 13

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. Remembering to also check the pressure test plug replaced in step 12. 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

See figure 13. 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)		
MHU 50/80/125	ALTITUDE FT. (M)	
		0-2000 (0-610)
MHU 50/80/125	4.0"WC (0.99 KPA)*	3.6"WC (0.89 KPA)
*NO ADJUSTMENT REQUIRED		

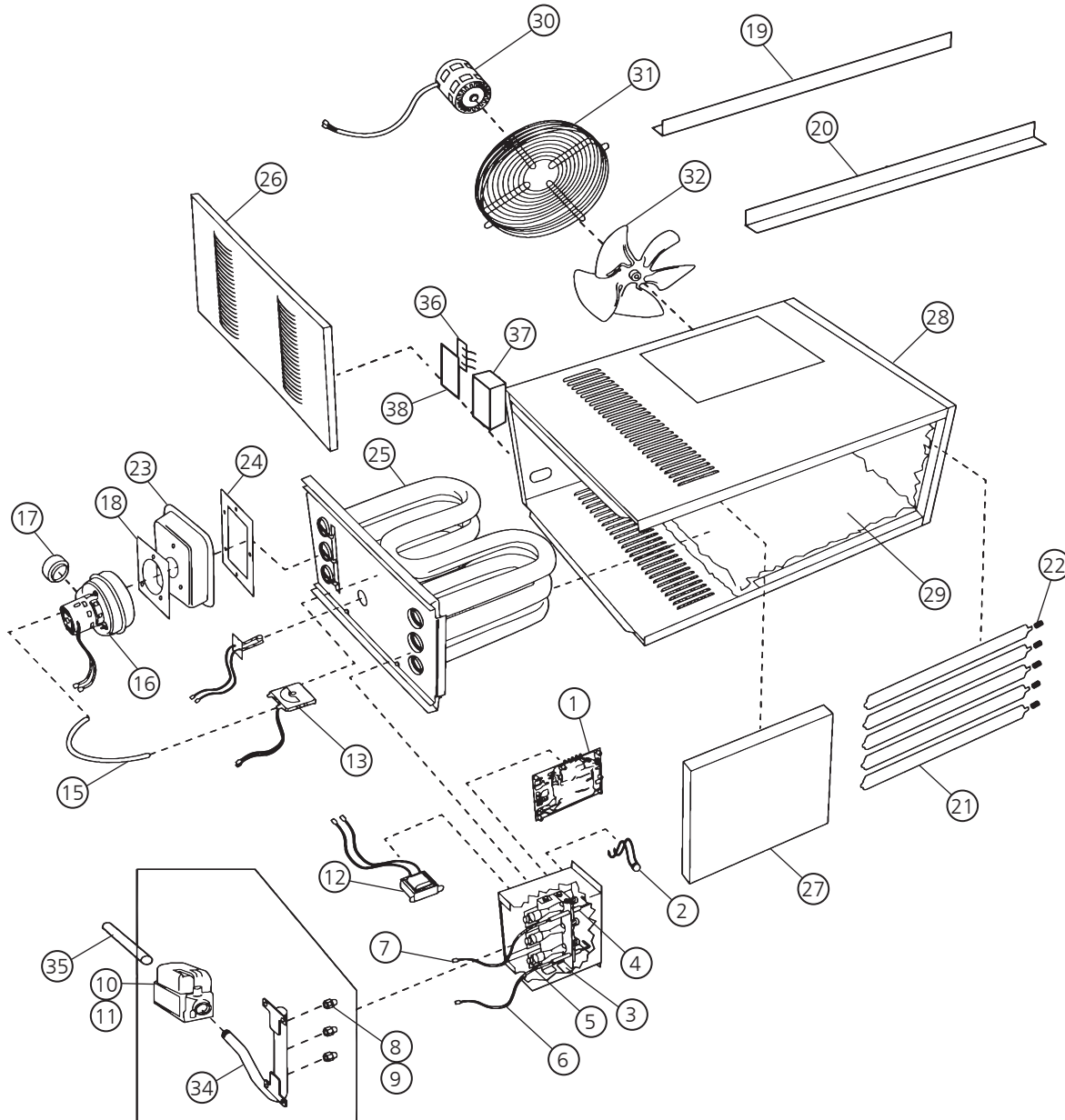
Table 5		
LP/PROPANE GAS MANIFOLD PRESSURES - IN.W.C.. (KPA)		
MHU 50/80/125	ALTITUDE FT. (M)	
		0-2000 (0-610)
MHU 50/80/125	10"WC (2.49 KPA)*	8.5"WC (2.12KPA)
*NO ADJUSTMENT REQUIRED		

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.

Mr. Heater • Compact / Utility Heater • Model # MHU50 / MHU80



PARTS LIST

SEE BACK PAGE FOR PARTS ORDERING INFORMATION

REF #	Description	50K	QTY	80K	QTY
1	CIRCUIT BOARD	60105	1	60105	1
2	LIMIT SENSOR	60022	1	60021	1
3	ELECTRODE IGNITER	60139	1	60139	1
4	ELECTRODE SENSOR	60141	1	60141	1
5	BURNER	60155	3	60155	5
6	IGNITION LEAD	60045	1	60045	1
7	SENSOR LEAD	60046	1	60046	1
8	ORIFICE (NAT)	60049	3	60049	5
9	ORIFICE (LP)	60156	3	60156	5
10	GAS VALVE (NAT)	60128	1	60128	1
11	GAS VALVE (LP)	60129	1	60129	1
12	TRANSFORMER	60025	1	60025	1
13	PRESSURE SWITCH	60147	1	60146	1
14	HIGH LIMIT SENSOR HEAT EXCH.	60015	1	60015	1
15	PRESSURE SWITCH TUBE	60031	1	60031	1
16	INDUCED DRAFT MOTOR	60020	1	60020	1
17	VENT ADAPTER	60140	1	60140	1
18	INDUCED DRAFT MOTOR GASKET	60157	1	60157	1
19	BACK BRACKET	60075	1	60075	1
20	FRONT BRACKET	60080	1	60080	1
21	LOUVERS	60100	5	60100	7
22	LOUVER SPRING	60103	5	60103	7
23	FLUE BOX	60189	1	60190	1
24	FLUE BOX GASKET	60090	1	60092	1
25	HEAT EXCHANGER	60065	1	60068	1
26	ACCESS DOOR	60070	1	60072	1
27	FRONT	60095	1	60097	1
28	SIDE DOOR	60110	1	60112	1
29	WRAPPER	60115	3	60117	3
30	FAN MOTOR	60055	1	60054	1
31	FAN GUARD	60120	1	60122	1
32	FAN ASSEMBLY	60125	1	60127	1
32	CAPACITOR STARTER		1	28788	1
34	MANIFOLD	60062	1	60064	1
35	INLET PIPE	60132	1	60132	1
36	THERMOSTAT TERMINAL	60144	1	60144	1
37	WIRING JUNCTION BOX	60159	1	60159	1
38	COVER, JUNCTION BOX	60160	1	60160	1
39	GAS VALVE BRACKET	60158	1	60158	1

Optional Installation Components

24V THERMOSTAT	F210359
4" VERTICAL VENT KIT (50/80/125)	F102848
4" HORIZONTAL STAINLESS STEEL VENT KIT (50/80/125)	F102860

Gas Conversion Kits

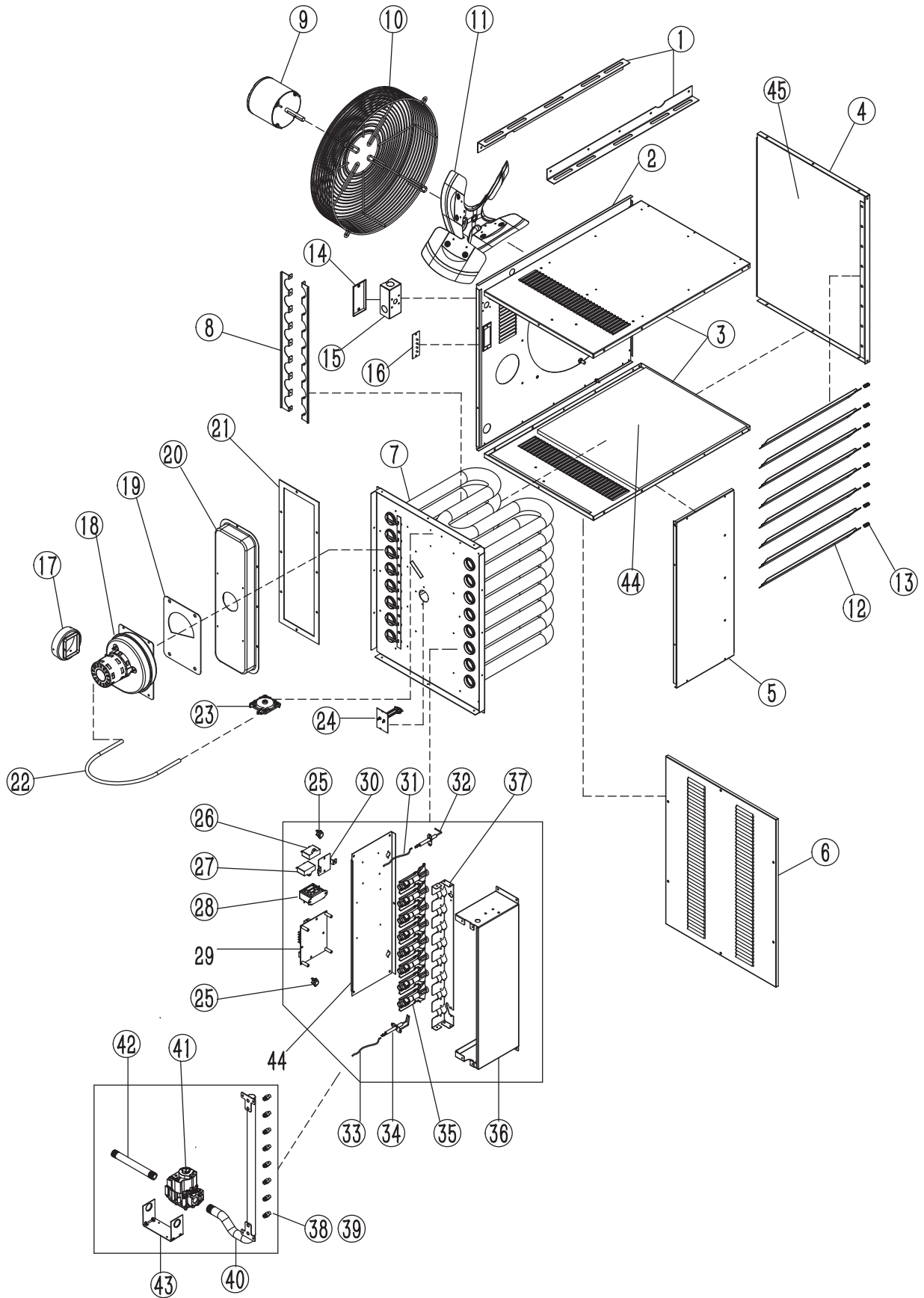
Natural Gas to Liquid Propane

MHU 50/80/125	F260163
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Liquid Propane to Natural Gas

MHU 50/80/125	F260164
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Mr. Heater • Compact / Utility Heater • Model # MHU125



SEE BACK PAGE FOR PARTS ORDERING INFORMATION

REF #	Description	125K	QTY
1	BRACKET	60200	2
2	MOUNTING PANEL-MOTOR	60201	1
3	MOUNTING PANEL-FRONT AND BACK	60202	2
4	MOUNTING PANEL-BOTTOM	60203	1
5	MOUNTING PANEL-SIDE	60204	1
6	MOUNTING PANEL-TOP	60205	1
7	HEAT EXCHANGER	60206	1
8	BRACKET-HEAT EXCHANGE	60207	2
9	FAN MOTOR	60208	1
10	FAN GUARD	60209	1
11	FAN ASSEMBLY	60210	1
12	LOUVERS	60211	8
13	LOUVERS SPRING	60103	8
14	COVER-WIRING JUNCTION BOX	60160	1
15	WIRING JUNCTION BOX	60159	1
16	THERMOSTAT TERMINAL	60144	1
17	VENT ADAPTER	60213	1
18	INDUCED DRAFT MOTOR	60214	1
19	INDUCED DRAFT MOTOR GASKET	60215	1
20	FLUE BOX	60216	1
21	FLUE BOX GASKET	60217	1
22	PRESSURE SWITCH TUBE	60031	1
23	PRESSURE SWITCH	60146	1
24	HI LIMIT SENSOR HEAT EXCH	60015	1
25	LIMIT SENSOR	60022	2
26	CAP-FAN MOTOR	28735	1
27	CAP-INDUCED DRAFT MOTOR	28788	1
28	TRANSFORMER	60025	1
29	CIRCUIT BOARD	60105	1
30	BRACKET-CAP	60223	1
31	SENSOR LEAD	60046	1
32	ELECTRODE SENSOR	60141	1
33	IGNITER LEAD	60224	1
34	ELECTRODE IGNITER	60139	1
35	BURNER	60155	8
36	BURNER BOX	60225	1
37	BRACKET BURNER	60226	1
38	ORIFICE(NAT)	60049	8
39	ORIFICE(LP)	60156	8
40	MANIFOLD	60227	1
41	GAS VALVE(NAT)	60128	1
42	INLET PIPE	60132	1
43	GAS VALVE BRACKET	60158	1
44	PANEL-BURN BOX	60228	1
***	BOTTOM INSULATION	60220	1
***	FRONT / BACK INSULATION	60231	2
***	HEAT EXCHANGER INSULATION	60218	1

*** NOT SHOWN IN FIGURE



OPERATING INSTRUCTIONS AND OWNER'S MANUAL

MODEL#
MHU50
MHU80
MHU125

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.



WARNING:

USE ONLY MANUFACTURER'S REPLACEMENT PARTS. USE OF ANY OTHER PARTS COULD CAUSE INJURY OR DEATH. REPLACEMENT PARTS ARE ONLY AVAILABLE DIRECT FROM THE FACTORY AND MUST BE INSTALLED BY A QUALIFIED SERVICE AGENCY.