PREPARING FOR INSTALLATION

Before beginning assembly or operation of the product, make sure all parts are present. Compare parts with package contents list and diagram above. If any part is missing or damaged, do not attempt to assemble, install or operate the product. Contact customer service for replacement parts.

Before installing heater, make sure you have the items listed below:

- piping (check local codes)
- sealant (resistant to natural gas and propane/LP gas)
- equipment shutoff valve*
- test gauge connection*
- sediment trap
- tee joint
- pipe wrench
- flexible gas hose (check local codes)

* A CSA design-certified equipment shutoff valve with 1/8-inch NPT tap is an acceptable alternative to test gauge connection. Purchase the optional CSA design-certified equipment shutoff valve from your dealer.

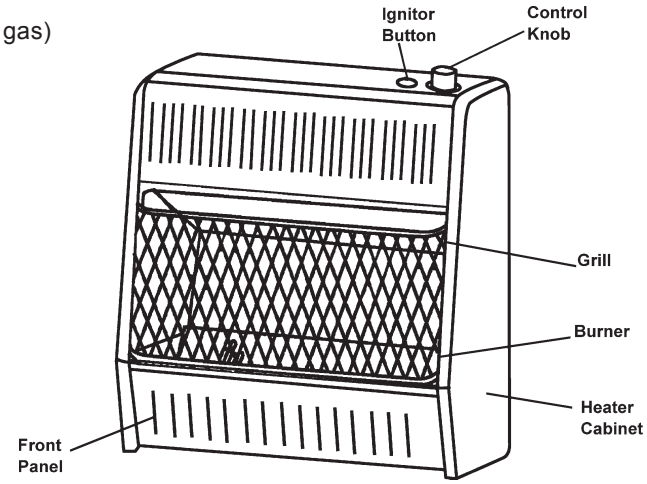


Figure 1

UNPACKING

1. Remove heater from carton.
2. Remove all protective packaging applied to heater for shipping
3. Check heater for any shipping damage. If heater is damaged, promptly inform dealer where you bought heater.

WATER VAPOR: A BY-PRODUCT OF UNVENTED ROOM HEATERS

Water vapor is a by-product of gas combustion. An unvented room heater produces approximately one (1) ounce (30 mL) of water for every 1,000 BTUs (.3 KWs) of gas input per hour. Unvented room heaters are recommended as supplemental heat (a room) rather than a primary heat source (an entire house). In most supplemental heat applications, the water vapor does not create a problem. In most applications, the water vapor enhances the low humidity atmosphere experienced during cold weather.

The following steps will help ensure that water vapor does not become a problem.

1. Be sure the heater is sized properly for the application, including ample combustion air and circulation air.
2. If high humidity is experienced, a dehumidifier may be used to help lower the water vapor content of the air.
3. Do not use an unvented room heater as the primary heat source.

AIR FOR COMBUSTION AND VENTILATION

⚠ **WARNING:** If the area in which the heater may be operated does not meet the required volume for indoor combustion air, combustion and ventilation air shall be provided by one of the methods described in the National Fuel Gas Code, ANSI Z223.1/NFPA 54, the International Fuel Gas Code, or applicable local codes.

Providing Adequate Ventilation

All spaces in homes fall into one of the three following ventilation classifications:

1. Unusually Tight Construction
2. Unconfined Space
3. Confined Space

The information on pages 7 through 9 will help you classify your space and provide adequate ventilation.

Confined and Unconfined Space

A confined space is a space whose volume is less than 50 cu. ft. per 1,000 BTU/hr (4.8 m^3 per kw) of the aggregate input rating of all appliances installed in that space and an unconfined space as a space whose volume is not less than 50 cubic feet per 1,000 BTU/hr (4.8 m^3 per kw) of the aggregate input rating of all appliances installed in that space. Rooms connecting directly with the space in which the appliances are installed*, through openings not furnished with doors, are considered a part of the unconfined space.

This heater shall not be installed in a confined space or unusually tight construction unless provisions are provided for adequate combustion and ventilation air.

* Adjoining rooms are connecting only if there are doorless passageways or ventilation grills between them.

Unusually Tight Construction

The air that leaks around doors and windows may provide enough fresh air for combustion and ventilation. However, in buildings of unusually tight construction, you must provide additional fresh air.
Unusually tight construction is defined as construction where:

a) Walls and ceilings exposed to the outside atmosphere have a continuous water vapor retarder with a rating of one perm (6×10^{-11}kg per pa-sec-m^2) or less with openings gasketed or sealed ***and***

b) Weather stripping has been added on openable windows and on doors ***and***

c) Caulking or sealants are applied to areas such as joints around window and door frames, between sole plates and floors, between wall ceiling joints, between wall panels, at penetrations for plumbing, electrical, and gas lines, and at other openings.

If your home meets all of the three criteria above, you must provide additional fresh air. See “Ventilation Air From Outdoors” (page 9). If your home does not meet all of the three criteria above, proceed to “Determining Fresh-Air Flow For Heater Location”.

DETERMINING FRESH-AIR FLOW FOR HEATER LOCATION

Determining if You Have a Confined or Unconfined Space

Use this worksheet to determine if you have a confined or unconfined space.

Space: Includes the room in which you will install heater plus any adjoining rooms with doorless passageways or ventilation grills between the rooms.

1. Determine the volume of the space Length × Width × Height =_____cu. ft. (volume of space)

   Example: Space size 20 ft. (length) × 16 ft. (width)×8 ft. (ceiling height) =2560 cu. ft. (volume of space)

   If additional ventilation to adjoining room is supplied with grills or openings, add the volume of these rooms to the total volume of the space.

2. Divide the space volume by 50 cubic feet to determine the maximum BTU/hr the space can support.

   _____(volume of space) ÷ 50 cu. ft. =(Maximum BTU/hr the space can support)

3. Add the BTU/hr of all fuel burning appliances in the space.

Vent-free heater	_____BTU/hr		
Gas water heater*	_____BTU/hr		
Gas furnace	_____BTU/hr		
Vented gas heater	_____BTU/hr	Example:	
Gas heater logs	_____BTU/hr	Gas water heater	30,000 BTU/hr
Other gas appliances* +	_____BTU/hr	Vent-free heater	+ 26,000 BTU/hr
Total =	_____BTU/hr	Total	= 56,000 BTU/hr

*Do not include direct-vent gas appliances. Direct-vent draws combustion air from the outdoors and vents to the outdoors.

4. Compare the maximum BTU/hr the space can support with the actual amount of BTU/hr used

_____ BTU/hr (maximum the space can support)

_____ BTU/hr (actual amount of BTU/hr used)

Example : 51,200 BTU/hr (maximum the space can support)

56,000 BTU/hr (actual amount of BTU/hr used)

The space in the above example is a confined space because the actual BTU/hr used is more than the maximum BTU/hr the space can support.

You must provide additional fresh air. Your options are as follows:

a) Rework worksheet, adding the space of an adjoining room. If the extra space provides an unconfined space, remove door to adjoining room or add ventilation grills between rooms. *See "* Ventilation Air From Inside Building " (page 9).

b) Vent room directly to the outdoors. See " Ventilation Air From Outdoors " (page 9).

c) Install a lower BTU/hr heater if lower BTU/hr size makes room unconfined. If the actual BTU/hr used is less than the maximum BTU/hr the space can support, the space is an unconfined space. You will need no additional fresh air ventilation.

WARNING: If the area in which the heater may be operated does not meet the required volume for indoor combustion air, combustion and ventilation air shall be provided by one of the methods described in the NATIONAL FUEL GAS CODE, ANSI Z223.1/ NFPA 54, the INTERNATIONAL FUEL GAS CODE, or applicable local codes.

Ventilation Air From Inside Building

This fresh air would come from an adjoining unconfined space. When ventilating to an adjoining unconfined space, you must provide two permanent openings: one within 12 inches of the ceiling and one within 12 inches of the floor on the wall connecting the two spaces (see options 1 and 2, Figure 2). You can also remove the door into adjoining room (see option 3, Figure 2). Follow the *National Fuel Gas Code. ANSI Z223.1/ NFPA 54, Air for Combustion and Ventilation* for required size of ventilation grills or ducts.

Ventilation Air From Outdoors

Provide extra fresh air by using ventilation grills or ducts. You must provide two permanent openings: one within 12 inches of the ceiling and one within 12 inches of the floor. Connect these items directly to the outdoors or spaces open to the outdoors. These spaces include attics and crawl spaces. Follow the *National Fuel Gas Code, ANSI Z223.1/ NFPA 54, Air for Combustion and Ventilation* for required size of ventilation grills or ducts.

IMPORTANT: Do not provide openings for inlet or outlet air into attic if attic has a thermostat-controlled power vent. Heated air entering the attic will activate the power vent. Rework worksheet, adding the space of the adjoining unconfined space. The combined spaces must have enough fresh air to supply all appliances in both spaces.

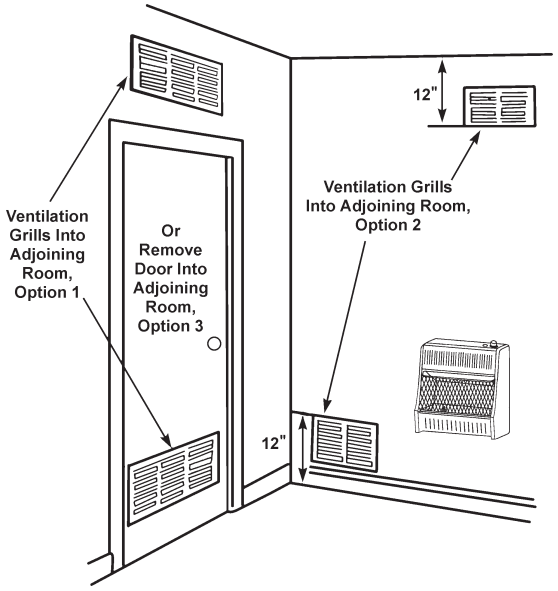


Figure 2 - Ventilation Air from Inside Building

NOTE: Base not included. Not for use in bedrooms or bathrooms.

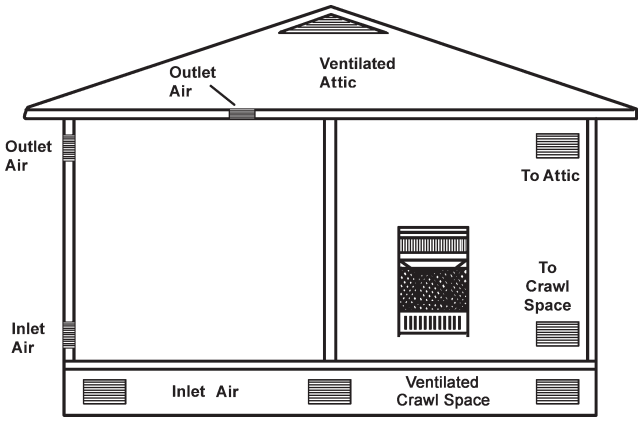


Figure 3 - Ventilation Air from Outdoors

INSTALLATION

NOTICE: This heater is intended for use as supplemental heat. Use this heater along with your primary heating system. Do not install this heater as your primary heat source. If you have a central heating system, you may run system's circulating blower while using heater. This will help circulate the heat throughout the house. In the event of a power outage, you can use this heater as your primary heat source.

CAUTION: If you install the heater in a home garage:

- Heater pilot and burner must be at least 18 inches above the floor.
- Place heater where moving vehicle will not hit it.

WARNING: A qualified service person must install heater. Follow all local codes.

WARNING: Never install the heater

- in a bedroom or bathroom
- in a recreational vehicle
- where curtains, furniture, clothing, or other flammable objects are less than 36 inches from the front, top, or sides of the heater
- in high traffic areas
- in windy or drafty areas

CAUTION: This heater creates warm air currents. These currents move heat to wall surfaces next to heater. Installing heater next to vinyl or cloth wall coverings or operating heater where impurities (such as tobacco smoke, aromatic candles, cleaning fluids, oil or kerosene lamps, etc.) in the air exist, may cause walls to discolor.

IMPORTANT: Vent-free heaters add moisture to the air. Although this is beneficial, installing heater in rooms without enough ventilation air may cause mildew to form too much moisture. See Air for Combustion and Ventilation, pages 7 through 9.

Check Gas Type

Be sure your gas supply is right for your heater. Otherwise, call dealer where you bought the heater for proper type heater.

Clearances To Combustibles

Carefully follow the instructions below. This heater is a freestanding unit designed to be mounted on a wall or set directly on the floor.

WARNING: Maintain the minimum clearances shown in Figure 4. If you can, provide greater clearances from floor, ceiling, and joining wall.

LOCATING HEATER

This heater is designed to be mounted on a wall. For convenience and efficiency, install heater:

1) where there is easy access for operation, inspection, and service.
2) In the coldest part of room.

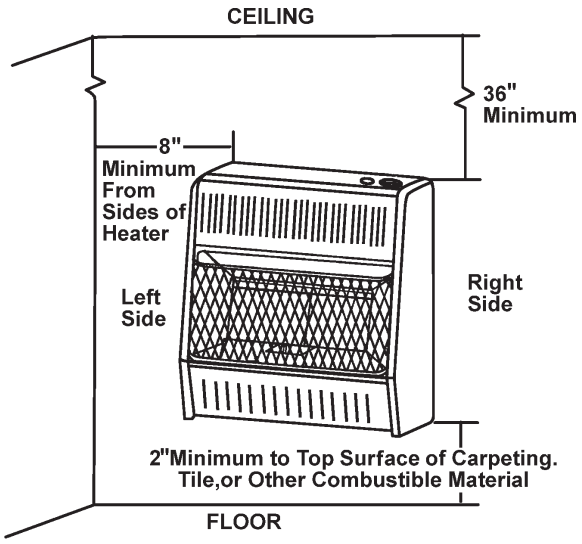


Figure 4 - Mouting clearances as viewed from front of heater (inches)

FASTENING HEATER TO WALL

Mounting Bracket

The mounting bracket is located on back panel of heater (see Figure 5). It has been taped there for shipping. Remove mounting bracket from back panel.

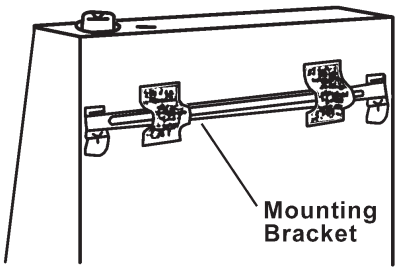


Figure 5 - Mounting Bracket Location

Removing Front Panel of Heater

1. Remove two screws near bottom corners of lower front panel.
2. Pull bottom of lower front panel forward, then down (see Figure 6).

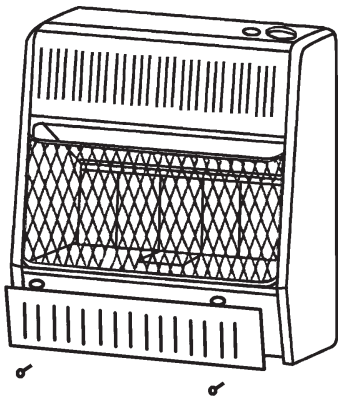


Figure 6 - Removing Front Panel Of Heater

Methods For Attaching Mounting Bracket To Wall

Use only the last hole on each end of mounting bracket to attach bracket to wall. Attach mounting bracket to a wall only in one of two ways:

1. *Attaching to wall stud:* This method provides the strongest hold. Insert mounting screws through mounting bracket and into wall studs.
2. *Attaching to wall anchor:* This method allows you to attach mounting bracket to hollow walls (wall areas between studs) or to solid walls (concrete or masonry).
3. Decide which method better suits your needs. Either method will provide a secure hold for the mounting bracket.

Marking Screw Locations

1. Tape mounting bracket to wall where heater will be located. Make sure mounting bracket is level.

⚠ **WARNING:** Maintain minimum clearances shown in Figure 4. If you can, provide greater clearances from floor and joining wall.

2. Mark screw locations on wall (see Figure 7).

   Note: Mark only last hole on each end of mounting bracket. Insert mounting screws through these holes only.

3. Remove tape and mounting bracket from wall.

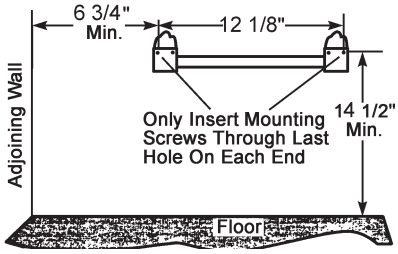
Attaching Mounting Bracket To Wall

Note: Wall anchors, mounting screws, and spacers are in hardware package. The hardware package is provided with heater.

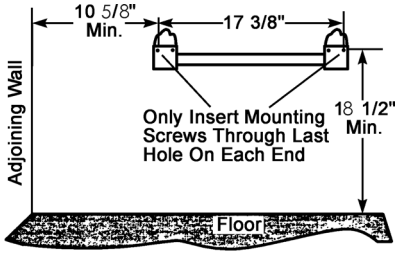
Attaching to Wall Stud Method

For attaching mounting bracket to wall studs:

1. Drill holes at marked locations using 9/64-inch drill bit.
2. Place mounting bracket onto wall. Line up last hole on each end of bracket with holes drilled in wall.
3. Insert mounting screws through bracket and into wall studs.
4. Tighten screws until mounting bracket is firmly fastened to wall studs.



Model: 1096513.9



Model: 2096513.9 and 3096513.9

Figure 7 - Mounting Bracket Clearances (inches)

Attaching to Wall Anchor Method

For attaching mounting bracket to hollow walls (wall areas between studs) or solid walls (concrete or masonry):

1. Drill holes at marked locations using 5/16-inch drill bit. For solid walls (concrete or masonry), drill at least 1 inch deep.
2. Fold wall anchor as shown in Figure 8.
3. Insert wall anchor (wings first) into hole. Tap anchor flush to wall.
4. For thin walls (1/2 inch or less), insert red key into wall anchor. Push red key to "pop" open anchor wings (see Figure 9).

IMPORTANT: Do not hammer anchor key! For thick walls (over 1/2 inch thick) or solid walls, do not pop open wings.

5. Place mounting bracket onto wall. Line up last hole on each end of bracket with wall anchors.
6. Insert mounting screws through bracket and into wall anchors.
7. Tighten screws until mounting bracket is firmly fastened to wall.

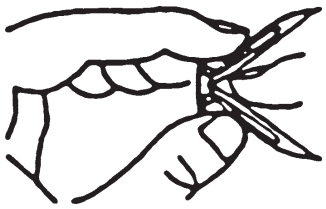


Figure 8 - Folding Anchor

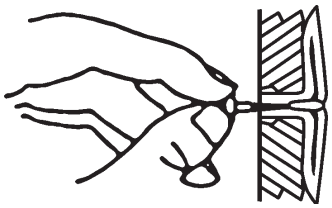


Figure 9 - Popping Open Anchor Wing For Thin Walls

Placing Heater On Mounting Bracket

1. Locate two horizontal slots on back panel of heater (see Figure 10).
2. Place heater onto mounting bracket. Slide horizontal slots onto stand-out tabs on mounting bracket.

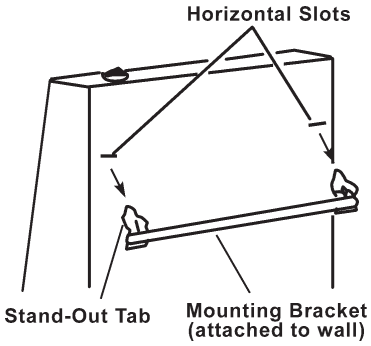


Figure 10 - Mounting Heater Onto Mounting Bracket

Installing Bottom Mounting Bracket

1. Install bottom bracket to heater bottom with two screws. It may be more convenient to remove heater from wall bracket to attach.
2. Place heater on wall mounting bracket.
3. Mark screw locations on wall.
4. Remove heater from mounting bracket.
5. If installing bottom mounting screws into hollow or solid wall, install wall anchors. Follow steps 1 through 4 under "Attaching To Wall Anchor Method". If installing bottom mounting screw into wall stud, drill holes at marked locations using 9/64-inch drill bit.
6. Replace heater onto mounting bracket.
7. Tighten both screws until heater is firmly secured to wall. Do not over-tighten.

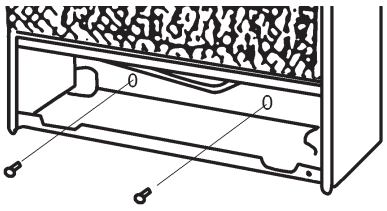


Figure 11 - Installing Bottom Mounting Bracket

CONNECTING TO GAS SUPPLY

WARNING: A qualified service technician must connect heater to gas supply. Follow all local codes.

WARNING: This appliance requires a 3/8-inch NPT (National Pipe Thread) inlet connection to the pressure regulator.

WARNING: Never connect heater to private (non-utility) gas wells. This gas is commonly known as wellhead gas.

WARNING: Do not over-tighten gas connections.

CAUTION: Use only new, black iron or steel pipe. Internally tinned copper tubing may be used in certain areas. Check your local codes. Use pipe of 1/2-in. diameter or greater to allow proper gas volume to heater. If pipe is too small, undue loss of pressure will occur.

CAUTION: Use pipe joint sealant that is resistant to gas (Propane or Natural Gas).

Typical Inlet Pipe Diameters Use 3/8-inch black iron pipe or greater. Installation must include an equipment shutoff valve, union, and plugged 1/8-inch NPT tap. Locate NPT tap within reach for test gauge hook up. NPT tap must be upstream from heater (see Figure 12).

IMPORTANT: Install an equipment shutoff valve in an accessible location. The equipment shutoff valve is for turning on or shutting off the gas to the appliance.

NATURAL GAS MODELS:

CAUTION: Check your gas line pressure before connecting heater to gas line. Gas line pressure must be no greater than 10.5 inches of water. If gas line pressure is higher, heater regulator damage could occur.

PROPANE MODELS:

CAUTION: Never connect heater directly to the gas supply. This heater requires an external regulator (not supplied). Install the external regulator between the heater and gas supply.

CAUTION: Avoid damage to regulator. Hold gas regulator with wrench when connecting into gas piping and/or fittings.

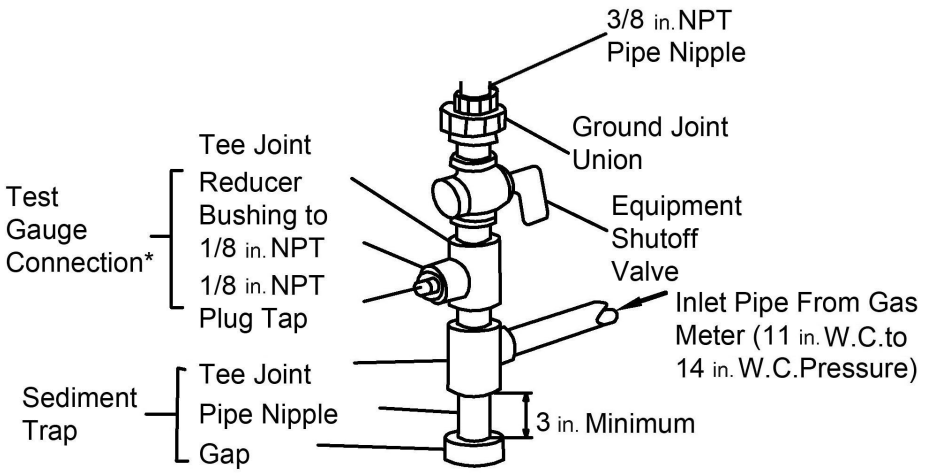


Figure 12 - Gas Connection (inches)

* Purchase the optional CSA design-certified equipment shutoff valve from your dealer.

Apply pipe joint sealant lightly to male threads. This will prevent excess sealant from going into pipe. Excess sealant in pipe could result in clogged heater valves. The installer must supply an external regulator. The external regulator will reduce incoming gas pressure. You must reduce incoming gas pressure to between 11 and 14 inches of water. If you do not reduce incoming gas pressure, heater regulator damage could occur. Install external regulator with the vent pointing down as shown in Figure 13. Pointing the vent down protects it from freezing rain or sleet.

Install sediment trap in supply line as shown in Figure 12. Place sediment trap where it is within reach for cleaning. Place sediment trap where trapped matter is not likely to freeze. A sediment trap traps moisture and contaminants. This keeps them from going into heater controls. If sediment trap is not installed or is installed wrong, heater may not run properly.

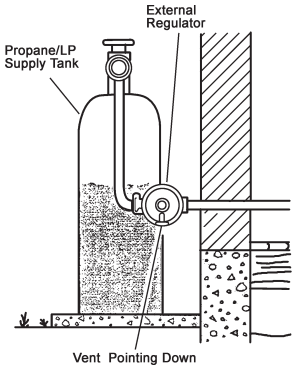


Figure 13 - External Regulator with Vent Pointing Down

INSTALLATION

Continued

CAUTION: Two gas line installations at the same time are prohibited. The access plate to the simple switching means shall not be opened while the heater is in operation.
This appliance can be used with propane or natural gas. It is shipped from the factory adjusted for use with propane. Only a qualified installer or service technician can perform gas selection and connecting to gas supply.

⚠ **CAUTION:** To avoid gas leakage at the inlet of regulator, a qualified installer or service technician must use steel or metal hex plug with sealant.

⚠ **WARNING**: Do not attempt to access or change the setting of the fuel selection means

Access to and adjustment of the fuel selection means must only be performed by a qualified service person when connecting this appliance to a specified fuel supply at the time of installation.

Change of the selector setting to other than the fuel type specified at the time of installation could damage this appliance and render it inoperable.

The instaler shall replace the access cover before completing the installation and operating this appliance.

For changing from propane to natural gas supply:

1. Remove top screw from cover plate, See Figure 14, and rotate to expose fuel selection device.
2. For NATURAL GAS, press knob using a flat screwdriver with a blade with thickness of a quarter and turn knob clockwise ↷ until the knob locks into the NG position (see Figure 15). Fuel selection device must be locked in the NG position. Do not operate heater between locked positions!
3. Rotate and close cover over fuel selection device and reinstall screw.
4. Remove steel or metal hex plug (with wrench provided) from natural gas inlet of regulator and install into LP inlet of regulator; use thread sealant to ensure that there are no leaks.

For changing from natural gas supply to propane supply:

1. Remove top screw from cover plate, See Figure 14, and rotate to expose fuel selection device.
2. For propane gas, press in knob using a flat screwdriver with a blade the thickness of a quarter and turn knob counterclockwise ↶ until the knob locks into the LP position, see Figure 16. Fuel selection device must be locked in the LP position. Do not operate heater between locked positions.
3. Rotate and close cover over fuel selection device and reinstall screw.
4. Remove steel or metal hex plug from liquid propane inlet of regulator and install into NG inlet of regulator; use thread sealant to assure there are no leaks.

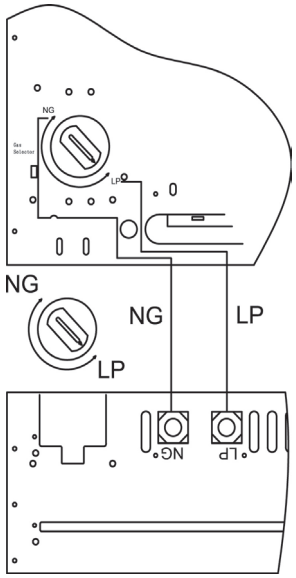


Figure 14

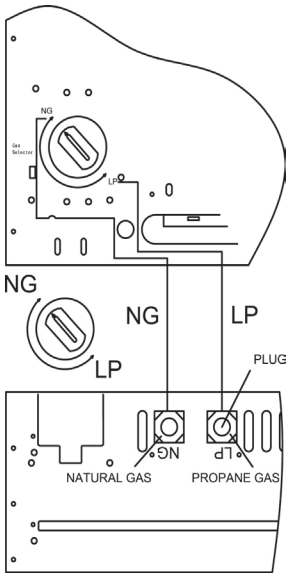


Figure 15

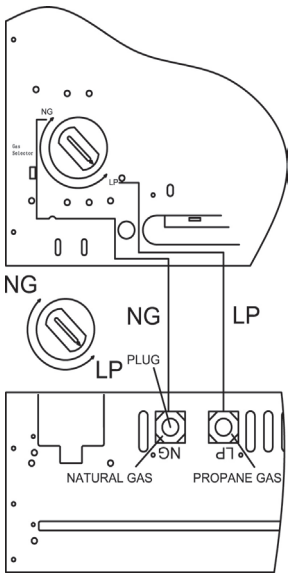


Figure 16

CHECKING GAS CONNECTIONS

WARNING: Test all gas piping and connections for leaks after installing or servicing. Correct all leaks at once.

WARNING: Never use an open flame to check for a leak. Apply a mixture of liquid soap and water to all joints. If bubbles form, there is a leak. Correct all leaks at once.

PRESSURE TESTING GAS SUPPLY PIPING SYSTEM

Test Pressures In Excess Of 1/2 PSIG (3.5kPa)

1. Disconnect heater with its appliance main gas valve (control valve) and equipment shutoff valve from gas supply piping system. Pressures in excess of 1/2 PSIG will damage heater regulator.
2. Cap off open end of gas pipe where equipment shutoff valve was connected.
3. Pressurize supply piping system by either using compressed air or opening gas supply valve.
4. Check all joints of gas supply piping system. Apply mixture of liquid soap and water to gas joints. If bubbles form, there may be a leak.
5. Correct all leaks at once.
6. Reconnect heater and equipment shutoff valve to gas suply. Check reconnected fittings for leaks.

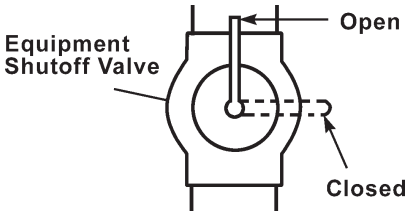


Figure 17 - Equipment Shutoff Valve

Test Pressures Equal To or Less Than 1/2 PSIG (3.5 kPa)

1. Close equipment shutoff valve (see Figure 17).
2. Pressurize supply piping system by either using compressed air or opening natural supply tank valve.
3. Check all joints from gas meter to equipment shutoff valve (see Figure 18).
   Apply mixture of liquid soap and water to gas joints. If bubbles form, there is a leak.
4. Correct all leaks at once.

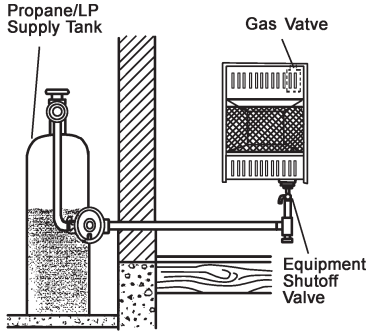


Figure 18 - Fuel Supply

Pressure Testing Heater Gas Connections

1. Open equipment shutoff valve (see Figure 17).
2. Open gas supply tank valve.
3. Make sure control knob of heater is in the OFF position.
4. Remove front panel.
5. Check all joints from equipment shutoff valve to control valve (see Figure 17). Apply mixture of liquid soap and water to gas joints. If bubbles form, there may be a leak.
6. Correct all leaks at once.
7. Light heater (see *Lighting Instructions on page 19*). Check all other internal joints for leaks.
8. Turn off heater (see "To Turn Off Gas Appliance" on page 18).
9. Replace lower front panel.

OPERATION

FOR YOUR SAFETY READ BEFORE LIGHTING

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

A. When lighting the pilot, follow these instructions exactly.

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

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

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

WHAT TO DO IF YOU SMELL GAS

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

LIGHTING INSTRUCTIONS

1. STOP! Read the safety information on the side of the heater.

2. Make sure equipment shutoff valve is fully open.

3. Turn control knob clockwise ↷ to the OFF position.

4. Wait five (5) minutes to clear out any gas. Then smell for gas, including near the floor. If you smell gas, STOP! Do not try to light any appliance. Do not touch electrical switch or use any phone in the building. Immediately contact gas supplier from a neighbor's phone. Follow gas supplier's instructions. If you can't reach the gas supplier, call the fire dept. If you don't smell gas, go to the next step.

5. Turn control knob counterclockwise ↶ to the PILOT position. Press in control knob for five (5) seconds (see Figure 19).

   Note: The first time that the heater is operated after connecting the gas supply, the control knob should be depressed for about thirty (30) seconds.This will allow air to bleed from the gas system. If pilot does not stay lit, refer to *Troubleshooting*, pages 23 through 24. Also contact a qualified service technician or gas supplier for repairs. Until repairs are made, light pilot with match.

• If control knob does not pop up when released, contact a qualified service technician or gas supplier for repairs.

6. With control knob pressed in, push down and release ignitor button. This will light pilot. The pilot is attached to the front of burner. The pilot can be seen through the gill. If needed, keep pressing ignitor button until pilot lights. ***Note***: If pilot does not stay lit, refer to *Troubleshooting*, pages 23 through 24. Also contact a qualified service technician or gas supplier for repairs. Until repairs are made, light pilot with match. To light pilot with match, see "Manual Lighting Procedure".

7. Keep control knob pressed in for 30 seconds after lighting pilot. After 30 seconds, release control knob. If control knob does not pop up when released, contact a qualified service technician or gas supplier for repairs. ***Note***: If pilot goes out, repeat steps 3 through 7. This heater has a safety interlock system. Wait one (1) minute before lighting pilot again.

8. Turn control knob counterclockwise ↶ to desired heating level. The main burner should light. Set control knob to any heat level between 1 and 5.

⚠ **CAUTION:** Do not try to adjust heating levels by using the equipment shutoff valve.

THERMOSTAT CONTROL OPERATION

The thermostatic control used on this model differs from standard thermostats. Standard thermostats simply turn the burner on and off. The thermostat used on this heater senses the room temperature. At times the room may exceed the set temperature. If so, the burner will shut off. The burner will cycle back on when room temperature drops below the set temperature. The control knob can be set to any comfort level between 1 and 5.

TO TURN OFF GAS TO APPLIANCE

Shutting Off Heater

Turn control knob clockwise ↷ to the OFF position.

Shutting Off Burner Only (pilot stays lit)

Turn control knob clockwise ↷ to the PILOT position.

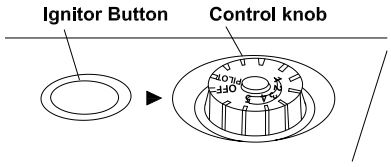


Figure 19 - Control Knob in the OFF Position

INSPECTING BURNER

Check pilot flame pattern and burner flame pattern often.

PILOT FLAME PATTERN

Figure 20 shows a correct pilot flame pattern. Figure 21 shows a incorrect pilot flame pattern. The incorrect pilot flame is not touching the thermocouple. This will cause the thermocouple to cool, which shuts the heater off. If pilot flame pattern is incorrect:

- turn heater off (see “To Turn Off Gas to Appliance” on page 17)
- see *Troubleshooting* pages 20 through 22.

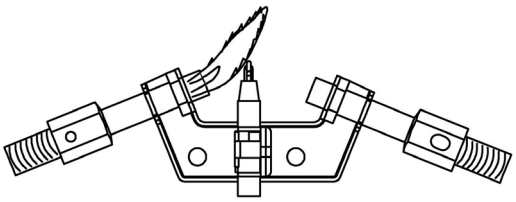


Figure 20 - Correct Pilot Flame Pattern

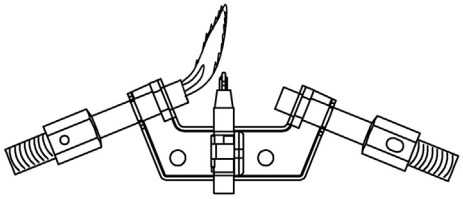


Figure 21 - Incorrect Pilot Flame Pattern

WARNING: If yellow tipping occurs, your heater could produce increased levels of carbon monoxide. If burner flame pattern shows yellow tipping, follow instructions at bottom of this page.

Notice: Do not mistake orange flames with yellow tipping. Dirt or other fine particles enter the heater and burn causing brief patches of orange flame.

BURNER FLAME PATTERN

Figure 22 shows a correct burner flame pattern. Figure 23 shows an incorrect burner flame pattern. If burner flame pattern is incorrect then:

- turn heater off (see “To Turn Off Gas to Appliance” on page 17).
- see *Troubleshooting*, pages 20 through 22.

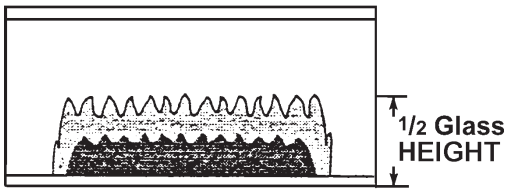


Figure 22 - Correct Burner Flame Pattern

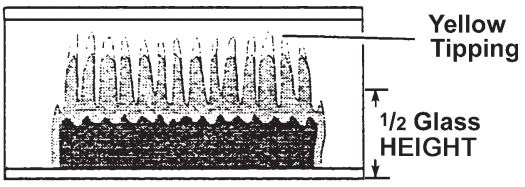


Figure 23 - Incorrect Burner Flame Pattern