Safety Precautions

⚠ WARNING

Air Quality Hazard

- Do not use this heater for heating human living quarters.
- Use of direct-fired heaters in the construction environment can result in exposure to levels of CO, CO2, and NO2 considered to be hazardous to health and potentially life threatening.
- Do not use in unventilated areas.
- Know the signs of CO and CO2 poisoning
  - Headaches, stinging eyes.
  - Dizziness, disorientation.
  - Difficulty breathing, feeling of being suffocated.
- Proper ventilation air exchange (OSHA 29 CFR 1926.57) to support combustions and maintain acceptable air quality shall be provided in accordance with OSHA 29 CFR part 1926.154, ANSI A10.10 Safety Requirements for Temporary and Portable Space Heating Devices and Equipment used in the Construction Industry or the Natural Gas and Propane Installation Codes CSA B149.1.
  - Periodically monitor levels of CO, CO2, and NO2 existing at the construction site – at the minimum at the start of the shift and after 4 hours.
  - Provide ventilation air exchange, either natural or mechanical, as required to maintain acceptable indoor air quality.

USA 8-Hr. Time weighted average (OSHA 29 CFR 1926.55 App A)		Canada 8-Hr. Time weighted average WorkSafe BC OHS Guidelines Part 5.1 and Ontario Workplaces Reg 833
CO	50 ppm	25 ppm
CO2	5,000 ppm	5,000 ppm
NO2		3 ppm (Reg 833)
USA – Ceiling Limit (Short Term Exposure Limit = 15 minutes)		Canada STEL (15 minutes Reg 833/1 hr. WSBC) WorkSafe BC OHS Guidelines part 5.1 and Ontario Workplaces Reg 833
CO		100 ppm
CO2		15,000 ppm (WSBC) 30,000 ppm (Reg 833)
NO2	5 ppm	1.0 ppm (WorkSafeBC) 5.0 ppm (Reg 833)

- Ensure that the flow of combustion and ventilation air exchange cannot become obstructed.
- As the building 'tightens up" during the construction phases, ventilation may need to be increased.

Fuel Gas Odor

Propane gas and natural gas have man-made odorants added specifically for detection of fuel gas leaks. If a gas leak occurs, you should be able to smell the fuel gas . THAT'S YOUR SIGNAL TO GO INTO IMMEDIATE ACTION!

- Do not take any action that could ignite the fuel gas. Do not operate any electrical switches. Do not pull any power supply or extension cords. Do not light matches or any other source of flame. Do not use your telephone.
- Get everyone out of the building and away from the area immediately.
- Close all fuel supply valves.
- Propane gas is heavier than air and may settle in low areas. When you have reason to suspect a propane leak, keep out of all low areas.
- Use your neighbor's phone and call your fuel gas-supplier and your fire department. Do not re-enter the building or area.
- Stay out of the building and away from the area until declared safe by the firefighters and your fuel gas supplier.
- FINALLY, let the fuel gas service person and the firefighters check for escaped gas. Have them air out the building and area before you return. Properly trained service people must repair the leak, check for further leakages, and then relight the heater for you.

Odor Fading - No Odor Detected

- Some people cannot smell well. Some people cannot smell the odor of the man-made chemical added to propane or natural gas. You must determine if you can smell the odorant in these fuel gases.
- Learn to recognize the odor of propane gas and natural gas. Local propane gas dealers and your local natural gas supplier (utility) will be more than happy to give you a "scratch and sniff" pamphlet. Use it to become familiar with the fuel gas odor.
- Smoking can decrease your ability to smell. Being around an odor for a period of time can affect your sensitivity to that particular odor.
- The odorant in propane gas and natural gas is colorless and the intensity of its odor can fade under some circumstances.
- If there is an underground leak, the movement of gas through the soil can filter the odorant.
- Propane gas odor may differ in intensity at different levels. Since propane gas is heavier than air, there may be more odor at lower levels.
- Always be sensitive to the slightest gas odor. If you continue to detect any gas odor, no matter how small, treat it as a serious leak. Immediately go into action as discussed previously.

Attention - Critical Points to Remember!

- Propane gas and natural gas have a distinctive odor. Learn to recognize these odors. (Reference "Fuel Gas Odor" and "Odor Fading" sections above.

- If you have not been properly trained in repair and service of propane gas and natural gas fueled heaters, then do not attempt to light the heater, perform service or repairs, or make any adjustments to the heater on a propane gas or natural gas fuel system.

- Even if you are not properly trained in the service and repair of radiant heaters, ALWAYS be consciously aware of the odors of propane gas and natural gas.

- A periodic "sniff test" around the heater or at the heater's joints; i.e. hose, connections, etc., is a good safety practice under any conditions. If you smell even a small amount of gas, CONTACT YOUR FUEL GAS SUPPLIER IMMEDIATELY. DO NOT WAIT!

1. Do not attempt to install, repair, or service this heater or the gas supply line unless you have continuing expert training and knowledge of gas heaters.

QUALIFICATIONS FOR SERVICING AND INSTALLATION:

a. To be a qualified gas heater service person, you must have been trained in gas-fired heater servicing, repair and also have sufficient experience to allow you to troubleshoot, replace defective parts, and test heaters in order to get them into a continuing safe and normal operation condition. You must completely familiarize yourself with each model heater by reading and complying with the safety instructions, labels, owner's manual, etc. that are provided with each heater.

b. To be a qualified gas installation person, you must have sufficient training and experience to handle all aspects of installing, repairing, and altering gas lines, including selecting and installing the proper equipment, and selecting proper pipe size to be used. This must be done in accordance with all local, state and national codes as well as the manufacturer's requirements.

c. In the Commonwealth of Massachusettes, this product must be installed by a gas fitter licensed in the Commonwealth of Massachusettes.

⚠WARNING
ELECTRICAL GROUNDING INSTRUCTIONS

This heater is equipped with a three prong (grounding) plug for your protection against electrical shock hazard. It must be plugged into a properly grounded three prong receptacle. Failure to use a properly grounded receptacle can result in electrical shock or death.

2. All installations or applications of L. B. White Co., Inc.'s heaters shall meet the requirements of local, state and national L.P. gas and natural gas, electrical and safety codes. Your gas supplier, local licensed electrician, local fire department and government agencies can help you determine these requirements. In the absence of local codes, comply with the following:

a. Installations in the U.S.A.:
-- NFPA 102, standard for assembly seating, tents and membrane structures
-- ANSI/NFPA 58, latest edition, Standard for Storage and Handling of Liquefied Petroleum Gas and/or
-- ANSI Z223.1/NFPA 54, National Fuel Gas Code
-- ANSI/NFPA 70, National Electrical Code.

b. Installations in Canada:
-- CAN1-B149.1 or CAN1-B149.2 Installation Codes
-- CSA C22.1 Part 1 Standard Canadian Electrical Code.
-- CSA C22.2 No.3, Electrical Features of Fuel Burning Equipment.

3. We cannot anticipate every use which maybe made of our heaters. Other standards govern the use of fuel gases and heat producing products in specific applications. Your local authority can advise you about these. Check with the local fire safety authority if you have questions about applications.

4. Forced air heaters shall not be directed toward any propane gas container within 20 feet/6.10 meters.

5. Do not wash the heater. Use only compressed air, a soft brush or dry cloth to clean the interior of the heater and it's components.

6. For safety, this heater is equipped with manual reset high limit switches, an air-proving switch, and a redundant gas control valve. Never operate the heater with any safety device that has been bypassed. Do not operate this heater unless all of these features are fully functioning.

7. Do not direct the heater toward any propane gas supply container or gas hose within 20 ft. (6m) of the heaters hot air discharge.

8. Do not block air intakes or discharge outlets of the heater. Doing so may cause improper combustion or damage to heater components leading to property damage.

9. The hose assembly shall be visually inspected on a daily basis after heater relocation and when the heater is in use. If it is evident there is excessive abrasion or wear, or if the hose is cut, it must be replaced prior to the heater being put into operation. The hose assembly shall be protected from building materials, and contact with hot surfaces both during use and while in storage. The replacement hose assembly shall be that specified by the manufacturer. See parts list.

10. Check for gas leaks and proper function upon heater installation, when relocating, and after servicing. Refer to leak check instructions within installation section of this manual.

11. This heater should be inspected for proper operation by a qualified service person before each use and at least annually.

12. Always turn off the gas supply to the heater if the heater is not going to be used in the heating of the work space.

13. If gas flow is interrupted and flame goes out, do not relight the heater until you are that all gas that may have accummulated has cleared away. In any event, do not relight the heater for at least 5 minutes.

14. Minimum propane gas cylinder size to be used: 170,000 btuh heaters: (1) 100 lb./45 kg or (2) 40 lb./18 kg. : 80,000 btuh heaters: 40 lb./18 kg Multiple cylinder installations require a manifold to ensure continuous supply of gas. The system must be arranged to provide vapor withdrawal from the operating cylinder.

15. When the heater is to be stored indoors, the connection between the propane gas supply cylinder(s) and the heater must be disconnected and the cylinder(s) removed form the heater and stored in accordance with the Standard for the Storage and Handling of Liquified Petroleum Gases, ANSI/NFPA 58 or Standard CSA B149.1 Natural Gas and Propane Installation Code as appropriate.

16. Propane gas supply containers have left handed threads. Use the manual hand wheel supplied with the regulator to make a connection of the regulator's P.O.L. fitting into the cylinders' gas supply valve.

17. Use pipe joint compound that is resistant to propane and natural gas.

18. For either indoor or outdoor installation. Adequate ventilation shall be provided in accordance with OSHA 29 CFR 1926.154, Safety Requirements for Temporary and Portable Space Heating Devices and Equipment, ANSI A10.10, National Fuel Gas Code, ANSI Z223.1/NFPA54, Liquified Petroleum Gas Code, NFPA 58 or the Natural Gas and Propane Installation Code, CAN B149.1, as appropriate.

General Installation Instructions

⚠ WARNING

Burn Hazard

Can cause property damage, severe injury or death.

1. To avoid dangerous accumulation of fuel gas, turn off gas supply at the appliance service valve before starting installation, and perform gas leak test after completion of installation.
2. Do not force the gas control knob. Use only your hand to turn the gas control knob. Never use any tools. If the knob will not operate by hand, the control should be replaced by a qualified service technician. Force or attempted repair may result in fire or explosion.

1. Read all safety precautions and follow L.B. White recommendations when installing this heater. If during the installation or relocating of heater, you suspect that a part is damaged or defective, call a qualified service agency for repair or replacement.

2. The heating equipment must be properly positioned before use on a flat, stable, and horizontal surface. Ensure the heater is level. (Use a level, check lengthwise & crosswise). Observe and obey all minimum safe distances of the heater to the nearest combustible materials. Safe distances are given on the heater dataplate and on page 4 of this manual.

3. L.P Gas Installation Requirements

- All LP. gas containers must be placed at least 5 feet/1.52 meters from the nearest tent wall structure.
- Ensure all L.P. gas containers are secured and protected from all people, vehicular traffic and contact.
- L.P. gas containers must be located on a flat,level, and stable surface.
- L.P. gas cylinders (a.k.a. 100 lb/45 kg. cylinders/ tanks) must be secured from tip-over.

Contact your local authorities, L.P. gas dealers, or fire marshalls for specifics dealing with installation in your area

4. This heater may be installed either indoors or outdoors and is approved for use with or without ductwork. For outdoor installations, additional accessories are needed to properly provide heated air to the inside. These accessories are as follows:

Only the ducting and the air distribution accessories as supplied and specified by the heater's manufacturer shall be used.

Unit Diffuser:

This accessory provides the necessary clearance to combustible materials and also spreads the heated air inside the tent. Local codes may require a 3.04 m separation between the tent and the heater. In this case the unit mounted diffuser shall not be used.

Unit Diffuser Part Numbers:
80,000 btu/h heaters: 500-26349
170,000 btu/h heaters: 500-26351

Duct Kit, 12 in./0.3 m. diameter x 12 ft/3.65 m. length:

This accessory provides for locating the heater 10 ft./3,04 meters away from the tent as required by some local codes.

Use only one duct (12 ft. x 12 in. / 3.65 m x 30.4 cm) per heater with or without an end diffuser.

Duct Kit Part Numbers: Gray 500-26346
White 500-26347 Clear 500-26348

End Diffuser:

This accessory is used with the 12 in/.3 m. diameter x 12 ft./3.65 m. duct. It is placed under the tent edge and provides for spreading of the heated air inside the tent.

End Diffuser Part Number: 500-26350

DO NOT USE ANY OTHER DUCTWORK, DUCTING,FIELD FABRICATED DUCTS, TARPS,STOVE PIPE, or any other means of making the connection between the heater and the inside of the tent.

5. When using the unit diffuser or end diffuser air distribution accessories, ensure the tent material is laid within the accessory's channel, and the tent material is firmly anchored to hold the tent material securely within the channel. See pages 16 and 17 for specifics when using these air distribution accessories.

6. The heater's gas pressure regulator (with pressure relief valve) must be protected from adverse weather conditions (rain, ice, snow) as well as from building materials (tar, concrete,