

IMPORTANT: Read and understand this manual before starting heater. Improper use of heater can cause serious injury.

GENERAL HAZARD WARNING:

Failure to comply with the precautions and instructions provided with this heater, can result in death, serious bodily injury and property loss or damage from hazards of fire, explosion, burn, asphyxiation, carbon monoxide poisoning and/or electrical shock.

Only persons who can understand and follow the instructions should use this heater.

If you need assistance or heater information, CONTACT CROWN RENTAL.

GAS-FIRED INFRARED CONSTRUCTION HEATER

MODEL 100-R

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.

WARNING: Not for home or recreational vehicle use.

WARNING: Do not exceed 1/2 psi (14" w.c.) gas pressure to the gas control valve. The heater is designed for use as a construction heater in accordance with ANSI Z83.7/CGA 2.14. Other standards govern the use of fuel gases and heating products for specific uses. Your local authority can advise you about these. The primary purpose of construction heaters is to provide temporary heating of buildings under construction, alteration or repair. Properly used, the heater provides safe economical heating. Products of combustion are vented into the area being heated. We cannot foresee every use which may be made of our heaters. Check with your local fire safety authority if you have questions about heater use.

Carbon Monoxide Poisoning: Some people are more affected by carbon monoxide than others. Early signs of carbon monoxide poisoning resemble the flu, with headaches, dizziness and/or nausea. If you have these signs, the heater may not be working properly. Get fresh air at once! Check for proper ventilation and have heater serviced.

Natural and Propane/LP Gas: Natural and propane/LP gas is odorless. An odor-making agent is added to these gases. The odor helps you detect a gas leak. However, the odor added to the gas can fade. Gas may be present even though no odor exists. Make certain you read and understand all warnings.

Keep this manual for reference. It is your guide to safe and proper operation of this heater.

1. Install and use heater with care. Follow all local ordinances and codes. In the absence of local ordinances and codes, refer to the Standard for Storage and Handling of Liquefied Petroleum Gas, ANSI/NFPA 58 and the Propane Installation Code, CAN/CGA B149.2. This instructs on the safe storage and handling of flammable gases.
2. Use only the hose and factory preset regulator provided with the heater.
3. Model 100-R: Use only propane gas set up for vapor withdrawal.
4. Provide adequate ventilation. Before using heater, provide at least a 0.28 m² (3 ft²) opening of fresh outside air for each 100,000 Btu/Hr rating of heater.
5. For indoor use only.
6. Do not use heater in occupied dwellings or in living or sleeping quarters.
7. Do not use heater in basement or below ground level.
8. Keep appliance area clear and free from combustible materials, gasoline, paint thinner and other flammable vapors and liquids. Dust is combustible. Do not use heater in areas with high dust content.
9. Minimum heater clearances from combustibles: Sides (5 ft), Top (4 ft).
10. Keep heater at least (20 ft) from propane tank(s).

11. Keep propane tank(s) below 38° C (100° F).
12. Check heater for damage before each use. Do not use a damaged heater.
13. Check hose (if used) before each use of heater. If highly worn or cut, CONTACT CROWN RENTAL before using heater.
14. Locate heater on stable and level surface if heater is hot or operating.
15. Not intended for use on finished floors.
16. Never block any air inlet or air outlet openings of heater.
17. Keep heater away from strong drafts, wind, water spray, rain or dripping water.
18. Do not leave heater unattended.
19. Keep children and animals away from heater.
20. To prevent burns, remove handle before operating heater.
21. Never move, handle or service a hot or operating heater. Severe burns may result. Wait 20 minutes after turning heater off.
22. To prevent injury, wear gloves when handling heater.
23. Never attach duct work to heater.
24. Do not alter heater. Keep heater in its original state.
25. Do not use heater if altered.
26. Turn off gas supply to heater when not in use.

SAFETY INFORMATION

The amount of propane gas ready for use from propane tanks varies. Two factors decide this amount.

1. The amount of liquid propane gas in tank(s)
2. The temperature of tank(s)

The chart below shows the minimum number of (100 lb) tanks needed to run the heater. Connect tanks together with a manifold.

Average Temperature Number Of Tanks At Tank Location (100 lb)

above 0° C (32° F)	2
Below 0° C (32° F)	3

Less gas is vaporized at lower temperatures. Your local propane gas dealer will help you select the proper supply system.

Smaller tanks can be used for limited run times but it is recommended to use larger tanks for optimum performance.

VENTILATION

WARNING: Provide at least a 0.28 m² (3 ft²) opening of fresh, outside air for each 100,000 Btu/Hr rating while running heater. If proper fresh, outside air ventilation is not provided, carbon monoxide poisoning can occur. Provide proper fresh, outside air ventilation before running heater.

INSTALLATION

Test all gas piping and connections for leaks after installation. Never use an open flame to check for a leak. Apply a mixture of liquid soap and water to all joints. Bubbles forming show a leak. Correct all leaks at once.

Read these instructions carefully.

Read and adhere to these instructions. Do not allow anyone who has not read these instructions to assemble, light, adjust or operate this heater.

Do not attempt to operate the heater with any gas other than that indicated on the heater nameplate.

For the U.S. and/or Canada, the installation of this appliance must comply with local and/or Provincial codes or, in the absence of these codes, with the (U.S.) National Fuel Gas Code, ANSI Z223.1 - Latest Edition (for natural and propane/LP gas operation) and with the (U.S) Standard for the Storage and Handling of Liquefied Petroleum Gases, ANSI/NFPA 58 (for propane/LP gas operation) or with the current (Canadian) CAN/CGA B149.1 and B149.2 installation codes.

LOCATING HEATER

The heater (and propane/LP gas supply cylinder if applicable) must be located on a hard, flat, level surface to minimize the risk of accidental tipping. If a propane/LP gas supply cylinder is used, the cylinder should be adequately

restrained to prevent accidental tipping. DO NOT operate this heater with the supply cylinder in any other than the upright position.

This appliance must be installed only in locations where the potential for physical damage to the appliance (i.e., due to physical contact) is reduced to a minimum.

This appliance produces radiant heat. Therefore, it must be located at least 6 feet away from any propane/LP gas container and must not be directed toward any propane/LP gas container within 20 feet.

The heater must be installed in a location such that it will not be exposed directly to water spray, rain and/or dripping water.

Use of this heater in a draft/windy area decreases its efficiency. If possible, operate the unit in a draft free area.

PIPING

For Model 100-R (for use with Propane/LP Gas only)

This model may be connected to a self-contained propane/LP gas supply system using the hose and regulator assembly supplied with the appliance OR, it may be connected to a permanently installed propane/LP gas supply system.

If connected to a self-contained propane/LP gas supply system, the hose assembly must be inspected prior to each use of the heater. If it is evident that there is excessive abrasion or wear or if the hose is cut, it must be replaced prior to the heater being put into operation.

WARNING: Never use a fork lift truck type cylinder.

The connection of model 100-R to a propane/LP cylinder must be made in a well ventilated area using the regulator and hose assembly supplied with the appliance. DO NOT attempt to adjust this regulator. It has been preset at the factory to provide safe and proper operation of the appliance.

Use a 7/8" open end wrench to connect the POL fitting (supplied with the propane/LP regulator) to the propane/LP cylinder. Turn the POL nut in a counterclockwise direction (left hand thread) until tight. DO NOT use pipe compound on POL threads.

The heater must be located at least six feet away from any propane/LP cylinder and must not be directed toward any propane/LP cylinder within 20 feet. If more than one heater is used, they and the supply cylinders must be separated by at least 20 feet. The gas supply must be turned off at the propane/LP supply cylinder when the heater is not in use. When the heater is to be stored indoors, the connection between the propane/LP supply cylinder and the heater must be disconnected and the cylinder removed from the heater and stored in accordance with Chapter 5 of the Standard for the Storage and Handling of Liquefied Petroleum Gases. ANSI/NFPA 58 (U.S.) OR CAN/CGA B149.2 (Canada).

If connected to a permanently installed propane/LP supply system, the system requires the use of a two-stage gas regulator assembly which is normally provided by your propane/LP dealer as part of the propane/LP supply system. Consult with your local propane/LP dealer for details concerning proper equipment and installation.

LIGHTING HEATER

1. Before attempting to light the heater, smell all around the heater area for gas. Turn on the gas supply to the appliance and check all fittings and connections for gas leaks using a mild soap and water solution. NEVER use a match to check for gas leaks. Should a gas leak occur, shut off the gas supply to the appliance immediately. Wait a minimum of five minutes before repairing the leak.
2. Use only the fuel intended for this appliance. Check the appliance rating plate for the correct fuel information.
3. Turn the control knob clockwise to the OFF position.
4. Wait a sufficient length of time (at least five minutes) to allow gas which may have accumulated in burner compartment to escape.
5. Turn on the main gas supply.

6. Turn control knob counterclockwise to the PILOT position.

7a. Press and turn control knob counterclockwise to PILOT position and hold for 1 to 2 minutes. This may take longer to purge air from supply hose depending on length of the hose being used. Press red spark ignition button to light pilot flame (repeat until pilot lights) and continue to hold control knob at PILOT position for 30-60 seconds to enable pilot light safety system. Fully turn control knob to HI position to light burner.

7b. To match light the pilot, move the lighting hole cover aside and place a lighted match into hole. Press control knob and hold while lighting and observing pilot burner. Ensure that pilot burner ignites from match. Allow pilot to burn approximately 30 seconds before releasing control knob. If pilot does not remain lit, repeat lighting operation allowing a longer period of time before releasing control knob.

Note: In cases where long runs of gas supply lines have been installed ahead of the appliance, it may be necessary to bleed trapped air out of supply lines before lighting pilot. New installations generally require bleed of supply lines. Wait a minimum of five minutes after bleeding supply lines before attempting to light heater. Adjust pilot if necessary as noted under Pilot Burner Adjustment.

8. Turn control knob counterclockwise to the ON position. The burner will light. DO NOT operate heater in any position other than full ON.

IMPORTANT: DO NOT attempt to adjust the main burner input using the main gas supply valve. This may cause the pilot and thermocouple to shut down the burner.
SHUTTING OFF HEATER

- For short periods of time, turn the main burner off by turning control knob clockwise to the PILOT position.
- For extended periods of non use, turn appliance completely off by turning control knob clockwise to the PILOT position, press knob slightly, then turn knob fully clockwise to the OFF position. Note: For propane/LP gas models, also turn off gas supply cylinder.

CLEANING AND MAINTENANCE

WARNING: Never attempt to service heater while it is connected to gas supply, operating or hot. Severe burns can occur.

1. Keep heater clean. Clean heater annually or as needed to remove dust and debris. If heater is dirty or dusty, clean heater with a damp cloth.

Use household cleaners on difficult spots.

2. Inspect heater before each use. Check connections for leaks. Apply mixture of liquid soap and water to connections. Bubbles forming show a leak. Correct all leaks at once.

3. Inspect hose/regulator assembly before each use. If hose is highly worn or cut, replace.

SYMPTOM:

Burner fails to light.

POSSIBLE CAUSE:

1. Gas supply valve closed
2. Excess-flow check valve closed (propane/LP units only)
3. Blockage in burner orifice
4. Piezo ignition system not sparking

REMEDY

1. Open gas supply valve slowly
2. Close propane supply valve on propane tank and reopen slowly
3. Replace burner orifice
4. Assure ignitor electrode gap is 5.0 mm (.195 in). Check wire lead for damage. Replace piezo ignitor and/or ignitor electrode as necessary. Do not bend electrode, this may cause breakage.

SYMPTOM:

Pilot lights but goes out when automatic control valve button is released.

POSSIBLE CAUSE:

1. Not enough warm-up time
2. Low gas pressure
3. Thermocouple loose or needs to be replaced
4. Automatic control valve needs to be replaced

REMEDY:

1. Relight, hold automatic control valve button in 45 seconds
2. Check for proper gas supply
3. Tighten connection or replace thermocouple
4. Replace automatic control valve.

SYMPTOM:

Burn rate is low.

POSSIBLE CAUSE:

1. Main burner valve not fully open
2. Plugged gas orifices
3. Low gas pressure
4. Low fuel supply

REMEDY

1. Fully open main burner valve by pushing in control knob and turning counterclockwise towards HIGH position until it stops.
2. Replace gas orifice
3. Check gas supply; check regulator output
4. Consult gas supplier to determine adequate supply. If using propane/LP gas, the tank could be empty

WARNING: Never attempt to service heater while it is connected to gas supply, operating or hot. Severe burns can occur.