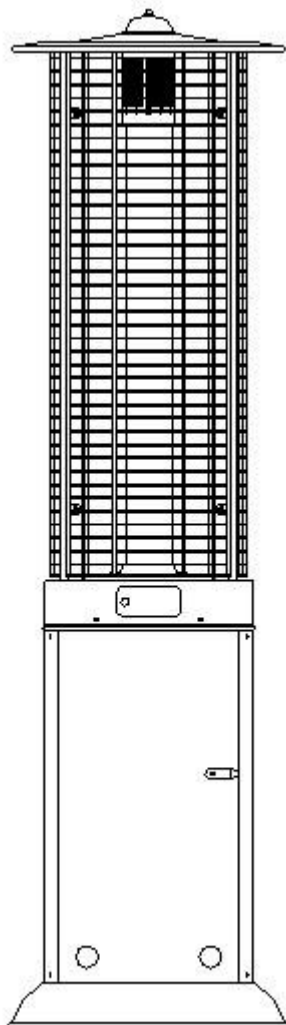


HEAT

outdoors





WARNING



- Read the instructions before installation and use.
- This appliance must be installed and the gas cylinder stored in accordance with the regulations in force.
- This appliance requires installation by a competent person.
- For use only in well-ventilated areas. An amply ventilated area must have a minimum of 25% of the surface area open. The surface area is the sum of the walls surface.
- The use of this appliance in enclosed areas can be dangerous and is prohibited.
- This appliance shall be not used for the heating of domestic premises.
- This appliance shall be used for space heating only.
- This appliance shall not be used in basements or below ground level.
- This appliance has no atmospheric sensing device. It shall be used for heating well-ventilated buildings used for animal rearing, or for outdoor use only.
- Use only the type of gas and the type of cylinder specified by the manufacturer.
- Do not place items on or against this appliance.
- Do not store chemicals or flammable materials or spray aerosols near this appliance.
- Do not operate this appliance in an explosive atmosphere like in areas where gasoline or other flammable liquids or vapors are stored.
- Protect the hot glass tube from rain, water splash or anything that will cause a sudden change in temperature which may lead to cracking or shattering.



WARNING



- Turn off the gas valve immediately if smell of gas is detected.
- Extinguish any open flame.
- If odour continues, contact your gas supplier immediately.



WARNING



The user assumes all risk in the assembly and operation of the gas heater. Failure to follow the warnings and instructions in this manual can result in severe personal injury, death or property damage. If user cannot read or fully understand the instruction manual, please contact your dealer. Manufacturer or supplier will not be responsible for user's negligence.

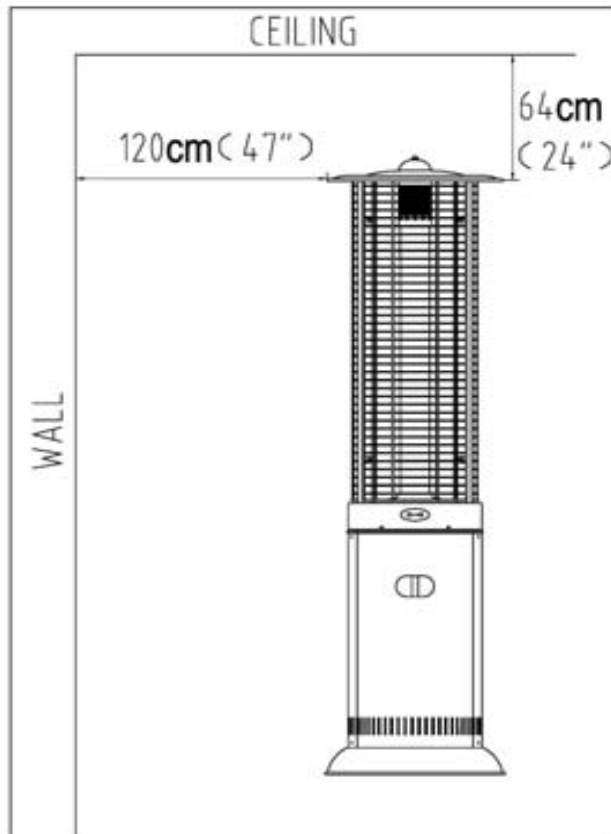
CAUTION

PLEASE READ CAREFULLY THE FOLLOWING SAFETY GUIDELINES BEFORE OPERATION.

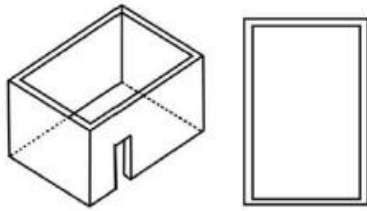
- This round flame heater is for outdoor use only (see attached diagrammatical representations of outdoor areas).
- This outdoor heater is not intended to be installed on recreational vehicles and/or boats.
- Do not use the heater for the heating of domestic premises.
- Do not use the heater in the basements or below ground level.
- Gas heater without atmospheric sensing device should only be used for heating well-ventilated buildings used for animal rearing or for outdoor use.
- This appliance must be installed and the gas cylinder stored in accordance with the regulations in force.
- Installation and repair should be done by a qualified service person.
- Improper installation, adjustment, alteration can cause personal injury or property damage.
- Do not attempt to alter the unit in any manner.
- Never replace or substitute the regulator with any regulator other than the factory-suggested replacement.
- Remove transit protection before use.
- Do not store or use petrol or other flammable vapors or liquids in the heater unit.
- The whole gas system, hose, regulator, pilot or burner should be inspected for leaks or damage before use, and at least annually by a qualified service person.
- The recommended frequency of checking the tubing or the flexible hose is at least once per month and each time the cylinder is changed. If it shows signs of cracking, splitting or other deterioration it shall be exchanged for new hose of the same length and of the equivalent quality.
- The tubing or the flexible hose must be changed within the prescribed intervals.
- All leak tests should be done with a soapy water solution. Never use an open flame to check for leaks.
- Do not use the heater until all connections have been leak tested.
- Turn off the gas valve immediately if smell of gas is detected.
- Do not transport the heater while it's operating.
- Do not move the heater after it has been turned off until the temperature has cooled down.
- Shut off the valve at the gas cylinder or the regulator before moving the appliance.
- Use only the type of gas and the type of cylinder specified by the manufacturer.
- In case of violent wind particular attention must be taken against tilting of the appliance.
- Keep the ventilation opening of the cylinder enclosure free and clear of debris.
- Do not paint the flue screen, windshield or reflector.
- Control compartment, burner and circulation air passageways of the heater must be kept clean. Frequent cleaning may be required as necessary.
- Protect the heater from bumps to avoid delicate parts like the glass tube from getting damaged.
- Protect the hot glass tube from rain, water splash, or anything that will cause a sudden change in temperature which may lead to cracking or shattering.
- Do not try to clean the glass tube in any way to avoid causing damage to the glass, and personal injury.
- The gas cylinder should be turned off when the heater is not in use.
- Avoid twisting the flexible tubes and hoses.
- Any guard or other protective device removed for servicing the heater must be replaced before operating the heater.
- Adults and children should stay away from high temperature surfaces to avoid burns.
- Children should be carefully supervised when they are in the area of the heater.
- Clothing or other flammable materials should not be hung on the heater or placed on or near the heater.

HEATER LOCATION

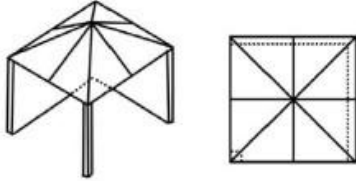
- The heater is primarily for outdoor use only (see diagrammatical representations of outdoor areas). Do not use it for indoors or in an enclosed area. Always ensure that adequate fresh air ventilation is provided.
- Do not use the heater for the heating of domestic premises.
- Do not use the heater in the basements or below ground level.
- This appliance shall only be used in an above ground open-air situation with natural ventilation, without stagnant areas, where gas leakage and products of combustion are rapidly dispersed by wind and natural convection.
- Any enclosure in which the appliance is used shall comply with one of the following:
 - An enclosure with walls on all sides, but at least one permanent opening at ground level and no overhead cover.
 - Within a partial enclosure that includes an over head cover and no more than two walls.
 - Within a partial enclosure that includes an overhead cover and more than two walls, the following shall apply:
 - At least 25% of the total wall area is completely open, and
 - At least 30% of the remaining wall area is open and unrestricted.
 - In the case of balconies, at least 20% of the total wall area shall be and remain open and unrestricted.
- This appliance shall be used only in an outdoor area and shall not be used in a building, garage or any other enclosed area.
- Always maintain clearance from combustible materials; from the top 60 cm, and sides 120cm
- Heater must be placed on level firm ground.
- Never operate heater in an explosive atmosphere like in areas where gasoline or other flammable liquids or vapors are stored.



DIAGRAMMATICAL REPRESENTATIONS OF OUTDOOR AREAS

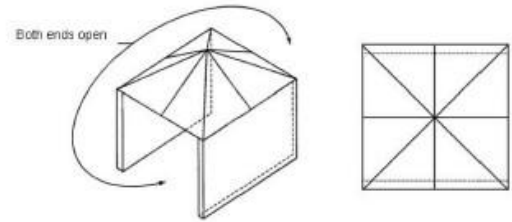


OUTDOOR AREA-EXAMPLE 1

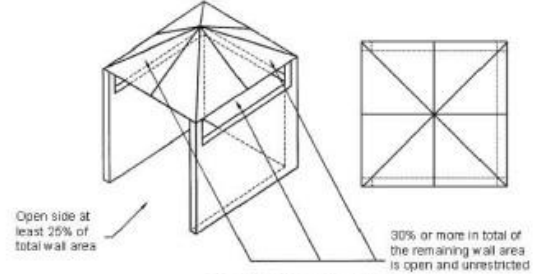


OUTDOOR AREA-EXAMPLE 2

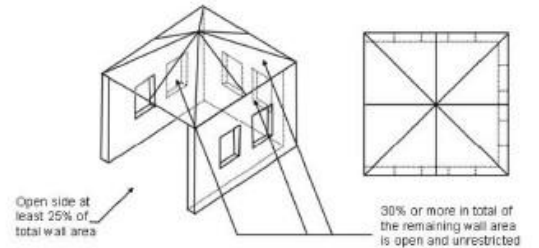
- 4 -



OUTDOOR AREA-EXAMPLE 3



OUTDOOR AREA-EXAMPLE 4



OUTDOOR AREA-EXAMPLE 5

- 5 -

GAS REQUIREMENTS

- Use propane or LPG only
- The heater is designed for use with 11-15kg cylinder. Maximum size of cylinder suitable for the appliance, w/ regulator attached, is $\phi 42\text{cm} \times 73\text{cm}$. Inner dimension of stand within the side panels is $\phi 42\text{cm} \times 73\text{cm}$.
- The appliance requires approved gas hose in 60cm length and a regulator.
- Regulator maximum inlet pressure must not exceed 690kPa (100 PSI).
- Regulator outlet pressure must be 28-30 mbar.
- The hose and regulator assembly must conform to local standard codes.
- The installation must conform to local codes, or in the absence of local codes, to the standard for the storage and handling of liquid petroleum gases.
- A dented, rusted or damaged gas cylinder may be hazardous and should be checked by your gas supplier. Never use a gas cylinder with a damaged valve connection.
- The gas cylinder must be arranged to provide for vapor withdrawal from the operating cylinder.
- Avoid twisting the flexible tubes and hoses.
- Never connect an unregulated gas cylinder to the heater.
- Disconnect the gas cylinder when the heater is not used.

LEAKAGE TEST

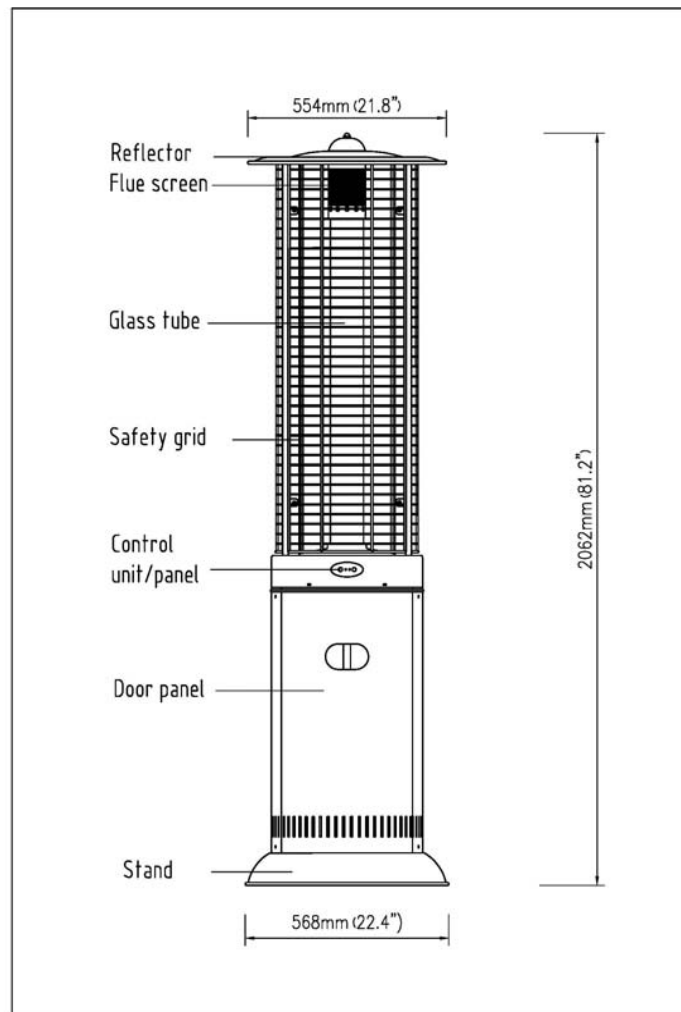
Gas connections on the heater are leak tested at the factory prior to shipment. A complete gas tightness check must be performed at the installation site due to possible mishandling in shipment or excessive pressure being applied to the heater. The heater must be checked with a full cylinder.

1. Make sure that the appliance is switched off.
2. Make a soapy water solution of one part liquid detergent and one part water. The soapy water solution can be applied with a spray bottle, brush or rag to all gas connections. Soap bubbles will appear in case of a leak.
3. Switch on the gas supply.
4. In case of a leak, switch off the gas supply. Tighten any leaking fittings, then turn the gas supply ON and recheck. Contact your dealer or gas supplier if bubbles continue to appear.

WARNING

Never leak test while smoking

PARTS AND SPECIFICATIONS



SPECIFICATION

- For outdoor use only
- Use propane only
- Burner pressure: 28-30/37 mbar
- Pilot injector: 0.20 mm
- Burner injector: 1.8 mmm
- Nominal heat input: 12 kW
- Consumption: 450 g/hr – 870 g/hr
- Weight: 30.2kg
- Height: 2062mm

ASSEMBLY TOOLS

- Adjustable opening wrench (2) 20 cm long
- Slip joint pliers 23 cm long
- Philips screwdriver w/ medium blade
- Spray bottle of soap solution for leakage test

Parts supplied:

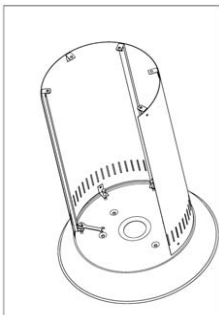
- Preassembled round flame heater
- Cover with 1 pcs bolts $\varnothing 10 \times 15\text{mm}$, 10 pcs bolts $\varnothing 8 \times 15\text{mm}$
- 60 cm gas hose conforming to local standard codes (pressure regulator included)
- Wheels

HEATER ASSEMBLY

The Flame Heater is preassembled at the factory. The user needs to complete only a few assembly procedures to make the appliance operational.

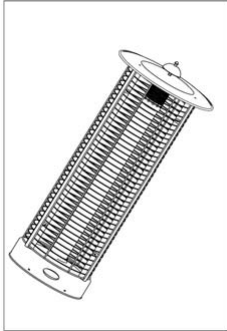
Step 1

- 1-1. As shown, put support bars in position lining up with holes on base
- 1-2. Connect the support bars to the chassis with five M8 by 15 mm screws.



Step 2

- 2-1 To release the glass tube, remove the reflector by;
- 2-2. Undo the 6 x nuts on the top reflector;
- 2-3 Remove reflector and carefully take out glass tube and remove from its packaging



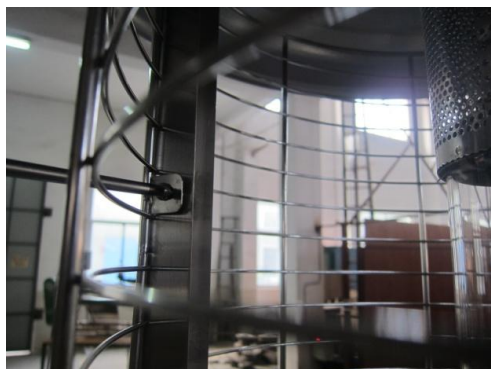
Step 3

- 3-1 Check the ceramic cord is in place where the glass is about to be positioned at each end;
- 3-2 Ensure the steel grippers are in place as shown below over the chord.



Step 4

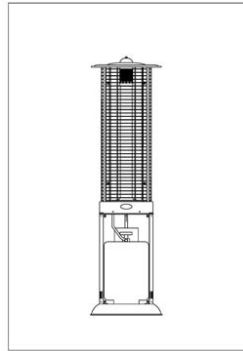
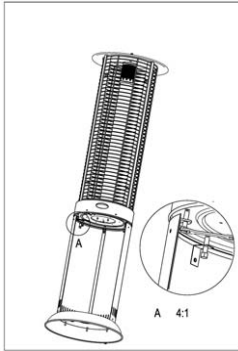
- 4-1 Remove one side safety grill by undoing the 4 screws attaching it to the frame (two on each side)
- 4-2 Carefully place glass tube on (spring loaded) base ring and lower reflector hood on top ensuring it is located properly onto ceramic chord and steel locating clips
- 4-3 Attach reflector hood to three support arms using the 6 bolts removed in stage 2.
- 4-4 Attach safety grill with 4 screws removed in 4-1



Step 5

5-1. Place the heater section on top of the base aligning the 5 holes in each section

3-2 Connect the supports to the heater chassis on the top with five M8 x15 mm screws



Step 6

6-1. Connect the rubber hose to the heater gas intake beneath the burner

6-2. Attach jubilee clip over hose and gas intake valve and tighten.

6-3. slid second jubilee clip over other end of hose and attach hose to the (red) gas regulator provided.

6-4 Tighten jubilee clip.

Step 7

7-1 Unscrew plastic black ring around ignition switch to remove it and insert AAA battery as shown below



7-2 Screw ignition switch and battery back into the unit

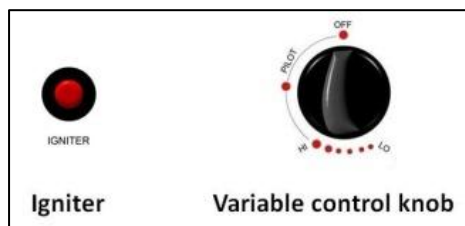
OPERATION

TO TURN ON THE HEATER

1. Turn on the valve of the gas supply cylinder.
2. Press and turn the variable control knob to PILOT position (counter- clockwise 90°).
3. Press down the variable control knob and hold for 30 seconds. While holding down the variable control knob, press the ignition button until the pilot flame ignites. Release the variable control knob 20-30 seconds after the ignition.

Note: If a new tank has just been connected, please allow at least one minute or more for the air in the gas pipeline to purge out through the pilot hole.

- If the pilot flame does not light or it goes out, repeat step 3.
- Turn the variable control knob to the desired temperature setting.
- If the burner flame goes out accidentally or it is blown out by wind, turn off the heater and wait at least 5 minutes or more to let the gas dissipate before re-lighting to avoid possible gas explosion. Repeat steps 2 to 4.



TO TURN OFF THE HEATER

1. Turn the variable control knob to PILOT position.
2. Press and turn the variable control knob to OFF position.
3. Turn off the valve of the gas cylinder and disconnect the cylinder.

WARNING

1. The whole gas system, hose, regulator, pilot or burner should be inspected for leak before use.
2. Check the hose assembly for sign of extreme abrasion, cuts or wears. Suspected areas should be leak tested. If the hose leaks, it must be replaced with a new one that conforms to local standard codes
3. Avoid twisting the flexible tubes and hoses.
4. Make sure the ventilation opening of the cylinder enclosure, control compartment, burner and circulation air passageways of the heater are free and clear of debris. If debris, spider or insect nests are found, clean the holes with heavy-duty pipe cleaner or compressed air.
5. Always keep a dry chemical fire extinguisher readily available.
6. For safety, always allow a 5-minute complete shut off period before re-lighting a hot heater.

WARNING

1. Close the valve of the gas cylinder or the regulator after use.
2. Do not move the heater, or cover it with protective cover after it has been turned off until it has cooled down.

REPLACING THE GAS CYLINDER

1. Close the valve of the gas cylinder.
2. Disconnect the regulator from the cylinder following the instructions that came with your regulator.
3. Replace the cylinder.
4. In the absence of any flame, remove the plug or seal cap from the cylinder valve.
5. Check for the presence and good state of bottle gasket before connecting the regulator.
6. Perform a leak test using a soapy water solution.

WARNING

1. Charging of cylinder must be undertaken in a flame-free atmosphere.
2. Make sure that all taps on the appliance are in their closed position.

STORAGE

- Always close the valve of the gas cylinder after use or in case of a disturbance.
- Remove the pressure regulator and the hose attachment if the heater is not to be used for a period of time.
- Cylinder must be stored outdoors in a well-ventilated area out of the reach of children.
- Storage of heater indoors is permissible only if the cylinder is disconnected and removed from the heater.
- Never store liquid gas cylinder in a sub-terrain, or at places without adequate air ventilation.

CLEANING AND CARE

- Wipe off powder coated surfaces with soap, moist rag and soap water. Do not clean heater with cleaners that are combustible or corrosive.
- **Remove debris, spider and insect nests from ventilation opening of the cylinder enclosure, control compartment, burner and circulation air passageways of the heater with heavy-duty pipe cleaner or compressed air to keep appliance clean and safe for use. Never clear ports or other openings with toothpicks or other article that will break and block the ports.**
- If carbon deposits develop, remove the reflector and flame screen and clean them with soap water. Do not paint the flame screen, control panel or reflector.
- Cover the burner unit with the supplied protective cover when the heater is not in use. Wait until the heater is cool before covering.
- In a salt-air environment, such as near an ocean, corrosion occurs more quickly than normal. Check frequently for corroded areas and repair them promptly.

WARNING

1. Do not perform maintenance after heater has been turned off until the temperature has cooled down.
2. Do not expose the pilot, controllers and parts underneath the burner to water. Do not use the heater if any of these parts are exposed to water until the appliance is inspected or repaired by a qualified service person.
3. Do not try to clean the glass tube in any way to avoid causing damage to the glass, and personal injury.

SERVICING

It is recommended that before using the heater after a period of 3 months or before the start of the heating season the owner should:

- Check the condition of the gas cylinder.
- Check the hose assembly for any wear damage. If the hose and regulator assembly is damaged or more than 5 years old replace with an approved hose and regulator assembly.
- The recommended frequency of checking the tubing or the flexible hose is at least once per month and each time the cylinder is changed. If it shows signs of cracking, splitting or other deterioration it shall be exchanged for new hose of the same length and of the equivalent quality.
- The tubing or the flexible hose must be changed within the prescribed intervals.
- Check for leaks.

WARNING

Servicing should be carried out by authorized or qualified service personnel only.

If service is required, remove the reflector hood and burner mesh assembly to access the ignition system and gas valve.

Replace the faulty item with correct approved component. Any replacement or accessories are available from your local distributors/dealer.

SOLVING COMMON PROBLEMS

The 3 most common problems associated with any gas heater are gas leaks, wrong gas pressure and dirt.

- **DO NOT USE YOUR HEATER WITHOUT CHECKING FOR LEAKS.** Leaks can occur during shipment and installation. A simple solution of soap and water dabbed on the fittings will bubble if a gas leak is present.
- **WRONG GAS PRESSURE.** Too much gas pressure may severely damage your heater. Too little gas pressure and your heater will not burn correctly. If your installer cannot check gas pressure, call your gas supplier.
- **DUST AND DIRT.** This heater requires some cleaning. If the pilot light will not stay, your heater is probably due for a good cleaning. Replacement of thermocouple or pilot assembly is generally not needed. Review CLEANING AND CARE in this manual.

PROBLEMS CHECK LIST

<u>PROBLEM</u>	<u>PROBABLE CAUSE</u>	<u>SOLUTION</u>
There is no spark at pilot when the control knob is pressed in and turned counterclockwise to Pilot position	<ul style="list-style-type: none">• Igniter electrode positioned wrong.• Igniter electrode broken.• Igniter cable pinched or broken.	<ul style="list-style-type: none">• Replace igniter electrode.• Replace electrode.• Free electrode cable. If damaged, replace it.
There is spark but no ignition when the control knob is pressed in and turned counterclockwise to Pilot position	<ul style="list-style-type: none">• Gas supply turned off.• Control knob not in pilot position.• Control knob not pressed in while in pilot position.• Pilot is clogged.• Air in gas lines.	<ul style="list-style-type: none">• Turn on the gas supply.• Turn variable control knob to pilot position.• Press in control knob while in pilot position.• Call a qualified person.• Purge air from lines by pressing the control knob continuously until there's a faint gas smell.
Pilot lights but flame goes out when control knob is released.	<ul style="list-style-type: none">• Control knob not pressed long enough.• Pilot flame not touching the thermocouple. Problem could be result of one or both of the following:<ul style="list-style-type: none">- Partially clogged pilot injector.- Low gas pressure.• Thermocouple damaged.• Thermocouple connection is loose at gas control valve.• Gas control valve damaged.	<ul style="list-style-type: none">• After pilot lights, keep control knob pressed in approx. 30 seconds.• Contact a qualified service person on your gas supplier.• Replace thermocouple.• Hand tight until snug then tighten ¼ turn with a wrench.• Replace gas control.
Burner does not light after pilot is lit.	<ul style="list-style-type: none">• Burner injector clogged.• Low gas supply pressure.	<ul style="list-style-type: none">• Clean burner injector.• Call your gas supplier.
Burner flame goes off immediately after ignition.	<ul style="list-style-type: none">• Low gas pressure.	<ul style="list-style-type: none">• Let the pilot flame stay lit for 10 minutes before setting variable knob to LO.
Delayed ignition.	<ul style="list-style-type: none">• Main burner carry over ports clogged.• Low gas supply pressure.	<ul style="list-style-type: none">• Clean main burner ports.• Call your gas supplier.
Inadequate combustion on burner.	<ul style="list-style-type: none">• Not enough air.	<ul style="list-style-type: none">• Check air passageways and burners for dirt and debris, and clean with compressed air.
Burner flame is low.	<ul style="list-style-type: none">• Supply hose is bent or twisted.• Blockage in burner injector.	<ul style="list-style-type: none">• Straighten hose and perform leak test on hose.• Clean or replace burner injector.
Emitter glows uneven.	<ul style="list-style-type: none">• Blockage in burner injector.• Base in not on a level surface.• Low gas pressure.	<ul style="list-style-type: none">• Clean or replace burner injector.• Place heater on a level surface.• Replace cylinder with a new cylinder.

<u>PROBLEM</u>	<u>PROBABLY CAUSE</u>	<u>SOLUTION</u>
Slight smoke and odour during initial operation.	<ul style="list-style-type: none"> • Residue from manufacturing processes. 	<ul style="list-style-type: none"> • Will stop after approx. 30 minutes of operation.
Thick black smoke.	<ul style="list-style-type: none"> • Blockage in burner. 	<ul style="list-style-type: none"> • Turn off the heater and let it cool. Remove blockage and clean burner inside and outside.
Heater produces a whistling noise when burner is lit.	<ul style="list-style-type: none"> • Air passageways blocked. • Air in the gas line. 	<ul style="list-style-type: none"> • Check minimum installation clearance and air passageways for debris. • Operate burner until the air is completely purged.
Heater produces a clicking noise just after burner is lit or turned off.	<ul style="list-style-type: none"> • Metal expanding and contracting, respectively. 	<ul style="list-style-type: none"> • This is common with heaters. If noise is excessive, contact a qualified person.
Gas odour even when control knob is in OFF position.	<ul style="list-style-type: none"> • Gas leaks. • Gas control defective. 	<ul style="list-style-type: none"> • Locate and correct leaks immediately. • Replace gas control.
Gas odour during combustion.	<ul style="list-style-type: none"> • Foreign matter in gas or on burner ports. • Heater burning vapors from paint, impurities in air. • Gas leakage from: <ul style="list-style-type: none"> - Regulator and hose connection. - Valve and pipes connection. - Pipes. 	<ul style="list-style-type: none"> • Check gas passageway and burner. • Stop storing and using odour-causing products near the heater. • Locate and correct leaks, or contact your gas supplier.
Carbon build-up.	<ul style="list-style-type: none"> • Dirt or film on reflector and flame screen. 	<ul style="list-style-type: none"> • Clean reflector and flame screen.



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