

OPERATING & SAFETY GUIDE

LPG SAFE USE & SET UP

**BLUE
SKY**

WHAT TO DO WHEN USING LPG

- Treat the cylinder with care to ensure that the valve is not damaged.
- Be careful when lifting cylinders. Full cylinders weigh approximately twice the net weight shown on the cylinder
- Always install / use cylinders in the upright position with the valve uppermost and cylinders should be located:
 1. In the open air
 2. On firm level hard standing ground
 3. Restrained to avoid falling
 4. Remain accessible at all times
 5. Not obstructing any access or emergency exits
 6. 2m away from drains and gullies
 7. Only the required number of cylinders to meet the requirements if the appliances used should be connected / stored at any time.
- Where less than 400kg of LPG is to be stored, a distance of 1m is required between cylinders and buildings, marquees, boundaries and any sources of ignition.
- Return the cylinder when empty or when not in use for long periods.
- Read the instructions and labels provided with your appliance and keep them handy for reference.
- Keep the appliance clean and have it serviced regularly.
- Ensure there is an adequate supply of fresh air in the room where your appliance is used.
If a room has ventilators or grilles ensure these are open.
If a room becomes stuffy, open a window or door immediately.
- If you have any queries please contact the depot that supplied the equipment and cylinder.

WHAT NOT TO DO WHEN USING LPG

- Don't subject a cylinder to heat as the pressure inside could build up to exceed the safe limit
- Don't attempt to disconnect or unscrew a regulator from any cylinder if the flame does not go out when the cylinder hand-wheel is turned off. Leave appliance alight and call your local Event Hire Depot.
- Don't store or use cylinders in cellars or below ground level. LPG is heavier than air and if there is an escape the gas will collect at low level, can be an asphyxiate, and can become dangerous in the presence of a flame or spark.
- For the same reason do not store cylinders any closer than 2 metres from untrapped drains, unsealed gullies or openings to cellars.
- Propane cylinders must not be used indoors at domestic premises or in high rise flats where a piped gas supply is prohibited
- Don't store Propane cylinders indoors or in high rise flats where a piped gas supply is prohibited.
- Don't attempt to force a regulator of one size on to a cylinder's valve of another size. If you have any difficulties contact your Event Hire Depot and have the appliance checked.

WHAT NOT TO DO WHEN USING LPG cont'd

- Don't improvise or modify any gas appliance. Do not let unqualified people tamper with or service your equipment, it could become unsafe to use.
- Don't obstruct access to cylinders

RISKS

- LPG is highly flammable and heavier than air.
- Leaks of small quantities can lead to large volumes of vapour / air mixtures.
- The main dangers when setting up LPG appliances are, fire and explosion and build-up of carbon monoxide fumes if the appliance is set up incorrectly.
- There are also risks from manual handling of gas cylinders and appliances, "cold" burns to skin through contact with liquid gas, and asphyxiation where the gas displaces oxygen in a confined space.

CARBON MONOXIDE

Carbon monoxide (CO) is a highly poisonous gas which can be produced if an appliance is not working correctly. It is difficult to recognise as it has no colour, smell or taste. Symptoms of CO poisoning are similar to that of a viral infection. It affects the mental ability causing a person to become incapable without realising.

SYMPTOMS OF EXPOSURE TO CARBON MONOXIDE:

- **Tightness across the forehead & headache**
- **Severe headache, weakness, dizziness, nausea, vomiting**
- **Convulsions, intermittent convulsions**
- **Depressed heart action, slowed respiration**
- **If the exposure has been severe it may cause death**

If you suspect you are suffering from the above symptoms, open doors and windows and get out into fresh air immediately. Obtain medical advice/assistance.

REGULATOR

- A regulator must be included in the connection between the cylinder and the appliance.
- The regulator is precisely set by the manufacturer to control the pressure of the supply and **Must Not Be Adjusted.**
- If a Regulator shows signs of wear, it should be replaced.
- Regulators must be marked **BS3016 or BS EN12864**

FLEXIBLE HOSE

- Use only certified hoses to **BS3212 or BSEN1763** which bear the year of manufacture and name of manufacturer
- LPG attacks and erodes natural rubber.
- Keep hose lengths as short as possible. All hoses must be secured with proper hose clips – "O CLIPS"
- Make sure that the hoses are kept clear of 'hot spots' and inspect them from time to time.
- Replace any hose that shows signs of wear, cracking or other damage.

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EMERGENCY ADVICE

- If you suspect a leak, turn off the gas, open all the doors and windows and ensure there is no source of ignition nearby i.e. extinguish any cigarettes and switch off your mobile phone.
- If safe to do so, examine all pipes and connections. If the leak is not located, turn on the gas supply and brush over the connections with liquid detection fluid – it will bubble where there is a leak.
- NEVER USE A NAKED FLAME to search for a leak.
- A suitably calibrated Explosimeter may be used for testing the concentration of LPG in the air, but Propane has a special odorant added to help with the detection of leaks.

IN THE EVENT OF FIRE

- Immediately raise the alarm and call the Fire Brigade advising them of the presence of LPG and how many cylinders there are.
- If possible, shut all valves on cylinders.
- If possible, keep cylinders cool by water spray if possible.
- Contact the Event Hire Depot that supplied your equipment.

LPG APPLIANCE SET UP

Read the Operating & Safety Guide Supplied with the Appliance

GENERAL PRECAUTIONS

- In the event of a gas leak ensure the public are evacuated from the enclosure or area whilst the leak is attended to.
- Never smoke whilst in the vicinity of gas cylinders or gas equipment or allow any naked flames to be brought into the area.
- PVC gloves should always be worn whilst handling gas cylinders.
- Read the supplied Operating and Safety Guides on LPG and on the appliances before set-up and use.

PROPANE CYLINDERS CONNECTED TO AN APPLIANCE

- Propane cylinders must always be sited in the open, not inside a building or structure (including a tent or marquee).
- Propane cylinders must be positioned in the upright position on firm, level hard standing. If there is any chance the cylinder could be tipped over it must be supported by metal or wooden stakes driven in to the ground.
- Cylinders should be positioned, as far as possible, where they cannot be interfered with by unauthorised persons.
- A pictorial sign warning of the dangers of LPG and the appropriate precautions must be displayed.
- Cylinders must be positioned away from combustible material, including rubbish.
- Cylinders must be positioned away from sources of ignition such as electric switches and open flames.
- Cylinders must be positioned away from open drains and other below ground areas where leaking gas may accumulate.
- Cylinders should be accessible to the user and the emergency services.

LPG APPLIANCE SET UP cont'd

SPARE CYLINDERS

Spare gas cylinders should be stored in an external area that is well ventilated, away from combustible materials and sources of ignition, and away from open drains and other below ground areas where leaking gas may accumulate.

APPLIANCE POSITIONING

- Appliances may be connected to a single gas cylinder only.
- Appliances should, as far as possible, be installed in a position where unauthorised interference is unlikely to occur.
- The appliance should be positioned at a sufficient distance to prevent accidental ignition of combustible materials such as tent canvas.
- If an appliance is not located in the open air it will be necessary to ensure that ventilation is sufficient to deal with carbon dioxide and water vapour and cooking fumes.
- As a minimum fixed ventilation openings must be at least equivalent to V in the following formula:

$$V = (2200 \times U) + (440 \times F) + (650 \times P)$$

Where:

V = area of ventilation (mm²) - to be a minimum of 4000 mm² in all circumstances

U = Input rating of flue-less appliances (Kw)

F = Input rating of open flued appliances (Kw)

P = number of people liable to be in the enclosure

- Input ratings can be found on the appliance data labels.

BEFORE CONNECTING THE APPLIANCE TO THE CYLINDER, CARRY OUT THE FOLLOWING CHECKS:

- Check the frame and case for damage, undue discolouration and combustible materials.
- Check that any covers or doors open freely, close securely and are free from damage.
- Check that castors operate correctly and that any brakes are easily applied and prevent movement.
- Check that burners, burner caps and any radiants are free from damage and undue discolouration.
- Check that any fixed guards are securely in place and free from damage.
- Check that controls operate correctly, are free from damage and the indications are visible.
- Check that the ignition operates correctly.

LEAK TESTING

Open the gas valve on the gas bottle.

Check for gas leaks before operating equipment by listening and by brushing / spraying hoses, joints and fittings with a proprietary leak detecting fluid. The presence of bubbles will indicate a leak.

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LPG SAFE USE & SET UP



LPG APPLIANCE SET UP cont'd

OPERATIONAL TEST

Only ignite the appliance if the appliance has passed all of the above checks.

Ignite the appliance checking for correct ignition and flame size / consistency.

Check for correct flame control through checking valves/taps turn up and down regulating the flame.

Check that thermostats turn down.

Check that the flame extinguishes correctly when the appliance is turned off.

If the flame does not go out when the regulator switch is turned off, leave the appliance alight and seek assistance from Event Hire 01922 628961. **DO NOT ATTEMPT TO DISCONNECT**

FLAME FAILURE DEVICE (FFD)

- If the appliance is fitted with a FFD light the appliance and allow it to warm up.
- Turn off the gas supply at the regulator or cylinder. Measure the time taken until the FFD is heard to click shut - this is normally 30-50 seconds. 60 seconds or more is not acceptable.
- After the FFD has closed turn the gas supply back on at the regulator or cylinder. Check that no gas is passing to the burners by attempting to re-light with a taper. The appliance must not re-lit.
- Ensure the necessary instruction plates are fitted to the appliance.
- If the appliance fails any of the checks on installation it must be removed from site and returned to the depot.
- Faulty or damaged hoses and regulators are replaced, re-tested and found to be satisfactory.

PROVISION OF FIRE FIGHTING EQUIPMENT

Fire extinguishers should be kept in the vicinity of the appliance - a minimum provision of one 5Kg dry powder extinguisher per two gas cylinders that are connected to the appliances.