

# Using propane cylinders safely

This leaflet is for the safe use of Calor Gas propane cylinders. If you have any queries please contact your local retailer.

Calor supplies Liquefied Petroleum Gas (LPG) which is obtained during the process of refining crude oil supplies or direct from oil wells. There are two types of LPG –Propane and Butane. Many appliances are designed to be used with either, but it is important to use the correct pressure reducing device (regulator) as the operating pressure for the two types of gas are different.



For identification, PROPANE is supplied in RED, GREEN or GREY (Patio Gas) cylinders. BUTANE is supplied in YELLOW or BLUE cylinders.

The cylinders are specially made to store the fuel in its liquid state under moderate pressure. The liquid turns to gas vapour, which fills the space above the liquid. As gas is drawn off in use more liquid turns to gas to replace it. A regulator fitted in the supply line to the appliance(s) keeps the gas pressure constant as the cylinder empties – until there is no liquid left to turn to gas.

- ✓ **DO** treat a cylinder with care to ensure the valve is not damaged. A damaged valve could result in a leak with serious consequences.
- ✓ **DO** use a cylinder upright. When horizontal, liquid gas could get into the supply pipes with serious results.
- ✗ **DON'T** use any cylinder for any purpose other than that for which they are intended.
- ✗ **DON'T** store cylinders where they would obstruct means of access, passageways, stairwells or emergency exits.
- ✗ **DON'T** attempt to disconnect a regulator if the flame does not go out when the pressure regulator switch or cylinder valve is turned off (applicable to appliances isolated directly by the pressure regulator switch or cylinder valve). Leave the appliance alight and call your Gas retailer.
- ✗ **DON'T** subject a cylinder to heat because pressure inside the cylinder could build up to a point beyond the designed safety limit.
- ✗ **DON'T** store or use cylinders in cellars, below ground level or near drains or gullies, because propane and butane are heavier than air. If there is a leak the gas could collect at a low level and become dangerous in the presence of a flame or a spark.
- ✗ **DON'T** use propane cylinders indoors residentially, because propane is contained under higher pressure and should only be kept outside. Butane can be used indoors in cabinet heaters, and when installed to the required standard by qualified gas fitters.\*

Propane cylinders can be used internally in Commercial and Industrial premises but their use should comply with the requirements of: LPGA Code of Practice 24 Part 6: 2000 – NI or I.S. 820 Non Domestic Gas Installation – ROI.

- ✗ **DON'T** use cylinders in high rise flats.

\* Qualified gas installers in NI are Gas Safe and in ROI are RGI registered

## THE REGULATOR

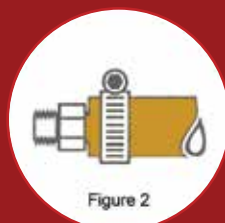
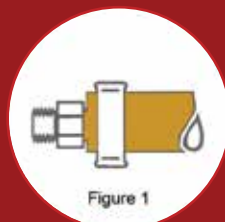
A regulator will be included in the connection between the cylinder(s) and appliance(s). Different propane cylinders will have different valves and it is essential that the regulator cylinder connection is compatible with the cylinder valve.

- Regulators should be made to either BS3016 or EN12864 for low pressure non-adjustable types, EN13785 for up to 4 bar outlet or EN13786 for automatic changeovers.
- The regulator is precisely set to control the pressure of the supply and **must not be adjusted**.
- Some industrial appliances operate at high pressure and are designed to operate at varying pressures depending on the heat output required. For these a special high pressure regulator must be used which incorporates a means of manual adjustment.
- If the regulator shows signs of wear it should be replaced.
- It is important for the regulator that rain and moisture are prevented from entering the device.
- Generally manufacturers recommend a 10 year lifespan for regulating devices.

## FLEXIBLE HOSES

- All flexible hoses or tubing should be secured as follows: for 8mm internal diameter or greater operating at 50mbar or less then crimp clips (Figure 1), swaged fittings or worm drive clips (Figure 2) can be used. Worm drive clips should not be used for hose or tubing less than 8mm internal diameter and hose operating at greater than 50mbar.
- The hose diameter must be compatible with the hose connection nozzles.
- Make sure that the hoses are kept clear of "hot spots".
- All flexible hoses should be replaced after 5 years of service or if showing signs of wear or damage. Inspect them frequently.
- Make sure that where hose end sealing washers are used they are in good condition.
- Hose length should be as short as practicable and shall not extend from one room to another, nor pass through any walls, partitions, ceilings or floors.

Use only hose approved for use with LPG. For patio heaters and barbecues the hose should be to BS3212 Type 2. This standard of hose is also used for high pressure connections including connecting propane cylinders to wall mounted regulators. BS3212 Type 1 hose can be used for low pressure connections to portable appliances. Quick connection hoses to BS669 Part 1 (warranted for use with LPG by the manufacturer) are used for domestic cooker connections.



## MAINTENANCE

Calor cylinders and cylinder valves remain the property of Calor who will carry out all necessary maintenance and testing. The pressure regulator / change-over valve unit, hoses\* and associated tubing is your property together with the gas distribution

system and all the gas appliances you operate. Calor Gas recommend that all gas installations and appliances are regularly checked by a competent gas installer.\*\*

\* Unless covered by a separate maintenance agreement by Calor

\*\* Qualified gas installers in NI are Gas Safe and in ROI are RGI registered

## APPLIANCES

Please read the instructions and labels provided with your appliance and keep them handy for future reference.

New appliances should bear a CE mark and indicate that they are suitable for use with propane, and must comply with European, British and Irish Standards.

Modifications to appliances, or their installation, should only be made by a gas installer\* in accordance with the appliance manufacturer's instructions.

All burning processes require oxygen, so there must be an adequate supply of fresh air for your appliance. Ventilators or grilles should never be blocked. Please observe the manufacturer's requirements for ventilation.

All gas appliances must be correctly installed, maintained and regularly serviced to the manufacturer's instructions by a gas installer.\*

In NI LPG appliances should not be fitted in cellars or basements (which have no natural floor level ventilation). In ROI this is only permitted when a gas detection system is installed linked to a remote automatic gas valve.

Only room sealed appliances may be installed in bathrooms and shower rooms.

When considering anything other than a room-sealed appliance in a bedroom or bed-sitting room the Irish Standard I.S.813, or in NI the Gas Safety (Installation & Use) Regulations, should be consulted for guidance.

Calor recommend a single stage regulator incorporating a Consumer Safety Over Pressure Device with Reset (OPSO) be used with all propane cylinders applications.



ROI

NI

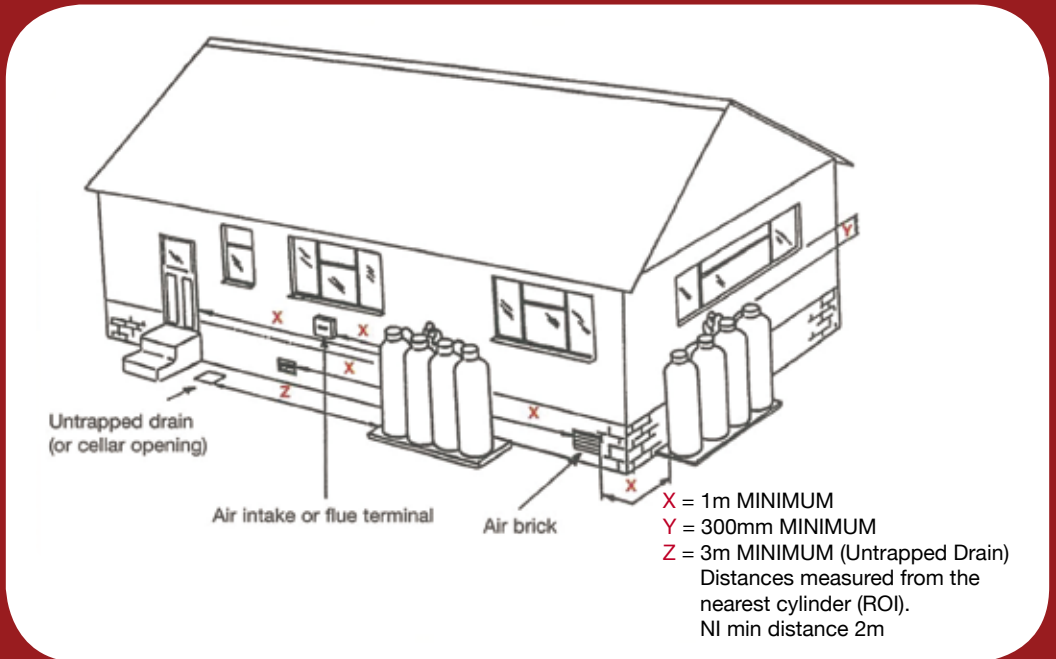
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## Cylinders must be located:

1. In a stable upright position with valves uppermost. When laid horizontally, liquid gas could get into the supply pipes with serious consequences. If necessary, tall cylinders should be secured to protect against being toppled.
2. Where they remain readily accessible at all times.

3. Where they do not obstruct any means of entrance, exit, passageways, stairwells or emergency exits.

4. Where they are reasonably protected from accidental damage. Where necessary, suitable protection should be provided against possible damage or interference by persons, animals or vehicles.



## Cylinders must not be located:

1. In any cellars, basements or in a sunken area. Propane is denser than air, so leaked gas will accumulate at low level, with the possibility of ignition.

2. Less than 1m from fixed sources of ignition, electrical equipment, excessive heat sources and combustible material etc. and openings in your properties, such as doors, openable windows, ventilation ducts, air brick or flue terminals etc.

3. Less than 0.3 metres from the top of the cylinder from those items listed in (2) unless a non-combustible hood which does not hinder access to the valves is used.

4. Closer than 2 metres from untrapped drains or unsealed gullies or openings to cellars unless a dividing wall not less than 0.25 metres high is used (ROI). NI min distance 2m.

5. Within 3 metres of any corrosive, toxic or oxidising materials, unless a dividing wall is used.

Any queries regarding safety distances contact your cylinder stockist or Calor.

## CHANGING A CYLINDER

The cylinder installation should be examined, paying particular attention to the hoses for damage or deterioration. If the installation is satisfactory the cylinders may be changed. Any minor defects should be brought to the attention of the gas user before changing the cylinder. Replacement of the defective parts should be advised. If the fault is significant it should be brought to the attention of the gas user and advice should be given that the system should be shut down until the defective part is replaced.

Cylinders should be changed out of doors in a well ventilated area. Make sure there are no sources of ignition in the vicinity of the cylinders.

Outlet valves on the empty and the replacement cylinders must be firmly closed before disconnection or removal of the cylinder outlet plug.

All appliances should be turned off, except when an automatic changeover pressure regulator to BS3016 or EN13786 is fitted. Where an automatic changeover pressure regulator is fitted and the cylinder regarded as containing gas is also off, do not replace the empty cylinder unless the appliances are confirmed to be off.

The valve of the empty cylinder must be closed before disconnecting the cylinder and the valve of the new full cylinder closed before removal of the protective plug and not opened until the cylinder has been connected.

The cylinder valve, mating connections and sealing washers (where applicable) must be clean and undamaged before making the connection. Jointing compounds must not be used.

After changing a cylinder, the valve and connection should be checked for leaks. Leaks may be detected by brushing connections and joints with a leak detection fluid. Bubbles will immediately form at the leak. If unable to make a leak free connection do not connect the cylinder and contact your gas supplier. If the cylinder is connected to another cylinder via an automatic changeover regulator, manual changeover valve or manifold then reconnect the empty cylinder i.e. do not leave the pigtail / hose unconnected.

Valves on nominally empty cylinders should be kept firmly closed to prevent air getting into the cylinder, which could form a flammable mixture with the vapour. Therefore a nominally empty cylinder should be treated as full.

## SWITCH ON VALVE

(10.88kg)

These cylinders take a connection which incorporates a switch for the control of the gas supply. No spanner is required.



## CONNECTING A CYLINDER

- 1 Remove plastic seal and discard



- 2 Check that the black sealing washer is fitted inside the cylinder valve. Place the connection down over the 6 o'clock position.



- 3 Turn the switch clockwise to the OFF (9 o'clock position).



- 4 Turn the switch clockwise to the ON (12 o'clock) position.



## DISCONNECTING A CYLINDER

- 1 Turn the switch anticlockwise to the disconnect (6 o'clock) position and lift off the connection.



## POL CONNECTION (NI ONLY)

LEFT HAND FEMALE CYLINDER VALVE THREAD

These cylinders have a female valve connection. Check that the connection is clean and undamaged. Always use the correct size spanner and fully tighten (left hand thread).



## CONNECTING A FULL CYLINDER



- 1 Check that the valve handwheel is OFF by turning clockwise.

- 2 Remove protective plug from full cylinder, keep and replace later.

- 3 Inspect the bullnose connection for damage before connecting.



- 4 Fit the connecting nut (left hand thread) to the cylinder using a spanner. Fully tighten.

- 5 Turn the valve handwheel anti-clockwise for the ON position.



## DISCONNECTING AN EMPTY CYLINDER

- 1 Ensure all gas taps are turned off.

- 2 Turn the valve handwheel OFF (clockwise rotation).

- 3 NEVER REMOVE THE CONNECTING NUT WITH THE CYLINDER VALVE OPEN



- 4 REMOVE the connecting nut (left hand thread) with the spanner.

- 5 Replace protective plug into valve outlet.



## F TYPE CONNECTION (ROI ONLY)

LEFT HAND MALE CYLINDER VALVE THREAD

### CONNECTING A CYLINDER



**1** Check that the cylinder hand-wheel valve is off by turning clockwise.

**2** Remove protective cap & keep it for later use.

**3** Inspect the sealing washer and check that it is clean and undamaged before connection. Replace washer if faulty.



**4** Fit the connection to the cylinder using the correct spanner (left hand thread). The connection must be tight.

**5** When gas is required turn hand-wheel valve anticlockwise to full extent.



### DISCONNECTING A CYLINDER

**1** Turn the cylinder valve off. (Clockwise Rotational) Never remove the connection with the cylinder valve open.



**2** Remove the connection with the spanner (left-hand thread).

**3** Replace the protective cap on the empty cylinder.



## PATIO GAS CONNECTION

(11.0kg)

### CONNECTING A CYLINDER

**1** Remove plastic seal and discard.



**2** Push the regulator gently onto the cylinder valve.

**3** Pull out Red lever to release switch.



**4** Turn switch clockwise to lock in the off position.

**5** Continue clockwise to on position to release gas.



### DISCONNECTING A CYLINDER

**6** Turn switch anticlockwise until red lever is facing downwards to release regulator.

**7** Replace cap.



## EMERGENCIES

As LPG is odourless, Calor add a special additive to give the gas a distinctive smell and so help the detection of leaks.

### NEVER LOOK FOR A LEAK WITH A NAKED FLAME!

#### In the event of GAS LEAKAGE or SUSPECTED LEAKAGE:

- Extinguish all naked flames and ignition sources.
- Turn off all gas appliances.
- Do not switch on or off any electrical equipment.
- Open doors and windows to increase ventilation.
- Turn off gas supply at cylinder.

**NOTIFY** Calor Gas on the numbers below.

- Do not use any gas appliance until it has been made safe.

#### In the event of FIRE:

- Immediately raise the alarm.
- **DO NOT** go near any cylinder in the vicinity of the fire.
- Call the Fire Brigade immediately and inform them that LPG cylinder(s) are on the premises.
- Turn off the gas supply if practicable to do so.

#### Calor contact

For Information, advice and support on all Calor products and services, contact our Customer Support Team.

ROI: 1850 812 450  
NI: 028 9045 5588

In the event of an emergency outside office hours, please dial:

ROI: 01 291 6229  
NI: 0845 075 5588

Email:  
[info@calorgas.ie](mailto:info@calorgas.ie)  
[www.calorgas.ie](http://www.calorgas.ie)