

MACGAS LIQUID PROPANE - SPECIAL APPLICATIONS:

Some types of LPG equipment (e.g. fork trucks, grain dryers) use Propane in liquefied form. Special 'Liquid Withdrawal' cylinders are available, identified by black painted handles. These are mainly 18kg forklift cylinders, although certain other sizes are used for special purposes. Macgas Liquid Withdrawal cylinders use right hand thread 'Acme' type fittings. Other types of fitting are not compatible - phone us at Macgas for advice or assistance.

n.b. Liquid Withdrawal cylinders with black tops can be operated in either horizontal or vertical positions.

Acme coupling... right hand thread



Check sealing washer is in place and undamaged

Always use gloves and goggles when connecting liquid propane cylinders



Tighten firmly by hand in a clockwise direction



Check joints for leaks

WARNING: Liquefied Propane can cause severe freeze burns and tissue damage if inhaled or allowed to contact skin or eyes. Extra care is essential when changing Liquid Withdrawal cylinders. Wear goggles or a full-face visor & stout, impermeable gloves. Never connect Liquid Withdrawal cylinders to vapour hose or equipment.

When connecting a new cylinder, check handwheel valve is shut and black sealing washer is in place in mouth of self-sealing cylinder 'nozzle'. Tighten coupling CLOCKWISE by hand - this action may be stiff, but you should not require tools. Open cylinder valve handwheel & check joint for leaks. In event of leakage try further tightening or disconnect and check sealing washer. If free of leakage, start equipment.

n.b. A small amount of liquid may escape from self-sealing coupling during connection & disconnection - this is normal.

When disconnecting, be sure to close handwheel valve.

SENSIBLE, SAFE AND LEGAL DISPOSAL

If you no longer need your Macgas cylinder tell your Macgas Dealer or phone the number on the cylinder Safety Label. You may be due partial refund - ask your Macgas Dealer - and remember to tell them if you still have your Macgas Hire Form. **Never** discard Macgas cylinders - you could be prosecuted on Waste Disposal and Health & Safety grounds. **Refuse** to give up your Macgas cylinder to any other gas supplier or scrapman.

n.b. Many customers wish to change to Macgas for all the benefits of a safe and economical Macgas supply.

Macgas Dealers cannot normally take away other brands of cylinders, but will advise you how to return these.



Macgas Propane is supplied in **RED** cylinders. There are four sizes for normal vapour supply - 47kg, 19kg, 11kg & 6kg. These are fitted with UK standard 5/8" BSP Left Hand POL vapour valves.

Macgas also supply special 'Liquid Withdrawal' cylinders with black carry-handles and special 'nozzle' style connections for liquid gas supply.

(See "Liquid Propane - Special Applications" section inside.)

HOW PROPANE GAS WORKS:

Propane gas can be stored under pressure in its liquid form - LPG (Liquefied Petroleum Gas). Thus we can store very large amounts of gas in a small space. By opening the cylinder valve we release some of this pressure to supply our appliances. More liquid simply vaporises to replace the gas used. Eventually all the liquid is used up and you need a refill from your Macgas Dealer.

In extreme cold or after prolonged heavy use, Propane liquid may be slow to vaporise. This can be overcome by using larger cylinders or by connecting extra cylinders. Never apply naked flame to heat up the cylinder.



Inside your Macgas cylinder, Propane is stored as a liquid under moderate pressure and vaporises to gas as you use your appliance.

The liquid simply vaporises to replace the gas used.

ADVICE & ASSISTANCE:

If unsure about any safety aspect of your Macgas Propane cylinders, regulators, fittings or equipment, consult your regular Macgas supplier or call us direct at Macgas for specialist advice and assistance.

TRADE USERS:

If you use LPG in your business you require Material Safety Data Sheets for your records. If you transport LPG you probably require Tremcards, and possibly Driver Training. Landlords have specific duties. Contact Macgas for information and advice.

LPG is a safe and reliable form of energy provided these commonsense safety rules are observed.

YOUR LOCAL MACGAS DEALER:

99(P) 11/97

MACGAS LTD.

Glasgow Road, Rutherglen, Glasgow G73 1SW
Telephone: 0141-647 9424 Fax: 0141-613 1537

Internet: www.macgas.co.uk Email: macgas@macgas.co.uk



Certificate No FM 12298

Macgas is Quality Assured to ISO 9002. Macgas is a Member of the Liquefied Petroleum Gas Association and operates to the Association's strict Codes of Practice.

For your own safety and comfort do not settle for less.

Your Guide
for Safe &
Sensible
use of
Macgas
Propane



How to use Propane safely!

Siting your Macgas Propane Cylinders:

Macgas Propane is the perfect fuel for many Domestic applications & environments. It is also an ideal environmental solution to a host of Commercial, Agricultural, Industrial and even Automotive Power problems.

Because it vaporises even in cold conditions, Propane is ideal for outdoor cylinder installations. Propane cylinders should be installed out of doors and piped to appliances according to relevant LPG Codes of Practice & LPG Industry Guidance Notes. If indoor siting of Propane cylinders is unavoidable (e.g. for temporary heating) you must tell your insurers.

Cylinders should be sited on level hard standing with proper access for delivery. Ask your Macgas Dealer or contact us at Macgas for specialist advice on siting.



Position: Propane is stored as a liquid. Cylinders are always to be transported, & used in the upright position. Never tilt cylinders when in use - liquid gas could enter your appliance.

LPG Cylinders: Treat cylinders with respect - damaged cylinders or valves can let gas escape.

Even 'empty' LPG cylinders contain flammable gas and should be treated as if full. Do not store unneeded cylinders - ask your Macgas Dealer for assistance.

LPG Hoses: For Propane vapour, use orange hose displaying maker's mark, plus "BS 3212: 1991/2/(mm size)/ High Pressure LPG", plus month & year of manufacture. Secure hoses with proper hose clips. Inspect hose regularly - replace if worn, cracked or damaged. Keep hose as short as practical. Protect from damage and excessive heat.

Gas Leaks: Propane has a strong odour so leaks can be easily detected. If you gas, close cylinder valve, ventilate area thoroughly. Make sure there are no sources of ignition around. If safe to do so, remove cylinder to an open area.

To pinpoint small leaks, brush leak detection fluid or soap solution over connections, pipes, hose etc. and watch for bubbles.

Never check for a gas leak with a naked flame.

Igniting: Many appliances have built-in ignition devices, but always be ready to light gas promptly. If gas does not light promptly, switch off and wait till any gas build-up clears before trying again.

Servicing: Servicing & repairs should not be attempted by untrained persons. LPG equipment should be inspected and serviced regularly by a qualified **CORGI Registered** contractor (or in certain workplace situations an officially recognised 'Competent Person'). Arrange this at least annually and have flues safety-checked for correct operation and Carbon Monoxide leakage.

Location: Propane is heavier than air. Leaking gas can collect in low lying areas such as basements. Never take Propane into high buildings where a piped gas supply is prohibited. Do not store Propane indoors. (n.b. Some Propane appliances are unsuitable for domestic use.)

Instructions: When using Propane equipment for first time, follow manufacturer's instructions carefully. Keep instructions handy for yourself and other users.

Ventilation: Follow manufacturer's instructions. If unsure do not use - seek specialist advice. Ensure sufficient ventilation to replace air consumed by unflued appliances - these could reduce Oxygen levels in the vicinity and produce Carbon Monoxide, with risk of asphyxiation. Keep ventilation grilles open and clear. Open windows and doors if the area feels stuffy. (n.b. Many unflued appliances have devices to shut gas off automatically if Oxygen is depleted, but do not rely solely on this - never leave unflued appliances lit and unattended, or whilst occupants are asleep.)

Fire Hazards: Never move portable heaters when lit. Keep combustible materials, clothes, etc. away from lit appliances. Face heaters into middle of area, away from curtains, furniture, walls etc. If fire occurs, stay away from any cylinders near fire - raise alarm and call Fire Brigade. Upon their arrival, tell them location of all cylinders.

Keep children away from Propane cylinders. Do not allow young children to change cylinders or operate appliances. Use a fireguard if required.



Connecting and disconnecting

Important Safety Precautions:

Before removing plug or disconnecting Propane cylinders, check cylinder valve is fully closed. Change cylinders out of doors in a well ventilated area away from ignition sources (e.g. electrical appliances, cigarettes, boilers, flues, etc.)

PROPANE REGULATORS & CONNECTORS

There are many brands and types of regulator and connector. We can not detail all types here. This advice is for typical Low Pressure and High Pressure vapour supply regulators. Propane regulators must conform to **BS 3016**. UK Propane vapour connectors use Left Hand Thread $1/8"$ BSP UK POL fittings and should fit all Macgas Propane vapour cylinder valves. Never try to fit anything else - if your connector will not fit readily, check your instructions or call us at Macgas.

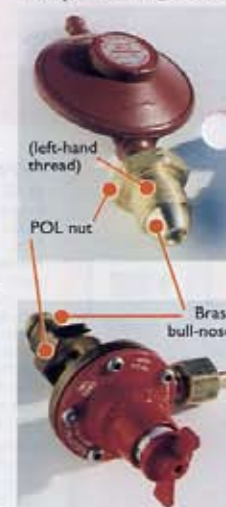
Gas Pressures: Many Propane appliances come pre-fitted with gas pressure regulators. Some operate on pre-set non-adjustable LOW or HIGH PRESSURE regulators. Others, e.g. gas torches & 'blower' heaters use adjustable regulators to vary the heat output. A few appliances use fittings which do not control gas pressure at the cylinder valve. To ensure you have the correct regulator or fitting, check equipment data plate and read maker's instructions.

Propane Valve Safety Plug:

To remove, grasp thumbgrip firmly and unscrew **CLOCKWISE**. Do not discard, leave inside carry-handle for later use.

To re-fit, reverse above procedure - turning plug **ANTI-CLOCKWISE**. Do not cross-thread. Re-fit plug when cylinder is disconnected, even if empty.

Low pressure regulators



High pressure regulators

ON/OFF valve handwheel



Propane valve safety plug

Remove (Clockwise)



Re-fit (Anti-Clockwise)

To connect cylinder:

Check for dirt or damage to valve threads & brass 'bull-nose' fitting. If threads or mating faces are damaged do not use - get a replacement; if dirty, clean carefully. Align bull-nose fitting with mouth of cylinder valve. Screw POL nut clockwise by hand. For **ANTI-CLOCKWISE** into valve by hand. If hard to turn, check for cross-threading - this can cause damage and leakage. Use a spanner for final tightening - do not over-tighten. Check joints with leak detection fluid or soap solution. (n.b. Do not disconnect again until next cylinder change - simply use On/Off handwheel on cylinder valve to turn your Macgas supply on and off.)

To disconnect cylinder:

Close cylinder valve. Let gas pressure in pipework burn off at appliance. If appliance has ON/OFF taps turn these off too - many appliances shut down if flame goes out and must be manually restarted, but some (e.g. most cooker hobs) can let gas escape if left 'ON' when gas is re-established. Using a spanner, unscrew POL nut **CLOCKWISE**. Re-fit safety plug.

To change cylinder:

Follow connection procedure above to fit replacement cylinder.

Important: Never disconnect if appliance stays lit when cylinder valve turned OFF - leave alight and call your Macgas Dealer.

Special exception: If you have a multi-cylinder installation with an **Automatic Changeover device**, refer to manufacturer's instructions on closing valves & disconnecting cylinders safely without interrupting your supply.

To turn gas ON & OFF:

ON: Turn cylinder valve handwheel **ANTI-CLOCKWISE** until fully open, then ease back $1/4$ turn to prevent seizing. The valve is now open, your supply is ON and ready for use. n.b. If gas escapes when valve is opened, shut valve, remove regulator & refit plug. If safe, move cylinder to open area & call your Macgas Dealer. **Call Fire Brigade** if serious gas escape persists. **OFF:** Turn valve handwheel **CLOCKWISE** until firmly closed. Check flame is out - if not, leave alight, do not disconnect, call your Macgas Dealer.

Connect by hand (Anti-clockwise)



Disconnect (Clockwise)



Tighten (Clockwise)

Stacken with spanner (Clockwise)



Typical automatic multi-cylinder changeover device



ON (Anti-clockwise)

OFF (Clockwise)