



**GUIDANCE NOTE 29**

**MEDICAL GASES  
THE MANAGEMENT OF MEDICAL  
OXYGEN IN DOMICILIARY USE**

**2020**

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**British Compressed Gases Association**

## **GUIDANCE NOTE 29**

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**2020**

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### **BRITISH COMPRESSED GASES ASSOCIATION**

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## PREFACE

The British Compressed Gases Association (BCGA) was established in 1971, formed out of the British Acetylene Association, which existed since 1901. BCGA members include gas producers, suppliers of gas handling equipment and users operating in the compressed gas field.

The main objectives of the Association are to further technology, to promote safe practice, and to prioritise environmental protection in the supply use, storage, transportation and handling of industrial, food and medical gases, and we produce a host of publications to this end. BCGA also provides advice and makes representations on behalf of its Members to regulatory bodies, including the UK Government.

Policy is determined by a Council elected from Member Companies, with detailed technical studies being undertaken by a Technical Committee and its specialist Sub-Committees appointed for this purpose.

BCGA makes strenuous efforts to ensure the accuracy and current relevance of its publications, which are intended for use by technically competent persons. However this does not remove the need for technical and managerial judgement in practical situations. Nor do they confer any immunity or exemption from relevant legal requirements, including by-laws.

For the assistance of users, references are given, either in the text or Appendices, to publications such as British, European and International Standards and Codes of Practice, and current legislation that may be applicable but no representation or warranty can be given that these references are complete or current.

BCGA publications are reviewed, and revised if necessary, at five-yearly intervals, or sooner where the need is recognised. Readers are advised to check the Association's website to ensure that the copy in their possession is the current version.

This document has been prepared by BCGA Technical Sub-Committee 7. It was approved for publication at BCGA Technical Committee 162. This document was first published on 18/06/2020. For comments on this document contact the Association via the website [www.bcg.co.uk](http://www.bcg.co.uk).

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\* Throughout this publication the numbers in <sup>[1]</sup> brackets refer to references in Section 9. Documents referenced are the edition current at the time of publication, unless otherwise stated.

## **TERMINOLOGY AND DEFINITIONS**

Carer	A relative, friend or professional who assists the patient with their therapy.
Cylinder	A transportable pressure receptacle of a water capacity not exceeding 150 litres.
Homecare Service Provider	An organisation / company that provides the medicinal oxygen and medical devices for treating patients in their home.
May	Indicates an option available to the user of this Guidance Note.
Shall	Indicates a mandatory requirement for compliance with this Guidance Note and may also indicate a mandatory requirement within UK law.
Should	Indicates a preferred requirement but is not mandatory for compliance with this Guidance Note.

# **GUIDANCE NOTE 29**

## **MEDICAL GASES THE MANAGEMENT OF MEDICAL OXYGEN IN DOMICILIARY USE**

### **1. INTRODUCTION**

Thousands of patients suffering from respiratory diseases receive medical oxygen therapy at home. Medical oxygen is administered in order to keep blood oxygen content levels high, thus helping to keep organs and tissue healthy. This in turn helps to maintain a patient's quality of life whilst allowing them to have mobility and to spend time with their family and friends both at home and away from home.

All medical gases and some of the associated equipment used are regulated by UK legislation, including homecare oxygen therapy services. To provide medical oxygen, the supplier shall have a license from the Medicines and Healthcare products Regulatory Agency (MHRA) and be under contract to the National Health Service (NHS) as a supplier within the local geographical region.

A healthcare professional has to prescribe the use of medical oxygen as a medicine and will decide which associated equipment is provided to the patient.

Before the first use of medical oxygen a homecare oxygen technician, working for the Homecare Service Provider, will carry out a risk assessment at the patient's premises and provide appropriate information and training.

This Guidance Note provides information on the supply of medical oxygen for homecare use and, in addition, highlights the actions to be taken in the unlikely event that there is an incident involving medical oxygen. It is right to state at this point that significant incidents are rare and the use of oxygen (whilst following the safety rules) is safe.

The patient (or those people responsible for the patient) should ensure they have adequate insurance to cover their activities, that their insurer is aware of the presence of medical oxygen on the premises and that they use their gases and look after their gas containers and associated equipment in a safe and responsible way.

This Guidance Note is intended for use in conjunction with current guidance and information produced by the Health and Safety Executive (HSE), the Department of Health and Social Care (DHSC) and other related bodies and trade associations.

### **2. SCOPE**

This document covers the supply of medical oxygen for domiciliary use, supplied to patients in their home, care home or other domiciliary facility.

The medical oxygen may be supplied from cylinders, cryogenic containers or oxygen concentrators.

It includes advice to patients and carers, as well as healthcare professionals, on the initial actions to take should an incident occur with medical oxygen.

The European Industrial Gases Association (EIGA) provide further guidance for the Homecare Service Provider on the provision of a safe system for the use and handling of medical oxygen therapy supply systems, refer to EIGA 89 <sup>[1]</sup>, *Medical oxygen systems for homecare supply*.

This document excludes advice on dealing with medical oxygen incidents outside the home.

### **3. GENERAL REQUIREMENTS**

Medical oxygen is classified as a medicine. As such, medical oxygen and some of the associated equipment used to provide medical oxygen are regulated by UK legislation. This includes homecare oxygen therapy services.

For a gas supplier to provide medical oxygen they have to have a license from the Medicines and Healthcare products Regulatory Agency (MHRA) and be under contract to the National Health Service (NHS) as a supplier within the local geographical region.

Patient safety is the prime objective of the healthcare industry and each Homecare Service Provider will operate a Quality Management System that ensures compliance with legislation and good homecare practice. Good homecare practice sets minimum requirements in order to safely supply products, devices and services to patients in their homes.

For further information on the role of the Homecare Service Provider refer to EIGA 158 <sup>[4]</sup>, *Good homecare practice for oxygen therapy*.

The delivery of the medical oxygen with the associated therapy equipment is made using purpose designed delivery vehicles by drivers either employed by the homecare service providers or by independent contractors on behalf of the homecare companies. For information on the design and safe operation of vehicles used for delivering homecare medical oxygen refer to EIGA 128 <sup>[3]</sup>, *Design and operation of vehicles used in medical oxygen homecare deliveries*.

**NOTE:** The transfilling of medical liquid oxygen on the roadside (at the patient's home) is not approved practice by the MHRA.

For a patient to use medical oxygen it has to be prescribed by a healthcare professional as a medicine. As part of the prescription, the healthcare professional will complete a Home Oxygen Order Form (HOOF), this will detail the equipment supplied, the oxygen flow rate and the hours per day that oxygen should be used.

The equipment can consist of:

- oxygen concentrators (static or portable);
- medical oxygen cylinders (static, back up or portable);

- liquid medical oxygen (supplied in liquid dewars with portable units);
- associated cannula, masks, plastic pipework, etc.

For further information on the equipment used to supply medical liquid oxygen to patients at home or in healthcare facilities, refer to EIGA 98 <sup>[2]</sup>, *Safe supply of transportable medical liquid oxygen systems by homecare service providers*.

Before the equipment can be installed and used by the patient a homecare oxygen technician will carry out a risk assessment. The purpose of the risk assessment is to ensure the safety of the patient, as well as the safety of others who may also be present.

The risk assessment will:

- identify the potential safety issues related to the three modes of supply of medical oxygen;
- assess the hazard from oxygen enrichment;
- determine if there is appropriate storage. Storage areas should be secure, well ventilated and with no sources of ignition present. Where practical they should be protected from the weather;
- provide recommended safety precautions;
- recommend the course of action following minor incidents.

NOTE: In the event of a significant incident always call the emergency services.

Once the installation is complete, the technician will train the patient and, as appropriate, other family members and carers on the correct and safe use of the equipment. This will include having a thorough understanding of the medical oxygen equipment, the ability to control the equipment to allow oxygen to be administered within prescribed limits and the potential hazards that oxygen may present in the domestic environment.

#### **WARNINGS:**

1. Using too much or too little oxygen can have serious effects on a patient's health and can be a major safety concern.
2. Excessive release of oxygen into a confined space can result in oxygen enrichment of the local area, leading to a higher fire risk.

#### **4. ASSESSMENT OF RELEVANT HAZARDS AND RISKS**

The primary hazard from oxygen is the increased risk of combustion, coupled with an increased intensity of combustion. Many substances which would otherwise not combust, are able to combust and burn fiercely in an atmosphere enriched with oxygen. In some cases, the fire will also be more difficult to extinguish.

For detailed information on enriched oxygen atmospheres refer to BCGA GN 11 <sup>[6]</sup>, *The management of risk when using gases in enclosed workplaces*.

In an enriched oxygen atmosphere a fire can be started from an ignition source, such as a cigarette, or from a chemical reaction, for example, from contact with emollient creams.

Incidents may include:

- a leak of gaseous oxygen, resulting in oxygen enrichment;
- a leak of liquid oxygen, resulting in cold burns (from contact with the liquid) and oxygen enrichment;
- loss of supply, for example, concentrator failure, an empty cylinder, trapped tubing, etc.;
- a fire on the cannula, for example, from smoking, cooking, candles, etc.;
- a fire, for example, from a reaction with emollient creams, other chemicals in the premises or other combustible materials close to the equipment.

For a fire to start there has to be present a fuel, oxygen and a source of ignition. Without a source of ignition a slightly higher level of oxygen does not present a significant hazard, however appropriate precautions shall be in-place.

Where oxygen is in-use the following safety precautions shall be followed:

- do **NOT** smoke or allow others to smoke around you. This includes e-cigarettes. You are at risk of very serious burns if you smoke whilst using oxygen.

For information refer to BCGA Leaflet 16 <sup>[8]</sup>, *The safe use of electronic cigarettes and other electronic devices used near medical oxygen*;

- ensure the area has adequate ventilation. Be aware that absorbent materials, for example, clothing, bedding and soft furnished chairs, may become oxygen rich in normal use and, therefore, have an increased risk of acting as a fuel source;
- turn off the oxygen supply when it is not in use;
- when cooking, take extra care as the flame, or intense heat, from a gas ring or oven may ignite the cannula;
- take care in the vicinity of any open flames or intense heat sources, for example, candles, open fires, heaters, etc.;

- take care if you use emollient creams (which may be transferred to bedclothes, sheets and clothing) or hand gels containing alcohol while using oxygen. If there is a fire it will be more severe.

Additional safety precautions for oxygen equipment:

- tubing is provided to transfer oxygen to the patient from concentrators or cylinders. A sufficient length of tubing should be provided to allow the patient reasonable freedom to move around the premises. This creates an additional hazard from the risk of tripping on the tubing. This has to be balanced with the requirement for the patient to remain mobile and to be able to move around the premises (as well as others, i.e. members of the household, carers, etc.);
- fire breaks may be fitted. A fire break is a safety device that can be fitted to the tubing between the patient's cannula or mask and the oxygen supply equipment. It acts as a thermal fuse which is designed to extinguish a fire in the tubing in the event of a fire occurring on the patient side of the fire break. However, not all designs will stop the flow of gas. Ensure the direction of flow aligns with the flow arrow;
- keep your spare cylinders, equipment not in use, etc., in the storage area agreed with the homecare oxygen technician;
- once empty, replace cylinders and remove empty cylinders to the storage area;
- do not tamper with oxygen equipment or modify it from the original condition in which it was provided.

## **5. FIRE INCIDENT - RISK AND ACTION**

Prepare an action plan which can be quickly activated in the event of a fire incident. This plan should be known by all residents / visitors at the premises.

The immediate action to take in the event of a fire:

- keep away. Do not approach or attempt to move a gas cylinder or to operate a valve;
- raise the alarm;
- evacuate the immediate area. Keep others away;
- Contact / inform the Emergency Services (on 999 or for mobile phones on 112).

NOTE: The Fire & Rescue Service will need to know which gases you have, where any cylinders are located and their type and quantity.

Take advice from the Emergency Services before attempting to re-enter the premises.

A fire action plan should include information on:

- smoke alarms. An understanding of what to do when an alarm operates (including awareness of the audio and visual warnings produced). Ensure smoke alarms are fitted and are maintained in working order throughout the premises. Additional smoke alarms may be beneficial in areas where oxygen is regularly used;
- escape routes. Plan an escape route (especially for night-time). Ensure exits are kept clear;
- the availability of spare keys. Keep spare keys for exit doors near the exit doors, for example, at the bottom of the stairs, but take appropriate security precautions;
- avoiding smoke filled areas. If there is smoke on the route, keep low and cover your mouth and nose to prevent smoke inhalation, for example, with a (wet) sleeve, blanket, etc.;
- the action to take if trapped. Call the Emergency Services, attempt to seal doors, etc. (to prevent smoke entering the room, for example, with blankets), opening a window and shouting for help.
- where gas cylinders are stored and in-use, their type and quantity. Information on the cylinder and gas it contains will be displayed on each gas cylinder label. This is useful information to pass on to the Fire & Rescue Services on their arrival.

BCGA provide advice on managing cylinders involved in a fire, refer to BCGA Leaflet 6<sup>[7]</sup>, *Cylinders in Fires*.

## **6. POTENTIAL INCIDENTS, RISK AND ACTION**

Following installation of the medical oxygen supply system the Homecare Service Provider shall inform the patient, carer or healthcare facility representative of the actions that should be taken in the event of an incident with the oxygen supply. The types of incidents can include:

- the involvement of the equipment in a fire whether caused by the equipment or not. For the immediate action in the event of a fire refer to Section 5;
- the loss of supply;
- malfunction of the oxygen supply system;
- adverse reaction by the patient to the gas.

Provided that the equipment is installed correctly and the user adequately trained and warned about the potential hazards of using medical oxygen, the likelihood of an incident is

considered remote. Where incidents do occur, they are often caused by external events that impact on the medical oxygen supply system. The patient / carer / healthcare facility staff shall be instructed to contact the Homecare Service Provider immediately if they have any doubt about the safety of any situation (involving medical oxygen).

Following an incident, where practical and appropriate, the following actions should be considered:

- isolate the oxygen supply system. Only if it is safe to do so, before following any other instructions. If there is any doubt about the safety of the situation, do not touch the equipment and evacuate the area immediately;
- where there is a major leak of oxygen, for example, caused by a cylinder falling over and the pressure regulator sheering off, a large leak developing between the cylinder valve and the regulator, or where a liquid oxygen container develops a major gas or liquid leak, the patient / carer / healthcare facility shall be instructed to:
  - close the cylinder or liquid container valve, only if it is safe to do so;
  - ensure that external windows and doors are opened to ventilate the area;
  - contact the Homecare Service Provider to obtain advice.
- if a cylinder or liquid container falls over, where there is no other apparent damage, contact the Homecare Service Provider for advice on the appropriate actions to be taken;
- if there is any evidence of a medical oxygen concentrator running hotter than usual, the Homecare Service Provider shall advise the patient / carer / healthcare facility to isolate the equipment at the mains supply and to contact the Homecare Service Provider immediately. Where it is essential for the patient to receive oxygen they should be instructed to use their back-up cylinder supply;
- in all cases the patient / carer / healthcare facility shall be advised to contact the Homecare Service Provider whenever they are concerned that any unusual event may have occurred that they believe could lead to a failure of the medical oxygen supply;
- in the event of an adverse reaction by the patient to the gas seek advice from the patient's healthcare professional.

The following tables provide information on potential incidents and the initial actions to take:

- Static and portable concentrators, refer to Table 1;
- Gas cylinders, refer to Table 2;
- Liquid oxygen systems, refer to Table 3.

Potential Incident / Risk	How to recognize it	What to do
Fires caused by the inappropriate use of the product (such as smoking whilst using oxygen)	Smoking in the house	Do not smoke or allow others to smoke when you are using your medical oxygen.
	Other ignition sources	Take care with open flames, for example, cooking, barbeque, candles, etc.
Minor localised oxygen enrichment (bedding, chairs, clothing)	Not an issue if no source of ignition (smoking, open flame etc.)	Keep the area ventilated, keep doors open and slightly open a window.
Concentrator stopped working	Concentrator plugged in. (Use main wall socket not an extension lead)	Check plug and electricity supply, move to back up cylinder, call Homecare Service Provider.
	Not plugged in	Plug in and check electrical supply.
	Alarming	Check electrical supply, move to back up cylinder call Homecare Service Provider.
	Alarming, with warning light on concentrator	Go straight to back up supply turn off concentrator and call Homecare Service Provider.
	Flow too high or too low	Reset the flow rate on front of the concentrator or call the Homecare Service Provider.
	No flow of oxygen, fire break damaged or in wrong way	Check flow control valve; check fire break, check flow arrow is pointing towards you on tubing.
Split or leaking tubing	Check the length of tubing for damage	If damaged or split go to back up supply and call the Homecare Service Provider.
Trapped tubing (low flow)	Check the length of tubing for damage	If damaged or split go to back up supply and call the Homecare Service Provider.
Broken fir tree (pipe connection to concentrator)	Check fir tree	If damaged or split go to back up supply and call the Homecare Service Provider.
Length of tubing too long	Potential trip hazard, coil up as you walk towards the concentrator	Call Homecare Service Provider to modify.
Supply failure, low battery in portable concentrator	Battery level meter	Charge on mains or in car, have a spare battery.

**TABLE 1:** Static and portable concentrators

<b>Potential Incident / Risk</b>	<b>How to recognize it</b>	<b>What to do</b>
Leak from cylinder or valve	Hissing sound from the cylinder or valve	Turn off the cylinder if possible and put outside on a covered area, use another cylinder and call Homecare Service Provider.
Leak from tubing or cannula	Hissing sound	Change the cannula or if tubing call Homecare Service Provider.
Loss of supply of oxygen	Cylinder empty, check gauge	Change cylinder.
	Flow selector not set	Check flow selector is set correctly.
	Cylinder valve faulty	Turn off the cylinder if possible and move cylinder to an external area, use another cylinder. Inform Homecare Service Provider.
Broken fir tree (pipe connection to cylinder)	Check fir tree	If damaged or split call the Homecare Service Provider.
Length of tubing too long	Potential trip hazard, coil up as you walk towards the static cylinder	Call Homecare Service Provider to modify; with portable supply have a short tubing to fire break and fit cannula to keep length short and avoid trip hazards.
Potential for cylinders being involved in a house fire	Home oxygen in house	Contact the Fire & Rescue service, provide information on location, quantity and type of cylinders. Refer to Section 5.

**TABLE 2:** Gas cylinders

Potential Incident / Risk	How to recognize it	What to do
Leak of oxygen	Hissing sound from Dewar	This is normally OK as the relief valves will vent slightly in normal operation, keep area ventilated. If larger release or you have a concern call your Homecare Service Provider.
Leak of oxygen	Hissing sound from portable unit	This is normally OK as the relief valves will vent slightly in normal operation, keep in a ventilated area. If larger release or you have a concern, take outside and call your Homecare Service Provider.
Filling the portable, potential cold burn	Cold gas will vent from the portable unit as it is filled	Stand on the opposite side of the cold gas cloud, do not put fingers or clothes in gas pathway, ventilate area.
Portable and Dewar locked together after filling	Cold parts (filling port)	Do not touch the cold parts, wipe the Dewar filling port with a clean lint free cloth before filling the portable (ensure no moisture).  If this happens stop the flow by releasing the filling valve and wait for the portable to warm before attempting removal.
	Ice crystals forming on filling adapters when filling, may cause issue with stopping the flow	Stop the flow every 10 seconds or so when filling for a 5 seconds to prevent ice crystals forming.
No flow of oxygen from portable	Check settings	If set for pulse flow ensure the cannula is clear to allow operation or switch to continuous flow.
Contamination	If there is any contamination with oil, grease	

**TABLE 3:** Liquid oxygen systems

## 7. SUMMARY USE CHARTS

A range of charts which summarise the safe use of medical oxygen in the domiciliary environment are displayed in Appendix 1. Your medical gas supplier may provide similar documents. These charts may be used by the homecare oxygen technician as part of the training provided during the installation of the equipment.

## 8. SECURITY

Medical gas cylinders and associated medical equipment, can be attractive items for thieves.

In the domestic environment there is also an opportunity for the curious (who have not had appropriate training) to tamper with the gas cylinders and equipment.

When not in use, medical gas cylinders and associated equipment should be kept in a secure location, which is well ventilated, where there are no sources of ignition, as agreed with the homecare oxygen technician.

Field homecare personnel who are required to deliver products and services to patients' homes should ensure they stay safe and secure when undertaking their duties. For further information refer to EIGA 198 <sup>[5]</sup>, *Security and safety for homecare field personnel*.

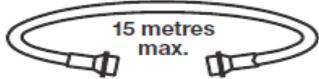
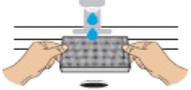
## 9. REFERENCES

<b>Document Number</b>	<b>Title</b>
1. EIGA 89	Medical oxygen systems for homecare supply.
2. EIGA 98	Safe supply of transportable medical liquid oxygen systems by homecare service providers.
3. EIGA 128	Design and operation of vehicles used in medical oxygen homecare deliveries.
4. EIGA 158	Good homecare practice for oxygen therapy.
5. EIGA 198	Security and safety for homecare field personnel.
6. BCGA Guidance Note 11	The management of risk when using gases in enclosed workplaces.
7. BCGA Leaflet 6	Cylinders in fires
8. BCGA Leaflet 16	The safe use of electronic cigarettes and other electronic devices used near medical oxygen.

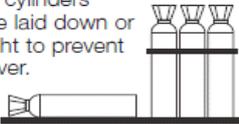
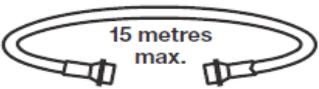
Further information can be obtained from:

UK Legislation	<a href="http://www.legislation.gov.uk">www.legislation.gov.uk</a>
Health and Safety Executive (HSE)	<a href="http://www.hse.gov.uk">www.hse.gov.uk</a>
Department of Health and Social Care	<a href="http://www.gov.uk/government/organisations/department-of-health-and-social-care">www.gov.uk/government/organisations/department-of-health-and-social-care</a>
Medicines and Healthcare products Regulatory Agency (MHRA)	<a href="http://www.gov.uk/government/organisations/medicines-and-healthcare-products-regulatory-agency">www.gov.uk/government/organisations/medicines-and-healthcare-products-regulatory-agency</a>
National Health Service (NHS)	<a href="https://www.nhs.uk/">https://www.nhs.uk/</a>
European Industrial Gases Association (EIGA)	<a href="http://www.eiga.eu">www.eiga.eu</a>
British Compressed Gases Association (BCGA)	<a href="http://www.bcgaco.uk">www.bcgaco.uk</a>

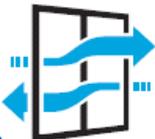
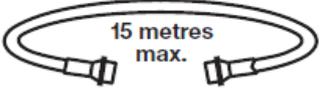
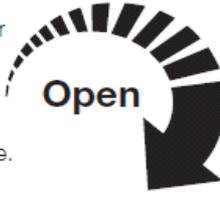
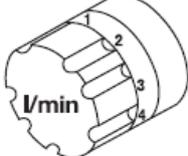
CONCENTRATORS

<p><b>1</b> Read the <b>User Instruction Manual</b> carefully before operating your oxygen concentrator and equipment. Pay special attention to information where the hazard symbol is shown.</p> 	<p><b>2</b> Materials burn much more vigorously in oxygen than air. <b>Never smoke</b> (or let someone else smoke near you) whilst using your oxygen concentrator. <b>Do not use</b> your oxygen concentrator near open fires or naked flames.</p> 	<p><b>3</b> Only use your oxygen concentrator and equipment in a <b>well ventilated area</b>. Keep internal doors open whilst your oxygen concentrator is in use.</p> 
<p><b>4</b> <b>Never</b> place your oxygen concentrator near curtains or cover them with clothing as this will restrict air circulation. Materials become <b>oxygen enriched</b> if any leak occurs with no ventilation.</p> 	<p><b>5</b> Follow the advice your Service Provider has given you where to safely position your oxygen concentrator when it is being used. Your concentrator must be used upright as detailed in the instruction manual.</p> 	<p><b>6</b> <b>Do not use</b> oils or grease with your oxygen concentrator. Ensure your hands are <b>clean</b> when handling your oxygen equipment. Only use authorised creams and moisturisers when using your medical oxygen.</p> 
<p><b>7</b> Attach the oxygen tubing to the outlet connector on the oxygen concentrator. Ensure the length of the tubing does not exceed 15 metres.</p> 	<p><b>8</b> Connect your oxygen concentrator to the electrical supply and switch on. <b>Never use</b> extension leads to connect your concentrator unless instructed by your Service Provider.</p> 	<p><b>9</b> Set the flow control valve to the flowrate <b>prescribed by your Doctor</b>. Check for any leaks on the tubing connection after selecting the correct flowrate.</p> 
<p><b>10</b> Check for flow by placing the end of the tubing in a glass of water and watch for bubbles. If bubbles do not appear, check a flow has been selected and there are no leaks. If a flow is still not evident, contact your Service Provider.</p> 	<p><b>11</b> <b>Regularly</b> clean the air inlet filter as instructed in the <b>User Instruction Manual</b>. Ensure the filter is <b>dried</b> before replacement. <b>Switch off</b> and isolate your medical oxygen concentrator from the mains supply when replacing the filter.</p> 	<p><b>12</b> <b>Never</b> open or remove the concentrator cover at any time. <b>Do not use</b> extension cables unless instructed. <b>Only</b> authorised personnel should carry out any repairs on your oxygen concentrator.</p> 
<p><b>13</b> Use <b>only</b> a clean damp cloth to clean your oxygen concentrator or any associated equipment. <b>Only</b> use mild non-abrasive cleaning materials. Allow the liquid oxygen vessels to dry after wiping down.</p> 	<p><b>14</b> <b>Switch off</b> your medical oxygen concentrator after use. <b>Never</b> leave your medical oxygen concentrator running when it is not in use.</p> 	<p><b>15</b> If your oxygen concentrator fails for any reason call your Service Provider immediately. <b>Never</b> try and repair any fault unless specifically instructed by your Service Provider.</p> 

GAS CYLINDERS

<p><b>1</b></p> <p>Read the <b>User Instruction Manual</b> carefully before operating your medical oxygen cylinder and equipment.</p> <p>Pay special attention to information where the hazard symbol is shown.</p> 	<p><b>2</b></p> <p>Materials burn much more vigorously in oxygen than air.</p> <p><b>Never smoke</b> (or let someone else smoke near you) whilst using your oxygen equipment.</p> <p><b>Do not use</b> your oxygen cylinder near open fires or naked flames.</p> 	<p><b>3</b></p> <p>Only use your medical oxygen cylinder and equipment in a <b>well ventilated area</b>.</p> <p>Keep internal doors open whilst your oxygen cylinder is in use.</p> 
<p><b>4</b></p> <p><b>Never</b> place your oxygen cylinders near curtains or cover them with clothing as this will restrict air circulation.</p> <p>Materials become <b>oxygen enriched</b> if any leak occurs with no ventilation. <b>Never</b> use or carry the portable oxygen vessel under any clothing.</p> 	<p><b>5</b></p> <p>Follow the advice your Service Provider has given you where to safely store and use your cylinders.</p> <p>When stored, cylinders must either be laid down or secured upright to prevent them falling over.</p> 	<p><b>6</b></p> <p><b>Do not use</b> oils or grease with your oxygen cylinders or equipment.</p> <p>Ensure your hands are <b>clean</b> when using the cylinder.</p> <p>Only use authorised creams and moisturisers when using your medical oxygen.</p> 
<p><b>7</b></p> <p>Attach the oxygen tubing to the outlet connector on the valve or regulator.</p> <p>Ensure the length of the tubing does not exceed 15 metres.</p> 	<p><b>8</b></p> <p>Ensure the flowmeter is set to zero before the valve is opened.</p> <p>Open the cylinder valve <b>slowly</b>.</p> <p>Open the valve fully by turning the handwheel anti-clockwise.</p> 	<p><b>9</b></p> <p>Set the flow control valve to the flowrate <b>prescribed by your Doctor</b>.</p> <p>Check for any leaks on the tubing connection after opening the cylinder valve.</p> 
<p><b>10</b></p> <p>Check for flow by placing the end of the tubing in a glass of water and watch for bubbles.</p> <p>If bubbles do not appear, check a flow has been selected and there are no leaks. If a flow is still not evident, contact your Service Provider.</p> 	<p><b>11</b></p> <p>Check how much oxygen is available for use by checking the gauge on the regulator.</p> <p><b>Never</b> fully empty the cylinder.</p> <p>Always change over your cylinders so you leave some gas in them after use.</p> 	<p><b>12</b></p> <p>If a regulator is used with your oxygen cylinder, ensure it is only connected hand tight.</p> <p><b>Never</b> use excessive force.</p> <p><b>Never</b> use spanners unless specifically instructed by your Service Provider.</p> 
<p><b>13</b></p> <p><b>Only</b> use a clean damp cloth if it is necessary to clean your oxygen cylinder or any associated equipment.</p> <p><b>Only</b> use mild non-abrasive cleaning materials. Allow the cylinder to dry after wiping down.</p> 	<p><b>14</b></p> <p>Close the valve when the cylinder is not in use.</p> <p>Close the valve by turning the handwheel clockwise.</p> <p><b>Never</b> use excessive force.</p> 	<p><b>15</b></p> <p>If your cylinder or regulator fails for any reason call your Service Provider immediately.</p> <p><b>Never</b> try and repair any fault unless specifically instructed by your Service Provider.</p> 

LIQUID OXYGEN

<p>1</p> <p>Read the <b>User Instruction Manual</b> carefully before operating your liquid oxygen vessels and equipment.</p> <p>Pay special attention to information where the hazard symbol is shown.</p> 	<p>2</p> <p>Materials burn much more vigorously in oxygen than air.</p> <p><b>Never smoke</b> (or let someone else smoke near you) whilst using your oxygen equipment.</p> <p><b>Do not use</b> your oxygen vessels near open fires or naked flames.</p> 	<p>3</p> <p>Only use your liquid oxygen vessels and equipment in a <b>well ventilated area</b>.</p> <p>Keep internal doors open whilst your oxygen vessels are in use.</p> 
<p>4</p> <p><b>Never</b> place your oxygen vessels near curtains or cover them with clothing as this will restrict air circulation.</p> <p>Materials become <b>oxygen enriched</b> if any leak occurs with no ventilation. <b>Never</b> use or carry the portable oxygen vessel under any clothing.</p> 	<p>5</p> <p>Follow the advice your Service Provider has given you where to safely store and use your liquid oxygen vessel.</p> <p>Use and store your liquid oxygen base unit <b>upright</b>. Use the portable unit only as shown in the instruction manual.</p> 	<p>6</p> <p><b>Do not use</b> oils or grease with your liquid oxygen vessels or equipment.</p> <p>Ensure your hands are <b>clean</b> when using the vessels.</p> <p>Only use authorised creams and moisturisers when using your medical oxygen.</p> 
<p>7</p> <p>Attach the oxygen tubing to the outlet connector on the liquid oxygen vessel.</p> <p>Ensure the length of the tubing does not exceed 15 metres.</p> 	<p>8</p> <p>To turn on your liquid oxygen vessel, turn the oxygen flow control valve clockwise.</p> 	<p>9</p> <p>Set the flow control valve to the flowrate <b>prescribed by your Doctor</b>.</p> <p>Check for any leaks on the tubing connection after selecting the correct flowrate.</p> 
<p>10</p> <p>Check for flow by placing the end of the tubing in a glass of water and watch for bubbles.</p> <p>If bubbles do not appear, check a flow has been selected and there are no leaks. If a flow is still not evident, contact your Service Provider.</p> 	<p>11</p> <p>When transfilling the portable unit, <b>never leave it unattended</b> until the unit is full.</p> <p>If the unit will not disconnect easily, <b>never</b> use force to remove it. <b>Wait</b> a few moments to allow it to thaw and then try again.</p> 	<p>12</p> <p><b>Never</b> touch any cold parts on either vessel or allow liquid oxygen to come into contact with your skin.</p> <p>This could cause a serious burn. Immerse affected parts in tepid water if you receive a cold burn.</p> 
<p>13</p> <p>Use <b>only</b> a clean damp cloth to clean your liquid oxygen vessels or any associated equipment.</p> <p><b>Only</b> use mild non-abrasive cleaning materials. Allow the liquid oxygen vessels to dry after wiping down.</p> 	<p>14</p> <p>Select zero on the oxygen flow control valve after use.</p> <p>Keep closed when the liquid oxygen vessel is not in use.</p> 	<p>15</p> <p>If either liquid oxygen vessel fails for any reason call your Service Provider immediately.</p> <p><b>Never</b> try and repair any fault unless specifically instructed by your Service Provider.</p> 



**British Compressed Gases Association**

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