

Medical oxygen. Integral valve cylinders (CD, ZD, HX, ZX).

Best-in-class cylinder packages

BOC Healthcare pioneers the medical gas products and services that will deliver tomorrow's patient care today. Our unrivalled commitment to improving medical gas technology, reduces costs, and optimises patient treatment. All BOC Healthcare gas cylinders are designed to be robust, reliable, convenient to use and safe to handle. To provide the highest quality, all cylinders are tested at every fill to ensure patient safety.

Integral valve cylinders

BOC was the first UK company to introduce integral valve cylinders to the healthcare sector. These simple, ready to use cylinders require no additional equipment. The lightweight packages in the range are more convenient to use and hold more gas than conventional cylinders.

The benefits and features of these cylinders are:

- constantly live gauge indicates gas levels, even when the cylinder is not turned on
- higher gas capacity for less cylinder changes
- lightweight for less lifting effort, making it ideal for ambulatory use
- clear product labelling to avoid selecting the wrong gas
- improved manual handling, minimising the risk of injury
- easier to store and handle due to its flat stable base and carry handle
- eliminates the costs of buying and maintaining separate regulators
- tamper-evident covers to ensure the gas is uncontaminated and safe for the patient
- no need for a cylinder key
- simple push fit connection to save time.

With BOC as your provider, you can be sure to benefit from leading-edge technology.

Cylinder features

Convenient carry handle

Flow selector

Easy on/off hand wheel

"Live" content gauge

Clear product identity

Flat base

Batch label

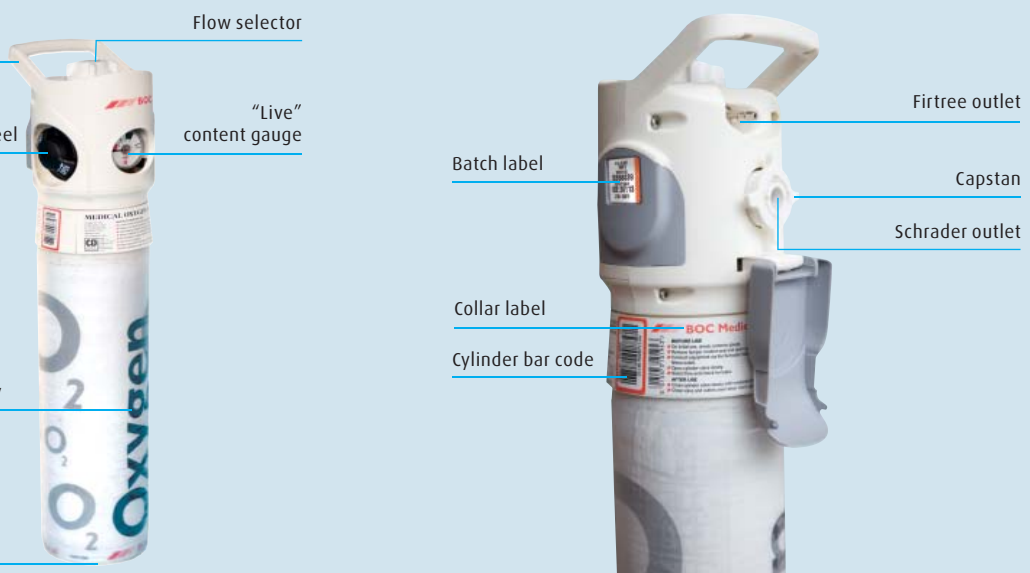
Firtree outlet

Capstan

Schrader outlet

Collar label

Cylinder bar code



Instructions for use.

1. Initial safety checks.

Before handling cylinders ensure your hands are clean. If you have been using alcohol based gel or liquids to decontaminate your hands make sure the alcohol has totally evaporated.

When selecting the cylinder for use, check that the cylinder is clean and free from any damage. Ensure the cylinder is free from oil and grease, particularly around the Schrader and firtree outlets.

2. Preparing a new cylinder for use.



2.1 Ensure you have the correct medical gas by checking the cylinder label.



2.2 Check the expiry date on the batch label fitted to the cylinder.



2.3 Make sure the contents gauge is in the green zone. This indicates that the cylinder is FULL.



2.4 Remove the tamper evident handwheel cover by pulling the tear ring. Discard the cover into the recycle bin. If the cylinder has been used before this cover will not be present.

If the cylinder has been used before make sure you have sufficient gas for treatment by inspecting the contents gauge. If the needle is in the red zone there is limited capacity and you may need to change the cylinder (see duration chart overleaf).



2.5 Prepare the cylinder for use before placing near the patient. **Do not place the cylinder on the bed before you have set up the cylinder.**



2.6 Remove the valve outlet cover. i) The hinged grey cover is pulled down. **Do not remove the grey cover and refit after use.**



ii) The red cover is removed by pulling towards you. **Retain the red cover to refit after use.**



2.7 Ensure the flow selector on top of the cylinder is set to zero and the hand wheel is turned off before connecting equipment.

Using the firtree.



2.7 Attach tubing from mask or nasal cannula to the firtree outlet. **Ensure the tubing is pushed on securely.**



2.8 Slowly turn on the cylinder by rotating the hand wheel anticlockwise until it comes to a complete stop. **Do not use excessive force.**



2.9 Set the prescribed flow by rotating the dial flow selector. **Ensure that the correct flow rate number is clearly visible in the flow selector window. Check the gas is flowing.**



2.10 Ensure the cylinder is turned on and leak tested before placing near the patient. Use a suitable cylinder holder where possible. **Do not place the cylinder on the patient's bed unless there is no alternative.**

3. Using the Schrader outlet.



3.1 Insert the oxygen probe into the Schrader outlet. **Ensure the probe clicks securely into place.**



3.2 Slowly turn on the cylinder by rotating the hand wheel anticlockwise until it comes to a stop. **Do not use excessive force.**



3.3 Check for leaks which maybe indicated by a hissing sound.⁽¹⁾

Note:

⁽¹⁾ If you suspect that you have a leak, turn off the cylinder and check the equipment is properly connected. Turn on the cylinder and re-check for leaks. If the leak continues, turn off and quarantine the cylinder and contact BOC Healthcare.

4. Monitoring during use.



4.1 Place a mask or nasal cannula onto patient. **If using a mask ensure a tight seal. Check the gas is flowing and that there are no leaks indicated by a hissing sound.⁽¹⁾**



4.2 Ensure the clinical condition of the patient remains satisfactory throughout the therapy.



4.3 Use pulse oximetry where appropriate.



4.4 Check the contents gauge at regular intervals, to ensure there is sufficient gas (as described in 2.3).

5. After use.



5.1 Remove the mask or nasal cannula from the patient.



5.2 Turn off the cylinder by rotating the hand wheel clockwise until it comes to a stop. **Do not use excessive force.**



5.3 Disconnect equipment. i) Remove the tubing by firmly pulling the tube whilst holding the cylinder handle.



ii) Release the probe by twisting the capstan clockwise.



5.4 Turn the flow selector to zero.



5.5 Replace the outlet cover. i) Pull up the hinged grey cover. ii) Refit the red cover.



5.6 Check the cylinder gauge, for content level (refer to duration chart). **Return the cylinder to a designated 'in use' or empty storage area.**

In the event of an emergency, or if you suspect your cylinder is leaking, contact BOC Healthcare on 0800 111 333.

Oxygen cylinder data summary

| Cylinder code | CD | ZD | HX | ZX |
|------------------------------------|--|--|--|--|
| Cylinder order code | 101-CD | 101-ZD | 101-HX | 101-ZX |
| Nominal contents (litres) | 460 | 605 | 2300 | 3040 |
| Nominal cylinder pressure (bar) | 230 | 300 | 230 | 300 |
| Nominal outlet pressure (bar) | 4 | 4 | 4 | 4 |
| Valve outlet flow connection | 6 mm firtree | 6 mm firtree | 6 mm firtree | 6 mm firtree |
| Valve outlet pressure connection | BS 5682 Schrader | BS 5682 Schrader | BS 5682 Schrader | BS 5682 Schrader |
| Valve operation | handwheel | handwheel | handwheel | handwheel |
| Flow-rate (litres/min) | Firtree: 1-15/ Schrader: 40 (nominal) | Firtree: 1-15/ Schrader: 40 (nominal) | Firtree: 1-15/ Schrader: 40 (nominal) | Firtree: 1-15/ Schrader: 40 (nominal) |
| Dimensions (inc. valve) L x D (mm) | 520 x 100 | 525 x 101 | 930 x 140 | 930 x 143 |
| Water capacity (litres) | 2.0 | 2.0 | 10.0 | 10.0 |
| Nominal weight full (kg) | 3.5 | 4.1 | 19.0 | 14.0 |

Cylinder duration versus selected flowrate (based on nominal flowrate and normal cylinder contents)

| Size | Flowrate (ltr/min) | Gauge contents | | | | | |
|-----------------------|--------------------|----------------|--------|------------|--------|-----------|--------|
| | | Full (100%) | | Half (50%) | | Low (25%) | |
| | | (hr.min) | (mins) | (hr.min) | (mins) | (hr.min) | (mins) |
| CD oxygen (460 ltrs) | 15 | 0.30 | 30 | 0.15 | 15 | 0.07 | 7 |
| | 9 | 0.51 | 51 | 0.25 | 25 | 0.12 | 12 |
| | 6 | 1.16 | 76 | 0.38 | 38 | 0.19 | 19 |
| | 4 | 1.55 | 115 | 0.57 | 57 | 0.28 | 28 |
| | 2 | 3.50 | 230 | 1.55 | 115 | 0.57 | 57 |
| ZD oxygen (605 ltrs) | 15 | 0.40 | 40 | 0.20 | 20 | 0.10 | 10 |
| | 9 | 1.06 | 66 | 0.33 | 33 | 0.16 | 16 |
| | 6 | 1.40 | 100 | 0.50 | 50 | 0.25 | 25 |
| | 4 | 2.30 | 150 | 1.15 | 75 | 0.37 | 37 |
| | 2 | 5.00 | 300 | 2.30 | 150 | 1.15 | 75 |
| HX oxygen (2300 ltrs) | 15 | 2.33 | 153 | 1.16 | 76 | 0.38 | 38 |
| | 9 | 4.15 | 256 | 2.07 | 127 | 1.03 | 63 |
| | 6 | 6.23 | 383 | 3.11 | 191 | 1.35 | 95 |
| | 4 | 9.35 | 575 | 4.47 | 287 | 2.23 | 143 |
| | 2 | 19.10 | 1150 | 9.35 | 575 | 4.47 | 287 |
| ZX oxygen (3040 ltrs) | 15 | 3.22 | 202 | 1.41 | 101 | 0.50 | 50 |
| | 9 | 5.37 | 337 | 2.48 | 168 | 1.24 | 84 |
| | 6 | 8.26 | 507 | 4.13 | 253 | 2.06 | 127 |
| | 4 | 12.40 | 760 | 6.20 | 380 | 3.10 | 190 |
| | 2 | 25.20 | 1520 | 12.40 | 760 | 6.20 | 380 |

Safety information and precautions

- Oxygen is a non-flammable gas, but strongly supports combustion.
- Do not store or use medical gas cylinders near naked flames, sources of ignition or combustible materials.
- Ensure the oxygen cylinders are stored in a safe and secure area where they cannot fall over and cause injury.
- Clearly identify the storage areas with appropriate signage. Ensure separation of full and empty cylinders.
- Store medical gas cylinders separately from industrial and other non medical cylinders in a well-ventilated area that is clean and dry, preferably inside.
- Smoking should not be permitted in the vicinity where cylinders are used or stored.
- Ensure labels remain clearly visible at all times and not removed or covered. Unauthorised labels/tags must not be fitted.
- Use a suitable trolley to transport large cylinders. Any stationary cylinder trolley in a ward area should be fixed in place to prevent it falling over.
- Where available, always use an appropriately designed cylinder support to hold the cylinder whilst in use adjacent to the patient.
- Ensure the cylinder is set up and tested before placing near the patient.
- Do not place the cylinder on the patient's bed unless there is no suitable alternative for retaining the cylinder.
- Do not use oil or grease (or any oil-based products which includes hand creams) in the vicinity of an oxygen cylinder.
- If you need to clean the cylinder do not use any materials which contain ammonium or chlorine compounds.
- Do not refill or tamper with the cylinder package.

BOC Healthcare

Customer Service Centre, Priestley Road, Worsley, Manchester M28 2UT

Phone 0800 111 333, Fax 0800 111 555, Email bohealthcare-uk@boc.com, www.bohealthcare.co.uk

The stripe symbol and the letters BOC are registered trade marks of The BOC Group Limited. Both BOC Limited and The BOC Group Limited are members of The Linde Group, the parent company of which is Linde AG. Reproduction without permission is strictly prohibited. © Copyright 2013

