

Medical gas pin index cylinders.

Using with a regulator.

Best-in-class cylinder packages

BOC Healthcare are continually reviewing their specification and design of their gas cylinder packages so that they provide a robust, reliable and safe package, which delivers a high quality gas to ensure patient safety. To ensure that the cylinder is safe to handle we recommend that you follow the procedures set out in this leaflet.

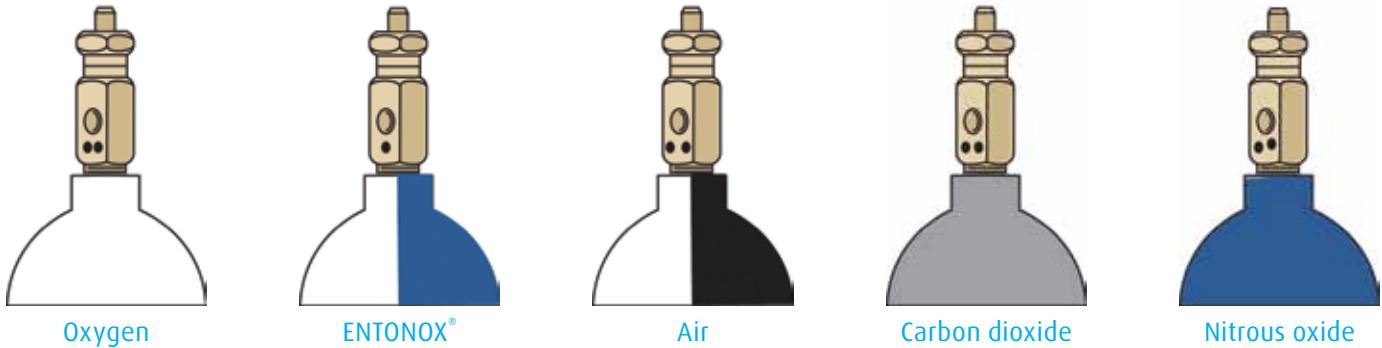
BOC offer a wide range of cylinders fitted with pin index valves. From the small portable cylinders used for administering gas to patients via a regulator and fitting to medical equipment as a backup supply, to larger cylinders used on manifolded systems to provide a bulk supply for medical gas pipelines.

Pin index cylinders

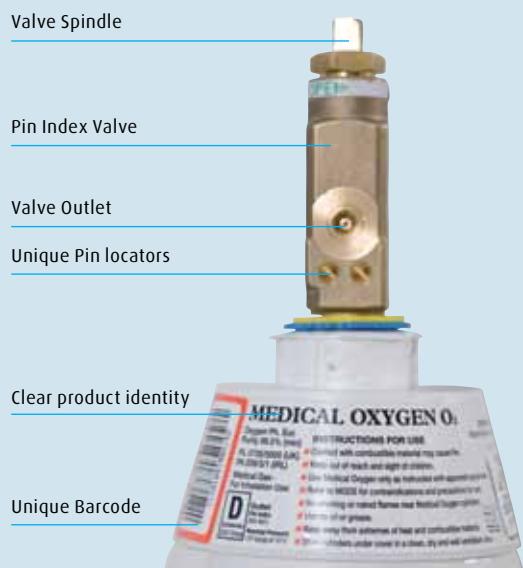
The Pin Index Safety System uses a unique configuration of holes in the face of the cylinder valve which match precisely with the positions of the pins in the yoke fitted to the regulator or anaesthetic machine. This eliminates the risk of connecting the wrong cylinder to the equipment, preventing the wrong gas being administered to the patient.

With BOC as your medical gas provider, you can be sure to benefit.

This instruction guide concentrates mainly on fitting regulators to a pin index cylinder. However, the same principles apply to fitting cylinders to any medical equipment with a pin index yoke.



Cylinder features



Instructions for use.

1. Initial safety checks

Before handling cylinders or the associated medical equipment/regulators, 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 setting up a cylinder for patient use, it is good practice to connect the regulator to the cylinder, fit the ancillary equipment to the regulator and test the complete system before placing the cylinder near the patient.

2. Preparing a 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.
We recommend you return cylinders which have passed their expiry date.



2.3 Remove the tamper evident seal by pulling the tear strip. Discard the seal and remove the plastic clip. **The seal and clip will not be present if the cylinder has been used before.**



2.4 Inspect the valve to ensure it is undamaged, free from oil and grease and clean. **If the valve appears contaminated or damaged it must not be used. Contact BOC to arrange for its return and replacement.**

3. Connecting the cylinder



3.1 Check you have the correct regulator for the medical gas. **Ensure the regulator is not due for any routine maintenance.**



3.2 When connecting to an anaesthetic machine or other equipment, check you have the correct cylinder.



3.3 Check the Bodok seal is in good condition, clean and free from any signs of oil or grease. **If in doubt, replace with a new one.**



3.4 Engage the pins on the regulator yoke with the holes on the valve. Tighten the screw firmly. **Do not apply excessive force.**



3.5 Where using a regulator with a flow selector – turn the flow to zero before turning on the gas.



3.6 Attach appropriate gas delivery equipment if using a regulator. **For example, fit tubing to the fir tree outlet .**



3.7 Where a regulator is fitted with a Schrader outlet, insert the probe before turning on the cylinder.



3.8 Open the cylinder slowly, using an appropriate cylinder key. **Do not apply excessive force.**

3. Connecting the cylinder (continued)



3.9 Where the regulator or equipment has a flow selector – set the flow selector to the prescribed flowrate.



3.10 Check for leaks by listening for a hissing sound. If you suspect a leak, shut off the valve.



3.11 With the valve shut, allow residual gas to vent. Remove the yoke and re-inspect the Bodok seal.



3.12 The Bodok seal should show no signs of wear, if in doubt replace with a new one.



Note:

It is good practice to routinely change the Bodok seals on your equipment. We recommend that seals are exchanged every two years (or sooner if they show signs of wear).

Bodok seals can be obtained from BOC Healthcare, call 0800 111 333 quoting part number 888823.

3.13 We only recommend using standard Bodok seals. We suggest other designs (as shown) are replaced with a standard seal.

3.14 Re-check for leaks. If leaks continue, turn off the cylinder and inform BOC to arrange for its return and replacement.

4. Monitoring during use



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



4.2 Check the contents gauge at regular intervals to ensure there is sufficient gas for continued use.



4.3 If you notice leaks whilst in use, repeat steps 3.10 to 3.14 above. **Ensure the gas supply for the patient is maintained.**



4.4 Shut off the gas whenever the cylinder is not in use. **Do not use excessive force.**

5. After use



5.1 Check the cylinder contents gauge to see whether it is empty or has sufficient gas for further use.



5.2 Close the cylinder valve using an appropriate cylinder key. **Do not use excessive force.**



5.3 Allow the regulator to vent to atmosphere by selecting a flow on the system. **Remove the regulator when the contents gauge reads zero.**



5.4 Return the cylinder to the appropriate in use or empty cylinder store.

Pin Index cylinder range and basic details

Oxygen	298121-AZ	101-C	101-D	101-E	101-J
Nominal contents (litres)	170	170	340	680	6800
Nominal cylinder pressure (bar)	137	137	137	137	137
Dimensions (inc. valve) L x D (mm)	290 x 106	430 x 89	535 x 102	865 x 102	1320 x 229
Nominal weight full (kg)	2.5	2.5	3.9	6.5	78.0
Nitrous oxide	298122-AZ	141-C	141-D	141-E	
Nominal contents (litres)	450	450	900	1800	
Nominal cylinder pressure (bar)	44	44	44	44	
Dimensions (inc. valve) L x D (mm)	290 x 106	430 x 89	535 x 102	865 x 102	
Nominal weight full (kg)	3.0	2.0	5.0	9.0	
ENTONOX® (50% oxygen/50% nitrous oxide)	211-D	211-F	211-G		
Nominal contents (litres)	500	2000	5000		
Nominal cylinder pressure (bar)	137	137	137		
Dimensions (inc. valve) L x D (mm)	535 x 102	930 x 140	1320 x 178		
Nominal weight full (kg)	4.0	18.0	43.0		
Air	298123-AZ	191-E	191-J		
Nominal contents (litres)	160	640	6400		
Nominal cylinder pressure (bar)	137	137	137		
Dimensions (inc. valve) L x D (mm)	290 x 106	865 x 102	1520 x 229		
Nominal weight full (kg)	2.5	6.5	78.0		
Carbon dioxide	201-C	201-E			
Nominal contents (litres)	450	1800			
Nominal cylinder pressure (bar)	50	50			
Dimensions (inc. valve) L x D (mm)	430 x 89	865 x 102			
Nominal weight full (kg)	3.0	8.5			

Safety information and precautions

- Do not store or use medical gas cylinders near naked flames, sources of ignition or combustible materials.
- Ensure medical gas 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.
- When using the cylinder with a regulator, prepare the cylinder for use prior to placing the cylinder near the patient.
- Where available, always use an appropriately designed cylinder support to hold the cylinder whilst in use adjacent to the patient.
- Only place the cylinder on the patient's bed if 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 medical gas cylinders.
- If you need to clean the cylinder do not use any materials which contain ammonium or chlorine compounds.
- Do not refill the cylinder or attempt to tamper with the cylinder package.

If you require a replacement or have concerns about your cylinder package please contact our Customer Service Centre on 0800 111 333 quoting your account number. This number should also be used in the unlikely event of an emergency or if you suspect your cylinder is leaking (our Customer Service Centre is open 365 days a year, 24 hours a day).

BOC Healthcare

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

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

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