

Domiciliary Oxygen Switch

Instructions for Use



1. Symbols

Warning!	Indicates a potentially hazardous situation which, if not avoided, could result in personal injury to the user or others
Caution!	Indicates a potentially hazardous situation which, if not avoided, could result in damage to the equipment or property

2. Warnings

2.1. Warnings!

- ▶ Read through this entire instruction manual before using or showing others how to use a Domiciliary Oxygen Switch. As with all medical equipment, attempting to use this device without a thorough understanding of its operation may result in patient or user injury.
- ▶ This device is intended for use with oxygen concentrators with low static operating pressures not exceeding those stated in the Specification. It must not be used for other applications.
- ▶ Oxygen is not flammable; however, an oxygen enriched atmosphere will drastically increase the rate and severity of combustion. Oil and/or grease in the presence of an oxygen enriched atmosphere will become highly combustible. Oxygen must never be allowed to contact oil, grease or other hydrocarbon or petrochemical based substances.
- ▶ Many hand creams and moisturisers contain paraffin and petroleum bases which are highly flammable and must never be allowed to contact the Domiciliary Oxygen Switch. Ensure hands are clean and dry before operating the equipment.
- ▶ This device offers an impedance to flow. Do not attempt to use this device to deliver flows exceeding those given in the Specification.
- ▶ Only appropriately trained personnel may install this device.
- ▶ Never administer oxygen while smoking or when near an open flame.
- ▶ The Domiciliary Oxygen Switch offers no protection in the event of a fire in the oxygen tubing travelling back towards the switch. Where the risk analysis on the installation indicates a fire risk, a suitable Firesafe Cannula Valve (BPR Part No. 827-2001) should be fitted on each line.
- ▶ Ensure switch is secure prior to use.
- ▶ Bubble humidifiers must not be fitted upstream of this Domiciliary Oxygen Switch.
- ▶ If a bubble humidifier is used downstream it must be fitted at a lower height than this switch. See Fitting Instructions in section 4 for further details.
- ▶ Do not submerge the device in any fluid. Ensure that no fluid is allowed to enter the switch inlet ports.
- ▶ Fully engage the control knob onto the switch shaft before attempting to move the switch from one position to another. Changing the switch position without the control knob fully engaged may lead to incorrect orientation of the switch shaft and output ports, which may make the switch inoperable.
- ▶ This device offers a resistance to flow; consider the impact of this resistance on the system when installing this device.

3. Functional Description

3.1. Intended Use

The Domiciliary Oxygen Switch enables the flow of oxygen from an oxygen concentrator or similar source to be diverted to one of up to four oxygen outlets in the home.

The switch can be configured to operate as a simple ON/OFF switch, a 2-way, 3-way or 4-way + OFF switch by the installer depending upon patient requirements.

3.2. Technical Description

The device uses a barrel and housing type arrangement to switch flow to the particular outlet required. O-ring seals eliminate leaks and particular attention has been given to gas pathways to ensure that the switch offers minimal impedance to flow; oxygen concentrators have a low output pressure.

A detent system provides positive feedback when switching between different switch positions and also helps to centre the valve and align the gas pathways.

Certain features have been added to assist disabled users, especially the visually impaired, including: colour coding of switch positions using contrasting colours, Braille style dimples for switch position recognition, large handle for additional mechanical advantage and ribbed handle grip for better feedback.

4. Fitting Instructions

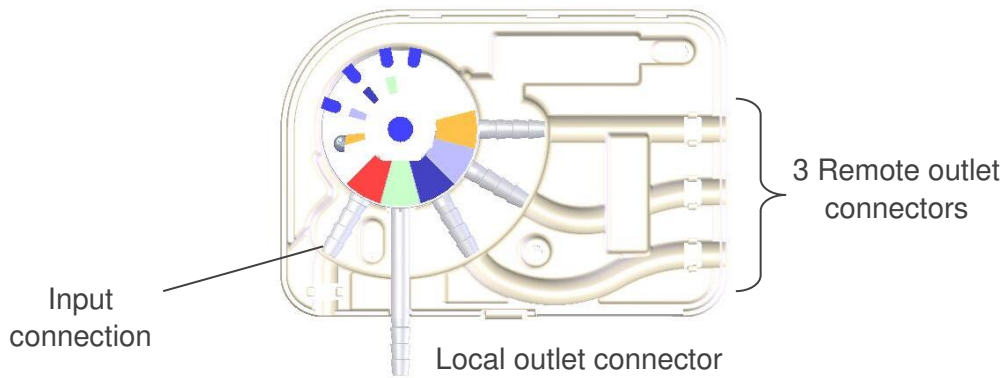
Warning! If a humidifier is installed downstream of the Domiciliary Oxygen Switch there is a risk of water flowing through the switch when the oxygen flow is turned off or diverted to another room. This is caused by pressure inside the humidifier chamber pushing water up the tubing. If backflow is initiated it could siphon the full contents of the humidifier to the switch and it would be discharged from the back of the switch. To prevent backflow of water, the humidifier must be installed lower than the Domiciliary Oxygen Switch. The height difference must be more than the back pressure developed by the delivery accessories downstream of the humidifier outlet (tubing, Firesafe Cannula Valve(s), cannula, swivel device etc.) at the highest oxygen flow rate that will be used.

For example, if at the prescribed oxygen flow rate the back pressure between the humidifier outlet and the nasal prongs of the cannula is 3 kPa (31 cm H₂O), the Domiciliary Oxygen Switch should be more than 31 cm above the maximum fill level of the humidifier.

Screw the switch housing to the wall in the appropriate place. Slotted holes are provided for adjustment. Use No. 8 pan head screws (not provided).

Arrange for the input and output hoses to terminate at the switch. Cut the hose to length and connect to the appropriate connector on the switch. Press the hose down into the slot provided.

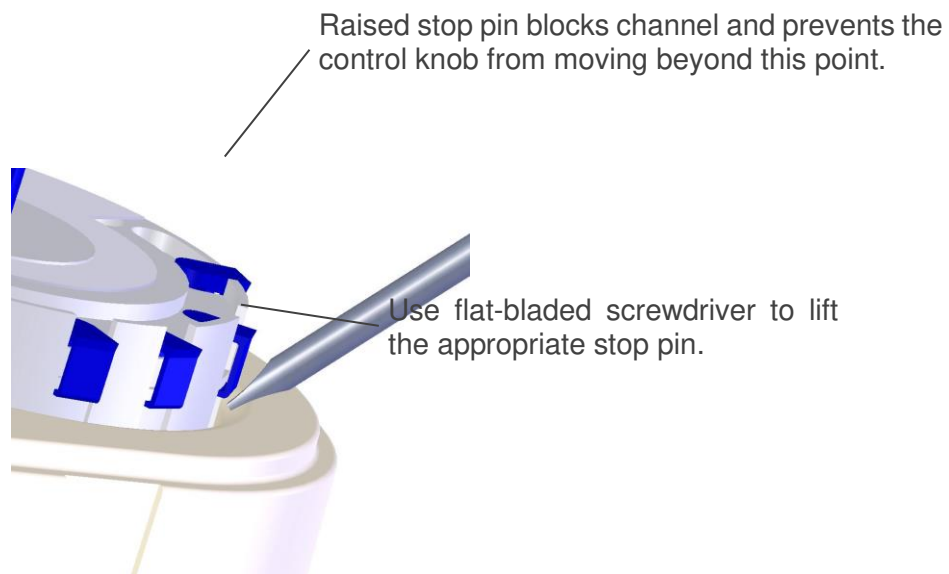
Note: Do not try and fit tubing or a cannula to the long local outlet connector until the switch cover is in place.



Configure the switch to limit the travel of the control knob according to the number of switch positions that are intended to be used (i.e. the number of rooms that have oxygen outlets). Using a small flat-bladed screwdriver, lift the appropriate limit stop pin (refer illustration below) so that it blocks the channel, all other pins should be pressed down. The colour-coded switch membrane indicates which stop pin has to be raised to enable that colour switch position and disable the next colour switch position.

To configure the switch for 4 outlets, leave all stop pins down.

The OFF position on the switch can be disabled by lifting the stop pin adjacent to the red marker.



Fit the appropriate room labels to the switch cover and then fit the correct membrane panel for the number of rooms in which oxygen hose is installed.

Configured as:
ON/OFF



Configured as:
2-Way + OFF



Configured as:
3-Way + OFF

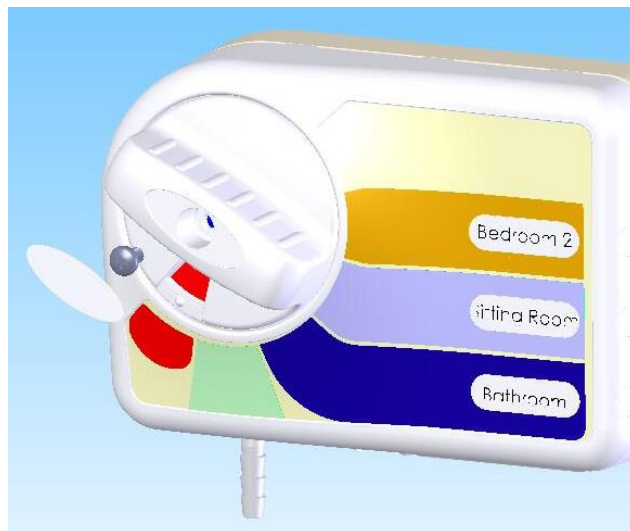


Configured as:
4-Way + OFF



Use snipe or long-nosed pliers to remove the hose breakouts from the side of the switch cover. Fit the switch cover onto the switch body.

Fit the control knob and secure with the 4mm button head screw provided.



Check that the switch rotates to each of the positions marked on the membrane panel.

Note: Ensure that the control knob is fully engaged before turning.

Fit the logo label on the switch knob.

4.1. Preparation and Connection

Connect a sufficient length of oxygen tubing (not supplied) to the outlet barb.

4.2. Testing Prior to Use

When undertaking the functional check on the installed system, ensure that there is oxygen flow at each oxygen outlet.

5. Maintenance

5.1. Interim Inspection

The switch is maintenance free for an intended life of 6 years. An expiry date is printed on the device rating label and the switch should not be used after this date.

5.2. Cleaning

Clean the device using a damp cloth and mild household detergent. Do not immerse the device in any fluid or allow fluid to enter any of the barb connections.

5.3. Refitting

Switches can be reused. When re-installing a switch, check that there are no obvious signs of damage and that the device is clean. A refurbishment kit, comprising a new cover moulding and knob, is available if these parts are considered beyond use.

The refurbishment kit can be obtained from your local BPR Medical distributor, details of which can be found at www.bprmedical.com.

6. Specification

Specification	Value
Resistance to Flow	≤ 0.9 kPa at 2 l/min ≤ 2.9 kPa at 4 l/min ≤ 9.9 kPa at 8 l/min ≤ 32.5 kPa at 15 l/min ≤ 55.9 kPa at 20 l/min
Maximum Flow Rate	20 l/min
Maximum Static Operating Pressure ^[1]	200 kPa
Leak	< 5 ml/min
Transport and storage temperature	-20 °C to 60 °C (-4 °F to 140 °F)
Operating temperature	5 °C to 40 °C (41 °F to 104 °F)

^[1] Maximum static pressure delivered by the gas supply source

Applied Standards

BS EN ISO 14971	Medical Devices. Application of risk management to medical devices
BS EN 15001	Anaesthetic and respiratory equipment. Compatibility with oxygen
BS EN 13544-2+A1	Respiratory Therapy Equipment. Tubing and connectors
BS ISO 18190	Anaesthetic and Respiratory equipment – General requirements for airways and related equipment
BS EN ISO 15223-1	Medical Device – Symbols to be used with medical device labels, labelling and information to be supplied

7. Parts and Spares List

Part Number	Description
826-0001	Domiciliary Oxygen Switch (1) - Barb Connection
826-0002	Domiciliary Oxygen Switch - Box of 10 Blank Switches - Barb Connection

Spare Parts and Servicing

826-0004	Domiciliary Oxygen - Membrane Panel (ON/OFF - Box 20)
826-0005	Domiciliary Oxygen - Membrane Panel (2 Way + OFF - Box 20)
826-0006	Domiciliary Oxygen - Membrane Panel (3 Way + OFF - Box 20)
826-0007	Domiciliary Oxygen - Membrane Panel (4 Way + OFF - Box 20)



BPR Medical Limited
22 Hamilton Way, Mansfield, Notts.
NG18 5BU, United Kingdom

☎ +44 (0)1623 628 281
✉ info@bprmedical.com
www.bprmedical.com