

# Medical Gas Hoses

## Instructions for Use

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# 1. Warnings

## 1.1. Warnings!

- ▶ Read through this instruction before using or showing others how to use a medical gas hose. As with all medical equipment, attempting to use this device without a thorough understanding of its operation may result in patient or user injury.
- ▶ 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 come into contact with oil, grease or other hydrocarbon based substances. Do not use oil or grease on this hose assembly.
- ▶ Many hand creams and moisturisers contain paraffin and petroleum bases which are highly flammable and must never be allowed to contact the Medical gas Hose. Ensure hands are clean and dry before operating the equipment.
- ▶ This device offers an impedance to flow. Following fitting of the hose ensure that the equipment that it is supplying is working in accordance with the manufacturer's specification.
- ▶ Do not repair medical gas hoses.
- ▶ Do not use this hose outside of the range of operating pressures given in the specification below.
- ▶ Do not fit near an open flame or near a source of excessive heat that is likely to exceed 60 °C.
- ▶ The connectors fitted at either end of the hose assembly are gas specific. Ensure that the appropriate gas mating connector is used.
- ▶ The hose material can suffer degradation over time. Ensure that hoses are replaced when they reach the expiry date on the device label.
- ▶ Do not submerge the device in any fluid. Ensure that no fluid is allowed to enter the hose assembly.
- ▶ Contact with oils, greases and fatty substances can cause the plasticiser, which makes the hose flexible, to be extracted and cause the hose to become hard. Contact with these substances should be avoided.
- ▶ Contact with sharp objects and being squashed e.g. by castor wheels of equipment, can lead to the hose being damaged. Ensure the hoses are arranged so that the risk of damage by sharp objects and crushing is minimised.
- ▶ Fitting multiple hoses in series may lead to reduced flow and/or pressure due to resistance to flow through end connectors. Single hoses should be used wherever possible.

## 2. Description

### 2.1. Intended Use

Medical gas hoses are used to provide a safe method for transferring low pressure medical gases to various medical devices.

The hoses are intended for use in the pressure range 300 kPa(g) to 1400 kPa(g) for compressed medical gases and between 10 kPa(abs.) to 101.3 kPa(abs.) for vacuum.

Medical gases covered by this range are oxygen, medical air, nitrous oxide and vacuum.

### 2.2. Technical Description

Medical gas hose assemblies comprise a length of hose with a gas specific connector secured with a crimped ferrule at each end. Part numbers for various models are available with the following variables:

- gas type
- hose length
- type of connector at each end

Every medical gas hose assembly is checked for gas specificity and leakage. A test for resistance to axial tensile load is undertaken on a sample basis.

Due to the conditions of use, medical gas hoses have a life expectancy of 5 years and should be replaced at the expiry date printed on the device label.

## 3. Fitting Instructions

### 3.1. Preparation and Connection

Before fitting a new hose, ensure that the mating connector on the equipment is of the correct type, undamaged and clean.

Attach the equipment end connector first and tighten as required.

Connect the other end of the hose to the pressure source. Give a light pull on the hose to ensure that the connection is properly made and secure.

### 3.2. Testing Prior to Use

Undertake a performance function check of the the equipment in accordance with the manufacturer's instructions to ensure that the hose is not offering any restriction to gas flow. Pay particular attention to maximum flow rates required and low pressure equipment alarms.

## 4. Maintenance

### 4.1. Labelling

The hose assembly is maintenance free for an intended life of 5 years from the date of manufacture. An expiry date is printed on the device label.

## 4.2. Periodic Inspection

Check the condition of the hose at least every 6 months. Pay particular attention to the surface of the hose, crimps and condition of the gas specific connectors. Remove and dispose of any damaged hose.

## 4.3. Cleaning

Clean the hose using a damp cloth and mild detergent. An alcohol wipe can be used to disinfect the outside of the hose. Do not immerse the hose in any fluid.

## 4.4. Maintenance

If the male NIST probe o-ring seal needs to be replaced it should be replaced with a 7.6 mm inside diameter x 2.4 mm cross-section 75 Shore A FKM o-ring to BS 4518; BPR part number 212-0068.

If you maintain a maintenance history log for the equipment then this should be completed in accordance with your standard operating procedure.

# 5. Specification

| Specification             | Value   |
|---------------------------|---|
| Gas compatibility         | Oxygen, nitrous oxide, medical air, vacuum  |
| Pressure Range            | Pressure gases: 300 kPa(g) to 1400 kPa(g)<br>Vacuum: 10 kPa(abs.) to 101.3 kPa(abs.)  |
| Flow Range                | Pressure gases: up to 200 l/min<br>Vacuum: up to 40 l/min   |
| Hose inside diameter      | 6.7 mm nominal  |
| Environmental             | Transport, Storage: -20 °C to +60 °C<br>Operation: -10 °C to +40 °C   |
| Regulatory                | UK Medical Device Regulations 2002 - class IIa medical device   |
| Applied Standards         |   |
| EN ISO 15001:2011         | Anaesthetic and respiratory equipment. Compatibility with oxygen  |
| EN ISO 5359:2014+A1:2017  | Low-pressure hose assemblies for use with medical gases   |
| EN ISO 18082:2014+A1:2017 | Anaesthetic and respiratory equipment — Dimensions of non-interchangeable screw-threaded (NIST) low-pressure connectors for medical gases |
| BS 5682:2015              | Specification for probes (quick connectors) for use with medical gas pipeline systems   |

## 6. Parts and Spares List


| Part Number | Gas           | Length         | Inlet Connector | Outlet Connector   |
|-------------|---------------|----------------|-----------------|--------------------|
| 832-1000    | Oxygen        | 2 m            | BS 5682         | Male NIST with nut |
| 832-1001    | Oxygen        | 3m             | BS 5682         | Male NIST with nut |
| 832-1001x5  | Oxygen        | 3m (pack of 5) | BS 5682         | Male NIST with nut |
| 832-1002    | Oxygen        | 4m             | BS 5682         | Male NIST with nut |
| 832-1003    | Oxygen        | 5m             | BS 5682         | Male NIST with nut |
| 832-1004    | Oxygen        | 6m             | BS 5682         | Male NIST with nut |
| 832-1006    | Oxygen        | 1m             | BS 5682         | Male NIST with nut |
| 832-2000    | Medical air   | 2m             | BS 5682         | Male NIST with nut |
| 832-2001    | Medical air   | 3m             | BS 5682         | Male NIST with nut |
| 832-2001x5  | Medical air   | 3m (pack of 5) | BS 5682         | Male NIST with nut |
| 832-2002    | Medical air   | 4m             | BS 5682         | Male NIST with nut |
| 832-2003    | Medical air   | 5m             | BS 5682         | Male NIST with nut |
| 832-2004    | Medical air   | 6m             | BS 5682         | Male NIST with nut |
| 832-2006    | Medical air   | 1m             | BS 5682         | Male NIST with nut |
| 832-3000    | Nitrous oxide | 2m             | BS 5682         | Male NIST with nut |
| 832-3001    | Nitrous oxide | 3m             | BS 5682         | Male NIST with nut |
| 832-3002    | Nitrous oxide | 4m             | BS 5682         | Male NIST with nut |
| 832-3003    | Nitrous oxide | 5m             | BS 5682         | Male NIST with nut |
| 832-3004    | Nitrous oxide | 6m             | BS 5682         | Male NIST with nut |
| 832-3006    | Nitrous oxide | 1m             | BS 5682         | Male NIST with nut |
| 832-4000    | Vacuum        | 2m             | BS 5682         | Male NIST with nut |
| 832-4001    | Vacuum        | 3m             | BS 5682         | Male NIST with nut |
| 832-4002    | Vacuum        | 4m             | BS 5682         | Male NIST with nut |
| 832-4003    | Vacuum        | 5m             | BS 5682         | Male NIST with nut |
| 832-4004    | Vacuum        | 6m             | BS 5682         | Male NIST with nut |
| 832-4005    | Vacuum        | 1m             | BS 5682         | Male NIST with nut |







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