

Piped Medical Gas Testing Equipment

Total Analysis, Identification and Sampling Package

Since 1976 Bedfont has been providing hospitals with the means to protect patients from the undesirable effects of incidents or errors in piped medical gas systems. By supplying hospital Pharmacists and Engineers with medical gas analysis equipment, the risks of poor quality have been minimised.

In March 1994, the British Health Technical Memorandum (HTM) 2022 'Medical Gas Pipeline Systems' was published replacing HTM 22 reflecting advances in engineering, test methodology and equipment, together with recognizing management structure changes in the British National Health Services. The new HTM is divided into five sections:

- Management Policy
- Design Considerations
- Operational Management
- Good Practice Guide
- Validation and Verification

The latter covers the procedures to be carried out before a medical gas pipeline system can be used, it includes tests and checks to be carried out at each stage of the installation programme, and at the final commissioning stage (availability ISBN 0-11-321750-1). We strongly recommend familiarization with this document before using our range of equipment for this purpose.

The Bedfont range of equipment for validation and verification of piped medical gas systems has been developed to cater for the requirements of HTM 2022 and to provide both the Quality Control Pharmacist and Hospital Engineer with a comprehensive kit to make tests in a fast and accurate manner.



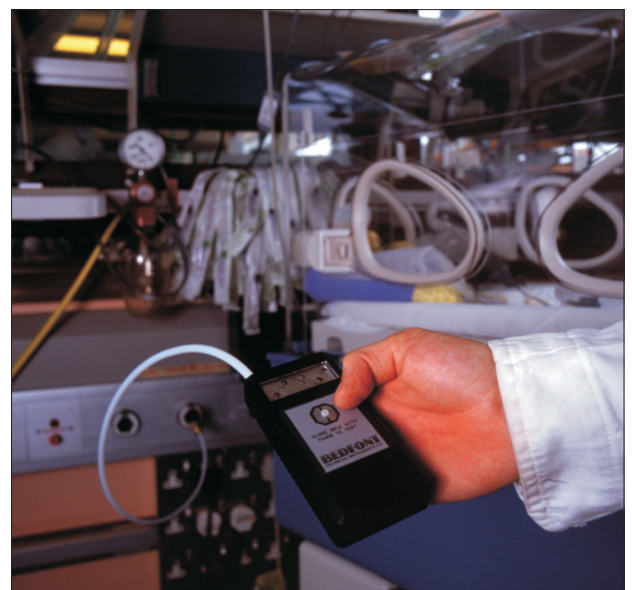
The complete kit for testing piped medical gas systems for quality and identification

TM3 Medi-Gas Check

The TM3 Medi-Gas Check is used as a convenient way to reinforce the cross connection tests and initially check gas identification once the pipelines have been filled and purged with the requisite medical gas.

This fully portable, pocket size, battery operated instrument will indicate the presence of Air, Oxygen (O_2), Nitrous Oxide (N_2O) or 50%:50% O_2/N_2O . Within a few seconds, it will qualitatively show on an LED display which gas is emerging from the outlet being tested.

The TM3 Medi-Gas Check can therefore be used for fast and effective support tests to ensure there have been no cross connections on positive pressure pipeline systems.



The TM3 Medi-Gas Check in action

Summary of quality tests for medical gas pipeline systems

Test	Gas	Specification	Test Result	Bedfont Product
Particulates	All	Practically free from visible particles in 75 l sample	No visible particles on membrane filter	Model PMS1 Particulate Matter Sampler
Pipeline odour	O ₂ & Air	Threshold is Approx. 0.3 mg/m ³	No odour	N/A
Water	All	11.5 VMP, 0.95mg/l, -40°C @atm pressure	H ₂ O detection tube satisfactory	Kitigawa detector tube 177U
Oil	Air, O ₂ from PSA plant	Oil content droplet & mist oil vapour <0.5 mg/m ³	Oil detection tube satisfactory	Model AC-LOW & Kitigawa Tube 602SP Oil Test Kit
CO	As above	<5mg/m ³ <5 ppm v/v	Gas detection tube satisfactory	Kitigawa Detector Tube 106SB
CO ₂	As above	<450 mg/m ³ <300 ppm v/v	Gas detection tube satisfactory	Kitigawa Detector Tube 126SC

Summary of gas concentrations for identification purposes

Medical Gas	Oxygen conc. % v/v	Nitrous oxide conc. % v/v	Bedfont product
Oxygen	minimum 99.0 or 94.0 (PSA)	N/A	Model TM100 Oxygen Analyser
Medical & Surgical Air	21.0 ±1.0	N/A	Model TM100 Oxygen Analyser
N ₂ O	0	N/A	Model TM40 Nitrous Oxide Analyser
N ₂ O/O ₂ 50%.50%	50.0 ±2.0	50.0 ±2.0	Model TM100 Oxygen Analyser

Available Equipment

- TM3 Medi-Gas Check - Anti confusion check
- TM40 - N₂O measurement
- TM100 - O₂ measurement
- Calibration Gases - For test and calibration of all equipment
- PMS1- Particulate Matter Sampler
- PMS4 - Universal Schraeder Probe
- AC-LOW - Oil mist testing kit
- Kitigawa - Gas Detector Tube system



Precision gas mixtures in non-refillable cans and cylinders for simple test and calibration of all gas equipment.

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