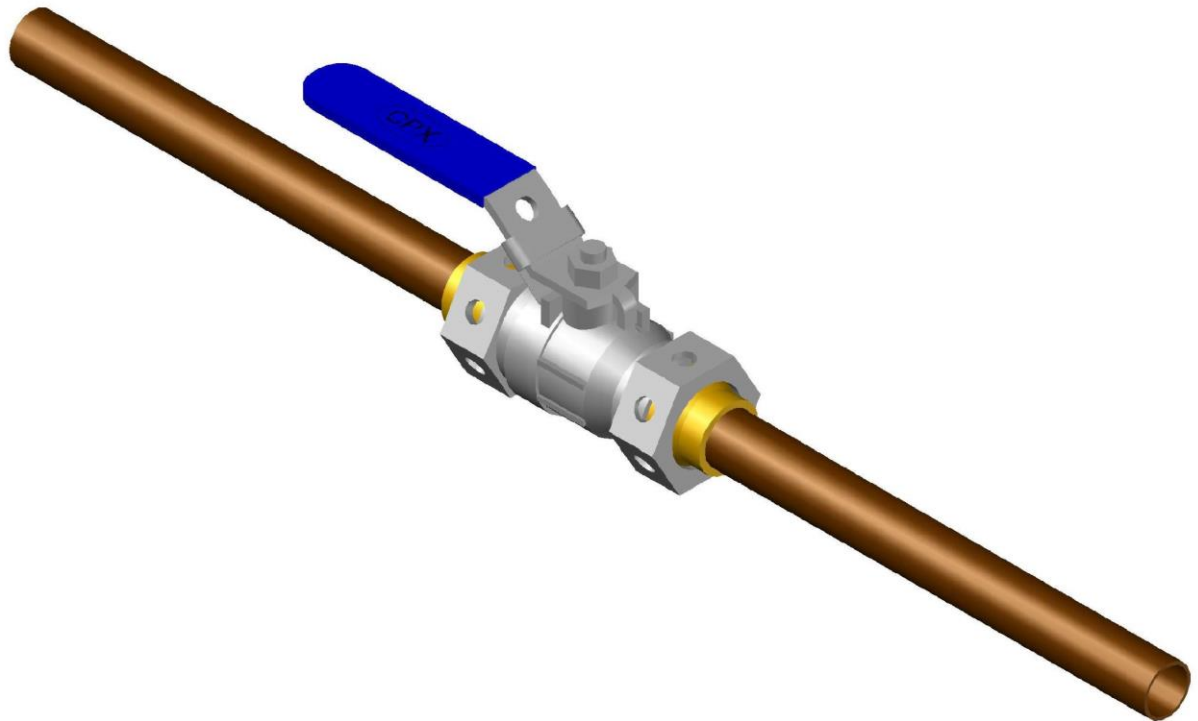


LOCKABLE LINE VALVE
INSTALLATION, OPERATIONS & MAINTENANCE
MANUAL



VERSION HISTORY

Version #	Implemented By	Revision Date	Approved By	Approval Date	Reason
1.0	<i>Kevin Pugh</i>	<i>19/11/2013</i>	<i>Rob Parry</i>		<i>1st Issue</i>

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1. INTRODUCTION

1.1 PURPOSE

The medical lockable line valve is intended to be used as a means of isolation on medical gas pipelines at positions specified in the design of the medical gas pipeline system in order for maintenance or major works to be undertaken.

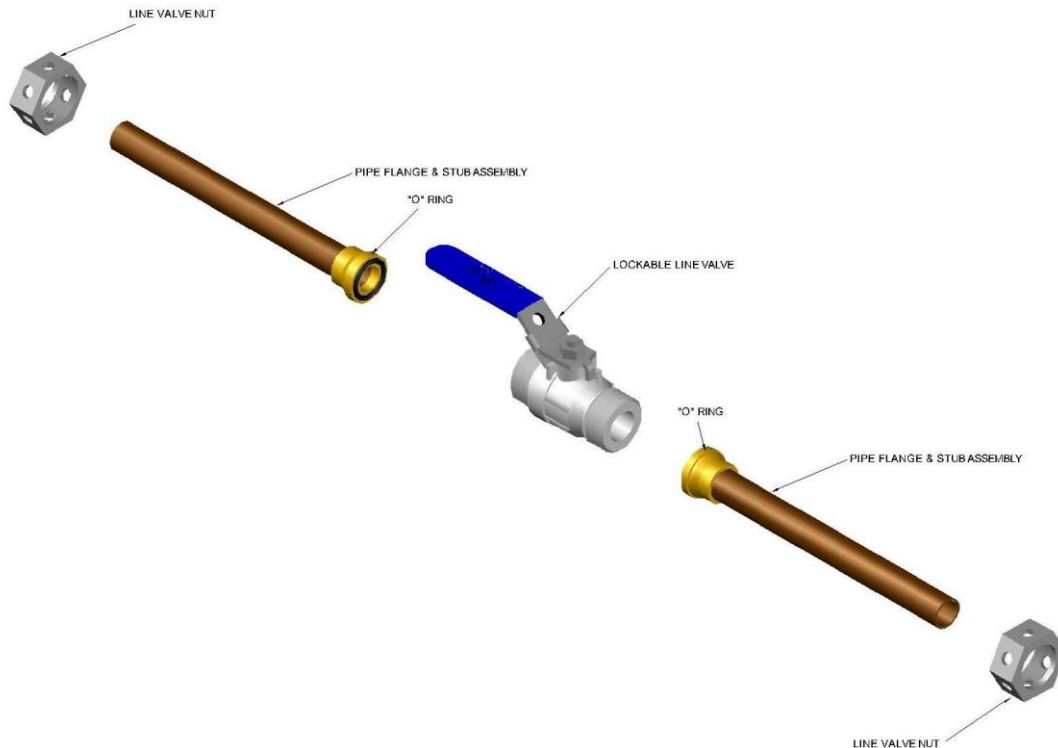
1.2 AUDIENCE

The medical lockable line valve is intended to be used in conjunction with CPX NIST tee connectors to enable the line valve to conform to HTM02-01. Nickel plated nuts complete with identifying holes supplied with the CPX medical lockable line valve allow “Thru” or blank plate insertion, therefore converting to a HTM02-01 gas specific NIST valve.

The lockable line valves are built in accordance with the HTM02-01, C11 and ISO7396 standard’s and are suitable for Oxygen, Nitrous Oxide, Oxy-Nitrous Oxide, MA4, MA7 and Vacuum.

2. SYSTEM DESCRIPTION

2.1 KEY FEATURES



The medical lockable line valve comprises of a 2-piece full bore male threaded nickel plated brass ball valve c/w chrome plated brass ball, blow out proof stem, stem o-ring, Teflon ® ball seals and flat face copper stub pipe assemblies.

The copper stub pipe assemblies are manufactured from medical gas copper tube compliant to BS EN 13348 and are factory soldered to brass flat face seal housings chemically cleaned and degreased.

The copper pipe stubs are of sufficient length to enable brazing directly to the medical gas pipeline system utilising flux less brazing to WKO (82) 1. Flat face housings incorporate Nitrile ® o-ring seals ensuring 100% gas tight connections.

The CPX lockable line valve is manufactured under BS EN 13485 Medical Devices: Quality Management Systems and CE marked under the Medical Device Directive 93/42/EEC (CE0086).

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All line valve assemblies are fully pressure tested for valve tightness and leakage prior to packing and delivery.

All line valve assemblies are batch numbered for traceability prior to packing and delivery.

Each medical lockable line valve is individually end capped and sealed in a clear polythene bag to maintain cleanliness.

2.2 INVENTORY

The medical lockable line valve comprises of a 2-piece full bore male threaded nickel plated brass ball valve c/w chrome plated brass ball, blow out proof stem, stem o-ring, Teflon ® ball seals and flat face copper stub pipe assemblies.

2.3 ENVIRONMENT

The lockable line valve has been designed and built to enhance the environment of the patient whilst in hospital care.

2.4 OPERATIONS

The medical lockable line valve is intended to be used as a means of isolation on medical gas pipelines at positions specified in the design of the medical gas pipeline system in order for maintenance or major works to be undertaken.

The medical lockable line valve has a 90 degree operation. The medical lockable line valve is designed to have a tight shut off and blow out proof stem for protection against pressure surges. The medical lockable line valve is designed to be lockable in the open or closed position to prevent unauthorised or inadvertent operation of the valve.

The medical lockable line valve is intended to be used in conjunction with CPX NIST tee connectors to enable the line valve to conform to HTM02-01. Nickel plated nuts complete with identifying holes supplied with the CPX medical lockable line valve allow “Thru” or blank plate insertion, therefore converting to a HTM02-01 gas specific NIST valve.

2.7 SAFETY

- The CPX Medical Lockable Line Valve must be fixed in consultation with the construction manager during installation procedure.
- The methods described for the fixation and gases are general recommendations and their implementation is to be planned and designed for each individual case by qualified experts.



This equipment should be kept clean and be free from oil and grease at all times. Oil and grease will ignite spontaneously in the presence of oxygen. If you suspect that any equipment is contaminated. **DO NOT USE IT.**

No attempt should be made to use or modify this equipment for use with gas other than the gas identified.

3. INSTALLATION

The lockable line valve may be installed in horizontal or vertical positions. Either way it is advisable to maintain the following sequence from left to right or top to bottom.

O₂, N₂O, 50% O₂/50% N₂O, Med AIR 4, Surgical AIR, Vacuum

The lockable line valve should be installed at a height that is easily accessible by hand.

The copper stub pipe is manufactured to BS13348 for connection to the pipeline system and joints shall be made on site using copper,

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phosphorus and silver brazing alloy CuP282 to BS EN 17672:2010. Brazing should be carried out using oxygen free nitrogen as an inert gas shield to prevent the formation of oxides on the inside of the pipe.

The CPX medical lockable line valve should be installed and maintained by competent personnel who are fully conversant with the requirements for medical gas systems.

- Installation is to be carried out using suitable types of anchors and screws, depending on the type of structure of the wall.
- Copper, Phosphorus and silver brazing CuP282 to BS EN 17672:2010 is to be used to braze the medical gas supply piping to the CPX medical lockable line valve.
- Gas connections must be checked in accordance with HTM02-01.

4. SYSTEM USAGE

The medical lockable line valve has a 90 degree operation and should be opened fully when operated. The medical lockable line valve is designed to have a tight shut off and blow out proof stem for protection against pressure surges. The medical lockable line valve is designed to be lockable in the open or closed position to prevent unauthorised or inadvertent operation of the valve.

4.1 INSTRUCTIONS

To gain access to the valve assembly, the key should be obtained from the responsible person. A permit to work may be required depending on the nature of the work to be carried out. It is advisable to lock the line valve if you leave during completion of works.

The line valve operates through 90 degrees and should always be operated fully so the valve can be locked in either the open or closed position.

5. TESTING

Prior to testing the installation, please check the following:

- a) All components have been installed and are tightened.
- b) The isolation valve is closed.

5.1 COMMISSIONING

- a) Slowly open the isolation valves and allow the system to pressurise.
- b) Check all joints for leaks.

6. MAINTENANCE

Maintenance of the medical lockable line valve should be restricted to periodic checking, and if necessary the replacement of faulty components. It should be noted that although components appear to be standard items many have been selected and treated to make them suitable for the gases carried and the pressures involved.

6.1 PREVENTATIVE MAINTENANCE

The area valve service unit should be inspected and maintained on a regular basis by competent personnel to ensure it is in good working order.

The unit should be subjected to regular inspection and testing as detailed below:

- **Monthly**

- a) Visually inspect the unit for signs of damage.
- b) Check all mechanical joints.
- c) Check the line pressures are correct.

- **Annually**

- a) Visually inspect the unit for signs of damage.
- b) Check all mechanical joints.
- c) Test the unit as detailed in section 6.2 to confirm correct operation.
- d) Observe that all gauges are working correctly.

All maintenance should be carried out with the knowledge of the hospital engineer and in accordance with the permit-to-work system.

7. SPARE PARTS

When ordering spare parts, please quote the batch number of the equipment and a description of the component required to ensure that you receive the component that you require!

8. WARRANTY

The lockable line valves comes with a 12 month warranty from day of shipment. Within this period Precision UK will repair, replace any part on site, or at the factory, which is proven defective at Precision UK's cost.

Furthermore, Precision UK will warrant its materials to be free from defects for an additional period of four (4) years (five (5) in total from date of shipment). Within this period Precision UK will replace any part, at no charge, which is proven to be defective. Shipping cost after the first twelve (12) months will be borne by the customer.

This warranty is valid when the product has been properly installed according to Precision UK's specifications, used in a normal manner and serviced according to the factory recommendations. It does not cover failure due to damage which occurs in shipments or failures which resulted from accidents, misuse, abuse, neglect, mishandling, alteration, misapplication or damage that may be attributable to acts of god.

Precision UK shall not be liable for incidental or consequential damages resulting from the use of this equipment.

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9. CONTACT US

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Fax: +44 (0) 161 487 2816

Email:

info@precisionuk.co.uk



10. REGULATORY REQUIREMENTS

The following British, European and International Standards have been consulted during the design, manufacture and testing of the medical lockable line valve.

- √ BS EN 1441:1998 Medical Devices. Risk Analysis.
- √ BS EN 13348:2001 Copper and copper alloys. Seamless round copper tubes for medical gases or vacuum.
- √ BS EN ISO17672 Brazing. Filler metals.
- √ BS EN 331:1998 Manually operated ball valves for gas installations for buildings.
- √ BS EN 980:1997 Graphical symbols for use in the labelling of medical devices.
- √ BS EN 1089:3:1997 Transportable gas cylinders. Gas cylinder identification (excluding LPG). Colour coding.
- √ ISO 7396-1 Medical gas pipeline systems. Pipeline systems for compressed medical gases and vacuum.
- √ ISO 7396-2 Medical gas pipeline systems. Anaesthetic gas scavenging disposal systems.
- √ ISO 32 Gas cylinders for medical use. Marking for identification of content.
- √ ISO 554 Standard atmospheres for conditioning and/or testing. Specifications.
- √ SS 01 91 02 Colour atlas.
- √ HTM 2022 Medical gas pipeline systems. Design, installation, validation and verification.
- √ HTM 02-01 Medical gas pipeline systems. Design, installation, validation and verification
- √ C11 NHS model engineering specification – medical gases.

Appendix A: Operations & Maintenance Manual Approval

The undersigned acknowledge they have reviewed the Bed Head Unit **Installation, Operations & Maintenance Manual** and agree with the approach it presents. Changes to this **Operations & Maintenance Manual** will be coordinated with and approved by the undersigned or their designated representatives.

Signature: _____ Date: _____

Print Name: _____

Title: _____

Role: _____

Signature: _____ Date: _____

Print Name: _____

Title: _____

Role: _____

Signature: _____ Date: _____

Print Name: _____

Title: _____

Role: _____