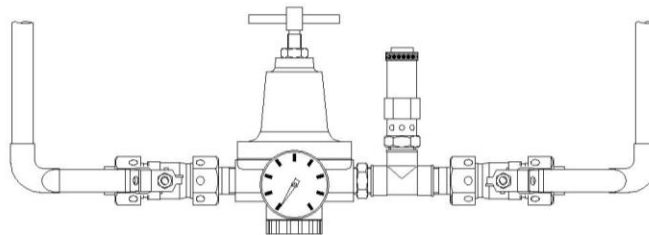
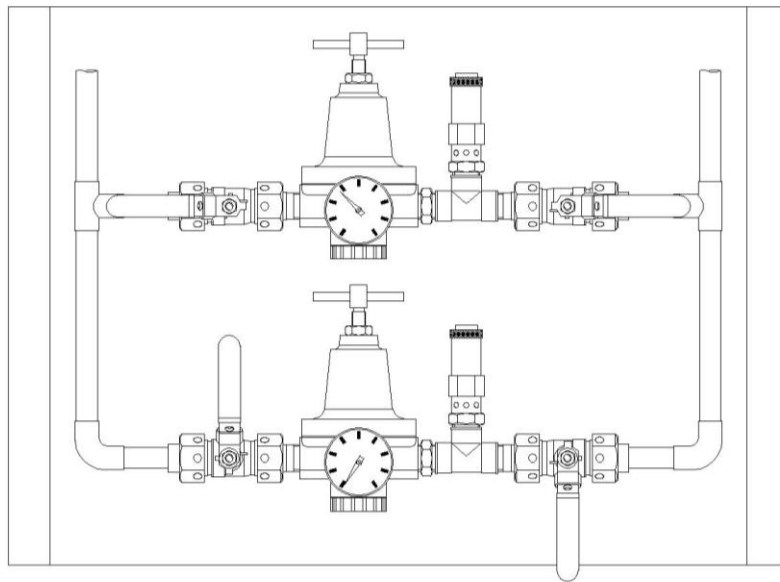


PRESSURE REDUCING STATION **INSTALLATION, OPERATIONS & MAINTENANCE** **MANUAL**



VERSION HISTORY

Version #	Implemented By	Revision Date	Approved By	Approval Date	Reason
1.0	<i>Kevin Pugh</i>	<i>03/09/2013</i>	<i>Rob Parry</i>		<i>1st Issue</i>

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INTRODUCTION

PURPOSE

The purpose of the pressure reducing station is to reduce pressure in a local area when the pipeline pressure is in excess of the recommendations outlined in HTM02-01.

Pressure reducing stations are available in simplex and duplex formats.

AUDIENCE

Pressure reducing stations are designed to reduce pressure in a local area when the pipeline pressure is in excess of the recommendations outlined in HTM02-01.

SYSTEM DESCRIPTION

KEY FEATURES

The pressure gauges are incorporated to monitor the outlet pressure. Pressure regulators can be adjusted to suit the exact requirements of the installation.

Relief valves are fitted to ensure a fail-safe unit.

The isolation valves are designed to have a tight shut off and blow out proof stem for protection against pressure surges.

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 housing incorporate Nitrile ® o-ring seals ensuring 100% gas tight connections.

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

All pressure reducing station assemblies are batch numbered for traceability prior to packing and delivery.

Each pressure reducing station assembly is individually end capped and sealed in a clear polythene bag to maintain cleanliness.

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INVENTORY

The pressure gauges to monitor the outlet pressure. Pressure regulators can be adjusted to suit the exact requirements of the installation.

Relief valves to ensure a fail-safe unit.

The isolation valves are designed to have a tight shut off.

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.

ENVIRONMENT

The Pressure reducing station has been designed and built to enhance the environment of the patient whilst in hospital care.

OPERATIONS

The pressure reducing station, whether simplex or duplex is not automatic and must be operated manually.

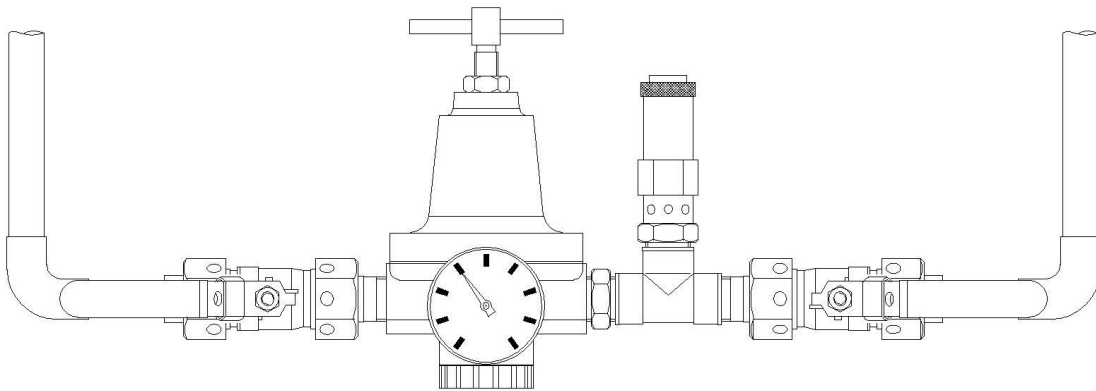
The simplex pressure reducing station's isolation valves should be in the open position at all times when in normal service conditions.

The duplex pressure reducing station should be kept in the following state when in use:

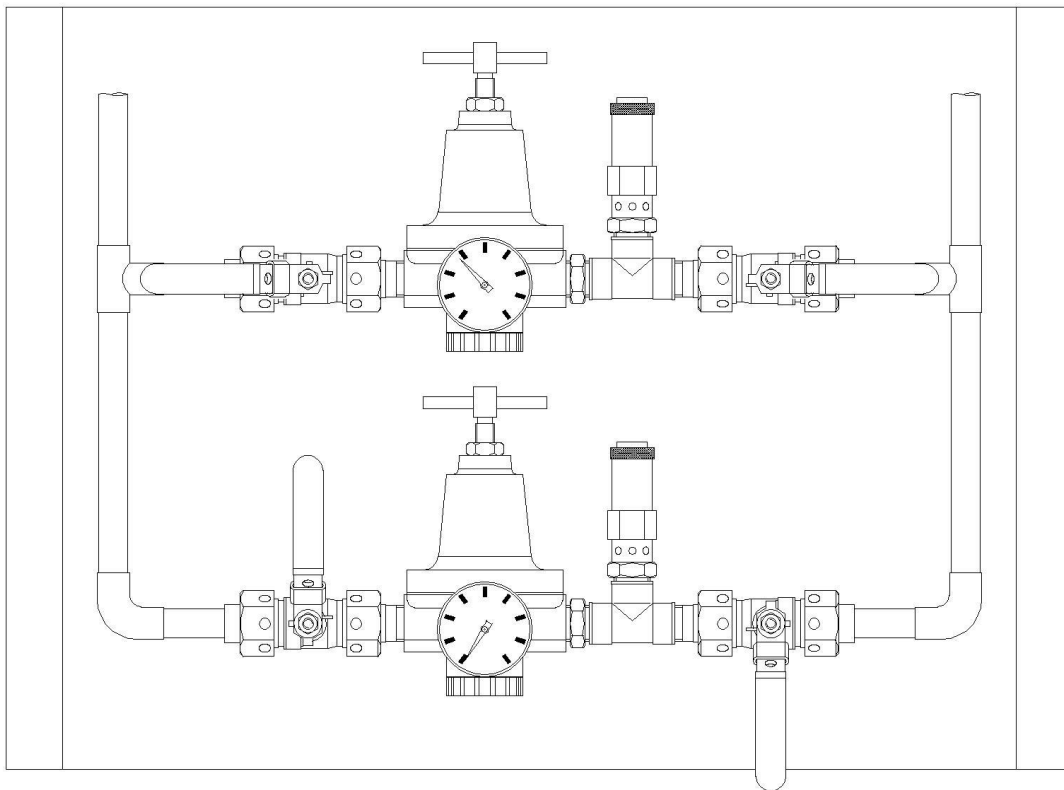
- a) The isolation valves either side of the duty regulator should be open.
- b) The isolation valves either side of the standby regulator should be closed.

In the unlikely event that the selected pressure reducing set fails or requires routine maintenance, the second pressure reducing set can be selected by manually opening and closing the relevant isolation valves.

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Simplex Reducing Station Layout.



Duplex Reducing Station Layout



SAFETY

The pressure reducing station should be installed by competent personnel who are fully conversant with the requirements of a medical gas pipeline system.

- The CPX pressure reducing stations 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.

INSTALLATION

Mechanical

- Secure the mounting plate (if required) using suitable anchors or fixings, depending on the type of structure of the wall. If necessary suitable backing supports should be prepared.
- Connect the inlet and outlet stub pipes to the distribution pipeline system and braze. The copper stub pipe is manufactured to BS13348 for connection to the pipeline system and joints shall be made on site using copper, 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.

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- Pressure test the system. If testing as part of the first fix test, remove the pressure relief valves and plug the ports.

The CPX pressure reducing station should be installed and maintained by competent personnel who are fully conversant with the requirements for medical gas systems

SYSTEM USAGE

The pressure reducing station, whether simplex or duplex is not automatic and must be operated manually.

INSTRUCTIONS

The simplex pressure reducing station's isolation valves should be in the open position at all times when in normal service conditions.

The duplex pressure reducing station should be kept in the following state when in use:

- a) The isolation valves either side of the duty regulator should be open.
- b) The isolation valves either side of the standby regulator should be closed.

TESTING

GENERAL

Prior to testing the installation, please check the following:

- a) All components have been installed and are tightened.
- b) The isolation valves are closed.
- c) The pressure relief valves are fitted.

COMMISSIONING

- a) Slowly open the isolation valves either side of regulator (one regulator if duplex) and allow the system to pressurise.
- b) Check all joints for leaks.
- c) Observe the reading on the pressure gauge. Adjust the duty regulator if necessary.
- d) To test the pressure relief valve close the isolation valve downstream of the regulator (duty regulator if a Duplex station has been selected) and increase the pressure until the relief valve opens. Observe the pressure on the pressure gauge.
- e) Isolate the regulator (duty regulator if duplex station has been selected) and very slowly depressurise the system in the downstream distribution pipeline. Reset the regulator (duty if duplex station has been selected) to the correct line pressure.
- f) Repeat the above procedure for the standby regulator if a duplex station has been selected.

MAINTENANCE

Maintenance of the CPX pressure reducing station should be restricted to periodic checking and adjustment 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.

PREVENTATIVE MAINTENANCE

The CPX pressure reducing station 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.

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!

Mounting plates are available for both the duplex and simplex pressure reducing stations.

WARRANTY

The CPX Bed Head Unit 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.

CONTACT US

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REGULATORY REQUIREMENTS

- √ BS EN 737-3:2000 Medical gas pipeline systems – Part 3: Pipelines for compressed medical gases and vacuum.
- √ BS EN 1441:1998 Medical Devices. Risk Analysis.
- √ BS EN 10524:2006 Pressure regulators for use with medical gases.
- √ BS EN 13348:2001 Copper and copper alloys. Seamless round copper tubes for medical gases or vacuum.
- √ BS EN ISO 17672 Brazing. Filler metals.
- √ 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: _____