Technical Specification

Pressure Reducing Station
Product Description

Pressure reducing stations are available in simplex and duplex formats and comprises of pressure regulator(s) isolation valves and pressure relief valve(s). They are designed to reduce pressure in a local area when the pipeline pressure is in excess of the recommendations outlined in HTM02-01
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.

Materials

The pressure regulators are comprised of aluminium body and bonnet with a brass valve and nitrile elastomers. The pressure regulator allows for in line installation with full gas flow gauge port. The balanced valve minimizes effect of variation in inlet pressure on outlet pressure and allows reduction of downstream pressure when system is dead-ended. The 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 valve is designed to have a tight shut off and blow out proof stem for protection against pressure surges.
Brass pressure relief valve is fitted to ensure a fail-safe unit.
The copper stub pipe assemblies are manufactured from phosphorous de-oxidised non-arsenical copper to EN 1412:1996 grade CW024A, manufactured to metric outside diameters in accordance with BS EN 13348:2008.
The stub pipes are factory soldered to brass flat face seal housings then 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.

Simplex Pressure Reducing Station	
Type	Product Code
15mm	15PRS-S
22mm	22PRS-S
28mm	28PRS-S

Duplex Pressure Reducing Station	
Type	Product Code
15mm	15PRS-D
22mm	22PRS-D
28mm	28PRS-D

Pressure Reducing Station Variants:

Definition of Intended Use

The pressure reducing station is intended to be used as a means of regulating the flow of gas within medical gas pipelines. Pressure reducing stations should be installed locally in a well-ventilated area and be easily accessible for maintenance. The pressure reducing station should be used when the pressure in the pipeline system exceeds 1100kPa.
The pressure reducing stations offer leak free connections as soon as they are installed to corresponding medical gas pipelines and are safe and easy to use.
The pressure reducing station is designed to be mounted directly into a medical gas pipeline system via copper tail pipes supplied and located within wall or ceiling voids or anywhere that general access is restricted.

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The copper pipe stubs are intended to be of sufficient length to enable brazing directly to the medical gas pipeline system utilising flux less brazing to WKO (82) 1.
The chrome plated valve handle is lockable in the open or closed position by way of a sliding device and a brass padlock is provided to prevent unauthorised or inadvertent operation of the valve.
For ease of installation all brass padlocks are the same size for the full range of ball valves from 15mm to 28mm.

Quality

Pressure reducing stations are manufactured in the UK under BS EN 13485 Medical Devices: Quality Management Systems. All tube is manufactured under strict quality control procedures to ISO 9001:2008.

CE Marking

Pressure reducing stations are CE marked as a Class IIa Medical Device 93/42/EEC with notified body British Standards Institute and stamped CE 0086.

Product Cleanliness

The pressure reducing station is cleaned and degreased for oxygen service and free from all particulate matter and toxic residues in accordance with BS EN 13348:2001 and has a maximum carbon level of 0.2mg/dm².
Each assembly is individually end capped and sealed in polythene bags to maintain cleanliness.

Installation Guidelines

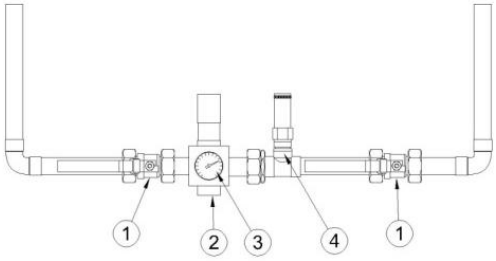
All regulators and relief valves are preset no further adjustment of these settings should be required.

a) 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.
b) 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.
c) Check and tighten all mechanical joints.
d) 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.

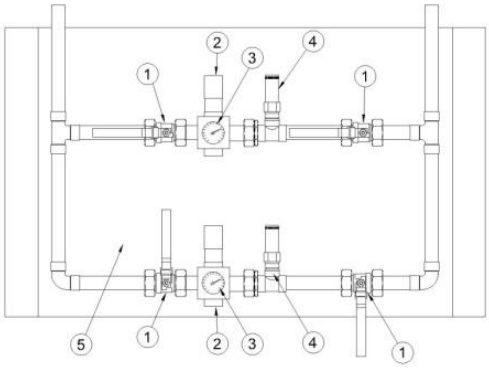
Simplex Pressure Reducing Station

ITEM	DESCRIPTION	QTY
1	ISOLATION VALVE	2
2	OUTLET PRESSURE GAUGE	1
3	PRESSURE REGULATOR	1
4	PRESSURE RELIEF VALVE	1



Duplex Pressure Reducing Station

ITEM	DESCRIPTION	QTY
1	ISOLATION VALVE	4
2	OUTLET PRESSURE GAUGE	2
3	PRESSURE REGULATOR	2
4	PRESSURE RELIEF VALVE	2
5	MOUNTING PLATE	1



Pipeline Jointing

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The pressure reducing station 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. Copper pipes shall be cut square with the pipe axis using a sharp wheel cutter wherever possible, and be cleaned to get rid of any cuttings or burrs.

Operation

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.

Testing

All CPX pressure reducing stations are pressure tested for valve tightness and leakage prior to packing and shipping.

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