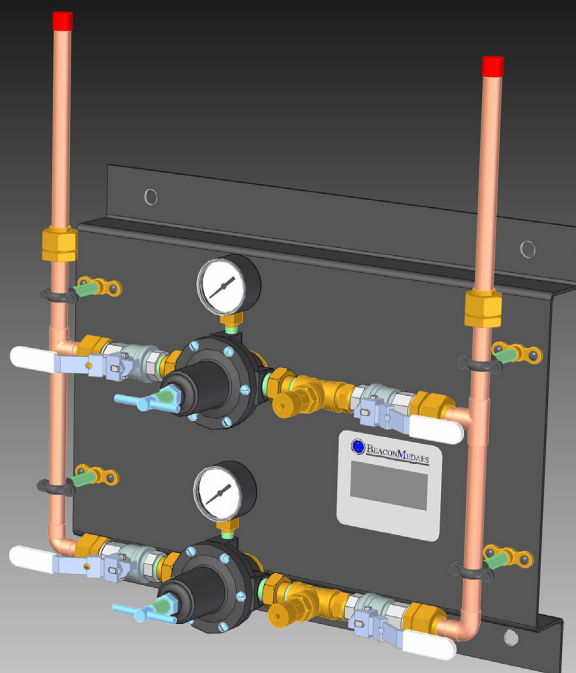


Instructions for Use



Duplex Pressure Reducing Stations

2005695

Revision 1

01/06/13

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Safety Precautions

This section gives safety, storage and handling information for the BeaconMedæ's Pressure Reducing Station only. Component parts lists and descriptions are available on request.

Operators should have carefully read and become familiar with the contents of this manual before maintaining the Pressure Reducing Station.

Operators are expected to use common sense safety precautions, good workmanship practices and follow any related local safety regulations.

Identification of symbols

The following symbols apply to this product and are used in these instructions and on the product in question. The meanings of these symbols are as specified below: -



- Read Instructions



- Temperature Limitations



- Date Of Manufacture

Environmental Transport and Storage Conditions

Ambient temperature: 0°C to 40°C
Relative humidity (non-condensing): 10%-95%

Environmental Operating Conditions

Ambient temperature: 0°C to 40°C
Relative humidity (non-condensing): 10%-95%
Atmospheric pressure range - 70-110 kPa

Environmental Protection

Discard the unit and/or components in any standard refuse facility. The unit does not contain and hazardous substances.

Electromagnetic Interference

Not applicable

Cleaning

The manifold should be wiped over with a damp cloth frequently to remove any dust or foreign substances

Safety Notice

Persons undertaking any installation and/or maintenance must be fully trained in specialist work of this nature.

The "PERMIT TO WORK" procedure must be adhered to for all installations once commissioned.

The BeaconMedæ's Pressure Reducing Station is designed and built in accordance with HTM02-01 regulations and therefore should be installed as such.

Oil, grease and jointing compounds must not be used!

1) DESCRIPTION

BeaconMedæ's pressure reducing stations are designed to Regulate line pressure from 11 bar or 7 bar inlet pressure to either 4 bar medical air or 7 bar surgical air, as required. Assemblies comply to HTM02-01 standards.

Additional NIST tee connections should be installed downstream of the pressure reducing stations and are available individually to suit all branch sizes.

Assemblies shall be based on three pipe sizes 15mm, 22mm and 28mm sized for four different flow rate capacities 1,200 lpm, 3200 lpm, 4,000 lpm or 5000 lpm as standard.

The regulator assemblies are designed for economy, maximum design life and reliability whilst requiring minimum maintenance.

Duplex Assemblies

Assemblies are supplied for regulating the line pressure to 4 bar medical air from either 11 bar or 7 bar inlet pressure and are intended for installation within the plant room, alongside or close by to the surgical or combined air plant. Assemblies are provided on a steel mounting plate with four pre drilled fixings holes for easy fastening of the unit onto the wall.

All units are supplied complete with stub pipes and union fittings. Pressure gauges are incorporated downstream to monitor outlet pressure and pressure relief valves are provided to maintain safe working pressure in the event of regulator failure. Isolation Line ball valves are included upstream and downstream of the regulator for maintenance purposes.

Ball Valves

BeaconMedæ's ball valves are constructed from a satin nickel plated body.

The ball plug and valve stem are machined to a high surface finish and electrolytically coated with chrome to resist wear and chemical attack.

The valve stem has an integral ball sealed by both nitrile seats and 'O' ring seals.

Safety Relief Valves

BeaconMedæ's safety relief valves are the high lift, atmospheric discharge type, suitable for medical air and oxygen applications. The flow is de-rated and measured in accordance with BS6759 Pt 2: 1984. The valve re-seats by minus 10% of the set pressure.

Pressure Regulators

Pressure regulators supplied with BeaconMedæ's Pressure Reducing Stations, have been modified by BeaconMedæ's personnel to improve their performance and service life.

Testing

All units are fully tested and inspected prior to despatch.

2) MECHANICAL INSTALLATION

Install the system as directed by the site engineer, for the optimum position. Check that the specified pressure safety valves, non-return valves and line valves have been fitted and verify the valves are certified to operate in accordance with the contract specification and conform to BS 6759: part 2 1984.

NOTE: TAKE CARE WHEN BRAZING INTO THE GAS PIPELINE, TO PREVENT DAMAGE TO THE REGULATOR SEALS DUE TO HEAT TRANSFER.

Site the Unit so as to enable periodic inspection and maintenance.

The Duplex Regulator Assembly is supplied with a Steel mounting Back Plate and is intended for wall mounting. The Back Plate has 4 pre – drilled fixing holes.

Back Plate mounting to the wall should be provided by means of suitable fixings through the mounting holes in the Chassis which are 7.5mm diameter.

Copper stubbed connectors are provided for soldering into pipe work.

3) OPERATION

The Regulator is in place to reduce the pipeline pressure. Should the Regulator fail to regulate, the Pressure Relief valve will discharge air to prevent damage to the apparatus/equipment down stream. Simplex Units are fitted on Surgical Air Installations and as such can be completely isolated for maintenance. Duplex Units can be maintained whilst in service.

Adjustment to the Regulators is made using the Tee Bar on top of the Regulator, these are factory set and locked, they should not require adjustment on installation, however, periodic adjustment during service may be necessary.

The illustration shows all Isolation Valves of the Duplex Regulator Assembly open, during normal service only one Regulator should be in service.

Duty selection of the Regulators is provided by isolating the Standby Regulator Inlet and Outlet.

4) COMMISSIONING

Commissioning consists of alternately checking the gas flow through each side of the station, Duplex systems, and ensuring the pressure is reduced to the required level.

BeaconMedæ's Pressure Reducing Stations are tested and certified prior to despatch from the manufacturing plant, there should be no need to make adjustments during commissioning unless adjustment of final line pressure is desired.

5) GENERAL MAINTENANCE

Equipment should be maintained by competent persons as defined in HTM02-01.

Prior to any maintenance being carried out on the system, ensure that the appropriate authorities have been informed, so as to minimise disruption to the delivery of medical gases throughout the system. Perform the following operations:-

- 1) Open all isolating valves,
- 2) Close the inlet and outlet valves to the regulator requiring maintenance.
- 3) Depressurise the regulator by lifting the relief valve easing gear.

If the regulator has to be removed from the station, undo the screws holding the flanges together and slide out the assembly.

NOTE: Both the inlet and outlet flange have 'O' ring seals fitted.

MONTHLY

- a) Ensure equipment is in good condition and free from damage.
- b) Check regulator pressure gauges are set correctly, adjust if necessary.
- c) Ensure free movement of ALL parts

ANNUALLY

In addition to the above, the following maintenance procedures should be followed.

Safety Relief Valves

All BeaconMedæ's Pressure Reducing Stations include safety relief valves with easing gear. The correct procedure, once installed is:

Every Six Months –

Ensure free movement of all parts, using the easing gear. When the valve is under pressure of not less than 75% of the set pressure.

Every Twelve Months –

Safety relief valves should be checked for correct function, as above, and for correct lift pressure.

To do this, remove the valve from the station and test using the external test rig. Under no circumstances increase the operating pressure of the station, in an attempt to test safety relief valves.

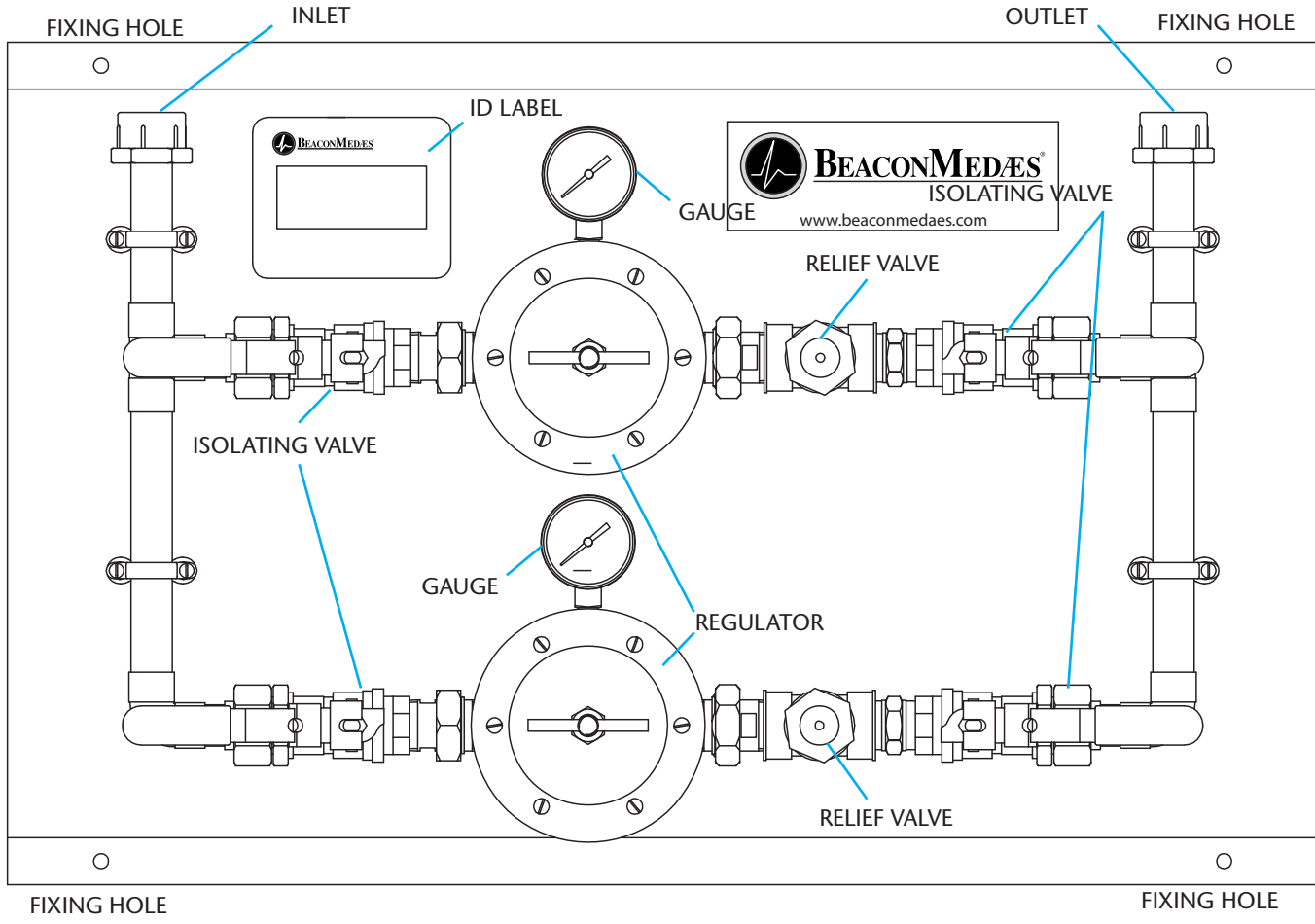
NOTE:

It is possible to test the correct lift pressure of the regulator output safety valve by isolating ONLY the output of the standby line pressure regulator (clockwise to increase pressure)

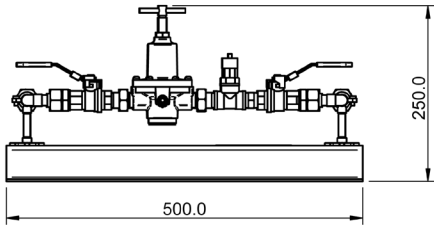
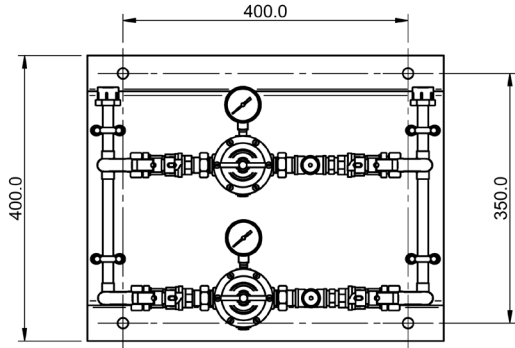
6) FAULT DIAGNOSIS

SYMPTOM	FAULT	ACTION
Bonnet vent hole leaks.	Punctured diaphragm.	Replace diaphragm
Set Pressure creeps up.	Reg. Valve Plunger seal damaged or deformed.	Replace seat or plunger seals and 'O' rings.
Vent hole on knurled cap on rear of Reg. Leaks.	Damaged 'O' ring.	Replace 'O' ring.

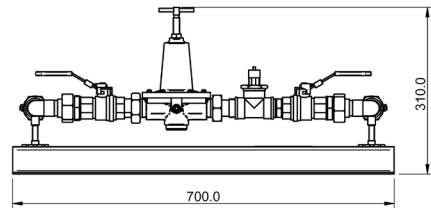
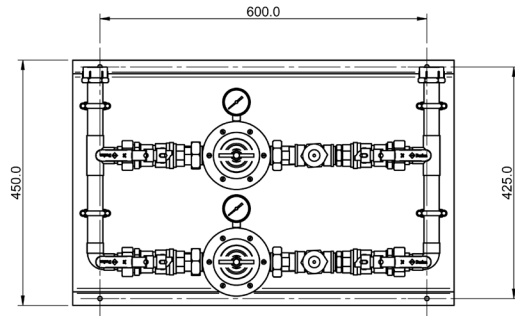
7) LAYOUT DETAILS
Duplex Layout



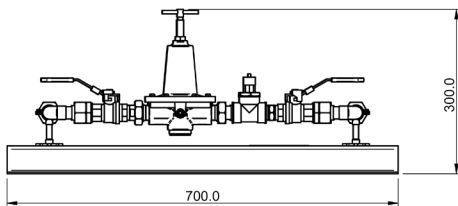
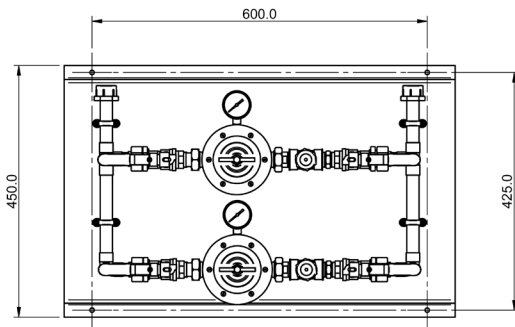
8) CONNECTION DIMENSIONS



15mm inlet/outlet



28mm inlet/outlet



22mm inlet/outlet

200mm stub pipe connections are supplied with the duplex unit.

9) PART NUMBERS

Duplex Units

Part Number	Inlet/Outlet Pressure	Flow	Connection Sizes
2005701	11/7 - 4 bar	1200 lpm	15mm
2005702	11 - 8 bar	1200 lpm	15mm
2005704	11/7 - 4 bar	3200 lpm	22mm
2005705	11 - 8 bar	4000 lpm	22mm
2005708	11 - 8 bar	5000 lpm	28mm

10) SPARE PARTS

Routine maintenance parts are available to prolong the service life of this product - please contact our sales or service department.

2005701 - 11/7 - 4 bar 15mm	
Part Number	Inlet/Outlet Pressure
3261116	¼" Pressure Relief Valve - 5.5 bar
3260437	½" Non Relieving Regulator
072195	½" Lockable Line Valve
5004270	0-11 bar Ø50mm 1/8" BSP Gauge

2005702 - 11 - 8 bar 15mm	
Part Number	Inlet/Outlet Pressure
3261477	¼" Pressure Relief Valve - 9 bar
3260437	½" Non Relieving Regulator
072195	½" Lockable Line Valve
5004270	0-11 bar Ø50mm 1/8" BSP Gauge

2005704 - 11/7 - 4 bar 22mm	
Part Number	Inlet/Outlet Pressure
3261116	¼" Pressure Relief Valve - 5.5 bar
3260751	¾" Non Relieving Regulator
072196	¾" Lockable Line Valve
5004270	0-11 bar Ø50mm 1/8" BSP Gauge

2005705 - 11 - 8 bar 22mm	
Part Number	Inlet/Outlet Pressure
3261477	¼" Pressure Relief Valve - 9 bar
3260751	¾" Non Relieving Regulator
072196	¾" Lockable Line Valve
5004270	0-11 bar Ø50mm 1/8" BSP Gauge

2005708 - 11 - 8 bar 28mm	
Part Number	Inlet/Outlet Pressure
3261477	¼" Pressure Relief Valve - 9 bar
3260765	1" Non Relieving Regulator
072197	1" Lockable Line Valve
5004270	0-11 bar Ø50mm 1/8" BSP Gauge



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