100 series – Operating and maintenance instructions

100 series – Pressure Redcuing Valve

General information:

The type 100 Pressure Regulator will reduce varying inlet pressures to a preset outlet requirement. It is designed for high flow, accurate pressure control and features a balanced main valve assembly to maintain a constant outlet pressure, whilst inlet pressure fluctuates.

Installation:

Before installing the regulator ensure the system operating requirements are matched with the valve specification details printed on the attached data label.

Immediately prior to installing the regulator into a system, check that all protective caps have been removed from various ports. Ensure that no ingress of dirt or debris is allowed to enter any part of the assembly, as this will affect the general working of the regulator.
A check should also be made to establish that the regulator inlet is positioned on the up-stream side and that the ports correspond with the direction of flow within the system.

It is likely, when new installations are assembled, small particles of metal etc will become dislodged. It is therefore recommended that a suitable filter (60 micron or less) be fitted immediately up-stream of the regulator.

As a necessary precaution it is also recommended that a correctly sized pressure relief valve, capable of safely exhausting full flow from the control regulator should be fitted down-stream of the valve. Advice on flow rates at various pressures can be obtained from PRESREG VALVES.

Operation:

When all port connections (including gauge ports, if fitted) have been checked for tightness, and the control knob fully turned anti-clockwise, inlet pressure can be steadily introduced to the regulator. During this time check that no leakage across the valve seat occurs. This will be detected by increasing outlet pressure reading down-stream of the regulator.

Having introduced inlet pressure to the valve, outlet pressure can be controlled by turning the control knob clockwise for increasing pressure and anti-clockwise for decreasing pressure during adjustment. It may be necessary to vent down-stream pressure during adjustment in order to obtain the desired setting.

Finally, check valve operation by venting off (with short steady bursts), the down-stream pressure. Outlet pressure should fall slightly when flow is taken and return to the set pressure when flow ceases.

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Web: Presreg.co.uk

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Spares

A refurbishing facility is offered by PRESREG VALVES and customers are strongly advised to make full use of this service whenever valves need attention. However, from time to time it may not be possible or practical for valves to be returned and therefore it is suggested that customers keep suitable quantities of recommended spare parts in order to carry out their own maintenance.

Spare kits are available from:

Presreg Valves
a trading division of
JRE Precision Limited
18 Bakewell Road
Loughborough
Leicester
LE11 5QY
UNITED KIINGDOM
Tel: 44(0) 1509 610580
e-mail: info@jreuk.com

In any correspondence, please quote valve type and serial number.

Maintenance:

Whilst in operation, the various moving components will experience wear. Any elastomer material used in also has a finite shelf life. It is for these reasons that it is recommended that maintenance be carried out at regular intervals.

Only certain maintenance tasks are recommended, and these are listed below. Work must be restricted to these operations only and no alteration should be made to any component part of the valve, as this may lead to poor performance and even unsafe operation.

Whenever possible, remove the complete valve from the system and carry out servicing at a bench, suitably cleaned to ensure no ingress of dirt or foreign matter to the valve.
Anyone wishing to carry out their own maintenance would be well advised to obtain an “O” ring service set of tools as these are specially made to avoid damage to the elastomers during re-assembly.

If, after maintenance has been carried out, the valve is not giving satisfactory performance, the complete unit should be returned, together with a brief outline of faults experienced, to the manufacturer for further investigation.

Recommended Maintenance

Before attempting any disassembly of valve, please ensure that a copy of drawing no 100-GA is available for reference, a recommended spares kit is obtained and a suitable clean area is set aside for working.

****IT IS NOT RECOMMENDED THAT VALVES USED ON MEDICAL/OXYGEN INSTALLATIONS BE SERVICED ON SITE**. Special cleaning procedures and materials are necessary **

Ensure all pressure to the valve is safely vented to zero prior to dismantling. If dangerous medias have been used the system must be purged in accordance with the system service instructions.

1) Main valve/poppet assembly:

The poppet sub assembly should also be replaced as an assembly as supplied.

Unscrew and remove the valve plug (item 5) from the base of the valve body (item 1). As the plug is unscrewed, the poppet sub assembly will come out with the plug. Remove the old poppet assembly from the valve plug and replace with the new one, ensuring that O ring (item 22) is fitted around the shaft of the new poppet assembly.

Replace the O ring (item 23) around the main valve plug (item 5).

If the seat O ring (item 20) is to be replaced, then the seat (item 8) must be unscrewed anti-clockwise with a pin spanner, the O ring can then be replaced and the seat screwed back in using a pin spanner, no torque setting is defined, use only moderate torque to secure the seat.

2) Sensing module

In order to change the O rings on the sensing module, it is not necessary to remove the control knob (item 16) or disturb the main valve unit unless further work is envisaged.

Make sure that the control knob is fully turned anti-clockwise before removing the eight cap head screws and remove the top spring housing assembly. Remove the spring (item 19) and put to one side.

The sensing module can now be lifted out of the body. O ring (item 21) can be replaced without dismantling the sensing module. To replace O ring (item 24) the sensing module must be disassembled. To do this, hold the bottom spring guide (item 13) in a vice on its flats, use a flat bladed screwdriver to unscrew the piston (item 4) from the bottom spring guide. The piston can now be pushed out of the piston guide (item 3).
Replace the O ring (item 24) and rebuild the sensing module using the reverse of the method used to disassemble.
Ensure the vent plug (item 17) is put back in to position when rebuilding the module.

Replace load spring (item 19).

Replace the top spring housing assembly, making sure to tighten the eight cap head screws equally to a torque of 38 Nm.

If you encounter any difficulties whilst performing a service procedure, please contact the sales office for further assistance.

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