



102-A series – Operating and maintenance instructions

102-A series – Pressure Reducing Valve

General information:

The type 102-A Pressure Regulator is a dome loaded regulator that will reduce varying inlet pressures to a preset outlet requirement. The dome is inlet line loaded, meaning it does not require a separate pilot line.

It is designed for high flow, accurate pressure control and features a balanced main valve 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 (30 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.



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 recommended that customers keep suitable quantities of 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 KINGDOM
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 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 into 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 107-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 *

*When the valve is to be used for OXYGEN service do not use ordinary grease, ONLY USE FONBLIN RT15. Unsafe conditions may result if this is not observed.

Ensure all pressure 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) Soft seals spares kit

In order to fit the soft seal spares kit, it is necessary to remove the dome from the valve body.

Loosen and remove the 8 x 3/8" UNC bolts securing the dome and remove. Lift the dome away from the body. Remove diaphragm plate (item 4) from underneath of dome and place to one side.

Remove old diaphragm and discard. Position replacement diaphragm into place.

Remove O ring (item 15) from the body and discard, position replacement O ring into place, there is no need to grease this O ring.

Loosen and remove the 2x M6 bolts (item 17) securing the dome plate (item 9) and place to one side. The dome plate should come away from the dome, be careful to retain the two needle control valves (item 7) and the associated springs (item 11) as the dome plate is removed.

Remove the O rings (item 14) from the needle control valves using a suitable tool. Replace with new O rings – apply a small amount of grease to these O rings.

Reassembly: Replace the dome plate (item 4) into the underside of the dome. Position the dome onto the body and replace the 8 x 3/8" UNC bolts. Tighten bolts evenly and torque to 45 Nm.

Place the needle control valve springs back into the holes in the dome and push needle control valves into place. Position the dome plate over the control valves and secured using the 2x M6 bolts (item 17). Tighten to moderate torque only.

If no other maintenance is required, the regulator can be brought back into service.

2) Main valve replacement:

The main valve sub assembly should also be replaced as an assembly as supplied.

Unscrew and remove the main valve sub assembly capsule (item 20) from the base of the valve body (item 1). Ensure the O ring and back up ring come out with the capsule.

Screw in replacement main valve sub assembly. Ensure O ring and back up ring are in position around the capsule and that the O ring is in place on the top of the capsule. Secure using 30 mm spanner, torque to 60 Nm. Do not over tighten, there should be approximately 1mm gap between the capsule and body when fully tightened.

If no other maintenance is required, the regulator can be brought back into service.