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OPERATING AND MAINTENANCE INSTRUCTIONS

TYPE 116 PRESSURE REDUCING VALVE

GENERAL

The 116 Pressure Reducing Range is based on modular concepts and designed to safely reduce inlet pressure and accurately deliver output pressure to the desired setting. There is a wide choice of outlet pressure settings, main valve types and optional extras available from standard components. Reference to the part number chart will identify any model from the standard range.

INSTALLATION

It is likely when new installations are assembled or when fluids are being conveyed small particles of dirt and debris may lodge on the valve seat causing the controller to malfunction. It is therefore recommended that a suitable filter, (30 micron or less) be fitted directly up stream of the valve. Certain models have internal filters assembled in to the main valve assembly but these should not be considered as suitable for a system and are fitted to protect the valve seating only.

Some models incorporate a pressure release feature to aid adjustment and although in operation this device acts as a following pressure relief, it must not be considered as sufficient to safely vent off full-bore flow. Consequently it is recommended that a separate relief valve, fully able to vent-off maximum system flow, be fitted down-stream of the regulator to vent off maximum system flow.

Immediately prior to installing the regulator into a system check all operating data compares with details printed on the valve label. Reference should also be made to the chart, identifying valve type, attached to these instructions..

If the regulator is to be fitted through a panel or bulkhead refer to drawing No. 116-2000 which shows the dimensions required for fitting. When the panel has been cut to the necessary dimensions the regulator black top cap should be prised out and the circlip fitted to the spindle removed. Do not attempt to turn the screw situated in the spindle of some valves as this will alter the release setting and may affect the general working of the regulator.

Lift off the hand control knob and slacken the small grub screw in the panel locking ring. Unscrew the ring and remove from the regulator being careful not to loosen the top housing whilst removing the ring. Insert the regulator through the panel hole from the underside and refit the panel locking ring. Tighten the ring on to the panel after positioning the valve ports and retighten the small grub screw. Refit the hand control knob, circlip and black top cap.

Remove protective dust caps from all ports ensuring ingress of dirt is prevented prior to connecting all fittings. Any debris introduced into the regulator may affect its working and cause incorrect operation.

Check that all fitting connections correspond exactly with the size and thread type of the regulator.

Ports should be connected correctly with the direction of flow of the system. Port and configurations are explained on drawing no 116-2000. Inlet, outlet and gauge and relief ports are clearly identified by the stampings or etchings on the valve body.

NOTE

On no account should the relief port be restricted or blocked and must be piped to a safe place if dangerous fluids are being controlled.

When all connections have been fully tightened turn the control knob anti clockwise until it stops. Pressure can now be introduced to the valve inlet. Outlet pressure can now be increased to the desired setting by turning the control knob clockwise. If the desired pressure is exceeded turn the knob anti clockwise.
On non venting models outlet pressure will have to be partially vented off and then increased to the desired setting.
On self venting models the release feature will automatically vent down-stream pressure. Always drop pressure well below the desired requirement and increase to final setting when making adjustments.

Finally check the setting by drawing off, with short steady bursts, the down steam pressure. Outlet pressure should fall slightly when flow is taken and return to the set pressure when flow ceases.

The valve is now set for operation.

MAINTENANCE & 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 :

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Email : info@jreuk.com www.presreg.com

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

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

MAINTENANCE

In general, unless special conditions prevail, valves should not need attention until performance becomes affected.

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.

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.

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.

NOTE

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.

RECOMENDED SERVICING

The design of the 126 valve range is such that maintenance has been simplified to the absolute minimum for this type of regulator. It consists of replacing the main valve, and pressure sensing modules. Always quote the regulator serial number and model type code when requesting spares in order that the correct materials and parts are supplied. Always return the control knob or locking boss to zero pressure setting by turning in an anti-clockwise direction until the stop is encountered.

1) REPLACING THE MAIN VALVE MODULE Refer to Fig 1

There are two standard types of main valve modules, but both can be considered as the same as far as the spares replacement is concerned.

After pressure has been safely vented, unscrew the main valve module situated in the base of the valve body. Ensure that all “O” rings and back-up rings are removed from the body and replace with a new valve module and new “O” rings etc. “O” rings should be lightly greased * before assembly. Tighten the module using moderate torque only.

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

2) REPLACING PRESSURE SENSING MODULE

There are a number of different sensing modules within the standard valve range, maintenance however is similar in all cases and reference to fig 2 will show the differences between models.

First remove the black top cap situated in the centre of the hand control knob. Remove the circlip from the spindle and take off the control knob. Slacken the small hexagon socket grub screw in the panel-locking ring and unscrew the ring. Grip and support the valve body and using the two flats machined on the spring housing , unscrew in anti-clockwise direction. Be careful not to lose any small components that may fall out during this operation. Remove the sensing module from the body together ensuring all “O” rings are also removed. The push rod can be left in the valve body.

Whilst the spring housing section is detached from the valve, push the spindle and loading nut through and remove. Take out the roller thrust bearing assy, ensuring that the two wear washers are accounted for (occasionally one will remain inside the housing) this must always be removed prior to re-assembly.

If the valve incorporates a down-stream release feature unscrew the adjuster from the centre of the spindle and take out the control rod. All “O” rings should be removed and discarded, ensuring that no damage is done to the machined surfaces during this operation.

Be sure to check that the push rod is correctly located in the valve body before re-assembly.

Replace the new sensing module any “O” rings and back-up rings, (refer to fig 2 in order to identify components). Lightly grease* any “O” rings with appropriate lubricant before re-assembly. If the valve incorporates a release feature, lightly grease* the release push rod and replace in the sensing module. Replace the spring, locating this correctly over the guide.

Take the spindle and load nut and fit a new thrust bearing assembly, applying grease* to the roller surfaces. Replace any “O” rings necessary (refer to fig 2) together with the roller guide in the load nut. Assembly is greatly eased if a small amount of grease* is applied to the roller before insertion in the load nut. The spindle assembly can now be fitted into the spring housing, ensuring that the roller guide engages with the slot in the housing and apply a small amount of grease* to the threaded section of the spindle. Holding the centre spindle, re-fit the spring housing to the valve body and re-tighten. Replace the panel locking ring and tighten the small hexagon socket grub screw.

NON VENTING MODELS ONLY

Slide the control knob over the spring housing and re-fit circlip and the black top cap. The valve is now ready for use and inlet pressure should be re-introduced and outlet pressure adjusted to the desired setting.

SELF-VENTING MODELS ONLY

Before fitting the control knob, lightly grease* the control rod and insert through the centre of the spindle. Replace the “O” ring on the adjuster after lightly applying grease* and screw into the spindle a few turns only. Inlet pressure should now be re-introduced to the valve and outlet pressure adjusted to any setting. A soap bubble must now be drawn across the small hole in the spring housing top, (vent to atmosphere models), or over the relief port (captured vent models). Slowly turn the adjuster screw into the spindle until the soap bubble bursts. Now turn the adjuster approx ½ turn anti-clockwise. This has now set the release device which will operate at any outlet pressure setting throughout the range and no further adjustment is needed. Re-fit the control knob and circlip and replace the black top cap. The valve can now be operated and the desired pressure setting adjusted.

NOTE

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