

BELLOW SEAL INSTALLATION & MAINTENANCE MANUAL

1. INTRODUCTION

Bellow Seals will be used on applications where the possibility of leakage through the valve gland into the atmosphere must be eliminated. This could be due to the medium being:

- Toxic
- Radioactive
- Environmentally unfriendly
- Flammable / Explosive

Bellow seals are used in conjunction with the Mitech Globe Control Valve with some slight part modifications.

2. SIGNIFICANT EQUIPMENT DETAILS

The Bellow seal will be more expensive than normal packing arrangements but does offer a safer seal as all sliding seals are eliminated.

Normal packing (braid) is also used as a secondary backup seal in case of bellows failure.

As the bellow seal is bulky, an extended bonnet has to be used which will increase the overall length and weight of the valve.

The bellow seal can be used on both low and high temperatures, as different materials can be used.

The standard Mitech plug is used with addition of a tapped hole in the threaded section. The plug stem is screwed into the extension stem then the grub screw is used to hold the two in place.

3. DISASSEMBLY OF VALVE

- 3.1. Disassemble the valve is very similar to the normal Globe Control Valve (see Globe Control Valve Maintenance Manual) except for a different plug arrangement and for the extended bonnet to house the bellow seal.
- 3.2. Follow the steps in the Globe Control Valve Maintenance Manual until you reach the stage where the plug and the bellow seals would need to be removed from the bonnet.
- 3.3. Remove the bonnet assembly sealing bolt to expose the hole.
- 3.4. Remove the grub screw holding the plug and the extension stem together through the exposed hole.
- 3.5. Unscrew the plug from the extension stem.
- 3.6. Remove the plug from the bottom of the extended bonnet.
- 3.7. Remove the extended stem from the top of the bonnet. Use care when removing so as not to damage bellow seal.

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4. COMPONENT INSPECTION

- 4.1. Check bellow seal for damage.
- 4.2. Check bonnet for damage caused by the medium.
- 4.3. Inspect the plug head for damage.
- 4.4. Inspect packing for wear and exposure to medium. If there is evidence of exposure to medium the bellow seals will need to be replaced.

5. REASSEMBLY OF VALVE

- 5.1. Re-build the valve according to the Globe Control Valve Maintenance Manual.
- 5.2. Slide the lower bonnet over the plug stem. Insert the extension stem with the bellow seal into the upper bonnet. Be careful with the seal.
- 5.3. Screw the plug stem into the extension stem. Using the hole in the side of the bonnet, replace the grub screw.
- 5.4. Place the plug and bonnet into the body of the valve.
- 5.5. Continue with the steps set out in the Globe
- 5.6. Control Valve Maintenance Manual

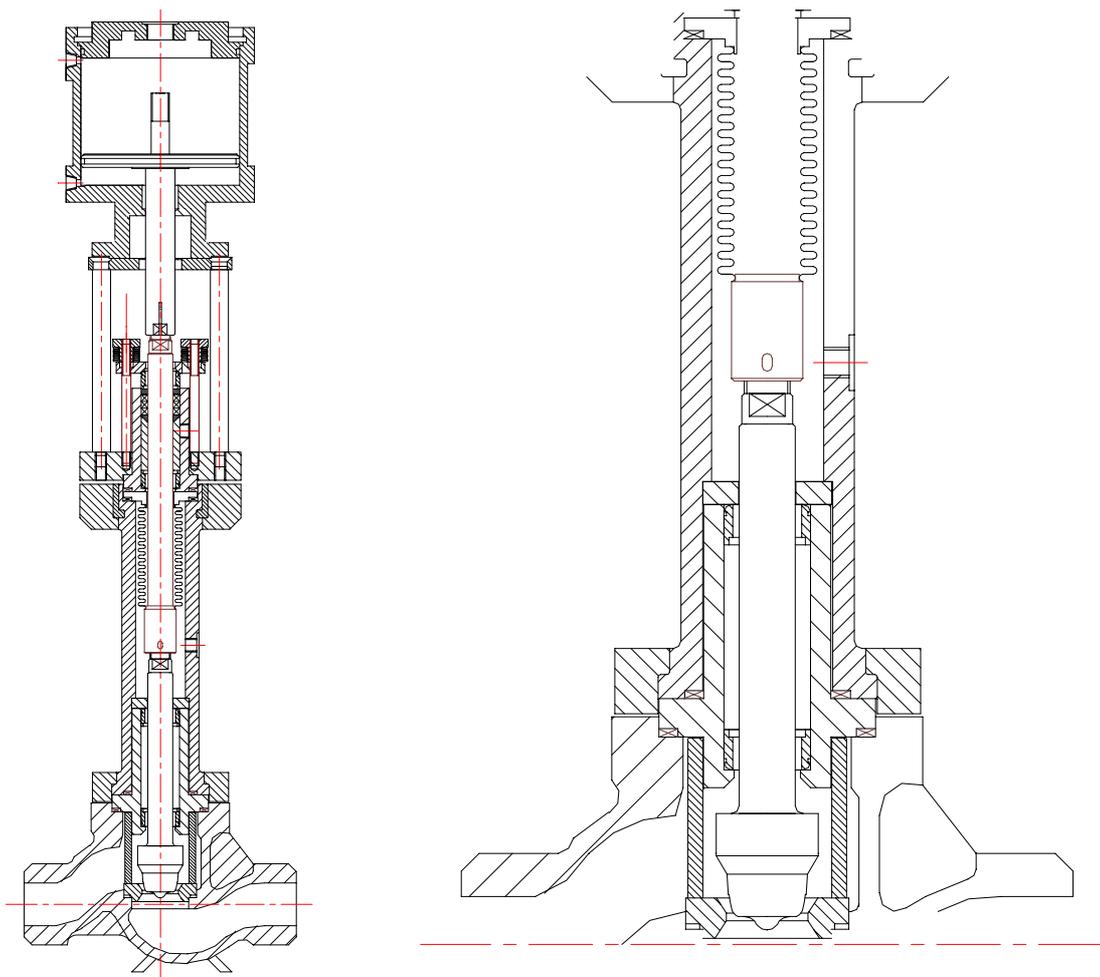


Figure 1: Drawing showing bellow seals, extended bonnet, grub screw and bonnet assembly plug