

**LIVE LOADING
INSTALLATION & MAINTENANCE MANUAL**

1 GENERAL

Live Loading is used to ensure constant pressure is applied to the gland packing over an extended period of time. It is used to eliminate the need to routinely tighten the gland packing nuts. This maintenance manual is only relevant for the Mitech Globe Control Valve.

2 REPLACEMENT

To retrofit an existing valve with Live Loading, it is necessary to increase the distance from the valve to the actuator to accommodate the additional components. Its is recommended to make use of the Mitech Production facility to make the changes but if this is not possible the following steps need to be followed. It is also recommended to overhaul the actuator, replace the gaskets in the valve body and replace the guide liners.

REPLACEMENT PARTS:

Actuator Stem	x1	Actuator Mounting Bars	x4
Gland Flange Studs	x2	Belleville Washers (Disk Spring)	x14
Modified Packing Spacer	x1	V-Ring	x1
Flat Ring	x1	Modified Gland Flange	x1
Gland Flange Nut	x2	Additional Stem Clamp	x1

- 2.1 Remove Actuator (see Globe Control Valve Maintenance Manual – CVMM)
- 2.2 Remove actuator stem and replace with new extended stem.
- 2.3 Remove mounting bars and replace with new extended mounting bars.
- 2.4 Remove gland flange studs and replace with new extended studs.
- 2.5 Remove bonnet internals. (Plug must be removed to do so)
- 2.6 Place new gaskets into valve body.
- 2.7 Reassemble bonnet
 - 2.7.1 Slide the bonnet over the plug stem taking care not to score the stem. Insert the bonnet assembly into the valve body.
 - 2.7.2 Insert existing lower guide retainer into bonnet.
 - 2.7.3 Insert new lower gland packing after retainer
 - 2.7.4 Place modified Packing Spacer onto lower gland packing
 - 2.7.5 Place V-Ring onto the grove in the packing spacer.
 - 2.7.6 Place upper gland packing into bonnet assembly compressing one at a time until it is one short of being flush with the top of the bonnet
 - 2.7.7 Use flat ring to get the packing flush with the top of the bonnet.
- 2.8 Place the existing upper guide on flat ring and the gland flange above that.
- 2.9 Place seven belleville washers onto each gland flange stud above the flange in configuration as in Figure 1.
- 2.10 Replace the gland flange nut and tighten until just passed finger tight.
- 2.11 Reassemble the actuator (see CVMM)
- 2.12 Fit actuator to valve (see CVMM)
- 2.13 Use existing stem clamp for calibration of positioner.
- 2.14 Place new stem clamp at bottom of actuator stem for clamping.

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3 MAINTENANCE

Live Loading on Control Valves should not have to be replaced regularly. It is still wise to check that valve is not leaking through the gland flange packing. Once the washers have travelled half of their initial compressed length the packing should be replaced. Please consult the control valve maintenance manual for replacement.

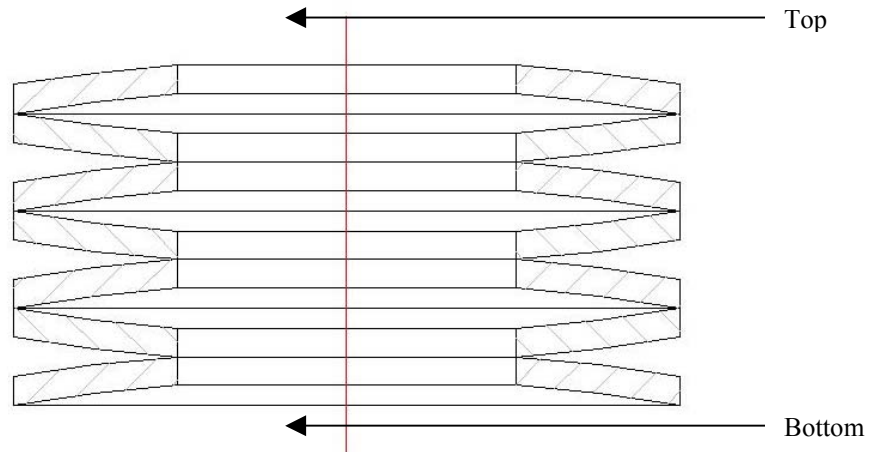


Figure 1: Belleville Washers Orientation

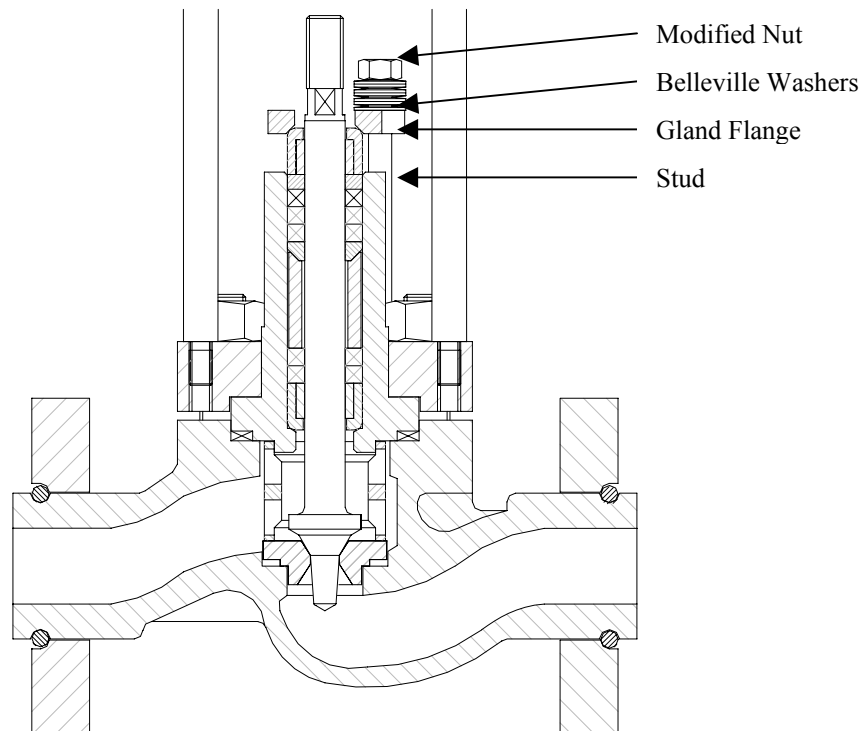


Figure 2: Mitech Globe Control Valve With Live loading