

Fisher® ISO-Seal Packing

Use these instructions to install ISO-Seal packing in valves that have standard packing or when inspecting or replacing ISO-Seal packing in Fisher easy-e™, EW, YD/YS, EH, and HP valves.

⚠ WARNING

Avoid personal injury or property damage from sudden release of process pressure or bursting of parts. Before performing any installation operations:

- Always wear protective clothing, gloves, and eyewear.
- Do not remove the actuator from the valve while the valve is still pressurized.
- Disconnect any operating lines providing air pressure, electric power, or a control signal to the actuator. Be sure the actuator cannot suddenly open or close the control valve.
- Use bypass valves or completely shut off the process to isolate the control valve from process pressure. Relieve process pressure from both sides of the control valve. Drain the process media from both sides of the valve.
- Vent the pneumatic actuator loading pressure and relieve any actuator spring precompression so the actuator is not applying force to the valve stem; this will allow for the safe removal of the stem connector.
- Use lock-out procedures to be sure that the above measures stay in effect while you work on the equipment.
- Check with your process or safety engineer for any additional measures that must be taken to protect against process media.

If you are installing the system in a valve that is still connected to an actuator, remove the actuator from the valve to provide sufficient space to install the packing assembly. If a spring-return actuator is used, it is possible that disconnecting the stem connector will allow the spring to force the actuator to the end of its travel. Be sure the actuator spring is resting on its travel stop. Refer to the appropriate valve and actuator instruction manuals to remove the actuator.

1. Carefully remove the old packing parts from the packing box. The surface condition of the valve stem and the packing box wall is critical in obtaining a good seal. If the valve stem needs to be replaced, or any other valve part, refer to the appropriate valve instruction manual for replacement procedures. Complete all valve maintenance before installing the ISO-Seal packing system into the bonnet.
2. Install new studs (key 200) and nuts (key 212) from the retrofit kit.

Note

Ensure that the packing box parts are assembled in the correct order. Packing parts cannot function properly if the Belleville springs or other packing parts are not stacked correctly.

3. Use figure 1 to ensure packing parts are assembled in the correct order. Install the packing parts into the packing box.
4. Install the spring pack assembly (key 217), which includes the attached springs, and packing flange (key 201), on the stem. Install the nuts (key 212) and hand-tighten them.

Note

Anti-seize lubrication (key 213) is required for the packing studs and nuts. Although it is important to properly lubricate the stud threads and internal nut threads, it is also important to properly lubricate the contacting face of the nut.

5. You will obtain maximum benefit from your ISO-Seal packing system when you tighten the packing flange nuts and compress the Belleville springs to their “target load”. The Belleville springs are designed for optimum performance when they are compressed to 85% of their maximum deflection, or nearly flat. (Maximum deflection is when the springs are 100% compressed, or completely flat.)

To obtain the target load of 85% compression of maximum deflection, perform the following:

- Tighten the packing flange nuts alternately and evenly, keeping the packing flange parallel with the valve flange, until the Belleville springs are compressed 100% (or completely flat).
 - For all ISO-Seal graphite packing and CL2500 ISO-Seal PTFE packing, loosen each packing flange nut 1/8 turn (45° of rotation). The “target load” of 85% compression has now been reached.
 - For CL600 to CL1500 ISO-Seal PTFE packing, loosen each packing flange nut 1/4 turn (90° of rotation). The “target load” of 85% compression has now been reached.
6. The “springs flat” procedure described above is the preferred method of adjusting ISO-Seal packing.



Other Considerations

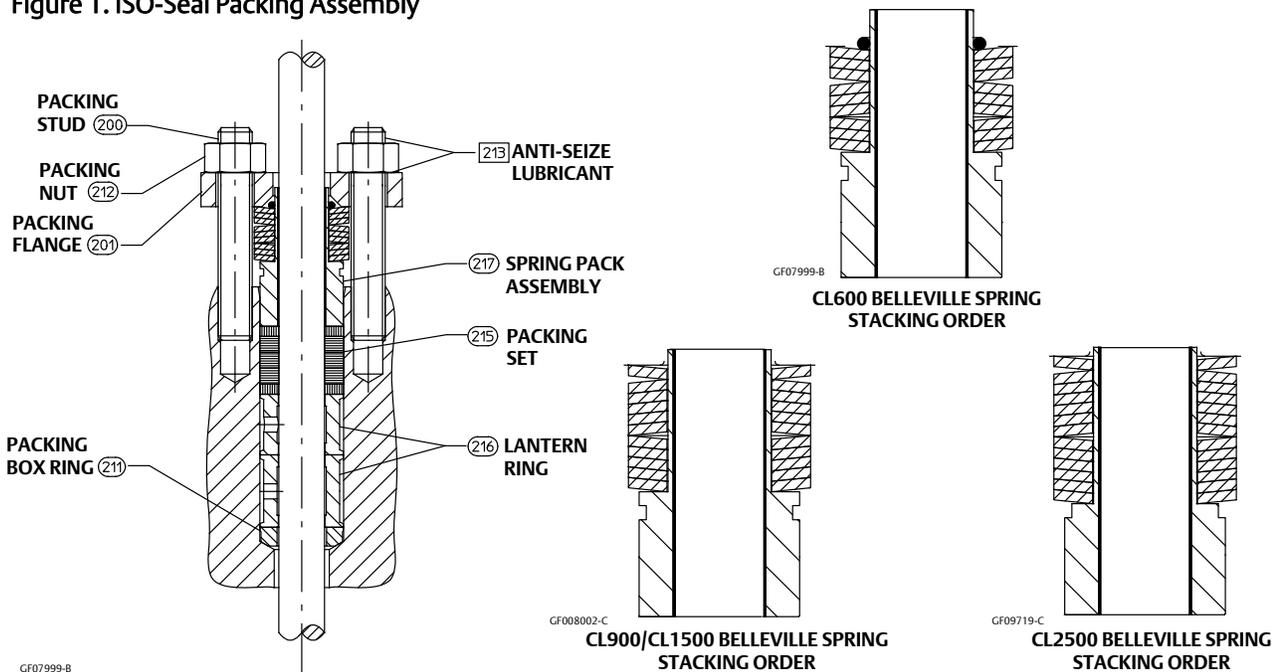
When retrofitting an existing packing system or repacking a valve with ISO-Seal packing that has been in service, check the condition of the packing bore after you have removed the packing. An easy method for cleaning debris and minor imperfections from the bore is to use a brake cylinder hone attached to an electric drill. This method will do a good job of cleaning the packing bore without changing the dimension of the bore.

If less than 20% of the surface area of the bore is pitted and if there are no pits deeper than 0.5 mm (0.020 inch), then your packing should work as designed. This does not need to be an exact measurement; visual inspection is adequate. If the packing bore does not meet this criterion, however, you should replace the bonnet.

Table 1. Fisher ISO-Seal Retrofit Kits

STEM DIAMETER		ISO-Seal PTFE RETROFIT KITS		ISO-Seal GRAPHITE RETROFIT KITS	
mm	Inch	CL600	CL900/1500	CL600	CL900/1500
9.53	3/8	RPACKXRT552	RPACKXRT602	RPACKXRT652	RPACKXRT702
12.7	1/2	RPACKXRT562	RPACKXRT612	RPACKXRT662	RPACKXRT712
19.1	3/4	RPACKXRT572	RPACKXRT622	RPACKXRT672	RPACKXRT722
25.4	1	RPACKXRT582	RPACKXRT632	RPACKXRT682	RPACKXRT732
31.8	1-1/4	RPACKXRT592	RPACKXRT642	RPACKXRT692	RPACKXRT742

Figure 1. ISO-Seal Packing Assembly



⚠ WARNING
 Use only genuine Fisher replacement parts. Components that are not supplied by Emerson Process Management should not, under any circumstances, be used in any Fisher valve, because they may void your warranty, might adversely affect the performance of the valve, and could cause personal injury and property damage.

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