WOODWARD

Application Note 51571
(Revision -, 5/2017)

Original Instructions

GSxE and GSxP
Seal Carrier

Potential Loss of Press Fit
Performance Degradation Unlikely
Long Term Reliability Potentially at Risk

Information

Introduction

The GSxE and GSxP valves utilize taper roller bearings on the main shaft of the valve. These bearings are greased and have rotary grease retention seals. The seal bushings rely on a press fit inside the valve housing to maintain position. Loss of the press fit can allow the bearing grease retention seal carrier bushings to move under working pressure. Noticeable performance degradation due to seal carrier bushing movement is unlikely.

Description

Woodward recently discovered a potential issue in the component dimensioning of GSxP and GSxE valves that resulted in potentially insufficient press fits. Due to friction variations, the grease retention seal carrier bushing could be pushed toward the bearing introducing parasitic torque, or be pushed out of the bore, allowing the bearing grease to escape.

Affected Units

Affected units are limited to the following part numbers shipping from Woodward prior to 1 December 2016:

GS100E	GS150E	GS200E	GS150P	GS200P
9909-195	9909-181	9909-212		9909-232
	9909-197			
	9909-210			

Corrective Action

Risk mitigation has two components: press fits were adjusted, and a new feature was added to the housing and seal carrier to create a hard stop. The flange fits into a counterbore in the housing to prevent seal carrier bushing movement during proof testing.

Customer Action

Noticeable performance degradation due to seal carrier bushing movement is unlikely. If the valve appears to be operating outside of specifications, or during routine service, visually examine the inside of the valve. The seal carrier bushing should appear to be nearly flush with the inside of the housing as shown in Figure 1 below.

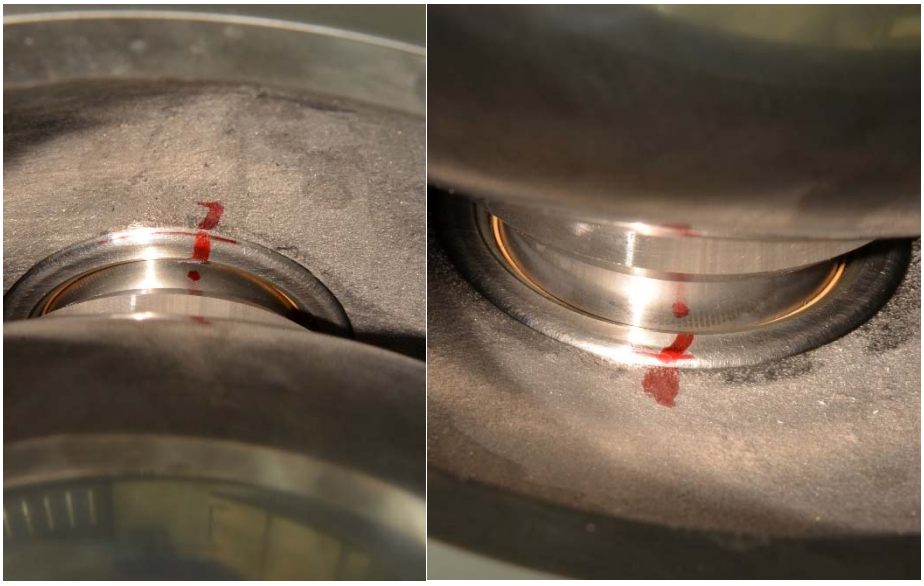

Figure 1. Bushing Movement

If one or both bushings have moved, they will appear as shown in Figure 1 above. In Figure 2 below, shafts and regulator were removed for clarity.

Figure 2. Shafts and Regulator Removed

If the bushings have moved deeper into the housing, please monitor the performance of the valve and send it in during the next planned outage. If the bushings have moved out of the housing, please contact Woodward. A bushing that has come out of the housing will potentially reduce the life of the bearings.

We appreciate your comments about the content of our publications.

Send comments to: icinfo@woodward.com

Please reference publication 51571.

B 5 1 5 7 1 : -

PO Box 1519, Fort Collins CO 80522-1519, USA
1041 Woodward Way, Fort Collins CO 80524, USA
Phone +1 (970) 482-5811

Email and Website—www.woodward.com

**Woodward has company-owned plants, subsidiaries, and branches,
as well as authorized distributors and other authorized service and sales facilities throughout the world.**

Complete address / phone / fax / email information for all locations is available on our website.