FM Approvals

Member of the FM Global Group

Product Alert

July 26th, 2018

Type of Notification: Product Safety Notice

FM Approvals has been notified by Moog Inc. of a potential defect involving FM Approved Series 743 Servovalves manufactured from January through April, 2018.

Company Identity: Moog Inc.
Name: Moog Inc.
Address: Seneca & Jamison Road, East Aurora, New York 14052, USA
Contact Information: Moog Inc., Industrial Group, Attn: Lee Plug Recall, 300 Jamison Road, Building 11D, Elma NY 14059

Product Identity: 743 Series Servovalve
Description: Electro-hydraulic Servovalve
Make/Model: 743xxxxx Servovalve
Nameplate Data: -743xxxxx Model, Dated between JAN-2018 and APR-2018

FM Approval Status: FM Approved for Unclassified locations (i.e. General Safety only)

Hazard Involved: The products contain a potential latent defect due to the improper installation of Lee Plugs® into the valve body. See attached Technical Service Bulletin, issued by Moog Industrial Group. Although testing conducted by the manufacturer indicates no immediate safety concern, the affected product should be returned to Moog Industrial Group for replacement. See attached Lee Plug Recall RGA Form.

If you suspect you are in possession of affected equipment bearing the FM Approvals certification marking, please bring that to the attention of:

Antonio L. Pires
FM Approvals, Quality Department
Norwood, MA, USA
+1 (1)781 255 4825
Email: Antonio.pires@fmapprovals.com

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Technical Service Bulletin

Observed Condition

Lee Plugs® are installed in 5 locations on the -743 Series Servovalves as shown in Figure 1. All plugs are in the Pilot pressure path.

The required installation depth for the Pin per the Lee Plug manual is 0.003 inches Max below the Plug surface as shown in Figure 2. Moog observed these inserted to a depth of 0.020 to 0.034 inches. A sample piece showing the condition when these are over installed to this depth is shown in Figure 3. This sample was installed to a depth of 0.040 inches. The material of the Pin, Plug and potentially the valve body has been deformed.

The measured valves represent a sample of 15 units which were contained at Moog. We expect this is representative of the parts in the field.

Containment

Moog has isolated the discrepant valves to those built by a single operator during the January through April 2018 timeframe. Process changes have been implemented to ensure future product does not have over-installed Lee Plugs.

Potential Failure Mode

There are two potential failure modes identified.

1. The bottom of the Lee Plug could fracture entirely and introduce FOD into the hydraulic system, possibly leading to a failure to operate or performance issues.
2. A fracture in the Lee Plug could lead to external oil leakage from the Lee Plug location.

Engineering Assurance Testing

All -743 valves manufactured by Moog are subject to a Back Pressure test prior to shipping. This test applies 3,000 psi to the Lee Plug cavities. No leakage is allowed during this test prior to product shipment. All the shipped units passed this test.

Moog has conducted an Engineering Assurance Test on two valves which represented the worst case range of measurements on valves contained at Moog. 150,000 Impulse cycles were conducted from 0 to 3,200 psi on the Lee Plug pressure cavities followed by a Burst Pressure test to 8,500 psi. There was no evidence of leakage or movement of the Lee Plugs during these tests.

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Recommendation

The Engineering Test conducted by Moog provides assurance that there is not an immediate safety concern, however based on the observed deformation in the over-driven Lee Plugs, Moog recommends the removal and replacement of the valve at your earliest convenience.

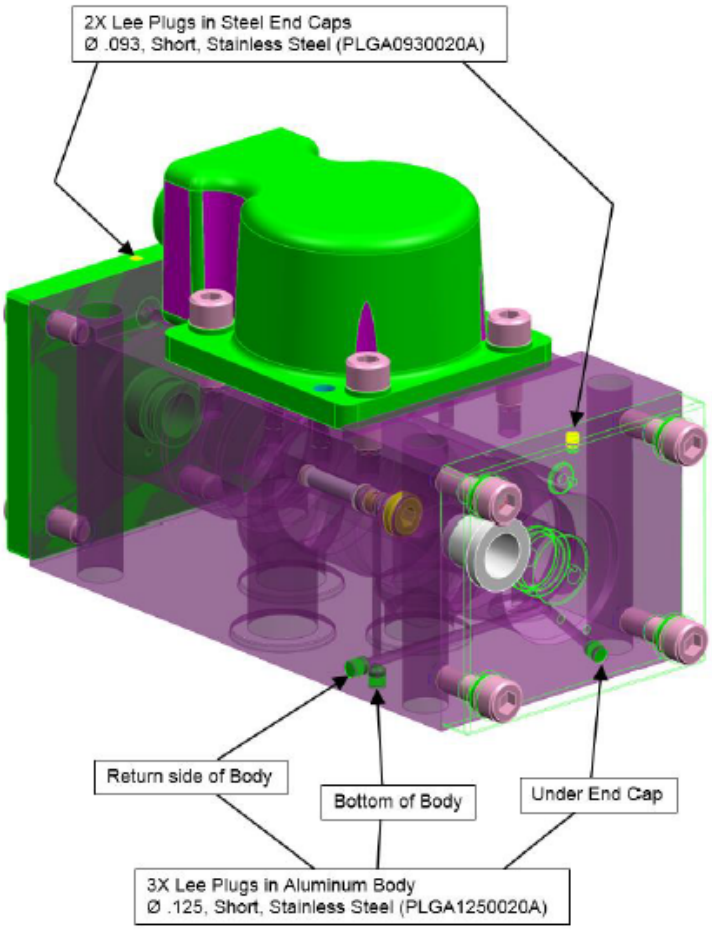

Figure 1 – Lee Plug Locations -743 Series Installation

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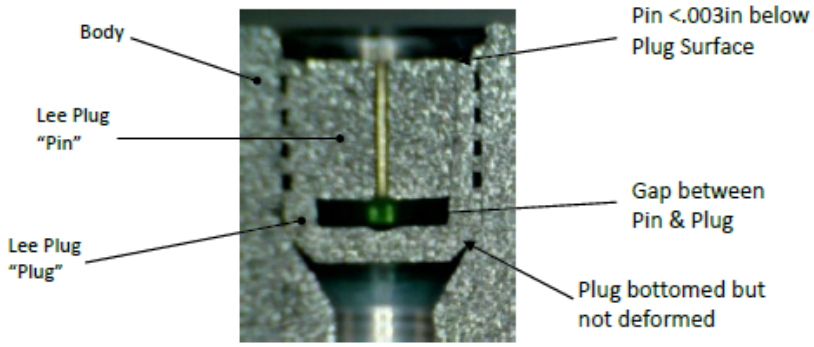

Figure 2 – Sample Part – Correct Lee Plug Installation

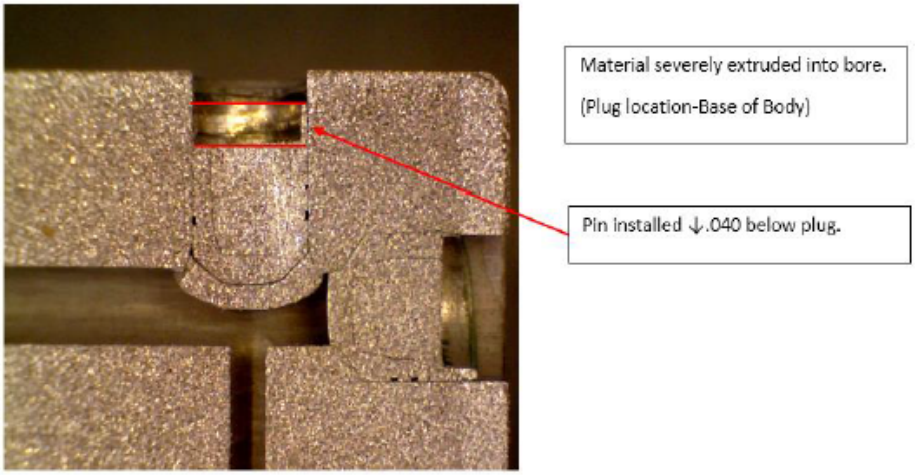

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Figure 3 – Sample Part – Over-Depth Lee Plug Installation
(Representative of Worst Case Measurement Observed at Moog)

ISSUE DATE: June 11. 2018

Lee Plug Recall RGA Form

Customer Information:

Company	
ADDRESS-1:	
ADDRESS-2	
CITY	
STATE/PROV	
POSTAL CODE	
COUNTRY	
CONTACT:	
PHONE:	
FAX:	
EMAIL:	

How to return valves covers under the 'Lee Plug Recall'

1. Complete this RGA form.
2. Print this RGA form and include a copy in each shipping box returning to Moog.
3. Return the valve to the address below via Moog's UPS account 1185544.
4. E-mail your Sales Administrator the tracking number for the return shipment.

Return Address:

Moog Inc
Industrial Group
Attn: Lee Plug Recall
300 Jamison Road, Building 11D
Elma, NY 14059

MOOG PART NO.	SERIAL NO.	QTY	DETAILED REASON FOR RETURN

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