
AIRWORTHINESS DIRECTIVE

On the effective date specified below, and for the reasons set out in the background section, the CASA delegate whose signature appears below revokes Airworthiness Directive (AD) AD/FSM/31 Amdt 2 under subregulation 39.001 (1) of CASR 1998 and subsection 33 (3) of the *Acts Interpretation Act 1901*, and issues the following AD under subregulation 39.001 (1) of CASR 1998. The AD requires that the action set out in the requirement section (being action that the delegate considers necessary to correct an unsafe condition) be taken in relation to the aircraft or aeronautical product mentioned in the applicability section: (a) in the circumstances mentioned in the requirement section; and (b) in accordance with the instructions set out in the requirement section; and (c) at the time mentioned in the compliance section.

**AD/FSM/31
Amdt 3**

Fuel Injection Servo Plugs

21/2013

Applicability: This AD applies to the following reciprocating engines with an installed Precision Airmotive LLC RSA-5 or RSA-10 series, or Bendix RSA-5 or RSA-10 series, fuel injection servo, having a servo plug gasket, part number (*P/N*) 365533, that was installed under the fuel injection servo plug, P/N 383493, on or after 22 August 2006:

- (a) Lycoming Engines IO, (L)IO, TIO, (L)TIO, AEIO, AIO, IGO, IVO, and HIO series reciprocating engines;
- (b) Teledyne Continental LTSIO-360-RB and TSIO-360-RB reciprocating engines;
- (c) Superior Air Parts, Inc. IO-360 series reciprocating engines.

This AD also applies to any other Precision Airmotive LLC RSA-5 or RSA-10 series, or Bendix RSA-5 or RSA-10 series, fuel injection servo that was received for installation on an engine on or after 22 August 2006 without a P/N 2577258 gasket and does not have a letter “G” on the fuel injection servo plug, P/N 383493.

This AD also applies to any other Precision Airmotive LLC RSA-5 or RSA-10 series, or Bendix RSA-5 or RSA-10 series, fuel injection servo if the installation history of the fuel injection servo is not known.

Requirement:

1. The registered operator of an aircraft fitted with an aeronautical product to which this AD applies (the *registered operator*) must inspect the fuel injection servo plug, P/N 383493, for looseness, by attempting to turn it by hand, while being careful not to damage the safety wire or seal. If the plug moves, it is loose.

If the plug is loose, the registered operator must carry out Requirement 2.

If the plug is not loose, the registered operator must repeat the inspection at the interval set out in the compliance section or carry out the mandatory terminating action in Requirement 3.

2. If the plug is found loose during the inspection detailed in Requirement 1, the registered operator must take all of the actions mentioned in paragraphs (a) to (j).
 - (a) Carefully cut and remove the safety wire that spans between the servo plug and regulator cover only.

AD/FSM/31 Amdt 3 (continued)

- (b) Remove the servo plug and gasket, P/N 365533, that is behind the plug. The gasket may be slightly stuck to the regulator cover.
 - (c) Examine the threads on the servo plug and regulator cover for damage. Threads should be smooth and consistent, with no burrs or chips. The servo plug outer diameter threads should also measure within 0.7419-0.7500 inch (18.84-19.05 mm).
 - (d) If the threads on either the servo plug or the regulator cover are damaged, or do not measure within the limits in Requirement 2(c) of this AD, the servo must not be installed and must be replaced before further flight.
 - (e) Replace the gasket, P/N 365533, with a new improved gasket, P/N 2577258.
 - (f) While the hex plug is removed, stamp or scribe the letter "G" onto the face of the hex plug in accordance with Precision Airmotive LLC Mandatory Service Bulletin No. PRS-107 Revision 4, dated 16 July 2008 (the *MSB*).
 - (g) When reassembling, do not install any servo plug or regulator cover that is not eligible for installation. Install a new gasket, P/N 2577258, onto the servo plug and reassemble the servo plug to the regulator cover.
 - (h) Torque the servo plug to a new, higher torque of 90-100 in-lbs, to maintain the proper clamp-up force between the plug and cover.
 - (i) Safety wire the servo plug to the regulator cover screws using wire with between 0.015 and 0.025 inch diameter in accordance with the *MSB*.
 - (j) Inspect all other safety wires on the servo. Replace any that are damaged.
3. The mandatory terminating action for the repetitive inspections required for compliance with Requirement 1, is that the registered operator must replace all servo plug gaskets, P/N 365533, that are installed on servos affected by this AD, with gasket, P/N 2577258, in accordance with the actions mentioned paragraphs (a) to (j) of Requirement 2.
4. A person must not install a gasket, P/N 365533, onto any fuel injection servo.

Later revisions of the *MSB*, approved by the United States Federal Aviation Administration (*FAA*) as an Alternate Method of Compliance to *FAA* AD 2009-02-03 are considered acceptable for compliance with the equivalent requirements of this AD.

Note 1: Refer to FAA AD 2009-02-03 Amdt 39-15793 dated 13 January 2009, which supersedes FAA AD 2008-08-14.

Note 2: A special flight permit may be issued to reposition aircraft for compliance with Requirement 1 following a specified check of the servo plug by the pilot in command. No special flight permit can be issued for compliance with other requirements of this AD.

AD/FSM/31 Amdt 3 (continued)

Compliance: For Requirement 1:

- (a) before further flight after 23 February 2009, unless previously accomplished;
and
- (b) until the P/N 365533 gasket is replaced with a P/N 2577258 gasket, repeat the inspection at the earlier of the following:
 - (i) every engine oil change;
 - (ii) every 50 flight hours.

For Requirement 2 - before further flight.

For Requirement 3 - by 31 December 2009.

For Requirement 4 - after 23 February 2009.

The effective date of this AD is 18 October 2013.

Background: Servo plug gaskets, P/N 365533, are identified as being made of either a paper or fibre material, impregnated with synthetic rubber. They are relatively flexible and have a rough surface.

Servo plug gaskets, P/N 2577258, are identified as being made of metal with a coating of synthetic rubber. They are relatively rigid and have a smooth surface.

The FAA received 18 reports of fuel injection servo plugs, P/N 383493, that had loosened or completely backed out of the threaded plug hole on the regulator cover of the fuel injection servo.

AD/FSM/31, which became effective on 14 March 2008, was intended to prevent a lean running engine, which could result in a substantial loss of engine power and subsequent loss of control of the aeroplane.

AD/FSM/31 Amdt 1, which became effective on 9 May 2008, included an alternative means of compliance and terminating action as detailed in Precision Airmotive Service Bulletin PRS-107. The service bulletin provided for different inspection intervals and also a terminating action to the repeat inspection intervals.

AD/FSM/31 Amdt 2, which became effective on 23 February 2009, made changes to the applicability section to clarify Teledyne Continental engine models and to include Bendix RSA-5 and RSA-10 servos. Replacement and fitment requirements associated with gasket P/N 365533 were also added.

AD/FSM/31 Amdt 3 (continued)

This AD, AD/FSM/31 Amdt 3, makes an editorial correction to the associated FAA AD references and other editorial changes. There is no technical change to the requirements and no change to the compliance from the previous amendment. Compliance with the previous amendment of this AD constitutes compliance with this amendment.

A handwritten signature in black ink, appearing to read 'MH' or similar initials, with a stylized flourish at the end.

Mike Higgins
Delegate of the Civil Aviation Safety Authority

10 October 2013