
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 1 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 the 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.

Fuel Supply and Metering Equipment

**AD/FSM/31
Amdt 2**

Fuel Injection Servo Plugs

**3/2009
TX**

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:

- i) That was received for installation on an engine on or after August 22, 2006 without a P/N 2577258 gasket and it does not have a letter "G" on the fuel injection servo plug, P/N 383493; or
- ii) Any fuel injection servo that the installation history is not known.

Requirement: 1. 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, carry out Requirement 2.

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

Fuel Supply and Metering Equipment

AD/FSM/31 Amdt 2 (continued)

2. If the plug is found loose during the inspection detailed in Requirement 1, do the following:
 - a) Carefully cut and remove the safety wire that spans between the servo plug and regulator cover only.
 - 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 Requirements 2c) of this AD, the servo is not eligible for any installation 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. Information on stamping or scribing can be found in Precision Airmotive LLC Mandatory Service Bulletin (MSB) No. PRS-107 Revision 4, dated 16 July, 2008.
 - 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 with 0.015 thru 0.025 inch diameter wire to the regulator cover screws. Information on properly safety wiring the plug can be found in Precision Airmotive LLC MSB No. PRS-107, Revision 4.
 - j) Inspect all other safety wire on the servo. Replace any that are damaged.
3. As mandatory terminating action to the repetitive inspections required for compliance with Requirement 1, replace all servo plug gaskets, P/N 365533 that are installed on servos affected by this AD, with gasket, P/N 2577258. Use Requirement 2, to do the gasket replacements.
4. Do not install gasket, P/N 365533, onto any fuel injection servo.

Fuel Supply and Metering Equipment

AD/FSM/31 Amdt 2 (continued)

Identification of Servo Plug Gaskets

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.

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

Note 1: FAA AD 2009-03-02 Amdt 39-15793 dated 13 January 2009 refers. This AD 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.

Compliance: For Requirement 1:

- a) Before further flight after 23 February 2009, unless previously accomplished.
- b) Repeat the inspection at every engine oil change or within every 50 flight hours, whichever occurs first, until the P/N 365533 gasket is replaced with a gasket, P/N 2577258.

For Requirement 2 - Before further flight.

For Requirement 3 - By 31 December 2009.

For Requirement 4 - After 23 February 2009.

This Amendment becomes effective on 23 February 2009.

Background: The FAA received eighteen 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. The original issue of this Directive 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.

Fuel Supply and Metering Equipment

AD/FSM/31 Amdt 2 (continued)

Amendment 1 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.

This amendment includes:

- Changes to the applicability section to clarify TCM engine models.
- Includes Bendix RSA-5 and RSA-10 servos.
- Replacement of the P/N 365533 gasket if the servo plug is found loose.
- Replacement of all P/N 365533 gaskets prior to 31 December 2009.
- Prohibits the fitment of P/N 365533 gaskets.

The original issue of this AD became effective on 14 March 2008.

Amendment 1 of this AD became effective on 9 May 2008.



Dinh Nguyen:
Delegate of the Civil Aviation Safety Authority

30 January 2009