EMERGENCY AIRWORTHINESS DIRECTIVE

Aircraft Certification Service
Washington, DC

U.S. Department
of Transportation
**Federal Aviation
Administration**

We post Emergency ADs on the internet at www.faa.gov/aircraft/safety/alerts.

DATE: March 12, 2008
AD #: 2008-06-51

This emergency airworthiness directive (AD) 2008-06-51 is sent to all owners and operators of Lycoming Engines IO, (L)IO, TIO, (L)TIO, AEIO, AIO, IGO, IVO, and HIO series reciprocating engines, Teledyne Continental Motors (TCM) TSIO-360-RB reciprocating engines, and Superior Air Parts, Inc. IO-360 series reciprocating engines with certain Precision Airmotive LLC RSA-5 and RSA-10 series fuel injection servos.

Background

This emergency AD results from eighteen reports of fuel injection servo plugs, part number (P/N) 383493, that had loosened or completely backed out of the threaded plug hole on the regulator cover of the fuel injection servo. These servo plugs were installed with servo plug gasket, P/N 365533, under the plug hex-head. Precision Airmotive LLC investigated and determined that servo plug gasket, P/N 365533, can shrink from engine heat, causing the plug to lose torque against the servo regulator cover, allowing the plug to vibrate out. The threads on the plugs were also found damaged. Servo plug gaskets, P/N 365533, installed on RSA-5 and RSA-10 series fuel injection servos since August 22, 2006, are made of a different material than the previous gasket part number used. This condition, if not corrected, could result in a substantial loss of engine power and subsequent loss of control of the airplane.

Explanation of Relevant Service Information

We have reviewed Precision Airmotive LLC Mandatory Service Bulletin (MSB) No. PRS-107, Revision 1, dated March 6, 2008. The MSB describes procedures for inspecting servo plugs for looseness and damage, inspecting the servo regulator cover threads for damage, on fuel injection servos that have a servo plug gasket, P/N 365533, installed, inspecting the gasket for damage, reinstalling acceptable parts, and torquing the servo plug to a new, higher torque to help maintain the proper clamp-up force against the plug and cover.

Interim Action

These actions are interim actions and we might take additional rulemaking actions in the future.

FAA's Determination and Requirements of the Rule

We have identified an unsafe condition that is likely to exist or develop on other RSA-5 and RSA-10 series fuel injection servos of this same type design. This AD requires inspecting servo plugs for looseness and damage on fuel injection servos that have a servo plug gasket, P/N 365533,

installed, inspecting the servo regulator cover threads for damage, inspecting the gasket for damage, reinstalling acceptable parts, and torquing the servo plug to a new, higher torque to help maintain the proper clamp-up force against the plug and cover.

Interim Action

The actions required by this AD must be done by an FAA-licensed mechanic.

Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, Section 106, describes the authority of the FAA Administrator. Subtitle VII, Aviation Programs, describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701, "General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Determination of Rule's Effective Date

We are issuing this AD under 49 U.S.C. Section 44701 according to the authority delegated to me by the Administrator, and it is effective immediately upon receipt.

2008-06-51 Precision Airmotive LLC: Docket No. 2008-NE-10-AD.

Effective Date

(a) Emergency AD 2008-06-51, issued on March 12, 2008, is effective upon receipt.

Affected ADs

(b) None.

Applicability

(c) This AD applies to the following reciprocating engines with an installed Precision Airmotive LLC, RSA-5 or RSA-10 series fuel injection servo, having a servo plug gasket, part number (P/N) 365533, installed under the fuel injection servo plug, P/N 383493:

(1) Lycoming Engines IO, (L)IO, TIO, (L)TIO, AEIO, AIO, IGO, IVO, and HIO series reciprocating engines, regardless of displacement, either new, rebuilt, overhauled, or repaired since August 22, 2006, and/or with an affected fuel injection servo installed either new, rebuilt, overhauled, or repaired since August 22, 2006.

(2) Teledyne Continental TSIO-360-RB reciprocating engines, either new, rebuilt, overhauled, or repaired since August 22, 2006, and/or with an affected fuel injection servo installed either new, rebuilt, overhauled, or repaired since August 22, 2006.

(3) Superior Air Parts, Inc. IO-360 series reciprocating engines, either new, rebuilt, overhauled, or repaired since August 22, 2006, and/or with an affected fuel injection servo installed either new, rebuilt, overhauled, or repaired since August 22, 2006.

(4) This AD also applies to any other Precision Airmotive LLC fuel injection servos received since August 22, 2006, or any fuel injection servos that have had the fuel injection servo plug, P/N 383493, removed during maintenance since August 22, 2006.

Unsafe Condition

(d) This AD results from 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. We are issuing this AD to prevent a lean running engine, which could result in a substantial loss of engine power and subsequent loss of control of the airplane.

Compliance

(e) You are responsible for having the actions required by this AD performed before further flight, unless the actions have already been done. The actions required by this AD must be done by an FAA-licensed mechanic.

Initial Inspection

(f) 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.

(g) If the plug is not loose, go to paragraph (i) of this AD.

(h) If the plug is loose, do the following:

(1) Carefully cut and remove the safety wire that spans between the servo plug and regulator cover only.

(2) Remove the servo plug while ensuring that the gasket, P/N 365533, that is behind the plug, is not lost. The gasket may be slightly stuck to the regulator cover.

(3) 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.

(4) If the threads on either the servo plug or the regulator cover are damaged, or do not measure within the limits in paragraph (h)(3) of this AD, the servo is not eligible for any installation and must be replaced before further flight.

(5) Inspect the gasket, P/N 365533, for tears and other damage. We are allowing the re-use of undamaged gaskets. Replace damaged gaskets with a new gasket, P/N 365533.

(6) When reassembling, do not install any servo plug or regulator cover that is not eligible for installation. Install the gasket onto the servo plug and reassemble the servo plug to the regulator cover.

(7) Torque the servo plug to a new, higher torque of 90-100 in-lbs, to help maintain the proper clamp-up force against the plug and cover.

(8) Safety wire the servo plug with 0.025-inch diameter wire to the regulator cover. Information on properly safety wiring the plug can be found in Precision Airmotive LLC Mandatory Service Bulletin No. PRS-107, Revision 1, dated March 6, 2008.

(9) Inspect all other safety wire on the servo. Replace any that are damaged.

Repetitive Inspections

(i) At every engine oil change or within every 50 hours of engine run time, whichever occurs first, repeat the inspection and remedial steps specified in paragraphs (f) through (h)(9) of this AD.

Special Flight Permits Prohibited

(j) Under 14 CFR part 39.23, we are prohibiting special flight permits.

Alternative Methods of Compliance

(k) The Manager, Seattle Aircraft Certification Office, may approve alternative methods of compliance for this AD if requested using the procedures found in 14 CFR 39.19.

Related Information

(l) Precision Airmotive LLC Mandatory Service Bulletin No. PRS-107, Revision 1, dated March 6, 2008, pertains to the subject of this AD. You can get the service information identified in this AD from http://www.precisionairmotive.com.

Contact Information

(m) For further information, contact:

(1) For Precision Airmotive LLC, Richard Simonson, Aerospace Engineer, Propulsion Branch, FAA, Transport Airplane Directorate, 1601 Lind Avenue SW, Renton, Washington 98055; e-mail: Richard.simonson@faa.gov; telephone: (425) 917-6507; fax: (425) 917-6590.

(2) For Lycoming Engines, Norm Perenson, Aerospace Engineer, New York Aircraft Certification Office, FAA, Engine & Propeller Directorate, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; e-mail: Norman.perenson@faa.gov; telephone: (516) 228-7337; fax: (516) 794-5531.

(3) For Teledyne Continental Motors, Kevin Brane, Aerospace Engineer, Atlanta Aircraft Certification Office, FAA, Small Airplane Directorate, One Crown Center, 1895 Phoenix Blvd., Suite 450, Atlanta, GA 30349; e-mail: kevin.brane@faa.gov; telephone: (770) 703-6063; fax: (770) 703-6097.

(4) For Superior Air Parts, Inc., Tausif Butt, Aerospace Engineer, Special Certification Office, FAA, Rotorcraft Directorate, Southwest Regional Headquarters, 2601 Meacham Blvd., Fort Worth, Texas 76137; e-mail: Tausif.butt@faa.gov; telephone (817) 222-5195; fax (817) 222-5785.

Issued in Burlington, Massachusetts, on March 12, 2008.

Robert J. Ganley,
Acting Manager, Engine and Propeller Directorate,
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