

SERVICE INFORMATION NO. SI 40-073

NOTE: SI's are used **only**:

- 1) To distribute information from DAI to our customers.
 - 2) To distribute applicable information / documents from our suppliers to our customers with additional information.
- Typically there is no revision service for SI's. Each new information or change of that will be send along with a new SI.

I. TECHNICAL DETAILS

1.1 Airplanes affected:

All DA 40 airplanes

1.2 Subject:

FAA Emergency Airworthiness Directive No. 2008-06-51

1.3 Reason:

The FAA has published the airworthiness directive (AD) 2008-06-51 which mandates inspections and if necessary corrective actions.

1.4 Information:

For detailed information see FAA Emergency Airworthiness Directive No. 2008-06-51, which is applicable without any further additions or restrictions.

II. OTHERS

The FAA Emergency Airworthiness Directive No. 2008-06-51 is attached to this SI.

In case of doubt contact Precision Airmotive LLC or Diamond Aircraft Industries GmbH.

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,
Aircraft Certification Service.



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FAA-PMA FACILITY #PQ111NM

MANDATORY Service Bulletin Fuel Systems

ENGINEERING ASPECTS OF THIS
BULLETIN ARE FAA APPROVED

Bulletin No.: PRS-107
Revision No: 1
Date: 3/6/08

SUBJECT: HEX PLUG 383493 COMING LOOSE FROM REGULATOR COVER

A. EFFECTIVITY:

All aircraft with RSA-5 or RSA-10 series Fuel Injection Servos which have had a new, rebuilt, overhauled, or repaired engine and/or servo installed since August 22, 2006.

B. REASON:

Precision Airmotive has recently learned of two incidents relating to its RSA fuel injection servos. In both cases the brass hex plug p/n 383493 on the cover of the regulator was found hanging from the safety wire, out of the hole, with damaged threads. In one instance the condition was found on the ground while troubleshooting a lean running condition. In the second instance the occurrence is believed to have happened in the air while flying at cruise power. The aircraft in the latter instance experienced a significant loss of power and misfiring while in flight. An off airport landing was made, resulting in considerable damage to the aircraft. The servos in these incidents had between 200 and 300 hours TSN. Precision Airmotive issued a Safety Alert on 3/3/08 requiring inspection of these plugs for looseness. Precision has now received additional reports of loose plugs on RSA-5 and RSA-10 servos on various different aircraft models. Precision Airmotive has determined that the gasket p/n 365533 located between the hex plug p/n 383493 and the servo regulator cover can shrink from engine heat which can cause the hex plug to lose torque against the regulator cover. The material in these gaskets was changed beginning August 22, 2006, and the gaskets that have been identified as experiencing shrinkage were all comprised of the new gasket material.

This bulletin identifies affected servos and provides information for immediate inspection and a temporary repair until a new gasket material is selected or another long term solution is established.

C. COMPLIANCE:

IMMEDIATE ACTION REQUIRED PRIOR TO NEXT FLIGHT: Immediately inspect all aircraft with RSA-5 or RSA-10 servos which have had a new, rebuilt, overhauled, or repaired engine and/or servo installed since August 22, 2006 to determine if the brass regulator hex plug is loose.

CONTINUED ACTION REQUIRED: Until a long term solution is found continue periodic inspections to determine if the hex plug is loose. Such inspections must occur at whichever comes first – at every oil change or every 50 hours of engine run time.

D. INSPECTION:**DO NOT FLY YOUR AIRCRAFT UNTIL THE SERVO PLUG HAS BEEN INSPECTED.**

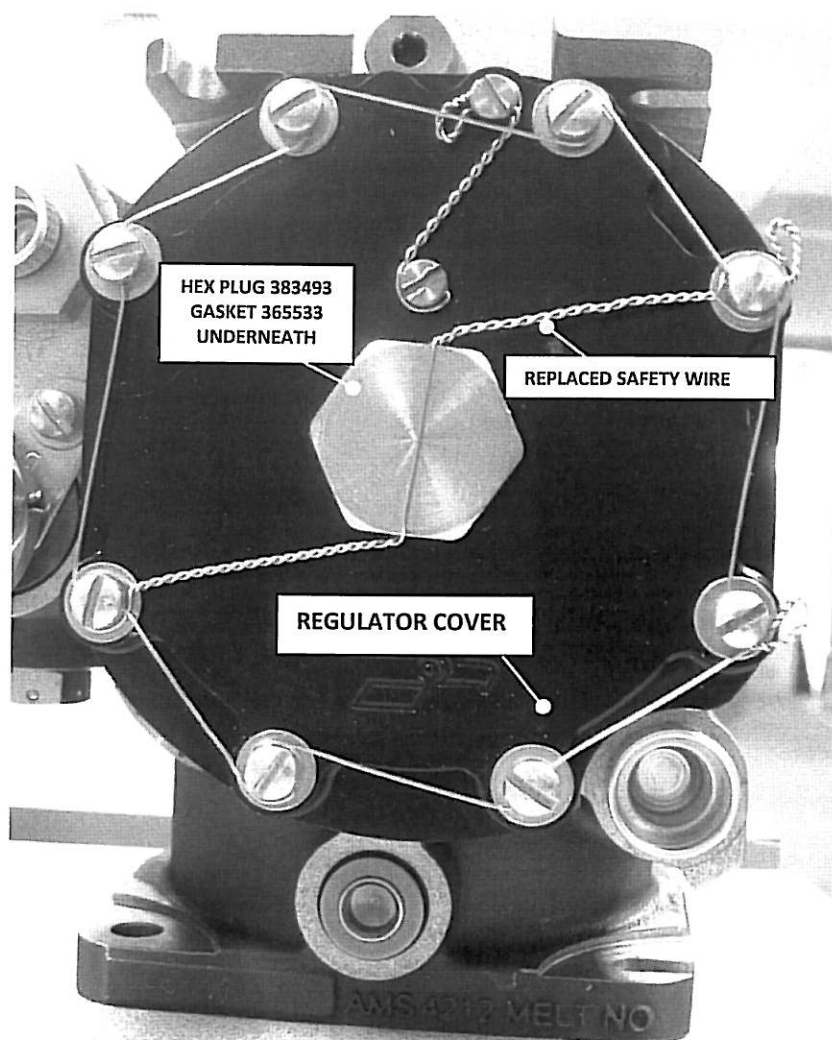
Determining if the plug is loose requires more than just a visual inspection. The inspection should be accomplished by attempting to turn the plug by hand, while taking care not to damage the safety wire or seal

IF THE PLUG IS LOOSE, DO NOT FLY YOUR AIRCRAFT UNTIL THE ISSUE IS RESOLVED AS SET FORTH IN THIS SERVICE BULLETIN.**E. ACTION IF HEX PLUG IS NOT FOUND LOOSE.**

1. Enter in the Engine log book the date in which the plug was inspected per PRS-107 and indicate that the plug was NOT loose.
2. Continued action is required per section C.

F. ACTION IF HEX PLUG IS FOUND LOOSE:

1. Carefully cut and remove the safety wire that spans between the hex plug 383493 and regulator cover only.
2. Remove hex plug while ensuring that gasket 365533 that is behind the plug is not lost. The gasket may be slightly stuck to regulator cover.
3. Examine the threads on the hex plug and regulator cover for damage. Threads should be smooth, consistent, with no burrs or chips. The hex plug outer diameter threads should also measure within .7419-.7500 inches.
4. If the threads on either the hex plug or regulator cover are damaged or don't measure within the aforementioned dimensions the servo must be removed and sent to Precision Airmotive for repair.
5. If the threads on both the hex plug and the regulator cover are acceptable. Inspect the gasket 365533 for tears and other damage. If the gasket is damaged acquire a new gasket from Precision Airmotive distribution.
6. With an acceptable hex plug, an acceptable regulator cover, and an acceptable gasket, install the gasket over the hex plug and install plug into the regulator cover. Torque the hex plug to 90-100 in-lbs.
7. The hex plug must be safety wired with .025 inch diameter wire to the regulator cover as shown in the figure below. The wire shall pass thru the plug such that it pulls the plug in the tightened direction and does not touch the corners of the hex on the plug.
8. Ensure that any other safety wire on the servo that may have been damaged when removing the hex plug safety wire is replaced.
9. Enter in the engine log book the date in which the plug was inspected, torqued, and safety wired per this service bulletin PRS-107.
10. Continued action is required per section C.



Note: Plug safety wire is wrapped around regulator screws under existing wire. It does not go through the holes in the screws.

G. **SECTION IV – WARRANTY INFORMATION:**

If your servo was manufactured or rebuilt by Precision Airmotive during this time period, Precision will provide a reimbursement to the aircraft owner of up to \$100 per servo for resolution of this problem. A listing of the serial numbers manufactured or rebuilt by Precision Airmotive during this time may be found on our website at www.precisionairmotive.com. Please note that this listing is NOT a complete list of servos that may contain this gasket. Servos overhauled or repaired by other repair stations during this time period may also contain this part and must comply with this bulletin.

Contact Information: Precision Airmotive LLC
Product Support Department
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