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FAA-PMA FACILITY #PQ111NM

# MANDATORY Service Bulletin Fuel Systems

Bulletin No.: PRS-107

Revision No.: 4

Date: 7/16/08

ENGINEERING ASPECTS OF THIS  
BULLETIN ARE FAA APPROVED

**SUBJECT:     HEX PLUG 383493 COMING LOOSE FROM REGULATOR COVER**

**NOTE:   THE FAA SEATTLE AIRCRAFT CERTIFICATION OFFICE HAS  
APPROVED THIS BULLETIN AS AN ALTERNATE METHOD OF  
COMPLIANCE TO EMERGENCY AD 2008-06-51 ON APRIL 16, 2008.**

**A. EFFECTIVITY:**

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

This bulletin does NOT apply if:

- 1) The gasket (part number 365533) under the regulator hex plug was shipped by Precision Airmotive prior to August 22, 2006.
- 2) The servo has the letter "G" marked on the regulator hex plug and gasket part number 2577258 has been installed.
- 3) The servo contains a regulator hex plug gasket manufactured by an FAA-PMA approved source other than Precision Airmotive. Continued airworthiness instructions for those non Precision Airmotive gaskets should be obtained from the manufacturer.

**NOTE:** If there is any doubt about whether one of the above three exceptions apply, this service bulletin is mandatory and must be complied with.

**NOTE:** This service bulletin applies to all Precision Airmotive AND all Bendix RSA-5 and RSA-10 series Fuel Injection Servos unless one of the above three exceptions apply.

**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 repair.

**C. COMPLIANCE:**

**IMMEDIATE ACTION REQUIRED PRIOR TO NEXT FLIGHT:** Unless already accomplished in accordance with PRS-107 Rev 1, PRS-107 Rev 2, PRS-107 Rev 3, or FAA AD 2008-06-51, immediately inspect all aircraft or engine with RSA-5 or RSA-10 series servos which have had a new, rebuilt, overhauled, or repaired servo installed after August 22, 2006 that cannot be confirmed to have had gasket p/n 2577258 installed under the hex plug, to determine if the brass regulator hex plug is loose.

**CONTINUED ACTION REQUIRED:** Until terminating action is accomplished (see section G) continue periodic inspections to determine if the hex plug is loose.

1. If the plug HAS NOT BEEN re-torqued per section F, such inspections must occur at every oil change or every 50 hours of engine run time, whichever comes first.
2. If the plug HAS BEEN re-torqued per section F, such inspections must occur at every annual inspection or every 120 hours of engine run time, whichever comes first.

**WARNING**  
***THESE PERIODIC INSPECTIONS MUST BE CONTINUED UNTIL***  
***TERMINATING ACTION PER SECTION G BELOW IS ACCOMPLISHED.***

**TERMINATING ACTION:** Accomplishment of the terminating action per section G is required to eliminate the repetitive inspections required above. Once section G has been completed, no further action is required.

**D. INSPECTION:**

**WARNING**  
***DO NOT FLY YOUR AIRCRAFT UNTIL THE REGULATOR***  
***HEX 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 move the plug with a single finger. Do not use a wrench or apply significant torque to the plug. If the plug does not move, it is acceptable.

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

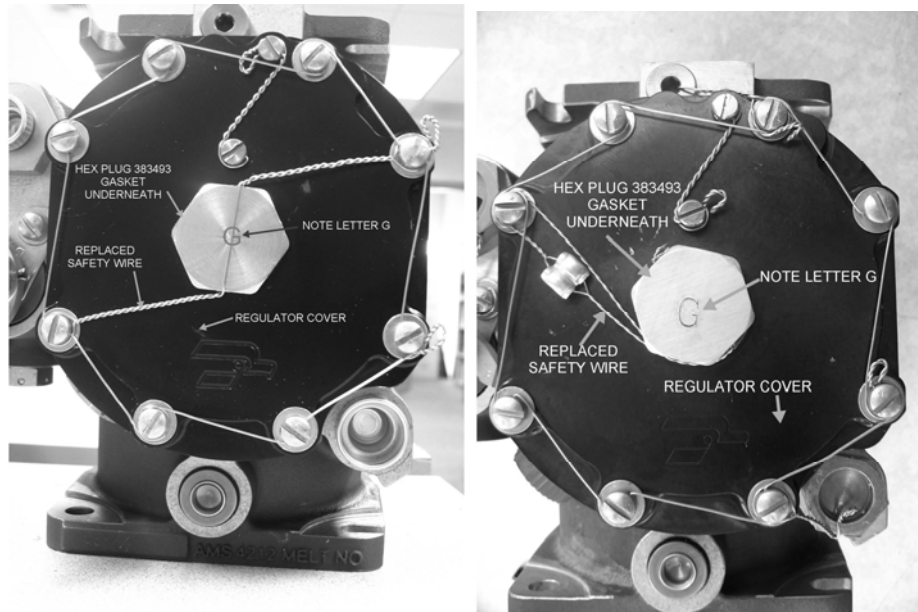
**E. ACTION IF HEX PLUG IS **NOT** FOUND LOOSE.**

1. Enter in the Engine log book the date in which the plug was inspected per PRS-107 Revision 4 and indicate that the plug was NOT loose.
2. Continued action is required per section C. In order to eliminate the need for continued inspection, proceed as directed in section G.

**F. ACTION IF HEX PLUG IS FOUND LOOSE:**

NOTE: If replacement gasket p/n 2577258 gasket is available, install it per section G. If replacement gasket is not available, remove, inspect, and reinstall plug and gasket per this section.

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 not show signs of excessive wear. The hex plug outer diameter threads should also measure within .7400-.7500 inches. If the condition of the threads is suspect, please contact Precision Airmotive Product Support.
4. If the threads on either the hex plug or regulator cover are excessively worn or don't measure within the aforementioned dimensions the servo must be removed and sent to Precision Airmotive or an authorized repair station 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 .015 thru .025 inch diameter wire to the regulator cover as shown in the photos on the next page. The wire shall pass thru the plug such that it pulls the plug in the tightened direction and does not rest on the corners of the hex on the plug (it is acceptable to wrap under the corners of the hex plug). These photos are just two examples of acceptable safety methods. Other safety wire methods such as those described in FAA AC 43-13-1B (or latest revision) are also acceptable.
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 Revision 4.
10. Continued action is required per section C. In order to eliminate the need for continued inspection, proceed as directed in section G.



Note: The safety wire through the hex plug shown in the left hand photo is .025" wire wrapped around regulator screws under existing wire. It does not go through the holes in the screws. The safety wire through the hex plug shown in the right hand photo is .015" wire which passes through the regulator screw hole. This is the normal safety wire method used at the factory.

**IMPORTANT:** The letter "G" shown in the photos is to be stamped **ONLY** if the new gasket, part number 2577258 has been installed.

#### **G. TERMINATING ACTION:**

1. Carefully cut and remove the safety wire that spans between the hex plug 383493 and regulator cover only.
2. Remove hex plug.
3. Examine the threads on the hex plug and regulator cover for damage. Threads should not show signs of excessive wear. The hex plug outer diameter threads should also measure within .7400-.7500 inches. If the condition of the threads is suspect, please contact Precision Airmotive Product Support.
4. If the threads on either the hex plug or regulator cover are excessively worn or don't measure within the aforementioned dimensions the servo must be removed and sent to Precision Airmotive or an authorized repair station for repair.
5. If the threads on both the hex plug and the regulator cover are acceptable, obtain a new gasket, part number 2577258 from Precision Airmotive. Discard the 365533 gasket.
6. Stamp or scribe the letter "G" onto the face of the hex plug as shown in the sample photos. This shall be done with the plug removed from the servo. **DO NOT** stamp the plug with it installed in the servo.

**NOTE:** The "G" marked on the hex plug indicates that the new 2577258 gasket has been installed. All servos manufactured/rebuilt/overhauled/repared after June 30, 2008 must use the new 2577258 gasket and must be marked with the "G" on the regulator hex plug.

7. With an acceptable hex plug, and an acceptable regulator cover, install the 2577258 gasket over the hex plug and install plug into the regulator cover. Torque the hex plug to 90-100 in-lbs.
8. Safety wire the plug as described in section F, paragraph 7.
9. Ensure that any other safety wire on the servo that may have been damaged when removing the hex plug safety wire is replaced.
10. Enter in the engine log book the date the 2577258 gasket was installed per this Service Bulletin PRS-107 Revision 4.

H. **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](http://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  
(360)651-8282

PARTS AVAILABILITY: As of March 21, 2008, gasket part number 365533 is no longer available from Precision Airmotive. The new gasket, part number 2577258 is available and should be used in place of 365533. Service Information Letter RS-87 has been published with instructions for use.

**NOTE:** All servos overhauled or repaired by repair stations after June 30, 2008 MUST use the new 2577258 gasket. After this date the 365533 gasket MAY NO LONGER BE INSTALLED.