



AVStar Fuel Systems, Inc.
1365 Park Lane South
Jupiter, FL 33458

FAA Repair Station V1RR580Y
www.avstardirect.com

SERVICE BULLETIN

FUEL SERVOS INSTALLED IN AN UPDRAFT CONFIGURATION

DOCUMENT: AFS-SB10

REVISION: ORIGINAL

ISSUED: DECEMBER 5, 2013

PAGE: 1 OF 3

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1. APPLICABILITY

This Service Bulletin applies to AVStar manufactured RSA-5AD1 and RSA-10AD1 servos mounted in an updraft configuration

2. REASON FOR PUBLICATION

There have been occasional reports of servo equipped engines that exhibit one or more of the following characteristics - gradually deteriorating idle, difficulty starting and/or cold engine acceleration performance. These engines may have the servo mounted in an updraft, or nearly updraft configuration. Close inspection of the servo may reveal oily contaminant in the bore of the servo that is green/blue in color. It is also possible for this contaminant to migrate into the air section of the regulator.

3. TIMING FOR COMPLIANCE

3.1 **AT THE OWNER'S DISCRETION** – but recommended if the oily has accumulated around the slots in the venturi

4. PROCESS FOR COMPLIANCE

4.1 Inspection Instructions

4.1.1 Ensure that the bore of the servo is clearly visible in order to determine the extent of the rectification work required. If practical, the servo can be inspected in situ after removal of the air intake duct.



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4.1.2 Remove the two (2) taper screws and the one screw/washer assembly that retain the venturi. They are located along the body of the servo on the side opposite to the servo regulator.

4.1.3 Taking great care to avoid any damage to the four (4) impact air tubes, place both thumbs inside the venturi and pull the venturi out of the servo body

4.1.4 Inspect the "O" rings and the cavities on the outer diameter of the venturi to determine if there is any oily contaminant present

4.2 If NO oily contaminant is found

4.2.1 The "O" rings should be removed and the venturi thoroughly cleaned and dried. New "O" rings should be pre-lubricated with ASTM #5 oil (applied very sparingly) and then installed onto the venturi. The venturi should then be re-installed into the bore of the servo. Ensure that the impact tubes are facing out of the servo bore and align the threaded hole with the hole in the body and re-install the screw and washer. Torque the screw to 15-20 in-lb (1.69-2.26 N-m).

4.2.1.1 "O" Ring Part Numbers

RSA-5AD1 P/N AV951437

RSA-10AD1 P/N AV2526429

4.2.2 Install the two (2) taper seat screws and tighten to 30-40 in-lb (3.39-4.52 N-m). Safety wire all three screws together using 0.025" diameter aircraft stainless steel lock wire to MS20995-C25

4.3 IF OILY CONTAMINANT IS FOUND

4.3.1 Return the servo complete to AVStar or an AVStar approved overhaul and repair facility for cleaning and flow re-calibration to approved specifications



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5. REFERENCES

- 5.1 Field Service Manual – RSA-5AD1 (latest revision)
- 5.2 Field Service Manual – RSA-10AD1 (latest revision)



Service Information Letter - Fuel Systems

SIL RS-40 Revision 1

SMALL RECIPROCATING ENGINES

RSA-5

Issued 9/1/04

Page 1 of 2

SUBJECT: Service Information For RSA-5 Series Fuel Injection Servos Installed In Updraft Configuration.

PURPOSE: To inform operators that the factory has received sporadic reports of thick, oily contamination in the air section of servo regulators.

Change 1: Revises applicability from aerobatic aircraft to updraft configuration.

- A. **EFFECTIVITY:** This Service Information Letter is applicable to all RSA-5AD1 and RSA-5AB1 fuel injection servos installed in updraft configuration.
- B. **REASON:** Precision Airmotive has received sporadic reports from the field of hard starting, rough idle, and poor acceleration on certain fuel injection servos. These servos are typically installed on Lycoming engines with the servo in the updraft configuration (mounted to the bottom of the sump). Disassembly of servos removed from these aircraft has occasionally revealed a red or blue/green, thick, oily residue behind the venturi and in the air section of the servo regulator. This contamination appears to enter the induction system and travel down the walls of the manifold where it can enter the servo through the venturi slots.
- C. **COMPLIANCE:** At owners discretion if symptoms in Paragraph D, ACCOMPLISH INSTRUCTIONS, are noted.
- D. **ACCOMPLISH INSTRUCTIONS:** Operators experiencing hard starting, rough idle, or poor acceleration, especially when the engine is cold, should inspect the interior of the intake manifold and venturi for evidence of contamination. If it appears that oil has accumulated around the venturi slots, removal of the venturi for cleaning and inspection as described in Paragraph E is recommended. If removal of the venturi reveals an accumulation (pool) of oil behind the venturi, removal of the servo for cleaning and flow test by an approved overhaul facility may be required.

NOTE: A slight oil film on the walls of the intake manifold and venturi is common in many installations and does <u>not</u> warrant removal of the venturi or fuel servo.

- E. **INSPECTION INSTRUCTIONS:**
1. Remove intake duct or airbox in order to gain access to injection servo venturi. Refer to airframe or engine maintenance manual.
 2. Remove two taper screws and one screw with washer located along body, opposite of regulator section.

3. Place both thumbs inside of venturi throat and pull venturi out of body. **Do not pry on, pull, or otherwise damage the four impact tubes.**
4. Inspect the rings around the outside of the venturi for evidence of heavy contamination.
5. If an accumulation of oil is found behind the venturi and the operator is experiencing hard starting, rough idle, or poor acceleration, removal of the servo for cleaning and flow test is recommended. If there is no accumulation of oil behind the venturi, the venturi should be cleaned and reinstalled as described below.
6. Lubricate three new venturi O'rings with engine oil and install in O'ring grooves. (O'ring grooves in the venturi do not have air passages) See Paragraph F for applicable O'ring part numbers.
7. Insert the end of the venturi opposite the four impact tubes into the main body assembly. Align the threaded hole in the venturi with the hole in the body and install the screw and washer. Torque screw to 15-20 in-lb.
8. Install taper seat screws and torque to 30-40 in-lb. Safety wire all three screws together using standard shop practices with .026 inch diameter corrosion resistant steel lockwire.
9. Reinstall intake duct or airbox per applicable airframe or engine maintenance manual.
10. Make an appropriate log book entry.

F. PARTS REQUIRED:

RSA-5 Series	951437	Venturi O'ring	3 ea.
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Precision Airmotive parts can be ordered from your local aircraft parts distributor. For further information please contact Precision Airmotive Product Support at (360) 651-8282, or your nearest factory approved overhaul facility.