

Service Information Letter - Fuel Systems

SMALL RECIPROCATING ENGINES

All RSA

Issued 12/12/06

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SUBJECT: Cleaning of Contaminated Fuel Injection Systems

PURPOSE: To provide additional information regarding inspecting and cleaning fuel injection systems that may have been exposed to possible contamination.

- A) **EFFECTIVITY:** This service Information Letter is applicable to RSA fuel injection systems.
- B) **DESCRIPTION:** Precision Airmotive LLC has learned of situations where the fuel injection system has been contaminated with foreign objects, including from contaminated fuel and during maintenance/installation. Contamination can have adverse affects on the performance of the engine, including the servo, and must be eliminated. This SIL provides instructions for inspecting and cleaning systems with suspected contamination.
- C) **PROCEDURE:** The following are guidelines for inspecting and cleaning fuel injection systems when it is suspected that the system may have been exposed to possible contamination.
- 1) **SERVO:** The fuel injection servo shall be completely disassembled, including all subassemblies that have contact with fuel, inspected, cleaned and damaged parts, if any, replaced. In doing so, ensure as follows:
 - a. When cleaning the main body of the servo ensure that ALL fuel passageways, including the UN-metered passageways, are cleaned, flushed, and unobstructed. ALL fuel plugs and fittings must be removed to allow inspection of each passageway.
 - b. The diaphragms must be gently flexed where the rubber meets the metal washer to look for hidden contamination. Also, carefully check the diaphragms for damage caused by contaminates. If there is any question about the condition of the diaphragm, it should be replaced.
 - c. The mixture control lever assembly and idle lever assembly can also house hidden contaminates because of the number and type of parts that are assembled. Carefully inspect each part after complete disassembly.
 - d. The servo seat must be removed to inspect the passages underneath.
 - e. Carefully inspect 90° fittings and internal passages where two passages meet. This is an area where contaminates can be trapped.
 - f. Any part with questionable wear or any evidence of damage must be replaced.

After inspecting and cleaning, the servo shall be reassembled and calibrated per the applicable service manual (See 15-895) using the calibration limits (not service limits).

- 2) **FLOW DIVIDER:** The flow divider shall be completely disassembled, including all subassemblies, inspected, cleaned and damaged parts, if any, replaced. In doing so, ensure as follows:
 - a. ALL fittings and plugs in the flow divider need to be removed. Behind each of the fittings a small pocket may exist where contaminants can hide. All small holes in the flow divider need to be cleaned, flushed and inspected to ensure no contaminants are in the small passageways.
 - b. The diaphragm/piston assembly shall be disassembled to allow careful inspection of the diaphragm. If there is any question about the condition of the diaphragm, or any other part, it should be replaced.

After inspecting and cleaning, the flow divider shall be reassembled per the applicable service manual (See 15-895).

- 3) **NOZZLES:** Nozzles may be cleaned using standard maintenance procedures.
- 4) **OTHER COMPONENTS:** It is very important that the source of the contamination be identified and eliminated. ALL fuel lines, fittings, and other components downstream of the contamination source must be thoroughly inspected and completely cleaned prior to the **reinstallation** of the fuel injection system to preclude recontamination of the system.