



SIL RS-96

Service Information Letter - Fuel Systems

SMALL RECIPROCATING ENGINES

RSA-5AD1

Issued 11-03-2009

Page 1 of 4

**SUBJECT: Service Information for RSA-5AD1 Fuel Injection Servo
Parts List 2524939-2**

PURPOSE: To provide repair shops with flow bench limits and service information for RSA-5AD1 fuel injection servo parts list 2524939-2.

- A. **EFFECTIVITY:** This Service Information Letter is applicable to all RSA-5AD1 fuel injection servos, parts list 2524939-2. These servos are installed on Lycoming TIO-360 engines.
- B. **DESCRIPTION:** Revised Calibration and Service limits to current settings.
- C. **DETAILED INSTRUCTIONS:** The service information found in manual 15-381G Revision 1 for parts list 2524939-2 is applicable except as follows:

Reference manual 15-381G Revision 1, , Calibration and Service Limits:

| Specification Type | Applicable Figure | Old Test Specification | New Test Specification |
|--------------------|-------------------|------------------------|------------------------|
| Calibration Limits | 1321 | 11298-01 | 11298-02 |
| Service Limits | 1304 | 9872-01 | 30091-01 |

These specifications supersede all previous specifications and are included with this service information letter, see pages 3 & 4.

2. Reference manual 15-381G Revision 1, History of Changes:

Issue 2

| <u>Date</u> | <u>IC Number</u> | <u>Description</u> |
|-------------|------------------|---|
| 9-27-00 | 6 | Calibration Limits T.S. 11298-02 was 11298-01 Service Limits T.S. 30091-01 was 9872-01 |
| 10-16-02 | 6 | Added optional Main Body 2577186 & optional Regulator Cover 2577194 |
| 5-1-08 | 7 | Hex Plug gasket 2577258 was 365533 |

11298-02
9/28/00 ^{gsh}

TEST SPECIFICATION
CALIBRATION LIMITS
PRECISION AIRMOTIVE CORPORATION - FUEL CONTROLS -MARYSVILLE, WASHINGTON

INSTALLATION PARTS LIST: _____ MODEL: RSA-5AD1 SERIAL NUMBER: _____

OPERATOR: _____ DATE: _____

BASIC PARTS LISTS: 2524938 FUEL PRESSURE: 19-21 PSI FUEL SP. GRAV. _____ @ _____ °F

| | 1 | 2 | 3 | 4 |
|--|------|----------|------|-------|
| METERING SUCTION (INCHES OF WATER) | 0 | 0 | 4.3 | 17.7 |
| CORRESPONDING AIRFLOW (LBS/HR) | 0 | 0 | 500 | 1000 |
| MIXTURE CONTROL POSITION | RICH | ICO | RICH | RICH |
| THROTTLE POSITION | W/O | W/O | W/O | W/O |
| FLOWMETER LIMITS | | | | |
| MINIMUM OBSERVED (LBS/HR) | 26.0 | 0 | 50.9 | 103.7 |
| MAXIMUM OBSERVED (LBS/HR) | 33.0 | 5 cc/min | 54.1 | 108.0 |
| BURETTE TIME LIMITS (Using MIL-C-7024 Type II STODDARD) | | | | |
| BURETTE VOLUME (cc) | 200 | | 300 | 850 |
| MINIMUM OBSERVED (SECONDS) | 37.0 | | 33.8 | 48.0 |
| MAXIMUM OBSERVED (SECONDS) | 46.9 | | 36.0 | 50.0 |
| METERING HEAD AVG OBSERVED (" STODDARD) | | | | |
| | | | 10.4 | 45.0 |

- PROCEDURE FOR SPLIT HEAD CHECK
1. Close throttle to .008" shim in bore.
 2. Adjust idle fuel flow to 8.0 - 9.0 lbs/hr with wheel centered. Observe metering head. Energize boost pump to provide 35 - 40 psi. After stabilizing, fuel flow must be within $\pm .5$ lbs/hr of value observed at specified fuel inlet pressure. Turn boost pump off.
 3. Remove .008" shim.
 4. Close throttle so that fuel flow is 4.0 - 5.0 lbs/hr. Observe metering head. Metering head shall be no more than 5" above value observed in step 2.

30091-01
9/27/00 ASHT

TEST SPECIFICATION
SERVICE LIMITS
PRECISION AIRMOTIVE CORPORATION - FUEL CONTROLS - MARYSVILLE, WASHINGTON

INSTALLATION PARTS LIST: _____ MODEL: RSA-5AD1 SERIAL NUMBER: _____

OPERATOR: _____ DATE: _____

BASIC PARTS LISTS: 2524938 FUEL PRESSURE: 19-21 PSI FUEL SP. GRAV. _____ @ _____ °F

| TEST POINT NUMBER | 1 | 2 | 3 | 4 |
|--|------|-----|------|-------|
| METERING SUCTION (INCHES OF WATER) | 0 | 0 | 4.3 | 17.7 |
| CORRESPONDING AIRFLOW (LBS/HR) | 0 | 0 | 500 | 1000 |
| MIXTURE CONTROL POSITION | RICH | ICO | RICH | RICH |
| THROTTLE POSITION | W/O | W/O | W/O | W/O |
| <u>FLOWMETER LIMITS</u> | | | | |
| MINIMUM OBSERVED (LBS/HR) | 24.0 | 0 | 48.9 | 101.7 |
| MAXIMUM OBSERVED (LBS/HR) | 35.0 | | 56.1 | 110.0 |
| <u>BURETTE TIME LIMITS (Using MIL-C-7024 Type II STODDARD)</u> | | | | |
| BURETTE VOLUME (cc) | 200 | | | |
| MINIMUM OBSERVED (SECONDS) | 34.9 | | 300 | 850 |
| MAXIMUM OBSERVED (SECONDS) | | | 32.6 | 47.2 |
| METERING HEAD AVG OBSERVED (" STODDARD) | | | 37.4 | 51.0 |
| | | | 10.4 | 45.0 |

PROCEDURE FOR SPLIT HEAD CHECK

1. Close throttle to .006" shim in bore.
2. Adjust idle fuel flow to 7 - 9 lbs/hr with wheel centered. Observe metering head. Energize boost pump to provide 35 - 40 psi. After stabilizing, fuel flow must be within $\pm .5$ lbs/hr of value observed at specified fuel inlet pressure. Turn boost pump off.
3. Remove .006" shim.
4. Close throttle so that fuel is less than 6 lbs/hr. Observe metering head. Metering head shall be no more than 5" above value observed in step 2.