PRECISION AIRMOTIVE LLC

# Service Information Letter - Fuel Systems

**SIL RS-79**

SMALL RECIPROCATING ENGINES
RSA-5AB1
Issued 1/5/05


## SUBJECT: Service Information for RSA-5AB1 Fuel Injection Servo Parts List 2576628-1.

PURPOSE: To provide repair shops with flow bench limits and service information for RSA-5AB1 fuel injection servo, parts list 2576628-1.

A. EFFECTIVITY: This service Information Letter is applicable to RSA-5AB1 fuel injection servos, identified with parts list 2576628-1.

B. DESCRIPTION: The service information found in manual 15-419D (02/24/90) for parts list 2524199-13 is applicable to parts list 2576628-1 except as follows:

1. Reference manual 15-419D, IPL, Figure 1:

| Item Number | 2524199-13 Part Number | 2576628-1 Part Number | Description |
|---|---|---|---|
| 1 | 2524199-13 | 2576628-1 | Servo, Fuel Injection |
| 20 | 2663787-004 | 367719 | Elbow, Bulkhead |
| 21 | n/a | 951787 | Packing, Preformed |
| 22 | n/a | 367720 | Nut, Flared Tube |
| 25 | 2525202 | 2538889 | Adapter |
| 60 | 2538889 | 2525202 | Plug |
| 75 | 2523184 | 2577087 | Lever, Mixture control |
| 90 | 2523183 | 2577090 | Lever, Throttle |
| 105 | 2524524-N | 2576508-C | Fuel Injector Assembly |

2. Reference manual 15-419D, IPL, Figure 3:

| Item Number | 2524199-13 Part Number | 2576628-1 Part Number | Description |
|---|---|---|---|
| 115 | 2523719 | 2577022 | Idle Lever Assembly |
| 180 | 2523317 | 2529155 | Idle Valve |

3. Reference manual 15-419D, Calibration and Service Limits:

| Specification Type | Test Specification |
|---|---|
| Calibration | 30026-01 |
| Service | 30027-01 |

These Specifications are included with this service information letter; see pages 3 and 4

4. Reference manual 15-419D, History of Changes

| Date | IC Number | Description |
|---|---|---|
| Issue 1 | | |
| 04-16-02 | 7 | Released to Production. |

# TEST SPECIFICATION
# FLOW BENCH LIMITS

**30026-01**
RSH 7/21/95

## PRECISION AIRMOTIVE CORPORATION - AIRCRAFT FUEL INJECTION - EVERETT, WASHINGTON

**MODEL:** RSA-5AB1 **SERIAL NUMBER:** _____

**OPERATOR:** _____ **DATE:** _____ **INSTALLATION PARTS LIST:** _____

**BASIC PARTS LISTS:** 2576508 **FUEL PRESSURE:** 20 ± 1 PSI **ENGINE MFG:** TEXTRON LYCOMING

LIMITS BASED ON .734 SPECIFIC GRAVITY AT 75°F ± 5°F (NAPTHA)

| TEST POINT NUMBER | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| METERING SUCTION (INCHES OF WATER) | 0 | 0 | 4.2 | 24.5 |
| CORRESPONDING AIRFLOW (LBS/HR) | 0 | 0 | 600 | 1400 |
| MIXTURE CONTROL POSITION | RICH | ICO | RICH | RICH |
| **FLOWMETER LIMITS** | | | | |
| MIN ALLOWABLE FUEL FLOW | 26.0 | 0 | 50.0 | 127.0 |
| OBSERVED FUEL FLOW (LBS/HR) | | | | |
| MAX ALLOWABLE FUEL FLOW | 35.0 | 5 CC/MIN | 54.5 | 132.0 |
| **BURRETTE TIME LIMITS** | | | | |
| BURRETTE VOLUME | *200* | | *300* | *850* |
| MINIMUM TIME | 33.3 | | 32.1 | 37.5 |
| OBSERVED (SECONDS) | | | | |
| MAXIMUM TIME | 44.8 | | 35.0 | 39.0 |
| METERING HEAD ("NAP) AVG | 2.3 | | 13.8 | 65 |
| OBSERVED METERING HEAD | | | | |

1. CLOSE THROTTLE TO .006" SHIM IN BORE.
2. ADJUST IDLE FUEL TO 9.0-11.0 LRS/HR WITH WHEEL CENTERED. OBSERVE METERING HEAD AND FUEL FLOW. ENERGIZE BOOST PUMP TO PROVIDE INSTANTANEOUS 35-40 PSI. AFTER STABILIZING, FUEL FLOW MUST BE WITHIN ± 0.5 LBS/HR OF VALUE RECORDED AT 26 ± 1 PSI. TURN BOOST PUMP OFF.
3. REMOVE .006" SHIM.
4. CLOSE THROTTLE TO 5.0-7.0 LBS/HR FUEL FLOW. METERING HEAD INCREASE (FROM VALUE RECORDED IN STEP 2) MUST BE LESS THAN 5.0" FUEL.

TEST SPECIFICATION
SERVICE LIMITS

**30027-01**
RSA 7/21/95

PRECISION AIRMOTIVE CORPORATION - AIRCRAFT FUEL INJECTION - EVERETT, WASHINGTON

**MODEL:** RSA-5AB1 **SERIAL NUMBER:** _____

**OPERATOR:** _____ **DATE:** _____ **INSTALLATION PARTS LIST:** _____

**BASIC PARTS LISTS:** 2576508 **FUEL PRESSURE:** 20 ± 1 PSI **ENGINE MFG:** TEXTRON LYCOMING

LIMITS BASED ON .734 SPECIFIC GRAVITY AT 75°F ± 5°F (NAPTHA)

| TEST POINT NUMBER | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| METERING SUCTION (INCHES OF WATER) | 0 | 0 | 4.2 | 24.5 |
| CORRESPONDING AIRFLOW (LBS/HR) | 0 | 0 | 600 | 1400 |
| MIXTURE CONTROL POSITION | RICH | ICO | RICH | RICH |
| **FLOWMETER LIMITS** | | | | |
| MIN ALLOWABLE FUEL FLOW | 24.0 | 0 | 49.0 | 125.0 |
| OBSERVED FUEL FLOW (LBS/HR) | | | | |
| MAX ALLOWABLE FUEL FLOW | 37.0 | 5 CC/MIN | 56.0 | 134.0 |
| **BURRETTE TIME LIMITS** | | | | |
| BURRETTE VOLUME | *200* | | *300* | *850* |
| MINIMUM TIME | 31.5 | | 31.2 | 37.0 |
| OBSERVED (SECONDS) | | | | |
| MAXIMUM TIME | 48.5 | | 35.7 | 39.6 |
| METERING HEAD ("NAP) AVG | 2.3 | | 13.8 | 65 |
| OBSERVED METERING HEAD | | | | |

1. CLOSE THROTTLE TO .006" SHIM IN BORE.
2. ADJUST IDLE FUEL TO 9.0-11.0 LRS/HR WITH WHEEL CENTERED. OBSERVE METERING HEAD AND FUEL FLOW. ENERGIZE BOOST PUMP TO PROVIDE INSTANTANEOUS 35-40 PSI. AFTER STABILIZING, FUEL FLOW MUST BE WITHIN ± 0.5 LBS/HR OF VALUE RECORDED AT 26 ± 1 PSI. TURN BOOST PUMP OFF.
3. REMOVE .006" SHIM.
4. CLOSE THROTTLE TO 5.0-7.0 LBS/HR FUEL FLOW. METERING HEAD INCREASE (FROM VALUE RECORDED IN STEP 2) MUST BE LESS THAN 5.0" FUEL.