

# Service Information Letter - Fuel Systems

SMALL RECIPROCATING ENGINES

RSA-10AD1

Issued 11/21/02

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**SUBJECT: Service Information for RSA-10AD1 Fuel Injection Servo  
Parts List 2576566-1.**

**PURPOSE:** To provide repair shops with flow bench limits and service information for RSA-10AD1 fuel injection servo parts list 2576566-1.

- A. **EFFECTIVITY:** This Service Information Letter is applicable to all RSA-10AD1 fuel injection servos, parts list 2576566-1. These servos are installed on Lycoming AEIO-540-L engines.
- B. **DESCRIPTION:** The service information found in manual 15-433D Revision 1, for parts list 2524030-11 is applicable to parts list 2576566-1 except as follows:

1. Reference manual 15-433D, IPL, Figure 1:

Item Number	2576566-1 Part Number	Description
1	2576566-1	Fuel Injector Servo
30	2523903	Adapter, Fuel Inlet
55	2538890	Plug, Machine 3/4-16
75	2540174	Bolt, Idle Speed
85	2521196	Lever
100	2523899	Lever, Mixture Control
110	2576565-A	Fuel Injector Assembly

2. Reference manual 15-433D, IPL, Figure 3:

Item Number	2576566-1 Part Number	Description
20	2523909	Lever Assembly, Idle Valve
25	2523986	Stem, Idle Valve
160	2577117	Valve, Lower Idle

3. Reference manual 15-433D, IPL, Figure 5:

Item Number	2576566-1 Part Number	Description
10	2523910	Valve, Throttle
30	2523911	Stop, Throttle
70	2525928	Body Assembly, Main

## 4. Reference manual 15-433D, Calibration and Service Limits:

Specification Type	2576566-1 Test Specification	Applicable Figure
Calibration Limits	30086	New
Service Limits	30087	New

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

## 5. Reference manual 15-433D, History of Changes:

<u>Date</u>	<u>IC Number</u>	<u>Description</u>
<u>Issue 1</u>		
9-13-99	1	Released to production

**30086-01**  
09/18/02

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

INSTALLATION PARTS LIST: \_\_\_\_\_ MODEL: RSA-10AD1 SERIAL NUMBER: \_\_\_\_\_

OPERATOR: \_\_\_\_\_ DATE: \_\_\_\_\_

BASIC PARTS LISTS: 2576565 FUEL PRESSURE: 25-27 PSI FUEL SP. GRAV. \_\_\_\_\_ @ \_\_\_\_\_ OF

TEST POINT NUMBER	1	2	3	4	5
METERING SUCTION (INCHES OF WATER)	0	0	3.2	9.8	12.8
CORRESPONDING AIRFLOW (LBS/HR)	0	0	800	1400	1600
MIXTURE CONTROL POSITION	RICH	ICO	RICH	RICH	RICH
THROTTLE POSITION	W/O	W/O	W/O	W/O	W/O
<u>FLOWMETER LIMITS</u>					
MINIMUM OBSERVED (LBS/HR)	50.0	0	72.0	117.0	134.0
MAXIMUM OBSERVED (LBS/HR)	56.0	5 cc/min	79.0	121.0	138.0
<u>BURETTE TIME LIMITS (Using MIL-C-7024 Type II STODDARD)</u>					
BURETTE VOLUME (cc)	300		500	850	850
MINIMUM OBSERVED (SECONDS)	32.7		38.6	42.8	37.6
MAXIMUM OBSERVED (SECONDS)	36.6		42.4	44.3	38.7
<u>METERING HEAD AVG OBSERVED (" STODDARD)</u>	6.4		12.5	30.0	38.5

USE YELLOW EFFORT SPRING REFERENCE BLUE HEAD SPRING

PROCEDURE FOR SPLIT HEAD CHECK

1. Close throttle to .006" shim in bore.
2. Adjust idle fuel flow to 6.4-7.2 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.

**30087-01**  
09/18/02

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

INSTALLATION PARTS LIST: \_\_\_\_\_ MODEL: RSA-10AD1 SERIAL NUMBER: \_\_\_\_\_

OPERATOR: \_\_\_\_\_ DATE: \_\_\_\_\_

	1	2	3	4	5
BASIC PARTS LISTS: 2576565					
FUEL PRESSURE: 25-27 PSI					
FUEL SP. GRAV.					
			@		
<b>METERING SUCTION (INCHES OF WATER)</b>	0	0	3.2	9.8	12.8
<b>CORRESPONDING AIRFLOW (LBS/HR)</b>	0	0	800	1400	1600
<b>MIXTURE CONTROL POSITION</b>	RICH	ICO	RICH	RICH	RICH
<b>THROTTLE POSITION</b>	W/O	W/O	W/O	W/O	W/O
<b>FLOWMETER LIMITS</b>					
MINIMUM	48.0	0	70.0	115.0	132.0
OBSERVED (LBS/HR)					
MAXIMUM	58.0	5 cc/min	81.0	123.0	140.0
<b>BURETTE TIME LIMITS (Using MIL-C-7024 Type II STODDARD)</b>					
BURETTE VOLUME (cc)	300		500	850	850
MINIMUM	31.6		37.6	42.2	37.1
OBSERVED (SECONDS)					
MAXIMUM	38.1		43.6	45.1	39.3
<b>METERING HEAD AVG</b>					
OBSERVED (" STODDARD)	6.4		12.5	30.0	38.5