



SIL RS-97

Service Information Letter - Fuel Systems

SMALL RECIPROCATING ENGINES

RSA-10ED2

Issued 4/23/09

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**SUBJECT: Service Information for RSA-10ED2 Fuel Injection Servo
Parts List 2524791-7.**

PURPOSE: To provide repair shops with flow bench limits and service information for RSA-10ED2 fuel injection servo parts list 2524791-7.

- A. EFFECTIVITY: This Service Information Letter is applicable to all RSA-10ED2 fuel injection servos, parts list 2524791-7. These servos are installed on Lycoming TIO-540-R series engines.
- B. REASON: To revise Calibration and Service limits to current settings
- C. COMPLIANCE: This change is non-mandatory and may be accomplished at overhaul or at the owner's discretion.
- D. DESCRIPTION: The service information found in manual 15-700A for parts list 2524791-7 is applicable except as follows:

Reference manual 15-700A Change 1, Calibration and Service Limits:

Specification Type	Applicable Figure	Old Test Specification	New Test Specification
Calibration Limits	1301	11311-01	11311-03
Service Limits	1302	11314-01	11314-02

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

2. Reference manual 15-700A, History of Changes:

<u>Date</u>	<u>IC Number</u>	<u>Description</u>
<u>Issue 7</u>		
6-19-97	20	Venturi 2542034 was 2523969
5-9-00	20	Added optional constant head springs 2523387, 2520625, 2537779, 2523155 or 2541439
10-15-02	20	Added optional regulator cover 2577230
4-21-08	21	Gasket 2577258 was 365533
10-21-08	21	Calibration TS 11311-03 was 11311-01
2-23-09	21	Service limits TS 11314-02 was 11314-01

11311-03
Jim Hagan 10/21/08

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

INSTALLATION PARTS LIST: _____ MODEL: RSA-10ED2 SERIAL NUMBER: _____

OPERATOR: _____ DATE: _____

BASIC PARTS LISTS: 2524790 FUEL PRESSURE: 25-27 PSI FUEL SP. GRAV. _____ @ _____ OF _____

TEST POINT NUMBER	1	2	3	4
METERING SUCTION (INCHES OF WATER)	0	0	3.6	15.8
CORRESPONDING AIRFLOW (LBS/HR)	0	0	800	1700
MIXTURE CONTROL POSITION	RICH	ICO	RICH	RICH
THROTTLE POSITION	W/O	W/O	W/O	W/O

FLOWMETER LIMITS

MINIMUM OBSERVED (LBS/HR)	55.0	0	90.0	200.0	Note: For Calibration Enr. Adj. Closed
MAXIMUM OBSERVED (LBS/HR)	61.0	5 cc/min	97.0	208.0	
MINIMUM BURETTE VOLUME (cc)	300		500	1000	After Calibration
MAXIMUM BURETTE VOLUME (cc)	28.7		30.0	28.0	open Enr. to increase total flow to 216#/hr
MINIMUM METERING HEAD (AVG)	31.8		32.4	29.1	
MAXIMUM METERING HEAD (AVG)			7.0	36.0	

PROCEDURE FOR SPLIT HEAD CHECK

1. Close throttle to .006" shim in bore.
2. Adjust idle fuel flow to 5-6 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 4 lbs/hr. Observe metering head. Metering head shall be no more than 5" above value observed in step 2.

11314-02
Jim Gwin 2/23/09

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

INSTALLATION PARTS LIST: _____ MODEL: RSA-10ED2 SERIAL NUMBER: _____

OPERATOR: _____ DATE: _____

BASIC PARTS LISTS: 2524790 FUEL PRESSURE: 25-27 PSI FUEL SP. GRAV. _____ @ _____ °F

TEST POINT NUMBER	1	2	3	4
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METERING SUCTION (INCHES OF WATER) 0 0 3.6 15.8
 CORRESPONDING AIRFLOW (LBS/HR) 0 0 800 1700
 MIXTURE CONTROL POSITION RICH ICO RICH RICH
 THROTTLE POSITION W/O W/O W/O W/O

FLOWMETER LIMITS

MINIMUM OBSERVED (LBS/HR) 53.0 [] 0 [] 88.0 [] 198.0 []
 MAXIMUM OBSERVED (LBS/HR) 63.0 [] 5 cc/min [] 99.0 [] 210.0 []

BURETTE TIME LIMITS (Using MIL-C-7024 Type II STODDARD)

BURETTE VOLUME (cc) 300
 MINIMUM OBSERVED (SECONDS) 29.1 [] 30.8 [] 58.1 []
 MAXIMUM OBSERVED (SECONDS) 34.5 [] 34.7 [] 61.6 []

METERING HEAD AVG

OBSERVED (" STODDARD) [] 7.0 [] 36.0 []

PROCEDURE FOR SPLIT HEAD CHECK

1. Close throttle to .006" shim in bore.
2. Adjust idle fuel flow to 9.0 - 11.0 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 .006" shim.
4. Close throttle to 7.0 - 8.0 lbs/hr. Observe metering head. Metering head shall be no more than 5" above value observed in step 2.