



Service Information Letter - Fuel Systems

SMALL RECIPROCATING ENGINES

RSA-10ED1

Issued 1-26-2012

Page 1 of 4

SUBJECT: Service Information for RSA-10ED1 Fuel Injection Servo Parts Lists 2524273-12, 2524298-12, 2524420-11, 2524422-9, 2524491-9, 2524534-9, 2524556-9, 2524582-8, and 2524859-3.

PURPOSE: To provide repair shops with flow bench limits and service information for RSA-10ED1 fuel injection servo parts lists noted in subject line.

Revision 2: Added parts lists 2524422-9 and 2524852-8. Revised calibration limits are now 11277-03 and service limits are 10171-03.

Revision 1: Added parts lists 2524298-12, 2524420-11, 2524491-9, 2524534-9, 2524556-9, and 2524852-8.

- A. **EFFECTIVITY:** This Service Information Letter is applicable to all RSA-10ED1 fuel injection servos, parts lists noted in subject line. These servos are installed on Lycoming IO-540 and IO-720 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 15-458G for parts lists noted in the subject line are applicable except as follows:

- 1. Reference manual 15-458G Change 1, Calibration and Service Limits:

Specification Type	Applicable Figure	Old Test Specification	New Test Specification
Calibration Limits	1301	11277-01	11277-03
Service Limits	1302	10171-01	10171-03

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

2. Reference manual 15-458G, History of Changes for the following Parts Lists:

2524273-12	Issue 12	Uses basic assembly 2524648-N
2524298-12	Issue 12	Uses basic assembly 2524648-N
2524420-11	Issue 11	Uses basic assembly 2524648-N
2524422-9	Issue 9	Uses basic assembly 2524516-P
2524491-9	Issue 9	Uses basic assembly 2524648-N
2524534-9	Issue 9	Uses basic assembly 2524648-N
2524556-9	Issue 9	Uses basic assembly 2524648-N
2524582-8	Issue 8	Uses basic assembly 2524648-N
2524859-3	Issue 3	Uses basic assembly 2524516-P

3. History of Changes for Basic Assembly **2524516-P**

<u>Date</u>	<u>IC Number</u>	<u>Description</u>
6-17-97	41	Added optional venturi 2542034
4-9-98	42	Lower idle valve 2525236 was 2537665
8-3-04	42	Added optional regulator cover 2577230
4-21-08	43	Hex plug gasket 2577258 was 365533
10-19-09	44	Servo Stem Seal 2577245 Replaced Spring 2539560 and Seal 2539561
12-6-11	44	Added Optional Servo Body Assy 2577278
1-13-12	44	Flow Bench T.S. 11277-03 was 11299-01 Flow Bench T.S. 10171-03 was 9891-01

4. History of Changes for Basic Assembly **25245648-N**

<u>Date</u>	<u>IC Number</u>	<u>Description</u>
6-17-97	35	Added optional venturi 2542034
4-9-98	36	Lower idle valve 2525236 was 2537665
6-28-04	36	Added optional regulator cover 2577230
4-11-08	37	Hex plug gasket 2577258 was 365533
2-3-09	37	Flow Bench T.S. 11277-02 was 11277-01 Flow Bench T.S. 10171-02 was 10171-01
1-20-10	38	Servo Stem Seal 2577245 Replaced Spring 2539560 and Seal 2539561
2-8-11	38	Added Optional Servo Body Assy 2577255
1-13-12	38	Flow Bench T.S. 11277-03 was 11277-02 Flow Bench T.S. 10171-03 was 10171-02

11277-03

1-13-12

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

INSTALLATION PARTS LIST: _____ MODEL: RSA-10ED1 SERIAL NUMBER: _____

OPERATOR: _____ DATE: _____

BASIC PARTS LISTS: 2524516 FUEL PRESSURE: 25-27 PSI FUEL SP. GRAV. _____ @ _____ OF
 2524648

	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)	34.5	0	77.0	156.8
MAXIMUM OBSERVED (LBS/HR)	42.7	5 cc/min	82.0	163.5
BURETTE TIME LIMITS (Using MIL-C-7024 Type II STODDARD)				
BURETTE VOLUME (cc)	200		500	850
MINIMUM OBSERVED (SECONDS)	28.6		37.2	31.7
MAXIMUM OBSERVED (SECONDS)	35.4		39.6	33.1
METERING HEAD AVG OBSERVED (" STODDARD)				
			6.7	37.8

PROCEDURE FOR SPLIT HEAD CHECK

1. Close throttle to .006" shim in bore.
2. Adjust idle fuel flow to 9-11 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 7-8 lbs/hr. Observe metering head. Metering head shall be no more than 5" above value observed in step 2.

10171-03
Sub 1-13-12

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

INSTALLATION PARTS LIST: _____ MODEL: RSA-10ED1 SERIAL NUMBER: _____

OPERATOR: _____ DATE: _____

BASIC PARTS LISTS: 2524516 FUEL PRESSURE: 25-27 PSI FUEL SP. GRAV. _____ @ _____ °F
 2524648

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) 32.5 [] 0 [] 75.0 [] 154.8 []
 MAXIMUM OBSERVED (LBS/HR) 44.7 [] 5 cc/min [] 84.0 [] 165.5 []

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

BURETTE VOLUME (cc)
 MINIMUM OBSERVED (SECONDS) 200 [] 27.3 [] 500 [] 850 []
 MAXIMUM OBSERVED (SECONDS) 37.6 [] 36.3 [] 31.3 [] 33.5 []

METERING HEAD AVG OBSERVED (" STODDARD)
 6.7 [] 37.8 []