



SIL RS-77

Service Information Letter - Fuel Systems

SMALL RECIPROCATING ENGINES

RSA-7DA1

Issued 12/2/04

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SUBJECT: Service Information for RSA-7DA1 Fuel Injection Servo Parts List 2576514-1.

PURPOSE: To provide repair shops with flow bench limits and service information for RSA-7DA1 fuel injection servo, parts list 2576514-1

- A. **EFFECTIVITY:** This service Information Letter is applicable to RSA-7DA1 fuel injection servos, identified with parts list 2576514-1. These servos are installed on Continental TSIO-520-LB engines.
- B. **DESCRIPTION:** The service information found in manual 15-633B (4/15/89) for parts list 2524624-6 is applicable to parts list 2576514-1 except as follows:

1. Reference manual 15-633B, IPL, Figure 1:

Item Number	Old Part Number	New Part Number	Description
1	2524624-6	2576514-1	Fuel Injection Servo
110	2540175	2540391	Screw, Fillister Head
140	2524633-L	2576513-A	Servo, Basic Assembly

2. Reference manual 15-633B, IPL, Figure 4:

Item Number	Old Part Number	New Part Number	Description
170	MS171533	2541786	Pin

3. Reference manual 15-633B, Calibration and Service Limits:

Specification Type	Applicable Figure	Test Specification
Calibration	Figure 1301	30037-02 dated 7/25/96
Service	Figure 1302	30038-02 dated 7/25/96

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

4. Reference manual 15-633B, History of Changes

<u>Date</u>	<u>IC Number</u>	<u>Description</u>
<u>Issue 1</u>		
03-10-94	1	Released to Production.
08-23-95	2	Metering jet 390188-65 was 390188-58.
07-24-96	3	Calibration Limits T.S. 30037-02 was 30037-01, Service Limits T.S. 30038-02 was 30038-01.

30037-02
RSH 7-25-96

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

MODEL: RSA-7DA1 PARTS LIST: _____ SERIAL NUMBER: _____
DATE: _____ OPERATOR: _____

BASIC PARTS LIST: 2576513 FUEL PRESSURE: 25-27 PSI FUEL SP. GRAV. _____ @ _____ °F

TEST POINT NUMBER	1	2	3	4	5
METERING SUCTION (INCHES OF WATER)	0	0	2.0	10.0	36.5
CORRESPONDING AIRFLOW (LBS/HR)	0	0	450	1000	1850
MIXTURE CONTROL POSITION	RICH	ICO	ICO	RICH	RICH
THROTTLE POSITION	W.O.	W.O.	W.O.	W.O.	W.O.
<u>FLOWMETER LIMITS</u>					
MINIMUM OBSERVED (LBS/HR)	36.0	0	NOTE 1	94.0	189.0
MAXIMUM OBSERVED (LBS/HR)	42.0	5 cc/min		108.0	192.0
<u>BURETTE TIME LIMITS</u> (Using MIL-C-7024 Type II)					
BURETTE VOLUME (cc)	200			850	1000
MINIMUM OBSERVED (SECONDS)	29.1			48.0	31.8
MAXIMUM OBSERVED (SECONDS)	33.9			55.2	32.3
<u>METERING HEAD</u>					
AVG. OBSERVED (" NAPTHA)				48.0	

NOTE 1: FLOW MUST INCREASE A MINIMUM OF 5 LBS/HR ABOVE THE VALUE RECORDED IN TEST POINT 1.
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 ± .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 fuel flow. Observe metering head. Metering head shall be no more than 5" above value observed in step 2.

30038-02
25#7-25-96

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

MODEL: RSA-7DA1 PARTS LIST: _____ SERIAL NUMBER: _____

DATE: _____ OPERATOR: _____

BASIC PARTS LIST: 2576513 FUEL PRESSURE: 25-27 PSI ENGINE MFG: TELEDYNE CONTINENTAL MOTORS

TEST POINT NUMBER	1	2	3	4	5
METERING SUCTION (INCHES OF WATER)	0	0	2.0	10.0	36.5
CORRESPONDING AIRFLOW (LBS/HR)	0	0	450	1000	1850
MIXTURE CONTROL POSITION	RICH	ICO	RICH	RICH	RICH
THROTTLE POSITION	W.O.	W.O.	W.O.	W.O.	W.O.

FLOWMETER LIMITS

MINIMUM OBSERVED (LBS/HR)	35.1	0	NOTE 1	91.0	184.0
MAXIMUM OBSERVED (LBS/HR)	43.3	5 cc/min		111.0	198.0

BURETTE TIME LIMITS

BURETTE VOLUME (cc)	200			850	1000
MINIMUM OBSERVED (SECONDS)	27.0			46.7	30.8
MAXIMUM OBSERVED (SECONDS)	33.2			57.0	33.2

METERING HEAD

AVG. OBSERVED (" NAPTHA)				48.0	
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NOTE 1: FLOW MUST INCREASE A MINIMUM OF 3 LBS/HR ABOVE THE VALUE RECORDED IN TEST POINT 1.