

Service Information Letter - Fuel Systems

SMALL RECIPROCATING
ENGINES

RSA-5AB1

Issued 11-14-2024

Page 1 of 4

**SUBJECT: Service Information for RSA-5AB1 Fuel Injection Servo
Parts List 2524858-5.**

PURPOSE: To provide repair shops with flow bench limits and service information for RSA-5AB1 fuel injection servo parts list 2524858-5.

Revision 2 changes 2524858-4 to 2524858-5 and adds history of changes.

Revision 3 changes flow sheets from rev 01 to 02.

- A. **EFFECTIVITY:** This Service Information Letter is applicable to all RSA-5AB1 fuel injection servos, parts list 2524858-5. These servos are installed on Lycoming HIO-360-F engines.
- B. **DESCRIPTION:** The service information found in manual 15-419D Revision 1, for parts list 2524858-3 is applicable to parts list 2524858-5 except as follows:

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

Item Number	2524858-5 Part Number	Description
1F	2524858-5	Servo Fuel Injector
25	2538889	Plug
60	2538044	Adapter, Strainer
75	2521287	Lever, Mixture Control
85	2521196	Lever, Throttle Control
105D	2524882-H	Servo, Basic Assembly

2. Reference manual 15-419D Revision 1, IPL, Figure 3:

Item Number	2524858-5 Part Number	Description
180C	2541559	Valve, Lower Idle

3. Reference manual 15-419D Revision 1, Calibration and Service Limits:

Specification Type	2524858-5 Test Specification	Applicable Figure
Calibration Limits	30083-02 dated 11-6-24	Figure 1301
Service Limits	30084-02 dated 11-6-24	Figure 1302

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

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

<u>Date</u>	<u>IC Number</u>	<u>Description</u>
<u>Issue 4</u>		
10/5/94	9	Idle Valve 2577012 was 2541559, Calibration Limits T.S. 30047-01 was 11292-01, Service Limits T.S. 30048-01 was 10353-01
<u>Issue 5</u>		
2/20/98	12	Idle Valve 2541559 was 2577012
7/28/99	14	Calibration Limits T.S. 30083-01 was 30047-01, Service Limits T.S. 30084-01 was 30048-01
4-28-08	15	Gasket 2577258 was 365533
8-21-08	16	Bleed 360909-48 was -50
8-30-10	17	Dome seal 2577245 replaced 2539560 and 2539561
7-27-16	18	Bleed 360909 can be either -48 or -50, it was -48.
1-31-23	19	Precision's Airbox limits adjusted. On 11-6-24 the Calibration and Service limits changed from rev 01 to 02.

30083-02
D Middleton 11-6-2024

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

MODEL: RSA-5AB1 PARTS LIST: _____ SERIAL NUMBER: _____
 DATE: _____ OPERATOR: _____

	1	2	3	4
BASIC PARTS LIST: 2524882	FUEL PRESSURE: 19-21 PSI			
	FUEL SP. GRAV. _____ @ _____ ° F			
METERING SUCTION (INCHES OF WATER)	0	0	4.8	12.0
CORRESPONDING AIRFLOW (LBS/HR)	0	0	700	1400
MIXTURE CONTROL POSITION	RICH	ICO	RICH	RICH
THROTTLE POSITION	W.O.	W.O.	W.O.	W.O.
FLOWMETER LIMITS				
MINIMUM OBSERVED (LBS/HR)	40.0	0	65.0	112.0
MAXIMUM OBSERVED (LBS/HR)	44.0	5 cc/min	67.0	115.0
BURETTE TIME LIMITS (Using MIL-C-7024 Type II Stoddard)				
BURETTE VOLUME (cc)	300		500	850
MINIMUM OBSERVED (SECONDS)	41.6		45.5	45.1
MAXIMUM OBSERVED (SECONDS)	45.8		46.9	46.3
METERING HEAD				
AVG. OBSERVED ("STODDARD)	1.0		7.0	23.5
				42.0

PROCEDURE FOR SPLIT HEAD CHECK
 1. Close throttle to .020" (#76) drill in bore.
 2. Adjust idle fuel flow to 8.8-9.2 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 in let pressure. Turn boost pump off.
 3. Remove .020" drill
 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.

TEST SPECIFICATION
SERVICE LIMITS

30084-02

D 11-6-2024

PRECISION AIRMOTIVE CORPORATION - FUEL CONTROLS - ARLINGTON, WASHINGTON

MODEL: RSA-5AB1 PARTS LIST: _____ SERIAL NUMBER: _____
 DATE: _____ OPERATOR: _____

BASIC PARTS LIST: 2524882 FUEL PRESSURE: 19-21 PSI ENGINE MFG: TEXTRON LYCOMING

TEST POINT NUMBER	1	2	3	4	5
METERING SUCTION (INCHES OF WATER)	0	0	4.8	12.0	20.0
CORRESPONDING AIRFLOW (LBS/HR)	0	0	700	1100	1400
MIXTURE CONTROL POSITION	RICH	ICO	RICH	RICH	RICH
THROTTLE POSITION	W/O	W/O	W/O	W/O	W/O

FLOWMETER LIMITS

MINIMUM	38.0	0	63.0	110.0	153.0
OBSERVED (LBS/HR)	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
MAXIMUM	46.0	5 cc/min	69.0	117.0	163.0

BURETTE TIME LIMITS (Using MIL-C-7024D, TYPE II, Stoddard)

BURETTE VOLUME (cc)	300	500	850	850	850
MINIMUM	39.8	44.2	44.3	44.3	31.8
OBSERVED (SECONDS)	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
MAXIMUM	48.2	48.4	47.2	47.2	33.9
AVG.	1.0	7.0	23.5	23.5	42.0
OBSERVED ("STODDARD)	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

METERING HEAD

OBSERVED ("STODDARD)	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
----------------------	----------------------	----------------------	----------------------	----------------------	----------------------