

## **Service Information Letter - Fuel Systems**

## SIL RS-72

SMALL RECIPROCATING ENGINES
RSA-5AD1
Issued 5/27/03
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SUBJECT: Service Information for RSA-5AD1 Fuel Injection Servo Parts List 2576586-1.

PURPOSE: To provide repair shops with flow bench limits and service information for RSA-5AD1 fuel injection servo parts list 2576586-1.

- A. <u>EFFECTIVITY:</u> This Service Information Letter is applicable to all RSA-5AD1 fuel injection servos, parts list 2576586-1. These servos are installed on Lycoming HIO-360-G1A series engines.
- B. <u>DESCRIPTION</u>: The service information found in manual 15-381G Revision 1, for parts list 2524054-11 is applicable to parts list 2576586-1 except as follows:
  - 1. Reference manual 15-381G Revision 1, IPL, Figure 1:

Item	2576586-1	Description
Number	Part Number	
1	2576586-1	Servo Fuel Injector
20	2538889	Plug, Hex Head
45	2577188	Lever
50	2576585-A	Servo, Basic Assembly

2. Reference manual 15-381G Revision 1, IPL, Figure 2:

Item	2576586-1	Description
Number	Part Number	
15	2663787-004	Plug, Proctective
50	2525202	Adapter, Fuel Inlet Strainer

3. Reference manual 15-381G Revision 1, IPL, Figure 3:

Item Number	2576586-1 Part Number	Description
15	2523183	Lever, Throttle

4. Reference manual 15-381G Revision 1, IPL, Figure 5:

Item	2576586-1	Description
Number	Part Number	
180	2577198	Valve, Lower Idle

5. Reference manual 15-381G Revision 1, Calibration and Service Limits:

Specification Type	2576586-1 Test Specification	Applicable Figure
Calibration Limits	30105-01	New
Service Limits	30106-01	New

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

6. Reference manual 15-381G Revision 1, History of Changes:

<u>Date</u>	IC Number	<u>Description</u>
<u>Issue 1</u>		
5-29-02	1	Released to production

PURE STORY ILSTS: 27:688   PUBL PRESSURE: 19-21 PSI   PUBL. SP. CRAV.   (6)   OF	INSTALLATION PARTS LIST:	MODE	MODEL: RSA-5AD1	SERIAL NUMBER:		
NETERING SUCTION TO NUMBER   1	OPERATOR:	DATE				
TEST POINT NUMBER   1   2   3   4	FUEL	PRESSURE: 19-21 PSI			OF	
METERING SUCTION   0	TEST POINT NUMBER	1	2	3	4	S
CORRESPONDING         0         400         900         1           AIRFLOW (LBS/HR)         RICH         ICO         RICH         W/O         W/	METERING SUCTION (INCHES OF WATER)	0	0	1.9	10.4	26.2
NECH	CORRESPONDING AIRFLOW (LBS/HR)	0	0	400	006	1400
THROTTLE POSITION         W/O         W/O         W/O         W/O           FLOWMETER LIMITS         MINIMUM         25.0         0         32.5         62.5           MAXIMUM         29.0         5 cc/min         35.0         66.0         66.0           BURETTE TIME LIMITS         Using MIL-C-7024 Type II STODDARD)         200         500         500           BURETTE TIME LIMITS         Using MIL-C-7024 Type II STODDARD)         200         500         500           BURETTE VOLUME (cc)         200         34.9         46.2         500           BURETTE TIME LIMITS         Using MIL-C-7024 Type II STODDARD)         34.9         46.2           BURETTE TIME LIMITS         MAXIMUM         42.1         34.9         46.2           MAXIMUM         48.8         37.5         48.8         32.0           COCEDURE FOR SPLIT HEAD CHECK         Adjust tide for II both with wheel centered. Observe metering head. Energize boost pump to provide 35 - 40 psi. After stabilizing.           Adjust tide for II both with wheel centered. Observe metering head in the pressure Turn both pump of provide 35 - 40 psi. After stabilizing.	MIXTURE CONTROL POSITION	RICH	ICO	RICH	RICH	RICH
NINIMUM   25.0   0   32.5	THROTTLE POSITION	O/M	O/M	O/M	O/M	O/M
MINIMUM   25.0   0   32.5   62.5	FLOWMETER LIMITS					
OBSERVED (LBS/HR)         S cc/min         5 cc/min         5 cc/min         5 cc/min         66.0           BURETTE TIME LIMITS (Using MIL-C-7024 Type II STODDARD)           BURETTE TIME LIMITS (Using MIL-C-7024 Type II STODDARD)           BURETTE VOLUME (cc)         200         500	MINIMUM	25.0	0	32.5	62.5	0.86
BURETTE TIME LIMITS (Using MIL-C-7024 Type II STODDARD)         5 cc/min         55.0         66.0           BURETTE VOLUME (cc)         200         500         500           MINIMUM         42.1         34.9         46.2           MAXIMUM         48.8         48.8           MATERING HEAD AVG         7.2         48.8           COCEDURE FOR SPLIT HEAD CHECK           COSE throttle to .022" (#74) drill in bore.           Adjust idle flow to 11.0.1.0.1.0.1.0.1.0.1.0.1.0.1.0.1.0.1.	OBSERVED (LBS/HR)					
BURETTE TIME LIMITS (Using MIL-C-7024 Type II STODDARD)           BURETTE VOLUME (cc)         200         500           BURETTE VOLUME (cc)         200         500           MINIMUM         42.1         34.9         46.2           MAXIMUM         48.8         37.5         48.8           METERING HEAD AVG         7.2         48.8         37.5         48.8           COCEDURE FOR SPLIT HEAD CHECK         Colose throttle to .022" (#74) drill in bore.         32.0         32.0           Adjust idle fuel flow to 11.0-11.6 lbs/hr with wheel centered. Observe metering head. Energize boost pump to provide 35 - 40 psi. After stabilizing, finel flow must be within + 5 lbs/hr of value observed at specified finel inputs must be within + 5 lbs/hr of value observed at specified finel input pressure. Turn boost numb off	MAXIMUM	29.0	5 cc/min	35.0	0.99	102.5
BURETTE VOLUME (cc)         200         500           MINIMUM         42.1         34.9         46.2           OBSERVED (SECONDS)         ARXIMUM         48.8         48.8           MAXIMUM         48.8         37.5         48.8           METERING HEAD AVG         7.2         48.8         32.0           COCEDURE FOR SPLIT HEAD CHECK         Close throttle to .022" (#74) drill in bore.         32.0         32.0           Adjust idle fivel flow to 11.0-11.6 lbs/hr with wheel centered. Observe metering head. Energize boost pump to provide 35 - 40 psi. After stabilizing, fixel flow must be within + 5 lbs/hr of value observed at snecified filed inlet pressure. Turn hoost numb off:         After stabilizing.	BURETTE TIME LIMITS (Using MIL-C-7024	Type II STODDARD				
MINIMUM         42.1         34.9         46.2           OBSERVED (SECONDS)         48.8         48.8           MAXIMUM         48.8         37.5         48.8           METERING HEAD AVG         7.2         10.0         32.0           COCEDURE FOR SPLIT HEAD CHECK         Close throttle to .022" (#74) drill in bore.         Adjust idle fuel flow to 11.0-11.6 lbs/hr with wheel centered. Observe metering head. Energize boost pump to provide 35 - 40 psi. After stabilizing, firel flow must be within + 5 lbs/hr of value observed at snecified finel inlet messure. Turn boost pump off	BURETTE VOLUME (cc)	200		200	500	850
OBSERVED (SECONDS)         48.8         48.8           MAXIMUM         48.8         37.5         48.8           METERING HEAD AVG         7.2         10.0         32.0           COCEDURE FOR SPLIT HEAD CHECKS         Close throttle to .022" (#74) drill in bore.         Close throttle to .022" (#74) drill in bore.           Adjust idle fuel flow to 11.0-11.6 lbs/hr with wheel centered. Observe metering head. Energize boost pump to provide 35 - 40 psi. After stabilizing, finel flow must be within + 5 hs/hr of value observed at sneetified finel inlet messure. Turn boost pump off:	MINIMUM	42.1		34.9	46.2	50.6
MAXIMUM 48.8 37.5 48.8 48.8  METERING HEAD AVG  OBSERVED (" STODDARD)  COCEDURE FOR SPLIT HEAD CHECK  Close throttle to .022" (#74) drill in bore.  Adjust idle fuel fou 0.1.0-11.6 lbs/hr with wheel centered. Observe metering head. Energize boost pump to provide 35 - 40 psi. After stabilizing, fivel flow must be within + 5 lbs/hr of value observed at sneeting dead. Energize boost pump of provide 35 - 40 psi. After stabilizing,	OBSERVED (SECONDS)					
METERING HEAD AVG     7.2       OBSERVED (" STODDARD)     32.0       COCEDURE FOR SPLIT HEAD CHECK     Close throttle to .022" (#74) drill in bore.       Adjust idle fuel flow to 11.0-11.6 lbs/hr with wheel centered. Observe metering head. Energize boost pump to provide 35 - 40 psi. After stabilizing, finel flow must be within + 5 lbs/hr of value observed at snecified finel inlet messure. Turn boost pump off.	MAXIMUM	48.8		37.5	48.8	52.9
	METERING HEAD AVG	7.2		10.0	32.0	74.0
	OBSERVED (" STODDARD)					
		el centered. Observe me	etering head. Energize b	oost pump to provide 35 - 40 ps	si. After stabilizing,	

WASHINGTON		oF	w	26.2	1400	RICH	W/O		0.96		104.5		850	49.6		54.0	74.0		
KOLS - MAKYSVILLE, SERIAL NUMBER:		(%)	4	10.4	006	RICH	O/M		60.5		68.0		200	44.8		50.4	32.0		
CONTROLS - 1 SERIAL N		FUEL SP. GRAV	3	1.9	400	RICH	O/M		30.5		37.0		200	32.9		40.0	10.0		
PRECISION AIRMOTIVE CORPORATION - FUEL CONTROLS - MARYSVILLE, WASHINGTON  TS LIST:	DATE:		2	0	0	ICO	O/M		0		5 cc/min	ODDARD)							
INTERPORT OF CONTRACTOR		FUEL PRESSURE: 19-21 PSI	1	0	0	RICH	O/M		23.0		31.0	C-7024 Type II ST	200	39.4		53.1	7.2		
INSTALLATION PARTS LIST:	OPERATOR:	BASIC PARTS LISTS: 2576585	TEST POINT NUMBER	METERING SUCTION (INCHES OF WATER)	CORRESPONDING AIRFLOW (LBS/HR)	MIXTURE CONTROL POSITION	THROTTLE POSITION	FLOWMETER LIMITS	MINIMUM	OBSERVED (LBS/HR)	MAXIMUM	BURETTE TIME LIMITS (Using MIL-C-7024 Type II STODDARD)	BURETTE VOLUME (cc)	MINIMUM	OBSERVED (SECONDS)	MAXIMUM	<u>METERING HEAD</u> AVG	OBSERVED (" STODDARD)	30106-01 doc 5/8/2003 1-21 PM