PRECISION AIRMOTIVE CORPORATION

Service Information Letter - Fuel Systems

SIL RS-48 Revision 1

SMALL RECIPROCATING ENGINES
RSA-5AD1
Issued 10/22/04

SUBJECT: Service Information for RSA-5AD1 Fuel Injection Servo Parts List 2576536-2.

PURPOSE: To provide repair shops with flow bench limits and service information for RSA-5AD1 fuel injection servo parts list 2576536-2.

Revision 1 changes applicable parts list for 2576536-2 up to IC Number 45. This SIL supercedes and cancels SIL RS-71.

A. EFFECTIVITY: This Service Information Letter is applicable to all RSA-5AD1 fuel injection servos, parts list 2576536-2. These servos are installed on Lycoming IO-360-L2A and IO-360-M1A engines.

B. REASON: This servo was released for installation on the new Cessna 172 and is also used on the Diamond DA40-180.

C. COMPLIANCE: Information only.

D. DESCRIPTION: The service information found in manual 15-381G for parts list 2524054-11 is applicable to parts list 2576536-2 except as follows:

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

Item Number	2524054-11 Part Number	2576536-2 Part Number	Description
20	2525202	2577129	Inlet Fitting
45	2521287	2522004	Lever, Mixture
50	2524469	2576535	Fuel Injection Servo, Basic

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

Item Number	2524054-11 Part Number	2576536-2 Part Number	Description
15	AN833-4 (367719)	132906	Plug, Threaded
20	AN924-4 (367720)	Not Used	Nut, Flared Tube
30	2523200	Not Used	Cap, Shipping
35	317-S-5	Not Used	Packing, Preformed

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

Item Number	2524054-11 Part Number	2576536-2 Part Number	Description
20	132906	AN833-4J (2577130)	Elbow, Flared Tube
21	Not Used	2523200	Cap, Shipping
22	Not Used	317-S-5	Packing, Preformed
23	Not Used	AN924-4J (2577131)	Nut, Flared Tube

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

Item Number	2524054-11 Part Number	2576536-2 Part Number	Description
180	2520626	2577197-589	Valve, Idle

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

Specification Type	2524054-11 Test Specification Number	2576536-2 Test Specification Number
Calibration Limits	11271	30075-02
Service Limits	9879	30076-01

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

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

Date	IC Number	Description
Issue 1		
8-13-96	40	Released to production.
9-10-96	40	Mixture Control Lever 2522004 was 2577020
Issue 2		
9-2-98	41	Basic 2576535-A was 2576515-A. Lower Idle Valve 2577091 was 2520626. Test Spec 30075-01 was 11271. Test Spec 30076-01 was 9879.
7-22-99	42	Calibration Revision.
8-20-99	43	Calibration Revision. Lower Idle Valve 2577110 was 2577091.
1-5-00	43	Test Spec 30075-02 was 30075-01.
8-31-00	44	Inlet Fitting 2577129 was 2525202, Outlet Fitting 2577130 was 367719, Outlet Nut 2577131 was 367720.
4-4-03	44A	Lower Idle Valve 2577197-589 added as as an option to 2577110. (See SIL RS-71)
1-8-04	45	Lower Idle Valve 2577110 removed as option (2577197-589 is the only current part)

TEST SPECIFICATION

CALIBRATION LIMITS

30075-02

RSH 1/5/00

PRECISION AIRMOTIVE CORPORATION - FUEL CONTROLS - EVERETT, WASHINGTON

INSTALLATION PARTS LIST: _____ **MODEL:** RSA-5AD1 **SERIAL NUMBER:** _____

OPERATOR: _____ **DATE:** _____

BASIC PARTS LISTS: 2576535 FUEL PRESSURE: 19-21 PSI FUEL SP. GRAV._____ @ _____ °F

TEST POINT NUMBER	1	2	3	4
METERING SUCTION (INCHES OF WATER)	0	0	1.9	26.2
CORRESPONDING AIRFLOW (LBS/HR)	0	0	400	1400
MIXTURE CONTROL POSITION	RICH	ICO	RICH	RICH
THROTTLE POSITION	W/O	W/O	W/O	W/O
FLOWMETER LIMITS				
MINIMUM	22.0	0	30.0	112.0
OBSERVED (LBS/HR)				
MAXIMUM	28.0	5 cc/min	34.5	117.0
BURETTE TIME LIMITS (Using MIL-C-7024 Type II STODDARD)				
BURETTE VOLUME (cc)	*200*		*200*	*850*
MINIMUM	43.6		35.4	44.3
OBSERVED (SECONDS)				
MAXIMUM	55.5		40.7	46.3
METERING HEAD AVG	2.4		5.5	71.0
OBSERVED (" STODDARD)				

PROCEDURE FOR SPLIT HEAD CHECK

1. Close throttle to .006" shim in bore.
2. Adjust idle fuel flow to 7 - 9 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 so that fuel is less than 6 lbs/hr. Observe metering head. Metering head shall be no more than 5" above value observed in step 2.

TEST SPECIFICATION

SERVICE LIMITS

30076-01

ASH 1/6/00

PRECISION AIRMOTIVE CORPORATION - FUEL CONTROLS - EVERETT, WASHINGTON

INSTALLATION PARTS LIST: _____ **MODEL:** RSA-5AD1 **SERIAL NUMBER:** _____

OPERATOR: _____ **DATE:** _____

BASIC PARTS LISTS: 2576535 FUEL PRESSURE: 19-21 PSI FUEL SP. GRAV. _____ @ _____ °F

TEST POINT NUMBER	1	2	3	4
METERING SUCTION (INCHES OF WATER)	0	0	1.9	26.2
CORRESPONDING AIRFLOW (LBS/HR)	0	0	400	1400
MIXTURE CONTROL POSITION	RICH	ICO	RICH	RICH
THROTTLE POSITION	W/O	W/O	W/O	W/O
FLOWMETER LIMITS				
MINIMUM	22.0	0	30.0	111.0
OBSERVED (LBS/HR)				
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