PRECISION AIRMOTIVE CORPORATION

Service Information Letter - Fuel Systems

SIL RS-49

SMALL RECIPROCATING ENGINES
RSA-5AD1
Issued 01/06/00

SUBJECT: Service Information for RSA-5AD1 Fuel Injection Servo Parts List 2549050-3.

PURPOSE: To provide repair shops with flow bench limits and service information for RSA-5AD1 fuel injection servo parts list 2549050-3.

A. EFFECTIVITY: This Service Information Letter is applicable to all RSA-5AD1 fuel injection servos, parts list 2549050-3. These servos are installed on Lycoming TIO-540-AF1B engines.

B. REASON: Textron Lycoming requested a flow schedule change to meet engine performance requirements. The lower idle valve was changed to facilitate calibration to this new flow schedule.

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 15-381G for parts list 2549050-1 is applicable to parts list 2549050-3 except as follows:

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

Item Number	Old Part Number	New Part Number	Description
1	25249050-1	25249050-3	Fuel Injection Servo
50	2549049-A	2549049-C	Servo, Basic Assembly

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

Item Number	Old Part Number	New Part Number	Description
180	2523381	2577104	Valve, Idle

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

Specification Type	Applicable Figure	Old Test Specification	New Test Specification
Calibration Limits	1328	12039-01	12039-03
Service Limits	1329	12041-01	12041-02

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

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

Date	IC Number	Description
Issue 1		
11-20-89	1	Released to production.
2-13-90	1	Relocated Fuel Inlet Fitting to opposite side.
6-7-91	1	2523381 Idle Valve was 2542950.
Issue 2		
7-6-98	2	Calibration Revision. 2549049-B Basic Assembly was 2549049-A. 2520626 Idle Valve was 2523381.
Issue 3		
1-19-99	3	Calibration revision. 2549049-C basic was 2549049-B. 2529155 Idle Valve was 2520626.
2-1-99	4	2577104 Idle Valve was 2529155.

TEST SPECIFICATION
CALIBRATION LIMITS

12039-03
6/8/99

PRECISION AIRMOTIVE CORPORATION - FUEL CONTROLS - EVERETT, WASHINGTON

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

OPERATOR: _____ **DATE:** _____

BASIC PARTS LISTS: 2549049 FUEL PRESSURE: 19-21 PSI FUEL SP. GRAV._____ @ _____ °F

TEST POINT NUMBER	1	2	3	4
METERING SUCTION (INCHES OF WATER)	0	0	4.6	26.2
CORRESPONDING AIRFLOW (LBS/HR)	0	0	600	1400
MIXTURE CONTROL POSITION	RICH	ICO	RICH	RICH
THROTTLE POSITION	W/O	W/O	W/O	W/O
FLOWMETER LIMITS				
MINIMUM	29.0	0	57.0	137.5
OBSERVED (LBS/HR)				
MAXIMUM	35.0	5 cc/min	61.0	140.5
BURETTE TIME LIMITS (Using MIL-C-7024 Type II)				
BURETTE VOLUME (cc)	*200*		*300*	*850*
MINIMUM	34.9		30.0	36.9
OBSERVED (SECONDS)				
MAXIMUM	42.1		32.1	37.7
METERING HEAD AVG			15.1	67.5
OBSERVED (" NAPTHA)				

PROCEDURE FOR SPLIT HEAD CHECK

1. Close throttle to .006" shim in bore.
2. Adjust idle fuel flow to 6 - 7 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
PRECISION AIRMOTIVE CORPORATION - FUEL CONTROLS - EVERETT, WASHINGTON

12041-02
JSJ **6/8/99**

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

OPERATOR: _____ **DATE:** _____

BASIC PARTS LISTS: 2549049 FUEL PRESSURE: 19-21 PSI FUEL SP. GRAV. _____ @ _____ °F

TEST POINT NUMBER	1	2	3	4
METERING SUCTION (INCHES OF WATER)	0	0	4.6	26.2
CORRESPONDING AIRFLOW (LBS/HR)	0	0	600	1400
MIXTURE CONTROL POSITION	RICH	ICO	RICH	RICH
THROTTLE POSITION	W/O	W/O	W/O	W/O
FLOWMETER LIMITS				
MINIMUM	29.0	0	55.0	135.0
OBSERVED (LBS/HR)				
MAXIMUM	35.0	5 cc/min	63.0	143.0
BURETTE TIME LIMITS (Using MIL-C-7024 Type II)				
BURETTE VOLUME (cc)	*200*		*300*	*850*
MINIMUM	34.9		29.1	36.3
OBSERVED (SECONDS)				
MAXIMUM	42.1		33.3	38.4
METERING HEAD AVG			15.1	67.5
OBSERVED (" NAPTHA)				