

Service Information Letter - Fuel Systems

**SUBJECT: Service Information for RSA-5AB1 Fuel Injection Servo
Parts List 2576507-1 thru -3.**

PURPOSE: To provide repair shops with flow bench limits and service information for RSA-5AB1 fuel injection servo parts list 2576507-1 thru -3.

- A. **EFFECTIVITY:** This Service Information Letter is applicable to all RSA-5AB1 fuel injection servos, parts list 2576507-1 thru -3. These servos are installed on Lycoming AEIO-540-D engines.
- B. **REASON:** This new parts list was released for a new installation on the U.S. Air Force T-3A trainer.
- C. **COMPLIANCE:** Information only.
- D. **DESCRIPTION:** The service information found in manual 15-419D, (2/24/90) for parts list 2524254-11 is applicable to parts list 2576507-3 except as follows:

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

Item Number	2524254-11 Part Number	2576507-3 Part Number	Description
1	2524254-11	2576507-3	Fuel Injection Servo
20	2663787-004	367719	Elbow, 90°
21	n/a	951787	Packing, Preformed
22	n/a	367720	Nut, Flared Tube
23	n/a	2523200	Cap, Shipping
24	n/a	317-S-5	Packing, Preformed
25	2525202	2538889	Plug
60	2538889	2525202	Adapter, Fuel Inlet
75	2523184	2521287	Lever, Control
90	2523183	2521196	Lever, Control

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

Item Number	2524254-11 Part Number	2576507-3 Part Number	Description
115	2523719	2577022	Idle Lever Assemblby
180	2523317	2529155	Idle Valve

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

Specification Type	2576507-3 Specification
Calibration	30026-01* dated 7/21/95
Service	30027-01* dated 7/21/95
AMC	10318-01 dated 5/20/81(SIL RSA-20)

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

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

Serial	Date	Description
	<u>Issue 1</u>	
1	3-24-94	Released to production.
	<u>Issue 2</u>	
2	3-24-94	2523381 Idle Valve was 2520626, 384606-40 was 360909-40
3	3-24-94	2541493 Idle Valve was 2523381
4	4-29-94	2523381 Idle Valve was 2541493
5	6-8-94	2529155 Idle Valve was 2523381
6	7-21-95	Calibration Revision
	<u>Issue 3</u>	
7	8-23-95	2577022 Idle Lever Assembly was 2523719, 2542255 Shaft was 2520881

30026-01
Rev# 7/21/95

TEST SPECIFICATION
FLOW BENCH LIMITS

PRECISION AIRMOTIVE CORPORATION - AIRCRAFT FUEL INJECTION - EVERETT, WASHINGTON

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

BASIC PARTS LIST: 2576508 FUEL PRESSURE: 20 ± 1 PSI ENGINE MFG: TEXTRON LYCOMING
 LIMITS BASED ON .734 SPECIFIC GRAVITY AT 75°F ± 5°F (NAPTHA)

TEST POINT NUMBER	1	2	3	4
METERING SUCTION (INCHES OF WATER)	0	0	4.2	24.5
CORRESPONDING AIRFLOW (LBS/HR)	0	0	600	1400
MIXTURE CONTROL POSITION	RICH	ICO	RICH	RICH
FLOWMETER LIMITS				
MIN ALLOWABLE FUEL FLOW	26.0	0	50.0	127.0
OBSERVED FUEL FLOW (LBS/HR)	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
MAX ALLOWABLE FUEL FLOW	35.0	5 CC/MIN	54.5	132.0
BURRETTE TIME LIMITS				
BURRETTE VOLUME	200		300	850
MINIMUM TIME	33.3		32.1	37.5
OBSERVED (SECONDS)	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
MAXIMUM TIME	44.8		35.0	39.0
METERING HEAD ("NAP) AVG	2.3		13.8	65
OBSERVED METERING HEAD	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

1. CLOSE THROTTLE TO .006" SHIM IN BORE.
2. ADJUST IDLE FUEL TO 9.0-11.0 LBS/HR WITH WHEEL CENTERED. OBSERVE METERING HEAD AND FUEL FLOW. ENERGIZE BOOST PUMP TO PROVIDE INSTANTANEOUS 35-40 PSI. AFTER STABILIZING, FUEL FLOW MUST BE WITHIN ± 0.5 LBS/HR OF VALUE RECORDED AT 26 ± 1 PSI. TURN BOOST PUMP OFF.
3. REMOVE .006" SHIM.
4. CLOSE THROTTLE TO 5.0-7.0 LBS/HR FUEL FLOW. METERING HEAD INCREASE (FROM VALUE RECORDED IN STEP 2) MUST BE LESS THAN 5.0" FUEL.

TEST SPECIFICATION
SERVICE LIMITS

30027-01
REV. 7/21/95

PRECISION AIRMOTIVE CORPORATION - AIRCRAFT FUEL INJECTION - EVERETT, WASHINGTON

OPERATOR: _____ DATE: _____ SERIAL NUMBER: _____
INSTALLATION PARTS LIST: _____

BASIC PARTS LISTS: 2576508 FUEL PRESSURE: 20 ± 1 PSI ENGINE MFG: TEXTRON LYCOMING
LIMITS BASED ON .734 SPECIFIC GRAVITY AT 75°F ± 5°F (NAPHTHA)

TEST POINT NUMBER	1	2	3	4
METERING SUCTION (INCHES OF WATER)	0	0	4.2	24.5
CORRESPONDING AIRFLOW (LBS/HR)	0	0	600	1400
MIXTURE CONTROL POSITION	RICH	ICO	RICH	RICH
FLOWMETER LIMITS				
MIN ALLOWABLE FUEL FLOW	24.0	0	49.0	125.0
OBSERVED FUEL FLOW (LBS/HR)				
MAX ALLOWABLE FUEL FLOW	37.0	5 CC/MIN	56.0	134.0
BURRETTE TIME LIMITS				
BURRETTE VOLUME	200		300	850
MINIMUM TIME	31.5		31.2	37.0
OBSERVED (SECONDS)				
MAXIMUM TIME	48.5		35.7	39.6
METERING HEAD ("NAP) AVG	2.3		13.8	65
OBSERVED METERING HEAD				

1. CLOSE THROTTLE TO .006" SHIM IN BORE.
2. ADJUST IDLE FUEL TO 9.0-11.0 LBS/HR WITH WHEEL CENTERED. OBSERVE METERING HEAD AND FUEL FLOW. ENERGIZE BOOST PUMP TO PROVIDE INSTANTANEOUS 35-40 PSI. AFTER STABILIZING, FUEL FLOW MUST BE WITHIN ± 0.5 LBS/HR OF VALUE RECORDED AT 26 ± 1 PSI. TURN BOOST PUMP OFF.
3. REMOVE .006" SHIM.
4. CLOSE THROTTLE TO 5.0-7.0 LBS/HR FUEL FLOW. METERING HEAD INCREASE (FROM VALUE RECORDED IN STEP 2) MUST BE LESS THAN 5.0" FUEL.