



South Bend, Indiana 46620, U.S.A.

Service Bulletin

Fuel Systems

Bulletin No.: RS-83 R1

Date: 1-20-84

Revised: 1-4-85

Subject: BENDIX FUEL INJECTOR SYSTEM, MODIFICATION OF: RSA-7DA1 PARTS LIST 2524624-3
TO PARTS LIST 2524624-4

1. PLANNING INFORMATION:

A. EFFECTIVITY:

<u>Model No.</u>	<u>Parts List Number</u>
RSA-7DA1	2524624-3

B. REASON:

To provide instructions for the modification of fuel injector listed above to increase maximum power fuel flow when Beech Aircraft Service Bulletin is implemented.

C. DESCRIPTION:

Replace existing power enrichment jet with new power enrichment jet.

D. COMPLIANCE:

Refer to Beech Aircraft Service Bulletin 2021.

E. APPROVAL:

F. MANPOWER:

No additional man-hours required to accomplish during overhaul.

G. MATERIAL AVAILABILITY: June 1984

<u>Part No.</u>	<u>Qty.</u>	<u>Nomenclature</u>	<u>Availability</u>
390188-58	1	Power Enrichment Jet	Bendix Product Support Centers

H. TOOLING:

Not affected.

1. PLANNING INFORMATION: (Continued)

I. WEIGHT AND BALANCE:

Not affected.

J. REFERENCES:

Beech Aircraft Service Bulletin.

K. PUBLICATIONS AFFECTED:

Bendix RSA-7DA1 Component Maintenance Manual Form 15-633A, dated October 1, 1982.

2. ACCOMPLISHMENT INSTRUCTIONS:

A. OVERHAUL ACTIVITIES:

- (1) During the course of normal overhaul of the RSA-7DA1, as outlined in the Bendix Component Maintenance Manual, Form 15-633A, remove the power enrichment jet, P/N 390188-60 and install a new power enrichment jet, P/N 390188-58.
- (2) Use Test Specification 10696 (Figure 1), for final flow bench calibration. Use Test Specification 10698 (Figure 2) for those units requiring Service Limits. The Automatic Mixture Control (AMC) Test Calibration Test Sheet remains the same as outlined in the Bendix Component Maintenance Manual, Form 15-633A.
- (3) Reidentify the fuel injector after incorporating this change per paragraph C.

B. MAINTENANCE ACTIVITIES:

WARNING: MAINTENANCE ACTIVITIES MAY PERFORM THIS MODIFICATION: EXTREME CARE MUST BE EXERCISED DURING ALL THE PHASES OF MAINTENANCE TO PRECLUDE THE INTRODUCTION OF FOREIGN MATERIAL INTO THE TOTAL FUEL SYSTEM.

- (1) Removal of the fuel injector from the engine is recommended to perform this change; however, it is permissible to accomplish this change while the fuel injector remains installed on the engine. If the latter method is used to accomplish this change, extreme care must be taken to avoid any mutilation of the P/N 390188-60 or P/N 390188-58 jet. Upon the removal of P/N 390188-60 jet, the slotted section must be examined. Any deformation of this section will require injector removal from the engine.
- (2) Locate the enrichment valve cover (Figure 3).
 - (a) Remove lockwire and seal from four screws (1, Figure 3).
 - (b) Remove four screws (1) and washers.

2. ACCOMPLISHMENT INSTRUCTIONS: (Continued)

THE BENDIX CORPORATION, ENERGY CONTROLS DIVISION, SOUTH BEND, INDIANA, U. S. A.
 TEST SPECIFICATION DATE: 25-FEB-83
 OPERATOR: MODEL: RSA-7DA1 SERIAL NO. (14-1911-10634-01) (20-2511)
 PARTS LIST: (1-1311) DATE: (32-37) PAGE CODE

ENGINE MFG: CONTINENTAL FUEL INLET PRESSURE: 26 P.S.I. ± 1 INJECTOR MODEL: RSA-7DA1
 NOZZLE PRESSURE: 0 LIMITS BASED ON 0.734 SPECIFIC GRAVITY AT 75 DEG F ± 5 DEG F
 (NAPHTHA) DATE ISSUED: -----

TEST POINT NO.	1	2	3	4	5
METERING SUCTION INCHES OF WATER	0	0	2.0	10.3	38.0
CORRESPONDING AIR FLOW LBS/HR.	0	0	450	1000	1900
MIXTURE CONTROL LEVER POSITION	R	I-C.O.	R	R	R
THROTTLE POSITION	W.O.	W.O.	W.O.	W.O.	W.O.
BURETTE VOLUME	200	200	28.1	29.9	29.9
TIME MIN.	27.7	27.7	30.3	30.3	31.2
LIMITS MIN. MAX.	---	---	---	---	---
IN SECONDS	---	---	---	---	---
FLOWMETER MIN. MAX.	36.0	0	96.0	187.0	195.0
LIMITS IN	42.0	5 CC	104.0	195.0	195.0
LBS./HR METERING HEAD	---	---	---	---	---
INCHES OF FUEL	---	---	---	---	---

NOTE 1: FLOW MUST INCREASE A MINIMUM OF 5 PPH ABOVE THE VALUE RECORDED I TEST POINT 1.

PROCEDURE FOR SPLIT HEAD CHECK

1. CLOSE THRO. TO .006" SHIM IN BORE.
2. ADJ. IDLE FUEL FLOW TO 9.0 - 11.0 #/HR. WHEEL CENTERED OBS. MET. HEAD.
3. REMOVE .006" SHIM.
4. CLOSE THRO. TO 7.0 - 8.0 #/HR. F.F. MET. HEAD INCREASE FROM (2) 5.0" FUEL MAX.

Figure 1

2. ACCOMPLISHMENT INSTRUCTIONS: (Continued)

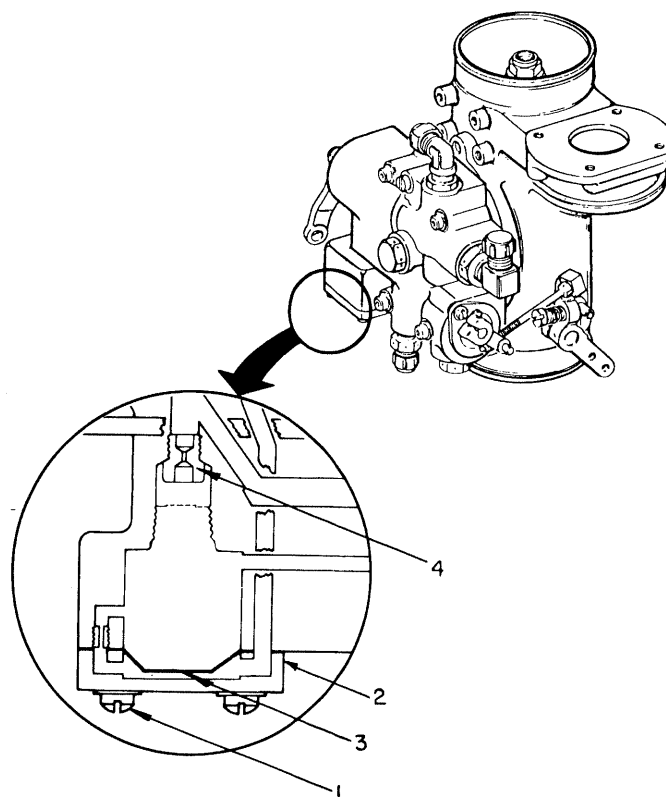
THE BENDIX CORPORATION, ENERGY CONTROLS DIVISION, SOUTH BEND, INDIANA, U. S. A.
 TEST SPECIFICATION DATE: 23-FEB-83
 OPERATOR MODEL BSA-7DQ1 SERIAL NO. 114-1911 10698-01 (20-251)
 PARTS LIST (1-13) DATE (32-37) PAGE CODE

ENGINE MFGR: CONTINENTAL
 SERVICE-LOW-LIMITS
 PARTS LIST: 2524624
 FUEL INLET PRESSURE: 26 P.S.I. ± 1
 NOZZLE PRESSURE: 0
 LIMITS BASED ON 0.734 SPECIFIC GRAVITY AT 75 DEG F ± 5 DEG F
 (NAPHTHA) DATE ISSUED: -----

TEST POINT NO.	1	2	3	4	5
METERING SUCTION INCHES OF WATER CORRESPONDING	0	0	2.0	10.3	38.0
AIR FLOW LBS/HR.	0	0	450	1000	1900
MIXTURE CONTROL LEVER POSITION	R	I.C.O.	R	R	R
THROTTLE POSITION	W.O.	W.O.	W.O.	W.O.	W.O.
BURETTE VOLUME	200	200	500	500	1000
TIME MIN.	27.	27.	27.4	27.4	27.8
LIMITS MAX.	33.2	33.2	31.	31.	31.3
IN SECONDS OBS.	---	---	---	---	---
FLOWMETER MIN.	35.1	0	94.	94.	179.5
LIMITS MAX.	43.3	5 CC	106.3	106.3	202.5
IN LBS./HR. OBS.	---	---	---	---	---
METERING HEAD INCHES OF FUEL	---	---	---	AV	48.0

NOTE 1: FLOW MUST INCREASE A MINIMUM OF 3 PPH ABOVE THE VALUE RECORDED IN TEST POINT 1.

Figure 2

2. ACCOMPLISHMENT INSTRUCTIONS: (Continued)

1. SCREW P/N 399847 WITH WASHER AN960-10L (4)
2. COVER P/N 2537055
3. GASKET P/N 2540053
4. POWER ENRICHMENT JET (REMOVE P/N 390188-60 AND INSTALL -58)

Figure 3

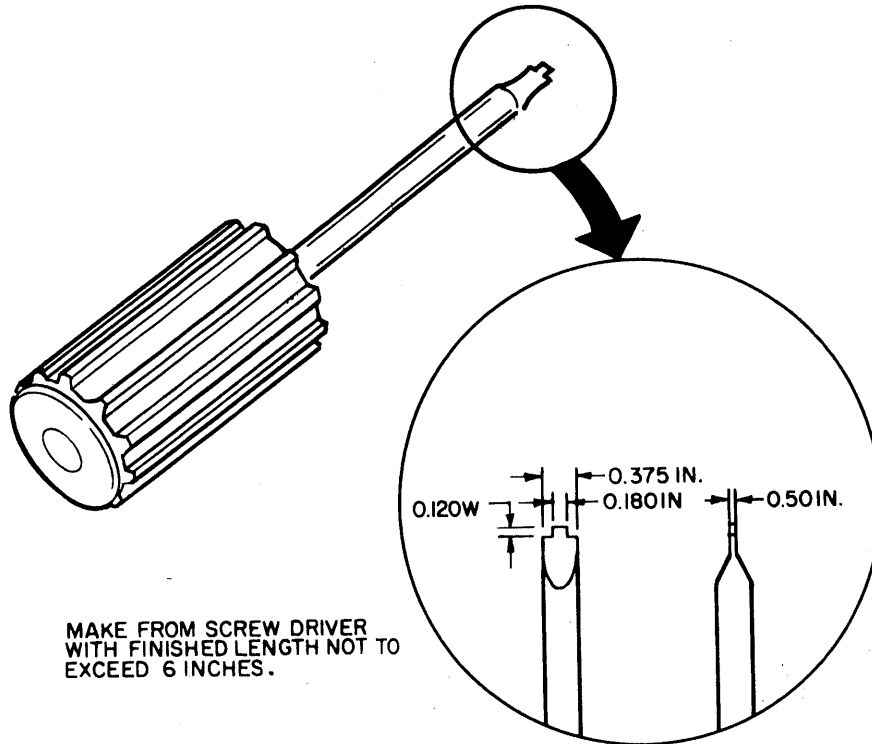
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- (c) Remove cover (2) and gasket (3).
- (d) Using the locally manufactured tool shown in Figure 4, remove power enrichment jet (4, Figure 3).
- (e) With the same special tool, install new power enrichment jet (4) and tighten to 70-90 pound-inches. As an alternate to measuring the torque, assemble the jet finger tight with the special tool and continue to tighten the jet through an additional 1/8 turn.

WARNING: EXTREME CARE SHOULD BE EXERCISED DURING THIS FLUSHING PROCEDURE TO ENSURE THAT THE FUEL EXPENDED DOES NOT CONSTITUTE A FIRE HAZARD.

- (f) If the fuel injector was not removed from the engine, before reassembly of cover (2), open the mixture control to the rich position, open the throttle to the full open position and momentarily turn boost pump on to back-flush the fuel injector.

2. ACCOMPLISHMENT INSTRUCTIONS: (Continued)



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Figure 4

WARNING: WHEN COMPRESSED AIR IS BEING USED, OPERATORS WILL BE CAREFUL TO KEEP FOREIGN OBJECTS FROM ENTERING THE EQUIPMENT. NOT ONLY CAN THIS DAMAGE THE EQUIPMENT, BUT PERSONNEL CAN BE INJURED BY SMALL OBJECTS BLOWN OUT OF NOZZLE OPENINGS.

- (g) If the fuel injector was removed from the engine, open the mixture control to the full rich position, place the air throttle in the full open position, and use clean, dry, filtered shop air (30 to 50 PSI) introduced in the inlet fitting to blow out any foreign material that could have been introduced into the fuel injector.
- (h) Reinstall gasket, cover, washers, and screws. Torque screws to 20-30 pound-inches.
- (i) Lockwire the screws.
- (j) Reidentify the fuel injector after incorporating this change per paragraph C.


2. ACCOMPLISHMENT INSTRUCTIONS: (Continued)

C. IDENTIFICATION:

- (1) All RSA-7DA1 Fuel Injectors modified in accordance with this Service Bulletin must be reidentified.
- (2) If the identification plate is reused, it is permissible to overstrike. The unit may also be reidentified by installing a new nameplate. Reidentify the unit as follows:
 - (a) Transfer the exact model number from the old identificaiton plate.
 - (b) Reidentify the fuel injector with Parts List Number 2524624-4, less any changes not incorporated during previous overhauls.
 - (c) Transfer the exact basic number less any changes not incorporated during previous overhauls.
 - (d) I.C. - This block should be left blank.
 - (e) Transfer the exact serial number from the old identification plate.

3. MATERIAL INFORMATION:

A.	<u>New P/N</u>	<u>Qty</u>	<u>Nomenclature</u>	<u>Old P/N</u>	<u>Disposition</u>
	390188-58	1	Power Enrichment Jet	390188-60	Scrap


 K. R. Dettweiler
 Manager of Service