

# Service Information

## Letter - Fuel Systems

Small Reciprocating  
Engines - All RSA  
No. 16, Rev. 2  
Issued 9-15-87  
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SUBJECT: RS and RSA Fuel Injectors, Manual Mixture Control, Leakage.

NOTE: Revision 2 supercedes S.I.L. 16, Rev. 1 issued 1-15-86.

PURPOSE: To advise FAA Certified Aircraft/Power Plant personnel of the proper method to repair idle cut-off leakage.

- A. To determine if the manual mixture control idle cut-off is operating properly, disconnect the fuel outlet line from the fuel injector. Open the throttle slightly, and place the mixture control lever in the idle cut-off position. Turn on the boost pump. Observe if fuel is leaking from the outlet fitting of the fuel injector. Allow two minutes for this test. If fuel leakage is observed, shut off boost pump and follow the procedure per paragraphs B and C.

CAUTION: DO NOT LAP MIXTURE CONTROL VALVES WHICH ARE IDENTIFIED BY A DARK GRAY COLOR. THESE VALVES ARE HARDCOATED ALUMINUM AND WILL BE PERMANENTLY DAMAGED IF LAPPED PER THE FOLLOWING INSTRUCTIONS. REFER TO S.I.L. 21 FOR IDENTIFICATION OF UNITS INCORPORATING NEW STYLE MIXTURE CONTROL VALVES.

NOTE: Maximum leakage allowed for new injectors is 5 cc's/minute and old injectors is 7-8 cc's/minute.

- B. Refer to figure 1 and following:

1. Remove screw (1, figure 1), washer (2), screw (3), washer (4), stop (5) and spacer (6).
2. Remove manual mixture control assembly (7).
3. Remove mixture control plate (8).
4. Use a 1/8 inch brass rod, with a small hook on one end, to remove mixture control (Brass) valve (9). DO NOT USE LONG NOSE PLIERS.
5. On RSA Fuel Injectors only, O-ring (10) is P/N 951400 and must be inspected for chipped, cut or damaged area. Replace if damaged.



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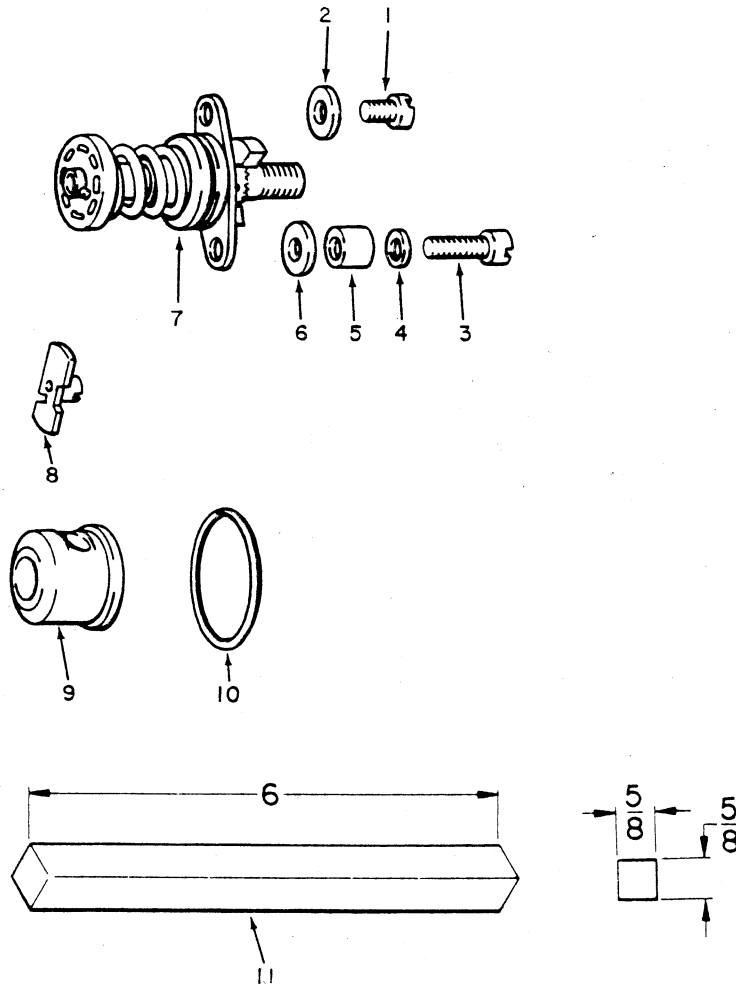
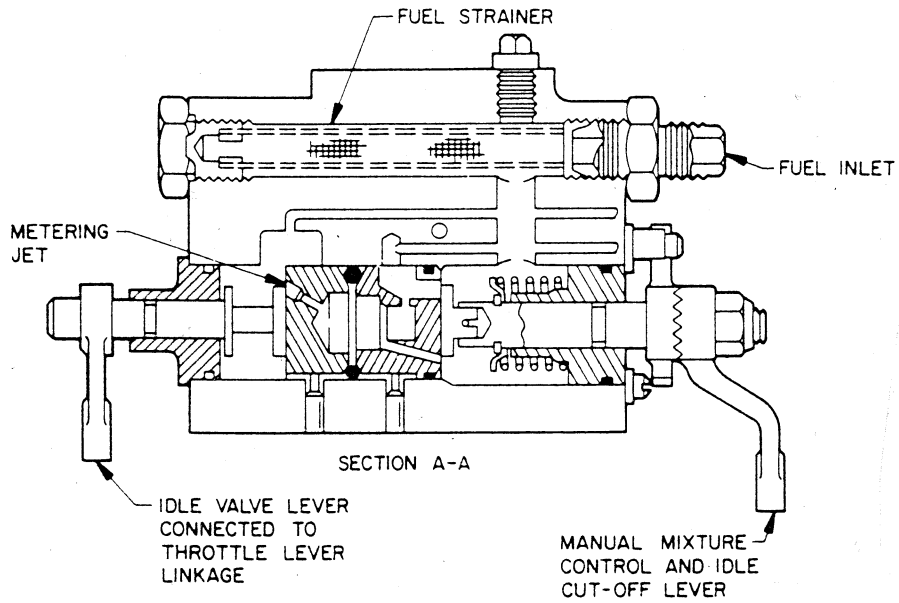


Figure 1.

LA-8463

6. Use a fine-grit India Stone (11) and grasping the brass mixture control valve (9) between thumb, index and middle fingers, using firm pressure, carefully lap on the stone, 6 to 8 strokes.
7. Rotate mixture control valve 45 degrees and continue to lap until valve has been rotated 360 degrees.

NOTE: Use WD-40 as a lubricant while lapping valve.

8. Complete lapping of mixture control valve on a professional lapping plate, using either a fine lapping compound or 600 grit Wet-Dry paper, using WD-40 as lubricant.

9. Lap the manual mixture control (Steel) plate (8) on the India Stone.

NOTE: The manual mixture control does not generally need rotation, but will clean up with 8 to 10 strokes on the stone.

10. Complete lapping process again on a lapping plate with either lapping compound or 600 grit paper and WD-40 as a lubricant.

C. Reinstall manual mixture control parts as follows:

1. Install new or inspected O-ring (10) on brass mixture control valve (9) and lubricate with No. 10 oil.

CAUTION: ALIGN SLOT IN BRASS VALVE WITH LOCATING PIN IN BORE AND PRESS IN WITH FOREFINGER.

2. Install brass valve (9) into bore of injector.
3. Attach steel plate (8) to mixture control assembly (7) and insert completed assembly into bore.
4. Install spacer (6), stop (5), washer (4), screw (3), washer (2) and screw (1).
5. Alternately tighten screws until a torque value of 15-20 inch-pounds is achieved.
6. Safety wire the screws.



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