

**THIS BULLETIN DOES NOT CHANGE AIRCRAFT TYPE DESIGN**

SERVICE BULLETIN M20-290B

SUBJECT: Fuel Flow Transducer

MODELS/ SN

AFFECTED: MOONEY M20M S/N 27-0318, 27-0326, 27-0328 THRU 27-0355  
MOONEY M20R S/N 29-0333 THRU 29-0416TIME OF  
COMPLIANCE: BEFORE NEXT FLIGHT

INTRODUCTION: There has been one reported instance, discovered in the factory, of cracks in the fuel flow transducer housing inlet and outlet ports as a result of over torquing the threaded fittings.

INSTRUCTIONS: Read entire procedure before beginning work.

1. Turn master switch - OFF.
2. Turn Fuel Selector Valve to - OFF
3. Remove top cowling per instructions provided in Chapter 71-10-00 of applicable aircraft Service & Maintenance Manual.
4. Inspect following areas for leaked fuel or evidence of fuel leakage:
  - Interior surface of top cowling
  - Firewall surface
  - Firesleeve encapsulating fuel flow transducer
5. Remove fuel flow transducer from firewall mounting bracket (retain attaching hardware). Loosen breeze clamps securing firesleeve to fuel flow transducer and slide firesleeve to expose transducer and fittings attaching fuel lines to transducer. Loosen and disconnect fittings attaching fuel lines to transducer adapter fitting (AN816-4-4) and elbow (MS51508B4-4S). Do not disconnect or remove adapter fitting or elbow from transducer. Disconnect electrical connector from aircraft harness connection. Using a 10X magnifier in a well lighted area, inspect transducer inlet and outlet aluminum bosses 360° around bosses for signs of cracking.

**If no evidence of fuel leak or cracked transducer bosses is discovered:****CAUTION****Make sure lines are not being put into a bind or twist when securing transducer to bracket.**

6. Re-attach fuel line fittings to inlet/outlet ports. Torque the fittings to 50 in. lbs. minimum/90 in. lbs. maximum. Return firesleeve to original position over transducer and secure with breeze clamps. Re-attach transducer to firewall mounting bracket with hardware removed in step 5 above.

**CAUTION****Do not pinch electrical connector wiring between transducer attaching hardware and mounting bracket.**

7. Re-install top cowling (and bottom cowling if removed in step 10 below) per instructions provided in Chapter 71-10-00 of applicable aircraft Service & Maintenance Manual.
8. Complete logbook entry.
9. Return aircraft to service.

**If evidence of fuel leak or cracked transducer aluminum bosses is discovered in the areas defined in steps 4 or 5 above:**

10. Remove bottom cowling per instructions provided in Chapter 71-10-00 of applicable aircraft Service & Maintenance Manual.

11. Remove and discard 2 breeze clamps (Figure M20-290-1) securing firesleeve on both sides of the fuel flow transducer.

12. Locate and disconnect fuel lines attached to adapter fitting and elbow on the inlet and outlet ports of the fuel flow transducer. Note position (orientation) of fittings so new fittings can be placed in similar position on new transducer.

13. Slide firesleeve off fuel lines/fuel flow transducer and discard.

14. Discard fuel flow transducer, adapter and elbow fittings.

**CAUTION**

**Exercise extreme caution to avoid “stringing” sealer across the ends of the fittings.**

15. Apply “Parker Threadlube” or equivalent to the male pipe threads only (omitting the first 2 threads) on adapter fitting and elbow supplied with parts kit M20-290-001, on the threads to be mated to the transducer.

16. Install new adapter fitting and elbow in inlet/outlet ports on new transducer supplied with parts kit M20-290-001. Refer to step 12 above for orientation of adapter fitting and elbow. Torque adapter fitting and elbow to 40 in. lbs. Torque adapter fitting and elbow to desired orientation on transducer not to exceed 65 in. lbs.

17. Install new fuel flow transducer (Figure M20-290-2) with firesleeve and breeze clamps (2 qty.) on mounting bracket using attaching hardware removed in step 5 above.

**CAUTION**

**Make sure lines are not being put into a bind or twist when securing transducer to bracket.**

18. Attach fuel lines to the transducer adapter fitting and elbow. Torque fuel line attaching nuts to 50 in. lbs. minimum/90 in. lbs. maximum.

**CAUTION**

**Do not pinch electrical connector wiring between transducer attaching hardware and mounting bracket.**

19. Connect fuel flow transducer electrical harness to aircraft harness.

20. Extend ends of firesleeve over fittings and tighten breeze clamps to secure firesleeve in position.

**Test for fuel leaks and bleed air from fuel system at fuel flow transducer following these steps:**

**WARNING**

**Allow no smoking or open flames within 50 feet of the engine compartment area during fuel leak testing.**

21. Turn master switch - ON.

22. Turn fuel selector valve to a fuel tank with fuel.

23. Adjust Mixture (red stick) to idle cut-off.

24. Adjust Throttle (black stick) to idle.

25. Turn fuel boost pump - ON

26. Adjust Mixture to full rich and Throttle to FULL for 15 seconds.

27. Return Mixture to idle cut-off.

28. Inspect fuel flow transducer installation for leaks.

**If no leaks:**

29. Remove any fuel residue from top/bottom cowlings and firewall. Follow steps 7, 8 and 9 above.

**If leaks are evident:**

Review steps 11 through 20 to determine fault and cause of leak and make necessary corrections. Retest per steps 21 through 28.

WARRANTY: Mooney Airplane Company, Inc. will warrant labor:  
Approximately 1 hour if no leak determined  
Approximately 2 hours if leak determined  
when done in accordance with procedures of this Service Bulletin.

REFERENCE DATA: MAC Service & Maintenance Manuals (applicable A/C) Chapter 71 and 73

PARTS LIST: Mooney Airplane Company, Inc., Parts Kit: M20-290-001

<u>Item</u>	<u>P/N</u>	<u>Description</u>	<u>Qty</u>
1.	800414-0084	Transducer Assy., Fuel Flow	1
2.	2650-28	Firesleeve	AR
3.	20016	Clamp, Breeze	2
4.	AN816-4-4	Fitting, Adapter	1
5.	MS51508B4-4S	Elbow	1

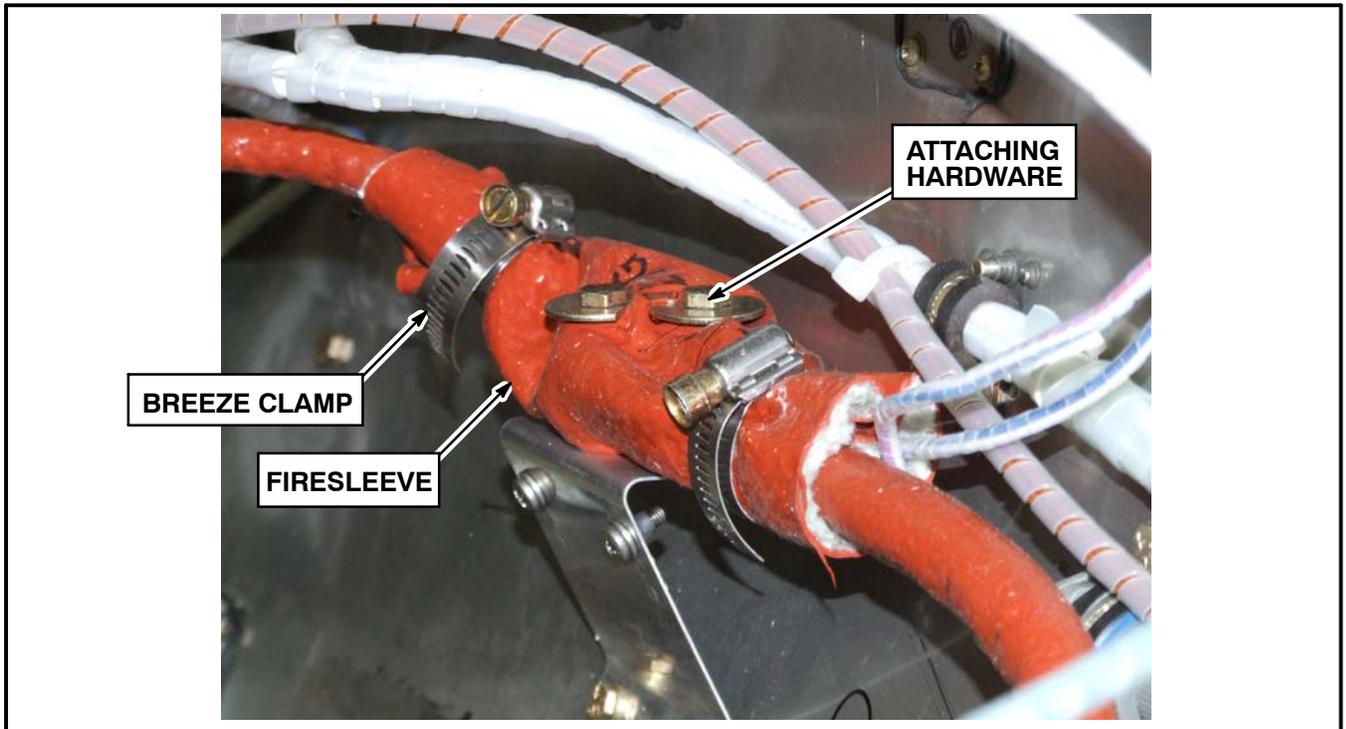


Figure SB M20-290-1

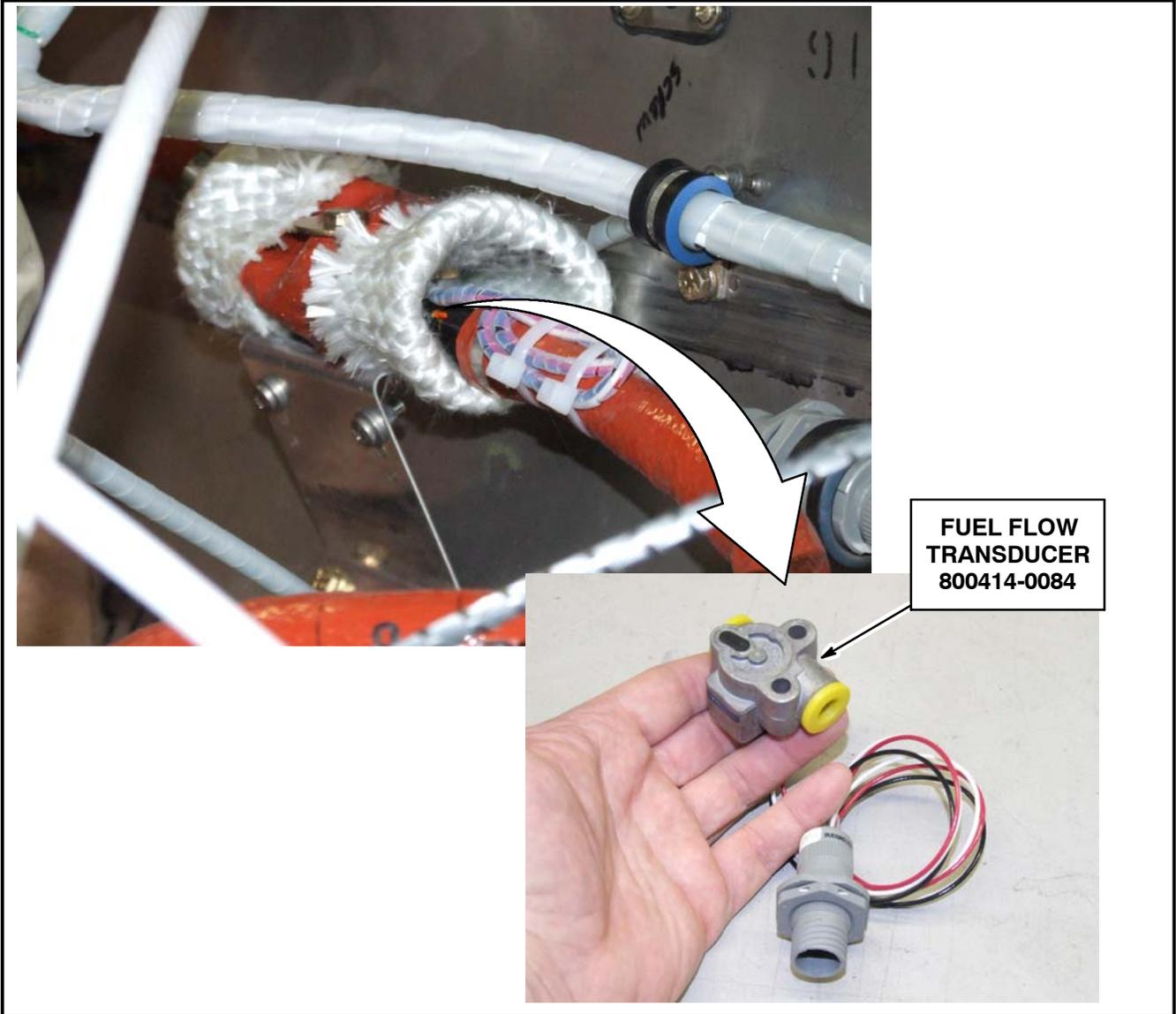


Figure SB M20-290-2