



NUMBER: M20-48A

DATE: 3-28-80

SUBJECT: FUEL FLOW GAGE CHECK AND CALIBRATION

MODELS/
SERIAL NUMBERS

AFFECTED: Model M20K, S/N 25-0172 thru 25-0255

TIME OF

COMPLIANCE: As soon as practical but within next 50 hours of operation.

INTRODUCTION: The Model M20K serial numbers referenced above incorporate a turbine type fuel flow measuring system which measures actual flow through the fuel system. The intent of this S.I. is to provide a means to calibrate the aircraft measuring system with calibrated pressure gauges used for engine adjustments. The ground support equipment kit P/N GSE 030027-501 is available from Mooney Service Parts Department through Mooney Marketing or Service Centers.

- INSTRUCTIONS:
1. Remove screws and clamps holding right hand instrument panel and pull panel out as far as possible without damaging wire harnesses.
 2. Disconnect plug from rear of CDT/TIT indicator and remove instrument.
 3. Remove fuel flow/manifold pressure (FF/MP) instrument from instrument panel after disconnecting all screws and connections.
 4. Remove decal from instrument case. (Use care to retain information contained on decal, serial number, etc.). This will expose trim potentiometer adjustment access holes.
NOTE: If there are no holes in case, take instrument to approved instrument shop and have Step 4.A accomplished prior to proceeding with remainder of Service Instructions.
- A. Remove four (4) screws holding rear portion of instrument case and carefully slide case off instrument. Locate and drill two (2) .250 in. holes in rear case as shown in Figure 1. Carefully replace rear case on instrument ensuring case is aligned correctly to allow access to adjustment potentiometers and secure with (4) screws previously removed.
5. Slide instrument into panel from inside cabin far enough to enable all connections to be securely made. (Wire harness ty-raps may need to be cut to allow sufficient movement of instrument from panel to allow access to trim pots.)

Instructions cont...

6. Connect calibrated engine adjustment gages to engine per Mooney M20K GSE 030027 drawing. The engine should be correctly adjusted per Teledyne Continental Motors (TCM) specifications prior to this instrument calibration procedure being attempted. (Refer to TCM Service Bulletins for complete engine set-up and adjustment procedures.

Start engine and after proper warmup run up to 40 inches Hg manifold pressure and 2700 RPM on calibrated gauges; a metered fuel pressure of 19.0+.25 PSI or a fuel flow of 145 lbs/hr. (24.9 gals/hr.) should be obtained. Adjust "high" trim pot on MP/FF gauge to obtain a reading of 24.9 gals/hr. on ships instrument. (Clockwise rotation of trim pot increases flow indication.) Reduce engine speed to obtain a metered fuel pressure of 6.0+.25 PSI or a fuel flow of 51.0 lbs./hr. (8.8 gals/hr.). If "low" trim pot adjustment is changed to obtain specification requirements the "high", full power setting will need to be checked again. Continue to adjust "high" and "low" settings until both are within limits.

NOTE: If either potentiometer does not change the G.P.H. reading, turn the other potentiometer to an extreme, high or low, and then adjust the one which did not respond initially.

7. Transfer information from decal removed from instrument in Step 4 to the new decal supplied. Remove backing from new decal and install to cover trim pot access holes on the ships instrument.
8. Reinstall instruments in panel and secure wire harness as necessary.
9. Remove the calibrated gages from engine fittings and reconnect all engine lines and check for leaks.
10. Reinstall cowling and all connections (landing light connections and cowl flap rods).
11. Enter compliance note in Engine Log Book and return aircraft to service.

REFERENCE

DATA:

- 1) Teledyne Continental Motors Detail Specification for Model TSIO-360-GB, TCM SB M79-8, Service Bulletin.

PARTS LIST:

S. I. M20-48-501 Kit

<u>Qty.</u>	<u>P/N</u>	<u>Description</u>
1	M20-48-1	Decal

FIGURES/

TABLES:

