**MOONEY** AIRCRAFT, INC.
LOUIS SCHREINER FIELD · KERRVILLE, TEXAS

# Service Bulletin

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## SERVICE INSTRUCTION M20-17

**MODELS AFFECTED:** M20, 1002-1200; M20A, 1201-1700;
M20B, 1701-1851, 1853-1939;
M20C, 1852, 1940 and on; M20D, 1, 101 and on

**SUBJECT:** Directional Gyro & Gyro-Horizon Air Filter

**TIME OF COMPLIANCE:** Within the next 25 hours and every 50 hours thereafter

### INTRODUCTION

To insure trouble-free operation of the Directional Gyro and Attitude Indicator, the instrument manufacturer recommends the air filters be cleaned or replaced every 50 hours. The trouble shooting guide is included to help diagnose any problems that might develop in these instruments.

**TABLE 1 MAINTENANCE — DIRECTIONAL GYRO INDICATOR**

| TROUBLE | PROBABLE CAUSE | REMEDY |
|---|---|---|
| EXCESSIVE DRIFT IN EITHER DIRECTION | Air filter dirty (high vacuum indication) | Inspect filter. Replace if necessary. |
| | Excessive vibration | Examine shock mountings and note whether connections are pulling on instruments. |
| | Insufficient vacuum. If vacuum indication is below 3.5 inches Hg, check as follows: | Correct for insufficient vacuum as follows: |
| | 1. Vacuum regulating valve improperly adjusted | 1. Adjust vacuum regulating valve. |
| | 2. Faulty pressure switch | 2. Check calibration of pressure switch. |
| | 3. Pump malfunction | 3. Repair or replace pump. |
| | 4. Vacuum line kinked, leaking, or too long for its diameter | 4. Locate and, if defective, replace or repair vacuum line. Check for collapsed inner wall of flexible hose. |
| | Defective mechanism (worn or dirty pivots and bearings) | Remove instrument from airplane and replace |
| DIAL SPINS CONTINUOUSLY IN ONE DIRECTION | Operating limits have been exceeded | Gage and reset the instrument when plane is leveled out. |
| | Defective mechanism | Remove instrument from airplane and replace. |

## GYRO-HORIZON INDICATOR

| TROUBLE | PROBABLE CAUSE | REMEDY |
|---|---|---|
| HORIZON BAR FAILS TO RESPOND | Air filter dirty (high vacuum indication) | Examine filter. Clean or replace if necessary. |
| | Insufficient vacuum—resulting from the following: | Correct insufficient vacuum as follows: |
| | 1. Vacuum regulating valve improperly adjusted | 1. Adjust vacuum regulating valve. |
| | 2. Faulty pressure switch | 2. Check calibration of pressure switch. |
| | 3. Pump malfunction | 3. Repair or replace pump. |
| | 4. Vacuum line kinked, leaking, or too long for its diameter | 4. Locate and repair. Check for collapsed inner wall of flexible hose. |
| HORIZON BAR DOES NOT SETTLE | Defective mechanism | Remove instrument from airplane and replace |
| | Insufficient vacuum | Correct for insufficient vacuum as outlined above. |
| | Excessive vibration | Examine installation to determine whether flexible hose connections are restricting movement of instrument; examine shock mountings and replace if necessary. |
| HORIZON BAR OSCILLATES OR VIBRATES EXCESSIVELY | Excessive vacuum, resulting from the following: | Correct for excessive vacuum as follows: |
| | 1. Air filter dirty | 1. Examine filter, clean or replace if necessary. |
| | 2. Vacuum regulating valve improperly adjusted | 2. Adjust vacuum regulating valve. |
| | 3. Faulty pressure switch | 3. Check calibration of pressure switch. |
| | Defective mechanism | Remove instrument from airplane and replace. |
| | Excessive vibration | Examine installation to determine whether flexible hose connections are restricting movement of instrument; examine shock mountings and replace if necessary. |

Filters may be purchased through your local Mooney distributor.