

CRITICAL SERVICE BULLETIN

Compliance Necessary to Maintain Safety

CSB 662A

**Technical Portions
FAA Approved**

SUBJECT: TCM D-2000 AND D-3000 SERIES MAGNETO CAPACITORS, P/N'S 10-382807, 10-382681, AND 10-382681-1

PURPOSE: To provide instructions for the replacement of affected capacitors, to revise overhaul replacement requirements for D-2000 and D-3000 capacitors, and to emphasize existing required safety practices.

BACKGROUND: Investigation of field returns has revealed the potential for incomplete control terminal connections and internal connections to ground in some magneto capacitors, P/N's 10-382807, 10-382681, and 10-382681-1, delivered to TCM prior to December 1999. Although these capacitors originally passed acceptance test, the possibility exists for the connections to be lost after a short time in service.

In the interest of safety, TCM is requiring replacement of all capacitors P/N's 10-382807, 10-382681, and 10-382681-1 marked with date codes up to and including 9942, and less than 200 hours.

WARNING: THE PROPELLER MUST NOT BE MOVED BY HAND ON ENGINES THAT MAY CONTAIN AFFECTED CAPACITORS UNTIL THE REPLACEMENT INSTRUCTIONS SET FORTH IN THIS SERVICE BULLETIN ARE COMPLIED WITH. TO DO SO COULD CAUSE THE ENGINE TO FIRE WHICH MAY RESULT IN SERIOUS BODILY INJURY OR DEATH.

COMPLIANCE: All affected magnetos, ignition systems, and magnetos that have had spare affected capacitors installed with less than 200 hours time in service must have affected capacitors replaced within the next 50 hours, or at the next scheduled maintenance event, whichever occurs first.

All D-2000 and D-3000 series magneto capacitors must be replaced with new capacitors at the time of magneto overhaul.

EQUIPMENT AFFECTED:

1. All new and rebuilt D4-3000 Series and D8-3000 Series magnetos and ignition systems prior to manufacturing number (Serial Number) L169901G(R) (which indicates a build date of December 16, 1999) with less than 200 hours, and all new and rebuilt D6-3000 magnetos and ignition systems prior to manufacturing number (Serial Number) K179901G(R) (which indicates a build date of November 17, 1999) with less than 200 hours, except magnetos identified as already in compliance as specified under IDENTIFICATION. Refer to TCM Ignition Systems Service Information Letter SIL642 to interpret manufacturing numbers.
2. All D-2000 and D-3000 Series magnetos that have had spare capacitors P/N's 10-382807, 10-382681, and 10-382681-1 marked with date codes prior to and including 9942 with less than 200 hours, except magnetos identified as already in compliance as specified under IDENTIFICATION. Refer to GENERAL INFORMATION section of this bulletin to interpret capacitor date codes.
3. All TCM D-2000 and D-3000 Series spare capacitors P/N's 10-382807, 10-382681, and 10-382681-1 marked with date codes prior to and including 9942 with less than 200 hours. Refer to GENERAL INFORMATION section of this bulletin to interpret capacitor date codes.

ISSUED			REVISED			 CONTINENTAL MOTORS <small>A Teledyne Technologies Company</small> <small>P.O. BOX 90 MOBILE ALABAMA 36601 • 334-438-3411</small>	PAGE NO	REVISION
MO	DAY	YEAR	MO	DAY	YEAR		1 of 3	A
01	24	2000				CSB 662		



GENERAL INFORMATION:

Investigation of field returns has revealed that some affected D-2000 and D-3000 capacitors for 4, 6, and 8 cylinder applications may experience open circuit conditions within a short time after installation. Symptoms include (a) engine will crank but will not start, (b) engine will crank and start normally but have 0 (zero) RPM Magneto drop, (c) engine will crank and start normally but will have an excessive magneto drop.

As always, the importance of the magneto drop-off check, as specified in the pilot's operating handbook and TCM Ignition System Service Bulletin SB 653, in determining the airworthiness of the aircraft cannot be overemphasized. Indications exceeding the pilot's operating handbook limits are cause for investigation and corrective action prior to further flight.

WARNING

ZERO RPM MAGNETO DROP INDICATES AN UNAIRWORTHY CONDITION, INCLUDING THE POSSIBILITY OF A HOT MAGNETO WHICH MAY BE A PRELIMINARY SYMPTOM LEADING TO MAGNETO FAILURE. THIS CONDITION MUST BE CORRECTED PRIOR TO FURTHER FLIGHT, OTHERWISE INJURY, DEATH, OR DAMAGE TO PROPERTY MAY RESULT. IN THE EVENT OF A HOT MAGNETO, THE ENGINE MAY INADVERTENTLY EXPERIENCE IGNITION OR START-UP ANY TIME THE PROPELLER IS MOVED. INJURY, DEATH, OR DAMAGE TO PROPERTY MAY RESULT. PLACE A SIGN ON THE PROPELLER INDICATING "HOT MAGNETO".

WARNING

HIGH RPM MAGNETO DROP OR INOPERATIVE MAGNETO INDICATES AN UNAIRWORTHY CONDITION, WHICH MAY BE A SYMPTOM OF MAGNETO FAILURE OR A PRELIMINARY SYMPTOM LEADING TO MAGNETO FAILURE. EITHER OF THESE CONDITIONS MUST BE CORRECTED PRIOR TO FURTHER FLIGHT, OTHERWISE INJURY, DEATH, OR DAMAGE TO PROPERTY MAY RESULT.

Capacitors are marked with a four-digit date code. The first two digits represent the year (99=1999, 00=2000), and the last two digits represent the week (01= first

week of the year, etc.). Therefore, date code 0001 is newer than date code 9942. See figure 1.

All D-2000 and D-3000 capacitors must be replaced with new capacitors at the time of magneto overhaul.

DETAILED INSTRUCTIONS:

For affected magnetos, ignition systems, and magnetos that have had spare affected TCM 10-382807, 10-382681, and 10-382681-1 capacitors installed:

1. Remove all harness spark plug leads from the spark plugs. Obtain access to the magneto.
2. Label and disconnect p-leads and any applicable retard or tachometer leads to the magneto.
3. Disassemble four screws that secure harness cover to the magneto. Discard lockwashers, crushwashers, and self-locking screws. Remove and discard pressure gasket, if used.
4. Remove nut and lockwasher from capacitor. Using a screwdriver or needle nose pliers, remove capacitor lead from breaker points. Remove capacitors from harness cover.
5. Measure magneto-to-engine timing for both magnetos. If timing exceeds engine manufacturer's limits, remove the magneto from the engine to inspect breaker points. Replace breaker assemblies if damage to the cam follower is evident. Adjust breaker points as necessary in accordance with D-2000 and D-3000 Service Support manual, Form X42003 or later revision.
6. Install new capacitors with date code 9943 or newer, and replace attaching hardware and gasket (if used) in accordance with D-2000 and D-3000 Service Support manual, Form X42003 or later revision, SB651, and SB653.

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MO	DAY	YEAR	MO	DAY	YEAR		2 of 3 CSB 662	A
01	24	2000						

IDENTIFICATION:

Identify magnetos in compliance with this bulletin by stamping or vibro-peening a letter W in the upper right corner of the magneto data plate. Make an engine logbook entry indicating compliance with this bulletin.

WARRANTY:

All affected equipment will be covered by the applicable TCM Ignition Systems warranty subject to its terms and conditions. Warranty claims may be filed through any TCM distributor. Up to 2.0 hours labor will be allowed per magneto.

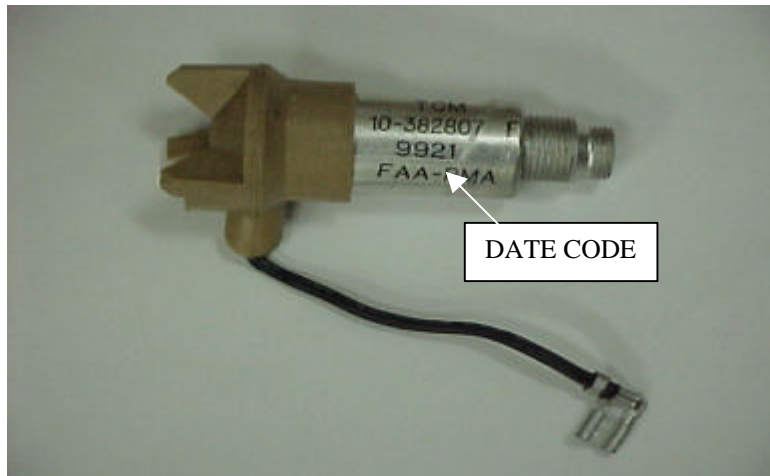


FIGURE 1
Capacitor date code marking.

ISSUED			REVISED			 CONTINENTAL MOTORS A Teledyne Technologies Company P.O. BOX 90 MOBILE ALABAMA 36601 • 334-438-3411	PAGE NO	REVISION
MO	DAY	YEAR	MO	DAY	YEAR		3 of 3 CSB 662	A
01	24	2000						