

SERVICE BULLETIN

Compliance Will Enhance Safety, Maintenance or Economy of Operation

SB663A

Technical Portions FAA
Approved**SUBJECT: TWO-WIRE MAGNETO TACHOMETER
BREAKER CONTACT (POINTS) ASSEMBLY
PART NUMBER 10-400507**

PURPOSE: To advise of procedures to ensure the integrity of the tachometer circuit in certain Teledyne Continental Motors (TCM) Ignition Systems Magnetos.

COMPLIANCE: All affected magnetos must be inspected and maintained per the instructions contained in this bulletin at each magneto overhaul, 500 hour inspection, each time the magneto tachometer breaker points are serviced or replaced, or at any time a component that utilizes the magneto tachometer breaker points exhibits abnormal operation. Additionally, any affected part number magneto between serial numbers D05DA001 to D06JA001 or between serial numbers E05DA001 to E06JA001 must be inspected per this service bulletin at the next scheduled maintenance visit. (See Figure 4 for initial compliance marking requirements applicable to above listed serial number magnetos only.)

MODELS

AFFECTED: For a list of the affected magneto part numbers see Table 1.

MODEL NUMBER	PART NUMBER
S4LN-21	10-51360-47
S6LN-25	10-79020-11, 10-79020-17
S4LN-204	10-163046-6
S6LN-204	10-163050-12
S4LSC-21T	10-500514-201, BL-500514-201
S6LSC-25T	10-500556-203, BL-500556-203
S4LSC-204T	10-600644-201, BL-600644-201
S6LSC-204T	10-600646-201, BL-600646-201

TABLE 1
AFFECTED MAGNETO MODEL AND PART NUMBER MATRIX

GENERAL

Teledyne Continental Motors (TCM) has developed procedures to ensure the integrity of the tachometer circuit. The tachometer breaker assembly P/N 10-400507 (supersedes P/N 10-361631) is designed to be insulated from the magneto ground when it is installed in the magneto. The following maintenance procedures must be followed at each magneto overhaul, 500 hour inspection, each time the tachometer points are replaced, or any time the magneto tachometer circuit exhibits abnormal operation.

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INSTRUCTIONS FOR CONTINUED AIRWORTHINESS

This Service Bulletin contains updates to the manufacturer's Instructions for Continued Airworthiness (ICA) as required by FAR 43.13(a). A copy of this bulletin must be inserted into the specified locations in the manuals listed in TABLE 2 until the manual is updated or the bulletin is superseded or cancelled.


MANUAL NUMBER	SECTION	SECTION
X-42002-1* S-20 / S-200 SERIES HIGH TENSION MAGNETOS	6	9

***Also included in the X40000 TCM Ignition
Systems Master Service Manual**

**TABLE 2
MANUAL REFERENCE CHART**

INSPECTION AND ASSEMBLY PROCEDURES

- Parts Assembly: Figure 2 depicts the correct current configuration of parts, assemblies and wiring in the magneto breaker compartment of the affected magnetos.
 - Inspect the P/N 10-361639 tachometer insulating bushings for cracks, crushing or other damage. Current bushings use phenolic material that is laminated in an annular (circular) pattern. (Reference Figure 1)
 - Any bushing found to have parallel laminations as shown in Figure 2 must be replaced before further service.
 - Set tachometer contacts to .016 - .022 clearance on the high lobe of the cam. Apply 8-10 inch-pounds torque to the retaining screws.
 - Visually inspect the P/N 10-361639 phenolic insulating bushings for damage after torque application. Any damaged bushings must be replaced before further service.
 - Washer P/N 10-14268 is used under the screw at the adjusting slot in the P/N 10-400507 tachometer contact assembly. The washer is thicker and wider to spread the clamping load evenly to the bushing that bridges the slot.
 - Washer P/N 10-400566 is used under the screw at the pivot hole in the P/N 10-400507 tachometer contact assembly. This washer is smaller to ensure electrical insulation from the tachometer assembly. The insulating bushing is supported on all sides by the breaker support.
- The breaker compartment features four wires that must be assembled properly to ensure continued reliable service: the coil primary wire, the two tachometer wires, and the capacitor wire. (See FIGURE 2.) Whenever access allows, inspect wires to ensure that they are free of cuts or chafing damage. Wires must be routed as shown in FIGURE 2 to ensure that they do not interfere with the rotating cam and associated parts during operation, and to ensure that no wire is pinched between the breaker cover and distributor housing at assembly. Any excess coil wire may be protected by bending it away from the cam. Coil and capacitor wires feature insulation that is relatively soft. Indentations on the insulation on these parts are normal and expected. Any exposed wire strands is cause for replacement. Replace damaged parts as necessary. The two tachometer wires use a short length of tubing as an assembly aid: the position of the tubing at

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assembly is unimportant. Either tachometer wire may pass through either hole in the bushing in the breaker compartment cover.

3. Whenever access allows, inspect the wiring terminals (Flag Terminals) for integrity as shown in Figure 3.
4. Hi-Pot insulation integrity test.
 - (a) As applicable, disconnect magneto tachometer wires from all airframe circuits in accordance with airframe manufacturer's instructions.
 - (b) Using Slaughter Model 1305 Dielectric Breakdown Tester * (or equivalent) set to 500V, apply 500V to each tachometer wire and ground. No indication of dielectric breakdown is permissible.
 - (c) Replace all tachometer breaker assemblies or related components that indicate any dielectric breakdown in accordance with the latest revision of S-20/S-200 Series High Tension Magneto Service Support Manual, form X42002-1, dated November 1993 and installation requirements detailed above. Repeat Hi-Pot test following parts replacement.
 - (d) Reattach magneto tachometer wires to airframe wires in accordance with the latest Airframe manufacturer's instructions.

* Slaughter Model 1305 Dielectric Breakdown Tester available from:
Slaughter Company, Inc.
 28105 N Keith Drive
 Lake Forest, IL 60045
 USA
 Ph: 800-504-0055
 Email: Sales@hipot.com

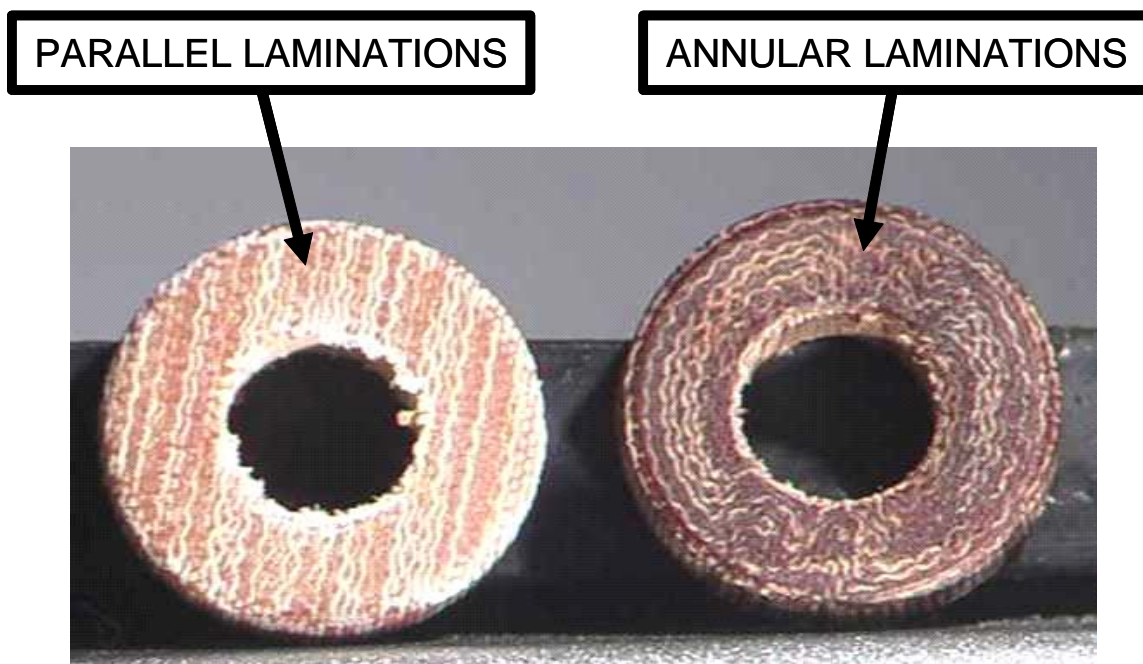


FIGURE 1
P/N 10-361639 PHENOLIC BUSHING INSPECTION

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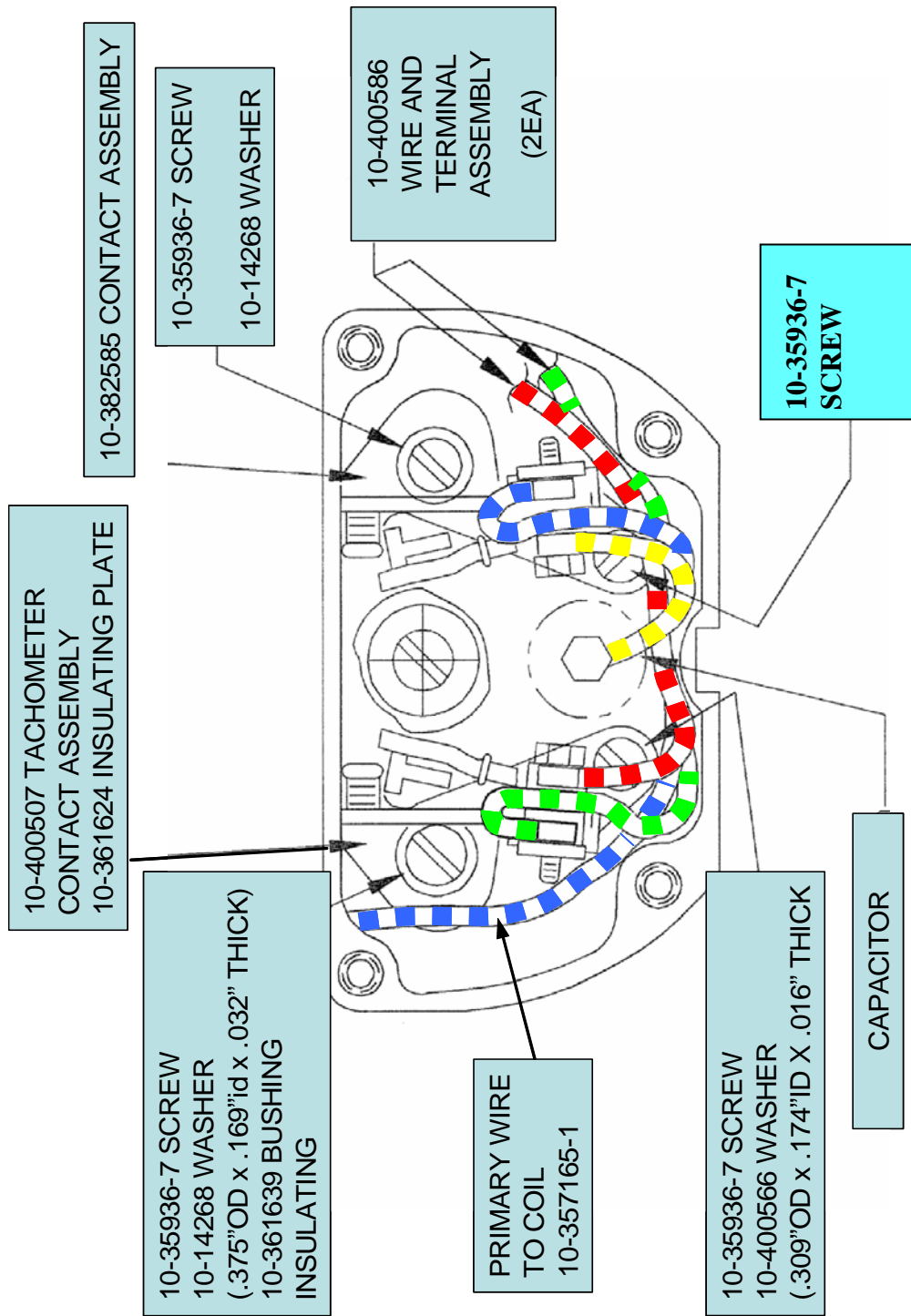


FIGURE 2
BREAKER COMPARTMENT ASSEMBLY AND WIRING
WIRE COLORS IN FIGURE 2 ARE FOR ILLUSTRATION OF ROUTING ONLY
AND DO NOT INDICATE ACTUAL WIRE COLORS.

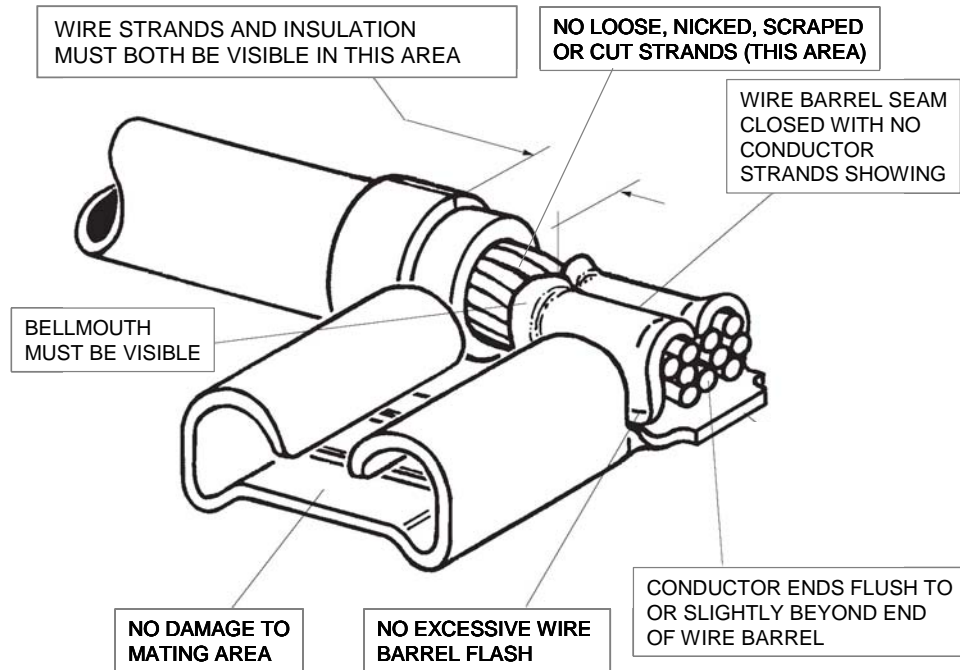


FIGURE 3

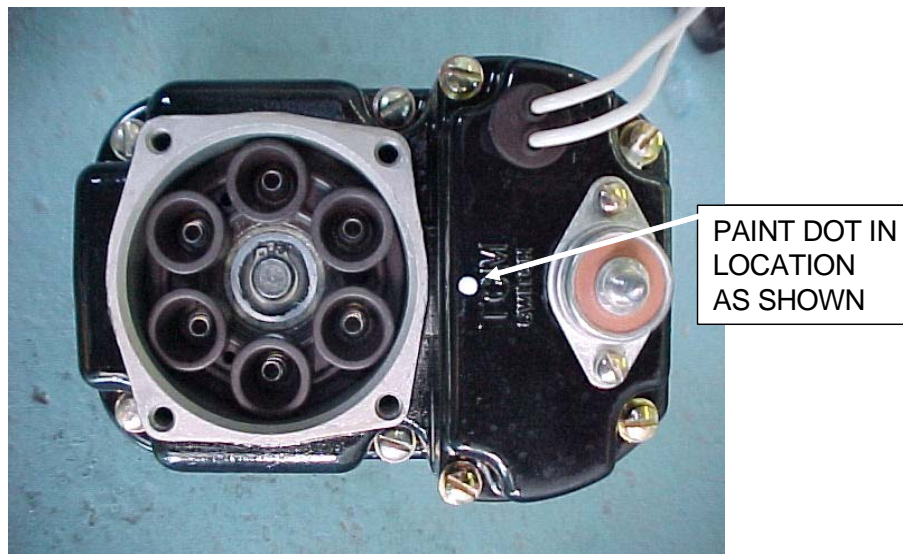



FIGURE 4

Initial compliance identification. Applicable to designated serial number range only.

NOTE: Initial compliance does not preclude recurring compliance performance in accordance with the recurring inspection requirements of this bulletin.

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