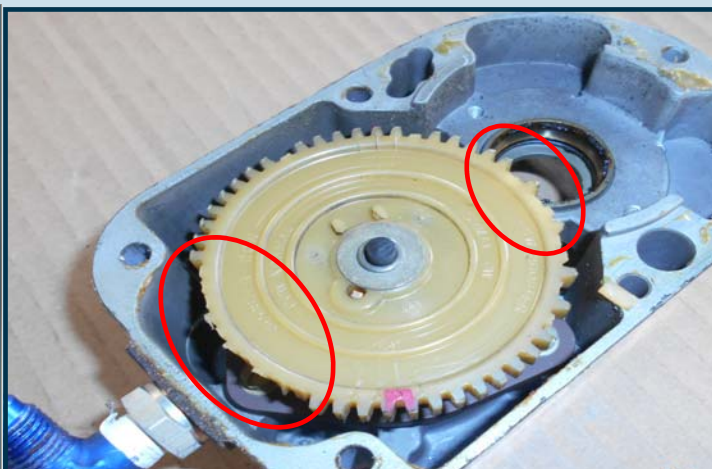
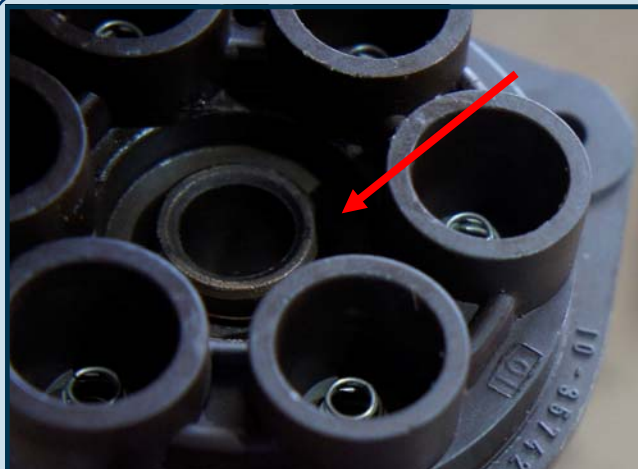


BOLETIN TÉCNICO DE SEGURIDAD OPERACIONAL AÉREA

BT-01-2018 CONTINENTAL MOTORS IGNITION SYSTEMS



DIRIGIDO A: OPERADORES, ORGANIZACIONES DE MANTENIMIENTO APROBADAS, ESCUELAS TÉCNICAS DE AVIACIÓN, PILOTOS AVIADORES Y PERSONAL ADMINISTRATIVO DE TODAS LAS EMPRESAS DE AVIACIÓN QUE OPERAN EN EL PAIS.

EMITIDO: UNIDAD DE INVESTIGACIÓN DE ACCIDENTES

ASUNTO: REQUERIMIENTO DE INSPECCIÓN EN INTERVALOS PARA MOTORES CONTINENTAL EQUIPADOS CON MAGNETOS BENDIX SERIE S-200, Y S-1200.

FECHA DE CREACIÓN S/B: 25 de febrero 1994 **REVISIÓN:** 21 julio 2017

De acuerdo a la información consignada en la nota de seguridad Categoría 3 No. SB643 C. Se ha tenido la experiencia en dos aeronaves que se han detectado en el Estado de Guatemala, falla en los magnetos, provocando la caída de una aeronave y la otra suspendiendo el vuelo al efectuar prueba de magnetos en cabecera de pista antes de iniciar el vuelo.

- Se recomienda la vigilancia de los magnetos que fueron manufacturados antes del 01 de junio del 2015, para ser reparados o reemplazados al finalizar su tiempo de operación que son cinco años desde su fecha de fabricación o su última reparación.

SAFETY INFORMATION NOTICE
CATEGORY 3 SUPERSEDES
SB643B TECHNICAL PORTION
FAA APPROVED

SERVICE BULLETIN
SB643 C

SERVICE BULLETIN**SB643C**

Compliance Will Enhance Safety

Supersedes SB643B
TECHNICAL PORTIONS
FAA APPROVED

- SUBJECT:** Maintenance intervals for Continental Motors (formerly TCM/Bendix) S-20, S-200, and S-1200 series Magnetos and Related Equipment
- PURPOSE:** Required inspection and maintenance intervals for CMI (formerly TCM/Bendix) Magnetos and Related Equipment.

COMPLIANCE: During the next inspection stage as specified in Section II within this Service Document, whichever occurs first

MODELS

AFFECTED: All aviation gasoline engines using Continental Motors, Inc. (CMI) (formerly TCM/Bendix) S-20, S-200, and S-1200 series magnetos, ignition harnesses, and CMI ignition switches and starting vibrators (where installed)

I. GENERAL INFORMATION

The following information constitutes a portion of the manufacturer's Instructions for Continued Airworthiness and outlines required maintenance, inspection, cleaning and overhaul intervals for CMI (formerly TCM/Bendix) magnetos and related equipment for CMI engines listed under "Models Affected" (above). Reference X42003, "D-2000/D-3000 Series Magneto Service Support Manual" for information on these systems.

NOTE: This Service Document supersedes the recommended periodic magneto **intervals** and does not replace the recommended periodic maintenance procedures as outlined in the published CMI Magneto Service Support Manuals for S-20, S-200, and S-1200 series magnetos, ignition harnesses, ignition switches and starting vibrators.

II. MAINTENANCE INTERVAL INSTRUCTIONS**A. 100 Hour / Annual Inspection or Progressive Maintenance Interval**

1. Magneto-to-engine timing checks must be conducted at the shortest of these intervals. Should the magneto-to-engine timing require adjustment due to exceeding the limits specified by the engine manufacturer, a visual inspection of the magneto contact assemblies must be performed. Follow procedures in the PERIODIC MAINTENANCE section of the latest revision of the applicable Service Support Manual, included in publication X42001, "S-1200 Series Magneto Service Support Manual" and X42002, "S-20/200 Series Magneto Service Support Manual." If internal magneto components require replacement or adjustment, the magneto must be removed from the engine.
2. Ignition Switches must also be functionally tested at the shortest of these intervals. This inspection may be accomplished by performing a "Preflight Magneto RPM Drop" test in accordance with the Aircraft Manufacturer's Pilot's Operating Handbook. Switch action must

ISSUED	REVISED	 P.O. Box 90 Mobile, AL 251-436-8299	PAGE NO	DOC NO	REVISION
1994/02/25	2017/07/21		1 of 4	SB643	C

be smooth and free from sticking. For key type Switches, keys must be removable only in the **OFF** position and the switch must function in accordance with the requirements of the latest revision of Service Documents No. 636, "Bendix/TCM Ignition Switch Inspection" and 653, "Hot Magneto Test."

3. Also at the shortest of these intervals, all ignition harness spark plug terminals must be removed from spark plugs, cleaned and inspected. Clean harness spark plug terminals following procedures in CLEANING section of publication X43001, "High Tension Ignition Harness Service Support Manual." Replace all parts found to be broken, brittle, cracked or burned, then lubricate and reinstall ignition harness following procedures in ASSEMBLY section of X43001, "High Tension Ignition Harness Service Support Manual".
4. Spark plug condition has a major effect on the continued airworthiness of the engine and its ignition system. Therefore, the importance of proper spark plug maintenance cannot be overemphasized. At the shortest of these intervals, all spark plugs must be inspected and maintained in accordance with the spark plug manufacturer's instructions.
5. Starting vibrator functionality must be validated and condition assessed. Functional testing may be conducted with the vibrator installed. Visually inspect the starting vibrator to ensure;
 - a. freedom from damage or threat of damage due to factors including but not limited to weathering, corrosion, and abrasion.
 - b. adequate provision for ventilation and drainage.
 - c. mounting is secure, and electric connections are secure, clean, and undamaged.

B. Impulse Coupling Inspection Interval

1. Magnetos equipped with snap-ring impulse couplings must be inspected for wear at 500-hour intervals as specified in the latest revision of the applicable Service Support Manual, PERIODIC MAINTENANCE section, paragraph 6.2.2.
2. Magnetos with riveted impulse couplings must be inspected for wear at 100-hour intervals as specified in the latest revision of Mandatory Service Bulletin, MSB645, "Inspection of Riveted Impulse Couplings and Stop Pins".

C. 500-Hour Inspection Interval

1. Magnetos must be inspected every 500 hours as specified in the latest revision of the applicable Service Support Manual, PERIODIC MAINTENANCE section, paragraph 6.2.3.
2. At the same time, clean and inspect all ignition harness outlet plates, covers or cap assemblies.
3. Clean grommets following procedures in the CLEANING section specified in the latest revision of the applicable Service Support Manual.
4. Replace all parts found to be broken, brittle, cracked or burned.
5. Lubricate and reinstall harnesses according to procedures in the ASSEMBLY section specified in the latest revision of the applicable Service Support Manual.

ISSUED	REVISED	 P.O. Box 90 Mobile, AL 251-436-8299	PAGE NO	DOC NO	REVISION
1994/02/25	2017/07/21			2 of 4	SB643

D. Engine Overhaul Interval

1. Magnetos are electro-mechanical devices using rotating parts are subject to the same service treatment, environmental conditions, and wear as the engine. Therefore, when the engine is overhauled;
 - a. magnetos must be overhauled,
 - b. ignition harnesses must be replaced, and
 - c. ignition switches and starting vibrators must be inspected and tested for airworthiness.
2. The magneto is an integral part of the engine and undergoes the same deterioration as the engine. Severe environmental conditions, engine over-speeds, sudden stoppage, immersion and other unusual circumstances may require complete or partial engine overhaul **prior** to the overhaul time recommended by the engine manufacturer. Under these circumstances, the magneto (regardless of "In Service" time) must be overhauled with particular attention focused on all rotating parts, bearings, and electrical components.
3. Magnetos with serial number older than D15FA000(R)¹, E15FA000(R)¹, or F15FA000(R)¹ (June 1, 2015) must be overhauled or replaced at the expiration of five years since the date of original manufacture or last overhaul, or four years since the magneto was placed in service, whichever occurs first, without regard to operating hours. Also at this interval, CMI (formerly Bendix/TCM) high tension ignition harnesses with serial numbers K15E or older must be discarded and replaced.
4. In addition to the requirements listed above (Section D., steps 1. and 2.) S-20, S-200 and S-1200 series magnetos with a serial number newer than D15FA000(R)¹, E15FA000(R)¹, or F15FA000(R)¹ (June 1, 2015) must be overhauled or replaced at the expiration of thirteen years since the date of original manufacture or last overhaul, or twelve years since the magneto was placed in service, whichever occurs first, without regard to operating hours. Also at this interval, CMI high tension ignition harnesses with serial numbers K15F or newer must be discarded and replaced.

1. See latest revision of SIL642, "Manufacturing Number (Serial Number) Interpretation" for information regarding CMI serial numbers

ISSUED	REVISED	 P.O. Box 90 Mobile, AL 251-436-8299	PAGE NO	DOC NO	REVISION
1994/02/25	2017/07/21		3 of 4	SB643	C

Intentionally Left Blank

ISSUED	REVISED		PAGE NO	DOC NO	REVISION
1994/02/25	2017/07/21	P.O. Box 90 Mobile, AL 251-436-8299	4 of 4	SB643	C

SERVICE BULLETIN

SB643B

Compliance Will Enhance Safety

SUPERSEDES SERVICE BULLETINS
SB632A , SB643 and SB643A
FAA APPROVED

SUBJECT: MAINTENANCE INTERVALS FOR ALL TCM AND BENDIX AIRCRAFT MAGNETOS AND RELATED EQUIPMENT

PURPOSE: Required maintenance of TCM and Bendix Aircraft Magnetos and Related Equipment

EQUIPMENT

AFFECTED: TCM and Bendix S-20, S-200, S-1200, D-2000 and D-3000 Magnetos, Ignition Harnesses, Ignition Switches and Starting Vibrators.

General Information:

The following information constitutes the manufacturer's Instructions for Continued Airworthiness and outlines required maintenance, inspection, cleaning and overhaul intervals of the TCM and Bendix magnetos and related equipment listed under "Equipment Affected".


Detailed Instructions:

1. 100 HOUR, ANNUAL INSPECTION, OR PROGRESSIVE MAINTENANCE.

A. Magneto-to-engine timing checks must be conducted at the shortest of these intervals. Should the magneto-to-engine timing require adjustment due to exceeding the limits specified by the engine manufacturer, a visual inspection of the magneto contact assemblies must be performed. Follow procedures in the PERIODIC MAINTENANCE section of the latest revision of the applicable Service Support Manual, included in Form X40000 Master Service Manual. If internal magneto components require replacement or adjustment, the magneto must be removed from the engine.

B. Ignition Switches must also be functionally tested at the shortest of these intervals. This inspection may be accomplished by performing a "Preflight Magneto RPM Drop" test in accordance with the Aircraft Manufacturer's Pilot's Operating Handbook. Switch action must be smooth and free from sticking. For key type Switches, keys must be removable only in the "OFF" position and the switch must function in accordance with the requirements of the latest revision of Service Bulletins No. 636 and 653.

C. Also at the shortest of these intervals, all Ignition Harness spark plug terminals must be removed from spark plugs, cleaned and inspected. Clean Harness spark plug terminals following procedures in CLEANING section of the latest revision of the applicable Service Support Manual, included in Form X40000 Master Service Manual. Replace all parts found to be broken, brittle, cracked or burned, then lubricate and reinstall Harness following procedures in ASSEMBLY section of the applicable Service Support Manual.

ISSUED			REVISED			 Teledyne Continental Motors, Inc. <small>A Teledyne Technologies Company</small> P.O. Box 90 Mobile Alabama • 251-438-3411	PAGE NO	REVISION
MO	DAY	YEAR	MO	DAY	YEAR		1 of 2	B
02	25	94	04	06	2005			

D. Spark plug condition has a major effect on the continued airworthiness of the engine and its ignition system. Therefore, the importance of proper spark plug maintenance cannot be overemphasized. At the shortest of these intervals, all spark plugs must be inspected and maintained in accordance with the spark plug manufacturer's instructions.

2. IMPULSE COUPLING INSPECTION.

A. Magnetos equipped with snap-ring impulse couplings must be inspected for wear at 500 hour intervals as specified in the latest revision of the applicable Service Support Manual, PERIODIC MAINTENANCE Section, Paragraph 6.2.2.

B. Magnetos with riveted impulse couplings must be inspected for wear at 100 hour intervals as specified in the latest revision of Service Bulletin MSB645.

3. 500 Hour Inspection.

A. Magnetos, regardless of engine manufacturer application, must be inspected every 500 hours as outlined in the PERIODIC MAINTENANCE section contained in the latest revision of the applicable Service Support Manual, Paragraph 6.2.3.


B. Also, all Ignition Harness outlet plates, covers or cap assemblies must be cleaned and inspected at the same time. Clean grommets following procedures found in the CLEANING section contained in the latest revision of the applicable Service Support Manual. Replace all parts found to be broken, brittle, cracked or burned, then lubricate and reinstall harnesses following procedures found in the ASSEMBLY section contained in the latest revision of the applicable Service Support Manual.

4. Engine Overhaul or Four Year Interval.

A. Magnetos are electro-mechanical devices that use rotating parts and are subject to the same service treatment, environmental conditions and wear as the engine. Therefore, magnetos must be overhauled when the engine is overhauled. Also at engine overhaul, Ignition Harnesses must be replaced. Ignition switches and starting vibrators must be inspected and tested for airworthiness in accordance with all current service information at engine overhaul.

B. Severe environmental conditions, engine over-speeds, sudden stoppage, immersion and other unusual circumstances may require complete or partial engine overhaul prior to the overhaul time recommended by the engine manufacturer. The magneto is an integral part of the engine and is subject to the same deterioration as the engine under the abnormal conditions listed above. In such circumstances the magneto, regardless of "In Service" time, must be overhauled with particular attention focused on all rotating parts, bearings and electrical components.

C. In addition to the requirements listed above, magnetos must be overhauled or replaced at the expiration of five years since the date of original manufacture or last overhaul, or four years since the date the magneto was placed in service, whichever occurs first, without regard to accumulated operating hours. Also at this time all related components, including the High Tension Ignition Harness, Starting Vibrator Assembly and Ignition Switch Assembly, must be inspected for airworthiness in accordance with the procedures contained in the latest revision of their respective Service Support Manual.

ISSUED			REVISED			 Teledyne Continental Motors, Inc. <small>A Teledyne Technologies Company</small> P.O. Box 90 Mobile Alabama • 251-438-3411	PAGE NO	REVISION
MO	DAY	YEAR	MO	DAY	YEAR		2 of 2	B
02	25	94	04	06	2005			

TELEDYNE CONTINENTAL[®] IGNITION SYSTEMS

CATEGORY 5

SERVICE INFORMATION LETTER

Contains Useful Information Pertaining To Your Ignition System

SIL642B

SUPERSEDES SERVICE BULLETINS
633, 642, and 642A
FAA APPROVED

SUBJECT: MANUFACTURING NUMBER (SERIAL NUMBER) INTERPRETATION

REASON FOR LETTER: To Clarify The Meaning Of Manufacturing Numbers Found on TCM Ignition Systems Data Plates.

EQUIPMENT AFFECTED: All TCM S-20, S-200, S-1200 and D-3000 Series Magnetos, New or Factory Rebuilt, Gold Seal Harnesses, Ignition Switches and Starting Vibrators.

GENERAL INFORMATION:

Field Reports indicate occasional difficulty when determining Service Bulletin applicability based on Serial Numbers.

Manufacturing numbers, commonly referred to as serial numbers, are currently used to identify ignition system equipment built by TCM. These manufacturing numbers employ a coding system shown below. The build date derived from this code, rather than the magnitude of the numbers, determines the time of manufacture. Therefore, for Service Bulletin compliance purposes, all magnetos manufactured or rebuilt by TCM may be considered to have a "higher" serial number than magnetos manufactured or "Remanufactured" by Bendix in Sidney, New York, or in Jacksonville, FL. Corporate identification and factory location is found on the Unit's Data Plate.

Current serial numbers, since late 1999, may be read as follows:

Example: D02EA005R

D= Component Identification Code (S20 Series Magneto)

02= Year of Manufacture (2002)

E= Month (May)

A005= Unit Serial Number (5th unit in sequence, begin with A001 each month, after A999 go to B001, etc.)

R= Rebuilt (No letter for new unit)

Serial numbers for components manufactured prior to late 1999 may be read as follows:

Example: B159801FR

B= Month (February)

15= Day of Month

98= Year of Manufacture (1998)

01= sequential number for unit (begins with 01 each day, magnetos only)

F= Component Identification code

R= Rebuilt (No letter for new unit)


Component Identification Codes:

- D - S20 Series Magneto
- E - S200 Series Magneto
- F - S1200 Series Magneto
- G - D3000 Series
- H - Switches, Ignition
- J - Vibrators, Ignition
- K - Harness, Ignition

Month Codes

- | | | |
|---------|---------|---------|
| A - Jan | E- May | I - Sep |
| B - Feb | F - Jun | J - Oct |
| C - Mar | G - Jul | K - Nov |
| D - Apr | H - Aug | L - Dec |

Note: Switches, harness and vibrators require only year and month codes for component identification.

ISSUED			REVISED			 Teledyne Continental Motors, Inc. PO Box 90 Mobile Alabama 36601 • 251-433-3411	PAGE NO	REVISION
MO	DAY	YEAR	MO	DAY	YEAR		1 of 1	B
02	01	94	03	09	2005			