

**TELEDYNE CONTINENTAL® AIRCRAFT ENGINE
CRITICAL SERVICE BULLETIN
Compliance Necessary To Maintain Safety**

CATEGORY 2

CSB97-9

**FAA APPROVED
Supersedes SB 94-14A**

SUBJECT: GTSIO-520 CRANKCASE INSPECTION

PURPOSE: PROVIDES INSTRUCTIONS FOR CRANKCASE INSPECTION AND REMOVAL OF NUMBER 5 CYLINDER 7TH STUD RETAINING BRACKET

COMPLIANCE: WITHIN NEXT 25 HOURS OF OPERATION AND EVERY 50 HOURS FOR THE NEXT 500 HOURS OF OPERATION

**MODELS
AFFECTED: ALL GTSIO-520 SERIES ENGINES INCORPORATING 7TH CYLINDER DECK STUD CONFIGURATION**

GENERAL INFORMATION

Inspection of engines and crankcases returned to TCM has identified the possibility of a crankcase crack developing in the area of the number 5 cylinder 7th stud and aft (9 o'clock) alternator mounting stud.

Within the next 25 operating hours after the effective date of this bulletin and every 50 hours for the next 500 hours of operation perform a visual and dye penetrant inspection of the engine crankcase at the number 5 cylinder 7th stud location. Refer to Figure 1 for area to be inspected.

All new and Rebuilt engines shipped from TCM after May 20, 1997 will not incorporate the number 5 cylinder 7th stud.

CAUTION.....Engines that have complied with this Critical Service Bulletin will not have the number 5 cylinder 7th stud bracket P/N 653867 or nut P/N 646312; however, the 7th stud P/N 646140-3 will remain installed in the crankcase.

PRE-INSPECTION:

1. Following the aircraft manufacturer's instructions perform the following:
 - a) disconnect aircraft battery

- b) remove the aircraft cowling
 - c) remove engine baffling to allow access to the alternator and number 5 cylinder area
 - d) disconnect electrical wiring from the alternator. Identify terminal locations on wiring to aid installation
2. Remove and discard the number 5 cylinder 7th stud nut and bracket. The nut and bracket **will not be** reinstalled after inspection.
3. Remove alternator mounting hardware and remove alternator from the engine. Discard lock washers.

CRANKCASE INSPECTION:

1. Clean the area around and adjacent to the number 5 cylinder 7th stud and alternator (Refer to Figure 1) with an approved cleaner.
2. Perform a visual and dye penetrant inspection of the area, with specific attention to the area between the number 5 cylinder 7th stud and the aft (9 o'clock) alternator mount stud (Refer to Figure 1).

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3. If a crack is identified, the crankcase or engine must be replaced prior to further operation.
4. If no crack is identified, comply with the following instruction prior to returning the engine to service.

ALTERNATOR STUD INSTALLATION:

On engines incorporating the aft (9 o'clock) alternator mount stud, follow the instructions contained in the ALTERNATOR INSTALLATION section of this bulletin.

Engines that do not have the alternator aft (9 o'clock) mounting stud installed will require installation of this stud.

1. Prior to installation of the P/N 401885 stud, thoroughly clean the stud hole in the crankcase with Loctite "Primer N".
2. Apply Loctite "271" to the course threads of the stud and install to a stud height of .950 inches. Allow a minimum of 30 minutes for the Loctite "271" to cure.

ALTERNATOR INSTALLATION:

1. Reinstall alternator using a new gasket, P/N 649978. Lubricate stud threads with clean 50 weight engine oil. Install 4 each of the following; flat washers, new lock washers and nuts. Torque alternator attaching nuts 150 to 180 inch pounds.

1. Following the aircraft manufacturer's instructions perform the following:
 - a) install engine baffling previously removed
 - b) reconnect electrical wiring at alternator
 - c) reinstall engine cowling
 - d) reconnect aircraft battery

POST INSPECTION / INSTALLATION OPERATIONAL VERIFICATION:


Perform a complete engine ground run up in accordance with the aircraft manufacture's instructions. Verify that alternators perform and function correctly.

1. After engine shut down, inspect engine for oil and fuel leaks.
2. Correct any discrepancies noted prior to returning the engine and aircraft to service.
3. Make log book entries indicating compliance with this Critical Service Bulletin. Entry must include the next required inspection interval.

WARRANTY:

The actions required by this bulletin are covered by TCM's Gold Medallion Warranty, subject to its terms and conditions.

AFFECTED PUBLICATIONS: We recommend that you make the appropriate annotations to applicable manuals to call attention to this service bulletin.

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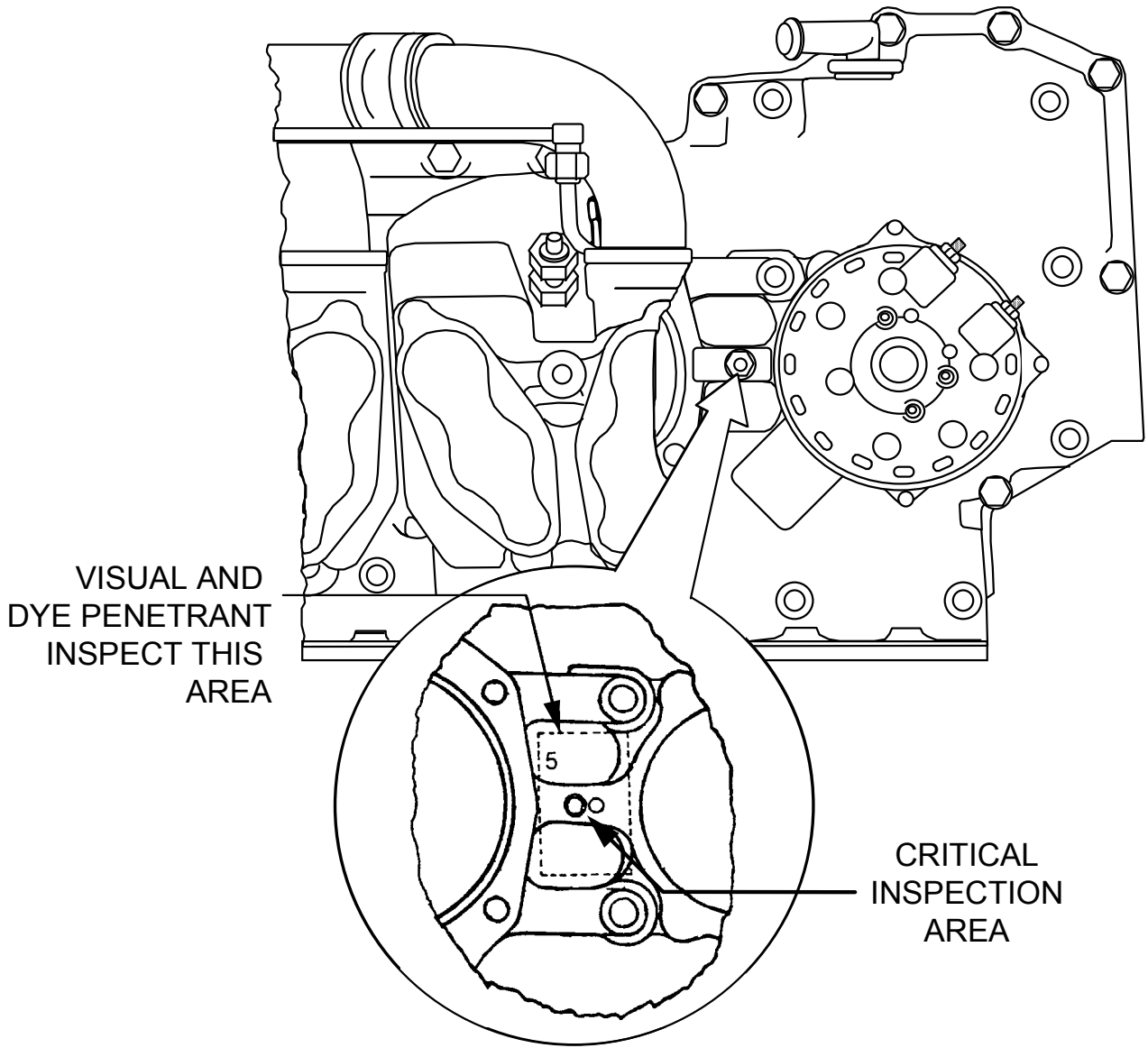


Figure 1

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