

SERVICE BULLETIN

SB94-7

Contains Useful Information Pertaining To Your Aircraft Engines' Service Documents

FAA APPROVED

SUBJECT: CHRANKSHAFT FLANGE TIMING MARKS

PURPOSE: TCM Quality Assurance has identified a small number of crankshafts that were marked with incorrect timing marks that must be removed to prevent magneto timing from being set with reference to these marks.

Magneto timing that is set utilizing these incorrect marks will advance timing by a maximum of three degrees.

WARNING


Engines that are operated with advanced timing exhibit higher than normal oil and cylinder head temperature and have a reduced margin of safety from detonation!

Engines that are manufactured by TCM have magneto timing set by the use of a timing disc and top dead center locator as required in TCM Service Bulletin SB94-8. However, it is required that the affected engines and service crankshafts listed below are inspected for correct magneto timing and the incorrect timing marks removed. This bulletin provides inspection and rework instructions for these crankshafts.

COMPLIANCE: The inspection portion of this bulletin is required within the next 25 hours of operation on engines that contain affected crankshafts to verify correct magneto to engine timing. The rework procedures are required no later than the next annual or 100 hour inspection.

MODELS AFFECTED: O-470-J, K, L, M R, S & U.
 IO-470-D, E, F, J, K, M, S, U & V.
 IO-520-A, D, E, F, J, K & L.
 TSIO-520-AF, C, G, H, M, P, R, & T.

Service crankshaft assembly part numbers 649133, 649134, 649135, 649138, 649141 and 652039 that were shipped from TCM on June 7, 1994 through July 13, 1994, identified with serial numbers F079401N through F209406N are affected. The crankshaft assembly part number is not identified on the crankshaft. The crankshaft serial number is located on the crankshaft flange, adjacent to the timing marks.

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The following engines must be inspected and have the timing marks removed utilizing the procedures set forth in this service bulletin:


ENGINE	SERIAL NUMBER
O-470-L.....	069797-R, 069798-R
O-470-R.....	288234-R thru 288238-R, 288247-R.
O-470-S.....	269302-R.
O-470-U.....	286846-R, 286847-R.
IO-470-V.....	171096-R, 171097-R.
IO-520-A.....	112716-R.
IO-520-D.....	293050-R thru 293055-R, 293057-R thru 293059-R, 293061-R, 293066-R, 293078-R.
IO-520-F.....	291201-R, 291202-R, 291204-R, 291205-R, 291208-R, 291209-R, 291212-R, 291216-R, 291217-R.
IO-520-L.....	294518-R thru 294521-R, 294524-R.
TSIO-520-C.....	178429-R, 178432-R.
TSIO-520-G.....	216045-R.
TSIO-520-H.....	217316-R.
TSIO-520-M.....	291572-R thru 291575-R, 291578-R.
TSIO-520-P.....	278680-R, 278683-R.
TSIO-520-R.....	293522-R, 293524-R, 293526-R, 293528-R, 293531-R, 293536-R, 293537-R, 293539-R.
TSIO-520-T.....	239405-R.

INSPECTION PROCEDURE

1. Affected crankshafts and engines listed above must have the correct magneto to engine timing verified within the next 25 hours of operation. The timing must be verified by using the procedure prescribed in TCM Service Bulletin SB94-8. If affected service crankshafts have not been assembled in an engine, remove the timing marks as instructed in the "REWORK INSTRUCTIONS" set forth in this bulletin.

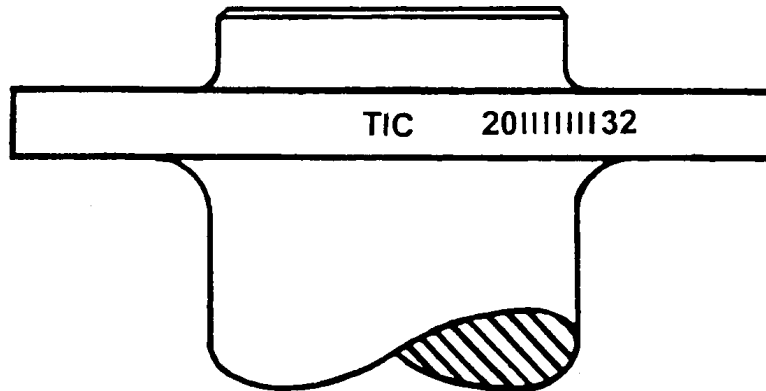
REWORK INSTRUCTIONS

1. Remove the propeller and associated parts to gain access to the crankshaft flange timing marks.
2. Correct crankshaft flange timing marks are illustrated in Figure 1. If the crankshaft is marked correctly, verify magneto timing and make a log book entry as to compliance with this service bulletin.
3. If incorrect crankshaft flange timing marks are found as illustrated in Figure 2, proceed as follows.
4. Remove degree numbers and marks by buffing with 180 grit emery cloth. Do not remove the TC mark. Maximum depth of buffing is .002 inch. Buffed area must be smooth with no sharp edges.

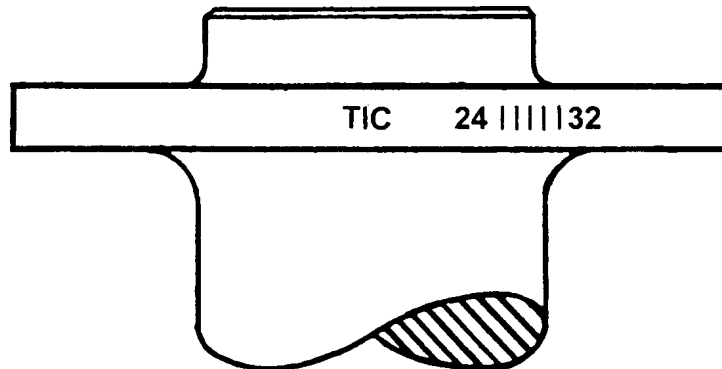
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5. Apply a thin film of aluminum color, enamel spray paint to the buffed area. Allow sufficient time for the paint to dry. Reworked crankshaft flange timing marks will appear as illustrated in Figure 3.
6. Install the propeller and associated parts in accordance with the airframe manufacturers instructions.
7. Verify and set magneto timing as indicated in TCM Service Bulletin SB94-8.
8. Make a log book entry as to compliance with this service bulletin.


Warranty action required to comply with this bulletin is covered by the TCM Gold Medallion Warranty, subject to its terms and conditions. Warranty claims may be filed through any TCM Distributor.

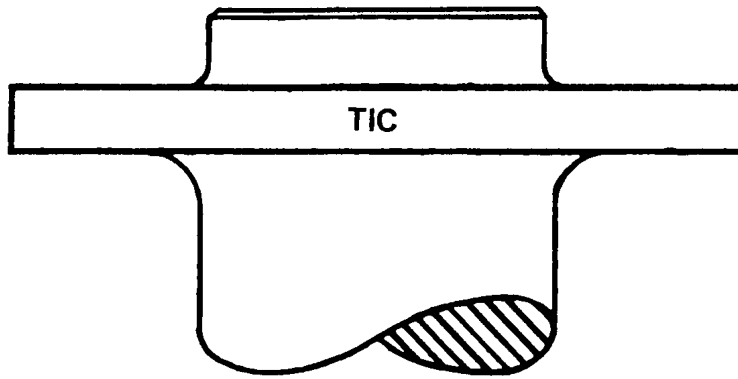


**CORRECT CRANKSHAFT FLANGE TIMING MARKS
FIGURE 1**




**INCORRECT CRANKSHAFT FLANGE TIMING MARKS
FIGURE 2**

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**REWORKED CRANKSHAFT FLANGE TIMING MARKS
FIGURE 3**

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