



MOONEY INTERNATIONAL CORPORATION SPECIAL LETTER

SPECIAL LETTER 18-18
Date: 12-18-2018

SUBJECT: To ADVISE MOONEY OWNERS/OPERATORS of the **Continental Motors Aircraft Engine SERVICE BULLETIN SB18-07, Dated: 11/19/2018 - Subject: Crankshaft Dowel (P/N 536563) Inspection and Replacement Instructions at Maintenance and Overhaul**

**MODELS/
S/N AFFECTED:** Refer to - **Continental Motors Aircraft Engine SERVICE BULLETIN SB18-07, Dated: 11/19/2018 - Subject: Crankshaft Dowel (P/N 536563) Inspection and Replacement Instructions at Maintenance and Overhaul.** (see attached document for more information)

**TIME OF
COMPLIANCE:** At the next maintenance requiring complete disassembly of the engine, no later than published TBO.

INTRODUCTION: This Service Document summarizes the inspection and replacement instructions for the Crankshaft Dowel (P/N 536563).
(see attached document for more information)

INSTRUCTIONS: Refer to - **Continental Motors Aircraft Engine SERVICE BULLETIN SB18-07, Dated: 11/19/2018 - Subject: Crankshaft Dowel (P/N 536563) Inspection and Replacement Instructions at Maintenance and Overhaul.** (see attached document for more information)

WARRANTY: Refer to - **Continental Motors Aircraft Engine SERVICE BULLETIN SB18-07, Dated: 11/19/2018 - Subject: Crankshaft Dowel (P/N 536563) Inspection and Replacement Instructions at Maintenance and Overhaul.** (see attached document for more information)

**REFERENCE
DATA:** Refer to - **Continental Motors Aircraft Engine SERVICE BULLETIN SB18-07, Dated: 11/19/2018 - Subject: Crankshaft Dowel (P/N 536563) Inspection and Replacement Instructions at Maintenance and Overhaul.** (see attached document for more information)

PARTS LIST: Refer to - **Continental Motors Aircraft Engine SERVICE BULLETIN SB18-07, Dated: 11/19/2018 - Subject: Crankshaft Dowel (P/N 536563) Inspection and Replacement Instructions at Maintenance and Overhaul.** (see attached document for more information)

SERVICE BULLETIN**SB18-07**

Compliance Will Enhance Safety

**TECHNICAL PORTIONS
FAA APPROVED****SUBJECT:** Crankshaft Dowel (P/N 536563) Inspection and Replacement Instructions at Maintenance and Overhaul**PURPOSE:** To ensure correct servicing of Crankshaft Dowel**COMPLIANCE:** At the next maintenance requiring complete disassembly of the engine, no later than published TBO.**MODELS****AFFECTED:** All Continental Motors, Inc. (CMI) O-470-R, S, U; IO-470-K, L, N, U, VO; GTSIO-520-D, H, K, L, M, N; IO-520-A, BB, BE, CB, D, DB, E, EB, F, J, JB, K, KB, L, LB, MB, NB, UB, VB, WB; IO-550-A, B, C, D, E, F, G, L, N, P, R; IOF-550-B, C, N, P, R; LTSIO-520-AE, TSIO-520-AE, AF, C, CE, G, H, M, P, R, T, UB, VB, WB; TSIO-550-A, B, C, E, G, K, N; TSIOF-550-D, J, K, P and TSIOL-550-A & C aviation gasoline (AvGas) engines**I. GENERAL INFORMATION**

This Service Document summarizes the inspection and replacement instructions for the Crankshaft Dowel (P/N 536563).

II. ICA REFERENCE UPDATES

Overhaul inspection, maintenance and repair instructions for the crankshaft dowel differ between Instructions for Continued Airworthiness (ICA) manuals. Use Table 1 to annotate “*see SB18-07 for revised crankshaft dowel instructions*” as an additional reference within the ICA to this Service Document (SB18-07).

Table 1. Revised Instruction Sets

ICAs ¹	Engine Model/Specification	Section	Page
X30039	IO-520-A, B, BB, CB, D, E, F, J, K, L, MB, NB, UB, VB & WB	4-29 & 4-30	4-21
X30045	GTSIO-520	7-18	A-7-5
X30574	TSIO-520-B, BB, BE, D, DB, E, EB, J, JB, K, KB, L, LB, N, NB, U, UB, VB & WB	72-10-17	72-10-60
X30575	TSIO-520-C, CE, G, H, M, P, R, T, AE & AF and LTSIO-520-AE	72-10-17	72-10-44
X30586	O-470-A, B, E, G, J, K, L, M, R, S & U	72-10-17	72-10-30
X30588	IO-470-C, D, E, F, G, H, J, K, L, M, N, P, R, S, U, V & VO	72-10-17	72-10-56
X30600	TSIOL-550-A	72-10-18	72-10-24
X30607	IO-550-D, E, F & L	72-10-17	72-10-38
M-16	IO-550-A, B, C, G, N, P & R	13-8.2	13-27
M-18	TSIO-550-B, C, E, G, K & N	13-10.2	13-30
M-26	TSIOF-550-D, J, K & P	13-9.2	13-29
OH-15	TSIOL-550-C	18-3	18-3
OH-24	IOF-550-B, C, N, P & R	7-8.2	7-26

1. Annotate the following reference to the engine models affected “*see SB18-07 for revised crankshaft dowel instructions.*”

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III. INSPECTION INSTRUCTIONS

The crankshaft dowel is installed with an interference fit. The dowel is used to positively orient the crankshaft gear to the crankshaft. At the next maintenance event requiring complete disassembly of the engine or at overhaul:

1. Visually inspect the crankshaft dowel for physical damage, corrosion or missing material. If the dowel is deformed, missing material or corroded, replace the dowel (reference Section IV, "Dowel Replacement").
2. Inspect the crankshaft dowel for security in the crankshaft. The dowel should be squarely installed in the bore and uniformly contacting the surface of the crankshaft. If the dowel appears to be loose, misaligned, or can be moved by hand, replace the dowel (reference Section IV, "Dowel Replacement").
3. Measure the outside diameter of the crankshaft dowel at two locations 90° apart. The O.D. measurement should be 0.2820" - 0.2825". If the diameter is less than 0.2820", replace the dowel (reference Section IV, "Dowel Replacement").

Table 2. Crankshaft Dowel Dimensions

Description	Min. Diameter (in.)	Max. Diameter (in.)
Dowel Dimensions	0.2820 ¹	0.2825
Dowel Bore in Crankshaft	0.2808	0.2818 ²
Min.-Max. Interference Fit ³	0.0002	0.0017

1. If the crankshaft dowel diameter is less than 0.2820", replace the dowel.
2. If the crankshaft dowel bore exceeds 0.2818" ID, an oversize dowel (0.0050") may be used.
3. Ensure interference fit is maintained.

CAUTION: Do not use the crankshaft dowel as an electrical contact point for magnetic particle inspections.

4. When performing crankshaft magnetic particle inspection with the crankshaft dowel installed, use a machined copper spacer to ensure uniform electrical contact and avoid arcing.

IV. DOWEL REPLACEMENT

1. Remove the existing crankshaft dowel with a slide hammer fitted with an adjustable chuck.
2. Inspect the crankshaft dowel bore for cracks; replace the crankshaft if cracks emanate from the dowel bore.
3. Inspect crankshaft dowel bore and ensure dowel bore meets specifications defined in Table 2.
4. Dry fit the new crankshaft dowel for a minimum 0.0002" interference fit (reference Table 2).

NOTE: If the dowel bore exceeds 0.2818" ID, an 0.0050" oversize dowel may be used.

CAUTION: Ensure the crankshaft dowel does not trap oil in the dowel bore or oil may cause a hydrostatic lock and the dowel will not seat at proper height in the dowel bore.

5. Lightly lubricate the end of the crankshaft dowel with clean 50wt aviation engine oil and install the dowel in the crankshaft bore with an arbor press.

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6. After crankshaft dowel replacement, inspect the:
 - a. dowel with a tool maker's square for proper alignment and seating height extending from the crankshaft flange (reference applicable ICA).
 - b. crankshaft and dowel bore area for cracks. Replace the crankshaft if cracks emanate from the dowel bore.

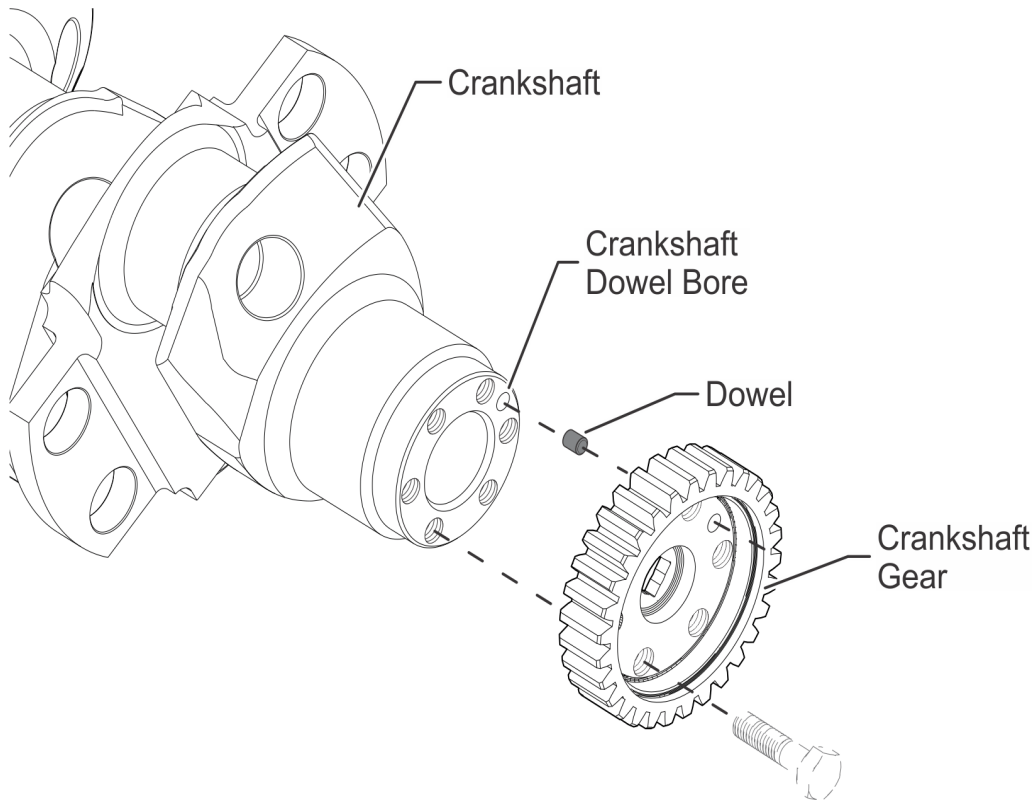


Figure 1. Crankshaft Dowel Bore and Dowel Locations, typical

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