

COMPLIANCE NECESSARY TO MAINTAIN SAFETY

Supersedes SB07-1  
TECHNICAL PORTIONS  
FAA APPROVED

**SUBJECT:** Connecting Rod Piston Pin Bushing Inspection  
**PURPOSE:** Provide inspection instructions for the connecting rod piston pin bushing  
**COMPLIANCE:** At each cylinder removal or anytime piston pin bushing material is identified during routine maintenance

**MODELS**

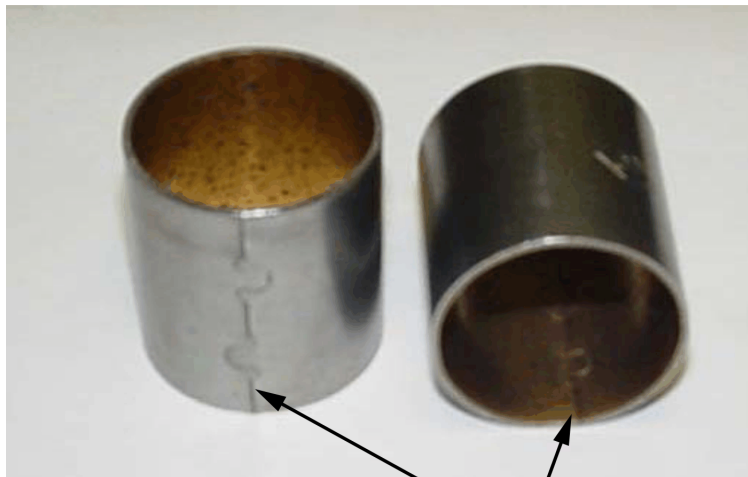
**AFFECTED:** Continental Aerospace Technologies new and rebuilt A Series, C Series, E Series, O-200, IO-240, IOF-240, GO-300, O-300, IO-346, IO-360, LTSIO-360, TSIO-360, GIO-470, O-470, IO-470, TSIO-470, IO-520, GTSIO-520, LTSIO-520, TSIO-520, IO-550, IOF-550, TIARA, TSIO-550, TSIOF-550, and TSIOL-550 engine models.

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**I. GENERAL INFORMATION**

Continental Aerospace Technologies, Inc. (Continental™) has received reports from the field of piston pin bushing material being found in the oil sump or the oil filter. Piston pin bushings are manufactured from steel-backed bronze and are curved on a radius of approximately 0.62” (see Figure 1).



**BUSHING SPLIT LINE**  
**Figure 1. Typical New Piston Pin Bushings**

**II. OIL CHANGE**

Straining engine oil and during the oil change and inspecting the oil filter media is the least invasive method to determine if connecting rod piston pin bushing material has separated from the connecting rods.

1. Perform the oil change at the next scheduled interval according to the instructions in M-0, Section 6-4.8.
  - a. Rather than drain the oil into catch basin and try to strain the spent oil through a paper filter, Continental recommends the following enhanced instructions:
    - 1) Place a pre-cleaned catch basin beneath the oil sump drain.
    - 2) Position a 1000 micron or less (approximately 0.040” or less) mesh screen in the catch basin to strain the oil sump contents. The 1000 micron stainless steel oil strainer (part number 2000) shown in Figure 2 is designed to fit the opening of a standard 5 gallon bucket. It is available for purchased from Arborfab.com. Arbor Fabricating, 14030 Tuttle Hill, Milan, MI 48160. (734) 626-5864.
  - b. Rinse the excess oil residue from the screen, retaining any fragments, particles, or sediment in the screen for analysis.

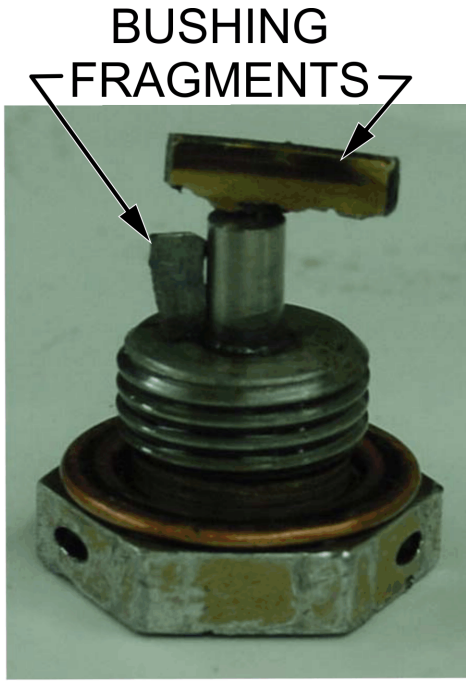


**Figure 2. 1000 Micron Stainless Steel Oil Strainer**

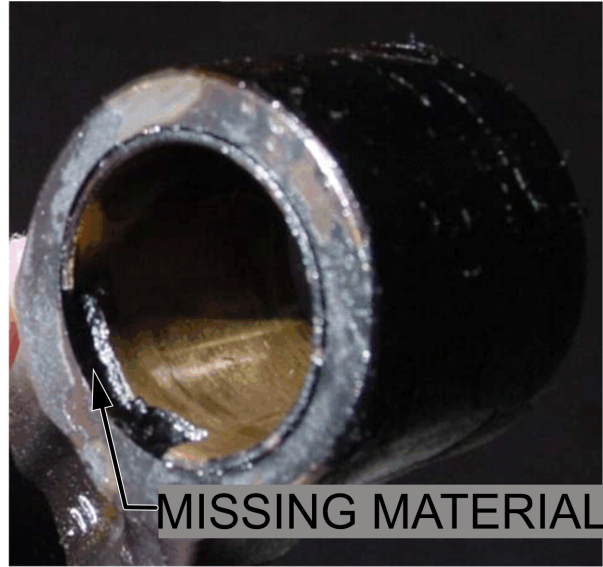
NOTE: The quick drain coupling orifice may trap debris and sediment material. To prevent entrapped material and allow collection of ferrous particles, Continental strongly recommends removing the non-magnetic oil plug (Part No. 532432) or quick drain coupling (Part Nos. 656122, 656995, or 658764) and installing a magnetic drain plug (Part No. 636376 or 656169) in the oil sump to attract and collect ferrous (iron) wear particulate and larger particles that could contaminate the lubrication system. The presence and collection of material on the magnetic drain plug can: 1) indicate an issue with certain engine components; 2) prevent damage to the oil pump and; 3) capture particles that could become lodged in the oil pressure relief-valve and result in a low oil pressure event. Not all engines are equipped with quick drain couplings or magnetic drain plugs - check engine illustrated parts catalog for applicability.

- c. Examine the strainer, drain plug and/or quick drain coupling for abnormal/excessive wear material, metal fragments, and debris to assess the engine condition. Metal fragments on the magnetic drain plug may indicate excessive wear or part damage.

If piston pin bushing material (see Figure 3) is recovered from an engine, remove the cylinders, pistons, and piston pins (no more than two cylinders at a time) to inspect the connecting rod piston pin bushings. In addition, the piston pin bushing must be inspected for condition each time a cylinder is removed for any reason.



**MAGNETIC OIL  
DRAIN PLUG**



**CONNECTING ROD  
AND BUSHING**

**Figure 3. Typical Indications of Bushing Fragments**

**III. INSTRUCTIONS FOR CONTINUED AIRWORTHINESS (ICA)**

This bulletin contains updates to the Instructions for Continued Airworthiness required under Title 14 CFR § 43.13(a). A copy of this bulletin must be inserted into the manuals listed in Table 1 of this bulletin until the data is incorporated into the manual by revision or the bulletin is superseded or canceled.

**WARNING**

**Instructions for Continued Airworthiness in Section 10-9.4 of M-0, Standard Practice Maintenance Manual contain the instructions for the remaining Maintenance and Overhaul Manuals listed below. When performing Connecting Rod Inspection or Maintenance, use the instructions in M-0, Section 10-9.4.**

**Table 1. Applicable Engine ICAs**

<b>Document Number</b>	<b>Applicable Engine Model(s)</b>	<b>Section/ Subsection</b>
M-0	Continental Spark-Ignited AvGas Engines	<b>10-9.4</b>
M-2	O200D	M-0, § 10-9.4
M-6 <sup>1</sup>	IO240A, B	15-7.9
M-7	IO360A, AB, AF, C, CB, D, DB, ES, G, GB, H, HB, J, JB, K & KB	M-0, § 10-9.4

**Table 1. Applicable Engine ICAs**

<b>Document Number</b>	<b>Applicable Engine Model(s)</b>	<b>Section/ Subsection</b>
M-8	LTSIO360E, EB, KB, & RB; TSI0360A, AB, B, BB, C, CB, D, DB, E, EB, F, FB, G, GB, H, HB, JB, KB, LB, MB, RB, SB	M-0, § 10-9.4
M-11 <sup>1</sup>	IO520B, BA, BB, C, CB, M & MB	19
M-16 <sup>1</sup>	IO550A, B, C, G, N, P & R	15-7.2.1
M-18	TSIO550A, B, C, E, G, J, K & N	M-0, § 10-9.4
M-22 <sup>1</sup>	IOF240B	15-6.2.1
OH-15 <sup>1</sup>	TSIOL550C	16 & 18
OMI-15 <sup>1</sup>	TSIOL550C	16
OH-24 <sup>1</sup>	IOF550B, C, N, P & R	9-7.2.3
M-26 <sup>1</sup>	TSIOF550D, J, K & P	15-7.2.1
X30008 <sup>1</sup>	A-65	9
X30010 <sup>1</sup>	C-75, C85, C90 & O200A, B	XIII
X30013 <sup>1</sup>	C-125, C-145 & O300	10
X30016 <sup>1</sup>	E-165, E-185, E-225	IX
X30019 <sup>1</sup>	GO300A, C, D & E	9
X30027 <sup>1</sup>	IO346	IX
X30144 <sup>1</sup>	TIARA	7
X30033 <sup>1</sup>	TSIO470	X
X30039 <sup>1</sup>	IO520A, B, BA, BB, C, CB, D, E, F, J, K, L, M & MB	6
X30045 <sup>1</sup>	GTSIO520C, D, F, H, K, L, M & N	IX
X30574 <sup>1</sup>	TSIO520B, BB, BE, D, DB, E, EB, J, JB, K, KB, L, LB, N, NB, UB, VB, & WB	72-20-20
X30575 <sup>1</sup>	TSIO520AE, AF, C, CE, G, H, M, P, R & T	72-20-20
X30586 <sup>1</sup>	O470A, B, E, G, J, K, L, M, P, R, S & U	72-20
X30588 <sup>1</sup>	IO470-C, D, E, F, G, H, J, K, L, M, N, P, R, S, U, V & VO	72-40
X30600 <sup>1</sup>	TSIOL550A	72-40
X30607 <sup>1</sup>	IO550D, E, F, L	72-40

1. The contents of these documents will be modified to reference M-0, Section 10-9.4.

## IV. INSPECTION

*CAUTION: Connecting rod piston pin bushing replacement requires specialized tools and procedures and must be accomplished by a shop properly rated to perform the repair.*

NOTE: Complete Connecting Rod Piston Pin Inspection Criteria may be found in **Section 10-9.4.** of **M-0**, Standard Practice Maintenance Manual.

If piston pin bushing issues are suspected:

1. Remove the cylinders and pistons from the engine using the instructions contained in the appropriate maintenance or overhaul manual to gain access to the piston pin bushings.
2. Inspect the connecting rods according to the instructions in **M-0**, Section 10-9.4.
3. Visually inspect the piston pin bushing for any signs of cracks emanating from the piston pin bushing split line, missing bushing material, or signs of bushing movement.
4. Inspect the piston pin bushing for wear according to the instructions in **M-0**, Standard Practice Maintenance Manual, **Section 10-9.4.**
  - a. Replace any piston pin bushing that does not meet the installation criteria in **M-0**, Section 10-9.4 or is found cracked per during the inspection in step 3.
  - b. Replace any piston pin bushing that does not meet the inspection criteria in **M-0**, Standard Practice Maintenance Manual, **Section 10-9.4.**

## V. WARRANTY

For engines currently within the warranty period, Continental will reimburse the customer for the parts and labor required to complete the inspection and repairs.

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