

MANDATORY SERVICE BULLETIN

DATE: June 13, 2017

Service Bulletin No. 630A
(Supersedes Service Bulletin No. 630)
Engineering Aspects are
FAA Approved

SUBJECT: Connecting Rod Bushing Inspection After Cylinder Removal

MODELS AFFECTED: All Lycoming Engines

TIME OF COMPLIANCE: At next maintenance event that requires cylinder removal

REASON FOR REVISION: Added more information to examine the following aspects of the connecting rod bushing: 1) looseness/out of place, 2) split line visibility, and 3) wear

NOTICE: Incomplete review of all the information in this document can cause errors. Read the entire Service Bulletin to make sure you have a complete understanding of the requirements.

This Service Bulletin includes a mandatory inspection of the connecting rod bushing (in the smaller end of the connecting rod as shown in Figure 1) that must be done any time a cylinder is removed from a Lycoming engine.

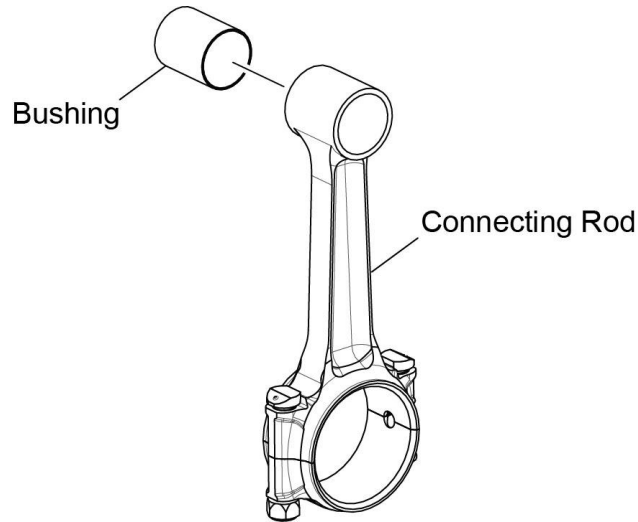


Figure 1
Bushing in Connecting Rod

NOTICE: To accurately and efficiently assist those who could be experiencing connecting rod bushings moving out of the correct installed position, Lycoming Engines must collect certain data and information from you each time you complete this inspection.

If, during the connecting rod bushing inspection, the bushing is found to have moved out of the correct installed position, contact Lycoming Engines' Product Support at +1 (877) 839-7878 (Toll Free) or +1 (570) 327-7222 or email Technicalsupport@lycoming.com.



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Connecting Rod Bushing Inspection

After cylinder removal, remove the piston and examine the connecting rod bushing for damage. If damaged, remove, discard and replace the connecting rod bushing.

If the connecting rod bushing is not damaged, continue with this progressive inspection for:

- Proper fit in the connecting rod
- Movement of the bushing
- Wear

If any one of the conditions identified above are found in the inspection herein, remove, discard and replace the connecting rod bushing.

For a bushing to be acceptable, the connecting rod bushing must not be damaged and pass all of the steps in the inspection herein.

NOTICE: Some connecting rod bushings have a straight edge (Figure 2) and others have a chamfered edge (Figure 3) on both sides after the bushing is installed at the factory. Some inspection steps apply specifically to the design application.

1. Examine the Connecting Rod Bushing for Looseness or if it has Moved Out of Place:

A. On *straight-edge, non-chamfered bushings* (Figure 2):

- (1) Either apply a straight edge or run your finger around the perimeter of each side of the connecting rod where the connecting rod bushing is installed.
- (2) Visually or by touch determine whether the connecting rod bushing is raised above the surface of the connecting rod perimeter.
- (3) If the connecting rod bushing is flush with or below the connecting rod perimeter (Figure 4), go to Step 1A (5).
- (4) If the edge of the connecting rod bushing is raised above the surface of the connecting rod perimeter (Figure 5), the connecting rod bushing is loose or has moved or is out of place. Remove, discard, and replace the connecting rod bushing.



Figure 2

Straight Edge Connecting Rod Bushing

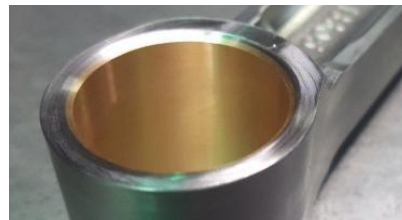


Figure 3

Chamfered Connecting Rod Bushing

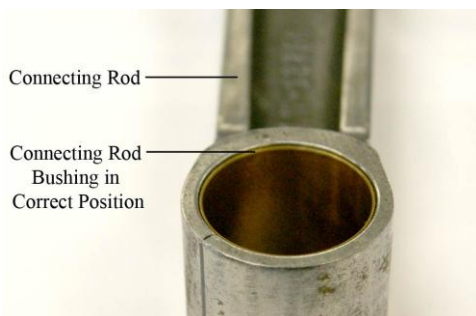


Figure 4

Example of Connecting Rod Bushing in Correct Position

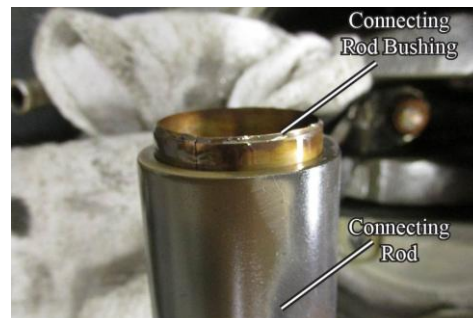


Figure 5

Example of Connecting Rod Bushing Raised Above the Connecting Rod

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(5) Measure the distance from the surface of the connecting rod to the edge of the connecting rod bushing installed in the connecting rod (Figure 6) on both sides of the connecting rod.

(a) If the sum total of the measurements from both sides of the connecting rod is 0.038 in. (0.965 mm) or less, this feature is acceptable. Go to Step 2.

(b) If the sum total of the measurements from both sides of the connecting rod is greater than 0.038 in. (0.965 mm) (it is an indication the connecting rod bushing is loose or has moved or is out of place) (Figure 5). Remove, discard, and replace the connecting rod bushing.

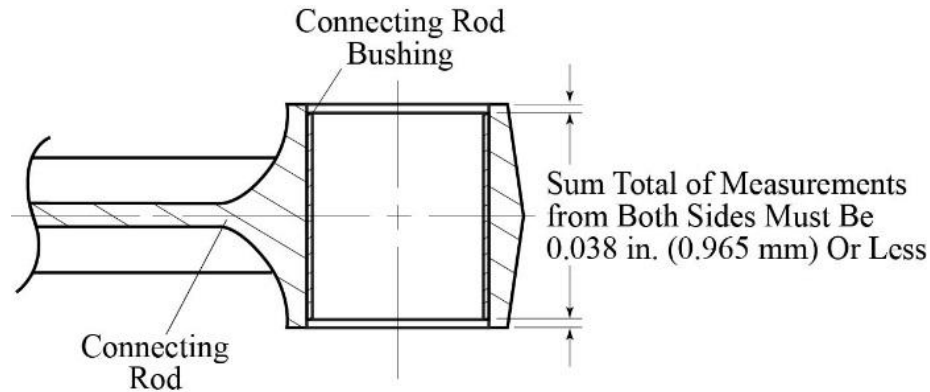


Figure 6
Correct Placement of Connecting Rod Bushing

B. On *chamfered connecting rod bushings* (Figure 3), look at the perimeter edge of the applicable connecting rod bushing within the connecting rod.

(1) If the chamfer of the connecting rod and the chamfer of the connecting rod bushing align (Figure 7), this feature is acceptable. Go to Step 2 on the next page.

(2) If the chamfer of the connecting rod and the chamfer of the connecting rod bushing do not align (Figure 8), the connecting rod bushing has moved within the connecting rod. Remove, discard, and replace the connecting rod bushing. Contact Lycoming Engines' Product Support at +1 (877) 839-7878 (Toll Free) or +1 (570) 327-7222 or email Technicalsupport@lycoming.com.

NOTICE: As the connecting rod bushing moves further out of place, the piston at the piston pin hole could show wear. If the connecting rod bushing is out of position, examine the piston for wear.

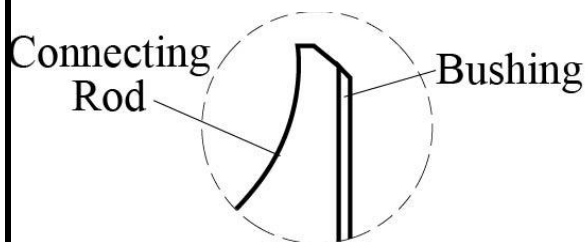


Figure 7
**Connecting Rod Bushing
in Correct Position**

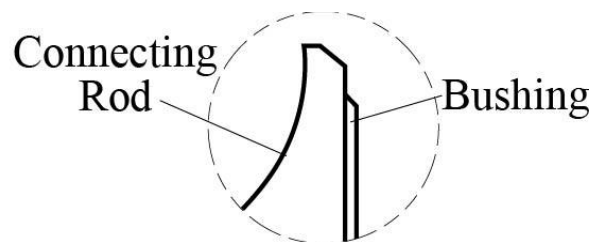


Figure 8
**Connecting Rod Bushing
Out of Place**

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2. Examine the Location of the Connecting Rod Bushing Split Line

NOTICE: Connecting rod bushings are manufactured with a split line in the bushing. When installed, the split line of the bushing is positioned approximately at a 45° angle from the center line of the connecting rod as shown in Figure 9.

Some connecting rod bushings have a notch or notches in the edge of the bushing (Figure 10). Do not confuse the notch or notches with the split line in the bushing.

Look for the split line on the inside diameter of the connecting rod bushing.

If the split line is visible at any other location other than approximately at a 45° angle from the center line of the connecting rod, the connecting rod bushing has moved and must be removed, discarded, and replaced.

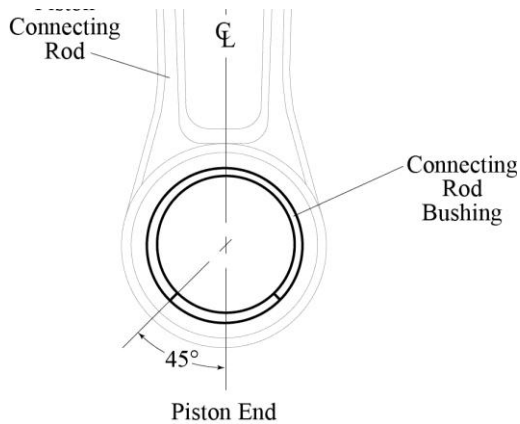


Figure 9

Connecting Rod Bushing Split Line Position

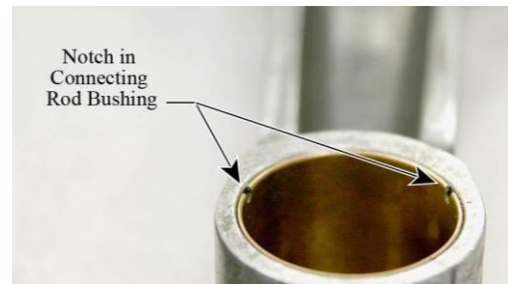


Figure 10

Notches in the Connecting Rod Bushing

3. Examine the Connecting Rod Bushing for Wear:

- A. Measure and record the Inside Diameter (ID) of the connecting rod bushing.
- B. Measure and record the Outside Diameter (OD) of the piston pin.
- C. Calculate and record the clearance by subtracting the OD of the piston pin from the ID of the connecting rod bushing.
 - If the clearance is less than or equal to the “Service Max.” clearance in the latest revision of the *Service Table of Limits - SSP-1776*, the connecting rod bushing and piston pin are acceptable with regards to connecting rod bushing wear.
 - If the clearance is greater than the “Service Max.” clearance in the latest revision of the *Service Table of Limits - SSP-1776*, remove, discard and replace the component(s) that exceed(s) the manufacturing dimensions according to the latest revision of the *Service Table of Limits - SSP-1776*.

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