MANDATORY

SEL-71-07

TITLE

POWER PLANT - TRANSMITTAL OF LYCOMING SERVICE BULLETIN NO. 632A IDENTIFICATION OF CONNECTING RODS WITH NON-CONFORMING SMALL END BUSHINGS

EFFECTIVITY

Airplanes delivered from the factory.

MODEL	SERIAL NUMBERS
172S	172S11669, 172S11672, 172S11673, 172S11676 thru 172S11703, 172S11705 thru 172S11731, 172S11736 thru 172S11777, 172S12001, 172S12002, 172S12004 thru 172S12014, 172S12016 thru 172S12021, 172S12023 thru 172S12025
182T	18282428, 18282433, 18282434, 18282440 thru 18282450, 182082452, 182082455, 18282462 thru 18282464, 18282470, 18283001 thru 18283006
T206H	T20609228 thru T20609258, T20609501 thru T20609509

Cessna and Beechcraft model airplanes that have replaced original engine or engine components with those identified in Lycoming Service Bulletin No. 632A Table 1 or Table 2.

All serial number airplanes that follow and have Lycoming Engines with a serial number listed in Table 1 of the Lycoming Service Bulletin No. 632A and engines that have been overhauled or repaired after January 1, 2015 using replacement parts identified in Table 2 of the Lycoming Service Bulletin No. 632A.

Cessna model airplanes: 152, A152, F152, FA152, 172I, 172K, 172L, F172L, 172M, F172M, 172N, F172N, 172P, F172P, 172RG, 172Q, 177, 177A, 177B, 177RG, F177RG, R182, FR182, T182, TR182.

Cessna model airplanes (1996 & On): 172R, 172S, 182S, 182T, T182T, 206H, T206H.

Beechcraft model airplanes: 23, A23-19, A23-24, A-24, A24R, 19A, B19, M19A, B-23, B24R, C-23, C24R, C-35, D-35, 77.

Textron Aviation Customer Service, P.O. Box 7706, Wichita, KS 67277, U.S.A. 1-316-517-5800

MANDATORY **SEL-71-07**

REASON

This service letter transmits Lycoming Service Bulletin No. 632A, Identification of Connecting Rods with Non-Conforming Small End Bushings. The Lycoming service bulletin has instructions to inspect engine serial numbers, connecting rod and connecting rod bushing part numbers, remove the cylinders and complete a connecting rod bushing press-out procedure. If a connecting rod, or connecting rod bushing is suspect, they must be replaced.

WARNING: You must complete the "required action" in this service bulletin to ensure that your connecting rod bushings are properly seated. If a connecting rod bushing becomes unseated, according to Lycoming the connecting rod can fail, causing an uncommanded and complete loss of power.

DESCRIPTION

This service document provides instructions to comply with Lycoming Service Bulletin No. 632A, Identification of Connecting Rods with Non-Conforming Small End Bushings.

COMPLIANCE

MANDATORY. This service document must be accomplished within 10 flight hours.

NOTE: If the airplane is operated before the incorporation of Lycoming Service Bulletin No. 632A the pilot should monitor the engine for abnormal vibrations or knocking. It is recommended that pilots consider operating only daytime VFR and familiarize themselves with the emergency procedures for a precautionary or emergency landing.

A service document published by Textron Aviation may be recorded as *completed* in an aircraft log only when the following requirements are satisfied:

1) The mechanic must complete all of the instructions in the service document, including the intent therein.
2) The mechanic must correctly use and install all applicable parts supplied with the service document kit. Only with written authorization from Textron Aviation can substitute parts or rebuilt parts be used to replace new parts.
3) The mechanic or airplane owner must use the technical data in the service document only as approved and published.
4) The mechanic or airplane owner must apply the information in the service document only to aircraft serial numbers identified in the *Effectivity* section of the document.
5) The mechanic or airplane owner must use maintenance practices that are identified as acceptable standard practices in the aviation industry and governmental regulations.

No individual or corporate organization other than Textron Aviation is authorized to make or apply any changes to a Textron Aviation-issued service document or flight manual supplement without prior written consent from Textron Aviation.

Textron Aviation is not responsible for the quality of maintenance performed to comply with this document, unless the maintenance is accomplished at a Textron Aviation-owned Service Center.

TOOLING

NAME	NUMBER	MANUFACTURER	USE
Connecting Rod Bushing Press-Out Verification Tool	ST-531	Textron Aviation Parts Distribution 7121 Southwest Boulevard Wichita, KS 67215	This tool is used to do a press-out test of the connecting rod bushing.
Stretch Bolt Micrometer and Set Master	R-ST-488	Lycoming 652 Oliver St Williamsport, PA 17701	Used to verify the stretch bolt installation on certain connecting rod installations.

REFERENCES

Lycoming Service Bulletin No. 632A, Identification of Connecting Rods with Non-Conforming Small End Bushings, Dated July 17, 2017 or latest revision

Lycoming Service Bulletin No. 630A, Connecting Rod Bushing Inspection After Cylinder Removal, Dated June 13, 2017 or latest revision

Lycoming Overhaul Manual Direct Drive Engine PN 60294-7-14 or latest revision

Lycoming Service Instruction No. 1059E, Pre-Lubrication of Parts Before Assembly, Dated January 27, 2016 or latest revision

Lycoming Service Instruction No. 1458G, Connecting Rod Bolts (Identification and Installation), Dated November 10, 2015 or latest revision

Lycoming Special Service Publication No. SSP-1776-3, Service Table Of Limits And Torque Value Recommendations, Dated January 31, 2017 or latest revision (This document is available at Lycoming.com.)

PUBLICATIONS AFFECTED

None

ACCOMPLISHMENT INSTRUCTIONS

1. Review Lycoming Service Bulletin No. 632A, Identification of Connecting Rods with Non-Conforming Small End Bushings.
   A. Determine whether your engine is in the engine serial list identified in Service Bulletin No. 632A Table 1.
   B. Determine whether your engine could contain connecting rods or connecting rod bushings shipped from Lycoming during dates identified in Service Bulletin No. 632A Table 2.
   C. If engine or components are not affected, go to step 10.
2. Prepare the airplane for maintenance.
   A. Make sure that the airplane is electrically grounded.
   B. Make sure that all switches are in the OFF/NORM position.
   C. Disconnect electrical power from the airplane.
      (1) Disconnect the airplane battery.
      (2) Disconnect external electrical power.
   D. Attach maintenance warning tags to the battery and external power receptacle that have **"DO NOT CONNECT ELECTRICAL POWER - MAINTENANCE IN PROGRESS"** written on them.
3. Remove the upper and lower engine cowl as necessary.
4. Remove baffling, induction, fuel injection, and exhaust system components as necessary to gain access to accomplish Service Bulletin Instructions.

5. Complete Lycoming Service Bulletin No. 632A, Identification of Connecting Rods with Non-Conforming Small End Bushings. (Refer to the referenced Lycoming documents to reassemble the engine.)
6. Install components removed in Step 4.
7. Complete an engine operational and leak check in accordance with local shop practices and the airplanes owner manual or POH.
8. Install the upper and lower engine cowl that was removed in Step 3.
9. Complete a return to service maintenance flight.
10. Make an entry in the airplane logbook that states compliance and method of compliance with this service document.

MATERIAL INFORMATION

Refer to Lycoming Service Bulletin No. 632A, Parts Required for Reassembly and an Authorized Service Facility for a list of additional parts necessary to complete this service letter.

There is no labor allowance available for the engines that have ordered and installed the LW-13923 Connecting Rod Bushing.

* Please contact a Textron Aviation Authorized Service Facility for current cost and availability of parts listed in the Lycoming Service Bulletin No. 632A.

SEL-71-07

TITLE

POWER PLANT - TRANSMITTAL OF LYCOMING SERVICE BULLETIN NO. 632A IDENTIFICATION OF CONNECTING RODS WITH NON-CONFORMING SMALL END BUSHINGS

TO:

Owners of the airplanes that follow:

Cessna model airplanes: 152, A152, F152, FA152, 172I, 172K, 172L, F172L, 172M, F172M, 172N, F172N, 172P, F172P, 172RG, 172Q, 177, 177A, 177B, 177RG, F177RG, R182, FR182, T182, TR182.

Cessna model airplanes (1996 & On): 172R, 172S, 182S, 182T, T182T, 206H, T206H.

Beechcraft model airplanes: 23, A23-19, A23-24, A-24, A24R, 19A, B19, M19A, B-23, B24R, C-23, C24R, C-35, D-35, 77.

REASON

This service letter transmits Lycoming Service Bulletin No. 632A, Identification of Connecting Rods with Non-Conforming Small End Bushings. The Lycoming service bulletin has instructions to inspect engine serial numbers, connecting rod and connecting rod bushing part numbers, remove the cylinders and complete a connecting rod bushing press-out procedure. If a connecting rod, or connecting rod bushing is suspect, they must be replaced.

WARNING: You must complete the "required action" in this service bulletin to ensure that your connecting rod bushings are properly seated. If a connecting rod bushing becomes unseated, according to Lycoming the connecting rod can fail, causing an uncommanded and complete loss of power.

COMPLIANCE

MANDATORY. This service document must be accomplished within 10 flight hours.

NOTE: If the airplane is operated before the incorporation of Lycoming Service Bulletin No. 632A the pilot should monitor the engine for abnormal vibrations or knocking. It is recommended that pilots consider operating only daytime VFR and familiarize themselves with the emergency procedures for a precautionary or emergency landing.

Textron Aviation Customer Service, P.O. Box 7706, Wichita, KS 67277, U.S.A. 1-316-517-5800

LABOR HOURS

WORK PHASE	LABOR-HOURS
Cylinder removal, inspection and reinstallation (4-cylinder engine)	12.0
Cylinder removal, inspection and reinstallation (6-cylinder engine)	16.0
Exhaust manifold removal and reinstallation (6-cylinder turbocharged engines)	3.0
Cylinder removal, inspection and reinstallation (8-cylinder engine)	20.0
Bushing Press-Out Procedure	0.25 per connecting rod
Connecting Rod Removal and Replacement (if required)	1.0 per connecting rod

NOTE: Additional labor hours may be considered. Please submit a claim form online for the actual hours at ww2.txtav.com/Parts or email the completed Textron Aviation Claim Form to warranty@txtav.com.

MATERIAL AVAILABILITY

For a list of part numbers, refer to the Parts Required for Reassembly section in the Lycoming Service Bulletin No. 632 Rev A or later.

Please contact a Textron Aviation Authorized Service Facility for current cost and availability of parts listed necessary to complete this service document.

WARRANTY

This service document is *mandatory*. Eligible airplanes may qualify for parts and labor coverage to the extent noted in the *Labor Hours* and *Material Availability* sections of this document.

Eligibility: All engine serials identified in Table 1 of the Lycoming Service Bulletin No. 632 Rev A or later or have had an engine that has been overhauled or repaired after January 1, 2015 and used replacement connecting rod assemblies identified in Table 2 of the Lycoming Service Bulletin No. 632 Rev A or later

Parts Coverage: Textron Aviation-owned and Textron Aviation-authorized Service Facilities, operators, or other maintenance facilities may submit a claim for the parts required to accomplish this service document as defined in the *Material Availability* section of this document.

Labor Coverage: Textron Aviation-owned and Textron Aviation-authorized Service Facilities rated to perform maintenance on the specific model of Beechcraft or Cessna Aircraft may submit a claim for the labor necessary to accomplish this service document as defined in the *Labor Hours* section of this document.

There is no labor allowance available for the engines that have ordered and installed the LW-13923 Connecting Rod Bushing.

Credit Application: After this service document has been accomplished, a claim must be submitted to Textron Aviation within 30 days of the service document completion. Claims for compliance of this service document are to be filed as a W4 type claim.

Please submit your claim form online at *ww2.txtav.com/Parts* or email the completed Textron Aviation Claim Form to *warranty@txtav.com*. If submitted on-line a Return Authorization will be provided. If a paper claim is submitted your claim will be entered into the system and a Return Authorization will be sent to you.

The Return Authorization must accompany any required return parts (see *Material Availability*), to the point of purchase.

Parts to be returned to Textron Aviation Parts Distribution should be forwarded to:

Textron Aviation Parts Distribution
Warranty Administration
285 South Greenwich Road
Bldg B89, Docks 1-4
Wichita, KS 67206
USA

Expiration: July 26, 2018 (after this date the owner/operator assumes the responsibility or compliance costs)

Textron Aviation reserves the right to void continued airplane warranty coverage for the parts affected by this service document until the service document is accomplished.

LYCOMING
652 Oliver Street
Williamsport, PA 17701 U.S.A.
Telephone +1 (800) 258-3279 (U.S. and Canada)
Telephone +1 (570) 323-6181 (International)
Facsimile +1 (570) 327-7101
Email Technicalsupport@lycoming.com
www.lycoming.com

MANDATORY SERVICE BULLETIN

DATE: July 23, 2017

Service Bulletin No. 632A
(Supersedes Service Bulletin No. 632)
Engineering Aspects are
FAA Approved

SUBJECT: Identification of Connecting Rods with Non-Conforming Small End Bushings

MODELS AFFECTED: (1) Engines with a serial number listed in Table 1 of this Service Bulletin; and

(2) Engines that have been overhauled or repaired after January 1, 2015 using replacement parts identified in Table 2 of this Service Bulletin.

TIME OF COMPLIANCE: Within the next 10 hours of engine operation

REASON FOR REVISION: Clarified "Models Affected" and Warning on Page 1and verbiage in Steps 1, 1-B, and 5 under "Required Action"; deleted "Limited Warranty" section

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 contains required action 1) to identify connecting rods that contain bushings that do not meet Lycoming Engine's specifications and 2) any applicable follow-up corrective action.

Table 1 identifies affected engine models and serial numbers of new, rebuilt, or overhauled engines shipped from Lycoming Engines. Table 2 identifies the part numbers of suspect connecting rod bushings and connecting rods (that could contain the suspect connecting rod bushing) shipped from the factory within specified time ranges.

⚠WARNING: YOU MUST COMPLETE THE "REQUIRED ACTION" IN THIS SERVICE BULLETIN TO ENSURE THAT YOUR CONNECTING ROD BUSHINGS ARE PROPERLY SEATED. IF A CONNECTING ROD BUSHING BECOMES UNSEATED, THE CONNECTING ROD CAN FAIL, CAUSING AN UNCOMMANDED AND COMPLETE LOSS OF POWER.

Required Action

1. Identify and quarantine affected engines (Table 1) and engines with suspect connecting rod assemblies or connecting rod bushings (Table 2):
   A. Refer to the engine serial numbers in Table 1 and identify affected engines in your fleet.
   B. If your engine was overhauled or repaired after January 1, 2015, contact your Lycoming parts source to review your parts invoice shipment dates as well as maintenance and engine logbooks to identify any engine in your fleet that could have one or more suspect connecting rod bushings (identified in Table 2) or connecting rod assemblies (identified in Table 2).
2. As you complete the remaining "Required Action" steps, complete the online survey at www.lycoming.com/SB632.
3. Complete the "Connecting Rod Inspection" in this Service Bulletin on all affected engines in Table 1 and on any engine which could have suspect connecting rods or connecting rod bushings (Table 2).
4. Review your spares inventory records and physical inventory of all connecting rod bushings and connecting rod assemblies for part numbers and ship dates in Table 2:
   A. Remove and quarantine all suspect connecting rod bushings and connecting rod assemblies identified in Table 2 from your spares inventory.

B. Arrange for the return of all suspect connecting rod assemblies and connecting rod bushings (identified in Table 2) through the Lycoming Distributor from which they were originally procured in exchange for conforming replacement parts.

5. If applicable, file a warranty claim. Please refer to your Lycoming Engine's Limited Warranty for procedures, details, and limitations related to your warranty. Information is available online at http://www.lycoming.com/warranty. Contact an Authorized Lycoming Distributor for assistance and to order all necessary parts.

Connecting Rod Inspection

1. For engines with serial numbers identified in Table 1 or for any engine that contains a suspect connecting rod assembly (in Table 2) or connecting rod bushing (in Table 2) installed in the field:
   A. Remove the rocker box cover, rocker box cover gasket, rockers, pushrods, and shroud tubes per instructions in the applicable Lycoming Engines' manual. Discard the rocker box gasket and shroud tube O-rings.
   B. Remove the cylinder fasteners at the base of each engine cylinder (Figure 1) to pull the cylinder out just enough to enable removal of the piston plugs and piston pin in the next step. **Do not pull the cylinder completely past the piston rings since it could require additional work and parts replacement**.

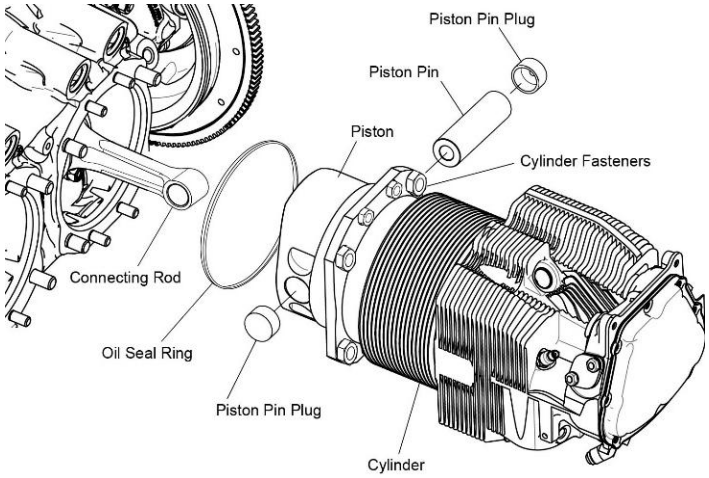

Figure 1
Cylinder, Piston Pin Plugs, Piston Pin, and Piston

NOTICE: A plastic drift and lightweight hammer can be used if the piston pin plugs are difficult to remove.

C. Support the cylinder and piston and remove the piston pin plugs and piston pin from the connecting rod.

D. Remove the cylinder and piston as a unit from the connecting rod.

E. Remove the oil seal ring (Figure 1) from the cylinder base and install it on the two studs in the crankcase to support the connecting rod as shown in Figure 2.

Figure 2
Oil Seal Ring Installed on the Crankcase Studs

F. Complete the "Connecting Rod Bushing Press-Out Verification Procedure" in this Service Bulletin.

Connecting Rod Bushing Press-Out Verification Procedure

NOTICE: A crescent wrench, 1/4-inch Allen socket, 1/4-inch or 3/8-inch ratchet, and extensions as necessary are required to complete this procedure.

1. Use the "Connecting Rod Bushing Inspection" in the latest revision of Service Bulletin No. SB-630 to identify an initial reference point or measurement for the connecting rod bushing position to determine if connecting rod bushing movement has occurred during this procedure.
2. Remove the bottom section from the ST-531, Connecting Rod Bushing Press-Out Verification Tool (Figure 3) (available from Lycoming Engines).

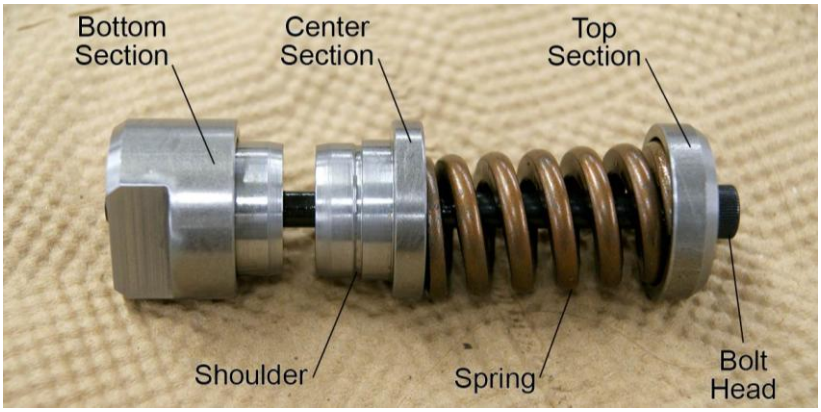

Figure 3
ST-531, Connecting Rod Bushing Press-Out Verification Tool

3. Apply a coating of clean engine oil to the threads of the bolt, the shoulder on the center section, and under the head of the bolt of the ST-531 (Figure 4).

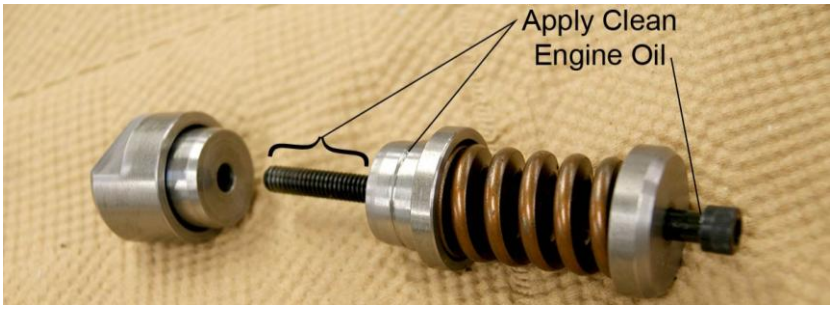

Figure 4
ST-531 Lubrication Points

4. Install the tool in the piston end of the connecting rod (Figure 5) and reinstall the bottom section.
5. Hold the bottom section of the ST-531 and turn the bolt head until finger-tight (Figure 6).

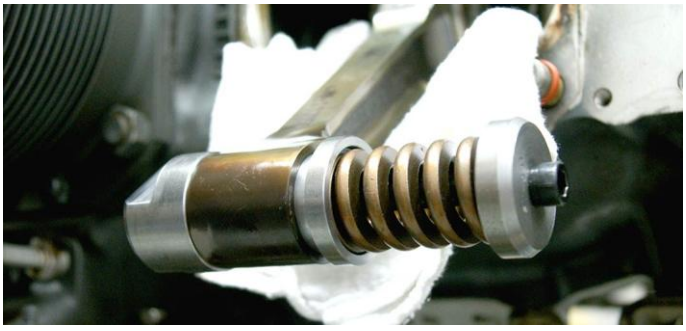

Figure 5
ST-531 Installed in the Connecting Rod

Figure 6
Turn the Bolt Head of the ST-531

6. Make sure:
   - The bottom section of the tool is in contact with the connecting rod
   - The shoulder of the center section of the tool is in contact with the connecting rod bushing
   - The head of the bolt is in contact with the top section of the tool
   - The spring is seated correctly in the tool as shown in Figure 7. Figure 8 shows **incorrect** seating of the spring.

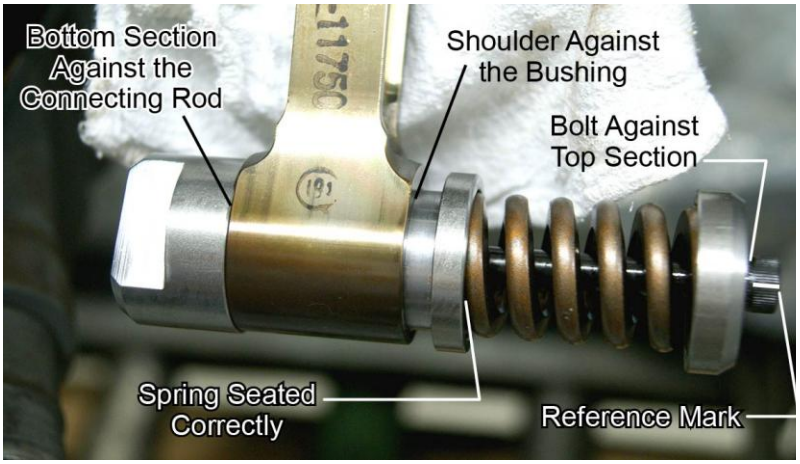

Figure 7
ST-531 Correctly Installed in the Connecting Rod

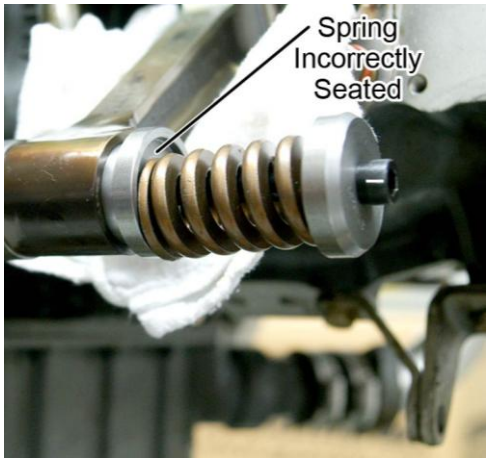

Figure 8
Spring Incorrectly Seated in the Tool

7. Use a marker to make a reference mark on the bolt head (Figure 7) to ensure an accurate count of the required number of turns during the procedure.
8. Use a wrench to hold the bottom section of ST-531 and turn the bolt with the ratchet and 1/4-inch Allen socket clockwise six full turns (Figure 9). **Do not exceed 6 turns.**

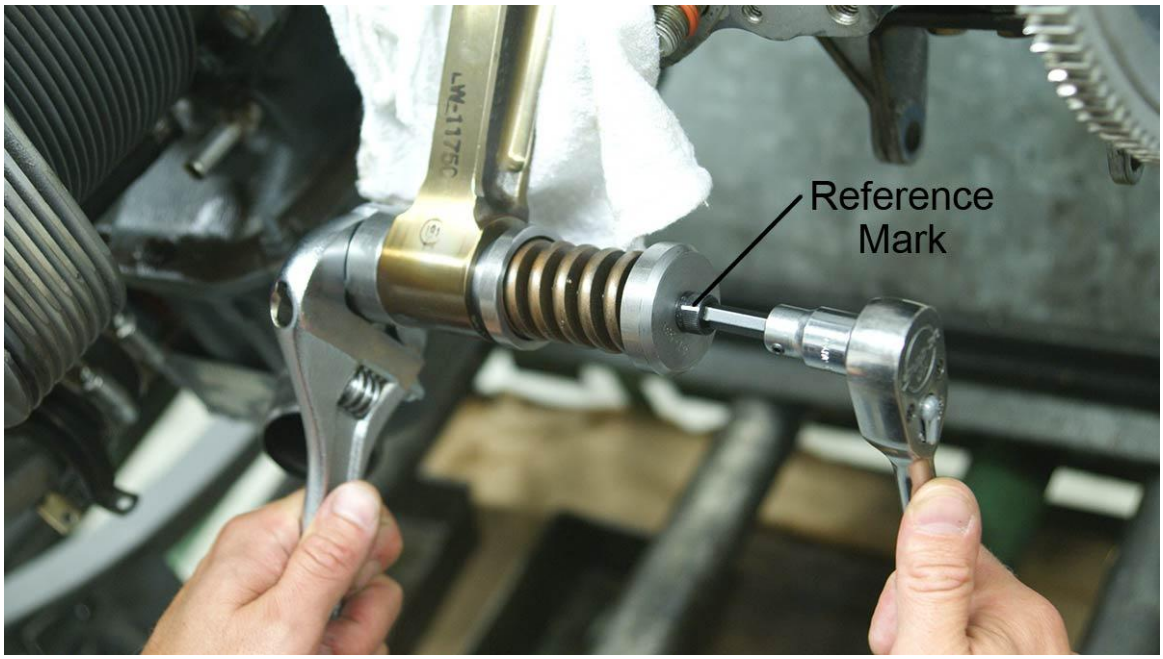

Figure 9
Turn the Bolt 6 Turns

9. Turn the bolt counter-clockwise until the bottom section can be removed from the ST-531 and the tool can be removed from the connecting rod.

10. Compare the reference point or measurement after removing the ST-531 to the initial reference point or measurement to determine connecting rod bushing movement.

A. If the connecting rod bushing has moved:

(1) Order new parts as necessary. Refer to the "Parts Required Table" in the "Parts Required for Reassembly" section of this Service Bulletin.

(2) Remove the connecting rod assembly from the affected engine per the "Connecting Rod Removal" procedure in this Service Bulletin.

- Lycoming will replace connecting rods removed from engines listed in Table 1 and connecting rod assemblies sold separately in Table 2.
- Lycoming will provide a replacement bushing sold separately in Table 2.

NOTICE: If either your engine or connecting rod assembly are still under warranty, do not remove the connecting rod bushing from the connecting rod. You will need to send the entire connecting rod assembly to Lycoming Engines, through an Authorized Lycoming Distributor, for verification and replacement.

(3) Install the replacement connecting rod with new connecting rod bearings per instructions in the "Connecting Rod Installation" procedure in this Service Bulletin.

(4) Reinstall the piston, piston pin, piston pin plugs, and cylinder per instructions in the applicable Lycoming Engines' manual.

(5) Record the results of the "Connecting Rod Bushing Press-Out Verification Procedure" and the part number (Figure 10), lot number, and serial number (Figure 11) of each connecting rod on Lycoming Engines' online survey at www.lycoming.com/SB632.

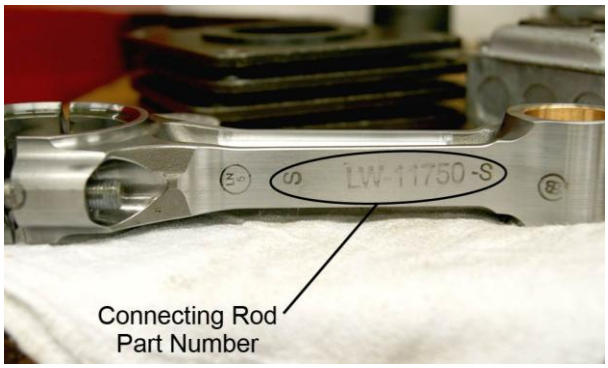

Figure 10
Connecting Rod Part Number

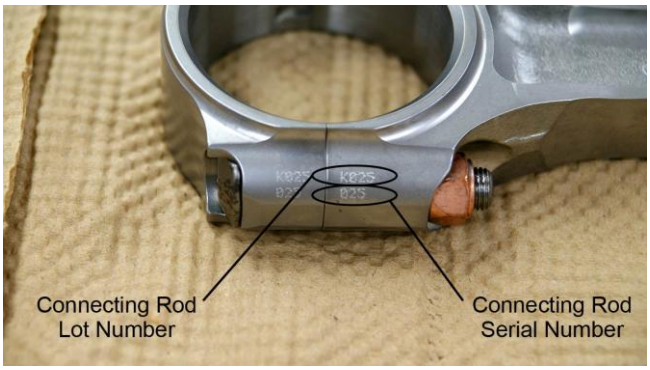

Figure 11
Connecting Rod Lot Number and Serial Number

B. If the connecting rod bushing has not moved:

(1) Order new parts as necessary. Refer to the "Parts Required Table" in the Parts Required for Reassembly section of this Service Bulletin.

(2) Reinstall the piston, piston pin, piston pin plugs, and cylinder per instructions in the applicable Lycoming Engines' manual.

(3) Record the results of the "Connecting Rod Bushing Press-Out Verification Procedure" and the part number (Figure 10), lot number, and serial number (Figure 11) of each connecting rod on Lycoming Engines' online survey at www.lycoming.com/SB632.

NOTICE: Since the piston rings and piston were not removed, it will not be necessary to complete an engine break-in to seat the piston rings.

Connecting Rod Removal

NOTICE: If the two nuts in the connecting rod cap cannot easily be removed, use a soft (plastic head) mallet and gently tap on the end of the two bolts to remove the nuts and the bolts.

1. Remove and discard the two nuts (Figure 12) and the two bolts that attach the connecting rod cap to the connecting rod.

   ⚠ **CAUTION:** DO NOT RE-USE THE CONNECTING ROD BEARINGS, BOLTS, AND NUTS.

2. Remove the connecting rod cap and connecting rod.
3. Remove and discard the two connecting rod bearings.

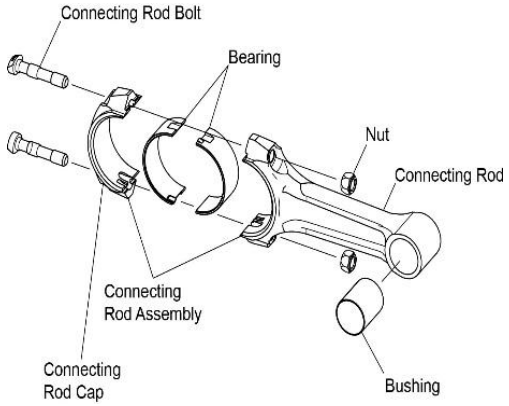

Figure 12
Connecting Rod Parts

Connecting Rod Installation

NOTICE: Each connecting rod is identified by a letter (A, E, S, etc.) as a designation for weight class. All of the connecting rods installed on the crankshaft must be of the same weight class, except "S" weight rods (service rods) can be used with either "A" or "E" weight rods depending on parts availability.

1. Ensure that all of the connecting rod assemblies in the engine have the same weight class letter.
2. Apply specified lubricant to the connecting rod and bearing inserts (per the latest revision of Service Instruction No. SI-1059) where shown in Figure 13. Different lubricants are used on the various areas on the connecting rod and bearing surfaces.

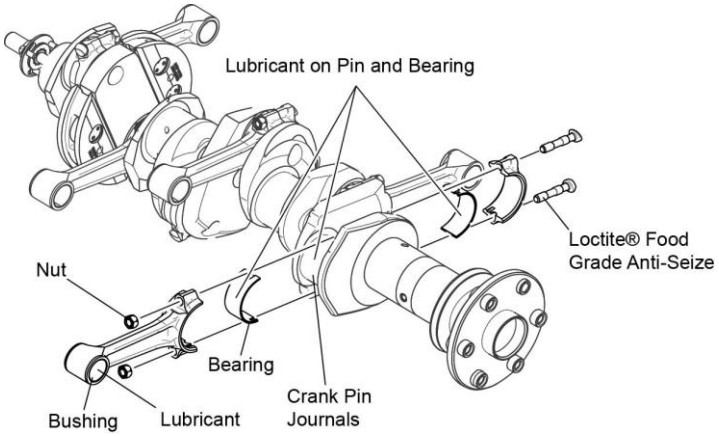

Figure 13
Connecting Rod Assembly Lubrication

NOTICE: Any time either the connecting rod bolt and/or nut pairs are removed from a Lycoming engine, replace **both** the bolt and nut pairs with new "Service Use Only" hardware regardless of apparent condition.

3. Refer to the latest revision of Service Instruction No. SI-1458 to identify the correct part numbers (P/Ns) for the new connecting rods bolts and nuts.
4. Make sure the new connecting rod bolt and new nut pairs are clean, free of dirt and debris and that the threads are not damaged.
5. Install the new lubricated matched set bearing pair on each connecting rod, one bearing on the connecting rod and the other bearing on the connecting rod cap. Ensure that the tang of each bearing fits and seats within the slot of the connecting rod as well as the connecting rod cap.

NOTICE: Do not install standard size connecting rod bolts in connecting rods with oversize bolt holes.

6. Apply engine oil mixture (mixture of 15% pre-lubricant (STP or equivalent) and 85% SAE No. 50 mineral base aviation grade lubricating oil) to the crank pin journal.
7. Install the connecting rod bolts in the connecting rod cap.
8. Apply Loctite® Food-Grade Anti-Seize Lubricant or equivalent to the bottom two or three threads of the new connecting rod bolts (Figure 13). Wipe away excess lubricant with a clean, lint-free cloth.
9. Install the connecting rod cap (with the bearing installed) on the back side of the respective crank pin on the crankshaft (where the numbers on the connecting rods and bearing locks point down - toward the oil sump.)

⚠ **CAUTION:** ENSURE THE NEW NUT ON EACH NEW CONNECTING ROD BOLT IS INSTALLED CORRECTLY. EACH CONNECTING ROD NUT HAS TWO DIFFERENT SURFACES, ONE SURFACE IS FLAT AND THE OTHER HAS A RAISED LIP. BE SURE TO INSTALL EACH NUT ON THE CONNECTING ROD BOLT WITH THE FLAT FACE TOUCHING THE ROD. THE RAISED LIP SURFACE IS AWAY FROM THE ROD. THE CONNECTING ROD BOLT CANNOT BE TIGHTENED CORRECTLY IF THE NUT ON THE CONNECTING ROD IS INSTALLED INCORRECTLY.

10. Install the connecting rod on the crank pin journal aligned with the connecting rod cap.
11. Install a new nut on each new connecting rod bolt where the flat face of the nut touches the connecting rod as shown in Figure 14.

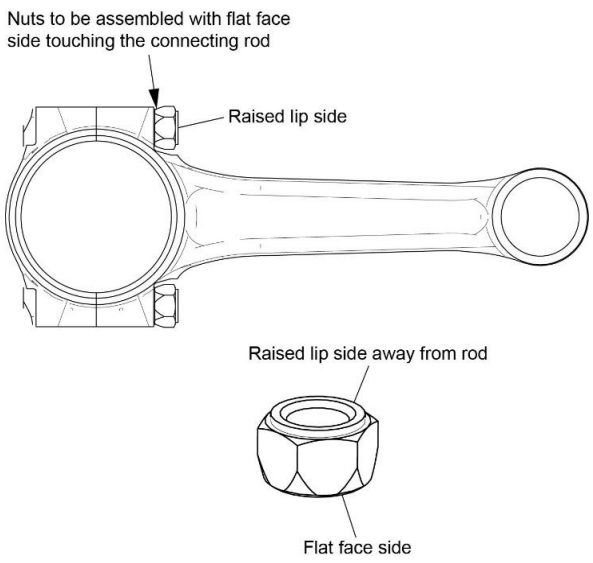

Figure 14
Connecting Rod Nut Installation

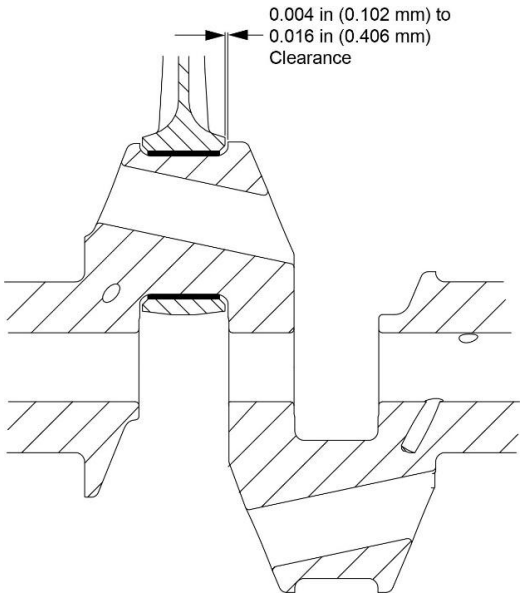

Figure 15
Connecting Rod Clearance

NOTICE: It will be necessary to use an ST-488, Stretch Bolt Micrometer and Set Master to ensure correct connecting rod bolt stretch when applicable.

12. Torque the connecting rod bolts per the torque values in the latest revision of Service Instruction No. SI-1458. (Stretch bolts require an initial torque and are then torqued to the correct stretched length.)
13. Measure the side clearance between the connecting rod and crankshaft with a feeler gage where shown in Figure 15. The clearance is to be 0.004 to 0.016 in (0.102 to 0.406 mm).

Parts Required for Reassembly

Parts Required Table

Top Overhaul Gasket Kit	Refer to the Top Overhaul Gasket Kit table
Replacement connecting rod (includes connecting rod bolts and nuts)	For each connecting rod removed and returned to Lycoming Engines through an Authorized Lycoming Distributor, refer to the Replacement Connecting Rod Assemblies table
Connecting rod bearings	For each connecting rod removed, order the same P/N bearings as removed (refer to Figure 16 for connecting rod bearing P/N location)

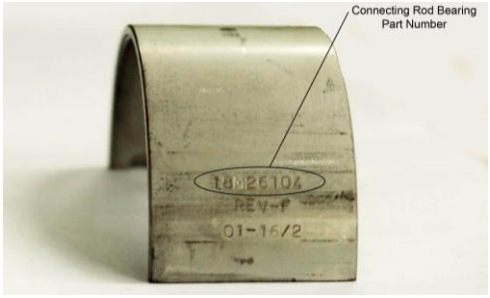

Figure 16
Connecting Rod Bearing Part Number

Replacement Connecting Rod Assemblies

LW-13865-S-85	LW-11750-S-85
78030-S	LW-19332-S-85

Top Overhaul Gasket Kit

Part Number	Applicable Overhaul Gasket Kit
LW-12040	Four Cylinder Parallel Valve Head Engines – O-235 Series
LW-12038	Four Cylinder Parallel Valve Head Engines – O-290; O, IO, LIO-320; AIO, AEIO-320; O-340; O-360-A, -B, -C, -D, -F, -J; IO-360-B, -E, -F, -L; LO-360-A; AEIO-360-B, -H; HO-360-A, -B; HIO-360-B; VO, IVO-360
05K22949	Four Cylinder Parallel Valve Head Engine – IO-360-M1A
LW-12039	Four Cylinder Angle Valve Head Engines – IO-360-A, -C, -D, -J, -K; AIO-360-A, -B; AEIO-360-A; HIO-360-A, -C, -D, -E, -F; LIO-360-C; LHIO-360-C, -F; TO, LTO-360-A; TIO-360-A
LW-15838	Four Cylinder Angle Valve Head Engines – TO, TIO-360-C1A6D, -F1A6D
LW-16916	Four Cylinder "76" Series Engines – O-320-H; O, LO, TO, LTO-360-E
05K26565	Kit – Gasket – Top overhaul IO-390 Series
LW-12032	Six Cylinder Parallel Valve Head Engines – O-540-A, -B, -E, -F, -G, -H, -J, -L, -V; AEIO-540-D; IO-540-C, -D, -J, -N, -R, -T, -W, -V, -AB; TIO-540-C, -E, -G, -H, -K, -AA, -AB, -AF, -AG; LTIO-540-K
LW-12036	Six Cylinder Parallel Valve Head Engine – O-435-A
LW-12033	Six Cylinder Angle Valve Head Top Exhaust Engines – IO-540-B, -E, -M, -U; TIO-540-A, -S, -T; TIO, LTIO-540-F, -J, -N, -R; TIO-541-A; IGO, IGSO-540-B
LW-12034	Six Cylinder Angle Valve Head Down Exhaust Engines – GO, VO, TVO-435; GO, GSO, IGSO-480; IO-540-A, -G, -K, -L, -P, -S, -AA; AEIO-540-L;TIO-540-W, -AE, -AH; TIO, LTIO-540-U, -V, -W; VO, IVO, TVO, TIVO-540; IGO, IGSO-540-A
LW-12035	Six Cylinder Angle Valve Head Engines – IO-540-AC1A5; TIO-540-AJ1A; TIO, TIGO-541-D, -E
LW-12036	Six Cylinder Parallel valve Head engine – O-435-A
LW-12037	Eight Cylinder Angle Valve Head Down Exhaust Engines – IO-720-A, -D
LW-18758	Eight Cylinder Angle Valve Head Top Exhaust Engines – IO-720-B, -C

Table 1
Affected Lycoming Engines

Engine Model	Serial Number	Engine Model	Serial Number	Engine Model	Serial Number
O-235-L2A	RL-13905-15	O-235-L2C	RL-12431-15	O-235-L2C	L-16548-15
O-235-L2C	L-12469-15	O-235-L2C	RL-12876-15	O-235-L2C	L-16619-15
O-235-L2C	L-13149-15	O-235-L2C	RL-13773-15	O-235-L2C	L-18855-15
O-235-L2C	L-14017-15	O-235-L2C	RL-14334-15	O-235-N2C	L-14152-15
O-235-L2C	L-14400-15	O-235-L2C	RL-14869-15	O-235-N2C	L-25962-15
O-235-L2C	L-14471-15	O-235-L2C	RL-15337-15	O-235-N2C	L-25963-15
O-235-L2C	L-15563-15	O-235-L2C	RL-16786-15	O-235-N2C	RL-12085-15
O-235-L2C	L-15585-15	O-235-L2C	RL-23820-15	O-235-N2C	RL-15847-15
O-235-L2C	L-15762-15	O-235-L2C	RL-25307-15	O-235-N2C	L-25965-15
O-235-L2C	L-15793-15	O-235-N2C	L-12747-15		
Engine Model	**Serial Number**	**Engine Model**	**Serial Number**	**Engine Model**	**Serial Number**
AEIO-320-D1B	L-6311-55E	O-320-D2J	L-19556-39E	O-320-D3G	RL-18127-39E
AEIO-320-D1B	RL-2005-55E	O-320-D2J	L-19575-39E	O-320-D3G	RL-18898-39E
AEIO-320-D2B	RL-561-55E	O-320-D2J	L-20632-39E	O-320-D3G	RL-9189-39E
IO-320-B1A	L-1062-55E	O-320-D2J	L-6662-39E	O-320-E2D	L-13993-27E
O-320-A2B	L-14567-27E	O-320-D2J	L-9110-39E	O-320-E2D	L-14312-27E
O-320-B2B	L-20416-39E	O-320-D2J	RL-10152-39E	O-320-E2D	L-14771-27E
O-320-B2B	L-8586-39E	O-320-D2J	RL-10765-39E	O-320-E2D	L-15787-27E
O-320-B2B	RL-10847-39E	O-320-D2J	RL-11229-39E	O-320-E2D	RL-1875-27E
O-320-B2C	L-12263-39A	O-320-D2J	RL-12405-39E	O-320-E2D	RL-27973-27E
O-320-B2C	L-8387-39A	O-320-D2J	RL-13451-39E	O-320-E2D	RL-28233-27E
O-320-B2C	RL-15339-39A	O-320-D2J	RL-17642-39E	O-320-E2G	RL-29826-27E
O-320-B2D	RL-13615-39E	O-320-D2J	RL-18582-39E	O-320-E3D	RL-14142-27E
O-320-D2A	L-12434-39E	O-320-D3G	L-10220-39E	O-320-E3D	RL-24215-27E
O-320-D2A	L-20635-39E	O-320-D3G	L-16750-39E	O-320-E3D	RL-45911-27E
O-320-D2A	L-20637-39E	O-320-D3G	L-17451-39E	O-320-H2AD	L-1823-76T
O-320-D2A	RL-18681-39E	O-320-D3G	L-18351-39E	O-320-H2AD	L-2591-76T
O-320-D2A	RL-19392-39E	O-320-D3G	L-18372-39E	O-320-H2AD	L-2947-76T
O-320-D2G	L-19131-39E	O-320-D3G	L-20165-39E	O-320-H2AD	RL-1325-76T
O-320-D2J	L-10167-39E	O-320-D3G	L-20432-39E	O-320-H2AD	RL-549-76T
O-320-D2J	L-10443-39E	O-320-D3G	L-20626-39E	YIO-320-D1A	EL-6308-55E
O-320-D2J	L-11310-39E	O-320-D3G	L-20629-39E	YIO-320-D1A	EL-6309-55E
O-320-D2J	L-11638-39E	O-320-D3G	L-7355-39E	YIO-320-D1A	EL-6310-55E
O-320-D2J	L-12063-39E	O-320-D3G	L-7395-39E	YO-320-A2B	EL-50734-27E
O-320-D2J	L-12178-39E	O-320-D3G	L-7829-39E	YO-320-D1A	EL-20627-39E
O-320-D2J	L-13132-39E	O-320-D3G	L-7950-39E	YO-320-D1A	EL-20633-39E
O-320-D2J	L-1364-39E	O-320-D3G	L-9866-39E	YO-320-D2G	EL-20628-39E
O-320-D2J	L-14261-39E	O-320-D3G	L-997-39E	YO-320-D2G	EL-20630-39E
O-320-D2J	L-14758-39E	O-320-D3G	RL-12741-39E	YO-320-D2G	EL-20631-39E
O-320-D2J	L-17624-39E	O-320-D3G	RL-13230-39E	YO-320-D2G	EL-20634-39E
O-320-D2J	L-19126-39E	O-320-D3G	RL-13696-39E	YO-320-D2G	EL-20636-39E

Table 1 (Cont.)
Affected Lycoming Engines

Engine Model	Serial Number	Engine Model	Serial Number	Engine Model	Serial Number
AEIO-360-B1G6	L-36853-51E	IO-360-L2A	L-25927-51E	IO-360-L2A	L-36841-51E
AEIO-360-B1G6	L-36937-51E	IO-360-L2A	L-26323-51E	IO-360-L2A	L-36842-51E
AEIO-360-B1G6	L-37136-51E	IO-360-L2A	L-26903-51E	IO-360-L2A	L-36844-51E
AEIO-360-H1B	L-36788-51E	IO-360-L2A	L-26993-51E	IO-360-L2A	L-36846-51E
AEIO-360-H1B	L-36845-51E	IO-360-L2A	L-27394-51E	IO-360-L2A	L-36848-51E
AEIO-360-H1B	L-36904-51E	IO-360-L2A	L-28171-51E	IO-360-L2A	L-36850-51E
AEIO-360-H1B	L-36974-51E	IO-360-L2A	L-28623-51E	IO-360-L2A	L-36851-51E
AEIO-360-H1B	L-37031-51E	IO-360-L2A	L-28677-51E	IO-360-L2A	L-36854-51E
AEIO-360-H1B	L-37090-51E	IO-360-L2A	L-28678-51E	IO-360-L2A	L-36855-51E
HIO-360-G1A	L-27219-51E	IO-360-L2A	L-28774-51E	IO-360-L2A	L-36858-51E
HIO-360-G1A	L-36828-51E	IO-360-L2A	L-28776-51E	IO-360-L2A	L-36859-51E
HIO-360-G1A	L-36829-51E	IO-360-L2A	L-29061-51E	IO-360-L2A	L-36860-51E
HO-360-C1A	RL-40781-36E	IO-360-L2A	L-29093-51E	IO-360-L2A	L-36861-51E
IO-360-A1A	RL-32584-51E	IO-360-L2A	L-29487-51E	IO-360-L2A	L-36862-51E
IO-360-B4A	L-36995-51E	IO-360-L2A	L-29712-51E	IO-360-L2A	L-36863-51E
IO-360-B4A	L-37001-51E	IO-360-L2A	L-30028-51E	IO-360-L2A	L-36865-51E
IO-360-B4A	L-37005-51E	IO-360-L2A	L-31511-51E	IO-360-L2A	L-36866-51E
IO-360-B4A	L-37011-51E	IO-360-L2A	L-32161-51E	IO-360-L2A	L-36867-51E
IO-360-B4A	L-37015-51E	IO-360-L2A	L-36803-51E	IO-360-L2A	L-36874-51E
IO-360-B4A	L-37033-51E	IO-360-L2A	L-36804-51E	IO-360-L2A	L-36875-51E
IO-360-B4A	L-37050-51E	IO-360-L2A	L-36806-51E	IO-360-L2A	L-36876-51E
IO-360-B4A	L-37053-51E	IO-360-L2A	L-36808-51E	IO-360-L2A	L-36878-51E
IO-360-B4A	L-37058-51E	IO-360-L2A	L-36809-51E	IO-360-L2A	L-36881-51E
IO-360-B4A	L-37069-51E	IO-360-L2A	L-36811-51E	IO-360-L2A	L-36882-51E
IO-360-B4A	L-37074-51E	IO-360-L2A	L-36815-51E	IO-360-L2A	L-36883-51E
IO-360-B4A	L-37082-51E	IO-360-L2A	L-36816-51E	IO-360-L2A	L-36884-51E
IO-360-B4A	L-37101-51E	IO-360-L2A	L-36817-51E	IO-360-L2A	L-36886-51E
IO-360-C1C	L-26146-51E	IO-360-L2A	L-36818-51E	IO-360-L2A	L-36887-51E
IO-360-C1C	L-36965-51E	IO-360-L2A	L-36819-51E	IO-360-L2A	L-36888-51E
IO-360-C1C	RL-29437-51E	IO-360-L2A	L-36820-51E	IO-360-L2A	L-36889-51E
IO-360-C1C	RL-8808-51E	IO-360-L2A	L-36821-51E	IO-360-L2A	L-36891-51E
IO-360-L2A	L-12138-51E	IO-360-L2A	L-36824-51E	IO-360-L2A	L-36892-51E
IO-360-L2A	L-13864-51E	IO-360-L2A	L-36830-51E	IO-360-L2A	L-36894-51E
IO-360-L2A	L-15686-51E	IO-360-L2A	L-36832-51E	IO-360-L2A	L-36897-51E
IO-360-L2A	L-18659-51E	IO-360-L2A	L-36833-51E	IO-360-L2A	L-36898-51E
IO-360-L2A	L-21658-51E	IO-360-L2A	L-36834-51E	IO-360-L2A	L-36899-51E
IO-360-L2A	L-23461-51E	IO-360-L2A	L-36835-51E	IO-360-L2A	L-36901-51E
IO-360-L2A	L-24253-51E	IO-360-L2A	L-36836-51E	IO-360-L2A	L-36902-51E
IO-360-L2A	L-25181-51E	IO-360-L2A	L-36837-51E	IO-360-L2A	L-36905-51E
IO-360-L2A	L-25193-51E	IO-360-L2A	L-36838-51E	IO-360-L2A	L-36906-51E
IO-360-L2A	L-25640-51E	IO-360-L2A	L-36839-51E	IO-360-L2A	L-36907-51E
IO-360-L2A	L-25671-51E	IO-360-L2A	L-36840-51E	IO-360-L2A	L-36909-51E

Table 1 (Cont.)
Affected Lycoming Engines

Engine Model	Serial Number	Engine Model	Serial Number	Engine Model	Serial Number
IO-360-L2A	L-36910-51E	IO-360-L2A	L-37080-51E	IO-360-L2A	RL-25607-51E
IO-360-L2A	L-36912-51E	IO-360-L2A	L-37083-51E	IO-360-L2A	RL-25872-51E
IO-360-L2A	L-36913-51E	IO-360-L2A	L-37085-51E	IO-360-L2A	RL-26203-51E
IO-360-L2A	L-36914-51E	IO-360-L2A	L-37087-51E	IO-360-L2A	RL-26377-51E
IO-360-L2A	L-36915-51E	IO-360-L2A	L-37089-51E	IO-360-L2A	RL-26625-51E
IO-360-L2A	L-36917-51E	IO-360-L2A	L-37091-51E	IO-360-L2A	RL-28340-51E
IO-360-L2A	L-36921-51E	IO-360-L2A	L-37092-51E	IO-360-L2A	RL-29336-51E
IO-360-L2A	L-36924-51E	IO-360-L2A	L-37094-51E	IO-360-L2A	RL-29915-51E
IO-360-L2A	L-36930-51E	IO-360-L2A	L-37099-51E	IO-360-L2A	RL-30030-51E
IO-360-L2A	L-36931-51E	IO-360-L2A	L-37100-51E	IO-360-L2A	RL-30795-51E
IO-360-L2A	L-36932-51E	IO-360-L2A	L-37102-51E	IO-360-L2A	RL-30884-51E
IO-360-L2A	L-36936-51E	IO-360-L2A	L-37103-51E	IO-360-L2A	RL-32025-51E
IO-360-L2A	L-36946-51E	IO-360-L2A	L-37104-51E	IO-360-L2A	RL-32181-51E
IO-360-L2A	L-36949-51E	IO-360-L2A	L-37105-51E	IO-360-L2A	RL-34550-51E
IO-360-L2A	L-36952-51E	IO-360-L2A	L-37108-51E	IO-360-L2A	RL-34698-51E
IO-360-L2A	L-36953-51E	IO-360-L2A	L-37112-51E	IO-360-L2A	RL-35038-51E
IO-360-L2A	L-36955-51E	IO-360-L2A	L-37113-51E	IO-360-L2A	RL-536-51E
IO-360-L2A	L-36957-51E	IO-360-L2A	L-37118-51E	IO-360-L2A	RL-9160-51E
IO-360-L2A	L-36964-51E	IO-360-L2A	L-37119-51E	IO-360-M1A	L-24714-51E
IO-360-L2A	L-36968-51E	IO-360-L2A	L-37121-51E	IO-360-M1A	L-36791-51E
IO-360-L2A	L-36970-51E	IO-360-L2A	L-37122-51E	IO-360-M1A	L-36792-51E
IO-360-L2A	L-36973-51E	IO-360-L2A	L-37124-51E	IO-360-M1A	L-36793-51E
IO-360-L2A	L-36975-51E	IO-360-L2A	L-37125-51E	IO-360-M1A	L-36798-51E
IO-360-L2A	L-36976-51E	IO-360-L2A	L-37126-51E	IO-360-M1A	L-36799-51E
IO-360-L2A	L-36977-51E	IO-360-L2A	L-37128-51E	IO-360-M1A	L-36800-51E
IO-360-L2A	L-36980-51E	IO-360-L2A	L-37131-51E	IO-360-M1A	L-36870-51E
IO-360-L2A	L-36981-51E	IO-360-L2A	L-37133-51E	IO-360-M1A	L-36877-51E
IO-360-L2A	L-36982-51E	IO-360-L2A	L-37134-51E	IO-360-M1A	L-36893-51E
IO-360-L2A	L-37010-51E	IO-360-L2A	L-37135-51E	IO-360-M1A	L-36900-51E
IO-360-L2A	L-37036-51E	IO-360-L2A	L-8715-51E	IO-360-M1A	L-36911-51E
IO-360-L2A	L-37038-51E	IO-360-L2A	RL-13433-51E	IO-360-M1A	L-36919-51E
IO-360-L2A	L-37039-51E	IO-360-L2A	RL-15791-51E	IO-360-M1A	L-36920-51E
IO-360-L2A	L-37041-51E	IO-360-L2A	RL-18775-51E	IO-360-M1A	L-36922-51E
IO-360-L2A	L-37043-51E	IO-360-L2A	RL-19432-51E	IO-360-M1A	L-36938-51E
IO-360-L2A	L-37048-51E	IO-360-L2A	RL-20433-51E	IO-360-M1A	L-36940-51E
IO-360-L2A	L-37060-51E	IO-360-L2A	RL-20612-51E	IO-360-M1A	L-36945-51E
IO-360-L2A	L-37062-51E	IO-360-L2A	RL-23967-51E	IO-360-M1A	L-36956-51E
IO-360-L2A	L-37066-51E	IO-360-L2A	RL-24271-51E	IO-360-M1A	L-36960-51E
IO-360-L2A	L-37067-51E	IO-360-L2A	RL-24497-51E	IO-360-M1A	L-36971-51E
IO-360-L2A	L-37068-51E	IO-360-L2A	RL-24860-51E	IO-360-M1A	L-36972-51E
IO-360-L2A	L-36978-51E	IO-360-L2A	RL-25257-51E	IO-360-M1A	L-36979-51E
IO-360-L2A	L-37079-51E	IO-360-L2A	RL-25486-51E	IO-360-M1A	L-36987-51E

Table 1 (Cont.)
Affected Lycoming Engines

Engine Model	Serial Number	Engine Model	Serial Number	Engine Model	Serial Number
IO-360-M1A	L-36991-51E	LO-360-A1H6	RL-576-71E	O-360-A1P	L-42828-36E
IO-360-M1A	L-37006-51E	O-360-A1A	L-42901-36E	O-360-A1P	L-42833-36E
IO-360-M1A	L-37007-51E	O-360-A1A	L-42914-36A	O-360-A1P	L-42836-36E
IO-360-M1A	L-37009-51E	O-360-A1A	RL-16565-36E	O-360-A1P	L-42842-36E
IO-360-M1A	L-37029-51E	O-360-A1A	RL-28000-36E	O-360-A1P	L-42857-36E
IO-360-M1A	L-37032-51E	O-360-A1A	RL-34128-36E	O-360-A1P	L-42875-36E
IO-360-M1A	L-37034-51E	O-360-A1AD	RL-20102-36E	O-360-A1P	L-42879-36E
IO-360-M1A	L-37040-51E	O-360-A1AD	RL-20912-36E	O-360-A1P	L-42905-36E
IO-360-M1A	L-37073-51E	O-360-A1AD	RL-23409-36E	O-360-A1P	L-42912-36E
IO-360-M1A	L-37078-51E	O-360-A1AD	RL-26288-36E	O-360-A1P	L-42970-36E
IO-360-M1A	L-37115-51E	O-360-A1D	L-42953-36E	O-360-A1P	L-42975-36E
IO-360-M1A	L-37117-51E	O-360-A1F6	L-41231-36E	O-360-A1P	RL-23515-36E
IO-360-M1A	L-37123-51E	O-360-A1H6	L-17973-36E	O-360-A3A	RL-16891-36E
IO-360-M1A	RL-22416-51E	O-360-A1H6	L-19500-36E	O-360-A3A	RL-23562-36E
IO-360-M1A	RL-22596-51E	O-360-A1H6	L-2016-36E	O-360-A3A	RL-32544-36E
IO-360-M1A	RL-27167-51E	O-360-A1H6	L-25932-36E	O-360-A3A	RL-40671-36E
IO-360-M1A	RL-29178-51E	O-360-A1H6	L-26394-36E	O-360-A4A	L-22614-36E
IO-360-M1A	RL-29607-51E	O-360-A1H6	L-27747-36E	O-360-A4A	RL-30534-36E
IO-360-M1A	RL-34700-51E	O-360-A1H6	L-30732-36E	O-360-A4A	RL-30580-36E
IO-360-M1B	L-37110-51E	O-360-A1H6	L-33456-36E	O-360-A4A	RL-31331-36E
IO-360-X259	L-1791-X	O-360-A1H6	L-40989-36E	O-360-A4K	RL-30773-36E
LO-360-A1G6D	RL-680-71E	O-360-A1H6	L-41153-36E	O-360-A4M	L-15994-36E
LO-360-A1H6	L-1037-71E	O-360-A1H6	L-42766-36E	O-360-A4M	L-166-36E
LO-360-A1H6	L-1038-71E	O-360-A1H6	L-42783-36E	O-360-A4M	L-19826-36E
LO-360-A1H6	L-1039-71E	O-360-A1H6	L-42808-36E	O-360-A4M	L-27926-36E
LO-360-A1H6	L-1040-71E	O-360-A1H6	L-42820-36E	O-360-A4M	L-33294-36E
LO-360-A1H6	L-1041-71E	O-360-A1H6	L-42822-36E	O-360-A4M	L-39277-36E
LO-360-A1H6	L-1042-71E	O-360-A1H6	L-42904-36E	O-360-A4M	L-40653-36E
LO-360-A1H6	L-1043-71E	O-360-A1H6	L-42908-36E	O-360-A4M	L-40664-36E
LO-360-A1H6	L-1044-71E	O-360-A1H6	L-42922-36E	O-360-A4M	L-40709-36E
LO-360-A1H6	L-1045-71E	O-360-A1H6	L-42926-36E	O-360-A4M	L-42753-36E
LO-360-A1H6	L-1046-71E	O-360-A1H6	L-42943-36E	O-360-A4M	L-42758-36E
LO-360-A1H6	L-1047-71E	O-360-A1H6	L-42958-36E	O-360-A4M	L-42760-36E
LO-360-A1H6	L-1048-71E	O-360-A1H6	L-42966-36E	O-360-A4M	L-42765-36E
LO-360-A1H6	L-1049-71E	O-360-A1H6	L-42976-36E	O-360-A4M	L-42767-36E
LO-360-A1H6	L-282-71E	O-360-A1H6	RL-22146-36E	O-360-A4M	L-42772-36E
LO-360-A1H6	L-466-71E	O-360-A1H6	RL-31359-36E	O-360-A4M	L-42773-36E
LO-360-A1H6	L-744-71E	O-360-A1P	L-42754-36E	O-360-A4M	L-42774-36E
LO-360-A1H6	L-753-71E	O-360-A1P	L-42781-36E	O-360-A4M	L-42775-36E
LO-360-A1H6	L-758-71E	O-360-A1P	L-42802-36E	O-360-A4M	L-42776-36E
LO-360-A1H6	L-775-71E	O-360-A1P	L-42810-36E	O-360-A4M	L-42777-36E
LO-360-A1H6	RL-312-71E	O-360-A1P	L-42815-36E	O-360-A4M	L-42786-36E

Table 1 (Cont.)
Affected Lycoming Engines

Engine Model	Serial Number	Engine Model	Serial Number	Engine Model	Serial Number
O-360-A4M	L-42788-36E	O-360-A4M	L-42960-36E	O-360-C1G	L-42873-36E
O-360-A4M	L-42789-36E	O-360-A4M	L-42969-36E	O-360-C1G	L-42876-36E
O-360-A4M	L-42791-36E	O-360-A4M	L-42971-36E	O-360-C1G	L-42877-36E
O-360-A4M	L-42797-36E	O-360-A4M	L-42972-36E	O-360-C1G	L-42883-36E
O-360-A4M	L-42798-36E	O-360-A4M	L-42977-36E	O-360-C1G	L-42884-36E
O-360-A4M	L-42799-36E	O-360-A4M	L-42978-36E	O-360-C1G	L-42893-36E
O-360-A4M	L-42803-36E	O-360-A4M	L-9994-36E	O-360-C1G	L-42895-36E
O-360-A4M	L-42812-36E	O-360-A4M	RL-12597-36E	O-360-C1G	L-42917-36E
O-360-A4M	L-42813-36E	O-360-A4M	RL-13903-36E	O-360-C1G	L-42956-36E
O-360-A4M	L-42814-36E	O-360-A4M	RL-14920-36E	O-360-C1G	L-42957-36E
O-360-A4M	L-42818-36E	O-360-A4M	RL-15267-36E	O-360-C1G	L-42959-36E
O-360-A4M	L-42823-36E	O-360-A4M	RL-15760-36E	O-360-C1G	L-42963-36E
O-360-A4M	L-42830-36E	O-360-A4M	RL-18039-36E	O-360-C1G	L-42967-36E
O-360-A4M	L-42832-36E	O-360-A4M	RL-18647-36E	O-360-C1G	L-42973-36E
O-360-A4M	L-42835-36E	O-360-A4M	RL-22253-36E	O-360-C1G	L-42974-36E
O-360-A4M	L-42837-36E	O-360-A4M	RL-24448-36E	O-360-C1G	L-42979-36E
O-360-A4M	L-42841-36E	O-360-A4M	RL-25836-36E	O-360-C1G	L-42980-36E
O-360-A4M	L-42850-36E	O-360-A4M	RL-28877-36E	O-360-C1G	L-42982-36E
O-360-A4M	L-42852-36E	O-360-A4M	RL-34275-36E	O-360-C1G	RL-36846-36E
O-360-A4M	L-42868-36E	O-360-A4M	RL-34339-36E	O-360-C2E	L-26183-36E
O-360-A4M	L-42874-36E	O-360-A4M	RL-39152-36E	O-360-C4F	L-35521-36E
O-360-A4M	L-42878-36E	O-360-A4M	RL-39496-36E	O-360-C4P	L-42794-36E
O-360-A4M	L-42880-36E	O-360-A4M	RL-39816-36E	O-360-C4P	L-42816-36E
O-360-A4M	L-42881-36E	O-360-A4M	RL-39932-36E	O-360-C4P	L-42840-36E
O-360-A4M	L-42882-36E	O-360-A4N	L-42903-36E	O-360-C4P	L-42844-36E
O-360-A4M	L-42885-36E	O-360-C1F	L-40270-36A	O-360-C4P	L-42848-36E
O-360-A4M	L-42886-36E	O-360-C1G	L-31911-36E	O-360-C4P	L-42909-36E
O-360-A4M	L-42888-36E	O-360-C1G	L-42755-36E	O-360-C4P	L-42910-36E
O-360-A4M	L-42891-36E	O-360-C1G	L-42763-36E	O-360-F1A6	RL-20549-36E
O-360-A4M	L-42896-36E	O-360-C1G	L-42770-36E	O-360-J2A	L-15757-36E
O-360-A4M	L-42907-36E	O-360-C1G	L-42778-36E	O-360-J2A	L-2106-36E
O-360-A4M	L-42919-36E	O-360-C1G	L-42784-36E	O-360-J2A	L-21893-36E
O-360-A4M	L-42923-36E	O-360-C1G	L-42801-36E	O-360-J2A	L-28468-36E
O-360-A4M	L-42927-36E	O-360-C1G	L-42811-36E	O-360-J2A	L-42756-36E
O-360-A4M	L-42939-36E	O-360-C1G	L-42819-36E	O-360-J2A	L-42757-36E
O-360-A4M	L-42940-36E	O-360-C1G	L-42843-36E	O-360-J2A	L-42759-36E
O-360-A4M	L-42941-36E	O-360-C1G	L-42851-36E	O-360-J2A	L-42761-36E
O-360-A4M	L-42948-36E	O-360-C1G	L-42860-36E	O-360-J2A	L-42762-36E
O-360-A4M	L-42949-36E	O-360-C1G	L-42861-36E	O-360-J2A	L-42768-36E
O-360-A4M	L-42950-36E	O-360-C1G	L-42862-36E	O-360-J2A	L-42779-36E
O-360-A4M	L-42952-36E	O-360-C1G	L-42866-36E	O-360-J2A	L-42780-36E
O-360-A4M	L-42954-36E	O-360-C1G	L-42872-36E	O-360-J2A	L-42782-36E

Table 1 (Cont.)
Affected Lycoming Engines

Engine Model	Serial Number	Engine Model	Serial Number	Engine Model	Serial Number
O-360-J2A	L-42785-36E	O-360-J2A	L-42898-36E	YIO-360-M1B	EL-36826-51E
O-360-J2A	L-42790-36E	O-360-J2A	L-42899-36E	YIO-360-M1B	EL-36831-51E
O-360-J2A	L-42792-36E	O-360-J2A	L-42900-36E	YIO-360-M1B	EL-36849-51E
O-360-J2A	L-42793-36E	O-360-J2A	L-42906-36E	YIO-360-M1B	EL-36856-51E
O-360-J2A	L-42795-36E	O-360-J2A	L-42915-36E	YIO-360-M1B	EL-36857-51E
O-360-J2A	L-42796-36E	O-360-J2A	L-42916-36E	YIO-360-M1B	EL-36868-51E
O-360-J2A	L-42800-36E	O-360-J2A	L-42918-36E	YIO-360-M1B	EL-36869-51E
O-360-J2A	L-42804-36E	O-360-J2A	L-42920-36E	YIO-360-M1B	EL-36895-51E
O-360-J2A	L-42805-36E	O-360-J2A	L-42924-36E	YIO-360-M1B	EL-36925-51E
O-360-J2A	L-42806-36E	O-360-J2A	L-42925-36E	YIO-360-M1B	EL-36927-51E
O-360-J2A	L-42807-36E	O-360-J2A	L-42929-36E	YIO-360-M1B	EL-36934-51E
O-360-J2A	L-42809-36E	O-360-J2A	L-42930-36E	YIO-360-M1B	EL-36935-51E
O-360-J2A	L-42817-36E	O-360-J2A	L-42931-36E	YIO-360-M1B	EL-36951-51E
O-360-J2A	L-42821-36E	O-360-J2A	L-42932-36E	YIO-360-M1B	EL-36954-51E
O-360-J2A	L-42824-36E	O-360-J2A	L-42933-36E	YIO-360-M1B	EL-36958-51E
O-360-J2A	L-42826-36E	O-360-J2A	L-42934-36E	YIO-360-M1B	EL-36959-51E
O-360-J2A	L-42827-36E	O-360-J2A	L-42935-36E	YIO-360-M1B	EL-36961-51E
O-360-J2A	L-42829-36E	O-360-J2A	L-42936-36E	YIO-360-M1B	EL-36962-51E
O-360-J2A	L-42831-36E	O-360-J2A	L-42937-36E	YIO-360-M1B	EL-36963-51E
O-360-J2A	L-42834-36E	O-360-J2A	L-42942-36E	YIO-360-M1B	EL-36983-51E
O-360-J2A	L-42838-36E	O-360-J2A	L-42944-36E	YIO-360-M1B	EL-36992-51E
O-360-J2A	L-42839-36E	O-360-J2A	L-42945-36E	YIO-360-M1B	EL-36993-51E
O-360-J2A	L-42847-36E	O-360-J2A	L-42946-36E	YIO-360-M1B	EL-36994-51E
O-360-J2A	L-42849-36E	O-360-J2A	L-42947-36E	YIO-360-M1B	EL-36996-51E
O-360-J2A	L-42853-36E	O-360-J2A	L-42951-36E	YIO-360-M1B	EL-36998-51E
O-360-J2A	L-42854-36E	O-360-J2A	L-42955-36E	YIO-360-M1B	EL-37002-51E
O-360-J2A	L-42855-36E	O-360-J2A	L-42962-36E	YIO-360-M1B	EL-37004-51E
O-360-J2A	L-42856-36E	O-360-J2A	L-42964-36E	YIO-360-M1B	EL-37008-51E
O-360-J2A	L-42859-36E	O-360-J2A	L-42965-36E	YIO-360-M1B	EL-37013-51E
O-360-J2A	L-42863-36E	O-360-J2A	L-42968-36E	YIO-360-M1B	EL-37014-51E
O-360-J2A	L-42864-36E	O-360-J2A	L-42981-36E	YIO-360-M1B	EL-37017-51E
O-360-J2A	L-42865-36E	O-360-J2A	RL-37682-36E	YIO-360-M1B	EL-37019-51E
O-360-J2A	L-42867-36E	YHIO-360-G1A	EL-36852-51E	YIO-360-M1B	EL-37021-51E
O-360-J2A	L-42869-36E	YIO-360-B1B	EL-37016-51E	YIO-360-M1B	EL-37023-51E
O-360-J2A	L-42870-36E	YIO-360-B1E	EL-36950-51E	YIO-360-M1B	EL-37024-51E
O-360-J2A	L-42871-36E	YIO-360-B1E	EL-37052-51E	YIO-360-M1B	EL-37030-51E
O-360-J2A	L-42887-36E	YIO-360-EXP	EL-37129-51E	YIO-360-M1B	EL-37037-51E
O-360-J2A	L-42889-36E	YIO-360-EXP14	EL-36812-51E	YIO-360-M1B	EL-37055-51E
O-360-J2A	L-42890-36E	YIO-360-EXP24	EL-37027-51E	YIO-360-M1B	EL-37056-51E
O-360-J2A	L-42892-36E	YIO-360-M1B	EL-36794-51E	YIO-360-M1B	EL-37057-51E
O-360-J2A	L-42894-36E	YIO-360-M1B	EL-36797-51E	YIO-360-M1B	EL-37064-51E
O-360-J2A	L-42897-36E	YIO-360-M1B	EL-36825-51E	YIO-360-M1B	EL-37081-51E

Table 1 (Cont.)
Affected Lycoming Engines

Engine Model	Serial Number	Engine Model	Serial Number	Engine Model	Serial Number
YIO-360-M1B	EL-37084-51E	YO-360-A1A	EL-42825-36E	YO-360-A1A	EL-42928-36E
YIO-360-M1B	EL-37086-51E	YO-360-A1A	EL-42845-36E	YO-360-EXP17	EL-42769-36E
YIO-360-M1B	EL-37098-51E	YO-360-A1A	EL-42858-36E	YO-360-EXP17	EL-42771-36E
YIO-360-M1B	EL-37111-51E	YO-360-A1A	EL-42911-36E	YO-360-EXP17	EL-42961-36E
YO-360-A1A	EL-42764-36E	YO-360-A1A	EL-42913-36E	YO-360-EXP19	EL-42846-36E
YO-360-A1A	EL-42787-36E	YO-360-A1A	EL-42921-36E		
Engine Model	**Serial Number**	**Engine Model**	**Serial Number**	**Engine Model**	**Serial Number**
AEIO-540-D4A5	L-36708-48E	IO-540-AB1A5	L-36720-48E	IO-540-AE1A5	L-36517-48E
AEIO-540-D4A5	RL-19320-48E	IO-540-AB1A5	L-36721-48E	IO-540-AE1A5	L-36518-48E
AEIO-540-D4A5	RL-25836-48E	IO-540-AB1A5	L-36722-48E	IO-540-AE1A5	L-36519-48E
AEIO-540-L1B5	L-36565-48E	IO-540-AB1A5	L-36727-48E	IO-540-AE1A5	L-36523-48E
AEIO-540-L1B5	L-36568-48E	IO-540-AB1A5	L-36731-48E	IO-540-AE1A5	L-36524-48E
IO-540-AB1A5	L-13271-48E	IO-540-AB1A5	RL-13449-48E	IO-540-AE1A5	L-36527-48E
IO-540-AB1A5	L-36458-48E	IO-540-AB1A5	RL-14864-48E	IO-540-AE1A5	L-36529-48E
IO-540-AB1A5	L-36462-48E	IO-540-AB1A5	RL-15243-48E	IO-540-AE1A5	L-36530-48E
IO-540-AB1A5	L-36466-48E	IO-540-AB1A5	RL-17947-48E	IO-540-AE1A5	L-36531-48E
IO-540-AB1A5	L-36479-48E	IO-540-AB1A5	RL-18173-48E	IO-540-AE1A5	L-36533-48E
IO-540-AB1A5	L-36480-48E	IO-540-AB1A5	RL-19059-48E	IO-540-AE1A5	L-36535-48E
IO-540-AB1A5	L-36481-48E	IO-540-AB1A5	RL-21045-48E	IO-540-AE1A5	L-36536-48E
IO-540-AB1A5	L-36483-48E	IO-540-AB1A5	RL-22027-48E	IO-540-AE1A5	L-36537-48E
IO-540-AB1A5	L-36485-48E	IO-540-AB1A5	RL-27169-48E	IO-540-AE1A5	L-36539-48E
IO-540-AB1A5	L-36487-48E	IO-540-AB1A5	RL-27360-48E	IO-540-AE1A5	L-36540-48E
IO-540-AB1A5	L-36494-48E	IO-540-AB1A5	RL-27789-48E	IO-540-AE1A5	L-36541-48E
IO-540-AB1A5	L-36497-48E	IO-540-AB1A5	RL-8259-48E	IO-540-AE1A5	L-36542-48E
IO-540-AB1A5	L-36499-48E	IO-540-AC1A5	L-17432-48E	IO-540-AE1A5	L-36544-48E
IO-540-AB1A5	L-36500-48E	IO-540-AC1A5	L-18568-48E	IO-540-AE1A5	L-36546-48E
IO-540-AB1A5	L-36501-48E	IO-540-AC1A5	L-18712-48E	IO-540-AE1A5	L-36548-48E
IO-540-AB1A5	L-36502-48E	IO-540-AC1A5	L-36669-48E	IO-540-AE1A5	L-36549-48E
IO-540-AB1A5	L-36503-48E	IO-540-AC1A5	L-36679-48E	IO-540-AE1A5	L-36550-48E
IO-540-AB1A5	L-36504-48E	IO-540-AC1A5	L-36716-48E	IO-540-AE1A5	L-36551-48E
IO-540-AB1A5	L-36514-48E	IO-540-AC1A5	L-36729-48E	IO-540-AE1A5	L-36552-48E
IO-540-AB1A5	L-36526-48E	IO-540-AC1A5	RL-16556-48E	IO-540-AE1A5	L-36553-48E
IO-540-AB1A5	L-36563-48E	IO-540-AC1A5	RL-5327-48E	IO-540-AE1A5	L-36554-48E
IO-540-AB1A5	L-36564-48E	IO-540-AE1A5	L-13764-48E	IO-540-AE1A5	L-36556-48E
IO-540-AB1A5	L-36566-48E	IO-540-AE1A5	L-36491-48E	IO-540-AE1A5	L-36557-48E
IO-540-AB1A5	L-36572-48E	IO-540-AE1A5	L-36495-48E	IO-540-AE1A5	L-36559-48E
IO-540-AB1A5	L-36573-48E	IO-540-AE1A5	L-36496-48E	IO-540-AE1A5	L-36560-48E
IO-540-AB1A5	L-36594-48E	IO-540-AE1A5	L-36508-48E	IO-540-AE1A5	L-36561-48E
IO-540-AB1A5	L-36656-48E	IO-540-AE1A5	L-36509-48E	IO-540-AE1A5	L-36562-48E
IO-540-AB1A5	L-36702-48E	IO-540-AE1A5	L-36510-48E	IO-540-AE1A5	L-36571-48E
IO-540-AB1A5	L-36703-48E	IO-540-AE1A5	L-36513-48E	IO-540-AE1A5	L-36574-48E
IO-540-AB1A5	L-36719-48E	IO-540-AE1A5	L-36515-48E	IO-540-AE1A5	L-36575-48E

Table 1 (Cont.)
Affected Lycoming Engines

Engine Model	Serial Number	Engine Model	Serial Number	Engine Model	Serial Number
IO-540-AE1A5	L-36576-48E	IO-540-AE1A5	L-36649-48E	IO-540-AE1A5	L-36725-48E
IO-540-AE1A5	L-36577-48E	IO-540-AE1A5	L-36650-48E	IO-540-AE1A5	L-36726-48E
IO-540-AE1A5	L-36578-48E	IO-540-AE1A5	L-36651-48E	IO-540-AE1A5	L-36730-48E
IO-540-AE1A5	L-36579-48E	IO-540-AE1A5	L-36654-48E	IO-540-AE1A5	L-36732-48E
IO-540-AE1A5	L-36580-48E	IO-540-AE1A5	L-36655-48E	IO-540-AE1A5	RL-10884-48E
IO-540-AE1A5	L-36582-48E	IO-540-AE1A5	L-36657-48E	IO-540-AE1A5	RL-12469-48E
IO-540-AE1A5	L-36584-48E	IO-540-AE1A5	L-36662-48E	IO-540-AE1A5	RL-13714-48E
IO-540-AE1A5	L-36585-48E	IO-540-AE1A5	L-36663-48E	IO-540-AE1A5	RL-14627-48E
IO-540-AE1A5	L-36586-48E	IO-540-AE1A5	L-36665-48E	IO-540-AE1A5	RL-26513-48E
IO-540-AE1A5	L-36587-48E	IO-540-AE1A5	L-36667-48E	IO-540-AE1A5	RL-26730-48E
IO-540-AE1A5	L-36588-48E	IO-540-AE1A5	L-36670-48E	IO-540-AE1A5	RL-26876-48E
IO-540-AE1A5	L-36589-48E	IO-540-AE1A5	L-36672-48E	IO-540-AE1A5	RL-27599-48E
IO-540-AE1A5	L-36590-48E	IO-540-AE1A5	L-36673-48E	IO-540-AE1A5	RL-28689-48E
IO-540-AE1A5	L-36591-48E	IO-540-AE1A5	L-36674-48E	IO-540-AF1A5	L-36506-48E
IO-540-AE1A5	L-36595-48E	IO-540-AE1A5	L-36676-48E	IO-540-AF1A5	RL-8985-48E
IO-540-AE1A5	L-36599-48E	IO-540-AE1A5	L-36678-48E	IO-540-C4B5	RL-2076-48E
IO-540-AE1A5	L-36600-48E	IO-540-AE1A5	L-36680-48E	IO-540-C4B5	RL-32565-48E
IO-540-AE1A5	L-36601-48E	IO-540-AE1A5	L-36682-48E	IO-540-C4D5D	L-15234-48E
IO-540-AE1A5	L-36602-48E	IO-540-AE1A5	L-36683-48E	IO-540-C4D5D	L-36543-48E
IO-540-AE1A5	L-36605-48E	IO-540-AE1A5	L-36684-48E	IO-540-C4D5D	L-36545-48E
IO-540-AE1A5	L-36606-48E	IO-540-AE1A5	L-36687-48E	IO-540-C4D5D	L-36547-48E
IO-540-AE1A5	L-36608-48E	IO-540-AE1A5	L-36688-48E	IO-540-C4D5D	RL-19202-48E
IO-540-AE1A5	L-36617-48E	IO-540-AE1A5	L-36689-48E	IO-540-D4A5	L-36603-48E
IO-540-AE1A5	L-36619-48E	IO-540-AE1A5	L-36690-48E	IO-540-D4A5	L-36610-48E
IO-540-AE1A5	L-36620-48E	IO-540-AE1A5	L-36692-48E	IO-540-D4B5	L-36490-48E
IO-540-AE1A5	L-36621-48E	IO-540-AE1A5	L-36693-48E	IO-540-D4B5	L-36538-48E
IO-540-AE1A5	L-36622-48E	IO-540-AE1A5	L-36694-48E	IO-540-D4B5	L-36570-48E
IO-540-AE1A5	L-36625-48E	IO-540-AE1A5	L-36695-48E	IO-540-D4B5	L-36699-48E
IO-540-AE1A5	L-36626-48E	IO-540-AE1A5	L-36696-48E	IO-540-D4B5	L-36701-48E
IO-540-AE1A5	L-36627-48E	IO-540-AE1A5	L-36697-48E	IO-540-K1A5	L-36623-48E
IO-540-AE1A5	L-36632-48E	IO-540-AE1A5	L-36698-48E	IO-540-K1A5	L-36624-48E
IO-540-AE1A5	L-36633-48E	IO-540-AE1A5	L-36700-48E	IO-540-K1A5	L-36661-48E
IO-540-AE1A5	L-36634-48E	IO-540-AE1A5	L-36704-48E	IO-540-K1A5	L-36664-48E
IO-540-AE1A5	L-36635-48E	IO-540-AE1A5	L-36705-48E	IO-540-K1A5	L-36666-48E
IO-540-AE1A5	L-36636-48E	IO-540-AE1A5	L-36706-48E	IO-540-K1A5	L-36675-48E
IO-540-AE1A5	L-36637-48E	IO-540-AE1A5	L-36707-48E	IO-540-K1A5	L-36685-48E
IO-540-AE1A5	L-36640-48E	IO-540-AE1A5	L-36709-48E	IO-540-K1A5	L-36691-48E
IO-540-AE1A5	L-36642-48E	IO-540-AE1A5	L-36710-48E	IO-540-K1A5	RL-17773-48E
IO-540-AE1A5	L-36643-48E	IO-540-AE1A5	L-36711-48E	IO-540-K1A5	RL-19715-48E
IO-540-AE1A5	L-36644-48E	IO-540-AE1A5	L-36712-48E	IO-540-K1B5	L-14107-48E
IO-540-AE1A5	L-36646-48E	IO-540-AE1A5	L-36723-48E	IO-540-K1B5	L-36520-48E
IO-540-AE1A5	L-36647-48E	IO-540-AE1A5	L-36724-48E	IO-540-K1B5	RL-27036-48E

Table 1 (Cont.)
Affected Lycoming Engines

Engine Model	Serial Number	Engine Model	Serial Number	Engine Model	Serial Number
IO-540-K1B5	RL-28624-48E	IO-540-W1A5	L-18062-48E	O-540-E4C5	RL-20301-40E
IO-540-K1F5	RL-10039-48E	IO-540-W1A5	RL-18043-48E	O-540-E4C5	RL-20769-40E
IO-540-K1F5	RL-18009-48E	LTIO-540-J2B	L-1472-68A	O-540-E4C5	RL-23596-40E
IO-540-K1G5	L-36645-48E	LTIO-540-J2B	L-1800-68A	O-540-E4C5	RL-23708-40E
IO-540-K1G5	L-36713-48E	LTIO-540-J2B	L-3024-68A	O-540-E4C5	RL-24164-40E
IO-540-K1G5	L-36714-48E	LTIO-540-J2B	RL-1563-68A	O-540-E4C5	RL-24524-40E
IO-540-K1G5D	RL-20203-48E	LTIO-540-J2B	RL-2180-68A	O-540-F1B5	L-19760-40E
IO-540-K1J5	L-36522-48E	LTIO-540-J2BD	L-1120-68A	O-540-F1B5	L-20124-40E
IO-540-K1J5	L-36525-48E	LTIO-540-J2BD	L-1435-68A	O-540-F1B5	L-21553-40E
IO-540-K1J5	L-36528-48E	LTIO-540-J2BD	L-1999-68A	O-540-F1B5	L-25028-40E
IO-540-K1J5	L-36555-48E	LTIO-540-J2BD	L-2436-68A	O-540-F1B5	L-27655-40E
IO-540-K1J5	L-36558-48E	LTIO-540-J2BD	RL-1134-68A	O-540-F1B5	L-27656-40E
IO-540-K1J5	L-36567-48E	LTIO-540-J2BD	RL-1492-68A	O-540-F1B5	L-27657-40E
IO-540-K1J5	L-36569-48E	LTIO-540-J2BD	RL-1958-68A	O-540-F1B5	L-27658-40E
IO-540-K1J5	L-36581-48E	LTIO-540-J2BD	RL-2887-68A	O-540-F1B5	L-27661-40E
IO-540-K1J5	L-36583-48E	O-540-A1A5	RL-10149-40E	O-540-F1B5	L-27662-40E
IO-540-K1J5	L-36597-48E	O-540-A1C5	RL-19285-40E	O-540-F1B5	L-27664-40E
IO-540-K1J5	L-36598-48E	O-540-A1C5	RL-25295-40E	O-540-F1B5	L-27665-40E
IO-540-K1J5	L-36604-48E	O-540-A1D5	RL-13079-40E	O-540-F1B5	L-27666-40E
IO-540-K1J5	L-36607-48E	O-540-A1D5	RL-22597-40E	O-540-F1B5	L-27667-40E
IO-540-K1K5	L-36511-48E	O-540-A1D5	RL-23985-40E	O-540-F1B5	L-27668-40E
IO-540-K2A5	L-36521-48E	O-540-A1D5	RL-25450-40E	O-540-F1B5	L-27669-40E
IO-540-M1C5	L-20070-48E	O-540-B2C5	RL-1012-40E	O-540-F1B5	L-27670-40E
IO-540-S1A5	L-19112-48E	O-540-B4B5	L-17096-40E	O-540-F1B5	L-27671-40E
IO-540-V4A5	L-27688-48E	O-540-B4B5	RL-15528-40E	O-540-F1B5	L-27672-40E
IO-540-V4A5	L-27698-48E	O-540-B4B5	RL-18480-40E	O-540-F1B5	L-27673-40E
IO-540-V4A5	L-27803-48E	O-540-E4A5	L-27652-40E	O-540-F1B5	L-27674-40E
IO-540-V4A5	L-27863-48E	O-540-E4A5	L-27653-40E	O-540-F1B5	RL-12963-40E
IO-540-V4A5	L-27864-48E	O-540-E4A5	L-27654-40E	O-540-F1B5	RL-19924-40E
IO-540-V4A5	L-28942-48E	O-540-E4C5	L-13034-40E	O-540-F1B5	RL-24137-40E
IO-540-V4A5	L-29190-48E	O-540-E4C5	L-13337-40E	O-540-F1B5	RL-24873-40E
IO-540-V4A5	L-29318-48E	O-540-E4C5	L-14400-40E	O-540-F1B5	RL-25896-40E
IO-540-V4A5	L-30041-48E	O-540-E4C5	L-15736-40E	O-540-G1A5	L-27659-40E
IO-540-V4A5	L-30114-48E	O-540-E4C5	L-16220-40E	O-540-G1A5	L-27660-40E
IO-540-V4A5	L-36492-48E	O-540-E4C5	L-19576-40E	O-540-J3A5	L-16192-40E
IO-540-V4A5	L-36507-48E	O-540-E4C5	L-19738-40E	O-540-J3C5D	L-10933-40E
IO-540-V4A5	L-36532-48E	O-540-E4C5	L-20326-40E	O-540-J3C5D	L-21141-40E
IO-540-V4A5	L-36611-48E	O-540-E4C5	L-21328-40E	O-540-J3C5D	RL-22132-40E
IO-540-V4A5	L-36612-48E	O-540-E4C5	RL-18368-40E	O-540-J3C5D	RL-23986-40E
IO-540-V4A5	L-36613-48E	O-540-E4C5	RL-18753-40E	O-540-L3C5D	L-12040-40E
IO-540-V4A5	L-36614-48E	O-540-E4C5	RL-19429-40E	O-540-L3C5D	L-13753-40E
IO-540-V4A5	L-36616-48E	O-540-E4C5	RL-19766-40E	O-540-L3C5D	RL-1055-40E

Table 1 (Cont.)
Affected Lycoming Engines

Engine Model	Serial Number	Engine Model	Serial Number	Engine Model	Serial Number
O-540-L3C5D	RL-456-40E	TIO-540-AJ1A	L-14264-61E	TIO-540-AK1A	RL-8162-61A
TEO-540-A1A	EL-106-84E	TIO-540-AJ1A	L-14265-61E	TIO-540-AK1A	RL-9320-61A
TEO-540-X218	L-1778-X	TIO-540-AJ1A	L-14266-61E	TIO-540-AK1A	RL-9860-61A
TEO-540-X254	L-1774-X	TIO-540-AJ1A	L-14267-61E	TIO-540-J2B	L-10745-61A
TEO-540-X254	L-1775-X	TIO-540-AJ1A	L-14268-61E	TIO-540-J2B	L-10925-61A
TEO-540-X254	L-1779-X	TIO-540-AJ1A	L-14269-61E	TIO-540-J2B	L-11116-61A
TEO-540-X254	L-1796-X	TIO-540-AJ1A	L-14270-61E	TIO-540-J2B	L-11292-61A
TEO-540-X254	L-1798-X	TIO-540-AJ1A	L-14271-61E	TIO-540-J2B	L-11378-61A
TIO-540-A2C	L-10943-61A	TIO-540-AJ1A	L-14273-61E	TIO-540-J2B	L-11416-61A
TIO-540-A2C	L-10944-61A	TIO-540-AJ1A	L-14274-61E	TIO-540-J2B	L-14254-61A
TIO-540-AB1AD	RL-9121-61A	TIO-540-AJ1A	L-14276-61E	TIO-540-J2B	RL-10978-61A
TIO-540-AF1B	RL-10618-61A	TIO-540-AJ1A	L-14277-61E	TIO-540-J2B	RL-5157-61A
TIO-540-AF1B	RL-11058-61A	TIO-540-AJ1A	L-14280-61E	TIO-540-J2BD	L-10052-61A
TIO-540-AF1B	RL-8936-61A	TIO-540-AJ1A	L-14281-61E	TIO-540-J2BD	L-10273-61A
TIO-540-AH1A	L-14249-61A	TIO-540-AJ1A	L-14282-61E	TIO-540-J2BD	L-11232-61A
TIO-540-AH1A	L-14279-61A	TIO-540-AJ1A	L-14284-61E	TIO-540-J2BD	L-14298-61A
TIO-540-AH1A	L-14283-61A	TIO-540-AJ1A	L-14291-61E	TIO-540-J2BD	L-14299-61A
TIO-540-AH1A	L-14296-61A	TIO-540-AJ1A	L-14292-61E	TIO-540-J2BD	RL-10589-61A
TIO-540-AH1A	L-14302-61A	TIO-540-AJ1A	L-14294-61E	TIO-540-J2BD	RL-3380-61A
TIO-540-AH1A	L-14311-61A	TIO-540-AJ1A	L-14295-61E	YAEIO-540-EXP	EL-36717-48A
TIO-540-AH1A	RL-10554-61A	TIO-540-AJ1A	L-14305-61E	YAEIO-540-EXP	EL-36718-48A
TIO-540-AH1A	RL-10793-61A	TIO-540-AJ1A	L-14306-61E	YIO-540-D4A5	EL-36505-48E
TIO-540-AH1A	RL-2315-61A	TIO-540-AJ1A	L-14308-61E	YIO-540-D4A5	EL-36512-48E
TIO-540-AH1A	RL-4860-61A	TIO-540-AJ1A	L-14312-61E	YIO-540-D4A5	EL-36516-48E
TIO-540-AH1A	RL-7714-61A	TIO-540-AJ1A	L-14313-61E	YIO-540-D4A5	EL-36534-48E
TIO-540-AH1A	RL-8669-61A	TIO-540-AJ1A	L-14314-61E	YIO-540-D4A5	EL-36592-48E
TIO-540-AJ1A	L-10313-61E	TIO-540-AJ1A	L-14315-61E	YIO-540-D4A5	EL-36593-48E
TIO-540-AJ1A	L-14241-61E	TIO-540-AJ1A	L-14318-61E	YIO-540-D4A5	EL-36596-48E
TIO-540-AJ1A	L-14242-61E	TIO-540-AJ1A	L-14319-61E	YIO-540-D4A5	EL-36609-48E
TIO-540-AJ1A	L-14243-61E	TIO-540-AJ1A	L-14320-61E	YIO-540-D4A5	EL-36615-48E
TIO-540-AJ1A	L-14244-61E	TIO-540-AJ1A	L-14321-61E	YIO-540-D4A5	EL-36618-48E
TIO-540-AJ1A	L-14245-61E	TIO-540-AJ1A	RL-10245-61E	YIO-540-D4A5	EL-36628-48E
TIO-540-AJ1A	L-14246-61E	TIO-540-AJ1A	RL-11460-61E	YIO-540-D4A5	EL-36629-48E
TIO-540-AJ1A	L-14247-61E	TIO-540-AJ1A	RL-12327-61E	YIO-540-D4A5	EL-36630-48E
TIO-540-AJ1A	L-14248-61E	TIO-540-AJ1A	RL-1898-61E	YIO-540-D4A5	EL-36631-48E
TIO-540-AJ1A	L-14250-61E	TIO-540-AJ1A	RL-6778-61E	YIO-540-D4A5	EL-36638-48E
TIO-540-AJ1A	L-14251-61E	TIO-540-AJ1A	RL-7101-61E	YIO-540-D4A5	EL-36639-48E
TIO-540-AJ1A	L-14253-61E	TIO-540-AJ1A	RL-8735-61E	YIO-540-D4A5	EL-36641-48E
TIO-540-AJ1A	L-14256-61E	TIO-540-AK1A	L-11361-61A	YIO-540-D4A5	EL-36652-48E
TIO-540-AJ1A	L-14259-61E	TIO-540-AK1A	RL-11070-61A	YIO-540-D4A5	EL-36653-48E
TIO-540-AJ1A	L-14262-61E	TIO-540-AK1A	RL-3733-61A	YIO-540-D4A5	EL-36658-48E
TIO-540-AJ1A	L-14263-61E	TIO-540-AK1A	RL-5212-61A	YIO-540-D4A5	EL-36659-48E

Table 1 (Cont.)
Affected Lycoming Engines

Engine Model	Serial Number	Engine Model	Serial Number	Engine Model	Serial Number
YIO-540-D4A5	EL-36660-48E	YIO-540-D4A5	EL-36686-48E	YO-540-EXP26	EL-27663-40E
YIO-540-D4A5	EL-36668-48E	YIO-540-D4A5	EL-36715-48E	YTEO-540-B1A	EL-107-84E
YIO-540-D4A5	EL-36671-48E	YIO-540-D4A5	EL-36728-48E	YTEO-540-B1A	EL-108-84E
YIO-540-D4A5	EL-36681-48E	YIO-540-K1A5	EL-36677-48E		
Engine Model	**Serial Number**	**Engine Model**	**Serial Number**	**Engine Model**	**Serial Number**
AEIO-580-B1A	L-463-79E	AEIO-580-B1A	L-481-79E	AEIO-580-B1A	L-493-79E
AEIO-580-B1A	L-464-79E	AEIO-580-B1A	L-482-79E	AEIO-580-B1A	L-494-79E
AEIO-580-B1A	L-466-79E	AEIO-580-B1A	L-483-79E	AEIO-580-B1A	L-495-79E
AEIO-580-B1A	L-467-79E	AEIO-580-B1A	L-484-79E	AEIO-580-B1A	L-496-79E
AEIO-580-B1A	L-468-79E	AEIO-580-B1A	L-485-79E	AEIO-580-B1A	L-497-79E
AEIO-580-B1A	L-470-79E	AEIO-580-B1A	L-486-79E	AEIO-580-B1A	L-498-79E
AEIO-580-B1A	L-471-79E	AEIO-580-B1A	L-487-79E	AEIO-580-EXP	EL-469-79E
AEIO-580-B1A	L-472-79E	AEIO-580-B1A	L-488-79E	AEIO-580-EXP	EL-476-79E
AEIO-580-B1A	L-473-79E	AEIO-580-B1A	L-489-79E	IO-580-B1A	L-477-79E
AEIO-580-B1A	L-474-79E	AEIO-580-B1A	L-490-79E	YIO-580-EXP18	EL-478-79E
AEIO-580-B1A	L-475-79E	AEIO-580-B1A	L-491-79E	YIO-580-EXP18	EL-479-79E
AEIO-580-B1A	L-480-79E	AEIO-580-B1A	L-492-79E		
Engine Model	**Serial Number**				
IO-720-D1C	RL-1019-54A				

Table 2
Part Numbers and Ship Date Ranges of Suspect Connecting Rods and Suspect Connecting Rod Bushings Shipped as Spares

Part Number (P/N)	Description	Shipped from the Factory Between
LW-13923	Connecting Rod Bushing	18 November 2015 and 15 November 2016
LW-11750-S	Connecting Rod Assembly	20 November 2015 and 2 February 2017
78030-S	Connecting Rod Assembly	1 April 2016 and 2 February 2017
LW-19332-S	Connecting Rod Assembly	4 January 2016 and 2 February 2017

LYCOMING

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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.

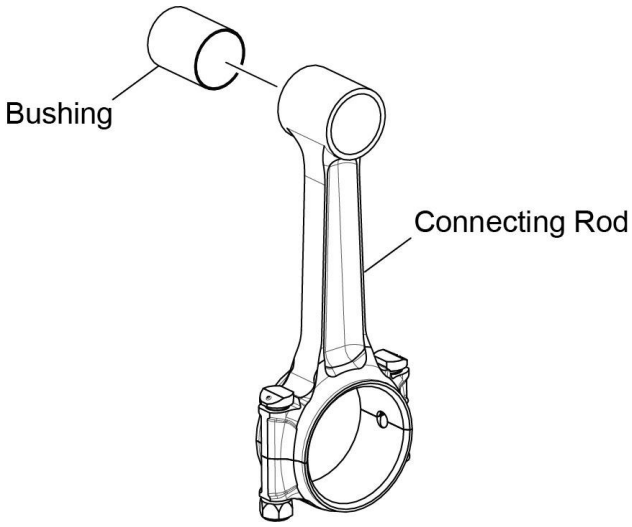

Figure 1
Bushing in Connecting Rod

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.

General Aviation Manufacturers Association

ISSUED			REVISED			PAGE NO.	REVISION
MO	DAY	YEAR	MO	DAY	YEAR	1 of 4	A
04	10	17	06	13	17		

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 Step1A (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

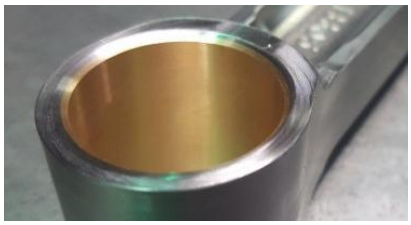

Figure 3
Chamfered Connecting Rod Bushing

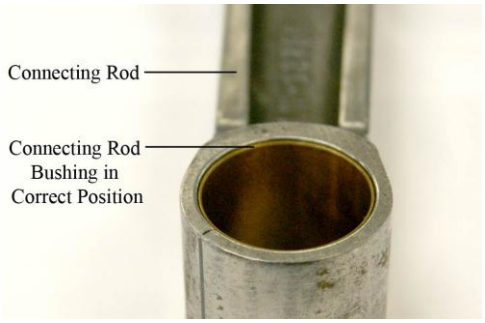

Figure 4
Example of Connecting Rod Bushing in Correct Position

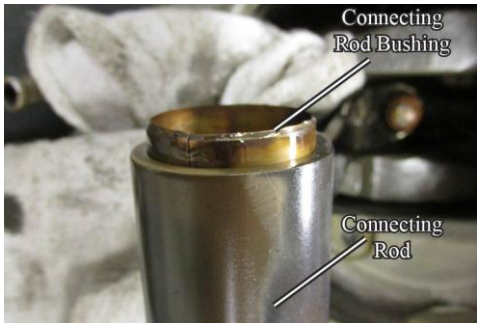

Figure 5
Example of Connecting Rod Bushing Raised Above the Connecting Rod

(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.

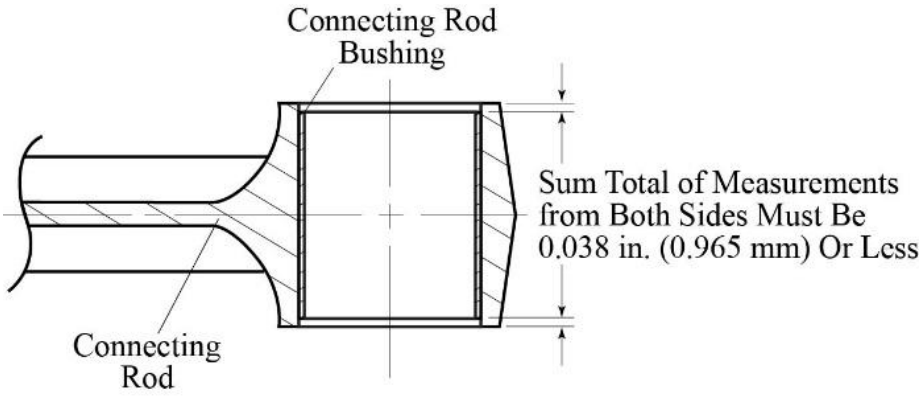

Figure 6
Correct Placement of Connecting Rod Bushing

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.

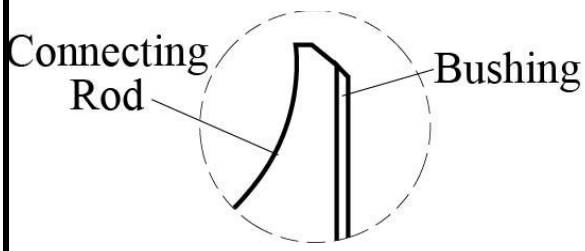

Figure 7
Connecting Rod Bushing in Correct Position

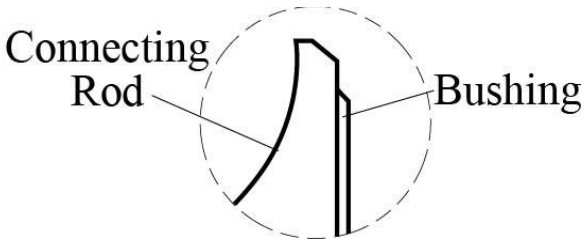

Figure 8
Connecting Rod Bushing Out of Place

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.

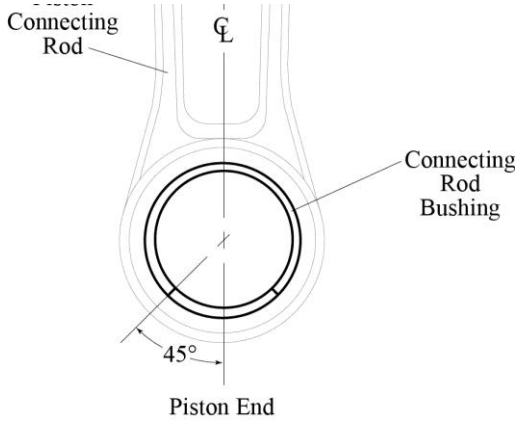

Figure 9
Connecting Rod Bushing Split Line Position

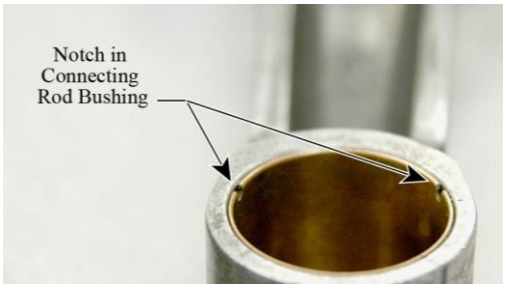

Figure 10
Notches in the Connecting Rod Bushing

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***.

LYCOMING

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SERVICE INSTRUCTION

DATE: January 27, 2016

Service Instruction No. 1059E
(Supersedes Service Instruction No. 1059D)
Engineering Aspects are
FAA Approved

SUBJECT: Pre-Lubrication of Parts Before Assembly

MODELS AFFECTED: All Lycoming opposed series aircraft engines

TIME OF COMPLIANCE: At engine assembly

REASON FOR REVISION: Update lubricants

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

This Service Instruction identifies approved factory-tested lubricants for specific engine parts that must be lubricated during engine assembly. Many premature part failures have been caused by incorrect pre-lubrication during engine assembly.

If parts are not correctly lubricated, or if an unapproved lubricant is used, engine parts could become scored before the engine oil has lubricated the engine during the first cycle of operation. This scoring can cause premature part failure, or, in some cases, engine failure.

As preventive action, during engine assembly and individual engine component replacement, apply the approved lubricant for specified components identified in Table 1.

Table 1
Lycoming-Approved Lubricants for Engine Components

Lycoming-Approved Lubricant	Engine Component
Undiluted lubricant - Castrol Contractor's Special NLGI #1 or Lubri-bond (A) - Fulfills MIL-L-23398 Spec. or Tex MOLYTEX EP 0	• Camshaft lobes • Face of tappet body (straight body solid tappet, hydraulic spherical tappet, or hydraulic hyperbolic tappet only) • Rocker arm tips • Valve stems and valve guides • Supercharger bearing (where applicable) • Piston pin plugs • Crankshaft thrust bearing surface • Drive spline of AN-type gear driven fuel pump • Fuel pump plunger for AC-type fuel pump

Table 1 (Cont.)
Lycoming-Approved Lubricants for Engine Components

Undiluted lubricant - Fel-Pro C5-A or Cop-Graf	High crush bearings used with connecting rod assembly P/N LW-13422 (apply as a light coat to the bearing surface of the connecting rod)
Mixture of 15% pre-lubricant (STP or equivalent) and 85% SAE No. 50 mineral base aviation grade lubricating oil	• All other connecting rod bearings • Tappet bores (roller tappet engines only) • Roller tappet rollers • Camshaft lobes (roller tappet engines only) • Cylinder base oil ring • All other engine components

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SERVICE INSTRUCTION

DATE: November 10, 2015

Service Instruction No. 1458G
(Supersedes Service Instruction No. 1458F and
Obsoletes Service Instruction Nos. 1106D, 1311A, and 1318)
Engineering Aspects are
FAA Approved

SUBJECT: Connecting Rod Bolts (Identification and Installation)

MODELS AFFECTED: All supported Lycoming reciprocating aircraft engines

TIME OF COMPLIANCE: Whenever new connecting rods and/or new connecting rod bolts are being installed

REASON FOR REVISION: Clarified connecting rod bolt selection and installation instructions, added new Figure 1, revised part numbers in Table 1, and added information from obsolete Service Instructions

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

This Service Instruction identifies currently available connecting rod assemblies, the applicable connecting rod bolt part numbers (P/Ns), specific requirements, and installation instructions for the various connecting rod bolts. Table 1 includes connecting rod bolt P/N LW-12596 which can be used as either a stretch bolt or torque bolt (indicated by the green or blue shading). Table 2 includes connecting rod assemblies no longer available from Lycoming Engines.

Connecting Rod Bolt Selection & Installation Guidelines

⚠ **CAUTION:** CONNECTING ROD ASSEMBLIES IN TABLE 1 HAVE A CORRESPONDING "SERVICE USE ONLY" CONNECTING ROD BOLT P/N. FOR CORRECT ENGINE OPERATION, ONLY INSTALL THE DESGNATED "SERVICE USE ONLY" CONNECTING ROD BOLT ON THE APPLICABLE CONNECTING ROD. DO NOT INSTALL ANY OTHER CONNECTING ROD BOLT.

NOTICE: All current connecting rod bolts are installed with connecting rod nut P/N LW-12186 as a matched set.

1. Any time connecting rod bolts and nuts are removed, discard both of the connecting rod bolts and nuts (Figure 1) and replace them with "Service Use Only" connecting rod bolts and nuts for the corresponding connecting rod assembly in Table 1 or Table 2.
2. To select the correct connecting rod bolt, identify the connecting rod assembly P/N in Table 1 and select the corresponding replacement "Service Use Only" connecting rod bolt P/N.

NOTICE: Connecting rod bolts identified as "Service Use Only" in Tables 1 and 2 are for installation in the field. Connecting rod bolts identified as "Lycoming Use Only" in Table 1 are only installed at the factory and are not for field installation.

⚠ CAUTION: LYCOMING DOES NOT GIVE APPROVAL FOR USE OF PMA PARTS ON ITS ENGINES. LYCOMING INSTALLATION INSTRUCTIONS DO NOT APPLY TO PMA PARTS. EQUIPMENT FAILURE COULD OCCUR IF LYCOMING INSTRUCTIONS ARE USED TO INSTALL PMA PARTS.

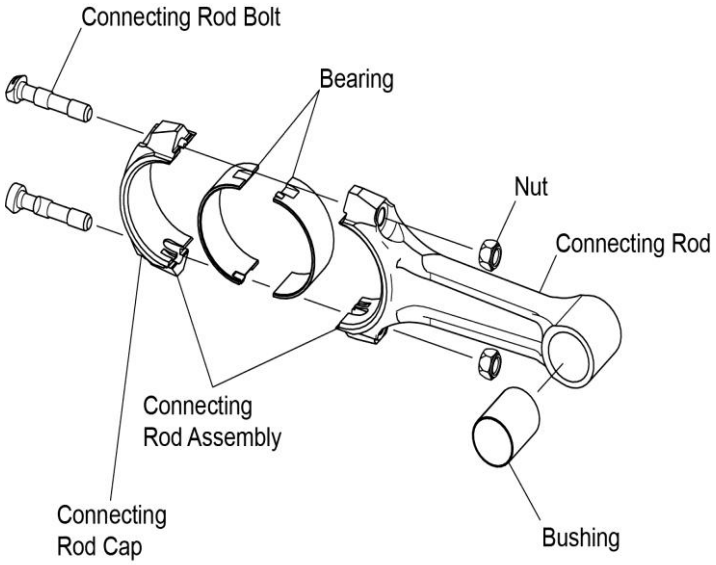

Figure 1
Connecting Rod

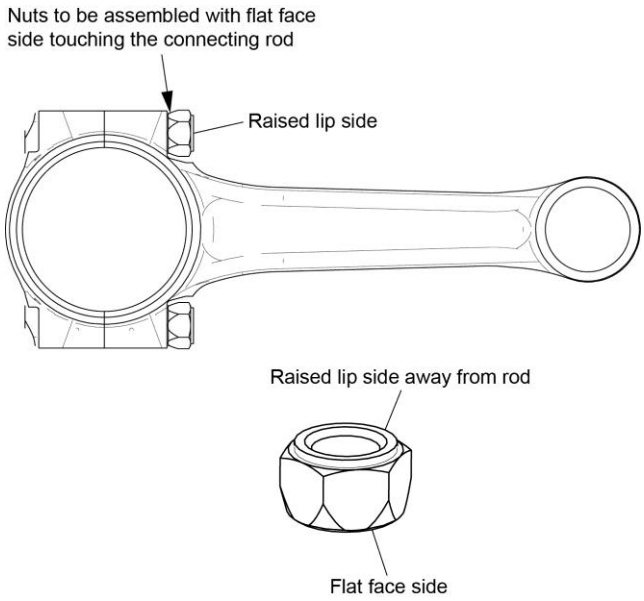

Figure 2
Connecting Rod Nut Installation

⚠ WARNING: *DO NOT ASSEMBLE STANDARD SIZE CONNECTING ROD BOLTS IN RODS THAT HAVE 0.005 IN. (0.127 MM) OVERSIZE BOLT HOLES. REFER TO THE "OVERSIZE CONNECTING ROD BOLTS" SECTION OF THIS SERVICE INSTRUCTION.*

3. Make sure the connecting rod bolt and nut are clean, free of dirt and debris, and that the threads are not damaged.
4. Apply Loctite® Food Grade Anti-Seize Lubricant to the bottom two or three threads of the connecting rod bolt. Wipe away any excess with a clean, lint-free cloth.

⚠ CAUTION: CORRECT INSTALLATION OF THE NEW NUT ON EACH NEW CONNECTING ROD BOLT IS NECESSARY FOR CORRECT CONNECTING ROD ASSEMBLY. EACH CONNECTING ROD NUT HAS TWO DIFFERENT SURFACES, ONE SURFACE IS FLAT AND THE OTHER HAS A RAISED LIP. BE SURE TO INSTALL EACH NUT ON THE CONNECTING ROD BOLT WITH THE FLAT FACE TOUCHING THE ROD AS SHOWN IN FIGURE 2. THE RAISED LIP SURFACE IS AWAY FROM THE ROD. THE CONNECTING ROD BOLT CANNOT BE TIGHTENED CORRECTLY IF THE NUT ON THE CONNECTING ROD IS INSTALLED INCORRECTLY.

5. Install the nut on the connecting rod bolt where the flat face of the nut touches the connecting rod as shown in Figure 2.
6. As shown in Table 1, some connecting rod bolts are either torqued or stretched:
   A. FOR TORQUE BOLTS: Tighten the torque bolts with a calibrated torque wrench. If a torque bolt cannot be installed at the specified torque value, send the bolt to Lycoming Engines. Refer to Tables 1 and 2 in this Service Instruction for the specified torque value.

B. FOR STRETCH BOLTS: Stretch bolts require an initial torque of 35 ft.-lb. (47 Nm). If 35 ft.-lb. (47 Nm) of torque fails to give the correct stretch, between 2.255/2.256 in. (57.2770/57.3024 mm) length measured by gauge 64945 or equivalent, apply additional torque, to a maximum of 55 ft.-lb.(75 Nm), until the bolt is at the correct stretched length. Replace the bolt if the required stretch length cannot be obtained using an applied torque between the minimum and maximum amounts. If 35 ft.-lb. (47 Nm) causes an over-stretched bolt (greater than 2.256 in. (57.3024 mm) length) replace the bolt. Although variables in the joint can increase the torque for the specified stretch, a maximum torque of 55 ft.-lb. (75 Nm) is acceptable for stretch bolts.

Initial Torque: 35 ft.-lb. (47 Nm)

Maximum Torque: 55 ft.-lb. (75 Nm).

NOTICE: If the correct stretched length of 2.255/2.256 in. (57.2770/57.3024 mm) is not achieved with the maximum torque of 55 ft.-lb. (75 Nm), discard and replace the bolt.

Table 1

Lycoming Connecting Rod Assemblies, Bolts, and Bolt Installation

Current Connecting Rod Assembly P/N	Service Use Only* Connecting Rod Bolt P/N	Bolt Type	Lycoming Use Only Connecting Rod Bolt P/N	Features
LW-11750-S**	75061	Torque	14S23890	Torque 40 ft.-lb (54 Nm).
LW-13865-S**	75061	Torque	14S23890	
77450-S	75060	Stretch	14S23890	Stretch length of bolt must be 2.255/2.256 in. (57.2770/57.3024 mm) measured using gage 64945 or equivalent.
78030-S	78027	Torque	----------	Torque 40 ft.-lb (54 Nm). All rod assemblies (connecting rod, bolts, and nuts) must be the same in a case where alternate rods could be approved for a particular engine.
LW-15288-S	78027	Torque	----------	
LW-13422-S**	LW-12596	Stretch	14S23889	High tensile strength bolt. Underside of bolt head must install flush against the boss on the connecting rod. Stretch length of bolt must be 2.255/2.256 in. (57.2770/57.3024 mm) measured using gage 64945 or equivalent.
LW-19332-S**	LW-12596	Stretch	14S23889	
LW-13937-S*	***LW-12596***	***Torque***	***14S23889***	*Torque 40 ft.-lb (54 Nm)*

NOTICE: Any time connecting rod bolts and nuts are removed, discard both of the connecting rod bolts and nuts (Figure 1) and replace them with "Service Use Only" connecting rod bolts and nuts for the corresponding connecting rod assembly

All current connecting rod assemblies use connecting rod nut P/N LW-12186.

Connecting rod bolt P/N LW-12595 is no longer available.

* "Service Use Only" bolts are to be used for installation of the connecting rod in the field.

** This connecting rod assembly can use connecting rod bolt P/N 75060 (stretch bolt) as an alternate to connecting rod bolt P/N 75061 (torque bolt). Either bolt must be used in pairs on the connecting rod assemblies in complete engine sets.

⚠ **CAUTION:** WHEN INSTALLING ANY CONNECTING ROD ASSEMBLY IN TABLE 1, USE THE SPECIFIED CONNECTING ROD BOLT FOR THAT PARTICULAR ASSEMBLY.

Table 2
Lycoming Connecting Rod Assemblies

Connecting Rod Assembly No Longer Available at Lycoming	Service Use Only* Connecting Rod Bolt P/N	Bolt Type	Features
69483	74669**	Crimp	Torque 30 ft.-lb (41 Nm).
74502	74644	Torque	Torque 40 ft.-lb (54 Nm).
LW-11457-S	75061	Torque	Torque 40 ft.-lb (54 Nm).
LW-10776	75060	Stretch	Stretch length of bolt must be 2.255/2.256 in. (57.2770/57.3024 mm) measured using gage 64945 or equivalent.
LW-10725	78027	Torque	Torque 40 ft.-lb (54 Nm) All rod assemblies (connecting rod, bolts, and nuts) must be the same in a case where alternate rods could be approved for a particular engine.
78028-S	78027	Torque	
LW-10726	78027	Torque	
78029-S	78027	Torque	Torque 40 ft.-lb (54 Nm) All rod assemblies (connecting rod, bolts, and nuts) must be the same in a case where alternate rods could be approved for a particular engine.
LW-10718	78027	Torque	
LW-10646	75060	Stretch	Stretch length of bolt must be 2.255/2.256 in. (57.2770/57.3024 mm) measured using gage 64945 or equivalent.

NOTICE: Any time connecting rod bolts and nuts are removed, discard both of the connecting rod bolts and nuts (Figure 1) and replace them with "Service Use Only" connecting rod bolts and nuts for the corresponding connecting rod assembly.

* "Service Use Only" bolts are to be used for installation of the connecting rod in the field.

** No longer available, no replacement available.

⚠ **CAUTION:** WHEN INSTALLING ANY CONNECTING ROD ASSEMBLY IN TABLE 2, USE THE SPECIFIED CONNECTING ROD BOLT FOR THAT PARTICULAR ASSEMBLY.

Oversize Connecting Rod Bolts

Connecting rods with 0.005 in. (0.127 mm) oversize bolt holes, use connecting rod bolts with 0.005 in. (0.127 mm) oversize body diameter are identified as shown in Figures 3 and 4. The oversize connecting rod bolts are identified by the black oxide coating and the characters, "H5" on the truncated surface of the bolt head; connecting rods with 0.005 in. (0.127 mm) oversize bolt holes are stamped with "H5" on both sides of the rod and cap. Also, the part number on the side of connecting rod has the suffix"H5" indicative of the oversize bolt holes. If any doubt exists as to the size of any bolt or bolt hole, measure the diameter with the dimensions shown in Figures 3 and 4.

WARNING *DO NOT, UNDER ANY CIRCUMSTANCE, ASSEMBLE STANDARD SIZE CONNECTING ROD BOLTS IN CONNECTING RODS THAT HAVE .005 0/S HOLES; TO DO SO COULD CAUSE ABRUPT ENGINE FAILURE. USED CONNECTING RODS WITH STANDARD SIZE BOLT HOLES CANNOT BE REWORKED TO ACCOMMODATE OVERSIZE BOLTS.*

Table 3 identifies the part numbers of connecting rods and corresponding attaching bolts that are currently available with 0.005 in. (0.127 mm) oversize bolt holes and 0.005 in. (0.127 mm) oversize body diameters, respectively. During manufacture, connecting rods with 0.005 in. (0.127 mm) oversize bolts and connecting rods with standard size bolts are not intermixed in the same engine. However, during overhaul it is permissible to intermix connecting rod assemblies with oversize bolts and connecting rod assemblies with standard size bolts.

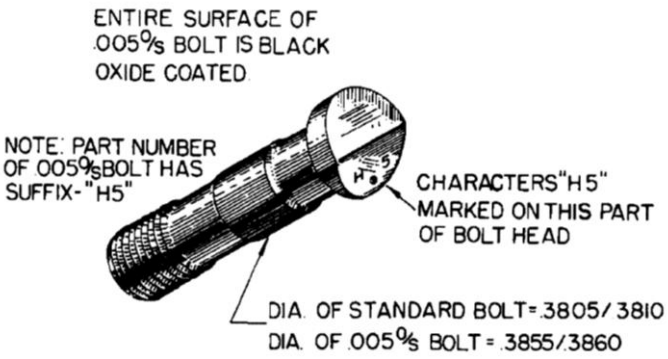

Figure 3
Typical Connecting Rod Bolt Showing Identification Marks on the Head

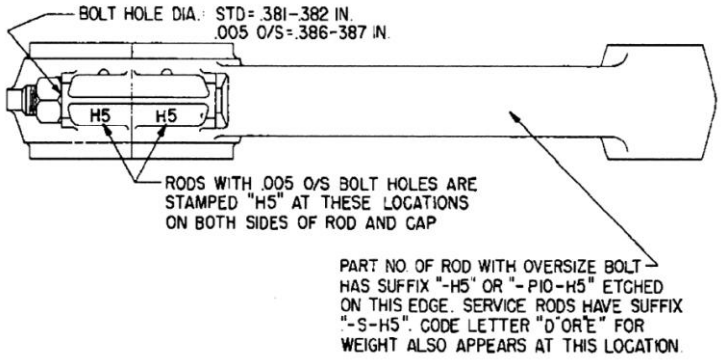

Figure 4
Typical Connecting Rod Assembly Showing Location of Oversize Identification Markings

Table 3
Connecting Rod and Oversize Connecting Rod Bolt Part Numbers

Basic Connecting Rod P/N	Basic Connecting Rod Bolt P/N
77450	75060
78030	78027
LW- 11750	75061
LW-13422*	***LW-12596****
LW-13937*	***LW-12596****
* Refer to Table 1 for connecting rod assembly and stretch or torque bolt application.	