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MANDATORY

SERVICE BULLETIN

DATE: June 16, 2021 Service Bulletin No. 642A
(Supersedes Service Bulletin No. 642)
Engineering Aspects are
FAA Approved

SUBJECT: Incorrect Piston and Ring Combination

MODELS AFFECTED: O-235-C, E & H series, and Factory Cylinder Kit P/N 05K23039

TIME OF COMPLIANCE: Within the next 10 hours of operation or next scheduled maintenance event, whichever occurs first.

REASON FOR REVISION: Deleted NOTICE “Only cylinders that ...”. Added CAUTION and instructions for cylinder replacement before the Procedure section. Revised Step 5 in the Procedure section. Revised title and Step 1 in the Warranty Instructions

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.

Lycoming has determined a possibility that an incorrect combination of piston and rings were included in Factory Cylinder Kit P/N 05K23039 starting in November 2019. This Service Bulletin provides guidance for the return of uninstalled cylinder kits, and the inspection and repair of in-service engines which had affected cylinder kits installed in the field. Factory cylinder kit P/N 05K23039 has been obsoleted and superseded by cylinder kit P/N 05K29652.

Lycoming Distributors, maintenance providers, and private owners that have uninstalled cylinder kits P/N 05K23039 purchased after October 2019 are to return the kits. DO NOT SELL OR INSTALL any cylinder kit containing a 4-ring piston P/N 14B23919 with compression rings P/N 68196 and nitrided cylinder P/N 16A30060-02. Authorized Lycoming Distributors can arrange for the return of uninstalled 05K23039 cylinder kits to be exchanged for 05K29652 cylinder kits.

For in-service O-235-C, E, & H Series engines that had Factory Cylinder Kits P/N 05K23039 installed, that were purchased after October 2019, removal of the cylinder or cylinders is required.

CAUTION DO NOT INTERMIX 3-RING PISTONS AND 4-RING PISTONS ON THE SAME ENGINE BECAUSE OF THE PISTON WEIGHT DIFFERENCE. ALL ENGINES AFFECTED BY THIS SERVICE BULLETIN MUST HAVE ANY REMAINING 4-RING PISTONS AND PLAIN STEEL CYLINDERS REPLACED WITH THE NEW 05K29652 CYLINDER KIT CONTAINING A NITRIDED CYLINDER AND 3-RING PISTON.

1. For engines which had Cylinder Kits P/N 05K23039 purchased after October 2019 installed in complete sets of four:
 - a. Complete the Procedure in this Service Bulletin for all cylinders.



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2. For engines with three or fewer cylinder kits purchased after October 2019:
 - a. Complete the Procedure in this Service Bulletin, to replace the pistons and rings, for any cylinder kits P/N 05K23039 purchased after October 2019.
 - b. Replace any cylinder kits P/N 05K23039 (4-ring piston) purchased before October 2019 with a new cylinder kit P/N 05K29652. Install the new cylinder kit in accordance with the latest revisions of the Direct Drive Overhaul Manual (60294-7) and Service Instruction No.1029.

Procedure:

1. Review the engine records for any suspect cylinder kits being installed on your engine.
2. Order SB642 Piston and Ring replacement kit P/N 05K29674 as necessary. Order one kit per cylinder.

Kit 05K29674

Description	P/N	Qty.
Piston, Compression Ratio 6.75:1, 3 Ring	14B28072	1
Ring, Piston, Comp, 4.375 Bore	78862	2
Ring, Piston, Oil, 4.375 Bore	78864	1
Plug, Piston Pin	LW-11625	2
Ring, Oil Seal, .09dia. x 4.38 ID	62869	1
Gasket, Rocker Box Cover (Silicone)	06B26669	1
Seal, Shroud Tube	LW-18661	4
Gasket, Exhaust Flange	77611	1
Gasket, 2 Bolt Flange 1.81 ID	71973	1

3. Remove each suspect cylinder in accordance with the latest revision of the Direct Drive Overhaul Manual (60294-7).
4. 4-ring pistons and rings must be removed from service.
5. Cylinder assemblies that have been installed on an engine and accumulated time in operation that are to be reinstalled must be inspected, honed, and returned to service in accordance with the inspections in the latest revisions of the Direct Drive Overhaul Manual (60294-7) and Service Table of Limits (SSP-1776). Cylinder assemblies that have not accumulated time in operation do not require honing.
6. If a cylinder does not meet specification for return to service, contact Lycoming Technical Support by phone at 570-327-7222 or 877-839-7878 or email to Technicalsupport@lycoming.com.
7. Reassemble using Piston Kit P/N 05K29674 and Serviceable Cylinder Assembly, in accordance with the latest revision of the Direct Drive Overhaul Manual (60294-7) and Service Instruction No.1029.
8. Service the engine with the appropriate grade of mineral oil after cylinder change in accordance with the latest revisions of Service Instruction No. 1014 and Service Bulletin No. 480.
9. Perform a ground run and leak check. Correct all leaks before returning the engine to service.
10. Record work performed, parts replaced, and compliance with this service bulletin in the engine maintenance records.
11. Continue to operate the engine at cruise power settings of 65% to 75% for 50 hours or until oil consumption stabilizes.

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**Warranty Instructions and Replacement Parts for
Engines/Cylinders Affected by Service Bulletin No. 642A**

1. Contact an Authorized Lycoming Distributor to order a Piston and Ring Replacement Kit P/N 05K29674 and/or Cylinder Kit P/N 05K29652. Quantity as necessary.
2. Upon receipt, complete the installation procedure.
3. Return the removed components to Lycoming Engines through the same Authorized Lycoming Distributor, and file a warranty claim for:
 - A. Reimbursement of the replacement parts.
 - B. Associated Standard, Non-Expedited Freight.
 - C. Removal and Reinstallation Labor in accordance with the latest revision of Lycoming's Removal and Installation Labor Allowance Guide Book (SSP-875).
 - D. Invoices / Work Orders for outside services for honing or cylinder inspection should be included with the warranty claim.

NOTICE: Warranty consideration is available for 12 months from the date of issue of this Service Bulletin.

If you have any questions, contact Lycoming Technical Support by phone at 570-327-7222 or 877-839-7878 or email to Technicalsupport@lycoming.com.

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