

DATE: September 1, 1995 Service Bulletin No. 524
(Supersedes Service Bulletin No. 381, Service Bulletin No. 385,
Service Bulletin No. 454B, Service Bulletin No. 455D, and
Service Bulletin No. 456F)

SUBJECT: I. Replacement of Sintered Iron Oil Pump Impellers.
II. Replacement of Aluminum Oil Pump Impellers.

MODELS AFFECTED: See attached Lists I and II for specific models and serial numbers. All new, overhauled and remanufactured engines shipped from the factory after March 31, 1985 are in compliance with this Service Bulletin.

For field overhauled engines, the overhaul facility must be contacted for information concerning the oil pump impellers which were installed.

TIME OF COMPLIANCE: **I. Sintered Iron Oil Pump Impellers:** Within next 25 hours of operation for engines which have sintered iron oil impellers and have not complied with any revisions to Service Bulletin No. 454, No. 455, or No. 456.

II. Aluminum Oil Pump Impellers: At next recommended overhaul not to exceed 2000 hours (2400 hours for O-235 series engines with extended TBO) of operation for engines which have steel and aluminum impellers installed or have complied with revisions to Service Bulletin No. 455, or No. 456.

I. Sintered Iron Oil Pump Impellers:

Textron Lycoming requires replacement of all sintered iron oil pump impellers within the next 25 hours of operation. Sintered iron impellers being replaced are P/N 77313, P/N 78532, P/N LW-12897, P/N LW-14038, P/N LW-14712 and P/N LW-15863. They can be identified by a porous surface finish on the impeller faces (refer to Figure 3). Engines from the attached List I with sintered iron impellers which are not in compliance with any revisions to Service Bulletin No. 454, No. 455, or No. 456 must have kit, P/N 05K19423-S installed within the next 25 hours of operation.

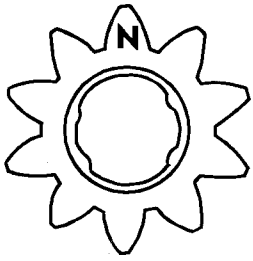


Figure 1. Nitrided Impeller

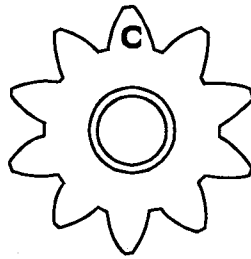


Figure 2. Carburized Impeller

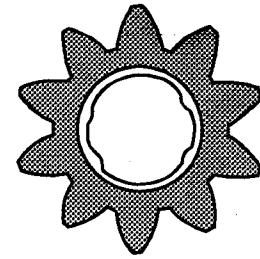


Figure 3. Sintered-Iron Impeller

II. Aluminum Oil Pump Impellers:

Textron Lycoming requires replacement of all aluminum oil pump impellers at the next recommended overhaul not to exceed 2000 hours of operation. The aluminum oil pump impellers being replaced are P/N 60747 (except on GO-435 and GO-480 engines) and P/N LW-13775. Engines from the attached List II, engines with aluminum oil pump impellers installed in the field, and engines in compliance with Service Bulletin No. 455, No. 455A, No. 455B, No. 456, or No. 456A, but not with any later revisions, must install kit P/N 05K19423-S at the next recommended overhaul not to exceed 2000 hours of operation.

CAUTION

GO-435 AND GO-480 ENGINES ARE THE ONLY MODELS APPROVED FOR USE OF STEEL DRIVING IMPELLER P/N 60746 AND ALUMINUM DRIVEN IMPELLER P/N 60747. THESE IMPELLERS MUST BE USED IN SETS. NEVER USE IMPELLER P/N 60746 WITH A HARDENED STEEL DRIVEN IMPELLER.

As a product improvement, a nitrided driving impeller, P/N LW-18109 and a carburized driven impeller shaft assembly, P/N LW-18110, are available to replace the sintered iron or aluminum impellers which may still be in service. The nitrided impeller can be identified by the character "N" located on the centerline of a gear tooth (refer to Figure 1). The carburized impeller will have a character "C" positioned on a gear tooth centerline (refer to Figure 2).

To ensure the steel impellers are used together, they must be purchased in a kit, P/N 05K19423-S.

Install steel oil pump impellers as follows:

1. Remove the magneto(s).
2. Remove the sump.
3. Remove the fuel pump.

NOTE

Care must be taken when removing or reinstalling a diaphragm-type fuel pump. The actuating arm of the pump must be on the base circle of the cam, or pressure exerted on the arm of the fuel pump could cause damage to the mounting bolt threads.

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4. Remove any other accessories from the housing.
5. Remove the accessory housing from the engine.
6. After the accessory housing has been removed, disassemble the oil pump and inspect both the housing and oil pump for damage. If oil pump is two piece (old style) do not reuse, refer to latest edition of Service Instruction No. 1164 for correct oil pump body part numbers along with appropriate model applications.
7. Reassemble the oil pump using the steel driving impeller (P/N LW-18109) and steel driven impeller and shaft assembly (P/N LW-18110). Be sure all parts are lubricated thoroughly during assembly. Refer to latest edition of Service Instruction No. 1341 for oil pump shaft lubrication requirements. As the slotted nuts are tightened to a torque of 17 foot-pounds, make sure that the oil pump impellers are free by rotating the oil pump shaft. Correct any problems before proceeding.
8. Before reinstalling the accessory housing make sure that the crankshaft to camshaft timing is correct and has not moved. See applicable Overhaul Manual for procedure.
9. Reinstall accessory housing using a new gasket. The new gasket may be too long and must be trimmed to fit at the oil sump parting face.
10. Reinstall the oil sump using a new gasket. Reinstall any clamps and hoses that were removed.
11. Reinstall the fuel pump.
12. Install magneto or magnetos. Consult the proper magneto timing procedure in applicable Overhaul Manual.
13. Reinstall any other accessories removed under step 4.
14. Following completion of assembly, run the engine. Check oil pressure and magnetos for drop-off.
15. Check any leaks prior to release for flight.

NOTE

Compliance with this Service Bulletin must be noted in engine log book.

PARTS DATA:

Oil pump impeller kit (P/N 05K19423-S) consists of:

Qty.	Part No.	Description
1	LW-18109	Steel Driving Impeller
1	LW-18110	Steel Driven Impeller Assembly
1	SSP285	Caution Tag

MODELS AFFECTED:

LIST I

All Textron Lycoming engines employing sintered iron impellers as follows:

NOTE

For the purpose of this Service Bulletin, disregard the 2 or 3 character suffix on the end of the serial numbers (i.e. -15 or -27A). Any engine which falls within the serial number range specified for the model, regardless of the suffix, is subject to this Service Bulletin.

AIO-320 series engines with serial numbers L-137-63A thru L-250-63A inclusive.

LIO-360 series engines with serial numbers L-101-67A thru L-1075-67A inclusive.

**O-540 series engines with serial numbers L-14227-40A thru L-18521-40A inclusive.

O-235 series engines with serial numbers L-10287-15 thru L-13039-15 inclusive.

O-290 series engines with serial numbers L-8560-21 thru L-8565-21 inclusive.

O-320 series engines with serial numbers L-28444-27A thru L-47241-27A inclusive.

O-320 series engines with serial numbers L-6673-39A thru L-7118-39A inclusive.

IO-320 series engines with serial numbers L-4625-55A thru L-5521-55A inclusive.

LIO-320 series engines with serial numbers L-101-66A thru L-304-66A inclusive.

*O-360, HO-360 series engines with serial numbers L-15277-36A thru L-23384-36A inclusive.

*IO-360, HIO-360-A, -B, -C series engines with serial numbers L-7274-51A thru L-17821-51A inclusive.

IVO-360 series engines with serial numbers L-232-58A thru L-233-58A inclusive.

**IO-540 series engines with serial numbers L-8771-48A thru L-16596-48A inclusive.

*NOTE

All dual magneto 360 wide deck series engines that have complied with Service Bulletin No. 455C or Service Bulletin No. 455D are in compliance with this Service Bulletin.

**NOTE

All dual magneto 540 wide deck series engines and all IO-540-P1A5, -R1A5, -S1A5 series engines were built with large capacity oil pumps. This Service Bulletin does not apply to these engines.

NOTE

Some of the models affected, regardless of serial numbers, that may still have sintered iron impellers are as follows:

1. All remanufactured engines shipped between April 6, 1970 thru April 1, 1981.
2. All engines that were overhauled in the field using any of the following sintered iron impeller part numbers:

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MODELS AFFECTED:

LIST I (CONT)

77313, 78532, LW-12897, LW-14038, LW-14712 and LW-15863.

These parts were available from Lycoming distributors between April 6, 1970 thru April 1, 1981.

For field overhauled engines, the overhaul facility must be contacted for information concerning the oil pump impellers which were installed.

3. All engines that have complied with Service Instructions No. 1230 and No. 1272; Service Bulletins No. 381 and No. 385.

MODELS AFFECTED (CONT.):

LIST II

All Textron Lycoming engines employing aluminum oil pump impellers as follows:

NOTE

For the purpose of this Service Bulletin, disregard the 2 or 3 character suffix on the end of the serial numbers (i.e. -15 or -27A). Any engine which falls within the serial number range specified for the model, regardless of the suffix, is subject to this Service Bulletin.

O-235 series engines with serial numbers up to and including L-10286-15, L-13040-15 thru L-24051-15 inclusive except the following: L-24033-15, L-24034-15, L-24035-15, L-24040-15 thru L-24049-15 inclusive.

O-290 series engines with serial numbers up to and including L-8565-21.

O-320 series engines with serial numbers up to and including L-28443-27A, L-47242-27A thru L-50133-27A inclusive.

O-320 series engines with serial numbers up to and including L-6672-39A, L-7119-39A thru L-13788-39A inclusive except for the following: L-13755-39A and L-13780-39A thru L-13783-39A.

IO-320 series engines with serial numbers up to and including L-4624-55A, L-5522-55A thru L-5897-55A inclusive.

AIO-320 series engines with serial numbers up to and including L-188-65A.

LIO-320 series engines with serial numbers up to and including L-100-66A, L-305-66A thru L-329-66A inclusive.

O-340 series engines with serial numbers up to and including L-345-30.

*O-360, HO-360 series engines with serial numbers up to and including L-15276-36A, L-23384-36A thru L-31007-36A inclusive except for the following: L-30988-36A, L-30989-36A, L-30990-36A, L-30991-36A, L-31001-36A, L-31002-36A, L-31003-36A.

*IO-360, HIO-360-A, -B, -C series engines with serial numbers up to and including L-7273-51A, L-17822-51A thru L-24033-51A inclusive except for the following: L-24020-51A, L-24029-51A, L-24030-51A, L-24031-51A.

HIO-360-D1A, -E1AD, -E1BD, -F1AD series engines with serial numbers up to and including L-25579-51A except for the following: L-22311-51A thru L-22313-51A, L-22396-51A, L-22397-51A, L-22416-51A, L-22546-51A thru L-22549-51A, L-22563-51A, L-22568-51A thru L-22571-51A inclusive.

LO-360 series engines with serial numbers up to and including L-544-71A.

VO-360 series engines with serial numbers up to and including L-395-45.

IVO-360 series engines with serial numbers up to and including L-L-234-58A.

AIO-360 series engines with serial numbers up to and including L-136-63A, L-251-63A thru L-258-63A inclusive.

LIO-360 series engines with serial numbers up to and including L-100-67A, L-1075-67A thru L-1113-67A inclusive.

MODELS AFFECTED (CONT):

LIST II (CONT.)

*TO-360, TIO-360 series engines with serial numbers up to and including L-367-69A.

*TIO-360 series engines with serial numbers up to and including L-183-64A.

**O-540 series engines with serial numbers up to and including L-14226-40A, L-18522-40A thru L-23888-40A inclusive.

**IO-540 series engines with serial numbers up to and including L-8870-48A, L-16597-48A thru L-22725-48A inclusive except for the following: L-22721-48A, L-22723-48A.

***NOTE**

All dual magneto 360 wide deck series engines that have complied with Service Bulletin No. 455C or Service Bulletin No. 455D are in compliance with this Service Bulletin.

****NOTE**

All dual magneto 540 wide deck series engines and all IO-540-P1A5, -R1A5, -S1A5 series engines were built with large capacity oil pumps. This Service Bulletin does not apply to these engines.

NOTE

Some of the models affected, regardless of serial numbers, that may still have aluminum impellers are as follows:

1. All remanufactured engine models listed above shipped prior to March 31, 1985.
2. All engine models listed above that were overhauled in the field prior to March 31, 1985.

For field overhauled engines, the overhaul facility must be contacted for information concerning the oil pump impellers which were installed.

3. Any 360 dual magneto wide deck series engines that have complied with Service Bulletin No. 455, No. 455A, No. 455B, but have not complied with Service Bulletin No. 455C or No. 455D.

MANDATORY
SERVICE BULLETIN

January 18, 1996

Supplement No. 1

To

Service Bulletin No. 524

On the **ATTACHMENT** for **LIST II** to Service Bulletin No. 524 the serial numbers for the following engine models should read:

O-290 series engines with serial numbers up to and including L-8559-21.

*O-360, HO-360 series engines with serial numbers up to and including L-15276-36A, L-23385-36A thru L-31007-36A inclusive except for the following : L-30988-36A, L-30989-36A, L-30990-36A, L-30991-36A, L-31001-36A, L-31002-36A, L-31003-36A.

HIO-360-D1A, -E1AD, -E1BD, -F1AD series engines with serial numbers up to and including L-22579-51A except for the following: L-22311-51A thru L-22313-51A, L-22396-51A, L-22397-51A, L-22416-51A, L-22546-51A thru L-22549-51A, L-22563-51A, L-22568-51A thru L-22571-51A inclusive.

LIO-360 series engines with serial numbers up to and including L-100-67A, L-1076-67A thru L-1113-67A inclusive.