



SERVICE DIRECTIVE BULLETIN

SERVICE DIRECTIVE BULLETIN 0053

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Date: April 30, 1981

Subject: Compliance to Avco Lycoming Service Bulletin No. 454 "Replacement of Oil Pump Impellers"

Models: F28C, 280C, F28F and 280F

Effectivity: All Helicopters with Engine Serial Numbers Noted in Attached Avco Lycoming Service Bulletin No. 454, Except Those With Engine Log Book Entries Indicating Compliance was Accomplished at the Enstrom Factory.

The attached Avco Lycoming Service Bulletin No. 454 is being distributed to insure compliance on all Enstrom helicopters as noted above.

Additional basic procedures for accessory case removal from the Enstrom helicopter are provided as follows:

1. Remove engine compartment bottom panel.
2. Start oil draining and set engine with #1 cylinder at top dead center on the compression stroke.
3. Remove seat cushions and firewall inspection panels.
4. Remove air filter box and hose.
5. Remove exhaust system.
6. Remove turbocharger and injector, as an assembly, from the mount brackets and injector bracket on sump.
7. Remove scavenge and fuel pump.
8. Remove turbo brackets and induction pipe.

NOTE: On "F" models, do not remove throttle cable from turbocharger bracket. If you have to remove cable from bracket, mark or check location (Ref. Fig. 1) or rod end and cable sheath. When reassembling, return rod end and cable to same location to insure proper operation of the correlator.

9. Remove magnetos and set off to the side of the engine compartment.
10. Remove oil filter (use caution if it is to be reused).
11. Disconnect oil lines, breather and tach drive cable.
12. Slide back induction hose and remove hardware from sump. Remove sump.
13. Remove hardware from accessory case.
14. Support engine on a jack - CAUTION should be exercised during the following operations.
15. When engine is adequately supported, remove Lord mounts.
16. Lower engine slightly and slide accessory case back 1½ to 2 inches.

CAUTION

Avoid bending tach drive shaft as accessory case is moved.

17. Replace oil pump impellers per Avco Lycoming Service Bulletin No. 454.
18. Reinstall in reverse order.

NOTE: Refer to the appropriate aircraft Maintenance Manual for torque and timing specifications.

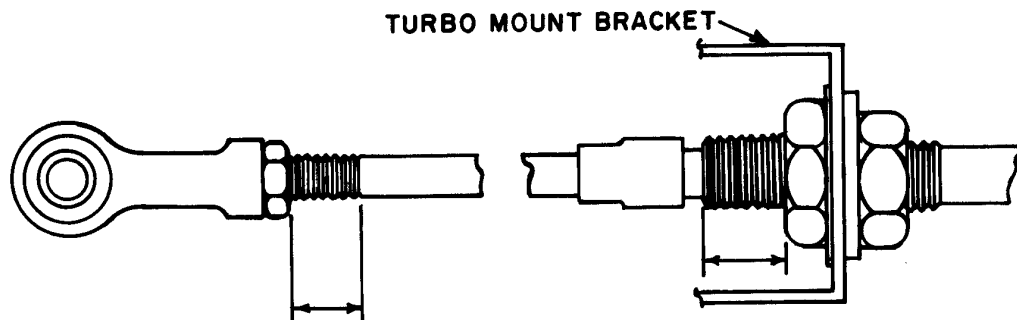


FIG. 1

Service Bulletin



DATE:

April 10, 1981

Service Bulletin No. 454
Engineering Aspects are
FAA (DER) Approved

SUBJECT:

Replacement of Oil Pump Impellers

MODELS AFFECTED:

All HIO-360-DIA, -E1AD, -E1BD and -F1AD up to and including serial number L-22579-51A except 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.

Any of the above engines that were overhauled in the field prior to April 1, 1981.

All remanufactured engines of the above models shipped prior to April 1, 1981.

TIME OF COMPLIANCE:

Within the next 25 hours of operation.

A recent manufacturing improvement to the above mentioned Avco Lycoming engines include the use of new hardened steel impellers for the oil pump. The use of these impellers will improve the life of the oil pump.

This modification consists of replacing the oil pump driven impeller and shaft with hardened steel impeller and shaft P/N LW-18110. Replacement of driving impeller with impeller P/N LW-18109.

The procedure for the installation of the oil pump impellers are as follows:

1. Remove the magneto.
2. Remove the sump.
3. Remove the fuel pump.

NOTE

The HIO-360-D1A is equipped with a diaphragm type fuel pump. Care must be taken when removing, to make sure that the actuating arm of the pump is on the base circle of the cam. Any pressure exerted by the action of the fuel pump lever could damage the fuel pump mounting bolt threads.

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 cover for damage.
7. Reassemble the oil pump using the hardened steel driven impeller and shaft assembly P/N LW-18110 and drive impeller P/N LW-18109. Be sure all parts are lubricated thoroughly during assembly. 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 check to make sure that the crankshaft to camshaft timing is correct. See Overhaul Manual No. 60294-7 for this procedure.
9. Reinstall the accessory housing using a new gasket.
10. Reinstall the oil sump using a new gasket. Reinstall any clamps and hoses that were removed.
11. Reinstall the fuel pump.

12. Install the magneto or magnetos. Consult the proper magneto timing procedure in Overhaul Manual No. 60294-7.

13. Reinstall any other accessories removed under paragraph 4.

14. Following completion of assembly, run the engine. Check oil pressure and magnetos for drop-off.

15. Check for any oil leaks prior to release for flight.

For those engines affected by this bulletin that are within the standard Avco Lycoming warranty period, material and labor will be reimbursed in accordance with published warranty upon the receipt of a properly ex-

ecuted warranty application through an authorized Avco Lycoming distributor on or before March 31, 1982.

For those engines affected by this bulletin that are beyond the Avco Lycoming warranty period, a labor assistance allowance of two (2) hours labor plus full reimbursement for the material will be allowed upon the receipt of properly executed warranty application through an authorized Avco Lycoming distributor on or before March 31, 1982.

NOTE

An entry must be made in engine log book that compliance to this service bulletin was accomplished.

PARTS DATA:

Kit LW-18270 Oil Pump Impeller Replacement (HIO-360-D1A) consists of:

QTY.	PART NO.	DESCRIPTION
1	LW-18110	Driven Steel Impeller Assy.
1	LW-18109	Drive Steel Impeller
2	LW-12681	Magneto Gasket
2	62224	Magneto Adapter Gasket
1	60096	Fuel Pump Gasket
1	73818	Accessory Housing Gasket
1	LW-13353	Sump Gasket

Kit LW-18269 Oil Pump Impeller Replacement (HIO-360-E1AD, -E1BD and -F1AD) consists of:

1	LW-18110	Driven Steel Impeller Assy.
1	LW-18109	Drive Steel Impeller
1	LW-12681	Magneto Gasket
1	LW-13353	Sump Gasket
1	8313	Vacuum Pump Gasket
1	73818	Accessory Housing Gasket
1	69164	Fuel Pump Adapter Gasket

21403A - This number for Avco Lycoming reference only.