



# SERVICE LETTER

No. 682B

Piper Aircraft Corporation

Lock Haven, Pennsylvania, U.S.A.

"FAA DOA SO-1 Approved"

April 19, 1974 S/M

(This supersedes and voids previous issues within the Service Letter No. 682 Series)

Subject: Required Inspection of Part No. 69650 Piston Pin -- reference attached Lycoming Service Bulletin No. 367D, dated March 8, 1974.

Reason for Revision: Refer to NOTE under Models Affected on Page 1 and NOTE on Page 6 of the attached Lycoming Service Bulletin No. 367D, dated March 8, 1974.

Models and Serial Numbers Affected: Refer to attached Lycoming Service Bulletin No. 367D to determine aircraft effectivity with respect to specified engine serial numbers (be sure to read NOTE under Models Affected, Page 1; affected engine serial number listing on Page 3 through 6 inclusive; and NOTE on bottom of Page 6 -- all of which refer to affected engine serial numbers).

If your engine(s) serial numbers(s) is/are not listed, no further action is required.

Compliance Time: Refer to attached Lycoming Service Bulletin No. 367D, Time of Compliance.

Purpose: To provide distribution of attached Lycoming Service Bulletin No. 367D, dated March 8, 1974.

Balance of Piper Service Letter format not applicable; refer to attached Lycoming Service Bulletin No. 367D for detailed information.

# AVCO LYCOMING DIVISION

WILLIAMSPORT, PENNSYLVANIA 17701

## Service Bulletin



DATE: March 8, 1974

Service Bulletin No. 367D  
(Supersedes Service Bulletin No. 367C)  
Engineering Aspects are  
FAA (DEER) Approved

SUBJECT: Required Inspection of Part No. 69650 Piston Pin

MODELS AFFECTED: O-320-B2B, -D1F, -D2A; IO-320; O-360-A; IO and LIO-360-A, -B, -C, -D; HIO-360; O-540-A, -B, -E, -G; IO-540-A, -B, -C, -D, -E, -G, -J, -K, -L, -M and -P; GO-480; IGSO-480-A1E6; TIO-540 and LTIO-540-J; IGO-540; IGSO-540-A, -B; VO-540; TIO and TIGO-541-E; IO-720-A, -B, -C series engines. See pages 3, 4, 5 and 6 for lists of serial numbers for specific applicable engines.

### NOTE

This revision to Service Bulletin No. 367 has been published primarily to add serial numbers of engines that are subject to the requirements of the bulletin. This revision supersedes all previous editions of Service Bulletin No. 367.

TIME OF COMPLIANCE: Required within next 50 hours of engine operation or before at owners discretion.

Several part no. 69650 piston pins have failed, caused by transverse grinding or heat cracks which occurred during manufacture of the piston pin. There is a possibility that a limited number of these pins were assembled in engines now in service.

To preclude failures of this type, removal of all piston pins from affected engines is required and replacement made with either new or reusable 69650 piston pins. A list of applicable engines is attached herewith. Reusability of piston pins is determined by magnetic particle inspection, those that are found to be free from indications should be reassembled in the engine. New replacement piston pins having any one of the three following identification markings HB-NM or FAAPMA or a large letter M on one end are satisfactory and do not require magnetic inspection prior to first use. All other piston pins must be magnetic inspected prior to their use or returned through your nearest Avco Lycoming Distributor for replacement parts.

Owners and operators having access to magnetic inspection facilities may inspect their piston pins locally rather than return them to Avco Lycoming. The accompanying figure shows the type of indications that may be encountered and the following procedure describes the method of inspection to be used.

1. Clean the piston pins to remove all traces of oil, grease or dirt; this is best done in a vapor degreaser using trichlorethylene as a solvent. The pins must be clean and dry before proceeding with magnetic inspection.

2. The equipment used for magnetic inspection must utilize either battery supplied direct current, or full wave rectified, 3 phase alternating current.

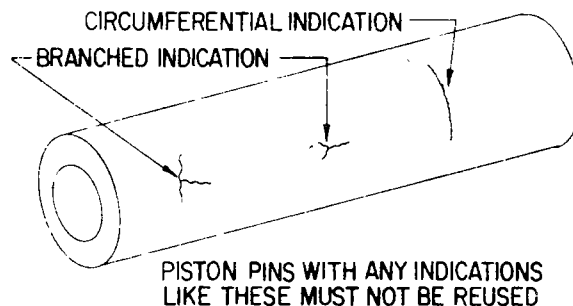
3. Circular magnetization shall be accomplished by mounting the piston pins on a 1/2 in. dia. x 6 in. min. long copper bar secured between the heads of the machine. Adjust the current supply to indicate 1000 amperes.

4. The pins must then be magnetized longitudinally in a coil of 10,000 ampere turns.

5. Use the continuous wet method for application of the magnetic fluid, either black powder or fluorescent may be used in a vehicle of kerosene or equivalent petroleum distillate.

6. Use a 5-power magnifying glass to examine the piston pins. Pay particular attention for indications around the circumference of the pin; branched indications as shown in the figure are conclusive evidence of unsatisfactory pins.

7. Piston pins that are found to be free of indications should be demagnetized, cleaned and reused. A wire, confirming the inspection should be sent immediately to Avco Lycoming, collect. Include the date of inspection and serial number of the engine.



If any piston pins are found to have magnetic indications, the quantity of such pins and serial number of the engine from which they were removed should be promptly sent to Avco Lycoming by wire, or cable, collect, and ship the properly identified pins, via air shipment collect to Avco Lycoming and mark the package for the attention of the Service Department.

Piston pins removed from applicable engines where magnetic inspection facilities are not available may be exchanged for re-inspected or new piston pins through your nearest Avco Lycoming distributor, include the engine model and serial number with the piston pins being returned.

Avco Lycoming will furnish or replace all necessary material required for disassembly and reassem-

bly of the cylinders and pistons to accomplish piston pin inspection, in addition to a labor allowance of \$40.00 for each cylinder.

Wherever possible claims for labor allowance should be submitted to your nearest Avco Lycoming distributor; in locations where this is not practical the claim may be submitted directly to Avco Lycoming. In either case, the claim must be accompanied by the model designation and serial number of the engine, the date of compliance with this bulletin, and results of the inspection.

After the inspection requirements have been completed a note indicating compliance with this bulletin should be entered in the aircraft records.

#### PARTS DATA

Qty. Req'd.	Part No.	Name
1	LW-13617	Top overhaul gasket set, 4-cylinder angle valve head engines (for IO and 1 IO-360-A, -C engines) NOTE: 74712 or 77569 intake pipe seals must be reused; they are not included with this kit.
1	LW-12032	Top overhaul gasket set, 6-cylinder parallel valve head engines (for O-540-B, -E, -G; IO-540-C; TIO-540-C1A)
1	LW-12033	Top overhaul gasket set, 6-cylinder angle valve head up-exhaust engines (for IO-540-E, -M; TIO-540-A, -J; LTIO-540-J2BD; IGSO-540-B)
1	LW-12034	Top overhaul gasket set, 6-cylinder angle valve head down-exhaust engines (for IGSO-480-A; IO-540-A, -G, -K, -L, -P; IGSO-540-A)
1	LW-12035	Top overhaul gasket set, 6-cylinder angle head top-exhaust engines (for TIO and TIGO-541-E series engines)
1	LW-12037	Top overhaul gasket set, 8-cylinder angle valve head down-exhaust engines (for IO-720-A, -B)
1	LW-12038	Top overhaul gasket set, 4-cylinder parallel valve head engines (for O-320-B, -D; O-360-A)
AR	69650 or LW-13444	Piston pin (69650 piston pins are interchangeable with LW-13444 piston pins for all applicable engines)

*As of August 15, 1973 the engines identified by the following list of serial numbers are subject to the inspection requirements of this bulletin*

### IO & HIO-360 SERIES (200 HP)

#### New Engines:

L-9409-51A, L-9410-51A, L-9415-51A thru L-9417-51A, L-9419-51A, L-9420-51A, L-9422-51A thru L-9427-51A, L-9438-51A thru L-9441-51A, L-9443-51A thru L-9453-51A, L-9459-51A thru L-9488-51A, L-9492-51A thru L-9496-51A, L-9503-51A, L-9504-51A, L-9529-51A, L-9530-51A, L-9549-51A, L-9559-51A, L-9564-51A, L-9573-51A thru L-9575-51A, L-9577-51A thru L-9597-51A, L-9599-51A, L-9609-51A thru L-9612-51A, L-9615-51A, L-9616-51A, L-9618-51A, L-9620-51A thru L-9622-51A, L-9624-51A thru L-9627-51A, L-9657-51A thru L-9666-51A, L-9669-51A thru L-9678-51A, L-9681-51A, L-9685-51A thru L-9691-51A, L-9693-51A thru L-9696-51A, L-9700-51A, L-9739-51A, L-9748-51A, L-9749-51A, L-9751-51A thru L-9754-51A, L-9756-51A thru L-9761-51A, L-9767-51A thru L-9774-51A, L-9777-51A thru L-9779-51A, L-9782-51A thru L-9784-51A, L-9905-51A thru L-9909-51A, L-9914-51A thru L-9928-51A, L-9937-51A, L-9939-51A, L-9940-51A, L-9964-51A, L-9981-51A, L-9982-51A, L-9986-51A thru L-9988-51A, L-9990-51A thru L-9995-51A, L-10002-51A thru L-10004-51A, L-10012-51A, L-10013-51A, L-10021-51A, L-10076-51A, L-10078-51A, L-10079-51A, L-10085-51A, L-10086-51A, L-10095-51A thru L-10105-51A, L-10108-51A thru L-10114-51A, L-10116-51A, L-10117-51A, L-10126-51A thru L-10136-51A, L-10139-51A, L-10141-51A thru L-10149-51A, L-10181-51A thru L-10183-51A, L-10187-51A thru L-10194-51A, L-10197-51A thru L-10201-51A, L-10204-51A thru L-10226-51A.

#### Remanufactured Engines:

RL-778-51A, RL-1642-51A, RL-2508-51A, RL-2562-51A, RL-2672-51A, RL-3048-51A, RL-3464-51A, RL-5652-51A, RL-5751-51A, RL-6331-51A, RL-6744-51A, RL-7357-51A, RL-7422-51A, RL-7806-51A, RL-7886-51A, RL-8000-51A, RL-8872-51A.

### LIO-360 SERIES (200 HP)

#### New Engines

L-440-67A thru L-461-67A, L-487-67A thru L-498-67A, L-513-67A thru L-516-67A, L-518-67A, L-572-67A thru L-577-67A, L-620-67A, L-622-67A thru L-633-67A, L-645-67A thru L-652-67A.

### O-540-E4A5, -E4B5, -E4C5, -G1A5 (260 HP)

#### New Engines.

L-15062-40, L-15063-40, L-15108-40, L-15117-40, L-15132-40, L-15133-40, L-15161-40, L-15221-40, L-15222-40, L-15225-40 thru L-15227-40, L-15242-40 thru L-15249-40, L-15300-40, L-15310-40 thru L-15314-40, L-15322-40, L-15323-40, L-15325-40.

#### Remanufactured Engines.

RL-10859-40, RL-11420-40, RL-11862-40, RL-13058-40.

### IO-540-A1A5, -B1A5, -E1A5, -K1A5, -K1B5, -K1C5, -K1E5, -K1E5D (290 and 300 HP)

#### New Engines.

L-10118-48 thru L-1022-48, L-10124-48 thru L-10127-48, L-10144-48, L-10145-48, L-10209-48, L-10213-48, L-10221-48 thru L-10260-48, L-10263-48 thru L-10267-48, L-10398-48, L-10524-48 thru L-10528-48, L-10545-48 thru L-10547-48, L-10554-48 thru L-10556-48.

#### Remanufactured Engines:

RL-113-48, RL-622-48, RL-7116-48, RL-1606-48, RL-2015-48.

### TIO-540-A2B, -A2C, -C1A; TIO-540-J2BD (250, 310, 350 HP)

#### New Engines:

L-2412-61 thru L-2414-61, L-2416-61 thru L-2419-61, L-2489-61 thru L-2498-61, L-2500-61 thru L-2503-61.

#### Remanufactured Engines:

RL-122-61, RL-226-61, RL-759-61, RL-1263-61, RL-1268-61.

### IGSO-540 SERIES (380 HP)

#### New Engines

L-3060-50, L-3061-50, L-3070-50, L-3071-50, L-3074-50, L-3085-50 thru L-3087-50, L-3090-50

#### Remanufactured Engines

RL-315-50, RL-518-50, RL-528-50, RL-871-50, RL-1100-50, RL-1151-50, RL-1174-50, RL-1216-50, RL-1517-50, RL-1558-50, RL-1591-50, RL-1682-50, RL-1694-50, RL-1788-50, RL-2003-50, RL-2385-50, RL-2464-50, RL-2479-50, RL-2543-50, RL-2604-50, RL-2907-50.

### IO-720 SERIES (400 HP)

#### New Engines.

L-535-54 thru L-520-54, L-532-54 thru L-536-54, L-540-54, L-541-54, L-546-54 thru L-554-54

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Engines with the following serial numbers have been published in error and should be deleted from the list shown on page 3 and previous editions of this bulletin

IO-360 Series (200 HP) - L-9769-51A

LIO-360 Series (200 HP) - L-513-67A, L-516-67A, L-633-67A, and L-649-67A

IO-540 Series (290 HP) - L-10547-48

TIO-540 Series (250 HP) - L-2500-61

IGSO-540 Series (380 HP) - RL-2464-50

IO-720 Series (400 HP) - L-507-54, L-550-54

*As of December 1, 1973 the engines identified by the following list of serial numbers (in addition to lists in previous editions of this bulletin) are subject to the inspection requirements of this bulletin.*

**O-320-B2B, -D1F**  
(160 HP)

L-6799-39A, L 6800 39A thru L-6802-39A, L 6808-39A.

**O-360-A SERIES**  
(180 HP)

L-17405-36A, L-17425-36A, L-17426-36A, L 17430-36A thru L-17439-36A, L-17444-36A, L-17450-36A thru L-17452-36A, L-17454-36A thru L-17459-36A, L-17461-36A; also remanufactured engine RL-2030-36.

**IO-360-B1B**  
(180 HP)

L-10142-51A thru L-10149 51A.

**O-540-B2B5, -B4B5**  
(235 HP)

L 15315 40 thru L-15320-40, L-15324-40, L-15326-40

**IO-540-C4B5**

L-10519-48 thru L-10523-48, L-10531-48 thru L-10534-48; also remanufactured engine RL-918-48.

**IGSO-480-A1E6**  
(340 HP)

Remanufactured engine RL 1258-44, RL-1508-44

**LTIO-540-J2BD**  
(350 HP)

L-102-68, L-105-68 L-109-68, L-113-68 thru L-117-68, L-125-68, L-128-68 thru L-130-68, L-148-68; also remanufactured engine RL-106-68.

**IGSO-540 SERIES**  
(380 HP)

Remanufactured engine RL 1014-50, RL-1700-50, RL-2187-50.

**TIO-541-E1C4**

L-867-59 thru L-870-59

**TIGO-541-E1A**

L-345-62, L-346-62, L-348-62, L-349-62.

*As of March 1, 1974 the engines identified by the following list of serial numbers (in addition to lists in previous editions of this bulletin) are subject to the inspection requirements of this bulletin.*

**O-320 SERIES**

(160 HP)

L-6798-39A, L-6803-39A thru L-6807-39A, L-6809-39A thru L-6815-39A.

**IO-320 SERIES**

(160 HP)

L-4952-55.

**O-360 SERIES**

(180 HP)

New Engines:

L-17389-36A thru L-17404-36A, L-17406-36A thru L-17408-36A, L-17410-36A thru L-17424-36A, L-17427-36A, L-17429-36A, L-17440-36A thru L-17443-36A, L-17445-36A thru L-17449-36A, L-17460-36A, L-17462-36A thru L-17474-36A, L-17481-36A thru L-17495-36A, L-17497-36A thru L-17500-36A, L-17503-36A thru L-17505-36A, L-17516-36A thru L-17518-36A.

Remanufactured Engines:

RL-523-36A, RL-3933-36A, RL-7173-36A, RL-11169-36A, RL-16937-36A.

**IO & HIO-360 SERIES**

(190, 200, 205 HP)

New Engines:

L-10073-51A, L-10074-51A, L-10081-51A thru L-10084-51A, L-10087-51A thru L-10089-51A, L-10092-51A, L-10093-51A, L-10115-51A, L-10118-51A thru L-10125-51A, L-10137-51A, L-10138-51A, L-10140-51A, L-10150-51A thru L-10161-51A, L-10163-51A thru L-10180-51A, L-10184-51A thru L-10186-51A, L-10188-51A, L-10195-51A, L-10205-51A thru L-10213-51A.

Remanufactured Engines:

RL-1272-51A, RL-1481-51A, RL-1769-51A, RL-2464-51A, RL-3195-51A, RL-3540-51A, RL-6345-51A, RL-6469-51A, RL-6652-51A.

**LIO-360 SERIES**

(200 HP)

L-612-67A thru L-619-67A, L-621-67A, L-634-67A thru L-647-67A, L-650-67A thru L-652-67A.

**O-540-A1C5, -A1D5, -B1A5, -B2B5, -B4B5, -B2C5, -E4A5, -E4B5, -E4C5, -G1A5**

(235, 250, 260 HP)

New Engines:

L-15297-40, L-15304-40 thru L-15309-40, L-15327-40 thru L-15367-40, L-15372-40.

Remanufactured Engines:

RL-1040-40, RL-1207-40, RL-3330-40, RL-6768-40, RL-7670-40, RL-9416-40, RL-11312-40, RL-11377-40, RL-13637-40, RL-14194-40.

**IO-540-C1A5, -C4B5, -D4A5, -E1A5, -E1B5, -G1D5, -J4A5, -K1A5, -K1B5**

(250, 260, 290, 300 HP)

New Engines:

L-10459-48, L-10487-48 thru L-10518-48, L-10529-48, L-10530-48, L-10535-48 thru L-10544-48, L-10548-48 thru L-10553-48, L-10557-48 thru L-10562-48, L-10568-48, L-10571-48 thru L-10576-48, L-10578-48 thru L-10584-48.

Remanufactured Engines:

RL-1170-48, RL-1640-48, RL-2050-48, RL-2210-48, RL-2271-48, RL-2276-48, RL-3610-48, RL-3614-48, RL-3732-48, RL-4057-48, RL-4103-48, RL-4506-48, RL-5778-48.

**TIO-540 SERIES**

(250, 310, 350 HP)

New Engines:

L-2550-61, L-2557-61, L-2562-61, L-2566-61, L-2567-61, L-2572-61 thru L-2583-61, L-2585-61 thru L-2588-61, L-2590-61, L-2591-61, L-2595-61 thru L-2597-61.

Remanufactured Engines:

RL-771-61, RL-1346-61, RL-1488-61, RL-1679-61, RL-1683-61, RL-2189-61.

**LTIO-540 SERIES**

(350 HP)

L-147-68, L-149-68 thru L-152-68, L-154-68, L-155-68.

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**IGO-540 SERIES**  
(350 HP)

L 320-49

**IGSO-540 SERIES**  
(380 HP)

New Engines

L 3093-50, L 3094-50

Remanufactured Engines

RL-1014-50, RL-1700-50, RL-1773-50, RL-1821-50, RL-2157-50.

**VO-540 SERIES**  
(305 HP)

New Engines:

L-2281-43.

Remanufactured Engines

RL-2269-43.

**GO-480-G1D6**  
(295 HP)

Remanufactured Engines:

RL 288-37, RL-482-37

**IGSO-480-A**  
(340 HP)

Remanufactured Engines:

RL 829-44, RL-1509-44, RL-1518-44, RL-1586-44.

**TIO-541 SERIES**  
(380 HP)

L-866-59, L-871-59 thru L 873-59.

**TIGO-541 SERIES**  
(425 HP)

New Engines:

L-343-62, L-344-62, L-347-62, L-350-62 thru L-352-62.

Remanufactured Engines

RL-161-62.

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NOTE: Revision "D" adds serial numbers for the following engine models to the list of engines subject to the inspection requirements of this bulletin: O-320-D2A, IO-320, O-540-A, IO-540-D, -J; GO-480; IGO-540, VO-540.