

# Airworthiness Directive Schedule

## Engines

### Lycoming AEIO-360, HIO-360, IO-360 and LIO-360 Series

28 November 2024

- Notes:**
1. This AD schedule is applicable to Lycoming **AEIO-360, HIO-360, IO-360 and LIO-360** series engines manufactured under FAA Type Certificate Number **1E10**.
  2. The Federal Aviation Administration (FAA) is the National Airworthiness Authority (NAA) responsible for the issue of State of Design Airworthiness Directives (ADs) for these engines.  
  
State of Design ADs can be obtained directly from the FAA website at: [Dynamic Regulatory System \(faa.gov\)](https://www.faa.gov/regulatory)
  3. Where a NZ AD is based on a foreign AD, compliance may be shown with either the NZ AD or the equivalent State of Design AD, because they will have essentially the same requirements i.e. the logbook will need to list all the NZ ADs, but the CAA will accept compliance with the equivalent State of Design AD as a means of compliance with the NZ AD. (The same as happens now for an imported aircraft.)
  4. Manufacturer service information referenced in Airworthiness Directives listed in this schedule may be at a later approved revision. Service information at later approved revisions can be used to accomplish the requirements of these Airworthiness Directives.
  5. The date above indicates the amendment date of this schedule.
  6. New or amended ADs are shown with an asterisk \*

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**DCA/LYC/109A    FAA AD 64-16-05            Fuel and Oil Vent Restriction – Modification**

**Applicability:** Model O-320, O-340, O-360 and O-540 series engines fitted with AC Fuel Pumps AC 5623-467 (Lycoming P/N 74082), AC 5656880 (Lycoming P/N 74082) and AC 6440152 (Lycoming P/N 74798), and model IO-320-B1A, IO-360-A1A, IO-360-B1B, HIO-360-B1A, HIO-360-B1B and IO-540-C-B5 engines fitted with AC Fuel Pumps, AC 5623466 (Lycoming P/N 73973) and AC 5656696 (Lycoming P/N 73870).

**Note 1:** No action required if already in compliance with DCA/LYC/109. This AD revised with Lycoming SB No. 298 no longer active. There is no change to the AD requirement.

**Note 2:** This AD is not applicable to remanufactured engines or new engines shipped from the manufacturer after 1 April 1964, or carburettor engines fitted with adapter P/N 75250 and AC fuel pump 6440152 (Lycoming P/N 74798), or fuel injected engines fitted with AC fuel pump P/N 5656696 (Lycoming P/N 73870) and Lycoming adapter 75250 or fuel injected engines fitted with AC fuel pump P/N 6440160 (Lycoming P/N 74999).

**Requirement:** To prevent failure of the fuel pump oil seal which could result in engine oil draining overboard, ensure the engine is fitted with an approved fuel pump.  
(FAA AD 64-16-05 refers)

**Compliance:** Within the next 100 hours TIS or annual inspection whichever occurs sooner, unless previously accomplished.

**Effective Date:** DCA/LYC/109    -    31 July 1964  
DCA/LYC/109A    -    27 November 2008

**DCA/LYC/116A    FAA AD 66-06-03            Connecting Rod P/N 74308 & 74503 - Replacement**

**Applicability:** All IO-360-A1A engines.

**Requirement:** Install connecting rod assembly P/N 75059.  
(FAA AD 66-06-03 refers)

**Compliance:** Rods with under 200 hours TIS when they reach 250 hours TIS.  
Rods with over 200 hours TIS within the next 50 hours TIS.

**Effective Date:** 31 January 1966

**DCA/LYC/120A    FAA AD 66-20-04            AC Oil Filter Adaptor Gasket – Replacement**

**Applicability:** Model O-320, IO-320, O-340, O-360, IO-360, O-540, and IO-540 series engines fitted with AC oil filters,

Except model O-320-A, O-320-E series engines, S/N 16128-27 onward, model O-320-B, O-320-C and O-320-D series engines, S/N 6217-39 onward, model IO-320 series engines, S/N 2110-55A and 2113-55A onward, model O-360 series engines, S/N 9346-36A onward, model O-540 series engine, S/N 9770-40, 9800-40 and 9803-40 onward, and model IO-540 series engines, S/N 2831-48, 2835-48 and 2840-48 onwards.

**Note:** No action required if already in compliance with DCA/LYC/120. This AD revised with Lycoming SB No. 307 no longer active. There is no change to the AD requirement.

**Requirement:** To prevent failure of the oil filter adapter gasket P/N 74904 which could result in loss of engine oil, replace gasket with P/N 76691 or an alternate approved part and inspect the stud, cap screws and tapped holes in the accessory housing mounting pad for proper length or depth, as applicable. Replace studs and cap screws of improper length and retap holes of insufficient depth as required.  
(FAA AD 66-20-04 refers)

**Compliance:** Within the next 100 hours TIS or annual inspection whichever occurs sooner, unless previously accomplished.

**Effective Date:** DCA/LYC/120    -    30 September 1968  
DCA/LYC/120A    -    27 November 2008

**DCA/LYC/128 Centre Main Bearing Retention - Inspection**

- Applicability:** As detailed except those engines affected by DCA/LYC/141
- Requirement:** Accomplish Lycoming SB 327C
- Compliance:**
1. Within the next 10 hours TIS on engines that have accumulated more than 600 hours.
  2. Within the next 50 hours TIS on engines that have accumulated more than 500 hours.
  3. At any time metal contamination is evident in the lubrication suction screens.
  4. The inspections may be discontinued upon compliance with DCA/LYC/131. (FAA ADs 71-05-02 and 72-21-06 refer)
- Effective Date:** 31 August 1970

**DCA/LYC/131A FAA AD 71-05-02 Crankcase Bearing Dowel Replacement – Modification**

- Applicability:** Model IO-360-A, IO-360-C, IO-360-D, AIO-360, HIO-360-C, TIO-360, IGO-540 and IGSO-540 engines listed in Lycoming SB 326A.
- Note 1:** No action required if already in compliance with DCA/LYC/131. This AD revised to include note 2 with no change to the AD requirement or compliance.
- Requirement:** To prevent main bearing failure due to possible bearing movement, modify the crankcase per Lycoming SI No. 1123D or repair the crankcase as described in Lycoming SI No. 1112E whichever is applicable, and install straight crankcase bearing dowels per Lycoming SB No. 326A or accomplish an equivalent approved repair.
- Note 2:** Compliance with earlier or later FAA approved SI and SB revisions is acceptable to meet the requirements of this AD. (FAA AD 71-05-02 and 72-21-06 refer)
- Compliance:** At next overhaul or at any time the engine is completely disassembled prior to overhaul, unless previously accomplished.
- Effective Date:** DCA/LYC/131 - 30 April 1971  
DCA/LYC/131A - 27 November 2008

**DCA/LYC/132A FAA AD 71-11-02 Limited Travel Valve Lifters - Replacement**

- Applicability:** Model IO-360A and IO-360A-C series engines, S/N 1734-51A through to 4412-51A, and  
All IO-360A and IO-360A-C series engines remanufactured between 1 September 1965 and 11 October 1967.
- Note:** No action required if already in compliance with DCA/LYC/132. This AD revised with Lycoming SB No. 328 no longer active. There is no change to the AD requirement.
- Requirement:** To prevent failure of the valves, replace the intake and exhaust hydraulic tappet plunger assembly P/N 76290 with P/N 78290 or with approved alternate parts. (FAA AD 71-11-02 refers)
- Compliance:** Within the next 50 hours TIS on engines that have accumulated more than 500 hours TIS unless previously accomplished.
- Effective Date:** DCA/LYC/132 - 31 March 1972  
DCA/LYC/132A - 27 November 2008

**DCA/LYC/136 Crankcase Bearing Dowel Replacement - Modification**

**Applicability:** As detailed  
**Requirement:** Accomplish Lycoming SI 1225D  
**Compliance:** At next overhaul  
**Effective Date:** 30 June 1972

**DCA/LYC/140 FAA AD 72-21-06 & 71-05-02 Lubrication System - Inspection**

**Applicability:** (a) IGSO-540A series engines except S/N 2537-50 and subsequent; IGSO-540-B series engines except S/N 2541-50 and subsequent; and IGSO-540-A and -B engines S/N 747-50, 844-50, 947-50, 1184-50, 1240-50, 1351-50, 1402-50, 1453-50, 1544-50, 1767-50, 1773-50, 1794-50, 1799-50, 1933-50 overhauled (re-manufactured) by Lycoming after 26 January 1970 and  
 (b) All IO-360-A & C series engines except S/N 7100-51A and subsequent and all engines overhauled (re-manufactured) by Lycoming after 26 January 1970 except S/N 354-51, 1049-51A, 3003-51A, 3281-51A and 6526-51A.  
**Requirement:** The lubrication system is to be inspected for metal contamination. If metal contamination is detected DCA/LYC/141 or 142 must be complied with before further flight.  
 (FAA AD 72-21-06 & 71-05-02 refer)  
**Compliance:** Within the next 10 hours TIS and thereafter at intervals not exceeding 25 hours TIS. The inspection may be discontinued upon compliance with DCA/LYC/142  
**Effective Date:** 31 December 1972

**DCA/LYC/141 FAA AD 72-21-06 & 71-05-02 Crankcase Bearing - Inspection**

**Applicability:** (a) IGSO-540A series engines except S/N 2537-50 and subsequent; IGSO-540-B series engines except S/N 2541-50 and subsequent; and IGSO-540-A and -B engines S/N 747-50, 844-50, 852-50, 947-50, 1184-50, 1240-50, 1361-50, 1402-50, 1453-50, 1544-50, 1767-50, 1773-50, 1794-50, 1799-50, 1933-50 overhauled (re-manufactured) by Lycoming after 26 January 1970 and  
 (b) All IO-360-A & C series engines except S/N 7100-51A and subsequent and all engines overhauled (re-manufactured) by Lycoming after 26 January 1970 except S/N 354-51, 1049-51A, 3003-51A, 3281-51A and 6526-51A.  
**Requirement:** The crankcase bearing is to be inspected for shifting as follows:  
 (a) Engines listed in para (a) above: Remove number four cylinder and examine visually the position of number three main bearing for shifting in accordance with Part II of Avco Lycoming Service Bulletin No. 327C.  
 (b) Engines listed in para (b) above: Remove number two position cylinder and examine visually the position of the centre main bearing for shifting in accordance with Part II of Avco Lycoming Service Bulletin No. 327C.  
 If shifting of the bearing is detected comply with DCA/LYC/142 before further flight.  
 (FAA AD 72-21-06 and 71-05-02 refers)  
**Compliance:** Engines which have accumulated less than 500 hours TIS since new or overhaul: As soon as they accumulate 525 hours TIS.  
**Effective Date:** 31 December 1972

**DCA/LYC/142    FAA AD 72-21-06 & 71-05-02    Crankcase and Bearing Dowels - Modification**

- Applicability:** (a) IGSO-540-A series engines except S/N 2537-50 and subsequent; IGSO-540-B series engines except S/N 2541-50 and subsequent; and IGSO-540-A and -B engines S/N 747-50, 844-50, 852-50, 947-50, 1184-50, 1240-50, 1361-50, 1402-50, 1453-50, 1544-50, 1767-50, 1773-50, 1794-50, 1799-50, 1933-50 overhauled (re-manufactured) by Lycoming after 26 January 1970 and
- (b) All IO-360-A & C series engines except S/N 7100-31A and subsequent and all engines overhauled (re-manufactured) by Lycoming after 26 January 1970 except S/N 354-51, 1049-51A, 3281-51A and 6526-51A.
- Requirement:** Modify the crankcase as described in Lycoming Service Instruction No. 1123C or repair the crankcase as described in Lycoming Service Instruction No. 1112E, whichever is applicable, and install straight crankcase bearing dowels per Lycoming Service Bulletin No. 326A or approved equivalent.  
(FAA AD's 72-21-06 and 71-05-02 refer)
- Compliance:** On engines which have accumulated 1200 hours TIS since new or overhaul: within the next 50 hours TIS
- Effective Date:** 31 December 1972

**DCA/LYC/143A    FAA AD 72-21-04    Magneto Distributor Bushing – Termination of Inspection**

- Applicability:** HIO-360-D1A engines fitted to model Hughes 269C helicopters.
- Note 1:** This AD revised to mandate Lycoming SB No. 365 with Lycoming SB No. 336C no longer active. Inactive SB No. 336C required the periodic inspection and lubrication of magneto distributor bushings and the periodic replacement of certain magneto parts.
- Note 2:** No action required if already in compliance with Lycoming SB No. 365.
- Requirement:** To prevent possible failure of Bendix S4LN-1208 magnetos P/N 10-349285-5 modify the magnetos per Lycoming SB No. 365.  
(FAA AD 72-21-04 refers)
- Compliance:** Within the next 50 hours TIS unless already accomplished.
- Effective Date:** DCA/LYC/143 - 28 February 1973  
DCA/LYC/143A - 27 November 2008

**DCA/LYC/149    FAA AD 73-15-04    Magneto Grommet - Replacement**

- Applicability:** HIO-360-D1A engines installed on Hughes model 269C helicopters
- Requirement:** Accomplish Lycoming SB 364A.  
(FAA AD 73-15-04 also refers)
- Compliance:** Every 300 hours TIS
- Effective Date:** 31 August 1973

**DCA/LYC/150    FAA AD 73-23-01    Piston Pins - Inspection**

- Applicability:** As detailed
- Requirement:** Accomplish Lycoming SB 367F.  
(FAA AD 73-23-01)
- Compliance:** Within the next 50 hours TIS
- Effective Date:** 30 September 1973

**DCA/LYC/154    FAA AD 75-09-15    Bendix Fuel Injector Flow Divider Cover Gasket - Modification**

- Applicability:** All Lycoming model IO-320, AIO-320, IO-360, LIO-360, HIO-360-C, IVO-360, TIO-360, AIO-360, IGO-380, IO-540, TIO-540, IVO-540, IGO-540, and IO-720 series engines equipped with Bendix fuel injector flow divider part numbers listed in Lycoming SB 382.
- Requirement:** Accomplish Lycoming SB 382.  
(FAA AD 75-09-15 and Bendix Bulletin RS43 also refer)
- Compliance:** Within the next 50 hours TIS or by 4 August 1975 whichever occurs the sooner
- Effective Date:** 6 May 1975

**DCA/LYC/156    Rotator Type Inlet Valves - Replacement**

- Applicability:** HIO-360-O1A and any other engines not specifically listed in Lycoming SI 1280C which have been fitted with rotator type inlet valves
- Requirement:** Some engines have been incorrectly fitted with rotator type inlet valves during overhaul or cylinder replacement. Remove rotator type inlet valves and replace with conventional intake valves P/N 73117.
- Compliance:** Within the next 25 hours TIS
- Effective Date:** 15 May 1975

**DCA/LYC/160    Camshaft - Replacement**

- Applicability:** Model HIO-360-D1A with Avco Lycoming P/N LW-11356 or P/N LW-13356 camshaft
- Requirement:** To prevent the sudden power loss and exhaust valve failure problems associated with earlier models of camshaft, install Avco Lycoming P/N LW-14970 camshaft or later approved equivalent.  
(Avco Lycoming SI 1350A refers)
- Compliance:** Not later than next occasion camshaft removed from engine
- Effective Date:** 14 April 1978

**DCA/LYC/163    FAA AD 78-23-10    Bendix Fuel Injector Bellows Assembly - Modification**

- Applicability:** All IO-360, AEIO-360, HIO-360, IO-540, AEIO-540, TIO-540, LTIO-540, TIO-541, TIGO-541 and IO-720 series engines detailed in Avco Lycoming SB's 428, 429 and 430
- Requirement:** Modify bellows assembly in affected engines per Bendix SB's RS-52, RS-53 or RS-54 as applicable.  
(FAA AD 78-23-10 refers)
- Compliance:** Within next 50 hours TIS
- Effective Date:** 9 February 1979

**DCA/LYC/164    FAA AD 79-04-05    Bendix Fuel Injector Assembly - Inspection**

- Applicability:** All AEIO-320, IVO-360, HIO-360, IO-540, AEIO-540, TIO-540, LTIO-540, TIGO-541 and IO-720 series engines detailed in Avco Lycoming SB 433A
- Requirement:** Inspect fuel diaphragm, and renew as necessary, per Bendix SB RS-57.  
(FAA AD 79-04-05 refers)
- Compliance:** Within next 50 hours TIS
- Effective Date:** 9 February 1979

**DCA/LYC/166    FAA AD 79-21-08 & 79-26-03    Bendix Fuel Injection Regulator - Inspection**

- Applicability:** Bendix fuel injection systems models RSA-5AB1, RSA-5AD1, RSA-7AA1, RSA-7DA1, RSA-1OAD1, RSA-1ODB1, RSA-1ODB2, RSA-1OED1, and RSA-1OED2 with parts list numbers detailed in Bendix SB's RS-68, RS-69 and RS-70 installed on, but not limited to, IO-320, AIO-320, AEIO-320, IO-360, HIO-360, AIO-360, AEIO-360, TIO-360, IGO-480, IO-540, HIO-540, AEIO-540, IGO-540, IVO-540, TIO-540, TIO-541, TIGO-541 and IO-720 series engines
- Requirement:** Inspect and modify affected regulators per Bendix fuel systems SB's RS-68, RS-69 or RS-70 as applicable.  
(FAA ADs 79-21-08 and 79-26-03 refer)
- Compliance:** Within next 25 hours TIS or by 18 October 1979 whichever is the sooner
- Effective Date:** 18 September 1979

**DCA/LYC/174F    FAA AD 96-09-10    Oil Pump Impellers – Replacement**

- Applicability** Engines fitted with sintered iron or aluminium oil pump impellers.
- Textron Lycoming SB 524 lists specific models and S/N that may be affected. All new, overhauled and remanufactured engines shipped from Textron Lycoming after 31 March 1985 are in compliance with this AD.
- Any engines that have complied with DCA/LYC/174B, C, D or E will have the latest (steel) oil pump impellers fitted and are in compliance with this airworthiness directive. Any engines that have complied with Textron Lycoming SB No. 456B, C, D, E or SB 524 will have the latest (steel) oil pump impellers fitted, and are in compliance with this AD.
- For engines overhauled by other facilities, the type of oil pump impeller fitted must be determined. Examination of overhaul records or physical inspection to determine type of oil pump impeller fitted is required.
- Note 1:** No action required if already in compliance with DCA/LYC/174E. This AD revised with Lycoming SI No. 1009AJ now at revision AT and to include note 2 with no change to the AD requirement.
- Requirement:** To prevent failure of engine oil pumps, replace sintered iron or aluminium oil pump impellers per Textron Lycoming SB 524.
- Note 2:** Lycoming SI No. 1009AT and SB No. 524 or later FAA approved revisions pertains to the subject of this AD.  
(FAA AD 96-09-10 refers)
- Compliance:** Sintered iron oil pump impellers:  
Within the next 25 hours TIS unless previously accomplished.
- Aluminium oil pump impellers (whichever occurs sooner):
- a) At the next oil pump removal, or
  - b) Next engine overhaul (Not to exceed the hours specified for the particular engine model in SI 1009AS). Except for engines that have already exceeded the hours specified, or are within 200 hours TIS of reaching it, within the next 200 hours TIS, or
  - c) By 18 January 2010.
- Effective Date:** DCA/LYC/174D - 2 August 1996  
DCA/LYC/174E - 30 August 1996  
DCA/LYC/174F - 18 December 2008



**DCA/LYC/176A    FAA AD 84-13-05      Crankshaft Flange – Inspection and Replacement**

- Applicability:** Model AIO-360-A1A, -A2A, -A1B, -A2B and -B1B engines, S/N all through L-257-63A, Model AEIO-360-A1A, -A1B, -A1B6, -A2A, -A1C, -A2C, -A1D, -A1E, -A2B, -B1B, -B1D, -B1F, -B1F6, -B2F, -B2F6, -B4A and -H1A engines, S/N all through L-23521-51A,  
  
Including any of the above engine models remanufactured by Lycoming before 1 June 1983.
- Note 1:** No action required if already in compliance with DCA/LYC/176. This AD revised with Lycoming SB No. 465B now at revision C and to include note 2 with no change to the AD requirement.
- Requirement:** To prevent the possibility of an inflight propeller separation, accomplish one of the following:
1. Inspect visually per procedure I in Lycoming SB 465C, or
  2. Inspect using magnetic particle method per procedure II in Lycoming SB 465C.
- Note 2:** Lycoming SB No. 465C or later FAA approved revisions pertains to the subject of this AD.
- Note 3:** The inspections may be discontinued when a redesigned crankshaft is fitted.  
(FAA AD 84-13-05 refers)
- Compliance:** 1. Within the next 25 hours TIS unless previously accomplished and thereafter at intervals not to exceed 25 hours TIS.  
  
2. Within the next 25 hours TIS unless previously accomplished and thereafter at intervals not to exceed 100 hours TIS.
- Effective Date:** DCA/LYC/176    - 26 July 1984  
DCA/LYC/176A    - 18 December 2008

**DCA/LYC/179    FAA AD 89-13-02      Bendix Fuel Injector System - Inspection**

- Applicability:** HIO-360-DIA engines with Bendix RSA-7AA servo fuel injectors, P/L 2524347 with S/N's listed in Precision Airmotive Corporation SB PRS-92
- Requirement:** To prevent possible power loss or engine stoppage accomplish the following:
1. Check affected engines to determine fuel injector S/N,
  2. If S/N is one of those listed in Precision Airmotive Corporation Service Bulletin PRS-92 (Textron Lycoming SB 485 also refers) rectify as prescribed before further flight.
- (FAA AD 89-13-02 refers)
- Compliance:** Within next 25 hours TIS, or by 15 September 1989, whichever is the sooner
- Effective Date:** 11 August 1989

**DCA/LYC/181    FAA AD 87-10-06R1    Rocker Arm Assembly - Inspection and Rework**

**Applicability:** O-320-A, -B, -D, -E, series IO-320 series, O-360 series, IO-360-B series, AEIO-360-B series, O-540 series, IO-540-C4B5, -C4D5D, -D4A5, -V4A5D, -W1A5D, -W3A5D, AEIO-540-D series, TIO-540-AA1AD, -AB1AD.

With S/N's detailed in Avco Lycoming SB 477A including supplement 1.

Also any engines detailed in SB 477A that were remanufactured or overhauled between 1 July 1985 and 8 October 1986 inclusive and had P/N LW-18790 rocker arm assembly installed

**Requirement:** To preclude possible rocker arm failure and loss of engine power inspect and rework or replace rocker arm assembly P/N LW-18790 per Avco Lycoming SB 477A. (FAA AD 87-10-06R1 refers)

**Compliance:** Within next 100 hours TIS for all applicable engines, unless already accomplished, and prior to installation for all P/N LW-18790 rocker arm assemblies not installed in engines

**Effective Date:** 30 March 1990

**DCA/LYC/182    FAA AD 90-04-06    Propeller Governor Line Support - Inspection**

**Applicability:** All four cylinder engines with rear mounted propeller governor and external oil line

**Requirement:** To prevent oil line fracture and loss of engine oil, inspect and modify oil line installation per Textron Lycoming SB 488A. If any leaks, damage or interference condition found, or if support clamps are not properly installed, before further flight, replace oil line and attachment end fittings with new parts even though installed parts may show no signs of visible damage. (FAA AD 90-04-06 refers)

**Compliance:** Inspection - within next 50 hours TIS or when oil line is removed for any reason, whichever is the sooner

Modification - at next engine overhaul

**Effective Date:** 30 March 1990

**DCA/LYC/187    FAA AD 92-12-05    Piston Pin - Removal**

**Applicability:** Models listed in Textron Lycoming SB 501B

**Requirement:** To prevent piston pin failure, accomplish the following:

1. For engines with S/N's listed in Textron Lycoming SB 501B, remove all piston pins P/N LW-14077 and replace with serviceable parts.

2. For engines not listed by S/N in SB 501B, determine if piston pin P/N LW-14077 purchased from Textron Lycoming or a Textron Lycoming distributor from 18 June 1991 through 5 August 1991 has been fitted. Remove these pins from service and replace with serviceable parts.

3. Piston pins P/N LW-14077 purchased from Textron Lycoming or a Textron Lycoming distributor from 18 June 1991 through 5 August 1991 that are not installed in engines are considered unairworthy and shall not be placed in service. (FAA AD 92-12-05 refers)

**Compliance:** 1. At 100 hours TTIS or within next 50 hours TIS, whichever is the later.

2. At 100 hours TTIS or within next 50 hours TIS whichever is the later.

3. Before installation.

**Effective Date:** 2 October 1992

**DCA/LYC/189    FAA AD 95-07-01    Connecting Rod Bolts - Removal**

**Applicability:** All O-360, LO-360, HO-360, HIO-360, TIO-360, LIO-360, AEIO-360, O-540, IO-540, TIO-540, LTIO-540, IVO-540 AEIO-540, TIO-541 and IO-720 series engines that had connecting rod bolts replaced on or after 15 February 1994. This AD is not applicable to engines that contain replacement connecting rod bolts that were purchased directly from Textron Lycoming or Aircraft Technologies Inc. This AD does not apply to engines that were manufactured or remanufactured at Textron Lycoming.

**Requirement:** To prevent engine failure due to connecting rod bolt failure, which could result in damage to or loss of the aircraft accomplish the following:-

1. For engines that contain replacement connecting rod bolts installed on or after 15 February 1994 that were not purchased directly from Textron Lycoming or Aircraft Technologies Inc., visually inspect to determine if the connecting rod bolts are clearly identified by;
  - (a) raised letters; SPS, S, C, or FC, identifying them as Textron Lycoming parts, or
  - (b) SL75060 etched on the head, identifying them as PMA parts manufactured by Superior Air Parts Inc., or
  - (c) AL75060 forged into the bolt head, identifying them as PMA parts manufactured by Aircraft Technologies Inc.
 If the connecting rod bolts can be positively identified, as described in this paragraph, then no further action is required.
2. If the connecting rod bolts cannot be positively identified per paragraph 1 of this AD, prior to further flight remove unapproved connecting rod bolts and replace with serviceable parts.  
(FAA AD 95-07-01 refers)

**Compliance:** Before further flight

**Effective Date:** 24 March 1995

**DCA/LYC/190A    FAA AD 97-01-03 Piston Pin - Removal**

**Applicability:** Piston Pins P/N LW-14077 that were originally shipped from Textron Lycoming during the time period 15 December 1995 through 17 September 1996.

These piston pins may have been obtained individually, or be installed in:-  
Models and S/Ns of engines listed in Textron Lycoming Service Bulletin 527C.  
Overhauled engines and cylinder kits (including Superior Air Parts supplied kits that use P/N LW-14077 piston pins).

*Note 1: Piston pins P/N LW-14077, are not fitted to O-235 series engines.*

**Requirement:** To prevent piston pin failure and engine stoppage, accomplish SB 527C. Piston Pins marked with code 17328 (per SB527B Figure 1) must be removed before further flight.  
(FAA AD 97-01-03 refers)

**Compliance:** Before 50 hours TTIS (piston pins). For piston pins that have already exceeded 50 hours TTIS, before further flight.

*Note 2: The aircraft may be operated to a location where the requirements of this AD can be accomplished.*

**Effective Date:** DCA/LYC/190 16 October 1996  
DCA/LYC/190A 6 June 1997

**DCA/LYC/191    FAA AD 96-23-03    High Pressure Fuel Pump - Inspection**

**Applicability:** Model IO-320, LIO-320, AEIO-320, IO-360, LIO-360, AEIO-360, HIO-360, TO-360, IO-540, O-540-L, LIO-540 and AEIO-540 series engines with high pressure fuel pumps P/N LW-15473 that have manufacturing date codes 154739506, 154739507 or 154739510.

**Requirement:** To prevent an in-flight engine stoppage due to fuel starvation, accomplish the following:-  
  
Determine if the engine is fitted with a high pressure fuel pump P/N LW-15473 with manufacturing date codes 154739506, 154739507 or 154739510 per Textron Lycoming SB 525A. If any of these high pressure fuel pumps is found fitted, inspect and if necessary repair or replace with a serviceable high pressure pump per SB 525A before further flight.  
(FAA AD 96-23-03 refers)

**Compliance:** Within next 5 hours TIS.

**Effective Date:** 4 November 1996

**DCA/LYC/193A    FAA AD 98-02-08    Crankshaft – Inspection and Replacement**

**Applicability:** Model 320 series engines limited to 160 horsepower, and  
Model 360 series engines fitted with fixed pitch propellers,  
  
Except the following engines fitted to helicopters or with solid crankshafts: model HO-360 series, model HIO-360 series, model LHIO-360 series, model VO-360 series and model IVO-360 series, and model O-320-B2C, O-360-J2A, AEIO-360-B4A, O-360-A4A, -A4G, -A4J, -A4K, -A4M and -C4F engines.

This AD is not applicable to engines with crankshafts with "PID" stamped on the outside diameter of the propeller flange.

**Note 1:** No action required if already in compliance with DCA/LYC/193. This AD revised with Lycoming SB No. 530 now at revision B and to include note 4 with no change to the AD requirement.

**Requirement:** To prevent crankshaft failure, which can result in engine failure, propeller separation, and forced landing, accomplish the following:

Visually inspect the inside diameter (ID) of the crankshaft for corrosion pits, per Textron Lycoming MSB 505B.

If corrosion pits are found during this inspection, accomplish the following before further flight:

(i) If the crankshaft is installed in the engine such as during an on-wing inspection, perform a fluorescent penetrant inspection (FPI) per MSB 505B.

(ii) If the crankshaft is removed from the engine at overhaul, perform a magnetic particle inspection (MPI) per MSB 505B.

If any crankshaft is found cracked during FPI or MPI, replace the crankshaft with a serviceable part before further flight.

If corrosion pits but no cracks are found on the ID of the crankshaft during the initial visual inspection and the ID does not exceed the maximum ID specified in MSB 505B, repeat the FPI at intervals not to exceed 100 hours TIS since last FPI or until a serviceable crankshaft is installed in the engine.

If no corrosion pits or cracks are found on the ID of the crankshaft during the initial visual inspection, perform a visual inspection at intervals not to exceed 5 years since last inspection, or at the next engine overhaul or disassembly, whichever occurs sooner.

**Note 2:** After accomplishing the initial inspection (visual and, if necessary, the FPI or MPI), report findings of any pits or cracks to the CAA. Please ensure that the report references this AD.

**Note 3:** The application of Urethabond 104 to the inner bore of the crankshaft and confirmed by stamping of the letters "PID" on the outside diameter of the propeller flange per Textron Lycoming MSB 530B, constitutes terminating action to this AD.

**Note 4:** Lycoming SB No. 530B and MSB No. 505B or later FAA approved revisions pertains to the subject of this AD.

(FAA AD 98-02-08 refers)

**Compliance:** Initial Inspection:

For engines shipped new from Textron Lycoming prior to and including December 31, 1984, and that have never been overhauled, or any engine remanufactured or overhauled and that has accumulated 1,000 hours or more TIS since remanufacture or overhaul, inspect within the next 100 hours TIS, or 6 months, whichever occurs sooner, unless previously accomplished.

For engines shipped new from Textron Lycoming after 31 December 1984, and that have never been overhauled, or any engine remanufactured or overhauled and that has accumulated less than 1,000 hours TIS since remanufacture or overhaul, inspect at the earliest occurrence of the following:

- (i) The next engine overhaul or disassembly.
- (ii) Within 10 years of the original shipping date or within the next 6 months, whichever occurs later.
- (iii) Within 1,000 hours TIS since remanufacture or overhaul, or within the next 6 months, whichever occurs later.

Repetitive inspections:

Repetitive inspection intervals are dependent on the findings of the initial inspection and are required as specified within the requirements of this AD.

**Effective Date:** DCA/LYC/193 - 13 March 1998  
DCA/LYC/193A - 18 December 2008

**DCA/LYC/194    FAA AD 98-17-11    Repaired Crankshafts - Inspection**

**Applicability:** Models O-235, O-235-C1, O-235-C2C, O-235-L2C, O-235-N2C, O-290, O-290-D2, O-320, O-320-A, O-320-A1A, O-320-A2B, O-320-B2B, O-320-B2C, O-320-D2J, O-320-D3G, O-320-E2A, O-320-E2D, O-320-E2G, O-320-E3D, O-320-H2AD, O-360, O-360-A1A, O-360-A1D, O-360-A3A, O-360-A4A, O-360-A4K, O-360-B1B, IO-360-F1A6, AEIO-320-E1B, HIO-360-C1A, IO-320, IO-320-B1A, IO-360, IO-360-A1A, IO-360-A1B6, IO-360-B1E, IO-360-C, IO-360-C1C, IO-360-C1C6, IO-360-C1D6, IO-360-D, O-540-A1B5, O-540-A1D5, O-540-R2AD, IO-540, IO-540-C4B5, IO-540-S1A5, TIO-540-A2, LIO-320-C1A, LIO-360-C1E6, and IO-720 reciprocating engines; engines, with installed crankshafts repaired by Nelson Balancing Service, Bedford, Massachusetts, USA, Repair Station Certificate No. NB7R820J, between February 1, 1995, and December 31, 1997, inclusive, as listed (by work order (W/O)) in Table 1 of this AD.

**Table 1**

| MODEL        | W/O  | DATE    | ENGINE S/N  |
|--------------|------|---------|-------------|
| AEIO-320-E1B | 1134 | 2/17/96 | L-5653-55A  |
| HIO-360-C1A  | 1155 | 2/7/96  | L-12126-51A |
| IO-320       | 1141 | 1/17/96 |             |

|              |        |          |              |
|--------------|--------|----------|--------------|
| IO-320-B1A   | 1525   | 11/14/97 |              |
| IO-360       | 1314   | 12/17/96 |              |
| IO-360       | IN6137 | 8/7/97   |              |
| IO-360-A1A   | 1230   | 6/10/96  | L-474-51     |
| IO-360-A1A   | 1289   | 10/23/96 | L-4085-5174  |
| IO-360-A1A   | 1415b  | 5/23/97  | RL-3920-51A  |
| IO-360-A1B6  | 1463   | 7/31/97  |              |
| IO-360-B1E   | 1312   | 12/12/96 | L-4453-51A   |
| IO-360-C     | 1146   | 1/23/96  | R-51448-9-C  |
| IO-360-C1C   | 1336   | 2/10/97  |              |
| IO-360-C1C   | 1518   | 12/9/97  |              |
| IO-360-C1C6  | 1530   | 11/25/97 |              |
| IO-360-C1C6  | 1537   | 12/9/97  | L-19294-51A  |
| IO-360-C1D6  | 1286   | 4/28/97  |              |
| IO-360-D     | 1540   | 12/2/97  |              |
| IO-360-F1A6  | 1176   | 3/7/96   | L-27423-36A  |
| IO-540       | 1014   | 2/8/95   |              |
| IO-540       | 1056   | 6/13/95  |              |
| IO-540       | 1302   | 12/5/96  |              |
| IO-540-C4B5  | 1313   | 12/17/96 | L-19547-48   |
| IO-540-S1A5  | 1513   | 10/27/97 | L-19597-48A  |
| IVO-435-G1A  | 1271   | 10/1/96  |              |
| LIO-320-C1A  | 1158   | 2/8/96   |              |
| LIO-360-C1E6 | 1280   | 10/7/96  |              |
| LIO-360-C1E6 | 1281   | 10/9/96  |              |
| O-235        | 1013   | 2/21/95  |              |
| O-235        | 1051   | 6/2/95   |              |
| O-235        | 1054   | 6/9/95   |              |
| O-235        | 1057   | 6/14/95  | L-9041-15    |
| O-235        | 1058   | 6/29/95  |              |
| O-235        | 1060   | 6/30/95  |              |
| O-235        | 1069   | 8/10/95  |              |
| O-235        | 1110   | 2/20/96  |              |
| O-235        | 1145   | 1/23/96  |              |
| O-235        | 1151   | 1/25/96  |              |
| O-235        | 1160   | 2/9/96   | RL-24636-15  |
| O-235        | 1305   | 12/5/96  | L-22542-15   |
| O-235        | 1329   | 2/11/97  |              |
| O-235        | 1332   | 2/11/97  |              |
| O-235        | 1481   | 9/2/97   |              |
| O-235-C1     | 1089   | 10/8/95  | L-6475-15    |
| O-235-C1     | 1188   | 4/2/96   | L-7143-15    |
| O-235-C1     | 1335   | 3/12/97  | L-5569-15    |
| O-235-C1     | 1367   | 3/24/97  |              |
| O-235-C2C    | 1019   | 2/24/95  | L-12284-15   |
| O-235-C2C    | 1040   | 5/8/95   |              |
| O-235-C2C    | 1105   | 12/1/95  | L-12273-15   |
| O-235-L2C    | 1030   | 4/6/95   | L-14545-15   |
| O-235-L2C    | 1036   | 4/24/95  |              |
| O-235-L2C    | 1037   | 4/24/95  | L-23012-15   |
| O-235-L2C    | 1050   | 6/2/95   | L-15542-15   |
| O-235-L2C    | 1062   | 7/5/95   | L-18306-15   |
| O-235-L2C    | 1067   | 8/8/95   |              |
| O-235-L2C    | 1070   | 8/10/95  | L-16005-15   |
| O-235-L2C    | 1095   | 11/14/95 | RL-023227-15 |
| O-235-L2C    | 1101   | 11/4/95  | L-15300-15   |
| O-235-L2C    | 1102   | 11/15/95 | L-20183-15   |
| O-235-L2C    | 1162   | 2/14/96  | L-16114-15   |
| O-235-L2C    | 1251   | 8/22/96  |              |
| O-235-L2C    | 1219   | 5/16/96  | L-21215-15   |
| O-235-L2C    | 1365   | 3/24/97  |              |
| O-235-L2C    | 1285   | 10/19/96 |              |

|           |      |          |              |
|-----------|------|----------|--------------|
| O-235-L2C | 1414 | 8/5/97   |              |
| O-235-L2C | 1400 | 4/28/97  |              |
| O-235-L2C | 1433 | 6/26/97  | L-17074-15   |
| O-235-L2C | 1417 | 12/5/97  |              |
| O-235-L2C | 1504 | 10/31/97 |              |
| O-235-L2C | 1435 | 6/9/97   |              |
| O-235-L2C | 1524 | 11/12/97 |              |
| O-235-L2C | 1508 | 11/18/97 |              |
| O-235-L2C | 2010 | 11/19/97 |              |
| O-235-L2C | 1536 | 11/24/97 |              |
| O-290     | 1257 | 9/4/96   |              |
| O-235-N2C | 1511 | 10/29/97 | L-23857-15   |
| O-290-D2  | 1082 | 9/26/95  | L-6019-21    |
| O-290     | 1326 | 3/26/97  |              |
| O-320     | 1024 | 3/17/95  |              |
| O-320     | 1018 | 2/22/95  |              |
| O-320     | 1038 | 5/3/95   | L-39272-27A  |
| O-320     | 1045 | 5/24/95  |              |
| O-320     | 1084 | 9/28/95  |              |
| O-320     | 1116 | 1/8/96   |              |
| O-320     | 1125 | 1/8/96   |              |
| O-320     | 1169 | 2/28/96  |              |
| O-320     | 1175 | 3/7/96   |              |
| O-320     | 1184 | 3/28/96  |              |
| O-320     | 1189 | 8/27/96  |              |
| O-320     | 1202 | 4/30/96  |              |
| O-320     | 1212 | 5/10/96  |              |
| O-320     | 1283 | 10/17/96 |              |
| O-320     | 1316 | 12/21/96 |              |
| O-320     | 1340 | 2/25/97  | L-24367      |
| O-320     | 1347 | 2/18/97  |              |
| O-320     | 1360 | 3/10/97  |              |
| O-320     | 1361 | 3/10/97  |              |
| O-320     | 1436 | 5/29/97  |              |
| O-320     | 1468 | 8/14/97  |              |
| O-320     | 1474 | 8/22/97  | L-13130-39A  |
| O-320     | 1477 | 9/13/97  |              |
| O-320     | 1519 | 11/21/97 |              |
| O-320     | 1507 | 11/18/97 |              |
| O-320     | 1171 | 3/1/96   |              |
| O-320     | 1546 | 12/7/97  |              |
| O-320-A   | 1194 | 4/13/96  |              |
| O-320-A   | 1192 | 4/13/96  |              |
| O-320-A1A | 1244 | 8/13/96  | L-5270-27    |
| O-320-A   | 1196 | 4/13/96  |              |
| O-320-A2B | 1461 | 9/9/97   | L-12626-27   |
| O-320-A2B | 1081 | 9/22/95  |              |
| O-320-B2C | 1315 | 12/17/96 |              |
| O-320-B2B | 1452 | 7/10/97  | L-2977-39    |
| O-320-D2J | 1173 | 3/7/96   | L-123412-39A |
| O-320-D2J | 1172 | 3/4/96   | L-13039-39A  |
| O-320-D2J | 1534 | 11/25/97 |              |
| O-320-D2J | 1253 | 9/4/96   |              |
| O-320-D3G | 1077 | 9/17/95  |              |
| O-320-D2J | 1539 | 12/3/97  |              |
| O-320-D3G | 1354 | 2/25/97  |              |
| O-320-D3G | 1114 | 1/8/96   | L-10983-39A  |
| O-320-D3G | 1544 | 12/3/97  |              |
| O-320-D3G | 1370 | 3/26/97  | H45247       |
| O-320-E2A | 1191 | 4/13/96  | L-19377-27A  |
| O-320-E2A | 1103 | 11/10/95 | L-26363-27A  |
| O-320-E2A | 1439 | 6/9/97   | L-38003-55A  |

|              |      |          |             |
|--------------|------|----------|-------------|
| O-320-E2A    | 1317 | 12/21/96 | L-15219-27A |
| O-320-E2D    | 1078 | 9/17/95  |             |
| O-320-E2D    | 1068 | 8/10/95  | L-35528-27A |
| O-320-E2D    | 1181 | 3/14/96  |             |
| O-320-E2D    | 1177 | 3/9/96   | L-44732-27A |
| O-320-E2D    | 1245 | 8/13/96  | L-40483-27A |
| O-320-E2D    | 1241 | 8/9/96   | L-42691-27A |
| O-320-E2D    | 1343 | 2/17/97  |             |
| O-320-E2D    | 1260 | 9/9/96   | L-15300-15  |
| O-320-E2D    | 1385 | 4/16/97  |             |
| O-320-E2D    | 1346 | 3/2/97   | L-44320-27A |
| O-320-E2D    | 1533 | 11/25/97 |             |
| O-320-E2D    | 1458 | 7/18/97  |             |
| O-320-E2G    | 1338 | 3/10/97  | L-38264-27A |
| O-320-E2D    | 1549 | 12/12/97 |             |
| O-320-E3D    | 1074 | 8/24/95  | L-29495-27A |
| O-320-E3D    | 1034 | 4/18/95  | L-29668-27A |
| O-320-E3D    | 1444 | 6/13/97  |             |
| O-320-E3D    | 1431 | 6/9/97   | L-33770-27A |
| O-320-H2AD   | 1322 | 1/22/97  | L-1530-78T  |
| O-320-E3D    | 1500 | 10/7/97  | L-33841-27A |
| O-360        | 1157 | 2/7/96   |             |
| O-360        | 1025 | 3/17/95  |             |
| O-360        | 1362 | 3/10/97  |             |
| O-360        | 1199 | 4/18/96  |             |
| O-360        | 1394 | 5/6/97   |             |
| O-360        | 1386 | 4/17/97  |             |
| O-360-A1A    | 1170 | 2/28/96  | L-20677-36A |
| O-360        | 1528 | 11/19/97 |             |
| O-360-A1A    | 1239 | 8/5/96   |             |
| O-360-A1A    | 1214 | 5/14/96  | L-20190-36A |
| O-360-A3A    | 1531 | 11/25/97 |             |
| O-360-A1D    | 1411 | 5/5/97   |             |
| O-360-A4A    | 1464 | 7/30/97  | L-24796-36A |
| O-360-A4A    | 1270 | 9/27/96  | L-14008-36A |
| O-360-A4A    | 1529 | 11/25/97 |             |
| O-360-A4A    | 1486 | 9/6/97   |             |
| O-360-B1B    | 1262 | 9/9/96   | L-5261-51A  |
| O-360-A4K    | 1166 | 2/22/96  | L-26455-36A |
| O-540-A1B5   | 1132 | 1/9/96   | L-1165-40   |
| O-540-A1B5   | 1129 | 12/29/95 |             |
| IO-720       | 1510 | 10/26/97 |             |
| O-540-A1D5   | 1462 | 7/28/97  | L-5661-40   |
| TIO-540-A2   | 1111 | 1/10/96  |             |
| TIO-540-A2   | 1064 | 7/13/95  |             |
| TIO-540-R2AD | 1106 | 11/27/95 | L-5949-61A  |

*Note: Blank spaces indicate unknown data. Where the engine S/N is blank in this table, it is either unknown or the crankshaft may not be installed in an engine.*

**Requirement:**

To prevent crankshaft failure due to cracking, which could result in an inflight engine failure and possible forced landing, accomplish the following:

a) Determine if this AD applies, as follows:

1. Determine if any repair was conducted on the engine that required crankshaft removal during the February 1, 1995, to December 31, 1997, time frame; if the engine was not disassembled for crankshaft removal and repair in this time frame, no further action is required.
2. If the engine and crankshaft was repaired during this time frame, determine from the maintenance records (engine log book), and Table 1 of this AD if the crankshaft was repaired by Nelson Balancing Service, Repair Station Certificate No. NB7R820J, Bedford, Massachusetts, USA. The maintenance records should contain the Return to Service (Yellow) tag for the crankshaft that will identify the company performing the



repair. Also the work order number contained in Table 1 of this AD was etched on the crankshaft propeller flange, adjacent to the closest connecting rod journal. Because some etched numbers will be difficult to see, if necessary, use a 10X magnifying glass with an appropriate light source to view the work order number. In addition, the propeller spinner, if installed, will have to be removed in order to see this number.

3. If it cannot be determined who repaired the crankshaft, compliance with this AD is required.

4. If the engine and crankshaft were not repaired during the time frame specified in a) 1, or if it is determined that the crankshaft was not repaired by Nelson Balancing Service, no further action is required.

b) Accomplish the following:

1. Perform a visual inspection as defined in paragraph b) 2 of this AD, magnetic particle inspection, and a dimensional check of the crankshaft journals, or remove from service affected crankshafts and replace with serviceable parts.

2. For the purpose of this AD, a visual inspection of the crankshaft is defined as the inspection of all surfaces of the crankshaft for cracks which include heat check cracking of the nitrided bearing surfaces, cracking in the main or aft fillet of the main bearing journal and crankpin journal, including checking the bearing surfaces for scoring, galling, corrosion, or pitting.

*Note: Further guidance on all inspection and acceptance criteria is contained in applicable Overhaul or Maintenance Manuals.*

3. Replace any crankshaft that fails the visual inspection, magnetic particle inspection, or the dimensional check with a serviceable crankshaft, unless the crankshaft can be reworked to bring it in compliance with:

i) All the overhaul requirements of the appropriate Overhaul/Maintenance Manuals; or

ii) All of the approved requirements for any repair station which currently has approval for limits other than those in the appropriate Overhaul/Maintenance Manuals.

4. For the purpose of this AD, a serviceable crankshaft is one which meets the requirements of paragraph b) 3 i) or b) 3) ii) of this AD.

(FAA AD 98-17-11 refers)

**Compliance:** By 31 October 1998

**Effective Date:** 25 September 1998

#### **DCA/ LYC/195B FAA AD 2003-14-03 Rotary Fuel Pump Relief Valve – Inspection**

**Applicability:** Model IO-320, LIO-320, IO-360, HIO-360, TIO-360, LTIO-360, GO-435, GO-480, IGO-480-A1B6, IO-540, IGO-540, AEIO-540, HIO-540, TIO-540, LTIO-540, TIGO-541, IO-720 and TIO-720 fuel injected reciprocating engines fitted with Crane/Lear Romec "AN" rotary fuel pump model series RG9080, RG9570 or RG17980.

These engines are installed on but not limited to fuel injected, reciprocating engine powered aircraft manufactured by Cessna, Piper, Mooney, Beech, Bellanca, Champion, Partenavia, Rockwell, Schweizer, Enstrom, Aerospatale (SOCATA), Maule, Aero Commander, Hiller, and Pacific Aerospace.

**Note 1:** No action required if already in compliance with DCA/LYC/195A. This AD revised with Lycoming SB No. 529 now at revision B and to include note 2 with no change to the AD requirement.

**Requirement:** To prevent rotary fuel pump leaks, which could result in an engine failure, engine fire and damage to or loss of the aircraft, accomplish the following:

Perform initial and repetitive torque check inspections of pump relief valve attaching screws per the instructions in Textron Lycoming SB 529B as follows:

1. Perform the initial torque check inspection. If the torque does not meet the specifications in SB 529B, tighten screws to the required torque per SB 529B.
2. Perform a follow-up torque check inspection. If the torque does not meet the specification in SB 529B, during follow-up inspections, tighten screws to the required torque in accordance with SB 529B.
3. Replacement of a rotary fuel pump series RG9080, RG9570, or RG17980, with a modified pump (with the "/M" after the part number) is a terminating action for the inspection requirements of parts 1 and 2 of this AD.

**Note 2:** Lycoming SB No. 529B or later FAA approved revisions pertains to the subject of this AD.

(FAA AD 2003-14-03 refers)

**Compliance:**

1. Within the next 10 hours TIS or 30 days, whichever occurs sooner unless previously accomplished.
2. Repetitive Torque Check Inspections after accumulating 50 hours TIS, or 6 months since the initial torque check inspection, whichever occurs first. Continue the repetitive torque check inspections per requirement 2 of this AD until:
  - (i) The accumulation of 100 hours TIS since the initial inspection with the torque remaining within the SB specification for 50 hours TIS, or
  - (ii) The torque meets the SB specification during the initial inspection and a subsequent inspection taking place at least 50 hours TIS later.

**Effective Date:** DCA/LYC/195 - 25 September 1998  
 DCA/LYC/195A - 28 August 2003  
 DCA/LYC/195B - 18 December 2008

#### **DCA/LYC/196A Piston Pin Plug Wear – Inspection**

**Applicability:** All Lycoming engines fitted with piston pin end plugs P/N 60828 or LW-11775.

**Note 1:** This AD revised to clarify the applicability and the compliance.

**Note 2:** This AD is not applicable to engines fitted with piston pin end plugs P/N 72198. Engines manufactured, overhauled or rebuilt by Lycoming after February 1999 are fitted with piston pin end plugs P/N 72198.

**Requirement:** To prevent abnormal wear of piston pin plugs which could result in engine failure, inspect the oil screen, the oil filter element, the oil suction screen and the oil from the filters as applicable per Lycoming SI 1492C of later FAA approved revisions.

If abnormal aluminium or iron content is found accomplish corrective actions per manufacturer instructions before further flight.

(Lycoming Service Instructions 1267C and 1492C refer)

**Compliance:** For all remanufactured and overhauled engines fitted with affected piston pin end plugs:

Within the first 10 hours TIS and the next 25 hours TIS, and thereafter at intervals not to exceed 50 hours TIS.

For all other engines in service fitted with affected piston pin end plugs:

At the next oil/oil filter change or before 50 hours TIS whichever is the sooner, and thereafter at intervals not to exceed 50 hours TIS.

**Effective Date:** DCA/LYC/196 - 28 January 1999  
 DCA/LYC/196A - 25 June 2009

**DCA/LYC/204B    FAA AD 2004-10-14    Propeller Strike – Crankshaft Gear Inspection**

**Applicability:** All direct drive piston engines except O-145, O-320-H, O-360-E, LO-360-E, TO-360-E, LTO-360-E, and TIO-541 series.

**Note 1:** DCA/LYC/204B revised to include note 3 and clarify note 2 with regard to requirements for certifying release-to-service after maintenance.

**Requirement:** To prevent loosening or failure of the crankshaft gear retaining bolt as result of a propeller strike, which may cause sudden engine failure, accomplish the following:

Inspect the crankshaft counter-bored recess, the alignment dowel, the bolt hole threads and the crankshaft gear for wear galling corrosion and fretting per steps 1 through 5 of Lycoming MSB No.475C. Repair, if necessary, per MSB 475C.

Remove the existing gear retaining bolt and lockplate from service and install a new bolt and lockplate per steps 6 and 7 of MSB No.475C.

Do not reinstall any gear retaining bolt and lockplate that were removed in accordance with this AD.

**Note 2:** This AD mandates a particular inspection of one of the components of Lycoming engines that was found to be necessary by the United States FAA. Inspection by AD was required because the component was not adequately covered by the existing inspection requirements. As such this AD is additional to and not in lieu of the inspections required in the event of a prop strike.

The manufacturer's instructions for continued airworthiness include SB 533A which relates to maintenance which may be required in the event of a prop strike. The CAA strongly recommends compliance with Lycoming Mandatory SB 533A. (FAA AD 2004-10-14 refers)

**Compliance:** Compliance with this AD is required before further flight if the engine has experienced a propeller strike.

**Note 3:** Compliance with this AD may be accomplished by adding the AD requirement to the aircraft AD logbook as a repetitive inspection, interval "as required".

**Note 4:** For the purposes of this AD a propeller strike is defined as follows:

1. Any incident, whether or not the engine is operating, that requires repair to the propeller other than minor dressing of the blades.
2. Any incident during engine operation in which the propeller impacts a solid object that causes a drop in RPM and also requires structural repair of the propeller (incidents requiring only paint touch-up are not included). This is not restricted to propeller strikes against the ground.
3. A sudden RPM drop while impacting water, tall grass, or similar yielding medium, where propeller damage is not normally incurred.
4. The preceding definitions include situations where an aircraft is stationary and the landing gear collapses causing one or more blades to be substantially bent, or where a hanger door (or other object) strikes the propeller blade. These cases should be handled as sudden stoppages because of potentially severe side loading on the crankshaft flange, front bearing, and seal in the absence of oil pressure.

**Effective Date:** DCA/LYC/204 - 24 June 2004  
 DCA/LYC/204A - 25 September 2008  
 DCA/LYC/204B - 30 October 2008

**DCA/LYC/206 FAA AD 2005-19-11 Crankshaft – Identification and Replacement**

- Applicability:** All Lycoming AEIO-360, IO-360, O-360, LIO-360, LO-360 and, AEIO-540, IO- 540, O-540, and TIO-540 series engines, rated at 300 HP or lower, manufactured, rebuilt or overhauled after 1 March 1999, or that had a crankshaft fitted after 1 March 1999.
- These engines are used on, but not limited to Beech 76, BN-2 Islander, Cessna T182T, Mooney 201 and Piper PA-23-235 aircraft.
- Requirement:** To prevent failure of the crankshaft, which could result in total engine power loss, verify the engine S/N per tables 1, 2 or 3 of Lycoming Mandatory Service Bulletin (MSB) No. 566, and use table 4 in MSB 566 to verify the crankshaft S/N. If the crankshaft S/N is listed in table 4 of MSB 566, replace with a crankshaft that is not listed in table 4 of MSB 566.  
(FAA AD 2005-19-11 refers)
- Note 1:** No action is required for engines manufactured new, rebuilt, or overhauled before 1 March 1999, or had a crankshaft replaced before 1 March 1999.
- Note 2:** Crankshafts with S/Ns listed per table 4 of MSB 566 are not to be fitted to any engine.
- Compliance:** Within the next 50 hours TIS or by 27 April 2006, whichever is sooner, unless already accomplished.
- Effective Date:** 27 October 2005

**DCA/LYC/208 FAA AD 2006-06-16 Crankshaft – Identification and Replacement**

- Applicability:** All AEIO-360, IO-360, O-360, LIO-360, and LO-360 series engines, manufactured, rebuilt or overhauled after 1 March 1999, or had a crankshaft fitted after 1 March 1999.
- These engines are used on, but not limited to Beech C-24R Sierra, Partenavia P-68, Cessna R-G Cardinal, Mooney M-201 and Piper PA-44-180 aircraft.
- Requirement:** To prevent failure of the crankshaft, which could result in in-flight engine failure and possible loss of the aircraft, verify the engine S/N, per table 1 of Supplement No. 1 of Lycoming Mandatory Service Bulletin (MSB) No. 566, dated 30 November 2005, and use table 2 to verify the crankshaft S/N.  
If the crankshaft S/N is listed in table 2 of Supplement No. 1 of MSB 566, replace with a crankshaft that is not listed in table 2 of Supplement No. 1 of MSB 566.  
If the engine S/N is not listed in table 1 of Supplement No. 1 of MSB 566, use table 2 to verify the crankshaft S/N.  
If the crankshaft S/N is listed in table 2 of Supplement No. 1 of MSB 566, replace with a crankshaft that is not listed in table 2 of Supplement No. 1 of MSB 566.  
(FAA AD 2006-06-16 refers)
- Note 1:** No action is required for engines manufactured, rebuilt or overhauled before 1 March 1999, or had a crankshaft replaced before 1 March 1999.
- Note 2:** Crankshafts with S/Ns listed in table 2 of Supplement No. 1 of MSB 566 are not to be fitted to any engine.
- Note 3:** The engine and crankshaft S/Ns listed in table 1 and table 2 of Supplement No.1 of MSB 566 are different from the engine and crankshaft S/Ns listed in DCA/LYC/201B (FAA AD 2002-19-03 refers) and DCA/LYC/206 (FAA AD 2005-19-11 refers), and Lycoming MSBs 552, 553 and 566.
- Compliance:** Within 50 hours TIS or 27 October 2006, whichever is sooner, unless already accomplished.
- Effective Date:** 27 April 2006

**DCA/LYC/209    FAA AD 2006-10-21    ECI Connecting Rods – Inspection and Replacement**

**Applicability:** All 360 and 540 series engines listed in table 1 of FAA AD 2006-10-21 fitted with Engine Components Incorporated (ECi) connecting rods P/N AEL11750, S/Ns through to 54/6 manufactured between January 2002 and January 2004.

These engines are installed on, but not limited to, the aircraft listed in table 2 of of FAA AD 2006-10-21.

**Note 1:** Connecting rods P/N AEL11750 can also be identified by the forging P/N AEL11488 (in raised letters) on the web of the connecting rod beam (between the big and small ends of the connecting rod).

**Note 2:** The ECi connecting rod serial number consists of two numbers. Number 54 is the lot number and 6 is the serial number.

**Requirement:** To prevent fatigue failure of connecting rods and the possibility of an uncommanded engine shutdown due to the possibility of having connecting rods fitted which have excessive variation in circularity of the journal bores, accomplish the following:

1. Inspect the aircraft maintenance records and engine logbook to determine whether the engine has been overhauled or repaired since new and also determine if ECi connecting rods, P/N AEL11750 have been fitted.

No further action is required if the engine has not been overhauled or repaired since new, or if the connecting rods are not ECi P/N AEL11750, or if the connecting rods are ECi P/N AEL11750 and the S/Ns are 54/7 or higher.

If the connecting rods are ECi P/N AEL11750, S/Ns through to 54/6, accomplish requirement 2.

2. If the connecting rods are ECi P/N AEL11750, S/Ns through to 54/6, replace with connecting rods which have a lot number which is 55 or higher, or replace with connecting rods which have a P/N not affected by this AD.

(FAA AD 2006-10-21 refers)

**Note 3:** Do not install ECi connecting rods P/N AEL11750 which have S/Ns 54/6 or lower into any engine.

**Compliance:** 1. Before further flight.  
2. For engines fitted with connecting rods that have 2000 hours or more TIS:

Replace within the next 50 hours TIS.

For engines fitted with connecting rods that have less than 2000 hours TIS:

Replace the connecting rods at the next engine overhaul, or at the next accessibility of the connecting rod, but no later than 2000 hours TIS on the connecting rod.

**Note 4:** For the purpose of this AD, connecting rod accessibility is defined as any maintenance action in which a cylinder assembly is removed for maintenance.

**Effective Date:** 29 June 2006

**DCA/LYC/210    FAA AD 2006-12-07    ECI Classic Cast Cylinders – Inspection and Replacement**

**Applicability:** Models 320, 360 and 540 series parallel valve engines, specified in table 1 fitted with ECI cylinder assemblies P/N AEL65102 series "Classic Cast" having casting head markings EC 65099-REV- 1 and with S/Ns 1 through to 9879.

**Note 1:** The set of numbers appearing on the cylinder below and to the left of the S/N in the form of "12345-67" is not used for determining applicability.

**TABLE 1.**

| <b>Cylinder head P/N</b> | <b>Installed on engine models</b>   |
|--------------------------|---|
| AEL65102-NST04           | O-320-A1B, A2B, A2C, A2D, A3A, A3B, B2B, B2C, B2D, B2E, B3B, B3C, C2B, C2C, C3B, C3C, D1A, D1AD, D1B, D1C, D1D, D1F, D2A, D2B, D2C, D2F, D2G, D2H, D2J, D3G, E1A, E1B, E1C, E1F, E1J, E2A, E2B, E2C, E2D, E2E, E2F, E2G, E2H, E3D, E3H.<br><br>IO-320-A1A, A2A, B1A, B1B, B1C, B1D, B1E, B2A, D1A, D1AD, D1B, D1C, E1A, E1B, E2A, E2B.<br><br>AEIO-320-D1B, D2B, E1A, E1B, E2A, E2B.<br><br>AIO-320-A1A, A1B, A2A, A2B, B1B, C1B.<br><br>LIO-320-B1A.   |
| AEL65102-NST05           | IO-320-C1A, C1B, C1F, F1A.<br><br>LIO-320-C1A.  |
| AEL65102-NST06           | O-320-A1A, A2A, A2B, A2C, A3A, A3B, A3C, E1A, E1B, E2A, E2C, (also, an O-320 model with no suffix). IO-320-A1A, A2A.  |
| AEL65102-NST07           | IO-320-B1A, B1B.<br><br>LIO-320-B1A.  |
| AEL65102-NST08           | O-320-B1A, B1B, B2A, B2B, B3A, B3B, B3C, C1A, C1B, C2A, C2B, C3A, C3B, C3C, D1A, D1B, D2A, D2B, D2C.  |
| AEL65102-NST10           | O-360-A1A, A1C, A1D, A2A, A2E, A3A, A3D, A4A, B1A, B1B, B2A, B2B, C1A, C1C, C1G, C2A, C2B, C2C, C2D, D1A, D2A, D2B.<br><br>IO-360-B1A, B1B, B1C.<br><br>HO-360-A1A, B1A, B1B.<br><br>HIO-360-B1A, B1B.<br><br>AEIO-360-B1B.<br><br>O-540-A1A, A1A5, A1B5, A1C5, A1D, A1D5, A2B, A3D5, A4A5, A4B5, A4C5, A4D5, B1A5, B1B5, B1D5, B2A5, B2B5, B2C5, B2C5D, B4A5, B4B5, B4B5D, D1A5, E1A, E4A5, E4B5, E4C5, F1A5, F1B5, G1A5, G2A5.<br><br>IO-540-C1B5, C1C5, C2C, C4B5, C4B5D, C4C5, D4A5, D4B5, N1A5, N1A5D. |

| Cylinder head P/N | Installed on engine models   |
|-------------------|--|
| AEL65102–NST12    | <p>O–360–A1A, A1AD, A1D, A1F, A1F6, A1F6D, A1G, A1G6, A1G6D, A1H, A1H6, A1J, A1LD, A1P, A2A, A2D, A2F, A2G, A2H, A3A, A3AD, A3D, A4A, A4AD, A4D, A4G, A4J, A4JD, A4K, A4M, A4N, A4P, A5AD, B1A, B2C, C1A, C1C, C1E, C1F, C1G, C2A, C2B, C2C, C2D, C2E, C4F, C4P, D2A, F1A6, G1A6.</p> <p>HO–360–C1A.</p> <p>LO–360–A1G6D, A1H6.</p> <p>HIO–360–B1A, B1B, G1A.</p> <p>LTO–360–A1A6D.</p> <p>TO–360–A1A6D.</p> <p>IO–360–B1B, B1BD, B1D, B1E, B1F, B1F6, B1G6, B2E, B2F, B2F6, B4A, E1A, L2A, M1A, M1B.</p> <p>AEIO–360–B1B, B1D, B1E, B1F, B1F6, B1G6, B1H, B2F, B2F6, B4A, H1A, H1B.</p> <p>O–540–A4D5, B2B5, B2C5, B2C5D, B4B5, B4B5D, E4A5, E4B5, E4B5D, E4C5, G1A5, G1A5D, G2A5, H1A5, H1A5D, H1B5, H1B5D, H2A5, H2A5D, H2B5D.</p> <p>IO–540–C4B5, C4B5D, C4D5, C4D5D, D4A5, D4B5, D4C5, N1A5, N1A5D, T4A5D, T4B5, T4B5D, T4C5D, V4A5, V4A5D.</p> <p>AEIO–540–D4A5, D4B5, D4C5, D4D5.</p> |
| AEL65102–NST26    | IO–540–J4A5, R1A5 and TIO–540–C1A, E1A, G1A, H1A.  |
| AEL65102–NST38    | IO–360–F1A; TIO–540–AA1AD, AB1AD, AB1BD, AF1A, AG1A, AK1A, C1A, C1AD, K1AD and LTIO–540–K1AD.  |
| AEL65102–NST43    | <p>O–360–J2A.</p> <p>O–540–F1B5, J1A5D, J1B5D, J1C5D, J1D5D, J2A5D, J2B5D, J2C5D, J2D5D, J3A5, J3A5D, J3C5D.</p> <p>IO–540–AB1A5, W1A5, W1A5D, W3A5D.</p>  |
| AEL65102–NST44    | O–540–L3C5D.   |

**Requirement:** To prevent loss of engine power due to cracks in the cylinder assemblies and possible engine failure caused by separation of a cylinder head. If your engine was overhauled or repaired since new, do the following:

1. Determine if ECI cylinder assemblies, P/N AEL65102 series "Classic Cast", with casting P/N EC 65099-REV-1 and S/Ns 1 through 9879 are installed on your engine.

**Note 2:** Serial numbers may have an "L" prefix for a long reach spark plug.

If the cylinder assemblies are not ECI, P/N AEL65102 series "Classic Cast", with casting P/N EC 65099-REV-1, no further action is required.

2. If any cylinder assembly is an ECI P/N AEL65102 series "Classic Cast", with casting P/N EC 65099-REV-1 and a S/Ns 1 through 9879, replace the cylinder assembly.  
(FAA AD 2006-12-07 refers)

**Compliance:**

1. By 29 July 2006.
2. Before the cylinder assembly exceeds 800 hours TIS or within 50 hours TIS, whichever occurs later.

**Effective Date:** 29 June 2006

**DCA/LYC/213A FAA AD 2007-04-19R1 Superior Air Parts Cylinders – Replacement**

**Applicability:** Superior Air Parts (SAP) cast cylinder assemblies P/Ns SL32000W-A1, SL32000W-A20P, SL32000W-A21P, SL32000WH-A1, SL32000WH-A20P, SL32006W-A1, SL32006W-A20P, SL32006W-A21P, SL36000TW-A1, SL36000TW-A20P, SL36000TW-A21P, SL36000TW-A22P, SL36000W-A1, SL36000W-A20P, SL36000W-A21P, SL36006W-A1, SL36006W-A20P and SL36006W-A21P. These SAP cast cylinder assemblies may be fitted to the following Lycoming engines:

|                    |                                   |
|--------------------|-----------------------------------|
| AEIO-320 -D, -E    | IO-360 -B, -L, -M                 |
| AEIO-360 -B, -H    | IO-540 -A, -C, -D, -N, -T, -V, -W |
| AEIO-540 -D        | LIO-320 -B                        |
| AIO-320 -A, -B, -C | LO-360 -A                         |
| HIO-360 -B         | O-320 -A, -B, -C, -D, -E, -H      |
| HO-360 -C          | O-360 -A, -B, -C, -D, -F, -G, -J  |
| IO-320 -B, -D, -E  | O-540 -A, -B, -E, -F, -G, -H, -J  |

**Note 1:** The affected cylinder assembly S/N range in this AD has been revised to narrow the applicability even further. Accomplishment of DCA/LYC/213 satisfies the requirements of this AD.

**Requirement:** To prevent cylinder head fatigue failure and separation at the head-to-barrel threaded interface that could lead to engine failure, accomplish the following:

1. Inspect the aircraft log books to determine which cast cylinder assemblies are fitted. If the aircraft log books do not list the P/Ns of the cylinders fitted to the engine, then visually inspect the engine to determine which cylinders are fitted. Replace cylinder assemblies S/N 47LE053559 through to 47LF053643, and 47SE054212 through to 47SF054251, and 52D0531708 through to 52H0532197, and 55E05223 through to 55G05289, and 32WE059006 through to 32WF059067, and 32WHE05379 through to 32WHE05392, and 326WF055517 through to 326WF055532, and 36TWF05430 through to 36TWG05453, and 36WF058058 through to 36WG058124, and 366WE056944 through to 366WF057061, and 366WF057150 through to 366WF057232, and 366WF057259 through to 366WG057534, and 366WG057556, 366WG057569, 366WG057598, 366WG057616, 366WG057621, 366WG057624, and 366WJ057770 through to 366WJ057776, and 366WL058131, per Superior Air Parts Mandatory SB B06-01, revision E, dated 24 January 2007.

**Note 2:** These affected S/Ns were manufactured between April 2005 and November 2005.

**Note 3:** The affected SAP cylinder head flanges are marked: SA47000L-A1, SA47000L-A20P, SA47000S-A1, SA47000S-A20P, SA47000S-A21P, SA52000-A1, SA52000-A20P, SA52000-A21P, SA52000-A22P, SA52000-A23P, SA55000-A1, SA55000-A20P, SL32000W-A1, SL32000W-A20P, SL32000W-A21P, SL32000WH-A1, SL32000WHA20P, SL32006W-A1, SL32006W-A20P, SL32006W-A21P, SL36000TW-A1, SL36000TW-A20P, SL36000TW-A21P, SL36000TW-A22P, SL36000W-A1, SL36000W-A20P, SL36000W-A21P, SL36006W-A1, SL36006W-A20P or SL36006W-A21P.

2. Affected Superior Air Parts cast cylinder assemblies listed in Requirement 1 of this AD may not be installed on any engine.  
(FAA AD 2007-04-19R1 refers)

**Compliance:**

- At 150 hours TTIS (on affected SAP cylinders), or within the next 10 hours TIS, whichever is the later.
- From the effective date of this AD.

**Effective Date:** DCA/LYC/213 - 12 March 2007  
DCA/LYC/213A - 26 April 2007



**DCA/LYC/217    FAA AD 2002-12-07    Oil Filter Converter Plate Gasket – Inspection**

- Applicability:** This AD is applicable to the following reciprocating engines models that were manufactured new, rebuilt or overhauled, or had the oil filter converter plate kit P/N LW-13904 or gasket P/N LW13388 replaced after 1 April 1999.
- Model O-320-H1AD, -H1BD, -H2AD, -H2BD, -H3AD and -H3BD engines
- Model (L)O-360-A1AD, -A1F6D, -A1G6D, -A1LD, -A3AD, -A4AD, -A5AD and -E1A6D engines
- Model IO-360-A1B6D, -A1D6D, -A3B6D, -A3D6D, -C1E6D, -J1AD and -J1A6D engines
- Model (L)TO-360-A1A6D, -C1A6D, -E1A6D and -F1A6D engines
- Model TIO-360-C1A6D engines
- Model (L)HIO-360 -E1AD, -E1BD and -F1AD engines
- Model O-540-H1A5D, -H1B5D, -H2A5D, -H2B5D, -J1A5D, -J1B5D, -J1C5D, -J1D5D, -J2A5D, -J2B5D, -J2C5D, -J2D5D, -J3A5D, -J3C5D and -L3C5D engines
- Model IO-540-C4D5D, -K1A5D, -K1B5D, -K1E5D, -K1F5D, -K1G5D, -K1J5D, -L1A5D, -L1B5D, -M1A5D, -M1B5D, -M2A5D, -T4A5D, -T4B5D, -T4C5D, -U1A5D, -U1B5D, -V4A5D, -W1A5D and -W3A5D engines
- Model (L)TIO-540-K1AD, -S1AD, -AA1AD, -AB1AD, -AB1BD, -F2BD, -J2BD, -N2BD, -R2AD, -T2AD and -V2AD engines
- Model AEIO-540-L1B5D engines
- Model TIO-541-E series engines
- Model TIGO-541-D1A, -D1B and -E1A engines
- Model IO-720-A1BD, -B1BD, -C1BD, -D1BD and -D1CD engines
- Note 1:** This AD supersedes DCA/LYC/199A and introduces requirement 3 as a terminating action to the repetitive replacement requirements of the converter plate gasket P/N LW-13388 and the oil converter plate kit P/N LW-13904.
- Requirement:** To prevent complete loss of engine oil and possible seizure of the engine and fire due to oil leaks between the converter plate and accessory housing, accomplish the following:
1. For engines with more than 50 hours TSN, TSO or time since the last replacement of the oil filter converter plate gasket P/N LW-13388 or the oil filter converter plate P/N LW-13904:  
 Replace the converter plate gasket or converter plate kit per paragraphs 1 and 2 of Lycoming MSB 543A dated 30 August 2000 before further flight.
  2. For engines with less than 50 hours TSN, TSO or time since the last replacement of the oil filter converter plate gasket P/N LW-13388 or the oil filter converter plate P/N LW-13904:  
 Inspect the oil filter base for signs of oil leaks between the oil filter base and the accessory housing and also inspect for any evidence of the gasket extruding beyond the perimeter of the base. If any oil leaks are found, or if the seal is damaged, extruded, displaced or deteriorated, replace the converter plate gasket or converter plate kit per paragraphs 1 and 2 of MSB 543A before further flight.
  3. Replace the oil filter converter plate gasket or oil filter converter plate kit per part II or part III of Lycoming Supplement No. 1 of MSB 543A dated 4 October 2000, or Lycoming MSB 543B dated 1 July 2003.

**Note 2:** Replacement of oil filter converter plate gasket P/N LW-13388 with a new gasket P/N 06B23072 per part II or part III of Supplement No. 1 of MSB 543A, or MSB 543B is a terminating action to requirements 1 and 2 of this AD.

**Note 3:** Lycoming SB No. 543A and Supplement No. 1 of MSB 543A pertains to the subject of this AD. SB No. 543B has superseded SB No. 543A and Supplement No. 1 of MSB 543A.

(AD 2002-12-07 refers)

- Compliance:**
1. Before further flight unless previously accomplished, and thereafter replace the converter plate gasket P/N LW-13388 or the oil converter plate kit P/N LW-13904 at intervals not to exceed 50 hours TIS.
  2. Within the next 10 hours TIS or the next 3 days, whichever occurs sooner unless previously accomplished, and thereafter replace the converter plate gasket P/N LW-13388 or the oil converter plate kit P/N LW-13904 at intervals not to exceed 50 hours TIS.
  3. By 18 December 2009, unless previously accomplished.

**Effective Date:** 18 December 2008

#### **DCA/LYC/218    FAA AD 2009-26-12    ECI Titan Cylinders – Inspection and Replacement**

**Applicability:** Model 320, 360 and 540 series parallel valve engines listed in table 1 of this AD, fitted with Engine Components Incorporated (ECi) Titan cylinder assembly P/N AEL65102, S/N 1138-02 through to 35171-22 and 35239-01 through to 42179-30 and cylinder head P/N AEL85099.

**Note 1:** This AD supersedes DCA/LYC/216. Since the issue of that AD there have been another 10 cylinder head separations of cylinder S/N not listed in that AD. The applicability of this AD revised to expand the affected cylinder assembly S/N range through to 42179-30.

**Note 2:** If the engine has not been overhauled since new, or a cylinder assembly has not been replaced since new, no further action is required.

**Note 3:** All affected cylinder assemblies are fitted with a cylinder head P/N AEL85099. The cylinder head P/N is located near the intake and exhaust valve springs at the top of the cylinder head. The cylinder assembly P/N which is difficult to see is located at the crankcase end of the cylinder assembly.

**Note 4:** The set of numbers appearing on the cylinder above and to the left of the S/N in the form of "123456" is not used for determining applicability.

**Table 1:**

| <b>Cylinder Assembly P/N:</b> | <b>Installed on Engine Models:</b>   |
|-------------------------------|--|
| AEL65102-NST04                | <b>O-320</b> -A1B, A2B, A2C, A2D, A3A, A3B, B2B, B2C, B2D, B2E, B3B, B3C, C2B, C2C, C3B, C3C, D1A, D1AD, D1B, D1C, D1D, D1F, D2A, D2B, D2C, D2F, D2G, D2H, D2J, D3G, E1A, E1B, E1C, E1F, E1J, E2A, E2B, E2C, E2D, E2E, E2F, E2G, E2H, E3D, E3H.<br><b>IO-320</b> -A1A, A2A, B1A, B1B, B1C, B1D, B1E, B2A, D1A, D1AD, D1B, D1C, E1A, E1B, E2A, E2B.<br><b>AEIO-320</b> -D1B, D2B, E1A, E1B, E2A, E2B.<br><b>AIO-320</b> -A1A, A1B, A2A, A2B, B1B, C1B.<br><b>LIO-320</b> -B1A |
| AEL65102-NST05                | <b>IO-320</b> -C1A, C1B, C1F, F1A.<br><b>LIO-320</b> -C1A  |
| AEL65102-NST06                | <b>O-320</b> -A1A, A2A, A2B, A2C, A3A, A3B, A3C, E1A, E1B, E2A, E2C, (also, an O-320 model with no suffix).  |

|                |   |
|----------------|---|
|                | <b>IO-320-A1A, A2A.</b>   |
| AEL65102-NST07 | <b>IO-320- B1A, B1B.</b><br><b>LIO-320- B1A.</b>  |
| AEL65102-NST08 | <b>O-320-B1A, B1B, B2A, B2B, B3A, B3B, B3C, C1A, C1B, C2A, C2B, C3A, C3B, C3C, D1A, D1B, D2A, D2B, D2C.</b>   |
| AEL65102-NST10 | <b>O-360-A1A, A1C, A1D, A2A, A2E, A3A, A3D, A4A, B1A, B1B, B2A, B2B, C1A, C1C, C1G, C2A, C2B, C2C, C2D, D1A, D2A, D2B.</b><br><b>IO-360-B1A, B1B, B1C.</b><br><b>HO-360-A1A, B1A, B1B.</b><br><b>HIO-360-B1A, B1B.</b><br><b>AEIO-360-B1B.</b><br><b>O-540-A1A, A1A5, A1B5, A1C5, A1D, A1D5, A2B, A3D5, A4A5, A4B5, A4C5, A4D5, B1A5, B1B5, B1D5, B2A5, B2B5, B2C5, B4A5, B4B5, D1A5, E1A, E4A5, E4B5, E4C5, F1A5, F1B5, G1A5, G2A5.</b><br><b>IO-540-C1B5, C1C5, C2C, C4B5, C4B5D, C4C5, D4A5, D4B5, N1A5.</b> |

| <b>Cylinder Assembly P/N:</b> | <b>Installed on Engine Models:</b>  |
|-------------------------------|---|
| AEL65102-NST12                | <b>O-360- A1A, A1AD, A1D, A1F, A1F6, A1F6D, A1G, A1G6, A1G6D, A1H, A1H6, A1J, A1LD, A1P, A2A, A2D, A2F, A2G, A2H, A3A, A3AD, A3D, A4A, A4AD, A4D, A4G, A4J, A4JD, A4K, A4M, A4N, A4P, A5AD, B1A, B2C, C1A, C1C, C1E, C1F, C1G, C2A, C2B, C2C, C2D, C2E, C4F, C4P, D2A, F1A6, G1A6.</b><br><b>HO-360 –C1A.</b><br><b>LO-360-A1G6D, A1H6.</b><br><b>HIO-360-B1A, B1B, G1A.</b><br><b>LTO-360-A1A6D.</b><br><b>TO-360-A1A6D.</b><br><b>IO-360-B1B, B1BD, B1D, B1E, B1F, B1F6, B1G6, B2E, B2F, B2F6, B4A, E1A, L2A, M1A, M1B.</b><br><b>AEIO-360-B1B, B1D, B1E, B1F, B1F6, B1G6, B1H, B2F, B2F6, B4A, H1A, H1B.</b><br><b>O-540-A4D5, B2B5, B2C5, B2C5D, B4B5, B4B5D, E4A5, E4B5, E4C5, G1A5, G2A5, H1A5, H1A5D, H1B5, H1B5D, H2A5, H2A5D, H2B5D.</b><br><b>IO-540-C4B5, C4B5D, C4D5, C4D5D, D4A5, D4B5, D4C5, N1A5, N1A5D, T4A5D, T4B5, T4B5D, T4C5D, V4A5, V4A5D</b><br><b>AEIO-540-D4A5, D4B5, D4C5, D4D5.</b> |
| AEL65102-NST26                | <b>IO-540-J4A5, R1A5.</b><br><b>TIO-540-C1A, E1A, G1A, H1A.</b>   |
| AEL65102-NST38                | <b>IO-360-F1A.</b><br><b>TIO-540-AA1AD, AB1AD, AB1BD, AF1A, AG1A, AK1A, C1A, C1AD, K1AD.</b><br><b>LTIO-540-K1AD.</b>   |
| AEL65102-NST43                | <b>O-360-J2A.</b><br><b>O-540-F1B5, J1A5D, J1B5D, J1C5D, J1D5D, J2A5D, J2B5D, J2C5D, J2D5D, J3A5, J3A5D, J3C5D.</b><br><b>IO-540-AB1A5, W1A5, W1A5D, W3A5D.</b>   |
| AEL65102-NST44                | <b>O-540-L3C5D.</b>   |

**Requirement:** To prevent loss of engine power due to cracks in the cylinder assembly head-to-barrel interface and possible engine failure caused by separation of a cylinder head, accomplish the following:

1. Inspect the aircraft logbooks and/or the aircraft and determine if the engine has been overhauled since new, or if a cylinder assembly has been replaced since new.

No further action is required if the engine has not been overhauled since new, or a cylinder assembly has not been replaced since new.

If the engine has been overhauled since new, or a cylinder assembly has been replaced since new, determine if any ECI Titan cylinder assemblies P/N AEL65102, S/N 1138-02 through to 35171-22 and 35239-01 through to 42179-30 and cylinder head P/N AEL85099 is fitted to the aircraft engine.

No further action is required if an ECI cylinder assembly P/N AEL65102 is not fitted to the engine.

No further action is required if an ECI cylinder assembly P/N AEL65102 is fitted to the engine, and the S/N is not an affected S/N.

If an affected S/N cylinder assembly is fitted to the engine, accomplish requirement 2 of this AD.

2. Visual Inspection:

Inspect the area around the exhaust valve side of the cylinder for cracks and any signs of black or white residue. Replace cracked cylinder assemblies before further flight. Information on cylinder assembly visual inspection can be found in ECI MSB No. 08-1.

Compression test:

Accomplish a standard cylinder differential compression test. If the cylinder pressure is below 70 lbs/square inch, apply a water and soap solution to the side of the leaking cylinder near the head-to-barrel interface. If air leaks and bubbles are observed on the side of the cylinder assembly near the head-to-barrel interface, replace the cylinder assembly before further flight.

For cylinder assemblies P/N AEL65102, S/N 1138-02 through to 35171-22 only, if the low cylinder pressure reading is as a result of leaking inlet or exhaust valves, or leaking piston rings, repair or replace the engine cylinder assembly before further flight.

3. Cylinder assemblies P/N AEL65102, S/N 35239-01 through to 42179-30 shall not be fitted to any engine, and shall not be repaired or reused.

(FAA AD 2009-26-12 refers)

**Compliance:**

1. Before further flight.
2. For cylinders with S/N 1138-02 through to 35171-22:

Accomplish a visual inspection and compression test before exceeding 350 hours TTIS on the cylinder, or within the next 10 hours TIS for a cylinders with between 350 hours TTIS and 2000 hours TTIS whichever occurs sooner, unless previously accomplished and thereafter at intervals not to exceed 50 hours TIS.

Replacement of cylinder assemblies fitted to helicopter engines: Before exceeding 1500 hours TTIS for cylinders that pass the visual inspection and compression tests, or within the next 25 hours TIS for cylinders with more than 1500 hours TTIS, whichever occurs sooner.

Replacement of cylinder assemblies fitted to aeroplane engines: Before exceeding 2000 hours TTIS for cylinders that pass the visual inspection and compression tests, or within the next 25 hours TIS for cylinders with more than 2000 hours TTIS, whichever occurs sooner.

For cylinders with S/N 35239-01 through to 42179-30:

Within the next 10 hours TIS accomplish a visual inspection and compression test.

Replace cylinders that pass the initial visual inspection and compression tests before exceeding 350 hours TTIS, and for cylinders with 350 or more hours TTIS replace within the next 25 hours TIS.

3. From 4 February 2010

**Effective Date:** 4 February 2010

**DCA/LYC/221 Cancelled – FAA AD 2015-19-07 refers**

**Effective Date:** 3 November 2015

**DCA/LYC/222 FAA AD 2012-03-06 AVStar Fuel Servos – Inspection and Replacement**

**Applicability:** All Lycoming fuel injected engines fitted with a AVStar Fuel Systems, Inc. (AFS) fuel servo diaphragm P/N AV2541801 or P/N AV2541803.

**Note:** This AD supersedes DCA/LYC/219 to expand the applicability to include additional affected engines. Affected fuel servos and fuel servo diaphragms are listed in AFS MSB No. AFS-SB6 revision 2, dated 6 April 2011. This SB remains unchanged since the issue of superseded DCA/LYC/219.

**Requirement:** To prevent fuel servo failure which could result in loss of engine power and aircraft control, accomplish the following:

1. Review the aircraft records and determine if an AFS fuel servo diaphragm P/N AV2541801 or P/N AV2541803 from an affected production lot listed in AFS MSB No. AFS-SB6 revision 2, dated 6 April 2011 was installed in the fuel servo any time after 20 May 2010.

If the fuel servo is found fitted with an affected diaphragm, replace the fuel servo before further flight

2. Fuel servos with an affected AFS fuel servo diaphragm P/N AV2541801 or P/N AV2541803 from the production lots listed in AFS MSB No. AFS-SB6 revision 2 shall not be fitted to any aircraft.

(FAA AD 2012-03-06 refers)

- Compliance:**
1. Within the next 5 hours TIS unless previously accomplished.
  2. From 24 February 2012.

**Effective Date:** 24 February 2012

The State of Design ADs listed below are available directly from the National Airworthiness Authority (NAA) websites. Links to NAA websites are available on the CAA website at [Links to state of design airworthiness directives | aviation.govt.nz](https://aviation.govt.nz/links-to-state-of-design-airworthiness-directives)  
 If additional NZ ADs need to be issued when an unsafe condition is found to exist in an aircraft or aeronautical product in NZ, they will be added to the list below.

**2012-19-01 Crankshaft – Identification and Replacement**

**Effective Date:** 24 October 2012

**2015-02-07 Propeller Governor – Inspection**

**Effective Date:** 11 March 2015

**2015-19-07 Fuel Injector Lines – Inspections**

**Effective Date:** 3 November 2015

**2017-16-11 Connecting Rod Small End Bushings – Inspection**

**Applicability:** All Lycoming engines listed in Table 1 of Lycoming Engines Mandatory Service Bulletin (MSB) No. 632B, dated 4 August 2017, and  
 All Lycoming engines that were overhauled or repaired using any replacement part listed in Table 2 of Lycoming Engines MSB No. 632B, dated 4 August, 2017, which was shipped from Lycoming Engines during the dates listed in Table 2 of Lycoming Engines MSB No. 632B, dated 4 August 2017.

**Effective Date:** 15 August 2017

**DCA/LYC/224A Lycoming Parallel Valve Cylinder and Head Assemblies – Inspection**

**Applicability:** All Lycoming engines fitted with parallel valve cylinder and head assemblies listed in Table 1 of Lycoming Mandatory Service Bulletin (MSB) 634, dated 11 October 2018, or later FAA approved revision.

**Note:** DCA/LYC/224A revised to introduce a repetitive inspection requirement for affected parallel valve cylinder and head assemblies, until replacement per requirement 2 of this AD. Affected cylinder and head assemblies were supplied in cylinder kits and installed on all parallel valve engines (except O-235 model engines), that were supplied by Lycoming Engines between 1 September 2013 and 30 April 2015. To identify affected cylinder and head assemblies refer to Lycoming MSB 634.

**Requirement:** To prevent loss of engine power due to a cracked cylinder assembly, accomplish the following:

1. **Inspection:**  
 Inspect affected parallel valve cylinder and head assemblies for visible discolouration/residue on the cylinder fins. If residue is found on the cylinder fins, then the cylinder may be cracked and further investigation is required.  
 Accomplish a compression test on affected cylinders (refer to Lycoming Service Instruction 1191A). If the compression value does not meet OEM requirements, then the cylinder may be cracked and further investigation is required. Any loss of compression may be due to a cracked cylinder assembly.  
 If a whistling sound is evident while accomplishing the compression test, then the cylinder may be cracked and further investigation is required.  
 If a cracked cylinder assembly is found, then replace all affected parallel valve cylinder and head assemblies fitted on the engine, before further flight.

2. Replacement:

Remove and replace all parallel valve cylinder and head assemblies listed in Table 1 of MSB 634, dated 11 October 2018, or later FAA approved revision.

Affected parallel valve cylinder and head assembly listed in Table 1 of MSB 634 shall not be overhauled, refurbished, or repaired and returned to service.

From the effective date of this AD, an affected parallel valve cylinder and head assembly listed in Table 1 of MSB 634, shall not be installed on any engine.

**Compliance:**

1. Inspection:

Within the next 50 hours TIS and thereafter at intervals not to exceed 50 hours TIS until requirement 2 of this AD is accomplished.

2. Replacement:

Replace all affected cylinder and head assemblies at the next engine overhaul.

**Effective Date:** DCA/LYC/224 - 25 October 2018  
DCA/LYC/224A - 28 February 2019

**2020-25-12 Crankshaft Assemblies – Inspection**

**Applicability:** Lycoming AEIO-360 series and IO-360 series engines listed in the applicability of FAA AD 2020-25-12.

**Note:** Affected engines are fitted with a Superior Air Parts, Inc. (SAP) crankshaft assembly, P/N SL36500-A20, or P/N SL36500-A31, with S/N 82976-01; 82976-02; SP12-0003 through to SP12-0089, inclusive; S/N SP13-0034 through to SP13-0150, inclusive; or S/N SP14-0151 through to SP14-0202, inclusive.

**Effective Date:** 15 January 2021

**\* 2024-21-02 Connecting Rod Assemblies - Inspection**

**Applicability:** Lycoming engines that are fitted with an affected part and P/N, and were assembled within the ship date range specified in Table 1 to paragraph (c) of FAA AD 2024-21-02.

**Note:** Affected P/N parts are known to be installed on Lycoming AEIO-320 series, AEIO-360 series, AEIO-390 series, AEIO-540 series, AEIO-580-B1A, AIO-320 series, AIO-360 series, HIO-360 series, HIO-390-A1A, HIO-540-A1A, HO-360 series, IO-320 series, IO-360 series, IO-390 series, IO-540 series, IVO-360-A1A, IVO-540-A1A, LHIO-360 series, LIO-320 series, LIO-360 series, LO-360 series, LTIO-540 series, LTO-360 series, O-233-A1, O-235 series, O-320 series, O-340 series, O-360 series, O-435 series, O-540 series, SO-580 series, TEO-540 series, TIGO-541 series, TIO-360 series, TIO-540 series, TIO-541 series, TIVO-540-A2A, TO-360 series, TVO-435 series, TVO-540-A1A, VO-360 series, VO-435 series, VO-540 series, and VSO-580-A1A engines.

**Effective Date:** 5 December 2024