

# Airworthiness Directive Schedule

## Engines

### Lycoming LTIO-540 and TIO-540 Series

26 March 2026

---

- Notes:**
1. This AD schedule is applicable to Lycoming **LTIO-540 and TIO-540** series engines manufactured under FAA Type Certificate Number **E14EA**.
  2. The Federal Aviation Administration (FAA) is the National Airworthiness Authority (NAA) responsible for the issue of State of Design Airworthiness Directives (ADs) for Lycoming reciprocating engines.  
  
State of Design ADs can be obtained directly from the FAA website at:  
[Dynamic Regulatory System \(faa.gov\)](https://www.faa.gov/dynamic-regulatory-system)
  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 \*
- 

## Contents

DCA/LYC/136	Crankcase Bearing Dowel Replacement - Modification .....	3
DCA/LYC/137	Turbine Housing - Inspection and Replacement .....	3
DCA/LYC/150	FAA AD 73-23-01 Piston Pins - Inspection .....	3
DCA/LYC/154	FAA AD 75-09-15 Bendix Fuel Injector Flow Divider Cover Gasket - Modification .....	3
DCA/LYC/163	FAA AD 78-23-10 Bendix Fuel Injector Bellows Assembly - Modification .....	3
DCA/LYC/164	FAA AD 79-04-05 Bendix Fuel Injector Assembly - Inspection .....	4
DCA/LYC/166	FAA AD 79-21-08 & 79-26-03 Bendix Fuel Injection Regulator - Inspection .....	4
DCA/LYC/168	Bendix Fuel Injector Assembly - Inspection .....	4
DCA/LYC/175A	FAA AD 83-22-04 Bendix Fuel Injection Diaphragm - Inspection .....	4
DCA/LYC/181	FAA AD 87-10-06R1 Rocker Arm Assembly - Inspection .....	5
DCA/LYC/183A	FAA AD 91-08-07 Restricted Fuel Pump Vent Fitting - Installation .....	5
DCA/LYC/184C	FAA AD 91-21-01R1 One-Piece Exhaust Pipe – Inspection .....	6
DCA/LYC/187	FAA AD 92-12-05 Piston Pin - Removal .....	7
DCA/LYC/189	FAA AD 95-07-01 Connecting Rod Bolts - Removal .....	7
DCA/LYC/190A	FAA AD 97-01-03 Piston Pin - Removal .....	8
DCA/LYC/192	FAA AD 97-01-04 Superior Air Parts Inc Cylinder Assemblies - Inspection .....	8
DCA/LYC/194	FAA AD 98-17-11 Repaired Crankshafts - Inspection .....	9
DCA/LYC/195B	FAA AD 2003-14-03 Rotary Fuel Pump Relief Valve – Inspection .....	14
DCA/LYC/196A	Piston Pin Plug Wear – Inspection .....	14
DCA/LYC/200	Engine Nose Bearing – Inspection .....	15
DCA/LYC/201B	FAA AD 2002-19-03 Crankshaft – Inspection and Removal from Service .....	15
DCA/LYC/202C	FAA AD 2004-05-24 Zinc-Plated Crankshaft Gear Retaining Bolts - Removal .....	17
DCA/LYC/204B	FAA AD 2004-10-14 Propeller Strike – Crankshaft Gear Inspection .....	18
DCA/LYC/206	FAA AD 2005-19-11 Crankshaft – Identification and Replacement .....	19

DCA/LYC/209	FAA AD 2006-10-21	ECI Connecting Rods – Inspection and Replacement .....	19
DCA/LYC/210	FAA AD 2006-12-07	ECI Classic Cast Cylinders – Inspection and Replacement.....	20
DCA/LYC/214	FAA AD 2008-08-17	Turbochargers – Inspection and Replacement .....	22
DCA/LYC/217	FAA AD 2002-12-07	Oil Filter Converter Plate Gasket – Inspection .....	23
DCA/LYC/218	FAA AD 2009-26-12	ECI Titan Cylinders – Inspection and Replacement.....	24
DCA/LYC/222	FAA AD 2012-03-06	AVStar Fuel Servos – Inspection and Replacement .....	28

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](#) 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.....	29
2013-21-02	HET Turbocharger Turbine Wheel – Inspection and Replacement.....	29
2015-10-06	Exhaust System – Inspection .....	29
2015-19-07	Fuel Injector Lines – Inspection .....	29
2017-11-10	Engine Exhaust System – Inspection.....	29
2017-16-11	Connecting Rod Small End Bushings – Inspection .....	29
DCA/LYC/224A	Lycoming Parallel Valve Cylinder and Head Assemblies – Inspection.....	29
* 2024-21-02	Cancelled – FAA AD 2026-04-11 refers.....	30
* 2026-04-11	Connecting Rod Assemblies and Bushing - Inspection.....	30

**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/137 Turbine Housing - Inspection and Replacement**

**Applicability:** TIO-360 and TIO-540 as listed in Garrett SB 571-1  
**Requirement:** Accomplish Lycoming SB 347 and Garrett SB 571-1  
**Compliance:** As detailed  
**Effective Date:** 30 September 1972

**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/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/168 Bendix Fuel Injector Assembly - Inspection**

- Applicability:** All IO-540, TIO-540, LTIO-540, TIO-541, TIGO-541 and IO-720 series engines detailed in Avco Lycoming SB 445.
- Requirement:** Inspect fuel diaphragm, and renew as necessary, per Bendix SB RS-63
- Compliance:** Within next 50 hours TIS unless already accomplished
- Effective Date:** 25 January 1980

**DCA/LYC/175A FAA AD 83-22-04 Bendix Fuel Injection Diaphragm - Inspection**

- Applicability:** All IO-540-G1B5, -G1C5, -G1D5, -K1A5, -K1A5D, -K1B5, -K1C5, -K1D5, -K1F5, -K1F5D, -K1G5, -K1G5D, -K1J5, -K1J5D, -M1B5D, -S1A5, -AA1A5;  
AEIO-540-L1B5D; TIO-540-F2BD, -J2B, -J2BD, -N2BD, -S1AD, -US1, -V2AD;  
LTIO-540-F2BD, -J2B, -J2BD, -N2BD, -U2A, -V2AD, -R2AD.  
TIO-541-E1A4, -E1B4, -E1C4; TIGO-541-E1A  
IO-720-B1B, -B1BD
- Requirement:** Inspect and modify as necessary per Avco Lycoming SB 467 and associated Bendix SB RS 88, including supplements.  
(FAA AD 83-22-04 refers)
- Compliance:** Within next 100 hours TIS or prior to engine installation
- Effective Date:** DCA/LYC/175 - 21 October 1983  
DCA/LYC/175A - 6 April 1984

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

**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/183A FAA AD 91-08-07 Restricted Fuel Pump Vent Fitting - Installation**

**Applicability:** TIO-360 series engines with S/N's up to L-215-64A inclusive; TIO-540 series engines with S/N's up to L-9245-61/61A inclusive, except TIO-540-AE2A engines; LTIO-540 series engines with S/N's up to L-2911-68A inclusive; TIGO-541 series engines with S/N's up to L-780-62 inclusive; all TIO-541 series engines; and all TIVO-540 series engines. Also overhauled and remanufactured engines of these models shipped from Textron Lycoming prior to 15 November 1990, and to any Textron Lycoming engine that has been modified to use a turbocharger and that has the fuel pump vented to the induction system.

**Requirement:** To prevent engine power loss and possible loss of the aircraft, accomplish the following:

1. Check engine fuel pump for leaking diaphragm per Part A of Textron Lycoming SB 494 or 497 as applicable.

Replace any fuel pump found leaking before further flight. Repeat the check following pump replacement.

2. Inspect and replace if necessary, the fuel pump vent restrictor per Part B of SB 494 or 497 as applicable. The orifice diameter must be within 0.014 to 0.020 inch and the fitting must have the code letter "R" impression stamped on a flat surface.

(FAA AD 91-08-07 refers)

**Compliance:** 1. Within next 15 hours TIS and thereafter at intervals not to exceed 50 hours TIS, until Part 2 is accomplished.

2. By 31 July 1991

**Effective Date:** DCA/LYC/183 - 3 May 1991  
DCA/LYC/183A - 1 July 1991

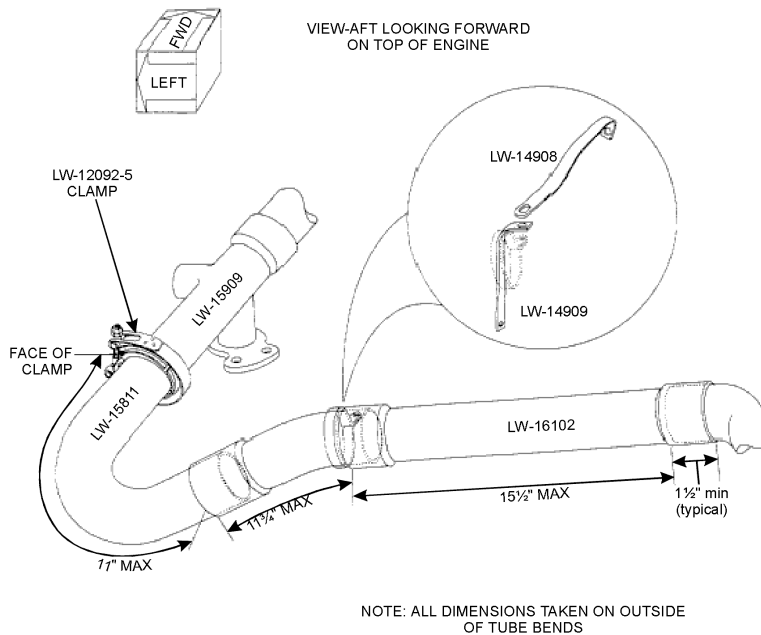
**DCA/LYC/184CFAA AD 91-21-01R1 One-Piece Exhaust Pipe – Inspection**

**Applicability** All model TIO-540-S1AD engines.

**Note 1:** No action required if already in compliance with DCA/LYC/184B. This AD revised with Lycoming SB No. 499A now at revision C and to include note 2 with no change to the AD requirement.

**Requirement:** To prevent exhaust system leaks which may cause engine failure or fire, accomplish the following:

1. Inspect all exhaust system joints, flanges, couplings and brackets for heat damage, distortion, cracks or excessive wear per Textron Lycoming SB 484. Inspect the exhaust system for proper slip joint engagement by measuring distances between pipe end points of LW-16102 (RH) and LW-16103 (LH) per the diagram. If damage is found in the exhaust system or measurements which exceed allowable dimensions, repair or replace damaged parts with serviceable parts as necessary, before further flight.



2. Install new design one-piece exhaust riser kit (05K21503) and manifold retainer kit (05K19650-S) per SB 499C.

**Note 2:** Lycoming SB No. 499C and SB No. 484 or later FAA approved revisions pertains to the subject of this AD.

(FAA AD 91-21-01R1 refers)

**Compliance:** 1. Within next 25 hours TIS unless previously accomplished and thereafter at intervals not to exceed 25 hours TIS until modified per requirement 2. After modification inspect at intervals not to exceed 100 hours TIS.

2. Within next 75 hours TIS, unless already accomplished.

**Effective Date:** DCA/LYC/184A - 20 December 1991  
 DCA/LYC/184B - 2 August 1996  
 DCA/LYC/184C - 18 December 2008

**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/190AFAA 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/192 FAA AD 97-01-04      Superior Air Parts Inc Cylinder Assemblies - Inspection**

**Applicability:** Models TIO-540-A2C, -F2BD, -J2B, -J2BD, -N2BD, -R2AD, -S1AD and LTIO-540-J2B, -F2BD, -J2BD, -N2BD, -R2AD and IO-540-M1B5D fitted with Superior Air Parts Inc replacement cylinder assemblies P/Ns SL54000-A1, -A2, -A2P, -A20P and -A21P with S/Ns 001 through 650.

**Requirement:** To prevent cylinder head separation, possible engine failure and fire, accomplish the following:-

1. Perform a dye penetrant inspection for cracks per Superior Air Parts Inc Mandatory SB 96-002, revision A. Prior to further flight remove from service cylinder assemblies found cracked and replace with serviceable parts.
2. Remove affected cylinder assemblies from service.

(FAA AD 97-01-04 refers)

*Note: For the purpose of this airworthiness directive, a serviceable part is defined as a cylinder assembly other than a Superior Air Parts replacement cylinder assembly P/N SL54000-A1, -A2, -A2P, -A20P and -A21P with S/N 001 through 650.*

**Compliance:** 1. Inspect at 250 hours TTIS since installation of the affected cylinder assemblies, or within next 5 hours TIS whichever is the later. Thereafter at intervals not to exceed 25 hours TIS, until replacement per part 2.

2. Remove at 300 hours TTIS since installation of the affected cylinder assemblies, or within next 5 hours TIS whichever is the later.

**Effective Date:** 4 January 1997

**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**

<b>MODEL</b>	<b>W/O</b>	<b>DATE</b>	<b>ENGINE S/N</b>
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
IYO-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, Aerospatiale (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/200 Engine Nose Bearing – Inspection**

**Applicability:** Model O-540, IO-540, TIO-540, LTIO-540, AEIO-540 and IO-720 series engines fitted with P/N LW-13885 series nose bearings with a (6-00) date stamp. Also listed engine models that were assembled new, have been rebuilt or overhauled after July 2000, and the nose bearing P/N or date stamp are unknown.

This AD is only applicable to those engines that have not yet exceeded 500 hours TIS since new/overhaul or since nose bearing replacement.

For any engine that was assembled new, last rebuilt, or overhauled before August 2000 and the nose bearing has not been replaced since, a suspect nose bearing will not be fitted to the engine.

**Requirement:** To detect failure of the engine nose bearing and prevent possible in-flight engine failure, accomplish the following:-

Check oil filter/screen content for premature or excessive engine component wear per Textron Lycoming Mandatory SB 480E, Part II. If abnormal metal content is found, determine the source and rectify as required. If the cause is found to be the failure of the nose bearing, notify the CAA.

From 5 July 2001 do not fit to any engine, P/N LW-13885 series nose bearings with a (6-00) date stamp.

**Note:** Lycoming SB No. 480E or later FAA approved revisions pertains to the subject of this AD.

(NZ Occurrence refers)

**Compliance:** Engines with less than 200 hours TIS since new/overhaul or since nose bearing replacement:-

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

Engines with more than 200 hours, but less than 500 hours TIS since new/overhaul or since nose bearing replacement:-

At each scheduled engine oil change.

**Effective Date:** 5 July 2001

### **DCA/LYC/201BFAA AD 2002-19-03 Crankshaft – Inspection and Removal from Service**

**Applicability:** LTIO-540 and TIO- 540 engines, rated at 300 horsepower (HP) or greater and all IO-540 engines, rated at any HP, that have been modified by supplemental type certificate (STC) listed below, by installing a turbocharger system. These engines are used on, but not limited to Piper PA 31, PA 31-350, and PA 31-325, Piper PA 32-301T, PA 32R-301T, Piper PA 60-700P, Piper PA 46-350P, Piper PA 31P-350, Appalachian Aircraft Corporation Gavilan (EL-1), and Cessna T-206 aircraft.

SA000214DE	SA00356DE	SA01925AT	SA09650SC
SA469NE	SA2062WE	SA2118NM	SE2122WE
SA2123NM	SA257CE	SA2657WE	SA2082WE
SA305SO	SA3513WE	SA3719SW	SA385WE

SA4942NM	SA529WE	SA530WE	SE1657NM
SA5699NM	SA811WE	SA840WE	SA01925AT
SA978WE	SE00357DE	SE01949AT	SE4941NM
SE978NM	SE17WE	SE21WE	SA539WE
SE4157NM	SE5869SW	SE40WE	SA909WE
SE6WE	SE7734SW	SE81WE	SE22WE
SA1648NM	SA4156NM	SA1747CE	SE60WE
SA2656WE	SA000214DE		

**Requirement:** To prevent crankshaft failure, and possible in-flight engine failure, accomplish the following:

**LTIO-540 Engines, TIO-540 Engines, Rated at 300 HP or Greater**

1. For engine S/Ns listed in Table 1 of Lycoming Mandatory SB 552, dated 16 August 2002, remove the crankshaft before further flight.

2. If the engine S/N is listed in Table 2 of FAA AD 2002-19-03, contact Lycoming, within 10 hours TIS to arrange for a crankshaft material test. Operation of the engine beyond 10 hours TIS after the effective date of this AD or while the material is being tested is not permitted.

If the crankshaft fails the material testing, remove the crankshaft before further flight. If the crankshaft passes the material testing, the crankshaft may be returned to service.

3. For engine S/Ns listed in Table 3 of FAA AD 2002-19-03, contact Lycoming, within 50 hours TIS or 6 months after the effective date of this AD, whichever occurs earlier, to arrange for a crankshaft material test. Operation of the engine beyond 50 hours TIS or 6 months after the effective date of this AD, whichever occurs earlier, or while the material is being tested is not permitted.

If the crankshaft fails the material testing, remove the crankshaft before further flight. If the crankshaft passes the material testing, the crankshaft may be returned to service.

**IO-540 Engines Modified by STC by Installing a Turbocharger System and All Engines That Have Been Overhauled**

4. For engines manufactured, overhauled or had the crankshaft replaced after March 1, 1997, and the engine S/N is not covered in paragraphs 1, 2 or 3 of this AD, determine the S/N of the crankshaft. If the crankshaft S/N is listed in Table 2 of Lycoming MSB 552, remove the crankshaft before further flight.

5. If the crankshaft S/N is listed in Table 4 of FAA AD 2002-19-03, contact Lycoming, within 10 hours TIS to arrange for a crankshaft material test. Operation of the engine beyond 10 hours TIS after the effective date of this AD or while the material is being tested is not permitted.

If the crankshaft fails the material testing, remove the crankshaft before further flight. If the crankshaft passes the material testing, the crankshaft may be returned to service.

6. If the crankshaft S/N is listed in Table 5 of FAA AD 2002-19-03, do the following contact Lycoming, within 50 hours TIS or 6 months after the effective date of this AD, whichever occurs earlier, to arrange for a crankshaft material test. Operation of the engine beyond 50 hours TIS or 6 months after the effective date of this AD, whichever occurs earlier, or while the material is being tested is not permitted.

If the crankshaft fails the material testing, remove the crankshaft before further flight. If the crankshaft passes the material testing, the crankshaft may be returned to service.

**Disposition of Crankshafts That Have Passed the Material Test**

A crankshaft that has passed the Lycoming material testing may be returned to service.

**Disposition of Crankshafts That Have Failed the Material Test**

After the effective date of this AD, do not install in any engine, any crankshaft that has failed the material test.

(FAA AD 2002-19-03 refers)

**Compliance:** Compliance is required at the times specified within the requirement of this AD.

**Effective Date:** DCA/LYC/201A – 20 August 2002  
DCA/LYC/201B – 25 September 2002

**DCA/LYC/202C FAA AD 2004-05-24 Zinc-Plated Crankshaft Gear Retaining Bolts - Removal**

**Applicability:** All AEIO-540, IO-540, LTIO-540, O-540, and TIO-540 series reciprocating engines with crankshaft gear retaining bolts, P/N STD-2209 installed, **except:**

O-540-F series engines to which DCA/LYC/197 applies and on which the bolt has not been subsequently replaced, and

Engines on which the bolt was installed during original assembly or was replaced by Lycoming per SB 554 after November 10, 1998, and

Engines with a bolt P/N STD-2209 supplied as part of a bolt replacement kit 05K19987, 05K23325, 05K23326, 05K23327, 05K23335, or 05K23336, and

Engines with single-drive dual magnetos.

**Note:** This revised AD expands the population of affected engines, and the introduction of five kits for replacing the crankshaft gear retaining bolts.

**Requirement:** To prevent the loss of all engine power and possible forced landing, accomplish the following:

**1. Engines that have complied with DCA/LYC/202B or earlier versions.**

No further action is required for AEIO-540, LTIO-540, IO-540, O-540, and TIO-540 series engines that have a bolt, P/N STD-2209 that was included in bolt replacement kit: 05K19987, 05K23325, 05K23326, 05K23327, 05K23335, 05K23336; or a bolt P/N STD-2209 that was installed by Lycoming per SB 554 after November 10, 1998, or an approved bolt with a P/N other than STD-2209.

If the installed crankshaft gear retaining bolt is not as described above, replace before further flight.

**2. Bolts that have been replaced during field maintenance.**

If the bolt on an AEIO, LTIO, IO, O, or TIO-540 series engine was replaced during field maintenance between November 27, 1996, and the effective date of this AD with a bolt that was **not** included in bolt replacement kit: 05K19987, 05K23325, 05K23326, 05K23327, 05K23335, or 05K23336 or an approved bolt with a P/N other than STD-2209, then replace the crankshaft gear retaining bolt with a new bolt supplied as part of gear bolt replacement kit: 05K19987, 05K23325, 05K23326, 05K23327, 05K23335, 05K23336, or an approved bolt with a P/N other than P/N STD-2209, before further flight.

**3. Engines listed by S/N in Lycoming MSB 554, Supplement 5, dated August 15, 2003 that have not previously complied with DCA/LYC/202B.**

If an engine model and S/N is listed in Lycoming MSB 554, Supplement 5, dated August 15, 2003, replace the crankshaft gear retaining bolt with:

A new bolt included in gear bolt replacement kit: 05K19987, 05K23325, 05K23326, 05K23327, 05K23335, 05K23336; or

Bolt STD-2247, or

An approved bolt with a P/N other than STD-2209.

**Note:** Information on replacing the bolt is contained in Lycoming SB No. 554, dated September 30, 2002.

(FAA AD 2004-05-24 refers)

- Compliance:**
1. Before further flight.
  2. Before further flight.
  3. Within next 10 hours TIS.

**Effective Date:** DCA/LYC/202B - 9 December 2002  
DCA/LYC/202C - 25 March 2004

#### **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/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 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.  IO-320-A1A, A2A, B1A, B1B, B1C, B1D, B1E, B2A, D1A, D1AD, D1B, D1C, E1A, E1B, E2A, E2B.  AEIO-320-D1B, D2B, E1A, E1B, E2A, E2B.  AIO-320-A1A, A1B, A2A, A2B, B1B, C1B.  LIO-320-B1A.
AEL65102-NST05	IO-320-C1A, C1B, C1F, F1A.  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.  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.  IO-360-B1A, B1B, B1C.  HO-360-A1A, B1A, B1B.

	<p>HIO-360-B1A, B1B.</p> <p>AEIO-360-B1B.</p> <p>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.</p> <p>IO-540-C1B5, C1C5, C2C, C4B5, C4B5D, C4C5, D4A5, D4B5, N1A5, N1A5D.</p>
--	---

<b>Cylinder head P/N</b>	<b>Installed on engine models</b>
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	<p>IO-540-J4A5, R1A5.</p> <p>TIO-540-C1A, E1A, G1A, H1A.</p>
AEL65102-NST38	<p>IO-360-F1A.</p> <p>TIO-540-AA1AD, AB1AD, AB1BD, AF1A, AG1A, AK1A, C1A, C1AD, K1AD.</p> <p>LTIO-540-K1AD.</p>
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/214 FAA AD 2008-08-17 Turbochargers – Inspection and Replacement****Applicability:**

Kelly Aerospace Power Systems (KAPS) turbochargers P/N 409170-0001 (Lycoming P/N LW-12463) fitted to (L)TIO-540-J2B and (L)TIO-540-J2BD engines with an engine S/N listed in table 1 of Lycoming Engines Mandatory Service Bulletin (MSB) No. 580, dated 15 February 2008 and turbochargers with a S/N listed in KAPS MSB No. 029, dated 1 February 2008. These engines are fitted to, but not limited to Piper PA31-350 Navajo Chieftain aircraft, Piper T1020 aircraft and Colemill Panther converted aircraft fitted with a 350 horsepower engine, and

KAPS turbochargers P/N 466412-0004 with a S/N listed in KAPS MSB No. 030, revision A, dated 1 April 2008 fitted to engines modified by RAM, and

KAPS overhauled turbochargers P/N 409170-9001 fitted to TIO-540-J2B, TIO-540-J2BD, TIO-540-N2BD and LTIO-540-N2BD engines with a turbocharger S/N listed in KAPS MSB No. 031 dated 28 February 2008, and

KAPS overhauled turbochargers P/N 465680-9005 fitted to TIO-540-V2AD and TIO-540-W2A engines with a turbocharger S/N listed in KAPS MSB No. 031, and

KAPS turbochargers that might have been overhauled or repaired by anyone other than KAPS, that used a P/N 441977-0023S or P/N 441977-0025S turbine housing which was sold as a spare part through the Aviall Company. These turbine housings have the date code of 1006 and might have been installed between October 2006 and 25 January 2008. The turbocharger data plates might include manufacturer's information other than KAPS information, such as:

Garrett P/N 409170-0001 fitted to TIO-540-J2B, TIO-540-J2BD, TIO-540-N2BD engines and LTIO versions of these engine models.

Garrett P/N 465680-0005 fitted to TIO-540-V2AD and TIO-540-W2A engines.

Garrett P/N 466412-0004 fitted to engines modified by RAM.

**Requirement:**

To prevent hazardous amounts of carbon monoxide entering the cabin, an increase in under-cowl temperatures and loss of tailpipe retention which could result in an inflight fire and loss of aircraft control, accomplish the following inspection of the turbocharger:

- a) Carefully remove the "V" band clamp around the turbocharger turbine housing at the turbocharger exhaust outlet. Take care not to move the exhaust tube and tailpipe assembly.
- b) Visually inspect the area that is captured by the "V" band clamp. Use a feeler gauge at the split line between the turbine housing flange and the exhaust tube flange all around the circumference. The maximum gap must not exceed 0.005 inch.
- c) Replace the turbocharger with a serviceable turbocharger before further flight, if the gap exceeds 0.005 inch.

d) If the maximum gap is not exceeded, metal stamp a 1/8" upper case "I" on the side of the turbocharger discharge flange. Information on the stamping location can be found in the MSBs referenced in this AD.

**Note:** A serviceable turbocharger is considered to be a unit that either passes the visual inspection in this AD, or is a unit with a S/N not listed in any of the referenced Lycoming Engine or KAPS MSBs.

(FAA AD 2008-08-17 refers)

**Compliance:** Within the next 10 hours TIS or at the next maintenance inspection, whichever occurs sooner, unless already accomplished.

**Effective Date:** 6 May 2008

**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-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.</b> <b>IO-320-A1A, A2A, B1A, B1B, B1C, B1D, B1E, B2A, D1A, D1AD, D1B, D1C, E1A, E1B, E2A, E2B.</b> <b>AEIO-320-D1B, D2B, E1A, E1B, E2A, E2B.</b> <b>AIO-320-A1A, A1B, A2A, A2B, B1B, C1B.</b> <b>LIO-320-B1A</b>
AEL65102-NST05	<b>IO-320-C1A, C1B, C1F, F1A.</b> <b>LIO-320-C1A</b>
AEL65102-NST06	<b>O-320-A1A, A2A, A2B, A2C, A3A, A3B, A3C, E1A, E1B, E2A, E2C, (also, an O-320 model with no suffix).</b> <b>IO-320-A1A, A2A.</b>
AEL65102-NST07	<b>IO-320- B1A, B1B.</b> <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> <b>IO-360-B1A, B1B, B1C.</b> <b>HO-360-A1A, B1A, B1B.</b> <b>HIO-360-B1A, B1B.</b> <b>AEIO-360-B1B.</b> <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> <b>IO-540-C1B5, C1C5, C2C, C4B5, C4B5D, C4C5, D4A5, D4B5, N1A5.</b>

Table 1 continued:

Cylinder Assembly P/N:	Installed on Engine Models:
AEL65102-NST12	<b>O-360-</b> 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>HO-360</b> –C1A. <b>LO-360</b> -A1G6D, A1H6. <b>HIO-360</b> -B1A, B1B, G1A. <b>LTO-360</b> -A1A6D. <b>TO-360</b> -A1A6D. <b>IO-360</b> -B1B, B1BD, B1D, B1E, B1F, B1F6, B1G6, B2E, B2F, B2F6, B4A, E1A, L2A, M1A, M1B. <b>AEIO-360</b> -B1B, B1D, B1E, B1F, B1F6, B1G6, B1H, B2F, B2F6, B4A, H1A, H1B. <b>O-540</b> -A4D5, B2B5, B2C5, B2C5D, B4B5, B4B5D, E4A5, E4B5, E4C5, G1A5, G2A5, H1A5, H1A5D, H1B5, H1B5D, H2A5, H2A5D, H2B5D. <b>IO-540</b> -C4B5, C4B5D, C4D5, C4D5D, D4A5, D4B5, D4C5, N1A5, N1A5D, T4A5D, T4B5, T4B5D, T4C5D, V4A5, V4A5D <b>AEIO-540</b> -D4A5, D4B5, D4C5, D4D5.
AEL65102-NST26	<b>IO-540</b> -J4A5, R1A5. <b>TIO-540</b> -C1A, E1A, G1A, H1A.
AEL65102-NST38	<b>IO-360</b> -F1A. <b>TIO-540</b> -AA1AD, AB1AD, AB1BD, AF1A, AG1A, AK1A, C1A, C1AD, K1AD. <b>LTIO-540</b> -K1AD.
AEL65102-NST43	<b>O-360</b> -J2A. <b>O-540</b> -F1B5, J1A5D, J1B5D, J1C5D, J1D5D, J2A5D, J2B5D, J2C5D, J2D5D, J3A5, J3A5D, J3C5D. <b>IO-540</b> -AB1A5, W1A5, W1A5D, W3A5D.
AEL65102-NST44	<b>O-540</b> -L3C5D.

**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/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)

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

**2013-21-02 HET Turbocharger Turbine Wheel – Inspection and Replacement**

**Effective Date:** 13 November 2013

**2015-10-06 Exhaust System – Inspection**

**Effective Date:** 2 July 2015

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

**Effective Date:** 3 November 2015

**2017-11-10 Engine Exhaust System – Inspection**

**Applicability:** All TIO-540-AJ1A engines.

**Effective Date:** 28 June 2017

**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

**\* 2024-21-02 Cancelled – FAA AD 2026-04-11 refers**

**Effective Date:** 8 April 2026

**\* 2026-04-11 Connecting Rod Assemblies and Bushing - Inspection**

**Applicability:** Lycoming engines that have an affected P/N part fitted, and were assembled within the ship date range specified in Table 1 to paragraph (c) of FAA AD 2026-04-11.

**Note 1:** Since the issue of FAA AD 2024-21-02, the shipping date range for potentially affected parts that may be subject to connecting rod failure has been expanded, and additional parts that are eligible for installation have been identified. FAA AD 2026-04-11 retains the requirements in superseded FAA AD 2024-21-02 and expands the AD applicability.

**Note 2:** Affected P/N parts are known to be installed on 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, IO-580 series, IO-720 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-290 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:** 8 April 2026