

# AIRWORTHINESS DIRECTIVES FINAL RULES: 91-21-01 R1

**CITATION:** This information is not available.

**PAGE NUMBER:**

**DOCKET NUMBER:** 91-ANE-29

**AMENDMENT:** 39-9470

**AD NUMBER:** 91-21-01 R1

**SUBJECT HEADING:** Textron Lycoming Model TIO-540-S1AD Engines

**ACTION:**

**SUMMARY:**

**DATES:** Effective June 27, 1996.

**ADDRESSES:**

**FOR FURTHER INFORMATION CONTACT:**

**SUPPLEMENTARY INFORMATION:**

**REGULATORY TEXT:** 91-21-01 R1 Textron Lycoming: Amendment 39-9470. Docket 91-ANE-29.

Revises AD 91-21-01, Amendment 39-8048, which superseded AD 89-12-04, Amendment 39-6214.

Applicability: Textron Lycoming Model TIO-540-S1AD reciprocating engines installed on but not limited to Piper PA-32 series aircraft. NOTE: This airworthiness directive (AD) applies to each engine identified in the preceding applicability provision, regardless of whether it has been modified, altered, or repaired in the area subject to the requirements of this AD. For engines that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the owner/operator must use the authority provided in paragraph (c) to request approval from the Federal Aviation Administration (FAA). This approval may address either no action, if the current configuration eliminates the unsafe condition, or different actions necessary to address the unsafe condition described in this AD. Such a request should include an assessment of the effect of the changed configuration on the unsafe condition addressed by this AD. In no case does the presence of any modification, alteration, or repair remove any engine from the applicability of this AD.

Compliance: Required as indicated, unless accomplished previously.

To prevent cracking or distortion of engine exhaust system flanges, V-band coupling, and pipes, which could result in engine compartment fire and smoke entering the cabin with possible loss to the aircraft, accomplish the following:

(a) For engines which have not complied with AD 89-12-04, paragraph (d), or Textron Lycoming Service Bulletin (SB) No. 484, Part II, dated January 30, 1989, on the effective date of this AD, accomplish the following:

(1) Within 25 hours time in service (TIS) after the effective date of this AD, install Crossover Exhaust Pipe Kit (05K21125) in accordance with Textron Lycoming SB No. 484, Part II, dated January 30, 1989, and also install new design One-piece Exhaust Riser Kit (05K21503) and Manifold Retainer Kit (05K19650-S) in accordance with Textron Lycoming SB No. 499A, dated June 14, 1991. NOTE: Instructions and notes relating to marking the slip joints, rotating the exhaust pipes for alignment, and maintaining clearances at critical locations during the above installation are contained in Textron Lycoming SB No. 499A, dated June 14, 1991.

(2) Thereafter, at intervals not to exceed 100 hours TIS, accomplish the following:

(i) Inspect the exhaust system for heat damage, distortion, cracks or excessive wear in accordance with Textron Lycoming SB No. 484, Part II, dated January 30, 1989.

(ii) Inspect the exhaust system for clearance dimensions, proper fastener torque and slip joint engagement in accordance with paragraphs 10, 11, and 12 of Textron Lycoming SB No. 499A, dated June 14, 1991.

- (iii) Repair or replace damaged parts with serviceable parts prior to further flight.
- (b) For engines that have complied with all portions of AD 89-12-04, or Textron Lycoming SB No. 484, dated January 30, 1989, on the effective date of this AD, accomplish the following:
- (1) Within 25 hours TIS after the effective date of this AD, and thereafter, at intervals not to exceed 25 hours TIS until the new design One-piece Exhaust Riser Kit (05K21503) has been installed in accordance with paragraph (b)(2)(i) of this AD, accomplish the following:
- (i) Inspect all exhaust system joints, flanges, couplings and brackets for heat damage, distortion, cracks or excessive wear, in accordance with Textron Lycoming SB No. 484, dated January 30, 1989.
- (ii) Inspect the exhaust system for proper slip joint engagement by measuring distances between pipe end points in accordance with Appendix 1 of this AD.
- (iii) If damage is observed in the exhaust system or measurements exceed allowable dimensions, repair or replace parts with serviceable parts, as necessary prior, to further flight.
- (iv) Reassemble and align exhaust system in accordance with Textron Lycoming SB No. 484, dated January 30, 1989, and Appendix 1 of this AD.
- (2) Within 75 hours TIS after the effective date of this AD, accomplish the following:
- (i) Install new design One-piece Exhaust Riser Kit (05K21503) and manifold retainer kit (05K19650-S) in accordance with Textron Lycoming SB No. 499A, dated June 14, 1991.
- (ii) Thereafter, at intervals not to exceed 100 TIS, perform exhaust system inspections specified in paragraph (a)(2)(i) and (a)(2)(ii) of this AD. Operators need to determine the minimum engagement of only exhaust pipes LW-16102 and LW-16103 by referring to Appendix 1 of this AD.
- (iii) The repetitive 25 hours TIS inspections required by paragraph (b)(1) of this AD are not required after installation of the new design One-piece Exhaust Riser Kit (05K21503) and the Manifold Retainer Kit (05K19650-S) in accordance with paragraph (b)(2)(i) of this AD.
- (c) An alternative method of compliance or adjustment of the initial compliance time that provides an acceptable level of safety may be used if approved by the Manager, New York Aircraft Certification Office. The request should be forwarded through an appropriate FAA Maintenance Inspector, who may add comments and then send it to the Manager, New York Aircraft Certification Office. NOTE: Information concerning the existence of approved alternative methods of compliance with this AD, if any, may be obtained from the New York Aircraft Certification Office.
- (d) Special flight permits may be issued in accordance with sections 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) to operate the aircraft to a location where the inspection may be performed.
- (e) The actions required by this AD shall be done in accordance with the following Textron Lycoming SB's:

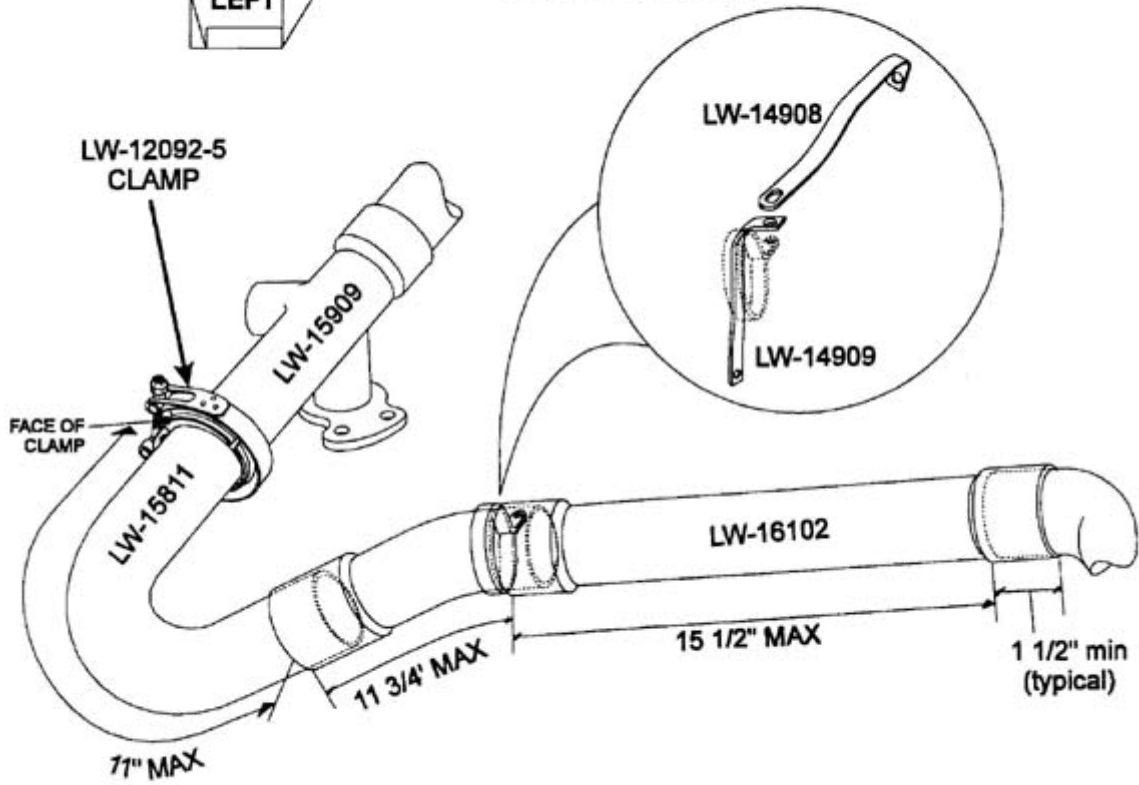
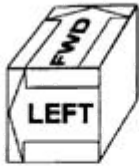
Document No.	Pages	Date
No. 484	1-4	January 30, 1989
Total pages: 4.		
No. 499	1-4	June 14, 1991
Total pages: 4.		

This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51 as of November 4, 1991. Copies may be obtained from Textron Lycoming/Subsidiary of Textron Inc., Williamsport, PA 17701; telephone (717) 327-7278, fax (717) 327-7022. Copies may be inspected at the FAA, New England Region, Office of the Assistant Chief Counsel, 12 New England Executive Park, Burlington, MA; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

(f) This amendment becomes effective on June 27, 1996.

APPENDIX I  
91-21-01 R1

VIEW-AFT LOOKING FORWARD  
ON TOP OF ENGINE



NOTE: ALL DIMENSIONS TAKEN ON OUTSIDE  
OF TUBE BENDS

FOOTER: