

*Forced
Aeromotive
Technologies*

Instructions for Continued Airworthiness

FAA-STC SE02689LA

Belt-Driven Supercharger on IO-360-M1A Engines

NOTICE

This document must be referenced on Block 8 of FAA form 337 and added to the aircraft permanent record as required by 14 CFR Part 91, §91.417(a)(2)(vi) when the reference FAA-STC modification is accomplished on eligible aircraft. This document complies with the requirements of 14 CFR Part 23, §23.1529, in accordance with 14 CFR Part 23, Appendix G.


Model No. _____

Serial No. _____

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LOG OF REVISIONS

Revision Number	Revision Date	Approval	Affected Pages	Description of Revision
IR	6/13/2017		All	New
A	9/7/2019		5	“up” corrected to “down”

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1. INTRODUCTION

This document outlines the compliance with 14 CFR 33.4 “Instructions for Continued Airworthiness” for SBARS LLC. Supplemental Type Certificate (STC) No. SE02689LA and is supplied with the STC.

NOTICE:

Section 15, titled “Airworthiness Limitations” is FAA approved and specifies maintenance required under 43.16 and 91.403 of the Federal Aviation Regulations unless an alternative program has been FAA approved. To remain in compliance with the STC, the aircraft shall be maintained in accordance with these limitations.

This document supplements or supersedes the “DA 40 Series Airplane Maintenance Manual”, document number 6.02.01, dated April 1, 2013 or later approved revision and Lycoming Operation and Installation Manual, P/N 60297-36 and Lycoming Engine Parts Catalog, P/N PF-306-14 only in those areas listed herein.

PRECAUTIONS

When operating the engine with the cowling removed care should be taken to remain clear of, and keep all objects clear of, the rotating supercharger drive belt.

2. GENERAL DESCRIPTION

STC SA02688LA installs supercharged Lycoming Engines Model No. IO-360-M1A engines in the Diamond model DA 40 aircraft. Intake air is ducted to the supercharger through the existing cowling NACA duct via a panel air filter to an airbox attached to the inlet of the supercharger. The airbox has an alternate air valve prior to the supercharger inlet that is controlled by the original cable. The supercharger outlet air is ducted to the servo via a short silicone duct. The supercharger has a self contained lubrication system and is not connected to the engine oil system. Manifold pressure is pilot controlled utilizing the existing control system

3. CONTROL, OPERATION INFORMATION, SPECIAL PROCEDURES

Refer to basic DA 40 Series Airplane Maintenance Manual, and basic Lycoming Operation and Installation Manual.

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4. SERVICING INFORMATION

Refer to basic DA 40 Series Airplane Maintenance Manual and basic and Lycoming Operation and Installation Manual.

5. MAINTENANCE INSTRUCTIONS

Refer to basic DA 40 Series Airplane Maintenance Manual, Lycoming Operation and Installation Manual, and Lycoming Engine Parts Catalog for information other than what is provided below.

5.1 REPLACEMENT OF SUPERCHARGER BELT

1. Remove the propeller.
2. Loosen the two bolts securing the tensioning idler to the supercharger mount and remove and replace the belt.
3. After placing the new belt on the pulleys, adjust the tension by pressing the idler pulley down against the belt and tightening the adjustment bolts. Tighten the belt until a 10-11 lb. pull on the center of the upper portion of the belt results in a .25 inch of belt deflection.
4. After 2 flight hours re-check belt tension. Tighten the belt until a 10.0 to 11.0 pound. pull on the center of the lower portion of the belt results in a .25 inch of belt deflection.

5.2 OIL CHANGE, SELF LUBRICATED SUPERCHARGERS

Oil should be changed every 100 hours. Oil level should be checked every 50 hours. The oil dipstick at the top of the supercharger is removed with a slotted screwdriver.

Checking the oil level:

1. Ensure that the gasket is located on the dipstick base.
2. Thread the clean dipstick into the unit until it seats.
3. Once the dipstick has seated, remove the dipstick from the unit. Fluid should register on the black end of the dipstick.
4. **DO NOT OVERFILL.** Drain excess fluid from the unit if it is above the maximum level on the dipstick.

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Changing the oil:

Empty the supercharger of oil by opening the drain at the bottom. When completely drained refill the supercharger with up to 2.5 ounces of oil. Verify proper oil level by using the dipstick. Do not overfill. USE ONLY APPROVED OIL SUPPLIED BY

Forced Aeromotive Technologies, Inc.
7161 S. Peoria Street 18E
Englewood, CO 80112
www.forcedaeromotive.com

6. TROUBLESHOOTING INSTRUCTIONS

For troubleshooting guidance contact Forced Aeromotive Technologies, Inc. for assistance.

Forced Aeromotive Technologies, Inc.
7161 S. Peoria Street 18E
Englewood, CO 80112
www.forcedaeromotive.com

7. REMOVAL AND REPLACEMENT INFORMATION

Remove and replace as specified in Forced Aeromotive Installation Drawing II-DA-40, Rev. B, dated 6/17/2013 or later FAA approved revision. For replacement parts contact Forced Aeromotive at the following address.

Forced Aeromotive Technologies, Inc.
7161 S. Peoria Street 18E
Englewood, Co 80112
www.forcedaeromotive.com

8. DIAGRAMS

Refer to basic DA 40 Series Airplane Maintenance Manual, Lycoming Operation and Installation Manual, and Lycoming Engine Parts Catalog.

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9. INSPECTION REQUIREMENTS

Conduct routine inspections on the engines, airframe, and propeller in accordance with appropriate basic Lycoming Engines Maintenance Manual, basic DA 40 Series Airplane Maintenance Manual, and basic Hartzell Maintenance Manual except as noted below.

9.1 INSPECTION OF SUPERCHARGER BELT

For every flight 100 hours, conduct routine inspections on the supercharger belt for wear. Replace worn belt as necessary.

There are no mandatory replacement times on any new components.

10. APPLICATION OF SPECIAL TREATMENTS

None

11. DATA

None

12. SPECIAL TOOLS

None Required

13. ADDITIONAL INFORMATION FOR COMMUTER CATEGORY AIRCRAFT

Not Applicable

14. RECOMMENDED OVERHAUL PERIOD

Supercharger: 1000 Hours after STC installation

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15. AIRWORTHINESS LIMITATIONS

NOTICE:

This section is FAA approved and specifies maintenance required under 43.16 and 91.403 of the Federal Aviation Regulations unless an alternative program has been FAA approved. To remain in compliance with the STC, the aircraft shall be maintained in accordance with these limitations.

There are no changes to the airworthiness limitations of the IO-360-M1A engine or Diamond DA 40 aircraft from those, which are listed in basic Lycoming Engines Maintenance Manual, or Basic Diamond Maintenance Manual:

There are no changes to the airworthiness limitations of the propeller from those which are listed in the basic Diamond Maintenance Manual or basic Hartzell Propeller Maintenance Manual.

16. REVISION

Each time this ICA is revised or reissued, the revised ICA will be distributed to operators using a Service Letter/Bulletin by Forced Aeromotive Technologies. This revision will include a new Log of Revisions page along with the revised pages. The lower right hand corner of each revised page will reflect the revision letter. That portion of text or an illustration, which has been revised by the addition of, or change in, information is denoted by a solid revision bar located adjacent to the area of change and placed along the outside margin of a page. Revision bars show only information changed within latest revision.

17. ASSISTANCE

For assistance with ICA issues not addressed herein, contact Forced Aeromotive Technologies at the following address or phone number.

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