Eggenfellner Installation Manual

Step by step installation procedures for installing your Eggenfellner Powerplant in a Vans RV series aircraft.

Document Revision History:
- 04-Sep-2003 - Updated Chapter 6 wiring diagrams
- 12-Jun-2003 - Added Cowl Ventilation to Chapter 7
- 21-Feb-2003 - Posted Chapters 7 and 8
- 03-Nov-2002 - First posting of chapter 6
- 05-Sept-2002 - First public posting of chapters 1-5
- 29-Aug-2002 - DRAFT includes first feedback
NOTICE - Your Eggenfellner firewall-forward package is an "experimental" aircraft powerplant. Installation, by an amateur or licensed airframe mechanic, must comply with all relevant legal, and customary regulations and guidelines for experimental aircraft in accordance with the governing body of the country in which the aircraft will be registered and flown. Deviation from the design, installation, or manufacturer's statement of intended use of this engine package shall be discussed with Eggenfellner Aircraft Inc. in advance of use and may result in void of warranty. Eggenfellner Aircraft is not responsible for misuse, neglect, faulty practices or materials employed by the builder, owner, or operator of an aircraft using this powerplant. Workmanship and materials employed in the installation of this powerplant must be in accordance with "best practice" for aircraft construction, materials and maintenance. Reference FAA publications AC43.13-1A and AC43.13-2A for information related to acceptable methods, techniques, and practices when working on aircraft.

Thank you for purchasing an Eggenfellner powerplant. With proper installation, care and maintenance, your powerplant should deliver many years of reliable and economical service. Refer to your Eggenfellner 2.5L Maintenance Video and web site for operational and maintenance details.

This manual provides a general guideline for achieving an airworthy installation of your engine package. Although the manual depicts an installation in a Vans RV-9A, the general information and procedures can be applied to all models of RV's, Glastars, and other airframes. Because every aircraft is unique to some extent, and builders exhibit a wide variety of skills and techniques, it is impossible to define a fully standardized engine installation. Eggenfellner Aircraft comes as close as possible to providing a consistent and trouble-free installation, but the builder must posses the knowledge and skills to assure that the powerplant is integrated with the airframe and supporting systems in an airworthy manner.

This manual will attempt to deliver the required knowledge.

The required skills include basic aircraft mechanical, electrical, plumbing, and sheet metal work.
Along with mounting the engine to the firewall, you will be installing batteries and cables, fuel lines, firewall fittings, cables, hoses, and harnesses. You will be modifying your fiberglass cowling to fit the engine oil cooling system and wiring several engine sensors. Your airframe will be modified to include a "full loop" fuel system and duplex fuel selector valve. You will need to operate a portable engine hoist, and use a portable drill and drill press. The installation will involve a moderate level of stainless steel work. When working with stainless steel, you will need sharp, high-quality drill bits, tin-snips, and files.

This manual describes a soup-to-nuts installation of the 2.5 Liter powerplant in a Vans RV-9A. Other installations are very similar. Ideally, the builder should be in the fuselage construction stage of his/her project. If you are beyond this stage or are installing the powerplant into a different model of aircraft or an existing experimental aircraft, your personal creativity will be called upon to interpret and apply the guidelines described herein.

Be sure to ask the factory when in doubt about the correct procedure for your airplane and contact a licensed aircraft mechanic, inspector, or EAA technical adviser. Don't overlook the immeasurable value of the various Internet newsgroups for ongoing and up to the minute expertise. We prefer to leverage the experience of our existing customers as a means of front-line support, and we ask that you also provide your knowledge and share your experiences. With the rapidly growing number of RV builders choosing to fly modern Eggenfellner powerplants, you'll find a thriving group of enthusiasts like yourself sharing their experiences, ideas, debate, and friendship. Finally, don't miss out on the airshow circuit. Eggenfeller is proud to display at Oshkosh, Sun-N-Fun, and many other events. Stop by, say hello!

Internet Newsgroups & Websites:

www.eggenfellneraircraft.com - Home base - Jan Eggenfellner


www.climbandcruise.com - Quinti Propellers - Bob Warfel


www.vansaircraft.com - Home base for Vans Aircraft Inc.

www.vansairforce.org/links/links.html - Vans Air Force of Western Canada

www.metronet.com/~dreeves/vaf.htm - Vans Air Force World-Wide

In the spotlight...

The aircraft pictured throughout this manual is a customer-owned RV-9A completed in 2003. The powerplant is an Eggenfellner 2.5L firewall-forward package delivered in June 2002. The owner and builder of the plane has customized a few things, but the installation sequence and guidelines remain common to all packages. I will indicate all references to these optional customizations. You can decide if these ideas are right for your own plane.

Please send us photos of your installations and any installation-related details you would like to share with your fellow builders. We urge you to share with the group, details of anything you have changed from the original design. It is very important that you understand that there is often a valid reason for why something on your engine was put together a particular way. If you would like to deviate or change anything, please be aware that an airplane is not always the right place to test your new idea. Airplanes are not forgiving in this respect. You can't just pull over to the side of the road if your idea proves not to work as expected. We assume that the installer is either a knowledgeable mechanic, or that the assistance of such a person is sought and secured. We require that the installer/s become familiar with and apply the guidelines described in this manual.

As always, we look forward to your feedback and suggestions on how we can improve our products, documentation, or service. If you feel we have missed an important point, let us know, or better yet, send us a photo and a few related words. Obviously, this manual cannot cover every possible detail, but we can try!

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Basic Navigation

The first chapter of this manual covers many topics of interest to installers, starting at the purchase decision. There are many things to plan and prepare for prior to your engine's arrival. We recommend you read through this material and become familiar with the installation sequence and tasks. Once you are ready to begin the installation, the remaining chapters are oriented along a sequence of photographs and checklists, with only as much narrative as required to get the point across.