ES7024-11 (TCM P/N 656872)  
ES7024-14 (TCM P/N 657199)  
ALTERNATOR FAN AND PULLEY REPLACEMENT  

INTRODUCTION:  

It has come to the attention of Hartzell Engine Technologies LLC (HET), that certain Cirrus Design SR22 airplanes may experience failures in the cooling fan of the backup alternator. During normal operation of the ES7024-11 (TCM 656872) & ES7024-14 (TCM 657199) backup alternator, a variable resonance condition with the cooling fan currently installed, may result in the development of cracks in portions of the blades. This condition, left uncorrected, may lead to the loss of the entire fan assembly with the potential loss of alternator function.  

This Service Bulletin is being issued to mandate the replacement of both the fan and pulley assemblies on the existing ES7024(-11 & -14) alternators and to announce the availability of an improved pulley assembly which when installed will remedy the above condition.  

COMPLIANCE:  

NOTE:  

Either Compliance time I or II may be chosen. Compliance time I will allow additional flight operation while Compliance time II allows only a single flight to effect repair.  

I. Prior to next flight, remove the backup alternator belt from the alternator. It is permissible to secure the existing serviceable belt to the engine for later reinstallation. Flight may continue not to exceed ten (10) hours time in service or when the next maintenance event is reached, the first to occur.  

II. A ferry permit is required to deliver the aircraft to a suitable facility for repair of the backup alternator.  

EFFECTIVITY:  

All Cirrus Design SR22 Airplanes utilizing a Hartzell Engine Technologies ES7024-11 or ES7024-14 backup alternator installed per the serial numbers listed below.  

Suspect Serial Numbers - ES7024-11  

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PROCEDURE:

**CAUTION:**

This procedure must be performed by competent and qualified personnel familiar with engine and airframe maintenance that is specific to the electrical system.

**CAUTION:**

Do not depend on this Service Bulletin for gaining access to the aircraft or engine. This instruction requires that you use the applicable manufacturers maintenance manuals. In addition, any preflight or inflight operational checks require use of the appropriate AFM or POH.

*For Compliance Time I.*

**Disabling Backup Alternator**

1. Remove all electrical power from the aircraft before beginning work. Assure that the aircraft battery has been disconnected and that no external power is hooked up.

2. Access the aircraft backup alternator by removing the engine cowling as required in accordance with instructions contained in the Cirrus Design aircraft maintenance manual.

3. Loosen the alternator from the mount and slide the belt off. Re-tighten the alternator to the mount per the applicable aircraft or engine manufacturers maintenance manuals. Check the alternator belt for condition, if serviceable it may be reused. Using cable ties or safety wire, secure the existing belt to the engine or other suitable structure for re-installation later. Although not preferred, the belt may also be cut and removed.

4. Utilizing the applicable aircraft and engine manufacturers maintenance manuals, install any portion of the aircraft removed to gain access.
For Compliance Time I (cont’d).

5. Make a temporary placard indicating the backup alternator is disabled and place it in plain view of the pilot. Prior to the accumulation of ten (10) hours time in service or at the next maintenance event, proceed to the replacement instructions below. It is recommended that airplane operation be limited to taking the airplane to an authorized service facility to replace the alternator fan and pulley. All operations should be limited to day VFR flight only.

6. Make an appropriate log book entry noting the work performed and that the backup alternator has been temporarily disabled.

For Compliance Time I or II.

Replacing Alternator Fan and Pulley

1. Remove all electrical power from the aircraft before beginning work. Assure that the aircraft battery has been disconnected and that no external power is hooked up.

2. Access the aircraft backup alternator by removing the engine cowling as required in accordance with instructions contained in the Cirrus Design aircraft maintenance manual.

3. Loosen the alternator from the mount and slide the belt off. Retighten alternator to mount.

4. Remove the alternator pulley nut, washer, pulley, and fan. The removal must be done using a nylon strap wrench (do not use rubber or chain). Apply a section of suitable alternator “V” belt of a length sufficient to wrap at least 320 degrees around and into the groove with the belt higher than the circumference of the pulley. To hold the pulley for the nut removal, place the strap wrench over the belt and pulley and tighten strap. This may be accomplished on or off the airplane.

5. Install a new TCM P/N 657582 fan, and new TCM P/N 657583 pulley as shown in Figure 1. Use the existing pulley nut and the locking washer. Take care when removing the locking washer as it is a special device which has two pieces. The sharp serrations must face outward while the shallow ramp must face each other. Using the strap wrench per instruction 4 above, torque the pulley nut to 35 to 45 ft-lbs.

6. Install the alternator belt (new or existing) on to the pulley and tension per instructions contained in the applicable manufacturers maintenance manual.

7. Perform an engine run to check the security and performance of the backup alternator installation and proceed to the “Return to Service” section.

![Figure 1 - Alternator Part Replacement](image-url)
RETURN TO SERVICE:

NOTE:
The alternator in question is only installed in Cirrus Design SR22 aircraft utilizing a backup alternator system. Check for the latest publication issued by Cirrus Design regarding aircraft model, serial number and warranty procedures.

1. Utilizing the applicable aircraft and engine manufacturers maintenance manuals, install any portion of the aircraft removed to gain access.

2. Upon successful completion of this service bulletin by repair of the alternator, make an appropriate log book entry of compliance.

PARTS REQUIRED:
One (1) each, fan, TCM part number 657582, and one (1) each, pulley, TCM part number 657583.

AVAILABILITY OF PARTS:
Parts to support this service bulletin must be obtained from an authorized Teledyne Continental Motors (TCM) Distributor. Any supplementary part such as the alternator belt, must be obtained from the applicable engine or airframe manufacturer.

WARRANTY STATEMENT:
The sole warranty applicable to this service publication is related to the material listed in the “Material Required” section above provided the parts are obtained through an authorized Teledyne Continental Motors (TCM) Distributor.

Other warranty may apply per the terms and conditions in the aircraft or engine manufacturers Limited Warranty Policy. All requests for labor related to this publication must be forwarded to the the airframe and/or engine manufacturer per the requirements contained in their Limited Warranty policies as applicable.

This publication does not imply or state any responsibility for the workmanship of any person or entity performing work or maintenance on the turbocharger, engine, or aircraft.

CONTACT INFORMATION:
If you have any questions concerning the instructions in this service bulletin, please contact Hartzell Engine Technologies Technical Support at 888-461-6077.

Questions concerning aircraft service or operation must be forwarded to the applicable manufacturer of that product.