



2900 Selma Highway
Montgomery, AL 36108 USA
Tel: 334-386-5400 Fax: 334-386-5450

Service Bulletin

Compliance is Considered Mandatory

Bulletin No. 033

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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

F012805	F012806	F012807	F013887	F013888	F073050	G051889	G051890	G061199	G061200
G061201	G061202	G061203	H024787	H051538	H051539	H051540	H051541	I031197	I051109
I051110	I051111	I052679							

Suspect Serial Numbers - ES7024-14

H025905	H025906	H025907	H025908	H025909	H051542	H060577	H060578	H060579	H060580
H060581	H060582	H060583	H060584	H060585	I031198	I031199	I031200	I031201	I031202
I031203	I041577	I041578	I041579	I041580	I041581	I041582	I041583	I041584	I041585
I041586	I041587	I041588	I041589	I041590	I041591	I041592	I041593	I041594	I041595
I050132	I050133	I050134	I050135	I050136	I050137	I050138	I050139	I050140	I050141
I050142	I050143	I050144	I050145	I050146	I050147	I050148	I050149	I050150	I050151
I050507	I050508	I050509	I050510	I050511	I050512	I050513	I050514	I050515	I050516
I050517	I050518	I050519	I050520	I050521	I050522	I050523	I050524	I050525	I052606
I052607	I052608	I052609	I052610	I052611	I052612	I052613	I052614	I052615	I052616
I052617	I052618	I052619	I052620	I052638	I052639	I052640	I052641	I052642	I052643
I060752	I060753	I060754	I060755	I060756	I060757	I060758	I060759	I061324	I061325
I061326	I061730	I061731	I061732	I061733	I061734	I061735	I061736	I061737	I061738
I061739	I061740	I061741	I061742	I061743	I061744	I061745	I061746	I061747	I061748
I061749	I061750	I061751	I061752	I062099	I062100	I062101	I062102	I062103	I062104
I062105	I062106	I062107	I062108	I062109	I062110	I062111	I062112	I062113	I062569
I062570	I062571	I062572	I062573	I062574	I062575	I062576	I062577	I062578	I062601
I062602	I062603	I062604	I062605	I062606	I070067	I070068	I070069	I070070	I070071
I070072	I070073	I070265	I070266	I070267	I070268				

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.

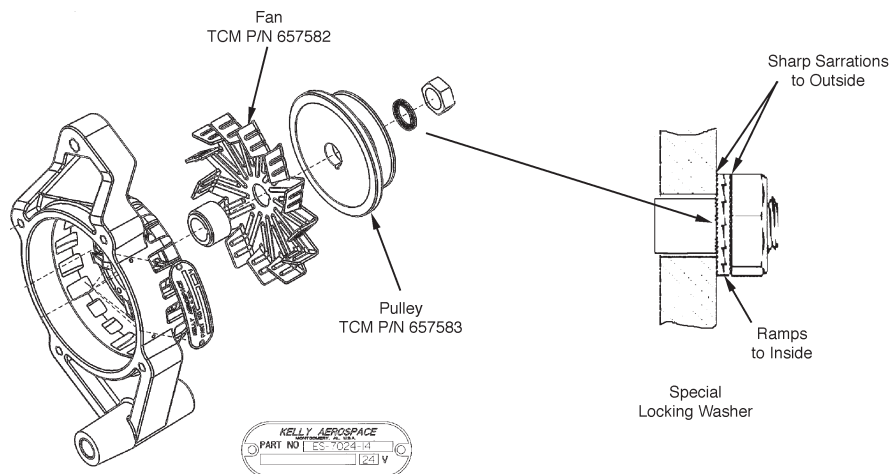


Figure 1 - Alternator Part Replacement

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.