

## Service Bulletin

**Title:** Bell 407 Driveshaft Mounted Pulley and Drive Ring installation inspection

**Date:** 4 December 2014

**Applicability:** Owner/Operators of Bell 407 Helicopters with STC SR00222DE Air Conditioning System  
**(This service bulletin supersedes the SB407-101 Service Bulletin)**

**Reference:** FAA / STC # SR00222DE, Bell 407 Air Conditioning System  
 407EC-300 Compressor Installation Drawing  
 407EC-200M-2 Instructions for Continued Airworthiness (ICA)

**Compliance:** Part 1: (One time) Within 25 hours of flight time after receipt of this bulletin

Part 2: (Repetitive) Every 100 or 150 hours inspection (following Bell Helicopter Maintenance Manual chapter 12 grease lubrication intervals for tail rotor driveshaft splines)

### A. Discussion:

Proper torquing of the compressor pulley and installation of the drive ring assembly is critical to ensure trouble free operation of the air conditioner system. There have been field reports of the compressor pulley loosening and causing damage to the oil cooler blower shaft.

The purpose of this bulletin is to expand and clarify the pulley and drive ring installation and inspection procedures.

This bulletin also introduces a new minimum and maximum torque for the pulley installation procedure for installations prior to kit S/N AC407-080 that have not upgraded using SB 407-301 and still have P/N S-3532EC-1 pulley and P/N S-3532EC-3 drive ring and current installations with P/N S-3532EC-4 pulley and P/N S-3532EC-5 drive ring installed. It also shows configuration differences of the S-3532EC-5 drive ring.

### B. Weight & Balance:

There is no change in weight due to the inspection and possible rework.

### C. Revision History:

Revision	Issue Date	Inserted By	Approved	Description of Changes
N/C	8/19/14	RL	MK	Initial Release
A	8/25/14	RL	MK	Clarified inspection/rework instructions
B	8/29/14	RL	MK	Corrected STC number in header
C	10/10/14	BD	MK	Added old configuration to discussion, clarified Part 2 instructions, edited callouts in figure 4.1, added note to address placard



thread the S-3532EC-4/-1 drive pulley onto the oil cooler blower shaft and torque to 450 in-lbs. Apply grease to the splines of the S-3532EC-5/-3 drive ring according to Bell requirements for the adjacent flex coupling spline (refer to BHT-407-MM-2, Table 12-2).

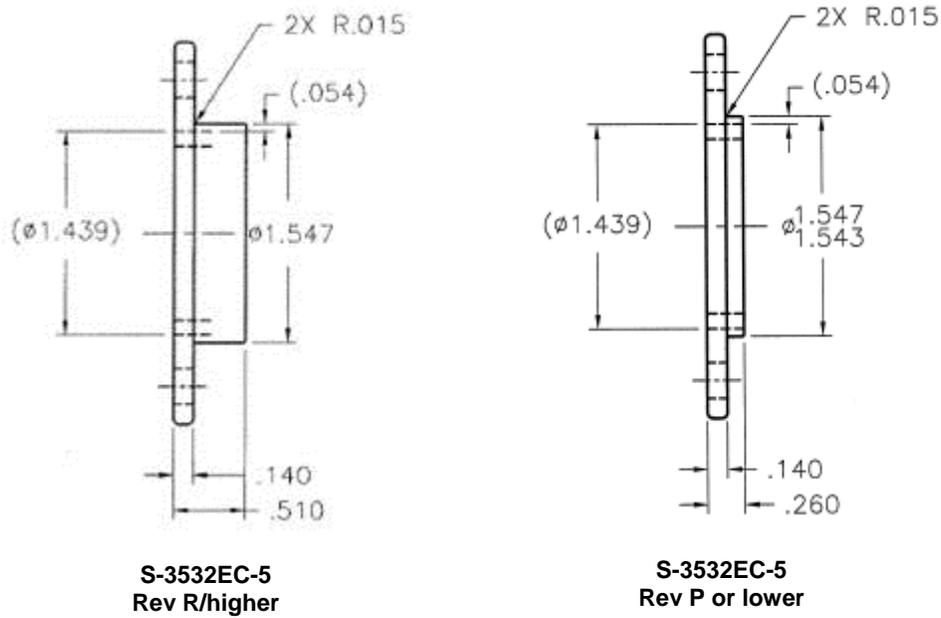
#### CAUTION

Under no circumstance should the installer start at a high pulley torque and back off to achieve alignment by rotating the pulley counterclockwise. Backing off on the torque during installation is likely to result in loosening of the pulley during operation, leading to damage to the oil cooler blower shaft spline. Alignment must be reached while rotating the pulley clockwise and increasing the torque of the pulley to ensure proper installation. Do not exceed 600 in-lbs. when torquing the pulley.

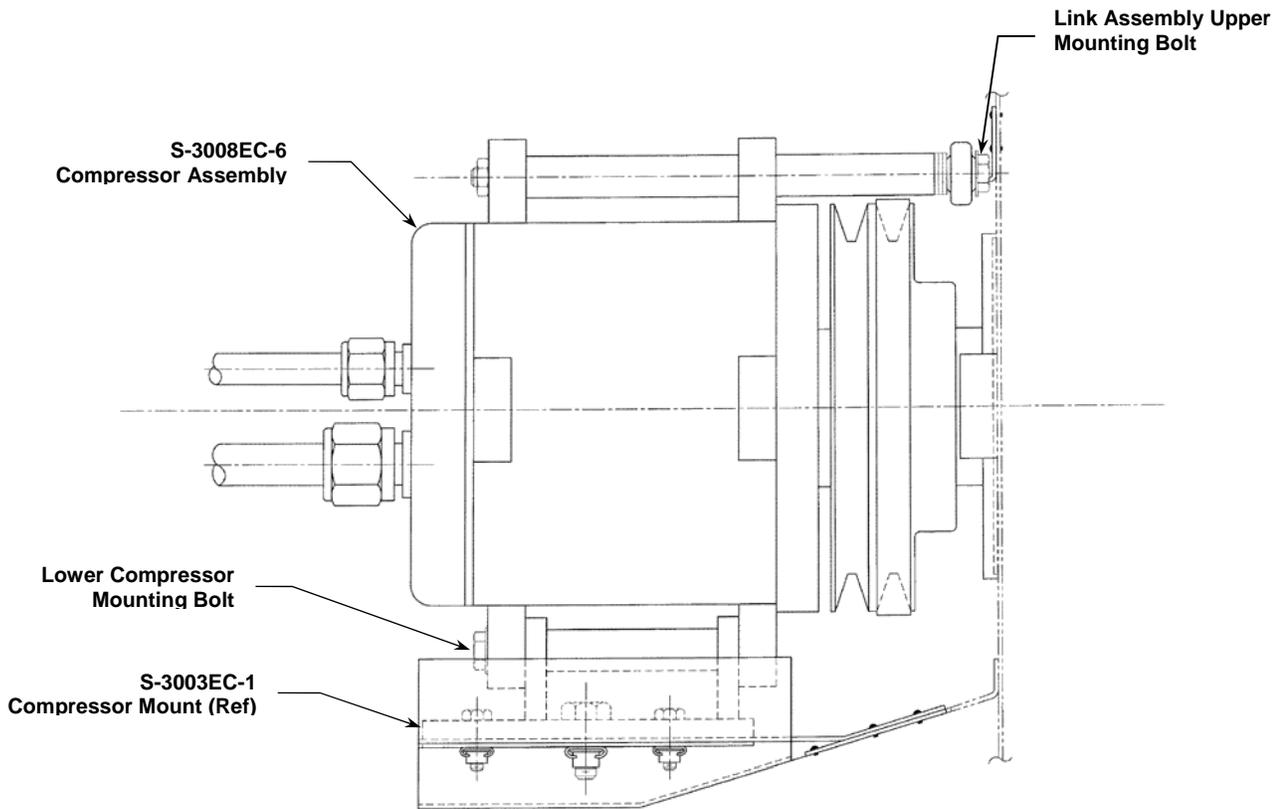
- h. Install the drive ring onto the oil cooler blower splined shaft in the proper orientation, in a position where 4 of the holes in the drive ring most closely align with 4 holes in the pulley. Slowly tighten the pulley further by rotating it in the clockwise direction only (looking aft) until 4 holes of both components are fully aligned.
  - i. Once 4 holes are aligned and after verifying the final pulley torque is in the range of 450-600 in-lbs., install 4X S-3532EC-11 bolts with 4X NAS143-4C washers into the aligned holes. Torque bolts to 60-80 in-lbs. Do not make any fastener substitutions. Safety wire the S-3532EC-11 bolts per BHT-407-MM. Safety wire must be routed so that it does not contact oil cooler blower splines or splined adapter.
  - j. If alignment of the 4 bolt holes is not achieved by the time 600 in-lbs. of pulley torque is reached, remove the drive ring from the splines and rotate it 1 spline in either direction so as to create better hole alignment. Fully loosen the pulley then repeat the procedure. Trial and error may be necessary to find a spline position for the drive ring that allows proper alignment of 4 bolt holes.
3. Install previously removed components and perform functional test per applicable maintenance manuals.
  4. Secure aircraft.
  5. Make an entry in the helicopter logbook and historical service records indicating compliance with Part 1 of this Service Bulletin.

#### **Part 2: (Repetitive) Every 100 or 150 hrs. inspection (following Bell's Grease Lubrication Intervals for tail rotor driveshaft splines)**

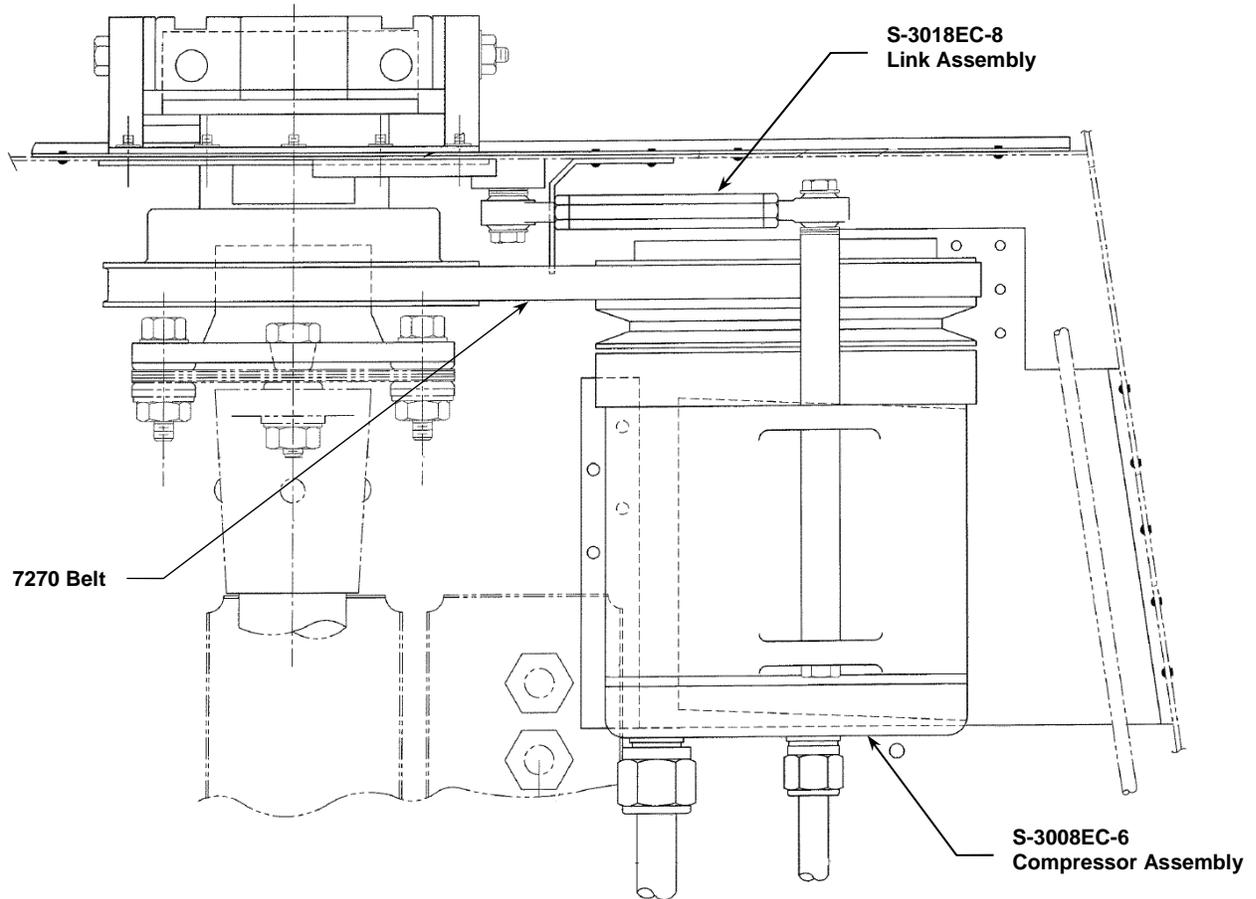
1. Perform steps 1-4 of Part 1.
2. Make an entry in the helicopter logbook and historical service records indicating compliance with Part 2 of this Service Bulletin.



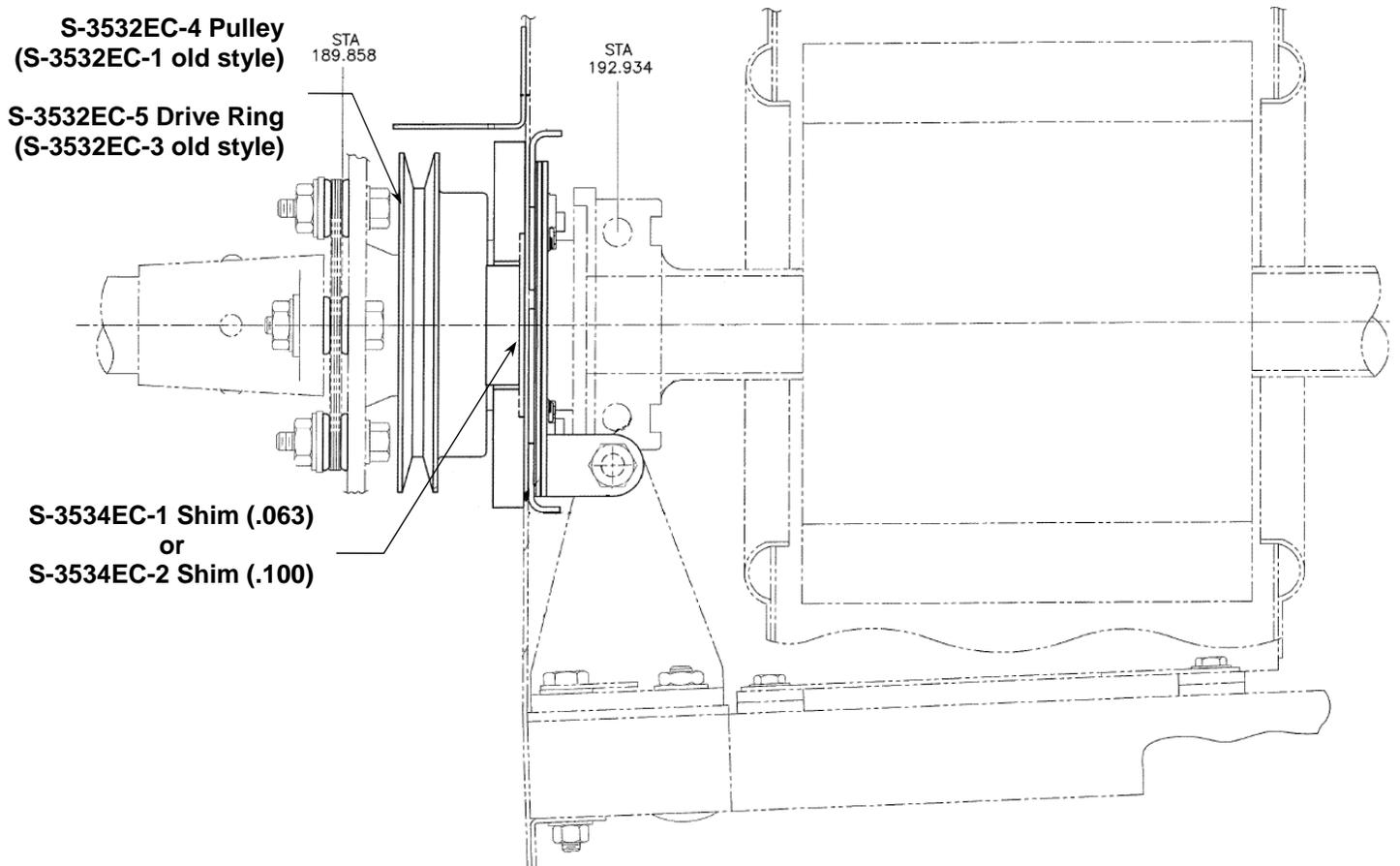
**Figure 1.1  
S-3532EC-5 Drive Ring Configurations**



**Figure 2.1**  
**Air Conditioner Compressor Installation**  
**(View Looking Inboard, LH Side)**



**Figure 3.1**  
**Air Conditioner Compressor Installation**  
**(View Looking Down)**



**Figure 4.1**  
**Oil Cooler Blower Shaft Assembly**  
**(View Looking Inboard, LH Side)**