



**Power Systems**

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# Service Bulletin

## Alert — Compliance Will Enhance Safety

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Technical Content is FAA Approved

**SUBJECT:** Replacement of Slip Ring End Bearing

**REASON :** Incorporate Improved Slip Ring End Bearing

**ALTERNATOR MODELS AFFECTED:** Kelly Aerospace’s ALE, ALT, ALU, ALX, ALY, ALZ, ANG series, ES-4032, and ES-4039 as listed below in Column A

**COMPLIANCE:** At next overhaul or whenever the alternator is removed for service and maintenance

Service experience has indicated the roller element bearing as used in the slip ring end of the ALE, ALT, ALU, ALX, ALY, ALZ, and ANG series, ES-4032, and ES-4039 alternators may be subject to excessive wear which could result in loss of alternator performance. Experience has shown use of a needle bearing in the alternator slip ring end housing provides improved service life and durability. At next overhaul or removal of the alternator for service and maintenance, incorporate a needle bearing in the slip ring end of the alternators shown below in Column A of Table 1 by replacing the existing slip ring end head assembly and rotor assembly with the Kelly Aerospace parts kit identified in Column B of Table 1. Perform disassembly and re-assembly in accordance with Kelly Aerospace OE-A1 manual or the forthcoming OE-A2 manual. Reference Kelly Aerospace Service Bulletin No. 018 for part number supersedure for Kelly Aerospace alternators.

**Table 1**

| <b>Column A<br/>Previous Alternator<br/>Part Number</b> | <b>Column B<br/>Upgrade to SRE Needle<br/>Bearing Using Kit Part<br/>Number</b> | <b>Column C<br/>Re-Identify<br/>Alternator As<br/>Part Number</b> |
|---|---|---|
| ALE-8421  | 90-2513   | ALE-8521 *  |
| ALE-8421R   | 90-2513   | ALE-8521 *  |
| ALH-5420  | 90-2514   | ALH-5520  |
| ALT-8420  | 90-2500   | ALT-8520  |
| ALT-8421  | 90-2501   | ALT-8521  |
| ALT-8421LS  | 90-2501   | ALT-8521LS  |
| ALT-8421R   | 90-2501   | ALT-8521  |
| ALT-8421RS  | 90-2501   | ALT-8521LS  |
| ALT-9422  | 90-2511   | ALT-9522  |
| ALU-6421LS  | 90-2501   | ALU-6521LS  |
| ALU-6421RS  | 90-2501   | ALU-6521LS  |
| ALU-8421  | 90-2501   | ALU-8521  |
| ALU-8421LS  | 90-2501   | ALU-8521LS  |
| ALU-9422L   | 90-2515   | ALU-9522 *  |

|            |         |              |
|------------|---------|--------------|
| ALU-9422R  | 90-2515 | ALU-9522 *   |
| ALX-6423   | 90-2516 | ALX-6523 *   |
| ALY-6420   | 90-2517 | ALY-6520 *   |
| ALY-6420G  | 90-2517 | ALY-6520 *   |
| ALY-6420R  | 90-2517 | ALY-6520 *   |
| ALY-6520RG | 90-2517 | ALY-6520 *   |
| ALY-6421   | 90-2513 | ALY-6521 *   |
| ALY-6425   | 90-2517 | ALY-6525 *   |
| ALY-8423   | 90-2513 | ALY-8523 *   |
| ALY-8423R  | 90-2513 | ALY-8523 *   |
| ALY-8424   | 90-2503 | ALY-8524     |
| ALY-8426   | 90-2503 | ALY-8526     |
| ALY-8426G  | 90-2503 | ALY-8526     |
| ALY-8426R  | 90-2503 | ALY-8526     |
| ALY-8426RG | 90-2503 | ALY-8526     |
| ALX-8421   | 90-2508 | ALX-8521     |
| ALX-8421LS | 90-2508 | ALX-8521LS   |
| ALX-8421R  | 90-2508 | ALX-8521     |
| ALX-8421RS | 90-2508 | ALX-8521LS   |
| ALX-8423   | 90-2506 | ALX-8523     |
| ALX-9422   | 90-2509 | ALX-9522     |
| ALX-9422R  | 90-2509 | ALX-9522     |
| ALX-9424   | 90-2504 | ALX-9524     |
| ALX-9425B  | 90-2505 | ALX-9525B    |
| ALY-6420LS | 90-2503 | ALY-6520LS   |
| ALY-6422   | 90-2507 | ALY-6522     |
| ALY-6422R  | 90-2507 | ALY-6522     |
| ALY-6427   | 90-2503 | ALY-6527     |
| ALY-6427R  | 90-2503 | ALY-6527     |
| ALY-8420   | 90-2503 | ALY-8520     |
| ALY-8420LS | 90-2503 | ALY-8520LS   |
| ALY-8420R  | 90-2503 | ALY-8520     |
| ALY-8420RS | 90-2503 | ALY-8520LS   |
| ALZ-8423   | 90-2503 | ALZ-8523     |
| ALZ-8423G  | 90-2503 | ALZ-8523     |
| ALZ-8423R  | 90-2503 | ALZ-8523     |
| ALZ-8423RG | 90-2503 | ALZ-8523     |
| ANG-6423   | 90-2518 | ANG-6523     |
| ANG-6423S  | 90-2518 | ANG-6523     |
| ES-4032    | 90-2510 | ALU-8532LS * |
| ES-4039LS  | 90-2512 | ALU-8539LS * |

Note, \* indicates non-PMA alternator approved under aircraft or engine type certificate.

The service kits identified above consist of a rotor assembly, slip ring end head assembly, brush set, and brush holder with springs as identified below in Table 2. The new slip ring head assembly is furnished complete with installed needle bearing and negative rectifiers.

**Table 2**

| <b>Kit Part Number</b> | <b>Slip Ring Head Assy Part Number</b> | <b>Rotor Assy Part Number</b> | <b>Brushes, Holder &amp; Spring Assy Part Number</b> |
|------------------------|--|-------------------------------|--|
| 90-2500                | ALK-1232LS-2                           | ALU-2228S                     | ALU-2045BS   |
| 90-2501                | ALK-1232CS-2                           | ALU-2228S                     | ALU-2045BS   |
| 90-2503                | ALK-1232BS-2                           | ALE-2273S                     | ALU-2045BS   |
| 90-2504                | ALE-1242AAS-2                          | ALX-2238AS                    | ALU-2045BS   |
| 90-2505                | ALE-1242AAS-2                          | ALH-2306S                     | ALU-2045BS   |
| 90-2506                | ALK-1232LS-2                           | ALH-2228S                     | ALU-2045BS   |
| 90-2507                | ALK-1232ES-2                           | ALE-2277S                     | ALE-2045BS   |
| 90-2508                | ALK-1232CS-2                           | ALH-2228S                     | ALU-2045BS   |
| 90-2509                | ALE-1242AAS-2                          | ALH-2238S                     | ALU-2045BS   |
| 90-2510                | ALK-1232ES-2                           | ALU-2227S                     | ALE-2045BS   |
| 90-2511                | ALE-1242AAS-2                          | ALU-2238S                     | ALU-2045BS   |
| 90-2512                | ALK-1232CS-2                           | ALU-2228S                     | ALU-2045BS   |
| 90-2513                | ALK-1232BS-2                           | ALE-2273S                     | ALE-2045BS   |
| 90-2514                | ALK-1232AS-2                           | ALH-2228S                     | ALU-2045BS   |
| 90-2515                | ALE-1242AAS-2                          | ALU-2238S                     | ALU-2045BS   |
| 90-2516                | ALK-1232CS-2                           | ALH-2228S                     | ALU-2045BS   |
| 90-2517                | ALK-1232BS-2                           | ALE-2273S                     | ALU-2045BS   |
| 90-2518                | ALK-1232AS-2                           | ANG-2228S                     | ALU-2045BS   |

A data plate as illustrated below in Figure 1 with provisions for part number, serial number, and voltage rating is provided with the kit and must be installed on the head assembly in the same location as the previous data plate. Upon incorporation of the new SRE head assembly and rotor assembly, re-identify the alternator with the appropriate new part number as shown in Column C of Table 1, while retaining the original serial number. Carefully stamp the appropriate new part number in the space provided on the data plate. Stamp in the space provided the original serial number beginning immediately after the designation K-, which identifies the alternator as being upgraded with the new slip ring end bearing. The new data plate is furnished pre-stamped with the appropriate voltage rating. A non-PMA data plate is used for the ALU-8532LS and the ALU-8539LS alternators since they are approved under the respective engine and/or aircraft type certificate. An appropriate entry should be made in the aircraft log book.

**Figure 1.0**