

# ALLISON HYBRID

## DRIVE UNIT UPDATES



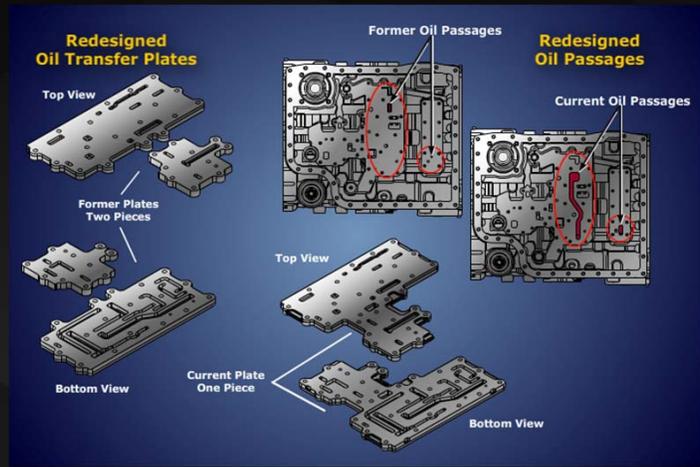
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### Drive Unit Updates

## Oil Transfer Plate Update

- Stator housing oil passage and oil transfer plate changes were implemented effective February 2009 and January 2010.

- Former and current stator housings utilize different oil passages in the oil transfer plate area.
- Former oil transfer plates are two separate pieces.
- Current oil transfer plates are a single piece component.



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## DRIVE UNIT UPDATES

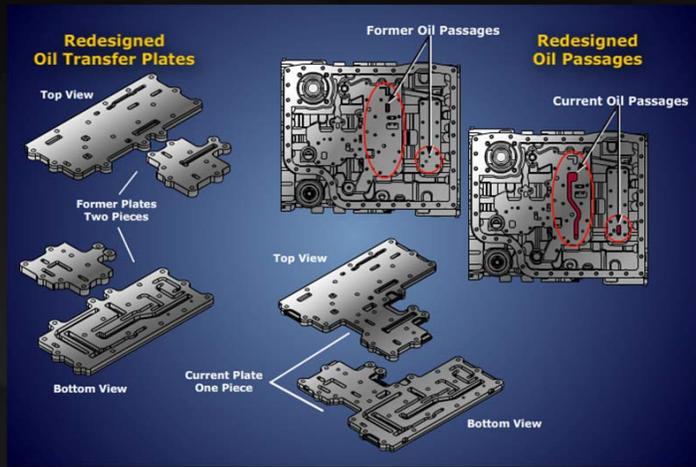


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### Drive Unit Updates

#### Oil Transfer Plate Update (cont'd)

- The former two-piece oil transfer plate components have been completely cancelled.
  - *The current single piece-oil transfer plate is backward compatible if both of the former oil transfer plates are removed.*
- Two stator housing service kits have been completely cancelled but can be used until stock is exhausted.



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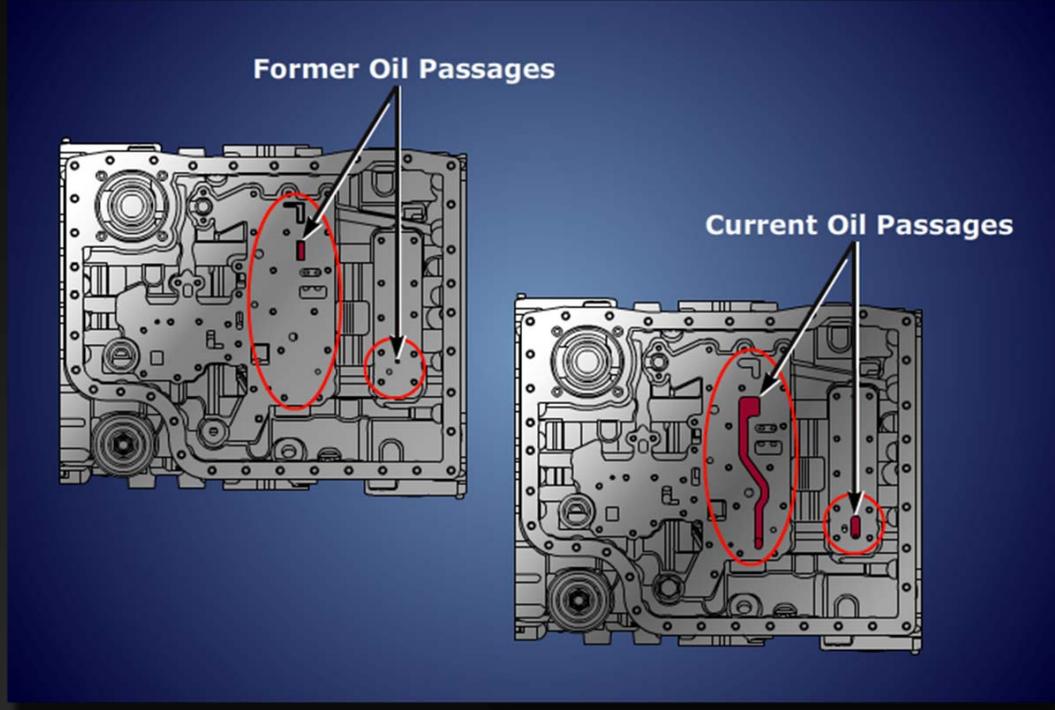
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## RESOURCES: Stator Housing Oil Passages



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### Stator Housing Oil Passages



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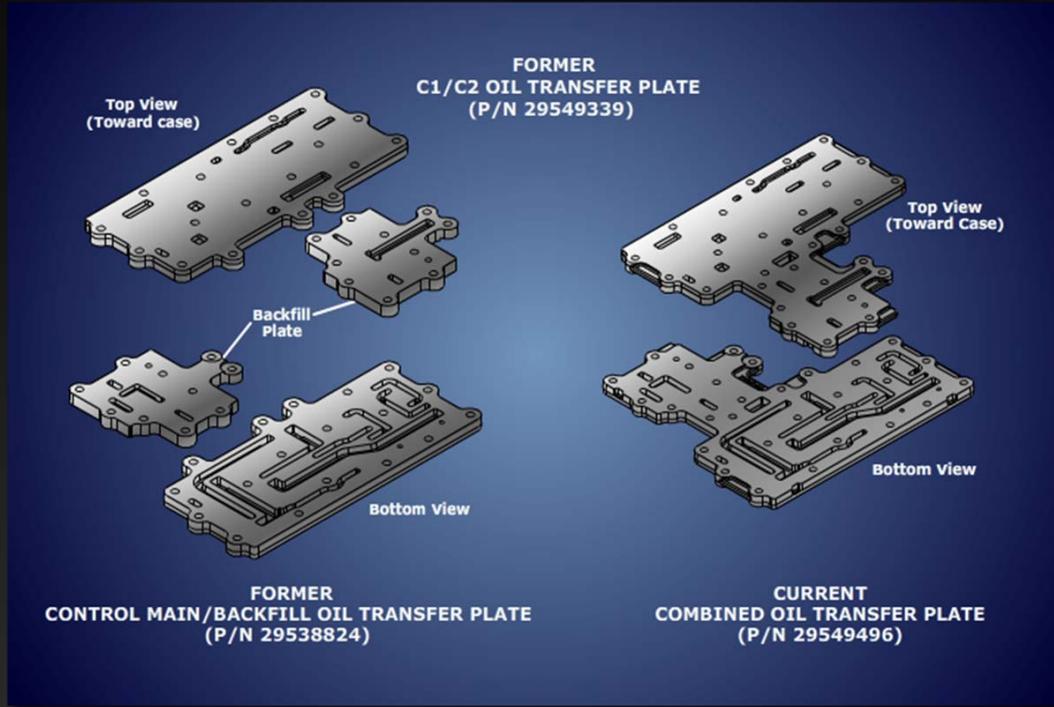
## RESOURCES: Oil Transfer Plates



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# ALLISON HYBRID H 40/50 EP

## Oil Transfer Plates



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# ALLISON HYBRID

## RESOURCES: Affected Service Kits



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### Affected Service Kits

Two Stator Housing Service Kits have been completely cancelled but individual parts are available

#### Units built with two-piece Oil Transfer Plate

| P/N      | Description             | Status      | Service With                             |
|----------|-------------------------|-------------|--|
| 29550777 | Stator Housing Kit      | Cancelled   | Use stock until exhausted then see below |
| 29549665 | Stator Housing Assembly | Serviceable | Self                                     |
| 29549496 | Oil Transfer Plate      | Serviceable | 29550061 Supplemental kit                |
| 29541080 | DPIM Bypass Washer      | Serviceable |  |
| 29550768 | Bearing Inner Race      | Serviceable |  |

| P/N      | Description             | Status      | Service With                             |
|----------|-------------------------|-------------|--|
| 29551539 | Stator Housing Kit      | Cancelled   | Use stock until exhausted then see below |
| 29549665 | Stator Housing Assembly | Serviceable | Self                                     |
| 29541080 | DPIM Bypass Washer      | Serviceable | Self                                     |
| 29550768 | Bearing Inner Race      | Serviceable | Self                                     |

#### Units equipped with single-piece Oil Transfer Plate

**NOTE: Always replace the inner bearing races and DPIM Bypass Washer when replacing the stator housing**

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## DRIVE UNIT UPDATES

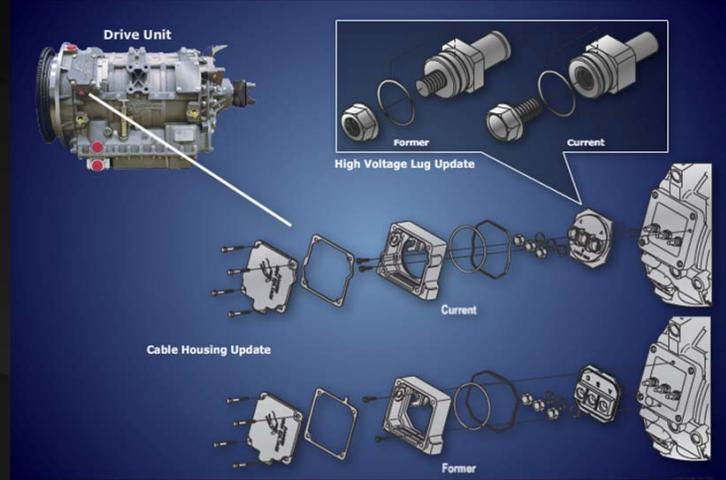


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### Drive Unit Updates

## Cable Housing and High Voltage Lug Changes

- The drive unit cable housing was updated effective October 2009.
  - Changes were implemented to components and service procedures.
  - Current components are backward compatible, but only as a group (components must be installed as a group, not individually).
  - Reference SIL 18-EP-09 for component and service procedure details.



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## DRIVE UNIT UPDATES

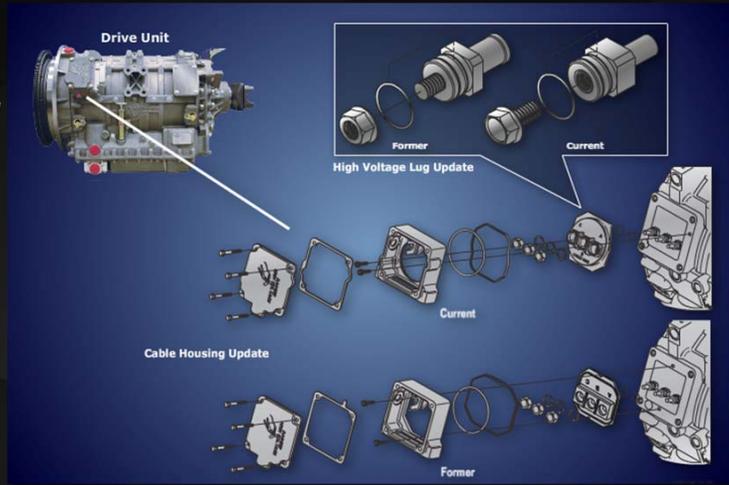


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### Drive Unit Updates

## Cable Housing and High Voltage Lug Changes (cont'd)

- High voltage lugs were updated effective May 2010.
  - The design changed from a stud and nut to a threaded lug and bolt.
  - The current design enables an increased torque value.
  - The current bolt cannot be substituted – use the designated bolt only.
  - Reference SIL 2-EP-10 for design update details.
  - Lug replacement procedures are detailed in SIL 6-EP-10 and in a separate Allison E-Learn module.



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# ALLISON HYBRID

## DRIVE UNIT UPDATES



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### Drive Unit Updates

## Availability of Remanufactured Stator Housings

- Remanufactured stator housings became available in April 2010.

- Variations (Groups A, B, C and D) are available to cover four serial number ranges.
- Exact replacement is not necessary, but external dimensional differences may cause clearance issues during installation.
- A supplemental service kit is required to complete the repair procedure.

The components in this kit must replace the original components or DPIM and drive unit damage will result.

- Reference SIL 4-EP-10 for details.

| Group   | Serial Numbers                                     | Description of Drive Unit   |
|---------|--|---|
| Group A | Group A - Prior to 7110002113                      | Group A Stator Housing has unused cable housing openings opposite the A and B cable housings. Some Group A Stator Housings have been covered by a bolted plate while some have the openings are left noticeable. The original control deck design is used in Group A. After identifying your Drive Unit refer to Figure 1 to verify you have a Group A housing. |
| Group B | Group B - Starting with 7110002113 thru 7110002202 | Group B Stator Housing is the same as Group A housing. The same as Group C housing. Refer to Figure 1 for Group A. Figure 2 for Group C to identify which remanufactured Stator Housing should be ordered.  |
| Group C | Group C - Starting with 7110002203 thru 7110002992 | Group C only has two cable openings. Control deck design is used in Group C. After identifying your Drive Unit refer to Figure 1 to verify the Group C housing. Group C housing has two cable openings. Control deck design is used in Group C. After identifying your Drive Unit refer to Figure 1 to verify you have a Group A housing.                       |

**SIL 4-EP-10**  
**Service Information Letter**

**SUBJECT:** Availability of Remanufactured EP 40/50 Drive Unit Stator Housing

**MODELS AFFECTED:** EP 40/50 Drive Units

**SERIAL NUMBERS AFFECTED:** Group A - Prior to 7110002113  
 Group B - Starting with 7110002113 thru 7110002202  
 Group C - Starting with 7110002203 thru 7110002992  
 Group D - Starting with 7110002993

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## RESOURCES: Group A Detail



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## Group A Detail

**Figure 1 - Group A**

| Group   | Serial Numbers                | Description of Drive Unit  |
|---------|-------------------------------|--|
| Group A | Group A - Prior to 7110002113 | Group A Stator Housings have unused cable housing openings opposite the A and B motor cable housings. Some Group A Stator Housings have these unused cable housing openings covered by a bolted plate while some have the openings cast shut, but the protrusions are still noticeable. The original control deck design is used in Group A. After identifying your Drive Unit S/N, refer to Figure 1 to verify that you have a Group A housing. |

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# ALLISON HYBRID

## RESOURCES: Group B Detail

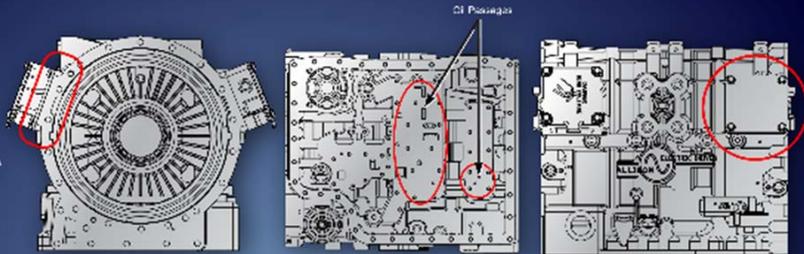


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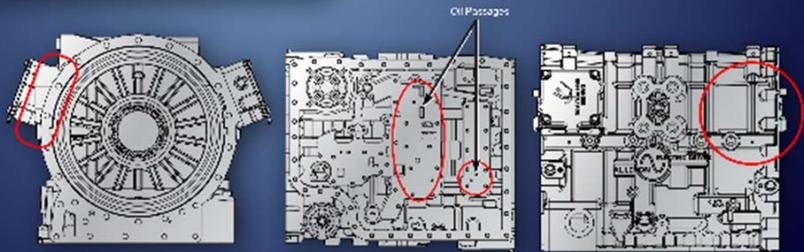
## Group B Detail

Figure 1 - Group A



|         |  |  |
|---------|--|--|
| Group B | Group B - Starting with 7110002113 thru 7110002202 | Group B Stator Housings may be the same as Group A housings or the same as Group C housings. Refer to Figure 1 for Group A and Figure 2 for Group C to identify which remanufactured Stator Housing should be ordered. |
|---------|--|--|

Figure 2 - Group C



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# ALLISON HYBRID

## RESOURCES: Group C Detail



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## Group C Detail

**Figure 2 - Group C**

|         |  |   |
|---------|--|---|
| Group C | Group C - Starting with 7110002203 thru 7110002992 | Group C only has two cable housing openings. The original control deck design is used in Group C. After identifying your Drive Unit S/N, refer to Figure 2 to verify that you have a Group C housing. |
|---------|--|---|

Oil Passages

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## RESOURCES: Group D Detail



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## Group D Detail

**Figure 3 - Group D**

|         |                                    |  |
|---------|------------------------------------|--|
| Group D | Group D - Starting with 7110002993 | Group D only has two cable housing openings. The new control deck design is used in Group D. After identifying your Drive Unit S/N, refer to Figure 3 to verify that you have a Group D housing. |
|---------|------------------------------------|--|

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## RESOURCES: Supplemental Service Kit



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### Supplemental Service Kit

Combined Oil Transfer Plate only required when removed unit is equipped with former two-piece design.

Always replace the inner races and DPIM Bypass Washer when replacing the stator housing.

| Part Name                   | Part Number | Quantity |
|-----------------------------|-------------|----------|
| DPIM Bypass Washer          | 29541080    | 1        |
| Combined Oil Transfer Plate | 29549496    | 1        |
| Bearing Inner Race          | 29550768    | 2        |
| Instruction Sheet #345      | 29550062    | 1        |

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# ALLISON HYBRID

## DRIVE UNIT UPDATES



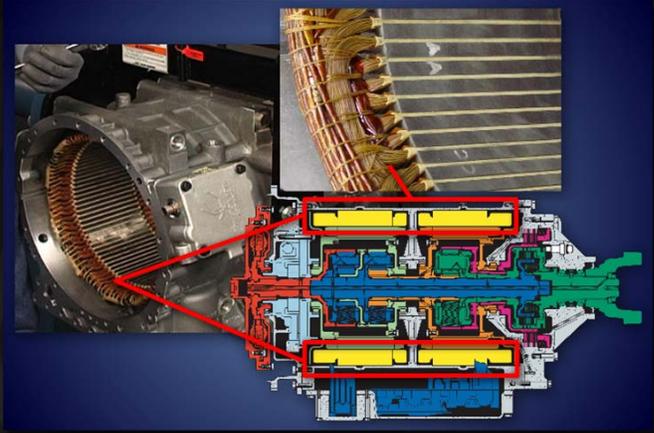
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### Drive Unit Updates

## Stator Replacement

- Drive unit stator replacement procedures were implemented effective July 2010.

- *The procedure requires an industrial oven to heat the stator housing.*
- *The replacement stator is installed to a specific depth, then the housing is allowed to cool.*
- *Stator retention bolt installation requires a drill guide available from SPX Corporation (there are two bolts for each stator on each side of the housing).*
- *Stators must be replaced one at a time if both stators are being replaced.*
- *After reassembly, install new high voltage lugs onto the lead wires as described in SIL 6-EP-10.*



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## DRIVE UNIT UPDATES

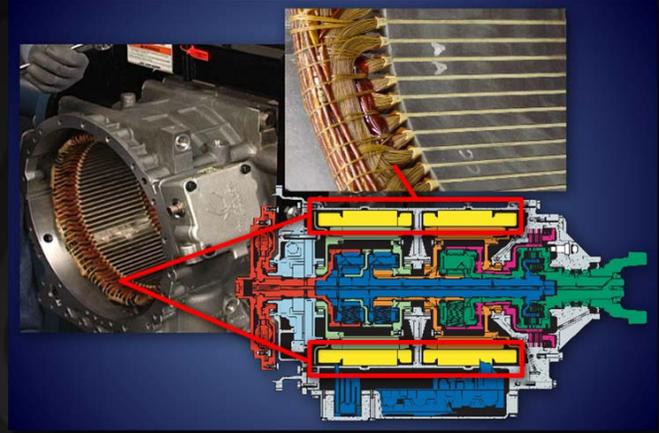


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### Drive Unit Updates

## Stator Replacement (cont'd)

- Electrical qualification tests must be performed after stator replacement.
  - *The unit must be between 66 and 86 degrees Fahrenheit when tested*
  - *Perform the following tests:*
    - *Hi-Pot test.*
    - *Surge test.*
    - *Corona test.*
    - *Phase-to-Phase resistance for both motors.*
    - *RTD resistance for both motors.*
- Reference SIL 16-EP-10 for details.



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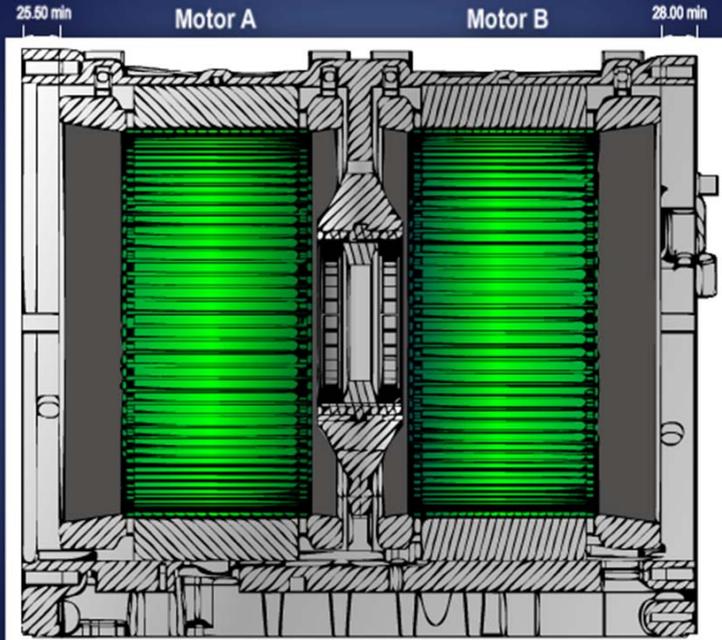
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## RESOURCES: Installed Stator Location



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### Installed Stator Location



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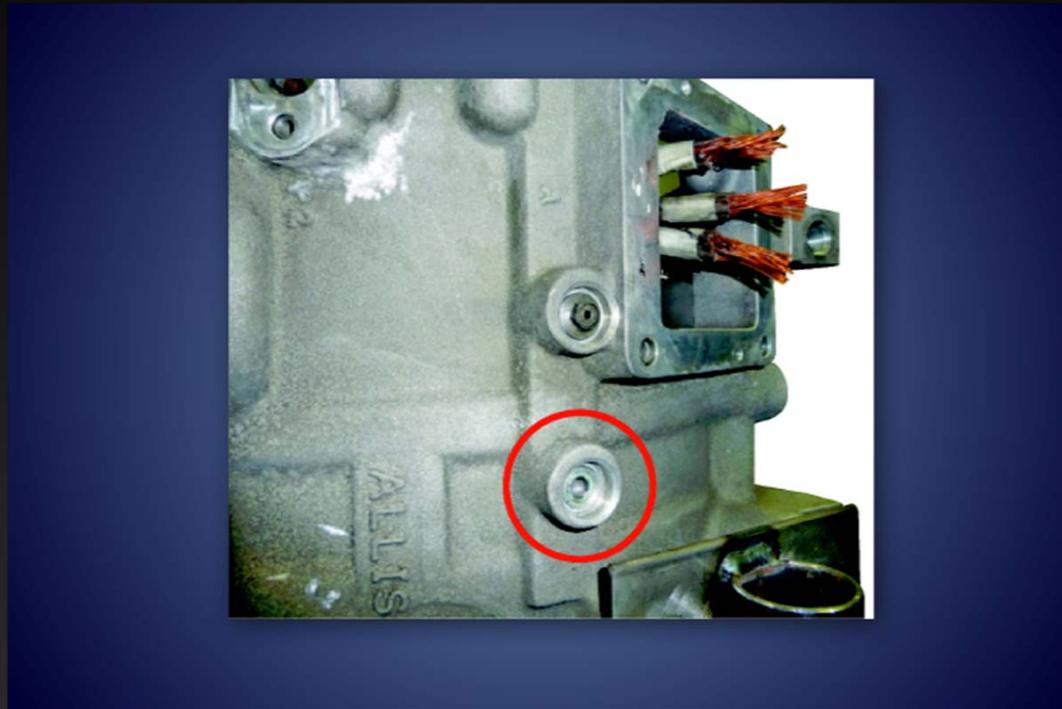
## RESOURCES:

## Stator Retention Bolt Hole Location



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## ALLISON HYBRID H 40/50 EP Stator Retention Bolt Hole Location



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