

# ALLISON HYBRID

## DRIVE UNIT LUG REPLACEMENT



Instructor  
Led  
Training

## Drive Unit Lug Replacement

### Introduction

- Allison Hybrid H 40/50 EP System drive unit high voltage lugs are replaceable.
  - *Replacement lugs use a bolt rather than stud and nut for high voltage cable connection.*
- **SIL 6-EP-10** introduces the replacement lug and covers lug replacement procedures.



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## DRIVE UNIT LUG REPLACEMENT



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### Drive Unit Lug Replacement

#### Introduction (cont'd)

- Reference Service Manual SM3602EN for high voltage cable housing removal and installation procedures.
  - Reference 18-EP-09 for cable housing serviceability on drive units prior to serial number 7110001178.
- When performing this procedure, replace all six high voltage lugs.
  - Lug replacement can be performed without drive unit disassembly.



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## DRIVE UNIT LUG REPLACEMENT



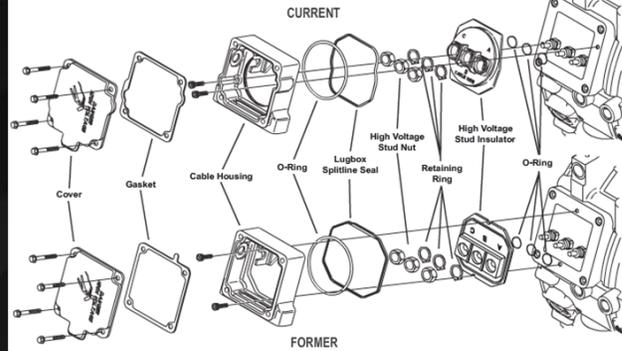
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### Drive Unit Lug Replacement

#### Cable Housing Removal

- Before performing lug replacement or service on any H 40/50 EP System components, perform the High Voltage Disconnect Verification procedure provided in Allison technical publications.
- Remove the cable housing cover and disconnect the high voltage cables from the drive unit.
- Remove the cable housing cover and disconnect the high voltage cables from the drive unit.

Cable Housing Components



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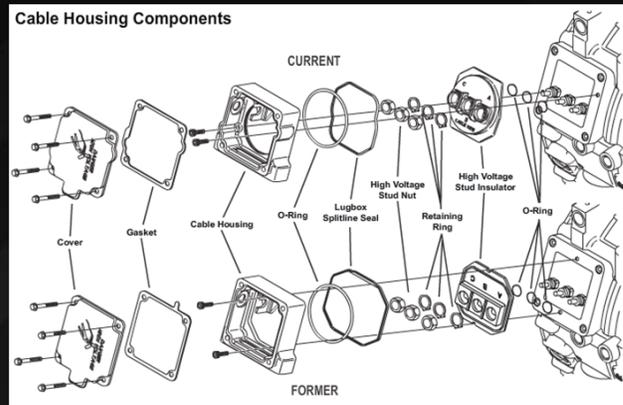


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### Drive Unit Lug Replacement

#### Cable Housing Removal (cont'd)

- Remove the cable housing from the drive unit.
  - Inspect and if necessary replace the housing o-ring and splitline seal.*
- Remove the snap rings securing the lugs to the high voltage insulator.
- Remove the insulator.



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## DRIVE UNIT LUG REPLACEMENT

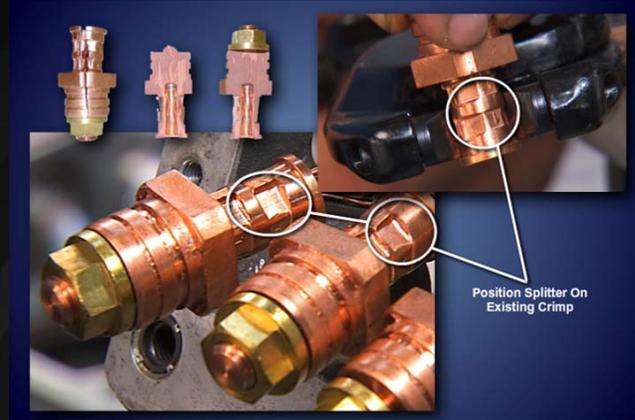


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### Drive Unit Lug Replacement

#### Lug Removal

- Lugs are removed by splitting them using the nut splitter specified in SIL 6-EP-10.
  - Carefully remove the protective shrink wrap.
  - Position the splitter on the existing crimp spots and tighten the tool.
  - To avoid damage, do not allow the splitter to make contact with the wires.
  - Gently pull the split lugs to remove them from the high voltage wires.
- High voltage wires may be brittle and susceptible to damage.
  - Avoid excessive tugging or twisting during lug removal.



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## RESOURCES: Shrink Wrap Removal



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### Shrink Wrap Removal

# ALLISON HYBRID H 40/50 EP



Avoid Damage to  
Wires and Insulators

# RESOURCES

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### Drive Unit Lug Replacement

#### Lug Installation

- Prepare the high voltage wires for lug installation.
  - *Wear clean nitrile gloves to minimize the possibility of oxidation which can occur from skin oils contacting the bare copper wires.*
  - *Straighten the wires using a clean pair of needle nose pliers.*
  - *Trim the wires to within 3 millimeters length of each other.*
  - *Clean the wires using Scotch Brite and contact cleaner or alcohol.*
- Install a 1-1/2 inch piece of shrink wrap over the prepped wires.
- Position the replacement lug onto the high voltage wires.



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## DRIVE UNIT LUG REPLACEMENT



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### Drive Unit Lug Replacement

#### Lug Installation (cont'd)

- Crimp the lug using the crimp tool specified in SIL 6-EP-10.
  - *Make the first crimp near the four-sided flange.*
  - *Make the second crimp just behind the first crimp.*
- Move the shrink wrap into position and apply heat as needed to conform the wrap to the wires and installed lug.
  - *Each replacement lug includes a new o-ring.*
  - *Make sure the o-rings are removed prior to heating the shrink wrap.*



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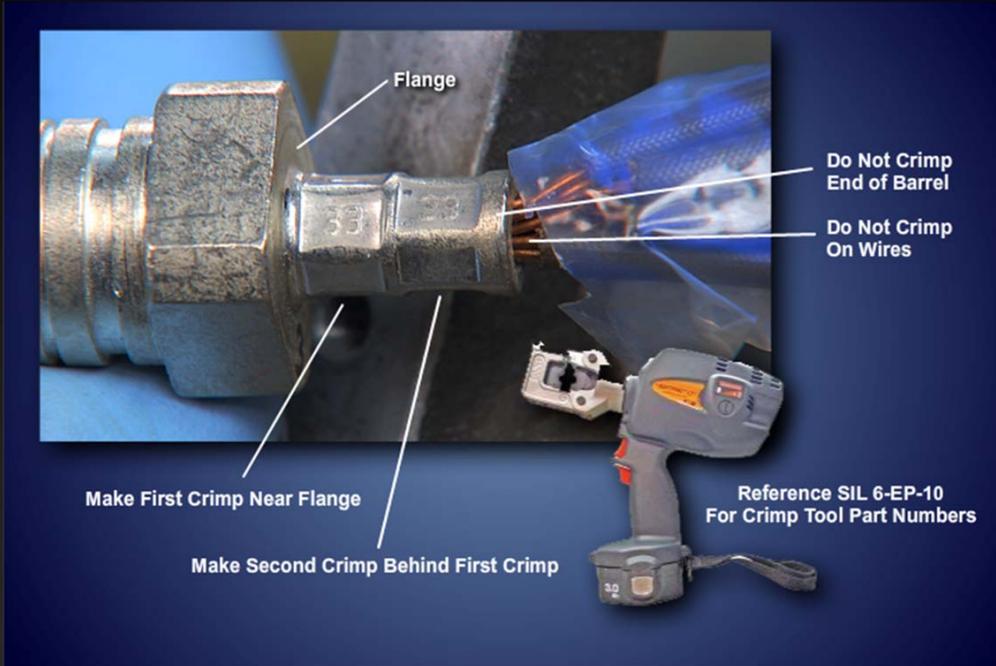
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## RESOURCES: Crimp Replacement



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### Crimp Replacement



RESOURCES

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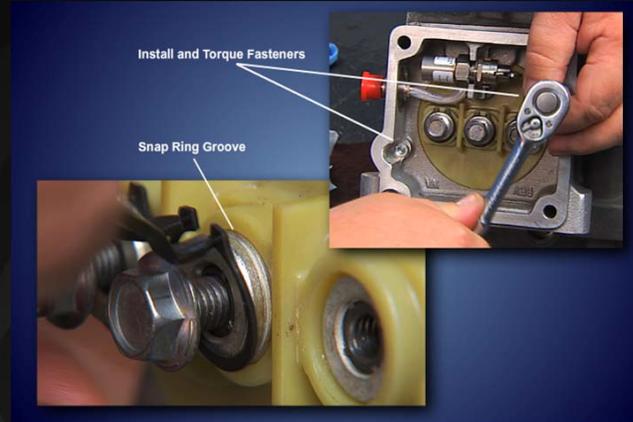


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### Drive Unit Lug Replacement

#### Cable Housing Installation

- Install the cable housing to the drive unit following the procedures in Service Manual SM3602EN.
  - *Install the o-rings on the lugs.*
  - *Position the insulator over the lugs.*
  - *Install the lug snap rings.*
  - *Install the cable housing o-ring and splitline seal.*
  - *Install the cable housing to the drive unit.*
- Install the high voltage cables to the drive unit lugs.
- Install the cable housing cover and torque the bolts to specification.



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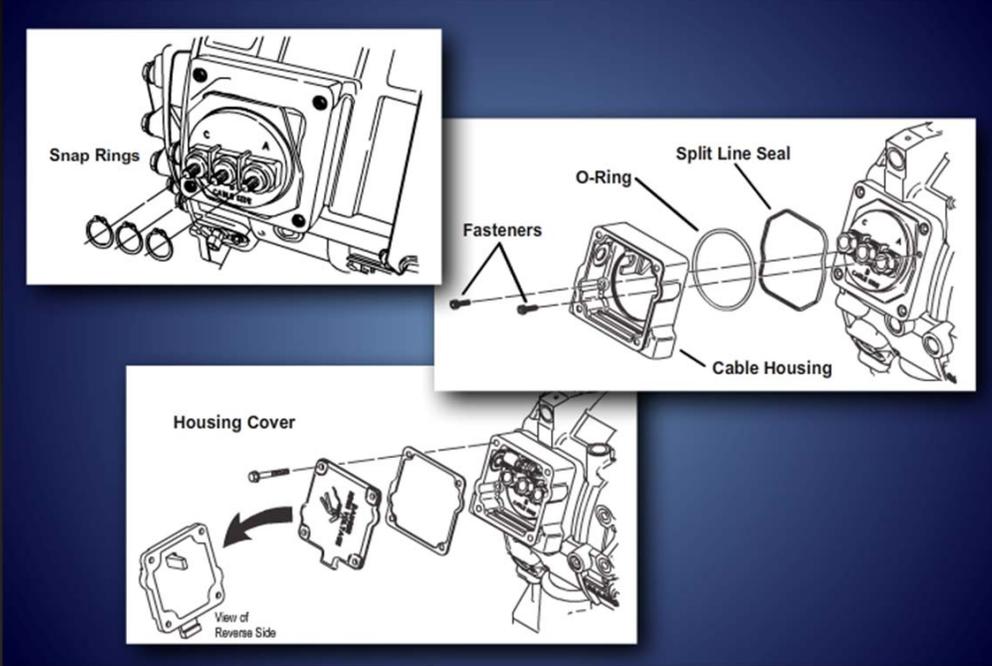
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## RESOURCES: Cable Housing Installation



Instructor Led Training

### Cable Housing Installation



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