



**POLARIS®**

# TECHNICAL SERVICE BULLETIN

Date: October 11, 2017  
Expires: December 31, 2019

## GEM

Bulletin Number: L-17-04-A  
Model Years: 2016-2018

Safety Bulletin

**Service Bulletin**

Service Alert Fax

*This Service Bulletin is located at [www.polarisdealers.com](http://www.polarisdealers.com) and [www.intl.polarisdealers.com](http://www.intl.polarisdealers.com)*

– Confidential and Proprietary –

**VERSION: R01 (October 11, 2017)**

### IMPORTANT

If you are working with a printed copy, please verify you have the most current version of these instructions.

#### SUBJECT:

#### 2016-2018 GEM MOTOR CONTROLLER RELOCATION (US MODELS ONLY)

#### PURPOSE:

Some 2016-2018 GEM vehicles have exhibited premature motor controller failures due to water ingress. To address this concern, GEM is releasing this Service Bulletin for dealers to relocate the motor controller and install a thermoform cover to prevent further water intrusion.

Your service department **MUST** perform the following actions as directed by this Service Bulletin:

1. Each member of your service department team must review this Service Bulletin in its entirety.

#### AFFECTED MODELS:

Model Year	Models	Vehicle Identification Number Range
2016-2018	e2	<b>Reference “Unit Inquiry” on the dealer website or the Service Bulletin list on the STOP site to lookup affected units.</b>
	e4	
	e6	
	eL XD	

#### CUSTOMER NOTIFICATION

Dealers are required to review their sales records and make arrangements with customers for Bulletin completion. In addition to consumer units, dealers are required to correct any affected units in their inventory.

#### WARRANTY CLAIM / PARTS INFORMATION

Bulletin parts are excluded from the standard RMA policy and cannot be returned. An initial Recommended Order Quantity has not been provided for this Bulletin. Use Quantity Ordered to Date and the Open VIN List from the STOP site to determine an order amount that’s right for your dealership. For more details, refer to University of Polaris training course “Polaris Item Availability and Daily Ordering” and click on “Bulletin Ordering Training”.

2016-2018 GEM e2, e4, e6, eL XD (US Models Only)	
SAFETY BULLETIN #	L-17-04-A
CLAIM TYPE	SB (Service Bulletin)
LABOR ALLOWANCE	2.5 hrs (150 minutes)
PART NUMBER / DESCRIPTION	2207597 (QTY 1) K-CNTRLR, MOTOR RELOCATION 7170107 (QTY 1) BULLETIN COMPLETION DECAL
PARTS AVAILABILITY	Available early November, 2017
UNIVERSITY OF POLARIS VIDEO TRAINING REQUIREMENT	NO
PHOTO REQUIREMENT	NO

## ACCESSORY REMOVE & REPLACE LABOR

Polaris will cover labor for the removal and installation of accessories required to complete the bulletin work. Follow the steps below to obtain reimbursement.

### For accessory removal and installation up to 30 minutes of labor

Enter the actual labor time for the removal and installation into the accessory R&R Min Field on the bulletin claim.

### For accessory removal and installation over 30 minutes of labor:

1. Start a new Ask Polaris Case, Service & Warranty Question > Authorization: Non-Cosmetic & Polaris ESC or Authorization: Out of Warranty.
2. Enter your contact information and VIN, along with miles and hours into the applicable fields.
3. Enter "L-17-04-A" in the CONCERN and CAUSE fields. In the CORRECTION field, enter "ACCESSORY REMOVAL AND INSTALLATION".
4. Enter warranty fail codes 128/367/132.
5. Add part 0000511, quantity 1.
6. Attach photos of the vehicle and accessories sufficient to support the labor time requested.
7. Submit the case to Polaris.

## BULLETIN CONTACT LIST & SCHEDULING TOOL:

A scheduling tool is available for dealers to keep a record of customers contacted and schedules for bulletin repairs. This optional tool provides visibility for your dealership and will be helpful to track the status of scheduled service. For more information, log in to <http://www.universityofpolaris.com>

## PARTS RETURN OR DISPOSAL INFORMATION

Under no circumstances shall the parts removed in this repair be re-used, sold, or re-purposed for another application. It is your dealership / distributor's responsibility to make sure every part replaced (related to this bulletin) is taken out of circulation and disposed of properly.

## WARRANTY COVERAGE PERIOD

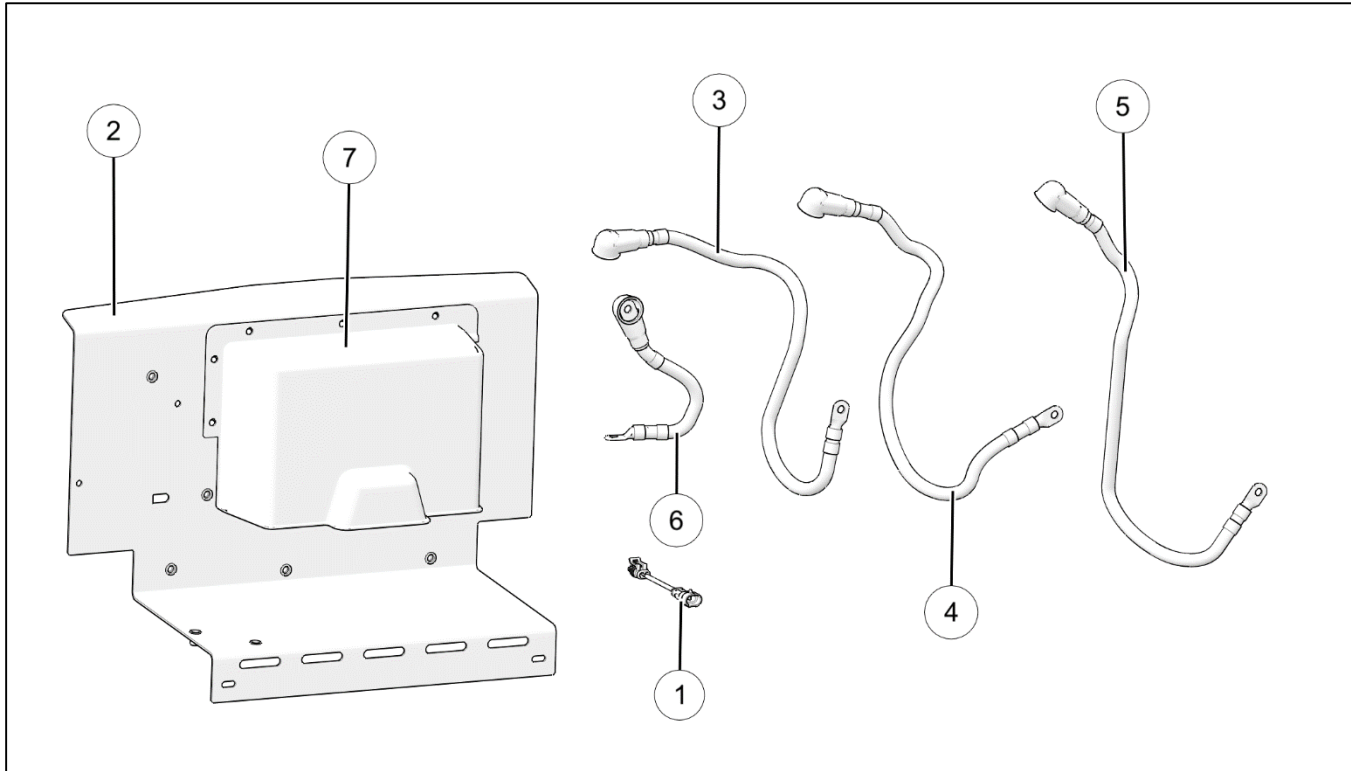
Warranty coverage for Service Bulletin L-17-04-A will begin October 11, 2017, and will expire on December 31, 2019.

## FEEDBACK FORM

A feedback form has been created for the technician to provide POLARIS with an overall satisfaction rating for the instructions, provide comments on your experience or upload pictures/videos from a specific repair. This feedback form is viewable on a mobile device by scanning the QR code shown or by clicking [HERE](#) if viewing this document electronically.



## KIT CONTENTS (P/N 2207597)



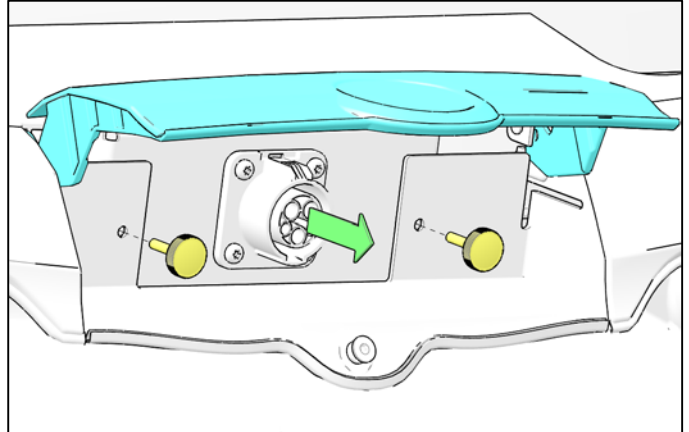
REF	PART DESCRIPTION	PART NUMBER	QTY
①	Motor Temperature Harness	2414335	1
②	Electrical Bracket	2414408	1
③	Cable-Motor, U, M1	4017720	1
④	Cable-Motor, V, M2	4017721	1
⑤	Cable-Motor, W, M3	4017722	1
⑥	Cable-Controller, BMC	4017751	1
⑦	Controller Cover	5454928	1
	Screw M6x1.0x25	7517751	1
	BLT-M8x1.25x16	7519611	1
	Washer-Lock M8x12.7	7556528	1
	Washer-M8	7556725	1
	Rivet-Tuflok	7661855	7
	Clip-Attachment	7082361	2
	Strap-Panduit	7080492	4
	Thermal Paste	8560261	1

## L-17-04-A: MOTOR CONTROLLER RELOCATION

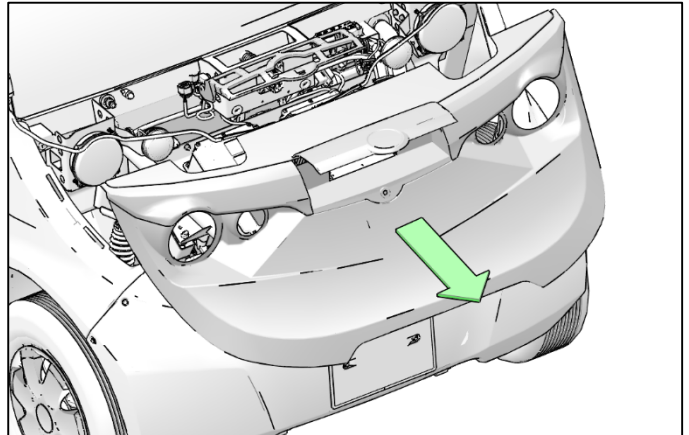
### Tools Required:

- 10mm & 13mm socket/ratchet set
- T30 Torx driver
- Push dart removal tool
- Side Cutters

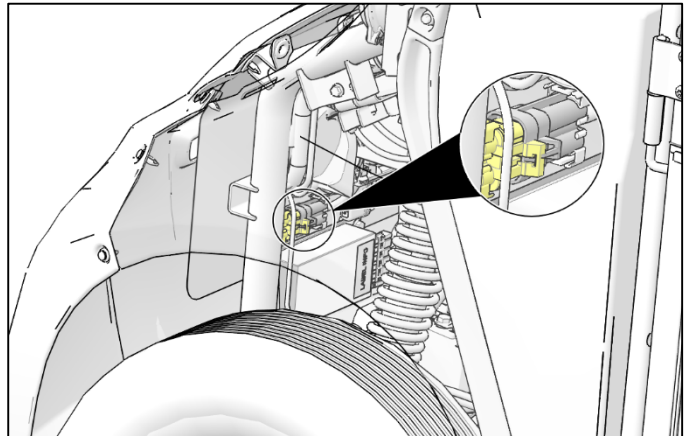
1. Park vehicle on a flat, level surface.
2. Remove two hood screws located under the charge port.



3. Keeping the hood parallel with the ground, Pull the hood forward to release it from the grommets. Carefully lift the hood away from the vehicle.



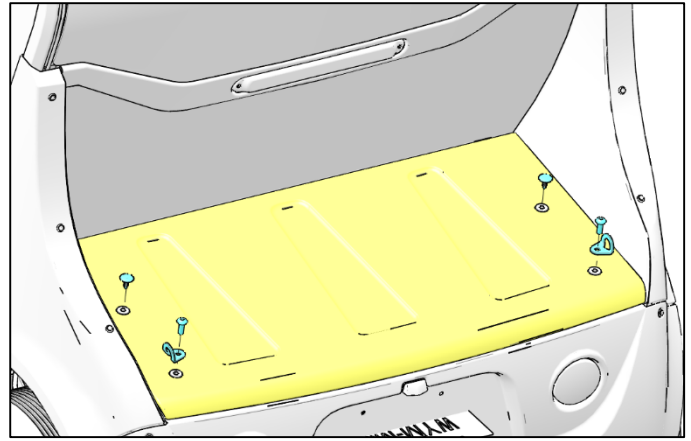
4. Disconnect power at service disconnect.



5. If installed, remove any rear accessory option, and then lift off rear deck.

**NOTE**

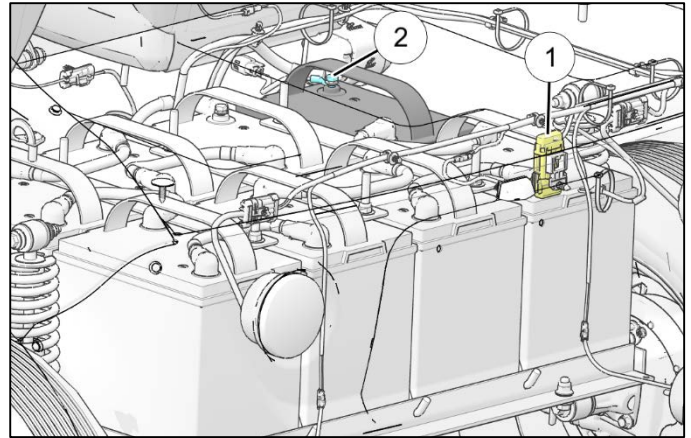
Refer to the service manual for accessory removal.



6. For all vehicles, remove main negative cable ② from battery pack with 13mm socket/ratchet, isolate cable and retain hardware.

**NOTE**

Image shows 6V battery option, but main negative hardware will be the same for all battery options. Refer to the service manual, if needed.



**WARNING**

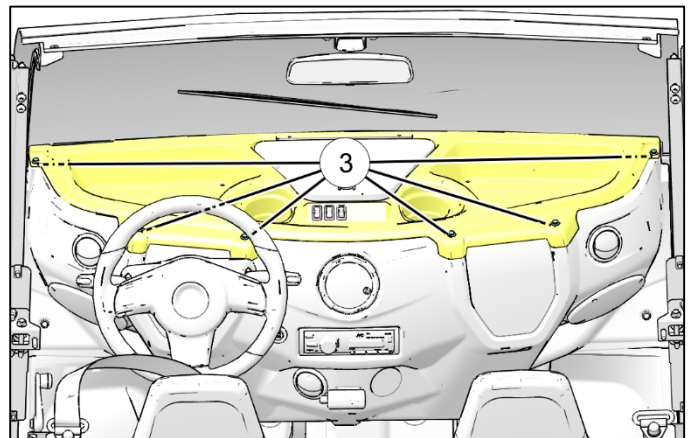
Improperly or not disconnecting the battery cables can result in an electric shock when working on electrical components.

**Lithium-ion vehicles, and vehicles not equipped with an auxiliary battery:**

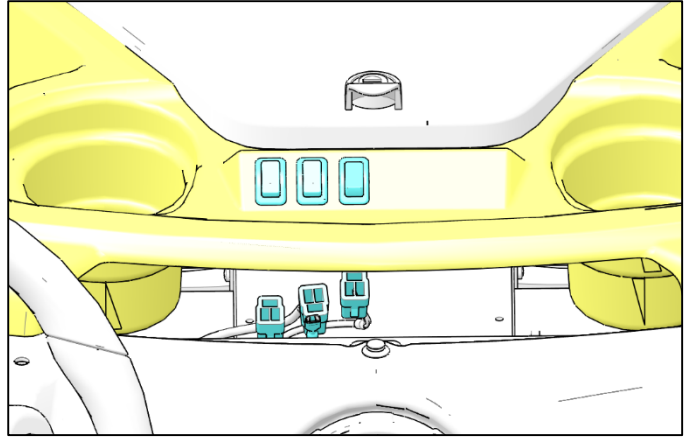
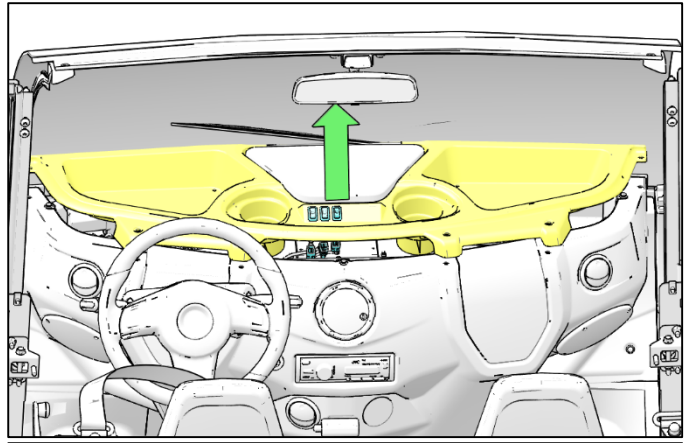
- I. Remove the 50-amp inline fuse ① on the red wire.

**Non-lithium-ion vehicles equipped with an auxiliary battery:**

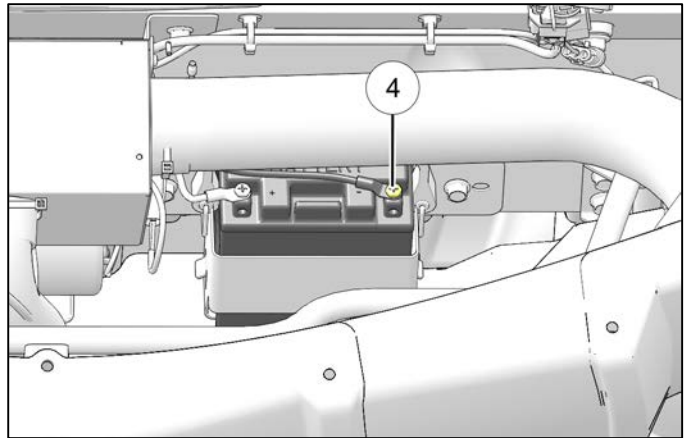
- I. Remove six push darts ③ from upper dash. Retain push darts.



- II. Lift upper dash to access and disconnect electrical connectors. Remove dash from vehicle.

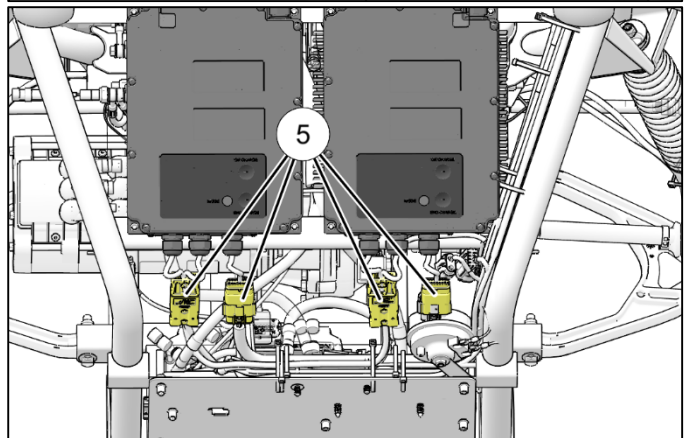


- III. Disconnect negative (-) battery cable ④ from the auxiliary battery under the dash.



**WARNING**

Improperly or not disconnecting the battery cables can result in an electric shock when working on electrical components.



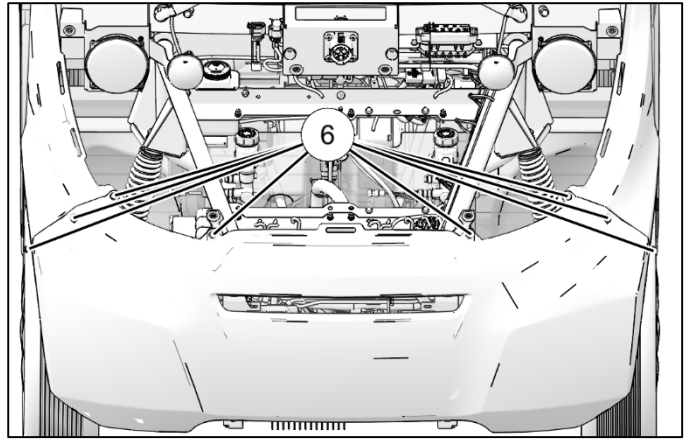
7. Disconnect charger connections ⑤.

**NOTE**

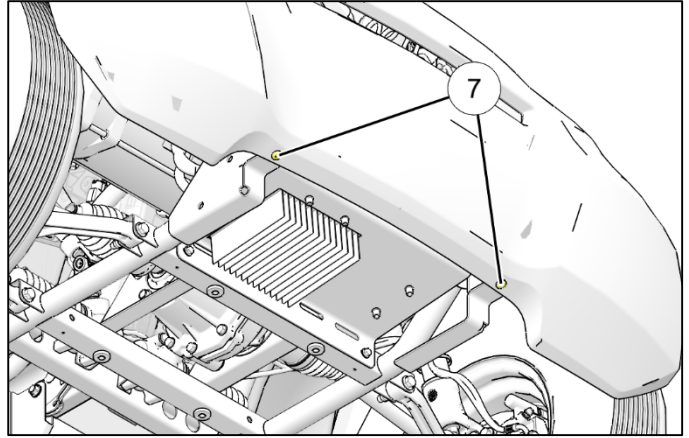
Vehicle shown is equipped with a level 2 fast charger setup. There are also standard charger and level 1 fast charger options.



8. Remove eight push darts ⑥ from the front fascia.



9. Remove two screws ⑦ from the bottom of the front fascia. Remove front fascia. Remove rubber flap from behind front fascia and discard.



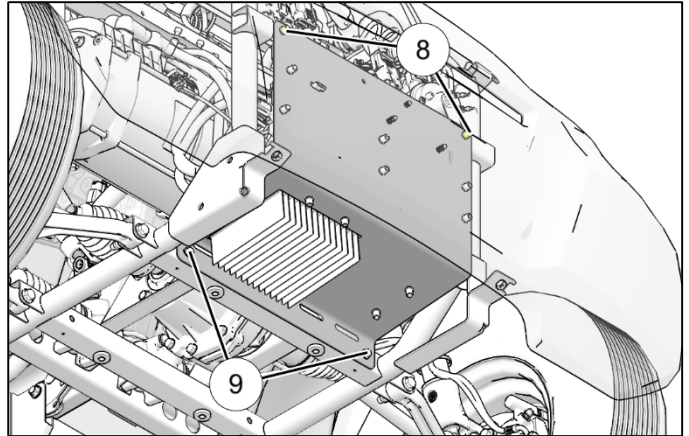
10. Remove top two screws ⑧ and loosen bottom two ⑨.

**IMPORTANT**

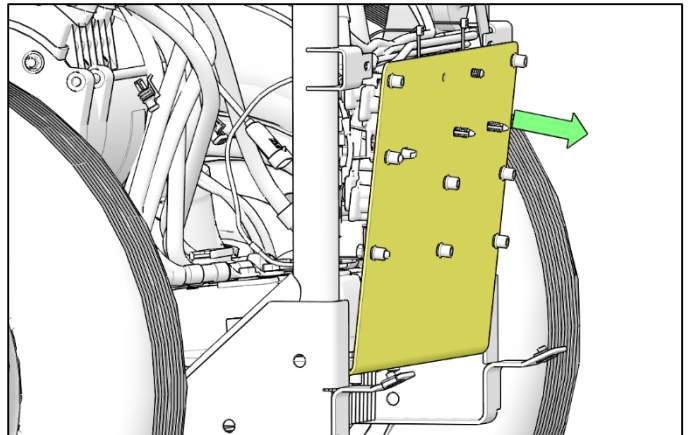
Do not fully remove two lower screws at this time.

**NOTE**

Horn will be loose when top two screws are removed.  
Ensure wiring is not damaged in the process.



11. Allow electrical mounting bracket to tilt forward providing access to electrical connections.



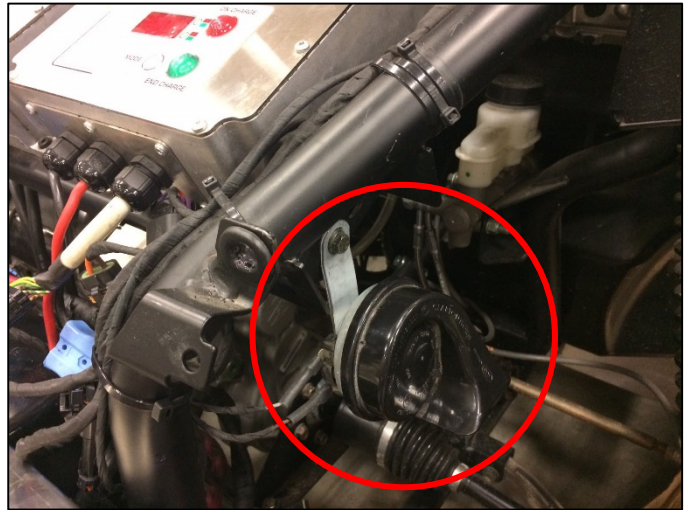
12. Remove bolt from left side of charger mounting bracket, install horn and reinstall mounting bolt.

**TORQUE**

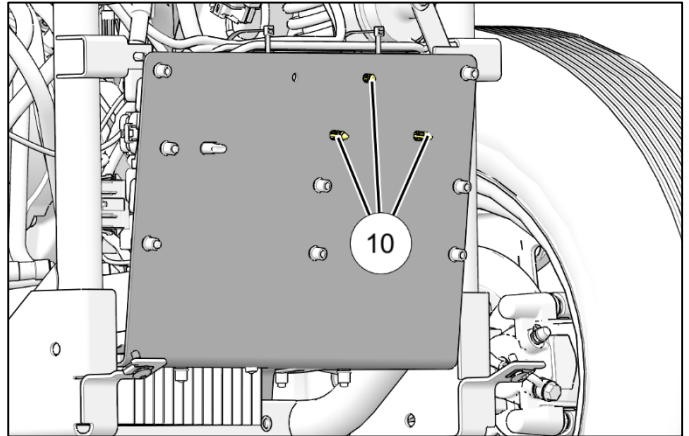
Charger Bracket Mounting Bolt:  
**8 ft-lbs (11 Nm)**

**IMPORTANT**

Adjust horn so the bell is pointing down at the ground.

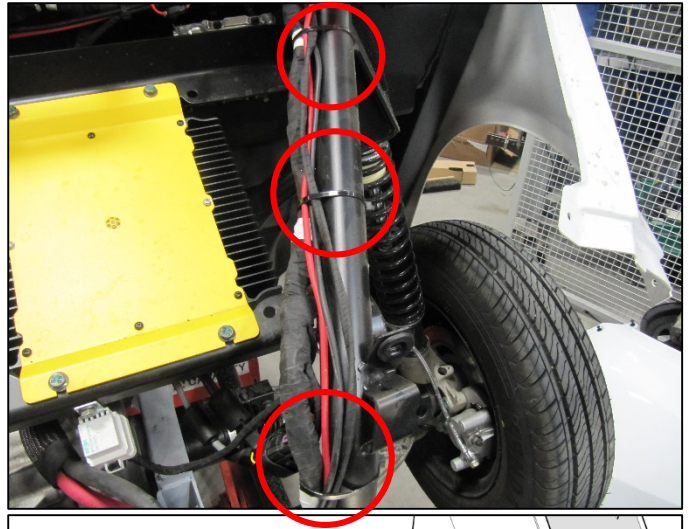


13. Remove all connectors with connector routing clips from the electrical mounting bracket ⑩.





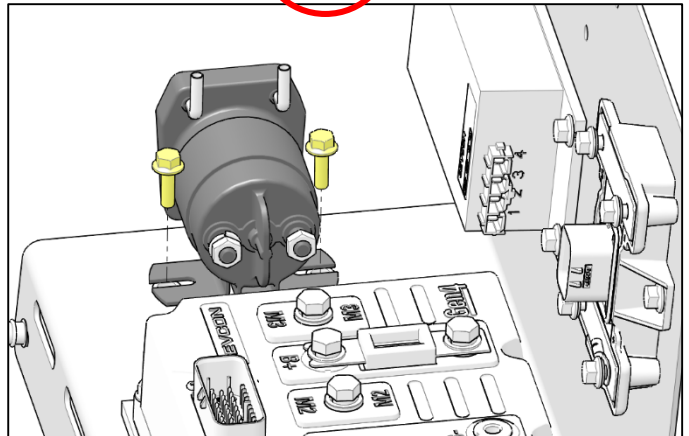
14. Remove zip ties from the electrical mounting bracket, and from the vehicle's sub-frame as shown.



15. Remove two contactor mounting bolts and remove contactor from electrical mounting bracket.

**NOTE**

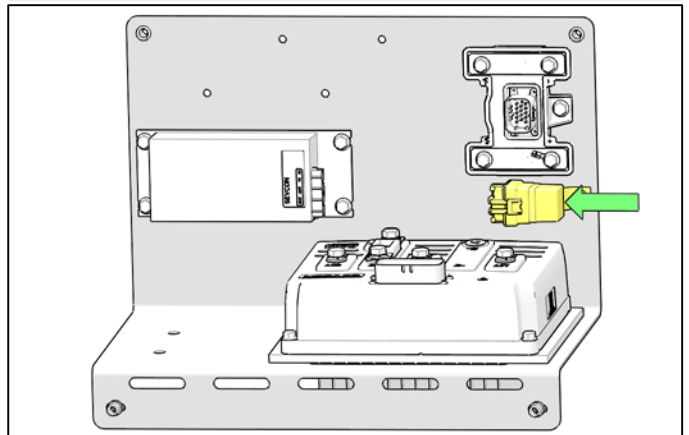
Leave all contactor electrical connections in place. Ensure wiring is not damaged in the process.



16. Slide white relay out of old mounting bracket. Do not unplug from harness.

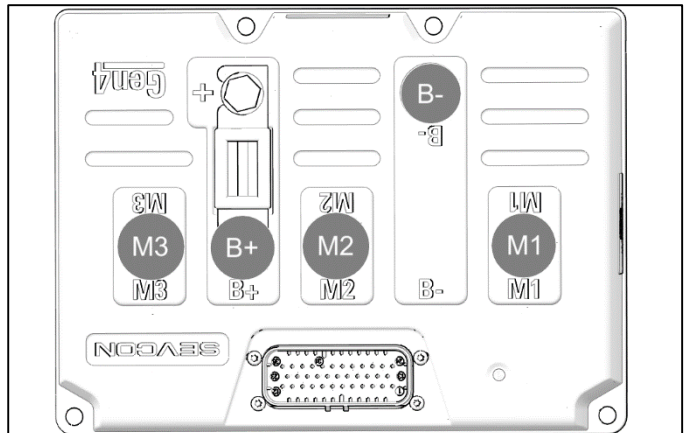
**NOTE**

Wiring not shown for image clarity.



17. Motor Controller:

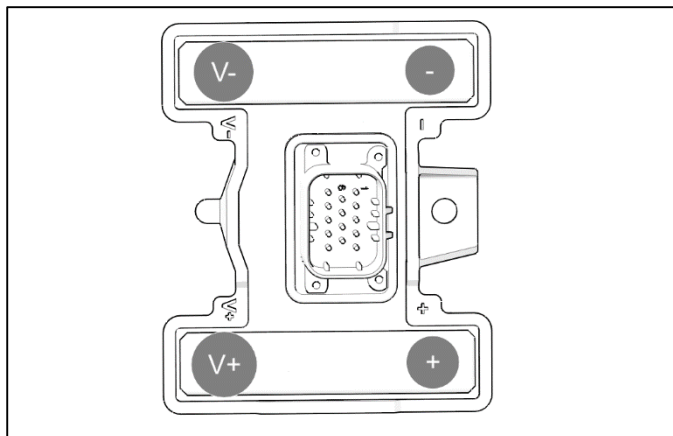
- I. Loosen all controller terminals and remove cables.
- II. Retain standard bolt, lock washer, and flat washer hardware.
- III. Discard stand-off bolt and hardware that was installed on the "B-" terminal.



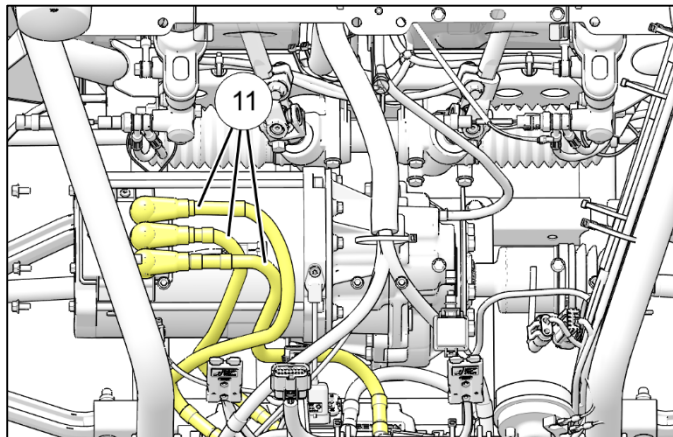
18. BMC:

- I. Loosen all BMC terminals and remove cables and wire terminals.
- II. Retain terminal bolts and washers.
- III. Disconnect main wiring connector.

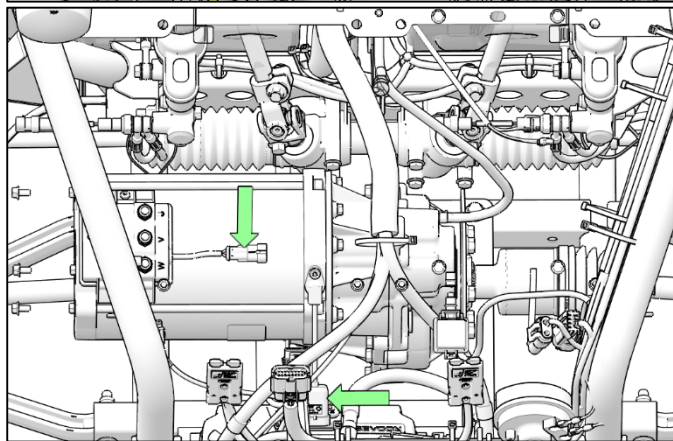
19. Disconnect the main wiring connector on the 48V converter.



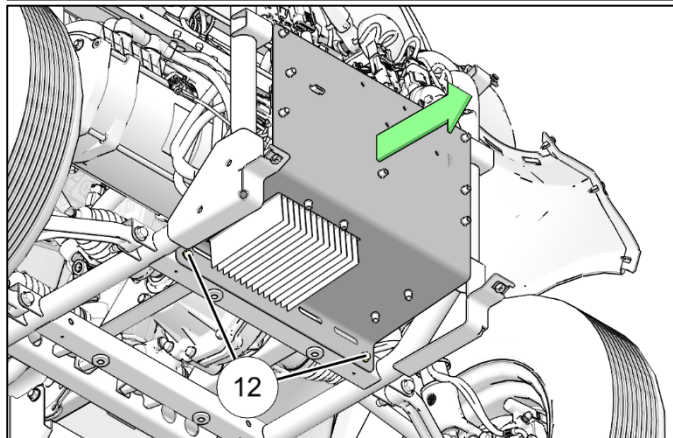
20. Remove three cables ⑪ from the drive motor. Discard cables, but retain cable boot covers.



21. Disconnect motor temperature sensor and motor speed sensor.



22. Remove two bottom screws ⑫ from electrical mounting bracket, and remove bracket with all electrical components except the contactor.



**NOTE**

Leave all contactor electrical connections in place. Ensure wiring is not damaged in the process.

23. Transfer DC/DC converter (13), BMC (14), and relay bracket (15) onto new electrical mounting bracket as shown.

**NOTE**

Relay shown in image to illustrate mounting direction.

**TORQUE**

DC/DC Converter Mounting Bolts:

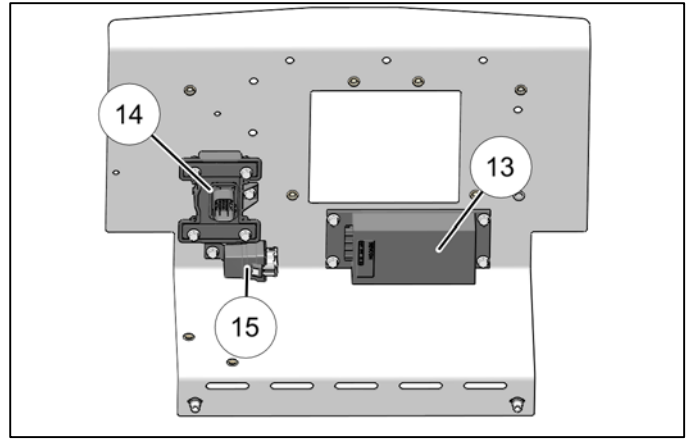
**8 ft-lbs (11 Nm)**

BMC Mounting Bolts:

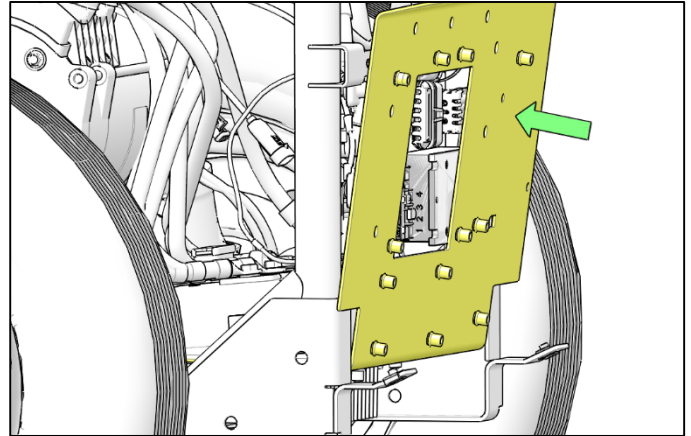
**8 ft-lbs (11 Nm)**

Relay Bracket Mounting Bolt:

**8 ft-lbs (11 Nm)**



24. Install new mounting bracket onto vehicle, and loosely install two lower mounting screws on new electrical mounting bracket. Leave bracket tilted for access.

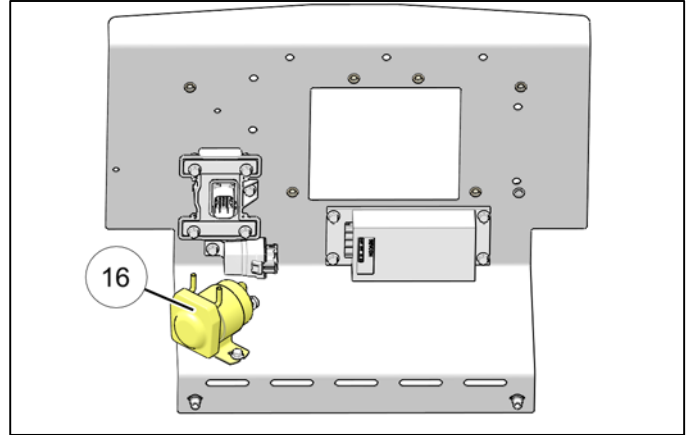


25. Install contactor (16) into new location. Torque bolts to specification.

**TORQUE**

Contactor Mounting Bolts:

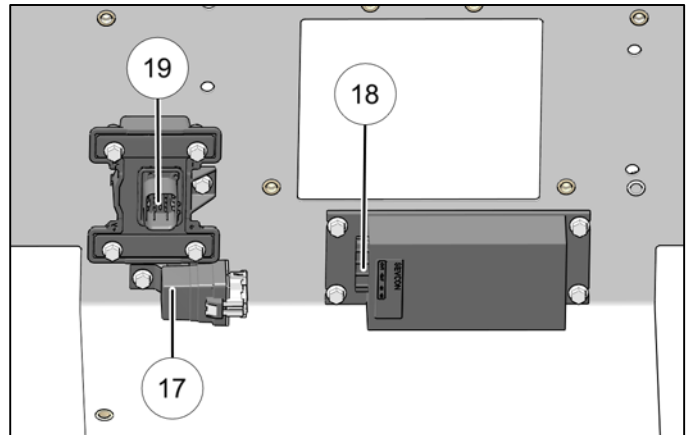
**8 ft-lbs (11 Nm)**



26. Slide white relay onto bracket (17).  
 27. Connect DC/DC converter connector (18).  
 28. Connect main BMC connector (19).

**NOTE**

Wiring not shown for image clarity.



### IMPORTANT

All BMC bolts and washers will be reused for installation except if the longer bolt (PN 7517751) from the kit is needed for the V- terminal.

29. For vehicles equipped with an auxiliary battery under the dash, install its red 10-gauge wire *instead* of the power harness wire on the BMC “+” terminal. For all other vehicles, install 10-gauge red wire from power harness.

### NOTE

On vehicles with auxiliary battery under the dash, the red 10-gauge wire from the power harness is unused.

30. On BMC “-” terminal, install 0-gauge black cable from power harness.

### IMPORTANT

Route black cable from the power harness straight up as shown in the image.

31. On BMC “V+” terminal, install the red wire labeled BMC “V+”. If EPS is equipped, also install positive EPS wire.
32. On BMC “V-” terminal install:
- I. Two bundles of brown ground wires from the front (main) harness.
  - II. New BMC/Controller ground from kit (0 gauge)

### IMPORTANT

Route BMC/Controller ground down and to the left of the main connector as shown

- III. If equipped, EPS ground.
- IV. If fast charger(s) equipped, fast charger ground(s).

### NOTE

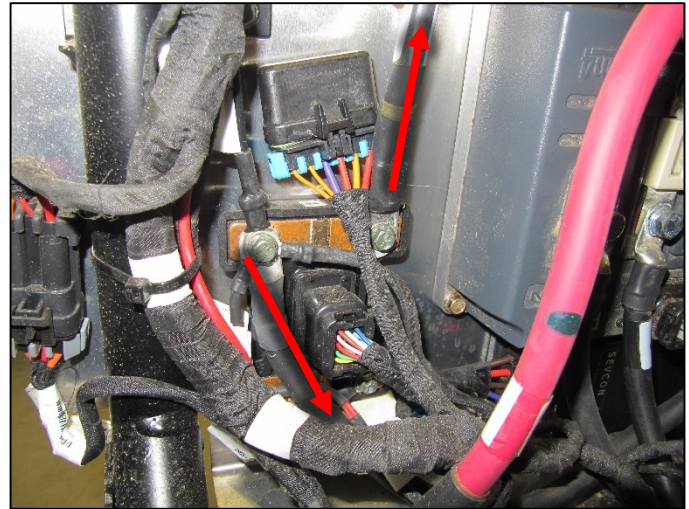
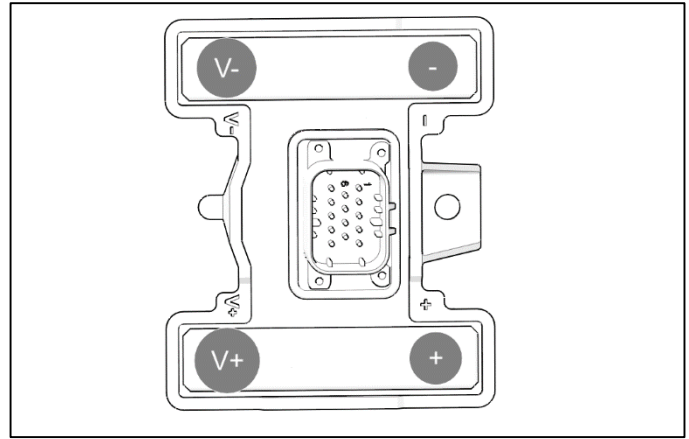
If there are multiple accessory wires that require grounding on the V- terminal, use new bolt (PN 7517751) from the kit to ensure enough bolt threads are engaged into the BMC.

### TORQUE

BMC Terminal Bolts:  
**8 ft-lbs (11 Nm)**

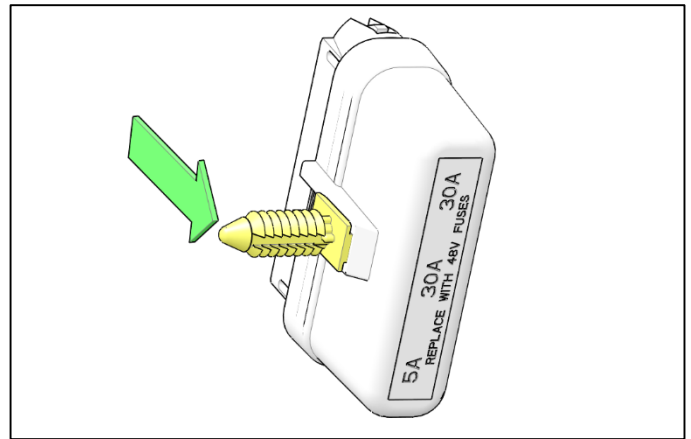
### NOTE

Ensure BMC wiring is routed as shown in the image.





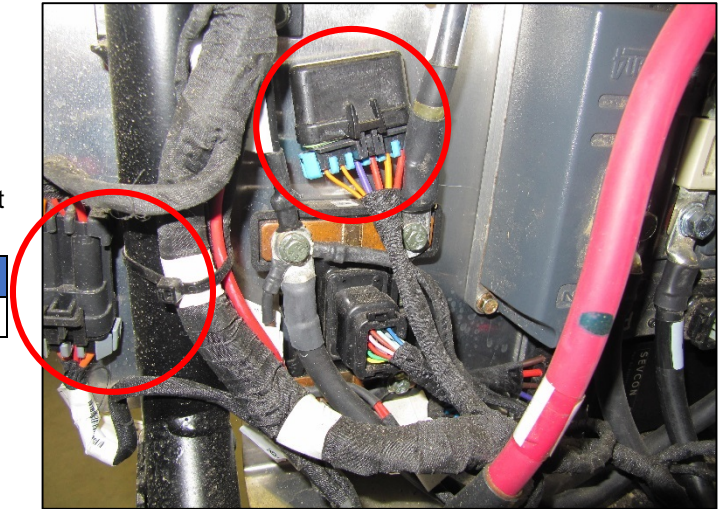
33. Install new connector routing clip onto 48V fuse block and install it into the electrical mounting bracket above the BMC.



34. Install new connector routing clip into service disconnect. Install service disconnect into new mounting location next to the left frame tube.

**NOTE**

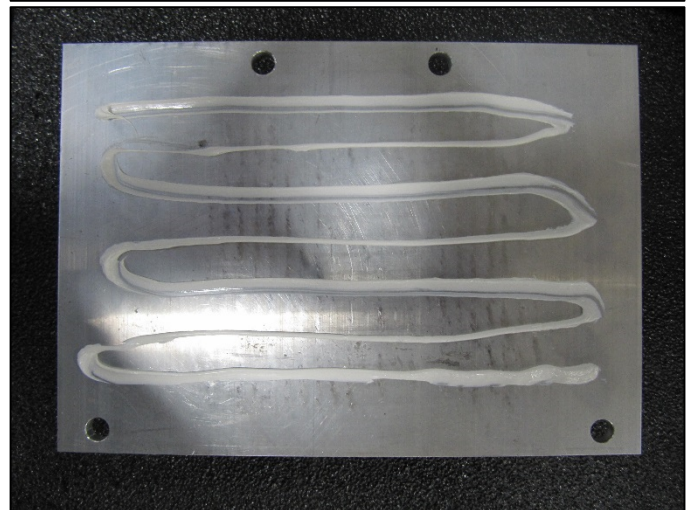
Do not reconnect service disconnect at this time.



**NOTE**

For vehicles equipped with 6.5kW motor and heat sink fin assembly, proceed to the next step. Vehicles equipped with 5kW motor, skip to step 37, as they do not have a heat sink.

35. Apply thermal paste (PN 8560261) to the back of motor controller or heat sink as shown.  
36. Put heat sink on motor controller. Rub together in a clockwise motion to evenly distribute paste.





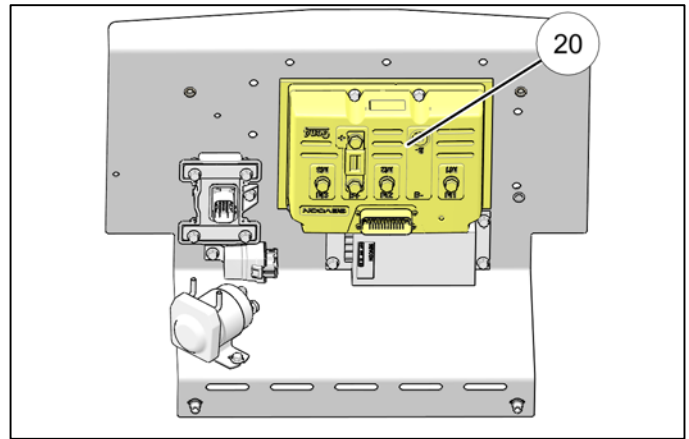
37. Mount motor controller ⑳ onto electrical mounting bracket (with heat sink, for 6.5kW motor-equipped vehicles) as shown and install the main motor controller wiring connector.

**TORQUE**

Motor Controller Mounting Bolts:  
**8 ft-lbs (11 Nm)**

**NOTE**

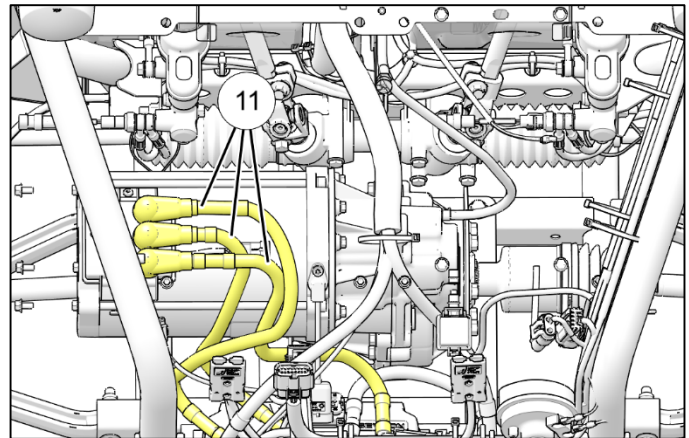
Wiring not shown for image clarity.



38. Install boot covers on motor-side of new motor cables, and install new motor cables onto motor.

**TORQUE**

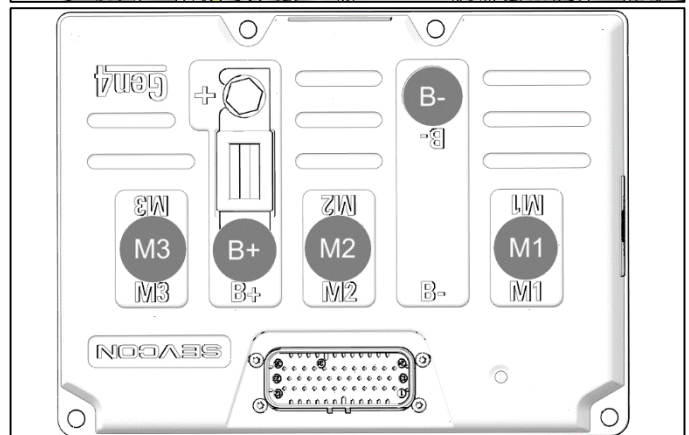
Motor Cable Bolts:  
**6 ft-lbs (8 Nm)**



39. Reconnect motor speed sensor.  
 40. Reconnect motor temperature sensor using the extension harness (PN 2414335) provided in the kit.  
 41. Install opposite ends of motor cables onto motor controller.  
 I. M1 > U  
 II. M2 > V  
 III. M3 > W

**IMPORTANT**

Motor cable orientation is critical to vehicle operation.



42. Install contactor + wire onto controller B+ terminal (0 gauge).  
 43. On controller "B-" terminal:  
 I. Install new 0-gauge BMC/Controller ground cable, new M8 bolt, lock washer, and flat washer from the kit.

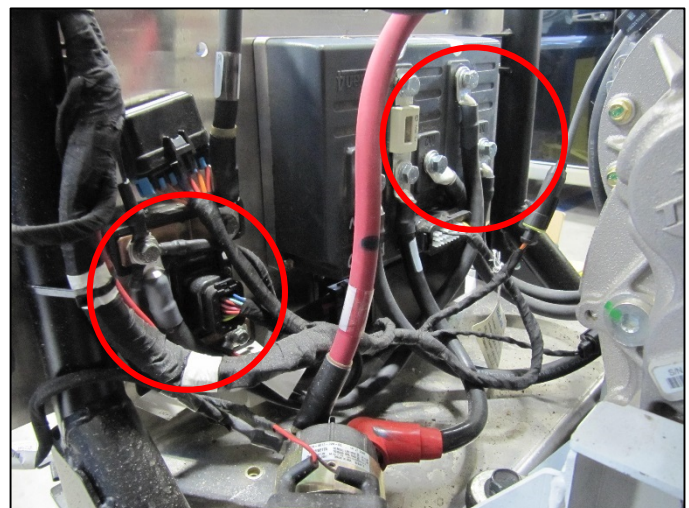
**TORQUE**

Motor Controller Terminal Bolts:  
**8 ft-lbs (11 Nm)**

44. Route motor controller wires as shown.

**IMPORTANT**

Ensure the B- wire is routed over M2 wire and underneath the BMC main connector.

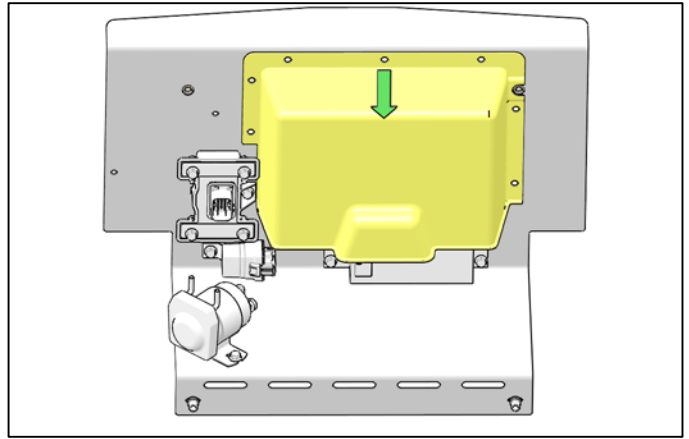


45. Tilt bracket up into place and install upper mounting bolts, tighten all four mounting bolts.

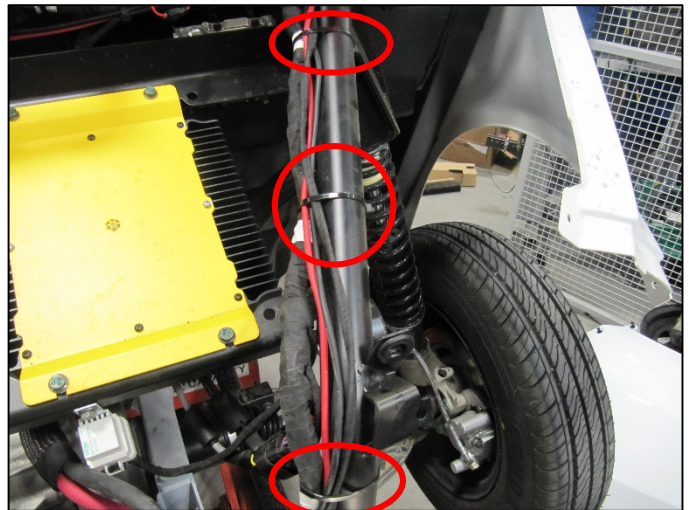
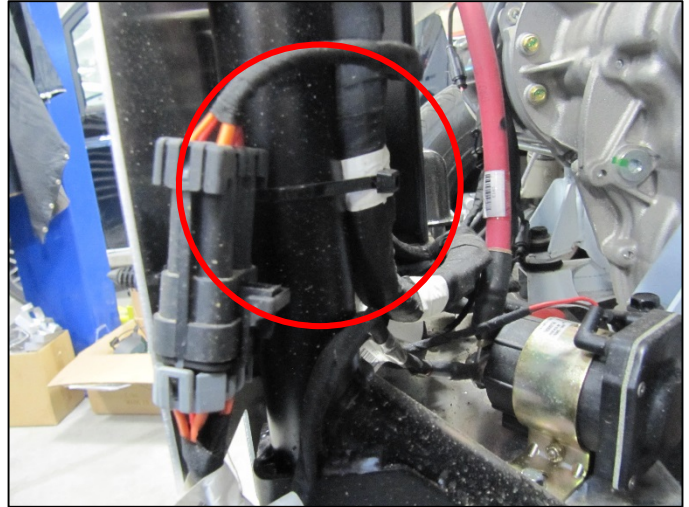
**TORQUE**

Electrical Mounting Bracket Bolts:  
**8 ft-lbs (11 Nm)**

46. Install new cover onto motor controller and install seven push darts from front side of the vehicle into the cover.



47. Using zip-ties supplied in the kit, retain the bulk of the main harness against the sub frame as shown.



48. Reconnect charger(s).  
49. Reinstall Main battery pack negative using original hardware.

**WARNING**

Improperly connecting the battery cables can result in an electric shock when working on electrical components.

**TORQUE**

Battery Terminal Fasteners:  
**8 ft-lbs (11 Nm)**

50. Reinstall rear deck, and any rear accessory that may have been installed.
51. Depending on vehicle's setup, reinstall 50-amp fuse, or connect auxiliary battery negative under dash board.

### TORQUE

Auxiliary Battery Terminal:  
**60 in-lbs (7 Nm)**

52. If previously removed, install any dash switches and install dash with original push darts.
53. Reconnect service disconnect.
54. Turn key-switch on and ensure, lights, turn signals, wipers, and drive modes all function properly.

### NOTE

Some vehicles may show a low state of charge after reassembly. If this occurs, plug the vehicle in to complete a full charge and the battery meter should reset.

55. Reinstall front fascia with original push darts and torx screws.

### TORQUE

Front Fascia Torx Screws:  
**5 ft-lbs (7 Nm)**

56. Install completion decal (PN 7170107)
57. Install hood and two thumb screws.
58. File bulletin L-17-04-A.

