SERVICE BULLETIN

Release Date: August 14, 2019

Expiration Date: August 14, 2021

LEV

Communication #: L-19-01

Model Year(s): 2016-2018

— Confidential and Proprietary —

VERSION: R01 (August 14, 2019)

IMPORTANT
If you are working with a printed copy, please verify you have the most current version of this document.

SUBJECT: GEM DC/DC CONVERTER

PURPOSE

Some 2016-2018 GEM vehicles built with the 500W DC/DC converter have exhibited premature failure of the component, including some thermal-related damage. To address this concern, GEM is releasing this Service Bulletin for dealers to remove 500W converters on all affected units, and replace with a 300W converter.

- If you encounter a vehicle that was upgraded to a 500W converter in the field, and is not showing as affected by this bulletin, please contact Tech Service to have it added to the bulletin.
- If you have a vehicle affected by this bulletin with a 300W converter, contact Tech Service to close out the bulletin.

IMPORTANT
All other applicable bulletins must be performed prior to completing this bulletin, including L-18-01-B.

AFFECTED MODELS

MODEL YEAR	MODELS	VEHICLE IDENTIFICATION NUMBER RANGE
2016 - 2018	E2	Reference Unit Inquiry on the dealer website or the Service Communications list on the STOP site to lookup affected VINs.
	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. Polaris will NOT be mailing a notification letter to consumers affected by this Bulletin.

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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	
Bulletin #	L-19-01
Claim Type	SB (Service Bulletin)
Labor Allowance	0.7 Hours (42 Minutes) - DC/DC Converter
Part Number / Description	4013453 - 300W Converter - QTY: 1
Parts Availability	Available to Order
University of Polaris Video Training Required	NO

INVENTORY / STOCK PART CLAIMS

Dealers should review their service parts inventory and ensure the following service parts are **NOT** used:

- 4015999 - CONVERTER-48VDC/12VDC,500W
- 2413415 - ASM-HARNESS,DC/DC,JUMPER [USE W/500W CONVERTER]

NOTICE
To remove these service parts from circulation, file a parts stock claim as directed below.

Use the following process for filing a PART STOCK warranty claim for any of the parts listed above.

1. Start a new Part Stock warranty claim.
2. Select Product Line: LEV
3. Enter today's date into the Date Failed and Date Repair information fields.
4. Enter L-19-01 into the CONCERN field.
5. Enter L-19-01 into the CAUSE field.
6. Enter L-19-01 into the CORRECTION field.
7. Enter the part number and quantity.
8. Enter warranty fail codes: 127 / 438 / 132
9. Validate the parts.
10. Save and submit the claim to Polaris.

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ACCESSORY 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-19-01 in the CONCERN and CAUSE fields. In the CORRECTION field, enter "ACCESSORY REMOVAL AND INSTALLATION".
4. Enter warranty fail codes 127 / 438 / 132.
5. Add part 0000541, 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 scheduled for this bulletin. 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**.

COVERAGE PERIOD

Coverage will begin on 8/14/19. Coverage will expire on 8/14/21.

PARTS RETURN / DISPOSAL INFORMATION

Under no circumstances shall the parts removed 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 communication) is taken out of circulation and disposed of properly or returned to Polaris (if required).

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/video. This feedback form is viewable on a mobile device by scanning the QR code or by clicking HERE if viewing this document electronically.

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REPAIR PROCEDURE

TOOLS REQUIRED

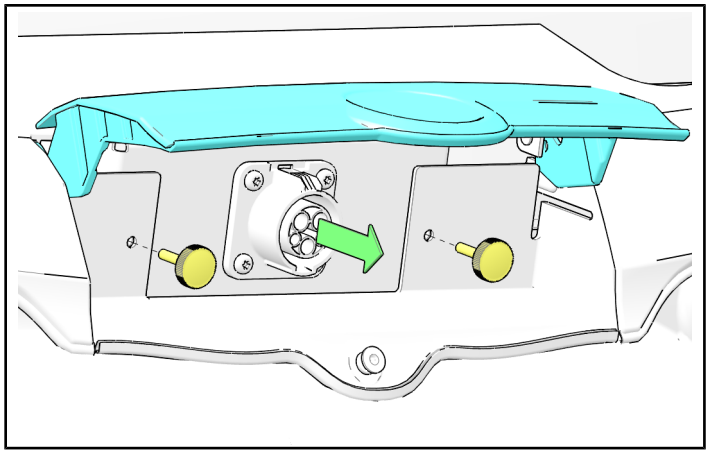
- Multi-Function Pliers
- Side Cutters
- 8 mm, 10 mm, 13 mm socket/ratchet
- T-25, T-30 Torx Driver
- Torque Wrench

REPAIR PROCEDURE

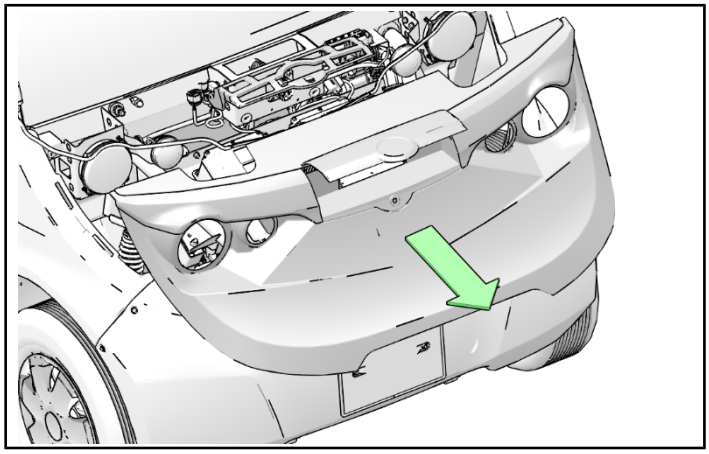
NOTICE
This procedure was written for a vehicle that has all other applicable bulletins completed. The vehicle must be equipped with an auxiliary battery before proceeding.

DC/DC CONVERTER REMOVAL

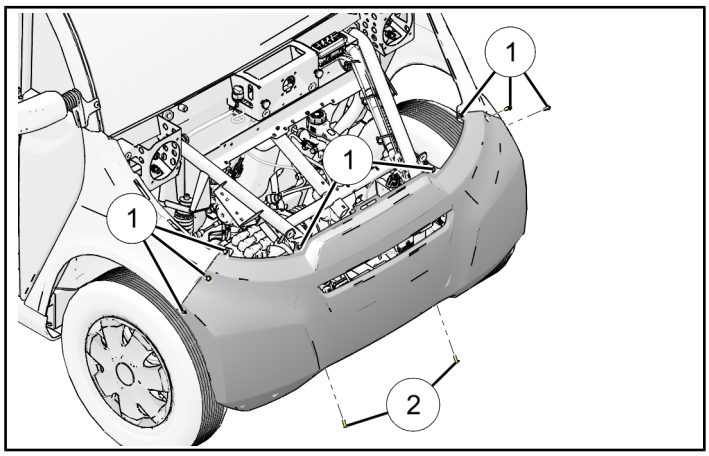
1. Park vehicle on a flat, level surface and turn key switch to the OFF position.
2. Remove two hood screws located under the charge port.



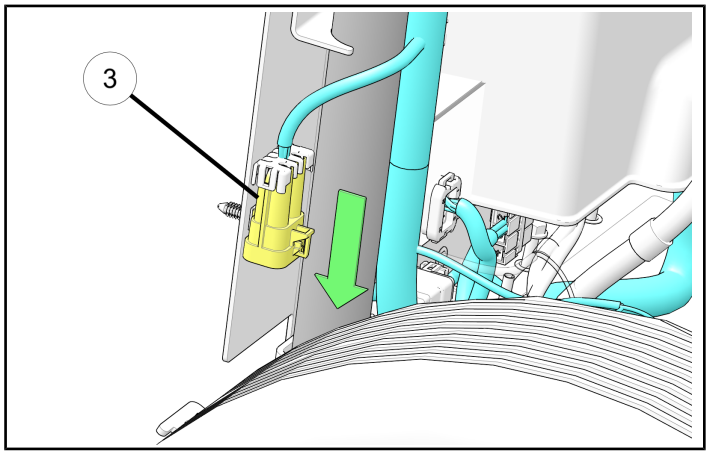
3. Keeping the hood parallel with the ground, pull the hood forward to release it from the grommets. Carefully lift the hood away from the vehicle.



4. Remove two T-30 Torx screws ② and eight push-rivets ①. Remove the front fascia.



5. Disconnect power at service disconnect, and slide the main harness side of the service disconnect downward ③ to remove it from its mounting clip.

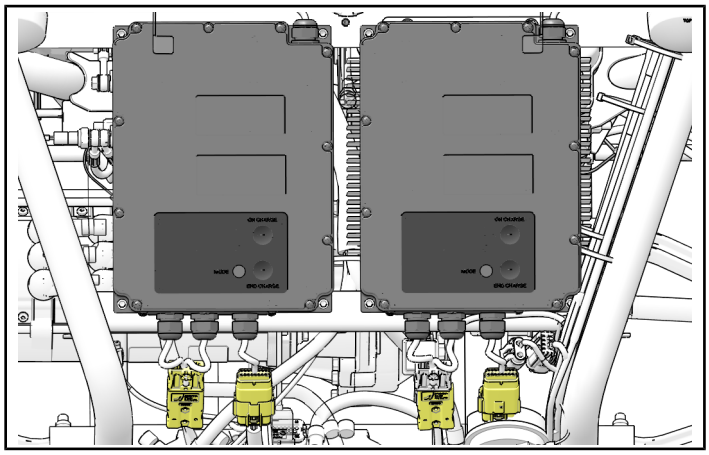


CAUTION
Failure to disconnect the service disconnect plug may result in electrical short damage to the vehicle electrical systems.

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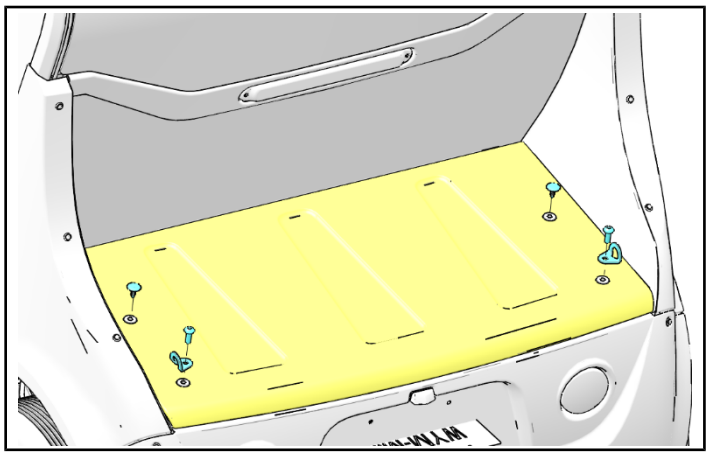
6. Disconnect charger connections.



NOTICE

Vehicle shown is equipped with a 6kW fast charger setup. There are also standard charger and 3kW fast charger options.

7. Remove fasteners and remove the rear deck.



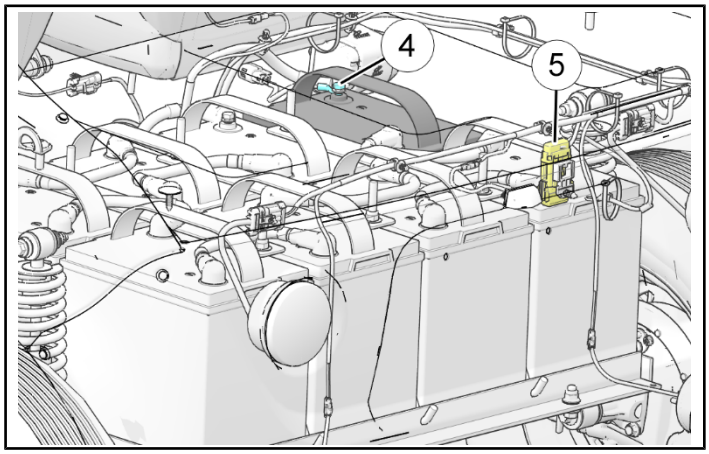
NOTICE

Refer to the service manual for accessory removal.

8. Remove main negative cable and battery temp sensor ④ from the battery pack with a 13mm socket/ratchet, isolate cable and sensor, and retain hardware.

NOTICE

Li-ion battery packs do not have a temp sensor at this terminal.

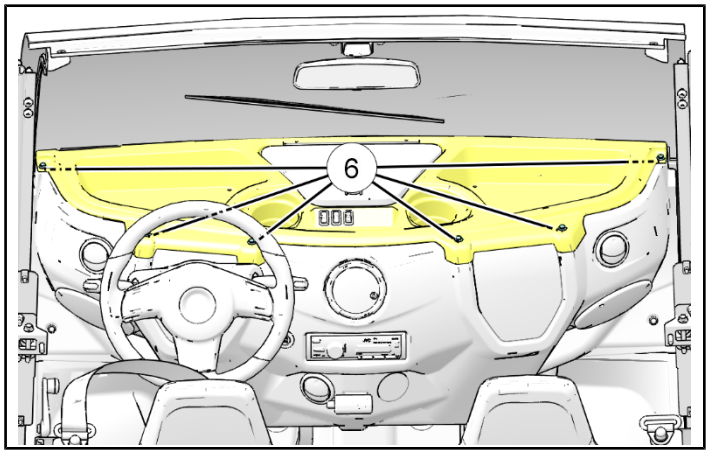


9. Some vehicles equipped with lithium-ion batteries will have the auxiliary battery in the rear. For these vehicles: Remove the 50-amp inline fuse ⑤ on the red wire to disconnect power from the auxiliary battery.

⚠ WARNING

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

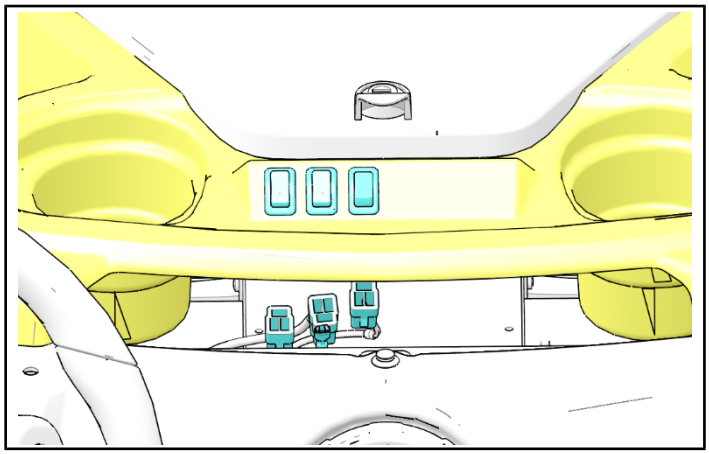
10. **Vehicles with the auxiliary battery under the dash:** Remove six push darts ⑥ from upper dash and two in the glovebox. Retain push darts.



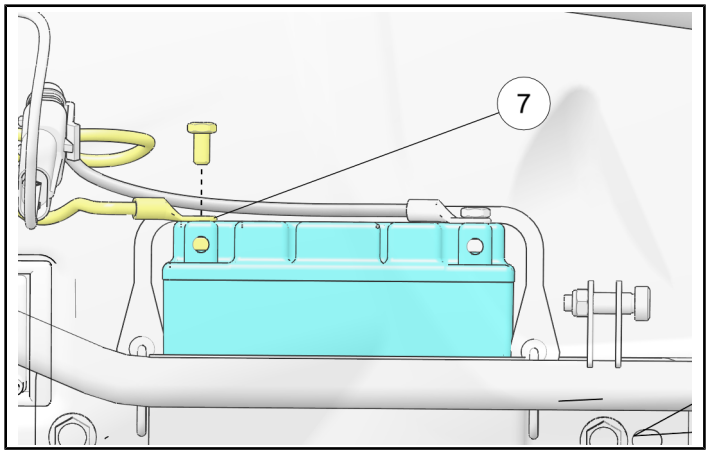
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11. Lift upper dash to access and disconnect electrical connectors. Remove dash from vehicle.



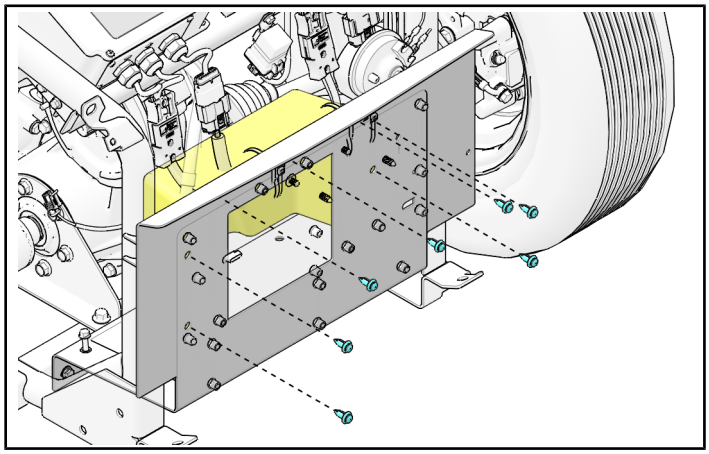
12. Disconnect positive (+) battery cable ⑦ from the auxiliary battery under the dash.



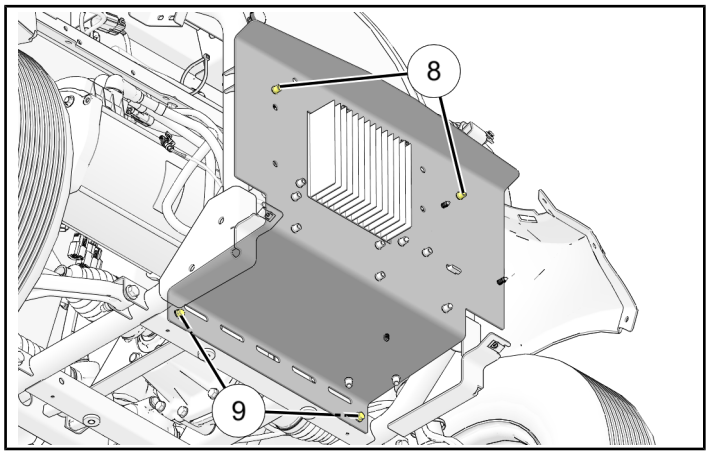
⚠ WARNING

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

13. Remove seven push-rivets from controller cover. Set cover aside.



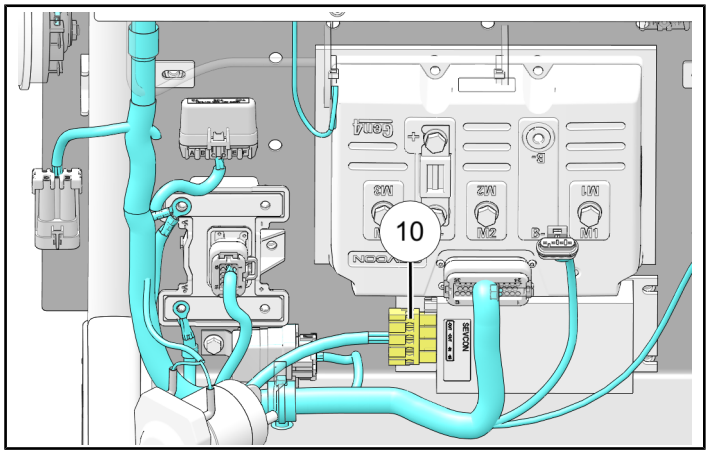
14. Remove top two bolts ⑧ from the electrical mounting bracket and loosen the bottom two bolts ⑨.



IMPORTANT

Do not fully remove two lower bolts.

15. Allow electrical mounting bracket to tilt forward, providing access to electrical connections.
16. Disconnect electrical connection from the DC/DC converter ⑩.

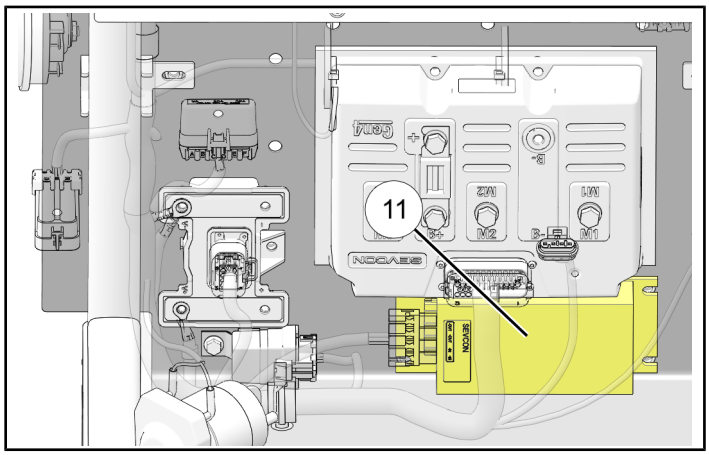


17. Vehicles with a 500W converter will have a short adapter harness between the converter and its connector on the front harness. Disconnect and discard the adapter harness.

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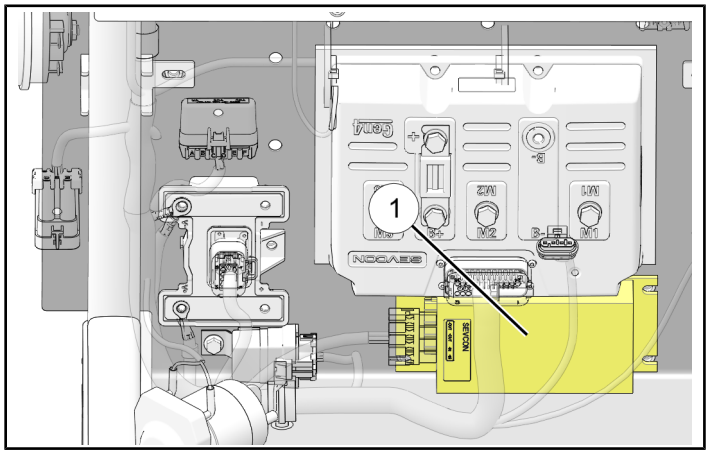
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18. Remove DC/DC mounting fasteners on right side, loosen the two left fasteners, slide the converter to the right and remove 500W DC/DC converter ⑪. Discard converter, retain hardware.



DC/DC CONVERTER INSTALLATION

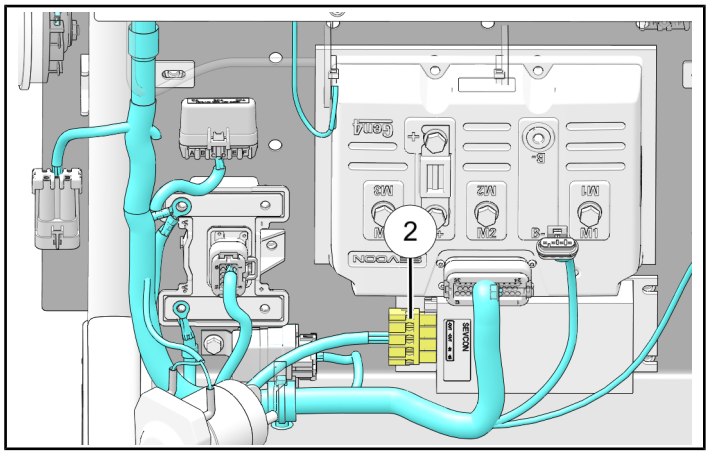
1. Install 300W DC/DC Converter **PN: 4013453**① by sliding it into the two left fasteners and align the right two mounting holes.



2. Install two - 10mm DC/DC mounting fasteners and torque all four fasteners to specification.

TORQUE
DC/DC Converter Mounting Fasteners: **8 ft-lbs (11 Nm)**

3. Connect electrical connection ② to the DC/DC converter.

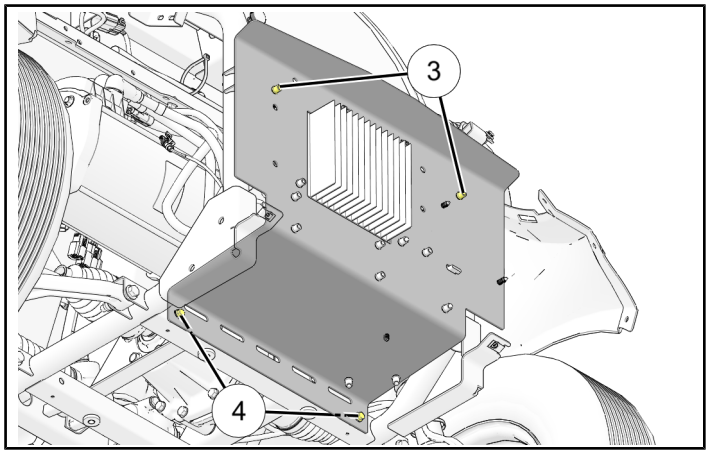


4. Install top bolts into mounting bracket ③ tighten bottom bolts ④. Torque all four bolts.

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

IMPORTANT
Before installing the electrical mounting bracket ensure the cables on the contactor (attached to bottom side of bracket) have not loosened. Verify torque.

TORQUE
Contactor Nut: **50 in-lbs (5.6 Nm)**



5. Reinstall motor controller cover and seven push-rivets.
6. Install service disconnect onto the electrical mounting bracket.

IMPORTANT
Do not reconnect service disconnect at this time.

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7. Reinstall main battery pack negative using original hardware.

NOTICE
Reinstall the battery temp sensor for lead acid battery packs.

⚠ 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)**

8. Depending on vehicle's setup, reinstall 50-amp fuse, or connect auxiliary battery negative under the dash.

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

9. Reconnect service disconnect.
10. Using a voltmeter, do a static voltage reading of the Auxiliary Battery. Voltmeter should read 12-13v.
11. Turn the key switch on, and check the voltage of the Auxiliary Battery again. There should be a rise in voltage with the voltmeter reading ~1v higher than the static reading.

NOTICE
If you are not seeing the correct voltages when testing the Auxiliary Battery refer to the Service Manual, or contact Polaris Tech Service for assistance.

12. Turn key switch off.
13. Reinstall rear deck, and any accessories that may have been installed.
14. Reinstall any dash switches and install upper dash with original push rivets.
15. Reconnect charger connections.
16. Turn key switch on and ensure lights, turn signals, wipers and drive modes all function.
17. Reinstall front fascia with original push darts and torx screws.
18. Install hood and two thumb screws.
19. File bulletin L-19-01.

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