



RECALL CAMPAIGN BULLETIN

Reference:

NTB14-046

Date:

May 22, 2014

VOLUNTARY SAFETY RECALL CAMPAIGN 2014 LEAF®; REPLACEMENT OF THE TRACTION MOTOR INVERTER

CAMPAIGN I.D. #: PC281
APPLIED VEHICLE: 2014 LEAF (ZE0)

Check Service Comm to confirm campaign eligibility.

INTRODUCTION

Nissan is conducting a Voluntary Safety Recall Campaign on a small subset of MY2014 LEAF (ZE0) vehicles to replace the Traction Motor Inverter.

IDENTIFICATION NUMBER

Nissan has assigned identification number PC281 to this campaign. This number must appear on all communications and documentation of any nature dealing with this Campaign.

DEALER RESPONSIBILITY

It is the dealer's responsibility to check Service Comm for the campaign status on each vehicle falling within the range of this voluntary safety recall which for any reason enters the service department. This includes vehicles purchased from private parties or presented by transient (tourist) owners and vehicles in a dealer's inventory. Federal law requires that new vehicles in dealer inventory which are the subject of a safety recall must be corrected prior to sale. Failure to do so can result in civil penalties by the National Highway Traffic Safety Administration. While federal law applies only to new vehicles, Nissan strongly encourages dealers to correct any used vehicles in their inventory before they are retailed.

SERVICE PROCEDURE

This procedure is to be performed **ONLY** by a Master Technician with **current** LEAF certification.

Follow all Warning, Caution, and Danger instructions in the Electronic Service Manual (ESM).

DANGER:

- Touching high voltage components without using the appropriate protective equipment will cause electrocution.
- Electric vehicles contain a high voltage battery. There is the risk of electric shock, electric leakage, or similar accidents if the high voltage components and vehicle are handled incorrectly. Be sure to follow the correct work procedures when performing this procedure.

WARNING:

- Be sure to remove the service plug in order to disconnect the high voltage circuits before performing inspection or maintenance of high voltage system harnesses and parts.
- The removed service plug must always be carried in a pocket of the responsible worker or placed in the tool box during the procedure to prevent the plug from being connected by mistake.
- Be sure to wear insulating protective equipment consisting of gloves, shoes, a face shield and glasses before beginning work on the high voltage system.
- Never allow workers other than the responsible person to touch the vehicle containing high voltage parts. To keep others from touching the high voltage parts, these parts must be covered with an insulating sheet except when using them.

CAUTION:

- Never turn the vehicle ignition to the READY status with the service plug removed unless otherwise instructed in the ESM. A malfunction may occur if this is not observed.

1. Write down the radio settings.

Presets	1	2	3	4	5	6
AM						
FM 1						
FM 2						
SAT 1						
SAT 2						
SAT 3						
Bass	Treble		Balance	Fade	Speed Sen. Vol.	

2. **If equipped**, Write down the customer preferred setting for the Automatic Air Conditioning System.

- If needed, refer to System Settings in the HAC section of the ESM.

Disconnect High Voltage

1. Turn the ignition switch OFF.

CAUTION: The technician must keep the Intelligent Key on his/her person.

2. Disconnect 12V battery negative terminal and tape exposed end.
3. Remove the service plug by following the below procedure.
 - a. Insert a suitable tool under the RH rear (1) corner of the access trim cover and pry up (2) to remove.

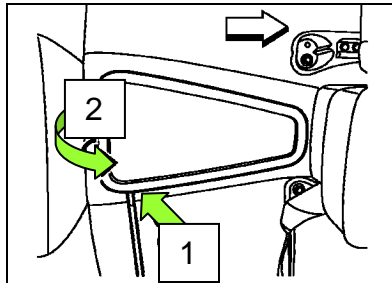


Figure 1

- b. Remove the access cover bolts (1) and remove the cover (2).

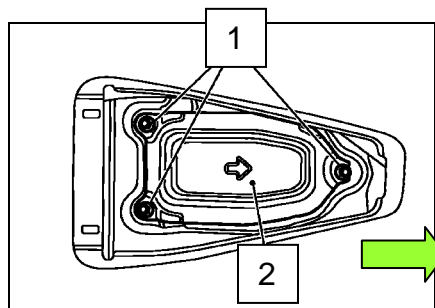


Figure 2

- c. Remove the service plug.

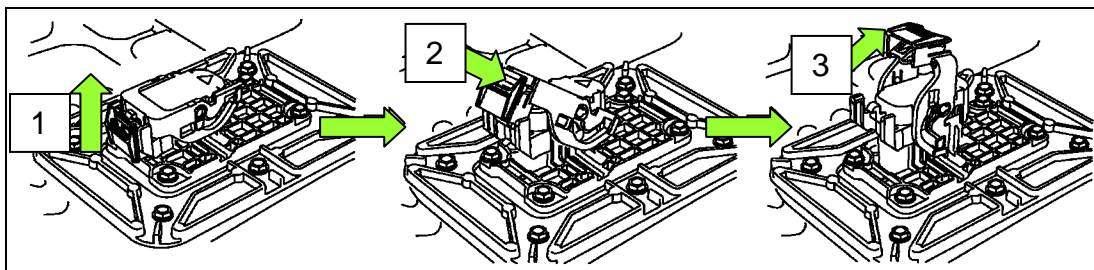


Figure 3

WARNING:

- Immediately insulate removed high voltage connectors and terminals with insulating tape.
- Be sure to put the removed service plug in your pocket and carry it with you so that another person does not accidentally connect it while work is in progress.

4. Wait for a minimum of 10 minutes after the service plug is removed.

Check Voltage in High Voltage Circuit (check that condensers are discharged)

1. Lift up the vehicle and remove the front battery Li-ion battery under cover.

Reassembly torque:
5.5 N•m (0.56 kg-m, **49 in-lb**)

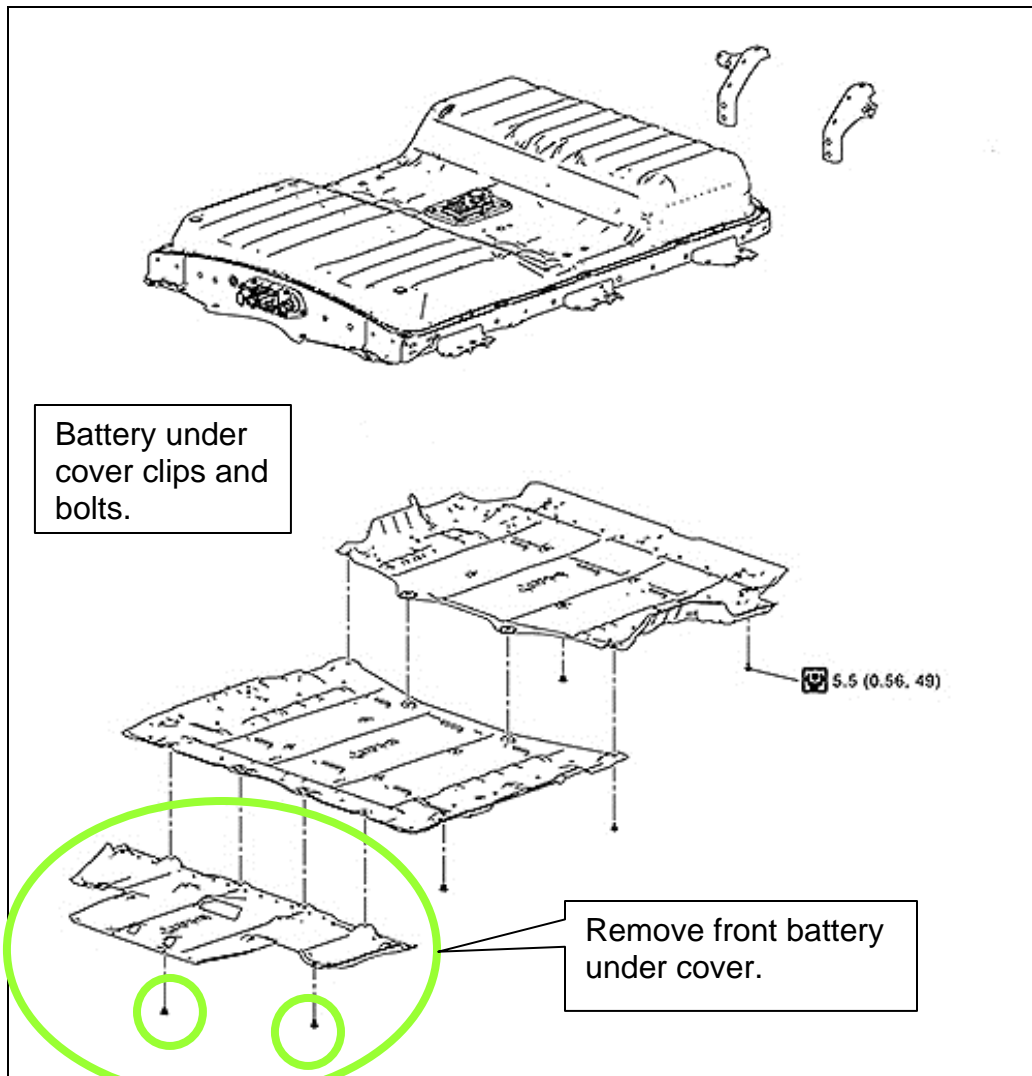
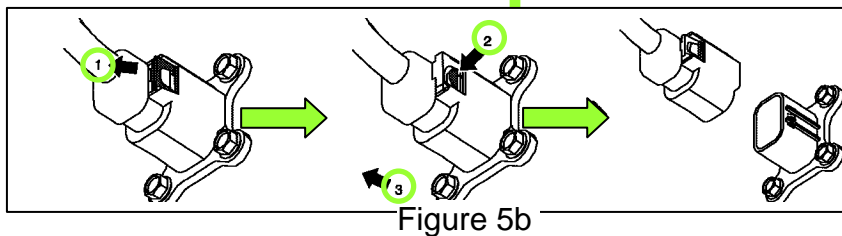
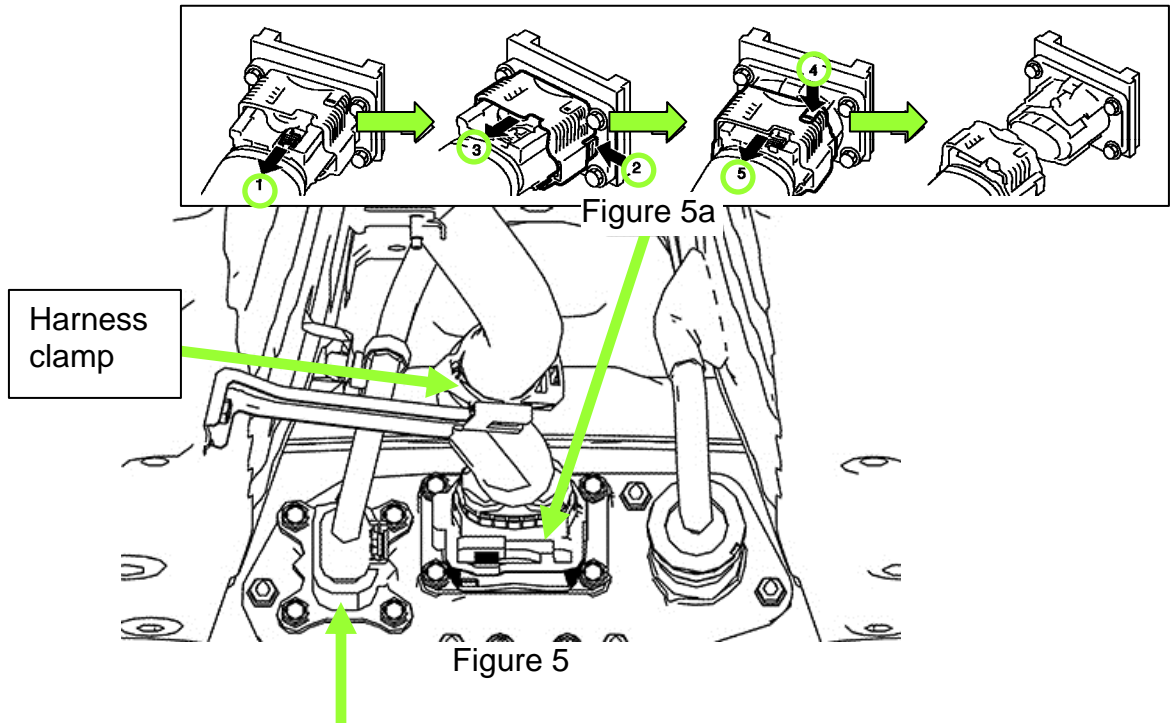


Figure 4

2. Remove the harness clamp from the high voltage harness (Figure 5).
3. Disconnect high voltage harness connector (Figure 5a) from front side of Li-ion battery.
4. Disconnect PTC heater harness connector (Figure 5b) from the front side of the Li-ion battery.



5. Measure voltage between high voltage harness connector terminals and PTC heater harness connector terminals (Figure 6).

- Voltage should be 5 volts or less.

DANGER: Touching high voltage components without using the appropriate protective equipment will cause electrocution.

CAUTION: For voltage measurements, use a tester which can measure to 500 V or higher.

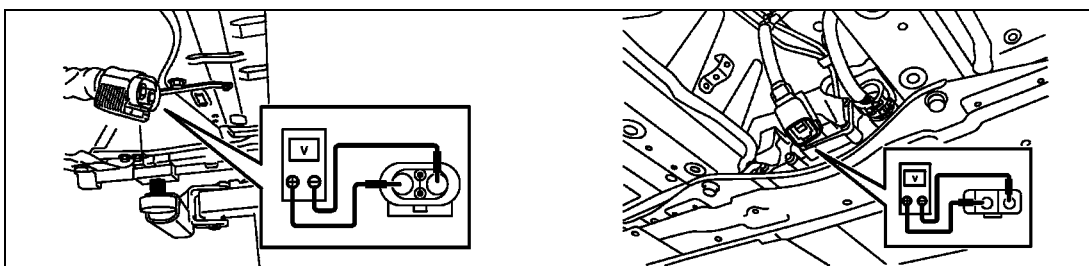


Figure 6

6. Cover the battery's exposed high voltage outlets with insulating tape.

Remove the Power Delivery Module (PDM)

1. Drain the coolant into a clean container and save for re-use.
2. Operate the front wiper to move wiper arms to the auto stop position.
3. Open the hood.
4. Remove the front wiper arm caps.
5. Remove the front wiper arm mounting nuts.

Reassembly torque:
23.5 N•m (2.4 kg-m, **17 ft-lb**)

6. Raise the front wiper arms, and then remove both wiper arms from the vehicle.

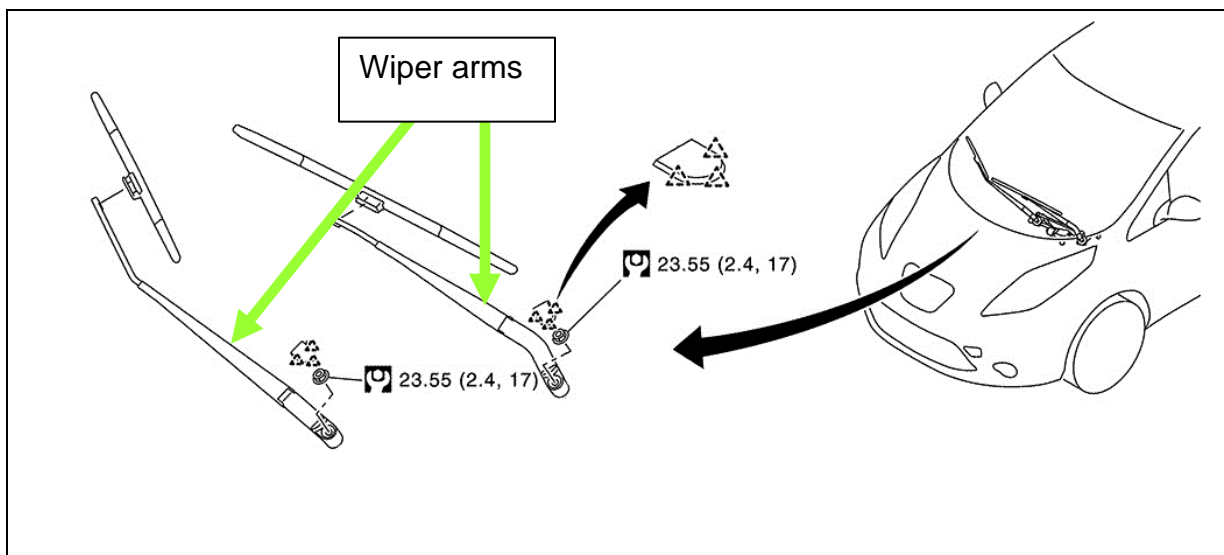


Figure 7

7. Remove both front fender covers.

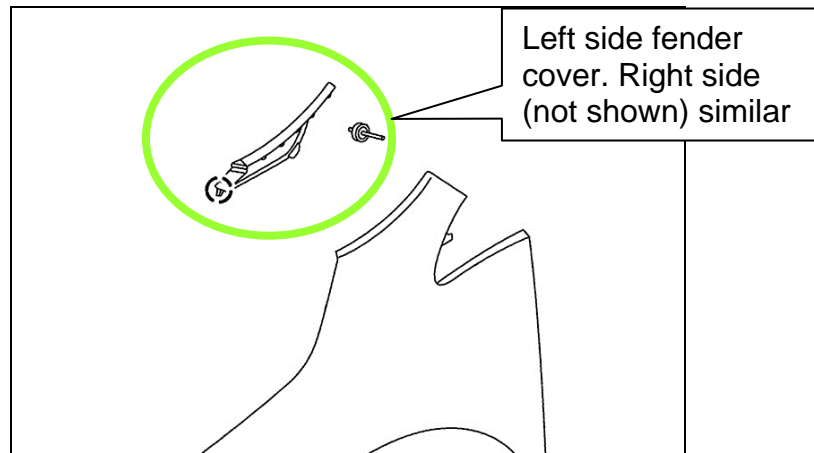


Figure 8

8. Disconnect the washer tube joint on the cowl top cover right side.

9. Remove the cowl top cover.

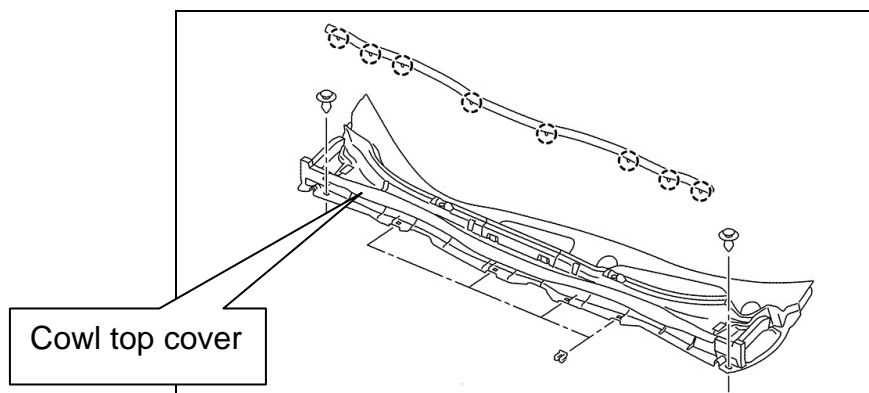


Figure 9

10. Disconnect the front wiper motor harness connector.

11. Remove the mounting bolts from the front wiper drive assembly.

Reassembly torque:
4.45 N•m (0.45 kg-m, **39 in-lb**)

12. Remove the front wiper drive assembly from the vehicle.

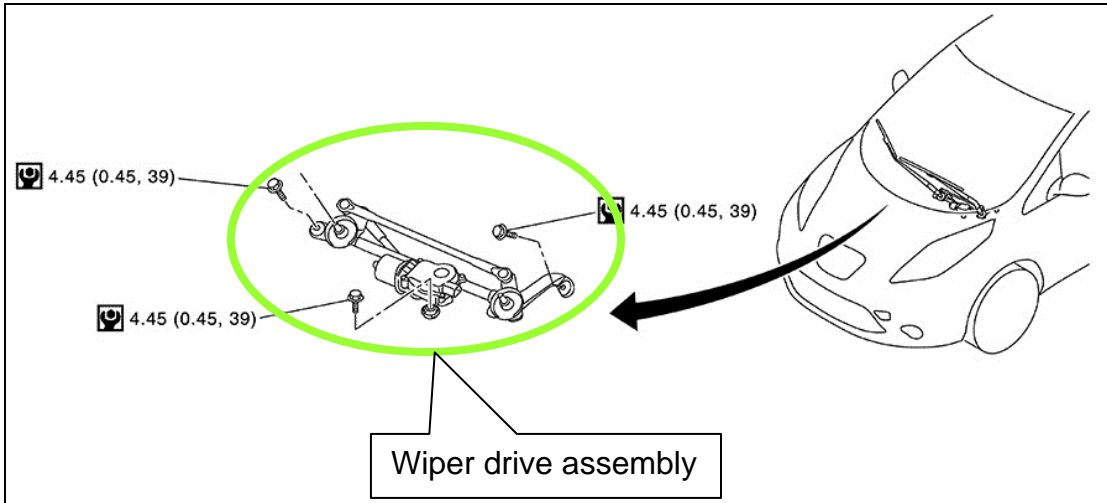


Figure 10

13. Remove the cowl top extension mounting bolts, and then the cowl top extension.

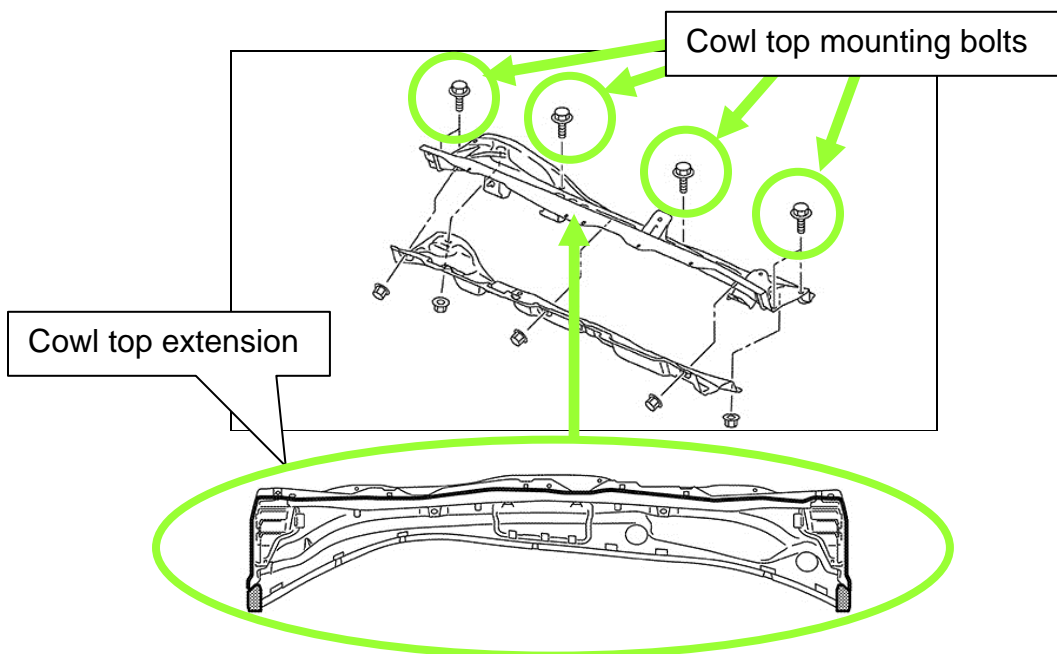


Figure 11

NOTE: Cover the bottom of the windshield with a fender cover to protect the glass.

14. Remove the acoustic insulating plate located on the rear of the PDM.

Reassembly torque:
10.0 N•m (1.0 kg-m, 7 ft-lb)

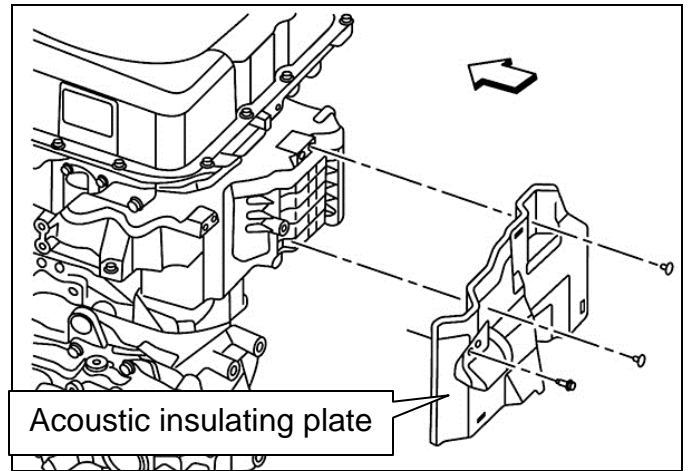


Figure 12

15. Remove the Li-ion battery high-voltage harness (2) from the clamp (1).

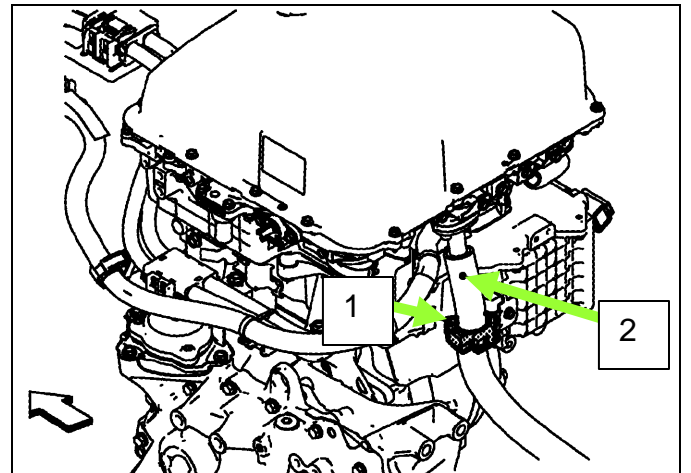


Figure 13

16. Remove the normal charge port harness clamps from the harness bracket.

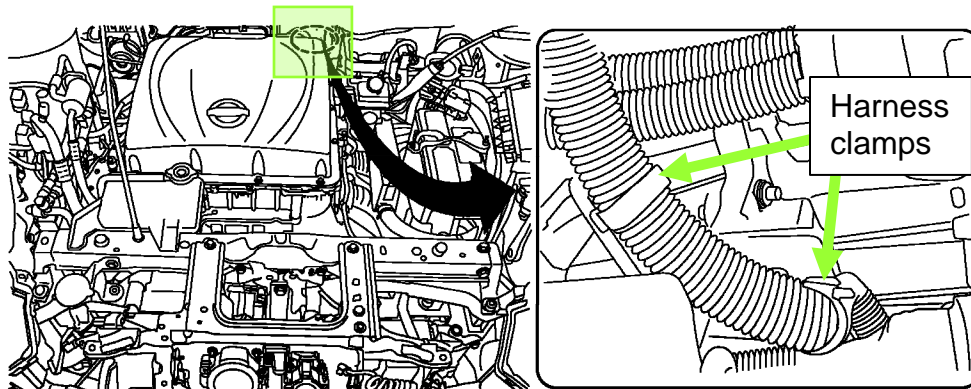


Figure 14

17. Remove the radiator upper grille.

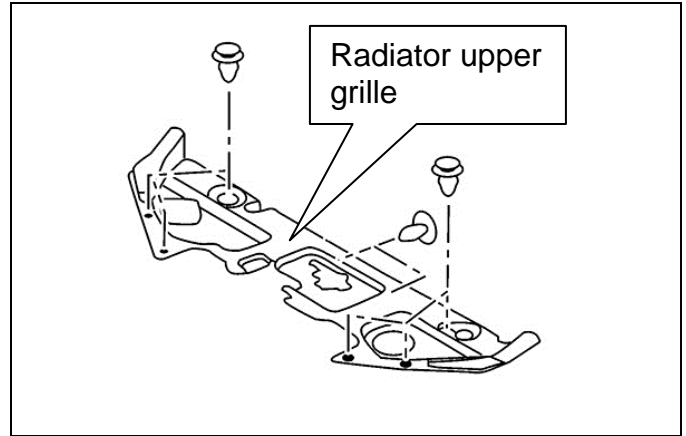


Figure 15

18. Remove the reservoir tank.

Reassembly torque:
4.2 N•m (0.43 kg-m, 37 in-lb)

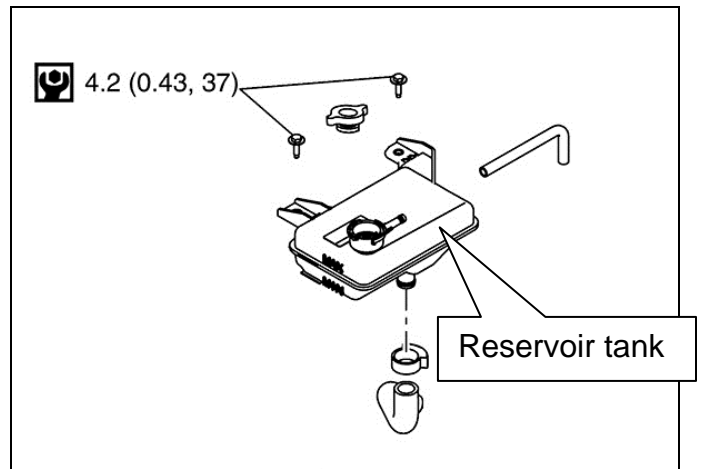


Figure 16

19. Disconnect the electric compressor high-voltage harness connector and low-voltage harness connector.

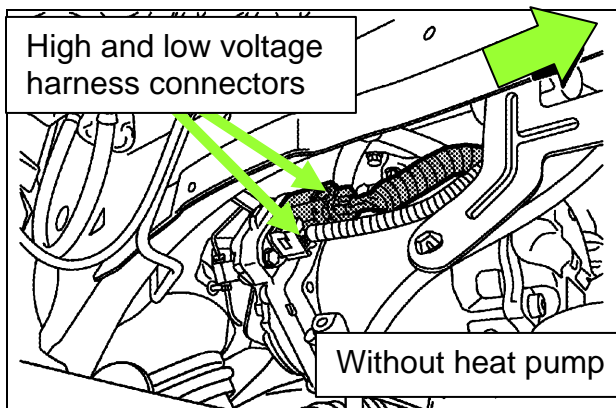


Figure 17

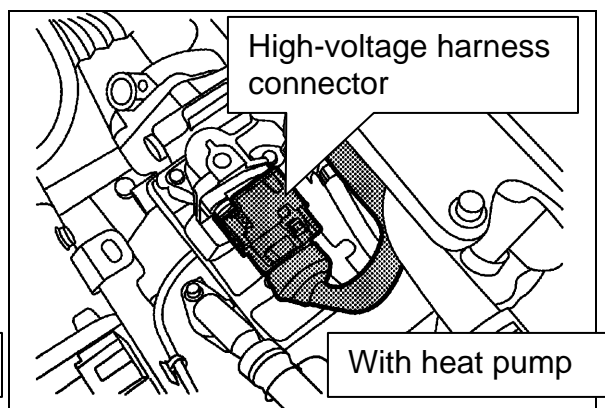


Figure 18

20. Remove the right front wheel.

21. Remove the front side of the right fender protector in order to secure work space for removal of the electric compressor mounting bolts.

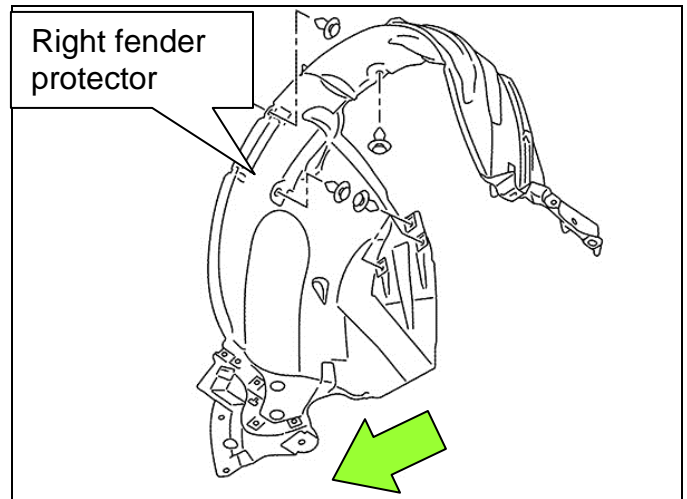


Figure 19

22. Remove the electric compressor mounting bolts and move the electric compressor out of the way.

Reassembly torque:
30.9 N•m (3.2 kg-m, 23 ft-lb)

NOTE: Use rope or other means to fasten the electric compressor in a location where it does not interfere with work.

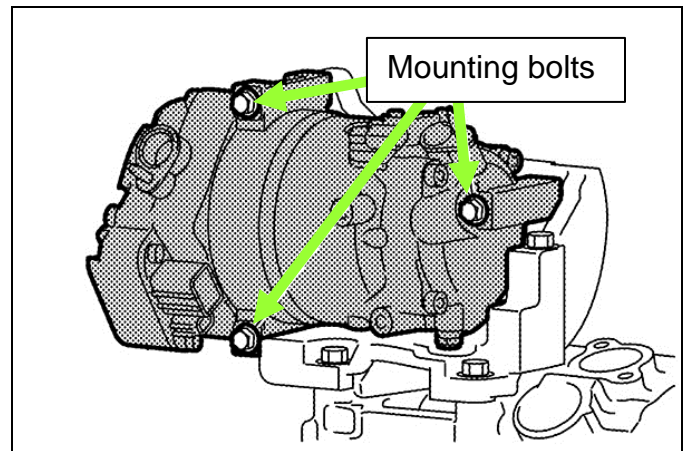


Figure 20

23. Disconnect cooling system hoses.

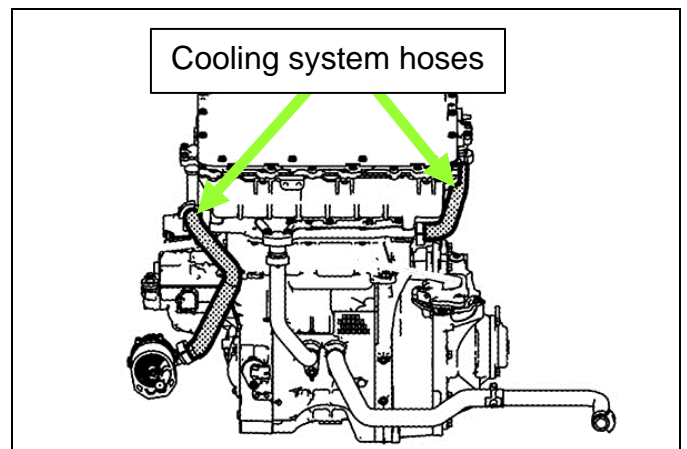


Figure 21

24. Remove the PDM harness connector, and then remove the harness bracket.

Reassembly torque:
10.0 N•m (1.0 kg-m, **89 in-lb**)

NOTE: Loosen the PDM harness connector by rotating it counterclockwise and then remove it.

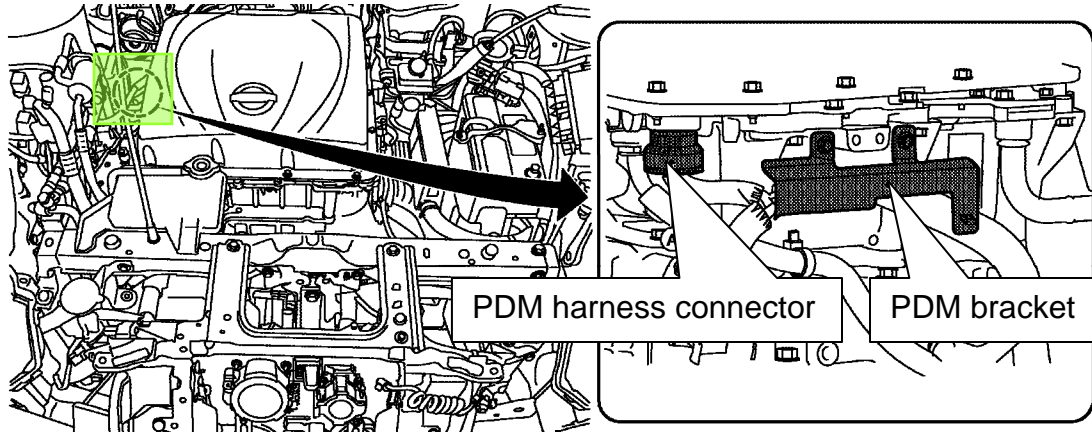


Figure 22

25. Remove the bracket, and disconnect the 12 V battery negative cable and 12 V battery positive cable on the side of the PDM.

Reassembly torque:

- **Bracket:** 10.0 N•m (1.0 kg-m, **89 in-lb**)
- **12 V battery negative:** 13.5 N•m (1.4 kg-m, **10 ft-lb**)
- **12 V battery positive:** 13.5 N•m (1.4 kg-m, **10 ft-lb**)

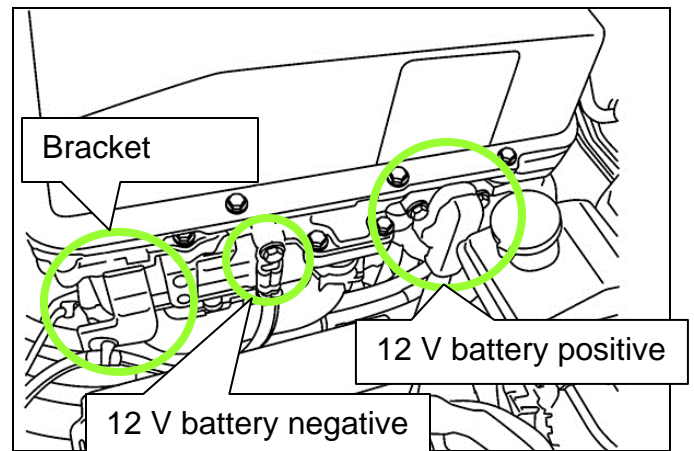


Figure 23

26. Disconnect the normal charge port (and quick charge port if so equipped) harness connector.

NOTE: Normal charge port connector shown for reference in Figure 24.

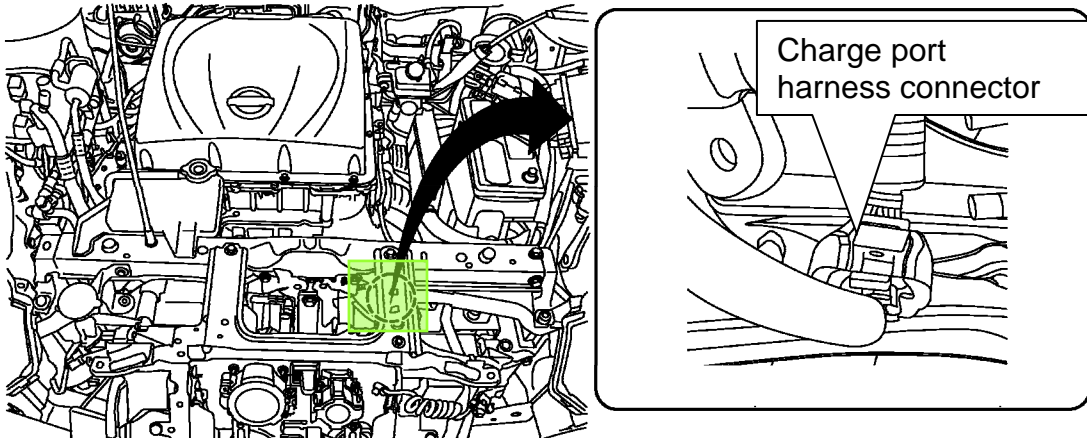


Figure 24

27. Disconnect the charge connector lock actuator harness connector.

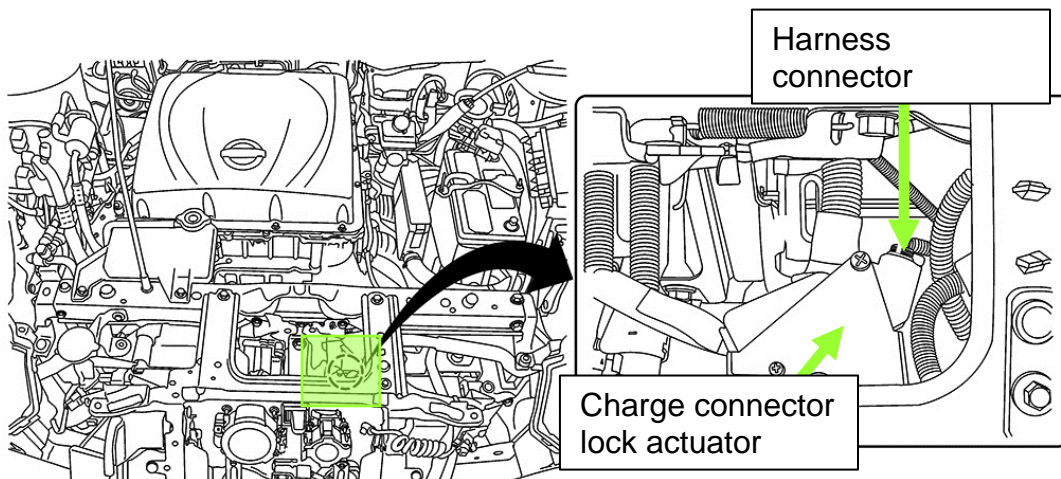


Figure 25

28. Remove the charge port harness clamps from the brackets at the radiator core support (Figure 26) and inverter side (Figure 27).

- Press tab while removing the harness clamp.

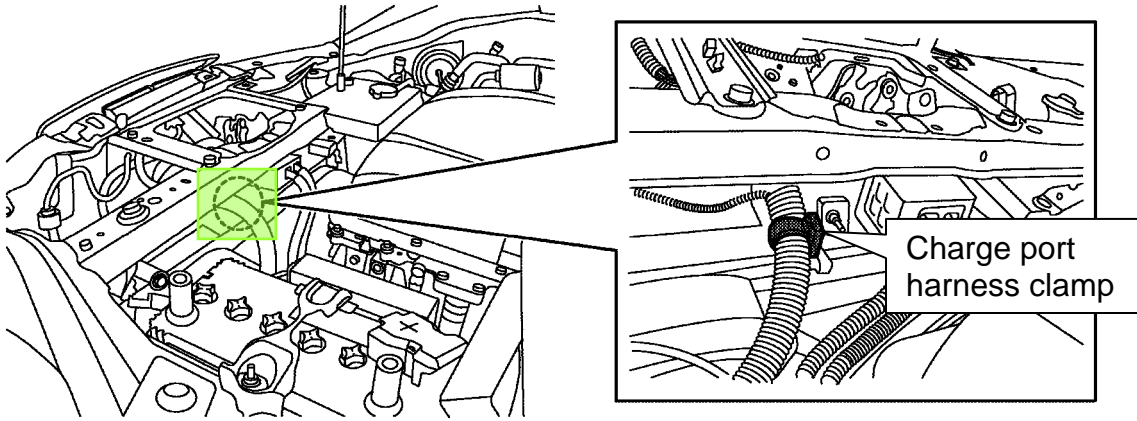


Figure 26

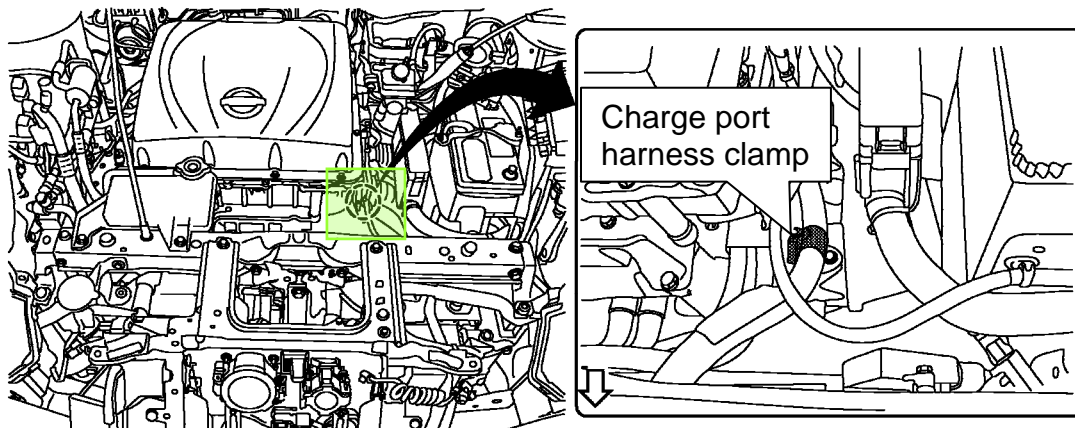


Figure 27

29. Remove the charging port's mounting nuts.

Reassembly torque:
10.0 N•m (1.0 kg-m, **89 in-lb**)

30. Remove the charge connector lock actuator.

31. Pull out the charge ports toward the rear of the vehicle.

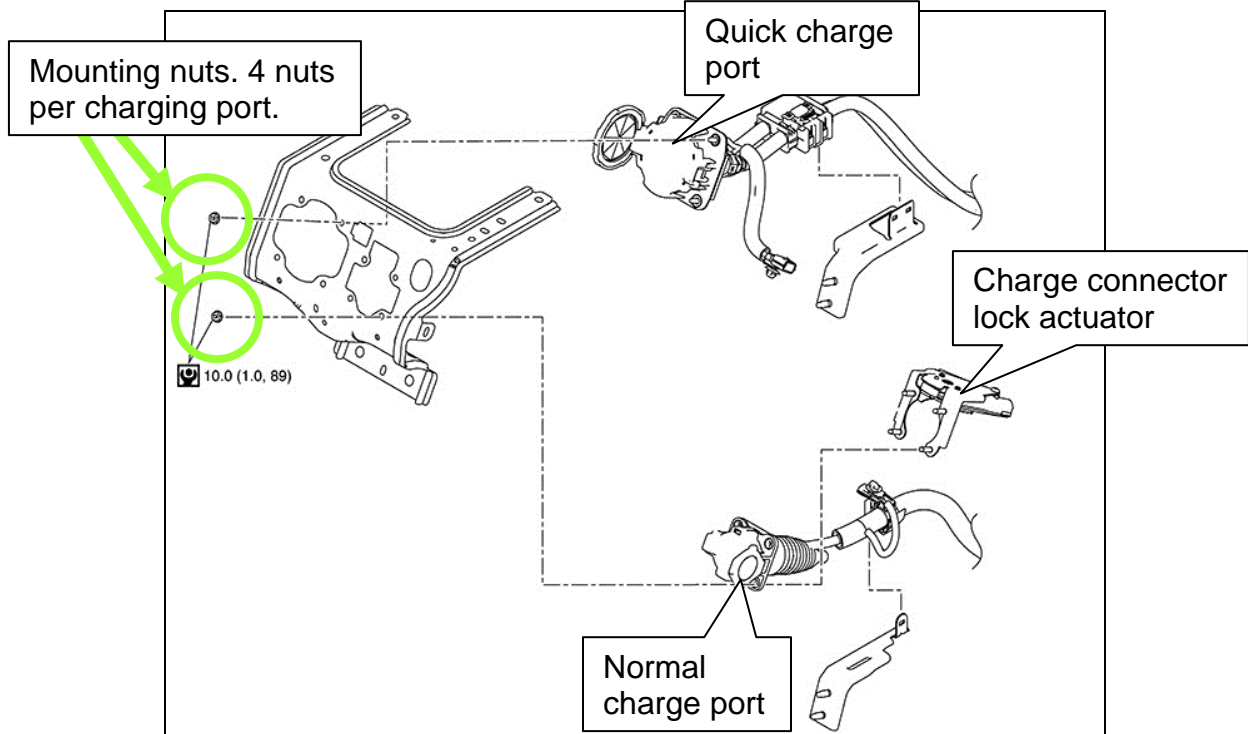


Figure 28

32. Remove the bus bar cover (use new cover from Parts Information for reassembly) and then remove the bus bar fastening bolt between the PDM and inverter.

Reassembly torque:
• **Bus bar cover:** 10.0 N•m (1.0 kg-m, **89 in-lb**)
• **Bus bar fastener:** 13.5 N•m (1.4 kg-m, **10 ft-lb**)

CAUTION: Cover opening of PDM with tape or equivalent to seal out foreign materials.

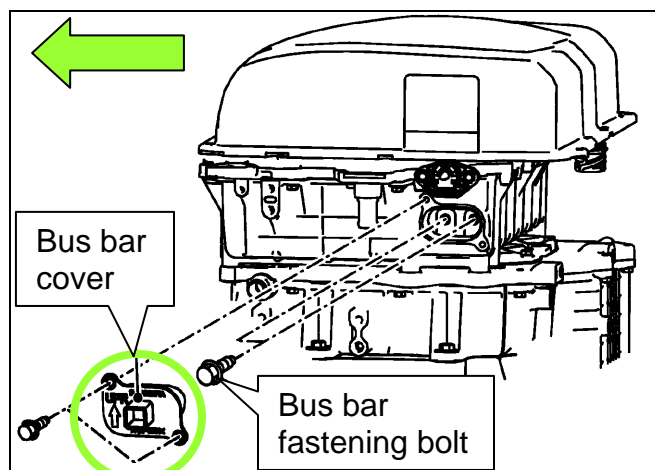


Figure 29

33. Remove the PDM mounting bolts.

Reassembly torque:
25.0 N•m (2.6 kg-m, 18 ft-lb)

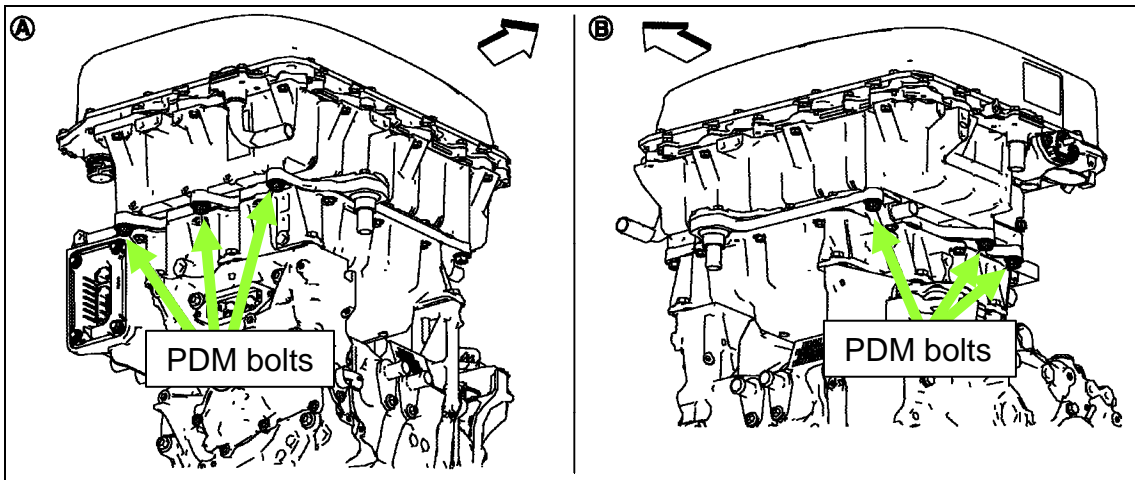


Figure 30

34. Insert guide pins (pins J-51050 found in kit J-51032) into the PDM mounting bolt holes shown in Figure 31 and in Figure 41 on page 21.

NOTE: Always install and remove the guide pins by hand.

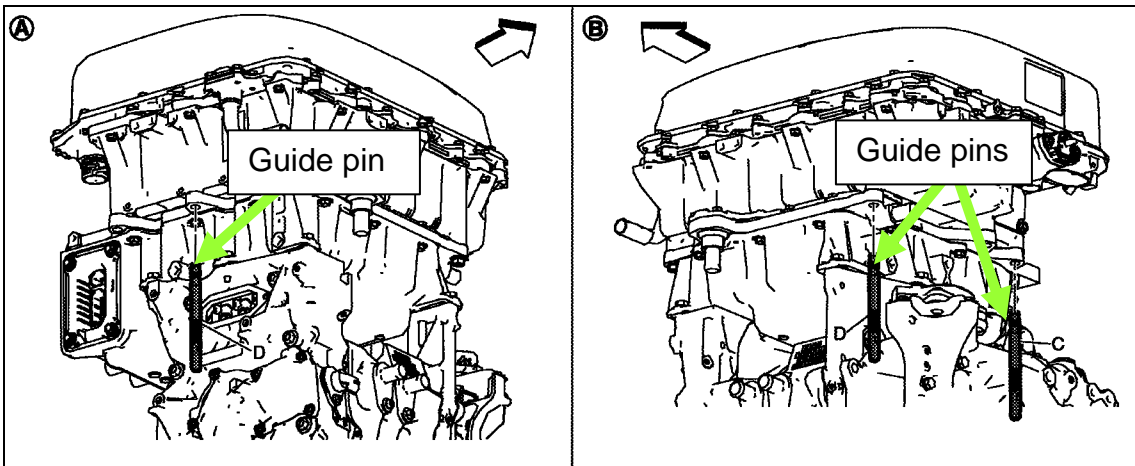


Figure 31

35. Place a fender cover, or equivalent, over the lower edge of the windshield to protect the glass from damage.

36. Install the PDM Lifting Brackets (J-51193 found in kit J-51032) onto the PDM (Figure 32).

Assembly torque:
25 N•m (2.6 kg-m, 18 ft-lb)

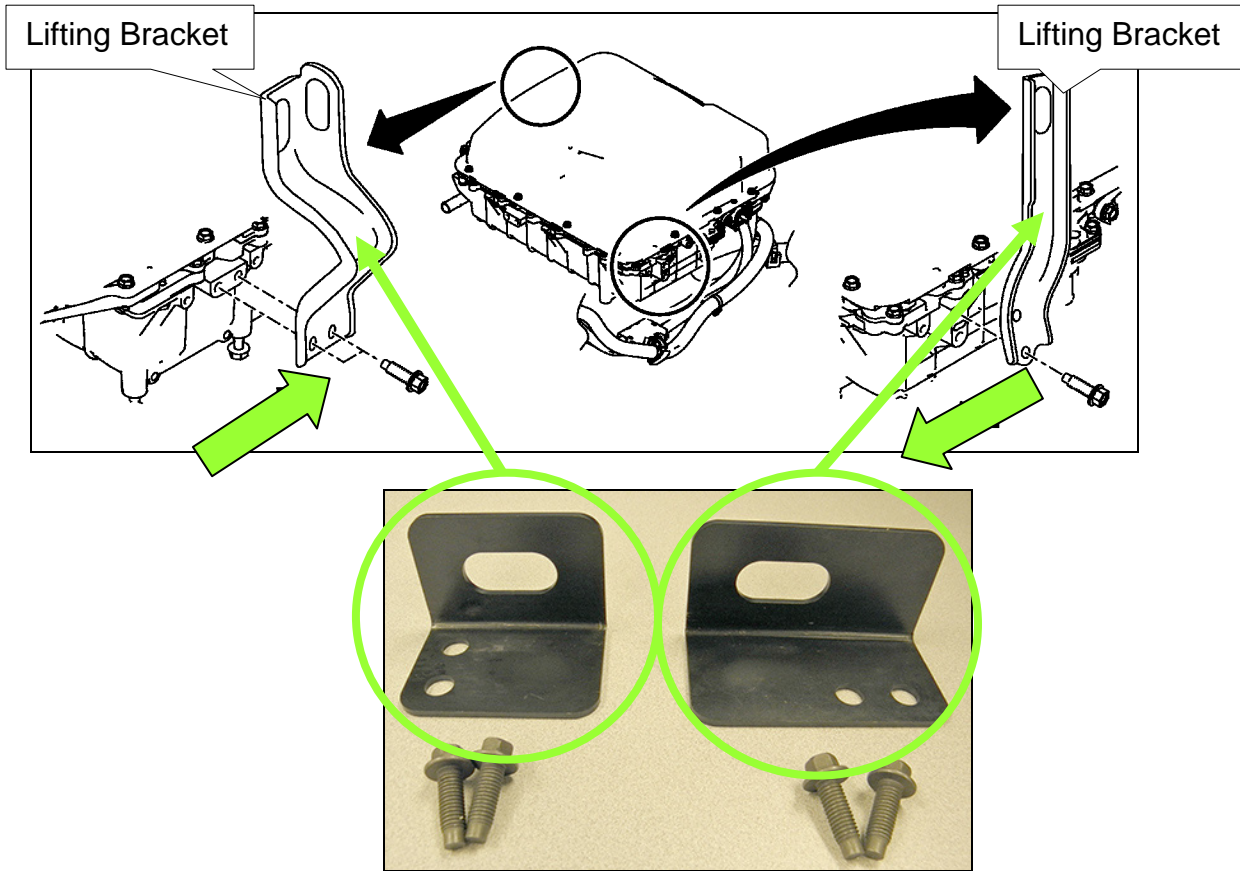


Figure 32

37. Install the shackle onto the left and right PDM Lifting Brackets, and then install the engine crane.

NOTE: Because of the engine hood rod, remove the PDM from the vehicle left side as shown in Figure 33.

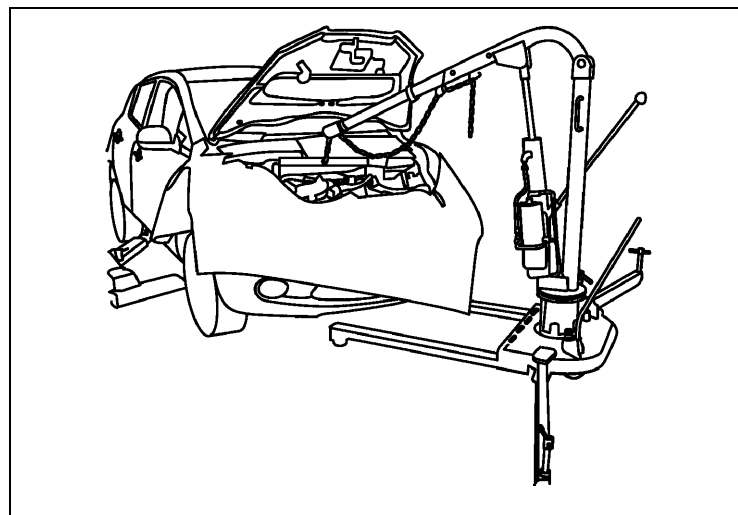


Figure 33

38. Separate the PDM from the Traction Motor Inverter.

- Because the bus bar gasket is difficult to remove, gently rock the PDM while raising the engine crane.
- When lifting with the engine crane, the PDM tilts. Therefore hold the bus bar side (vehicle left side) while raising the engine crane.
- When the PDM has been raised to at or above the height of the bus bar, move the engine crane, avoiding the bus bar, and pull to remove from the locating pins.

CAUTION:

- Be careful that the engine crane does not contact the hood.
- Confirm that the windshield protection (fender cover) has not moved.
- When removing, be careful that the PDM does not contact the windshield glass.
- When moving, be careful that the PDM does not contact the high-voltage bus bar.

39. Prepare the work bench, and lower the PDM onto blocks of wood or similar material.

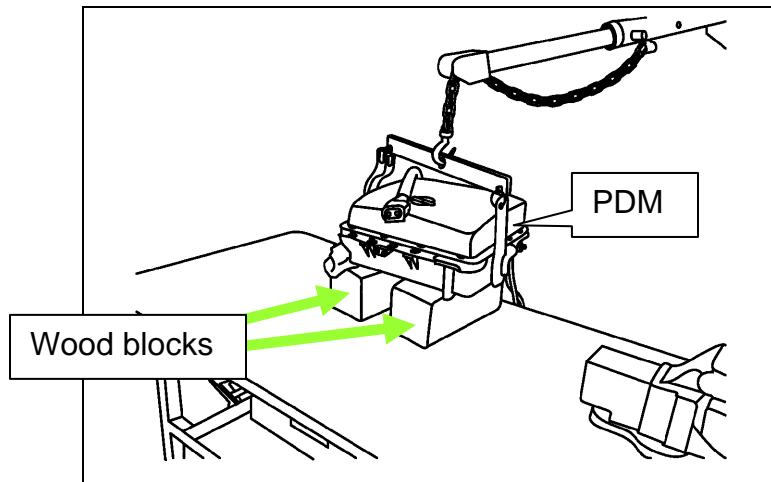


Figure 34

40. Cover the high-voltage bus bar opening shown in the shaded area in Figure 35 with tape to prevent intrusion of any foreign material, dust or moisture.

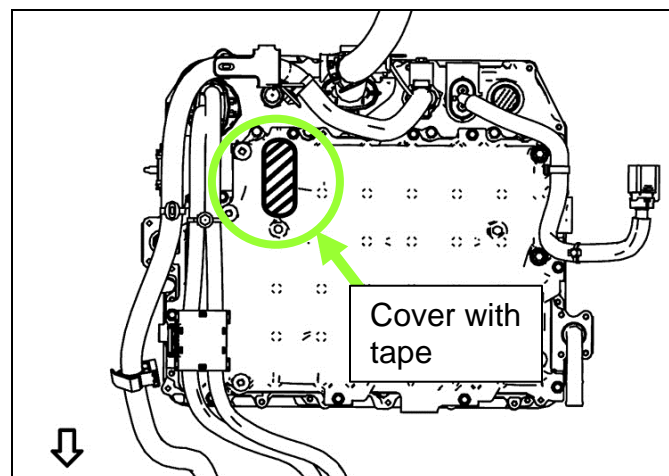


Figure 35

Remove the Traction Motor Inverter

1. Remove the Traction Motor Inverter connector cover.

NOTE: Figure 36 shown with PDM in place for reference only.

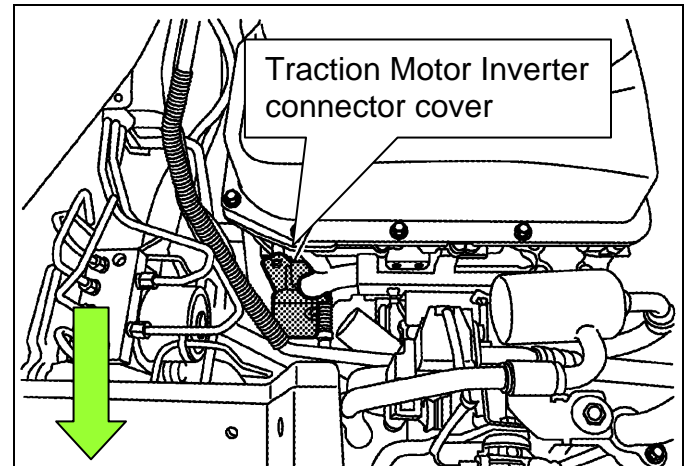


Figure 36

2. Disconnect the Traction Motor Inverter connector.

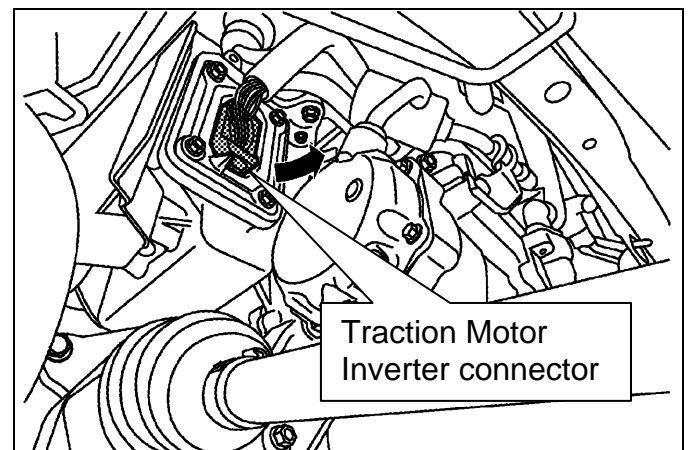


Figure 37

3. Remove the 3-phase bus bar cover (use new gasket from Parts Information for reassembly).

Reassembly torque:
10 N•m (1.0 kg-m, 7 ft-lb)

IMPORTANT: When reassembling the 3-phase bus bar cover, the raised lip of the metal gasket **MUST** face the Inverter.

NOTE: Figure 38 shown with PDM in place for reference only.

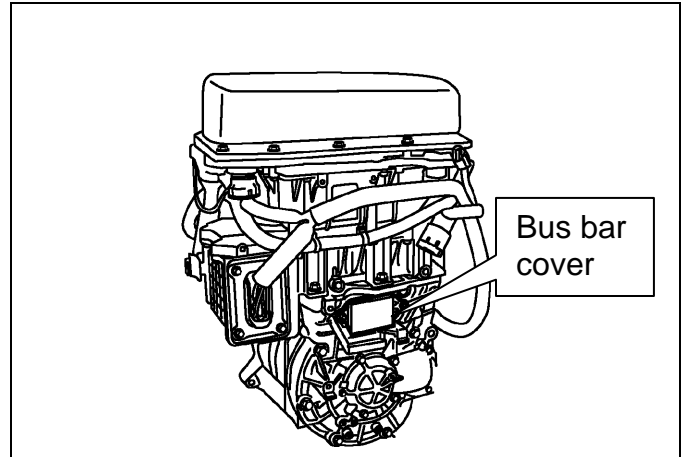


Figure 38

4. Remove the 3-phase bus bar mounting bolts.

Reassembly torque:
13.5 N•m (1.4 kg-m, 10 ft-lb)

- When removing the 3-phase bus bar mounting bolts, never drop the bolts into the traction motor.
- After the 3-phase bus bar mounting bolts are removed:
 - Close the opening using tape or an equivalent to prevent dirt, dust, or foreign material from entering the Traction Motor.
 - When leaving workspace for a long time, install the 3-phase bus bar cover.

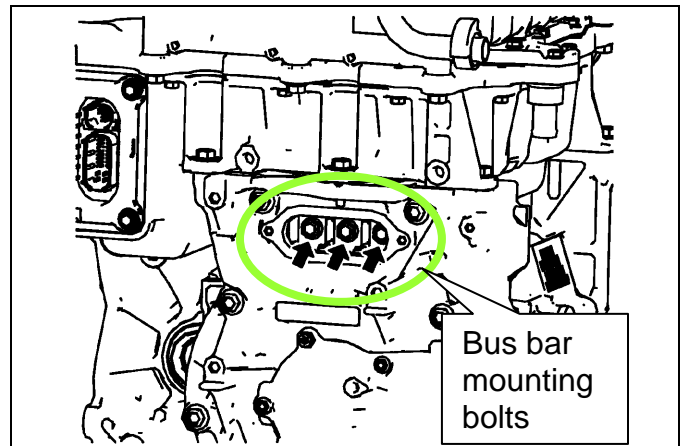


Figure 39

5. Remove the Traction Motor Inverter mounting bolts.

Reassembly torque:
25 N•m (2.6 kg-m, 18 ft-lb)

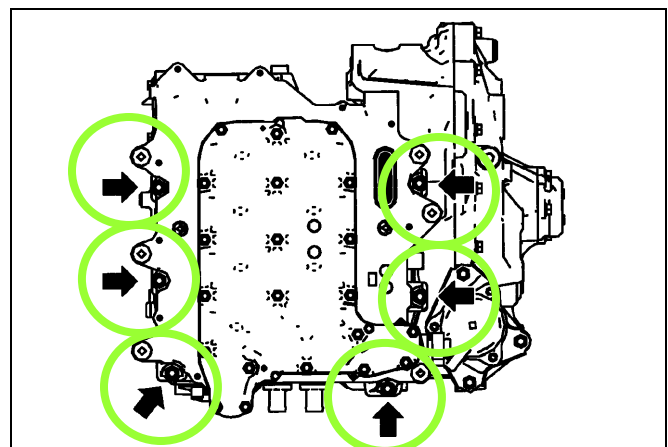


Figure 40

6. Install the guide pins (J-51050) into the Traction Motor Inverter mounting bolt holes (2 holes located in vehicle rear).

NOTE: Always install and remove the guide pins by hand.

7. Remove the Traction Motor Inverter by hand.
 - Remove the Traction Motor Inverter in the vertical direction.
 - Do not damage the 3-phase bus bar.
 - Do not damage the bolt hole threaded portion located on the Traction Motor side, where the guide pins are installed.

NOTE: Dowel pins are located around the Traction Motor Inverter mounting bolt holes (two locations) in vehicle front.

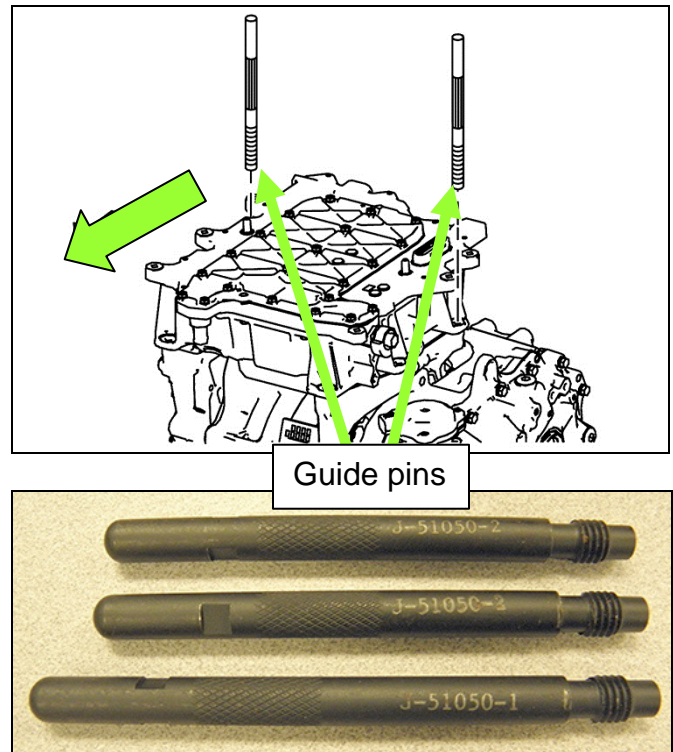


Figure 41

8. Remove the seal from the opening of Traction Motor side 3-phase bus bar (use new seal from Parts Information for reassembly).
9. Cover the 3-phase bus bar opening on the Traction Motor with tape to prevent foreign material from entering the drive motor.

CAUTION: Always protect the bus bar section. If the bus bar is touched or dirty, clean it using isopropanol.

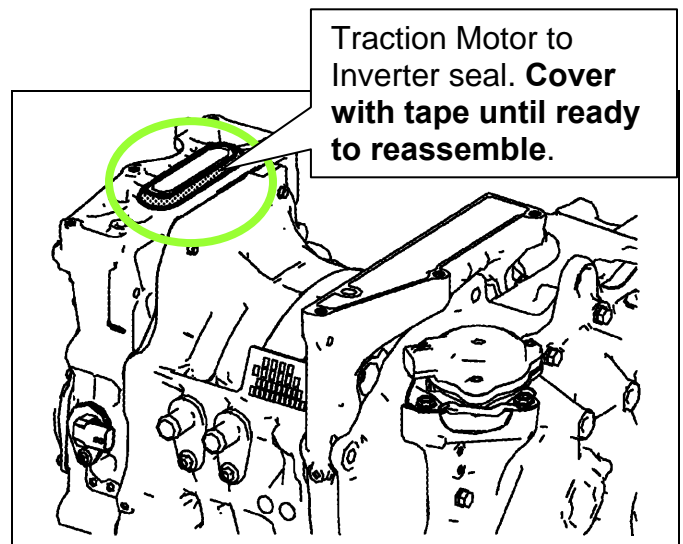


Figure 42

WARNING: To prevent electric shock hazards, be sure to put on insulating protective gear before reconnecting the high voltage system to the vehicle battery.

10. Install the new Traction Motor Inverter from the Parts Information table and the pre-existing PDM in the reverse order.

- When installing the Traction Motor Inverter and PDM, always use the guide pins J-51050. Remove the guide pins when finished.

CAUTION: Be careful not to damage the 3-phase bus bar.

- Check that the dowel pins are inserted to their end positions completely.
- When attaching the seal to the opening of Traction Motor side 3-phase bus bar, be sure to install the convex portion of the seal to the installation groove completely.
- Never reuse the seal for the opening of Traction Motor side 3-phase bus bar.
- Never reuse the gasket for the 3-phase bus bar cover.

Inspection after Installation

After installing the Traction Motor Inverter and PDM, measure resistance between:

- Traction Motor Inverter and other high voltage system.
- Traction Motor Inverter and body.

Resistance standard is less than 0.1 Ω

NOTE: If result deviates from standard values, check that no paint, oil, dirt, or other substance is adhering to bolts or conductive mounting parts. If any such substance is adhering, clean the surrounding area and remove the substance.

Refilling the Cooling System

1. Check that all hose clamps have been firmly tightened.
2. Refill reservoir tank to "MAX" level line with engine coolant.
3. Install reservoir tank cap.
4. Set the vehicle to READY and operate the electric water pump.
5. If reservoir tank fluid level drops, set the vehicle in READY OFF state and fill the coolant to the "MAX" line of the reservoir tank.
6. Repeat from step 4 and 5 until the reservoir tank fluid level stops dropping.
7. Operate the electrically-controlled water pump for approximately 10 minutes with the vehicle set in READY state, and check that the reservoir tank fluid level does not drop.
8. If reservoir tank fluid level drops, repeat steps 4 to 7.

Writing of the Traction Motor Resolver Offset with CONSULT

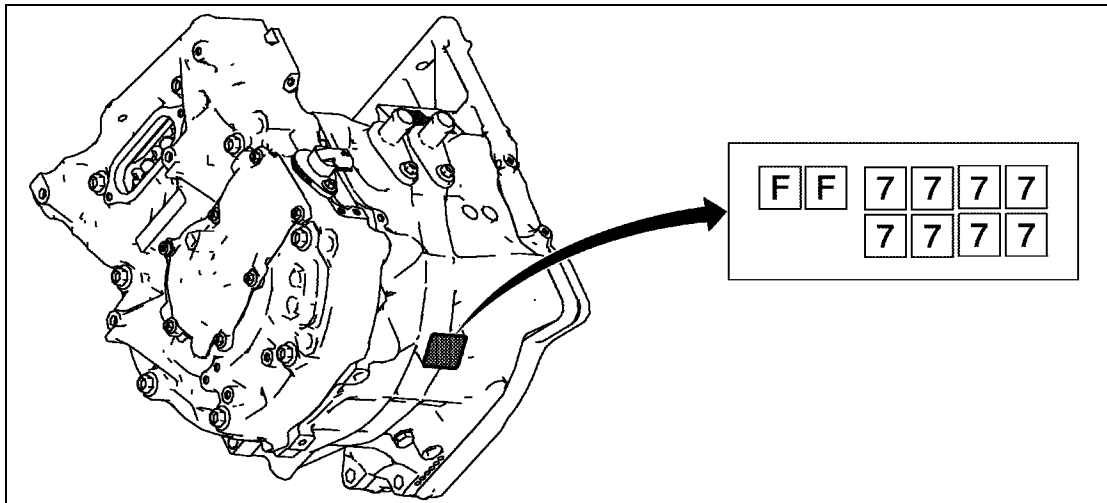


Figure 43

1. Turn ignition switch ON.

NOTE: EV system warning lamp will come on.

2. Select **Work Support** in **MOTOR CONTROL**.
3. Select **RESOLVER WRITE**.
4. Enter the traction motor resolver offset (Figure 43).

NOTE: Because the traction motor resolver offset stamp is located on the lower side of the traction motor, it is necessary to remove the undercover in order to check it.

5. Touch **WRITE**.
6. Is **Writing is complete** displayed?
 - YES: Proceed to step 7.
 - NO: Perform steps 2 - 6 again.

7. Turn the ignition switch OFF.
8. Turn the ignition ON and wait 2 seconds or more.
9. Verify that the EV system warning lamp is OFF.
10. Select **Work Support** in **MOTOR CONTROL**.
11. Select **RESOLVER WRITE**.
12. Confirm the value has changed according to the correction value input.
13. Perform **Self Diagnostic Results** in **MOTOR CONTROL**.
14. Erase the DTC P325C.
15. Turn ignition OFF.
 - Disconnect VI and turn OFF CONSULT PC.

Reset Customer Settings

1. Reset the clock in the combination meter.
2. Reset the radio settings.
3. **If equipped**, check/reset the clock in the navigation system.
4. **If equipped**, reset the customer preferred settings for the Automatic Air Conditioning System.
 - If needed, refer to System Settings in the HAC section of the ESM.
5. Inform the customer:
 - **If equipped**, some memory settings in the navigation system may need to be reset.
 - **If equipped**, some charging and climate control timers may need to be reset.
6. Reinitialize and check the Anti-Pinch Function for all Auto-UP power windows:

Reinitialize:

- a. Turn the ignition ON.
- b. Operate the power window switch to fully open the window (glass all the way down).
- c. Hold the window switch UP until the glass stops at the fully closed position, and then continue holding the switch UP for 2 seconds or more.
- d. Check that AUTO-UP function operates normally.

Check Anti-Pinch Function

- a. Fully open the door window (glass all the way down).
- b. Hold a piece of wood near the fully closed position.
- c. Close the door window glass using the AUTO-UP switch. Allow the window glass to hit the wood.
- d. Check the following conditions:
 - Check that the glass lowers for approximately 150 mm (5.9 in), without pinching the wood, and stops.
 - Check that the glass does not rise when operating the power window main switch, while the window is lowering after hitting the wood.

CAUTION: Do not check anti-pinch function with hands or other body parts because they may be pinched.

PARTS INFORMATION

DESCRIPTION	PART #	QUANTITY
INVERTER COMP-POWER HEAD	291A0-3NF1A	1
SEAL - O – RING (Inverter to Traction Motor)	290Y6-3NF0B	1
GASKET (Inverter to Traction Motor Bus Bar Cover seal)	290H9-3NF1C	1
COVER-SUB, POWER CONVERTER (PDM to Inverter Bus Bar Cover seal)	292A2-3NF1A	1

CLAIMS INFORMATION

Submit a “CM” line claim using the following claims coding:

“CM” I.D.: PC281

CAMPAIGN ID	DESCRIPTION	OP CODE	FRT
PC281	Replace Traction Motor Inverter	PC2810	4.9 hrs.

