

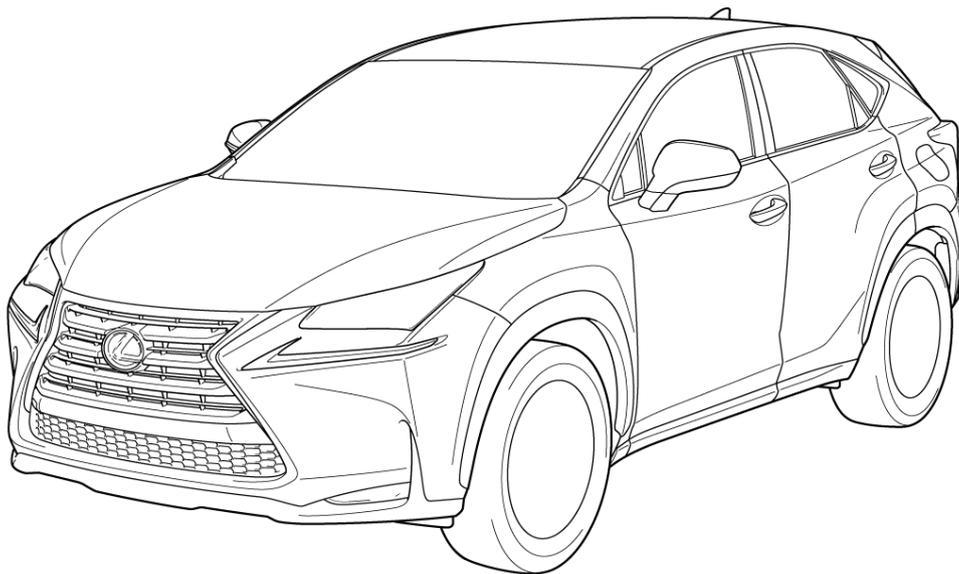


NX300h

Gasoline-Electric

Hybrid Synergy Drive

HYBRID VEHICLE DISMANTLING MANUAL



Foreword

This guide was developed to educate and assist dismantlers in the safe handling of Lexus NX300h gasoline-electric hybrid vehicles. NX300h dismantling procedures are similar to other non-hybrid Lexus vehicles with the exception of the high voltage electrical system. It is important to recognize and understand the high voltage electrical system features and specifications of the Lexus NX300h, as they may not be familiar to dismantlers.

High voltage electricity powers the A/C compressor, electric motor, generator, and inverter/converter. All other conventional automotive electrical devices such as the head lights, radio, and gauges are powered from a separate 12 Volt auxiliary battery. Numerous safeguards have been designed into the NX300h to help ensure the high voltage, approximately 244.8 Volt, Nickel Metal Hydride (NiMH) Hybrid Vehicle (HV) battery pack is kept safe and secure in an accident.

The NiMH HV battery pack contains sealed batteries that are similar to rechargeable batteries used in some battery operated power tools and other consumer products. The electrolyte is absorbed in the cell plates and will not normally leak out even if the battery is cracked. In the unlikely event the electrolyte does leak, it can be easily neutralized with a dilute boric acid solution or vinegar.

High voltage cables, identifiable by orange insulation and connectors, are isolated from the metal chassis of the vehicle.

Additional topics contained in the guide include:

- Lexus NX300h identification.
- Major hybrid component locations and descriptions.

By following the information in this guide, dismantlers will be able to handle NX300h hybrid-electric vehicles as safely as the dismantling of a conventional gasoline engine automobile.

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About the NX300h hybrid

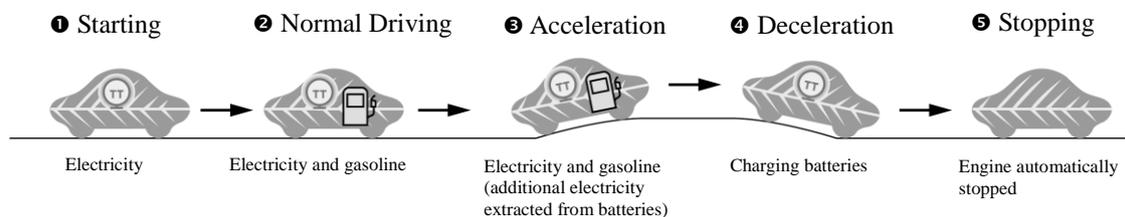
The NX300h 5-door wagon joins the hybrid model for Lexus. Lexus Hybrid Drive means that the vehicle contains a gasoline engine and an electric motor for power. The two hybrid power sources are stored on board the vehicle:

1. Gasoline stored in the fuel tank for the gasoline engine.
2. Electricity stored in a high voltage Hybrid Vehicle (HV) battery pack for the electric motor.

The result of combining these two power sources is improved fuel economy and reduced emissions. The gasoline engine also powers an electric generator to recharge the battery pack; unlike a pure all electric vehicle, the NX300h never needs to be recharged from an external electric power source.

Depending on the driving conditions one or both sources are used to power the vehicle. The following illustration demonstrates how the NX300h operates in various driving modes.

- ❶ During light acceleration at low speeds, the vehicle is powered by the electric motor. The gasoline engine is shut off.
 - ❷ During normal driving, the vehicle is powered mainly by the gasoline engine. The gasoline engine also powers the generator to recharge the battery pack and to drive the motors.
 - ❸ During full acceleration, such as climbing a hill, both the gasoline engine and the electric motors power the vehicle.
 - ❹ During deceleration, such as when braking, the vehicle regenerates the kinetic energy from the front and rear* wheels to produce electricity that recharges the battery pack.
- *: AWD models only
- ❺ While the vehicle is stopped, the gasoline engine and electric motor are off, however the vehicle remains on and operational.



NX300h Identification

In appearance, the 2015 model year NX300h is nearly identical to the conventional, non-hybrid Lexus NX200 and NX200t. The NX300h is a 5-door wagon. Exterior, interior, and engine compartment illustrations are provided to assist in identification.

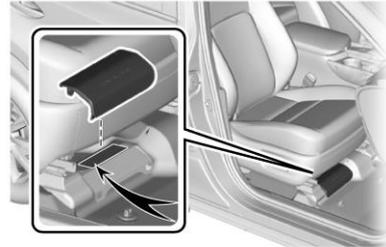
The alphanumeric 15 character Vehicle Identification Number (VIN) is provided in the front windshield cowl and on the floor under the right side front seat.

Example VIN: JTJYWRBZ2000101 (2WD Models)

JTJZWRBZ2000101 (2WD Models)

JTJBJRBZ2000101 (AWD Models)

An NX300h is identified by the first 8 alphanumeric characters **JTJYWRBZ**, **JTJZWRBZ** or **JTJBJRBZ**.



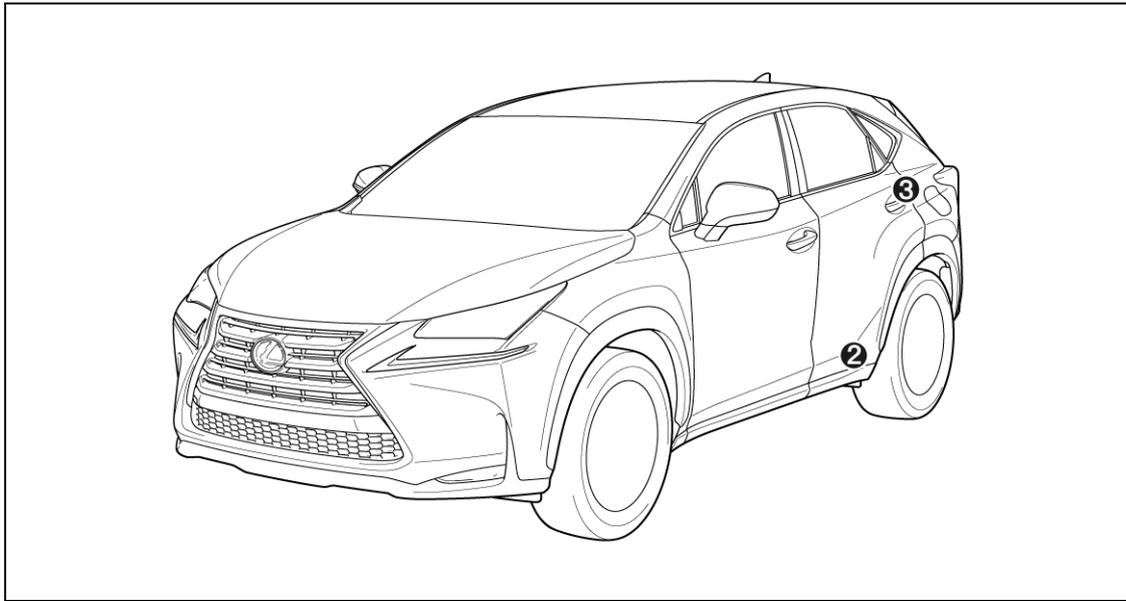
Left Side Windshield Cowl and Under the Right Side Front Seat

NX300h Identification (Continued)

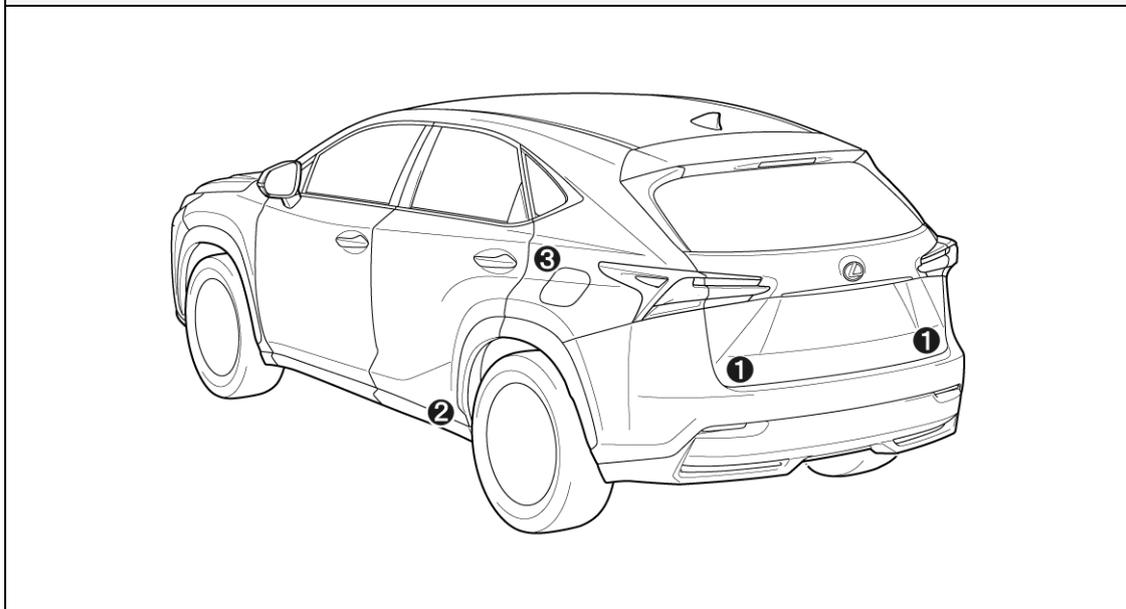
Exterior

- ❶ Lexus* and **NX300h** logos on the back door.
- ❷ **HYBRID** logos on the rear doors.
- ❸ Gasoline fuel filler door located on left side rear quarter panel.

*: Except U.S.A. and Canada models.



Exterior Front and Left Side View



Exterior Rear and Left Side View

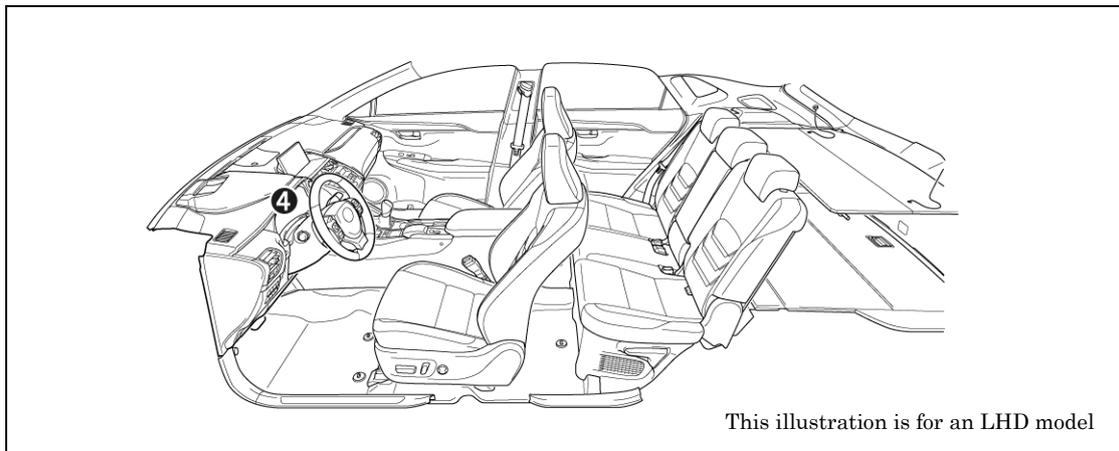
NX300h Identification (Continued)

Interior

- 4 The instrument cluster (hybrid system indicator, **READY** indicator and warning lights) located in the dash behind the steering wheel, is different than the one on the conventional, non-hybrid NX200 or NX200t.
- 5 A switchable gauge in the instrument cluster showing either a hybrid system indicator or a tachometer depending on driving mode.

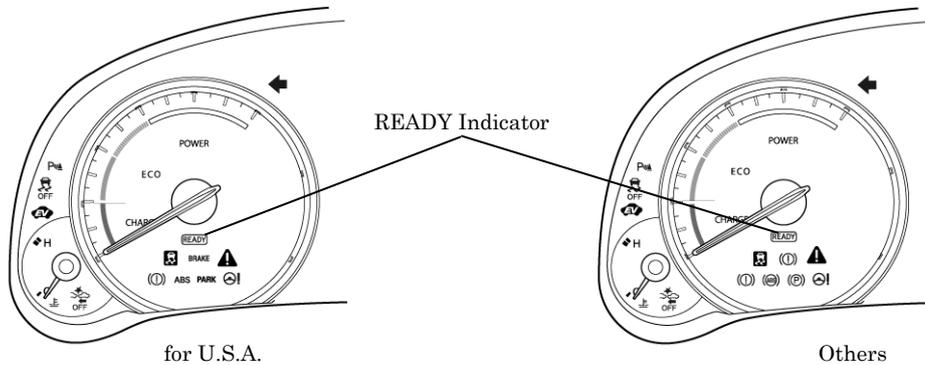
Notice:

If the vehicle is shut off, the instrument cluster gauges will be “blacked out”, not illuminated.

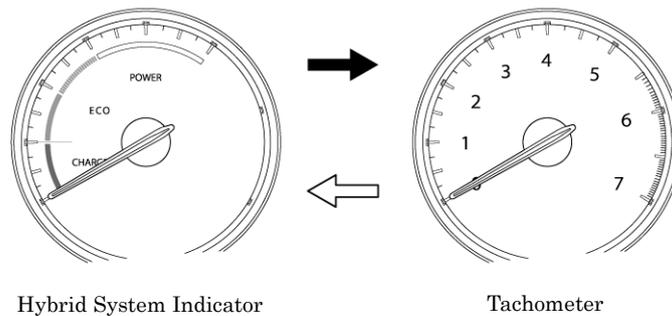


Interior View

4 Hybrid System Indicator



5

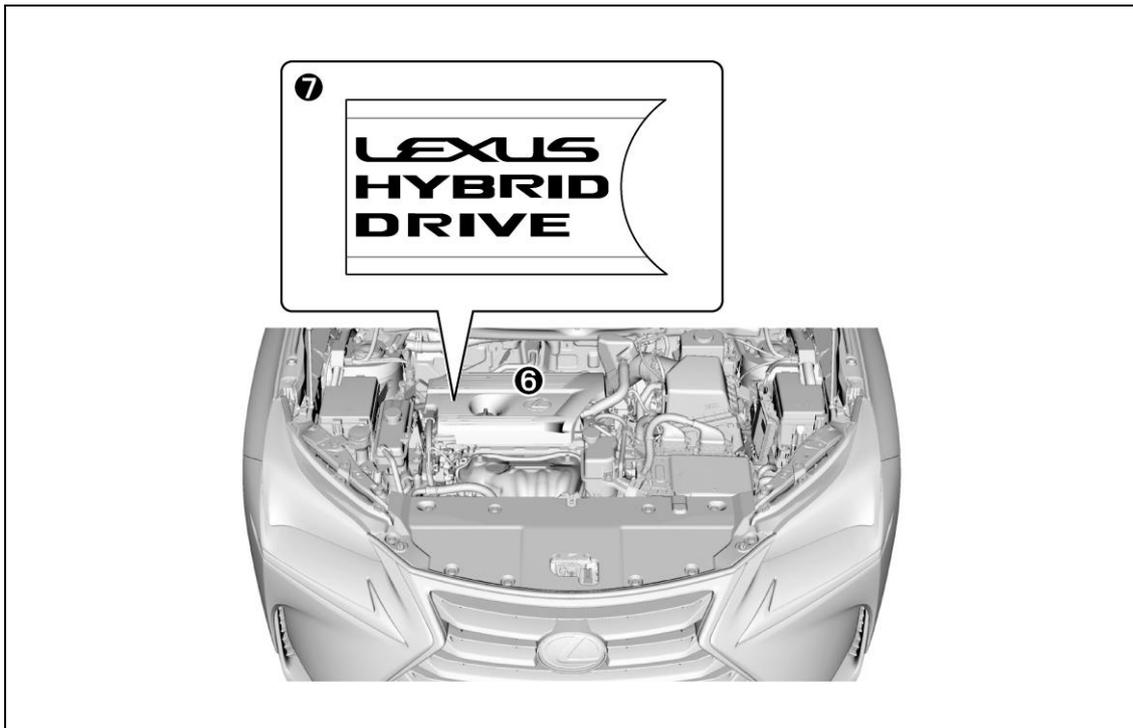


Instrument Cluster View

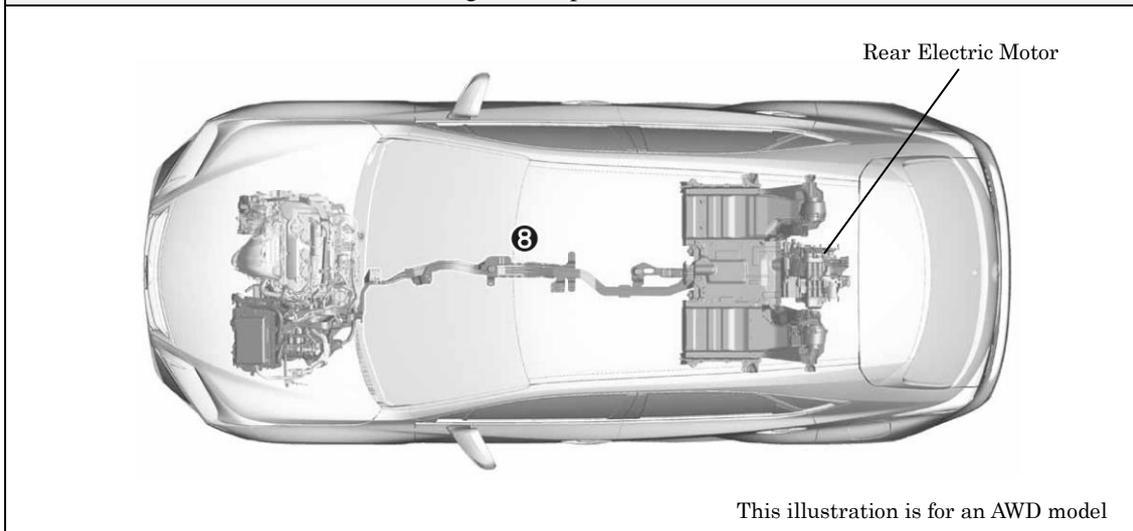
NX300h Identification (Continued)

Engine Compartment

- ⑥ 2.5-liter aluminum alloy gasoline engine.
- ⑦ LEXUS HYBRID DRIVE logo on the plastic engine cover.
- ⑧ Orange colored high voltage power cables.



Engine Compartment View



This illustration is for an AWD model

Power Cables

Hybrid Component Locations & Descriptions

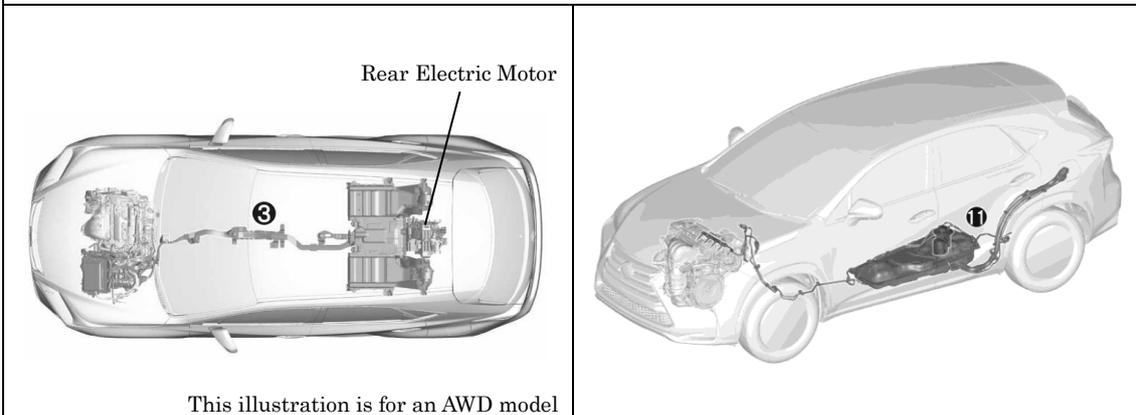
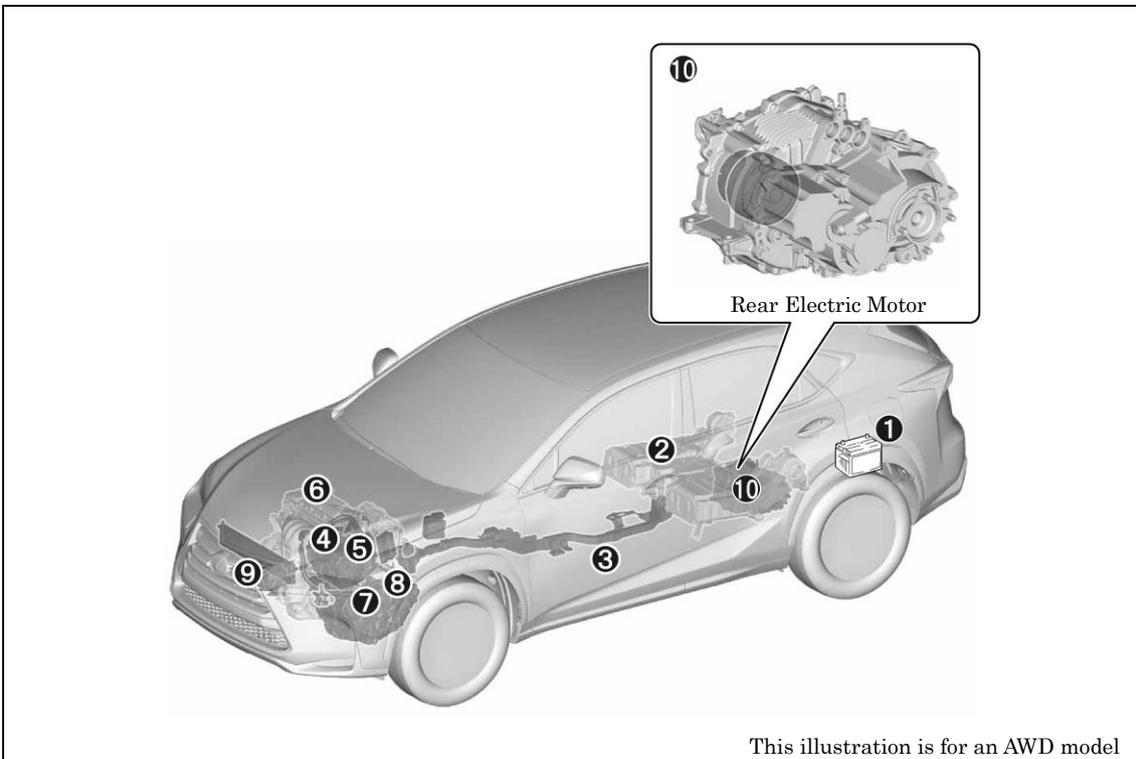
Component	Location	Description
12 Volt Auxiliary Battery ❶	Left Side of Cargo Area	A lead-acid battery that supplies power to the low voltage devices.
Hybrid Vehicle (HV) Battery Pack ❷	Cabin Area, Mounted to Cross Member under Second Row Seat	244.8 Volt Nickel Metal Hydride (NiMH) battery pack consisting of 34 low voltage (7.2 Volt) modules connected in series.
Power Cables ❸	Undercarriage and Engine Compartment	Orange colored power cables carry high voltage Direct Current (DC) between the HV battery pack, inverter/converter, and A/C compressor. These cables also carry 3-phase Alternating Current (AC) between the inverter/converter, electric motor, and generator.
Inverter/Converter ❹	Engine Compartment	Boosts and inverts the high voltage electricity from the HV battery pack to 3-phase AC electricity that drives the electric motors. The inverter/converter also converts AC electricity from the electric generator and electric motor (regenerative braking) to DC that recharges the HV battery pack.
DC-DC Converter ❺ for 12 Volt Auxiliary Battery	Inverter/Converter	Converts 244.8 Volts from the HV battery pack to 12 Volts for low voltage vehicle power.
Gasoline Engine ❻	Engine Compartment	Provides two functions: 1) Powers vehicle. 2) Powers generator to recharge the HV battery pack. The engine is started and stopped under control of the vehicle computer.
Front Electric Motor ❼	Engine Compartment	3-phase high voltage AC permanent magnet electric motor contained in the front transaxle. It is used to power the front wheels.
Electric Generator ❸	Engine Compartment	3-phase high voltage AC generator that is contained in the transmission and recharges the HV battery pack.
A/C Compressor (with inverter) ❾	Engine Compartment	3-phase high voltage AC electrically driven motor compressor.
Rear Electric Motor ❿	Rear Sub-Frame	3-phase high voltage AC permanent magnet electric motor contained in the rear transaxle. It is used to power the rear wheels.
Fuel Tank and Fuel Line ❶	Undercarriage	The fuel tank provides gasoline via a fuel line to the engine. The fuel line is routed along the left side under the floor pan.

*Numbers in the component column apply to the illustrations on the following page.

Hybrid Component Locations & Descriptions (Continued)

Specifications

- Gasoline Engine: 150 hp (112 kW), 2.5-liter Aluminum Alloy Engine (for U.S.A.)
 153 hp (114 kW), 2.5-liter Aluminum Alloy Engine (Others)
- Electric Motors
 Front 140 hp (105 kW), Permanent Magnet Motor
 Rear 67 hp (50 kW), Permanent Magnet Motor (AWD models only)
- Transmission: Automatic Only (electrically controlled continuously variable transaxle)
- HV Battery: 244.8 Volt Sealed NiMH-Battery
- Curb Weight: 3,781-4,200 lbs/1,715-1,905 kg
- Fuel Tank: 12.3 gals/56 liters
- Frame Material: Steel Unibody
- Body Material: Steel Panels except for Aluminum Engine Hood
- Seating Capacity: 5 passenger



Lexus Hybrid Drive Operation

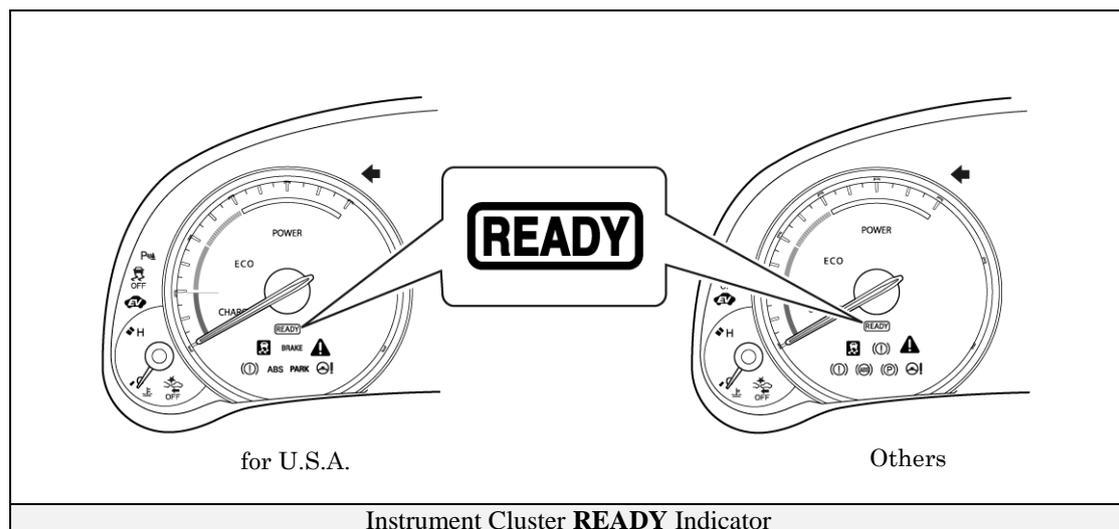
Once the **READY** indicator is illuminated in the instrument cluster, the vehicle may be driven. However, the gasoline engine does not idle like a typical automobile and will start and stop automatically. It is important to recognize and understand the **READY** indicator provided in the instrument cluster. When illuminated, it informs the driver that the vehicle is on and operational even though the gasoline engine may be off and the engine compartment is silent.

Vehicle Operation

- With the NX300h, the gasoline engine may stop and start at any time while the **READY** indicator is on.
- Never assume that the vehicle is shut off just because the engine is off. Always look for the **READY** indicator status. The vehicle is shut off when the **READY** indicator is off.

The vehicle may be powered by:

1. The electric motor only.
2. A combination of both the electric motor and the gasoline engine.



Hybrid Vehicle (HV) Battery Pack and Auxiliary Battery

The NX300h features a high voltage Hybrid Vehicle (HV) battery pack that contains sealed Nickel Metal Hydride (NiMH) battery modules.

HV Battery Pack

- The HV battery pack is enclosed in a metal case and is rigidly mounted to the cabin area floor pan cross member under the second row rear seats. The metal case is isolated from high voltage and concealed by fabric covers in the cabin area.
- The HV battery pack consists of 34 low voltage (7.2 Volt) NiMH battery modules connected in series to produce approximately 244.8 Volts. Each NiMH battery module is non-spillable and sealed in a metal case.
- The electrolyte used in the NiMH battery module is an alkaline mixture of potassium and sodium hydroxide. The electrolyte is absorbed into the battery cell plates and will not normally leak, even in a collision.

HV Battery Pack	
Battery pack voltage	244.8 V
Number of NiMH battery modules in the pack	34
NiMH battery module voltage	7.2 V
NiMH battery module dimensions	11.2 x 4.7 x 0.8 in (284 x 119 x 20 mm)
NiMH module weight	2.2 lbs (1.0 kg)
NiMH battery pack dimensions	31.6 x 12.7 x 43 in (802 x 322 x 1092 mm)
NiMH battery pack weight	118.8 lbs (54 kg)

Components Powered by the HV Battery Pack

- Front Electric Motor
- Rear Electric Motor
- Power Cables
- A/C Compressor
- Electric Generator
- Inverter/Converter
 - DC-DC Converter for 12 Volt Auxiliary Battery

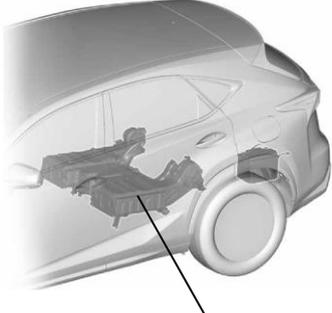
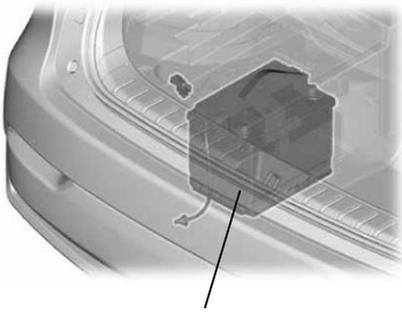
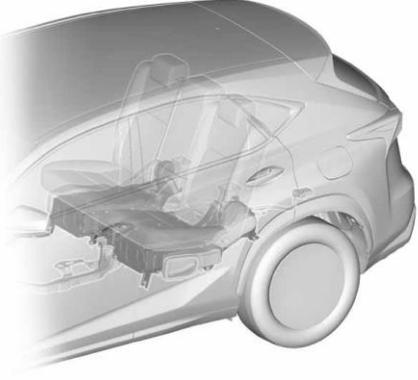
Hybrid Vehicle (HV) Battery Pack and Auxiliary Battery (Continued)

HV Battery Pack Recycling

- The HV battery pack is recyclable. Contact either your Lexus Distributor as mentioned on HV battery Caution Label (see page 30) or the nearest Lexus dealer.

Auxiliary Battery

- The NX300h also contains a sealed lead-acid 12 Volt battery. This 12 Volt auxiliary battery powers the vehicle electrical system similar to a conventional vehicle. As with other conventional vehicles, the auxiliary battery is grounded to the metal chassis of the vehicle.
- The auxiliary battery is located in the cargo area. It is concealed by a plastic resin cover on the left side in the rear quarter panel well.

 <p style="text-align: center;">HV Battery Pack</p>	 <p style="text-align: center;">Auxiliary Battery Pack</p>
244.8 Volt HV Battery Pack	12 Volt Auxiliary Battery Mounted in Cargo Area (Left Side)
	
HV Battery Pack Mounted in Cabin Area	

High Voltage Safety

The HV battery pack powers the high voltage electrical system with DC electricity. Positive and negative orange colored high voltage power cables are routed from the battery pack, under the vehicle floor pan, to the inverter/converter. The inverter/converter contains a circuit that boosts the HV battery voltage from 244.8 to 650 Volts DC. The inverter/converter creates 3-phase AC to power the motor. Power cables are routed from the inverter/converter to each high voltage motor (front and rear electric motors, electric generator, and A/C compressor). The following systems are intended to help keep occupants in the vehicle and emergency responders safe from high voltage electricity:

High Voltage Safety System

- A high voltage fuse ❶* provides short circuit protection in the HV battery pack.
- Positive and negative high voltage power cables ❷* connected to the HV battery pack are controlled by 12 Volt normally open relays ❸*. When the vehicle is shut off, the relays stop electricity flow from leaving the HV battery pack.



WARNING:

- ***The high voltage system may remain powered for up to 10 minutes after the vehicle is shut off or disabled. To prevent serious injury or death from severe burns or electric shock, avoid touching, cutting, or opening any orange high voltage power cable or high voltage component.***

- Both positive and negative power cables ❷* are insulated from the metal chassis, so there is no possibility of electric shock when touching the metal chassis.
- A ground-fault monitor ❹* continuously monitors for high voltage leakage to the metal chassis while the vehicle is running. If a malfunction is detected, the hybrid vehicle computer ❹* will illuminate the master warning light  in the instrument cluster and indicate “Hybrid system malfunction” on the multi-information display.
- The HV battery pack relays will automatically open to stop electricity flow in a collision sufficient to activate the SRS.

*Numbers apply to the illustration on the following page.

Precaution to be observed when dismantling the vehicle



WARNING:

- *The high voltage system may remain powered for up to 10 minutes after the vehicle is shut off or disabled. To prevent serious injury or death from severe burns or electric shock, avoid touching, cutting, or opening any orange high voltage power cable or high voltage component.*

Necessary Items

- Protective clothing such as insulated gloves (electrically insulated), rubber gloves, safety goggles, and safety shoes.
- Insulating tape such as electrical tape that has a suitable electrical insulation rating.
- Before wearing insulated gloves, make sure that they are not cracked, ruptured, torn, or damaged in any way. Do not wear wet insulated gloves.
- An electrical tester that is capable of measuring DC 750 Volts or more.

Spills

The NX300h contains the same common automotive fluids used in other non-hybrid Lexus vehicles, with the exception of the NiMH electrolyte used in the HV battery pack. The NiMH battery electrolyte is a caustic alkaline (pH 13.5) that is damaging to human tissues. The electrolyte, however, is absorbed in the cell plates and will not normally spill or leak out even if a metal battery module is cracked.

A catastrophic crash that would breach both the metal battery pack case and a metal battery module would be a rare occurrence.

A caustic alkaline is at the opposite end of the pH scale from a strong acid. A safe (neutral) substance is approximately in the middle of this scale. Adding a weak acidic mixture, such as a dilute boric acid solution or vinegar, to the caustic alkaline electrolyte will cause the electrolyte to be neutralized. This is similar but opposite to the use of baking soda to neutralize a lead-acid battery electrolyte spill.

A Lexus Product Safety Data Sheets (PSDS) is attached to this document.

- Handle NiMH electrolyte spills using the following Personal Protective Equipment (PPE):
 - Splash shield or safety goggles. A fold down face shield is not acceptable for acid or electrolyte spills.
 - Rubber, latex or nitrile gloves.
 - Apron suitable for alkaline.
 - Rubber boots.

- Neutralize NiMH electrolyte.
 - Use a boric acid solution or vinegar.
 - Boric acid solution - 800 grams boric acid to 20 liters water or 5.5 ounces boric acid to 1 gallon of water.

Dismantling the vehicle

The following 3 pages contain general instructions for use when working on an NX300h.

Read these instructions before proceeding to the HV battery removal instructions on page 19.



WARNING:

- ***The high voltage system may remain powered for up to 10 minutes after the vehicle is shut off or disabled. To prevent serious injury or death from severe burns or electric shock, avoid touching, cutting, or opening any orange high voltage power cable or any high voltage component.***

1. Shut off the ignition (**READY** indicator is off).

Then disconnect the cable from negative auxiliary battery terminal.

- (1) Remove the deck board assembly.
- (2) Remove the No. 3 deck board sub-assembly.
- (3) Remove the rear deck floor box. (w/ Spare tire)
- (4) Remove the deck floor box LH. (w/ Spare tire)
- (5) Detach the 2 claws and remove the battery service cover. (w/o Spare tire)
- (6) Disconnect the cable from the negative (-) auxiliary battery terminal.

2. Remove the service plug grip.

- (1) Disengage the 4 claws and remove the battery service hole cover.

Hint:

Disengage the upper 2 claws and then pull them up to remove.

- (2) Remove the 2 nuts and hybrid battery service plug cover.

Caution:

- **Wear insulated gloves.**
- **Remove the service plug grip to interrupt the high voltage circuit.**
- **Keep the removed service plug grip in your pocket to prevent other staff from accidentally reinstalling it while you are dismantling the vehicle.**
- **All the high voltage wiring connectors are orange.**

Hint:

Waiting for at least 10 minutes is required to discharge the high voltage capacitor inside the inverter with converter assembly.

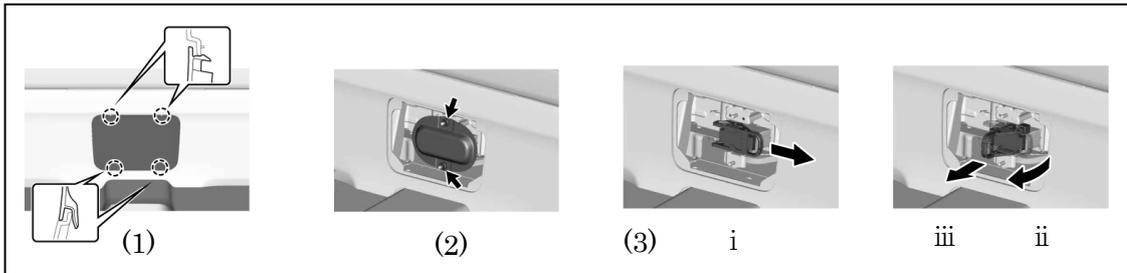
(3) Wear insulated gloves and remove the service plug grip after sliding up the lever of the service plug grip as shown in the illustration.

- i. Slide the lever to release the lock.
- ii. Lift the lever straight up.

Notice:

Do not exert excessive force to lift up the lever.

- iii. Draw the service plug grip out from the HV battery to remove it.

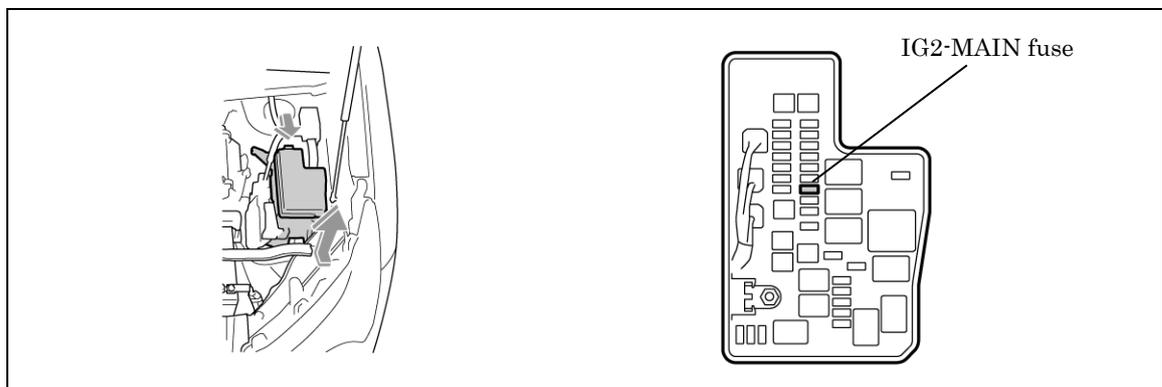


(4) Apply insulating tape to the socket of the service plug grip to insulate it.

3. Carry the removed service plug grip in your pocket to prevent other staff from accidentally reinstalling it while you are dismantling the vehicle.
4. Make other staff aware that a high-voltage system is being dismantled by using the following sign: CAUTION: HIGH-VOLTAGE. DO NOT TOUCH (see page 18).
5. If the service plug grip cannot be removed due to damage to the vehicle, remove the **IG2-MAIN** fuse (20 A).

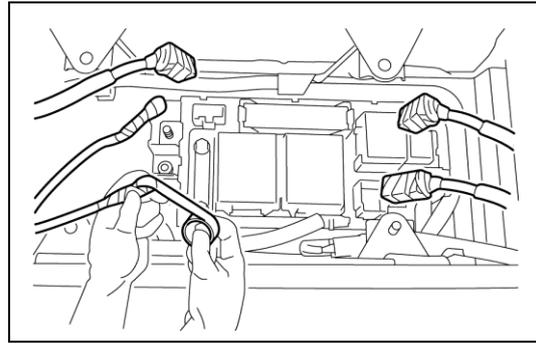
Caution:

This operation shuts off the HV system. Be sure to wear insulated gloves because high voltage is not shut off inside the HV battery. When it is possible to remove the service plug grip, remove it and continue the procedure.



6. After disconnecting or exposing a high-voltage connector or terminal, insulate it immediately using insulating tape. Before disconnecting or touching a bare high-voltage terminal, wear insulated gloves.

7. Check the HV battery and nearby area for leakage. If you find any liquid, it may be strong alkaline electrolyte. Wear rubber gloves and goggles and neutralize the liquid using a saturated boric acid solution or vinegar. Then wipe up the liquid using waste rags etc.



8. If the electrolyte comes into contact with your skin, wash the skin immediately using a saturated boric acid solution or a large amount of water. If the electrolyte adheres to any article of clothing, take the clothing off immediately.

9. If the electrolyte comes into contact with your eye(s), call out loudly for help. Do not rub your eye(s). Instead, wash the eye(s) with a dilute boric acid solution or a large amount of water and seek medical care.

10. With the exception of the HV battery, remove parts by following procedures which are similar to conventional Lexus vehicles. For the removal of the HV battery, refer to the following pages.

Person in charge: _____

CAUTION:
HIGH-VOLTAGE.
DO NOT TOUCH.

CAUTION:
HIGH-VOLTAGE.
DO NOT TOUCH.

Person in charge: _____

When performing work on the HV system, fold this sign and put it on the roof of the vehicle.

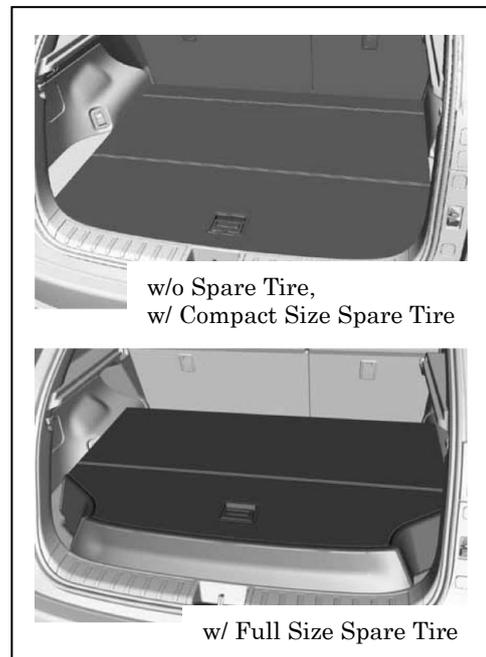
Removal of HV battery



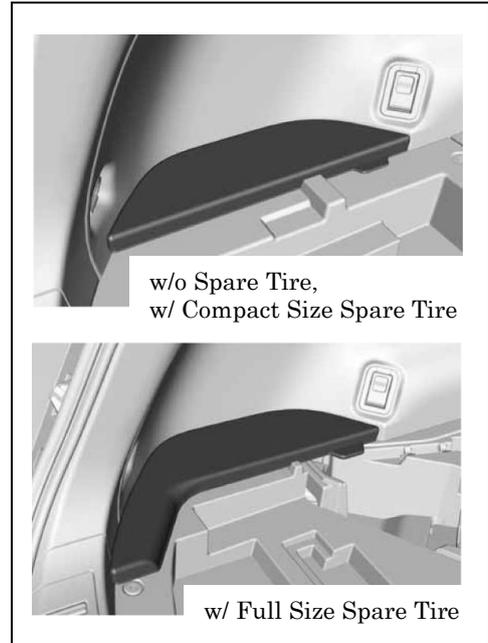
WARNING:

- *Be sure to wear insulated gloves when handling high-voltage parts.*
- *Even if the vehicle is shut off and the relays are off, be sure to remove the service plug grip before performing any further work.*
- *Power remains in the high voltage electrical system for 10 minutes even after the HV battery pack is shut off because the circuit has a condenser that stores power.*
- *Make sure that the tester reading is 0 V before touching any high-voltage terminals which are not insulated.*
- *The SRS may remain powered for up to 90 seconds after the vehicle is shut off or disabled. To prevent serious injury or death from unintentional SRS deployment, avoid cutting the SRS components.*

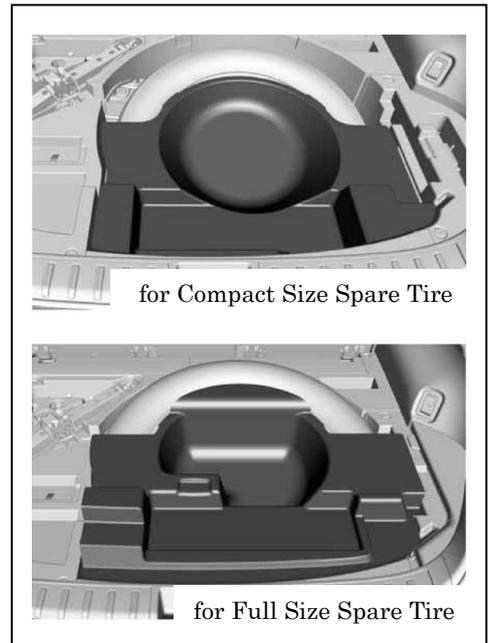
1. SHUT OFF IGINATION (**READY** indicator is off)
2. REMOVE DECK BOARD ASSEMBLY



3. REMOVE NO. 3 DECK BOARD
SUB-ASSEMBLY

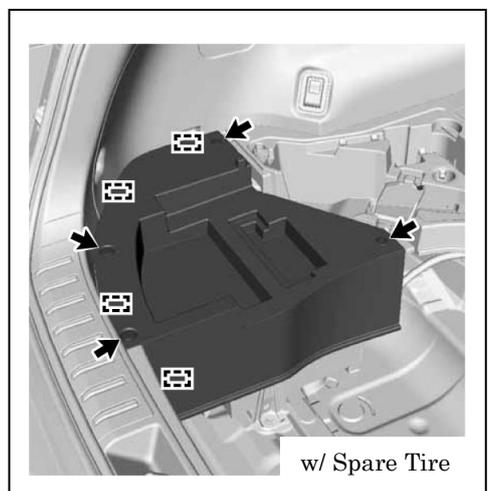


4. REMOVE REAR DECK FLOOR BOX
(w/ Spare Tire)



5. REMOVE DECK FLOOR BOX LH
(w/ Spare Tire)

- (1) Remove the 4 clips.
- (2) Detach the 4 guides and remove the deck floor box LH.



6. DISCONNECT CABLE FROM NEGATIVE AUXILIARY BATTERY TERMINAL

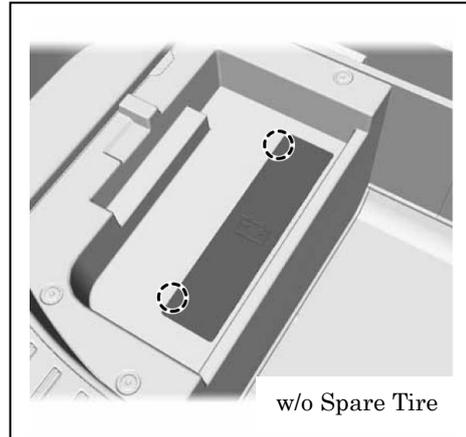
- (1) Detach the 2 claws and remove the battery service cover. (w/o Spare tire)
- (2) Disconnect the cable from the negative (-) auxiliary battery terminal.

Caution:

Wait at least 90 seconds after disconnecting the cable from the negative (-) auxiliary battery terminal to disable the SRS system.

Notice:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected.



7. REMOVE SERVICE PLUG GRIP

- (1) Disengage the 4 claws and remove the battery service hole cover.

Hint:

Disengage the upper 2 claws and then pull them up to remove.

- (2) Remove the 2 nuts and hybrid battery service plug cover.

Caution:

- **Wear insulated gloves.**
- **Remove the service plug grip to interrupt the high voltage circuit.**
- **Keep the removed service plug grip in your pocket to prevent other staff from accidentally reinstalling it while you are dismantling the vehicle.**
- **All the high voltage wiring connectors are orange.**

Hint:

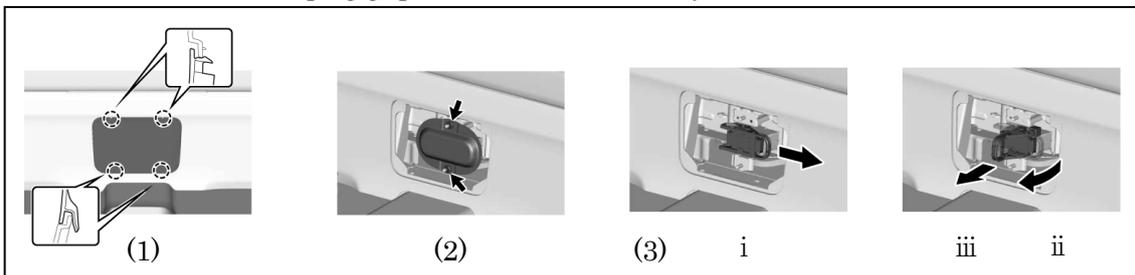
Waiting for at least 10 minutes is required to discharge the high voltage capacitor inside the inverter with converter assembly.

- (3) Wear insulated gloves and remove the service plug grip after sliding up the lever of the service plug grip as shown in the illustration.
 - i. Slide the lever to release the lock.
 - ii. Lift the lever straight up.

Notice:

Do not exert excessive force to lift up the lever.

- iii. Draw the service plug grip out from the HV battery to remove it.

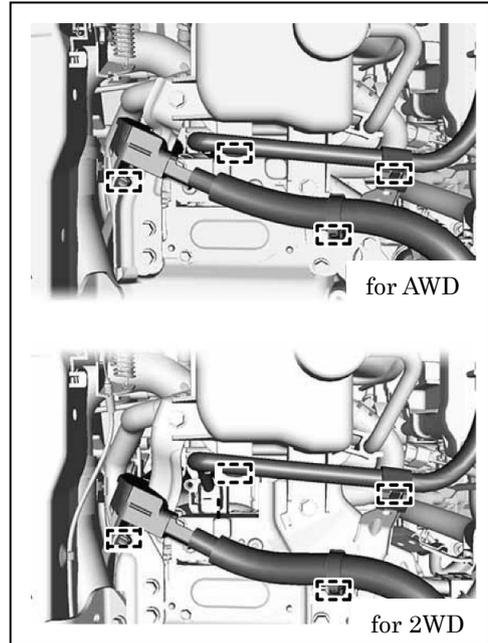


(4) Apply insulating tape to the socket of the service plug grip to insulate it.

8. DRAIN COOLANT (for Inverter Coolant)

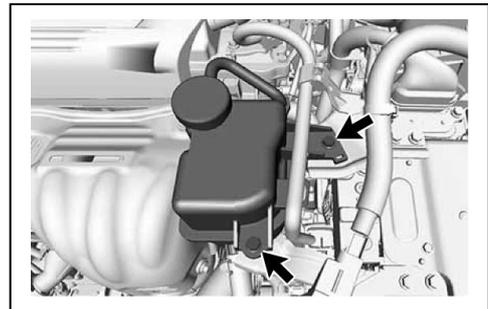
9. DISCONNECT WIRE HARNESS

Disconnect the 4 wire harness clamps from the inverter reservoir tank assembly and inverter with converter assembly.



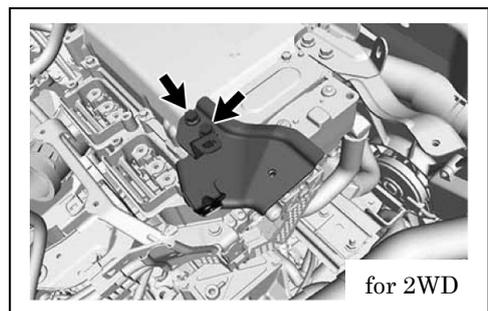
10. DISCONNECT INVERTER RESERVOIR TANK ASSEMBLY

Remove the 2 bolts and disconnect the inverter reservoir tank assembly.



11. REMOVE NO. 1 INVERTER RESERVOIR TANK BRACKET (for 2WD)

Remove the 2 bolts and No. 1 inverter reservoir tank bracket.



12. REMOVE CONNECTOR COVER ASSEMBLY

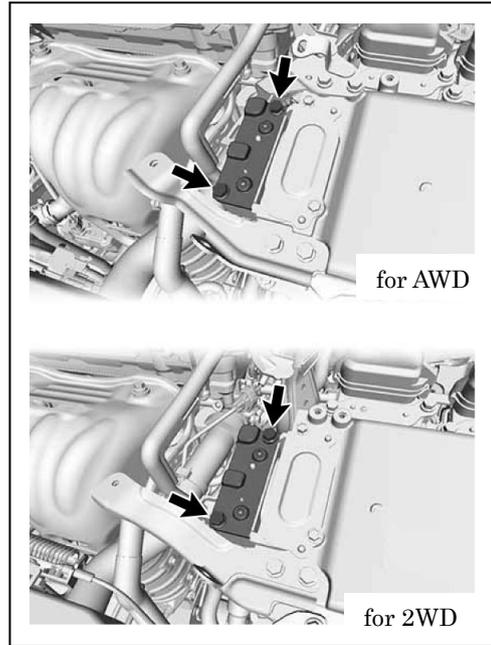
Caution:

Wear insulated gloves.

Remove the 2 bolts and connector cover assembly.

Notice:

- Pull the connector cover assembly straight up, as a connector is connected to the bottom of the cover.
- Do not allow any foreign objects or water to enter the inverter with converter assembly.



13. CHECK TERMINAL VOLTAGE

Using a voltmeter, measure the voltage between the terminals of the 2 phase connectors.

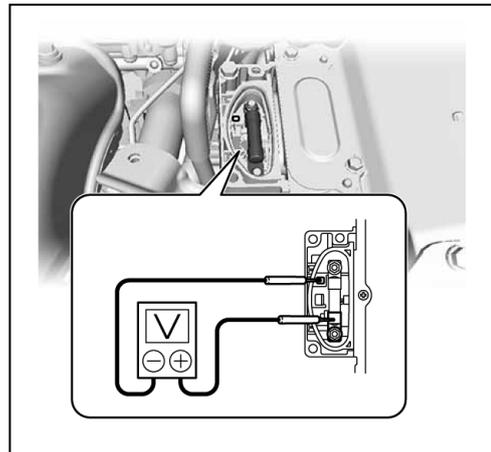
Caution:

Wear insulated gloves.

Standard voltage: 0 V

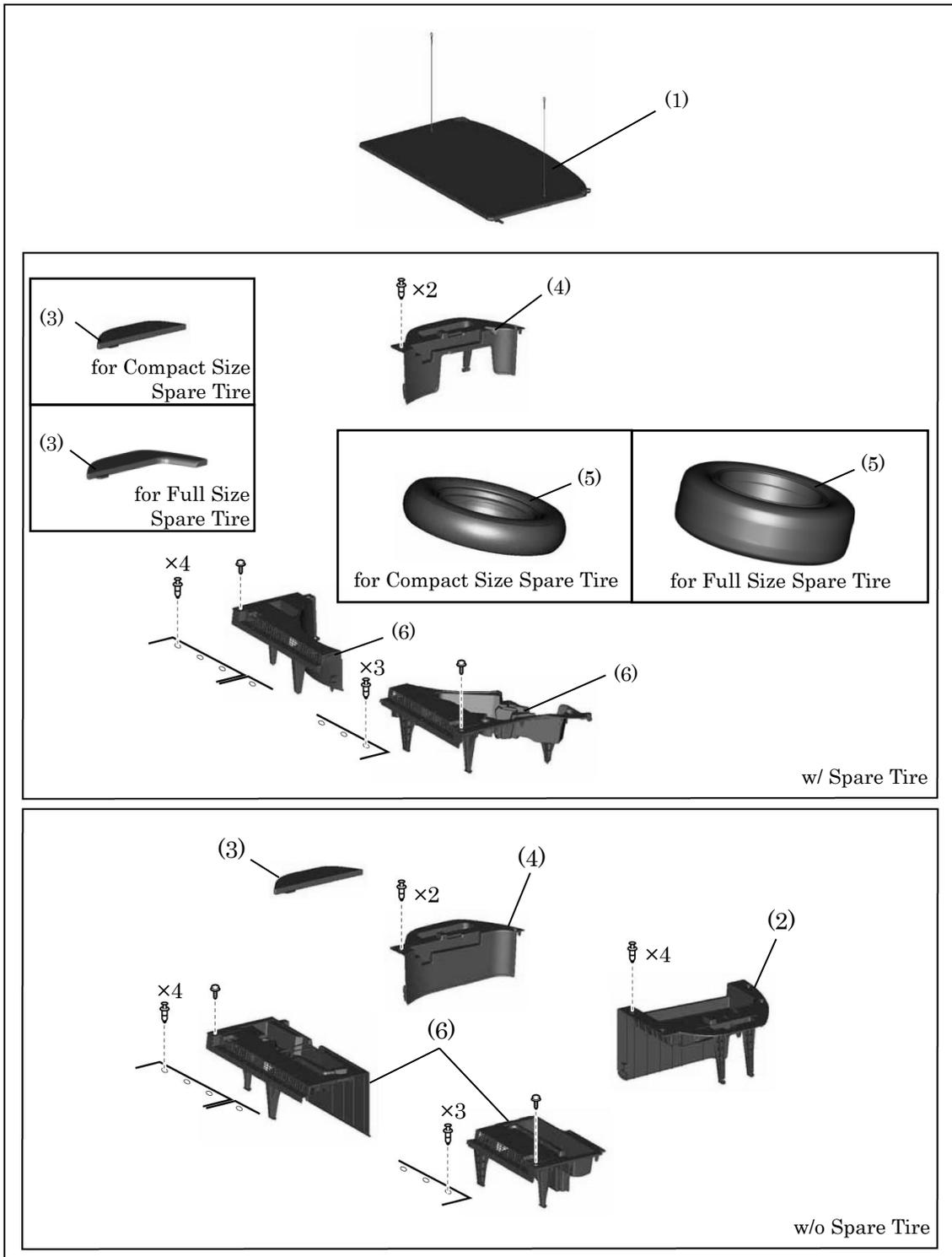
Hint:

Use a measuring range of DC 750 V or more on the voltmeter.



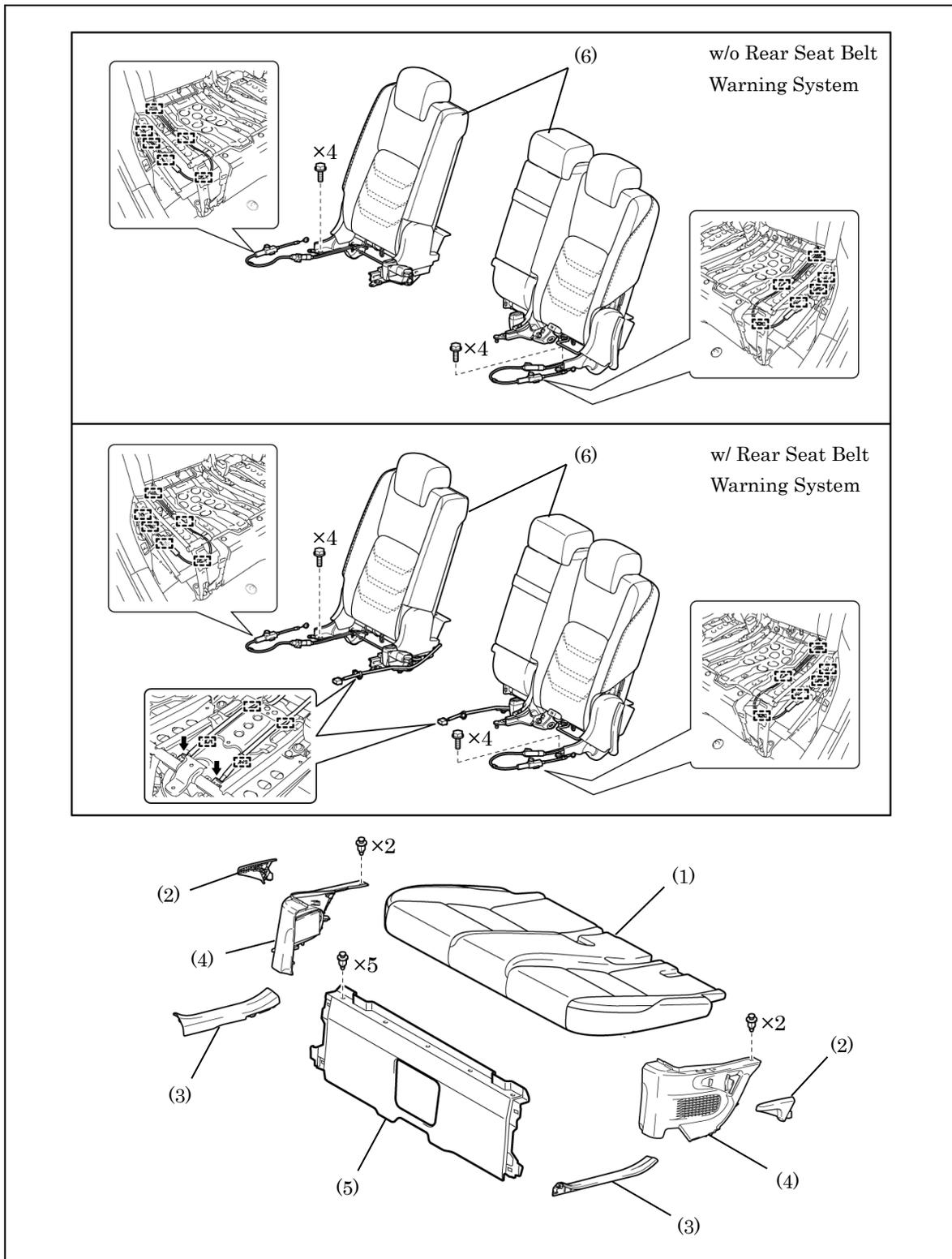
14. REMOVE NO. 1 TOOL BOX SUB-ASSEMBLY AND NO. 2 TOOL BOX SUB-ASSEMBLY

- (1) Remove the tonneau cover assembly.
- (2) Remove the deck floor box LH. (w/o Spare Tire)
- (3) Remove the No. 2 deck board sub-assembly.
- (4) Remove the deck floor box RH.
- (5) Remove the spare tire. (w/ Spare Tire)
- (6) Remove the No. 1 tool box sub-assembly and No. 2 tool box sub-assembly.



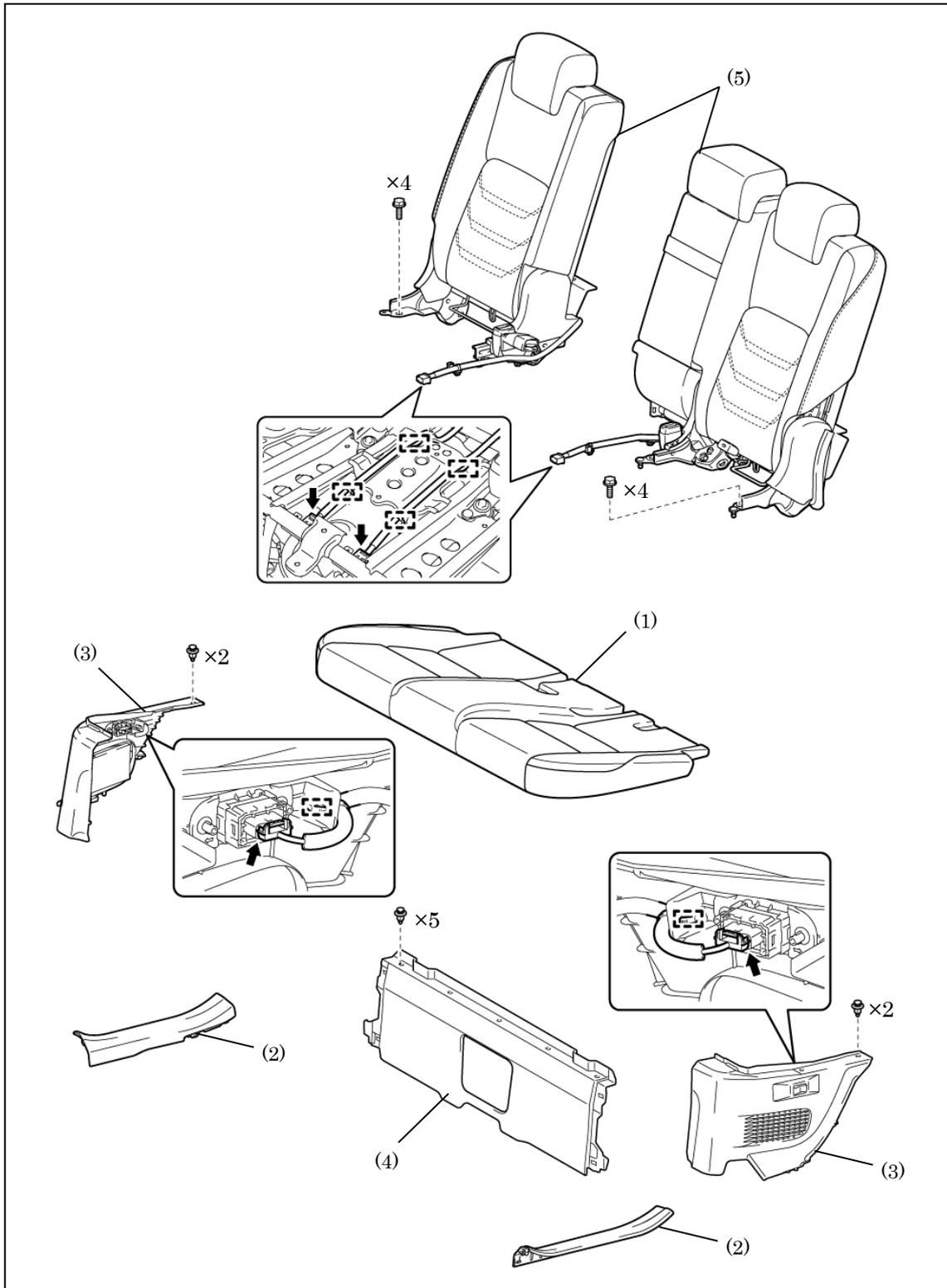
15. REMOVE REAR SEAT ASSEMBLY (for Manual Seat)

- (1) Remove the bench type rear seat cushion assembly.
- (2) Remove the reclining adjuster release handle LH and RH.
- (3) Remove the rear door scuff plate LH and RH.
- (4) Remove the No. 3 battery service cover board and No. 2 battery service cover board.
- (5) Remove the battery service cover board.
- (6) Remove the rear seatback assembly LH and RH.



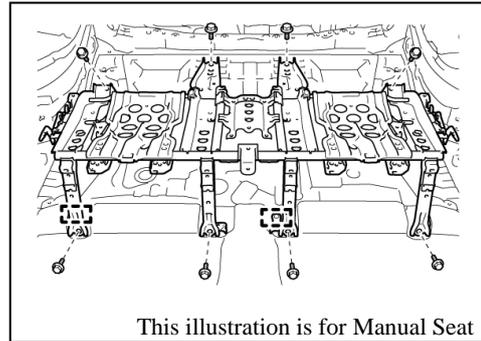
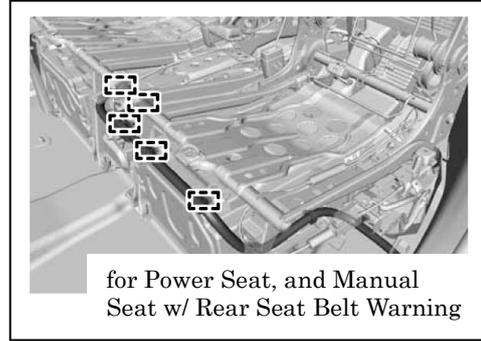
16. REMOVE REAR SEAT ASSEMBLY (for Power Seat)

- (1) Remove the bench type rear seat cushion assembly.
- (2) Remove the rear door scuff plate LH and RH.
- (3) Remove the No. 3 battery service cover board and No. 2 battery service cover board.
- (4) Remove the service cover board.
- (5) Remove the rear seatback assembly LH and RH.



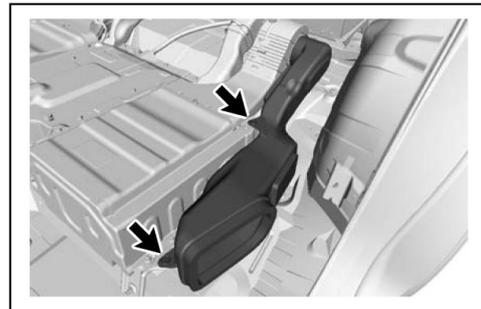
17. REMOVE NO. 1 SEAT LEG ASSEMBLY

- (1) Detach the 2 claws and 3 clamps to disconnect the wire harness. (for Power Seat, and Manual Seat w/ Rear Seat Warning System)
- (2) Remove the 8 bolts.
- (3) Detach the 2 guides to remove the No. 1 seat leg assembly.



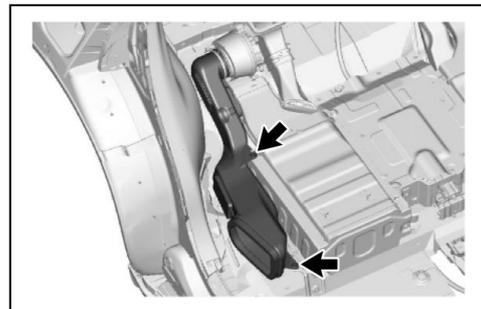
18. REMOVE NO. 2 HYBRID BATTERY INTAKE DUCT

Remove the 2 clips and No. 2 hybrid battery intake duct.



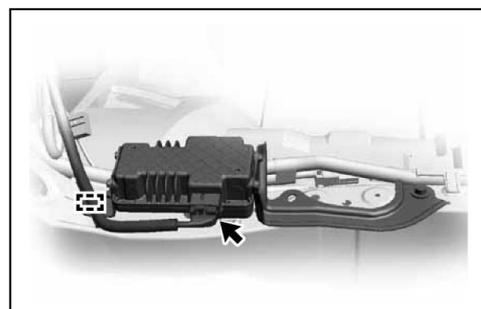
19. REMOVE NO. 1 HYBRID BATTERY INTAKE DUCT

Remove the 2 clips and No. 1 hybrid battery intake duct.

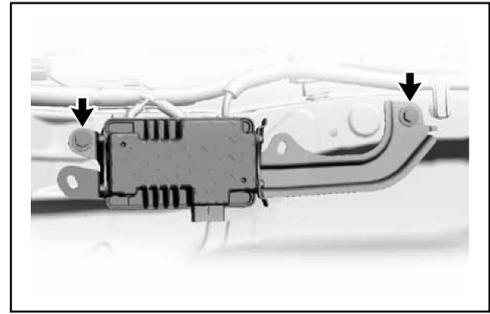


20. REMOVE VOLTAGE INVERTER ASSEMBLY (w/ Voltage Inverter)

- (1) Disconnect the connector and detach the clamp.



- (2) Remove the 2 bolts and voltage inverter assembly.



21. REMOVE NO. 2 HYBRID VEHICLE BATTERY SHIELD REINFORCEMENT

Caution:

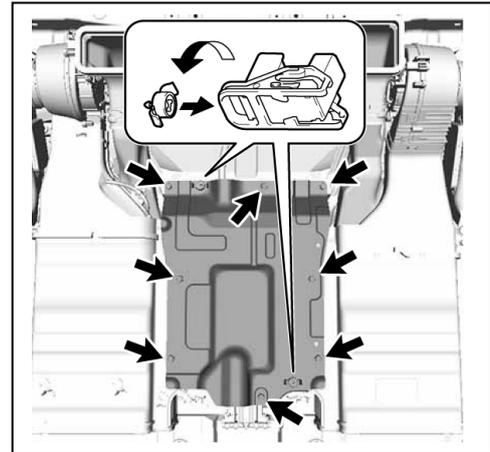
Wear insulated gloves.

- (1) Using the service plug grip, release the 2 battery cover lock strikers.

Hint:

Align the protrusion and notch on the service plug grip with the battery cover lock strikers, and turn the button counterclockwise to release the strikers.

- (2) Remove the 8 bolts and No. 2 hybrid vehicle battery shield reinforcement.

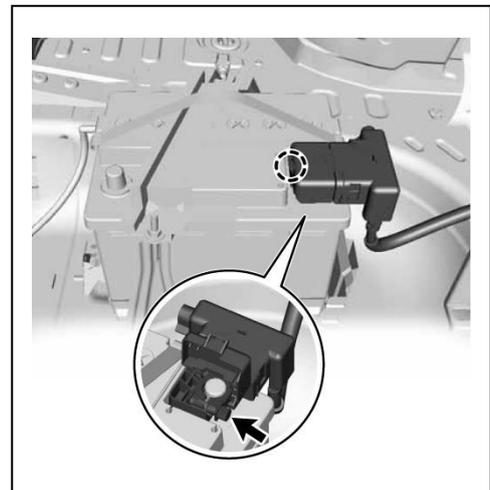


22. DISCONNECT POSITIVE AUXILIARY BATTERY TERMINAL

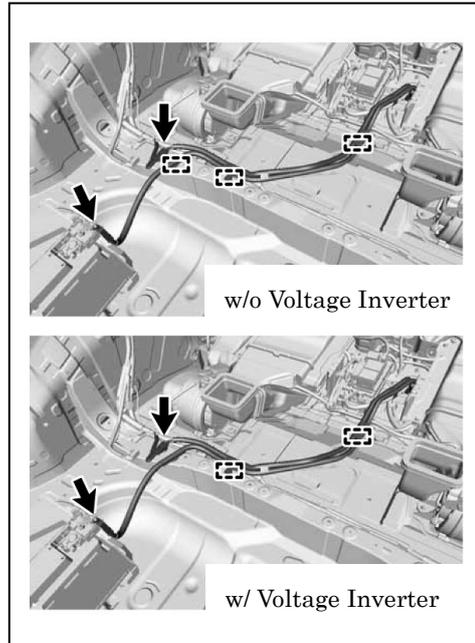
- (1) Detach the claw to open the auxiliary battery terminal cap.
- (2) Remove the nut and disconnect the positive (+) auxiliary battery terminal.

Notice:

Insulate the terminals of the remove auxiliary battery terminal with insulating tape.



- (3) Disconnect the 3 wire harness clamps and connector. (w/o Voltage Inverter)
- (4) Disconnect the 2 wire harness clamps and connector. (w/ Voltage Inverter)



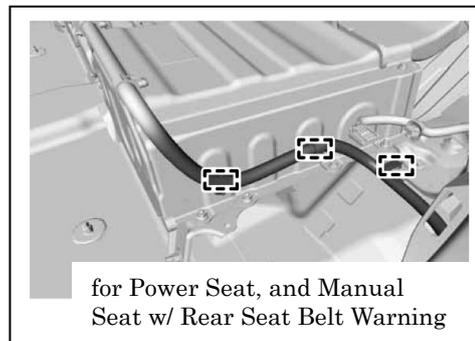
23. DISCONNECT WIRE HARNESS

Caution:

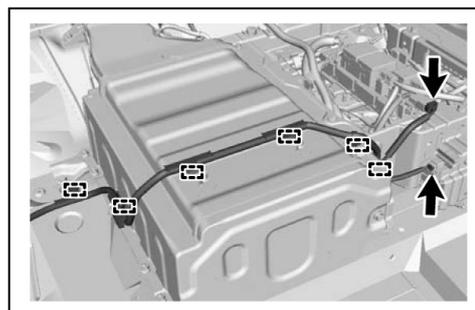
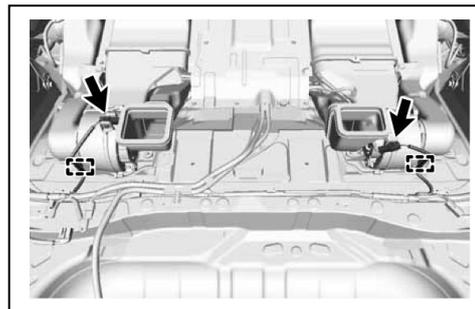
Wear insulated gloves.

Notice:

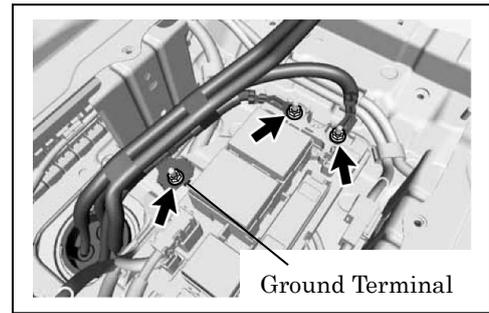
- To prevent the wire harness from being caught, make sure to bundle the wire harness using insulating tape or equivalent.
- Insulate the removed terminals and connector with insulating tape.
- Insulate the removed connector with insulating tape.



- (1) Disconnect the 3 clamps and the No. 2 floor wire. (for Power Seat, and Manual Seat w/ Rear Seat Warning System)
- (2) Disconnect the connector and wire harness clamps from battery cooling blower assembly LH.
- (3) Disconnect the connector and wire harness clamps from battery cooling blower assembly RH.
- (4) Disconnect the 2 connectors and 6 wire harness clamps.



- (5) Remove the 3 nuts, and disconnect the 2 No. 2 flame wires (high-voltage cables) and ground terminal.

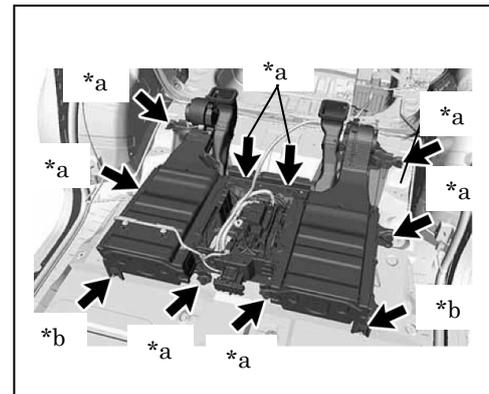


24. REMOVE HV BATTERY ASSEMBLY

Caution:

Be sure to wear insulated gloves and protective goggles.

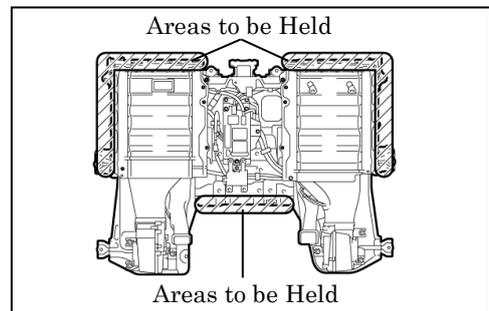
- (1) Use cardboard or other similar material to protect the HV battery assembly and vehicle body from damage.
- (2) Remove the 8 bolts, 2 nuts, and the HV battery assembly.
- (3) Lift up the HV battery assembly, and draw out the 4 cable from the HV battery assembly towards the lower side.



*a	Bolt
*b	Nut

Notice:

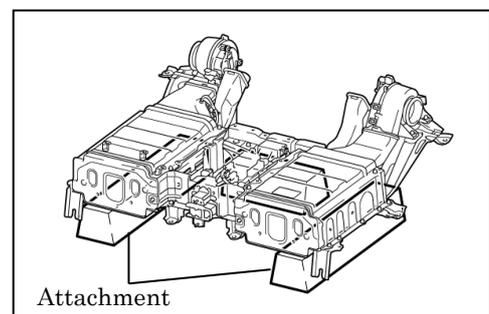
- Hold the areas shown in the illustration and lift up the HV battery assembly.
- Since the HV battery assembly is very heavy, 4 people are needed to remove the HV battery assembly. When removing the HV battery assembly, do not damage the parts around it.



- (4) Remove the HV battery assembly from the vehicle.

Notice:

- Since the HV battery assembly is very heavy, 4 people are needed to remove the HV battery assembly. When removing the HV battery assembly, do not damage the parts around it.
- To prevent the wire harness from being caught, make sure to bundle the wire harness using insulating tape or equivalent.
- When removing/moving the HV battery assembly, make sure not to tilt it more than 80°.



Hint:

When removing the HV battery assembly, do so from the back door opening.

- (5) Place the HV battery assembly on attachments.

25. The HV battery pack is recyclable. Contact your Lexus distributor (if included on the HV battery caution label) or contact the nearest Lexus dealer (see the next pages for samples of the HV battery caution label).

Caution:

After removing the HV battery, do not reinstall the service plug grip to the HV battery.

HV Battery Caution Label

1. For U.S.A.

DANGER		High Voltage Inside/Alkaline Electrolyte		Ni-MH	
		To Qualified Technicians, Haulers, Dismantlers Be sure to read the Repair Manual when servicing or replacing this unit. Please consult your dealer or your national distributor when hauling or dismantling this unit.		HV Battery Recycling Information ● Please transport this unit in accordance with all applicable laws. ● Consultations about replacing and disposing this unit are accepted in your dealer or the following address.	
Observe the following precautions when you handle this battery unit. If you do not conform to those, it may result in a fire, an electrical shock and death in the worst case. Leakage of alkaline electrolyte may cause blindness or skin problems, if alkaline electrolyte comes into contact with your eyes, skins or clothes. In event of accident, flush with water and get medical help immediately. ● Never disassemble, convert or divert this battery unit or remove its covers. (Please have the battery serviced by your dealer or a Qualified Technician.) ● Do not dump this unit illegally. It may result in pollution, death or serious injury. ● Do not puncture or expose this unit to impact. ● Keep this unit away from a fire. ● Do not water this unit. ● Keep children away from this unit.		Residents in U.S.A. ◆ TOYOTA MOTOR SALES U.S.A., ◆ SERVCO PACIFIC INC. INC. TORRANCE, CAL 90501 HONOLULU, HAWAII 96813 Phone:1-800-331-4331 Phone:808-839-2273		Residents in PUERTO RICO ◆ TOYOTA DE PUERTO RICO HATO REY, PUERTO RICO Phone:787-751-1000	

2. For Canada

DANGER		High Voltage Inside / Alkaline Electrolyte		Haute tension à l'intérieur / Electrolyte alcalin	
		Observe the following precautions when you handle this battery unit. If you do not conform to those, it may result in a fire, an electrical shock and death in the worst case. Leakage of alkaline electrolyte may cause blindness or skin problems, if alkaline electrolyte comes into contact with your eyes, skins or clothes. In event of accident, flush with water and get medical help immediately. ● Never disassemble, convert or divert this battery unit or remove its covers. (Please have the battery serviced by your dealer or a Qualified Technician.) ● Do not dump this unit illegally. It may result in pollution, death or serious injury. ● Do not puncture or expose this unit to impact. ● Keep this unit away from a fire. ● Do not water this unit. ● Keep children away from this unit.		Observez les précautions suivantes lors de la manipulation de cette batterie. Le défaut de s'y conformer pourrait entraîner un incendie, une décharge électrique et, dans le pire des cas, la mort. Une fuite d'électrolyte alcalin peut provoquer la cécité ou des problèmes de peau, en cas de contact avec les yeux, la peau ou les vêtements. En cas d'accident, rincer la partie touchée avec de l'eau et consulter immédiatement un médecin. ● Ne jamais dissassembler ou transporter cette batterie, ni l'employer à un autre usage ou en retirer le couvercle. (En confier l'entretien à votre concessionnaire ou à un technicien qualifié.) ● Ne pas jeter cette batterie illégalement. Cela pourrait engendrer de la pollution, ou provoquer des blessures graves, voire mortelles. ● Ne pas percer cette batterie ni l'exposer à des chocs. ● Garder cette batterie à l'écart des flammes. ● Ne pas arroser cette batterie. ● Garder les enfants éloignés de cette batterie.	
To Qualified Technicians, Haulers, Dismantlers Be sure to read the Repair Manual when servicing or replacing this unit. Please consult your dealer or your national distributor when hauling or dismantling this unit.		HV Battery Recycling Information ● Please transport this unit in accordance with all applicable laws. ● Consultations about replacing and disposing this unit are accepted in your dealer or the following address.		Informations relatives au recyclage de la batterie HV (véhicules hybrides) S'assurer de lire le Manuel de réparation lors de l'entretien ou du remplacement de cette batterie. Prière de consulter votre concessionnaire ou votre distributeur national lors du transport ou du démontage de cette batterie.	
TOYOTA CANADA INC. ONE TOYOTA PLACE SCARBOROUGH, ONTARIO M1H 1H9 Phone 1-888-TOYOTA-6 (1-888-869-8238) URL www.toyota.ca				C	

3. For Europe

DANGER		High Voltage Inside / Alkaline Electrolyte		Haute tension à l'intérieur / Electrolyte alcalin	
		Observe the following precautions when you handle this battery unit. If you do not conform to those, it may result in a fire, an electrical shock and death in the worst case. Leakage of alkaline electrolyte may cause blindness or skin problems, if alkaline electrolyte comes into contact with your eyes, skins or clothes. In event of accident, flush with water and get medical help immediately. ● Never disassemble, convert or divert this battery unit or remove its covers. (Please have the battery serviced by your dealer or a Qualified Technician.) ● Do not dump this unit illegally. It may result in pollution, death or serious injury. ● Do not puncture or expose this unit to impact. ● Keep this unit away from a fire. ● Do not water this unit. ● Keep children away from this unit.		Respecter les mesures de précaution suivantes lorsque vous manipulez cette batterie. Le non-respect de ces mesures peut provoquer un incendie ou une décharge électrique et entraîner la mort dans les cas les plus graves. Une fuite d'électrolyte alcalin peut entraîner la cécité ou des problèmes dermatologiques si l'électrolyte alcalin entre en contact avec les yeux, la peau ou les vêtements. En cas d'accident, rincer abondamment à l'eau et consulter immédiatement un médecin. ● Ne jamais démonter, convertir ou diviser cette batterie, ou en disposer les composants. ● Ne pas percer cette batterie ni l'exposer à des chocs. ● Ne pas arroser cette batterie de matières liquides. Cela pourrait polluer l'environnement, provoquer de graves brûlures ou entraîner la mort. ● Ne pas percer cette batterie ou l'exposer à des impacts. ● Tenir cette batterie éloignée du feu. ● Ne pas mouler cette batterie. ● Garder hors de portée des enfants.	
To Qualified Technicians, Haulers, Dismantlers Be sure to read the Repair Manual when servicing or replacing this unit. Please consult your dealer or your national distributor when hauling or dismantling this unit.		HV Battery Recycling Information ● Please transport this unit in accordance with all applicable laws. ● Consultations about replacing and disposing this battery unit are accepted in your dealer or your national distributor.		Informations concernant le recyclage des batteries des HV (Véhicules Hybrides) : ● Veiller à transporter cette batterie dans le respect des lois applicables. ● Vous pouvez consulter votre concessionnaire ou votre distributeur national pour savoir comment remplacer ou éliminer cette batterie.	
				D	

4. For China

危险		内部高电压 / 碱性电解液		Ni-MH	
		处理蓄电池单元时，请遵守下列注意事项。否则可能导致火灾、触电甚至死亡。如果碱性电解液溅到并接触到眼睛、皮肤或衣服，可能导致失明或皮肤伤害。如果发生意外，用水冲洗并立即就医。		致有资质的技师、运输人员和拆解人员 维修或更换蓄电池单元时请务必阅读修理手册。运输或拆解蓄电池单元时，请咨询您的经销商或全国分销商。	
●切勿将蓄电池单元拆解、改装、改作他用或拆下其盖子。(请您的经销商或有资质的技师维修蓄电池。) ●不要非法丢弃蓄电池单元。否则可能导致环境污染或严重伤亡。 ●不要撞击蓄电池单元以免破损。 ●使蓄电池单元远离火源。 ●不要使蓄电池单元接触到水。 ●使儿童远离蓄电池单元。				HV (混合动力车辆) 蓄电池单元回收信息 ●运输蓄电池单元时请遵守当地法规。 ●有关更换和弃置蓄电池单元的事宜，请咨询您的经销商或全国分销商。	
				E	

5. For Russia

	Высокое напряжение/щелочной электролит
	<p>Во избежание травм, ожогов и поражений электрическим током:</p> <ul style="list-style-type: none"> ● никогда не разбирайте аккумуляторную батарею и не снимайте с нее крышку. ● осуществляйте обслуживание аккумуляторной батареи у специалиста надлежащей квалификации. ● избегайте попадания щелочного электролита в глаза, на кожу или на одежду. В случае попадания электролита следует промыть пораженный участок водой и немедленно обратиться за медицинской помощью. ● не подпускайте детей к аккумуляторной батарее. ● избегайте прокола аккумуляторной батареи или ударов по ней при работе с выключным погружным насосом. ● не оставляйте аккумуляторную батарею вблизи открытого огня и не сжигайте ее, а также не подвергайте воздействию хлорокислот во время хранения; избыточное нагревание может вызвать пожар или утечку электролита. <p>Информация для сертифицированных автоэлектриков: перед обслуживанием или заменой аккумуляторной батареи ознакомьтесь с руководством по ремонту.</p> <p>Информация об утилизации аккумуляторной батареи гибридного автомобиля</p> <ul style="list-style-type: none"> ● транспортировка аккумуляторной батареи должна осуществляться в соответствии со всеми применимыми законами. ● относительно замены и способов утилизации аккумуляторной батареи проконсультируйтесь с дилером или дистрибутором в вашей стране указанным в Руководстве по гарантийному обслуживанию.