



# RX 450h

*Gasoline-Electric*

*Lexus Hybrid Drive*

## *HYBRID VEHICLE DISMANTLING MANUAL*



## Foreword

This guide was developed to educate and assist dismantlers in the safe handling of Lexus RX450h gasoline-electric hybrid vehicles. RX450h 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 RX450h, as they may not be familiar to dismantlers.

High voltage electricity powers the A/C compressor, electric motors, generator, and inverter/converter. All other conventional automotive electrical devices such as the headlights, radio, and gauges are powered from a separate 12 Volt auxiliary battery. Numerous safeguards have been designed into the RX450h to help ensure the high voltage, approximately 288 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 RX450h identification.
- Major hybrid component locations and descriptions.

By following the information in this guide, dismantlers will be able to handle RX450h-electric vehicles as safely as the dismantling of a conventional non-hybrid automobile.

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## About the RX450h

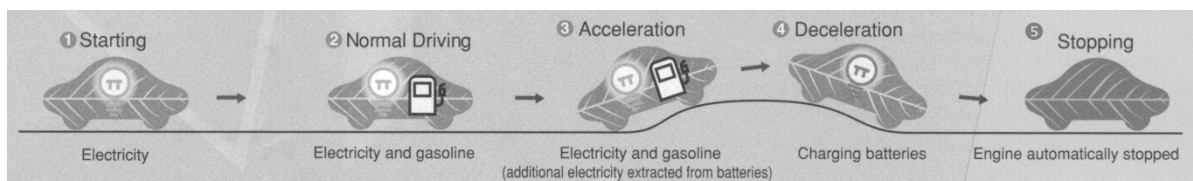
The RX450h continues into its 2<sup>nd</sup> generation as a gasoline-electric hybrid vehicle. Lexus Hybrid Drive means that the vehicle contains a gasoline engine and electric motors for power. The two hybrid power sources are stored on board the vehicle:

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 RX450h 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 RX450h 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.
- ❸ During full acceleration, such as climbing a hill, both the gasoline engine and the electric motor power the vehicle.
- ❹ During deceleration, such as when braking, the vehicle regenerates the kinetic energy from the wheels to produce electricity that recharges the battery pack.
- ❺ While the vehicle is stopped, the gasoline engine and electric motor are off, however the vehicle remains on and operational.



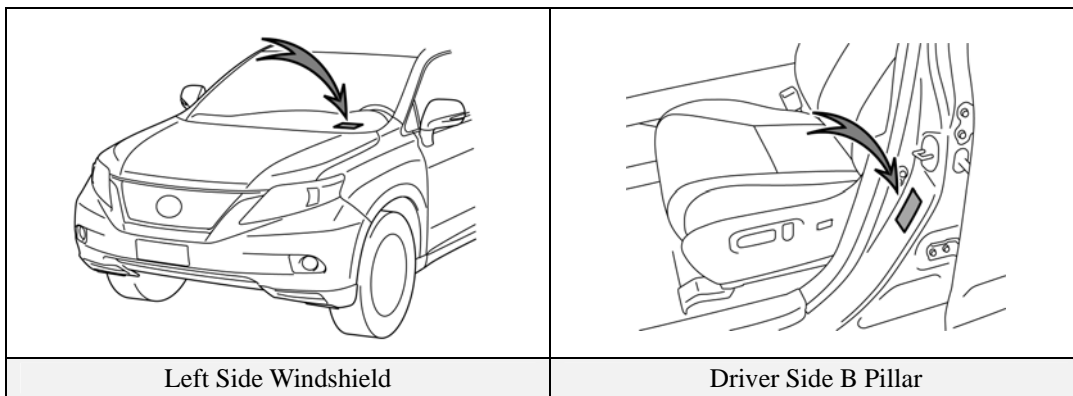
## **RX450h Identification**

In appearance, the 2010 model year RX 450h is nearly identical to the conventional, non-hybrid Lexus RX 350. The RX 450h is a 5-door SUV. Exterior, interior, and engine compartment illustrations are provided to assist in identification.

The alphanumeric 17 character Vehicle Identification Number (VIN) is provided in the front windshield cowl, driver door pillar, and engine compartment.

Example VIN: JTJZB1BAF82020211 or JTJZB11AF82020211 (FWD Models)  
JTJBC1BAF82020211 or JTJBC11AF82020211 (AWD Models)

A RX450h is identified by the first 6 alphanumeric characters  
**JTJZB1BA, JTJZB11A, JTJBC1BA or JTJBC11A.**



## RX450h Identification (Continued)

### Exterior

- ❶ **RX450h** logo on the back door.
- ❷ Front bumper and grill that are unique to the hybrid model.
- ❸ **HYBRID** logo on the rear door moldings.



Exterior Driver Side View



Exterior Front View

Exterior Rear View



Exterior Rear and Driver Side View

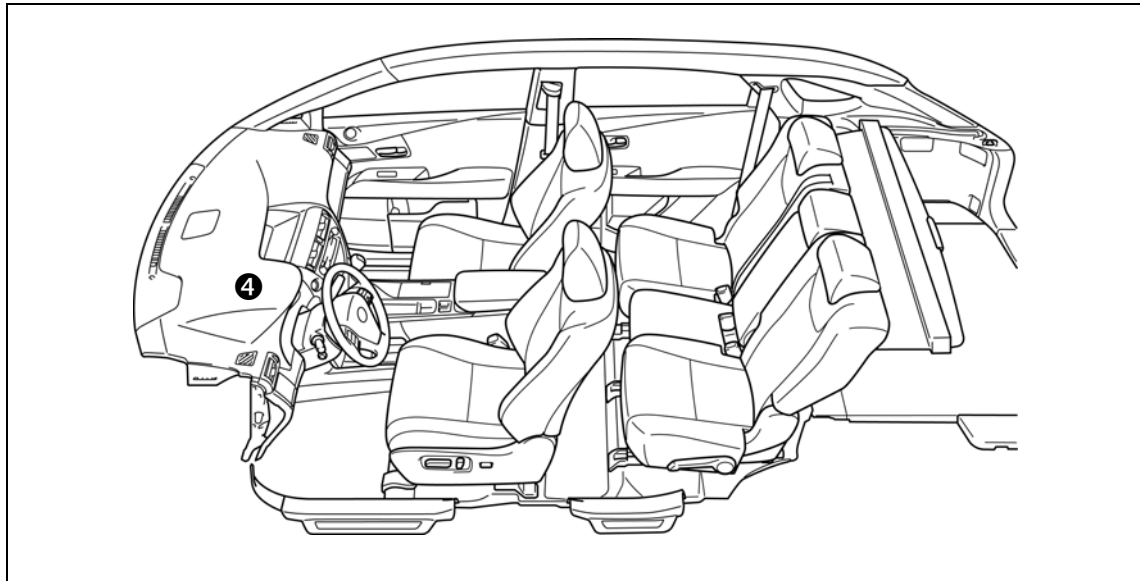
## RX450h Identification (Continued)

### Interior

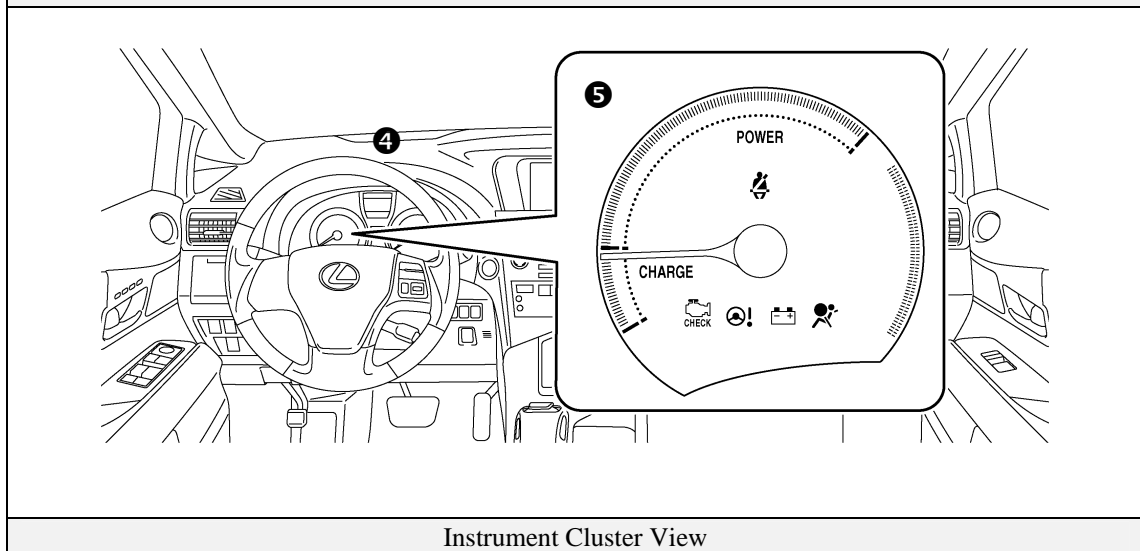
- ④ The instrument cluster (speedometer, fuel gauge, warning lights) located in the dash behind the steering wheel, is different than the one on the conventional, RX350.
- ⑤ In place of a tachometer, a power meter showing kW output is used.

### **Hint:**

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



Interior View of Front Door Sill/Scuff Plate



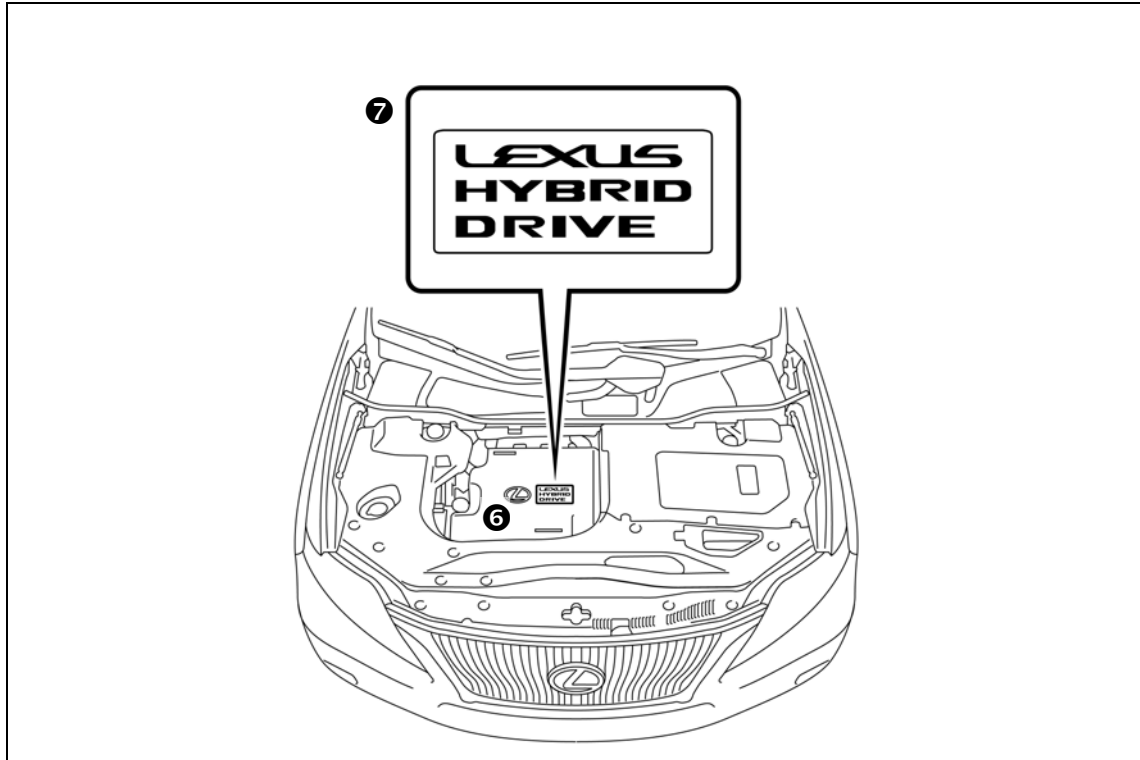
Instrument Cluster View



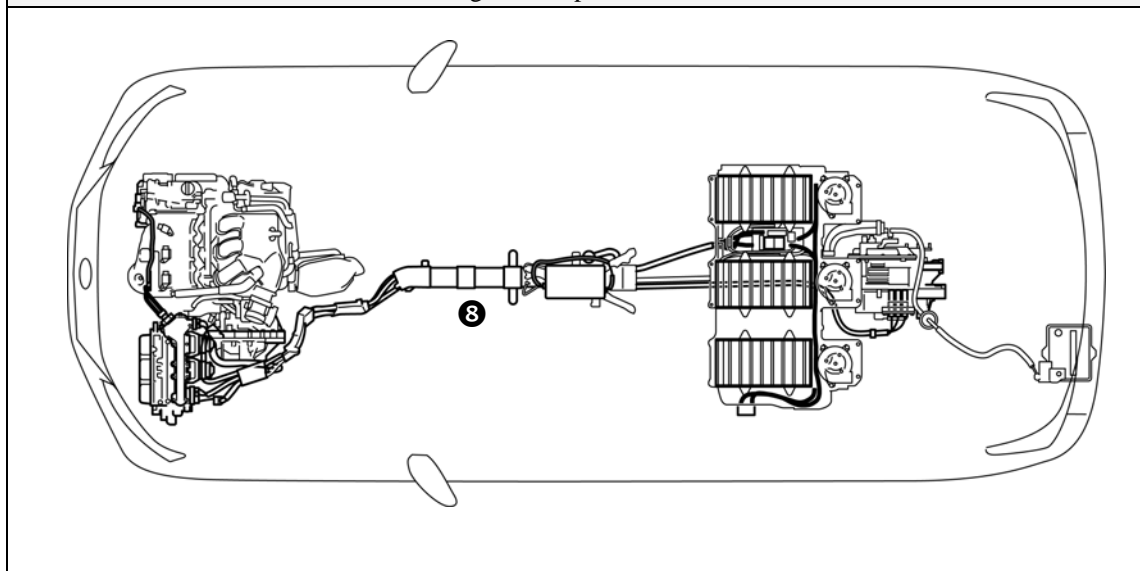
## RX450h Identification (Continued)

### Engine Compartment

- ⑥ 3.5-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



Power Cables

## Hybrid Component Locations & Descriptions

Component	Location	Description
12 Volt ❶ Auxiliary Battery	Cargo Area	A lead-acid battery that supplies power to the low voltage devices.
Hybrid ❷ Vehicle (HV) Battery Pack	Cabin Area, Mounted to Cross Member under Second Row Seat	288 Volt Nickel Metal Hydride (NiMH) battery pack consisting of 30 low voltage (9.6 Volt) modules connected in series.
Power ❸ Cables	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 motors, 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 motors (regenerative braking) to DC that recharges the HV battery pack.
Gasoline ❺ Engine	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 Electric❻ Motor	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 ❼ Generator	Engine Compartment	3-phase high voltage AC generator that is contained in the transaxle and recharges the HV battery pack.
A/C Compressor (with Inverter) ❸	Engine Compartment	3-phase high voltage AC electrically driven motor compressor.
Fuel Tank and Fuel Line ❾	Undercarriage and Center	The fuel tank provides gasoline via a fuel line to the engine. The fuel line is routed under the center of vehicle.
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.
DC-DC Converter ⓫ for EPS and optional Active Stabilizer Suspension System	Under Center Console	Converts 288 Volts from the HV battery pack to 46 Volts for EPS and optional active stabilizer suspension system power. Dull yellow colored sheathing identifies 46 Volt wires that are routed under the vehicle body to power the EPS and the active stabilizer suspension system.

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

## Hybrid Component Locations & Descriptions (Continued)

### Specifications

Gasoline Engine: 245 hp (183 kW), 3.5-liter Aluminum Alloy Engine

Electric Motors

Front: 165 hp (123 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: 288 Volt Sealed NiMH-Battery

Curb Weight: 4,642 lbs/2,110 kg

Fuel Tank: 17.2 gals/65.0 liters

Fuel Economy

Ratings: 32/28 (City/Hwy) miles/US gal (for FWD models)

31/27 (City/Hwy) miles/US gal (for AWD models)

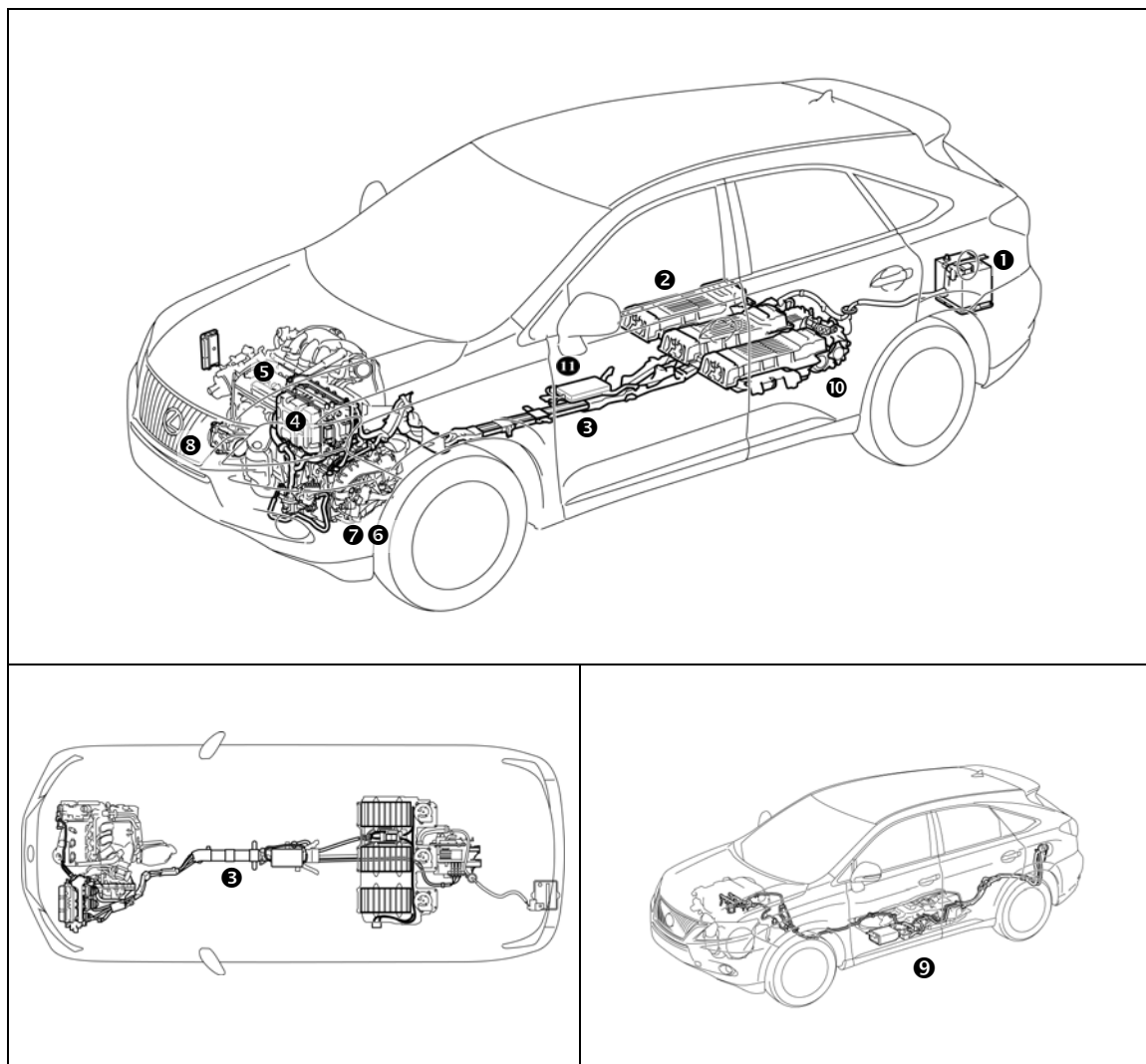
7.4/8.4 (City/Hwy) liters/100 km (for FWD models)

7.6/8.7 (City/Hwy) liters/100 km (for AWD models)

Frame Material: Steel Unibody

Body Material: Steel Panels

Seating Capacity: 5 standard



## Lexus Hybrid Drive Operation

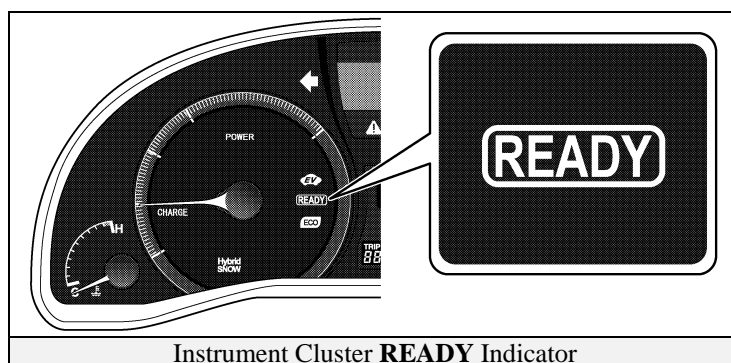
Once the **READY** indicator is illuminated in the instrument cluster, the vehicle may be driven. However, the gasoline engine does not idle like a typical automobile and will start and stop automatically. It is important to recognize and understand the **READY** indicator provided in the instrument 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 RX450h, 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. The gasoline engine only.
3. A combination of both the electric motor and the gasoline engine.



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

The RX450h 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 seat. The metal case is isolated from high voltage and concealed by carpet in the cabin area.
- The HV battery pack consists of 30 low voltage (9.6 Volt) NiMH battery modules connected in series to produce approximately 288 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.
- In the unlikely event that the battery pack is overcharged, the modules vent gases directly outside the vehicle through a vent hose.

HV Battery Pack	
Battery pack voltage	288 V
Number of NiMH battery modules in the pack	30
NiMH battery module voltage	9.6 V
NiMH battery module dimensions	1 x 15 x 3.3 in (18.5 x 382 x 86 mm)
NiMH module weight	3.3 lbs (1.5 kg)
NiMH battery pack dimensions	25 x 43 x 7 in (630 x 1080 x 180 mm)
NiMH battery pack weight	152.1 lbs (69 kg)

### Components Powered by the HV Battery Pack

- Front Electric Motor
- Inverter/Converter
- A/C Compressor
- DC-DC Converter for 12 Volt Auxiliary Battery
- DC-DC Converter for EPS and Active Stabilizer Suspension System
- Optional Rear Electric Motor
- Power Cables
- Electric Generator

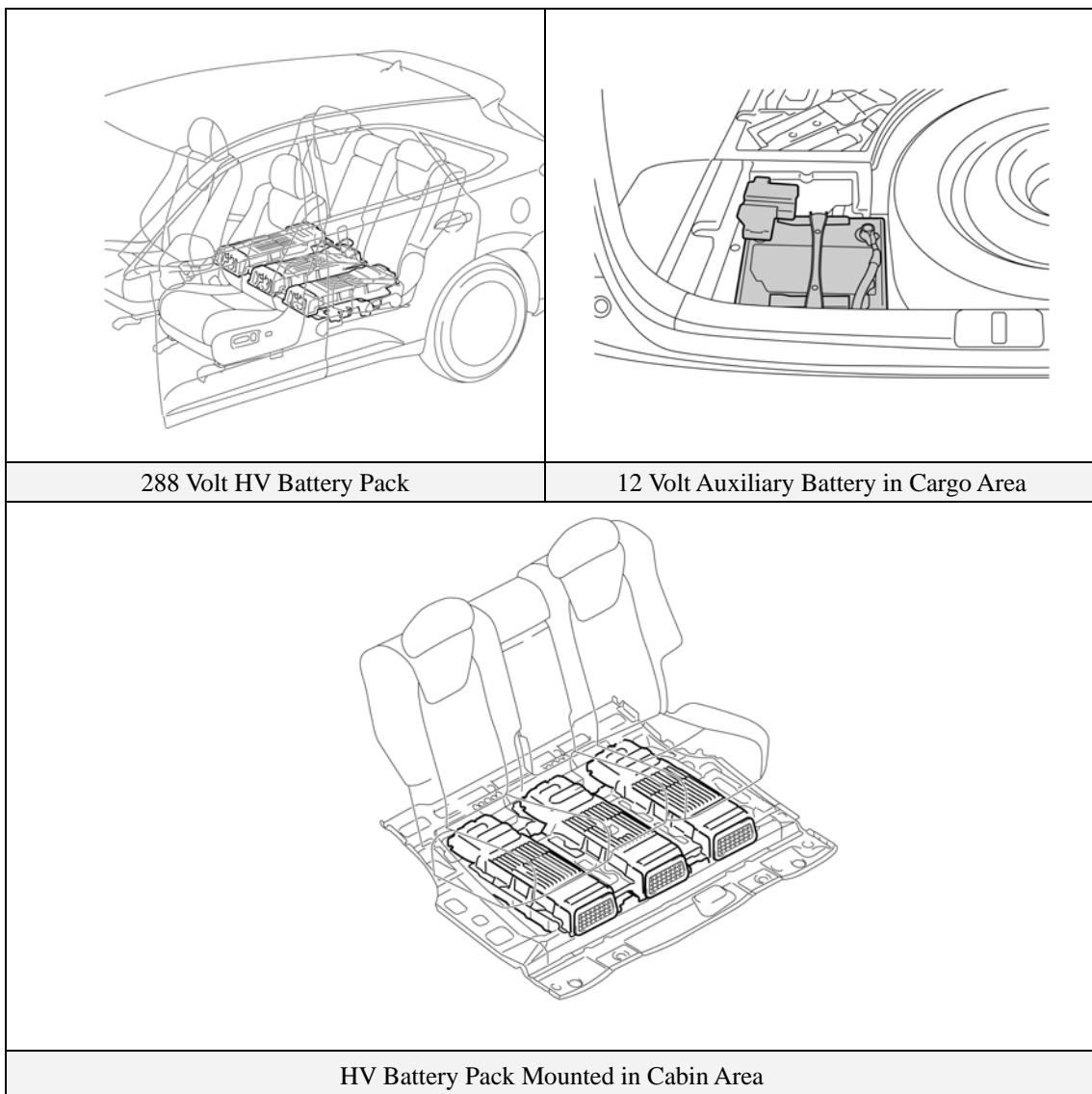
## Hybrid Vehicle (HV) Battery Pack and Auxiliary Battery (Continued)

### HV Battery Pack Recycling

- The HV battery pack is recyclable. Contact either your Lexus Distributor as mentioned on HV battery Caution Label (see page 28) or the nearest Lexus dealer.

### Auxiliary Battery

- The RX450h also contains a 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.



## 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 288 to 650 Volts DC. The inverter/converter creates 3-phase AC to power the motors. 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.***

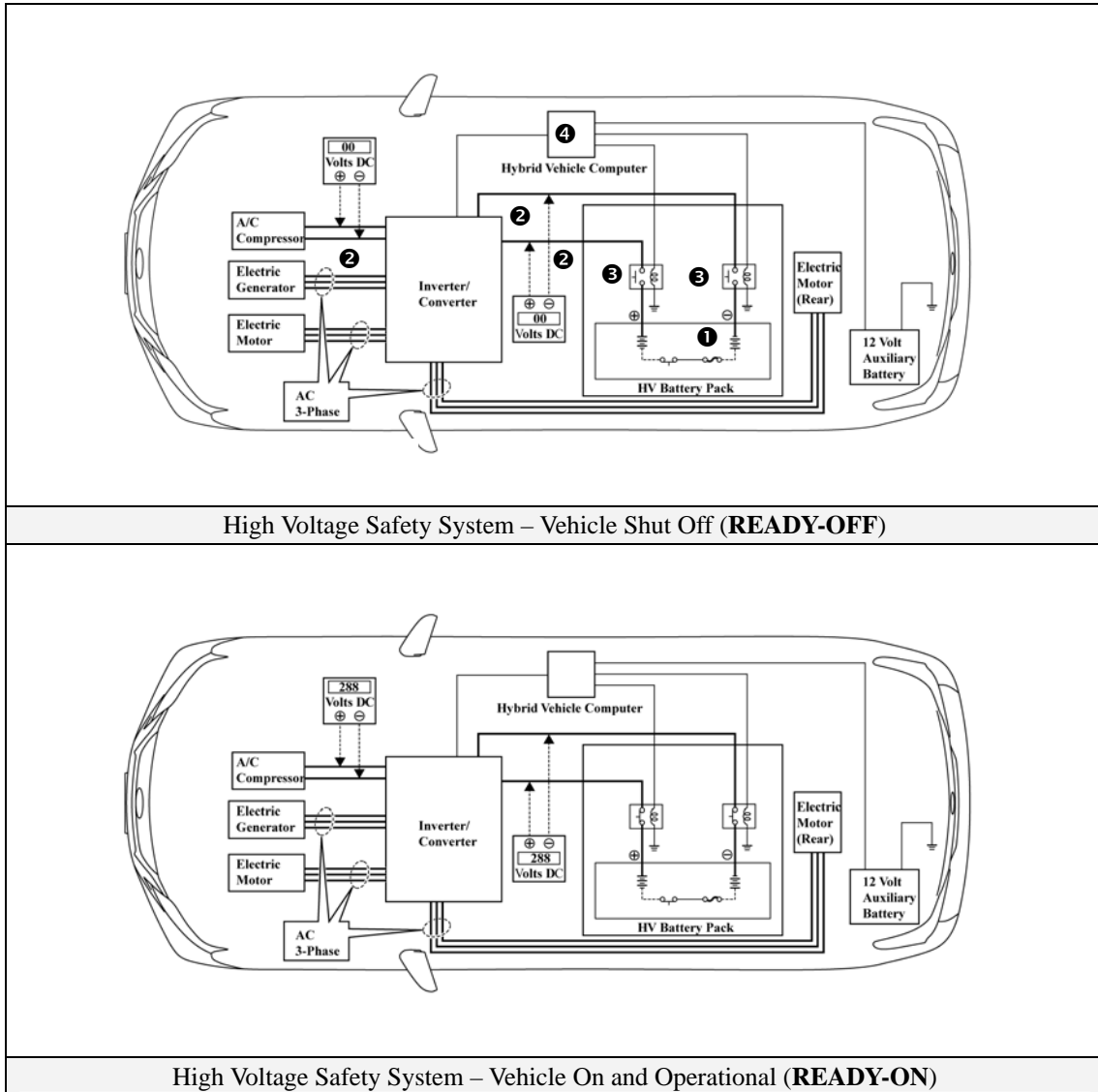
- Both positive and negative power cables ❷\* are insulated from the metal chassis, so there is no possibility of electric shock when touching the metal chassis.
- A ground-fault monitor continuously monitors for high voltage leakage to the metal chassis while the vehicle is running. If a malfunction is detected, the hybrid vehicle computer ❹\* will illuminate the master warning light  in the instrument cluster and indicate “CHECK HYBRID SYSTEM” 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.

## High Voltage Safety (Continued)

### Service Plug Grip

- The high-voltage circuit is cut by removing the service plug grip (see page 15).





## 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 RX450h 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 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 Material Safety Data Sheets (MSDS) 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

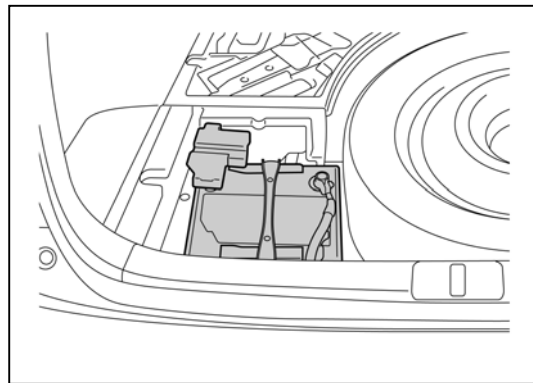
The following 2 pages contain general instructions for use when working on an RX450h. Read these instructions before proceeding to the HV battery removal instructions on page 18.



### **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 the auxiliary battery negative (-) terminal.



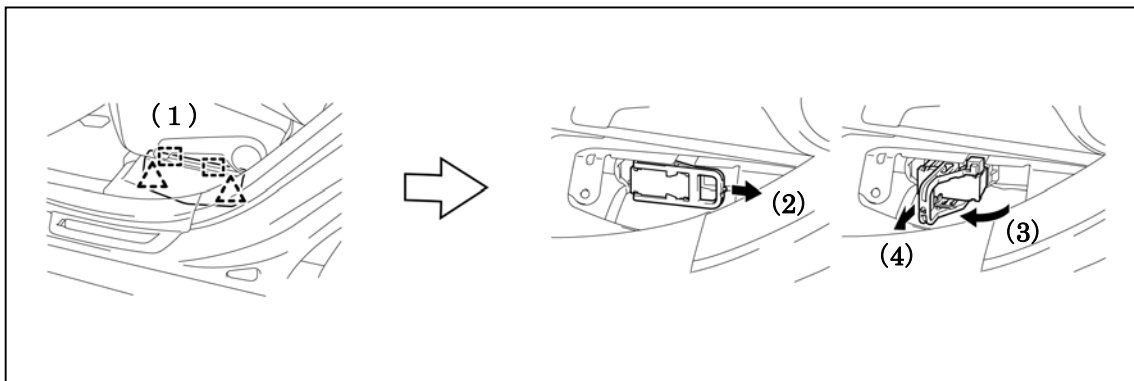
2. Remove the service plug grip.

- (1) Disengage the 2 clips and 2 guides, and remove the battery service hole cover.

### **Caution:**

**Wear insulated gloves for the following 3 steps.**

- (2) Slide the handle of the service plug grip to the left.
- (3) Raise the release handle of the service plug grip.
- (4) Remove the service plug grip.

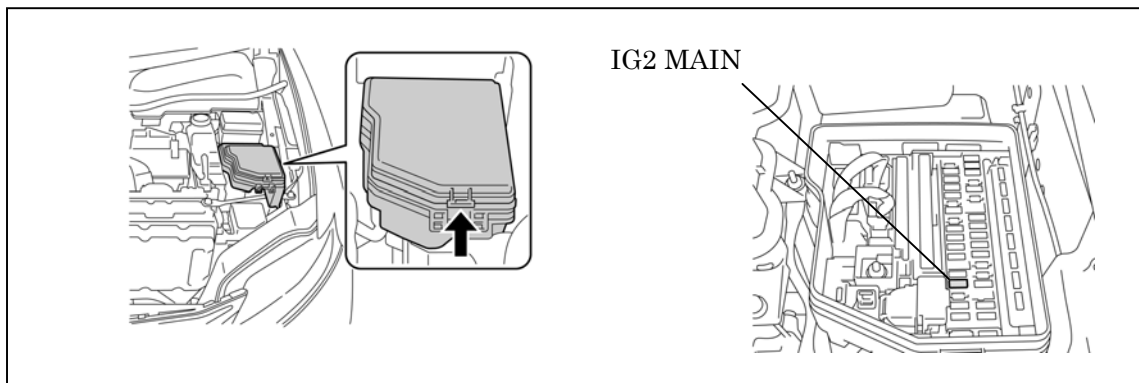


- (5) Apply insulating tape to the socket of the service plug grip to insulate it.

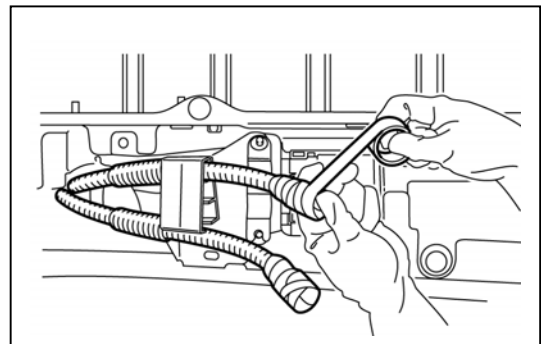
3. Carry the removed service plug grip in your pocket to prevent other staff from accidentally reinstalling it while you are dismantling the vehicle.
4. Make other staff aware that a high-voltage system is being dismantled by using the following sign: CAUTION: HIGH-VOLTAGE. DO NOT TOUCH (see page 17).
5. If the service plug grip cannot be removed due to damage to the vehicle, remove the **IG2 MAIN** fuse (30A).

**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.

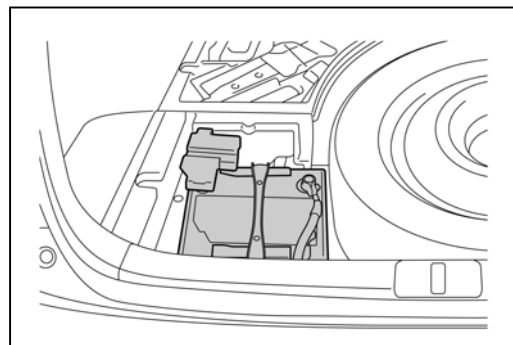
## Removal of HV battery



### **WARNING:**

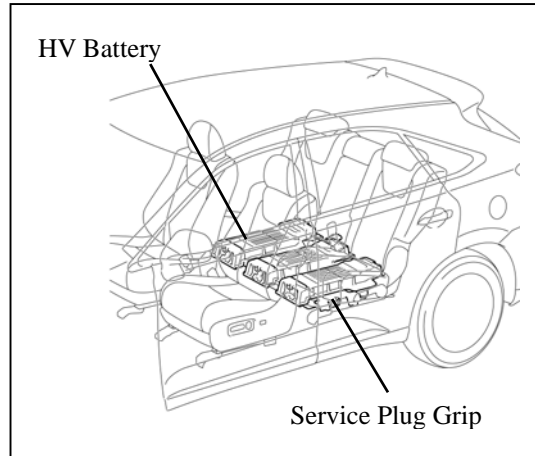
- *Be sure to wear insulated gloves when handling high-voltage parts.*
- *Even if the vehicle is shut off and the relays are off, be sure to remove the service plug grip before performing any further work.*
- *Power remains in the high voltage electrical system for 10 minutes even after the HV battery 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 the ignition (**READY** indicator is off).
2. Disconnect the cable from the auxiliary battery negative (-) terminal.



3. Remove the service plug grip.

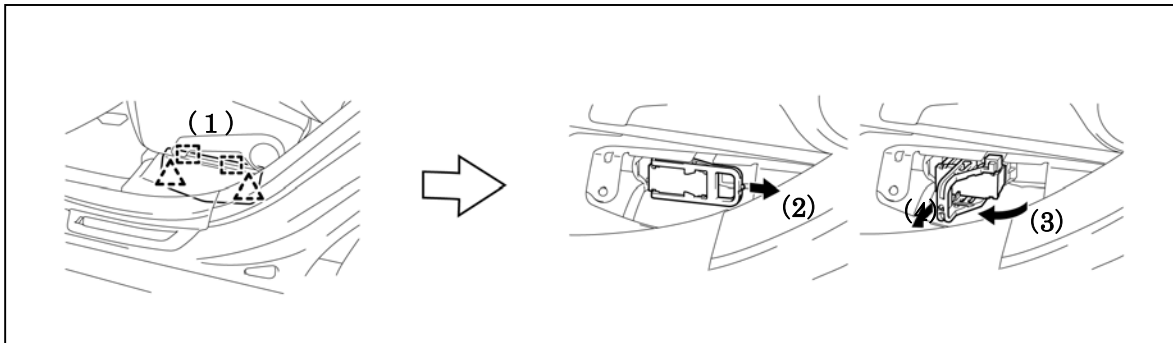
- (1) Disengage the 2 clips and 2 guides, and remove the battery service hole cover.
- (2) Slide the handle of the service plug grip to the left.



**Caution:**

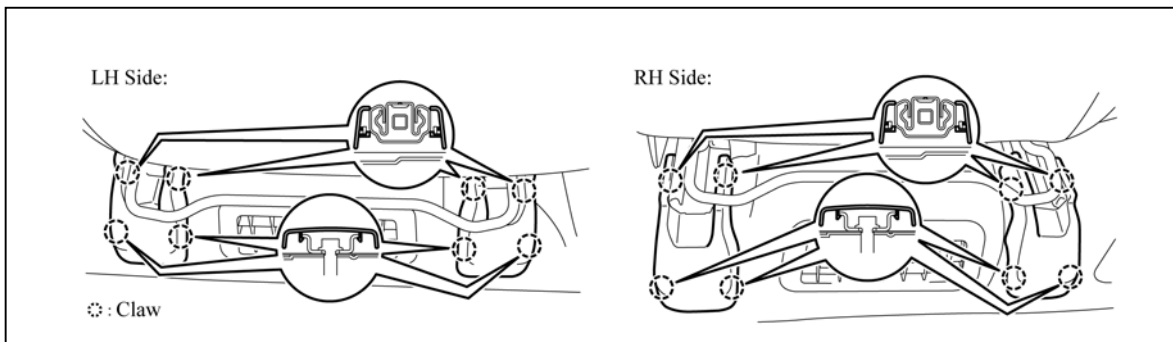
**Wear insulated gloves for the following 3 steps.**

- (3) Raise the release handle of the service plug grip as shown in the illustration below.
- (4) Remove the service plug grip.
- (5) Apply insulating tape to the socket of the service plug grip to insulate it.

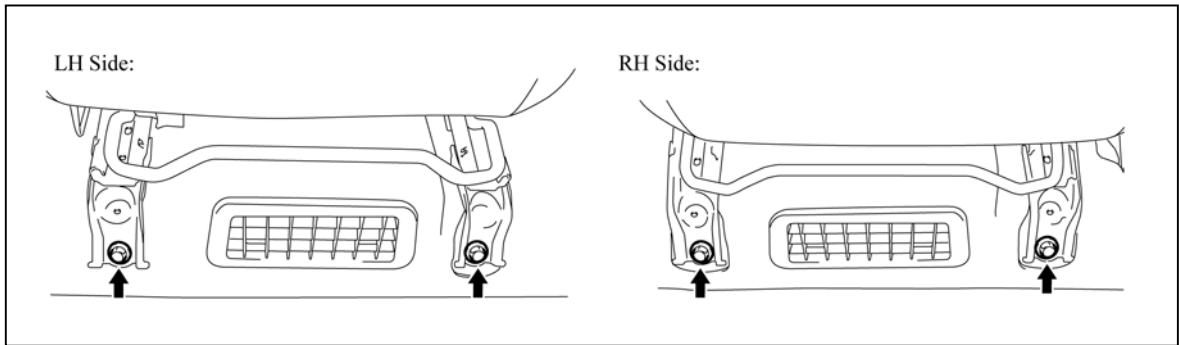


4. Remove the left rear seat for the second row.

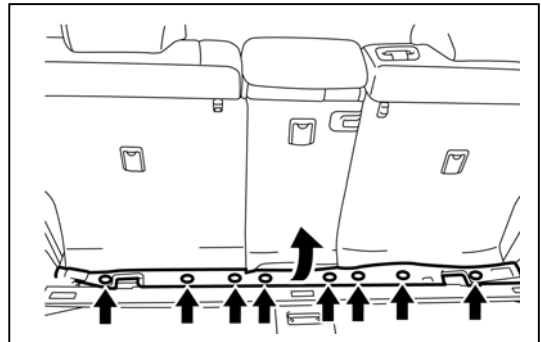
- (1) Disengage the 8 claws and remove the 4 rear seat track bracket covers.



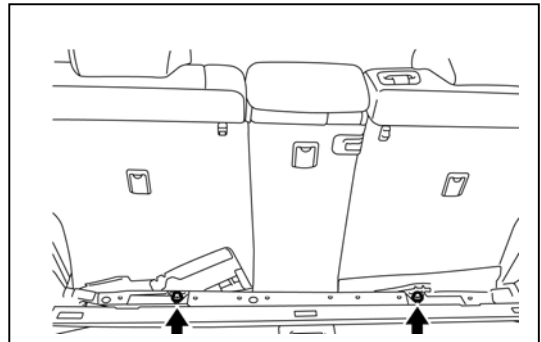
(2) Remove the 4 bolts on the front side of the seat.



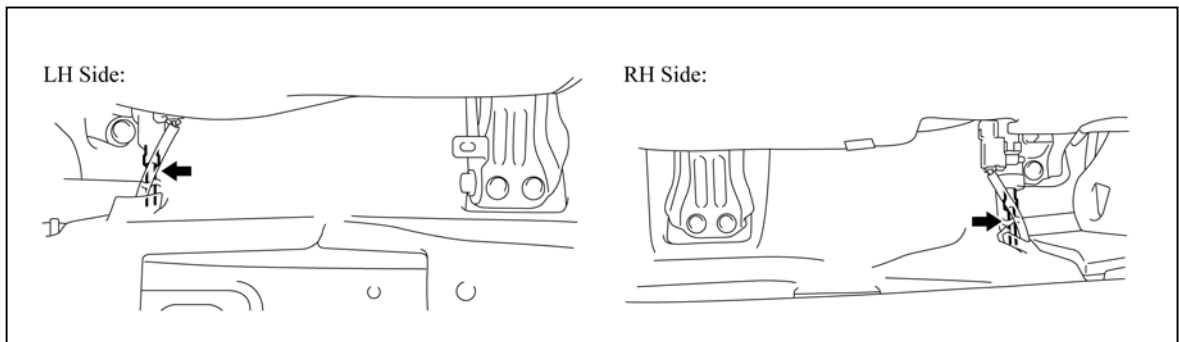
(3) Remove the 8 clips and seatback board carpet LH.



(4) Remove the bolt and disconnect the fold seat stopper band assembly.

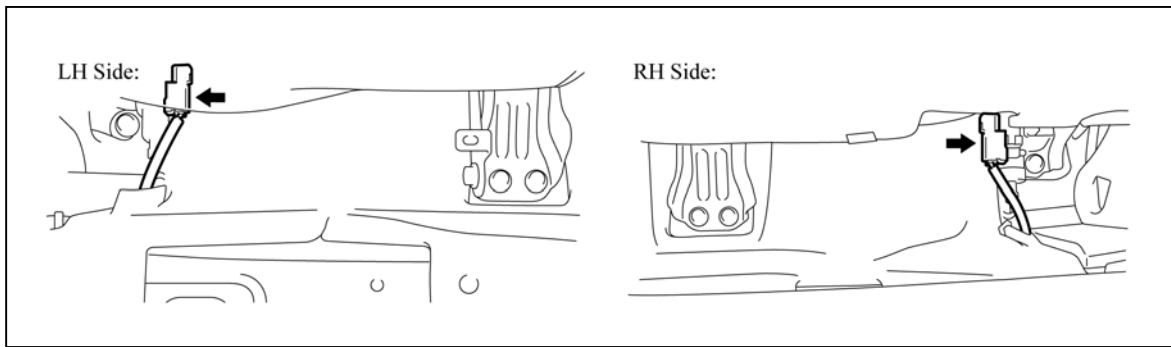


(5) Cut the seat lock cable assembly (with remote folding function).

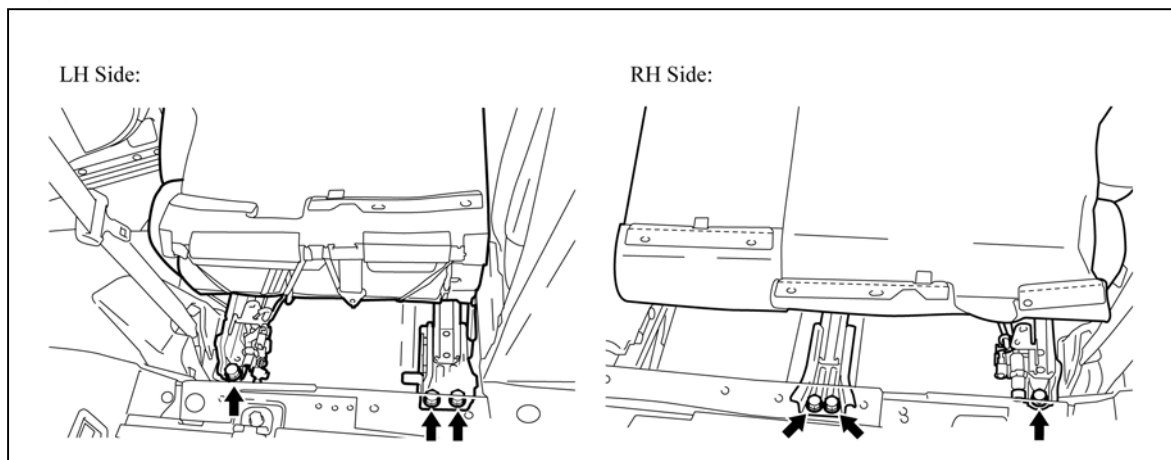




(6) Disconnect the 2 rear seat side airbag connectors.



(7) Remove the 3 bolts on the rear side of the seat.



(8) Remove the seat assembly LH and RH.

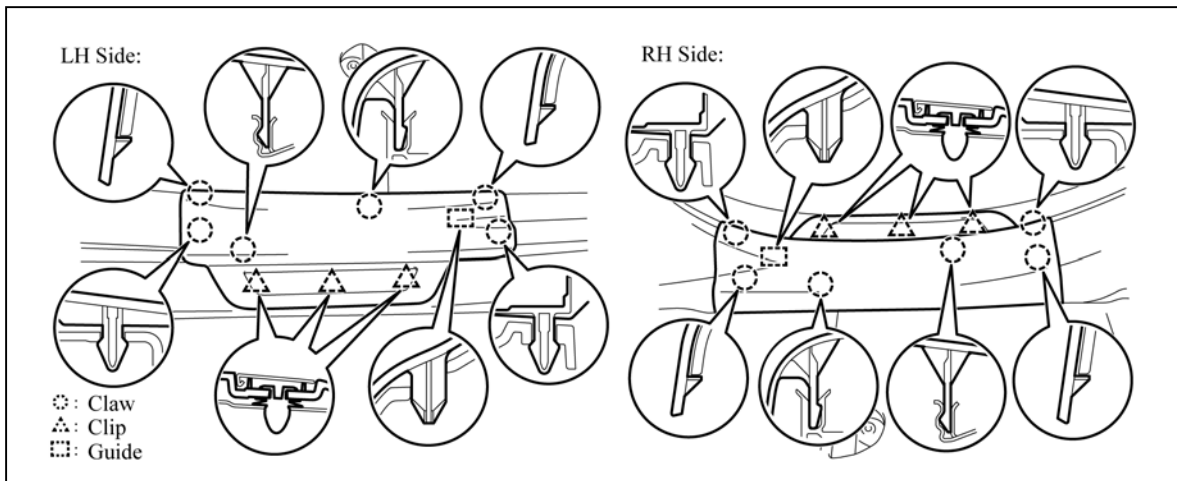
**Caution:**

**Do not cut wiring or wire harnesses when removing vehicle components. Always disconnect components at the connector.**

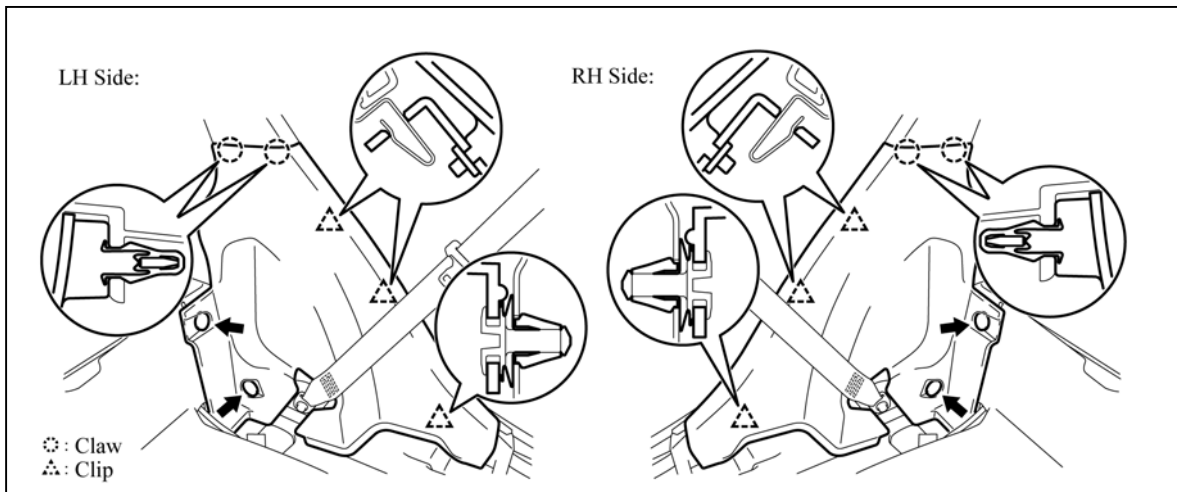
**Hint:**

When removing rear seat components, it may be necessary to unbolt or move other components in order to access connectors for components.

5. Remove the rear door scuff plate LH and RH.

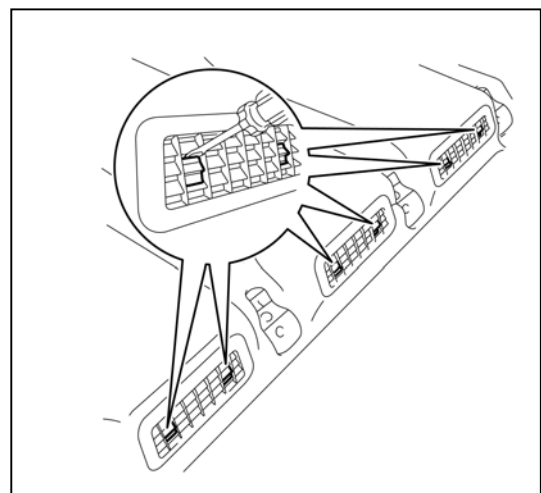


9. Remove the rear seat side cover LH and RH.

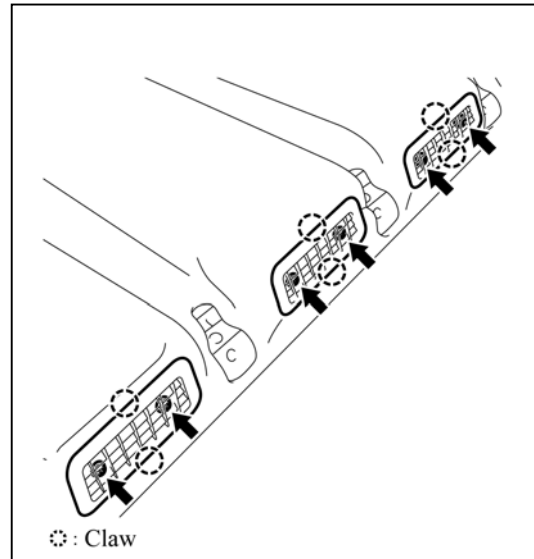


10. Remove the air intake covers.

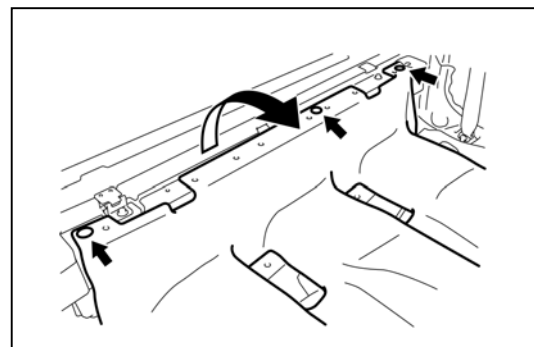
(1) Remove the 6 hole covers.



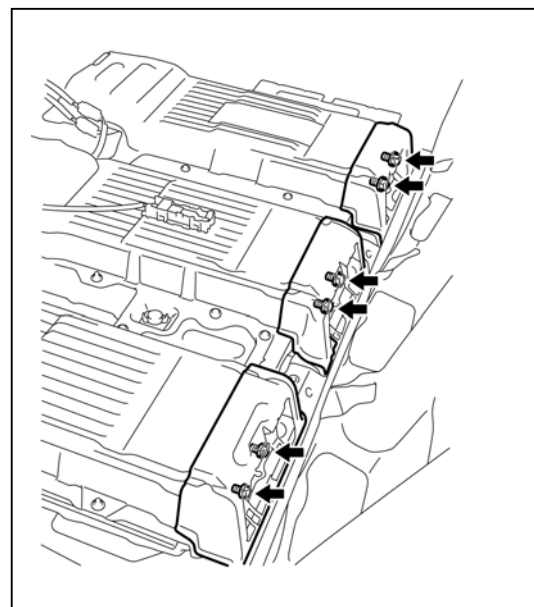
- (2) Remove the 6 screws, then release the 3 claws and remove the 3 air intake covers.



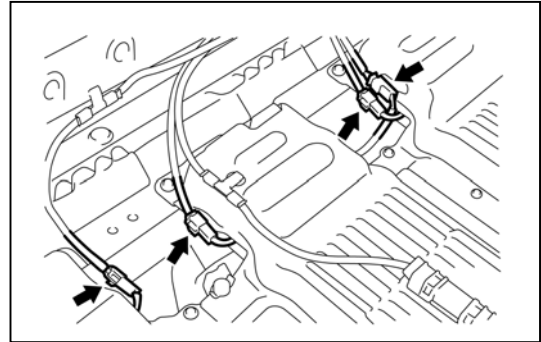
11. Remove the 3 clips and turn back the front floor carpet assembly.



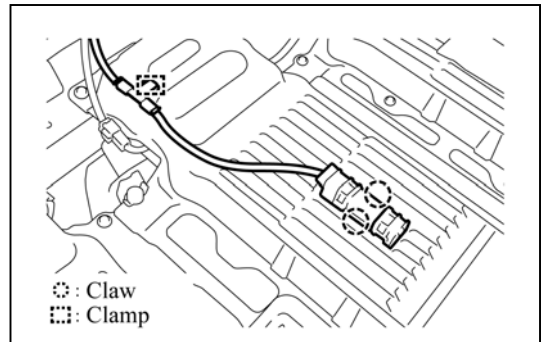
12. Remove the 6 bolts and 3 battery carrier ducts.



13. Disconnect the 4 wire harness connectors.



14. Disconnect the 4 wire harness connectors.



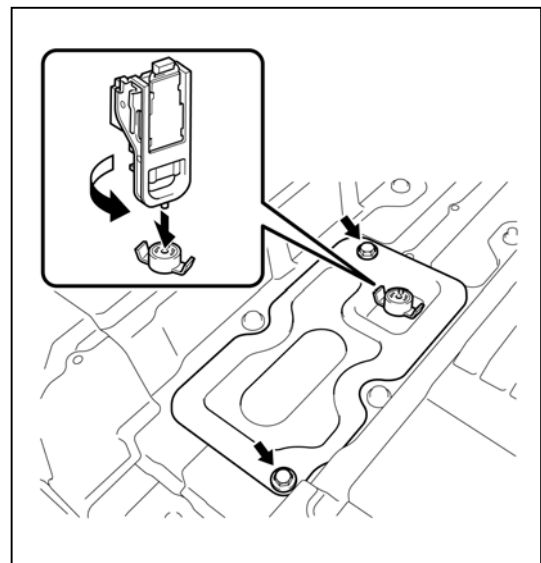
15. Remove the battery service hole cover.

- (1) Using the service plug grip, remove the battery cover lock striker.

**Hint:**

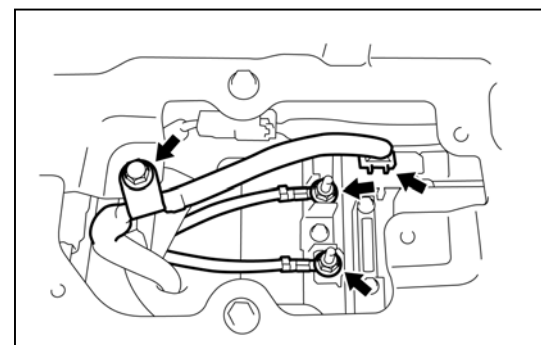
Insert the projecting part of the service plug grip and turn the button of the battery cover lock striker counterclockwise to release the lock.

- (2) Remove the 2 bolts and battery service hole cover.



16. Disconnect the 3 frame wires.

- (1) Remove the 2 nuts to remove the 2 frame wires from the hybrid battery junction block assembly.
- (2) Remove the bolt and disconnect the connector.



**Caution:**

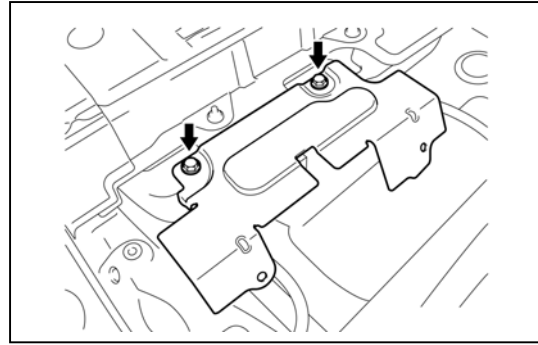
**Wear insulated gloves.**

**Notice:**

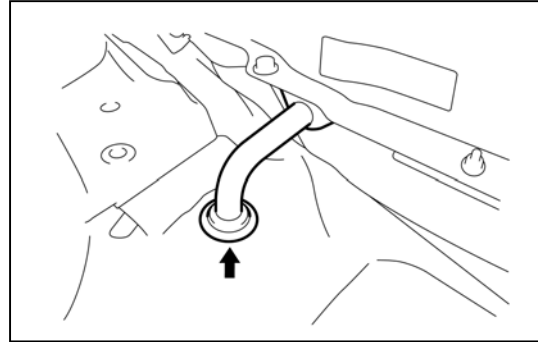
**Insulate the terminals of the removed frame wire with insulating tape.**

17. Remove battery carrier bracket.

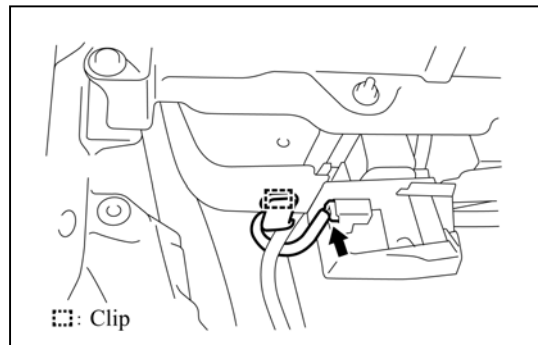
- (1) Remove the 2 bolts and battery carrier bracket.



18. Remove the battery room ventilation hose.

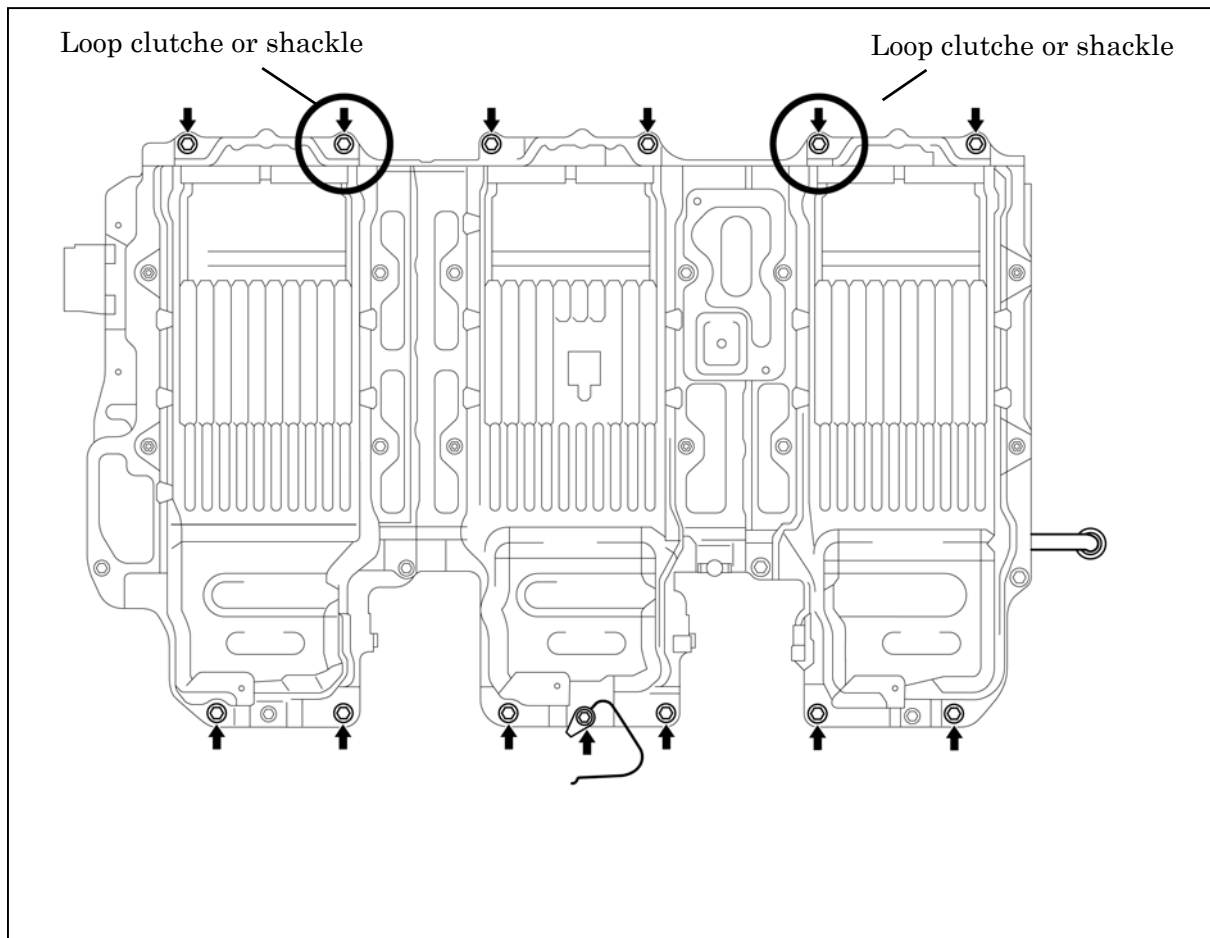


19. Disconnect the harness clamps.



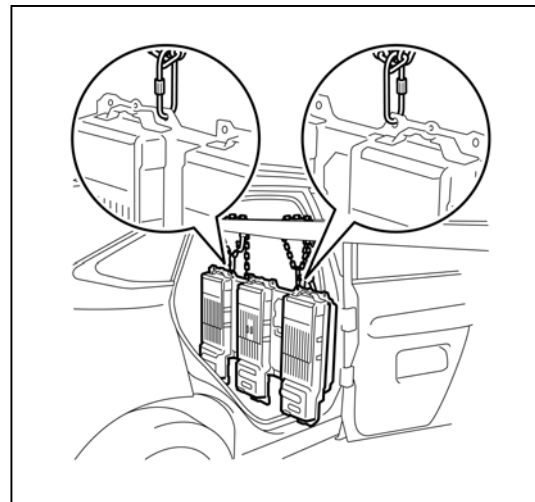
20. Remove the 13 bolts.

21. Attach loop clutches or similar devices to the holes of the HV battery to connect the steel cables as shown in the illustration (load capacity: more than 70 kg).



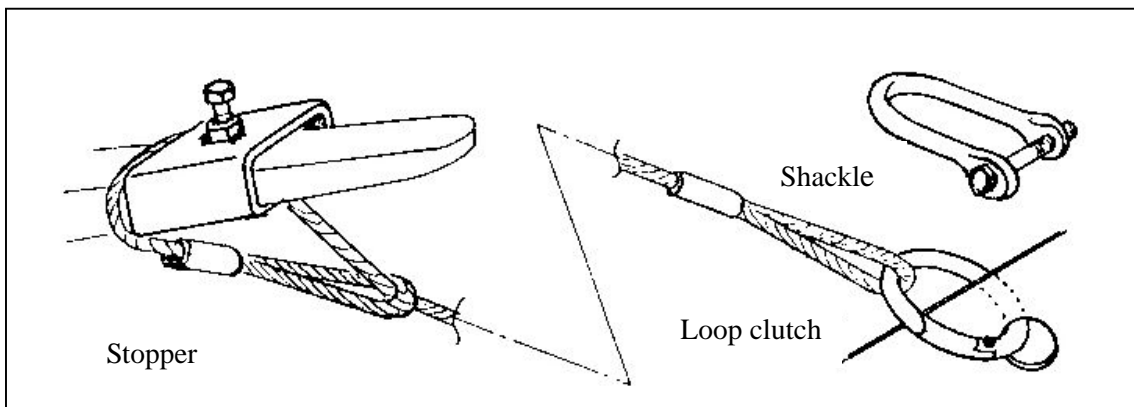
22. Pry either of the rear doors by operating the forklift to secure an opening for taking out the battery.

23. Insert the fork into the cabin to hang the HV battery unit. While maintaining clearance between the battery unit and the vehicle interior, take out the battery unit from the vehicle.



**Caution:**

**Set a stopper on the end of the fork to prevent the battery unit from sliding down.**



24. 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 2 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.

<b>! DANGER</b>								
<b>High Voltage Inside/Alkaline Electrolyte</b>		<b>Ni-MH</b>						
<p>To avoid injuries, burns or electric shocks:          ●Never disassemble this battery unit or remove its covers.          -Service by Qualified Technician.-          ●Avoid contact alkaline electrolyte with eyes, skin or clothes. In event of accident, flush with water and get medical help immediately. ●Keep children away from this unit.          ●Do not puncture or impact on this unit when operating forklift, or expose to open flame or incinerate, or expose to liquids when storing this unit, as excessive heat may generate fire and electrolyte may leak out.</p>								
<p><b>To the Qualified EV Technicians:</b>          Be sure to read the Repair Manual when servicing or replacing the battery.</p>								
<p><b>HV Battery Recycling Information</b>          ●Please transport this battery in accordance with all applicable laws.          ●Be sure to consult your dealer or the following address for replacing and disposing of this battery.</p>								
Residents In U.S.A. ●TOYOTA MOTOR SALES U.S.A., INC. ♦TORRANCE, CAL. 90501 Phone: 1-800-331-4331		SERVCO PACIFIC INC. HONOLULU, HAWAII 96813 Phone: 808-839-2273		Residents In PUERTO RICO ♦TOYOTA DE PUERTO RICO HATO REY, PUERTO RICO Phone: 787-751-1000		<b>B</b>		

## 2. For CANADA

<b>! DANGER</b>		<b>High Voltage Inside / Alkaline Electrolyte</b>		<b>Haute tension à l'intérieur / Electrolyte alcalin</b>	
      <b>Ni-MH</b>		<p>To avoid injuries, burns or electric shocks:          ●Never disassemble this battery unit or remove its covers.          -Service by Qualified Technician.-          ●Avoid contact alkaline electrolyte with eyes, skin or clothes. In event of accident, flush with water and get medical help immediately. ●Keep children away from this unit.          ●Do not puncture or impact on this unit when operating forklift, or expose to open flame or incinerate, or expose to liquids when storing this unit, as excessive heat may generate fire and electrolyte may leak out.</p>		<p>Afin d'éviter des blessures et brûlures et tout choc électriques:          ●Ne jamais démonter cet ensemble batterie ni enlever ses couvercles.          -Confier l'entretien à un technicien qualifié.-          ●Éviter tout contact de l'électrolyte alcalin avec les yeux, la peau ou les vêtements. En cas d'accident, rincer à l'eau et contacter un médecin immédiatement. ●Garder cet ensemble hors de portée des enfants.          ●Ne pas percer cet ensemble et ne pas lui faire subir d'impact lors de l'utilisation du chariot élévateur.          Ne pas l'exposer à une flamme vive ni l'incinérer. Ne pas l'exposer à un liquide lors du stockage. Une chaleur excessive pourrait provoquer un incendie et l'électrolyte pourrait fuir.</p>	
		<p><b>To the Qualified EV Technicians:</b>          Be sure to read the Repair Manual when servicing or replacing the battery.</p>		<p><b>A l'attention des techniciens spécialistes en véhicules électriques:</b>          Veiller à lire le manuel de réparation lors de l'entretien ou du remplacement de la batterie.</p>	
		<p><b>HV Battery Recycling Information</b>          ●Please transport this battery in accordance with all applicable laws.          ●Be sure to consult your dealer or the following address for replacing and disposing of this battery.</p>		<p><b>Information sur le recyclage de batterie de véhicule hybride</b>          ●Prière de transporter cette batterie conformément à toutes les lois applicables.          ●Pour le remplacement et la mise au rebut de cette batterie, veiller à consulter un votre concessionnaire ou se renseigner à l'adresse suivante.</p>	
TOYOTA CANADA INC. ONE TOYOTA PLACE SCARBOROUGH, ONTARIO M1H 1H8 Phone: 1-888-TOYOTA-8 (1-888-868-8828) URL: www.toyota.ca				<b>C</b>	

## 3. For Europe

<b>! DANGER</b>		<b>High Voltage Inside / Alkaline Electrolyte</b>		<b>Haute tension à l'intérieur / Electrolyte alcalin</b>	
      <b>Ni-MH</b>		<p>To avoid injuries, burns or electric shocks:          ●Never disassemble this battery unit or remove its covers.          -Service by Qualified Technician.-          ●Avoid contact alkaline electrolyte with eyes, skin or clothes. In event of accident, flush with water and get medical help immediately. ●Keep children away from this unit.          ●Do not puncture or impact on this unit when operating forklift, or expose to open flame or incinerate, or expose to liquids when storing this unit, as excessive heat may generate fire and electrolyte may leak out.</p>		<p>Afin d'éviter des blessures et brûlures et tout choc électriques:          ●Ne jamais démonter cet ensemble batterie ni enlever ses couvercles.          -Confier l'entretien à un technicien qualifié.-          ●Éviter tout contact de l'électrolyte alcalin avec les yeux, la peau ou les vêtements. En cas d'accident, rincer à l'eau et contacter un médecin immédiatement. ●Garder cet ensemble hors de portée des enfants.          ●Ne pas percer cet ensemble et ne pas lui faire subir d'impact lors de l'utilisation du chariot élévateur.          Ne pas l'exposer à une flamme vive ni l'incinérer. Ne pas l'exposer à un liquide lors du stockage. Une chaleur excessive pourrait provoquer un incendie et l'électrolyte pourrait fuir.</p>	
		<p><b>To the Qualified EV Technicians:</b>          Be sure to read the Repair Manual when servicing or replacing the battery.</p>		<p><b>A l'attention des techniciens spécialistes en véhicules électriques:</b>          Veiller à lire le manuel de réparation lors de l'entretien ou du remplacement de la batterie.</p>	
		<p><b>HV Battery Recycling Information</b>          ●Please transport this battery in accordance with all applicable laws.          ●Be sure to consult your dealer or your national distributor as mentioned in your Dealer Guide-Book for replacing and disposing of this battery.</p>		<p><b>Information sur le recyclage de batterie de véhicule hybride</b>          ●Prière de transporter cette batterie conformément à toutes les lois applicables.          ●Pour le remplacement et la disposition de cette batterie, se rassurer de consulter un votre concessionnaire ou distributeur national cités mentionnés dans le guide des concessionnaires.</p>	
				<b>D</b>	

## 4. For China

<b>! 危险</b>								
<b>内部高电压 / 碱性电解液</b>		<b>Ni-MH</b>						
<p>为避免伤害，烧伤或电击：          ●绝不要解体蓄电池单元或拆下蓄电池盖。车内装配有Ni-MH电池。          由经过资格认证的技师维修</p>								
<p>●避免眼睛，皮肤或衣服接触碱性电解液，发生意外接触时，用水冲洗并立即治疗。使儿童远离蓄电池单元。          ●操作叉车时，不要刺穿或碰撞此单元。也不要将其暴露在明火下或焚烧。存储此单元时不要使其受潮。          ●因为过多的热量会造成起火和电解液泄漏。</p>								
<p><b>对于有资格认证的HV技师：</b> 维护或更换蓄电池前请务必阅读维修手册。</p>								
<p><b>混合动力电池回收信息</b> 请严格遵守当地规定对这种电池进行运输。</p>								
<p>更换和报废这种电池的时候，请一定向经销店指南中的经销店或者TASS进行相关事项的咨询。</p>								
							<b>E</b>	