

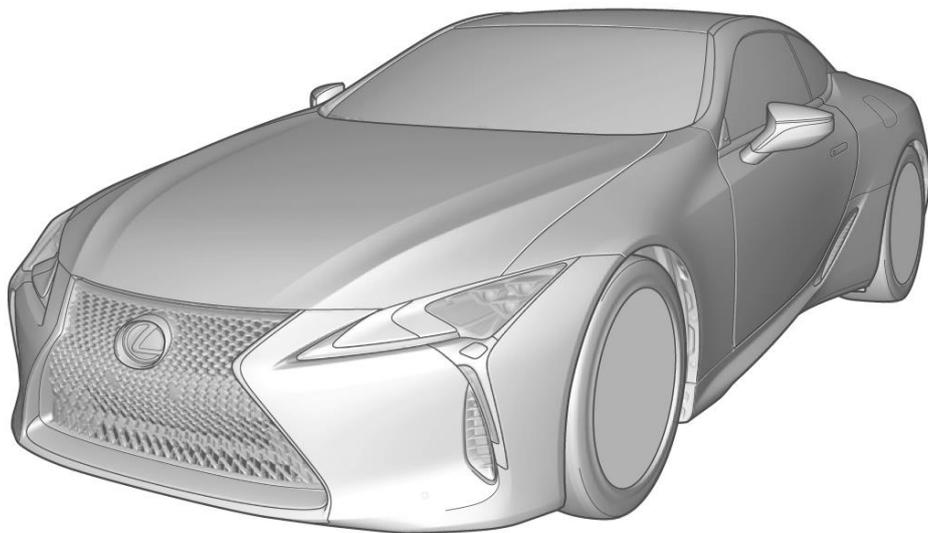


LC500h

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 LC500h gasoline-electric hybrid vehicles. LC500h 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 LC500h, 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 V auxiliary battery. Numerous safeguards have been designed into the LC500h to help ensure the high voltage, approximately 310.8 V, Lithium-ion battery pack is kept safe and secure in an accident.

The Lithium-ion 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. If the electrolyte is leaking, it's wiped up for a waste.

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 LC500h identification.
- Major hybrid component locations and descriptions.

By following the information in this guide, dismantlers will be able to handle LC500h hybrid-electric vehicles as safely as the dismantling of a conventional gasoline engine automobile.

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About the LC500h

The LC500h 2-door coupe joins the hybrid model for Lexus. Lexus Hybrid Drive means that the vehicle contains a gasoline engine and electric motor for power.

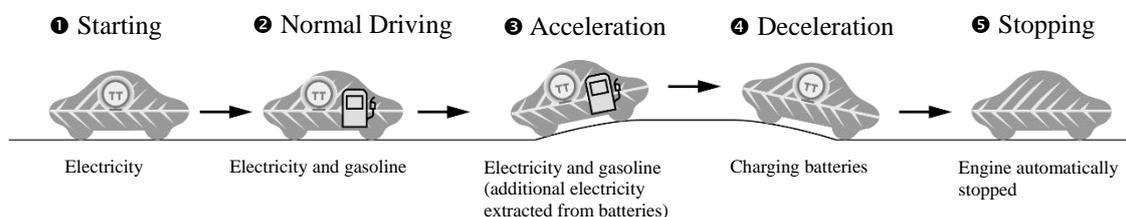
The two hybrid power sources are stored on board the vehicle:

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 a generator to recharge the battery pack; unlike a pure all electric vehicle, the LC500h 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 LC500h 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 motor.
- 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 rear 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.



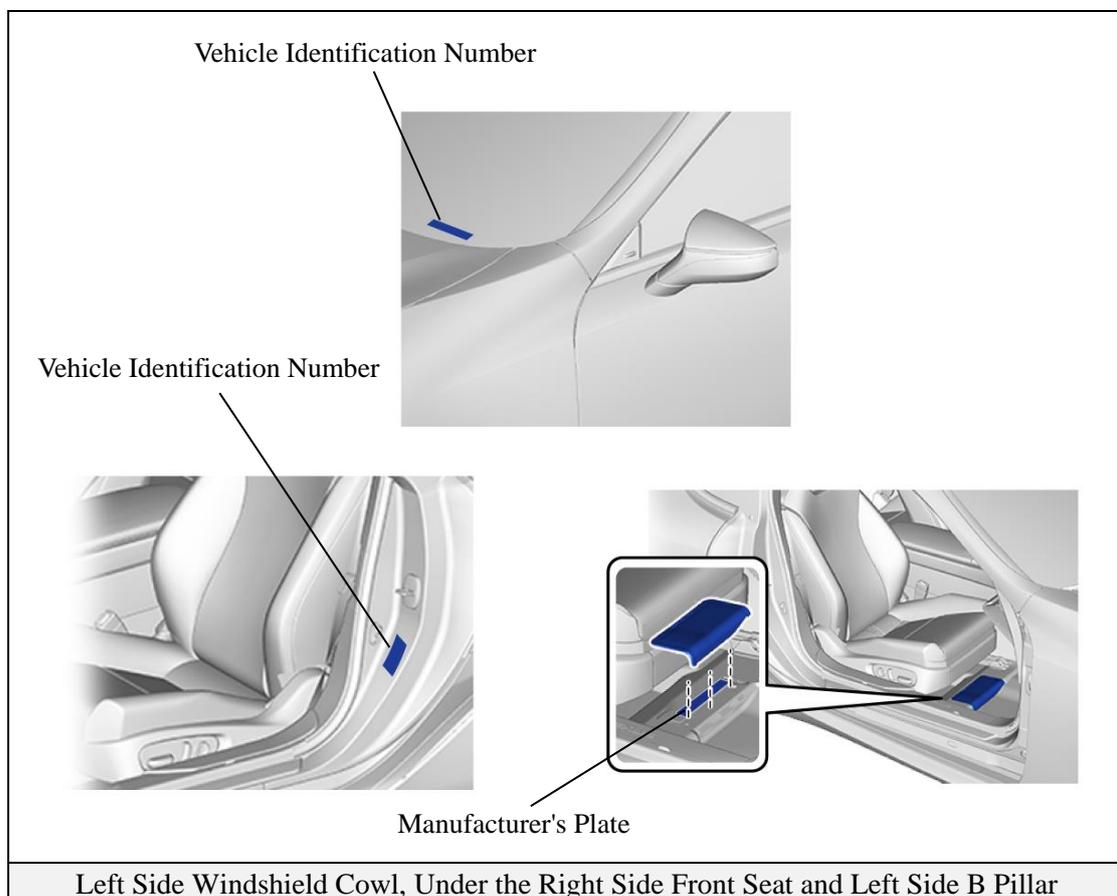
LC500h Identification

In appearance, the LC500h is nearly identical to the conventional, non-hybrid Lexus LC500. The LC500h is a 2-door coupe. Exterior, interior, and engine compartment illustrations are provided to assist in identification.

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

Example VIN: JTHHY5AY0001001

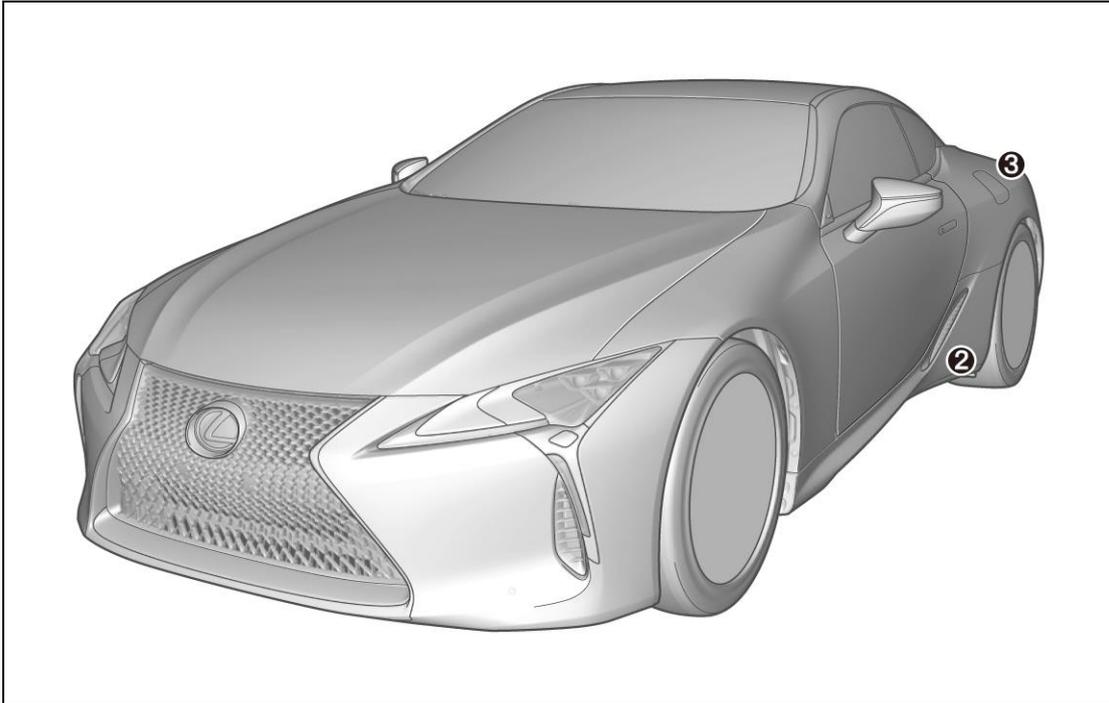
An LC500h is identified by the first 8 alphanumeric characters **JTHHY5AY**.



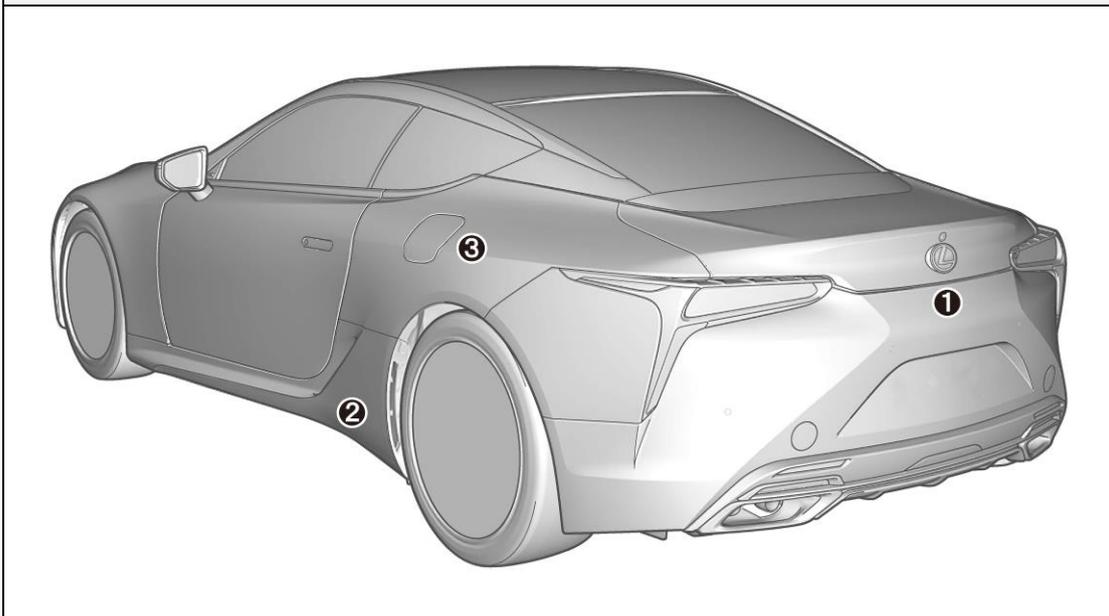
LC500h Identification (Continued)

Exterior

- ❶ LC500h logo on the rear bumper.
- ❷ MULTI DRIVE HYBRID logos on the rear quarter panels.
- ❸ Gasoline fuel filler door located on the left side rear quarter panel.



Exterior Front and Left Side View



Exterior Rear and Left Side View

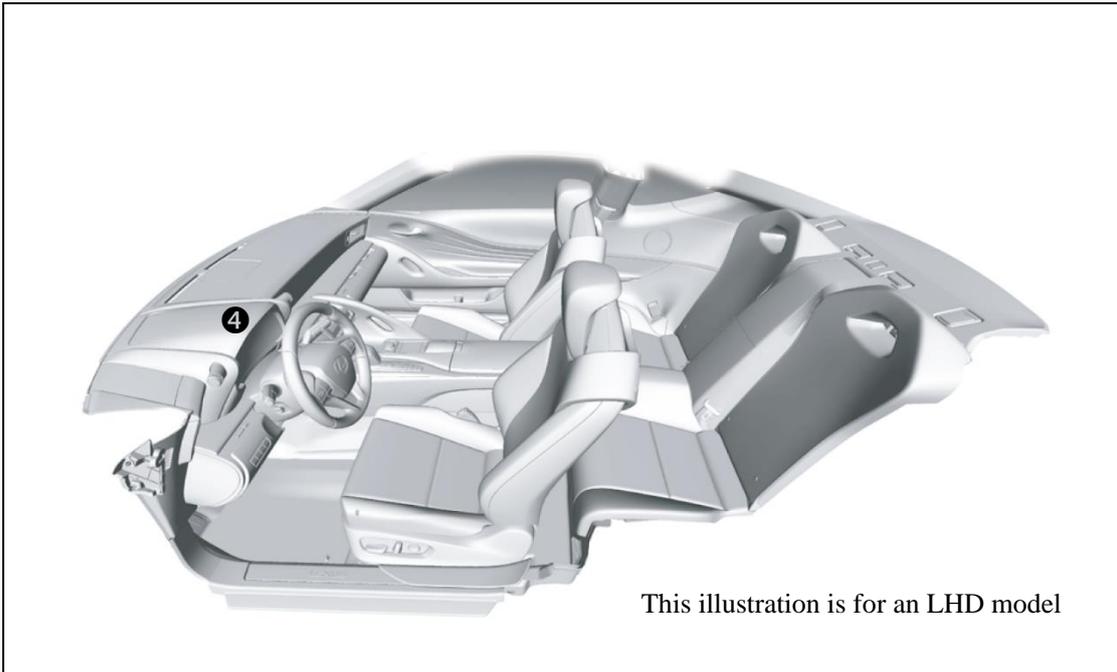
LC500h Identification (Continued)

Interior

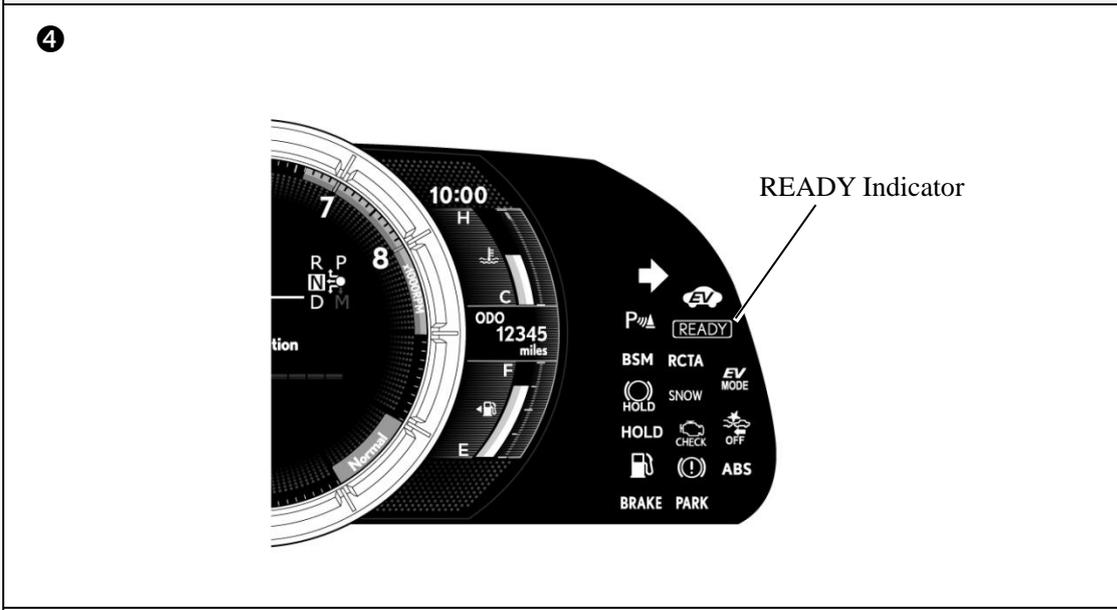
- ④ The instrument cluster (hybrid system indicator, **READY** indicator and warning lights) located in the dash behind the steering wheel, is different than the one on the conventional, non-hybrid LC500.

Notice:

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



Interior View

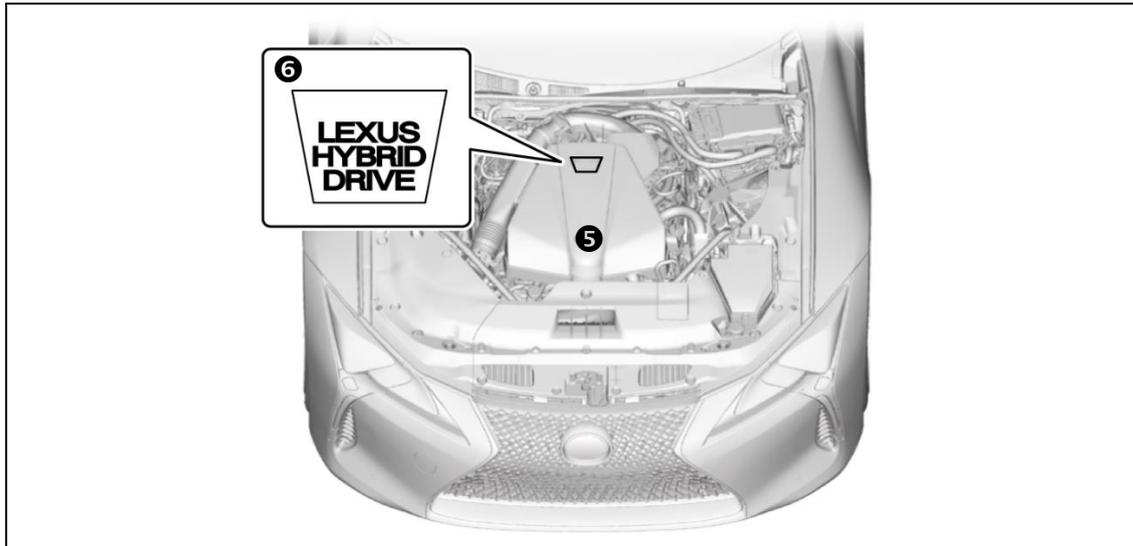


Combination Meter View

LC500h Identification (Continued)

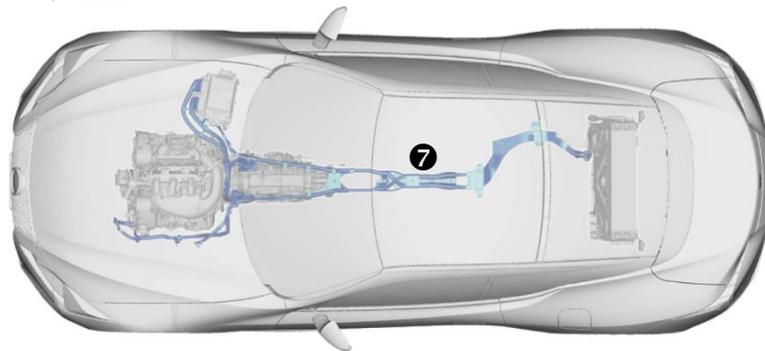
Engine Compartment

- ⑤ 3.5-liter aluminum alloy gasoline engine.
- ⑥ Logo on the engine cover.
- ⑦ Orange colored high voltage power cables.

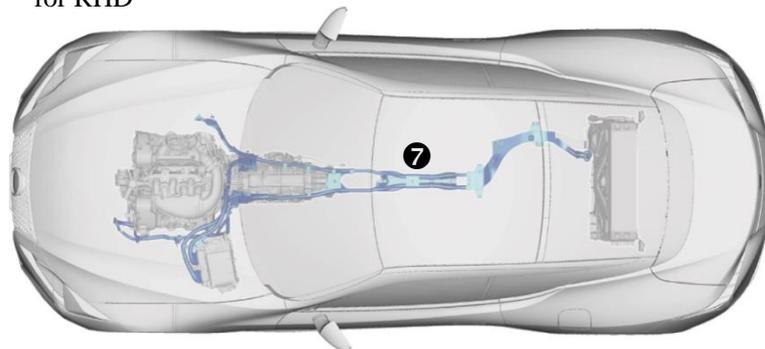


Engine Compartment View

for LHD



for RHD



Power Cables

Hybrid Component Locations & Descriptions

Component		Description
12 Volts Auxiliary Battery ❶		When the power switch (push start switch) is on (ACC) or on (IG), the auxiliary battery supplies power to the electrical equipment and ECUs.
Hybrid Vehicle (HV) Battery Pack ❷		<ul style="list-style-type: none"> · Supplies electrical power to MG1, MG2 and compressor with motor assembly in accordance with the driving conditions of the vehicle. · Charged by MG1 and MG2 in accordance with the State Of Charge (SOC) of the HV battery (HV supply battery assembly) and the driving conditions of the vehicle. · Has a nominal (approximate) voltage of DC 310.8 Volts (actual voltage will vary depending on various conditions such as temperature, charge or discharge).
Power Cables ❸		Connects the HV battery (HV supply battery assembly) to the inverter with converter assembly, the inverter with converter assembly to MG1 and MG2, and the inverter with converter assembly to the compressor with motor assembly.
Inverter/ Converter ❹	Hybrid Vehicle Converter Assembly ❺ (DC-DC Converter)	Reduces the HV battery (HV supply battery assembly) voltage from DC 310.8 Volts to approximately DC 14 Volts in order to supply electricity to body electrical components, as well as to recharge the auxiliary battery.
	Motor Generator ECU (MG ECU)	Controls the boost converter and inverter in accordance with signals received from the hybrid vehicle control ECU assembly, operating MG1 or MG2 as either a generator or motor.
	Boost Converter	Boosts the voltage of the HV battery (HV supply battery assembly) from DC 310.8 Volts to a maximum of DC 650 Volts and vice versa (reduces from DC 650 Volts to DC 310.8 Volts).
	Inverter	Converts high-voltage DC (HV battery (HV supply battery assembly)) into AC (MG1 and MG2) and vice versa (converts AC into DC).
Gasoline Engine ❻		The 8GR-FXE engine is a high-expansion ratio Atkinson cycle engine which is compatible with the hybrid system and which generates drive force for driving and energy for electricity generation.
Electric Motor ❼		<ul style="list-style-type: none"> · Driven by electrical power from MG1 and/or the HV battery (HV supply battery assembly) and generates motive force for the rear wheels. · Generates electricity to recharge the HV battery (HV supply battery assembly) (regenerative braking) during braking or when the accelerator pedal is not depressed.
Generator ❸		<ul style="list-style-type: none"> · Driven by the engine and generates high-voltage electricity in order to operate MG2 and/or to charge the HV battery (HV supply battery assembly). Also, MG1 functions as a starter to start the engine. · Operated to allow the gear ratio of the power split device unit to optimally suit the driving conditions of the vehicle.
A/C Compressor (with inverter) ❾		Driven at a speed calculated by the air conditioning amplifier assembly, receives drive requests from the hybrid vehicle control ECU and takes in, compresses and discharges refrigerant.
Fuel Tank and Fuel Line ❿		The fuel tank provides gasoline via a fuel line to the engine. The fuel line is routed along the left and right 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: 295 hp (220 kW), 3.5-liter Aluminum Alloy Engine

Electric Motor: 177 hp (132 kW), Permanent Magnet Motor

Transmission: Automatic Only

HV Battery: 310.8 Volts Sealed Lithium-ion Battery

Curb Weight: 4,376-4,453 lbs / 1,985-2,020 kg

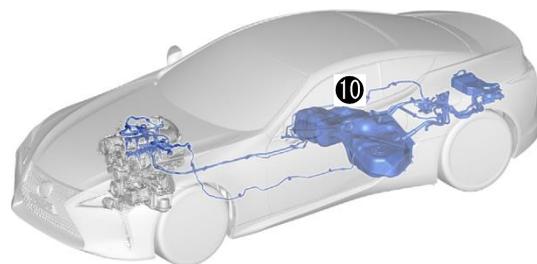
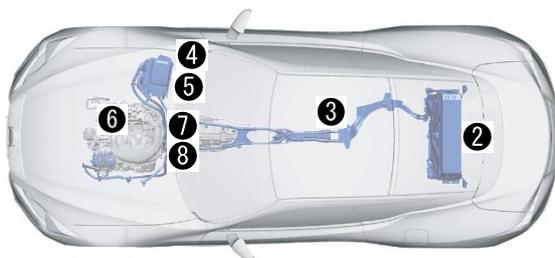
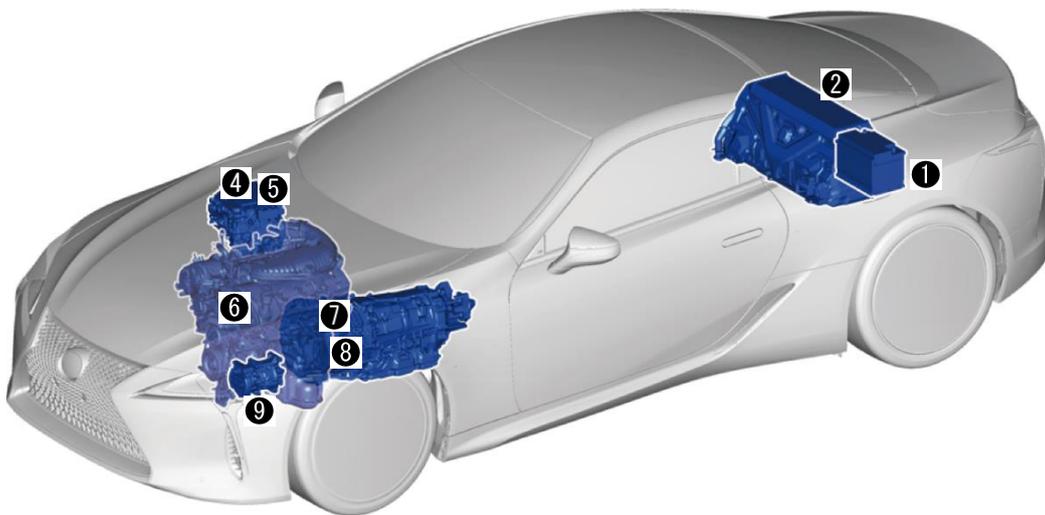
Fuel Tank: 18.5 Imp gals / 22.2 U.S. gals / 84 liters

Frame Material: Steel Unibody

Body Material: Steel Panels

Seating Capacity: 4 passenger

This illustration is for an LHD model



Lexus Hybrid Drive Operation

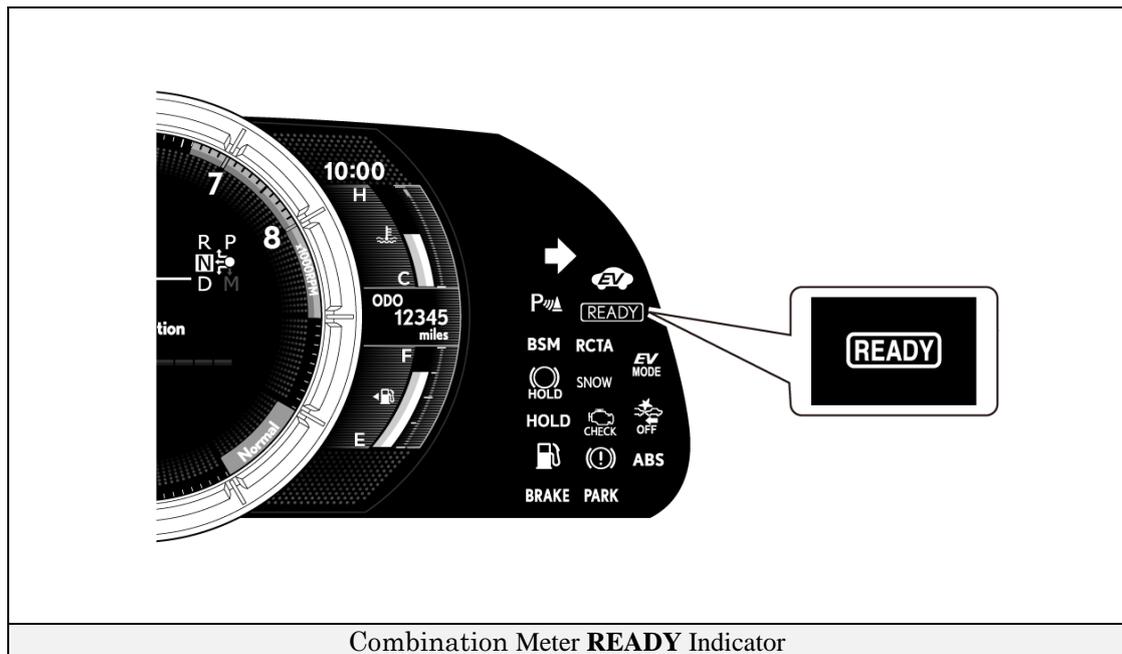
Once the **READY** indicator is illuminated in the combination meter, the vehicle may be driven. However, the gasoline engine does not idle like a typical automobile and will start and stop automatically. It is important to recognize and understand the **READY** indicator provided in the instrument cluster. 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 LC500h, 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 LC500h features a high voltage Hybrid Vehicle (HV) battery pack that contains sealed Lithium-ion battery modules.

HV Battery Pack

- The HV battery pack is enclosed in a metal case and is rigidly mounted to the cabin area under the front seats. The metal case is isolated from high voltage and concealed by fabric covers in the cabin area.
- The HV battery pack consists of 84 low voltage (3.7 Volts) Lithium-ion battery cells connected in series to produce approximately 310.8 Volts. Each Li-ion battery cell is non-spillable and in a sealed case.
- The electrolyte used in the Li-ion battery cells is a flammable organic electrolyte. The electrolyte is absorbed into the battery cell separator and will not normally leak, even in a collision.

HV Battery Pack	
Battery pack voltage	310.8 Volts
Number of Lithium-ion battery modules in the pack	84
Lithium-ion battery module voltage	3.7 Volts

Components Powered by the HV Battery Pack

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

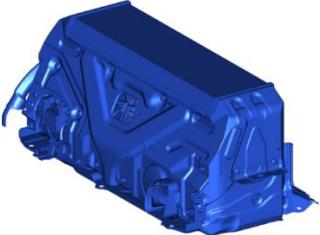
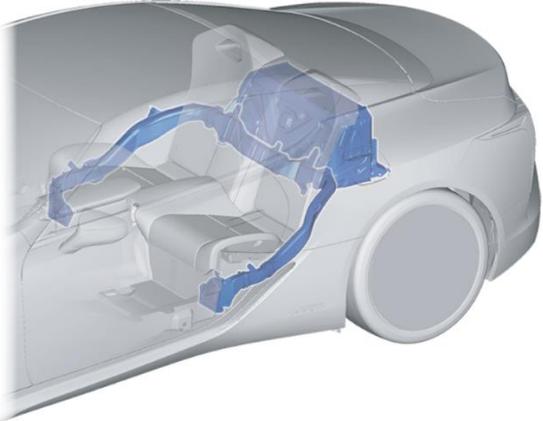
Hybrid Vehicle (HV) Battery Pack and Auxiliary Battery (Continued)

HV Battery Pack Recycling

- The HV battery pack is recyclable. Contact either your Lexus distributor as mentioned on HV battery Caution Label or the nearest Lexus dealer.

Auxiliary Battery

- The LC500h also contains a sealed lead-acid 12 Volts battery. This 12 Volts 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 luggage compartment area. It is concealed by a plastic resin cover on the center in the luggage compartment.

	 <p>Auxiliary Battery</p>
310.8 Volts HV Battery Pack	12 Volts Auxiliary Battery Mounted in Luggage Compartment Area
	
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 310.8 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 (electric motor, 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 Volts 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.***

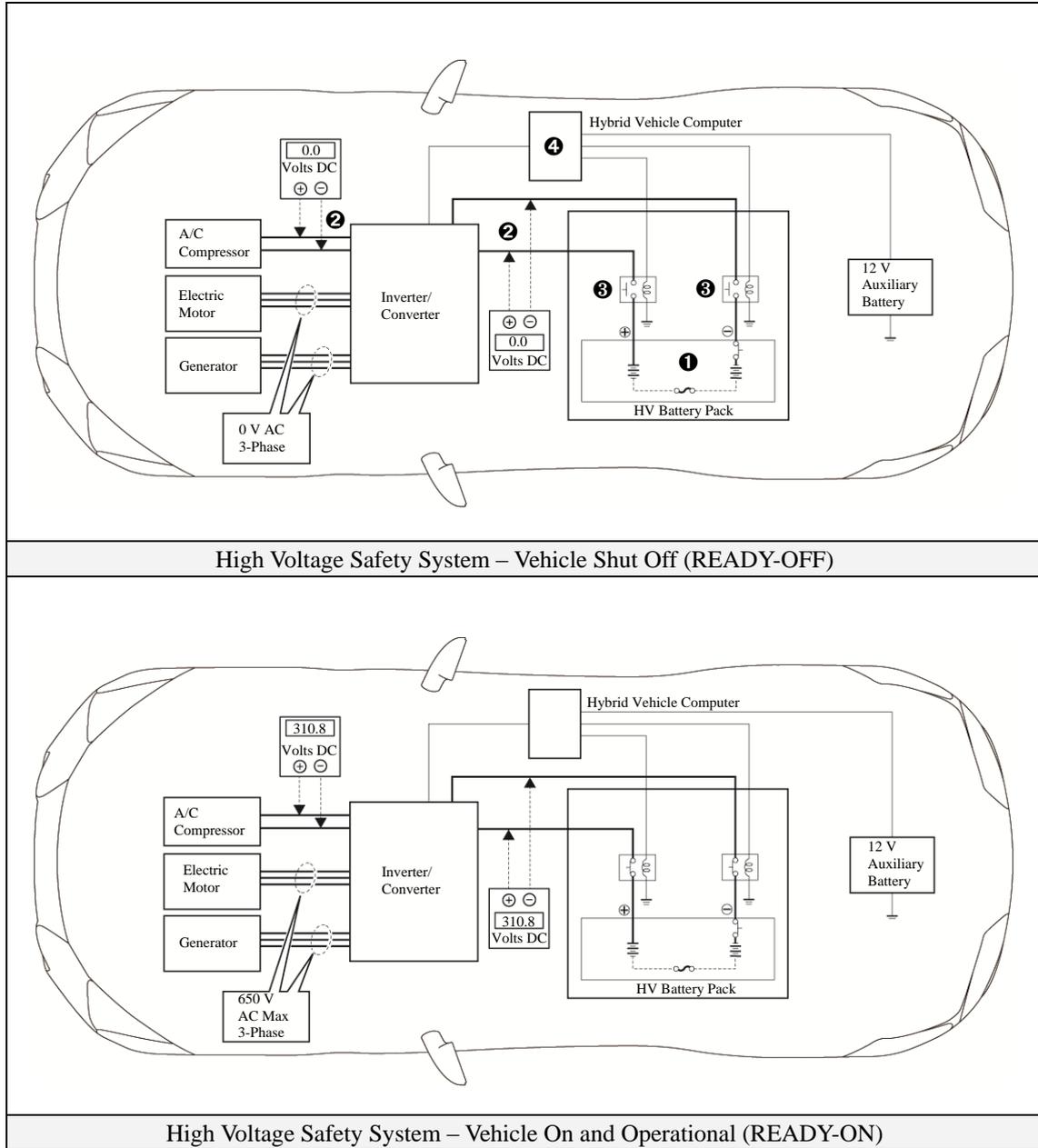
- Both positive and negative power cables ❷* are insulated from the metal body. High voltage electricity flows through these cables and not through the metal vehicle body. The metal vehicle body is safe to touch because it is insulated from the high voltage components.
- A ground fault monitor ❹* continuously 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 a message indicating that the hybrid system is malfunctioning will be displayed 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 LC500h contains the same common automotive fluids used in other non-hybrid Lexus vehicles, with the exception of the Li-ion electrolyte used in the HV battery pack. The electrolyte used in the Li-ion battery cells is a flammable organic electrolyte. The electrolyte is absorbed into the battery cell separators, even if the battery cells are crushed or cracked, it is unlikely that liquid electrolyte will leak. Any liquid electrolyte that leaks from a Li-ion battery cell quickly evaporates.



WARNING:

- ***The Li-ion battery contains organic electrolyte. Only a small amount may leak from the batteries which may irritate the eyes, nose, throat, and skin.***
- ***Contact with the vapor produced by the electrolyte may irritate the nose and throat.***
- ***To avoid injury by coming in contact with the electrolyte or vapor, wear personal protective equipment for organic electrolyte including SCBA or protective mask for organic gases.***

- Handle Lithium-ion 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 gloves or gloves suitable for organic solvents.
 - Apron suitable for organic solvents.
 - Rubber boots or boots suitable for organic solvents.
 - Protective mask for organic gases or SCBA.

Dismantling the vehicle

The following 5 pages contain general instructions for use when working on an LC500h.

Read these instructions before proceeding to the HV battery removal instructions on page 21.



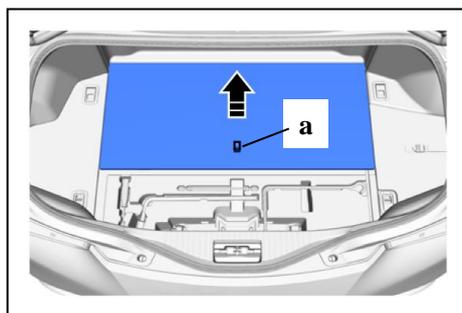
WARNING:

- ***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).

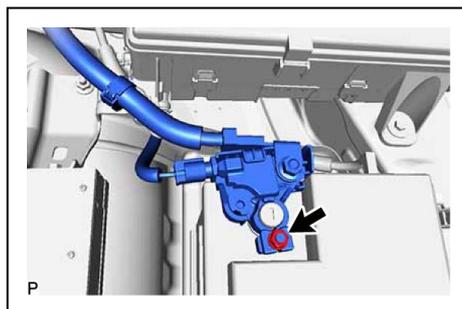
Then disconnect the cable from the negative (-) auxiliary battery terminal.

(1) Lift up the strap and remove the No. 2 deck board.



a	Strap
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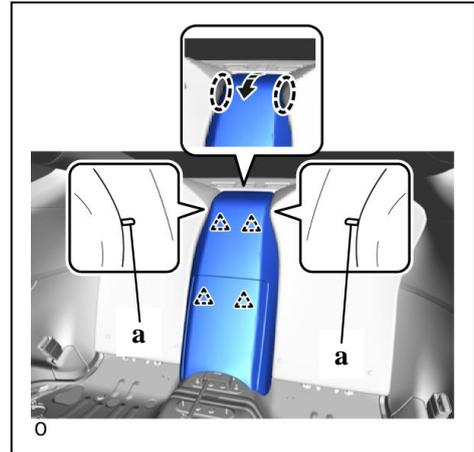
(2) Loosen the nut, and disconnect the cable from the negative (-) auxiliary battery terminal.



2. Remove the service plug grip.

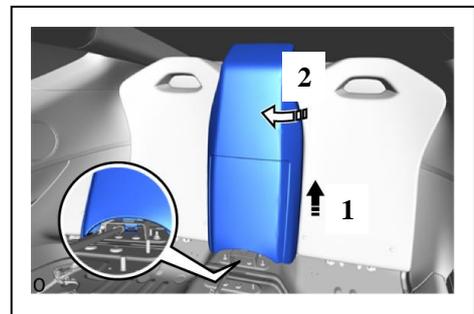
(1) Remove rear seat side garnish.

- a) Using the marking as a guide, insert your hand in the gap between the seatback and vehicle as shown in the illustration and while pulling toward the front of the vehicle, detach the clip.

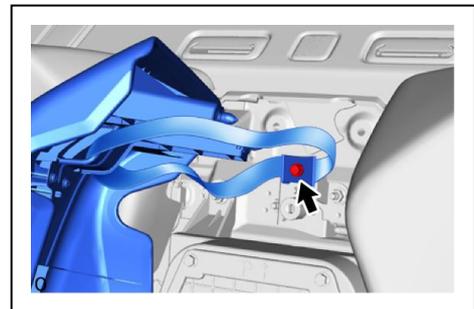


	Place Hands Here
a	Marking

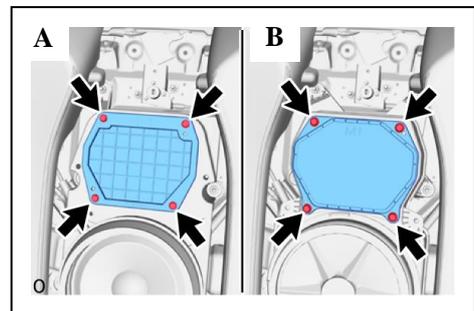
- b) Move the rear seat side garnish in the direction of the arrow shown in the illustration and remove the insertion point from the No. 2 rear seat cushion spring.



- c) Remove the strap fixing bolt and rear seat side garnish.

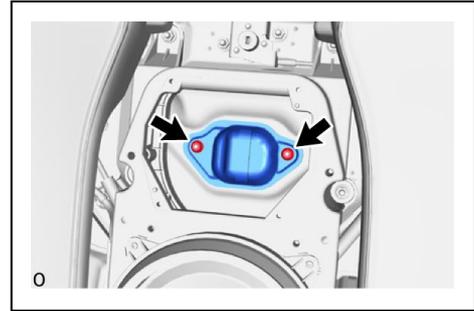


(2) Remove the 4 bolts and speaker mounting cover.



A	for 13 Speakers
B	for 12 Speakers

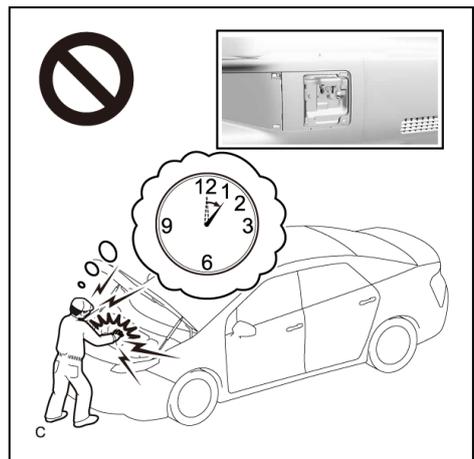
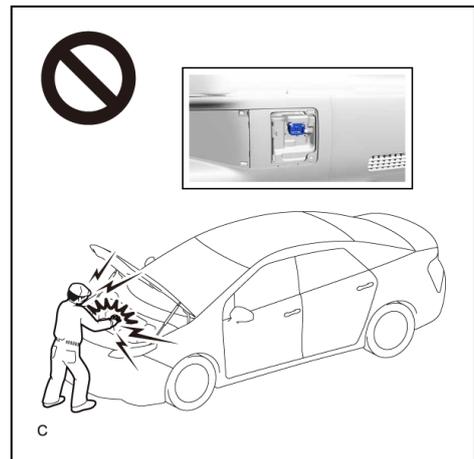
- (3) Remove the 2 nuts and No. 8 HV battery shield panel.



- (4) Remove the service plug grip.

Caution:

- **Wear insulated gloves.**
- **Do not inspect or service the high voltage system with the service plug grip installed.**
- **To reduce the risk of electric shock, make sure to remove the service plug grip to cut off the high voltage circuit before servicing the vehicle.**
- **To reduce the risk of electric shock, make sure to wait at least 10 minutes after removing the service plug grip to fully discharge the high voltage capacitor inside the inverter with converter assembly.**
- **Keep the removed service plug grip in your pocket to prevent other technicians from accidentally installing it while you are servicing the vehicle.**



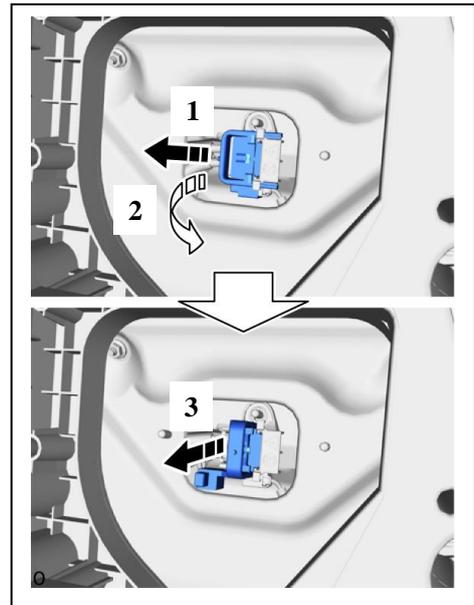
Notice:

- After removing the service plug grip, turning the power switch on (READY) may cause a malfunction. Do not turn the power switch on (READY) unless instructed by the repair manual.
- Do not touch the terminals of the service plug grip.

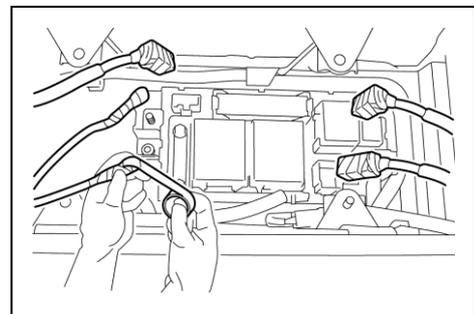
Hint:

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

- a) While wearing insulated gloves, rotate the handle of the service plug grip and remove the service plug grip as indicated by the arrows, in the order shown in the illustration.

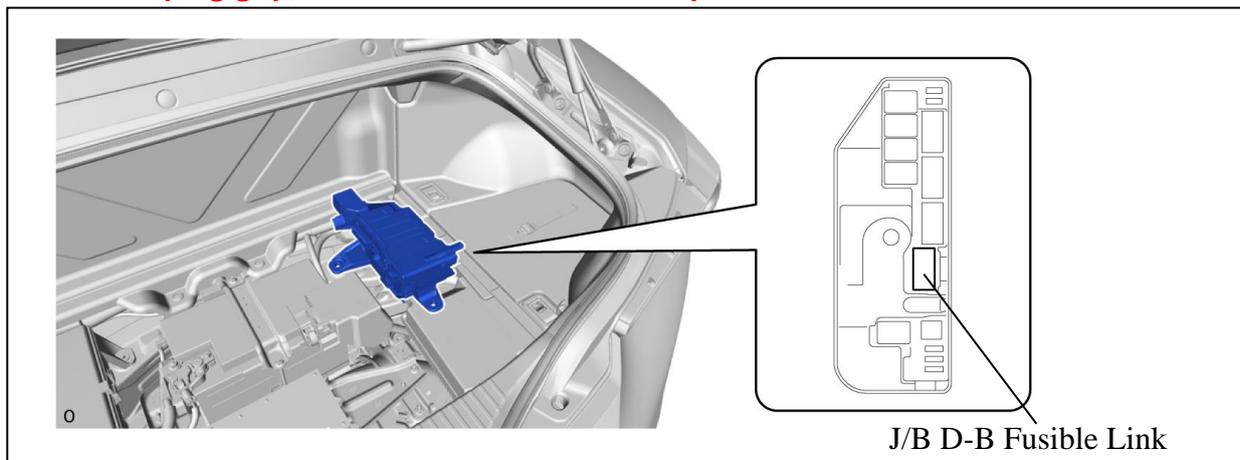


3. Carry the removed service plug grip in your pocket to prevent other staff from accidentally reinstalling it while you are dismantling the vehicle.
4. Make other staff aware that a high-voltage system is being dismantled by using the following sign:
CAUTION: HIGH-VOLTAGE. DO NOT TOUCH (see page 20).
5. If the service plug grip cannot be removed due to damage to the vehicle, remove the **J/B D-B Fusible Link (40 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, wear rubber gloves and goggles, and 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



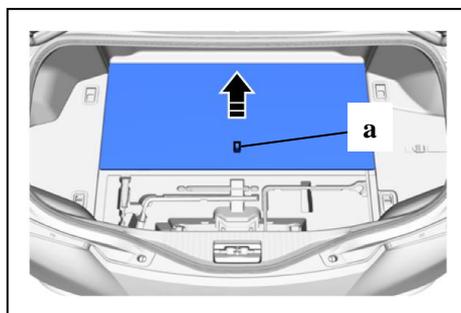
WARNING:

- *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 NO. 2 DECK BOARD

- (1) Lift up the strap and remove the No. 2 deck board.



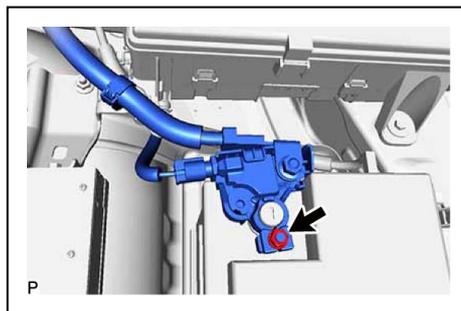
a	Strap
---	-------

3. DISCONNECT CABLE FROM NEGATIVE AUXILIARY BATTERY TERMINAL

- (1) Loosen the nut, and disconnect the cable from the negative (-) auxiliary battery terminal.

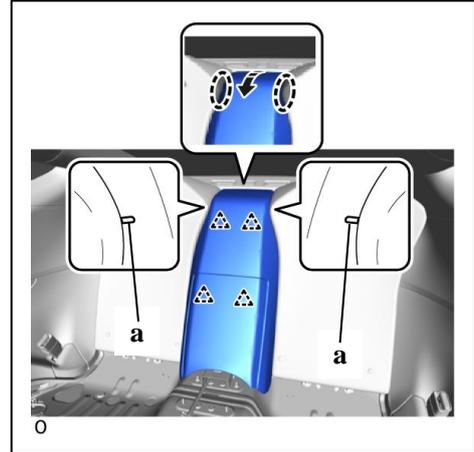
Caution:

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



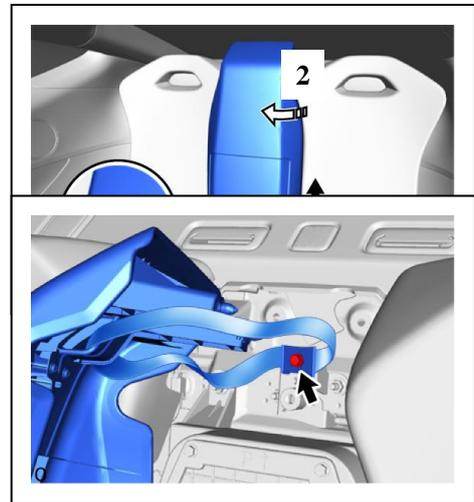
4. REMOVE REAR SEAT SIDE GARNISH

- (1) Using the marking as a guide, insert your hand in the gap between the seatback and vehicle as shown in the illustration and while pulling toward the front of the vehicle, detach the clip.



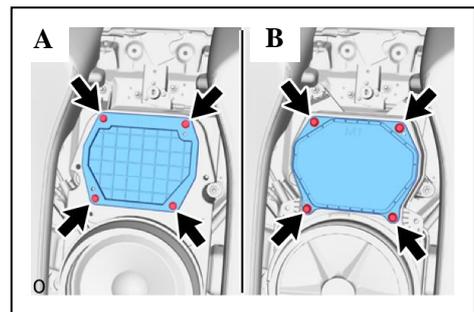
	Place Hands Here
a	Marking

- (2) Move the rear seat side garnish in the direction of the arrow shown in the illustration and remove the insertion point from the No. 2 rear seat cushion spring.
- (3) Remove the strap fixing bolt and rear seat side garnish.



5. REMOVE SPEAKER MOUNTING COVER

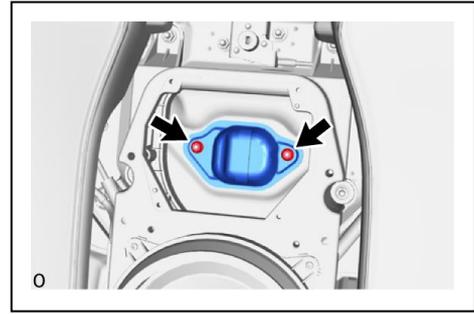
- (1) Remove the 4 bolts and speaker mounting cover.



A	for 13 Speakers
B	for 12 Speakers

6. REMOVE NO. 8 HV BATTERY SHIELD PANEL

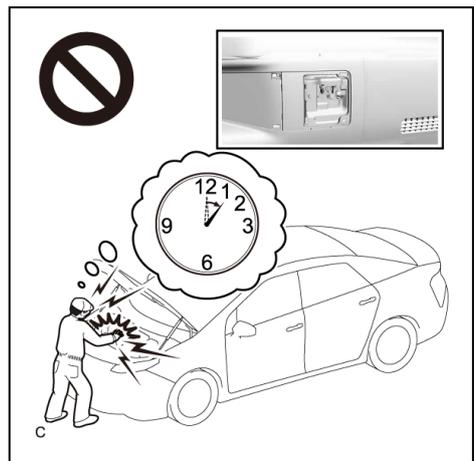
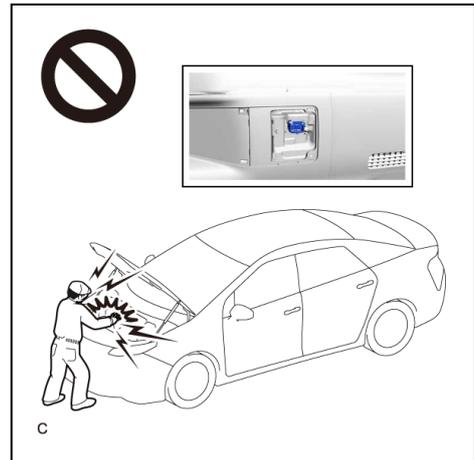
- (1) Remove the 2 nuts and No. 8 HV battery shield panel.



7. Remove the service plug grip.

Caution:

- **Wear insulated gloves.**
- **Do not inspect or service the high voltage system with the service plug grip installed.**
- **To reduce the risk of electric shock, make sure to remove the service plug grip to cut off the high voltage circuit before servicing the vehicle.**
- **To reduce the risk of electric shock, make sure to wait at least 10 minutes after removing the service plug grip to fully discharge the high voltage capacitor inside the inverter with converter assembly.**
- **Keep the removed service plug grip in your pocket to prevent other technicians from accidentally installing it while you are servicing the vehicle.**



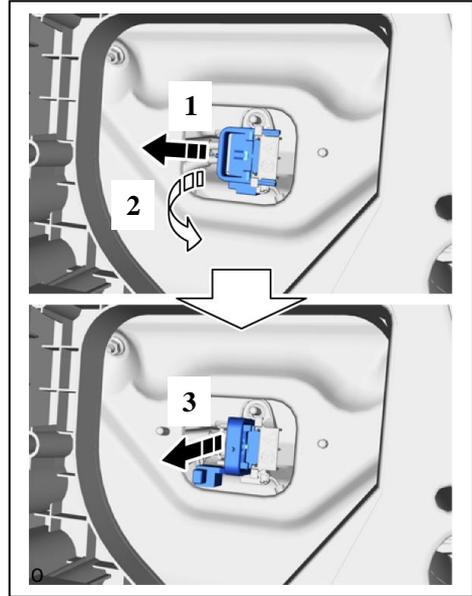
Notice:

- After removing the service plug grip, turning the power switch on (READY) may cause a malfunction. Do not turn the power switch on (READY) unless instructed by the repair manual.
- Do not touch the terminals of the service plug grip.

Hint:

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

- (1) While wearing insulated gloves, rotate the handle of the service plug grip and remove the service plug grip as indicated by the arrows, in the order shown in the illustration.



8. REMOVE CONNECTOR COVER ASSEMBLY

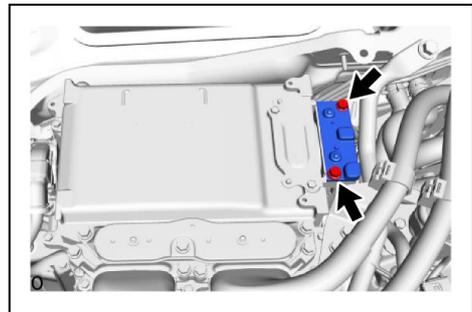
Caution:

Wear insulated gloves.

- (1) Remove the 2 bolts and connector cover assembly.

Notice:

- Make sure to pull the connector cover assembly straight up, as a connector is connected to the bottom of the cover.
- Do not touch the connector cover assembly waterproofing rubber.
- Do not allow any foreign matter or water to enter the inverter with converter assembly.



9. CHECK TERMINAL VOLTAGE

Caution:

Wear insulated gloves.

- (1) Using a voltmeter, measure the voltage between the terminals of the 2 phase connectors.

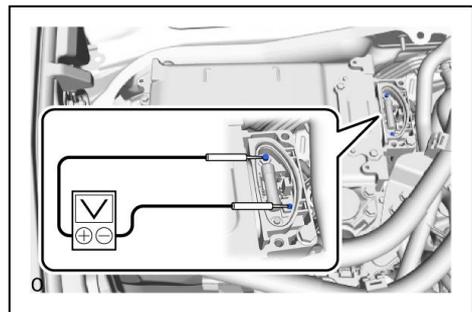
Standard voltage: 0 V

Notice:

Do not allow any foreign matter or water to enter the inverter with converter assembly.

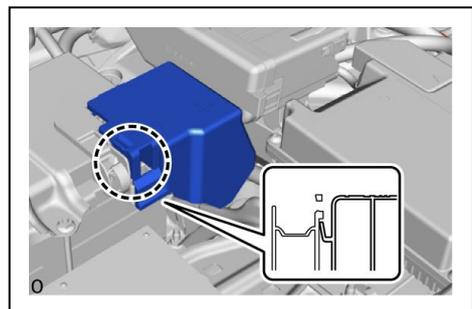
Hint:

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

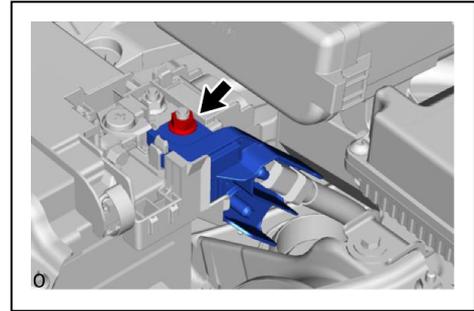


10. DISCONNECT HV FLOOR UNDER WIRE

- (1) Detach the claw and Remove the battery terminal connector cover.

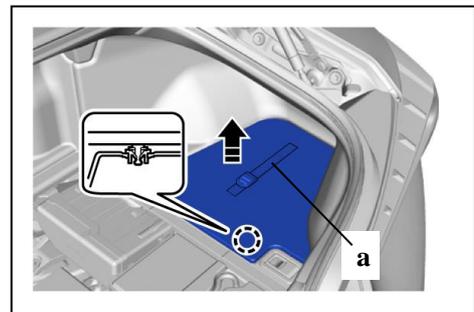


- (2) Remove the nut and disconnect the HV floor under wire.



11. REMOVE LUGGAGE COMPARTMENT TRIM COVER RH

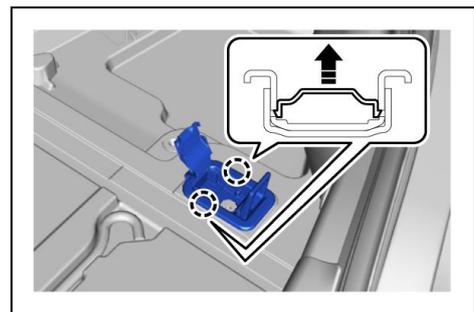
- (1) Detach the claw and lift up the strap, remove the luggage compartment trim cover RH.



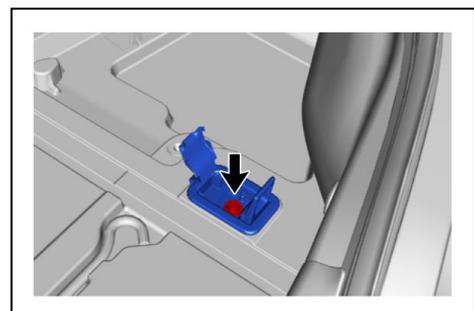
a	Strap
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12. REMOVE SIDE TRIM BOX

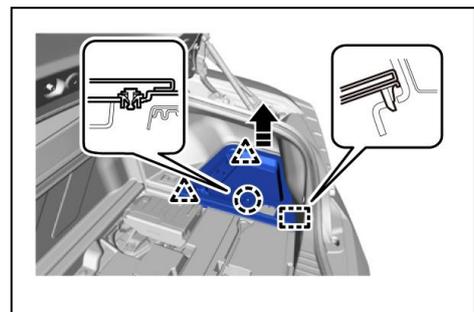
- (1) Detach the claws and open the rope hook cap.



- (2) Remove the bolt and rope hook.

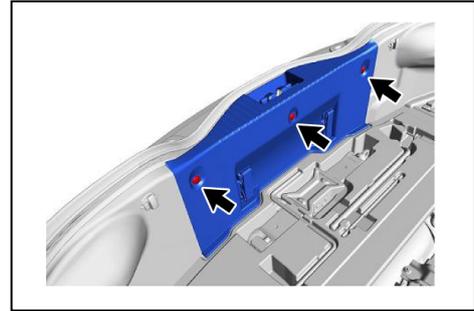


- (3) Detach the claw and clips.
- (4) Detach the guide and remove the side trim box.

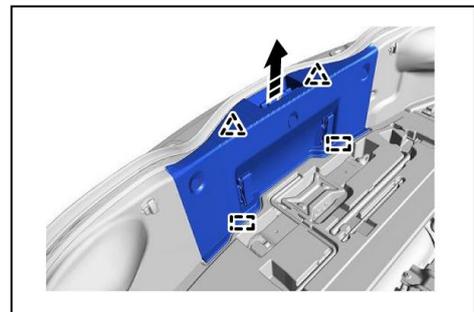


13. REMOVE REAR FLOOR FINISH PLATE

- (1) Using a clip remover, remove the 3 clips.

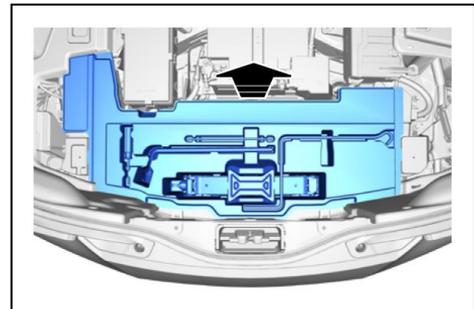


- (2) Detach the clips and guides and remove the rear floor finish plate.



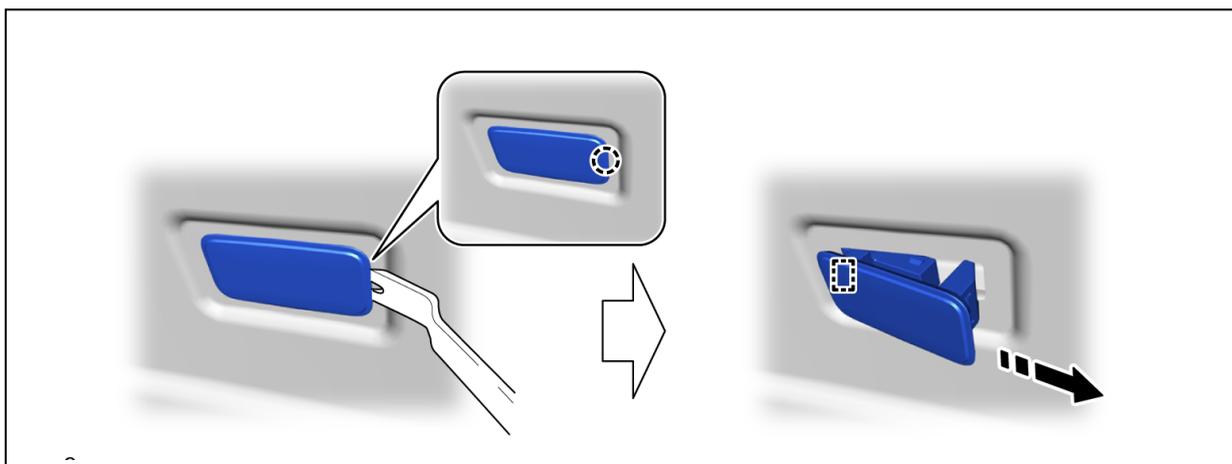
14. REMOVE LUGGAGE COMPARTMENT TRIM BOX

- (1) Remove the luggage compartment trim box as shown in the illustration.

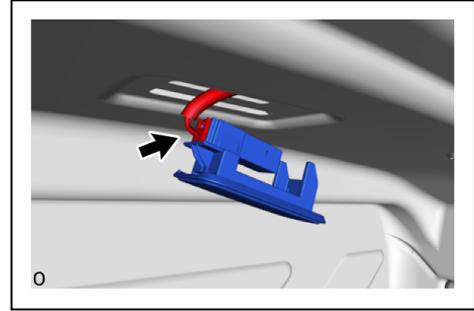


15. REMOVE NO. 1 LUGGAGE COMPARTMENT LIGHT ASSEMBLY

- (1) Using moulding remover B, insert it between the No. 1 luggage compartment light assembly and front luggage compartment trim cover to detach the claw.
- (2) Pull out the No. 1 luggage compartment light assembly to detach the hook.

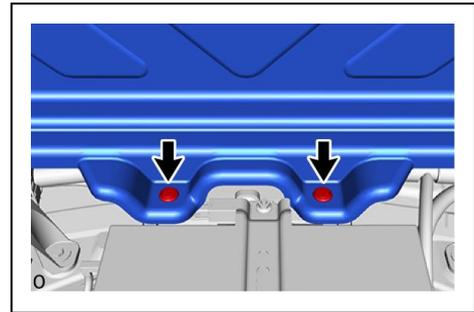


(3) Disconnect the connector.

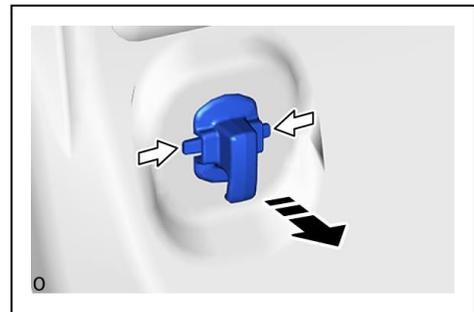


16. REMOVE FRONT LUGGAGE COMPARTMENT TRIM COVER

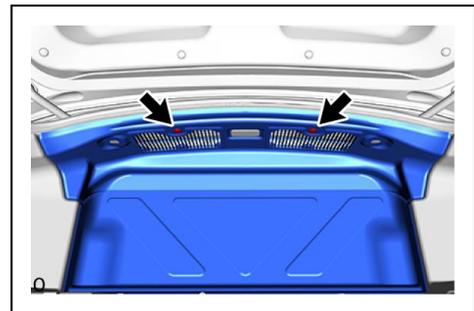
(1) Remove the 2 clips



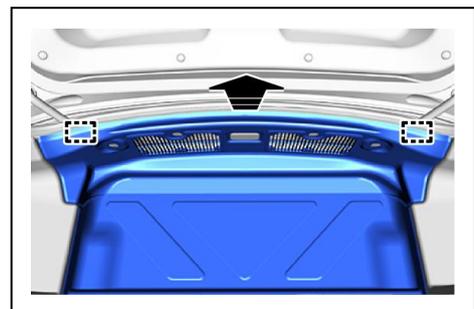
(2) Push the lever and remove the rope hook.



(3) Remove the 2 clips.

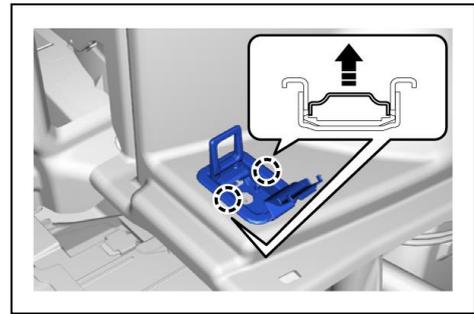


(4) Detach the guides as shown in the illustration.

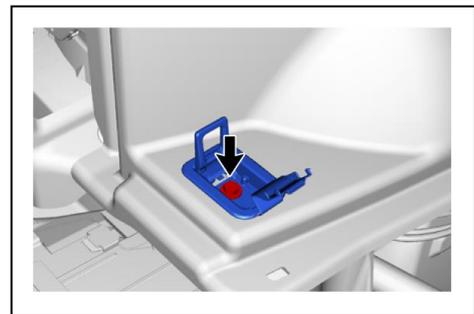


17. REMOVE INNER LUGGAGE COMPARTMENT TRIM COVER RH

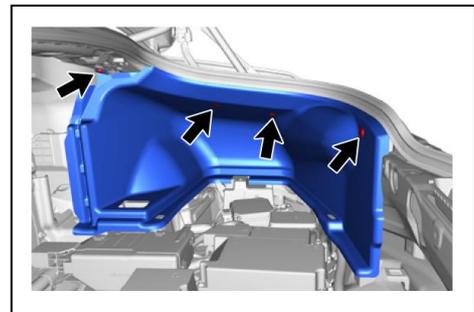
(1) Detach the claws and open the rope hook cap.



(2) Remove the bolt and rope hook.



(3) Remove the 4 clips and inner luggage compartment trim cover RH.

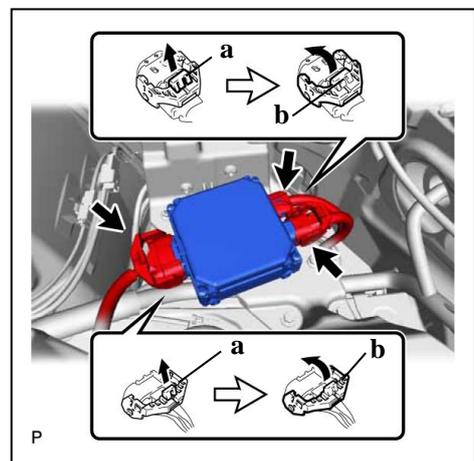


18. REMOVE NO. 2 DECK BOARD BRACKET

(1) Disconnect the 3 connectors from the rear steering control ECU.

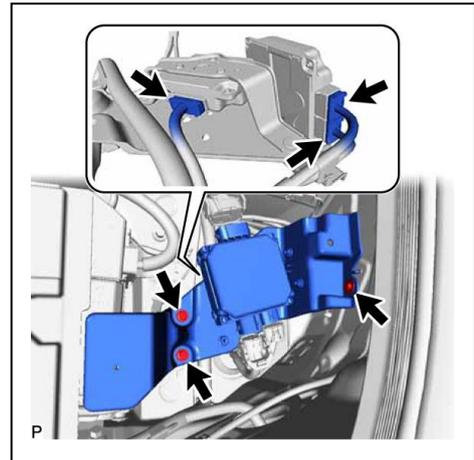
HINT:

When disconnecting the connector with lock lever, pull out the lock of the lock lever and turn the lock lever as shown in the illustration.



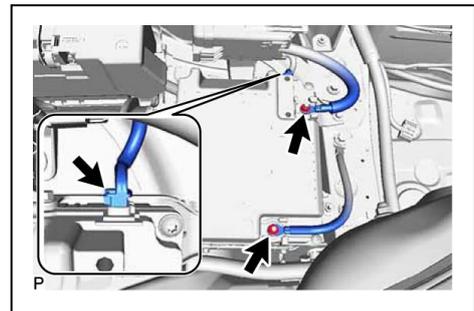
a	Lock of the Lock Lever
b	Lock Lever

- (2) Disconnect the 3 connectors.
- (3) Remove the 3 bolts and No. 2 deck board bracket.

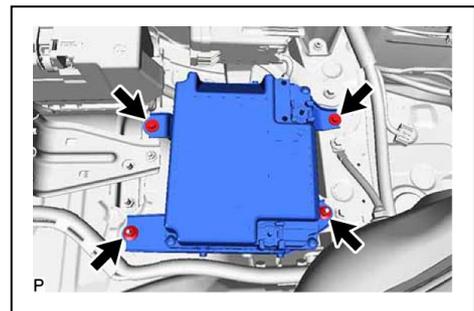


19. REMOVE SUB-BATTERY MODULE ASSEMBLY

- (1) Loosen the 2 nuts and disconnect the 2 sub-battery terminals from the sub-battery module assembly.
- (2) Disconnect the connector from the sub-battery assembly with control.

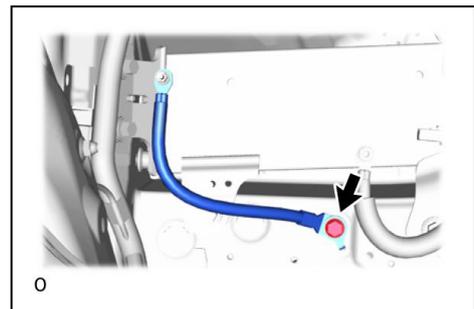


- (3) Loosen the 2 bolts and 2 nuts and disconnect the connector from the sub-battery module assembly.



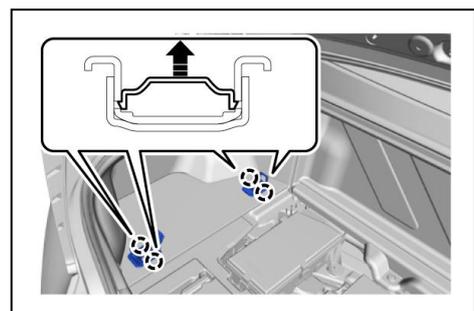
20. REMOVE NO. 3 GROUND WIRE

- (1) Remove the bolt and No. 3 ground wire.

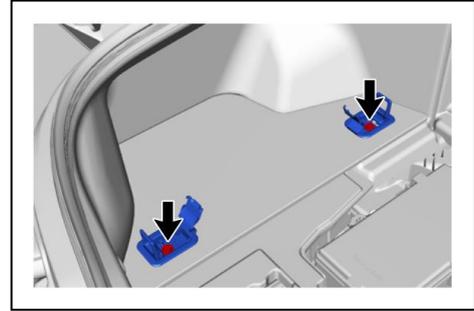


21. REMOVE LUGGAGE COMPARTMENT TRIM COVER LH

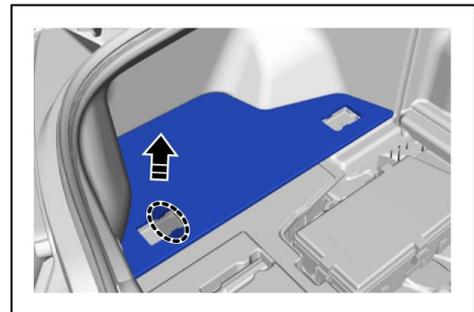
- (1) Detach the claws and open the rope hook caps.



- (2) Remove the 2 bolts and 2 rope hooks.



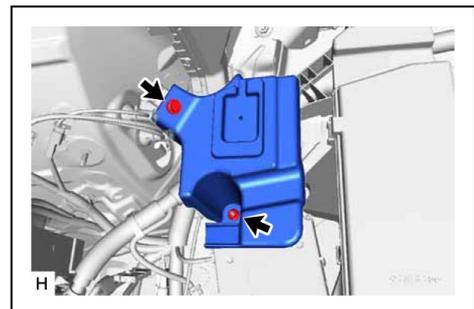
- (3) Pull the entire luggage compartment trim cover LH to the rear while bending inward (in the direction of the arrow) to remove it.



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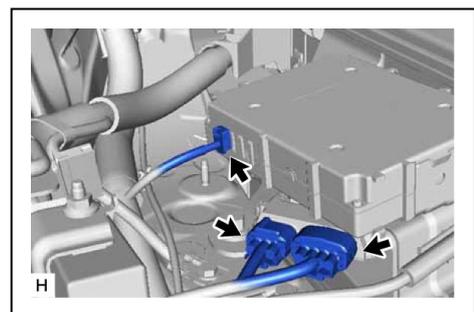
22. REMOVE NO. 1 DECK BOARD BRACKET LH

- (1) Remove the bolt, nut and No. 1 deck board bracket LH.

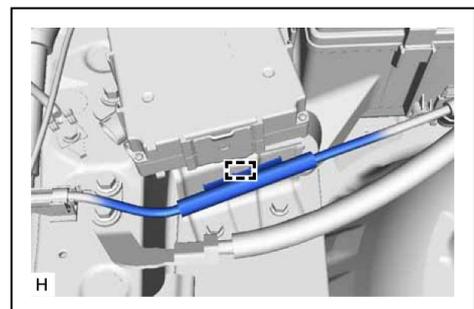


23. REMOVE FUEL PUMP CONTROL ECU BRACKET

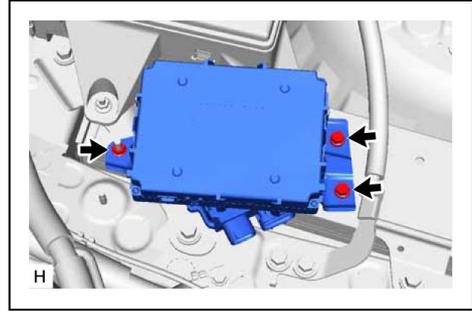
- (1) Disconnect the brake control power supply connector.
- (2) Disconnect the 2 fuel pump control ECU connectors.



- (3) Detach the clamp.

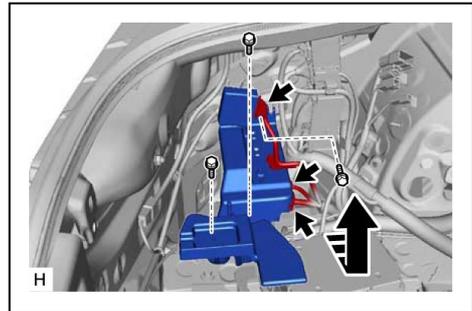


- (4) Remove the 2 bolts, nut and fuel pump control ECU bracket from the vehicle body.



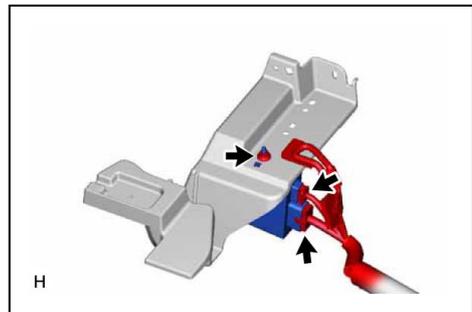
24. REMOVE NO. 3 DECK BOARD BRACKET

- (1) Disconnect the 3 connectors.
(2) Remove the 3 bolts and No. 3 deck board bracket as shown in the illustration.



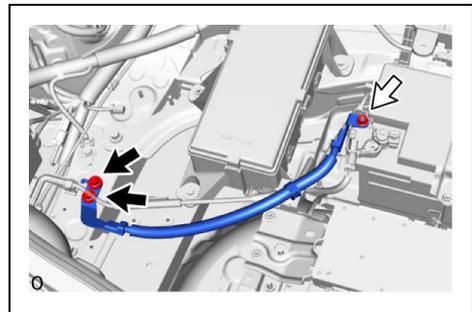
25. REMOVE ELECTRIC PARKING BRAKE ECU

- (1) Remove the nut and disconnect the electric parking brake ECU.
(2) Disconnect the 2 connectors and remove the electric parking brake ECU.



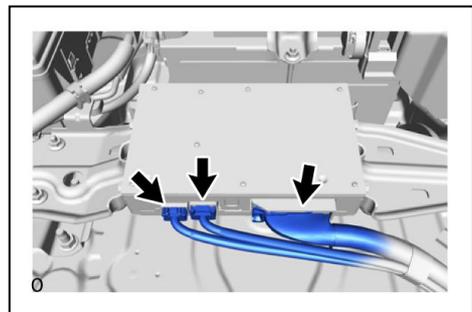
26. REMOVE GROUND WIRE

- (1) Remove the 2 bolts, nut and ground wire.

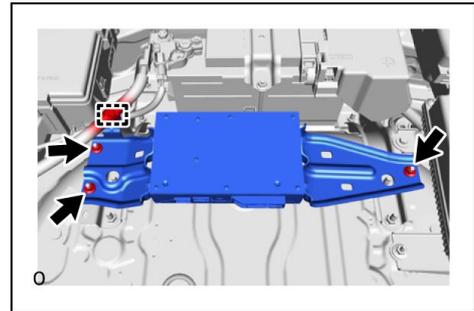


27. REMOVE STEREO COMPONENT AMPLIFIER ASSEMBLY

- (1) for 12 Speakers:
a) Disconnect the 3 connectors.

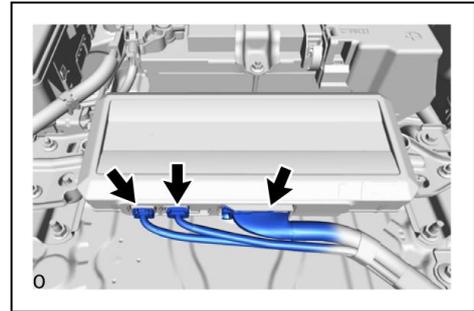


- b) Detach the clamp.
- c) Remove the 3 nuts and stereo component amplifier assembly with bracket.

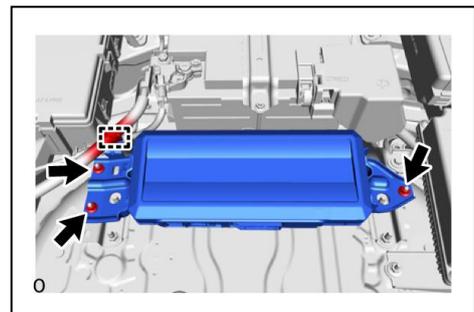


(2) for 13 Speakers:

- a) Disconnect the 3 connectors.

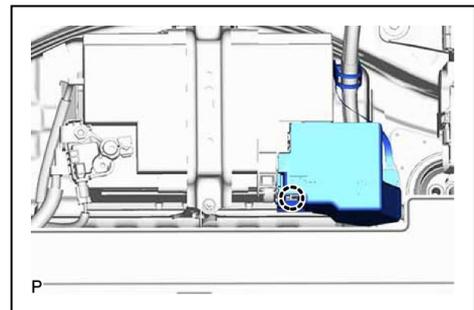


- b) Detach the clamp.
- c) Remove the 3 nuts and stereo component amplifier assembly with bracket.

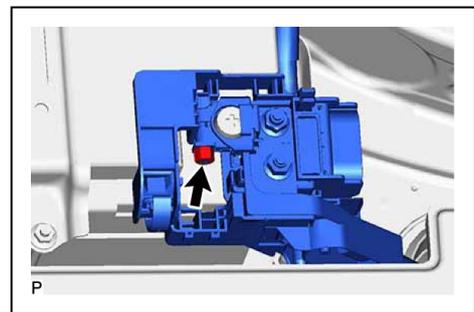


28. REMOVE AUXILIARY BATTERY

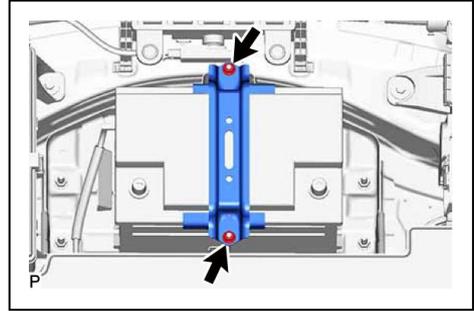
- (1) Disengage the claw and disconnect the battery terminal cap.



- (2) Loosen the nut and disconnect the cable from the positive (+) auxiliary battery terminal.

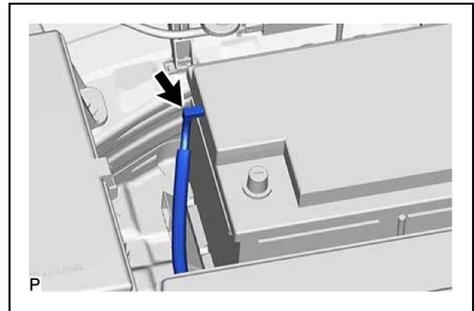


(3) Remove the 2 nuts and battery clamp sub-assembly.



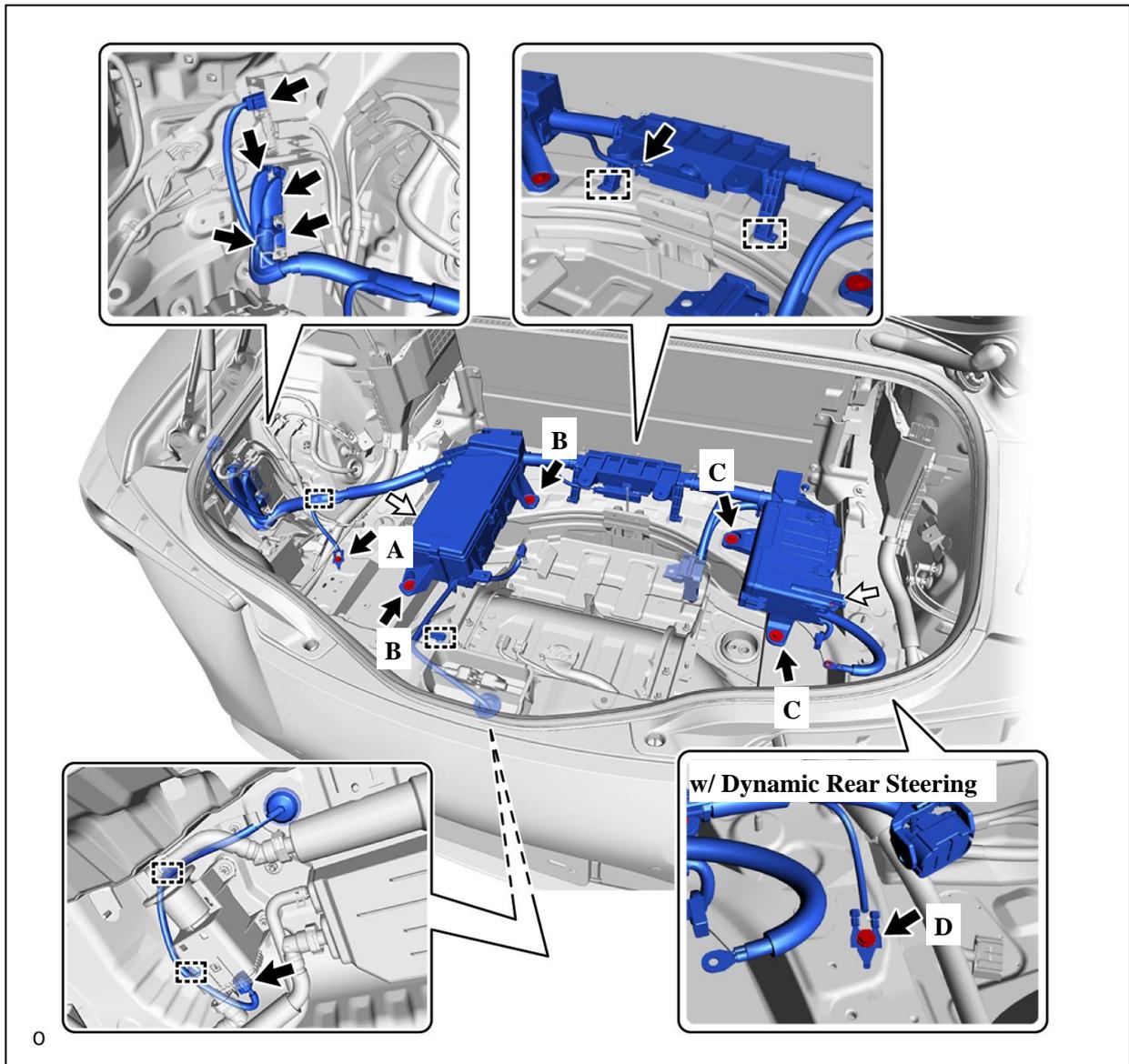
(4) Disconnect the battery exhaust hose from the auxiliary battery.

(5) Remove the auxiliary battery.



29. REMOVE NO. 1 LUGGAGE ROOM WIRE

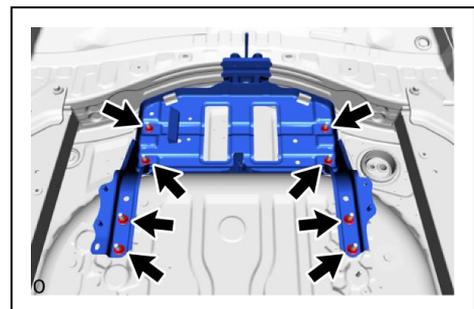
- (1) Disconnect the 7 connectors.



- (2) Remove the bolt (A).
- (3) Remove the 2 bolts (B).
- (4) Remove the 2 bolts (C).
- (5) w/ Dynamic Rear Steering: Remove the bolt (D).
- (6) Remove the 2 nuts and detach the 6 clamps.
- (7) Remove the grommet and No. 1 luggage room wire.

30. REMOVE BATTERY CARRIER ASSEMBLY

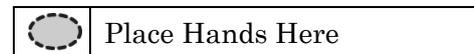
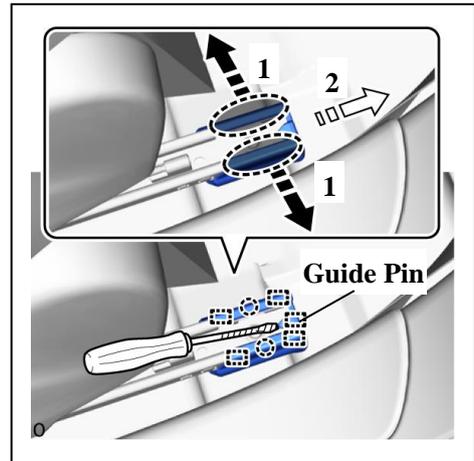
- (1) Remove the 8 nuts and battery carrier assembly.



31. REMOVE FRONT SEAT ASSEMBLY LH

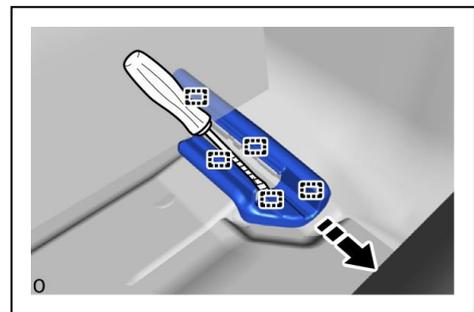
(1) REMOVE OUTER SEAT TRACK COVER LH

- a) Using a thin-bladed screwdriver, detach the guide pin.
- b) Place your hands at the positions shown in the illustration and pull in the removal direction (1) to detach the claws.
- c) Slide in the removal direction (2) to detach the guides and remove the outer seat track cover LH.



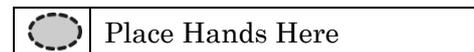
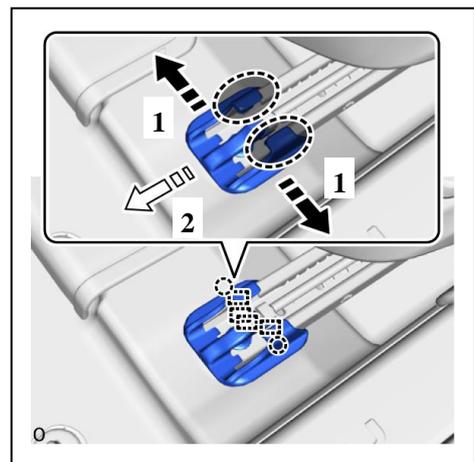
(2) REMOVE INNER SEAT TRACK BRACKET COVER LH

- a) Using a thin-bladed screwdriver, detach the guide pin.
- b) Slide in the removal direction shown in the illustration, detach the guides and remove the inner seat track bracket cover LH.



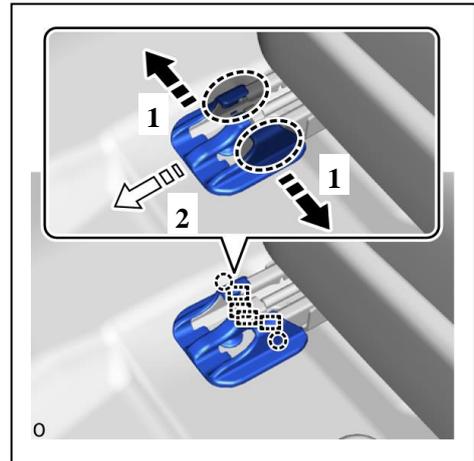
(3) REMOVE FRONT OUTER SEAT TRACK BRACKET COVER LH

- a) Place your hands at the positions shown in the illustration and pull in the removal direction (1) to detach the claws.
- b) Slide in the removal direction (2) to detach the guides and remove the front outer seat track bracket cover LH.



(4) REMOVE FRONT INNER SEAT TRACK BRACKET COVER LH

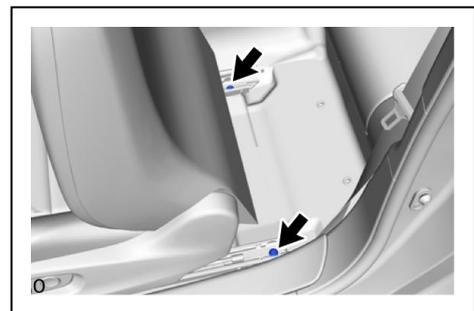
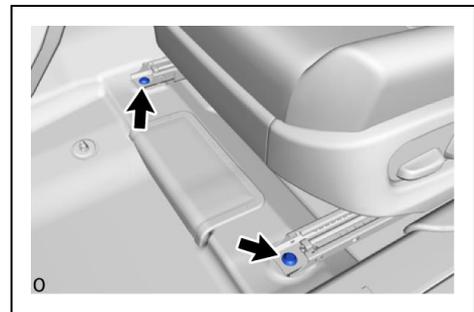
- a) Place your hands at the positions shown in the illustration and pull in the removal direction (1) to detach the claws.
- b) Slide in the removal direction (2) to detach the guides and remove the front inner seat track bracket cover LH.



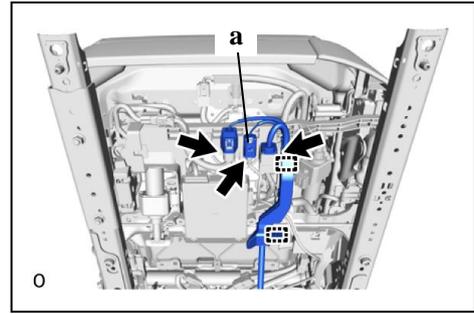
 Place Hands Here

(5) REMOVE FRONT SEAT ASSEMBLY LH

- a) Using a T50 "TORX" socket wrench, remove the 2 "TORX" screws.
- b) Operate the slide and vertical power seat switch knob to slide the front seat assembly LH to the frontmost position.
- c) Using a T50 "TORX" socket wrench, remove the 2 "TORX" screws.
- d) Operate the slide and vertical power seat switch knob to slide the front seat assembly LH to the center position.
- e) Operate the reclining power seat switch knob to set the seatback of the front seat assembly LH perpendicular.
- f) Operate the slide and vertical power seat switch knob to set the seat cushion height of the front seat assembly LH to the uppermost position.



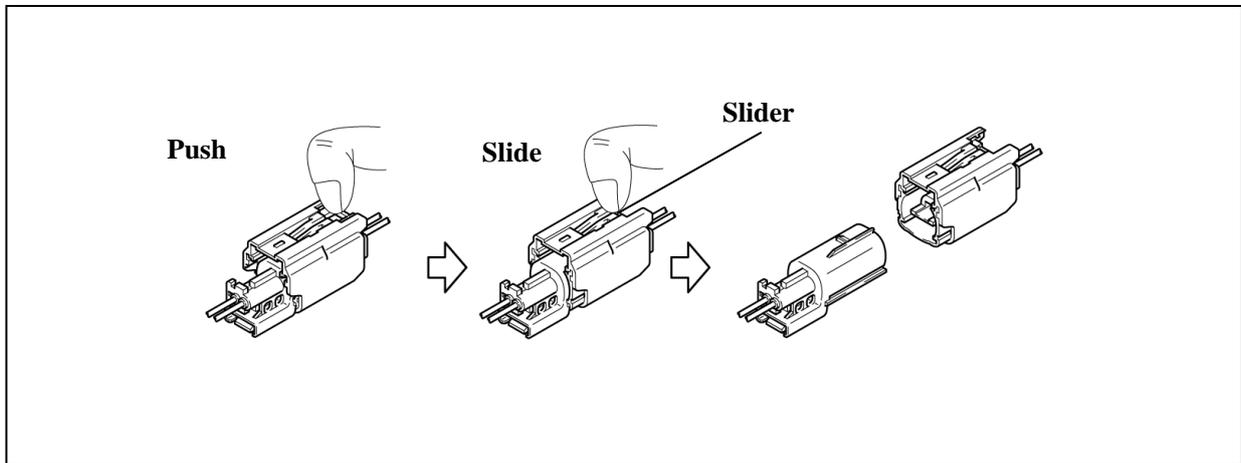
- g) Detach the wire harness protector clamps and disconnect the 2 connectors.
- h) Disconnect the front seat airbag assembly LH connector.



a	Front Seat Airbag Assembly LH Connector
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Hint:

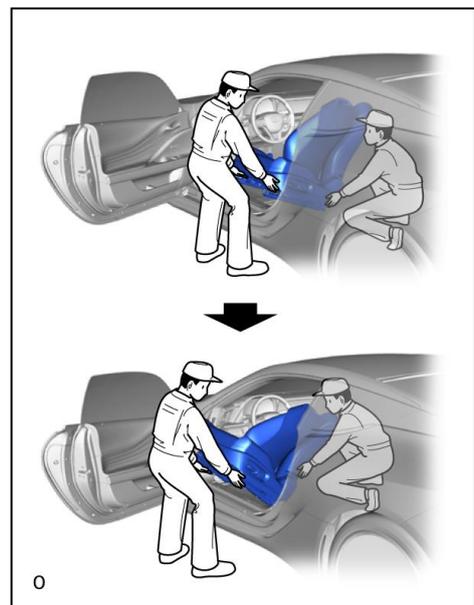
Push the slider to detach the primary lock. Continue pushing and slide the slider to detach the secondary lock and then disconnect the airbag connector.



- i) Remove the front seat assembly LH from the vehicle.

Notice:

2 or more people are required when carrying the front seat assembly LH out of the vehicle.



32. REMOVE FRONT SEAT ASSEMBLY RH

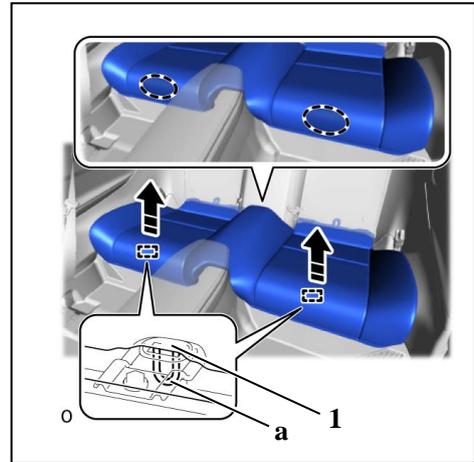
Hint:

Use the same procedure as for the LH side.

33. REMOVE REAR SEAT ASSEMBLY

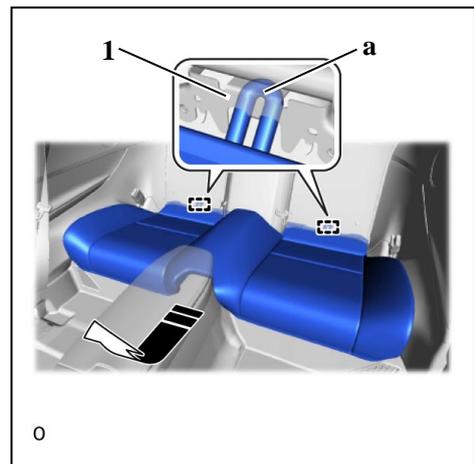
(1) REMOVE REAR SEAT CUSHION ASSEMBLY

- a) Place your hands at the positions shown in the illustration and pull in the removal direction to detach the 2 hooks on the front of the rear seat cushion from the 2 rear seat cushion lock hooks.



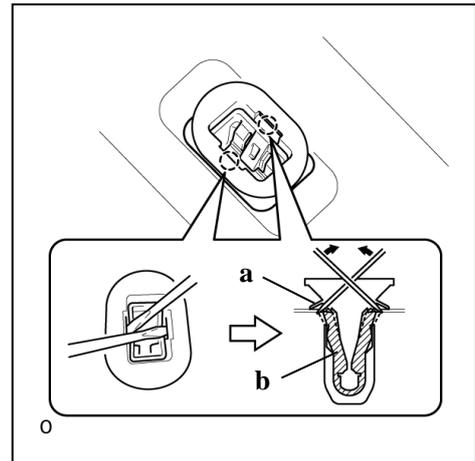
1	Rear Seat Cushion Lock Hook
a	Hook on Front of Rear Seat Cushion
	Place Hands Here

- b) Pull in the removal direction shown in the illustration to detach the 2 hooks on the rear of the rear seat cushion assembly from the 2 child restraint seat anchor brackets.
- c) Remove the rear seat cushion assembly.



1	Child Restraint Seat Anchor Bracket
a	Hook on Rear of Rear Seat Cushion

- d) Insert 2 thin-bladed screwdrivers between the sleeve and body of the rear seat cushion lock hook.
- e) Pull up the 2 thin-bladed screwdrivers to detach the 2 claws and remove the rear seat cushion lock hook.



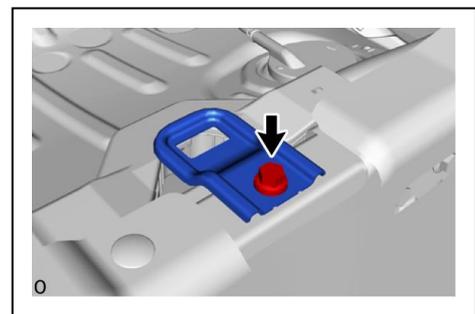
a	Body
b	Sleeve

(2) REMOVE REAR SEAT CUSHION HOLDER BRACKET

- a) Remove the bolt and rear seat cushion holder bracket.

Hint:

Use the same procedure for the other side.

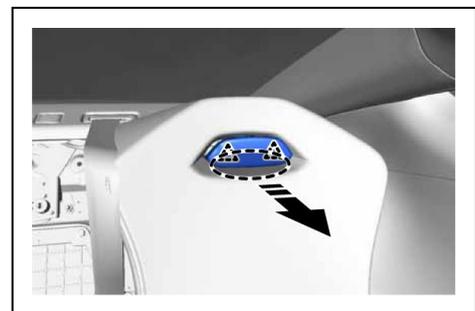


(3) REMOVE REAR SEATBACK COVER

- a) Insert a finger in the gap between the seatback cover as shown in the illustration and pull back to detach the 2 clips and remove the rear seatback cover.

Hint:

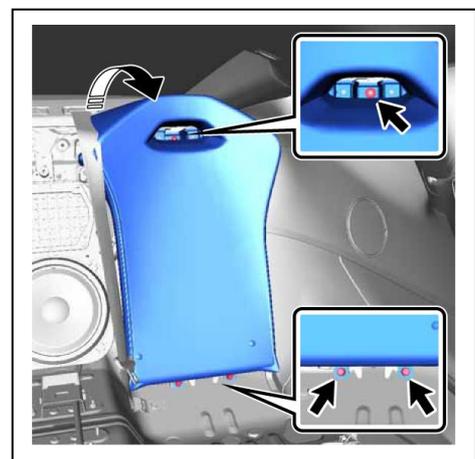
Use the same procedure for the other side.



	Place Hands Here
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(4) REMOVE REAR SEATBACK ASSEMBLY LH

- a) Remove the nut and 2 bolts.
- b) Pull down in the direction of the arrow shown in the illustration to remove the rear seatback assembly LH.



(5) REMOVE REAR SEATBACK ASSEMBLY RH

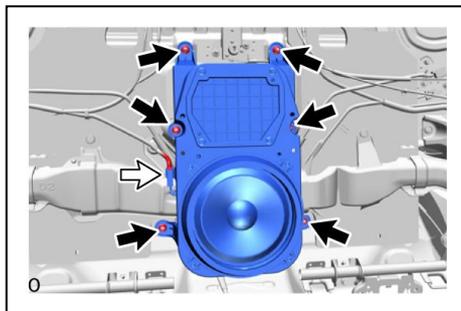
Hint

Use the same procedure as for the LH side.

34. REMOVE NO. 3 SPEAKER ASSEMBLY WITH BOX

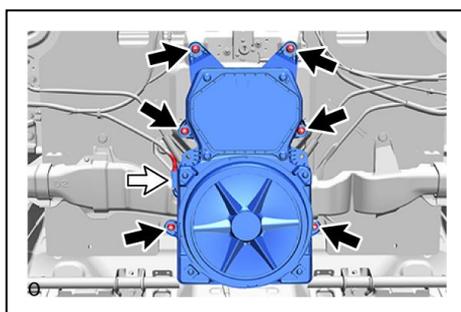
(1) for 12 Speakers :

- a) Remove the 6 nuts.
- b) Disconnect the connector and remove the No. 3 speaker assembly with box.



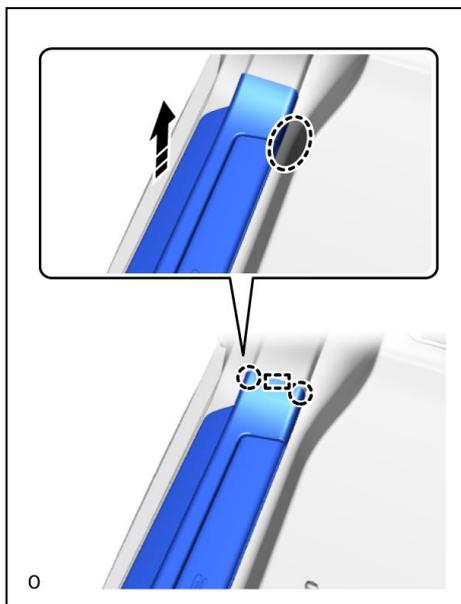
(2) for 13 Speakers :

- a) Remove the 6 nuts.
- b) Disconnect the connector and remove the No. 3 speaker assembly with box.



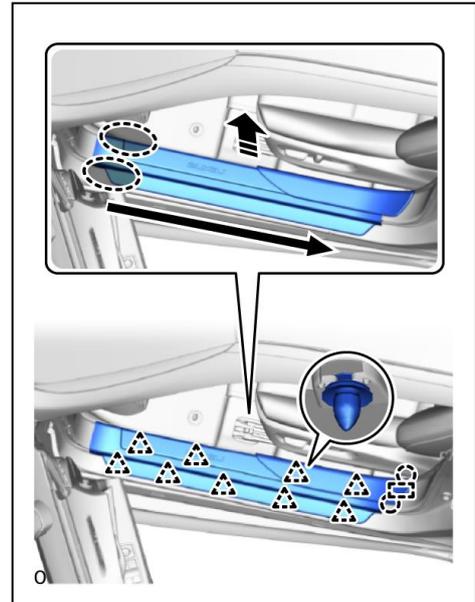
35. REMOVE FRONT DOOR SCUFF PLATE LH

(1) Place your hand at the position shown in the illustration and open the front door scuff plate LH towards the center of the vehicle. Then, lift it up in the direction of the arrow to detach the claw and guide.



 Place Hands Here

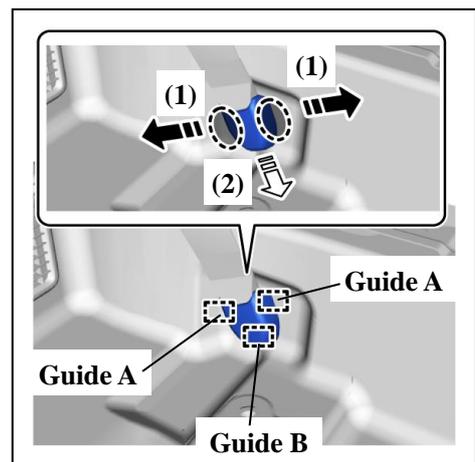
- (2) Place both hands in the gap in the vehicle and while pulling in the direction of the arrow shown in the illustration to detach the clips, claws and guide and remove the front door scuff plate LH.



	Place Hands Here
	Order of Removal

36. REMOVE OUTER LAP BELT OUTER ANCHOR COVER LH

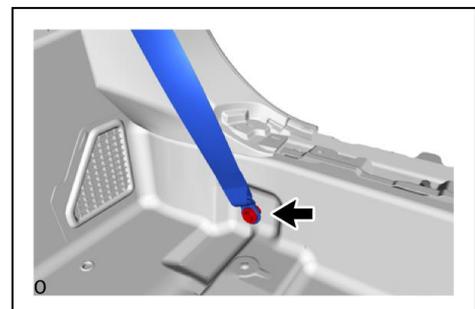
- (1) Place your hands at the positions shown in the illustration and pull in the removal direction (1) to detach guide A.
- (2) Slide in the removal direction (2) shown in the illustration to detach guide B and remove the lap belt outer anchor cover LH.



	Place Hands Here
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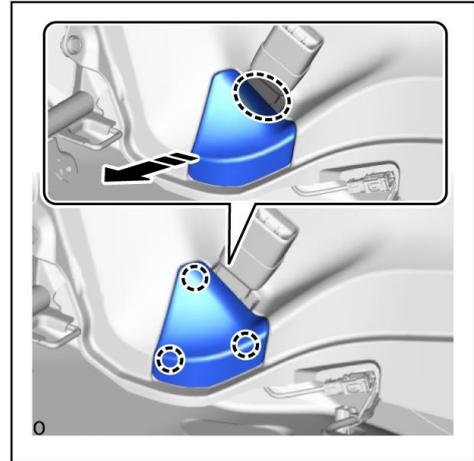
37. REMOVE FRONT SEAT OUTER BELT ASSEMBLY LH (FLOOR ANCHOR)

- (1) Remove the bolt and the floor anchor of the front seat outer belt assembly LH.



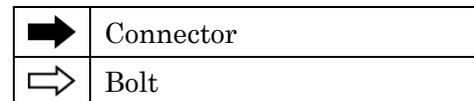
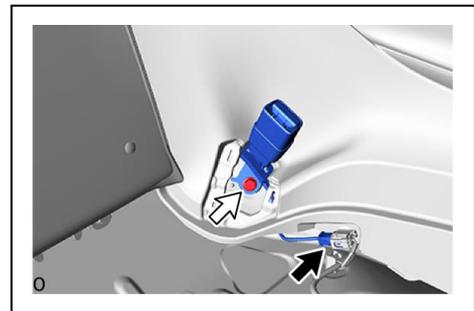
38. REMOVE QUARTER INSIDE TRIM BOARD LH

- (1) Place your hand at the position shown in the illustration and pull in the direction indicated by the arrow to detach the claws and remove the quarter inside trim board LH.



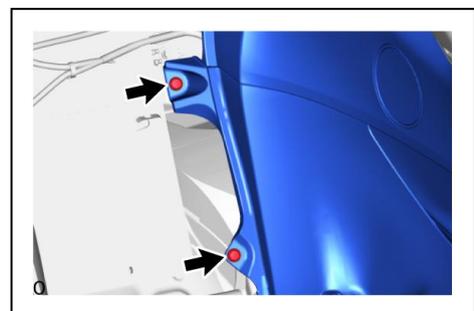
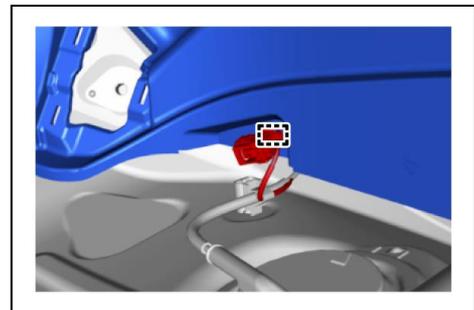
39. REMOVE REAR NO. 1 SEAT INNER BELT ASSEMBLY LH

- (1) Disconnect the connector.
- (2) Remove the bolt.
- (3) Pass the wire harness and connector of the rear No. 1 seat inner belt assembly LH through the hole on the quarter trim panel assembly LH.
- (4) Remove the rear No. 1 seat inner belt assembly LH.

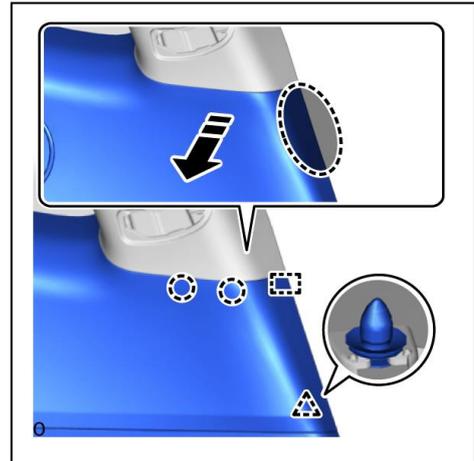


40. REMOVE QUARTER TRIM PANEL ASSEMBLY LH

- (1) Detach the clamp.
- (2) Remove the 2 clips.

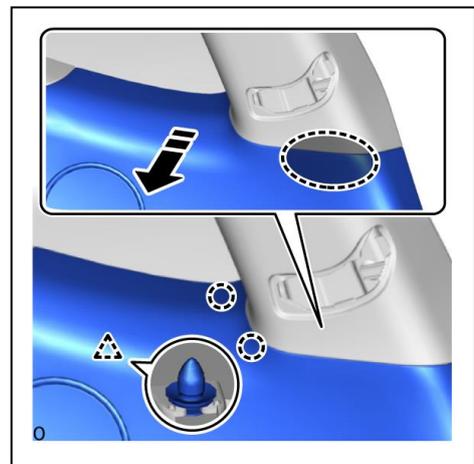


- (3) Place your hand at the position shown in the illustration and detach the hook.
- (4) Pull in the direction of the arrow shown in the illustration to detach the claws and clips.



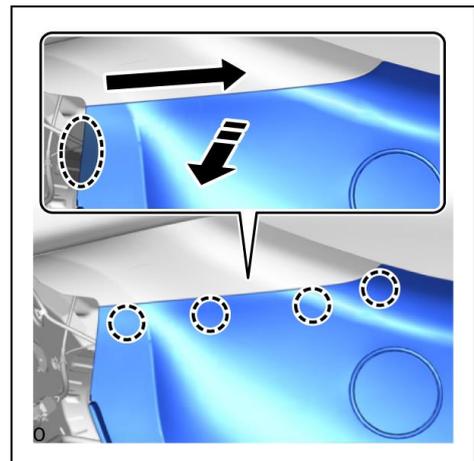
	Place Hands Here
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- (5) Place your hand at the position shown in the illustration and pull in the direction indicated by the arrow to detach the claws and clip.



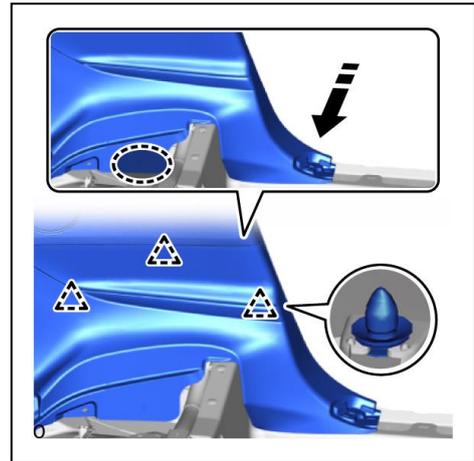
	Place Hands Here
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- (6) Place your hand at the position shown in the illustration and pull in the direction indicated by the arrow to detach the claws in order.



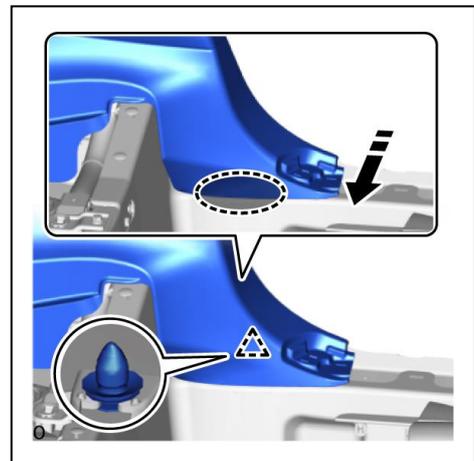
	Place Hands Here
	Order of Removal

- (7) Place your hand at the position shown in the illustration and pull in the direction indicated by the arrow to detach the clips.



 Place Hands Here

- (8) Place your hand at the position shown in the illustration and detach the clip to remove the quarter trim panel assembly LH.



 Place Hands Here

- (9) Disconnect the connector.



41. REMOVE FRONT DOOR SCUFF PLATE RH

Hint:

Use the same procedure as for the LH side.

42. REMOVE OUTER LAP BELT ANCHOR COVER RH

Hint:

Use the same procedure as for the LH side.

43. REMOVE FRONT OUTER SEAT OUTER BELT ASSEMBLY RH

Hint:

Use the same procedure as for the LH side.

44. REMOVE QUARTER INSIDE TRIM BOARD RH

Hint:

Use the same procedure as for the LH side.

45. REMOVE REAR INNER SEAT INNER BELT ASSEMBLY RH

Hint:

Use the same procedure as for the LH side.

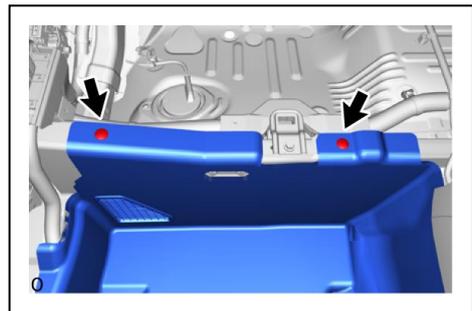
46. REMOVE QUARTER TRIM PANEL ASSEMBLY RH

Hint

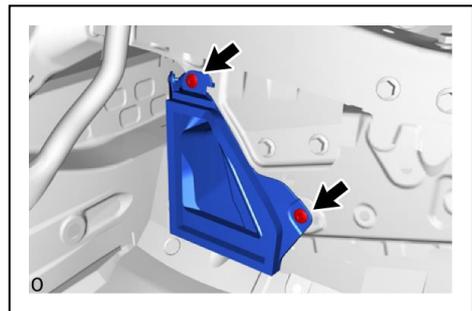
Use the same procedure as for the LH side.

47. REMOVE NO. 1 HYBRID BATTERY INTAKE DUCT

- (1) Remove the 2 clips and disconnect the floor carpet mat.



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



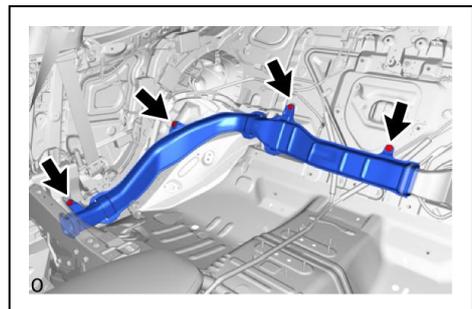
48. REMOVE NO. 3 HYBRID BATTERY INTAKE DUCT

Hint

Use the same procedure described for the No. 1 hybrid battery intake duct.

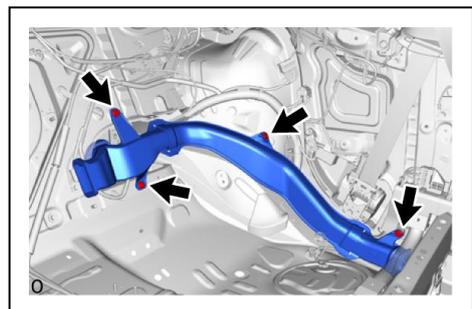
49. REMOVE NO. 2 HYBRID BATTERY INTAKE DUCT

- (1) Remove the 4 clips and No. 2 hybrid battery intake duct.



50. REMOVE NO. 4 HYBRID BATTERY INTAKE DUCT

- (1) Remove the 4 clips and No. 4 hybrid battery intake duct.

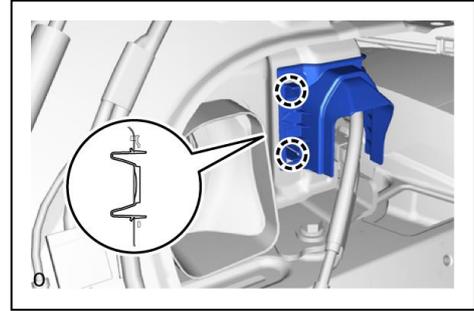


51. DISCONNECT FLOOR WIRE

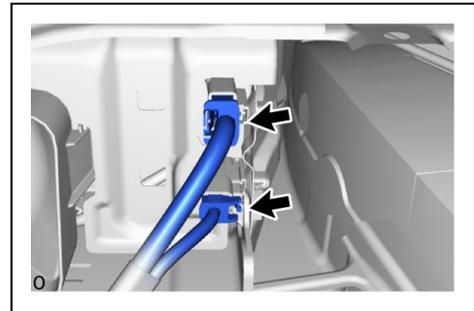
Caution

Wear insulated gloves.

(1) Detach the 2 claws.



(2) Disconnect the 2 connectors.



52. REMOVE NO. 10 HV BATTERY SHIELD PANEL

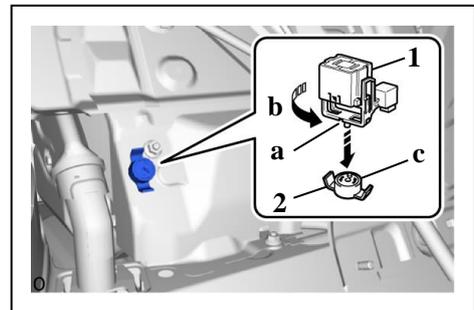
Caution

Wear insulated gloves.

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

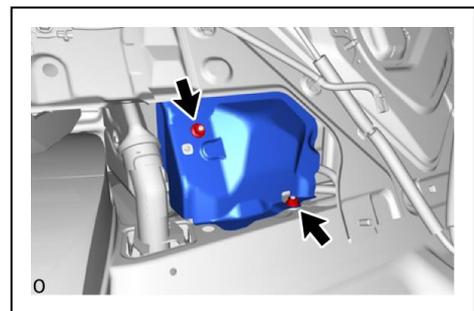
Hint

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



1	Service Plug Grip
2	Battery Cover Lock Striker
a	Projection
b	Turn
c	Button

(2) Remove the 2 nuts and No. 10 HV battery shield panel.

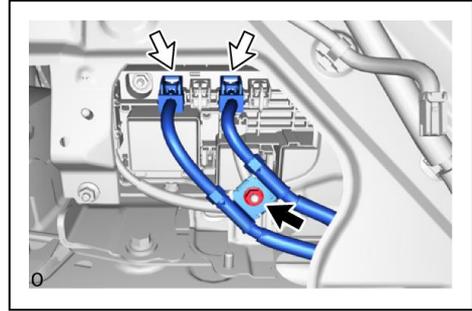


53. DISCONNECT HV FLOOR UNDER WIRE

Caution

Wear insulated gloves.

- (1) Remove the nut and disconnect the 2 connectors.

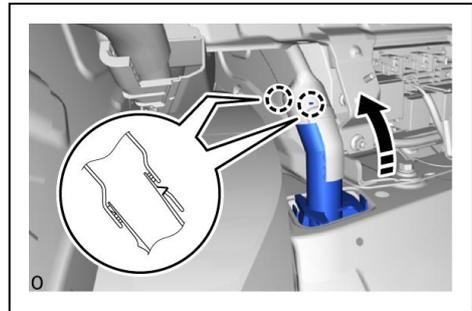


54. REMOVE NO. 4 HV BATTERY EXHAUST DUCT

Caution

Wear insulated gloves.

- (1) Detach the 2 claws as shown in the illustration.
- (2) Remove the No. 4 HV battery exhaust duct.



55. REMOVE HV BATTERY ASSEMBLY

Caution

Wear insulated gloves.

- (1) Remove the 3 bolts, 2 nuts and HV battery assembly.

Notice:

- To prevent the wire harness from being caught, make sure to bundle the wire harness using insulating tape or equivalent.
- Use cardboard or another similar material to protect the HV battery and vehicle body from damage.
- Since the HV battery is very heavy, 2 people are needed to remove it.
- When removing the HV battery from the vehicle, do not allow it to contact the vehicle.
- When removing/ moving the HV battery, make sure not to tilt it more than 80°.
- Insulate the disconnected terminals or connectors with insulating tape.

