

$I N F I N I T I_{\circ}$

2017 Q70 HYBRID Dismantling Guide

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Foreword

This manual describes dismantling operations and **important safety** related warnings and cautions for this vehicle.

This vehicle is equipped with a high voltage battery pack. Failure to follow recommended practices during dismantling will cause death or serious personal injury.

Please read this manual in advance of any dismantling activities in order to understand the features of this vehicle and to help you deal with dismantling operations involving this vehicle. Follow the procedures in order to help assure a safe and successful dismantling operation.

This manual is periodically updated. If you are not viewing this manual on the Infiniti web site, we urge you to go to www.infinitiusa.com or www.infiniti-techinfo.com to make sure you have the most recent version of this manual.

INFINITI EMERGENCY CONTACT INFORMATION

- Infiniti Consumer Affairs: 1-800-662-6200 (US) or 1-800-361-4792 (Canada)
- Hours of operation are 8am 5pm (Monday-Friday) Eastern, Central and Pacific time zones

IMPORTANT INFORMATION ABOUT THIS MANUAL

You may see various symbols in this manual. They have the following meanings:

A DANGER

This symbol is used to inform you of an operation which will result in death or serious personal injury if instructions are not followed.

Example: Touching high voltage components without using the appropriate protective equipment will result in electrocution. PPE must always be worn when touching or working on high voltage components.

This symbol is used to inform you of an operation which may cause death or serious personal injury if instructions are not followed.

ACAUTION

This symbol is used to inform you of an operation which may cause personal injury or component damage if instructions are not followed.

Please note that there may be differences between this manual and the vehicle specification due to specification changes.

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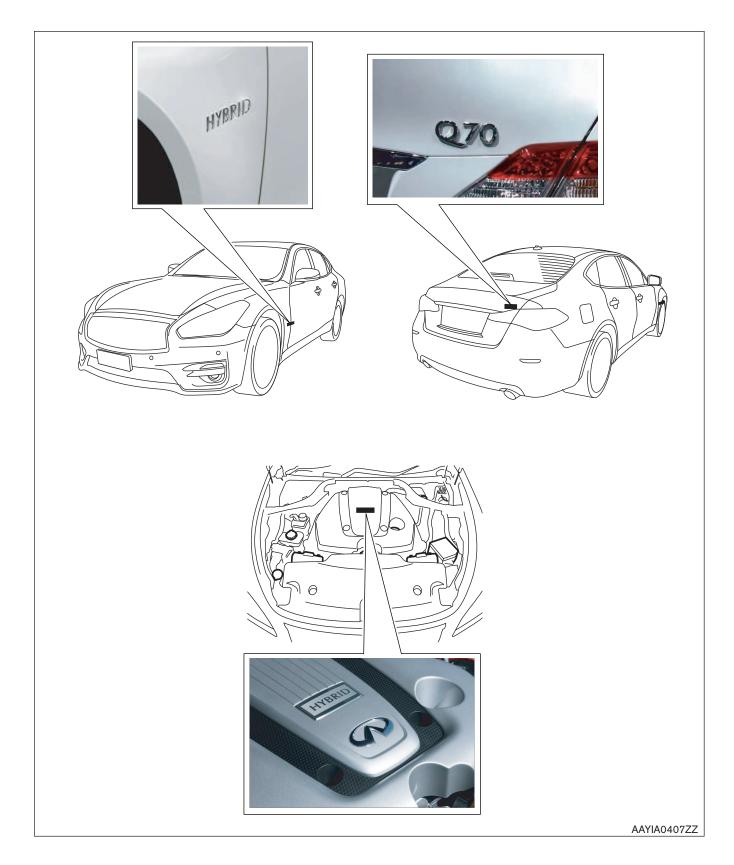
1. About the INFINITI Q70 HYBRID

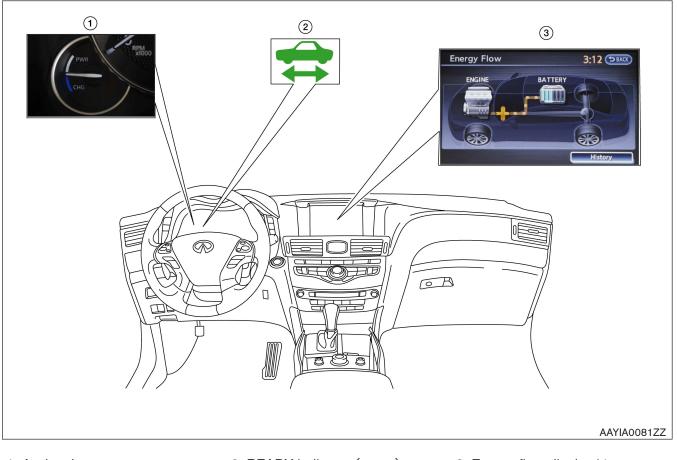
This hybrid electric vehicle (HEV) uses two types of batteries. One is a 12-volt battery that is the same as the battery in vehicles powered by internal combustion engines. The 12-volt battery is located behind the rear seat back with battery cable access through the trunk area. The other is the high voltage battery for the traction motor which propels the vehicle. The high voltage battery is located behind the rear seat back with service plug access through the trunk area.

When the high voltage battery level is low, engine output is used to generate power from the traction motor and charge the high voltage battery. Additionally, the vehicle system can recharge the high voltage battery by converting driving force into electricity while the vehicle is decelerating or being driven downhill. This is called regenerative charging.

1-1 Q70 HYBRID IDENTIFICATION

1-1.1 Exterior and Engine Compartment





1. Assist charge gauge2. READY indicator (green)3. Energy flow display *1*1: This screen may not be displayed due to customer settings.

1-2 Vehicle Identification Number (VIN) Layout

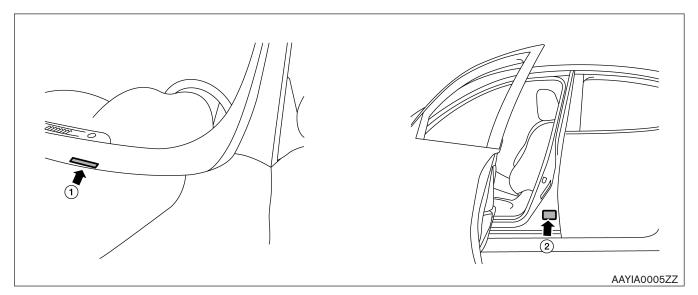
In exterior appearance the Q70 HYBRID is nearly identical to the conventional Infiniti Q70 series vehicles.

The vehicle identification number can be located as follows:

Example VIN : JN1 EY1APXHM005523

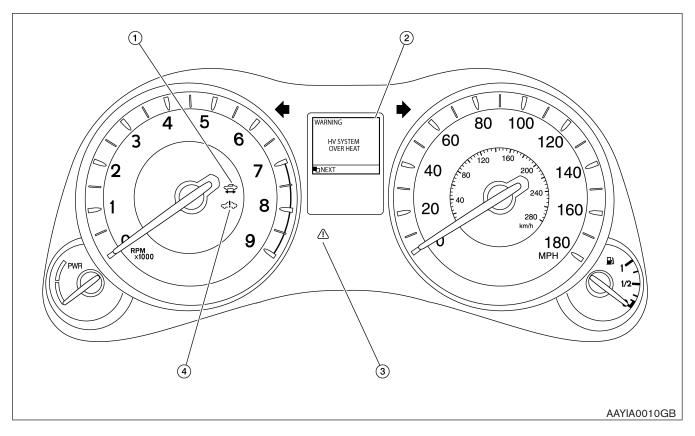
The Q70 HYBRID is identified by the 4th alphanumeric character: E

 $\mathbf{E} = \mathbf{Q70} \ \mathbf{HYBRID}$



- 1. VIN plate (visible through windshield)
- 2. Vehicle certification label (lower center pillar)

1-3 Warning and Indicator Lamp Information



- 1. READY Indicator (Green)
- 3. Master Warning Lamp (Orange or Red)
- 2. HV System Overheat Warning (Dot Matrix Liquid Crystal Display)
- 4. Hybrid System Warning Lamp (Orange)

Lamp Name	Icon	Description	
READY Indicator (Green)		This lamp is on when the high voltage system is powered up and the vehicle is ready to drive.	
Master Warning Lamp (Orange or Red)		This lamp is on when another warning lamp or message is displayed in the instrument cluster.	
Hybrid System Warning Lamp (Orange)		 This lamp is on or blinking when: Malfunction has occurred in the hybrid control system and/or High voltage leak to vehicle chassis and/or Emergency shut-off system has been activated. The shut-off system activates in the following conditions: Front and side collisions in which the air bags are deployed. Certain rear collisions. Certain high voltage system malfunctions. 	

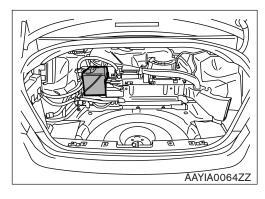
2. Basic High Voltage Information

2-1 Battery Information

The Q70 HYBRID utilizes two batteries in order to supply both high and low voltage.

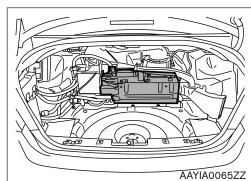
2-1.1 12-volt Battery

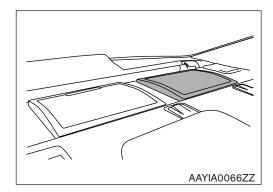
- The Q70 HYBRID contains a conventional lead-acid 12-volt battery.
- The 12-volt battery is located in the trunk, left of high voltage battery, concealed by trim cover.
- The 12-volt battery is charged by the high voltage battery through the DC/DC converter.



2-1.2 High Voltage Battery

- The Q70 HYBRID contains a high voltage battery.
- The high voltage battery is mounted in the trunk area behind the rear seat, enclosed in a metal case and concealed by trim cover.
- The high voltage battery stores approximately 346 volts DC (400V max.).
- A vent hose is provided to exhaust gasses outside the vehicle if necessary.
- An air vent is located on the rear parcel shelf for battery cooling.

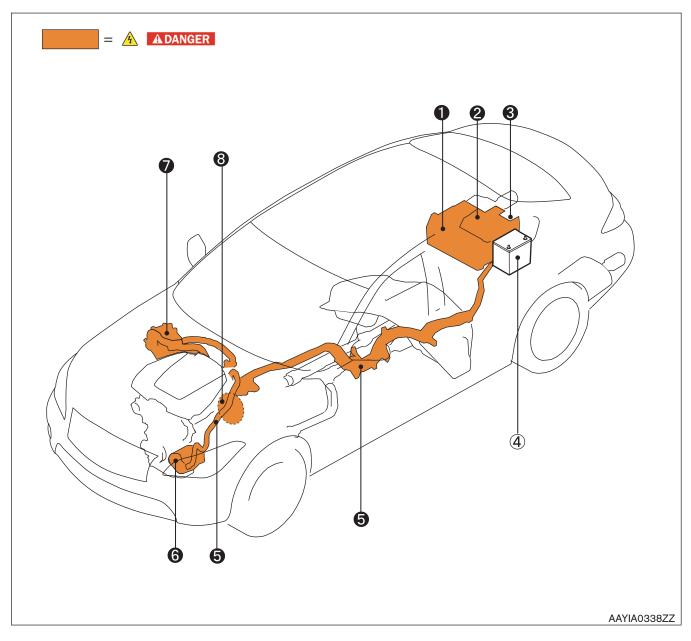




The high voltage battery supplies power to the following:

- High voltage harnesses
- DC/DC converter
- Traction motor inverter
- Traction motor
- Electric air conditioner compressor

2-2 High Voltage-Related and 12-Volt-Related Component Locations and Descriptions



NOTE:

Components with white number in black background are high voltage components.

No.	Component	Location	Description	
0	High Voltage Bat- tery	Trunk area (behind rear seat back)		
0	DC/DC Converter	Trunk area (mounted to top of high volt- age battery)	The DC/DC converter reduces the voltage of the high voltage battery to provide power to the 12-volt battery in order to operate the vehi- cle's electric components (headlights, audio system, etc.).	

No.	Component	Location	Description
0	Service Plug	Trunk area (below parcel shelf; behind access door in trim panel)	This is used to disable the high voltage system.
4	12-volt Battery	Trunk area (below parcel shelf; behind trim panel left of high voltage battery)	A lead-acid battery that supplies power to the low voltage devices.
0	High Voltage Har- nesses	Trunk area (on high voltage battery), under floor pan, engine compartment	Orange-colored power cables carry high DC voltage between each of the high voltage components.
6	Electric Air Condi- tioner Compressor	Engine compart- ment (front driver side)	Air conditioner compressor
Ø	Traction Motor Inverter	Engine compart- ment (right rear side)	Converts the DC power stored in the high volt- age battery to three-phase AC power and con- trols motor torque (revolution) by regulating the motor current. The inverter has a built in high voltage capacitor.
8	Traction Motor	Built-into the trans- mission	Converts three-phase alternating current (AC) power to drive power (torque) which propels the vehicle.

2-3 High Voltage Battery Pack Specifications

High Voltage Battery Specifications		
High voltage battery voltage	346V (400V max.)	
Number of high voltage battery modules in the pack	12	
High voltage battery module voltage	28.8V each	
High voltage battery dimensions	33.35 x 17.83 x 15.43 in. (847 x 453 x 392 mm)	
High voltage battery weight	121.28 lbs (55 kg)	

2-4 High Voltage Safety Measures

Circuit insulation	The high voltage positive (+) and negative (-) circuits are insulated from the metal chassis.
Reducing the risk of electrocution	The high voltage components and harnesses have insulated cases or orange-colored coverings which provide insulation and easy identification. The high voltage battery case is electrically connected to the vehicle ground. This connection helps protect the vehicle occupants and vehicle dismantlers from high voltage electrical shock.
Identification	The high voltage components are labeled "WARNING" similar to the label shown below. All high voltage harnesses are coated in orange.

2-4.1 Warning Labels

▲警告/WARNING/AVERTISSEMENT

重大な傷害を負わないために、エンジンルーム内作業時はスタートスイッチ上のインジケータと メーチらの READY ランフが消灯していることを確認して下さい。エンジンが自動業的始動し、 ベルトやファンが動き出すことがのります。詳しくはオーナースマニュアルをご覧下さい。

To avoid serious injury, keep clear of engine parts at all times. Engine may start at any time if the start switch and the READY lamps on the instrument panel are "ON". Make sure both lamps are "OFF" before working in the engine compartment. See Owners Manual.

Pour éviter des blessures graves, assurez-vous que les témoins START SWITCH et READY dans le tableau de bord sont éteints (OFF) avant d' entreprendre tout travail à l' intérieur du compartiment moteur. Le moteur peut démarrer à tout moment si le contacteur d' allumage est à la position ON et que les témoins READY du tableau de bord sont allumés. Assurez-vous que les deux témonins sont éteints avant de travailler dans le compartiment moteur. Reportez-vous au manuel du conducteur.

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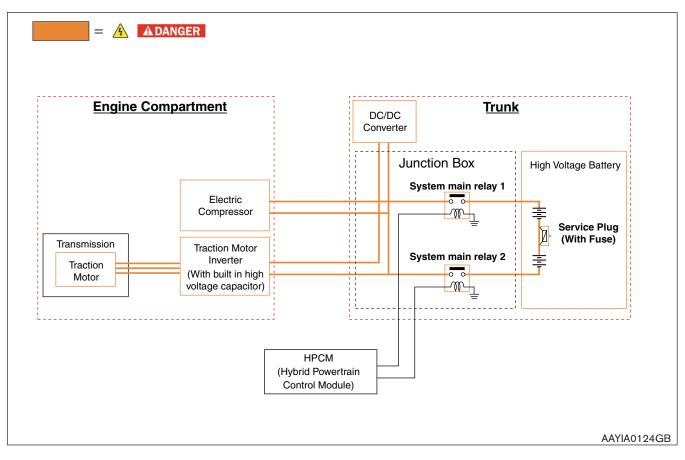


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2-5 High Voltage Safety System

The high voltage safety system is intended to help keep vehicle occupants and emergency responders safe from high voltage electricity.

- A high voltage fuse provides short circuit protection inside the high voltage battery.
- The high voltage safety system is insulated from the metal chassis.
- Positive and negative high voltage power cables are connected to the high voltage battery and are controlled by normally open system main relays (SMR1 and SMR2). When the vehicle is shut off, the relays stop electrical flow from leaving the high voltage battery. However, it can take approximately ten (10) minutes for the high voltage capacitor to fully discharge.



AWARNING

- The high voltage system and high voltage capacitor may remain powered for up to approximately 10 minutes after the vehicle is shut off. Personal Protective Equipment (PPE) must always be worn when touching or working on high voltage components to avoid risk of electrical shock and severe personal injury or death.
- The high voltage battery retains high voltage at all times. PPE must always be worn when touching or working on high voltage components to avoid risk of electrical shock and severe personal injury or death.
 - 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 HPCM (hybrid powertrain control module) will illuminate the hybrid system warning lamp in the instrument cluster.
 - The high voltage battery relays (SMR1 and SMR2) will automatically open to stop the electrical flow in a front, side or certain rear collisions that are sufficient enough to activate the supplemental restraint system (SRS).

2-6 High Voltage Circuit Shut-Off System

This vehicle is equipped with a system to shut off the current from the high voltage battery by the following methods:

Service plug	Positioned in the center area of the high voltage battery, this plug shuts off the output of high voltage when manually removed.
System main relays (located in the high voltage battery)	Controlled by the ignition switch, these relays are powered by the 12-volt system and shut off high voltage from the high voltage battery.
Emergency shut-off sys- tem	In the case of a collision (air bag deployment, etc.) or certain system malfunc- tions this system is designed to shut off the high voltage from the high volt- age battery.

2-7 Preventing Electrical Shock

- If it is necessary to touch any of the high voltage harnesses or components, always wear appropriate Personal Protective Equipment (PPE) [refer to 3-1 Preparation Items (DG-17)]. Shut off the high voltage system by referring to 3-4.1 High Voltage System Shut-Down Procedure (DG-19).
- 2. To avoid the risk of electrocution, NEVER touch the inside of the high voltage battery with bare hands after shutting off the high voltage system. The high voltage battery maintains charge even though the high voltage system is shut down. PPE must always be worn when touching or working on high voltage components.
- 3. Cover damaged high voltage components with insulated tape.

3. Preparation for Dismantling

A DANGER

- A Failure to properly shut down the high voltage electrical system before the Dismantling Procedures are performed will result in serious injury or death from electrical shock. To prevent serious injury or death, NEVER touch high voltage harnesses or components without always wearing appropriate Personal Protective Equipment (PPE). PPE must always be worn when touching or working on high voltage components.
- ▲ If it is necessary to touch any of the high voltage harnesses or components you must always wear appropriate PPE to avoid electrical shock. PPE must always be worn when touching or working on high voltage components. Shut down the high voltage system by following the steps outlined in 3-4.1 High Voltage System Shut-Down Procedure (DG-19). Wait approximately ten (10) minutes for complete discharge of the high voltage capacitor after the high voltage system has been shut down.

AWARNING

- NEVER assume the Q70 HYBRID is shut OFF simply because it is quiet.
- If it becomes necessary for the dismantler to leave the vehicle, place a "DANGER" sign [for example, refer to 5. Storing the Vehicle (DG-37)] on the vehicle to alert other people that the vehicle contains a high voltage battery.
- If the READY 🚖 indicator is ON the high voltage system is active.
- If possible, be sure to check the READY indicator on the instrument cluster and verify that the READY indicator is OFF and the high voltage system is stopped.

3-1 Preparation Items

Preparation Items	Specification	Purpose
PPE (personal protective equipment):	Up to 1,000V	For protection from high voltage electrical shock.
Insulated gloves		
Insulated shoes	_	
Safety shield		To protect eyes when around high voltage components and wiring.
Safety Glasses		
Leather gloves	Must be able to fasten tight around the wrist (worn over insulated gloves).	To protect insulated gloves.
Wrenches	Size:10mm	To remove the 12-volt battery terminal bolt.
Solvent resistant protection gloves Solvent resistant protection shoes	_	To utilize in the event of a high voltage battery electrolytic solution leak.
Absorbent pad	The same pad used for internal combustion engine fluids can be used.	To absorb any high voltage battery electrolytic solution leakage.
Standard fire fighting equipment	Standard fire fighting equipment. Depending on type of fire (vehicle or battery) use standard fire fighting equipment (water or extinguisher).	To extinguish a fire.
Insulated tape	Insulating	To cover any damaged harnesses to protect from and prevent electrical shock. Tape should cover all bare or damaged wire.

3-2 Personal Protective Equipment (PPE) and Insulated Tools

3-2.1 Personal Protective Equipment (PPE) Protective Wear Control

Perform an inspection of the Personal Protective Equipment (PPE) items before beginning work. Do not use any damaged PPE items.

3-2.2 Daily Inspection

This inspection is performed before and after use. The worker who will be using the items should perform the inspection and check for deterioration and damage.

- Insulated rubber gloves should be inspected for scratches, holes and tears. (Visual check and air leakage test)
- Insulated safety boots should be inspected for holes, damage, nails, metal pieces, wear or other problems on the soles. (Visual check)
- Insulated rubber sheet should be inspected for tears. (Visual check)

3-2.3 Insulated Tools

When performing work at locations where high voltage is applied (such as terminals), use insulated tools meeting 1,000V/300A specifications.

3-3 Discharge Procedures

A DANGER

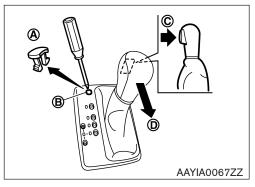
Do not perform this procedure if the battery is damaged. If you are unsure of battery damage, use extreme caution and wear appropriate Personal Protective Equipment (PPE).

High voltage battery discharging must take place before dismantling. Sufficient discharging can be achieved by following these steps.

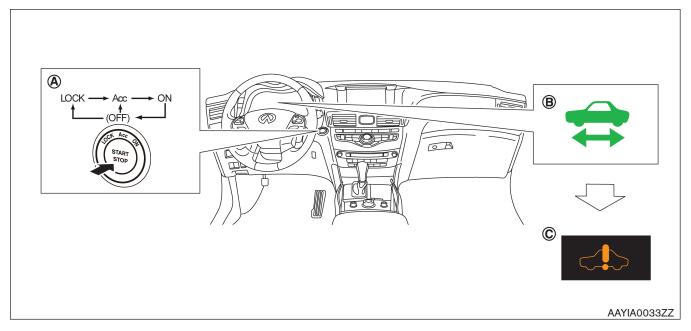
- 1. Place the shift selector into the Park (P) position
- 2. Apply the parking brake.
- 3. Set wheel chocks to ensure the vehicle is completely stopped.
- 4. Fasten the driver seat belt and close the driver door.
- 5. Apply foot brake and press the ignition switch to turn the system ON. Confirm READY indicator in instrument cluster turns ON.
 - a. If the engine starts, leave the engine on until idling stops.
 - b. If the engine does NOT start, move on to next step.
- 6. Remove the shift lock cover (A) using a suitable tool.
- 7. Push down the shift lock (B) as shown in the illustration.
- 8. Push the shift selector button (C) and move the shift selector to Neutral (N) position (D) while holding down the shift lock.

NOTE:

DO NOT press accelerator or foot brake after moving the shift selector to the Neutral (N) position. Otherwise high-voltage battery will start to be charged.



- 9. Release the parking brake.
- Turn ON electric devices such as headlamps, A/C (set to the coldest temperature) and rear window defogger to discharge the high voltage battery. Allow approximately 15 minutes to discharge. Discharge is complete when the READY indicator (B) (green) turns OFF and the hybrid system warning indicator (C) (orange) turns ON.



11. Press the ignition switch (A) to turn the system OFF.

Please contact following number if the vehicle could not be discharged.

- 1-800-662-6200 (US) or 1-800-361-4792 (Canada)
- Hours of operation are 8am-5pm (Monday-Friday) Eastern, Central and Pacific time zones.

3-4 How to Handle a Damaged Vehicle

3-4.1 High Voltage System Shut-Down Procedure

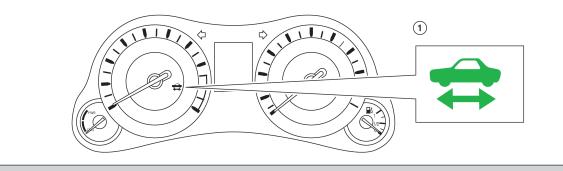
Any of the following procedures can shut down the high voltage system. The dismantling operation canonly begin after shutting down the high voltage system. If the vehicle is heavily damaged, for example the high voltage battery is deformed, broken or cracked, appropriate PPE must always be used and the high voltage battery and high voltage components must not be touched.

A DANGER

- A Failure to properly shut down the high-voltage system before the dismantling procedures are performed will result in serious injury or death from electrical shock. To prevent serious injury or death, NEVER touch high-voltage harnesses or components without always wearing appropriate Personal Protective Equipment (PPE). Appropriate PPE must always be worn when touching or working on high-voltage components.
- A When contact with high-voltage components or high-voltage harnesses is unavoidable, or when there is risk of such contact, you must always wear appropriate PPE. PPE must always be worn when touching or working on high-voltage components.

AWARNING

- A The vehicle contains parts that contain powerful magnets. If a person who is wearing a pacemaker or other medical device is close to these parts, the medical device may be affected by the magnets. Such persons must not perform work on the vehicle.
- Be sure to check the READY indicator (1) in the instrument cluster, and verify that the READY indicator is off and the high voltage system is stopped.



- After the high voltage system is shut down, please wait for approximately ten (10) minutes for complete discharge of the high voltage capacitor. While waiting, do not operate any vehicle functions.
- Remove the 12-volt battery negative (-) terminal and wait for three (3) minutes to discharge the air bag capacitor. Even though the 12-volt battery negative (-) is disconnected, the Supplemental Restraint System (SRS) air bag maintains voltage for three (3) minutes. There is a possibility of sudden SRS air bag inflation due to harness short circuit or damage and it may cause serious injuries.
- The 12V system will remain active even after the 12-volt battery negative (-) terminal is removed while the high voltage system is active. This is because the DC/DC converter will not shut down and power will be supplied to the 12V system and high voltage system continuously.

Before disconnecting the 12-volt battery terminal, if necessary, lower the windows, adjust the steering column, adjust the seats, unlock the doors, open the trunk, etc. as required. Once the 12-volt battery is disconnected, power controls will not operate.

Powering Down the High Voltage System

The high voltage system can be shut down with any 1 of the following procedures:

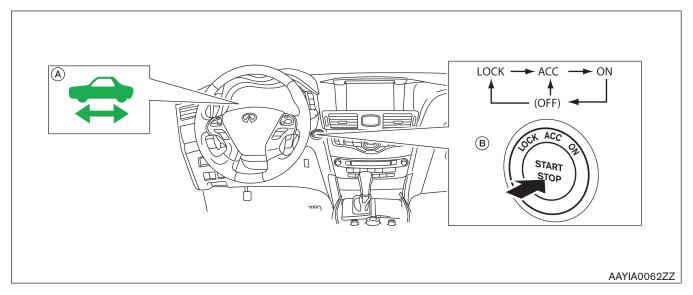
- Turn OFF the power switch and disconnect the 12-volt battery. Refer to Primary Procedure (DG-21).
- Remove the fuse for the high voltage control system and disconnect the 12-volt battery. Refer to Alternate Procedure 1 (Remove Fuses) (DG-24).
- Remove the service plug and disconnect the 12-volt battery. Refer to Alternate Procedure 2 (Remove Service Plug) (DG-26).

Primary Procedure

NOTE:

Before disconnecting the 12-volt battery terminal, if necessary, lower the windows, adjust the steering column, adjust the seats, unlock the doors, etc. Once 12-volt battery is disconnected, power controls will not operate.

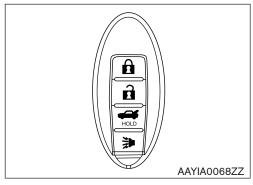
1. Check the READY indicator (A) status in the instrument cluster. If it is on, the high voltage system is active.



- 2. Place the shift selector in the Park (P) position.
- 3. Push the ignition switch (B) once to turn OFF the high voltage system. Then verify whether the READY indicator (A) is off.

If the READY indicator (A) does not turn off, refer to Alternate Procedure 1 (Remove Fuses) (DG-24)

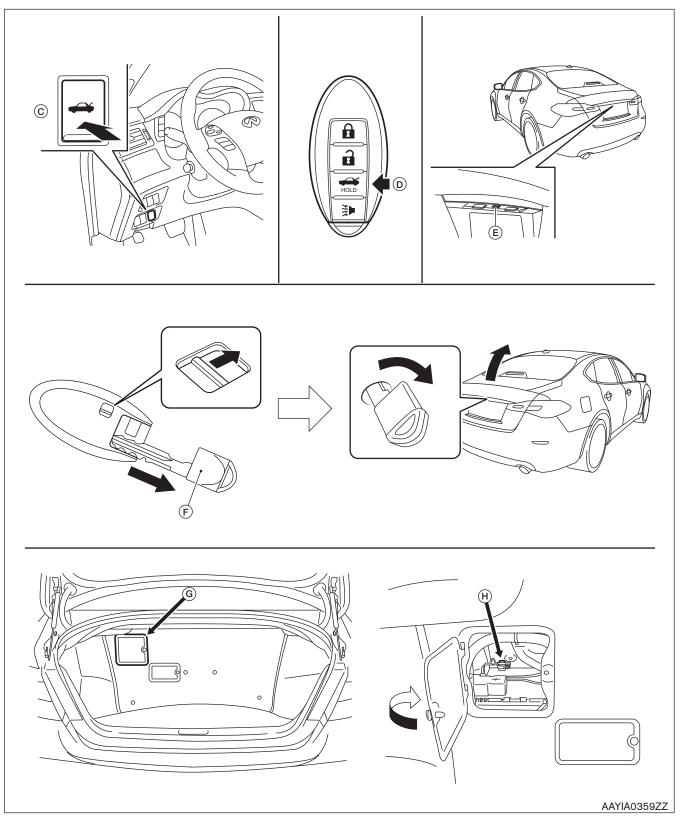
If possible, keep the Infiniti Intelligent Key at least
 meters (16 feet) away from the vehicle (except as noted below).



- 5. Open the trunk using any of the following:
 - a. push-button switch (C) on the lower LH side of the instrument panel.
 - b. trunk button (D) on the Infiniti Intelligent Key [press for longer than one (1) second].
 - c. trunk open request switch (E) (located above license plate)*.
 - d. with the mechanical key (F) housed inside the Infiniti Intelligent Key.

Method	Shift Selector Position	Ignition Switch Status
a	P or N	Any
b	Р	OFF
С*	Any	Any
d	Any	Any

* You must have the Infiniti Intelligent Key within approximately 1 meter (3 feet) range of trunk request switch to use the trunk open request switch function.

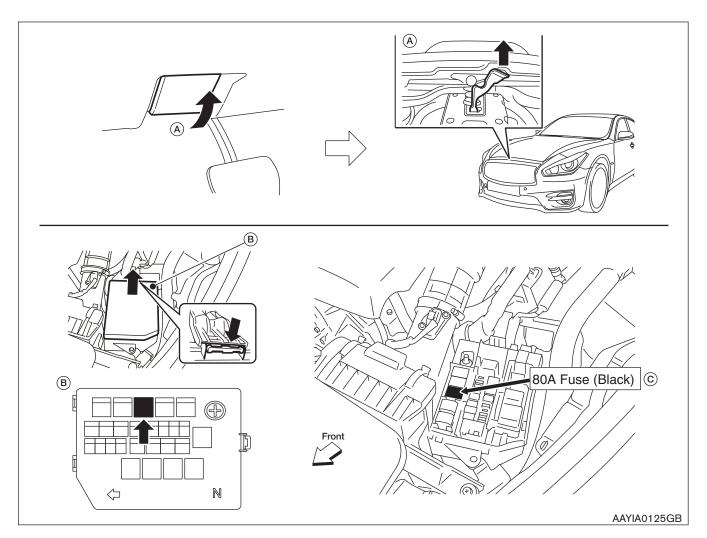


- 6. Open the 12-volt battery service access cover (G).
- 7. Disconnect negative (-) battery cable (H) and cover it with insulated tape.
- 8. Wait approximately ten (10) minutes for complete discharge of the high voltage capacitor after the battery cable has been disconnected.
- 9. Perform the dismantling operation. Refer to 6. Dismantling Information (DG-39).

Alternate Procedure 1 (Remove Fuses)

NOTE:

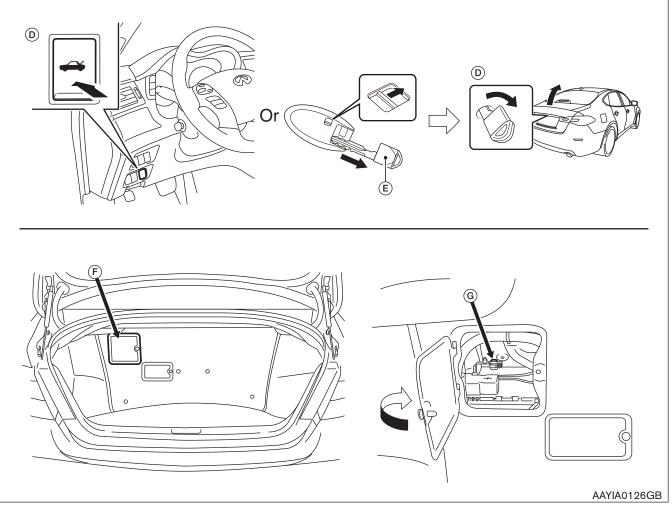
Before removing any fuses, if necessary, lower the windows, adjust the steering column, adjust the seats, unlock the doors, etc. Once fuses are removed, power controls will not operate.



- 1. Pull release handle (A) to open the hood.
- 2. Remove fuse box cover (B).
- 3. Remove 80A fuse (C) (black).
- 4. If you cannot identify the fuse (C), remove all fuses in the fuse box.

AWARNING

▲ To avoid unintended reinstallation and risk of electrical shock and severe personal injury or death, the dismantler should carry the fuse or fuses on his/her person and cover the fuse box with insulated tape.



- 5. Open the trunk. The trunk can be opened with the push-button switch (D) on the lower LH side of the instrument panel or with the mechanical key (E) housed inside the Infiniti Intelligent Key.
- 6. Open the 12-volt battery service access cover (F).
- 7. Disconnect negative (-) battery cable (G) and cover it with insulated tape.
- 8. Wait approximately ten (10) minutes for complete discharge of the high voltage capacitor after the fuse is pulled and battery cable has been disconnected.
- 9. Perform the dismantling operation. Refer to 6. Dismantling Information (DG-39).

A DANGER

- A Do not remove the service plug without always wearing appropriate Personal Protective Equipment (PPE) to help protect the dismantler from serious injury or death by electrical shock.
- A Immediately cover the service plug socket with insulated tape. The high-voltage battery retains high-voltage power even when the service plug is removed. To avoid electric shock, NEVER touch the terminals inside the socket.

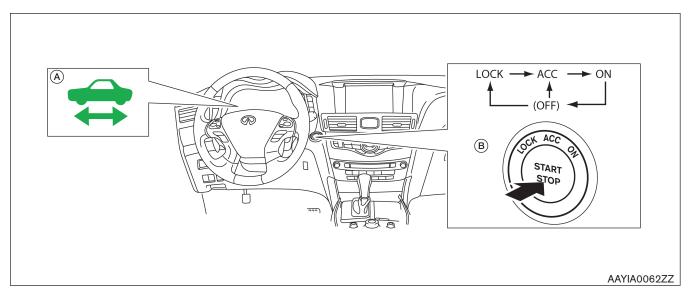
AWARNING

▲ To avoid unintended reinstallation and risk of electrical shock and severe personal injury or death, the dismantler should carry the service plug on his/her person while work is in progress.

NOTE:

Before disconnecting the 12-volt battery terminal, if necessary, lower the windows, adjust the steering column, adjust the seats, unlock the doors, etc. Once 12-volt battery is disconnected, power controls will not operate.

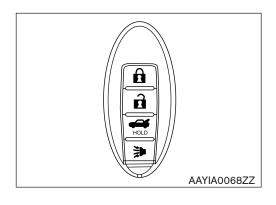
1. Check the READY indicator (A) status in the instrument cluster. If it is on, the high voltage system is active.



- 2. Place the shift selector in the Park (P) position.
- 3. Push the ignition switch (B) once to turn OFF the high voltage system. Then verify whether the READY indicator (A) is off.

If the READY indicator (A) does not turn off, continue to step 5 to open the trunk for 12-volt battery negative cable access.

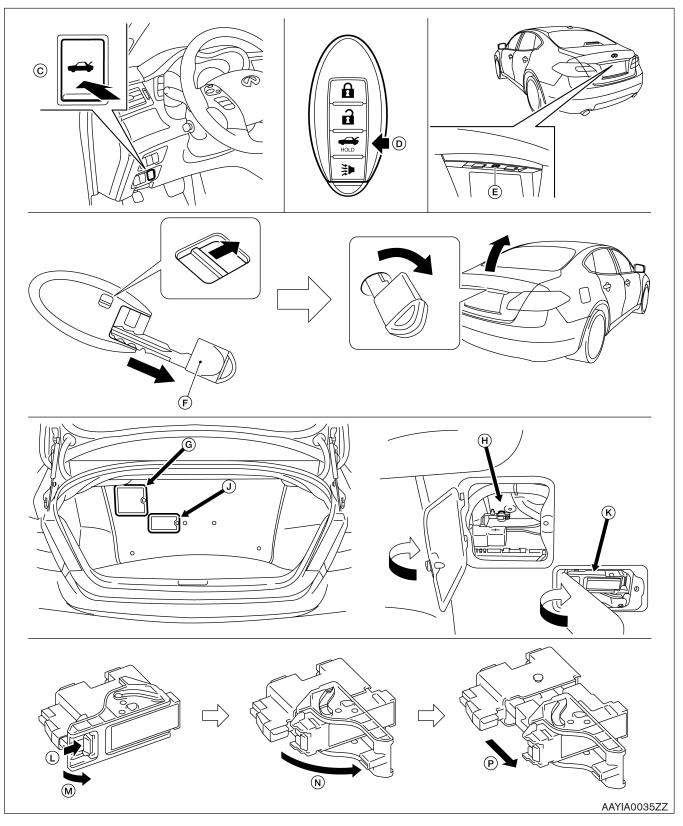
If possible, keep the Infiniti Intelligent Key at least
 meters (16 feet) away from the vehicle (except as noted below).



- 5. Open the trunk using any of the following:
 - a. push-button switch (C) on the lower LH side of the instrument panel.
 - b. trunk button (D) on the Infiniti Intelligent Key [press for longer than one (1) second].
 - c. trunk open request switch (E) (located above license plate)*.
 - d. with the mechanical key (F) housed inside the Infiniti Intelligent Key.

Method	Shift Selector Position	Ignition Switch Status
a	P or N	Any
b	Р	OFF
C*	Any	Any
d	Any	Any

* You must have the Infiniti Intelligent Key within approximately 1 meter (3 feet) range of trunk request switch to use the trunk open request switch function.



- 6. Open the 12-volt battery service access cover (G).
- 7. Disconnect negative (-) battery cable (H) and cover it with insulated tape.
- 8. Open service plug access cover (J).
- 9. Remove the service plug (K) by pressing the locking tab (L) and rotating the handle (M) fully outward (N). Using the handle, pull the service plug (P) completely out of its socket.
- 10. Cover the service plug socket with insulated tape.

- 11. Wait approximately ten (10) minutes for complete discharge of the high voltage capacitor after the service plug has been removed.
- 12. Perform the dismantling operation. Refer to 6. Dismantling Information (DG-39).

3-4.2 Cutting the Vehicle Body

A DANGER

- A Do not cut into high-voltage related areas to avoid severe personal injury or death.
- A Do not cut into the high-voltage battery to avoid severe personal injury or death.
- When removing parts, NEVER touch the high-voltage parts or the insides of the exposed orange-colored high-voltage cables to avoid severe personal injury or death. Appropriate Personal Protective Equipment (PPE) must always be worn when touching or working on high-voltage components.

AWARNING

To avoid unintended reinstallation and risk of electrical shock and severe personal injury or death, the dismantler should carry the fuses or service plug on his/her person while work is in progress.

AWARNING

Do not cut air bag parts to avoid unintended deployment of the air bags and the risk of severe personal injury or death.

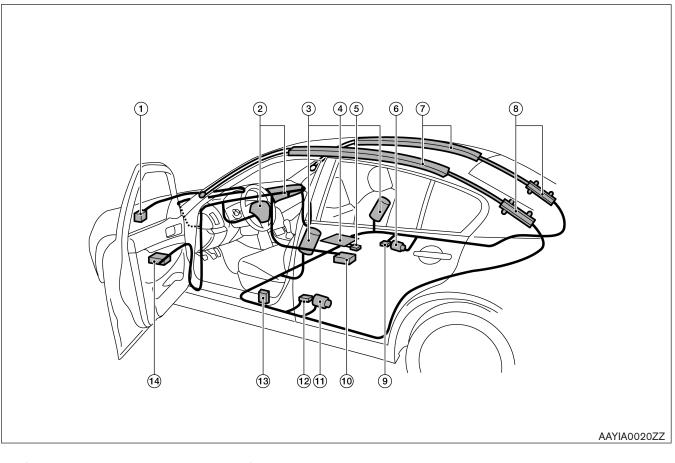
If **approximately (10) minutes** have passed since the dismantler shut down the high voltage system [refer to 3-4.1 High Voltage System Shut-Down Procedure (DG-19)], then the dismantler can cut the vehicle <u>except</u> for the high voltage battery.

DO NOT cut the high voltage battery due to possible electrocution risk and electrolyte solution leakage.

SRS Air Bag System Components Location

The SRS air bag system must not be cut as there is a risk of short circuit and unintentional deployment of the SRS However, the vehicle can be cut (except inflators) under the following conditions:

- The front, side and curtain air bags have deployed.
- At least three (3) minutes have passed after the 12-volt battery negative (-) cable has been disconnected and the high voltage system has been shut down.



1. Crash zone sensor

4. Occupant classification sensor (pattern sensor)

7. Roof-mounted curtain sideimpact supplemental air bags

10. Air bag control unit (ACU)

13. Lap outer pretensioner (if so equipped)

2. Supplemental front air bag modules (Infiniti Advanced Air Bags)

5. Occupant classification system control unit

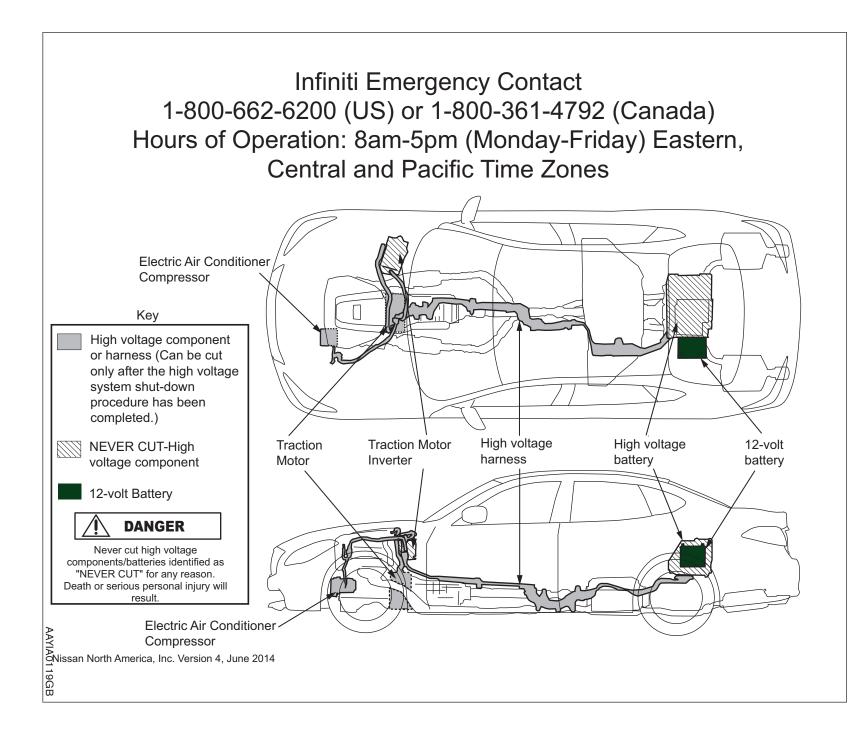
8. Roof-mounted curtain sideimpact supplemental air bag inflators

11. LH seat belt with pretensioner

14. Front door satellite sensor LH (RH similar)

3. Front seat-mounted sideimpact supplemental air bags

- 6. RH seat belt with pretensioner
- 9. RH satellite sensor
- 12. LH Satellite sensor



A DANGER

▲ Damage level of submerged vehicle may not be apparent. Handling a submerged vehicle without appropriate Personal Protective Equipment (PPE) will result in serious injury or death from electrical shock.

AWARNING

- A The ignition switch of the submerged vehicle must be turned OFF first, if possible. Then the vehicle must be completely out of the water and drained to avoid electrical shock.
- Always wear appropriate Personal Protective Equipment (PPE) and remove/drain water before removing the service plug when working on a vehicle after a fire or submersion to avoid electrical shock.
- A If the vehicle is in the water, to avoid electrical shock NEVER touch the high-voltage components, harnesses or service plug. PPE must always be worn when touching or working on high-voltage components.

3-4.4 Vehicle Fire

AWARNING

- Always utilize full Personal Protective Equipment (PPE) and self-contained breathing apparatus during fire fighting operations. Smoke from a Q70 HYBRID vehicle fire is similar to smoke from a conventional vehicle fire.
- In the case of extinguishing a fire with water, large amounts of water from a fire hydrant (if possible) must be used. DO NOT extinguish fire with a small amount of water.

ACAUTION

In the event of a small fire, a Type ABC fire extinguisher may be used for an electrical fire caused by wiring harnesses, electrical components, etc. or oil fire.

In case of vehicle fire, contact fire department immediately and extinguish the fire if possible. If you must walk away from the vehicle, notify an appropriate responder or a rescue person of the fact that the vehicle is a hybrid vehicle that contains a high voltage system and warn all others.

AWARNING

The high-voltage battery contains electrolyte solution. To avoid exposure to electrolyte solution and serious personal injury, always wear appropriate solvent resistant Personal Protective Equipment (PPE) and read the following precautions:

- Electrolyte solution is a skin irritant.
- Electrolyte solution is an eye irritant If contact with eyes, rinse with plenty of water and see a doctor immediately.
- If electrolyte leak occurs, wear appropriate solvent resistant PPE and use a dry cloth to clean up the spilled electrolyte. Be sure to adequately ventilate the area.
- Electrolyte solution is highly flammable.
- Electrolyte liquid or fumes that have come into contact with water vapors in the air will create an oxidized substance. This substance may irritate skin and eyes. In these cases, rinse with plenty of water and see a doctor immediately.
- Electrolyte fumes (when inhaled) can cause respiratory irritation and acute intoxication. Move to fresh air and wash mouth with water. See a doctor immediately.

In cases of battery case breach or electrolyte leakage, contact the fire department immediately. If you must walk away from the vehicle, notify an appropriate responder of the fact that the vehicle is a hybrid vehicle and contains a high voltage system and warn all others.

High Voltage Battery Electrolyte Solution Characteristics:

- Clear in color
- Sweet odor
- Similar viscosity to water
- Since the high voltage battery is made up of many small sealed battery modules, electrolyte solution leakage should be minimal.

NOTE:

Other fluids in the vehicle (such as engine oil, washer fluid, brake fluid, coolant, etc.) are the same as those in a conventional vehicle.

4. Jump Starting

To start the hybrid system with a booster battery, the instructions and precautions below must be followed.

AWARNING

If done incorrectly, jump starting can lead to a 12-volt battery explosion, resulting in severe personal injury or death. It could also damage your vehicle.

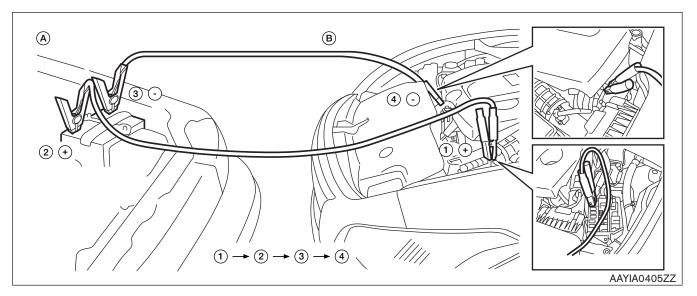
Jump starting provides power to the 12-volt system to allow the electrical systems to operate. The electrical systems must be operating to allow the high voltage battery to be charged. Jump starting does not charge the high voltage battery.

Discharged 12-volt battery may cause the following issues:

- The instrument cluster cannot be displayed while the ignition switch is turned ON. (The hybrid system cannot start.)
- Headlamps, horn, etc. are weak.

AWARNING

- A To avoid electrical shock, the high voltage battery CANNOT be jump started.
- Explosive hydrogen gas is always present in the vicinity of the 12-volt battery. Keep all sparks and flames away from the 12-volt battery. Make sure the vent tube is mounted.
- Do not allow battery fluid to come into contact with eyes, skin, clothing or painted surfaces. Battery fluid is a corrosive sulfuric acid solution that can cause severe burns. If the fluid comes into contact with anything, immediately flush the contacted area with water.
- The booster battery must be rated at 12 volts. Use of an improperly rated battery can damage the vehicle.
- Whenever working on or near a 12-volt battery, always wear suitable eye protectors (for example, goggles or industrial safety spectacles) and remove rings, metal bands, or any other jewelry. Do not lean over the 12-volt battery when jump starting.
- Do not attempt to jump start a frozen battery. It could explode and cause serious injury.
- Q70 HYBRID is equipped with an automatic cooling fan. It could come on at any time. Keep hands and other objects away from it.
- Always follow the jump starting instructions below. Failure to do so could result in damage to the charging system and cause personal injury.



NOTE:

Jumper cable connections under the hood of the Q70 HYBRID are not connected directly to a battery. They are connected to chassis ground and a fuse box terminal. Refer to the following instructions and the above illustration.

1. If the booster battery is in another vehicle (A), position the two vehicles (A) and (B) to bring the battery of booster vehicle (A) and the fuse box of jumped vehicle (B) into close proximity to each other.

DO NOT allow the two vehicles to touch.

- 2. Apply the parking brake. Move the selector lever the P (Park) position. Switch off all unnecessary electrical systems (headlights, heater, air conditioner, etc.).
- 3. Place the ignition switch in the "OFF" position.

ACAUTION

- Always connect positive (+) to positive (+) and negative (-) to body ground (for example, as illustrated), not to the 12-volt battery.
- Make sure the jumper cables do not touch moving parts in the engine compartment and that the cable clamps do not contact any other metal.
- If the hybrid system does not start right away, push the ignition switch to the OFF position and wait ten (10) seconds before trying again.
 - 4. Connect the jumper cables in the sequence as illustrated [(1), (2), (3), (4)].
 - 5. Start the engine of the booster vehicle (A) and let it run for a few minutes.
 - 6. Start the hybrid system of the jumped vehicle (B) in the normal manner.
 - 7. After the hybrid system is started, carefully disconnect the jumper cables in the opposite sequence from that illustrated [(4), (3), (2), (1)].

NOTE:

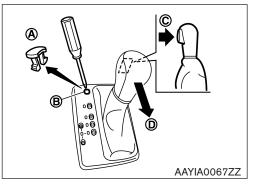
If it is not possible to turn the hybrid system ON by following this procedure, it is recommended you contact an INFINITI retailer immediately.

8. Put the fuse cover and the engine compartment cover back to the original location.

4-2 Shift Selector Lever Lock Release

If the 12-volt battery is low or discharged, the selector lever cannot be moved from the Park (P) position. If a booster battery is not available, the selector lever lock can be manually released. To manually release the selector lever lock, perform the following procedure:

- 1. Push the ignition switch to the LOCK or OFF position.
- 2. Apply the parking brake.
- 3. Remove the shift lock cover (A) using a suitable tool.
- 4. Push down the shift lock (B) as shown in the illustration.
- 5. Push the selector lever button (C) and move the selector lever to the Neutral (N) position (D) while holding down the shift lock.



5. Storing the Vehicle

AWARNING

The service plug must be removed to shut down the high-voltage system for storage.

Do not store a vehicle inside a structure. Keep the vehicle away from other vehicles if the high-voltage battery is severely damaged. There is possibility of delayed fire from a severely damaged high-voltage battery.

If the Q70 HYBRID needs to be stored or left unattended, the high voltage system must be shut down by removing the service plug [refer to Alternate Procedure 2 (Remove Service Plug) (DG-26)] and a sign put on the vehicle indicating it is a hybrid vehicle with high voltage dangers. For example:

HIGH VOLTAGE REPAIR SSJADAD IHOUT TON OD :901610 II 002199

IN PROGRESS.

Person in charge:_____

Copy this page and put it after folding on the roof of the vehicle in service.

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6. Dismantling Information

Removal or repair of the high voltage battery requires special tools and specific training. Infiniti strongly recommends that only certified INFINITI retailer technicians perform these operations.

6-1 Precautions for Handling High Voltage Battery

A DANGER

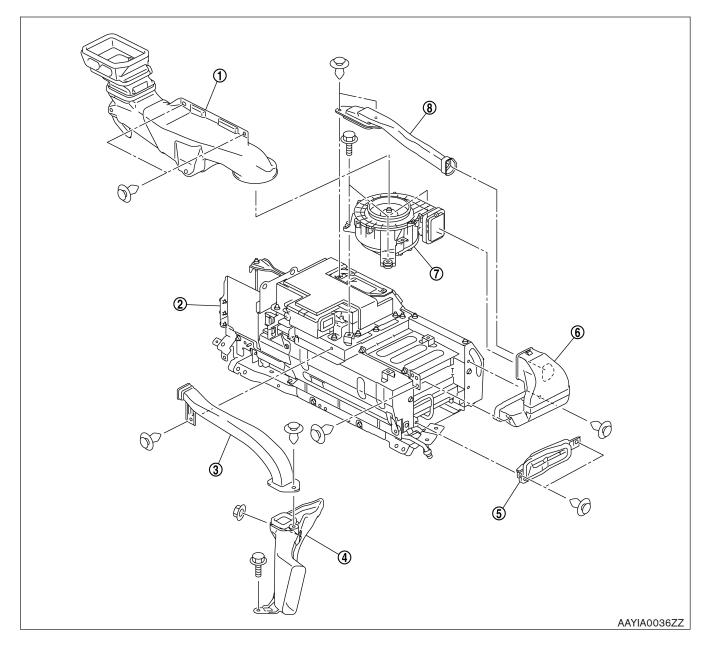
- A Because Q70 HYBRID contains a high voltage battery, there is the risk of electric shock, electric leakage, or similar accidents if the high voltage components or vehicle is handled incorrectly. Be sure to follow the correct work procedures when performing inspection and dismantling.
- A If it is necessary to touch any of the high voltage harnesses or components you must always wear appropriate Personal Protective Equipment (PPE) and properly shut-down the high voltage system by removing the service plug.
- A Be sure to always wear appropriate PPE before beginning work on the high voltage system.
- A Be sure to remove the service plug in order to shut-down the high voltage system before performing inspection or dismantling of high voltage system harnesses and parts.
- A If the vehicle is heavily damaged, for example the high voltage battery is deformed, broken, or cracked; appropriate PPE must always be used at all times to avoid electrical shock.

AWARNING

- A The colors of the high-voltage harnesses and connectors are all orange. Orange "highvoltage" labels are applied to the high-voltage battery and other high-voltage devices. Do not touch the high-voltage battery or other high-voltage devices without always wearing appropriate PPE.
- A Clearly identify the persons responsible for high-voltage work and ensure that other persons do not touch the vehicle. When not working, cover high-voltage parts with an insulating cover sheet and sign or similar item to prevent other persons from contacting them.
- A Be sure to put the removed service plug in your pocket and carry it with you so another person does not accidentally reinstall it while work is in progress.
- A The high-voltage battery retains high-voltage at all times. Appropriate Personal Protective Equipment (PPE) must always be worn when touching or working on high-voltage components to avoid risk of electrical shock and severe personal injury or death.
- A Immediately insulate disconnected high-voltage connectors and terminals with insulated tape.
- A The vehicle contains parts that contain powerful magnets. If a person who is wearing a pacemaker or other medical device is close to these parts, the medical device may be affected by the magnets. Such persons must not perform work on the vehicle.
- A Because this vehicle uses components that contain high-voltage and powerful magnetism, do not carry any metal products which may cause short circuits, or any magnetic media (cash cards, credit cards, etc.) which may be damaged when working on the vehicle.
- A Keep removed high-voltage battery packs away from rain to avoid electric shock.
- Do not heat removed battery packs higher than 158° F (70° C).

6-2 High Voltage Battery Pack Removal

6-2.1 Exploded View



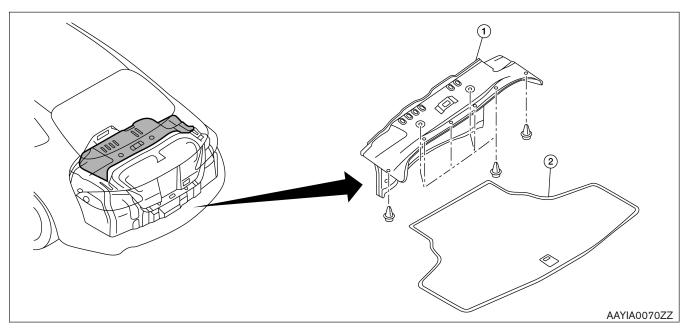
- 1. Battery inlet duct A
- 4. Battery outlet duct B
- 7. Battery cooling fan
- 2. High Voltage battery assembly
 5. Battery outlet duct A

8. DC/DC converter inlet duct

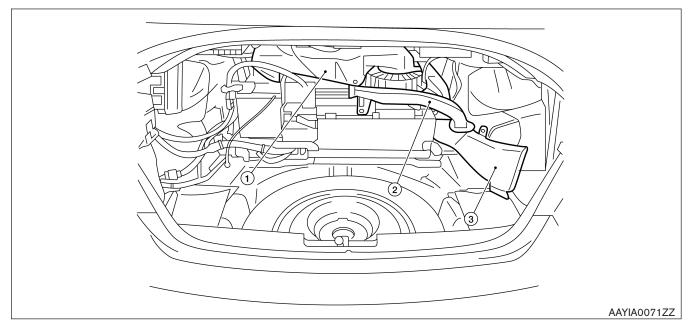
- 3. DC/DC converter outlet duct
- 6. Battery inlet duct B

- 6-2.2 Removal Procedure
 - 1. Discharge high voltage battery. Refer to 3-3 Discharge Procedures (DG-18).
 - 2. Remove the service plug. Refer to Alternate Procedure 2 (Remove Service Plug) (DG-26).
 - 3. Insert an appropriate tool into the gap between the trunk lamp case and front trunk trim panel to remove the trunk lamp case.
 - 4. Disconnect the trunk lamp harness connector.
 - 5. Remove the trunk lid weather strip.
 - 6. Remove the front trunk trim retainer clips.

7. Remove the front trunk trim panel (1) and remove the trunk floor trim panel (2).



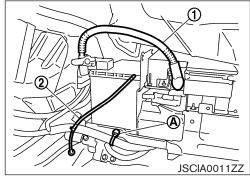
Remove the battery inlet duct A (1), DC/DC converter outlet duct (2) and battery outlet duct B (3).



9. Remove the DC/DC harness (1), the 12-volt battery vent tube (2) and the high voltage harness clip (A).

ACAUTION

Grip the tip of the tube to remove the 12-volt battery vent tube.



- 10. Remove cover on 12-volt battery positive terminal.
- 11. Remove the mounting bolts (A) and then remove the 12-volt battery cover (1).

(1)

0

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12. Remove 12-volt battery by removing the negative battery cable (1), positive battery cable (2) and frame (3).

ACAUTION

To prevent damage to the parts:

a) Disconnect the negative battery cable first

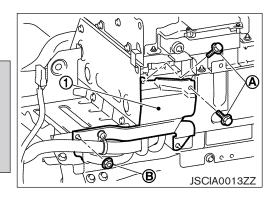
b) Immediately cover the battery cables with insulated tape.

13. Remove the terminal cover bolts (A) and nut (B), then remove the terminal cover (1).

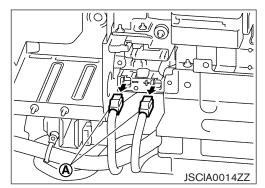
A DANGER

Touching high-voltage components without wearing appropriate Personal Protective Equipment (PPE) will cause electrocution.

 Disconnect the high voltage harness connectors (A). Touching high voltage components without wearing appropriate personal protective equipment (PPE) will cause electrocution.



HН



A DANGER

- A Touching high voltage components without wearing appropriate Personal Protective Equipment (PPE) will cause electrocution.
- Immediately cover the terminals of the disconnected high voltage harness connectors using insulated tape so that they are not exposed.
- A Immediately protect the terminals of the disconnected battery junction box using insulated tape so that they are not exposed.
- 15. Grasp the rubber base of the gas discharge tube (1) and remove from the vehicle-side discharge port (body member).

A DANGER

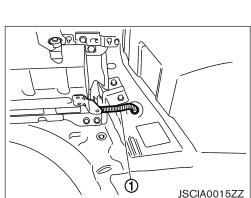
Touching high-voltage components without wearing appropriate Personal Protective Equipment (PPE) will cause electrocution.

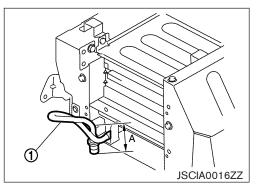
16. Hook approximately 15mm (A) from the end of the gas discharge tube (1) onto the tube base on the battery and check that the flange on the end of the tube does not come off from the tube base.

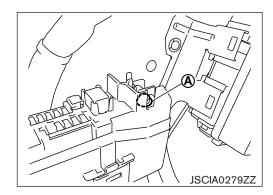
A DANGER

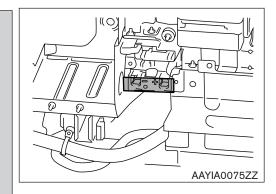
Touching high-voltage components without wearing appropriate Personal Protective Equipment (PPE) will cause electrocution.

17. Remove the mounting nut (A) and then disconnect the harness from the fuse box on the left side of the trunk room.









18. Disconnect the capacitor harness connector (A) and remove the ground cable mounting bolts (B).

: Vehicle front

19. Disconnect the high voltage harness connector (A) and harness connector (B).

: Vehicle front

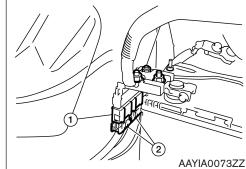
A DANGER

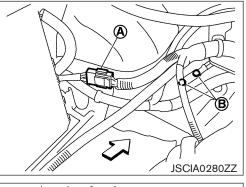
Touching high-voltage components without wearing appropriate Personal Protective Equipment (PPE) will cause electrocution.

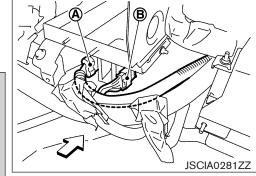
A DANGER

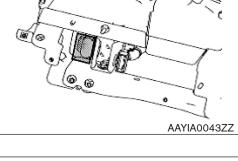
Immediately protect the terminals of the disconnected high-voltage harness connector socket using insulated tape so that they are not exposed.

20. Disconnect the fusible link connectors (2) that are integrated with the 12-volt positive battery cable (1).

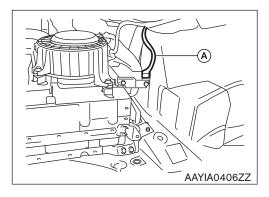




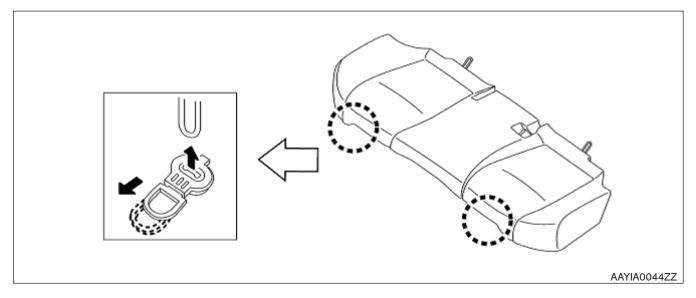




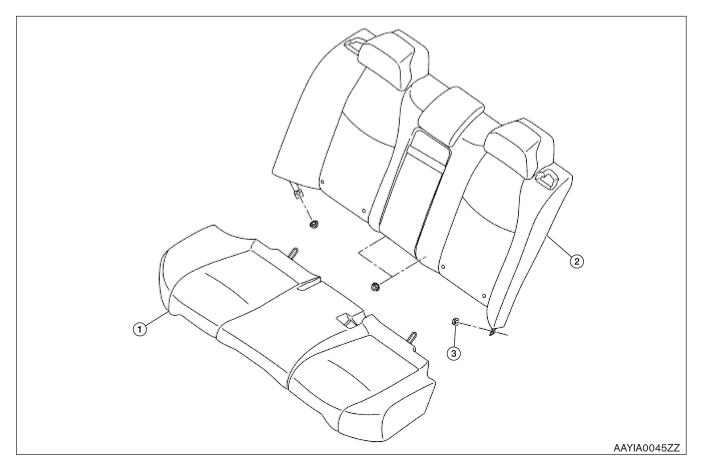
- 21. Disconnect the atmospheric pressure sensor harness connector (A).
- 22. Disconnect the high voltage battery cooling fan motor harness connector.



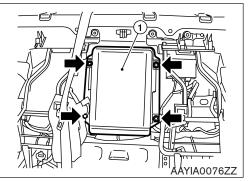
23. Release the two rear seat cushion retainers.



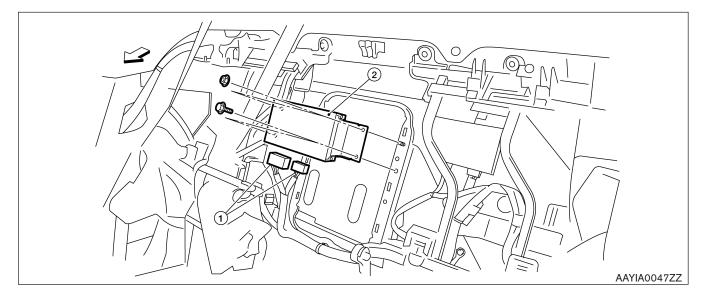
24. Lift up and pull out the rear seat cushion (1) and then remove the rear seat back nuts (3). Lift up the rear seat back (2) and remove it.



25. Remove the 4 clips (\blacksquare) and the HPCM cover (1).



26. Disconnect the HPCM harness connectors (1), and remove the HPCM mounting bolts, nuts and then the HPCM (2).

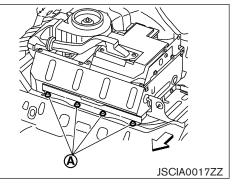


27. Remove the high voltage battery pack mounting bolts (A) from the passenger compartment side.

: Vehicle front

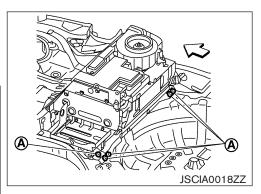
A DANGER

Touching high-voltage components without wearing appropriate Personal Protective Equipment (PPE) will cause electrocution.



NOTE:

It is possible to access the mounting bolts (1) when the noise insulation sheet that is attached to the body panel behind the rear seat back is removed. JSCIA0022ZZ



28. Remove the high voltage battery pack mounting bolts (A) from the trunk side.

C : Vehicle front

A DANGER

Touching high-voltage components without wearing appropriate Personal Protective Equipment (PPE) will cause electrocution. 29. Place a plywood panel (A) on top of the spare tire, then lift the high voltage battery pack upwards (1) and slide a cardboard panel (B) underneath it (2).

A DANGER

Touching high-voltage components without wearing appropriate Personal Protective Equipment (PPE) will cause electrocution.

30. Pull the cardboard (A) together with the high voltage battery pack (1) toward the rear of the vehicle.

A DANGER

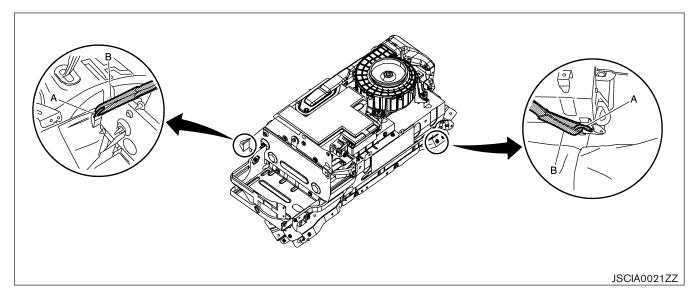
Touching high-voltage components without wearing appropriate Personal Protective Equipment (PPE) will cause electrocution.

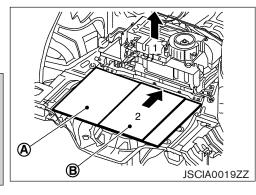
31. Follow the procedure below to remove the high voltage battery pack from the trunk room.

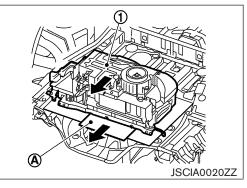
A DANGER

Touching high-voltage components without wearing appropriate Personal Protective Equipment (PPE) will cause electrocution.

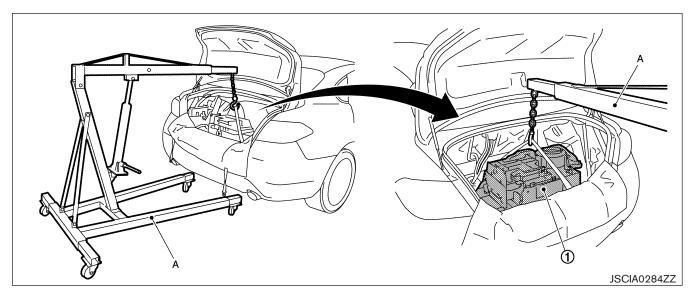
a. Attach carabiners (A) in the positions as shown in the figure, and then connect a slinger (B) to them.





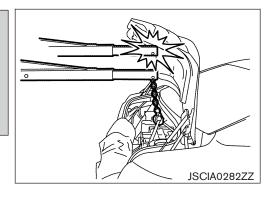


b. Using an engine crane (A) to lift up the high voltage battery pack (1) and remove it from the trunk room.



ACAUTION

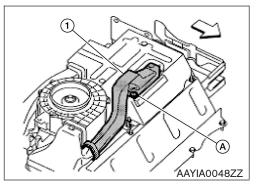
- Be careful that the engine crane does not contact the trunk lid.
- Apply protection so that no scratches or other damage occurs on the vehicle body or trunk lid.



- 32. Remove the DC/DC outlet duct, battery outlet duct B, and battery inlet duct A.
- Remove the DC/DC inlet duct. Clip (A) is not visible because it is located on the reverse side of the DC/DC inlet duct (1). Remove as shown in the figure.

A DANGER

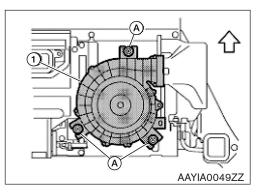
Touching high-voltage components without wearing appropriate Personal Protective Equipment (PPE) will cause electrocution.



34. Remove the battery cooling fan mounting bolts (A) and remove the battery cooling fan (1).

A DANGER

Touching high-voltage components without wearing appropriate Personal Protective Equipment (PPE) will cause electrocution.



35. Confirm that the insulated tape is still securely in place on the high voltage battery pack as shown in the figure.



36. Dismantling the remainder of the Q70 HYBRID may be performed like conventional Infiniti vehicles once the high voltage system is properly shut down and discharged.

6-3 High Voltage Battery Recycling

The high voltage battery is recyclable. For information regarding recycling of the high voltage battery, it is recommended you contact the nearest INFINITI retailer or Infiniti Consumer Affairs at: United States: 1-800-662-6200 or in Canada: 1-800-361-4792.



 $I \quad N \quad F \quad I \quad N \quad I \quad T \quad I_{\circ}$

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