



2018 e-NV200

First Responder's Guide



zero Emission

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FOREWORD

Foreword

This manual describes **first response** operations and related warnings and cautions for this vehicle. This vehicle is an electrically driven vehicle equipped with a high voltage battery pack. **Failure to follow recommended practices during emergency responses may cause death or serious personal injury.**

Please read this manual in advance in order to understand the features of this vehicle and to help you deal with **first response** operations in which this vehicle is involved. Follow the procedures in order to help assure a safe and successful **first response** operations.

This manual is periodically updated. If you are not sure you are viewing the most recent version of this manual, we urge you to contact Nissan Customer Services.

IMPORTANT INFORMATION ABOUT THIS MANUAL

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

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.

WARNING

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

CAUTION

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.

1. About the NISSAN e-NV200

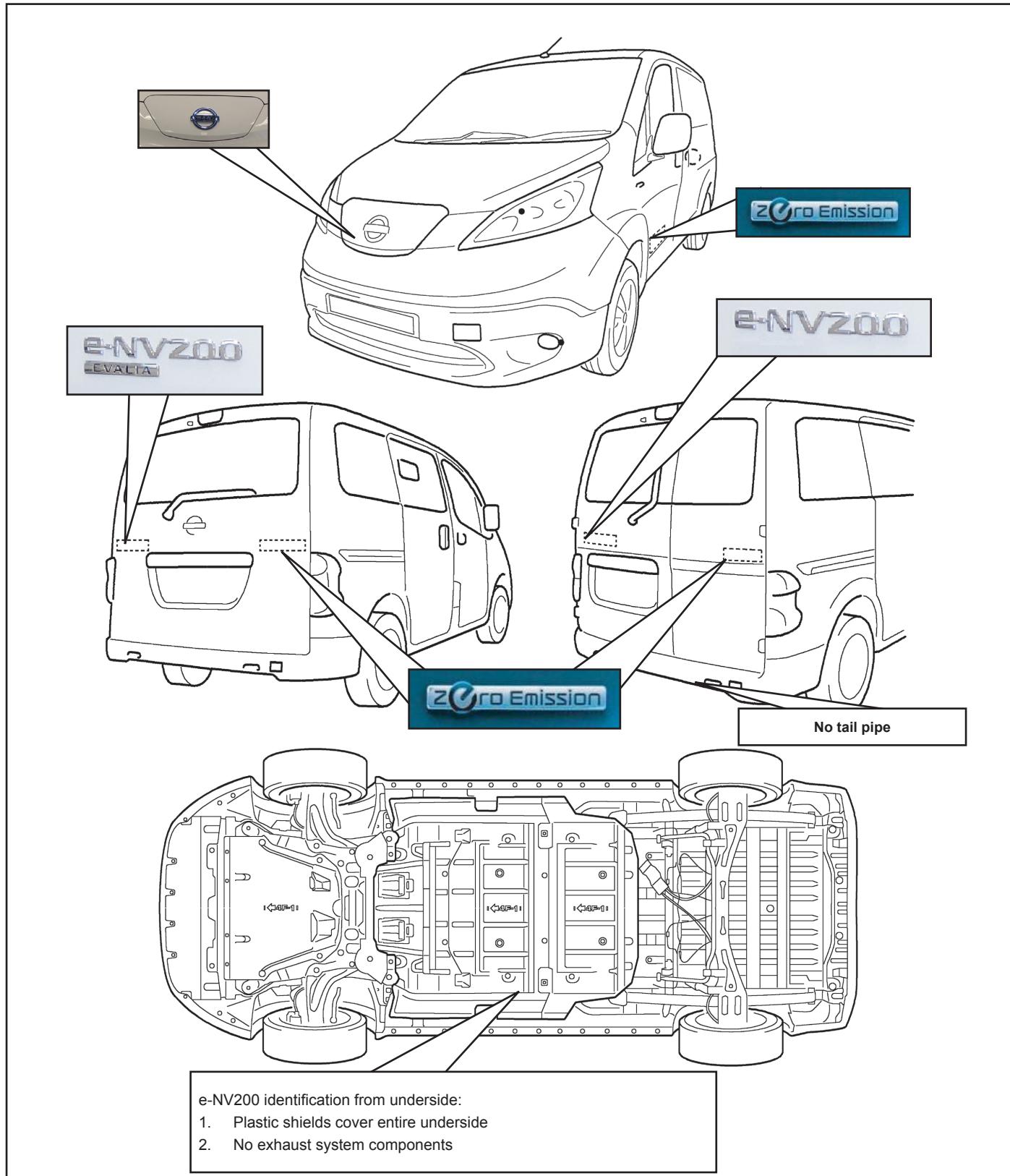
This vehicle uses two types of batteries. One is a 12V battery that is of the same type as the battery in vehicles powered by internal combustion engines. The other is the Lithium-ion (Li-ion) battery (high voltage) for the traction motor which propels the vehicle. The Li-ion battery is encased in steel and mounted underneath the vehicle.

The vehicle must be plugged-in in order for the Li-ion battery to be recharged. Additionally, the vehicle system can recharge the Li-ion battery by converting driving force into electricity while the vehicle is decelerating or while being driven downhill. This is called regenerative charging. This vehicle is considered to be an environmentally friendly vehicle because it does not emit any exhaust gases.

1.1. e-NV200 Identification

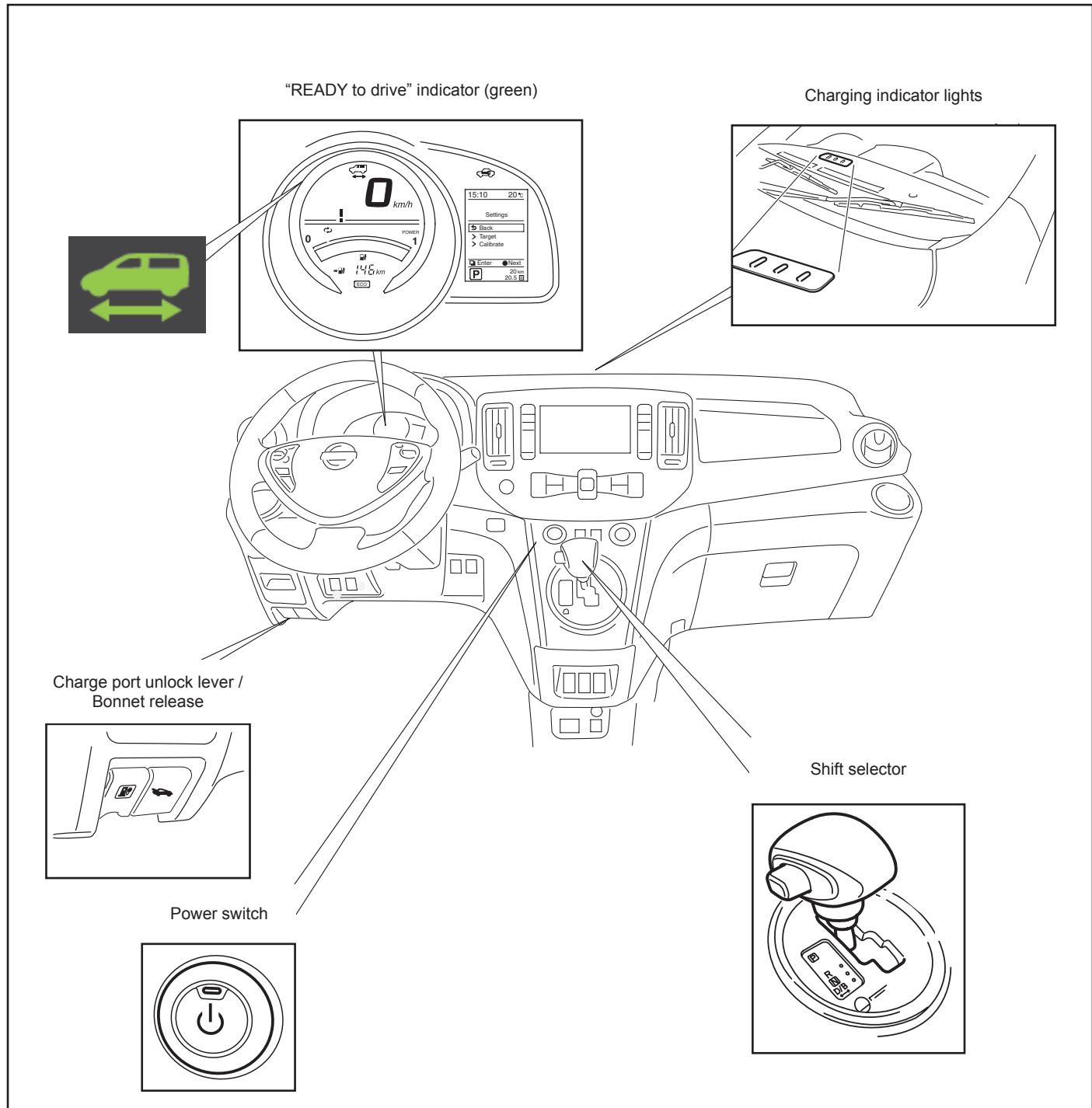
1.1.1. Exterior

The specific exterior identification features are indicated as follows:



1.1.2. Interior Component Location

Interior components referenced in this manual are as follows:



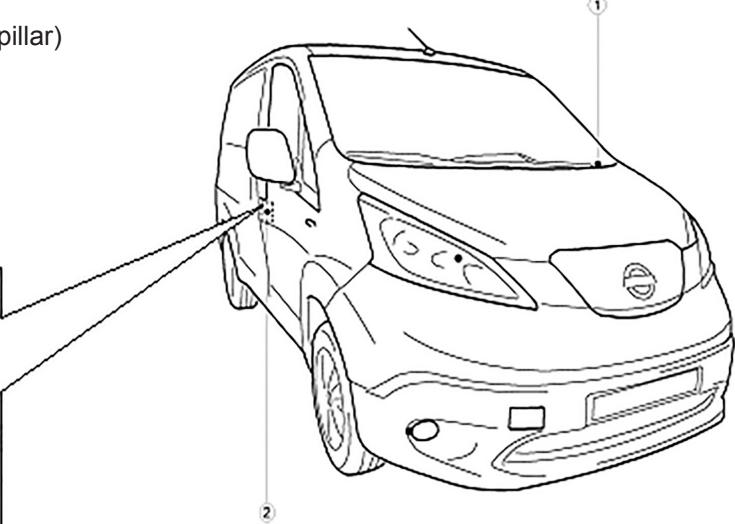
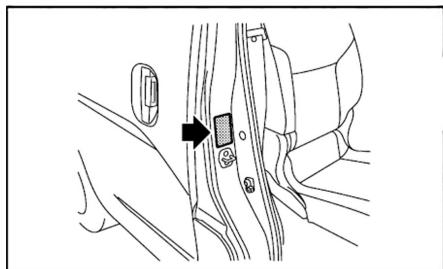
1.2. Vehicle Identification Number (VIN) Layout

The vehicle identification number can be located as follows:

Example VIN: VSKYAAAME0U0123456

The e-NV200 is identified by the 7th, 8th and 9th alphanumeric characters: ME0.

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



1.3. Warning and Indicator Light Information

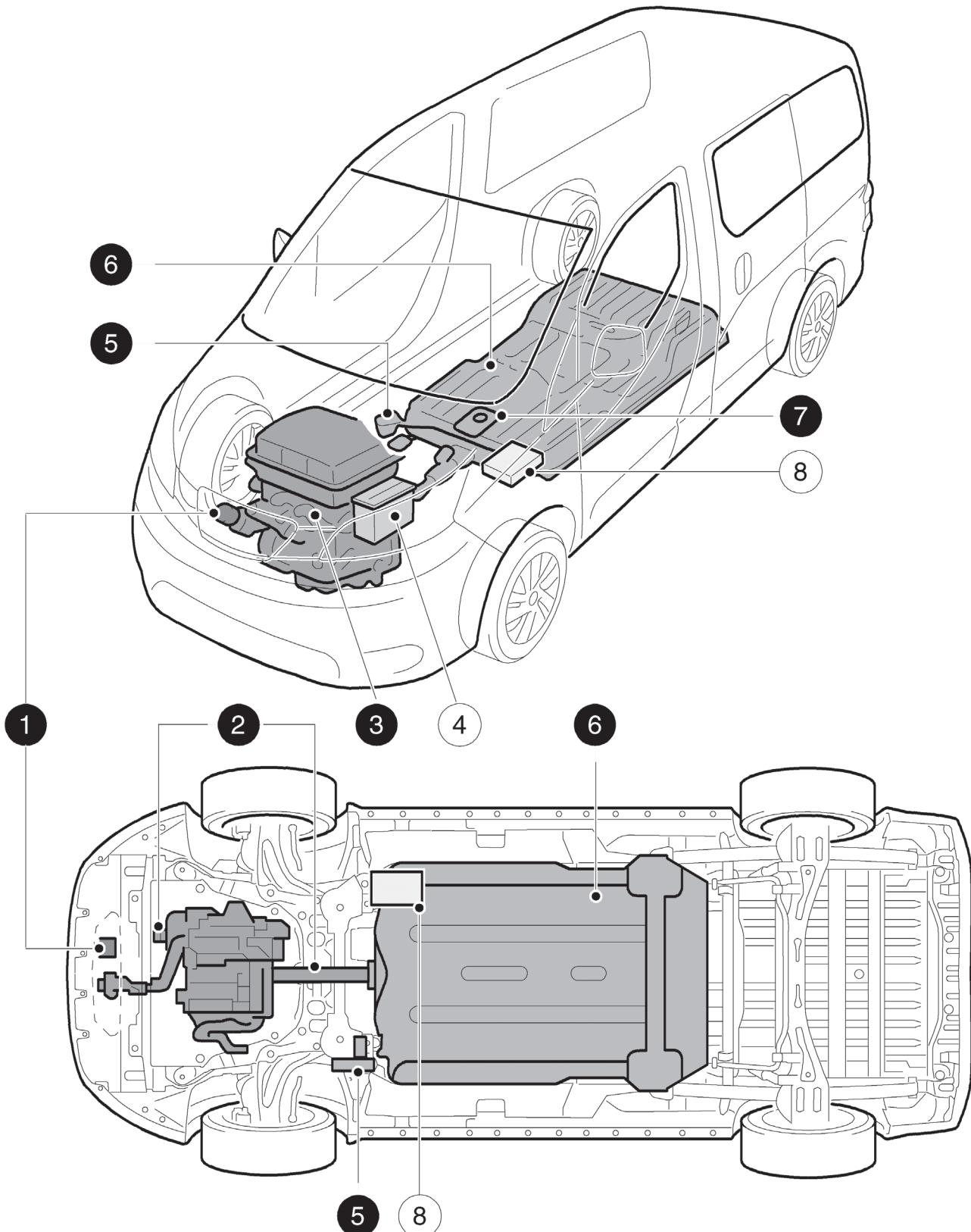
The following warning and indicator lights are located in the instrument cluster.

| Light Name | Icon | Description |
|----------------------------|------|--|
| READY to drive indicator | | This light is on when the EV system is powered up and the vehicle is ready to drive |
| EV System Warning Light *1 | | <ul style="list-style-type: none"> • Malfunction has occurred in the EV system and/or • Emergency shut-off system has been activated. The shut-off system activates in the following conditions: <ul style="list-style-type: none"> - Front and side collisions in which the air bags are deployed. - Certain rear collisions. - Certain EV system malfunctions. |

*1: When this light is ON, the READY to drive indicator will turn OFF.

2. Basic High Voltage System and 12V System Information

2.1. High Voltage-Related and 12V-Related Component Locations and descriptions



NOTE:

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

2. BASIC HIGH VOLTAGE SYSTEM AND 12V SYSTEM INFORMATION

| No. | Component | Location | Description |
|-----|--|---|--|
| 1 | Charge port | Under bonnet | Connecting port for EVSE (Electric Vehicle Supply Equipment). Two ports are available: Normal charge and quick charge (where fitted). |
| 2 | High voltage cables | Under bonnet and undercarriage | Orange-coloured power cables carry high voltage current between each of the high voltage components. |
| 3 | Traction motor | Under bonnet | Converts three-phase AC power to drive power (torque) which propels the vehicle. |
| | Traction motor inverter | Under bonnet | Converts the DC power stored in the Li-ion battery to three-phase AC power and controls motor torque (revolution) by regulating the motor current. It also converts three-phase AC power to DC power during regenerative braking. |
| | Electric air conditioner compressor | Under bonnet | Air conditioner compressor. |
| | Power Distribution Module (PDM): <ul style="list-style-type: none">• On Board Charger• DC/DC Converter• High Voltage Junction Box (J/B) | Under bonnet | The PDM includes an On Board Charger, DC/DC converter and high voltage junction box (J/B). <ul style="list-style-type: none">• The On Board Charger converts single-phase AC power from a home power outlet to DC power and increases the voltage in order to charge the Li-ion battery.• The DC/DC converter reduces the voltage of the Li-ion battery to provide power to the 12V battery in order to operate the vehicle's electric components (headlights, audio system, etc.).• The J/B provides electric power from the Li-ion battery to all high voltage parts of the vehicle. |
| 4 | 12V Battery | Under bonnet | A lead-acid battery that supplies power to the low voltage devices. |
| 5 | Cabin heater | Interior (this unit is installed behind the instrument panel) | This is the electric heat source for the cabin heater. It heats the interior of the vehicle. |
| 6 | Li-ion (Lithium ion) battery | Undercarriage | Stores and outputs DC power (Maximum voltage approx. 400V) needed to propel the vehicle. |
| 7 | High voltage battery service disconnect | Centre console | Isolates the battery from the rest of the high voltage electrical system. |
| 8 | Brake power supply backup unit | Front seat floor (this unit is installed behind a trim panel to prevent access) | Power supply backup unit for the brake system. It supplies power to the brake system if a malfunction occurs in the 12V battery. |

2. BASIC HIGH VOLTAGE SYSTEM AND 12V SYSTEM INFORMATION

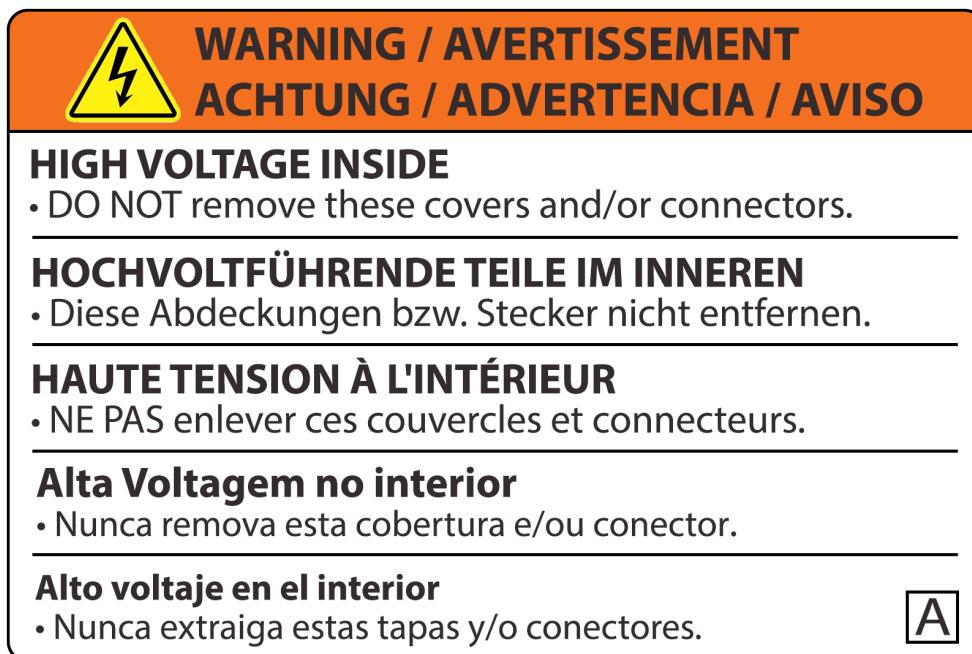
2.1.1. Li-ion Battery Pack Specifications

| | |
|--|--|
| Li-ion battery voltage | 360V Nominal (240V - 400V usable range) |
| Number of Li-ion battery modules in the pack | 48 |
| Li-ion battery dimensions | 1578 x 1102 x 266 mm (62.1 x 43.4 x 10.5 in.) |
| Li-ion battery weight | 263 - 290 kg (580 - 639 lbs) |

2.2. 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-coloured 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 emergency responders from high voltage electrical shock. |
| Identification | The high voltage components are labeled "WARNING" similar to label. |

2.2.1. Warning Label



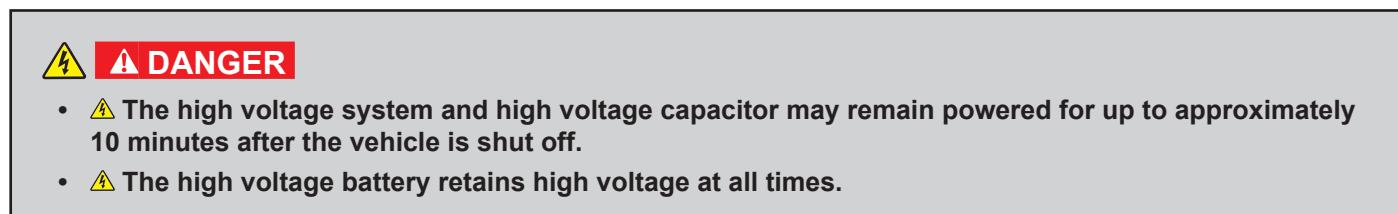
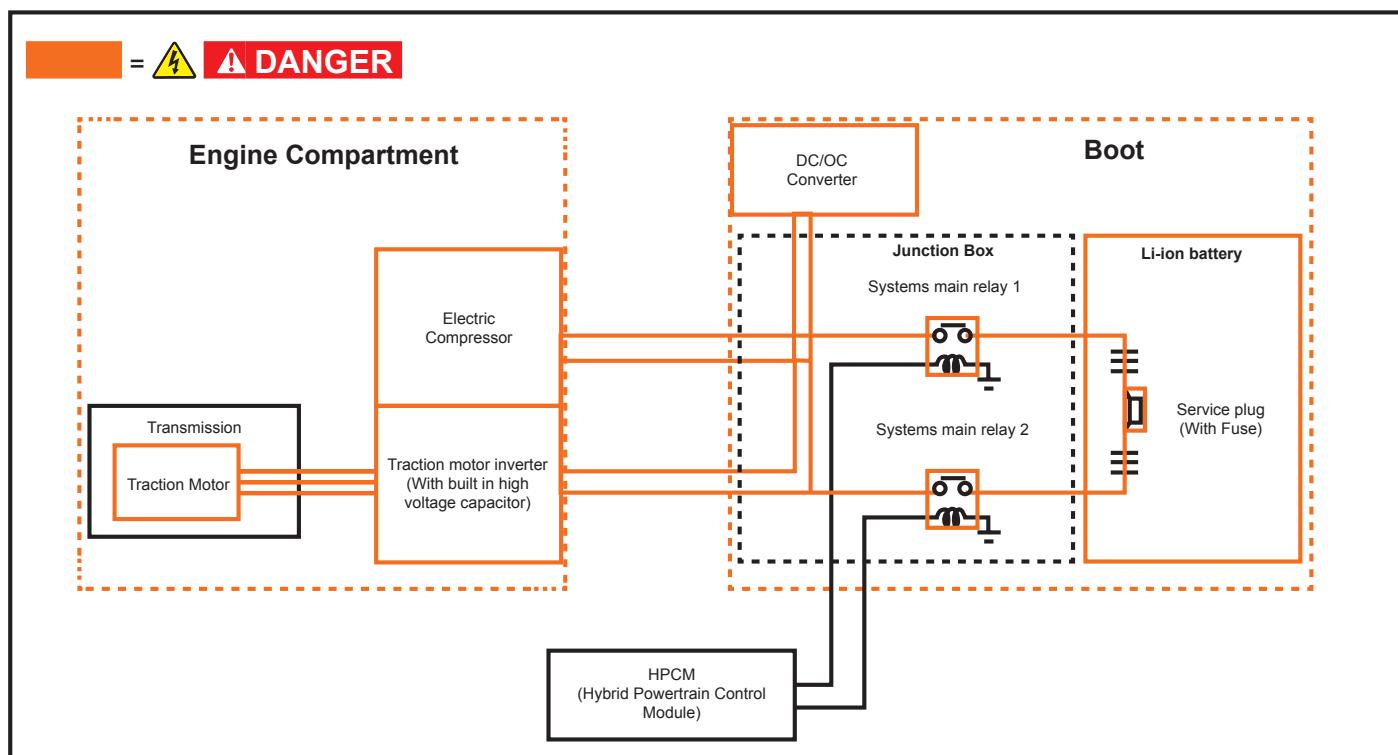
2.3. High Voltage Safety System

NOTE:

The block diagram shown in this paragraph is intended just as an example to understand the High Voltage Safety System. Component locations differ by Electric Vehicle type. Refer to the table in [2.1. High Voltage-Related and 12V-Related Component Locations and descriptions](#) for the actual location of system components for the e-NV200 vehicle.

The high voltage safety system is intended to 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 interrupt the electrical flow from the high voltage battery. However, it can take approximately (10) minutes for the high voltage capacitor to fully discharge.



- A ground fault monitor continuously monitors for any 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 light in the instrument cluster.
- The high voltage battery relays (SMR1 and SMR2) will automatically open to stop the electrical flow in a frontal collision that is severe enough to activate the supplemental restraint system (SRS).

2. BASIC HIGH VOLTAGE SYSTEM AND 12V SYSTEM INFORMATION

2.4. High Voltage Circuit Shut-Off System

The high voltage can be shut off by the following methods:

| | |
|---------------------------|--|
| Service plug | Positioned in the centre console of the vehicle. This interrupts the high voltage output. |
| System main relay | Controlled by the power switch, this relay, which is controlled by the 12V system, shuts off the high voltage from the Li-ion battery. |
| Emergency shut-off system | In the case of a collision (front and side collisions in which the air bags are deployed, certain rear collisions) or certain system malfunctions this system may shut off the high voltage from the Li-ion battery. |
| Charging connector | Some of the high voltage components are activated during charging. Remove the charging connector to deactivate these components. |

2.5. Preventing Electrical Shock

1. If it is necessary to touch any of the high voltage harnesses or components, you must always wear appropriate Personal Protective Equipment (PPE) (refer to [3.1. Preparation Items](#)) and shut off the high voltage system by referring to [3.3.2. High Voltage System Shut-Down Procedures](#).
2. To avoid the risk of electrocution, NEVER touch the inside of the Li-ion battery with bare hands even after shutting off the high voltage system. The Li-ion battery maintains charge even though the high voltage system is shut down.
3. Cover any damaged high voltage components with insulated tape.

2.6. Emergency Medical Equipment

The high voltage system should not interfere with emergency medical equipment which must be used in or near the vehicle at an accident scene.

3. Emergency Response Steps

DANGER

-  Failure to properly shut down the high voltage electrical system before the Emergency Response 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).
-  If it is necessary to touch any of the high voltage harnesses or components you must always wear appropriate Personal Protective Equipment (PPE) to avoid electrical shock. Shut down the high voltage system by following the steps outlined in section 3.3.2. High Voltage System Shut-Down Procedures. Wait at least ten (10) minutes for complete discharge of the high voltage capacitor after the high voltage system has been shut down.

WARNING

-  NEVER assume the e-NV200 is shut OFF simply because it is quiet.
-  If the READY to drive  indicator or charging indicator are ON, the high voltage system is active.
-  If possible, be sure to verify that the READY to drive  indicator on the instrument cluster is OFF and the high voltage system is stopped.
- Some of the under bonnet parts get hot and may cause serious burns. Use caution when working on or around these parts.

3. EMERGENCY RESPONSE STEPS

3.1. Preparation Items

| Preparation Items | Specification | Purpose |
|---|---|--|
| Personal Protective Equipment (PPE) | Up to 1000V | |
| Insulated gloves:  | Removing and installing high voltage components comply with EN60903: <ul style="list-style-type: none"> • Use protective gloves made of insulating material. • The protective gloves must be capable of resisting the voltage of 1000V or more. | For protection from high voltage electrical shock. |
| Insulated shoes:  | Removing and installing high voltage components comply with EN60903: <ul style="list-style-type: none"> • Use insulated shoes made of insulating material. • The insulated shoes must be capable of resisting the voltage of 1000V or more. | |
| Safety shield/safety glasses:   | Removing and installing high voltage components comply with EN166: <ul style="list-style-type: none"> • To protect face from the spatter, when working on the electric line. | |
| Wrenches  | Size:10mm | To remove the service plug access cover bolts. To remove the 12V battery terminal bolt. |
| Solvent resistant protection gloves | - | To utilize in the event of a Li-ion battery electrolytic solution leak. |
| Solvent resistant protection shoes | - | |
| Absorbent pad | The same pad used for internal combustion engine fluids can be used. | To absorb any Li-ion battery electrolytic solution leakage. |
| Standard firefighting equipment | Depending on type of fire (vehicle or battery) use standard firefighting equipment. | 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. EMERGENCY RESPONSE STEPS

3.1.1. 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.

3.1.2. Daily Inspection

This inspection is performed before and after use. The responder 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)

3.1.3. Insulated Tools

When performing work at locations where high voltage is applied (such as terminals), use insulated tools meeting 1000V/300A specifications.

3. EMERGENCY RESPONSE STEPS

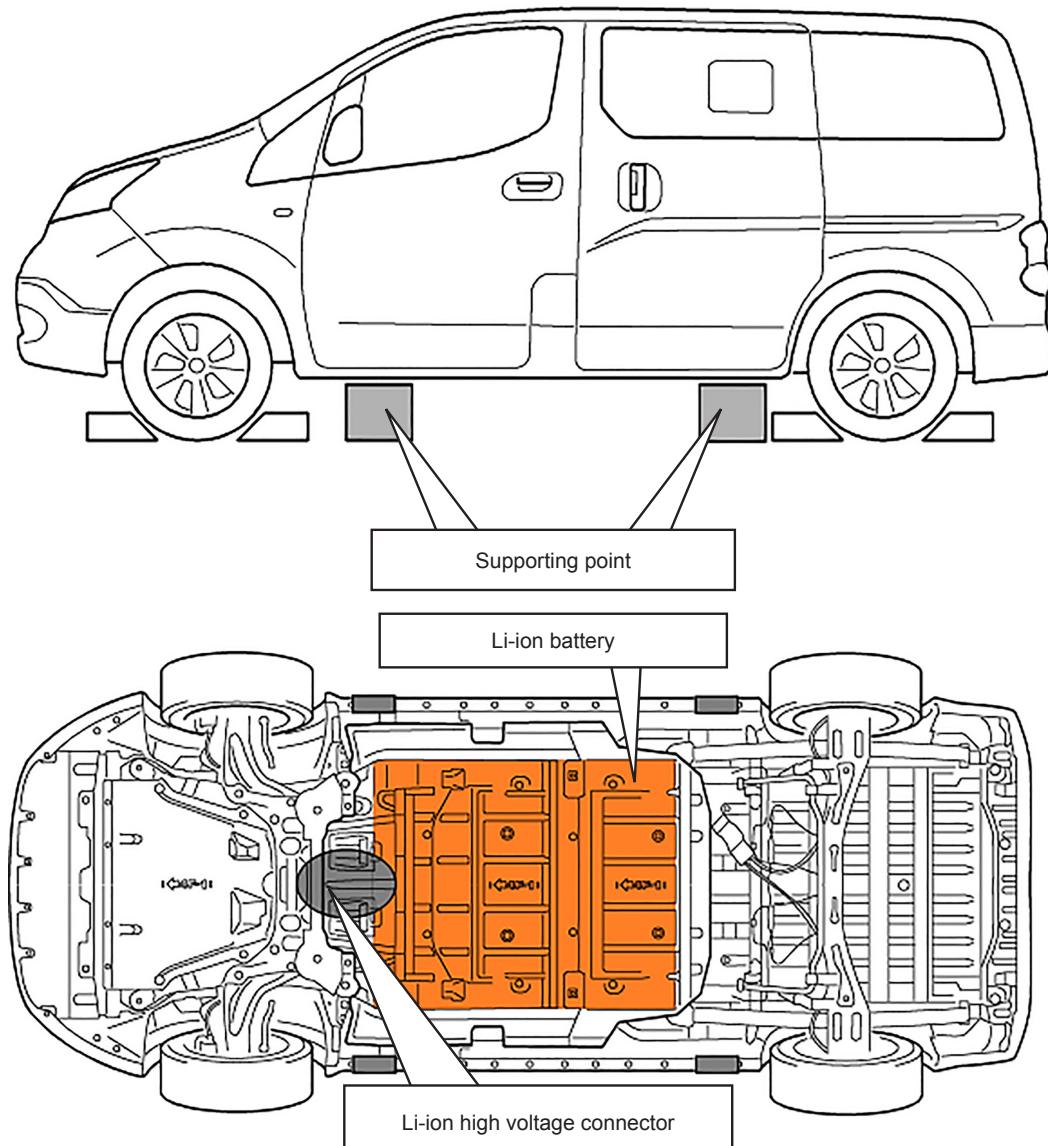
3.2. Vehicle Immobilization and Stabilization

If possible, immobilize the vehicle by turning the 12V system OFF and stabilize it with wheel chock(s). Stabilize the vehicle with cribbing, by removing air from the tyres, or utilize the Lift Airbag Equipment for rescue.

⚠ WARNING

- Do not stabilize the vehicle with cribbing under the Li-ion battery.
- To avoid electrical shock:
 - Do not put wheel chock(s) under the high voltage components and harnesses.
 - Do not put lift Airbag for rescue under the high voltage harnesses and connector of Li-ion battery.
 - Do not put any equipments for rescue under the high voltage components and harness when inside of high voltage components or harnesses are exposed.

= ⚠ DANGER



3. EMERGENCY RESPONSE STEPS

3.3. How to Handle a Damaged Vehicle at an Accident Scene

NOTE:

If any air bags have deployed in the following 3 situations, the high-voltage (HV) system has been automatically shut off at the time of deployment.

The NISSAN e-NV200 high voltage system incorporates capacitors which are energized whenever the high-voltage system is on. If the high-voltage system is shut down (either through one of the built-in automatic mechanisms or manually through one of the procedures explained in this FRG), the capacitors will begin to gradually discharge. After 5 minutes, the voltage level will have dropped below 60V, and **complete discharge requires approximately 10 minutes after high-voltage system shut down**. It is within this period of time that responders must be most cautious.

When arriving to an incident involving a NISSAN e-NV200, the vehicle should be approached with caution and inspected for the level of damage. In addition to overall vehicle condition (location and severity of body damage, air bag deployment, etc.), the high-voltage system should be assessed specifically. The locations of the high-voltage component parts are illustrated in this FRG. Refer to section [2.1. High Voltage-Related and 12V-Related Component Locations and descriptions](#). Appropriate Personal Protective Equipment (PPE) must always be worn when approaching a vehicle of unknown condition, as described in this FRG.

3.3.1. High voltage (HV) and PPE

Situation 1) High voltage system intact, occupants can be accessed without extrication tools

The HV system can be shut down by following the procedures in this guide, while wearing appropriate Personal Protective Equipment (PPE). After HV system shut down, occupant assistance can start immediately, and no waiting period is necessary.

Situation 2) High voltage system intact, occupants cannot be accessed without extrication tools

The HV system can be shut down by following the procedure in this guide, while wearing appropriate Personal Protective Equipment (PPE). After HV system shut down, absolute care must be taken not to cut through or damage any HV system wiring, battery or components within **ten (10) minutes of HV system shut down**, but occupant assistance operations using extrication equipment can start immediately. The locations of the HV components are illustrated in this guide.

Situation 3) High-voltage (HV) system damaged

If there is any evidence that the HV system has been compromised (such as arcing/sparking, orange wiring harnesses cut or damaged, HV component casings damaged, etc.), the responder may still be at risk of high voltage exposure. The vehicle must be approached with extreme caution prior to initiating any system shut down procedures or rendering assistance to occupants. Appropriate Personal Protective Equipment (PPE) must always be worn as described in this guide, and the **ten (10) minute waiting time must be observed after HV system shut down** in order to ensure the system is de-energized.

In rare situations where vehicle damage is very severe, the HV system shut down procedures as described in this guide may not work. In these instances, extreme caution and appropriate risk management must be followed to prevent shock or electrocution to the responder or occupant.

3.3.2. High Voltage System Shut-Down Procedures

Once the high voltage battery is properly discharged, any of the following procedures can shut down and isolate the high voltage system. The first response operation should only start after shutting down the high voltage system. If the vehicle is heavily damaged, for example the Li-ion battery is deformed, broken or cracked, appropriate Personal Protective Equipment (PPE) must always be used and the Li-ion battery and high voltage components should not be touched.

3. EMERGENCY RESPONSE STEPS

DANGER

- ⚠ Failure to properly shut down the high voltage electrical system before the Emergency Response Procedures are performed will result in serious injury or death from electrical shock. To prevent serious injury or death, DO NOT touch high voltage harnesses or components without always wearing appropriate Personal Protective Equipment (PPE).
- ⚠ 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 Personal Protective Equipment (PPE).

WARNING

- ⚠ If the charge connector is connected to the vehicle, remove it. Refer to section [Removing the Charge Connector](#).
- ⚠ 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 verify that the READY to drive  Indicator is off and the high voltage system is stopped.
- After the high voltage system is shut down, please wait at least ten (10) minutes for complete discharge of the high voltage capacitor. While waiting, do not operate any vehicle functions.

NOTE:

The high voltage full discharge takes ten (10) minutes, but after five (5) minutes the voltage has dropped below 60 V

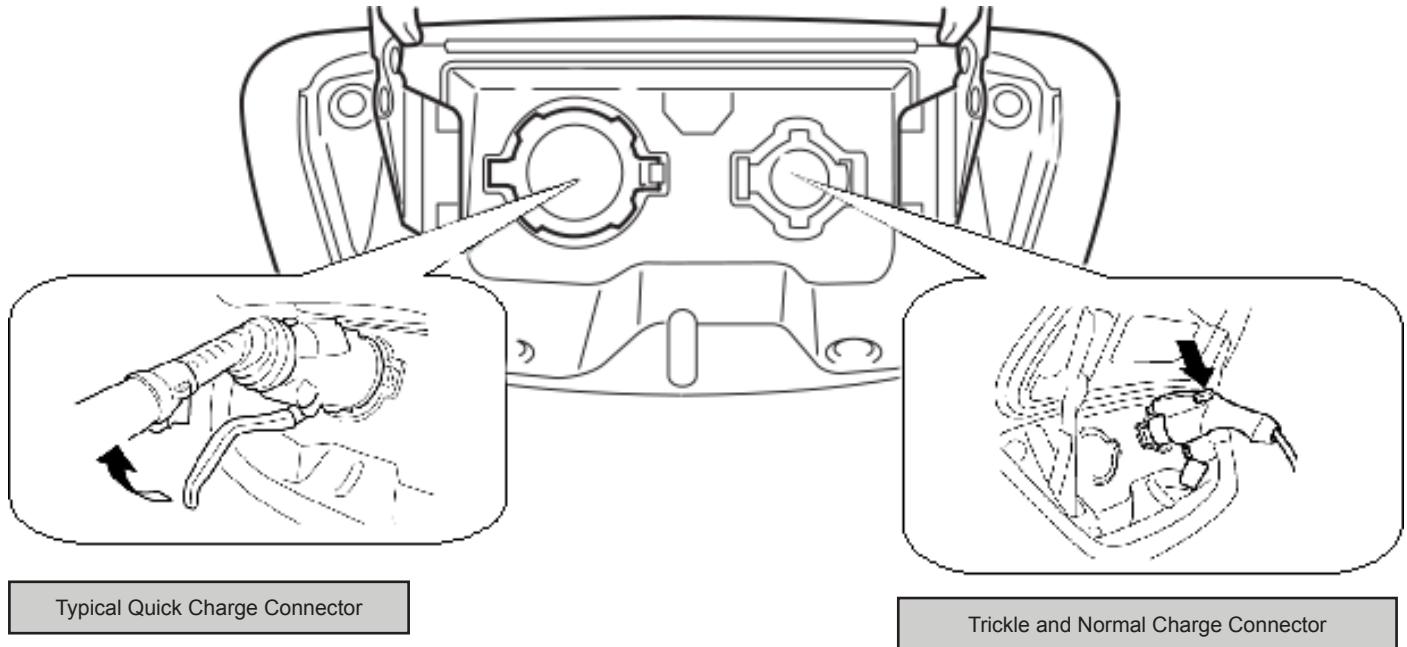
- After shutting down the high voltage system and removing the 12 V battery negative (-) terminal, wait at least three (3) minutes to discharge the air bag capacitor. Even though the 12V battery negative (-) is disconnected, the Supplemental Restraint System (SRS) air bag maintains voltage at least three (3) minutes. During this time, there is a possibility of sudden SRS air bag inflation due to harness short circuit or damage and it may cause serious injuries.
- Always shut down the high voltage system before disconnecting the 12V battery. Not doing so, may result in serious injury or death from electrical shock.
- The 12V system will remain active even after the 12V battery negative (-) terminal is removed while the high voltage system is active. The high voltage system is active during any of the following conditions:
 - charging indicator is turned ON
 - READY to drive indicator is turned ON
- Refer to [1.1.2. Interior Component Location](#) for location of these indicators. This is because DC/DC converter will not shut down and power will be supplied to the 12V system and high voltage system continuously.

3. EMERGENCY RESPONSE STEPS

Removing the Charge Connector

NOTE:

Use the illustration to identify the type of charge connector and follow the appropriate procedure.



1. Quick Charge Connector (where fitted)

NOTE:

The quick charger must be OFF to release the charge connector lock.

Release the quick connector lock and pull to remove. Refer to the quick charger label or instructions.

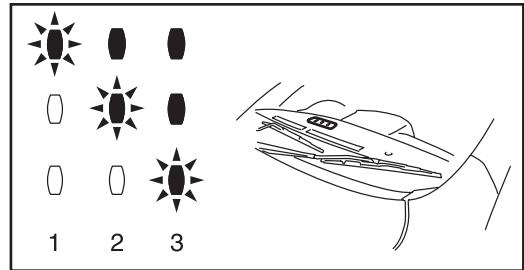
2. Trickle and Normal Charge Connectors

Press the charge connector release button on the charge connector and pull to remove.

3. EMERGENCY RESPONSE STEPS

Indications showing that the High Voltage System is ON

1. If the READY to drive  indicator is ON, the high voltage system is active.
2. The high voltage system is active if any charge indicator is ON (blue LEDs on top of the instrument panel).



Before disconnecting the 12V battery terminal, if necessary, lower the windows, unlock the doors, and open the rear hatch as required. Once 12V battery is disconnected, power controls will not operate.

Powering Down the High Voltage System

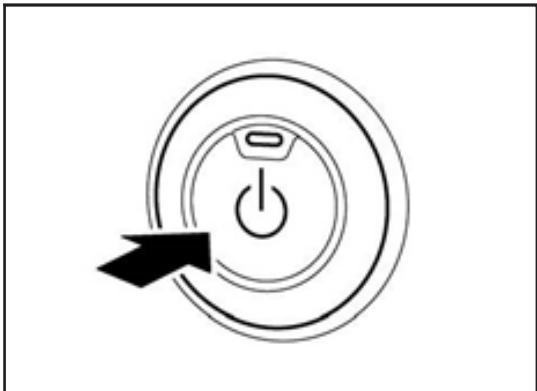
The high voltage system can be shut down using any of the following procedures:

- Turn OFF the power switch and disconnect the 12V battery.
Refer to section [Primary Procedure](#).
- Remove the fuses for the high voltage control system and disconnect the 12V battery.
Refer to section [Alternate Procedure 1 \(Remove Fuses\)](#).
- Remove the service plug and disconnect the 12V battery.
Refer to section [Alternate Procedure 2 \(Remove Service Plug\)](#).

3. EMERGENCY RESPONSE STEPS

Primary Procedure

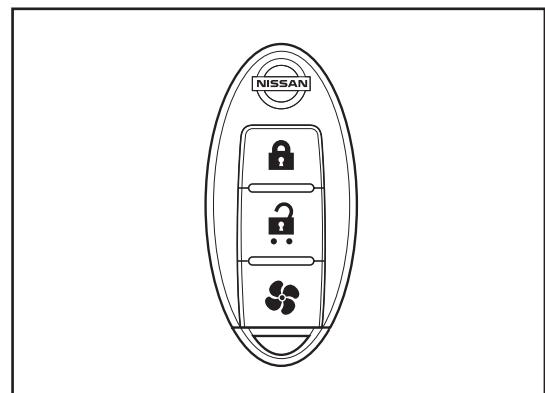
1. Check the READY to drive  indicator status. If it is ON, the high voltage system is active.
2. Place the selector lever in the Park (P) position.
3. Press the power switch once to turn OFF the high voltage system. Then verify whether the READY to drive  indicator is OFF.



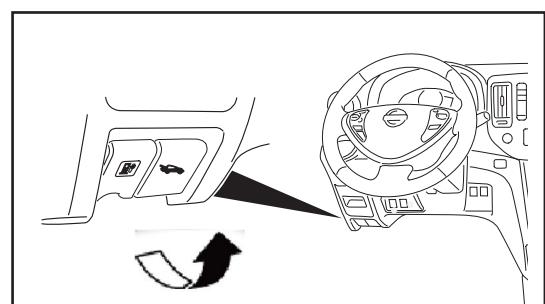
4. If possible, keep the Nissan Intelligent Key® at least 5 meters (16 feet) away from the vehicle.

NOTE:

This step is not necessary if the 12V system is already disabled.



5. Open the bonnet.

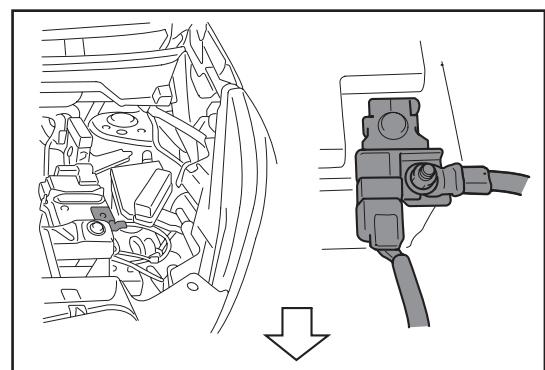


6. Disconnect the highlighted negative (-) 12V battery cable (1). Insulate the negative (-) battery cable terminal with insulated tape.

NOTE:



Arrow in illustration depicts vehicle front direction.



7. Wait at least ten (10) minutes for complete discharge of the high voltage capacitor after the power switch has been turned OFF.
8. Perform the first response action.

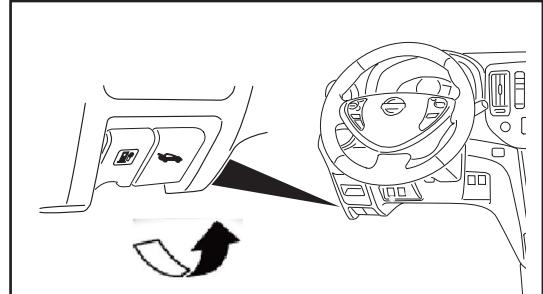
3. EMERGENCY RESPONSE STEPS

Alternate Procedure 1 (Remove Fuses)

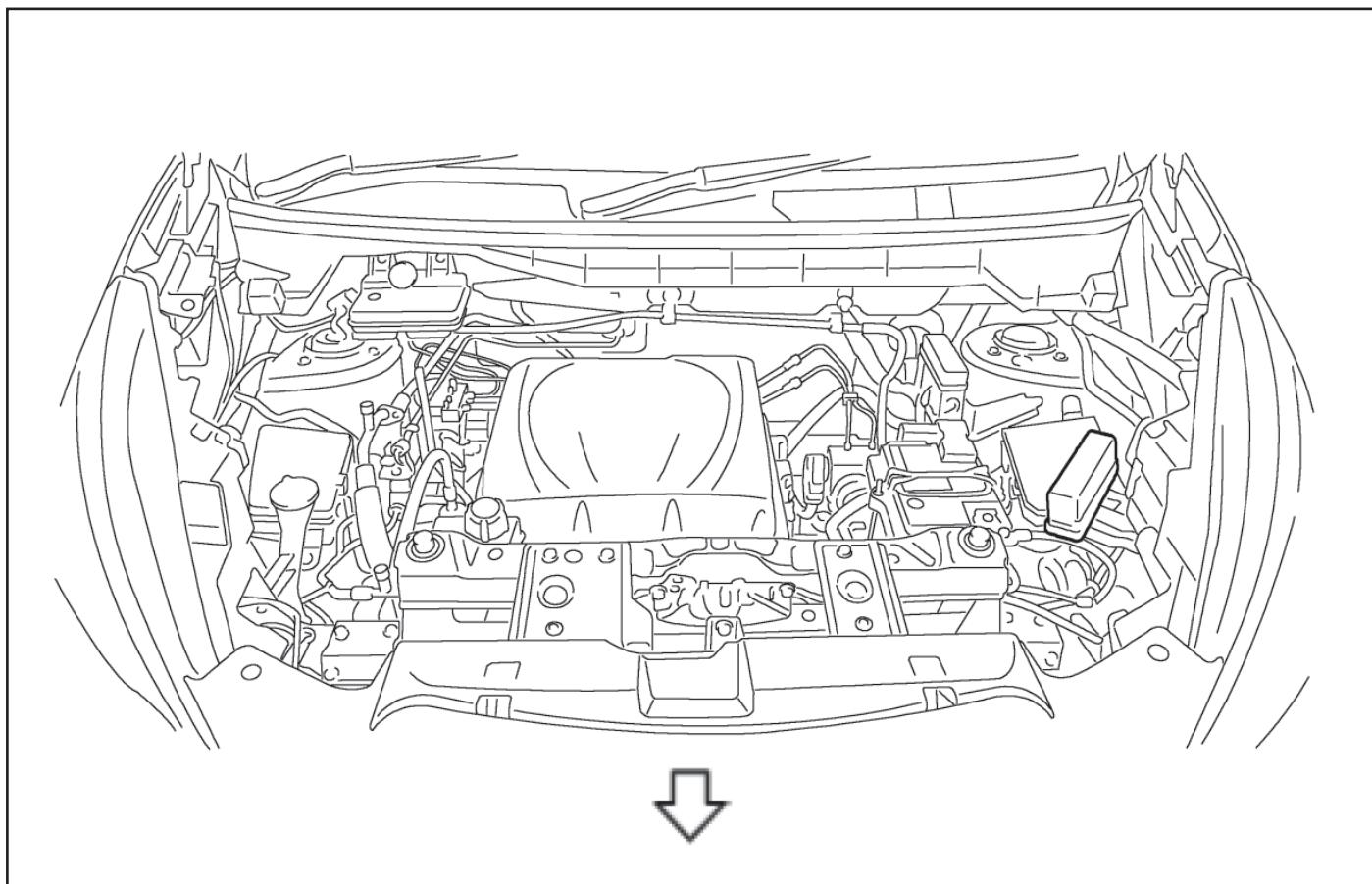
⚠ WARNING

⚠ To avoid unintended re-installation and risk of electrical shock and severe personal injury or death, the rescuer should carry the fuses on his/her person and cover the fuse box with insulated tape.

1. Open the bonnet.



2. Press and expand the pawls on the sides of the fuse box and remove the fuse box (1) from its housing.



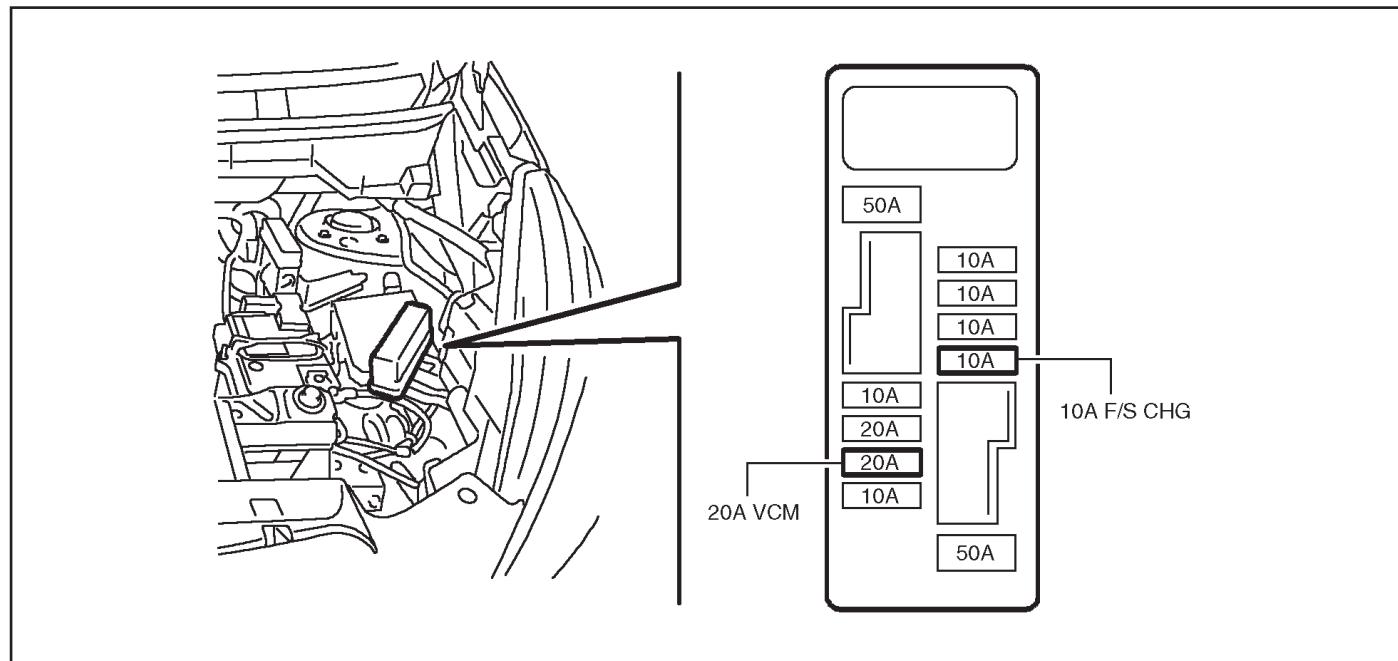
NOTE:



Arrow in illustration depicts vehicle front direction. There is no separate fuse box cover. The bottom of the fuse box is also its cover.

3. EMERGENCY RESPONSE STEPS

3. Remove the following fuses:
 - a. F/S CHG Fuse (10A)
 - b. VCM Fuse (20A)

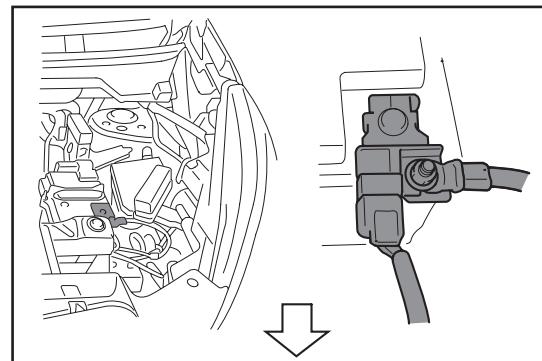


4. If you cannot identify the above fuses, remove all fuses in the fuse boxes.
5. Disconnect the negative (-) 12V battery cable (1). Insulate the negative (-) battery cable terminal with insulated tape.

NOTE:



Arrow in illustration depicts vehicle front direction.



6. Wait at least ten (10) minutes for complete discharge of the high voltage capacitor after the fuses are pulled.
7. Perform the first response action.

3. EMERGENCY RESPONSE STEPS

Alternate Procedure 2 (Remove Service Plug)

DANGER

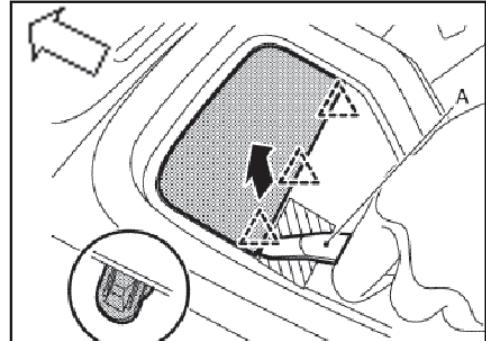
-  Do not remove the service plug without always wearing appropriate Personal Protective Equipment (PPE) to help protect the responder from serious injury or death by electrical shock.
-  Immediately cover the service plug socket with insulated tape. The Li-ion battery retains high voltage power even when the service plug is removed To avoid electric shock, DO NOT touch the terminals inside the socket.

1. Disengage the fixing pawls of the access trim cover located on the floor behind the centre console. Pry up and remove.

 : Pawl

NOTE:

 Arrow in illustration depicts vehicle front direction.

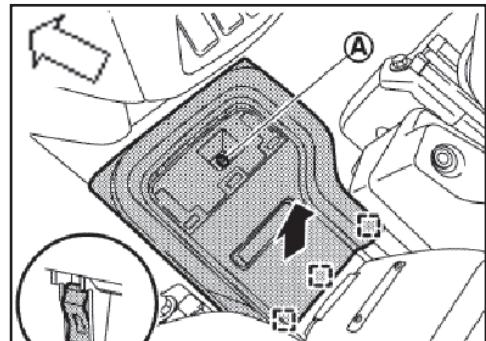


2. Remove the fixing screw (A) and disengage the metal fixing clips, and then remove the cover.

 : Metal clip

NOTE:

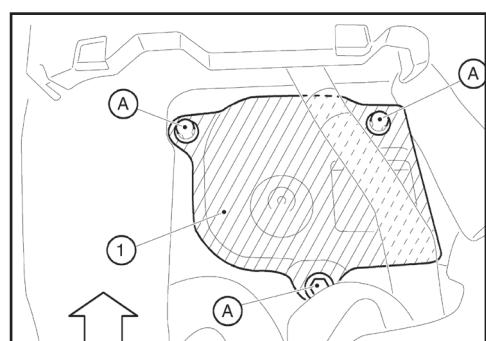
 Arrow in illustration depicts vehicle front direction.



3. Remove the access cover bolts (A) and remove the cover (1)

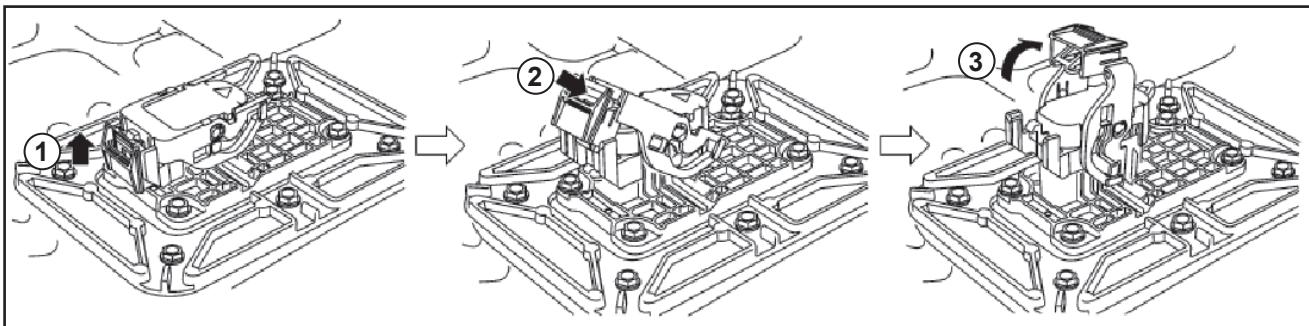
NOTE:

 Arrow in illustration depicts vehicle front direction.

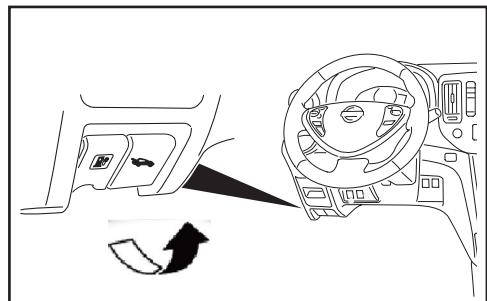


3. EMERGENCY RESPONSE STEPS

4. Remove the service plug using the following steps: (1) pull up and release the green lever, (2) press the locking tab to release and rotate fully upward (3) and pull the service plug completely out of its socket.



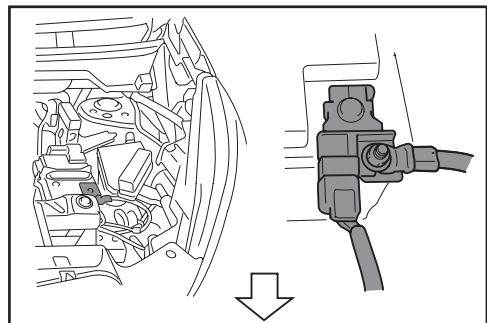
5. **Wait at least ten (10) minutes** for complete discharge of the high voltage capacitor after the service plug has been removed.
6. Open the bonnet.



7. Disconnect the negative (-) 12V battery cable (1). Insulate the negative (-) battery cable terminal with Insulated tape.

NOTE:

 Arrow in illustration depicts vehicle front direction



8. Perform the first response action.

3. EMERGENCY RESPONSE STEPS

3.3.3. Water Submersion

DANGER

 The damage level of a 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.

WARNING

-  The power 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.
-  If the vehicle is in the water, to avoid electrical shock do not touch the high voltage components, harnesses or service plug.

3.3.4. Vehicle Fire

WARNING

- Always utilize full Personal Protective Equipment (PPE) and a self-contained breathing apparatus during firefighting operations. Smoke from a e-NV200 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.

CAUTION

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.

Fire attack should follow standard firefighting practices.

If you must walk away from the vehicle, notify an appropriate responder or a rescue person of the fact that the vehicle is an electric car and contains a high voltage system and warn all others.

During overhaul operations (late stage fire suppression process to examine for remaining sources of heat), make sure the battery is fully cooled to avoid fire re-ignition. The battery could reignite if it is placed near fire. To avoid possible electrical shock and serious personal injury, do not breach the Li-ion battery case.

3. EMERGENCY RESPONSE STEPS

3.3.5. Cutting the Vehicle Body

DANGER

- ⚠ Do not cut into high voltage related areas to avoid severe personal injury or death.
- ⚠ Do not cut into the Li-ion battery to avoid severe personal injury or death.
- ⚠ When removing parts, DO NOT touch the high voltage parts or the insides of the exposed orange-coloured high voltage cables to avoid severe personal injury or death.

WARNING

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

If at least ten (10) minutes have passed since the rescuer shut down the high voltage system (refer to [3.3.2. High Voltage System Shut-Down Procedures](#)), then the rescuer can cut the vehicle body except for the Li-ion battery.

NOTE:

If the rescuer cannot wait the full ten (10) minutes or shut down the high voltage system, absolute care must be taken to avoid cutting HV parts and appropriate Personal Protective Equipment (PPE) must always be worn. DO NOT cut the Li-ion battery due to possible electrocution risk and electrolyte solution leakage.

3. EMERGENCY RESPONSE STEPS

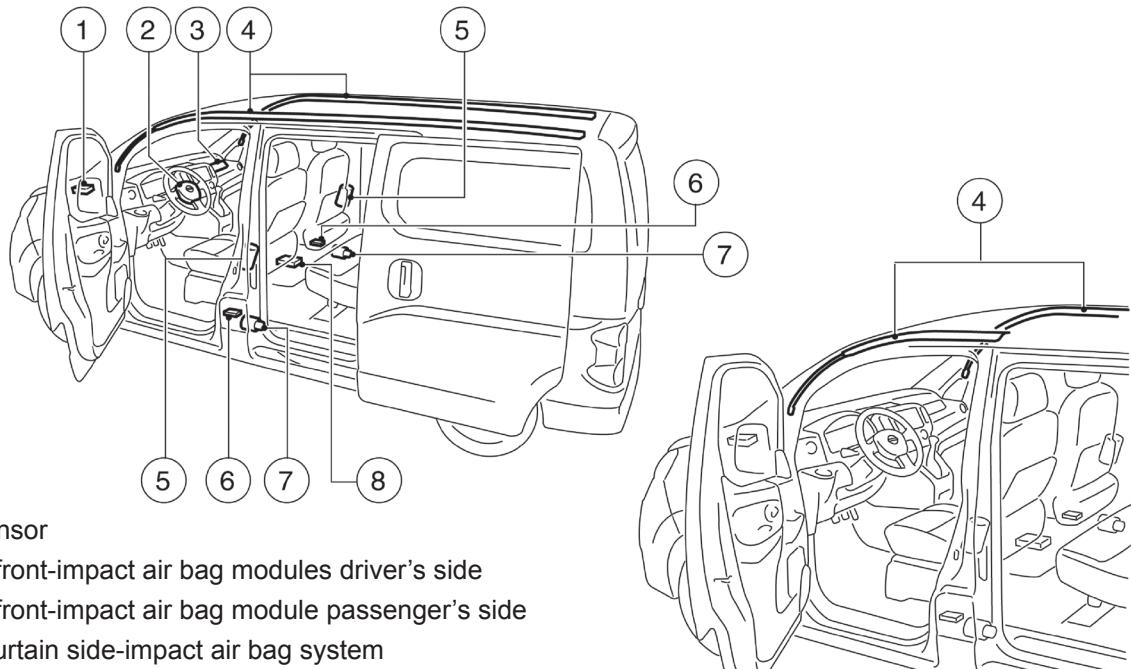
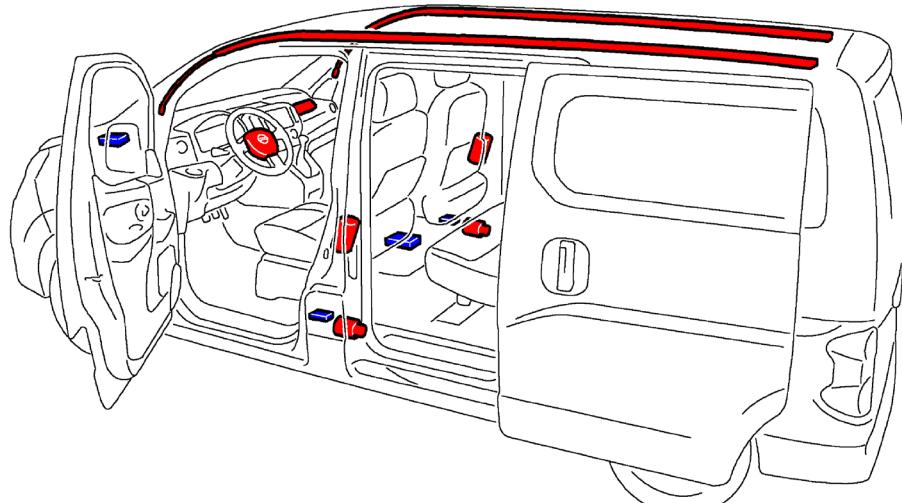
SRS Air Bag System Components Location

Avoid cutting air bag system parts. 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 12V battery negative (-) cable has been disconnected and the high voltage system has been shut down.

 = Inflators (Peel back plastic trim parts prior to cutting operations to confirm exact inflator location.)

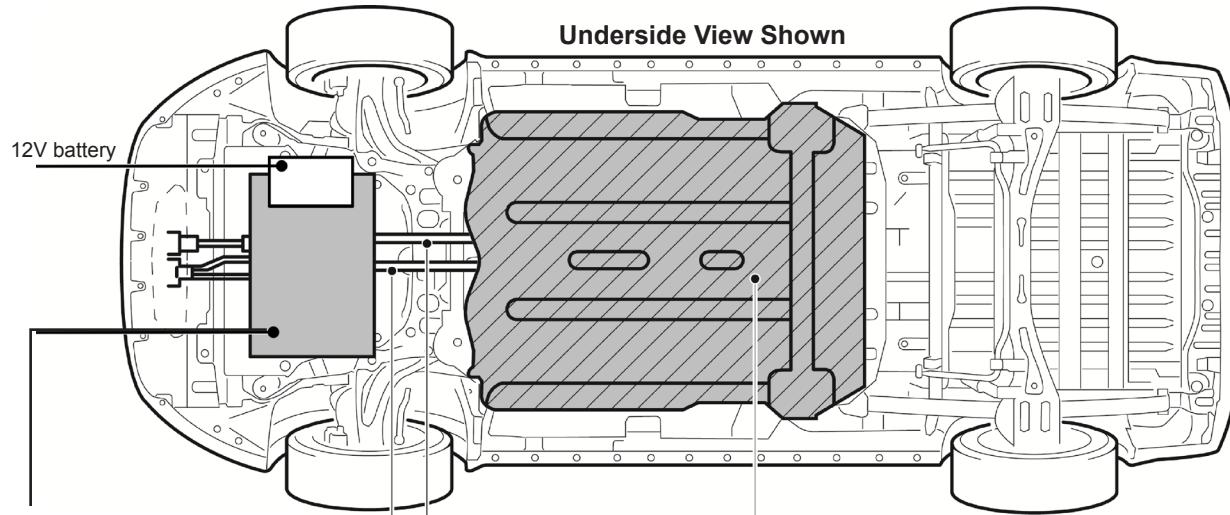
 = Sensor



1. Crash zone sensor
2. Supplemental front-impact air bag modules driver's side
3. Supplemental front-impact air bag module passenger's side
4. Supplemental curtain side-impact air bag system
5. Supplemental side-impact air bag system
6. Satellite sensors
7. Seatbelt pre-tensioner retractors
8. Diagnosis sensor unit

3. EMERGENCY RESPONSE STEPS

Vehicle Cut Sheet

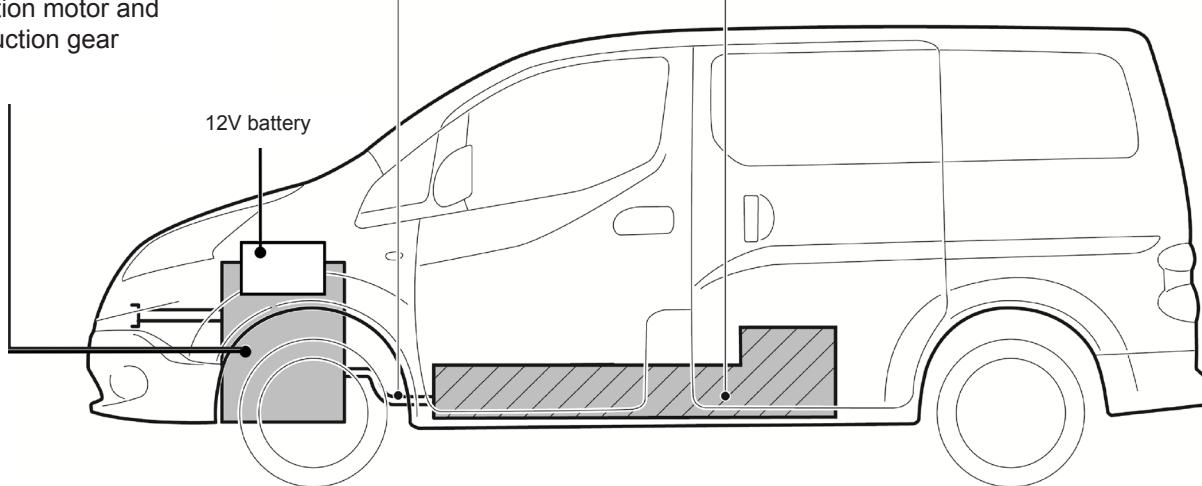


High voltage components:

Inverter, Power Delivery
Module (DC-DC converter
and On Board Charger),
Traction motor and
Reduction gear

High voltage harness

High voltage Li-ion battery



High voltage component or
Harness (Harness can be cut
only after the high voltage
system shutdown procedure
has been completed.)

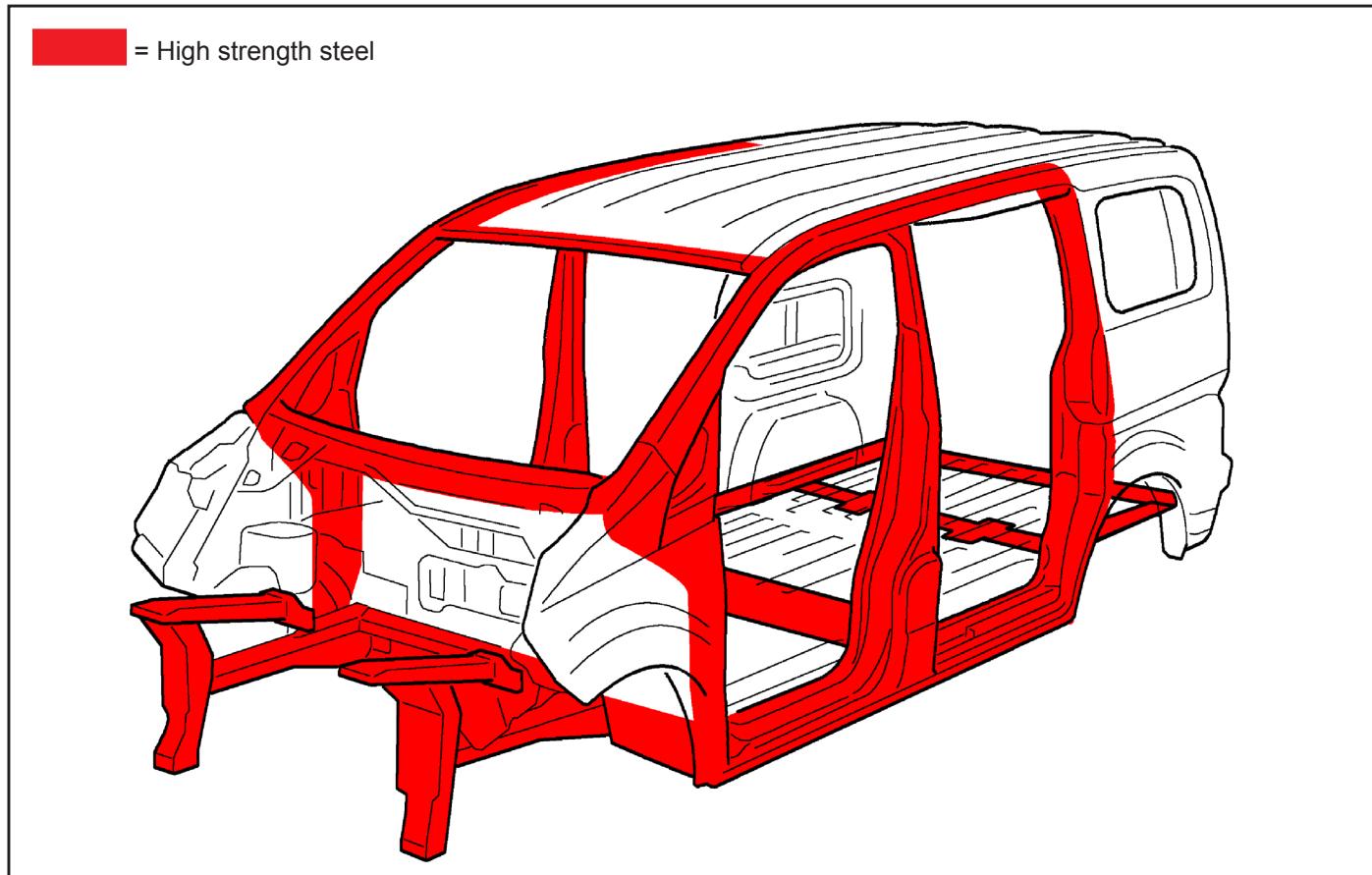
12V Battery

DANGER

Never cut High Voltage components/
batteries for any reason. Death or
serious personal injury will result.

3. EMERGENCY RESPONSE STEPS

High Strength Steel Locations



3. EMERGENCY RESPONSE STEPS

3.3.6. Li-ion Battery Damage and Fluid Leaks

⚠ WARNING

The Li-ion 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 Personal Protective Equipment (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.

If electrolyte solution leakage, or damage such as any problem with the Li-ion battery casing are observed, first responders should attempt to neutralize the battery by applying a large volume of water to the battery pack while wearing appropriate Personal Protective Equipment (PPE). The neutralization process helps stabilize the thermal condition of the battery pack but does not discharge the battery.

Li-ion Battery Electrolyte Solution Characteristics:

- Clear in colour.
- Sweet odour.
- Similar viscosity to water

Since the Li-ion battery is made up of many small sealed battery modules, electrolyte solution leakage should be minimal.

NOTE:

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

3. EMERGENCY RESPONSE STEPS

3.3.7. Accessing the Occupants

1. Remove windows.

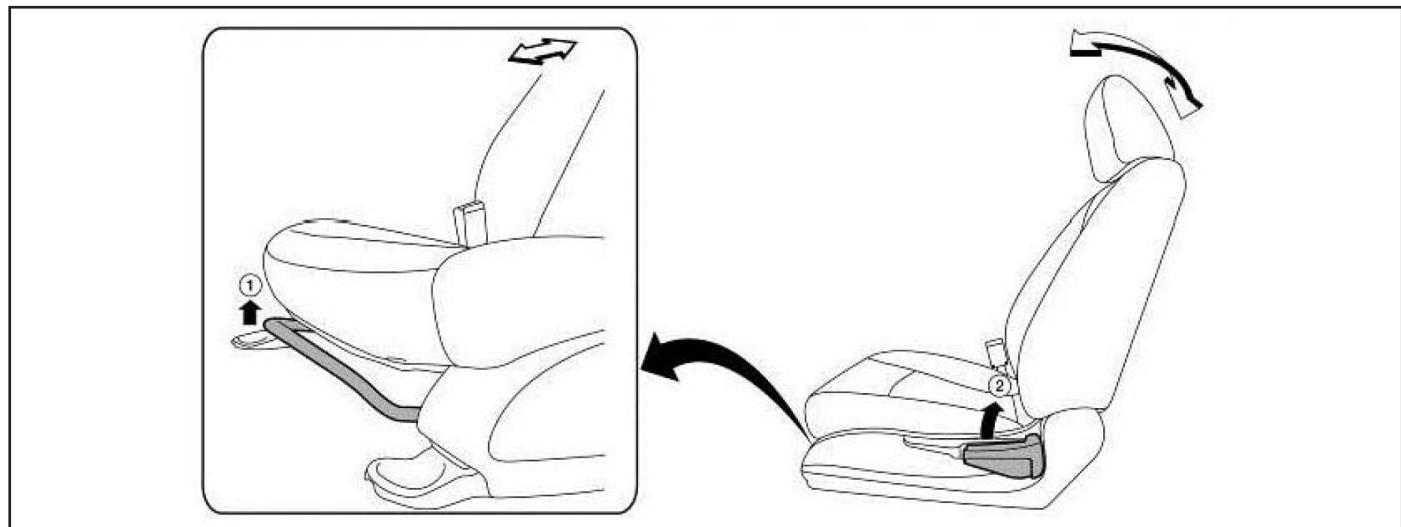
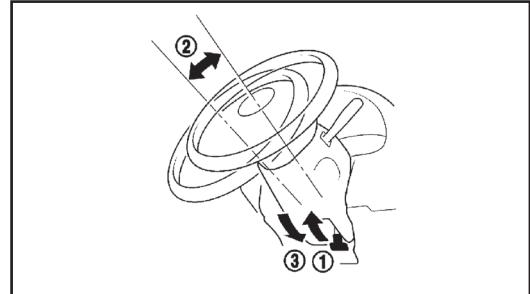
Perform window removal the same as a normal vehicle.

2. Remove doors

The doors are removable with hand tools or basic rescue tools such as electrical/hydraulic rescue tools. It may be easier to remove the doors by cutting door hinges.

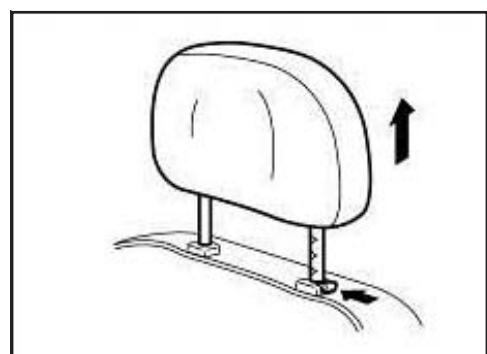
3. Adjust steering wheel and front seat position (if necessary).

- a. Release the lock lever up (1) and adjust the steering wheel to the desired position (up or down) (2). Firmly push the lock lever (3) back into position to lock the steering wheel in place.
- b. Front seat can be adjusted forward/backward manually by pulling up and holding lever (1) and tilted forward/backward manually by pulling up and holding lever (2).



4. Remove front seat head restraint (if necessary).

The front seat head restraint can be removed by pressing the lock knob and pulling it up.



3. EMERGENCY RESPONSE STEPS

5. Unfasten the seat belt.

Seat belt can be unfastened by pressing the release button. If seat belt cannot be unfastened, cut it with a belt cutter.



3.4. Storing the Vehicle

For vehicle storage information, refer to the Roadside Assistance Guide.



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