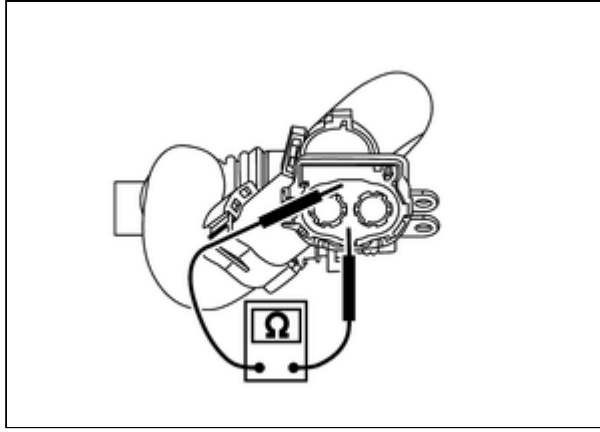


# Your Ultimate Source for OEM Repair Manuals

FactoryManuals.net is a great resource for anyone who wants to save money on repairs by doing their own work. The manuals provide detailed instructions and diagrams that make it easy to understand how to fix a vehicle.

## 2010 NISSAN Leaf OEM Service and Repair Workshop Manual

[Go to manual page](#)



SIEMD-7198452-02-000362457

Value:

0  $\Omega$  approx.

Is the inspection result normal?

YES>>

INSPECTION END

NO>>

Replace Li-ion battery high-voltage harness.

Sample

**WARNING:**

Since hybrid vehicles and electric vehicles contain a high voltage battery, there is the risk of electric shock, electric leakage, or similar accidents if the high voltage component and vehicle are handled incorrectly. Be sure to follow the correct work procedures when performing inspection and maintenance.

**WARNING:**

- Be sure to remove the service plug in order to disconnect the high voltage circuits before performing inspection or maintenance of high voltage system harnesses and parts.
- The removed service plug must always be carried in a pocket of the responsible worker or placed in the tool box during the procedure to prevent the plug from being connected by mistake.
- Be sure to wear insulating protective equipment consisting of glove, shoes, face shield and glasses before beginning work on the high voltage system.
- Never allow workers other than the responsible person to touch the vehicle containing high voltage parts. To keep others from touching the high voltage parts, these parts must be covered with an insulating sheet except when using them.
- Refer to [HIGH VOLTAGE PRECAUTIONS : Precautions](#).

**CAUTION:**

Never bring the vehicle into the READY status with the service plug removed unless otherwise instructed in the Service Manual. A malfunction may occur if this is not observed.

## 1. SERVICE PLUG REMOVING

---

Remove the service plug. Refer to [HOW TO DISCONNECT HIGH VOLTAGE : Precautions](#).

Is installation condition normal?

YES>>

[GO TO 2.](#)

NO>>

Install service plug properly.

## 2. CHECK CONNECTION STATUS OF HIGH VOLTAGE HARNESS CONNECTOR (QUICK CHARGE)

---

**WARNING:**

Disconnect the high voltage. Refer to [HOW TO DISCONNECT HIGH VOLTAGE : Precautions](#).

Check harness connector connection status of high voltage harness connector (connection, lock and interlock conditions). Refer to [CHARGE PORT : Inspection](#).

Is connection status normal?

YES>>

[GO TO 3.](#)

NO>>

Connect high voltage harness connector (Quick charge) properly.

### 3. CHECK INTERLOCK DETECTING SWITCH [HIGH-VOLTAGE HARNESS CONNECTOR (QUICK CHARGE)]

---

Check interlock detecting switch [High voltage harness connector (Quick charge)]. Refer to [Component Inspection](#).

Is inspection result normal?

YES>>

[GO TO 4.](#)

NO>>

Replace quick charge high voltage harness.

### 4. REMOVE LI-ION BATTERY

---

1. Remove Li-ion battery. Refer to [Removal & Installation](#).
2. Remove battery pack upper case. Refer to [Removal & Installation](#).

>>

[GO TO 5.](#)

### 5. Check CONNECTOR CONNECTING CONDITION

---

Check connection status of LBC harness connector and interlock detecting switch [High voltage harness connector (Quick charge)].



**NOTE:**

**Pull connector first then push connector to check connection. Since if connector is pressed first, connector may be locked, malfunction cannot be found.**

Is the inspection result normal?

YES>>

[GO TO 6.](#)

NO>>

Repair harness connector connection.

### 6. CHECK CONTINUITY OF INTERLOCK DETECTING CIRCUIT HARNESS

---

1. Remove harness connectors of LBC and interlock detecting switch [High voltage harness connector (Quick charge)].
2. Check continuity between LBC harness connector and interlock detecting switch [High voltage harness connector (Quick charge)] harness connector.

LBC		Interlock detecting switch [High voltage harness connector (Quick charge)]		Continuity
Connector	Terminal	Connector	Terminal	
LB18	40	LB9	40	Exist
	34		34	

3. Check harness for short to ground and short to lines.

YES>>

[GO TO 7.](#)

NO>>

Repair or replace Li-ion battery vehicle communication harness.

## 7. CHECK HIGH-VOLTAGE HARNESS CONNECTOR (QUICK CHARGE)

---

1. Check continuity between high voltage harness connector (Quick charge) and interlock detecting switch [High voltage harness connector(Quick charge)] harness connector.

High voltage harness connector (Quick charge)		Interlock detecting switch [High voltage harness connector (Quick charge)]		Continuity
Connector	Terminal	Connector	Terminal	
LB3	2	LB9	40	Exist
	1		43	

2. Check harness for short to ground and short to lines.

YES>>

INSPECTION END

NO>>

Replace quick charge high voltage harness.

**WARNING:**

Since hybrid vehicles and electric vehicles contain a high voltage battery, there is the risk of electric shock, electric leakage, or similar accidents if the high voltage component and vehicle are handled incorrectly. Be sure to follow the correct work procedures when performing inspection and maintenance.

**WARNING:**

- Be sure to remove the service plug in order to disconnect the high voltage circuits before performing inspection or maintenance of high voltage system harnesses and parts.
- The removed service plug must always be carried in a pocket of the responsible worker or placed in the tool box during the procedure to prevent the plug from being connected by mistake.
- Be sure to wear insulating protective equipment consisting of glove, shoes, face shield and glasses before beginning work on the high voltage system.
- Never allow workers other than the responsible person to touch the vehicle containing high voltage parts. To keep others from touching the high voltage parts, these parts must be covered with an insulating sheet except when using them.
- Refer to [HIGH VOLTAGE PRECAUTIONS : Precautions](#).

**CAUTION:**

Never bring the vehicle into the READY status with the service plug removed unless otherwise instructed in the Service Manual. A malfunction may occur if this is not observed.

## 1. PRECONDITIONING

---

**WARNING:**

Perform the following procedure before work starts.

1. Disconnect the high voltage. Refer to [HOW TO DISCONNECT HIGH VOLTAGE : Precautions](#).
2. Check voltage of high voltage circuit. Refer to [CHECK VOLTAGE IN HIGH VOLTAGE CIRCUIT : Precautions](#).

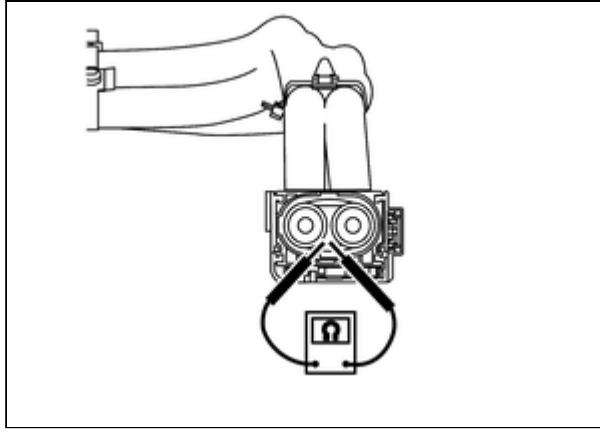
>>

[GO TO 2.](#)

## 2. CHECK INTERLOCK DETECTING SWITCH [HIGH-VOLTAGE HARNESS CONNECTOR (QUICK CHARGE)]

---

1. Check that terminals are not a corrosion, a bend, a break or a damage.
2. Check the continuity between terminals.



SIEMD-7198454-02-000362456

Value:

0  $\Omega$  approx.

Is the inspection result normal?

YES>>

INSPECTION END

NO>>

Replace quick charge high-voltage harness.

Sample

# Outline

SIEMD-7196704

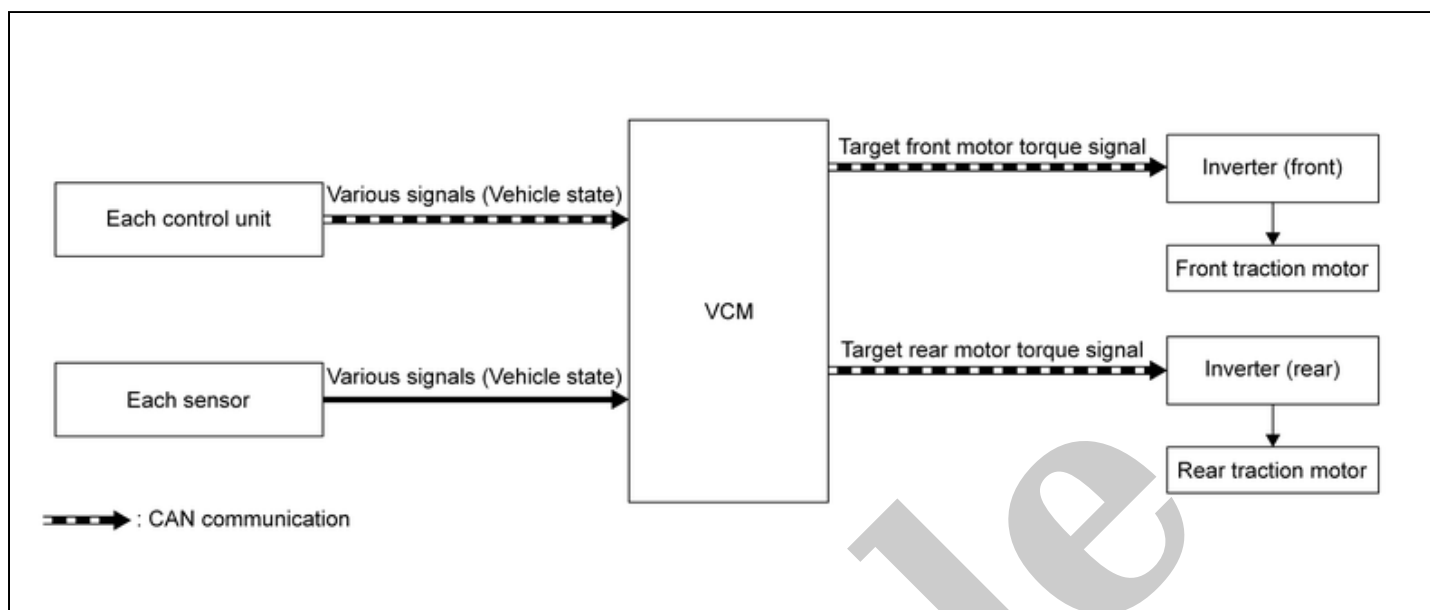
The EV uses the electric power stored in the Li-ion battery as the entire power source.

EV control system that judges the driving situation and the vehicle status according to information from various units and performs comprehensive control is adopted.

Sample



## SYSTEM DIAGRAM



SIEMD-7521497-01-000426767

Component parts	Function
VCM	Based on each signal (vehicle status) obtained from each C/U and sensor, the following signals are transmitted to the inverter (front) and the inverter (rear). <ul style="list-style-type: none"> <li>• Target front motor torque signal</li> <li>• Target rear motor torque signal</li> </ul>
Inverter (front)	Receive the target front motor torque signal from VCM, and operate the front traction motor.
Inverter (rear)	Receive the target rear motor torque signal from VCM, and operate the rear traction motor.

## DESCRIPTION

- The VCM estimates the status of the vehicle based on the signals from each C/U and sensor, and controls the optimum front and rear traction force distribution in real time. Taking advantage that the front and rear wheels are 100% electrically driven, the front and rear traction force can be controlled in real time at electrical response speed according to the operation and condition of the vehicle.

The vehicle's attitude is stabilized and performance is improved by estimating changes in vehicle behavior in advance, such as when accelerating or turning, and controlling the traction force distribution to the front and rear wheels without delay.

- The front and rear traction force distribution during driving can be checked with the AWD torque display. Refer to [System Description](#).
- The characteristics are changed to the optimum traction force distribution according to the selected drive mode. For the drive mode refer to [System Description](#).

## Traction force distribution characteristics at each drive mode

Drive mode			
STANDARD	ECO	SPORT	SNOW
Automatic switching between electric power consumption priority (front wheel main) and driving performance priority.	Automatic switching between electric power consumption priority (front wheel main) and driving performance priority.	Driving performance priority	Driving performance priority on the snow covered road.

## DESCRIPTION

---

- CAN (Controller Area Network) is a serial communication line for real time application. It is an on vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent).

In CAN communication, control units are connected with 2 communication lines (CAN-H line, CAN-L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

- VCM includes a gateway function and communicates signals between the CAN communication circuit and EV system CAN circuit.
- For CAN communication details, Refer to [System Description](#).

Sample