

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.

2013 NISSAN Patrol OEM Service and Repair Workshop Manual

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1. PREPARATION BEFORE OPERATION

If another "Confirmation Procedure" was performed immediately before this task, always power switch OFF exit the vehicle and close all doors (including the back door), and wait for at least 60 seconds until the combination meter turns off before starting the next test.

CAUTION:

While waiting, never operate the vehicle such as locking, opening, and closing doors. Violation of this caution results in the activation of ACC power supply according to the auto ACC function.

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2. PERFORM THE DTC CONFIRMATION PROCEDURE

 With CONSULT

1. Set the vehicle to READY and wait for at least 10 seconds.
2. Fully depress the accelerator pedal to increase the vehicle speed up to 10 km/h (6 MPH).
3. Stop the vehicle.
4. Check the DTC.

Is "P0BFF-18 detected?"

YES>>

Refer to [DTC Diagnosis Procedure](#).

NO-1>>

To check malfunction symptom before repair: Refer to [Intermittent Incident](#).

NO-2>>

Confirmation after repair: INSPECTION END

1. REPLACEMENT OF THE INVERTER (FRONT)

Replace the inverter (front). Refer to [INVERTER \(FRONT\) : Removal & Installation](#).

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END

DTC DETECTION LOGIC

DTC		CONSULT screen terms	DTC detection condition	
P0A78	48	Drive Motor A Inverter	Diagnosis condition	READY state
			Signal	—
			Threshold	An error signal from the LBC was received.
			Diagnosis delay time	Within 1 second

POSSIBLE CAUSE

EV battery system

FAIL-SAFE

Limits drive torque of front traction motor

1. PREPARATION BEFORE OPERATION

If another "Confirmation Procedure" was performed immediately before this task, always power switch OFF exit the vehicle and close all doors (including the back door), and wait for at least 60 seconds until the combination meter turns off before starting the next test.

CAUTION:

While waiting, never operate the vehicle such as locking, opening, and closing doors. Violation of this caution results in the activation of ACC power supply according to the auto ACC function.

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2. PERFORM THE DTC CONFIRMATION PROCEDURE

 With CONSULT

1. Set to READY and wait for at least 10 seconds.
2. Check the DTC.

Is "P0A78-48 detected?"

YES>>

Refer to [DTC Diagnosis Procedure](#).

NO-1>>

To check malfunction symptom before repair: Refer to [Intermittent Incident](#).

NO-2>>

Confirmation after repair: INSPECTION END

1. INSPECTION OF THE EV BATTERY SYSTEM

Inspect the EV battery system. Refer to [Work Flow](#) (66kWh Li-ion battery models) or [Work Flow](#) (91kWh Li-ion battery models).

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INSPECTION END

Sample

DTC DETECTION LOGIC

DTC		CONSULT screen terms	DTC detection condition	
P0A78	62	Drive Motor A Inverter	Diagnosis condition	READY state
			Signal	—
			Threshold	There was an inconsistency between the voltage value detected by the voltage monitor circuit and the system main relay ON/OFF that is received via CAN.
			Diagnosis delay time	Within 2 seconds

POSSIBLE CAUSE

- CAN signal (system main relay ON/OFF signal)
- System main relay
- Voltage monitor circuit in the inverter (front)

FAIL-SAFE

Control of the front traction motor stops. Or, no limitation

1. PREPARATION BEFORE OPERATION

If another "Confirmation Procedure" was performed immediately before this task, always power switch OFF exit the vehicle and close all doors (including the back door), and wait for at least 60 seconds until the combination meter turns off before starting the next test.

CAUTION:

While waiting, never operate the vehicle such as locking, opening, and closing doors. Violation of this caution results in the activation of ACC power supply according to the auto ACC function.

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2. PERFORM THE DTC CONFIRMATION PROCEDURE

 With CONSULT

1. Set to READY and wait for at least 10 seconds.
2. Check the DTC.

Is "P0A78-62 detected?"

YES>>

Refer to [DTC Diagnosis Procedure](#).

NO-1>>

To check malfunction symptom before repair: Refer to [Intermittent Incident](#).

NO-2>>

Confirmation after repair: INSPECTION END

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 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. INSPECTION OF THE CAN COMMUNICATION CIRCUIT

Inspect the CAN communication circuit. Refer to [Trouble Diagnosis Flow Chart](#).

Is the inspection result normal?

YES>>

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NO>>

Repair or replace the malfunctioning parts.

2. CHECK FOR DTC RELATED TO THE HIGH VOLTAGE SYSTEM

 With CONSULT

1. Power switch ON and wait at least 10 seconds.
2. Check the DTCs related to the high voltage system.

Is a DTC related to the high voltage system other than the inverter (front) detected?

YES>>

Check the detected DTC.

NO>>

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3. PRECONDITIONING

WARNING:

Follow the instructions below before starting the procedure.

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

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4. INSPECTION OF THE HIGH VOLTAGE HARNESS

Inspect the high voltage harness between the Li-ion battery and the inverter (front).

Is the inspection result normal?

YES>>

[GO TO 5.](#)

NO>>

Repair or replace the malfunctioning parts.

5. INSPECTION OF THE SYSTEM MAIN RELAY CIRCUIT

Inspect the circuits of system main relays 1 and 2.

- System main relay 1: Refer to [Diagnosis Procedure](#) (66kWh Li-ion battery models) or [Diagnosis Procedure](#) (91kWh Li-ion battery models).
- System main relay 2: Refer to [Diagnosis Procedure](#) (66kWh Li-ion battery models) or [Diagnosis Procedure](#) (91kWh Li-ion battery models).

Is the inspection result normal?

YES>>

Replace the inverter (front). Refer to [INVERTER \(FRONT\) : Removal & Installation.](#)

NO>>

Repair or replace the malfunctioning parts.