

&lt; HOW TO USE THIS MANUAL &gt;

# HOW TO USE THIS MANUAL

## APPLICATION NOTICE

### How to Check Vehicle Type

INFOID:000000004802910

Check the vehicle type (refer to [GI-22, "Model Variation"](#)) to use the service information in this section.

Application	Service information
Europe	"FOR EUROPE"
Australia and New Zealand	"FOR GENERAL AREAS"
Middle East	
Taiwan	"FOR TAIWAN"

&lt; BASIC INSPECTION &gt;

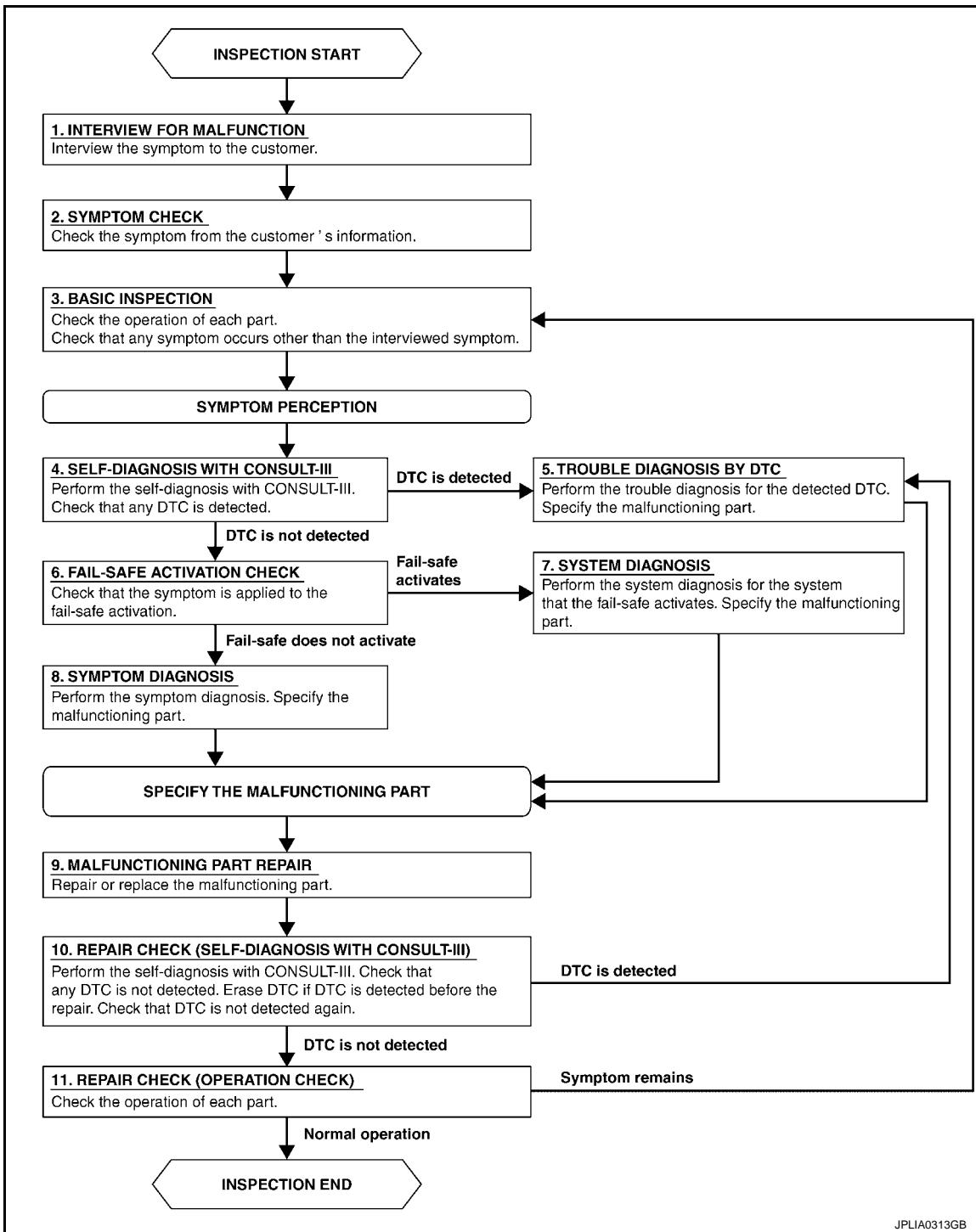
# BASIC INSPECTION

## DIAGNOSIS AND REPAIR WORKFLOW

### Work Flow

INFOID:000000004639851

### OVERALL SEQUENCE



JPLIA0313GB

### DETAILED FLOW

#### 1. INTERVIEW FOR MALFUNCTION

Interview the symptom to the customer.

# DIAGNOSIS AND REPAIR WORKFLOW

[FOR EUROPE]

< BASIC INSPECTION >

>> GO TO 2.

## 2. SYMPTOM CHECK

Check the symptom from the customer's information.

>> GO TO 3.

## 3. BASIC INSPECTION

Check the operation of each part. Check that any symptom occurs other than the interviewed symptom.

>> GO TO 4.

## 4. SELF-DIAGNOSIS WITH CONSULT-III

Perform the self-diagnosis with CONSULT-III. Check that any DTC is detected.

Is any DTC detected?

YES >> GO TO 5.

NO >> GO TO 6.

## 5. TROUBLE DIAGNOSIS BY DTC

Perform the trouble diagnosis for the detected DTC. Specify the malfunctioning part.

>> GO TO 9.

## 6. FAIL-SAFE ACTIVATION CHECK

Check that the symptom is applied to the fail-safe activation.

Does the fail-safe activate?

YES >> GO TO 7.

NO >> GO TO 8.

## 7. SYSTEM DIAGNOSIS

Perform the system diagnosis for the system that the fail-safe activates. Specify the malfunctioning part.

>> GO TO 9.

## 8. SYMPTOM DIAGNOSIS

Perform the symptom diagnosis. Specify the malfunctioning part.

>> GO TO 9.

## 9. MALFUNCTION PART REPAIR

Repair or replace the malfunctioning part.

>> GO TO 10.

## 10. REPAIR CHECK (SELF-DIAGNOSIS WITH CONSULT-III)

Perform the self-diagnosis with CONSULT-III. Check that any DTC is not detected. Erase DTC if DTC is detected before the repair. Check that DTC is not detected again.

Is any DTC detected?

YES >> GO TO 5.

NO >> GO TO 11.

## 11. REPAIR CHECK (OPERATION CHECK)

Check the operation of each part.

Does it operate normally?

YES >> INSPECTION END

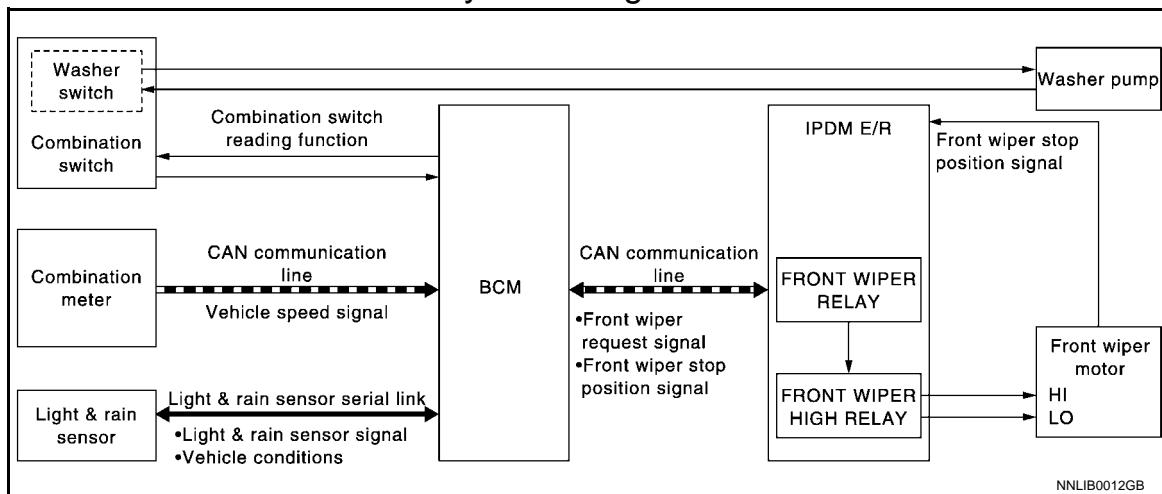
NO >> GO TO 3.

&lt; SYSTEM DESCRIPTION &gt;

## SYSTEM DESCRIPTION

### FRONT WIPER AND WASHER SYSTEM WITH LIGHT & RAIN SENSOR

#### WITH LIGHT & RAIN SENSOR : System Diagram



#### WITH LIGHT & RAIN SENSOR : System Description

INFOID:0000000004786236

##### OUTLINE

The front wiper is controlled by each function of BCM and IPDM E/R.

Control by BCM

- Combination switch reading function
- Front wiper control function

Control by IPDM E/R

- Front wiper control function
- Relay control function

Combination meter indicates low washer fluid warning judged with the signal from the washer level switch. For details of low washer fluid warning, refer to [MWI-30, "INFORMATION DISPLAY : System Description"](#).

##### FRONT WIPER BASIC OPERATION

- BCM detects the combination switch condition by the combination switch reading function.
- BCM transmits the front wiper request signal to IPDM E/R with CAN communication depending on each operating condition of the front wiper.
- IPDM E/R turns ON/OFF the integrated front wiper relay and the front wiper high relay according to the front wiper request signal. IPDM E/R provides the power supply to operate the front wiper HI/LO operation.

##### FRONT WIPER LO OPERATION

- BCM transmits the front wiper request signal (LO) to IPDM E/R with CAN communication according to the front wiper LO operating condition.

Front wiper LO operating condition

- Ignition switch ON
- Front wiper switch LO or front wiper switch MIST (while pressing)
- IPDM E/R turns ON the integrated front wiper relay according to the front wiper request signal (LO).

##### FRONT WIPER HI OPERATION

- BCM transmits the front wiper request signal (HI) to IPDM E/R with CAN communication according to the front wiper HI operating condition.

Front wiper HI operating condition

- Ignition switch ON
- Front wiper switch HI

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# FRONT WIPER AND WASHER SYSTEM

[FOR EUROPE]

## < SYSTEM DESCRIPTION >

- IPDM E/R turns ON the integrated front wiper relay and the front wiper high relay according to the front wiper request signal (HI).

## FRONT WIPER AUTO OPERATION

### Rain Sensing

Rain level and sensor conditions are detected by light & rain sensor.

- BCM transmits the vehicle conditions (vehicle speed, front wiper condition, light & rain sensor sensitivity setting, etc.) to the light & rain sensor via the light & rain sensor serial link.
- Light & rain sensor judges a wiping speed for front wiper by rain condition and the vehicle conditions. And it transmits the wiping speed request signal to the BCM via the light & rain sensor serial link.

### Auto Wiping Operation

- BCM receives the wiping speed request signal from the light & rain sensor via the light & rain sensor serial link.
- BCM controls front wiper operation according to the wiping speed request signals. And it transmits the front wiper request signals (LO or HI) to the IPDM E/R via CAN communication line.

### Front wiper AUTO operating condition

- Ignition switch ON
- Front wiper switch AUTO

### NOTE:

When the front wiper switch is turned to AUTO position, front wiper operates once regardless of a rainy condition.

### Light & rain Sensor Sensitivity Setting

BCM determines light & rain sensor sensitivity according to a wiper volume.

Wiper volume dial position	Sensitivity
1	High sensitivity
2	
3	Medium – high sensitivity
4	
5	Low – medium sensitivity
6	
7	Low sensitivity

### NOTE:

When the wiper volume is turned up at 1 level with front wiper AUTO operating condition, front wiper operates once.

## FRONT WIPER AUTO STOP OPERATION

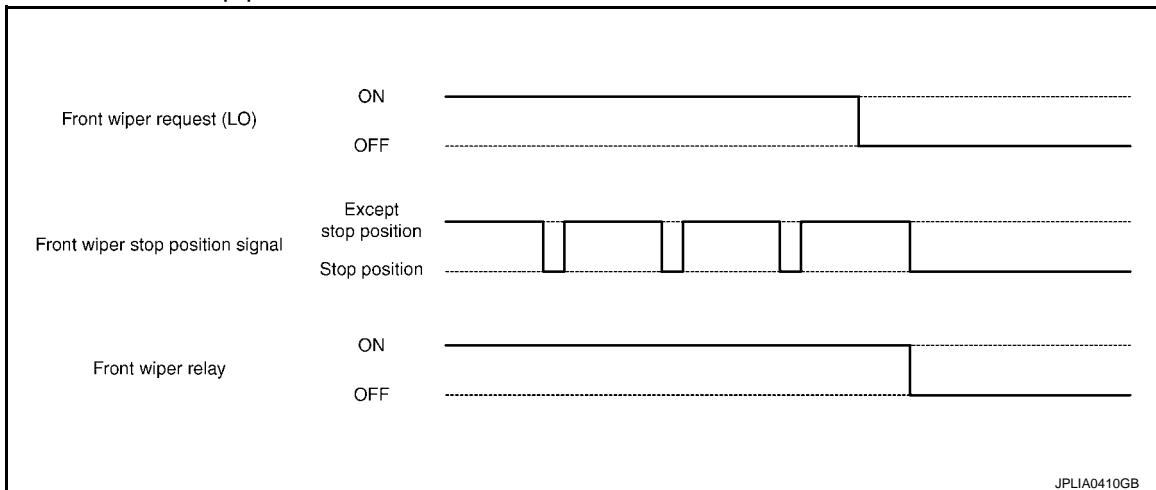
- BCM stops transmitting the front wiper request signal when the front wiper switch is turned OFF.
- IPDM E/R detects the front wiper stop position signal from the front wiper motor and detects the front wiper motor position (stop position/except stop position).

# FRONT WIPER AND WASHER SYSTEM

[FOR EUROPE]

## < SYSTEM DESCRIPTION >

- When the front wiper request signal is stopped, IPDM E/R turns ON the front wiper relay until the front wiper motor returns to the stop position.



### NOTE:

- BCM stops the transmitting of the front wiper request signal when the ignition switch OFF.
- IPDM E/R turns the front wiper relay OFF when the ignition switch OFF.

## FRONT WIPER OPERATION LINKED WITH WASHER

- BCM transmits the front wiper request signal (LO) to IPDM E/R with CAN communication according to the washer linked operating condition of the front wiper.
- BCM transmits the front wiper request signal (LO) so that the front wiper operates approximately 2 times when the front washer switch OFF is detected.

### Washer linked operating condition of front wiper

- Ignition switch ON
- Front washer switch ON (0.4 second or more)
- IPDM E/R turns ON the integrated front wiper relay according to the front wiper request signal (LO).
- The washer pump is grounded through the combination switch when the front washer switch ON.

## FAIL-SAFE FUNCTION

### Front Wiper control

IPDM E/R performs the fail-safe function when the front wiper auto stop circuit is malfunctioning. Refer to [PCS-32, "Fail-safe".](#)

### Light & rain Sensor Malfunction

- BCM judges the light & rain sensor serial link error by the light & rain sensor serial link condition and detects the light & rain sensor malfunction by light & rain sensor malfunction signal.
- When BCM detects the light & rain sensor serial link error or the light & rain sensor malfunction while front wiper AUTO operation, BCM operates a fail-safe control.

### NOTE:

If light & rain sensor malfunction is detected when ignition switch is turned OFF  $\Rightarrow$  ON and front wiper switch is AUTO position, BCM operates front wiper LO.

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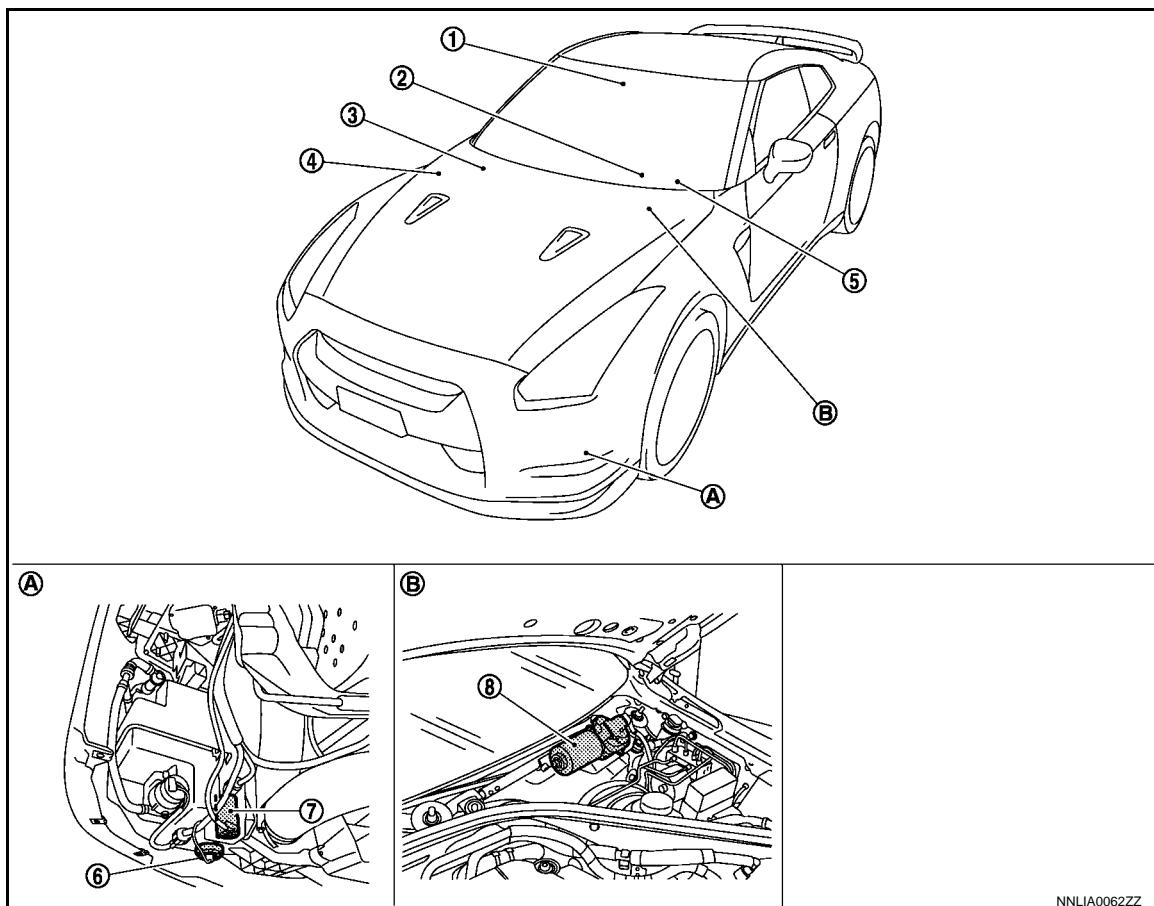
# FRONT WIPER AND WASHER SYSTEM

< SYSTEM DESCRIPTION >

[FOR EUROPE]

WITH LIGHT & RAIN SENSOR : Component Parts Location

INFOID:000000004786237



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1. Light & rain sensor	2. Combination switch	3. IPDM E/R Refer to <a href="#">PCS-6, "Component Parts Location"</a> .
4. BCM Refer to <a href="#">BCS-11, "Component Parts Location"</a> .	5. Combination meter	6. Washer level switch
7. Washer pump	8. Front wiper motor	
A. Radiator core support (LH)	B. Behind of Cowl top cover	

INFOID:000000004786238

WITH LIGHT & RAIN SENSOR : Component Description

Part	Description
BCM	<ul style="list-style-type: none"> <li>Judges the each switch status by the combination switch reading function.</li> <li>Requests (with CAN communication) the front wiper relay and the front wiper high relay ON to IPDM E/R.</li> </ul>
IPDM E/R	<ul style="list-style-type: none"> <li>Controls the integrated relay according to the request (with CAN communication) from BCM.</li> <li>Performs the auto stop control of the front wiper.</li> </ul>
Front wiper motor	<ul style="list-style-type: none"> <li>IPDM E/R controls front wiper operation.</li> <li>Front wiper auto stop signal is transmitted to IPDM E/R.</li> </ul>
Washer pump	Washer fluid is sprayed according to washer switch states.
Combination switch (Wiper & washer switch)	Refer to <a href="#">BCS-12, "System Description"</a> .

# FRONT WIPER AND WASHER SYSTEM

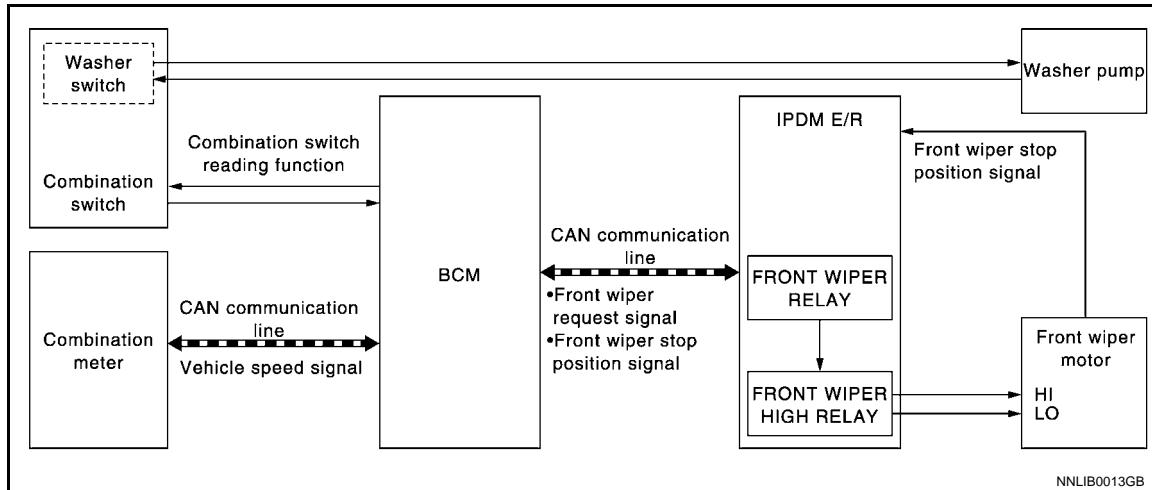
[FOR EUROPE]

< SYSTEM DESCRIPTION >

Part	Description
Combination meter	Transmits the vehicle speed signal to BCM with CAN communication.
Light & rain sensor	Detects water droplets on the windshield with infrared rays, and transmits the light & rain sensor signal to BCM through the light and light & rain sensor serial link.

## WITHOUT LIGHT & RAIN SENSOR

### WITHOUT LIGHT & RAIN SENSOR : System Diagram



### WITHOUT LIGHT & RAIN SENSOR : System Description

INFOID:0000000005286342

#### OUTLINE

The front wiper is controlled by each function of BCM and IPDM E/R.

#### Control by BCM

- Combination switch reading function
- Front wiper control function

#### Control by IPDM E/R

- Front wiper control function
- Relay control function

Combination meter indicates low washer fluid warning judged with the signal from the washer level switch. For details of low washer fluid warning, refer to [MWI-30, "INFORMATION DISPLAY : System Description"](#).

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#### FRONT WIPER BASIC OPERATION

- BCM detects the combination switch condition by the combination switch reading function.
- BCM transmits the front wiper request signal to IPDM E/R with CAN communication depending on each operating condition of the front wiper.
- IPDM E/R turns ON/OFF the integrated front wiper relay and the front wiper high relay according to the front wiper request signal. IPDM E/R provides the power supply to operate the front wiper HI/LO operation.

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#### FRONT WIPER LO OPERATION

- BCM transmits the front wiper request signal (LO) to IPDM E/R with CAN communication according to the front wiper LO operating condition.

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#### Front wiper LO operating condition

- Ignition switch ON
- Front wiper switch LO or front wiper switch MIST (while pressing)
- IPDM E/R turns ON the integrated front wiper relay according to the front wiper request signal (LO).

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#### FRONT WIPER HI OPERATION

- BCM transmits the front wiper request signal (HI) to IPDM E/R with CAN communication according to the front wiper HI operating condition.

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#### Front wiper HI operating condition

- Ignition switch ON

# FRONT WIPER AND WASHER SYSTEM

[FOR EUROPE]

## < SYSTEM DESCRIPTION >

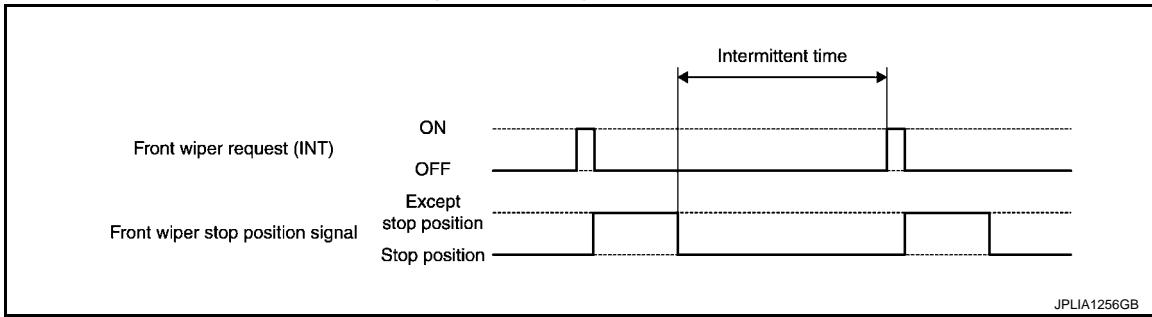
- Front wiper switch HI
- IPDM E/R turns ON the integrated front wiper relay and the front wiper high relay according to the front wiper request signal (HI).

## FRONT WIPER INT OPERATION

- BCM transmits the front wiper request signal (INT) to IPDM E/R with CAN communication depending on the front wiper INT operating condition and intermittent operation delay interval according to the wiper intermittent dial position.

Front wiper INT operating condition

- Ignition switch ON
- Front wiper switch INT
- IPDM E/R turns ON the integrated front wiper relay so that the front wiper is operated only once according to the front wiper request signal (INT).
- BCM detects stop position/except stop position of the front wiper motor according to the front wiper stop position signal received from IPDM E/R with CAN communication.
- BCM transmits the front wiper request signal (INT) again after the intermittent operation delay interval.



### NOTE:

Factory setting of the front wiper intermittent operation is the operation without vehicle speed. Front wiper intermittent operation can be set to the operation with vehicle speed by CONSULT-III. Refer to [WW-20, "WIPER : CONSULT-III Function \(BCM - WIPER\)".](#)

Front wiper intermittent operation

BCM determines intermittent operation delay interval according to a wiper volume.

Unit: Second

Wiper intermittent dial position	Intermittent operation interval	Intermittent operation delay Interval (s)
1	Short ↑	0.4
2		2
3		5
4		8
5		12
6	Long ↓	16
7		21

## FRONT WIPER AUTO STOP OPERATION

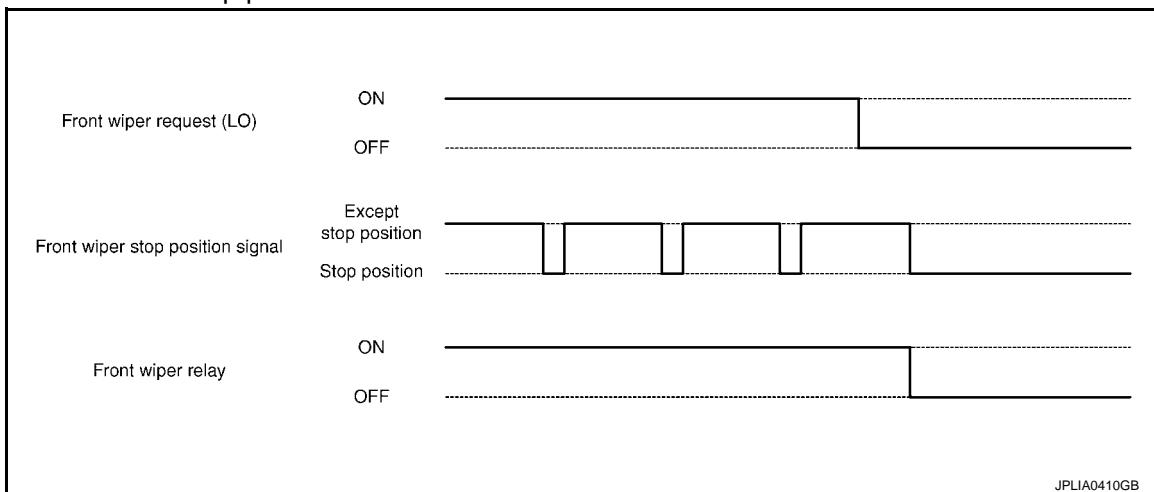
- BCM stops transmitting the front wiper request signal when the front wiper switch is turned OFF.
- IPDM E/R detects the front wiper stop position signal from the front wiper motor and detects the front wiper motor position (stop position/except stop position).

# FRONT WIPER AND WASHER SYSTEM

[FOR EUROPE]

## < SYSTEM DESCRIPTION >

- When the front wiper request signal is stopped, IPDM E/R turns ON the front wiper relay until the front wiper motor returns to the stop position.



### NOTE:

- BCM stops the transmitting of the front wiper request signal when the ignition switch OFF.
- IPDM E/R turns the front wiper relay OFF when the ignition switch OFF.

## FRONT WIPER OPERATION LINKED WITH WASHER

- BCM transmits the front wiper request signal (LO) to IPDM E/R with CAN communication according to the washer linked operating condition of the front wiper.
- BCM transmits the front wiper request signal (LO) so that the front wiper operates approximately 2 times when the front washer switch OFF is detected.

### Washer linked operating condition of front wiper

- Ignition switch ON
- Front washer switch ON (0.4 second or more)
- IPDM E/R turns ON the integrated front wiper relay according to the front wiper request signal (LO).
- The washer pump is grounded through the combination switch when the front washer switch ON.

## FRONT WIPER FAIL-SAFE OPERATION

When the front wiper auto stop circuit is malfunctioning, IPDM E/R performs the fail-safe function. Refer to [PCS-32, "Fail-safe"](#).

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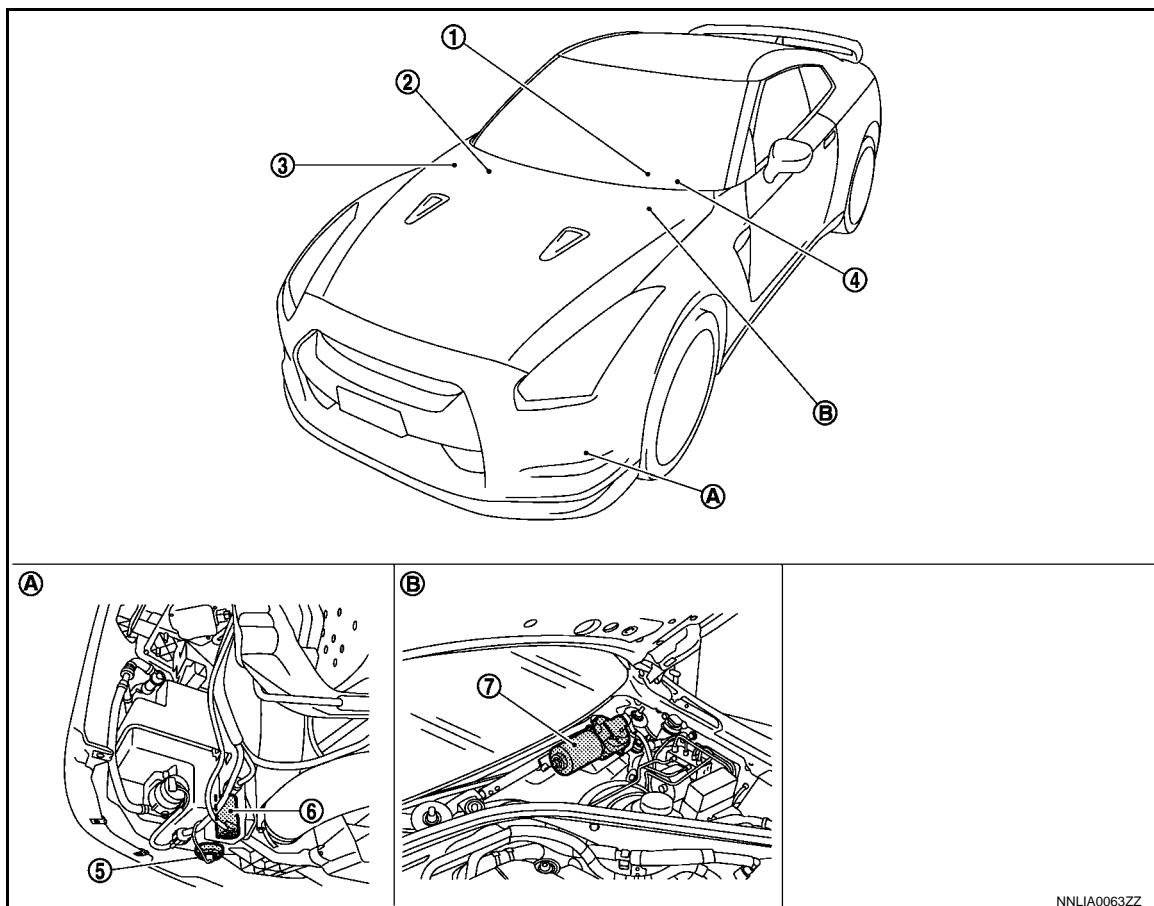
# FRONT WIPER AND WASHER SYSTEM

< SYSTEM DESCRIPTION >

[FOR EUROPE]

WITHOUT LIGHT & RAIN SENSOR : Component Parts Location

INFOID:0000000005286343



NNLIA0063ZZ

1. Combination switch	2. IPDM E/R Refer to <a href="#">PCS-6, "Component Parts Location"</a> .	3. BCM Refer to <a href="#">BCS-100, "Component Parts Location"</a> .
4. Combination meter	5. Washer level switch	6. Washer pump
7. Front wiper motor		
A. Radiator core support (LH)	B. Behind of Cowl top cover	

INFOID:0000000005286344

WITHOUT LIGHT & RAIN SENSOR : Component Description

Part	Description
BCM	<ul style="list-style-type: none"> <li>Detects the each switch status by the combination switch reading function.</li> <li>Requests (with CAN communication) the front wiper relay and the front wiper high relay ON to IPDM E/R.</li> </ul>
IPDM E/R	<ul style="list-style-type: none"> <li>Controls the integrated relay according to the request (with CAN communication) from BCM.</li> <li>Performs the auto stop control of the front wiper.</li> </ul>
Front wiper motor	<ul style="list-style-type: none"> <li>IPDM E/R controls front wiper operation.</li> <li>Front wiper auto stop signal is transmitted to IPDM E/R.</li> </ul>
Washer pump	Washer fluid is sprayed according to washer switch states.
Combination switch (Wiper & washer switch)	Refer to <a href="#">BCS-101, "System Description"</a> .
Combination meter	Transmits the vehicle speed signal to BCM with CAN communication.

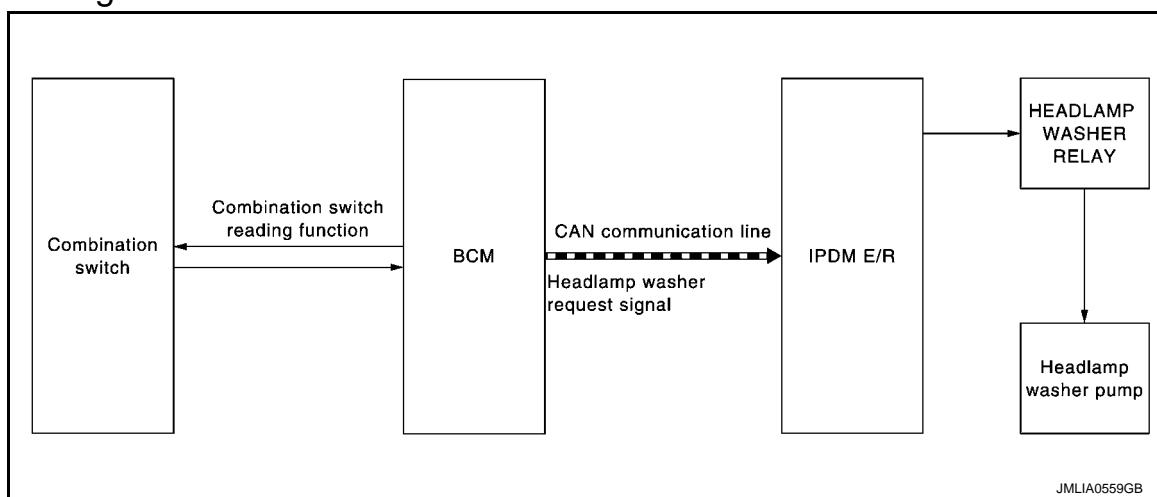
# HEADLAMP WASHER SYSTEM

[FOR EUROPE]

< SYSTEM DESCRIPTION >

## HEADLAMP WASHER SYSTEM

### System Diagram



### System Description

INFOID:0000000004784797

#### OUTLINE

Headlamp washer is controlled by each function of BCM and IPDM E/R.

Control by BCM

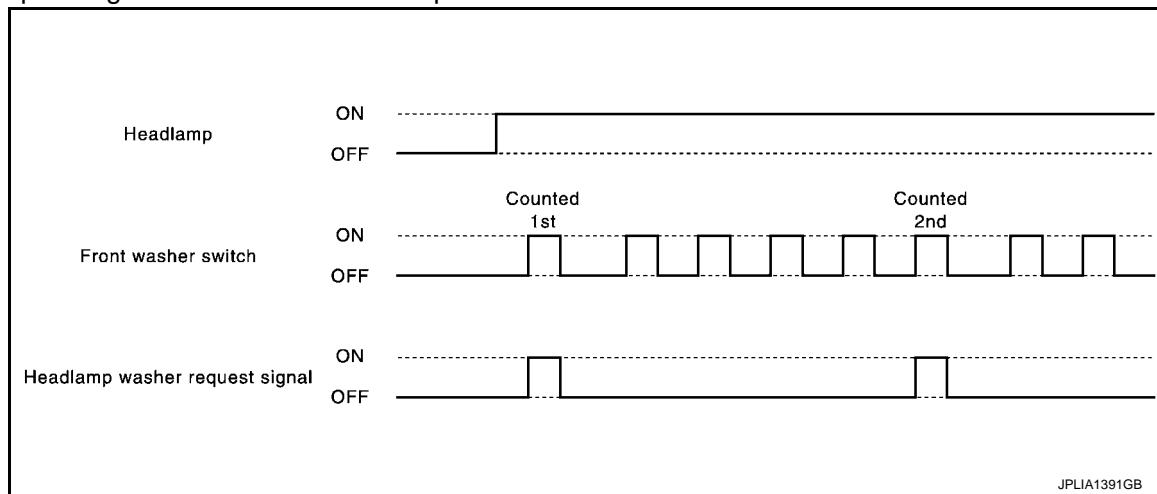
- Combination switch reading function
- Headlamp washer control function

Control by IPDM E/R

- Headlamp washer relay control function

#### HEADLAMP WASHER BASIC OPERATION

- BCM detects the combination switch condition by the combination switch reading function.
- BCM transmits the headlamp washer request signal to IPDM E/R with CAN communication depending on each operating condition of the headlamp washer.



Operation is front washer switch (The first time)

- Ignition switch ON
- Headlamps ON
- Front washer switch ON at first time

Operation is front washer switch (From the second time)

- Ignition switch ON
- Headlamps ON
- Front washer switch ON at fifth time after the first time

# HEADLAMP WASHER SYSTEM

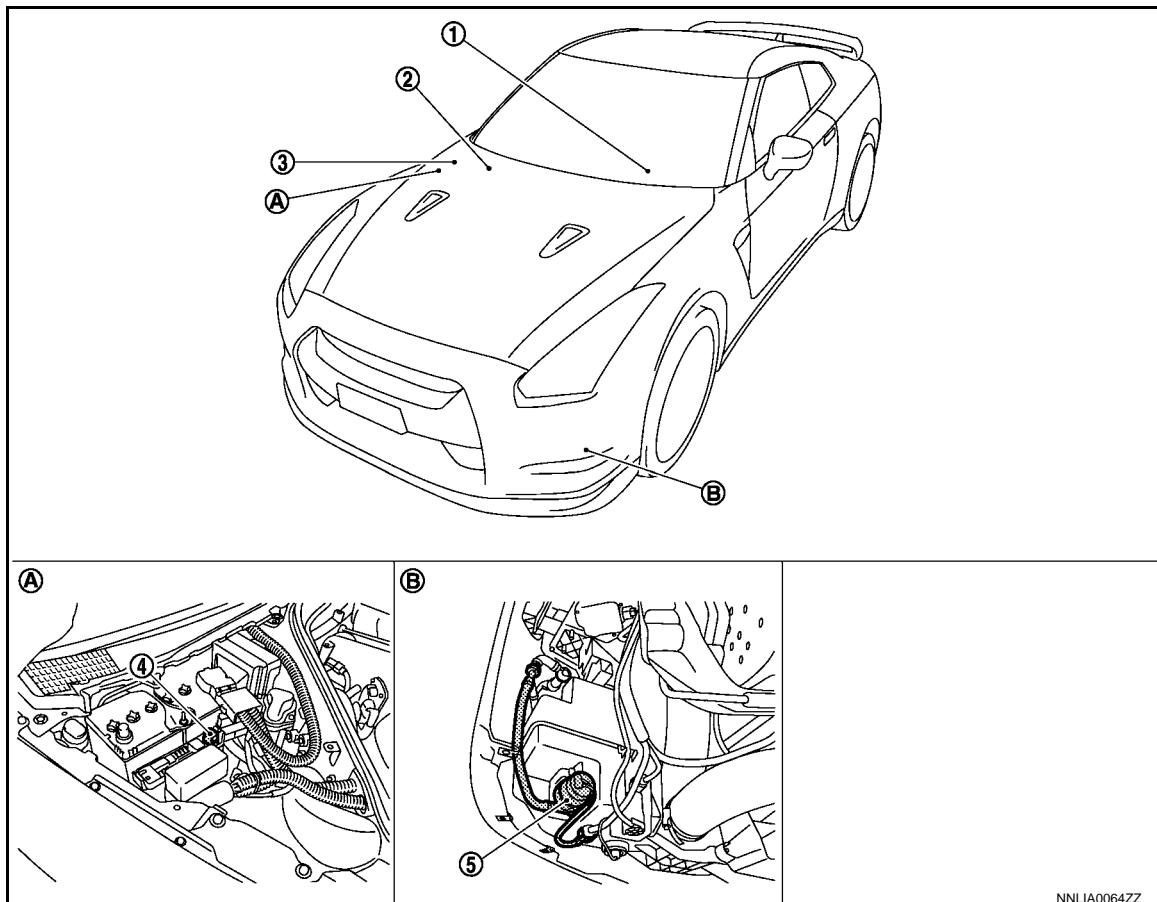
[FOR EUROPE]

## < SYSTEM DESCRIPTION >

- IPDM E/R turns ON/OFF the headlamp washer relay by receiving the headlamp washer request signal, and controls the headlamp washer.

## Component Parts Location

INFOID:000000004784798



- Combination switch
- IPDM E/R  
Refer to [PCS-6, "Component Parts Location"](#).
- BCM  
Refer to [BCS-11, "Component Parts Location"](#).
- Headlamp washer relay
- Headlamp washer pump
- Engine room dash Panel (RH)
- Radiator core support (LH)

## Component Description

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Part	Description
BCM	<ul style="list-style-type: none"><li>Judges the each switch status by the combination switch reading function.</li><li>Requests (with CAN communication) the headlamp washer relay ON to IPDM E/R.</li></ul>
IPDM E/R	Controls the integrated relay according to the request (with CAN communication) from BCM.
Combination switch (Wiper & washer switch)	Refer to <a href="#">BCS-12, "System Description"</a> .

&lt; SYSTEM DESCRIPTION &gt;

## DIAGNOSIS SYSTEM (BCM)

## COMMON ITEM

## COMMON ITEM : CONSULT-III Function (BCM - COMMON ITEM)

INFOID:000000004992979

## APPLICATION ITEM

CONSULT-III performs the following functions via CAN communication with BCM.

Diagnosis mode	Function Description
Work Support	Changes the setting for each system function.
Self Diagnostic Result	Displays the diagnosis results judged by BCM.
CAN Diag Support Monitor	Monitors the reception status of CAN communication viewed from BCM. Refer to CONSULT-III operation manual.
Data Monitor	The BCM input/output signals are displayed.
Active Test	The signals used to activate each device are forcibly supplied from BCM.
Ecu Identification	The BCM part number is displayed.
Configuration	<ul style="list-style-type: none"> <li>• Read and save the vehicle specification.</li> <li>• Write the vehicle specification when replacing BCM.</li> </ul>

## SYSTEM APPLICATION

BCM can perform the following functions for each system.

## NOTE:

It can perform the diagnosis modes except the following for all sub system selection items.

x: Applicable item

System	Sub system selection item	Diagnosis mode		
		Work Support	Data Monitor	Active Test
Door lock	DOOR LOCK	x	x	x
Rear window defogger	REAR DEFOGGER		x	x
Warning chime	BUZZER		x	x
Interior room lamp timer	INT LAMP	x	x	x
Exterior lamp	HEAD LAMP	x	x	x
Wiper and washer	WIPER	x <sup>*2</sup>	x	x
Turn signal and hazard warning lamps	FLASHER	x	x	x
—	AIR CONDITIONER <sup>*1</sup>			
• Intelligent Key system • Engine start system	INTELLIGENT KEY	x	x	x
Combination switch	COMB SW		x	
Body control system	BCM	x		
NVIS - NATS	IMMU		x	x
Interior room lamp battery saver	BATTERY SAVER	x	x	x
Trunk lid open	TRUNK		x	x
Vehicle security system	THEFT ALM	x	x	x
RAP system	RETAINED PWR		x	
Signal buffer system	SIGNAL BUFFER		x	x

## NOTE:

- \*1: This item is displayed, but is not used.
- \*2: At models with light and rain sensor this mode is displayed, but is not used.

## FREEZE FRAME DATA (FFD)

The BCM records the following vehicle condition at the time a particular DTC is detected, and displays on CONSULT-III.

# DIAGNOSIS SYSTEM (BCM)

[FOR EUROPE]

< SYSTEM DESCRIPTION >

CONSULT screen item	Indication/Unit	Description
Vehicle Speed	km/h	Vehicle speed of the moment a particular DTC is detected
Odo/Trip Meter	km	Total mileage (Odometer value) of the moment a particular DTC is detected
Vehicle Condition	SLEEP>LOCK SLEEP>OFF LOCK>ACC ACC>ON RUN>ACC CRANK>RUN RUN>URGENT ACC>OFF OFF>LOCK OFF>ACC ON>CRANK OFF>SLEEP LOCK>SLEEP LOCK OFF ACC ON ENGINE RUN CRANKING	Power position status of the moment a particular DTC is detected While turning BCM status from low power consumption mode to normal mode (Power supply position is "LOCK") While turning BCM status from low power consumption mode to normal mode (Power supply position is "OFF".) While turning power supply position from "LOCK" to "ACC" While turning power supply position from "ACC" to "IGN" While turning power supply position from "RUN" to "ACC" (Vehicle is stopping and shift lever is except P position.) While turning power supply position from "CRANKING" to "RUN" (From cranking up the engine to run it) While turning power supply position from "RUN" to "ACC" (Emergency stop operation) While turning power supply position from "ACC" to "OFF" While turning power supply position from "OFF" to "LOCK" While turning power supply position from "OFF" to "ACC" While turning power supply position from "IGN" to "CRANKING" While turning BCM status from normal mode (Power supply position is "OFF".) to low power consumption mode While turning BCM status from normal mode (Power supply position is "LOCK".) to low power consumption mode Power supply position is "LOCK" (Ignition switch OFF with steering is locked.) Power supply position is "OFF" (Ignition switch OFF with steering is unlocked.) Power supply position is "ACC" (Ignition switch ACC) Power supply position is "IGN" (Ignition switch ON with engine stopped) Power supply position is "RUN" (Ignition switch ON with engine running) Power supply position is "CRANKING" (At engine cranking)
IGN Counter	0 - 39	The number of times that ignition switch is turned ON after DTC is detected • The number is 0 when a malfunction is detected now. • The number increases like 1 → 2 → 3...38 → 39 after returning to the normal condition whenever ignition switch OFF → ON. • The number is fixed to 39 until the self-diagnosis results are erased if it is over 39.

## WIPER

### WIPER : CONSULT-III Function (BCM - WIPER)

INFOID:000000004639857

#### WORK SUPPORT

Service item	Setting item	Description
WIPER SPEED SETTING*1	On	With vehicle speed (Front wiper intermittent time linked with the vehicle speed and wiper intermittent dial position)
	Off*2	Without vehicle speed (Front wiper intermittent time linked with the wiper intermittent dial position)

\*1:With out light & rain sensor

\*2:Factory setting

# DIAGNOSIS SYSTEM (BCM)

[FOR EUROPE]

< SYSTEM DESCRIPTION >

## DATA MONITOR

Monitor Item [Unit]	Description
PUSH SW [Off/On]	The switch status input from push-button ignition switch.
VEHICLE SPEED 1 [km/h]	The value of the vehicle speed signal received from combination meter with CAN communication.
FR WIPER HI [Off/On]	
FR WIPER LOW [Off/On]	
FR WASHER SW [Off/On]	Each switch status that BCM judges from the combination switch reading function.
FR WIPER INT [Off/On]	
FR WIPER STOP [Off/On]	Front wiper motor (stop position) status received from IPDM E/R with CAN communication.
INT VOLUME [1 – 7]	Each switch status that BCM judges from the combination switch reading function.
H/L WASH SW [Off/On]	<b>NOTE:</b> The item is indicated, but not monitored.

## ACTIVE TEST

Test item	Operation	Description
FR WIPER	Hi	Transmits the front wiper request signal (HI) to IPDM E/R with CAN communication to operate the front wiper HI operation.
	Lo	Transmits the front wiper request signal (LO) to IPDM E/R with CAN communication to operate the front wiper LO operation.
	INT	Transmits the front wiper request signal (INT) to IPDM E/R with CAN communication to operate the front wiper INT operation.
	Off	Stops transmitting the front wiper request signal to stop the front wiper operation.
HEADLAMP WASHER	On	Transmits the headlamp washer request signal to IPDM E/R with CAN communication to operate the headlamp washer operation.

&lt; SYSTEM DESCRIPTION &gt;

## DIAGNOSIS SYSTEM (IPDM E/R)

## Diagnosis Description

INFOID:0000000004992980

## AUTO ACTIVE TEST

## Description

In auto active test mode, the IPDM E/R sends a drive signal to the following systems to check their operation.

- Front wiper (LO, HI)
- Parking lamps
- License plate lamps
- Tail lamps
- Headlamps (LO, HI)
- A/C compressor (magnet clutch)
- Cooling fan (cooling fan control module)

## Operation Procedure

1. Close the hood and lift the wiper arms from the windshield. (Prevent windshield damage due to wiper operation)

**NOTE:**

When auto active test is performed with hood opened, sprinkle water on windshield beforehand.

2. Turn the ignition switch OFF.
3. Turn the ignition switch ON, and within 20 seconds, press the driver door switch 10 times. Then turn the ignition switch OFF.

**CAUTION:**

**Close passenger door.**

4. Turn the ignition switch ON within 10 seconds. After that the horn sounds once and the auto active test starts.
5. After a series of the following operations is repeated 3 times, auto active test is completed.

**NOTE:**

When auto active test mode has to be cancelled halfway through test, turn the ignition switch OFF.

**CAUTION:**

- If auto active test mode cannot be actuated, check door switch system. Refer to [DLK-65, "Component Function Check"](#) (With super lock), [DLK-416, "Component Function Check"](#) (Without super lock).
- Do not start the engine.

## Inspection in Auto Active Test Mode

When auto active test mode is actuated, the following 5 steps are repeated 3 times.

Operation sequence	Inspection location	Operation
1	Front wiper	LO for 5 seconds → HI for 5 seconds
2	<ul style="list-style-type: none"> <li>• Parking lamps</li> <li>• License plate lamps</li> <li>• Tail lamps</li> </ul>	10 seconds
3	Headlamps	LO for 10 seconds → HI ON ⇔ OFF 5 times
4	A/C compressor (magnet clutch)	ON ⇔ OFF 5 times
5*	Cooling fan	MID for 5 seconds → HI for 5 seconds

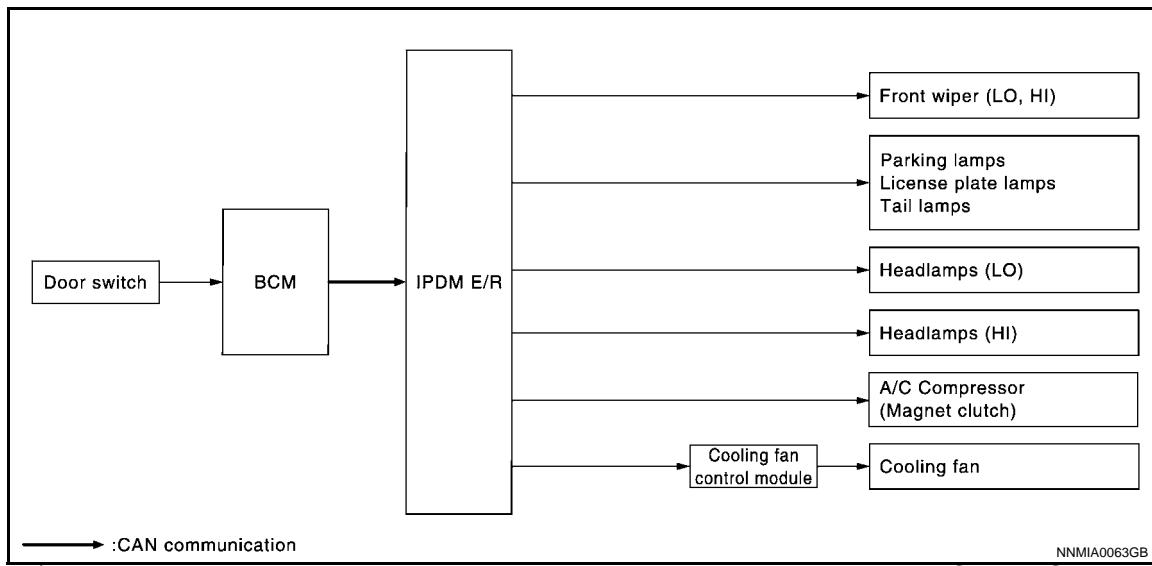
\*: Outputs duty ratio of 50% for 5 seconds → duty ratio of 100% for 5 seconds on the cooling fan control module.

# DIAGNOSIS SYSTEM (IPDM E/R)

[FOR EUROPE]

< SYSTEM DESCRIPTION >

Concept of auto active test



- IPDM E/R starts the auto active test with the door switch signals transmitted by BCM via CAN communication. Therefore, the CAN communication line between IPDM E/R and BCM is considered normal if the auto active test starts successfully.
- The auto active test facilitates troubleshooting if any systems controlled by IPDM E/R cannot be operated.

Diagnosis chart in auto active test mode

Symptom	Inspection contents	Possible cause
Any of the following components do not operate • Parking lamps • License plate lamps • Tail lamps • Headlamp (LO, HI) • Front wiper (LO, HI)	Perform auto active test. Does the applicable system operate?	YES BCM signal input circuit
		NO • Lamp or motor • Lamp or motor ground circuit • Harness or connector between IPDM E/R and applicable system • IPDM E/R
A/C compressor does not operate	Perform auto active test. Does the magnet clutch operate?	YES • A/C amp. signal input circuit • CAN communication signal between A/C amp. and ECM • CAN communication signal between ECM and IPDM E/R
		NO • Magnet clutch • Harness or connector between IPDM E/R and magnet clutch • IPDM E/R
Cooling fan does not operate	Perform auto active test. Does the cooling fan operate?	YES • ECM signal input circuit • CAN communication signal between ECM and IPDM E/R
		NO • Cooling fan • Harness or connector between cooling fan and cooling fan control module • Cooling fan control module • Harness or connector between IPDM E/R and cooling fan control module • Cooling fan relay • Harness or connector between IPDM E/R and cooling fan relay • IPDM E/R

# DIAGNOSIS SYSTEM (IPDM E/R)

[FOR EUROPE]

< SYSTEM DESCRIPTION >

## CONSULT-III Function (IPDM E/R)

INFOID:000000004992981

### APPLICATION ITEM

CONSULT-III performs the following functions via CAN communication with IPDM E/R.

Diagnosis mode	Description
Ecu Identification	Allows confirmation of IPDM E/R part number.
Self Diagnostic Result	Displays the diagnosis results judged by IPDM E/R.
Data Monitor	Displays the real-time input/output data from IPDM E/R input/output data.
Active Test	IPDM E/R can provide a drive signal to electronic components to check their operations.
CAN Diag Support Monitor	The results of transmit/receive diagnosis of CAN communication can be read.

### SELF DIAGNOSTIC RESULT

Refer to [WW-117, "DTC Index".](#)

### DATA MONITOR

Monitor item

Monitor Item [Unit]	MAIN SIG- NALS	Description
RAD FAN REQ [%]	×	Displays the value of the cooling fan speed signal received from ECM via CAN communication.
AC COMP REQ [Off/On]	×	Displays the status of the A/C compressor request signal received from ECM via CAN communication.
TAIL&CLR REQ [Off/On]	×	Displays the status of the position light request signal received from BCM via CAN communication.
HL LO REQ [Off/On]	×	Displays the status of the low beam request signal received from BCM via CAN communication.
HL HI REQ [Off/On]	×	Displays the status of the high beam request signal received from BCM via CAN communication.
FR FOG REQ [Off/On]	×	<b>NOTE:</b> The item is indicated, but not monitored.
FR WIP REQ [Stop/1LOW/Low/Hi]	×	Displays the status of the front wiper request signal received from BCM via CAN communication.
WIP AUTO STOP [STOP P/ACT P]	×	Displays the status of the front wiper stop position signal judged by IPDM E/R.
WIP PROT [Off/BLOCK]	×	Displays the status of the front wiper fail-safe operation judged by IPDM E/R.
IGN RLY1 -REQ [Off/On]		Displays the status of the ignition switch ON signal received from BCM via CAN communication.
IGN RLY [Off/On]	×	Displays the status of the ignition relay judged by IPDM E/R.
PUSH SW [Off/On]		Displays the status of the push-button ignition switch judged by IPDM E/R.
INTER/NP SW [Off/On]		Displays the status of the shift position judged by IPDM E/R.
ST RLY CONT [Off/On]		Displays the status of the starter relay status signal received from BCM via CAN communication.
IHBT RLY -REQ [Off/ On/INHI ON/UNKWN]		Displays the status of the starter control relay signal received from BCM via CAN communication.
ST/INHI RLY [Off/ ST ON/INHI ON/UNKWN]		Displays the status of the starter relay and starter control relay judged by IPDM E/R.
DETENT SW [Off/On]		Displays the status of the A/T shift selector (detention switch) judged by IPDM E/R.

# DIAGNOSIS SYSTEM (IPDM E/R)

[FOR EUROPE]

< SYSTEM DESCRIPTION >

Monitor Item [Unit]	MAIN SIG- NALS	Description
S/L RLY -REQ [Off/On]		Displays the status of the steering lock relay request signal received from BCM via CAN communication.
S/L STATE [LOCK/UNLOCK/UNKWN]		Displays the status of the steering lock judged by IPDM E/R.
DTRL REQ [Off/On]	×	Displays the status of the daytime running light request signal received from BCM via CAN communication. <b>NOTE:</b> This item is monitored only the vehicle with daytime running light system.
OIL P SW [Open/Close]		<b>NOTE:</b> The item is indicated, but not monitored.
HOOD SW [Off/On]		Displays the status of the hood switch judged by IPDM E/R.
HL WASHER REQ [Off/On]		Displays the status of the headlamp washer request signal received from BCM via CAN communication. <b>NOTE:</b> This item is monitored only the vehicle with headlamp washer system.
THFT HRN REQ [Off/On]		Displays the status of the theft warning horn request signal received from BCM via CAN communication.
HORN CHIRP [Off/On]		Displays the status of the horn reminder signal received from BCM via CAN communication.
CRNRNG LMP REQ [Off/On]		<b>NOTE:</b> The item is indicated, but not monitored.

## ACTIVE TEST

Test item

Test item	Operation	Description
CORNERRING LAMP	Off	<b>NOTE:</b> The item is indicated, but cannot be tested.
	LH	
	RH	
HORN	On	Operates horn relay 1 and horn relay 2 for 20 ms.
FRONT WIPER	Off	OFF
	Lo	Operates the front wiper relay.
	Hi	Operates the front wiper relay and front wiper high relay.
MOTOR FAN	1	OFF
	2	Outputs 50% pulse duty signal (PWM signal) to the cooling fan control module.
	3	Outputs 80% pulse duty signal (PWM signal) to the cooling fan control module.
	4	Outputs 100% pulse duty signal (PWM signal) to the cooling fan control module.
HEAD LAMP WASHER	Off	OFF
	On	Operates the headlamp washer relay for 1 second.
EXTERNAL LAMPS	Off	OFF
	TAIL	Operates the tail lamp relay.
	Lo	Operates the headlamp low relay.
	Hi	Operates the headlamp low relay and ON/OFF the headlamp high relay at 1 second intervals.
	Fog	<b>NOTE:</b> The item is indicated, but cannot be tested.

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## DTC/CIRCUIT DIAGNOSIS

### WIPER AND WASHER FUSE, FUSIBLE LINK

#### Diagnosis Procedure

INFOID:000000004639861

##### 1. CHECK FUSES AND FUSIBLE LINK

Check that the following fuses and fusible link are not fusing.

Unit	Location	No.	Capacity
Front wiper motor	IPDM E/R	60	30 A
Washer pump	IPDM E/R	47	10 A
Headlamp washer pump	Fuse block	J	40 A

#### Is the fuse fusing?

YES    >> Replace the fuse or fusible link with a new one after repairing the applicable circuit.  
NO    >> The fuse is normal.

&lt; DTC/CIRCUIT DIAGNOSIS &gt;

## POWER SUPPLY AND GROUND CIRCUIT

### BCM (BODY CONTROL MODULE)

#### BCM (BODY CONTROL MODULE) : Diagnosis Procedure

INFOID:000000004992983

##### 1. CHECK FUSE AND FUSIBLE LINK

Check that the following fuse and fusible link are not blown.

Signal name	Fuse and fusible link No.
Battery power supply	I
	10

Is the fuse fusing?

YES >> Replace the blown fuse or fusible link after repairing the affected circuit if a fuse or fusible link is blown.

NO >> GO TO 2.

##### 2. CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connectors.
3. Check voltage between BCM harness connector and ground.

Terminals		Voltage (Approx.)
(+)	(-)	
BCM	Ground	
Connector	Terminal	
M118	1	
M119	11	Battery voltage

Is the measurement value normal?

YES >> GO TO 3.

NO >> Repair harness or connector.

##### 3. CHECK GROUND CIRCUIT

Check continuity between BCM harness connector and ground.

BCM		Continuity
Connector	Terminal	
M119	13	
Ground		Existed

Does continuity exist?

YES >> INSPECTION END

NO >> Repair harness or connector.

## IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

#### IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) : Diagnosis Procedure

INFOID:000000004992982

##### 1. CHECK FUSES AND FUSIBLE LINK

Check that the following IPDM E/R fuses or fusible links are not blown.

# POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[FOR EUROPE]

Signal name	Fuses and fusible link No.
	C
Battery power supply	50
	51

Is the fuse fusing?

YES >> Replace the blown fuse or fusible link after repairing the affected circuit if a fuse or fusible link is blown.

NO >> GO TO 2.

## 2. CHECK POWER SUPPLY CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Check voltage between the IPDM E/R harness connector and the ground.

Terminals		Voltage (Approx.)
(+)	(-)	
IPDM E/R		
Connector	Terminal	Ground
E4	1	Battery voltage

Is the measurement value normal?

YES >> GO TO 3.

NO >> Repair the harness or connector.

## 3. CHECK GROUND CIRCUIT

Check continuity between the IPDM E/R harness connectors and the ground.

IPDM E/R		Ground	Continuity
Connector	Terminal		Existed
E5	12		
E6	41		

Does continuity exist?

YES >> INSPECTION END

NO >> Repair the harness or connector.

# FRONT WIPER MOTOR LO CIRCUIT

[FOR EUROPE]

< DTC/CIRCUIT DIAGNOSIS >

## FRONT WIPER MOTOR LO CIRCUIT

### Component Function Check

INFOID:0000000004639864

#### 1. CHECK FRONT WIPER LO OPERATION

##### IPDM E/R AUTO ACTIVE TEST

1. Start IPDM E/R auto active test. Refer to [PCS-11, "Diagnosis Description"](#).
2. Check that the front wiper operates at the LO operation.

##### CONSULT-III ACTIVE TEST

1. Select "FRONT WIPER" of IPDM E/R active test item.
2. With operating the test item, check front wiper operation.

**Lo : Front wiper (LO) operation**

**Off : Stop the front wiper.**

Is front wiper (LO) operation normally?

YES >> Front wiper motor LO circuit is normal.

NO >> Refer to [WW-29, "Diagnosis Procedure"](#).

### Diagnosis Procedure

INFOID:0000000004639865

#### 1. CHECK FRONT WIPER MOTOR (LO) OUTPUT VOLTAGE

##### CONSULT-III ACTIVE TEST

1. Turn the ignition switch OFF.
2. Disconnect front wiper motor connector.
3. Turn the ignition switch ON.
4. Select "FRONT WIPER" of IPDM E/R active test item.
5. With operating the test item, check voltage between front wiper motor harness connector and ground.

Terminals		Test item	Voltage (Approx.)
(+)	(-)		
Front wiper motor		FRONT WIPER	
Connector	Terminal		
E42	1	Ground	
		Lo	Battery voltage
		Off	0 V

Is the measurement value normal?

YES >> GO TO 2.

NO >> Replace front wiper motor.

#### 2. CHECK FRONT WIPER MOTOR (LO) OPEN CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Check continuity between IPDM E/R harness connector and front wiper motor harness connector.

IPDM E/R		Front wiper motor		Continuity
Connector	Terminal	Connector	Terminal	
E5	4	E42	1	Existed

Does continuity exist?

YES >> GO TO 3.

NO >> Repair or replace harness.

#### 3. CHECK FRONT WIPER MOTOR (LO) SHORT CIRCUIT

Check continuity between IPDM E/R harness connector and ground.

## FRONT WIPER MOTOR LO CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[FOR EUROPE]

IPDM E/R		Ground	Continuity
Connector	Terminal		
E5	4		Not existed

Does continuity exist?

YES >> Repair or replace harness.

NO >> Replace IPDM E/R.

&lt; DTC/CIRCUIT DIAGNOSIS &gt;

## FRONT WIPER MOTOR HI CIRCUIT

## Component Function Check

INFOID:0000000004639866

## 1. CHECK FRONT WIPER HI OPERATION

## ☒ IPDM E/R AUTO ACTIVE TEST

1. Start IPDM E/R auto active test. Refer to [PCS-11, "Diagnosis Description"](#).
2. Check that the front wiper operates at the HI operation.

## ☒ CONSULT-III ACTIVE TEST

1. Select "FRONT WIPER" of IPDM E/R active test item.
2. With operating the test item, check front wiper operation.

Hi : Front wiper (HI) operation

Off : Stop the front wiper.

Is front wiper (HI) operation normally?

YES &gt;&gt; Front wiper motor HI circuit is normal.

NO >> Refer to [WW-31, "Diagnosis Procedure"](#).

## Diagnosis Procedure

INFOID:0000000004639867

## 1. CHECK FRONT WIPER MOTOR (HI) OUTPUT VOLTAGE

## ☒ CONSULT-III ACTIVE TEST

1. Turn the ignition switch OFF.
2. Disconnect front wiper motor connector.
3. Turn the ignition switch ON.
4. Select "FRONT WIPER" of IPDM E/R active test item.
5. With operating the test item, check voltage between front wiper motor harness connector and ground.

Terminals		Test item	Voltage (Approx.)
(+)	(-)		
Front wiper motor		FRONT WIPER	
Connector	Terminal		
E42	4	Hi	Battery voltage
		Off	0 V

Is the measurement value normal?

YES &gt;&gt; GO TO 2.

NO &gt;&gt; Replace front wiper motor.

## 2. CHECK FRONT WIPER MOTOR (HI) OPEN CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Check continuity between IPDM E/R harness connector and front wiper motor harness connector.

IPDM E/R		Front wiper motor		Continuity
Connector	Terminal	Connector	Terminal	
E5	5	E42	4	Existed

Does continuity exist?

YES &gt;&gt; GO TO 3.

NO &gt;&gt; Repair or replace harness.

## 3. CHECK FRONT WIPER MOTOR (HI) SHORT CIRCUIT

Check continuity between IPDM E/R harness connector and ground.

## FRONT WIPER MOTOR HI CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[FOR EUROPE]

IPDM E/R		Ground	Continuity
Connector	Terminal		
E5	5		Not existed

Does continuity exist?

YES >> Repair or replace harness.

NO >> Replace IPDM E/R.

# FRONT WIPER AUTO STOP SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[FOR EUROPE]

## FRONT WIPER AUTO STOP SIGNAL CIRCUIT

### Component Function Check

INFOID:0000000004639868

#### 1. CHECK FRONT WIPER (AUTO STOP) SIGNAL

##### ④ CONSULT-III DATA MONITOR

1. Select "WIP AUTO STOP" of IPDM E/R data monitor item.
2. Operate the front wiper.
3. With the front wiper operation, check the monitor status.

Monitor item	Condition		Monitor status
WIP AUTO STOP	Front wiper motor	Stop position	STOP P
		Except stop position	ACT P

Is the status of item normal?

YES >> Auto stop signal circuit is normal.  
NO >> Refer to [WW-33, "Diagnosis Procedure"](#).

### Diagnosis Procedure

INFOID:0000000004639869

#### 1. CHECK FRONT WIPER MOTOR (AUTO STOP) OUTPUT VOLTAGE

1. Turn the ignition switch OFF.
2. Disconnect front wiper motor connector.
3. Turn the ignition switch ON.
4. Check voltage between front wiper motor harness connector and ground.

Terminals		Voltage (Approx.)
(+)	(-)	
Front wiper motor		
Connector	Terminal	
E42	5	Battery voltage

Is the measurement value normal?

YES >> Replace front wiper motor.  
NO >> GO TO 2.

#### 2. CHECK FRONT WIPER MOTOR (AUTO STOP) CIRCUIT CONTINUITY

1. Turn the ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Check continuity between IPDM E/R harness connector and front wiper motor harness connector.

IPDM E/R		Front wiper motor		Continuity
Connector	Terminal	Connector	Terminal	
E5	16	E42	5	Existed

Does continuity exist?

YES >> GO TO 3.  
NO >> Repair or replace harness.

#### 3. CHECK FRONT WIPER MOTOR (AUTO STOP) SHORT CIRCUIT

Check continuity between IPDM E/R harness connector and ground.

IPDM E/R		Ground	Continuity
Connector	Terminal		
E5	16		Not existed

## FRONT WIPER AUTO STOP SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[FOR EUROPE]

Does continuity exist?

YES    >> Repair or replace harness.

NO    >> Replace IPDM E/R.

# FRONT WIPER MOTOR GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[FOR EUROPE]

## FRONT WIPER MOTOR GROUND CIRCUIT

### Diagnosis Procedure

INFOID:0000000004639870

#### 1. CHECK FRONT WIPER MOTOR (GND) OPEN CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect front wiper motor connector.
3. Check continuity between front wiper motor harness connector and ground.

Front wiper motor		Ground	Continuity
Connector	Terminal		
E42	2		Existed

#### Does continuity exist?

YES >> Front wiper motor ground circuit is normal.  
NO >> Repair or replace harness.

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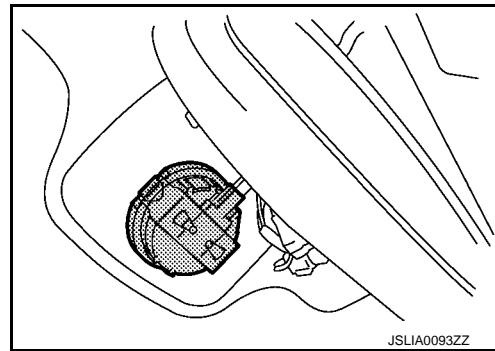
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&lt; DTC/CIRCUIT DIAGNOSIS &gt;

**LIGHT & RAIN SENSOR****Description**

INFOID:0000000004784815

Light & rain sensor judges a wiping speed for front wiper by rain condition and the vehicle conditions. And it transmits the wiping speed request signal to the BCM via the light & rain sensor serial link.



JSLIA0093ZZ

**Component Function Check**

INFOID:0000000004784816

**1. CHECK FRONT WIPER AUTO OPERATION**

1. Clean light & rain sensor detection area of windshield fully.
2. When the front wiper switch is turned to AUTO position, front wiper operates once regardless of a rainy condition.

Is front wiper (AUTO) operation normally?

YES >> Light & rain sensor circuit is normal.  
 NO >> Refer to [WW-36, "Diagnosis Procedure"](#).

**Diagnosis Procedure**

INFOID:0000000004784817

**1. CHECK LIGHT & RAIN SENSOR FUSE**

1. Turn the ignition switch OFF.
2. Check that the light & rain sensor 10 A fuse (#6) is not fusing.

Is the fuse fusing?

YES >> Replace the fuse after repairing the applicable circuit.  
 NO >> GO TO 2.

**2. CHECK LIGHT & RAIN SENSOR POWER SUPPLY**

1. Disconnect light & rain sensor connector.
2. Check voltage between light & rain sensor harness connector and ground.

Terminal		(-)	Voltage (Approx.)
(+)	Terminal		
Light & rain sensor connector			
R10	1	Ground	Battery voltage

Is the measurement value normal?

YES >> GO TO 3.  
 NO >> Repair or replace harness.

**3. CHECK LIGHT & RAIN SENSOR GROUND CIRCUIT**

Check continuity between light &amp; rain sensor harness connector and ground.

Light & rain sensor	Ground	Continuity
Connector		
R10	3	Existed

Does continuity exist?

# LIGHT & RAIN SENSOR

[FOR EUROPE]

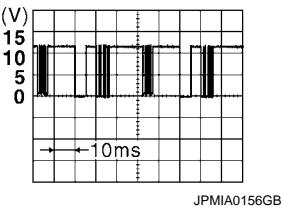
< DTC/CIRCUIT DIAGNOSIS >

YES >> GO TO 4.

NO >> Repair or replace harness.

## 4. CHECK LIGHT & RAIN SENSOR SIGNAL

1. Connect light & rain sensor connector.
2. Turn ignition switch ON.
3. Check signal between BCM harness connector and ground with oscilloscope.

Terminal		Condition	Signal (Reference value)
(+)			
BCM connector	Terminal	(-)	
M123	112	Ground	<p>Ignition switch ON</p> 

Is the measurement value normal?

YES >> Replace light & rain sensor. Refer to [WW-144, "Exploded View"](#).

NO >> GO TO 5.

## 5. CHECK LIGHT & RAIN SENSOR SIGNAL CIRCUIT FOR OPEN

1. Disconnect BCM connector and light & rain sensor connector.
2. Check continuity between BCM harness connector and light & rain sensor harness connector.

BCM		Light & rain sensor		Continuity
Connector	Terminal	Connector	Terminal	
M123	112	R10	2	Existed

Does continuity exist?

YES >> GO TO 6.

NO >> Repair or replace harness.

## 6. CHECK LIGHT & RAIN SENSOR SIGNAL CIRCUIT FOR SHORT

Check continuity between BCM harness connector and ground.

BCM		Ground	Continuity
Connector	Terminal		
M123	112		Not existed

Does continuity exist?

YES >> Repair or replace harness.

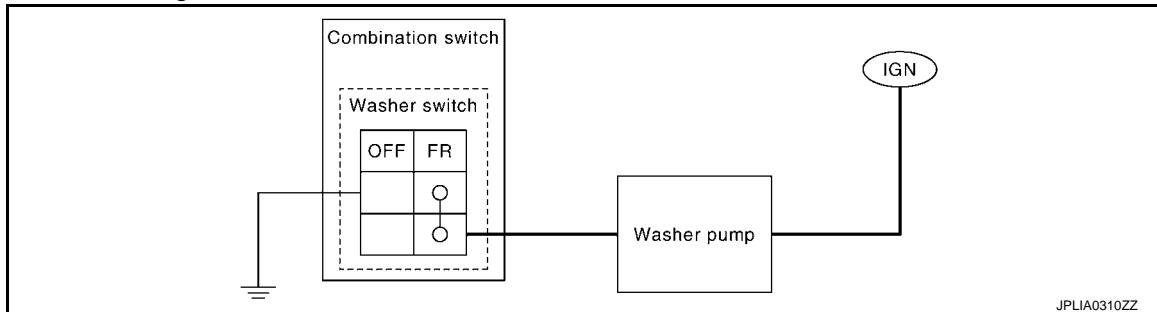
NO >> Replace BCM. Refer to [BCS-93, "Exploded View"](#).

&lt; DTC/CIRCUIT DIAGNOSIS &gt;

**WASHER SWITCH****Description**

INFOID:0000000004639871

Washer switch is integrated with combination switch.

**Component Inspection**

INFOID:0000000004639872

**1. CHECK WIPER SWITCH**

1. Turn the ignition switch OFF.
2. Disconnect combination switch connector.
3. Check continuity between the combination switch terminals.

Combination switch	Condition	Continuity
Terminal		
1	6	Front washer switch ON
		Existed

Does continuity exist?

YES >> Wiper and washer switch is normal.  
 NO >> Replace combination switch (Wiper and washer switch).

&lt; DTC/CIRCUIT DIAGNOSIS &gt;

## HEADLAMP WASHER RELAY

### Component Inspection

INFOID:0000000004784819

#### 1. CHECK HEADLAMP WASHER RELAY

1. Turn the ignition switch OFF.
2. Remove headlamp washer relay.
3. Apply battery voltage to headlamp washer relay between terminals 1 and 2.
4. Check continuity of headlamp washer relay.

Headlamp washer relay		Condition	Continuity
Terminal		Voltage	
3	5	Apply	Existed
		Not Apply	Not existed

#### Does continuity exist?

YES >> Headlamp washer relay is normal.  
NO >> Replace headlamp washer relay.

&lt; DTC/CIRCUIT DIAGNOSIS &gt;

**HEADLAMP WASHER CIRCUIT****Component Function Check**

INFOID:0000000004784820

**1. CHECK HEADLAMP WASHER OPERATION** **CONSULT-III ACTIVE TEST**

1. Select "HEAD LAMP WASHER" of IPDM E/R active test item.
2. With operating the test item, check headlamp operation.

**On :Headlamp washer ON operation**

**Off :Stop the headlamp washer.**

Is headlamp washer operation normally?

YES >> Headlamp washer circuit is normal.

NO >> Refer to [WW-40, "Diagnosis Procedure"](#).

**Diagnosis Procedure**

INFOID:0000000004784821

**1. CHECK HEADLAMP WASHER FUSIBLE LINK**

1. Turn the ignition switch OFF.
2. Check that the headlamp washer 40 A fusible link (#J) is not fusing.

Is the fusible link fusing?

YES >> Replace the fusible link after repairing the applicable circuit.

NO >> GO TO 2.

**2. CHECK HEADLAMP WASHER RELAY POWER SUPPLY**

1. Remove headlamp washer relay.
2. Check voltage between headlamp washer relay harness connector and ground.

Terminals		Voltage (Approx.)
(+)	(-)	
Headlamp washer relay		Ground
Connector	Terminal	
E64	1	
	3	
		Battery voltage

Is the measurement value normal?

YES >> GO TO 3.

NO >> Repair or replace harness.

**3. CHECK HEADLAMP WASHER RELAY**Check headlamp washer relay. Refer to [WW-39, "Component Inspection"](#).Is the headlamp washer relay normal?

YES >> GO TO 4.

NO >> Replace headlamp washer relay.

**4. CHECK HEADLAMP WASHER RELAY CONTROL SIGNAL OUTPUT** **CONSULT-III ACTIVE TEST**

1. Turn the ignition switch OFF.
2. Install headlamp washer relay.
3. Turn the ignition switch ON.
4. Select "HEAD LAMP WASHER" of IPDM E/R active test item.
5. With operating the test item, check voltage between IPDM E/R harness connector and ground.

# HEADLAMP WASHER CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[FOR EUROPE]

Terminals		Test item	Voltage (Approx.)
(+)	(-)		
IPDM E/R	Connector	Ground	HEAD LAMP WASHER
Terminal			On 0 V
E5 17			Off Battery voltage

Is the measurement value normal?

YES >> GO TO 7.

Fixed at 0 V >> GO TO 5.

Fixed at battery voltage >> Replace IPDM E/R.

## 5.CHECK HEADLAMP WASHER RELAY CONTROL SIGNAL OPEN CIRCUIT

1. Turn the ignition switch OFF.
2. Remove headlamp washer relay.
3. Disconnect IPDM E/R harness connector.
4. Check continuity between IPDM E/R harness connector and headlamp washer relay harness connector.

IPDM E/R		Headlamp washer relay		Continuity
Connector	Terminal	Connector	Terminal	
E5	17	E64	2	Existed

Does continuity exist?

YES >> GO TO 6.

NO >> Repair or replace harness.

## 6.CHECK HEADLAMP WASHER RELAY CONTROL SIGNAL SHORT CIRCUIT

Check continuity between IPDM E/R harness connector and ground.

IPDM E/R		Ground	Continuity
Connector	Terminal		
E5	17		Not existed

Does continuity exist?

YES >> Repair or replace harness.

NO >> Replace IPDM E/R.

## 7.CHECK HEADLAMP WASHER PUMP OPEN CIRCUIT

1. Turn the ignition switch OFF.
2. Remove headlamp washer relay.
3. Disconnect headlamp washer pump connector.
4. Check continuity between headlamp washer relay harness connector and headlamp washer pump harness connector.

Headlamp washer relay		Headlamp washer pump		Continuity
Connector	Terminal	Connector	Terminal	
E64	5	E67	1	Existed

Does continuity exist?

YES >> GO TO 8.

NO >> Repair or replace harness.

## 8.CHECK HEADLAMP WASHER PUMP (GND) OPEN CIRCUIT

Check continuity headlamp washer pump harness connector and ground.

## HEADLAMP WASHER CIRCUIT

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Headlamp washer pump		Ground	Continuity
Connector	Terminal		
E67	2		Existed

Does continuity exist?

YES >> Replace headlamp washer pump.

NO >> Repair or replace harness.

## FRONT WIPER AND WASHER SYSTEM

## < DTC/CIRCUIT DIAGNOSIS >

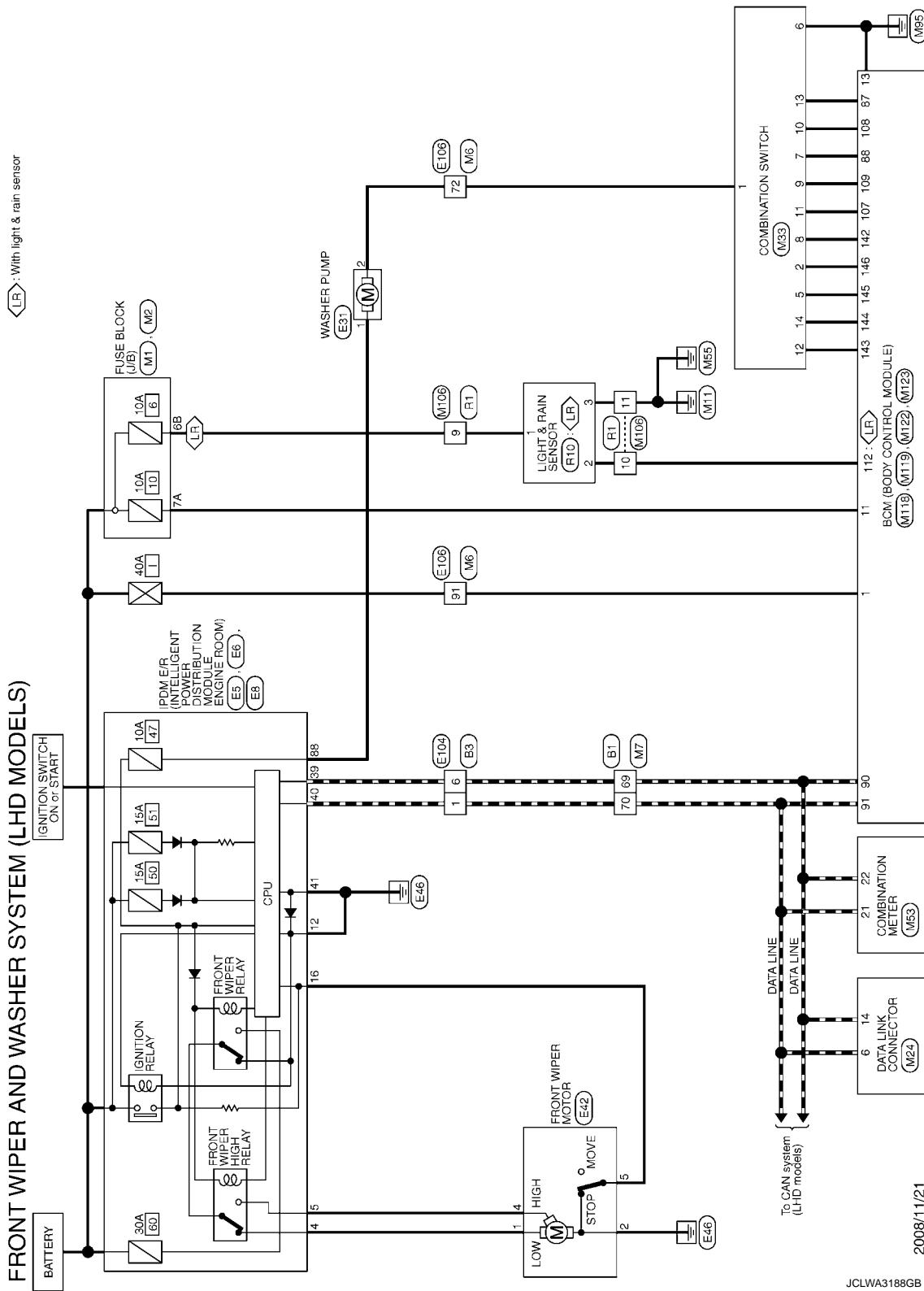
## [FOR EUROPE]

## FRONT WIPER AND WASHER SYSTEM

## Wiring Diagram - FRONT WIPER AND WASHER SYSTEM -

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## LHD MODELS



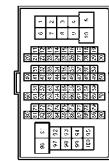
# FRONT WIPER AND WASHER SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

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## FRONT WIPER AND WASHER SYSTEM (LHD MODELS)

Connector No.	Bl
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4



Terminal No.	Color of Wire	Signal Name [Specification]	Signal Name [Specification]
1	L	—	—
6	P	—	—

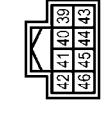
Terminal No.	Color of Wire	Signal Name [Specification]	Signal Name [Specification]
69	P	—	—
70	L	—	—

Connector No.	E3
Connector Name	WIRE TO WIRE
Connector Type	NS12FW-CS



Terminal No.	Color of Wire	Signal Name [Specification]	Signal Name [Specification]
1	L	—	—
6	P	—	—
11	—	—	—
12	—	—	—
13	—	—	—
14	—	—	—
15	—	—	—
16	—	—	—

Connector No.	E6
Connector Name	POWER INTELLIGENT POWER DISTRIBUTION MODULE
Connector Type	TH80FW-NH



Connector No.	E5
Connector Name	POWER INTELLIGENT POWER DISTRIBUTION MODULE
Connector Type	TH80FW-NH



Terminal No.	Color of Wire	Signal Name [Specification]	Signal Name [Specification]
39	P	—	—
40	L	—	—
41	B/W	—	—
42	LG	—	—

Terminal No.	Color of Wire	Signal Name [Specification]	Signal Name [Specification]
4	V	—	—
5	L	—	—
12	B/W	—	—
16	LG	—	—

Terminal No.	Color of Wire	Signal Name [Specification]	Signal Name [Specification]
1	L	—	—
6	P	—	—

Connector No.	E104
Connector Name	WIRE TO WIRE
Connector Type	NS12MW-CS



Terminal No.	Color of Wire	Signal Name [Specification]	Signal Name [Specification]
1	V	—	—
2	B/W	—	—
4	L	—	—
5	LG	—	—

Terminal No.	Color of Wire	Signal Name [Specification]	Signal Name [Specification]
1	P	—	—
6	L	—	—

Terminal No.	Color of Wire	Signal Name [Specification]	Signal Name [Specification]
1	V	—	—
2	B/W	—	—

Connector No.	E42
Connector Name	FRONT WIPER MOTOR
Connector Type	HS05FW-GY



Terminal No.	Color of Wire	Signal Name [Specification]	Signal Name [Specification]
1	L	—	—
2	P	—	—
3	—	—	—
4	—	—	—
5	—	—	—

Terminal No.	Color of Wire	Signal Name [Specification]	Signal Name [Specification]
1	V	—	—
2	B/W	—	—
4	L	—	—
5	LG	—	—

Connector No.	E31
Connector Name	WASHER PUMP
Connector Type	E02FW-YRS



Terminal No.	Color of Wire	Signal Name [Specification]	Signal Name [Specification]
1	L	—	—
2	P	—	—

Terminal No.	Color of Wire	Signal Name [Specification]	Signal Name [Specification]
1	V	—	—
2	B/W	—	—

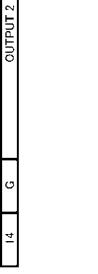
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# FRONT WIPER AND WASHER SYSTEM

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## FRONT WIPER AND WASHER SYSTEM (LHD MODELS)

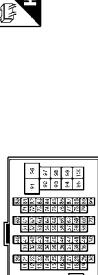
Connector No.	M1	Connector No.	M6
Connector Name	WIRE TO WIRE	Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4	Connector Type	TH80MW-CS16-TM4
			
Terminal No.	Color of Wire	Terminal No.	Color of Wire
72	SB	72	LG
91	GR	91	GR
Signal Name [Specification]		Signal Name [Specification]	
—	—	—	—

Connector No.	M7	Connector No.	M2
Connector Name	WIRE TO WIRE	Connector Name	FUSE BLOCK (J/B)
Connector Type	TH80FW-CS16-TM4	Connector Type	NS10FW-CS
			
Terminal No.	Color of Wire	Terminal No.	Color of Wire
69	P	6	L
70	L	14	P
Signal Name [Specification]		Signal Name [Specification]	
—	—	—	—

Connector No.	M24	Connector No.	M3
Connector Name	DATA LINK CONNECTOR	Connector Name	COMBINATION SWITCH
Connector Type	BD16FW-P	Connector Type	TH16FW-NH
			
Terminal No.	Color of Wire	Terminal No.	Color of Wire
9	10	1	2
10	11	2	3
11	12	3	4
12	13	4	5
13	14	5	6
14	15	6	7
15	16	7	8
Signal Name [Specification]		Signal Name [Specification]	
—	—	—	—

Connector No.	M7	Connector No.	M2
Connector Name	WIRE TO WIRE	Connector Name	FUSE BLOCK (J/B)
Connector Type	TH80FW-CS16-TM4	Connector Type	NS10FW-CS
			
Terminal No.	Color of Wire	Terminal No.	Color of Wire
69	P	6	L
70	L	14	P
Signal Name [Specification]		Signal Name [Specification]	
—	—	—	—

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A B C D E F G H I J K L M N O P

# FRONT WIPER AND WASHER SYSTEM

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## FRONT WIPER AND WASHER SYSTEM (LHD MODELS)

Connector No.	M53
Connector Name	COMBINATION METER
Connector Type	SAB40FW
	

Terminal No.	Color of Wire	Signal Name [Specification]
21	L	CAN-H
22	P	CAN-L

Connector No.	M106
Connector Name	WIRE TO WIRE
Connector Type	TH12MW-NH

Terminal No.	Color of Wire	Signal Name [Specification]
9	Y	-
10	GR	BAT (F1L) [LHD models]
11	B	-

Connector No.	M119
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	MD3FB-LC

Terminal No.	Color of Wire	Signal Name [Specification]
4	5	6
5	6	7
6	7	8
7	11	12
8	12	13
9	13	14
10	14	15
11	15	16
12	16	17
13	17	18
14	18	19
15	19	20

Connector No.	M118
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	MD3FW-CS

Terminal No.	Color of Wire	Signal Name [Specification]
11	R	BAT (FUSE)
13	B	GND

Connector No.	R10
Connector Name	LIGHT & RAIN SENSOR
Connector Type	AA803FB

Terminal No.	Color of Wire	Signal Name [Specification]
11	R	BAT (F1L) [LHD models]
13	B	GND

Connector No.	TH12FW-NH
Connector Name	WIRE TO WIRE

Terminal No.	Color of Wire	Signal Name [Specification]
6	5	4
5	4	3
4	3	2
12	11	10
11	10	9
10	9	8
9	8	7

Connector No.	TH40FG-NH
Connector Name	BCM (BODY CONTROL MODULE)

Terminal No.	Color of Wire	Signal Name [Specification]
112	GR	L&R SENSOR SERIAL LINK
142	O	COMBI SW OUTPUT 5
143	P	COMBI SW OUTPUT 1
144	Q	COMBI SW OUTPUT 2
145	L	COMBI SW OUTPUT 3
146	S	COMBI SW OUTPUT 4

Connector No.	TH40FW-NH
Connector Name	BCM (BODY CONTROL MODULE)

Terminal No.	Color of Wire	Signal Name [Specification]
9	BR	-
10	GR	-
11	B	-

## FRONT WIPER AND WASHER SYSTEM

## < DTC/CIRCUIT DIAGNOSIS >

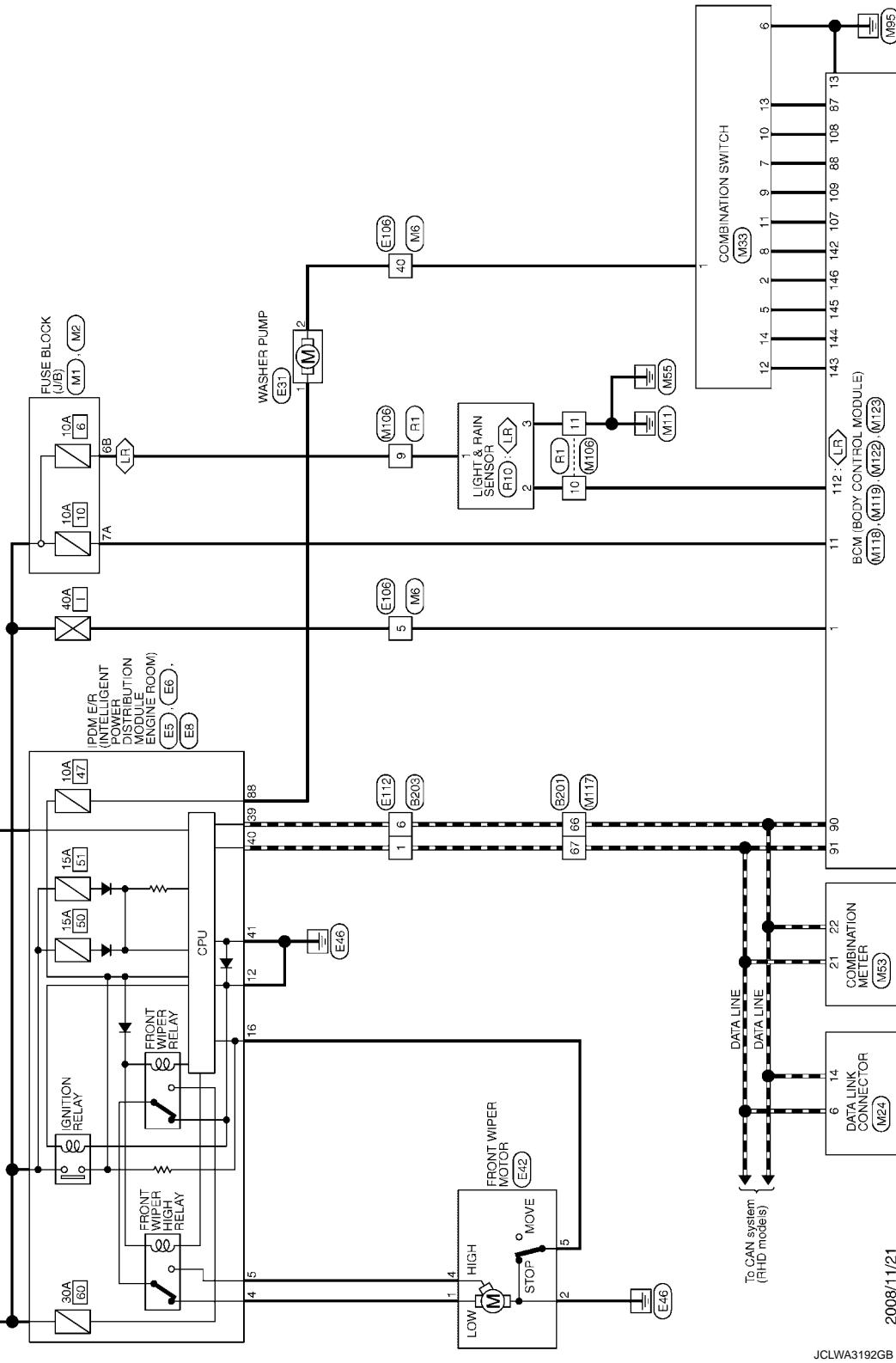
## [FOR EUROPE]

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## RHD MODELS

## FRONT WIPER AND WASHER SYSTEM (RHD MODELS)

LR : With light & rain sensor



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# FRONT WIPER AND WASHER SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[FOR EUROPE]

## FRONT WIPER AND WASHER SYSTEM (RHD MODELS)

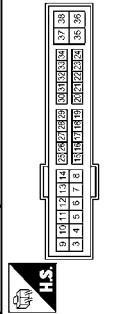
Connector No.	52013
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4



Terminal No.	Color of Wire	Signal Name [Specification]	Signal Name [Specification]
1	L	—	—
6	P	—	—

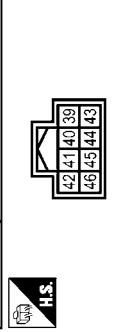
Terminal No.	Color of Wire	Signal Name [Specification]	Signal Name [Specification]
66	P	—	—
67	L	—	—

Connector No.	E5
Connector Name	FRONT INTELLIGENT POWER DISTRIBUTION MODULE
Connector Type	TH80FW-CS12-M4-IV



Terminal No.	Color of Wire	Signal Name [Specification]	Signal Name [Specification]
9	9	1	2
10	10	2	3
11	11	3	4
12	12	4	5
13	13	5	6
14	14	6	7
15	15	7	8
16	16	8	9
17	17	9	10
18	18	10	11
19	19	11	12
20	20	12	13
21	21	13	14
22	22	14	15
23	23	15	16
24	24	16	17
25	25	17	18
26	26	18	19
27	27	19	20
28	28	20	21
29	29	21	22
30	30	22	23
31	31	23	24
32	32	24	25
33	33	25	26
34	34	26	27
35	35	27	28
36	36	28	29
37	37	29	30
38	38	30	31

Connector No.	E6
Connector Name	FRONT INTELLIGENT POWER DISTRIBUTION MODULE
Connector Type	TH80FW-NH



Terminal No.	Color of Wire	Signal Name [Specification]	Signal Name [Specification]
1	V	—	—
5	L	—	—
12	B/W	—	—
16	LG	—	—

Terminal No.	Color of Wire	Signal Name [Specification]	Signal Name [Specification]
39	P	—	—
40	L	—	—
41	B/Y	—	—

Terminal No.	Color of Wire	Signal Name [Specification]	Signal Name [Specification]
4	V	—	—
5	L	—	—
12	B/W	—	—
16	LG	—	—

Terminal No.	Color of Wire	Signal Name [Specification]	Signal Name [Specification]
39	P	—	—
40	L	—	—
41	B/Y	—	—

Terminal No.	Color of Wire	Signal Name [Specification]	Signal Name [Specification]
1	V	—	—
2	B	—	—
4	L	—	—
5	LG	—	—

Terminal No.	Color of Wire	Signal Name [Specification]	Signal Name [Specification]
5	GR	—	—
40	SB	—	—

Terminal No.	Color of Wire	Signal Name [Specification]	Signal Name [Specification]
5	GR	—	—
40	SB	—	—

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# FRONT WIPER AND WASHER SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[FOR EUROPE]

## FRONT WIPER AND WASHER SYSTEM (RHD MODELS)

Connector No.	Wire to Wire	Wire to Wire
Connector Name	WIRE TO WIRE	WIRE TO WIRE
Connector Type	TH12MW-NH	TH12MW-CS16-TM4
		
Terminal No.	1 2 3 4 5 6	7 8 9 10 11 12
Color of Wire	Y	GR
Signal Name [Specification]	—	—
Terminal No.	66	67
Color of Wire	P	L
Signal Name [Specification]	—	—
Terminal No.	10	11
Color of Wire	GR	B
Signal Name [Specification]	—	—
Terminal No.	11	12
Color of Wire	GR	GR
Signal Name [Specification]	—	—

Connector No.	BCM (BODY CONTROL MODULE)	BCM (BODY CONTROL MODULE)
Connector Name	BCM (BODY CONTROL MODULE)	BCM (BODY CONTROL MODULE)
Connector Type	MD3FB-LC	MD3FB-CS
		
Terminal No.	4 5 6 7	8 9 10
Color of Wire	GR	GR
Signal Name [Specification]	BAT (FUSE)	BAT (FUSE)
Terminal No.	11 12 13 14	15 16 17 18
Color of Wire	GR	GR
Signal Name [Specification]	—	—
Terminal No.	13	14
Color of Wire	GR	GR
Signal Name [Specification]	—	—
Terminal No.	15	16
Color of Wire	GR	GR
Signal Name [Specification]	—	—
Terminal No.	17	18
Color of Wire	GR	GR
Signal Name [Specification]	—	—
Terminal No.	19	19
Color of Wire	GR	GR
Signal Name [Specification]	—	—

Connector No.	BCM (BODY CONTROL MODULE)	BCM (BODY CONTROL MODULE)
Connector Name	BCM (BODY CONTROL MODULE)	BCM (BODY CONTROL MODULE)
Connector Type	MD3FB-LC	MD3FB-CS
		
Terminal No.	4 5 6 7	8 9 10
Color of Wire	GR	GR
Signal Name [Specification]	BAT (FUSE)	BAT (FUSE)
Terminal No.	11 12 13 14	15 16 17 18
Color of Wire	GR	GR
Signal Name [Specification]	—	—
Terminal No.	13	14
Color of Wire	GR	GR
Signal Name [Specification]	—	—
Terminal No.	15	16
Color of Wire	GR	GR
Signal Name [Specification]	—	—
Terminal No.	17	18
Color of Wire	GR	GR
Signal Name [Specification]	—	—
Terminal No.	19	19
Color of Wire	GR	GR
Signal Name [Specification]	—	—

Connector No.	BCM (BODY CONTROL MODULE)	BCM (BODY CONTROL MODULE)
Connector Name	BCM (BODY CONTROL MODULE)	BCM (BODY CONTROL MODULE)
Connector Type	TH12FW-NH	TH12FW-NH
		
Terminal No.	1 2 3	1 2 3
Color of Wire	GR	GR
Signal Name [Specification]	—	—

Connector No.	BCM (BODY CONTROL MODULE)	BCM (BODY CONTROL MODULE)
Connector Name	BCM (BODY CONTROL MODULE)	BCM (BODY CONTROL MODULE)
Connector Type	TH12FW-NH	TH12FW-NH
		
Terminal No.	6 5 4 3 2 1	12 11 10 9 8 7
Color of Wire	GR	GR
Signal Name [Specification]	—	—

Connector No.	BCM (BODY CONTROL MODULE)	BCM (BODY CONTROL MODULE)
Connector Name	BCM (BODY CONTROL MODULE)	BCM (BODY CONTROL MODULE)
Connector Type	TH12FW-NH	TH12FW-NH
		
Terminal No.	1 2 3	1 2 3
Color of Wire	GR	GR
Signal Name [Specification]	—	—

# HEADLAMP WASHER SYSTEM

[FOR EUROPE]

< DTC/CIRCUIT DIAGNOSIS >

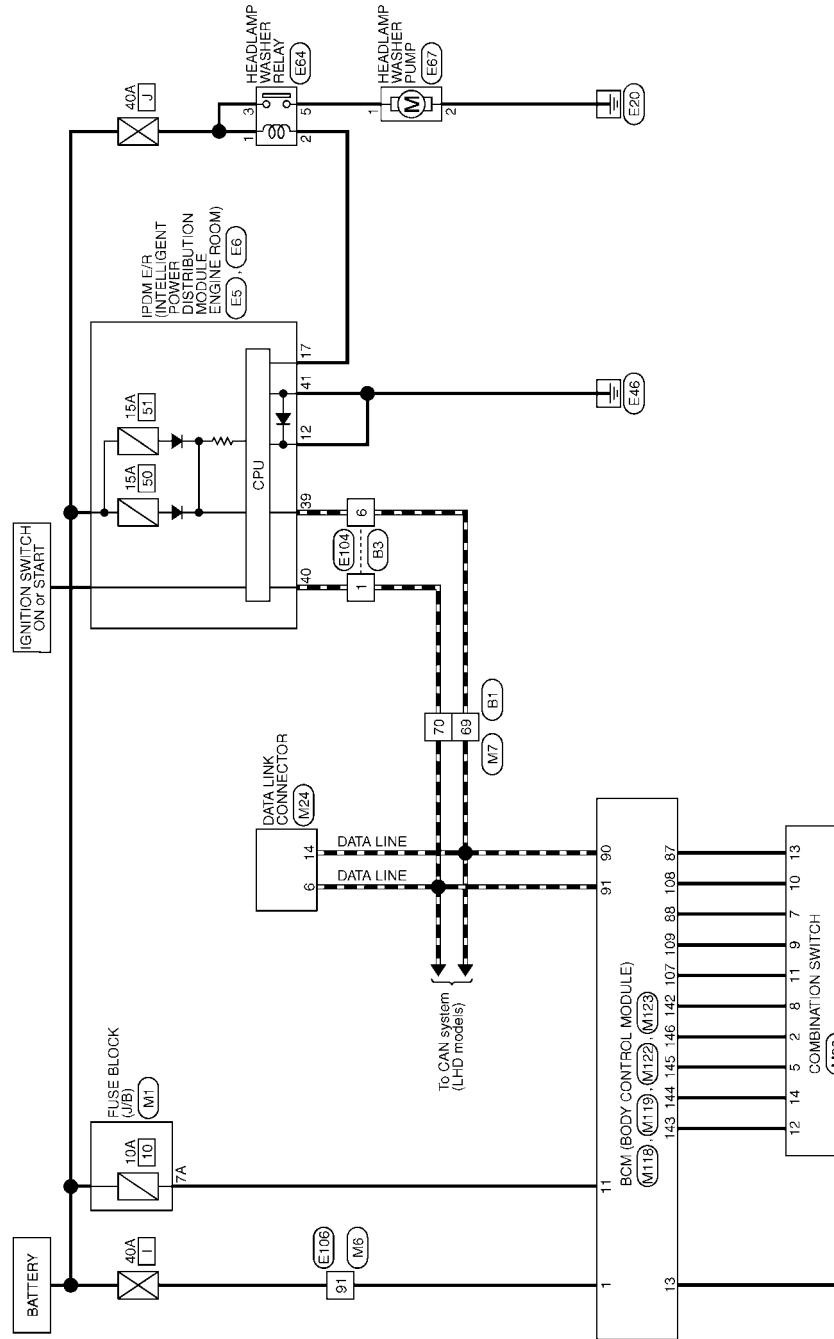
## HEADLAMP WASHER SYSTEM

### Wiring Diagram - HEADLAMP WASHER -

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LHD MODELS

HEADLAMP WASHER (LHD MODELS)



2008/1/21

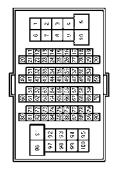
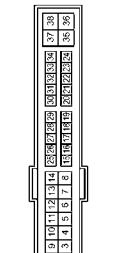
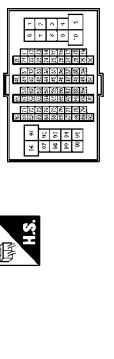
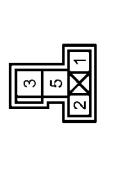
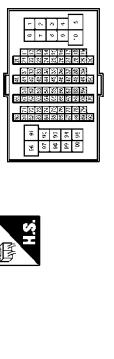
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# HEADLAMP WASHER SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

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## HEADLAMP WASHER (LHD MODELS)

Connector No.	Bl	Connector No.	E3	Connector No.	E5	Connector No.	E106	Connector No.	E64	Connector No.	E67	Connector No.	E64
Connector Name	WIRE TO WIRE	Connector Name	WIRE TO WIRE	Connector Name	POWER IN/INTELLIGENT POWER DISTRIBUTION MODULE	Connector Name	WIRE TO WIRE	Connector Name	HEADLAMP WASHER RELAY	Connector Name	HEADLAMP WASHER PUMP	Connector Name	HEADLAMP WASHER RELAY
Connector Type	TH80FW-CS16-TM4	Connector Type	NS12FW-CS	Connector Type	TH80FW-CS12-M4-IV	Connector Type	NS12MW-CS	Connector Type	MS20FL-M2	Connector Type	RS02FGY	Connector Type	MS20FL-M2
													
Terminal No.	Color of Wire	Signal Name [Specification]	Terminal No.	Color of Wire	Signal Name [Specification]	Terminal No.	Color of Wire	Signal Name [Specification]	Terminal No.	Color of Wire	Signal Name [Specification]	Terminal No.	Color of Wire
1	Bl	—	1	L	—	12	B/W	—	1	W	—	1	W
6	P	—	6	P	—	17	G	—	2	GR	—	2	GR
70	L	—							2	GR	—	3	W
													

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# HEADLAMP WASHER SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[FOR EUROPE]

## HEADLAMP WASHER (LHD MODELS)

Connector No.	Color of Wire	Signal Name [Specification]	Terminal No.	Color of Wire	Signal Name [Specification]
M1	TA	—	91	GR	—
	R	—			
M6	WIRE BLOCK (J/B)	WIRE TO WIRE	M7	WIRE TO WIRE	WIRE TO WIRE
NS05FW-Y-M2	NS05FW-Y-M2	TH80MW-CS16-TM4	TH80MW-CS16-TM4	BD16FW-P	BD16FW-P

Connector No.	Color of Wire	Signal Name [Specification]	Terminal No.	Color of Wire	Signal Name [Specification]
3A	—	—	69	P	—
2A 1A	—	—	70	L	—
8A 7A 6A 5A 4A	—	—	14	P	—

Connector No.	Color of Wire	Signal Name [Specification]	Terminal No.	Color of Wire	Signal Name [Specification]
3A	—	—	91	GR	—
2A 1A	—	—			
8A 7A 6A 5A 4A	—	—			

Connector No.	Color of Wire	Signal Name [Specification]	Terminal No.	Color of Wire	Signal Name [Specification]
13	—	—	1	GR	—
2	—	—			
1	—	—			

Connector No.	Color of Wire	Signal Name [Specification]	Terminal No.	Color of Wire	Signal Name [Specification]
13	—	—	9	GR	—
12	—	—	10	GR	—
11	—	—	11	GR	—
10	—	—	12	GR	—
9	—	—	13	GR	—
8	—	—	14	GR	—
7	—	—	15	GR	—
6	—	—	16	GR	—
5	—	—	17	GR	—
4	—	—	18	GR	—
3	—	—	19	GR	—

Connector No.	Color of Wire	Signal Name [Specification]	Terminal No.	Color of Wire	Signal Name [Specification]
13	—	—	9	GR	—
12	—	—	10	GR	—
11	—	—	11	GR	—
10	—	—	12	GR	—
9	—	—	13	GR	—
8	—	—	14	GR	—
7	—	—	15	GR	—
6	—	—	16	GR	—
5	—	—	17	GR	—
4	—	—	18	GR	—
3	—	—	19	GR	—

Connector No.	Color of Wire	Signal Name [Specification]	Terminal No.	Color of Wire	Signal Name [Specification]
13	—	—	6	GR	—
12	—	—	7	GR	—
11	—	—	8	GR	—
10	—	—	9	GR	—
9	—	—	10	GR	—
8	—	—	11	GR	—
7	—	—	12	GR	—
6	—	—	13	GR	—
5	—	—	14	GR	—
4	—	—	15	GR	—
3	—	—	16	GR	—
2	—	—	17	GR	—
1	—	—	18	GR	—
13	—	—	19	GR	—

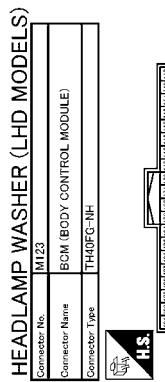
Connector No.	Color of Wire	Signal Name [Specification]	Terminal No.	Color of Wire	Signal Name [Specification]
13	—	—	1	GR	—
12	—	—	2	GR	—
11	—	—	3	GR	—
10	—	—	4	GR	—
9	—	—	5	GR	—
8	—	—	6	GR	—
7	—	—	7	GR	—
6	—	—	8	GR	—
5	—	—	9	GR	—
4	—	—	10	GR	—
3	—	—	11	GR	—
2	—	—	12	GR	—
1	—	—	13	GR	—

Connector No.	Color of Wire	Signal Name [Specification]	Terminal No.	Color of Wire	Signal Name [Specification]
13	—	—	1	GR	—
12	—	—	2	GR	—
11	—	—	3	GR	—
10	—	—	4	GR	—
9	—	—	5	GR	—
8	—	—	6	GR	—
7	—	—	7	GR	—
6	—	—	8	GR	—
5	—	—	9	GR	—
4	—	—	10	GR	—
3	—	—	11	GR	—
2	—	—	12	GR	—
1	—	—	13	GR	—

# HEADLAMP WASHER SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[FOR EUROPE]



Terminal No.	Color of Wire	Signal Name [Specification]
142	Q	COMBI SW OUTPUT 5
143	P	COMBI SW OUTPUT 1
144	G	COMBI SW OUTPUT 2
145	L	COMBI SW OUTPUT 3
146	SB	COMBI SW OUTPUT 4

JCLWA3199GB

## HEADLAMP WASHER SYSTEM

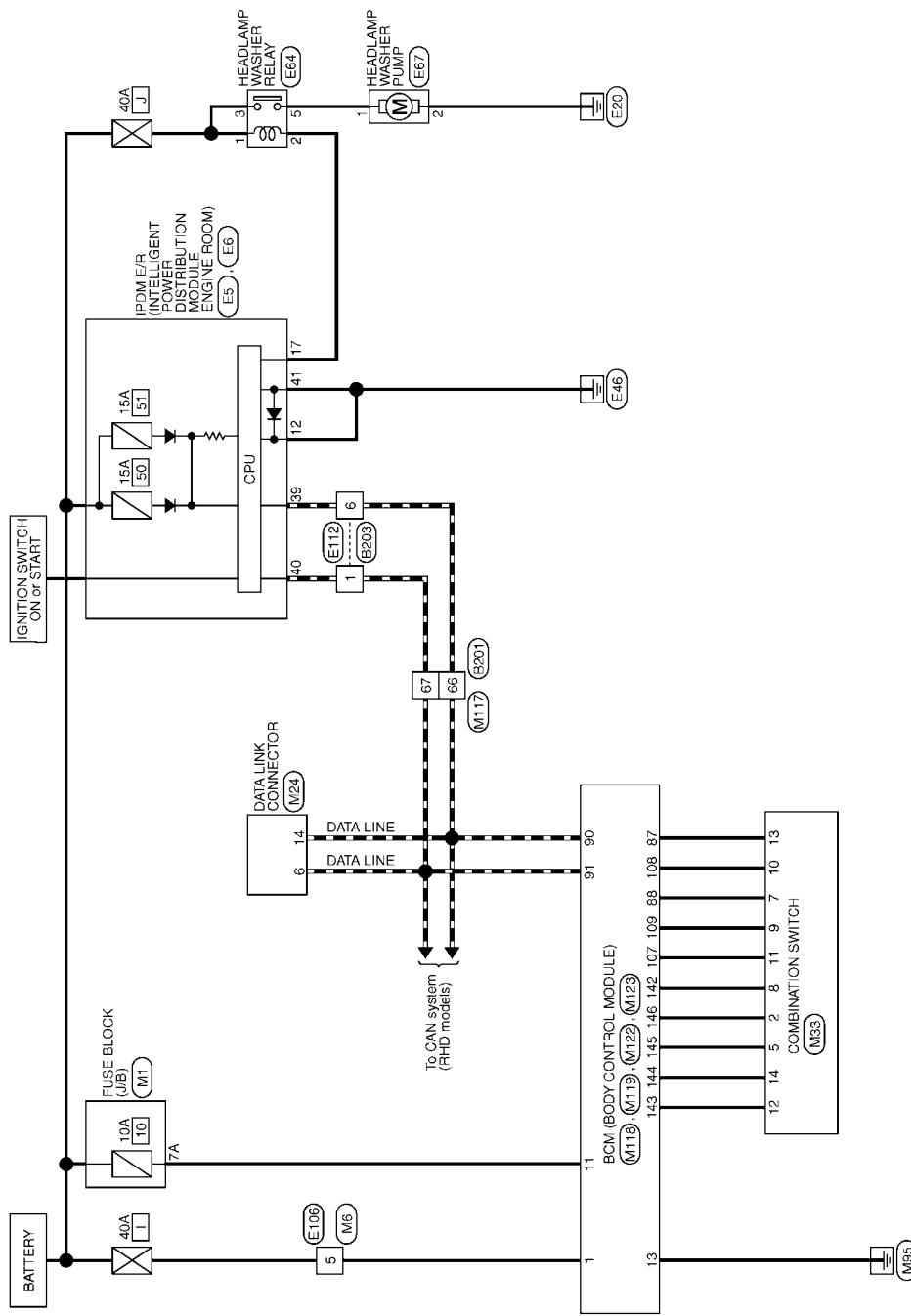
## < DTC/CIRCUIT DIAGNOSIS >

[FOR EUROPE]

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## RHD MODELS

## HEADLAMP WASHER (RHD MODELS)



2008/11/21

JCLWA3200GB

## **HEADLAMP WASHER SYSTEM**

## < DTC/CIRCUIT DIAGNOSIS >

## [FOR EUROPE]

## HEADLAMP WASHER (RHD MODELS)

	<b>THD9FW-CSV16-TH4</b>	Connector Types	THD9FW-CSV16-TH4	Connector Name	WIRE TO WIRE	Connector No.	B201	HS
	<b>THD9FW-NH</b>	Connector Types	THD9FW-NH	Connector Name	ENGINE INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM	Connector No.	E5	HS
	<b>THD9FW-NH</b>	Connector Types	THD9FW-NH	Connector Name	ENGINE INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM	Connector No.	E6	HS
	<b>THD9FW-CSV16-IV</b>	Connector Types	THD9FW-CSV16-IV	Connector Name	WIRE TO WIRE	Connector No.	E5	HS
	<b>THD9FW-CSV16-IV</b>	Connector Types	THD9FW-CSV16-IV	Connector Name	WIRE TO WIRE	Connector No.	E5	HS
	<b>THD9FW-CSV16-IV</b>	Connector Types	THD9FW-CSV16-IV	Connector Name	WIRE TO WIRE	Connector No.	E5	HS
	<b>THD9FW-CSV16-IV</b>	Connector Types	THD9FW-CSV16-IV	Connector Name	WIRE TO WIRE	Connector No.	E5	HS

Signal Name [Specification]		Signal Name [Specification]		Signal Name [Specification]	
Terminal No.	Color of Wire	Terminal No.	Color of Wire	Terminal No.	Color of Wire
66	P	1	L	12	B/W
67	L	6	—	17	G

Connector No. E64	Connector Name HEADLAMP WASHER RELAY	Connector Type MS20FL M2	 
Connector No. E67	Connector Name HEADLAMP WASHER PUMP	Connector Type ESG02FGY	 
Connector No. E106	Connector Name WIRE TO WIRE	Connector Type TH80FW-CS16-TM4	 
Connector No. E112	Connector Name WIRE TO WIRE	Connector Type NST20W-CS	 

Terminal No.	Color of Wire	Signal Name [Specification]	Terminal No.	Color of Wire	Signal Name [Specification]
1	W	—	5	GR	—
2	G	—	—	—	—
3	W	—	—	—	—
5	GR	—	—	—	—

# HEADLAMP WASHER SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[FOR EUROPE]

## HEADLAMP WASHER (RHD MODELS)

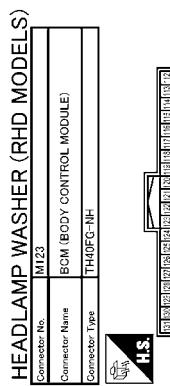
Connector No.	Terminal No.	Color of Wire	Signal Name [Specification]	Terminal No.	Color of Wire	Signal Name [Specification]	Terminal No.	Color of Wire	Signal Name [Specification]
M1	5	W	—	6	L	—	2	SB	OUTPUT 4
	7A	R	—	14	P	—	5	L	OUTPUT 3
							7	V	INPUT 3
							3	O	OUTPUT 5
							9	Y	INPUT 2
							10	R	INPUT 4
							11	LG	INPUT 1
							12	P	OUTPUT 1
							13	BR	INPUT 5
							14	G	OUTPUT 2

JCLWA3202GB

# HEADLAMP WASHER SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[FOR EUROPE]



Terminal No.	Color of Wire	Signal Name [Specification]
142	Q	COMBI SW OUTPUT 5
143	P	COMBI SW OUTPUT 1
144	G	COMBI SW OUTPUT 2
145	L	COMBI SW OUTPUT 3
146	SB	COMBI SW OUTPUT 4

JCLWA3203GB

&lt; ECU DIAGNOSIS INFORMATION &gt;

## ECU DIAGNOSIS INFORMATION

## BCM (BODY CONTROL MODULE)

## Reference Value

INFOID:0000000005037499

## VALUES ON THE DIAGNOSIS TOOL

## CONSULT-III MONITOR ITEM

Monitor Item	Condition	Value/Status
FR WIPER HI	Other than front wiper switch HI	Off
	Front wiper switch HI	On
FR WIPER LOW	Other than front wiper switch LO	Off
	Front wiper switch LO	On
FR WASHER SW	Front washer switch OFF	Off
	Front washer switch ON	On
FR WIPER INT	Other than front wiper switch INT/AUTO	Off
	Front wiper switch INT/AUTO	On
FR WIPER STOP	Front wiper is not in STOP position	Off
	Front wiper is in STOP position	On
INT VOLUME	Wiper volume dial is in a dial position 1 - 7	Wiper volume dial position
TURN SIGNAL R	Other than turn signal switch RH	Off
	Turn signal switch RH	On
TURN SIGNAL L	Other than turn signal switch LH	Off
	Turn signal switch LH	On
TAIL LAMP SW	Other than lighting switch 1ST and 2ND	Off
	Lighting switch 1ST or 2ND	On
HI BEAM SW	Other than lighting switch HI	Off
	Lighting switch HI	On
HEAD LAMP SW 1	Other than lighting switch 2ND	Off
	Lighting switch 2ND	On
HEAD LAMP SW 2	Other than lighting switch 2ND	Off
	Lighting switch 2ND	On
PASSING SW	Other than lighting switch PASS	Off
	Lighting switch PASS	On
AUTO LIGHT SW	Other than lighting switch AUTO	Off
	Lighting switch AUTO	On
RR FOG SW <b>NOTE:</b> At models without rear fog lamp this item is not monitored.	Rear fog lamp switch OFF	Off
	Rear fog lamp switch ON	On
DOOR SW-DR	Driver door closed	Off
	Driver door opened	On
DOOR SW-AS	Passenger door closed	Off
	Passenger door opened	On
DOOR SW-RR	<b>NOTE:</b> The item is indicated, but not monitored.	Off

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# BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

[FOR EUROPE]

Monitor Item	Condition	Value/Status
DOOR SW-RL	<b>NOTE:</b> The item is indicated, but not monitored.	Off
DOOR SW-BK	<b>NOTE:</b> The item is indicated, but not monitored.	Off
CDL LOCK SW	Other than power door lock switch LOCK	Off
	Power door lock switch LOCK	On
CDL UNLOCK SW	Other than power door lock switch UNLOCK	Off
	Power door lock switch UNLOCK	On
KEY CYL LK-SW	<b>NOTE:</b> The item is indicated, but not monitored.	Off
KEY CYL UN-SW	<b>NOTE:</b> The item is indicated, but not monitored.	Off
KEY CYL SW-TR	<b>NOTE:</b> The item is indicated, but not monitored.	Off
HAZARD SW	Hazard switch is OFF	Off
	Hazard switch is ON	On
REAR DEF SW	<b>NOTE:</b> The item is indicated, but not monitored.	Off
H/L WASH SW	<b>NOTE:</b> The item is indicated, but not monitored.	Off
TR CANCEL SW	Trunk lid opener cancel switch OFF	Off
	Trunk lid opener cancel switch ON	On
TR/BD OPEN SW	Trunk lid opener switch OFF	Off
	While the trunk lid opener switch is turned ON	On
TRNK/HAT MNTR	Trunk lid closed	Off
	Trunk lid opened	On
SEN CANCEL SW	Sensor cancel switch is not pressed	Off
	Sensor cancel switch is pressed	On
RKE-LOCK	LOCK button of the Intelligent Key is not pressed	Off
	LOCK button of the Intelligent Key is pressed	On
RKE-UNLOCK	UNLOCK button of the Intelligent Key is not pressed	Off
	UNLOCK button of the Intelligent Key is pressed	On
RKE-TR/BD	TRUNK OPEN button of the Intelligent Key is not pressed	Off
	TRUNK OPEN button of the Intelligent Key is pressed	On
RKE-PANIC	<b>NOTE:</b> The item is indicated, but not monitored.	Off
RKE-P/W OPEN	UNLOCK button of the Intelligent Key is not pressed	Off
	UNLOCK button of the Intelligent Key is pressed and held	On
RKE-MODE CHG	LOCK/UNLOCK button of the Intelligent Key is not pressed and held simultaneously	Off
	LOCK/UNLOCK button of the Intelligent Key is pressed and held simultaneously	On
OPTICAL SENSOR	<b>NOTE:</b> The item is indicated, but not monitored.	0 V
REQ SW -DR	Driver door request switch is not pressed	Off
	Driver door request switch is pressed	On
REQ SW -AS	Passenger door request switch is not pressed	Off
	Passenger door request switch is pressed	On

# BCM (BODY CONTROL MODULE)

[FOR EUROPE]

< ECU DIAGNOSIS INFORMATION >

Monitor Item	Condition	Value/Status
REQ SW -RR	<b>NOTE:</b> The item is indicated, but not monitored.	Off
REQ SW -RL	<b>NOTE:</b> The item is indicated, but not monitored.	Off
REQ SW -BD/TR	Trunk lid opener request switch is not pressed	Off
	Trunk lid opener request switch is pressed	On
PUSH SW	Push-button ignition switch (push switch) is not pressed	Off
	Push-button ignition switch (push switch) is pressed	On
IGN RLY2 -F/B	Ignition switch in OFF or ACC position	Off
	Ignition switch in ON position	On
ACC RLY -F/B	<b>NOTE:</b> The item is indicated, but not monitored.	Off
CLUCH SW	<b>NOTE:</b> The item is indicated, but not monitored.	Off
BRAKE SW 1	The brake pedal is depressed when No. 7 fuse is blown	Off
	The brake pedal is not depressed when No. 7 fuse is blown, or No. 7 fuse is normal	On
BRAKE SW 2	The brake pedal is not depressed	Off
	The brake pedal is depressed	On
DETE/CANCL SW	Shift lever in P position	Off
	Shift lever in any position other than P	On
SFT PN/N SW	Shift lever in any position other than P and N	Off
	Shift lever in P or N position	On
S/L -LOCK	Steering is unlocked	Off
	Steering is locked	On
S/L -UNLOCK	Steering is locked	Off
	Steering is unlocked	On
S/L RELAY-F/B	Ignition switch in OFF or ACC position	Off
	Ignition switch in ON position	On
UNLK SEN -DR	Driver door is unlocked	Off
	Driver door is locked	On
PUSH SW -IPDM	Push-button ignition switch (push-switch) is not pressed	Off
	Push-button ignition switch (push-switch) is pressed	On
IGN RLY1 -F/B	Ignition switch in OFF or ACC position	Off
	Ignition switch in ON position	On
DETE SW -IPDM	Shift lever in any position other than P	Off
	Shift lever in P position	On
SFT PN -IPDM	Shift lever in any position other than P and N	Off
	Shift lever in P or N position	On
SFT P -MET	Shift lever in any position other than P	Off
	Shift lever in P position	On
SFT N -MET	Shift lever in any position other than N	Off
	Shift lever in N position	On

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# BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

[FOR EUROPE]

Monitor Item	Condition	Value/Status
ENGINE STATE	Engine stopped	Stop
	While the engine stalls	Stall
	At engine cranking	Crank
	Engine running	Run
S/L LOCK-IPDM	Steering is unlocked	Off
	Steering is locked	On
S/L UNLK-IPDM	Steering is locked	Off
	Steering is unlocked	On
S/L RELAY-REQ	Steering lock system is not the LOCK condition and the changing condition from LOCK to UNLOCK	Off
	Steering lock system are not the LOCK condition or the changing condition from LOCK to UNLOCK	On
VEH SPEED 1	While driving	Equivalent to speed-ometer reading
VEH SPEED 2	While driving	Equivalent to speed-ometer reading
DOOR STAT-DR	Driver door is locked	LOCK
	Wait with selective UNLOCK operation (5 seconds)	READY
	Driver door is unlocked	UNLOCK
DOOR STAT-AS	Passenger door is locked	LOCK
	Wait with selective UNLOCK operation (5 seconds)	READY
	Passenger door is unlocked	UNLOCK
ID OK FLAG	Steering is locked	Reset
	Steering is unlocked	Set
PRMT ENG STRT	The engine start is prohibited	Reset
	The engine start is permitted	Set
PRMT RKE STRT	<b>NOTE:</b> The item is indicated, but not monitored.	Reset
KEY SW -SLOT	The Intelligent Key is not inserted into key slot	Off
	The Intelligent Key is inserted into key slot	On
RKE OPE COUN1	During the operation of the Intelligent Key	Operation frequency of the Intelligent Key
RKE OPE COUN2	<b>NOTE:</b> The item is indicated, but not monitored.	—
CONFIRM ID ALL	The key ID that the key slot receives is not recognized by any key ID registered to BCM.	Yet
	The key ID that the key slot receives is recognized by any key ID registered to BCM.	Done
CONFIRM ID4	The key ID that the key slot receives is not recognized by the fourth key ID registered to BCM.	Yet
	The key ID that the key slot receives is recognized by the fourth key ID registered to BCM.	Done
CONFIRM ID3	The key ID that the key slot receives is not recognized by the third key ID registered to BCM.	Yet
	The key ID that the key slot receives is recognized by the third key ID registered to BCM.	Done

# BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

[FOR EUROPE]

Monitor Item	Condition	Value/Status
CONFIRM ID2	The key ID that the key slot receives is not recognized by the second key ID registered to BCM.	Yet
	The key ID that the key slot receives is recognized by the second key ID registered to BCM.	Done
CONFIRM ID1	The key ID that the key slot receives is not recognized by the first key ID registered to BCM.	Yet
	The key ID that the key slot receives is recognized by the first key ID registered to BCM.	Done
TP 4	The ID of fourth Intelligent Key is not registered to BCM	Yet
	The ID of fourth Intelligent Key is registered to BCM	Done
TP 3	The ID of third Intelligent Key is not registered to BCM	Yet
	The ID of third Intelligent Key is registered to BCM	Done
TP 2	The ID of second Intelligent Key is not registered to BCM	Yet
	The ID of second Intelligent Key is registered to BCM	Done
TP 1	The ID of first Intelligent Key is not registered to BCM	Yet
	The ID of first Intelligent Key is registered to BCM	Done

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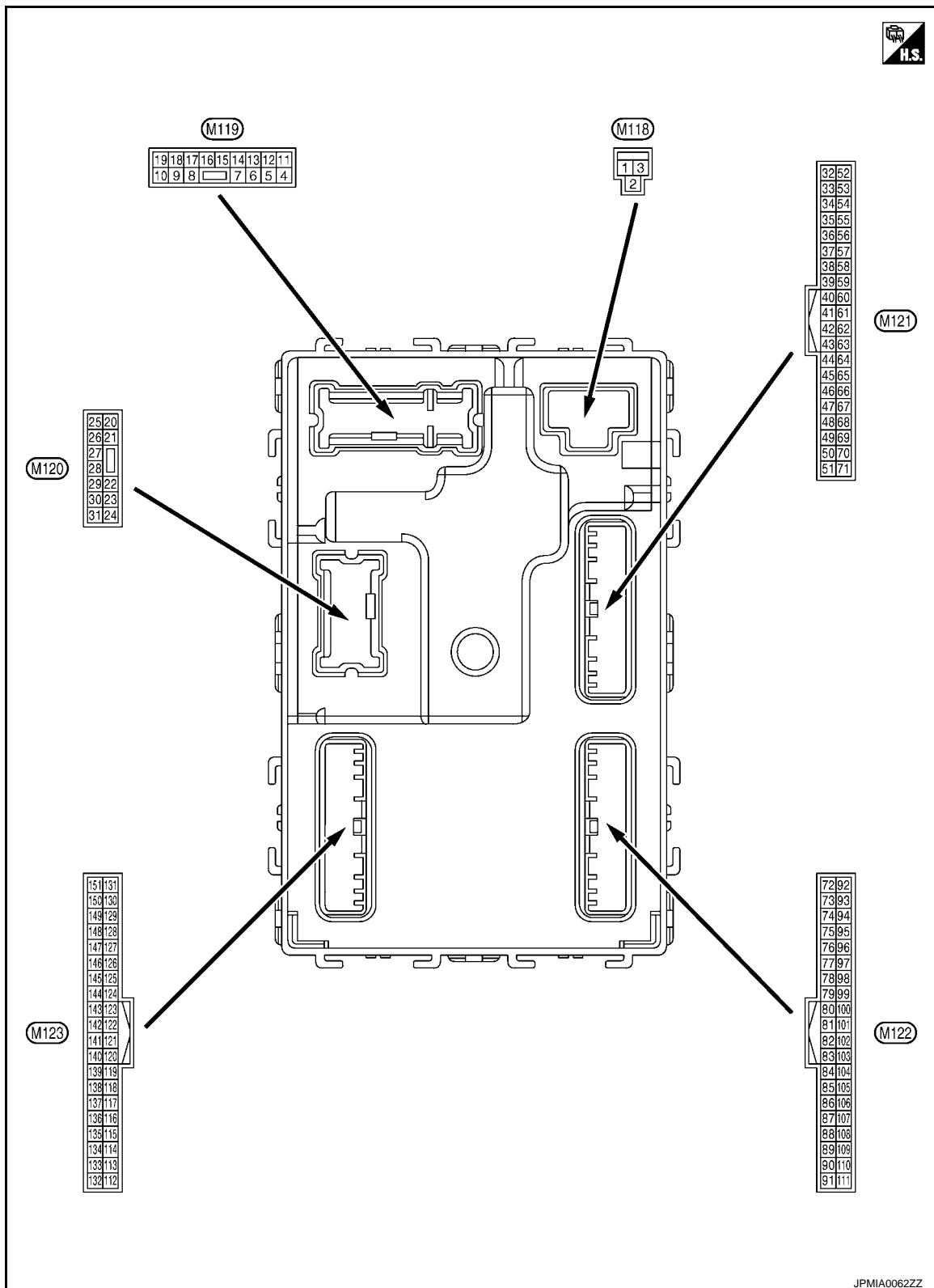
## **BCM (BODY CONTROL MODULE)**

## < ECU DIAGNOSIS INFORMATION >

[FOR EUROPE]

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## TERMINAL LAYOUT



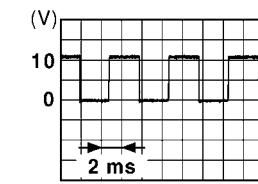
## PHYSICAL VALUES

# BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

[FOR EUROPE]

Terminal No. (Wire color)		Description		Condition	Value (Approx.)	
+	-	Signal name	Input/ Output			
1 (GR)* <sup>1</sup> (W)* <sup>2</sup>	Ground	Battery power supply	Input	Ignition switch OFF		
2 (R)	Ground	P/W power supply (BAT)	Output	Ignition switch OFF		
3 (W)	Ground	P/W power supply (RAP)	Output	Ignition switch ON		
4 (R)* <sup>1</sup> (O)* <sup>2</sup>	Ground	Interior room lamp power supply	Output	Interior room lamp battery saver is activated. (Cuts the interior room lamp power supply)	0 V	
				Interior room lamp battery saver is not activated. (Outputs the interior room lamp power supply)	12 V	
5 (L)	Ground	Super lock	Output	Super lock ac- tuator	Actuator is activated	
					0 V	
7 (Y)	Ground	Step lamp	Output	Step lamp	ON	
					12 V	
8 (V)	Ground	All doors, fuel lid LOCK	Output	All doors, fuel lid	LOCK (Actuator is activated)	
					0 V	
9 (G)	Ground	Driver door, fuel lid UNLOCK	Output	Driver door, fuel lid	UNLOCK (Actuator is activated)	
					0 V	
10 (G)* <sup>1</sup> (P)* <sup>2</sup>	Ground	Passenger door UN- LOCK	Output	Passenger door	UNLOCK (Actuator is activated)	
					0 V	
11 (R)	Ground	Battery power supply	Input	Ignition switch OFF		
13 (B)	Ground	Ground	—	Ignition switch ON		
14 (P)	Ground	Push-button ignition switch illumination ground	Output	Tail lamp	OFF	
					ON	
15 (Y)	Ground	ACC indicator lamp	Output	Ignition switch	OFF (LOCK indicator is not illuminated)	
					ACC	



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# BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

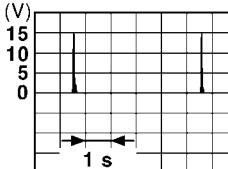
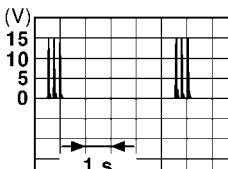
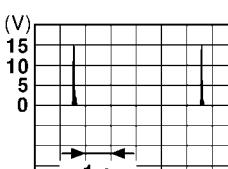
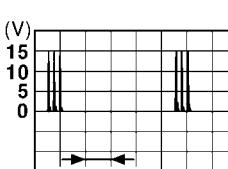
[FOR EUROPE]

Terminal No. (Wire color)	Description		Condition	Value (Approx.)
	Signal name	Input/ Output		
+	-			
17 (W)	Ground	Turn signal RH (Front and side)	Output	Ignition switch ON
18 (O)	Ground	Turn signal LH (Front and side)	Output	Ignition switch ON
19 (V) <sup>*1</sup> (GR) <sup>*2</sup>	Ground	Room lamp timer control	Output	Interior room lamp
20 (SB) <sup>*1</sup> (V) <sup>*2</sup>	Ground	Turn signal RH (Rear)	Output	Ignition switch ON
23 (G)	Ground	Trunk lid open	Output	Trunk lid
24 (R)	Ground	Rear fog lamp	Output	Rear fog lamp
25 (V) <sup>*1</sup> (SB) <sup>*2</sup>	Ground	Turn signal LH (Rear)	Output	Ignition switch ON

# BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

[FOR EUROPE]

Terminal No. (Wire color)	Description		Condition	Value (Approx.)		
	Signal name	Input/ Output				
30 (O) <sup>*1</sup> (L) <sup>*2</sup>	Ground	Trunk room lamp	Output	Trunk room lamp		
				ON	0 V	
				OFF	12 V	
34 (P)	Ground	Trunk room antenna (-)	Output	Ignition switch OFF	When Intelligent Key is in the passenger compart- ment	 (V) 15 10 5 0 1 s JMKIA0062GB
					When Intelligent Key is not in the passenger compart- ment	 (V) 15 10 5 0 1 s JMKIA0063GB
35 (L)	Ground	Trunk room antenna (+)	Output	Ignition switch OFF	When Intelligent Key is in the passenger compart- ment	 (V) 15 10 5 0 1 s JMKIA0062GB
					When Intelligent Key is not in the passenger compart- ment	 (V) 15 10 5 0 1 s JMKIA0063GB

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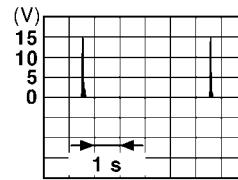
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# BCM (BODY CONTROL MODULE)

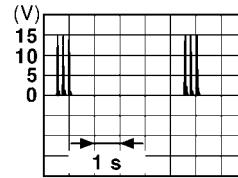
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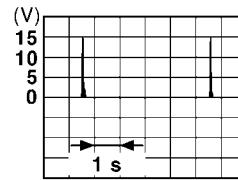
Terminal No. (Wire color)	Description		Condition	Value (Approx.)
	Signal name	Input/ Output		
+	-			
38 (R) <sup>*1</sup> (G) <sup>*2</sup>	Ground	Rear bumper antenna (-)	Output	When Intelligent Key is in the antenna detection area
				When the trunk lid opener request switch is operated with ignition switch OFF
39 (BR) <sup>*1</sup> (R) <sup>*2</sup>	Ground	Rear bumper antenna (+)	Output	When Intelligent Key is in the antenna detection area
				When the trunk lid opener request switch is operated with ignition switch OFF
47 (Y)	Ground	Ignition relay (IPDM E/R) control	Output	OFF or ACC
				ON
50 (R) <sup>*1</sup> (BR) <sup>*2</sup>	Ground	Trunk room lamp switch	Input	OFF (Trunk lid is closed)
				ON (Trunk lid is opened)
52 (SB)	Ground	Starter relay control	Output	When shift lever is in P or N position
				When shift lever is not in P or N position



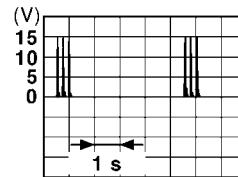
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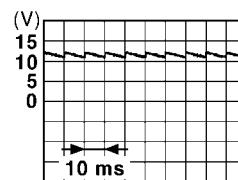
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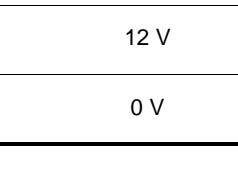


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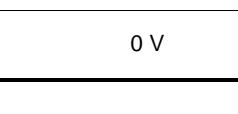
11.8 V



0 V



12 V



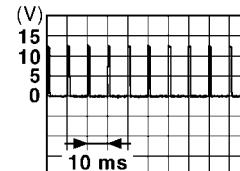
0 V

# BCM (BODY CONTROL MODULE)

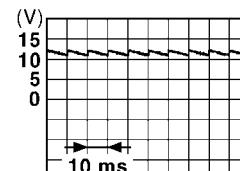
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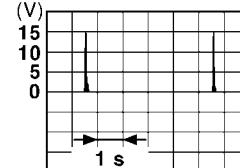
Terminal No. (Wire color)	Description		Condition	Value (Approx.)
	Signal name	Input/ Output		
+	-			
61 (W)	Ground	Trunk lid opener re- quest switch	Input	ON (Pressed)
				OFF (Not pressed)
64 (O)* <sup>1</sup> (GR)* <sup>2</sup>	Ground	Intelligent Key warn- ing buzzer (Engine room)	Output	Intelligent Key warning buzzer (Engine room)
				Sounding
67 (G)* <sup>1</sup> (O)* <sup>2</sup>	Ground	Trunk lid opener switch	Input	Not sounding
				Pressed
72 (R)	Ground	Room antenna 2 (-) (Center console)	Output	Ignition switch OFF
				When Intelligent Key is in the passenger compart- ment
				When Intelligent Key is not in the passenger compart- ment



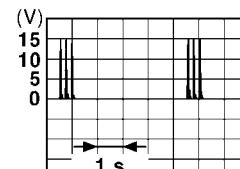
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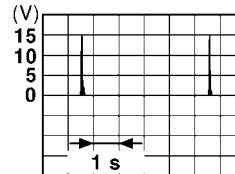
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# BCM (BODY CONTROL MODULE)

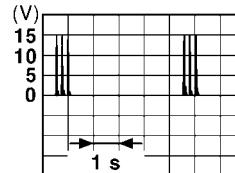
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[FOR EUROPE]

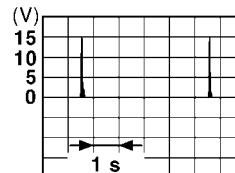
Terminal No. (Wire color)	Description		Condition	Value (Approx.)
	Signal name	Input/ Output		
+	-			
73 (G)	Ground	Room antenna 2 (+) (Center console)	Output	<p>When Intelligent Key is in the passenger compartment</p> <p>When Intelligent Key is not in the passenger compartment</p>
74 (SB)	Ground	Passenger door antenna (-)	Output	<p>When Intelligent Key is in the antenna detection area</p> <p>When the passenger door request switch is operated with ignition switch OFF</p> <p>When Intelligent Key is not in the antenna detection area</p>
75 (BR)	Ground	Passenger door antenna (+)	Output	<p>When Intelligent Key is in the antenna detection area</p> <p>When the passenger door request switch is operated with ignition switch OFF</p> <p>When Intelligent Key is not in the antenna detection area</p>



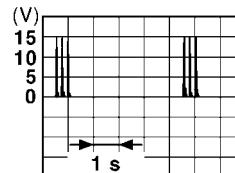
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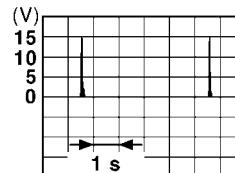
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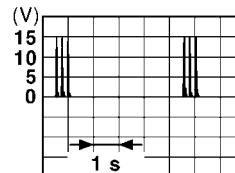
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# BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

[FOR EUROPE]

Terminal No. (Wire color)	Description		Condition	Value (Approx.)
	Signal name	Input/ Output		
+	-			
76 (V)	Ground	Driver door antenna (-)	Output	When Intelligent Key is in the antenna detection area
				When the driver door request switch is operated with ignition switch OFF
77 (LG)	Ground	Driver door antenna (+)	Output	When Intelligent Key is in the antenna detection area
				When the driver door request switch is operated with ignition switch OFF
78 (Y)	Ground	Room antenna 1 (-) (Instrument panel)	Output	When Intelligent Key is in the passenger compartment
				Ignition switch OFF

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# BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

[FOR EUROPE]

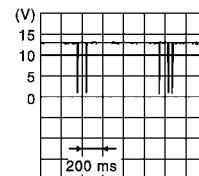
Terminal No. (Wire color)	Description		Condition	Value (Approx.)
	Signal name	Input/ Output		
+	-			
79 (BR)	Ground	Room antenna 1 (+) (Instrument panel)	Output	<p>When Intelligent Key is in the passenger compartment</p> <p>Ignition switch OFF</p>
80 (GR)	Ground	NATS antenna amp.	Input/ Output	<p>Ignition switch is pressed while inserting the Intelligent Key into the key slot.</p> <p>Just after pressing ignition switch. Pointer of tester should move.</p>
81 (L) <sup>*1</sup> (W) <sup>*2</sup>	Ground	NATS antenna amp.	Input/ Output	Ignition switch is pressed while inserting the Intelligent Key into the key slot. Just after pressing ignition switch. Pointer of tester should move.
82 (R) <sup>*1</sup> (SB) <sup>*2</sup>	Ground	Ignition relay [Fuse block (J/B)] control	Output	<p>OFF or ACC</p> <p>ON</p>
83 (Y)	Ground	Remote keyless entry receiver communication	Input/ Output	<p>During waiting</p> <p>When operating either button on the Intelligent Key</p>
84 (GR)	Ground	Dimmer signal	Output	<p>Either of the following conditions</p> <ul style="list-style-type: none"> <li>• Lighting switch OFF</li> <li>• The area around the vehicle is bright (Shine a light on the optical sensor)</li> </ul> <p>The area around the vehicle is dark (Block the light from the optical sensor)</p>

# BCM (BODY CONTROL MODULE)

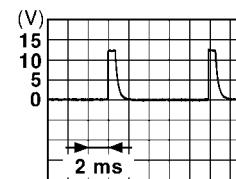
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< ECU DIAGNOSIS INFORMATION >

Terminal No. (Wire color)	Description		Condition	Value (Approx.)
	Signal name	Input/ Output		
+	-			
85 (V)	Ground	Alarm link	Input/ Output	Vehicle securi- ty system
86 (BR)	Ground	Dongle link	Input/ Output	Ignition switch is pressed while inserting the Intelli- gent Key into the key slot.
87 (BR)	Ground	Combination switch INPUT 5	Input	All switches OFF (Wiper volume dial 4)
				Rear fog lamp switch ON (Wiper volume dial 4)
				Any of the conditions be- low with all switches OFF • Wiper volume dial 1 • Wiper volume dial 2 • Wiper volume dial 6 • Wiper volume dial 7

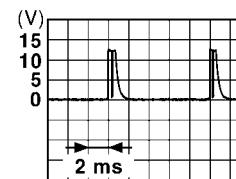


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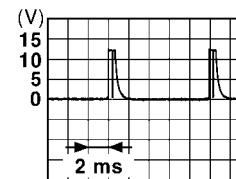
JPMIA0041GB

1.4 V



JPMIA0038GB

1.3 V



JPMIA0040GB

1.3 V

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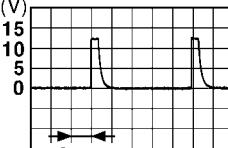
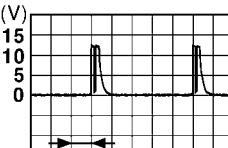
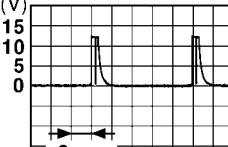
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# BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

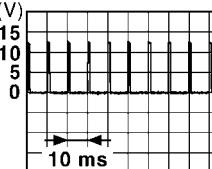
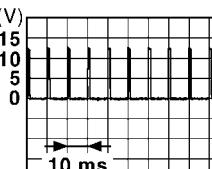
[FOR EUROPE]

Terminal No. (Wire color)	Description		Condition	Value (Approx.)
	Signal name	Input/ Output		
+	-			
88 (V)	Ground	Combination switch INPUT 3	Input	 JPMIA0041GB 1.4 V
89 (BR)	Ground	Push-button ignition switch (Push switch)	Input	 JPMIA0036GB 1.3 V
	Ground	CAN-L	Input/ Output	—
91 (L)	Ground	CAN-H	Input/ Output	—
92 (LG)	Ground	Key slot illumination	Output	 JPMIA0040GB 12 V
		Key slot illumination	Output	 JPMIA0015GB 6.5 V
				ON

# BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

[FOR EUROPE]

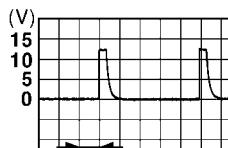
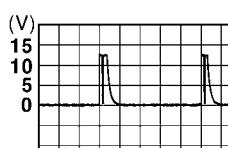
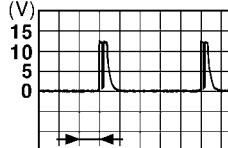
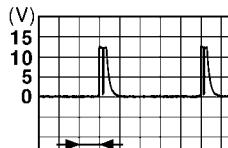
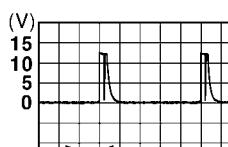
Terminal No. (Wire color)	Description		Condition	Value (Approx.)
	Signal name	Input/ Output		
93 (V)	Ground	ON indicator lamp	Output Ignition switch	OFF (LOCK indicator is not illuminated)
				0 V
95 (O)	Ground	ACC relay control	Output Ignition switch	OFF
				0 V
				ACC or ON
96 (SB)	Ground	A/T shift selector (Detention switch) power supply	Output	—
				12 V
97 (L)	Ground	Steering lock condition No. 1	Input Steering lock	LOCK status
				0 V
				UNLOCK status
				12 V
98 (R)* <sup>1</sup> (P)* <sup>2</sup>	Ground	Steering lock condition No. 2	Input Steering lock	LOCK status
				12 V
				UNLOCK status
				0 V
99 (G)	Ground	Shift lever P position switch	Input Shift lever	P position
				0 V
				Any position other than P
				12 V
100 (W)	Ground	Passenger door request switch	Input Passenger door request switch	ON (Pressed)
				0 V
				OFF (Not pressed)
				 JPMIA0016GB
				1.0 V
101 (V)* <sup>1</sup> (W)* <sup>2</sup>	Ground	Driver door request switch	Input Driver door request switch	ON (Pressed)
				0 V
				OFF (Not pressed)
				 JPMIA0016GB
				1.0 V
102 (O)	Ground	Blower fan motor relay control	Output Ignition switch	OFF or ACC
				0 V
				ON
				12 V
103 (LG)	Ground	Remote keyless entry receiver power supply	Output	Ignition switch OFF
				12 V
106 (P)* <sup>1</sup> (V)* <sup>2</sup>	Ground	Steering lock unit power supply	Output Ignition switch	OFF or ACC
				12 V
				ON
				0 V

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# BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

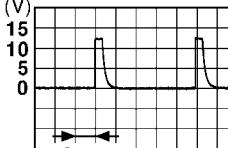
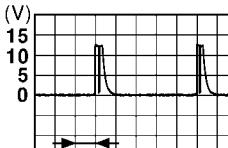
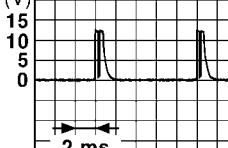
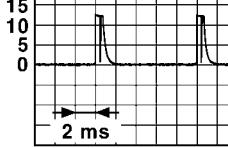
[FOR EUROPE]

Terminal No. (Wire color)	Description		Condition	Value (Approx.)
	Signal name	Input/ Output		
+	-			
107 (LG)	Ground	Combination switch INPUT 1	Combination switch (Wiper volume dial 4)	All switches OFF   1.4 V
				Turn signal switch LH   1.3 V
				Turn signal switch RH   1.3 V
				Front wiper switch LO   1.3 V
				Front washer switch ON   1.3 V

# BCM (BODY CONTROL MODULE)

[FOR EUROPE]

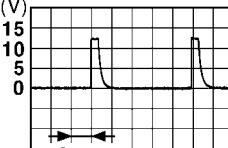
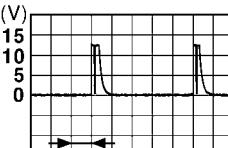
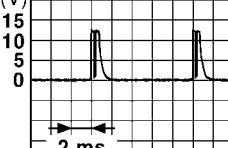
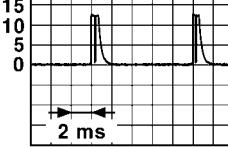
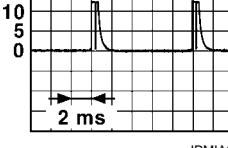
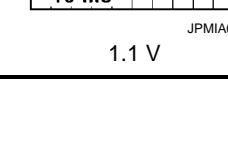
< ECU DIAGNOSIS INFORMATION >

Terminal No. (Wire color)	Description		Condition	Value (Approx.)	A B C D E F G H I J K WW	
	Signal name	Input/ Output				
+	-					
108 (R)	Ground	Combination switch INPUT 4	Input	Combination switch	 All switches OFF (Wiper volume dial 4)	 Lighting switch AUTO (Wiper volume dial 4)
						 Lighting switch 1ST (Wiper volume dial 4)
						 Any of the conditions below with all switches OFF <ul style="list-style-type: none"> <li>• Wiper volume dial 1</li> <li>• Wiper volume dial 5</li> <li>• Wiper volume dial 6</li> </ul>

# BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

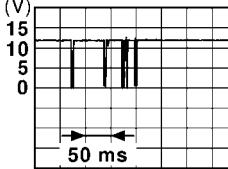
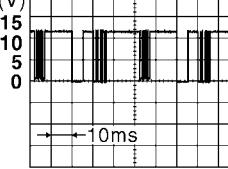
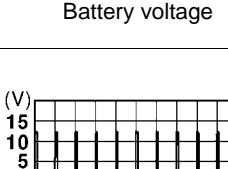
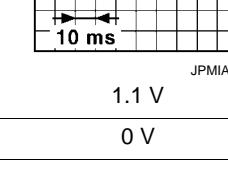
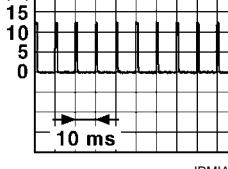
[FOR EUROPE]

Terminal No. (Wire color)	Description		Condition	Value (Approx.)
	Signal name	Input/ Output		
+	-			
109 (Y)	Ground	Combination switch INPUT 2	Combination switch (Wiper volume dial 4)	All switches OFF   1.4 V
				Lighting switch PASS   1.3 V
				Lighting switch 2ND   1.3 V
				Front wiper switch INT/ AUTO   1.3 V
				Front wiper switch HI   1.3 V
110 (G)	Ground	Hazard switch	Hazard switch	ON   0 V
				OFF   1.1 V

# BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

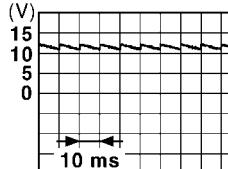
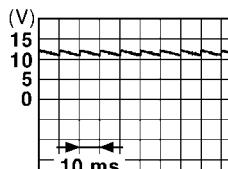
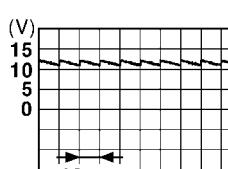
[FOR EUROPE]

Terminal No. (Wire color)	Description		Condition	Value (Approx.)	A B C D E F G H I J K WW M N O P
	Signal name	Input/ Output			
111 (Y)	Ground	Steering lock unit communication	Input/ Output	LOCK status	12 V
					 JMKIA0066GB
				LOCK or UNLOCK	 JPMIA0156GB
				For 15 seconds after UN-LOCK	12 V
				15 seconds or later after UNLOCK	0 V
112 (GR)	Ground	Light and rain sensor serial link	Input/ Output	Ignition switch ON	 JPMIA0012GB
116 (SB)	Ground	Stop lamp switch 1	Input	—	Battery voltage
117 (G)	Ground	Sensor cancel switch	Input	Sensor cancel switch	 JPMIA0012GB
118 (P)* <sup>1</sup> (BR)* <sup>2</sup>	Ground	Stop lamp switch 2	Input	Stop lamp switch	OFF (Brake pedal is not depressed)
					ON (Brake pedal is depressed)
119 (SB)	Ground	Driver side door lock assembly (Unlock sensor)	Input	Driver door	OFF (Brake pedal is not depressed)
					ON (Brake pedal is depressed)
					Battery voltage
					 JPMIA0012GB
					1.1 V
					0 V

# BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

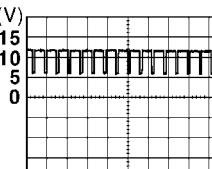
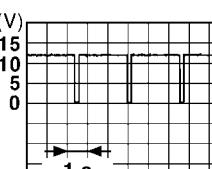
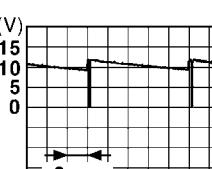
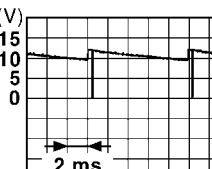
[FOR EUROPE]

Terminal No. (Wire color)	Description		Condition	Value (Approx.)
	+	-		
121 (R)	Ground	Key slot switch	Input	When the Intelligent Key is inserted into key slot
				12 V
123 (BR) <sup>*1</sup> (W) <sup>*2</sup>	Ground	IGN feedback	Input	When the Intelligent Key is not inserted into key slot
				0 V
124 (LG)	Ground	Passenger door switch	Input	OFF (Door close)
				 11.8 V JPMIA0011GB
128 (P) <sup>*1</sup> (GR) <sup>*2</sup>	Ground	Door lock and unlock switch LOCK	Input	ON (Door open)
				0 V
129 (O)	Ground	Trunk lid opener cancel switch	Input	NEUTRAL position
				 11.8 V JPMIA0011GB
131 (BR)	Ground	Door lock and unlock switch UNLOCK	Input	LOCK position
				0 V
129 (O)	Ground	Trunk lid opener cancel switch	Input	CANCEL
				 1.1 V JPMIA0012GB
131 (BR)	Ground	Door lock and unlock switch UNLOCK	Input	ON
				0 V
128 (P) <sup>*1</sup> (GR) <sup>*2</sup>	Ground	Door lock and unlock switch (Power window main switch or power window sub-switch)	Input	NEUTRAL position
				 11.8 V JPMIA0011GB
131 (BR)	Ground	Door lock and unlock switch (Power window main switch or power window sub-switch)	Input	UNLOCK position
				0 V

# BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

[FOR EUROPE]

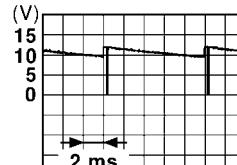
Terminal No. (Wire color)	Description		Condition	Value (Approx.)
	Signal name	Input/ Output		
+	-			
133 (W)* <sup>1</sup> (L)* <sup>2</sup>	Ground	Push-button ignition switch illumination	Output Push-button ignition switch illumination	ON (Tail lamps OFF) 9.5 V
				<b>NOTE:</b> The pulse width of this wave is varied by the illumination brightening/dimming level.  JPMIA0159GB
				ON (Tail lamps ON) OFF 0 V
134 (GR)* <sup>1</sup> (R)* <sup>2</sup>	Ground	LOCK indicator lamp	Output LOCK indicator lamp	OFF Battery voltage
				ON 0 V
137 (L)	Ground	Receiver ground	Input	Ignition switch ON 0 V
140 (BR)	Ground	Shift lever P/N position	Input Shift lever	P or N position 12 V
				Except P and N positions 0 V
141 (G)	Ground	Security indicator	Output Security indicator	ON 0 V
				 JPMIA0014GB 11.3 V
				OFF Battery voltage
142 (O)	Ground	Combination switch OUTPUT 5	Output Combination switch (Wiper volume dial 4)	All switches OFF 0 V
				Lighting switch 1ST
				Lighting switch HI
				Lighting switch 2ND
				Turn signal switch RH  JPMIA0031GB 10.7 V
143 (P)	Ground	Combination switch OUTPUT 1	Output Combination switch	All switches OFF (Wiper volume dial 4) 0 V
				Front wiper switch HI (Wiper volume dial 4)
				Any of the conditions below with all switches OFF <ul style="list-style-type: none"> <li>• Wiper volume dial 1</li> <li>• Wiper volume dial 2</li> <li>• Wiper volume dial 3</li> <li>• Wiper volume dial 6</li> <li>• Wiper volume dial 7</li> </ul>
				 JPMIA0032GB 10.7 V

# BCM (BODY CONTROL MODULE)

[FOR EUROPE]

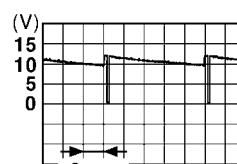
< ECU DIAGNOSIS INFORMATION >

Terminal No. (Wire color)	Description		Condition	Value (Approx.)
	Signal name	Input/ Output		
+	-			
144 (G)	Ground	Combination switch OUTPUT 2	Output	All switches OFF (Wiper volume dial 4)  Front washer switch ON (Wiper volume dial 4)  Any of the conditions below with all switches OFF • Wiper volume dial 1 • Wiper volume dial 5 • Wiper volume dial 6
145 (L)	Ground	Combination switch OUTPUT 3	Output	All switches OFF  Front wiper switch INT/ AUTO  Front wiper switch LO  Lighting switch AUTO  Rear fog lamp switch ON
146 (SB)	Ground	Combination switch OUTPUT 4	Output	All switches OFF  Lighting switch 2ND  Lighting switch PASS  Turn signal switch LH
150 (GR)	Ground	Driver door switch	Input	OFF (Door close)  ON (Door open)
151 (G)	Ground	Rear window defog- ger relay control	Output	Active  Not activated



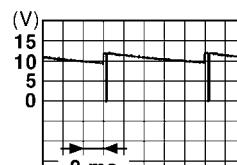
JPMIA0033GB

10.7 V



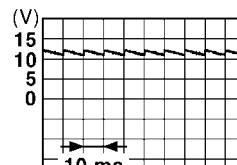
JPMIA0034GB

10.7 V



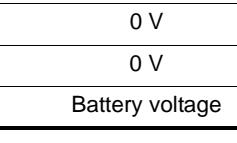
JPMIA0035GB

10.7 V



JPMIA0011GB

11.8 V



0 V

Battery voltage

• \*1: LHD models

• \*2: RHD models

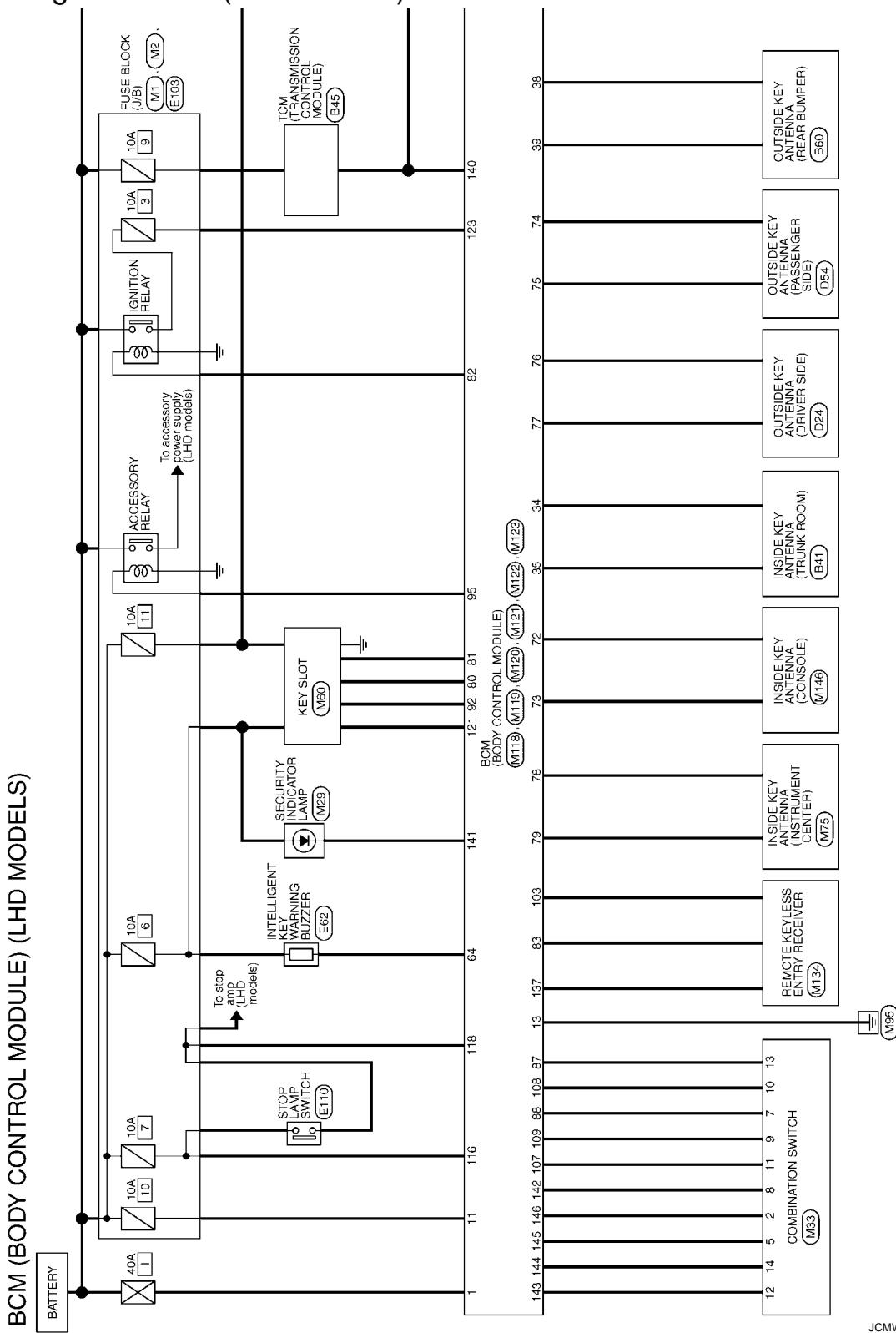
## **BCM (BODY CONTROL MODULE)**

## < ECU DIAGNOSIS INFORMATION >

## [FOR EUROPE]

## Wiring Diagram - BCM (LHD models) -

INFOID:0000000005037500



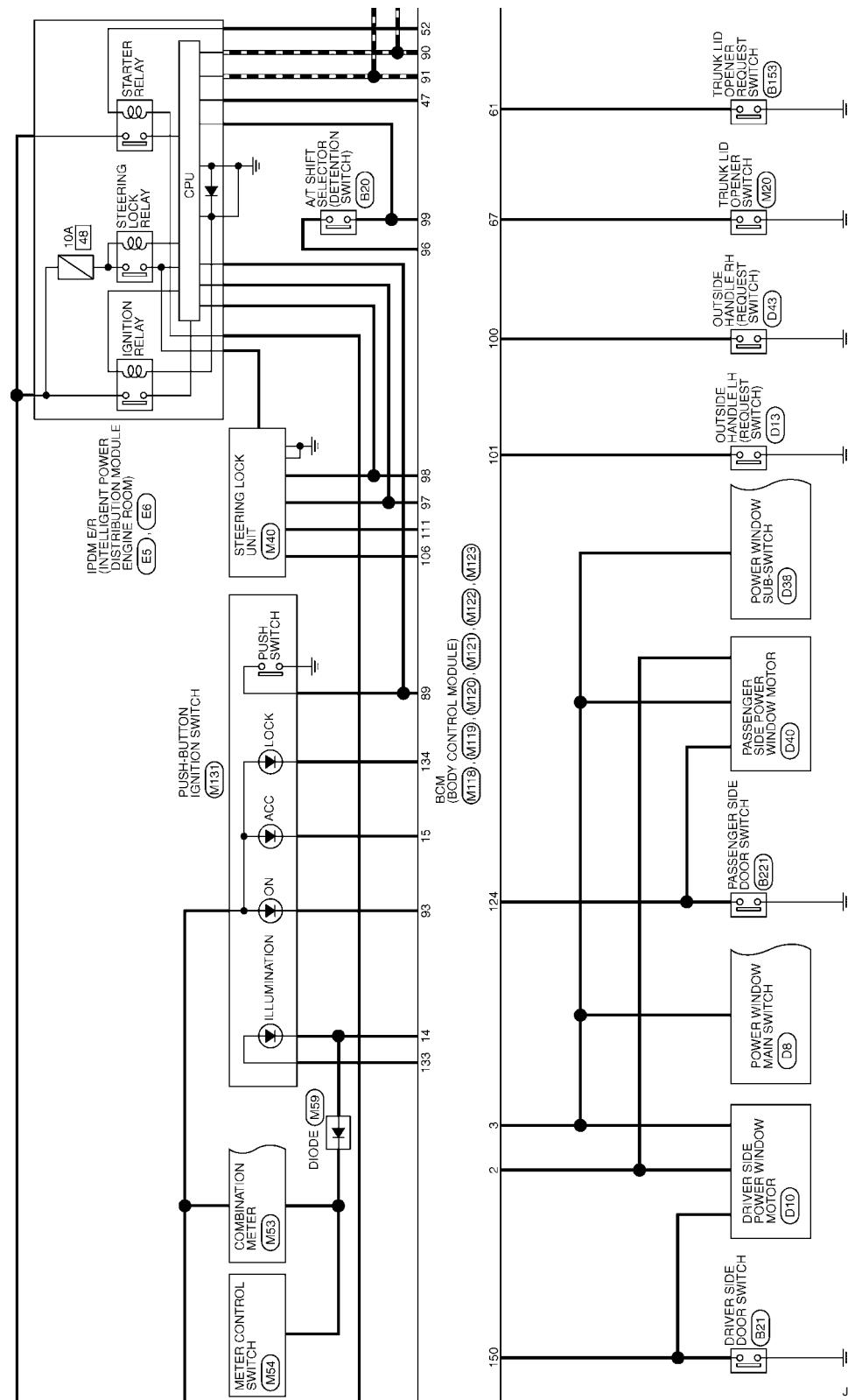
2009/05/07

JCMWA4567GB

## **BCM (BODY CONTROL MODULE)**

## < ECU DIAGNOSIS INFORMATION >

[FOR EUROPE]



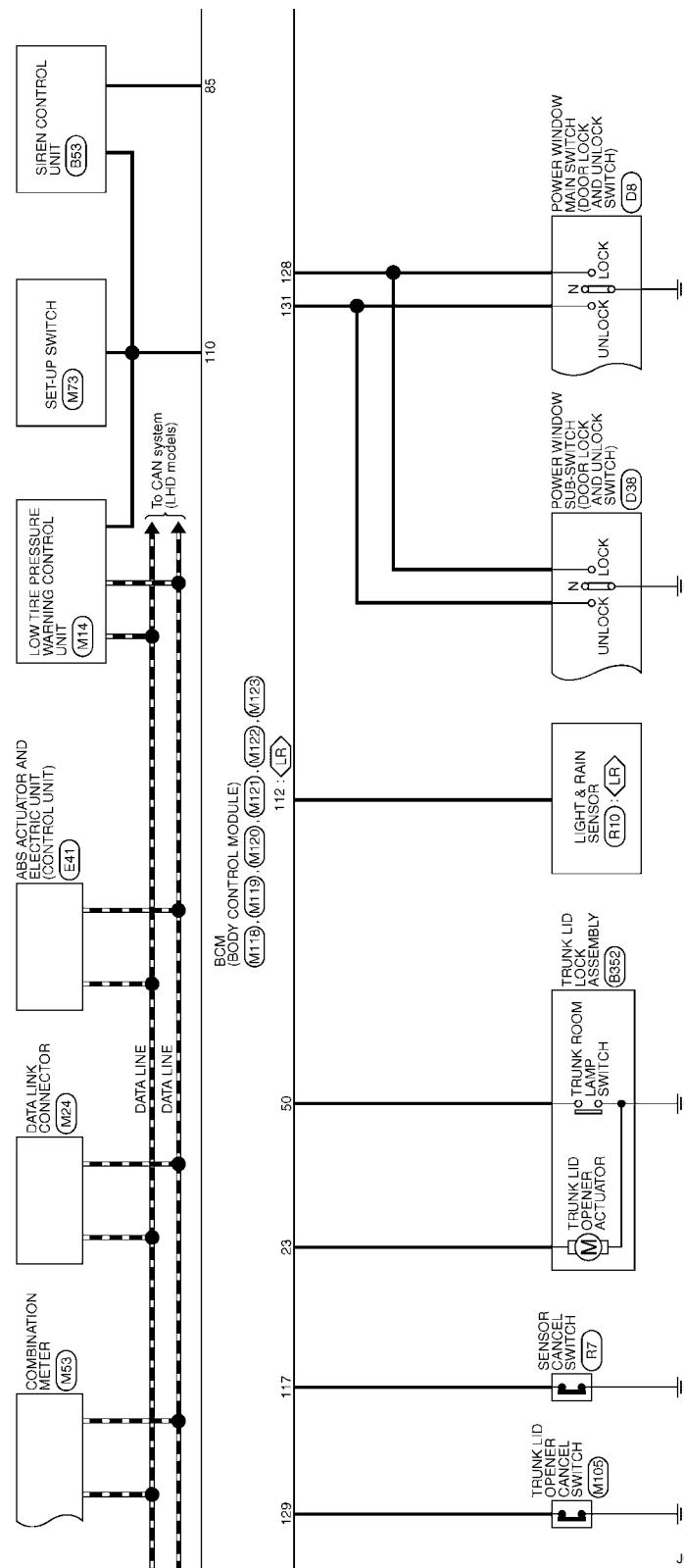
JCMWA4568GB

# BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

[FOR EUROPE]

⟨LR⟩ : With light & rain sensor

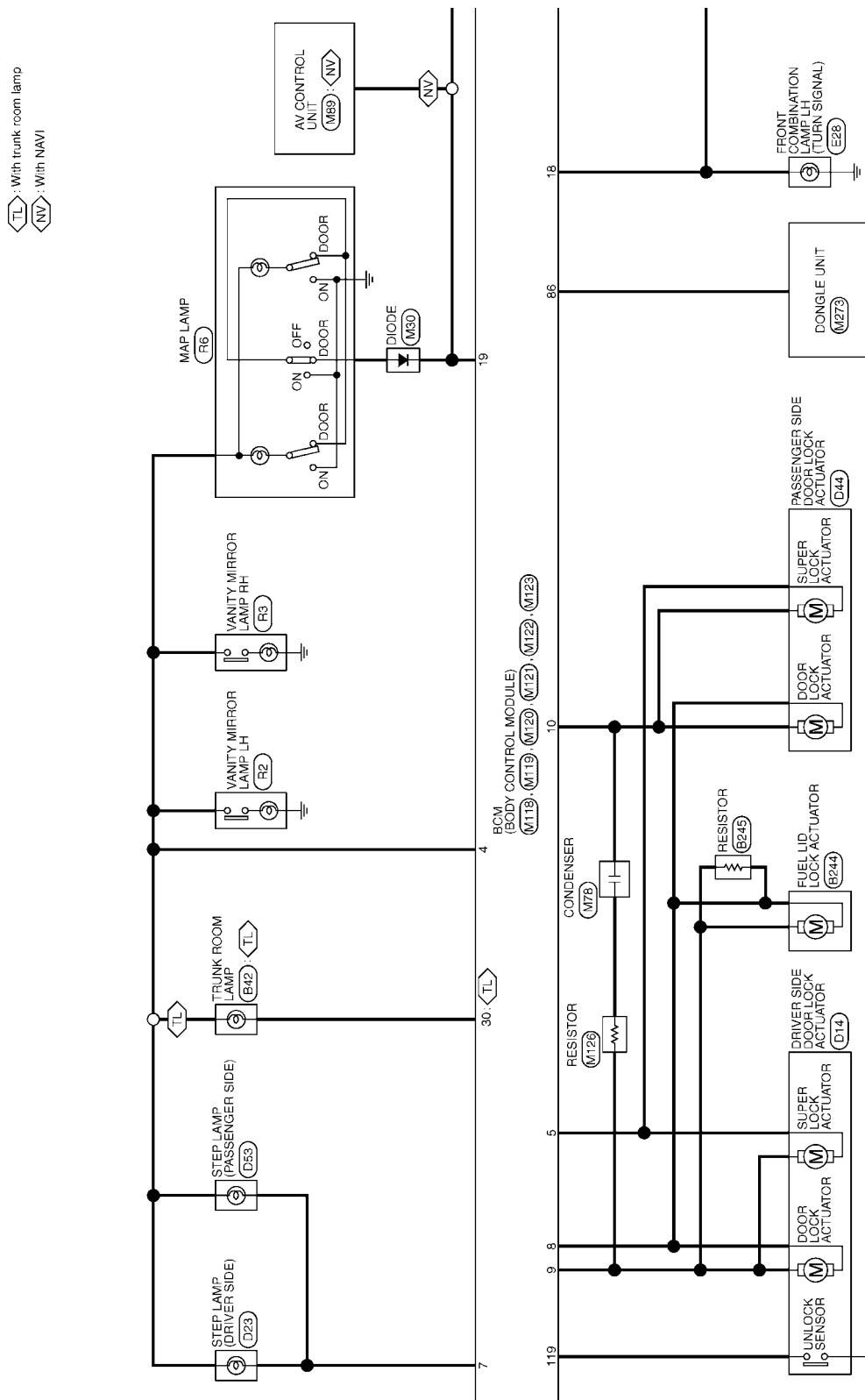


JCMWA4569GB

# BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

[FOR EUROPE]

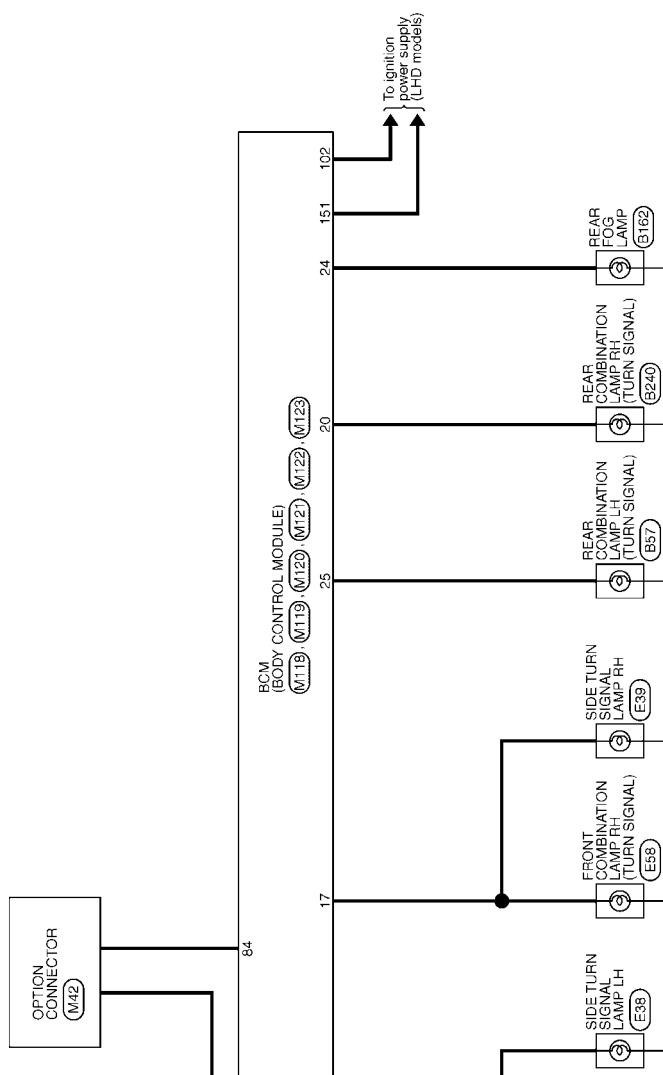


JCMW4570GB

# BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

[FOR EUROPE]



JCMW4571GB

# BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

[FOR EUROPE]

BCM (BODY CONTROL MODULE) (LHD MODELS)			BCM (BODY CONTROL MODULE) (LHD MODELS)		
Connector No. M53	Connector No. M118	Connector No. M119	Terminal No.	Color of Wire	Signal Name [Specification]
Connector Name COMBINATION SWITCH	Connector Name BCM (BODY CONTROL MODULE)	Connector Name BCM (BODY CONTROL MODULE)	1	GR	BAT (F1) (LHD models)
Connector Type TH16FW-NH	Connector Type M03FB-LC	Connector Type NS16FW-CS	2	R	POWER WINDOW POWER SUPPLY BAT
			3	W	POWER MINDOW POWER SUPPLY BAT
			4	R	INTERIOR ROOM LAMP POWER SUPPLY (LHD models)
			5	L	SUPER LOCK OUTPUT
			7	Y	STEP LAMP
			8	V	ALL DOOR FUEL LID LOCK OUTPUT
			9	G	DRIVER DOOR FUEL LID UNLOCK OUTPUT
			10	G	PASSENGER DOOR UNLOCK OUTPUT (LHD models)
			11	R	BAT (FUSE)
			13	B	GRD
			14	P	PUSH-BUTTON IGNITION SWILL CND
			15	Y	ACC IND
			17	W	TURN SIGNAL RH (FRONT SIDE) OUTPUT
BCM (BODY CONTROL MODULE) (LHD MODELS)			BCM (BODY CONTROL MODULE) (LHD MODELS)		
Connector No. M120	Connector No. M121	Connector No. M121	Terminal No.	Color of Wire	Signal Name [Specification]
Connector Name BCM (BODY CONTROL MODULE)	Connector Name BCM (BODY CONTROL MODULE)	Connector Name BCM (BODY CONTROL MODULE)	1	GR	BAT (F1) (LHD models)
Connector Type NS16FW-CS	Connector Type TH40FG7-NH	Connector Type TH40FG7-NH	2	R	POWER WINDOW POWER SUPPLY BAT
			3	W	POWER MINDOW POWER SUPPLY BAT
			4	R	INTERIOR ROOM LAMP POWER SUPPLY (LHD models)
			5	L	SUPER LOCK OUTPUT
			7	Y	STEP LAMP
			8	V	ALL DOOR FUEL LID LOCK OUTPUT
			9	G	DRIVER DOOR FUEL LID UNLOCK OUTPUT
			10	G	PASSENGER DOOR UNLOCK OUTPUT (LHD models)
			11	R	BAT (FUSE)
			13	B	GRD
			14	P	PUSH-BUTTON IGNITION SWILL CND
			15	Y	ACC IND
			17	W	TURN SIGNAL RH (FRONT SIDE) OUTPUT
BCM (BODY CONTROL MODULE) (LHD MODELS)			BCM (BODY CONTROL MODULE) (LHD MODELS)		
Terminal No.	Color of Wire	Signal Name [Specification]	Terminal No.	Color of Wire	Signal Name [Specification]
20	SB	TURN SIGNAL RH (FRONT SIDE) OUTPUT (LHD models)	34	P	TRUNK ROOM ANT-
21	G	TRUNK LD OPEN OUTPUT	35	L	TRUNK ROOM ANT+
22	R	REAR FOG OUTPUT	36	R	REAR BUMPER ANT (LHD models)
23	V	TURN SIGNAL LH (FRONT SIDE) OUTPUT (LHD models)	39	BR	REAR BUMPER ANT+ (LHD models)
24	SB	TURN SIGNAL RH (FRONT SIDE) OUTPUT (LHD models)	47	Y	IGN RELAY (FDM E/FR CONTROL)
25	G	TRUNK ROOM LAMP OUTPUT (LHD models)	50	R	TRUNK ROOM LAMP SW (LHD models)
26	R	STARTER RELAY CONT	52	SB	TRUNK LD REQUEST SW
27	V	TRUNK ROOM LAMP SW (LHD models)	61	W	TRUNK LD REQUEST SW
28	SB	KEYLESS BIZZER TENG ROOM (LHD models)	64	O	KEYLESS BIZZER TENG ROOM (LHD models)
29	G	TRUNK LID REQUEST SW (LHD models)	67	G	TRUNK LID OPENER SW (LHD models)
30	SB	TRUNK LID REQUEST SW (LHD models)			
31	G	TRUNK LID REQUEST SW (LHD models)			

JCMW A3928GB

# BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

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BCM (BODY CONTROL MODULE) (LHD MODELS)			S/L UNIT COMM		
Connector No	M122	Y	KEYLESS ENTRY RECEIVER COMM		
Connector Name	BCM(BODY CONTROL MODULE)	GR	DIMMER SIGNAL		
Connector Type	TH40FB-NH	BR	ALARM LINK		
			DONGLE LINK		
			COMBI SW INPUT 5		
			COMBI SW INPUT 3		
			PUSH SW		
			CAN-L		
			CAN-H		
			KEY SLOT ILL.OUTPUT		
			ON IND		
			AC RELAY CONT		
			AC T SHIFT SELECTOR POWER SUPPLY		
			AC T CONDITION 1		
			AC T CONDITION 2 (LHD models)		
			SHIFT P		
			PASSENGER DOOR REQUEST SW		
			DRIVER DOOR REQUEST SW (LHD models)		
			BLOWER FAN MOTOR RELAY CONT		
			KEYLESS ENTRY RECEIVER POWER SUPPLY		
			S/L UNIT POWER SUPPLY (LHD models)		
			COMBI SW INPUT 1		
			COMBI SW INPUT 2		
			COMBI SW INPUT 3		
			COMBI SW INPUT 4		
			HAZARD SW		
Terminal No	Signal Name [Specification]				
72	R				
73	G				
74	SB				
75	BR				
76	V				
77	LG				
78	Y				
79	BR				
80	GR				
81	L				
82	R				
	IGN RELAY (F/B) CONT (LHD models)				
Connector No	M123	W	PUSH-BUTTON (MAIN) SW (LHD models)		
Connector Name	BCM(BODY CONTROL MODULE)	GR	LOCK IND (LHD models)		
Connector Type	TH40FG-NH	BR	RECEIVER SWD		
			SHIFT N/P		
			SECURITY INDICATOR		
			COMBI SW OUTPUT 5		
			COMBI SW OUTPUT 1		
			COMBI SW OUTPUT 2		
			COMBI SW OUTPUT 3		
			COMBI SW OUTPUT 4		
			DRIVER DOOR SW		
			REAR WIND/DOOR DEFROGER RELAY CONT		
Terminal No	Signal Name [Specification]				
112	GR		L& SENSOR SERIAL LINK		
116	SB		STOP LAMP SW 1		
117	G		SENSOR CANCEL SW		
118	P		STOP LAMP SW 2 (LHD models)		
119	SB		DR DOOR UNL. SENSOR		
121	R		KEY SLOT SW		
123	BR		IGN F/B (LHD models)		
124	LG		PASSENGER DOOR SW		
126	P		DOOR LOCK/UNLOCK SW LOCK (LHD models)		
129	O		TRUNK CANCEL SW		
131	BR		DOOR LOCK/UNLOCK SW/UNLOCK		

JCMWA4572GB

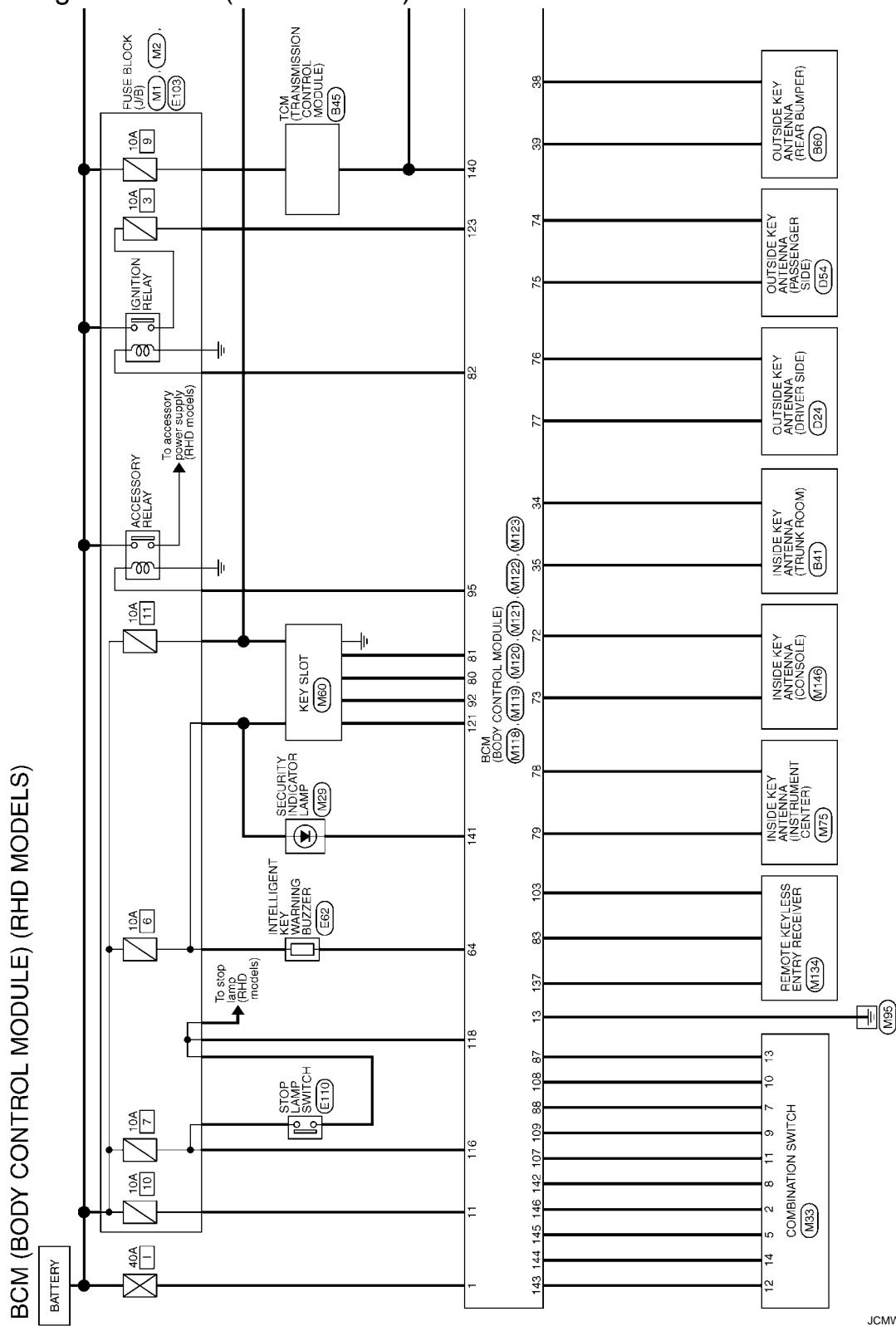
## **BCM (BODY CONTROL MODULE)**

## < ECU DIAGNOSIS INFORMATION >

## [FOR EUROPE]

## Wiring Diagram - BCM (RHD models) -

INFOID:000000005037501

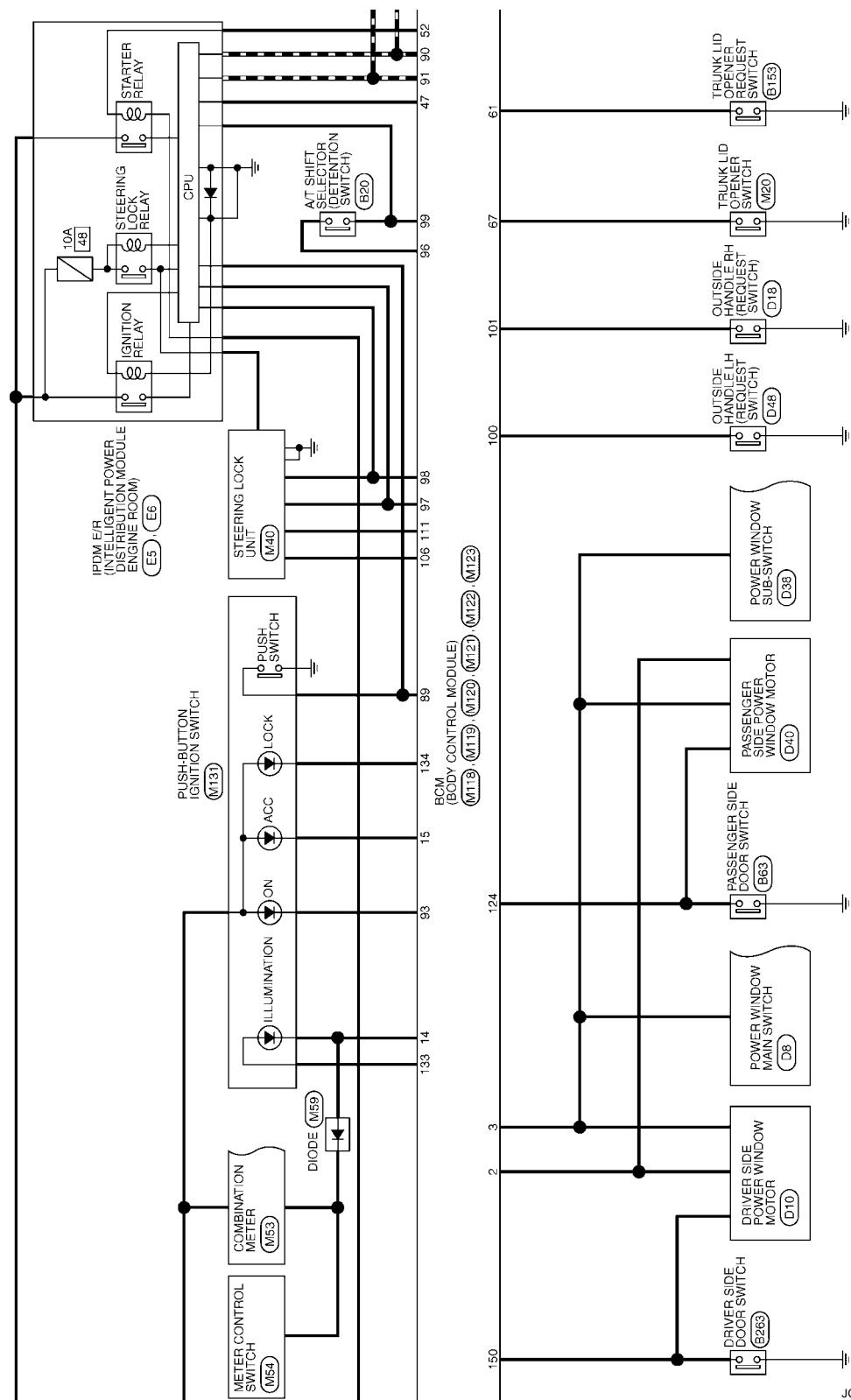


JCMWA4573GB

# BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

[FOR EUROPE]



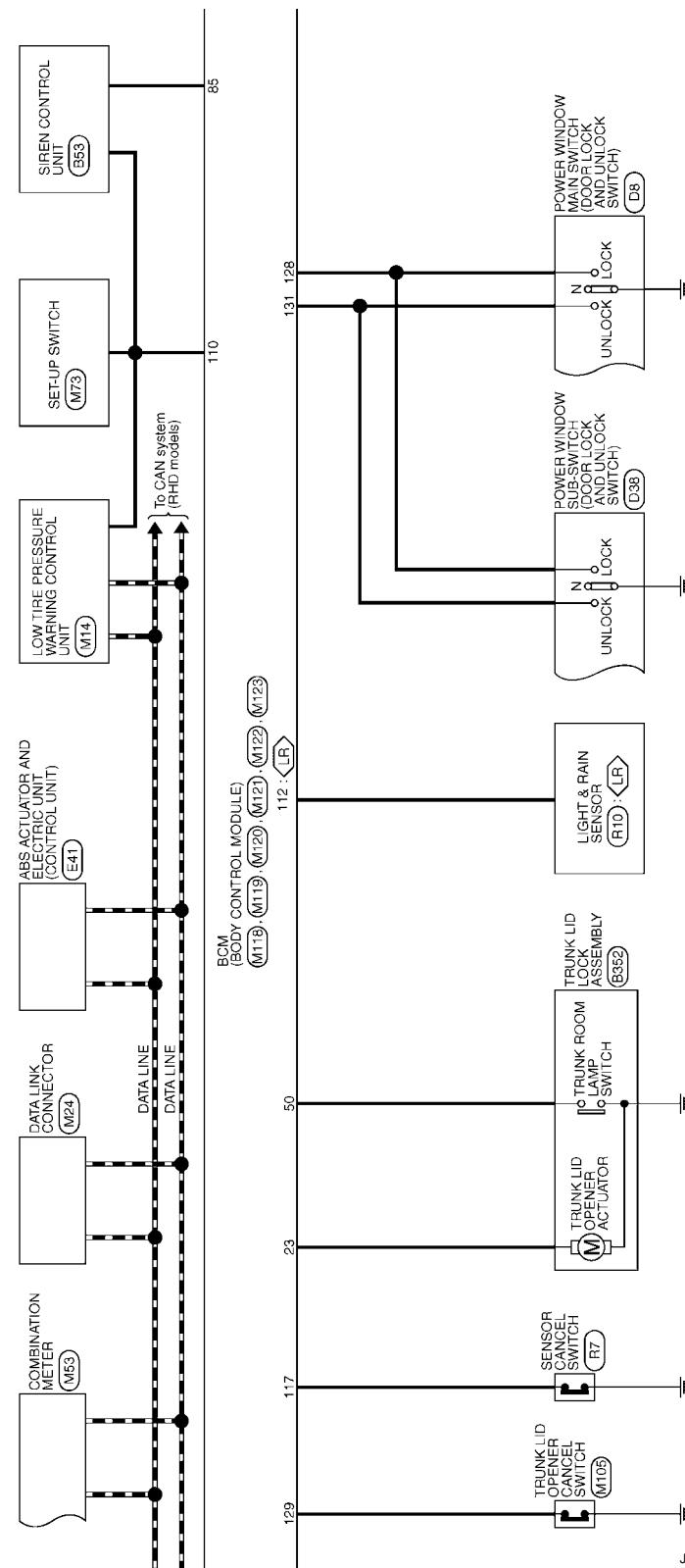
JCMWA4574GB

# BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

[FOR EUROPE]

LR : With light & rain sensor

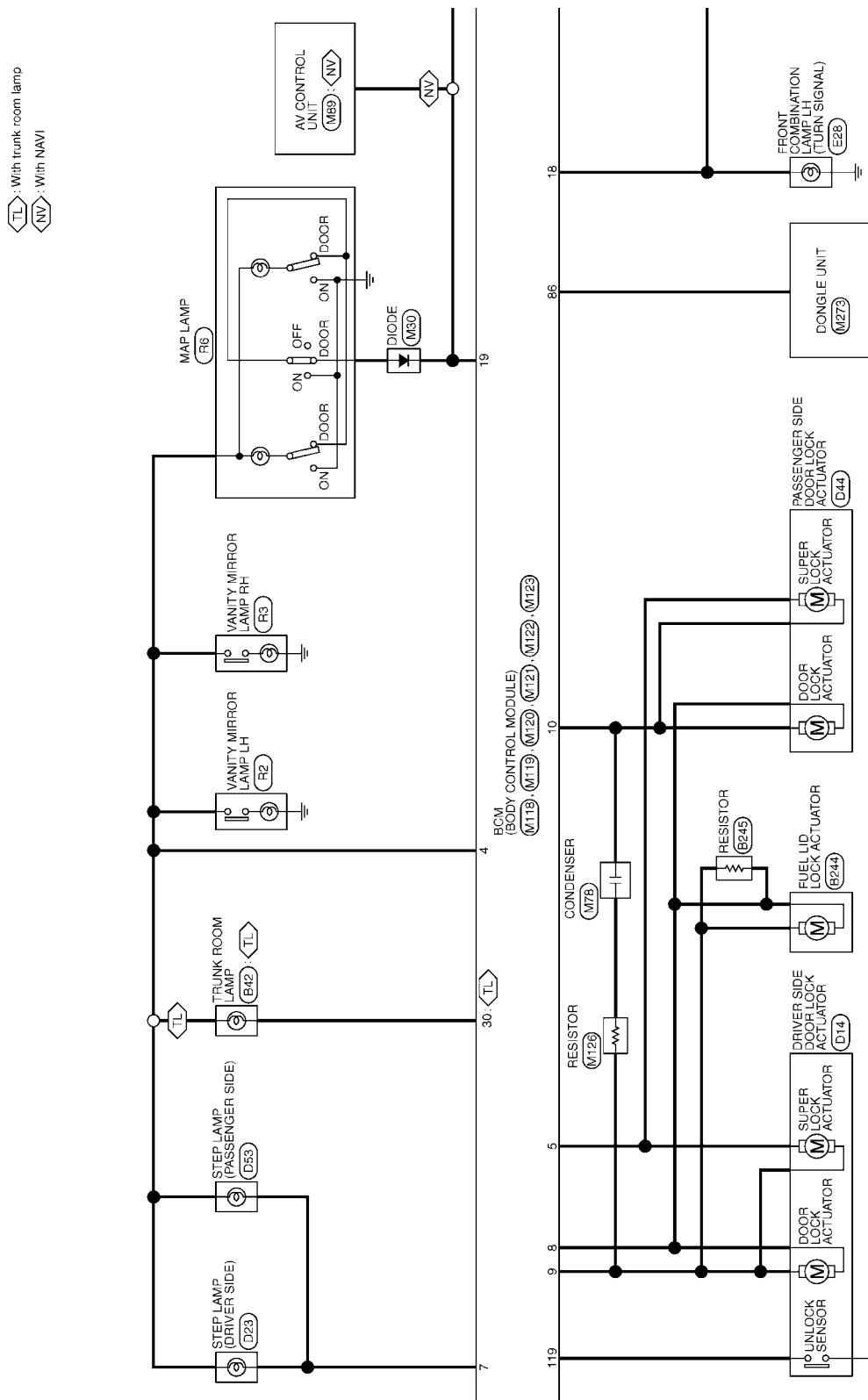


JCMW4575GB

# BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

[FOR EUROPE]

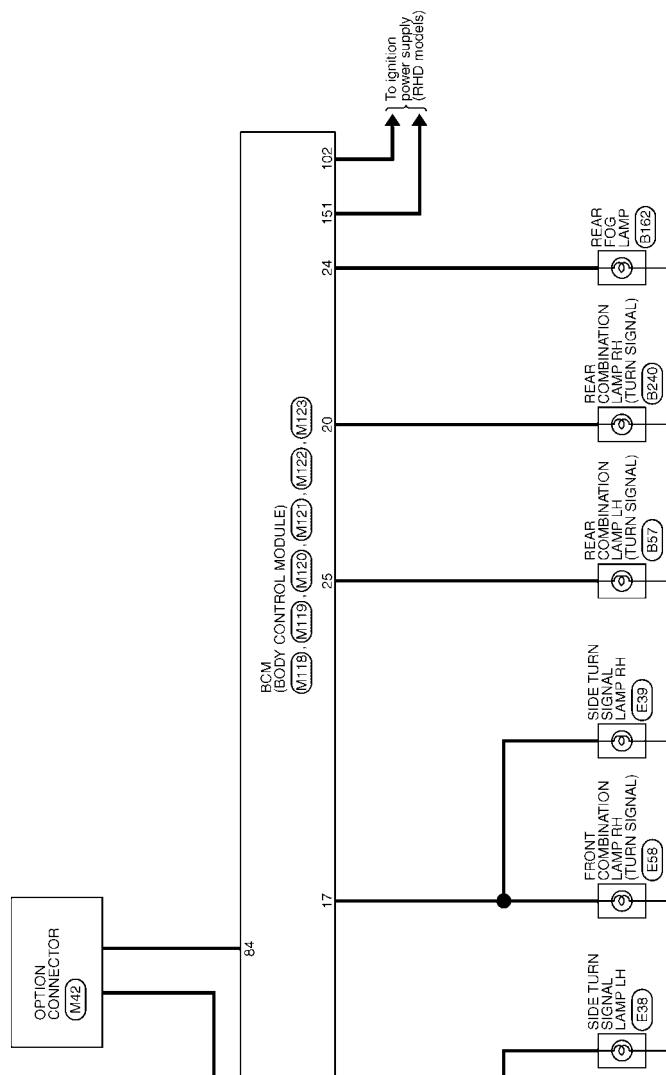


JCMW4576GB

# BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

[FOR EUROPE]



JCMW4577GB

# BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

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## BCM (BODY CONTROL MODULE) (RHD MODELS)

Connector No.		M116	
Connector Name		BCM (BODY CONTROL MODULE)	
Connector Type		M03FB-LC	



Terminal No.	Color of Wire	Signal Name [Specification]	Terminal No.	Color of Wire	Signal Name [Specification]
1	SE	OUTPUT 4	1	W	BAT (E/L) (RHD models)
2	L	OUTPUT 3	2	R	POWER WINDOW POWER SUPPLY BAT
5	Y	INPUT 3	3	W	POWER WINDOW POWER SUPPLY (RHD)
7	Y	OUTPUT 5	7	Y	SUPER LOCK OUTPUT
8	O	INPUT 2	8	V	STEP LAMP
9	Y	OUTPUT 2	9	V	ALL DOOR FUEL LID LOCK OUTPUT
10	R	INPUT 4	10	P	DRIVER DOOR FUEL LID UNLOCK OUTPUT
11	LG	INPUT 4	11	R	PASSENGER DOOR UNLOCK OUTPUT (RHD models)
12	P	OUTPUT 1	13	B	BAT (FUSE)
13	BR	INPUT 5	14	P	GND
14	G	OUTPUT 5	15	Y	PUSH+BUTTON IGNITION SW/HLD
			17	W	ACC IND
			17	W	TURN SIGNAL RH (FRONT SIDE) OUTPUT

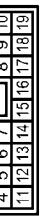
Connector No.		M120	
Connector Name		BCM (BODY CONTROL MODULE)	
Connector Type		NS12DFW-CS	



Connector No.		M121	
Connector Name		BCM (BODY CONTROL MODULE)	
Connector Type		TH40FG7-NH	



Connector No.		M119	
Connector Name		BCM (BODY CONTROL MODULE)	
Connector Type		NS16EFW-CS	



Terminal No.	Color of Wire	Signal Name [Specification]	Terminal No.	Color of Wire	Signal Name [Specification]
4	O	TURN SIGNAL RH (FRONT SIDE) OUTPUT	18	O	TURN SIGNAL RH (FRONT SIDE) OUTPUT
5	GR	ROOF LAMP (RHD models)	19	GR	ROOF LAMP (RHD models)

JCMWA3935GB

# BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

[FOR EUROPE]

BCM (BODY CONTROL MODULE) (RHD MODELS)		S/L UNIT COMM	
Connector No.	M122	83	Y
Connector Name	BCM (BODY CONTROL MODULE)	84	GR
Connector Type	TH40FB-NH	85	V
		86	BR
		87	BR
		88	V
		89	BR
		90	P
		91	L
		92	LG
		93	V
		94	O
		95	ACC RELAY CONT
		96	SB
		97	L
		98	P
		99	G
		100	W
		101	W
		102	O
		103	LG
		104	V
		105	LG
		106	V
		107	LG
		108	R
		109	Y
		110	G
Terminal No. [Wire Color of Signal Name (Specification)]		S/L CONDITION 1	
72	R	ROOM ANT2-	
73	G	ROOM ANT2+	
74	SB	PASSENGER DOOR ANT-	
75	BR	PASSENGER DOOR ANT+	
76	V	DRIVER DOOR ANT-	
77	LG	DRIVER DOOR ANT+	
78	Y	ROOM ANT1-	
79	BR	ROOM ANT1+	
80	GR	IMMOB ANTENNA CONTROL	
81	W	IMMOB ANTENNA SIGNAL (RHD models)	
82	SB	[IGN RELAY (F/B) CONT (RHD models)]	
Terminal No. [Wire Color of Signal Name (Specification)]		S/L CONDITION 2 [RHD models]	
123	L	PUSH-BUTTON IGNITION SW (L POWER (RHD models))	
134	R	LOCK IND (RHD models)	
137	L	RECEIVER SND	
140	BR	SHIFT N/P	
141	G	SECURITY INDICATOR	
142	O	COMBI SW OUTPUT 5	
143	P	COMBI SW OUTPUT 1	
144	G	COMBI SW OUTPUT 2	
145	L	COMBI SW OUTPUT 3	
146	SB	COMBI SW OUTPUT 4	
150	GR	DRIVER DOOR SW	
151	G	REAR WIND DEFROGGER RELAY CONT	
Terminal No. [Wire Color of Signal Name (Specification)]		S/L UNIT COMM	
112	GR	L& SENSOR SERIAL LINK	
116	SB	STOP LAMP SW 1	
117	G	SENSOR CANCEL SW	
118	BR	STOP LAMP SW 2 (RHD models)	
119	SB	DR DOOR UNLCK SENSOR	
121	R	KEY SLOT SW	
123	W	[IGN F/B (RHD models)]	
124	LG	PASSENGER DOOR SW	
128	GR	DOOR LOCK/UNLOCK SW (LOCK (RHD models))	
129	O	TRUNK CANCEL SW	
131	BR	DOOR LOCK/UNLOCK SW (UNLOCK)	

JCMWA4578GB

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## Fail-safe

### FAIL-SAFE CONTROL BY DTC

BCM performs fail-safe control when any DTC are detected.

# BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

[FOR EUROPE]

Display contents of CONSULT	Fail-safe	Cancellation
B2013: ID DISCORD BCM-S/L	Inhibit engine cranking	Erase DTC
B2014: CHAIN OF S/L-BCM	Inhibit engine cranking	Erase DTC
B2190: NATS ANTENNA AMP	Inhibit engine cranking	Erase DTC
B2191: DIFFERENCE OF KEY	Inhibit engine cranking	Erase DTC
B2192: ID DISCORD BCM-ECM	Inhibit engine cranking	Erase DTC
B2193: CHAIN OF BCM-ECM	Inhibit engine cranking	Erase DTC
B2195: ANTI SCANNING	Inhibit engine cranking	Ignition switch ON → OFF
B2196: DONGLE NG	Inhibit engine cranking	Erase DTC
B2557: VEHICLE SPEED	Inhibit steering lock	When normal vehicle speed signals are received from ABS actuator and electric unit (control unit) for 500 ms
B2560: STARTER CONT RELAY	Inhibit engine cranking	500 ms after the following CAN signal communication status becomes consistent <ul style="list-style-type: none"> <li>• Starter control relay signal</li> <li>• Starter relay status signal</li> </ul>
B2601: SHIFT POSITION	Inhibit steering lock	500 ms after the following signal reception status becomes consistent <ul style="list-style-type: none"> <li>• Shift lever P position switch signal</li> <li>• P range signal (CAN)</li> </ul>
B2602: SHIFT POSITION	Inhibit steering lock	5 seconds after the following BCM recognition conditions are fulfilled <ul style="list-style-type: none"> <li>• Ignition switch is in the ON position</li> <li>• Shift lever P position switch signal: Except P position (battery voltage)</li> <li>• Vehicle speed: 4 km/h (2.5 MPH) or more</li> </ul>
B2603: SHIFT POSI STATUS	Inhibit steering lock	500 ms after the following BCM recognition conditions are fulfilled <ul style="list-style-type: none"> <li>• Ignition switch is in the ON position</li> <li>• Shift lever P position switch signal: Except P position (battery voltage)</li> <li>• Shift lever P/N position signal: Except P and N positions (0 V)</li> </ul>
B2604: PNP/CLUTCH SW	Inhibit steering lock	500 ms after any of the following BCM recognition conditions are fulfilled <ul style="list-style-type: none"> <li>• Status 1 <ul style="list-style-type: none"> <li>- Ignition switch is in the ON position</li> <li>- Shift lever P/N position signal: P and N position (battery voltage)</li> <li>- P range signal or N range signal (CAN): ON</li> </ul> </li> <li>• Status 2 <ul style="list-style-type: none"> <li>- Ignition switch is in the ON position</li> <li>- Shift lever P/N position signal: Except P and N positions (0 V)</li> <li>- P range signal and N range signal (CAN): OFF</li> </ul> </li> </ul>
B2605: PNP/CLUTCH SW	Inhibit steering lock	500 ms after any of the following BCM recognition conditions are fulfilled <ul style="list-style-type: none"> <li>• Status 1 <ul style="list-style-type: none"> <li>- Ignition switch is in the ON position</li> <li>- Shift lever P/N position signal: Except P and N positions (0 V)</li> <li>- Interlock/PNP switch signal (CAN): OFF</li> </ul> </li> <li>• Status 2 <ul style="list-style-type: none"> <li>- Ignition switch is in the ON position</li> <li>- Shift lever P/N position signal: P or N position (battery voltage)</li> <li>- PNP switch signal (CAN): ON</li> </ul> </li> </ul>
B2606: S/L RELAY	Inhibit engine cranking	500 ms after the following CAN signal communication status becomes consistent <ul style="list-style-type: none"> <li>• Steering lock relay signal (Request signal)</li> <li>• Steering lock relay signal (Condition signal)</li> </ul>
B2607: S/L RELAY	Inhibit engine cranking	500 ms after the following CAN signal communication status has becomes consistent <ul style="list-style-type: none"> <li>• Steering lock relay signal (Request signal)</li> <li>• Steering lock relay signal (Condition signal)</li> </ul>

# BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

[FOR EUROPE]

Display contents of CONSULT	Fail-safe	Cancellation
B2608: STARTER RELAY	Inhibit engine cranking	500 ms after the following signal communication status becomes consistent <ul style="list-style-type: none"> <li>Starter motor relay control signal</li> <li>Starter relay status signal (CAN)</li> </ul>
B2609: S/L STATUS	<ul style="list-style-type: none"> <li>Inhibit engine cranking</li> <li>Inhibit steering lock</li> </ul>	When the following steering lock conditions agree <ul style="list-style-type: none"> <li>BCM steering lock control status</li> <li>Steering lock condition No. 1 signal status</li> <li>Steering lock condition No. 2 signal status</li> </ul>
B260A: IGNITION RELAY	Inhibit engine cranking	500 ms after the following conditions are fulfilled <ul style="list-style-type: none"> <li>IGN relay (IPDM E/R) control signal: OFF (Battery voltage)</li> <li>Ignition ON signal (CAN to IPDM E/R): OFF (Request signal)</li> <li>Ignition ON signal (CAN from IPDM E/R): OFF (Condition signal)</li> </ul>
B260F: ENG STATE SIG LOST	Maintains the power supply position attained at the time of DTC detection	When any of the following conditions are fulfilled <ul style="list-style-type: none"> <li>Power position changes to ACC</li> <li>Receives engine status signal (CAN)</li> </ul>
B2612: S/L STATUS	<ul style="list-style-type: none"> <li>Inhibit engine cranking</li> <li>Inhibit steering lock</li> </ul>	When any of the following conditions are fulfilled <ul style="list-style-type: none"> <li>Steering lock unit status signal (CAN) is received normally</li> <li>The BCM steering lock control status matches the steering lock status recognized by the steering lock unit status signal (CAN from IPDM E/R)</li> </ul>
B2617: BCM	Inhibit engine cranking	1 second after the starter motor relay control inside BCM becomes normal
B2618: BCM	Inhibit engine cranking	1 second after the ignition relay (IPDM E/R) control inside BCM becomes normal
B2619: BCM	Inhibit engine cranking	1 second after the steering lock unit power supply output control inside BCM becomes normal
B261E: VEHICLE TYPE	Inhibit engine cranking	BCM initialization
B26E9: S/L STATUS	<ul style="list-style-type: none"> <li>Inhibit engine cranking</li> <li>Inhibit steering lock</li> </ul>	When BCM transmits the LOCK request signal to steering lock unit, and receives LOCK response signal from steering lock unit, the following conditions are fulfilled <ul style="list-style-type: none"> <li>Steering condition No. 1 signal: LOCK (0 V)</li> <li>Steering condition No. 2 signal: LOCK (Battery voltage)</li> </ul>

## HIGH FLASHER OPERATION

BCM detects the turn signal lamp circuit status by the current value.

BCM increases the turn signal lamp blinking speed if the bulb or harness open is detected with the turn signal lamp operating.

### NOTE:

The blinking speed is normal while activating the hazard warning lamp.

## FAIL-SAFE CONTROL BY LIGHT AND RAIN SENSOR MALFUNCTION

BCM detects the light and rain sensor serial link error and the light and rain sensor malfunction.

BCM controls the following fail-safe when light and rain sensor has a malfunction.

### Fail-safe Control

- Auto light control: Headlamp low beam, parking lamp, license plate lamp and tail lamp are turned ON.
- Front wiper control
  - Front wiper switch AUTO and sensing rain drop: The condition just before the activation of fail-safe is maintained until the front wiper switch is turned OFF.
  - Front wiper switch AUTO and not sensing rain drop: Front wiper is LO operation until the front wiper switch is turned off.

## DTC Inspection Priority Chart

INFOID:0000000005037503

If some DTCs are displayed at the same time, perform inspections one by one based on the following priority chart.

# BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

[FOR EUROPE]

Priority	DTC	
1	B2562: LOW VOLTAGE	A
2	<ul style="list-style-type: none"> <li>• U1000: CAN COMM</li> <li>• U1010: CONTROL UNIT(CAN)</li> </ul>	B
3	<ul style="list-style-type: none"> <li>• B2190: NATS ANTENNA AMP</li> <li>• B2191: DIFFERENCE OF KEY</li> <li>• B2192: ID DISCORD BCM-ECM</li> <li>• B2193: CHAIN OF BCM-ECM</li> <li>• B2195: ANTI SCANNING</li> <li>• B2196: DONGLE NG</li> </ul>	C
	<ul style="list-style-type: none"> <li>• B2013: ID DISCORD BCM-S/L</li> <li>• B2014: CHAIN OF S/L-BCM</li> <li>• B2553: IGNITION RELAY</li> <li>• B2555: STOP LAMP</li> <li>• B2556: PUSH-BTN IGN SW</li> <li>• B2557: VEHICLE SPEED</li> <li>• B2560: STARTER CONT RELAY</li> <li>• B2601: SHIFT POSITION</li> <li>• B2602: SHIFT POSITION</li> <li>• B2603: SHIFT POSI STATUS</li> <li>• B2604: PNP/CLUTCH SW</li> <li>• B2605: PNP/CLUTCH SW</li> <li>• B2606: S/L RELAY</li> <li>• B2607: S/L RELAY</li> <li>• B2608: STARTER RELAY</li> <li>• B2609: S/L STATUS</li> <li>• B260A: IGNITION RELAY</li> <li>• B260B: STEERING LOCK UNIT</li> <li>• B260C: STEERING LOCK UNIT</li> <li>• B260D: STEERING LOCK UNIT</li> <li>• B260F: ENG STATE SIG LOST</li> <li>• B2612: S/L STATUS</li> <li>• B2614: BCM</li> <li>• B2615: BCM</li> <li>• B2616: BCM</li> <li>• B2617: BCM</li> <li>• B2618: BCM</li> <li>• B2619: BCM</li> <li>• B261A: PUSH-BTN IGN SW</li> <li>• B261E: VEHICLE TYPE</li> <li>• B26E9: S/L STATUS</li> <li>• B26EA: KEY REGISTRATION</li> <li>• U0415: VEHICLE SPEED</li> </ul>	D
4		E
		F
		G
		H
		I
		J
		K
		WW
5	<ul style="list-style-type: none"> <li>• B2621: INSIDE ANTENNA</li> <li>• B2622: INSIDE ANTENNA</li> <li>• B2623: INSIDE ANTENNA</li> </ul>	M
6	B26E7: TPMS CAN COMM	N

## DTC Index

INFOID:0000000005037504

### NOTE:

The details of time display are as follows.

- CRNT: A malfunction is detected now.
- PAST: A malfunction was detected in the past.

IGN counter is displayed on Freeze Frame Data. For details of Freeze Frame Data, refer to [BCS-20, "COMMON ITEM : CONSULT-III Function \(BCM - COMMON ITEM\)"](#).

# BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

[FOR EUROPE]

CONSULT display	Fail-safe	Freeze Frame Data •Vehicle Speed •Odo/Trip Meter •Vehicle condition	Intelligent Key warning lamp ON	Reference page
No DTC is detected. further testing may be required.	—	—	—	—
U1000: CAN COMM	—	—	—	<a href="#">BCS-38</a>
U1010: CONTROL UNIT(CAN)	—	—	—	<a href="#">BCS-39</a>
U0415: VEHICLE SPEED	—	—	—	<a href="#">BCS-40</a>
B2013: ID DISCORD BCM-S/L	×	×	—	<a href="#">SEC-55</a>
B2014: CHAIN OF S/L-BCM	×	×	—	<a href="#">SEC-56</a>
B2190: NATS ANTENNA AMP	×	—	—	<a href="#">SEC-45</a>
B2191: DIFFERENCE OF KEY	×	—	—	<a href="#">SEC-48</a>
B2192: ID DISCORD BCM-ECM	×	—	—	<a href="#">SEC-49</a>
B2193: CHAIN OF BCM-ECM	×	—	—	<a href="#">SEC-51</a>
B2195: ANTI SCANNING	×	—	—	<a href="#">SEC-52</a>
B2196: DONGLE NG	×	—	—	<a href="#">SEC-53</a>
B2553: IGNITION RELAY	—	×	—	<a href="#">PCS-50</a>
B2555: STOP LAMP	—	×	—	<a href="#">SEC-59</a>
B2556: PUSH-BTN IGN SW	—	×	×	<a href="#">SEC-61</a>
B2557: VEHICLE SPEED	×	×	×	<a href="#">SEC-63</a>
B2560: STARTER CONT RELAY	×	×	×	<a href="#">SEC-64</a>
B2562: LOW VOLTAGE	—	×	—	<a href="#">BCS-41</a>
B2601: SHIFT POSITION	×	×	×	<a href="#">SEC-65</a>
B2602: SHIFT POSITION	×	×	×	<a href="#">SEC-68</a>
B2603: SHIFT POSI STATUS	×	×	×	<a href="#">SEC-71</a>
B2604: PNP/CLUTCH SW	×	×	×	<a href="#">SEC-73</a>
B2605: PNP/CLUTCH SW	×	×	×	<a href="#">SEC-75</a>
B2606: S/L RELAY	×	×	×	<a href="#">SEC-77</a>
B2607: S/L RELAY	×	×	×	<a href="#">SEC-78</a>
B2608: STARTER RELAY	×	×	×	<a href="#">SEC-80</a>
B2609: S/L STATUS	×	×	×	<a href="#">SEC-82</a>
B260A: IGNITION RELAY	×	×	×	<a href="#">PCS-52</a>
B260B: STEERING LOCK UNIT	—	×	×	<a href="#">SEC-86</a>
B260C: STEERING LOCK UNIT	—	×	×	<a href="#">SEC-87</a>
B260D: STEERING LOCK UNIT	—	×	×	<a href="#">SEC-88</a>
B260F: ENG STATE SIG LOST	×	×	×	<a href="#">SEC-89</a>
B2612: S/L STATUS	×	×	×	<a href="#">SEC-92</a>
B2614: BCM	—	×	×	<a href="#">PCS-54</a>
B2615: BCM	—	×	×	<a href="#">PCS-56</a>
B2616: BCM	—	×	×	<a href="#">PCS-58</a>
B2617: BCM	×	×	×	<a href="#">SEC-96</a>
B2618: BCM	×	×	×	<a href="#">PCS-60</a>
B2619: BCM	×	×	×	<a href="#">SEC-98</a>
B261A: PUSH-BTN IGN SW	—	×	×	<a href="#">SEC-99</a>

# BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

[FOR EUROPE]

CONSULT display	Fail-safe	Freeze Frame Data •Vehicle Speed •Odo/Trip Meter •Vehicle condition	Intelligent Key warning lamp ON	Reference page
B261E: VEHICLE TYPE	×	×	×	(Turn ON for 15 seconds)
B2621: INSIDE ANTENNA	—	×	—	<a href="#">DLK-58</a>
B2622: INSIDE ANTENNA	—	×	—	<a href="#">DLK-60</a>
B2623: INSIDE ANTENNA	—	×	—	<a href="#">DLK-62</a>
B26E7: TPMS CAN COMM	—	—	—	<a href="#">BCS-42</a>
B26E9: S/L STATUS	×	×	×	(Turn ON for 15 seconds)
B26EA: KEY REGISTRATION	—	×	×	(Turn ON for 15 seconds)

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# IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

< ECU DIAGNOSIS INFORMATION >

[FOR EUROPE]

## IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

### Reference Value

INFOID:000000004992991

### VALUES ON THE DIAGNOSIS TOOL

Monitor Item	Condition	Value/Status
RAD FAN REQ	Engine idle speed	Changes depending on engine coolant temperature, air conditioner operation status, vehicle speed, etc. 0 - 100 %
AC COMP REQ	Engine running	A/C switch OFF Off
		A/C switch ON (Compressor is operating) On
TAIL&CLR REQ	Lighting switch OFF	Off
	Lighting switch 1ST, 2ND, HI or AUTO (Light is illuminated)	On
HL LO REQ	Lighting switch OFF	Off
	Lighting switch 2ND, HI or AUTO (Light is illuminated)	On
HL HI REQ	Lighting switch OFF	Off
	Lighting switch HI	On
FR FOG REQ	<b>NOTE:</b> The item is indicated, but not monitored.	Off
FR WIP REQ	Ignition switch ON	Front wiper switch OFF Stop
		Front wiper switch INT 1LOW
		Front wiper switch LO Low
		Front wiper switch HI Hi
WIP AUTO STOP	Ignition switch ON	Front wiper stop position STOP P
		Any position other than front wiper stop position ACT P
WIP PROT	Ignition switch ON	Front wiper operates normally Off
		Front wiper stops at fail-safe operation BLOCK
IGN RLY1 -REQ	Ignition switch OFF or ACC	Off
	Ignition switch ON	On
IGN RLY	Ignition switch OFF or ACC	Off
	Ignition switch ON	On
PUSH SW	Release the push-button ignition switch	Off
	Press the push-button ignition switch	On
INTER/NP SW	Ignition switch ON	Shift lever in any position other than P or N Off
	Ignition switch ON	Shift lever in P or N position On
ST RLY CONT	Ignition switch ON	Off
	At engine cranking	On
IHBT RLY -REQ	Ignition switch ON	Off
	At engine cranking	On

# IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

[FOR EUROPE]

< ECU DIAGNOSIS INFORMATION >

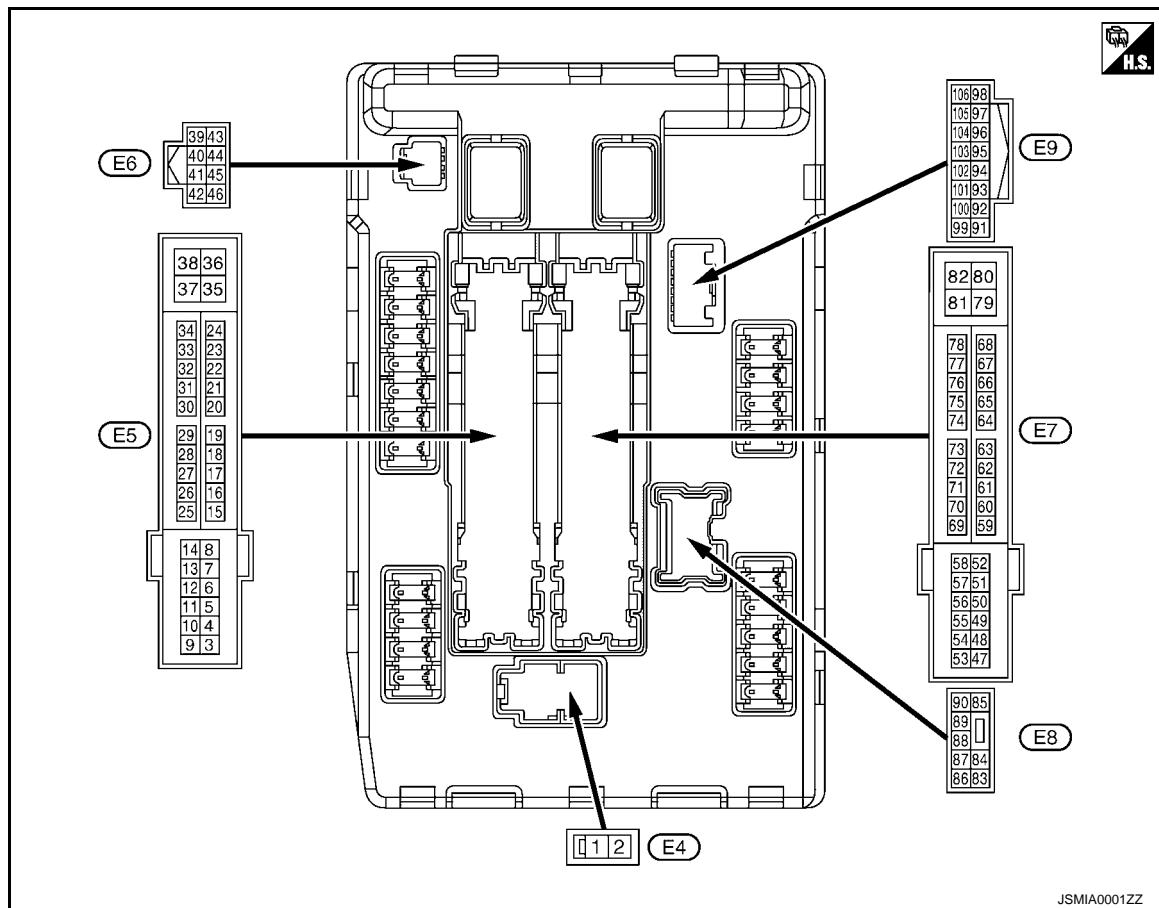
Monitor Item	Condition	Value/Status
ST/INHI RLY	Ignition switch ON	Off
	At engine cranking	INHI ON→ ST ON
	The status of starter relay or starter control relay cannot be recognized by the battery voltage malfunction, etc. when the starter relay is ON and the starter control relay is OFF	UNKWN
DETENT SW	Ignition switch ON	<ul style="list-style-type: none"> <li>Press the knob button with shift lever in P position</li> <li>Shift lever in any position other than P</li> </ul>
	Release the knob button with shift lever in P position	On
S/L RLY -REQ	None of the conditions below are present	Off
	<ul style="list-style-type: none"> <li>Open the driver door after the ignition switch is turned OFF (for a few seconds)</li> <li>Press the push-button ignition switch when the steering lock is activated</li> </ul>	On
	Steering lock is activated	LOCK
S/L STATE	Steering lock is deactivated	UNLOCK
	[DTC: B210A] is detected	UNKWN
DTRL REQ <b>NOTE:</b> This item is monitored only on the vehicle with the daytime running light system.	Daytime running light system is not operated	Off
	Daytime running light system is operated	On
OIL P SW	<b>NOTE:</b> The item is indicated, but not monitored.	Open
HOOD SW	Close the hood	Off
	Open the hood	On
HL WASHER REQ <b>NOTE:</b> This item is monitored only on the vehicle with the headlamp washer system.	Not operating	Off
	Headlamp washer operating	On
THFT HRN REQ	Not operating	Off
	<ul style="list-style-type: none"> <li>Panic alarm is activated</li> <li>Horn is activated with VEHICLE SECURITY (THEFT WARNING) SYSTEM</li> </ul>	On
HORN CHIRP	Not operating	Off
	<ul style="list-style-type: none"> <li>Door locking with Intelligent Key (horn chirp mode)</li> <li>Door locking with key fob (horn chirp mode)</li> </ul>	On
CRNRNG LMP REQ	<b>NOTE:</b> The item is indicated, but not monitored.	Off

# IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

[FOR EUROPE]

< ECU DIAGNOSIS INFORMATION >

## TERMINAL LAYOUT



## PHYSICAL VALUES

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	-	Signal name	Input/ Output			
1 (W)	Ground	Battery power supply	Input	Ignition switch OFF		Battery voltage
2 (Y)	Ground	Battery power supply	Input	Ignition switch OFF		Battery voltage
4 (V)	Ground	Front wiper LO	Output	Ignition switch ON	Front wiper switch OFF	0 V
					Front wiper switch LO	Battery voltage
5 (L)	Ground	Front wiper HI	Output	Ignition switch ON	Front wiper switch OFF	0 V
					Front wiper switch HI	Battery voltage
6 <sup>*1</sup> (Y)	Ground	Daytime running light relay power supply	Input	Ignition switch OFF		Battery voltage
				Ignition switch ON	Lighting switch 1ST	0 V
				Daytime running light system operated		
7 (R)	Ground	Illuminations <sup>*1</sup>	Output	Ignition switch ON	Lighting switch OFF	0 V
		Tail, license plate lamps & illuminations <sup>*2</sup>			Lighting switch 1ST	Battery voltage

# IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

[FOR EUROPE]

< ECU DIAGNOSIS INFORMATION >

Terminal No. (Wire color)	Description		Condition	Value (Approx.)
	Signal name	Input/ Output		
10 (W)	Ground	ECM relay power supply	Output	Ignition switch OFF (More than a few seconds after turning ignition switch OFF)
				• Ignition switch ON • Ignition switch OFF (For a few seconds after turning ignition switch OFF)
11 (SB)	Ground	Steering lock unit power supply	Output	Ignition switch OFF A few seconds after opening the driver door
				Ignition switch LOCK Press the push-button ignition switch
				Ignition switch ACC or ON
12 (B/W)	Ground	Ground	—	Ignition switch ON
13 (R) <sup>*3</sup> (Y) <sup>*4</sup>	Ground	Fuel pump power supply	Output	Ignition switch OFF
				• Ignition switch ON • Engine running
16 (LG)	Ground	Front wiper stop position	Input	Ignition switch ON Front wiper stop position
				Any position other than front wiper stop position
17 (G)	Ground	Headlamp washer relay control	Output	Ignition switch ON Headlamp washer deactivated
				Headlamp washer activated
25 (O)	Ground	Ignition relay power supply	Output	Ignition switch OFF
				Ignition switch ON
27 (Y)	Ground	Ignition relay monitor	Input	Ignition switch OFF or ACC
				Ignition switch ON
28 (G)	Ground	Push-button ignition switch	Input	Press the push-button ignition switch
				Release the push-button ignition switch
30 (GR)	Ground	Starter relay control	Input	Shift lever in any position other than P or N (Ignition switch ON)
				Shift lever P or N (Ignition switch ON)
32 (L)	Ground	Steering lock unit condition-1	Input	Steering lock is activated
				Steering lock is deactivated
33 (P)	Ground	Steering lock unit condition-2	Input	Steering lock is activated
				Steering lock is deactivated
36 (LG)	Ground	Battery power supply	Input	Ignition switch OFF
39 (P)	—	CAN-L	Input/ Output	—
40 (L)	—	CAN-H	Input/ Output	—
41 (B/Y)	Ground	Ground	—	Ignition switch ON
42 (G)	Ground	Cooling fan relay control	Input	Ignition switch OFF or ACC
				Ignition switch ON

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# IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

[FOR EUROPE]

< ECU DIAGNOSIS INFORMATION >

Terminal No. (Wire color)	Description		Condition	Value (Approx.)
	Signal name	Input/ Output		
+	-			
43 (SB)	Ground	A/T shift selector (Detention switch)	Input	<ul style="list-style-type: none"> <li>Press the knob button (Shift lever P)</li> <li>Shift lever in any position other than P</li> </ul>
				<ul style="list-style-type: none"> <li>Release the knob button (Shift lever P)</li> </ul>
44 (W)	Ground	Horn relay control	Input	The horn is deactivated
				The horn is activated
46 (O)	Ground	Starter relay control	Input	Shift lever in any position other than P or N (Ignition switch ON)
				Shift lever P or N (Ignition switch ON)
48 (L)	Ground	A/C relay power supply	Output	<ul style="list-style-type: none"> <li>A/C switch OFF</li> <li>A/C switch ON (A/C compressor is operating)</li> </ul>
49 (P)	Ground	ECM relay power supply	Output	Ignition switch OFF (More than a few seconds after turning ignition switch OFF)
				<ul style="list-style-type: none"> <li>Ignition switch ON</li> <li>Ignition switch OFF (For a few seconds after turning ignition switch OFF)</li> </ul>
51 (LG)	Ground	Ignition relay power supply	Output	Ignition switch OFF
				Ignition switch ON
53 (SB)	Ground	ECM relay power supply	Output	Ignition switch OFF (More than a few seconds after turning ignition switch OFF)
				<ul style="list-style-type: none"> <li>Ignition switch ON</li> <li>Ignition switch OFF (For a few seconds after turning ignition switch OFF)</li> </ul>
54 (W)	Ground	Throttle control motor relay power supply	Output	Ignition switch OFF (More than a few seconds after turning ignition switch OFF)
				<ul style="list-style-type: none"> <li>Ignition switch ON</li> <li>Ignition switch OFF (For a few seconds after turning ignition switch OFF)</li> </ul>
55 (O)	Ground	ECM power supply	Output	Ignition switch OFF
56 (R)	Ground	Ignition relay power supply	Output	Ignition switch OFF
				Ignition switch ON
57 (G)	Ground	Ignition relay power supply	Output	Ignition switch OFF
				Ignition switch ON
58 (Y)	Ground	Ignition relay power supply	Output	Ignition switch OFF
				Ignition switch ON

# IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

[FOR EUROPE]

< ECU DIAGNOSIS INFORMATION >

Terminal No. (Wire color)	Description		Condition	Value (Approx.)
	Signal name	Input/ Output		
+	-			
69 (O)	Ground	ECM relay control	Output	Ignition switch OFF (More than a few seconds after turning ignition switch OFF)
				• Ignition switch ON • Ignition switch OFF (For a few seconds after turning ignition switch OFF)
70 (G)	Ground	Throttle control motor re- lay control	Output	Ignition switch ON → OFF
				Battery voltage ↓ 0 V
				Ignition switch ON
71 (SB)	Ground	Ignition relay power supply	Output	Ignition switch OFF
				0 V
74 (LG)	Ground	Ignition relay power supply	Output	Ignition switch ON
				Battery voltage
77 (B/W)	Ground	Fuel pump relay control	Output	Ignition switch OFF
				0 V
80 (W)	Ground	Starter motor	Output	Ignition switch ON
				Battery voltage
83 (R)	Ground	Headlamp LO (RH)	Output	At engine cranking
				Ignition switch ON
				Lighting switch OFF
84 (P)	Ground	Headlamp LO (LH)	Output	Lighting switch 2ND
				Daytime running light system operated*1
				Ignition switch ON
88 (G)	Ground	Washer pump power sup- ply	Output	Lighting switch OFF
				Lighting switch 2ND
				Daytime running light system operated*1
89 (BR)	Ground	Headlamp HI (RH)	Output	Ignition switch ON
				Lighting switch OFF
90 (O)	Ground	Headlamp HI (LH)	Output	• Lighting switch HI • Lighting switch PASS
				Lighting switch OFF
				• Lighting switch HI • Lighting switch PASS
91*2 (O)	Ground	Parking lamp (RH)	Output	Ignition switch ON
				Lighting switch OFF
92*2 (R)	Ground	Parking lamp (LH)	Output	Lighting switch 1ST
				Ignition switch ON
				Lighting switch OFF
97 (Y)	Ground	Cooling fan control	Output	Lighting switch 1ST
				0 V
104 (LG)	Ground	Hood switch	Input	Close the hood
				Open the hood
105*1 (GR)	Ground	Daytime running light relay control	Input	• Parking lamp • Tail lamp • License plate lamp
				Turned OFF
				Turned ON
				0 V

\*1: With daytime running light system

## IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

## < ECU DIAGNOSIS INFORMATION >

[FOR EUROPE]

\*2: Without daytime running light system

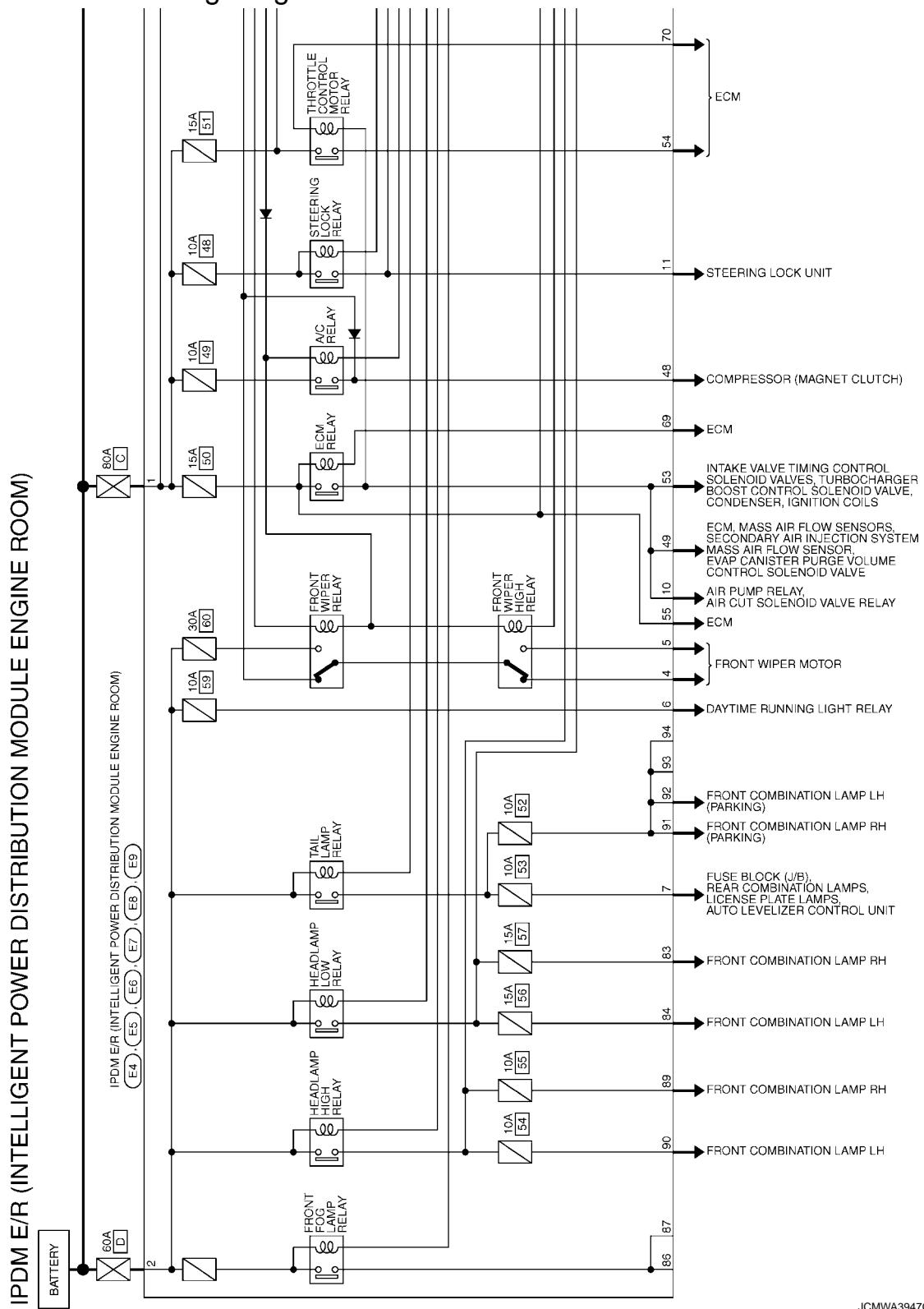
### \*3: LHD models

#### \*4: RHD models

## FOR EUROPE

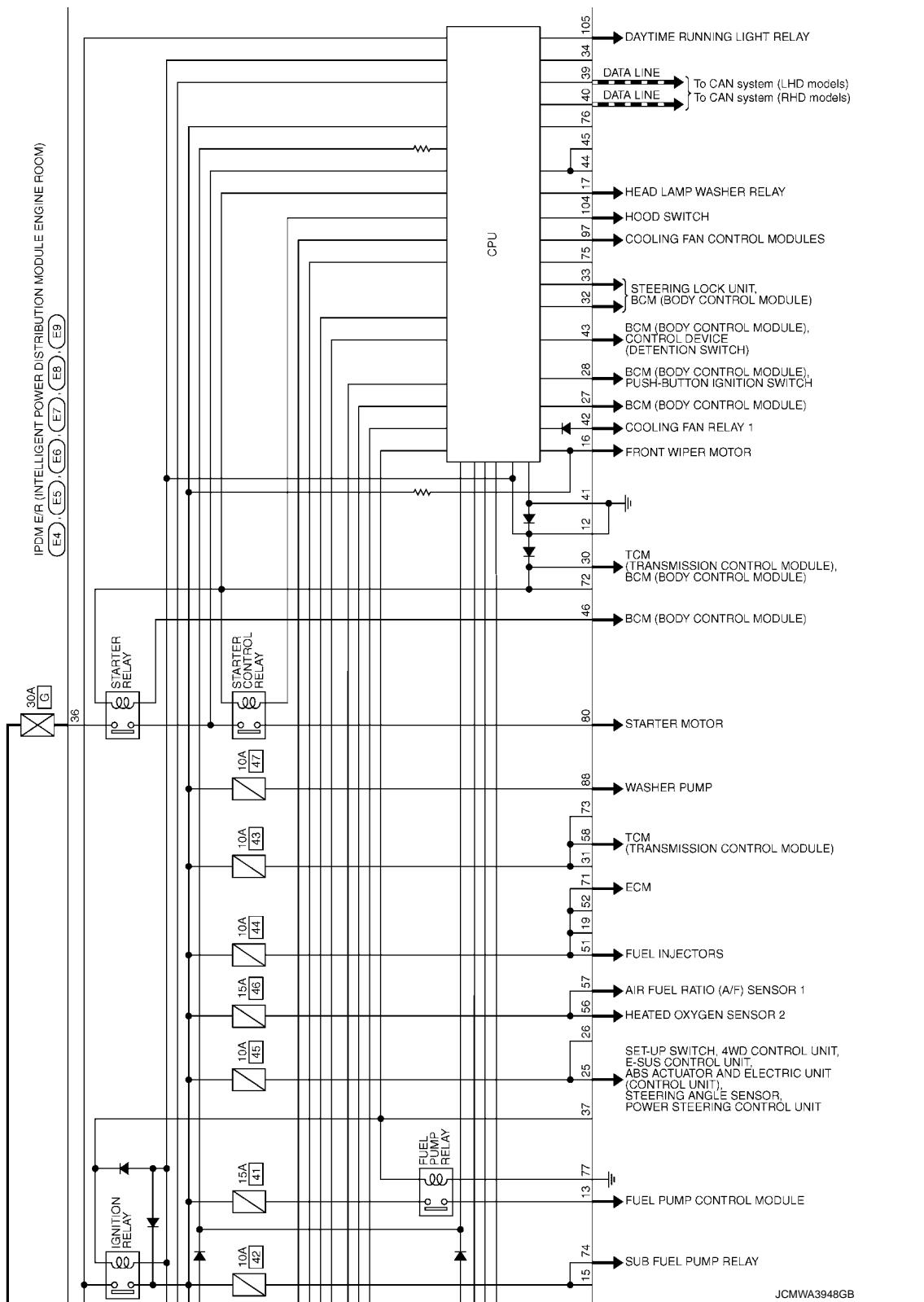
FOR EUROPE : Wiring Diagram - IPDM E/R -

INFOID:0000000004992992



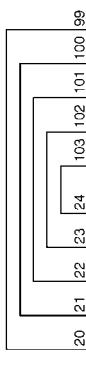
## IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

## < ECU DIAGNOSIS INFORMATION >



JCMWA3948GB

IPDM E/R  
(INTELLIGENT POWER  
DISTRIBUTION MODULE  
ENGINE ROOM)  
(E4), (E5), (E6),  
(E7), (E8), (E9)



JCMW A3949GB

# IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

< ECU DIAGNOSIS INFORMATION >

[FOR EUROPE]

## IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

Connector No.	Ed	Connector No.	E5
Connector Name	IPDM E/R INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM	Connector Name	IPDM E/R INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM
Connector Type	LC20F-B-MC	Connector Type	TH20FW-CS12-M4-1V
			

Terminal No.	Color of Wire	Signal Name [Specification]	Signal Name [Specification]
1	W	-	-
2	Y	-	-

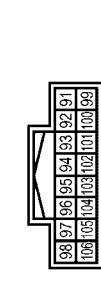
Terminal No.	Color of Wire	Signal Name [Specification]	Signal Name [Specification]
4	V	-	-
5	L	-	-
6	Y	-	-
7	R	-	-
10	W	-	-
11	SB	-	-
12	B/W	-	-
13	R	- [LHD models]	- [RHD models]
14	Y	-	-
16	LG	-	-
17	G	-	-

Terminal No.	Color of Wire	Signal Name [Specification]	Signal Name [Specification]
9	1	12	13
10	2	5	4
11	3	6	7
12	4	8	9
13	5	10	11
14	6	12	13
15	7	14	15
16	8	16	17
17	9	18	19
18	10	20	21
19	11	22	23
20	12	24	25
21	13	26	27
22	14	28	29
23	15	30	31
24	16	32	33
25	17	34	35
26	18	36	37
27	19	38	39
28	20	40	41
29	21	42	43
30	22	44	45
31	23	46	47

Terminal No.	Color of Wire	Signal Name [Specification]	Signal Name [Specification]
25	O	-	-
27	Y	-	-
28	GR	-	-
30	GR	-	-
32	L	-	-
33	D	-	-
35	LG	-	-

Terminal No.	Color of Wire	Signal Name [Specification]	Signal Name [Specification]
39	P	-	-
40	L	-	-
41	BY	-	-
42	G	-	-
43	SB	-	-
46	O	-	-

Terminal No.	Color of Wire	Signal Name [Specification]	Signal Name [Specification]
39	P	-	-
40	L	-	-
41	BY	-	-
42	G	-	-
43	SB	-	-
46	O	-	-



Terminal No.	Color of Wire	Signal Name [Specification]	Signal Name [Specification]
71	SB	-	-
74	LG	-	-
77	B/W	-	-
80	W	-	-

Terminal No.	Color of Wire	Signal Name [Specification]	Signal Name [Specification]
71	SB	-	-
74	LG	-	-
77	B/W	-	-
80	W	-	-

Terminal No.	Color of Wire	Signal Name [Specification]	Signal Name [Specification]
84	SB	-	-
85	SB	-	-
86	SB	-	-
87	SB	-	-

Terminal No.	Color of Wire	Signal Name [Specification]	Signal Name [Specification]
91	O	-	-
92	R	-	-
97	Y	-	-
104	LG	-	-
105	GR	-	-

Terminal No.	Color of Wire	Signal Name [Specification]	Signal Name [Specification]
91	O	-	-
92	R	-	-
97	Y	-	-
104	LG	-	-
105	GR	-	-

Terminal No.	Color of Wire	Signal Name [Specification]	Signal Name [Specification]
91	O	-	-
92	R	-	-
97	Y	-	-
104	LG	-	-
105	GR	-	-

Terminal No.	Color of Wire	Signal Name [Specification]	Signal Name [Specification]
91	O	-	-
92	R	-	-
97	Y	-	-
104	LG	-	-
105	GR	-	-

Terminal No.	Color of Wire	Signal Name [Specification]	Signal Name [Specification]
91	O	-	-
92	R	-	-
97	Y	-	-
104	LG	-	-
105	GR	-	-

Terminal No.	Color of Wire	Signal Name [Specification]	Signal Name [Specification]
91	O	-	-
92	R	-	-
97	Y	-	-
104	LG	-	-
105	GR	-	-

Terminal No.	Color of Wire	Signal Name [Specification]	Signal Name [Specification]
91	O	-	-
92	R	-	-
97	Y	-	-
104	LG	-	-
105	GR	-	-

Terminal No.	Color of Wire	Signal Name [Specification]	Signal Name [Specification]
91	O	-	-
92	R	-	-
97	Y	-	-
104	LG	-	-
105	GR	-	-

Terminal No.	Color of Wire	Signal Name [Specification]	Signal Name [Specification]
91	O	-	-
92	R	-	-
97	Y	-	-
104	LG	-	-
105	GR	-	-

Terminal No.	Color of Wire	Signal Name [Specification]	Signal Name [Specification]
91	O	-	-
92	R	-	-
97	Y	-	-
104	LG	-	-
105	GR	-	-

Terminal No.	Color of Wire	Signal Name [Specification]	Signal Name [Specification]
91	O	-	-
92	R	-	-
97	Y	-	-
104	LG	-	-
105	GR	-	-

Terminal No.	Color of Wire	Signal Name [Specification]	Signal Name [Specification]
91	O	-	-
92	R	-	-
97	Y	-	-
104	LG	-	-
105	GR	-	-

Terminal No.	Color of Wire	Signal Name [Specification]	Signal Name [Specification]
91	O	-	-
92	R	-	-
97	Y	-	-
104	LG	-	-
105	GR	-	-

Terminal No.	Color of Wire	Signal Name [Specification]	Signal Name [Specification]




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## IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

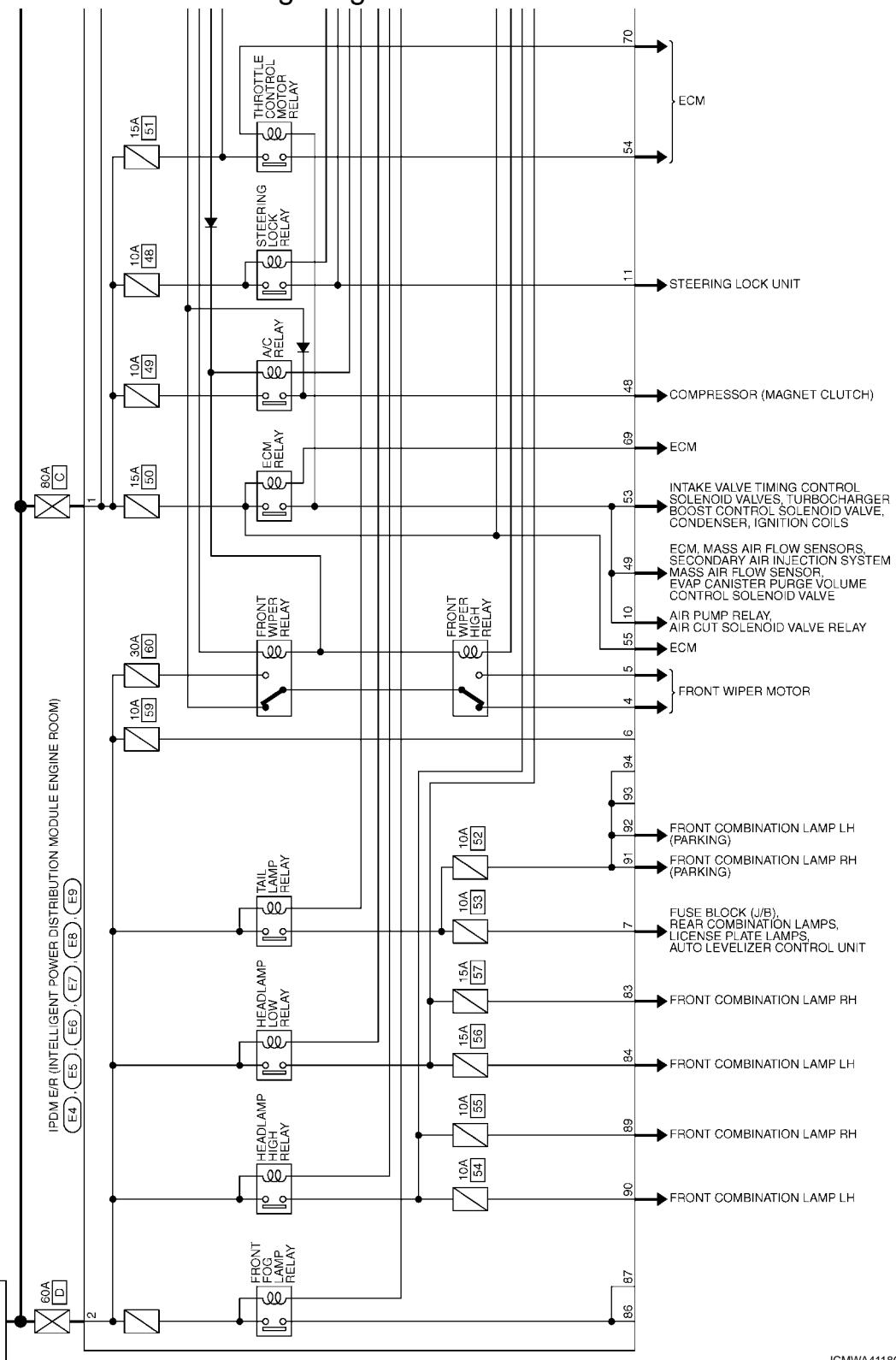
## < ECU DIAGNOSIS INFORMATION >

## [FOR EUROPE]

**EXCEPT FOR EUROPE : Wiring Diagram - IPDM E/R -**

INFOID:0000000004992993

## IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)



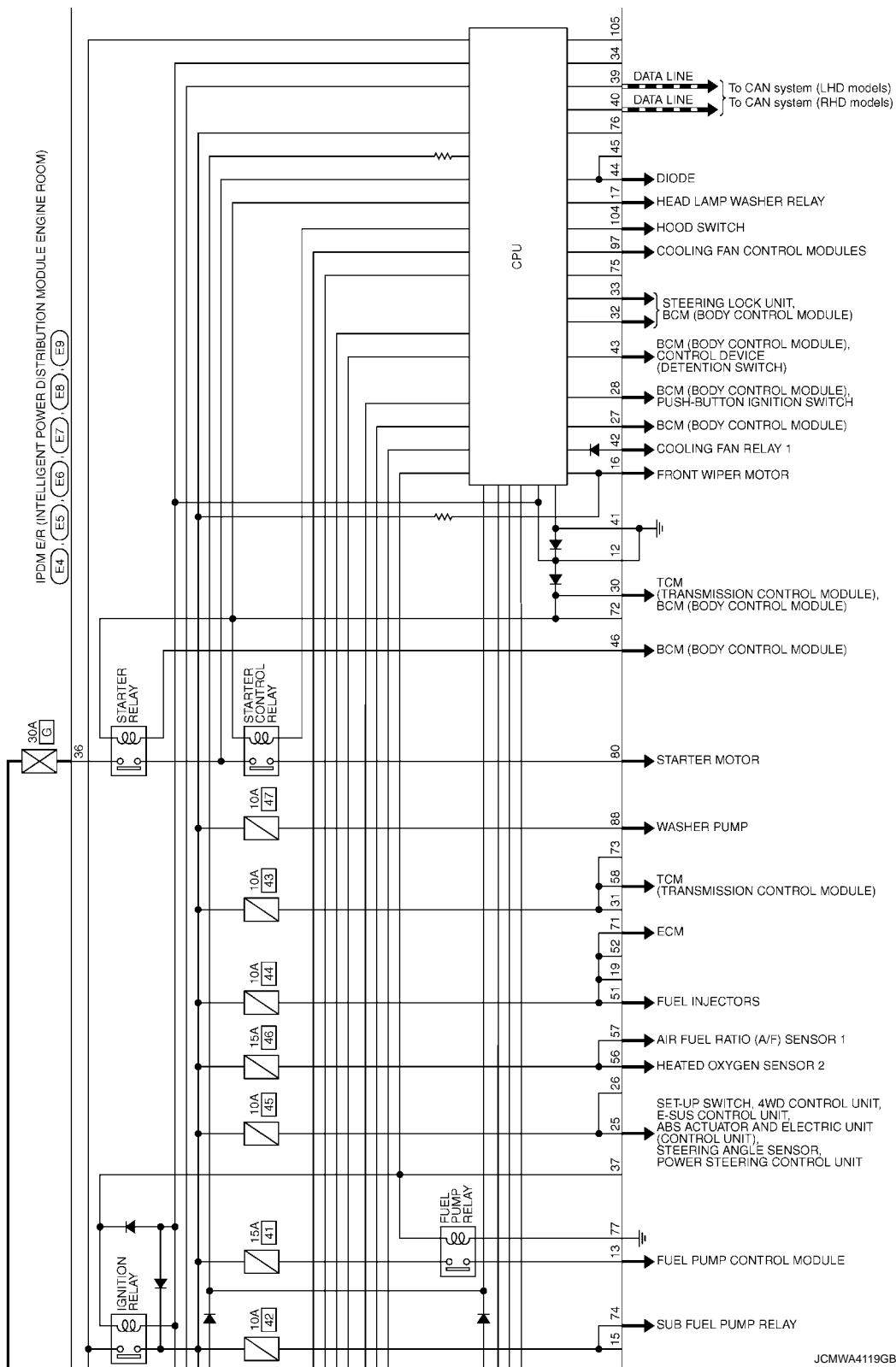
JCMWA4118GB

**WW-112**

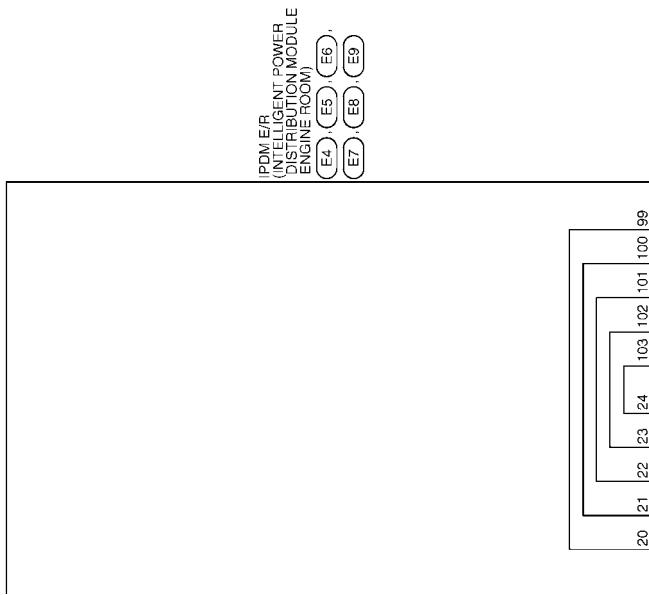
## IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

[FOR EUROPE]

## < ECU DIAGNOSIS INFORMATION >



JCMWA4119GB



JCMW4120GB

## IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

## < ECU DIAGNOSIS INFORMATION >

[FOR EUROPE]

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K

IPBM E/V INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM

Connector No.	E4	Connector No.	E5
Connector Name	BRONZE INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM	Connector Name	BRONZE INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM
Connector Type	LOOPEN-INC	Connector Type	THORHW-CS12-M4-1V



Terminal No.	Color of Wire	Symbol Name [Specification]	Terminal No.	Color of Wire	Symbol Name [Specification]
1	W	—	4	V	—
2	Y	—	5	L	—
			7	R	—
			10	W	—
			11	SE	—
			12	B/W	—
			13	R	— [LHD models]
			13	Y	— [RHD models]
			16	LG	—
			17	G	—
			25	O	—

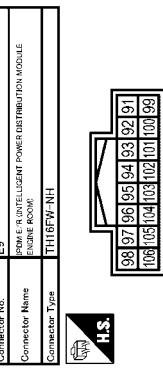
<b>Connector No.</b>	<b>E6</b>
<b>Connector Name</b>	6 PIN INTEGRATED POWER DISTRIBUTION MODULE
<b>Connector Type</b>	THREWFY-NH



27	Y	-
28	G	-
30	GR	-
32	L	-
33	P	-
36	LG	-



Terminal No	Color of Wire	Signal Name [Specification]
39	P	-
40	L	-
41	B/Y	-
42	G	-
43	SB	-
44	W	-
46	O	-



Terminal No.	Color of Wire	Signal Name [Specification]
91	O	-
92	R	-
97	Y	-
104	LG	-

20	Connector No.	POWER IN (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
	Connector Name	
	Connector Type	NS08FW-CS



Terminal No.	Color of Wire	Signal Name [Specification]
83	R	—
84	P	—
86	G	—
89	BR	—
90	C	—

Connector No.	E4
Connector Name	POWER INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM
Connector Type	LQ2FB-MC



Terminal No.	Color of Wire	Signal Name [Specification]
1	W	—
2	Y	—

Computer Type	TH20W-CS12-MA
Computer Name	BRICKY-PC01
Power Distribution Module	POWER INTELLIGENT POWER DISTRIBUTION MODULE

Terminal No.	Code of Wire	Signal Name [Specification]
48	L	-
49	P	-
51	LG	-
53	SB	-
54	W	-
55	O	-
56	R	-
57	G	-
58	Y	-
69	O	-
70	G	-

JCMWA4121GB

INFOID:0000000004992994

## Fail-safe

## CAN COMMUNICATION CONTROL

When CAN communication with ECM and BCM is impossible, IPDM E/R performs fail-safe control. After CAN communication recovers normally, it also returns to normal control.

### If No CAN Communication Is Available With ECM

Control part	Fail-safe operation
Cooling fan	<ul style="list-style-type: none"> <li>Outputs the pulse duty signal (PWM signal) 100% when the ignition switch is turned ON</li> <li>Outputs the pulse duty signal (PWM signal) 0% when the ignition switch is turned OFF</li> </ul>
A/C compressor	A/C relay OFF

If No CAN Communication Is Available With BCM

Control part	Fail-safe operation
Headlamp	<ul style="list-style-type: none"> <li>Turns ON the headlamp low relay when the ignition switch is turned ON</li> <li>Turns OFF the headlamp low relay when the ignition switch is turned OFF</li> <li>Headlamp high relay OFF</li> </ul>
<ul style="list-style-type: none"> <li>Parking lamps</li> <li>License plate lamps</li> <li>Illuminations</li> <li>Tail lamps</li> </ul>	<ul style="list-style-type: none"> <li>Turns ON the tail lamp relay and daytime running light relay* when the ignition switch is turned ON</li> <li>Turns OFF the tail lamp relay and daytime running light relay* when the ignition switch is turned OFF</li> </ul>
Front wiper	<ul style="list-style-type: none"> <li>The status just before activation of fail-safe control is maintained until the ignition switch is turned OFF while the front wiper is operating at LO or HI speed.</li> <li>The wiper is operated at LO speed until the ignition switch is turned OFF if the fail-safe control is activated while the front wiper is set in the INT mode and the front wiper motor is operating.</li> </ul>
Horn	Horn OFF
Ignition relay	The status just before activation of fail-safe is maintained.
Starter motor	Starter control relay OFF
Steering lock unit	Steering lock relay OFF
Headlamp washer*	Headlamp washer relay OFF

\*: If equipped

#### IGNITION RELAY MALFUNCTION DETECTION FUNCTION

- IPDM E/R monitors the voltage at the contact circuit and excitation coil circuit of the ignition relay inside it.
- IPDM E/R judges the ignition relay error if the voltage differs between the contact circuit and the excitation coil circuit.
- If the ignition relay cannot turn OFF due to contact seizure, it activates the tail lamp relay and daytime running light relay\* for 10 minutes to alert the user to the ignition relay malfunction when the ignition switch is turned OFF.

Voltage judgment		IPDM E/R judgment	Operation
Ignition relay contact side	Ignition relay excitation coil side		
ON	ON	Ignition relay ON normal	—
OFF	OFF	Ignition relay OFF normal	—
ON	OFF	Ignition relay ON stuck	<ul style="list-style-type: none"> <li>Detects DTC "B2098: IGN RELAY ON"</li> <li>Turns ON the tail lamp relay and daytime running light relay* for 10 minutes</li> </ul>
OFF	ON	Ignition relay OFF stuck	Detects DTC "B2099: IGN RELAY OFF"

\*: With daytime running light system

#### FRONT WIPER CONTROL

IPDM E/R detects front wiper stop position by a front wiper stop position signal.

When a front wiper stop position signal is in the conditions listed below, IPDM E/R stops power supply to wiper after repeating a front wiper 10 seconds activation and 20 seconds stop five times.

Ignition switch	Front wiper switch	Front wiper stop position signal
ON	OFF	The front wiper stop position signal (stop position) cannot be input for 10 seconds.
	ON	The front wiper stop position signal does not change for 10 seconds.

**NOTE:**

This operation status can be confirmed on the IPDM E/R “Data Monitor” that displays “BLOCK” for the item “WIP PROT” while the wiper is stopped.

**STARTER MOTOR PROTECTION FUNCTION**

IPDM E/R turns OFF the starter control relay to protect the starter motor when the starter control relay remains active for 90 seconds.

**DTC Index**

INFOID:000000004992995

**NOTE:**

- The details of time display are as follows.
- CRNT: A malfunction is detected now.
- PAST: A malfunction was detected in the past.
- IGN counter is displayed on FFD (Freeze Frame data).
- The number is 0 when is detected now.
- The number increases like 1 → 2 … 38 → 39 after returning to the normal condition whenever IGN OFF → ON.
- The number is fixed to 39 until the self-diagnosis results are erased if it is over 39.

x: Applicable

CONSULT display	Fail-safe	Refer to
No DTC is detected. further testing may be required.	—	—
U1000: CAN COMM CIRCUIT	×	<a href="#">PCS-15</a>
B2098: IGN RELAY ON	×	<a href="#">PCS-16</a>
B2099: IGN RELAY OFF	—	<a href="#">PCS-17</a>
B2108: STRG LCK RELAY ON	—	<a href="#">SEC-102</a>
B2109: STRG LCK RELAY OFF	—	<a href="#">SEC-104</a>
B210A: STRG LCK STATE SW	—	<a href="#">SEC-105</a>
B210B: START CONT RLY ON	—	<a href="#">SEC-109</a>
B210C: START CONT RLY OFF	—	<a href="#">SEC-110</a>
B210D: STARTER RELAY ON	—	<a href="#">SEC-111</a>
B210E: STARTER RELAY OFF	—	<a href="#">SEC-112</a>
B210F: INTRLCK/PNP SW ON	—	<a href="#">SEC-114</a>
B2110: INTRLCK/PNP SW OFF	—	<a href="#">SEC-116</a>

## SYMPTOM DIAGNOSIS

### WIPER AND WASHER SYSTEM SYMPTOMS WITH LIGHT & RAIN SENSOR

#### WITH LIGHT & RAIN SENSOR : Symptom Table

INFOID:000000004784823

**CAUTION:**

Perform the self-diagnosis with CONSULT-III before performing the diagnosis by symptom. Perform the diagnosis by DTC if DTC is detected.

Symptom		Probable malfunction location	Inspection item
Front wiper does not operate.	HI only	<ul style="list-style-type: none"> <li>Combination switch</li> <li>Harness between combination switch and BCM</li> <li>BCM</li> </ul>	Combination switch Refer to <a href="#">BCS-91, "Symptom Table"</a> .
		<ul style="list-style-type: none"> <li>IPDM E/R</li> <li>Harness between IPDM E/R and front wiper motor</li> <li>Front wiper motor</li> </ul>	Front wiper motor (HI) circuit Refer to <a href="#">WW-31, "Component Function Check"</a> .
		Front wiper request signal <ul style="list-style-type: none"> <li>BCM</li> <li>IPDM E/R</li> </ul>	IPDM E/R DATA MONITOR "FR WIP REQ"
	LO only	<ul style="list-style-type: none"> <li>Combination switch</li> <li>Harness between combination switch and BCM</li> <li>BCM</li> </ul>	Combination switch Refer to <a href="#">BCS-91, "Symptom Table"</a> .
		<ul style="list-style-type: none"> <li>IPDM E/R</li> <li>Harness between IPDM E/R and front wiper motor</li> <li>Front wiper motor</li> </ul>	Front wiper motor (LO) circuit Refer to <a href="#">WW-29, "Component Function Check"</a> .
		Front wiper request signal <ul style="list-style-type: none"> <li>BCM</li> <li>IPDM E/R</li> </ul>	IPDM E/R DATA MONITOR "FR WIP REQ"
	AUTO only	<ul style="list-style-type: none"> <li>Combination switch</li> <li>Harness between combination switch and BCM</li> <li>BCM</li> </ul>	Combination switch Refer to <a href="#">BCS-91, "Symptom Table"</a> .
		<ul style="list-style-type: none"> <li>Light &amp; rain sensor</li> <li>Harness between Light &amp; rain sensor and BCM</li> <li>BCM</li> </ul>	Light & rain sensor Refer to <a href="#">WW-36, "Component Function Check"</a> .
	HI, LO and AUTO	<b>SYMPTOM DIAGNOSIS</b> <b>"FRONT WIPER DOES NOT OPERATE"</b> Refer to <a href="#">WW-123, "Diagnosis Procedure"</a> .	

# WIPER AND WASHER SYSTEM SYMPTOMS

[FOR EUROPE]

< SYMPTOM DIAGNOSIS >

Symptom	Probable malfunction location	Inspection item	
Front wiper does not stop.	HI only	• Combination switch • BCM Front wiper request signal • BCM • IPDM E/R IPDM E/R	Combination switch Refer to <a href="#">BCS-91, "Symptom Table"</a> . IPDM E/R DATA MONITOR "FR WIP REQ" —
		• Combination switch • BCM Front wiper request signal • BCM • IPDM E/R	Combination switch Refer to <a href="#">BCS-91, "Symptom Table"</a> . IPDM E/R DATA MONITOR "FR WIP REQ"
		IPDM E/R	—
	LO only	• Combination switch • BCM Front wiper request signal • BCM • IPDM E/R	Combination switch Refer to <a href="#">BCS-91, "Symptom Table"</a> . IPDM E/R DATA MONITOR "FR WIP REQ"
		IPDM E/R	—
		• Combination switch • BCM • Light & rain sensor • Harness between Light & rain sensor and BCM • BCM	Combination switch Refer to <a href="#">BCS-91, "Symptom Table"</a> . Light & rain sensor Refer to <a href="#">WW-36, "Component Function Check"</a> .
	AUTO only	• Combination switch • Harness between combination switch and BCM • BCM	Combination switch Refer to <a href="#">BCS-91, "Symptom Table"</a> . —
		BCM	—
		• Combination switch • Harness between combination switch and BCM • BCM	Combination switch Refer to <a href="#">BCS-91, "Symptom Table"</a> . —
Front wiper does not operate normally.	Sensitivity adjustment cannot be performed.	• Combination switch • Harness between combination switch and BCM • BCM	Combination switch Refer to <a href="#">BCS-91, "Symptom Table"</a> . —
		BCM	—
	Wiper is not linked to the washer operation.	• Combination switch • Harness between combination switch and BCM • BCM	Combination switch Refer to <a href="#">BCS-91, "Symptom Table"</a> . —
		BCM	—
	Does not return to stop position. [Repeatedly operates for 10 seconds and then stops for 20 seconds. After that, it stops the operation. (Fail-safe)]	• IPDM E/R • Harness between IPDM E/R and front wiper motor • Front wiper motor	Front wiper auto stop signal circuit Refer to <a href="#">WW-33, "Component Function Check"</a> .
Headlamp washer does not operate.	Headlamp washer does not operate with the front washer when headlamps are turned ON.	• Combination switch • Harness between combination switch and BCM • BCM • Headlamp washer pump	Combination switch Refer to <a href="#">BCS-91, "Symptom Table"</a> .
		• Fusible link • Harness between fusible link and headlamp washer relay • Headlamp washer relay • Harness between headlamp washer relay and IPDM E/R • IPDM E/R • Harness between headlamp washer relay and headlamp washer pump • Harness between headlamp washer pump and ground • Headlamp washer pump	
		BCM	—
		Headlamp washer circuit Refer to <a href="#">WW-40, "Component Function Check"</a> .	

WITHOUT LIGHT & RAIN SENSOR

WITHOUT LIGHT & RAIN SENSOR : Symptom Table

INFOID:0000000005286347

**CAUTION:**

# WIPER AND WASHER SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

[FOR EUROPE]

Perform the self-diagnosis with CONSULT-III before performing the diagnosis by symptom. Perform the diagnosis by DTC if DTC is detected.

Symptom		Probable malfunction location	Inspection item
Front wiper does not operate.	HI only	<ul style="list-style-type: none"> <li>Combination switch</li> <li>Harness between combination switch and BCM</li> <li>BCM</li> </ul>	Combination switch Refer to <a href="#">BCS-171, "Symptom Table"</a> .
		<ul style="list-style-type: none"> <li>IPDM E/R</li> <li>Harness between IPDM E/R and front wiper motor</li> <li>Front wiper motor</li> </ul>	Front wiper motor (HI) circuit Refer to <a href="#">WW-31, "Component Function Check"</a> .
		Front wiper request signal <ul style="list-style-type: none"> <li>BCM</li> <li>IPDM E/R</li> </ul>	IPDM E/R DATA MONITOR "FR WIP REQ"
	LO and INT	<ul style="list-style-type: none"> <li>Combination switch</li> <li>Harness between combination switch and BCM</li> <li>BCM</li> </ul>	Combination switch Refer to <a href="#">BCS-171, "Symptom Table"</a> .
		<ul style="list-style-type: none"> <li>IPDM E/R</li> <li>Harness between IPDM E/R and front wiper motor</li> <li>Front wiper motor</li> </ul>	Front wiper motor (LO) circuit Refer to <a href="#">WW-29, "Component Function Check"</a> .
		Front wiper request signal <ul style="list-style-type: none"> <li>BCM</li> <li>IPDM E/R</li> </ul>	IPDM E/R DATA MONITOR "FR WIP REQ"
	INT only	<ul style="list-style-type: none"> <li>Combination switch</li> <li>Harness between combination switch and BCM</li> <li>BCM</li> </ul>	Combination switch Refer to <a href="#">BCS-171, "Symptom Table"</a> .
		Front wiper request signal <ul style="list-style-type: none"> <li>BCM</li> <li>IPDM E/R</li> </ul>	IPDM E/R DATA MONITOR "FR WIP REQ"
	HI, LO and INT	SYMPTOM DIAGNOSIS "FRONT WIPER DOES NOT OPERATE" Refer to <a href="#">WW-123, "Diagnosis Procedure"</a> .	
Front wiper does not stop.	HI only	<ul style="list-style-type: none"> <li>Combination switch</li> <li>BCM</li> </ul>	Combination switch Refer to <a href="#">BCS-171, "Symptom Table"</a> .
		Front wiper request signal <ul style="list-style-type: none"> <li>BCM</li> <li>IPDM E/R</li> </ul>	IPDM E/R DATA MONITOR "FR WIP REQ"
		IPDM E/R	—
	LO only	<ul style="list-style-type: none"> <li>Combination switch</li> <li>BCM</li> </ul>	Combination switch Refer to <a href="#">BCS-171, "Symptom Table"</a> .
		Front wiper request signal <ul style="list-style-type: none"> <li>BCM</li> <li>IPDM E/R</li> </ul>	IPDM E/R DATA MONITOR "FR WIP REQ"
		IPDM E/R	—
	INT only	<ul style="list-style-type: none"> <li>Combination switch</li> <li>BCM</li> </ul>	Combination switch Refer to <a href="#">BCS-171, "Symptom Table"</a> .
		Front wiper request signal <ul style="list-style-type: none"> <li>BCM</li> <li>IPDM E/R</li> </ul>	IPDM E/R DATA MONITOR "FR WIP REQ"

# WIPER AND WASHER SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

[FOR EUROPE]

Symptom	Probable malfunction location	Inspection item	
Front wiper does not operate normally.	Intermittent adjustment cannot be performed.	<ul style="list-style-type: none"> <li>Combination switch</li> <li>Harness between combination switch and BCM</li> <li>BCM</li> </ul>	
	Intermittent control linked with vehicle speed cannot be performed.	<p>Check the vehicle speed detection wiper setting. Refer to <a href="#">WW-20, "WIPER : CONSULT-III Function (BCM - WIPER)".</a></p> <p><b>NOTE:</b> Factory setting of the front wiper intermitted operation is the operation without vehicle speed.</p>	
	Wiper is not linked to the washer operation.	<ul style="list-style-type: none"> <li>Combination switch</li> <li>Harness between combination switch and BCM</li> <li>BCM</li> </ul>	
Does not return to stop position. [Repeatedly operates for 10 seconds and then stops for 20 seconds. After that, it stops the operation. (Fail-safe)]	<ul style="list-style-type: none"> <li>IPDM E/R</li> <li>Harness between IPDM E/R and front wiper motor</li> <li>Front wiper motor</li> </ul>	Front wiper auto stop signal circuit Refer to <a href="#">WW-33, "Component Function Check".</a>	
Headlamp washer does not operate.	Headlamp washer does not operate with the front washer when headlamps are turned ON.	<ul style="list-style-type: none"> <li>Combination switch</li> <li>Harness between combination switch and BCM</li> <li>BCM</li> <li>Headlamp washer pump</li> </ul>	
		<ul style="list-style-type: none"> <li>Fusible link</li> <li>Harness between fusible link and headlamp washer relay</li> <li>Headlamp washer relay</li> <li>Harness between headlamp washer relay and IPDM E/R</li> <li>IPDM E/R</li> <li>Harness between headlamp washer relay and headlamp washer pump</li> <li>Harness between headlamp washer pump and ground</li> <li>Headlamp washer pump</li> </ul>	Headlamp washer circuit Refer to <a href="#">WW-40, "Component Function Check".</a>
		BCM	—

&lt;SYMPTOM DIAGNOSIS&gt;

**NORMAL OPERATING CONDITION****Description**

INFOID:000000004639884

**FRONT WIPER MOTOR PROTECTION FUNCTION**

- IPDM E/R may stop the front wiper to protect the front wiper motor if any obstruction (operation resistance) such as a large amount of snow is detected during the front wiper operation.
- At that time turn OFF the front wiper and remove the foreign object. Then wait for approximately 20 seconds or more and reactivate the front wiper. The wiper will operate normally.

&lt; SYMPTOM DIAGNOSIS &gt;

## FRONT WIPER DOES NOT OPERATE

## Description

INFOID:0000000004639885

The front wiper does not operate under any operating conditions.

## Diagnosis Procedure

INFOID:0000000004639886

## 1. CHECK WIPER RELAY OPERATION

 IPDM E/R AUTO ACTIVE TEST

1. Start IPDM E/R auto active test. Refer to [PCS-11, "Diagnosis Description"](#).
2. Check that the front wiper operates at the LO/HI operation.

 CONSULT-III ACTIVE TEST

1. Select "FRONT WIPER" of IPDM E/R active test item.
2. With operating the test item, check that front wiper LO/HI operation and OFF.

Lo : Front wiper LO operation

Hi : Front wiper HI operation

Off : Stop the front wiper.

Does the front wiper operate?

YES &gt;&gt; GO TO 5.

NO &gt;&gt; GO TO 2.

## 2. CHECK FRONT WIPER MOTOR FUSE

1. Turn the ignition switch OFF.
2. Check that the front wiper motor 30 A (#60) fuse is not fusing.

Is the fuse fusing?

YES &gt;&gt; Replace the fuse after repairing the applicable circuit.

NO &gt;&gt; GO TO 3.

## 3. CHECK FRONT WIPER MOTOR (GND) OPEN CIRCUIT

Check front wiper motor (GND) open circuit. Refer to [WW-35, "Diagnosis Procedure"](#).

Does continuity exist?

YES &gt;&gt; GO TO 4.

NO &gt;&gt; Repair or replace harness.

## 4. CHECK FRONT WIPER MOTOR OUTPUT VOLTAGE

 CONSULT-III ACTIVE TEST

1. Disconnect front wiper motor connector.
2. Turn the ignition switch ON.
3. Select "FRONT WIPER" of IPDM E/R active test item.
4. With operating the test item, check voltage between IPDM E/R harness connector and ground.

Terminals		Test item	Voltage (Approx.)
(+)	(-)		
IPDM E/R		FRONT WIPER	
Connector	Terminal		
E5	4		
		Lo	Battery voltage
	5	Off	0 V
		Hi	Battery voltage
		Off	0 V

Is the measurement normal?

YES &gt;&gt; Replace front wiper motor.

NO &gt;&gt; Replace IPDM E/R.

# FRONT WIPER DOES NOT OPERATE

< SYMPTOM DIAGNOSIS >

[FOR EUROPE]

## 5. CHECK FRONT WIPER REQUEST SIGNAL INPUT

### ④ CONSULT-III DATA MONITOR

1. Select "FR WIP REQ" of IPDM E/R data monitor item.
2. Switch the front wiper switch to HI and LO.
3. With operating the front wiper switch, check the monitor status.

Monitor item	Condition	Monitor status	
FR WIPER REQ	Front wiper switch HI	ON	Hi
		OFF	Stop
	Front wiper switch LO	ON	Low
		OFF	Stop

Is the status of item normal?

YES >> Replace IPDM E/R.  
NO >> GO TO 6.

## 6. CHECK COMBINATION SWITCH

Perform the inspection of the combination switch. Refer to [BCS-91, "Symptom Table"](#).

Is combination switch normal?

YES >> Replace BCM. Refer to [BCS-93, "Exploded View"](#).  
NO >> Repair or replace the applicable parts.

## HEADLAMP WASHER DOES NOT OPERATE

### Description

Headlamp washer does not operate linked to front washer operation.

INFOID:0000000004784824

### Diagnosis Procedure

INFOID:0000000004784825

#### 1. CHECK IPDM E/R

##### CONSULT-III DATA MONITOR

1. Turn the lighting switch 2ND.
2. Select "HL WASHER REQ" of IPDM E/R data monitor item.
3. Operate the headlamp washer.
4. Check the status of "HL WASHER REQ".

Monitor item	Condition		Monitor status
HL WASHER REQ	Headlamp washer	Operating	ON
		Stopped	OFF

Is the status of item normal?

YES >> Refer to [WW-40, "Component Function Check"](#).  
NO >> GO TO 2.

#### 2. CHECK COMBINATION SWITCH

Perform the inspection of the combination switch. Refer to [BCS-91, "Symptom Table"](#).

Is combination switch normal?

YES >> Replace BCM. Refer to [BCS-93, "Exploded View"](#).  
NO >> Repair or replace the applicable parts.

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&lt; PRECAUTION &gt;

## PRECAUTION

### PRECAUTIONS

#### Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

INFOID:000000004786239

The Supplemental Restraint System such as "AIR BAG" and "SEAT BELT PRE-TENSIONER", used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted. Information necessary to service the system safely is included in the "SRS AIR BAG" and "SEAT BELT" of this Service Manual.

**WARNING:**

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.
- Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the "SRS AIR BAG".
- Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.

#### PRECAUTIONS WHEN USING POWER TOOLS (AIR OR ELECTRIC) AND HAMMERS

**WARNING:**

- When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, DO NOT use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.
- When using air or electric power tools or hammers, always switch the ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.

#### Precaution for Pop Up Engine Hood

INFOID:000000005413550

**WARNING:**

- Before removal or installation of the pop-up engine hood and harness, always turn OFF the key switch, disconnect the battery negative terminal, and wait for 3 minutes or more. (To discharge the accumulated electricity in the pop-up engine hood control unit auxiliary power supply circuit)
- Never use pneumatic or electric tools, etc., to remove or install components of the pop-up engine hood.
- Never repair the harness for the pop-up engine hood with a solder. Also, always avoid contact or interference between the harness and other parts.
- Never use an electric tester like a circuit tester, etc., when inspecting the pop-up engine hood circuit or other individual parts. (To prevent activation due to the low voltage of the tester)
- Never allow foreign materials like a screwdriver, etc., to enter the pop-up engine hood harness connector. (To prevent activation due to static electricity)
- The yellow harness connector is used with the pop-up engine hood for identification purposes compared to other harnesses.

#### Precaution Necessary for Steering Wheel Rotation after Battery Disconnect

INFOID:000000005413551

**NOTE:**

- Before removing and installing any control units, first turn the push-button ignition switch to the LOCK position, then disconnect both battery cables.
- After finishing work, confirm that all control unit connectors are connected properly, then re-connect both battery cables.
- Always use CONSULT-III to perform self-diagnosis as a part of each function inspection after finishing work. If a DTC is detected, perform trouble diagnosis according to self-diagnosis results.

## &lt; PRECAUTION &gt;

This vehicle is equipped with a push-button ignition switch and a steering lock unit.

If the battery is disconnected or discharged, the steering wheel will lock and cannot be turned.

If turning the steering wheel is required with the battery disconnected or discharged, follow the procedure below before starting the repair operation.

## OPERATION PROCEDURE

1. Connect both battery cables.

**NOTE:**

Supply power using jumper cables if battery is discharged.

2. Turn the push-button ignition switch to ACC position.  
(At this time, the steering lock will be released.)

3. Disconnect both battery cables. The steering lock will remain released with both battery cables disconnected and the steering wheel can be turned.

4. Perform the necessary repair operation.

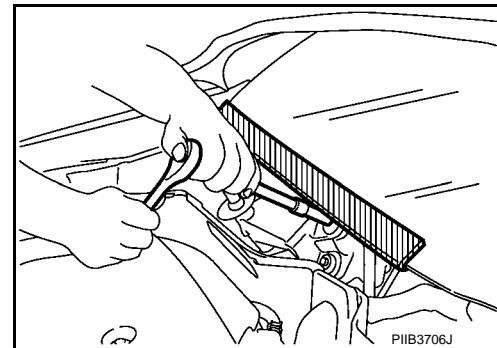
5. When the repair work is completed, re-connect both battery cables. With the brake pedal released, turn the push-button ignition switch from ACC position to ON position, then to LOCK position. (The steering wheel will lock when the push-button ignition switch is turned to LOCK position.)

6. Perform self-diagnosis check of all control units using CONSULT-III.

## Precaution for Procedure without Cowl Top Cover

INFOID:000000004786240

When performing the procedure after removing cowl top cover, cover the lower end of windshield with urethane, etc.



## Precaution for Battery Service

INFOID:000000004639889

Before disconnecting the battery, lower both the driver and passenger windows. This will prevent any interference between the window edge and the vehicle when the door is opened/closed. During normal operation, the window slightly raises and lowers automatically to prevent any window to vehicle interference. The automatic window function will not work with the battery disconnected.

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# HEADLAMP WASHER NOZZLE AND TUBE

< REMOVAL AND INSTALLATION >

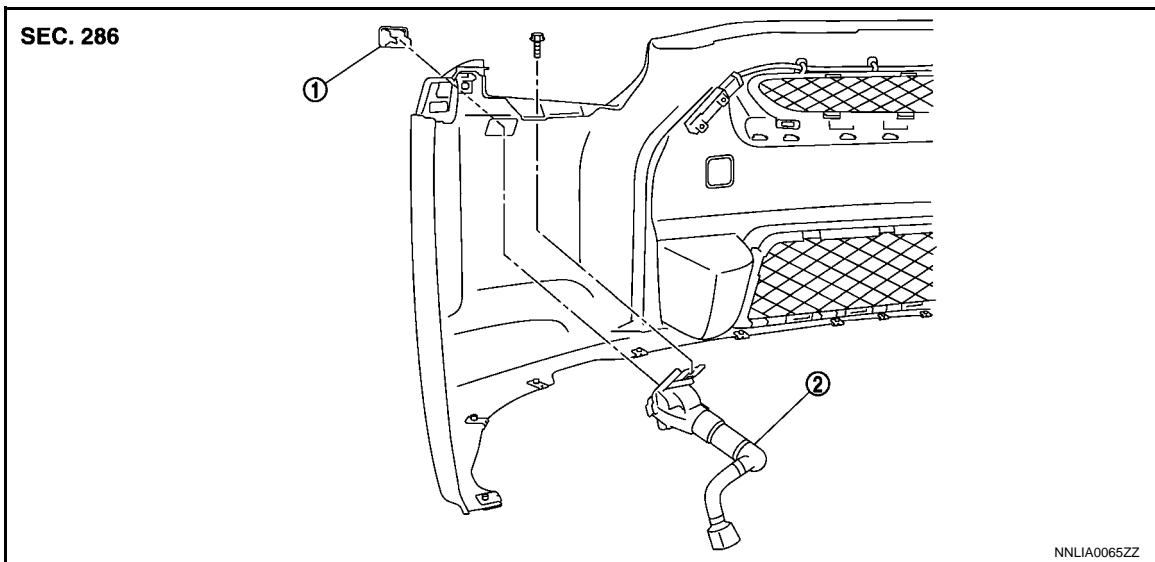
[FOR EUROPE]

## REMOVAL AND INSTALLATION

### HEADLAMP WASHER NOZZLE AND TUBE

#### Exploded View

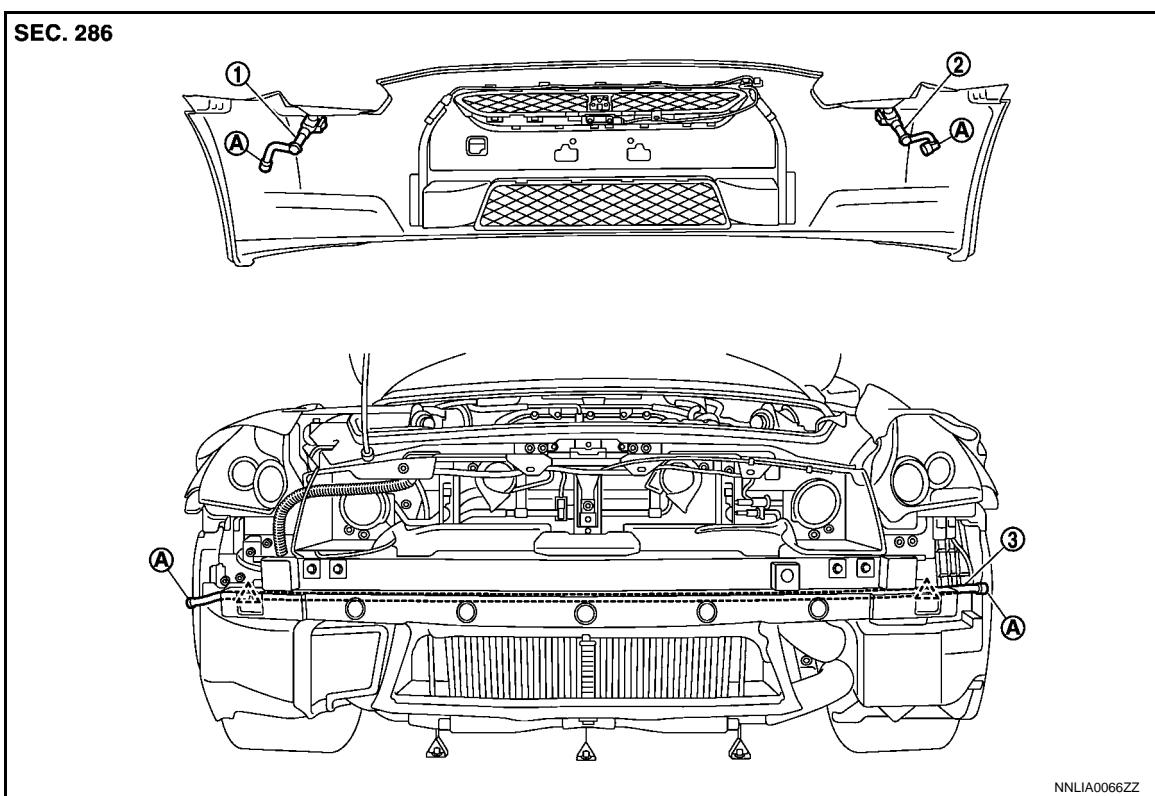
INFOID:000000004784826



1. Headlamp washer nozzle cover
2. Headlamp washer nozzle assembly

#### Hydraulic Layout

INFOID:000000004784827



1. Headlamp washer nozzle assembly (LH)
2. Headlamp washer nozzle assembly (RH)
3. Headlamp washer tube

## &lt; REMOVAL AND INSTALLATION &gt;

A. Headlamp washer tube joint

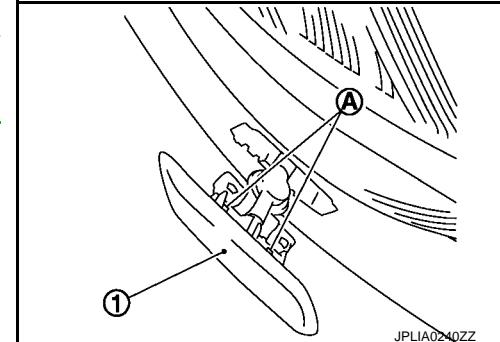
△ : Clip

## Removal and Installation

INFOID:000000004784828

## REMOVAL

1. Pull out the headlamp washer nozzle from the bumper, disengage pawl (A), and remove the headlamp washer nozzle cover (1).
2. Remove the front bumper fascia. Refer to [EXT-14, "Exploded View"](#).
3. Disconnect the headlamp washer tube joint.
4. Remove the headlamp washer nozzle assembly mounting bolt.

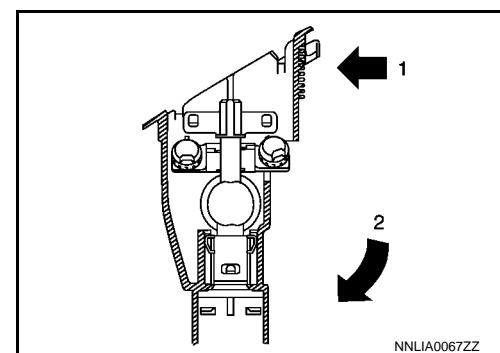


JPLIA0240ZZ

5. Remove the headlamp washer nozzle assembly in numerical order shown in the figure.

**NOTE:**

This drawing shows the parts of the headlamp washer nozzle (LH). The headlamp washer nozzle (RH) is symmetrical of this drawing.



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## INSTALLATION

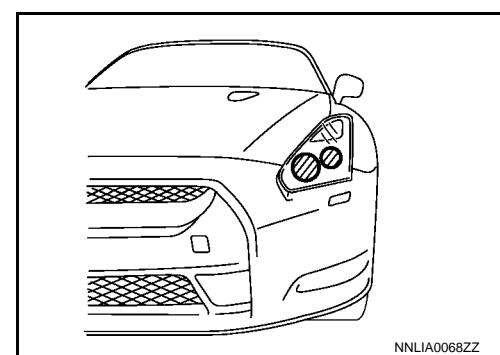
Install in the reverse order of removal.

## Inspection

INFOID:000000004784829

## HEADLAMP WASHER NOZZLE SPRAY POSITION INSPECTION

- Check that the headlamp washer injection is certainly on the headlamp illuminating area.



NNLIA0068ZZ

- Check the headlamp washer tube and headlamp washer nozzle leakages.

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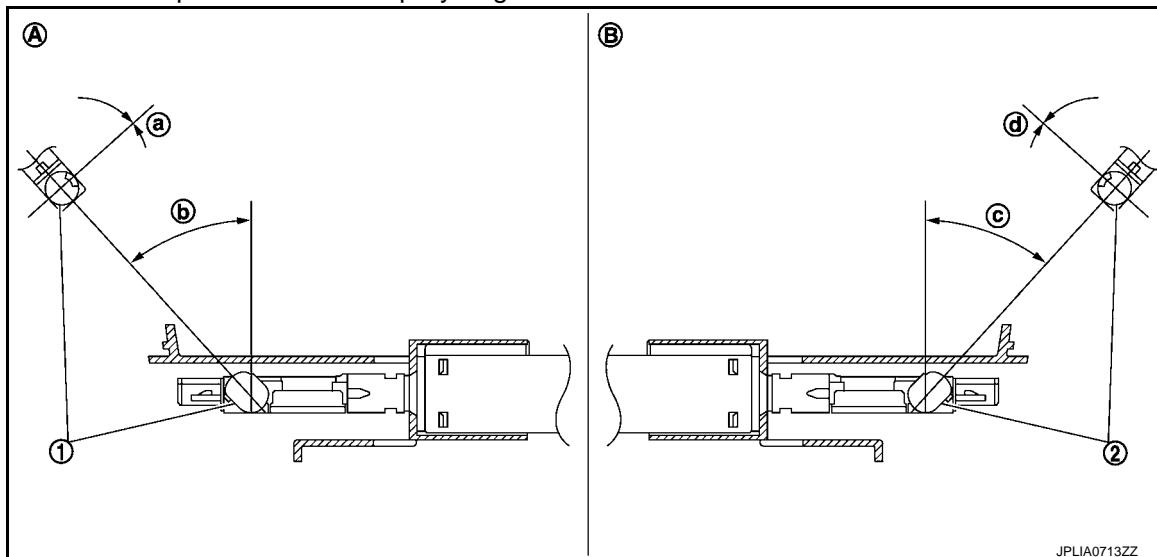
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# HEADLAMP WASHER NOZZLE AND TUBE

## < REMOVAL AND INSTALLATION >

[FOR EUROPE]

- Check the headlamp washer nozzle spray angle.



1. Headlamp washer nozzle (outside)
2. Headlamp washer nozzle (inside)

Outside (A)

- a :  $2^\circ \pm 3^\circ$
- b :  $28^\circ \pm 3^\circ$

Inside (B)

- c :  $40^\circ \pm 3^\circ$
- d :  $25^\circ \pm 3^\circ$

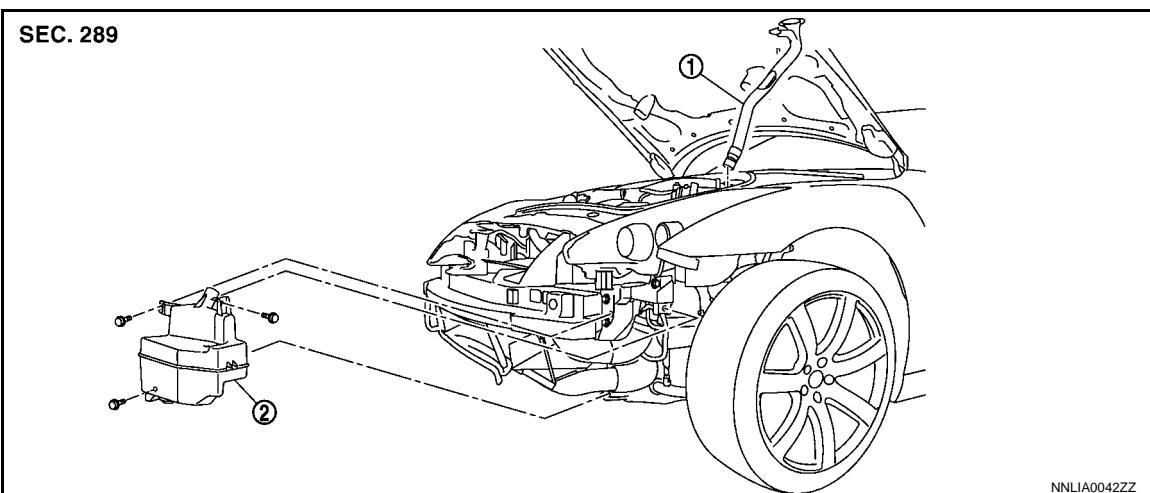
**NOTE:**

This drawing shows the parts of the headlamp washer nozzle (LH). The headlamp washer nozzle (RH) is symmetrical of this drawing.

&lt; REMOVAL AND INSTALLATION &gt;

**WASHER TANK****Exploded View**

INFOID:0000000004639890



1. Washer tank inlet      2. Washer tank

**Removal and Installation**

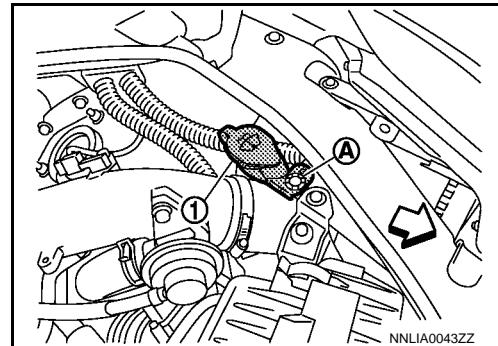
INFOID:0000000004639891

**REMOVAL**

1. Remove the clip (A)

↙ : Vehicle front

2. Pull out the washer tank inlet (1) from the washer tank.



3. Remove the front bumper fascia. Refer to [EXT-14, "Exploded View"](#).  
 4. Disconnect the washer pump connector.  
 5. Disconnect the headlamp washer pump connector.  
 6. Disconnect the washer level switch connector.  
 7. Disconnect the front washer tube.  
 8. Disconnect the headlamp washer tube joint.  
 9. Remove the washer tank mounting bolts.  
 10. Remove the washer tank from the vehicle.

**INSTALLATION**

Install in the reverse order of removal.

**CAUTION:**

Add water up to the top of the washer tank inlet after installing. Check that there is no leakage.

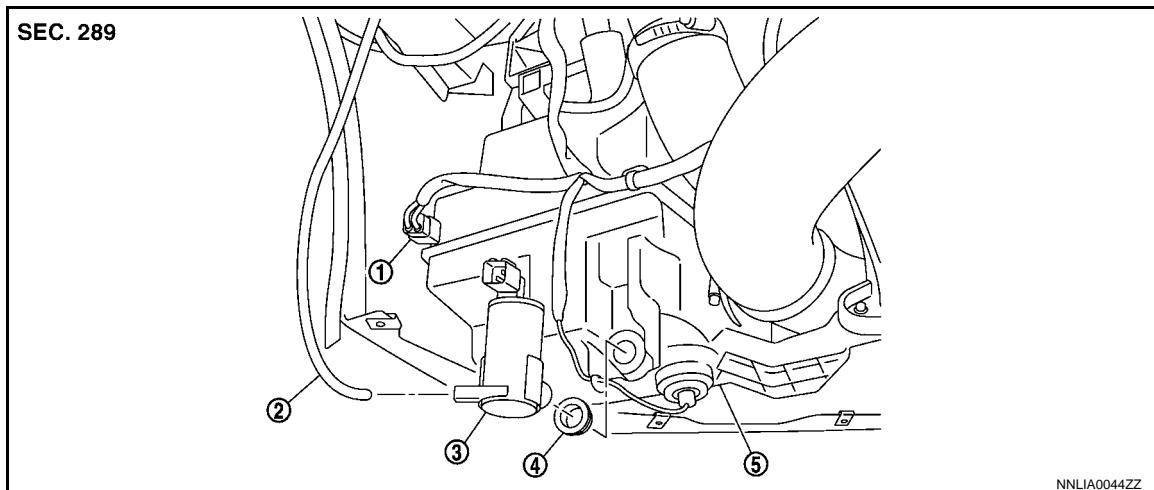
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&lt; REMOVAL AND INSTALLATION &gt;

## WASHER PUMP

### Exploded View

INFOID:0000000004639892



1. Washer pump connector
2. Front washer tube
3. Washer pump
4. Packing
5. Washer tank

### Removal and Installation

INFOID:0000000004639893

#### REMOVAL

1. Remove the fender protector LH (front). Refer to [EXT-29, "FENDER PROTECTOR : Exploded View"](#).
2. Disconnect the washer pump connector.
3. Disconnect the front washer tube.
4. Remove the washer pump from the washer tank.
5. Remove the packing from the washer tank.

#### INSTALLATION

Install in the reverse order of removal.

#### CAUTION:

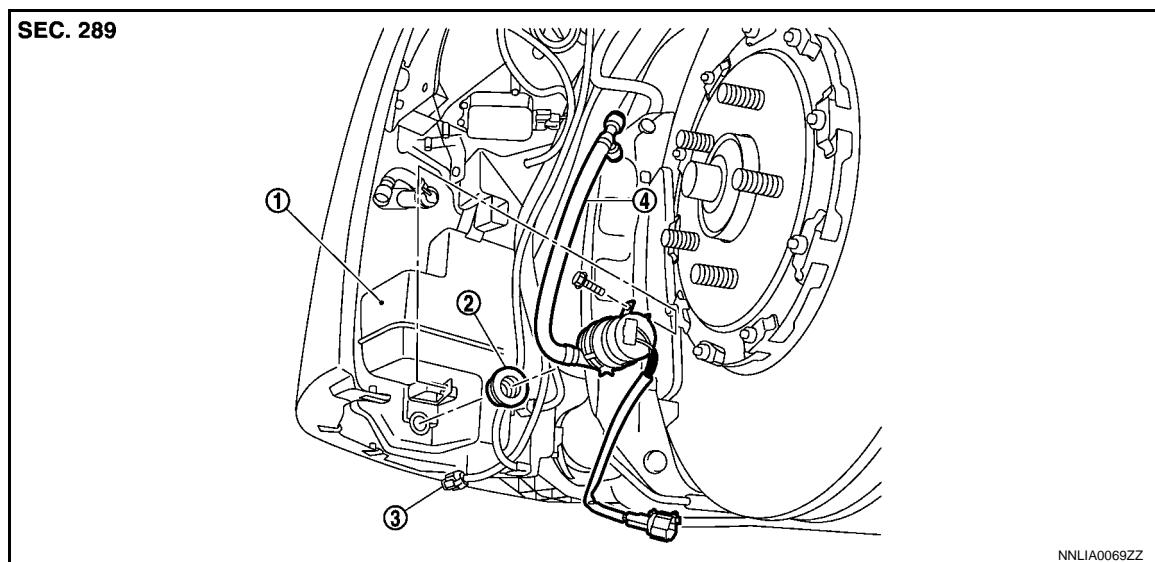
Never twist the packing when installing the washer pump.

&lt; REMOVAL AND INSTALLATION &gt;

## HEADLAMP WASHER PUMP

## Exploded View

INFOID:0000000004784834



- 1. Washer tank
- 2. Packing
- 3. Headlamp washer pump connector
- 4. Headlamp washer pump

## Removal and Installation

INFOID:0000000004784835

## REMOVAL

1. Remove the fender protector (LH) front. Refer to [EXT-29, "FENDER PROTECTOR : Exploded View"](#).
2. Disconnect the headlamp washer pump connector.
3. Disconnect the headlamp washer tube joint.
4. Remove the headlamp washer pump mounting bolt.
5. Remove the headlamp washer pump from the washer tank.
6. Remove the packing from the washer tank.

## INSTALLATION

Install in the reverse order of removal.

**CAUTION:**

Never twist the packing when installing the headlamp washer pump.

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< REMOVAL AND INSTALLATION >

## WASHER LEVEL SWITCH

### Removal and Installation

INFOID:0000000004639894

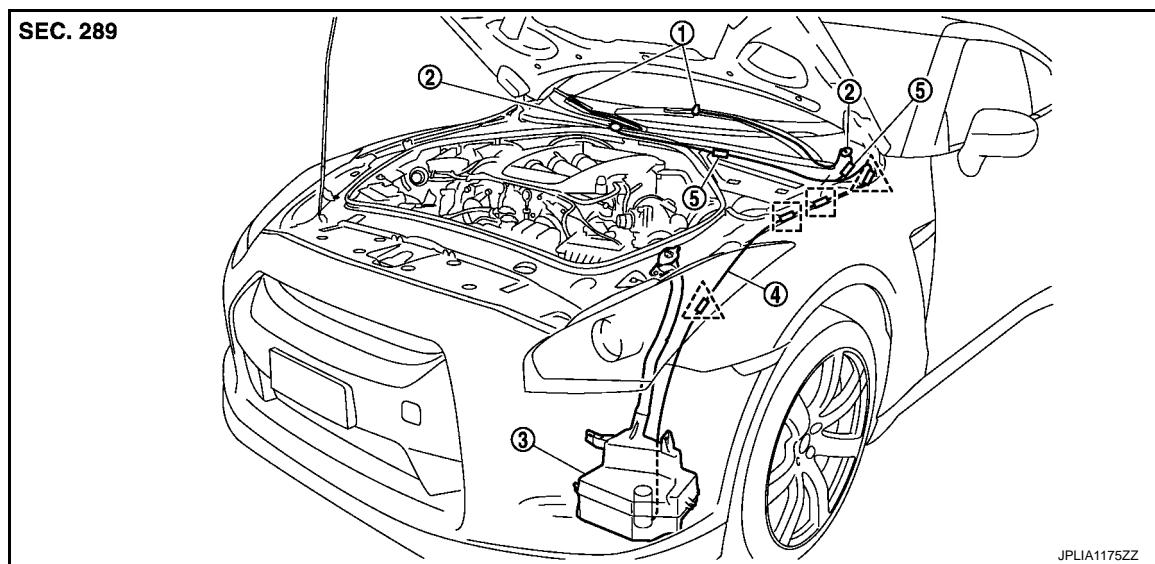
The washer level switch must be replaced together with the washer tank as an assembly. Refer to [WW-131, "Removal and Installation"](#).

&lt; REMOVAL AND INSTALLATION &gt;

## FRONT WASHER NOZZLE AND TUBE

## Hydraulic Layout

INFOID:0000000004639895



- 1. Front washer nozzle
- 2. Front washer joint
- 3. Washer tank
- 4. Front washer tube
- 5. Check valve

△ : Clip A

□ : Clip B

## Removal and Installation

INFOID:0000000004639896

## FRONT WASHER NOZZLE

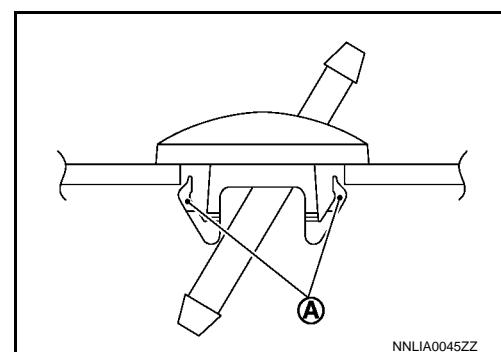
The front washer nozzle must be replaced together with the front wiper arm as an assembly. Refer to [WW-138, "Exploded View"](#).

**CAUTION:**

**Never remove/install the front washer nozzle from the front wiper arm assembly.**

## FRONT WASHER JOINT

1. Remove upwards while pressing pawl (A) on reverse side.
2. Disconnect front washer tube.



## Inspection and Adjustment

INFOID:0000000004802798

## INSPECTION

## Check valve Inspection

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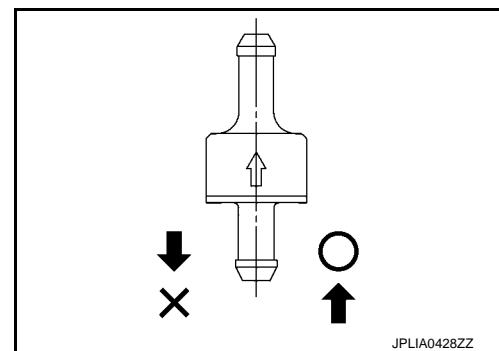
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# FRONT WASHER NOZZLE AND TUBE

[FOR EUROPE]

## < REMOVAL AND INSTALLATION >

Check that air can pass through the hose by blowing forward (toward the nozzle), and check that air cannot pass through by sucking.



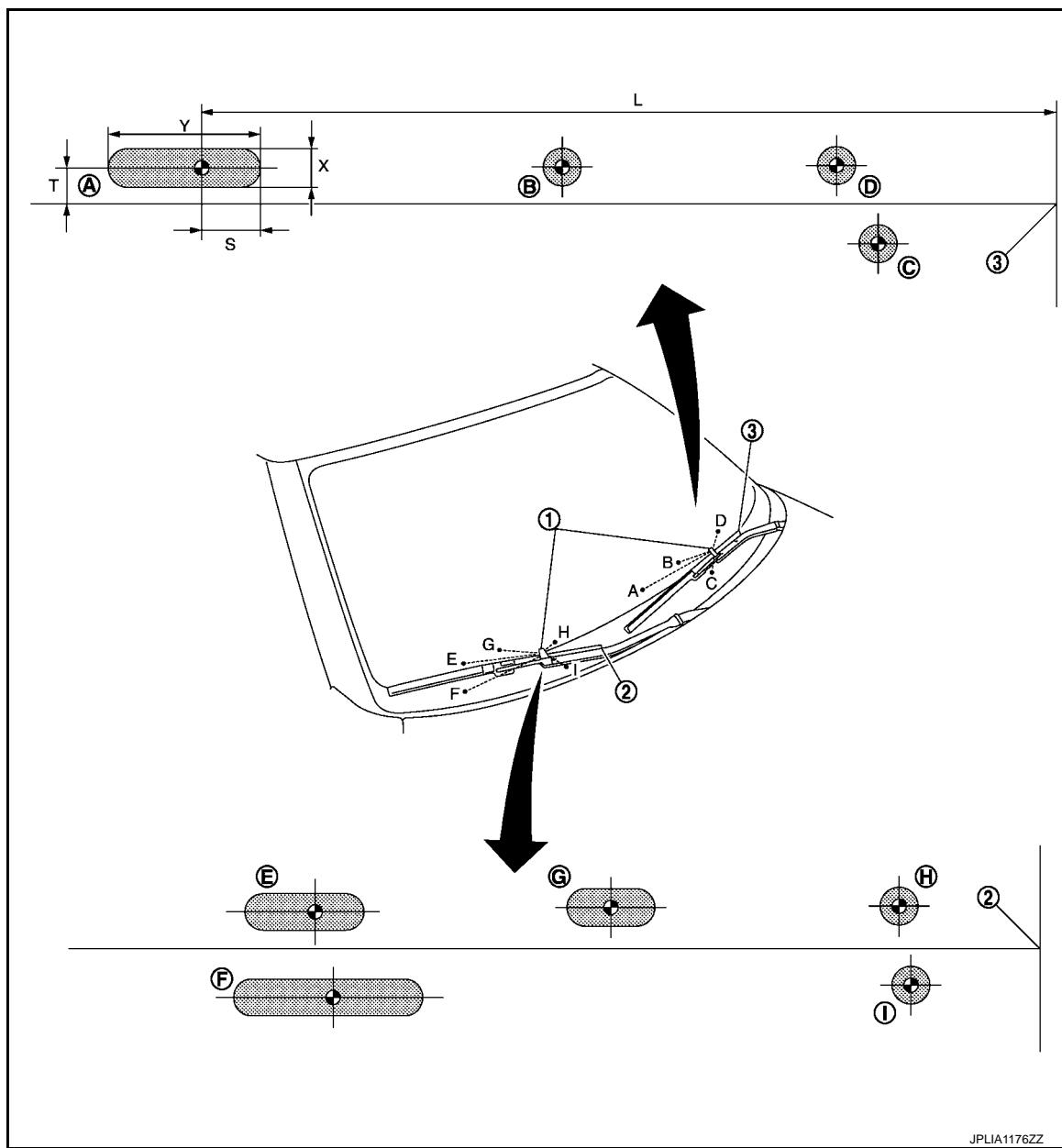
## ADJUSTMENT

### Front Washer Nozzle Spray Position Adjustment

Adjust spray positions to match the positions shown in the figure. Remove the wiper motor connector to ensure front wiper arms do not move.

#### NOTE:

This figure for LHD models and is symmetric with RHD models.



# FRONT WASHER NOZZLE AND TUBE

## < REMOVAL AND INSTALLATION >

[FOR EUROPE]

1. Front washer nozzle

2. Passenger side blade rubber end

3. Driver side blade rubber end

 : Spray area

 : Target spray position

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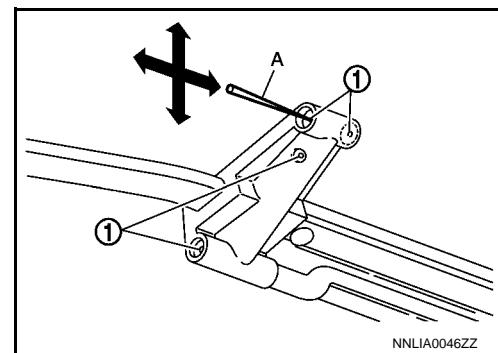
Unit: mm (in)

Spray position	T	L	X	Y	S
A	29 (1.14)	448 (17.64)	20 (0.79)	50 (1.97)	25 (0.98)
B	34 (1.34)	235 (9.25)	20 (0.79)	20 (0.79)	10 (0.39)
C	-18 (-0.71)	112 (4.41)	20 (0.79)	20 (0.79)	10 (0.39)
D	29 (1.14)	115 (4.53)	20 (0.79)	20 (0.79)	10 (0.39)
E	30 (1.18)	304 (11.97)	20 (0.79)	30 (1.18)	15 (0.59)
F	-40 (-1.57)	237 (9.33)	20 (0.79)	60 (2.36)	30 (1.18)
G	35 (1.38)	197 (7.76)	20 (0.79)	30 (1.18)	15 (0.59)
H	30 (1.18)	73 (2.87)	20 (0.79)	20 (0.79)	10 (0.39)
I	-17 (-0.67)	68 (2.68)	20 (0.79)	20 (0.79)	10 (0.39)

Insert a needle or similar object (A) into the spray opening (1) and move up/down and left/right to adjust the spray position.

**NOTE:**

If wax or dust gets into the nozzle, remove wax or dust with a needle or small pin.



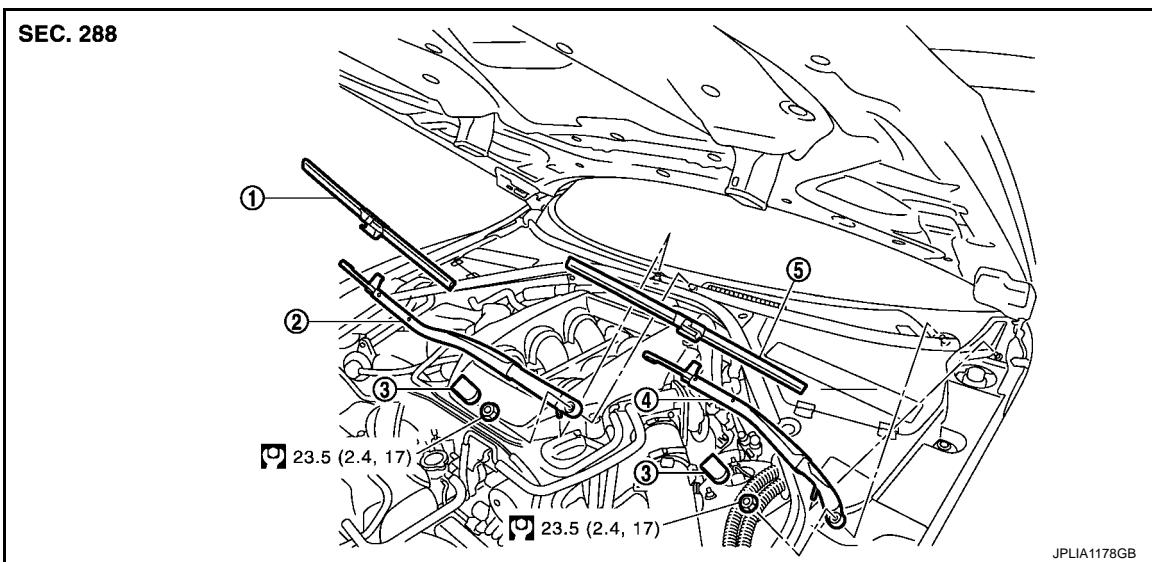
&lt; REMOVAL AND INSTALLATION &gt;

## FRONT WIPER ARM

## Exploded View

INFOID:0000000004639898

LHD models



- 1. Front wiper blade (RH)
- 2. Front wiper arm (RH)
- 3. Front wiper arm cap
- 4. Front wiper arm (LH)
- 5. Front wiper blade (LH)

Refer to [GI-4, "Components"](#) for symbols in the figure.

## Removal and Installation

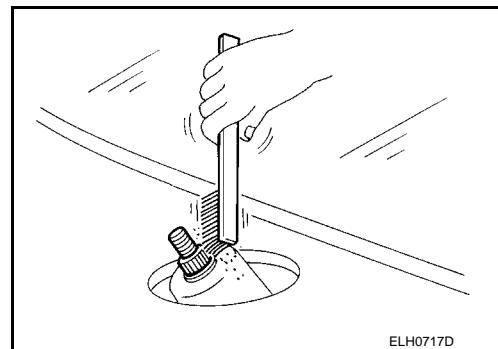
INFOID:0000000004639899

## REMOVAL

1. Operate the front wiper to move it to the auto stop position.
2. Open the hood.
3. Remove the front wiper arm caps.
4. Remove the front wiper arm mounting nuts.
5. Disconnect the front washer tube from the front washer joint.
6. Raise front wiper arm, and remove front wiper arm from the vehicle.

## INSTALLATION

1. Clean wiper arm mount as shown in the figure to prevent nuts from being loosened.
2. Operate the front wiper motor to move the front wiper to the auto stop position.
3. Adjust the front wiper blade position. Refer to [WW-138, "Adjustment"](#).
4. Install the front wiper arm by tightening the mounting nuts.
5. Connect the front washer tube to the front washer joint.
6. Inject the washer fluid.
7. Operate the front wiper to move it to the auto stop position.
8. Check that the front wiper blades stop at the specified position.
9. Install the front wiper arm caps.



## Adjustment

INFOID:0000000004802801

## WIPER BLADE POSITION ADJUSTMENT

Clearance between the end of cowl top cover and the top of wiper blade center

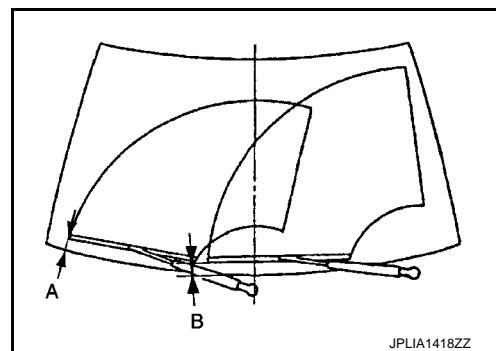
# FRONT WIPER ARM

## < REMOVAL AND INSTALLATION >

[FOR EUROPE]

Standard clearance

**Passenger side (A) :  $35.1 \pm 7.5 \text{ mm} (1.382 \pm 0.295 \text{ in})$**   
**Driver side (B) :  $46.9 \pm 7.5 \text{ mm} (1.846 \pm 0.295 \text{ in})$**



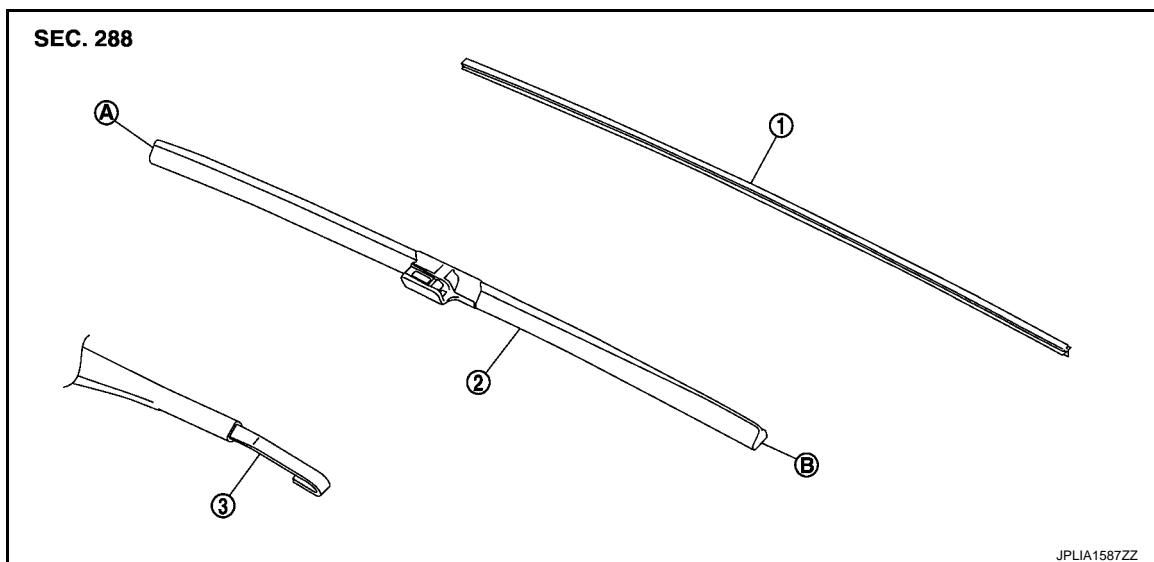
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&lt; REMOVAL AND INSTALLATION &gt;

## WIPER BLADE

## Exploded View

INFOID:0000000004786241



JPLIA1587ZZ

- 1. Wiper refill
- 2. Wiper blade
- 3. Wiper arm

- A. Wiper blade end
- B. Wiper blade tip

## Removal and Installation

INFOID:0000000004786242

## REMOVAL

Remove the wiper blade from the wiper arm.

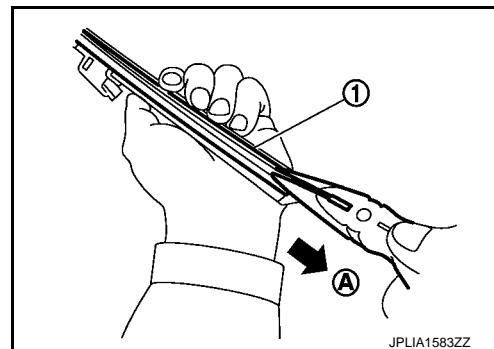
## INSTALLATION

Install the front wiper blade to the wiper arm.

## Replacement

INFOID:0000000004786243

1. Hold the rip of old wiper refill (1) at the rear end of the wiper blade with long-nose pliers, and pull out the wiper refill to the direction (A).



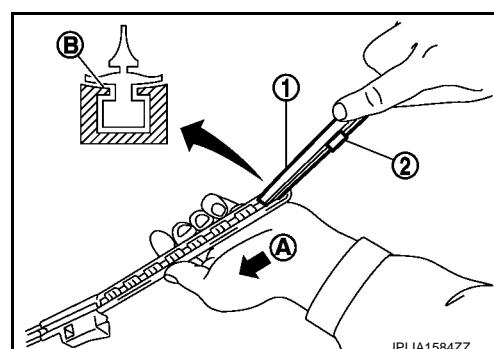
JPLIA1583ZZ

2. Insert the tip of new wiper refill (1) into the rear end of wiper blade. Slide the wiper refill to the direction (A) while pressing the wiper refill onto the wiper blade rear end.

## NOTE:

- Insert the wiper refill to be held securely by tab (B) of wiper blade.
- After the wiper refill is fully inserted, remove the holder\* (2).

\*: Attached to service parts.



JPLIA1584ZZ

## WIPER BLADE

[FOR EUROPE]

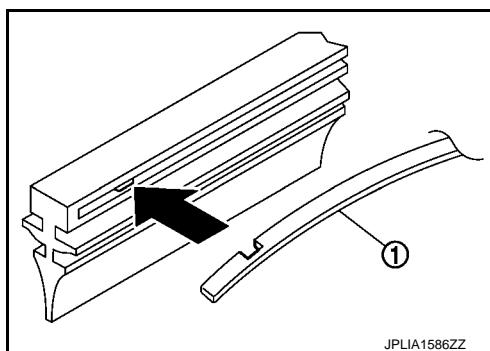
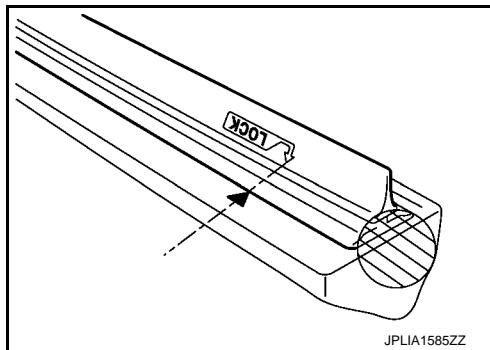
### < REMOVAL AND INSTALLATION >

3. Inert the wiper refill until the stopper at the rear end of wiper refill fits in the tab. Check that "LOCK" mark on wiper refill is aligned with "▼" mark on wiper blade.
4. Untwist the twisted wiper refill (▨) at the rear end of wiper blade, if any.
5. Check the following items after replacing wiper refill.
  - Wiper refill is not twisted at all.
  - Wiper refill thoroughly fits in the tab on wiper blade.
  - Wiper refill is inserted from the proper direction.

#### NOTE:

When the vertebra is detached.

- Insert the vertebra (1) into the wiper blade to the same bending direction.
- If a vertebra has a notch, fit it to a protrusion inside the wiper refill.



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# FRONT WIPER DRIVE ASSEMBLY

< REMOVAL AND INSTALLATION >

[FOR EUROPE]

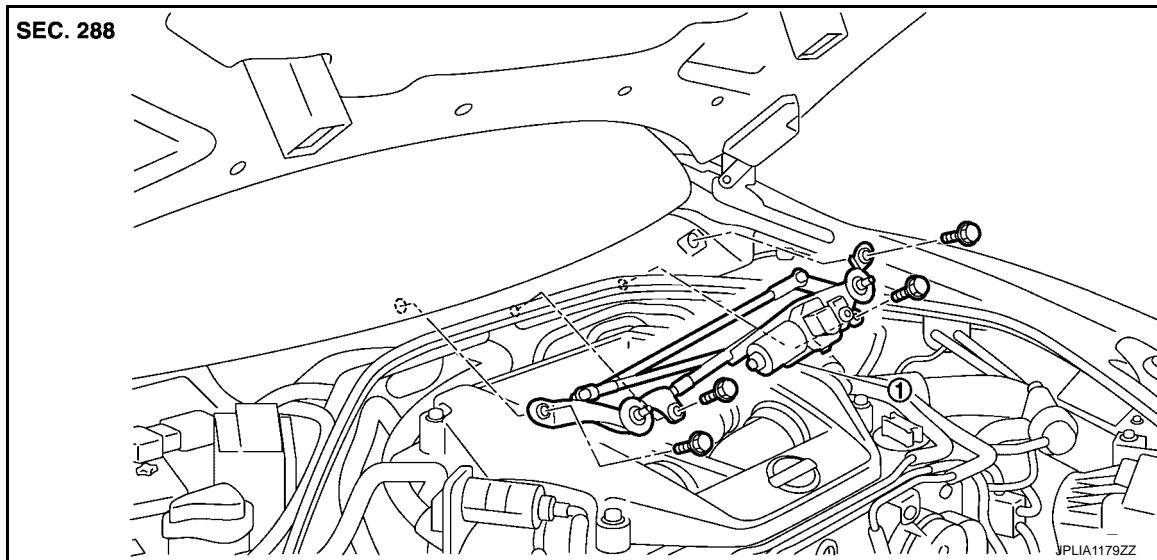
## FRONT WIPER DRIVE ASSEMBLY

### Exploded View

INFOID:000000004639902

### REMOVAL

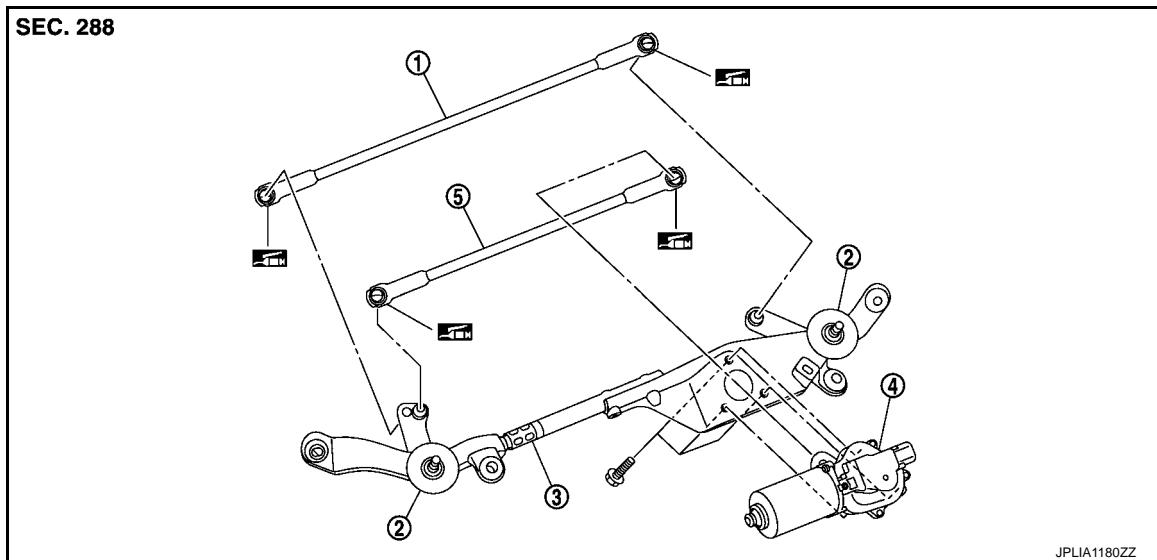
LHD models



1. Front wiper drive assembly

### DISASSEMBLY

LHD models



1. Front wiper linkage 1
2. Shaft seal
3. Front wiper frame
4. Front wiper motor
5. Front wiper linkage 2

: Multi-purpose grease or an equivalent.

### Removal and Installation

INFOID:000000004639903

### REMOVAL

1. Remove the front wiper arm. Refer to [WW-138, "Exploded View"](#).
2. Remove the cowl top cover. Refer to [EXT-26, "Exploded View"](#).

# FRONT WIPER DRIVE ASSEMBLY

[FOR EUROPE]

## < REMOVAL AND INSTALLATION >

3. Remove the font wiper drive assembly mounting bolts.
4. Disconnect the front wiper motor connector.
5. Remove the front wiper drive assembly from the vehicle.

## INSTALLATION

1. Install the front wiper drive assembly to the vehicle.
2. Connect the front wiper motor connector.
3. Operate the front wiper to move it to the auto stop position.
4. Install the cowl top cover. Refer to [EXT-26, "Exploded View"](#).
5. Install the front wiper arms. Refer to [WW-138, "Exploded View"](#).

## Disassembly and Assembly

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### DISASSEMBLY

1. Remove the front wiper linkage 1 and 2 from the front wiper drive assembly.

**CAUTION:**

Never bend the linkage or damage the plastic part of the ball joint when removing the wiper linkage.

2. Remove the front wiper motor mounting screws, and then remove the front wiper motor from the front wiper frame.

### ASSEMBLY

1. Connect the front wiper motor connector.
2. Operate the front wiper to move it to the auto stop position.
3. Disconnect the front wiper motor connector.
4. Install the front wiper motor to the front wiper frame.
5. Install the front wiper linkage 2 to the front wiper motor and the front wiper frame.
6. Install the front wiper linkage 1 to the front wiper frame.

**CAUTION:**

- Never drop front wiper motor or cause it to come into contact with other parts.
- Be careful for the grease condition at the front wiper motor and front wiper linkage joint (retainer). Apply Multi-purpose grease or an equivalent if necessary.

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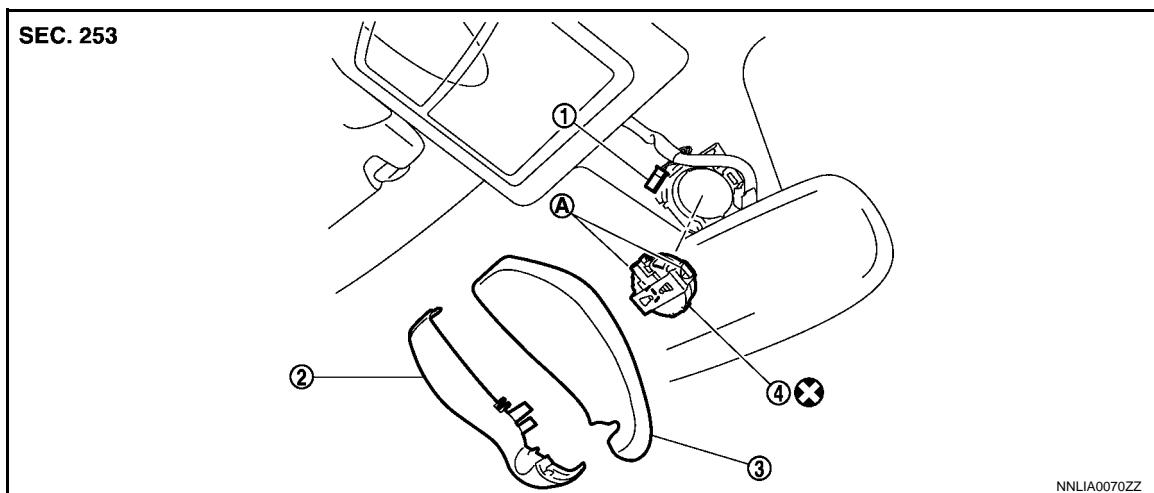
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&lt; REMOVAL AND INSTALLATION &gt;

**LIGHT & RAIN SENSOR****Exploded View**

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**CAUTION:****When the light & rain sensor is removed from windshield, the light & rain sensor cannot be re-used.****REMOVAL**

1. Light & rain sensor connector
2. Inside mirror cover (LH)
3. Inside mirror cover (RH)
4. Light & rain sensor
- A. Metal spring clip

Refer to [GI-4, "Components"](#) for symbols in the figure.

**Removal and Installation**

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**REMOVAL**

1. Remove the inside mirror cover (LH and RH).
2. Disengage the both sides of metal spring clips, and remove the light & rain sensor from the windshield.
3. Disconnect the light & rain sensor connector.

**INSTALLATION**

Install in the reverse order of removal.

**CAUTION:**

- Surface of windshield should be cleaned.
- Never touch gel/adhesive of new part.
- Lock the metal spring clips and install the light & rain sensor securely.

< REMOVAL AND INSTALLATION >

## WIPER AND WASHER SWITCH

### Exploded View

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Refer to [BCS-94, "Exploded View".](#)

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