

WW  
**SECTION**  
**WIPER & WASHER**

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# DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

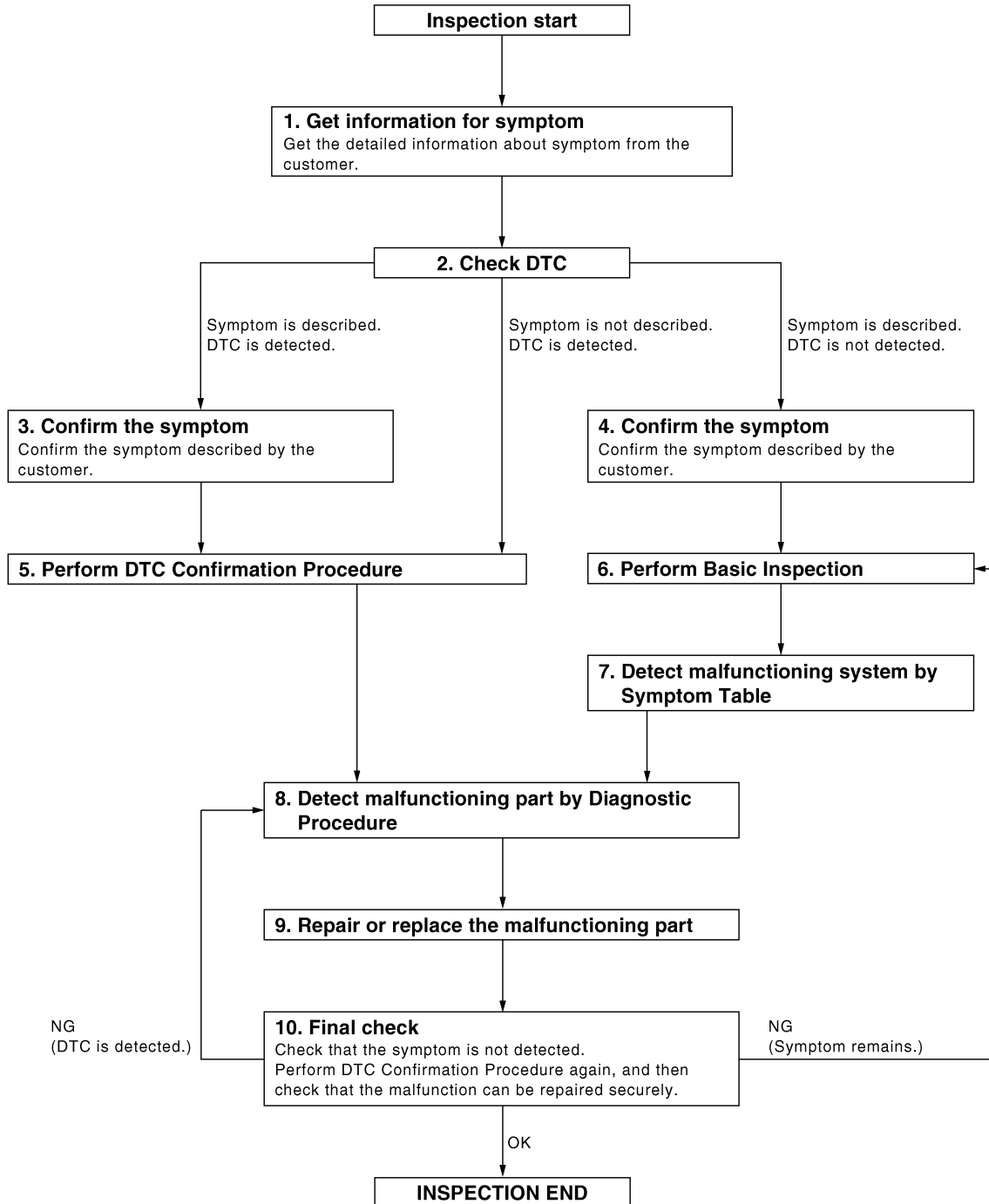
## BASIC INSPECTION

### DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

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OVERALL SEQUENCE



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DETAILED FLOW

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# DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

---

## 1. GET INFORMATION FOR SYMPTOM

---

Get the detailed information from the customer about the symptom (the condition and the environment when the incident/malfunction occurred).

>> GO TO 2

## 2. CHECK DTC

---

1. Check DTC.
2. Perform the following procedure if DTC is displayed.
  - Record DTC and freeze frame data (Print them out with CONSULT-III.)
  - Erase DTC.
  - Study the relationship between the cause detected by DTC and the symptom described by the customer.
3. Check related service bulletins for information.

Is any symptom described and any DTC detected?

Symptom is described, DTC is displayed>>GO TO 3

Symptom is described, DTC is not displayed>>GO TO 4

Symptom is not described, DTC is displayed>>GO TO 5

## 3. CONFIRM THE SYMPTOM

---

Confirm the symptom described by the customer.

Connect CONSULT-III to the vehicle in "DATA MONITOR" mode and check real time diagnosis results.

Verify relation between the symptom and the condition when the symptom is detected.

>> GO TO 5

## 4. CONFIRM THE SYMPTOM

---

Confirm the symptom described by the customer.

Connect CONSULT-III to the vehicle in "DATA MONITOR" mode and check real time diagnosis results.

Verify relation between the symptom and the condition when the symptom is detected.

>> GO TO 6

## 5. PERFORM DTC CONFIRMATION PROCEDURE

---

Perform DTC Confirmation Procedure for the displayed DTC, and then check that DTC is detected again.

At this time, always connect CONSULT-III to the vehicle, and check diagnostic results in real time.

If two or more DTCs are detected, refer to [BCS-81. "DTC Inspection Priority Chart"](#) and determine trouble diagnosis order.

**NOTE:**

- Freeze frame data is useful if the DTC is not detected.
- Perform Component Function Check if DTC Confirmation Procedure is not included in Service Manual. This simplified check procedure is an effective alternative though DTC cannot be detected during this check. If the result of Component Function Check is NG, it is the same as the detection of DTC by DTC Confirmation Procedure.

Is DTC detected?

YES >> GO TO 8

NO >> Refer to [GI-39. "Intermittent Incident"](#).

## 6. PERFORM BASIC INSPECTION

---

Perform [WW-3. "Work Flow"](#).

Inspection End>>GO TO 7

## 7. DETECT MALFUNCTIONING SYSTEM BY SYMPTOM TABLE

---

Detect malfunctioning system according to [WW-87. "Diagnosis Procedure"](#) based on the confirmed symptom in step 4, and determine the trouble diagnosis order based on possible causes and symptom.

>> GO TO 8

# DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

---

## 8. DETECT MALFUNCTIONING PART BY DIAGNOSTIC PROCEDURE

---

Inspect according to Diagnostic Procedure of the system.

**NOTE:**

The Diagnostic Procedure described is based on open circuit inspection. A short circuit inspection is also required for the circuit check in the Diagnostic Procedure.

Is malfunctioning part detected?

YES >> GO TO 9

NO >> Check voltage of related BCM terminals using CONSULT-III.

---

## 9. REPAIR OR REPLACE THE MALFUNCTIONING PART

---

1. Repair or replace the malfunctioning part.
2. Reconnect parts or connectors disconnected during Diagnostic Procedure again after repair and replacement.
3. Check DTC. If DTC is displayed, erase it.

>> GO TO 10

---

## 10. FINAL CHECK

---

When DTC was detected in step 2, perform DTC Confirmation Procedure or Component Function Check again, and then check that the malfunction has been repaired securely.

When symptom was described from the customer, refer to confirmed symptom in step 3 or 4, and check that the symptom is not detected.

Does the symptom reappear?

YES (DTC is detected)>>GO TO 8

YES (Symptom remains)>>GO TO 6

NO >> Inspection End.

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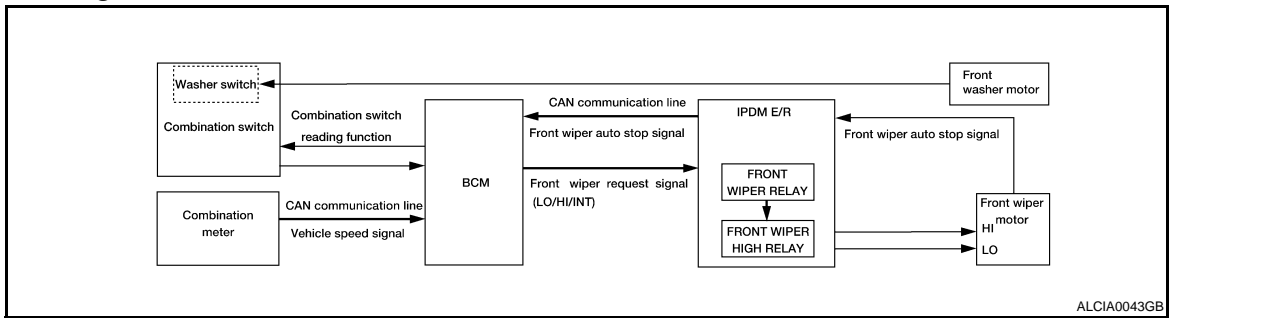
# FRONT WIPER AND WASHER SYSTEM

< FUNCTION DIAGNOSIS >

## FUNCTION DIAGNOSIS

### FRONT WIPER AND WASHER SYSTEM

#### System Diagram



#### System Description

INFOID:000000003899013

#### 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

#### 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
- 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.

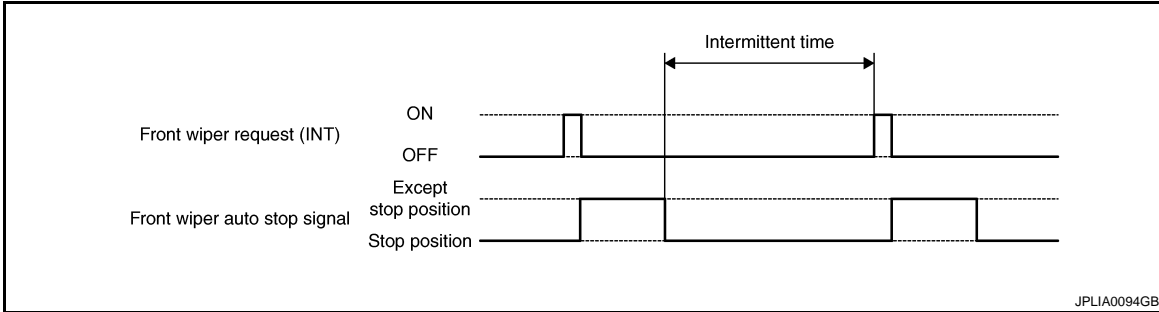
##### Front wiper INT operating condition

- Ignition switch ON
- Front wiper switch INT

# FRONT WIPER AND WASHER SYSTEM

## < FUNCTION DIAGNOSIS >

- 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 auto stop 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:

Front wiper intermittent operation can be set to the operation with vehicle speed by CONSULT-III. Refer to [BCS-24, "WIPER : CONSULT - III Function \(BCM-WIPER\)"](#).

Front wiper intermittent operation with vehicle speed

- BCM calculates the intermittent operation delay interval from the following
  - Vehicle speed signal (received from the combination meter with CAN communication)
  - Wiper intermittent dial position

| Wiper intermittent dial position | Intermittent operation interval | Intermittent operation delay Interval (s)     |  |  |                           |
|----------------------------------|---------------------------------|---|--|--|---------------------------|
|                                  |                                 | Vehicle speed                                 |  |  |                           |
|                                  |                                 | Vehicle stopped or less than 5 km/h (3.1 MPH) | 5 km/h (3.1MPH) or more or less than 35km/h (21.7 MPH) | 35 km/h (21.7 MPH) or more or less than 65km/h (40.4 MPH)* | 65 km/h (40.4MPH) or more |
| 1                                | Short<br>↑                      | 0.8   | 0.6  | 0.4  | 0.24                      |
| 2                                |                                 | 4   | 3  | 2  | 1.2                       |
| 3                                |                                 | 10  | 7.5  | 5  | 3                         |
| 4                                |                                 | 16  | 12   | 8  | 4.8                       |
| 5                                |                                 | 24  | 18   | 12   | 7.2                       |
| 6                                | Long<br>↓                       | 32  | 24   | 16   | 9.6                       |
| 7                                |                                 | 42  | 31.5   | 21   | 12.6                      |

\*: When without vehicle speed setting

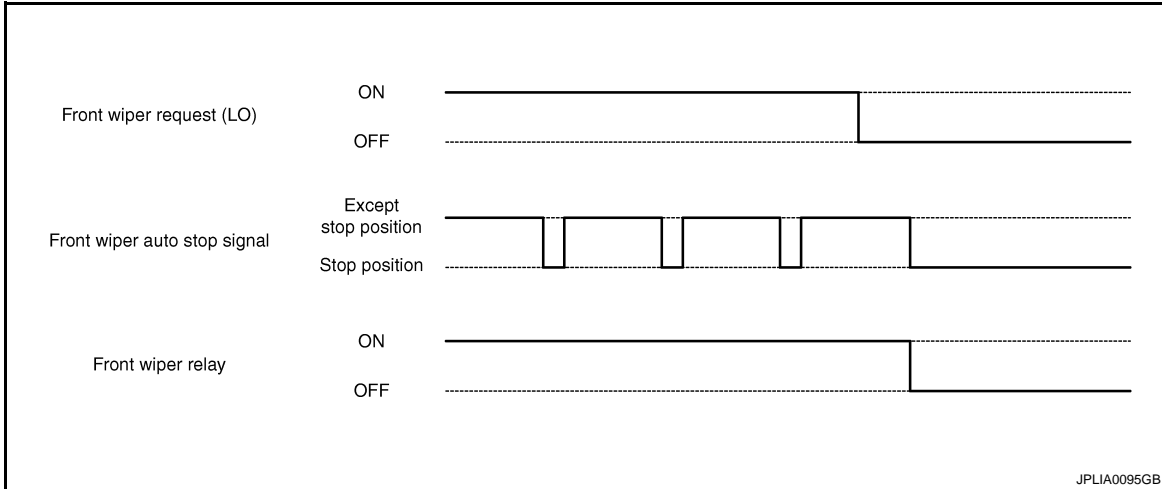
## FRONT WIPER AUTO STOP OPERATION

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

# FRONT WIPER AND WASHER SYSTEM

## < FUNCTION DIAGNOSIS >

- 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 is OFF.
- IPDM E/R turns the front wiper relay OFF when the ignition switch is 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 front washer motor is grounded through the combination switch when the front washer switch is 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-35. "Fail Safe"](#).

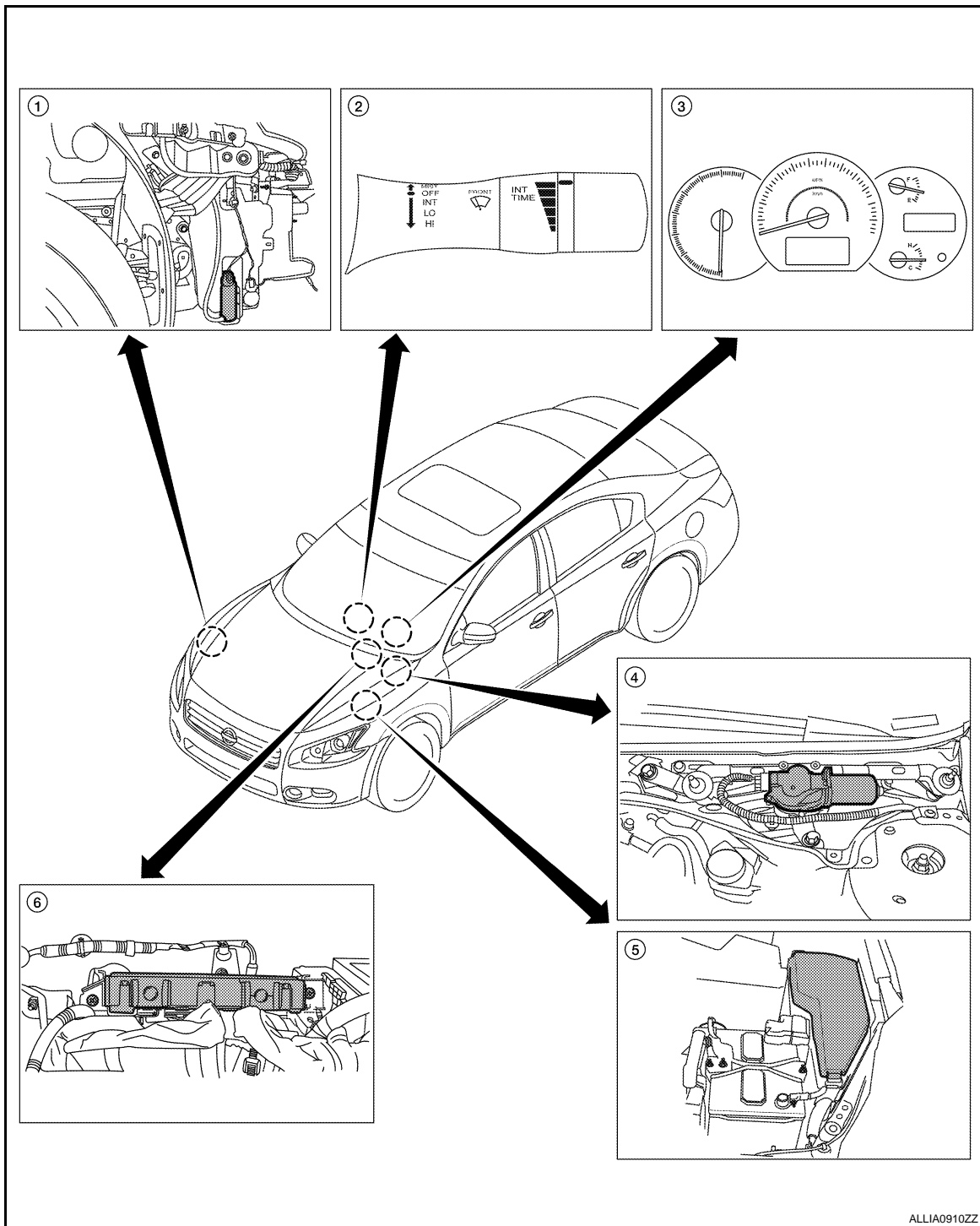


# FRONT WIPER AND WASHER SYSTEM

< FUNCTION DIAGNOSIS >

## Component Parts Location

INFOID:000000003899014



- |   |  |  |
|---|--|--|
| 1. Front washer motor E226 (view with front bumper cover removed) | 2. Combination switch (wiper switch) M28 | 3. Combination meter M24                                       |
| 4. Front wiper motor E25  | 5. IPDM E/R E17, E18, E20                | 6. BCM M16, M17, M18, M19 (view with instrument panel removed) |

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# FRONT WIPER AND WASHER SYSTEM

< FUNCTION DIAGNOSIS >

## Component Description

INFOID:000000003899015

| Part  | Description   |
|---|---|
| BCM   | <ul style="list-style-type: none"><li>• Judges the 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>                                |
| Combination switch<br>(Wiper & washer switch) | Refer to <a href="#">WW-6, "System Description"</a> .   |
| Combination meter                             | Transmits the vehicle speed signal to BCM with CAN communication.   |

# DIAGNOSIS SYSTEM (BCM)

< FUNCTION DIAGNOSIS >

## DIAGNOSIS SYSTEM (BCM)

### COMMON ITEM

#### COMMON ITEM : Diagnosis Description

INFOID:000000004351853

#### BCM CONSULT-III FUNCTION

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-DIAG RESULTS     | Displays the diagnosis results judged by BCM.                            |
| CAN DIAG SUPPORT MNTR | Monitors the reception status of CAN communication viewed from BCM.      |
| 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         | This function is not used even though it is displayed.                   |

#### 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.

| System                               | Sub system selection item | Diagnosis mode |              |             |
|--------------------------------------|---------------------------|----------------|--------------|-------------|
|                                      |                           | WORK SUPPORT   | DATA MONITOR | ACTIVE TEST |
| Door lock                            | DOOR LOCK                 | ×              | ×            | ×           |
| Rear window defogger                 | REAR DEFOGGER             |                | ×            | ×           |
| Warning chime                        | BUZZER                    |                | ×            | ×           |
| Interior room lamp timer             | INT LAMP                  | ×              | ×            | ×           |
| Exterior lamp                        | HEADLAMP                  | ×              | ×            | ×           |
| Wiper and washer                     | WIPER                     | ×              | ×            | ×           |
| Turn signal and hazard warning lamps | FLASHER                   | ×              | ×            | ×           |
| Air conditioner                      | AIR CONDITONER            |                | ×            |             |
| Intelligent Key system               | INTELLIGENT KEY           | ×              | ×            | ×           |
| Combination switch                   | COMB SW                   |                | ×            |             |
| BCM                                  | BCM                       | ×              |              |             |
| Immobilizer                          | IMMU                      |                | ×            | ×           |
| Interior room lamp battery saver     | BATTERY SAVER             | ×              | ×            | ×           |
| Trunk open                           | TRUNK                     |                | ×            |             |
| Vehicle security system              | THEFT ALM                 | ×              | ×            | ×           |
| RAP system                           | RETAINED PWR              |                | ×            |             |
| Signal buffer system                 | SIGNAL BUFFER             |                | ×            | ×           |
| TPMS                                 | AIR PRESSURE MONITOR      | ×              | ×            |             |

#### COMMON ITEM : CONSULT-III Function

INFOID:000000004351854

#### ECU IDENTIFICATION

Displays the BCM part No.

#### SELF-DIAG RESULT

Refer to [BCS-82, "DTC Index"](#).

#### WIPER

# DIAGNOSIS SYSTEM (BCM)

< FUNCTION DIAGNOSIS >

WIPER : CONSULT - III Function (BCM-WIPER)

INFOID:000000004351856

## WORK SUPPORT

| Service item        | Setting item | Description   |
|---------------------|--------------|---|
| WIPER SPEED SETTING | ON           | With vehicle speed<br>(Front wiper intermittent time linked with the vehicle speed and wiper dial position) |
|                     | OFF*         | Without vehicle speed<br>(Front wiper intermittent time linked with the wiper dial position)                |

\* : Factory setting

## DATA MONITOR

| Monitor Item<br>[Unit]    | Description  |
|---------------------------|--|
| PUSH SW                   | Displays the status of the engine switch (push switch) judged by BCM.                                  |
| VEH SPEED 1<br>[km/h]     | Displays the value of the vehicle speed signal received from combination meter with CAN communication. |
| FR WIPER HI<br>[OFF/ON]   | Status of each switch judged by BCM using the combination switch reading function                      |
| FR WIPER LOW<br>[OFF/ON]  |  |
| FR WASHER SW<br>[OFF/ON]  |  |
| FR WIPER INT<br>[OFF/ON]  |  |
| FR WIPER STOP<br>[OFF/ON] | Displays the status of the front wiper auto stop signal received from IPDM E/R with CAN communication. |
| INT VOLUME<br>[1 - 7]     | Status of each switch judged by BCM using the combination switch reading function                      |

## 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.  |

# DIAGNOSIS SYSTEM (IPDM E/R)

< FUNCTION DIAGNOSIS >

## DIAGNOSIS SYSTEM (IPDM E/R)

### Diagnosis Description

INFOID:000000004351858

### 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.

- Oil pressure warning lamp
- Front wiper (LO, HI)
- Parking lamps
- License plate lamps
- Tail lamps
- Front fog lamps (if equipped)
- Headlamps (LO, HI)
- A/C compressor (magnet clutch)
- Cooling fans

#### 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 ignition switch OFF.
3. Turn the ignition switch ON, and within 20 seconds, press the front door switch LH 10 times. Then turn the ignition switch OFF.  
**CAUTION:**  
**Close front door RH.**
4. Turn the ignition switch ON within 10 seconds. After that the horn sounds once and the auto active test starts.
5. The oil pressure warning lamp starts blinking when the auto active test starts.
6. 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 ignition switch OFF.

#### CAUTION:

- If auto active test mode cannot be actuated, check door switch system. Refer to [DLK-68, "Component Function Check"](#).
- Do not start the engine.

#### Inspection in Auto Active Test Mode

When auto active test mode is actuated, the following 6 steps are repeated 3 times.

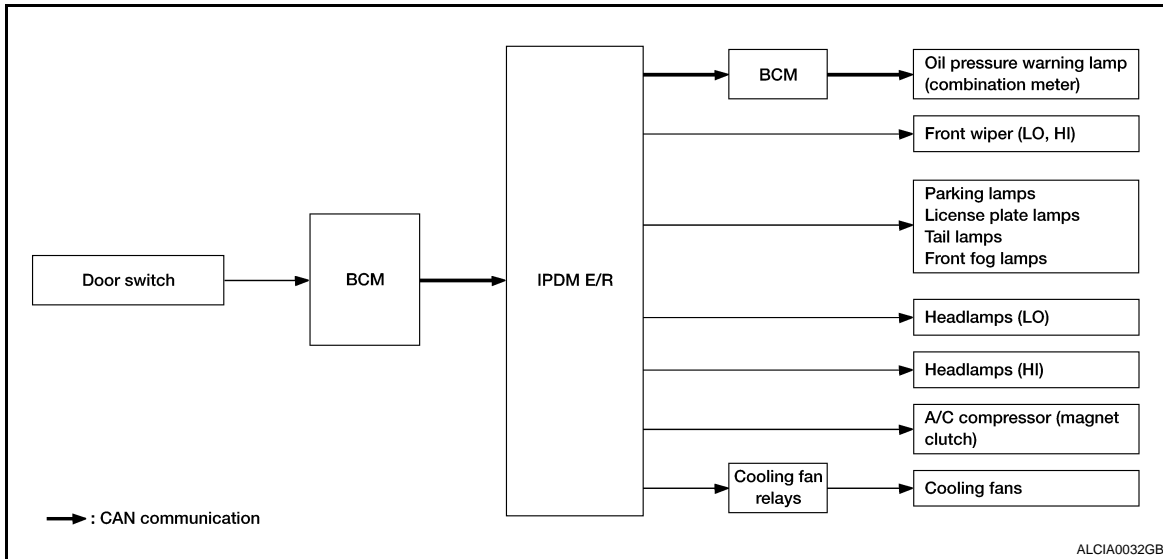
| Operation sequence | Inspection Location   | Operation  |
|--------------------|---|--|
| 1                  | Oil pressure warning lamp   | Blinks continuously during operation of auto active test |
| 2                  | Front wiper   | LO for 5 seconds → HI for 5 seconds                      |
| 3                  | <ul style="list-style-type: none"> <li>• Parking lamps</li> <li>• License plate lamps</li> <li>• Tail lamps</li> <li>• Front fog lamps (if equipped)</li> </ul> | 10 seconds   |
| 4                  | Headlamps   | LO ↔ HI 5 times  |
| 5                  | A/C compressor (magnet clutch)  | ON ↔ OFF 5 times   |
| 6*                 | Cooling fans  | 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)

## < FUNCTION DIAGNOSIS >

### 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 <ul style="list-style-type: none"> <li>• Parking lamps</li> <li>• License plate lamps</li> <li>• Tail lamps</li> <li>• Front fog lamps (if equipped)</li> <li>• Headlamp (HI, LO)</li> <li>• Front wiper</li> </ul> | Perform auto active test.<br>Does the applicable system operate? | YES<br>BCM signal input circuit  |
|  |  | NO<br>• Lamp or motor<br>• Lamp or motor ground circuit<br>• Harness or connector between IPDM E/R and applicable system<br>• IPDM E/R                                 |
| A/C compressor does not operate  | Perform auto active test.<br>Does the magnet clutch operate?     | YES<br>• Combination meter signal input circuit<br>• CAN communication signal between combination meter and ECM<br>• CAN communication signal between ECM and IPDM E/R |
|  |  | NO<br>• Magnet clutch<br>• Harness or connector between IPDM E/R and magnet clutch<br>• IPDM E/R   |

# DIAGNOSIS SYSTEM (IPDM E/R)

## < FUNCTION DIAGNOSIS >

| Symptom                                    | Inspection contents  |     | Possible cause   |
|--|--|-----|--|
| Oil pressure warning lamp does not operate | Perform auto active test.<br>Does the oil pressure warning lamp blink? | YES | <ul style="list-style-type: none"> <li>• Harness or connector between IPDM E/R and oil pressure switch</li> <li>• Oil pressure switch</li> <li>• IPDM E/R</li> </ul>   |
|  |  | NO  | <ul style="list-style-type: none"> <li>• CAN communication signal between IPDM E/R and BCM</li> <li>• CAN communication signal between BCM and combination meter</li> <li>• Combination meter</li> </ul>   |
| Cooling fan does not operate               | Perform auto active test.<br>Does the cooling fan operate?             | YES | <ul style="list-style-type: none"> <li>• ECM signal input circuit</li> <li>• CAN communication signal between ECM and IPDM E/R</li> </ul>  |
|  |  | NO  | <ul style="list-style-type: none"> <li>• Cooling fan</li> <li>• Harness or connector between cooling fan and cooling fan relays</li> <li>• Cooling fan relays</li> <li>• Harness or connector between IPDM E/R and cooling fan relays</li> <li>• IPDM E/R</li> </ul> |

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

INFOID:000000004351859

### 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

Refer to [PCS-37. "DTC Index"](#).

### DATA MONITOR

Monitor item

| Monitor Item<br>[Unit]     | MAIN SIGNALS | Description   |
|----------------------------|--------------|---|
| MOTOR FAN REQ<br>[1,2,3,4] | ×            | Displays the value of the cooling fan speed signal received from ECM via CAN communication.       |
| AC COMP REQ<br>[Off/On]    | ×            | Displays the status of the A/C compressor request signal received from ECM via CAN communication. |
| TAIL&CLR REQ<br>[Off/On]   | ×            | Displays the status of the position light request signal received from BCM via CAN communication. |
| HL LO REQ<br>[Off/On]      | ×            | Displays the status of the low beam request signal received from BCM via CAN communication.       |
| HL HI REQ<br>[Off/On]      | ×            | Displays the status of the high beam request signal received from BCM via CAN communication.      |

## DIAGNOSIS SYSTEM (IPDM E/R)

### < FUNCTION DIAGNOSIS >

| Monitor Item<br>[Unit]           | MAIN SIG-<br>NALS | Description   |
|----------------------------------|-------------------|---|
| FR FOG REQ<br>[Off/On]           | ×                 | Displays the status of the front fog light request signal received from BCM via CAN communication.    |
| FR WIP REQ<br>[Stop/1LOW/Low/Hi] | ×                 | Displays the status of the front wiper request signal received from BCM via CAN communication.        |
| WIP AUTO STOP<br>[STOP P/ACT P]  | ×                 | Displays the status of the front wiper auto stop signal judged by IPDM E/R.                           |
| WIP PROT<br>[Off/BLOCK]          | ×                 | Displays the status of the front wiper fail-safe operation judged by IPDM E/R.                        |
| IGN RLY1 -REQ<br>[Off/On]        |                   | Displays the status of the ignition switch ON signal received from BCM via CAN communication.         |
| IGN RLY<br>[Off/On]              | ×                 | Displays the status of the ignition relay judged by IPDM E/R.   |
| PUSH SW<br>[Off/On]              |                   | Displays the status of the push-button ignition switch judged by IPDM E/R.                            |
| INTER/NP SW<br>[Off/On]          |                   | Displays the status of the CVT shift position judged by IPDM E/R.                                     |
| ST RLY CONT<br>[Off/On]          |                   | Displays the status of the starter relay status signal received from BCM via CAN communication.       |
| IHBT RLY -REQ<br>[Off/On]        |                   | Displays the status of the starter control relay signal received from BCM via CAN communication.      |
| ST/INHI RLY<br>[Off/ ST /INHI]   |                   | Displays the status of the starter relay and starter control relay judged by IPDM E/R.                |
| DETENT SW<br>[Off/On]            |                   | Displays the status of the CVT device (detention switch) judged by IPDM E/R.                          |
| S/L RLY -REQ<br>[Off/On]         |                   | Displays the status of the steering lock relay request received from BCM via CAN communication.       |
| S/L STATE<br>[LOCK/UNLK/UNKWN]   |                   | Displays the status of the electronic steering column lock judged by IPDM E/R.                        |
| DTRL REQ<br>[Off]                |                   | <b>NOTE:</b><br>This item is displayed, but cannot be monitored.                                      |
| OIL P SW<br>[Open/Close]         |                   | Displays the status of the oil pressure switch judged by IPDM E/R.                                    |
| THFT HRN REQ<br>[Off/On]         |                   | Displays the status of the theft warning horn request signal received from BCM via CAN communication. |
| HORN CHIRP<br>[Off/On]           |                   | Displays the status of the horn reminder signal received from BCM via CAN communication.              |
| CRNRNG LMP REQ<br>[Off]          |                   | <b>NOTE:</b><br>This item is displayed, but cannot be monitored.                                      |
| HOOD SW<br>[Off/On]              |                   | <b>NOTE:</b><br>This item is displayed, but cannot be monitored.                                      |
| HL WASHER REQ<br>[Off/On]        |                   | <b>NOTE:</b><br>This item is displayed, but cannot be monitored.                                      |

### ACTIVE TEST

Test item

| Test item      | Operation | Description  |
|----------------|-----------|--|
| CORNERING LAMP | Off       | <b>NOTE:</b><br>This item is displayed, but cannot be monitored. |
|                | LH        |  |
|                | RH        |  |
| HORN           | On        | Operates horn relay 1 and horn relay 2 for 20 ms.                |



## DIAGNOSIS SYSTEM (IPDM E/R)

### < FUNCTION DIAGNOSIS >

| Test item        | Operation | Description   |
|------------------|-----------|---|
| 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.            |
| 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       | Operates the front fog lamp relay.  |
| HEAD LAMP WASHER | ON        | <b>NOTE:</b><br>This item is displayed, but cannot be monitored.                          |

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# WIPER AND WASHER FUSE

< COMPONENT DIAGNOSIS >

## COMPONENT DIAGNOSIS

### WIPER AND WASHER FUSE

#### Description

INFOID:000000003899021

#### Fuse list

| Unit               | Location | Fuse No. | Capacity |
|--------------------|----------|----------|----------|
| Front wiper motor  | IPDM E/R | 55       | 30 A     |
| Front washer motor | IPDM E/R | 38       | 10 A     |

#### Diagnosis Procedure

INFOID:000000003899022

#### 1. CHECK FUSES

Check that the following fuses are not blown.

| Unit               | Location | Fuse No. | Capacity |
|--------------------|----------|----------|----------|
| Front wiper motor  | IPDM E/R | 55       | 30 A     |
| Front washer motor | IPDM E/R | 38       | 10 A     |

#### Is the fuse blown?

- YES >> Replace the blown fuse after repairing the affected circuit.
- NO >> The fuse is normal.

# FRONT WIPER MOTOR LO CIRCUIT

< COMPONENT DIAGNOSIS >

## FRONT WIPER MOTOR LO CIRCUIT

### Component Function Check

INFOID:000000003899023

#### 1. CHECK FRONT WIPER LO OPERATION

##### ⊗ IPDM E/R AUTO ACTIVE TEST

1. Start IPDM E/R auto active test. Refer to [PCS-13, "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. While operating the test item, check front wiper LO operation and OFF.

**LO** : Front wiper LO operation

**OFF** : Stop the front wiper.

Does the front wiper operate?

- YES >> Front wiper motor LO circuit is normal.  
 NO >> Refer to [WW-19, "Diagnosis Procedure"](#).

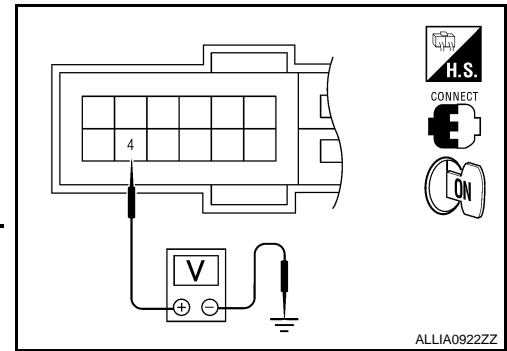
### Diagnosis Procedure

INFOID:000000003899024

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

##### Ⓜ CONSULT-III ACTIVE TEST

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



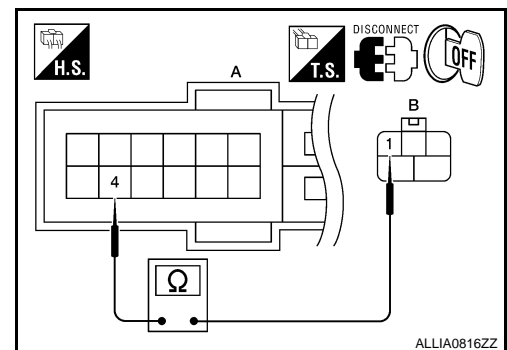
| Terminals |          | Test item   | Voltage (V) (Approx.) |
|-----------|----------|-------------|-----------------------|
| (+)       | (-)      |             |                       |
| IPDM E/R  |          | FRONT WIPER | Battery voltage       |
| Connector | Terminal |             |                       |
| E18       | 4        |             |                       |
|           |          | LO          | Battery voltage       |
|           |          | OFF         | 0V                    |

Is the measurement normal?

- YES >> GO TO 2  
 NO >> Replace IPDM E/R. Refer to [PCS-40, "Removal and Installation"](#).

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

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



| IPDM E/R  |          | Front wiper motor |          | Continuity |
|-----------|----------|-------------------|----------|------------|
| Connector | Terminal | Connector         | Terminal |            |
| E18 (A)   | 4        | E25 (B)           | 1        | Yes        |

Does continuity exist?

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

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

# FRONT WIPER MOTOR LO CIRCUIT

## < COMPONENT DIAGNOSIS >

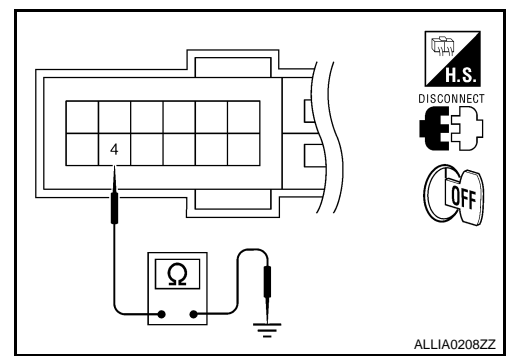
Check continuity between IPDM E/R harness connector and ground.

| IPDM E/R  |          | Ground | Continuity |
|-----------|----------|--------|------------|
| Connector | Terminal |        |            |
| E18       | 4        |        | No         |

Does continuity exist?

YES >> Repair or replace harness.

NO >> Replace front wiper motor. Refer to [WW-93. "FRONT WIPER DRIVE ASSEMBLY : Removal and Installation"](#).



# FRONT WIPER MOTOR HI CIRCUIT

< COMPONENT DIAGNOSIS >

## FRONT WIPER MOTOR HI CIRCUIT

### Component Function Check

INFOID:000000003899025

#### 1. CHECK FRONT WIPER HI OPERATION

##### ⊗ IPDM E/R AUTO ACTIVE TEST

1. Start IPDM E/R auto active test. Refer to [PCS-13, "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. While operating the test item, check front wiper HI operation and OFF.

**HI** : Front wiper HI operation

**OFF** : Stop the front wiper.

Does the front wiper operate?

YES >> The front wiper motor HI circuit is normal.

NO >> Refer to [WW-21, "Diagnosis Procedure"](#).

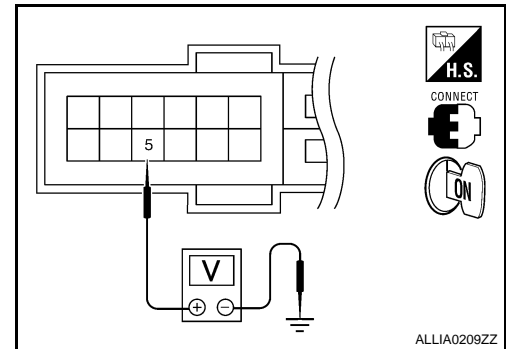
### Diagnosis Procedure

INFOID:000000003899026

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

##### Ⓜ CONSULT-III ACTIVE TEST

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



| Terminals |          | Test item   | Voltage (V)<br>(Approx.) |
|-----------|----------|-------------|--------------------------|
| (+)       | (-)      |             |                          |
| IPDM E/R  |          | FRONT WIPER | Battery voltage          |
| Connector | Terminal |             |                          |
| E18       | 5        |             |                          |
|           |          | HI          | Battery voltage          |
|           |          | OFF         | 0V                       |

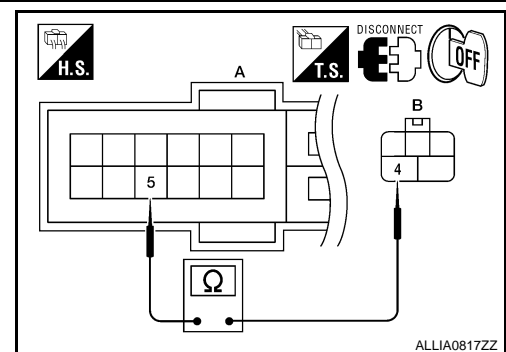
Is the measurement normal?

YES >> GO TO 2

NO >> Replace IPDM E/R. Refer to [PCS-40, "Removal and Installation"](#).

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

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



| IPDM E/R  |          | Front wiper motor |          | Continuity |
|-----------|----------|-------------------|----------|------------|
| Connector | Terminal | Connector         | Terminal |            |
| E18 (A)   | 5        | E25 (B)           | 4        | Yes        |

Does continuity exist?

YES >> GO TO 3

NO >> Repair or replace harness.

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

# FRONT WIPER MOTOR HI CIRCUIT

## < COMPONENT DIAGNOSIS >

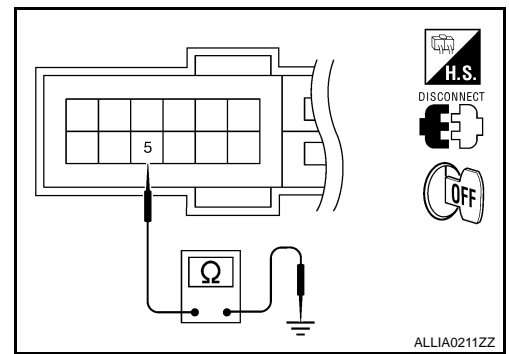
Check continuity between IPDM E/R harness connector and ground.

| IPDM E/R  |          | Ground | Continuity |
|-----------|----------|--------|------------|
| Connector | Terminal |        |            |
| E18       | 5        |        | No         |

Does continuity exist?

YES >> Repair or replace harness.

NO >> Replace front wiper motor. Refer to [WW-93. "FRONT WIPER DRIVE ASSEMBLY : Removal and Installation"](#).



# FRONT WIPER AUTO STOP SIGNAL CIRCUIT

< COMPONENT DIAGNOSIS >

## FRONT WIPER AUTO STOP SIGNAL CIRCUIT

### Component Function Check

INFOID:000000003899027

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

#### CONSULT-III DATA MONITOR

1. Select "FRONT WIPER 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 |
|---------------|-------------------|---------------|----------------|
| FR WIPER STOP | Front wiper motor | Stop position | STOP P         |
|               |                   | Except        | ACT P          |

Is the status of item normal?

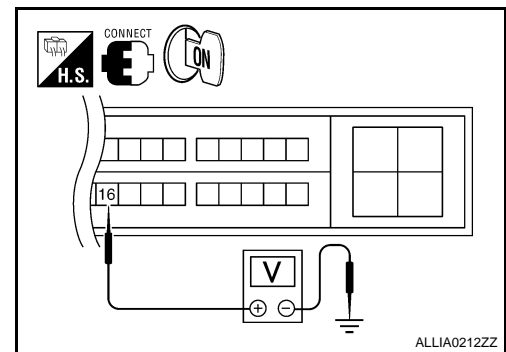
- YES >> Auto stop signal circuit is normal.  
 NO >> Refer to [WW-23, "Diagnosis Procedure"](#).

### Diagnosis Procedure

INFOID:000000003899028

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

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



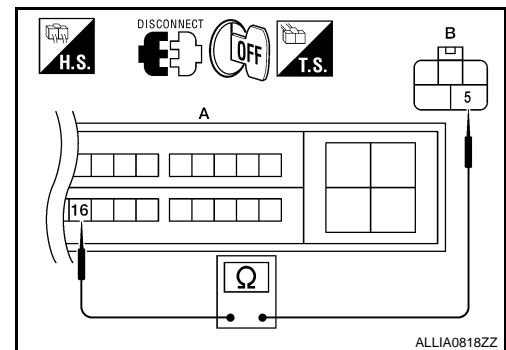
| Terminals |          | Voltage (V)<br>(Approx.) |
|-----------|----------|--------------------------|
| (+)       | (-)      |                          |
| IPDM E/R  |          | Ground                   |
| Connector | Terminal |                          |
| E18       | 16       |                          |
|           |          | Battery voltage          |

Is the measurement normal?

- YES >> GO TO 2  
 NO >> Replace IPDM E/R. Refer to [PCS-40, "Removal and Installation"](#).

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

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



| IPDM E/R  |          | Front wiper motor |          | Continuity |
|-----------|----------|-------------------|----------|------------|
| Connector | Terminal | Connector         | Terminal |            |
| E18 (A)   | 16       | E25 (B)           | 5        | Yes        |

Does continuity exist?

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

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

# FRONT WIPER AUTO STOP SIGNAL CIRCUIT

## < COMPONENT DIAGNOSIS >

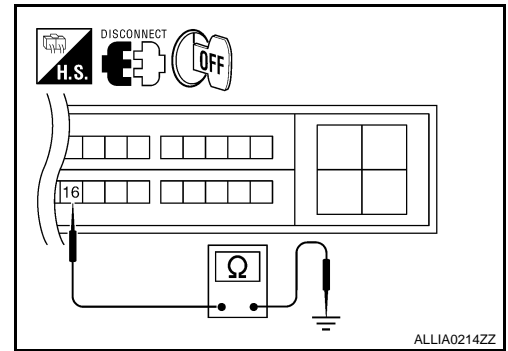
Check continuity between IPDM E/R harness connector and ground.

| IPDM E/R  |          | Ground | Continuity |
|-----------|----------|--------|------------|
| Connector | Terminal |        |            |
| E18       | 16       |        | No         |

Does continuity exist?

YES >> Repair or replace harness.

NO >> Replace front wiper motor. Refer to [WW-93. "FRONT WIPER DRIVE ASSEMBLY : Removal and Installation"](#).





# FRONT WIPER MOTOR GROUND CIRCUIT

< COMPONENT DIAGNOSIS >

## FRONT WIPER MOTOR GROUND CIRCUIT

### Diagnosis Procedure

INFOID:000000003899029

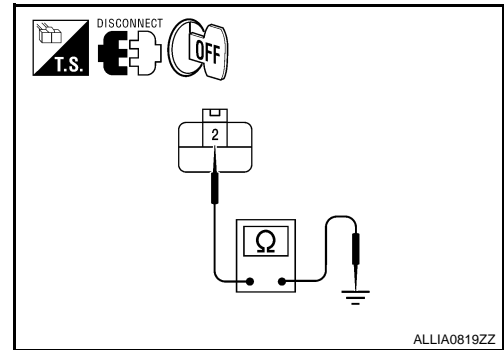
#### 1. CHECK FRONT WIPER MOTOR (GND) OPEN CIRCUIT

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

| Front wiper motor |          | Ground | Continuity |
|-------------------|----------|--------|------------|
| Connector         | Terminal |        |            |
| E25               | 2        |        | Yes        |

Does continuity exist?

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



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# FRONT WIPER AND WASHER SYSTEM

< COMPONENT DIAGNOSIS >

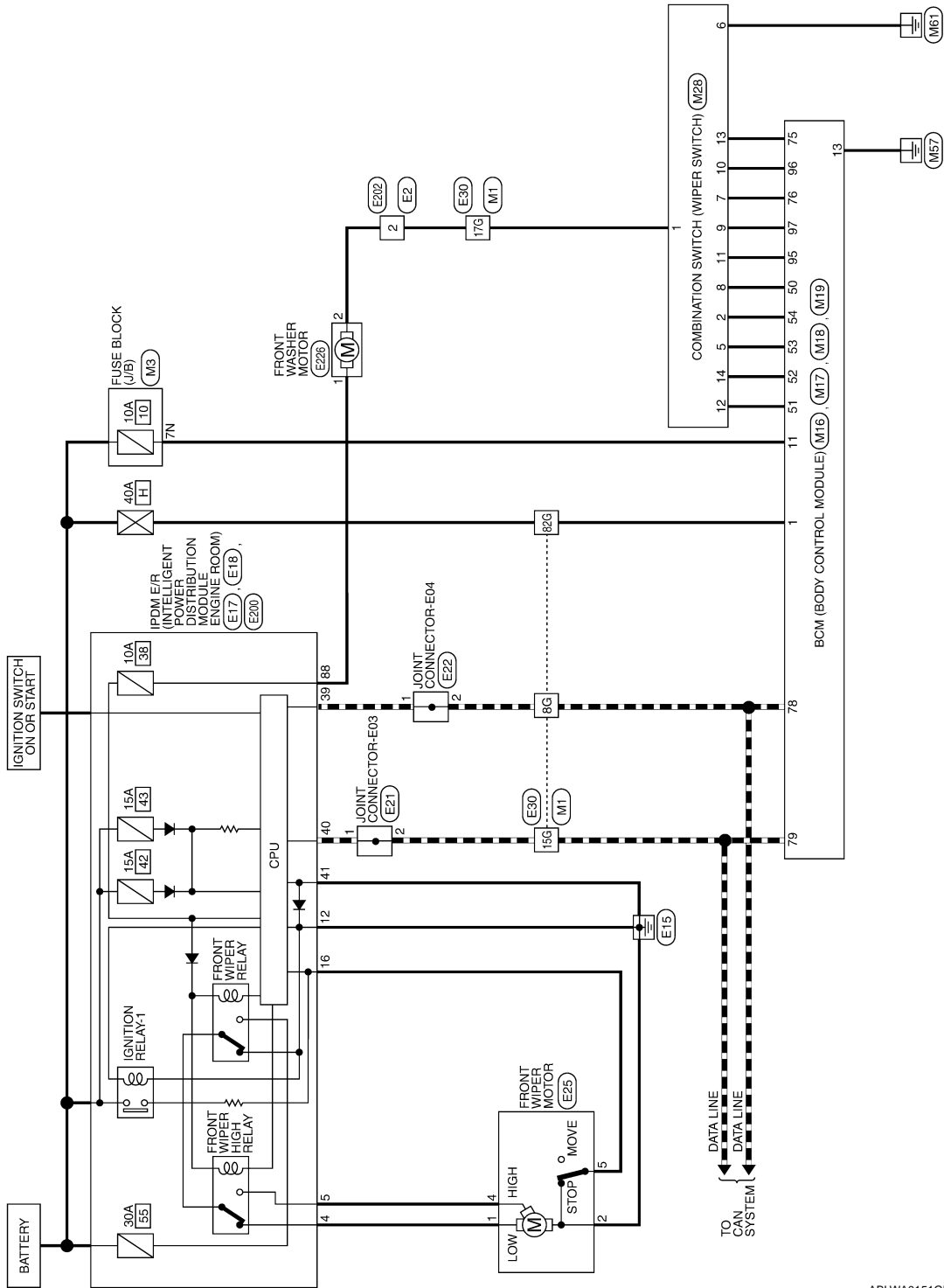
## FRONT WIPER AND WASHER SYSTEM

### Wiring Diagram

INFOID:000000003899030

--- : DATA LINE

### FRONT WIPER AND WASHER SYSTEM



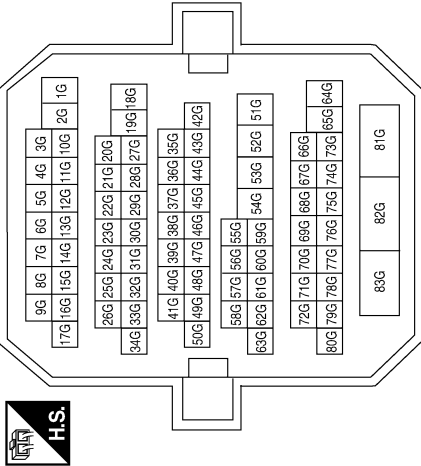
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# FRONT WIPER AND WASHER SYSTEM

< COMPONENT DIAGNOSIS >

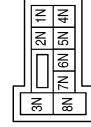
## FRONT WIPER AND WASHER SYSTEM CONNECTORS

|                 |              |
|-----------------|--------------|
| Connector No.   | M1           |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 8G           | P             | -           |
| 15G          | L             | -           |
| 17G          | R/L           | -           |
| 82G          | W/B           | -           |

|                 |                  |
|-----------------|------------------|
| Connector No.   | M3               |
| Connector Name  | FUSE BLOCK (J/B) |
| Connector Color | WHITE            |



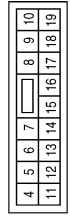
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 7N           | Y/R           | -           |

|                 |                           |
|-----------------|---------------------------|
| Connector No.   | M16                       |
| Connector Name  | BCM (BODY CONTROL MODULE) |
| Connector Color | BLACK                     |



| Terminal No. | Color of Wire | Signal Name   |
|--------------|---------------|---------------|
| 1            | W/B           | BAT POWER F/L |

|                 |                           |
|-----------------|---------------------------|
| Connector No.   | M17                       |
| Connector Name  | BCM (BODY CONTROL MODULE) |
| Connector Color | WHITE                     |



| Terminal No. | Color of Wire | Signal Name  |
|--------------|---------------|--------------|
| 11           | Y/R           | BAT BCM FUSE |
| 13           | B             | GND1         |

|                 |                           |
|-----------------|---------------------------|
| Connector No.   | M18                       |
| Connector Name  | BCM (BODY CONTROL MODULE) |
| Connector Color | GREEN                     |



| Terminal No. | Color of Wire | Signal Name    |
|--------------|---------------|----------------|
| 50           | LG/B          | COMBI SW OUT 5 |
| 51           | L/W           | COMBI SW OUT 1 |
| 52           | G/B           | COMBI SW OUT 2 |
| 53           | LG/R          | COMBI SW OUT 3 |
| 54           | G/Y           | COMBI SW OUT 4 |

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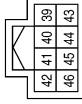
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# FRONT WIPER AND WASHER SYSTEM

< COMPONENT DIAGNOSIS >

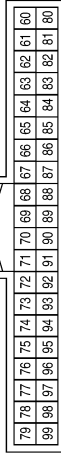
|                 |  |
|-----------------|--|
| Connector No.   | E17  |
| Connector Name  | IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) |
| Connector Color | WHITE  |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 39           | P             | CAN-L       |
| 40           | L             | CAN-H       |

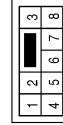
| Terminal No. | Color of Wire | Signal Name   |
|--------------|---------------|---------------|
| 96           | P/B           | COMBI SW IN 4 |
| 97           | R/B           | COMBI SW IN 2 |

|                 |                           |
|-----------------|---------------------------|
| Connector No.   | M19                       |
| Connector Name  | BCM (BODY CONTROL MODULE) |
| Connector Color | BLACK                     |



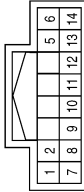
| Terminal No. | Color of Wire | Signal Name   |
|--------------|---------------|---------------|
| 75           | R/Y           | COMBI SW IN 5 |
| 76           | R/G           | COMBI SW IN 3 |
| 77           | BR            | ENG START SW  |
| 78           | P             | CAN-L         |
| 79           | L             | CAN-H         |
| 95           | R/W           | COMBI SW IN 1 |

|                 |              |
|-----------------|--------------|
| Connector No.   | E2           |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 11           | R/W           | INPUT 1     |
| 12           | L/W           | OUTPUT 1    |
| 13           | R/Y           | INPUT 5     |
| 14           | G/B           | OUTPUT 2    |

|                 |                    |
|-----------------|--------------------|
| Connector No.   | M28                |
| Connector Name  | COMBINATION SWITCH |
| Connector Color | WHITE              |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | R/L           | -           |
| 2            | G/Y           | OUTPUT 4    |
| 5            | LG/R          | OUTPUT 3    |
| 6            | B             | -           |
| 7            | R/G           | INPUT 3     |
| 8            | LG/B          | OUTPUT 5    |
| 9            | R/B           | INPUT 2     |
| 10           | P/B           | INPUT 4     |

|               |   |
|---------------|---|
| Terminal No.  | 8 |
| Color of Wire | G |
| Signal Name   | - |

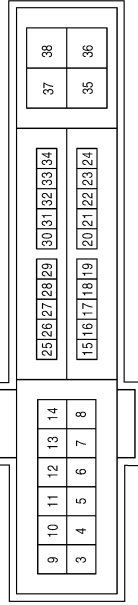
ABLIA0538GB

# FRONT WIPER AND WASHER SYSTEM

## < COMPONENT DIAGNOSIS >

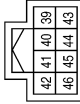
| Terminal No. | Color of Wire | Signal Name    |
|--------------|---------------|----------------|
| 12           | B             | P-GND          |
| 16           | R             | WIPER AUTOSTOP |

|                 |  |
|-----------------|--|
| Connector No.   | E18  |
| Connector Name  | IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) |
| Connector Color | WHITE  |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 4            | LG            | FR WIPER LO |
| 5            | Y             | FR WIPER HI |

|                 |  |
|-----------------|--|
| Connector No.   | E17  |
| Connector Name  | IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) |
| Connector Color | WHITE  |



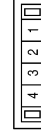
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 39           | P             | CAN-L       |
| 40           | L             | CAN-H       |
| 41           | B             | S-GND       |

|                 |                   |
|-----------------|-------------------|
| Connector No.   | E25               |
| Connector Name  | FRONT WIPER MOTOR |
| Connector Color | GRAY              |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | LG            | -           |
| 2            | B/Y           | -           |
| 3            | -             | -           |
| 4            | Y             | -           |
| 5            | R             | -           |

|                 |                     |
|-----------------|---------------------|
| Connector No.   | E22                 |
| Connector Name  | JOINT CONNECTOR-E04 |
| Connector Color | WHITE               |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | P             | -           |
| 2            | P             | -           |

|                 |                     |
|-----------------|---------------------|
| Connector No.   | E21                 |
| Connector Name  | JOINT CONNECTOR-E03 |
| Connector Color | WHITE               |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | L             | -           |
| 2            | L             | -           |

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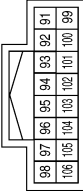
A  
B  
C  
D  
E  
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H  
I  
J  
K  
L  
M  
N  
O  
P

WW

# FRONT WIPER AND WASHER SYSTEM

## < COMPONENT DIAGNOSIS >

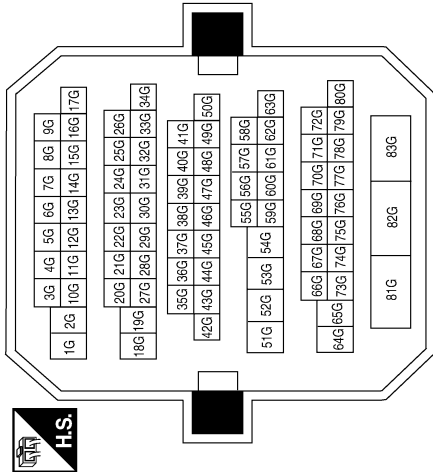
|                 |  |
|-----------------|--|
| Connector No.   | E200   |
| Connector Name  | IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) |
| Connector Color | WHITE  |

|              |               |             |
|--------------|---------------|-------------|
| Terminal No. | Color of Wire | Signal Name |
| 88           | R/W           | WASHER MTR  |

| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 8G           | P             | -           |
| 15G          | L             | -           |
| 17G          | GR            | -           |
| 82G          | LG            | -           |

|                 |              |
|-----------------|--------------|
| Connector No.   | E30          |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



|                 |                    |
|-----------------|--------------------|
| Connector No.   | E226               |
| Connector Name  | FRONT WASHER MOTOR |
| Connector Color | BLACK              |




| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | R/W           | -           |
| 2            | R/L           | -           |

|                 |              |
|-----------------|--------------|
| Connector No.   | E202         |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |




| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 2            | R/L           | -           |

ABLIA0540GB

# BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

## ECU DIAGNOSIS

### BCM (BODY CONTROL MODULE)

Reference Value

INFOID:000000004351873

#### VALUES ON THE DIAGNOSIS TOOL

| 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                   | OFF                              |
|                | Front wiper switch INT                              | ON                               |
| FR WIPER STOP  | Front wiper is not in STOP position                 | OFF                              |
|                | Front wiper is in STOP position                     | ON                               |
| INT VOLUME     | Wiper intermittent dial is in a dial position 1 - 7 | Wiper intermittent 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                               |
| FR FOG SW      | Front fog lamp switch OFF                           | OFF                              |
|                | Front 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     | Rear door RH closed                                 | OFF                              |
|                | Rear door RH opened                                 | ON                               |
| DOOR SW-RL     | Rear door LH closed                                 | OFF                              |
|                | Rear door LH opened                                 | ON                               |

## BCM (BODY CONTROL MODULE)

### < ECU DIAGNOSIS >

| Monitor Item   | Condition   | Value/Status |
|----------------|---|--------------|
| DOOR SW-BK     | <b>NOTE:</b><br>This item is displayed, but cannot be 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  | Other than driver door key cylinder LOCK position                                 | OFF          |
|                | Driver door key cylinder LOCK position  | ON           |
| KEY CYL UN-SW  | Other than driver door key cylinder UNLOCK position                               | OFF          |
|                | Driver door key cylinder UNLOCK position  | ON           |
| KEY CYL SW-TR  | <b>NOTE:</b><br>This item is displayed, but cannot be monitored.                  | OFF          |
| HAZARD SW      | When hazard switch is not pressed   | OFF          |
|                | When hazard switch is pressed   | ON           |
| REAR DEF SW    | When rear window defogger switch is pressed                                       | ON           |
| 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           |
| RKE-LOCK       | When LOCK button of Intelligent Key is not pressed                                | OFF          |
|                | When LOCK button of Intelligent Key is pressed                                    | ON           |
| RKE-UNLOCK     | When UNLOCK button of Intelligent Key is not pressed                              | OFF          |
|                | When UNLOCK button of Intelligent Key is pressed                                  | ON           |
| RKE-TR/BD      | When TRUNK OPEN button of Intelligent Key is not pressed                          | OFF          |
|                | When TRUNK OPEN button of Intelligent Key is pressed                              | ON           |
| RKE-PANIC      | When PANIC button of Intelligent Key is not pressed                               | OFF          |
|                | When PANIC button of Intelligent Key is pressed                                   | ON           |
| RKE-P/W OPEN   | When UNLOCK button of Intelligent Key is not pressed and held                     | OFF          |
|                | When UNLOCK button of Intelligent Key is pressed and held                         | ON           |
| RKE-MODE CHG   | When LOCK/UNLOCK button of Intelligent Key is not pressed and held simultaneously | OFF          |
|                | When LOCK/UNLOCK button of Intelligent Key is pressed and held simultaneously     | ON           |
| OPTICAL SENSOR | When outside of the vehicle is bright   | Close to 5 V |
|                | When outside of the vehicle is dark   | Close to 0 V |
| REQ SW-DR      | When front door request switch is not pressed (driver side)                       | OFF          |
|                | When front door request switch is pressed (driver side)                           | ON           |
| REQ SW-AS      | When front door request switch is not pressed (passenger side)                    | OFF          |
|                | When front door request switch is pressed (passenger side)                        | ON           |
| REQ SW-RL      | When rear door request switch is not pressed (driver side)                        | OFF          |
|                | When rear door request switch is pressed (driver side)                            | ON           |
| REQ SW-RR      | When rear door request switch is not pressed (passenger side)                     | OFF          |
|                | When rear door request switch is pressed (passenger side)                         | ON           |



## BCM (BODY CONTROL MODULE)

### < ECU DIAGNOSIS >

| Monitor Item   | Condition  | Value/Status |    |
|----------------|--|--------------|----|
| REQ SW-BD/TR   | When trunk request switch is not pressed                         | OFF          | A  |
|                | When trunk request switch is pressed                             | ON           |    |
| PUSH SW        | When engine switch (push switch) is not pressed                  | OFF          | B  |
|                | When engine switch (push switch) is pressed                      | ON           |    |
| IGN RLY 2-F/B  | Ignition switch OFF or ACC                                       | OFF          | C  |
|                | Ignition switch ON   | ON           |    |
| ACC RLY-F/B    | Ignition switch OFF  | OFF          | D  |
|                | Ignition switch ACC or ON  | ON           |    |
| CLUTCH SW      | <b>NOTE:</b><br>This item is displayed, but cannot be monitored. | OFF          | E  |
| BRAKE SW 1     | When the brake pedal is not depressed                            | ON           | F  |
|                | When the brake pedal is depressed                                | OFF          |    |
| DETE/CANCL SW  | When selector lever is in P position                             | OFF          | G  |
|                | When selector lever is in any position other than P              | ON           |    |
| SFT PN/N SW    | When selector lever is in any position other than P or N         | OFF          | H  |
|                | When selector lever is in P or N position                        | ON           |    |
| S/L-LOCK       | Electronic steering column lock LOCK status                      | OFF          | I  |
|                | Electronic steering column lock UNLOCK status                    | ON           |    |
| S/L-UNLOCK     | Electronic steering column lock UNLOCK status                    | OFF          | J  |
|                | Electronic steering column lock LOCK status                      | ON           |    |
| S/L RELAY-F/B  | Ignition switch OFF or ACC                                       | OFF          | K  |
|                | Ignition switch ON   | ON           |    |
| UNLK SEN-DR    | Driver door UNLOCK status  | OFF          | WW |
|                | Driver door LOCK status  | ON           |    |
| PUSH SW-IPDM   | When engine switch (push switch) is not pressed                  | OFF          | M  |
|                | When engine switch (push switch) is pressed                      | ON           |    |
| IGN RLY1 F/B   | Ignition switch OFF or ACC                                       | OFF          | N  |
|                | Ignition switch ON   | ON           |    |
| DETE SW -IPDM  | When selector lever is in P position                             | OFF          | O  |
|                | When selector lever is in any position other than P              | ON           |    |
| SFT PN -IPDM   | When selector lever is in any position other than P or N         | OFF          | P  |
|                | When selector lever is in P or N position                        | ON           |    |
| SFT P-MET      | When selector lever is in any position other than P              | OFF          |    |
|                | When selector lever is in P position                             | ON           |    |
| SFT N-MET      | When selector lever is in any position other than N              | OFF          |    |
|                | When selector lever is in N position                             | ON           |    |
| ENGINE STATE   | Engine stopped   | STOP         |    |
|                | While the engine stalls  | STALL        |    |
|                | At engine cranking   | CRANK        |    |
|                | Engine running   | RUN          |    |
| S/L LOCK-IPDM  | Electronic steering column lock LOCK status                      | OFF          |    |
|                | Electronic steering column lock UNLOCK status                    | ON           |    |
| S/L UNLCK-IPDM | Electronic steering column lock UNLOCK status                    | OFF          |    |
|                | Electronic steering column lock LOCK status                      | ON           |    |

## BCM (BODY CONTROL MODULE)

### < ECU DIAGNOSIS >

| Monitor Item   | Condition   | Value/Status                           |
|----------------|---|--|
| S/L RELAY-REQ  | Ignition switch OFF or ACC  | OFF                                    |
|                | Ignition switch ON  | ON                                     |
| VEH SPEED 1    | While driving   | Equivalent to speedometer reading      |
| VEH SPEED 2    | While driving   | Equivalent to speedometer reading      |
| DOOR STAT-DR   | Driver door LOCK status   | LOCK                                   |
|                | Wait with selective UNLOCK operation (5 seconds)  | READY                                  |
|                | Driver door UNLOCK status   | UNLK                                   |
| DOOR STAT-AS   | Passenger door LOCK status  | LOCK                                   |
|                | Wait with selective UNLOCK operation (5 seconds)  | READY                                  |
|                | Passenger door UNLOCK status  | UNLK                                   |
| ID OK FLAG     | Ignition switch ACC or ON   | RESET                                  |
|                | Ignition switch OFF   | SET                                    |
| PRMT ENG STAT  | When the engine start is prohibited   | RESET                                  |
|                | When the engine start is permitted  | SET                                    |
| PRMT RKE STAT  | <b>NOTE:</b><br>This item is displayed, but cannot be monitored.                                | RESET                                  |
| KEY SW -SLOT   | When Intelligent Key is not inserted into key slot  | OFF                                    |
|                | When Intelligent Key is inserted into key slot  | ON                                     |
| RKE OPE COUN1  | During the operation of Intelligent Key   | Operation frequency of Intelligent Key |
| RKE OPE COUN2  | <b>NOTE:</b><br>This item is displayed, but cannot be monitored.                                | Operation frequency of Intelligent Key |
| CONFIRM ID ALL | The key ID that the key slot receives does not accord with any key ID registered to BCM.        | YET                                    |
|                | The key ID that the key slot receives accords with any key ID registered to BCM.                | DONE                                   |
| CONFIRM ID4    | The key ID that the key slot receives does not accord with the fourth key ID registered to BCM. | YET                                    |
|                | The key ID that the key slot receives accords with the fourth key ID registered to BCM.         | DONE                                   |
| CONFIRM ID3    | The key ID that the key slot receives does not accord with the third key ID registered to BCM.  | YET                                    |
|                | The key ID that the key slot receives accords with the third key ID registered to BCM.          | DONE                                   |
| CONFIRM ID2    | The key ID that the key slot receives does not accord with the second key ID registered to BCM. | YET                                    |
|                | The key ID that the key slot receives accords with the second key ID registered to BCM.         | DONE                                   |
| CONFIRM ID1    | The key ID that the key slot receives does not accord with the first key ID registered to BCM.  | YET                                    |
|                | The key ID that the key slot receives accords with the first key ID registered to BCM.          | DONE                                   |
| TP 4           | The ID of fourth key is not registered to BCM   | YET                                    |
|                | The ID of fourth key is registered to BCM   | DONE                                   |
| TP 3           | The ID of third key is not registered to BCM  | YET                                    |
|                | The ID of third key is registered to BCM  | DONE                                   |
| TP 2           | The ID of second key is not registered to BCM   | YET                                    |
|                | The ID of second key is registered to BCM   | DONE                                   |

## BCM (BODY CONTROL MODULE)

### < ECU DIAGNOSIS >

| Monitor Item | Condition  | Value/Status                  |   |
|--------------|--|-------------------------------|---|
| TP 1         | The ID of first key is not registered to BCM                               | YET                           | A |
|              | The ID of first key is registered to BCM                                   | DONE                          |   |
| AIR PRESS FL | Ignition switch ON (only when the signal from the transmitter is received) | Air pressure of front LH tire | B |
| AIR PRESS FR | Ignition switch ON (only when the signal from the transmitter is received) | Air pressure of front RH tire | C |
| AIR PRESS RR | Ignition switch ON (only when the signal from the transmitter is received) | Air pressure of rear RH tire  |   |
| AIR PRESS RL | Ignition switch ON (only when the signal from the transmitter is received) | Air pressure of rear LH tire  | D |
| ID REGST FL1 | When ID of front LH tire transmitter is registered                         | DONE                          |   |
|              | When ID of front LH tire transmitter is not registered                     | YET                           | E |
| ID REGST FR1 | When ID of front RH tire transmitter is registered                         | DONE                          |   |
|              | When ID of front RH tire transmitter is not registered                     | YET                           |   |
| ID REGST RR1 | When ID of rear RH tire transmitter is registered                          | DONE                          | F |
|              | When ID of rear RH tire transmitter is not registered                      | YET                           |   |
| ID REGST RL1 | When ID of rear LH tire transmitter is registered                          | DONE                          | G |
|              | When ID of rear LH tire transmitter is not registered                      | YET                           |   |
| WARNING LAMP | Tire pressure indicator OFF  | OFF                           |   |
|              | Tire pressure indicator ON   | ON                            | H |
| BUZZER       | Tire pressure warning alarm is not sounding                                | OFF                           |   |
|              | Tire pressure warning alarm is sounding                                    | ON                            | I |

WW

M

N

O

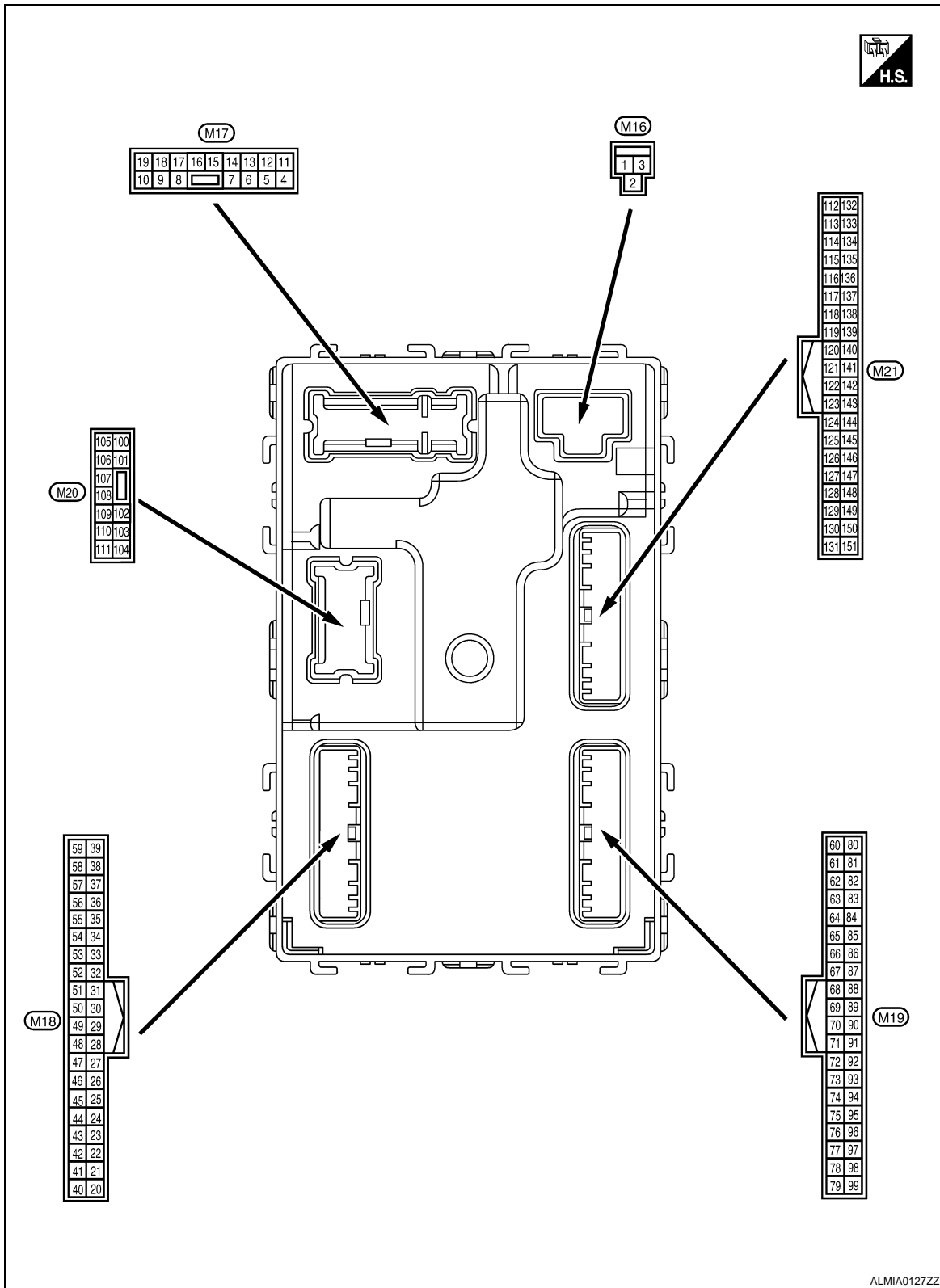
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# BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

## Terminal Layout

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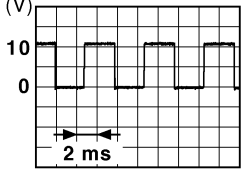


Physical Values

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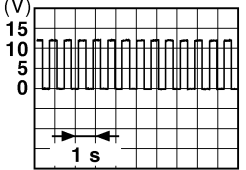
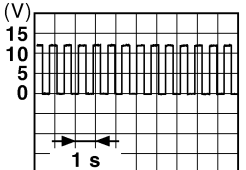
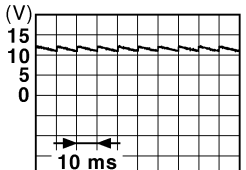
# BCM (BODY CONTROL MODULE)

## < ECU DIAGNOSIS >

| Terminal No.<br>(Wire color) |        | Description                                     |                  | Condition  |   | Value<br>(Approx.)   |
|------------------------------|--------|---|------------------|--|---|--|
|                              |        | Signal name                                     | Input/<br>Output |  |   |  |
| (+)                          | (-)    |   |                  |  |   |  |
| 1<br>(W/B)                   | Ground | Battery power supply                            | Input            | Ignition switch OFF  |   | Battery voltage  |
| 2<br>(R/Y)                   | Ground | Battery power supply output                     | Output           | Ignition switch OFF  |   | Battery voltage  |
| 3<br>(L/W)                   | Ground | Ignition power supply output                    | Output           | Ignition switch ON   |   | Battery voltage  |
| 4<br>(P/W)                   | Ground | Interior room lamp power supply                 | Output           | After passing the interior room lamp battery saver operation time                |   | 0V   |
|                              |        |   |                  | Any other time after passing the interior room lamp battery saver operation time |   | Battery voltage  |
| 5<br>(G)                     | Ground | Front door RH UNLOCK                            | Output           | Front door RH  | UNLOCK (actuator is activated)                | Battery voltage  |
|                              |        |   |                  |  | Other than UNLOCK (actuator is not activated) | 0V   |
| 7<br>(R/W)                   | Ground | Step lamp                                       | Output           | Step lamp  | ON  | 0V   |
|                              |        |   |                  |  |   | OFF  |
| 8<br>(V)                     | Ground | All doors LOCK                                  | Output           | All doors  | LOCK (actuator is activated)                  | Battery voltage  |
|                              |        |   |                  |  |   | Other than LOCK (actuator is not activated)  |
| 9<br>(L)                     | Ground | Front door LH UNLOCK                            | Output           | Front door LH  | UNLOCK (actuator is activated)                | Battery voltage  |
|                              |        |   |                  |  |   | Other than UNLOCK (actuator is not activated)  |
| 10<br>(G)                    | Ground | Rear door RH and rear door LH UNLOCK            | Output           | Rear door RH and rear door LH  | UNLOCK (actuator is activated)                | Battery voltage  |
|                              |        |   |                  |  |   | Other than UNLOCK (actuator is not activated)  |
| 11<br>(Y/R)                  | Ground | Battery power supply                            | Input            | Ignition switch OFF  |   | Battery voltage  |
| 13<br>(B)                    | Ground | Ground  | —                | Ignition switch ON   |   | 0V   |
| 14<br>(GR/W)                 | Ground | Engine switch (push switch) illumination ground | Input            | Tail lamp  | OFF   | 0V   |
|                              |        |   |                  |  | ON  | <p><b>NOTE:</b><br/>When the illumination brightening/dimming level is in the neutral position</p>  <p style="text-align: right; font-size: small;">JSNIA0010GB</p> |
| 15<br>(Y/L)                  | Ground | ACC indicator lamp                              | Output           | Ignition switch  | OFF   | Battery voltage  |
|                              |        |   |                  |  | ACC or ON                                     | 0V   |

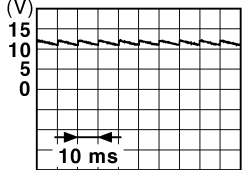
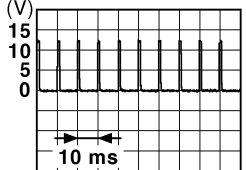
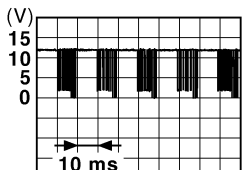
# BCM (BODY CONTROL MODULE)

## < ECU DIAGNOSIS >

| Terminal No.<br>(Wire color) |        | Description                                 |                  | Condition   | Value<br>(Approx.)  |
|------------------------------|--------|---|------------------|---|---|
| (+)                          | (-)    | Signal name                                 | Input/<br>Output |   |   |
| 17<br>(G/B)                  | Ground | Turn signal (RH)                            | Output           | Ignition switch ON  | Turn signal switch OFF<br>0V  |
|                              |        |   |                  | Turn signal switch RH   | <br>6.5 V                  |
| 18<br>(G/Y)                  | Ground | Turn signal (LH)                            | Output           | Ignition switch ON  | Turn signal switch OFF<br>0V  |
|                              |        |   |                  | Turn signal switch LH   | <br>6.5 V                  |
| 19<br>(Y)                    | Ground | Room lamp timer control                     | Output           | Interior room lamp  | OFF<br>Battery voltage  |
|                              |        |   |                  | ON  | 0V  |
| 21<br>(P/B)                  | Ground | Optical sensor signal                       | Input            | Ignition switch ON  | When outside of the vehicle is bright<br>Close to 5V  |
|                              |        |   |                  | When outside of the vehicle is dark<br>Close to 0V                |   |
| 24<br>(R/W)                  | Ground | Stop lamp switch 1                          | Input            | —   | Battery voltage   |
| 26<br>(O/L)                  | Ground | Stop lamp switch 2                          | Input            | Stop lamp switch  | OFF (brake pedal is not depressed)<br>0V  |
|                              |        |   |                  | ON (brake pedal is depressed)<br>Battery voltage                  |   |
| 27<br>(O)                    | Ground | Front door lock assembly LH (unlock sensor) | Input            | Front door LH   | LOCK status<br><br>11.8V |
|                              |        |   |                  | UNLOCK status<br>0V   |   |
| 29<br>(Y)                    | Ground | Key slot switch                             | Input            | When Intelligent Key is inserted into key slot<br>Battery voltage |   |
|                              |        |   |                  | When Intelligent Key is not inserted into key slot<br>0V          |   |
| 30<br>(V/Y)                  | Ground | ACC feedback signal                         | Input            | Ignition switch   | OFF<br>0  |
|                              |        |   |                  | ACC or ON<br>Battery voltage                                      |   |
| 31<br>(G)                    | Ground | Rear window defogger feedback signal        | Input            | Rear window defogger switch                                       | OFF<br>0V   |
|                              |        |   |                  | ON<br>Battery voltage   |   |

# BCM (BODY CONTROL MODULE)

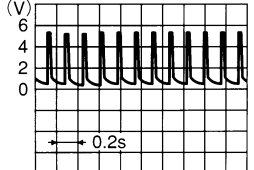

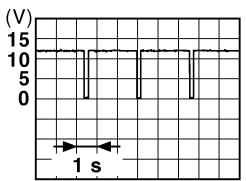
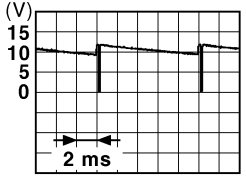
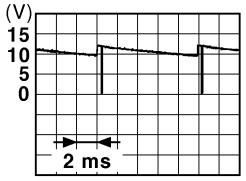
## < ECU DIAGNOSIS >

| Terminal No.<br>(Wire color) |        | Description                              |                  | Condition                                |   | Value<br>(Approx.)   |
|------------------------------|--------|--|------------------|--|---|--|
| (+)                          | (-)    | Signal name                              | Input/<br>Output |  |   |  |
| 32<br>(R/B)                  | Ground | Front door RH switch                     | Input            | Front door RH switch                     | OFF (when front door RH closes)   |  <p style="text-align: right; margin-right: 50px;"><small>JPMIA0011GB</small></p> <p style="text-align: center;">11.8 V</p> |
|                              |        |  |                  |  | ON (when front door RH opens)   | 0V   |
| 37<br>(O)                    | Ground | Trunk lid opener cancel switch           | Input            | Trunk lid opener cancel switch           | CANCEL  |  <p style="text-align: right; margin-right: 50px;"><small>JPMIA0012GB</small></p> <p style="text-align: center;">1.1V</p>   |
|                              |        |  |                  |  | ON  | 0V   |
| 38<br>(GR/W)                 | Ground | Rear window defogger ON signal           | Input            | Rear window defogger switch              | OFF   | 5V   |
|                              |        |  |                  |  | ON  | 0V   |
| 40<br>(Y/G)                  | Ground | Power window serial link                 | Input/<br>Output | Ignition switch ON                       |  <p style="text-align: right; margin-right: 50px;"><small>JPMIA0013GB</small></p> <p style="text-align: center;">10.2V</p> |  |
|                              |        |  |                  | Ignition switch OFF or ACC               | 0V  |  |
| 41<br>(W)                    | Ground | Engine switch (push switch) illumination | Output           | Engine switch (push switch) illumination | ON  | 5.5V   |
|                              |        |  |                  |  | OFF   | 0V   |
| 42<br>(R)                    | Ground | LOCK indicator lamp                      | Output           | LOCK indicator lamp                      | ON  | 0V   |
|                              |        |  |                  |  | OFF   | Battery voltage  |
| 45<br>(P)                    | Ground | Receiver & sensor ground                 | Input            | Ignition switch ON                       |   | 0V   |
| 46<br>(V/W)                  | Ground | Receiver & sensor power supply output    | Output           | Ignition switch                          | OFF   | 0V   |
|                              |        |  |                  |  | ACC or ON   | 5.0V   |

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# BCM (BODY CONTROL MODULE)

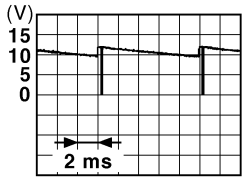
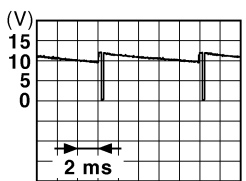
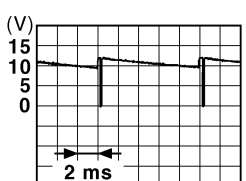
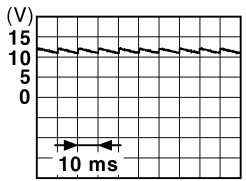
## < ECU DIAGNOSIS >

| Terminal No.<br>(Wire color)   |        | Description                        |                  | Condition   | Value<br>(Approx.)  |   |
|--|--------|------------------------------------|------------------|---|---|---|
| (+)  | (-)    | Signal name                        | Input/<br>Output |   |   |   |
| 47<br>(G/O)  | Ground | Tire pressure receiver signal      | Input/<br>Output | Ignition switch ON  | Standby state<br><br>OCC3881D  |   |
|  |        |                                    |                  | When receiving the signal from the transmitter<br><br>OCC3880D |   |   |
| 48<br>(R/G)  | Ground | Selector lever P/N position signal | Input            | Selector lever  | P or N position<br>12.0V<br>Except P and N positions<br>0V  |   |
|  |        |                                    |                  | 49<br>(L/O)   | Ground  | Security indicator signal   |
| Blinking<br><br>JPMIA0014GB<br>11.3V |        |                                    |                  |   |   |   |
| 50<br>(LG/B)   | Ground | Combination switch OUTPUT 5        | Output           | Combination switch (Wiper intermittent dial 4)  | All switch OFF  | 0V  |
|  |        |                                    |                  |   | Lighting switch 1ST   | <br>JPMIA0031GB<br>10.7V |
|  |        |                                    |                  |   | Lighting switch high-beam   |   |
|  |        |                                    |                  |   | Lighting switch 2ND   |   |
| Turn signal switch RH  |        |                                    |                  |   |   |   |
| 51<br>(L/W)  | Ground | Combination switch OUTPUT 1        | Output           | Combination switch  | All switch OFF (Wiper intermittent dial 4)  | 0V  |
|  |        |                                    |                  |   | Front wiper switch HI (Wiper intermittent dial 4)   | <br>JPMIA0032GB<br>10.7V |
|  |        |                                    |                  |   | Any of the conditions below with all switch OFF <ul style="list-style-type: none"> <li>• Wiper intermittent dial 1</li> <li>• Wiper intermittent dial 2</li> <li>• Wiper intermittent dial 3</li> <li>• Wiper intermittent dial 6</li> <li>• Wiper intermittent dial 7</li> </ul> |   |



# BCM (BODY CONTROL MODULE)

## < ECU DIAGNOSIS >

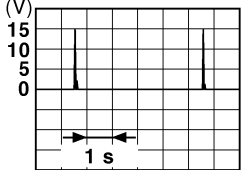
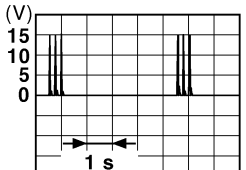
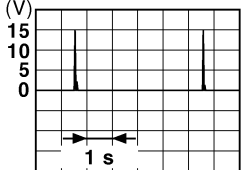
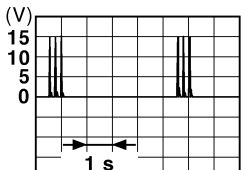
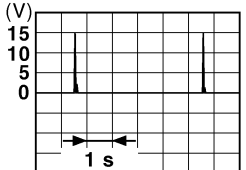
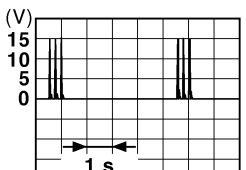
| Terminal No.<br>(Wire color) |        | Description                             |                  | Condition   | Value<br>(Approx.)  |   |    |
|------------------------------|--------|---|------------------|---|---|---|----|
|                              |        | Signal name                             | Input/<br>Output |   |   |   |    |
| (+)                          | (-)    |   |                  |   |   |   |    |
| 52<br>(G/B)                  | Ground | Combination switch<br>OUTPUT 2          | Output           | Combination<br>switch                                     | All switch OFF<br>(Wiper intermittent dial 4)   | 0V  |    |
|                              |        |   |                  |   | Front washer switch ON<br>(Wiper intermittent dial 4)   |    |    |
|                              |        |   |                  |   | Any of the conditions below<br>with all switch OFF  |   |    |
|                              |        |   |                  |   | <ul style="list-style-type: none"> <li>• Wiper intermittent dial 1</li> <li>• Wiper intermittent dial 5</li> <li>• Wiper intermittent dial 6</li> </ul> |   |    |
|                              |        |   |                  |   | 10.7V   |   |    |
| 53<br>(LG/<br>R)             | Ground | Combination switch<br>OUTPUT 3          | Output           | Combination<br>switch<br>(Wiper intermit-<br>tent dial 4) | All switch OFF  | 0V  |    |
|                              |        |   |                  |   | Front wiper switch INT  |    |    |
|                              |        |   |                  |   | Front wiper switch LO   |   |    |
|                              |        |   |                  |   | Lighting switch AUTO  |   |    |
|                              |        |   |                  |   | 10.7V   |   |    |
| 54<br>(G/Y)                  | Ground | Combination switch<br>OUTPUT 4          | Output           | Combination<br>switch<br>(Wiper intermit-<br>tent dial 4) | All switch OFF  | 0V  |    |
|                              |        |   |                  |   | Front fog lamp switch ON  |   |    |
|                              |        |   |                  |   | Lighting switch 2ND   |   |    |
|                              |        |   |                  |   | Lighting switch flash-to-<br>pass   |   |    |
|                              |        |   |                  |   | 10.7V   |   |    |
| 57<br>(W)                    | Ground | Tire pressure warn-<br>ing check switch | Input            | —   | 5V  |   |    |
| 58<br>(SB)                   | Ground | Front door LH switch                    | Input            | Front door LH<br>switch                                   | OFF (front door LH<br>CLOSE)  |  |    |
|                              |        |   |                  |   | ON (front door LH OPEN)   |   | 0V |
|                              |        |   |                  |   | 11.8V   |   |    |
| 59<br>(G/R)                  | Ground | Rear window defog-<br>ger relay         | Output           | Rear window de-<br>fogger                                 | Active  | Battery voltage   |    |
|                              |        |   |                  |   | Not activated   | 0V  |    |

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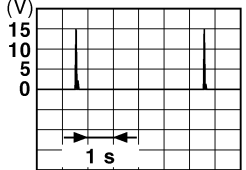
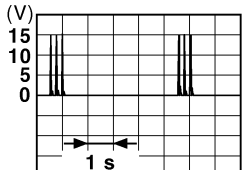
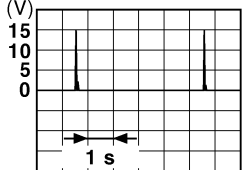
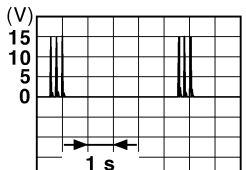
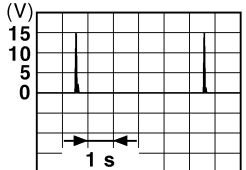
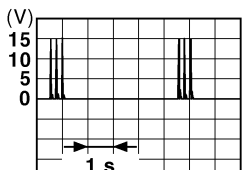
# BCM (BODY CONTROL MODULE)

## < ECU DIAGNOSIS >

| Terminal No.<br>(Wire color) |        | Description                         |                  | Condition  | Value<br>(Approx.)  |
|------------------------------|--------|-------------------------------------|------------------|--|---|
| (+)                          | (-)    | Signal name                         | Input/<br>Output |  |   |
| 60<br>(B/R)                  | Ground | Front console antenna 2 (-)         | Output           | Ignition switch OFF  |  <p style="text-align: right; font-size: small;">JMKIA0062GB</p>   |
|                              |        |                                     |                  | When Intelligent Key is not in the passenger compartment                   |  <p style="text-align: right; font-size: small;">JMKIA0063GB</p>   |
| 61<br>(W/R)                  | Ground | Center console antenna 2 (+)        | Output           | Ignition switch OFF  |  <p style="text-align: right; font-size: small;">JMKIA0062GB</p>  |
|                              |        |                                     |                  | When Intelligent Key is not in the passenger compartment                   |  <p style="text-align: right; font-size: small;">JMKIA0063GB</p> |
| 62<br>(V)                    | Ground | Front outside handle RH antenna (-) | Output           | When the front door RH request switch is operated with ignition switch OFF |  <p style="text-align: right; font-size: small;">JMKIA0062GB</p> |
|                              |        |                                     |                  | When Intelligent Key is not in the antenna detection area                  |  <p style="text-align: right; font-size: small;">JMKIA0063GB</p> |

# BCM (BODY CONTROL MODULE)

## < ECU DIAGNOSIS >

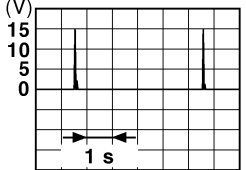
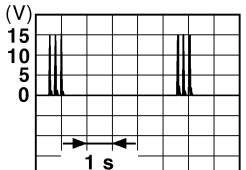
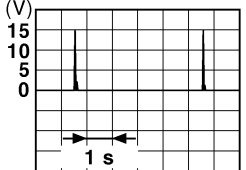
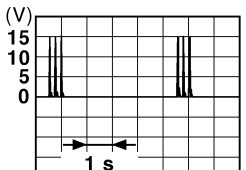
| Terminal No.<br>(Wire color) |        | Description                            |                  | Condition  | Value<br>(Approx.)  |
|------------------------------|--------|--|------------------|--|---|
|                              |        | Signal name                            | Input/<br>Output |  |   |
| (+)                          | (-)    |  |                  |  |   |
| 63<br>(P)                    | Ground | Front outside handle<br>RH antenna (+) | Output           | When the front<br>door RH request<br>switch is operat-<br>ed with ignition<br>switch OFF |  <p style="text-align: right; font-size: small;">JMKIA0062GB</p>   |
|                              |        |  |                  | When Intelligent Key is not<br>in the antenna detection<br>area                          |  <p style="text-align: right; font-size: small;">JMKIA0063GB</p>   |
| 64<br>(V)                    | Ground | Front outside handle<br>LH antenna (-) | Output           | When the front<br>door LH request<br>switch is operat-<br>ed with ignition<br>switch OFF |  <p style="text-align: right; font-size: small;">JMKIA0062GB</p>  |
|                              |        |  |                  | When Intelligent Key is not<br>in the antenna detection<br>area                          |  <p style="text-align: right; font-size: small;">JMKIA0063GB</p> |
| 65<br>(P)                    | Ground | Front outside handle<br>LH antenna (+) | Output           | When the front<br>door LH request<br>switch is operat-<br>ed with ignition<br>switch OFF |  <p style="text-align: right; font-size: small;">JMKIA0062GB</p> |
|                              |        |  |                  | When Intelligent Key is not<br>in the antenna detection<br>area                          |  <p style="text-align: right; font-size: small;">JMKIA0063GB</p> |

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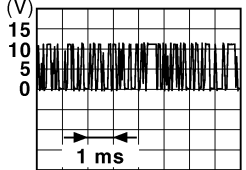
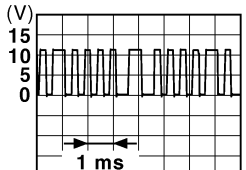
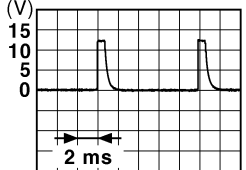
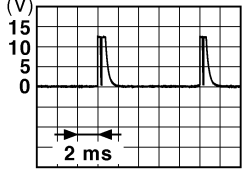

# BCM (BODY CONTROL MODULE)

## < ECU DIAGNOSIS >

| Terminal No.<br>(Wire color) |        | Description                          |                  | Condition              | Value<br>(Approx.)   |
|------------------------------|--------|--------------------------------------|------------------|------------------------|--|
| (+)                          | (-)    | Signal name                          | Input/<br>Output |                        |  |
| 66<br>(R)                    | Ground | Instrument panel antenna (-)         | Output           | Ignition switch<br>OFF | When Intelligent Key is in the passenger compartment<br><br>JMKIA0062GB       |
|                              |        |                                      |                  |                        | When Intelligent Key is not in the passenger compartment<br><br>JMKIA0063GB   |
| 67<br>(G)                    | Ground | Instrument panel antenna (+)         | Output           | Ignition switch<br>OFF | When Intelligent Key is in the passenger compartment<br><br>JMKIA0062GB      |
|                              |        |                                      |                  |                        | When Intelligent Key is not in the passenger compartment<br><br>JMKIA0063GB |
| 68<br>(G/O)                  | Ground | NATS antenna amp (built in key slot) | Input/<br>Output | During waiting         | Ignition switch is pressed while inserting the Intelligent Key into the key slot.<br>Just after pressing ignition switch. Pointer of tester should move.         |
| 69<br>(O)                    | Ground | NATS antenna amp (built in key slot) | Input/<br>Output | During waiting         | Ignition switch is pressed while inserting the Intelligent Key into the key slot.<br>Just after pressing ignition switch. Pointer of tester should move.         |
| 70<br>(R/B)                  | Ground | Ignition relay-2 control             | Output           | Ignition switch        | OFF or ACC<br>0V   |
|                              |        |                                      |                  | ON                     | Battery voltage  |

# BCM (BODY CONTROL MODULE)

## < ECU DIAGNOSIS >

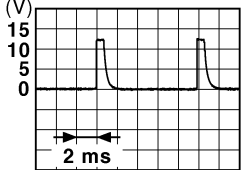
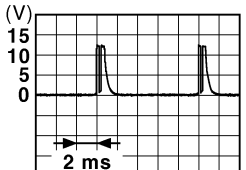

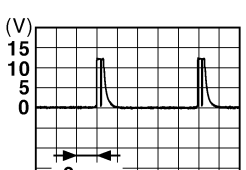
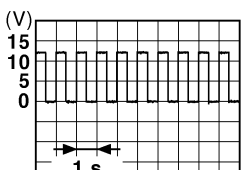
| Terminal No.<br>(Wire color) |        | Description                             |                  | Condition                                       | Value<br>(Approx.)  |
|------------------------------|--------|---|------------------|---|---|
| (+)                          | (-)    | Signal name                             | Input/<br>Output |   |   |
| 71<br>(L/O)                  | Ground | Remote keyless entry<br>receiver signal | Input/<br>Output | During waiting                                  |  <p style="text-align: right; font-size: small;">JMKIA0064GB</p>   |
|                              |        |   |                  | When operating either button on Intelligent Key |  <p style="text-align: right; font-size: small;">JMKIA0065GB</p>   |
| 75<br>(R/Y)                  | Ground | Combination switch<br>INPUT 5           | Input            | Combination switch                              | <p>All switch OFF<br/>(Wiper intermittent dial 4)</p>  <p style="text-align: right; font-size: small;">JPMIA0041GB</p> <p style="text-align: center;">1.4V</p>  |
|                              |        |   |                  | Combination switch                              | <p>Front fog lamp switch ON<br/>(Wiper intermittent dial 4)</p>  <p style="text-align: right; font-size: small;">JPMIA0037GB</p> <p style="text-align: center;">1.3V</p>   |
|                              |        |   |                  | Combination switch                              | <p>Any of the conditions below<br/>with all switch OFF</p> <ul style="list-style-type: none"> <li>• Wiper intermittent dial 1</li> <li>• Wiper intermittent dial 2</li> <li>• Wiper intermittent dial 6</li> <li>• Wiper intermittent dial 7</li> </ul>  <p style="text-align: right; font-size: small;">JPMIA0040GB</p> <p style="text-align: center;">1.3V</p> |

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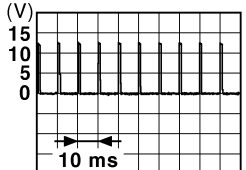
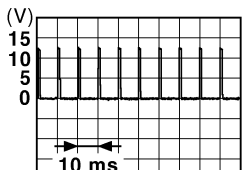
# BCM (BODY CONTROL MODULE)

## < ECU DIAGNOSIS >

| Terminal No.<br>(Wire color) |        | Description                    |                  | Condition                      | Value<br>(Approx.)                                       |   |
|------------------------------|--------|--------------------------------|------------------|--------------------------------|--|---|
| (+)                          | (-)    | Signal name                    | Input/<br>Output |                                |  |   |
| 76<br>(R/G)                  | Ground | Combination switch<br>INPUT 3  | Input            | Combination<br>switch          | All switch OFF<br>(Wiper intermittent dial 4)            |  <p style="text-align: right; font-size: small;">JPMIA0041GB</p> <p style="text-align: center;">1.4V</p>   |
|                              |        |                                |                  |                                | Lighting switch high-beam<br>(Wiper intermittent dial 4) |  <p style="text-align: right; font-size: small;">JPMIA0036GB</p> <p style="text-align: center;">1.3V</p>   |
|                              |        |                                |                  |                                | Lighting switch 2ND<br>(Wiper intermittent dial 4)       |  <p style="text-align: right; font-size: small;">JPMIA0037GB</p> <p style="text-align: center;">1.3V</p>  |
|                              |        |                                |                  |                                | Any of the conditions below<br>with all switch OFF       | <ul style="list-style-type: none"> <li>• Wiper intermittent dial 1</li> <li>• Wiper intermittent dial 2</li> <li>• Wiper intermittent dial 3</li> </ul>  <p style="text-align: right; font-size: small;">JPMIA0040GB</p> <p style="text-align: center;">1.3V</p> |
| 77<br>(BR)                   | Ground | Engine switch (push<br>switch) | Input            | Engine switch<br>(push switch) | Pressed  | 0V  |
|                              |        |                                |                  | Not pressed                    | Battery voltage  |   |
| 78<br>(P)                    | Ground | CAN-L                          | Input/<br>Output | —                              | —  |   |
| 79<br>(L)                    | Ground | CAN-H                          | Input/<br>Output | —                              | —  |   |
| 80<br>(R/L)                  | Ground | Key slot illumination          | Output           | Key slot illumina-<br>tion     | OFF  | 0V  |
|                              |        |                                |                  |                                | Blinking   |  <p style="text-align: right; font-size: small;">JPMIA0015GB</p> <p style="text-align: center;">6.5V</p>   |
|                              |        |                                |                  |                                | ON   | Battery voltage   |

# BCM (BODY CONTROL MODULE)

## < ECU DIAGNOSIS >

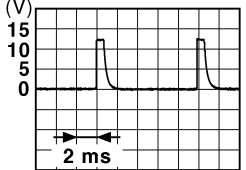

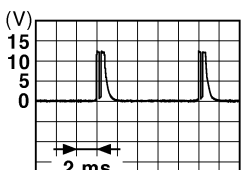
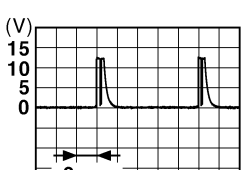
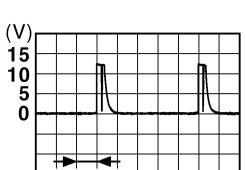
| Terminal No.<br>(Wire color) |        | Description   |                  | Condition                            |                           | Value<br>(Approx.)   |
|------------------------------|--------|---|------------------|--------------------------------------|---------------------------|--|
| (+)                          | (-)    | Signal name   | Input/<br>Output |                                      |                           |  |
| 81<br>(Y/L)                  | Ground | ON indicator lamp                                     | Output           | Ignition switch                      | OFF or ACC                | 0V   |
|                              |        |   |                  |                                      | ON                        | Battery voltage  |
| 83<br>(L)                    | Ground | ACC relay control                                     | Output           | Ignition switch                      | OFF                       | 0V   |
|                              |        |   |                  |                                      | ACC or ON                 | Battery voltage  |
| 84<br>(Y/R)                  | Ground | A/T device  | Output           | —                                    |                           | Battery voltage  |
| 85<br>(L/O)                  | Ground | Electronic steering<br>column lock condition<br>No. 1 | Input            | Electronic steer-<br>ing column lock | Lock status               | 0V   |
|                              |        |   |                  |                                      | Unlock status             | Battery voltage  |
| 86<br>(G/R)                  | Ground | Electronic steering<br>column lock condition<br>No. 2 | Input            | Electronic steer-<br>ing column lock | Lock status               | Battery voltage  |
|                              |        |   |                  |                                      | Unlock status             | 0V   |
| 87<br>(G/B)                  | Ground | Selector lever P posi-<br>tion switch                 | Input            | Selector lever                       | P position                | 0V   |
|                              |        |   |                  |                                      | Any position other than P | Battery voltage  |
| 88<br>(R)                    | Ground | Front door RH re-<br>quest switch                     | Input            | Front door RH re-<br>quest switch    | ON (pressed)              | 0V   |
|                              |        |   |                  |                                      | OFF (not pressed)         |  <p style="text-align: right; font-size: small;">JPMIA0016GB<br/>1.0V</p>  |
| 89<br>(R)                    | Ground | Front door LH re-<br>quest switch                     | Input            | Front door LH re-<br>quest switch    | ON (pressed)              | 0V   |
|                              |        |   |                  |                                      | OFF (not pressed)         |  <p style="text-align: right; font-size: small;">JPMIA0016GB<br/>1.0V</p> |
| 90<br>(Y)                    | Ground | Blower fan motor re-<br>lay control                   | Output           | Ignition switch                      | OFF or ACC                | 0V   |
|                              |        |   |                  |                                      | ON                        | Battery voltage  |
| 91<br>(L/R)                  | Ground | Remote keyless entry<br>receiver power sup-<br>ply    | Output           | Ignition switch OFF                  |                           | Battery voltage  |
| 94<br>(G/Y)                  | Ground | Steering wheel lock<br>unit power supply              | Output           | Ignition switch                      | OFF or ACC                | Battery voltage  |
|                              |        |   |                  |                                      | ON                        | 0V   |

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# BCM (BODY CONTROL MODULE)

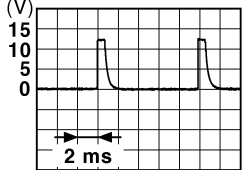
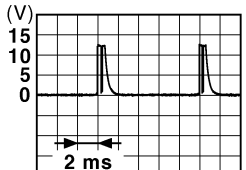
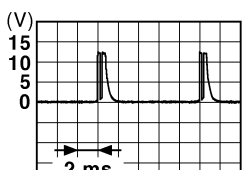
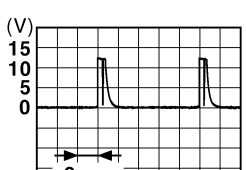
## < ECU DIAGNOSIS >

| Terminal No.<br>(Wire color) |        | Description                   |                  | Condition  | Value<br>(Approx.)  |
|------------------------------|--------|-------------------------------|------------------|--|---|
| (+)                          | (-)    | Signal name                   | Input/<br>Output |  |   |
| 95<br>(R/W)                  | Ground | Combination switch<br>INPUT 1 | Input            | Combination<br>switch<br>(Wiper intermittent dial 4) | All switch OFF <div style="text-align: right;">  <p style="text-align: right;">1.4V</p> </div>           |
|                              |        |                               |                  |  | Turn signal switch LH <div style="text-align: right;">  <p style="text-align: right;">1.3V</p> </div>    |
|                              |        |                               |                  |  | Turn signal switch RH <div style="text-align: right;">  <p style="text-align: right;">1.3V</p> </div>   |
|                              |        |                               |                  |  | Front wiper switch LO <div style="text-align: right;">  <p style="text-align: right;">1.3V</p> </div>  |
|                              |        |                               |                  |  | Front washer switch ON <div style="text-align: right;">  <p style="text-align: right;">1.3V</p> </div> |



# BCM (BODY CONTROL MODULE)

## < ECU DIAGNOSIS >

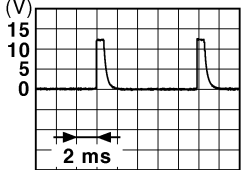

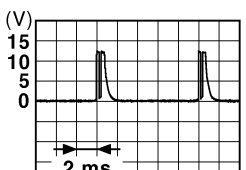
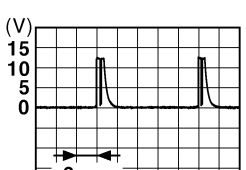
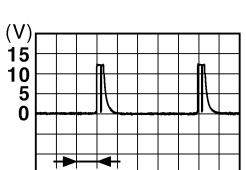
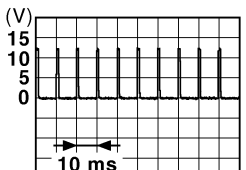
| Terminal No.<br>(Wire color) |        | Description                   |                  | Condition             | Value<br>(Approx.)   |
|------------------------------|--------|-------------------------------|------------------|-----------------------|--|
| (+)                          | (-)    | Signal name                   | Input/<br>Output |                       |  |
| 96<br>(P/B)                  | Ground | Combination switch<br>INPUT 4 | Input            | Combination<br>switch | All switch OFF<br>(Wiper intermittent dial 4) <div style="text-align: right;">  <p style="text-align: right; margin-top: 5px;">JPMIA0041GB<br/>1.4V</p> </div>  |
|                              |        |                               |                  |                       | Lighting switch AUTO<br>(Wiper intermittent dial 4) <div style="text-align: right;">  <p style="text-align: right; margin-top: 5px;">JPMIA0038GB<br/>1.3V</p> </div>  |
|                              |        |                               |                  |                       | Lighting switch 1ST<br>(Wiper intermittent dial 4) <div style="text-align: right;">  <p style="text-align: right; margin-top: 5px;">JPMIA0036GB<br/>1.3V</p> </div>  |
|                              |        |                               |                  |                       | Any of the conditions below<br>with all switch OFF <ul style="list-style-type: none"> <li>• Wiper intermittent dial 1</li> <li>• Wiper intermittent dial 5</li> <li>• Wiper intermittent dial 6</li> </ul> <div style="text-align: right;">  <p style="text-align: right; margin-top: 5px;">JPMIA0039GB<br/>1.3V</p> </div> |

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# BCM (BODY CONTROL MODULE)

## < ECU DIAGNOSIS >

| Terminal No.<br>(Wire color) |        | Description                   |                  | Condition  | Value<br>(Approx.)   |   |
|------------------------------|--------|-------------------------------|------------------|--|--|---|
| (+)                          | (-)    | Signal name                   | Input/<br>Output |  |  |   |
| 97<br>(R/B)                  | Ground | Combination switch<br>INPUT 2 | Input            | Combination<br>switch<br>(Wiper intermittent dial 4) | All switch OFF   | <br><small>JPMIA0041GB</small><br>1.4V   |
|                              |        |                               |                  |  | Lighting switch flash-to-pass  | <br><small>JPMIA0037GB</small><br>1.3V   |
|                              |        |                               |                  |  | Lighting switch 2ND  | <br><small>JPMIA0036GB</small><br>1.3V  |
|                              |        |                               |                  |  | Front wiper switch INT   | <br><small>JPMIA0038GB</small><br>1.3V |
|                              |        |                               |                  |  | Front wiper switch HI  | <br><small>JPMIA0040GB</small><br>1.3V |
|                              |        |                               |                  |  | Pressed  | 0 V   |
| 98<br>(G/O)                  | Ground | Hazard switch                 | Input            | Hazard switch  | Not pressed<br><br><small>JPMIA0012GB</small><br>1.1V |   |

# BCM (BODY CONTROL MODULE)

## < ECU DIAGNOSIS >

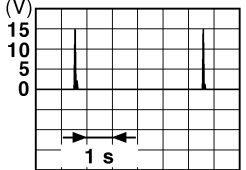
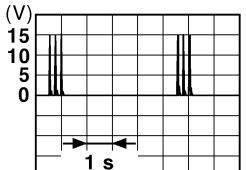
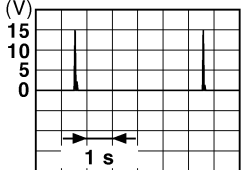
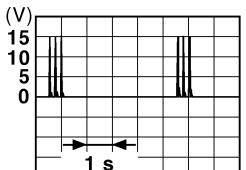
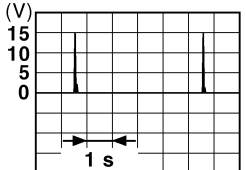
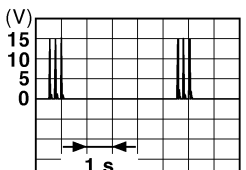
| Terminal No.<br>(Wire color) |        | Description  |                  | Condition                            | Value<br>(Approx.)   |   |
|------------------------------|--------|--|------------------|--------------------------------------|--|---|
| (+)                          | (-)    | Signal name  | Input/<br>Output |                                      |  |   |
| 99<br>(L/Y)                  | Ground | Electronic steering<br>column lock unit com-<br>munication | Input/<br>Output | Electronic steer-<br>ing column lock | LOCK status  | Battery voltage   |
|                              |        |  |                  |                                      | LOCK or UNLOCK   | <p style="text-align: right; font-size: small;">JMKIA0066GB</p> |
|                              |        |  |                  |                                      | For 15 seconds after UN-<br>LOCK                                 | Battery voltage   |
|                              |        |  |                  |                                      | 15 seconds or later after<br>UNLOCK                              | 0V  |
| 103<br>(V)                   | Ground | Trunk lid opening.   | Output           | Trunk lid                            | Open (trunk lid opener ac-<br>tuator is activated)               | Battery voltage   |
|                              |        |  |                  |                                      | Close (trunk lid opener ac-<br>tuator is not activated)          | 0V  |
| 110<br>(V/W)                 | Ground | Trunk room lamp  | Output           | Trunk room lamp                      | ON   | 0V  |
|                              |        |  |                  |                                      | OFF  | Battery voltage   |
| 114<br>(B)                   | Ground | Trunk room antenna<br>1 (-)                                | Output           | Ignition switch<br>OFF               | When Intelligent Key is in<br>the passenger compart-<br>ment     | <p style="text-align: right; font-size: small;">JMKIA0062GB</p> |
|                              |        |  |                  |                                      | When Intelligent Key is not<br>in the passenger compart-<br>ment | <p style="text-align: right; font-size: small;">JMKIA0063GB</p> |

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# BCM (BODY CONTROL MODULE)

## < ECU DIAGNOSIS >

| Terminal No.<br>(Wire color) |        | Description                  |                  | Condition  | Value<br>(Approx.)   |
|------------------------------|--------|------------------------------|------------------|--|--|
| (+)                          | (-)    | Signal name                  | Input/<br>Output |  |  |
| 115<br>(W)                   | Ground | Trunk room antenna<br>1 (+)  | Output           | Ignition switch<br>OFF   | <p>When Intelligent Key is in<br/>the passenger compart-<br/>ment</p>  <p style="text-align: right; font-size: small;">JMKIA0062GB</p>  |
|                              |        |                              |                  | <p>When Intelligent Key is not<br/>in the passenger compart-<br/>ment</p>  <p style="text-align: right; font-size: small;">JMKIA0063GB</p>  |  |
| 118<br>(L/O)                 | Ground | Rear bumper anten-<br>na (-) | Output           | When the trunk<br>lid request switch<br>is operated with<br>ignition switch<br>OFF   | <p>When Intelligent Key is in<br/>the antenna detection<br/>area</p>  <p style="text-align: right; font-size: small;">JMKIA0062GB</p>  |
|                              |        |                              |                  | <p>When Intelligent Key is not<br/>in the antenna detection<br/>area</p>  <p style="text-align: right; font-size: small;">JMKIA0063GB</p> |  |
| 119<br>(BR/<br>W)            | Ground | Rear bumper anten-<br>na (+) | Output           | When the trunk<br>lid request switch<br>is operated with<br>ignition switch<br>OFF   | <p>When Intelligent Key is in<br/>the antenna detection<br/>area</p>  <p style="text-align: right; font-size: small;">JMKIA0062GB</p> |
|                              |        |                              |                  | <p>When Intelligent Key is not<br/>in the antenna detection<br/>area</p>  <p style="text-align: right; font-size: small;">JMKIA0063GB</p> |  |

# BCM (BODY CONTROL MODULE)

## < ECU DIAGNOSIS >

| Terminal No.<br>(Wire color) |        | Description                          |                  | Condition  | Value<br>(Approx.)   |   |
|------------------------------|--------|--------------------------------------|------------------|--|--|---|
|                              |        | Signal name                          | Input/<br>Output |  |  |   |
| (+)                          | (-)    |                                      |                  |  |  |   |
| 127<br>(BR/<br>W)            | Ground | Ignition relay (IPDM<br>E/R) control | Output           | Ignition switch                                    | OFF or ACC   | Battery voltage                         |
|                              |        |                                      |                  |  | ON   | 0V                                      |
| 130<br>(W)                   | Ground | Trunk room lamp<br>switch            | Input            | Trunk room lamp<br>switch                          | OFF (trunk is closed)  | <p style="text-align: right;">11.8V</p> |
|                              |        |                                      |                  |  | ON (trunk is open)   | 0V                                      |
| 132<br>(R)                   | Ground | Starter motor relay<br>control       | Output           | Ignition switch<br>OFF (M/T vehi-<br>cle)          | When the clutch pedal is<br>depressed  | Battery voltage                         |
|                              |        |                                      |                  |  | When the clutch pedal is<br>not depressed                                      | 0V                                      |
|                              |        |                                      |                  | Ignition switch<br>ON (other than M/<br>T vehicle) | When selector lever is in P<br>or N position and the brake<br>is depressed     | Battery voltage                         |
|                              |        |                                      |                  |  | When selector lever is in P<br>or N position and the brake<br>is not depressed | 0V                                      |
| 141<br>(BR)                  | Ground | Trunk request switch                 | Input            | Trunk request<br>switch                            | ON (pressed)   | 0V                                      |
|                              |        |                                      |                  |  | OFF (not pressed)  | <p style="text-align: right;">1.0V</p>  |
| 144<br>(GR)                  | Ground | Request switch buzzer                | Output           | Request switch<br>buzzer                           | Sounding   | 0V                                      |
|                              |        |                                      |                  |  | Not sounding   | Battery voltage                         |
| 147<br>(L/R)                 | Ground | Trunk lid opener<br>switch           | Input            | Trunk lid opener<br>switch                         | Pressed  | 0V                                      |
|                              |        |                                      |                  |  | Not pressed  | Battery voltage                         |
| 148<br>(R/W)                 | Ground | Rear door RH switch                  | Input            | Rear door RH<br>switch                             | OFF (when rear door RH<br>closes)  | <p style="text-align: right;">11.8V</p> |
|                              |        |                                      |                  |  | ON (when rear door RH<br>opens)  | 0V                                      |

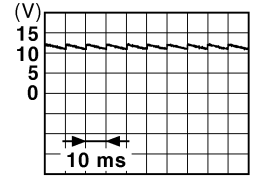
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# BCM (BODY CONTROL MODULE)

## < ECU DIAGNOSIS >

| Terminal No.<br>(Wire color) |        | Description         |                  | Condition                    | Value<br>(Approx.)             |
|------------------------------|--------|---------------------|------------------|------------------------------|--------------------------------|
| (+)                          | (-)    | Signal name         | Input/<br>Output |                              |                                |
| 149<br>(R/B)                 | Ground | Rear door LH switch | Input            | Rear door LH switch          | OFF (when rear door LH closes) |
|                              |        |                     |                  | ON (when rear door LH opens) | 0V                             |



JPMIA0011GB

11.8V

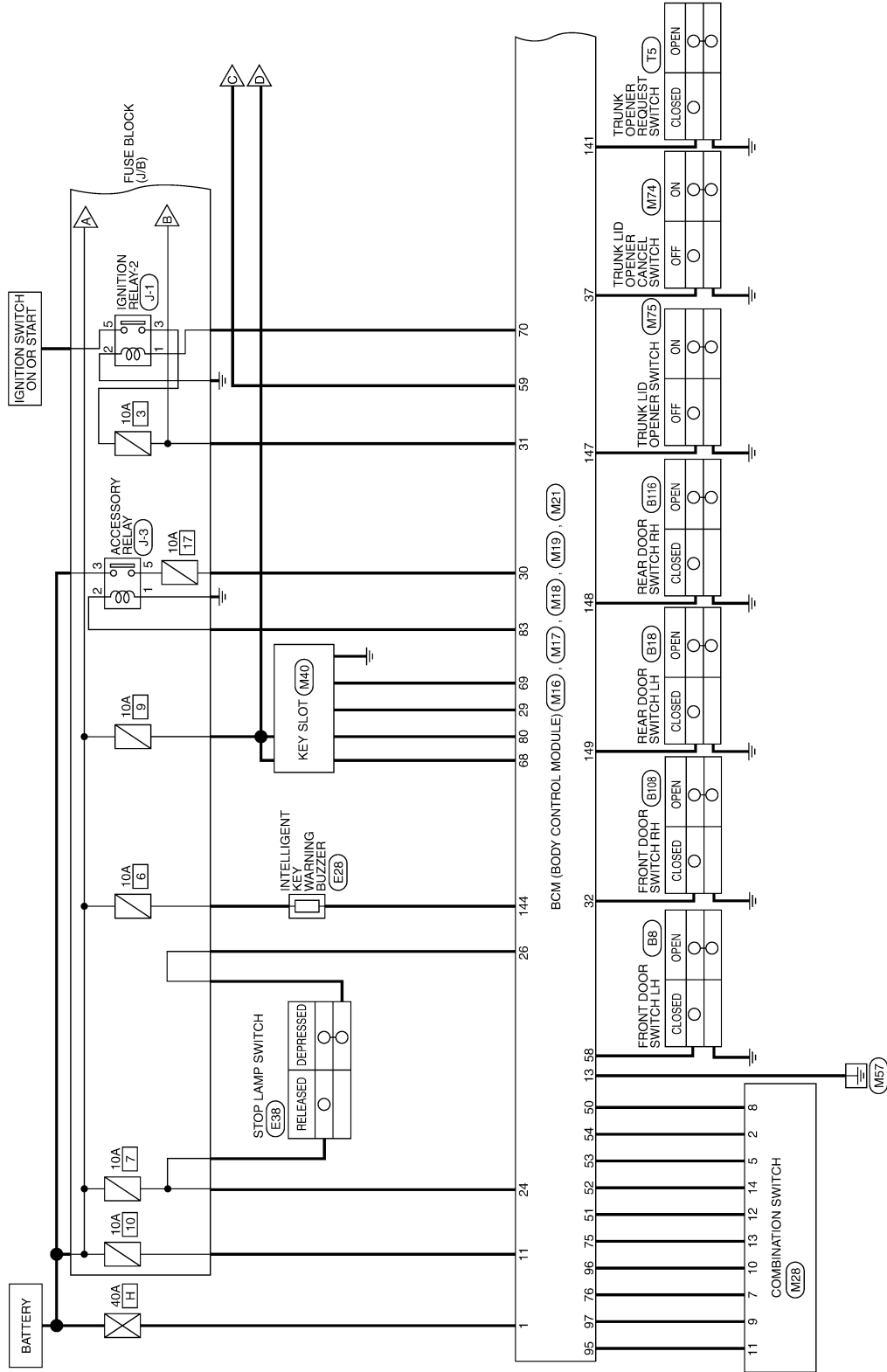
# BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

## Wiring Diagram

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### BCM (BODY CONTROL MODULE)



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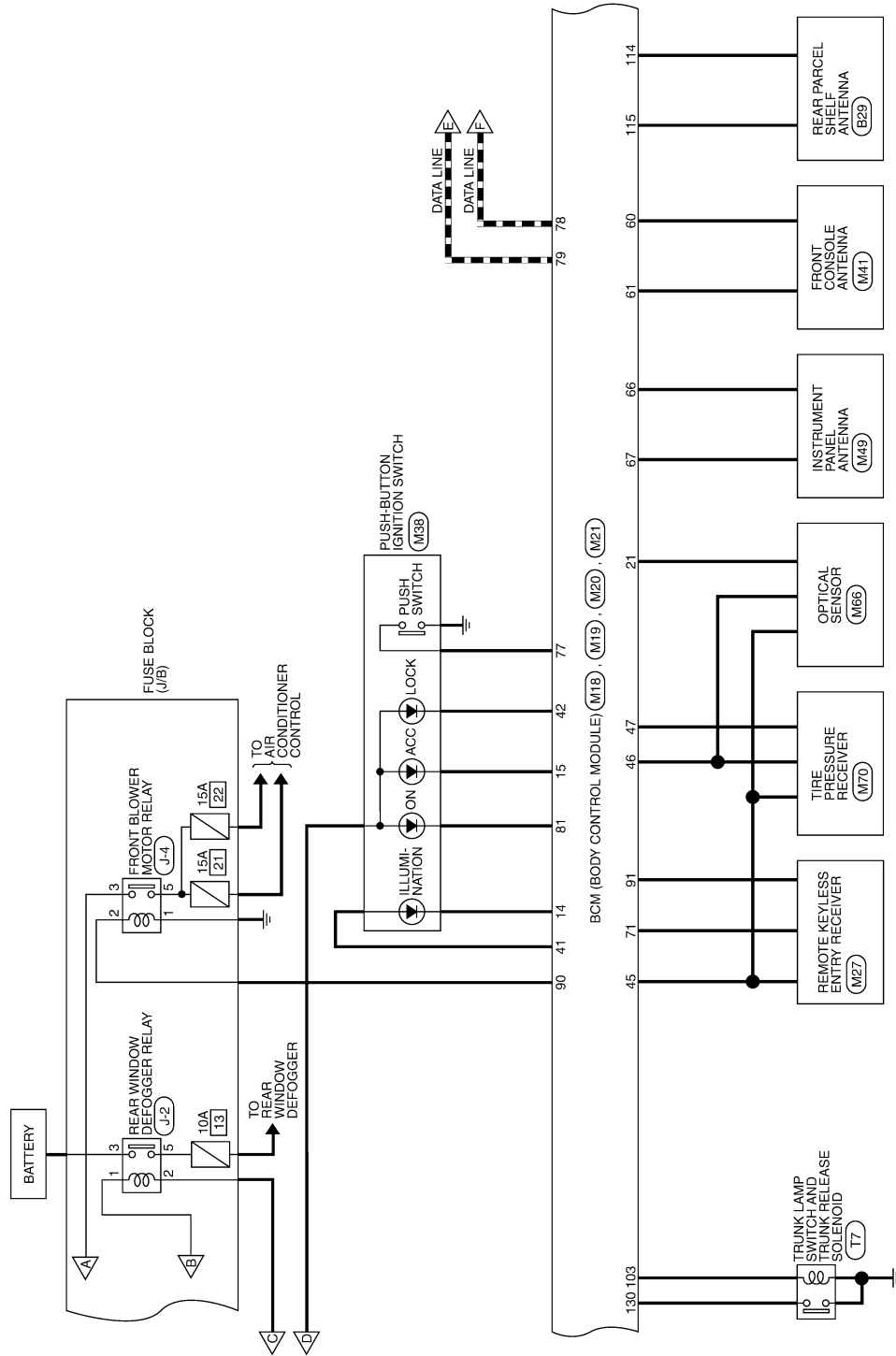
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# BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

— : DATA LINE



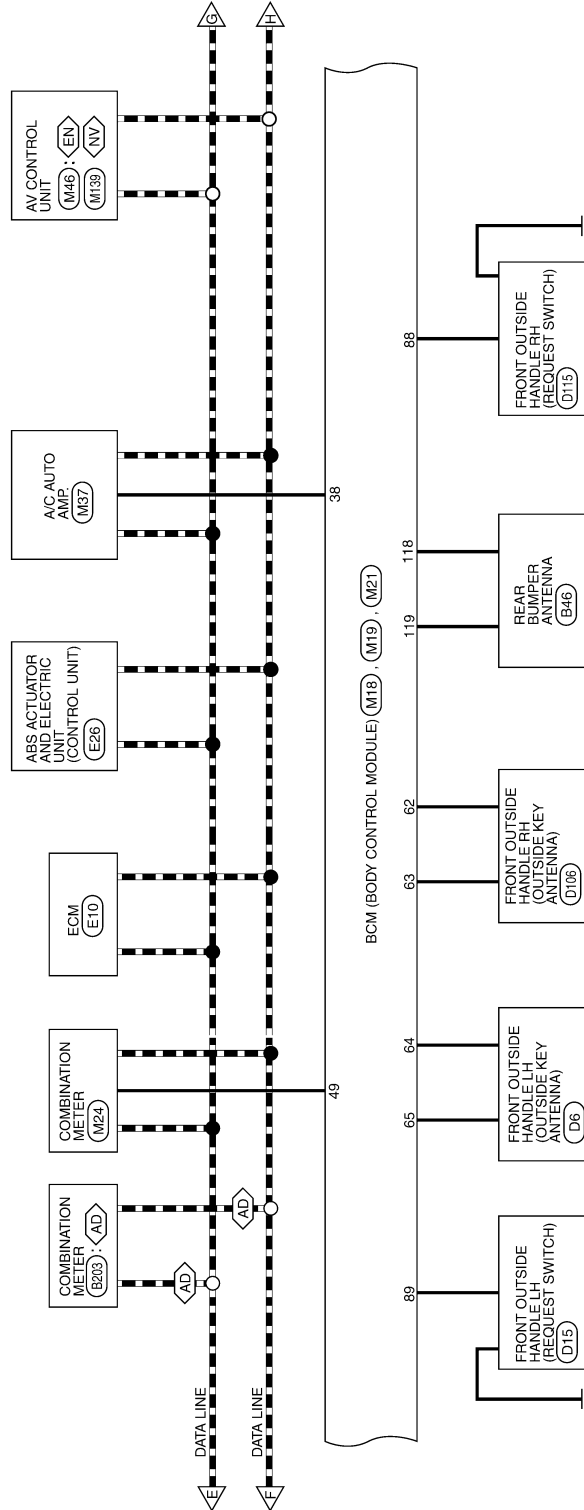
ABMWA0078GI



# BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

- - - : DATA LINE  
 <AD> : WITH AUTOMATIC DRIVE POSITIONER  
 <EN> : WITHOUT NAVI  
 <NV> : WITH NAVI



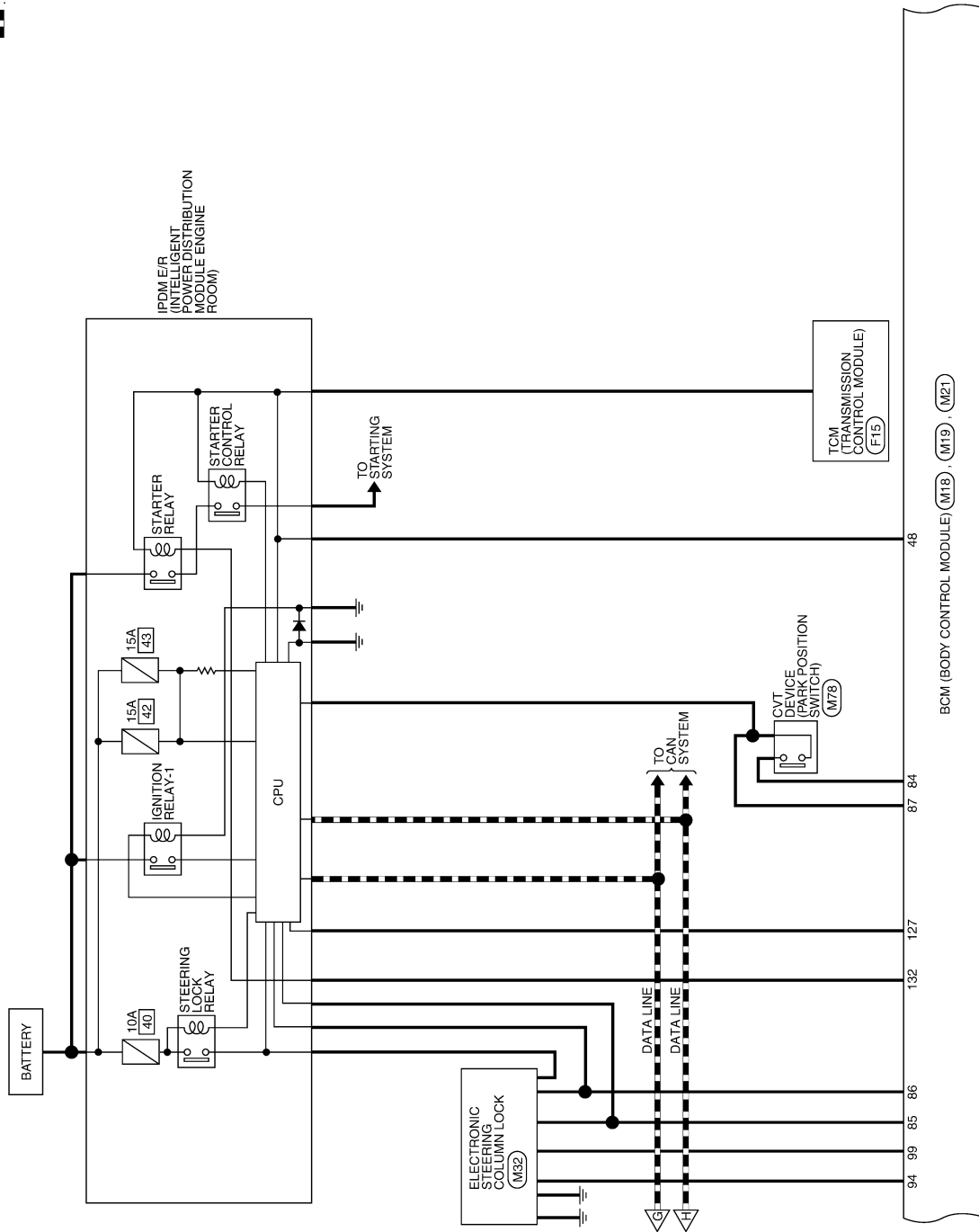
ABMWA0079GI

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# BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

--- : DATA LINE

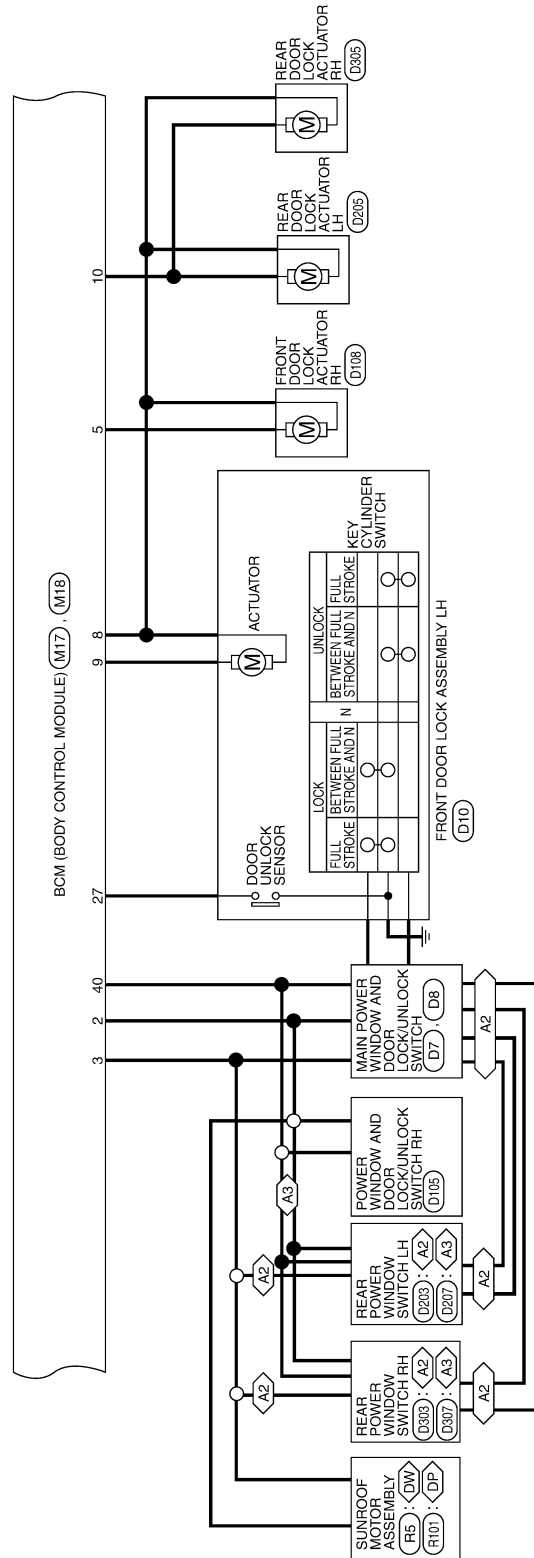


ABMWA0080GI

# BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

- <A2> : WITH LEFT AND RIGHT FRONT POWER WINDOW ANTI-PINCH SYSTEM
- <A3> : WITH FRONT AND REAR POWER WINDOW ANTI-PINCH SYSTEM
- <DP> : WITH DUAL PANEL SUNROOF
- <DW> : WITHOUT DUAL PANEL SUNROOF



ABMWA0081G1

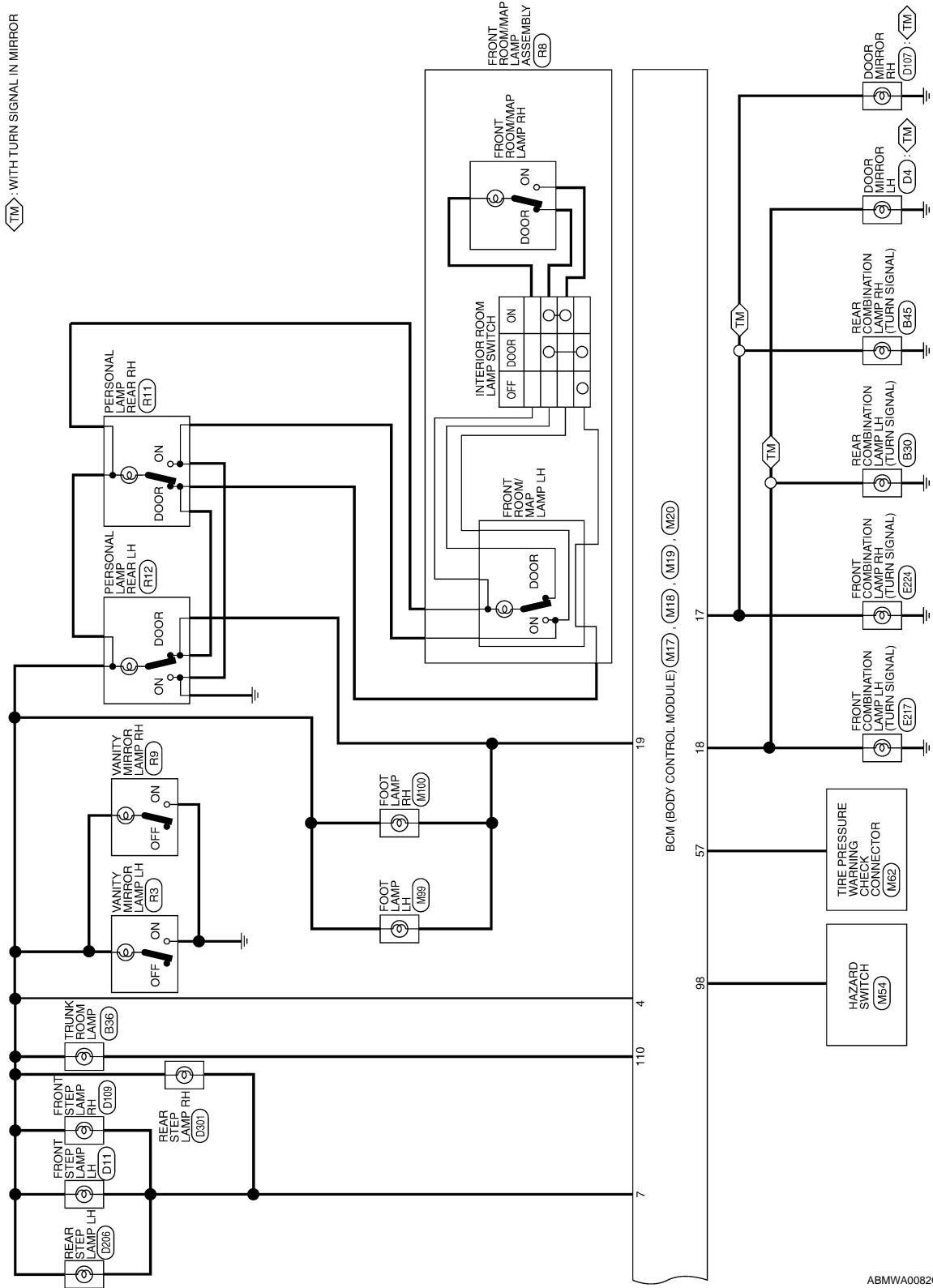
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# BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

TM : WITH TURN SIGNAL IN MIRROR



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# BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

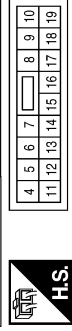
## BCM (BODY CONTROL MODULE) CONNECTORS

|                 |                           |
|-----------------|---------------------------|
| Connector No.   | M16                       |
| Connector Name  | BCM (BODY CONTROL MODULE) |
| Connector Color | BLACK                     |



| Terminal No. | Color of Wire | Signal Name           |
|--------------|---------------|-----------------------|
| 1            | W/B           | BAT POWER F/L         |
| 2            | R/Y           | P/W POWER SUPPLY PERM |
| 3            | L/W           | P/W POWER SUPPLY IGN  |

|                 |                           |
|-----------------|---------------------------|
| Connector No.   | M17                       |
| Connector Name  | BCM (BODY CONTROL MODULE) |
| Connector Color | WHITE                     |



| Terminal No. | Color of Wire | Signal Name                |
|--------------|---------------|----------------------------|
| 4            | P/W           | R/L POWER SUPPLY           |
| 5            | G             | DOOR UNLOCK OUTPUT AS      |
| 6            | -             | -                          |
| 7            | R/W           | STEP LAMP CONT             |
| 8            | V             | DOOR UNLOCK OUTPUT ALL     |
| 9            | L             | DOOR UNLOCK OUTPUT (DR/FL) |

| Terminal No. | Color of Wire | Signal Name                |
|--------------|---------------|----------------------------|
| 10           | G             | DOOR UNLOCK OUTPUT (RR/RL) |
| 11           | Y/R           | BAT BCM FUSE               |
| 12           | -             | -                          |
| 13           | B             | GND1                       |
| 14           | GR/W          | LOW SIDE PUSH LED          |
| 15           | Y/L           | ACC LED                    |
| 16           | -             | -                          |
| 17           | G/B           | FR FLASHER                 |
| 18           | G/Y           | FL FLASHER                 |
| 19           | Y             | ROOM LAMP CONT             |

|                 |                           |
|-----------------|---------------------------|
| Connector No.   | M18                       |
| Connector Name  | BCM (BODY CONTROL MODULE) |
| Connector Color | GREEN                     |



|    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |   |   |   |   |   |   |   |   |   |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---|---|---|---|---|---|---|---|---|---|
| 39 | 38 | 37 | 36 | 35 | 34 | 33 | 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---|---|---|---|---|---|---|---|---|---|

| Terminal No. | Color of Wire | Signal Name       |
|--------------|---------------|-------------------|
| 20           | -             | -                 |
| 21           | P/B           | A/L SIGNAL TYPE 1 |
| 22           | -             | -                 |
| 23           | -             | -                 |
| 24           | R/W           | BRAKE SW1         |
| 25           | -             | -                 |
| 26           | O/L           | BRAKE SW2         |

| Terminal No. | Color of Wire | Signal Name         |
|--------------|---------------|---------------------|
| 27           | O             | DOOR LOCK STATUS DR |
| 28           | -             | -                   |
| 29           | Y             | FOB IN SW 1         |
| 30           | V/Y           | ACC F/B             |
| 31           | G             | IGN F/B             |
| 32           | R/B           | AS DOOR SW 1        |
| 33           | -             | -                   |
| 34           | -             | -                   |
| 35           | -             | -                   |
| 36           | -             | -                   |
| 37           | O             | TRUNK CANCEL SW     |
| 38           | GR/W          | REAR DEFOGGER SW    |
| 39           | -             | -                   |
| 40           | Y/G           | PW K-LINE           |
| 41           | W             | PUSH LED            |
| 42           | R             | S/L LOCK LED        |
| 43           | -             | -                   |
| 44           | -             | -                   |

| Terminal No. | Color of Wire | Signal Name                   |
|--------------|---------------|-------------------------------|
| 45           | P             | GND RF2 A/L                   |
| 46           | V/W           | A/L POWER SUPPLY .5V          |
| 47           | G/O           | RF2 TUNER SIGNAL              |
| 48           | R/G           | SHIFT N/R/NEUTRAL SW          |
| 49           | L/O           | IMMO LED (SECURITY INDICATOR) |
| 50           | LG/B          | COMBI SW OUT 5                |
| 51           | L/W           | COMBI SW OUT 1                |
| 52           | G/B           | COMBI SW OUT 2                |
| 53           | LG/R          | COMBI SW OUT 3                |
| 53           | G/Y           | COMBI SW OUT 4                |
| 54           | -             | -                             |
| 55           | -             | -                             |
| 56           | W             | TPMS MODE                     |
| 58           | SB            | DR DOOR SW                    |
| 59           | G/R           | REAR DEFOGGER                 |

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

# BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

|                 |                           |
|-----------------|---------------------------|
| Connector No.   | M19                       |
| Connector Name  | BCM (BODY CONTROL MODULE) |
| Connector Color | BLACK                     |



|    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 79 | 78 | 77 | 76 | 75 | 74 | 73 | 72 | 71 | 70 | 69 | 68 | 67 | 66 | 65 | 64 | 63 | 62 | 61 | 60 |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|

| Terminal No. | Color of Wire | Signal Name   |
|--------------|---------------|---------------|
| 60           | B/R           | ROOM ANT 2 B  |
| 61           | W/R           | ROOM ANT 2 A  |
| 62           | V             | AS DOOR ANT B |
| 63           | P             | AS DOOR ANT A |
| 64           | V             | DR DOOR ANT B |
| 65           | P             | DR DOOR ANT A |
| 66           | R             | ROOM ANT 1 B  |



|     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|
| 100 | 101 | 102 | 103 | 104 |     |     |
| 105 | 106 | 107 | 108 | 109 | 110 | 111 |

| Terminal No. | Color of Wire | Signal Name    |
|--------------|---------------|----------------|
| 100          | -             | -              |
| 101          | -             | -              |
| 102          | -             | -              |
| 103          | V             | CDL BACK TRUNK |

| Terminal No. | Color of Wire | Signal Name           |
|--------------|---------------|-----------------------|
| 67           | G             | ROOM ANT 1 A          |
| 68           | G/O           | FOB READER CLOCK      |
| 69           | O             | FOB READER DATA       |
| 70           | R/B           | IGN REL OUTPUT 2      |
| 71           | L/O           | RF1 TUNER SIGNAL      |
| 72           | -             | -                     |
| 73           | -             | -                     |
| 74           | -             | -                     |
| 75           | R/Y           | COMBI SW IN 5         |
| 76           | R/G           | COMBI SW IN 3         |
| 77           | BR            | ENG START SW          |
| 78           | P             | CAN-L                 |
| 79           | L             | CAN-H                 |
| 80           | R/L           | FOB SLOT ILLUMINATION |
| 81           | Y/L           | IGN ON LED            |
| 82           | -             | -                     |
| 83           | L             | ACC CONT              |

| Terminal No. | Color of Wire | Signal Name            |
|--------------|---------------|------------------------|
| 84           | Y/R           | AT DEVICE OUT          |
| 85           | L/O           | S/L CONDITION 1        |
| 86           | G/R           | S/L CONDITION 2        |
| 87           | G/B           | SHIFT P/ASCD CANCEL SW |
| 88           | R             | AS REQUEST SW          |
| 89           | R             | DR REQUEST SW          |
| 90           | Y             | BLOWER FAN RELAY       |
| 91           | L/R           | RF POWER SUPPLY 12V    |
| 92           | -             | -                      |
| 93           | -             | -                      |
| 94           | G/Y           | S/L POWER SUPPLY 12V   |
| 95           | RW            | COMBI SW IN 1          |
| 96           | P/B           | COMBI SW IN 4          |
| 97           | R/B           | COMBI SW IN 2          |
| 98           | G/O           | HAZARD SW              |
| 99           | L/Y           | S/L K-LINE             |

| Terminal No. | Color of Wire | Signal Name     |
|--------------|---------------|-----------------|
| 104          | -             | -               |
| 105          | -             | -               |
| 106          | -             | -               |
| 107          | -             | -               |
| 108          | -             | -               |
| 109          | -             | -               |
| 110          | V/W           | TRUNK LAMP CONT |
| 111          | -             | -               |

|                 |                           |
|-----------------|---------------------------|
| Connector No.   | M20                       |
| Connector Name  | BCM (BODY CONTROL MODULE) |
| Connector Color | WHITE                     |

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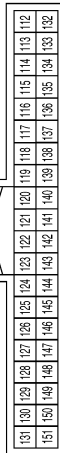
# BCM (BODY CONTROL MODULE)

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| Terminal No. | Color of Wire | Signal Name       |
|--------------|---------------|-------------------|
| 136          | -             | -                 |
| 137          | -             | -                 |
| 138          | -             | -                 |
| 139          | -             | -                 |
| 140          | -             | -                 |
| 141          | BR            | TRUNK REQUEST SW  |
| 142          | -             | -                 |
| 143          | -             | -                 |
| 144          | GR            | BUZZER            |
| 145          | -             | -                 |
| 146          | -             | -                 |
| 147          | L/R           | BACK TRUNK OPENER |
| 148          | R/W           | RR DOOR SW        |
| 149          | R/B           | RL DOOR SW        |
| 150          | -             | -                 |
| 151          | -             | -                 |

| Terminal No. | Color of Wire | Signal Name      |
|--------------|---------------|------------------|
| 119          | BR/W          | BACK DOOR ANT A  |
| 120          | -             | -                |
| 121          | -             | -                |
| 122          | -             | -                |
| 123          | -             | -                |
| 124          | -             | -                |
| 125          | -             | -                |
| 126          | -             | -                |
| 127          | BR/W          | IGN RELAY OUTPUT |
| 128          | -             | -                |
| 129          | -             | -                |
| 130          | W             | TRUNK SW         |
| 131          | -             | -                |
| 132          | R             | ST RELAY OUTPUT  |
| 133          | -             | -                |
| 134          | -             | -                |
| 135          | -             | -                |

|                 |                           |
|-----------------|---------------------------|
| Connector No.   | M21                       |
| Connector Name  | BCM (BODY CONTROL MODULE) |
| Connector Color | GRAY                      |



| Terminal No. | Color of Wire | Signal Name     |
|--------------|---------------|-----------------|
| 112          | -             | -               |
| 113          | -             | -               |
| 114          | B             | TRUNK ANT 1 B   |
| 115          | W             | TRUNK ANT 1 A   |
| 116          | -             | -               |
| 117          | -             | -               |
| 118          | L/O           | BACK DOOR ANT B |

## Fail Safe

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INFOID:000000004351877

| 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    |

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

WW

## BCM (BODY CONTROL MODULE)

### < ECU DIAGNOSIS >

| Display contents of CONSULT | Fail-safe  | Cancellation   |
|-----------------------------|--|--|
| 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  | Erase DTC  |
| B2557: VEHICLE SPEED        | Inhibit electronic steering column lock  | When normal vehicle speed signals have been 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 has become consistent <ul style="list-style-type: none"> <li>• Starter control relay signal</li> <li>• Starter relay status signal</li> </ul>   |
| B2562: LO VOLTAGE           | <ul style="list-style-type: none"> <li>• Inhibit engine cranking</li> <li>• Inhibit electronic steering column lock</li> </ul> | 100 ms after the power supply voltage increases to more than 8.8 V   |
| B2601: SHIFT POSITION       | Inhibit electronic steering column lock  | 500 ms after the following signal reception status becomes consistent <ul style="list-style-type: none"> <li>• Selector lever P position switch signal</li> <li>• P range signal (CAN)</li> </ul>  |
| B2602: SHIFT POSITION       | Inhibit electronic steering column 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>• Selector lever P position switch signal: Except P position (battery voltage)</li> <li>• Vehicle speed: 4 km/h or more</li> </ul>  |
| B2603: SHIFT POSI STATUS    | Inhibit electronic steering column 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>• Selector lever P position switch signal: Except P position (battery voltage)</li> <li>• Selector lever P/N position signal: Except P and N positions (0 V)</li> </ul>  |
| B2604: PNP SW               | Inhibit electronic steering column lock  | 500 ms after any of the following BCM recognition conditions is 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>- Selector 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>- Selector 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 SW               | Inhibit electronic steering column lock  | 500 ms after any of the following BCM recognition conditions is fulfilled <ul style="list-style-type: none"> <li>• Ignition switch is in the ON position               <ul style="list-style-type: none"> <li>- Power position: IGN</li> <li>- Selector 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>- Selector 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 has become consistent <ul style="list-style-type: none"> <li>• Electronic steering column lock relay signal (Request signal)</li> <li>• Electronic steering column lock relay signal (Condition signal)</li> </ul>  |
| B2607: S/L RELAY            | Inhibit engine cranking  | 500 ms after the following CAN signal communication status has become consistent <ul style="list-style-type: none"> <li>• Electronic steering column lock relay signal (Request signal)</li> <li>• Electronic steering column lock relay signal (Condition signal)</li> </ul>  |



## BCM (BODY CONTROL MODULE)

### < ECU DIAGNOSIS >

| 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 electronic steering column lock</li> </ul> | When the following electronic steering column lock conditions agree <ul style="list-style-type: none"> <li>• BCM electronic steering column lock control status</li> <li>• Electronic steering column lock condition No. 1 signal status</li> <li>• Electronic steering column 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 is 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 electronic steering column lock</li> </ul> | When any of the following conditions is fulfilled <ul style="list-style-type: none"> <li>• Electronic steering column lock unit status signal (CAN) is received normally</li> <li>• The BCM electronic steering column lock control status matches the electronic steering column lock status recognized by the electronic steering column lock unit status signal (CAN from IPDM E/R)</li> </ul> |
| B2617: STARTER RELAY CIRC   | 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 electronic steering column lock unit power supply output control inside BCM becomes normal   |
| B26E1: ENG STATE NO RECIV   | Inhibit engine cranking  | 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>   |

### DTC Inspection Priority Chart

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

| Priority | DTC   |
|----------|---|
| 1        | <ul style="list-style-type: none"> <li>• B2562: LO VOLTAGE</li> </ul>   |
| 2        | <ul style="list-style-type: none"> <li>• U1000: CAN COMM CIRCUIT</li> <li>• U1010: CONTROL UNIT (CAN)</li> </ul>  |
| 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> </ul> |

# BCM (BODY CONTROL MODULE)

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| Priority | DTC  |
|----------|--|
| 4        | <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 SW</li> <li>• B2605: PNP 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: ACC RELAY CIRC</li> <li>• B2615: BLOWER RELAY CIRC</li> <li>• B2616: IGN RELAY CIRC</li> <li>• B2617: STARTER RELAY CIRC</li> <li>• B2618: BCM</li> <li>• B2619: BCM</li> <li>• B261A: PUSH-BTN IGN SW</li> <li>• B26E1: ENG STATE NO RECIV</li> <li>• C1729: VHCL SPEED SIG ERR</li> <li>• U0415: VEHICLE SPEED SIG</li> </ul> |
| 5        | <ul style="list-style-type: none"> <li>• C1704: LOW PRESSURE FL</li> <li>• C1705: LOW PRESSURE FR</li> <li>• C1706: LOW PRESSURE RR</li> <li>• C1707: LOW PRESSURE RL</li> <li>• C1708: [NO DATA] FL</li> <li>• C1709: [NO DATA] FR</li> <li>• C1710: [NO DATA] RR</li> <li>• C1711: [NO DATA] RL</li> <li>• C1712: [CHECKSUM ERR] FL</li> <li>• C1713: [CHECKSUM ERR] FR</li> <li>• C1714: [CHECKSUM ERR] RR</li> <li>• C1715: [CHECKSUM ERR] RL</li> <li>• C1716: [PRESSDATA ERR] FL</li> <li>• C1717: [PRESSDATA ERR] FR</li> <li>• C1718: [PRESSDATA ERR] RR</li> <li>• C1719: [PRESSDATA ERR] RL</li> <li>• C1720: [CODE ERR] FL</li> <li>• C1721: [CODE ERR] FR</li> <li>• C1722: [CODE ERR] RR</li> <li>• C1723: [CODE ERR] RL</li> <li>• C1724: [BATT VOLT LOW] FL</li> <li>• C1725: [BATT VOLT LOW] FR</li> <li>• C1726: [BATT VOLT LOW] RR</li> <li>• C1727: [BATT VOLT LOW] RL</li> <li>• C1734: CONTROL UNIT</li> </ul>  |
| 6        | <ul style="list-style-type: none"> <li>• B2621: INSIDE ANTENNA</li> <li>• B2622: INSIDE ANTENNA</li> <li>• B2623: INSIDE ANTENNA</li> </ul>  |

DTC Index

INFOID:000000004351879

NOTE:

## BCM (BODY CONTROL MODULE)

### < ECU DIAGNOSIS >

#### Details of time display

- CRNT: Displays when there is a malfunction now or after returning to the normal condition until turning ignition switch OFF → ON again.
- 1 - 39: Displayed if any previous malfunction is present when current condition is normal. It increases 1 → 2 → 3...38 → 39 after returning to the normal condition whenever ignition switch OFF → ON. The counter remains at 39 even if the number of cycles exceeds it. It is counted from 1 again when turning ignition switch OFF → ON after returning to the normal condition if the malfunction is detected again.

| CONSULT display                                      | Fail-safe | Intelligent Key warning lamp ON | Tire pressure monitor warning lamp ON | Reference page         |
|--|-----------|---------------------------------|---------------------------------------|------------------------|
| No DTC is detected. further testing may be required. | —         | —                               | —                                     | —                      |
| U1000: CAN COMM CIRCUIT                              | —         | —                               | —                                     | <a href="#">BCS-37</a> |
| U1010: CONTROL UNIT (CAN)                            | —         | —                               | —                                     | <a href="#">BCS-38</a> |
| U0415: VEHICLE SPEED SIG                             | —         | —                               | —                                     | <a href="#">BCS-39</a> |
| B2013: ID DISCORD BCM-S/L                            | ×         | —                               | —                                     | <a href="#">SEC-30</a> |
| B2014: CHAIN OF S/L-BCM                              | ×         | —                               | —                                     | <a href="#">SEC-31</a> |
| B2190: NATS ANTENNA AMP                              | ×         | —                               | —                                     | <a href="#">SEC-34</a> |
| B2191: DIFFERENCE OF KEY                             | ×         | —                               | —                                     | <a href="#">SEC-37</a> |
| B2192: ID DISCORD BCM-ECM                            | ×         | —                               | —                                     | <a href="#">SEC-38</a> |
| B2193: CHAIN OF BCM-ECM                              | ×         | —                               | —                                     | <a href="#">SEC-39</a> |
| B2553: IGNITION RELAY                                | —         | —                               | —                                     | <a href="#">PCS-54</a> |
| B2555: STOP LAMP                                     | —         | —                               | —                                     | <a href="#">SEC-40</a> |
| B2556: PUSH-BTN IGN SW                               | —         | ×                               | —                                     | <a href="#">SEC-42</a> |
| B2557: VEHICLE SPEED                                 | ×         | ×                               | —                                     | <a href="#">SEC-44</a> |
| B2560: STARTER CONT RELAY                            | ×         | ×                               | —                                     | <a href="#">SEC-45</a> |
| B2562: LOW VOLTAGE                                   | —         | —                               | —                                     | <a href="#">BCS-40</a> |
| B2601: SHIFT POSITION                                | ×         | ×                               | —                                     | <a href="#">SEC-46</a> |
| B2602: SHIFT POSITION                                | ×         | ×                               | —                                     | <a href="#">SEC-49</a> |
| B2603: SHIFT POSI STATUS                             | ×         | ×                               | —                                     | <a href="#">SEC-51</a> |
| B2604: PNP SW  | ×         | ×                               | —                                     | <a href="#">SEC-54</a> |
| B2605: PNP SW  | ×         | ×                               | —                                     | <a href="#">SEC-56</a> |
| B2606: S/L RELAY                                     | ×         | ×                               | —                                     | <a href="#">SEC-58</a> |
| B2607: S/L RELAY                                     | ×         | ×                               | —                                     | <a href="#">SEC-59</a> |
| B2608: STARTER RELAY                                 | ×         | ×                               | —                                     | <a href="#">SEC-61</a> |
| B2609: S/L STATUS                                    | ×         | ×                               | —                                     | <a href="#">SEC-63</a> |
| B260A: IGNITION RELAY                                | ×         | ×                               | —                                     | <a href="#">PCS-56</a> |
| B260B: STEERING LOCK UNIT                            | —         | ×                               | —                                     | <a href="#">SEC-67</a> |
| B260C: STEERING LOCK UNIT                            | —         | ×                               | —                                     | <a href="#">SEC-68</a> |
| B260D: STEERING LOCK UNIT                            | —         | ×                               | —                                     | <a href="#">SEC-69</a> |
| B260F: ENG STATE SIG LOST                            | ×         | ×                               | —                                     | <a href="#">SEC-70</a> |
| B2612: S/L STATUS                                    | ×         | ×                               | —                                     | <a href="#">SEC-72</a> |
| B2614: ACC RELAY CIRC                                | —         | ×                               | —                                     | <a href="#">PCS-58</a> |
| B2615: BLOWER RELAY CIRC                             | —         | ×                               | —                                     | <a href="#">PCS-61</a> |
| B2616: IGN RELAY CIRC                                | —         | ×                               | —                                     | <a href="#">PCS-64</a> |
| B2617: STARTER RELAY CIRC                            | ×         | ×                               | —                                     | <a href="#">PCS-64</a> |
| B2618: BCM   | ×         | ×                               | —                                     | <a href="#">PCS-67</a> |

## BCM (BODY CONTROL MODULE)

### < ECU DIAGNOSIS >

| CONSULT display           | Fail-safe | Intelligent Key<br>warning lamp ON | Tire pressure<br>monitor warning<br>lamp ON | Reference page         |
|---------------------------|-----------|------------------------------------|---|------------------------|
| B2619: BCM                | ×         | ×                                  | —   | <a href="#">SEC-78</a> |
| B261A: PUSH-BTN IGN SW    | —         | ×                                  | —   | <a href="#">SEC-79</a> |
| B2621: INSIDE ANTENNA     | —         | —                                  | —   | <a href="#">DLK-57</a> |
| B2622: INSIDE ANTENNA     | —         | —                                  | —   | <a href="#">DLK-60</a> |
| B2623: INSIDE ANTENNA     | —         | —                                  | —   | <a href="#">DLK-63</a> |
| B26E1: ENG STATE NO RES   | ×         | ×                                  | —   | <a href="#">SEC-71</a> |
| C1704: LOW PRESSURE FL    | —         | —                                  | ×   | <a href="#">WT-48</a>  |
| C1705: LOW PRESSURE FR    | —         | —                                  | ×   | <a href="#">WT-48</a>  |
| C1706: LOW PRESSURE RR    | —         | —                                  | ×   | <a href="#">WT-48</a>  |
| C1707: LOW PRESSURE RL    | —         | —                                  | ×   | <a href="#">WT-48</a>  |
| C1708: [NO DATA] FL       | —         | —                                  | ×   | <a href="#">WT-13</a>  |
| C1709: [NO DATA] FR       | —         | —                                  | ×   | <a href="#">WT-13</a>  |
| C1710: [NO DATA] RR       | —         | —                                  | ×   | <a href="#">WT-13</a>  |
| C1711: [NO DATA] RL       | —         | —                                  | ×   | <a href="#">WT-13</a>  |
| C1712: [CHECKSUM ERR] FL  | —         | —                                  | ×   | <a href="#">WT-15</a>  |
| C1713: [CHECKSUM ERR] FR  | —         | —                                  | ×   | <a href="#">WT-15</a>  |
| C1714: [CHECKSUM ERR] RR  | —         | —                                  | ×   | <a href="#">WT-15</a>  |
| C1715: [CHECKSUM ERR] RL  | —         | —                                  | ×   | <a href="#">WT-15</a>  |
| C1716: [PRESSDATA ERR] FL | —         | —                                  | ×   | <a href="#">WT-17</a>  |
| C1717: [PRESSDATA ERR] FR | —         | —                                  | ×   | <a href="#">WT-17</a>  |
| C1718: [PRESSDATA ERR] RR | —         | —                                  | ×   | <a href="#">WT-17</a>  |
| C1719: [PRESSDATA ERR] RL | —         | —                                  | ×   | <a href="#">WT-17</a>  |
| C1720: [CODE ERR] FL      | —         | —                                  | ×   | <a href="#">WT-15</a>  |
| C1721: [CODE ERR] FR      | —         | —                                  | ×   | <a href="#">WT-15</a>  |
| C1722: [CODE ERR] RR      | —         | —                                  | ×   | <a href="#">WT-15</a>  |
| C1723: [CODE ERR] RL      | —         | —                                  | ×   | <a href="#">WT-15</a>  |
| C1724: [BATT VOLT LOW] FL | —         | —                                  | ×   | <a href="#">WT-15</a>  |
| C1725: [BATT VOLT LOW] FR | —         | —                                  | ×   | <a href="#">WT-15</a>  |
| C1726: [BATT VOLT LOW] RR | —         | —                                  | ×   | <a href="#">WT-15</a>  |
| C1727: [BATT VOLT LOW] RL | —         | —                                  | ×   | <a href="#">WT-15</a>  |
| C1729: VHCL SPEED SIG ERR | —         | —                                  | ×   | <a href="#">WT-18</a>  |
| C1734: CONTROL UNIT       | —         | —                                  | ×   | <a href="#">WT-19</a>  |

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

< ECU DIAGNOSIS >

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

Reference Value

INFOID:000000004351880

VALUES ON THE DIAGNOSIS TOOL

| Monitor Item  | Condition   |  | Value/Status |
|---------------|---|--|--------------|
| MOTOR FAN REQ | Engine idle speed   | Changes depending on engine coolant temperature, air conditioner operation status, vehicle speed, etc.   | 1,2,3,4      |
| 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    | Lighting switch 2ND or AUTO (Light is illuminated)          | Front fog lamp switch OFF  | Off          |
|               |   | <ul style="list-style-type: none"> <li>• Front fog lamp switch ON</li> <li>• Daytime running light activated (Only for Canada models)</li> </ul> | On           |
| 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  | CVT selector lever in any position other than P or N   | Off          |
|               | Ignition switch ON  | CVT selector 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)

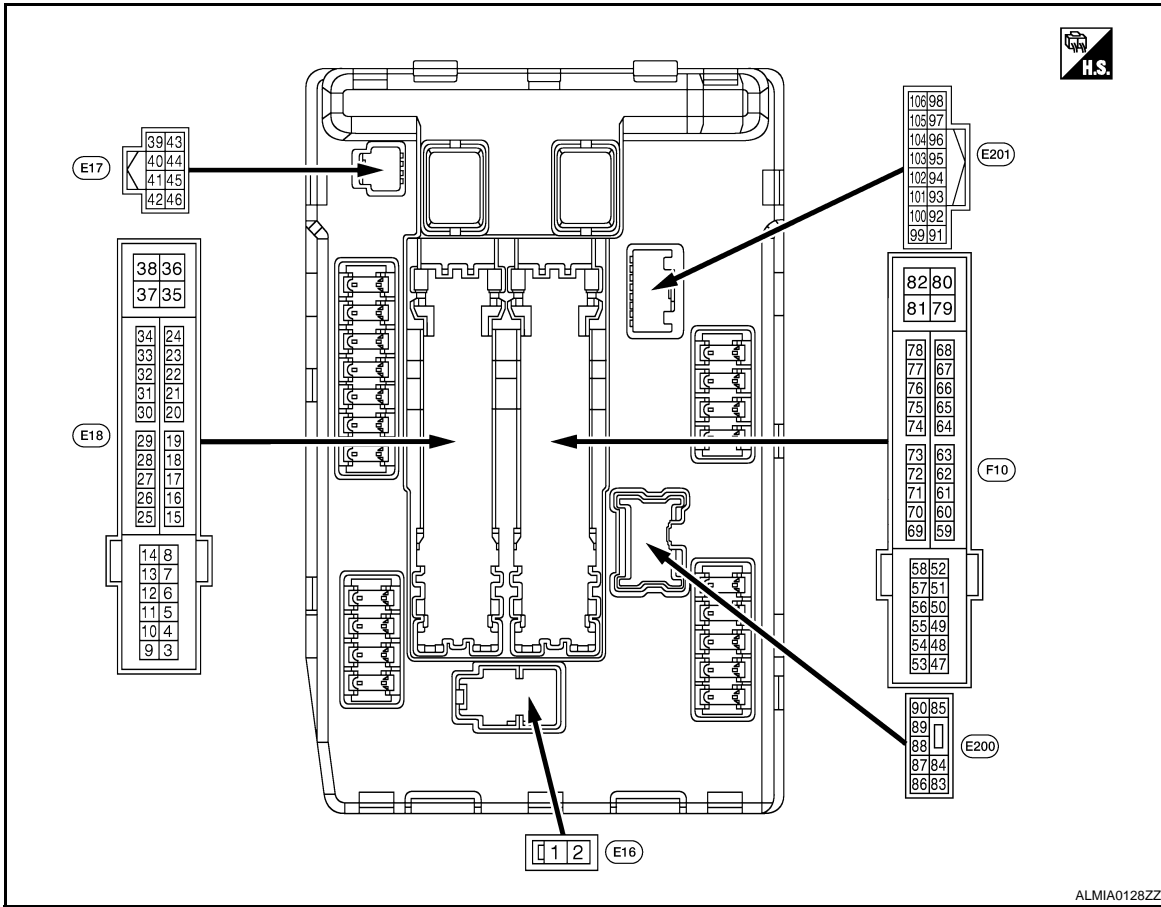
## < ECU DIAGNOSIS >

| Monitor Item   | Condition   | Value/Status |
|----------------|---|--------------|
| ST/INHI RLY    | Ignition switch ON  | Off          |
|                | At engine cranking  | ST →INHI     |
|                | 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 selector button with CVT selector lever in P position</li> <li>• CVT selector lever in any position other than P</li> </ul>                         | Off          |
|                | Release the CVT selector button with CVT selector 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           |
| S/L STATE      | Steering lock is activated  | LOCK         |
|                | Steering lock is deactivated  | UNLK         |
|                | [DTC B210A] is detected   | UNKWN        |
| DTRL REQ       | <b>NOTE:</b><br>This item is displayed, but cannot be monitored.  | Off          |
| OIL P SW       | Ignition switch OFF, ACC or engine running  | Open         |
|                | Ignition switch ON  | Close        |
| THFT HRN REQ   | Not operated  | 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 operated  | Off          |
|                | Door locking with Intelligent Key (horn chirp mode)   | On           |
| CRNRNG LMP REQ | <b>NOTE:</b><br>This item is displayed, but cannot be monitored.  | Off          |
| HOOD SW        | <b>NOTE:</b><br>This item is displayed, but cannot be monitored.  | On           |
| HL WASHER REQ  | <b>NOTE:</b><br>This item is displayed, but cannot be monitored.  | On           |

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

< ECU DIAGNOSIS >

## TERMINAL LAYOUT



## PHYSICAL VALUES

| Terminal No.<br>(Wire color) |        | Description   |                  | Condition   |                        | Value<br>(Approx.) |
|------------------------------|--------|---|------------------|---|------------------------|--------------------|
| +                            | -      | Signal name   | Input/<br>Output |   |                        |                    |
| 1<br>(R)                     | Ground | Battery power supply                                  | Input            | Ignition switch OFF   |                        | Battery voltage    |
| 2<br>(L)                     | Ground | Battery power supply                                  | Input            | Ignition switch OFF   |                        | Battery voltage    |
| 4<br>(LG)                    | Ground | Front wiper LO  | Output           | Ignition switch OFF   | Front wiper switch OFF | 0 V                |
|                              |        |   |                  | Ignition switch ON  | Front wiper switch LO  | Battery voltage    |
| 5<br>(Y)                     | Ground | Front wiper HI  | Output           | Ignition switch OFF   | Front wiper switch OFF | 0 V                |
|                              |        |   |                  | Ignition switch ON  | Front wiper switch HI  | Battery voltage    |
| 6<br>(L)                     | Ground | Daytime light relay power supply (Canada models only) | Output           | Ignition switch OFF   |                        | Battery voltage    |
| 7<br>(GR)                    | Ground | Tail, license plate lamps & interior lamps            | Output           | Ignition switch OFF   | Lighting switch OFF    | 0 V                |
|                              |        |   |                  | Ignition switch ON  | Lighting switch 1ST    | Battery voltage    |
| 10<br>(BR)                   | Ground | ECM relay power supply                                | Output           | Ignition switch OFF<br>(For a few seconds after turning ignition switch OFF)  |                        | 0 V                |
|                              |        |   |                  | <ul style="list-style-type: none"> <li>Ignition switch ON</li> <li>Ignition switch OFF<br/>(More than a few seconds after turning ignition switch OFF)</li> </ul> |                        | Battery voltage    |

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

## < ECU DIAGNOSIS >

| Terminal No.<br>(Wire color) |        | Description                                      |                  | Condition   |   | Value<br>(Approx.) |
|------------------------------|--------|--|------------------|---|---|--------------------|
| +                            | -      | Signal name                                      | Input/<br>Output |   |   |                    |
| 11<br>(O)                    | Ground | Electronic steering column lock power supply     | Output           | Ignition switch OFF   | A few seconds after opening the driver door       | Battery voltage    |
|                              |        |  |                  | Ignition switch LOCK  | Press the push-button ignition switch             | Battery voltage    |
|                              |        |  |                  | Ignition switch ACC or ON   |   | 0 V                |
| 12<br>(B)                    | Ground | Ground   | —                | Ignition switch ON  |   | 0 V                |
| 13<br>(SB)                   | Ground | Fuel pump power supply                           | Output           | Approximately 1 second or more after turning the ignition switch ON   |   | 0 V                |
|                              |        |  |                  | <ul style="list-style-type: none"> <li>Approximately 1 second after turning the ignition switch ON</li> <li>Engine running</li> </ul>                           |   | Battery voltage    |
| 15<br>(W)                    | Ground | Ignition relay-1 power supply                    | Output           | Ignition switch OFF   |   | 0 V                |
|                              |        |  |                  | Ignition switch ON  |   | Battery voltage    |
| 16<br>(R)                    | Ground | Front wiper auto stop                            | Input            | Ignition switch ON  | Front wiper stop position                         | 0 V                |
|                              |        |  |                  |   | Any position other than front wiper stop position | Battery voltage    |
| 19<br>(Y)                    | Ground | Ignition relay-1 power supply                    | Output           | Ignition switch OFF   |   | 0 V                |
|                              |        |  |                  | Ignition switch ON  |   | Battery voltage    |
| 20<br>(L)                    | Ground | Ambient sensor ground                            | —                | Ignition switch ON  |   | 0V                 |
| 21<br>(LG)                   | Ground | Ambient sensor                                   | —                | Ignition switch ON  |   | 5V                 |
| 22<br>(SB)                   | Ground | Refrigerent pressure sensor ground               | —                | Ignition switch ON  |   | 0V                 |
| 23<br>(GR)                   | Ground | Refrigerent pressure sensor                      | —                | <ul style="list-style-type: none"> <li>Ignition switch ON (READY)</li> <li>Both A/C switch and blower motor switch ON (electric compressor operates)</li> </ul> |   | 1.0 - 4.0V         |
| 24<br>(G)                    | Ground | Refrigerent pressure sensor power supply         | —                | Ignition switch ON  |   | 5V                 |
| 25<br>(GR)                   | Ground | Ignition relay-1 power supply                    | Output           | Ignition switch OFF   |   | 0 V                |
|                              |        |  |                  | Ignition switch ON  |   | Battery voltage    |
| 27<br>(W)                    | Ground | Ignition relay monitor                           | Input            | Ignition switch OFF or ACC  |   | Battery voltage    |
|                              |        |  |                  | Ignition switch ON  |   | 0 V                |
| 28<br>(SB)                   | Ground | Push-button ignition switch                      | Input            | Press the push-button ignition switch   |   | 0 V                |
|                              |        |  |                  | Release the push-button ignition switch   |   | Battery voltage    |
| 30<br>(BR)                   | Ground | Starter relay control                            | Input            | CVT selector lever in any position other than P or N (ignition switch ON)   |   | 0 V                |
|                              |        |  |                  | CVT selector lever P or N (ignition switch ON)  |   | Battery voltage    |
| 32<br>(P)                    | Ground | Electronic steering column lock unit condition-1 | Input            | Electronic steering column lock is activated  |   | 0 V                |
|                              |        |  |                  | Electronic steering column lock is deactivated  |   | Battery voltage    |



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

## < ECU DIAGNOSIS >

| Terminal No.<br>(Wire color) |        | Description                                 |                  | Condition   | Value<br>(Approx.) |
|------------------------------|--------|---|------------------|---|--------------------|
| +                            | -      | Signal name                                 | Input/<br>Output |   |                    |
| 33<br>(G)                    | Ground | Electronic steering column lock condition-2 | Input            | Electronic steering column lock is activated  | Battery voltage    |
|                              |        |   |                  | Electronic steering column lock is deactivated  | 0 V                |
| 34<br>(O)                    | Ground | Cooling fan relay-3 control                 | Input            | Ignition switch OFF or ACC  | 0 V                |
|                              |        |   |                  | Ignition switch ON  | 0.7 V              |
| 35<br>(P)                    | Ground | Cooling fan motor control                   | Output           | Ignition switch OFF or ACC  | 0 V                |
|                              |        |   |                  | Ignition switch ON  | 0.7 V              |
| 36<br>(G)                    | Ground | Battery power supply                        | Input            | Ignition switch OFF   | Battery voltage    |
| 38<br>(GR)                   | Ground | Cooling fan motor control                   | Output           | Ignition switch OFF or ACC  | 0 V                |
|                              |        |   |                  | Ignition switch ON  | 0.7 V              |
| 39<br>(P)                    | —      | CAN - L                                     | Input/<br>Output | —   | —                  |
| 40<br>(L)                    | —      | CAN - H                                     | Input/<br>Output | —   | —                  |
| 41<br>(B)                    | Ground | Ground                                      | —                | Ignition switch ON  | 0 V                |
| 42<br>(SB)                   | Ground | Cooling fan relay-2 control                 | Input            | Ignition switch OFF or ACC  | 0 V                |
|                              |        |   |                  | Ignition switch ON  | 0.7 V              |
| 43<br>(Y)                    | Ground | CVT device<br>(Detention switch)            | Input            | Ignition switch ON<br>Press the CVT selector button (CVT selector lever P)  | Battery voltage    |
|                              |        |   |                  | <ul style="list-style-type: none"> <li>CVT selector lever in any position other than P</li> <li>Release the CVT selector button (CVT selector lever P)</li> </ul> | 0 V                |
| 44<br>(W)                    | Ground | Horn relay control                          | Input            | The horn is deactivated   | Battery voltage    |
|                              |        |   |                  | The horn is activated   | 0 V                |
| 45<br>(GR)                   | Ground | Anti theft horn relay control               | Input            | The horn is deactivated   | Battery voltage    |
|                              |        |   |                  | The horn is activated   | 0 V                |
| 46<br>(BR)                   | Ground | Starter relay control                       | Input            | CVT selector lever in any position other than P or N (ignition switch ON)   | 0 V                |
|                              |        |   |                  | CVT selector lever P or N (ignition switch ON)  | Battery voltage    |
| 48<br>(W)                    | Ground | A/C relay power supply                      | Output           | Engine running<br>A/C switch OFF  | 0 V                |
|                              |        |   |                  | A/C switch ON (A/C compressor is operating)   | Battery voltage    |
| 49<br>(R/G)                  | Ground | ECM relay power supply                      | Output           | Ignition switch OFF (For a few seconds after turning ignition switch OFF)   | 0 V                |
|                              |        |   |                  | <ul style="list-style-type: none"> <li>Ignition switch ON</li> <li>Ignition switch OFF (More than a few seconds after turning ignition switch OFF)</li> </ul>     | Battery voltage    |
| 51<br>(LG)                   | Ground | Ignition relay power supply                 | Output           | Ignition switch OFF   | 0 V                |
|                              |        |   |                  | Ignition switch ON  | Battery voltage    |

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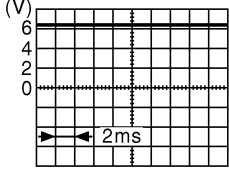
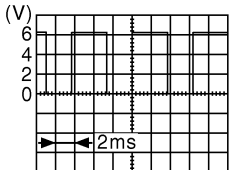
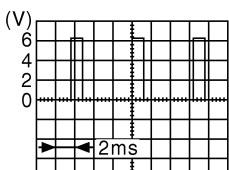
# IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

## < ECU DIAGNOSIS >

| Terminal No.<br>(Wire color) |        | Description                               |                  | Condition   |   | Value<br>(Approx.)                           |
|------------------------------|--------|---|------------------|---|---|--|
| +                            | -      | Signal name                               | Input/<br>Output |   |   |  |
| 52<br>(Y/G)                  | Ground | Ignition relay power supply               | Output           | Ignition switch OFF   |   | 0 V  |
|                              |        |   |                  | Ignition switch ON  |   | Battery voltage                              |
| 53<br>(R/W)                  | Ground | ECM relay power supply                    | Output           | Ignition switch OFF<br>(For a few seconds after turning ignition switch OFF)  |   | 0 V  |
|                              |        |   |                  | <ul style="list-style-type: none"> <li>• Ignition switch ON</li> <li>• Ignition switch OFF<br/>(More than a few seconds after turning ignition switch OFF)</li> </ul> |   | Battery voltage                              |
| 54<br>(G/W)                  | Ground | Throttle control motor relay power supply | Output           | Ignition switch OFF<br>(For a few seconds after turning ignition switch OFF)  |   | 0 V  |
|                              |        |   |                  | <ul style="list-style-type: none"> <li>• Ignition switch ON</li> <li>• Ignition switch OFF<br/>(More than a few seconds after turning ignition switch OFF)</li> </ul> |   | Battery voltage                              |
| 55<br>(W/L)                  | Ground | ECM power supply                          | Output           | Ignition switch OFF   |   | Battery voltage                              |
| 56<br>(R/Y)                  | Ground | Ignition relay power supply               | Output           | Ignition switch OFF   |   | 0 V  |
|                              |        |   |                  | Ignition switch ON  |   | Battery voltage                              |
| 57<br>(O)                    | Ground | Ignition relay power supply               | Output           | Ignition switch OFF   |   | 0 V  |
|                              |        |   |                  | Ignition switch ON  |   | Battery voltage                              |
| 58<br>(Y)                    | Ground | Ignition relay power supply               | Output           | Ignition switch OFF   |   | 0 V  |
|                              |        |   |                  | Ignition switch ON  |   | Battery voltage                              |
| 69<br>(W/B)                  | Ground | ECM relay control                         | Output           | Ignition switch OFF<br>(For a few seconds after turning ignition switch OFF)  |   | Battery voltage                              |
|                              |        |   |                  | <ul style="list-style-type: none"> <li>• Ignition switch ON</li> <li>• Ignition switch OFF<br/>(More than a few seconds after turning ignition switch OFF)</li> </ul> |   | 0 - 1.5 V                                    |
| 70<br>(O)                    | Ground | Throttle control motor relay control      | Output           | Ignition switch ON → OFF  |   | 0 -1.0 V<br>↓<br>Battery voltage<br>↓<br>0 V |
|                              |        |   |                  | Ignition switch ON  |   | 0 - 1.0 V                                    |
| 72<br>(R/B)                  | Ground | PNP switch signal                         | Input            | Ignition switch ON  | CVT selector lever in P or N position                         | Battery voltage                              |
|                              |        |   |                  |   | CVT selector lever in any position other than P or N position | 0 V  |
| 75<br>(LG)                   | Ground | Oil pressure switch                       | Input            | Ignition switch ON  | Engine stopped  | 0 V  |
|                              |        |   |                  |   | Engine running  | Battery voltage                              |

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

## < ECU DIAGNOSIS >

| Terminal No.<br>(Wire color) |        | Description                     |                  | Condition   |  | Value<br>(Approx.)  |                 |
|------------------------------|--------|---------------------------------|------------------|---|--|---|-----------------|
| +                            | -      | Signal name                     | Input/<br>Output |   |  |   |                 |
| 76<br>(SB)                   | Ground | Power generation command signal | Output           | Ignition switch ON  |  |  <p style="text-align: right; margin-right: 50px;">JPMIA0001GB</p> <p style="text-align: center;">6.3 V</p>  |                 |
|                              |        |                                 |                  | 40% is set on "Active test", "ALTERNATOR DUTY" of "ENGINE"  |  |  <p style="text-align: right; margin-right: 50px;">JPMIA0002GB</p> <p style="text-align: center;">3.8 V</p>  |                 |
|                              |        |                                 |                  | 80% is set on "Active test", "ALTERNATOR DUTY" of "ENGINE"  |  |  <p style="text-align: right; margin-right: 50px;">JPMIA0003GB</p> <p style="text-align: center;">1.4 V</p> |                 |
| 77<br>(GR)                   | Ground | Fuel pump relay control         | Output           | <ul style="list-style-type: none"> <li>• Approximately 1 second after turning the ignition switch ON</li> <li>• Engine running</li> </ul> |  | 0 - 1.0 V   |                 |
|                              |        |                                 |                  | Approximately 1 second or more after turning the ignition switch ON   |  | Battery voltage   |                 |
| 80<br>(B/W)                  | Ground | Starter motor                   | Output           | At engine cranking  |  | Battery voltage   |                 |
| 83<br>(R/Y)                  | Ground | Headlamp LO (RH)                | Output           | Ignition switch ON  | Lighting switch OFF  | 0 V   |                 |
|                              |        |                                 |                  |   | Lighting switch 2ND  | Battery voltage   |                 |
| 84<br>(L)                    | Ground | Headlamp LO (LH)                | Output           | Ignition switch ON  | Lighting switch OFF  | 0 V   |                 |
|                              |        |                                 |                  |   | Lighting switch 2ND  | Battery voltage   |                 |
| 86<br>(W/R)                  | Ground | Front fog lamp (RH)             | Output           | Lighting switch 2ND   | <ul style="list-style-type: none"> <li>• Front fog lamp switch ON</li> <li>• Daytime running light activated (Only for Canada models)</li> </ul> |   | Battery voltage |
|                              |        |                                 |                  |   | Front fog lamp switch OFF  |   | 0 V             |
| 87<br>(L/Y)                  | Ground | Front fog lamp (LH)             | Output           | Lighting switch 2ND   | <ul style="list-style-type: none"> <li>• Front fog lamp switch ON</li> <li>• Daytime running light activated (Only for Canada models)</li> </ul> |   | Battery voltage |
|                              |        |                                 |                  |   | Front fog lamp switch OFF  |   | 0 V             |
| 88<br>(R/W)                  | Ground | Washer pump power supply        | Output           | Ignition switch ON  |  | Battery voltage   |                 |

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

## < ECU DIAGNOSIS >

| Terminal No.<br>(Wire color) |        | Description   |                  | Condition   |  | Value<br>(Approx.) |
|------------------------------|--------|---|------------------|---|--|--------------------|
| +                            | -      | Signal name   | Input/<br>Output |   |  |                    |
| 89<br>(L/W)                  | Ground | Headlamp HI (RH)  | Output           | Ignition<br>switch ON   | • Lighting switch HI<br>• Lighting switch PASS | Battery voltage    |
|                              |        |   |                  |   | Lighting switch OFF                            | 0 V                |
| 90<br>(G)                    | Ground | Headlamp HI (LH)  | Output           | Ignition<br>switch ON   | • Lighting switch HI<br>• Lighting switch PASS | Battery voltage    |
|                              |        |   |                  |   | Lighting switch OFF                            | 0 V                |
| 91<br>(LG/<br>R)             | Ground | Parking lamp (RH)                                       | Output           | Ignition<br>switch ON   | Lighting switch 1ST                            | Battery voltage    |
|                              |        |   |                  |   | Lighting switch OFF                            | 0 V                |
| 92<br>(LG/<br>B)             | Ground | Parking lamp (LH)                                       | Output           | Ignition<br>switch ON   | Lighting switch 1ST                            | Battery voltage    |
|                              |        |   |                  |   | Lighting switch OFF                            | 0 V                |
| 99<br>(BR/<br>W)             | Ground | Ambient sensor ground                                   | —                | Ignition switch ON  |  | 0V                 |
| 100<br>(SB)                  | Ground | Ambient sensor  | —                | Ignition switch ON  |  | 5V                 |
| 101<br>(W)                   | Ground | Refrigerent pressure sensor ground                      | —                | Ignition switch ON  |  | 0V                 |
| 102<br>(R)                   | Ground | Refrigerent pressure sensor                             | —                | • Ignition switch ON (READY)<br>• Both A/C switch and blower motor switch ON (electric compressor operates) |  | 1.0 - 4.0V         |
| 103<br>(P)                   | Ground | Refrigerent pressure sensor power supply                | —                | Ignition switch ON  |  | 5V                 |
| 105<br>(V)                   | Ground | Daytime light relay control<br>(Only for Canada models) | Output           | Ignition<br>switch ON   | Daytime light system active                    | Battery voltage    |
|                              |        |   |                  | Ignition<br>switch ON   | Daytime light system inactive                  | 0 V                |

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

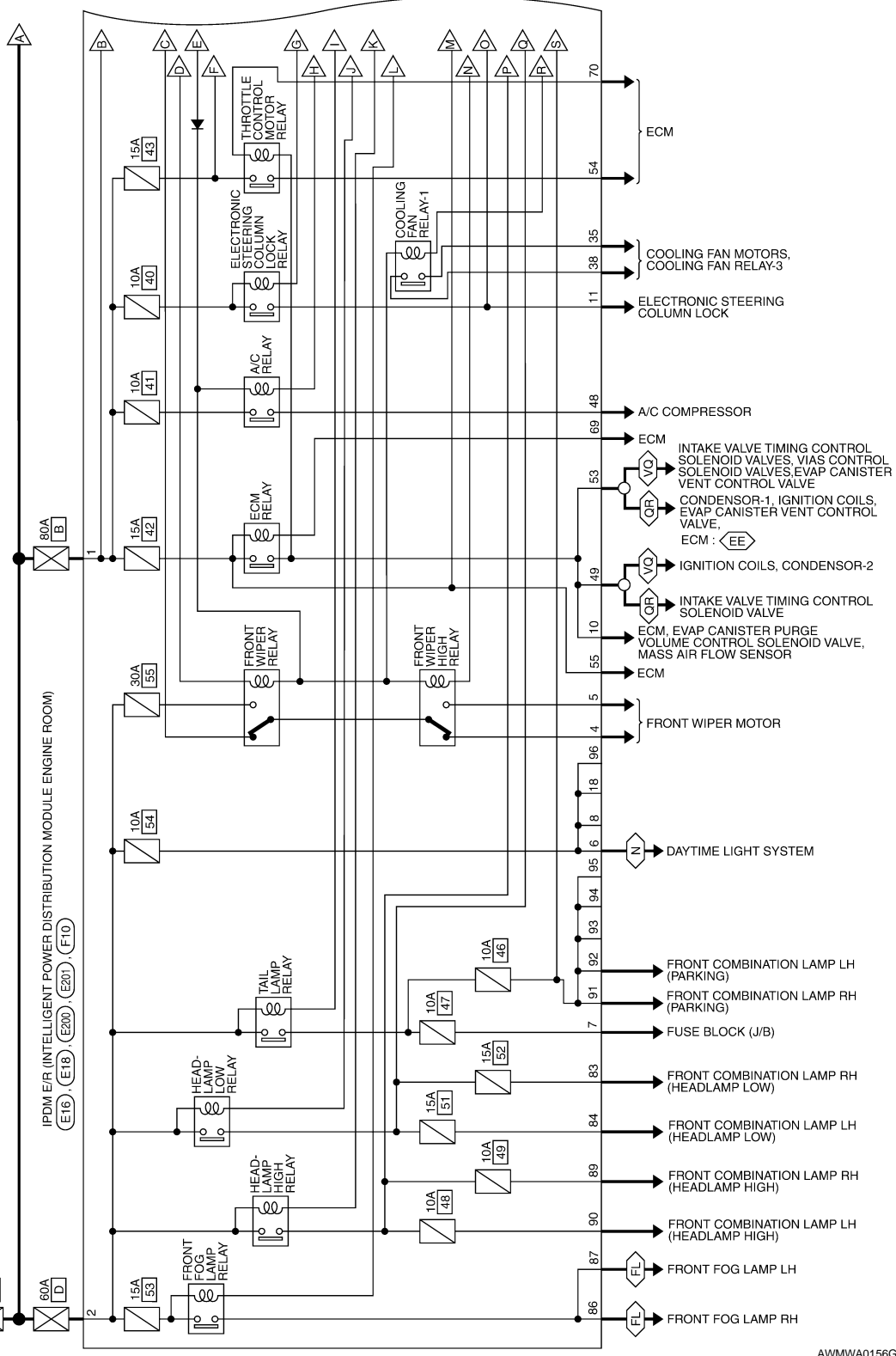
< ECU DIAGNOSIS >

## Wiring Diagram

INFOID:000000004351883

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

- : WITH FRONT FOG LAMPS
- : CALIFORNIA EMISSIONS
- : CANADA
- : WITH QR25DE
- : WITH VQ35DE



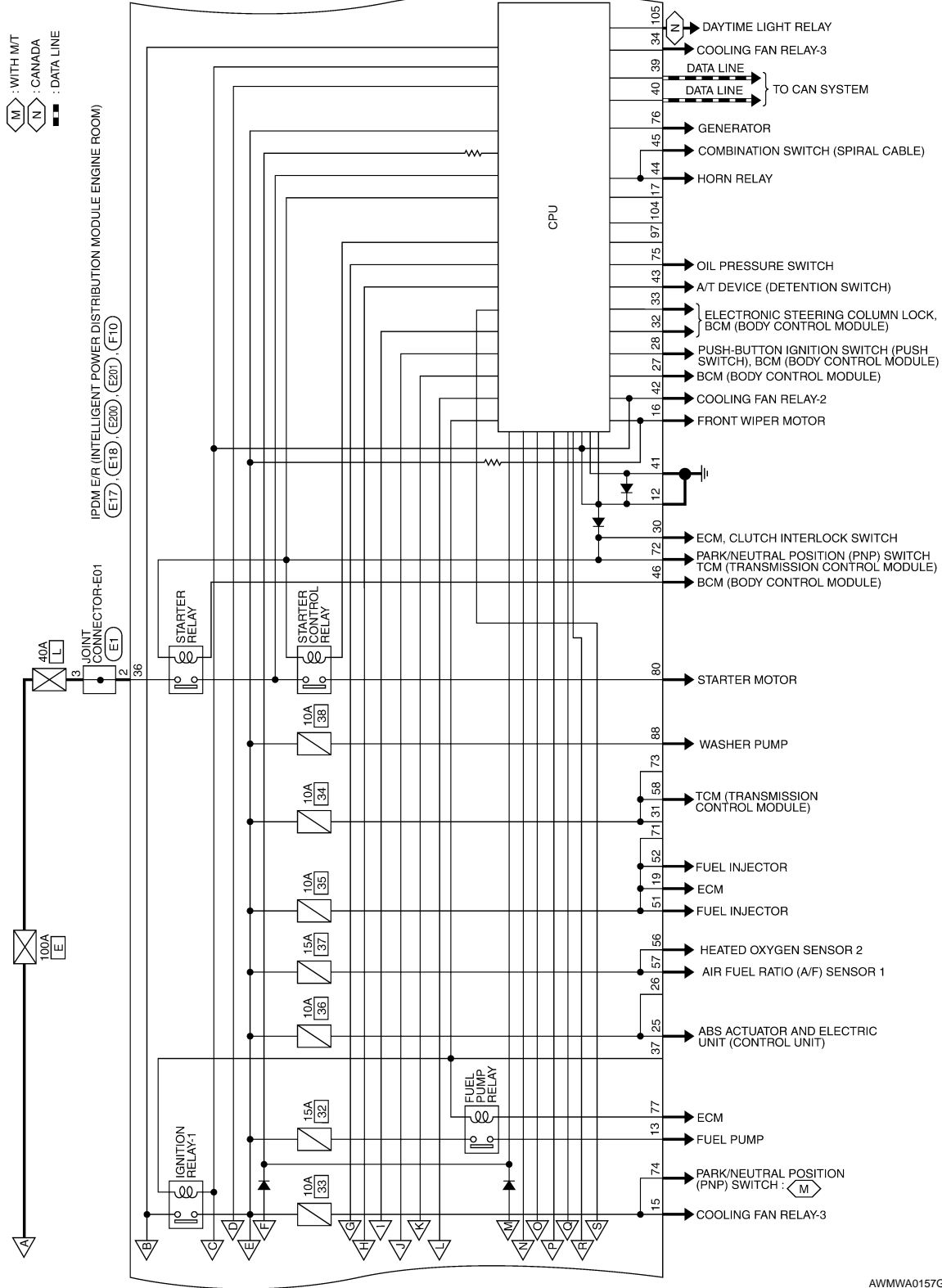
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# IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

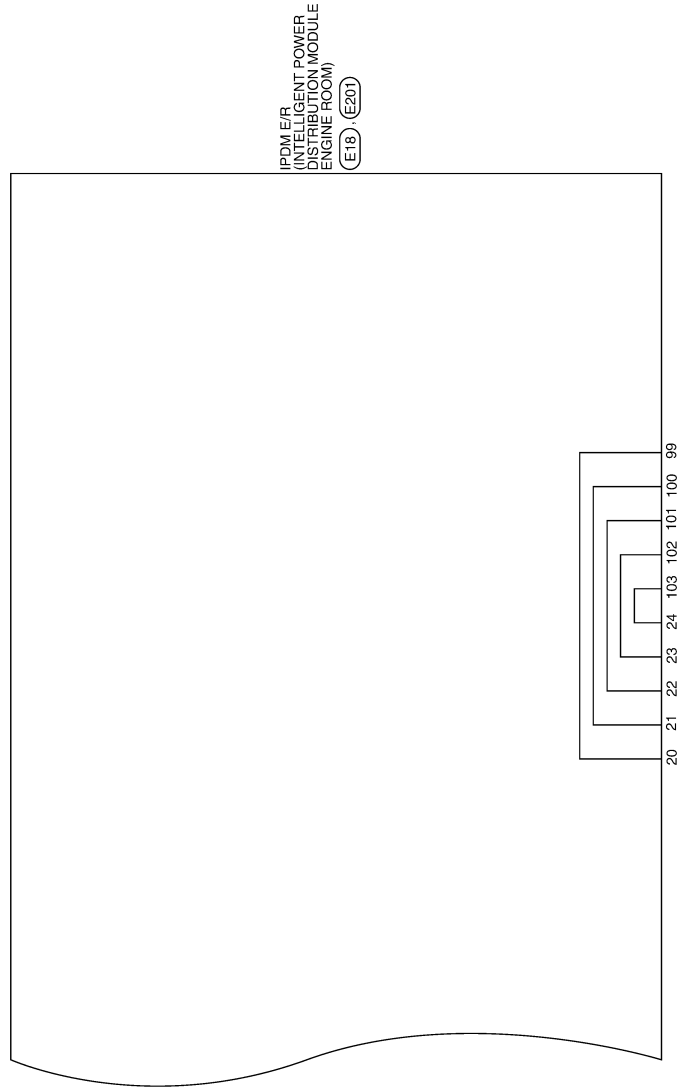
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# IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

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

< ECU DIAGNOSIS >

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

|                 |                     |
|-----------------|---------------------|
| Connector No.   | E1                  |
| Connector Name  | JOINT CONNECTOR-E01 |
| Connector Color | WHITE               |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 2            | G             | -           |
| 3            | G             | -           |

|                 |  |
|-----------------|--|
| Connector No.   | E16  |
| Connector Name  | IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) |
| Connector Color | BLACK  |



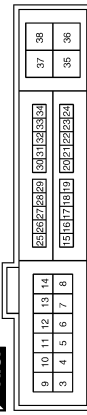
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | R             | F/L_MAIN    |
| 2            | B/Y           | F/L_USM     |

|                 |  |
|-----------------|--|
| Connector No.   | E17  |
| Connector Name  | IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) |
| Connector Color | WHITE  |



| Terminal No. | Color of Wire | Signal Name       |
|--------------|---------------|-------------------|
| 39           | P             | CAN-L             |
| 40           | L             | CAN-H             |
| 41           | B             | S-GND             |
| 42           | SB            | MOTOR_FAN_RLY_MID |
| 43           | G/B           | DETENT_SW         |
| 44           | G/W           | HORN_RLY          |
| 45           | L/O           | HORN_SW           |
| 46           | R             | START_CONT        |

|                 |  |
|-----------------|--|
| Connector No.   | E18  |
| Connector Name  | IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) |
| Connector Color | WHITE  |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 3            | -             | -           |
| 4            | L/R           | FR_WIPER_LO |
| 5            | L/B           | FR_WIPER_HI |
| 6            | SB            | DTRL        |
| 7            | R/L           | TAIL/ILLUMI |

| Terminal No. | Color of Wire | Signal Name      |
|--------------|---------------|------------------|
| 8            | -             | -                |
| 9            | -             | -                |
| 10           | R/B           | ECM_VB           |
| 11           | P/L           | ESCL             |
| 12           | B             | P-GND            |
| 13           | W             | FUEL_PUMP        |
| 14           | -             | -                |
| 15           | G/W           | START_IG-E/R     |
| 16           | L/Y           | WIPER_AUTOSTOP   |
| 17           | -             | -                |
| 18           | -             | -                |
| 19           | L/Y           | BCM_IGNSW        |
| 20           | B/Y           | AMB_SENS_GND-E/R |
| 21           | O/B           | AMB_SENS_SIG-E/R |
| 22           | W/R           | PD_SENS_GND-E/R  |

| Terminal No. | Color of Wire | Signal Name      |
|--------------|---------------|------------------|
| 23           | B/R           | PD_SENS_SIG-E/R  |
| 24           | BR/W          | PD_SENS_PWR-E/R  |
| 25           | GR            | ABS_ECU          |
| 26           | -             | -                |
| 27           | BR/W          | IGN_SIGNAL       |
| 28           | BR            | PUSH_START_SW    |
| 29           | -             | -                |
| 30           | R/B           | CLUTCH_I/L_SW    |
| 31           | -             | -                |
| 32           | L/O           | SL_CONDITION_1   |
| 33           | G/R           | SL_CONDITION_2   |
| 34           | O/L           | MOTOR_FAN_RLY_HI |
| 35           | L/B           | MOTOR_FAN_LO     |
| 36           | G             | F/L_IGNSW        |
| 37           | -             | -                |
| 38           | R/W           | F/L_MOTOR_FAN    |

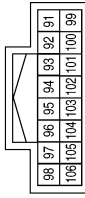
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# IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

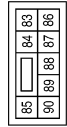
< ECU DIAGNOSIS >

|                 |  |
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| Connector No.   | E201   |
| Connector Name  | IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) |
| Connector Color | WHITE  |



| Terminal No. | Color of Wire | Signal Name      |
|--------------|---------------|------------------|
| 91           | LG/R          | CLEARANCE_RH     |
| 92           | LG/B          | CLEARANCE_LH     |
| 93           | -             | -                |
| 94           | -             | -                |
| 95           | -             | -                |
| 96           | -             | -                |
| 97           | -             | -                |
| 98           | -             | -                |
| 99           | BR/W          | AMB_SENS_GND-FEM |
| 100          | SB            | AMB_SENS_SIG-FEM |
| 101          | O/L           | PD_SENS_GND-FEM  |
| 102          | R/B           | PD_SENS_SIG-FEM  |
| 103          | P             | PD_SENS_PWR-FEM  |
| 104          | -             | -                |
| 105          | V             | DTRL_RLY         |
| 106          | -             | -                |

|                 |  |
|-----------------|--|
| Connector No.   | E200   |
| Connector Name  | IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) |
| Connector Color | WHITE  |



| Terminal No. | Color of Wire | Signal Name    |
|--------------|---------------|----------------|
| 83           | R/Y           | HEADLAMP_LO_RH |
| 84           | L             | HEADLAMP_LO_LH |
| 85           | -             | -              |
| 86           | W/R           | FR_FOG_LAMP_RH |
| 87           | L/Y           | FR_FOG_LAMP_LH |
| 88           | R/W           | WASHER_MTR     |
| 89           | L/W           | HEADLAMP_HI_RH |
| 90           | G             | HEADLAMP_HI_LH |

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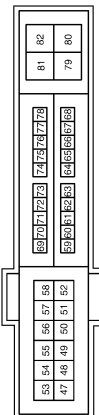
# IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

< ECU DIAGNOSIS >

| Terminal No. | Color of Wire | Signal Name     |
|--------------|---------------|-----------------|
| 65           | -             | -               |
| 66           | -             | -               |
| 67           | -             | -               |
| 68           | -             | -               |
| 69           | W/B           | SSOF            |
| 70           | O             | MOTRLY          |
| 71           | -             | -               |
| 72           | R/B           | NPSW            |
| 73           | -             | -               |
| 74           | Y             | START_IG-EGI    |
| 75           | P/L           | OIL_PRESSURE_SW |
| 76           | GR            | ALT_C           |
| 77           | B/R           | FPR             |
| 78           | -             | -               |
| 79           | -             | -               |
| 80           | B/W           | STARTER_MOTOR   |
| 81           | -             | -               |
| 82           | -             | -               |

| Terminal No. | Color of Wire | Signal Name              |
|--------------|---------------|--------------------------|
| 50           | -             | -                        |
| 51           | LG            | INJECTOR_#1              |
| 52           | Y/G           | INJECTOR_#2              |
| 53           | R/B           | IGN_SOL<br>(WITH VQ35DE) |
| 53           | B/R           | ENG_SOL<br>(WITH VQ35DE) |
| 54           | G/W           | ETC                      |
| 55           | W/L           | ECM_BAT                  |
| 56           | R/Y           | O2_SENS_#1               |
| 57           | O             | O2_SENS_#2               |
| 58           | Y             | AT_ECU                   |
| 59           | -             | -                        |
| 60           | -             | -                        |
| 61           | -             | -                        |
| 62           | -             | -                        |
| 63           | -             | -                        |
| 64           | -             | -                        |

|                 |  |
|-----------------|--|
| Connector No.   | F10  |
| Connector Name  | IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) |
| Connector Color | WHITE  |



| Terminal No. | Color of Wire | Signal Name                 |
|--------------|---------------|-----------------------------|
| 47           | -             | -                           |
| 48           | Y/R           | A/C COMP                    |
| 49           | B/R           | ENG SOL<br>(WITHOUT VQ35DE) |
| 49           | R/B           | IGN_SOL (WITH VQ35DE)       |

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## 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

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

## < ECU DIAGNOSIS >

| Control part   | Fail-safe in operation   |
|----------------|--|
| Cooling fan    | <ul style="list-style-type: none"> <li>• Signals cooling fans ON when the ignition switch is turned ON</li> <li>• Signals cooling fans OFF when the ignition switch is turned OFF</li> </ul> |
| A/C compressor | A/C relay OFF  |
| Generator      | Outputs the power generation command signal (PWM signal) 0%  |

### If No CAN Communication Is Available With BCM

| Control part   | Fail-safe in 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>• Illumination</li> <li>• Tail lamps</li> </ul> | <ul style="list-style-type: none"> <li>• Turns ON the tail lamp relay when the ignition switch is turned ON</li> <li>• Turns OFF the tail lamp 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> |
| Front fog lamps (if equipped)  | Front fog lamp relay OFF   |
| Horn   | Horn OFF   |
| Ignition relay   | The status just before activation of fail-safe is maintained.  |
| Starter motor  | Starter control relay OFF  |
| Electronic steering column lock  | Steering lock relay OFF  |

### 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 for 10 minutes to alert the user to the ignition relay malfunction when the ignition switch is turned OFF.

| DTC                  | Ignition switch | Ignition relay | Tail lamp relay |
|----------------------|-----------------|----------------|-----------------|
| —                    | ON              | ON             | —               |
| —                    | OFF             | OFF            | —               |
| B2098: IGN RELAY ON  | OFF             | ON             | ON (10 minutes) |
| B2099: IGN RELAY OFF | ON              | OFF            | —               |

#### NOTE:

The tail lamp turns OFF when the ignition switch is turned ON.

### FRONT WIPER CONTROL

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

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

| Ignition switch | Front wiper switch | Auto stop signal   |
|-----------------|--------------------|--|
| ON              | OFF                | Front wiper stop position signal cannot be input 10 seconds. |
|                 | ON                 | The 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.

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

< ECU DIAGNOSIS >

## 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:000000004351882

| CONSULT-III display  | Fail-safe | TIME <sup>NOTE</sup> |        | Refer to               |
|--|-----------|----------------------|--------|------------------------|
| No DTC is detected.<br>further testing<br>may be required. | —         | —                    | —      | —                      |
| U1000: CAN COMM CIRCUIT                                    | ×         | CRNT                 | 1 – 39 | <a href="#">PCS-18</a> |
| B2098: IGN RELAY ON  | ×         | CRNT                 | 1 – 39 | <a href="#">PCS-19</a> |
| B2099: IGN RELAY OFF                                       | —         | CRNT                 | 1 – 39 | <a href="#">PCS-20</a> |
| B2108: STRG LCK RELAY ON                                   | —         | CRNT                 | 1 – 39 | <a href="#">SEC-81</a> |
| B2109: STRG LCK RELAY OFF                                  | —         | CRNT                 | 1 – 39 | <a href="#">SEC-82</a> |
| B210A: STRG LCK STATE SW                                   | —         | CRNT                 | 1 – 39 | <a href="#">SEC-83</a> |
| B210B: START CONT RLY ON                                   | —         | CRNT                 | 1 – 39 | <a href="#">SEC-87</a> |
| B210C: START CONT RLY OFF                                  | —         | CRNT                 | 1 – 39 | <a href="#">SEC-88</a> |
| B210D: STARTER RELAY ON                                    | —         | CRNT                 | 1 – 39 | <a href="#">SEC-89</a> |
| B210E: STARTER RELAY OFF                                   | —         | CRNT                 | 1 – 39 | <a href="#">SEC-90</a> |
| B210F: INTRLCK/PNP SW ON                                   | —         | CRNT                 | 1 – 39 | <a href="#">SEC-92</a> |
| B2110: INTRLCK/PNP SW OFF                                  | —         | CRNT                 | 1 – 39 | <a href="#">SEC-94</a> |

#### NOTE:

The details of TIME display are as follows.

- CRNT: The malfunctions that are detected now
- 1 - 39: The number is indicated when it is normal at present and a malfunction was detected in the past. It increases like 0 → 1 → 2 ... 38 → 39 after returning to the normal condition whenever IGN OFF → ON. It is fixed to 39 until the self-diagnosis results are erased if it is over 39. It returns to 0 when a malfunction is detected again in the process.

# FRONT WIPER AND WASHER SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

## SYMPTOM DIAGNOSIS

### FRONT WIPER AND WASHER SYSTEM SYMPTOMS

#### Symptom Table

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**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<br>Refer to <a href="#">BCS-10, "System Description"</a> .                  |
|                              |                 | <ul style="list-style-type: none"> <li>IPDM E/R</li> <li>Harness between IPDM E/R and wiper motor</li> <li>Front wiper motor</li> </ul> | Front wiper motor (HI) circuit<br>Refer to <a href="#">WW-21, "Component Function Check"</a> . |
|                              |                 | Front wiper request signal<br><ul style="list-style-type: none"> <li>BCM</li> <li>IPDM E/R</li> </ul>                                   | IPDM E/R<br>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<br>Refer to <a href="#">BCS-10, "System Description"</a> .                  |
|                              |                 | <ul style="list-style-type: none"> <li>IPDM E/R</li> <li>Harness between IPDM E/R and wiper motor</li> <li>Front wiper motor</li> </ul> | Front wiper motor (LO) circuit<br>Refer to <a href="#">WW-19, "Component Function Check"</a> . |
|                              |                 | Front wiper request signal<br><ul style="list-style-type: none"> <li>BCM</li> <li>IPDM E/R</li> </ul>                                   | IPDM E/R<br>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<br>Refer to <a href="#">BCS-10, "System Description"</a> .                  |
|                              |                 | Front wiper request signal<br><ul style="list-style-type: none"> <li>BCM</li> <li>IPDM E/R</li> </ul>                                   | IPDM E/R<br>Data monitor "FR WIP REQ"  |
|                              | HI, LO, and INT | SYMPTOM DIAGNOSIS<br>Refer to <a href="#">WW-87, "Diagnosis Procedure"</a> .  |  |

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# FRONT WIPER AND WASHER SYSTEM SYMPTOMS

## < SYMPTOM DIAGNOSIS >

| Symptom  |   | Probable malfunction location   | Inspection item   |
|--|---|---|---|
| Front wiper does not stop  | HI only   | <ul style="list-style-type: none"> <li>• Combination switch</li> <li>• BCM</li> </ul>   | Combination switch<br>Refer to <a href="#">BCS-10, "System Description"</a> .   |
|  |   | Front wiper request signal<br><ul style="list-style-type: none"> <li>• BCM</li> <li>• IPDM E/R</li> </ul>                                   | IPDM E/R<br>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<br>Refer to <a href="#">BCS-10, "System Description"</a> .   |
|  |   | Front wiper request signal<br><ul style="list-style-type: none"> <li>• BCM</li> <li>• IPDM E/R</li> </ul>                                   | IPDM E/R<br>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<br>Refer to <a href="#">BCS-10, "System Description"</a> .   |
|  |   | Front wiper request signal<br><ul style="list-style-type: none"> <li>• BCM</li> <li>• IPDM E/R</li> </ul>                                   | IPDM E/R<br>Data monitor "FR WIP REQ"   |
|  | 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> |
| BCM  |   |   | —   |
| Intermittent control linked with vehicle speed cannot be performed   |   | Check the vehicle speed detection wiper setting.<br>Refer to <a href="#">BCS-24, "WIPER : CONSULT - III Function (BCM-WIPER)"</a> .         |   |
| 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> | Combination switch<br>Refer to <a href="#">BCS-10, "System Diagram"</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.) | <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<br>Refer to <a href="#">WW-23, "Component Function Check"</a> .  |   |

# FRONT WIPER DOES NOT OPERATE

< SYMPTOM DIAGNOSIS >

## FRONT WIPER DOES NOT OPERATE

### Description

INFOID:000000003899035

The front wiper does not operate under any operation conditions

### Diagnosis Procedure

INFOID:000000003899036

#### 1. CHECK WIPER RELAY OPERATION

##### ⊗ IPDM E/R AUTO ACTIVE TEST

1. Start IPDM E/R auto active test. Refer to [PCS-13, "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. While operating the test item, check 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 >> GO TO 5

NO >> GO TO 2

#### 2. CHECK FRONT WIPER MOTOR FUSE

1. Turn the ignition switch OFF.
2. Check that the front wiper motor fuse 30A (No. 55, located in the IPDM E/R) is not blown.

Is the fuse blown?

YES >> Replace the fuse after repairing the affected circuit.

NO >> GO TO 3

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

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

| Front wiper motor |          | Ground | Continuity |
|-------------------|----------|--------|------------|
| Connector         | Terminal |        |            |
| E25               | 2        |        | Yes        |

Does continuity exist?

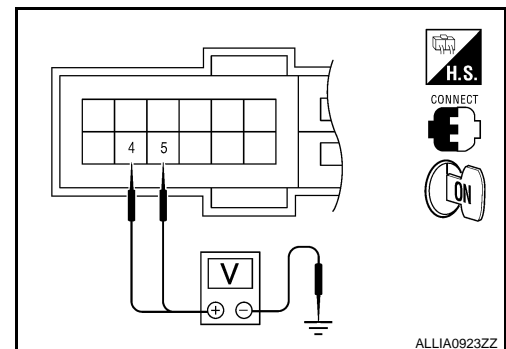
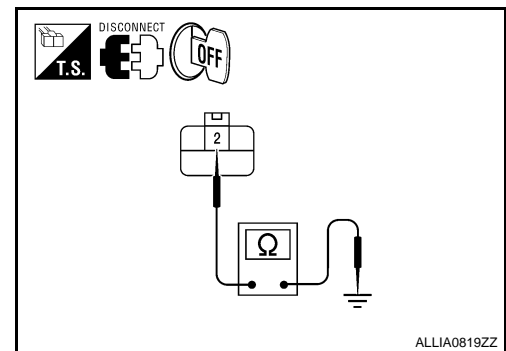
YES >> GO TO 4

NO >> Repair or replace harness.

#### 4. CHECK FRONT WIPER MOTOR OUTPUT VOLTAGE

##### Ⓜ CONSULT-III ACTIVE TEST

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



# FRONT WIPER DOES NOT OPERATE

## < SYMPTOM DIAGNOSIS >

| Terminals |          | Test item   | Voltage (V)<br>(Approx.) |
|-----------|----------|-------------|--------------------------|
| (+)       | (-)      |             |                          |
| IPDM E/R  |          | FRONT WIPER |                          |
| Connector | Terminal |             |                          |
| E18       | 4        | Ground      | Battery voltage          |
|           |          | LO          | 0 V                      |
|           | 5        | HI          | Battery voltage          |
|           |          | OFF         | 0 V                      |

Is the measurement normal?

YES >> Replace front wiper motor. Refer to [WW-93, "FRONT WIPER DRIVE ASSEMBLY : Removal and Installation"](#).

NO >> Replace IPDM E/R. Refer to [PCS-40, "Removal and Installation"](#).

## 5. CHECK FRONT WIPER REQUEST SIGNAL INPUT

### 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. While operating the front wiper switch, check the monitor status.

| Monitor item | While operating the front wiper switch 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. Refer to [PCS-40, "Removal and Installation"](#).

NO >> GO TO 6

## 6. CHECK COMBINATION SWITCH

Perform the inspection of the combination switch. Refer to [BCS-10, "System Description"](#).

Is combination switch normal?

YES >> Replace BCM. Refer to [BCS-87, "Removal and Installation"](#).

NO >> Repair or replace the malfunctioning parts.



# NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

## NORMAL OPERATING CONDITION

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### Description

INFOID:000000003899037

#### 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.

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# PRECAUTIONS

< PRECAUTION >

## PRECAUTION

### PRECAUTIONS

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

INFOID:000000003899038

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 SR and SB section of this Service Manual.

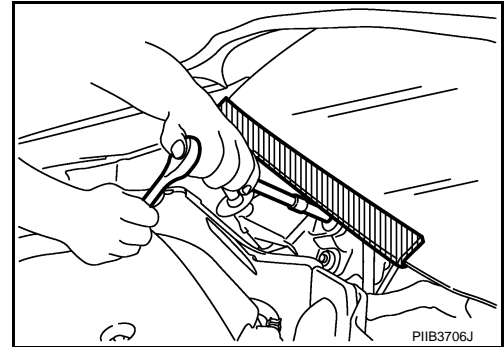
#### **WARNING:**

- 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 SR section.
- 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.

#### Precaution for Procedure without Cowl Top Cover

INFOID:000000004393996

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



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

INFOID:000000004394021

#### **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.

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. Carry the Intelligent Key or insert it to the key slot and turn the push-button ignition switch to ACC position. (At this time, the steering lock will be released.)

## PRECAUTIONS

### < PRECAUTION >

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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.

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# FRONT WIPER

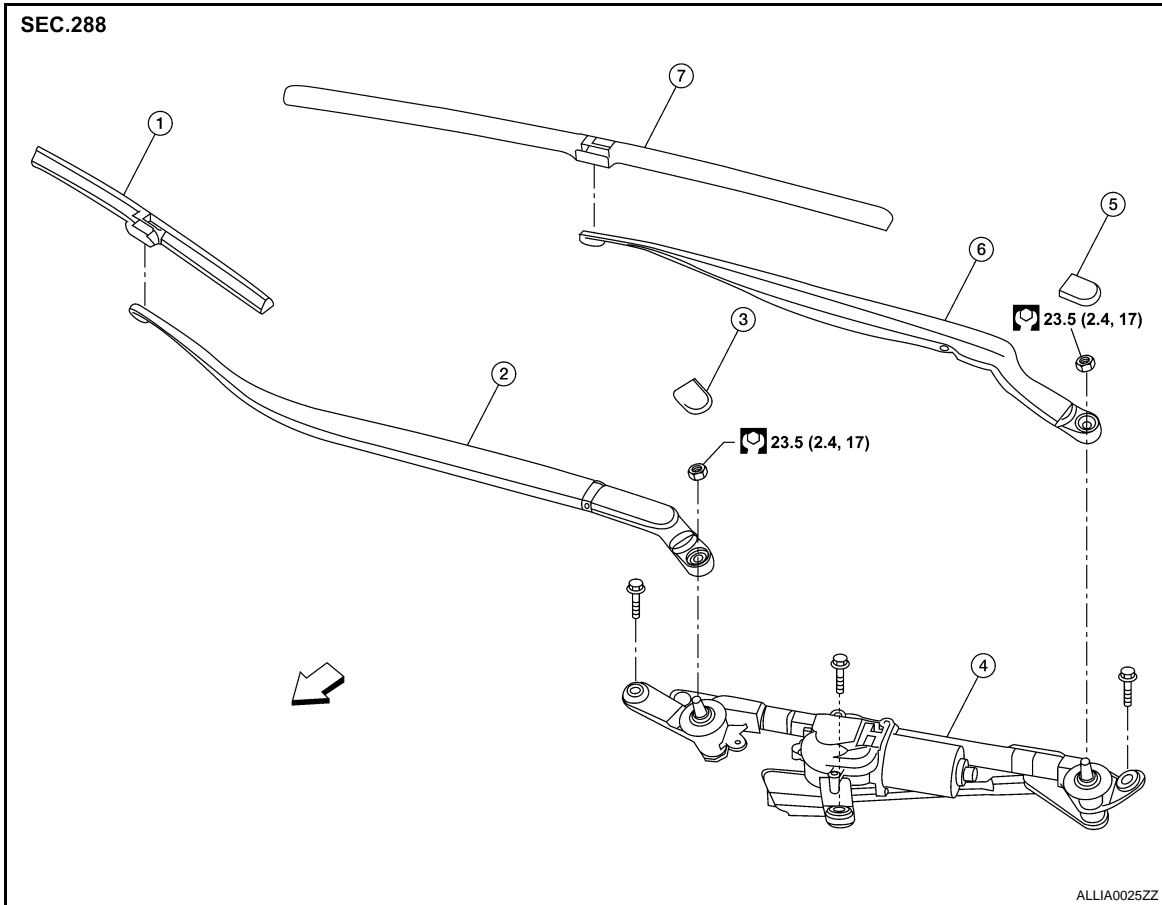
< ON-VEHICLE REPAIR >

## ON-VEHICLE REPAIR

### FRONT WIPER

#### Exploded View

INFOID:000000003899041



- |                               |                       |                       |
|-------------------------------|-----------------------|-----------------------|
| 1. Front RH wiper blade       | 2. Front RH wiper arm | 3. Wiper arm cap      |
| 4. Front wiper drive assembly | 5. Wiper arm cap      | 6. Front LH wiper arm |
| 7. Front LH wiper blade       | ↩ Front               |                       |

## FRONT WIPER ARMS

### FRONT WIPER ARMS : Removal and Installation

INFOID:000000003899042

#### REMOVAL

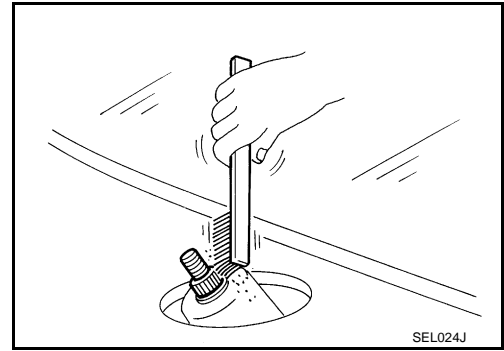
1. Turn wiper switch ON to operate wiper motor and then turn wiper switch OFF (auto stop).
2. Open hood, remove arm caps, and remove wiper arm nuts.
3. Raise wiper arm, and remove wiper arm from the vehicle.

#### INSTALLATION

# FRONT WIPER

## < ON-VEHICLE REPAIR >

1. Clean up the pivot area as shown. This will reduce the possibility of wiper arm looseness.



2. Prior to wiper arm installation, turn wiper switch ON to operate wiper motor and then turn wiper switch OFF (auto stop).
3. Push wiper arm onto pivot shaft, paying attention to blind spline.
4. Lift the blade up and then set it down onto glass surface to set the blade center immediately before temporarily tightening the wiper arm nuts.
5. Spray washer fluid. Turn wiper switch ON to operate wiper motor and then turn wiper switch OFF (auto stop).

- Windshield glass (1)

6. Make sure that wiper blades stop within clearance (A), (B), (C) and (D).

**Clearance (A) : 62.5 ± 7.5 mm (2.461 ± 0.295 in)**

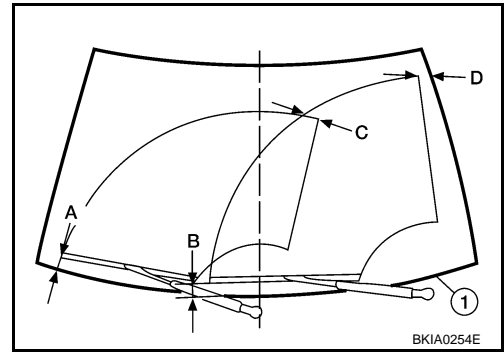
**Clearance (B) : 67.8 ± 7.5 mm (2.669 ± 0.295 in)**

**Clearance (C) : 29.2 mm (1.150 in)**

**Clearance (D) : 57.7 mm (2.272 in)**

7. Tighten wiper arm nuts to specification. Refer to [WW-92, "Exploded View"](#).

8. Attach wiper arm caps.



## ADJUSTMENT

To adjust the wiper arm stop location, the wiper arm must be removed and installed. Refer to [WW-92, "FRONT WIPER ARMS : Removal and Installation"](#).

## FRONT WIPER DRIVE ASSEMBLY

### FRONT WIPER DRIVE ASSEMBLY : Removal and Installation

INFOID:000000003899043

#### REMOVAL

1. Turn wiper switch ON to operate wiper motor and then turn wiper switch OFF (auto stop).
2. Remove wiper arms. Refer to [WW-92, "FRONT WIPER ARMS : Removal and Installation"](#).
3. Remove hood ledge covers.
4. Remove the cowl top grille. Refer to [EXT-17, "Exploded View"](#).
5. Disconnect washer hose from the lower cowl top extension brace.
6. Remove the lower cowl top extension brace. Refer to [EXT-18, "Removal and Installation"](#).
7. Detach the wiper drive harness clip from the wiper drive assembly frame.

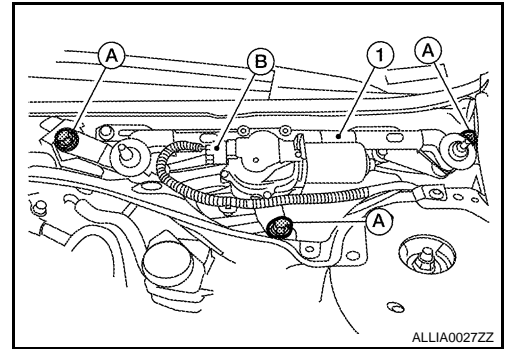
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## FRONT WIPER

### < ON-VEHICLE REPAIR >

8. Remove the front wiper drive assembly bolts (A), disconnect the wiper drive motor connector (B) and remove the front wiper drive assembly (1).



### INSTALLATION

Installation is in the reverse order of removal.

- Adjust wiper arm stop location as necessary. Refer to [WW-92, "FRONT WIPER ARMS : Removal and Installation"](#).

# FRONT WASHER

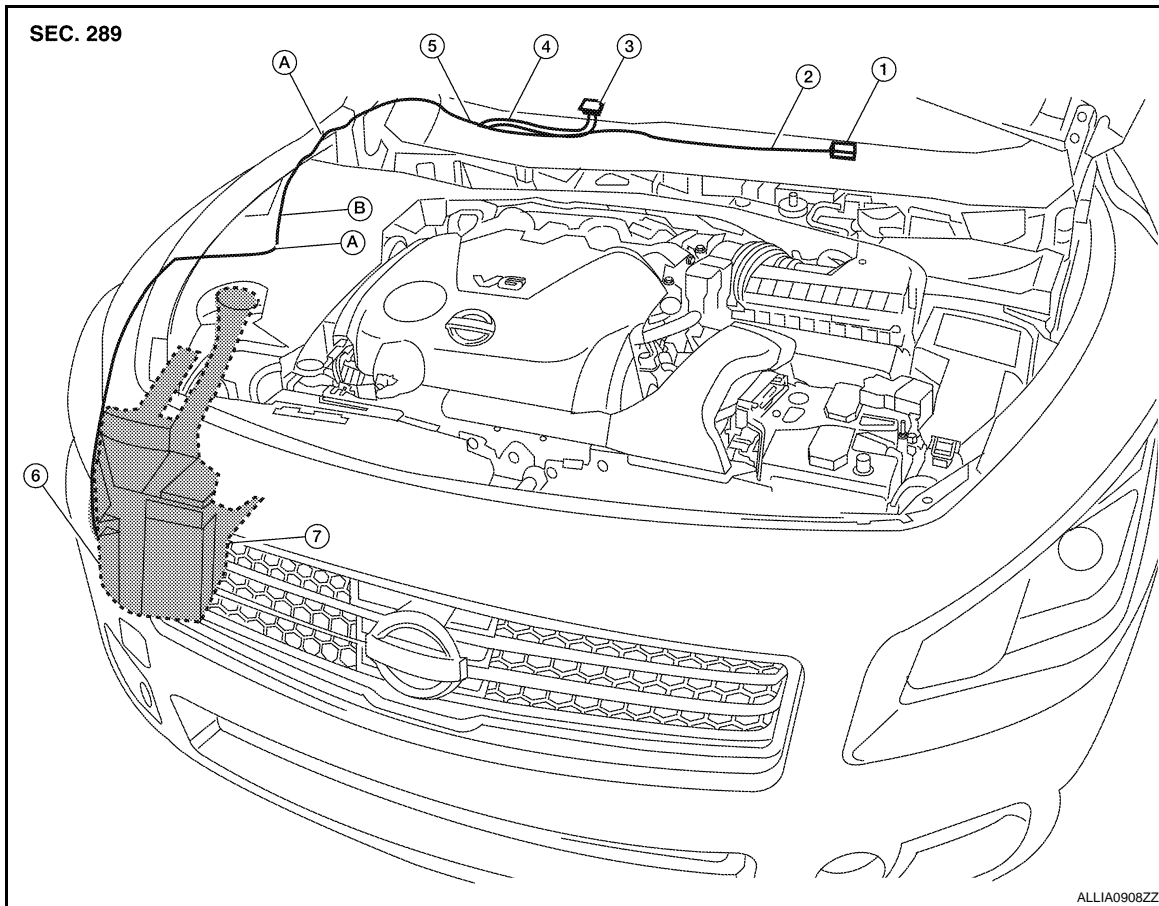
< ON-VEHICLE REPAIR >

## FRONT WASHER

### WASHER TUBE

#### WASHER TUBE : Layout

INFOID:000000003899044



- |                          |                          |                     |
|--------------------------|--------------------------|---------------------|
| 1. Washer nozzle LH      | 2. Washer nozzle hose LH | 3. Washer nozzle RH |
| 4. Washer nozzle hose RH | 5. Y-tube connector      | 6. Washer tank hose |
| 7. Washer tank           | A. Tube connectors       | B. Clip             |

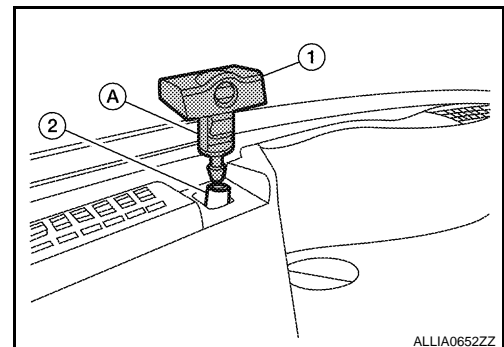
## FRONT WASHER NOZZLE

### FRONT WASHER NOZZLE : Removal and Installation

INFOID:000000003899045

#### REMOVAL

1. Remove the cowl top grille. Refer to [EXT-18, "Removal and Installation"](#).
2. Push washer nozzle tab (A) to release the washer nozzle (1) from the cowl top grille, then disconnect the washer nozzle hose (2).



#### INSTALLATION

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# FRONT WASHER

## < ON-VEHICLE REPAIR >

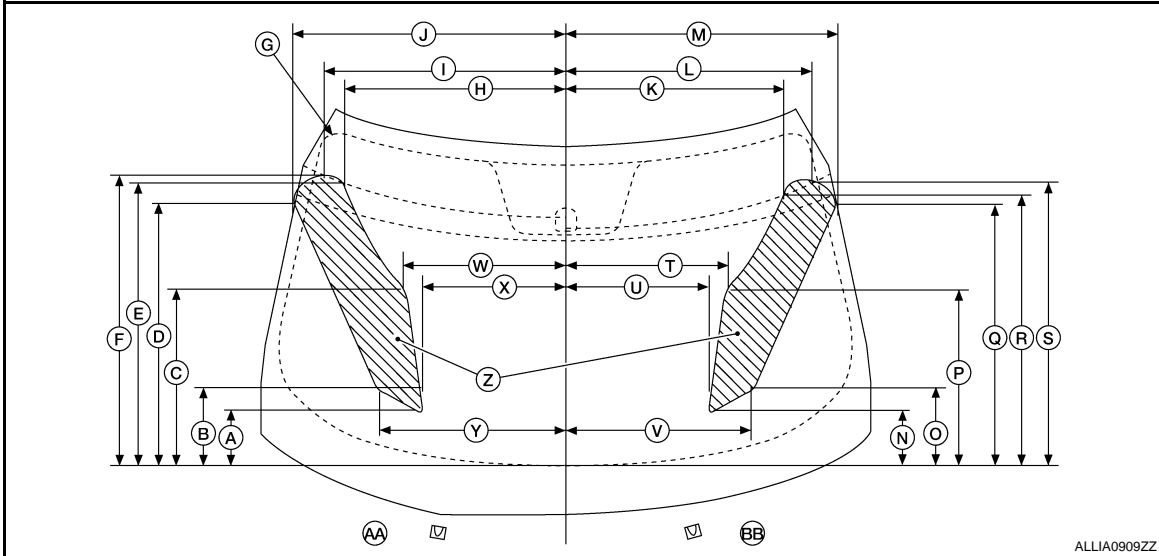
Installation is in the reverse order of removal.

- Adjust nozzle spray location. Refer to [WW-96, "FRONT WASHER NOZZLE : Adjustment"](#).

## FRONT WASHER NOZZLE : Adjustment

INFOID:000000003899046

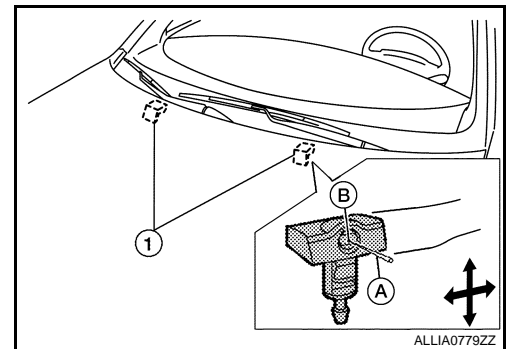
Adjust spray positions to match the target positions as shown.



Unit: mm (in)

|                             |               |               |
|-----------------------------|---------------|---------------|
| A. 127 (5.0)                | B. 184 (7.2)  | C. 414 (16.3) |
| D. 619 (24.4)               | E. 648 (25.5) | F. 666 (26.2) |
| G. Black printed frame line | H. 513 (20.2) | I. 563 (22.2) |
| J. 642 (25.3)               | K. 513 (20.2) | L. 564 (22.2) |
| M. 642 (25.3)               | N. 127 (5.0)  | O. 185 (7.3)  |
| P. 408 (16.1)               | Q. 619 (24.4) | R. 648 (25.5) |
| S. 666 (26.2)               | T. 382 (15.0) | U. 342 (13.5) |
| V. 444 (17.5)               | W. 384 (15.1) | X. 342 (13.5) |
| Y. 443 (17.4)               | Z. Spray zone | AA. RH side   |
| BB. LH side                 |               |               |

- Front washer nozzles (1)  
Insert a suitable tool (A) into the nozzle hole (B) and move up/down and left/right to adjust the spray position.



## WASHER TANK

### WASHER TANK : Removal and Installation

INFOID:000000003899047

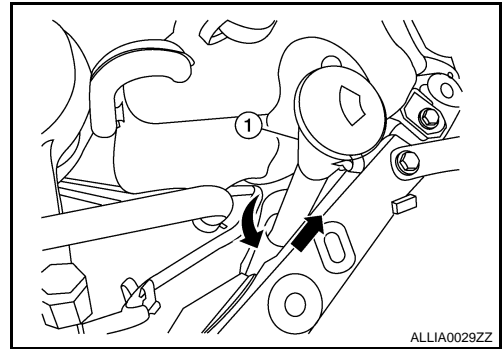
#### REMOVAL



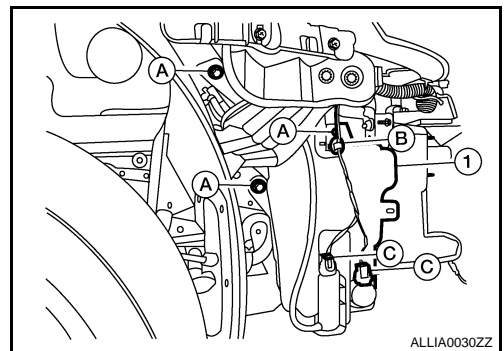
# FRONT WASHER

## < ON-VEHICLE REPAIR >

1. Remove the washer tank filler tube (1).



2. Remove RH front tire. Refer to [WT-62, "Adjustment"](#).
3. Position the RH fender protector back. Refer to [EXT-19, "Exploded View"](#).
4. Remove engine undercover.
5. Remove side undercover.
6. Disconnect the washer pump and washer fluid level sensor connectors (C), then detach the connector harness clip (B).
7. Remove the washer tank bolts (A), disconnect the washer pump hose and remove the washer tank (1).



## INSTALLATION

Installation is in the reverse order of removal.

### **CAUTION:**

After installation, add Nissan specified fluid up to the upper level of washer tank inlet, and check for leaks. Refer to [MA-17, "FOR NORTH AMERICA : Fluids and Lubricants"](#).

## FRONT WASHER PUMP

### FRONT WASHER PUMP : Removal and Installation

INFOID:000000003899048

The front washer pump is not available separately, it is part of the washer tank. Refer to [WW-96, "WASHER TANK : Removal and Installation"](#).

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## FRONT WIPER AND WASHER SWITCH

< ON-VEHICLE REPAIR >

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### FRONT WIPER AND WASHER SWITCH

#### Removal and Installation

INFOID:000000003899049

**NOTE:**

The front wiper and washer switch is part of the combination switch assembly.

#### REMOVAL

1. Remove the spiral cable. Refer to [SR-8, "Removal and Installation"](#).
2. Disconnect the combination switch connector and remove the combination switch assembly.

#### INSTALLATION

Installation is in the reverse order of removal.