

SECTION **WW**

WIPER & WASHER

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DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

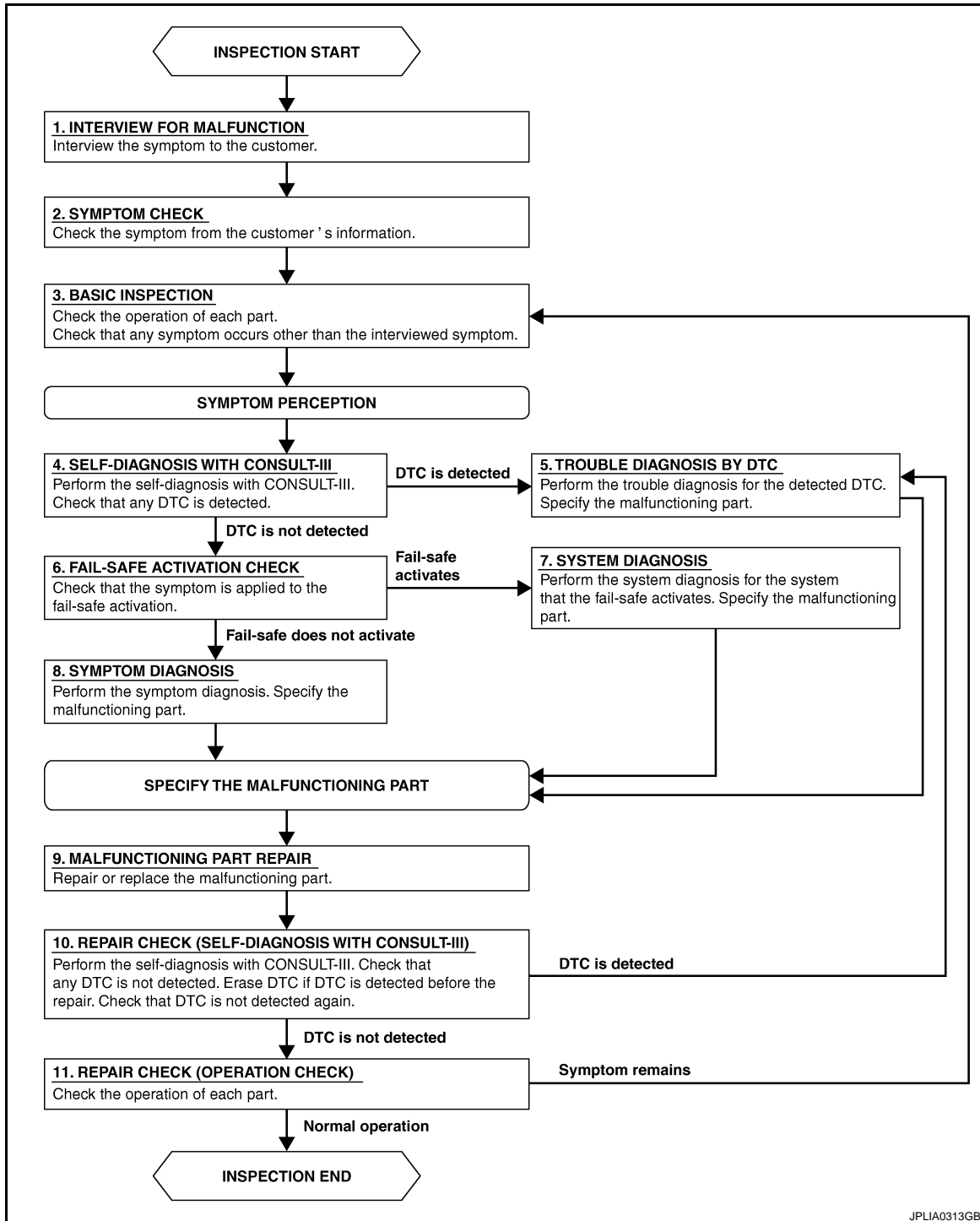
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

INFOID:000000004468125

OVERALL SEQUENCE



DETAILED FLOW

1. INTERVIEW FOR MALFUNCTION

Interview the symptom to the customer.

DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

>> GO TO 2.

2. SYMPTOM CHECK

Check the symptom from the customer's information.

>> GO TO 3.

3. BASIC INSPECTION

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

>> GO TO 4.

4. SELF-DIAGNOSIS WITH CONSULT-III

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

Is any DTC detected?

YES >> GO TO 5.

NO >> GO TO 6.

5. TROUBLE DIAGNOSIS BY DTC

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

>> GO TO 9.

6. FAIL-SAFE ACTIVATION CHECK

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

Does the fail-safe activate?

YES >> GO TO 7.

NO >> GO TO 8.

7. SYSTEM DIAGNOSIS

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

>> GO TO 9.

8. SYMPTOM DIAGNOSIS

Perform the symptom diagnosis. Specify the malfunctioning part.

>> GO TO 9.

9. MALFUNCTION PART REPAIR

Repair or replace the malfunctioning part.

>> GO TO 10.

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

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

Is any DTC detected?

YES >> GO TO 5.

NO >> GO TO 11.

11. REPAIR CHECK (OPERATION CHECK)

Check the operation of each part.

Does it operate normally?

YES >> INSPECTION END

NO >> GO TO 3.

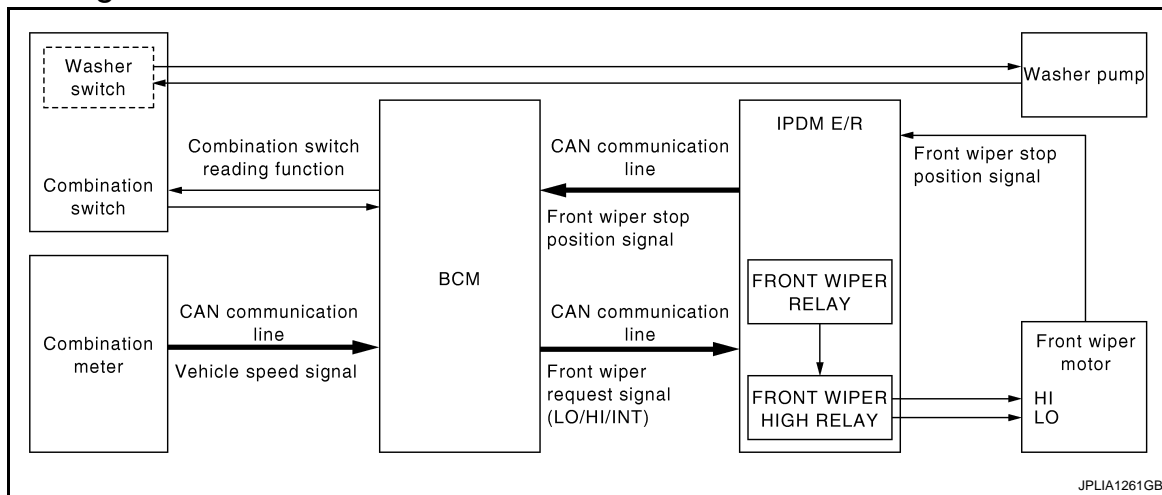
FRONT WIPER AND WASHER SYSTEM

< FUNCTION DIAGNOSIS >

FUNCTION DIAGNOSIS

FRONT WIPER AND WASHER SYSTEM

System Diagram



System Description

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OUTLINE

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

Control by BCM

- Combination switch reading function
- Front wiper control function

Control by IPDM E/R

- Front wiper control function
- Relay control function

Combination meter indicates low washer fluid warning judged with the signal from the washer level switch. For details of low washer fluid warning, refer to [MWI-26, "INFORMATION DISPLAY : System Description"](#).

FRONT WIPER BASIC OPERATION

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

FRONT WIPER LO OPERATION

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

Front wiper LO operating condition

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

FRONT WIPER HI OPERATION

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

Front wiper HI operating condition

- Ignition switch ON
- Front wiper switch HI
- 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 AND WASHER SYSTEM

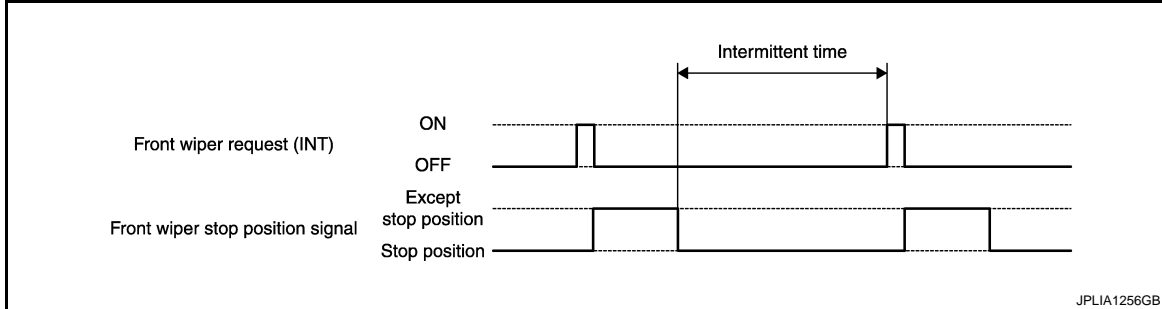
< FUNCTION DIAGNOSIS >

FRONT WIPER INT OPERATION

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

Front wiper INT operating condition

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



NOTE:

Factory setting of the front wiper intermittent operation is the operation without vehicle speed. Front wiper intermittent operation can be set to the operation with vehicle speed by CONSULT-III. Refer to [WW-10, "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

Unit: Second

| Wiper intermittent dial position | Intermittent operation interval | Intermittent operation delay Interval | | | |
|----------------------------------|---------------------------------|---------------------------------------|---------------------------------|------------------------------------|-------------------------------|
| | | Vehicle speed | | | |
| | | 0 – 5 km/h (0 – 3.1 MPH) | 5 – 35 km/h (3.1 – 21.7 MPH) | 35 – 65 km/h (21.7 – 40.4 MPH)* | 65 km/h (40.4 MPH) or more |
| 1 | Short ↑ | 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 ↓ | 32 | 24 | 16 | 9.6 |
| 7 | | 42 | 31.5 | 21 | 12.6 |

*: When without vehicle speed setting

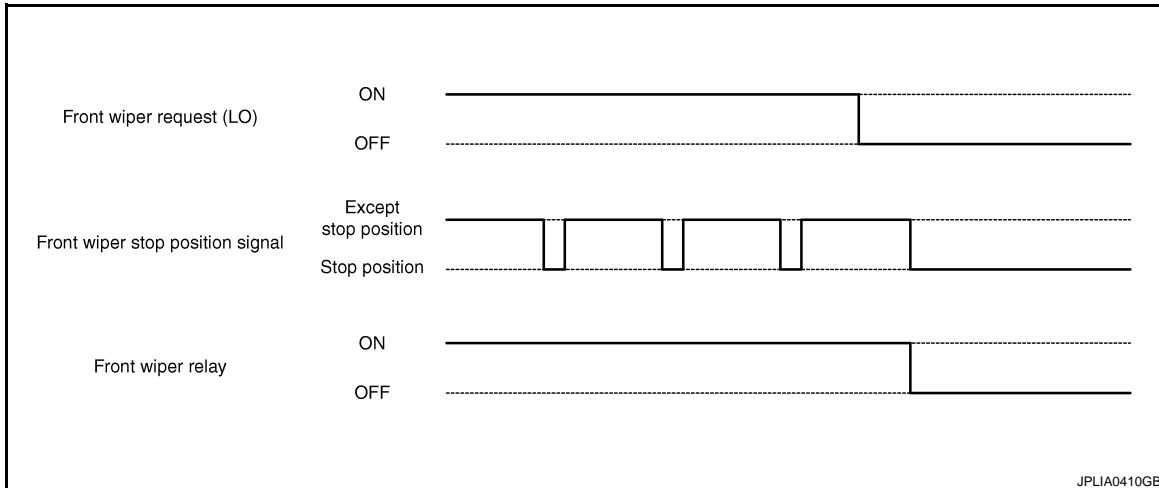
FRONT WIPER AUTO STOP OPERATION

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

FRONT WIPER AND WASHER SYSTEM

< 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 washer pump is grounded through the combination switch with the front washer switch ON.

FRONT WIPER FAIL-SAFE OPERATION

IPDM E/R performs the fail-safe function when the front wiper auto stop circuit is malfunctioning. Refer to [PCS-29. "Fail-safe"](#).

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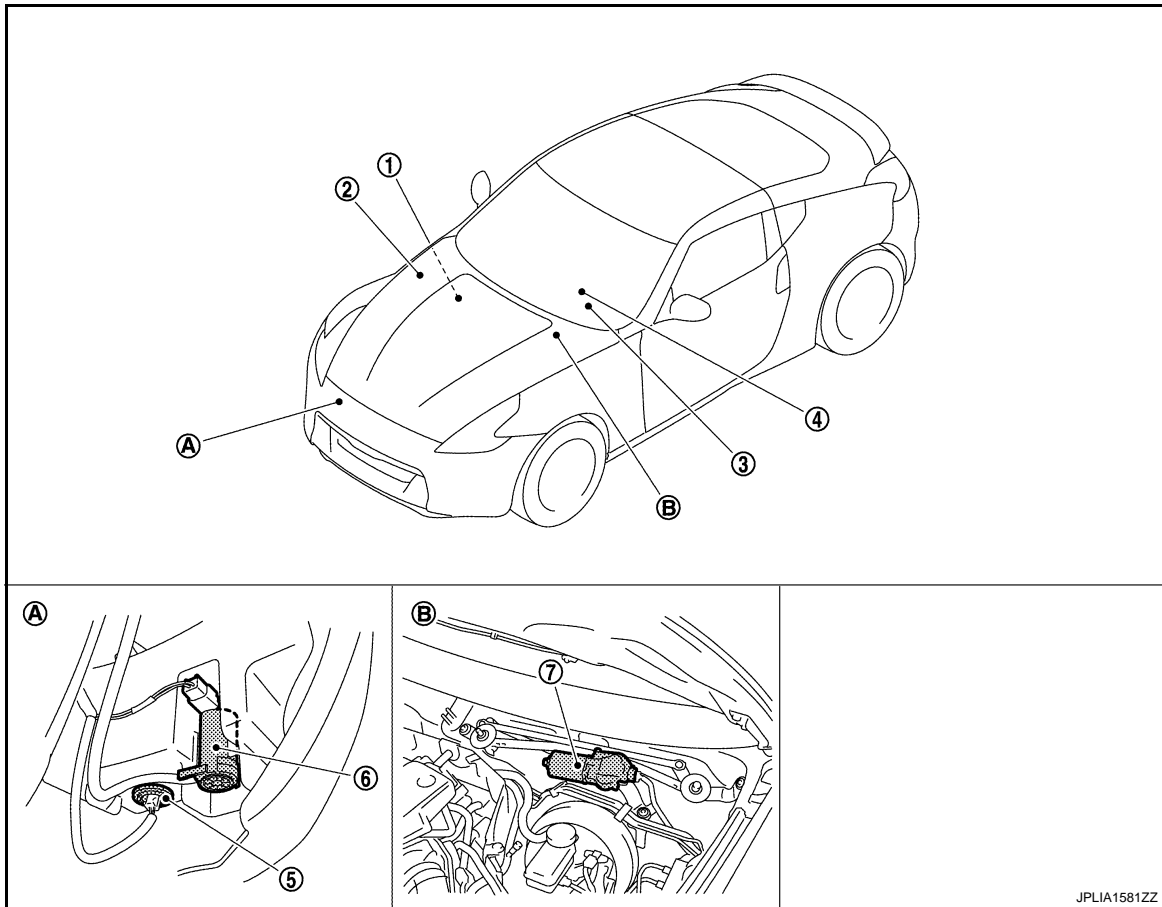
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P

FRONT WIPER AND WASHER SYSTEM

< FUNCTION DIAGNOSIS >

Component Parts Location

INFOID:000000004468132



- | | | |
|--|---|----------------------|
| 1. BCM Refer to BCS-8, "Component Parts Location" | 2. IPDM E/R Refer to PCS-5, "Component Parts Location" | 3. Combination meter |
| 4. Combination switch | 5. Washer level switch | 6. Washer pump |
| 7. Front wiper motor | | |
| A. Radiator core support (RH) | B. Cowl top, left side of engine room | |

Component Description

INFOID:000000004468133

| Part | Description |
|--|---|
| BCM | <ul style="list-style-type: none"> Judges each switch status by the combination switch reading function. Requests (with CAN communication) the front wiper relay and the front wiper high relay ON to IPDM E/R. |
| IPDM E/R | <ul style="list-style-type: none"> Controls the integrated relay according to the request (with CAN communication) from BCM. Performs the auto stop control of the front wiper. |
| Combination switch (Wiper & washer switch) | Refer to BCS-9, "System Diagram" . |
| Combination meter | Transmits the vehicle speed signal to BCM with CAN communication. |

DIAGNOSIS SYSTEM (BCM)

< FUNCTION DIAGNOSIS >

DIAGNOSIS SYSTEM (BCM)

COMMON ITEM

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

INFOID:000000004715362

APPLICATION ITEM

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

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

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.

×: Applicable item

| 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 | HEAD LAMP | × | × | × |
| Wiper and washer | WIPER | × | × | × |
| Turn signal and hazard warning lamps | FLASHER | × | × | × |
| — | AIR CONDITONER* | | | |
| <ul style="list-style-type: none"> Intelligent Key system Engine start system | INTELLIGENT KEY | × | × | × |
| Combination switch | COMB SW | | × | |
| Body control system | BCM | × | | |
| IVIS - NATS | IMMU | | × | × |
| Interior room lamp battery saver | BATTERY SAVER | × | × | × |
| Trunk lid open | TRUNK | | × | × |
| Vehicle security system | THEFT ALM | × | × | × |
| RAP system | RETAINED PWR | | × | |
| Signal buffer system | SIGNAL BUFFER | | × | × |
| TPMS | TPMS (AIR PRESSURE MONITOR) | × | × | × |

NOTE:

*: This item is displayed, but is not used.

FREEZE FRAME DATA (FFD)

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

DIAGNOSIS SYSTEM (BCM)

< FUNCTION DIAGNOSIS >

| CONSULT screen item | Indication/Unit | Description | |
|---------------------|-----------------|--|--|
| Vehicle Speed | km/h | Vehicle speed of the moment a particular DTC is detected | |
| Odo/Trip Meter | km | Total mileage (Odometer value) of the moment a particular DTC is detected | |
| Vehicle Condition | SLEEP>LOCK | Power position status of the moment a particular DTC is detected | While turning BCM status from low power consumption mode to normal mode (Power supply position is "LOCK") |
| | SLEEP>OFF | | While turning BCM status from low power consumption mode to normal mode (Power supply position is "OFF".) |
| | LOCK>ACC | | While turning power supply position from "LOCK" to "ACC" |
| | ACC>ON | | While turning power supply position from "ACC" to "IGN" |
| | RUN>ACC | | While turning power supply position from "RUN" to "ACC" (Vehicle is stopping and selector lever is except P position.) |
| | CRANK>RUN | | While turning power supply position from "CRANKING" to "RUN" (From cranking up the engine to run it) |
| | RUN>URGENT | | While turning power supply position from "RUN" to "ACC" (Emergency stop operation) |
| | ACC>OFF | | While turning power supply position from "ACC" to "OFF" |
| | OFF>LOCK | | While turning power supply position from "OFF" to "LOCK" |
| | OFF>ACC | | While turning power supply position from "OFF" to "ACC" |
| | ON>CRANK | | While turning power supply position from "IGN" to "CRANKING" |
| | OFF>SLEEP | | While turning BCM status from normal mode (Power supply position is "OFF".) to low power consumption mode |
| | LOCK>SLEEP | | While turning BCM status from normal mode (Power supply position is "LOCK".) to low power consumption mode |
| | LOCK | | Power supply position is "LOCK" (Ignition switch OFF with steering is locked.) |
| | OFF | | Power supply position is "OFF" (Ignition switch OFF with steering is unlocked.) |
| | ACC | | Power supply position is "ACC" (Ignition switch ACC) |
| | ON | | Power supply position is "IGN" (Ignition switch ON with engine stopped) |
| | ENGINE RUN | | Power supply position is "RUN" (Ignition switch ON with engine running) |
| | CRANKING | | Power supply position is "CRANKING" (At engine cranking) |
| IGN Counter | 0 - 39 | The number of times that ignition switch is turned ON after DTC is detected <ul style="list-style-type: none"> • The number is 0 when a malfunction is detected now. • The number increases like 1 → 2 → 3...38 → 39 after returning to the normal condition whenever ignition switch OFF → ON. • The number is fixed to 39 until the self-diagnosis results are erased if it is over 39. | |

WIPER

WIPER : CONSULT-III Function (BCM - WIPER)

INFOID:000000004468139

WORK SUPPORT

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

*:Factory setting

DATA MONITOR

DIAGNOSIS SYSTEM (BCM)

< FUNCTION DIAGNOSIS >

| Monitor Item [Unit] | Description |
|---------------------------|---|
| PUSH SW [Off/On] | The switch status input from push-button ignition switch. |
| VEH SPEED 1 [km/h] | The value of the vehicle speed signal received from combination meter with CAN communication. |
| FR WIPER HI [Off/On] | Each switch status that BCM judges from the combination switch reading function. |
| FR WIPER LOW [Off/On] | |
| FR WASHER SW [Off/On] | |
| FR WIPER INT [Off/On] | |
| FR WIPER STOP [Off/On] | Front wiper motor (stop position) status received from IPDM E/R with CAN communication. |
| INT VOLUME [1 – 7] | Each switch status that BCM judges from the combination switch reading function. |

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. |

WW

DIAGNOSIS SYSTEM (IPDM E/R)

< FUNCTION DIAGNOSIS >

DIAGNOSIS SYSTEM (IPDM E/R)

Diagnosis Description

INFOID:000000004715363

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
- Side marker lamps
- Tail lamps
- Headlamps (LO, HI)
- A/C compressor (magnet clutch)
- Cooling fan (cooling fan control module)

Operation Procedure

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

NOTE:

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

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

CAUTION:

Close passenger door.

4. Turn the ignition switch ON within 10 seconds. After that the horn sounds once and the auto active test starts.
5. 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 the ignition switch OFF.

CAUTION:

- If auto active test mode cannot be actuated, check door switch system. Refer to [DLK-60, "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.

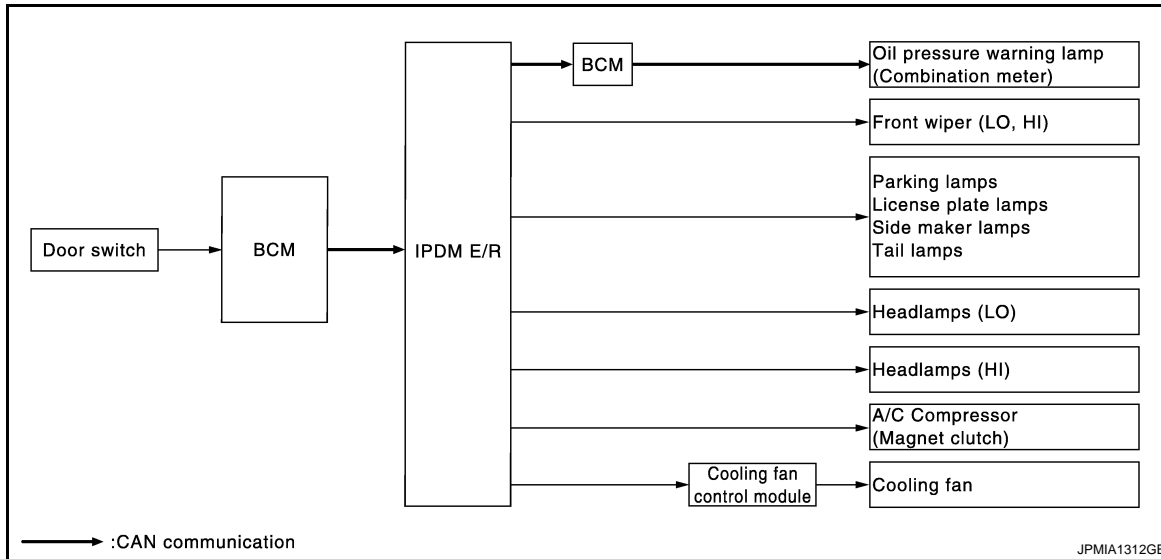
| Operation sequence | Inspection location | Operation |
|--------------------|--|--|
| 1 | Oil pressure warning lamp | Blinks continuously during operation of auto active test |
| 2 | Front wiper | LO for 5 seconds → HI for 5 seconds |
| 3 | <ul style="list-style-type: none">• Parking lamps• License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

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

DIAGNOSIS SYSTEM (IPDM E/R)

< 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"> Parking lamps License plate lamps Side maker lamps Tail lamps Headlamp (HI, LO) Front wiper (HI, LO) | Perform auto active test. Does the applicable system operate? | YES BCM signal input circuit |
| | | NO <ul style="list-style-type: none"> Lamp or motor Lamp or motor ground circuit Harness or connector between IPDM E/R and applicable system IPDM E/R |
| A/C compressor does not operate | Perform auto active test. Does the magnet clutch operate? | YES <ul style="list-style-type: none"> Unified meter and A/C amp. signal input circuit CAN communication signal between unified meter and A/C amp. and ECM CAN communication signal between ECM and IPDM E/R |
| | | NO <ul style="list-style-type: none"> Magnet clutch Harness or connector between IPDM E/R and magnet clutch IPDM E/R |
| Oil pressure warning lamp does not operate | Perform auto active test. Does the oil pressure warning lamp blink? | YES <ul style="list-style-type: none"> Harness or connector between IPDM E/R and oil pressure switch Oil pressure switch IPDM E/R |
| | | NO <ul style="list-style-type: none"> CAN communication signal between IPDM E/R and BCM CAN communication signal between BCM and unified meter and A/C amp. Combination meter |

DIAGNOSIS SYSTEM (IPDM E/R)

< FUNCTION DIAGNOSIS >

| Symptom | Inspection contents | | Possible cause |
|------------------------------|--|-----|--|
| Cooling fan does not operate | Perform auto active test. Does the cooling fan operate? | YES | <ul style="list-style-type: none"> ECM signal input circuit CAN communication signal between ECM and IPDM E/R |
| | | NO | <ul style="list-style-type: none"> Cooling fan Harness or connector between cooling fan and cooling fan control module Cooling fan control module Harness or connector between IPDM E/R and cooling fan control module Cooling fan relay Harness or connector between IPDM E/R and cooling fan relay IPDM E/R |

CONSULT-III Function (IPDM E/R)

INFOID:000000004715364

APPLICATION ITEM

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

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

SELF DIAGNOSTIC RESULT

Refer to [WW-78. "DTC Index"](#).

DATA MONITOR

Monitor item

| Monitor Item [Unit] | MAIN SIGNALS | Description |
|----------------------------------|--------------|---|
| RAD FAN REQ [%] | × | Displays the value of the cooling fan speed signal received from ECM via CAN communication. |
| AC COMP REQ [Off/On] | × | Displays the status of the A/C compressor request signal received from ECM via CAN communication. |
| TAIL&CLR REQ [Off/On] | × | Displays the status of the position light request signal received from BCM via CAN communication. |
| HL LO REQ [Off/On] | × | Displays the status of the low beam request signal received from BCM via CAN communication. |
| HL HI REQ [Off/On] | × | Displays the status of the high beam request signal received from BCM via CAN communication. |
| FR FOG REQ [Off/On] | × | NOTE: The item is indicated, but not monitored. |
| FR WIP REQ [Stop/1LOW/Low/Hi] | × | Displays the status of the front wiper request signal received from BCM via CAN communication. |
| WIP AUTO STOP [STOP P/ACT P] | × | Displays the status of the front wiper stop position signal judged by IPDM E/R. |
| WIP PROT [Off/BLOCK] | × | Displays the status of the front wiper fail-safe operation judged by IPDM E/R. |

DIAGNOSIS SYSTEM (IPDM E/R)

< FUNCTION DIAGNOSIS >

| Monitor Item [Unit] | MAIN SIG- NALS | Description |
|--|-------------------|--|
| IGN RLY1 -REQ [Off/On] | | Displays the status of the ignition switch ON signal received from BCM via CAN communication. |
| IGN RLY [Off/On] | × | Displays the status of the ignition relay judged by IPDM E/R. |
| PUSH SW [Off/On] | | Displays the status of the push-button ignition switch judged by IPDM E/R. |
| INTER/NP SW [Off/On] | | Displays the status of the clutch interlock switch (M/T models) or shift position (A/T models) judged by IPDM E/R. |
| ST RLY CONT [Off/On] | | Displays the status of the starter relay status signal received from BCM via CAN communication. |
| IHBT RLY -REQ [Off/On] | | Displays the status of the starter control relay signal received from BCM via CAN communication. |
| ST/INHI RLY [Off/ST ON/INHI ON/UNKWN] | | Displays the status of the starter relay and starter control relay judged by IPDM E/R. |
| DETENT SW [Off/On] | | Displays the status of the control device (detention switch) judged by IPDM E/R. |
| S/L RLY -REQ [Off/On] | | Displays the status of the steering lock relay request received from BCM via CAN communication. |
| S/L STATE [LOCK/UNLOCK/UNKWN] | | Displays the status of the steering lock judged by IPDM E/R. |
| DTRL REQ [Off/On] | | Displays the status of the daytime running light request signal received from BCM via CAN communication. NOTE: This item is monitored only the vehicle with daytime running light system. |
| OIL P SW [Open/Close] | | Displays the status of the oil pressure switch judged by IPDM E/R. |
| HOOD SW [Off/On] | | Displays the status of the hood switch judged by IPDM E/R. |
| HL WASHER REQ [Off/On] | | NOTE: The item is indicated, but not monitored. |
| THFT HRN REQ [Off/On] | | Displays the status of the theft warning horn request signal received from BCM via CAN communication. |
| HORN CHIRP [Off/On] | | Displays the status of the horn reminder signal received from BCM via CAN communication. |
| CRNRNG LMP REQ [Off/On] | | NOTE: The item is indicated, but not monitored. |

ACTIVE TEST

Test item

| Test item | Operation | Description |
|----------------|-----------|--|
| CORNERING LAMP | Off | NOTE: The item is indicated, but cannot be tested. |
| | LH | |
| | RH | |
| HORN | On | Operates horn relay 1 and horn relay 2 for 20 ms. |
| FRONT WIPER | Off | OFF |
| | Lo | Operates the front wiper relay. |
| | Hi | Operates the front wiper relay and front wiper high relay. |

DIAGNOSIS SYSTEM (IPDM E/R)

< FUNCTION DIAGNOSIS >

| Test item | Operation | Description |
|------------------|-----------|---|
| MOTOR FAN | 1 | OFF |
| | 2 | Outputs 50% pulse duty signal (PWM signal) to the cooling fan control module. |
| | 3 | Outputs 80% pulse duty signal (PWM signal) to the cooling fan control module. |
| | 4 | Outputs 100% pulse duty signal (PWM signal) to the cooling fan control module. |
| HEAD LAMP WASHER | On | NOTE: The item is indicated, but cannot be tested. |
| EXTERNAL LAMPS | Off | OFF |
| | TAIL | Operates the tail lamp relay and daytime running light relay. NOTE: Daytime running light relay is with daytime running light system only. |
| | Lo | Operates the headlamp low relay. |
| | Hi | Operates the headlamp low relay and ON/OFF the headlamp high relay at 1 second intervals. |
| | Fog | NOTE: The item is indicated, but cannot be tested. |

WIPER AND WASHER FUSE

< COMPONENT DIAGNOSIS >

COMPONENT DIAGNOSIS

WIPER AND WASHER FUSE

Description

INFOID:000000004468142

Fuse list

| Unit | Location | No. | Capacity |
|-------------------|----------|-----|----------|
| Front wiper motor | IPDM E/R | 60 | 30 A |
| Washer pump | IPDM E/R | 47 | 10 A |

Diagnosis Procedure

INFOID:000000004468143

1.CHECK FUSES

Check that the following fuses are not fusing.

| Unit | Location | No. | Capacity |
|-------------------|----------|-----|----------|
| Front wiper motor | IPDM E/R | 60 | 30 A |
| Washer pump | IPDM E/R | 47 | 10 A |

Is the fuse fusing?

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

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WW

POWER SUPPLY AND GROUND CIRCUIT

< COMPONENT DIAGNOSIS >

POWER SUPPLY AND GROUND CIRCUIT

BCM (BODY CONTROL MODULE)

BCM (BODY CONTROL MODULE) : Diagnosis Procedure

INFOID:000000004715365

1.CHECK FUSE AND FUSIBLE LINK

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

| Signal name | Fuse and fusible link No. |
|----------------------|---------------------------|
| Battery power supply | K |
| | 10 |

Is the fuse fusing?

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

NO >> GO TO 2.

2.CHECK POWER SUPPLY CIRCUIT

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

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

Is the measurement value normal?

YES >> GO TO 3.

NO >> Repair harness or connector.

3.CHECK GROUND CIRCUIT

Check continuity between BCM harness connector and ground.

| BCM | | Ground | Continuity |
|-----------|----------|--------|------------|
| Connector | Terminal | | Existed |
| M119 | 13 | | |

Does continuity exist?

YES >> INSPECTION END

NO >> Repair harness or connector.

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

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

INFOID:000000004715366

1.CHECK FUSES AND FUSIBLE LINK

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

POWER SUPPLY AND GROUND CIRCUIT

< COMPONENT DIAGNOSIS >

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

Is the fuse fusing?

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

NO >> GO TO 2.

2.CHECK POWER SUPPLY CIRCUIT

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

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

Is the measurement value normal?

YES >> GO TO 3.

NO >> Repair the harness or connector.

3.CHECK GROUND CIRCUIT

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

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

Does continuity exist?

YES >> INSPECTION END

NO >> Repair the harness or connector.

FRONT WIPER MOTOR LO CIRCUIT

< COMPONENT DIAGNOSIS >

FRONT WIPER MOTOR LO CIRCUIT

Component Function Check

INFOID:000000004468146

1.CHECK FRONT WIPER LO OPERATION

⊗IPDM E/R AUTO ACTIVE TEST

1. Start IPDM E/R auto active test. Refer to [PCS-10, "Diagnosis Description"](#).
2. Check that the front wiper operates at the LO operation.

ⓂCONSULT-III ACTIVE TEST

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

Lo : Front wiper (LO) operation

Off : Stop the front wiper.

Is front wiper (LO) operation normally?

YES >> Front wiper motor LO circuit is normal.

NO >> Refer to [WW-20, "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:000000004468147

1.CHECK FRONT WIPER MOTOR (LO) OUTPUT VOLTAGE

ⓂCONSULT-III ACTIVE TEST

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

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

Is the measurement value normal?

YES >> GO TO 2.

NO >> Replace IPDM E/R.

2.CHECK FRONT WIPER MOTOR (LO) OPEN CIRCUIT

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

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

Does continuity exist?

YES >> GO TO 3.

NO >> Repair the harness or connector.

3.CHECK FRONT WIPER MOTOR (LO) SHORT CIRCUIT

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

FRONT WIPER MOTOR LO CIRCUIT

< COMPONENT DIAGNOSIS >

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

Does continuity exist?

- YES >> Repair the harness or connector.
- NO >> Replace front wiper motor.

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FRONT WIPER MOTOR HI CIRCUIT

< COMPONENT DIAGNOSIS >

FRONT WIPER MOTOR HI CIRCUIT

Component Function Check

INFOID:000000004468148

1.CHECK FRONT WIPER HI OPERATION

⊗IPDM E/R AUTO ACTIVE TEST

1. Start IPDM E/R auto active test. Refer to [PCS-10, "Diagnosis Description"](#).
2. Check that the front wiper operates at the HI operation.

ⓂCONSULT-III ACTIVE TEST

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

Hi : Front wiper (HI) operation

Off : Stop the front wiper.

Is front wiper (HI) operation normally?

YES >> Front wiper motor HI circuit is normal.

NO >> Refer to [WW-22, "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:000000004468149

1.CHECK FRONT WIPER MOTOR (HI) OUTPUT VOLTAGE

ⓂCONSULT-III ACTIVE TEST

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

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

Is the measurement value normal?

YES >> GO TO 2.

NO >> Replace IPDM E/R.

2.CHECK FRONT WIPER MOTOR (HI) OPEN CIRCUIT

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

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

Does continuity exist?

YES >> GO TO 3.

NO >> Repair the harness or connector.

3.CHECK FRONT WIPER MOTOR (HI) SHORT CIRCUIT

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

FRONT WIPER MOTOR HI CIRCUIT

< COMPONENT DIAGNOSIS >

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

Does continuity exist?

YES >> Repair the harness or connector.

NO >> Replace front wiper motor.

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FRONT WIPER AUTO STOP SIGNAL CIRCUIT

< COMPONENT DIAGNOSIS >

FRONT WIPER AUTO STOP SIGNAL CIRCUIT

Component Function Check

INFOID:000000004468150

1.CHECK FRONT WIPER (AUTO STOP) SIGNAL

CONSULT-III DATA MONITOR

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

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

Is the status of item normal?

- YES >> Auto stop signal circuit is normal.
NO >> Refer to [WW-24, "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:000000004468151

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

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

| Terminals | | | Voltage (Approx.) |
|-----------|----------|--------|-------------------|
| (+) | | (-) | |
| IPDM E/R | | Ground | |
| Connector | Terminal | | |
| E5 | 16 | | |
| | | | Battery voltage |

Is the measurement value normal?

- YES >> GO TO 3.
NO >> GO TO 2.

2.CHECK FRONT WIPER MOTOR (AUTO STOP) SHORT CIRCUIT

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

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

Does continuity exist?

- YES >> Repair the harnesses or connectors.
NO >> Replace IPDM E/R.

3.CHECK FRONT WIPER MOTOR (AUTO STOP) CIRCUIT CONTINUITY

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

FRONT WIPER AUTO STOP SIGNAL CIRCUIT

< COMPONENT DIAGNOSIS >

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

Does continuity exist?

- YES >> Replace front wiper motor.
- NO >> Repair the harnesses or connectors.

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FRONT WIPER MOTOR GROUND CIRCUIT

< COMPONENT DIAGNOSIS >

FRONT WIPER MOTOR GROUND CIRCUIT

Diagnosis Procedure

INFOID:000000004468152

1. CHECK FRONT WIPER MOTOR (GND) OPEN CIRCUIT

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

| Front wiper motor | | Ground | Continuity |
|-------------------|----------|--------|------------|
| Connector | Terminal | | |
| E42 | 2 | | Existed |

Does continuity exist?

- YES >> Front wiper motor ground circuit is normal.
NO >> Repair the harnesses or connectors.

WASHER SWITCH

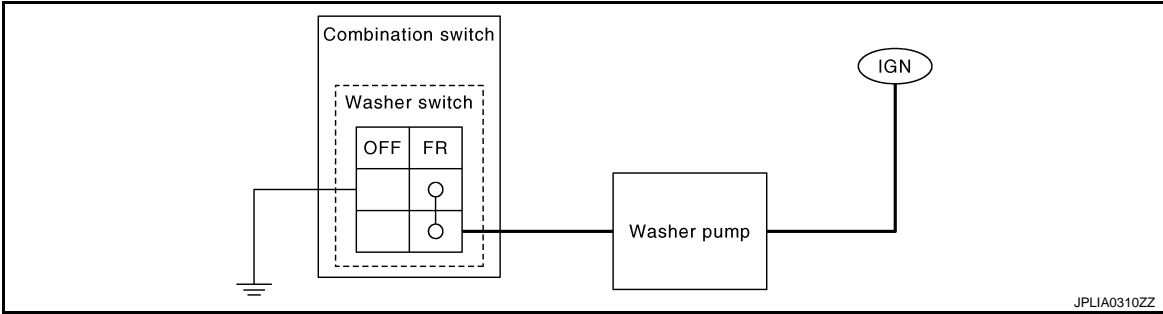
< COMPONENT DIAGNOSIS >

WASHER SWITCH

Description

INFOID:000000004468153

Washer switch is integrated with combination switch.



Component Inspection

INFOID:000000004468154

1.CHECK WIPER SWITCH

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

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

Does continuity exist?

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

WW

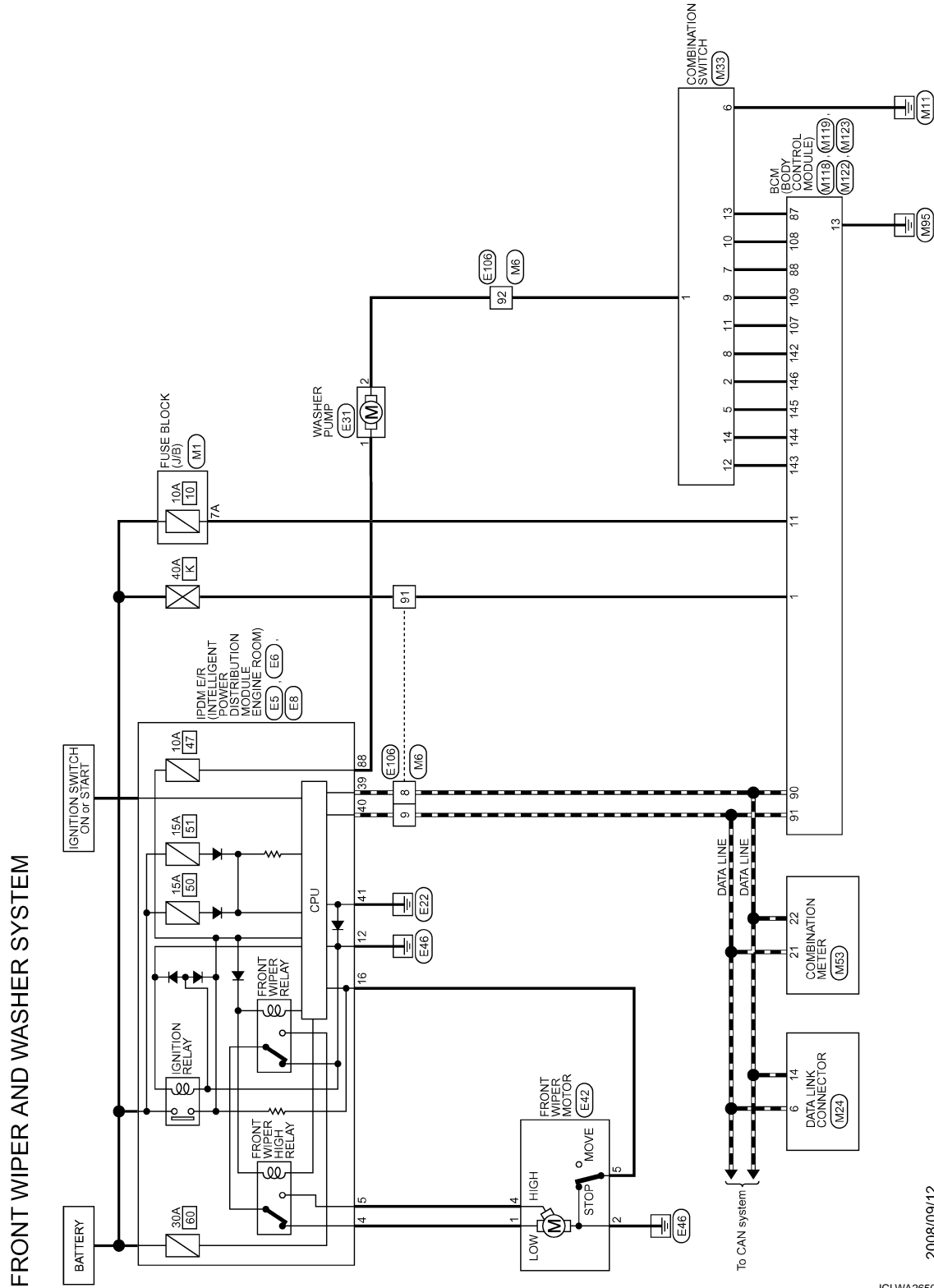
FRONT WIPER AND WASHER SYSTEM

< COMPONENT DIAGNOSIS >

FRONT WIPER AND WASHER SYSTEM

Wiring Diagram - FRONT WIPER AND WASHER SYSTEM -

INFOID:000000004468162



2008/09/12

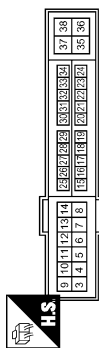
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FRONT WIPER AND WASHER SYSTEM

< COMPONENT DIAGNOSIS >

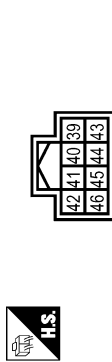
FRONT WIPER AND WASHER SYSTEM

| | |
|----------------|--|
| Connector No. | E5 |
| Connector Name | IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) |
| Connector Type | TH20FW-CS12-M4-IV |



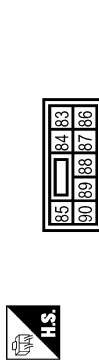
| Terminal No. | Color of Wire | Signal Name [Specification] |
|--------------|---------------|-----------------------------|
| 4 | V | - |
| 5 | L | - |
| 12 | B/W | - |
| 16 | LG | - |

| | |
|----------------|--|
| Connector No. | E6 |
| Connector Name | IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) |
| Connector Type | TH68FW-NH |



| Terminal No. | Color of Wire | Signal Name [Specification] |
|--------------|---------------|-----------------------------|
| 39 | P | - |
| 40 | L | - |
| 41 | B/W | - |

| | |
|----------------|--|
| Connector No. | E8 |
| Connector Name | IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) |
| Connector Type | NS36FW-CS |



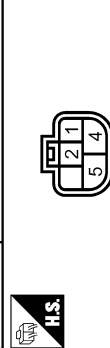
| Terminal No. | Color of Wire | Signal Name [Specification] |
|--------------|---------------|-----------------------------|
| 88 | G | - |

| | |
|----------------|-------------|
| Connector No. | E31 |
| Connector Name | WASHER PUMP |
| Connector Type | ED2GY-RS |



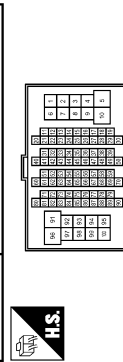
| Terminal No. | Color of Wire | Signal Name [Specification] |
|--------------|---------------|-----------------------------|
| 1 | G | - |
| 2 | L | - |

| | |
|----------------|-------------------|
| Connector No. | E42 |
| Connector Name | FRONT WIPER MOTOR |
| Connector Type | MS5FGY |



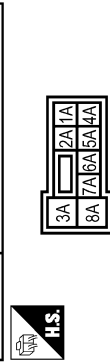
| Terminal No. | Color of Wire | Signal Name [Specification] |
|--------------|---------------|-----------------------------|
| 1 | V | - |
| 2 | B/W | - |
| 4 | L | - |
| 5 | LG | - |

| | |
|----------------|-----------------|
| Connector No. | E106 |
| Connector Name | WIRE TO WIRE |
| Connector Type | TH68FW-CS16-TM4 |



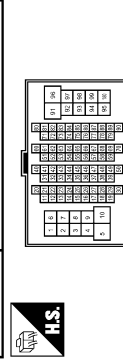
| Terminal No. | Color of Wire | Signal Name [Specification] |
|--------------|---------------|-----------------------------|
| 8 | P | - |
| 9 | L | - |
| 91 | W | - |
| 92 | L | - |

| | |
|----------------|------------------|
| Connector No. | M1 |
| Connector Name | FUSE BLOCK (J/B) |
| Connector Type | NS36FW-M2 |



| Terminal No. | Color of Wire | Signal Name [Specification] |
|--------------|---------------|-----------------------------|
| 7A | BR | - |

| | |
|----------------|-----------------|
| Connector No. | M6 |
| Connector Name | WIRE TO WIRE |
| Connector Type | TH68MW-CS16-TM4 |



| Terminal No. | Color of Wire | Signal Name [Specification] |
|--------------|---------------|-----------------------------|
| 8 | P | - |
| 9 | L | - |
| 91 | W | - |
| 92 | P | - |

JCLWA2651GB

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FRONT WIPER AND WASHER SYSTEM

< COMPONENT DIAGNOSIS >

FRONT WIPER AND WASHER SYSTEM

| | |
|----------------|---------------------|
| Connector No. | M24 |
| Connector Name | DATA LINK CONNECTOR |
| Connector Type | BD16FW |



| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|

| Terminal No. | Color of Wire | Signal Name [Specification] |
|--------------|---------------|-----------------------------|
| 6 | L | - |
| 14 | P | - |

| | |
|----------------|--------------------|
| Connector No. | M33 |
| Connector Name | COMBINATION SWITCH |
| Connector Type | TH16FW-NH |



| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|----|----|----|----|----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
|---|---|---|---|---|---|---|---|---|----|----|----|----|----|

| Terminal No. | Color of Wire | Signal Name [Specification] |
|--------------|---------------|-----------------------------|
| 1 | P | FR WASHER(-) |
| 2 | SB | OUTPUT 4 |
| 5 | L | OUTPUT 3 |
| 6 | B | GND |
| 7 | V | INPUT 3 |
| 8 | O | OUTPUT 5 |
| 9 | Y | INPUT 2 |
| 10 | R | INPUT 4 |
| 11 | LG | INPUT 1 |
| 12 | P | OUTPUT 1 |
| 13 | BR | INPUT 5 |

| | |
|----------------|---------------------------|
| Connector No. | M18 |
| Connector Name | BCM (BODY CONTROL MODULE) |
| Connector Type | M03FB-LC |



| | | |
|---|---|---|
| 1 | 2 | 3 |
|---|---|---|

| Terminal No. | Color of Wire | Signal Name [Specification] |
|--------------|---------------|-----------------------------|
| 1 | W | BAT (F/L) |

| | |
|----------------|---------------------------|
| Connector No. | M19 |
| Connector Name | BCM (BODY CONTROL MODULE) |
| Connector Type | NS16FW-CS |



| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|
| 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|

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

| | | |
|----|---|----------|
| 14 | G | OUTPUT 2 |
|----|---|----------|

| | |
|----------------|-------------------|
| Connector No. | M53 |
| Connector Name | COMBINATION METER |
| Connector Type | TH24FW-NH |



| | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|

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

| | |
|----------------|---------------------------|
| Connector No. | M123 |
| Connector Name | BCM (BODY CONTROL MODULE) |
| Connector Type | TH40FG-NH |



| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|

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

| Terminal No. | Color of Wire | Signal Name [Specification] |
|--------------|---------------|-----------------------------|
| 87 | BR | COMBI SW INPUT 5 |
| 88 | V | COMBI SW INPUT 3 |
| 90 | P | CAN-L |
| 91 | L | CAN-H |
| 107 | LG | COMBI SW INPUT 1 |
| 108 | R | COMBI SW INPUT 4 |
| 109 | Y | COMBI SW INPUT 2 |

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

ECU DIAGNOSIS

BCM (BODY CONTROL MODULE)

Reference Value

INFOID:000000004715377

VALUES ON THE DIAGNOSIS TOOL

CONSULT-III MONITOR ITEM

| Monitor Item | Condition | Value/Status |
|----------------|---|----------------------------------|
| FR WIPER HI | Other than front wiper switch HI | Off |
| | Front wiper switch HI | On |
| FR WIPER LOW | Other than front wiper switch LO | Off |
| | Front wiper switch LO | On |
| FR WASHER SW | Front washer switch OFF | Off |
| | Front washer switch ON | On |
| FR WIPER INT | Other than front wiper switch INT | 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 | NOTE: The item is indicated, but not monitored. | Off |
| RR FOG SW | Rear fog lamp switch OFF | Off |
| | Rear fog lamp switch ON | On |
| DOOR SW-DR | Driver door closed | Off |
| | Driver door opened | On |
| DOOR SW-AS | Passenger door closed | Off |
| | Passenger door opened | On |
| DOOR SW-RR | NOTE: The item is indicated, but not monitored. | Off |

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

| Monitor Item | Condition | Value/Status |
|--|--|--------------|
| DOOR SW-RL | NOTE: The item is indicated, but not monitored. | Off |
| DOOR SW-BK | Back door closed | Off |
| | Back door opened | On |
| CDL LOCK SW | Other than door lock and unlock switch LOCK | Off |
| | Door lock and unlock switch LOCK | On |
| CDL UNLOCK SW | Other than door lock and unlock switch UNLOCK | Off |
| | Door lock and unlock 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 | NOTE: The item is indicated, but not monitored. | Off |
| HAZARD SW | Hazard switch is OFF | Off |
| | Hazard switch is ON | On |
| REAR DEF SW NOTE: At models with NAVI this item is not monitored. | Rear window defogger switch OFF | Off |
| | Rear window defogger switch ON | On |
| H/L WASH SW | NOTE: The item is indicated, but not monitored. | Off |
| TR CANCEL SW | NOTE: The item is indicated, but not monitored. | Off |
| TR/BD OPEN SW | Back door opener switch OFF | Off |
| | While the back door opener switch is turned ON | On |
| TRNK/HAT MNTR | NOTE: The item is indicated, but not monitored. | Off |
| RKE-LOCK | LOCK button of the Intelligent Key is not pressed | Off |
| | LOCK button of the Intelligent Key is pressed | On |
| RKE-UNLOCK | UNLOCK button of the Intelligent Key is not pressed | Off |
| | UNLOCK button of the Intelligent Key is pressed | On |
| RKE-TR/BD | NOTE: The item is indicated, but not monitored. | Off |
| RKE-PANIC | PANIC button of the Intelligent Key is not pressed | Off |
| | PANIC button of the Intelligent Key is pressed | On |
| RKE-P/W OPEN | UNLOCK button of the Intelligent Key is not pressed | Off |
| | UNLOCK button of the Intelligent Key is pressed and held | On |
| RKE-MODE CHG | LOCK/UNLOCK button of the Intelligent Key is not pressed and held simultaneously | Off |
| | LOCK/UNLOCK button of the Intelligent Key is pressed and held simultaneously | On |
| OPTICAL SENSOR | Bright outside of the vehicle | Close to 5 V |
| | Dark outside of the vehicle | Close to 0 V |
| REQ SW -DR | Driver door request switch is not pressed | Off |
| | Driver door request switch is pressed | On |
| REQ SW -AS | Passenger door request switch is not pressed | Off |
| | Passenger door request switch is pressed | On |

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

| Monitor Item | Condition | Value/Status | |
|--|---|--------------|----|
| REQ SW -RR | NOTE: The item is indicated, but not monitored. | Off | A |
| REQ SW -RL | NOTE: The item is indicated, but not monitored. | Off | B |
| REQ SW -BD/TR | Back door request switch is not pressed | Off | C |
| | Back door request switch is pressed | On | |
| PUSH SW | Push-button ignition switch (push switch) is not pressed | Off | D |
| | Push-button ignition switch (push switch) is pressed | On | |
| IGN RLY2 -F/B | Ignition switch in OFF or ACC position | Off | E |
| | Ignition switch in ON position | On | |
| ACC RLY -F/B | NOTE: The item is indicated, but not monitored. | Off | F |
| CLUCH SW NOTE: At A/T models this item is not monitored. | The clutch pedal is not depressed | Off | G |
| | The clutch pedal is depressed | On | |
| BRAKE SW 1 | Stop lamp switch 1 signal circuit is open | Off | H |
| | Stop lamp switch 1 signal circuit is normal | On | |
| BRAKE SW 2 | The brake pedal is not depressed | Off | I |
| | The brake pedal is depressed | On | |
| DETE/CANCL SW NOTE: At M/T models with SynchroRev Match mode this item is not monitored. | <ul style="list-style-type: none"> Selector lever in P position (A/T models) The clutch pedal is depressed (M/T models without SynchroRev Match mode) | Off | J |
| | <ul style="list-style-type: none"> Selector lever in any position other than P (A/T models) The clutch pedal is not depressed (M/T models without SynchroRev Match mode) | On | |
| SFT PN/N SW NOTE: At M/T models without SynchroRev Match mode this item is not monitored. | <ul style="list-style-type: none"> Selector lever in any position other than P and N (A/T models) Control lever in any position other than neutral position (M/T models with SynchroRev Match mode) | Off | K |
| | <ul style="list-style-type: none"> Selector lever in P or N position (A/T models) Control lever in neutral position (M/T models with SynchroRev Match mode) | On | |
| S/L -LOCK | Steering is unlocked | Off | WW |
| | Steering is locked | On | |
| S/L -UNLOCK | Steering is locked | Off | M |
| | Steering is unlocked | On | |
| S/L RELAY-F/B | Ignition switch in OFF or ACC position | Off | N |
| | Ignition switch in ON position | On | |
| UNLK SEN -DR | Driver door is unlocked | Off | O |
| | Driver door is locked | On | |
| PUSH SW -IPDM | Push-button ignition switch (push-switch) is not pressed | Off | P |
| | Push-button ignition switch (push-switch) is pressed | On | |
| IGN RLY1 -F/B | Ignition switch in OFF or ACC position | Off | |
| | Ignition switch in ON position | On | |
| DETE SW -IPDM | Selector lever in any position other than P | Off | |
| | Selector lever in P position | On | |

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

| Monitor Item | Condition | Value/Status |
|----------------|--|--|
| SFT PN -IPDM | <ul style="list-style-type: none"> Selector lever in any position other than P and N (A/T models) The clutch pedal is not depressed (M/T models) | Off |
| | <ul style="list-style-type: none"> Selector lever in P or N position (A/T models) The clutch pedal is depressed (M/T models) | On |
| SFT P -MET | Selector lever in any position other than P | Off |
| | Selector lever in P position | On |
| SFT N -MET | Selector lever in any position other than N | Off |
| | Selector lever 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 | Steering is unlocked | Off |
| | Steering is locked | On |
| S/L UNLK-IPDM | Steering is locked | Off |
| | Steering is unlocked | On |
| S/L RELAY-REQ | Steering lock system is not the LOCK condition and the changing condition from LOCK to UNLOCK | Off |
| | Steering lock system are not the LOCK condition or the changing condition from LOCK to UNLOCK | On |
| VEH SPEED 1 | While driving | Equivalent to speedometer reading |
| VEH SPEED 2 | While driving | Equivalent to speedometer reading |
| DOOR STAT-DR | Driver door is locked | LOCK |
| | Wait with selective UNLOCK operation (60 seconds) | READY |
| | Driver door is unlocked | UNLOCK |
| DOOR STAT-AS | Passenger door is locked | LOCK |
| | Wait with selective UNLOCK operation (60 seconds) | READY |
| | Passenger door is unlocked | UNLOCK |
| ID OK FLAG | Steering is locked | Reset |
| | Steering is unlocked | Set |
| PRMT ENG STRT | The engine start is prohibited | Reset |
| | The engine start is permitted | Set |
| PRMT RKE STRT | NOTE: The item is indicated, but not monitored. | Reset |
| KEY SW -SLOT | The Intelligent Key is not inserted into key slot | Off |
| | The Intelligent Key is inserted into key slot | On |
| RKE OPE COUN1 | During the operation of the Intelligent Key | Operation frequency of the Intelligent Key |
| RKE OPE COUN2 | NOTE: The item is indicated, but not monitored. | — |
| CONFIRM ID ALL | The key ID that the key slot receives is not recognized by any key ID registered to BCM. | Yet |
| | The key ID that the key slot receives is recognized by any key ID registered to BCM. | Done |

BCM (BODY CONTROL MODULE)

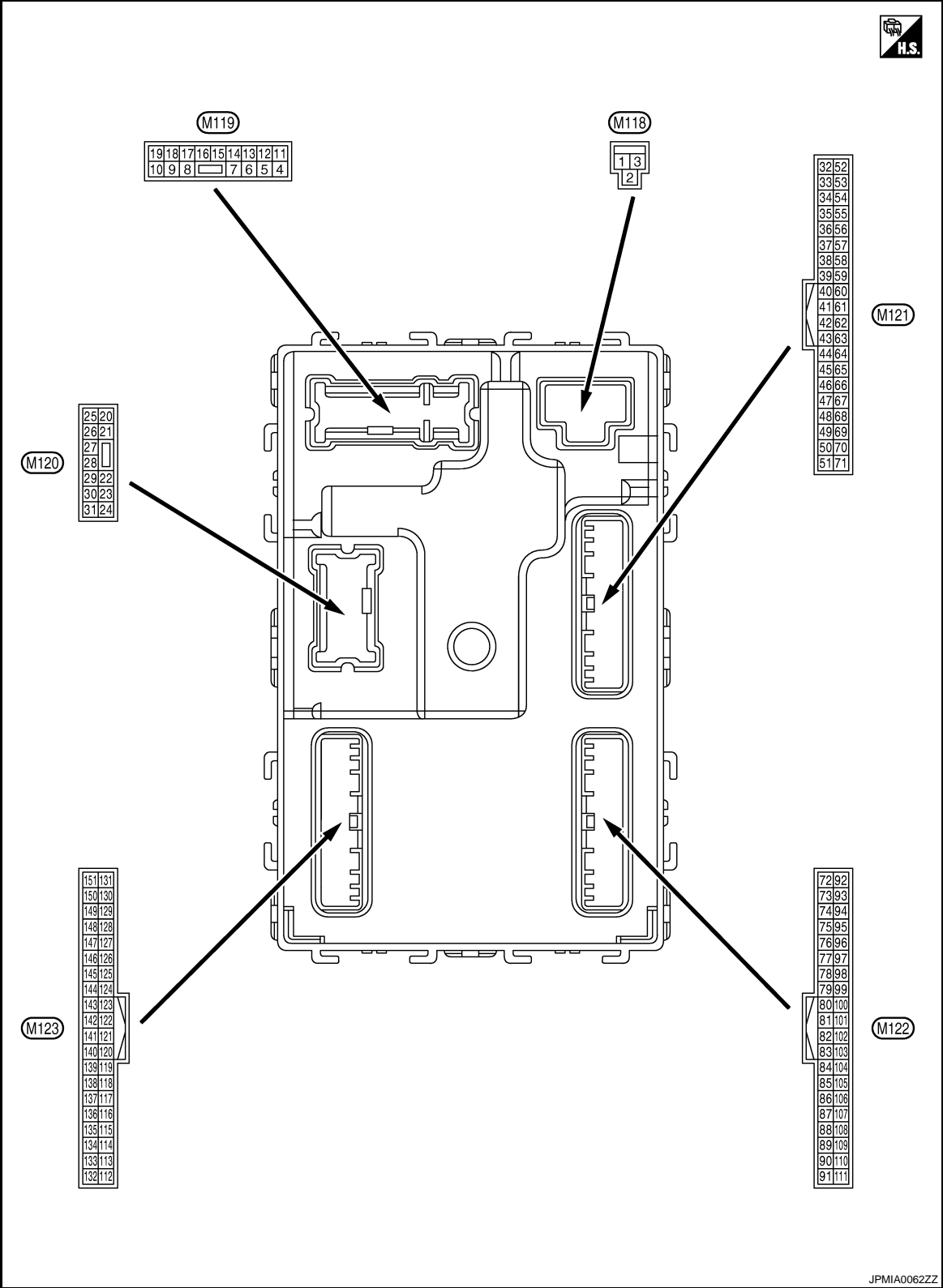
< ECU DIAGNOSIS >

| Monitor Item | Condition | Value/Status | |
|--------------|---|-------------------------------|----|
| CONFIRM ID4 | The key ID that the key slot receives is not recognized by the fourth key ID registered to BCM. | Yet | A |
| | The key ID that the key slot receives is recognized by the fourth key ID registered to BCM. | Done | B |
| CONFIRM ID3 | The key ID that the key slot receives is not recognized by the third key ID registered to BCM. | Yet | C |
| | The key ID that the key slot receives is recognized by the third key ID registered to BCM. | Done | |
| CONFIRM ID2 | The key ID that the key slot receives is not recognized by the second key ID registered to BCM. | Yet | D |
| | The key ID that the key slot receives is recognized by the second key ID registered to BCM. | Done | |
| CONFIRM ID1 | The key ID that the key slot receives is not recognized by the first key ID registered to BCM. | Yet | E |
| | The key ID that the key slot receives is recognized by the first key ID registered to BCM. | Done | F |
| TP 4 | The ID of fourth Intelligent Key is not registered to BCM | Yet | |
| | The ID of fourth Intelligent Key is registered to BCM | Done | G |
| TP 3 | The ID of third Intelligent Key is not registered to BCM | Yet | |
| | The ID of third Intelligent Key is registered to BCM | Done | |
| TP 2 | The ID of second Intelligent Key is not registered to BCM | Yet | H |
| | The ID of second Intelligent Key is registered to BCM | Done | |
| TP 1 | The ID of first Intelligent Key is not registered to BCM | Yet | I |
| | The ID of first Intelligent 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 | J |
| AIR PRESS FR | Ignition switch ON (Only when the signal from the transmitter is received) | Air pressure of front RH tire | |
| AIR PRESS RR | Ignition switch ON (Only when the signal from the transmitter is received) | Air pressure of rear RH tire | K |
| AIR PRESS RL | Ignition switch ON (Only when the signal from the transmitter is received) | Air pressure of rear LH tire | |
| ID REGST FL1 | ID of front LH tire transmitter is registered | Done | WW |
| | ID of front LH tire transmitter is not registered | Yet | |
| ID REGST FR1 | ID of front RH tire transmitter is registered | Done | M |
| | ID of front RH tire transmitter is not registered | Yet | |
| ID REGST RR1 | ID of rear RH tire transmitter is registered | Done | N |
| | ID of rear RH tire transmitter is not registered | Yet | |
| ID REGST RL1 | ID of rear LH tire transmitter is registered | Done | O |
| | ID of rear LH tire transmitter is not registered | Yet | |
| WARNING LAMP | Tire pressure indicator OFF | Off | |
| | Tire pressure indicator ON | On | |
| BUZZER | Tire pressure warning alarm is not sounding | Off | P |
| | Tire pressure warning alarm is sounding | On | |

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

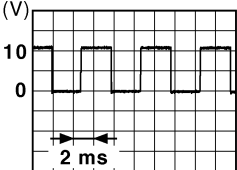
TERMINAL LAYOUT



PHYSICAL VALUES

BCM (BODY CONTROL MODULE)

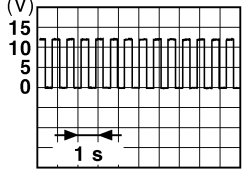
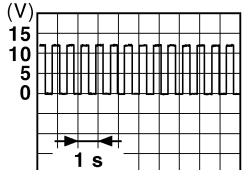
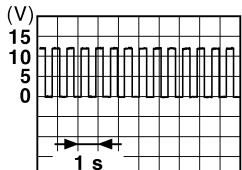
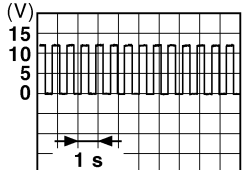
< ECU DIAGNOSIS >

| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) |
|------------------------------|--------|---|------------------|---|---|--|
| + | – | Signal name | Input/ Output | | | |
| 1 (W) | Ground | Battery power supply | Input | Ignition switch OFF | | Battery voltage |
| 2 (W) | Ground | P/W power supply (BAT) | Output | Ignition switch OFF | | 12 V |
| 3 (Y) | Ground | P/W power supply (RAP) | Output | Ignition switch ON | | 12 V |
| 4 (R) | Ground | Interior room lamp power supply | Output | Interior room lamp battery saver is activated. (Cuts the interior room lamp power supply) | | 0 V |
| | | | | Interior room lamp battery saver is not activated. (Outputs the interior room lamp power supply) | | 12 V |
| 5 (G) | Ground | Passenger door UN- LOCK | Output | Passenger door | UNLOCK (Actuator is activated) | 12 V |
| | | | | | Other than UNLOCK (Actuator is not activated) | 0 V |
| 8 (V) | Ground | All doors, fuel lid LOCK | Output | All doors, fuel lid | LOCK (Actuator is activated) | 12 V |
| | | | | | Other than LOCK (Actuator is not activated) | 0 V |
| 9 (G) | Ground | Driver door, fuel lid UNLOCK | Output | Driver door, fuel lid | UNLOCK (Actuator is activated) | 12 V |
| | | | | | Other than UNLOCK (Actuator is not activated) | 0 V |
| 11 (BR) | Ground | Battery power supply | Input | Ignition switch OFF | | Battery voltage |
| 13 (B) | Ground | Ground | — | Ignition switch ON | | 0 V |
| 14 (R) | Ground | Push-button ignition switch illumination ground | Output | Tail lamp | OFF | 0 V |
| | | | | | ON | <p>NOTE: When the illumination brightening/dimming level is in the neutral position.</p>  <p>JSNIA0010GB</p> |
| 15 (Y) | Ground | ACC indicator lamp | Output | Ignition switch | OFF (LOCK indicator is not illuminated) | Battery voltage |
| | | | | | ACC | 0 V |

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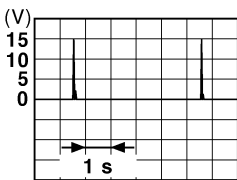
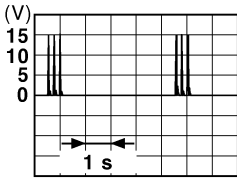
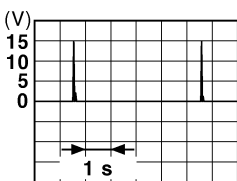
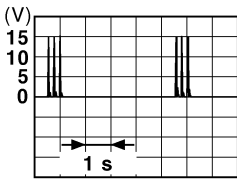
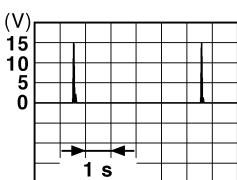
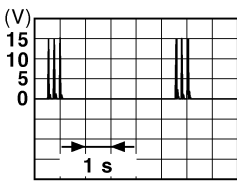
BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) |
|------------------------------|--------|---------------------------------|------------------|--------------------|---|--|
| + | - | Signal name | Input/ Output | | | |
| 17 (W) | Ground | Turn signal RH (Front and side) | Output | Ignition switch ON | Turn signal switch OFF | 0 V |
| | | | | | Turn signal switch RH |  6.5 V |
| 18 (O) | Ground | Turn signal LH (Front and side) | Output | Ignition switch ON | Turn signal switch OFF | 0 V |
| | | | | | Turn signal switch LH |  6.5 V |
| 19 (V) | Ground | Room lamp timer control | Output | Interior room lamp | OFF | 12 V |
| | | | | | ON | 0 V |
| 20 (V) | Ground | Turn signal RH (Rear) | Output | Ignition switch ON | Turn signal switch OFF | 0 V |
| | | | | | Turn signal switch RH |  6.5 V |
| 23 (L) | Ground | Back door open | Output | Back door | OPEN (Back door opener actuator is activated) | 12 V |
| | | | | | Other than OPEN (Back door opener actuator is not activated) | 0 V |
| 24*1 (O) | Ground | Rear fog lamp | Output | Rear fog lamp | OFF | 0 V |
| | | | | | ON | 12 V |
| 25 (LG) | Ground | Turn signal LH (Rear) | Output | Ignition switch ON | Turn signal switch OFF | 0 V |
| | | | | | Turn signal switch LH |  6.5 V |
| 30 (R) | Ground | Luggage room lamp | Output | Luggage room lamp | ON | 0 V |
| | | | | | OFF | 12 V |

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

| Terminal No. (Wire color) | | Description | | Condition | Value (Approx.) |
|------------------------------|--------|--------------------------|------------------|--|--|
| + | - | Signal name | Input/ Output | | |
| 34 (G) | Ground | Luggage room antenna (-) | Output | Ignition switch OFF |  JMKIA0062GB |
| | | | | When Intelligent Key is not in the passenger compartment |  JMKIA0063GB |
| 35 (R) | Ground | Luggage room antenna (+) | Output | Ignition switch OFF |  JMKIA0062GB |
| | | | | When Intelligent Key is not in the passenger compartment |  JMKIA0063GB |
| 38 (B) | Ground | Rear bumper antenna (-) | Output | When the back door request switch is operated with ignition switch OFF |  JMKIA0062GB |
| | | | | When Intelligent Key is not in the antenna detection area |  JMKIA0063GB |

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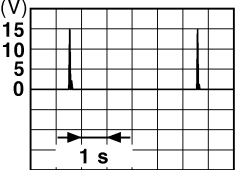
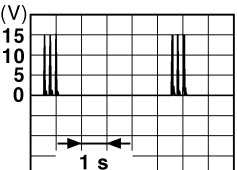
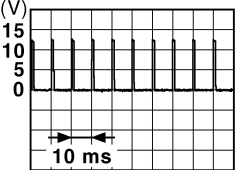
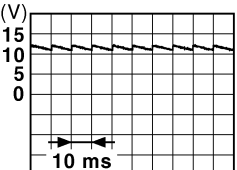
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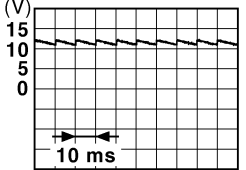
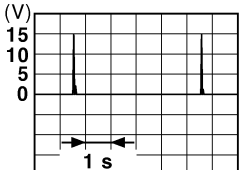
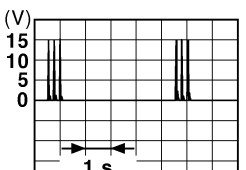
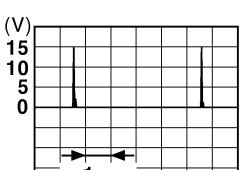
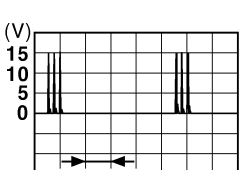
BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) |
|------------------------------|--------|-----------------------------------|------------------|--|---|--|
| + | - | Signal name | Input/ Output | | | |
| 39 (W) | Ground | Rear bumper antenna (+) | Output | When the back door request switch is operated with ignition switch OFF | When Intelligent Key is in the antenna detection area |  JMKIA0062GB |
| | | | | | When Intelligent Key is not in the antenna detection area |  JMKIA0063GB |
| 47 (V) | Ground | Ignition relay (IPDM E/R) control | Output | Ignition switch | OFF or ACC | 12 V |
| | | | | | ON | 0 V |
| 52 (SB) | Ground | Starter relay control | Output | Ignition switch ON (A/T models) | When selector lever is in P or N position | 12 V |
| | | | | | When selector lever is not in P or N position | 0 V |
| | | | | Ignition switch ON (M/T models) | When the clutch pedal is depressed | Battery voltage |
| | | | | | When the clutch pedal is not depressed | 0 V |
| 61 (W) | Ground | Back door request switch | Input | Back door request switch | ON (Pressed) | 0 V |
| | | | | | OFF (Not pressed) |  JPMIA0016GB 1.0 V |
| 64 (G) | Ground | Intelligent Key warning buzzer | Output | Intelligent Key warning buzzer | Sounding | 0 V |
| | | | | | Not sounding | 12 V |
| 66 (R) | Ground | Back door switch | Input | Back door switch | OFF (Door close) |  JPMIA0011GB 11.8 V |
| | | | | | ON (Door open) | 0 V |

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

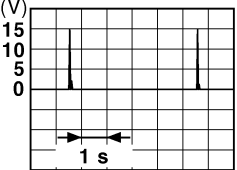
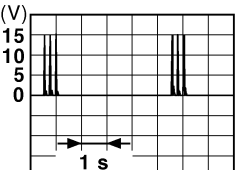
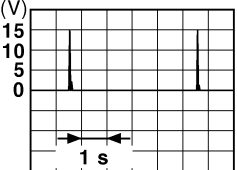
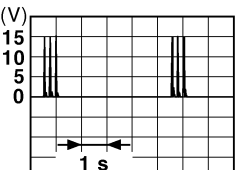
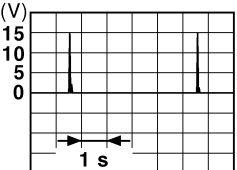
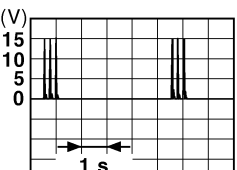
| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) |
|------------------------------|--------|--------------------------------------|------------------|----------------------------|--|--|
| + | - | Signal name | Input/ Output | | | |
| 67 (GR) | Ground | Back door opener switch | Input | Back door opener switch | Pressed | 0 V |
| | | | | | Not pressed |  <p>11.8 V</p> <p>JPMIA0011GB</p> |
| 72 (L) | Ground | Room antenna (-) (Center console) | Output | Ignition switch OFF | When Intelligent Key is in the passenger compart- ment |  <p>11.8 V</p> <p>JMKIA0062GB</p> |
| | | | | | When Intelligent Key is not in the passenger compart- ment |  <p>11.8 V</p> <p>JMKIA0063GB</p> |
| 73 (P) | Ground | Room antenna (+) (Center console) | Output | Ignition switch OFF | When Intelligent Key is in the passenger compart- ment |  <p>11.8 V</p> <p>JMKIA0062GB</p> |
| | | | | | When Intelligent Key is not in the passenger compart- ment |  <p>11.8 V</p> <p>JMKIA0063GB</p> |

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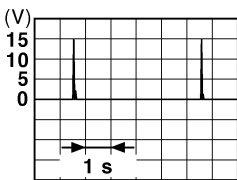
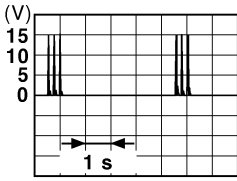
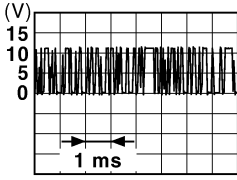
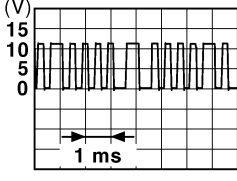
BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

| Terminal No. (Wire color) | | Description | | Condition | Value (Approx.) |
|------------------------------|--------|----------------------------|------------------|---|--|
| + | - | Signal name | Input/ Output | | |
| 74 (SB) | Ground | Passenger door antenna (-) | Output | When Intelligent Key is in the antenna detection area |  JMKIA0062GB |
| | | | | When the passenger door request switch is operated with ignition switch OFF |  JMKIA0063GB |
| 75 (BR) | Ground | Passenger door antenna (+) | Output | When Intelligent Key is in the antenna detection area |  JMKIA0062GB |
| | | | | When the passenger door request switch is operated with ignition switch OFF |  JMKIA0063GB |
| 76 (V) | Ground | Driver door antenna (-) | Output | When Intelligent Key is in the antenna detection area |  JMKIA0062GB |
| | | | | When the driver door request switch is operated with ignition switch OFF |  JMKIA0063GB |

BCM (BODY CONTROL MODULE)

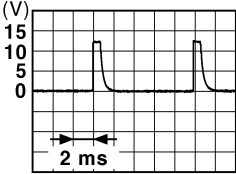
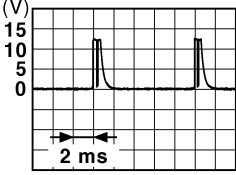
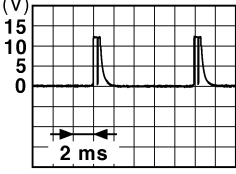
< ECU DIAGNOSIS >

| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) |
|------------------------------|--------|---|------------------|-----------------|---|--|
| + | - | Signal name | Input/ Output | | | |
| 77 (LG) | Ground | Driver door antenna (+) | Output | | When Intelligent Key is in the antenna detection area |  JMKIA0062GB |
| | | | | | When Intelligent Key is not in the antenna detection area |  JMKIA0063GB |
| 80 (GR) | Ground | NATS antenna amp (Built in key slot) | Input/ Output | During waiting | Ignition switch is pressed while inserting the Intelli- gent Key into the key slot. | Just after pressing ignition switch. Pointer of tester should move. |
| 81 (W) | Ground | NATS antenna amp (Built in key slot) | Input/ Output | During waiting | Ignition switch is pressed while inserting the Intelli- gent Key into the key slot. | Just after pressing ignition switch. Pointer of tester should move. |
| 82 (R) | Ground | Ignition relay [Fuse block (J/B)] control | Output | Ignition switch | OFF or ACC | 0 V |
| | | | | | ON | 12 V |
| 83 (GR) | Ground | Remote keyless entry receiver communica- tion | Input/ Output | | During waiting |  JMKIA0064GB |
| | | | | | When operating either button on the Intelli- gent Key |  JMKIA0065GB |

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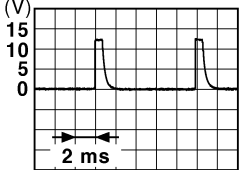

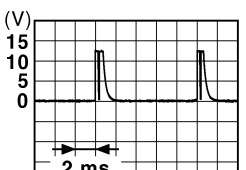

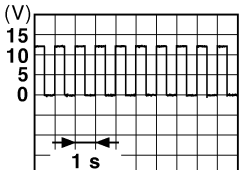
BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) |
|------------------------------|--------|-------------------------------|------------------|-----------------------|--|--|
| + | - | Signal name | Input/ Output | | | |
| 87 (BR) | Ground | Combination switch INPUT 5 | Input | Combination switch | All switches OFF (Wiper intermittent dial 4) |  <p>JPMIA0041GB</p> <p>1.4 V</p> |
| | | | | | Rear fog lamp switch ON (Wiper intermittent dial 4) |  <p>JPMIA0038GB</p> <p>1.3 V</p> |
| | | | | | Any of the conditions below with all switches OFF <ul style="list-style-type: none"> • Wiper intermittent dial 1 • Wiper intermittent dial 2 • Wiper intermittent dial 6 • Wiper intermittent dial 7 |  <p>JPMIA0040GB</p> <p>1.3 V</p> |

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) |
|------------------------------|--------|--|------------------|--|---|---|
| + | - | Signal name | Input/ Output | | | |
| 88 (V) | Ground | Combination switch INPUT 3 | Input | Combination switch | All switches OFF (Wiper intermittent dial 4) |  <p>JPMIA0041GB</p> <p>1.4 V</p> |
| | | | | | Lighting switch HI (Wiper intermittent dial 4) |  <p>JPMIA0036GB</p> <p>1.3 V</p> |
| | | | | | Lighting switch 2ND (Wiper intermittent dial 4) |  <p>JPMIA0037GB</p> <p>1.3 V</p> |
| | | | | | Any of the conditions below with all switches OFF <ul style="list-style-type: none"> • Wiper intermittent dial 1 • Wiper intermittent dial 2 • Wiper intermittent dial 3 |  <p>JPMIA0040GB</p> <p>1.3 V</p> |
| 89 (BR) | Ground | Push-button ignition switch (Push switch) | Input | Push-button ignition switch (push switch) | Pressed | 0 V |
| | | | | | Not pressed | Battery voltage |
| 90 (P) | Ground | CAN-L | Input/ Output | — | — | — |
| 91 (L) | Ground | CAN-H | Input/ Output | — | — | — |
| 92 (LG) | Ground | Key slot illumination | Output | Key slot illumination | OFF | 0 V |
| | | | | | Blinking |  <p>JPMIA0015GB</p> <p>6.5 V</p> |
| | | | | | ON | 12 V |

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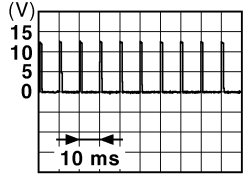
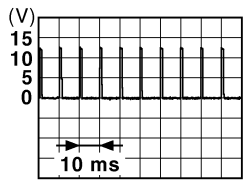
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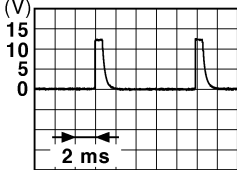
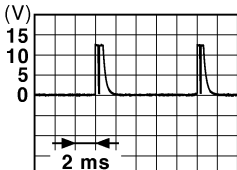

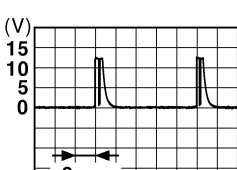
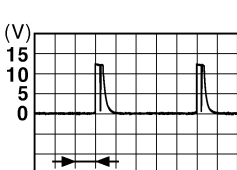
BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) |
|------------------------------|--------|---|------------------|-------------------------------|---|--|
| + | - | Signal name | Input/ Output | | | |
| 93 (V) | Ground | ON indicator lamp | Output | Ignition switch | OFF (LOCK indicator is not illuminated) | Battery voltage |
| | | | | | ON | 0 V |
| 95 (O) | Ground | ACC relay control | Output | Ignition switch | OFF | 0 V |
| | | | | | ACC or ON | 12 V |
| 96*2 (Y) | Ground | Control device (Detention switch) power supply | Output | — | | 12 V |
| 97 (L) | Ground | Steering lock condition No. 1 | Input | Steering lock | LOCK status | 0 V |
| | | | | | UNLOCK status | 12 V |
| 98 (P) | Ground | Steering lock condition No. 2 | Input | Steering lock | LOCK status | 12 V |
| | | | | | UNLOCK status | 0 V |
| 99*3 (R)*2 (BR)*4 | Ground | Selector lever P position switch (A/T models) | Input | Selector lever | P position | 0 V |
| | | | | | Any position other than P | 12 V |
| | | Clutch pedal position switch (M/T models without SynchroRev Match mode) | Input | Clutch pedal position switch | OFF (Clutch pedal is depressed) | 0 V |
| | | | | | ON (Clutch pedal is not depressed) | Battery voltage |
| 100 (GR) | Ground | Passenger door request switch | Input | Passenger door request switch | ON (Pressed) | 0 V |
| | | | | | OFF (Not pressed) |  1.0 V |
| 101 (Y) | Ground | Driver door request switch | Input | Driver door request switch | ON (Pressed) | 0 V |
| | | | | | OFF (Not pressed) |  1.0 V |
| 102 (O) | Ground | Blower fan motor relay control | Output | Ignition switch | OFF or ACC | 0 V |
| | | | | | ON | 12 V |
| 103 (LG) | Ground | Remote keyless entry receiver power supply | Output | Ignition switch OFF | | 12 V |
| 106 (W) | Ground | Steering lock unit power supply | Output | Ignition switch | OFF or ACC | 12 V |
| | | | | | ON | 0 V |

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

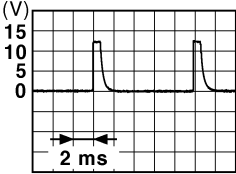


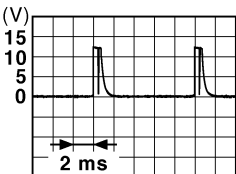
| Terminal No. (Wire color) | | Description | | Condition | Value (Approx.) |
|------------------------------|--------|-------------------------------|------------------|---|---|
| + | - | Signal name | Input/ Output | | |
| 107 (LG) | Ground | Combination switch INPUT 1 | Input | Combination switch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

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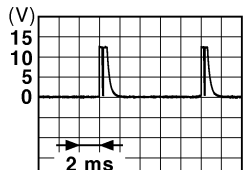
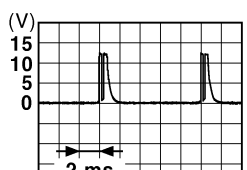
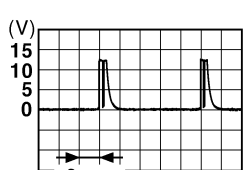
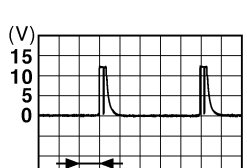
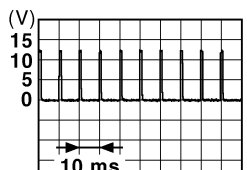
BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

| Terminal No. (Wire color) | | Description | | Condition | Value (Approx.) |
|------------------------------|--------|-------------------------------|------------------|---|---|
| + | - | Signal name | Input/ Output | | |
| 108 (R) | Ground | Combination switch INPUT 4 | Input | Combination switch |  <p>JPMIA0041GB</p> <p>1.4 V</p> |
| | | | | Lighting switch AUTO (Wiper intermittent dial 4) |  <p>JPMIA0038GB</p> <p>1.3 V</p> |
| | | | | Lighting switch 1ST (Wiper intermittent dial 4) |  <p>JPMIA0036GB</p> <p>1.3 V</p> |
| | | | | Any of the conditions below with all switches OFF <ul style="list-style-type: none"> • Wiper intermittent dial 1 • Wiper intermittent dial 5 • Wiper intermittent dial 6 |  <p>JPMIA0039GB</p> <p>1.3 V</p> |

BCM (BODY CONTROL MODULE)

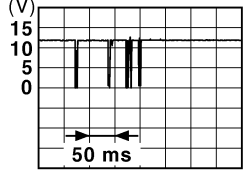
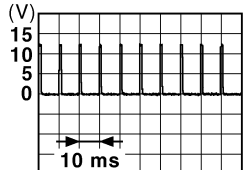
< ECU DIAGNOSIS >

| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) | |
|------------------------------|--------|-------------------------------|------------------|---|------------------------|---|---|
| + | − | Signal name | Input/ Output | | | | |
| 109 (Y) | Ground | Combination switch INPUT 2 | Input | Combination switch (Wiper intermit- tent dial 4) | All switches OFF |  <p>JPMIA0041GB</p> <p>1.4 V</p> | A |
| | | | | | Lighting switch PASS |  <p>JPMIA0037GB</p> <p>1.3 V</p> | B |
| | | | | | Lighting switch 2ND |  <p>JPMIA0036GB</p> <p>1.3 V</p> | C |
| | | | | | Front wiper switch INT |  <p>JPMIA0038GB</p> <p>1.3 V</p> | D |
| | | | | | Front wiper switch HI |  <p>JPMIA0040GB</p> <p>1.3 V</p> | E |
| | | | | | ON | 0 V | |
| 110 (P) | Ground | Hazard switch | Input | Hazard switch | OFF |  <p>JPMIA0012GB</p> <p>1.1 V</p> | F |

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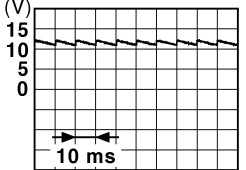
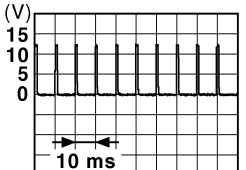

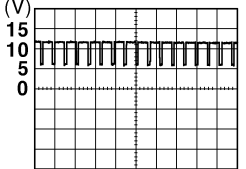
BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) |
|------------------------------|--------|--|------------------|---|---|--|
| + | - | Signal name | Input/ Output | | | |
| 111 (Y) | Ground | Steering lock unit communication | Input/ Output | Steering lock | LOCK status | 12 V |
| | | | | | LOCK or UNLOCK |  JMKIA0066GB |
| | | | | | For 15 seconds after UN- LOCK | 12 V |
| | | | | | 15 seconds or later after UNLOCK | 0 V |
| 113 (O) | Ground | Optical sensor | Input | Ignition switch ON | When bright outside of the vehicle | Close to 5 V |
| | | | | | When dark outside of the vehicle | Close to 0 V |
| 114*5 (R) | Ground | Clutch interlock switch | Input | Clutch interlock switch | OFF (Clutch pedal is not depressed) | 0 V |
| | | | | | ON (Clutch pedal is de- pressed) | Battery voltage |
| 116 (SB) | Ground | Stop lamp switch 1 | Input | — | | Battery voltage |
| 118 (P) | Ground | Stop lamp switch 2 | Input | Stop lamp switch | OFF (Brake pedal is not depressed) | 0 V |
| | | | | | ON (Brake pedal is de- pressed) | Battery voltage |
| 119 (SB) | Ground | Driver side door lock assembly (Unlock sensor) | Input | Driver door | LOCK status (Unlock sensor switch OFF) |  JPMIA0012GB |
| | | | | | UNLOCK status (Unlock switch sensor ON) | 0 V |
| 121 (R) | Ground | Key slot switch | Input | When the Intelligent Key is inserted into key slot | | 12 V |
| | | | | When the Intelligent Key is not inserted into key slot | | 0 V |
| 123 (W) | Ground | IGN feedback | Input | Ignition switch | OFF or ACC | 0 V |
| | | | | | ON | Battery voltage |

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) |
|------------------------------|--------|--|------------------|--|---------------------------------|--|
| + | - | Signal name | Input/ Output | | | |
| 124 (LG) | Ground | Passenger door switch | Input | Passenger door switch | OFF (Door close) |  JPMIA0011GB 11.8 V |
| | | | | | ON (Door open) | 0 V |
| 130*6 (L) | Ground | Rear window defogger switch | Input | Ignition switch ON | Rear window defogger switch OFF |  JPMIA0012GB 1.1 V |
| | | | | | Rear window defogger switch ON | 0 V |
| 132 (Y) | Ground | Power window switch communication | Input/ Output | Ignition switch ON | |  JPMIA0013GB 10.2 V |
| | | | | Ignition switch OFF or ACC | | 12 V |
| 133 (G) | Ground | Push-button ignition switch illumination | Output | Push-button ignition switch illumination | ON (Tail lamps OFF) | 9.5 V |
| | | | | | ON (Tail lamps ON) | NOTE: The pulse width of this wave is varied by the illumination brightening/dimming level.  JPMIA0159GB |
| | | | | | OFF | 0 V |
| 134 (GR) | Ground | LOCK indicator lamp | Output | LOCK indicator lamp | OFF | Battery voltage |
| | | | | | ON | 0 V |
| 137 (P) | Ground | Receiver and sensor ground | Input | Ignition switch ON | | 0 V |
| 138 (V) | Ground | Receiver and sensor power supply | Output | Ignition switch | OFF | 0 V |
| | | | | | ACC or ON | 5.0 V |

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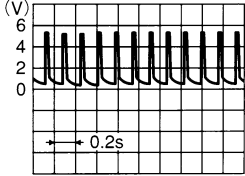

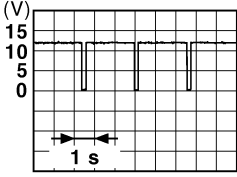
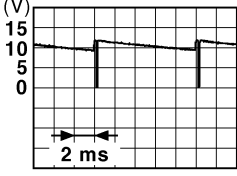
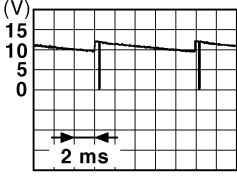
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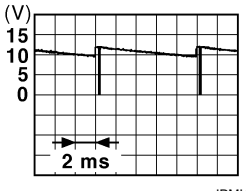
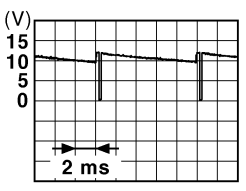
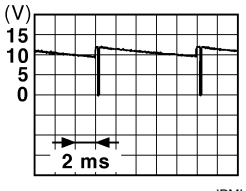
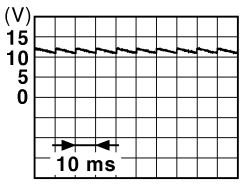
BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) |
|------------------------------|--------|--|------------------|--|---|--|
| + | - | Signal name | Input/ Output | | | |
| 139 (L) | Ground | Tire pressure receiver communication | Input/ Output | Ignition switch ON | Standby state |  OCC3881D |
| | | | | Ignition switch ON | When receiving the signal from the transmitter |  OCC3880D |
| 140*7 (G) | Ground | Selector lever P/N position (A/T models) | Input | Selector lever | P or N position | 12 V |
| | | | | Selector lever | Except P and N positions | 0 V |
| | | Park/neutral position switch (M/T models with SynchroRev Match mode) | Input | Ignition switch ON | Control lever in neutral position | Battery voltage |
| | | | | Ignition switch ON | Control lever in any position other than neutral | 0 V |
| 141 (Y) | Ground | Security indicator | Output | Security indicator | ON | 0 V |
| | | | | Security indicator | Blinking |  JPMIA0014GB |
| | | | | Security indicator | OFF | 12 V |
| 142 (O) | Ground | Combination switch OUTPUT 5 | Output | Combination switch (Wiper intermittent dial 4) | All switches OFF | 0 V |
| | | | | Combination switch (Wiper intermittent dial 4) | Lighting switch 1ST |  JPMIA0031GB |
| | | | | Combination switch (Wiper intermittent dial 4) | Lighting switch HI | |
| | | | | Combination switch (Wiper intermittent dial 4) | Lighting switch 2ND | |
| | | | | Combination switch (Wiper intermittent dial 4) | Turn signal switch RH | |
| 143 (P) | Ground | Combination switch OUTPUT 1 | Output | Combination switch | All switches OFF (Wiper intermittent dial 4) | 0 V |
| | | | | Combination switch | Front wiper switch HI (Wiper intermittent dial 4) |  JPMIA0032GB |
| | | | | Combination switch | Any of the conditions below with all switches OFF <ul style="list-style-type: none"> • Wiper intermittent dial 1 • Wiper intermittent dial 2 • Wiper intermittent dial 3 • Wiper intermittent dial 6 • Wiper intermittent dial 7 | |

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) |
|------------------------------|--------|---|------------------|---|---|---|
| + | - | Signal name | Input/ Output | | | |
| 144 (G) | Ground | Combination switch OUTPUT 2 | Output | Combination switch | All switches OFF (Wiper intermittent dial 4) | 0 V |
| | | | | | Front washer switch ON (Wiper intermittent dial 4) |  |
| | | | | | Any of the conditions below with all switches OFF <ul style="list-style-type: none"> • Wiper intermittent dial 1 • Wiper intermittent dial 5 • Wiper intermittent dial 6 | |
| 145 (L) | Ground | Combination switch OUTPUT 3 | Output | Combination switch (Wiper intermittent dial 4) | All switches OFF | 0 V |
| | | | | | Front wiper switch INT |  |
| | | | | | Front wiper switch LO | |
| | | | | | Lighting switch AUTO | |
| | | | | | Rear fog lamp switch ON | |
| 146 (SB) | Ground | Combination switch OUTPUT 4 | Output | Combination switch (Wiper intermittent dial 4) | All switches OFF | 0 V |
| | | | | | Lighting switch 2ND |  |
| | | | | | Lighting switch PASS | |
| | | | | | Turn signal switch LH | |
| 149 (W) | Ground | Tire pressure warning check switch | Input | — | | 12 V |
| 150 (GR) | Ground | Driver door switch | Input | Driver door switch | OFF (Door close) |  |
| | | | | | ON (Door open) | 0 V |
| 151 (G) | Ground | Rear window defog- ger relay control | Output | Rear window defogger | Active | 0 V |
| | | | | | Not activated | Battery voltage |

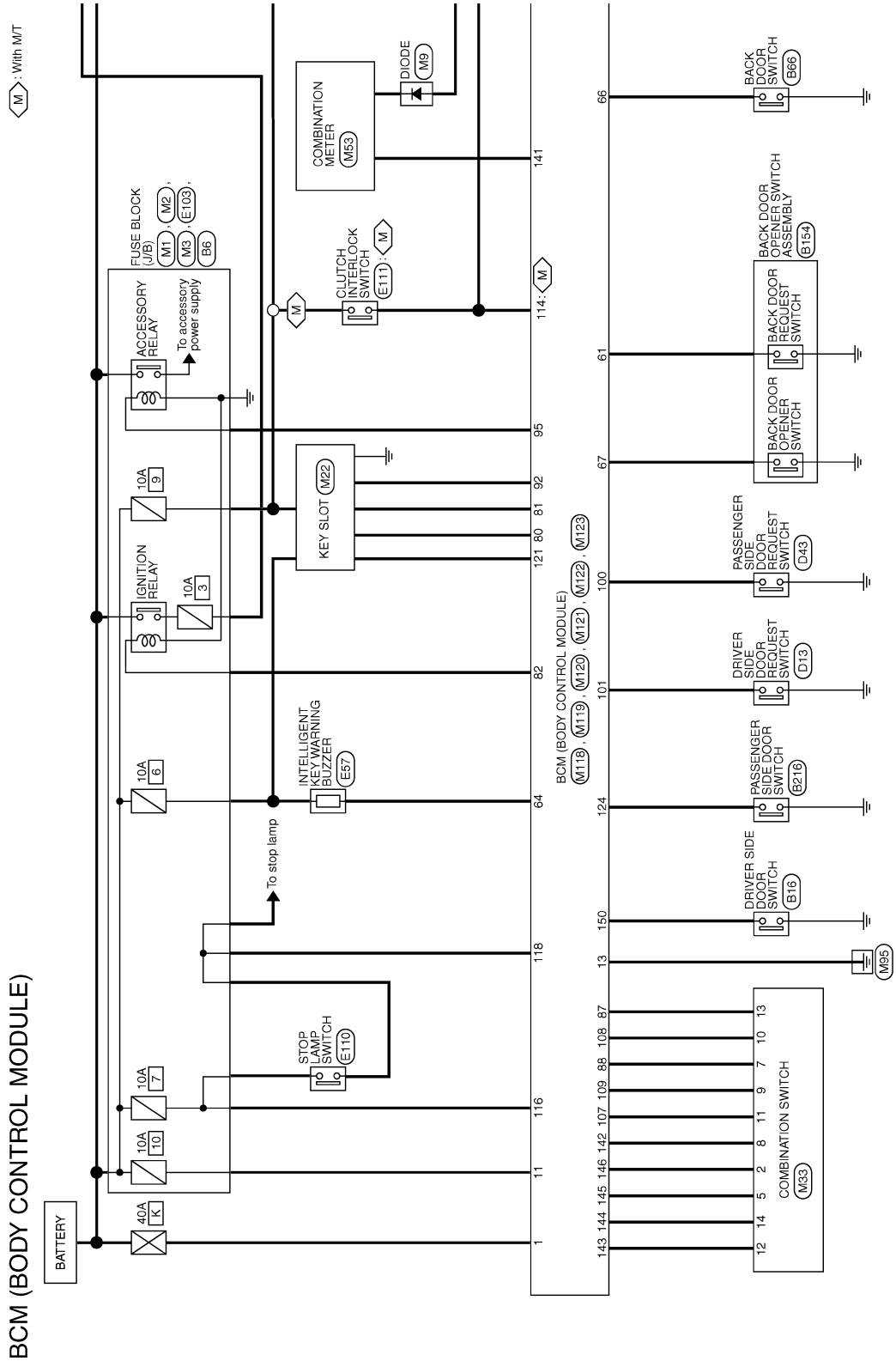
- *1: For Canada
- *2: A/T models
- *3: Except M/T models with SynchroRev Match mode
- *4: M/T models without SynchroRev Match mode
- *5: M/T models
- *6: Without NAVI
- *7: Except M/T models without SynchroRev Match mode

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

Wiring Diagram - BCM -

INFOID:000000004715378

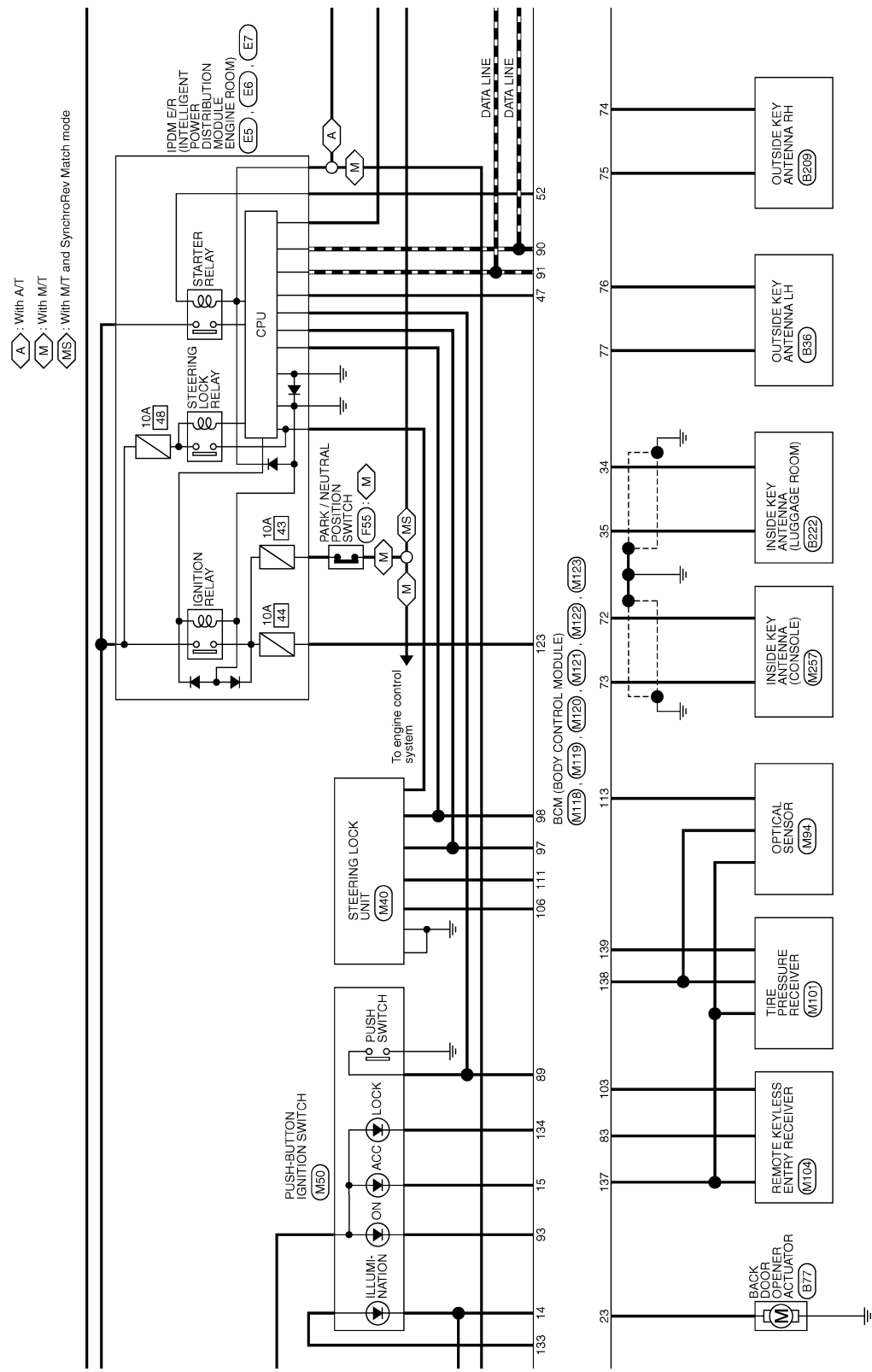


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JCMWA3235G6

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >



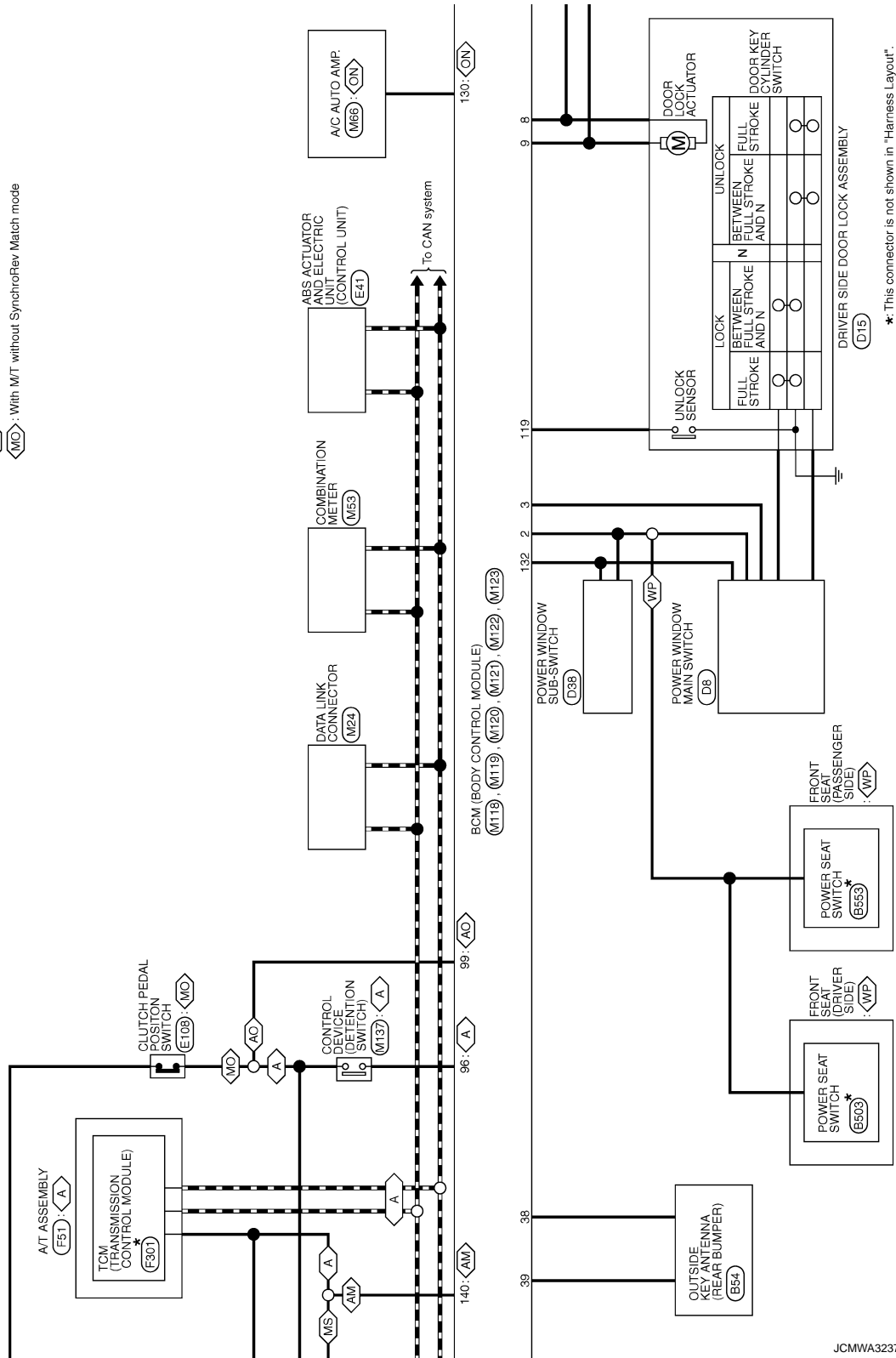
JCMWA3236GE

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BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

- <A> : With A/T
- <WP> : With power seat
- <ON> : Without NAVI
- <AM> : With A/T or with M/T and SynchroRev Match mode
- <AO> : With A/T or with M/T without SynchroRev Match mode
- <MS> : With M/T and SynchroRev Match mode
- <MO> : With M/T without SynchroRev Match mode

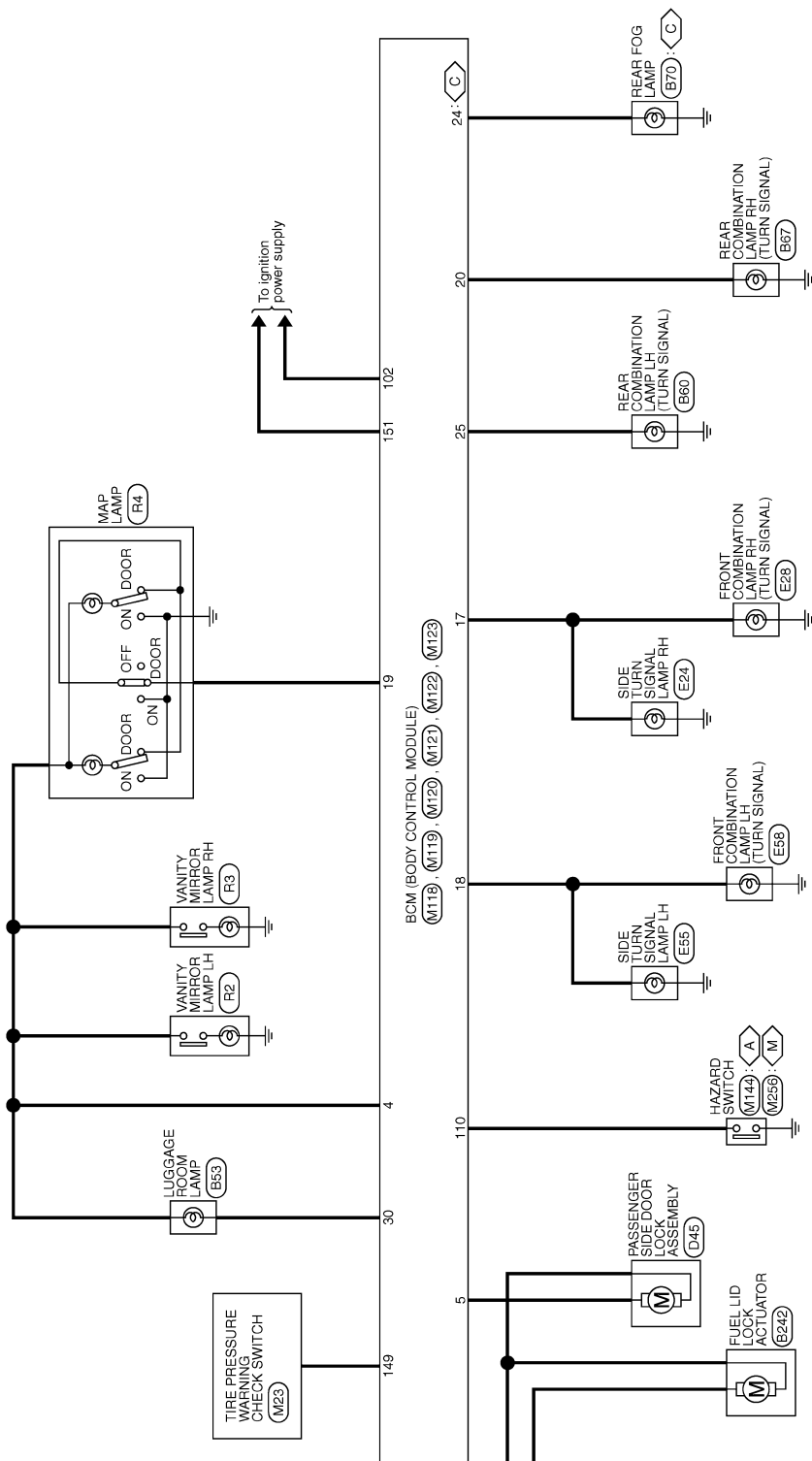


*: This connector is not shown in "Harness Layout".

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

A : With A/T
M : With M/T
C : For Canada



JCMWA3238GE

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BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

| BCM (BODY CONTROL MODULE) | | |
|---------------------------|--------------------|--|
| Connector No. | M33 | |
| Connector Name | COMBINATION SWITCH | |
| Connector Type | TH16FW-NH | |



| Terminal No. | Color of Wire | Signal Name [Specification] |
|--------------|---------------|-----------------------------|
| 2 | SB | OUTPUT 4 |
| 5 | L | OUTPUT 3 |
| 7 | V | INPUT 3 |
| 8 | O | OUTPUT 5 |
| 9 | Y | INPUT 2 |
| 10 | R | INPUT 4 |
| 11 | LG | INPUT 1 |
| 12 | P | OUTPUT 1 |
| 13 | BR | INPUT 5 |
| 14 | G | OUTPUT 2 |

| | | |
|----------------|---------------------------|--|
| Connector No. | M118 | |
| Connector Name | BCM (BODY CONTROL MODULE) | |
| Connector Type | M03FB-LC | |



| Terminal No. | Color of Wire | Signal Name [Specification] |
|--------------|---------------|---------------------------------|
| 1 | W | BAT (E/L) |
| 2 | W | POWER WINDOW POWER SUPPLY (BAT) |
| 3 | Y | POWER WINDOW POWER SUPPLY (RAP) |

| | | |
|----------------|---------------------------|--|
| Connector No. | M119 | |
| Connector Name | BCM (BODY CONTROL MODULE) | |
| Connector Type | NS16FW-GS | |



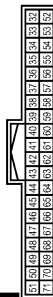
| Terminal No. | Color of Wire | Signal Name [Specification] |
|--------------|---------------|------------------------------------|
| 4 | R | INTERIOR ROOM LAMP POWER SUPPLY |
| 5 | G | PASSENGER DOOR UNLOCK OUTPUT |
| 8 | V | ALL DOOR FUEL LID LOCK OUTPUT |
| 9 | G | DRIVER DOOR FUEL LID UNLOCK OUTPUT |
| 11 | BR | BAT (FUSE) |
| 13 | B | GND |
| 14 | R | PUSH-BUTTON IGNITION SW ILL GND |
| 15 | Y | ASC IND |
| 17 | W | TURN SIGNAL RH (FRONT, SIDE) |
| 18 | O | TURN SIGNAL LH (FRONT, SIDE) |
| 19 | V | ROOM LAMP TIMER CONT |

| | | |
|----------------|---------------------------|--|
| Connector No. | M120 | |
| Connector Name | BCM (BODY CONTROL MODULE) | |
| Connector Type | NS12FW-GS | |



| Terminal No. | Color of Wire | Signal Name [Specification] |
|--------------|---------------|-----------------------------|
| 20 | V | TURN SIGNAL RH (REAR) |
| 23 | L | BACK DOOR OPEN OUTPUT |
| 24 | O | REAR FOG OUTPUT |
| 25 | LG | TURN SIGNAL LH (REAR) |
| 30 | R | LUGGAGE ROOM LAMP OUTPUT |

| | | |
|----------------|---------------------------|--|
| Connector No. | M121 | |
| Connector Name | BCM (BODY CONTROL MODULE) | |
| Connector Type | TH10FV-NH | |



| Terminal No. | Color of Wire | Signal Name [Specification] |
|--------------|---------------|------------------------------|
| 34 | G | LUGGAGE ROOM ANT- |
| 35 | R | LUGGAGE ROOM ANT+ |
| 38 | B | BACK DOOR ANT- |
| 39 | W | BACK DOOR ANT+ |
| 47 | V | IGN RELAY (IPDM F/R) CONT |
| 52 | SB | STARTER RELAY CONT |
| 61 | W | BACK DOOR OPENER REQUEST SW |
| 64 | G | F-KEY WARN BUZZER (ENG ROOM) |
| 66 | R | BACK DOOR SW |
| 67 | GR | BACK DOOR OPENER SW |

| | | |
|----------------|---------------------------|--|
| Connector No. | M122 | |
| Connector Name | BCM (BODY CONTROL MODULE) | |
| Connector Type | TH10FB-NH | |



| Terminal No. | Color of Wire | Signal Name [Specification] |
|--------------|---------------|-----------------------------|
| 72 | L | ROOM ANT- |
| 73 | P | ROOM ANT+ |
| 74 | SB | PASSENGER DOOR ANT- |
| 75 | BR | PASSENGER DOOR ANT+ |
| 76 | V | DRIVER DOOR ANT- |
| 77 | LG | DRIVER DOOR ANT+ |
| 80 | GR | IMMOBI ANTENNA CONTROL |
| 81 | W | IMMOBI ANTENNA SIGNAL |
| 82 | R | IGN RELAY (F/R) CONT |
| 83 | GR | KEYLESS ENTRY RECEIVER COMM |
| 87 | BR | COMBI SW INPUT 3 |

| Terminal No. | Color of Wire | Signal Name [Specification] |
|--------------|---------------|--|
| 88 | V | COMBI SW INPUT 3 |
| 89 | BR | PUSH SW |
| 90 | P | CAN-L |
| 91 | L | CAN-H |
| 92 | LG | KEY SLOT ILL |
| 93 | V | IGN IND |
| 95 | O | ACC RELAY CONT |
| 96 | Y | CONTROL DEVICE POWER SUPPLY |
| 97 | L | S/L CONDITION 1 |
| 98 | P | S/L CONDITION 2 |
| 99 | BR | ASCO CLUTCH SW (With M/T without SynchroRe Match mode) |
| 99 | R | SHIFT P (With A/T) |
| 100 | GR | PASSENGER DOOR REQUEST SW |
| 101 | Y | DRIVER DOOR REQUEST SW |
| 102 | O | BLOWER FAN MOTOR RELAY CONT |
| 103 | LG | KEYLESS ENTRY RECEIVER POWER SUPPLY |
| 105 | W | S/L UNIT POWER SUPPLY |
| 107 | LG | COMBI SW INPUT 1 |
| 108 | R | COMBI SW INPUT 4 |
| 109 | Y | COMBI SW INPUT 2 |
| 110 | P | HAZARD SW |
| 111 | Y | S/L UNIT COMM |

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< ECU DIAGNOSIS >

| Terminal No. | Color of Wire | Signal Name (Specification) |
|--------------|---------------|------------------------------------|
| 113 | 0 | OPTICAL SENSOR |
| 114 | R | CLUTCH INTERLOCK SW |
| 116 | SB | STOP LAMP SW 1 |
| 118 | P | STOP LAMP SW 2 |
| 119 | SB | DR DOOR UNLOCK SENSOR |
| 121 | R | KEY SLOT SW |
| 123 | W | IGN F/B |
| 124 | LG | PASSENGER DOOR SW |
| 130 | L | REAR DEFROGGER SW |
| 132 | Y | POWER WINDOW SW COMM |
| 133 | G | PUSH BUTTON IGNITION SW ILL. POWER |

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

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BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

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

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

| Display contents of CONSULT | Fail-safe | Cancellation |
|-----------------------------|--|---|
| B2607: S/L RELAY | Inhibit engine cranking | 500 ms after the following CAN signal communication status has becomes consistent <ul style="list-style-type: none"> Steering lock relay signal (Request signal) Steering lock relay signal (Condition signal) |
| B2608: STARTER RELAY | Inhibit engine cranking | 500 ms after the following signal communication status becomes consistent <ul style="list-style-type: none"> Starter motor relay control signal Starter relay status signal (CAN) |
| B2609: S/L STATUS | <ul style="list-style-type: none"> Inhibit engine cranking Inhibit steering lock | When the following steering lock conditions agree <ul style="list-style-type: none"> BCM steering lock control status Steering lock condition No. 1 signal status Steering lock condition No. 2 signal status |
| B260A: IGNITION RELAY | Inhibit engine cranking | 500 ms after the following conditions are fulfilled <ul style="list-style-type: none"> IGN relay (IPDM E/R) control signal: OFF (Battery voltage) Ignition ON signal (CAN to IPDM E/R): OFF (Request signal) Ignition ON signal (CAN from IPDM E/R): OFF (Condition signal) |
| B260F: ENG STATE SIG LOST | Maintains the power supply position attained at the time of DTC detection | When any of the following conditions are fulfilled <ul style="list-style-type: none"> Power position changes to ACC Receives engine status signal (CAN) |
| B2612: S/L STATUS | <ul style="list-style-type: none"> Inhibit engine cranking Inhibit steering lock | When any of the following conditions are fulfilled <ul style="list-style-type: none"> Steering lock unit status signal (CAN) is received normally The BCM steering lock control status matches the steering lock status recognized by the steering lock unit status signal (CAN from IPDM E/R) |
| 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 steering lock unit power supply output control inside BCM becomes normal |
| B261E: VEHICLE TYPE | Inhibit engine cranking | BCM initialization |
| B26E8: CLUTCH SW | Inhibit engine cranking | When any of the following BCM recognition conditions are fulfilled <ul style="list-style-type: none"> Status 1 <ul style="list-style-type: none"> Clutch switch signal (CAN from ECM): ON Clutch interlock switch signal: OFF (0 V) Status 2 <ul style="list-style-type: none"> Clutch switch signal (CAN from ECM): OFF Clutch interlock switch signal: ON (Battery voltage) |
| B26E9: S/L STATUS | <ul style="list-style-type: none"> Inhibit engine cranking Inhibit steering lock | When BCM transmits the LOCK request signal to steering lock unit, and receives LOCK response signal from steering lock unit, the following conditions are fulfilled <ul style="list-style-type: none"> Steering condition No. 1 signal: LOCK (0 V) Steering condition No. 2 signal: LOCK (Battery voltage) |

HIGH FLASHER OPERATION

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

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

NOTE:

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

FAIL-SAFE CONTROL BY RAIN SENSOR MALFUNCTION

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

NOTE:

If rain sensor malfunction is detected when ignition switch is turned OFF ⇒ ON and front wiper switch is INT position, BCM operates a fail-safe control.

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

DTC Inspection Priority Chart

INFOID:000000004715380

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

| Priority | DTC |
|----------|--|
| 1 | B2562: LOW VOLTAGE |
| 2 | <ul style="list-style-type: none">• U1000: CAN COMM CIRCUIT• U1010: CONTROL UNIT (CAN) |
| 3 | <ul style="list-style-type: none">• B2190: NATS ANTENNA AMP• B2191: DIFFERENCE OF KEY• B2192: ID DISCORD BCM-ECM• B2193: CHAIN OF BCM-ECM• B2195: ANTI SCANNING |
| 4 | <ul style="list-style-type: none">• B2013: ID DISCORD BCM-S/L• B2014: CHAIN OF S/L-BCM• B2553: IGNITION RELAY• B2555: STOP LAMP• B2556: PUSH-BTN IGN SW• B2557: VEHICLE SPEED• B2560: STARTER CONT RELAY• B2601: SHIFT POSITION• B2602: SHIFT POSITION• B2603: SHIFT POSI STATUS• B2604: PNP SW• B2605: PNP SW• B2606: S/L RELAY• B2607: S/L RELAY• B2608: STARTER RELAY• B2609: S/L STATUS• B260A: IGNITION RELAY• B260B: STEERING LOCK UNIT• B260C: STEERING LOCK UNIT• B260D: STEERING LOCK UNIT• B260F: ENG STATE SIG LOST• B2612: S/L STATUS• B2614: ACC RELAY CIRC• B2615: BLOWER RELAY CIRC• B2616: IGN RELAY CIRC• B2617: STARTER RELAY CIRC• B2618: BCM• B2619: BCM• B261A: PUSH-BTN IGN SW• B261E: VEHICLE TYPE• B26E8: CLUTCH SW• B26E9: S/L STATUS• B26EA: KEY REGISTRATION• C1729: VHCL SPEED SIG ERR• U0415: VEHICLE SPEED SIG |

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

| Priority | DTC | |
|----------|---|---------------------------------|
| 5 | <ul style="list-style-type: none"> • C1704: LOW PRESSURE FL • C1705: LOW PRESSURE FR • C1706: LOW PRESSURE RR • C1707: LOW PRESSURE RL • C1708: [NO DATA] FL • C1709: [NO DATA] FR • C1710: [NO DATA] RR • C1711: [NO DATA] RL • C1712: [CHECKSUM ERR] FL • C1713: [CHECKSUM ERR] FR • C1714: [CHECKSUM ERR] RR • C1715: [CHECKSUM ERR] RL • C1716: [PRESSDATA ERR] FL • C1717: [PRESSDATA ERR] FR • C1718: [PRESSDATA ERR] RR • C1719: [PRESSDATA ERR] RL • C1720: [CODE ERR] FL • C1721: [CODE ERR] FR • C1722: [CODE ERR] RR • C1723: [CODE ERR] RL • C1724: [BATT VOLT LOW] FL • C1725: [BATT VOLT LOW] FR • C1726: [BATT VOLT LOW] RR • C1727: [BATT VOLT LOW] RL • C1734: CONTROL UNIT | A B C D E F G |
| 6 | <ul style="list-style-type: none"> • B2621: INSIDE ANTENNA • B2622: INSIDE ANTENNA • B2623: INSIDE ANTENNA | H |

DTC Index

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NOTE:

The details of time display are as follows.

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

IGN counter is displayed on Freeze Frame Data. For details of Freeze Frame Data, refer to [BCS-17. "COMMON ITEM : CONSULT-III Function \(BCM - COMMON ITEM\)"](#).

| CONSULT display | Fail-safe | Freeze Frame Data •Vehicle Speed •Odo/Trip Meter •Vehicle condition | Intelligent Key warning lamp ON | Tire pressure monitor warning lamp ON | Refer- ence page |
|--|-----------|--|------------------------------------|---|------------------------|
| No DTC is detected. further testing may be required. | — | — | — | — | — |
| U1000: CAN COMM CIRCUIT | — | — | — | — | BCS-38 |
| U1010: CONTROL UNIT (CAN) | — | — | — | — | BCS-39 |
| U0415: VEHICLE SPEED SIG | — | — | — | — | BCS-40 |
| B2013: ID DISCORD BCM-S/L | × | × | — | — | SEC-50 |
| B2014: CHAIN OF S/L-BCM | × | × | — | — | SEC-51 |
| B2190: NATS ANTENNA AMP | × | — | — | — | SEC-42 |
| B2191: DIFFERENCE OF KEY | × | — | — | — | SEC-45 |
| B2192: ID DISCORD BCM-ECM | × | — | — | — | SEC-46 |
| B2193: CHAIN OF BCM-ECM | × | — | — | — | SEC-48 |
| B2195: ANTI SCANNING | × | — | — | — | SEC-49 |
| B2553: IGNITION RELAY | — | × | — | — | PCS-48 |
| B2555: STOP LAMP | — | × | — | — | SEC-54 |

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

| CONSULT display | Fail-safe | Freeze Frame Data •Vehicle Speed •Odo/Trip Meter •Vehicle condition | Intelligent Key warning lamp ON | Tire pressure monitor warning lamp ON | Refer- ence page |
|---------------------------|-----------|--|------------------------------------|---|------------------------|
| B2556: PUSH-BTN IGN SW | — | × | × | — | SEC-56 |
| B2557: VEHICLE SPEED | × | × | × | — | SEC-58 |
| B2560: STARTER CONT RELAY | × | × | × | — | SEC-59 |
| B2562: LOW VOLTAGE | — | × | — | — | BCS-41 |
| B2601: SHIFT POSITION | × | × | × | — | SEC-60 |
| B2602: SHIFT POSITION | × | × | × | — | SEC-63 |
| B2603: SHIFT POSI STATUS | × | × | × | — | SEC-66 |
| B2604: PNP SW | × | × | × | — | SEC-69 |
| B2605: PNP SW | × | × | × | — | SEC-71 |
| B2606: S/L RELAY | × | × | × | — | SEC-73 |
| B2607: S/L RELAY | × | × | × | — | SEC-74 |
| B2608: STARTER RELAY | × | × | × | — | SEC-76 |
| B2609: S/L STATUS | × | × | × | — | SEC-78 |
| B260A: IGNITION RELAY | × | × | × | — | PCS-50 |
| B260B: STEERING LOCK UNIT | — | × | × | — | SEC-82 |
| B260C: STEERING LOCK UNIT | — | × | × | — | SEC-83 |
| B260D: STEERING LOCK UNIT | — | × | × | — | SEC-84 |
| B260F: ENG STATE SIG LOST | × | × | × | — | SEC-85 |
| B2612: S/L STATUS | × | × | × | — | SEC-90 |
| B2614: ACC RELAY CIRC | — | × | × | — | PCS-52 |
| B2615: BLOWER RELAY CIRC | — | × | × | — | PCS-55 |
| B2616: IGN RELAY CIRC | — | × | × | — | PCS-58 |
| B2617: STARTER RELAY CIRC | × | × | × | — | SEC-94 |
| B2618: BCM | × | × | × | — | PCS-61 |
| B2619: BCM | × | × | × | — | SEC-96 |
| B261A: PUSH-BTN IGN SW | — | × | × | — | PCS-62 |
| B261E: VEHICLE TYPE | × | × | × (Turn ON for 15 seconds) | — | SEC-97 |
| B2622: INSIDE ANTENNA | — | × | — | — | DLK-55 |
| B2623: INSIDE ANTENNA | — | × | — | — | DLK-57 |
| B26E8: CLUTCH SW | × | × | × | — | SEC-86 |
| B26E9: S/L STATUS | × | × | × (Turn ON for 15 seconds) | — | SEC-88 |
| B26EA: KEY REGISTRATION | — | × | × (Turn ON for 15 seconds) | — | SEC-89 |
| C1704: LOW PRESSURE FL | — | — | — | × | WT-15 |
| C1705: LOW PRESSURE FR | — | — | — | × | |
| C1706: LOW PRESSURE RR | — | — | — | × | |
| C1707: LOW PRESSURE RL | — | — | — | × | |
| C1708: [NO DATA] FL | — | — | — | × | WT-17 |
| C1709: [NO DATA] FR | — | — | — | × | |
| C1710: [NO DATA] RR | — | — | — | × | |
| C1711: [NO DATA] RL | — | — | — | × | |

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

| CONSULT display | Fail-safe | Freeze Frame Data •Vehicle Speed •Odo/Trip Meter •Vehicle condition | Intelligent Key warning lamp ON | Tire pressure monitor warning lamp ON | Refer- ence page |
|---------------------------|-----------|--|------------------------------------|---|-----------------------|
| C1712: [CHECKSUM ERR] FL | — | — | — | × | WT-20 |
| C1713: [CHECKSUM ERR] FR | — | — | — | × | |
| C1714: [CHECKSUM ERR] RR | — | — | — | × | |
| C1715: [CHECKSUM ERR] RL | — | — | — | × | |
| C1716: [PRESSDATA ERR] FL | — | — | — | × | WT-23 |
| C1717: [PRESSDATA ERR] FR | — | — | — | × | |
| C1718: [PRESSDATA ERR] RR | — | — | — | × | |
| C1719: [PRESSDATA ERR] RL | — | — | — | × | |
| C1720: [CODE ERR] FL | — | — | — | × | WT-25 |
| C1721: [CODE ERR] FR | — | — | — | × | |
| C1722: [CODE ERR] RR | — | — | — | × | |
| C1723: [CODE ERR] RL | — | — | — | × | |
| C1724: [BATT VOLT LOW] FL | — | — | — | × | WT-28 |
| C1725: [BATT VOLT LOW] FR | — | — | — | × | |
| C1726: [BATT VOLT LOW] RR | — | — | — | × | |
| C1727: [BATT VOLT LOW] RL | — | — | — | × | |
| C1729: VHCL SPEED SIG ERR | — | — | — | × | WT-31 |
| C1734: CONTROL UNIT | — | — | — | × | WT-33 |

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

< ECU DIAGNOSIS >

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

Reference Value

INFOID:000000004715367

VALUES ON THE DIAGNOSIS TOOL

CONSULT-III MONITOR ITEM

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

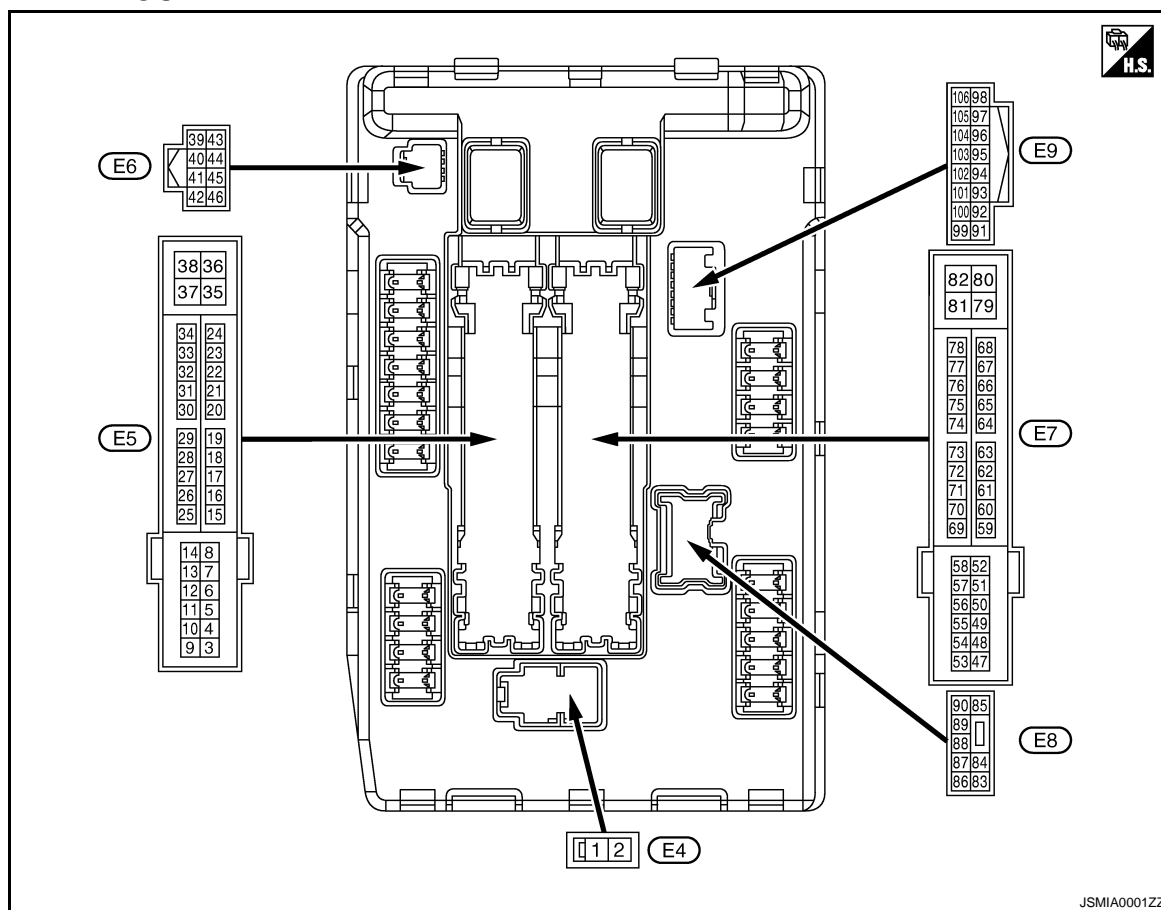
| Monitor Item | Condition | | Value/Status |
|---|---|--|-----------------|
| ST/INHI RLY | Ignition switch ON | | Off |
| | At engine cranking | | INHI ON → ST ON |
| | The status of starter relay or starter control relay cannot be recognized by the battery voltage malfunction, etc. when the starter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

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

< ECU DIAGNOSIS >

TERMINAL LAYOUT



PHYSICAL VALUES

| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) |
|------------------------------|--------|--|------------------|---------------------------|--|--------------------|
| + | - | Signal name | Input/ Output | | | |
| 1 (W) | Ground | Battery power supply | Input | Ignition switch OFF | | Battery voltage |
| 2 (L) | Ground | Battery power supply | Input | Ignition switch OFF | | Battery voltage |
| 4 (V) | Ground | Front wiper LO | Output | Ignition switch ON | Front wiper switch OFF | 0 V |
| | | | | | Front wiper switch LO | Battery voltage |
| 5 (L) | Ground | Front wiper HI | Output | Ignition switch ON | Front wiper switch OFF | 0 V |
| | | | | | Front wiper switch HI | Battery voltage |
| 6*1 (R) | Ground | Daytime running light relay | Input | Ignition switch OFF | | Battery voltage |
| 7 (R) | Ground | Illuminations*1 | Output | Ignition switch ON | Lighting switch OFF | 0 V |
| | | Tail, license plate lamps & illuminations*2 | | | Lighting switch 1ST | Battery voltage |
| 11 (BR) | Ground | Steering lock unit 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 (B/W) | Ground | Ground | — | Ignition switch ON | | 0 V |

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

< ECU DIAGNOSIS >

| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) | |
|------------------------------|--------|-----------------------------------|------------------|---|---|--------------------|----|
| + | — | Signal name | Input/ Output | | | | |
| 13 (Y) | Ground | Fuel pump power supply | Output | Approximately 1 second or more after turning the ignition switch ON | | 0 V | A |
| | | | | <ul style="list-style-type: none"> Approximately 1 second after turning the ignition switch ON Engine running | | Battery voltage | B |
| 16 (LG) | Ground | Front wiper auto stop | Input | Ignition switch ON | Front wiper stop position | 0 V | C |
| | | | | | Any position other than front wiper stop position | Battery voltage | D |
| 19 (W) | Ground | Ignition relay power supply | Output | Ignition switch OFF | | 0 V | E |
| | | | | Ignition switch ON | | Battery voltage | F |
| 25 (G) | Ground | Ignition relay power supply | Output | Ignition switch OFF | | 0 V | G |
| | | | | Ignition switch ON | | Battery voltage | H |
| 27 (Y) | Ground | Ignition relay monitor | Input | Ignition switch OFF or ACC | | Battery voltage | I |
| | | | | Ignition switch ON | | 0 V | J |
| 28 (L) | Ground | Push-button ignition switch | Input | Press the push-button ignition switch | | 0 V | K |
| | | | | Release the push-button ignition switch | | Battery voltage | L |
| 30 (GR) | Ground | Starter relay control | Input | A/T models | Selector lever in any position other than P or N (Ignition switch ON) | 0 V | M |
| | | | | | Selector lever P or N (Ignition switch ON) | Battery voltage | N |
| | | | | M/T models | Release the clutch pedal | 0 V | O |
| | | | | | Depress the clutch pedal | Battery voltage | P |
| 32 (L) | Ground | Steering lock unit condition-1 | Input | Steering lock is activated | | 0 V | Q |
| | | | | Steering lock is deactivated | | Battery voltage | R |
| 33 (P) | Ground | Steering lock unit condition-2 | Input | Steering lock is activated | | Battery voltage | S |
| | | | | Steering lock is deactivated | | 0 V | T |
| 36 (G) | Ground | Battery power supply | Input | Ignition switch OFF | | Battery voltage | U |
| 39 (P) | — | CAN-L | Input/ Output | — | | — | WW |
| 40 (L) | — | CAN-H | Input/ Output | — | | — | V |
| 41 (B/W) | Ground | Ground | — | Ignition switch ON | | 0 V | W |
| 42 (Y) | Ground | Cooling fan relay control | Input | Ignition switch OFF or ACC | | 0 V | X |
| | | | | Ignition switch ON | | 0.7 V | Y |
| 43*3 (SB) | Ground | Control device (Detention switch) | Input | Ignition switch ON | <ul style="list-style-type: none"> Press the selector button (selector lever P) Selector lever in any position other than P | Battery voltage | Z |
| | | | | | Release the selector button (selector lever P) | 0 V | AA |
| 44 (W) | Ground | Horn relay control | Input | The horn is deactivated | | Battery voltage | AB |
| | | | | The horn is activated | | 0 V | AC |
| 45 (G) | Ground | Anti theft horn relay control | Input | The horn is deactivated | | Battery voltage | AD |
| | | | | The horn is activated | | 0 V | AE |

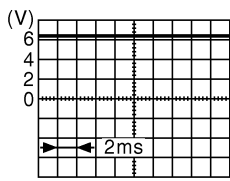
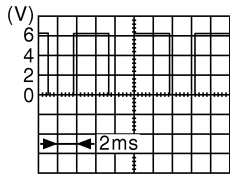
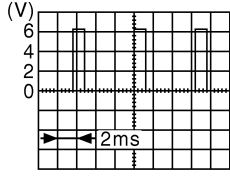
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

< ECU DIAGNOSIS >

| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) |
|------------------------------|--------|---|------------------|---|---|--------------------|
| + | - | Signal name | Input/ Output | | | |
| 46 (V) | Ground | Starter relay control | Input | A/T models | Selector lever in any position other than P or N (Ignition switch ON) | 0 V |
| | | | | | Selector lever P or N (Ignition switch ON) | Battery voltage |
| | | | | M/T models | Release the clutch pedal | 0 V |
| | | | | | Depress the clutch pedal | Battery voltage |
| 48 (L) | Ground | A/C relay power supply | Output | Engine running | A/C switch OFF | 0 V |
| | | | | | A/C switch ON (A/C compressor is operating) | Battery voltage |
| 49 (O) | Ground | ECM relay power supply | Output | Ignition switch OFF (More than a few seconds after turning ignition switch OFF) | | 0 V |
| | | | | <ul style="list-style-type: none"> Ignition switch ON Ignition switch OFF (For a few seconds after turning ignition switch OFF) | | Battery voltage |
| 51 (Y) | Ground | Ignition relay power supply | Output | Ignition switch OFF | | 0 V |
| | | | | Ignition switch ON | | Battery voltage |
| 53 (W) | Ground | ECM relay power supply | Output | Ignition switch OFF (More than a few seconds after turning ignition switch OFF) | | 0 V |
| | | | | <ul style="list-style-type: none"> Ignition switch ON Ignition switch OFF (For a few seconds after turning ignition switch OFF) | | Battery voltage |
| 54 (V) | Ground | Throttle control motor relay power supply | Output | Ignition switch OFF (More than a few seconds after turning ignition switch OFF) | | 0 V |
| | | | | <ul style="list-style-type: none"> Ignition switch ON Ignition switch OFF (For a few seconds after turning ignition switch OFF) | | Battery voltage |
| 55 (SB) | Ground | ECM power supply | Output | Ignition switch OFF | | Battery voltage |
| 56 (LG) | Ground | Ignition relay power supply | Output | Ignition switch OFF | | 0 V |
| | | | | Ignition switch ON | | Battery voltage |
| 57 (G) | Ground | Ignition relay power supply | Output | Ignition switch OFF | | 0 V |
| | | | | Ignition switch ON | | Battery voltage |
| 58*3 (P) | Ground | Ignition relay power supply | Output | Ignition switch OFF | | 0 V |
| | | | | Ignition switch ON | | Battery voltage |
| 69 (BR) | Ground | ECM relay control | Output | Ignition switch OFF (More than a few seconds after turning ignition switch OFF) | | Battery voltage |
| | | | | <ul style="list-style-type: none"> Ignition switch ON Ignition switch OFF (For a few seconds after turning ignition switch OFF) | | 0 - 1.5 V |

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

< ECU DIAGNOSIS >

| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) |
|------------------------------|--------|---|------------------|--|---------------------|--|
| + | − | Signal name | Input/ Output | | | |
| 70 (O) | Ground | Throttle control motor relay control | Output | Ignition switch ON → OFF | | 0 - 1.0 V ↓ Battery voltage ↓ 0 V |
| | | | | Ignition switch ON | | 0 - 1.0 V |
| 73*4 (GR) | Ground | Ignition relay power supply | Output | Ignition switch OFF | | 0 V |
| | | | | Ignition switch ON | | Battery voltage |
| 74 (G) | Ground | Ignition relay power supply | Output | Ignition switch OFF | | 0 V |
| | | | | Ignition switch ON | | Battery voltage |
| 75 (SB) | Ground | Oil pressure switch | Input | Ignition switch ON | Engine stopped | 0 V |
| | | | | | Engine running | Battery voltage |
| 76 (Y) | Ground | Power generation com- mand signal | Output | Ignition switch ON | |  6.3 V |
| | | | | 40% is set on “ACTIVE TEST”, “ALTERNA- TOR DUTY” of “ENGINE” | |  3.8 V |
| | | | | 80% is set on “ACTIVE TEST”, “ALTERNA- TOR DUTY” of “ENGINE” | |  1.4 V |
| 77 (R) | Ground | Fuel pump relay control | Output | • Approximately 1 second after turning the ignition switch ON • Engine running | | 0 - 1.0 V |
| | | | | Approximately 1 second or more after turn- ing the ignition switch ON | | Battery voltage |
| 80 (W) | Ground | Starter motor | Output | At engine cranking | | Battery voltage |
| 83 (R) | Ground | Headlamp LO (RH) | Output | Ignition switch ON | Lighting switch OFF | 0 V |
| | | | | | Lighting switch 2ND | Battery voltage |
| | | | | Daytime running light system activated*1 | | |

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

< ECU DIAGNOSIS >

| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) |
|------------------------------|--------|-------------------------------------|------------------|--|--|--------------------|
| + | – | Signal name | Input/ Output | | | |
| 84 (P) | Ground | Headlamp LO (LH) | Output | Ignition switch ON | Lighting switch OFF | 0 V |
| | | | | | Lighting switch 2ND | Battery voltage |
| | | | | Daytime running light system activated*1 | | |
| 88 (G) | Ground | Washer pump power supply | Output | Ignition switch ON | | Battery voltage |
| 89 (BR) | Ground | Headlamp HI (RH) | Output | Ignition switch ON | Lighting switch OFF | 0 V |
| | | | | | • Lighting switch HI • Lighting switch PASS | Battery voltage |
| 90 (LG) | Ground | Headlamp HI (LH) | Output | Ignition switch ON | Lighting switch OFF | 0 V |
| | | | | | • Lighting switch HI • Lighting switch PASS | Battery voltage |
| 91*2 (P) | Ground | Parking lamp (RH) | Output | Ignition switch ON | Lighting switch OFF | 0 V |
| | | | | | Lighting switch 1ST | Battery voltage |
| 92*2 (O) | Ground | Parking lamp (LH) | Output | Ignition switch ON | Lighting switch OFF | 0 V |
| | | | | | Lighting switch 1ST | Battery voltage |
| 97 (V) | Ground | Cooling fan control | Output | Engine idling | | 0 - 5 V |
| 104 (LG) | Ground | Hood switch | Input | Close the hood | | Battery voltage |
| | | | | Open the hood | | 0 V |
| 105*1 (SB) | Ground | Daytime running light relay control | Output | • Parking lamp • Side maker lamp • License plate lamp • Tail lamp | Turned OFF | Battery voltage |
| | | | | | Turned ON | 0 V |

*1: With daytime running light system

*2: Without daytime running light system

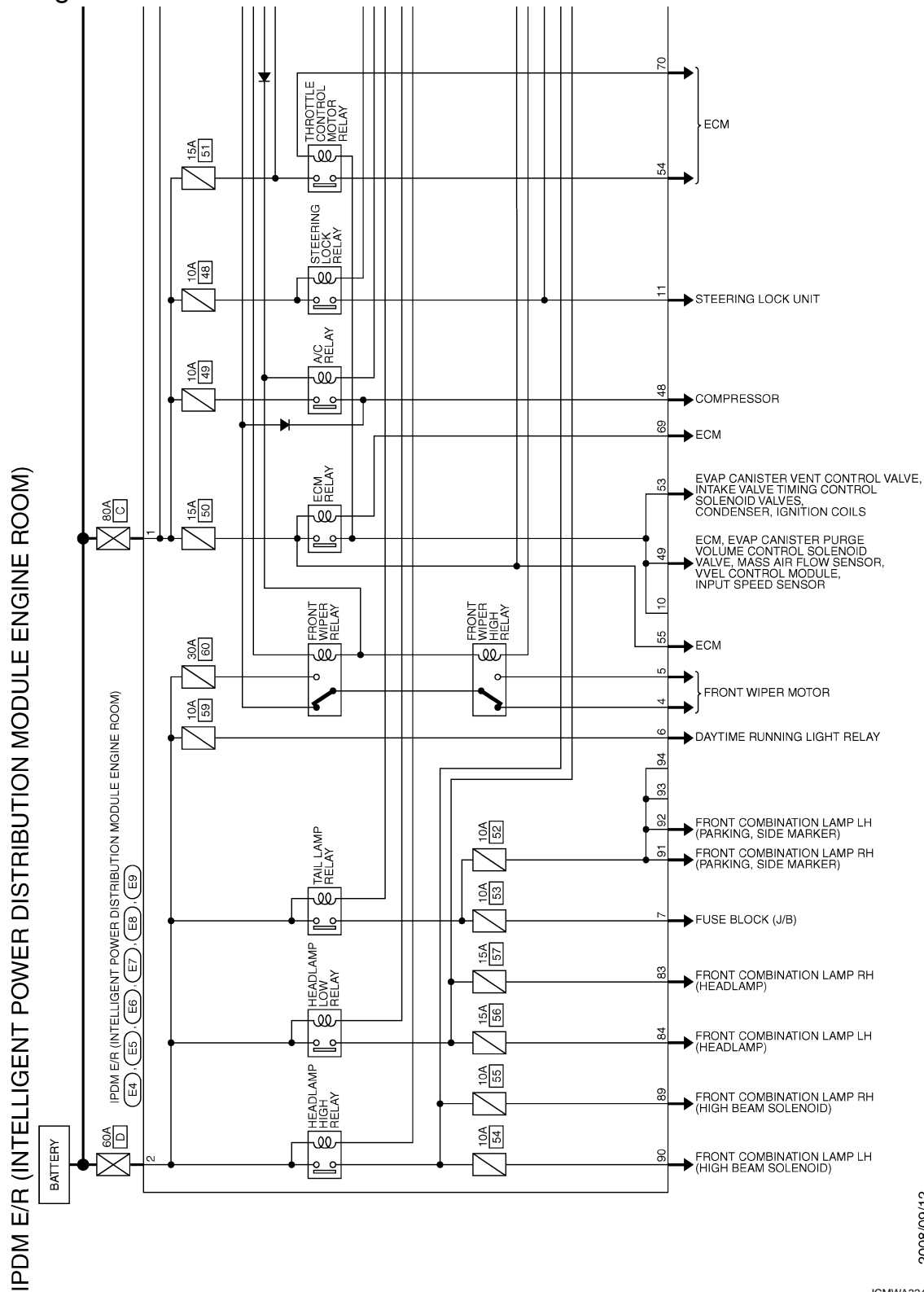
*3: A/T models only

*4: M/T models only

< ECU DIAGNOSIS >

Wiring Diagram - IPDM E/R -

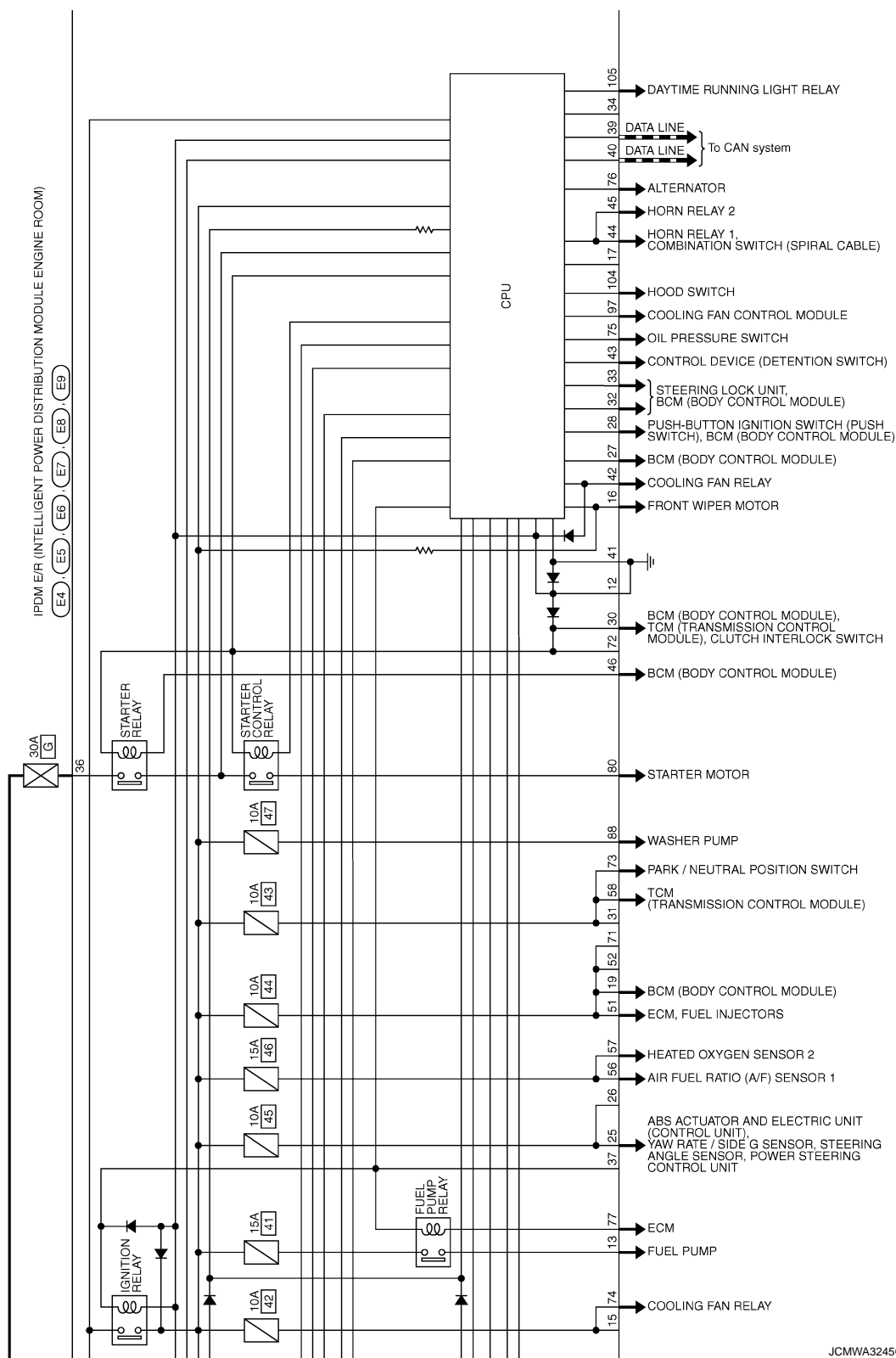
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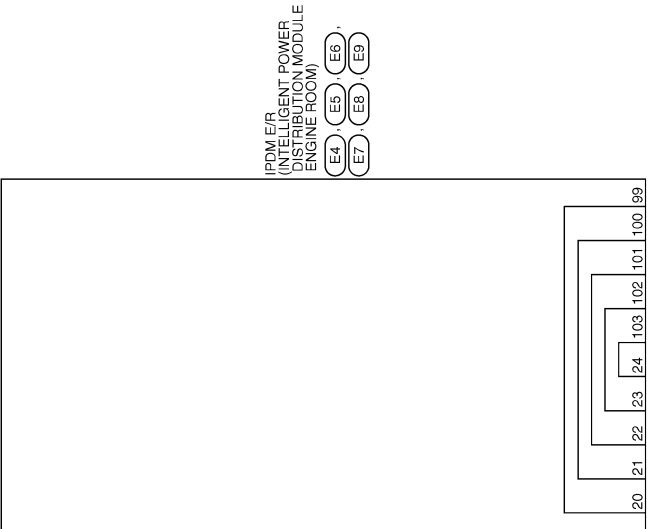


JCMWA3244GE

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

< ECU DIAGNOSIS >





JCMWA3246GE

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

< ECU DIAGNOSIS >

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

| | |
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| Connector No. | E4 |
| Connector Name | IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) |
| Connector Type | LO2FB-MC |



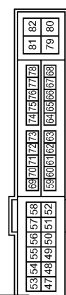
| Terminal No. | Color of Wire | Signal Name [Specification] |
|--------------|---------------|-----------------------------|
| 1 | W | |
| 2 | L | |

| | |
|----------------|--|
| Connector No. | E5 |
| Connector Name | IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) |
| Connector Type | TH20FW-CS12-M4-TV |



| Terminal No. | Color of Wire | Signal Name [Specification] |
|--------------|---------------|-----------------------------|
| 4 | V | |
| 5 | L | |
| 6 | R | |
| 7 | R | |
| 11 | BR | |
| 12 | B/W | |
| 13 | Y | |
| 16 | LG | |
| 19 | W | |
| 25 | G | |
| 27 | Y | |

| | |
|----------------|--|
| Connector No. | E7 |
| Connector Name | IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) |
| Connector Type | TH20FW-CS12-M4 |



| Terminal No. | Color of Wire | Signal Name [Specification] |
|--------------|---------------|-----------------------------|
| 48 | L | |
| 49 | O | |
| 51 | Y | |
| 53 | W | |
| 54 | V | |
| 55 | SB | |
| 56 | LG | |
| 57 | P | |
| 58 | P | |
| 59 | BR | |
| 70 | O | |

| | |
|----------------|--|
| Connector No. | E8 |
| Connector Name | IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) |
| Connector Type | NS30FW-CS |



| Terminal No. | Color of Wire | Signal Name [Specification] |
|--------------|---------------|-----------------------------|
| 83 | R | |
| 84 | P | |
| 88 | G | |
| 89 | BR | |
| 90 | LG | |

| | |
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| Connector No. | E9 |
| Connector Name | IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) |
| Connector Type | TH10FW-NH |



| Terminal No. | Color of Wire | Signal Name [Specification] |
|--------------|---------------|-----------------------------|
| 91 | P | |
| 92 | O | |
| 97 | V | |
| 104 | LG | |
| 105 | SB | |

| | | |
|----|----|--|
| 28 | L | |
| 30 | GR | |
| 32 | L | |
| 33 | P | |
| 36 | G | |

| | |
|----------------|--|
| Connector No. | E6 |
| Connector Name | IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) |
| Connector Type | TH40FW-NH |



| Terminal No. | Color of Wire | Signal Name [Specification] |
|--------------|---------------|-----------------------------|
| 39 | P | |
| 40 | L | |
| 41 | B/W | |
| 42 | Y | |
| 43 | SB | |
| 44 | W | |
| 45 | G | |
| 46 | V | |

JCMWA3247GE

INFOID:0000000004715369

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 operation |
|----------------|---|
| Cooling fan | <ul style="list-style-type: none"> Outputs the pulse duty signal (PWM signal) 100% when the ignition switch is turned ON Outputs the pulse duty signal (PWM signal) 0% when the ignition switch is turned OFF |
| A/C compressor | A/C relay OFF |
| Alternator | Outputs the power generation command signal (PWM signal) 0% |

If No CAN Communication Is Available With BCM

| Control part | Fail-safe operation |
|--|---|
| Headlamp | <ul style="list-style-type: none"> Turns ON the headlamp low relay when the ignition switch is turned ON Turns OFF the headlamp low relay when the ignition switch is turned OFF Headlamp high relay OFF |
| <ul style="list-style-type: none"> Parking lamps Side maker lamp License plate lamps Illuminations Tail lamps | <ul style="list-style-type: none"> Turns ON the tail lamp relay and the daytime running light relay* when the ignition switch is turned ON Turns OFF the tail lamp relay and the daytime running light relay* when the ignition switch is turned OFF |
| Front wiper | <ul style="list-style-type: none"> 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. 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 AUTO mode and the front wiper motor is operating. |
| Horn | Horn relay OFF |
| Ignition relay | The status just before activation of fail-safe is maintained. |
| Starter motor | Starter control relay OFF |
| Steering lock unit | Steering lock relay OFF |

*: With daytime running light system

IGNITION RELAY MALFUNCTION DETECTION FUNCTION

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

WW

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

*: With daytime running light system

FRONT WIPER CONTROL

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

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

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

< ECU DIAGNOSIS >

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

NOTE:

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

STARTER MOTOR PROTECTION FUNCTION

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

DTC Index

INFOID:000000004715370

NOTE:

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

×: Applicable

| CONSULT display | Fail-safe | Refer to |
|--|-----------|-------------------------|
| No DTC is detected. further testing may be required. | — | — |
| U1000: CAN COMM CIRCUIT | × | PCS-15 |
| B2098: IGN RELAY ON | × | PCS-16 |
| B2099: IGN RELAY OFF | — | PCS-17 |
| B2108: STRG LCK RELAY ON | — | SEC-100 |
| B2109: STRG LCK RELAY OFF | — | SEC-102 |
| B210A: STRG LCK STATE SW | — | SEC-103 |
| B210B: START CONT RLY ON | — | SEC-107 |
| B210C: START CONT RLY OFF | — | SEC-108 |
| B210D: STARTER RELAY ON | — | SEC-109 |
| B210E: STARTER RELAY OFF | — | SEC-110 |
| B210F: INTRLCK/PNP SW ON | — | SEC-112 |
| B2110: INTRLCK/PNP SW OFF | — | SEC-114 |

WIPER AND WASHER SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

SYMPTOM DIAGNOSIS

WIPER AND WASHER SYSTEM SYMPTOMS

Symptom Table

INFOID:000000004468174

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"> Combination switch Harness between combination switch and BCM BCM Combination switch Refer to BCS-82, "Symptom Table" . |
| | | <ul style="list-style-type: none"> IPDM E/R Harness between IPDM E/R and front wiper motor Front wiper motor Front wiper motor (HI) circuit Refer to WW-22, "Component Function Check" . |
| | | Front wiper request signal <ul style="list-style-type: none"> BCM IPDM E/R IPDM E/R DATA MONITOR "FR WIP REQ" |
| | LO and INT | <ul style="list-style-type: none"> Combination switch Harness between combination switch and BCM BCM Combination switch Refer to BCS-82, "Symptom Table" . |
| | | <ul style="list-style-type: none"> IPDM E/R Harness between IPDM E/R and front wiper motor Front wiper motor Front wiper motor (LO) circuit Refer to WW-20, "Component Function Check" . |
| | | Front wiper request signal <ul style="list-style-type: none"> BCM IPDM E/R IPDM E/R DATA MONITOR "FR WIP REQ" |
| | INT only | <ul style="list-style-type: none"> Combination switch Harness between combination switch and BCM BCM Combination switch Refer to BCS-82, "Symptom Table" . |
| | | Front wiper request signal <ul style="list-style-type: none"> BCM IPDM E/R IPDM E/R DATA MONITOR "FR WIP REQ" |
| | HI, LO and INT | SYMPTOM DIAGNOSIS "FRONT WIPER DOES NOT OPERATE" Refer to WW-82, "Diagnosis Procedure" . |

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"> Combination switch BCM | Combination switch Refer to BCS-82, "Symptom Table" . |
| | | Front wiper request signal <ul style="list-style-type: none"> BCM IPDM E/R | IPDM E/R DATA MONITOR "FR WIP REQ" |
| | | IPDM E/R | — |
| | LO only | <ul style="list-style-type: none"> Combination switch BCM | Combination switch Refer to BCS-82, "Symptom Table" . |
| | | Front wiper request signal <ul style="list-style-type: none"> BCM IPDM E/R | IPDM E/R DATA MONITOR "FR WIP REQ" |
| | | IPDM E/R | — |
| | INT only | <ul style="list-style-type: none"> Combination switch BCM | Combination switch Refer to BCS-82, "Symptom Table" . |
| | | Front wiper request signal <ul style="list-style-type: none"> BCM IPDM E/R | IPDM E/R DATA MONITOR "FR WIP REQ" |
| Front wiper does not operate normally. | Intermittent adjustment cannot be performed. | <ul style="list-style-type: none"> Combination switch Harness between combination switch and BCM BCM | Combination switch Refer to BCS-82, "Symptom Table" . |
| | | BCM | — |
| | Intermittent control linked with vehicle speed cannot be performed. | Check the vehicle speed detection wiper setting. Refer to WW-10, "WIPER : CONSULT-III Function (BCM - WIPER)" . NOTE: Factory setting of the front wiper intermitted operation is the operation without vehicle speed. | |
| | Wiper is not linked to the washer operation. | <ul style="list-style-type: none"> Combination switch Harness between combination switch and BCM BCM | Combination switch Refer to BCS-82, "Symptom Table" . |
| | | BCM | — |
| | Does not return to stop position. [Repeatedly operates for 10 seconds and then stops for 20 seconds. After that, it stops the operation. (Fail-safe)] | <ul style="list-style-type: none"> IPDM E/R Harness between IPDM E/R and front wiper motor Front wiper motor | Front wiper auto stop signal circuit Refer to WW-24, "Component Function Check" . |

NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

NORMAL OPERATING CONDITION

Description

INFOID:000000004468175

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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FRONT WIPER DOES NOT OPERATE

< SYMPTOM DIAGNOSIS >

FRONT WIPER DOES NOT OPERATE

Description

INFOID:000000004468176

The front wiper does not operate under any operation conditions.

Diagnosis Procedure

INFOID:000000004468177

1.CHECK WIPER RELAY OPERATION

⊗IPDM E/R AUTO ACTIVE TEST

1. Start IPDM E/R auto active test. Refer to [PCS-10. "Diagnosis Description"](#).
2. Check that the front wiper operates at the LO/HI operation.

ⓂCONSULT-III ACTIVE TEST

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

Lo : Front wiper LO operation

Hi : Front wiper HI operation

Off : Stop the front wiper.

Is front wiper operation normally?

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 30 A fuse (#60) is not fusing.

Is the fuse fusing?

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

NO >> GO TO 3.

3.CHECK FRONT WIPER MOTOR GROUND OPEN CIRCUIT

1. Disconnect front wiper motor connector.
2. Check continuity between front wiper motor harness connector and ground.

| Front wiper motor | | Ground | Continuity |
|-------------------|----------|--------|------------|
| Connector | Terminal | | |
| E42 | 2 | | Existed |

Does continuity exist?

YES >> GO TO 4.

NO >> Repair the harness or connector.

4.CHECK FRONT WIPER MOTOR OUTPUT VOLTAGE

ⓂCONSULT-III ACTIVE TEST

1. Turn the ignition switch ON.
2. Select "FRONT WIPER" of IPDM E/R active test item.
3. With 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 (Approx.) |
|-----------|----------|-------------|-------------------|
| (+) | (-) | | |
| IPDM E/R | | FRONT WIPER | |
| Connector | Terminal | | |
| E5 | 4 | Lo | Battery voltage |
| | | Off | 0 V |
| | 5 | Hi | Battery voltage |
| | | Off | 0 V |

Is the measurement value normal?

- YES >> Replace front wiper motor.
NO >> Replace IPDM E/R.

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. With operating the front wiper switch, check the status of "FR WIP REQ".

| Monitor item | Condition | | Monitor status |
|--------------|-----------------------|-----|----------------|
| FR WIP REQ | Front wiper switch HI | On | Hi |
| | | Off | Stop |
| | Front wiper switch LO | On | Low |
| | | Off | Stop |

Is the status of item normal?

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

6.CHECK COMBINATION SWITCH

Perform the inspection of the combination switch. Refer to [BCS-82. "Symptom Table"](#).

Is combination switch normal?

- YES >> Replace BCM. Refer to [BCS-84. "Exploded View"](#).
NO >> Repair or replace the applicable parts.

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PRECAUTIONS

< PRECAUTION >

PRECAUTION

PRECAUTIONS

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

INFOID:000000004468178

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

WARNING:

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.
- Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the "SRS AIRBAG".
- Never use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.

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

When working near the Airbag Diagnosis Sensor Unit or other Airbag System sensors while ignition switch is ON or engine is running, never use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration may activate the sensor(s), deploy the airbag(s), possibly cause serious injury. When using air or electric power tools or hammers, always turn OFF ignition switch, disconnect the battery, and wait 3 minutes or more before performing any service.

Precaution for Battery Service

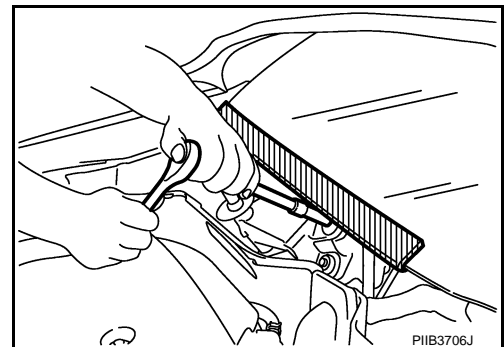
INFOID:000000004770270

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

Precaution for Procedure without Cowl Top Cover

INFOID:000000004468179

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



PREPARATION

< PREPARATION >

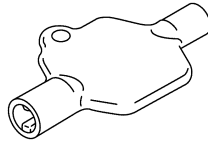
PREPARATION

PREPARATION

Commercial Service Tool

INFOID:0000000004702638

| Tool name | Description |
|------------------------|---|
| Washer nozzle adjuster | Adjusting washer nozzle. (Available in SEC. 289 of PARTS CATALOG: Part No. 28949 1EA0A) NOTE: Washer nozzle adjuster is included with shipment of nozzle. |



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WASHER TANK

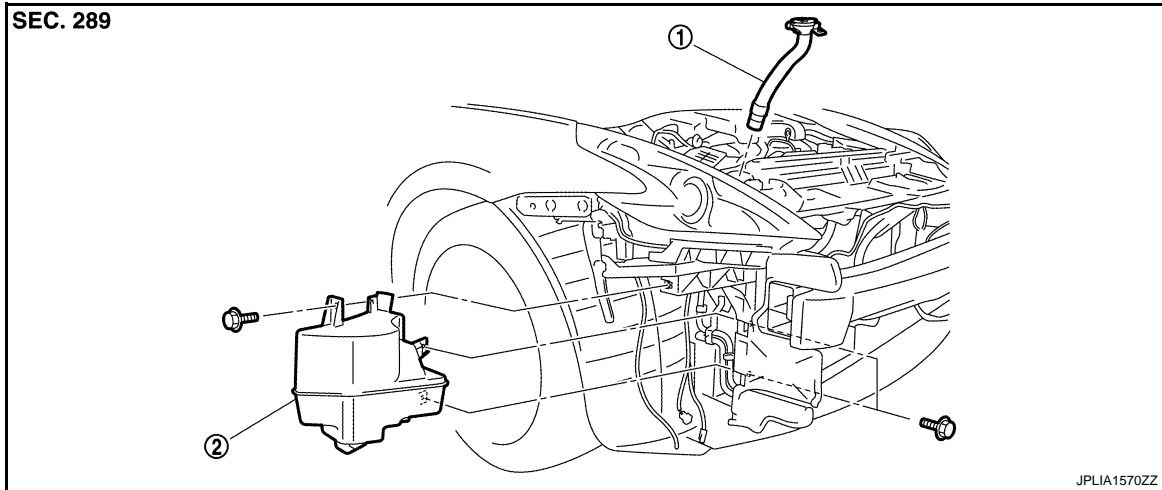
< ON-VEHICLE REPAIR >

ON-VEHICLE REPAIR

WASHER TANK

Exploded View

INFOID:000000004468180



1. Washer tank inlet

2. Washer tank

Removal and Installation

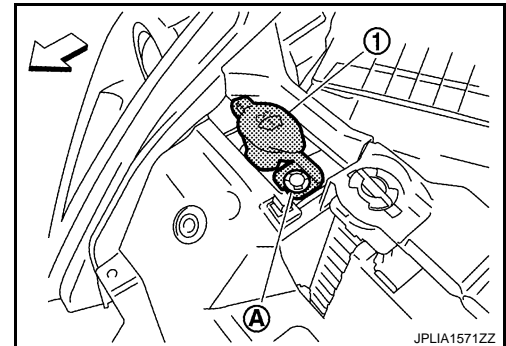
INFOID:000000004468181

REMOVAL

1. Remove the clip (A).

⇐ : Vehicle front

2. Pull out the washer tank inlet (1) from the washer tank.
3. Remove the fender protector RH (front). Refer to [EXT-23](#), "[FENDER PROTECTOR : Exploded View](#)".
4. Disconnect the washer pump connector.
5. Disconnect the washer level switch connector.
6. Disconnect the front washer tube.
7. Remove the washer tank mounting bolts.
8. Remove the washer tank from the vehicle.



INSTALLATION

Install in the reverse order of removal.

CAUTION:

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

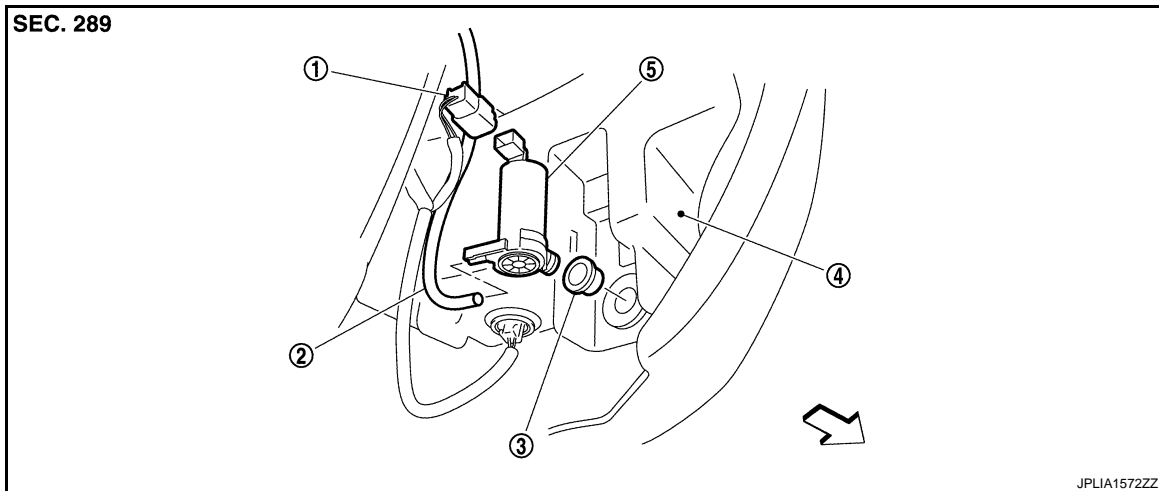
WASHER PUMP

< ON-VEHICLE REPAIR >

WASHER PUMP

Exploded View

INFOID:000000004468182



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

⇐ : Vehicle front

Removal and Installation

INFOID:000000004468183

REMOVAL

1. Remove the fender protector RH (front). Refer to [EXT-23, "FENDER PROTECTOR : Exploded View"](#).
2. Disconnect the washer pump connector.
3. Disconnect the front washer tube.
4. Remove the washer pump from the washer tank.
5. Remove the packing from the washer tank.

INSTALLATION

Install in the reverse order of removal.

CAUTION:

Never twist the packing when installing the washer pump.

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WASHER LEVEL SWITCH

< ON-VEHICLE REPAIR >

WASHER LEVEL SWITCH

Removal and Installation

INFOID:000000004468184

The washer level switch must be replaced together with the washer tank as an assembly. Refer to [WW-86](#), "[Removal and Installation](#)".

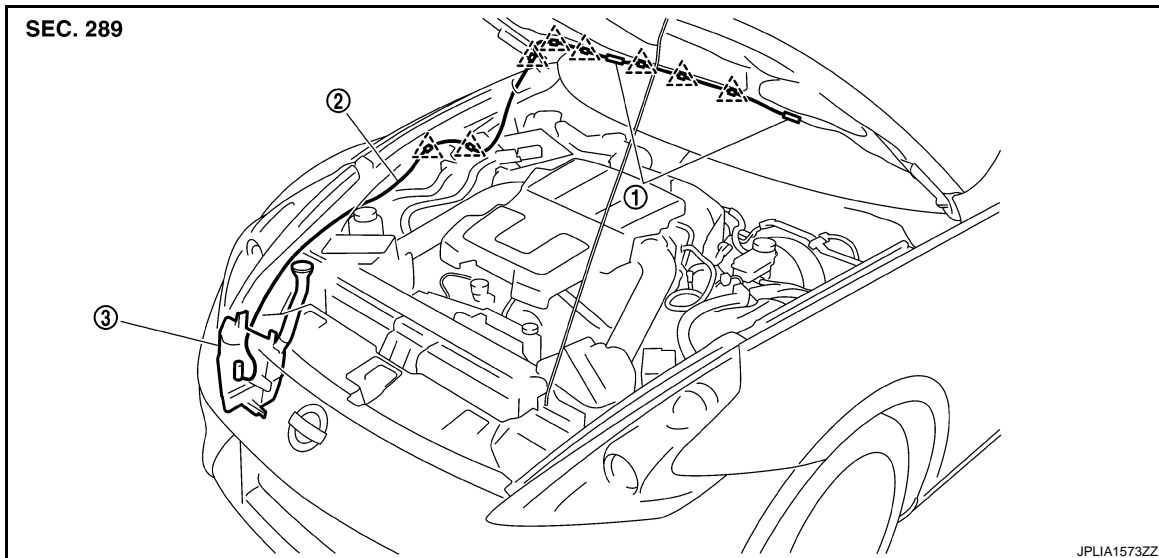
FRONT WASHER NOZZLE AND TUBE

< ON-VEHICLE REPAIR >

FRONT WASHER NOZZLE AND TUBE

Hydraulic Layout

INFOID:000000004468185



1. Front washer nozzle

2. Front washer tube

3. Washer tank

△ : Clip

Removal and Installation

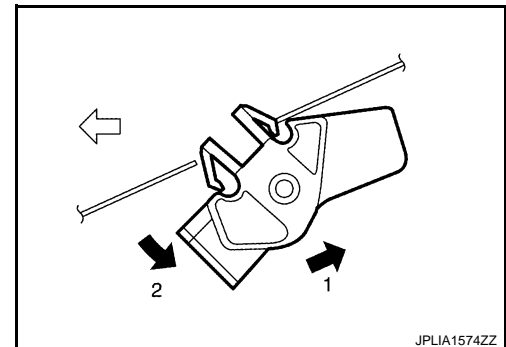
INFOID:000000004468186

REMOVAL

1. Open the hood.
2. Remove the front washer nozzle in numerical order shown in the figure.

← : Vehicle front

3. Disconnect the front washer tube from the front washer nozzle.



INSTALLATION

1. Connect the front washer tube into the front washer nozzle.
2. Install the front washer nozzle to the hood.
3. Adjust the front washer nozzle spray position. Refer to [WW-89, "Inspection and Adjustment"](#).

CAUTION:

The spray positions differ. Check that left and right nozzles are installed correctly.

Inspection and Adjustment

INFOID:000000004468187

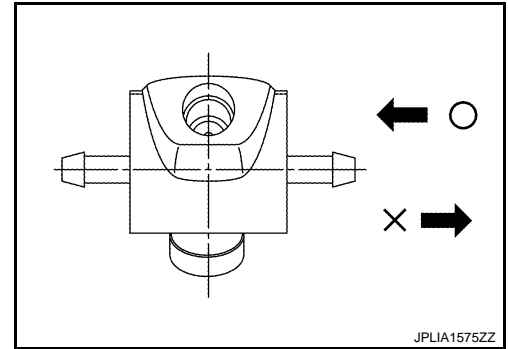
INSPECTION

Washer Nozzle Inspection

FRONT WASHER NOZZLE AND TUBE

< ON-VEHICLE REPAIR >

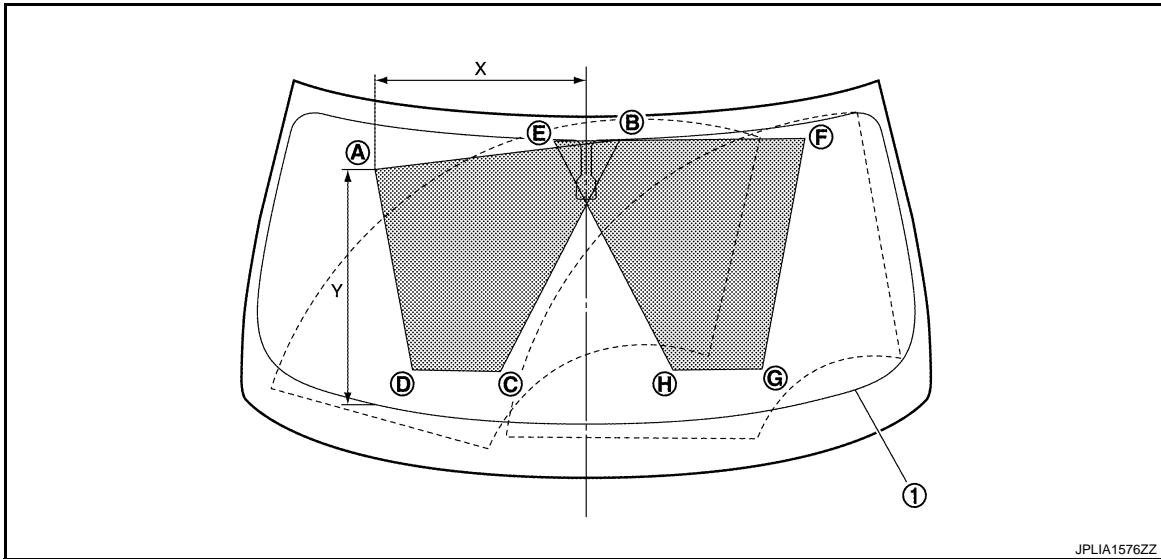
Check that air can pass through the hose by blowing forward (toward the nozzle), and check that air cannot pass through by sucking.



JPLIA1575ZZ

ADJUSTMENT

Washer Nozzle Spray Position Adjustment




JPLIA1576ZZ

1. Black printed frame line

 : Spray area

Unit: mm (in)

| | Passenger side | | | | Driver side | | | |
|---|----------------|-------------|------------|-------------|-------------|-------------|-------------|------------|
| | A | B | C | D | E | F | G | H |
| X | 445 (17.52) | 69 (2.72) | 181 (7.13) | 366 (14.41) | 68 (2.68) | 458 (18.03) | 367 (14.45) | 180 (7.09) |
| Y | 493 (19.41) | 594 (23.39) | 104 (4.09) | 87 (3.43) | 594 (23.39) | 555 (21.85) | 90 (3.54) | 108 (4.25) |

Check that washer fluid is splayed on 80% or more the splay area () when spraying washer fluid. If the spray area deviates from the specification, adjust the washer nozzle.

CAUTION:

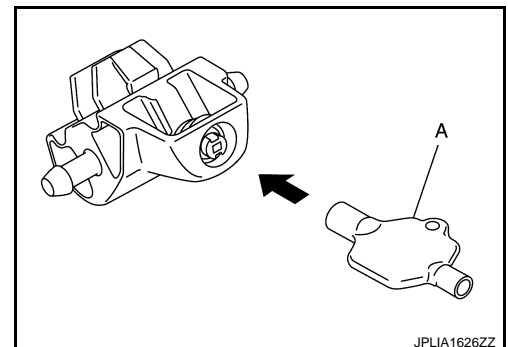
• Use washer nozzle adjuster* (A) for nozzle adjustment.

• Never use needle or small pin.

*: Washer nozzle adjuster is included with shipment of nozzle.

NOTE:

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



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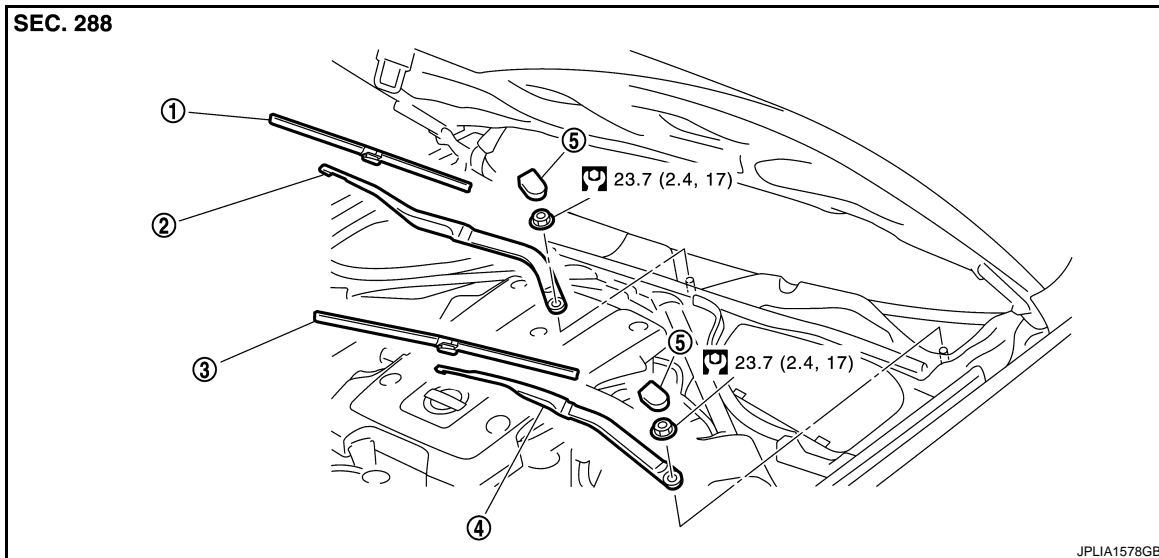
FRONT WIPER ARM

< ON-VEHICLE REPAIR >

FRONT WIPER ARM

Exploded View

INFOID:000000004468188



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

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

Removal and Installation

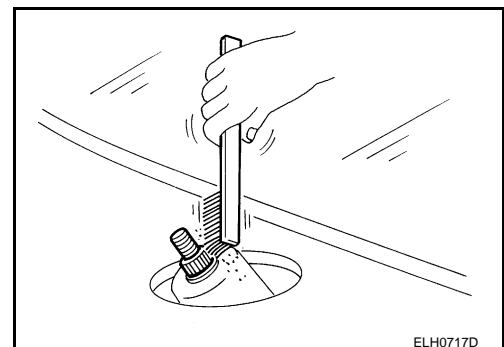
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REMOVAL

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

INSTALLATION

1. Clean front wiper arm mount as shown in the figure to prevent nuts from being loosened.
2. Operate the front wiper motor to move the front wiper to the auto stop position.
3. Adjust the front wiper blade position. Refer to [WW-91, "Adjustment"](#).
4. Install the front wiper arm by tightening the mounting nuts.
5. Inject the washer fluid.
6. Operate the front wiper to move it to the auto stop position.
7. Check that the front wiper blades stop at the specified position.
8. Install the front wiper arm caps.



Adjustment

INFOID:000000004468190

WIPER BLADE POSITION ADJUSTMENT

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

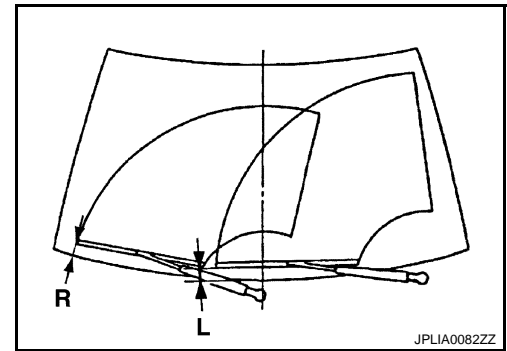
FRONT WIPER ARM

< ON-VEHICLE REPAIR >

Standard clearance

R : $33.9 \pm 7.5 \text{ mm}$ ($1.335 \pm 0.295 \text{ in}$)

L : $61.4 \pm 7.5 \text{ mm}$ ($2.417 \pm 0.295 \text{ in}$)



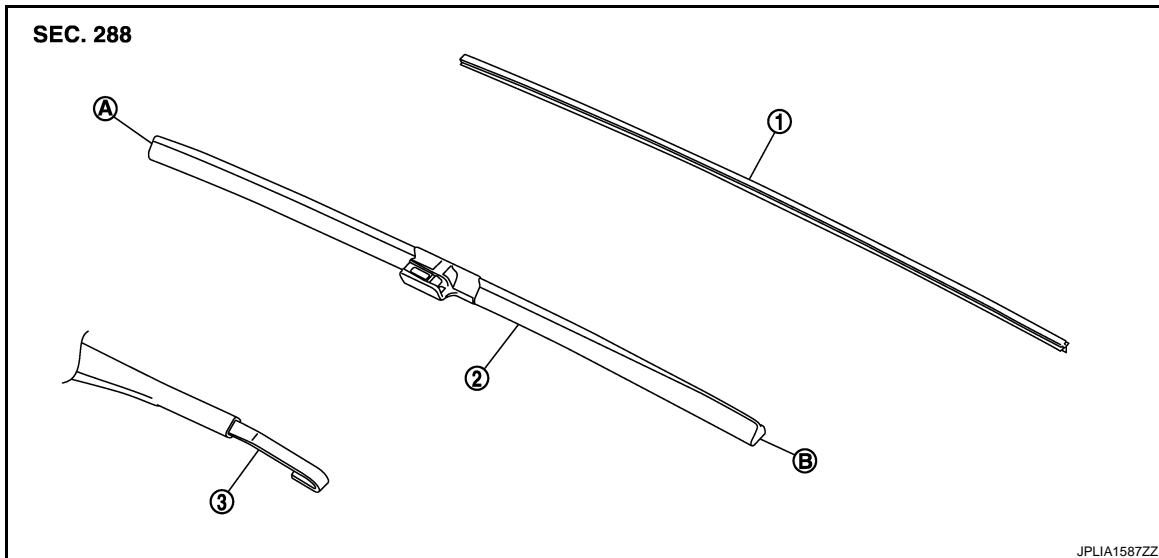
WIPER BLADE

< ON-VEHICLE REPAIR >

WIPER BLADE

Exploded View

INFOID:000000004703529



- | | | |
|--------------------|--------------------|--------------|
| 1. Wiper refill | 2. Wiper blade | 3. Wiper arm |
| A. Wiper blade end | B. Wiper blade tip | |

Removal and Installation

INFOID:000000004703530

REMOVAL

Remove the wiper blade from the wiper arm.

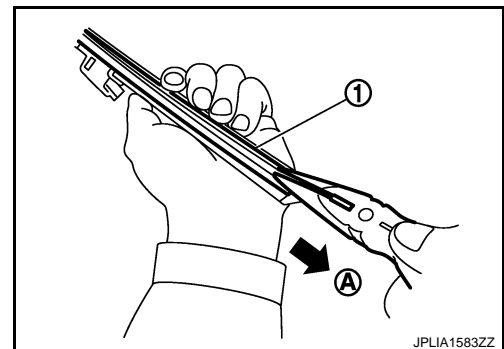
INSTALLATION

Install the front wiper blade to the wiper arm.

Replacement

INFOID:000000004703531

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

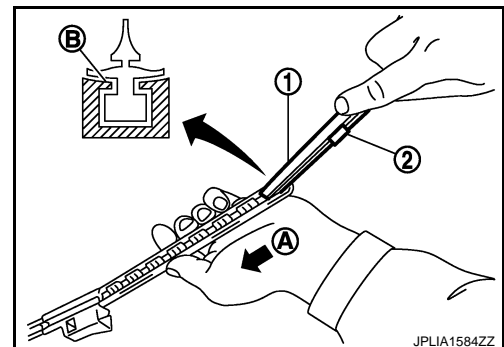


2. Insert the tip of new wiper refill (1) into the rear end of wiper blade. Slide the wiper refill to the direction (A) while pressing the wiper refill onto the wiper blade rear end.

NOTE:

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

*: Attached to service parts.



WIPER BLADE

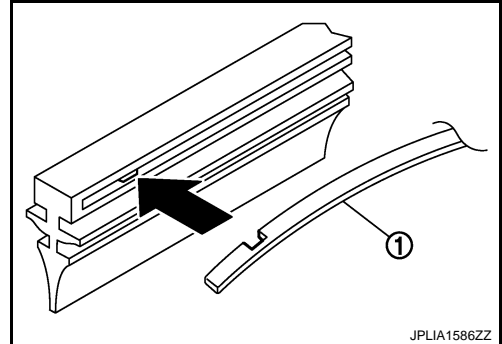
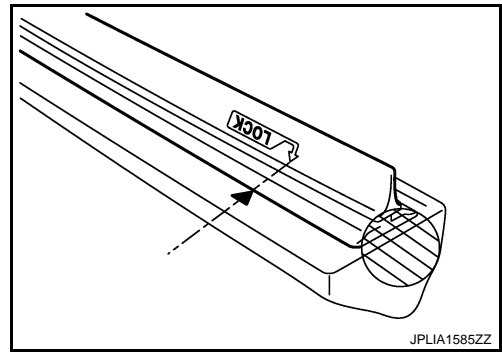
< ON-VEHICLE REPAIR >

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

NOTE:

When the vertebra is detached.

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



FRONT WIPER DRIVE ASSEMBLY

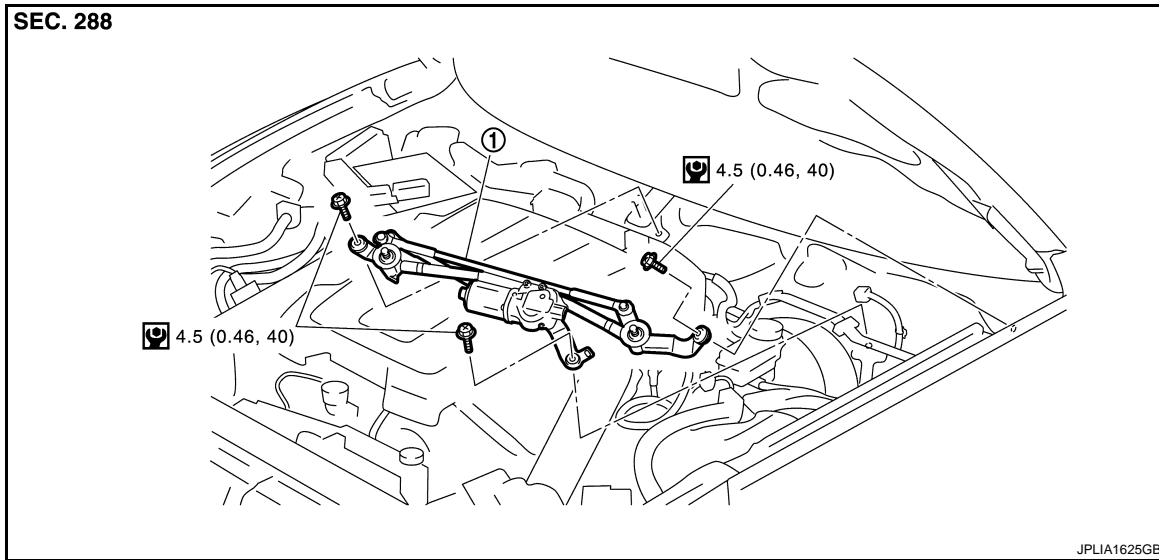
< ON-VEHICLE REPAIR >

FRONT WIPER DRIVE ASSEMBLY

Exploded View

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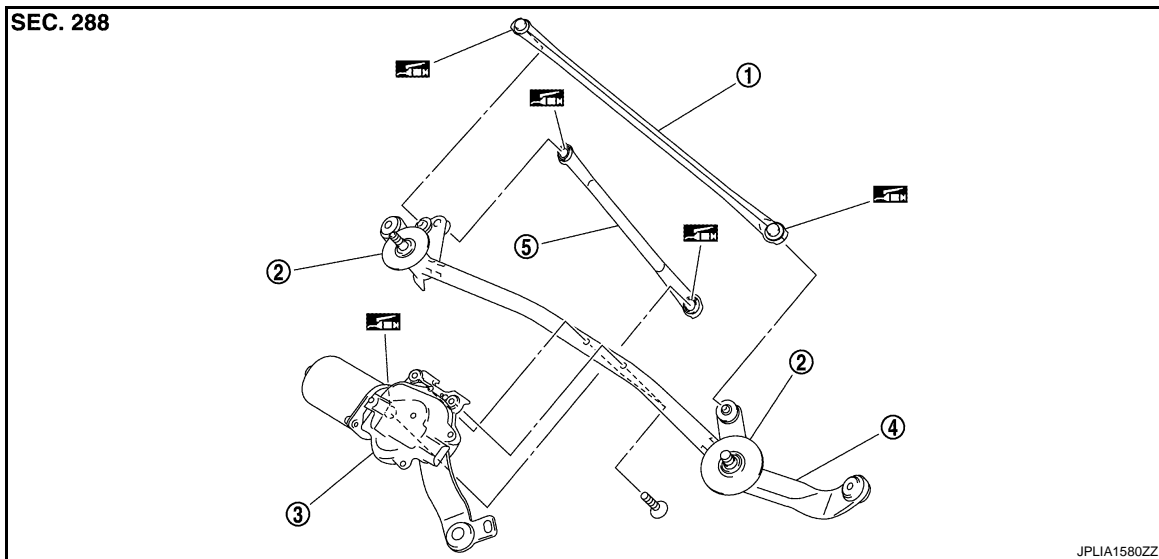
REMOVAL



1. Front wiper drive assembly

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

DISASSEMBLY



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

: Multi-purpose grease or an equivalent.

Removal and Installation

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REMOVAL

1. Remove the front wiper arm. Refer to [WW-91, "Exploded View"](#).
2. Remove the front tower bar and cowl top cover. Refer to [EXT-20, "Exploded View"](#).

FRONT WIPER DRIVE ASSEMBLY

< ON-VEHICLE REPAIR >

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

INSTALLATION

1. Install the front wiper drive assembly to the vehicle.
2. Connect the front wiper motor connector.
3. Operate the front wiper to move it to the auto stop position.
4. Install the front tower bar and cowl top cover. Refer to [EXT-20, "Exploded View"](#).
5. Install the front wiper arms. Refer to [WW-91, "Exploded View"](#).

Disassembly and Assembly

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DISASSEMBLY

1. Remove the front wiper linkage 1 and 2 from the front wiper drive assembly.
CAUTION:
Never bend the linkage or damage the plastic part of the ball joint when removing the front wiper linkage.
2. Remove the front wiper motor mounting screws, and then remove the front wiper motor from the front wiper frame.

ASSEMBLY

1. Connect the front wiper motor connector.
2. Operate the front wiper to move it to the auto stop position.
3. Disconnect the front wiper motor connector.
4. Install the front wiper motor to the front wiper frame.
5. Install the front wiper linkage 2 to the front wiper motor and the front wiper frame.
6. Install the front wiper linkage 1 to the front wiper frame.
CAUTION:
 - **Never drop front wiper motor or cause it to come into contact with other parts.**
 - **Be careful for the grease condition at the front wiper motor and front wiper linkage joint (retainer). Apply Multi-purpose grease or an equivalent if necessary.**

WIPER AND WASHER SWITCH

< ON-VEHICLE REPAIR >

WIPER AND WASHER SWITCH

Exploded View

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Refer to [BCS-85. "Exploded View"](#).

A
B
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