

WW
SECTION
WIPER & WASHER

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DIAGNOSIS AND REPAIR WORK FLOW

< BASIC INSPECTION >

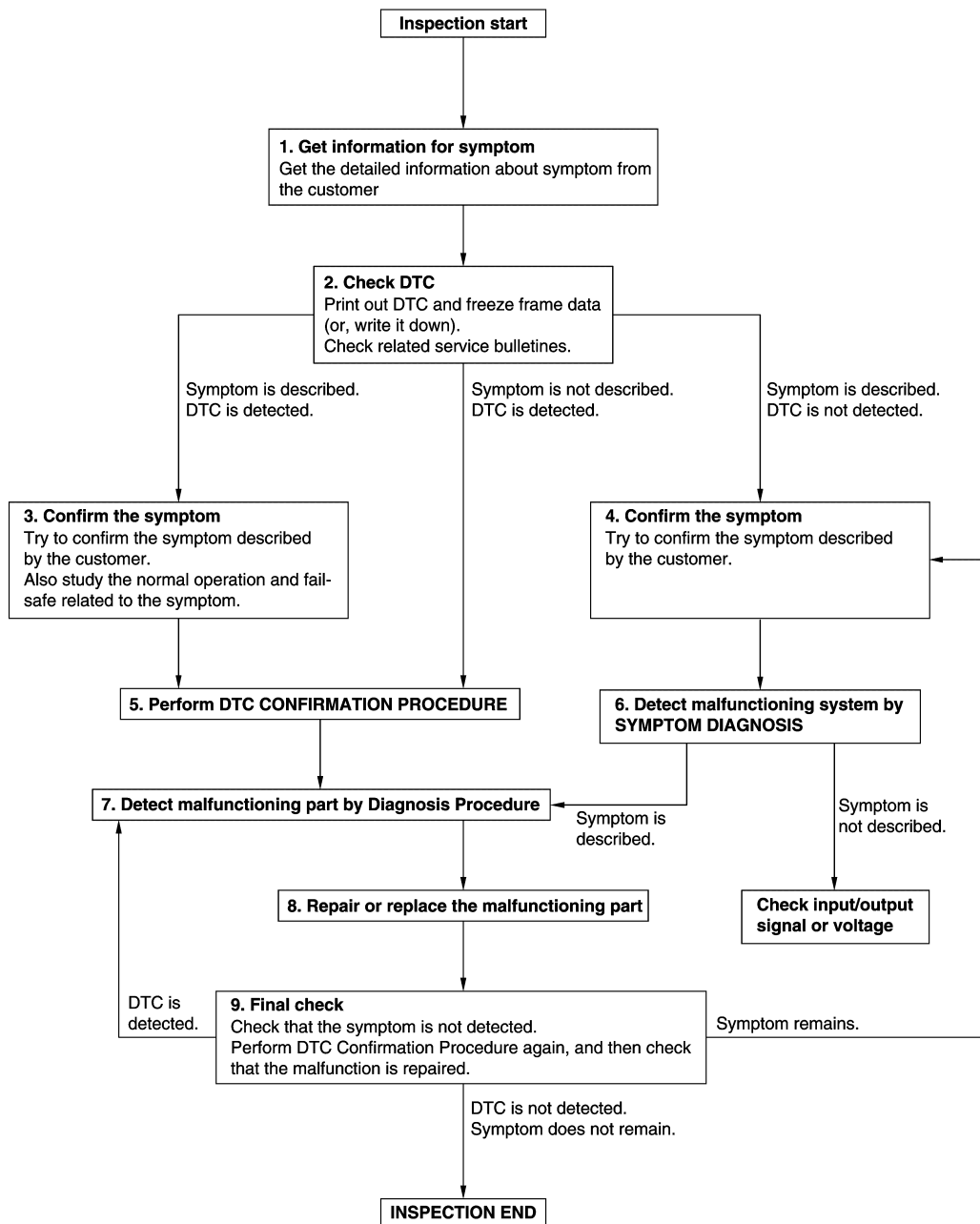
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

INFOID:000000007798438

OVERALL SEQUENCE



DETAILED FLOW

JMKIA8652GB

DIAGNOSIS AND REPAIR WORK FLOW

< BASIC INSPECTION >

1. GET INFORMATION FOR SYMPTOM

1. Get detailed information from the customer about the symptom (the condition and the environment when the incident/malfunction occurs).
2. Check operation condition of the function that is malfunctioning.

>> GO TO 2.

2. CHECK DTC

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

Are any symptoms described and any DTC detected?

Symptom is described, DTC is detected>>GO TO 3.

Symptom is described, DTC is not detected>>GO TO 4.

Symptom is not described, DTC is detected>>GO TO 5.

3. CONFIRM THE SYMPTOM

Try to confirm the symptom described by the customer.

Also study the normal operation and fail-safe related to the symptom.

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

>> GO TO 5.

4. CONFIRM THE SYMPTOM

Try to confirm the symptom described by the customer.

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

>> GO TO 6.

5. PERFORM DTC CONFIRMATION PROCEDURE

Perform DTC CONFIRMATION PROCEDURE for the detected DTC, and then check that DTC is detected again. At this time, always connect CONSULT to the vehicle, and check self diagnostic results in real time.

If two or more DTCs are detected, refer to [BCS-84. "DTC Inspection Priority Chart"](#) (BCM) or [PCS-31. "DTC Index"](#) (IPDM E/R), and determine trouble diagnosis order.

NOTE:

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

Is DTC detected?

YES >> GO TO 7.

NO >> Check according to [GI-44. "Intermittent Incident"](#).

6. DETECT MALFUNCTIONING SYSTEM BY SYMPTOM DIAGNOSIS

Detect malfunctioning system according to SYMPTOM DIAGNOSIS based on the confirmed symptom in step 4, and determine the trouble diagnosis order based on possible causes and symptom.

Is the symptom described?

YES >> GO TO 7.

NO >> Monitor input data from related sensors or check voltage of related module terminals using CONSULT.

7. DETECT MALFUNCTIONING PART BY DIAGNOSIS PROCEDURE

DIAGNOSIS AND REPAIR WORK FLOW

< BASIC INSPECTION >

Inspect according to Diagnosis Procedure of the system.

Is malfunctioning part detected?

YES >> GO TO 8.

NO >> Check according to [GI-44. "Intermittent Incident"](#).

8. REPAIR OR REPLACE THE MALFUNCTIONING PART

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

>> GO TO 9.

9. FINAL CHECK

When DTC is detected in step 2, perform DTC CONFIRMATION PROCEDURE again, and then check that the malfunction is repaired securely.

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

Is DTC detected and does symptom remain?

YES-1 >> DTC is detected: GO TO 7.

YES-2 >> Symptom remains: GO TO 4.

NO >> Before returning the vehicle to the customer, always erase DTC.

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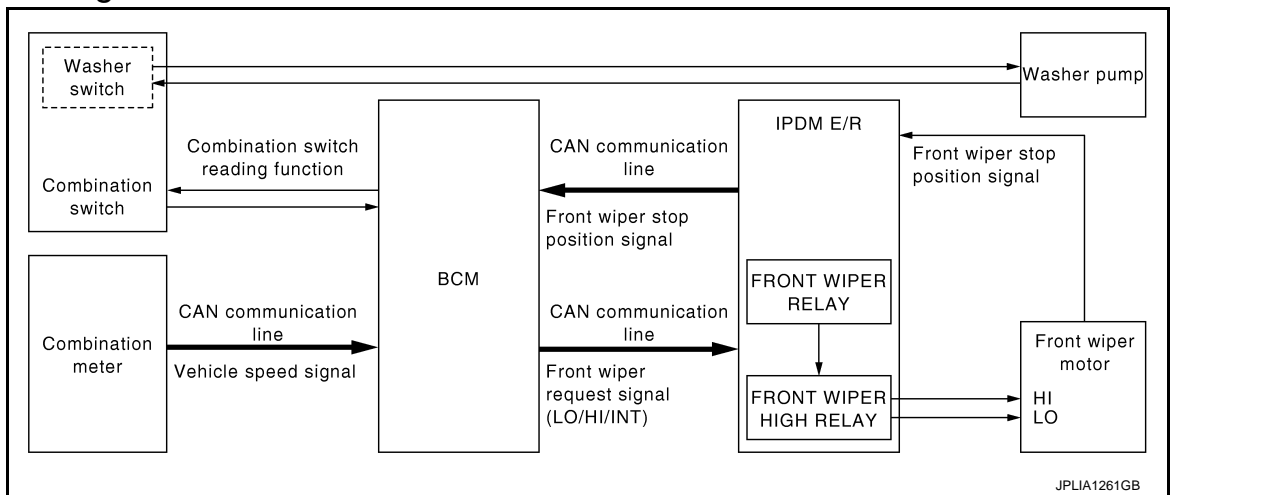
FRONT WIPER AND WASHER SYSTEM

< SYSTEM DESCRIPTION >

SYSTEM DESCRIPTION

FRONT WIPER AND WASHER SYSTEM

System Diagram



System Description

INFOID:000000007625671

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-27, "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

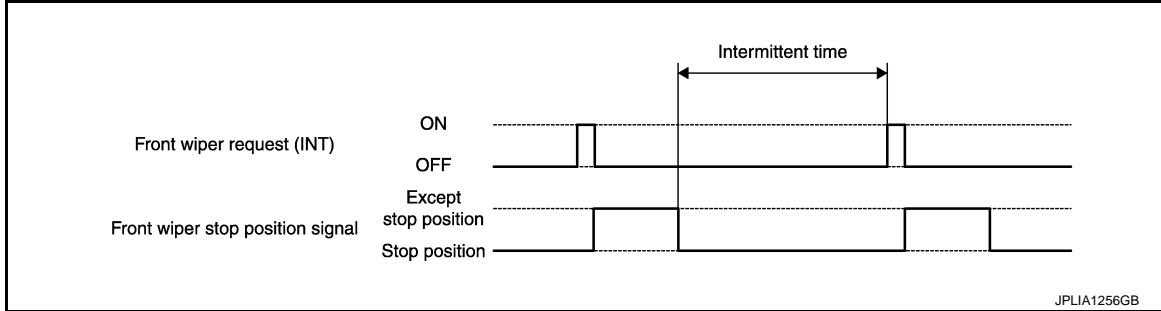
< SYSTEM DESCRIPTION >

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. Refer to [WW-11, "WIPER : CONSULT 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

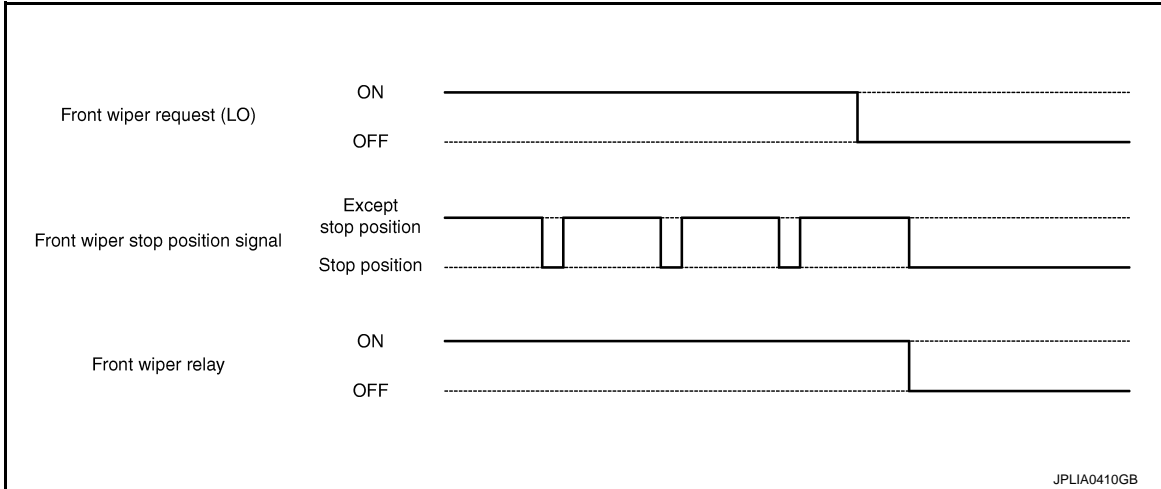
FRONT WIPER AUTO STOP OPERATION

- 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

< SYSTEM DESCRIPTION >

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



NOTE:

- BCM stops the transmitting of the front wiper request signal when the ignition switch 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

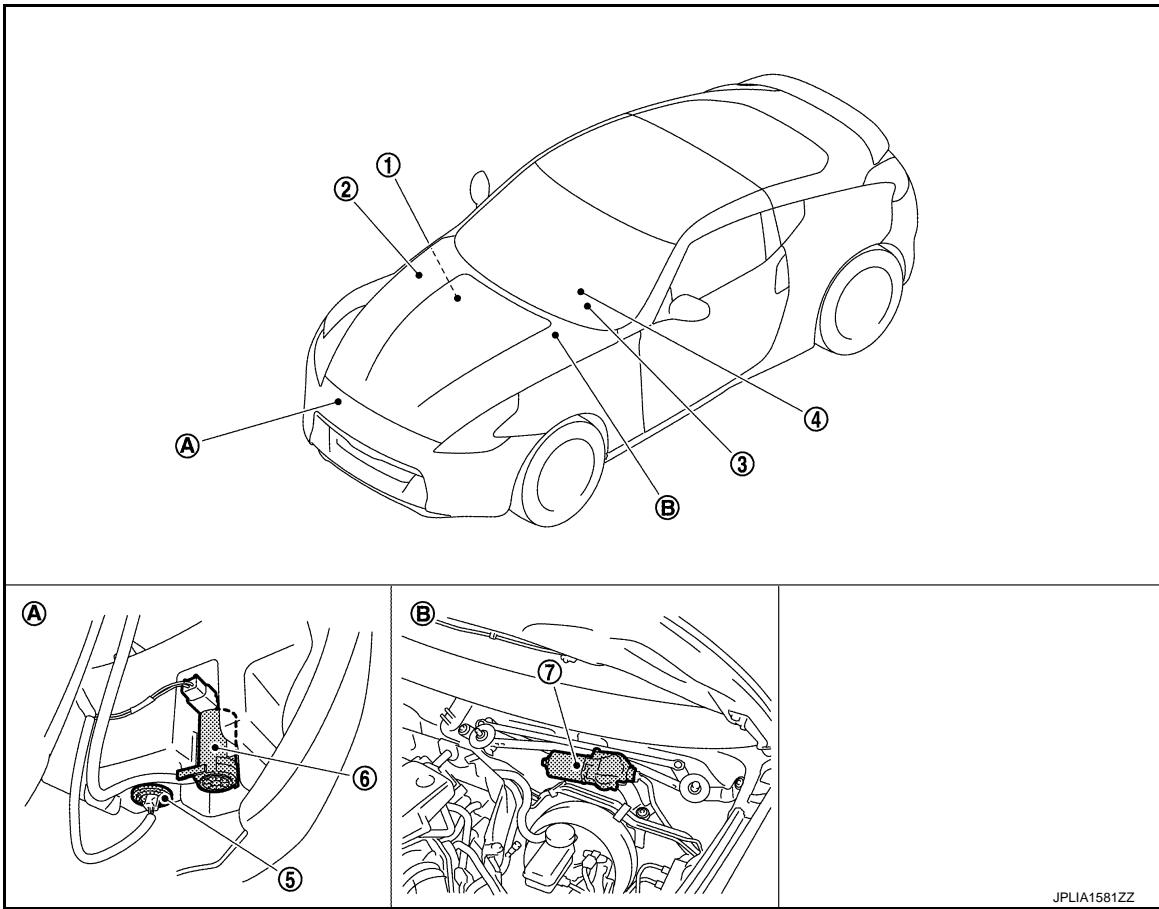
IPDM E/R performs the fail-safe function when the front wiper stop position circuit is malfunctioning. Refer to [PCS-29. "Fail-safe"](#).

FRONT WIPER AND WASHER SYSTEM

< SYSTEM DESCRIPTION >

Component Parts Location

INFOID:000000007625672



- | | | |
|--|---|----------------------|
| 1. BCM Refer to BCS-9, "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:000000007625673

| 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-10, "System Diagram" . |
| Combination meter | Transmits the vehicle speed signal to BCM with CAN communication. |

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DIAGNOSIS SYSTEM (BCM)

< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (BCM)

COMMON ITEM

COMMON ITEM : CONSULT Function (BCM - COMMON ITEM)

INFOID:000000007798446

APPLICATION ITEM

CONSULT 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. |
| 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 | × | | |
| NVIS - NATS | IMMU | | × | × |
| Interior room lamp battery saver | BATTERY SAVER | × | × | × |
| Back door/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.

DIAGNOSIS SYSTEM (BCM)

< SYSTEM DESCRIPTION >

| CONSULT screen item | Indication/Unit | Description | |
|---------------------|---|--|--|
| Vehicle Speed | km/h | Vehicle speed of the moment a particular DTC is detected | |
| Odo/Trip Meter | km | Total mileage (Odometer value) of the moment a particular DTC is detected | |
| Vehicle Condition | SLEEP>LOCK | Power supply 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" (Except emergency stop operation) |
| | 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"* |
| | OFF | | Power supply position is "OFF" (Ignition switch OFF) |
| | 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. | |

NOTE:

*: Power supply position shifts to "LOCK" from "OFF", when ignition switch is in the OFF position, selector lever is in the P position (A/T models), and any of the following conditions are met.

- Closing door
- Opening door
- Door is locked using door request switch
- Door is locked using Intelligent Key

The power supply position shifts to "ACC" when the push-button ignition switch (push switch) is pushed at "LOCK".

WIPER

WIPER : CONSULT Function (BCM - WIPER)

INFOID:000000007625675

WORK SUPPORT

DIAGNOSIS SYSTEM (BCM)

< SYSTEM DESCRIPTION >

| 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

| 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. |

DIAGNOSIS SYSTEM (IPDM E/R)

< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (IPDM E/R)

Diagnosis Description

INFOID:000000007798448

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 maker 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-63](#), "[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.

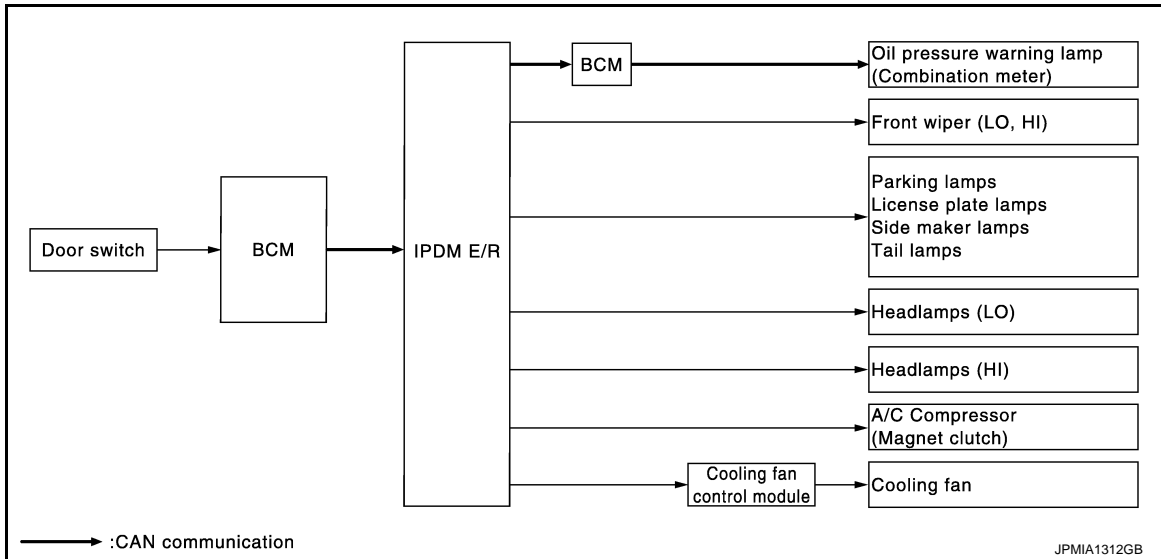
| Operation sequence | Inspection location | Operation |
|--------------------|--|--|
| 1 | Oil pressure warning lamp | Blinks continuously during operation of auto active test |
| 2 | Front wiper | LO for 5 seconds → HI for 5 seconds |
| 3 | <ul style="list-style-type: none"> • Parking lamps • License plate lamps • Side maker 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)

< SYSTEM DESCRIPTION >

Concept of auto active test



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

Diagnosis chart in auto active test mode

| Symptom | Inspection contents | Possible cause |
|--|--|--|
| Any of the following components do not operate <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)

< SYSTEM DESCRIPTION >

| 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 Function (IPDM E/R)

INFOID:000000007798449

APPLICATION ITEM

CONSULT 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 [PCS-31, "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)

< SYSTEM DESCRIPTION >

| 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/INH RLY [Off/ST ON/INH ON/UNKWN] | | Displays the status of the starter relay and starter control relay judged by IPDM E/R. |
| DETENT SW [Off/On] | | Displays the status of the A/T shift selector (detention switch) judged by IPDM E/R. |
| S/L RLY -REQ [Off/On] | | NOTE: The item is indicated, but not monitored. |
| S/L STATE [LOCK/UNLOCK/UNKWN] | | NOTE: The item is indicated, but not monitored. |
| 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)

< SYSTEM DESCRIPTION >

| 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. |

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WW

WIPER AND WASHER FUSE

< DTC/CIRCUIT DIAGNOSIS >

DTC/CIRCUIT DIAGNOSIS

WIPER AND WASHER FUSE

Description

INFOID:000000007625678

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:000000007625679

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.

POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

POWER SUPPLY AND GROUND CIRCUIT

BCM (BODY CONTROL MODULE)

BCM (BODY CONTROL MODULE) : Diagnosis Procedure

INFOID:000000007625680

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 Battery voltage |
| Connector | Terminal | |
| M118 | 1 | |
| M119 | 11 | |

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 | | |
| M119 | 13 | | Existed |

Does continuity exist?

YES >> INSPECTION END

NO >> Repair harness or connector.

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

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

INFOID:000000007625681

1. CHECK FUSES AND FUSIBLE LINK

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

POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

| 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 | | Battery voltage |
| Connector | Terminal | |
| 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

< DTC/CIRCUIT DIAGNOSIS >

FRONT WIPER MOTOR LO CIRCUIT

Component Function Check

INFOID:000000007625682

1. CHECK FRONT WIPER LO OPERATION

⊗ IPDM E/R AUTO ACTIVE TEST

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

Ⓜ CONSULT 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-21, "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:000000007625683

1. CHECK FRONT WIPER MOTOR (LO) OUTPUT VOLTAGE

Ⓜ CONSULT 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.

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WW

FRONT WIPER MOTOR LO CIRCUIT

< DTC/CIRCUIT 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.

FRONT WIPER MOTOR HI CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

FRONT WIPER MOTOR HI CIRCUIT

Component Function Check

INFOID:000000007625684

1. CHECK FRONT WIPER HI OPERATION

IPDM E/R AUTO ACTIVE TEST

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

CONSULT 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-23, "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:000000007625685

1. CHECK FRONT WIPER MOTOR (HI) OUTPUT VOLTAGE

CONSULT 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.

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FRONT WIPER MOTOR HI CIRCUIT

< DTC/CIRCUIT 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.

FRONT WIPER STOP POSITION SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

FRONT WIPER STOP POSITION SIGNAL CIRCUIT

Component Function Check

INFOID:000000007625686

1.CHECK FRONT WIPER STOP POSITION SIGNAL

CONSULT 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 >> Front wiper stop position signal circuit is normal.
NO >> Refer to [WW-25, "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:000000007625687

1.CHECK FRONT WIPER MOTOR 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 | | Battery voltage |
| Connector | Terminal | |
| E5 | 16 | |

Is the measurement value normal?

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

2.CHECK FRONT WIPER MOTOR 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 | | |
| E5 | 16 | | Not existed |

Does continuity exist?

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

3.CHECK FRONT WIPER MOTOR 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 STOP POSITION SIGNAL CIRCUIT

< DTC/CIRCUIT 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.

FRONT WIPER MOTOR GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

FRONT WIPER MOTOR GROUND CIRCUIT

Diagnosis Procedure

INFOID:000000007625688

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 | | Existed |
| E42 | 2 | | |

Does continuity exist?

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

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WASHER SWITCH

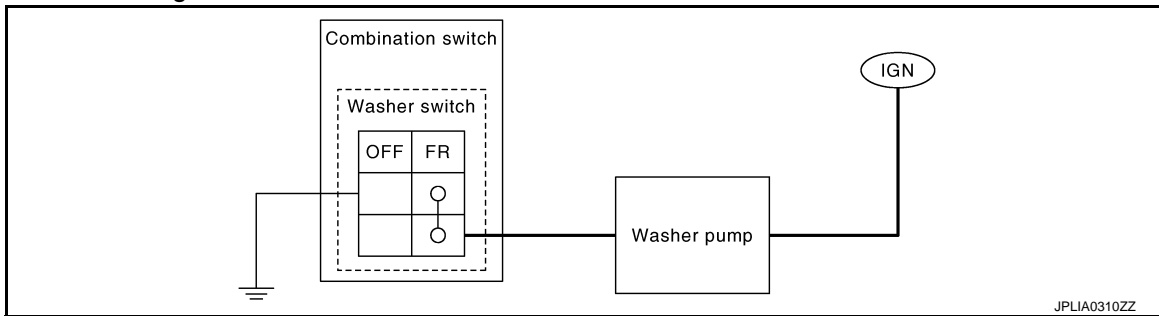
< DTC/CIRCUIT DIAGNOSIS >

WASHER SWITCH

Description

INFOID:000000007625689

Washer switch is integrated with combination switch.



Component Inspection

INFOID:000000007625690

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).

FRONT WIPER AND WASHER SYSTEM

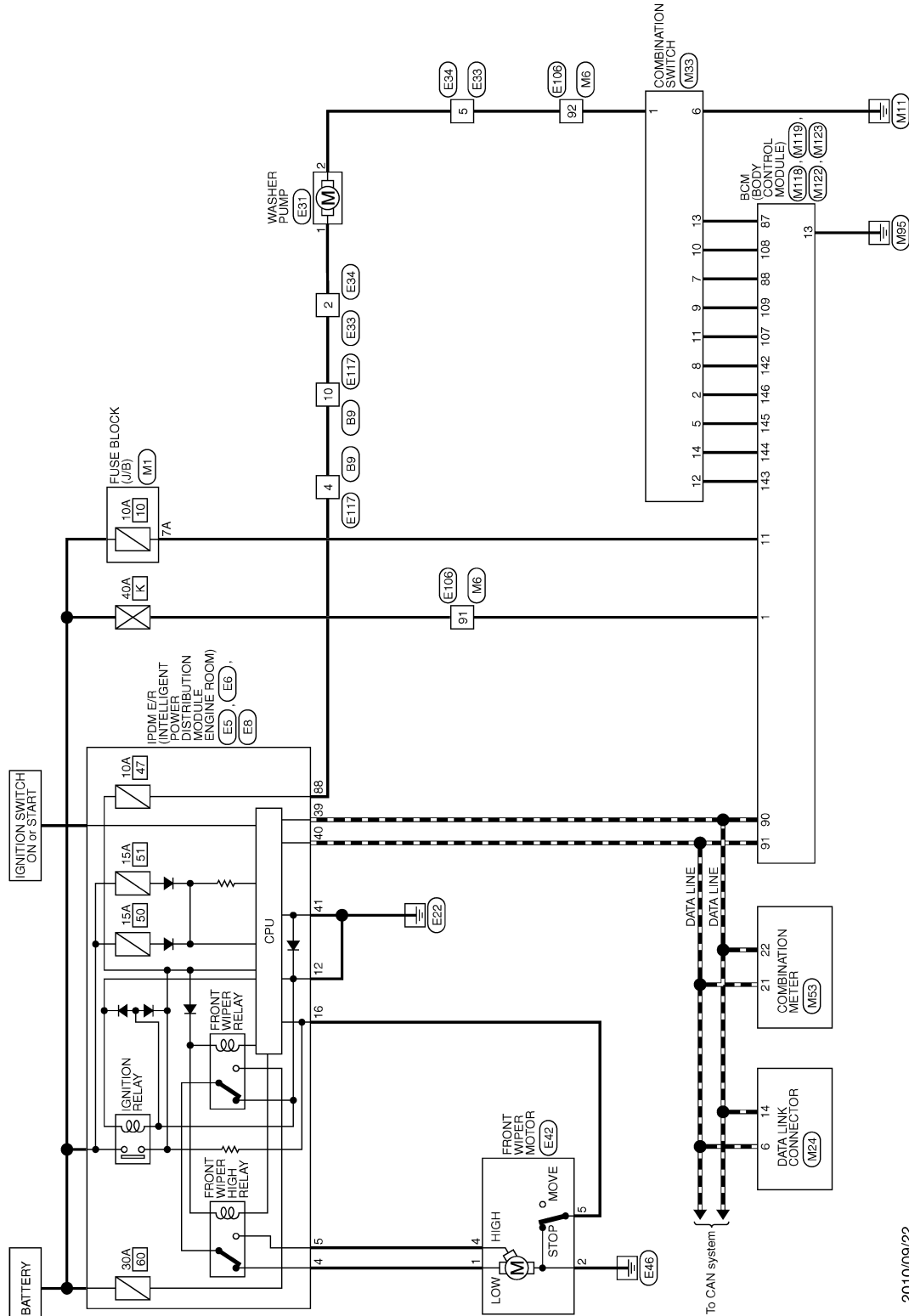
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FRONT WIPER AND WASHER SYSTEM

Wiring Diagram - FRONT WIPER AND WASHER SYSTEM -

INFOID:000000007625691

FRONT WIPER AND WASHER SYSTEM



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BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

ECU DIAGNOSIS INFORMATION

BCM (BODY CONTROL MODULE)

Reference Value

INFOID:000000007798458

VALUES ON THE DIAGNOSIS TOOL

CONSULT 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 INFORMATION >

| Monitor Item | Condition | Value/Status | |
|---|---|--------------|----|
| DOOR SW-RL | NOTE: The item is indicated, but not monitored. | Off | A |
| DOOR SW-BK | <ul style="list-style-type: none"> • Back door closed (Coupe models) • Trunk lid closed (Roadster models) | Off | B |
| | <ul style="list-style-type: none"> • Back door opened (Coupe models) • Trunk lid opened (Roadster models) | On | |
| CDL LOCK SW | Other than door lock and unlock switch LOCK | Off | C |
| | Door lock and unlock switch LOCK | On | |
| CDL UNLOCK SW | Other than door lock and unlock switch UNLOCK | Off | D |
| | 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 | E |
| KEY CYL UN-SW | Other than driver door key cylinder UNLOCK position | Off | |
| | Driver door key cylinder UNLOCK position | On | F |
| KEY CYL SW-TR | NOTE: The item is indicated, but not monitored. | Off | |
| HAZARD SW | Hazard switch is OFF | Off | G |
| | Hazard switch is ON | On | |
| REAR DEF SW NOTE: For models with NAVI this item is not monitored. | Rear window defogger switch OFF | Off | H |
| | Rear window defogger switch ON | On | |
| H/L WASH SW | NOTE: The item is indicated, but not monitored. | Off | I |
| TR CANCEL SW | Trunk lid opener cancel switch OFF | Off | |
| | Trunk lid opener cancel switch ON | On | J |
| TR/BD OPEN SW | <ul style="list-style-type: none"> • Back door opener switch OFF (Coupe models) • Trunk lid opener switch OFF (Roadster models) | Off | |
| | <ul style="list-style-type: none"> • While the back door opener switch is turned ON (Coupe models) • While the trunk lid opener switch is turned ON (Roadster models) | On | K |
| TRNK/HAT MNTR | NOTE: The item is indicated, but not monitored. | Off | WW |
| 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 | M |
| | UNLOCK button of the Intelligent Key is pressed | On | |
| RKE-TR/BD NOTE: For Coupe models this item is not monitored. | TRUNK OPEN button of the Intelligent Key is not pressed | Off | N |
| | TRUNK OPEN of the Intelligent Key is pressed | On | |
| RKE-PANIC | PANIC button of the Intelligent Key is not pressed | Off | O |
| | PANIC button of the Intelligent Key is pressed | On | |
| RKE-P/W OPEN | UNLOCK button of the Intelligent Key is not pressed | Off | P |
| | 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 | |

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

| Monitor Item | Condition | Value/Status |
|---|---|--------------|
| 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 |
| REQ SW -RR | NOTE: The item is indicated, but not monitored. | Off |
| REQ SW -RL | NOTE: The item is indicated, but not monitored. | Off |
| REQ SW -BD/TR | <ul style="list-style-type: none"> • Back door request switch is not pressed (Coupe models) • Trunk lid door request switch is not pressed (Roadster models) | Off |
| | <ul style="list-style-type: none"> • Back door request switch is pressed (Coupe models) • Trunk lid door request switch is pressed (Roadster models) | On |
| PUSH SW | Push-button ignition switch (push switch) is not pressed | Off |
| | Push-button ignition switch (push switch) is pressed | On |
| IGN RLY2 -F/B | NOTE: The item is indicated, but not monitored. | Off |
| ACC RLY -F/B | NOTE: The item is indicated, but not monitored. | Off |
| CLUCH SW NOTE: For A/T models this item is not monitored. | The clutch pedal is not depressed | Off |
| | The clutch pedal is depressed | On |
| BRAKE SW 1 | The brake pedal is depressed when No. 7 fuse is blown | Off |
| | The brake pedal is not depressed when No. 7 fuse is blown, or No. 7 fuse is normal | On |
| BRAKE SW 2 | The brake pedal is not depressed | Off |
| | The brake pedal is depressed | On |
| DETE/CANCL SW NOTE: For M/T models with Synchro-Rev 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 |
| | <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: For roadster M/T models and coupe 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 (Coupe M/T models with SynchroRev Match mode) | Off |
| | <ul style="list-style-type: none"> • Selector lever in P or N position (A/T models) • Control lever in neutral position (Coupe M/T models with SynchroRev Match mode) | On |
| S/L -LOCK | NOTE: The item is indicated but not monitored. | Off |
| S/L -UNLOCK | NOTE: The item is indicated but not monitored. | Off |
| S/L RELAY-F/B | NOTE: The item is indicated but not monitored. | Off |
| UNLK SEN -DR | Driver door is unlocked | Off |
| | Driver door is locked | On |
| PUSH SW -IPDM | Push-button ignition switch (push-switch) is not pressed | Off |
| | Push-button ignition switch (push-switch) is pressed | On |

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

| Monitor Item | Condition | Value/Status | |
|---------------|--|--|----|
| IGN RLY1 -F/B | Ignition switch in OFF or ACC position | Off | A |
| | Ignition switch in ON position | On | |
| DETE SW -IPDM | Selector lever in any position other than P | Off | B |
| | Selector lever in P position | On | |
| 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 | C |
| | <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 | D |
| | Selector lever in P position | On | |
| SFT N -MET | Selector lever in any position other than N | Off | E |
| | Selector lever in N position | On | |
| ENGINE STATE | Engine stopped | Stop | F |
| | While the engine stalls | Stall | |
| | At engine cranking | Crank | |
| | Engine running | Run | |
| S/L LOCK-IPDM | NOTE: The item is indicated but not monitored. | Off | G |
| S/L UNLK-IPDM | NOTE: The item is indicated but not monitored. | Off | H |
| S/L RELAY-REQ | NOTE: The item is indicated but not monitored. | Off | I |
| VEH SPEED 1 | While driving | Equivalent to speedometer reading | J |
| VEH SPEED 2 | While driving | Equivalent to speedometer reading | |
| DOOR STAT-DR | Driver door is locked | LOCK | K |
| | Wait with selective UNLOCK operation (60 seconds) | READY | |
| | Driver door is unlocked | UNLOCK | |
| DOOR STAT-AS | Passenger door is locked | LOCK | WW |
| | Wait with selective UNLOCK operation (60 seconds) | READY | |
| | Passenger door is unlocked | UNLOCK | |
| ID OK FLAG | Driver side door is open after ignition switch is turned OFF (Shift position is in the P position) | Reset | M |
| | Ignition switch ON | Set | |
| PRMT ENG STRT | The engine start is prohibited | Reset | N |
| | The engine start is permitted | Set | |
| PRMT RKE STRT | NOTE: The item is indicated, but not monitored. | Reset | O |
| KEY SW -SLOT | The Intelligent Key is not inserted into key slot | Off | P |
| | 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 | During the operation of the Intelligent Key | Operation frequency of the Intelligent Key | |

BCM (BODY CONTROL MODULE)

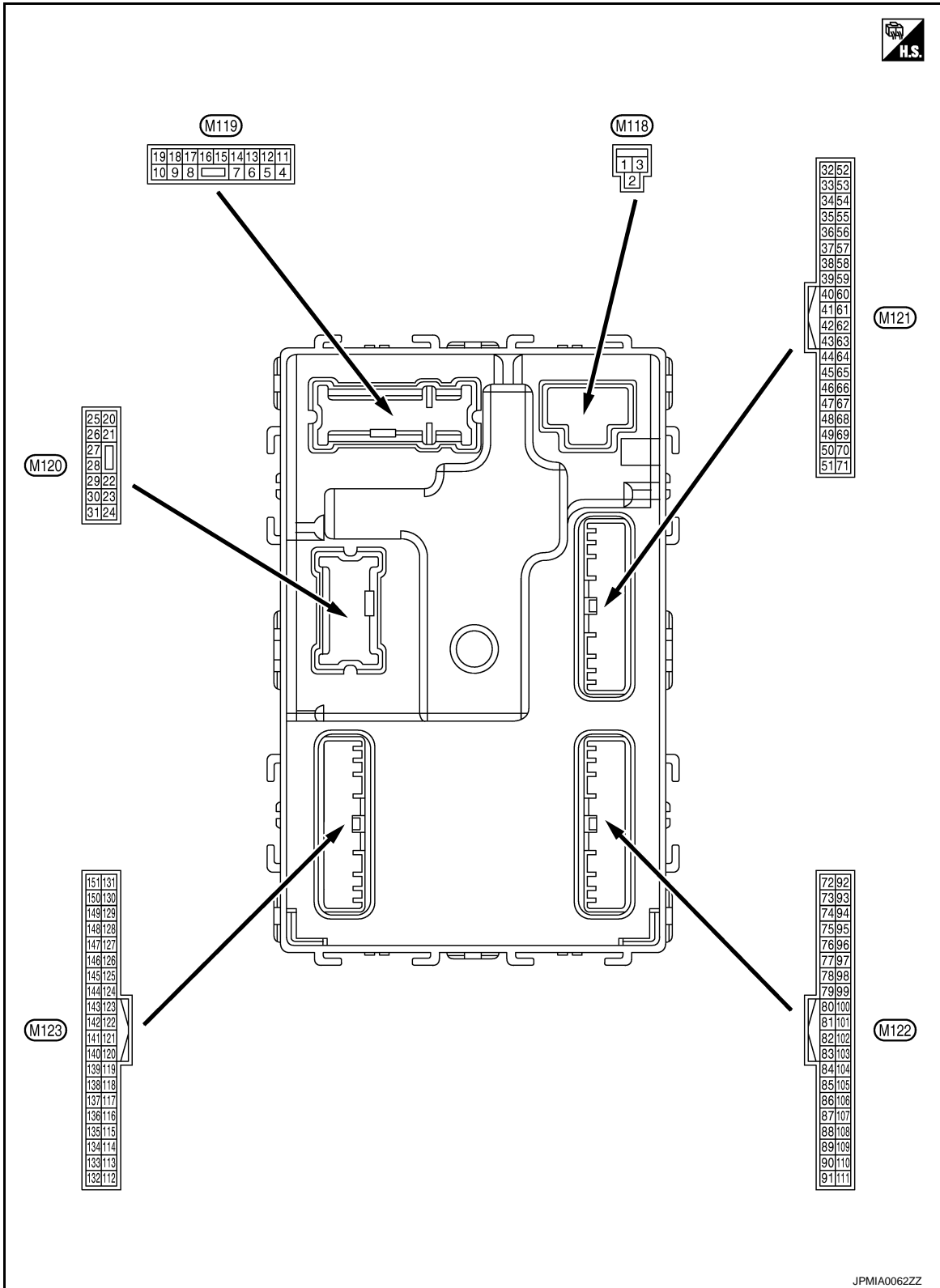
< ECU DIAGNOSIS INFORMATION >

| Monitor Item | Condition | Value/Status |
|----------------|---|-------------------------------|
| CONFIRM ID ALL | The key ID that the key slot receives is not recognized by any key ID registered to BCM. | Yet |
| | The key ID that the key slot receives is recognized by any key ID registered to BCM. | Done |
| CONFIRM ID4 | The key ID that the key slot receives is not recognized by the fourth key ID registered to BCM. | Yet |
| | The key ID that the key slot receives is recognized by the fourth key ID registered to BCM. | Done |
| CONFIRM ID3 | The key ID that the key slot receives is not recognized by the third key ID registered to BCM. | Yet |
| | The key ID that the key slot receives is recognized by the third key ID registered to BCM. | Done |
| CONFIRM ID2 | The key ID that the key slot receives is not recognized by the second key ID registered to BCM. | Yet |
| | The key ID that the key slot receives is recognized by the second key ID registered to BCM. | Done |
| CONFIRM ID1 | The key ID that the key slot receives is not recognized by the first key ID registered to BCM. | Yet |
| | The key ID that the key slot receives is recognized by the first key ID registered to BCM. | Done |
| TP 4 | The ID of fourth Intelligent Key is not registered to BCM | Yet |
| | The ID of fourth Intelligent Key is registered to BCM | Done |
| TP 3 | The ID of third Intelligent Key is not registered to BCM | Yet |
| | The ID of third Intelligent Key is registered to BCM | Done |
| TP 2 | The ID of second Intelligent Key is not registered to BCM | Yet |
| | The ID of second Intelligent Key is registered to BCM | Done |
| TP 1 | The ID of first Intelligent Key is not registered to BCM | Yet |
| | The ID of first Intelligent Key is registered to BCM | Done |
| AIR PRESS FL | Ignition switch ON (Only when the signal from the transmitter is received) | Air pressure of front LH tire |
| 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 |
| 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 |
| | ID of front LH tire transmitter is not registered | Yet |
| ID REGST FR1 | ID of front RH tire transmitter is registered | Done |
| | ID of front RH tire transmitter is not registered | Yet |
| ID REGST RR1 | ID of rear RH tire transmitter is registered | Done |
| | ID of rear RH tire transmitter is not registered | Yet |
| ID REGST RL1 | ID of rear LH tire transmitter is registered | Done |
| | 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 |
| | Tire pressure warning alarm is sounding | On |

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

TERMINAL LAYOUT

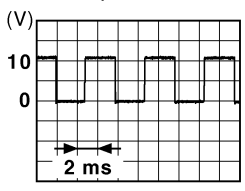


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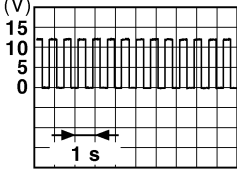
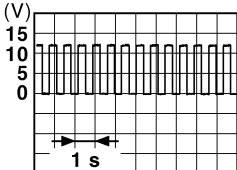
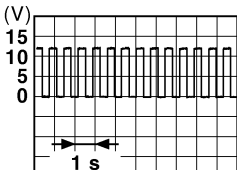
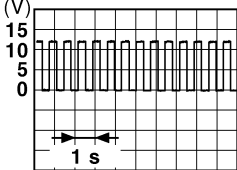
BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

| 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 (IGN) | 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 (Ac- tuator 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 brighten- ing/dimming level is in the neutral position.</p>  <p style="text-align: right; font-size: small;">JSNIA0010GB</p> |
| 15 (Y) | Ground | ACC indicator lamp | Output | Ignition switch | OFF (LOCK indicator is not illuminated) | Battery voltage |
| | | | | | ACC | 0 V |

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

| 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 | A |
| | | | | | Turn signal switch RH |  6.5 V | B |
| 18 (O) | Ground | Turn signal LH (Front and side) | Output | Ignition switch ON | Turn signal switch OFF | 0 V | C |
| | | | | | Turn signal switch LH |  6.5 V | D |
| 19 (P) | Ground | Interior room lamp control | Output | Interior room lamp | OFF | 12 V | E |
| | | | | | ON | 0 V | F |
| 20 (V) | Ground | Turn signal RH (Rear) | Output | Ignition switch ON | Turn signal switch OFF | 0 V | G |
| | | | | | Turn signal switch RH |  6.5 V | H |
| 23 (L) ^{*1} (Y) ^{*2} | Ground | Back door/Trunk lid open | Output | Back door/ Trunk lid | OPEN (Back door/Trunk lid opener actuator is activated) | 12 V | I |
| | | | | | Other than OPEN (Back door/Trunk lid opener actuator is not activated) | 0 V | J |
| 24 ^{*8} (O) | Ground | Rear fog lamp | Output | Rear fog lamp | OFF | 0 V | K |
| | | | | | 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/Trunk room lamp | Output | Luggage room/ Trunk room lamp | ON | 0 V | |
| | | | | | OFF | 12 V | |

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BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

| Terminal No. (Wire color) | | Description | | Condition | Value (Approx.) |
|------------------------------|--------|-------------------------------------|------------------|---|---|
| + | - | Signal name | Input/ Output | | |
| 34 (G) | Ground | Luggage room/Trunk room antenna (-) | Output | Ignition switch OFF | <p style="text-align: right; font-size: small;">JMKIA0062GB</p> |
| | | | | When Intelligent Key is not in the passenger compartment | <p style="text-align: right; font-size: small;">JMKIA0063GB</p> |
| 35 (R) | Ground | Luggage room/Trunk room antenna (+) | Output | Ignition switch OFF | <p style="text-align: right; font-size: small;">JMKIA0062GB</p> |
| | | | | When Intelligent Key is not in the passenger compartment | <p style="text-align: right; font-size: small;">JMKIA0063GB</p> |
| 38 (B) | Ground | Rear bumper antenna (-) | Output | When the back door/trunk lid door request switch is operated with ignition switch OFF | <p style="text-align: right; font-size: small;">JMKIA0062GB</p> |
| | | | | When Intelligent Key is not in the antenna detection area | <p style="text-align: right; font-size: small;">JMKIA0063GB</p> |

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

| Terminal No. (Wire color) | | Description | | Condition | Value (Approx.) |
|------------------------------|--------|---|------------------|---|---|
| + | - | Signal name | Input/ Output | | |
| 39 (W) | Ground | Rear bumper antenna (+) | Output | When Intelligent Key is in the antenna detection area | <p>JMKIA0062GB</p> |
| | | | | When the back door/trunk lid door request switch is operated with ignition switch OFF | <p>JMKIA0063GB</p> |
| 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 |
| 60 (BR) | Ground | Push-button ignition switch (Push switch) | Input | Push-button ignition switch (push switch) | Pressed: 0 V |
| | | | | | Not pressed: Battery voltage |
| 61 (W) | Ground | Back door/Trunk Lid door request switch | Input | Back door/Trunk lid door request switch | ON (Pressed): 0 V |
| | | | | | OFF (Not pressed) |
| 64 (G) | Ground | Intelligent Key warning buzzer | Output | Intelligent Key warning buzzer | Sounding: 0 V |
| | | | | | Not sounding: 12 V |
| 66 (R) | Ground | Back door/Trunk room lamp switch | Input | Back door/Trunk room lamp switch | OFF (Door close) |
| | | | | | ON (Door open): 0 V |

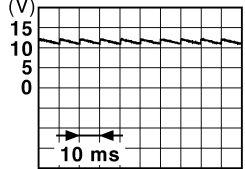
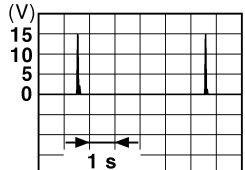
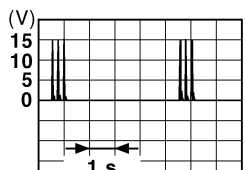
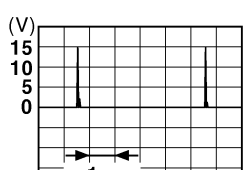
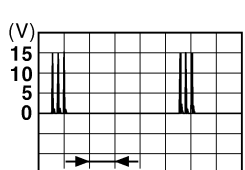
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BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

| Terminal No. (Wire color) | | Description | | Condition | Value (Approx.) | |
|------------------------------|--------|--|------------------|--|---|---|
| + | - | Signal name | Input/ Output | | | |
| 67 (GR) | Ground | Back door/Trunk lid opener switch | Input | Back door/ Trunk lid open- er switch | Pressed | 0 V |
| | | | | Not pressed |  <p style="text-align: right; font-size: small;">JPMIA0011GB</p> | |
| 72 (L) | Ground | Room antenna 2 (-) (Center console) | Output | Ignition switch OFF | When Intelligent Key is in the passenger compart- ment |  <p style="text-align: right; font-size: small;">JMKIA0062GB</p> |
| | | | | When Intelligent Key is not in the passenger compart- ment |  <p style="text-align: right; font-size: small;">JMKIA0063GB</p> | |
| 73 (P) | Ground | Room antenna 2 (+) (Center console) | Output | Ignition switch OFF | When Intelligent Key is in the passenger compart- ment |  <p style="text-align: right; font-size: small;">JMKIA0062GB</p> |
| | | | | When Intelligent Key is not in the passenger compart- ment |  <p style="text-align: right; font-size: small;">JMKIA0063GB</p> | |

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

| 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 | <p style="text-align: right; font-size: small;">JMkia0062GB</p> |
| | | | | When the passenger door request switch is operated with ignition switch OFF | <p style="text-align: right; font-size: small;">JMkia0063GB</p> |
| 75 (BR) | Ground | Passenger door antenna (+) | Output | When Intelligent Key is in the antenna detection area | <p style="text-align: right; font-size: small;">JMkia0062GB</p> |
| | | | | When the passenger door request switch is operated with ignition switch OFF | <p style="text-align: right; font-size: small;">JMkia0063GB</p> |
| 76 (V) | Ground | Driver door antenna (-) | Output | When Intelligent Key is in the antenna detection area | <p style="text-align: right; font-size: small;">JMkia0062GB</p> |
| | | | | When the driver door request switch is operated with ignition switch OFF | <p style="text-align: right; font-size: small;">JMkia0063GB</p> |

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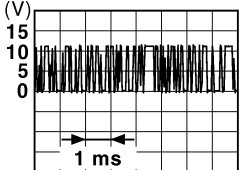
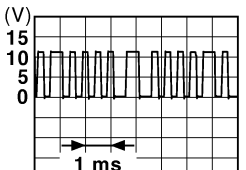

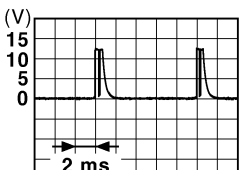

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

| 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 | <p style="text-align: right; font-size: small;">JMKIA0062GB</p> | |
| | | | | When the driver door request switch is oper- ated with igni- tion switch OFF | When Intelligent Key is not in the antenna detection area | <p style="text-align: right; font-size: small;">JMKIA0063GB</p> |
| 78*2 (L) | Ground | Room antenna 1 (-) (Instrument panel) | Output | Ignition switch OFF | When Intelligent Key is in the passenger compart- ment | <p style="text-align: right; font-size: small;">JMKIA0062GB</p> |
| | | | | | When Intelligent Key is not in the passenger compart- ment | <p style="text-align: right; font-size: small;">JMKIA0063GB</p> |
| 79*2 (R) | Ground | Room antenna 1 (+) (Instrument panel) | Output | Ignition switch OFF | When Intelligent Key is in the passenger compart- ment | <p style="text-align: right; font-size: small;">JMKIA0062GB</p> |
| | | | | | When Intelligent Key is not in the passenger compart- ment | <p style="text-align: right; font-size: small;">JMKIA0063GB</p> |

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >


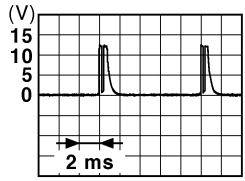
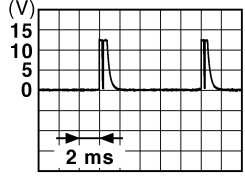
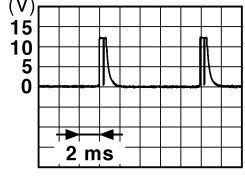
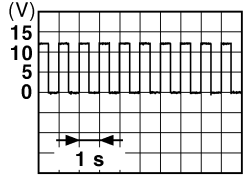
| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) |
|------------------------------|--------|---|------------------|---|--|--|
| + | - | Signal name | Input/ Output | | | |
| 80 (GR) | Ground | NATS antenna amp. | Input/ Output | During waiting | Ignition switch is pressed while inserting the Intelligent Key into the key slot. | Just after pressing ignition switch. Pointer of tester should move. |
| 81 (W) | Ground | NATS antenna amp. | Input/ Output | During waiting | Ignition switch is pressed while inserting the Intelligent Key into the key slot. | Just after pressing ignition switch. Pointer of tester should move. |
| 82 (R) | 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 (front) communication | Input/ Output | During waiting | |  <p style="text-align: right; font-size: small;">JMKIA0064GB</p> |
| | | | | When operating either button on the Intelligent Key | |  <p style="text-align: right; font-size: small;">JMKIA0065GB</p> |
| 87 (BR) | Ground | Combination switch INPUT 5 | Input | Combination switch | All switches OFF (Wiper intermittent dial 4) |  <p style="text-align: right; font-size: small;">JPMIA0041GB</p> <p style="text-align: center;">1.4 V</p> |
| | | | | | Rear fog lamp switch ON (Wiper intermittent dial 4) |  <p style="text-align: right; font-size: small;">JPMIA0038GB</p> <p style="text-align: center;">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 style="text-align: right; font-size: small;">JPMIA0040GB</p> <p style="text-align: center;">1.3 V</p> |

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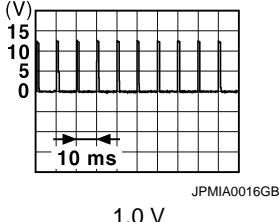
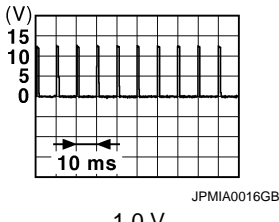
BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

| 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 style="text-align: right; font-size: small;">JPMA0041GB</p> <p style="text-align: center;">1.4 V</p> |
| | | | | | Lighting switch HI (Wiper intermittent dial 4) |  <p style="text-align: right; font-size: small;">JPMA0036GB</p> <p style="text-align: center;">1.3 V</p> |
| | | | | | Lighting switch 2ND (Wiper intermittent dial 4) |  <p style="text-align: right; font-size: small;">JPMA0037GB</p> <p style="text-align: center;">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 style="text-align: right; font-size: small;">JPMA0040GB</p> <p style="text-align: center;">1.3 V</p> |
| 90 (P) | Ground | CAN-L | Input/ Output | — | — | |
| 91 (L) | Ground | CAN-H | Input/ Output | — | — | |
| 92 (LG) | Ground | Key slot illumination | Output | Key slot illumina- tion | OFF | 0 V |
| | | | | | Blinking |  <p style="text-align: right; font-size: small;">JPMA0015GB</p> <p style="text-align: center;">6.5 V</p> |
| 93 (V) | Ground | ON indicator lamp | Output | Ignition switch | OFF (LOCK indicator is not illuminated) | Battery voltage |
| | | | | | ON | 0 V |

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

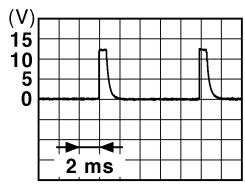
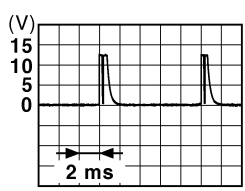

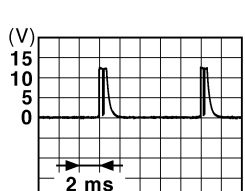
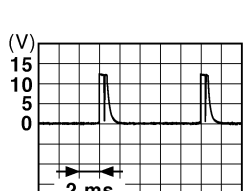
| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) |
|------------------------------|--------|---|------------------|-------------------------------|------------------------------------|--|
| | | Signal name | Input/ Output | | | |
| + | - | | | | | |
| 95 (O) | Ground | ACC relay control | Output | Ignition switch | OFF | 0 V |
| | | | | | ACC or ON | 12 V |
| 96*3 (Y) | Ground | A/T shift selector (Detention switch) power supply | Output | — | | 12 V |
| 99*6 (R) | 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) | | 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) |  <p style="text-align: center;">1.0 V</p> |
| 101 (Y) | Ground | Driver door request switch | Input | Driver door request switch | ON (Pressed) | 0 V |
| | | | | | OFF (Not pressed) |  <p style="text-align: center;">1.0 V</p> |
| 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 (front) power supply | Output | Ignition switch OFF | | 12 V |

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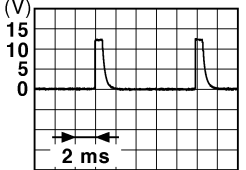

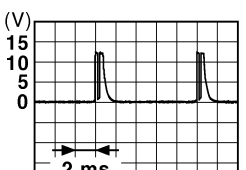
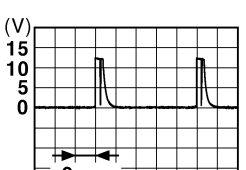
BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

| 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) | All switches OFF |  <p style="text-align: right;">1.4 V</p> |
| | | | | | Turn signal switch LH |  <p style="text-align: right;">1.3 V</p> |
| | | | | | Turn signal switch RH |  <p style="text-align: right;">1.3 V</p> |
| | | | | | Front wiper switch LO |  <p style="text-align: right;">1.3 V</p> |
| | | | | | Front washer switch ON |  <p style="text-align: right;">1.3 V</p> |

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

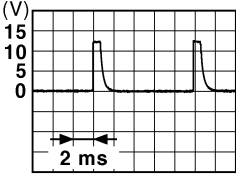



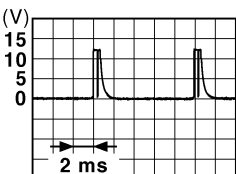
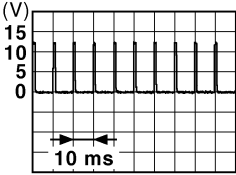
| Terminal No. (Wire color) | | Description | | Condition | Value (Approx.) |
|------------------------------|--------|-------------------------------|------------------|-----------------------|--|
| + | - | Signal name | Input/ Output | | |
| 108 (R) | Ground | Combination switch INPUT 4 | Input | Combination switch | All switches OFF (Wiper intermittent dial 4)  1.4 V |
| | | | | | Lighting switch AUTO (Wiper intermittent dial 4)  1.3 V |
| | | | | | Lighting switch 1ST (Wiper intermittent dial 4)  1.3 V |
| | | | | | 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  1.3 V |

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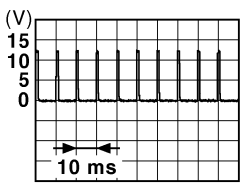
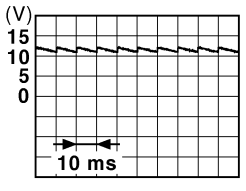
BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

| Terminal No. (Wire color) | | Description | | Condition | Value (Approx.) | |
|------------------------------|--------|-------------------------------|------------------|--|---|---|
| + | - | Signal name | Input/ Output | | | |
| 109 (Y) | Ground | Combination switch INPUT 2 | Input | Combination switch (Wiper intermittent dial 4) | All switches OFF |  <p style="text-align: right;">1.4 V</p> |
| | | | | | Lighting switch PASS |  <p style="text-align: right;">1.3 V</p> |
| | | | | | Lighting switch 2ND |  <p style="text-align: right;">1.3 V</p> |
| | | | | | Front wiper switch INT |  <p style="text-align: right;">1.3 V</p> |
| | | | | | Front wiper switch HI |  <p style="text-align: right;">1.3 V</p> |
| | | | | | ON | 0 V |
| 110 (P) | Ground | Hazard switch | Input | Hazard switch |  <p style="text-align: right;">1.1 V</p> | |
| | | | | OFF | | |

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

| Terminal No. (Wire color) | | Description | | Condition | Value (Approx.) |
|------------------------------|--------|--|------------------|---|---|
| | | Signal name | Input/ Output | | |
| + | - | | | | |
| 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*4 (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 |
| 115*9 (O) | — | — | — | — | — |
| 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)  1.1 V |
| | | | | | 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 |
| 124 (LG) | Ground | Passenger door switch | Input | Passenger door switch | OFF (Door close)  11.8 V |
| | | | | | ON (Door open) 0 V |

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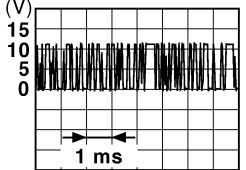
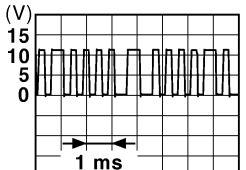
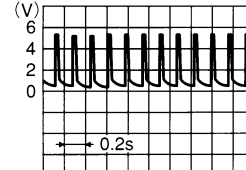
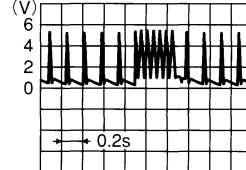
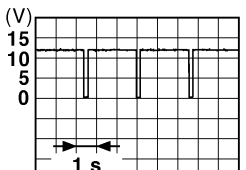
BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

| Terminal No. (Wire color) | | Description | | Condition | Value (Approx.) |
|------------------------------|--------|---|------------------|--------------------------------|---|
| + | - | Signal name | Input/ Output | | |
| 129*2 (O) | Ground | Trunk lid opener cancel switch | Input | Trunk lid opener cancel switch | CANCEL JPMA0012GB 1.1 V |
| | | | | ON | 0 V |
| 130*7 (L) | Ground | Rear window defogger switch | Input | Ignition switch ON | Rear window defogger switch OFF JPMA0012GB 1.1 V |
| | | | | Rear window defogger switch ON | 0 V |
| 132 (Y)*1 (V)*2 | Ground | Power window switch and soft top control unit communication | Input/ Output | Ignition switch ON | JPMA0013GB 10.2 V |
| | | | | Ignition switch OFF or ACC | 12 V |
| 133 (G) | Ground | Push-button ignition switch illumination | Output | 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. JPMA0159GB |
| | | | | 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 |

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

| Terminal No. (Wire color) | | Description | | Condition | Value (Approx.) | |
|------------------------------|--------|---|-----------------------|--|---|---|
| | | Signal name | Input/ Output | | | |
| + | - | | | | | |
| 139 (L) | Ground | Tire pressure receiver communication | Input/ Output | Ignition switch OFF (Remote key-less entry receiver communication) | During waiting |  |
| | | | | | When operating either button on the Intelligent Key |  |
| | | | | Ignition switch ON (Tire pressure receiver communication) | Standby state |  |
| | | | | When receiving the signal from the transmitter |  | |
| 140*5 (G) | Ground | Selector lever P/N position (A/T models) | Input | Selector lever | P or N position | 12 V |
| | | | | | Except P and N positions | 0 V |
| | | Park/neutral position switch (Coupe M/T models with Synchro-Rev Match mode) | Ignition switch ON | Control lever in neutral position | Battery voltage | |
| | | | | Control lever in any position other than neutral | 0 V | |
| 141 (Y) | Ground | Security indicator lamp | Output | Security indicator lamp | ON | 0 V |
| | | | | | Blinking |  |
| | | | | | OFF | 11.3 V |
| | | | | | 12 V | |

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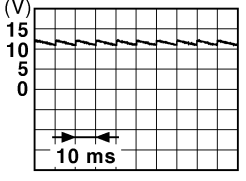
BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

| Terminal No. (Wire color) | | Description | | Condition | Value (Approx.) | |
|---|--------|--------------------------------|------------------|---|---|-----|
| + | - | Signal name | Input/ Output | | | |
| 142 (O) | Ground | Combination switch OUTPUT 5 | Output | Combination switch (Wiper intermit- tent dial 4) | All switches OFF | 0 V |
| | | | | | Lighting switch 1ST | |
| | | | | | Lighting switch HI | |
| | | | | | Lighting switch 2ND | |
| | | | | | Turn signal switch RH | |
| | | | | | 10.7 V | |
| 143 (P) | Ground | Combination switch OUTPUT 1 | Output | Combination switch | All switches OFF (Wiper intermittent dial 4) | 0 V |
| | | | | | Front wiper switch HI (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 2 • Wiper intermittent dial 3 • Wiper intermittent dial 6 • Wiper intermittent dial 7 | | | | | 10.7 V | |
| 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 | | | | | 10.7 V | |
| 145 (L) | Ground | Combination switch OUTPUT 3 | Output | Combination switch (Wiper intermit- tent dial 4) | All switches OFF | 0 V |
| | | | | | Front wiper switch INT | |
| | | | | | Front wiper switch LO | |
| | | | | | Lighting switch AUTO | |
| | | | | | Rear fog lamp switch ON | |
| | | | | | 10.7 V | |
| 146 (SB) | Ground | Combination switch OUTPUT 4 | Output | Combination switch (Wiper intermit- tent dial 4) | All switches OFF | 0 V |
| | | | | | Lighting switch 2ND | |
| | | | | | Lighting switch PASS | |
| | | | | | Turn signal switch LH | |
| | | | | | 10.7 V | |

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

| Terminal No. (Wire color) | | Description | | Condition | Value (Approx.) | |
|------------------------------|--------|------------------------------------|------------------|----------------------|--------------------|---|
| | | Signal name | Input/ Output | | | |
| + | - | | | | | |
| 150 (GR) | Ground | Driver door switch | Input | Driver door switch | OFF (Door close) |  <p style="text-align: center;">11.8 V</p> |
| | | | | ON (Door open) | 0 V | |
| 151 (G) | Ground | Rear window defogger relay control | Output | Rear window defogger | Active | 0 V |
| | | | | Not activated | Battery voltage | |

- *1: Coupe models
- *2: Roadster models
- *3: A/T models
- *4: M/T models
- *5: With A/T or coupe models with M/T and SynchroRev Match mode
- *6: With A/T or with M/T without SynchroRev Match mode
- *7: Without NAVI
- *8: With rear fog lamp
- *9: BCM does not use this terminal for control.

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
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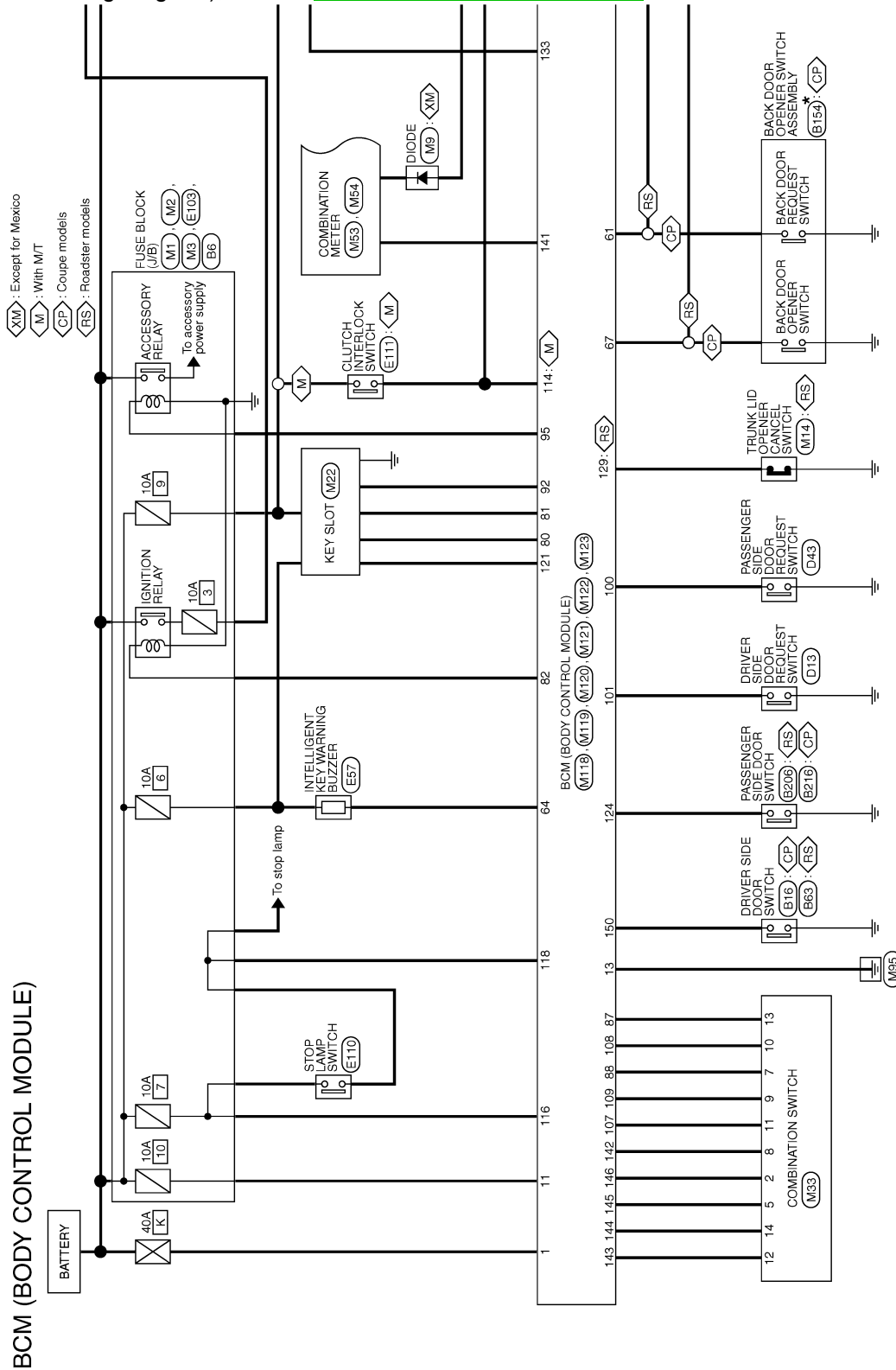
BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

Wiring Diagram - BCM -

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For connector terminal arrangements, harness layouts, and alphabets in a  (option abbreviation; if not described in wiring diagram), refer to [GI-12, "Connector Information"](#).



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

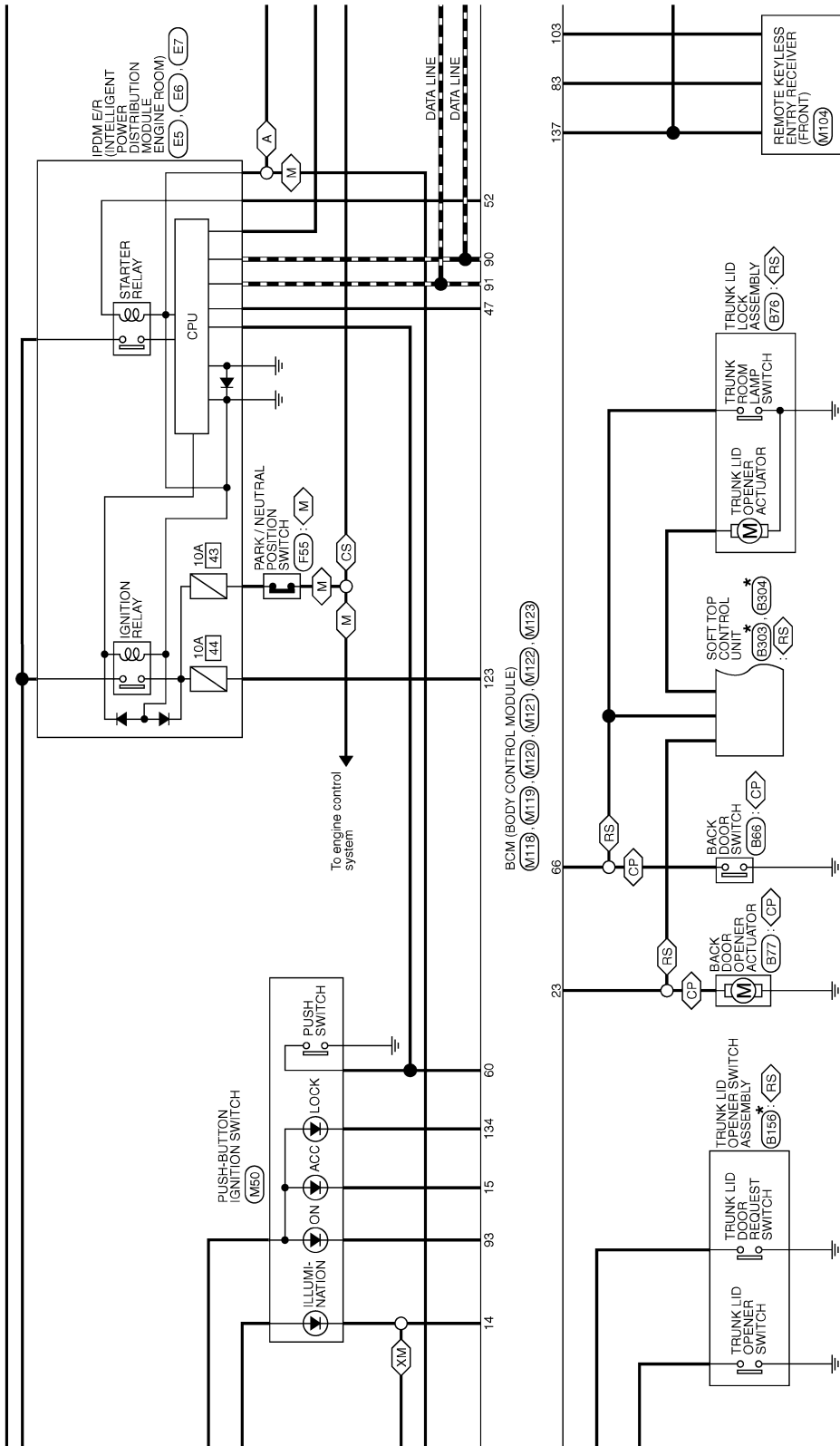
2011/07/19

JRMWC4658GB

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

- XM**: Except for Mexico
- CP**: Coupe models
- A**: With A/T
- RS**: Roadster models
- M**: With M/T
- CS**: Coupe models with M/T and SynchroRev Match mode



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

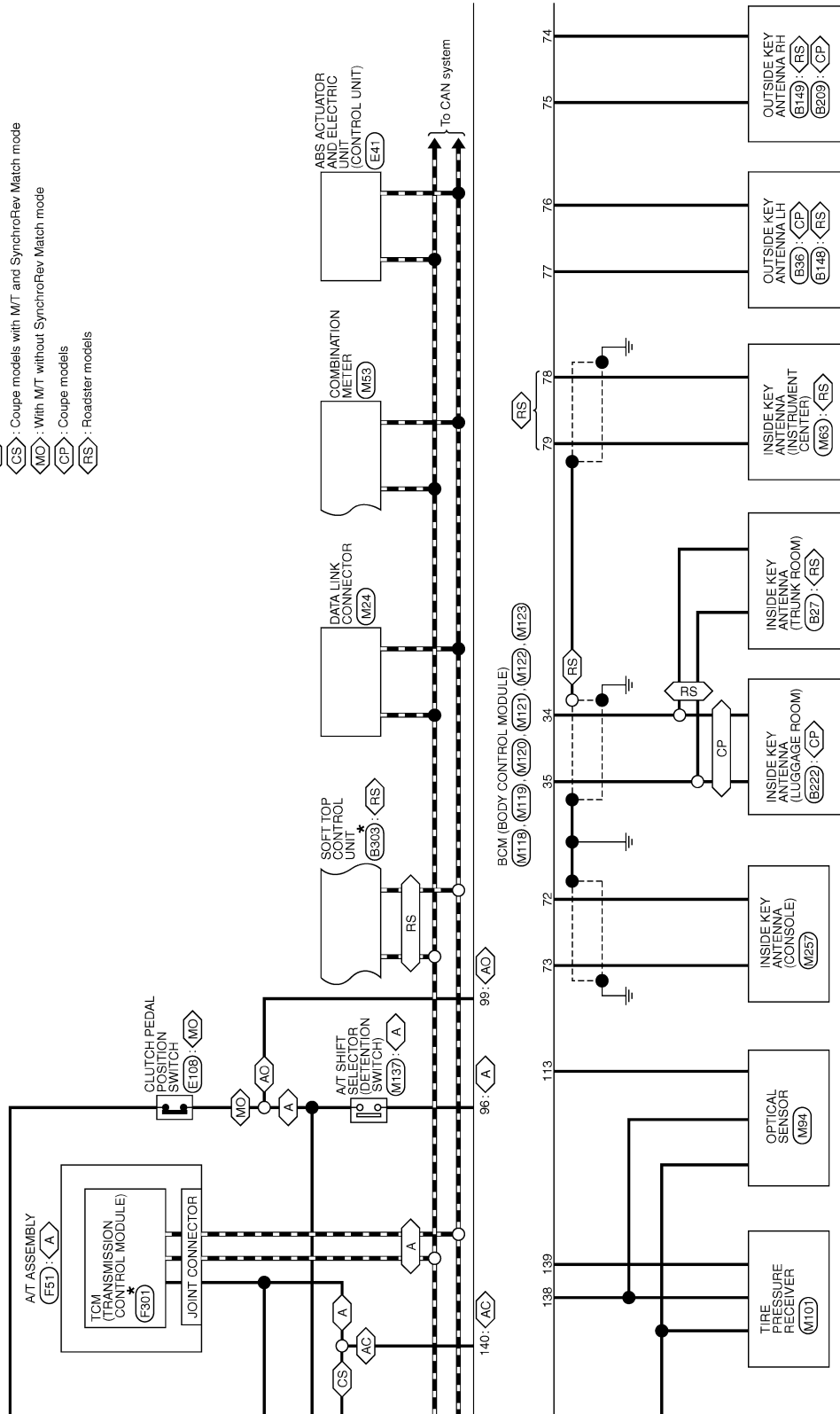
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BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

- : With A/T
- : With A/T or coupe models with M/T and SynchroRev Match mode
- : With A/T or with M/T without SynchroRev Match mode
- : Coupe models with M/T and SynchroRev Match mode
- : With M/T without SynchroRev Match mode
- : Coupe models
- : Roadster models



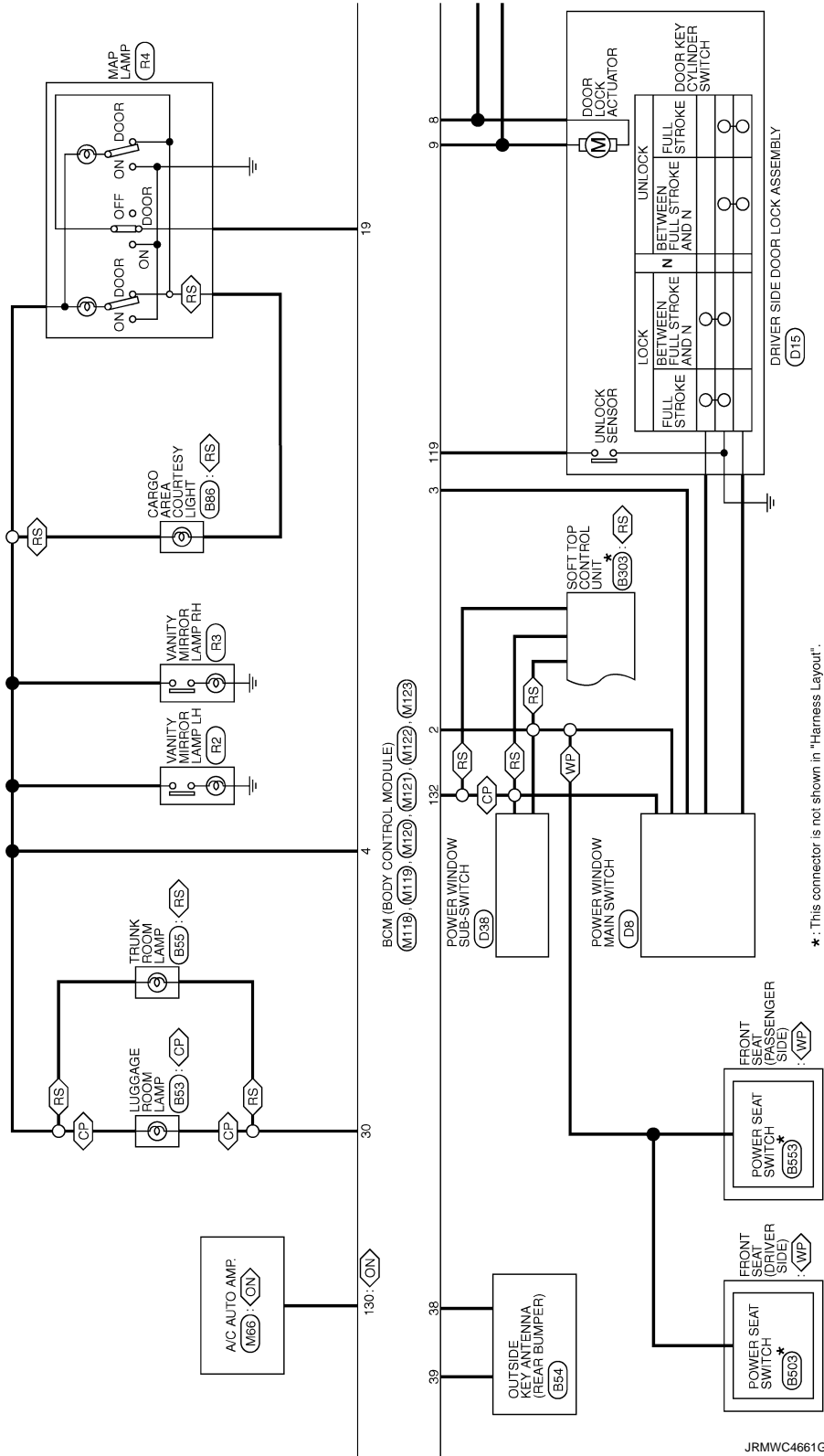
*: This connector is not shown in "Harness Layout".

JRMWC4660GB

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

- ◊ CP : Coupe models
- ◊ RS : Roadster models
- ◊ WP : With power seat
- ◊ ON : Without NAVI



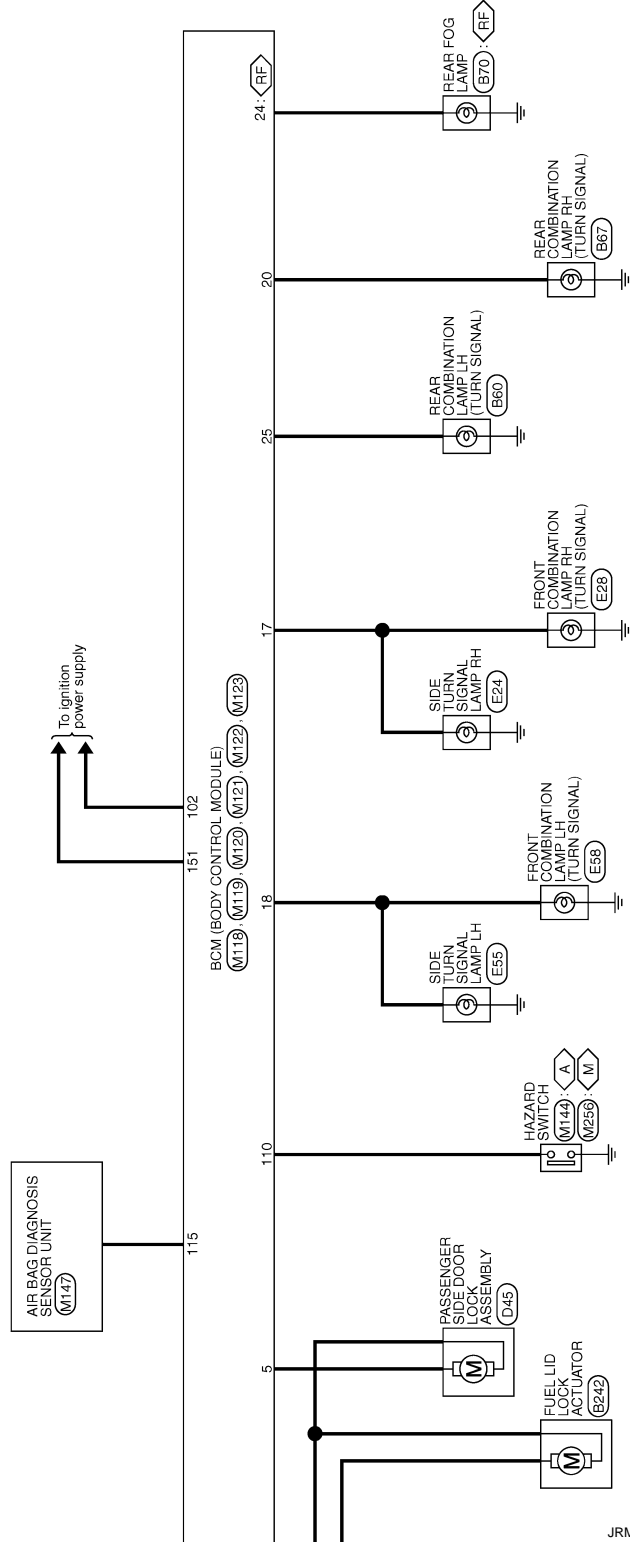
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BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

A : With A/T
 M : With M/T
 RF : With rear fog lamp



JRMWC4662GB

Fail-safe

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FAIL-SAFE CONTROL BY DTC

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

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

| Display contents of CONSULT | Fail-safe | Cancellation |
|-----------------------------|---|--|
| 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 |
| 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 |
| 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) |
| 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) |
| 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 |
| 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) |

DTC Inspection Priority Chart

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

| Priority | DTC |
|----------|---|
| 1 | 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 |

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

| Priority | DTC |
|----------|---|
| 4 | <ul style="list-style-type: none"> • 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 • B2608: STARTER RELAY • B260A: IGNITION RELAY • B260F: ENG STATE SIG LOST • B2614: BCM • B2615: BCM • B2616: BCM • B2617: BCM • B2618: BCM • B261A: PUSH-BTN IGN SW • B261E: VEHICLE TYPE • B26E8: CLUTCH SW • B26EA: KEY REGISTRATION • C1729: VHCL SPEED SIG ERR • U0415: VEHICLE SPEED SIG |
| 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 • C1716: [PRESSDATA ERR] FL • C1717: [PRESSDATA ERR] FR • C1718: [PRESSDATA ERR] RR • C1719: [PRESSDATA ERR] RL • C1734: CONTROL UNIT |
| 6 | <ul style="list-style-type: none"> • B2621: INSIDE ANTENNA • B2622: INSIDE ANTENNA • B2623: INSIDE ANTENNA |

DTC Index

INFOID:000000007798462

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-19, "COMMON ITEM : CONSULT 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 warn- ing lamp ON | Reference |
|--|-----------|--|---------------------------------------|---|------------------------|
| No DTC is detected. further testing may be required. | — | — | — | — | — |
| U1000: CAN COMM CIRCUIT | — | — | — | — | BCS-46 |
| U1010: CONTROL UNIT (CAN) | — | — | — | — | BCS-47 |
| U0415: VEHICLE SPEED SIG | — | — | — | — | BCS-48 |

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

| 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 | Reference | |
|---------------------------|-----------|--|---------------------------------|---------------------------------------|--|----|
| B2190: NATS ANTENNA AMP | × | — | — | — | SEC-42 | A |
| B2191: DIFFERENCE OF KEY | × | — | — | — | SEC-45 | B |
| B2192: ID DISCORD BCM-ECM | × | — | — | — | SEC-46 | C |
| B2193: CHAIN OF BCM-ECM | × | — | — | — | SEC-48 | |
| B2195: ANTI SCANNING | × | — | — | — | SEC-49 | D |
| B2553: IGNITION RELAY | — | × | — | — | PCS-48 | E |
| B2555: STOP LAMP | — | × | — | — | SEC-50 | |
| B2556: PUSH-BTN IGN SW | — | × | × | — | SEC-52 | F |
| B2557: VEHICLE SPEED | × | × | × | — | SEC-54 | G |
| B2560: STARTER CONT RELAY | × | × | × | — | SEC-55 | |
| B2562: LOW VOLTAGE | — | × | — | — | BCS-49 | H |
| B2601: SHIFT POSITION | × | × | × | — | SEC-56 | I |
| B2602: SHIFT POSITION | × | × | × | — | SEC-59 | J |
| B2603: SHIFT POSI STATUS | × | × | × | — | SEC-62 | |
| B2604: PNP SW | × | × | × | — | SEC-65 | K |
| B2605: PNP SW | × | × | × | — | SEC-67 | |
| B2608: STARTER RELAY | × | × | × | — | SEC-69 | |
| B260A: IGNITION RELAY | × | × | × | — | PCS-50 | |
| B260F: ENG STATE SIG LOST | × | × | × | — | SEC-71 | |
| B2614: BCM | — | × | × | — | PCS-52 | |
| B2615: BCM | — | × | × | — | PCS-55 | |
| B2616: BCM | — | × | × | — | PCS-58 | |
| B2617: BCM | × | × | × | — | SEC-75 | |
| B2618: BCM | × | × | × | — | PCS-61 | |
| B261A: PUSH-BTN IGN SW | — | × | × | — | PCS-62 | |
| B261E: VEHICLE TYPE | × | × | × (Turn ON for 15 seconds) | — | SEC-78 | WW |
| B2621: INSIDE ANTENNA | — | × | — | — | DLK-228 | |
| B2622: INSIDE ANTENNA | — | × | — | — | • DLK-59 (Coupe) • DLK-230 (Roadster) | M |
| B2623: INSIDE ANTENNA | — | × | — | — | • DLK-61 (Coupe) • DLK-232 (Roadster) | N |
| B26E8: CLUTCH SW | × | × | × | — | SEC-72 | O |
| B26EA: KEY REGISTRATION | — | × | × (Turn ON for 15 seconds) | — | SEC-74 | |
| C1704: LOW PRESSURE FL | — | — | — | × | WT-20 | P |
| C1705: LOW PRESSURE FR | — | — | — | × | | |
| C1706: LOW PRESSURE RR | — | — | — | × | | |
| C1707: LOW PRESSURE RL | — | — | — | × | | |

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

| CONSULT display | Fail-safe | Freeze Frame Data •Vehicle Speed •Odo/Trip Meter •Vehicle condition | Intelligent Key warning lamp ON | Tire pressure monitor warn- ing lamp ON | Reference |
|---------------------------|-----------|--|---------------------------------------|---|-----------------------|
| C1708: [NO DATA] FL | — | — | — | × | WT-22 |
| C1709: [NO DATA] FR | — | — | — | × | |
| C1710: [NO DATA] RR | — | — | — | × | |
| C1711: [NO DATA] RL | — | — | — | × | |
| C1716: [PRESSDATA ERR] FL | — | — | — | × | WT-25 |
| C1717: [PRESSDATA ERR] FR | — | — | — | × | |
| C1718: [PRESSDATA ERR] RR | — | — | — | × | |
| C1719: [PRESSDATA ERR] RL | — | — | — | × | |
| C1729: VHCL SPEED SIG ERR | — | — | — | × | WT-27 |
| C1734: CONTROL UNIT | — | — | — | × | WT-29 |

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

< ECU DIAGNOSIS INFORMATION >

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

Reference Value

INFOID:000000007798463

VALUES ON THE DIAGNOSIS TOOL

CONSULT 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)

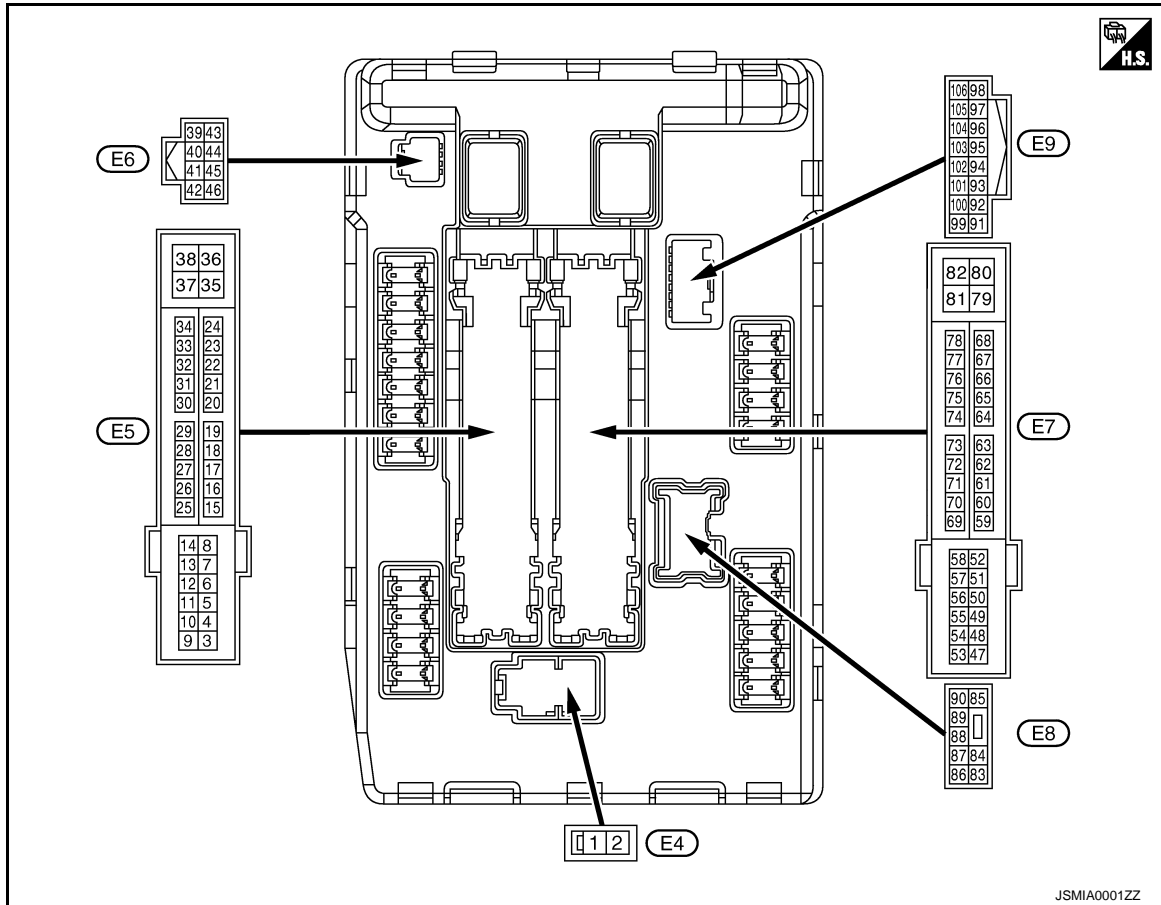
< ECU DIAGNOSIS INFORMATION >

| Monitor Item | Condition | Value/Status |
|---|---|-----------------|
| ST/INHI RLY | Ignition switch ON | Off |
| | At engine cranking | INHI ON → ST ON |
| | The status of starter relay or starter control relay cannot be recognized by the battery voltage malfunction, etc. when the starter relay is ON and the starter control relay is OFF | UNKWN |
| DETENT SW | Ignition switch ON <ul style="list-style-type: none"> • 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 | NOTE: The item is indicated, but not monitored. | Off |
| S/L STATE | NOTE: The item is indicated, but not monitored. | UNLOCK |
| 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 |

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

< ECU DIAGNOSIS INFORMATION >

TERMINAL LAYOUT



PHYSICAL VALUES

| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) |
|------------------------------|--------|---|------------------|---|------------------------|--------------------|
| + | - | Signal name | Input/ Output | | | |
| 1 (W) | Ground | Battery power supply | Input | Ignition switch OFF | | Battery voltage |
| 2 (L) | Ground | Battery power supply | Input | Ignition switch OFF | | Battery voltage |
| 4 (V) | Ground | Front wiper LO | Output | Ignition switch OFF | Front wiper switch OFF | 0 V |
| | | | | Ignition switch ON | Front wiper switch LO | Battery voltage |
| 5 (L) | Ground | Front wiper HI | Output | Ignition switch OFF | Front wiper switch OFF | 0 V |
| | | | | Ignition switch ON | Front wiper switch HI | Battery voltage |
| 6*1 (R) | Ground | Daytime running light relay | Input | Ignition switch OFF | | Battery voltage |
| 7 (R)*5 (V)*6 | Ground | Illuminations*1 | Output | Ignition switch ON | Lighting switch OFF | 0 V |
| | | Tail, license plate lamps & illuminations*2 | | | Lighting switch 1ST | Battery voltage |
| 12 (B/W) | Ground | Ground | — | Ignition switch ON | | 0 V |
| 13 (Y) | Ground | Fuel pump power supply | Output | Approximately 1 second or more after turning the ignition switch ON | | 0 V |
| | | | | <ul style="list-style-type: none"> Approximately 1 second after turning the ignition switch ON Engine running | | Battery voltage |

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

< ECU DIAGNOSIS INFORMATION >

| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) |
|------------------------------|--------|---------------------------------------|------------------|---|---|--------------------|
| + | - | Signal name | Input/ Output | | | |
| 16 (LG) | Ground | Front wiper auto stop | Input | Ignition switch ON | Front wiper stop position | 0 V |
| | | | | | Any position other than front wiper stop position | Battery voltage |
| 19 (W) | Ground | Ignition relay power supply | Output | Ignition switch OFF | | 0 V |
| | | | | Ignition switch ON | | Battery voltage |
| 25 (G) | Ground | Ignition relay power supply | Output | Ignition switch OFF | | 0 V |
| | | | | Ignition switch ON | | Battery voltage |
| 27 (Y) | Ground | Ignition relay monitor | Input | Ignition switch OFF or ACC | | Battery voltage |
| | | | | Ignition switch ON | | 0 V |
| 28 (L) | Ground | Push-button ignition switch | Input | Press the push-button ignition switch | | 0 V |
| | | | | Release the push-button ignition switch | | Battery voltage |
| 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 |
| | | | | | 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 |
| 36 (G) | Ground | Battery power supply | Input | Ignition switch OFF | | Battery voltage |
| 39 (P) | — | CAN-L | Input/ Output | — | | — |
| 40 (L) | — | CAN-H | Input/ Output | — | | — |
| 41 (B/W) | Ground | Ground | — | Ignition switch ON | | 0 V |
| 42 (Y) | Ground | Cooling fan relay control | Input | Ignition switch OFF or ACC | | 0 V |
| | | | | Ignition switch ON | | 0.7 V |
| 43*3 (SB) | Ground | A/T shift selector (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 |
| | | | | | Release the selector button (selector lever P) | 0 V |
| 44 (W) | Ground | Horn relay control | Input | The horn is deactivated | | Battery voltage |
| | | | | The horn is activated | | 0 V |
| 45 (G) | Ground | Anti theft horn relay control | Input | The horn is deactivated | | Battery voltage |
| | | | | The horn is activated | | 0 V |
| 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 |

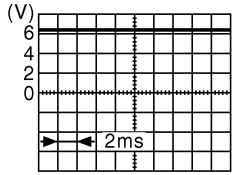
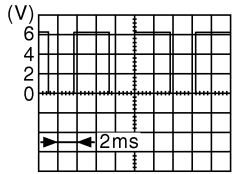
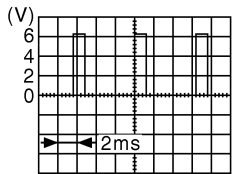
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

< ECU DIAGNOSIS INFORMATION >

| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) | |
|------------------------------|--------|---|------------------|---|--|---|----|
| + | - | Signal name | Input/ Output | | | | |
| 48 (L) | Ground | A/C relay power supply | Output | Engine running | A/C switch OFF | 0 V | A |
| | | | | | A/C switch ON (A/C compressor is operating) | Battery voltage | B |
| 49 (BG) | Ground | ECM relay power supply | Output | Ignition switch OFF (More than a few seconds after turning ignition switch OFF) | | 0 V | C |
| | | | | <ul style="list-style-type: none"> Ignition switch ON Ignition switch OFF (For a few seconds after turning ignition switch OFF) | | Battery voltage | D |
| 51 (Y) | Ground | Ignition relay power supply | Output | Ignition switch OFF | | 0 V | E |
| | | | | Ignition switch ON | | Battery voltage | F |
| 53 (W) | Ground | ECM relay power supply | Output | Ignition switch OFF (More than a few seconds after turning ignition switch OFF) | | 0 V | F |
| | | | | <ul style="list-style-type: none"> Ignition switch ON Ignition switch OFF (For a few seconds after turning ignition switch OFF) | | Battery voltage | G |
| 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 | H |
| | | | | <ul style="list-style-type: none"> Ignition switch ON Ignition switch OFF (For a few seconds after turning ignition switch OFF) | | Battery voltage | I |
| 55 (SB) | Ground | ECM power supply | Output | Ignition switch OFF | | Battery voltage | J |
| 56 (LG) | Ground | Ignition relay power supply | Output | Ignition switch OFF | | 0 V | K |
| | | | | Ignition switch ON | | Battery voltage | |
| 57 (G) | Ground | Ignition relay power supply | Output | Ignition switch OFF | | 0 V | WW |
| | | | | Ignition switch ON | | Battery voltage | |
| 58*3 (P) | Ground | Ignition relay power supply | Output | Ignition switch OFF | | 0 V | M |
| | | | | 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 | N |
| | | | | <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 | |
| 70 (BG) | Ground | Throttle control motor relay control | Output | Ignition switch ON → OFF | | 0 - 1.0 V ↓ Battery voltage ↓ 0 V | P |
| | | | | Ignition switch ON | | 0 - 1.0 V | |

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

< ECU DIAGNOSIS INFORMATION >

| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) |
|------------------------------|--------|--|------------------|---|---|--|
| + | - | Signal name | Input/ Output | | | |
| 72 (GR) | 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 |
| 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 command signal | Output | Ignition switch ON | |  <p style="text-align: right;">JPMIA0001GB</p> <p style="text-align: center;">6.3 V</p> |
| | | | | 40% is set on "ACTIVE TEST", "ALTERNATOR DUTY" of "ENGINE" | |  <p style="text-align: right;">JPMIA0002GB</p> <p style="text-align: center;">3.8 V</p> |
| | | | | 80% is set on "ACTIVE TEST", "ALTERNATOR DUTY" of "ENGINE" | |  <p style="text-align: right;">JPMIA0003GB</p> <p style="text-align: center;">1.4 V</p> |
| 77 (R) | Ground | Fuel pump relay control | Output | <ul style="list-style-type: none"> Approximately 1 second after turning the ignition switch ON Engine running | | 0 - 1.0 V |
| | | | | Approximately 1 second or more after turning 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 | | | | |

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

< ECU DIAGNOSIS INFORMATION >

| 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 (BG) | 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

*5: Coupe models

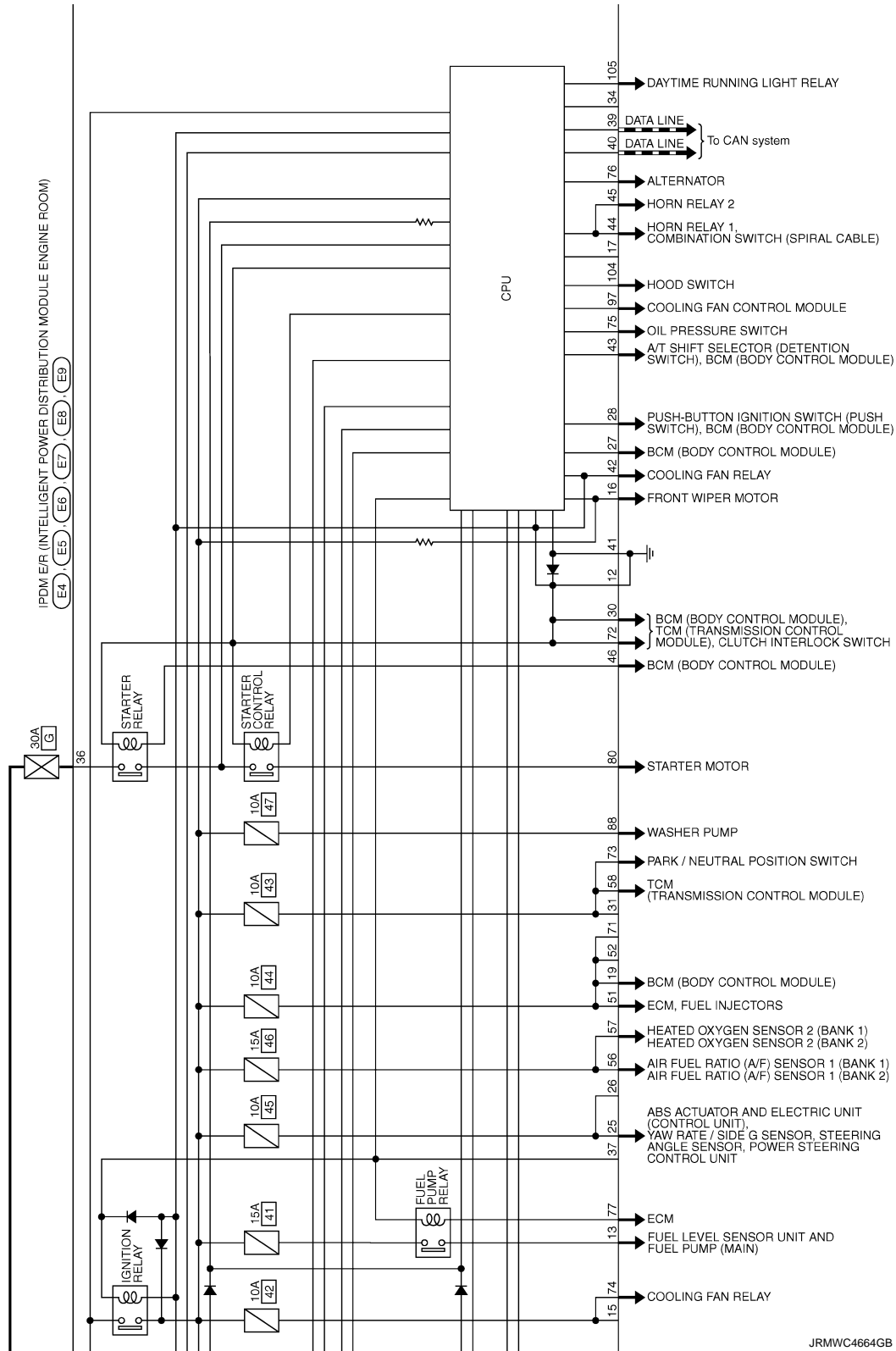
*6: Roadster models

A
B
C
D
E
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WW

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

< ECU DIAGNOSIS INFORMATION >



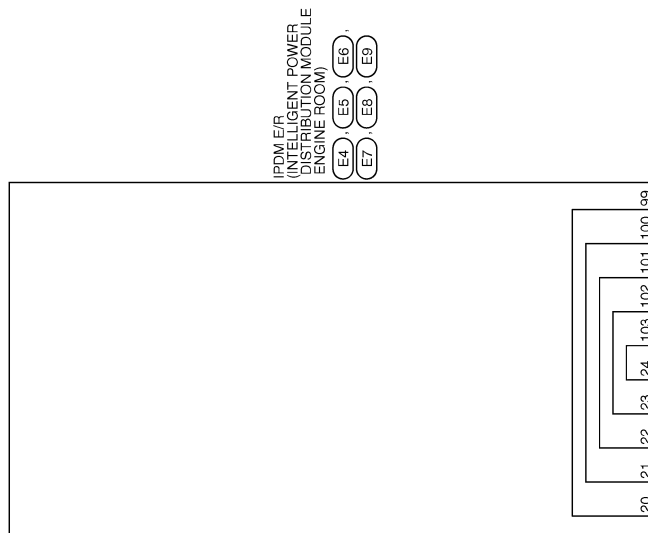
JRMWC4664GB

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

< ECU DIAGNOSIS INFORMATION >



JRMWC4665GB

Fail-safe

INFOID:000000007798465

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 INFORMATION >

| 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*¹ when the ignition switch is turned ON Turns OFF the tail lamp relay and the daytime running light relay*¹ 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 |

*: 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.

| 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 INFORMATION >

| 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:000000007798466

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-16 |
| B2098: IGN RELAY ON | × | PCS-17 |
| B2099: IGN RELAY OFF | — | PCS-18 |
| B210B: START CONT RLY ON | — | SEC-81 |
| B210C: START CONT RLY OFF | — | SEC-82 |
| B210D: STARTER RELAY ON | — | SEC-83 |
| B210E: STARTER RELAY OFF | — | SEC-84 |
| B210F: INTRLCK/PNP SW ON | — | SEC-86 |
| B2110: INTRLCK/PNP SW OFF | — | SEC-88 |

WIPER AND WASHER SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

SYMPTOM DIAGNOSIS

WIPER AND WASHER SYSTEM SYMPTOMS

Symptom Table

INFOID:000000007625701

CAUTION:

Perform the self-diagnosis with CONSULT 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-88, "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-23, "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-88, "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-21, "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-88, "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-78, "Diagnosis Procedure" . | |

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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-88, "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-88, "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-88, "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 |
| BCM | | | — |
| Intermittent control linked with vehicle speed cannot be performed. | | Check the vehicle speed detection wiper setting. Refer to WW-11, "WIPER : CONSULT 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-88, "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 stop position signal circuit Refer to WW-25, "Component Function Check" . | |

NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

NORMAL OPERATING CONDITION

Description

INFOID:000000007625702

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:000000007625703

The front wiper does not operate under any operation conditions.

Diagnosis Procedure

INFOID:000000007625704

1. CHECK WIPER RELAY OPERATION

IPDM E/R AUTO ACTIVE TEST

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

CONSULT 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 | | Existed |
| E42 | 2 | | |

Does continuity exist?

- YES >> GO TO 4.
NO >> Repair the harness or connector.

4. CHECK FRONT WIPER MOTOR OUTPUT VOLTAGE

CONSULT 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 | Ground | Lo | Battery voltage |
| | | | Off | 0 V |
| | 5 | Ground | 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 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-88. "Symptom Table"](#).

Is combination switch normal?

YES >> Replace BCM. Refer to [BCS-92. "Exploded View"](#).

NO >> Repair or replace the applicable parts.

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PRECAUTIONS

< PRECAUTION >

PRECAUTION

PRECAUTIONS

FOR USA AND CANADA

FOR USA AND CANADA : Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

INFOID:000000007625705

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

WARNING:

Always observe the following items for preventing accidental activation.

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision that 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 "SRS AIR BAG".
- 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

WARNING:

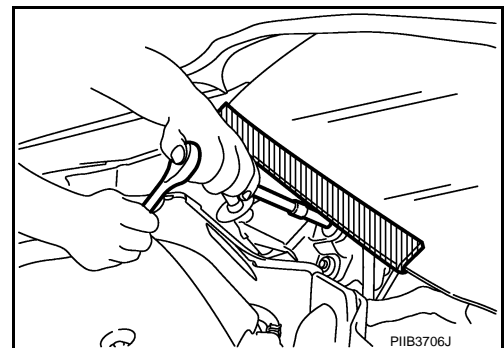
Always observe the following items for preventing accidental activation.

- When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, never use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.
- When using air or electric power tools or hammers, always switch the ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.

FOR USA AND CANADA : Precaution for Procedure without Cowl Top Cover

INFOID:000000007625706

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



FOR USA AND CANADA : Precaution for Battery Service

INFOID:000000007625707

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.

FOR MEXICO

PRECAUTIONS

< PRECAUTION >

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

INFOID:000000007625708

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. Information necessary to service the system safely is included in the "SRS AIR BAG" and "SEAT BELT" of this Service Manual.

WARNING:

Always observe the following items for preventing accidental activation.

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision that 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 "SRS AIR BAG".
- 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

WARNING:

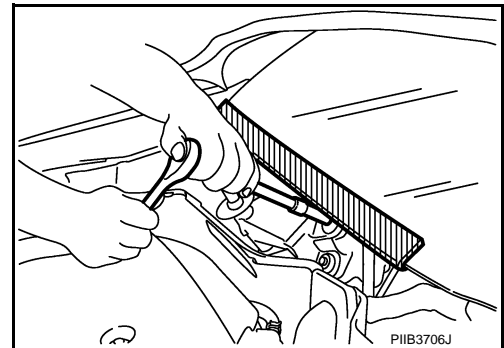
Always observe the following items for preventing accidental activation.

- When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, never use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.
- When using air or electric power tools or hammers, always switch the ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.

FOR MEXICO : Precaution for Procedure without Cowl Top Cover

INFOID:000000007625709

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



FOR MEXICO : Precaution for Battery Service

INFOID:000000007625710

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.

PREPARATION

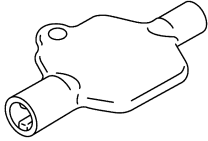
< PREPARATION >

PREPARATION

PREPARATION

Commercial Service Tool

INFOID:000000007625711

| Tool name | Description |
|--|--|
| <p data-bbox="191 516 431 543">Washer nozzle adjuster</p>  <p data-bbox="776 632 859 646">JSLIA0149ZZ</p> | <p data-bbox="927 449 1425 531">Adjusting washer nozzle. (Available in SEC. 289 of PARTS CATALOG: Part No. 28949 1EA0A)</p> <p data-bbox="927 533 1425 611">NOTE: Washer nozzle adjuster is included with shipment of nozzle.</p> |

WASHER TANK

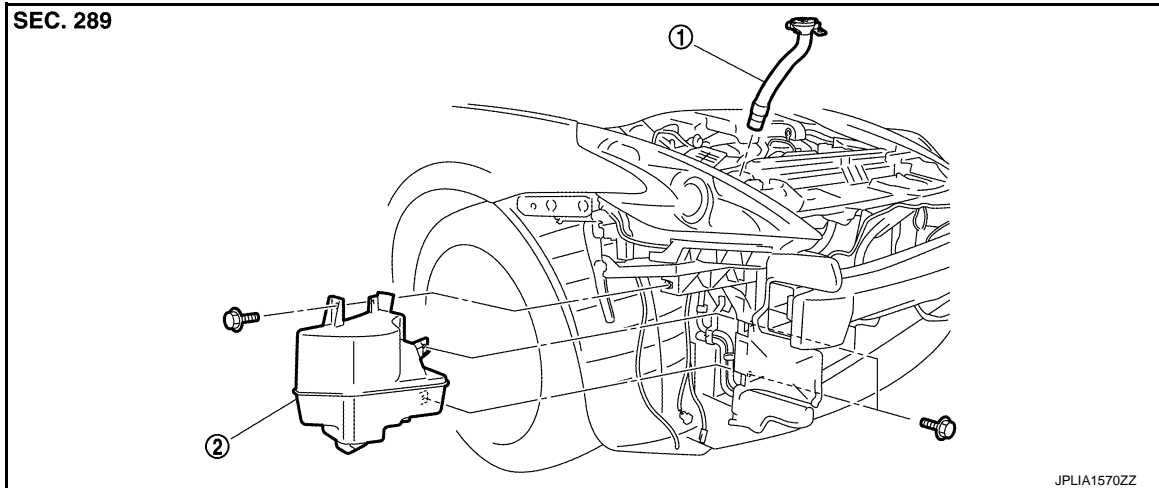
< REMOVAL AND INSTALLATION >

REMOVAL AND INSTALLATION

WASHER TANK

Exploded View

INFOID:0000000007625712



1. Washer tank inlet

2. Washer tank

Removal and Installation

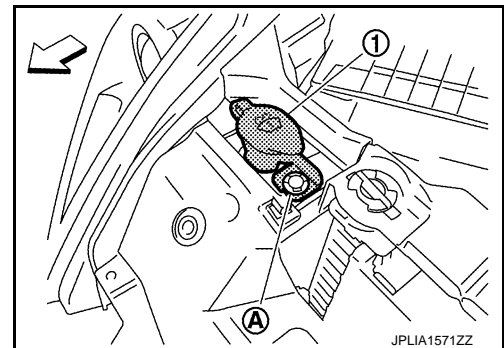
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REMOVAL

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-25](#), "[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.

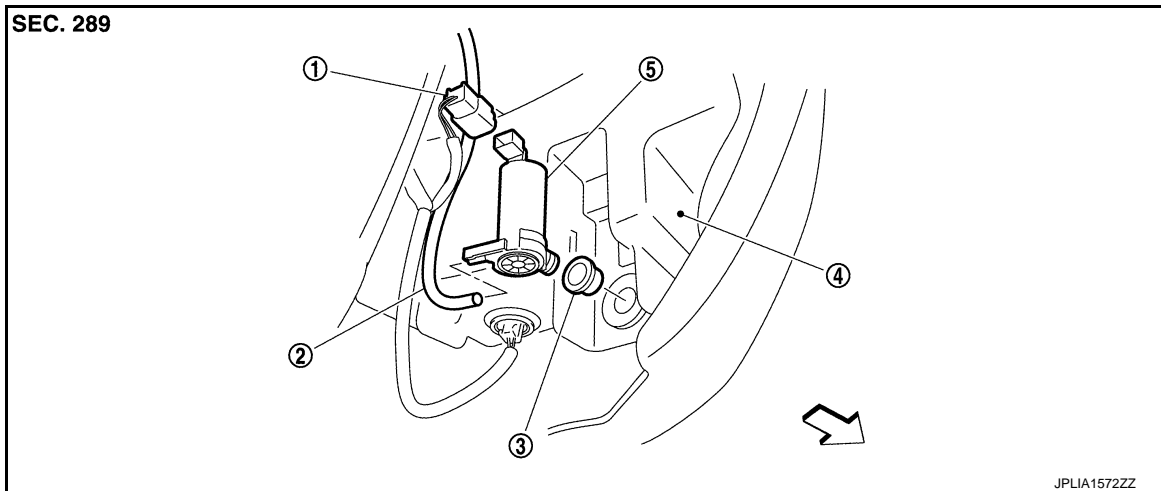
WASHER PUMP

< REMOVAL AND INSTALLATION >

WASHER PUMP

Exploded View

INFOID:000000007625714



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

⇨ : Vehicle front

Removal and Installation

INFOID:000000007625715

REMOVAL

1. Remove the fender protector RH (front). Refer to [EXT-25, "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.

WASHER LEVEL SWITCH

< REMOVAL AND INSTALLATION >

WASHER LEVEL SWITCH

Removal and Installation

INFOID:000000007625716

The washer level switch must be replaced together with the washer tank as an assembly. Refer to [WW-83](#), "[Removal and Installation](#)".

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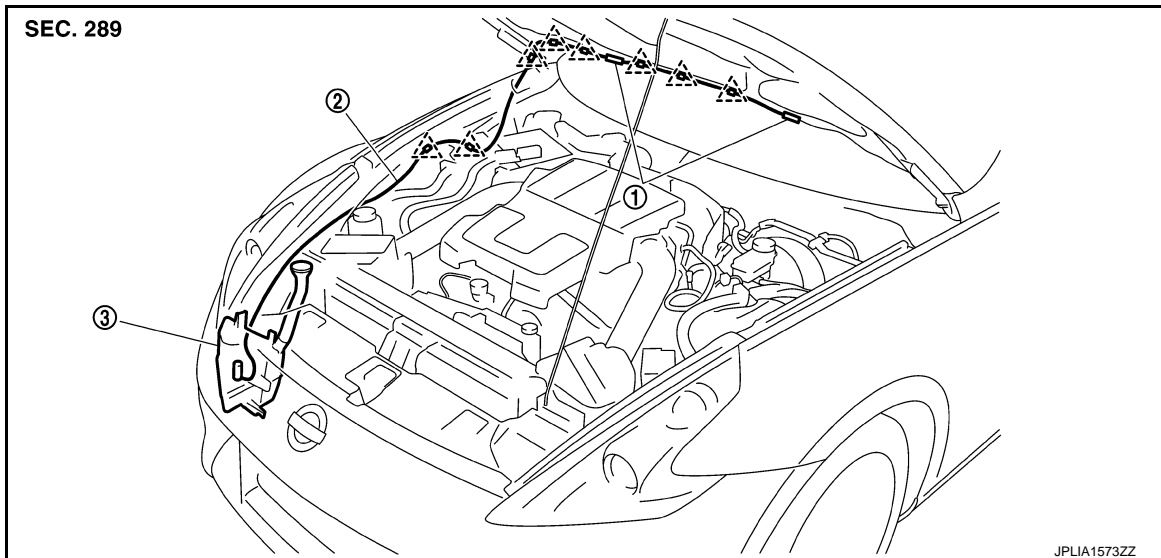
FRONT WASHER NOZZLE AND TUBE

< REMOVAL AND INSTALLATION >

FRONT WASHER NOZZLE AND TUBE

Hydraulic Layout

INFOID:000000007625717



1. Front washer nozzle

2. Front washer tube

3. Washer tank

△ : Clip

Removal and Installation

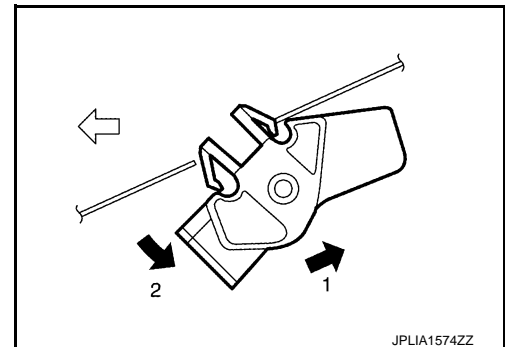
INFOID:000000007625718

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-86, "Inspection and Adjustment"](#).

CAUTION:

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

Inspection and Adjustment

INFOID:000000007625719

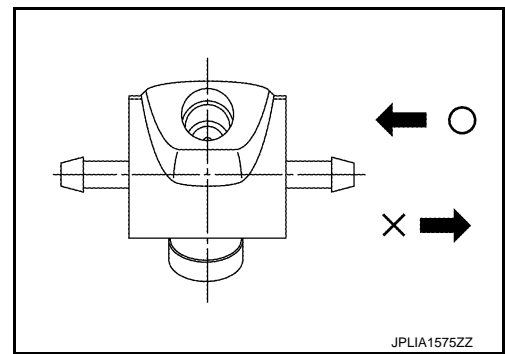
INSPECTION

Washer Nozzle Inspection

FRONT WASHER NOZZLE AND TUBE

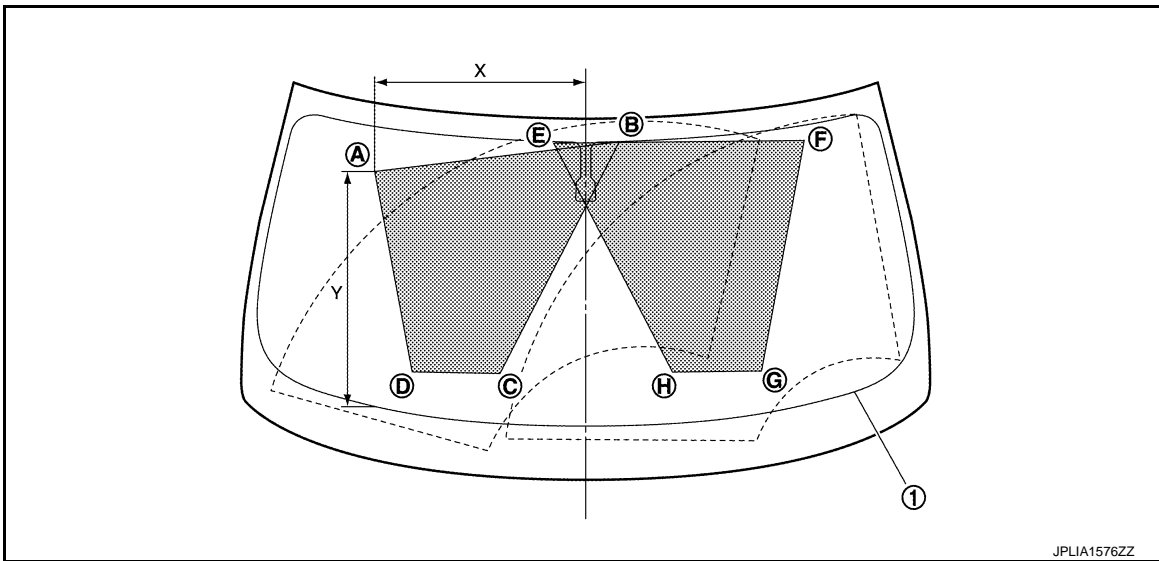
< REMOVAL AND INSTALLATION >

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



ADJUSTMENT

Washer Nozzle Spray Position Adjustment



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.

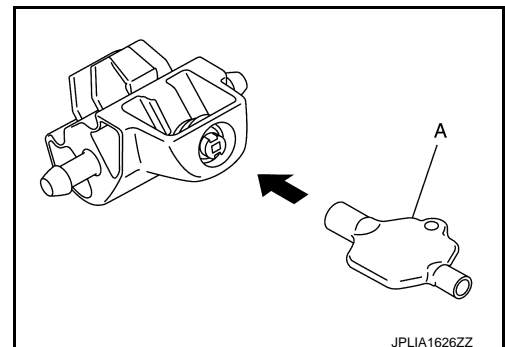
CAUTION:

- 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.



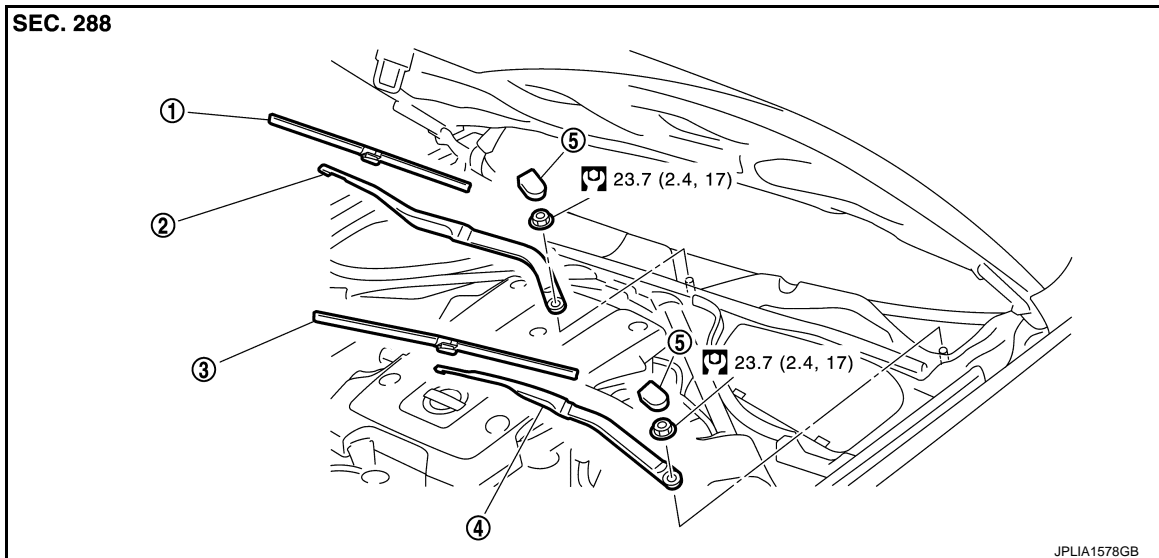
FRONT WIPER ARM

< REMOVAL AND INSTALLATION >

FRONT WIPER ARM

Exploded View

INFOID:000000007625720



- | | | |
|---------------------------|-------------------------|---------------------------|
| 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

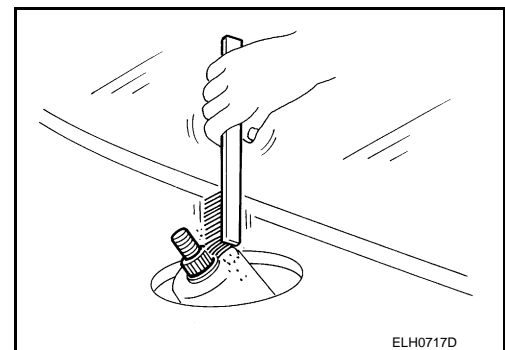
INFOID:000000007625721

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-88, "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:000000007625722

WIPER BLADE POSITION ADJUSTMENT

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

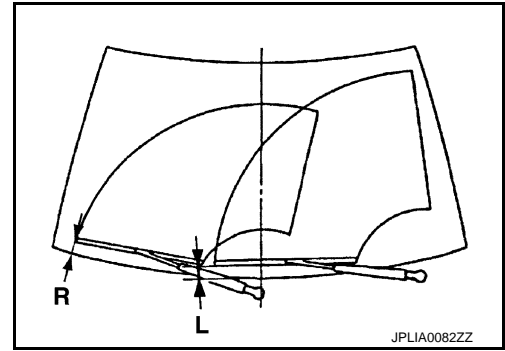
FRONT WIPER ARM

< REMOVAL AND INSTALLATION >

Standard clearance

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

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



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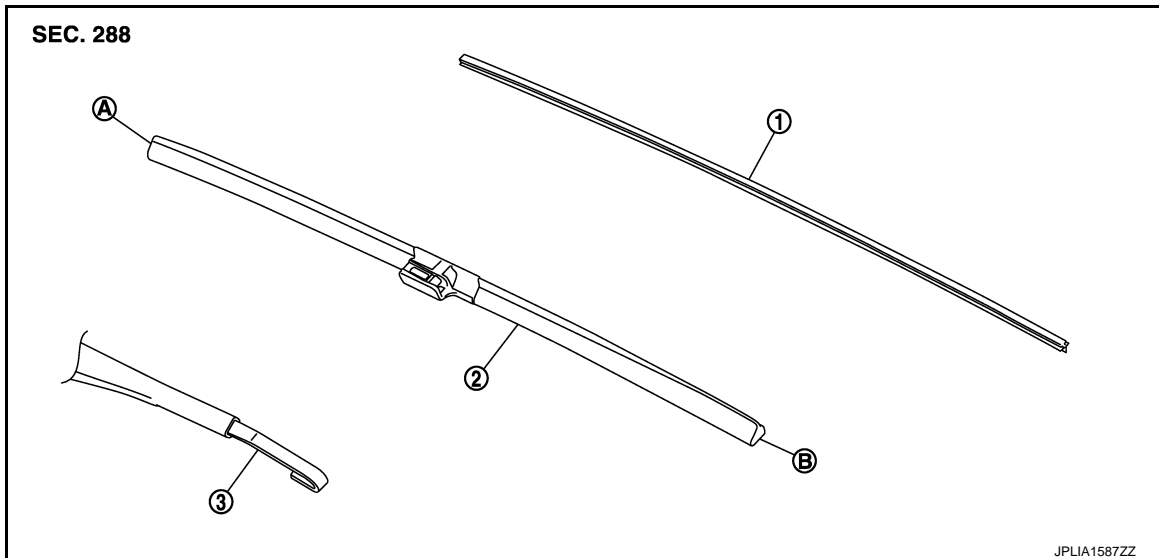
WIPER BLADE

< REMOVAL AND INSTALLATION >

WIPER BLADE

Exploded View

INFOID:000000007625723



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

Removal and Installation

INFOID:000000007625724

REMOVAL

Remove the wiper blade from the wiper arm.

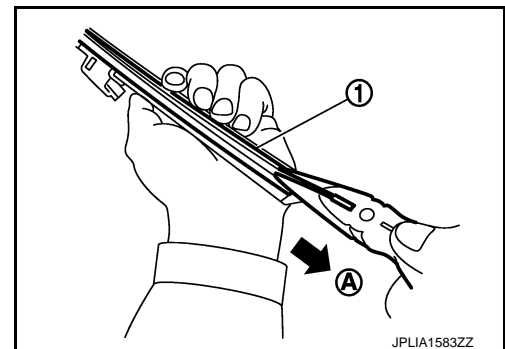
INSTALLATION

Install the front wiper blade to the wiper arm.

Replacement

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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).

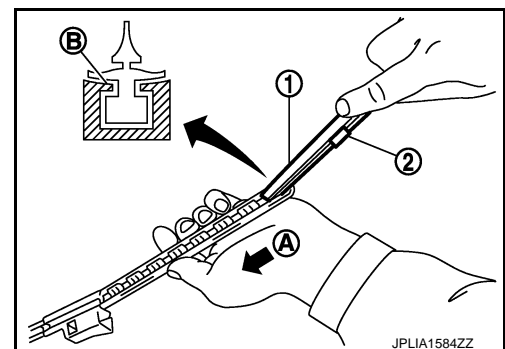


2. Insert the tip of new wiper refill (1) into the rear end of wiper blade. Slide the wiper refill to the direction (A) while pressing the wiper refill onto the wiper blade rear end.

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

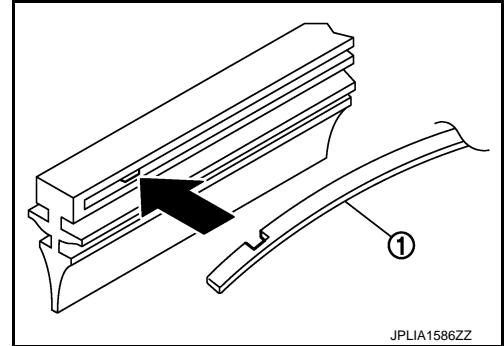
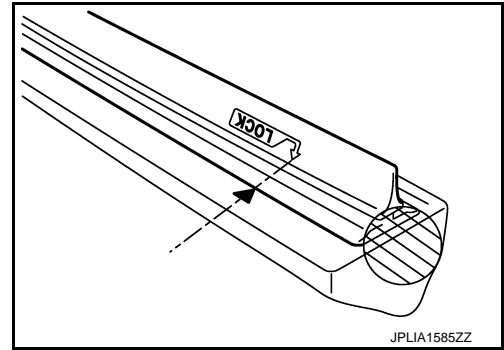
< REMOVAL AND INSTALLATION >

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

NOTE:

When the vertebra is detached.

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



A
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C
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WW

FRONT WIPER DRIVE ASSEMBLY

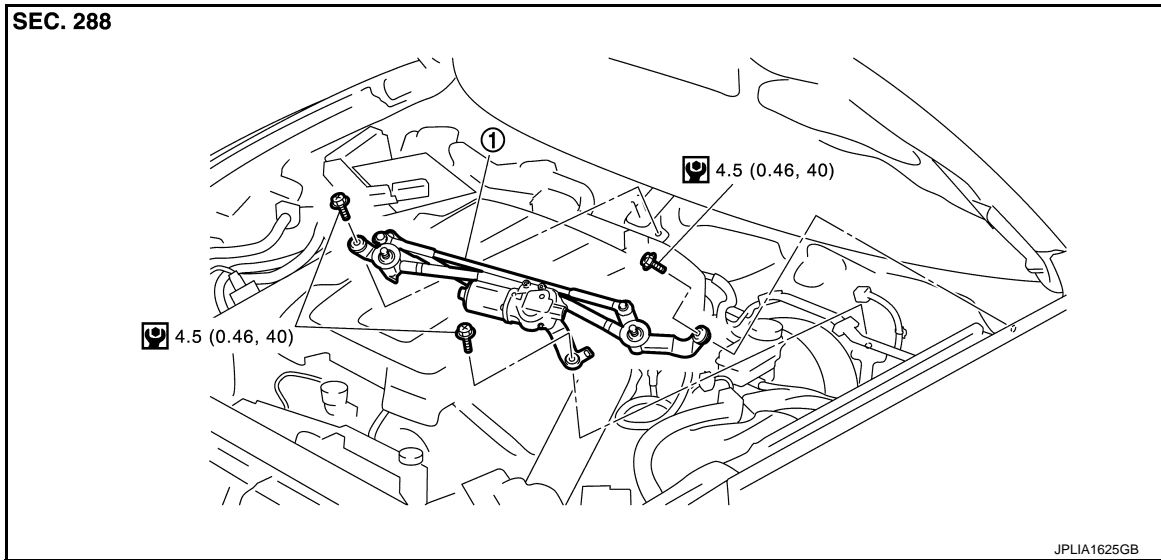
< REMOVAL AND INSTALLATION >

FRONT WIPER DRIVE ASSEMBLY

Exploded View

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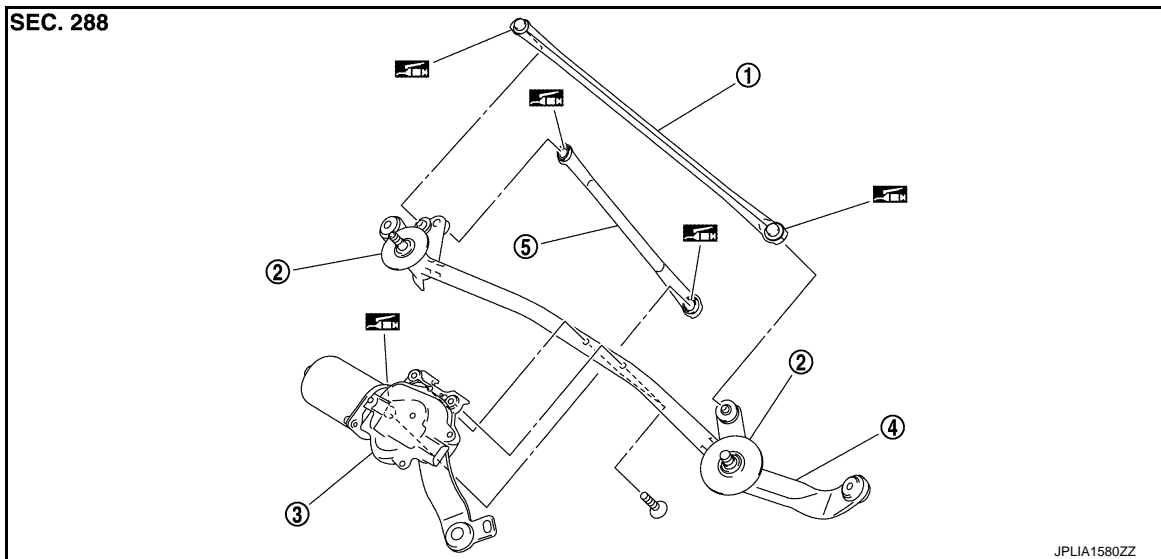
REMOVAL



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-88. "Exploded View"](#).
2. Remove the front tower bar and cowl top cover. Refer to [EXT-22. "Exploded View"](#).

FRONT WIPER DRIVE ASSEMBLY

< REMOVAL AND INSTALLATION >

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.

A

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-22, "Exploded View"](#).
5. Install the front wiper arms. Refer to [WW-88, "Exploded View"](#).

B

C

D

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.

E

F

G

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.**

H

I

J

K

WW

M

N

O

P

WIPER AND WASHER SWITCH

< REMOVAL AND INSTALLATION >

WIPER AND WASHER SWITCH

Exploded View

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Refer to [BCS-93, "Exploded View"](#).