# SECTION RF
# ROOF

## CONTENTS

# BASIC INSPECTION

## DIAGNOSIS AND REPAIR WORKFLOW

### WorkFlow

INFOID:0000000004249801

DETAILED FLOW

#### 1.OBTAIN INFORMATION ABOUT SYMPTOM

Interview the customer to obtain the malfunction information (conditions and environment when the malfunction occurred) as much as possible when the customer brings the vehicle in.

>> GO TO 2.

#### 2.REPRODUCE THE MALFUNCTION INFORMATION

Check the malfunction on the vehicle that the customer describes.
Inspect the relation of the symptoms and the condition when the symptoms occur.

>> GO TO 3.

#### 3.IDENTIFY THE MALFUNCTIONING SYSTEM WITH “SYMPTOM DIAGNOSIS”

Use “Symptom diagnosis” from the symptom inspection result in step 2 and then identify where to start performing the diagnosis based on possible causes and symptoms.

>> GO TO 4.

#### 4.IDENTIFY THE MALFUNCTIONING PARTS WITH “COMPONENT DIAGNOSIS”

Perform the diagnosis with “Component diagnosis” of the applicable system.

>> GO TO 5.

#### 5.REPAIR OR REPLACE THE MALFUNCTIONING PARTS

Repair or replace the specified malfunctioning parts.

>> GO TO 6.

#### 6.FINAL CHECK

Check that malfunctions are not reproduced when obtaining the malfunction information from the customer, referring to the symptom inspection result in step 2.

Are the malfunctions corrected?

YES >> INSPECTION END
NO >> GO TO 3.

# INSPECTION AND ADJUSTMENT

## ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT

### ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Description

INFOID:0000000004249802

#### MEMORY RESET PROCEDURE

1. Please observe the following instructions at confirming the sunroof operation.
   **NOTE:**
   Do not disconnect the electronic power while the sunroof is operating or within 5 seconds after the sunroof stops (to wipe-out the memory of lid position and operating friction.)
2. Initialization of system should be conducted after the following conditions.
   - When the sunroof motor is changed.
   - When the sunroof does not operate normally. (Incomplete initialization conditions)

### ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement

INFOID:0000000004249803

#### INITIALIZATION PROCEDURE

If the sunroof does not close or open automatically, use the following procedure to return sunroof operation to normal.

1. Press the tilt up switch and start the tilt up operation.
2. Release the tilt up switch once, press the tilt up switch again, press and hold the switch until lid pops up.
3. The glass lid will more toward tilt up direction and will be stopped mechanically, and then it will be automatically fully closed. (press and hold the switch during this operation)
4. Release the switch again, and press the tilt up switch within the first 10 seconds. (press and hold the switch)
5. After 4 seconds, the glass lid will be automatically operated in sequence of tilt down, slide open and slide close.
6. After the glass lid stops, release the switch 0.5 second later. (press and hold the switch during this operation)
7. If slide switch operates normally, this initialization is done.

#### ANTI-PINCH FUNCTION

1. Full open the sunroof.
2. Place a piece of wood near fully closed position.
3. Close the sunroof completely with auto-slide close.

Check that sunroof lowers for approximately 150 mm (5.91in) with out pinching a piece of wood and stops.

**CAUTION:**

- **Do not check with hands and other part of body because they may be pinched. Do not get pinched.**
- **Depending on environment and driving conditions, if a similar impact or lord is applied to the sunroof it may lower.**
- **Check that auto-slide operates before inspection when system initialization is performed.**
- **Perform initial setting when auto-slide operation or anti-pinch function does not operate normally.**

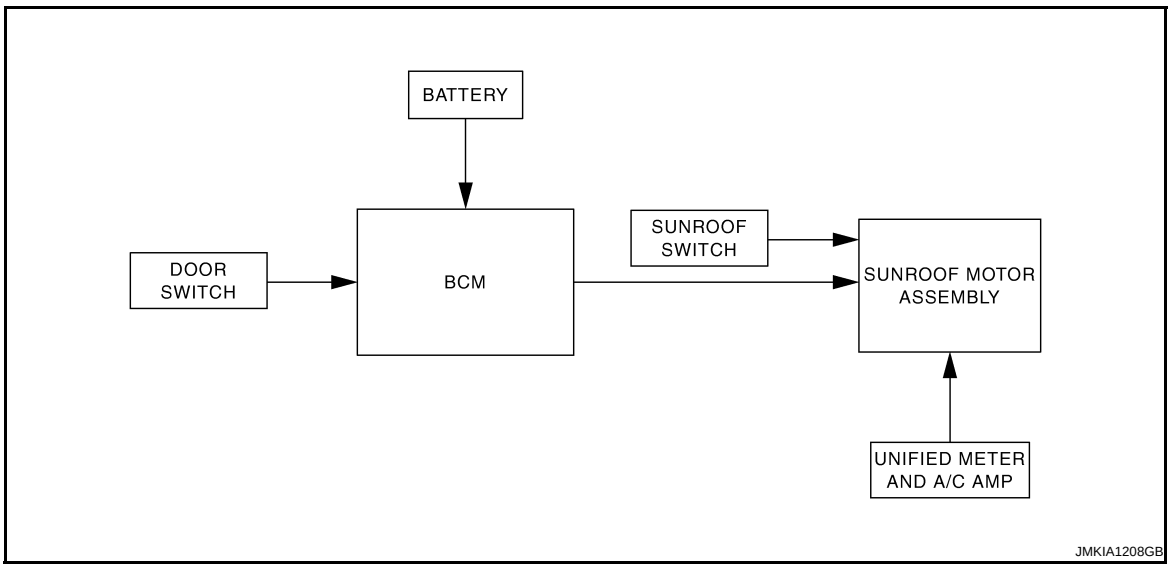
# SYSTEM DESCRIPTION

## SUNROOF SYSTEM

### System Diagram

INFOID:0000000004249804

SUNROOF




### System Description

INFOID:0000000004249805

#### SUNROOF OPERATION

- Sunroof motor assembly operates with the power supply that is output from BCM while ignition switch is ON or retained power is operating.
- Tilt up/down & slide open/close signals from sunroof switch enables operate sunroof motor to move arbitrarily.
- Sunroof motor assembly receives a vehicle speed signal from unified meter and A/C amp. and controls the sunroof motor torque of tilt-down at the time of high speed operation.

#### AUTO OPERATION

Sunroof AUTO feature makes it possible to slide open and slide close or tilt up and tilt down the sunroof without holding the sunroof switch in the slide open/tilt down or slide close/tilt up position.

#### RETAINED POWER OPERATION

- Retained power operation is an additional power supply function that enables sunroof system to operate for 45 seconds period of time even when ignition switch is turned OFF.

#### Retained power function cancel conditions

- Front door CLOSE (door switch OFF)→OPEN (door switch ON).
- When ignition switch is ON again.
- When timer time passes. (45 seconds)

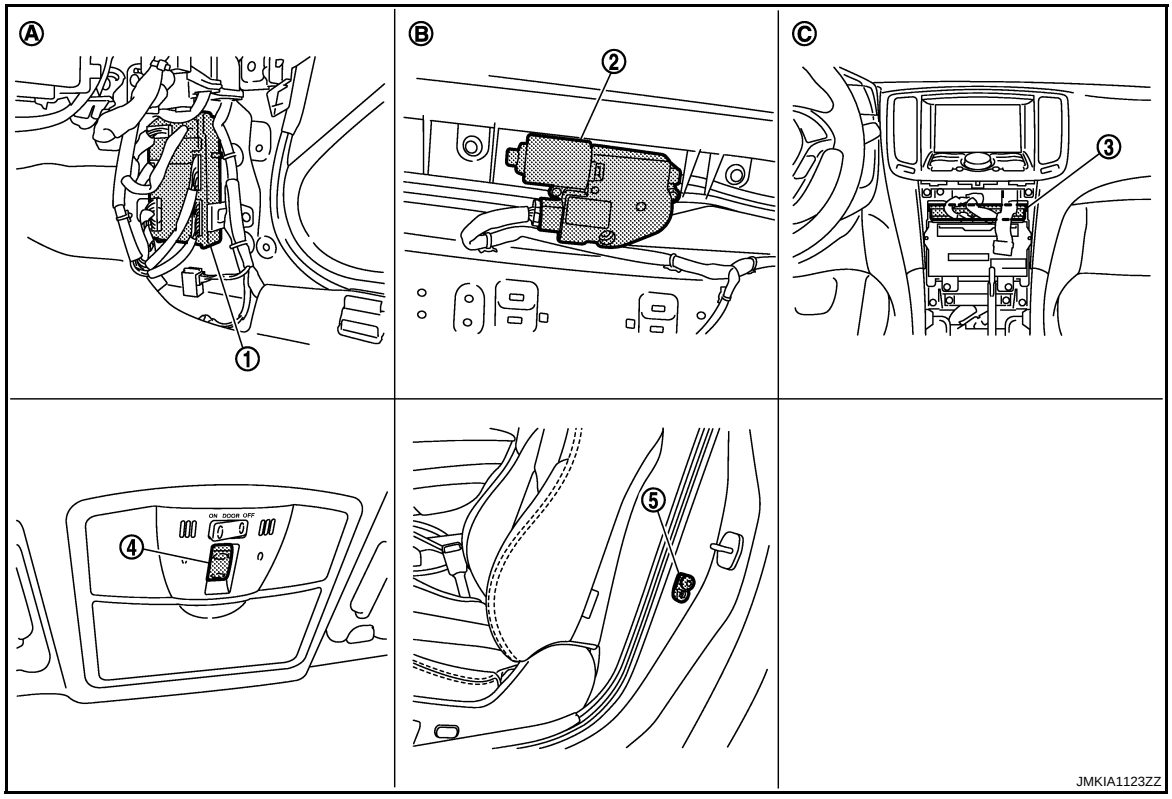
#### ANTI-PINCH FUNCTION

The CPU of sunroof motor assembly monitors the sunroof motor operation and the sunroof position (fully-closed or other) by the signals from sunroof motor.
When sunroof motor detects an interruption during the following slide close and tilt down operation, sunroof switch controls the motor for open. And then the sunroof will operate until full up position (when tilt down operate) or 150 mm (5.91 in) or more in an open direction (when slide close operate):

- close operation and tilt down when ignition switch is in the “ON” position

## Component Parts Location

INFOID:0000000004249806




1. BCM M118,M119,M123
2. Sunroof motor assembly R4
3. Unified meter and A/C amp. M66
4. Sunroof switch R16
5. Driver side door switch B16
A. View with dash side finisher RH removed
B. View with headlining removed
C. Behind cluster lid C

## Component Description

INFOID:0000000004249807

| Component | Function |
|---|---|
| BCM | • Supplies the power supply to sunroof motor assembly.<br>• Controls retained power. |
| Sunroof switch | Transmits tilt up/down & slides open/close operation signal to sunroof motor assembly. |
| Sunroof motor assembly | It is sunroof motor and CPU integrated type that enables tilt up/down & slide open/close by sunroof switch operation. |
| Door switch | Detects door open/close condition and transmits to BCM. |
| Unified meter and A/C amp. | Transmits vehicle speed signal to sunroof motor assembly. |

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

INFOID:0000000004249808

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

| Diagnosis mode | Function Description |
|---|---|
| Work Support | Changes the setting for each system function. |
| Self Diagnostic Result | Displays the diagnosis results judged by BCM. |
| CAN Diag Support Monitor | Monitors the reception status of CAN communication viewed from BCM. Refer to CONSULT-III operation manual. |
| Data Monitor | The BCM input/output signals are displayed. |
| Active Test | The signals used to activate each device are forcibly supplied from BCM. |
| Ecu Identification | The BCM part number is displayed. |
| Configuration | This function is not used even though it is displayed. |

#### SYSTEM APPLICATION
BCM can perform the following functions for each system.
**NOTE:**
It can perform the diagnosis modes except the following for all sub system selection items.

×: 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* | | × | |
| Intelligent Key system | INTELLIGENT KEY | × | × | × |
| Combination switch | COMB SW | | × | |
| Body control system | BCM | × | | |
| IVIS - NATS | IMMU | | × | × |
| Interior room lamp battery saver | BATTERY SAVER | × | × | × |
| Trunk open | TRUNK | | × | |
| Vehicle security system | THEFT ALM | × | × | × |
| RAP system | RETAINED PWR | | × | |
| Signal buffer system | SIGNAL BUFFER | | × | × |
| TPMS | TPMS (AIR PRESSURE MONITOR) | × | × | × |

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

#### FREEZE FRAME DATA (FFD) AND IGN COUNTER

Freeze Frame Data
The BCM records the following condition at the moment a particular DTC is detected.
- Vehicle Speed
- Odo/Trip Meter

• Vehicle Condition (BCM detected condition)

| CONSULT screen terms | Description |
|---|---|
| SLEEP>LOCK | While turning BCM status from low power consumption mode to normal mode (Power supply position is “LOCK”) |
| SLEEP>OFF | While turning BCM status from low power consumption mode to normal mode (Power supply position is “OFF”.) |
| LOCK>ACC | While turning power supply position from “LOCK” to “ACC” |
| ACC>ON | While turning power supply position from “ACC” to “IGN” |
| RUN>ACC | While turning power supply position from “RUN” to “ACC” (Vehicle is stopping and selector lever is except P position.) |
| CRANK>RUN | While turning power supply position from “CRANKING” to “RUN” (From cranking up the engine to run it) |
| RUN>URGENT | While turning power supply position from “RUN“ to “ACC” (Emergency stop operation) |
| ACC>OFF | While turning power supply position from “ACC” to “OFF” |
| OFF>LOCK | While turning power supply position from “OFF” to “LOCK” |
| OFF>ACC | While turning power supply position from “OFF” to “ACC” |
| ON>CRANK | While turning power supply position from “IGN” to “CRANKING” |
| OFF>SLEEP | While turning BCM status from normal mode (Power supply position is “OFF”.) to low power consumption mode |
| LOCK>SLEEP | While turning BCM status from normal mode (Power supply position is “LOCK”.) to low power consumption mode |
| LOCK | Power supply position is “LOCK” (Ignition switch OFF with steering is locked.) |
| OFF | Power supply position is “OFF” (Ignition switch OFF with steering is unlocked.) |
| ACC | Power supply position is “ACC” (Ignition switch ACC) |
| ON | Power supply position is “IGN” (Ignition switch ON with engine stopped) |
| ENGINE RUN | Power supply position is “RUN” (Ignition switch ON with engine running) |
| CRANKING | Power supply position is “CRANKING” (At engine cranking) |

IGN Counter

IGN counter indicates the number of times that ignition switch is turned ON after DTC is detected.

• The number is 0 when a malfunction is detected now.
• The number increases like 1 → 2 → 3...38 → 39 after returning to the normal condition whenever ignition switch OFF → ON.
• The number is fixed to 39 until the self-diagnosis results are erased if it is over 39.

## RETAIND PWR

## RETAIND PWR : CONSULT-III Function (BCM - RETAINED PWR)

INFOID:0000000004249809

Data monitor

| Monitor Item | Description |
|---|---|
| DOOR SW-DR | Indicates [ON/OFF] condition of driver side door switch. |
| DOOR SW-AS | Indicates [ON/OFF] condition of passenger side door switch. |

# DTC/CIRCUIT DIAGNOSIS

## POWER SUPPLY AND GROUND CIRCUIT

### BCM

### BCM : Diagnosis Procedure

INFOID:0000000004249810

#### 1.CHECK FUSE AND FUSIBLE LINK

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

| Terminal No. | Signal name | Fuse and fusible link No. |
|---|---|---|
| 1 | Battery power supply | K (40 A) |
| 11 | | 10 (10 A) |

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.

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

Is the measurement value normal?

YES >> GO TO 3.
NO >> Repair the 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 the harness or connector.

### SUNROOF MOTOR ASSEMBLY

### SUNROOF MOTOR ASSEMBLY : Diagnosis Procedure

INFOID:0000000004249811

#### 1.CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect sunroof motor assembly connector.
3. Turn ignition switch ON.
4. Check voltage between sunroof motor assembly harness connector and ground.

| (+) | | (–) | Voltage (V) (Approx.) |
|---|---|---|---|
| Sunroof motor assembly | | | |
| Connector | Terminal | | |
| R4 | 7 | Ground | Battery voltage |
| | 9 | | |

Is the inspection result normal?

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

## 2.CHECK SUNROOF MOTOR CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connector.
3. Check continuity between BCM harness connector and sunroof motor assembly harness connector.

| BCM | | Sunroof motor assembly | | Continuity |
|---|---|---|---|---|
| Connector | Terminal | Connector | Terminal | |
| M118 | 2 | R4 | 7 | Existed |
| | 3 | | 9 | |

4. Check continuity between BCM harness connector and ground.

| BCM | | Ground | Continuity |
|---|---|---|---|
| Connector | Terminal | | |
| M118 | 2 | | Not existed |
| | 3 | | |

Is the inspection result normal?

YES >> Replace BCM. Refer to BCS-81, "Removal and Installation".
NO >> Repair or replace the harness.

## 3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Check continuity between sunroof motor assembly harness connector and ground.

| Sunroof motor assembly | | Ground | Continuity |
|---|---|---|---|
| Connector | Terminal | | |
| R4 | 10 | | Existed |

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair or replace the harness.

## 4.CHECK INTERMITTENT INCIDENT

Refer to GI-41, "Intermittent Incident".

>> INSPECTION END

# SUNROOF SWITCH

## Description

INFOID:0000000004249812

- Sunroof motor assembly is sunroof motor and CPU integrated type.
- Tilts up/down & slides open/close by sunroof switch operation.
- In order to close sunroof lid certainly with the signal from unified meter and A/C amp. at the time of high speed run, the sunroof motor torque at the time of tilt-down operation is controlled.

## Component Function Check

INFOID:0000000004249813

### 1.CHECK SUNROOF MOTOR FUNCTION

Check tilt up/down & slide open/close operations with sunroof switch.

Is the inspection result normal?

YES >> Sunroof motor function is OK.
NO >> Refer to RF-11, "Diagnosis Procedure".

## Diagnosis Procedure

INFOID:0000000004249814

### 1.CHECK SUNROOF SWITCH INPUT SIGNAL

1. Turn ignition switch ON.
2. Check voltage between sunroof motor assembly harness connector and ground.

| (+) | | (–) | Condition | Voltage (V) (Approx.) |
|---|---|---|---|---|
| Sunroof motor assembly | | | | |
| Connector | Terminal | | | |
| R4 | 5 | Ground | Sunroof switch is operated TILT DOWN or SLIDE OPEN | 0 |
| | | | Other than above | Battery voltage |
| | 1 | | Sunroof switch is operated TILT UP or SLIDE CLOSE | 0 |
| | | | Other than above | Battery voltage |

Is the inspection result normal?

YES >> GO TO 4.
NO >> GO TO 2.

### 2.CHECK SUNROOF SWITCH CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect sunroof motor assembly connector and sunroof switch connector.
3. Check continuity between sunroof motor assembly harness connector and sunroof switch harness connector.

| Sunroof motor assembly | | Sunroof switch | | Continuity |
|---|---|---|---|---|
| Connector | Terminal | Connector | Terminal | |
| R4 | 5 | R16 | 1 | Existed |
| | 1 | | 3 | |

4. Check continuity between sunroof motor assembly harness connector and ground.

| Sunroof motor assembly | | Ground | Continuity |
|---|---|---|---|
| Connector | Terminal | | |
| R4 | 5 | | Not existed |
| | 1 | | |

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or the replace harness.

## 3.CHECK SUNROOF SWITCH GROUND CIRCUIT

Check continuity between sunroof switch harness connector and ground.

| Sunroof switch | | Ground | Continuity |
|---|---|---|---|
| Connector | Terminal | | |
| R16 | 2 | | Existed |

Is the inspection result normal?

YES >> Refer to RF-12, "Component Inspection".
NO >> Repair or replace the harness.

## 4.CHECK INTERMITTENT INCIDENT

Refer to GI-41, "Intermittent Incident".

>> INSPECTION END

# Component Inspection

INFOID:0000000004249815

## SUNROOF SWITCH

### 1.CHECK SUNROOF SWITCH

1. Turn ignition switch OFF.
2. Disconnect sunroof switch connector.
3. Check continuity sunroof switch terminals.

| Terminal | | Condition | Continuity |
|---|---|---|---|
| 1 | 2 | Sunroof switch is operated TILT DOWN or SLIDE OPEN | Existed |
| | | Other than above | Not existed |
| 3 | | Sunroof switch is operated TILT UP or SLIDE CLOSE | Existed |
| | | Other than above | Not existed |

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace sunroof switch (built in map lamp assembly).

# DOOR SWITCH

## Description

INFOID:0000000004249816

Detects door open/close condition.

## Component Function Check

INFOID:0000000004249817

### 1.CHECK FUNCTION

**With CONSULT-III**

Check door switches (“DOOR SW-DR”, “DOOR SW-AS”) in Data Monitor” mode with CONSULT-III.

| Monitor item | Condition |
|---|---|
| DOOR SW-DR | CLOSE → OPEN: OFF → ON |
| DOOR SW-AS | |

Is the inspection result normal?

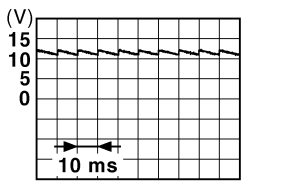
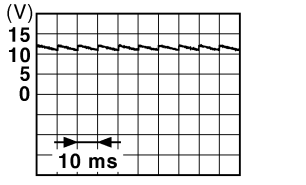
YES >> Door switch is OK.
NO >> Refer to RF-13, "Diagnosis Procedure".

## Diagnosis Procedure

INFOID:0000000004249818

### 1.CHECK DOOR SWITCH INPUT SIGNAL

1. Turn ignition switch OFF.
2. Check signal between BCM harness connector and ground with oscilloscope.

| (+) BCM Connector | (+) BCM Terminal | (–) | Door condition | | Voltage (V) (Approx.) |
|---|---|---|---|---|---|
| M123 | 150 | Ground | Driver side | OPEN | 0 |
| | | | | CLOSE |  |
| | 124 | | Passenger side | OPEN | 0 |
| | | | | CLOSE |  |



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Is the inspection result normal?

YES >> GO TO 4.
NO >> GO TO 2.

### 2.CHECK DOOR SWITCH CIRCUIT

1. Disconnect BCM connector and door switch connector.
2. Check continuity between BCM harness connector and door switch harness connector.

| BCM | | Door switch | | Continuity |
|---|---|---|---|---|
| Connector | Terminal | Connector | Terminal | |
| M123 | 150 | B16 (Driver side) | 2 | Existed |
| | 124 | B216 (Passenger side) | | |

3. Check continuity between BCM harness connector and ground.

| BCM | | Ground | Continuity |
|---|---|---|---|
| Connector | Terminal | | |
| M123 | 150 | | Not existed |
| | 124 | | |

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace harness between BCM and door switch.

## 3.CHECK DOOR SWITCH

Refer to RF-14, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace malfunctioning door switch. Refer to DLK-237, "Removal and Installation".

## 4.CHECK INTERMITTENT INCIDENT

Refer to GI-41, "Intermittent Incident".

>> INSPECTION END

# Component Inspection

INFOID:0000000004249819

## 1.CHECK DOOR SWITCH

1. Turn ignition switch OFF.
2. Disconnect door switch connector.
3. Check continuity between door switch terminal and ground.

| Terminal | | Door switch condition | Continuity |
|---|---|---|---|
| Door switch | | | |
| 2 | Ground part of door switch | Pressed | Not existed |
| | | Released | Existed |

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace malfunctioning door switch. Refer to DLK-237, "Removal and Installation".

# ECU DIAGNOSIS INFORMATION

## BCM (BODY CONTROL MODULE)

### Reference Value

INFOID:0000000004685544

#### VALUES ON THE DIAGNOSIS TOOL

CONSULT-III MONITOR ITEM

| Monitor Item | Condition | Value/Status |
|---|---|---|
| FR WIPER HI | Other than front wiper switch HI | Off |
| | Front wiper switch HI | On |
| FR WIPER LOW | Other than front wiper switch LO | Off |
| | Front wiper switch LO | On |
| FR WASHER SW | Front washer switch OFF | Off |
| | Front washer switch ON | On |
| FR WIPER INT | Other than front wiper switch INT | Off |
| | Front wiper switch INT | On |
| FR WIPER STOP | Front wiper is not in STOP position | Off |
| | Front wiper is in STOP position | On |
| INT VOLUME | Wiper intermittent dial is in a dial position 1 - 7 | Wiper intermittent dial position |
| TURN SIGNAL R | Other than turn signal switch RH | Off |
| | Turn signal switch RH | On |
| TURN SIGNAL L | Other than turn signal switch LH | Off |
| | Turn signal switch LH | On |
| TAIL LAMP SW | Other than lighting switch 1ST and 2ND | Off |
| | Lighting switch 1ST or 2ND | On |
| HI BEAM SW | Other than lighting switch HI | Off |
| | Lighting switch HI | On |
| HEAD LAMP SW 1 | Other than lighting switch 2ND | Off |
| | Lighting switch 2ND | On |
| HEAD LAMP SW 2 | Other than lighting switch 2ND | Off |
| | Lighting switch 2ND | On |
| PASSING SW | Other than lighting switch PASS | Off |
| | Lighting switch PASS | On |
| AUTO LIGHT SW | Other than lighting switch AUTO | Off |
| | Lighting switch AUTO | On |
| FR FOG SW | Front fog lamp switch OFF | Off |
| | Front fog lamp switch ON | On |
| RR FOG SW | **NOTE:**<br>The item is indicated, but not monitored. | Off |
| 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:**<br>The item is indicated, but not monitored. | Off |

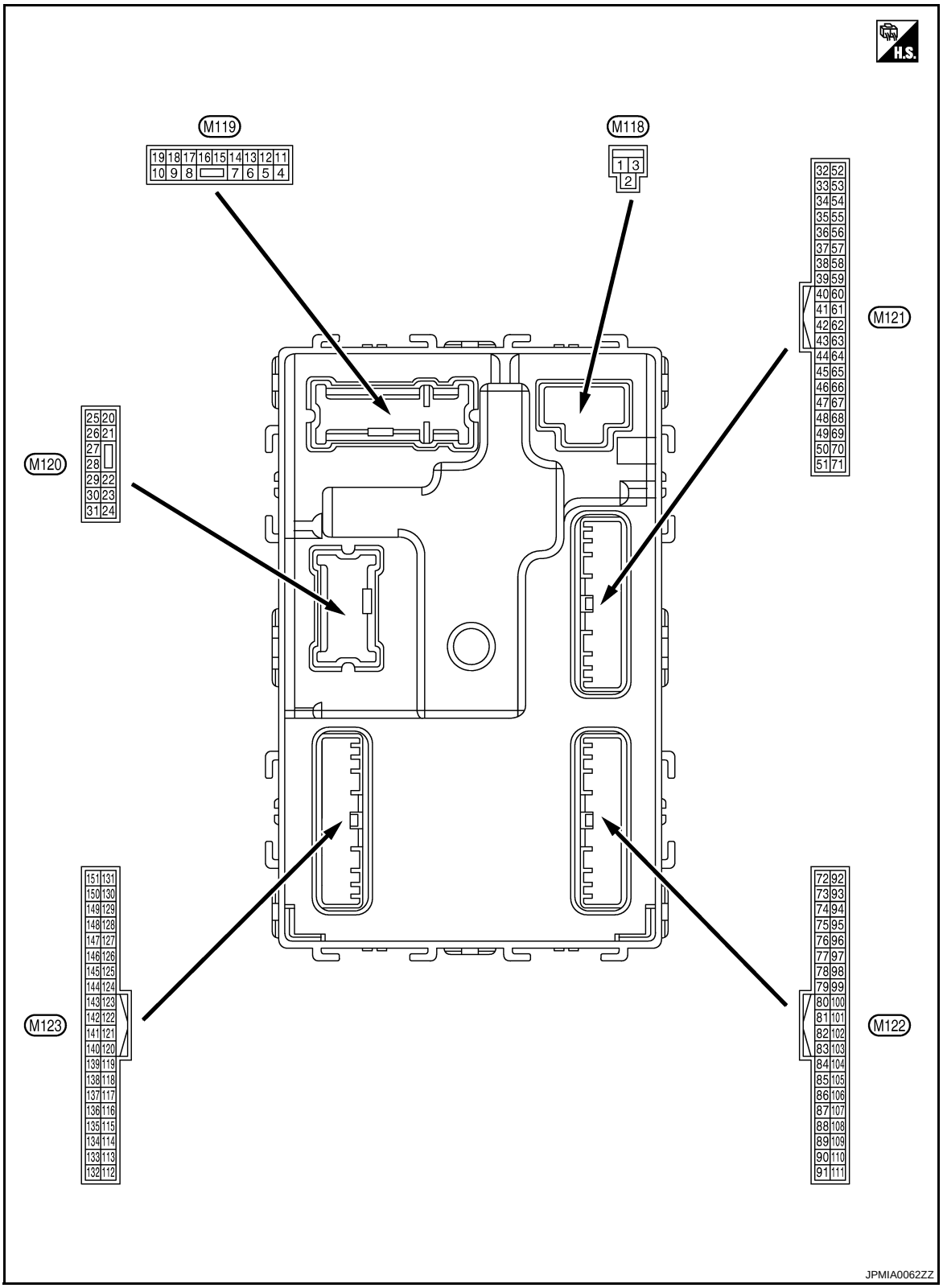
| Monitor Item | Condition | Value/Status |
|---|---|---|
| DOOR SW-RL | **NOTE:** The item is indicated, but not monitored. | Off |
| DOOR SW-BK | **NOTE:** The item is indicated, but not monitored. | Off |
| CDL LOCK SW | Other than power door lock switch LOCK | Off |
| | Power door lock switch LOCK | On |
| CDL UNLOCK SW | Other than power door lock switch UNLOCK | Off |
| | Power door lock switch UNLOCK | On |
| KEY CYL LK-SW | Other than driver door key cylinder LOCK position | Off |
| | Driver door key cylinder LOCK position | On |
| KEY CYL UN-SW | Other than driver door key cylinder UNLOCK position | Off |
| | Driver door key cylinder UNLOCK position | On |
| KEY CYL SW-TR | **NOTE:** The item is indicated, but not monitored. | Off |
| HAZARD SW | Hazard switch is OFF | Off |
| | Hazard switch is ON | On |
| REAR DEF SW | **NOTE:** The item is indicated, but not monitored. | Off |
| H/L WASH SW | **NOTE:** The item is indicated, but not monitored. | Off |
| TR CANCEL SW | Trunk lid opener cancel switch OFF | Off |
| | Trunk lid opener cancel switch ON | On |
| TR/BD OPEN SW | Trunk lid opener switch OFF | Off |
| | While the trunk lid opener switch is turned ON | On |
| TRNK/HAT MNTR | Trunk lid closed | Off |
| | Trunk lid opened | On |
| RKE-LOCK | LOCK button of the Intelligent Key is not pressed | Off |
| | LOCK button of the Intelligent Key is pressed | On |
| RKE-UNLOCK | UNLOCK button of the Intelligent Key is not pressed | Off |
| | UNLOCK button of the Intelligent Key is pressed | On |
| RKE-TR/BD | TRUNK OPEN button of the Intelligent Key is not pressed | Off |
| | TRUNK OPEN button of the Intelligent Key is pressed | On |
| RKE-PANIC | PANIC button of the Intelligent Key is not pressed | Off |
| | PANIC button of the Intelligent Key is pressed | On |
| RKE-P/W OPEN | UNLOCK button of the Intelligent Key is not pressed | Off |
| | UNLOCK button of the Intelligent Key is pressed and held | On |
| RKE-MODE CHG | LOCK/UNLOCK button of the Intelligent Key is not pressed and held simultaneously | Off |
| | LOCK/UNLOCK button of the Intelligent Key is pressed and held simultaneously | On |
| OPTICAL SENSOR | Bright outside of the vehicle | Close to 5 V |
| | Dark outside of the vehicle | Close to 0 V |
| REQ SW -DR | Driver door request switch is not pressed | Off |
| | Driver door request switch is pressed | On |
| REQ SW -AS | Passenger door request switch is not pressed | Off |
| | Passenger door request switch is pressed | On |
| REQ SW -RR | **NOTE:** The item is indicated, but not monitored. | Off |

| Monitor Item | Condition | Value/Status |
|---|---|---|
| REQ SW -RL | **NOTE:**<br>The item is indicated, but not monitored. | Off |
| REQ SW -BD/TR | Trunk lid opener request switch is not pressed | Off |
| | Trunk lid opener request switch is pressed | On |
| PUSH SW | Push-button ignition switch (push switch) is not pressed | Off |
| | Push-button ignition switch (push switch) is pressed | On |
| IGN RLY2 -F/B | Ignition switch in OFF or ACC position | Off |
| | Ignition switch in ON position | On |
| ACC RLY -F/B | **NOTE:**<br>The item is indicated, but not monitored. | Off |
| CLUCH SW | 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 | • Selector lever in P position (Except M/T models)<br>• The clutch pedal is depressed (M/T models) | Off |
| | • Selector lever in any position other than P (Except M/T models)<br>• The clutch pedal is not depressed (M/T models) | On |
| SFT PN/N SW | Selector lever in any position other than P and N | Off |
| | Selector lever in P or N position | On |
| S/L -LOCK | Steering is unlocked | Off |
| | Steering is locked | On |
| S/L -UNLOCK | Steering is locked | Off |
| | Steering is unlocked | On |
| S/L RELAY-F/B | Ignition switch in OFF or ACC position | Off |
| | Ignition switch in ON position | On |
| UNLK SEN -DR | Driver door is unlocked | Off |
| | Driver door is locked | On |
| PUSH SW -IPDM | Push-button ignition switch (push-switch) is not pressed | Off |
| | Push-button ignition switch (push-switch) is pressed | On |
| IGN RLY1 -F/B | Ignition switch in OFF or ACC position | Off |
| | Ignition switch in ON position | On |
| DETE SW -IPDM | Selector lever in any position other than P | Off |
| | Selector lever in P position | On |
| SFT PN -IPDM | • Selector lever in any position other than P and N (Except M/T models)<br>• The clutch pedal is not depressed (M/T models) | Off |
| | • Selector lever in P or N position<br>• The clutch pedal is depressed | On |
| SFT P -MET | Selector lever in any position other than P | Off |
| | Selector lever in P position | On |
| SFT N -MET | Selector lever in any position other than N | Off |
| | Selector lever in N position | On |

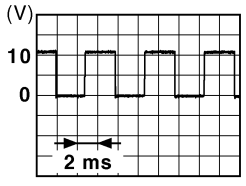
| Monitor Item | Condition | Value/Status |
|---|---|---|
| ENGINE STATE | Engine stopped | Stop |
| | While the engine stalls | Stall |
| | At engine cranking | Crank |
| | Engine running | Run |
| S/L LOCK-IPDM | Steering is unlocked | Off |
| | Steering is locked | On |
| S/L UNLK-IPDM | Steering is locked | Off |
| | Steering is unlocked | On |
| S/L RELAY-REQ | Steering lock system is not the LOCK condition and the changing condition from LOCK to UNLOCK | Off |
| | Steering lock system are not the LOCK condition or the changing condition from LOCK to UNLOCK | On |
| VEH SPEED 1 | While driving | Equivalent to speed-ometer reading |
| VEH SPEED 2 | While driving | Equivalent to speed-ometer reading |
| DOOR STAT-DR | Driver door is locked | LOCK |
| | Wait with selective UNLOCK operation (60 seconds) | READY |
| | Driver door is unlocked | UNLOCK |
| DOOR STAT-AS | Passenger door is locked | LOCK |
| | Wait with selective UNLOCK operation (60 seconds) | READY |
| | Passenger door is unlocked | UNLOCK |
| ID OK FLAG | Steering is locked | Reset |
| | Steering is unlocked | Set |
| PRMT ENG STRT | The engine start is prohibited | Reset |
| | The engine start is permitted | Set |
| PRMT RKE STRT | **NOTE:**<br>The item is indicated, but not monitored. | Reset |
| KEY SW -SLOT | The Intelligent Key is not inserted into key slot | Off |
| | The Intelligent Key is inserted into key slot | On |
| RKE OPE COUN1 | During the operation of the Intelligent Key | Operation frequency of the Intelligent Key |
| RKE OPE COUN2 | **NOTE:**<br>The item is indicated, but not monitored. | — |
| CONFRM 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 |

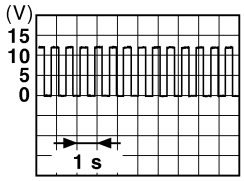
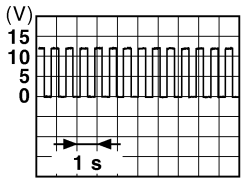
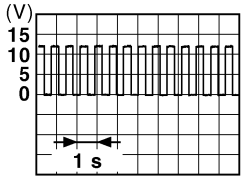
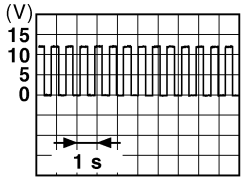
| Monitor Item | Condition | Value/Status |
|---|---|---|
| CONFIRM ID2 | The key ID that the key slot receives is not recognized by the second key ID registered to BCM. | Yet |
| | The key ID that the key slot receives is recognized by the second key ID registered to BCM. | Done |
| CONFIRM ID1 | The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

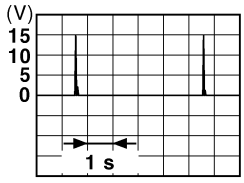
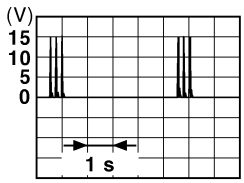
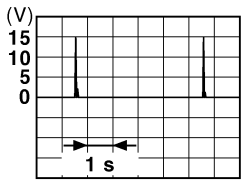
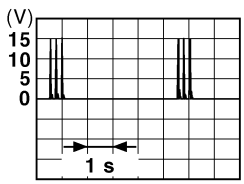
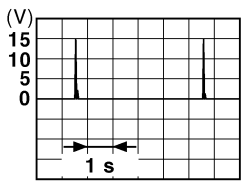
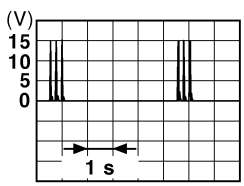
TERMINAL LAYOUT

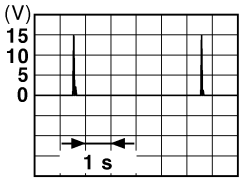
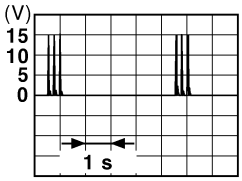
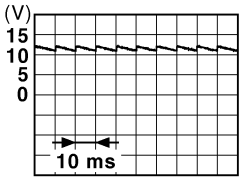
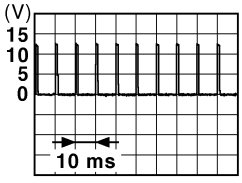


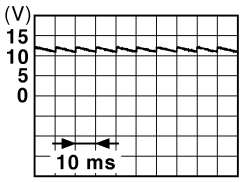
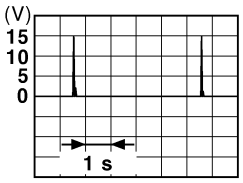
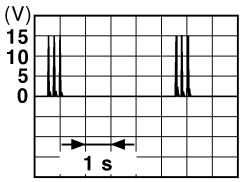
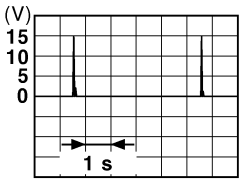
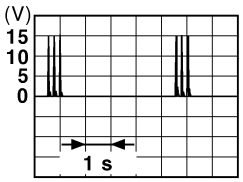

PHYSICAL VALUES

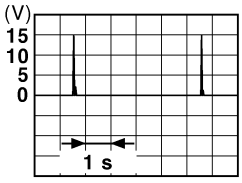
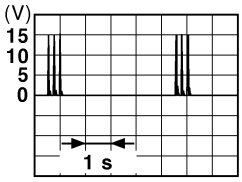
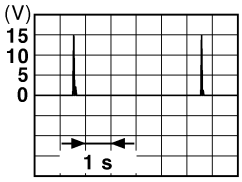
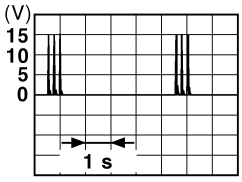
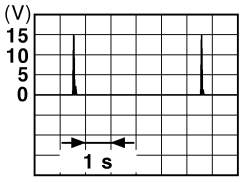
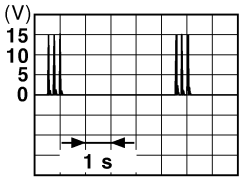
| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) |
|---|---|---|---|---|---|---|
| | | Signal name | Input/ Output | | | |
| + | – | | | | | |
| 1 (W) | Ground | Battery power supply | Input | Ignition switch OFF | | Battery voltage |
| 2 (Y) | Ground | P/W power supply (BAT) | Output | Ignition switch OFF | | 12 V |
| 3 (O) | Ground | P/W power supply (RAP) | Output | Ignition switch ON | | 12 V |
| 4 (LG) | 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 (P) | Ground | Passenger door UNLOCK | Output | Passenger door | UNLOCK (Actuator is activated) | 12 V |
| | | | | | Other than UNLOCK (Actuator is not activated) | 0 V |
| 7 (SB) | Ground | Step lamp | Output | Step lamp | ON | 0 V |
| | | | | | OFF | 12 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 (R) | Ground | Battery power supply | Input | Ignition switch OFF | | Battery voltage |
| 13 (B) | Ground | Ground | — | Ignition switch ON | | 0 V |
| 14 (W) | Ground | Push-button ignition switch illumination ground | Output | Tail lamp | OFF | 0 V |
| | | | | | ON | **NOTE:** When the illumination brightening/dimming level is in the neutral position.   JSNIA0010GB |
| 15 (O) | Ground | ACC indicator lamp | Output | Ignition switch | OFF (LOCK indicator is not illuminated) | Battery voltage |
| | | | | | ACC | 0 V |

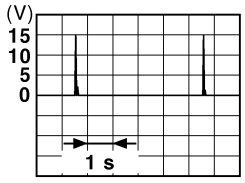
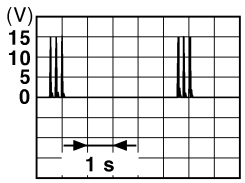
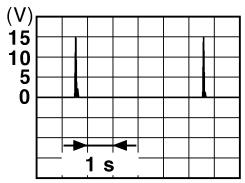
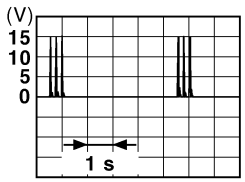
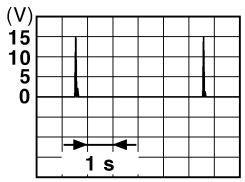
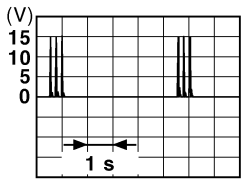
| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) |
|---|---|---|---|---|---|---|
| + | – | Signal name | Input/ Output | | | |
| 17 (W) | Ground | Turn signal RH (Front) | Output | Ignition switch ON | Turn signal switch OFF | 0 V |
| | | | | | Turn signal switch RH |  PKID0926E 6.5 V |
| 18 (O) | Ground | Turn signal LH (Front) | Output | Ignition switch ON | Turn signal switch OFF | 0 V |
| | | | | | Turn signal switch LH |  PKID0926E 6.5 V |
| 19 (V) | Ground | Room lamp timer control | Output | Interior room lamp | OFF | 12 V |
| | | | | | ON | 0 V |
| 20 (V) | Ground | Turn signal RH (Rear) | Output | Ignition switch ON | Turn signal switch OFF | 0 V |
| | | | | | Turn signal switch RH |  PKID0926E 6.5 V |
| 23 (L) | Ground | Trunk lid open | Output | Trunk lid | OPEN (Trunk lid opener actuator is activated) | 12 V |
| | | | | | Other than OPEN (Trunk lid opener actuator is not activated) | 0 V |
| 25 (Y) | Ground | Turn signal LH (Rear) | Output | Ignition switch ON | Turn signal switch OFF | 0 V |
| | | | | | Turn signal switch LH |  PKID0926E 6.5 V |
| 30 (P) | Ground | Trunk room lamp | Output | Trunk room lamp | ON | 0 V |
| | | | | | OFF | 12 V |

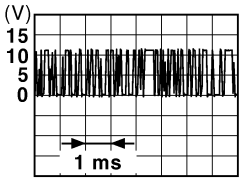
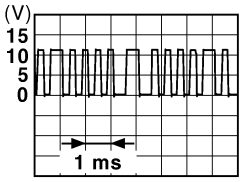
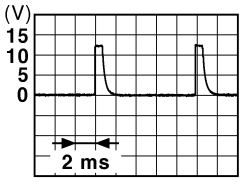
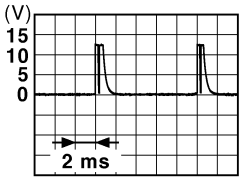
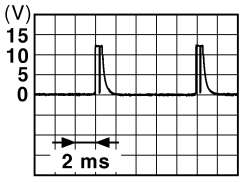
| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) |
|---|---|---|---|---|---|---|
| + | – | Signal name | Input/ Output | | | |
| 34 (SB) | Ground | Trunk room antenna (–) | Output | Ignition switch OFF | When Intelligent Key is in the passenger compartment |   JMKIA0062GB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

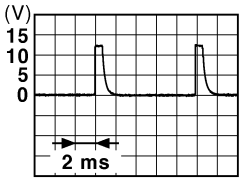
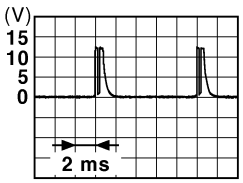
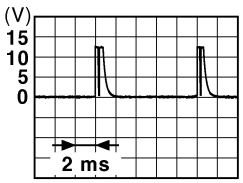
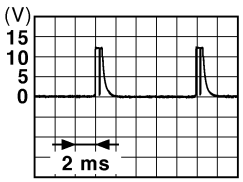
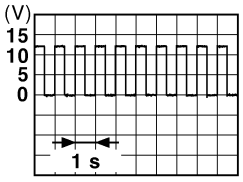
| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) |
|---|---|---|---|---|---|---|
| + | – | Signal name | Input/ Output | | | |
| 39 (W) | Ground | Rear bumper antenna (+) | Output | When the trunk lid opener request switch is operated with ignition switch OFF | When Intelligent Key is in the antenna detection area |  JMKIA0062GB |
| | | | | | When Intelligent Key is not in the antenna detection area |  JMKIA0063GB |
| 47 (Y) | Ground | Ignition relay (IPDM E/R) control | Output | Ignition switch | OFF or ACC | 12 V |
| | | | | | ON | 0 V |
| 50 (R) | Ground | Trunk room lamp switch | Input | Trunk room lamp switch | OFF (Trunk lid is closed) |  JPMIA0011GB<br>11.8 V |
| | | | | | ON (Trunk lid is opened) | 0 V |
| 52 (SB) | Ground | Starter relay control | Output | Ignition switch ON (A/T models) | When selector lever is in P or N position | 12 V |
| | | | | | When selector lever is not in P or N position | 0 V |
| | | | | Ignition switch ON (M/T models) | When the clutch pedal is depressed | Battery voltage |
| | | | | | When the clutch pedal is not depressed | 0 V |
| 61 (SB) | Ground | Trunk lid opener request switch | Input | Trunk lid opener request switch | ON (Pressed) | 0 V |
| | | | | | OFF (Not pressed) |  JPMIA0016GB<br>1.0 V |
| 64 (L) | Ground | Intelligent Key warning buzzer (Engine room) | Output | Intelligent Key warning buzzer (Engine room) | Sounding | 0 V |
| | | | | | Not sounding | 12 V |

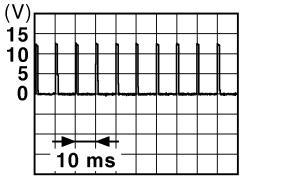
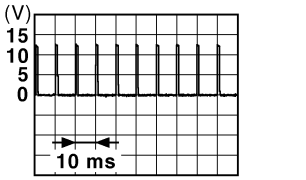
| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) |
|---|---|---|---|---|---|---|
| + | – | Signal name | Input/ Output | | | |
| 67 (GR) | Ground | Trunk lid opener switch | Input | Trunk lid opener switch | Pressed | 0 V |
| | | | | | Not pressed |  JPMIA0011GB<br>11.8 V |
| 72 (R) | Ground | Room antenna 2 (–) (Center console) | Output | Ignition switch OFF | When Intelligent Key is in the passenger compartment |  JMKIA0062GB |
| | | | | | When Intelligent Key is not in the passenger compartment |  JMKIA0063GB |
| 73 (G) | Ground | Room antenna 2 (+) (Center console) | Output | Ignition switch OFF | When Intelligent Key is in the passenger compartment |  JMKIA0062GB |
| | | | | | When Intelligent Key is not in the passenger compartment |  JMKIA0063GB |

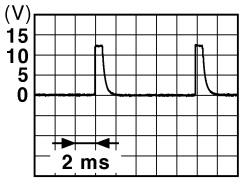
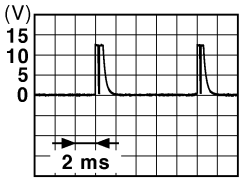
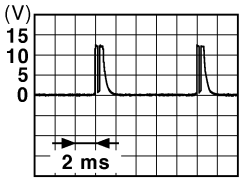
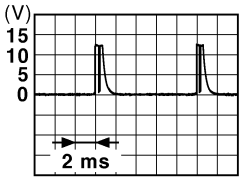
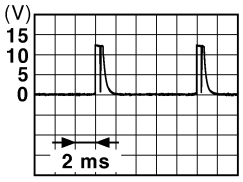
| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) |
|---|---|---|---|---|---|---|
| + | – | Signal name | Input/ Output | | | |
| 74 (SB) | Ground | Passenger door antenna (–) | Output | When the passenger door request switch is operated with ignition switch OFF | When Intelligent Key is in the antenna detection area |  JMKIA0062GB |
| | | | | | When Intelligent Key is not in the antenna detection area |  JMKIA0063GB |
| 75 (BR) | Ground | Passenger door antenna (+) | Output | When the passenger door request switch is operated with ignition switch OFF | When Intelligent Key is in the antenna detection area |  JMKIA0062GB |
| | | | | | When Intelligent Key is not in the antenna detection area |  JMKIA0063GB |
| 76 (V) | Ground | Driver door antenna (–) | Output | When the driver door request switch is operated with ignition switch OFF | When Intelligent Key is in the antenna detection area |  JMKIA0062GB |
| | | | | | When Intelligent Key is not in the antenna detection area |  JMKIA0063GB |

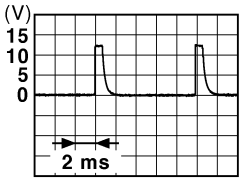
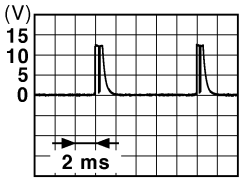
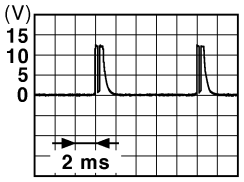
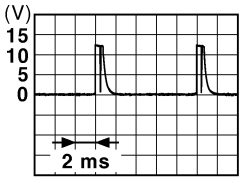
| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) |
|---|---|---|---|---|---|---|
| + | – | Signal name | Input/ Output | | | |
| 77 (LG) | Ground | Driver door antenna (+) | Output | When the driver door request switch is operated with ignition switch OFF | When Intelligent Key is in the antenna detection area |  JMKIA0062GB |
| | | | | | When Intelligent Key is not in the antenna detection area |  JMKIA0063GB |
| 78 (Y) | Ground | Room antenna 1 (–) (Instrument panel) | Output | Ignition switch OFF | When Intelligent Key is in the passenger compartment |  JMKIA0062GB |
| | | | | | When Intelligent Key is not in the passenger compartment |  JMKIA0063GB |
| 79 (BR) | Ground | Room antenna 1 (+) (Instrument panel) | Output | Ignition switch OFF | When Intelligent Key is in the passenger compartment |  JMKIA0062GB |
| | | | | | When Intelligent Key is not in the passenger compartment |  JMKIA0063GB |

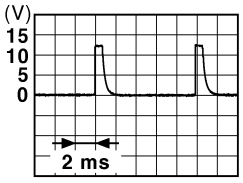
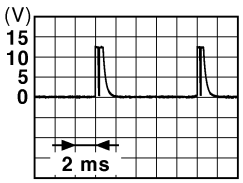
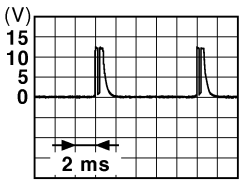
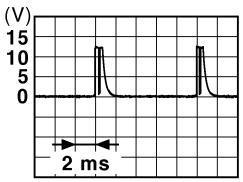
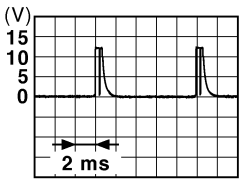
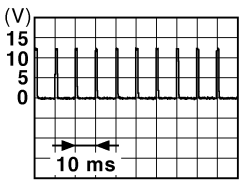
| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) |
|---|---|---|---|---|---|---|
| + | – | Signal name | Input/ Output | | | |
| 80 (GR) | Ground | NATS antenna amp (Built in key slot) | Input/ Output | During waiting | Ignition switch is pressed while inserting the Intelligent Key into the key slot. | Just after pressing ignition switch. Pointer of tester should move. |
| 81 (W) | Ground | NATS antenna amp (Built in key slot) | 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 (Y) | Ground | Remote keyless entry receiver communication | Input/ Output | During waiting | |  JMKIA0064GB |
| | | | | When operating either button on the Intelligent Key | |  JMKIA0065GB |
| 87 (Y) | Ground | Combination switch INPUT 5 | Input | Combination switch | All switches OFF (Wiper intermittent dial 4) |  JPMIA0041GB 1.4 V |
| | | | | | Front fog lamp switch ON (Wiper intermittent dial 4) |  JPMIA0037GB 1.3 V |
| | | | | | Any of the conditions below with all switches OFF<br>• Wiper intermittent dial 1<br>• Wiper intermittent dial 2<br>• Wiper intermittent dial 6<br>• Wiper intermittent dial 7 |  JPMIA0040GB 1.3 V |

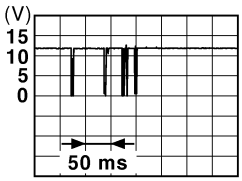
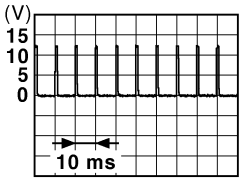
| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) |
|---|---|---|---|---|---|---|
| + | – | Signal name | Input/ Output | | | |
| 88 (O) | Ground | Combination switch INPUT 3 | Input | Combination switch | All switches OFF (Wiper intermittent dial 4) |  JPMIA0041GB 1.4 V |
| | | | | | Lighting switch HI (Wiper intermittent dial 4) |  JPMIA0036GB 1.3 V |
| | | | | | Lighting switch 2ND (Wiper intermittent dial 4) |  JPMIA0037GB 1.3 V |
| | | | | | Any of the conditions below with all switches OFF<br>• Wiper intermittent dial 1<br>• Wiper intermittent dial 2<br>• Wiper intermittent dial 3 |  JPMIA0040GB 1.3 V |
| 89 (BR) | Ground | Push-button ignition switch (Push switch) | Input | Push-button ignition switch (push switch) | Pressed | 0 V |
| | | | | | Not pressed | Battery voltage |
| 90 (P) | Ground | CAN-L | Input/ Output | — | | — |
| 91 (L) | Ground | CAN-H | Input/ Output | — | | — |
| 92 (LG) | Ground | Key slot illumination | Output | Key slot illumination | OFF | 0 V |
| | | | | | Blinking |  JPMIA0015GB 6.5 V |
| | | | | | ON | 12 V |

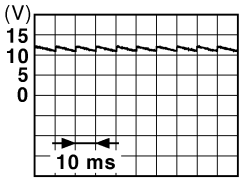
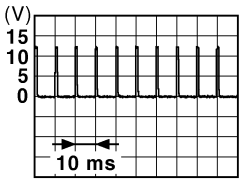
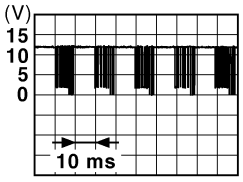
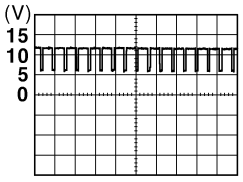
| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) |
|---|---|---|---|---|---|---|
| | | Signal name | Input/ Output | | | |
| + | – | | | | | |
| 93 (Y) | Ground | ON indicator lamp | Output | Ignition switch | OFF (LOCK indicator is not illuminated) | Battery voltage |
| | | | | | ON | 0 V |
| 95 (O) | Ground | ACC relay control | Output | Ignition switch | OFF | 0 V |
| | | | | | ACC or ON | 12 V |
| 96 (GR) | Ground | A/T shift selector (Detention switch) power supply | Output | — | | 12 V |
| 97 (L) | Ground | Steering lock condition No. 1 | Input | Steering lock | LOCK status | 0 V |
| | | | | | UNLOCK status | 12 V |
| 98 (P) | Ground | Steering lock condition No. 2 | Input | Steering lock | LOCK status | 12 V |
| | | | | | UNLOCK status | 0 V |
| 99 (R) | Ground | Selector lever P position switch | Input | Selector lever | P position | 0 V |
| | | | | | Any position other than P | 12 V |
| | | ASCD clutch switch (M/T models without ICC) | | ASCD clutch switch | OFF (Clutch pedal is depressed) | 0 V |
| | | | | | ON (Clutch pedal is not depressed) | 12 V |
| | | ICC clutch switch (M/T models with ICC) | | ICC clutch switch | OFF (Clutch pedal is depressed) | 0 V |
| | | | | | ON (Clutch pedal is not depressed) | 12 V |
| 100 (Y) | Ground | Passenger door request switch | Input | Passenger door request switch | ON (Pressed) | 0 V |
| | | | | | OFF (Not pressed) |  JPMIA0016GB<br>1.0 V |
| 101 (P) | Ground | Driver door request switch | Input | Driver door request switch | ON (Pressed) | 0 V |
| | | | | | OFF (Not pressed) |  JPMIA0016GB<br>1.0 V |
| 102 (O) | Ground | Blower fan motor relay control | Output | Ignition switch | OFF or ACC | 0 V |
| | | | | | ON | 12 V |
| 103 (LG) | Ground | Remote keyless entry receiver power supply | Output | Ignition switch OFF | | 12 V |
| 106 (W) | Ground | Steering lock unit power supply | Output | Ignition switch | OFF or ACC | 12 V |
| | | | | | ON | 0 V |

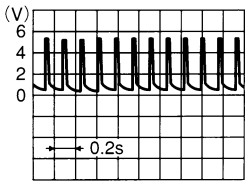
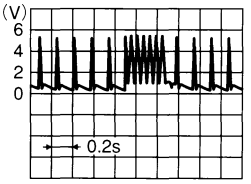
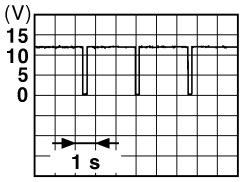
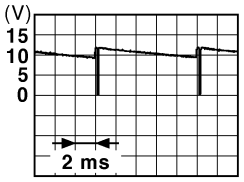
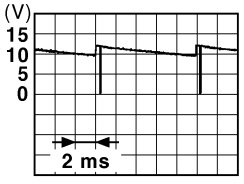
| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) |
|---|---|---|---|---|---|---|
| + | – | Signal name | Input/ Output | | | |
| 107 (LG) | Ground | Combination switch INPUT 1 | Input | Combination switch (Wiper intermittent dial 4) | All switches OFF |  JPMIA0041GB 1.4 V |
| | | | | | Turn signal switch LH |  JPMIA0037GB 1.3 V |
| | | | | | Turn signal switch RH |  JPMIA0036GB 1.3 V |
| | | | | | Front wiper switch LO |  JPMIA0038GB 1.3 V |
| | | | | | Front washer switch ON |  JPMIA0039GB 1.3 V |

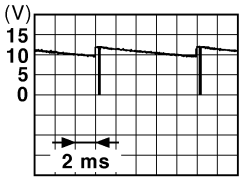
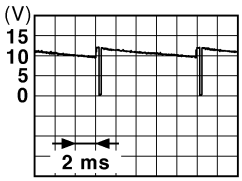
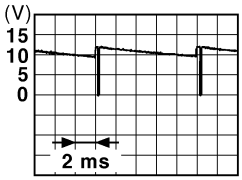
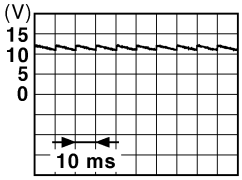
| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) |
|---|---|---|---|---|---|---|
| + | – | Signal name | Input/ Output | | | |
| 108 (R) | Ground | Combination switch INPUT 4 | Input | Combination switch | All switches OFF (Wiper intermittent dial 4) |  JPMIA0041GB 1.4 V |
| | | | | | Lighting switch AUTO (Wiper intermittent dial 4) |  JPMIA0038GB 1.3 V |
| | | | | | Lighting switch 1ST (Wiper intermittent dial 4) |  JPMIA0036GB 1.3 V |
| | | | | | Any of the conditions below with all switches OFF<br>• Wiper intermittent dial 1<br>• Wiper intermittent dial 5<br>• Wiper intermittent dial 6 |  JPMIA0039GB 1.3 V |

| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) |
|---|---|---|---|---|---|---|
| + | – | Signal name | Input/ Output | | | |
| 109 (W) | Ground | Combination switch INPUT 2 | Input | Combination switch (Wiper intermittent dial 4) | All switches OFF |  JPMIA0041GB 1.4 V |
| | | | | | Lighting switch PASS |  JPMIA0037GB 1.3 V |
| | | | | | Lighting switch 2ND |  JPMIA0036GB 1.3 V |
| | | | | | Front wiper switch INT |  JPMIA0038GB 1.3 V |
| | | | | | Front wiper switch HI |  JPMIA0040GB 1.3 V |
| 110 (G) | Ground | Hazard switch | Input | Hazard switch | ON | 0 V |
| | | | | | OFF |  JPMIA0012GB 1.1 V |

| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) |
|---|---|---|---|---|---|---|
| + | – | Signal name | Input/ Output | | | |
| 111 (Y) | Ground | Steering lock unit communication | Input/ Output | Steering lock | LOCK status | 12 V |
| | | | | | LOCK or UNLOCK |  JMKIA0066GB |
| | | | | | For 15 seconds after UNLOCK | 12 V |
| | | | | | 15 seconds or later after UNLOCK | 0 V |
| 113 (O) | Ground | Optical sensor | Input | Ignition switch ON | When bright outside of the vehicle | Close to 5 V |
| | | | | | When dark outside of the vehicle | Close to 0 V |
| 114 (R) | Ground | Clutch interlock switch | Input | Clutch interlock switch | OFF (Clutch pedal is not depressed) | 0 V |
| | | | | | ON (Clutch pedal is depressed) | Battery voltage |
| 116 (SB) | Ground | Stop lamp switch 1 | Input | — | | Battery voltage |
| 118 (BR) | Ground | Stop lamp switch 2 (Without ICC) | Input | Stop lamp switch | OFF (Brake pedal is not depressed) | 0 V |
| | | | | | ON (Brake pedal is depressed) | Battery voltage |
| | | Stop lamp switch 2 (With ICC) | | Stop lamp switch OFF (Brake pedal is not depressed) and ICC brake hold relay OFF | | 0 V |
| | | | | Stop lamp switch ON (Brake pedal is depressed) or ICC brake hold relay ON | | Battery voltage |
| 119 (SB) | Ground | Driver side door lock assembly (Unlock sensor) | Input | Driver door | LOCK status (Unlock sensor switch OFF) |  JPMIA0012GB<br>1.1 V |
| | | | | | UNLOCK status (Unlock switch sensor ON) | 0 V |
| 121 (SB) | 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 |

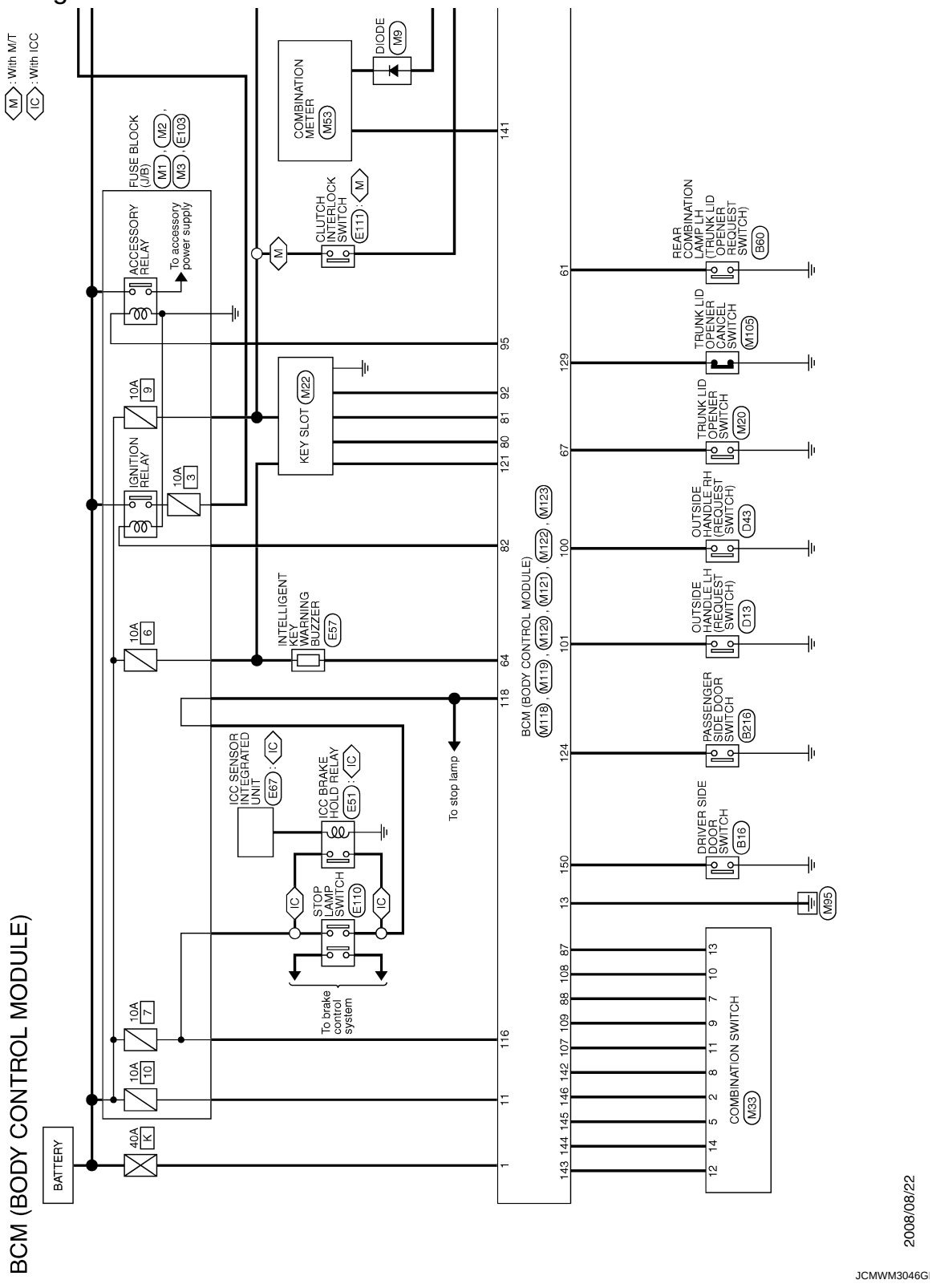
| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) |
|---|---|---|---|---|---|---|
| + | – | Signal name | Input/ Output | | | |
| 124 (LG) | Ground | Passenger door switch | Input | Passenger door switch | OFF (Door close) |  JPMIA0011GB 11.8 V |
| | | | | | ON (Door open) | 0 V |
| 129 (O) | Ground | Trunk lid opener cancel switch | Input | Trunk lid opener cancel switch | CANCEL |  JPMIA0012GB 1.1 V |
| | | | | | ON | 0 V |
| 132 (V) | Ground | Power window switch communication | Input/ Output | Ignition switch ON | |  JPMIA0013GB 10.2 V |
| | | | | Ignition switch OFF or ACC | | 12 V |
| 133 (L) | Ground | Push-button ignition switch illumination | Output | Push-button ignition switch illumination | ON (Tail lamps OFF) | 9.5 V |
| | | | | | ON (Tail lamps ON) | **NOTE:** The pulse width of this wave is varied by the illumination brightening/dimming level.  JPMIA0159GB |
| | | | | | OFF | 0 V |
| 134 (LG) | Ground | LOCK indicator lamp | Output | LOCK indicator lamp | OFF | Battery voltage |
| | | | | | ON | 0 V |
| 137 (O) | 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 |

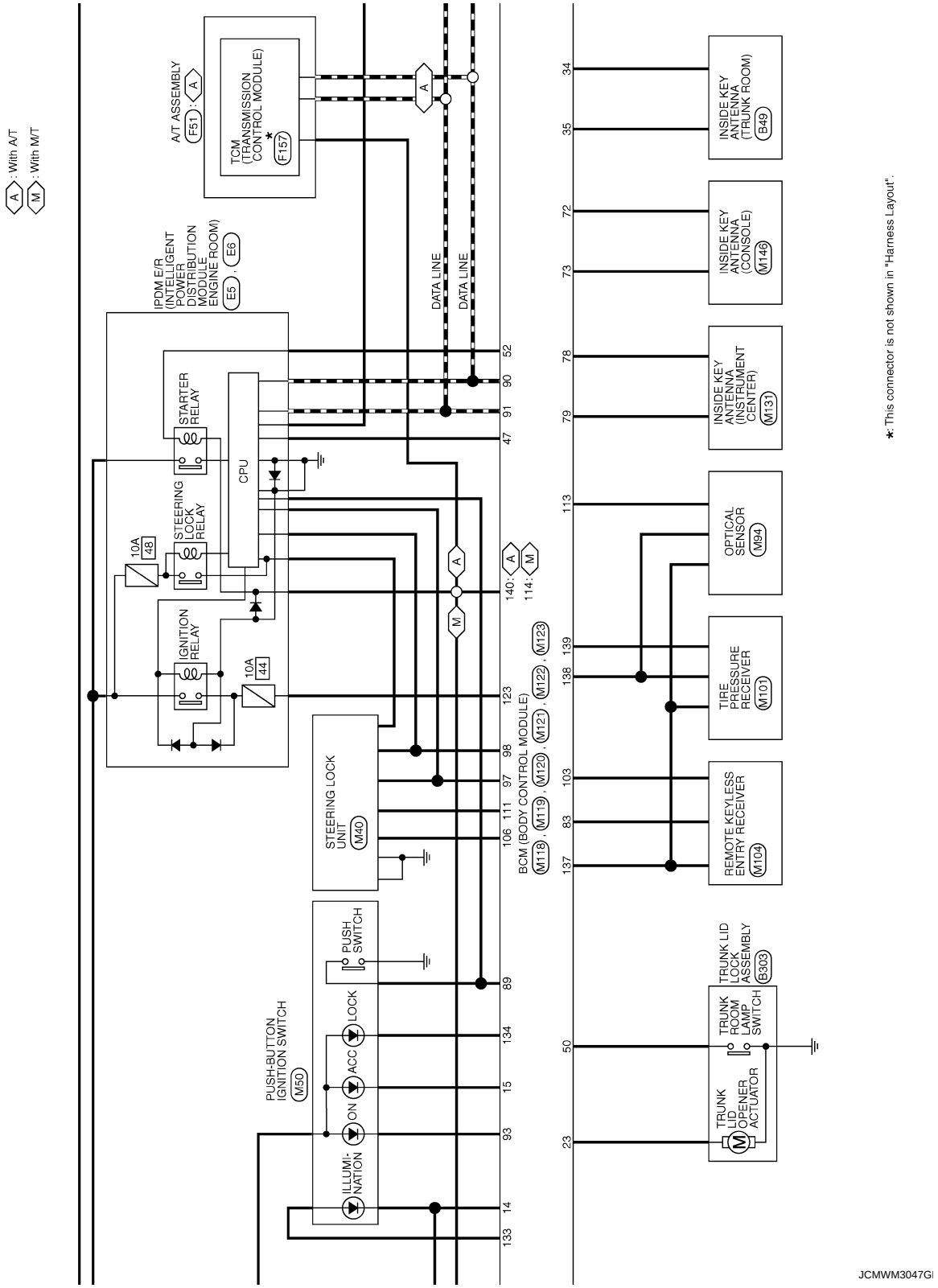
| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) |
|---|---|---|---|---|---|---|
| + | – | Signal name | Input/ Output | | | |
| 139 (L) | Ground | Tire pressure receiver communication | Input/ Output | Ignition switch ON | Standby state |   OCC3881D |
| | | | | | When receiving the signal from the transmitter |   OCC3880D |
| 140 (GR) | 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 |
| 141 (R) | Ground | Security indicator | Output | Security indicator | ON | 0 V |
| | | | | | Blinking |   JPMIA0014GB 11.3 V |
| | | | | | OFF | 12 V |
| 142 (BR) | Ground | Combination switch OUTPUT 5 | Output | Combination switch (Wiper intermittent dial 4) | All switches OFF | 0 V |
| | | | | | Lighting switch 1ST |   JPMIA0031GB 10.7 V |
| | | | | | Lighting switch HI | |
| | | | | | Lighting switch 2ND | |
| | | | | | Turn signal switch RH | |
| 143 (V) | 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) |   JPMIA0032GB 10.7 V |
| | | | | | Any of the conditions below with all switches OFF • Wiper intermittent dial 1 • Wiper intermittent dial 2 • Wiper intermittent dial 3 • Wiper intermittent dial 6 • Wiper intermittent dial 7 | |

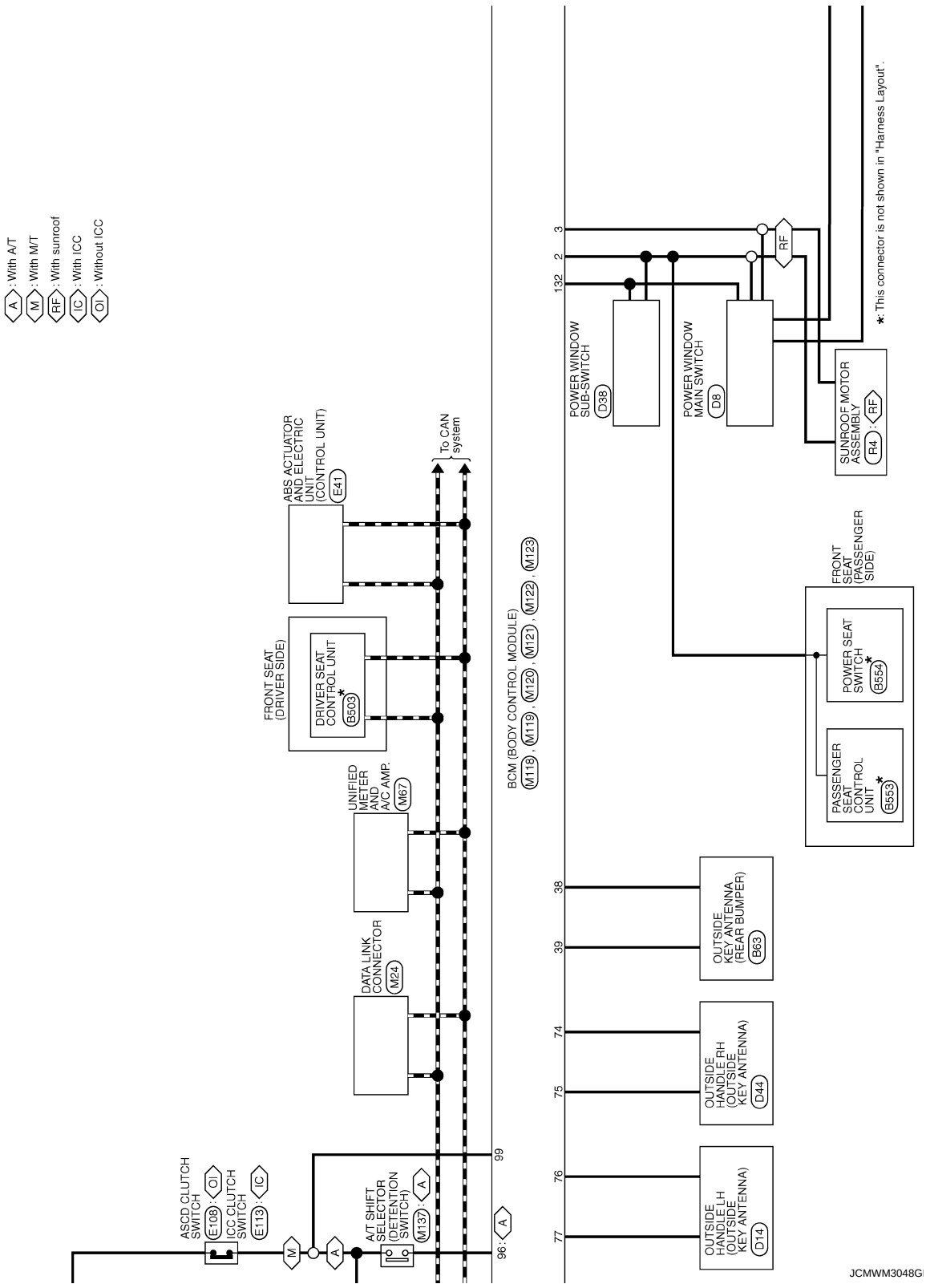
| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) |
|---|---|---|---|---|---|---|
| + | – | Signal name | Input/ Output | | | |
| 144 (G) | Ground | Combination switch OUTPUT 2 | Output | Combination switch | All switches OFF (Wiper intermittent dial 4) | 0 V |
| | | | | | Front washer switch ON (Wiper intermittent dial 4) |  JPMIA0033GB 10.7 V |
| | | | | | Any of the conditions below with all switches OFF • Wiper intermittent dial 1 • Wiper intermittent dial 5 • Wiper intermittent dial 6 | |
| 145 (L) | Ground | Combination switch OUTPUT 3 | Output | Combination switch (Wiper intermittent dial 4) | All switches OFF | 0 V |
| | | | | | Front wiper switch INT |  JPMIA0034GB 10.7 V |
| | | | | | Front wiper switch LO | |
| | | | | | Lighting switch AUTO | |
| 146 (SB) | Ground | Combination switch OUTPUT 4 | Output | Combination switch (Wiper intermittent dial 4) | All switches OFF | 0 V |
| | | | | | Front fog lamp switch ON |  JPMIA0035GB 10.7 V |
| | | | | | Lighting switch 2ND | |
| | | | | | Lighting switch PASS | |
| | | | | | Turn signal switch LH | |
| 149 (W) | Ground | Tire pressure warning check switch | Input | — | | 12 V |
| 150 (R) | Ground | Driver door switch | Input | Driver door switch | OFF (Door close) |  JPMIA0011GB 11.8 V |
| | | | | | ON (Door open) | 0 V |
| 151 (G) | Ground | Rear window defogger relay control | Output | Rear window defogger | Active | 0 V |
| | | | | | Not activated | Battery voltage |

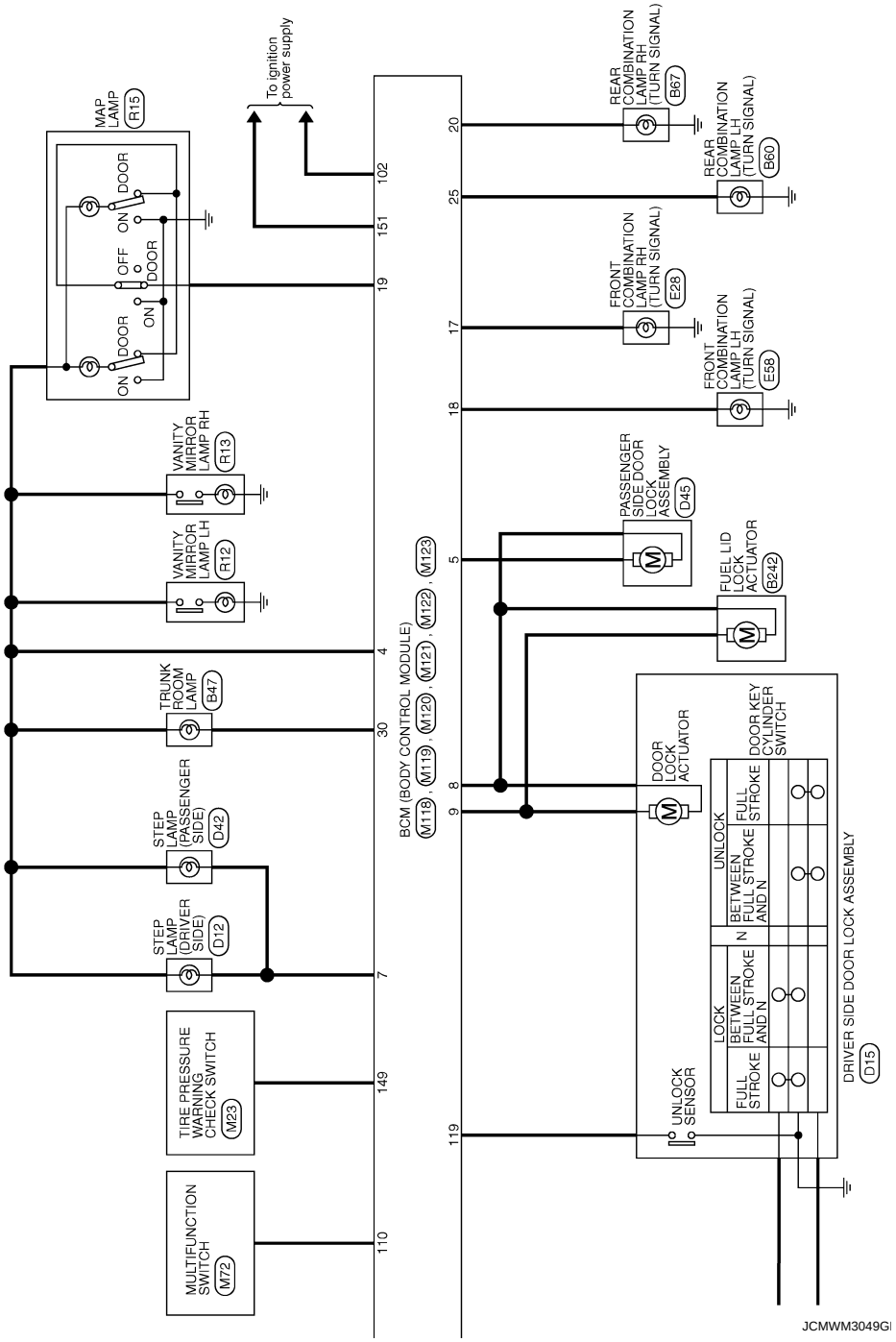
## Wiring Diagram - BCM -

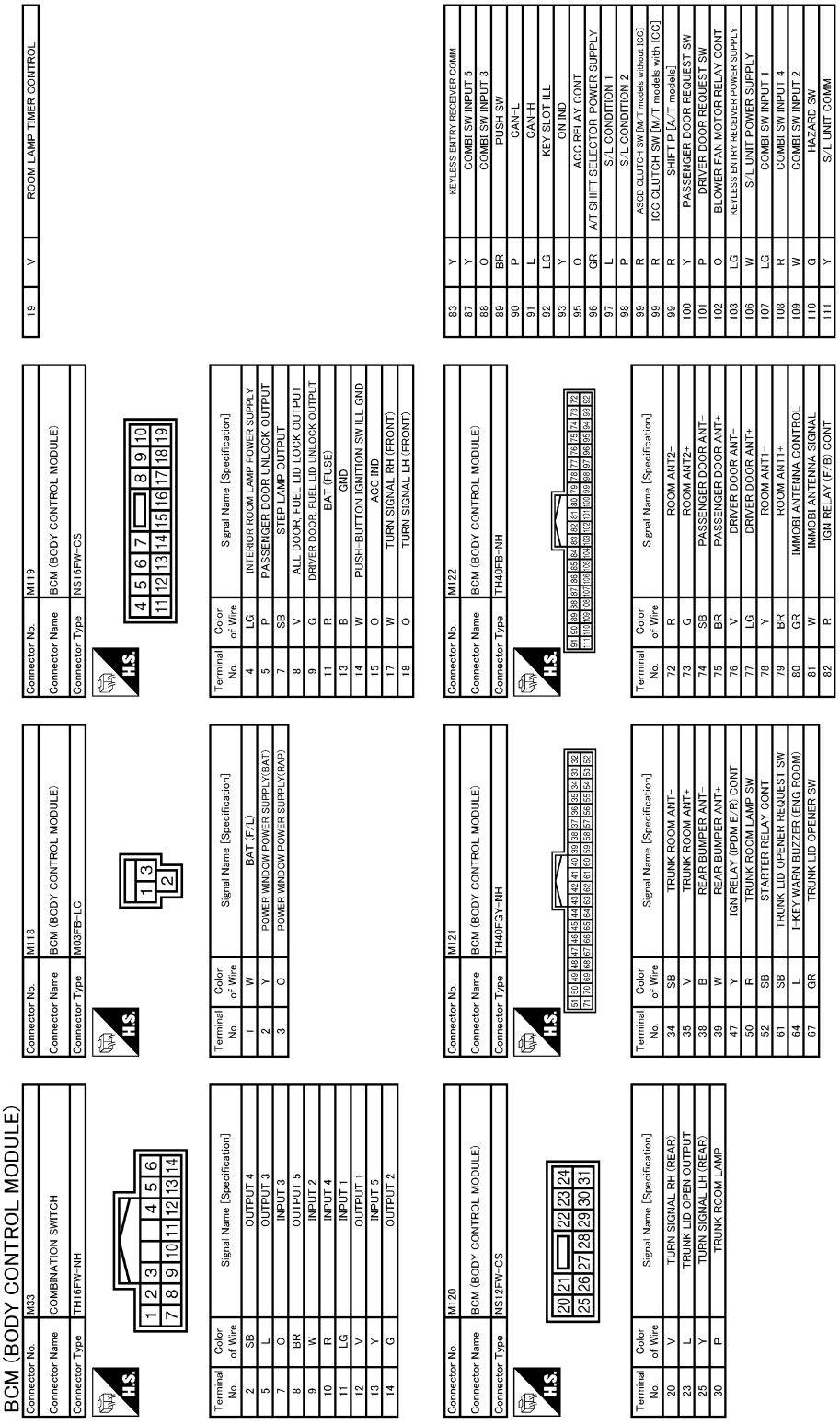
INFOID:0000000004685545



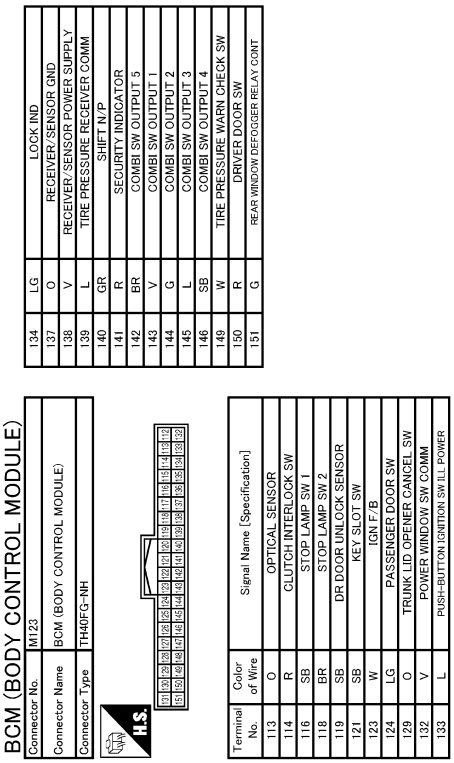

A : With A/T
M : With M/T
A/T ASSEMBLY
F51 : A
TCM (TRANSMISSION CONTROL MODULE)
F157
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E5 E6
STARTER RELAY
CPU
STEERING LOCK RELAY
IGNITION RELAY
10A 48
10A 44
DATA LINE
DATA LINE
STEERING LOCK UNIT M40
PUSH-BUTTON IGNITION SWITCH M50
PUSH SWITCH
LOCK
ACC
ON
ILLUMI-NATION
BCM (BODY CONTROL MODULE) M118, M119, M120, M121, M122, M123
INSIDE KEY ANTENNA (TRUNK ROOM) B49
INSIDE KEY ANTENNA (CONSOLE) M146
INSIDE KEY ANTENNA (INSTRUMENT CENTER) M131
OPTICAL SENSOR M94
TIRE PRESSURE RECEIVER M101
REMOTE KEYLESS ENTRY RECEIVER M104
TRUNK LID LOCK ASSEMBLY B303
TRUNK ROOM LAMP SWITCH
TRUNK LID OPENER ACTUATOR
*: This connector is not shown in "Harness Layout".
JCMWM3047GI


A : With A/T
M : With M/T
RF : With sunroof
IC : With ICC
OI : Without ICC
ASCD CLUTCH SWITCH E108 : OI
ICC CLUTCH SWITCH E113 : IC
M
A
A/T SHIFT SELECTOR (DETENTION SWITCH) M137 : A
96 : A
99
DATA LINK CONNECTOR M24
UNIFIED METER AND A/C AMP. M67
FRONT SEAT (DRIVER SIDE)
DRIVER SEAT CONTROL UNIT* B503
ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) E41
To CAN system
BCM (BODY CONTROL MODULE) M118, M119, M120, M121, M122, M123
38
39
74
75
76
77
OUTSIDE KEY ANTENNA (REAR BUMPER) B63
OUTSIDE HANDLE RH (OUTSIDE KEY ANTENNA) D44
OUTSIDE HANDLE LH (OUTSIDE KEY ANTENNA) D14
FRONT SEAT (PASSENGER SIDE)
POWER SEAT SWITCH* B554
PASSENGER SEAT CONTROL UNIT* B553
POWER WINDOW SUB-SWITCH D38
POWER WINDOW MAIN SWITCH D8
132
2
3
RF
SUNROOF MOTOR ASSEMBLY R4 : RF
*: This connector is not shown in "Harness Layout".
JCMWM3048GB


To ignition power supply
MAP LAMP R15
DOOR ON
OFF
DOOR ON
DOOR ON
ON DOOR
VANITY MIRROR LAMP RH R13
VANITY MIRROR LAMP LH R12
TRUNK ROOM LAMP B47
STEP LAMP (PASSENGER SIDE) D42
STEP LAMP (DRIVER SIDE) D12
TIRE PRESSURE WARNING CHECK SWITCH M23
MULTIFUNCTION SWITCH M72
BCM (BODY CONTROL MODULE) M118, M119, M120, M121, M122, M123
102
151
19
4
30
7
149
110
20
25
17
18
5
8
9
119
REAR COMBINATION LAMP RH (TURN SIGNAL) B67
REAR COMBINATION LAMP LH (TURN SIGNAL) B60
FRONT COMBINATION LAMP RH (TURN SIGNAL) E28
FRONT COMBINATION LAMP LH (TURN SIGNAL) E58
PASSENGER SIDE DOOR LOCK ASSEMBLY D45
FUEL LID LOCK ACTUATOR B242
DOOR LOCK ACTUATOR
UNLOCK SENSOR
DOOR KEY CYLINDER SWITCH
LOCK
UNLOCK
FULL STROKE
BETWEEN FULL STROKE AND N
N
DRIVER SIDE DOOR LOCK ASSEMBLY D15
JCMWM3049GI


BCM (BODY CONTROL MODULE)
Connector No. M33
Connector Name COMBINATION SWITCH
Connector Type TH16FW-NH
H.S.
1 2 3 4 5 6
7 8 9 10 11 12 13 14
Terminal No. Color of Wire Signal Name [Specification]
2 SB OUTPUT 4
5 L OUTPUT 3
7 O INPUT 3
8 BR OUTPUT 5
9 W INPUT 2
10 R INPUT 4
11 LG INPUT 1
12 V OUTPUT 1
13 Y INPUT 5
14 G OUTPUT 2
Connector No. M120
Connector Name BCM (BODY CONTROL MODULE)
Connector Type NS12FW-CS
H.S.
20 21 22 23 24
25 26 27 28 29 30 31
Terminal No. Color of Wire Signal Name [Specification]
20 V TURN SIGNAL RH (REAR)
23 L TRUNK LID OPEN OUTPUT
25 Y TURN SIGNAL LH (REAR)
30 P TRUNK ROOM LAMP
Connector No. M118
Connector Name BCM (BODY CONTROL MODULE)
Connector Type M03FB-LC
H.S.
1 3
2
Terminal No. Color of Wire Signal Name [Specification]
1 W BAT (F/L)
2 Y POWER WINDOW POWER SUPPLY(BAT)
3 O POWER WINDOW POWER SUPPLY(RAP)
Connector No. M121
Connector Name BCM (BODY CONTROL MODULE)
Connector Type TH40FGY-NH
H.S.
51 50 49 48 47 46 45 44 43 42 41 40 39 38 37 36 35 34 33 32
71 70 69 68 67 66 65 64 63 62 61 60 59 58 57 56 55 54 53 52
Terminal No. Color of Wire Signal Name [Specification]
34 SB TRUNK ROOM ANT−
35 V TRUNK ROOM ANT+
38 B REAR BUMPER ANT−
39 W REAR BUMPER ANT+
47 Y IGN RELAY (IPDM E/R) CONT
50 R TRUNK ROOM LAMP SW
52 SB STARTER RELAY CONT
61 SB TRUNK LID OPENER REQUEST SW
64 L I-KEY WARN BUZZER (ENG ROOM)
67 GR TRUNK LID OPENER SW
Connector No. M119
Connector Name BCM (BODY CONTROL MODULE)
Connector Type NS16FW-CS
H.S.
4 5 6 7 8 9 10
11 12 13 14 15 16 17 18 19
Terminal No. Color of Wire Signal Name [Specification]
4 LG INTERIOR ROOM LAMP POWER SUPPLY
5 P PASSENGER DOOR UNLOCK OUTPUT
7 SB STEP LAMP OUTPUT
8 V ALL DOOR, FUEL LID LOCK OUTPUT
9 G DRIVER DOOR, FUEL LID UNLOCK OUTPUT
11 R BAT (FUSE)
13 B GND
14 W PUSH−BUTTON IGNITION SW ILL GND
15 O ACC IND
17 W TURN SIGNAL RH (FRONT)
18 O TURN SIGNAL LH (FRONT)
Connector No. M122
Connector Name BCM (BODY CONTROL MODULE)
Connector Type TH40FB-NH
H.S.
91 90 89 88 87 86 85 84 83 82 81 80 79 78 77 76 75 74 73 72
111 110 109 108 107 106 105 104 103 102 101 100 99 98 97 96 95 94 93 92
Terminal No. Color of Wire Signal Name [Specification]
72 R ROOM ANT2−
73 G ROOM ANT2+
74 SB PASSENGER DOOR ANT−
75 BR PASSENGER DOOR ANT+
76 V DRIVER DOOR ANT−
77 LG DRIVER DOOR ANT+
78 Y ROOM ANT1−
79 BR ROOM ANT1+
80 GR IMMOBI ANTENNA CONTROL
81 W IMMOBI ANTENNA SIGNAL
82 R IGN RELAY (F/B) CONT
19 V ROOM LAMP TIMER CONTROL
83 Y KEYLESS ENTRY RECEIVER COMM
87 Y COMBI SW INPUT 5
88 O COMBI SW INPUT 3
89 BR PUSH SW
90 P CAN−L
91 L CAN−H
92 LG KEY SLOT ILL
93 Y ON IND
95 O ACC RELAY CONT
96 GR A/T SHIFT SELECTOR POWER SUPPLY
97 L S/L CONDITION 1
98 P S/L CONDITION 2
99 R ASCD CLUTCH SW [M/T models without ICC]
99 R ICC CLUTCH SW [M/T models with ICC]
99 R SHIFT P [A/T models]
100 Y PASSENGER DOOR REQUEST SW
101 P DRIVER DOOR REQUEST SW
102 O BLOWER FAN MOTOR RELAY CONT
103 LG KEYLESS ENTRY RECEIVER POWER SUPPLY
106 W S/L UNIT POWER SUPPLY
107 LG COMBI SW INPUT 1
108 R COMBI SW INPUT 4
109 W COMBI SW INPUT 2
110 G HAZARD SW
111 Y S/L UNIT COMM

JCMWM3050G




JCMWM3051GI

## Fail-safe

*INFOID:0000000004685546*

### FAIL-SAFE CONTROL BY DTC

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

| Display contents of CONSULT | Fail-safe | Cancellation |
|---|---|---|
| B2013: ID DISCORD BCM-S/L | Inhibit engine cranking | Erase DTC |
| B2014: CHAIN OF S/L-BCM | Inhibit engine cranking | Erase DTC |
| B2190: NATS ANTENNA AMP | Inhibit engine cranking | Erase DTC |
| B2191: DIFFERENCE OF KEY | Inhibit engine cranking | Erase DTC |
| B2192: ID DISCORD BCM-ECM | Inhibit engine cranking | Erase DTC |
| B2193: CHAIN OF BCM-ECM | Inhibit engine cranking | Erase DTC |
| B2195: ANTI SCANNING | Inhibit engine cranking | Ignition switch ON → OFF |
| B2557: VEHICLE SPEED | Inhibit steering lock | When normal vehicle speed signals are received from ABS actuator and electric unit (control unit) for 500 ms |
| B2560: STARTER CONT RELAY | Inhibit engine cranking | 500 ms after the following CAN signal communication status becomes consistent<br>• Starter control relay signal<br>• Starter relay status signal |
| B2601: SHIFT POSITION | Inhibit steering lock | 500 ms after the following signal reception status becomes consistent<br>• Selector lever P position switch signal<br>• P range signal (CAN) |
| B2602: SHIFT POSITION | Inhibit steering lock | 5 seconds after the following BCM recognition conditions are fulfilled<br>• Ignition switch is in the ON position<br>• Selector lever P position switch signal: Except P position (battery voltage)<br>• Vehicle speed: 4 km/h (2.5 MPH) or more |
| B2603: SHIFT POSI STATUS | Inhibit steering lock | 500 ms after the following BCM recognition conditions are fulfilled<br>• Ignition switch is in the ON position<br>• Selector lever P position switch signal: Except P position (battery voltage)<br>• Selector lever P/N position signal: Except P and N positions (0 V) |
| B2604: PNP SW | Inhibit steering lock | 500 ms after any of the following BCM recognition conditions are fulfilled<br>• Status 1<br>- Ignition switch is in the ON position<br>- Selector lever P/N position signal: P and N position (battery voltage)<br>- P range signal or N range signal (CAN): ON<br>• Status 2<br>- Ignition switch is in the ON position<br>- Selector lever P/N position signal: Except P and N positions (0 V)<br>- P range signal and N range signal (CAN): OFF |
| B2605: PNP SW | Inhibit steering lock | 500 ms after any of the following BCM recognition conditions are fulfilled<br>• Status 1<br>- Ignition switch is in the ON position<br>- Selector lever P/N position signal: Except P and N positions (0 V)<br>- Interlock/PNP switch signal (CAN): OFF<br>• Status 2<br>- Ignition switch is in the ON position<br>- Selector lever P/N position signal: P or N position (battery voltage)<br>- PNP switch signal (CAN): ON |
| B2606: S/L RELAY | Inhibit engine cranking | 500 ms after the following CAN signal communication status becomes consistent<br>• Steering lock relay signal (Request signal)<br>• Steering lock relay signal (Condition signal) |

| Display contents of CONSULT | Fail-safe | Cancellation |
|---|---|---|
| B2607: S/L RELAY | Inhibit engine cranking | 500 ms after the following CAN signal communication status has becomes consistent<br>• Steering lock relay signal (Request signal)<br>• Steering lock relay signal (Condition signal) |
| B2608: STARTER RELAY | Inhibit engine cranking | 500 ms after the following signal communication status becomes consistent<br>• Starter motor relay control signal<br>• Starter relay status signal (CAN) |
| B2609: S/L STATUS | • Inhibit engine cranking<br>• Inhibit steering lock | When the following steering lock conditions agree<br>• BCM steering lock control status<br>• Steering lock condition No. 1 signal status<br>• Steering lock condition No. 2 signal status |
| B260A: IGNITION RELAY | Inhibit engine cranking | 500 ms after the following conditions are fulfilled<br>• IGN relay (IPDM E/R) control signal: OFF (Battery voltage)<br>• Ignition ON signal (CAN to IPDM E/R): OFF (Request signal)<br>• 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<br>• Power position changes to ACC<br>• Receives engine status signal (CAN) |
| B2612: S/L STATUS | • Inhibit engine cranking<br>• Inhibit steering lock | When any of the following conditions are fulfilled<br>• Steering lock unit status signal (CAN) is received normally<br>• The BCM steering lock control status matches the steering lock status recognized by the steering lock unit status signal (CAN from IPDM E/R) |
| B2617: STARTER RELAY CIRC | Inhibit engine cranking | 1 second after the starter motor relay control inside BCM becomes normal |
| B2618: BCM | Inhibit engine cranking | 1 second after the ignition relay (IPDM E/R) control inside BCM becomes normal |
| B2619: BCM | Inhibit engine cranking | 1 second after the steering lock unit power supply output control inside BCM becomes normal |
| B261E: VEHICLE TYPE | Inhibit engine cranking | BCM initialization |
| B26E8: CLUTCH SW | Inhibit engine cranking | When any of the following BCM recognition conditions are fulfilled<br>• Status 1<br>- Clutch switch signal (CAN from ECM): ON<br>- Clutch interlock switch signal: OFF (0 V)<br>• Status 2<br>- Clutch switch signal (CAN from ECM): OFF<br>- Clutch interlock switch signal: ON (Battery voltage) |
| B26E9: S/L STATUS | • Inhibit engine cranking<br>• Inhibit steering lock | When BCM transmits the LOCK request signal to steering lock unit, and receives LOCK response signal from steering lock unit, the following conditions are fulfilled<br>• Steering condition No. 1 signal: LOCK (0 V)<br>• Steering condition No. 2 signal: LOCK (Battery voltage) |

## HIGH FLASHER OPERATION

BCM detects the turn signal lamp circuit status by the current value.
BCM increases the turn signal lamp blinking speed if the bulb or harness open is detected with the turn signal lamp operating.

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

## DTC Inspection Priority Chart

INFOID:0000000004685547

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 | • U1000: CAN COMM<br>• U1010: CONTROL UNIT(CAN) |
| 3 | • B2190: NATS ANTENNA AMP<br>• B2191: DIFFERENCE OF KEY<br>• B2192: ID DISCORD BCM-ECM<br>• B2193: CHAIN OF BCM-ECM<br>• B2195: ANTI SCANNING |
| 4 | • B2013: ID DISCORD BCM-S/L<br>• B2014: CHAIN OF S/L-BCM<br>• B2553: IGNITION RELAY<br>• B2555: STOP LAMP<br>• B2556: PUSH-BTN IGN SW<br>• B2557: VEHICLE SPEED<br>• B2560: STARTER CONT RELAY<br>• B2601: SHIFT POSITION<br>• B2602: SHIFT POSITION<br>• B2603: SHIFT POSI STATUS<br>• B2604: PNP SW<br>• B2605: PNP SW<br>• B2606: S/L RELAY<br>• B2607: S/L RELAY<br>• B2608: STARTER RELAY<br>• B2609: S/L STATUS<br>• B260A: IGNITION RELAY<br>• B260B: STEERING LOCK UNIT<br>• B260C: STEERING LOCK UNIT<br>• B260D: STEERING LOCK UNIT<br>• B260F: ENG STATE SIG LOST<br>• B2612: S/L STATUS<br>• B2614: ACC RELAY CIRC<br>• B2615: BLOWER RELAY CIRC<br>• B2616: IGN RELAY CIRC<br>• B2617: STARTER RELAY CIRC<br>• B2618: BCM<br>• B2619: BCM<br>• B261A: PUSH-BTN IGN SW<br>• B261E: VEHICLE TYPE<br>• B26E8: CLUTCH SW<br>• B26E9: S/L STATUS<br>• B26EA: KEY REGISTRATION<br>• C1729: VHCL SPEED SIG ERR<br>• U0415: VEHICLE SPEED SIG |

| Priority | DTC |
|---|---|
| 5 | • C1704: LOW PRESSURE FL<br>• C1705: LOW PRESSURE FR<br>• C1706: LOW PRESSURE RR<br>• C1707: LOW PRESSURE RL<br>• C1708: [NO DATA] FL<br>• C1709: [NO DATA] FR<br>• C1710: [NO DATA] RR<br>• C1711: [NO DATA] RL<br>• C1712: [CHECKSUM ERR] FL<br>• C1713: [CHECKSUM ERR] FR<br>• C1714: [CHECKSUM ERR] RR<br>• C1715: [CHECKSUM ERR] RL<br>• C1716: [PRESSDATA ERR] FL<br>• C1717: [PRESSDATA ERR] FR<br>• C1718: [PRESSDATA ERR] RR<br>• C1719: [PRESSDATA ERR] RL<br>• C1720: [CODE ERR] FL<br>• C1721: [CODE ERR] FR<br>• C1722: [CODE ERR] RR<br>• C1723: [CODE ERR] RL<br>• C1724: [BATT VOLT LOW] FL<br>• C1725: [BATT VOLT LOW] FR<br>• C1726: [BATT VOLT LOW] RR<br>• C1727: [BATT VOLT LOW] RL<br>• C1734: CONTROL UNIT |
| 6 | • B2621: INSIDE ANTENNA<br>• B2622: INSIDE ANTENNA<br>• B2623: INSIDE ANTENNA |

## DTC Index

INFOID:0000000004685548

**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-14, "COMMON ITEM : CONSULT-III Function (BCM - COMMON ITEM)".

| CONSULT display | Fail-safe | Freeze Frame Data<br>•Vehicle Speed<br>•Odo/Trip Meter<br>•Vehicle condition | Intelligent Key warning lamp ON | Tire pressure monitor warning lamp ON | Reference page |
|---|---|---|---|---|---|
| No DTC is detected. further testing may be required. | — | — | — | — | — |
| U1000: CAN COMM | — | — | — | — | BCS-35 |
| U1010: CONTROL UNIT(CAN) | — | — | — | — | BCS-36 |
| U0415: VEHICLE SPEED SIG | — | — | — | — | BCS-37 |
| B2013: ID DISCORD BCM-S/L | × | × | — | — | SEC-55 |
| B2014: CHAIN OF S/L-BCM | × | × | — | — | SEC-56 |
| B2190: NATS ANTENNA AMP | × | — | — | — | SEC-47 |
| B2191: DIFFERENCE OF KEY | × | — | — | — | SEC-50 |
| B2192: ID DISCORD BCM-ECM | × | — | — | — | SEC-51 |
| B2193: CHAIN OF BCM-ECM | × | — | — | — | SEC-53 |
| B2195: ANTI SCANNING | × | — | — | — | SEC-54 |
| B2553: IGNITION RELAY | — | × | — | — | PCS-48 |
| B2555: STOP LAMP | — | × | — | — | SEC-59 |

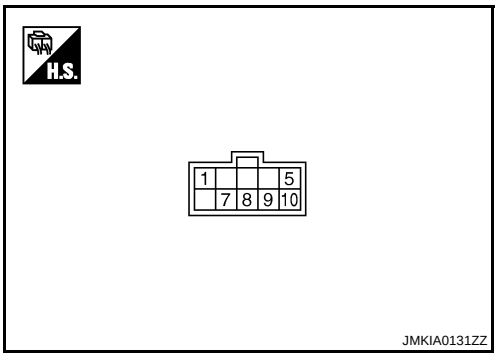
| CONSULT display | Fail-safe | Freeze Frame Data •Vehicle Speed •Odo/Trip Meter •Vehicle condition | Intelligent Key warning lamp ON | Tire pressure monitor warning lamp ON | Refer-ence page |
|---|---|---|---|---|---|
| B2556: PUSH-BTN IGN SW | — | × | × | — | SEC-61 |
| B2557: VEHICLE SPEED | × | × | × | — | SEC-63 |
| B2560: STARTER CONT RELAY | × | × | × | — | SEC-64 |
| B2562: LOW VOLTAGE | — | × | — | — | BCS-38 |
| B2601: SHIFT POSITION | × | × | × | — | SEC-65 |
| B2602: SHIFT POSITION | × | × | × | — | SEC-68 |
| B2603: SHIFT POSI STATUS | × | × | × | — | SEC-70 |
| B2604: PNP SW | × | × | × | — | SEC-73 |
| B2605: PNP SW | × | × | × | — | SEC-75 |
| B2606: S/L RELAY | × | × | × | — | SEC-77 |
| B2607: S/L RELAY | × | × | × | — | SEC-78 |
| B2608: STARTER RELAY | × | × | × | — | SEC-80 |
| B2609: S/L STATUS | × | × | × | — | SEC-82 |
| B260A: IGNITION RELAY | × | × | × | — | PCS-50 |
| B260B: STEERING LOCK UNIT | — | × | × | — | SEC-86 |
| B260C: STEERING LOCK UNIT | — | × | × | — | SEC-87 |
| B260D: STEERING LOCK UNIT | — | × | × | — | SEC-88 |
| B260F: ENG STATE SIG LOST | × | × | × | — | SEC-89 |
| B2612: S/L STATUS | × | × | × | — | SEC-94 |
| B2614: ACC RELAY CIRC | — | × | × | — | PCS-52 |
| B2615: BLOWER RELAY CIRC | — | × | × | — | PCS-54 |
| B2616: IGN RELAY CIRC | — | × | × | — | PCS-56 |
| B2617: STARTER RELAY CIRC | × | × | × | — | SEC-98 |
| B2618: BCM | × | × | × | — | PCS-58 |
| B2619: BCM | × | × | × | — | SEC-100 |
| B261A: PUSH-BTN IGN SW | — | × | × | — | PCS-59 |
| B261E: VEHICLE TYPE | × | × | × (Turn ON for 15 seconds) | — | SEC-101 |
| B2621: INSIDE ANTENNA | — | × | — | — | DLK-55 |
| B2622: INSIDE ANTENNA | — | × | — | — | DLK-57 |
| B2623: INSIDE ANTENNA | — | × | — | — | DLK-59 |
| B26E8: CLUTCH SW | × | × | × | — | SEC-90 |
| B26E9: S/L STATUS | × | × | × (Turn ON for 15 seconds) | — | SEC-92 |
| B26EA: KEY REGISTRATION | — | × | × (Turn ON for 15 seconds) | — | SEC-93 |
| C1704: LOW PRESSURE FL | — | — | — | × | WT-17 |
| C1705: LOW PRESSURE FR | — | — | — | × | |
| C1706: LOW PRESSURE RR | — | — | — | × | |
| C1707: LOW PRESSURE RL | — | — | — | × | |

| CONSULT display | Fail-safe | Freeze Frame Data •Vehicle Speed •Odo/Trip Meter •Vehicle condition | Intelligent Key warning lamp ON | Tire pressure monitor warning lamp ON | Refer-ence page |
|---|---|---|---|---|---|
| C1708: [NO DATA] FL | — | — | — | × | WT-19 |
| C1709: [NO DATA] FR | — | — | — | × | |
| C1710: [NO DATA] RR | — | — | — | × | |
| C1711: [NO DATA] RL | — | — | — | × | |
| C1712: [CHECKSUM ERR] FL | — | — | — | × | WT-21 |
| C1713: [CHECKSUM ERR] FR | — | — | — | × | |
| C1714: [CHECKSUM ERR] RR | — | — | — | × | |
| C1715: [CHECKSUM ERR] RL | — | — | — | × | |
| C1716: [PRESSDATA ERR] FL | — | — | — | × | WT-24 |
| C1717: [PRESSDATA ERR] FR | — | — | — | × | |
| C1718: [PRESSDATA ERR] RR | — | — | — | × | |
| C1719: [PRESSDATA ERR] RL | — | — | — | × | |
| C1720: [CODE ERR] FL | — | — | — | × | WT-26 |
| C1721: [CODE ERR] FR | — | — | — | × | |
| C1722: [CODE ERR] RR | — | — | — | × | |
| C1723: [CODE ERR] RL | — | — | — | × | |
| C1724: [BATT VOLT LOW] FL | — | — | — | × | WT-29 |
| C1725: [BATT VOLT LOW] FR | — | — | — | × | |
| C1726: [BATT VOLT LOW] RR | — | — | — | × | |
| C1727: [BATT VOLT LOW] RL | — | — | — | × | |
| C1729: VHCL SPEED SIG ERR | — | — | — | × | WT-32 |
| C1734: CONTROL UNIT | — | — | — | × | WT-33 |

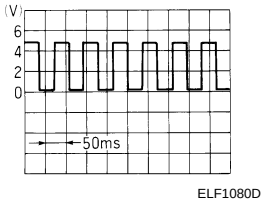
# SUNROOF SYSTEM
## SUNROOF MOTOR ASSEMBLY
### SUNROOF MOTOR ASSEMBLY : Reference Value

INFOID:0000000004249825

TERMINAL LAYOUT

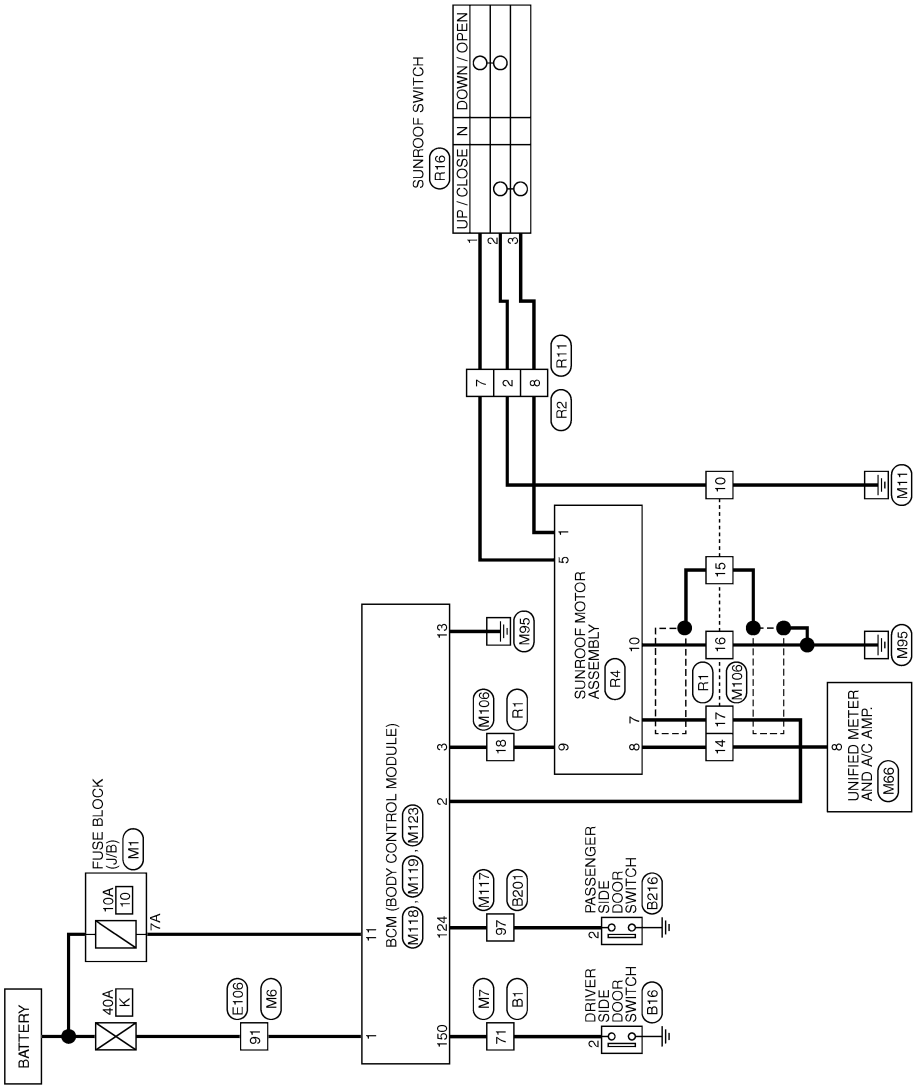



PHYSICAL VALUES

| Terminal No. (Wire color) | | Description | | Condition | Voltage (V) (Approx.) |
|---|---|---|---|---|---|
| + | – | Signal name | Input/ Output | | |
| 1 (GR) | Ground | Sunroof close switch (BIT 1) signal | Input | Sunroof switch in following position<br>• TILT UP<br>• SLIDE CLOSE | 0 |
| | | | | Other than above | Battery voltage |
| 5 (P) | Ground | Sunroof open switch (BIT 0) signal | Input | Sunroof switch in following position<br>• TILT DOWN<br>• SLIDE OPEN | 0 |
| | | | | Other than above | Battery voltage |
| 7 (W) | Ground | Sunroof power supply | Input | — | Battery voltage |
| 8 (L) | Ground | Vehicle speed signal (2-pulse) | Input | Speedometer operated [When vehicle speed is approx.40km/ h (25MPH)] |  ELF1080D |
| 9 (Y) | Ground | Retained power signal | Input | Ignition switch ON | Battery voltage |
| | | | | Within 45 second after ignition switch is turned to OFF. | Battery voltage |
| | | | | When driver side or passenger side door is opened during retained power operation. | 0 |
| 10 (B) | Ground | Ground | — | — | 0 |

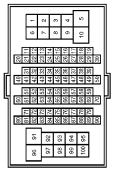
# SUNROOF MOTOR ASSEMBLY : Wiring Diagram - SUNROOF CONTROL SYSTEM -

INFOID:0000000004249826



SUNROOF

| Connector No. | B1 |
|---|---|
| Connector Name | WIRE TO WIRE |
| Connector Type | TH80FW-CS16-TM4 |

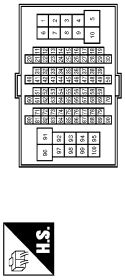


| Terminal No. | Color of Wire | Signal Name [Specification] |
|---|---|---|
| 71 | V | – |

| Connector No. | B16 |
|---|---|
| Connector Name | DRIVER SIDE DOOR SWITCH |
| Connector Type | A03FW |

| Terminal No. | Color of Wire | Signal Name [Specification] |
|---|---|---|
| 2 | V | – |

| Connector No. | B201 |
|---|---|
| Connector Name | WIRE TO WIRE |
| Connector Type | TH80FW-CS16-TM4 |



| Terminal No. | Color of Wire | Signal Name [Specification] |
|---|---|---|
| 97 | GR | – |

| Connector No. | B216 |
|---|---|
| Connector Name | PASSENGER SIDE DOOR SWITCH |
| Connector Type | A03FW |

| Terminal No. | Color of Wire | Signal Name [Specification] |
|---|---|---|
| 2 | GR | – |

| Connector No. | E106 |
|---|---|
| Connector Name | WIRE TO WIRE |
| Connector Type | TH80FW-CS16-TM4 |



| Terminal No. | Color of Wire | Signal Name [Specification] |
|---|---|---|
| 91 | G | – |

| Connector No. | M1 |
|---|---|
| Connector Name | FUSE BLOCK (J/B) |
| Connector Type | NS06FW-M2 |




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

| Connector No. | M6 |
|---|---|
| Connector Name | WIRE TO WIRE |
| Connector Type | TH80MW-CS16-TM4 |



| Terminal No. | Color of Wire | Signal Name [Specification] |
|---|---|---|
| 91 | W | – |

| Connector No. | M7 |
|---|---|
| Connector Name | WIRE TO WIRE |
| Connector Type | TH80MW-CS16-TM4 |



| Terminal No. | Color of Wire | Signal Name [Specification] |
|---|---|---|
| 71 | R | – |

JCKWM2150GB

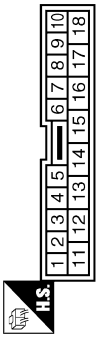
SUNROOF

| Connector No. | M66 |
|---|---|
| Connector Name | UNIFIED METER AND A/C AMP. |
| Connector Type | TH40FW-NH |



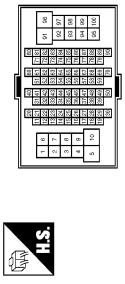
| Terminal No. | Color of Wire | Signal Name [Specification] |
|---|---|---|
| 8 | L | VEHICLE SPEED (2-PULSE) |

| Connector No. | M106 |
|---|---|
| Connector Name | WIRE TO WIRE |
| Connector Type | TK10MW-NS8 |



| Terminal No. | Color of Wire | Signal Name [Specification] |
|---|---|---|
| 10 | B | – |
| 14 | L | – |
| 15 | SHIELD | – |
| 16 | G | – |
| 17 | BR | – |
| 18 | O | – [With 4WAS] |
| 18 | R | – [Without 4WAS] |

| Connector No. | M117 |
|---|---|
| Connector Name | WIRE TO WIRE |
| Connector Type | TH80MW-CS16-TM4 |

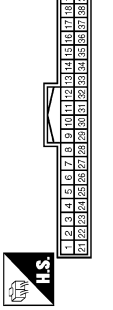


| Terminal No. | Color of Wire | Signal Name [Specification] |
|---|---|---|
| 97 | LG | – |

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

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

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



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

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



| Terminal No. | Color of Wire | Signal Name [Specification] |
|---|---|---|
| 124 | LG | PASSENGER DOOR SW |
| 150 | R | DRIVER DOOR SW |

| Connector No. | R1 |
|---|---|
| Connector Name | WIRE TO WIRE |
| Connector Type | TK10FW-NS8 |



| Terminal No. | Color of Wire | Signal Name [Specification] |
|---|---|---|
| 10 | B | – |
| 14 | L | – |
| 15 | SHIELD | – |
| 16 | G | – [With 4WAS] |
| 16 | B | – [Without 4WAS] |
| 17 | BR | – |
| 18 | Y | – |

| Connector No. | R2 |
|---|---|
| Connector Name | WIRE TO WIRE |
| Connector Type | TH12FW-NH |

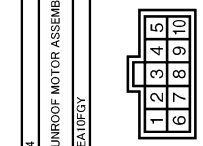


| Terminal No. | Color of Wire | Signal Name [Specification] |
|---|---|---|
| 2 | B | – |
| 7 | P | – |
| 8 | GR | – |

JCKWM2151GB

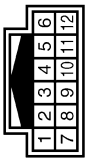
SUNROOF

| Connector No. | R4 |
|---|---|
| Connector Name | SUNROOF MOTOR ASSEMBLY |
| Connector Type | YEA10FGY |




| Terminal No. | Color of Wire | Signal Name [Specification] |
|---|---|---|
| 1 | GR | SW-BIT1 |
| 5 | P | SW-BIT0 |
| 7 | BR | +B |
| 8 | L | SPEED SENSOR(2P) |
| 9 | Y | TIMER(+IGN) |
| 10 | G | GND [With 4WAS] |
| 10 | B | GND [Without 4WAS] |

| Connector No. | R11 |
|---|---|
| Connector Name | WIRE TO WIRE |
| Connector Type | TH12MW-NH |




| Terminal No. | Color of Wire | Signal Name [Specification] |
|---|---|---|
| 2 | BR | – |
| 7 | O | – |
| 8 | G | – |

| Connector No. | R16 |
|---|---|
| Connector Name | SUNROOF SWITCH |
| Connector Type | TK03FW |


| Terminal No. | Color of Wire | Signal Name [Specification] |
|---|---|---|
| 1 | O | – |
| 2 | BR | – |
| 3 | G | – |

JCKWM2152GB

# SYMPTOM DIAGNOSIS

## SUNROOF DOES NOT OPERATE PROPERLY

### Diagnosis Procedure

INFOID:0000000004249827

**1.** CHECK BCM POWER SUPPLY AND GROUND CIRCUIT

Check BCM power supply and ground circuit.
Refer to RF-9, "BCM : Diagnosis Procedure"

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace the malfunctioning parts.

**2.** CHECK SUNROOF MOTOR ASSEMBLY POWER SUPPLY AND GROUND CIRCUIT

Check sunroof motor assembly power supply and ground circuit.
Refer to RF-9, "SUNROOF MOTOR ASSEMBLY : Diagnosis Procedure"

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace the malfunctioning parts.

**3.** CHECK SUNROOF SWITCH

Check sunroof switch.
Refer to RF-11, "Component Function Check".

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair or replace the malfunctioning parts.

**4.** CONFIRM THE OPERATION

Confirm the operation again.

Is the result normal?

YES >> Check intermittent incident. Refer to GI-41, "Intermittent Incident".
NO >> GO TO 1.

# AUTO OPERATION DOES NOT OPERATE

## Diagnosis Procedure

INFOID:0000000004249828

### 1.PERFORM INITIALIZATION PROCEDURE

Initialization procedure is executed and operation is confirmed.
Refer to RF-4, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement".

Is the inspection result normal?

YES >> INSPECTION END
NO >> GO TO 2.

### 2.CONFIRM THE OPERATION

Confirm the operation again.

Is the result normal?

YES >> Check intermittent incident. Refer to GI-41, "Intermittent Incident".
NO >> GO TO 1.

# DOES NOT STOP FULLY-OPEN OR FULLY-CLOSED POSITION

## Diagnosis Procedure

INFOID:0000000004249829

### 1.PERFORM INITIALIZATION PROCEDURE

Initialization procedure is executed and operation is confirmed.
Refer to RF-4, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement".

Is the inspection result normal?

YES >> INSPECTION END
NO >> GO TO 2.

### 2.CONFIRM THE OPERATION

Confirm the operation again.

Is the result normal?

YES >> Check intermittent incident. Refer to GI-41, "Intermittent Incident".
NO >> GO TO 1.

# RETAINED POWER OPERATION DOES NOT OPERATE PROPERLY

## Diagnosis Procedure

INFOID:0000000004249830

### 1.CHECK DOOR SWITCH

Check door switch.
Refer to RF-13, "Component Function Check".

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace the malfunctioning parts.

### 2.CONFIRM THE OPERATION

Confirm the operation again.

Is the result normal?

YES >> Check intermittent incident. Refer to GI-41, "Intermittent Incident".
NO >> GO TO 1.

# SUNROOF DOES NOT OPERATE ANTI-PINCH FUNCTION

## Diagnosis Procedure

INFOID:0000000004249831

### 1.PERFORM INITIALIZATION PROCEDURE

Initialization procedure is executed and operation is confirmed.
Refer to RF-4, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement".

Is the inspection result normal?

YES >> INSPECTION END.
NO >> GO TO 2.

### 2.CONFIRM THE OPERATION

Confirm the operation again.

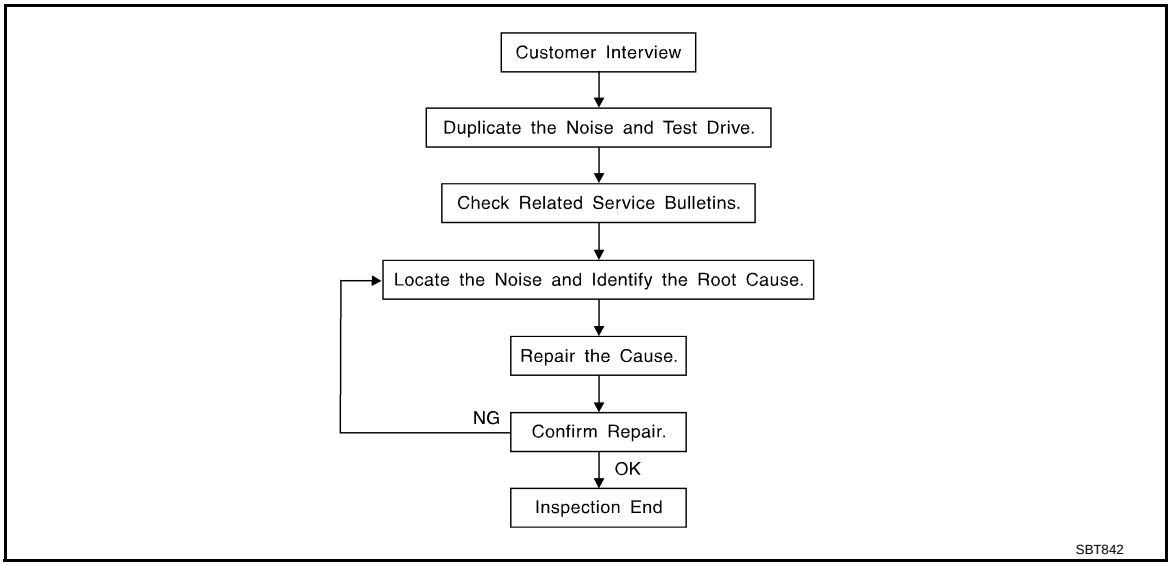
Is the result normal?

YES >> Check intermittent incident. Refer to GI-41, "Intermittent Incident".
NO >> GO TO 1.

# SQUEAK AND RATTLE TROUBLE DIAGNOSES

## Work Flow

INFOID:0000000004684710




### CUSTOMER INTERVIEW

Interview the customer if possible, to determine the conditions that exist when the noise occurs. Use the Diagnostic Worksheet during the interview to document the facts and conditions when the noise occurs and any of customer's comments; refer to RF-64, "Diagnostic Worksheet". This information is necessary to duplicate the conditions that exist when the noise occurs.

- The customer may not be able to provide a detailed description or the location of the noise. Attempt to obtain all the facts and conditions that exist when the noise occurs (or does not occur).
- If there is more than one noise in the vehicle, perform a diagnosis and repair the noise that the customer is concerned about. This can be accomplished by performing a cruise test on the vehicle with the customer.
- After identifying the type of noise, isolate the noise in terms of its characteristics. The noise characteristics are provided so the customer, service adviser and technician are all speaking the same language when defining the noise.
- Squeak – (Like tennis shoes on a clean floor)
  Squeak characteristics include the light contact/fast movement/brought on by road conditions/hard surfaces = higher pitch noise/softer surfaces = lower pitch noises/edge to surface = chirping
- Creak – (Like walking on an old wooden floor)
  Creak characteristics include firm contact/slow movement/twisting with a rotational movement/pitch dependent on materials/often brought on by activity.
- Rattle – (Like shaking a baby rattle)
  Rattle characteristics include the fast repeated contact/vibration or similar movement/loose parts/missing clip or fastener/incorrect clearance.
- Knock – (Like a knock on a door)
  Knock characteristics include hollow sounding/sometimes repeating/often brought on by driver action.
- Tick – (Like a clock second hand)
  Tick characteristics include gentle contacting of light materials/loose components/can be caused by driver action or road conditions.
- Thump – (Heavy, muffled knock noise)
  Thump characteristics include softer knock/dead sound often brought on by activity.
- Buzz – (Like a bumblebee)
  Buzz characteristics include high frequency rattle/firm contact.
- Often the degree of acceptable noise level will vary depending up on the person. A noise that a technician may judge as acceptable may be very irritating to the customer.
- Weather conditions, especially humidity and temperature, may have a great effect on noise level.

### DUPLICATE THE NOISE AND TEST DRIVE

If possible, drive the vehicle with the customer until the noise is duplicated. Note any additional information on the Diagnostic Worksheet regarding the conditions or location of the noise. This information can be used to duplicate the same conditions when the repair is reconfirmed.

If the noise can be duplicated easily during the test drive, to help identify the source of the noise, try to duplicate the noise with the vehicle stopped by doing one or all of the following:

1) Close a door.
2) Tap or push/pull around the area where the noise appears to be coming from.
3) Rev the engine.
4) Use a floor jack to recreate vehicle “twist”.
5) At idle, apply engine load (electrical load, half-clutch on M/T models, drive position on A/T models).
6) Raise the vehicle on a hoist and hit a tire with a rubber hammer.

- Drive the vehicle and attempt to duplicate the conditions the customer states exist when the noise occurs.
- If it is difficult to duplicate the noise, drive the vehicle slowly on an undulating or rough road to stress the vehicle body.

## CHECK RELATED SERVICE BULLETINS

After verifying the customer concern or symptom, check ASIST for Technical Service Bulletins (TSBs) related to that concern or symptom.
If a TSB relates to the symptom, follow the procedure to repair the noise.

## LOCATE THE NOISE AND IDENTIFY THE ROOT CAUSE

1. Narrow down the noise to a general area. To help pinpoint the source of the noise, use a listening tool (Chassis ear: J-39570, Engine ear and mechanics stethoscope).
2. Narrow down the noise to a more specific area and identify the cause of the noise by:

- Removing the components in the area that is are suspected to be the cause of the noise.
  Do not use too much force when removing clips and fasteners, otherwise clips and fastener can be broken or lost during the repair, resulting in the creation of new noise.
- Tapping or pushing/pulling the component that is are suspected to be the cause of the noise.
  Do not tap or push/pull the component with excessive force, otherwise the noise will be eliminated only temporarily.
- Feeling for a vibration by hand by touching the component(s) that is are suspected to be the cause of the noise.
- Placing a piece of paper between components that are suspected to be the cause of the noise.
- Looking for loose components and contact marks.
  Refer to RF-62, "Inspection Procedure".

## REPAIR THE CAUSE

- If the cause is a loose component, tighten the component securely.
- If the cause is insufficient clearance between components:
- Separate components by repositioning or loosening and retightening the component, if possible.
- Insulate components with a suitable insulator such as urethane pads, foam blocks, felt cloth tape or urethane tape. A Nissan Squeak and Rattle Kit (J-43980) is available through the authorized Nissan Parts Department.

**CAUTION:**
**Never use excessive force as many components are constructed of plastic and may be damaged.**
**NOTE:**
Always check with the Parts Department for the latest parts information.
The following materials are contained in the Nissan Squeak and Rattle Kit (J-43980). Each item can be ordered separately as needed.
URETHANE PADS [1.5 mm (0.059 in) thick]
Insulates connectors, harness, etc.
76268-9E005: 100 × 135 mm (3.94 × 5.31 in)/76884-71L01: 60 × 85 mm (2.36 × 3.35 in)/76884-71L02:15 × 25 mm (0.59 × 0.98 in)
INSULATOR (Foam blocks)
Insulates components from contact. Can be used to fill space behind a panel.
73982-9E000: 45 mm (1.77 in) thick, 50 × 50 mm (1.97 × 1.97 in)/73982-50Y00: 10 mm (0.39 in) thick, 50 × 50 mm (1.97 × 1.97 in)
INSULATOR (Light foam block)
80845-71L00: 30 mm (1.18 in) thick, 30 × 50 mm (1.18 × 1.97in)
FELT CLOTHTAPE
Used to insulate where movement does not occur. Ideal for instrument panel applications.
68370-4B000: 15 × 25 mm (0.59 × 0.98 in) pad/68239-13E00: 5 mm (0.20 in) wide tape roll
The following materials, not found in the kit, can also be used to repair squeaks and rattles.
UHMW (TEFLON) TAPE

Insulates where slight movement is present. Ideal for instrument panel applications.
SILICONE GREASE
Used in place of UHMW tape that is be visible or does not fit. Will only last a few months.
SILICONE SPRAY
Used when grease cannot be applied.
DUCT TAPE
Used to eliminate movement.

### CONFIRM THE REPAIR

Confirm that the cause of a noise is repaired by test driving the vehicle. Operate the vehicle under the same conditions as when the noise originally occurred. Refer to the notes on the Diagnostic Worksheet.

## Inspection Procedure

INFOID:0000000004684711

Refer to Table of Contents for specific component removal and installation information.

### INSTRUMENT PANEL

Most incidents are caused by contact and movement between:

1. The cluster lid A and instrument panel
2. Acrylic lens and combination meter housing
3. Instrument panel to front pillar garnish
4. Instrument panel to windshield
5. Instrument panel mounting pins
6. Wiring harnesses behind the combination meter
7. A/C defroster duct and duct joint
   These incidents can usually be located by tapping or moving the components to duplicate the noise or by pressing on the components while driving to stop the noise. Most of these incidents can be repaired by applying felt cloth tape or silicon spray (in hard to reach areas). Urethane pads can be used to insulate wiring harness.
   **CAUTION:**
   **Never use silicone spray to isolate a squeak or rattle. If the area is saturated with silicone, the recheck of repair becomes impossible.**

### CENTER CONSOLE

Components to pay attention to include:

1. Shifter assembly cover to finisher
2. A/C control unit and cluster lid C
3. Wiring harnesses behind audio and A/C control unit

The instrument panel repair and isolation procedures also apply to the center console.

### DOORS

Pay attention to the following:

1. Finisher and inner panel making a slapping noise
2. Inside handle escutcheon to door finisher
3. Wiring harnesses tapping
4. Door striker out of alignment causing a popping noise on starts and stops

Tapping or moving the components or pressing on them while driving to duplicate the conditions can isolate many of these incidents. The areas can usually be insulated with felt cloth tape or insulator foam blocks from the Nissan Squeak and Rattle Kit (J-43980) to repair the noise.

### TRUNK

Trunk noises are often caused by a loose jack or loose items put into the trunk by the customer.
In addition look for the following:

1. Trunk lid dumpers out of adjustment
2. Trunk lid striker out of adjustment
3. The trunk lid torsion bars knocking together
4. A loose license plate or bracket

Most of these incidents can be repaired by adjusting, securing or insulating the item(s) or component(s) causing the noise.

### SUNROOF/HEADLINING

Noises in the sunroof/headlining area can often be traced to one of the following:

1. Sunroof lid, rail, linkage or seals making a rattle or light knocking noise
2. Sunvisor shaft shaking in the holder
3. Front or rear windshield touching headlining and squeaking

Again, pressing on the components to stop the noise while duplicating the conditions can isolate most of these incidents. Repairs usually consist of insulating with felt cloth tape.

### SEATS

When isolating seat noise it's important to note the position the seats in and the load placed on the seat when the noise occurs. These conditions should be duplicated when verifying and isolating the cause of the noise.
Cause of seat noise include:

1. Headrest rods and holder
2. A squeak between the seat pad cushion and frame
3. The rear seatback lock and bracket

These noises can be isolated by moving or pressing on the suspected components while duplicating the conditions under which the noise occurs.Most of these incidents can be repaired by repositioning the component or applying urethane tape to the contact area.

### UNDERHOOD

Some interior noise may be caused by components under the hood or on the engine wall. The noise is then transmitted into the passenger compartment.
Causes of transmitted underhood noise include:

1. Any component mounted to the engine wall
2. Components that pass through the engine wall
3. Engine wall mounts and connectors
4. Loose radiator mounting pins
5. Hood bumpers out of adjustment
6. Hood striker out of adjustment

These noises can be difficult to isolate since they cannot be reached from the interior of the vehicle. The best method is to secure, move or insulate one component at a time and test drive the vehicle. Also, engine RPM or load can be changed to isolate the noise. Repairs can usually be made by moving, adjusting, securing, or insulating the component causing the noise.

## Diagnostic Worksheet

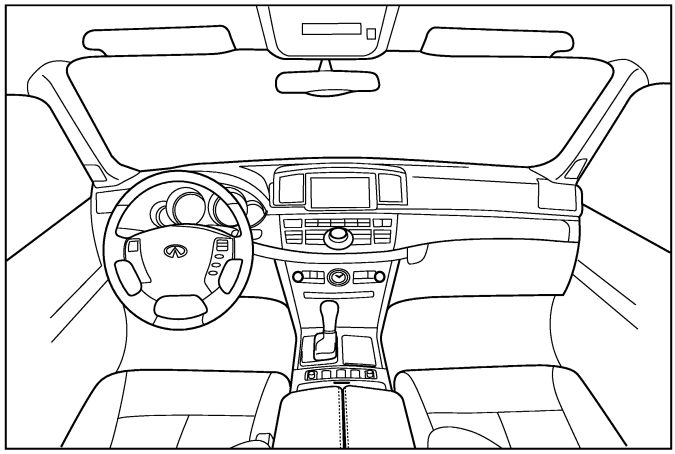
INFOID:0000000004249834

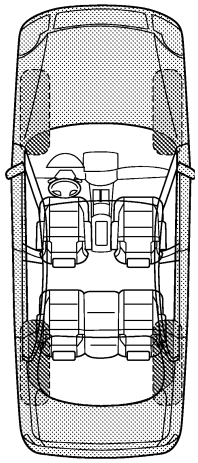
INFINITI

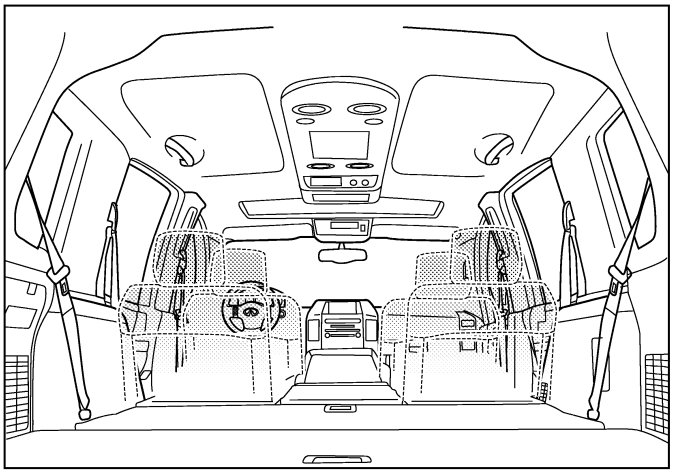
**SQUEAK & RATTLE DIAGNOSTIC WORKSHEET**

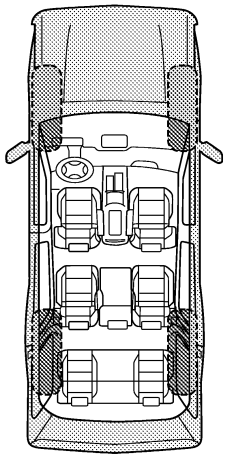
Dear Infiniti Customer:
We are concerned about your satisfaction with your Infiniti vehicle. Repairing a squeak or rattle sometimes can be very difficult. To help us fix your Infiniti right the first time, please take a moment to note the area of the vehicle where the squeak or rattle occurs and under what conditions. You may be asked to take a test drive with a service consultant or technician to ensure we confirm the noise you are hearing.

**I. WHERE DOES THE NOISE COME FROM?** (circle the area of the vehicle)
The illustrations are for reference only, and may not reflect the actual configuration of your vehicle.









**Continue to page 2 of the worksheet and briefly describe the location of the noise or rattle. In addition, please indicate the conditions which are present when the noise occurs.**

PIIB8741E

**SQUEAK & RATTLE DIAGNOSTIC WORKSHEET - page 2**

Briefly describe the location where the noise occurs:

_____

_____

**II. WHEN DOES IT OCCUR?** (please check the boxes that apply)

- ☐ anytime
- ☐ 1st time in the morning
- ☐ only when it is cold outside
- ☐ only when it is hot outside
- ☐ after sitting out in the rain
- ☐ when it is raining or wet
- ☐ dry or dusty conditions
- ☐ other:

**III. WHEN DRIVING:**

- ☐ through driveways
- ☐ over rough roads
- ☐ over speed bumps
- ☐ only about ____ mph
- ☐ on acceleration
- ☐ coming to a stop
- ☐ on turns: left, right or either (circle)
- ☐ with passengers or cargo
- ☐ other: _____
- ☐ after driving _____ miles or _____ minutes

**IV. WHAT TYPE OF NOISE**

- ☐ squeak (like tennis shoes on a clean floor)
- ☐ creak (like walking on an old wooden floor)
- ☐ rattle (like shaking a baby rattle)
- ☐ knock (like a knock at the door)
- ☐ tick (like a clock second hand)
- ☐ thump (heavy, muffled knock noise)
- ☐ buzz (like a bumble bee)

**TO BE COMPLETED BY DEALERSHIP PERSONNEL**

**Test Drive Notes:**

_____

_____

_____

| | YES | NO | Initials of person performing |
|---|---|---|---|
| Vehicle test driven with customer | ☐ | ☐ | _____ |
| - Noise verified on test drive | ☐ | ☐ | _____ |
| - Noise source located and repaired | ☐ | ☐ | _____ |
| - Follow up test drive performed to confirm repair | ☐ | ☐ | _____ |

VIN: _____ Customer Name: _____

W.O.# _____ Date: _____

This form must be attached to Work Order

PIIB8742E

# PRECAUTION

## PRECAUTIONS

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

INFOID:0000000004249835

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

**WARNING:**

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

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

**WARNING:**

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

### Service Notice

INFOID:0000000004249836

- When removing or installing various parts, place a cloth or padding onto the vehicle body to prevent scratches.
- Handle trim, molding, instruments, grille, etc. carefully during removing or installing. Be careful not to oil or damage them.
- Apply sealing compound where necessary when installing parts.
- When applying sealing compound, be careful that the sealing compound does not protrude from parts.
- When replacing any metal parts (for example body outer panel, members, etc.), be sure to take rust prevention measures.

### Precaution for Work

INFOID:0000000004249837

- When removing or disassembling each component, be careful not to damage or deform it. If a component may be subject to interference, be sure to protect it with a shop cloth.
- When removing (disengaging) components with a screwdriver or similar tool, be sure to wrap the component with a shop cloth or vinyl tape to protect it.
- Protect the removed parts with a shop cloth and keep them.
- Replace a deformed or damaged clip.
- If a part is specified as a non-reusable part, always replace it with new one.
- Be sure to tighten bolts and nuts securely to the specified torque.
- After re-installation is completed, be sure to check that each part works normally.
- Follow the steps below to clean components.

- Water soluble foul: Dip a soft cloth into lukewarm water, and wring the water out of the cloth to wipe the fouled area.
  Then rub with a soft and dry cloth.

- Oily foul: Dip a soft cloth into lukewarm water with mild detergent (concentration: within 2 to 3%), and wipe the fouled area.
  Then dip a cloth into fresh water, and wring the water out of the cloth to wipe the detergent off. Then rub with a soft and dry cloth.
- Do not use organic solvent such as thinner, benzene, alcohol, and gasoline.
- For genuine leather seats, use a genuine leather seat cleaner.

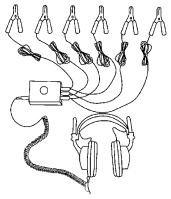
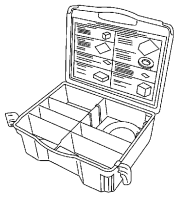
# PREPARATION

## PREPARATION

### Special Service Tool

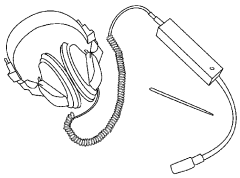
INFOID:0000000004249838

The actual shapes of Kent-Moore tools may differ from those of special service tools illustrated here.

| Tool number<br>(Kent-Moore No.)<br>Tool name | Description |
|---|---|
| (J39570)<br>Chassis ear<br>  <br>SIIA0993E | Locates the noise |
| (J43980)<br>NISSAN Squeak and Rattle Kit<br>  <br>SIIA0994E | Repairs the cause of noise |

### Commercial Service Tool

INFOID:0000000004249839

| Tool name | Description |
|---|---|
| Engine ear<br>  <br>SIIA0995E | Locates the noise |

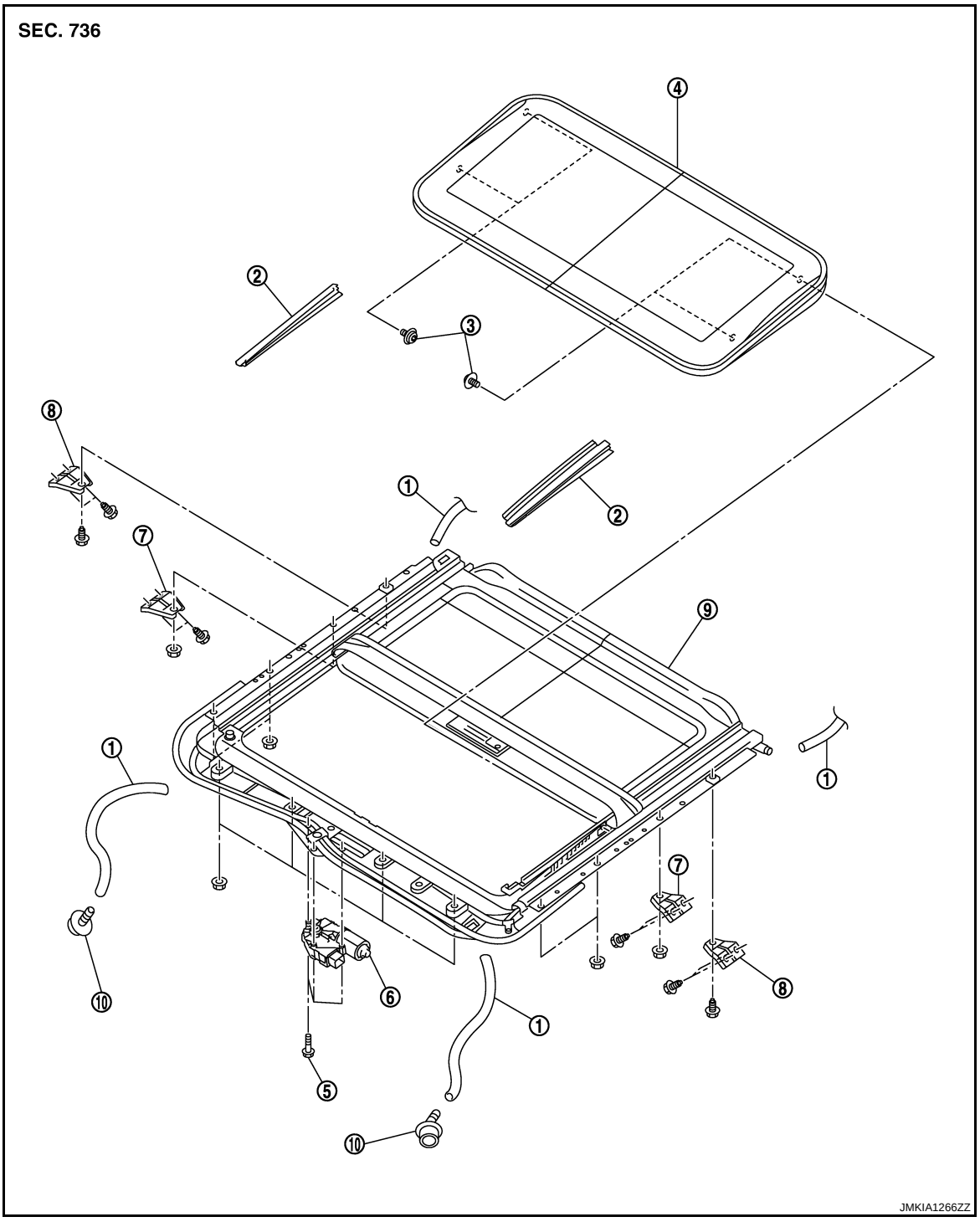
# REMOVAL AND INSTALLATION

## SUNROOF UNIT ASSEMBLY

### Exploded View

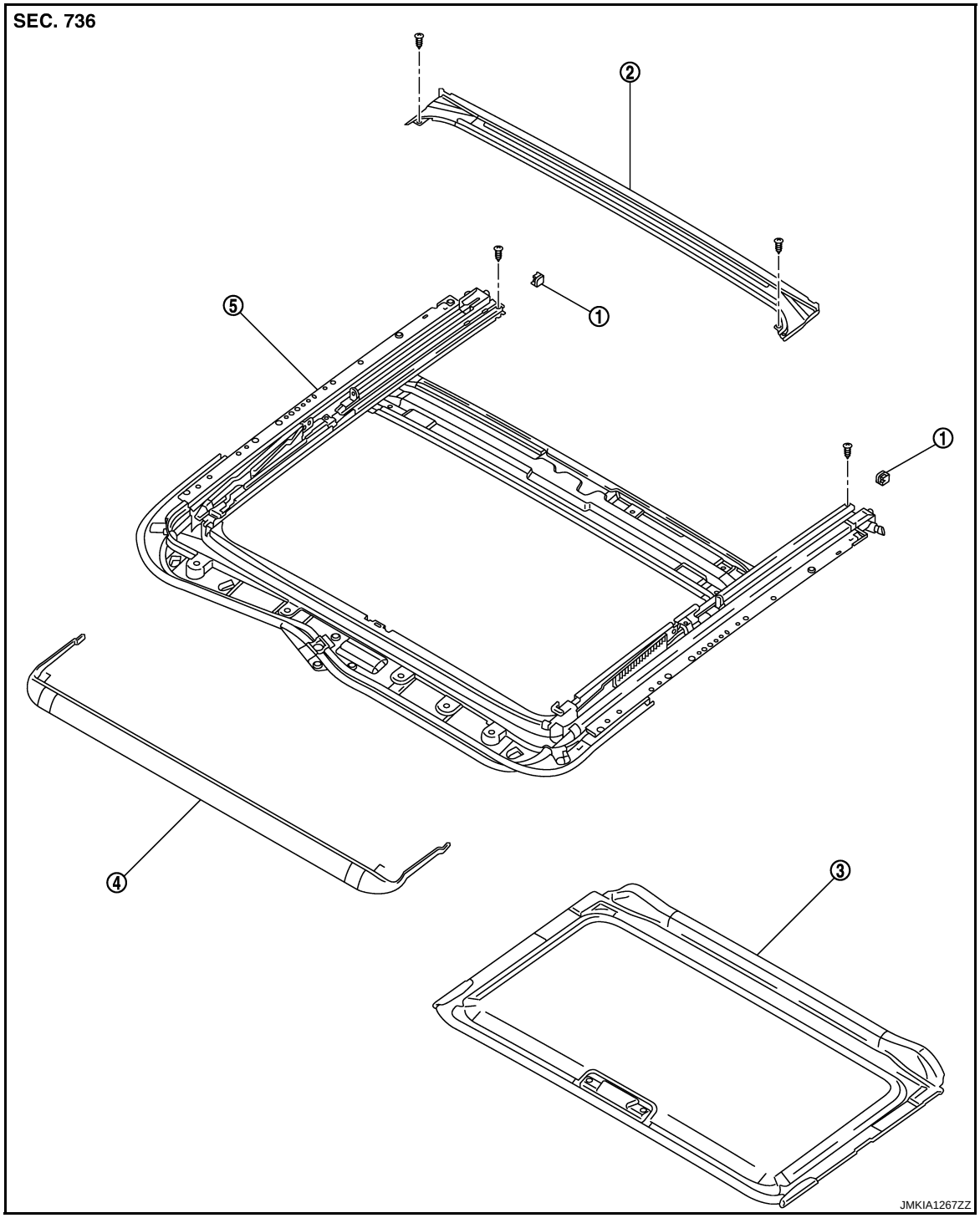
INFOID:0000000004249840

REMOVAL




1. Drain hose
2. Side trim
3. TORX bolt
4. Glass lid
5. TORX bolt
6. Sunroof motor assembly
7. Front sunroof bracket (LH/RH)
8. Rear sunroof bracket (LH/RH)
9. Sunroof unit assembly
10. Drain connector

DISASSEMBLY




1. Sunshade stopper
2. Rear drain assembly
3. Sunshade
4. Wind deflector
5. Sunroof frame

## Removal and Installation

INFOID:0000000004249841

REMOVAL

**CAUTION:**

- **Always work with a helper.**
- **Fully close the glass lid assembly, before removal, then never operate sunroof motor assembly after removal.**

- **When taking sunroof unit out, use cloths to protect the seats and trim from damage.**
- **After installing the sunroof unit and glass lid, perform the leak test and check that there is no malfunction.**

1. Remove the headlining. Refer to INT-24, "SUNROOF : Removal and Installation".
2. Disconnect drain hoses.
3. Remove the glass lid. Refer to RF-73, "Removal and Installation".
4. Remove sunroof motor assembly. Refer to RF-76, "Removal and Installation".
5. Remove assistance grip bracket.
6. Remove sunroof bracket bolts and nuts.
7. Remove nuts from the front end and side rail, and then remove sunroof unit assembly from roof panel.
8. Remove sunroof unit assembly through the passenger compartment while being careful not to damage the seats and trim.

### INSTALLATION

1. Bring sunroof unit assembly into passenger compartment.
2. Temporarily tighten the mounting nuts to the side rail of sunroof unit assembly.
3. Temporarily tighten the mounting nuts to the front end of sunroof unit assembly.
4. Tighten the installation points diagonally excluding the installation point of the sunroof bracket around the roof opening.
5. Tighten the sunroof bracket bolts of the vehicle side, and then tighten the bolt of the rail side.
6. Tighten the mounting nuts to the front end and side rail.
7. Install the assistance grip bracket.
8. Install the sunroof motor assembly. Refer to RF-76, "Removal and Installation".
9. Install the glass lid. Refer to RF-73, "Removal and Installation".
10. Install the side trim.
11. Connect drain hoses.
12. Install the headlining. Refer to INT-24, "SUNROOF : Removal and Installation".

## Disassembly and Assembly

INFOID:0000000004249842

### DISASSEMBLY

1. Remove sunshade stopper mounting from the rear end of sunroof frame.
2. Remove rear drain assembly from sunroof frame.
3. Remove sunshade from the rear end of sunroof frame.
4. Remove wind deflector from sunroof frame.

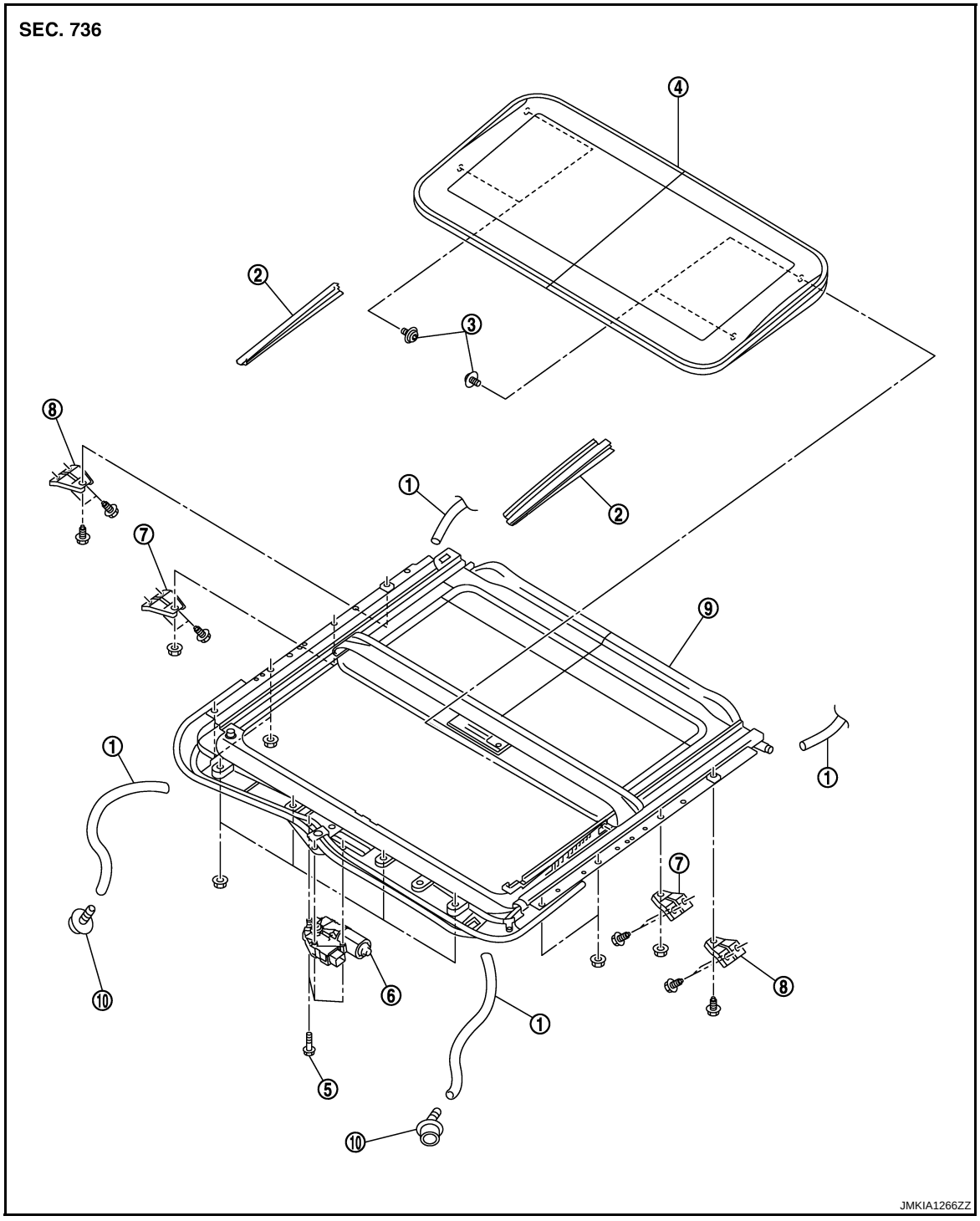
### ASSEMBLY

Assemble in the reverse order of disassembly.

# GLASS LID

## Exploded View

INFOID:0000000004249843



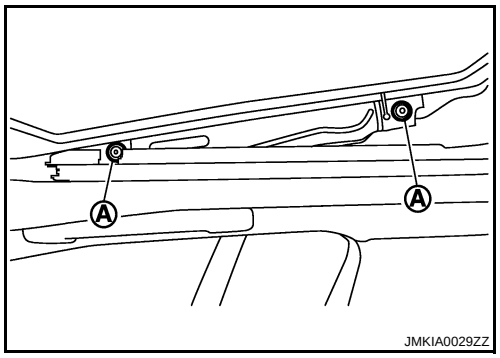

1. Drain hose
2. Side trim
3. TORX bolt
4. Glass lid
5. TORX bolt
6. Sunroof motor assembly
7. Front sunroof bracket (LH/RH)
8. Rear sunroof bracket (LH/RH)
9. Sunroof unit assembly
10. Drain connector

## Removal and Installation

INFOID:0000000004249844

### REMOVAL

1. Remove the side trim.
2. Remove the TORX bolts (A) and remove glass lid.




### INSTALLATION

**CAUTION:**

**After installing the glass lid, peform the leak test and check thet there is no malfunction.**

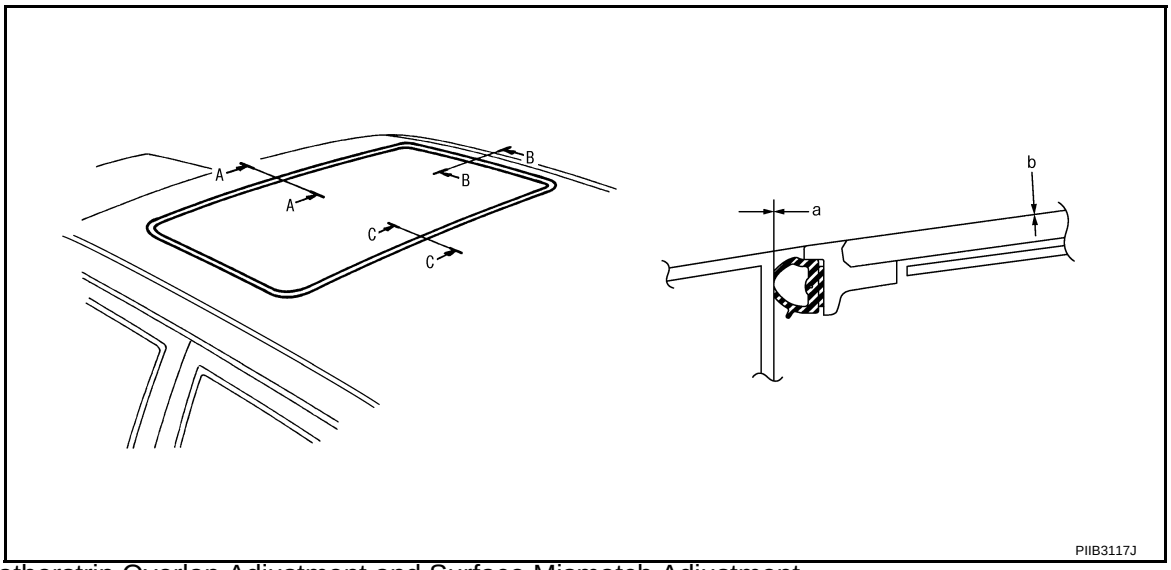
**NOTE:**

After installation carry out fitting adjustment. Refer to RF-73, "Adjustment".

Install in the reverse order of removal.

## Adjustment

INFOID:0000000004249845




Lid Weatherstrip Overlap Adjustment and Surface Mismatch Adjustment

1. Tilt up glass lid, and then remove side trim.
2. After loosening glass lid from TORX bolts (left and right), tilt down glass lid.
3. Adjust glass lid from outside of vehicle so it resembles “A – A”“B – B” "C – C" as shown in the figure.

| | a | b |
|---|---|---|
| **A – A** | **0.6 - 2.2 mm (0.024 - 0.087 in)** | **-2.3 - 0.7 mm (-0.091 - 0.028 in)** |
| **B – B** | **0.6 - 2.2 mm (0.024 - 0.087 in)** | **-2.3 - 0.7 mm (-0.091 - 0.028 in)** |
| **C – C** | **0.6 - 2.2 mm (0.024 - 0.087 in)** | **-2.3 - 0.7 mm (-0.091 - 0.028 in)** |

4. To prevent glass lid from moving after adjustment, first tighten the TORX bolts of front left, and then tighten the TORX bolts of rear right.
5. Tighten remaining TORX bolts, being careful to prevent glass lid from moving.
6. Tilt glass lid up and down several times to check that it moves smoothly.

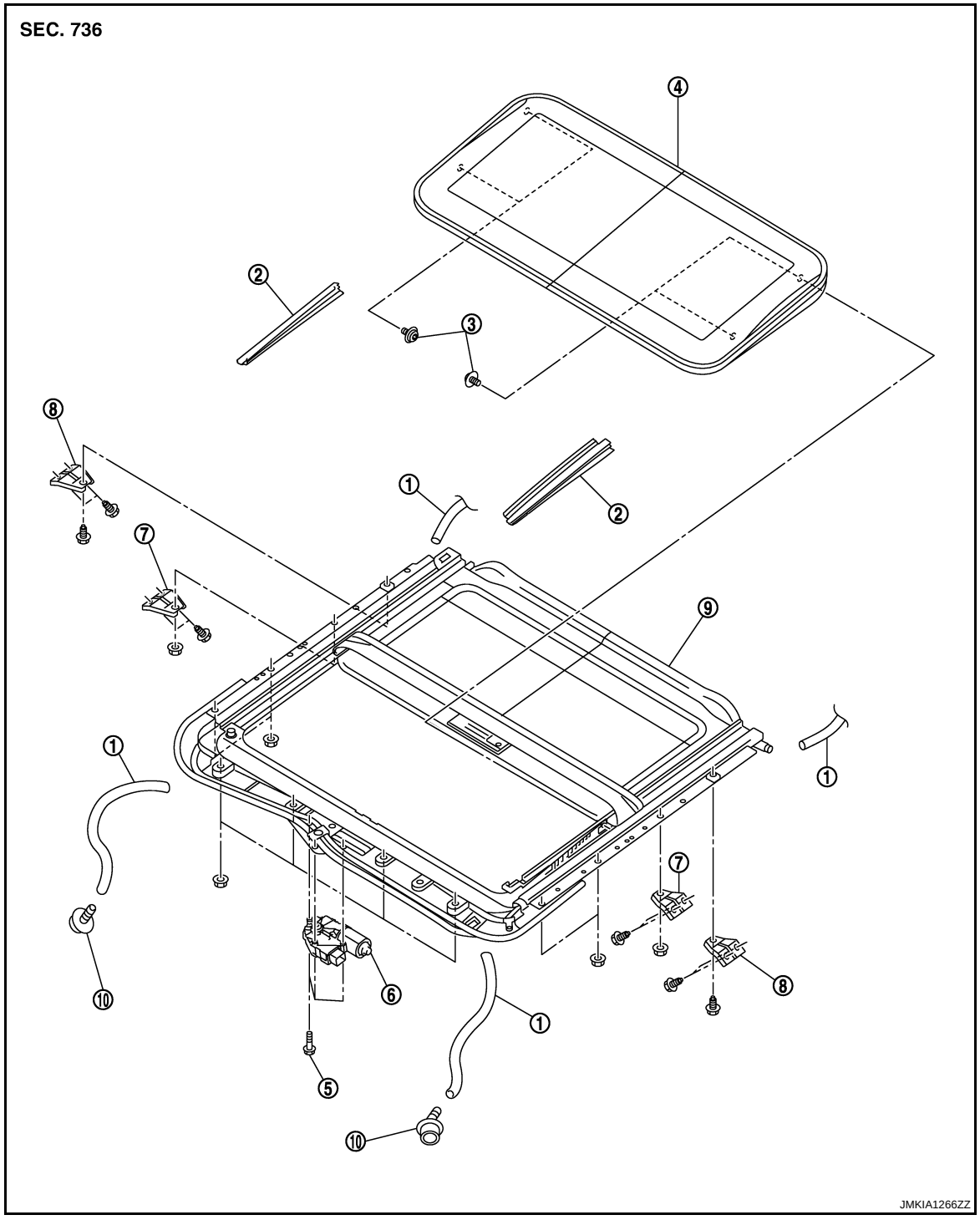
**NOTE:**

After adjustment the sunroof unit assembly, perform additional service. Refer to RF-4, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Description".

# SUNROOF MOTOR ASSEMBLY

## Exploded View

INFOID:0000000004249846




1. Drain hose
2. Side trim
3. TORX bolt
4. Glass lid
5. TORX bolt
6. Sunroof motor assembly
7. Front sunroof bracket (LH/RH)
8. Rear sunroof bracket (LH/RH)
9. Sunroof unit assembly
10. Drain connector

## Removal and Installation

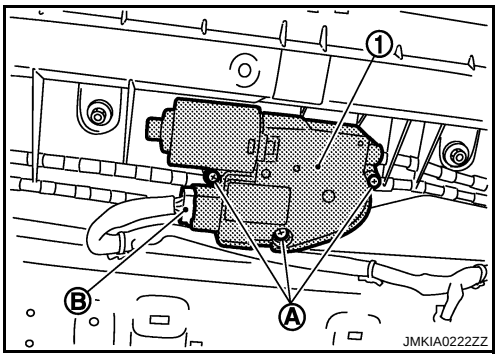
INFOID:0000000004249847

### REMOVAL

**CAUTION:**

- **Before removing sunroof motor, check that glass lid is fully closed.**
- **After removing sunroof motor, never attempt to rotate sunroof motor assembly as a single unit.**

1. Remove the headlining. Refer to INT-24, "SUNROOF : Removal and Installation".
2. Remove sunroof motor assembly mounting screws (A). Disconnect connector (B) from sunroof motor assembly and then remove sunroof motor assembly (1).




### INSTALLATION

**CAUTION:**

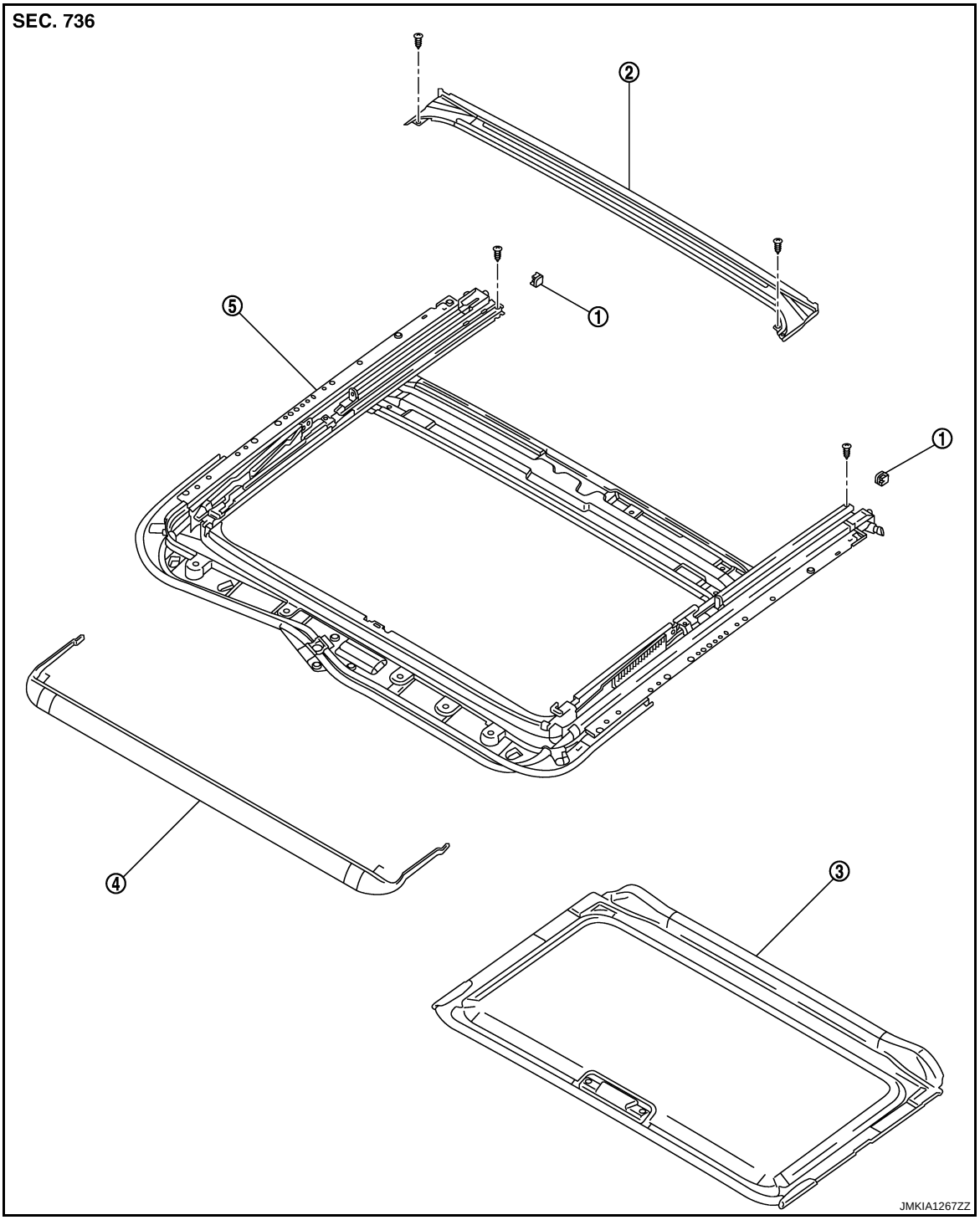
**Before installing the sunroof motor assembly, be sure to the place the link and wire assembly in the symmetrical and fully closed position.**

1. Move the sunroof motor assembly laterally by little so that the gear is completely engaged into the wire on the sunroof unit assembly and mounting surface becomes parallel. Then secure the sunroof motor assembly with screw.
2. Install the headlining. Refer to INT-24, "SUNROOF : Removal and Installation".

# SUNSHADE

## Exploded View

INFOID:0000000004249848




1. Sunshade stopper
2. Rear drain assembly
3. Sunshade
4. Wind deflector
5. Sunroof frame

## Removal and Installation

INFOID:0000000004249849

### REMOVAL

1. Remove the headlining. Refer to INT-24, "SUNROOF : Removal and Installation".

2. Remove the sunroof unit assembly. Refer to RF-70, "Removal and Installation".
3. Remove the sunshade stopper mounting from the rear end of sunroof frame.
4. Remove the sunshade from the rear end of sunroof frame.

## INSTALLATION

Install in the reverse order of removal.