# SECTION RF
# ROOF

## CONTENTS

# BASIC INSPECTION

## DIAGNOSIS AND REPAIR WORKFLOW

### Work Flow

INFOID:0000000006199586

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 vehicles 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. Then identify where to start performing the diagnosis based on possible causes and symptom.

>> GO TO 4.

#### 4.IDENTIFY 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 2.

# INSPECTION AND ADJUSTMENT

## ADDITIONAL SERVICE WHEN REMOVING BATTERY NEGATIVE TERMINAL

### ADDITIONAL SERVICE WHEN REMOVING BATTERY NEGATIVE TERMINAL : Description

INFOID:0000000006199587

#### MEMORY RESET PROCEDURE

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 REMOVING BATTERY NEGATIVE TERMINAL : Special Repair Requirement

INFOID:0000000006199588

#### INTERRUPTION DETECTION FUNCTION

The CPU of sunroof motor 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 sliding close operation, sunroof switch controls the motor for open and the sunroof will operate until full open position.
- automatic close operation when ignition switch is in the ON position.
- automatic close operation during retained power operation.

#### INITIALIZATION PROCEDURE

If the sunroof does no close or open automatically, use the following procedure to return sunroof operation to normal.
1. Close the sunroof if it is not in the closed position. It may be necessary to repeatedly push the switch to close the sunroof.
2. Press and hold the TILT UP switch the sunroof will tilt up. Release the button.
3. Press and hold the TILT UP switch again. Do not release the switch, keep pressure on it. After 4 seconds of depressing, the sunroof will full close.
4. Initializing procedure is complete. Confirm proper operation of the sunroof (slide open, slide close, tilt up, tilt down.)

#### 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 210 mm (8.26 in) with out pinching a piece of wood and stops.

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

## ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT

### ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Description

INFOID:0000000006199589

Refer to RF-4, "ADDITIONAL SERVICE WHEN REMOVING BATTERY NEGATIVE TERMINAL : Description".

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

INFOID:0000000006199590

Refer to RF-4, "ADDITIONAL SERVICE WHEN REMOVING BATTERY NEGATIVE TERMINAL : Special Repair Requirement" for initialization procedure and check anti-pinch function.

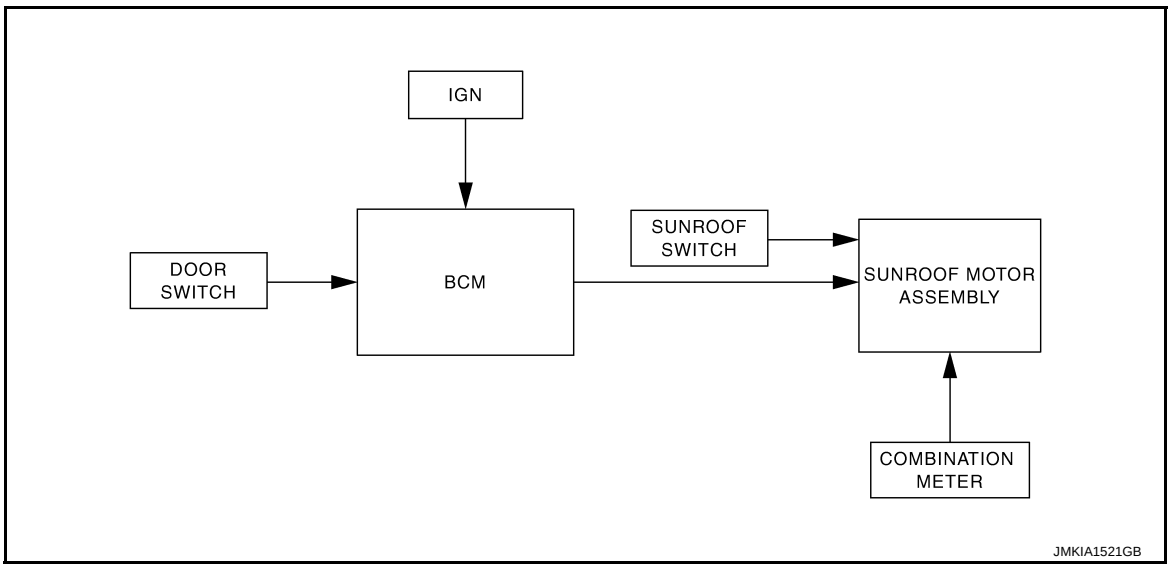
# SYSTEM DESCRIPTION

## SUNROOF SYSTEM

### System Diagram

INFOID:0000000006199591

SUNROOF SYSTEM




### System Description

INFOID:0000000006199592

SUNROOF SYSTEM

INPUT/OUTPUT SIGNAL CHART

| Item | Input signal to sunroof motor assembly | Sunroof motor function | Actuator |
|---|---|---|---|
| Sunroof switch | Sunroof switch signal (tilt down or slide open) | Sunroof control | Sunroof motor |
| | Sunroof switch signal (tilt up or slide close) | | |
| BCM | Retained power signal | | |
| Combination meter | Vehicle speed signal | | |

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 combination meter 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.

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 the sunroof will operate until full up position (when tilt down operate) or 210 mm (8.26 in) or more in an open direction (when slide close operate):

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

## RETAINED POWER OPERATION

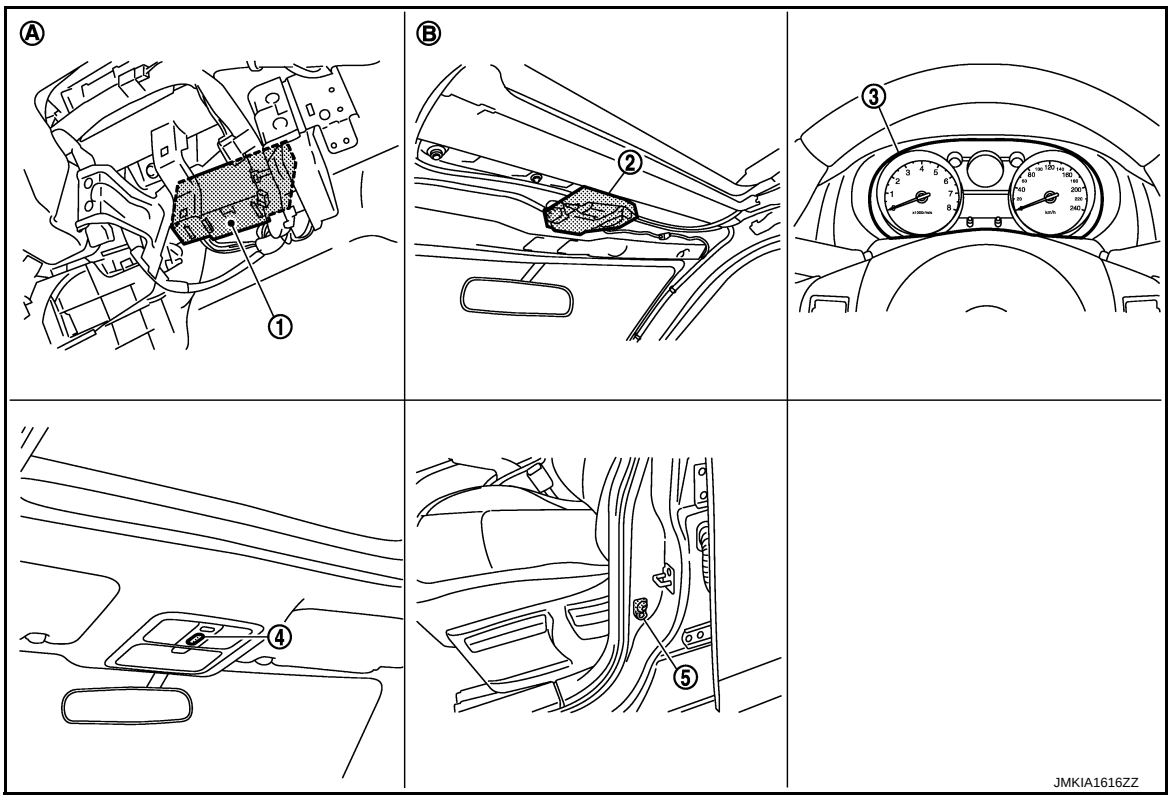
Retained power operation is an additional power supply function that enables sunroof system to operate for 45 seconds when ignition switch is turned OFF.

## 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)

# Component Parts Location

INFOID:0000000006199593




| | | | | | |
|---|---|---|---|---|---|
| 1. | BCM<br>M65, M66, M67 | 2. | Sunroof motor assembly<br>R5 | 3. | Combination meter<br>M34 |
| 4. | Sunroof switch<br>R6 | 5. | Front door switch(driver side)<br>B34 | | |

A. Over the glove box B. View with headlining removed

# Component Description

INFOID:0000000006199594

| 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 |
| Combination meter | Transmits vehicle speed signal to sunroof motor assembly. |
| Front door switch (driver side) | Detects door open/close condition and transmits to BCM. |

# DIAGNOSIS SYSTEM (BCM)

## COMMON ITEM

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

INFOID:0000000006199595

#### APPLICATION ITEM

CONSULT-III can display each diagnostic item using the diagnostic test modes shown following.

| Diagnosis mode | Function description |
|---|---|
| ECU Identification | BCM part number is displayed. |
| Self-Diagnostic Result | Displays the diagnosis results judged by BCM. Refer to BCS-62, "DTC Index". |
| Data Monitor | BCM input/output signals are displayed. |
| Active Test | The signals used to activate each device are forcibly supplied from BCM. |
| Work Support | Changes the setting for each system function. |
| Configuration | • Read and save the vehicle specification.<br>• Write the vehicle specification when replacing BCM. |
| CAN Diag Support Monitor | Monitors the reception status of CAN communication viewed from BCM. |

#### SYSTEM APPLICATION

BCM can perform the following functions for each system.

**NOTE:**

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

×: Applicable item

| System | CONSULT-III 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 control | INT LAMP | × | × | × |
| Remote keyless entry system | MULTI REMOTE ENT | × | × | × |
| Exterior lamp | HEAD LAMP | × | × | × |
| Wiper and washer | WIPER | × | × | × |
| Turn signal and hazard warning lamps | FLASHER | | × | × |
| Air conditioner | AIR CONDITONER | | × | |
| Intelligent Key system | INTELLIGENT KEY | | × | |
| Combination switch | COMB SW | | × | |
| — | BCM | × | | |
| Immobilizer | IMMU | | × | × |
| Interior room lamp battery saver | BATTERY SAVER | × | × | × |
| Back door open | TRUNK | | × | × |
| Vehicle security system | THEFT ALM | × | × | × |
| RAP system | RETAINED PWR | × | × | × |
| Signal buffer system | SIGNAL BUFFER | | × | × |
| — | FUEL LID* | | | |
| TPMS | TPMS (AIR PRESSURE MONITOR) | × | × | × |
| Panic alarm system | PANIC ALARM | | | × |

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

## RETAIND PWR

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

INFOID:0000000006199596

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 (BODY CONTROL MODULE)

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

INFOID:0000000006548664

#### 1.CHECK FUSES AND FUSIBLE LINK

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

| Signal name | Fuses and fusible link No. |
|---|---|
| Battery power supply | 10 |
| | J |
| ACC power supply | 20 |
| Ignition power supply | 1 |

Is the fuse fusing?

YES >> Replace the blown fuse or fusible link after repairing the affected circuit if a fuse or fusible link is blown.
NO >> GO TO 2.

#### 2.CHECK POWER SUPPLY CIRCUIT

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

| Terminals | | | Ignition switch position | | |
|---|---|---|---|---|---|
| (+) | | (–) | | | |
| BCM | | | OFF | ACC | ON |
| Connector | Terminal | | | | |
| M67 | 70 | Ground | Battery voltage | Battery voltage | Battery voltage |
| | 57 | | | | |
| M65 | 11 | | Approx. 0 V | Battery voltage | Battery voltage |
| | 38 | | Approx. 0 V | Approx. 0 V | Battery voltage |

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 the ground.

| BCM | | Ground | Continuity |
|---|---|---|---|
| Connector | Terminal | | |
| M67 | 67 | | Existed |

Does continuity exist?

YES >> INSPECTION END
NO >> Repair the harness or connector.

## SUNROOF MOTOR ASSEMBLY

## SUNROOF MOTOR ASSEMBLY : Description

INFOID:0000000006199598

- BCM supplies power.
- It is sunroof motor and CPU integrated type.
- Tilts up/down & slides open/close by sunroof switch operation.

## SUNROOF MOTOR ASSEMBLY : Diagnosis Procedure

INFOID:0000000006199599

SUNROOF MOTOR ASSEMBLY

### 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 | | |
| R5 | 2 | Ground | Battery voltage |
| | 4 | | |

Is the inspection result normal?

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

### 2.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 | | |
| R5 | 6 | | Exists |

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair or replace harness.

### 3.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 | |
| M67 | 68 | R5 | 4 | Exists |
| | 69 | | 2 | |

4. Check continuity between BCM harness connector and ground.

| BCM | | Ground | Continuity |
|---|---|---|---|
| Connector | Terminal | | |
| M67 | 68 | | Not exist |
| | 69 | | |

Is the inspection result normal?

YES >> Replace BCM.Refer to BCS-66, "Removal and Installation".
NO >> Repair or replace harness.

# SUNROOF SWITCH

## Description

INFOID:0000000006199600

Tilts up/down & slides open/close by sunroof switch operation.

## Component Function Check

INFOID:0000000006199601

### 1.CHECK SUNROOF MOTOR OPERATION

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

Is the inspection result normal?

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

## Diagnosis Procedure

INFOID:0000000006199602

SUNROOF SWITCH

### 1.CHECK SUNROOF SWITCH POWER SUPPLY CIRCUIT

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

| (+) | | (–) | Voltage (V) (Approx.) |
|---|---|---|---|
| Sunroof switch | | | |
| Connector | Terminal | | |
| R6 | 1 | Ground | Battery voltage |
| | 3 | | |

Is the inspection result normal?

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

### 2.CHECK GROUND CIRCUIT

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

| Sunroof switch | | Ground | Continuity |
|---|---|---|---|
| Connector | Terminal | | |
| R6 | 2 | | Exist |

Is the inspection result normal?

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

### 3.CHECK SUNROOF SWITCH

Check sunroof switch.
Refer to RF-12, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 5.
NO >> Replace sunroof switch. Refer to RF-68, "SUNROOF SWITCH : Removal and Installation".

### 4.CHECK SUNROOF SWITCH CIRCUIT

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

| Sunroof switch | | Sunroof motor assembly | | Continuity |
|---|---|---|---|---|
| Connector | Terminal | Connector | Terminal | |
| R6 | 1 | R5 | 5 | Exist |
| | 3 | | 1 | |

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

| Sunroof motor assembly | | Ground | Continuity |
|---|---|---|---|
| Connector | Terminal | | |
| R5 | 5 | | Not exist |
| | 1 | | |

Is the inspection result normal?

YES >> Replace sunroof motor assembly.RF-61, "SUNROOF MOTOR ASSEMBLY : Removal and Installation"

NO >> Repair or replace harness.

## 5.CHECK INTERMITTENT INCIDENT

Refer to GI-45, "Intermittent Incident".

>> INSPECTION END

## Component Inspection

INFOID:0000000006199603

### SUNROOF SWITCH

## 1.CHECK SUNROOF SWITCH

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

| Terminals | | Condition | Continuity |
|---|---|---|---|
| 1 | 2 | Sunroof switch is operated TILT DOWN or SLIDE OPEN | Exists |
| | | Other than above | Not exist |
| 3 | | Sunroof switch is operated TILT UP or SLIDE CLOSE | Exists |
| | | Other than above | Not exist |

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace sunroof switch (built in map lamp assembly). Refer to RF-68, "SUNROOF SWITCH : Removal and Installation".

# DOOR SWITCH

## Description

INFOID:0000000006199604

Detects door open/closed condition.

## Component Function Check

INFOID:0000000006199605

### 1.CHECK FUNCTION

**With CONSULT-III**

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

| Monitor item | Door condition | Display |
|---|---|---|
| DOOR SW-DR | CLOSE → OPEN | OFF → ON |
| DOOR SW-AS | | |
| DOOR SW-RL | | |
| DOOR SW-RR | | |
| BACK DOOR | | |

Is the inspection result normal?

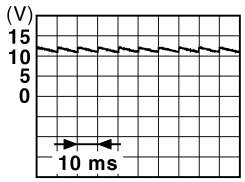
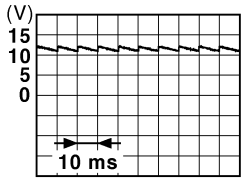
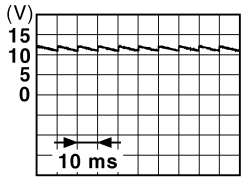
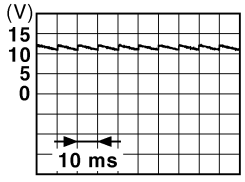
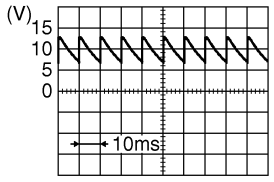
YES >> Door switch is OK.
NO >> Refer to RF-13, "Diagnosis Procedure".

## Diagnosis Procedure

INFOID:0000000006199606

### 1.CHECK DOOR SWITCH INPUT SIGNAL

1. Turn ignition switch OFF.
2. Disconnect door switch connectors.
3. Check signal between door switch harness connector and ground with oscilloscope.

| Door switch | | | | Voltage (V) (Approx.) |
|---|---|---|---|---|
| (+) | | | (–) | |
| connector | | Terminal | | |
| Front door switch (passenger side) | B27 | 2 | Ground |  JPMIA0011GB |
| Front door switch (driver side) | B34 | 2 | |  JPMIA0011GB |
| Rear door switch RH | B53 | 2 | |  JPMIA0011GB |
| Rear door switch LH | B71 | 2 | |  JPMIA0011GB |
| Back door lock assembly (back door switch) | D190 | 3 | |  JPMIA0593GB |

Is the inspection result normal?

YES >> • Back door switch : GO TO 3.
• Door switch : GO TO 4.

NO >> GO TO 2.

## 2.CHECK DOOR SWITCH CIRCUIT

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

| BCM | | Door switch | | Continuity |
|---|---|---|---|---|
| connector | Terminal | connector | Terminal | |
| M65 | 12 | B27 | 2 | Exists |
| | 13 | B53 | | |
| M66 | 43 | D190 | 3 | |
| | 47 | B34 | 2 | |
| | 48 | B71 | | |

3. Check continuity between BCM harness connector and ground.

| BCM connector | Terminal | Ground | Continuity |
|---|---|---|---|
| M65 | 12 | | Does not exist |
| | 13 | | |
| M66 | 43 | | |
| | 47 | | |
| | 48 | | |

Is the inspection result normal?

YES >> Replace BCM. Refer to BCS-66, "Exploded View".
NO >> Repair or replace harness.

## 3.CHECK BACK DOOR GROUND CIRCUIT

Check continuity between back door lock assembly harness connector and ground.

| Back door lock assembly | | Ground | Continuity |
|---|---|---|---|
| connector | Terminal | | |
| D190 | 4 | | Exist |

Is the inspection result normal?

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

## 4.CHECK DOOR SWITCH

Check door switch.
Refer to RF-15, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 5.
NO >> Replace door switch. Refer to DLK-265, "Removal and Installation".

## 5.CHECK INTERMITTENT INCIDENT

Refer to GI-45, "Intermittent Incident".

>> INSPECTION END

# Component Inspection

INFOID:0000000006199607

## 1.CHECK DOOR SWITCH

1. Turn ignition switch OFF.
2. Disconnect door switch connector.
3. Check door switch .

| Terminal | | | Condition | Continuity |
|---|---|---|---|---|
| Each door | 2 | Ground | Door switch pressed | Exists |
| | | | Door switch released | Does not exist |

| Terminal | | | Condition | Continuity |
|---|---|---|---|---|
| Back door | 3 | 4 | Back door open | Exists |
| | | | Back door close | Does not exist |

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace door switch . Refer to DLK-265, "Removal and Installation".

# ECU DIAGNOSIS INFORMATION

## BCM (BODY CONTROL MODULE)

### Reference Value

INFOID:0000000006548658

#### VALUES ON THE DIAGNOSIS TOOL

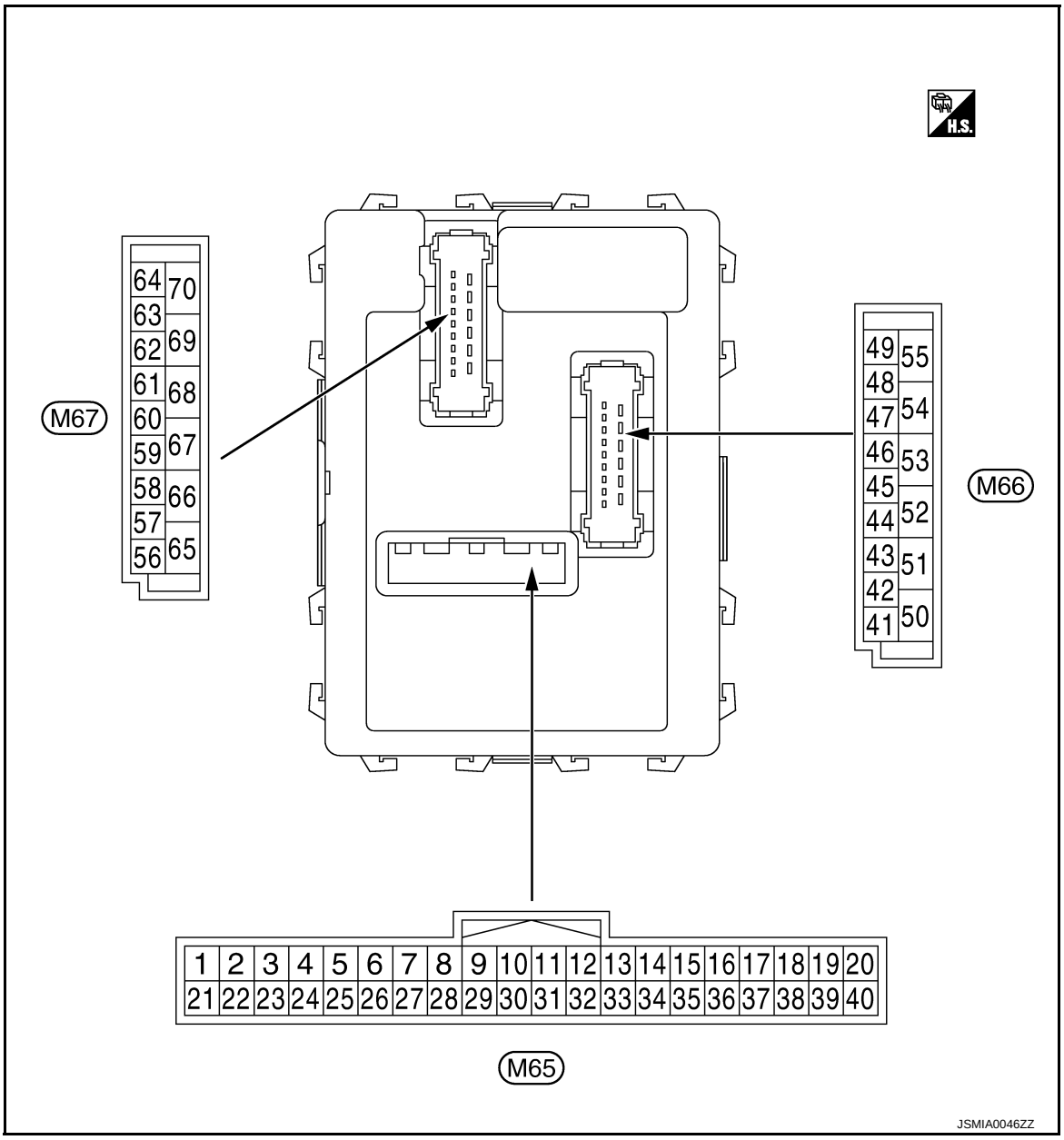
| Monitor Item | Condition | Value/Status |
|---|---|---|
| IGN ON SW | Ignition switch OFF or ACC | Off |
| | Ignition switch ON | On |
| KEY ON SW | Mechanical key is removed from key cylinder | Off |
| | Mechanical key is inserted to key cylinder | On |
| CDL LOCK SW | Door lock/unlock switch does not operate | Off |
| | Press door lock/unlock switch to the lock side | On |
| CDL UNLOCK SW | Door lock/unlock switch does not operate | Off |
| | Press door lock/unlock switch to the unlock side | On |
| DOOR SW-DR | Driver's door closed | Off |
| | Driver's door opened | On |
| DOOR SW-AS | Passenger door closed | Off |
| | Passenger door opened | On |
| DOOR SW-RR | Rear RH door closed | Off |
| | Rear RH door opened | On |
| DOOR SW-RL | Rear LH door closed | Off |
| | Rear LH door opened | On |
| BACK DOOR SW | Back door closed | Off |
| | Back door opened | 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 |
| KEYLESS LOCK | “LOCK” button of key fob is not pressed | Off |
| | “LOCK” button of key fob is pressed | On |
| KEYLESS UNLOCK | “UNLOCK” button of key fob is not pressed | Off |
| | “UNLOCK” button of key fob is pressed | On |
| I-KEY LOCK | “LOCK” button of Intelligent Key or door request switch are not pressed | Off |
| | “LOCK” button of Intelligent Key or door request switch are pressed | On |
| I-KEY UNLOCK | “UNLOCK” button of Intelligent Key or door request switch are not pressed | Off |
| | “UNLOCK” button of Intelligent Key or door request switch are pressed | On |
| ACC ON SW | Ignition switch OFF | Off |
| | Ignition switch ACC or ON | On |
| REAR DEF SW | Rear window defogger switch OFF | Off |
| | Rear window defogger switch ON | On |
| LIGHT SW 1ST | Lighting switch OFF | Off |
| | Lighting switch 1ST | On |

| Monitor Item | Condition | Value/Status |
|---|---|---|
| BUCKLE SW | The seat belt (driver side) is unfastened. [Seat belt switch (driver side) OFF] | Off |
| | The seat belt (driver side) is fastened. [Seat belt switch (driver side) ON] | On |
| KEYLESS PANIC | PANIC button of key fob is not pressed | Off |
| | PANIC button of key fob is pressed | On |
| KEYLESS TRUNK | **NOTE:**<br>The item is indicated, but not monitored. | Off |
| TRNK OPN MNTR | **NOTE:**<br>The item is indicated, but not monitored. | Off |
| RKE LCK-UNLCK | LOCK/UNLOCK button of key fob is not pressed and held simultaneously | Off |
| | LOCK/UNLOCK button of key fob is pressed and held simultaneously | On |
| RKE KEEP UNLK | UNLOCK button of key fob is not pressed | Off |
| | UNLOCK button of key fob is pressed and held | On |
| HI BEAM SW | Lighting switch OFF | Off |
| | Lighting switch HI | On |
| HEAD LAMP SW 1 | Lighting switch OFF | Off |
| | Lighting switch 2ND | On |
| HEAD LAMP SW 2 | Lighting switch OFF | Off |
| | Lighting switch 2ND | On |
| AUTO LIGHT SW | Other than lighting switch AUTO | Off |
| | Lighting switch AUTO | On |
| PASSING SW | Other than lighting switch PASS | Off |
| | Lighting switch PASS | 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 |
| TURN SIGNAL R | Turn signal switch OFF | Off |
| | Turn signal switch RH | On |
| TURN SIGNAL L | Turn signal switch OFF | Off |
| | Turn signal switch LH | On |
| ENGINE RUN | Engine stopped | Off |
| | Engine running | On |
| PKB SW | Parking brake switch is OFF | Off |
| | Parking brake switch is ON | On |
| CARGO LAMP SW | **NOTE:**<br>The item is indicated, but not monitored. | Off |
| OPTICAL SENSOR | Bright outside of the vehicle | Close to 5 V |
| | Dark outside of the vehicle | Close to 0 V |
| IGN SW CAN | Ignition switch OFF or ACC | Off |
| | Ignition switch ON | On |
| FR WIPER HI | Front wiper switch OFF | Off |
| | Front wiper switch HI | On |

| Monitor Item | Condition | Value/Status |
|---|---|---|
| FR WIPER LOW | Front wiper switch OFF | Off |
| | Front wiper switch LO | On |
| FR WIPER INT | Front wiper switch OFF | Off |
| | Front wiper switch INT | On |
| FR WASHER SW | Front washer switch OFF | Off |
| | Front washer switch ON | On |
| INT VOLUME | Wiper intermittent dial is in a dial position 1 - 7 | 1 - 7 |
| FR WIPER STOP | Any position other than front wiper stop position | Off |
| | Front wiper stop position | On |
| VEHICLE SPEED | While driving | Equivalent to speedometer reading |
| RR WIPER ON | Rear wiper switch OFF | Off |
| | Rear wiper switch ON | On |
| RR WIPER INT | Rear wiper switch OFF | Off |
| | Rear wiper switch INT | On |
| RR WASHER SW | Rear washer switch OFF | Off |
| | Rear washer switch ON | On |
| RR WIPER STOP | Rear wiper stop position | Off |
| | Other than rear wiper stop position | On |
| RR WIPER STP2 | **NOTE:**<br>The item is indicated, but not monitored. | Off |
| H/L WASH SW | **NOTE:**<br>The item is indicated, but not monitored. | Off |
| HAZARD SW | Hazard switch OFF | Off |
| | Hazard switch ON | On |
| BRAKE SW | Brake pedal is not depressed | Off |
| | Brake pedal is depressed | On |
| FAN ON SIG | Blower fan motor switch OFF | Off |
| | Blower fan motor switch ON (other than OFF) | On |
| AIR COND SW | • A/C conditioner OFF (A/C switch indicator OFF) (Automatic air conditioner)<br>• A/C switch OFF (Manual air conditioner) | Off |
| | • A/C conditioner ON (A/C switch indicator ON) (Automatic air conditioner)<br>• A/C switch ON (Manual air conditioner) | On |
| I-KEY TRUNK | **NOTE:**<br>The item is indicated, but not monitored. | Off |
| I-KEY PW DWN | UNLOCK button of Intelligent Key is not pressed | Off |
| | UNLOCK button of Intelligent Key is pressed and held | On |
| I-KEY PANIC | PANIC button of Intelligent Key is not pressed | Off |
| | PANIC button of Intelligent Key is pressed | On |
| PUSH SW | Return to ignition switch to “LOCK” position | Off |
| | Press ignition switch | On |
| TRNK OPNR SW | When back door opener switch is not pressed | Off |
| | When back door opener switch is pressed | On |
| TRUNK CYL SW | **NOTE:**<br>The item is indicated, but not monitored. | Off |

| Monitor Item | Condition | Value/Status |
|---|---|---|
| HOOD SW | Close the hood<br>**NOTE:**<br>Vehicles of except for Mexico are OFF-fixed | Off |
| | Open the hood | On |
| OIL PRESS SW | • Ignition switch OFF or ACC<br>• Engine running | Off |
| | Ignition switch ON | On |
| 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

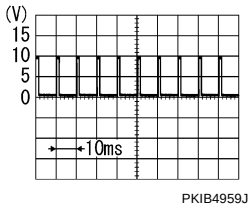
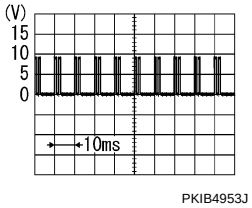
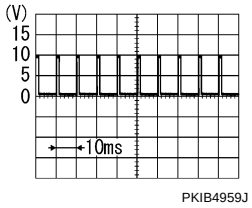
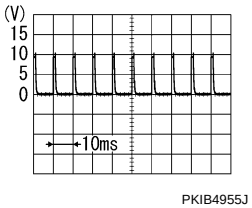
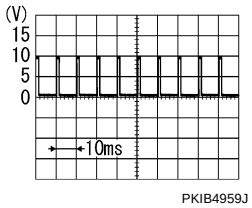


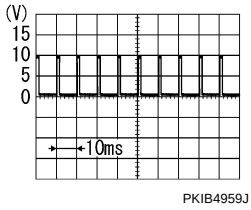
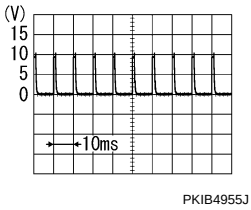
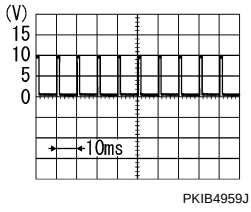
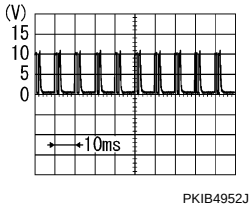
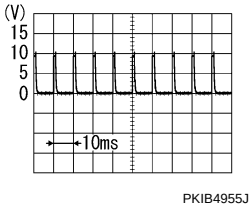

PHYSICAL VALUES

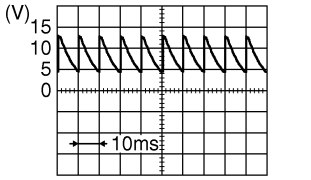
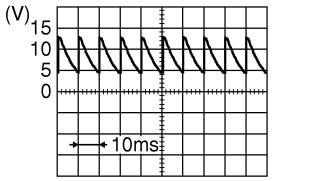
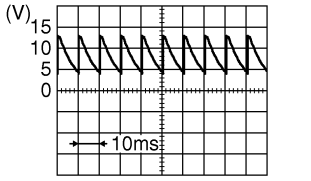
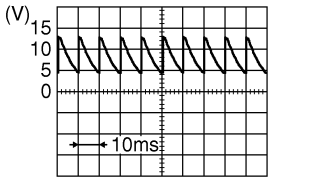
**CAUTION:**

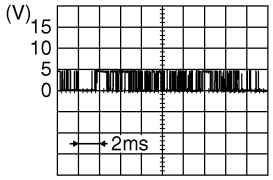
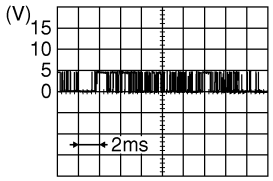
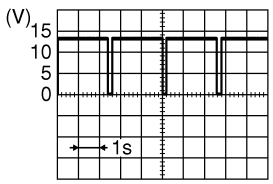
- **Check combination switch system terminal waveform under the loaded condition with lighting switch, turn signal switch and wiper switch OFF is not to be fluctuated by being overloaded.**
- **Turn wiper intermittent dial position to 4 except when checking waveform or voltage of wiper intermittent dial position. Wiper intermittent dial position can be confirmed on CONSULT-III. Refer to BCS-27, "COMB SW : CONSULT-III Function (BCM - COMB SW)".**
- **BCM reads the status of the combination switch at 10 ms internal normally. Refer to BCS-9, "System Diagram".**

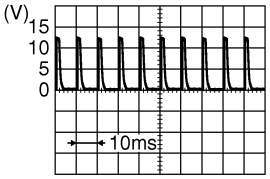
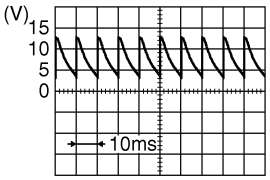
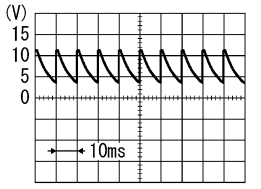
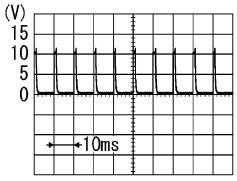
| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) |
|---|---|---|---|---|---|---|
| | | Signal name | Input/ Output | | | |
| + | – | | | | | |
| 1 (V) | Ground | Ignition key hole illumination control | Output | Ignition key hole illumination | OFF | Battery voltage |
| | | | | | ON | 0 V |

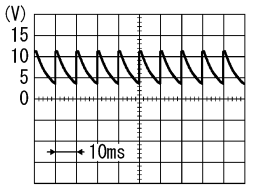
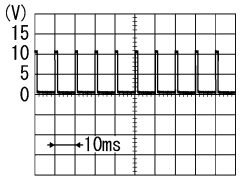
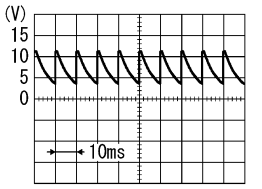
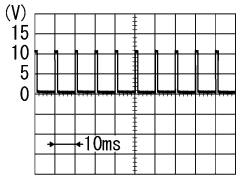
| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) |
|---|---|---|---|---|---|---|
| + | – | Signal name | Input/ Output | | | |
| 2 (G) | Ground | Combination switch INPUT 5 | Input | Combination switch (Wiper intermittent dial 4) | All switch OFF | 0 V |
| | | | | | Turn signal switch RH<br>Lighting switch HI<br>Lighting switch 1ST |  <br>PKIB4959J<br>1.0 V |
| | | | | | Lighting switch 2ND |  <br>PKIB4953J<br>2.0 V |
| 3 (Y) | Ground | Combination switch INPUT 4 | Input | Combination switch (Wiper intermittent dial 4) | All switch OFF | 0 V |
| | | | | | Turn signal switch LH<br>Lighting switch PASS<br>Lighting switch 2ND |  <br>PKIB4959J<br>1.0 V |
| | | | | | Front fog lamp switch ON |  <br>PKIB4955J<br>0.8 V |
| 4 (W) | Ground | Combination switch INPUT 3 | Input | Combination switch (Wiper intermittent dial 4) | All switch OFF | 0 V |
| | | | | | Lighting switch AUTO<br>Front wiper switch LO<br>Front wiper switch MIST<br>Front wiper switch INT |  <br>PKIB4959J<br>1.0 V |

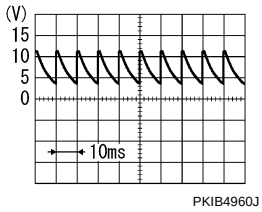
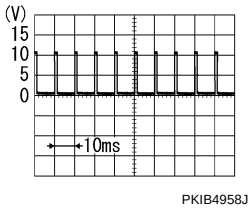
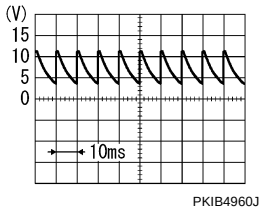
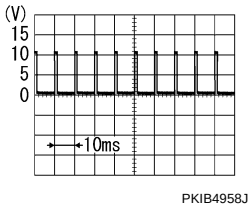
| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) |
|---|---|---|---|---|---|---|
| + | – | Signal name | Input/ Output | | | |
| 5 (R) | Ground | Combination switch INPUT 2 | Input | Combination switch | All switch OFF (Wiper intermittent dial 4) | 0 V |
| | | | | | Front washer switch (Wiper intermittent dial 4) |  PKIB4959J 1.0 V |
| | | | | | Rear washer ON (Wiper intermittent dial 4) | |
| | | | | | Any of the condition below with all switch OFF<br>• Wiper intermittent dial 1<br>• Wiper intermittent dial 5<br>• Wiper intermittent dial 6 | |
| | | | | | Rear wiper switch ON (Wiper intermittent dial 4) |  PKIB4955J 0.8 V |
| 6 (P) | Ground | Combination switch INPUT 1 | Input | Combination switch | All switch OFF (Wiper intermittent dial 4) | 0 V |
| | | | | | Front wiper switch HI (Wiper intermittent dial 4) |  PKIB4959J 1.0 V |
| | | | | | Rear wiper switch INT (Wiper intermittent dial 4) | |
| | | | | | Wiper intermittent dial 3 (All switch OFF) | |
| | | | | | Any of the condition below with all switch OFF<br>• Wiper intermittent dial 1<br>• Wiper intermittent dial 2 |  PKIB4952J 1.7 V |
| | | | | | Any of the condition below with all switch OFF<br>• Wiper intermittent dial 6<br>• Wiper intermittent dial 7 |  PKIB4955J 0.8 V |

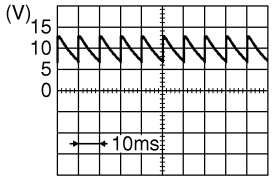
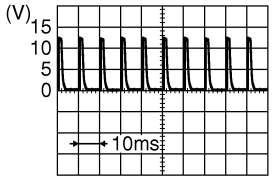
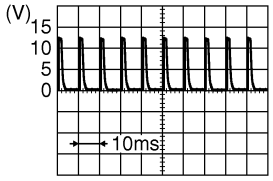
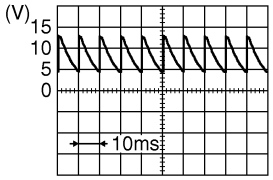
| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) |
|---|---|---|---|---|---|---|
| + | – | Signal name | Input/ Output | | | |
| 7 (L) | Ground | Door key cylinder switch UNLOCK signal | Input | Door key cylinder switch | NEUTRAL position |  JPMIA0587GB 8.0 - 8.5 V |
| | | | | | UNLOCK position | 0 V |
| 8 (R) | Ground | Door key cylinder switch LOCK signal | Input | Door key cylinder switch | NEUTRAL position |  JPMIA0587GB 8.0 - 8.5 V |
| | | | | | LOCK position | 0 V |
| 9 (R) | Ground | Stop lamp switch | Input | Stop lamp switch | OFF (Brake pedal is not depressed) | 0 V |
| | | | | | ON (Brake pedal is depressed) | Battery voltage |
| 10 (SB) | Ground | Rear window defogger switch | Input | Rear window defogger switch | Not pressed | Battery voltage |
| | | | | | Pressed | 0 V |
| 11 (SB) | Ground | Ignition switch ACC | Input | Ignition switch OFF | | 0 V |
| | | | | Ignition switch ACC or ON | | Battery voltage |
| 12 (P) | Ground | Passenger door switch | Input | Passenger door switch | OFF (When passenger door closed) |  JPMIA0586GB 7.5 - 8.0 V |
| | | | | | ON (When passenger door opened) | 0 V |
| 13 (LG) | Ground | Rear door switch RH | Input | Rear door switch RH | OFF (When rear door RH closed) |  JPMIA0587GB 8.0 - 8.5 V |
| | | | | | ON (When rear door RH opened) | 0 V |

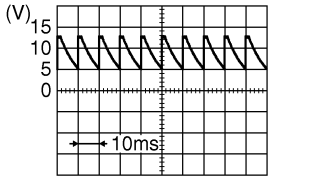
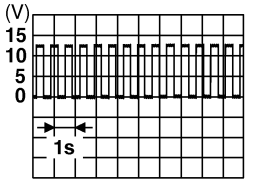
| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) |
|---|---|---|---|---|---|---|
| + | – | Signal name | Input/ Output | | | |
| 14 (G) | Ground | Optical sensor | Input | Ignition switch ON | When bright outside of the vehicle | Close to 5 V |
| | | | | | When dark outside of the vehicle | Close to 0 V |
| 17 (W) | Ground | Optical sensor power supply | Output | Ignition switch | OFF, ACC | 0 V |
| | | | | | ON | 5 V |
| 18* (O) | Ground | Remote keyless entry receiver ground | Input | Ignition switch ON | | 0 V |
| 19* (V) | Ground | Remote keyless entry receiver power supply | Input | Without Intelligent Key system | At any condition | 5 V |
| | | | | With Intelligent Key system | • Ignition switch OFF<br>• For 3 seconds after ignition switch OFF to ON | 0 V |
| | | | | | 3 seconds or later after ignition switch OFF to ON | 5 V |
| 20* (GR) | Ground | Remote keyless entry receiver signal | Input | Without Intelligent Key system | At any condition |  <br>JPMIA0589GB<br>**NOTE:**<br>The wave form changes according to signal-receiving condition. |
| | | | | With Intelligent Key system | • Ignition switch OFF<br>• For 3 seconds after ignition switch OFF to ON | 0 V |
| | | | | | 3 seconds or later after ignition switch OFF to ON |  <br>JPMIA0589GB<br>**NOTE:**<br>The wave form changes according to signal-receiving condition. |
| 21 (G) | Ground | NATS antenna amp. | Input/ Output | Just after inserting ignition key in key cylinder | | Pointer of tester should move |
| 23 (B) | Ground | Security indicator signal | Input | Security indicator | ON | 0 V |
| | | | | | Blinking (Ignition switch OFF) |  <br>JPMIA0590GB<br>12.0 V |
| | | | | | OFF | Battery voltage |

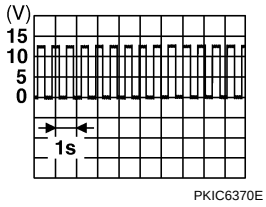
| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) |
|---|---|---|---|---|---|---|
| + | – | Signal name | Input/ Output | | | |
| 25 (BR) | Ground | NATS antenna amp. | Input/ Output | Just after inserting ignition key in key cylinder | | Pointer of tester should move |
| 27 (Y) | Ground | A/C switch | Input | Ignition switch OFF | | |
| | | | | Ignition switch ON | A/C switch OFF |  JPMIA0591GB 1.6 V |
| | | | | | A/C switch ON | 0 V |
| 28 (LG) | Ground | Blower fan switch | Input | Ignition switch OFF | | |
| | | | | Ignition switch ON | Blower fan switch OFF |  JPMIA0592GB 7.0 - 7.5 V |
| | | | | | Blower fan switch ON | 0 V |
| 29 (W) | Ground | Hazard switch | Input | Hazard switch | OFF | Battery voltage |
| | | | | | ON | 0 V |
| 30 (G) | Ground | Back door opener switch | Input | Back door opener switch | Not pressed | Battery voltage |
| | | | | | Pressed | 0 V |
| 32 (BR) | Ground | Combination switch OUTPUT 5 | Output | Combination switch | All switch OFF (Wiper intermittent dial 4) |  PKIB4960J 7.2 V |
| | | | | | Front fog lamp switch ON (Wiper intermittent dial 4) | |
| | | | | | Rear wiper switch ON (Wiper intermittent dial 4) |  PKIB4956J 1.0 V |
| | | | | | Any of the condition below with all switch OFF<br>• Wiper intermittent dial 1<br>• Wiper intermittent dial 2<br>• Wiper intermittent dial 6<br>• Wiper intermittent dial 7 | |

| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) |
|---|---|---|---|---|---|---|
| + | – | Signal name | Input/ Output | | | |
| 33 (GR) | Ground | Combination switch OUTPUT 4 | Output | Combination switch | All switch OFF (Wiper intermittent dial 4) |  PKIB4960J 7.2 V |
| | | | | | Lighting switch 1ST (Wiper intermittent dial 4) |  PKIB4958J 1.2 V |
| | | | | | Lighting switch AUTO (Wiper intermittent dial 4) | |
| | | | | | Rear wiper switch INT (Wiper intermittent dial 4) | |
| | | | | | Any of the condition below with all switch OFF<br>• Wiper intermittent dial 1<br>• Wiper intermittent dial 5<br>• Wiper intermittent dial 6 | |
| 34 (L) | Ground | Combination switch OUTPUT 3 | Output | Combination switch | All switch OFF (Wiper intermittent dial 4) |  PKIB4960J 7.2 V |
| | | | | | Lighting switch 2ND (Wiper intermittent dial 4) |  PKIB4958J 1.2 V |
| | | | | | Lighting switch HI (Wiper intermittent dial 4) | |
| | | | | | Rear washer switch ON (Wiper intermittent dial 4) | |
| | | | | | Any of the condition below with all switch OFF<br>• Wiper intermittent dial 1<br>• Wiper intermittent dial 2<br>• Wiper intermittent dial 3 | |

| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) |
|---|---|---|---|---|---|---|
| + | – | Signal name | Input/ Output | | | |
| 35 (B) | Ground | Combination switch OUTPUT 2 | Output | Combination switch (Wiper intermittent dial 4) | All switch OFF |  PKIB4960J 7.2 V |
| | | | | | Lighting switch 2ND<br>Lighting switch PASS<br>Front wiper switch INT<br>Front wiper switch HI |  PKIB4958J 1.2 V |
| 36 (V) | Ground | Combination switch OUTPUT 1 | Output | Combination switch (Wiper intermittent dial 4) | All switch OFF |  PKIB4960J 7.2 V |
| | | | | | Turn signal switch RH<br>Turn signal switch LH<br>Front wiper switch LO (Front wiper switch MIST)<br>Front washer switch ON |  PKIB4958J 1.2 V |
| 37 (LG) | Ground | Key switch | Input | Insert mechanical key into ignition key cylinder | | Battery voltage |
| | | | | Remove mechanical key from ignition key cylinder | | 0 V |
| 38 (G) | Ground | Ignition switch ON | Input | Ignition switch OFF or ACC | | 0 V |
| | | | | Ignition switch ON or START | | Battery voltage |
| 39 (L) | Ground | CAN-H | Input/ Output | — | | — |
| 40 (P) | Ground | CAN-L | Input/ Output | — | | — |

| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) |
|---|---|---|---|---|---|---|
| + | – | Signal name | Input/ Output | | | |
| 43 (V) | Ground | Back door switch | Input | Back door switch | OFF (When back door closed) |  JPMIA0593GB 9.5 - 10.0 V |
| | | | | | ON (When back door opened) | 0 V |
| 44 (B) | Ground | Rear wiper auto stop | Input | Ignition switch ON | Rear wiper stop position | 0 V |
| | | | | | Any position other than rear wiper stop position | Battery voltage |
| 45 (P) | Ground | Door lock and unlock switch LOCK signal | Input | Door lock and unlock switch | NEUTRAL position |  JPMIA0591GB 1.6 V |
| | | | | | LOCK position | 0 V |
| 46 (BR) | Ground | Door lock and unlock switch UNLOCK signal | Input | Door lock and unlock switch | NEUTRAL position |  JPMIA0591GB 1.6 V |
| | | | | | UNLOCK position | 0 V |
| 47 (W) | Ground | Driver door switch | Input | Driver door switch | OFF (When driver door closed) |  JPMIA0587GB 8.0 - 8.5 V |
| | | | | | ON (When driver door opened) | 0 V |

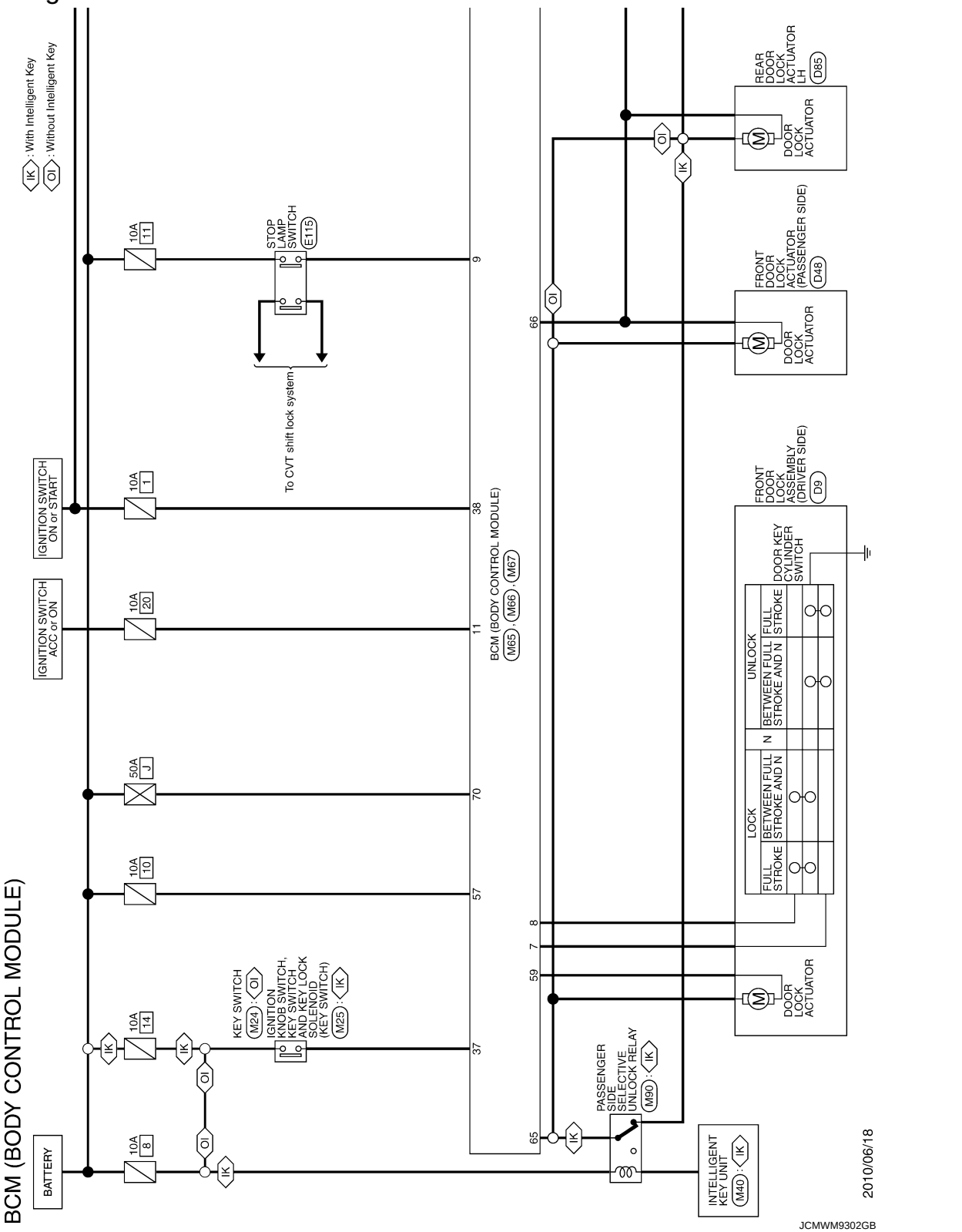
| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) |
|---|---|---|---|---|---|---|
| + | – | Signal name | Input/ Output | | | |
| 48 (GR) | Ground | Rear door switch LH | Input | Rear door switch LH | OFF (When rear door LH closed) |  JPMIA0594GB 8.5 - 9.0 V |
| | | | | | ON (When rear door LH opened) | 0 V |
| 49 (L) | Ground | Luggage room lamp control | Output | Luggage room lamp switch DOOR position | Back door is closed (Luggage room lamp turns OFF) | Battery voltage |
| | | | | | Back door is opened (Luggage room lamp turns ON) | 0 V |
| 53 (V) | Ground | Back door open | Output | Back door opener switch | Not pressed (Back door actuator is activated) | 0 V |
| | | | | | Pressed (Back door actuator is activated) | Battery voltage |
| 55 (SB) | Ground | Rear wiper motor | Output | Ignition switch ON | Rear wiper switch OFF | 0 V |
| | | | | | Rear wiper switch ON | Battery voltage |
| 56 (Y) | Ground | Interior room lamp power supply | Output | After passing the interior room lamp battery saver operation time | | 0 V |
| | | | | Any other time after passing the interior room lamp battery saver operation time | | Battery voltage |
| 57 (G) | Ground | Battery power supply | Input | Ignition switch OFF | | Battery voltage |
| 59 (L) | Ground | Driver door UNLOCK | Output | Driver door | UNLOCK (Actuator is activated) | Battery voltage |
| | | | | | Other then UNLOCK (Actuator is not activated) | 0 V |
| 60 (BR) | Ground | Turn signal LH | Output | Ignition switch ON | Turn signal switch OFF | 0 V |
| | | | | | Turn signal switch LH |  PKIC6370E 6.0 V |

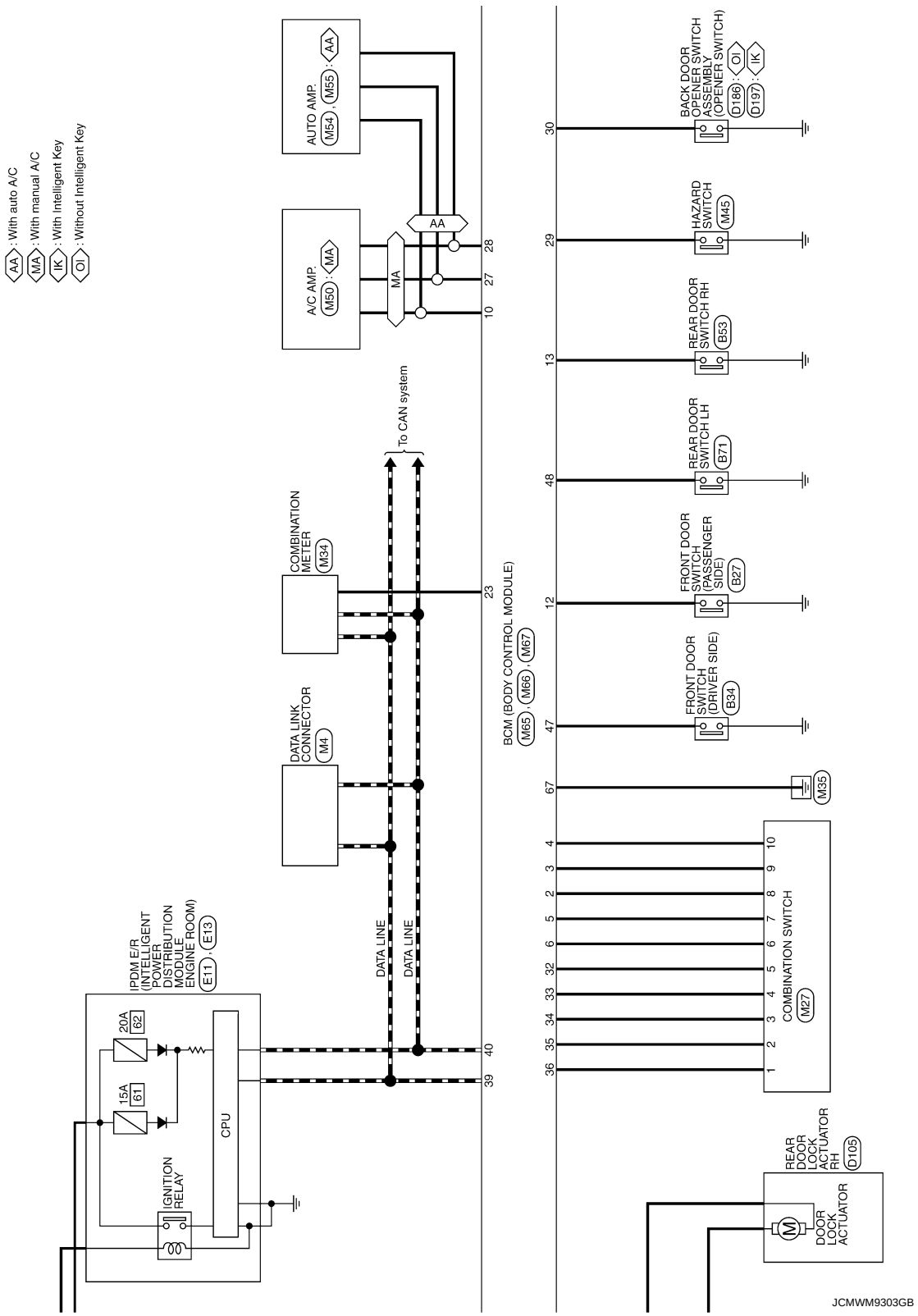
| Terminal No. (Wire color) | | Description | | Condition | | Value (Approx.) |
|---|---|---|---|---|---|---|
| + | – | Signal name | Input/ Output | | | |
| 61 (GR) | Ground | Turn signal RH | Output | Ignition switch ON | Turn signal switch OFF | 0 V |
| | | | | | Turn signal switch RH |  PKIC6370E 6.0 V |
| 63 (R) | Ground | Interior room lamp timer control | Output | Interior room lamp | OFF | Battery voltage |
| | | | | | ON | 0 V |
| 65 (V) | Ground | All doors LOCK | Output | All doors | LOCK (Actuator is activated) | Battery voltage |
| | | | | | Other then LOCK (Actuator is not activated) | 0 V |
| 66 (G) | Ground | Passenger door and rear door UNLOCK | Output | Passenger door and rear door | UNLOCK (Actuator is activated) | Battery voltage |
| | | | | | Other then UNLOCK (Actuator is not activated) | 0 V |
| 67 (B) | Ground | Ground | Output | Ignition switch ON | | 0 V |
| 68 (L) | Ground | P/W power supply (RAP) | Output | Ignition switch ON | | Battery voltage |
| 69 (P) | Ground | P/W power supply (BAT) | Output | Ignition switch OFF | | Battery voltage |
| 70 (Y) | Ground | Battery power supply | Input | Ignition switch OFF | | Battery voltage |

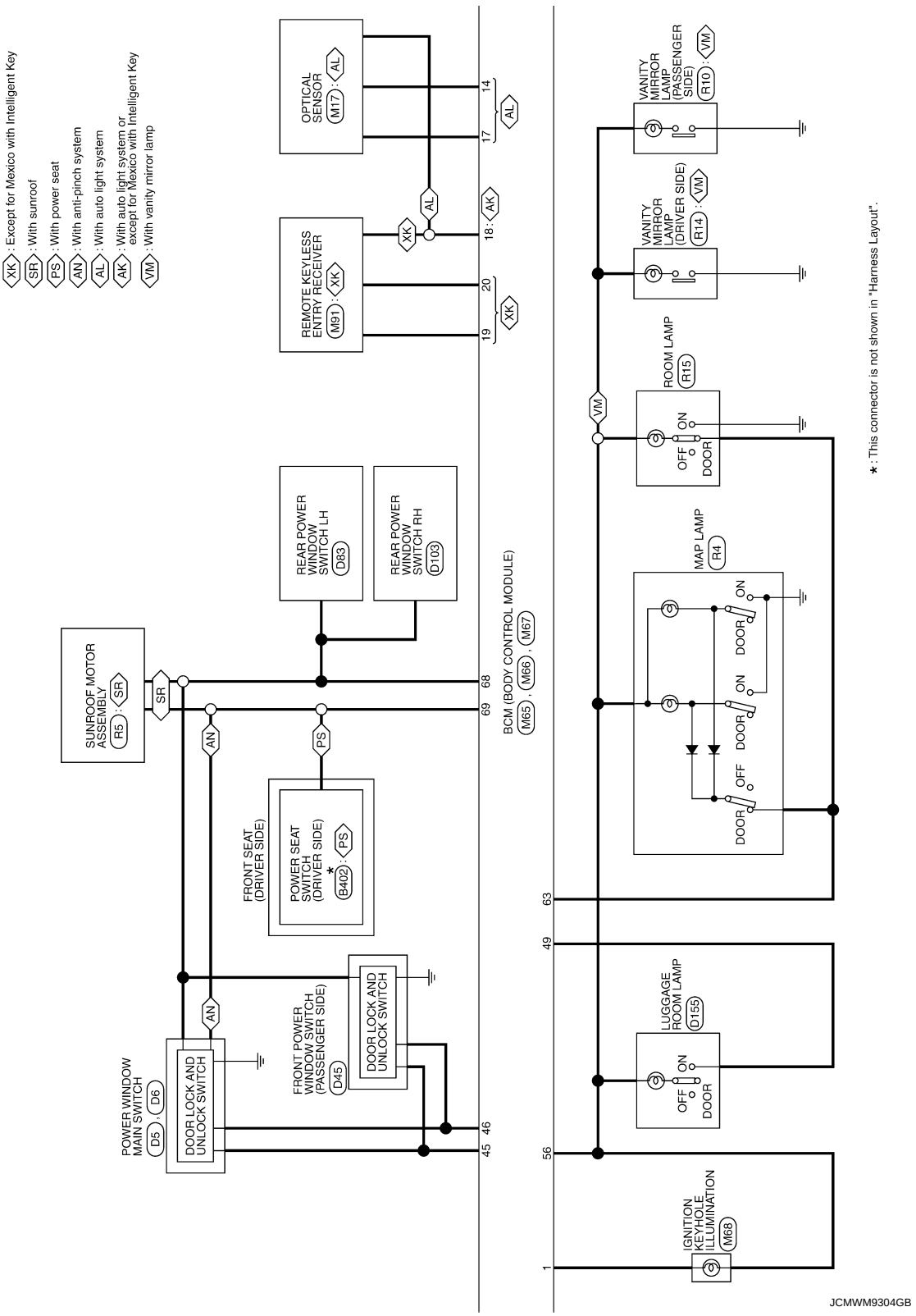
*: Except for Mexico with Intelligent Key

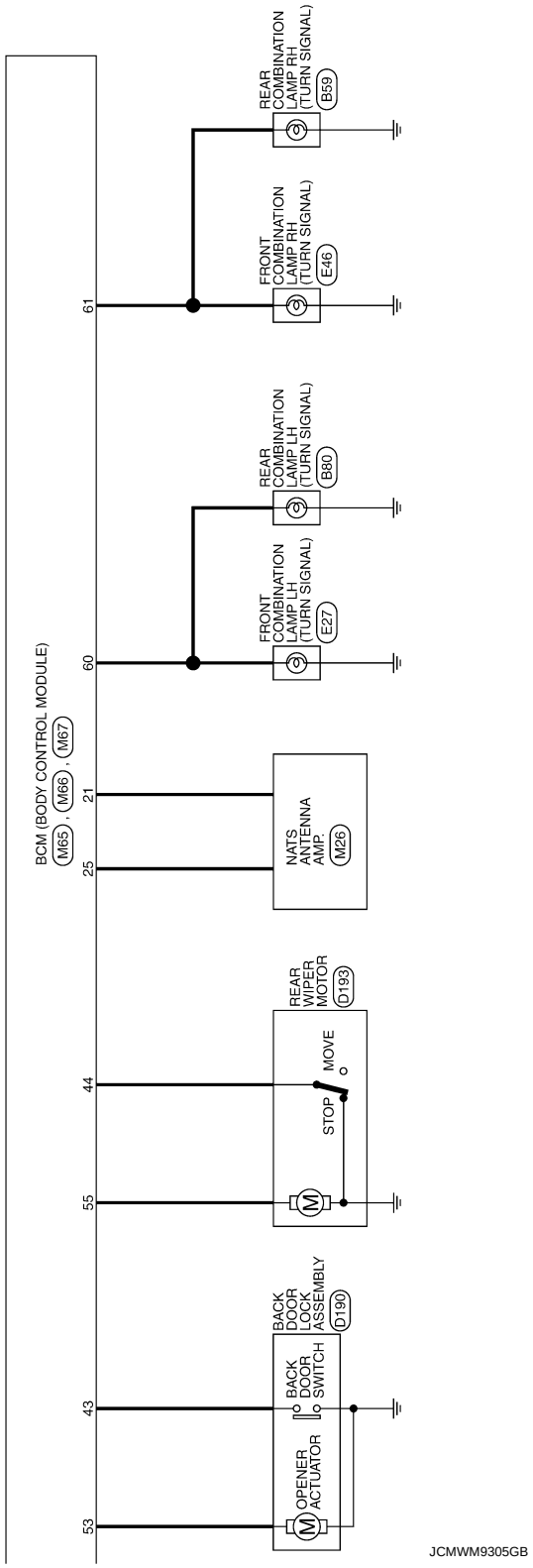
## Wiring Diagram - BCM -

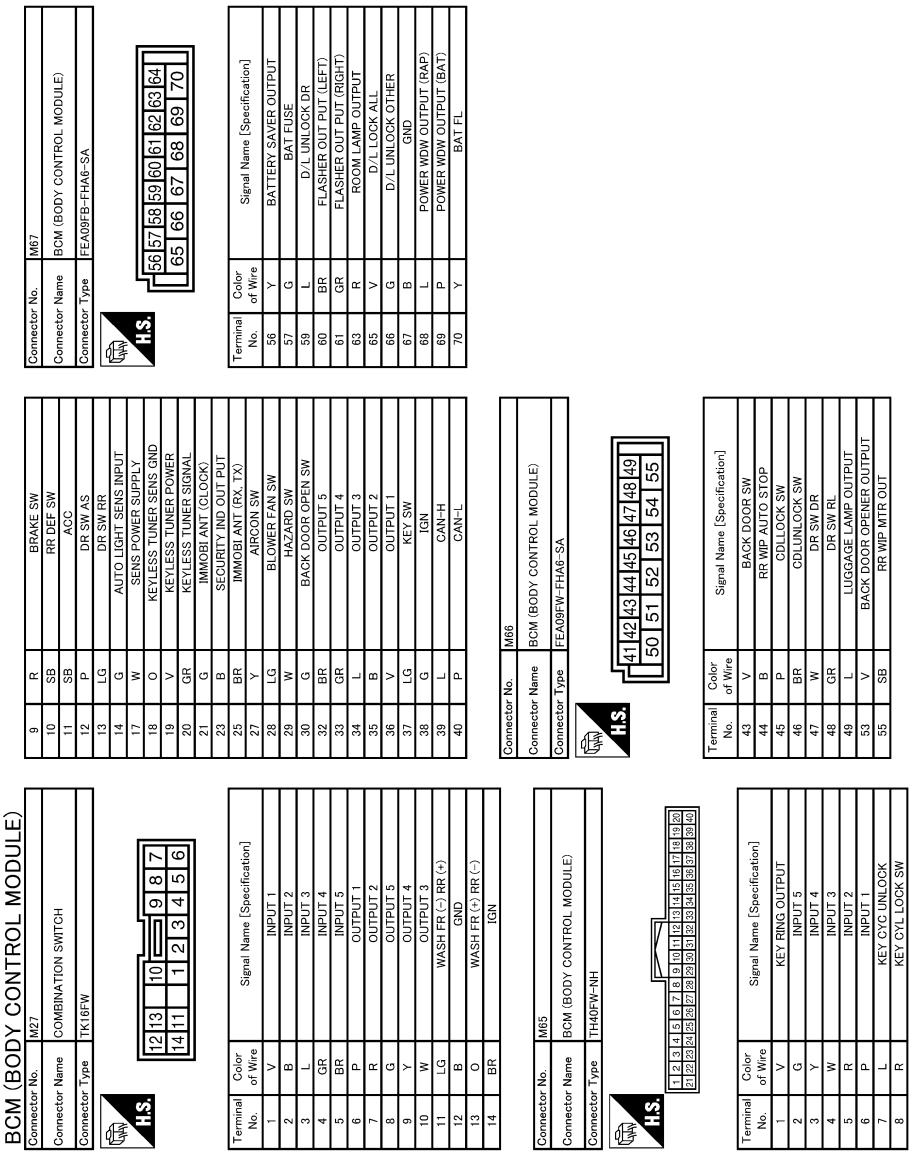
INFOID:0000000006548659




AA : With auto A/C
MA : With manual A/C
IK : With Intelligent Key
OI : Without Intelligent Key
AUTO AMP. (M54), (M55) : AA
A/C AMP. (M50) : MA
AA
MA
To CAN system
COMBINATION METER (M34)
DATA LINK CONNECTOR (M4)
DATA LINE
DATA LINE
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) (E11), (E13)
20A 62
15A 61
CPU
IGNITION RELAY
BCM (BODY CONTROL MODULE) (M65), (M66), (M67)
BACK DOOR OPENER SWITCH ASSEMBLY (OPENER SWITCH) (D186) : OI (D197) : IK
HAZARD SWITCH (M45)
REAR DOOR SWITCH RH (B53)
REAR DOOR SWITCH LH (B71)
FRONT DOOR SWITCH (PASSENGER SIDE) (B27)
FRONT DOOR SWITCH (DRIVER SIDE) (B34)
(M35)
COMBINATION SWITCH (M27)
REAR DOOR LOCK ACTUATOR RH (D105)
DOOR LOCK ACTUATOR
JCMWM9303GB


XK : Except for Mexico with Intelligent Key
SR : With sunroof
PS : With power seat
AN : With anti-pinch system
AL : With auto light system
AK : With auto light system or except for Mexico with Intelligent Key
VM : With vanity mirror lamp
OPTICAL SENSOR (M17) : AL
REMOTE KEYLESS ENTRY RECEIVER (M91) : XK
REAR POWER WINDOW SWITCH LH (D83)
REAR POWER WINDOW SWITCH RH (D103)
SUNROOF MOTOR ASSEMBLY (R5) : SR
FRONT SEAT (DRIVER SIDE)
POWER SEAT SWITCH (DRIVER SIDE) *(B402) : PS
FRONT POWER WINDOW SWITCH (PASSENGER SIDE) (D45)
DOOR LOCK AND UNLOCK SWITCH
POWER WINDOW MAIN SWITCH (D5) : (D6)
BCM (BODY CONTROL MODULE) (M65), (M66), (M67)
VANITY MIRROR LAMP (PASSENGER SIDE) (R10) : VM
VANITY MIRROR LAMP (DRIVER SIDE) (R14) : VM
ROOM LAMP (R15)
MAP LAMP (R4)
LUGGAGE ROOM LAMP (D155)
IGNITION KEYHOLE ILLUMINATION (M68)
ON
OFF
DOOR
* : This connector is not shown in "Harness Layout".
JCMWM9304GB


BCM (BODY CONTROL MODULE)
(M65), (M66), (M67)
61
60
21
25
44
55
43
53
REAR COMBINATION LAMP RH (TURN SIGNAL) B59
FRONT COMBINATION LAMP RH (TURN SIGNAL) E46
REAR COMBINATION LAMP LH (TURN SIGNAL) B80
FRONT COMBINATION LAMP LH (TURN SIGNAL) E27
NATS ANTENNA AMP. M26
REAR WIPER MOTOR D193
MOVE
STOP
BACK DOOR LOCK ASSEMBLY D190
BACK DOOR SWITCH
OPENER ACTUATOR
JCMWM9305GB




JCMWM9306GB

## Fail-safe

*INFOID:0000000006548660*

### REAR WIPER MOTOR PROTECTION

BCM detects the rear wiper stopping position according to the rear wiper stop position signal.
When the rear wiper stop position signal does not change more than 5 seconds while driving the rear wiper, BCM stops power supply to protect the rear wiper motor.

Condition of cancellation

1. Pass more than 1 minute after the rear wiper stop.
2. Turn the rear wiper switch OFF.
3. Operate the rear wiper switch or rear washer switch.

## DTC Inspection Priority Chart

INFOID:0000000006548661

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

| Priority | DTC |
|---|---|
| 1 | U1000: CAN COMM CIRCUIT |
| 2 | C1735: IGN CIRCUIT OPEN |
| 3 | • 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>• C1716: [PRESS DATA ERR] FL<br>• C1717: [PRESS DATA ERR] FR<br>• C1718: [PRESS DATA ERR] RR<br>• C1719: [PRESS DATA ERR] RL<br>• C1729: VHCL SPEED SIG ERR |

## DTC Index

INFOID:0000000006548662

**NOTE:**

Details of time display

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

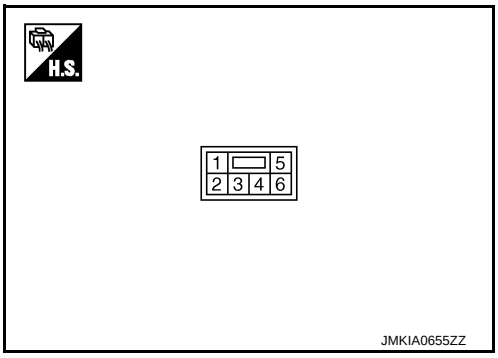
| CONSULT display | Tire pressure monitor warning lamp ON | Reference |
|---|---|---|
| U1000: CAN COMM CIRCUIT | — | BCS-34 |
| C1704: LOW PRESSURE FL | × | WT-13 |
| C1705: LOW PRESSURE FR | × | |
| C1706: LOW PRESSURE RR | × | |
| C1707: LOW PRESSURE RL | × | |
| C1708: [NO DATA] FL | × | WT-15 |
| C1709: [NO DATA] FR | × | |
| C1710: [NO DATA] RR | × | |
| C1711: [NO DATA] RL | × | |
| C1716: [PRESS DATA ERR] FL | × | WT-18 |
| C1717: [PRESS DATA ERR] FR | × | |
| C1718: [PRESS DATA ERR] RR | × | |
| C1719: [PRESS DATA ERR] RL | × | |
| C1729: VHCL SPEED SIG ERR | × | WT-20 |
| C1735: IGN CIRCUIT OPEN | — | BCS-35 |

# SUNROOF MOTOR ASSEMBLY

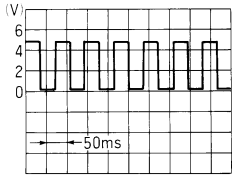
## Reference Value

INFOID:0000000006199613

### TERMINAL LAYOUT

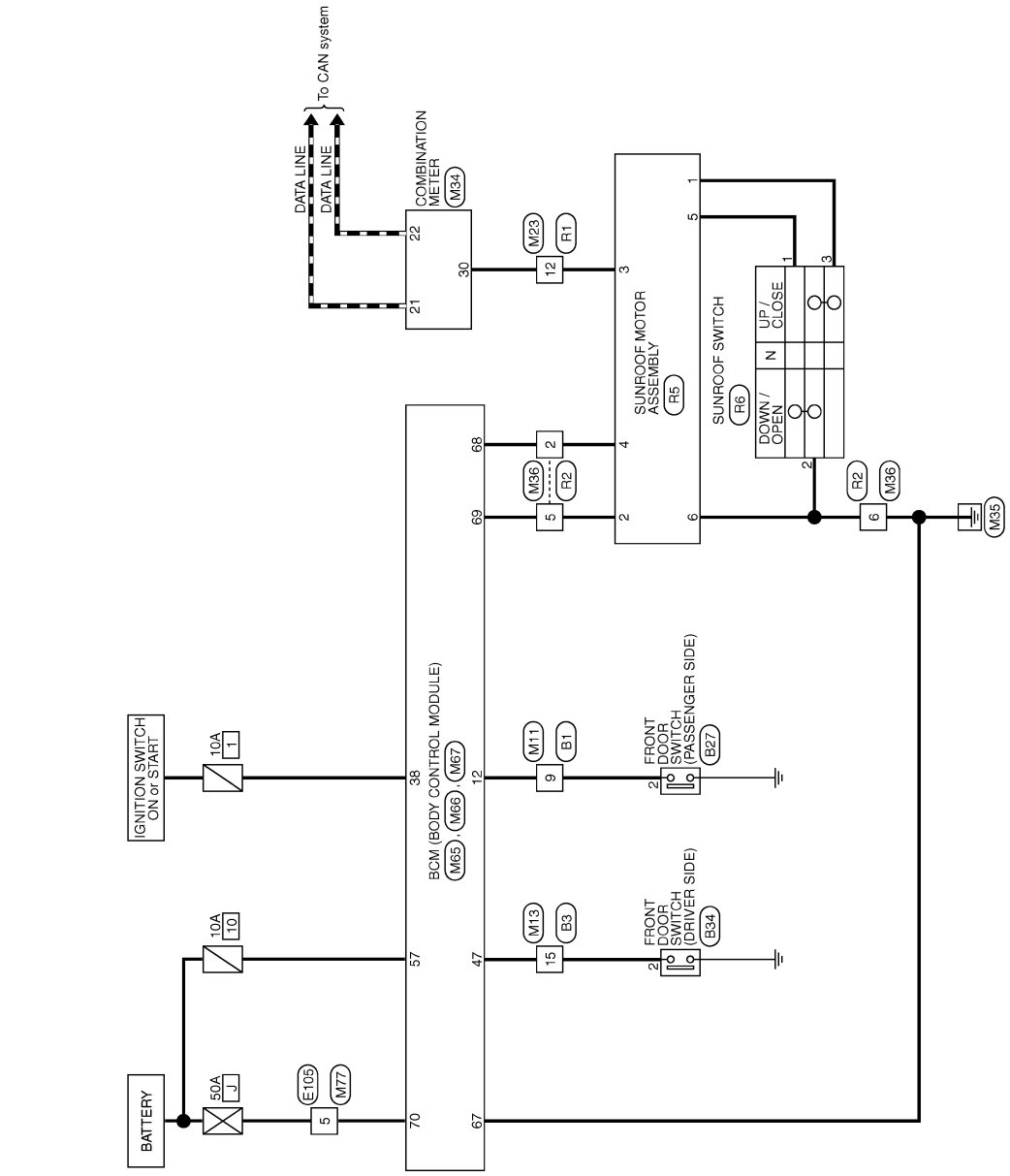



### PHYSICAL VALUES

| Terminal No. (Wire color) | | Description | | Condition | Value |
|---|---|---|---|---|---|
| + | - | Signal name | Input/ Output | | |
| 1 (R) | Ground | Sunroof close switch signal | Input | Sunroof switch in following position<br>• TILT UP<br>• SLIDE CLOSE | 0 |
| | | | | Other than above | Battery voltage |
| 2 (P) | Ground | Sunroof power supply | Input | — | Battery voltage |
| 3 (O) | Ground | Vehicle speed signal (2-pulse) | Input | Speedometer operated [When vehicle speed is approx.40km/ h (25MPH)] |  ELF1080D |
| 4 (L) | Ground | Ignition switch power supply | Input | Ignition switch ON | Battery voltage |
| | | | | Other than above | 0 |
| 5 (G) | Ground | Sunroof open switch signal | Input | Sunroof switch in following position<br>• TILT DOWN<br>• SLIDE OPEN | 0 |
| | | | | Other than above | Battery voltage |
| 6 (B) | Ground | Ground | — | — | 0 |

## Wiring Diagram— SUNROOF —

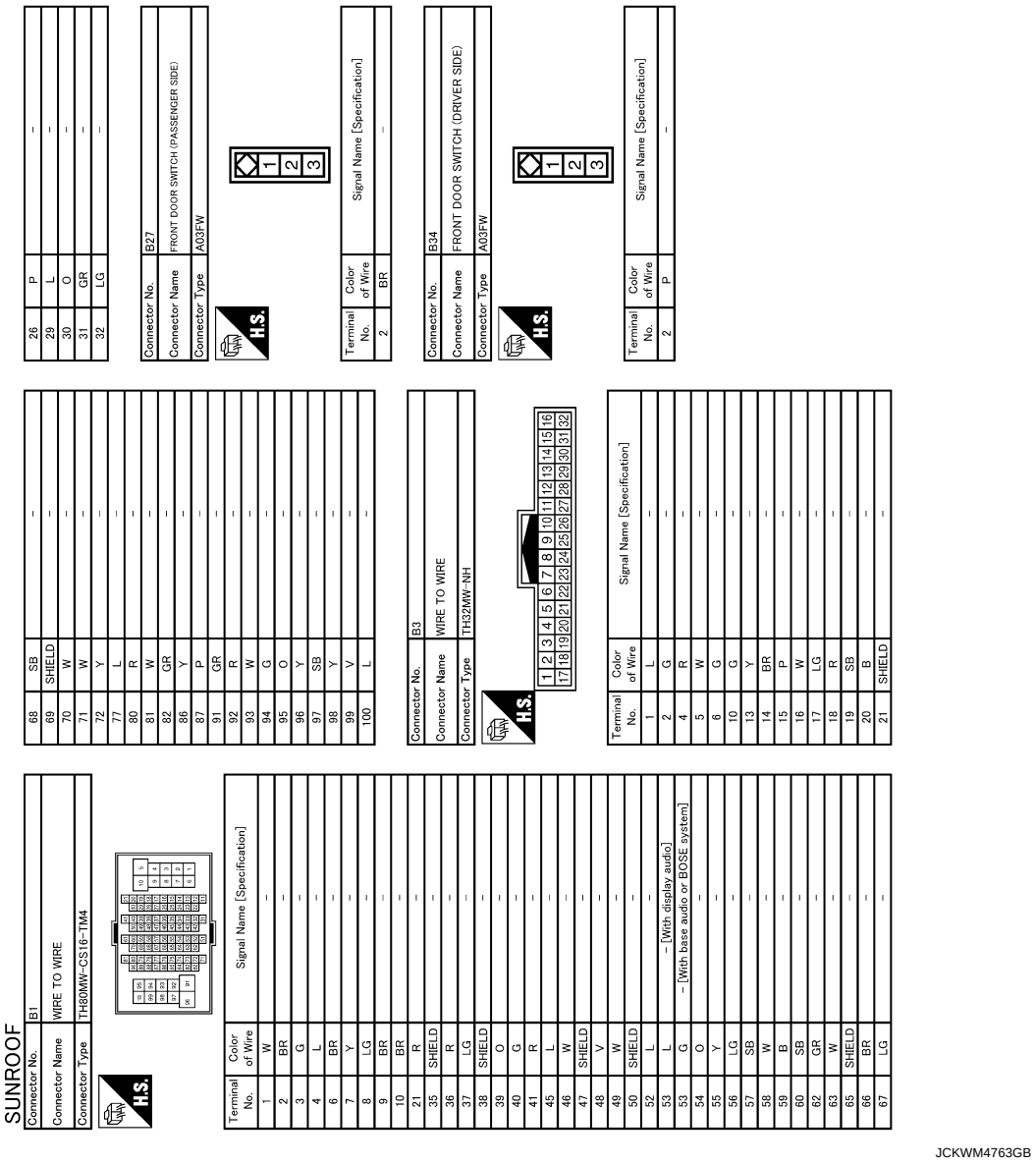
INFOID:0000000006199614



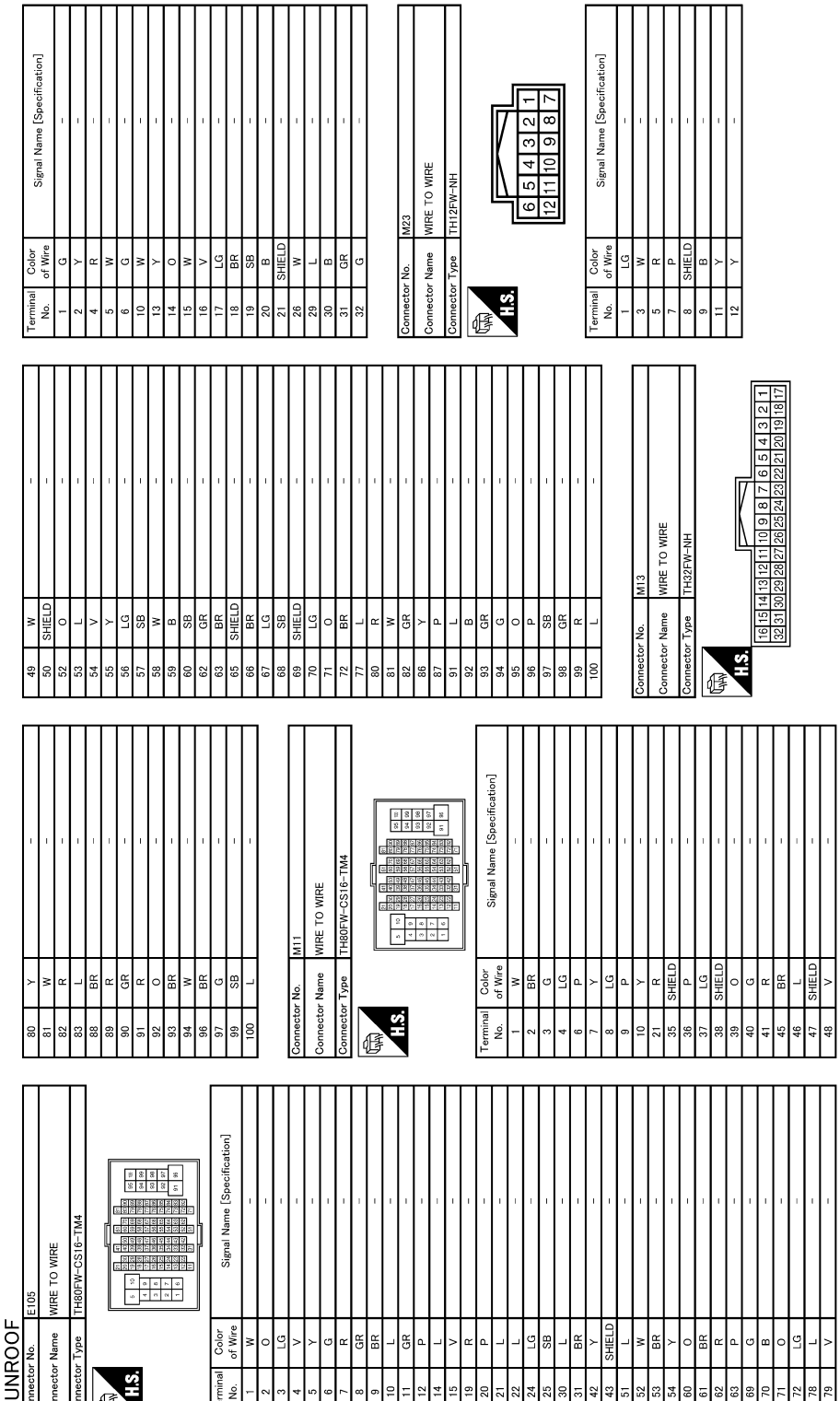

SUNROOF

2008/07/15

JCKWM2031GB




JCKWM4763GB

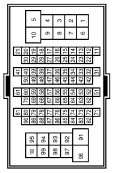



JCKWM4764GB

JCKWM4765GB

SUNROOF

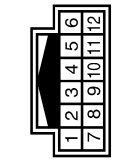
| Connector No. | M77 |
|---|---|
| Connector Name | WIRE TO WIRE |
| Connector Type | TH80MW-CS16-TM4 |



| Terminal No. | Color of Wire | Signal Name [Specification] |
|---|---|---|
| 1 | BR | – |
| 2 | O | – |
| 3 | LG | – |
| 4 | Y | – |
| 5 | Y | – |
| 6 | G | – |
| 7 | R | – |
| 8 | GR | – |
| 9 | BR | – |
| 10 | L | – |
| 11 | GR | – |
| 12 | P | – |
| 14 | SB | – |
| 15 | V | – |
| 19 | R | – |
| 20 | P | – |
| 21 | O | – |
| 22 | L | – |
| 24 | BR | – |
| 25 | W | – |
| 30 | L | – |
| 31 | W | – |
| 42 | O | – |
| 43 | SHIELD | – |
| 51 | W | – |
| 52 | SB | – |
| 53 | L | – |
| 54 | Y | – |
| 60 | O | – |
| 61 | BR | – |
| 62 | G | – |
| 63 | P | – |
| 69 | W | – |
| 70 | B | – |
| 71 | P | – |
| 72 | O | – |
| 78 | SB | – |
| 79 | V | – |

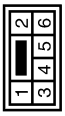
| 80 | L | – |
|---|---|---|
| 81 | W | – |
| 82 | B | – |
| 83 | LG | – |
| 88 | BR | – |
| 89 | G | – |
| 90 | GR | – |
| 91 | R | – |
| 92 | L | – |
| 93 | P | – |
| 94 | W | – |
| 96 | BR | – |
| 97 | G | – |
| 99 | SB | – |
| 100 | Y | – |

| Connector No. | R1 |
|---|---|
| Connector Name | WIRE TO WIRE |
| Connector Type | TH12MW-NH |



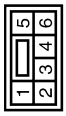
| Terminal No. | Color of Wire | Signal Name [Specification] |
|---|---|---|
| 1 | B/Y | – |
| 2 | SHIELD | – |
| 3 | W | – |
| 5 | GR | – |
| 7 | B/R | – |
| 8 | SHIELD | – |
| 9 | B | – |
| 11 | Y | – |
| 12 | O | – |

| Connector No. | R2 |
|---|---|
| Connector Name | WIRE TO WIRE |
| Connector Type | NS06MBR-CS |



| Terminal No. | Color of Wire | Signal Name [Specification] |
|---|---|---|
| 1 | B | – |
| 2 | L | – |
| 3 | R | – |
| 4 | Y | – |
| 5 | P | – |
| 6 | B | – |

| Connector No. | R5 |
|---|---|
| Connector Name | SUNROOF MOTOR ASSEMBLY |
| Connector Type | NS06FW-CS |



| Terminal No. | Color of Wire | Signal Name [Specification] |
|---|---|---|
| 1 | R | SW BIT 4 |
| 2 | P | +B |
| 3 | O | SPEED SENSOR |
| 4 | L | +IGN |
| 5 | G | SW BIT 3 |
| 6 | B | GND |

| Connector No. | R6 |
|---|---|
| Connector Name | SUNROOF SWITCH |
| Connector Type | TK03FW |

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

JCKWM4766GB

# SYMPTOM DIAGNOSIS

## SUNROOF DOES NOT OPERATE PROPERLY

### Description

INFOID:0000000006377780

Sunroof does not operate normally.
- Glass lid does not slide or tilt.
- Judder occurs during sliding operation of glass lid.
- Sliding or tilting operation of glass lid is slow.

### Diagnosis Procedure

INFOID:0000000006377781

#### 1.CHECK GLASS LID

Check the following items.
- Cracks, damage, or deformation of weather-strip.
- Sticking of weather-strip.
- Loose or missing glass lid mounting blot.
- Misalignment of glass lid.

Refer to RF-59, "GLASS LID : Removal and Installation".

Is the inspection result normal?

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

#### 2.CHECK SUNROOF FRAME ASSEMBLY

Check the following items.
- Damage, deformation or trapped foreign material of slide rail.
- Insufficient application of grease to sliding section of slide rail.

Refer to RF-64, "SUNROOF UNIT ASSEMBLY : Removal and Installation".

Is the inspection result normal?

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

#### 3.CHECK SUNSHADE

Check sunshade for damage, deformation, of interference with other parts.
Refer to RF-66, "SUNSHADE : Removal and Installation".

Is the inspection result normal?

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

#### 4.CHECK BCM POWER SUPPLY AND GROUND CIRCUIT

Check BCM power supply and ground circuit.
Refer to BCS-36, "Diagnosis Procedure".

Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair or replace the malfunctioning parts.

#### 5.CHECK SUNROOF MOTOR ASSEMBLY POWER SUPPLY AND GROUND CIRCUIT

Check sunroof motor assembly power supply and ground circuit.
Refer to RF-10, "SUNROOF MOTOR ASSEMBLY : Diagnosis Procedure".

Is the inspection result normal?

YES >> GO TO 6.
NO >> Repair or replace the malfunctioning parts.

#### 6.CHECK SUNROOF SWITCH

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

Is the inspection result normal?

YES >> GO TO 7.
NO >> Repair or replace the malfunctioning parts.

## 7. CONFIRM THE OPERATION

Confirm the operation again.

Is the result normal?

YES >> Check intermittent incident. Refer to GI-45, "Intermittent Incident".
NO >> GO TO 1.

# AUTO OPERATION DOES NOT OPERATE

## Description

INFOID:0000000006377782

Auto operation does not operate
- Auto operation of glass lid does not operate.
- Glass lid stops halfway.
- Anti-pinch function operates.

## Diagnosis Procedure

INFOID:0000000006377783

### 1.CHECK GLASS LID

Check the following items.
- Cracks, damage, or deformation of weather-strip.
- Sticking of weather-strip.
- Loose or missing glass lid mounting blot.
- Misalignment of glass lid.
  Refer to RF-59, "GLASS LID : Removal and Installation".

Is the inspection result normal?

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

### 2.CHECK WIND DEFLECTOR

Check wind deflector for deformation and interference.
Refer to RF-67, "WIND DEFLECTOR : Removal and Installation".

Is the inspection result normal?

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

### 3.CHECK SUNROOF FRAME ASSEMBLY

Check the following items.
- Damage, deformation or trapped foreign material of slide rail.
- Insufficient application of grease to sliding section of slide rail.
  Refer to RF-64, "SUNROOF UNIT ASSEMBLY : Removal and Installation".

Is the inspection result normal?

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

### 4.PERFORM INITIALIZATION PROCEDURE

Perform initialization procedure.
Refer to RF-4, "ADDITIONAL SERVICE WHEN REMOVING BATTERY NEGATIVE TERMINAL : Special Repair Requirement".

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace sunroof motor assembly. Refer to RF-61, "SUNROOF MOTOR ASSEMBLY : Removal and Installation".

# SUNROOF DOES NOT OPERATE ANTI-PINCH FUNCTION

## Diagnosis Procedure

INFOID:0000000006377784

### 1.PERFORM INITIALIZATION PROCEDURE

Perform initialization procedure.
Refer to RF-4, "ADDITIONAL SERVICE WHEN REMOVING BATTERY NEGATIVE TERMINAL : Special Repair Requirement".

Is the inspection result normal?

YES >> Inspection end.
NO >> Check intermittent incident. Refer to GI-45, "Intermittent Incident".

# RETAINED POWER OPERATION DOES NOT OPERATE PROPERLY

## Diagnosis Procedure

INFOID:0000000006377785

### 1.CHECK DOOR SWITCH

Check door switch.
Refer to DLK-56, "Component_Function_Check".

Is the inspection result normal?

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

### 2.CHECK POWER WINDOW MAIN SWITCH

Check power window main switch system.
Refer to PWC-13, "POWER WINDOW MAIN SWITCH : Diagnosis Procedure".

Is the inspection result normal?

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

### 3.CHECK BCM POWER SUPPLY AND GROUND

Check BCM power supply and ground circuit.
Refer to BCS-36, "Diagnosis Procedure".

Is the inspection result normal?

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

### 4.CHECK SUNROOF MOTOR ASSEMBLY POWER SUPPLY AND GROUND

Check sunroof motor assembly power supply and ground circuit.
Refer to RF-10, "SUNROOF MOTOR ASSEMBLY : Diagnosis_Procedure".

Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair or replace the malfunctioning parts.

### 5.CHECK SUNROOF SWITCH

Check sunroof switch circuit.
Refer to RF-11, "Diagnosis_Procedure".

Is the inspection result normal?

YES >> GO TO 6.
NO >> Repair or replace the malfunctioning parts.

### 6.CONFIRM THE OPERATION

Confirm the operation again.

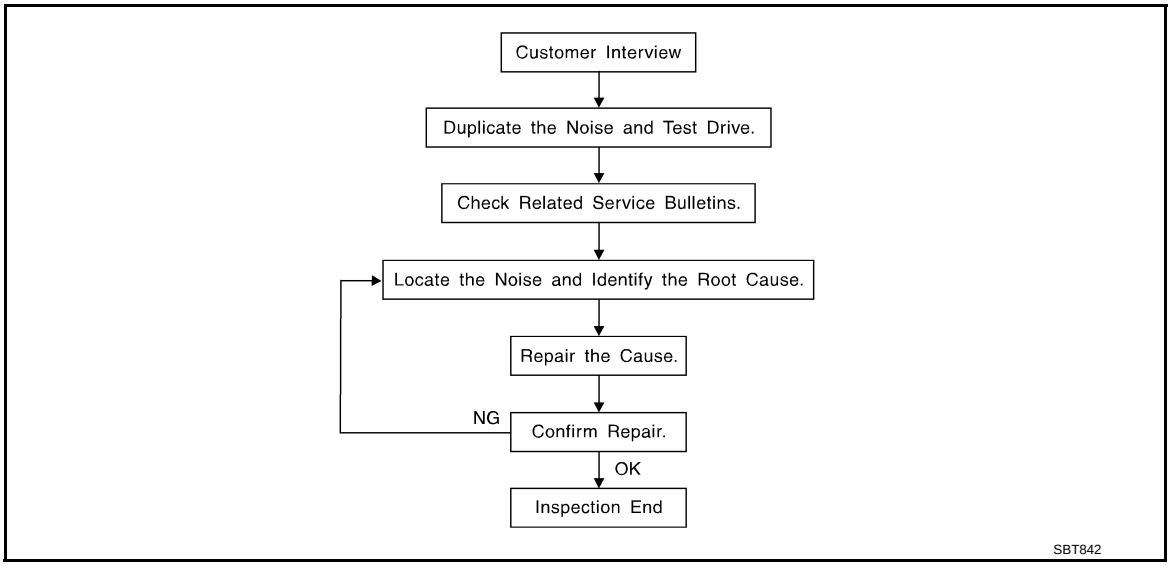
Is the result normal?

YES >> Check intermittent incident. Refer to GI-45, "Intermittent Incident".
NO >> GO TO 1.

# SQUEAK AND RATTLE TROUBLE DIAGNOSES

## Work Flow

INFOID:0000000006199620




### 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-53, "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-51, "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:0000000006199621

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.

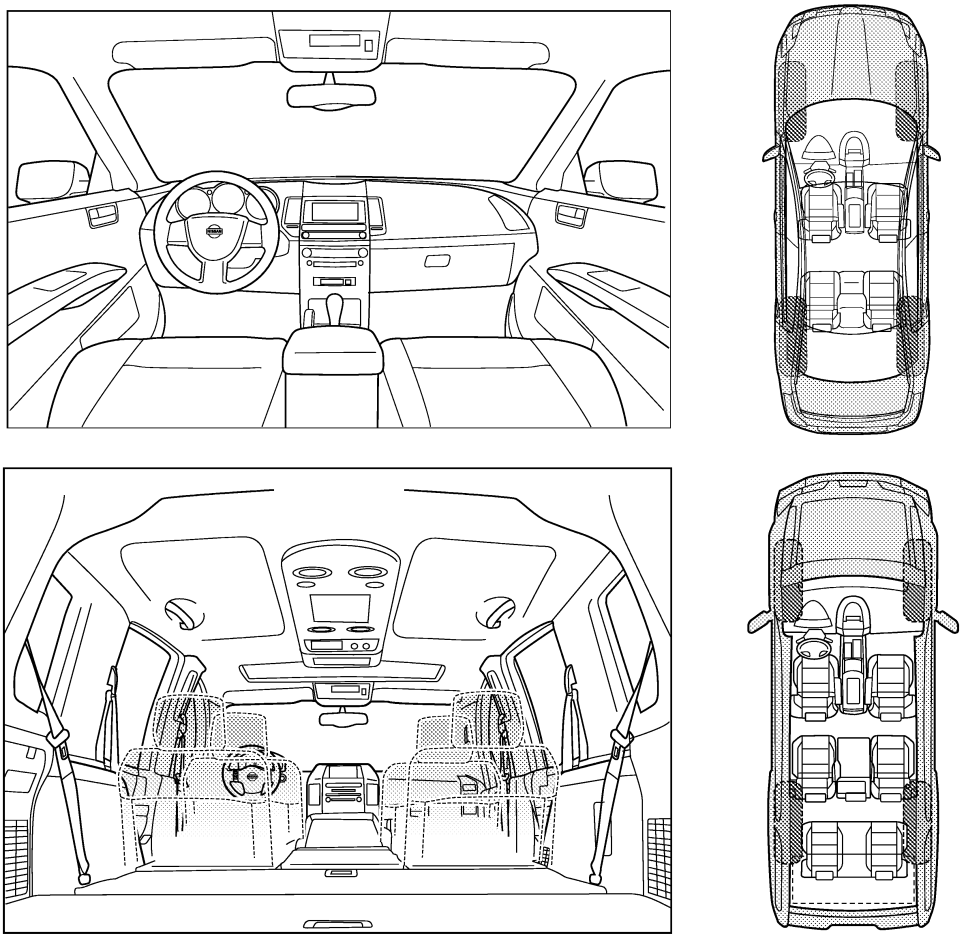
# Diagnostic Worksheet

INFOID:0000000006199622

**SQUEAK & RATTLE**
**DIAGNOSTIC WORKSHEET**

Dear Nissan Customer:
We are concerned about your satisfaction with your Nissan vehicle. Repairing a squeak or rattle sometimes can be very difficult. To help us fix your Nissan 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 advisor 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.**

PIIB8740E

**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

## FOR MEXICO

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

INFOID:0000000006199623

The Supplemental Restraint System such as “AIR BAG” and “SEAT BELT PRE-TENSIONER”, used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. Information necessary to service the system safely is included in the “SRS AIR BAG” and “SEAT BELT” of this Service Manual.

**WARNING:**

- **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 “SRS AIR BAG”.**
- **Never use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.**

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

**WARNING:**

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

### FOR MEXICO : Service Notice

INFOID:0000000006199624

- 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.

### FOR MEXICO : Precaution for Work

INFOID:0000000006199625

- 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.
- Never use organic solvent such as thinner, benzene, alcohol, and gasoline.
- For genuine leather seats, use a genuine leather seat cleaner.

## FOR USA AND CANADA

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

INFOID:0000000006199626

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 that would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.**
- **Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see “SRS AIR BAG”.**
- **Never use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.**

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

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

### FOR USA AND CANADA : Service Notice

INFOID:0000000006199627

- 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.

### FOR USA AND CANADA : Precaution for Work

INFOID:0000000006199628

- 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.

- Never use organic solvent such as thinner, benzene, alcohol, and gasoline.
- For genuine leather seats, use a genuine leather seat cleaner.

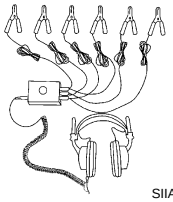
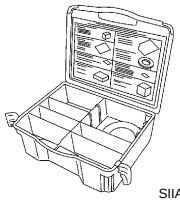
# PREPARATION

## PREPARATION

### Special Service Tools

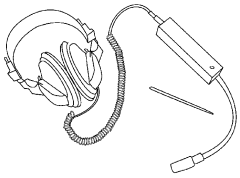
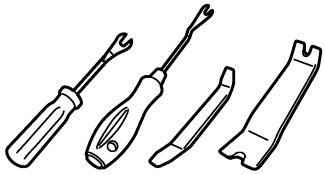
INFOID:0000000006199629

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

| Tool number (Kent-Moore No.) Tool name | | Description |
|---|---|---|
| (J-39570) Chassis ear |  SIIA0993E | Locates the noise |
| (J-43980) NISSAN Squeak and Rattle Kit |  SIIA0994E | Repairs the cause of noise |

### Commercial Service Tool

INFOID:0000000006199630

| Tool name | | Description |
|---|---|---|
| Engine ear |  SIIA0995E | Locates the noise |
| Remover tool |  JMKIA3050ZZ | Removes the clips pawls and metal clips |

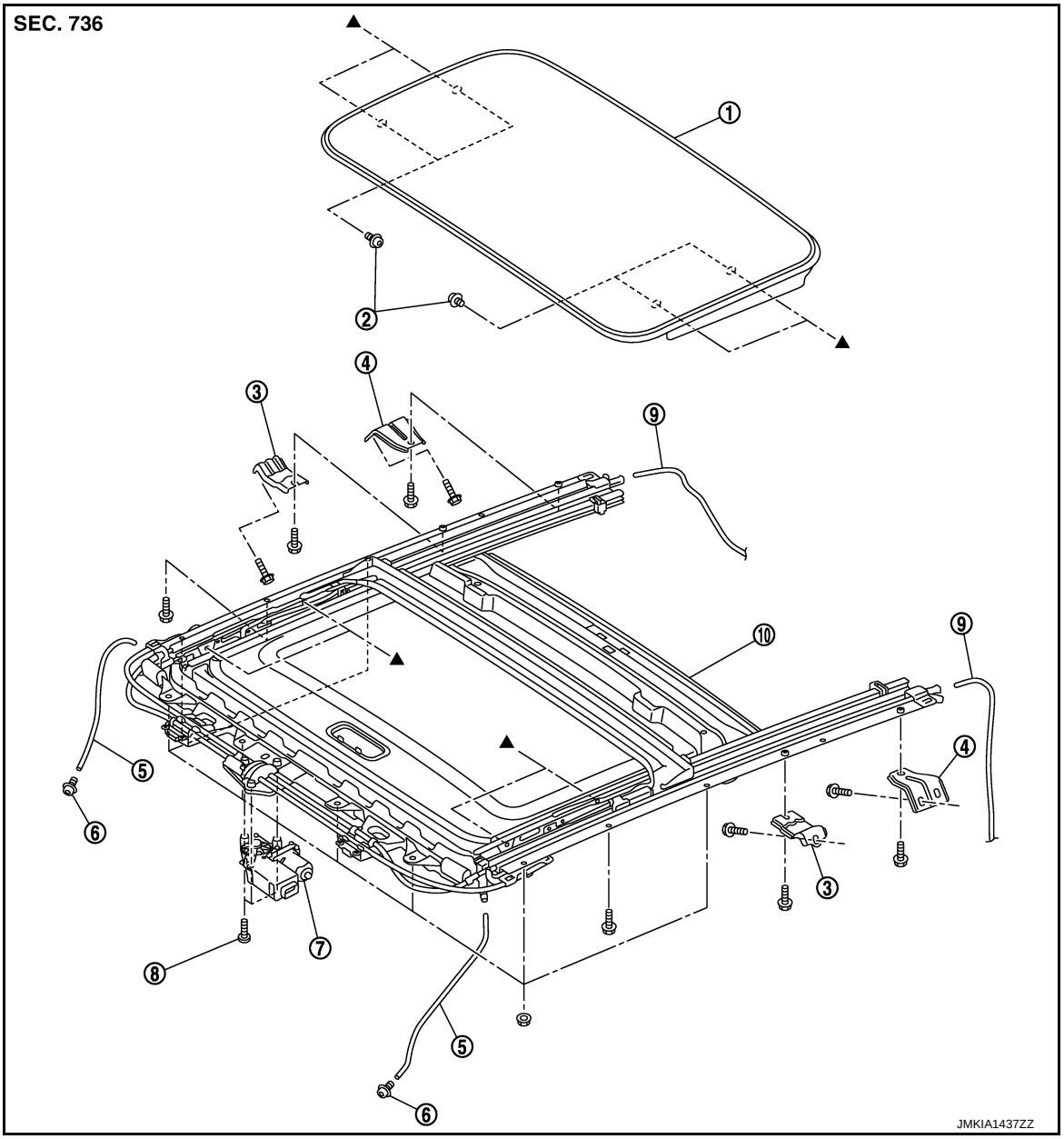
# REMOVAL AND INSTALLATION

## SUNROOF

### GLASS LID

#### GLASS LID : Exploded View

INFOID:0000000006199631




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

#### GLASS LID : Removal and Installation

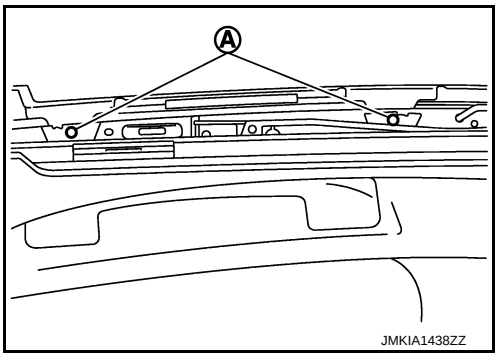
INFOID:0000000006199632

REMOVAL

**CAUTION:**

**Always work with a helper.**

1. Remove the side trim upper side, and then fold the side trim so that the TORX bolt can be seen.
2. Remove the TORX bolts (A), and then remove the glass lid.




3. Remove the sunroof lid from the vehicle.

## INSTALLATION

**CAUTION:**

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

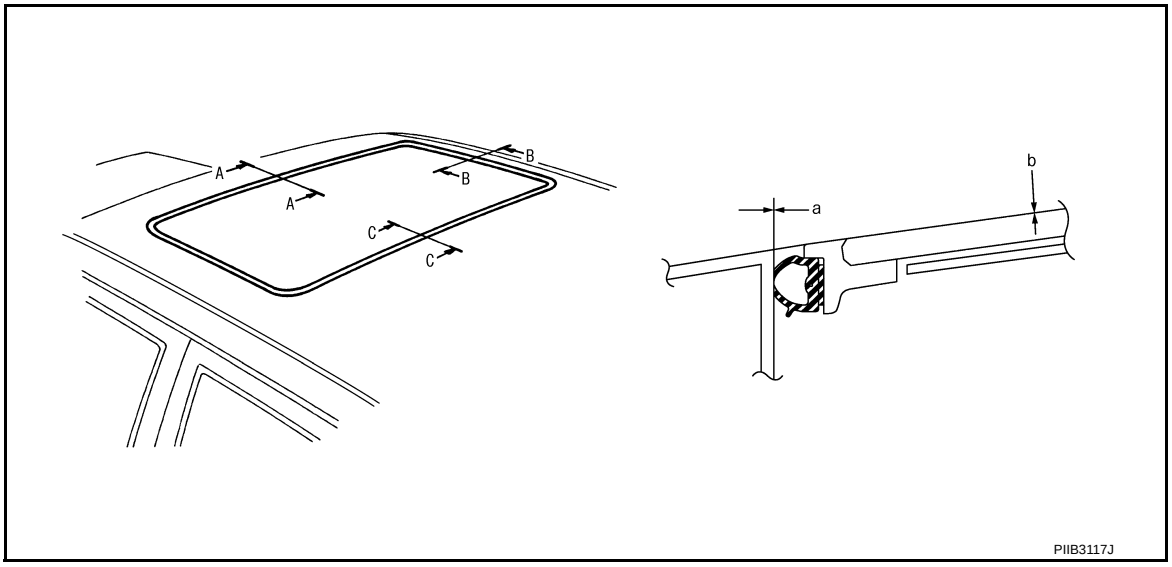
**NOTE:**

After installation carry out fitting adjustment. Refer to RF-60, "GLASS LID : Adjustment".

Install in the reverse order of removal.

## GLASS LID : Adjustment

INFOID:0000000006199633




### LID WEATHERSTRIP OVERLAP ADJUSTMENT AND SURFACE MISMATCH ADJUSTMENT

1. Remove the side trim upper side, and then fold the side trim so that the TORX bolt can be seen.
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** | **0.5 – 1.9 mm (0.020 – 0.075 in)** | **–1.5 – 1.5 mm (–0.059 – 0.059 in)** |
| **B – B** | **0.5 – 1.9 mm (0.020 – 0.075 in)** | **–1.5 – 1.5 mm (–0.059 – 0.059 in)** |
| **C – C** | **0.5 – 1.9 mm (0.020 – 0.075 in)** | **–1.5 – 1.5 mm (–0.059 – 0.059 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.

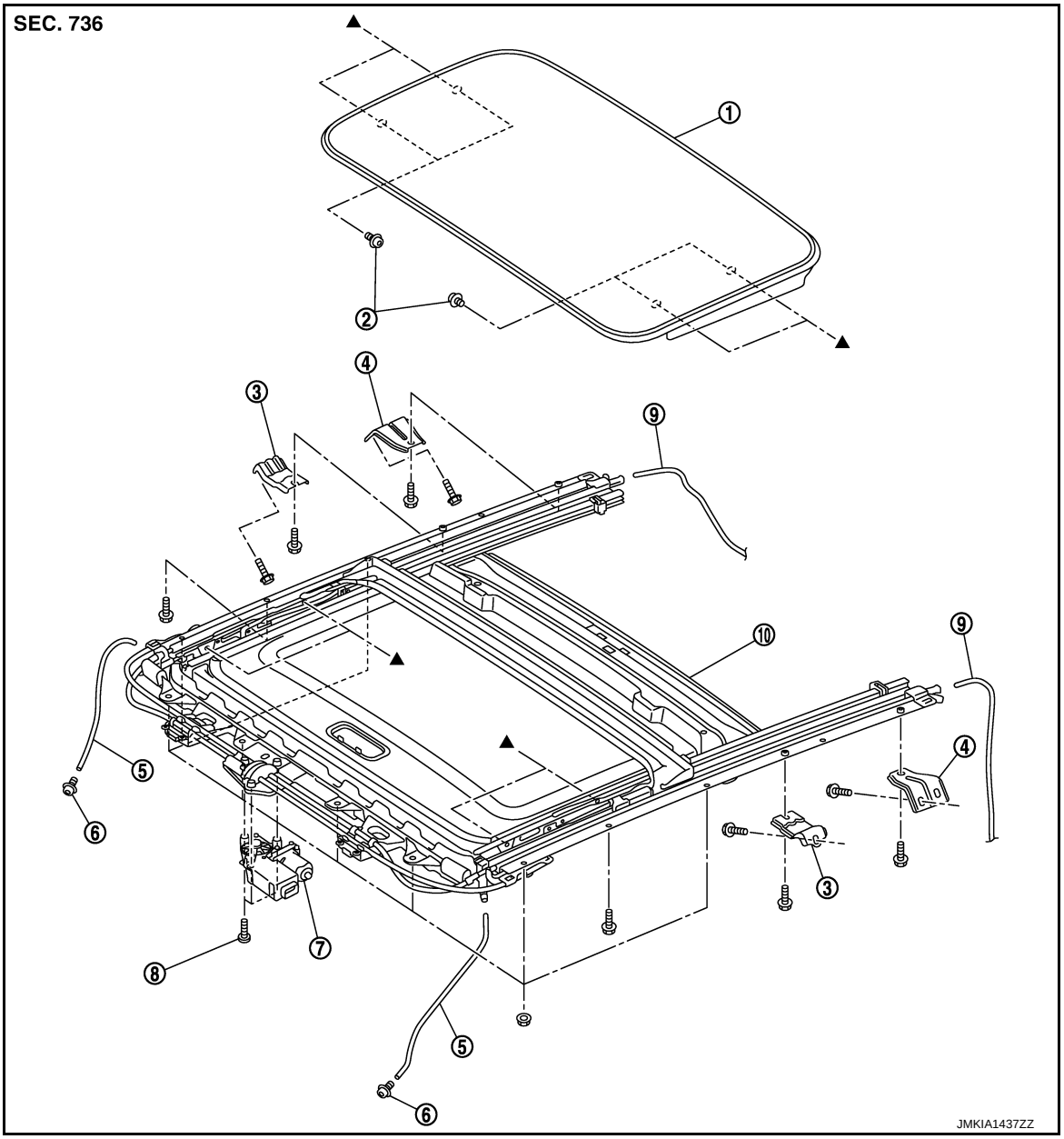
**NOTE:**

After adjustment the sunroof unit assembly, perform additional service. Refer to RF-4, "ADDITIONAL SERVICE WHEN REMOVING BATTERY NEGATIVE TERMINAL : Special Repair Requirement".

# SUNROOF MOTOR ASSEMBLY

## SUNROOF MOTOR ASSEMBLY : Exploded View

INFOID:0000000006199634




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

## SUNROOF MOTOR ASSEMBLY : Removal and Installation

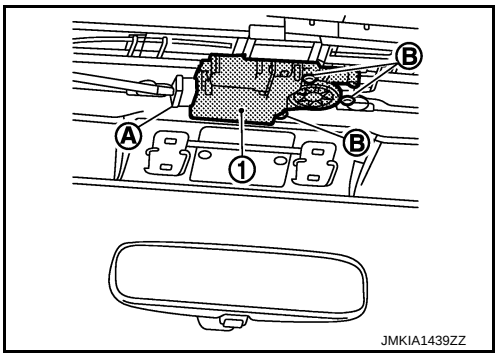
INFOID:0000000006199635

### 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-28, "SUNROOF : Removal and Installation".
2. Disconnect connector (A) and from sunroof motor assembly. Remove sunroof motor assembly mounting TORX bolts (B), 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.**

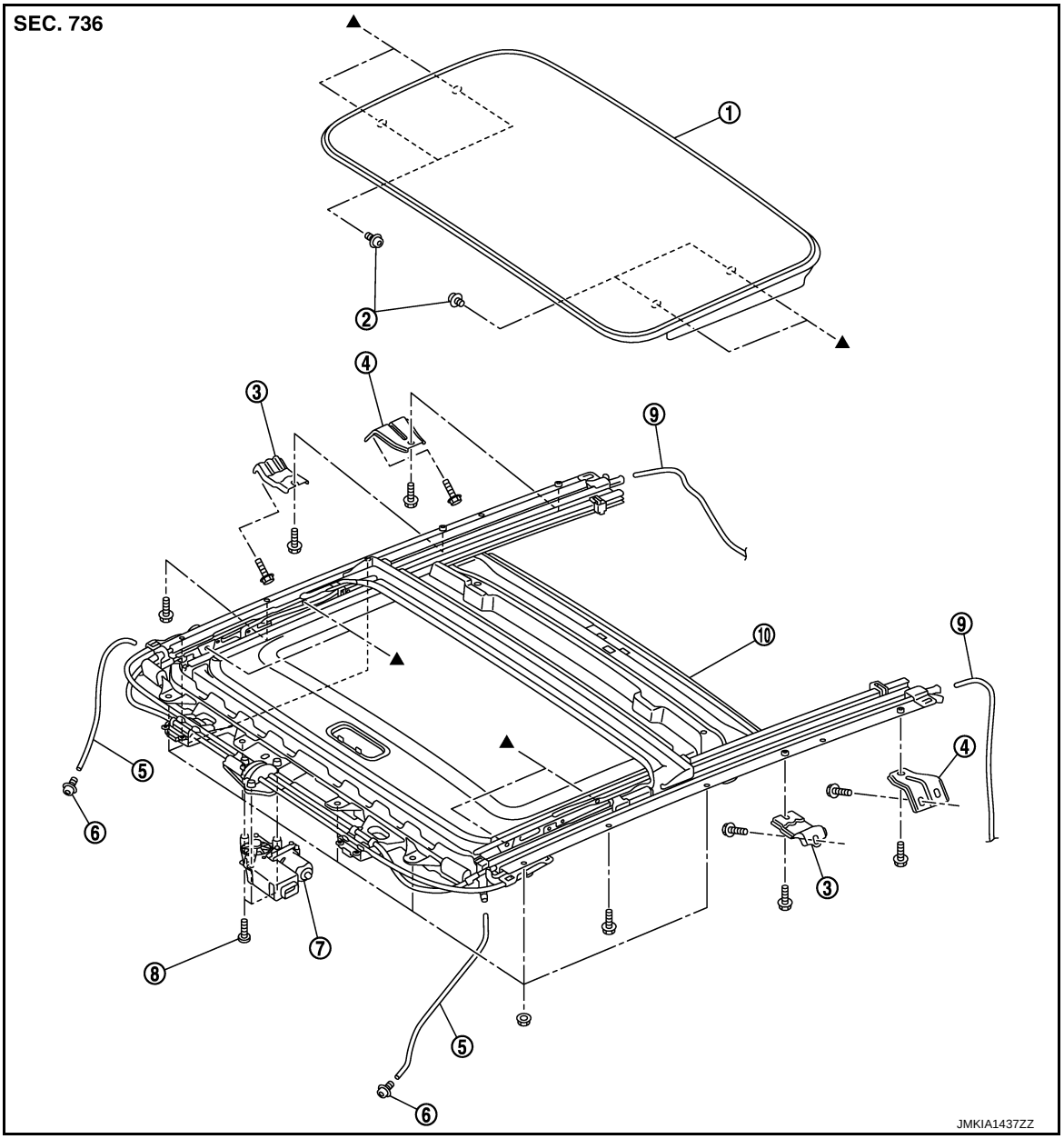
1. Move the sunroof motor assembly laterally by little so that the gear is completely engaged into the wire on the sunroof unit assembly and mounting surface becomes parallel. Then secure the sunroof motor assembly with TORX bolts.
2. Install the headlining. Refer to INT-28, "SUNROOF : Removal and Installation".

## SUNROOF UNIT ASSEMBLY

### SUNROOF UNIT ASSEMBLY : Exploded View

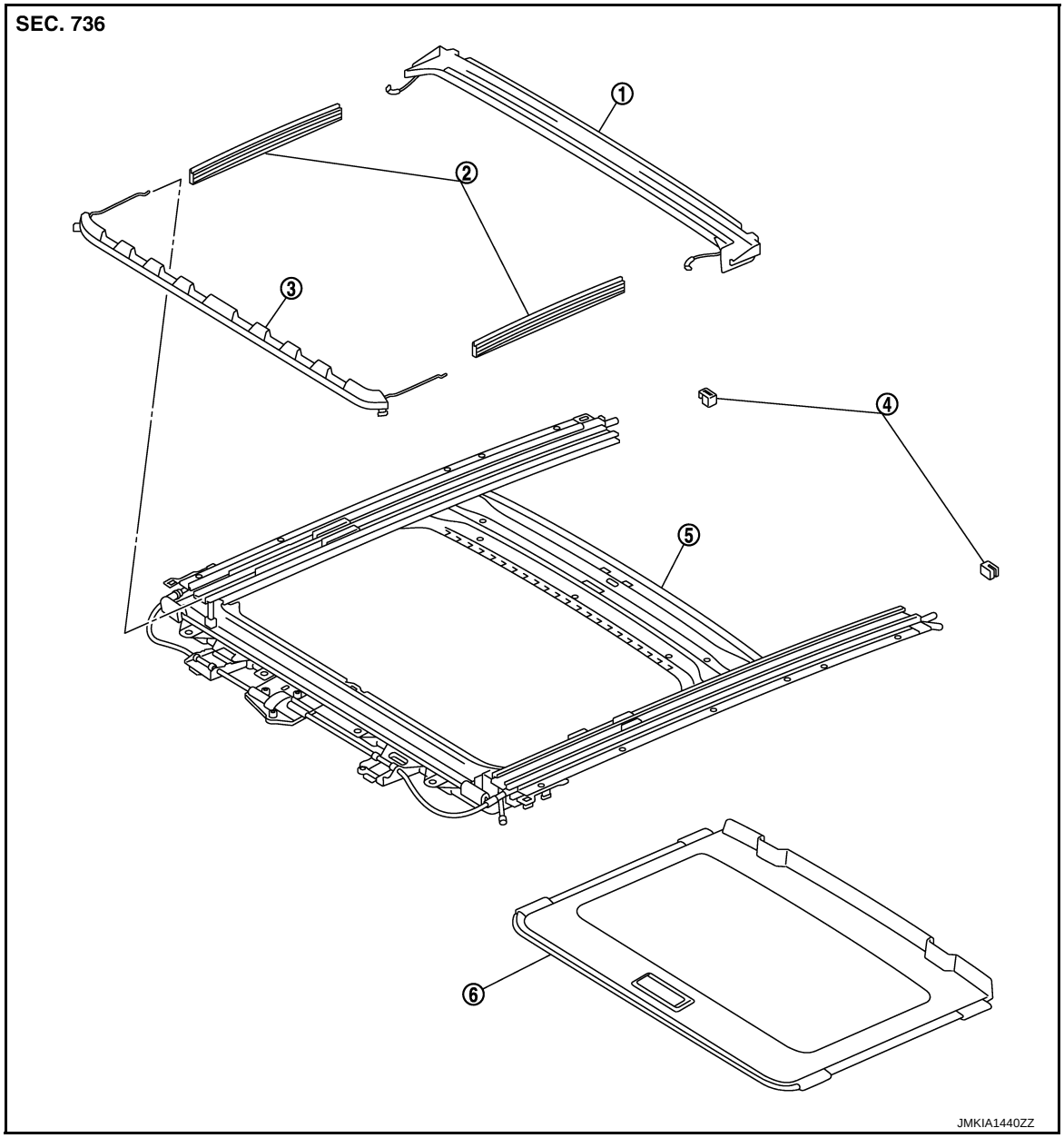
INFOID:0000000006199636

REMOVAL




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

## DISASSEMBLY




1. Rear drain
2. Side trim (LH/RH)
3. Wind deflector
4. Sunshade stopper (LH/RH)
5. Sunroof frame
6. Sunshade

## SUNROOF UNIT ASSEMBLY : Removal and Installation

INFOID:0000000006199637

### REMOVAL

**CAUTION:**

- **Always work with a helper.**
- **Fully close the glass lid, before removal, then never operate sunroof motor assembly after removal.**
- **When taking sunroof unit assembly out, use cloths to protect the seats and trim from damage.**

1. Remove the headlining. Refer to INT-28, "SUNROOF : Removal and Installation".
2. Remove the glass lid. Refer to RF-59, "GLASS LID : Removal and Installation".
3. Remove the sunroof motor assembly. Refer toRF-61, "SUNROOF MOTOR ASSEMBLY : Removal and Installation"
4. Disconnect drain hoses.
5. Remove the sunroof front brackets (LH/RH).
6. Remove the sunroof rear brackets (LH/RH).

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 back door while being careful not to damage the seats and trim.

## INSTALLATION

**CAUTION:**
**After installing the sunroof unit assembly and glass lid, perform the leak test and check that there is no malfunction.**

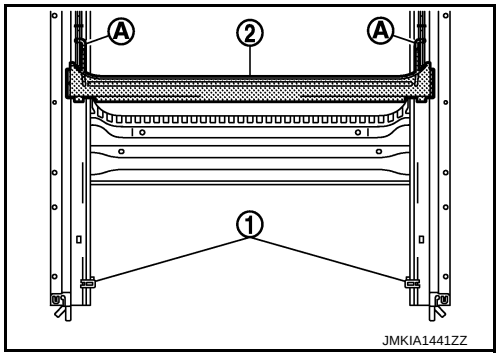
1. Temporarily tighten the mounting bolts to the sunroof rear brackets (LH/RH).
2. Bring sunroof unit into back door, and then place the rear end of the rail onto the sunroof brackets.
3. Temporarily tighten the mounting nuts to the front end of sunroof unit assembly.
4. Temporarily tighten the mounting bolts to the sunroof front and rear brackets (LH/RH)
5. Tighten the installation points diagonally excluding the installation point of the sunroof bracket around the roof opening.
6. Tighten the mounting nuts to the front end and side rail.
7. Tighten the sunroof bracket bolts of the vehicle side, and then tighten the bolt of the rail side.
8. Connect drain hoses.
9. Install the glass lid. Refer to RF-59, "GLASS LID : Removal and Installation".
   **NOTE:**
   After installation, carry out fitting adjustment. Refer to RF-60, "GLASS LID : Adjustment".
10. Install the headlining. Refer to INT-28, "SUNROOF : Removal and Installation".

# SUNROOF UNIT ASSEMBLY : Disassembly and Assembly

INFOID:0000000006199638

## DISASSEMBLY

1. Remove sunshade stopper (1) (LH/RH) from the rear end of sunroof frame.
2. Remove sunshade from the rear end of sunroof frame.
3. Remove the rear drain linkage (A) from the sunroof frame.
4. Remove the rear drain (2) from the rear end of suroof frame.
5. Remove the side trim (LH/RH) from the rear end of sunroof frame.



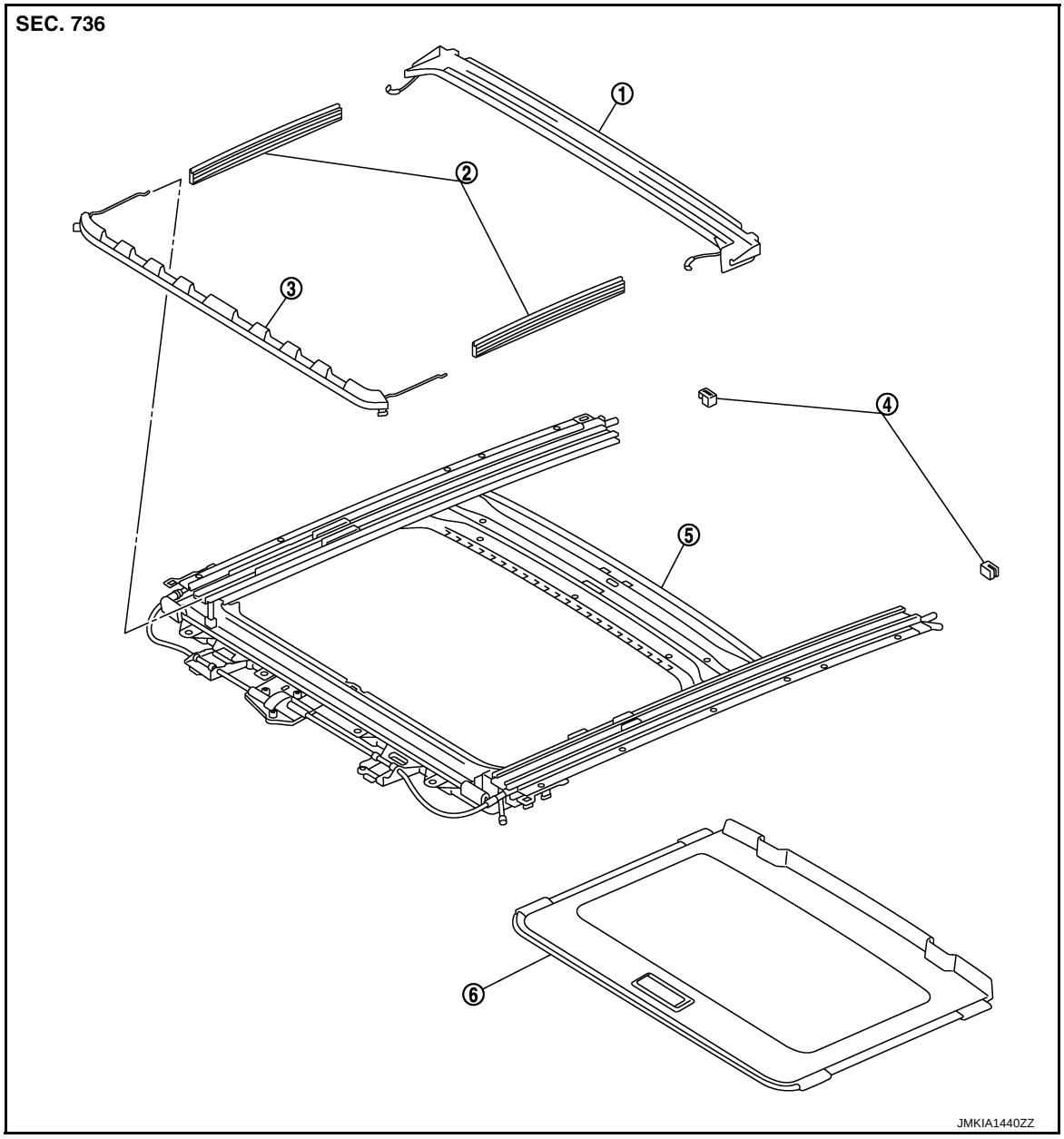

## ASSEMBLY

Assemble in the reverse order of disassembly.

# SUNSHADE

## SUNSHADE : Exploded View

INFOID:0000000006199639




1. Rear drain
2. Side trim (LH/RH)
3. Wind deflector
4. Sunshade stopper (LH/RH)
5. Sunroof frame
6. Sunshade

## SUNSHADE : Removal and Installation

INFOID:0000000006199640

### REMOVAL

1. Remove the headlining. Refer to INT-28, "SUNROOF : Removal and Installation".
2. Remove the sunshade stopper (LH/RH) from the sunroof frame end.
3. Remove the sunshade from the rear end of sunroof frame.

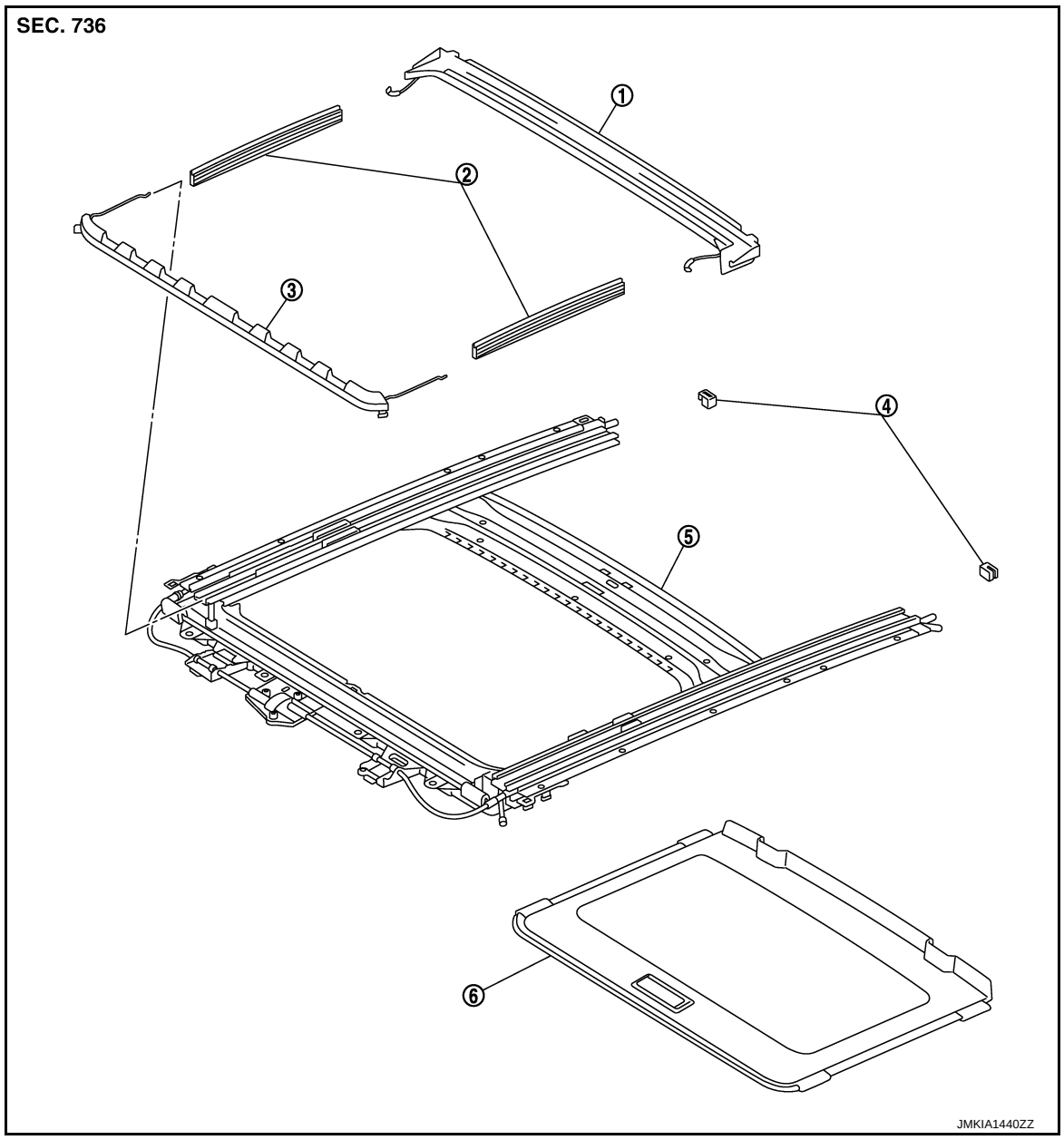
### INSTALLATION

Install in the reverse order of removal.

## WIND DEFLECTOR

## WIND DEFLECTOR : Exploded View

INFOID:0000000006199641




1. Rear drain
2. Side trim (LH/RH)
3. Wind deflector
4. Sunshade stopper (LH/RH)
5. Sunroof frame
6. Sunshade

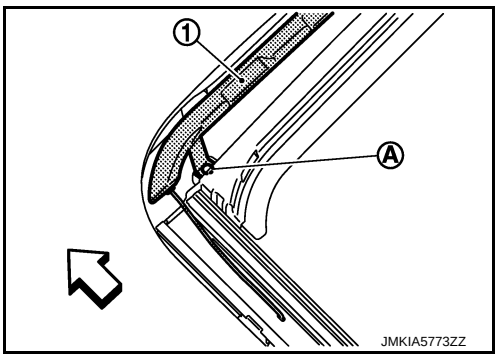
## WIND DEFLECTOR : Removal and Installation

INFOID:0000000006562442

### Removal

1. Open the glass lid to see the wind deflector installation point on the sun roof slide rail.
2. Remove wind deflector (1) mounting TORX bolts (A) (LH and RH).

⇦ : Vehicle front




3. Move the wind deflector from under the roof panel to upper the roof panel, and then remove the springs (LH and RH) from sunroof frame groove.
4. Remove the wind deflector from the vehicle.

### Installation
Install in the reverse order of removal.

## SUNROOF SWITCH

### SUNROOF SWITCH : Exploded View

INFOID:0000000006199643

Refer to INL-70, "Exploded View".

### SUNROOF SWITCH : Removal and Installation

INFOID:0000000006199644

#### Removal
Remove the sunroof switch. Refer to INL-70, "Removal and Installation".

#### Installation
Install in the reverse order of removal.