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# PRECAUTIONS

## PRECAUTIONS

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### Precautions for Supplemental Restraint System (SRS) “AIR BAG” and “SEAT BELT PRE-TENSIONER”

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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 and SB section of this Service Manual.

#### **WARNING:**

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

#### Precautions

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- Disconnect both battery cables in advance.
- Never tamper with or force air bag lid open, as this may adversely affect air bag performance.
- Be careful not to scratch pad and other parts.
- When removing or disassembling any part, be careful not to damage or deform it. Protect parts which may get in the way with cloth.
- When removing parts with a screwdriver or other tool, protect parts by wrapping them with vinyl or tape.
- Keep removed parts protected with cloth.
- If a clip is deformed or damaged, replace it.
- If an un reusable part is removed, replace it with a new one.
- Tighten bolts and nuts firmly to the specified torque.
- After re-assembly has been completed, make sure each part functions correctly.
- Remove stains in the following way.

Water-soluble stains:

Dip a soft cloth in warm water, and then squeeze it tightly. After wiping the stain, wipe with a soft dry cloth.

Oil stain:

Dissolve a synthetic detergent in warm water (density of 2 to 3% or less), dip the cloth, then clean off the stain with the cloth. Next, dip the cloth in fresh water and squeeze it tightly. Then clean off the detergent completely. Then wipe the area with a soft dry cloth.

- Do not use any organic solvent, such as thinner or benzine.

# PREPARATION

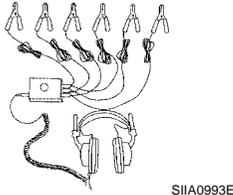
## PREPARATION

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### Special service tool

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

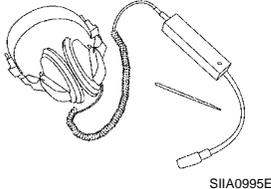
| Tool number<br>(Kent-Moore No.)<br>Tool name   | Description  |
|--|--|
| —<br>(J-39570)<br>Chassis ear                  |  Locating the noise           |
| —<br>(J-43980)<br>NISSAN Squeak and Rattle Kit |  Repairing the cause of noise |

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### Commercial Service Tool

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| (Kent-Moore No.)<br>Tool name | Description  |
|-------------------------------|--|
| (J-39565)<br>Engine ear       |  Locating the noise |

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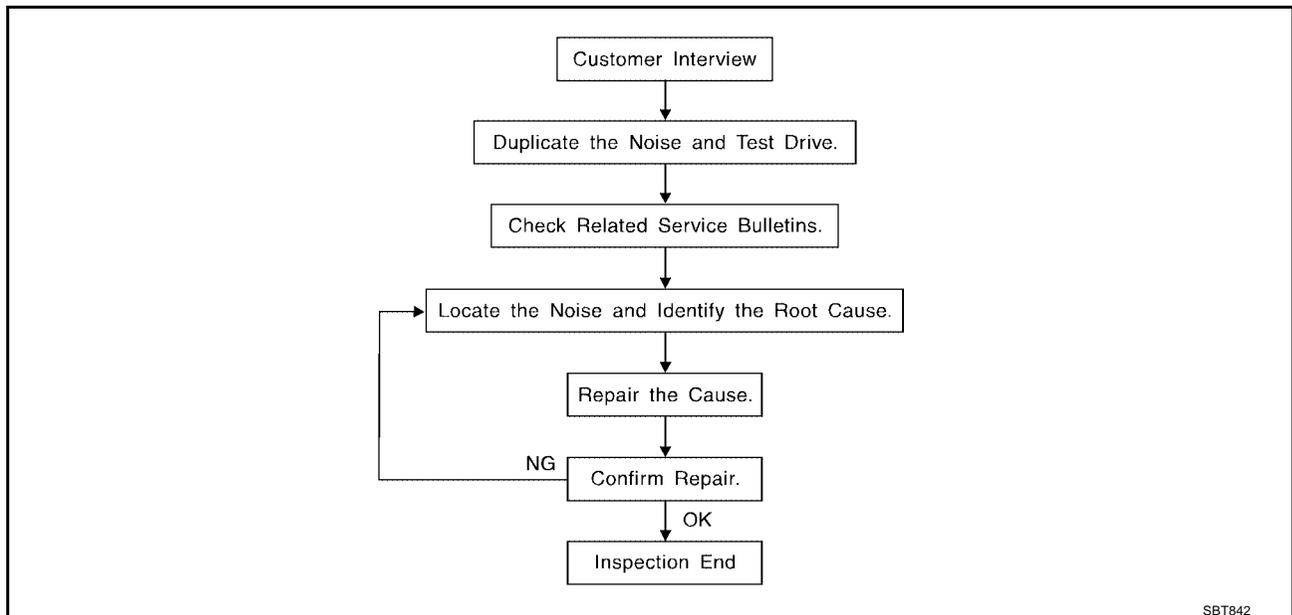
# SQUEAK AND RATTLE TROUBLE DIAGNOSES

## SQUEAK AND RATTLE TROUBLE DIAGNOSES

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### Work Flow

EIS007JH



### 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 customer comments; refer to [RF-8, "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, be sure to diagnose and repair the noise that the customer is concerned about. This can be accomplished by test driving 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 bumble bee)  
Buzz characteristics include high frequency rattle/firm contact.
- Often the degree of acceptable noise level will vary depending upon the person. A noise that you may judge as acceptable may be irritating to the customer.
- Weather conditions, especially humidity and temperature, may have a great effect on noise level.

# SQUEAK AND RATTLE TROUBLE DIAGNOSES

## 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 you confirm the repair.

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 model, drive position on A/T model).
  - 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: J-39565 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 you suspect the noise is coming from.  
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 you suspect is causing 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 with your hand by touching the component(s) that you suspect is (are) causing the noise.
  - Placing a piece of paper between components that you suspect are causing the noise.
  - Looking for loose components and contact marks.  
Refer to [RF-6, "Generic Squeak and Rattle Troubleshooting"](#).

## 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 your authorized NISSAN Parts Department.

### CAUTION:

**Do not use excessive force as many components are constructed of plastic and may be damaged. 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)

# SQUEAK AND RATTLE TROUBLE DIAGNOSES

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## INSULATOR (Light foam block)

80845-71L00: 30 mm (1.18 in) thick, 30×50 mm (1.18×1.97 in)

## FELT CLOTH TAPE

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 will be visible or not fit.

Note: Will only last a few months.

## SILICONE SPRAY

Use when grease cannot be applied.

## DUCT TAPE

Use 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.

## Generic Squeak and Rattle Troubleshooting

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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 silicone spray (in hard to reach areas). Urethane pads can be used to insulate wiring harness.

### CAUTION:

**Do not use silicone spray to isolate a squeak or rattle. If you saturate the area with silicone, you will not be able to recheck the repair.**

## 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:

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. You can usually insulate the areas with felt cloth tape or insulator foam blocks from the NISSAN Squeak and Rattle Kit (J-43980) to repair the noise.

# SQUEAK AND RATTLE TROUBLE DIAGNOSES

## TRUNK

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

1. Trunk lid bumpers 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. Sun visor shaft shaking in the holder
3. Front or rear windshield touching headliner 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.

## OVERHEAD CONSOLE (FRONT AND REAR)

Overhead console noises are often caused by the console panel clips not being engaged correctly. Most of these incidents are repaired by pushing up on the console at the clip locations until the clips engage.

In addition look for:

1. Loose harness or harness connectors.
2. Front console map/reading lamp lens loose.
3. Loose screws at console attachment points.

## SEATS

When isolating seat noise it's important to note the position the seat is in and the load placed on the seat when the noise is present. 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.

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# SQUEAK AND RATTLE TROUBLE DIAGNOSES

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## Diagnostic Worksheet

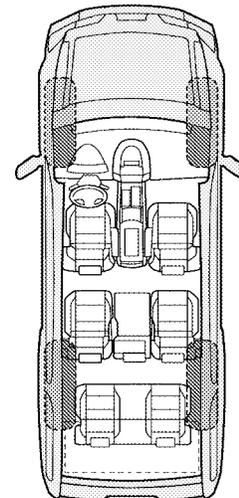
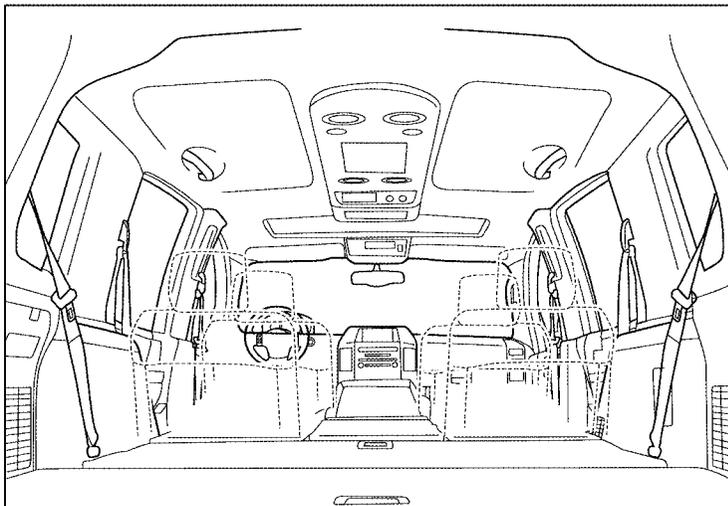
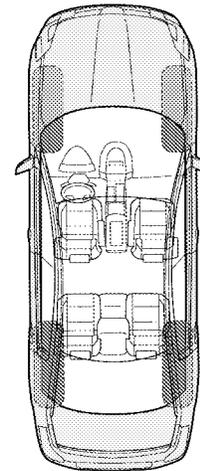
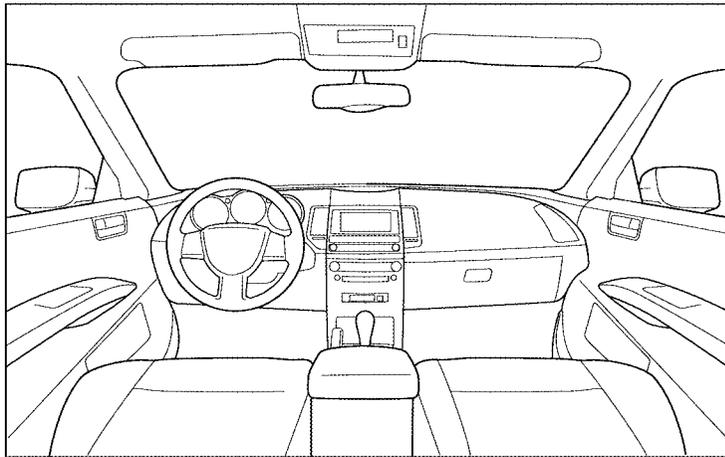
Dear Customer:

We are concerned about your satisfaction with your vehicle. Repairing a squeak or rattle sometimes can be very difficult. To help us fix your vehicle 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.

### SQUEAK & RATTLE DIAGNOSTIC WORKSHEET

#### 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.

# SQUEAK AND RATTLE TROUBLE DIAGNOSES

## 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)

- |   |  |
|---|--|
| <input type="checkbox"/> Anytime                      | <input type="checkbox"/> After sitting out in the rain |
| <input type="checkbox"/> 1st time in the morning      | <input type="checkbox"/> When it is raining or wet     |
| <input type="checkbox"/> Only when it is cold outside | <input type="checkbox"/> Dry or dusty conditions       |
| <input type="checkbox"/> Only when it is hot outside  | <input type="checkbox"/> 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                  | <input type="checkbox"/> | <input type="checkbox"/> | _____                         |
| - Noise verified on test drive                     | <input type="checkbox"/> | <input type="checkbox"/> | _____                         |
| - Noise source located and repaired                | <input type="checkbox"/> | <input type="checkbox"/> | _____                         |
| - Follow up test drive performed to confirm repair | <input type="checkbox"/> | <input type="checkbox"/> | _____                         |

VIN: \_\_\_\_\_ Customer Name \_\_\_\_\_

W.O.# \_\_\_\_\_ Date: \_\_\_\_\_

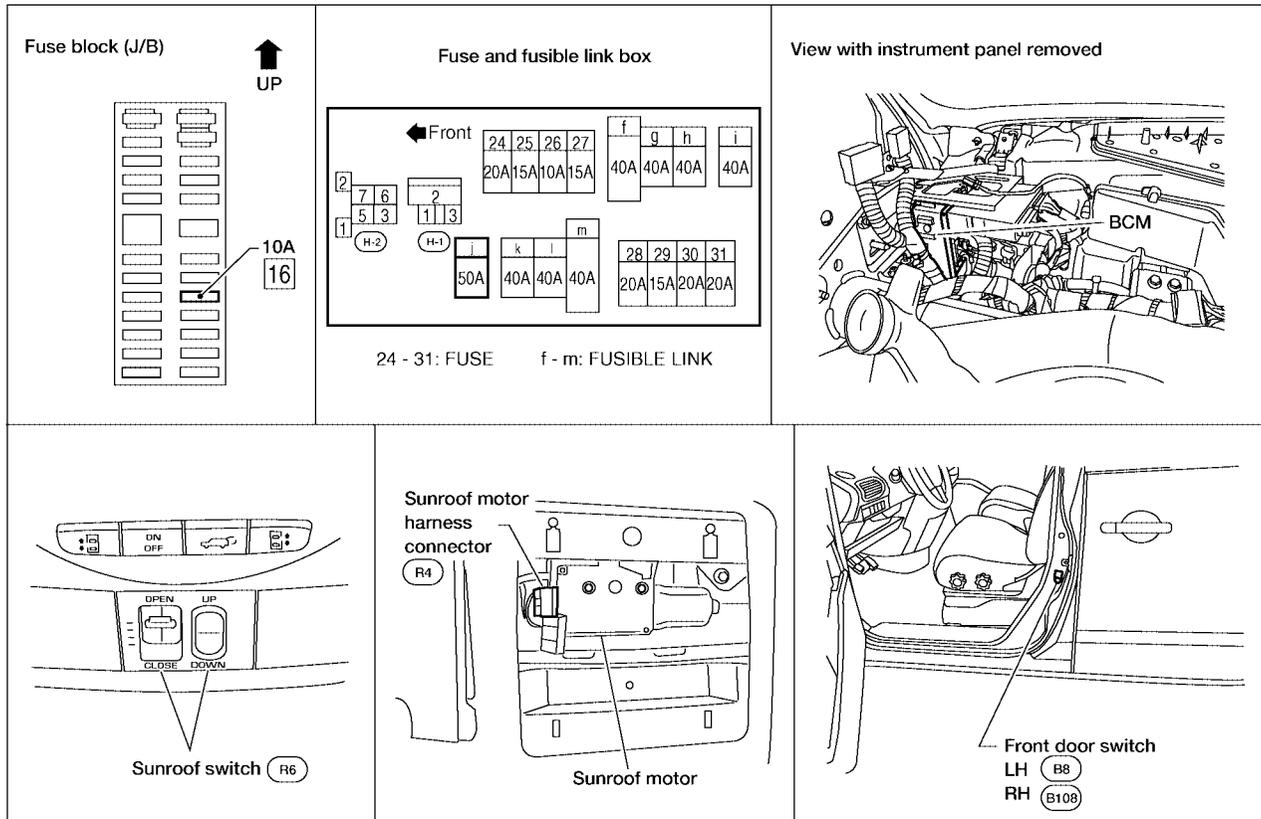
This form must be attached to Work Order

LAI0071E

## SUNROOF

### Component Parts and Harness Connector Location

EIS007JK



WIIA0415E

### System Description OUTLINE

EIS007JL

Electric sunroof system consists of

- Sunroof switch
- Sunroof motor assembly
- BCM (body control module)

BCM supplies power to the sunroof motor. Sunroof operation depends on sunroof switch condition.

### OPERATION

Sunroof can be opened or closed and tilted up or down with sunroof switch.

### RETAINED POWER OPERATION

When the ignition switch is turned to OFF position from ON or START position, power is supplied for 45 seconds

- through BCM terminal 53
- to sunroof motor assembly terminal 1.

When power is supplied, the sunroof can be operated.

The retained power operation is canceled when the driver or passenger side door is opened.

RAP signal period can be changed by CONSULT-II. Refer to [RF-14, "CONSULT-II Function \(BCM\)"](#).

### MEMORY RESET PROCEDURE

If the battery is disconnected, or the sunroof motor harness connector is disconnected, the slide switch will become inoperable and the sunroof motor memory must be reset. To reset the sunroof motor memory from any sunroof position (full open, partially open, closed, partially vented, and vented), push and hold the sunroof tilt switch in the tilt down position until the unit is closed. Push the switch once in the tilt down position. Finally, push the switch in the tilt down position for 2 seconds. This resets the sunroof motor memory and now the sunroof will operate correctly.

# SUNROOF

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## INTERRUPTION DETECTION FUNCTION

The CPU (central processing unit) 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 it reaches full open position.

- automatic close operation when ignition switch is in the ON position
- automatic close operation during retained power operation

## CAN Communication System Description

EIS007JM

Refer to [LAN-24, "CAN COMMUNICATION"](#) .

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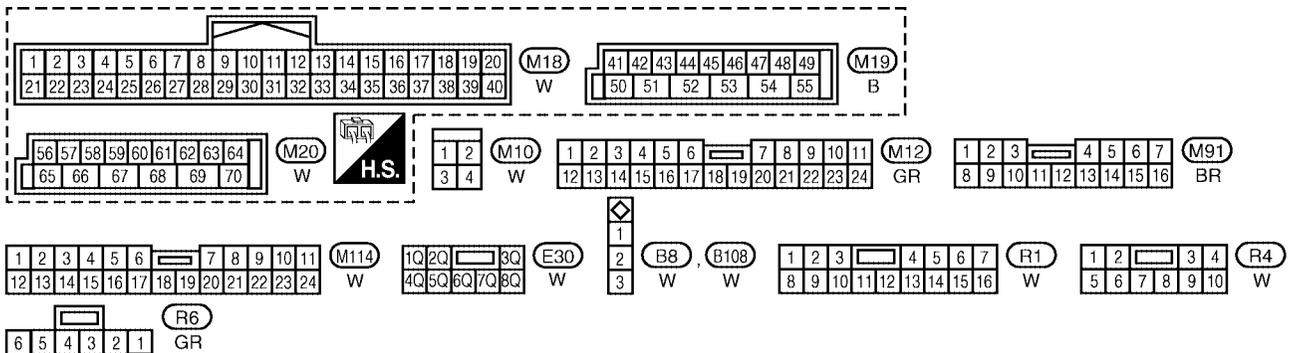
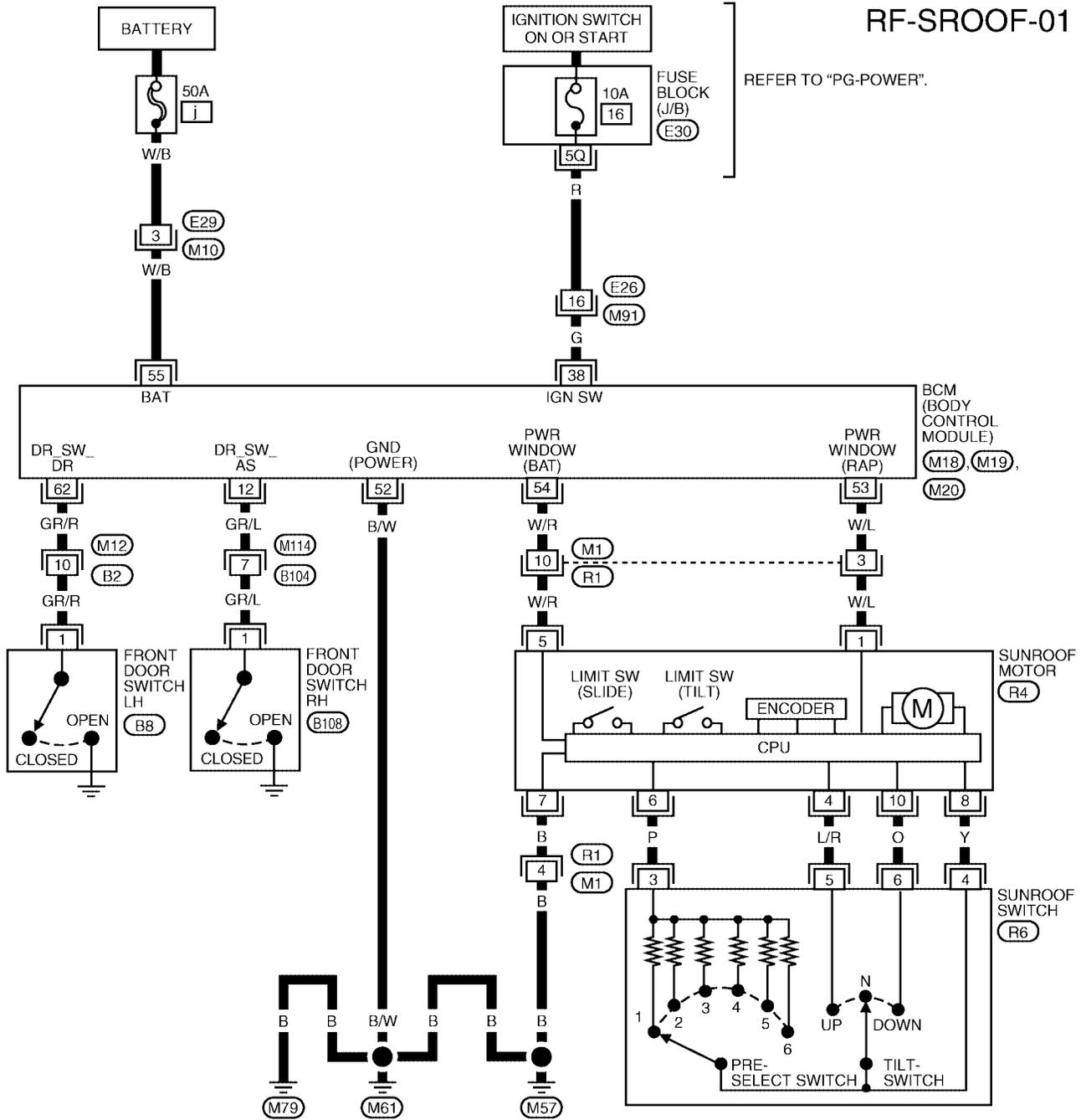
RF

# SUNROOF

## Wiring Diagram — SROOF —

EIS007JN

### RF-SROOF-01



WIWA1026E

# SUNROOF

## Terminals and Reference Values for BCM

EIS007JO

| Terminal | Wire Color | Item                        | Condition  | Voltage (V)<br>(Approx.) |
|----------|------------|-----------------------------|--|--------------------------|
| 12       | GR/L       | Front door switch RH signal | ON (Open)  | 0                        |
|          |            |                             | OFF (Closed)   | Battery voltage          |
| 38       | G          | IGN power supply            | Ignition switch ON   | Battery voltage          |
| 52       | B/W        | Ground                      | —  | —                        |
| 53       | W/L        | RAP signal                  | Ignition switch ON   | Battery voltage          |
|          |            |                             | Within 45 seconds after ignition switch is turned OFF              | Battery voltage          |
|          |            |                             | When front door LH or RH is open while retained power is operating | 0                        |
| 54       | W/R        | Power window power supply   | —  | Battery voltage          |
| 55       | W/B        | BAT power supply            | —  | Battery voltage          |
| 62       | GR/R       | Front door switch LH signal | ON (Open)  | 0                        |
|          |            |                             | OFF (Closed)   | Battery voltage          |

## Terminals and Reference Values for Sunroof Motor

EIS007JP

| Terminal | Wire Color | Item                            | Condition  | Voltage (V)<br>(Approx.) |
|----------|------------|---------------------------------|--|--------------------------|
| 1        | W/L        | RAP signal                      | Ignition switch ON   | Battery voltage          |
|          |            |                                 | Within 45 seconds after ignition switch is turned OFF              | Battery voltage          |
|          |            |                                 | When front door LH or RH is open while retained power is operating | 0                        |
| 4        | L/R        | Sunroof switch TILT UP signal   | Ignition switch ON and sunroof switch in TILT UP position          | 0                        |
|          |            |                                 | Other than above   | Battery voltage          |
| 5        | W/R        | BAT power supply                | —  | Battery voltage          |
| 6        | P          | Slide switch signal             | —  | —                        |
| 7        | B          | Ground                          | —  | —                        |
| 8        | Y          | Ground signal                   | —  | —                        |
| 10       | O          | Sunroof switch TILT DOWN signal | Ignition switch ON and sunroof switch in TILT DOWN position        | 0                        |
|          |            |                                 | Other than above   | Battery voltage          |

## Work Flow

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1. Check the symptom and customer's requests.
2. Understand the outline of system. Refer to [RF-10, "System Description"](#) .
3. According to the trouble diagnosis chart, repair or replace the cause or replace of the malfunction. Refer to [RF-15, "Trouble Diagnosis Chart by Symptom"](#) .
4. Does sunroof system operate normally? If Yes, GO TO 5, If No, GO TO 3.
5. Inspection End.

# SUNROOF

EIS007JR

## CONSULT-II Function (BCM)

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

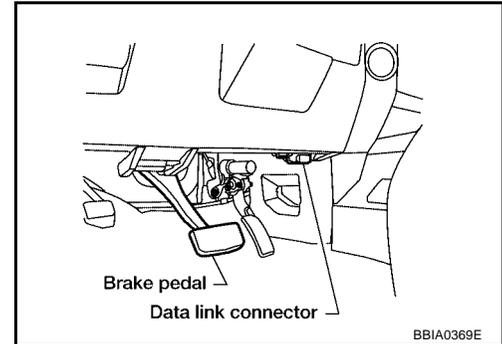
| BCM diagnostic test item | Diagnostic mode       | Description  |
|--------------------------|-----------------------|--|
| Inspection by part       | WORK SUPPORT          | Supports inspections and adjustments. Commands are transmitted to the BCM for setting the status suitable for required operation, input/output signals are received from the BCM and received data is displayed. |
|                          | DATA MONITOR          | Displays BCM input/output data in real time.   |
|                          | ACTIVE TEST           | Operation of electrical loads can be checked by sending drive signal to them.  |
|                          | SELF-DIAG RESULTS     | Displays BCM self-diagnosis results.   |
|                          | CAN DIAG SUPPORT MNTR | The result of transmit/receive diagnosis of CAN communication can be read.   |
|                          | ECU PART NUMBER       | BCM part number can be read.   |
|                          | CONFIGURATION         | Performs BCM configuration read/write functions.   |

## CONSULT-II OPERATION

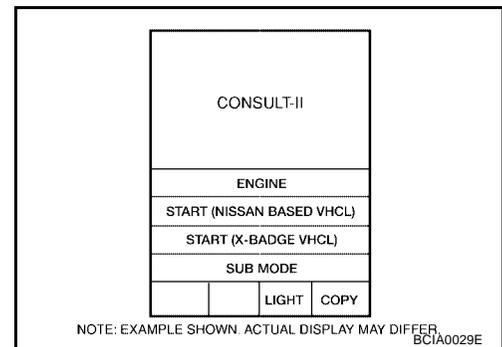
### CAUTION:

If CONSULT-II is used with no connection of CONSULT-II CONVERTER, malfunctions might be detected in self-diagnosis depending on control unit which carries out CAN communication.

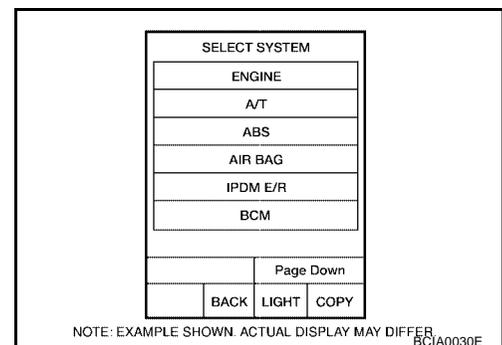
1. With the ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to the data link connector, then turn ignition switch ON.



2. Touch "START (NISSAN BASED VHCL)".

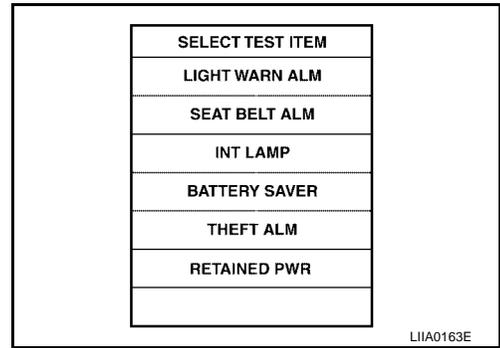


3. Touch "BCM".  
If "BCM" is not indicated, go to [GI-38, "CONSULT-II Data Link Connector \(DLC\) Circuit"](#).

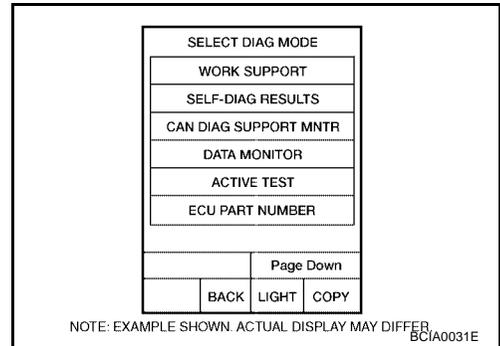


# SUNROOF

4. Touch "RETAINED PWR".



5. Select diagnosis mode. "DATA MONITOR", "ACTIVE TEST" and "WORK SUPPORT" are available.



## Work Support

EIS007JS

| Work item        | Description   |
|------------------|---|
| RETAINED PWR SET | RAP signal's power supply period can be changed by mode setting. Select RAP signal's power supply period between the following three modes: <ul style="list-style-type: none"> <li>● MODE 1 (45 sec.) / MODE 2 (OFF) / MODE 3 (2 min.)</li> </ul> |

## Active Test

EIS007JT

| Test item    | Description  |
|--------------|--|
| RETAINED PWR | This test is able to supply RAP signal (power) from BCM to power window system, power sunroof system. Those systems can be operated when turning on "RETAINED PWR" on CONSULT-II screen even if the ignition switch is turned OFF. <p><b>NOTE:</b><br/>During this test, CONSULT-II can be operated with ignition switch in "OFF" position. "RETAINED PWR" should be turned "ON" or "OFF" on CONSULT-II screen when ignition switch ON. Then turn ignition switch OFF for checking retained power operation. CONSULT-II might be stuck if "RETAINED PWR" is turned "ON" or "OFF" on CONSULT-II screen when ignition switch is OFF.</p> |

## Data Monitor

EIS007JU

| Monitored item | Description   |
|----------------|---|
| IGN ON SW      | Indicates [ON/OFF] condition of ignition switch.                  |
| DOOR SW-DR     | Indicates [ON/OFF] condition of front door switch driver side.    |
| DOOR SW-AS     | Indicates [ON/OFF] condition of front door switch passenger side. |

## Trouble Diagnosis Chart by Symptom

EIS007JV

| Symptom                   | Diagnostic procedure and repair order                           | Refer to page         |
|---------------------------|---|-----------------------|
| Sunroof does not operate. | 1. Sunroof motor assembly power supply and ground circuit check | <a href="#">RF-18</a> |
|                           | 2. Sunroof switch system check                                  | <a href="#">RF-17</a> |
|                           | 3. Replace sunroof motor assembly                               | <a href="#">RF-24</a> |

# SUNROOF

| Symptom   | Diagnostic procedure and repair order              | Refer to page         |
|---|--|-----------------------|
| Retained power operation does not operate properly.                     | 1. Check the retained power operation mode setting | <a href="#">RF-15</a> |
|   | 2. BCM power supply and ground circuit check       | <a href="#">RF-16</a> |
|   | 3. Door switch check                               | <a href="#">RF-19</a> |
|   | 4. Replace sunroof motor assembly                  | <a href="#">RF-24</a> |
| Motor does not stop at the sunroof fully-open or fully-closed position. | 1. Initialization procedure check                  | <a href="#">RF-10</a> |
|   | 2. Replace sunroof motor assembly                  | <a href="#">RF-24</a> |
| Sunroof does not do the interruption detection.                         | 1. Replace sunroof motor assembly                  | <a href="#">RF-24</a> |

## BCM Power Supply and Ground Circuit Check

EIS007JW

### 1. CHECK FUSE

Check the following BCM fuse and fusible link.

| Component Parts | Terminal No. (SIGNAL) | Ampere | No. | Location                  |
|-----------------|-----------------------|--------|-----|---------------------------|
| BCM             | 38 (IGN power supply) | 10A    | 16  | Fuse block (J/B)          |
|                 | 55 (BAT power supply) | 50A    | j   | Fuse and fusible link box |

#### NOTE:

Refer to [BL-18, "Component Parts and Harness Connector Location"](#).

#### OK or NG

OK >> GO TO 2.

NG >> If fuse is blown, be sure to eliminate cause of problem before installing new fuse. Refer to [PG-4, "POWER SUPPLY ROUTING CIRCUIT"](#).

### 2. CHECK POWER SUPPLY CIRCUIT

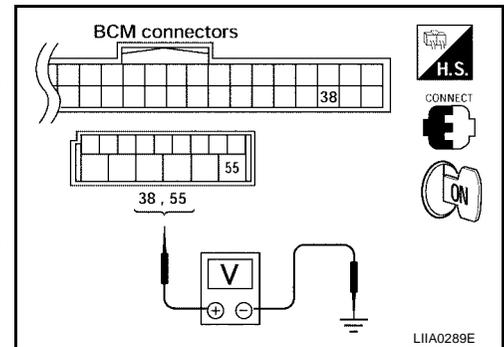
- Turn ignition switch ON.
- Check voltage between BCM connectors M18 terminal 38 and M19 terminal 55 and ground.

| Connector | Terminals |        | Voltage (V)<br>(Approx.) |
|-----------|-----------|--------|--------------------------|
|           | (+)       | (-)    |                          |
| M18       | 38        | Ground | Battery voltage          |
| M19       | 55        |        |                          |

#### OK or NG

OK >> GO TO 3.

NG >> Repair or replace fuse or harness.



### 3. CHECK GROUND CIRCUIT

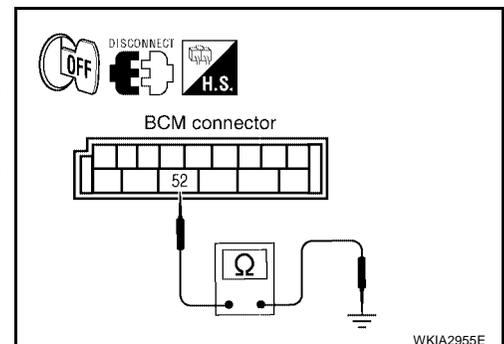
- Turn ignition switch OFF.
- Disconnect BCM.
- Check voltage between BCM connector M19 terminal 52 and ground.

| Connector | Terminal | Continuity |
|-----------|----------|------------|
| M19       | 52       | Ground     |
|           |          | Yes        |

#### OK or NG

OK >> Power supply and ground circuits are OK.

NG >> Repair or replace harness.



# SUNROOF

EIS007JX

## Sunroof Switch System Check

### 1. CHECK SUNROOF SWITCH-1

1. Turn ignition switch OFF.
2. Disconnect sunroof switch connector.
3. Operate sunroof switch, and check continuity between terminals 5, 6 and terminal 4 in each of the switch positions.

#### TILT UP switch operation

**4 - 5 : Continuity should exist.**

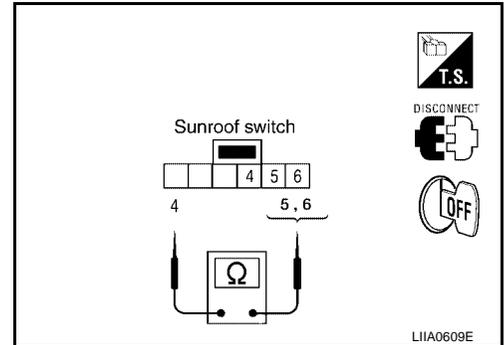
#### TILT DOWN switch operation

**4 - 6 : Continuity should exist.**

#### OK or NG

OK >> GO TO 2.

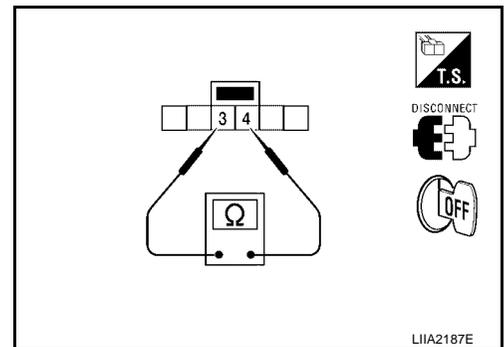
NG >> Replace sunroof switch.



### 2. CHECK SUNROOF SWITCH-2

Operate sunroof slide switch, and check resistance between terminals 3 and 4 in each of the switch positions.

| Connector      | Terminals |   | Switch Position     | Resistance (kΩ) |
|----------------|-----------|---|---------------------|-----------------|
| Sunroof Switch | 3         | 4 | 1<br>(Fully closed) | 0.12            |
|                |           |   | 2                   | 0.22            |
|                |           |   | 3                   | 0.39            |
|                |           |   | 4                   | 0.68            |
|                |           |   | 5                   | 1.30            |
|                |           |   | 6<br>(Fully open)   | 3.60            |



#### OK or NG

OK >> GO TO 3.

NG >> Replace sunroof switch.

### 3. CHECK HARNESS CONTINUITY

1. Disconnect sunroof motor connector.
2. Check continuity between sunroof motor connector R4 terminals 4, 6, 8, 10 and sunroof switch connector R6 terminals 3, 4, 5, 6.

**4 - 5 : Continuity should exist.**

**6 - 3 : Continuity should exist.**

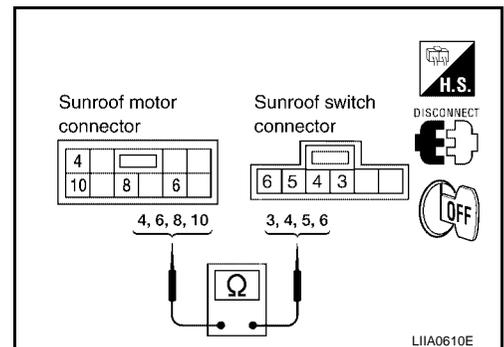
**8 - 4 : Continuity should exist.**

**10 - 6 : Continuity should exist.**

#### OK or NG

OK >> Sunroof switch system is OK.

NG >> Repair or replace harness between sunroof motor and sunroof switch.



# SUNROOF

EIS007JY

## Sunroof Motor Power Supply and Ground Circuit Check

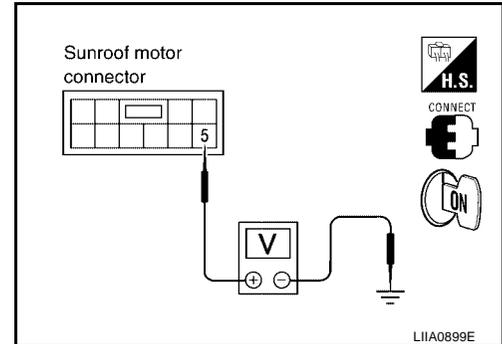
### 1. CHECK POWER SUPPLY CIRCUIT-1

1. Turn ignition switch ON.
2. Check voltage between sunroof motor connector R4 terminal 5 and ground.

**5 - Ground : Battery voltage**

#### OK or NG

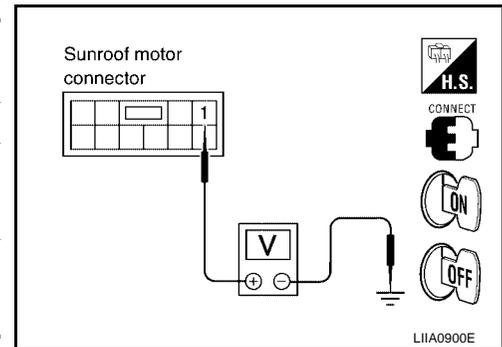
- OK >> GO TO 2.  
 NG >> ● Check harness for open or short between sunroof motor and BCM.  
 ● Check BCM. Refer to [RF-16, "BCM Power Supply and Ground Circuit Check"](#) .



### 2. CHECK POWER SUPPLY CIRCUIT-2

Check voltage between sunroof motor connector R4 terminal 1 and ground.

| Connector | Terminal |        | Condition  | Voltage (V)<br>(Approx.) |
|-----------|----------|--------|--|--------------------------|
|           | (+)      | (-)    |  |                          |
| R4        | 1        | Ground | Ignition switch ON   | Battery voltage          |
|           |          |        | Within 45 seconds after ignition switch is turned OFF              | Battery voltage          |
|           |          |        | When front door LH or RH is open while retained power is operating | 0                        |



#### OK or NG

- OK >> GO TO 3.  
 NG >> ● Check harness for open or short between sunroof motor and BCM.  
 ● Check front door switch LH or RH. Refer to [RF-19, "Door Switch Check"](#) .  
 ● Check BCM. Refer to [RF-16, "BCM Power Supply and Ground Circuit Check"](#) .

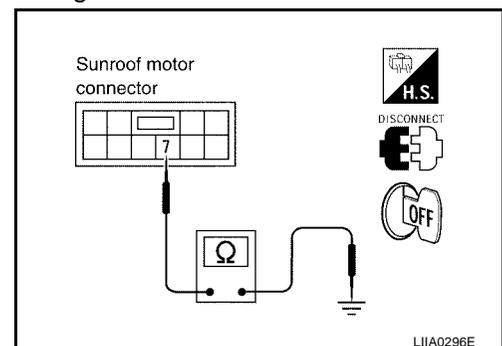
### 3. CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect sunroof motor connector.
3. Check continuity between sunroof motor connector R4 terminal 7 and ground.

**7 - Ground : Continuity should exist.**

#### OK or NG

- OK >> Sunroof motor power supply and ground circuits are OK.  
 NG >> Repair or replace harness.



# SUNROOF

EIS007JZ

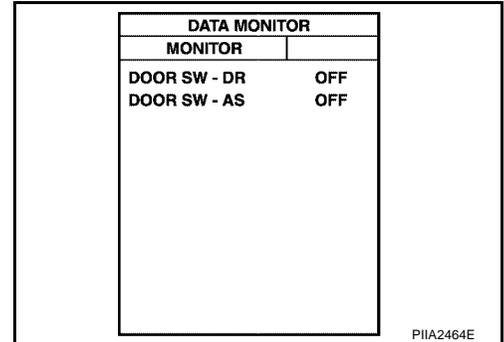
## Door Switch Check

### 1. CHECK DOOR SWITCH INPUT SIGNAL

#### With CONSULT-II

Check door switches ("DOOR SW-DR" and "DOOR SW-AS") in "DATA MONITOR" mode with CONSULT-II.

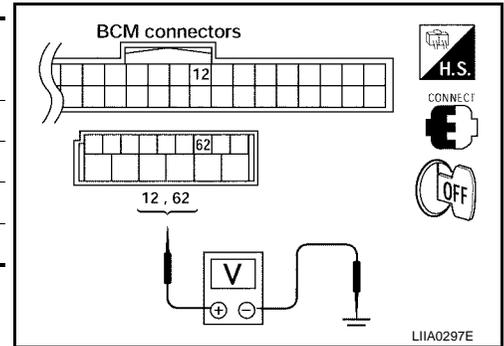
| Monitor item | Condition of door |       |
|--------------|-------------------|-------|
| DOOR SW-DR   | OPEN              | : ON  |
|              | CLOSED            | : OFF |
| DOOR SW-AS   | OPEN              | : ON  |
|              | CLOSED            | : OFF |



#### Without CONSULT-II

Check voltage between BCM connector and ground.

| Item | Connector | Terminals |        | Condition of door | Voltage (V) (Approx.) |
|------|-----------|-----------|--------|-------------------|-----------------------|
|      |           | (+)       | (-)    |                   |                       |
| RH   | M18       | 12        | Ground | OPEN              | 0                     |
|      |           |           |        | CLOSED            | Battery voltage       |
| LH   | M20       | 62        |        | OPEN              | 0                     |
|      |           |           |        | CLOSED            | Battery voltage       |



#### OK or NG

- OK >> Door switches are OK.
- NG >> GO TO 2.

# SUNROOF

## 2. CHECK DOOR SWITCH CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect front door switches and BCM connectors.
3. Check continuity between front door switch connector (B) B8 (LH) or B108 (RH) terminal 1 and BCM connector (A) M18 or M20 terminals 12, 62.

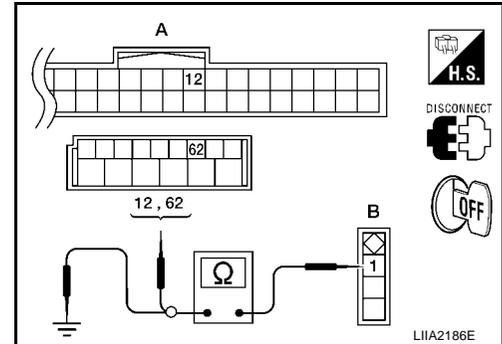
| A         |          | B                             |          | Continuity |
|-----------|----------|-------------------------------|----------|------------|
| Connector | Terminal | Connector                     | Terminal |            |
| BCM: M18  | 12       | Front door switch<br>RH: B108 | 1        | Yes        |
| BCM: M20  | 62       | Front door switch<br>LH: B8   | 1        | Yes        |

4. Check continuity between front door switch connector (B) B8 (LH) or B108 (RH) terminal 1 and ground.

| B                             |          | Ground | Continuity |
|-------------------------------|----------|--------|------------|
| Connector                     | Terminal |        |            |
| Front door switch<br>LH: B8   | 1        | Ground | No         |
| Front door switch<br>RH: B108 | 1        |        |            |

### OK or NG

- OK >> GO TO 3.  
 NG >> Repair or replace harness between BCM and front door switch.



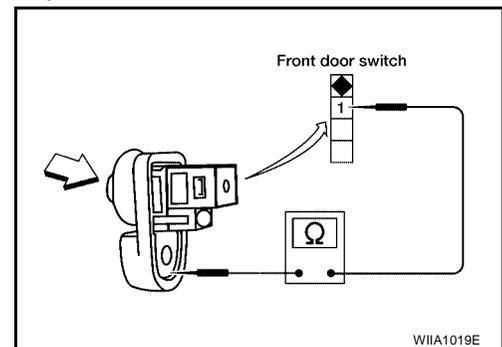
## 3. CHECK DOOR SWITCH

Check continuity between each door switch terminal 1 and body ground part of door switch.

| Terminal |                                    | Door switch | Continuity |
|----------|------------------------------------|-------------|------------|
| 1        | Body ground part<br>of door switch | Pushed      | No         |
|          |                                    | Released    | Yes        |

### OK or NG

- OK >> GO TO 4.  
 NG >> Replace malfunctioning door switch.



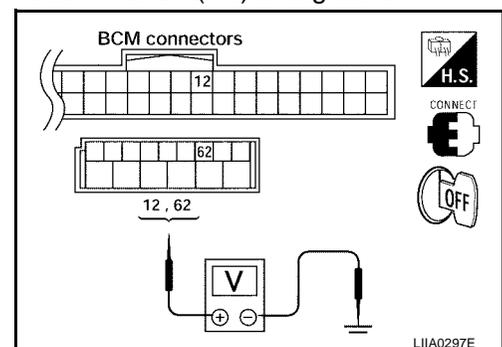
## 4. CHECK BCM OUTPUT SIGNAL

1. Connect BCM connectors.
2. Check voltage between BCM connector M18 terminal 12 (RH), M20 terminal 62 (LH) and ground.

**12 - Ground : Battery voltage**  
**62 - Ground : Battery voltage**

### OK or NG

- OK >> Check the condition of the harness and the connector.  
 NG >> Replace BCM. Refer to [BCS-20, "Removal and Installation of BCM"](#).

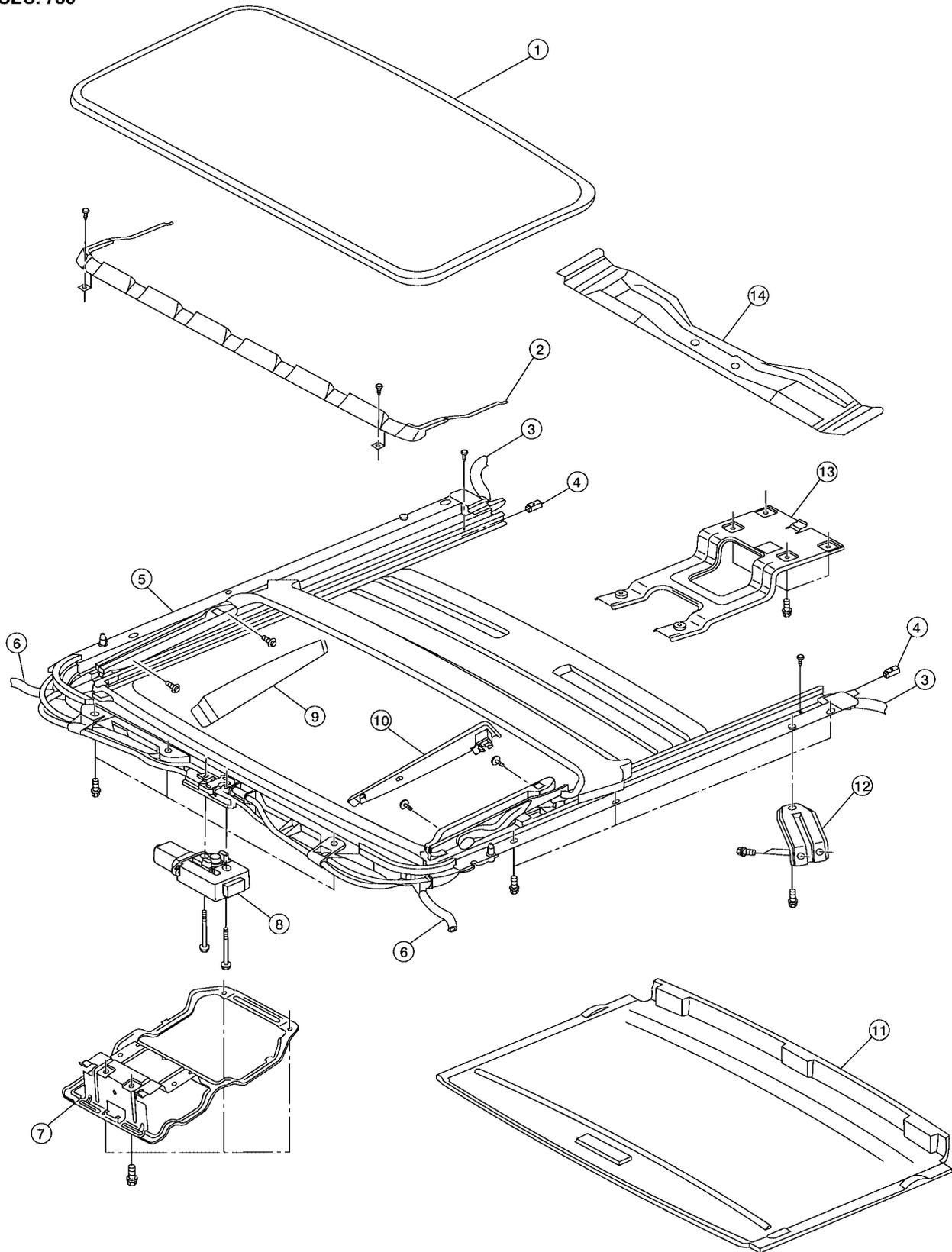


# SUNROOF

## Removal and Installation

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# SUNROOF

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- |   |                           |                           |
|---|---------------------------|---------------------------|
| 1. Glass lid assembly                   | 2. Wind deflector         | 3. Rear drain hoses       |
| 4. Shade stoppers                       | 5. Sunroof frame assembly | 6. Front drain hoses      |
| 7. Front overhead console bracket       | 8. Sunroof motor assembly | 9. Side cover RH          |
| 10. Side cover LH                       | 11. Sunshade assembly     | 12. Sunroof bracket RH/LH |
| 13. Front rear overhead console bracket | 14. Sunroof rear bracket  |                           |

- After any adjustment, check sunroof operation and glass lid assembly alignment.
- Handle glass lid assembly with care to avoid damage.
- For easier installation, mark each point before removal.

## **CAUTION:**

- **Always work with a helper.**
- **Before removal, fully close the glass lid assembly. Then, after removal, do not move the sunroof motor assembly.**
- **After installing the glass lid assembly, check gap adjustment to ensure there is no malfunction.**

## **SUNROOF UNIT**

### **Removal**

#### **CAUTION:**

- **Always work with a helper.**
- **When taking sunroof unit out, use shop cloths to protect the seats and trim from damage.**
- **After installing the sunroof unit and glass lid assembly, be sure to check gap adjustment to ensure there is no malfunction.**

1. Remove headlining. Refer to [EI-40, "HEADLINING"](#) .
2. Remove the glass lid assembly. Refer to [RF-22, "GLASS LID ASSEMBLY"](#) .
3. Remove front overhead console bracket.
4. Remove front rear overhead console bracket.
5. Disconnect the drain hoses.
6. Remove front sunroof frame assembly bolts.
7. Remove sunroof bracket RH/LH bolts.
8. Remove the side sunroof frame assembly bolts, then the sunroof unit.

### **Installation**

1. Position the sunroof frame assembly and install the side bolts.
2. Install the sunroof bracket RH/LH bolts.
3. Install the front sunroof frame assembly bolts.
4. Install the front rear overhead console bracket.
5. Connect drain hoses.
6. Install the front overhead console bracket.
7. Install the glass lid assembly. Refer to [RF-22, "GLASS LID ASSEMBLY"](#) .
8. Install headlining. Refer to [EI-40, "HEADLINING"](#) .

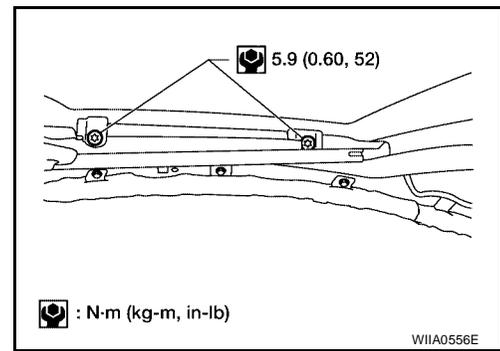
## **GLASS LID ASSEMBLY**

### **Removal**

1. Open sunroof shade and confirm glass lid assembly is closed.
2. Remove the side covers RH/LH.

# SUNROOF

3. Remove the screws securing glass lid assembly to the sunroof unit.
4. Lift and remove the glass lid assembly.



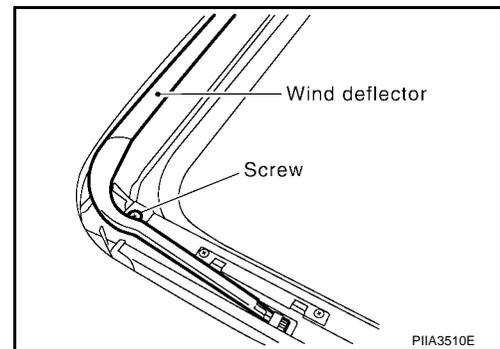
## Installation

1. Position glass lid assembly to sunroof assembly.
2. Install the glass lid assembly screws. First tighten left front bolt, then tighten right rear bolt on glass lid assembly to prevent movement while tightening other bolts.
3. Adjust the sunroof glass. Refer to [RF-27, "Fitting Adjustment"](#).
4. Install the side covers RH/LH

## WIND DEFLECTOR

### Removal

1. Open the sunroof.
2. Remove screws from left and right sides of wind deflector holder.
3. Remove the wind deflector from the sunroof frame assembly.



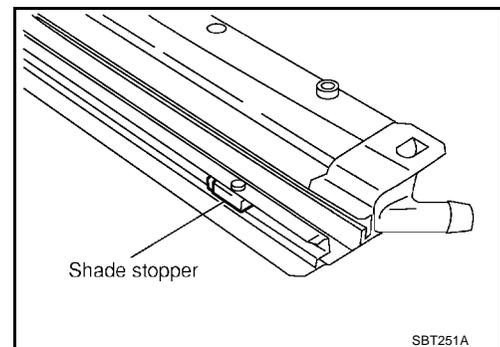
### INSTALLATION

Installation is in the reverse order of removal.

## SUNSHADE

### Removal

1. Remove the sunroof unit. Refer to [RF-22, "SUNROOF UNIT"](#).
2. Remove the shade stoppers (2 points) from the rear end of the sunroof frame assembly.
3. Remove the shade assembly from the rear end of the sunroof frame assembly.



### INSTALLATION

Installation is in the reverse order of removal.

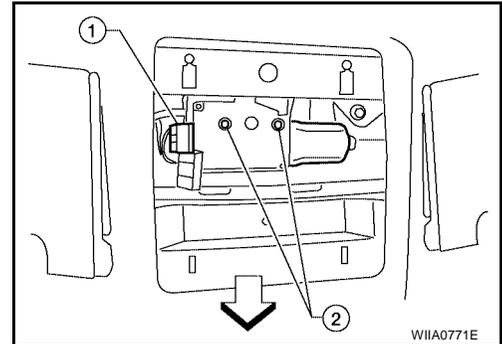
# SUNROOF

## SUNROOF MOTOR ASSEMBLY

### Removal

#### CAUTION:

- When removing the sunroof motor assembly, be sure that the glass lid assembly is in the fully closed position.
  - Never run the removed sunroof motor assembly as a single unit.
1. Position the glass lid assembly in the fully closed position.
  2. Remove the front roof console assembly. Refer to [EI-40, "HEADLINING"](#).
  3. Disconnect the harness connector (1).
    - ← Vehicle front
  4. Remove the sunroof motor assembly screws (2).



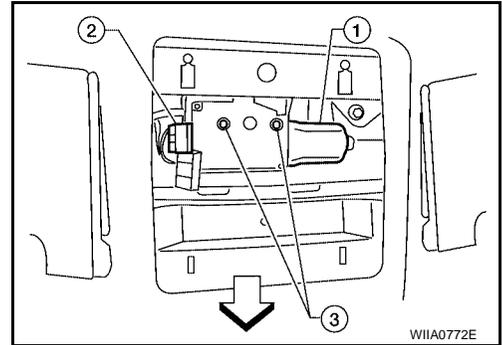
# SUNROOF

## Installation

### CAUTION:

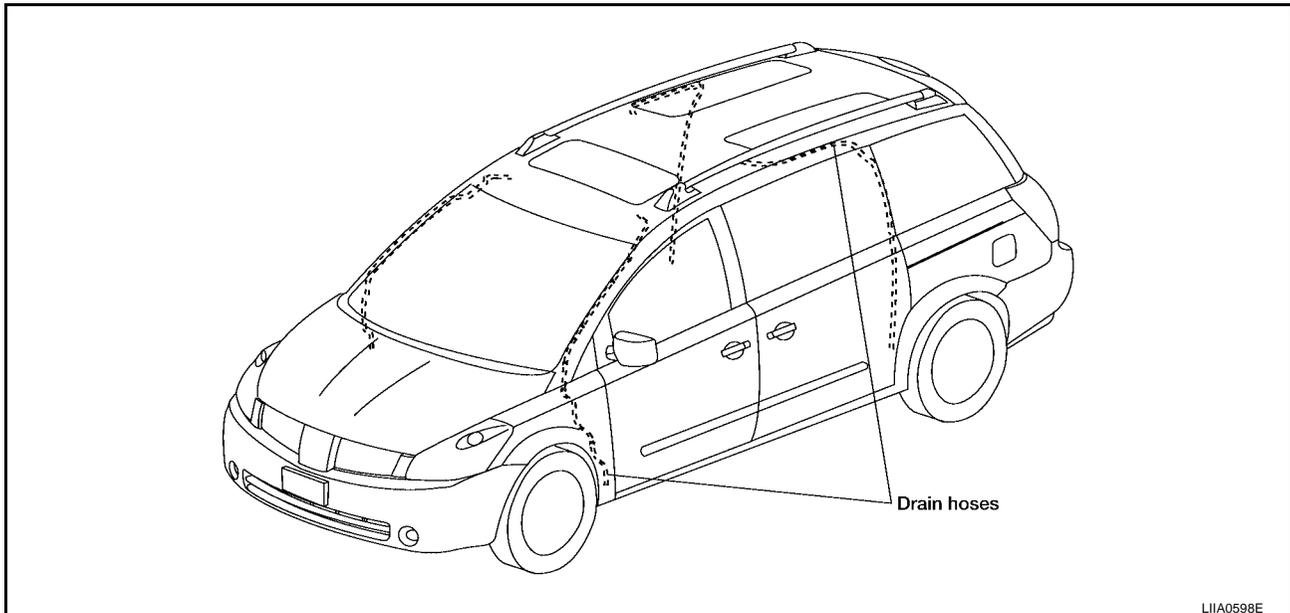
Before installing the sunroof motor assembly, be sure to place the link and wire assembly in the symmetrical and fully closed position.

- ←: Vehicle front
1. Move the sunroof motor assembly (1) laterally little by little so that the gear is completely engaged into the wire on the sunroof frame assembly, and the mounting surface becomes parallel.
  2. Secure the sunroof motor assembly (1) with screws (3).
  3. Connect the harness connector (2).



4. Install the roof console assembly. Refer to [EI-40, "HEADLINING"](#).
5. Check sunroof unit for proper operation.

## DRAIN HOSES

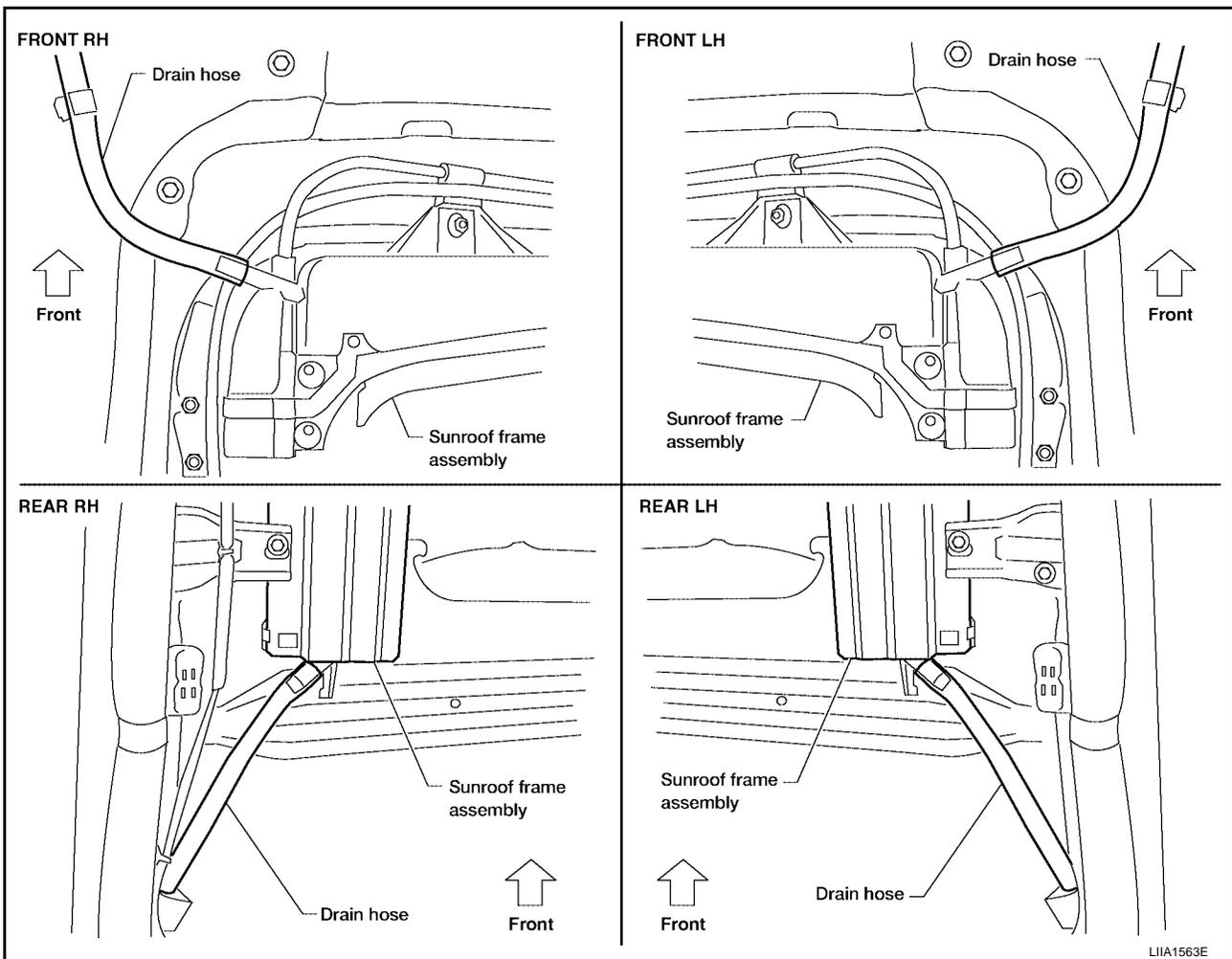


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# SUNROOF

## Removal

1. Remove the headlining. Refer to [EI-40, "Removal and Installation"](#) .



2. Check visually for proper connections, damage or deterioration.
  3. Remove each drain hose and check visually for damage, cracks or deterioration.
  4. Pour water through the drain hose to check for damage.
- If any damage is found, replace the drain hose.

## Installation

Installation is in the reverse order of removal.

## LINK AND WIRE ASSEMBLY

### NOTE:

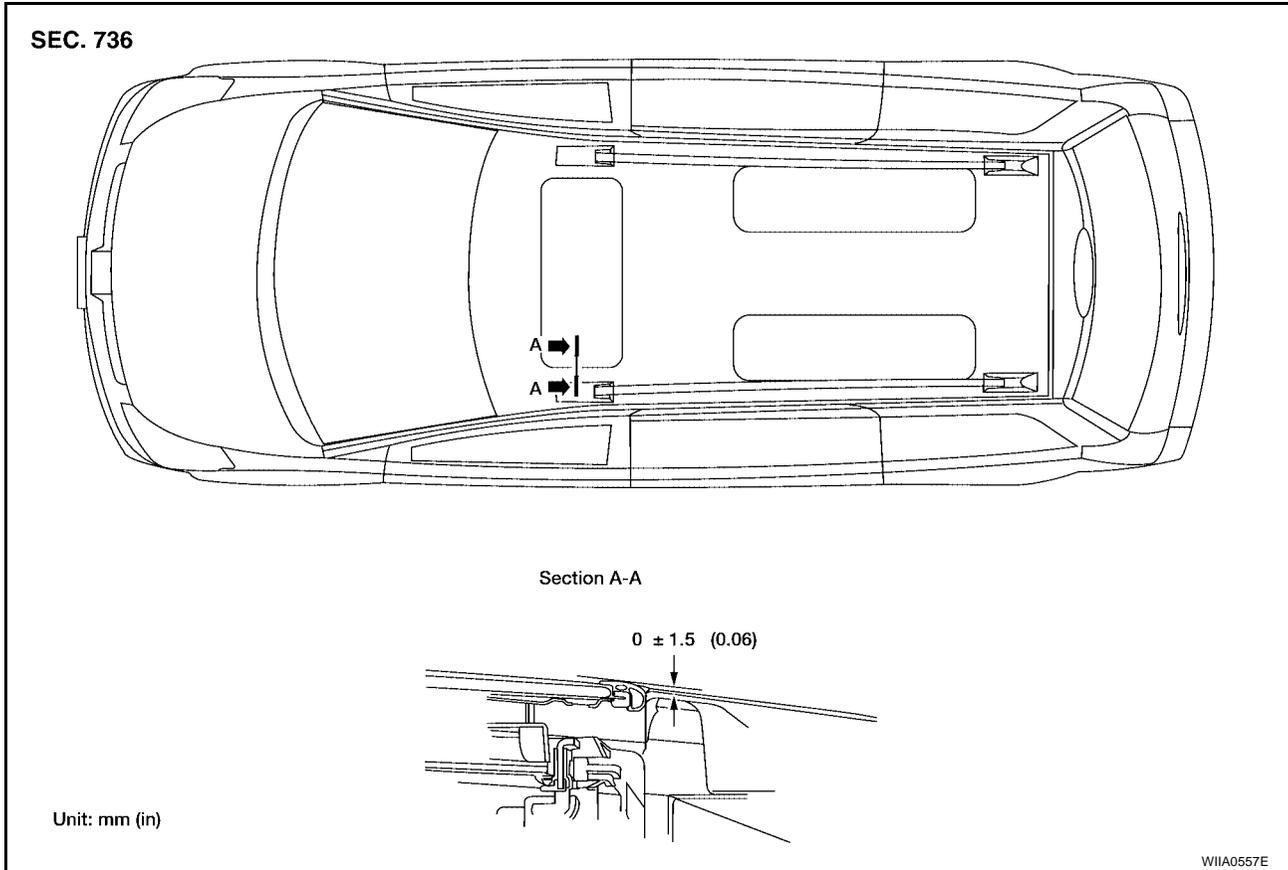
Before replacing any suspect part, be sure it is the source of the noise being experienced.

1. Visually check to determine if a sufficient amount of petroleum jelly has been applied to the wire or rail groove. If not, add petroleum jelly as required.
2. Check wire for any damage or deterioration. If any damage is found, replace sunroof frame assembly.

# SUNROOF

## Fitting Adjustment

EIS007K1



### GAP AND HEIGHT ADJUSTMENT

If any gap or height difference between glass lid assembly and roof is found, check glass lid assembly fit. Adjust the sunroof glass lid assembly as follows:

1. Open sunshade, tilt glass lid assembly up and remove side trim.
2. Loosen glass lid assembly screws (2 each on left and right sides), then tilt glass lid assembly down.

#### NOTE:

To prevent glass lid assembly from moving after adjustment, first gently tighten the glass lid assembly screw at left front, then right rear.

3. For gap adjustments:
  - Manually adjust glass lid assembly forward or rearward until gap becomes equal in distance between front and rear of roof panel edge.
4. For height adjustments:
  - Manually adjust glass lid assembly up or down from outside of vehicle until it is within the specification "A-A" as shown.
5. After gap/height adjustment, tilt glass lid assembly up and tighten all screws.
6. Tilt mechanism up and down several times to check that it operates smoothly.

#### NOTE:

After glass lid assembly gap or height adjustments are performed, always cover the entire surface of the roof with water to check for leaks.

# SUNROOF

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