

SECTION **RF**  
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D  
E  
F  
G  
H  
RF  
J  
K  
L  
M  
N  
O  
P

CONTENTS

<b>SERVICE INFORMATION</b> .....	2	CAN Communication System Description .....	12
<b>PRECAUTIONS</b> .....	2	Wiring Diagram - SROOF - .....	12
Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER" .....	2	Terminal and Reference Value for BCM .....	13
Precaution .....	2	Sunroof Motor Assembly Harness Connector Terminal Layout .....	14
<b>PREPARATION</b> .....	3	Terminal and Reference Value for Sunroof Motor Assembly .....	14
Special Service Tool .....	3	Work Flow .....	14
Commercial Service Tool .....	3	CONSULT-III Function (BCM) .....	14
<b>SQUEAK AND RATTLE TROUBLE DIAGNOSES</b> .....	4	Work Support .....	15
Work Flow .....	4	Data Monitor .....	15
Generic Squeak and Rattle Troubleshooting .....	6	Active Test .....	15
Diagnostic Worksheet .....	8	Trouble Diagnosis Chart by Symptom .....	15
<b>SUNROOF</b> .....	10	BCM Power Supply and Ground Circuit Inspection .....	16
Component Parts and Harness Connector Location .....	10	Sunroof Switch System Inspection .....	16
System Description .....	10	Sunroof Motor Assembly Power Supply and Ground Circuit Inspection .....	16
		Door Switch Check .....	18
		Removal and Installation .....	20
		Fitting Adjustment .....	25

# PRECAUTIONS

< SERVICE INFORMATION >

## SERVICE INFORMATION

### PRECAUTIONS

#### Precaution 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.**

#### Precaution

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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

< SERVICE INFORMATION >

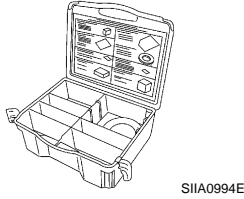
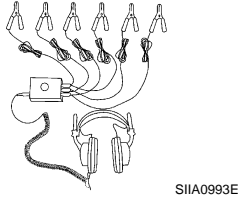
## PREPARATION

### Special Service Tool

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

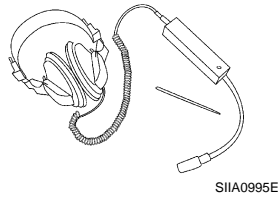
Tool number (Kent-Moore No.) Tool name	Description
— (J-39570) Chassis ear	Locating the noise
— (J-43980) NISSAN Squeak and Rattle Kit	Repairing the cause of noise



### Commercial Service Tool

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



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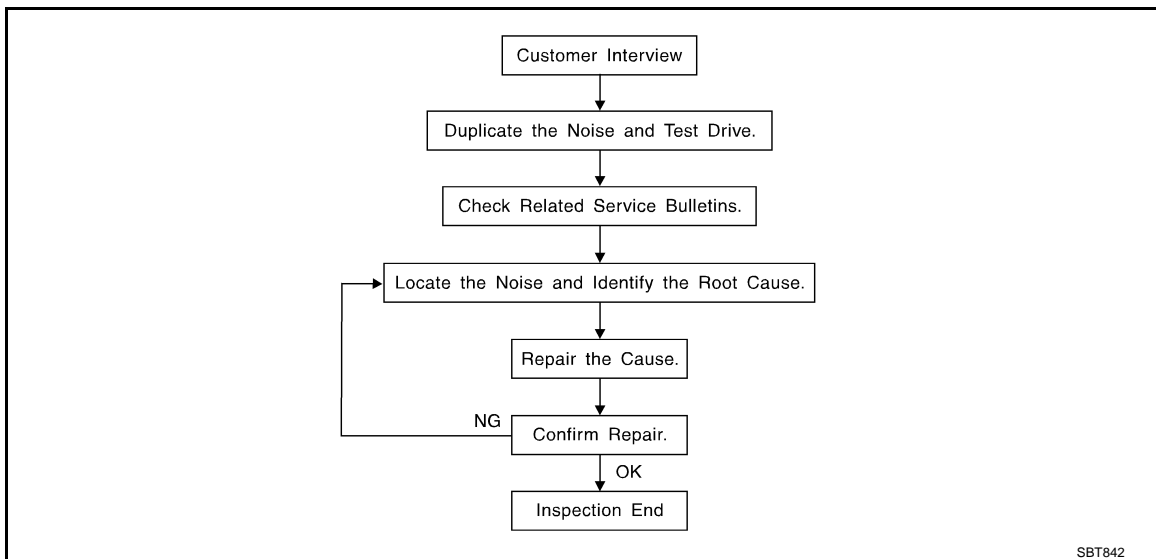
# SQUEAK AND RATTLE TROUBLE DIAGNOSES

< SERVICE INFORMATION >

## SQUEAK AND RATTLE TROUBLE DIAGNOSES

### Work Flow

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### 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.

### 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.

# SQUEAK AND RATTLE TROUBLE DIAGNOSES

## < SERVICE INFORMATION >

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)

INSULATOR (Light foam block)

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

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

# SQUEAK AND RATTLE TROUBLE DIAGNOSES

## < SERVICE INFORMATION >

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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.

## 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

# SQUEAK AND RATTLE TROUBLE DIAGNOSES

## < SERVICE INFORMATION >

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

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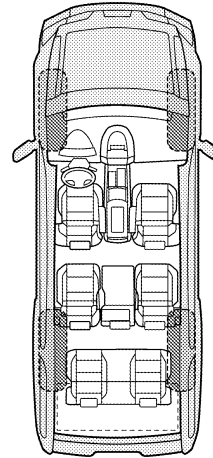
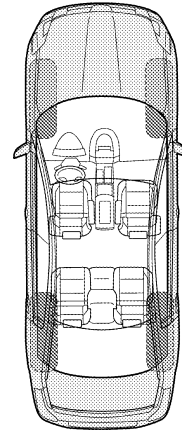
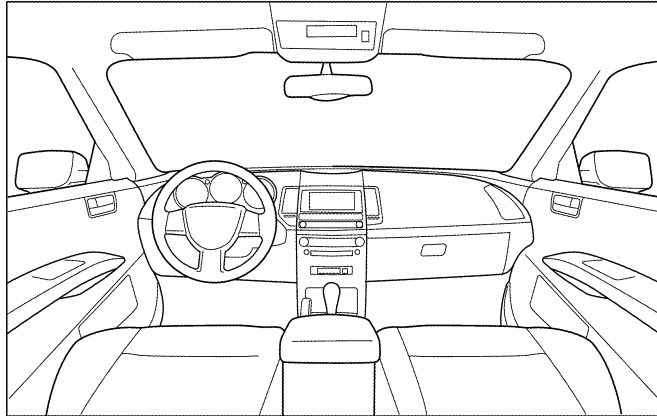
Dear Customer:

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

< SERVICE INFORMATION >

## SQUEAK & RATTLE DIAGNOSTIC WORKSHEET - page 2

Briefly describe the location where the noise occurs:

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### 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:

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	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

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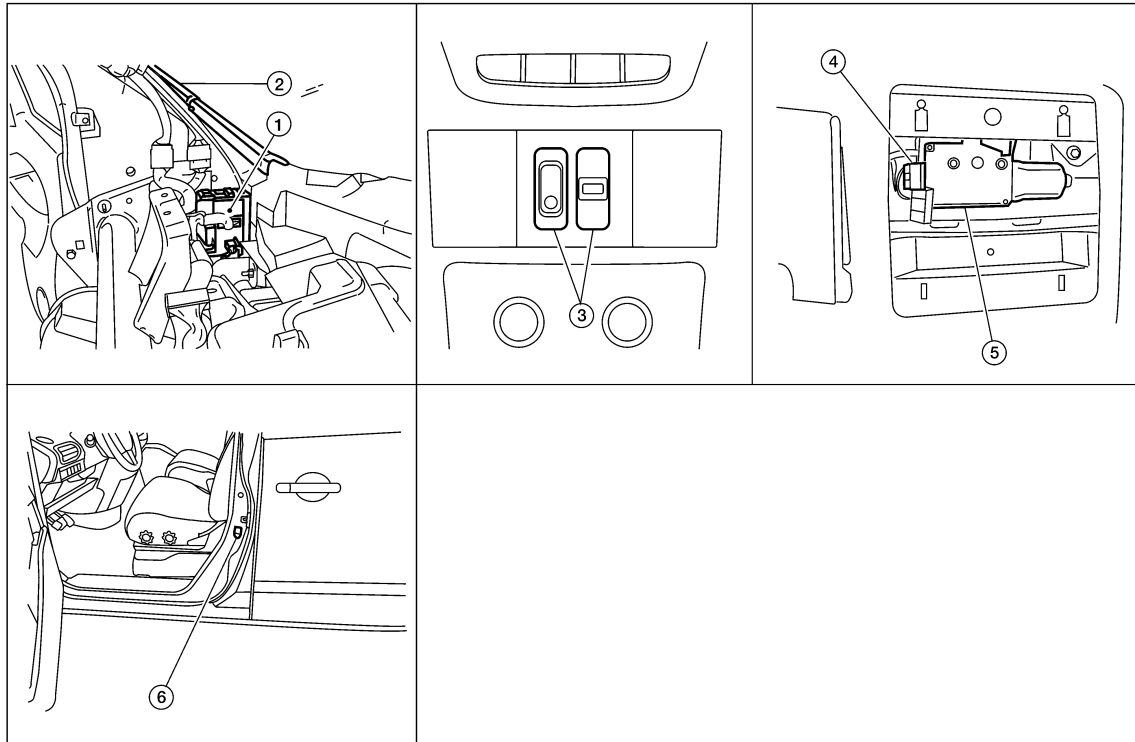
# SUNROOF

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## SUNROOF

### Component Parts and Harness Connector Location

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|--|-------------------------------|---------------------------------------|
| 1. BCM M18, M19, M20<br>(view with instrument panel removed) | 2. Front pillar LH            | 3. Sunroof switch R6                  |
| 4. Sunroof motor assembly harness                            | 5. Sunroof motor connector R4 | 6. Front door switch LH B8<br>RH B108 |

### System Description

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#### OUTLINE

Electric sunroof system consists of

- Front door switches
- 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.

Power is supplied at all times

- through 50A fusible link (letter j located in the fuse and fusible link box)
- to BCM terminal 70 and
- through BCM terminal 69
- to sunroof motor assembly terminal 5.

With ignition switch in ON or START position, power is supplied

- through 10A fuse [No. 16, located in the fuse block (J/B)]
- to BCM terminal 38.

Ground is supplied

- to BCM terminal 67 and
- to sunroof motor assembly terminal 7
- through grounds M57, M61 and M79.

#### TILT UP OPERATION

When the tilt switch is operated for tilt up, ground is supplied

# SUNROOF

## < SERVICE INFORMATION >

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- to sunroof motor assembly terminal 4
- through sunroof switch terminal 4
- through sunroof switch terminal 2
- through sunroof motor assembly terminal 8
- through sunroof motor assembly terminal 7
- through grounds M57, M61 and M79.

Then, the sunroof will tilt up.

### TILT DOWN OPERATION

When the tilt switch is operated for tilt down, ground is supplied

- to sunroof motor assembly terminal 10
- through sunroof switch terminal 6
- through sunroof switch terminal 2
- through sunroof motor assembly terminal 8
- through sunroof motor assembly terminal 7
- through grounds M57, M61 and M79.

Then, the sunroof will tilt down.

### SLIDE OPEN OPERATION

When the switch is operated for slide open, ground is supplied

- to sunroof motor assembly terminal 9
- through sunroof switch terminal 3
- through sunroof switch terminal 2
- through sunroof motor assembly terminal 8
- through sunroof motor assembly terminal 7
- through grounds M57, M61 and M79.

Then, the sunroof will slide open.

### SLIDE CLOSE OPERATION

When the switch is operated for slide close, ground is supplied

- to sunroof motor assembly terminal 3
- through sunroof switch terminal 1
- through sunroof switch terminal 2
- through sunroof motor assembly terminal 8
- through sunroof motor assembly terminal 7
- through grounds M57, M61 and M79.

Then, the sunroof will slide closed.

### 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 68
- 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-III 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 forward (DOWN) position until the sunroof is fully closed. After it has closed all the way, push and hold the switch forward (DOWN) position for more than 2 seconds to re-establish the motor preset position. The sunroof should now operate normally.

### 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 the 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

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# SUNROOF

< SERVICE INFORMATION >

## CAN Communication System Description

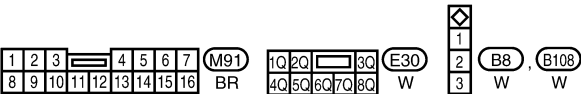
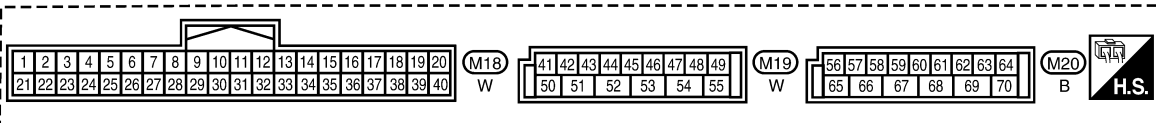
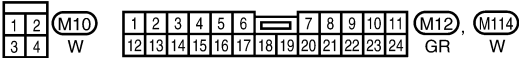
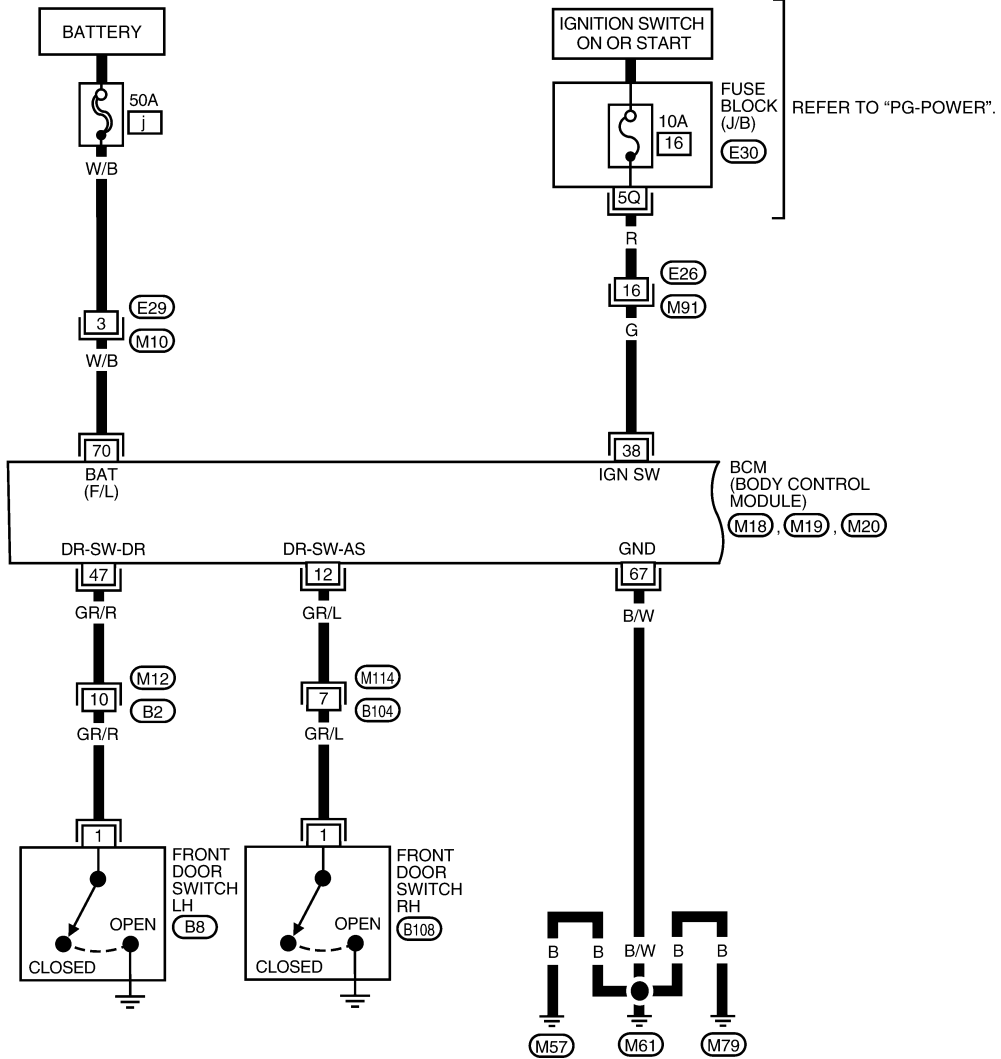
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Refer to [LAN-3. "CAN Communication System"](#).

### Wiring Diagram - SROOF -

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### RF-SROOF-01

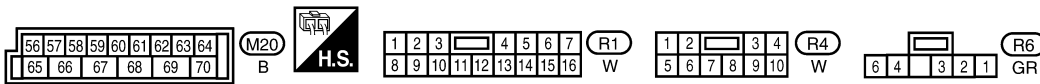
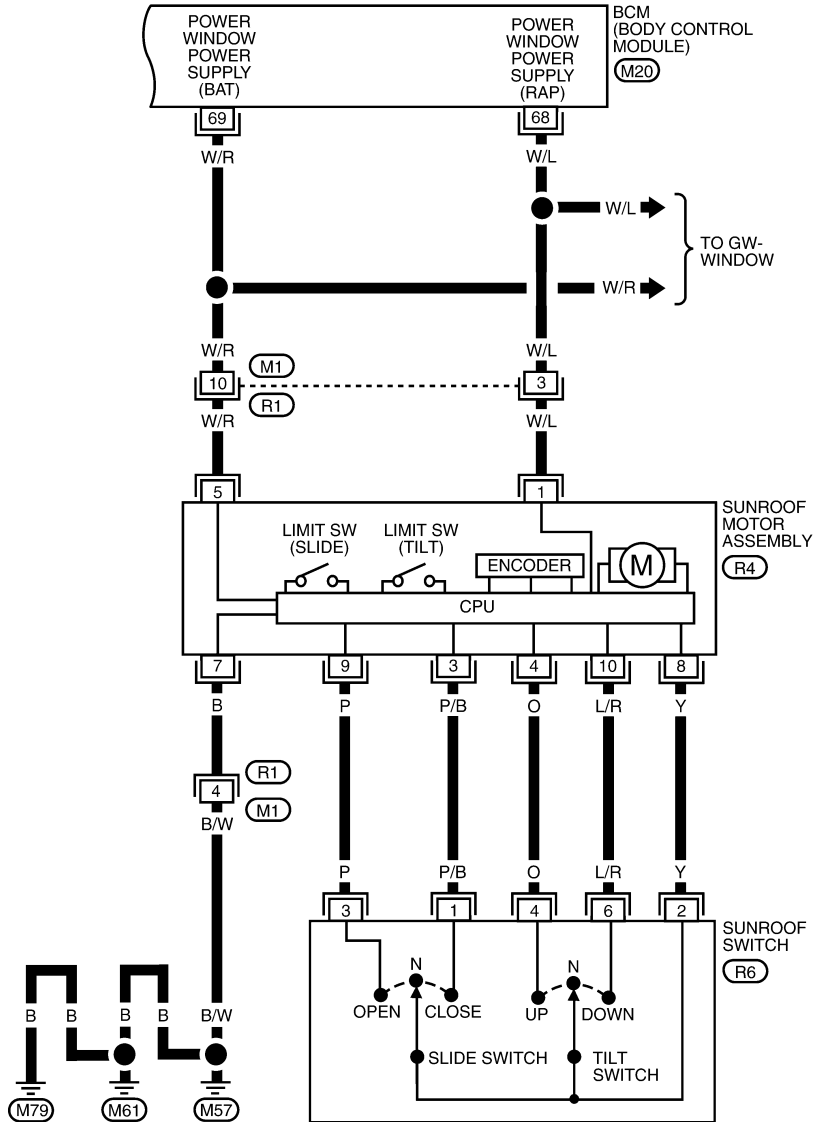


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# SUNROOF

< SERVICE INFORMATION >

RF-SROOF-02



Terminal and Reference Value for BCM

Refer to [BCS-11, "Terminal and Reference Value for BCM"](#).

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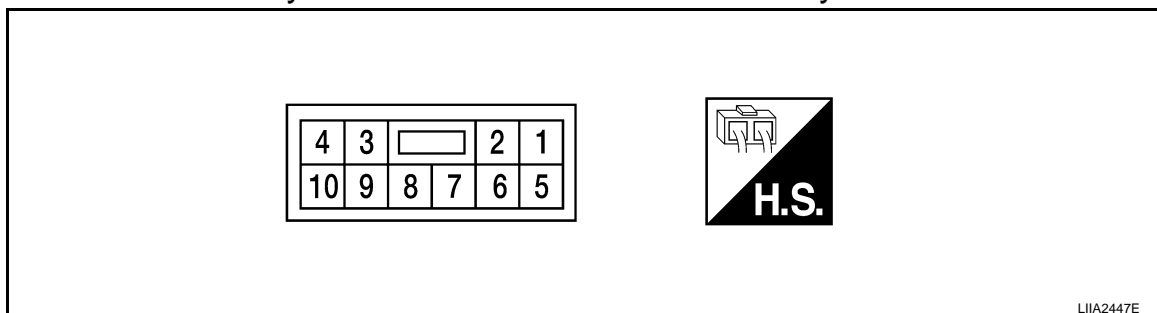
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# SUNROOF

< SERVICE INFORMATION >

## Sunroof Motor Assembly Harness Connector Terminal Layout

INFOID:000000001718699



## Terminal and Reference Value for Sunroof Motor Assembly

INFOID:000000001718700

Terminal	Wire Color	Item	Condition	Voltage (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
3	P/B	Sunroof switch CLOSE signal	Ignition switch ON and sunroof switch in CLOSE position	0
			Other than above	Battery voltage
4	O	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
7	B	Ground	—	—
8	Y	Ground signal	—	—
9	P	Sunroof switch OPEN signal	Ignition switch ON and sunroof switch in OPEN position	0
			Other than above	Battery voltage
10	L/R	Sunroof switch TILT DOWN signal	Ignition switch ON and sunroof switch in TILT DOWN position	0
			Other than above	Battery voltage

\*: When MODE1 is selected. For more details, refer to [RF-15. "Work Support"](#).

## Work Flow

INFOID:000000001718701

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.

## CONSULT-III Function (BCM)

INFOID:000000001718702

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

# SUNROOF

## < SERVICE INFORMATION >

Diagnostic mode	Description
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.

### Work Support

INFOID:000000001718703

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>

### Data Monitor

INFOID:000000001718704

Monitored item	Description
IGN ON SW	Indicates [ON/OFF] condition of ignition switch.
DOOR SW-DR	Indicates [ON/OFF] condition of front door switch LH.
DOOR SW-AS	Indicates [ON/OFF] condition of front door switch RH.

### Active Test

INFOID:000000001718705

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-III screen even if the ignition switch is turned OFF. <b>NOTE:</b> <b>During this test, CONSULT-III can be operated with ignition switch in "OFF" position. "RETAINED PWR" should be turned "ON" or "OFF" on CONSULT-III screen when ignition switch ON. Then turn ignition switch OFF for checking retained power operation. CONSULT-III might be stuck if "RETAINED PWR" is turned "ON" or "OFF" on CONSULT-III screen when ignition switch is OFF.</b>

### Trouble Diagnosis Chart by Symptom

INFOID:000000001718706

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-16</a>
	2. Sunroof switch system check	<a href="#">RF-16</a>
	3. Replace sunroof motor assembly	<a href="#">RF-20</a>
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-18</a>
	4. Replace sunroof motor assembly	<a href="#">RF-20</a>

# SUNROOF

## < SERVICE INFORMATION >

Symptom	Diagnostic procedure and repair order	Refer to page
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-20</a>
Sunroof interruption detection does operate properly.	1. Replace sunroof motor assembly	<a href="#">RF-20</a>

## BCM Power Supply and Ground Circuit Inspection

INFOID:000000001718707

Refer to [BCS-15, "BCM Power Supply and Ground Circuit Inspection"](#).

## Sunroof Switch System Inspection

INFOID:000000001718708

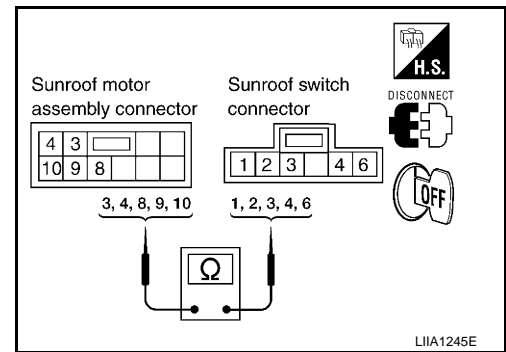
### 1. CHECK HARNESS CONTINUITY

- Turn ignition switch OFF.
- Disconnect sunroof motor assembly and sunroof switch.
- Check continuity between sunroof motor assembly connector R4 terminals 3, 4, 8, 9 and 10 and sunroof switch connector R104 terminals 1, 2, 3, 4 and 6.

- 3 - 1 : Continuity should exist.**  
**4 - 4 : Continuity should exist.**  
**8 - 2 : Continuity should exist.**  
**9 - 3 : Continuity should exist.**  
**10 - 6 : Continuity should exist.**

#### OK or NG

- OK >> GO TO 2.  
 NG >> Repair or replace harness.



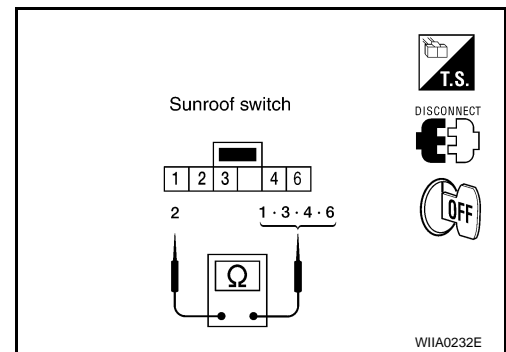
### 2. CHECK SUNROOF SWITCH

Operate sunroof switch, and check continuity of the sunroof switch as follows.

Terminals	Condition	Continuity
1	Sunroof switch in CLOSE position	Yes
	Other than above	No
3	Sunroof switch in OPEN position	Yes
	Other than above	No
4	Sunroof switch in TILT UP position	Yes
	Other than above	No
6	Sunroof switch in TILT DOWN position	Yes
	Other than above	No

#### OK or NG

- OK >> Sunroof switch and harness are OK. Refer to [RF-15, "Trouble Diagnosis Chart by Symptom"](#).  
 NG >> Replace sunroof switch.



## Sunroof Motor Assembly Power Supply and Ground Circuit Inspection

INFOID:000000001718709

### 1. CHECK POWER SUPPLY CIRCUIT

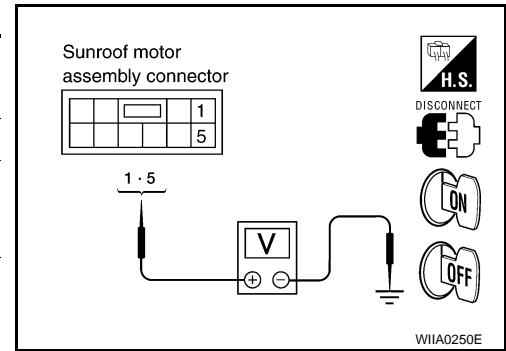
- Turn ignition switch OFF.
- Disconnect the sunroof motor assembly.
- Turn ignition switch ON.
- Check voltage between sunroof motor assembly connector R4 terminals 1, 5 and ground.



# SUNROOF

## < SERVICE INFORMATION >

Connector	Terminals		Condition	Voltage (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
	5		Ignition switch OFF	Battery voltage



### OK or NG

- OK >> GO TO 2.
- NG >> GO TO 3.

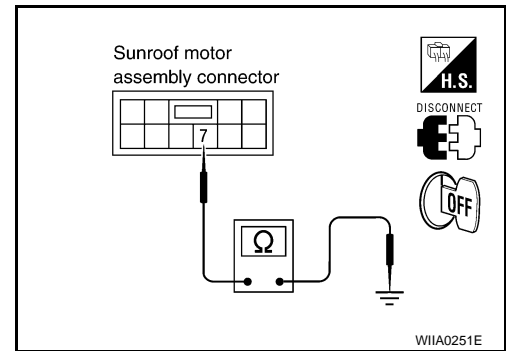
## 2. CHECK GROUND CIRCUIT

Check continuity between sunroof motor assembly connector R4 terminal 7 and ground.

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

### OK or NG

- OK >> Sunroof motor assembly power supply and ground circuits are OK. Refer to [RF-15, "Trouble Diagnosis Chart by Symptom"](#).
- NG >> Repair or replace harness.



## 3. CHECK BCM OUTPUT SIGNAL

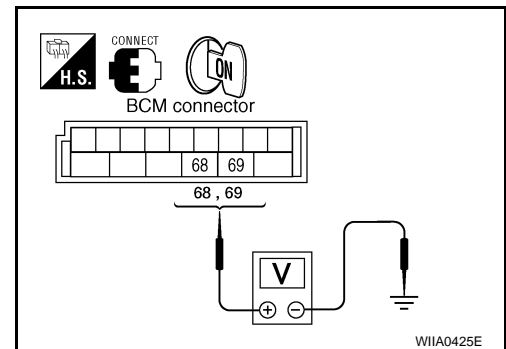
1. Turn ignition switch ON.
2. Check voltage between BCM connector M20 terminals 68, 69 and ground.

**68 - Ground : Battery voltage**

**69 - Ground : Battery voltage**

### OK or NG

- OK >> GO TO 4.
- NG >> Replace BCM. Refer to [BCS-18, "Removal and Installation of BCM"](#).



## 4. CHECK SUNROOF MOTOR CIRCUIT HARNESS

1. Turn ignition switch OFF.
2. Disconnect BCM.
3. Check continuity between BCM connector M20 terminal 68, 69 and sunroof motor assembly connector R4 terminals 1, 5.

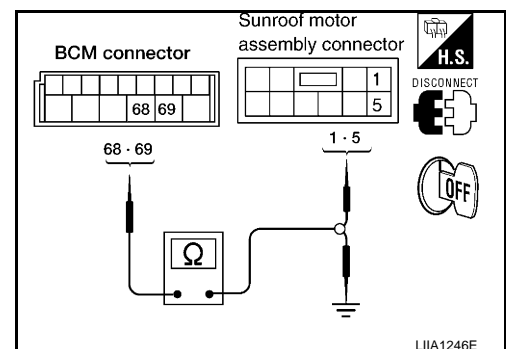
**68 - 1 : Continuity should exist.**

**69 - 5 : Continuity should exist.**

4. Check continuity between BCM connector M20 terminal 68, 69 and ground.

**68 - Ground : Continuity should not exist.**

**69 - Ground : Continuity should not exist.**



# SUNROOF

## < SERVICE INFORMATION >

### OK or NG

- OK >> Sunroof motor assembly power supply circuits are OK. Refer to [RF-15, "Trouble Diagnosis Chart by Symptom"](#).
- NG >> Repair or replace harness between BCM and sunroof motor assembly.

## Door Switch Check

INFOID:000000001718710

### 1.CHECK DOOR SWITCH INPUT SIGNAL

#### With CONSULT-III

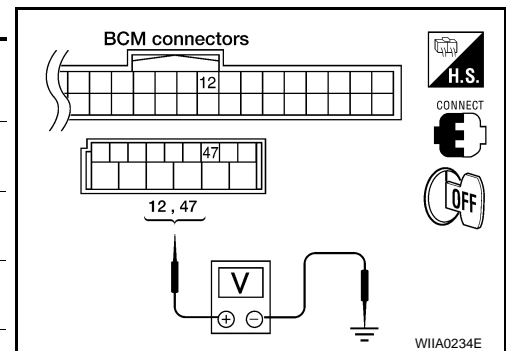
Check door switches ("DOOR SW-DR" and "DOOR SW-AS") in "DATA MONITOR" mode with CONSULT-III.

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

#### Without CONSULT-III

- Turn ignition switch OFF.
- Check voltage between BCM connector and ground.

Item	Connector	Terminals		Condition	Voltage (Approx.)
		(+)	(-)		
RH	M18	12	Ground	Door open (switch closed)	0
				Door closed (switch open)	Battery voltage
LH	M19	47		Door open (switch closed)	0
				Door closed (switch open)	Battery voltage



### OK or NG

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

### 2.CHECK DOOR SWITCH CIRCUIT

- Disconnect front door switches and BCM.
- Check continuity between front door switch connector B8 (LH) or B108 (RH) (B) terminal 1 and BCM connector M18, M19 (A) terminals 12 and 47.

#### Front door switch LH

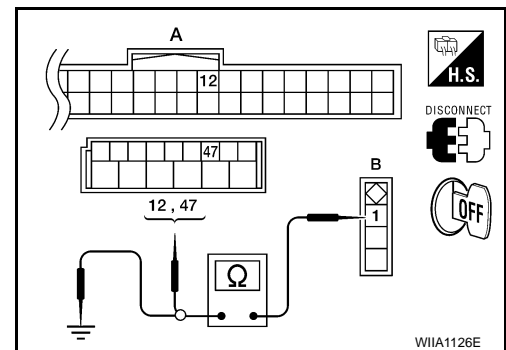
1 - 47 : Continuity should exist.

#### Front door switch RH

1 - 12 : Continuity should exist.

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

1 - Ground : Continuity should not exist.



### OK or NG

- OK >> GO TO 3.
- NG >> Repair or replace harness between BCM and sunroof motor assembly.

### 3.CHECK DOOR SWITCHES

# SUNROOF

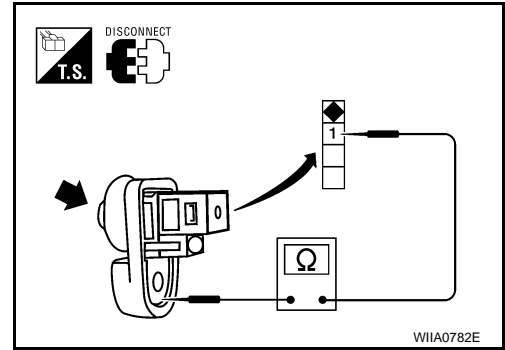
## < SERVICE INFORMATION >

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

Terminal	Condition	Continuity
1	Door switch pushed	No
	Door switch released	Yes

### OK or NG

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



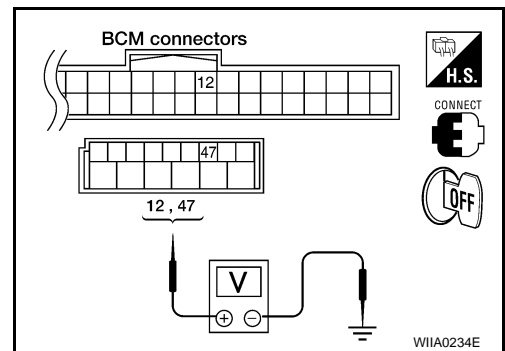
## 4. CHECK BCM OUTPUT SIGNAL

1. Connect BCM connectors.
2. Check voltage between BCM connector M18 terminal 12, M19 terminal 47 and ground.

**12 - Ground : Battery voltage**  
**47 - Ground : Battery voltage**

### OK or NG

- OK >> Check the condition of the harness and the connector.
- NG >> Replace BCM. Refer to [BCS-18, "Removal and Installation of BCM"](#).



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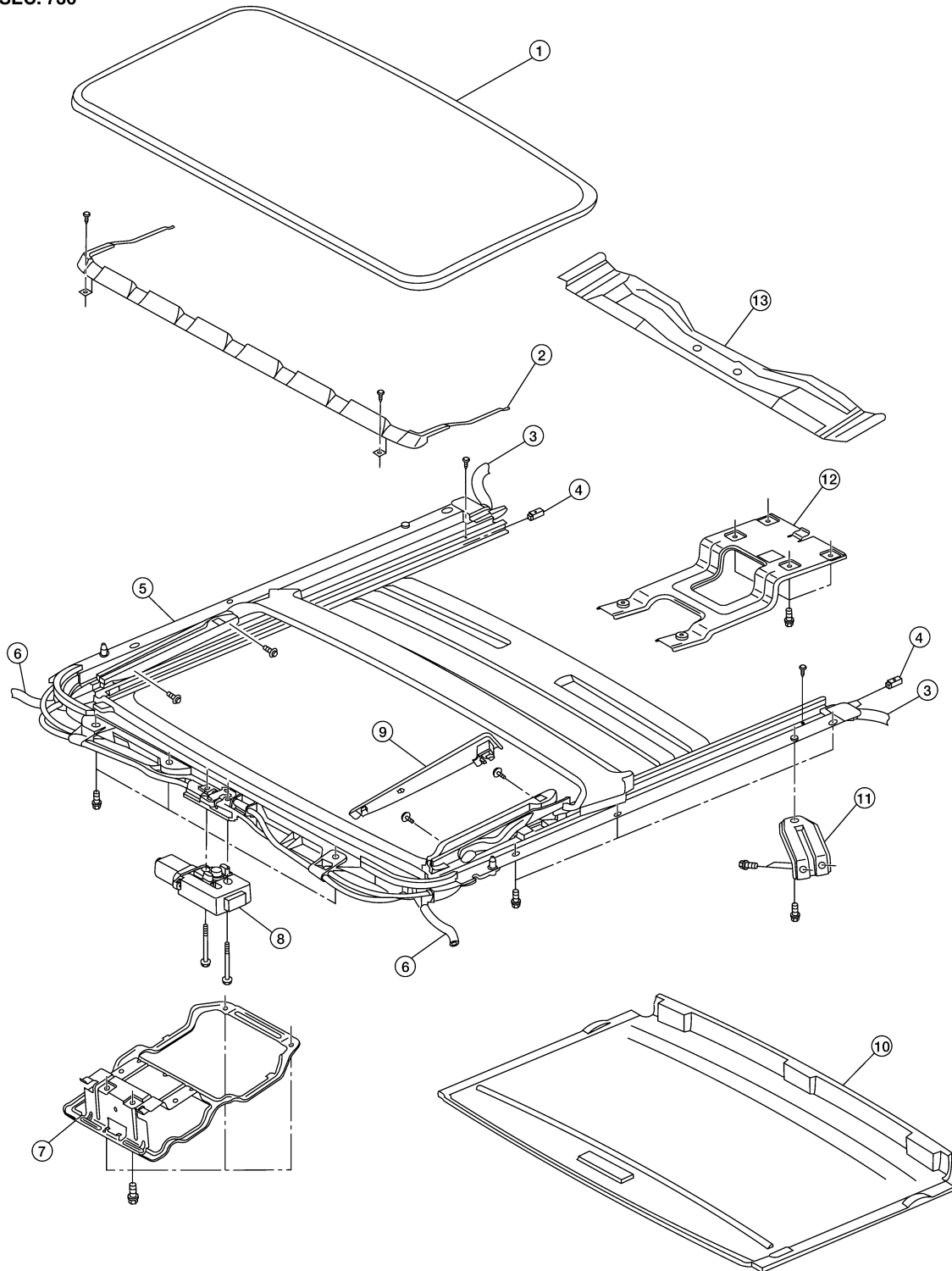
# SUNROOF

< SERVICE INFORMATION >

## Removal and Installation

INFOID:000000001718711

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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 hose                     |
| 7. Front overhead console bracket | 8. Sunroof motor assembly | 9. Side cover                           |
| 10. Sunshade assembly             | 11. Sunroof bracket       | 12. Front rear overhead console bracket |
| 13. Sunroof rear bracket          | Sunroof bracket LH        |   |

- After any adjustment, check sunroof operation and glass lid assembly alignment.

# SUNROOF

## < SERVICE INFORMATION >

- 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 make sure 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 make sure there is no malfunction.**

1. Remove headlining. Refer to [EI-38](#).
2. Remove the glass lid assembly. Refer to "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.

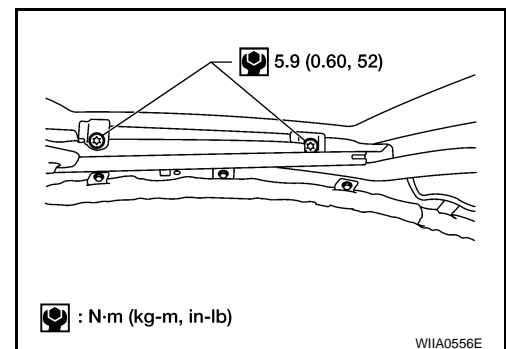
### Installation

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 "GLASS LID ASSEMBLY".
8. Install headlining. Refer to [EI-38](#).

## GLASS LID ASSEMBLY

### Removal

1. Open sunroof shade and confirm glass lid assembly is closed.
2. Remove the side covers RH/L/H.
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-25, "Fitting Adjustment"](#).

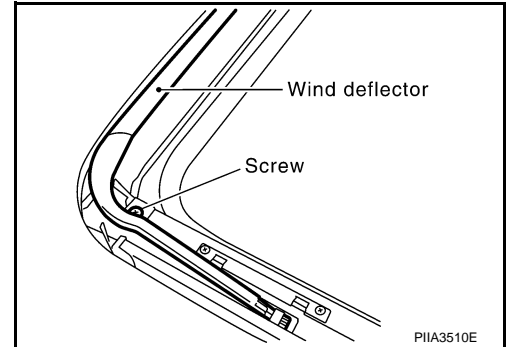
# SUNROOF

## < SERVICE INFORMATION >

### 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.



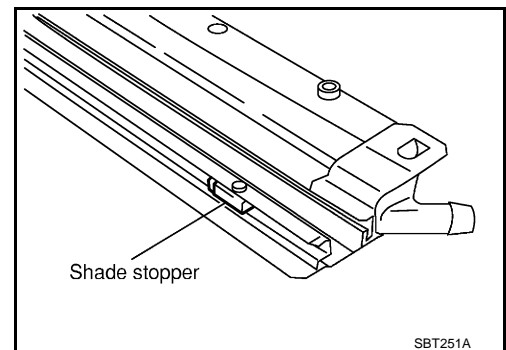
#### Installation

Installation is in the reverse order of removal.

### SUNSHADE

#### Removal

1. Remove the sunroof unit. Refer to "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.

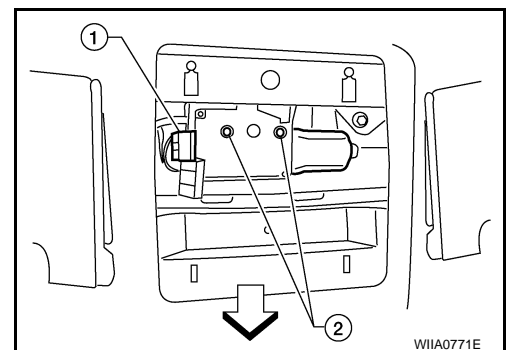
### SUNROOF MOTOR ASSEMBLY

#### 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-38](#).
3. Disconnect the harness connector (1).
  - ← Vehicle front
4. Remove the sunroof motor assembly screws (2).



#### Installation

#### **CAUTION:**

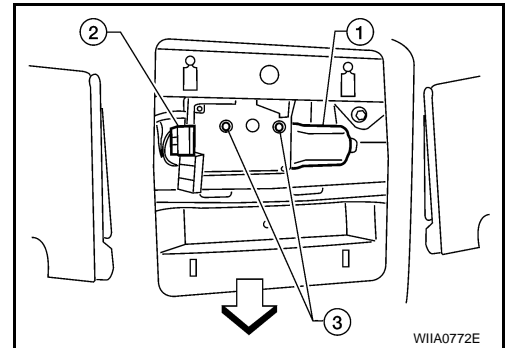
# SUNROOF

## < SERVICE INFORMATION >

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

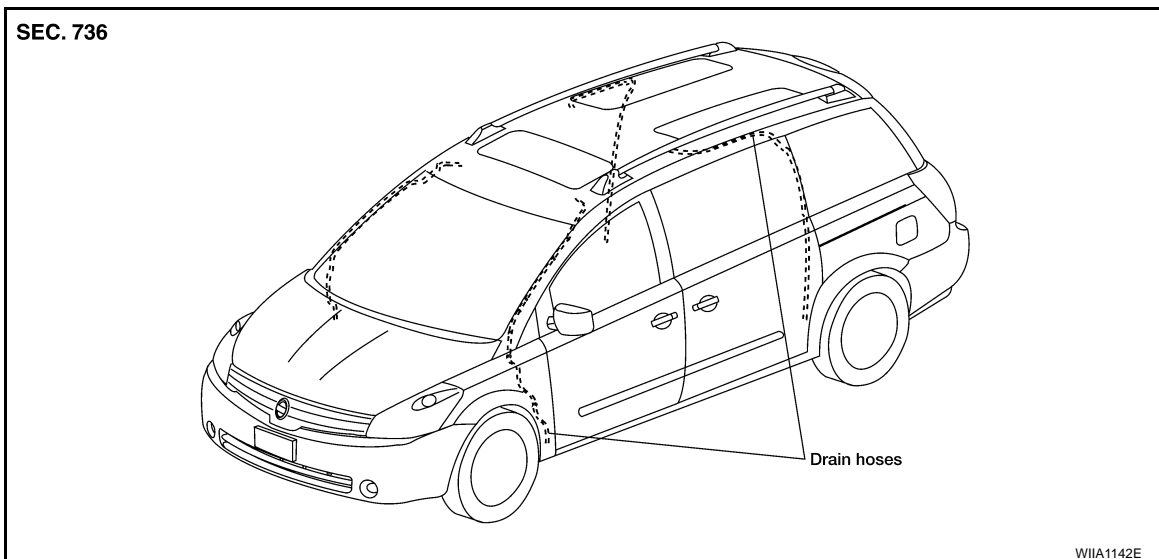
• ←: Vehicle front

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-38](#).
5. Check sunroof unit for proper operation.

## DRAIN HOSES



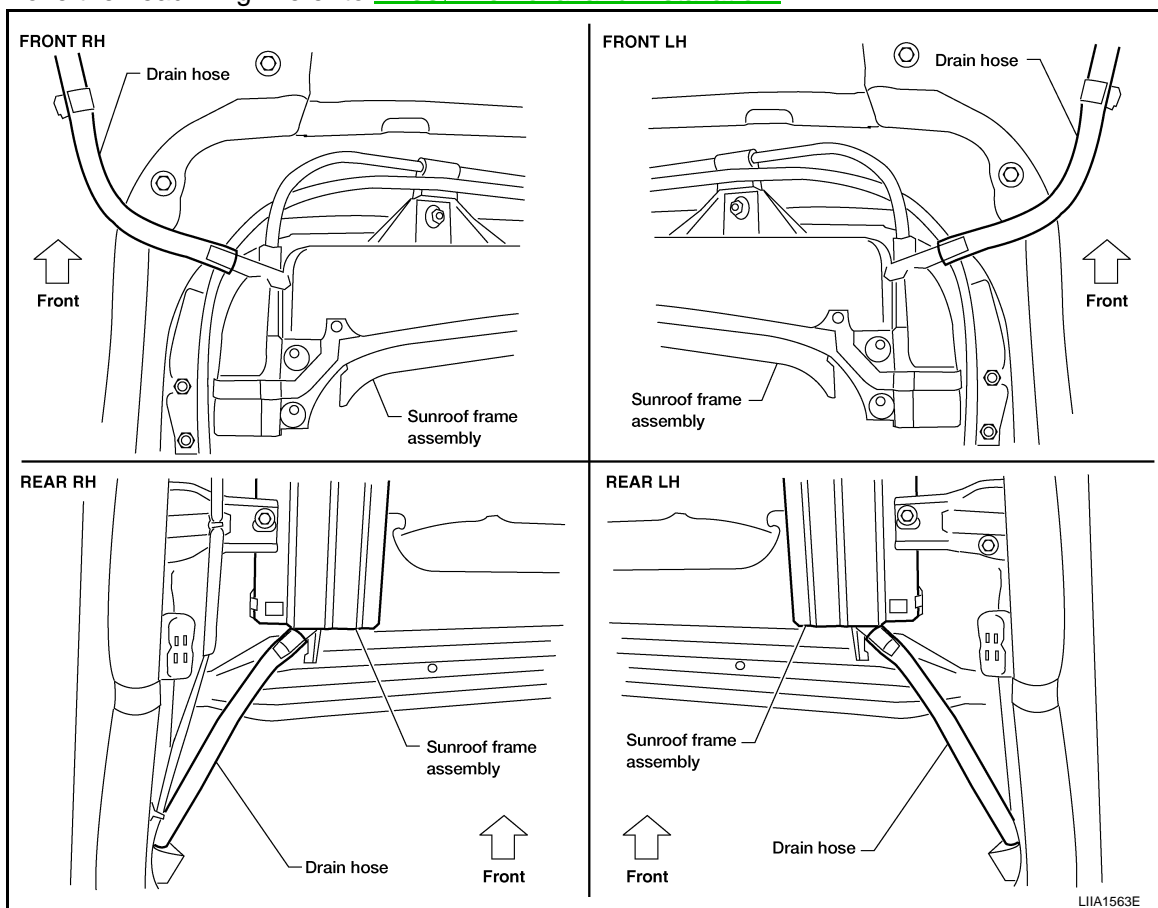
Removal

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# SUNROOF

## < SERVICE INFORMATION >

1. Remove the headlining. Refer to [EI-38, "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, remove rear guide then replace wire.

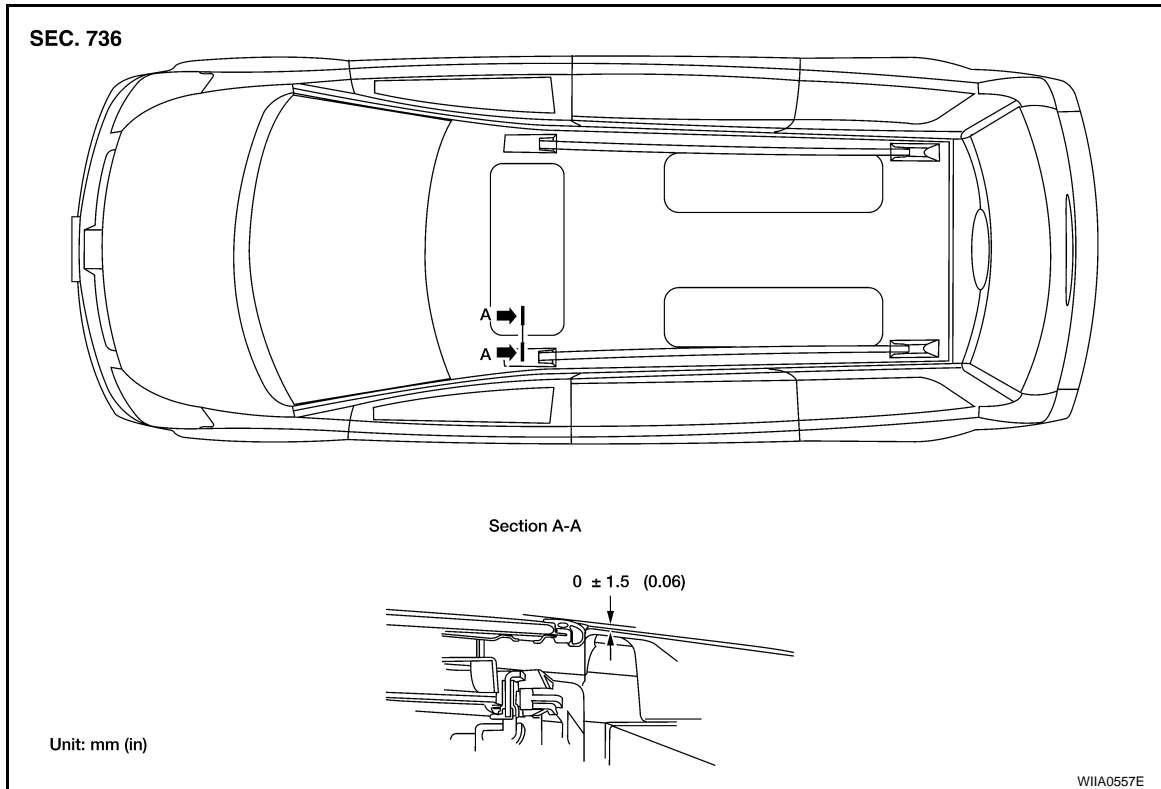


# SUNROOF

< SERVICE INFORMATION >

## Fitting Adjustment

INFOID:000000001718712



### 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.