# SECTION RF
# ROOF



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# PRECAUTIONS

PFP:00001

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

EIS00CE9

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

EIS00B92

- 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 unreusable 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.

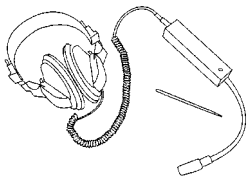
- Do not use any organic solvent, such as thinner or benzine.

# PREPARATION

PFP:00002

## Commercial Service Tool

EIS00B94

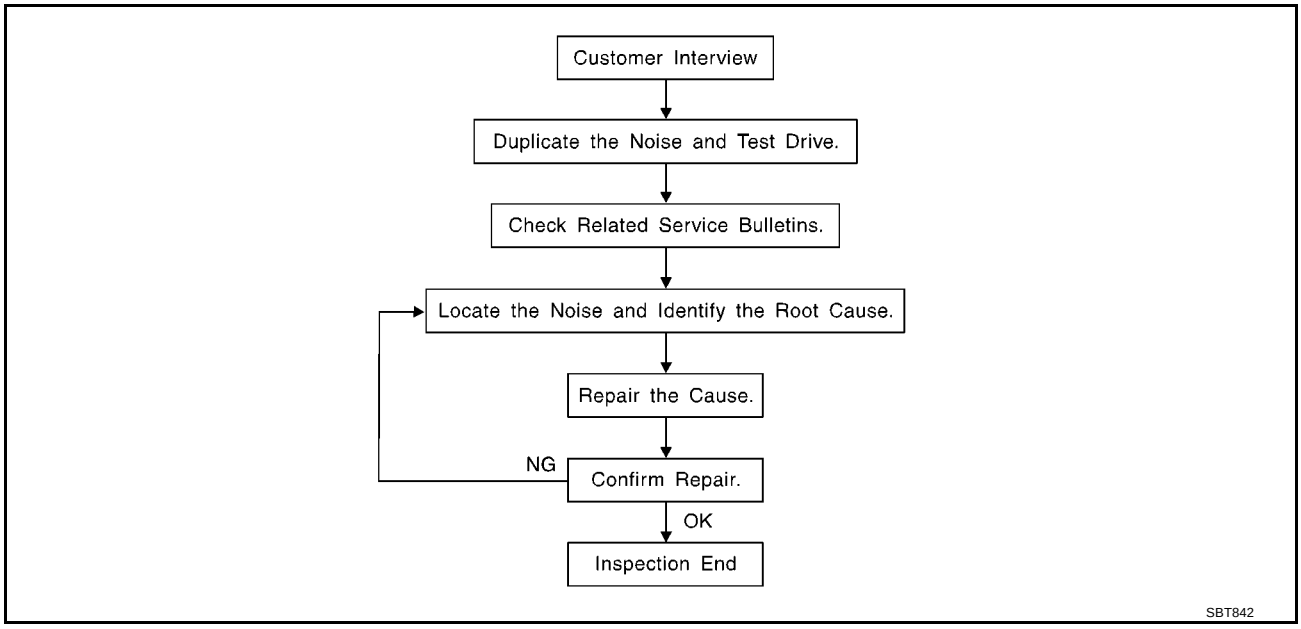
| Tool name | Description |
|---|---|
| Engine ear  SIIA0995E | Locating the noise |

# SQUEAK AND RATTLE TROUBLE DIAGNOSES

PFP:00000

## Work Flow

EIS00CDY




### 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's comments; refer toRF-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 very irritating to the customer.
- Weather conditions, especially humidity and temperature, may have a great effect on noise level.

## DUPLICATE THE NOISE AND TEST DRIVE

If possible, drive the vehicle with the customer until the noise is duplicated. Note any additional information on the Diagnostic Worksheet regarding the conditions or location of the noise. This information can be used to duplicate the same conditions when 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 models, drive position on A/T models).
6) Raise the vehicle on a hoist and hit a tire with a rubber hammer.

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

## CHECK RELATED SERVICE BULLETINS

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

## LOCATE THE NOISE AND IDENTIFY THE ROOT CAUSE

1. Narrow down the noise to a general area. To help pinpoint the source of the noise, use a listening tool (Engine Ear or 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 are available through your authorized Nissan Parts Department.

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

**NOTE:**
Always check with the Parts Department for the latest parts information.
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 available through NISSAN Parts Department, 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

EIS00CDZ

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

### INSTRUMENT PANEL

Most incidents are caused by contact and movement between:

1. Cluster lid A and instrument panel
2. Acrylic lens and combination meter housing
3. Instrument panel to front pillar garnish
4. Instrument panel to windshield
5. Instrument panel mounting pins
6. Wiring harnesses behind the combination meter
7. A/C defroster duct and duct joint

These incidents can usually be located by tapping or moving the components to duplicate the noise or by pressing on the components while driving to stop the noise. Most of these incidents can be repaired by applying felt cloth tape or silicon spray (in hard to reach areas). Urethane pads can be used to insulate wiring harness.

**CAUTION:**
**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 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 dumpers out of adjustment
2. Trunk lid striker out of adjustment
3. Trunk lid torsion bars knocking together
4. A loose license plate or bracket

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

## SUNROOF/HEADLINING

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

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

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

## SEATS

When isolating seat noise it's important to note the position the 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. Rear seatback lock and bracket

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

## UNDERHOOD

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

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

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

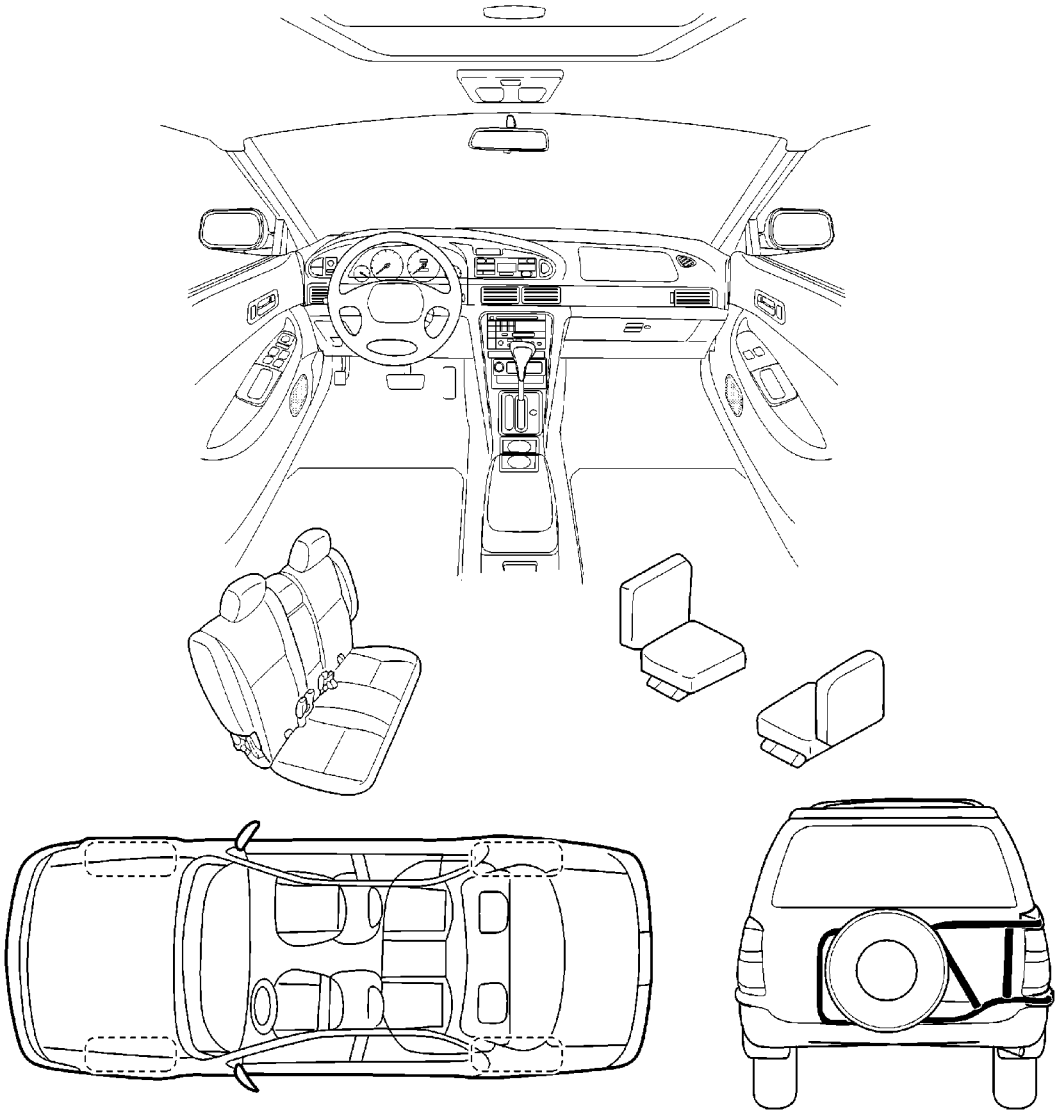
## Diagnostic Worksheet

EIS00CE0

### SQUEAK & RATTLE DIAGNOSTIC WORKSHEET

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

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



**Continue to the back 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.**

PIIB0723E

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

**Briefly describe the location where the noise occurs:**

_____

_____

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

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

**III. WHEN DRIVING:**

❑ through driveways
❑ over rough roads
❑ over speed bumps
❑ only at 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 on a door)
❑ tick (like a clock second hand)
❑ thump (heavy, muffled knock noise)
❑ buzz (like a bumble bee)

**TO BE COMPLETED BY DEALERSHIP PERSONNEL**
**Test Drive Notes:**

_____

_____

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

VIN: _____ Customer Name: _____

W.O. #: _____ Date: _____

**This form must be attached to Work Order**

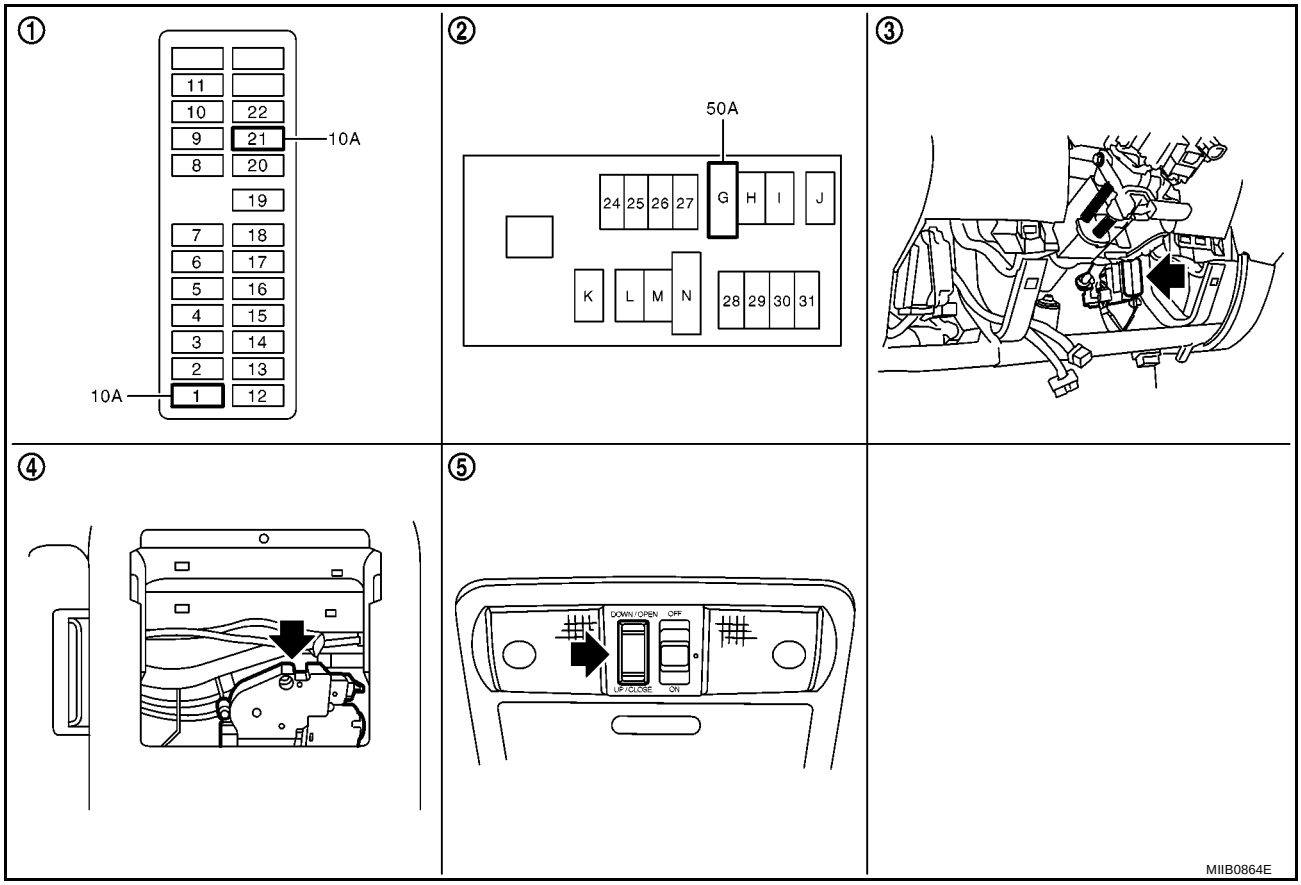
SBT844

# SUNROOF

PFP:91210

## Component Parts and Harness Connector Location

EIS00D4V




1. Fuse block (J/B) fuse layout
2. Fuse and fusible link box
3. BCM M42,M43 (View with instrument lower panel LH removed.)
4. Sunroof motor assembly B16
5. Sunroof switch R5

## System Description

EIS00D4W

Power supplied at all time

- through 50A fusible link (letter **G** , located in the fuse and fusible link box)
- to BCM terminal 57.
- through 10A fuse [No.21, located in the fuse block (J/B)]
- to BCM terminal 41.
- through BCM terminal 58
- to sunroof motor assembly terminal 7.

Ground is supplied

- to BCM terminal 55
- through body grounds M21, M80 and M83.
- to sunroof motor assembly terminal 10
- through body grounds B9 and B25.

When ignition switch ON or START position,
Power is supplied

- through 10A fuse [No.1, located in the fuse block (J/B)]
- to BCM terminal 3.
- through BCM terminal 53
- to sunroof motor assembly terminal 9.

### TILT UP / SLIDE CLOSE OPERATION

When tilt up / slide close switch is pressed,
Ground is supplied

- to sunroof motor assembly terminal 1
- through sunroof switch terminal 3
- through sunroof switch terminal 2
- through body grounds M21, M80 and M83.

Then, the sunroof tilt up / slide close.

### TILT DOWN / SLIDE OPEN OPERATION

When tilt down / slide open switch is pressed,
Ground is supplied

- to sunroof motor assembly terminal 5
- through sunroof switch terminal 1
- through sunroof switch terminal 2
- through body grounds M21, M80 and M83.

Then, the sunroof tilt down / slide open.

### AUTO OPERATION

The power sunroof AUTO feature makes it possible to slide open and slide close or tilt up and tilt down the sunroof without holding the sunroof switch in the TILT UP/SLIDE CLOSE, TILT DOWN/SLIDE OPEN position.

### ANTI-PINCH FUNCTION

The CPU of sunroof motor assembly monitors the sunroof motor operation and the sunroof position (fully-closed or other) by the signals from sunroof motor.
When sunroof motor detects an interruption during the following slide close and tilt down operation, sunroof switch controls the motor for open and the sunroof will operate until it reaches full up position (when tilt down operate) or 125 mm (4.92 in) or more in an open direction (during slide close operate).

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

## MEMORY RESET PROCEDURE

1. Please observe the following instructions while confirming the sunroof operation.

   **NOTE:**
   Do not disconnect the electronic power while the sunroof is operating or within 5 seconds after the sunroof stops. (to wipe-out the memory of lid position and operating friction.)
2. Initialization of system should be conducted after the following conditions.
   - When the battery is out or connector is disconnected while sunroof is operating or within 5 seconds after sunroof stops.
   - When the sunroof motor is changed.
   - When an emergency handle is used.
   - When the sunroof does not operate normally. (Incomplete initialization conditions)

## INITIALIZATION PROCEDURE

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

1. Close sunroof if it is not in close position. It may be necessary to repeatedly push TILT UP/SLIDE CLOSE switch to close sunroof.
2. Tilt up sunroof, and release TILT UP/SLIDE CLOSE switch once.
3. Keep pushing TILT UP/SLIDE CLOSE switch. After 10seconds, glass lid will back up a few millimeters. then will be stopped at normal tilt up position.
   (Keep pushing TILT UP/SLIDE CLOSE switch during this operation.)
4. Within first 10 seconds of releasing TILT UP/SLIDE CLOSE switch, keep pushing TILT UP/SLIDE CLOSE switch again. After 4 seconds, glass lid will be automatically TILT DOWN→SLIDE OPEN→SLIDE CLOSE.
   (Keep pushing TILT UP/SLIDE CLOSE switch during this operation.)
5. After glass lid stops, release TILT UP/SLIDE CLOSE switch later 0.5 seconds.
6. Initializing procedure is completed. Confirm proper operation of sunroof (slide open, slide close, tilt up, tilt down).

## CAN Communication System Description

EIS00D4X

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

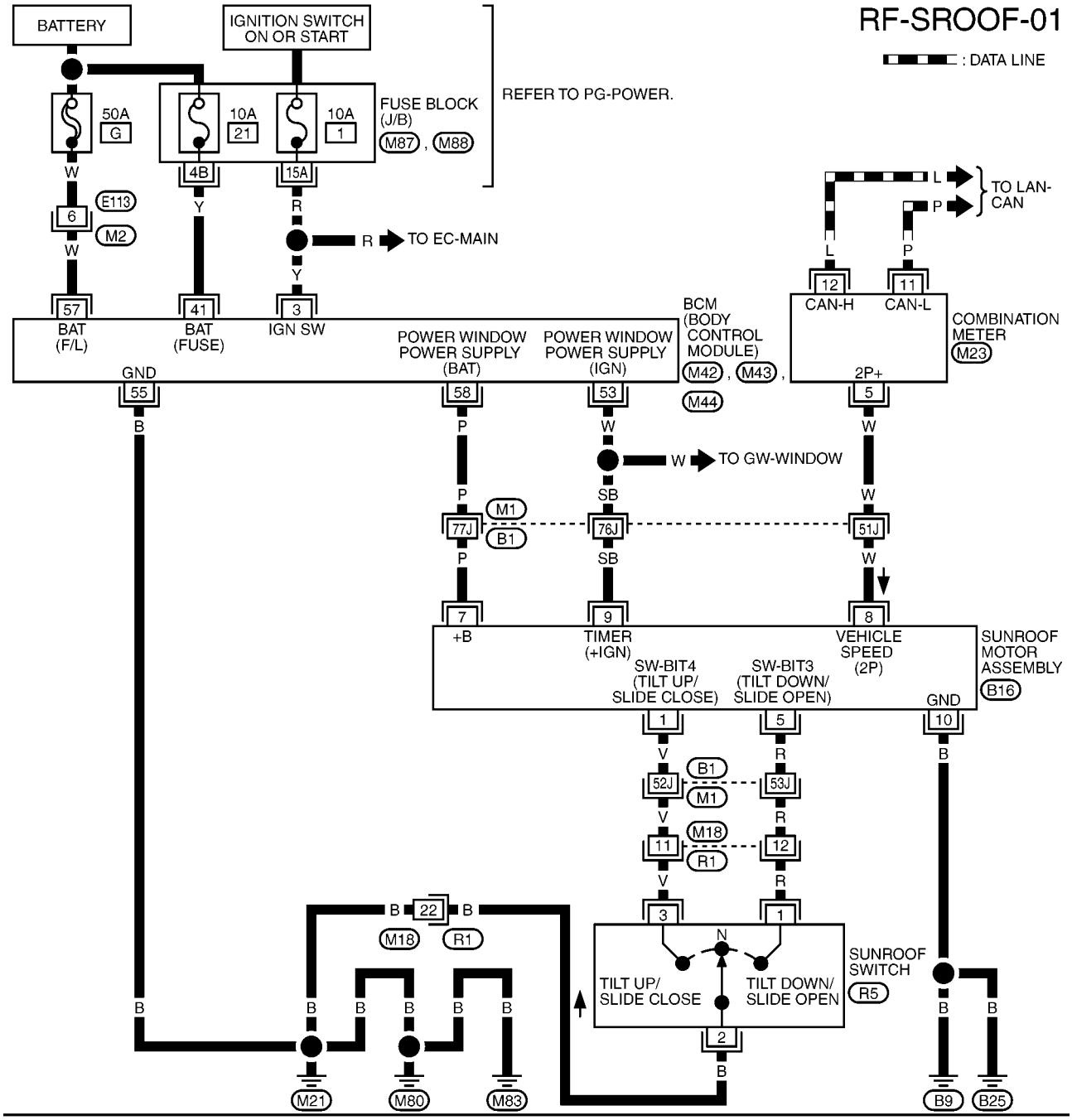
## CAN Communication Unit

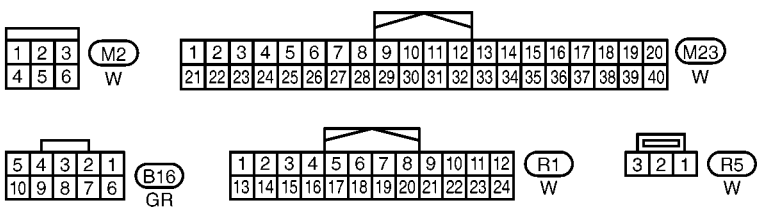
EIS00D4Y

Refer to LAN-30, "CAN Communication Unit" .

## Wiring Diagram — SROOF —

EIS00D4Z




REFER TO THE FOLLOWING.
M1 -SUPER MULTIPLE JUNCTION (SMJ)
M87, M88 -FUSE BLOCK-JUNCTION BOX (J/B)
M42, M43, M44 -ELECTRICAL UNITS

MIWA0481E

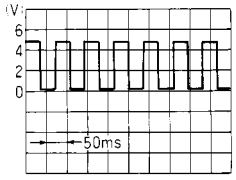
## Terminals and Reference Value for BCM

EIS00D50

| Terminal | Wire color | Item | Condition | Voltage (V) (Approx.) |
|---|---|---|---|---|
| 3 | Y | Ignition switch (ON) | Ignition switch (ON or START) position | Battery voltage |
| 41 | Y | Power source (Fuse) | — | Battery voltage |
| 53 | W | Power window power supply (IGN) | Ignition switch ON | Battery voltage |
| | | | Other than above | 0 |
| 55 | B | Ground | — | 0 |
| 57 | W | Power source (Fusible link) | — | Battery voltage |
| 58 | P | Power window power supply (BAT) | — | Battery voltage |

## Terminals and Reference Value for Sunroof Motor Assembly

EIS00D51

| Terminal | Wire color | Item | Condition | Voltage (V) (Approx.) |
|---|---|---|---|---|
| 1 | V | Sunroof (Tilt up/Slide close) switch signal | Ignition switch ON and sunroof switch in TILT UP / SLIDE CLOSE position | 0 |
| | | | Other than above | Battery voltage |
| 5 | R | Sunroof (Tilt down/Slide open) switch signal | Ignition switch ON and sunroof switch in TILT DOWN / SLIDE OPEN position | 0 |
| | | | Other than above | Battery voltage |
| 7 | P | Power window power supply | — | Battery voltage |
| 8 | W | Vehicle speed signal | Speedometer operated [When vehicle speed is approx. 40 km/h (25 MPH)] |  ELF1080D |
| 9 | SB | Power window power supply (IGN) | Ignition switch ON | Battery voltage |
| | | | Other than above | 0 |
| 10 | B | Ground | — | 0 |

## Work Flow

EIS00D52

1. Check the symptom and customer's requests.
2. Understand the outline of system. Refer to RF-11, "System Description" .
3. According to the trouble diagnosis chart, repair or replace the cause of the malfunction. Refer to RF-16, "Trouble Diagnosis Symptom Chart" .
4. Does sunroof system operate normally? If Yes, GO TO 5. If No, GO TO 3.
5. INSPECTION END.

## Trouble Diagnosis Symptom Chart

EIS00D53

| Symptom | Diagnostic procedure and repair order | Refer to page |
|---|---|---|
| Sunroof does not operate. | 1. BCM power supply and ground circuit check | RF-16 |
| | 2. Sunroof motor assembly power supply and ground circuit check | RF-17 |
| | 3. Sunroof switch system check | RF-18 |
| | 4. Replace sunroof motor assembly. | RF-23 |
| Auto operation does not operate | 1. Initialization procedure check. | RF-12 |
| | 2. Replace sunroof motor assembly. | RF-23 |
| Motor does not stop at the sunroof fully -open or fully-closed position. | 1. Initialization procedure check. | RF-12 |
| | 2. Replace sunroof motor assembly. | RF-23 |
| Anti-pinch function does not operate. | 1. Initialization procedure check. | RF-12 |
| | 2. Replace sunroof motor assembly. | RF-23 |

## BCM Power Supply and Ground Circuit Check

EIS00D54

### 1. FUSE INSPECTION

Check the following.

- 50A fusible link (letter **G** , located in the fuse and fusible link box)
- 10A fuse [No. 1, located in the fuse block (J/B)]
- 10A fuse [No.21 located in the fuse block (J/B)]

**NOTE:**
Refer to RF-10, "Component Parts and Harness Connector Location" .

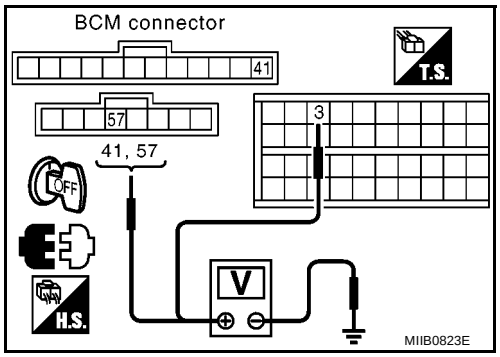
OK or NG

OK >> GO TO 2.
NG >> If fuse is blown, be sure to eliminate cause of malfunction before installing new fuse, refer to PG-4, "POWER SUPPLY ROUTING CIRCUIT" .

### 2. CHECK POWER SUPPLY CIRCUIT

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

| Connector | Terminals | | Ignition switch position | | |
|---|---|---|---|---|---|
| | (+) | (-) | OFF | ACC | ON |
| M42 | 3 | Ground | 0V | 0V | Battery voltage |
| M43 | 41 | | Battery voltage | Battery voltage | Battery voltage |
| M44 | 57 | | | | |



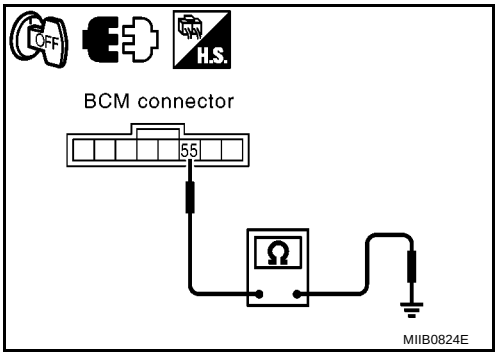

OK or NG

OK >> GO TO 3.
NG >> Repair or replace BCM power supply circuit.

## 3. CHECK GROUND CIRCUIT

Check continuity between BCM connector M44 terminal 55 and ground.

**55 – Ground : Continuity should exist.**




OK or NG

OK >> BCM power supply and ground circuit are OK.
NG >> Repair or replace BCM ground circuit.

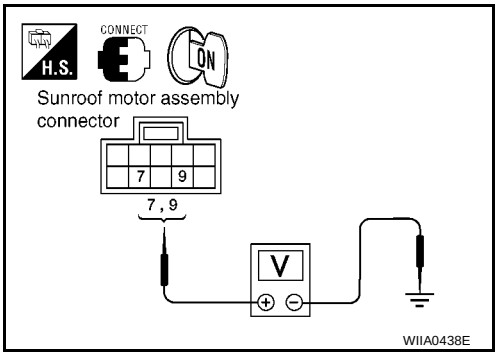
# Sunroof Motor Assembly Power Supply and Ground Circuit Check

EIS00D55

## 1. CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch ON.
2. Check voltage between sunroof motor assembly connector B16 terminal 7, 9 and ground.

**7 – Ground : Battery voltage**
**9 – Ground : Battery voltage**



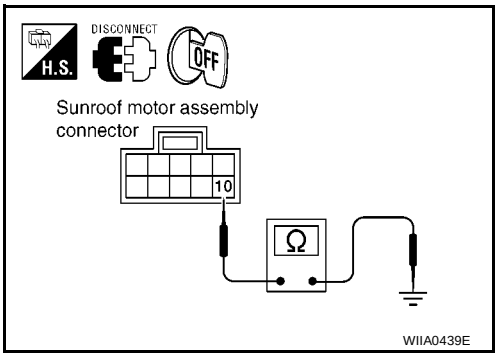

OK or NG

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

## 2. CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect sunroof motor assembly connector.
3. Check continuity between sunroof motor assembly connector B16 terminal 10 and ground.

**10 – Ground : Continuity should exist.**




OK or NG

OK >> Sunroof motor assembly power supply and ground circuit are OK.
NG >> Repair or replace harness.

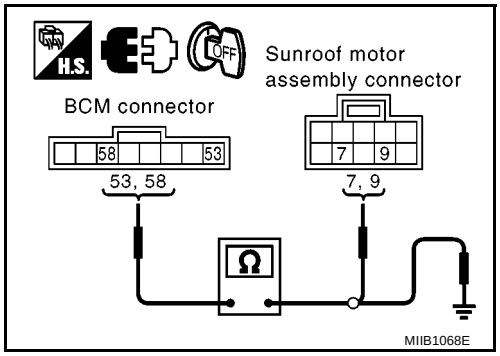
## 3. CHECK SONROOF MOTOR CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM and sunroof motor assembly connector.
3. Check continuity between BCM connector M44 terminal 53, 58 and sunroof motor assembly connector B16 terminal 7, 9.

**53 – 9 : Continuity should exist.**
**58 – 7 : Continuity should exist.**

4. Check continuity between BCM connector M44 terminal 53, 58 and ground.

**53 – Ground : Continuity should not exist.**
**58 – Ground : Continuity should not exist.**



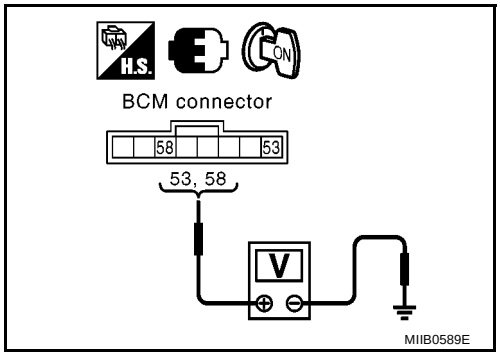

OK or NG

OK >> GO TO 4.
NG >> Repair or replace harness.

## 4. CHECK BCM OUTPUT SIGNAL

1. Connect BCM connector.
2. Turn ignition switch ON.
3. Check voltage between BCM connector M44 terminal 53, 58 and ground.

**53 – Ground : Battery voltage**
**58 – Ground : Battery voltage**




OK or NG

OK >> Check condition of harness and connector.
NG >> Replace BCM.

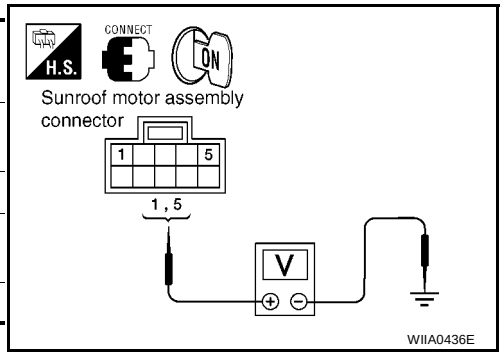
# Sunroof Switch System Check

EIS00D56

## 1. SUNROOF SWITCH INPUT SIGNAL CHECK

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

| Connector | Terminals (+) | Terminals (–) | Condition | Voltage (V) (Approx.) |
|---|---|---|---|---|
| B16 | 1 | Ground | Sunroof switch is operated TILT UP or SLIDE CLOSE | 0 |
| | | | Other than above | Battery voltage |
| | 5 | | Sunroof switch is operated TILT DOWN or SLIDE OPEN | 0 |
| | | | Other than above | Battery voltage |




OK or NG

OK >> Sunroof switch system is OK.
NG >> GO TO 2.

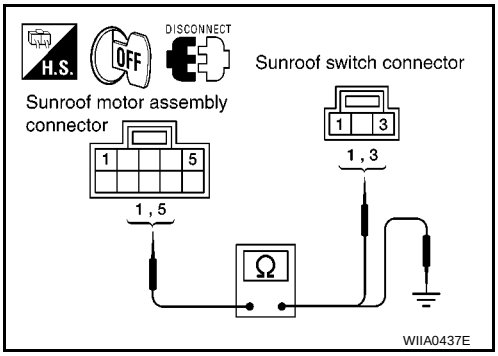
## 2. SUNROOF SWITCH CIRCUIT CHECK

1. Turn ignition switch OFF.
2. Disconnect sunroof motor assembly and sunroof switch connector.
3. Check continuity between sunroof motor assembly connector B16 terminal 1, 5 and sunroof switch connector R5 terminal 1, 3.

**1 – 3 : Continuity should exist.**
**5 – 1 : Continuity should exist.**

4. Check continuity between sunroof motor assembly connector B16 terminal 1, 5 and ground.

**1 – Ground : Continuity should not exist.**
**5 – Ground : Continuity should not exist.**



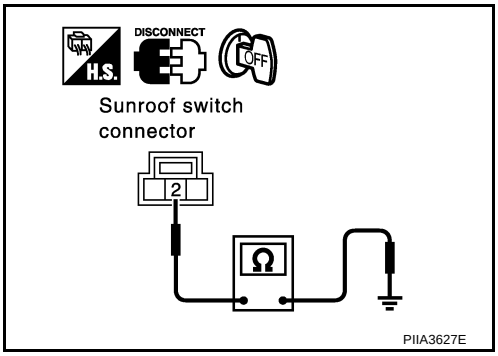

OK or NG

OK >> GO TO 3.
NG >> Repair or replace harness.

## 3. SUNROOF SWITCH GROUND CIRCUIT CHECK

Check continuity between sunroof switch connector R5 terminal 2 and ground.

**2 – Ground : Continuity should exist.**



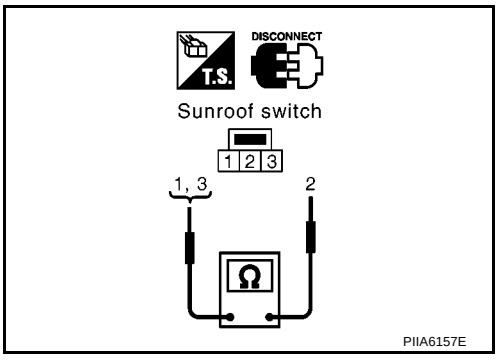

OK or NG

OK >> GO TO 4.
NG >> Repair or replace harness.

## 4. SUNROOF SWITCH CHECK

Check continuity between sunroof switch terminal 1, 3 and 2.

| Terminals | | Condition | Continuity |
|---|---|---|---|
| 1 | 2 | Sunroof switch is operated TILT DOWN or SLIDE OPEN | Yes |
| | | Other than above | No |
| 3 | | Sunroof switch is operated TILT UP or SLIDE CLOSE | Yes |
| | | Other than above | No |

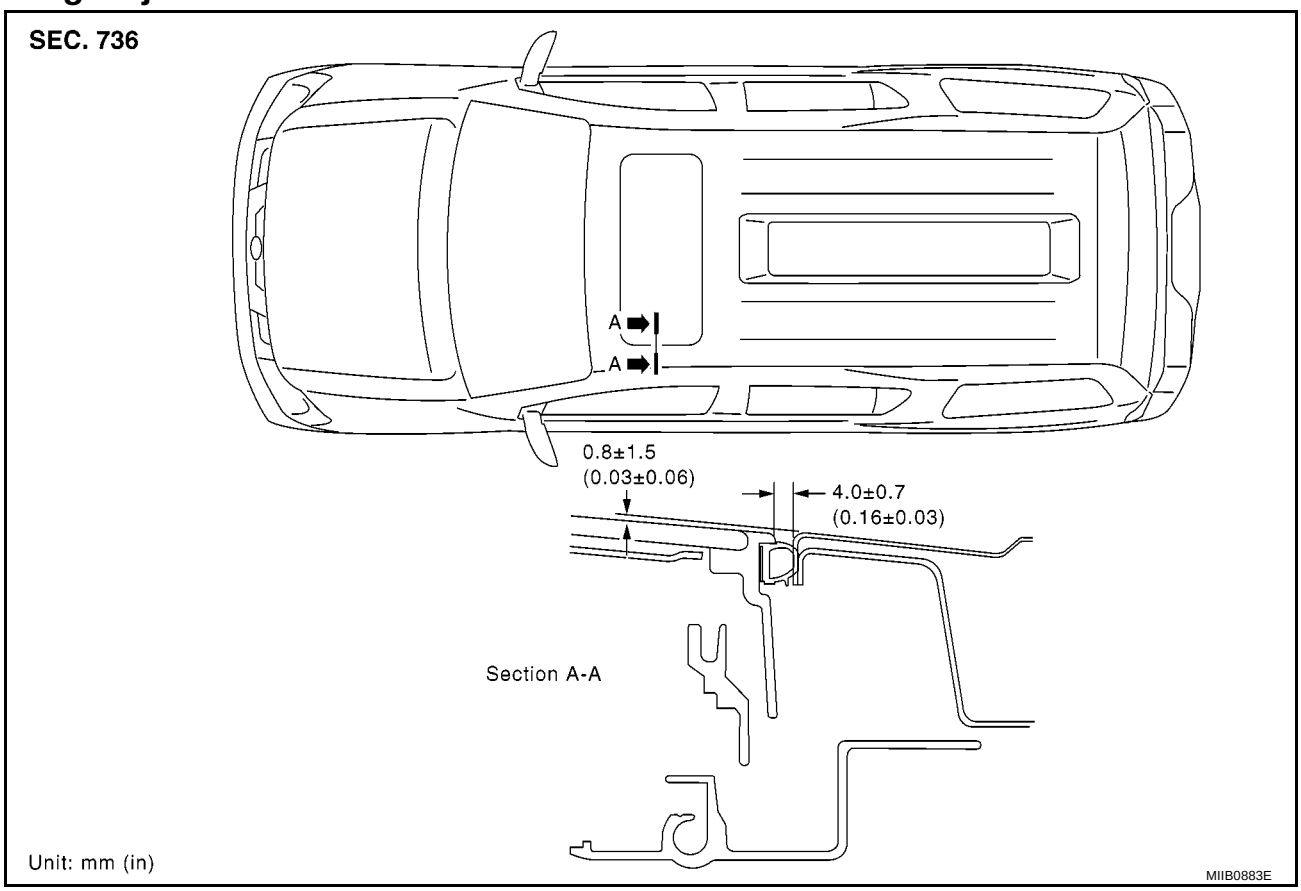



OK or NG

OK >> Replace sunroof motor assembly.
NG >> Replace sunroof switch.

## Fitting Adjustment

EIS00C0M




### GAP ADJUSTMENT

**NOTE:**

If any gap or height difference between glass lid and roof panel is found, check glass lid fit and adjust as follows:

1. Open sunshade assembly.
2. Loosen glass lid securing screws (2 each on left and right sides), then tilt glass lid down.
3. Manually adjust glass lid from outside of vehicle so it resembles "A-A" as shown in the figure.
4. After adjusting glass lid tilt glass lid up and tighten screws.
5. Tilt glass lid up and down several times to check that it moves smoothly.

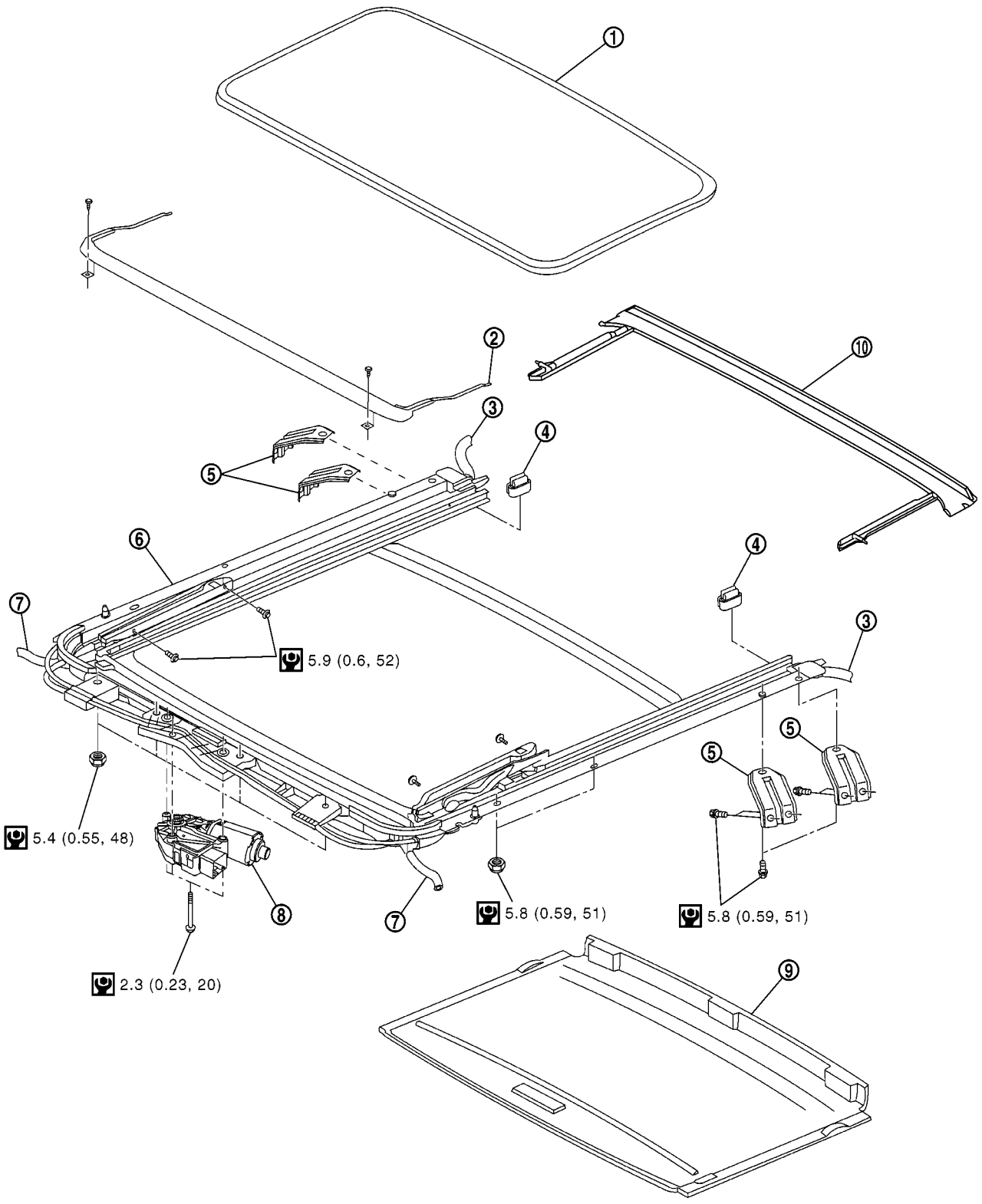
### HEIGHT DIFFERENCE ADJUSTMENT

1. Tilt glass lid up and down.
2. Check height difference between roof panel and glass lid, and compare to “A-A”.

## Removal and Installation

EIS00C0N

**SEC. 736**




MIIB0666E

1. Glass lid
2. Wind deflector
3. Rear drain hoses
4. Shade stoppers
5. Sunroof bracket
6. Sunroof frame assembly
7. Front drain hoses
8. Sunroof motor assembly
9. Sunshade assembly
10. Rear drain assembly

- After any adjustment, check sunroof operation and glass lid alignment.
- Handle glass lid with care so not to cause 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 motor assembly.**
- **After installing the sunroof and glass lid, 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, be sure to check gap adjustment to ensure there is no malfunction.**

1. Remove headlining. Refer to EI-40, "Removal and Installation" .
2. Remove the sunroof glass lid. Refer to RF-22, "GLASS LID" .
3. Disconnect the drain hoses.
4. Remove the mounting nuts from the front end and side rail.
5. Remove the mounting bolts to sunroof bracket and then remove the sunroof unit.

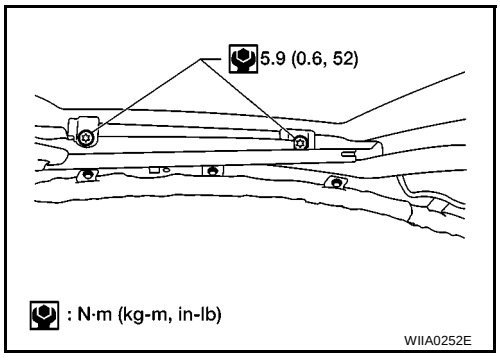
### Installation

1. Position the sunroof frame assembly and temporally tighten the mounting bolts to the sunroof brackets.
2. Tighten the mounting nuts to the front end and side rail.
3. Tighten the mounting bolts to sunroof brackets.
4. Connect the drain hoses.
5. Install the sunroof glass lid. Refer to RF-22, "GLASS LID" .
6. Install headlining. Refer to EI-40, "Removal and Installation" .

## GLASS LID

### Removal

1. Open sunshade.
2. Ensure glass lid is closed.
3. Remove the screws securing glass lid to the sunroof frame assembly.
4. Remove the glass lid assembly.




### Installation

1. Position glass lid to sunroof assembly.
2. Install the glass lid assembly screws. (First tighten left front bolt, then tighten right rear bolt on glass lid to prevent lid from moving while tightening other bolts.)

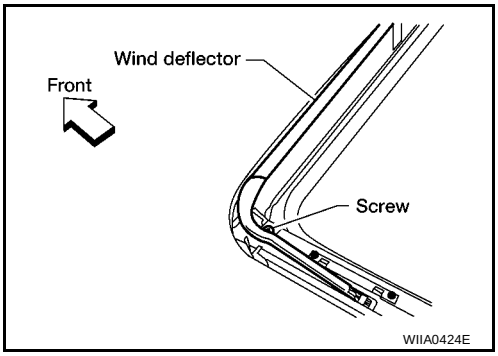
3. Adjust the sunroof glass. Refer to RF-20, "Fitting Adjustment" .

## WIND DEFLECTOR

### Removal

**NOTE:**
Removing is possible even by the on vehicle.

1. Sunroof lid is open.
2. Remove spring hinge screws and then remove hinge from the frame.
3. Remove the stopper from the sunroof assembly.
4. Turn the wind deflector from ditch of the sunroof unit assembly.




### Installation

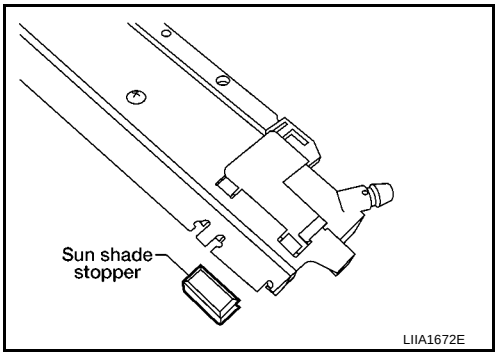
Install in the reverse order of removal.

## SUNSHADE

### Removal

**NOTE:**
Removing is possible even by the on vehicle.

1. Remove headlining. Refer to RF-22, "SUNROOF UNIT" .
2. Remove the sunshade stoppers (2 points) from the rear end of the sunroof frame assembly.
3. Remove the sunshade assembly from the rear end of the sunroof frame assembly.




### Installation

Install in the reverse order of removal.

## SUNROOF MOTOR

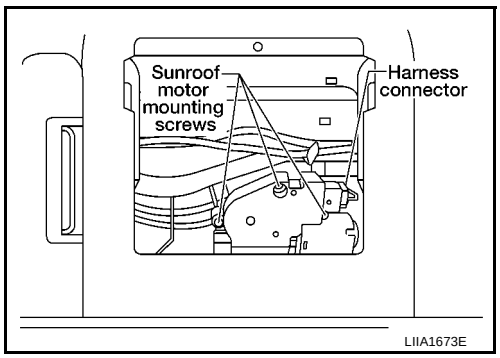
### Removal

**CAUTION:**

- **When removing the sunroof motor, be sure that the sunroof is in the fully closed position.**
- **Never run the removed motor as a single unit.**

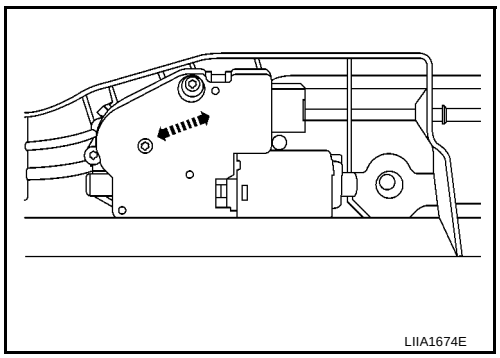
1. Position the sunroof assembly in the fully closed position.
2. Remove the front roof console assembly. Refer to EI-40, "Removal and Installation" .

3. Disconnect the harness connector from the sunroof motor assembly.
4. Remove the mounting screws and the sunroof motor assembly.




## Installation

1. Move the sunroof motor assembly laterally little by little so that the gear is completely engaged into the wire on the sunroof unit and the mounting surface becomes parallel. Then secure the motor with bolts.
2. Connect the wire harness connector to the sunroof motor assembly.



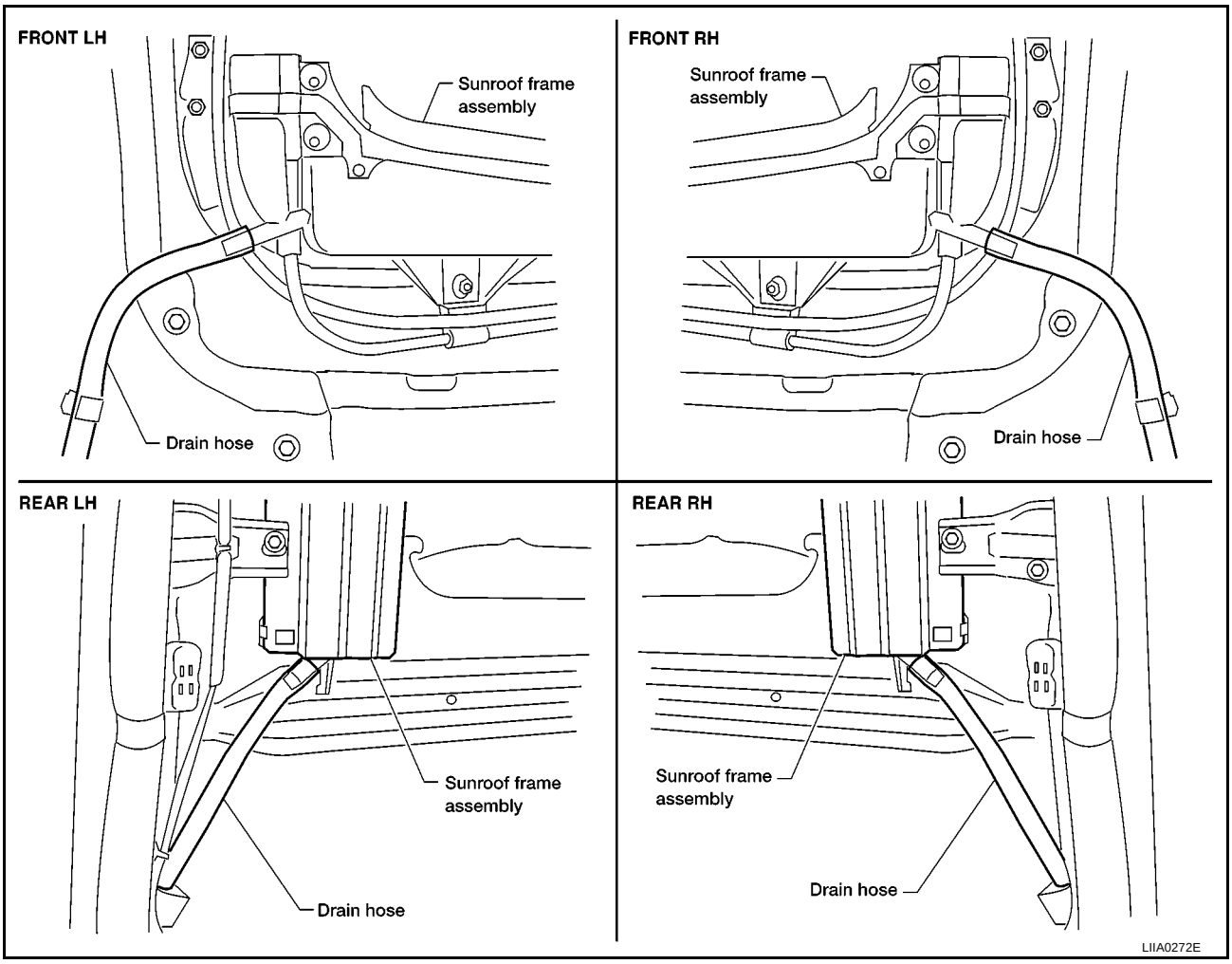

3. Install the roof console assembly. Refer to EI-40, "Removal and Installation" .

**CAUTION:**

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

## DRAIN HOSES

1. Remove the headlining. Refer to EI-40, "Removal and Installation" .




2. Visually check the drain hoses 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.

## WEATHERSTRIP

Visually check weatherstrip for any damage, deterioration, or flattening.

- In the case of leakage around glass lid, close glass lid and pour water around it to find the damaged or gaped portion, remove glass lid assembly.
- If any damage is found, replace glass lid assembly.

**CAUTION:**

**Do not remove weatherstrip.**

## REAR DRAIN ASSEMBLY

### Removal

1. Remove sunroof frame assembly. Refer to RF-22, "SUNROOF UNIT" .
2. Remove sunshade assembly. Refer to RF-23, "SUNSHADE" .
3. Disconnect the rear drain pin from the sunroof link assembly.
4. Remove the rear drain assembly from the rear end of the sunroof frame.

### Installation

Install in the reverse order of removal.

## LINK AND WIRE ASSEMBLY

**NOTE:**

Before replacing any suspect part, carefully ensure 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.