

SECTION **RF**
ROOF

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PRECAUTIONS

PRECAUTIONS

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

AIS002MR

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.
- Disconnect air bag system line 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 benzene.

PREPARATION

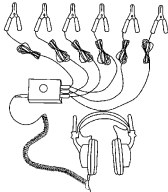
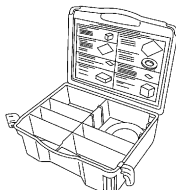
PREPARATION

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Special Service Tools

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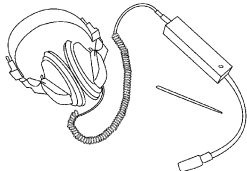
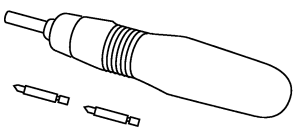
The actual shapes of Kent-Moore tools may differ from those of special service tools illustrated here.

Tool number (Kent-Moore No.) Tool name	Description
<p>(J-39570) Chassis ear</p>  <p style="text-align: right;">SIIA0993E</p>	<p>Location the noise</p>
<p>(J-43980) NISSAN Squeak and Rattle Kit</p>  <p style="text-align: right;">SIIA0994E</p>	<p>Repairing the cause of noise</p>

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Commercial Service Tools

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Tool name	Description
<p>Engine ear</p>  <p style="text-align: right;">SIIA0995E</p>	<p>Location the noise</p>
<p>Power tool</p>  <p style="text-align: right;">PBIC0191E</p>	

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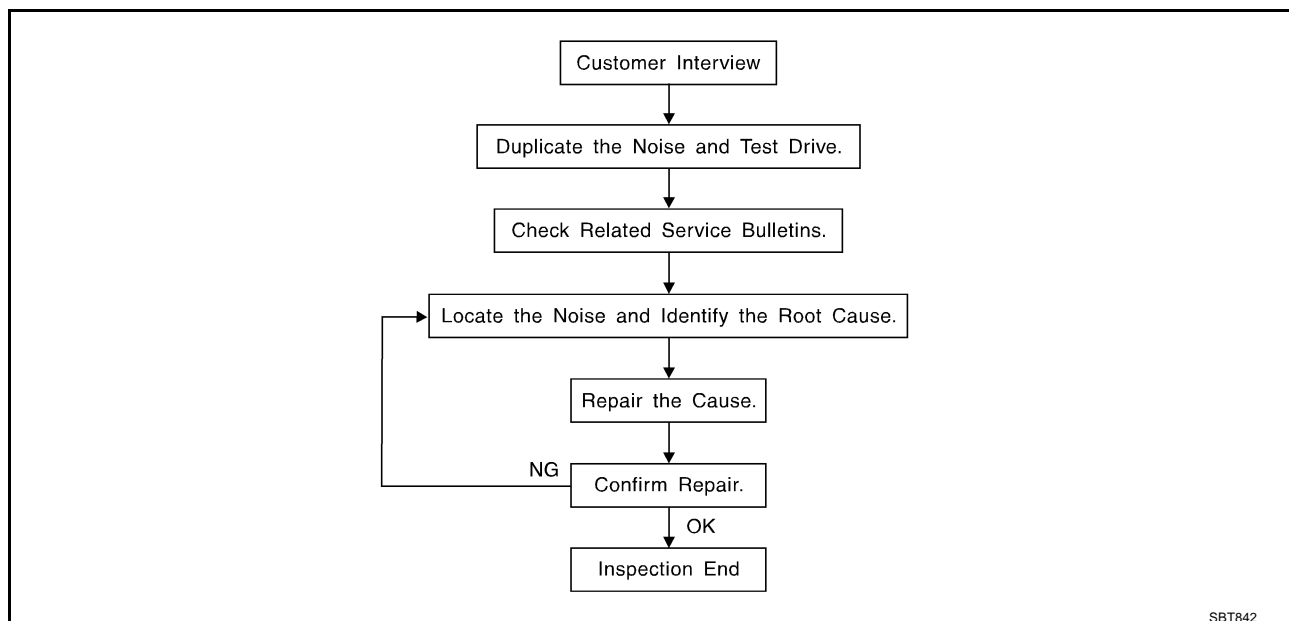
SQUEAK AND RATTLE TROUBLE DIAGNOSES

SQUEAK AND RATTLE TROUBLE DIAGNOSES

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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's 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 very 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: 100×135mm(3.94×5.31 in)/76884-71L01: 60×85mm(2.36×3.35 in)/76884-71L02: 15×25mm(0.59×0.98 in)

INSULATOR (Foam blocks)

Insulates components from contact. Can be used to fill space behind a panel.

73982-9E000: 45mm(1.77 in) thick, 50×50mm(1.97×1.97 in)/73982-50Y00: 10mm(0.39 in) thick, 50×50mm(1.97×1.97 in)

SQUEAK AND RATTLE TROUBLE DIAGNOSES

INSULATOR (Light foam block)

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

FELT CLOTH TAPE

Used to insulate where movement does not occur. Ideal for instrument panel applications.

68370-4B000: 15×25mm(0.59×0.98 in) pad/68239-13E00: 5mm(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 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

AIS001HU

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

INSTRUMENT PANEL

Most incidents are caused by contact and movement between:

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

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

CAUTION:

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

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

SUNROOF/HEADLINER

Noises in the sunroof/headliner 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 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.

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 seat back 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 noise 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

Diagnostic Worksheet

AI5001HV



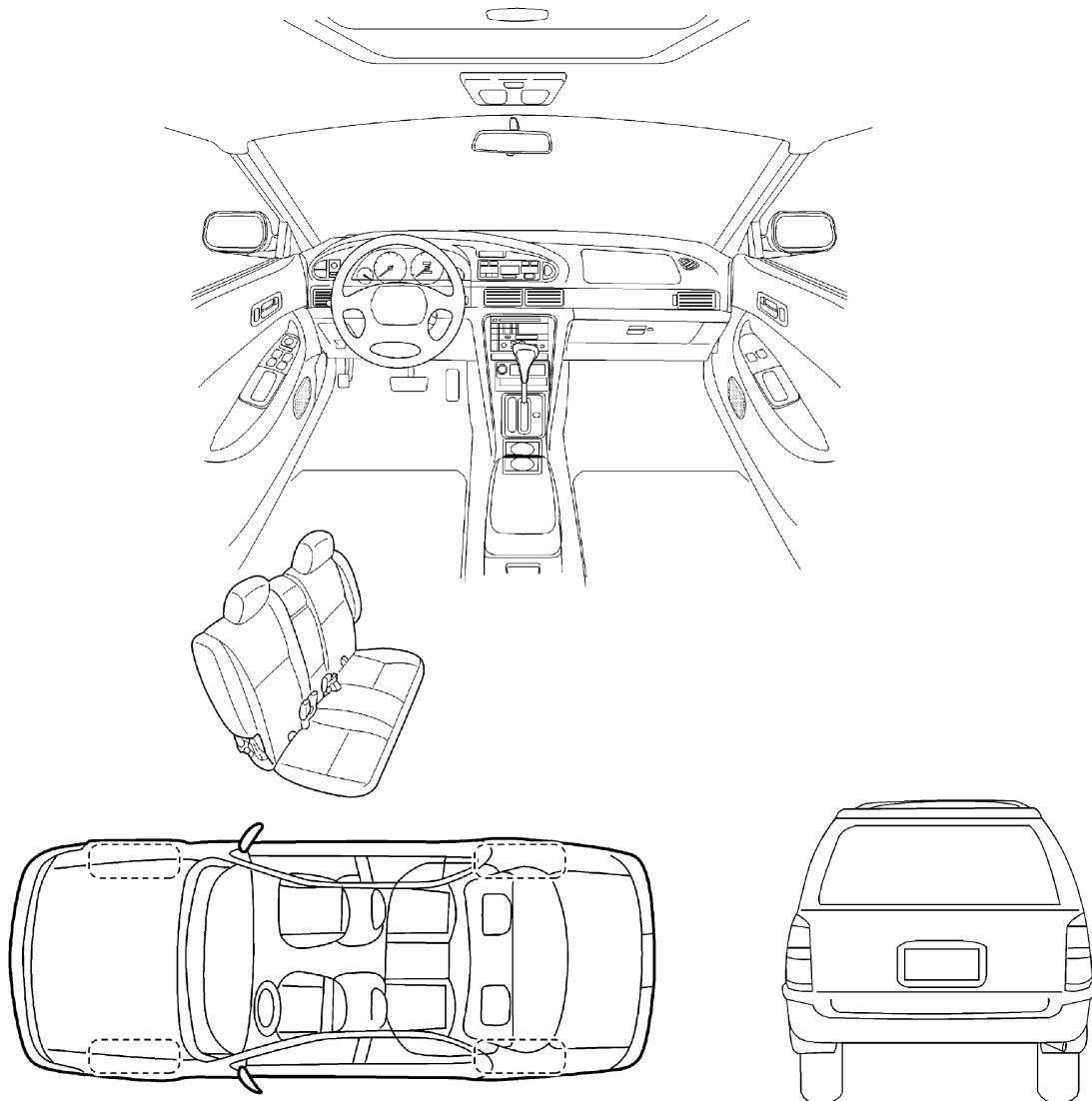
SQUEAK & RATTLE DIAGNOSTIC WORKSHEET

Dear Infiniti Customer:

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

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SQUEAK AND RATTLE TROUBLE DIAGNOSES

SQUEAK & RATTLE DIAGNOSTIC WORKSHEET- page 2

Briefly describe the location where the noise occurs:

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

- | | |
|--|---|
| <input type="checkbox"/> anytime | <input type="checkbox"/> after sitting out in the sun |
| <input type="checkbox"/> 1 st 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 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	<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: _____

SBT844

This form must be attached to Work Order

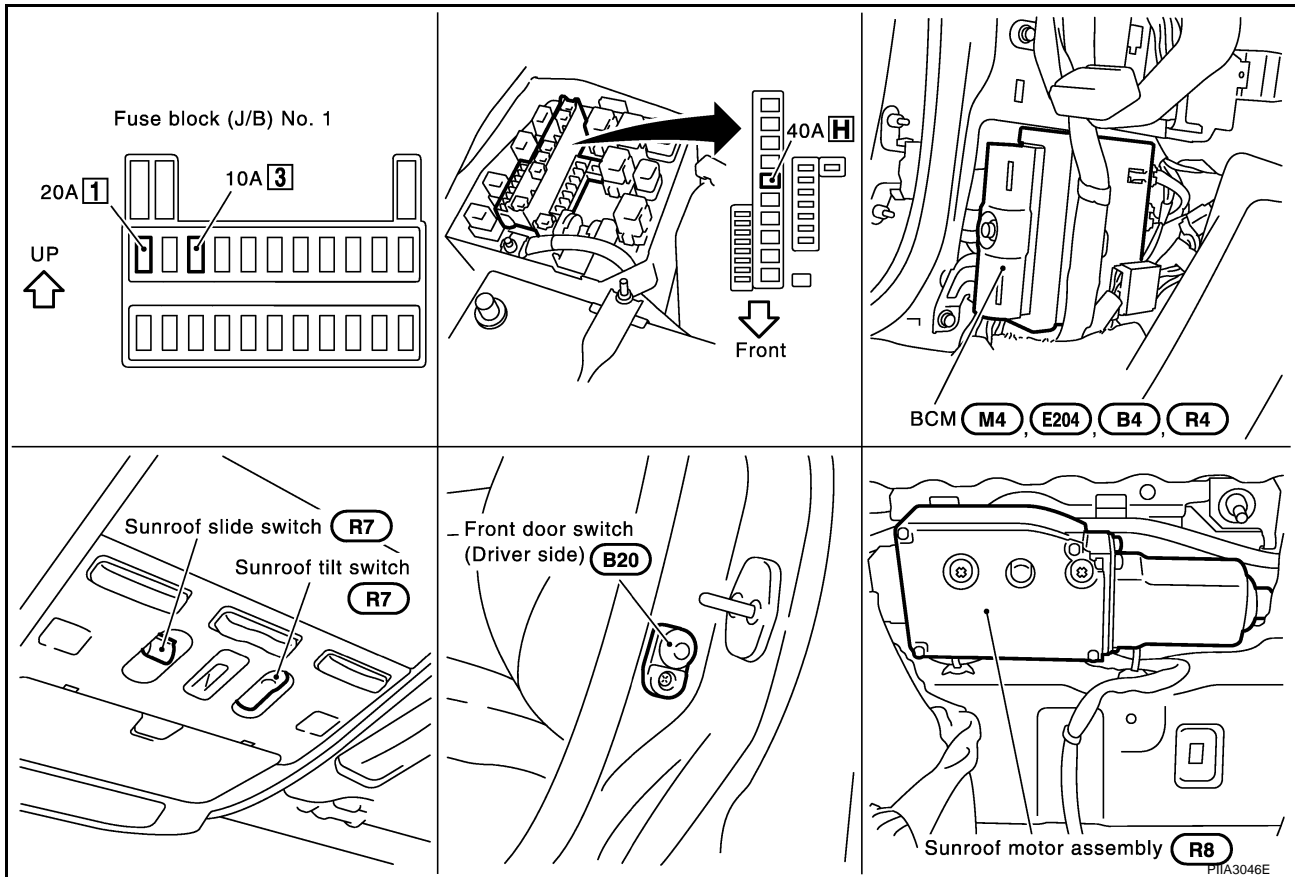
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SUNROOF

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Component Parts and Harness Connector Location

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System Description OUTLINE

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Electric sunroof system consists of

- Sunroof switch
- Sunroof motor assembly
- BCM (Body Control Module)

BCM control the operation of sunroof motor.

Power is supplied to sunroof motor assembly from BCM.

Sunroof will be operated depending on sunroof switch condition.

OPERATION

- The sunroof can be tilted up or down with the sunroof switch.
- The sunroof can be opened or closed automatically with the sunroof switch.

SUNROOF

DELAYED POWER OPERATION

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

- to sunroof motor assembly terminal 6
- from BCM terminal 135.

Then the electrical sunroof can be operated.

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

ANTI – PINCH SYSTEM

The CPU of sunroof motor monitors the sunroof motor operation and the sunroof position (full closed or other) by the signals from sunroof motor.

When sunroof motor detects interruption during the following close operation, sunroof switch controls the motor for open and the sunroof will operate about 150 mm (5.91 in).

The operation condition is the following.

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

INITIALIZATION PROCEDURE

If the battery is disconnected or the sunroof motor harness connector is disconnected or the sunroof cannot close or open automatically, use the following procedure to return sunroof operation to normal.

1. Make sure that sunroof lid is in CLOSE state.

NOTE:

When sunroof lid is not in CLOSE state, repeat and operate the CLOSE switch or TILT switch, and make it operate to CLOSE state.

2. Pushing the CLOSE switch or TILT switch to CLOSE for approximately 1 second or more.
3. Operate the sunroof switch and make sure that auto operation functions normally.

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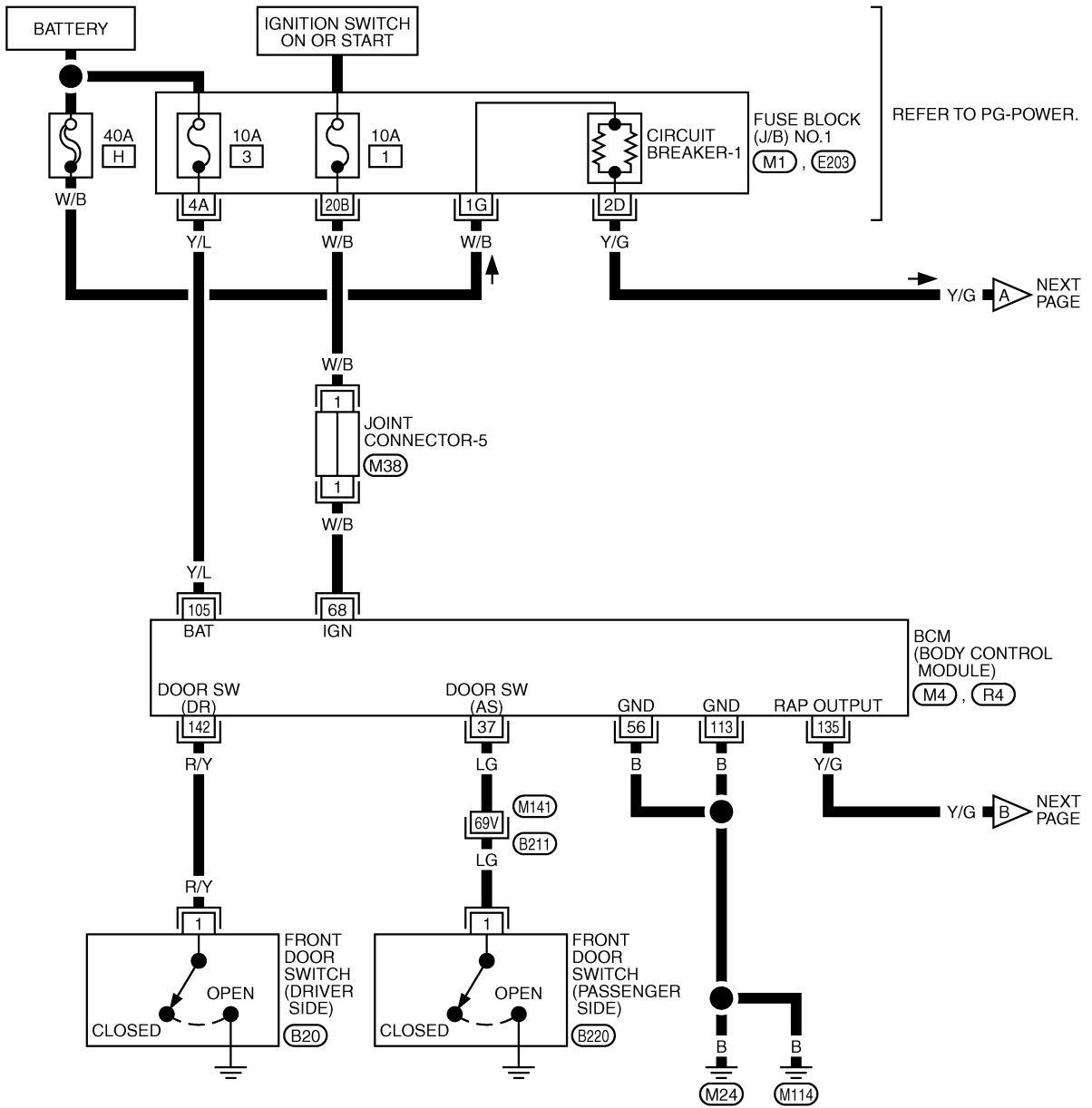
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SUNROOF

Wiring Diagram — SROOF —

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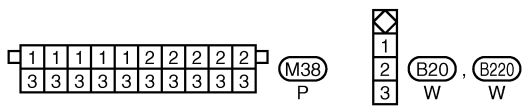
RF-SROOF-01



REFER TO PG-POWER.

NEXT PAGE

NEXT PAGE



REFER TO THE FOLLOWING.

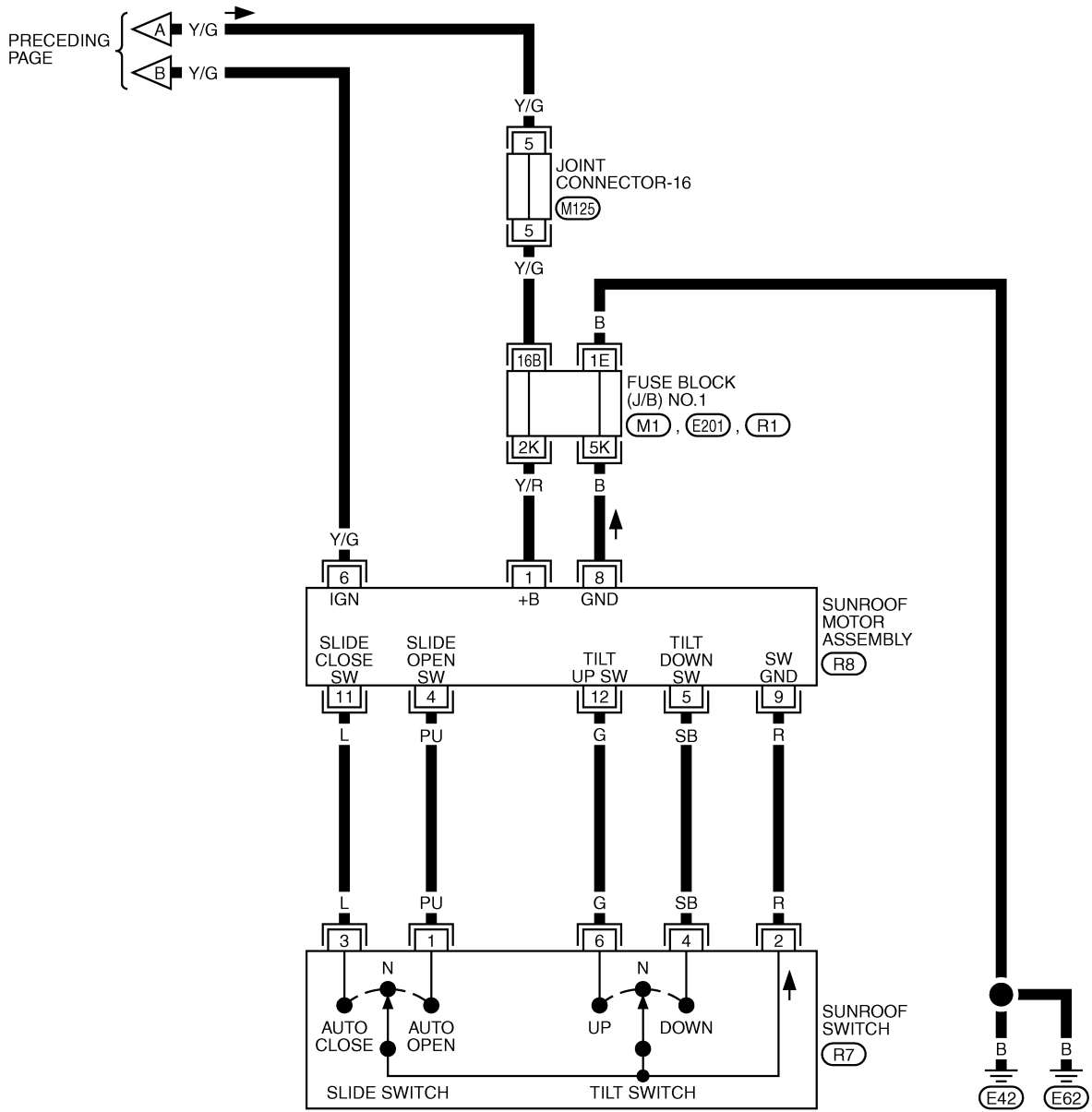
- (B21) -SUPER MULTIPLE JUNCTION (SMJ)
- (M1), (E203) -FUSE BLOCK-JUNCTION BOX (J/B) NO.1
- (M4), (R4) -ELECTRICAL UNITS

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SUNROOF

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4	4	4	4	4	5	5	5	5

(M125)
B

4	1
2	3

(R7)
BR

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12	11	10	9	8	7	6

(R8)
W

REFER TO THE FOLLOWING.
(M1), (E201), (R1) - FUSE
BLOCK-JUNCTION BOX (J/B) NO.1

TIWA0234E

SUNROOF

Terminals and Reference Value for BCM

AIS002EO

TER-MINAL	WIRE COLOR	ITEM	CONDITION	Voltage (V) (Approx.)
37	LG	Passenger side door switch	ON (Open) →OFF (Close)	0→Battery voltage
56	B	Ground	—	—
68	W/B	Ignition switch ON or START	Ignition switch (ON or START position)	Battery voltage
105	Y/L	BAT power supply	—	Battery voltage
113	B	Ground	—	0
135	Y/G	RAP (sunroof timer)	Ignition key is in "ON" position	Battery voltage
			More than 45 seconds after ignition switch is turned to OFF	0
			When driver side and passenger side door is open in power window timer is operates.	0
142	R/Y	Driver side door switch	ON (Open)→OFF (Close)	0→Battery voltage

Terminals and Reference Value for Sunroof Motor

AIS001HZ

TER-MINAL	WIRE COLOR	ITEM	CONDITION	Voltage (V) (Approx.)
1	Y/R	Power source (FUSE)	—	Battery voltage
4	PU	Sunroof OPEN switch	Sunroof switch OPEN operation	Battery voltage→0
5	SB	Sunroof TILT DOWN switch	Sunroof switch TILT DOWN operation	Battery voltage→0
6	Y/G	RAP (sunroof timer)	Ignition key is in "ON" position	Battery voltage
			More than 45 seconds after ignition switch is turned to OFF	0
			When driver side and passenger side door is open in power window timer is operates.	0
8	B	Ground	—	0
9	R	Sunroof switch ground	—	0
11	L	Sunroof CLOSE switch	Sunroof switch CLOSE operation	Battery voltage→ 0
12	G	Sunroof TILT UP switch	Sunroof switch TILT UP operation	Battery voltage→ 0

Work Flow

AIS002MT

1. Check the symptom and customer's requests.
2. Understand the outline of system. Refer to [RF-10, "System Description"](#) .
3. The preliminary check. Refer to [RF-15, "Preliminary Check"](#) .
4. According to the trouble diagnosis chart, repair or replace the cause of the malfunction. Refer to [RF-17, "Trouble Diagnoses Symptom Chart"](#) .
5. Does sunroof operate normally?
OK: GO TO 6.
NG: GO TO 4.
6. Inspection end.

SUNROOF

AIS002MU

Preliminary Check POWER SUPPLY AND GROUND CIRCUIT INSPECTION

1. FUSE INSPECTION

- Check that any of the following fuses in the BCM is blown.

Unit	Terminal NO.	Power source	Fuse NO.
BCM	105	BAT power supply	#3
	68	IGN power supply	#1

NOTE:

Refer to [RF-10, "Component Parts and Harness Connector Location"](#) .

OK or NG?

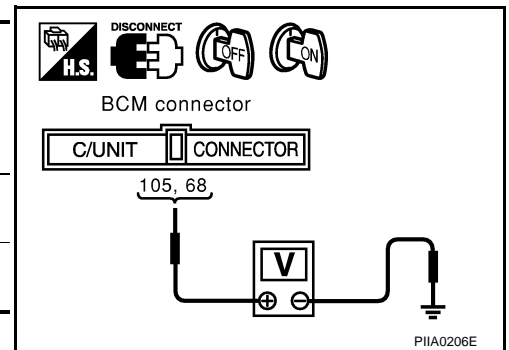
OK >> GO TO 2.

NG >> If fuse is blown, be sure to eliminate cause of problem before installing new fuse. Refer to [PG-2, "POWER SUPPLY ROUTING"](#) .

2. POWER SUPPLY CIRCUIT INSPECTION (BCM)

- Turn ignition switch OFF.
- Disconnect the BCM connector M4, check voltage between connector terminal (refer to the "Chart" below) of the harness connector and ground.

Terminals		Power source	Condition	Voltage(V) (Approx.)
(+)	(-)			
Connector	Terminal (Wire color)			
M4	105(Y/L)	BAT power supply	Ignition switch OFF	Battery voltage
	68(W/B)	IGN power supply	Ignition switch ON	Battery voltage



OK or NG?

OK >> GO TO 3.

NG >> Check harness for open and short between BCM and fuse.

3. GROUND CIRCUIT INSPECTION (BCM)

Check continuity between BCM connector M4 terminals and ground.

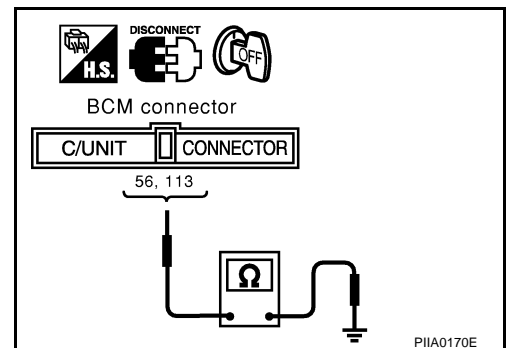
56 (B) – Ground :Continuity should exist.

113 (B) – Ground :Continuity should exist.

OK or NG?

OK >> System is OK.

NG >> Repair or replace harness.



SUNROOF

CONSULT-II Function

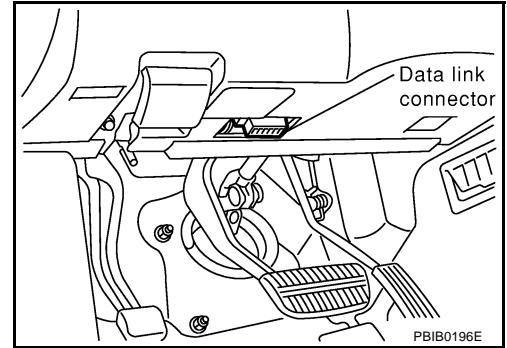
AI500110

CONSULT-II executes the following functions by combining data reception and command transmission via the communication line from the BCM.

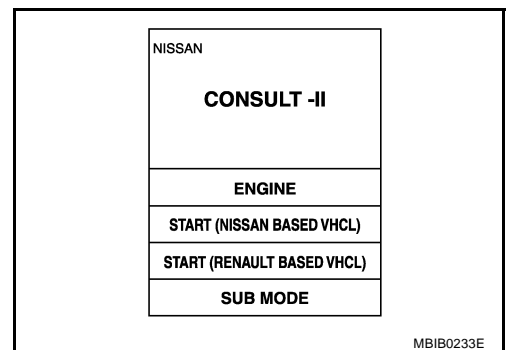
Self-diagnosis mode	Content
Date monitor	Displays BCM input date on real-time basis.
Active test	It can confirm whether the sunroof control signal is active or inactive.

CONSULT-II INSPECTION PROCEDURE

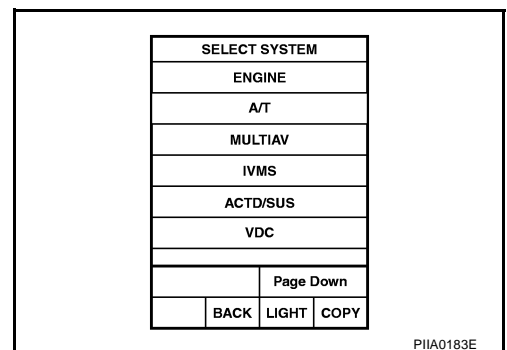
1. Turn ignition switch "OFF".
2. Connect "CONSULT-II" and "CONSULT-II CONVERTER" to data link connector.



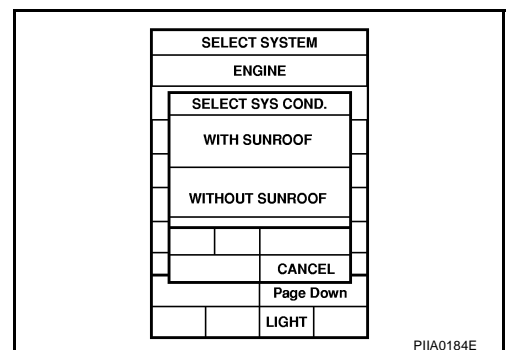
3. Turn ignition switch "ON".
4. Touch "START (NISSAN BASED VHCL)".



5. Touch "IVMS" on the "SELECT SYSTEM" screen. If "IVMS" is not indicated, go to [GI-39, "INSPECTION PROCEDURE"](#)

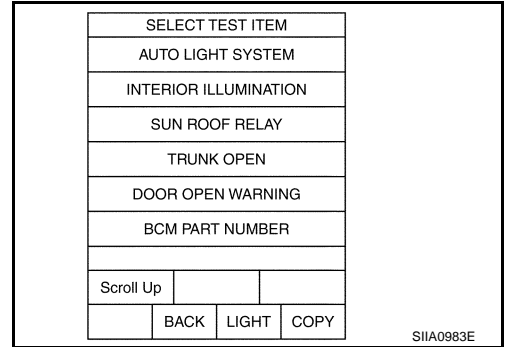


6. Touch "WITH SUNROOF" on the "SELECT SYS COND" screen.
7. Touch "OK". If the selection is wrong, touch "CANCEL".



SUNROOF

8. Touch "SUNROOF RELAY" on the "SELECT TEST ITEM" screen.
9. Select diagnosis mode.
"DATE MONITOR" and "ACTIVE TEST"



DATA MONITOR

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

Sunroof signal	Sunroof
ON	Operated.
OFF	Not operated.

Trouble Diagnoses Symptom Chart

AI500111

Symptom	Faulty system and reference	Refer to page
Sunroof does not operate	1. RAP signal circuit check	RF-18
	2. Sunroof switch check	RF-18
	3. Sunroof motor assembly power supply and ground circuit check	RF-18
	4. Sunroof motor assembly circuit check	RF-19
	5. Replace sunroof motor assembly	RF-22
Retained power operation does not operate properly	1. Door switch check	RF-20
Anti-pinch system does not operate properly	1. Sunroof rail sliding part malfunction <ul style="list-style-type: none"> ● A foreign material adheres to sunroof rail ● Weather strip wear or deformation 	-
	2. Replace sunroof motor assembly	RF-27
Motor does not stop at the sunroof fully open or fully closed position	Replace sunroof motor assembly	RF-27

SUNROOF

AI500112

Sunroof Switch Check

1. CHECK SUNROOF SWITCH

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

OPEN switch operation

1 – 2 : Continuity should exist.

CLOSE switch operation

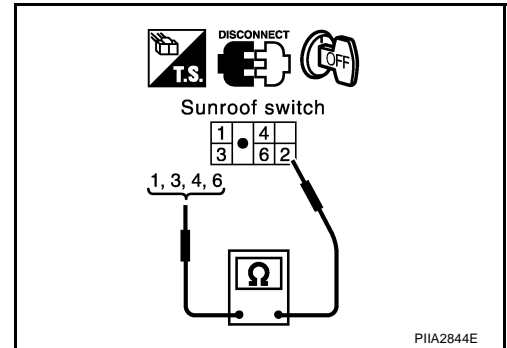
3 – 2 : Continuity should exist.

TILT DOWN switch operation

4 – 2 : Continuity should exist.

TILT UP switch operation

6 – 2 : Continuity should exist.



OK or NG

- OK >> Sunroof switch is OK.
NG >> Replace sunroof switch.

Sunroof Motor Assembly Power Supply and Ground Circuit Check

AI500113

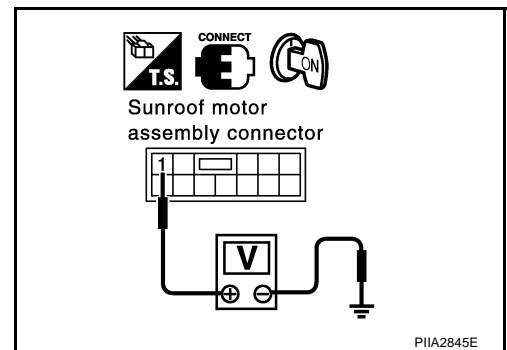
1. CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch ON.
2. Check voltage between sunroof motor assembly connector R8 terminal 1 and ground.

1 (Y/R) – Ground : Battery voltage

OK or NG

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



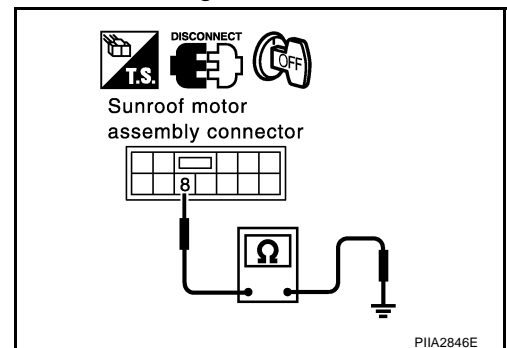
2. CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect sunroof motor assembly connector.
3. Check continuity between sunroof motor assembly connector R8 terminal 8 and ground.

8 (B) – Ground : Continuity should exist.

OK or NG?

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



SUNROOF

AIS00114

Sunroof Motor Assembly Circuit Check

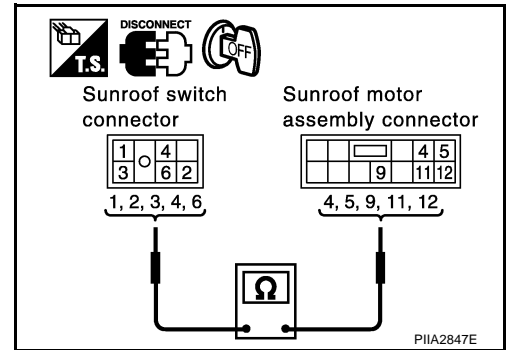
1. CHECK HARNESS CONTINUITY

1. Turn the ignition switch OFF.
2. Disconnect sunroof switch and sunroof motor assembly connector.
3. Check continuity between sunroof switch connector R7 terminals 1, 2, 3, 4, 6 and sunroof motor assembly connector R8 terminals 4, 5, 9, 11, 12.

- 1 (PU) – 4 (PU) : Continuity should exist.**
2 (R) – 9 (R) : Continuity should exist.
3 (L) – 11 (L) : Continuity should exist.
4 (SB) – 5 (SB) : Continuity should exist.
6 (G) – 12 (G) : Continuity should exist.

OK or NG?

- OK >> Sunroof motor assembly circuit is OK.
 NG >> Repair or replace harness.



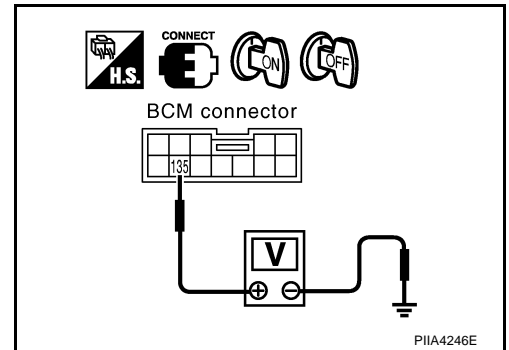
RAP Signal Circuit Check

1. CHECK BCM OUTPUT SIGNAL

AIS002EP

Check voltage between BCM connector and ground.

Connector	Terminals (Wire color)		Condition	Voltage (V) (Approx.)
	(+)	(-)		
R4	135 (Y/G)	Ground	Ignition switch is "ON" position	Battery voltage
			More than 45 seconds after ignition switch is turned to OFF	0
			When driver side and passenger side door is open in power window timer is operates	0



OK or NG

- OK >> GO TO 2.
 NG >> Replace BCM.

2. CHECK HARNESS CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect BCM and sunroof motor assembly connector.
3. Check continuity between BCM connector R4 terminal 135 and sunroof motor assembly connector R8 terminal 6.

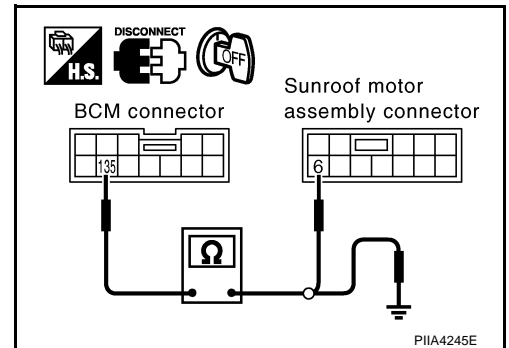
135 (Y/G) – 6 (Y/G) :Continuity should exist.

4. Check continuity between BCM connector R4 terminal 135 and ground.

135 (Y/G) – Ground :Continuity should not exist.

OK or NG

- OK >> Replace sunroof motor assembly.
 NG >> Repair or replace harness BCM and sunroof motor assembly.



SUNROOF

AIS001N9

Door Switch Check

1. CHECK DOOR SWITCH INPUT SIGNAL

① With CONSULT-II

- Check door switch in "DATE MONITOR" mode with CONSULT-II.

When door is opened :DOOR SW ON
When door is closed :DOOR SW OFF

DATA MONITOR	
MONITOR	
DOOR SW - DR	OFF
DOOR SW - AS	OFF

PIIA2464E

⊗ Without CONSULT-II

- Check all door switches in switch monitor mode. Refer to "Remote keyless entry system" [BL-79, "SWITCH MONITOR"](#).

OK or NG

OK >> Door switch is OK.
NG >> GO TO 2.

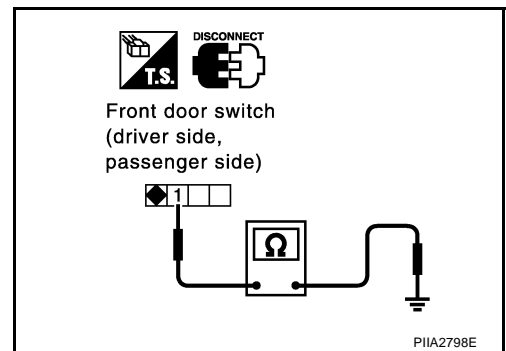
2. CHECK DOOR SWITCH

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

Door switch connector		Terminals (Wire color)	Condition	Continuity
Front door switch (driver side)	B20	1(R/Y) – Ground	Pressed	No
			Released	Yes
Front door switch (passenger side)	B220	1(LG) – Ground	Pressed	No
			Released	Yes

OK or NG

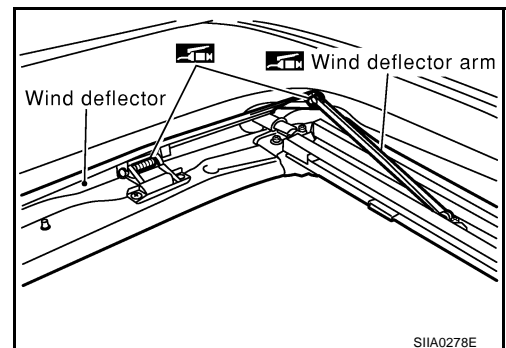
OK >> Check harness for open or short between door switch and BCM.
NG >> Check door switch ground condition.



Wind Deflector Inspection

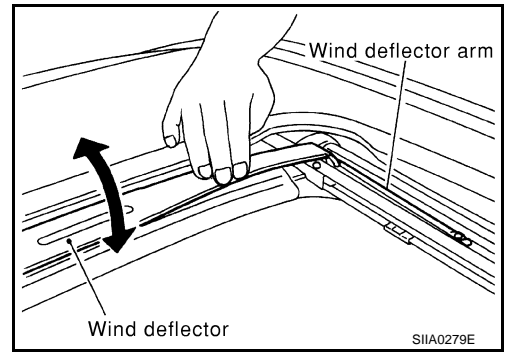
AIS001I5

1. Open glass lid.
2. Visually check that it is installed properly.
3. Check that the wind deflector is properly greased. If necessary, apply grease.



SUNROOF

4. Make sure the wind deflector is properly raised by manual. If a malfunction is detected, remove and visually check it. If it is damaged, replace it with a new one. If no damage is found, reinstall it properly.



Link and Wire Assembly

AI500116

NOTE:

Before replacing a suspect part, carefully ensure it is the source of noise being experienced.

1. Check link to determine if coating film has peeled off to such an extent that substrate is visible. Check also to determine if link is the source of noise. If it is, replace it.
2. Visually check to determine if a sufficient amount of grease has been applied to wire or rail groove. If not, add grease as required.
3. Check wire for any damage or deterioration. If any damage is found, remove rear guide, then replace wire.

Fitting Adjustment

AI500117

	a	b
A - A	14.7 - 16.1 (0.579 - 0.634)	0.8 - 2.2 (0.031 - 0.087)
B - B	15.2 - 16.6 (0.598 - 0.654)	0.3 - 1.7 (0.012 - 0.067)
C - C	15.6 - 17.0 (0.614 - 0.669)	0.2 - 1.6 (0.008 - 0.063)

Unit: mm (in)

PIIA3048E

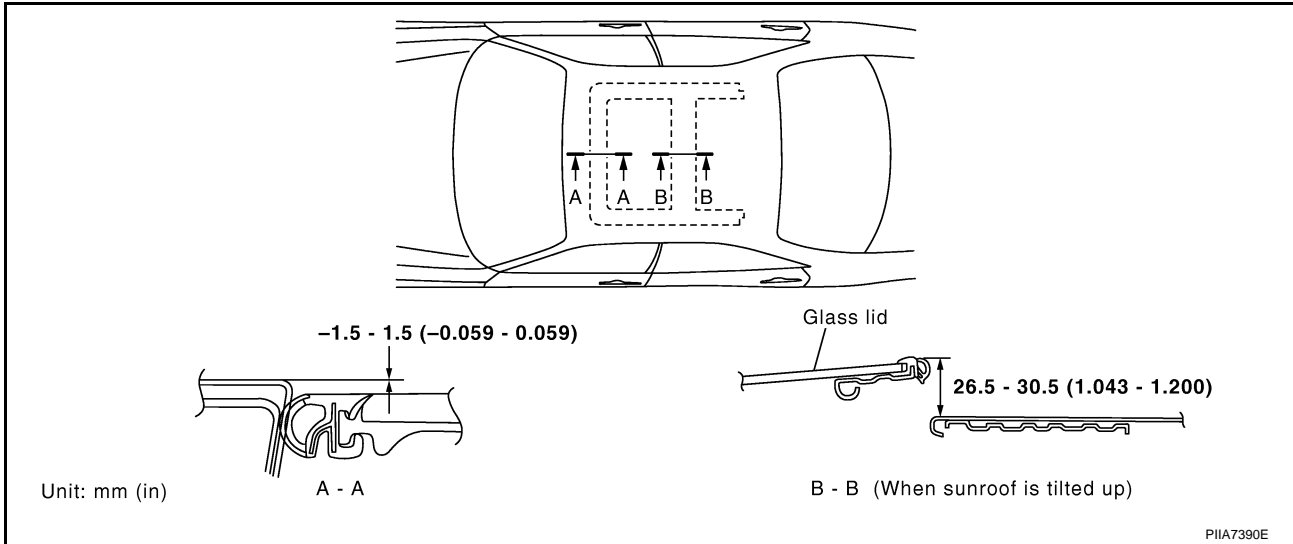
GAP ADJUSTMENT

1. Remove shade assembly.
2. Tilt glass lid up then remove side trims.
3. Loosen glass lid securing nuts, then tilt glass lid down.
4. Adjust glass lid from outside of vehicle so it resembles "A - A" "B - B" as shown in the figure above.
5. Tilt glass lid up and down until it is adjusted to "C - C" as shown in the figure above.
6. After adjusting glass lid, tilt glass lid up and tighten nuts.
7. Tilt glass lid up and down several times to check that it moves smoothly.

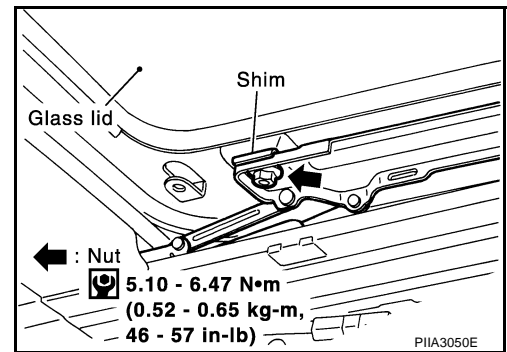
SUNROOF

HEIGHT DIFFERENCE ADJUSTMENT

1. Tilt glass lid up and down.
2. Check height difference between roof panel and glass lid to see if it is as "A - A" and "B - B" as shown in the figure above.



3. If necessary, adjust it by using one of following procedures.
 - Adjust by adding or removing adjustment shim(s) between glass lid and link assembly.
 - If glass lid protrudes above roof panel, add shim(s) or plain washer at sunroof mounting bracket or stud bolt locations to adjust sunroof installation as required.



Removal and Installation

- After any adjustment, check sunroof operation and lid alignment.
- Handle finisher plate and glass lid with care so not to cause damage.
- It is desirable for easy installation to mark each point before removal.

CAUTION:

- Always work with a helper.
- Fully close the glass lid assembly, before removal, then do not operate motor assembly after removal.

SUNROOF

7. Side trim

8. Sunshade

9. Sunroof unit bracket

10. Drain plate

11. Link and wire assembly

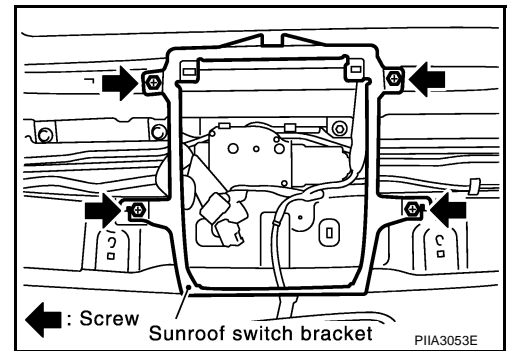
SUNROOF UNIT

Removal

CAUTION:

- Always work with a helper.
- When taking sunroof unit out, use clothes to protect the seats and trim from damage.
- After installing the sunroof unit and glass lid, be sure to carry out the leak test and check that there is no malfunction.

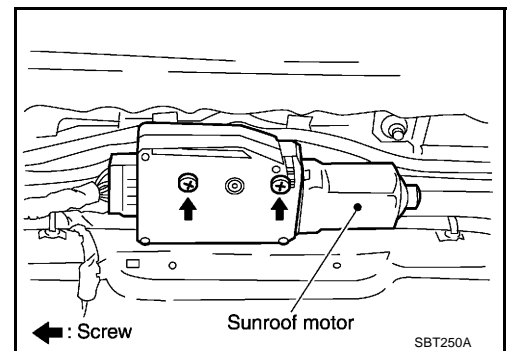
1. Remove the headlining. Refer to [EI-39, "Removal and Installation"](#).
2. Disconnect drain hoses.
3. Remove glass lid.
4. Remove screws, and remove the sunroof switch bracket.



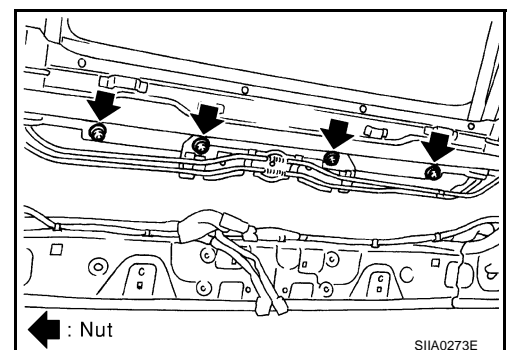
5. Remove motor mounting screws. Remove sunroof motor and disconnect harness connector.

CAUTION:

- Before removing sunroof motor, make sure that sunroof is fully closed.
- After removing sunroof motor, never attempt to rotate sunroof motor as a single unit.



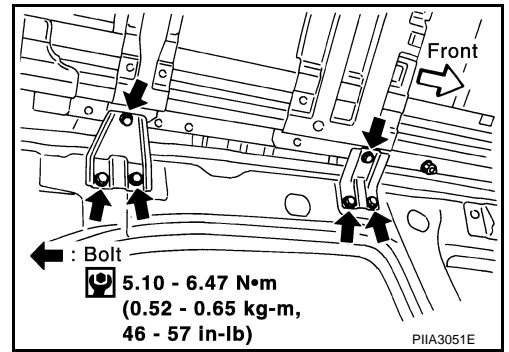
6. Remove nuts on the front end and side rail.



7. Remove the side curtain air bag module. Refer to [SRS-45, "Removal and Installation"](#).

SUNROOF

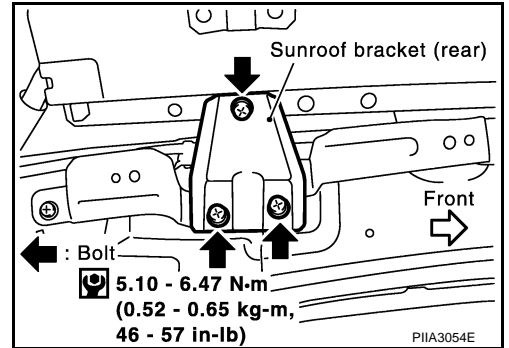
8. Remove front sunroof bracket bolts.
9. Remove rear sunroof bracket bolts, and remove sunroof unit from roof panel.
10. Remove sunroof unit through the passenger compartment while being careful not to damage the seats and trim.



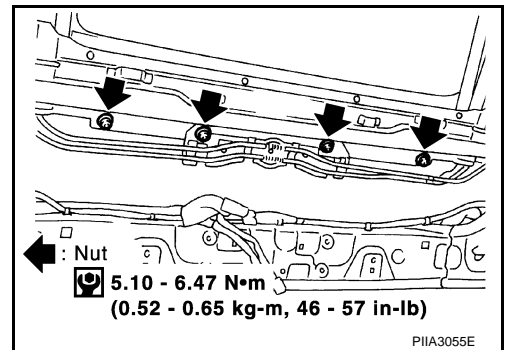
A
B
C
D
E
F
G
H

Installation

1. Temporarily tighten the mounting bolts on the rear sunroof brackets (RH/LH).



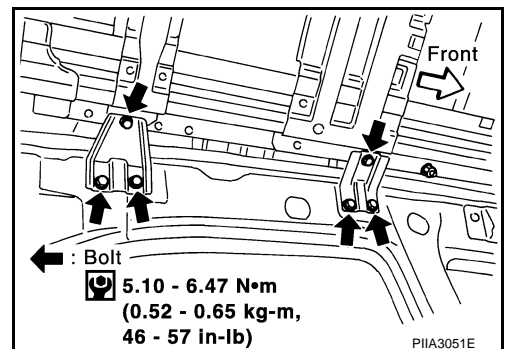
2. Bring sunroof unit into passenger compartment and place the rear end of the rail onto the rear sunroof brackets.
3. Temporarily tighten the mounting nuts on the front end.



RF

J
K
L

4. Tighten the installation points diagonally excluding the installation point of the sunroof bracket around the roof opening.
5. Tighten the bolts on the front sunroof bracket at the vehicle side, and then at the rail side.
6. Tighten the bolts on the rear sunroof bracket at the vehicle side, and then at the rail side.



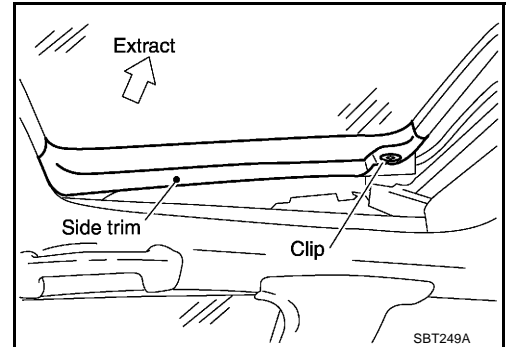
M

SUNROOF

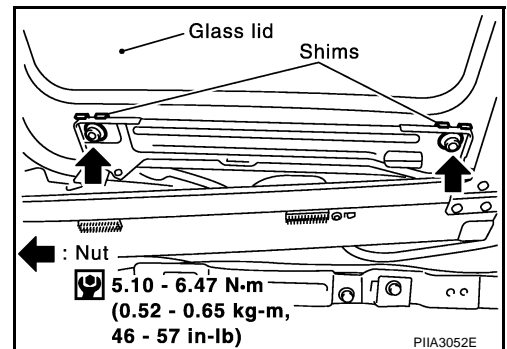
GLASS LID

Removal

1. Tilt up glass lid.
2. Pull the side trims out of the retainer to remove it from glass lid and link assembly.



3. Check the number of shims between glass lid and link, and remove mounting bolt to remove glass lid.



Installation

1. Tighten bolts diagonally on the glass lid.
2. After installation, carry out fitting adjustment.

SUNSHADE

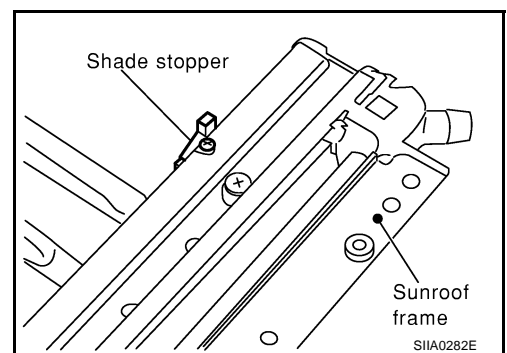
Removal and Installation

CAUTION:

Before removing or installing the sunshade, be sure to remove the sunroof unit from the vehicle.

1. Loosen shade stopper mounting screws on the rear end of the sunroof frame to remove stopper.
2. Pull sunshade out of the rear end of the sunroof frame, and remove it from the frame.

Install in the reverse order of removal.

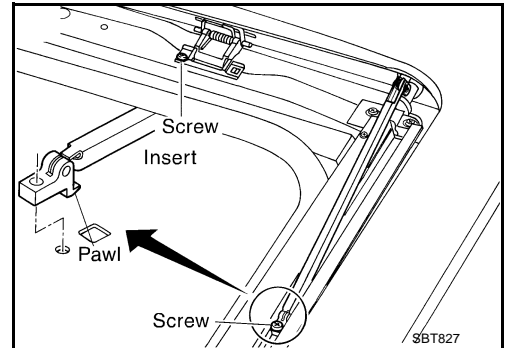


SUNROOF

WIND DEFLECTOR

Removal and Installation

1. Remove screws from left and right sides of each wind deflector holder. Extract pawls through rail holes, then remove left and right sides of wind deflector holder.
2. Remove screws from front end of sunroof unit. Extract pawls through frame holes, then remove wind deflector from frame assembly.



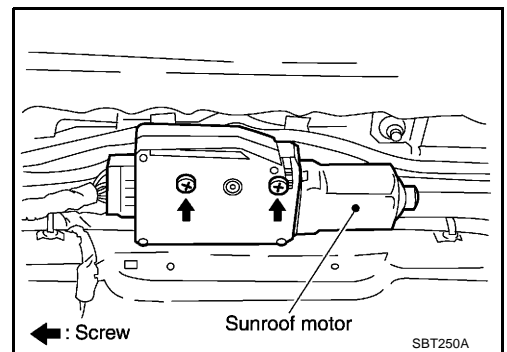
SUNROOF MOTOR

Removal

1. Remove headlining.
2. Remove motor mounting screw.
3. Disconnect harness connector to remove sunroof motor.

CAUTION:

- When removing the sunroof motor, be sure that the sunroof is in the fully open position.
- After removing sunroof motor, never attempt to rotate sunroof motor as a single unit.



Installation

1. Move the motor 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 screws.

CAUTION:

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

A
B
C
D
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RF
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K
L
M

SUNROOF
