

Brought to you by Eris Studios
NOT FOR RESALE

**SUNROOF
T-TOP CONVERTIBLE TOP
(SUNROOF)**

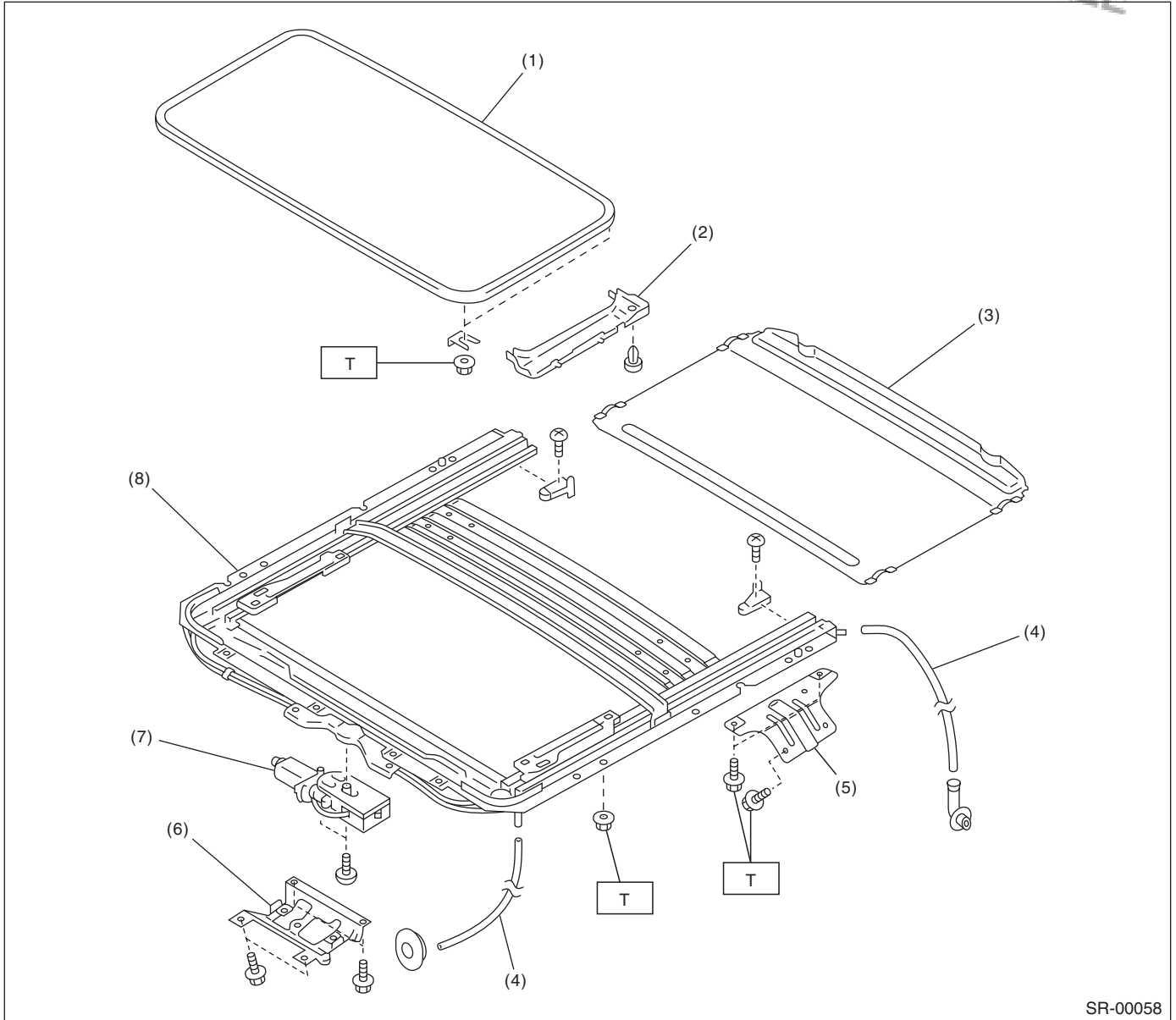
General Description

SUNROOF/T-TOP/CONVERTIBLE TOP (SUNROOF)

1. General Description

A: COMPONENT

Brought to you by Eris Studios
NOT FOR RESALE



SR-00058

- | | |
|----------------------|---------------------|
| (1) Glass lid | (5) Sunroof bracket |
| (2) Guide rail cover | (6) Motor cover |
| (3) Sunshade | (7) Motor ASSY |
| (4) Drain tube | (8) Frame ASSY |

Tightening torque: N·m (kgf·m, ft·lb)
T: 7.4 (0.75, 5.4)

General Description

SUNROOF/T-TOP/CONVERTIBLE TOP (SUNROOF)

B: CAUTION

- Before disassembling or reassembling parts, always disconnect the battery ground cable from battery. When replacing the radio, control unit, and other parts provided with memory functions, record the memory contents before disconnecting the battery ground cable in order to prevent memory deletion.
- Reassemble the parts in the reverse order of disassembly unless otherwise indicated.
- Adjust parts to the given specifications.
- Connect the connectors and hoses securely during reassembly.
- After reassembly, make sure functional parts operate smoothly.

C: PREPARATION TOOL

1. GENERAL TOOL

TOOL NAME	REMARKS
Circuit tester	Used for measuring resistance and voltage.

Sunroof Control System

SUNROOF/T-TOP/CONVERTIBLE TOP (SUNROOF)

2. Sunroof Control System

A: WIRING DIAGRAM

1. SUNROOF

<Ref. to WI-167, WIRING DIAGRAM, Sunroof Control System.>

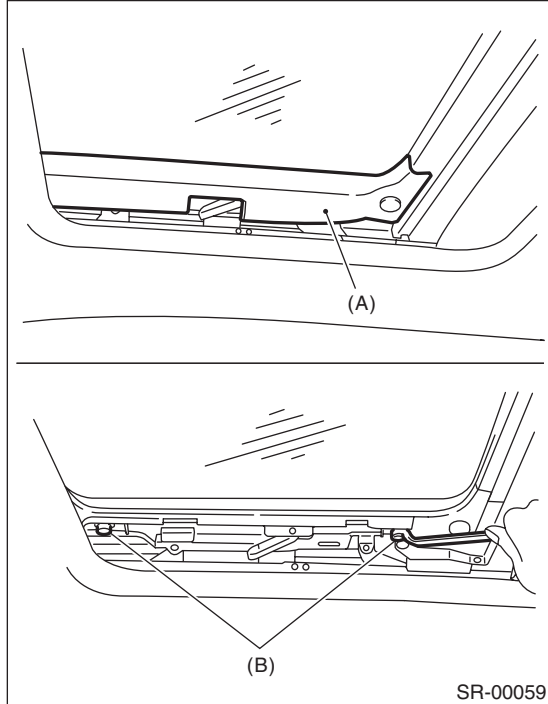
B: INSPECTION

Symptom	Inspection order
Water leakage	<ol style="list-style-type: none">1. Check roof panel and glass lid for improper or poor sealing.2. Check drain tube for clogging.3. Check sunroof frame seal and body for improper fit.
Booming noise, wind noise and other noise	<ol style="list-style-type: none">1. Check glass lid and roof panel for improper clearance.2. Check sunshade and roof trim for improper clearance.
Abnormal motor noise	<ol style="list-style-type: none">1. Check motor for looseness.2. Check gears and bearings for wear.3. Check cable for wear.4. Check cable pipe for deformities.
Failure of sunroof (Motor operates properly.)	<ol style="list-style-type: none">1. Check guide rail for foreign particles.2. Check guide rail for improper installation.3. Check parts for mutual interference.4. Check cable slider for improper clinching.5. Check cable for improper installation.6. Check clutch adjusting nut for improper tightness.
Motor does not rotate or rotate improperly.	<ol style="list-style-type: none">1. Check fuse for blown out.2. Check switch for improper function.3. Check motor for incorrect terminal voltage.4. Check relay for improper operation.5. Check poor grounding system.6. Check harness for open or short and terminals for poor connections.7. Check limit switch for improper operation.

3. Glass Lid

A: REMOVAL

- 1) Completely close the glass lid, and then open the sunshade.
- 2) Remove the cover (A), then remove the nuts (B).



- 3) Remove the glass lid carefully.

B: INSTALLATION

Install in the reverse order of removal.

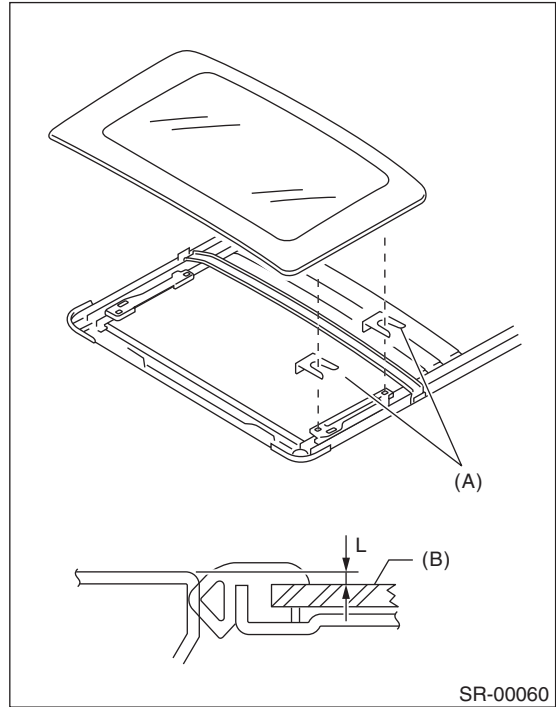
C: ADJUSTMENT

1. ADJUSTMENT OF HEIGHT BETWEEN GLASS LID AND ROOF PANEL

Loosen the glass lid installation nuts, and then adjust the height by adding (max: three pieces) or extracting (min: zero pieces) shims (normally one piece) which are installed between the glass lid and the body.

Difference in height between sunroof and roof panel L:

$2.0 \pm 0.5 \text{ mm}$ ($0.079 \pm 0.020 \text{ in}$)



- (A) Shim
- (B) Glass lid

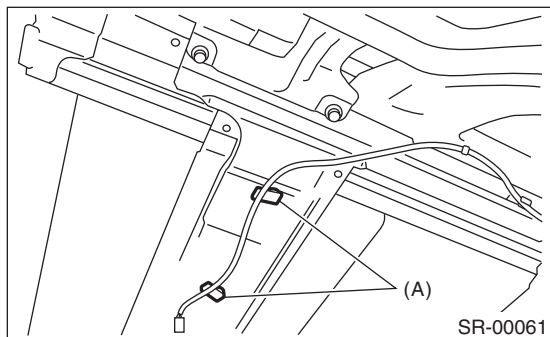
Sunroof Assembly

SUNROOF/T-TOP/CONVERTIBLE TOP (SUNROOF)

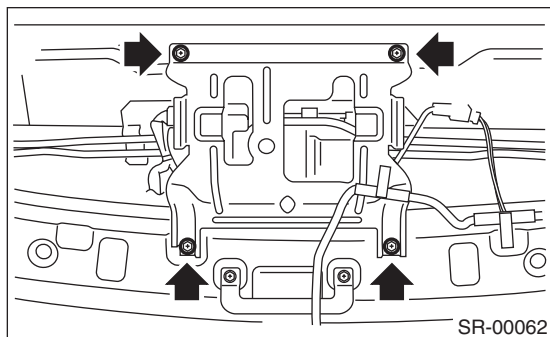
4. Sunroof Assembly

A: REMOVAL

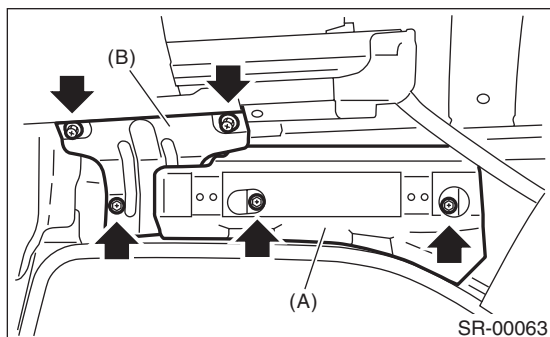
- 1) Disconnect the ground cable from the battery.
- 2) Remove the roof trim. <Ref. to EI-55, REMOVAL, Roof Trim.>
- 3) Remove the glass lid. <Ref. to SR-5, REMOVAL, Glass Lid.>
- 4) Disconnect the drain tube from the sunroof frame.
- 5) Remove the room light harness clips (A).



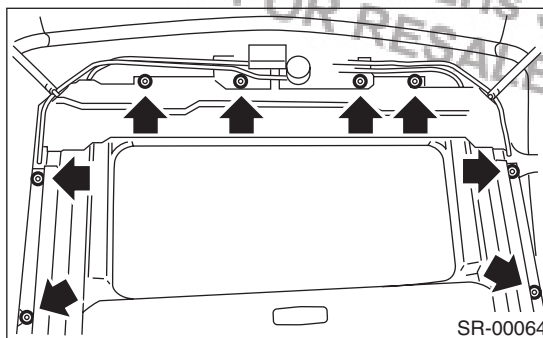
- 6) Disconnect the harness connector of the sunroof.
- 7) Remove the motor cover.



- 8) Remove the assist grip bracket (A) and sunroof bracket (B).



- 9) Remove the nuts to remove the sunroof frame.



B: INSTALLATION

Install in the reverse order of removal.

Tightening torque:

7.4 N·m (0.75 kgf-m, 5.46 ft-lb)

CAUTION:

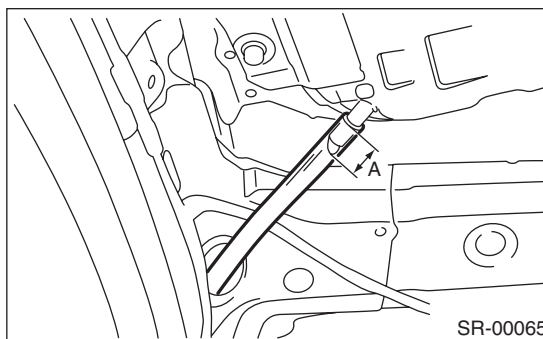
Be careful not to snag the harness.

NOTE:

- Be sure to connect the harness connector.
- When installing the drain tube, insert it securely into drain pipe.

Length A:

15 mm (0.59 in) or more

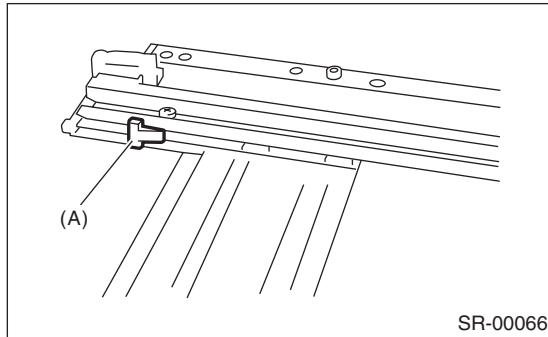


Sunroof Assembly

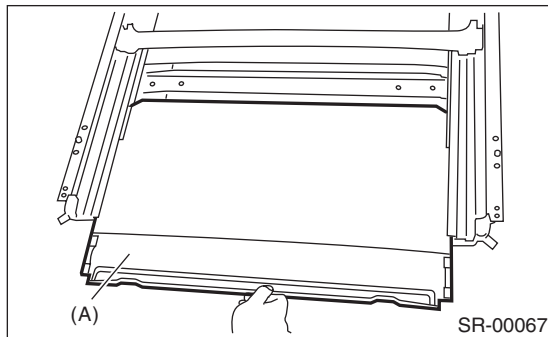
SUNROOF/T-TOP/CONVERTIBLE TOP (SUNROOF)

C: DISASSEMBLY

- 1) Remove the sunroof frame.
- 2) Remove the rail stopper (A).



- 3) Pull out the sunshade (A) from the sunroof frame.



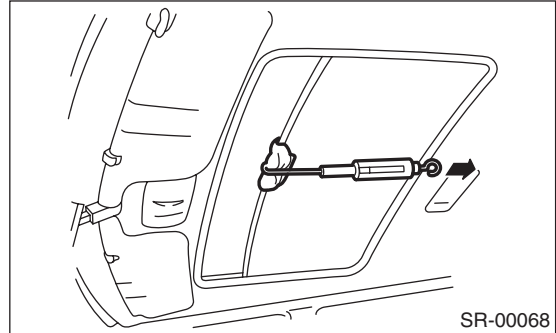
D: ASSEMBLY

Assemble in the reverse order of disassembly.

E: INSPECTION

1. CHECK FOR MOVING LOAD OF SUNSHADE

- 1) Attach a spring scale to sunshade edge using a cloth.



- 2) Pull the spring scale to measure moving load of the sunshade.

Moving load of the rear sunshade:

Less than 24.5 ± 4.9 N (2.5 ± 0.5 kgf, 5.5 ± 1.1 lbf)

NOTE:

Moving load is larger at the beginning of pulling a spring scale, so take a spring scale reading while sunshade sliding smoothly.

- 3) If moving load exceeds specifications, check the glass lid, sunshade and guide rail assembly for improper installation.

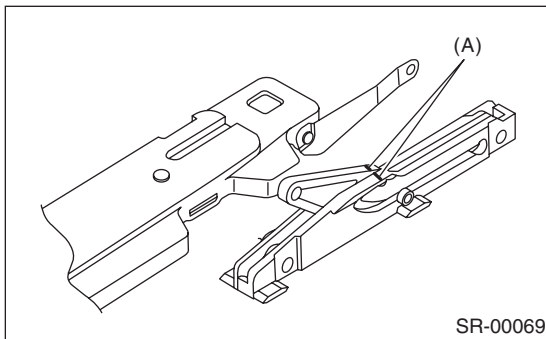
5. Sunroof Motor

A: REMOVAL

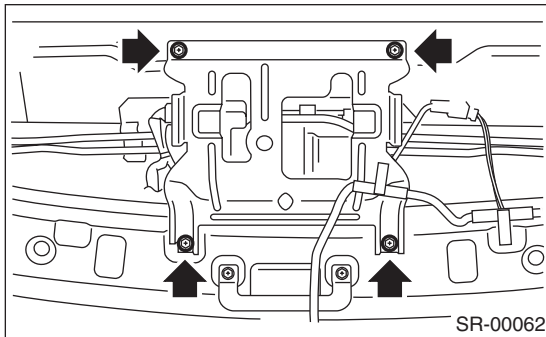
CAUTION:

- When removing the clip, use great care not to damage the roof trim.
- Never rotate the sunroof motor after removing it.

- 1) Completely close the sunroof.
- 2) Disconnect the ground cable from the battery.
- 3) Remove the glass lid. <Ref. to SR-5, REMOVAL, Glass Lid.>
- 4) Confirm the alignment mark (A) of sunroof bracket link and the guide of the sunroof opening. (If the mark does not align, adjust to align the mark.)



- 5) Remove the roof trim. <Ref. to EI-55, REMOVAL, Roof Trim.>
- 6) Remove the motor cover.



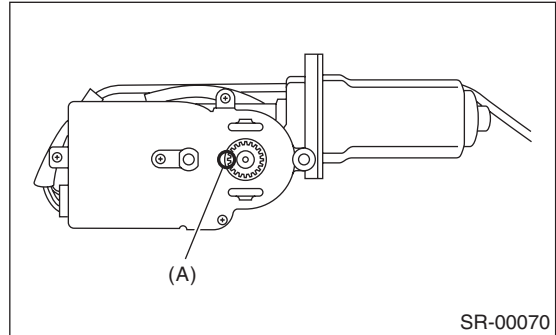
- 7) Disconnect the harness connector, and then remove the sunroof motor mounting screw.

B: INSTALLATION

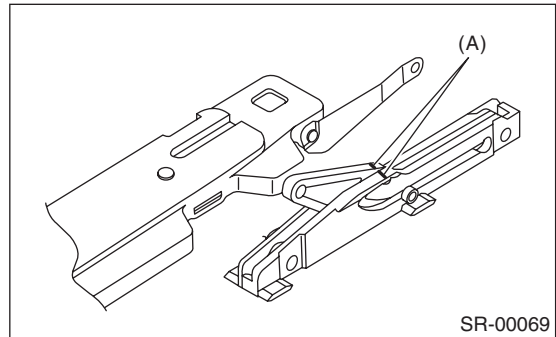
CAUTION:

When installing the sunroof motor assembly, be careful not to move the sunroof cable.

- 1) Check the alignment mark (A) of the sunroof motor.



- 2) Confirm the alignment mark (A) of the sunroof bracket link.



- 3) Install the sunroof motor.
- 4) After installing the motor, reconfirm the alignment marks of motor side and sunroof bracket link side.
- 5) Connect the sunroof motor harness connector of motor assembly, and then connect the battery ground cable to battery.
- 6) Check the operation of the sunroof with the procedure as shown in the table.

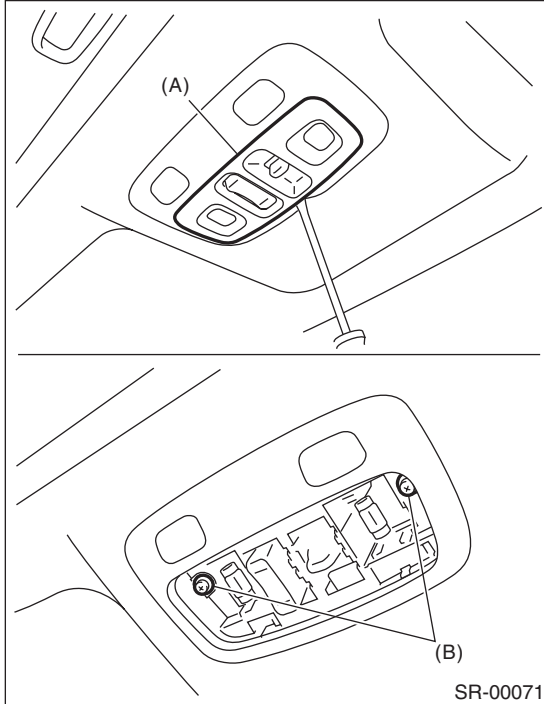
Inspection order	Switch position
1. Sunroof closes completely.	Close
2. Sunroof tilt up to the top position.	Tilt up
3. Sunroof lowers down completely.	Tilt down
4. Sunroof opens to just before the completely open position.	Open
5. Sunroof opens completely.	Open
6. Sunroof closes 150 mm (5.91 in) away from the completely closed position.	Close
7. Sunroof closes completely.	Close

- 7) Install parts on the glass lid and trim in reverse order of removal.

6. Sunroof Switch

A: REMOVAL

- 1) Disconnect the ground cable from the battery.
- 2) Remove the spot map light lens (A) and sunroof switch mounting screws (B).



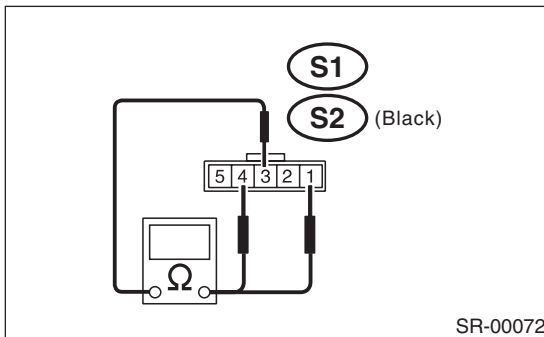
- 3) Disconnect the harness connector, and then remove the sunroof switch.

B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

Measure the sunroof switch resistance.



Switch	Terminal No.	Standard value
Open	S1: 3 and 4	Less than 1 Ω
Close	S1: 1 and 3	Less than 1 Ω
Tilt up	S2: 3 and 4	Less than 1 Ω
Tilt down	S2: 1 and 3	Less than 1 Ω

Sunroof Switch

SUNROOF/T-TOP/CONVERTIBLE TOP (SUNROOF)

Brought to you by Eris Studios
NOT FOR RESALE