

**BODY SECTION**

This service manual has been prepared to provide SUBARU service personnel with the necessary information and data for the correct maintenance and repair of SUBARU vehicles.

This manual includes the procedures for maintenance, disassembling, reassembling, inspection and adjustment of components and diagnostics for guidance of experienced mechanics.

Please peruse and utilize this manual fully to ensure complete repair work for satisfying our customers by keeping their vehicle in optimum condition. When replacement of parts during repair work is needed, be sure to use SUBARU genuine parts.

All information, illustration and specifications contained in this manual are based on the latest product information available at the time of publication approval.

FUJI HEAVY INDUSTRIES LTD.

**HVAC SYSTEM  
(HEATER, VENTILATOR AND A/C) AC**

**AIRBAG SYSTEM AB**

**SEAT BELT SYSTEM SB**

**LIGHTING SYSTEM LI**

**WIPER AND WASHER SYSTEMS WW**

**ENTERTAINMENT ET**

**COMMUNICATION SYSTEM COM**

**GLASS/WINDOWS/MIRRORS GW**

**BODY STRUCTURE BS**

**INSTRUMENTATION/DRIVER INFO IDI**

**SEATS SE**

**SECURITY AND LOCKS SL**

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

**EXTERIOR/INTERIOR TRIM EI**

**EXTERIOR BODY PANELS EB**

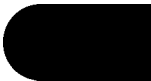
**CRUISE CONTROL SYSTEM CC**

# SUNROOF/T-TOP/CONVERTIBLE TOP (SUNROOF)

**SR**



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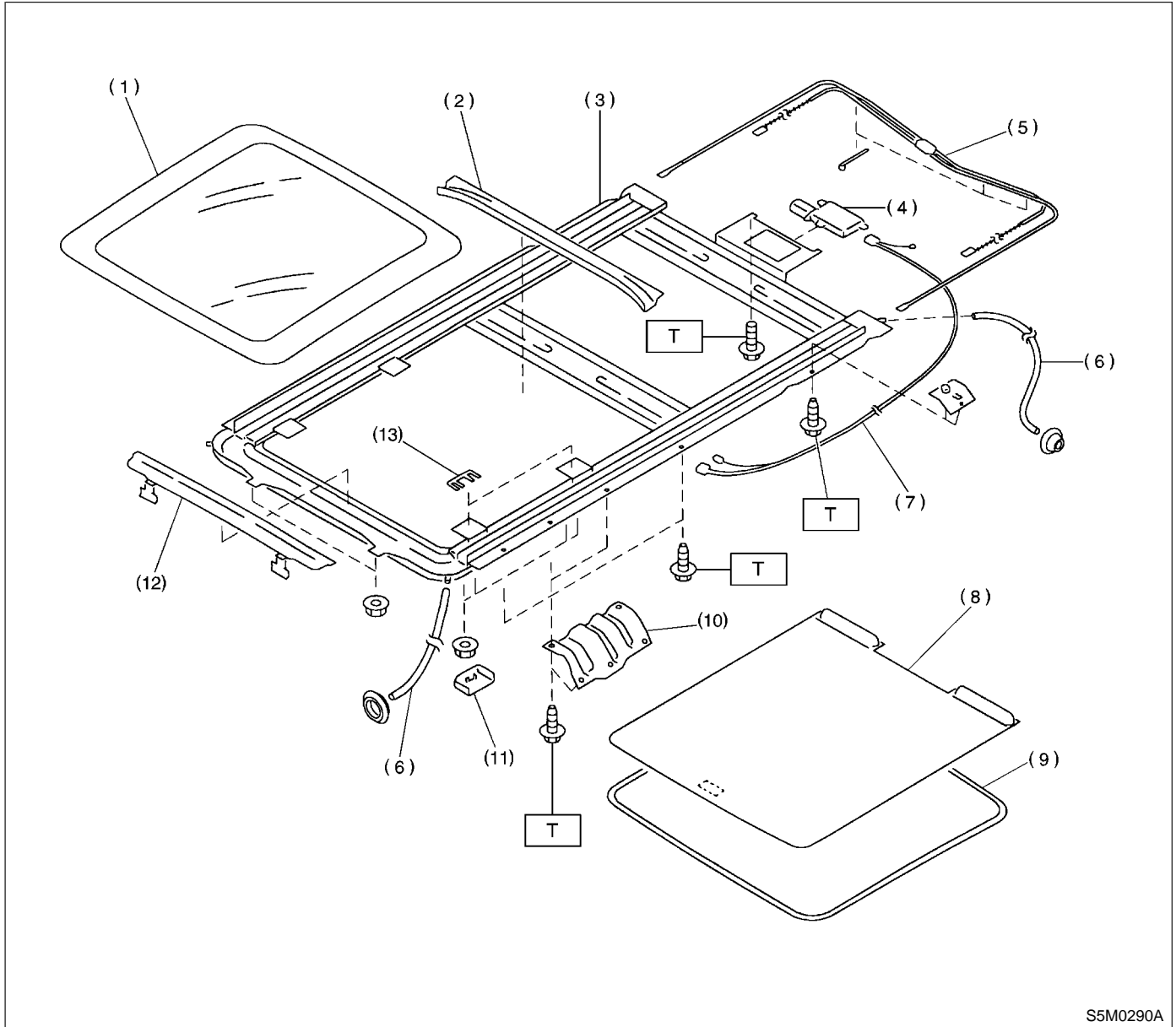


# GENERAL DESCRIPTION

Sunroof/T-top/Convertible Top (Sunroof)

## 1. General Description S910001

### A: COMPONENT S910001A05



S5M0290A

# GENERAL DESCRIPTION

Sunroof/T-top/Convertible Top (Sunroof)

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- (1) Glass lid
- (2) Rear drain ASSY
- (3) Frame ASSY
- (4) Motor ASSY
- (5) Drive unit
- (6) Drain tube
- (7) Harness
- (8) Sunshade
- (9) Garnish
- (10) Frame bracket
- (11) Cover
- (12) Deflector
- (13) Shim

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***Tightening torque: N-m (kgf-m, ft-lb)***

***T: 7.4 (0.75, 5.4)***

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# GENERAL DESCRIPTION

Sunroof/T-top/Convertible Top (Sunroof)

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## **B: CAUTION** S910001A03

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

## **C: PREPARATION TOOL** S910001A17

### **1. GENERAL TOOLS** S910001A1701

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

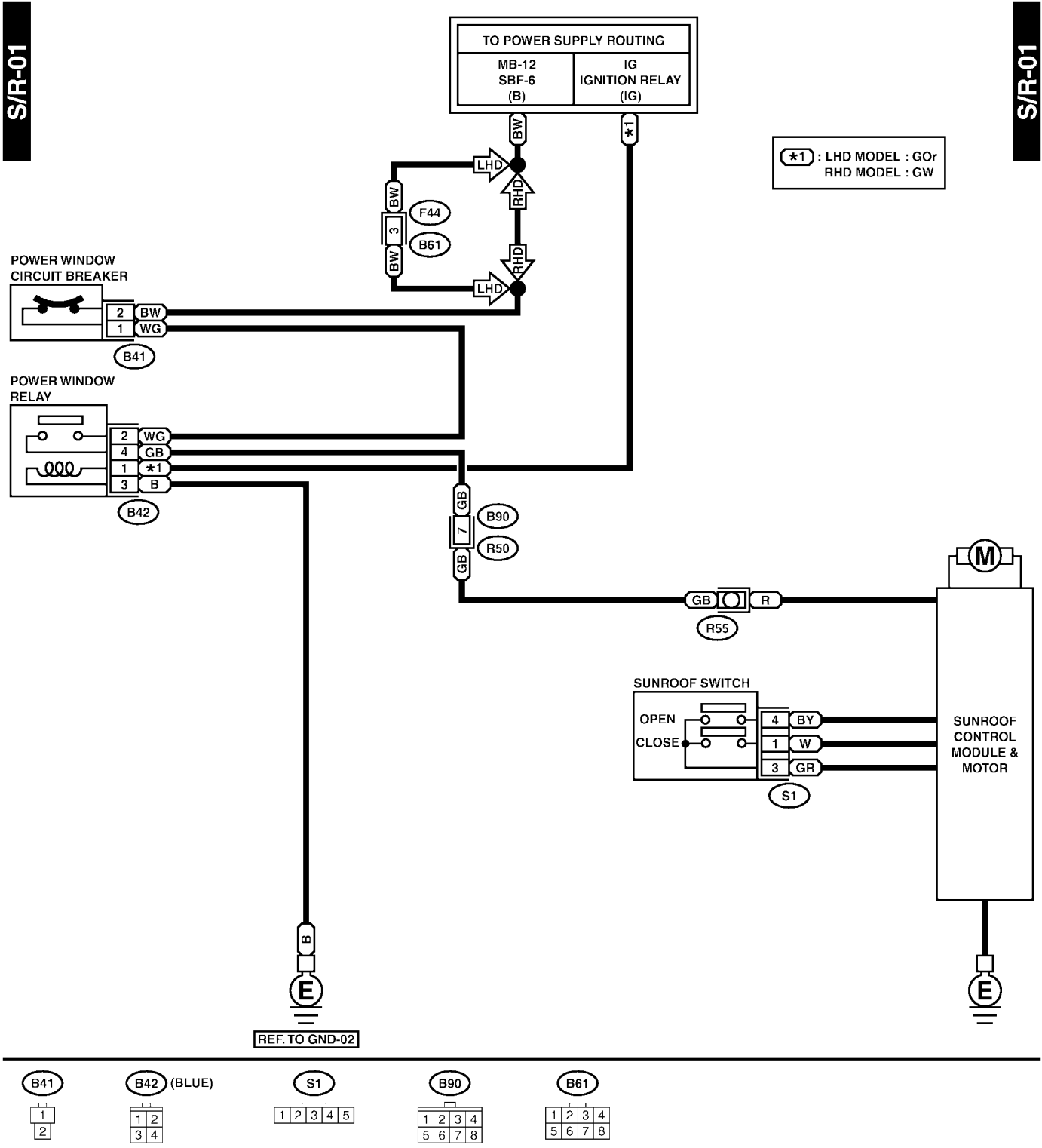
# SUNROOF CONTROL SYSTEM

Sunroof/T-top/Convertible Top (Sunroof)

## 2. Sunroof Control System S910328

### A: SCHEMATIC S910328A21

#### 1. SUNROOF S910328A2101



# SUNROOF CONTROL SYSTEM

Sunroof/T-top/Convertible Top (Sunroof)

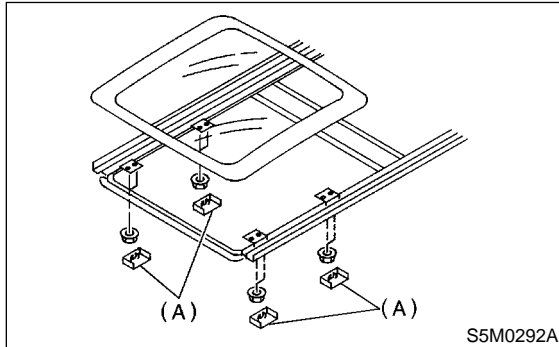
## B: INSPECTION S910328A10

Symptom	Checking order
Water leaks.	(1) Check roof panel and sunroof lid for improper or poor sealing. (2) Check drain tube for clogging. (3) Check sunroof frame seal and body for improper fit.
Booming noise	(1) Check sunroof lid and roof panel for improper clearance. (2) Check sunshade and roof trim for improper clearance.
Abnormal motor noise	(1) Check motor for looseness. (2) Check gears and bearings for wear. (3) Check cables for wear. (4) Check cable pipe for deformities.
Failure of sunroof (Motor operates properly.)	(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 adjustment nut for improper tightness.
Motor does not rotate or rotates improperly.	(1) Check fuse for blow-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. Sunroof Lid S910536

### A: REMOVAL S910536A18

- 1) Completely close glass lid and open sunshade.
- 2) Detach the four covers (A) and then remove eight nuts.



- 3) Carefully remove glass lid.

### B: INSTALLATION S910536A11

Install in the reverse order of removal.

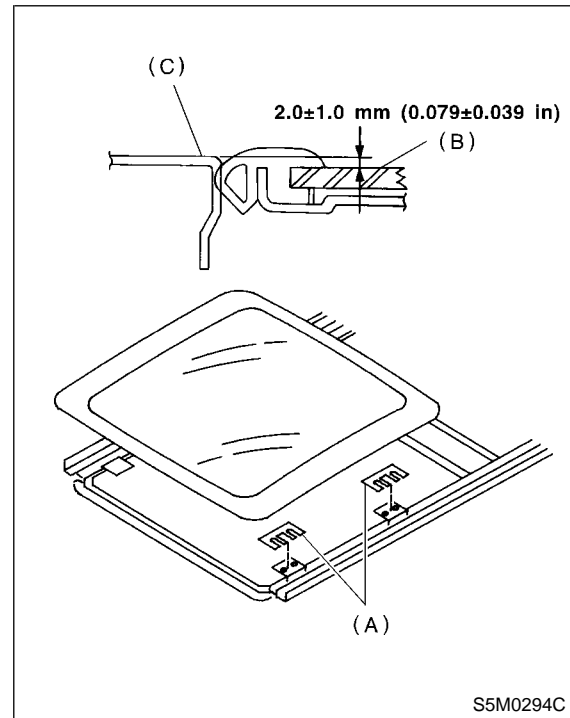
## C: ADJUSTMENT S910536A01

### 1. ALIGNMENT OF HEIGHT BETWEEN SUNROOF LID AND ROOF PANEL S910536A0101

Loosen sunroof lid nuts and then adjust height by adding (max: four pieces) or extracting (max: two pieces) shims (A) (standard: two pieces) between sunroof lid (B) and roof panel (C).

***Difference in height between sunroof lid and roof panel***

***2.0±1.0 mm (0.079±0.039 in)***





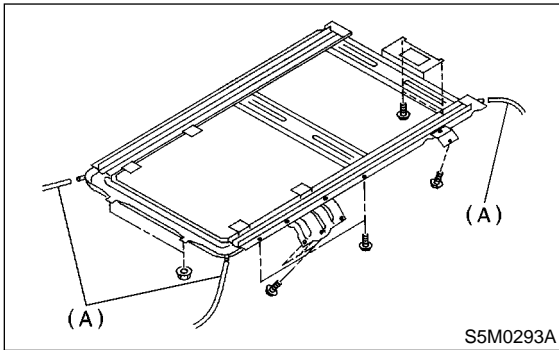
# SUNROOF ASSEMBLY

Sunroof/T-top/Convertible Top (Sunroof)

## 4. Sunroof Assembly S910329

### A: REMOVAL S910329A18

- 1) Remove roof trim. <Ref. to EI-41, REMOVAL, Roof Trim.>
- 2) Remove sunroof lid. <Ref. to SR-7, REMOVAL, Sunroof Lid.>
- 3) Disconnect the four drain tubes (A) from sunroof frame.
- 4) Disconnect sunroof harness connector.
- 5) Remove bolts and nuts and then detach sunroof frame.



### B: INSTALLATION S910329A11

Install in the reverse order of removal.

#### CAUTION:

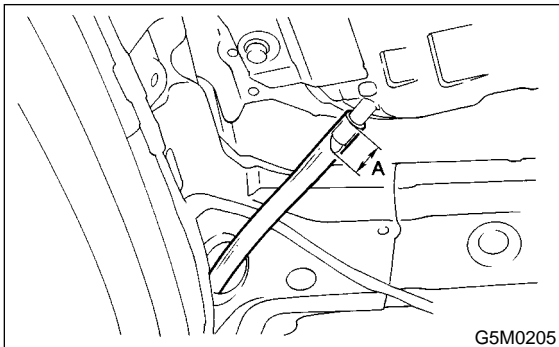
**Be careful not to snag harness.**

#### NOTE:

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

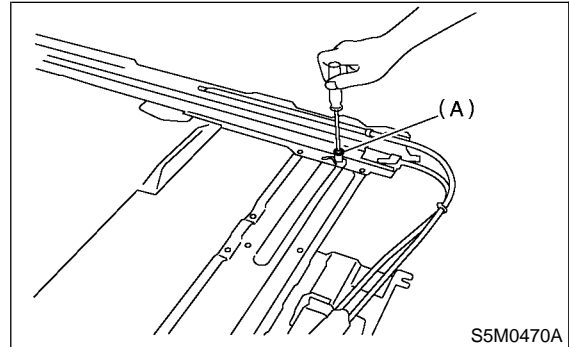
#### Length A:

**15 mm (0.59 in) or more**

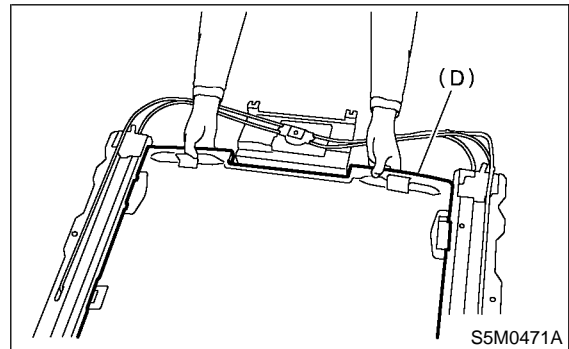


### C: DISASSEMBLY S910329A06

- 1) Remove sunroof frame.
- 2) Remove rail stoppers (A).



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



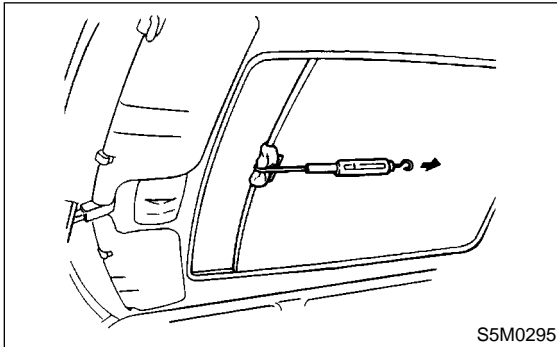
### D: ASSEMBLY S910329A02

Assemble in the reverse order of disassembly.

## E: INSPECTION S910329A10

### 1. CHECK FOR MOVEMENT OF SUNSHADE S910329A1001

- 1) Place a cloth on sunshade, and attach a spring scale to sunshade edge using a cloth.



- 2) Pull spring scale to measure force required to move the sunshade.

**Force required to move sunshade:**  
**Less than  $24.5 \pm 9.8$  N ( $2.5 \pm 1.0$  kgf,  $5.5 \pm 2.2$  lb)**

**NOTE:**

Considerable effort is required to start sunshade moving, so take scale reading while sunroof panel is moving smoothly.

- 3) If force required exceeds specifications, check the sunroof glass lid, sunshade and deflector, and guide rail assembly for improper installation.

# SUNROOF MOTOR

Sunroof/T-top/Convertible Top (Sunroof)

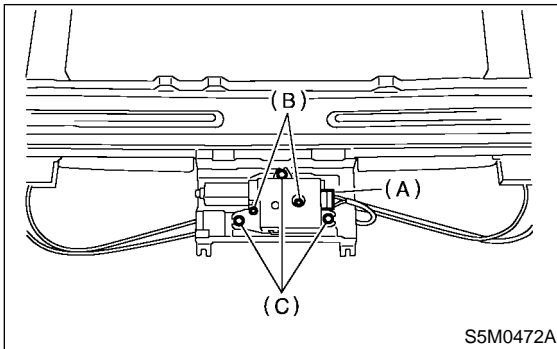
## 5. Sunroof Motor S910537

### A: REMOVAL S910537A18

#### CAUTION:

- Fully open sunroof when removing sunroof motor.
- When removing clip, use great care to not damage the roof trim.

- 1) Completely open the sunroof.
- 2) Remove roof trim. <Ref. to EI-41, REMOVAL, Roof Trim.>
- 3) Disconnect harness connector (A) and remove sunroof motor mounting screw (B) and nut (C).



### B: INSTALLATION S910537A11

#### CAUTION:

- Never rotate the sunroof motor while removed.
- Be careful not to move the sunroof cable when installing sunroof motor.

- 1) Install sunroof motor.
- 2) Connect sunroof motor harness connector and then connect battery ground cable.
- 3) Operate the sunroof switch, and check the sunroof stop position.
- 4) Move sunroof to completely closed position.

# SUNROOF MOTOR

Sunroof/T-top/Convertible Top (Sunroof)

5) Check sunroof operation with the following procedure.

Checking order	Switch position
(1) Completely close sunroof.	Closed
(2) Open sunroof until it is almost completely open.	Open
(3) Completely open sunroof.	Open
(4) Close sunroof 500 mm (19.69 in) from completely open position.	Closed
(5) Completely close sunroof.	Closed

6) Install trim in the reverse order of removal.

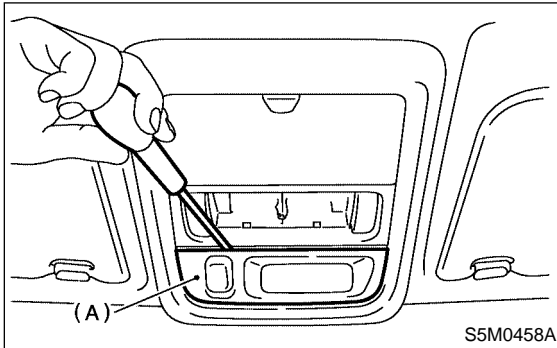
# SUNROOF SWITCH

Sunroof/T-top/Convertible Top (Sunroof)

## 6. Sunroof Switch S910538

### A: REMOVAL S910538A18

- 1) Disconnect ground cable from battery.
- 2) Remove sunroof switch panel (A).

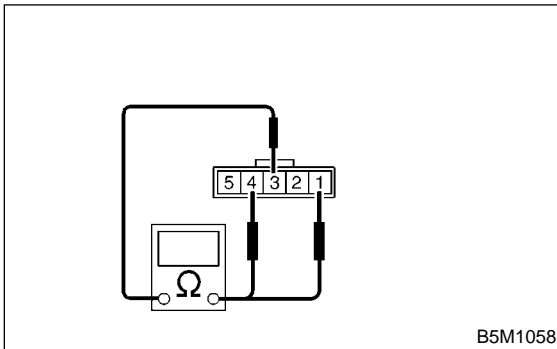


- 3) Disconnect harness connectors and remove sunroof switch.

### B: INSTALLATION S910538A11

Install in the reverse order of removal.

### C: INSPECTION S910538A10



Check continuity between terminals when operating the switch.

Switch position	Tester connection	Specified condition
Open	3 — 4	Continuity
Close	1 — 3	Continuity