LIGHTING SYSTEM

LI

1. General Description

A: SPECIFICATIONS

Headlight	Single-bulb type	12 V — 55/65 W
	Dual-bulb type	12 V — 55 W (Low) 12 V — 60 W (High)
Front turn signal light, side turn signal light, parking light		12 V — 27/8 W
Front fog light		12 V — 51 W
Rear combination light	Tail/Stop/Turn signal light	12 V — 21/5 W
	Back-up light	12 V — 21 W
Rear finisher light	Tail light	12 V — 5 W
License plate light		12 V — 5 W
High-mounted stop light		12 V — 13 W
Room light		12 V — 8 W
Spot light		12 V — 8 W
Door step light		12 V — 3.4 W
Glove box light		12 V — 1.4 W
Cargo light		12 V — 13 W

B: PRECAUTIONS

• 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.

WARNING:
• Airbag system wiring harness is routed near electrical parts and switches. All airbag system wiring harnesses and connectors are yellow. Do not use electric test equipment on these circuits.
• Be careful not to damage the airbag system wiring harness when servicing electrical parts and switches.

C: PREPARATION TOOL

1. GENERAL TOOLS

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

2. Headlight and Tail Light System

A: SCHEMATIC

1. HEADLIGHT 2-LIGHT MODEL

<Ref. to WI-130, 2-LIGHT MODEL, SCHEMATIC, Headlight System.>

2. HEADLIGHT 4-LIGHT MODEL

<Ref. to WI-131, 4-LIGHT MODEL, SCHEMATIC, Headlight System.>

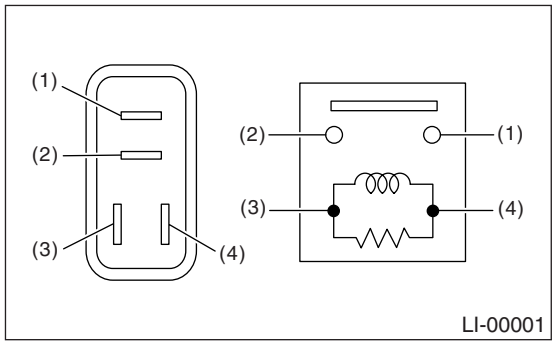
3. CLEARANCE LIGHT AND ILLUMINATION LIGHT

<Ref. to WI-124, SCHEMATIC, Clearance Light and Illumination Light System.>

B: INSPECTION

1. HEADLIGHT RELAY

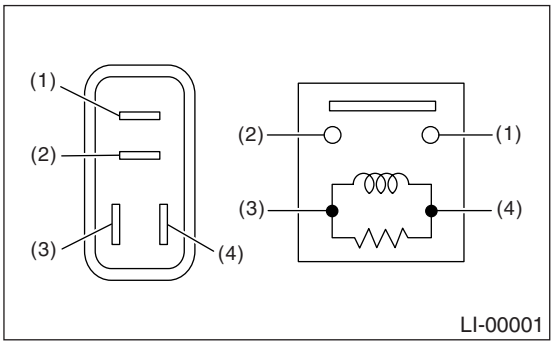
Measure headlight relay resistance between terminals while connecting terminal No. 4 to battery positive terminal No. 3 to battery ground terminal.



Current	Terminal No.	Standard
Flow	1 and 2	Less than 1 Ω
No flow		More than 1 MΩ

2. TAIL AND ILLUMINATION RELAY

Measure tail and illumination relay resistance between terminals while connecting terminal No. 4 to battery positive terminal No. 3 to battery ground terminal.



Current	Terminal No.	Standard
Flow	1 and 2	Less than 1 Ω
No flow		More than 1 MΩ

3. Front Fog Light System

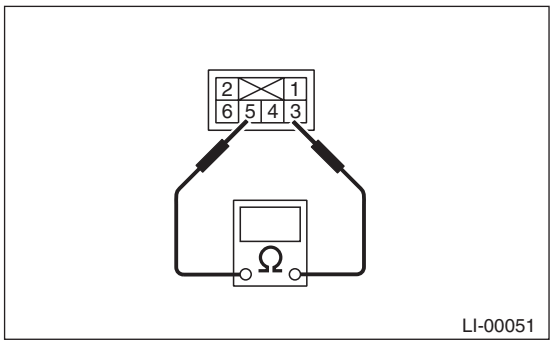
A: SCHEMATIC

<Ref. to WI-128, SCHEMATIC, Front Fog Light System.>

B: INSPECTION

1. FRONT FOG LIGHT SWITCH

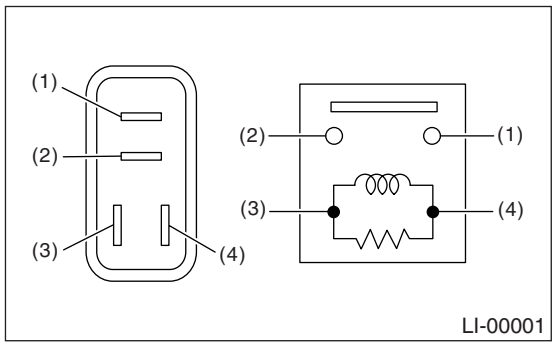
Measure front fog light switch resistance.



Switch position	Terminal No.	Standard
OFF	—	More than 1 MΩ
ON	3 and 5	Less than 1 Ω

2. FRONT FOG LIGHT RELAY

Measure front fog light relay resistance between terminals while connecting terminal No. 4 to battery positive terminal and terminal No. 3 to battery ground terminal.



Current	Terminal No.	Standard
Flow	1 and 2	Less than 1 Ω
No flow		More than 1 MΩ

4. Turn Signal and Hazard Light System

A: SCHEMATIC

<Ref. to WI-138, SCHEMATIC, Turn Signal Light and Hazard Light System.>

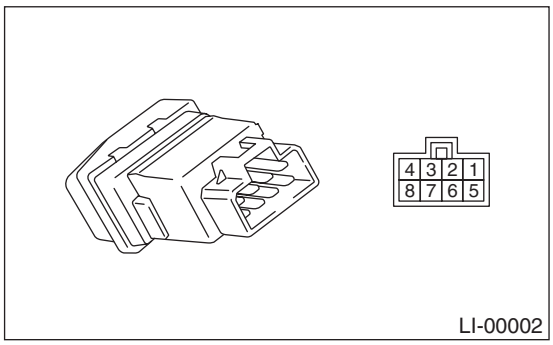
B: INSPECTION

1. TURN SIGNAL SWITCH

<Ref. to LI-10, INSPECTION, Combination Switch (Light).>

2. HAZARD SWITCH

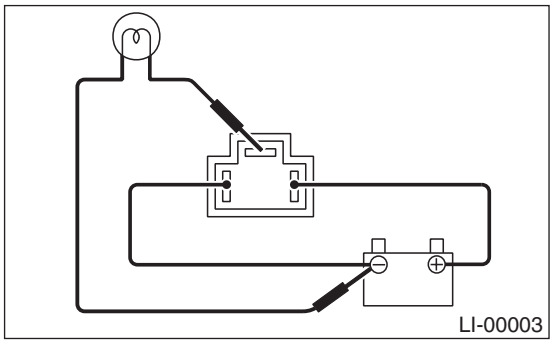
Measure hazard switch resistance.



Switch position	Terminal No.	Standard
OFF	6 and 7	Less than 1 Ω
ON	1, 3 and 4	Less than 1 Ω
	7 and 8	Less than 1 Ω

3. TURN SIGNAL & HAZARD MODULE

Connect battery and turn signal light bulb to the module, as shown in the figure. The module is properly functioning if it blinks when power is supplied to the circuit.



5. Back-up Light System

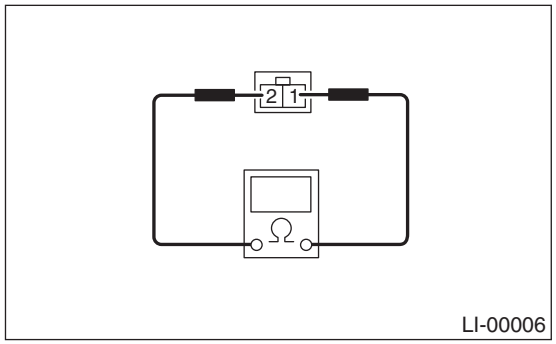
A: SCHEMATIC

<Ref. to WI-120, SCHEMATIC, Back-up Light System.>

B: INSPECTION

1. BACK-UP LIGHT SWITCH (M/T)

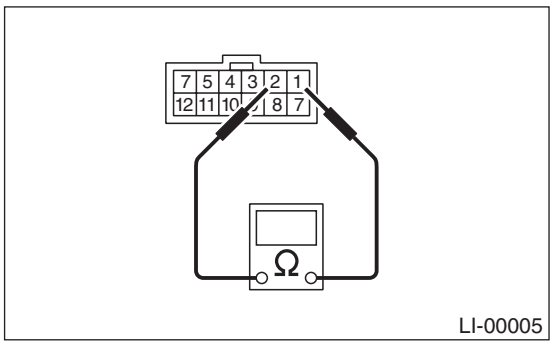
Measure back-up light switch resistance.



Switch position	Terminal No.	Standard
When shift lever is set in reverse position	1 and 2	Less than 1 Ω
Other positions		More than 1 MΩ

2. INHIBITOR SWITCH (A/T)

Measure inhibitor switch resistance.



Switch position	Terminal No.	Standard
When select lever is set in “R” position	1 and 2	Less than 1 Ω
Other positions		More than 1 MΩ

6. Stop Light System

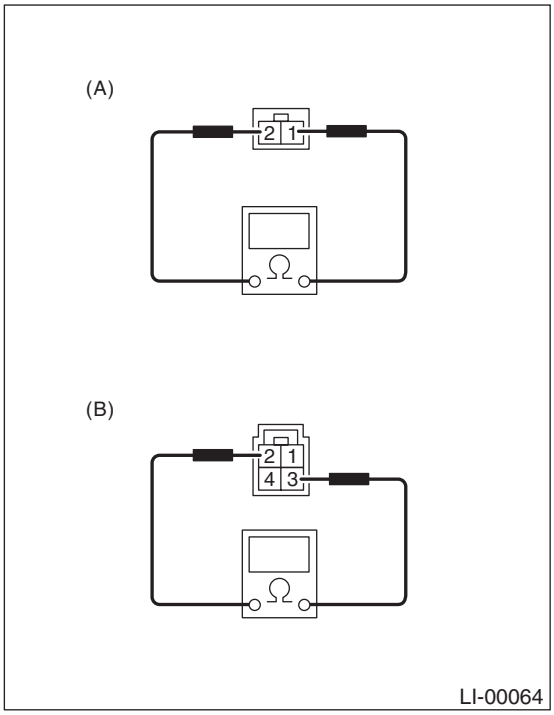
A: SCHEMATIC

<Ref. to WI-137, SCHEMATIC, SCHEMATIC, Stop Light System.>

B: INSPECTION

1. STOP LIGHT SWITCH

Measure stop light switch resistance.



(A) Without cruise control
(B) With cruise control

Switch position	Terminal No.	Standard
When brake pedal is depressed	1 and 2: Without cruise control 2 and 3: With cruise control	Less than 1 Ω
When brake pedal is released		More than 1 MΩ

7. Interior Light System

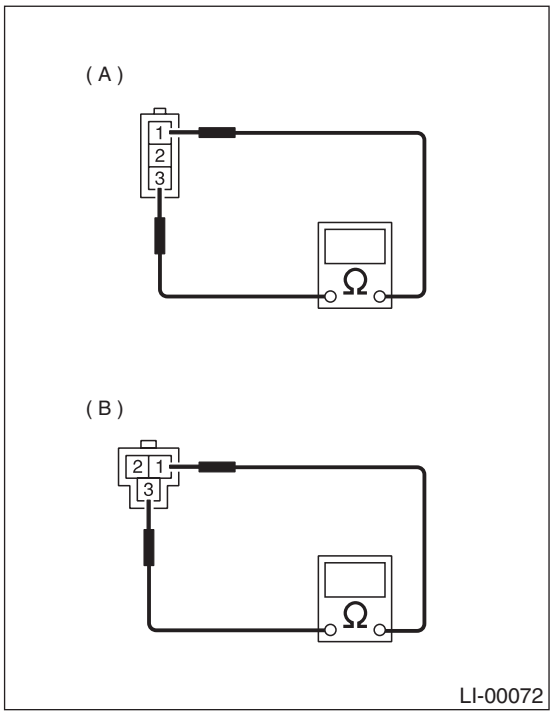
A: SCHEMATIC

<Ref. to WI-134, SCHEMATIC, In Compartment Light System.>

B: INSPECTION

1. DOOR SWITCH

Measure door switch resistance.



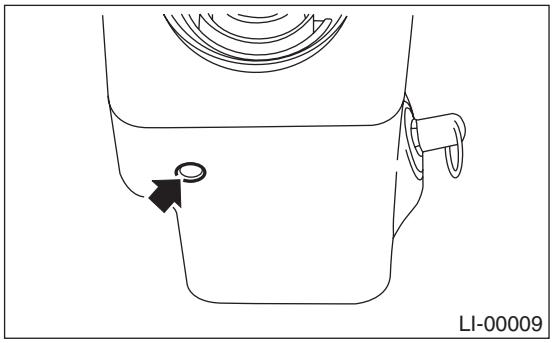
(A) Front door switch
(B) Rear door switch

Switch position	Terminal No.	Standard
When door is open	1 and 3	Less than 1 Ω
When door is closed		More than 1 MΩ

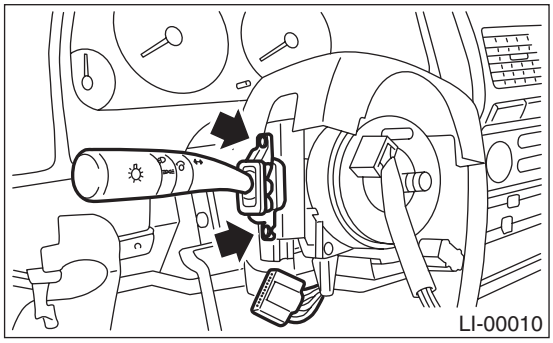
8. Combination Switch (Light)

A: REMOVAL

1) Disconnect ground cable from battery.
2) Remove instrument panel lower cover. <Ref. to EI-37, REMOVAL, Instrument Panel Assembly.>
3) Remove screws which secure upper column cover to lower column cover.



4) Disconnect connector from combination switch.
5) Remove screws which secure switch and remove switch.

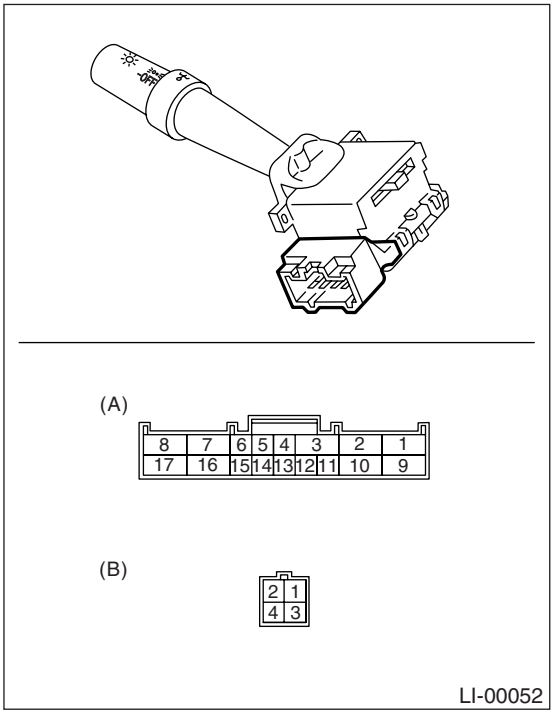


B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

Measure combination switch resistance.



(A) Lighting and turn signal switch connector
(B) Parking switch conector

1. LIGHTING SWITCH

Switch position	Terminal No.	Standard
OFF	—	More than 1 MΩ
Tail	14 and 16	Less than 1 Ω
Head	13, 14 and 16	Less than 1 Ω

2. DIMMER AND PASSING SWITCH

Switch position	Terminal No.	Standard
Passing	7, 8 and 16	Less than 1 Ω
Low beam	16 and 17	Less than 1 Ω
High beam	7 and 16	Less than 1 Ω

3. TURN SIGNAL SWITCH

Switch position	Terminal No.	Standard
Left	1 and 2	Less than 1 Ω
Neutral	—	More than 1 MΩ
Right	2 and 3	Less than 1 Ω

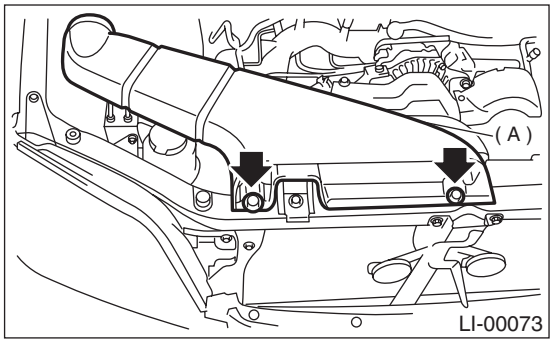
4. PARKING SWITCH

Switch position	Terminal No.	Standard
OFF	2 and 4	Less than 1 Ω
ON	1 and 4	Less than 1 Ω

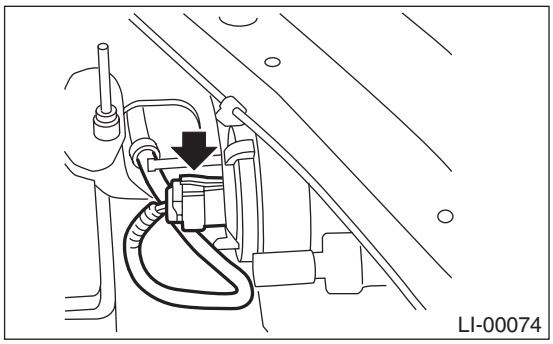
9. Headlight Assembly

A: REMOVAL

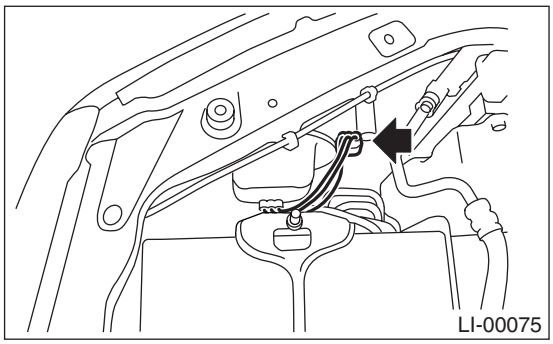
1) Disconnect ground cable from battery.
2) Remove duct (A) (when right side headlight is removed).



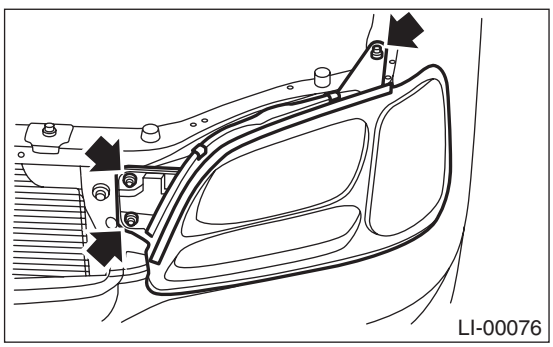
3) Disconnect headlight harness connector.
Single-bulb type



Dual-bulb type



4) Remove three bolts and disconnect connectors, and then detach headlight assembly.



B: INSTALLATION

Install in the reverse order of removal.

C: ADJUSTMENT

1. HEADLIGHT AIMING

NOTE:
As this headlight is the “VISUAL AIMING TYPE”, it is possible to adjust aiming only in the vertical direction. It cannot be adjusted in the horizontal direction.

CAUTION:
Turn off the light before adjusting headlight aiming. If the light is necessary to check aiming, do not turn on for more than two minutes.

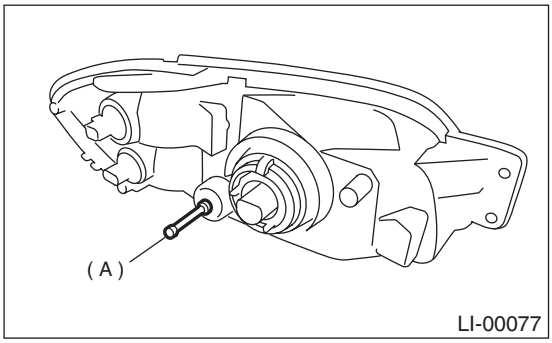
NOTE:
Before checking the headlight aiming, be sure of the following:

- The area around the headlight has not sustained any accident, damage or other type of deformation.
- Vehicle is parked on level ground.
- The inflation pressure of tires is correct.
- Vehicle's gas tank is fully charged.
- Bounce the vehicle several times to normalize the suspension.
- Make certain that someone is seated in the driver's seat.

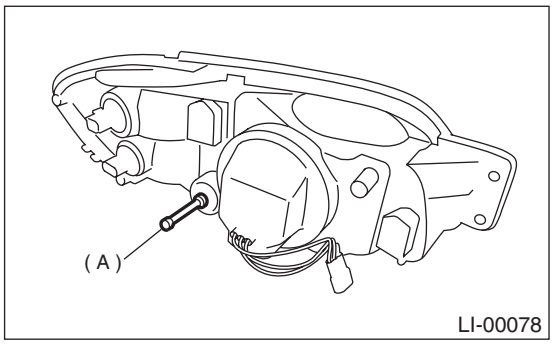
Turn the headlights on and then adjust the low beam pattern to the following positions on the screen.

NOTE:
Adjust the headlight aiming by turning the adjusting screw (A).

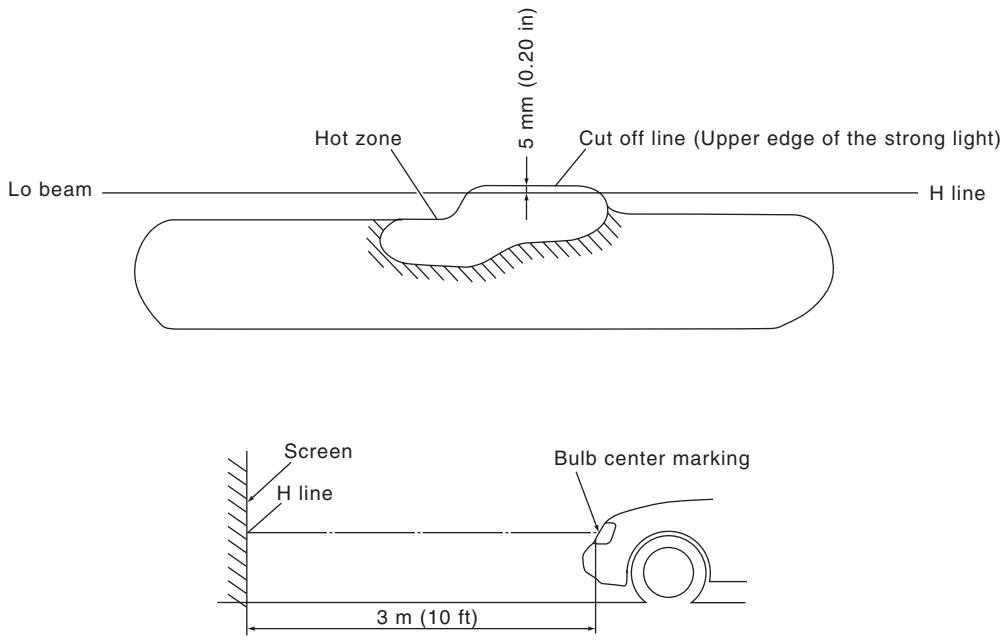
Single-bulb type



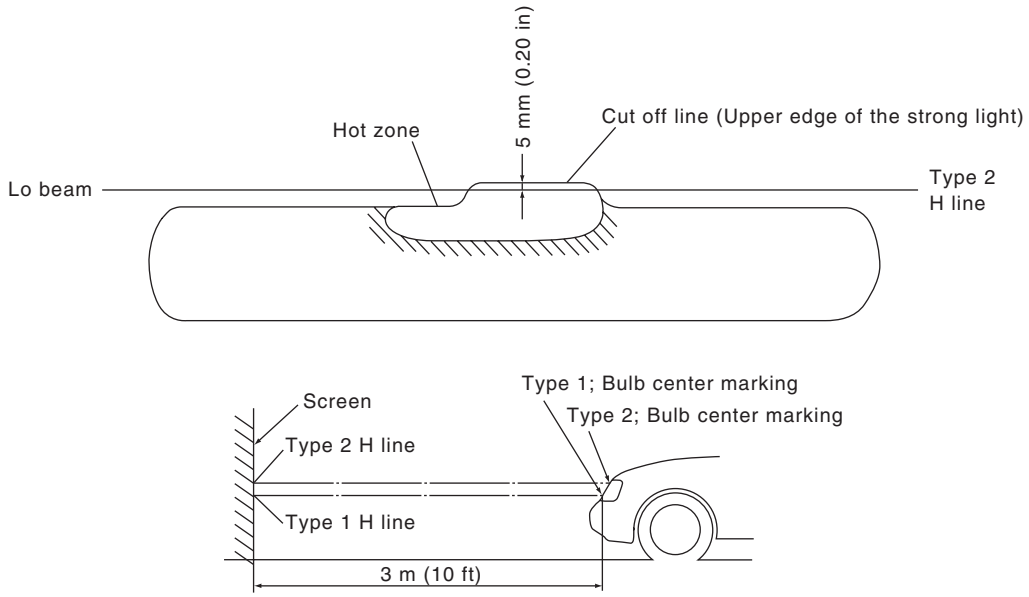
Dual-bulb type



Single-bulb headlight



Dual-bulb headlight



LI-00079

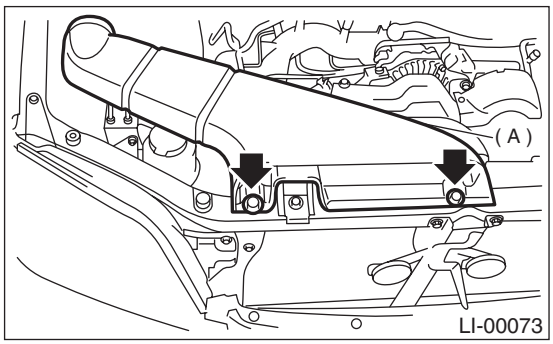
10.Headlight Bulb

A: REMOVAL

CAUTION:
• Because the halogen bulb operates at a high temperature, dirt and oil on the bulb surface reduces the bulb's service life. Hold the flange portion when replacing the bulb. Never touch the glass portion.
• Do not leave the headlight without a bulb for a long time. Dust, moisture, etc. entering the headlight may affect its the performance.

1. SINGLE-BULB TYPE

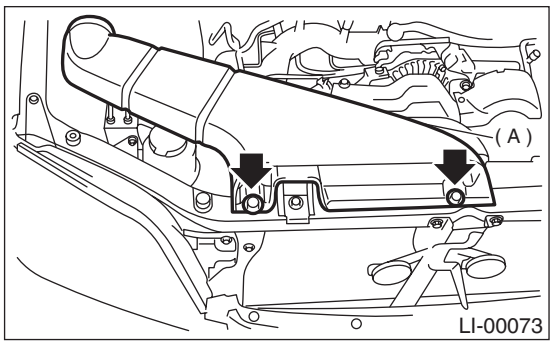
1) Disconnect ground cable from battery.
2) Remove duct (A) (when right side headlight is removed).



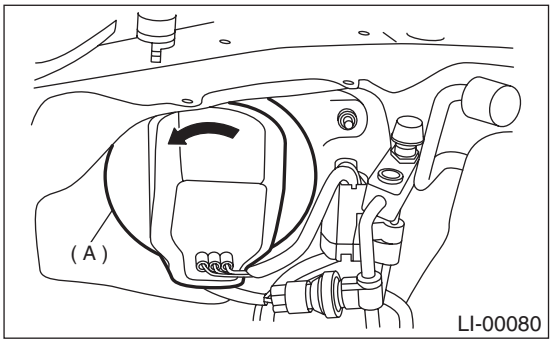
3) Disconnect harness connector.
4) Remove rubber cover.
5) Push to remove spring retainer, and then detach the headlight bulb.

2. DUAL-BULB TYPE

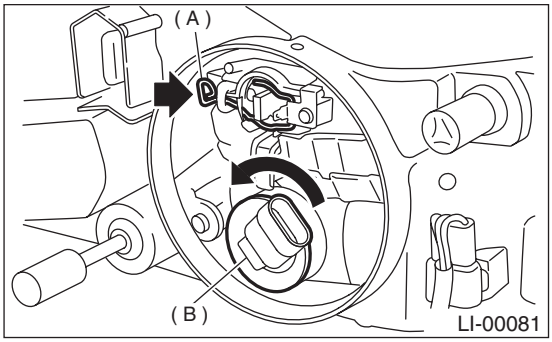
1) Disconnect ground cable from battery.
2) Remove duct (A) (when right side headlight is removed).



3) Remove back cover (A).



4) Disconnect harness connector.
5) Push to remove spring retainer (A) (low beam) or turn bulb assembly (B) counterclockwise (high beam), and then detach headlight bulb.



B: INSTALLATION

Install in the reverse order of removal.

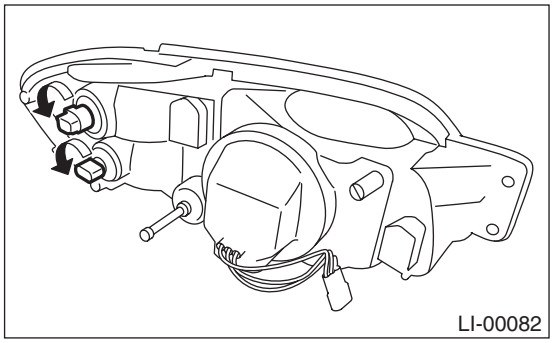
C: INSPECTION

1) Visually check the bulb for blow out.
2) Check the bulb specification. <Ref. to LI-2, SPECIFICATIONS, General Description.>
3) If NG, replace the bulb with a new one.

11.Front Turn Signal Light Bulb

A: REMOVAL

1) Remove headlight assembly. <Ref. to LI-11, REMOVAL, Headlight Assembly.>
2) Turn the socket and remove the bulb.



B: INSTALLATION

Install in the reverse order of removal.

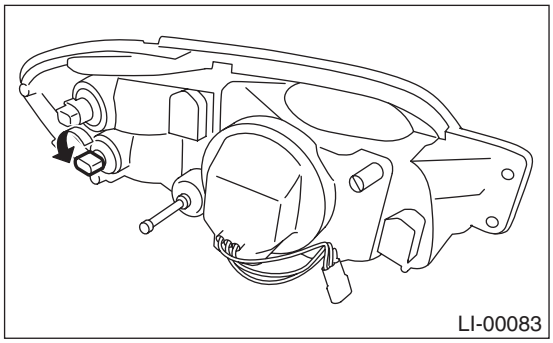
C: INSPECTION

1) Visually check the bulb for blow out.
2) Check the bulb specification. <Ref. to LI-2, SPECIFICATIONS, General Description.>
3) If NG, replace the bulb with a new one.

12.Parking /Side Marker Light Bulb

A: REMOVAL

1) Remove headlight assembly. <Ref. to LI-11, REMOVAL, Headlight Assembly.>
2) Turn the socket and remove the bulb.



B: INSTALLATION

Install in the reverse order of removal.

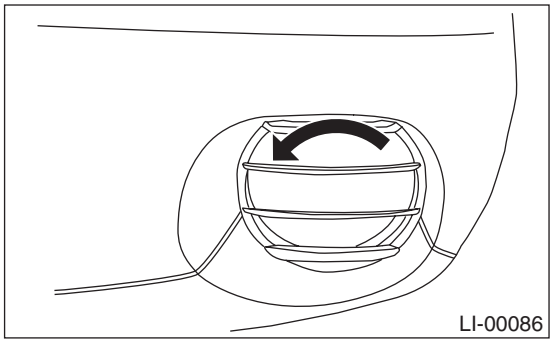
C: INSPECTION

1) Visually check the bulb for blow out.
2) Check the bulb specification. <Ref. to LI-2, SPECIFICATIONS, General Description.>
3) If NG, replace the bulb with a new one.

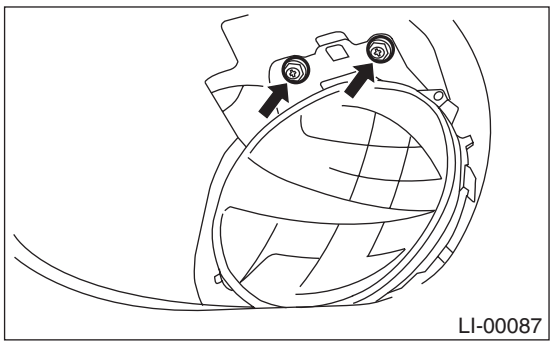
13.Front Fog Light Assembly

A: REMOVAL

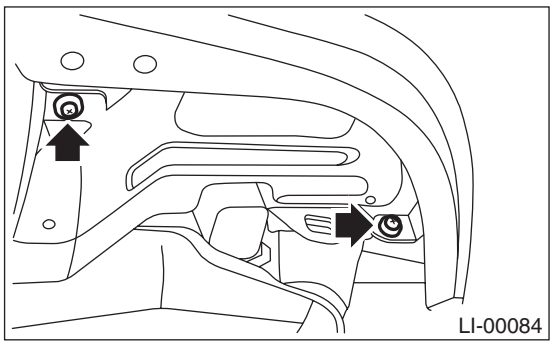
1) Disconnect ground cable from battery.
2) Turn stone guard counterclockwise, and then remove it.



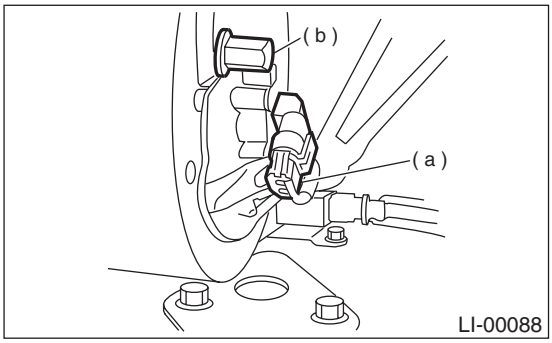
3) Remove mounting bolts.



4) Remove two clips and lower the mudguard.



5) Disconnect harness connector (a).
6) Remove nut (b) then detach fog light assembly.



B: INSTALLATION

Install in the reverse order of removal.

14.Front Fog Light Bulb

A: REMOVAL

1) Remove fog light assembly. <Ref. to LI-17, REMOVAL, Front Fog Light Assembly.>
2) Disconnect harness connector.
3) Turn the bulb assembly counterclockwise, and then remove the bulb.

B: INSTALLATION

Install in the reverse order of removal.

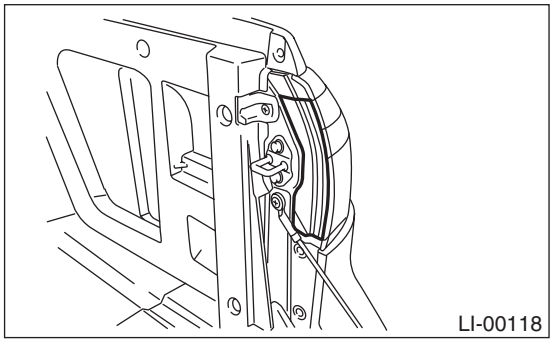
C: INSPECTION

1) Visually check the bulb for blow out.
2) Check the bulb specification. <Ref. to LI-3, PRECAUTIONS, General Description.>
3) If NG, replace the bulb with a new one.

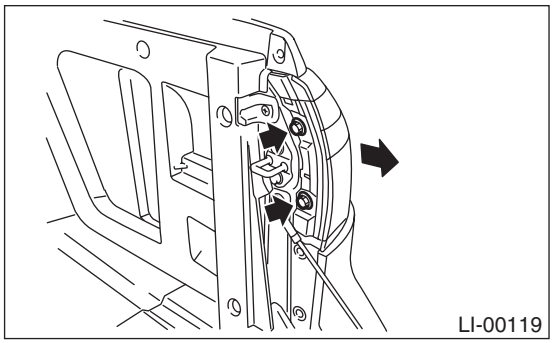
15.Rear Combination Light Assembly

A: REMOVAL

1) Disconnect ground cable from battery.
2) Open tail gate.
3) Remove bolt cover.



4) Remove bolt and detach rear combination light assembly by pulling to the rear.



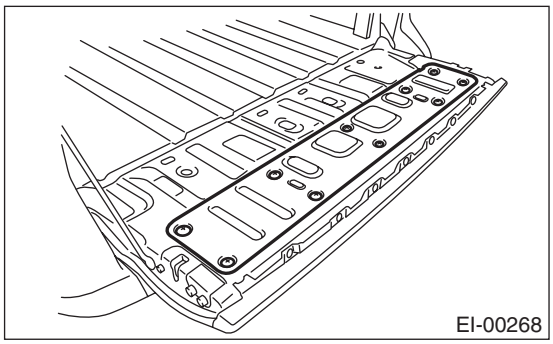
B: INSTALLATION

Install in the reverse order of removal.

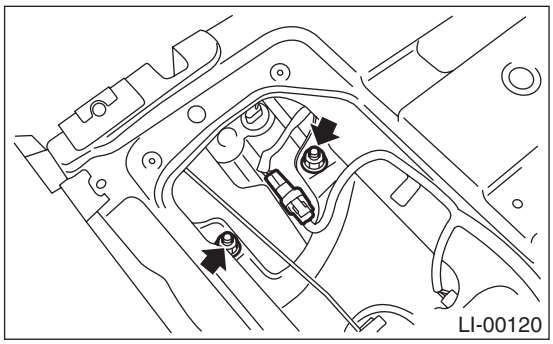
16.Rear Finisher Light Assembly

A: REMOVAL

1) Disconnect ground cable from battery.
2) Remove tail gate tray. <Ref. to EI-56, REMOVAL, Tail Gate Tray.>
3) Remove tail gate cover.



4) Separate connector. Remove nuts and detach rear finisher light.



B: INSTALLATION

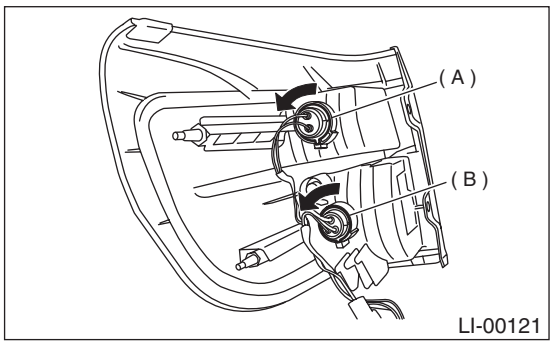
Install in the reverse order of removal.

17.Brake/Tail Light Bulb

A: REMOVAL

1. COMBINATION LIGHT

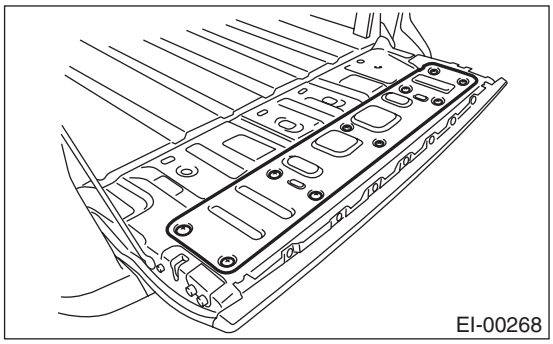
1) Remove combination light assembly. <Ref. to LI-19, REMOVAL, Rear Combination Light Assembly.>
2) Rotate the socket and remove the bulb.



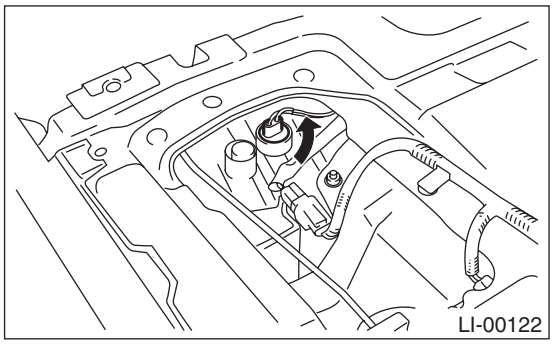
(A) Back-up light bulb
(B) Brake/ Tail/ Rear turn signal light bulb

2. FINISHER LIGHT

1) Remove tail gate tray. <Ref. to EI-56, REMOVAL, Tail Gate Tray.>
2) Remove tail gate cover.



3) Rotate the socket and remove the bulb.



B: INSTALLATION

Install in the reverse order of removal.

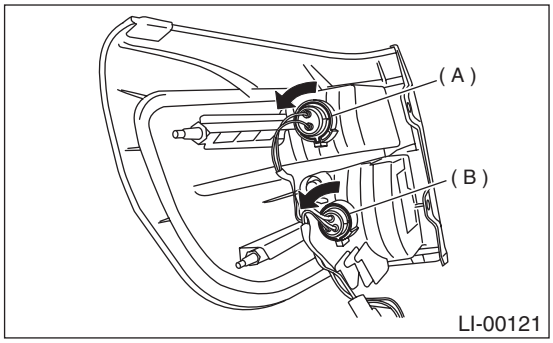
C: INSPECTION

1) Visually check the bulb for blow out.
2) Check the bulb specification. <Ref. to LI-2, SPECIFICATIONS, General Description.>
3) If the requirement is not satisfied, replace it with a new one.

18.Back-up Light Bulb

A: REMOVAL

1) Remove combination light assembly. <Ref. to LI-19, REMOVAL, Rear Combination Light Assembly.>
2) Rotate socket and remove bulb.



(A) Back-up light bulb
(B) Brake / Tail / Rear turn signal light bulb

B: INSTALLATION

Install in the reverse order of removal.

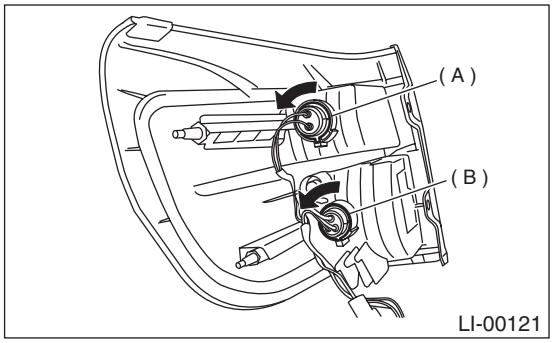
C: INSPECTION

1) Visually check the bulb for blow out.
2) Check the bulb specification. <Ref. to LI-2, SPECIFICATIONS, General Description.>
3) If the requirement is not satisfied, replace it with a new one.

19.Rear Turn Signal Light Bulb

A: REMOVAL

1) Remove combination light assembly. <Ref. to LI-19, REMOVAL, Rear Combination Light Assembly.>
2) Turn the socket and remove the bulb.



(A) Back-up light bulb
(B) Brake / Tail / Rear / Turn signal light bulb

B: INSTALLATION

Install in the reverse order of removal.

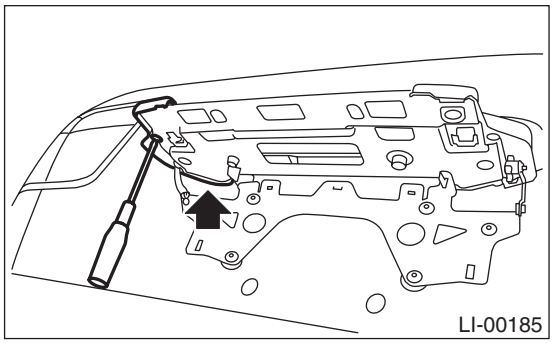
C: INSPECTION

1) Visually check the bulb for blow out.
2) Check the bulb specification. <Ref. to LI-2, SPECIFICATIONS, General Description.>
3) If the requirement is not satisfied, replace it with a new one.

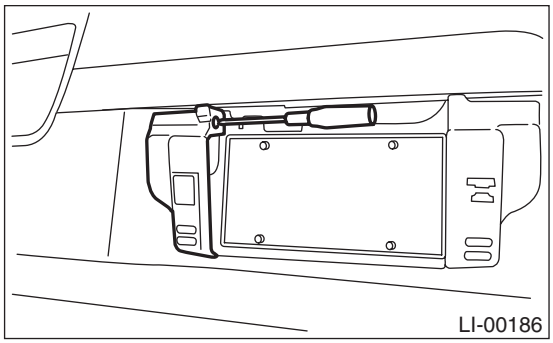
20.License Plate Light

A: REMOVAL

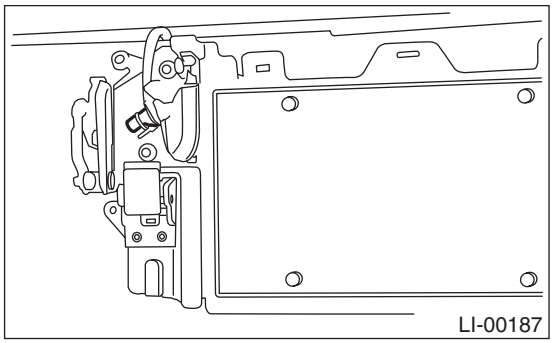
1) Lift up license plate bracket and remove rear bolts.



2) Back off license plate bracket and remove bolts.



3) Remove cover. Turn the socket and remove the bulb.



B: INSTALLATION

Install in the reverse order of removal.

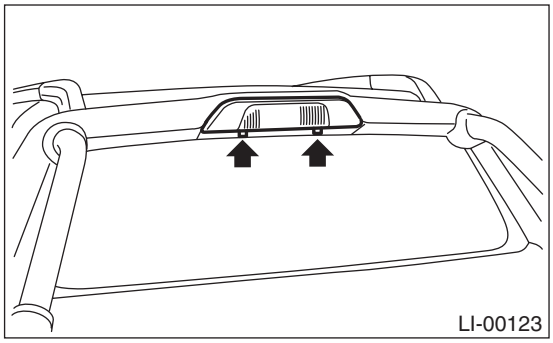
C: INSPECTION

1) Visually check the bulb for blow out.
2) Check the bulb specification. <Ref. to LI-2, SPECIFICATIONS, General Description.>
3) If NG, replace the bulb with a new one.

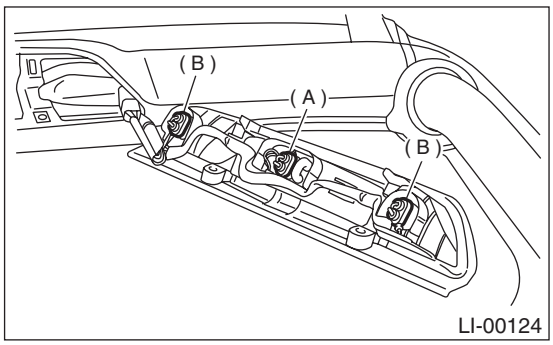
21.High-mounted Stop Light

A: REMOVAL

1) Disconnect ground cable from battery.
2) Remove bolts, then detach high-mounted stop light assembly.



3) Turn the socket and remove the bulb.



(A) High-mounted stop lamp
(B) Cargo light bulb

B: INSTALLATION

Install in the reverse order of removal.

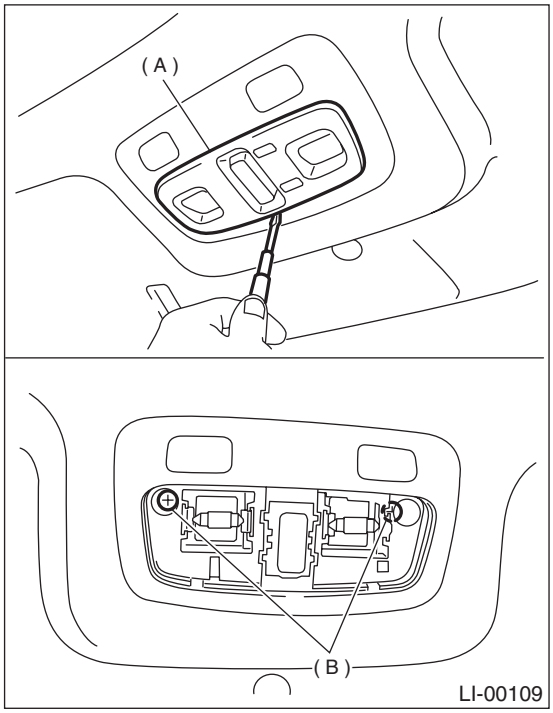
C: INSPECTION

1) Visually check the bulb for blow out.
2) Check the bulb specification. <Ref. to LI-2, SPECIFICATIONS, General Description.>
3) If the requirement is not satisfied, replace it with a new one.

22.Spot Light

A: REMOVAL

1) Disconnect ground cable from battery.
2) Remove lens (A) and spot light mounting screw (B).



3) Disconnect harness connectors and remove spot light.

B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

1. SPOT LIGHT BULB

1) Visually check the bulb for blow out.
2) Check the bulb specification. <Ref. to LI-2, SPECIFICATIONS, General Description.>
3) If NG, replace the bulb with a new one.

2. SPOT LIGHT SWITCH

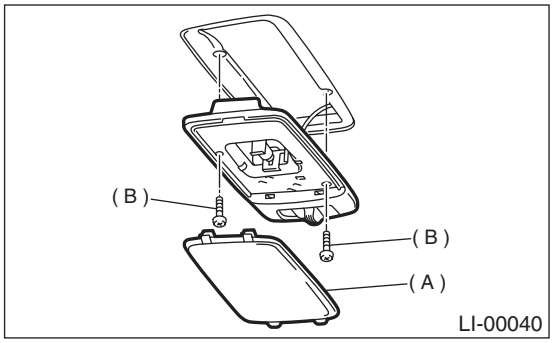
Measure spot light resistance.

Switch position	Terminal No.	Standard
OFF	—	More than 1 MΩ
ON	1 and 2	18±5.4 Ω

23.Room Light

A: REMOVAL

1) Disconnect ground cable from battery.
2) Remove lens (A) and room light mounting screws (B).



3) Disconnect harness connectors and remove the light.

B: INSTALLATION

Install in the reverse order of removal.

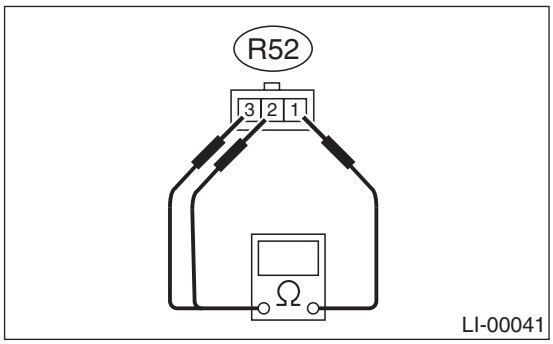
C: INSPECTION

1. ROOM LIGHT BULB

1) Visually check the bulb for blow out.
2) Check the bulb specification. <Ref. to LI-2, SPECIFICATIONS, General Description.>
3) If NG, replace the bulb with a new one.

2. ROOM LIGHT SWITCH

Measure room light switch resistance.

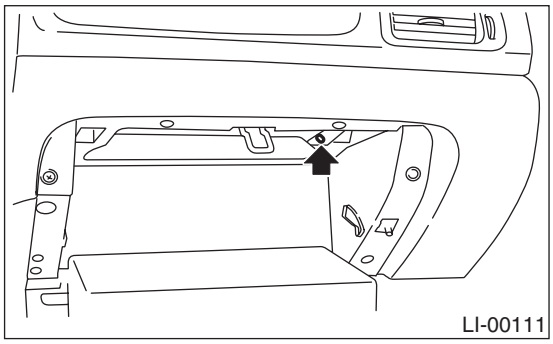


Switch position	Terminal No.	Standard
OFF	—	More than 1 MΩ
ON	1 and 3	1.5±0.5 Ω
DOOR	1 and 2	1.5±0.5 Ω

24.Glove Box Light

A: REMOVAL

1) Disconnect ground cable from battery.
2) Remove glove box. <Ref. to EI-34, REMOVAL, Glove Box.>
3) Disconnect harness connector.
4) Remove glove box light.



B: INSTALLATION

Install in the reverse order of removal.

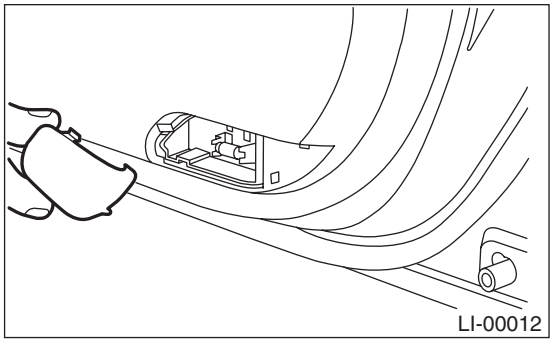
C: INSPECTION

1) Visually check the bulb for blow out.
2) Check the bulb specification. <Ref. to LI-2, SPECIFICATIONS, General Description.>
3) If NG, replace the bulb with a new one.

25.Door Step Light

A: REMOVAL

Remove the lens then detach the bulb.



B: INSTALLATION

Install in the reverse order of removal.

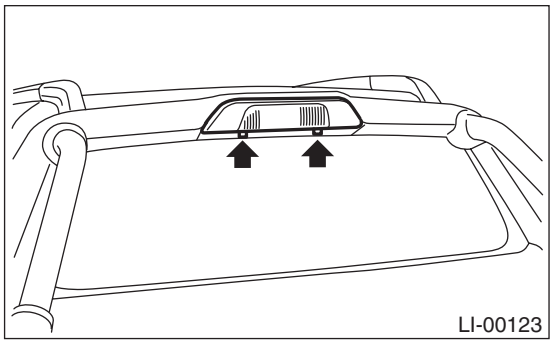
C: INSPECTION

1) Visually check the bulb for blow out.
2) Check the bulb specification. <Ref. to LI-2, SPECIFICATIONS, General Description.>
3) If NG, replace the bulb with a new one.

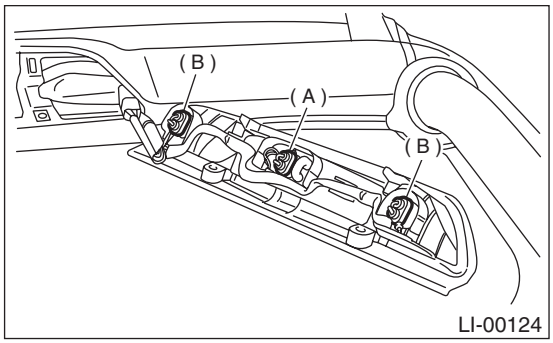
26.Cargo Light System

A: REMOVAL

1) Remove bolts and remove high-mounted stop light.



2) Turn the socket and remove the bulb.



(A) High-mounted stop light bulb
(B) Cargo light bulb

B: INSTALLATION

Install in the reverse order of removal.

C: INSPECTION

1. CARGO LIGHT BULB

1) Visually check the bulb for blow out.
2) Check the bulb specification. <Ref. to LI-2, SPECIFICATIONS, General Description.>
3) If the requirement is not satisfied, replace it with a new one.

2. CARGO LIGHT SWITCH

Measure resistance of cargo light switch.

Switch position	Terminal No.	Standard
OFF	—	More than 1 MΩ
ON	3 and 5	1.5±0.5 Ω