

LIGHTING SYSTEM

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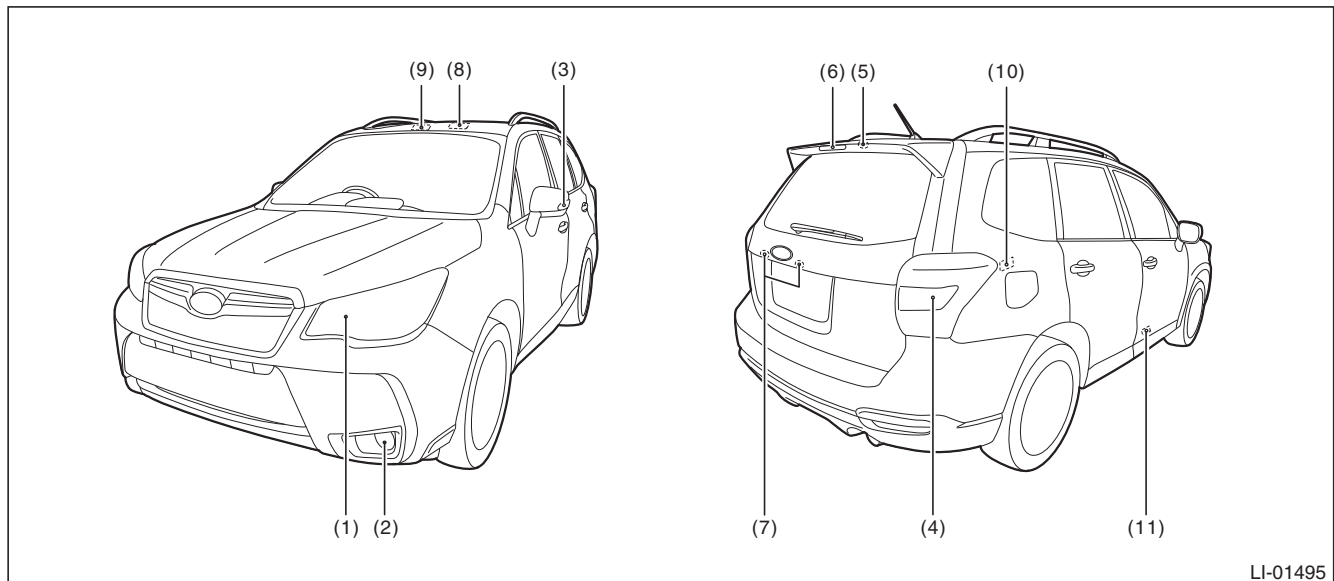
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General Description

LIGHTING SYSTEM

1. General Description

A: SPECIFICATION



LI-01495

No.	Description		Capacity and wattage	Type
(1)	Headlight	Low beam (halogen type)	12 V — 55 W	H11
		Low beam (HID type)	12 V — 35 W	D4R
		High beam	12 V — 60 W	HB3
		Front turn signal light	12 V — 21 W	WY21W
		Clearance light (halogen type)	12 V — 5 W	W5W
		Clearance light (HID type)	12 V — 1.8 W (LED)	*1
(2)	Front fog light		12 V — 19 W	H16
(3)	Side turn signal light		12 V — 1.1 W (LED)	*1
(4)	Rear combination light	Tail/stop light	12 V — 5 / 21 W	W21/5W
		Back-up light	12 V — 16 W	W16W
		Turn signal light	12 V — 21 W	WY21W
		Tail light	12 V — 5 / 21 W	W21/5W*2
(5)	High-mounted stop light (rear gate type)		12 V — 1.2 W (LED)	*1
(6)	High-mounted stop light (rear spoiler type)		12 V — 1.2 W (LED)	*1
(7)	License plate light		12 V — 5 W	W5W
(8)	Room light		12 V — 8 W	—
(9)	Spot map light		12 V — 8 W	—
(10)	Luggage room light		12 V — 5 W	W5W
(11)	Door step light		12 V — 5 W	W5W

*1: Non-disassembly type

*2: Only 5W illuminates.

General Description

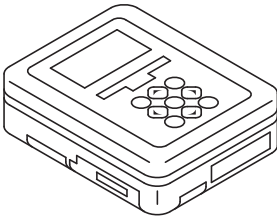
LIGHTING SYSTEM

B: CAUTION

- Before disassembling or reassembling parts, always disconnect the battery ground cable from battery. When replacing the audio, control module and other parts provided with memory functions, record the memory contents before disconnecting the battery ground cable. Otherwise, the memory is cleared.
- Reassemble the parts in the reverse order of disassembly procedure unless otherwise indicated.
- Connect the connectors securely during reassembly.
- After reassembly, make sure that the each component operates normally.
- Yellow connectors and harnesses with yellow tapes around them are the connectors and harnesses for the airbag system. Using a tester above such circuits may cause malfunction of airbag system. Follow the cautions of "AIRBAG SYSTEM" in this case. <Ref. to AB-9, CAUTION, General Description.>
- Be careful not to damage the airbag system wiring harness when servicing electrical parts and switches.
- If the steering wheel and steering angle sensor (steering roll connector) are removed, adjust the steering angle sensor. <Ref. to VDC-23, ADJUSTMENT, VDC Control Module and Hydraulic Control Unit (VDC-CM&H/U).>

C: PREPARATION TOOL

1. SPECIAL TOOL

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST1B022XU0	1B022XU0	SUBARU SELECT MONITOR III KIT	Used for setting of each function and troubleshooting for electrical system. NOTE: For detailed operation procedures of SUBARU SELECT MONITOR III KIT, refer to "PC application help for Subaru Select Monitor".

2. GENERAL TOOL

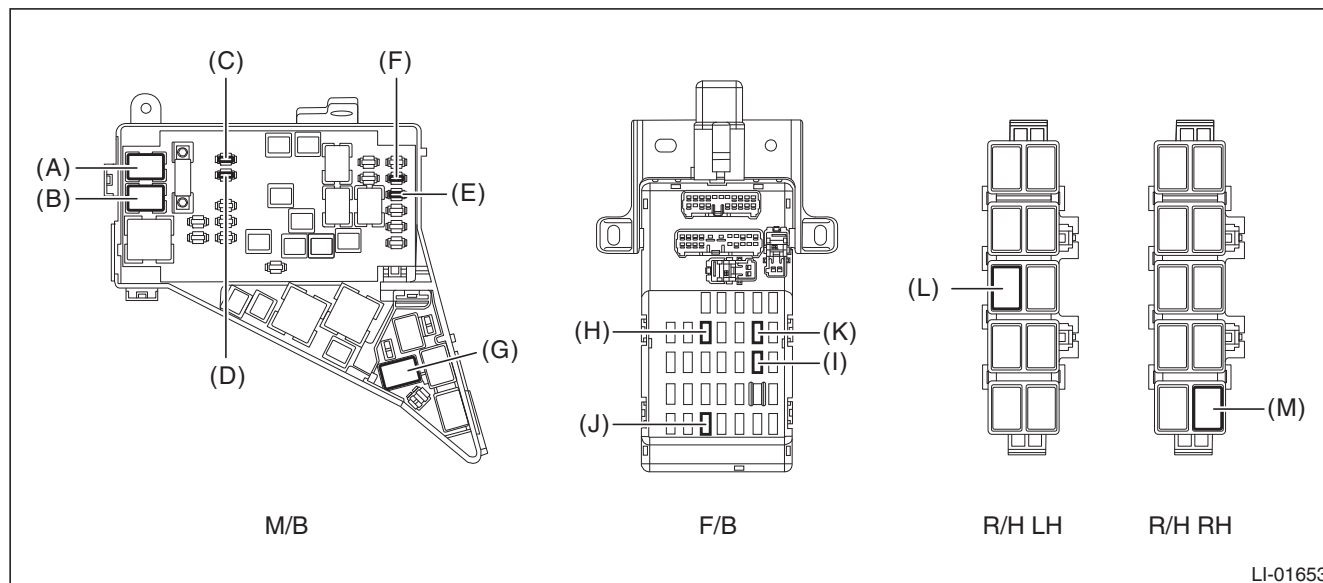
TOOL NAME	REMARKS
Circuit tester	Used for measuring resistance and voltage.
Steering wheel puller	Used for removing the steering wheel.

Relay and Fuse

LIGHTING SYSTEM

2. Relay and Fuse

A: LOCATION



Main fuse box	Headlight relay (HI)	(A)
	Headlight relay (LO)	(B)
	Fuse 15 A (high beam LH/RH)	(C)
	Fuse 30 A (combination light LH/RH)	(D)
	Fuse 15A (turn signal & hazard unit, key illumination)	(E)
	Fuse 15A (tail and illumination relay, daytime running light relay)	(F)
	Daytime running light relay	(G)
Relay & fuse box	Fuse 15A (stop light and brake switch)	(H)
	Fuse 10A (inhibitor switch, back-up light switch, auto headlight beam leveler CM)	(I)
	Fuse 15A (front fog light relay)	(J)
	Fuse 7.5A (turn signal & hazard unit)	(K)
Relay holder LH	Tail & illumination relay	(L)
Relay holder RH	Front fog light relay	(M)

NOTE:

For other related fuses, refer to the wiring diagram. <Ref. to WI-24, Power Supply Circuit.>

Relay and Fuse

LIGHTING SYSTEM

B: INSPECTION

1. CHECK FUSE

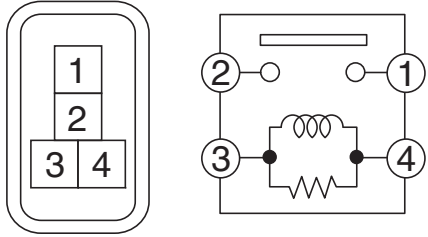
- 1) Remove the fuse and inspect visually.
- 2) If the fuse is blown out, replace the fuse.

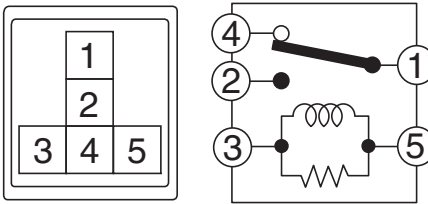
NOTE:

If the fuse is blown again, check the system wiring harness.

2. CHECK RELAY

- 1) Check the resistance between relay terminals.

Terminal No.	Inspection conditions	Standard	Circuit
1 — 2	Always	1 MΩ or more	 LI-01273
1 — 2	Apply battery voltage between terminals 4 and 3.	Less than 1 Ω	

Terminal No.	Inspection conditions	Standard	Circuit
1 — 2	Always	1 MΩ or more	 LI-01274
1 — 4	Always	Less than 1 Ω	
1 — 2	Apply battery voltage between terminals 3 and 5.	Less than 1 Ω	

- 2) Replace the relay if the inspection result is not within the standard value.

Headlight System

LIGHTING SYSTEM

3. Headlight System

A: WIRING DIAGRAM

Refer to "Headlight System" in the wiring diagram. <Ref. to WI-263, WIRING DIAGRAM, Headlight System.>

B: INSPECTION

1. AUTO HEADLIGHT SYSTEM CHECK

Step	Check	Yes	No
1	CHECK HEADLIGHT ILLUMINATION. Set the lighting switch to the switch 1 (TAIL) and switch 2 (HEAD).	Go to step 2.	Check the combination switch (light) and headlight bulb.
2	CHECK CURRENT DATA. Using the Subaru Select Monitor, display the data of «Lighting AUTO input». NOTE: For detailed procedures, refer to "PC application help for Subaru Select Monitor".	Go to step 3.	Go to step 8.
3	CHECK CURRENT DATA. 1) Using the Subaru Select Monitor, display the data of «Illumination Sensor Output». 2) Measure the voltage when the area around the light control sensor, which was dark, becomes bright. Illumination sensor output Dark condition: Approx. 0.6 V or less Bright condition: Approx. 3.0 V or more	Is the voltage output according to the brightness? Check and replace the body integrated unit. • Inspection: <Ref. to BC(diag)-2, Basic Diagnostic Procedure.> • Replacement: <Ref. to SL-74, Body Integrated Unit.>	Go to step 4.
4	CHECK HARNESS. 1) Disconnect the connectors from body integrated unit and light control sensor. 2) Check the harness between body integrated unit and light control sensor. Connector & terminal (B280) No. 19 — (i89) No. 2: (B280) No. 29 — (i89) No. 1: (B281) No. 1 — (i89) No. 3:	Is harness normal?	Go to step 5.
5	CHECK HARNESS. 1) Connect the connector of body integrated unit. 2) Turn the ignition switch to ON. 3) Measure the voltage between light control sensor connector and chassis ground. Connector & terminal (i89) No. 3 (+) — Chassis ground (-):	Is the voltage 4.5 — 5.5 V?	Go to step 6.
6	CHECK BODY INTEGRATED UNIT. Measure the resistance between the body integrated unit and chassis ground. Connector & terminal (B280) No. 29 — Chassis ground:	Is the resistance less than 10 Ω?	Go to step 7.
7	CHECK LIGHT CONTROL SENSOR. 1) Connect the light control sensor connector. 2) Check the light control sensor. <Ref. to LI-25, INSPECTION, Light Control Sensor.>	Is the light control sensor normal?	Go to step 8.
8	CHECK COMBINATION SWITCH (LIGHT). Check the combination switch (light). <Ref. to LI-22, INSPECTION, Combination Switch (Light).>	Is the combination switch (light) normal?	Go to step 9.
			Replace the combination switch (light).

Headlight System

LIGHTING SYSTEM

Step	Check	Yes	No
9 CHECK HARNESS. 1) Disconnect the connectors of body integrated unit and combination switch (light). 2) Check the harness between body integrated unit and combination switch (light). Connector & terminal (B71) No. 19 — (B281) No. 16:	Is harness normal?	Check and replace the body integrated unit. • Inspection: <Ref. to BC(diag)-2, Basic Diagnostic Procedure.> • Replacement: <Ref. to SL-74, Body Integrated Unit.>	Repair or replace the harness.

2. CHECK LIGHTING SWITCH

Refer to the "INSPECTION" of the "Combination Switch (Light)". <Ref. to LI-22, INSPECTION, Combination Switch (Light).>

3. CHECK DIMMER & PASSING SWITCH

Refer to the "INSPECTION" of the "Combination Switch (Light)". <Ref. to LI-22, INSPECTION, Combination Switch (Light).>

C: NOTE

For operation procedures of each component of the headlight system, refer to the respective section.

- Headlight Assembly: <Ref. to LI-26, Headlight Assembly.>
- Headlight bulb: <Ref. to LI-33, Headlight Bulb.>
- Combination switch (light): <Ref. to LI-18, Combination Switch (Light).>
- Light control sensor: <Ref. to LI-24, Light Control Sensor.>



Day Time Running Light System

LIGHTING SYSTEM

4. Day Time Running Light System

A: WIRING DIAGRAM

Refer to "Headlight System" in the wiring diagram. <Ref. to WI-263, WIRING DIAGRAM, Headlight System.>

B: INSPECTION

1. DAYTIME RUNNING LIGHT SYSTEM CHECK

Step	Check	Yes	No
1 CHECK BODY INTEGRATED UNIT. Read the DTC using Subaru Select Monitor. NOTE: For detailed procedures, refer to "PC application help for Subaru Select Monitor".	Is DTC displayed?	Perform the diagnosis according to DTC.	Go to step 2.
2 CHECK CURRENT DATA. Display the following items using Subaru Select Monitor. • «Parking Brake Switch Input» • «Shift position» • «Lighting II Switch Input»	Is the input signal normal?	Go to step 3.	Check the defective part.
3 CHECK RELAY. Check the daytime running light relay. <Ref. to LI-5, CHECK RELAY, INSPECTION, Relay and Fuse.>	Is the relay OK?	Go to step 4.	Replace the relay.
4 CHECK HARNESS. Check each harness.	Is harness normal?	Replace the body integrated unit. <Ref. to SL-74, REMOVAL, Body Integrated Unit.>	Repair or replace the harness.

C: NOTE

For operation procedures of each component of the daytime running light system, refer to the respective section.

- Headlight Assembly: <Ref. to LI-26, Headlight Assembly.>
- Headlight bulb: <Ref. to LI-33, Headlight Bulb.>
- Combination switch (light): <Ref. to LI-18, Combination Switch (Light).>
- Daytime running resistor: <Ref. to LI-76, Day Time Running Resistor.>

5. Clearance Light and Illumination Light System

A: WIRING DIAGRAM

Refer to "Clearance Light and Illumination Light System" in the wiring diagram. <Ref. to WI-108, WIRING DIAGRAM, Clearance Light and Illumination Light System.>

B: INSPECTION

1. CHECK LIGHTING SWITCH

Refer to the "INSPECTION" of the "Combination Switch (Light)". <Ref. to LI-22, INSPECTION, Combination Switch (Light).>

C: NOTE

For operation procedures of each component of the clearance light & illumination light system, refer to the respective sections.

- Combination switch (light): <Ref. to LI-18, Combination Switch (Light).>
- Parking light bulb: <Ref. to LI-44, Clearance/Parking Light Bulb.>
- Front side marker light bulb: <Ref. to LI-45, Front Side Marker Light Bulb.>
- Rear combination light assembly: <Ref. to LI-51, Rear Combination Light Assembly.>
- Tail light/stop light bulb: <Ref. to LI-52, Tail/Stop Light Bulb.>
- Rear side marker light bulb: <Ref. to LI-56, Rear Side Marker Light Bulb.>
- License plate light: <Ref. to LI-59, License Plate Light.>
- Ignition switch illumination: <Ref. to LI-70, Ignition Switch Illumination.>



Front Fog Light System

LIGHTING SYSTEM

6. Front Fog Light System

A: WIRING DIAGRAM

Refer to "Front Fog Light System" in the wiring diagram. <Ref. to WI-252, WIRING DIAGRAM, Front Fog Light System.>

B: INSPECTION

1. CHECK FRONT FOG LIGHT SWITCH

Refer to the "INSPECTION" of the "Combination Switch (Light)". <Ref. to LI-22, INSPECTION, Combination Switch (Light).>

C: NOTE

For operation procedures of each component of the front fog light system, refer to the respective section.

- Combination switch (light): <Ref. to LI-18, Combination Switch (Light).>
- Front fog light assembly: <Ref. to LI-46, Front Fog Light Assembly.>
- Front fog light bulb: <Ref. to LI-49, Front Fog Light Bulb.>

7. Turn Signal Light and Hazard Light System

A: WIRING DIAGRAM

Refer to "Turn Signal Light and Hazard Light System" in the wiring diagram. <Ref. to WI-411, WIRING DIAGRAM, Turn Signal Light and Hazard Light System.>

B: INSPECTION

1. CHECK TURN SIGNAL SWITCH

Refer to the "INSPECTION" of the "Combination Switch (Light)". <Ref. to LI-22, INSPECTION, Combination Switch (Light).>

2. CHECK HAZARD SWITCH

Refer to the "INSPECTION" of the "Hazard Switch". <Ref. to LI-40, INSPECTION, Hazard Switch.>

3. CHECK TURN SIGNAL & HAZARD UNIT

Refer to "INSPECTION" of the "Turn Signal Light & Hazard Light Unit". <Ref. to LI-41, INSPECTION, Turn Signal Light & Hazard Light Unit.>

C: NOTE

For operation procedures of each component of the turn signal and hazard light system, refer to the respective sections.

- Combination switch (light): <Ref. to LI-18, Combination Switch (Light).>
- Front turn signal light bulb: <Ref. to LI-43, Front Turn Signal Light Bulb.>
- Side turn signal light assembly: <Ref. to LI-50, Side Turn Signal Light Assembly.>
- Rear combination light assembly: <Ref. to LI-51, Rear Combination Light Assembly.>
- Rear turn signal light bulb: <Ref. to LI-54, Rear Turn Signal Light Bulb.>
- Hazard switch: <Ref. to LI-39, Hazard Switch.>
- Turn signal & hazard unit: <Ref. to LI-41, Turn Signal Light & Hazard Light Unit.>



Back-up Light System

LIGHTING SYSTEM

8. Back-up Light System

A: WIRING DIAGRAM

Refer to "Back-up Light System" in the wiring diagram.

- Non-turbo model: <Ref. to WI-90, NON-TURBO MODEL, WIRING DIAGRAM, Back-up Light System.>
- Turbo model: <Ref. to WI-93, TURBO MODEL, WIRING DIAGRAM, Back-up Light System.>

B: INSPECTION

1. CHECK BACK-UP LIGHT SWITCH (MT MODEL)

Refer to "INSPECTION" of the "Switches and Harness" in "MANUAL TRANSMISSION AND DIFFERENTIAL" section. <Ref. to 6MT-41, BACK-UP LIGHT SWITCH, INSPECTION, Switches and Harness.>

2. CHECK INHIBITOR SWITCH (CVT MODEL)

Refer to "INSPECTION" of the "Inhibitor Switch" in "CONTINUOUSLY VARIABLE TRANSMISSION" section.

- Non-turbo model: <Ref. to CVT(TR580)-91, INSPECTION, Inhibitor Switch.>
- Turbo model: <Ref. to CVT(TR690)-91, INSPECTION, Inhibitor Switch.>

C: NOTE

For operation procedures of each component of the back-up light system, refer to the respective section.

- Rear combination light assembly: <Ref. to LI-51, Rear Combination Light Assembly.>
- Back-up light bulb: <Ref. to LI-57, Back-up Light Bulb.>



9. Stop Light System

A: WIRING DIAGRAM

Refer to "Stop Light System" in the wiring diagram.

- Non-turbo model without EyeSight: <Ref. to WI-401, NON-TURBO MODEL (WITHOUT EyeSight AND X MODE), WIRING DIAGRAM, Stop Light System.>
- Except for non-turbo model without EyeSight: <Ref. to WI-403, EXCEPT FOR NON-TURBO MODEL (WITHOUT EyeSight AND X MODE), WIRING DIAGRAM, Stop Light System.>

B: INSPECTION

1. CHECK STOP LIGHT SWITCH

Refer to "INSPECTION" of the "Stop Light Switch" in "BRAKE" section. <Ref. to BR-78, INSPECTION, Stop Light Switch.>

C: NOTE

For operation procedures of each component of the stop light system, refer to the respective section.

- Rear combination light assembly: <Ref. to LI-51, Rear Combination Light Assembly.>
- Tail light/stop light bulb: <Ref. to LI-52, Tail/Stop Light Bulb.>
- High-mounted stop light: <Ref. to LI-60, High-mounted Stop Light.>



Interior Light System

LIGHTING SYSTEM

10. Interior Light System

A: WIRING DIAGRAM

Refer to "Interior Light System" in the wiring diagram. <Ref. to WI-275, WIRING DIAGRAM, Interior Light System.>

B: INSPECTION

1. CHECK DOOR SWITCH

Refer to the "INSPECTION" of the "Door Switch". <Ref. to LI-78, INSPECTION, Door Switch.>

2. CHECK REAR GATE LATCH SWITCH

- Except for model with power rear gate: refer to "INSPECTION" of the "Rear Gate Latch and Actuator Assembly" in "SECURITY AND LOCKS" section. <Ref. to SL-51, ACTUATOR, INSPECTION, Rear Gate Latch and Actuator Assembly.>
- Model with power rear gate: Refer to "INSPECTION" of the "Power Rear Gate Auto Closer" in "POWER REAR GATE SYSTEM" section. <Ref. to PRG-16, INSPECTION, Power Rear Gate Auto Closer.>

C: NOTE

For operation procedures of each component of the interior light system, refer to the respective section.

- Spot map light: <Ref. to LI-62, Spot Map Light.>
- Room light: <Ref. to LI-65, Room Light.>
- Luggage room light: <Ref. to LI-67, Luggage Room Light.>
- Door step light: <Ref. to LI-69, Door Step Light.>
- Door switch: <Ref. to LI-78, Door Switch.>



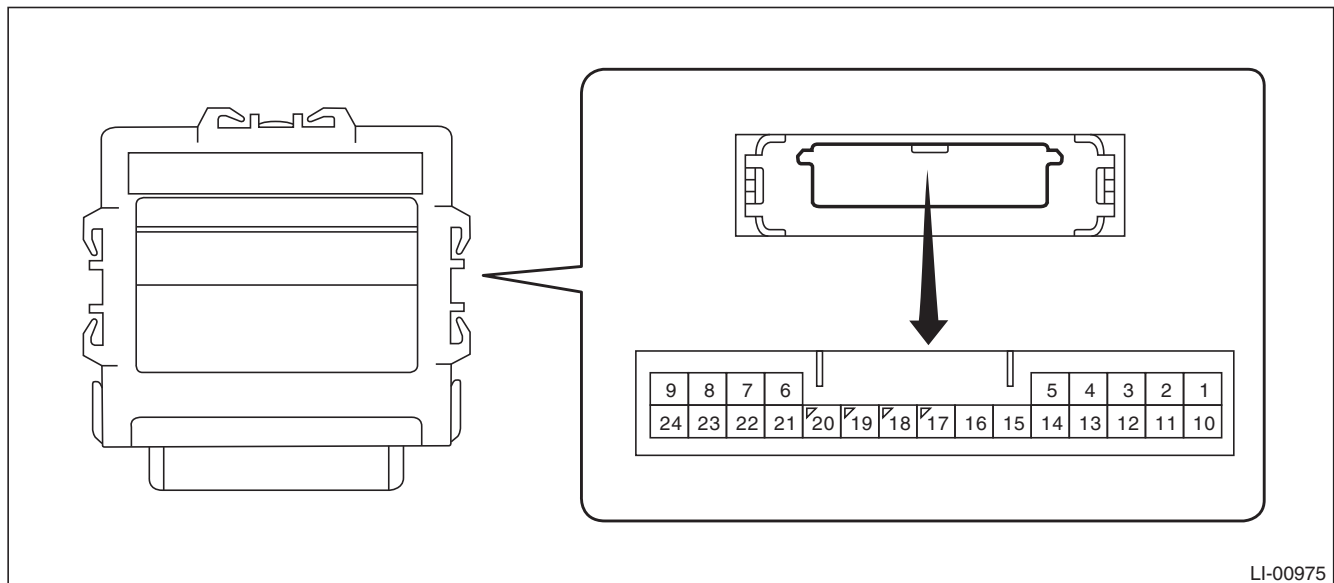
11. Auto Headlight Beam Leveler System

A: WIRING DIAGRAM

Refer to "Headlight Beam Leveler System" in the wiring diagram. <Ref. to WI-260, WIRING DIAGRAM, Headlight Beam Leveler System.>

B: SPECIFICATION

1. TERMINAL ARRANGEMENT OF AUTO HEADLIGHT BEAM LEVELER CM

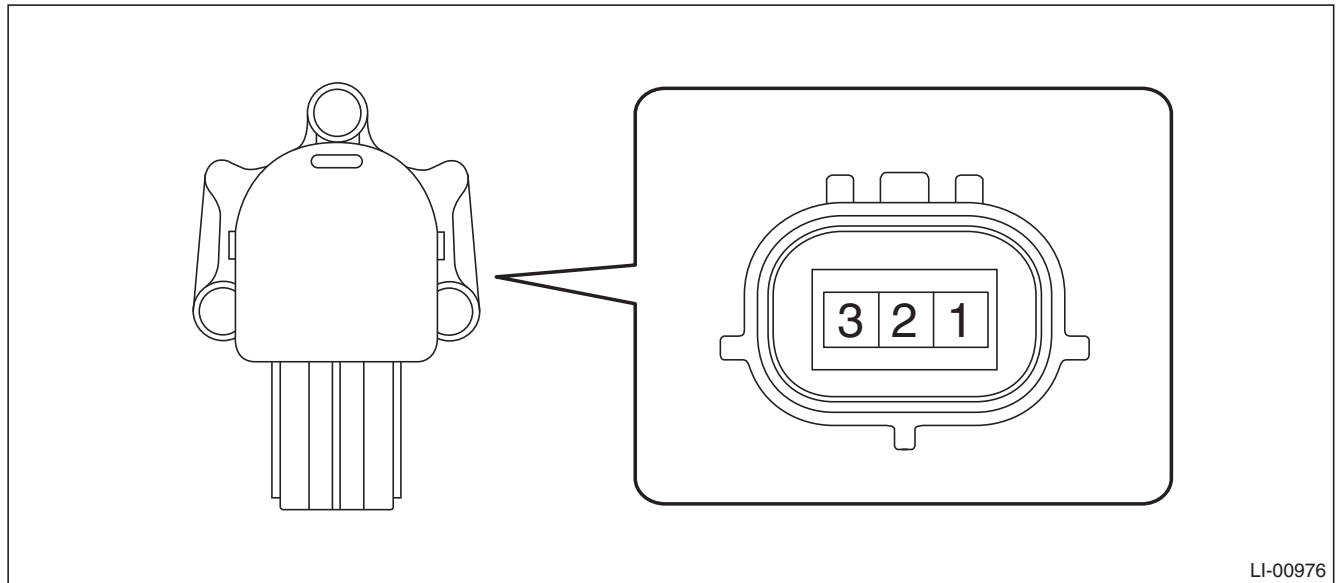


- | | | |
|----------------------|-------------------------------|-------------------------------------|
| (1) IG power supply | (9) Not used | (17) Actuator control signal output |
| (2) GND | (10) Actuator power supply | (18) Not used |
| (3) Rear sensor GND | (11) Actuator GND | (19) Rear sensor input |
| (4) Not used | (12) Rear sensor power supply | (20) Not used |
| (5) Not used | (13) Not used | (21) Not used |
| (6) Indicator output | (14) Not used | (22) Not used |
| (7) Not used | (15) Not used | (23) CAN-HI |
| (8) Not used | (16) Not used | (24) CAN-LO |

Auto Headlight Beam Leveler System

LIGHTING SYSTEM

2. TERMINAL LAYOUT OF VEHICLE HEIGHT SENSOR



(1) GND

(2) Output

(3) Power supply

C: INSPECTION

Refer to “Basic Diagnostic Procedure” of “AUTO HEADLIGHT BEAM LEVELER SYSTEM (DIAGNOSTICS)” section. <Ref. to AL(diag)-2, Basic Diagnostic Procedure.>

D: PROCEDURE

When parts related to the auto headlight beam leveler system are removed or replaced, perform the following procedures to initialize or reinitialize.

NOTE:

Before performing initialization or reinitialization, check the following:

- Vehicle is parked on a level surface.
- The inflation pressure of tires is correct.
- Unload any cargo from the vehicle.
- Vehicle’s fuel tank is fully filled.
- Refer to the following chart to determine whether to initialize or reinitialize.

Initialization	When the auto headlight beam leveler CM was replaced with a new module.
Reinitialization	• When the auto headlight beam leveler CM was replaced with a part from another vehicle. • When suspension parts have been removed or replaced. (Crossmember, front arm, sub frame, lateral link, housing, strut etc.) • When the vehicle height sensor has been replaced or removed.

CAUTION:

If the indicator does not flash three times or the headlight beam does not operate, it can be assumed that there is an open circuit or faulty wiring in the harness of the auto headlight beam leveler CM, vehicle height sensors or headlight assembly. Perform inspection and repair according to the inspection results, then perform initialization/reinitialization again.

- Initialization: <Ref. to LI-17, INITIALIZATION, PROCEDURE, Auto Headlight Beam Leveler System.>
- Reinitialization: <Ref. to LI-17, REINITIALIZATION, PROCEDURE, Auto Headlight Beam Leveler System.>

Auto Headlight Beam Leveler System

LIGHTING SYSTEM

1. INITIALIZATION

- 1) Check that the indicator in the meter is flashing twice repeatedly.
- 2) Bounce the vehicle several times to normalize the suspension.
- 3) Make certain that someone is seated in the driver's seat.
- 4) Turn the ignition switch to ON, and within 1.5 — 20 seconds, turn the headlight switch OFF → ON for three successive times.
- 5) Make sure that the indicator in the meter flashes three times and then turns OFF, indicating that initialization has been successfully completed. (At this time, the headlight beam drops once, and then returns to the original position.)
- 6) Perform beam adjustment for the headlight. <Ref. to LI-31, ADJUSTMENT, Headlight Assembly.>

2. REINITIALIZATION

- 1) Bounce the vehicle several times to normalize the suspension.
- 2) Make certain that someone is seated in the driver's seat.
- 3) Turn the ignition switch to ON, and, within 1.5 — 10 seconds, turn the headlight switch OFF → ON five or more successive times.
- 4) Check that the headlight beam drops once, then returns to normal.
- 5) After confirming 4), turn the ignition switch to OFF within 30 seconds.
- 6) Turn the ignition switch to ON again, and, within 1.5 — 10 seconds, turn the headlight switch OFF → ON five or more successive times.
- 7) Make sure that the indicator in the meter flashes three times and then turns OFF, indicating that reinitialization has been successfully completed. (At this time, the headlight beam drops once, and then returns to the original position.)
- 8) Perform beam adjustment for the headlight. <Ref. to LI-31, ADJUSTMENT, Headlight Assembly.>

E: NOTE

For operation procedures of each component of the auto headlight beam leveler system, refer to the respective section.

- Auto headlight beam leveler CM: <Ref. to LI-72, Auto Headlight Beam Leveler Control Module.>
- Vehicle height sensor: <Ref. to LI-74, Rear Height Sensor.>



Combination Switch (Light)

LIGHTING SYSTEM

12. Combination Switch (Light)

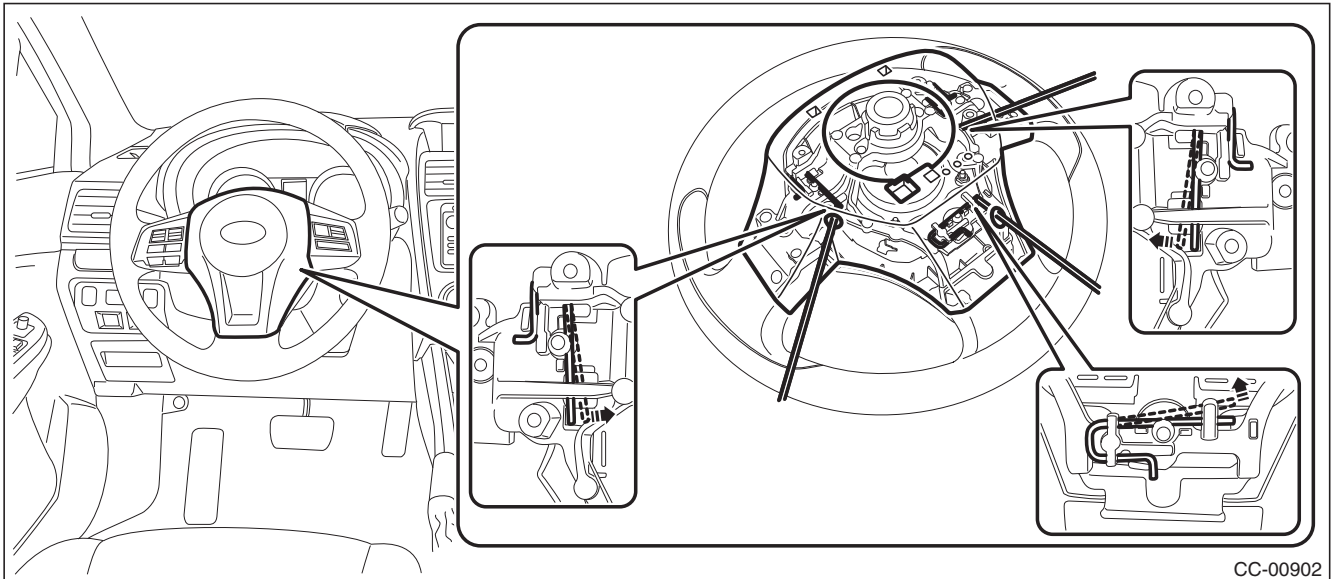
A: REMOVAL

- 1) Position the front wheels straight ahead. (After moving a vehicle 5 m (16 ft) or more with front wheels positioned straight ahead, make sure that the vehicle moves straight ahead.)
- 2) Turn the ignition switch to OFF.
- 3) Disconnect the ground cable from battery and wait for at least 60 seconds before starting work.
- 4) Remove the driver's airbag module.

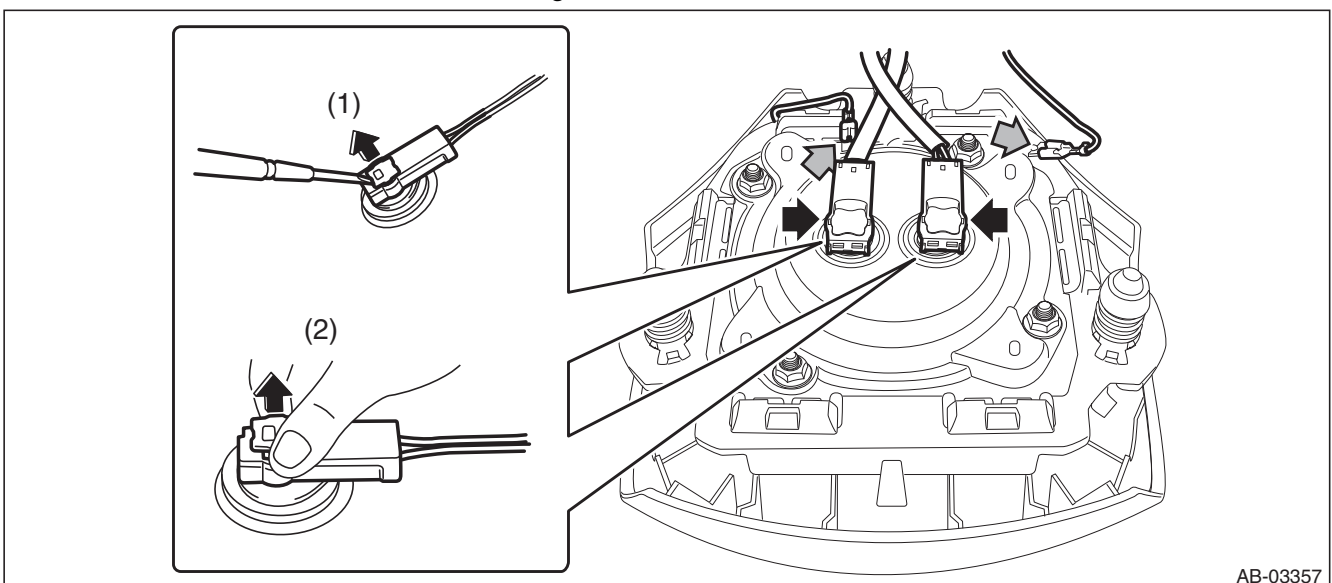
CAUTION:

Before handling the airbag module, refer to "CAUTION" of "General Description" in "AIRBAG SYSTEM". <Ref. to AB-9, CAUTION, General Description.>

- (1) Using a hexagon wrench etc. wrapped by protective tape, insert the snap pins and release the locks (3 locations).



- (2) Disconnect the horn harness and airbag connector, and remove the driver's airbag module. <Ref. to AB-21, DRIVER'S AIRBAG MODULE, KNEE AIRBAG MODULE, CURTAIN AIRBAG MODULE AND PRETENSIONER, PROCEDURE, Airbag Connector.>



Combination Switch (Light)

LIGHTING SYSTEM

5) Remove the steering wheel.

CAUTION:

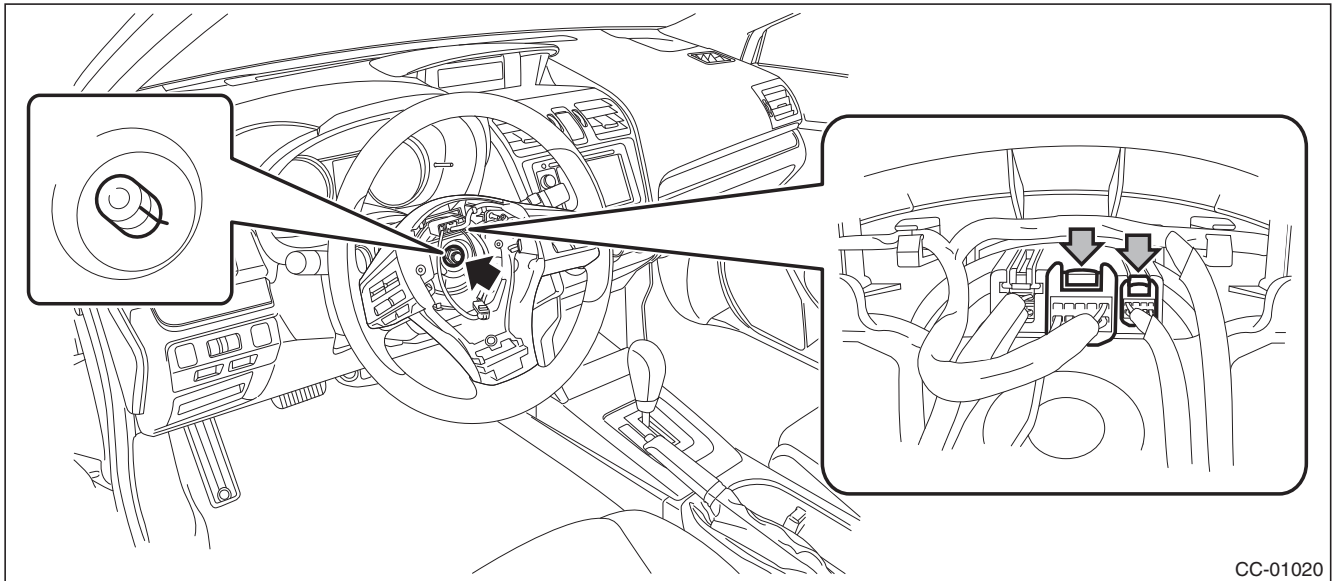
- Always use the steering wheel puller for removal to avoid deforming the steering wheel.
- If the steering wheel has been removed, make sure that the steering roll connector is not turned from the original position.

(1) Disconnect the connector and remove the nut.

(2) Put alignment marks and remove the steering wheel using a steering wheel puller.

Preparation tool:

Steering wheel puller

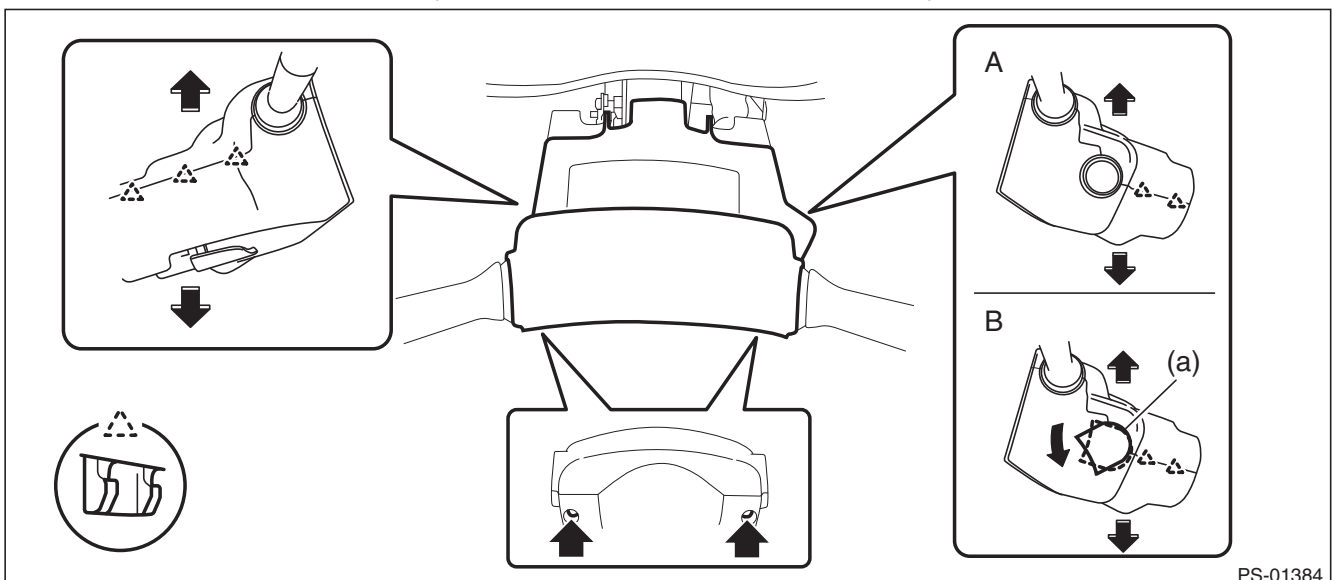


6) Remove the cover assembly - column.

(1) Release the screws and claws.

(2) Remove the cap - key cylinder (a). (Model with keyless access)

(3) Remove the cover assembly - column UPR and the cover assembly - column LWR.



A Models without keyless access

B Models with keyless access

Combination Switch (Light)

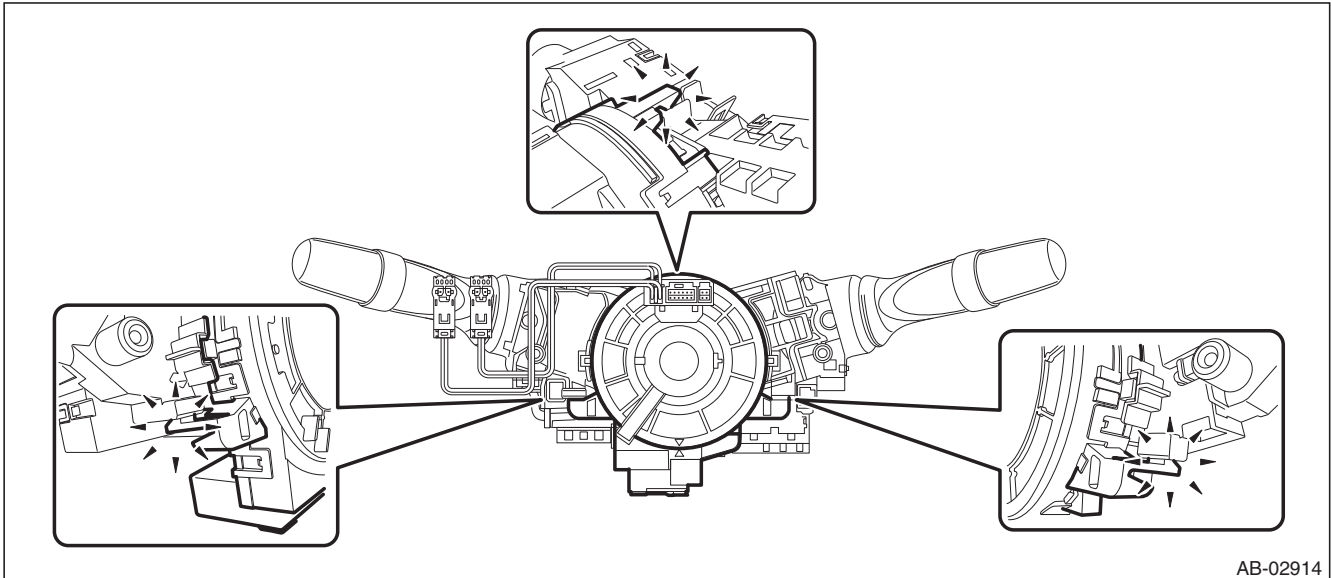
LIGHTING SYSTEM

7) Remove the steering roll connector.

CAUTION:

Make sure that the steering roll connector is not turned from the original position.

- (1) Disconnect the connector under the steering roll connector.
- (2) Release the claws and remove the steering roll connector.

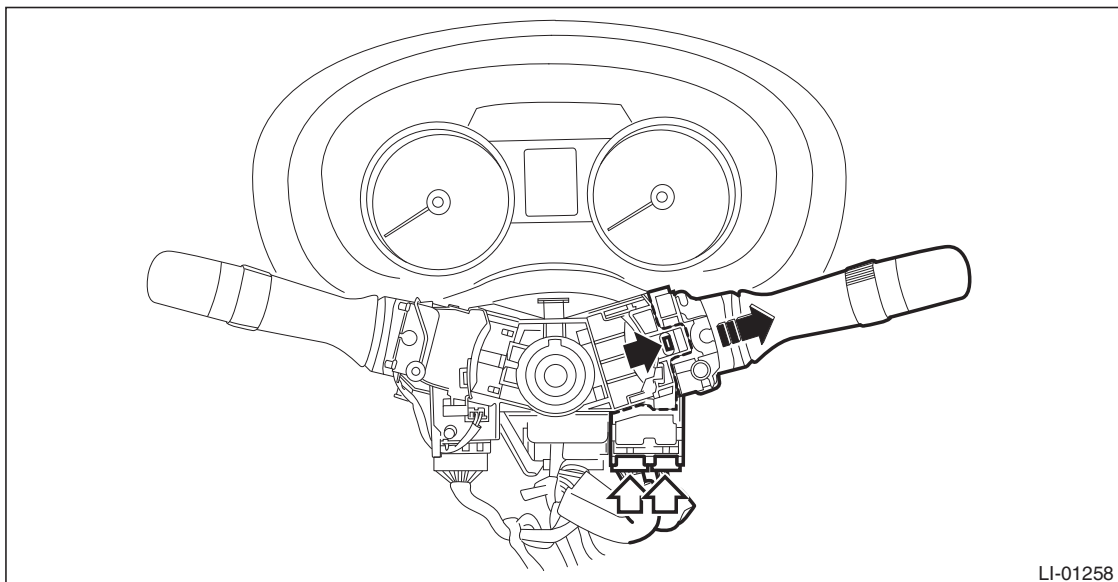


8) Remove the switch assembly - combination wiper select.

- (1) Disconnect the connector.
- (2) Release the claws, and pull out the switch assembly - combination wiper select.

CAUTION:

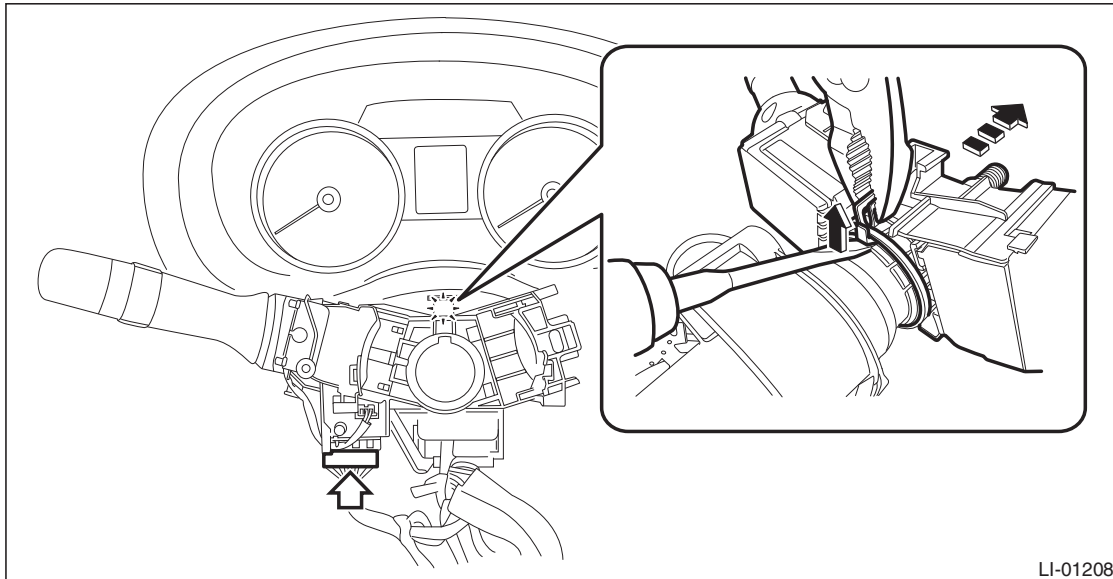
Do not press the claws with excessive force. They may be damaged.



Combination Switch (Light)

LIGHTING SYSTEM

- 9) Remove the switch assembly - combination turn dimmer.
- (1) Disconnect the connector, and loosen the clamp to release the claws.
 - (2) Pull out the switch assembly - combination turn dimmer from the column assembly - steering.



B: INSTALLATION

CAUTION:

- Before handling the airbag module, refer to “CAUTION” of “General Description” in “AIRBAG SYSTEM”. <Ref. to AB-9, CAUTION, General Description.>
- Do not allow harness and connectors to interfere or get tangled up with other parts.
- If the steering wheel and steering angle sensor (steering roll connector) are removed, adjust the steering angle sensor. <Ref. to VDC-23, ADJUSTMENT, VDC Control Module and Hydraulic Control Unit (VDCCM&H/U).>

- 1) Before installing steering wheel, be sure to adjust the direction of steering roll connector with steering wheel. <Ref. to AB-103, ADJUSTMENT, Roll Connector.>
- 2) Install each part in the reverse order of removal.

NOTE:

Align the alignment marks on the steering wheel and the column assembly - steering.

Tightening torque:

Steering wheel: 39 N·m (3.98 kgf-m, 28.8 ft-lb)

Clearance:

Between cover assembly - column and steering wheel: 4 — 6 mm (0.16 — 0.24 in)

Combination Switch (Light)

LIGHTING SYSTEM

C: INSPECTION

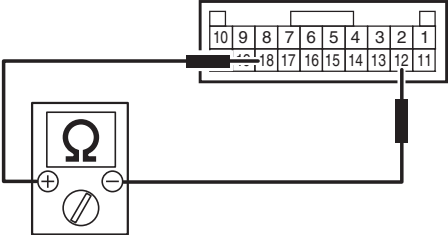
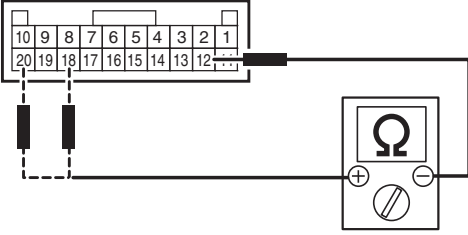
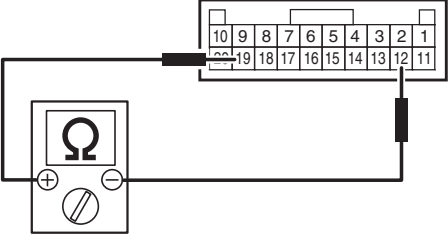
Unit inspection

Preparation tool:

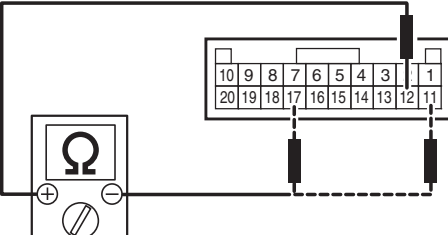
Circuit tester

1) Check the resistance between switch terminals.

- Lighting switch

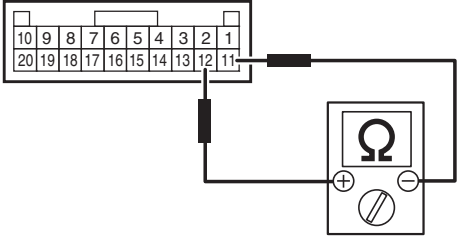
Terminal No.	Inspection conditions	Standard	Connection diagram
—	Switch OFF	1 MΩ or more	—
18 — 12	Switch 1 (TAIL)	Less than 1 Ω	 LI-01244
20, 18 — 12	Switch 2 (HEAD)	Less than 1 Ω	 LI-01245
19 — 12	Switch AUTO	Less than 1 Ω	 LI-01246

- Dimmer & passing switch

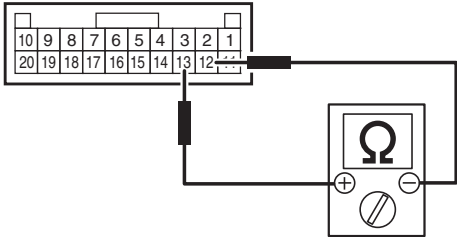
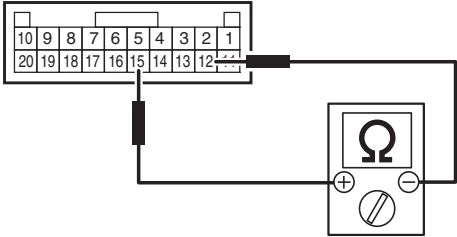
Terminal No.	Inspection conditions	Standard	Connection diagram
11, 17 — 12	Switch PASS	Less than 1 Ω	 LI-01247

Combination Switch (Light)

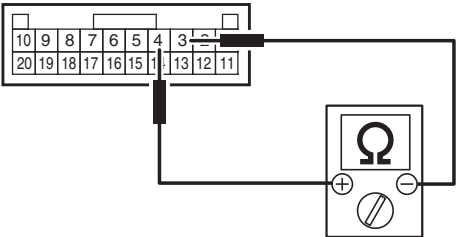
LIGHTING SYSTEM

Terminal No.	Inspection conditions	Standard	Connection diagram
11 — 12	Switch UP	Less than 1 Ω	 LI-01248

• Turn signal switch

Terminal No.	Inspection conditions	Standard	Connection diagram
13 — 12	Switch TURN (RH)	Less than 1 Ω	 LI-01249
15 — 12	Switch TURN (LH)	Less than 1 Ω	 LI-01250

• Front fog light switch

Terminal No.	Inspection conditions	Standard	Connection diagram
4 — 3	Switch OFF	1 M Ω or more	 LI-01251
	Switch ON	Less than 1 Ω	

2) Replace the switch assembly - combination turn dimmer if the inspection result is not within the standard value.

Light Control Sensor

LIGHTING SYSTEM

13. Light Control Sensor

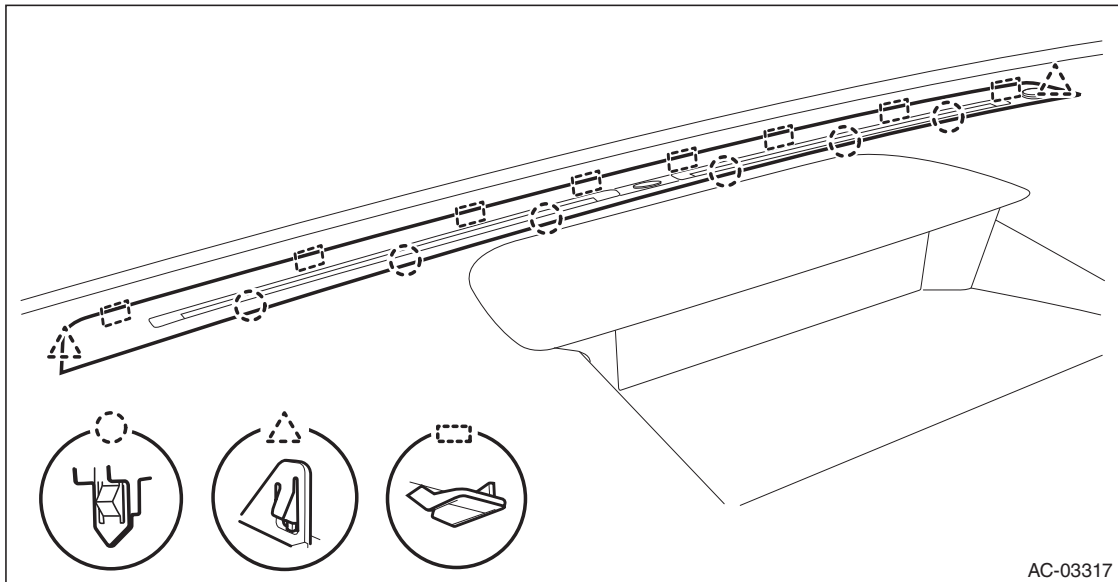
A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Remove the sensor - automatic light.

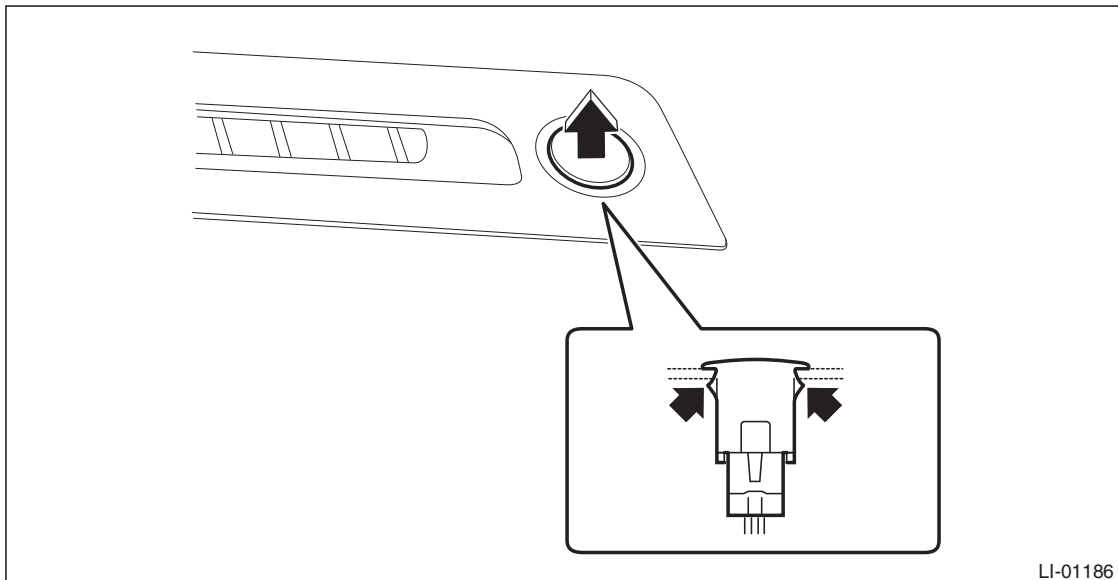
CAUTION:

Be careful not to damage the sensors and interior trims when removing.

- (1) Release the connector and claws, and remove the panel COMPL - instrument UPR.



- (2) Release the claws, and remove the sensor - automatic light from the panel COMPL - instrument UPR.



B: INSTALLATION

Install each part in the reverse order of removal.

Light Control Sensor

LIGHTING SYSTEM

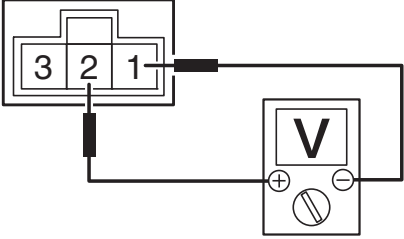
C: INSPECTION

UNIT INSPECTION

Preparation tool:

Circuit tester

- 1) Turn the ignition switch to ON.
- 2) Set the lighting switch to AUTO position.
- 3) Check the voltage between the sensor terminals.

Terminal No.	Inspection conditions	Standard	Connection diagram
2 (+) — 1 (—)	Measure the voltage when the area around the sensor - automatic light, which was dark, becomes bright.	Dark condition: Approx. 0.6 V or less	
		Bright condition: Approx. 3.0 V or more	

LI-01280

- 4) Replace the sensor - automatic light if the inspection result is not within the standard value.



Headlight Assembly

LIGHTING SYSTEM

14. Headlight Assembly

A: REMOVAL

1. WHEN REMOVING RH SIDE

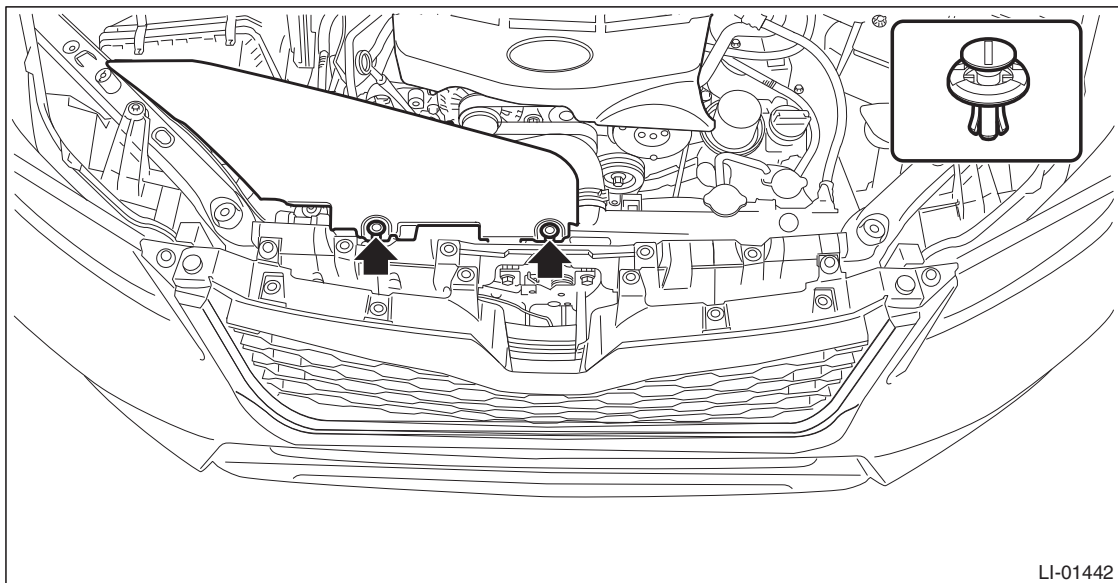
WARNING:

Because the headlight system uses high voltage, be careful not to perform work with wet hands. There is a possibility of electrical shock.

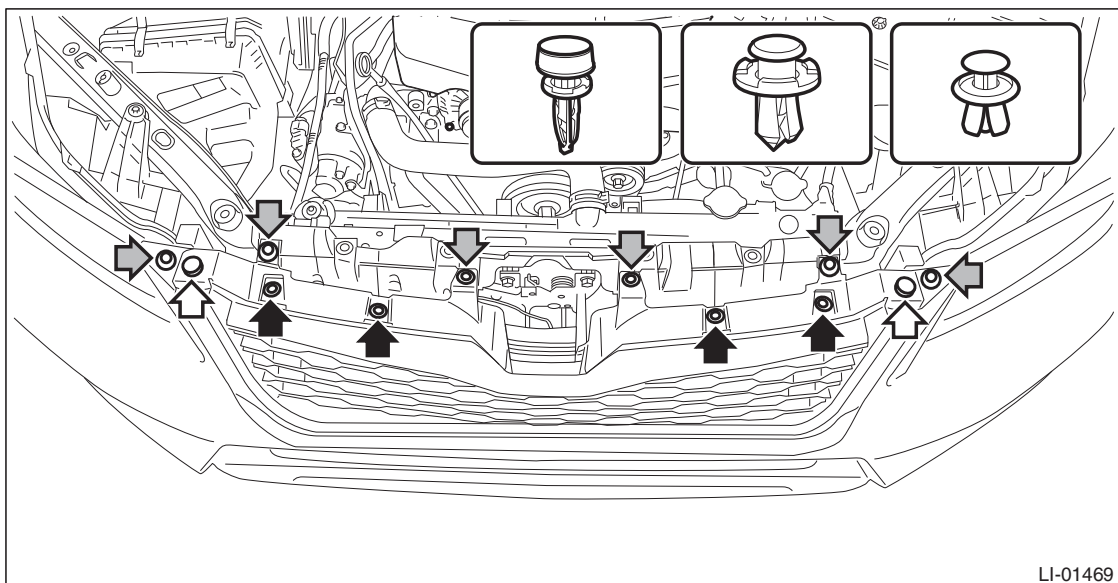
CAUTION:

The HID type uses very high voltages for the lighting circuit. Make sure that the power supply is turned OFF before working.

- 1) Disconnect the ground cable from battery.
- 2) Remove the clips and remove the air intake duct (rear).



- 3) Detach the flange section on the right side of the bumper face - front.
 - (1) Remove each bumper clip.



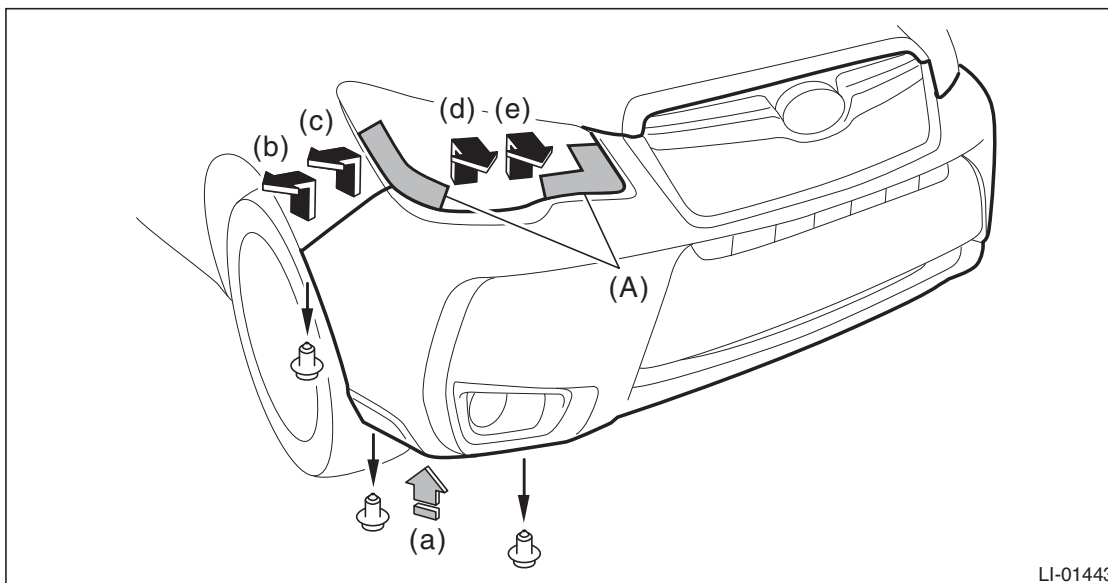
Headlight Assembly

LIGHTING SYSTEM

- (2) Apply protective tape (A) to the light assembly - head.
- (3) Release the clips, and while pushing up the lower side (a) of the bumper face - front, remove from (b) to (e).

CAUTION:

Do not pull forcibly. It may damage the flange sections of the bumper face - front.

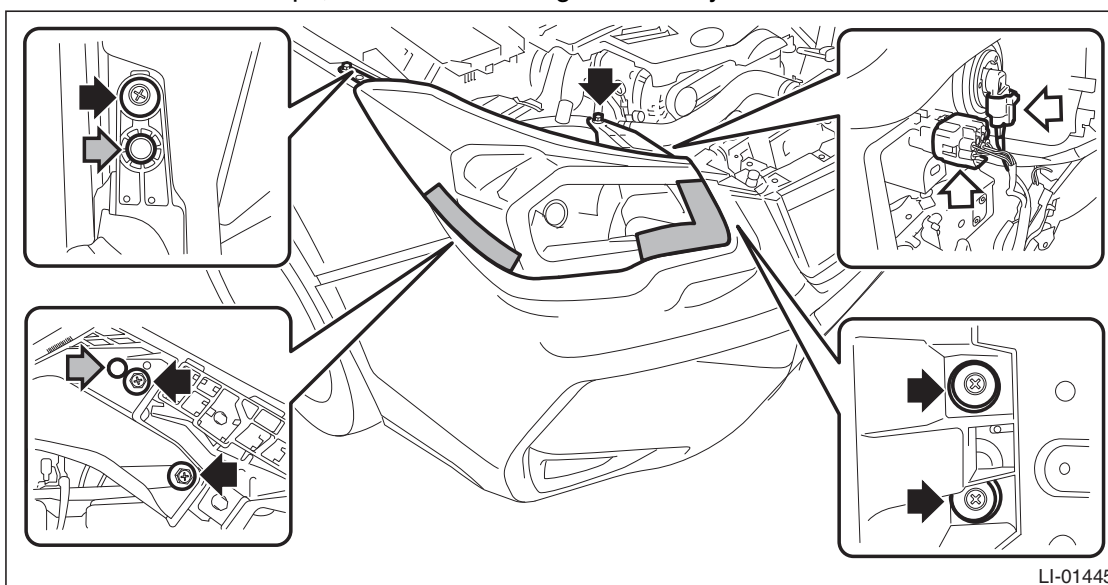


- 4) Remove the light assembly - head.

CAUTION:

Be careful not to damage the light assembly - head, fender COMPL - front, and bumper face - front.

- (1) Disconnect connectors.
- (2) Remove the bolts and clips, and remove the light assembly - head.



Headlight Assembly

LIGHTING SYSTEM

2. WHEN REMOVING LH SIDE

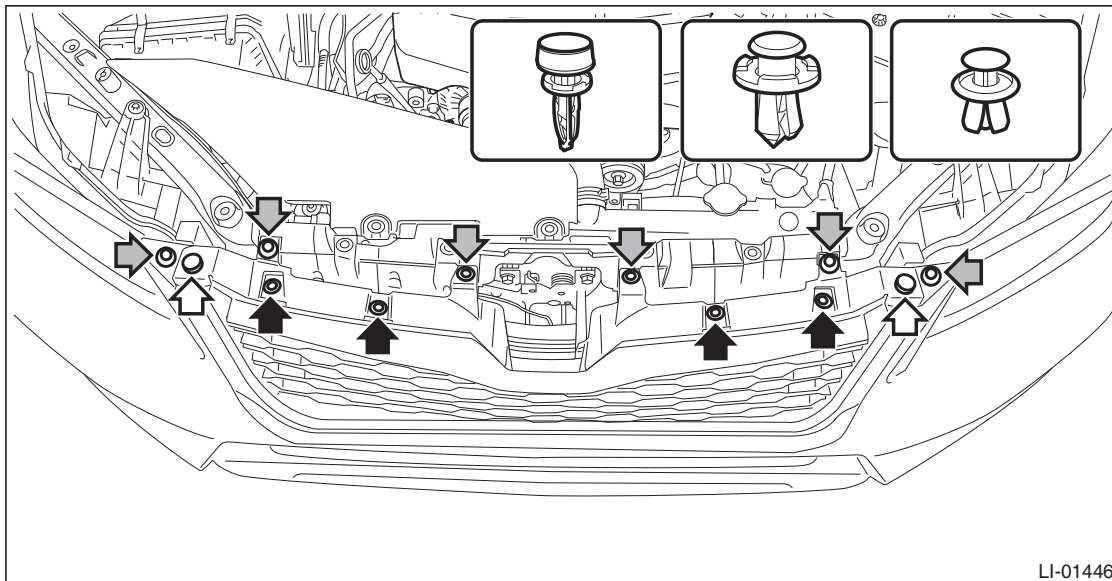
WARNING:

Because the headlight system uses high voltage, be careful not to perform work with wet hands. There is a possibility of electrical shock.

CAUTION:

The HID type uses very high voltages for the lighting circuit. Make sure that the power supply is turned OFF before working.

- 1) Disconnect the ground cable from battery.
- 2) Detach the flange section on the bumper face - front left side.
 - (1) Remove each bumper clip.

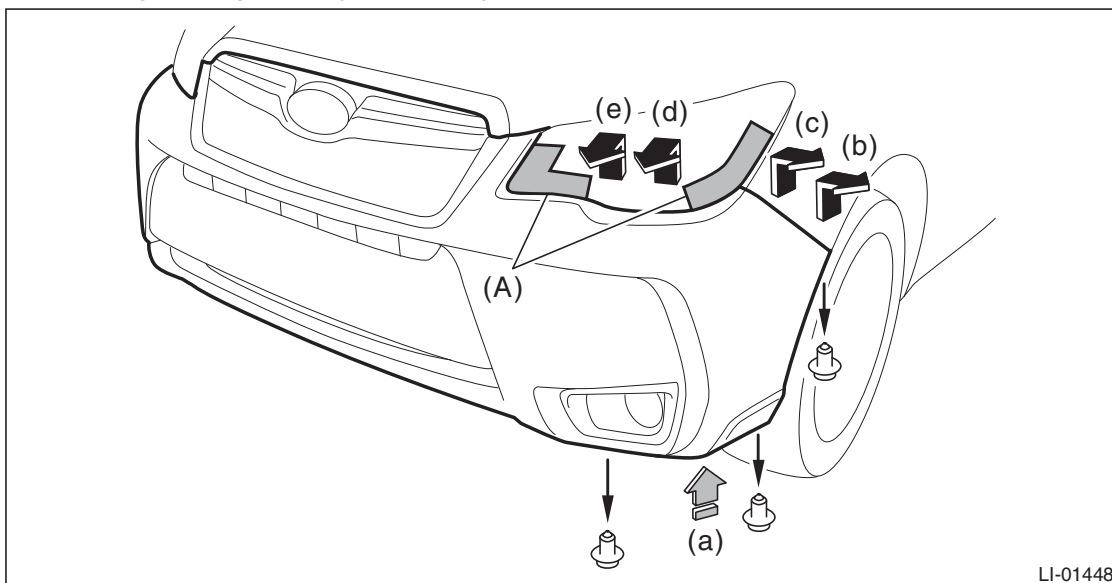


- (2) Apply protective tape (A) to the light assembly - head.

- (3) Release the clips, and while pushing up the lower side (a) of the bumper face - front, remove in the order from (b) to (e).

CAUTION:

Do not pull forcibly. It may damage the flange sections of the bumper face - front.



Headlight Assembly

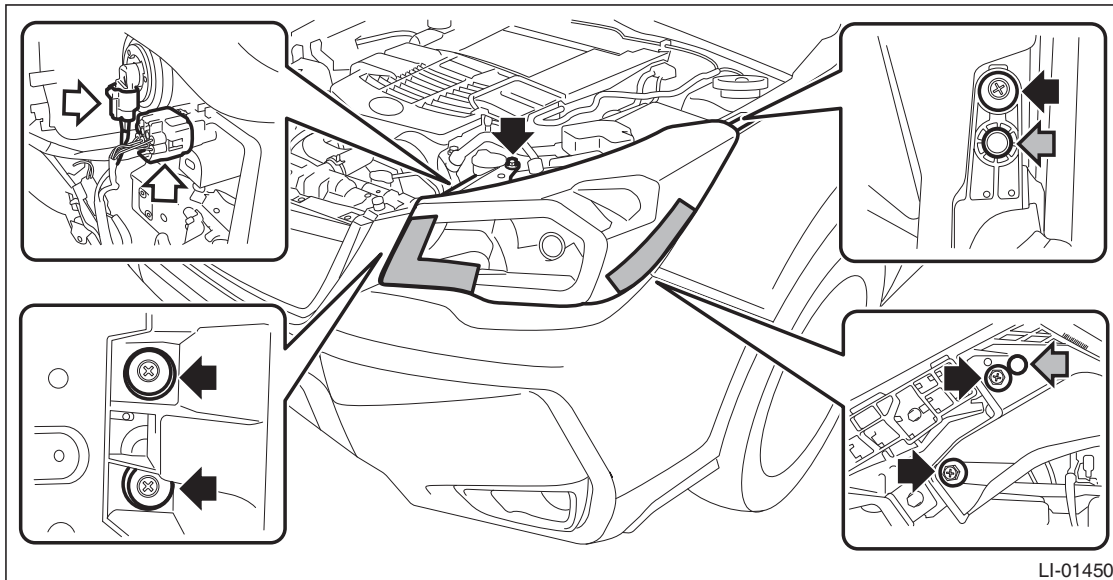
LIGHTING SYSTEM

3) Remove the light assembly - head.

CAUTION:

Be careful not to damage the light assembly - head, fender COMPL - front, and bumper face - front.

- (1) Disconnect connectors.
- (2) Remove the bolts and clips, and remove the light assembly - head.



3. WHEN REMOVING BOTH SIDE

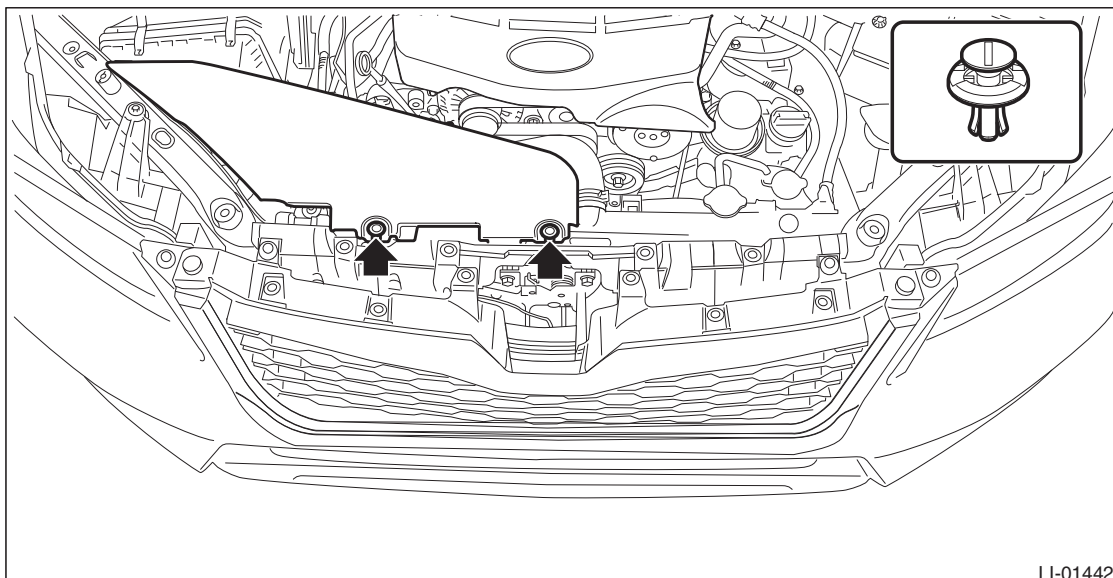
WARNING:

Because the headlight system uses high voltage, be careful not to perform work with wet hands. There is a possibility of electrical shock.

CAUTION:

The HID type uses very high voltages for the lighting circuit. Make sure that the power supply is turned OFF before working.

- 1) Disconnect the ground cable from battery.
- 2) Remove the clips and remove the air intake duct (rear).



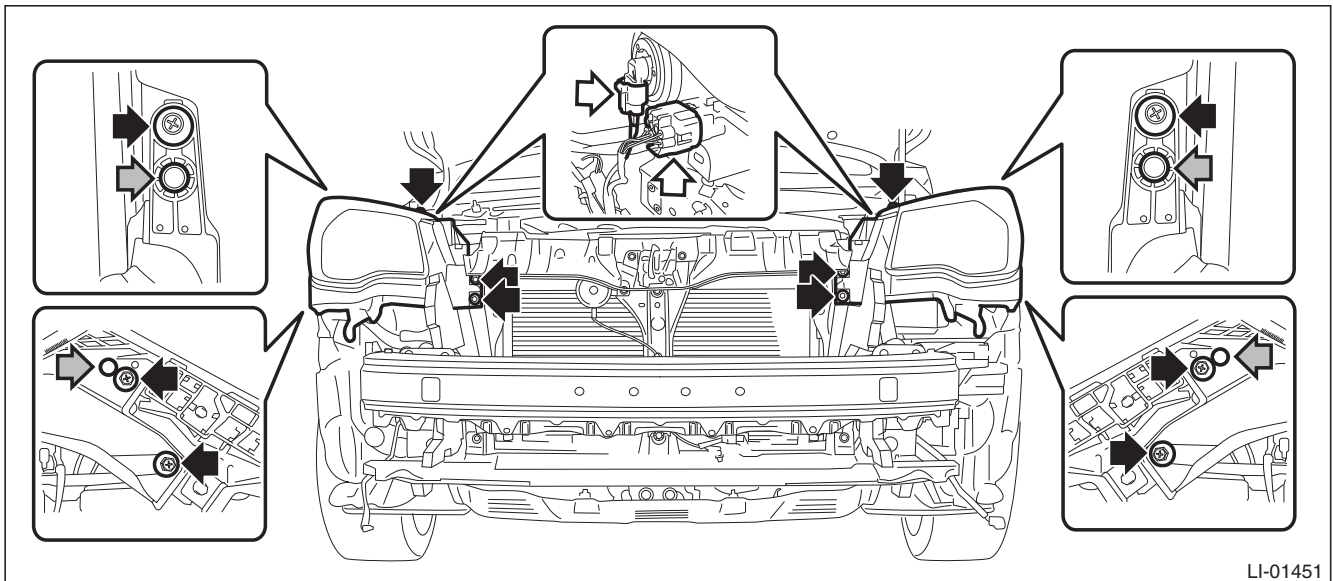
3) Remove the bumper face - front. <Ref. to EI-31, REMOVAL, Front Bumper.>

Headlight Assembly

LIGHTING SYSTEM

4) Remove the light assembly - head.

- (1) Disconnect connectors.
- (2) Remove the bolts and clips, and remove the light assembly - head.



B: INSTALLATION

- 1) Install each part in the reverse order of removal.

NOTE:

Secure the flange section of the bumper face - front to the bracket - front bumper side.

Tightening torque:

Light assembly - head: 7.5 N·m (0.76 kgf-m, 5.5 ft-lb)

- 2) Adjust the headlight beam and fog light beam.

- Adjust the headlight beam. <Ref. to LI-31, HEADLIGHT BEAM ADJUSTMENT, ADJUSTMENT, Headlight Assembly.>
- Adjust the fog light beam. (Model with fog light) <Ref. to LI-47, FOG LIGHT AIMING, ADJUSTMENT, Front Fog Light Assembly.>

C: ADJUSTMENT

1. HEADLIGHT BEAM ADJUSTMENT

CAUTION:

- Turn off the light before adjusting the beam level of the light assembly - head. If it is necessary to inspect the beam level, do not keep the light on for two minutes or more.
 - When blocking the light emitted from the headlight, use a light shield or equivalent.
- Do not apply the tape on the lens or place the cloth over it. It may raise the temperature in the light and cause deformation/bubble formations of the plastic lens.**

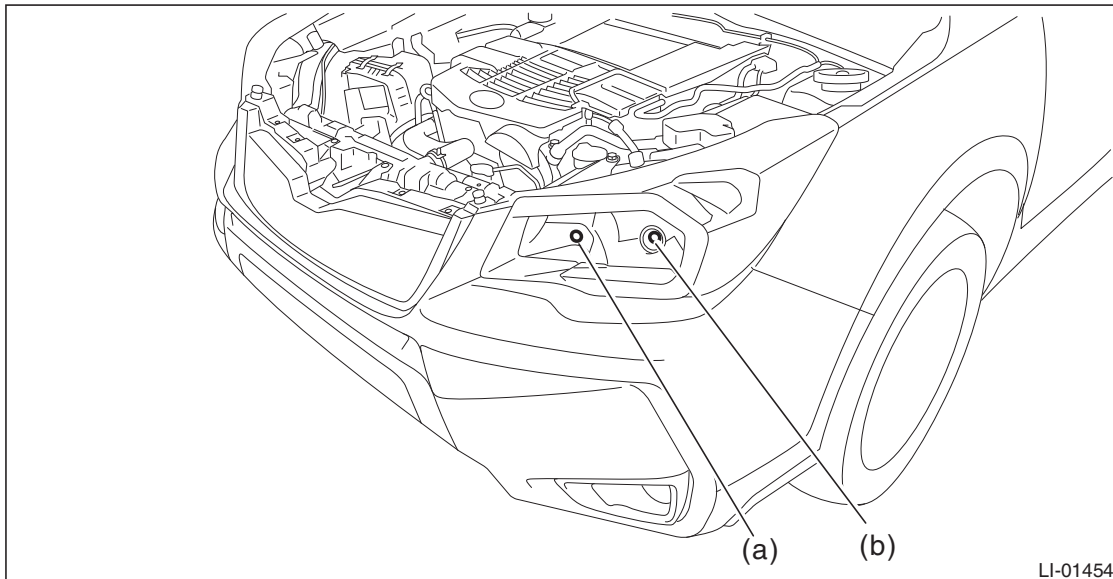
1) Before checking the beam level of the light assembly - head, be sure of the following:

- The area around the light assembly - head has not sustained any scratches, damage or other type of deformation.
- Vehicle is parked on a level surface.
- The inflation pressure of tires is correct.
- Vehicle's fuel tank is fully filled.

2) Bounce the vehicle several times to normalize the suspension.

3) Make certain that someone is seated in the driver's seat.

4) Measure the distance between the low beam bulb centers and the height of the bulb center.



LI-01454

(a) High beam

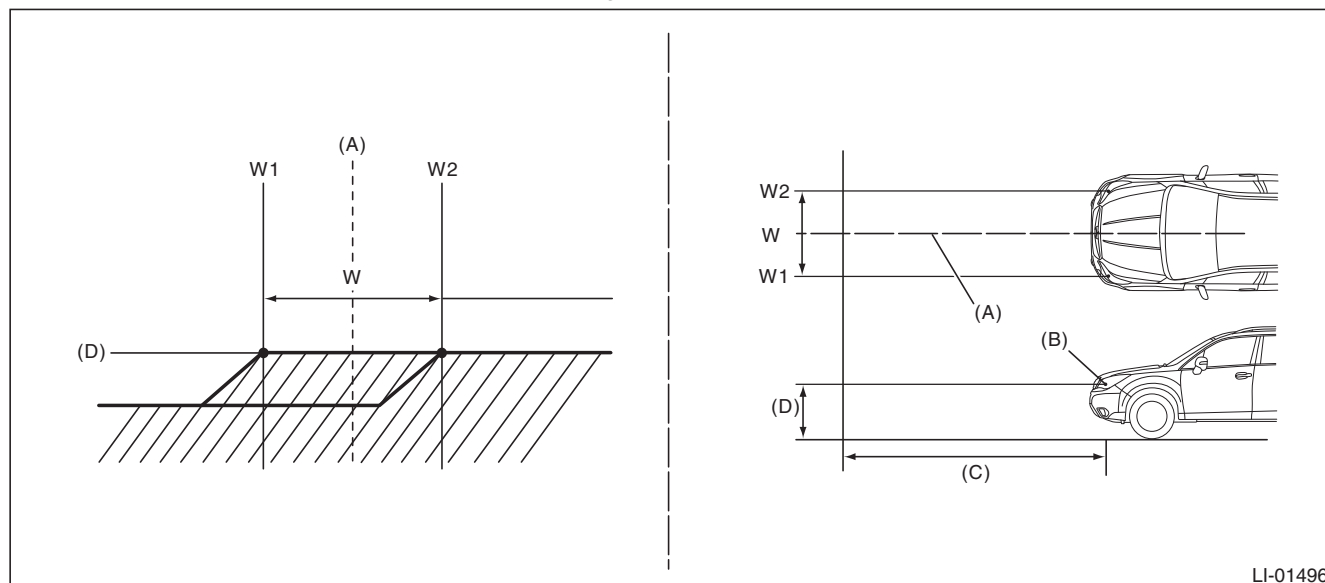
(b) Low beam

Headlight Assembly

LIGHTING SYSTEM

5) Adjust the beam level of the light assembly - head.

(1) Place the vehicle with the front end facing to the measurement panel, then illuminate the low beam.



LI-01496

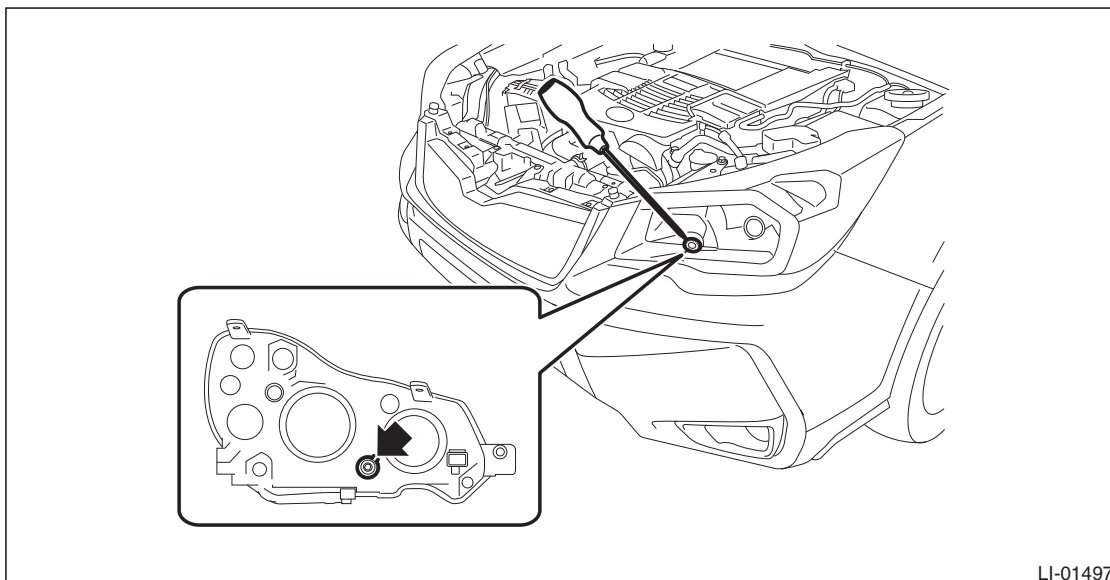
- (A) Vehicle center
- (B) Bulb center marking

(C) 3 m (10 ft)

(D) Height of headlight center

W mm (in)
1,298 (51.10)

(2) Adjust the low beam by turning the aiming screw.



LI-01497

15. Headlight Bulb

A: REMOVAL

1. HIGH BEAM

WARNING:

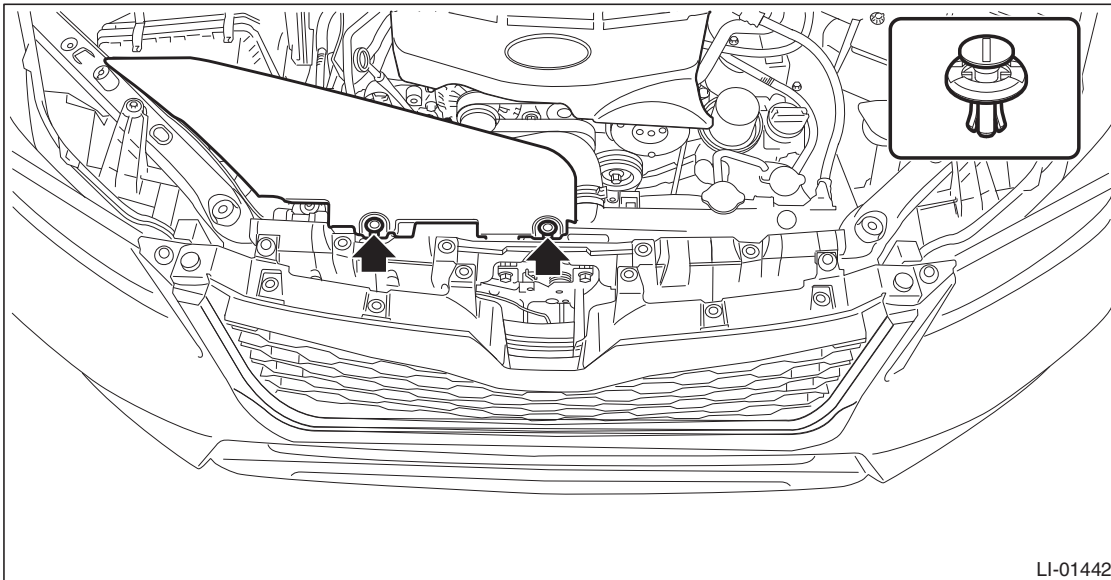
Because the headlight system uses high voltage, be careful not to perform work with wet hands. There is a possibility of electrical shock.

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 light assembly - head without the bulb for a long time. Dust, moisture, etc. entering the light may affect its performance.

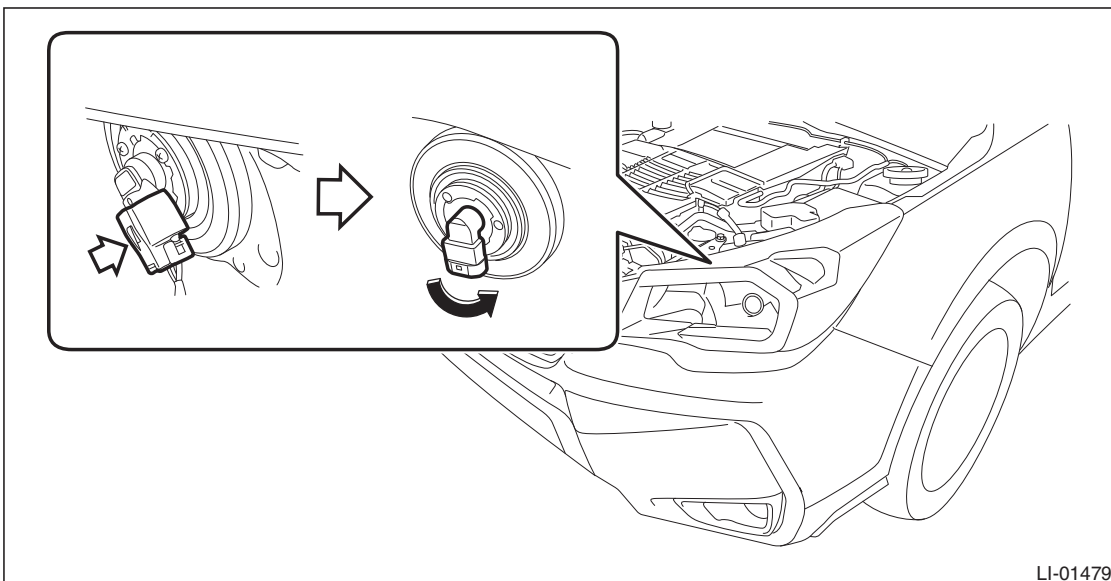
1) Disconnect the ground cable from battery.

2) Remove the clips and remove the air intake duct (rear). (When removing the high beam bulb RH)



LI-01442

3) Disconnect the connector and remove the high beam bulb.



LI-01479

Headlight Bulb

LIGHTING SYSTEM

2. HALOGEN TYPE LOW BEAM

WARNING:

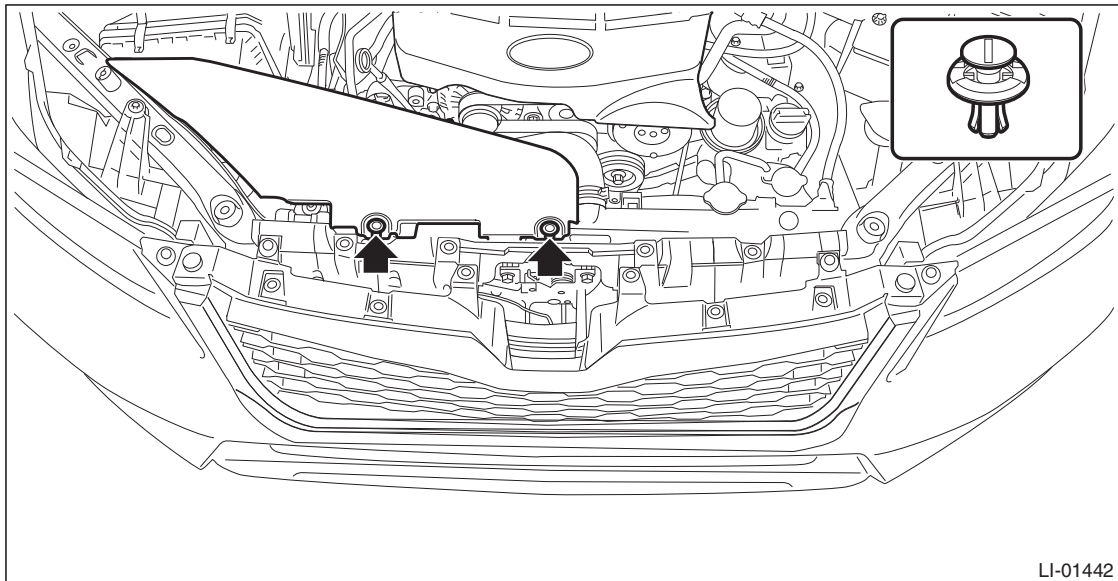
Because the headlight system uses high voltage, be careful not to perform work with wet hands. There is a possibility of electrical shock.

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 light assembly - head without the bulb for a long time. Dust, moisture, etc. entering the light may affect its performance.

1) Disconnect the ground cable from battery.

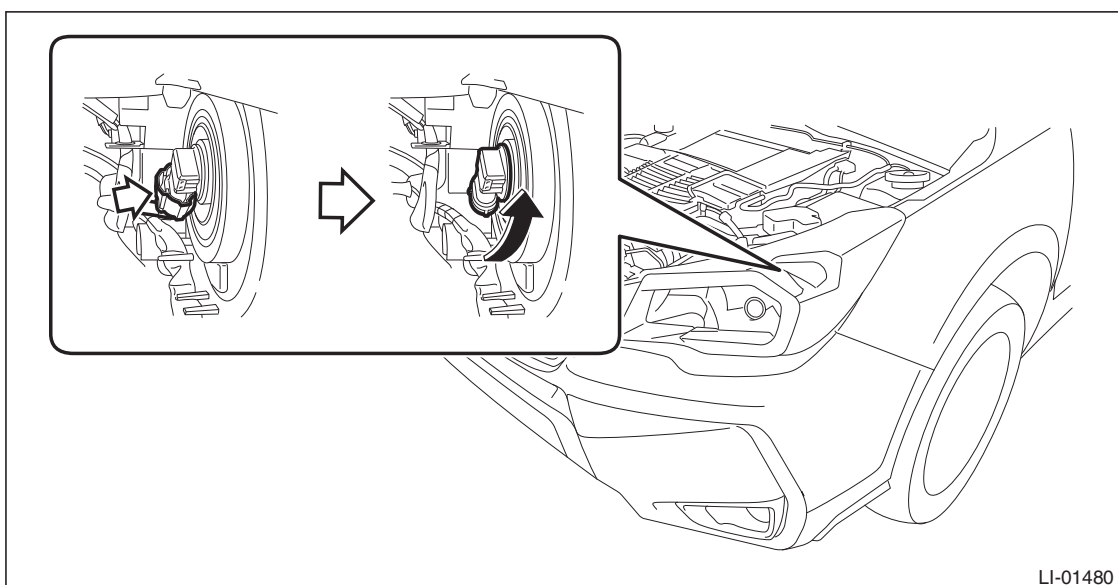
2) Remove the clips and remove the air intake duct (rear). (When removing the low beam bulb RH)



3) Disconnect the connector and remove the low beam bulb.

CAUTION:

Make sure to check if any bulb O-ring is remained on the housing side as this may sometimes happen.



Headlight Bulb

LIGHTING SYSTEM

3. HID TYPE LOW BEAM

WARNING:

Because the headlight system uses high voltage, be careful not to perform work with wet hands. There is a possibility of electrical shock.

CAUTION:

- Because the lighting circuit uses high voltage, be sure to confirm that the power supply is turned off before operation.
- When replacing bulb, hold the flange area. Be careful not to touch the glass area.
- Do not leave the light assembly - head without the bulb and ballast - headlight for a long time. Dust, moisture, etc. entering the light may affect its performance.

1) Disconnect the ground cable from battery.

2) Remove the battery. (When removing the low beam bulb LH) <Ref. to SC(H4DO)-63, REMOVAL, Battery.>

3) Remove the air cleaner case. (When removing the low beam bulb RH)

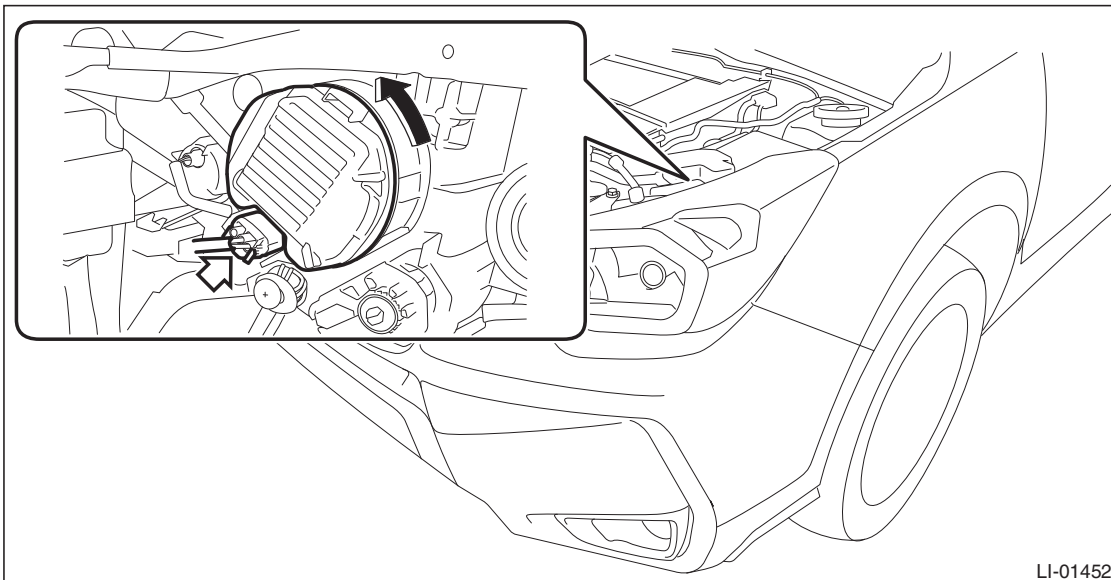
- Non-turbo model: <Ref. to IN(H4DO)-6, REMOVAL, Air Cleaner Case.>

- Turbo model: <Ref. to IN(H4DOTC)-9, REMOVAL, Air Cleaner Case.>

4) Remove the low beam bulb.

(1) Disconnect the connector.

(2) Remove the ballast - headlight, and pull out the light assembly - head.



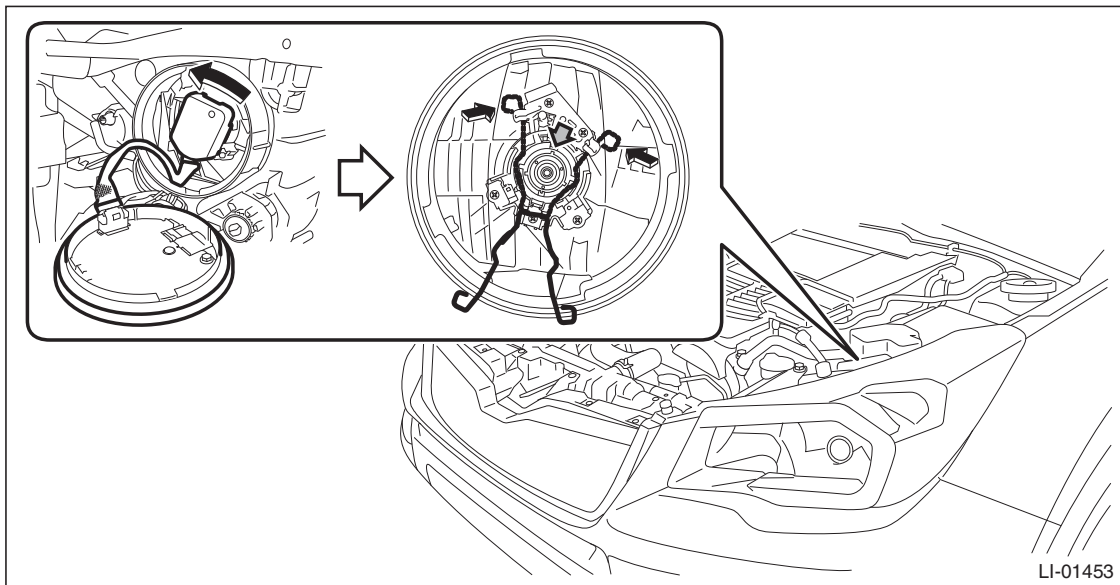
LI-01452

(3) Remove the bulb socket and remove the ballast - headlight.

Headlight Bulb

LIGHTING SYSTEM

- (4) Unlock the bulb spring, and remove the low beam bulb.



B: INSTALLATION

Install each part in the reverse order of removal.

C: INSPECTION

1. HALOGEN TYPE

WARNING:

Because the headlight system uses high voltage, be careful not to perform work with wet hands. There is a possibility of electrical shock.

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 light assembly - head without the bulb for a long time. Dust, moisture, etc. entering the headlight may affect its performance.

- 1) Visually check the bulb for blow out.
- 2) Check the bulb specification. <Ref. to LI-2, SPECIFICATION, General Description.>
- 3) Replace the bulb if it is found defective.

Headlight Bulb

LIGHTING SYSTEM

2. HID TYPE

WARNING:

Because the headlight system uses high voltage, be careful not to perform work with wet hands. There is a possibility of electrical shock.

CAUTION:

- Do not leave the light assembly - head without the bulb and ballast - headlight for a long time. Dust, moisture, etc. entering the headlight may affect its performance.
- When lit (lighting switch is ON), do not touch the harness, light internals, or metal parts of the light.
- When performing a lighting test, make sure that the headlight is mounted on the vehicle, and the power supply is connected to the connector on the vehicle's side.

1) Check the bulb specification. <Ref. to LI-2, SPECIFICATION, General Description.>

2) Install the specified bulb to check whether it lights properly.

3) If it does not light properly, replace with a new bulb.

Headlight Bulb

LIGHTING SYSTEM

4) Check the ballast - headlight.

Inspect the ballast - headlight in the following manner, and determine whether or not to reuse.

(1) Perform cold starts (light the headlight after turning off for 10 minutes or more), and hot starts (light the headlight for 15 minutes or more, then turn off for 1 minute and relight) several times, to make sure that the headlight lights properly.

(2) Monitor the lighting condition right after a cold start up to a stable state (approx. 5 min.), to see if there are any unstable conditions such as flickering.

(3) Install bulbs with the same number of operating hours on both headlights, and light for approximately 30 minutes. Check for whether there is a difference in brightness on the right and left sides.

5) Replace the ballast - headlight if it is found defective.

16. Hazard Switch

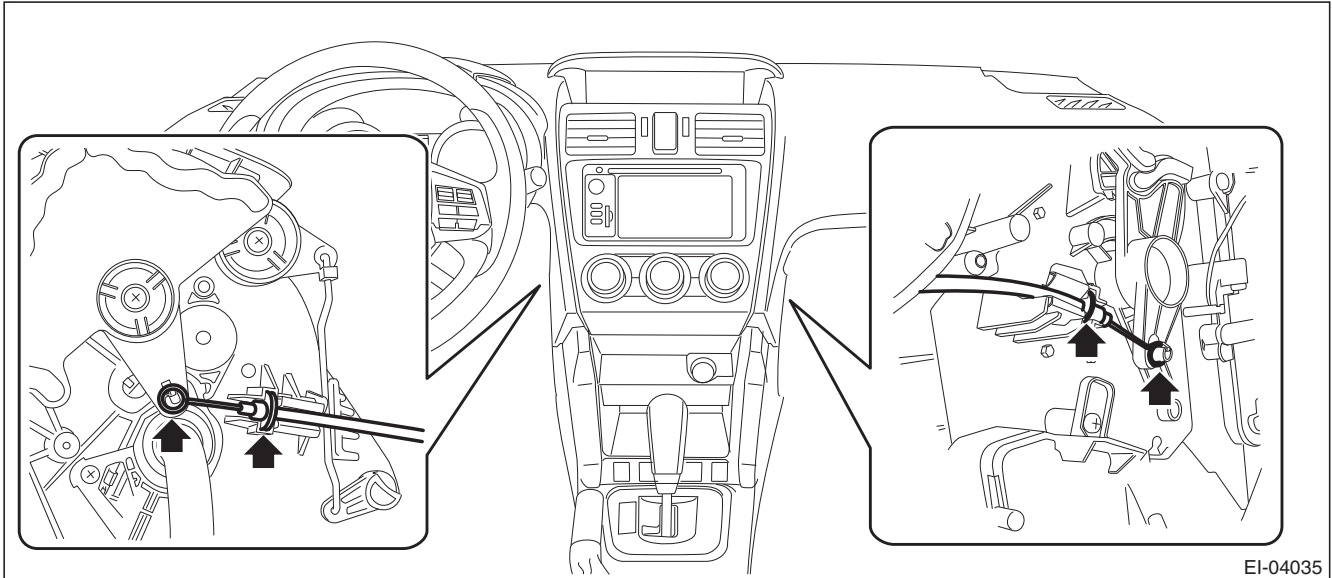
A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Remove the panel center assembly.

CAUTION:

Do not put your finger on the fin of the air vent grille. Doing so may damage the fin.

- (1) On manual A/C models, disconnect the control cables from both sides of the heater and cooling unit assembly.

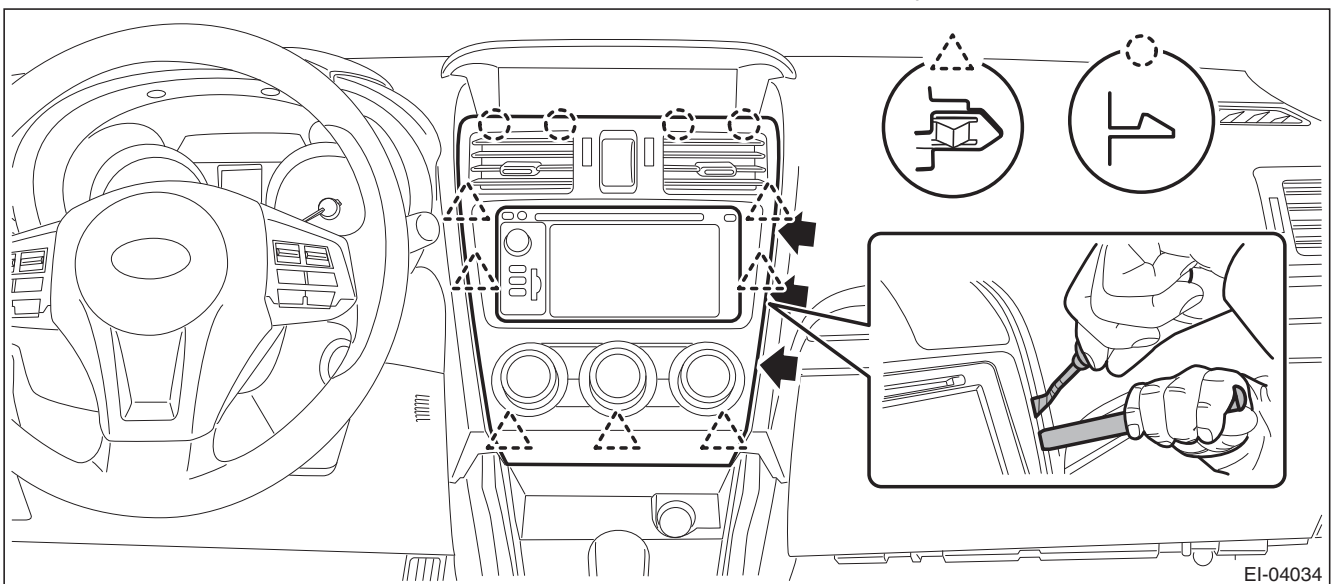


EI-04035

NOTE:

Remove the glove box pocket assembly on the passenger's side.

- (2) Insert a plastic remover to the three areas shown by the arrows, and slightly lift up the panel center assembly.
- (3) With the panel center assembly lifted up slightly, release the claw by using a clip remover wrapped with protective tape.
- (4) Release the rest of the claws, and pull out the panel center assembly.
- (5) Disconnect the connectors, and remove the panel center assembly.

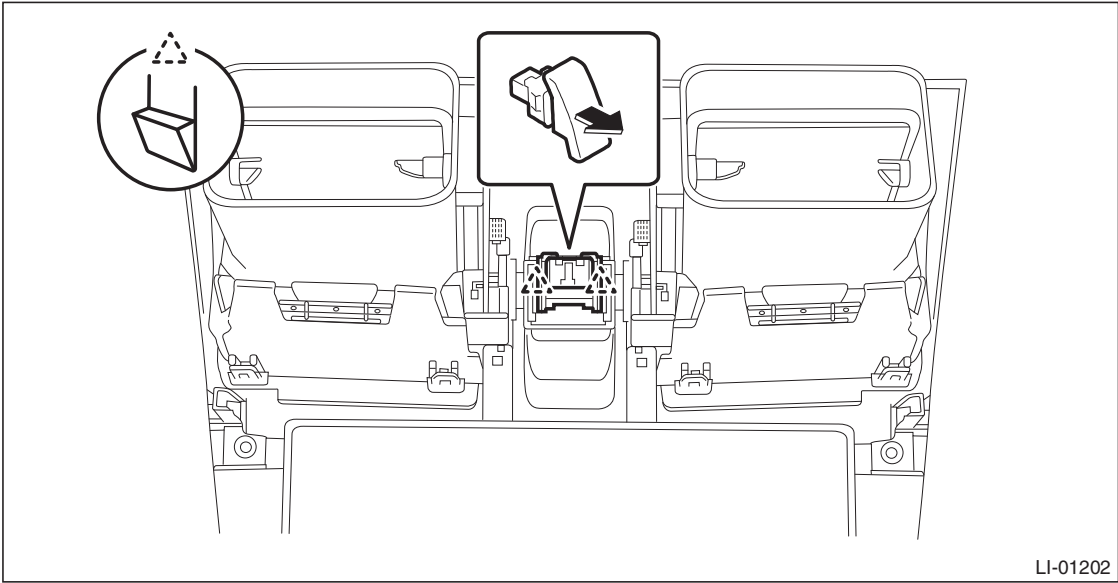


EI-04034

Hazard Switch

LIGHTING SYSTEM

3) Release the claws, and remove the switch - hazard from the panel center assembly.



B: INSTALLATION

CAUTION:

After installing the panel center assembly, check that the air vent grille of the panel center assembly is inserted correctly into the air vent duct.

Install each part in the reverse order of removal.

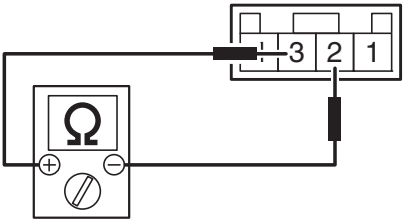
C: INSPECTION

Unit inspection

Preparation tool:

Circuit tester

1) Check the resistance between switch terminals.

Terminal No.	Inspection conditions	Standard	Connection diagram
2 — 3	Switch OFF	1 MΩ or more	
	Switch ON	Less than 1 Ω	

LI-01252

2) Replace the switch - hazard if the inspection result is not within the standard value.

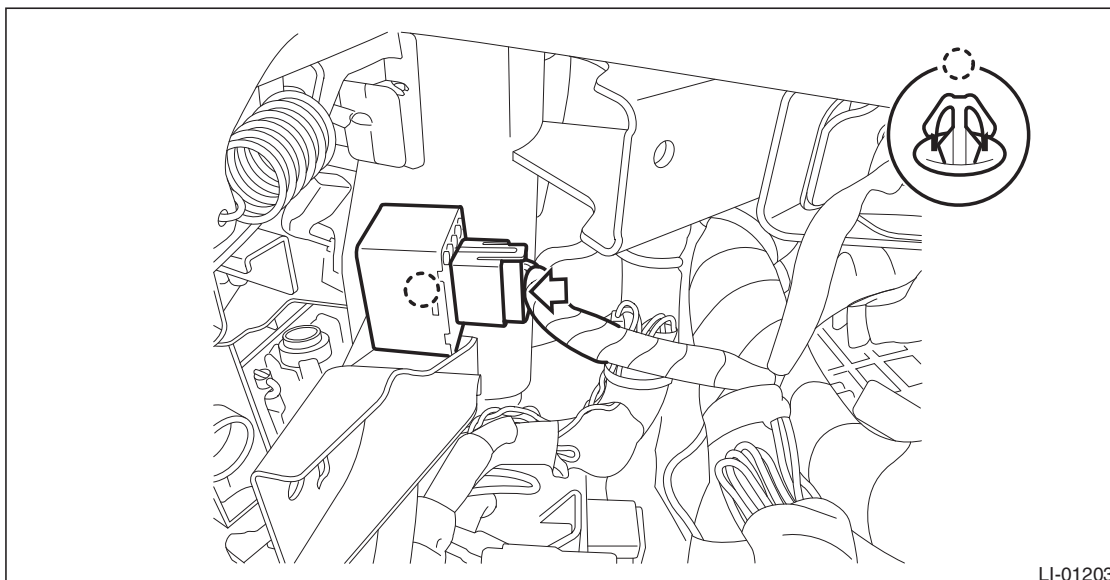
Turn Signal Light & Hazard Light Unit

LIGHTING SYSTEM

17. Turn Signal Light & Hazard Light Unit

A: REMOVAL

- 1) Remove the instrument panel lower cover and knee airbag module. <Ref. to AB-39, REMOVAL, Knee Airbag Module.>
- 2) Remove the turn signal & hazard unit.
 - (1) Disconnect the connector.
 - (2) Release the claws and remove the turn signal & hazard unit from the beam COMPL - steering.



B: INSTALLATION

Install each part in the reverse order of removal.

C: INSPECTION

On the vehicle inspection

Preparation tool:

Circuit tester

- 1) Disconnect the connector of the turn signal & hazard unit.
- 2) Measure the voltage between the turn signal & hazard unit connector and the chassis ground.

Terminal No.	Inspection conditions	Standard	Connection diagram
4 (+) — Chassis ground (-)	Always	10 — 14 V	
1 (+) — Chassis ground (-)	IG OFF → ON	Less than 1 V → 10 — 14 V	

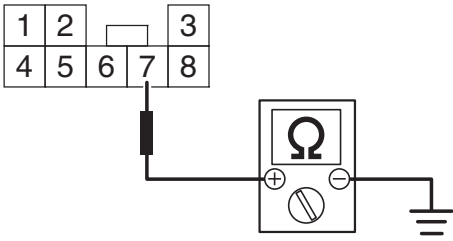
LI-01281

Repair or replace the harness if the inspection result is not within the standard value.

Turn Signal Light & Hazard Light Unit

LIGHTING SYSTEM

3) Measure the resistance between the turn signal & hazard unit connector and the chassis ground.

Terminal No.	Inspection conditions	Standard	Connection diagram
7 — Chassis ground	Always	Less than 1 Ω	 LI-01282

Repair or replace the harness if the inspection result is not within the standard value.

4) Connect the turn signal & hazard unit connector.

5) Measure the voltage between turn signal & hazard unit and chassis ground.

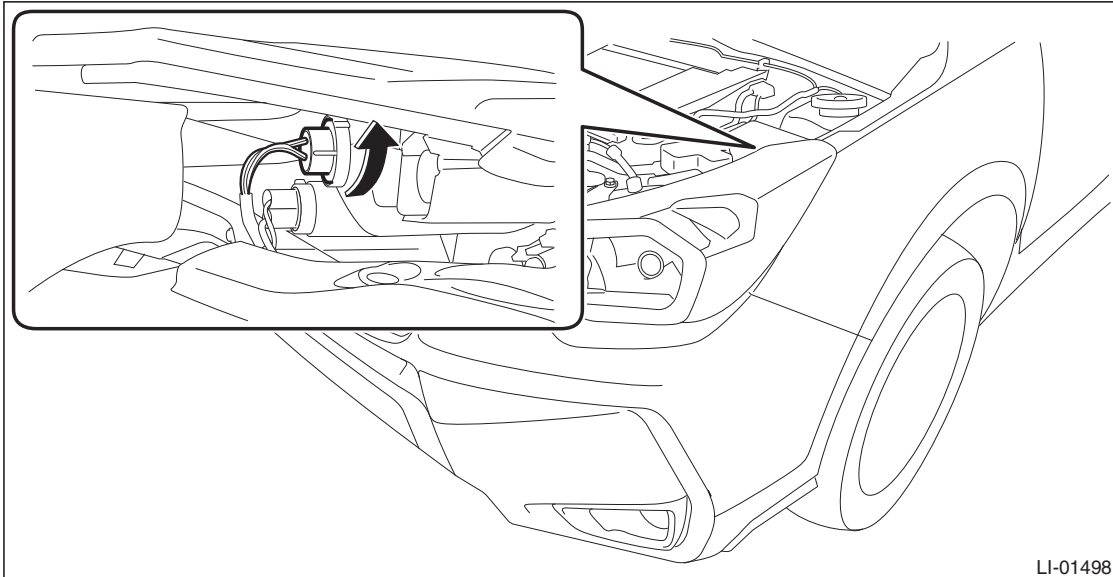
Terminal No.	Input/Output	Inspection conditions	Standard
6 (+) — Chassis ground (—)	Input	Turn signal switch (right) OFF → ON	Less than 1 V → 9 V or more
5 (+) — Chassis ground (—)	Input	Turn signal switch (left) OFF → ON	Less than 1 V → 9 V or more
8 (+) — Chassis ground (—)	Input	Hazard switch OFF → ON	Less than 1 V → 9 V or more
2 (+) — Chassis ground (—)	Output	Turn signal switch (right) OFF → ON	Repeat less than 1 V → less than 1 V ↔ more than 9 V at 60 to 120 times per minute.
3 (+) — Chassis ground (—)	Output	Turn signal switch (left) OFF → ON	Repeat less than 1 V → less than 1 V ↔ more than 9 V at 60 to 120 times per minute.
2 (+) — Chassis ground (—)	Output	Hazard switch OFF → ON	Repeat less than 1 V → less than 1 V ↔ more than 9 V at 60 to 120 times per minute.
3 (+) — Chassis ground (—)	Output	Hazard switch OFF → ON	Repeat less than 1 V → less than 1 V ↔ more than 9 V at 60 to 120 times per minute.

Replace the turn signal & hazard unit if the inspection result is not within the standard value.

18.Front Turn Signal Light Bulb

A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Remove the bulb socket and front turn signal light bulb.



B: INSTALLATION

Install each part 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, SPECIFICATION, General Description.>
- 3) Replace the bulb if it is found defective.

Clearance/Parking Light Bulb

LIGHTING SYSTEM

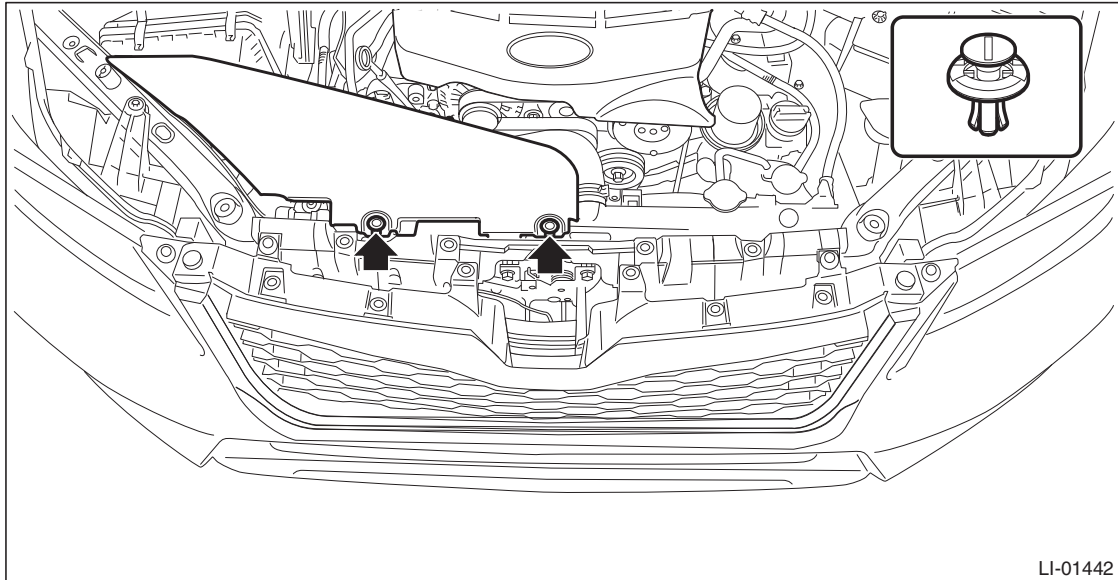
19. Clearance/Parking Light Bulb

A: REMOVAL

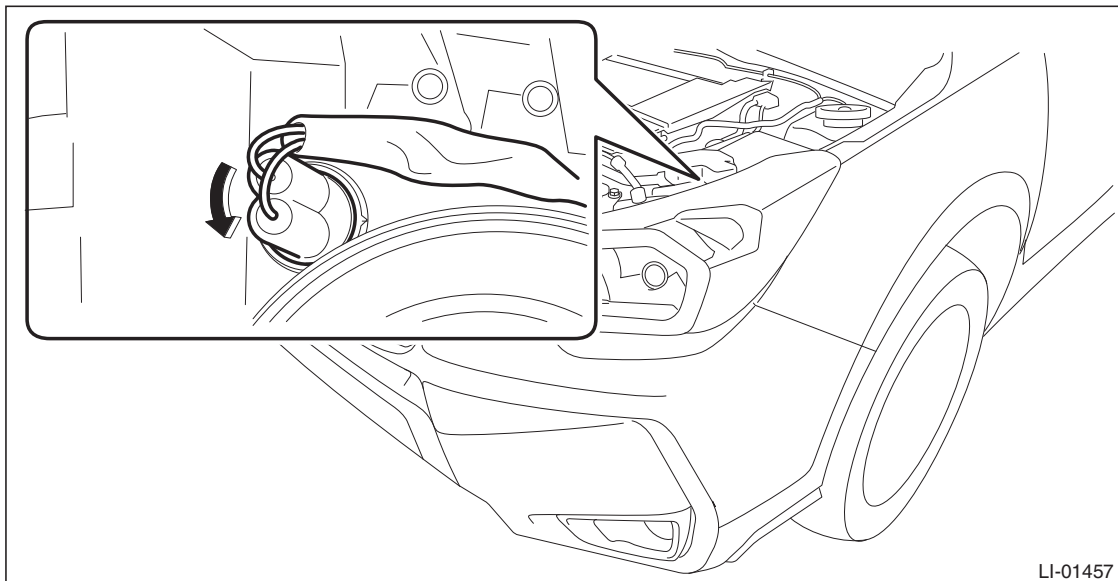
NOTE:

Since the LED type parking light cannot be disassembled, it cannot be removed.

- 1) Disconnect the ground cable from battery.
- 2) Remove the clips and remove the air intake duct (rear). (When removing the parking light bulb RH)



- 3) Remove the bulb socket and parking light bulb.



B: INSTALLATION

Install each part in the reverse order of removal.

C: INSPECTION

NOTE:

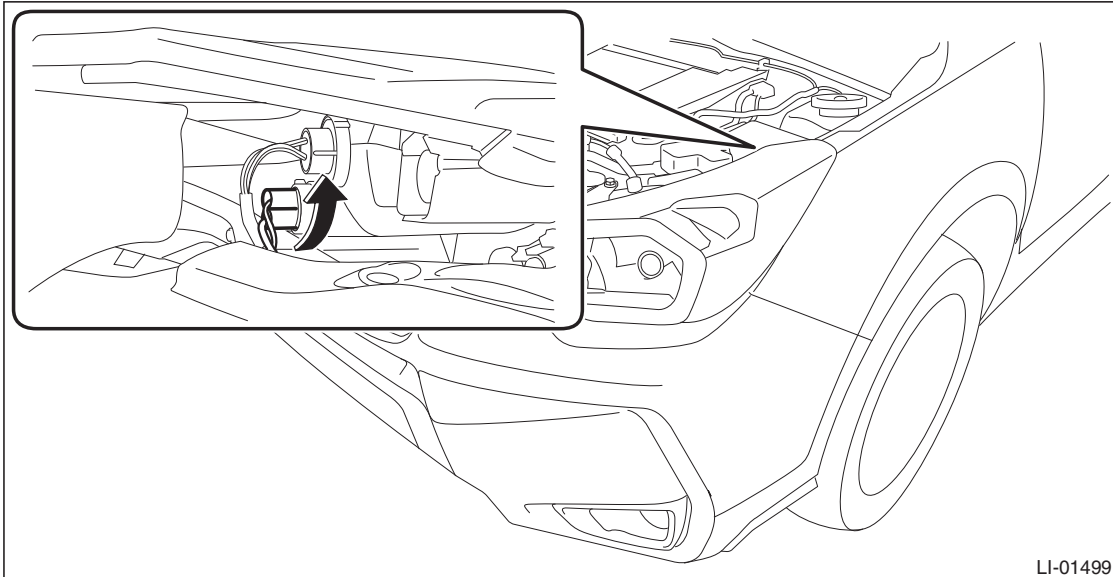
When the LED type parking light burns out, replace the light assembly - head.

- 1) Visually check the bulb for blow out.
- 2) Check the bulb specification. <Ref. to LI-2, SPECIFICATION, General Description.>
- 3) Replace the bulb if it is found defective.

20.Front Side Marker Light Bulb

A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Remove the bulb socket and front side marker light bulb.



B: INSTALLATION

Install each part 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, SPECIFICATION, General Description.>
- 3) Replace the bulb if it is found defective.

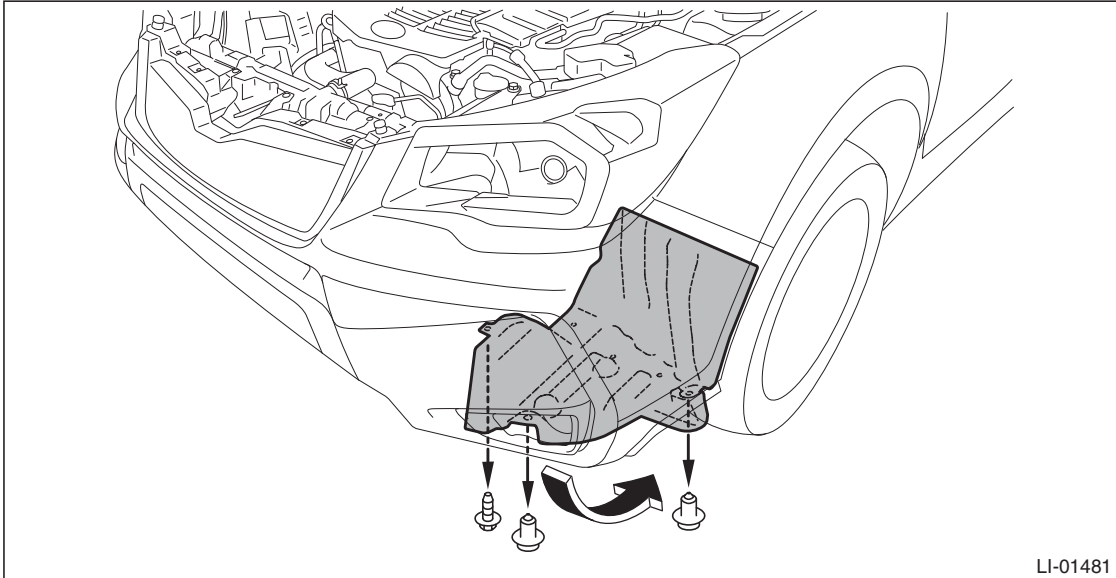
Front Fog Light Assembly

LIGHTING SYSTEM

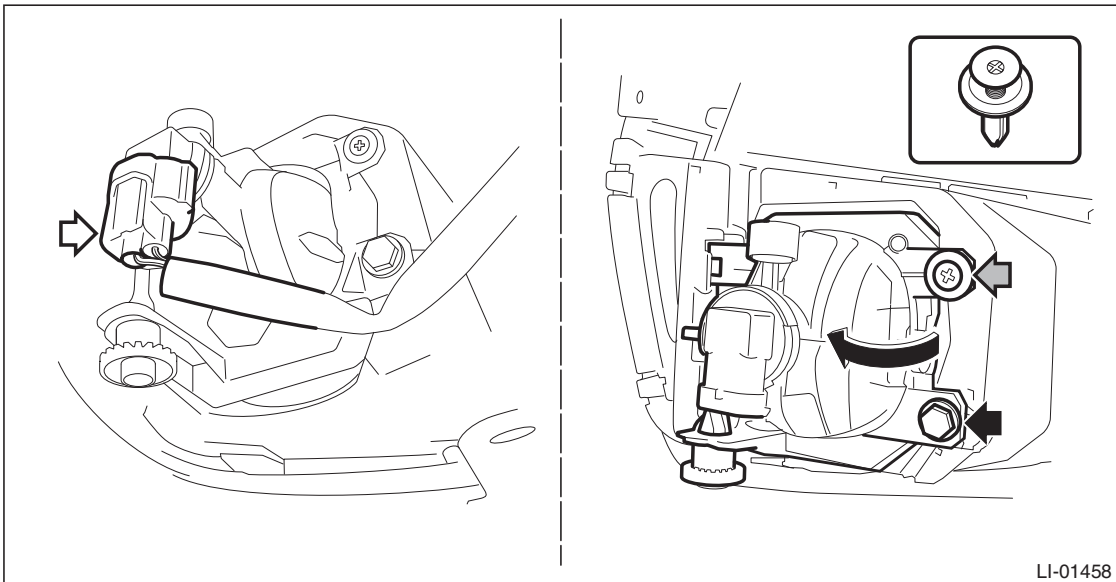
21. Front Fog Light Assembly

A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Lift up the vehicle.
- 3) Remove the screw and clips, and turn over the front side of the mud guard - front.



- 4) From the bottom of the bumper face - front, remove the fog light assembly - front.
 - (1) Disconnect the connector.
 - (2) Remove the bolts and clips, and remove the fog light assembly - front.



B: INSTALLATION

- 1) Install each part in the reverse order of removal.

Tightening torque:

Fog light assembly - front: 7.5 N·m (0.76 kgf-m, 5.5 ft-lb)

- 2) Adjust the fog light beam. <Ref. to LI-47, FOG LIGHT AIMING, ADJUSTMENT, Front Fog Light Assembly.>

Front Fog Light Assembly

LIGHTING SYSTEM

C: ADJUSTMENT

1. FOG LIGHT AIMING

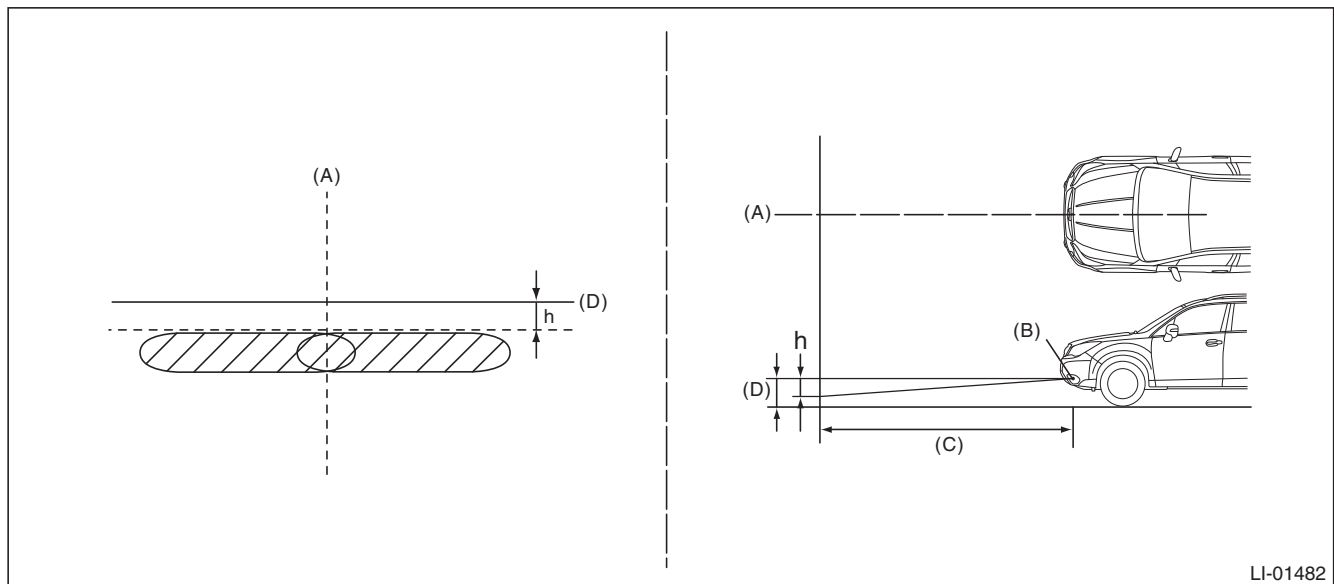
1) Before checking the fog light assembly - front beam level, be sure of the following:

- The area around the fog light assembly - front has not sustained any scratches, damage or other type of deformation.
- Vehicle is parked on a level surface.
- The inflation pressure of tires is correct.
- Vehicle's fuel tank is fully filled.

2) Bounce the vehicle several times to normalize the suspension.

3) Make certain that someone is seated in the driver's seat.

4) Place the vehicle with the front end facing to the measurement panel.



(A) Vehicle center

(C) 3 m (10 ft)

(D) Height of fog light center

(B) Bulb center marking

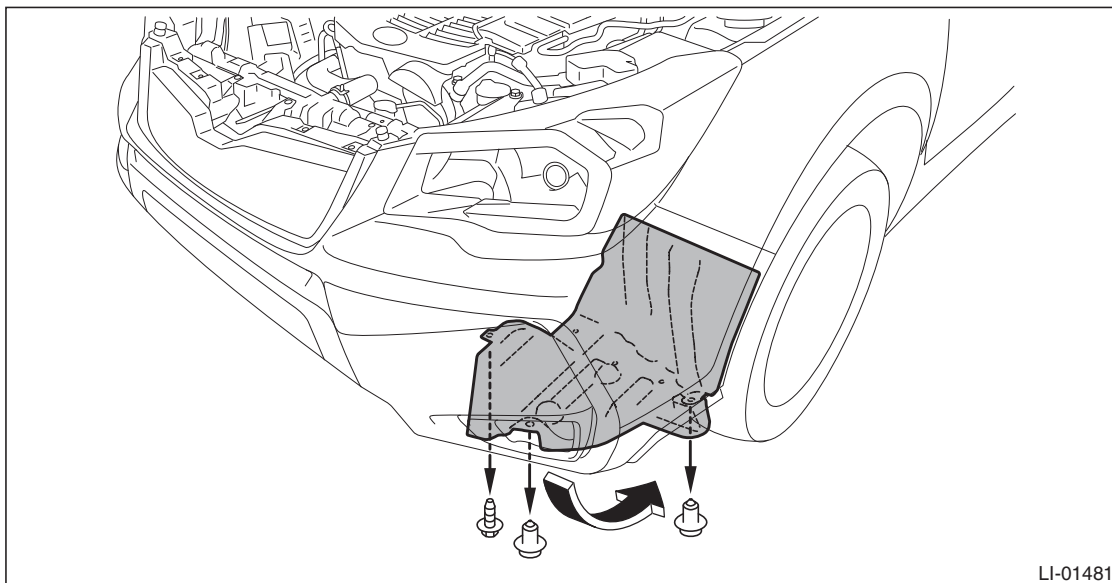
h mm (in) at 3 m (10 ft)
40 (1.58)

Front Fog Light Assembly

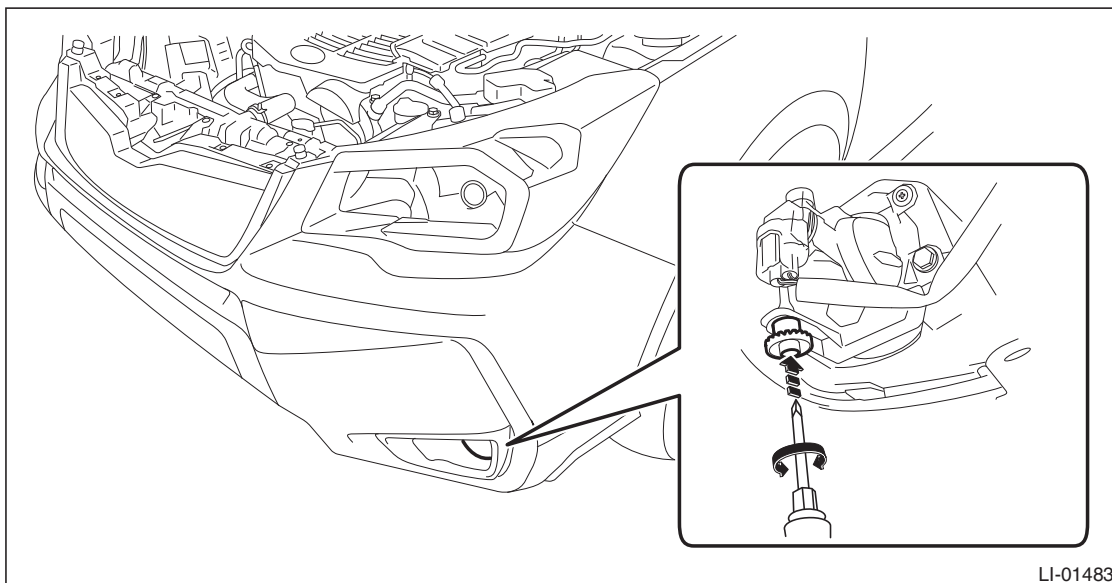
LIGHTING SYSTEM

5) Adjust the fog light assembly - front beam.

(1) Remove the screw and clips, and turn over the front side of the mud guard - front.



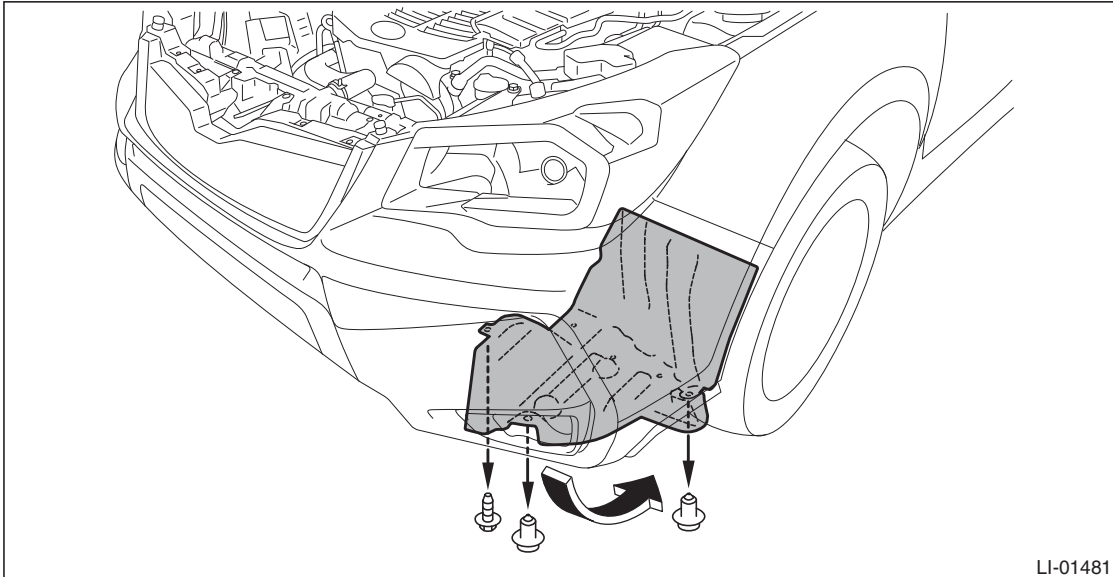
(2) Adjust the beam direction by turning the aiming screw from the bottom of the bumper face - front.



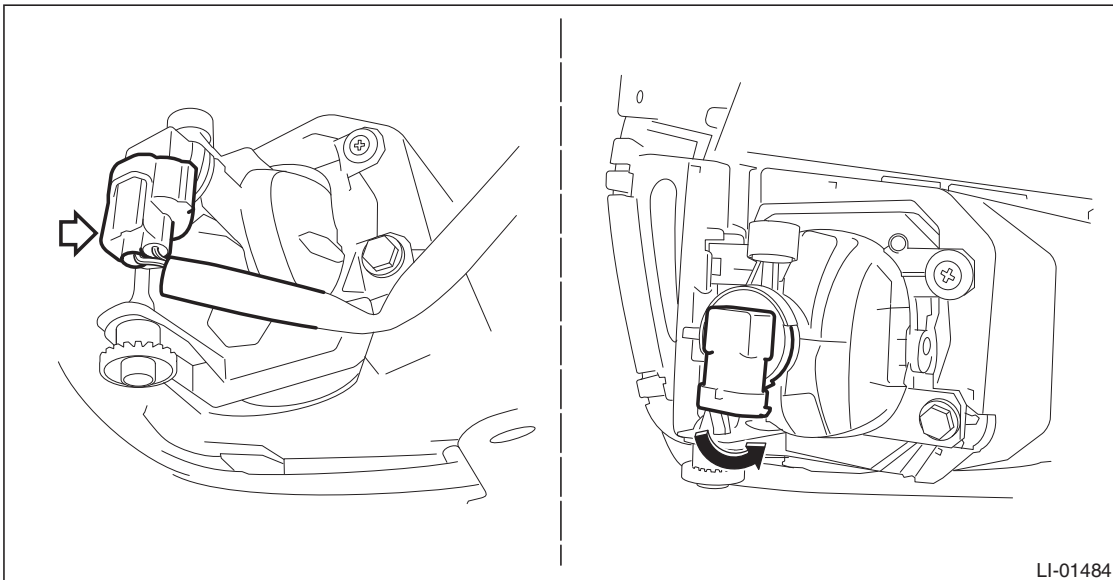
22.Front Fog Light Bulb

A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Remove the screw and clips, and turn over the front side of the mud guard - front.



- 3) From the bottom of the bumper face - front, remove the front fog light bulb.
 - (1) Disconnect the connector.
 - (2) Remove the bulb.



B: INSTALLATION

CAUTION:

After connecting the connector, make sure that the bulb is locked securely.

Install each part 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, SPECIFICATION, General Description.>
- 3) Replace the bulb if it is found defective.

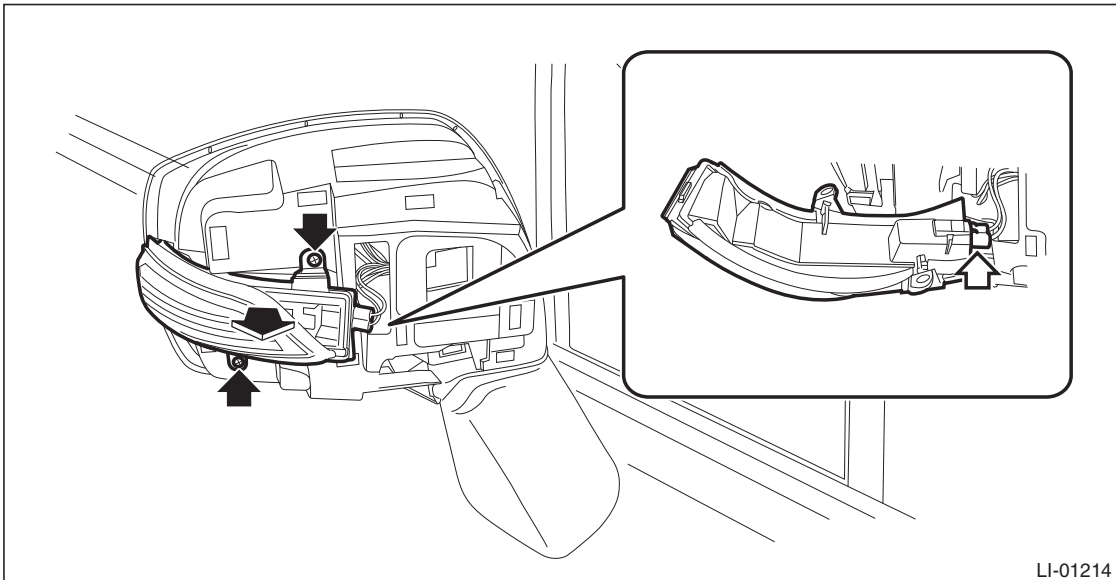
Side Turn Signal Light Assembly

LIGHTING SYSTEM

23.Side Turn Signal Light Assembly

A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Remove the cover - cap outer mirror. <Ref. to GW-24, DISASSEMBLY, Outer Mirror Assembly.>
- 3) Remove the light assembly - side turn mirror.
 - (1) Remove the screws and pull out the light assembly - side turn mirror to the front of the vehicle.
 - (2) Disconnect the connector and remove the light assembly - side turn mirror.



B: INSTALLATION

Install each part in the reverse order of removal.

C: INSPECTION

- 1) Install the light to check if it blinks normally.
- 2) If it fails to blink normally, replace the light assembly - side turn mirror with a new part.

NOTE:

Since LED (Light Emitting Diode) is used for the light, replace the light assembly - side turn mirror if the LED burns out.

24.Rear Combination Light Assembly

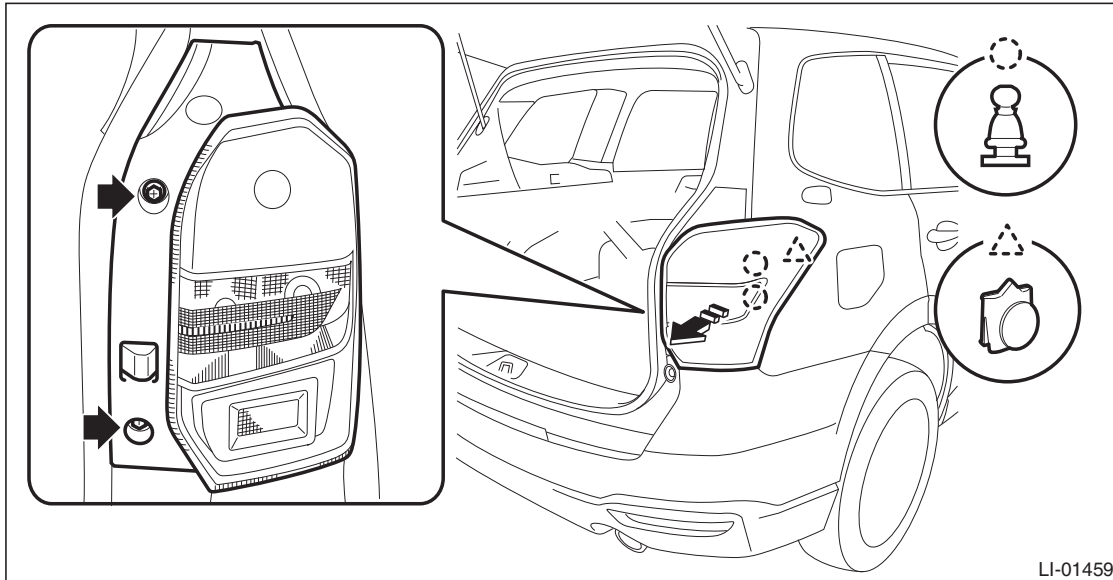
A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Remove the light assembly - rear combination.

CAUTION:

Be careful not to damage the clips.

- (1) Release the bolts and clips, then pull out the light assembly - rear combination to the vehicle rear.
- (2) Disconnect the connector and remove the light assembly - rear combination.



LI-01459

B: INSTALLATION

Install each part in the reverse order of removal.

Tightening torque:

Light assembly - rear combination: 7.5 N·m (0.76 kgf-m, 5.5 ft-lb)

C: INSPECTION

- 1) Visually check the bulb for blow out.
- 2) Check the bulb specification. <Ref. to LI-2, SPECIFICATION, General Description.>
- 3) Replace the bulb if it is found defective.

Tail/Stop Light Bulb

LIGHTING SYSTEM

25. Tail/Stop Light Bulb

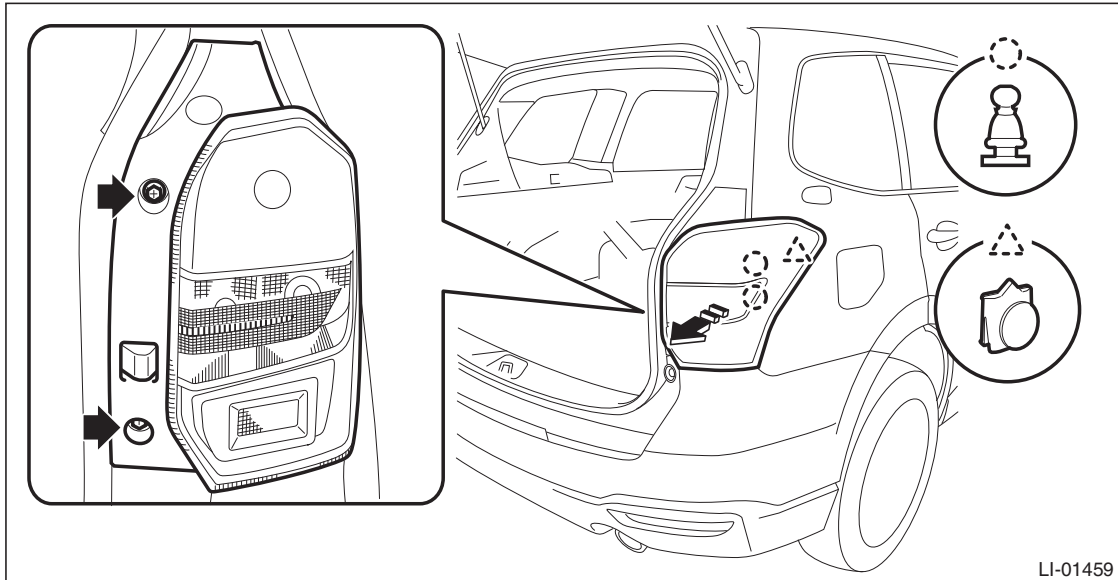
A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Remove the light assembly - rear combination.

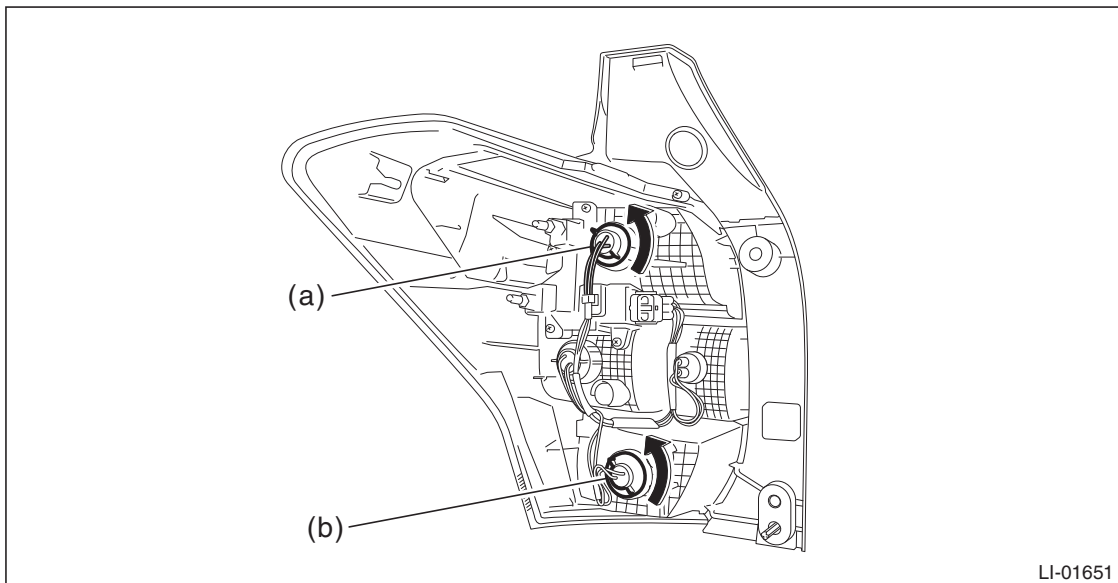
CAUTION:

Be careful not to damage the clips.

- (1) Release the bolts and clips, then pull out the light assembly - rear combination to the vehicle rear.
- (2) Disconnect the connector and remove the light assembly - rear combination.



- 3) Remove the bulb sockets and bulbs.



(a) Tail light/stop light

(b) Tail light

Tail/Stop Light Bulb

LIGHTING SYSTEM

B: INSTALLATION

Install each part in the reverse order of removal.

Tightening torque:

Light assembly - rear combination: 7.5 N·m (0.76 kgf-m, 5.5 ft-lb)

C: INSPECTION

- 1) Visually check the bulb for blow out.
- 2) Check the bulb specification. <Ref. to LI-2, SPECIFICATION, General Description.>
- 3) Replace the bulb if it is found defective.

Rear Turn Signal Light Bulb

LIGHTING SYSTEM

26.Rear Turn Signal Light Bulb

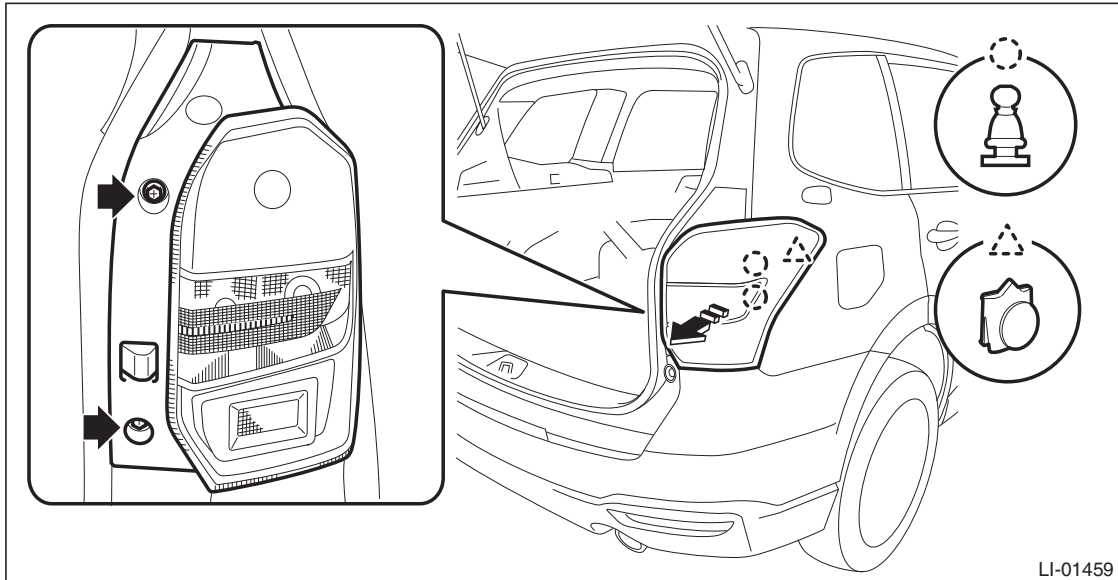
A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Remove the light assembly - rear combination.

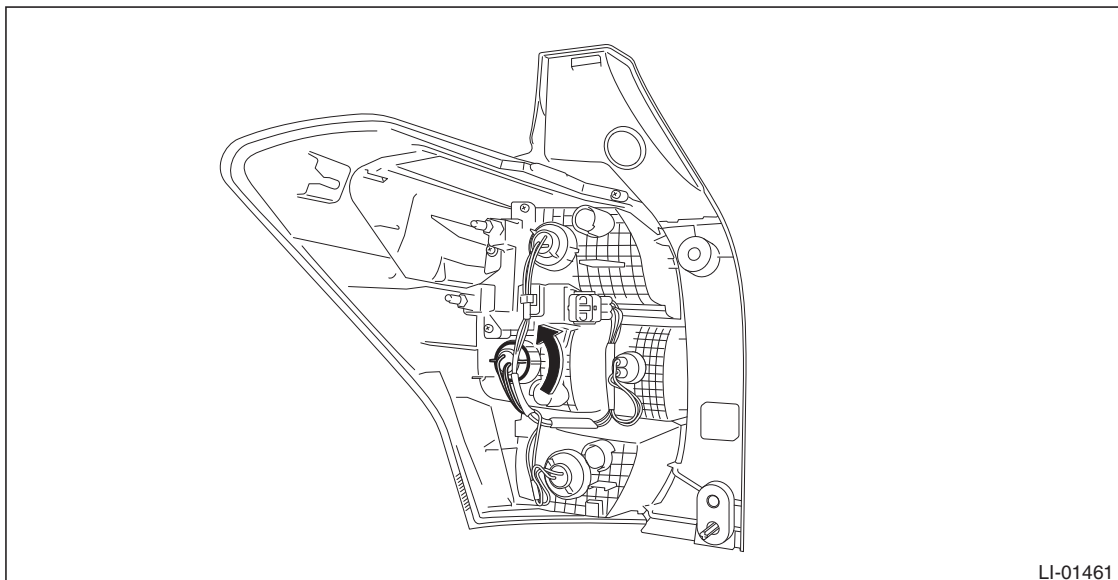
CAUTION:

Be careful not to damage the clips.

- (1) Release the bolts and clips, then pull out the light assembly - rear combination to the vehicle rear.
- (2) Disconnect the connector and remove the light assembly - rear combination.



- 3) Remove the bulb socket and rear turn signal light bulb.



Rear Turn Signal Light Bulb

LIGHTING SYSTEM

B: INSTALLATION

Install each part in the reverse order of removal.

Tightening torque:

Light assembly - rear combination: 7.5 N·m (0.76 kgf-m, 5.5 ft-lb)

C: INSPECTION

- 1) Visually check the bulb for blow out.
- 2) Check the bulb specification. <Ref. to LI-2, SPECIFICATION, General Description.>
- 3) Replace the bulb if it is found defective.

Rear Side Marker Light Bulb

LIGHTING SYSTEM

27.Rear Side Marker Light Bulb

A: NOTE

It is integrated with the tail light bulb. For details concerning operation procedures, refer to “Tail/Stop Light Bulb”. <Ref. to LI-52, Tail/Stop Light Bulb.>

28.Back-up Light Bulb

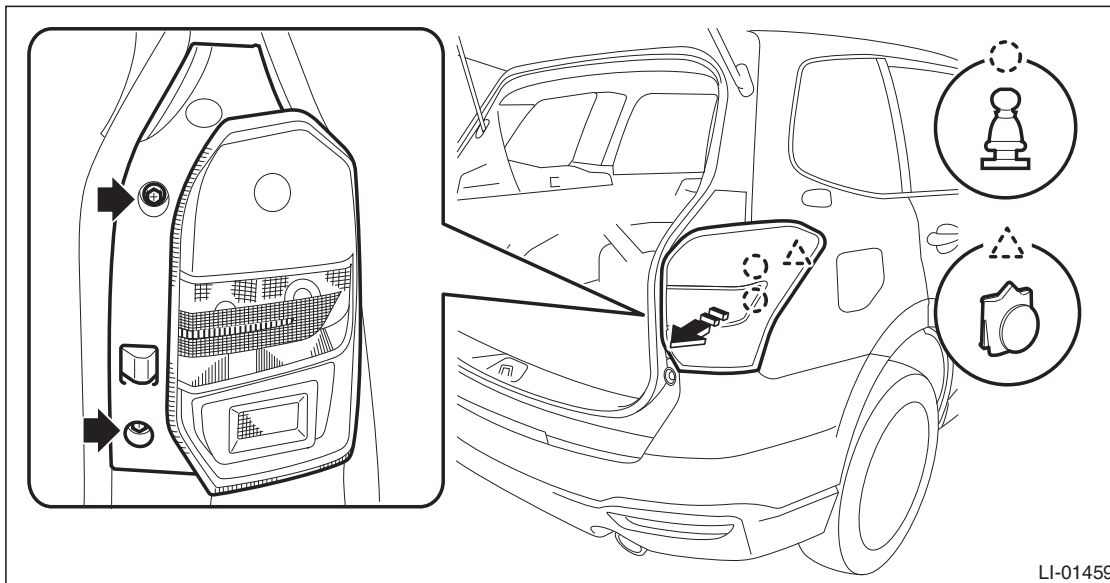
A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Remove the light assembly - rear combination.

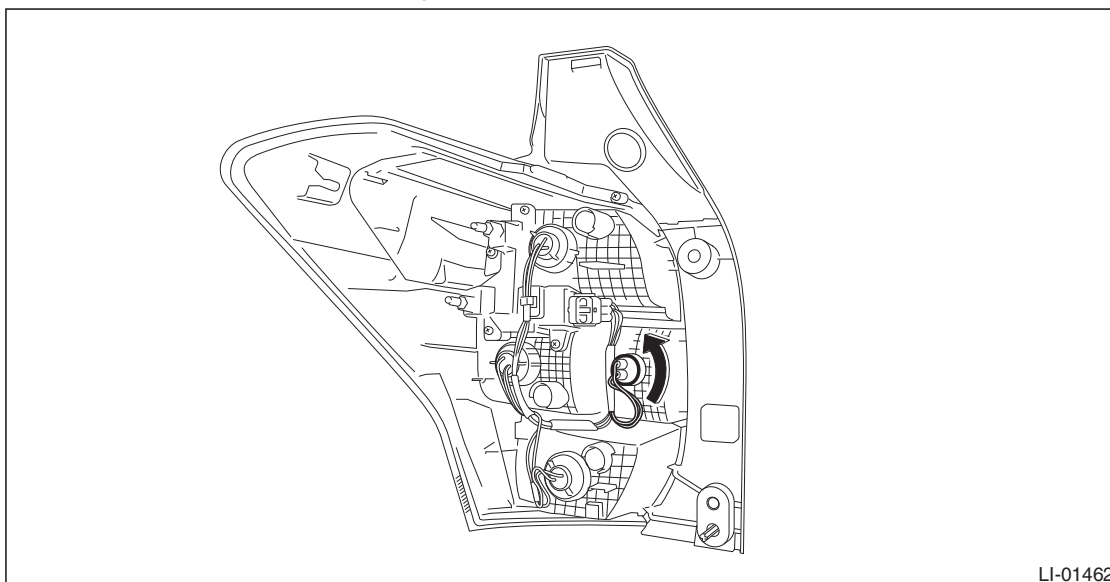
CAUTION:

Be careful not to damage the clips.

- (1) Release the bolts and clips, then pull out the light assembly - rear combination to the vehicle rear.
- (2) Disconnect the connector and remove the light assembly - rear combination.



- 3) Remove the bulb socket and back-up light bulb.



Back-up Light Bulb

LIGHTING SYSTEM

B: INSTALLATION

Install each part in the reverse order of removal.

Tightening torque:

Light assembly - rear combination: 7.5 N·m (0.76 kgf-m, 5.5 ft-lb)

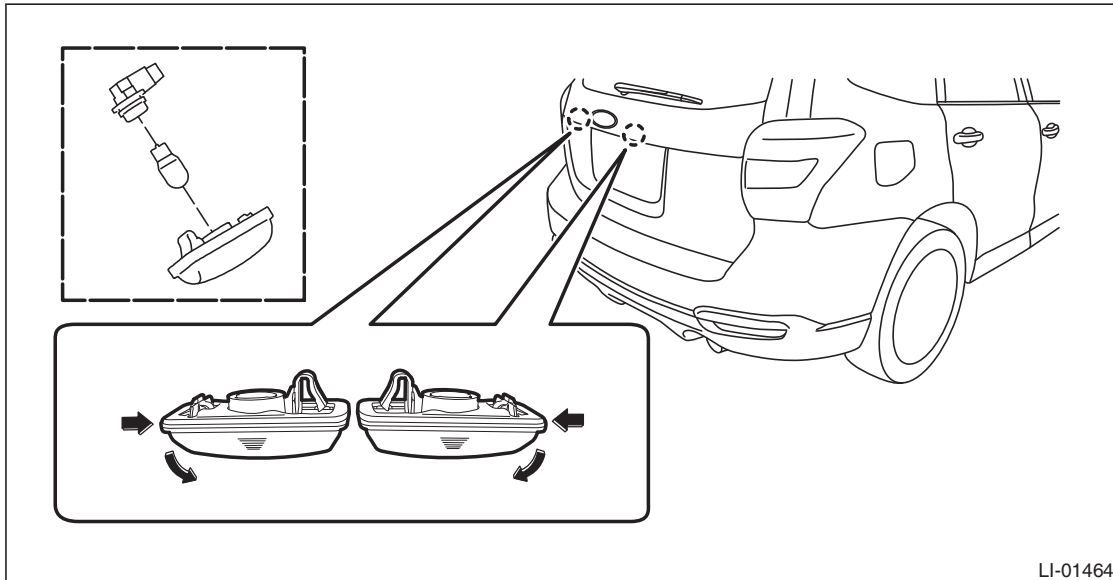
C: INSPECTION

- 1) Visually check the bulb for blow out.
- 2) Check the bulb specification. <Ref. to LI-2, SPECIFICATION, General Description.>
- 3) Replace the bulb if it is found defective.

29. License Plate Light

A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Remove the license plate light.
 - (1) Release the claws and pull out the license plate light.
 - (2) Disconnect the connector and remove the bulb socket and bulb from the license plate light.



LI-01464

B: INSTALLATION

Install each part 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, SPECIFICATION, General Description.>
- 3) Replace the bulb if it is found defective.

High-mounted Stop Light

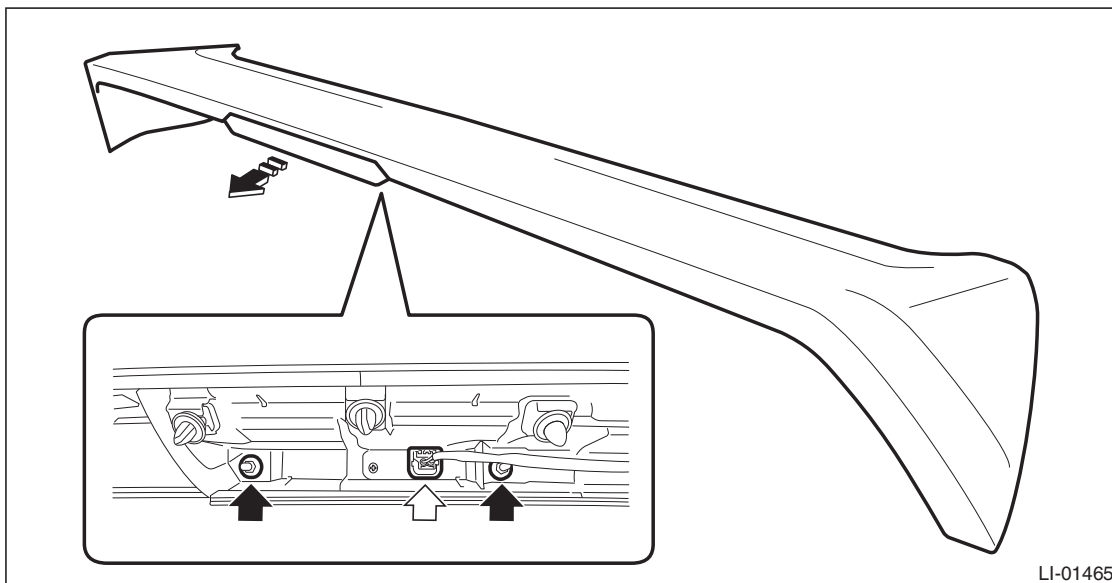
LIGHTING SYSTEM

30.High-mounted Stop Light

A: REMOVAL

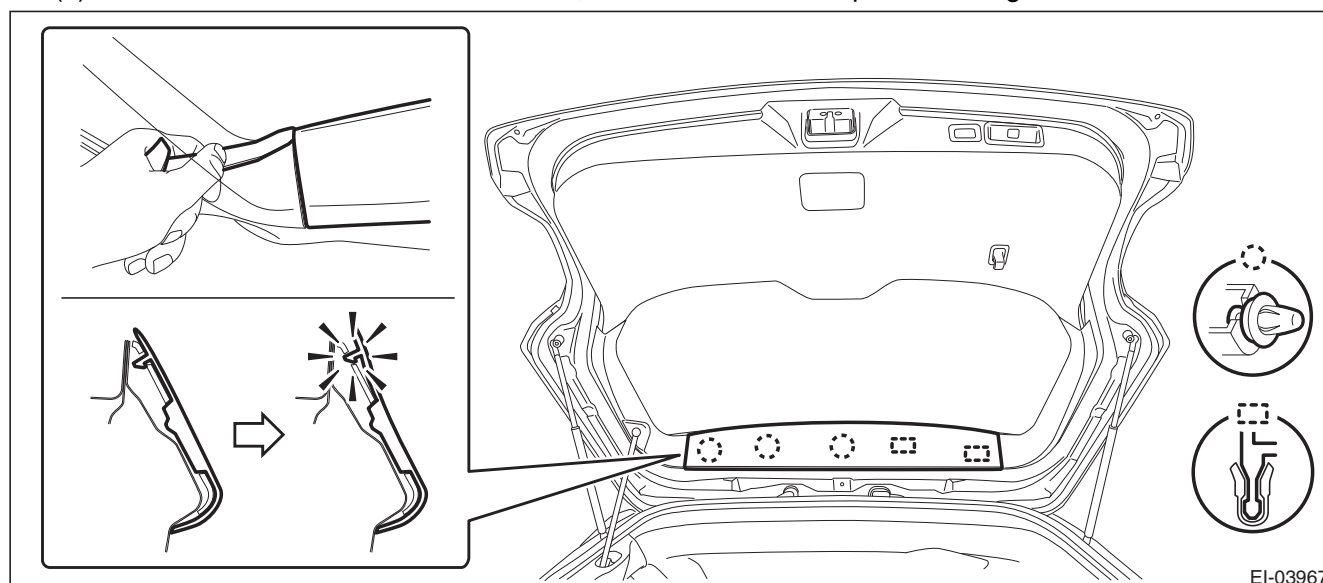
1. ROOF SPOILER TYPE

- 1) Disconnect the ground cable from battery.
- 2) Remove the roof spoiler. <Ref. to EI-50, REMOVAL, Roof Spoiler.>
- 3) Remove the light assembly - high-mounted.
 - (1) Disconnect the connector.
 - (2) Remove the nuts and remove the light assembly - high-mounted.



2. REAR GATE TYPE

- 1) Disconnect the ground cable from battery.
- 2) Remove the trim panel - rear gate UPR.
 - (1) Remove the claws on the trim edge.
 - (2) Release the claws in the center of trim, and remove the trim panel - rear gate UPR.

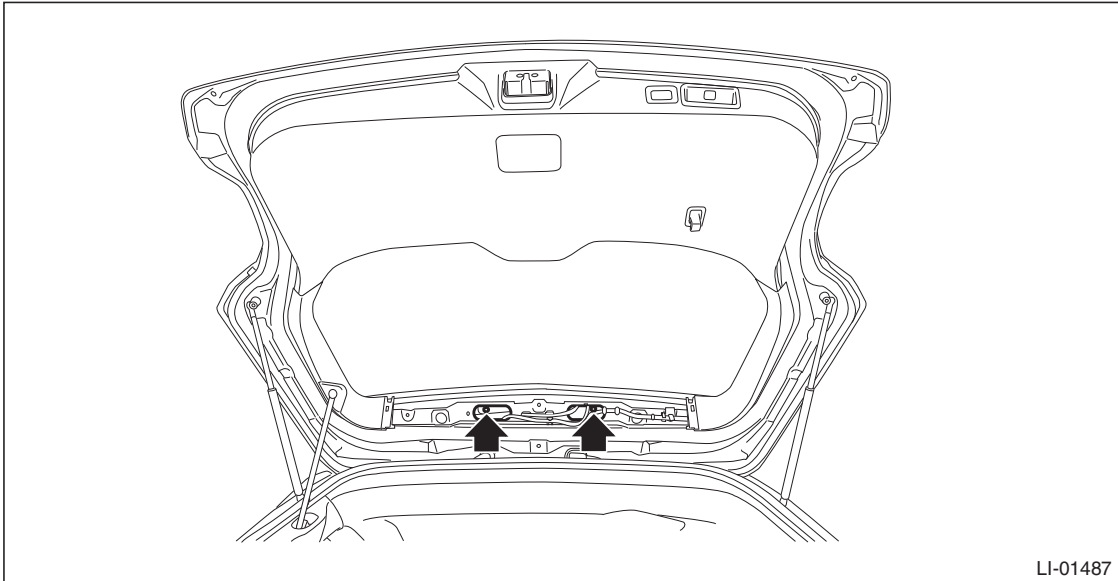


High-mounted Stop Light

LIGHTING SYSTEM

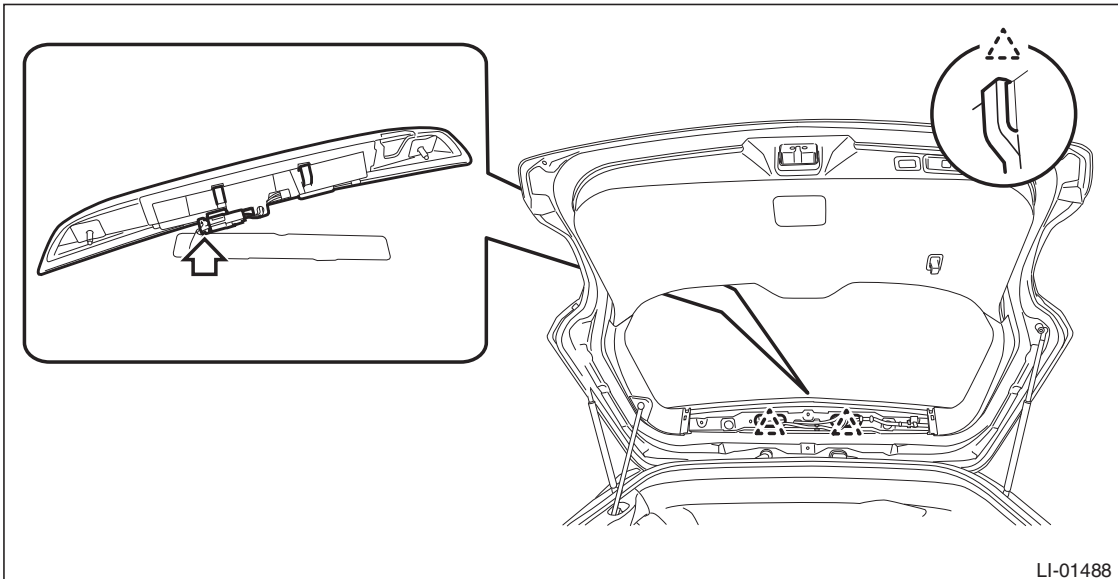
3) Remove the light assembly - high-mounted.

(1) Remove the nut.



(2) Release the claws, and pull out the light assembly - high-mounted to the rear side of the vehicle.

(3) Disconnect the connector and remove the light assembly - high-mounted.



B: INSTALLATION

Install each part in the reverse order of removal.

Tightening torque:

Light assembly - high-mounted: 4.5 N·m (0.46 kgf-m, 3.3 ft-lb)

C: INSPECTION

1) Install the light to test if it illuminates normally.

2) If it fails to illuminate normally, replace the light assembly - high-mounted with a new part.

NOTE:

Since LED (Light Emitting Diode) is used for the light, replace the light assembly - high-mounted if the LED burns out.

Spot Map Light

LIGHTING SYSTEM

31. Spot Map Light

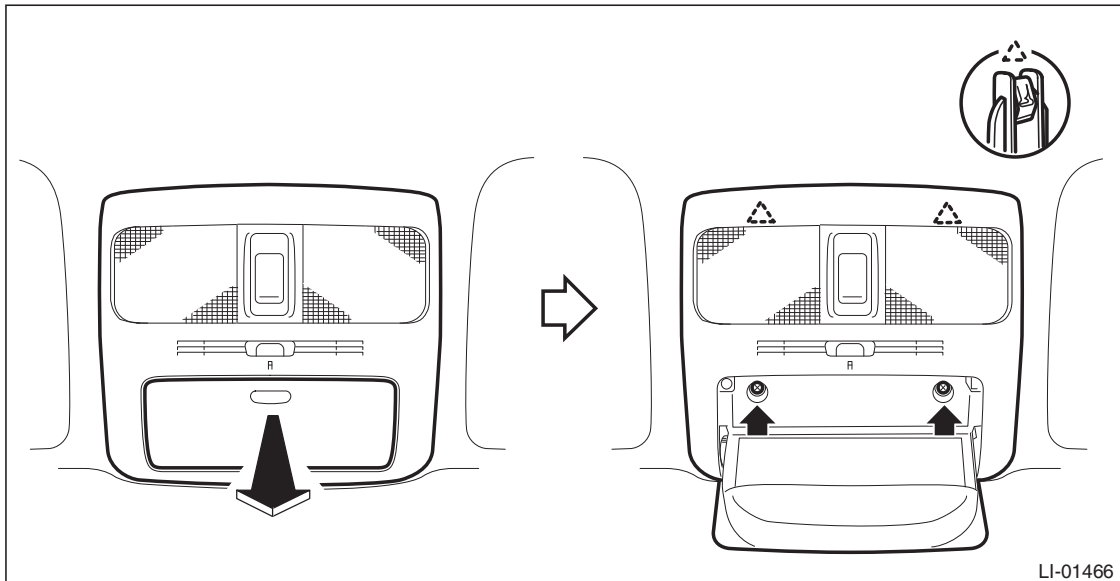
A: REMOVAL

1. MODELS WITHOUT EyeSight

NOTE:

The spot map light is a single unit with the overhead console.

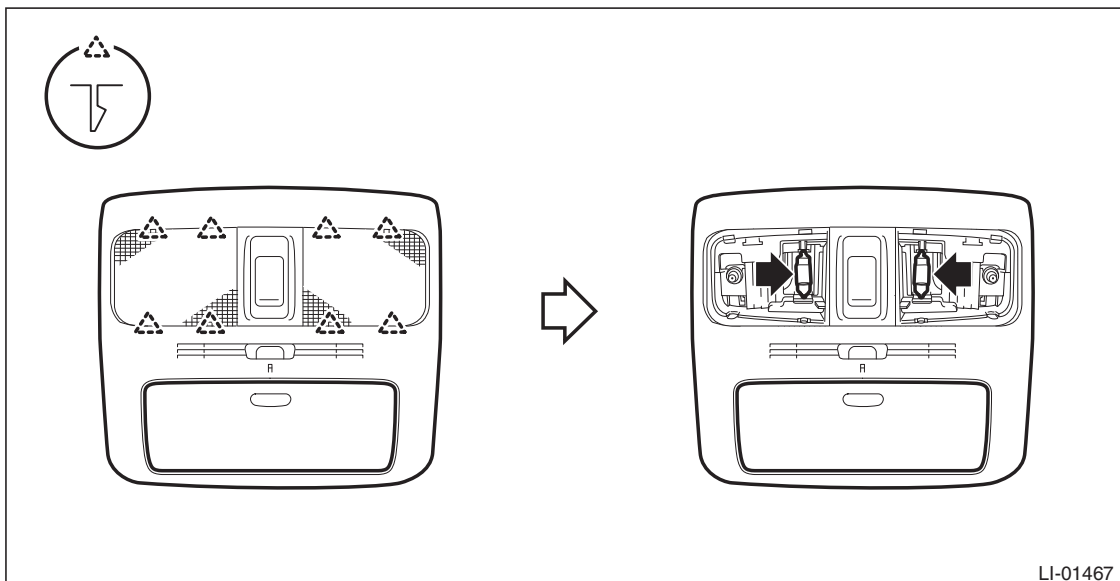
- 1) Disconnect the ground cable from battery.
- 2) Remove the overhead console assembly.
 - (1) Push and open the rear end of the overhead console lid, and remove the screws.
 - (2) Remove the clips and pull out the overhead console to disconnect the connectors.



- 3) Release the claws, then detach the spot map light cover and bulb.

CAUTION:

When using a flat tip screwdriver, apply protective tape or cloth and be careful not to cause damage.



Spot Map Light

LIGHTING SYSTEM

2. MODELS WITH EyeSight

NOTE:

The spot map light is a single unit with the stereo camera cover.

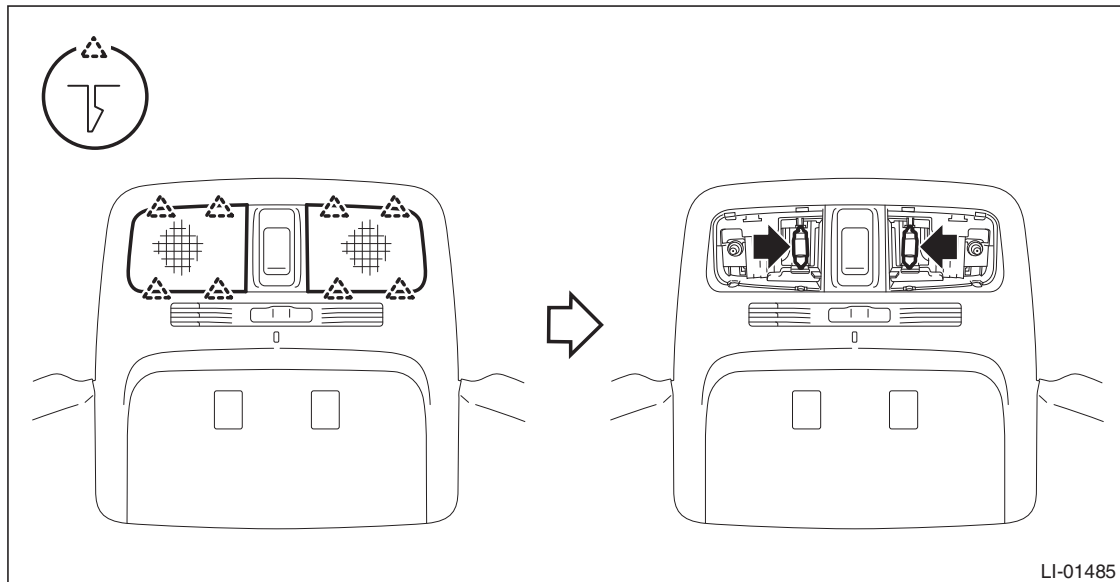
1) Remove the stereo camera cover. <Ref. to ES-11, REMOVAL, Stereo Camera.>

CAUTION:

When using a flat tip screwdriver, apply protective tape or cloth and be careful not to cause damage.

2) Release the claws and remove the lens.

3) Remove the bulb.



B: INSTALLATION

Install each part in the reverse order of removal.

Spot Map Light

LIGHTING SYSTEM

C: INSPECTION

1. SPOT MAP LIGHT BULB

- 1) Visually check the bulb for blow out.
- 2) Check the bulb specification. <Ref. to LI-2, SPECIFICATION, General Description.>
- 3) Replace the bulb if it is found defective.

2. SPOT MAP LIGHT SWITCH

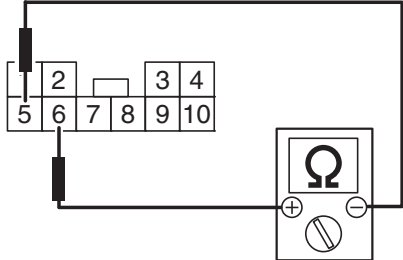
UNIT INSPECTION

Preparation tool:

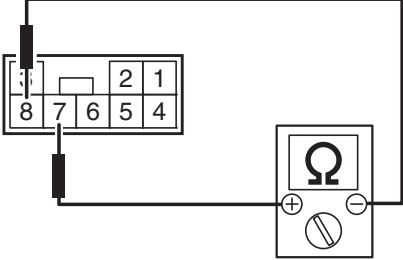
Circuit tester

- 1) Check the resistance between switch terminals.

- Models without EyeSight

Terminal No.	Inspection conditions	Standard	Connection diagram
6 — 5	Switch OFF	1 M Ω or more	
	Switch ON	Approx. 18 Ω	

- Models with EyeSight

Terminal No.	Inspection conditions	Standard	Connection diagram
7 — 8	Switch OFF	1 M Ω or more	
	Switch ON	Approx. 18 Ω	

- 2) Replace the light assembly - map if the inspection result is not within the standard value.

32.Room Light

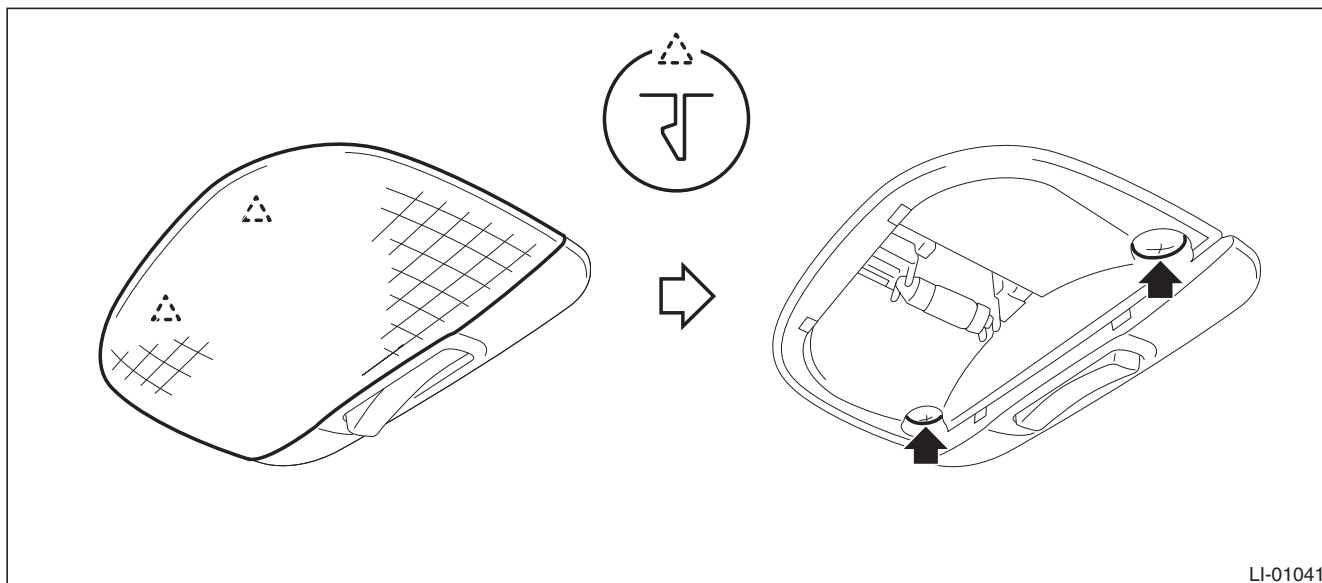
A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Remove the light assembly - room.

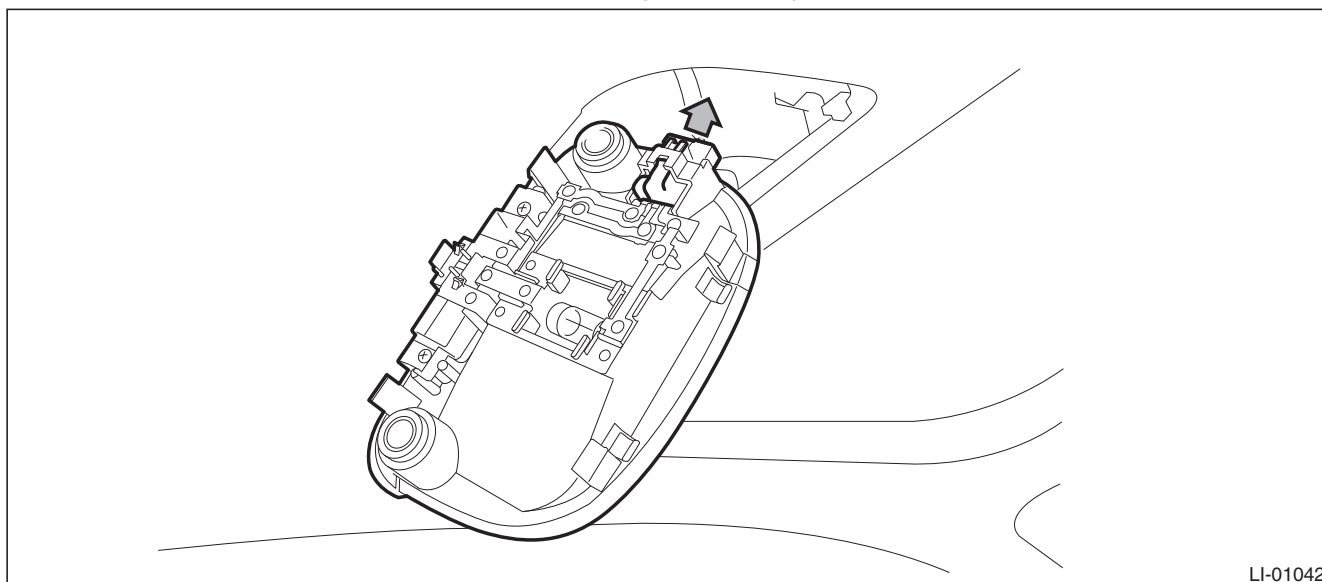
CAUTION:

When using a flat tip screwdriver, apply protective tape or cloth and be careful not to cause damage.

- (1) Release the claws and remove the lens.
- (2) Remove the screws and pull out the light assembly - room.



- (3) Disconnect the connector and remove the light assembly - room and the bulb.



B: INSTALLATION

Install each part in the reverse order of removal.

Room Light

LIGHTING SYSTEM

C: INSPECTION

1. ROOM LIGHT BULB

- 1) Visually check the bulb for blow out.
- 2) Check the bulb specification. <Ref. to LI-2, SPECIFICATION, General Description.>
- 3) Replace the bulb if it is found defective.

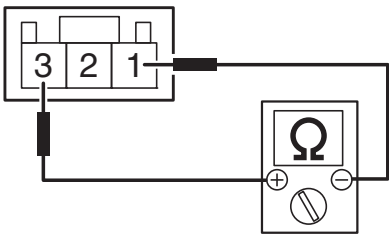
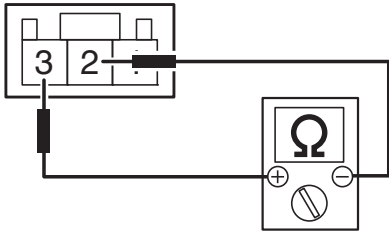
2. ROOM LIGHT SWITCH

Unit inspection

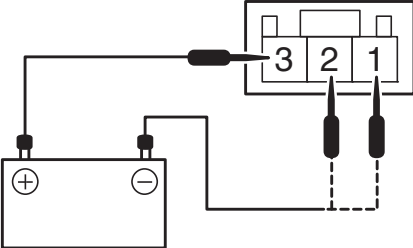
Preparation tool:

Circuit tester

- 1) Check the resistance between switch terminals.

Terminal No.	Inspection conditions	Standard	Connection diagram
—	Switch OFF	1 M Ω or more	 LI-01254
1 — 3	Switch ON	Less than 1 Ω	
2 — 3	Switch door	Less than 1 Ω	 LI-01255

- 2) Apply battery voltage to check the lighting condition of the light.

Terminal No.	Inspection conditions	Specification	Connection diagram
3 (+) — 1, 2 (—)	Switch OFF	Light OFF	 LI-01256
	Switch ON	Light ON	
	Switch door	Light ON	

- 3) Replace the light assembly - room if the inspection result is not within the standard value.

33.Luggage Room Light

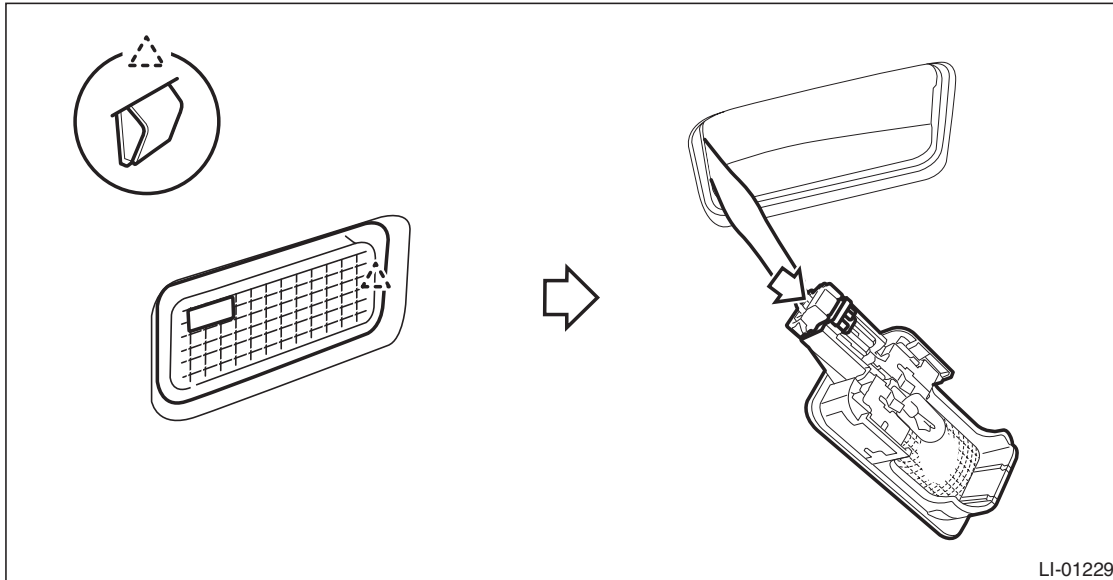
A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Remove the light assembly - luggage room.

CAUTION:

When using a flat tip screwdriver, apply protective tape or cloth and be careful not to cause damage.

- (1) Release the claws and remove the main body of the light assembly - luggage room.
- (2) Disconnect the connector and remove the light assembly - luggage room and the bulb.



B: INSTALLATION

Install each part in the reverse order of removal.

Luggage Room Light

LIGHTING SYSTEM

C: INSPECTION

1. LUGGAGE ROOM LIGHT BULB

- 1) Visually check the bulb for blow out.
- 2) Check the bulb specification. <Ref. to LI-2, SPECIFICATION, General Description.>
- 3) Replace the bulb if it is found defective.

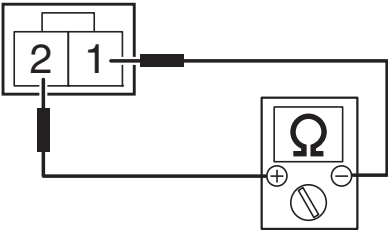
2. LUGGAGE ROOM LIGHT SWITCH

Unit inspection

Preparation tool:

Circuit tester

- 1) Check the resistance between switch terminals.

Terminal No.	Inspection conditions	Specification	Connection diagram
1 — 2	Switch OFF	1 M Ω or more	
	Switch ON	Less than 1 Ω	

LI-01253

- 2) Replace the light assembly - luggage room if the inspection result is not within the standard value.



34. Door Step Light

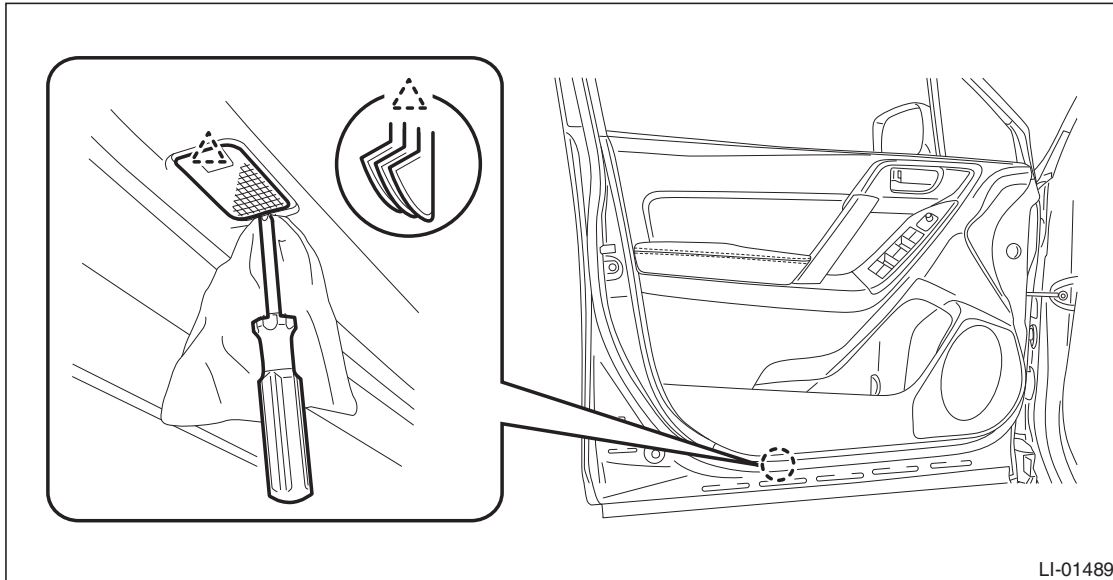
A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Remove the door step light.

CAUTION:

When using a flat tip screwdriver, apply protective tape or cloth and be careful not to cause damage.

- (1) Insert a flat tip screwdriver into the slit of the door step light to release the claw.
- (2) Disconnect the connector and remove the door step light.



B: INSTALLATION

Install each part 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, SPECIFICATION, General Description.>
- 3) Replace the bulb if it is found defective.

Ignition Switch Illumination

LIGHTING SYSTEM

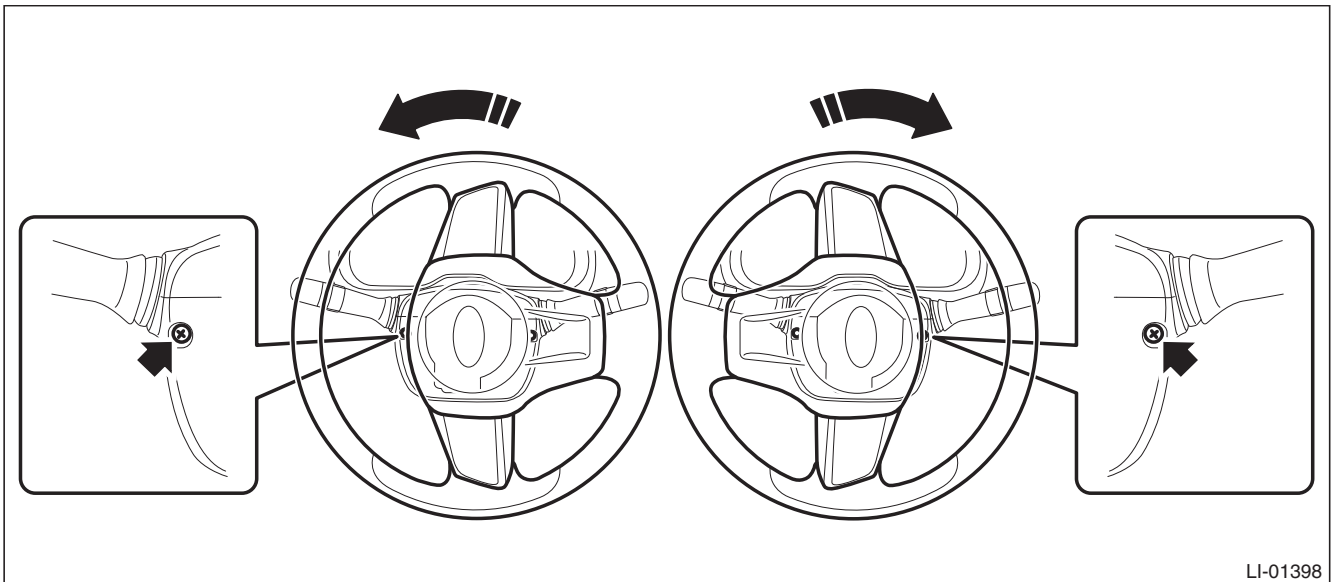
35. Ignition Switch Illumination

A: REMOVAL

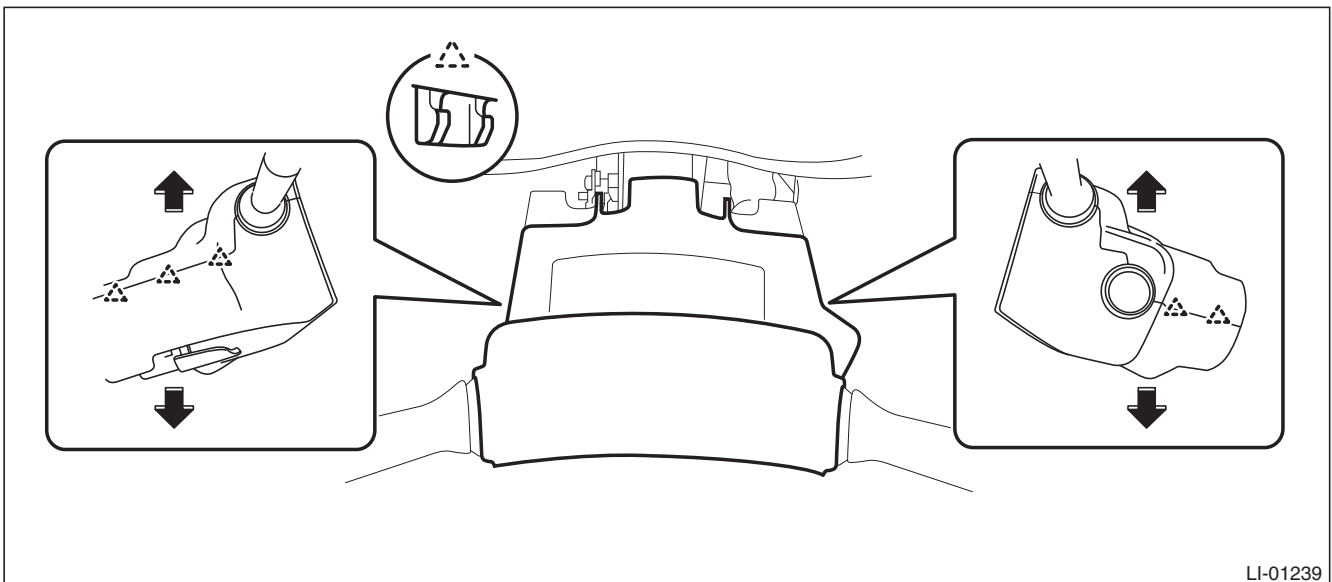
NOTE:

The ignition switch illumination is integrated into the immobilizer antenna assembly.

- 1) Disconnect the ground cable from battery.
- 2) Remove the cover assembly - column.
 - (1) Remove the screws by turning the steering wheel to right and left.



- (2) Release the claw, and remove the cover assembly - column UPR and the cover assembly - column LWR.

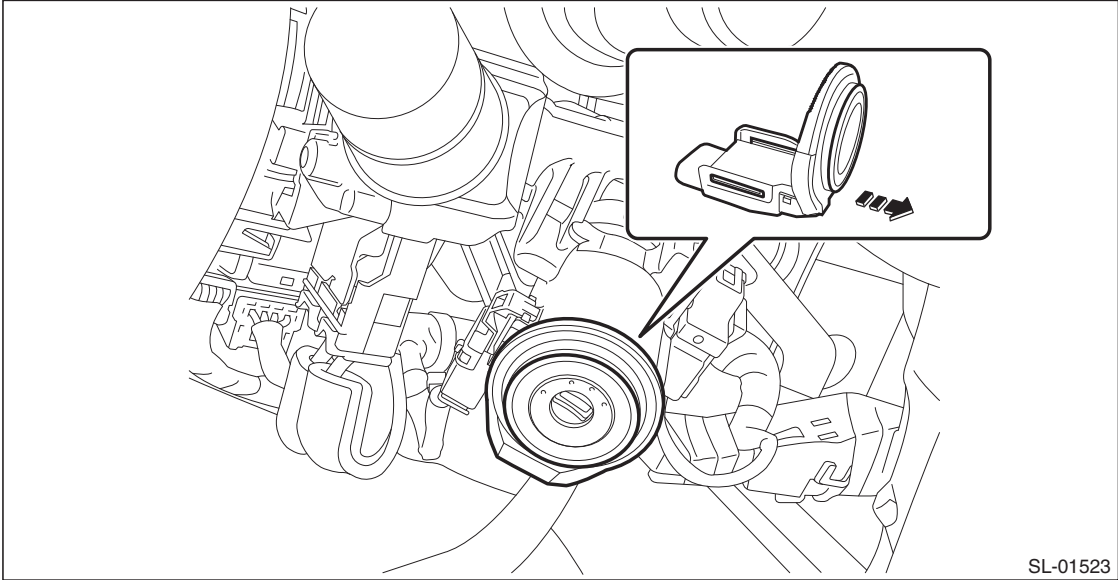


Ignition Switch Illumination

LIGHTING SYSTEM

3) Disconnect the connector and remove the ignition switch illumination.

CAUTION:
Do not apply excessive force to remove the ignition switch illumination lock. Otherwise they may be broken because those parts are the products made of a plastic.



B: INSTALLATION

Install each part in the reverse order of removal.

C: INSPECTION

On- the vehicle inspection

Preparation tool:
Circuit tester

Step	Check	Yes	No
1 CHECK THE IGNITION SWITCH ILLUMINATION. Make sure the ignition switch illumination illuminates when driver's side door is open.	Does the ignition switch illumination illuminate?	Ignition switch illumination is normal.	Go to step 2.
2 CHECK THE IGNITION SWITCH ILLUMINATION. Make sure the ignition switch illumination blinks when the ignition switch is turned to ON.	Does the ignition switch illumination blink?	Check the function setting of body integrated unit. <Ref. to BC(diag)-2, Basic Diagnostic Procedure.>	Check the ignition switch illumination circuit. <Ref. to SL-25, CHECK IGNITION SWITCH ILLUMINATION, INSPECTION, Keyless Entry System.>

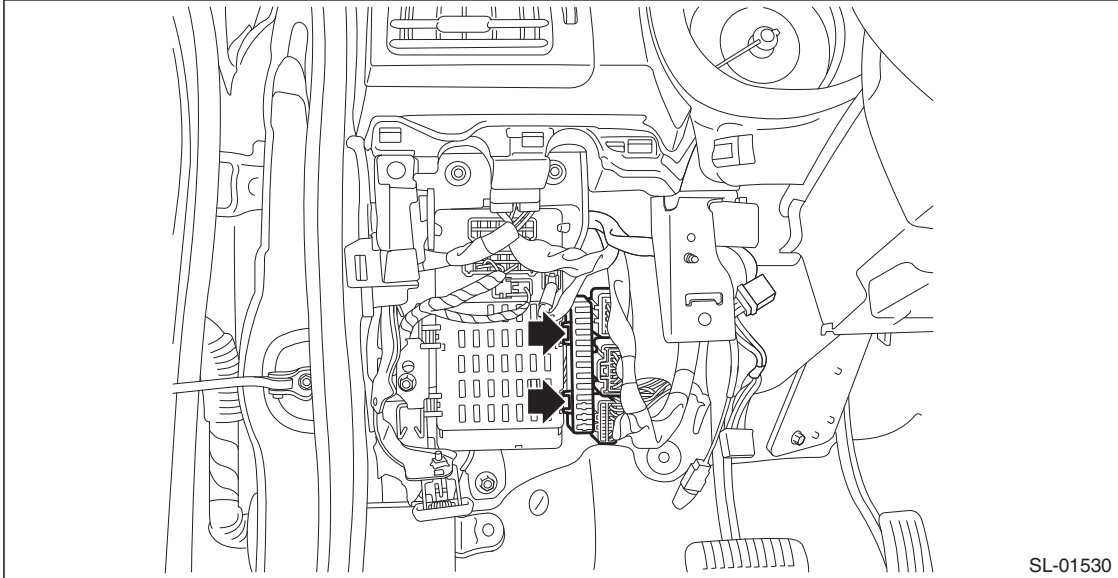
Auto Headlight Beam Leveler Control Module

LIGHTING SYSTEM

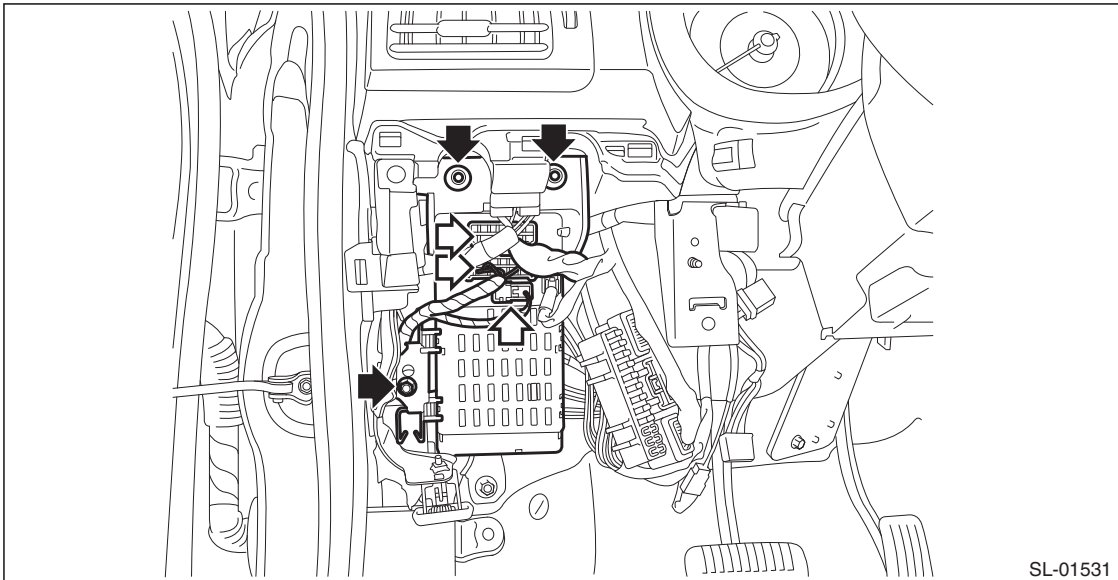
36. Auto Headlight Beam Leveler Control Module

A: REMOVAL

- 1) Remove the instrument panel lower cover and knee airbag module. <Ref. to AB-39, REMOVAL, Knee Airbag Module.>
- 2) Release the lock and remove the fuse holder.



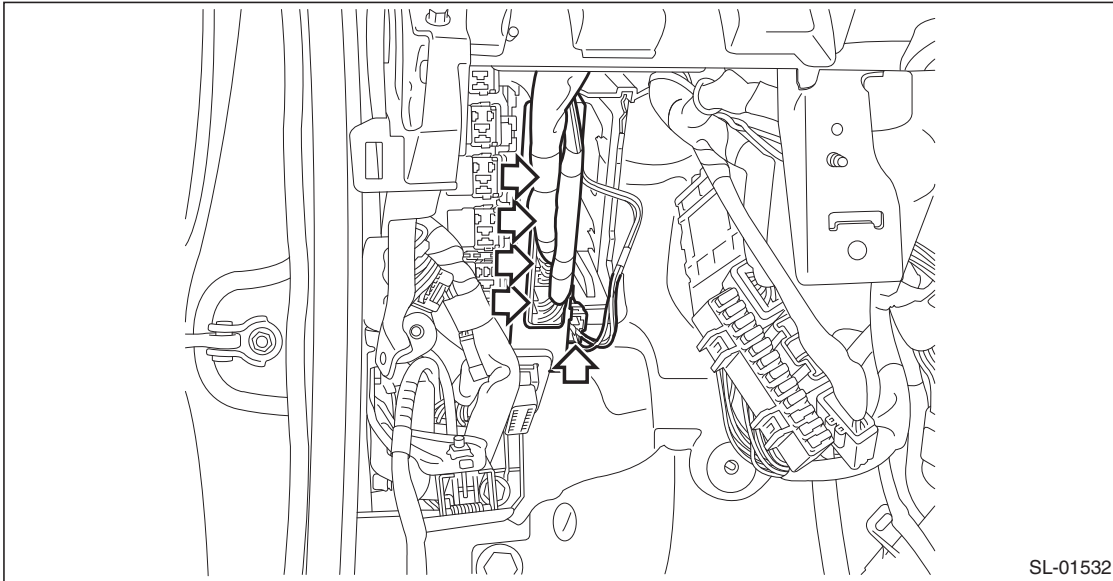
- 3) Remove the relay & fuse box.
 - (1) Disconnect the connector.
 - (2) Remove the bolts and nuts, and remove the relay & fuse box.



Auto Headlight Beam Leveler Control Module

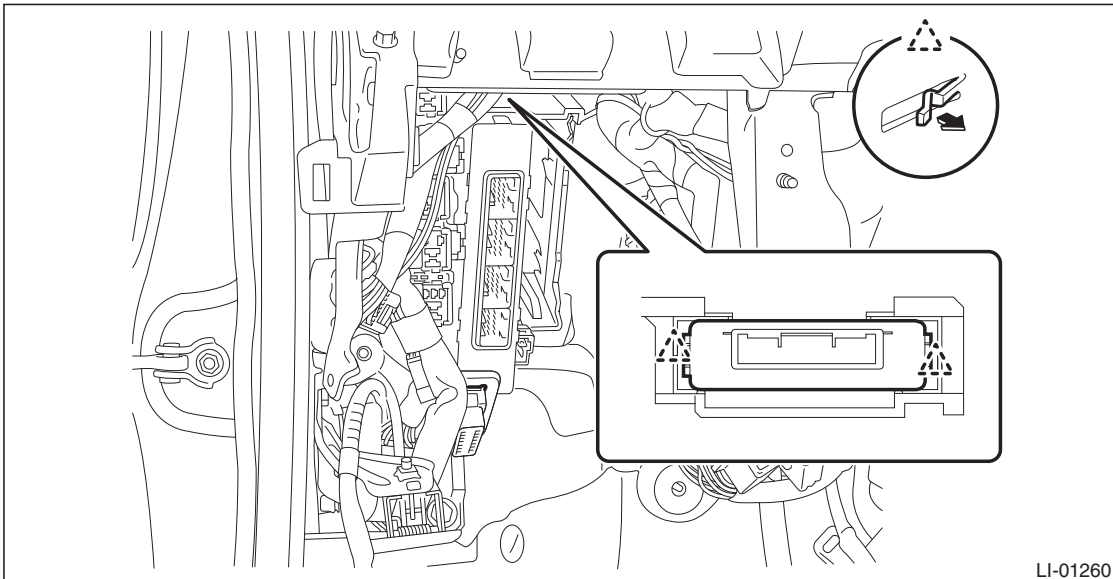
LIGHTING SYSTEM

- 4) Disconnect the connector of body integrated unit.



- 5) Remove the auto headlight beam leveler CM.

- (1) Disconnect the connector.
- (2) Release the claws and pull out the auto headlight beam leveler CM.



B: INSTALLATION

Install each part in the reverse order of removal.

Tightening torque:

Relay & fuse box: 7.5 N·m (0.76 kgf-m, 5.5 ft-lb)

NOTE:

When the auto headlight beam leveler CM is removed, perform initialization or reinitialization. <Ref. to LI-16, PROCEDURE, Auto Headlight Beam Leveler System.>

Rear Height Sensor

LIGHTING SYSTEM

37.Rear Height Sensor

A: REMOVAL

CAUTION:

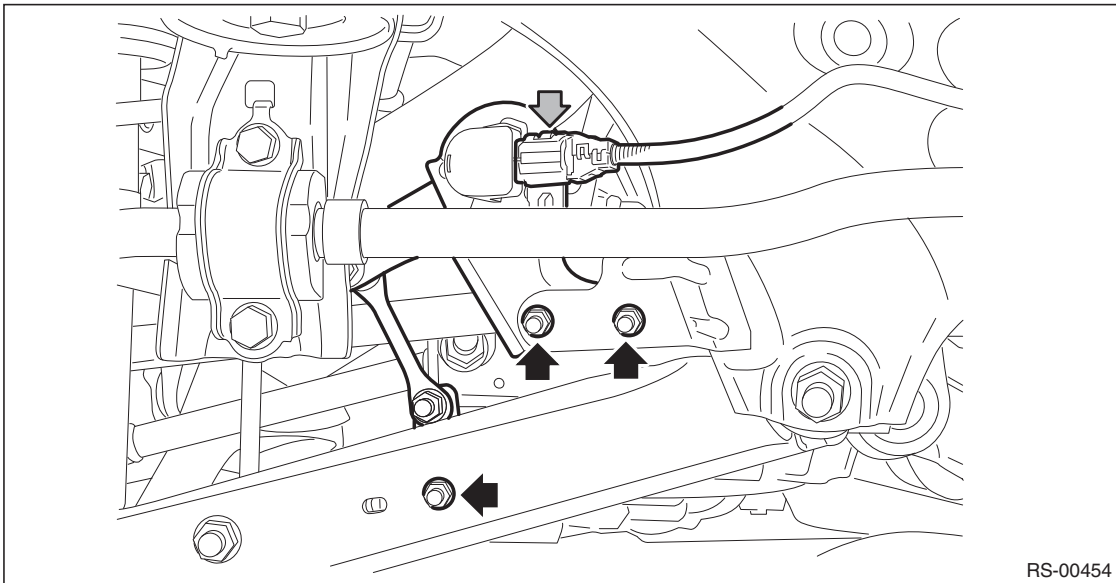
- Always remove the sensor assembly - headlight beam leveler before removing any parts related to the suspension.
- Do not apply impact to the sensor assembly - headlight beam leveler or forcibly move the arm. Doing so may cause sensor damage and malfunction.

- 1) Disconnect the ground cable from battery.
- 2) Lift up the vehicle, and remove the left rear wheel.
- 3) Remove the sensor assembly - headlight beam leveler.

CAUTION:

Do not disassemble the sensor and lever.

- (1) Disconnect the connector.
- (2) Remove the nuts, and remove the sensor assembly - headlight beam leveler.



B: INSTALLATION

CAUTION:

Do not apply impact to the sensor assembly - headlight beam leveler or forcibly move the arm. Doing so may cause sensor damage and malfunction.

- 1) Install each part in the reverse order of removal.

Tightening torque:

Sensor assembly - headlight beam leveler: 7.5 N·m (0.76 kgf-m, 5.5 ft-lb)

Rear wheel: 120 N·m (12.24 kgf-m, 88.5 ft-lb)

- 2) Perform reinitialization of the sensor assembly - headlight beam leveler. <Ref. to LI-17, REINITIALIZATION, PROCEDURE, Auto Headlight Beam Leveler System.>

NOTE:

When replacing the sensor assembly - headlight beam leveler with a new part, perform the initialization. <Ref. to LI-17, INITIALIZATION, PROCEDURE, Auto Headlight Beam Leveler System.>

Rear Height Sensor

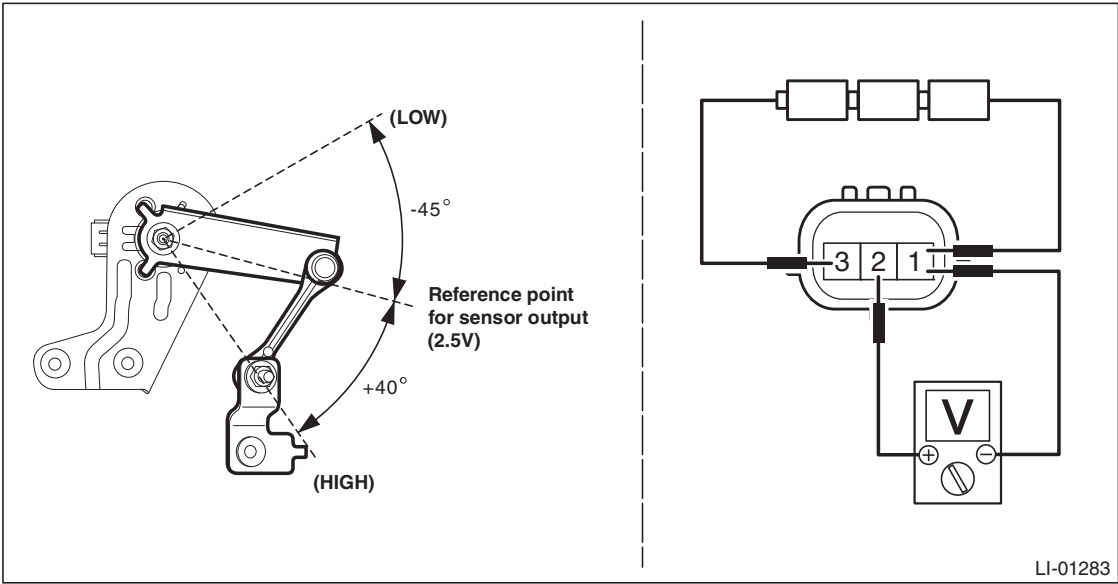
C: INSPECTION

UNIT INSPECTION

Preparation tool:

Circuit tester

- 1) Connect three dry cell batteries (1.5 V) in series.
- 2) Connect the (+) side of the battery to terminal No. 3 of the sensor, and the (–) side of the battery to terminal No. 1, and apply a voltage of 4.5 V between terminals No. 3 — No. 1.
- 3) With voltage applied, check the voltage between terminals when the sensor link is moved slowly up and down.



Terminal No.	Inspection conditions	Standard
2 (+) — 1 (–)	Move the link within the operation range.	0.5 — 4.1 V

- 4) Replace the sensor assembly - headlight beam leveler if the inspection result is not within the standard value.

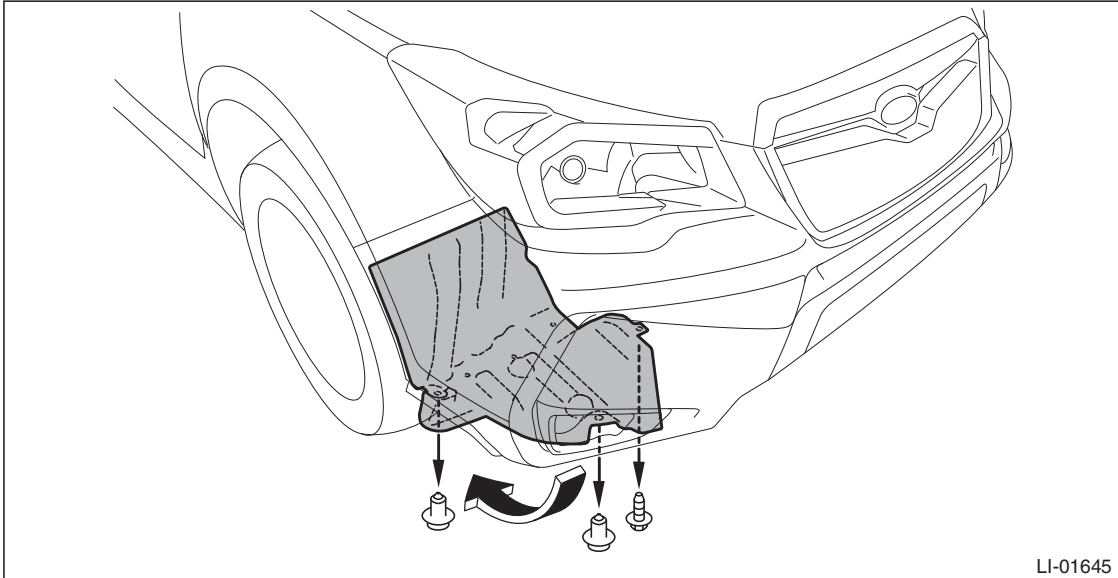
Day Time Running Resistor

LIGHTING SYSTEM

38.Day Time Running Resistor

A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Lift up the vehicle.
- 3) Remove the screw and clips, and turn over the front side of the mud guard - front.

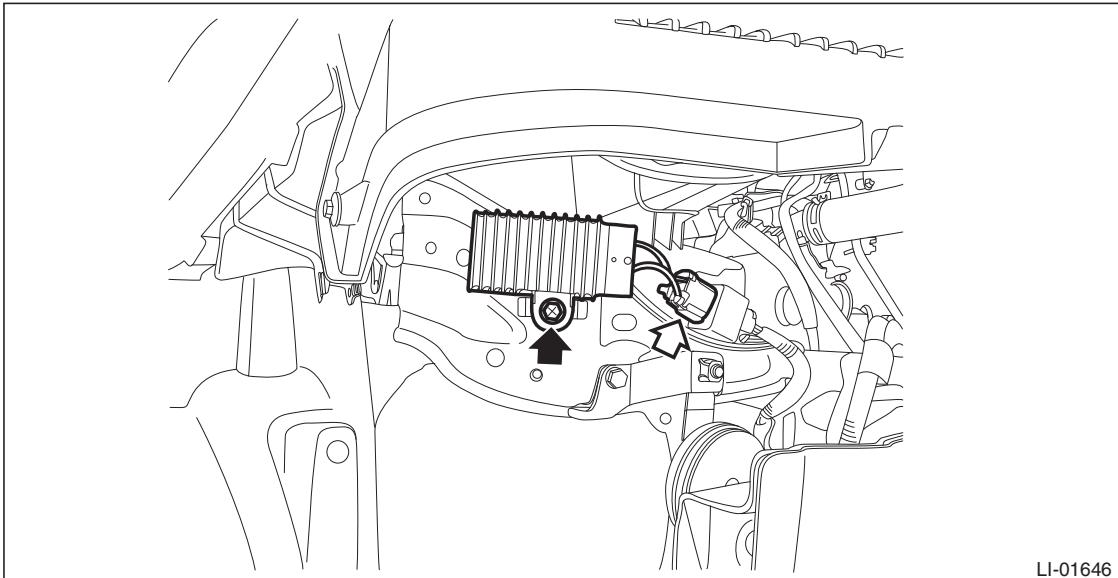


- 4) Remove the resistor assembly - daytime running light.

CAUTION:

The resistor may become hot. Be careful not to burn yourself when removing it.

- (1) Disconnect the connector.
- (2) Remove the bolts, then remove the resistor assembly - daytime running light.



B: INSTALLATION

Install each part in the reverse order of removal.

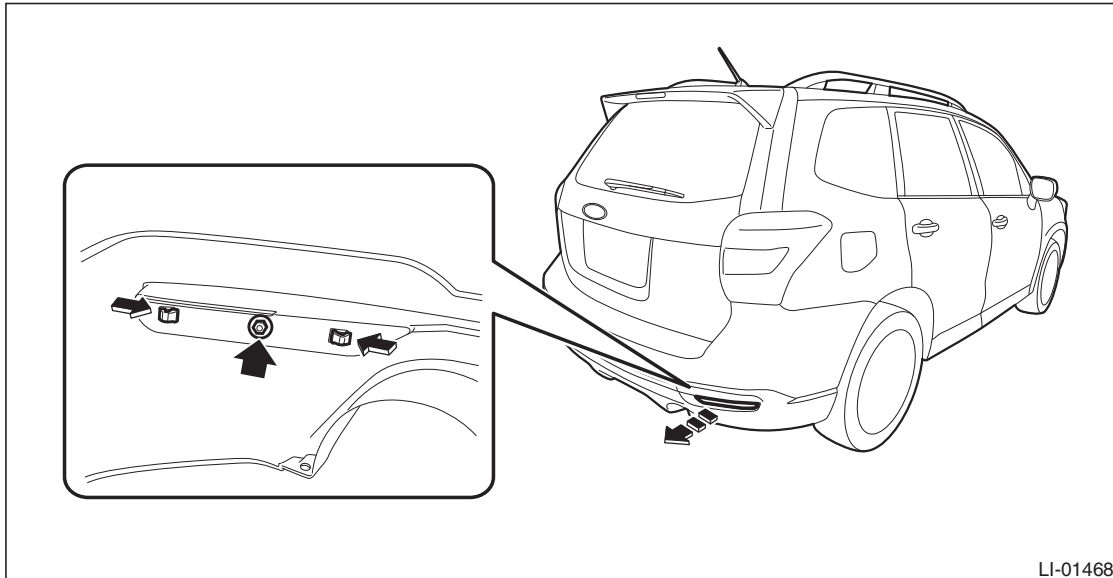
Tightening torque:

Resistor assembly - daytime running light: 7.5 N·m (0.76 kgf-m, 5.5 ft-lb)

39. Reflex Reflector

A: REMOVAL

From behind the bumper face - rear, release the nuts and claws and remove the reflex reflector assembly.



LI-01468

B: INSTALLATION

Install each part in the reverse order of removal.

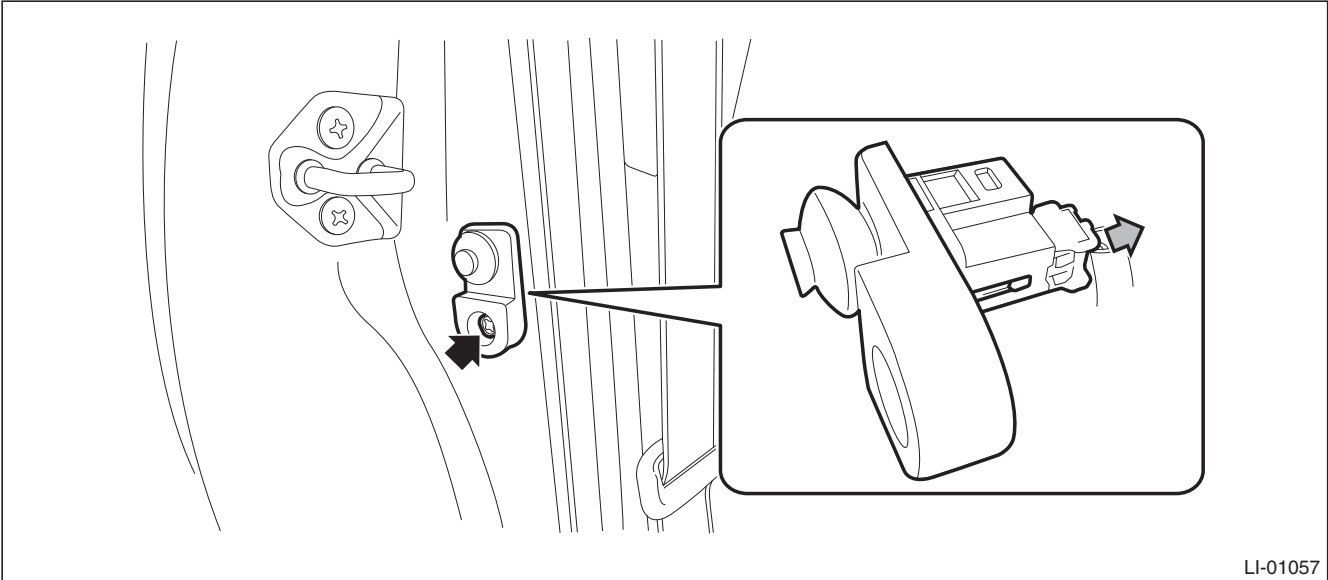
Door Switch

LIGHTING SYSTEM

40.Door Switch

A: REMOVAL

- 1) Disconnect the ground cable from battery.
- 2) Remove the switch assembly - door.
 - (1) Remove the screws, and pull out the switch assembly - door toward you.
 - (2) Disconnect the connector and remove the switch assembly - door.



LI-01057

B: INSTALLATION

Install each part in the reverse order of removal.

C: INSPECTION

Unit inspection

Preparation tool:

Circuit tester

- 1) Check the resistance between switch terminals.

Terminal No.	Inspection conditions	Standard	Connection diagram
1 — 3	When door is opened	Less than 1 Ω	
	When door is closed	1 MΩ or more	

LI-01327

- 2) Replace the switch assembly - door if the inspection result is not within the standard value.

AUTO HEADLIGHT BEAM LEVELER SYSTEM (DIAGNOSTICS)

AL(diag)

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Basic Diagnostic Procedure

AUTO HEADLIGHT BEAM LEVELER SYSTEM (DIAGNOSTICS)

1. Basic Diagnostic Procedure

A: PROCEDURE

Step	Check	Yes	No
1	PERFORM CUSTOMER INTERVIEW. Using the Check List for Interview, ask the customer the condition of how the trouble occurred. <Ref. to AL(diag)-3, CHECK, Check List for Interview.>	Did you interview the customer?	Go to step 2.
2	CHECK LAN SYSTEM. Inspect LAN system. <Ref. to LAN(diag)-2, PROCEDURE, Basic Diagnostic Procedure.>	Is there any fault?	Interview the customer. <Ref. to AL(diag)-3, CHECK, Check List for Interview.>
3	CHECK AUTO HEADLIGHT BEAM LEVELER SYSTEM. Using the Subaru Select Monitor, read DTC of the auto headlight beam leveler system inspection. <Ref. to AL(diag)-10, OPERATION, Read Diagnostic Trouble Code (DTC).> NOTE: If the communication function of the Subaru Select Monitor cannot be executed properly, check the communication circuit. <Ref. to AL(diag)-8, COMMUNICATION FOR INITIALIZING IMPOSSIBLE, INSPECTION, Subaru Select Monitor.>	Record DTC and time stamp, and perform the diagnosis according to DTC. <Ref. to AL(diag)-13, LIST, List of Diagnostic Trouble Code (DTC).> NOTE: For time stamp, refer to "LAN SYSTEM". <Ref. to LAN(diag)-6, TIME STAMP, CAUTION, General Description.>	Perform the inspection according to the diagnosis for LAN system.
4	CHECK DIAGNOSTICS WITH PHENOMENON. Check "Diagnostics with Phenomenon". <Ref. to AL(diag)-18, Diagnostics with Phenomenon.>	Is DTC displayed?	Go to step 3.
5	CHECK TROUBLE PHENOMENON. 1) Perform the basic inspection and function check. <Ref. to AL(diag)-4, INSPECTION, General Description.> 2) Check the auto headlight beam leveler CM. <Ref. to AL(diag)-6, Control Module I/O Signal.> 3) Perform check of current data. <Ref. to AL(diag)-12, Read Current Data.> 4) Perform a unit check.	Does the symptom apply?	Record DTC and time stamp, and perform the diagnosis according to DTC. <Ref. to AL(diag)-13, LIST, List of Diagnostic Trouble Code (DTC).> NOTE: For time stamp, refer to "LAN SYSTEM". <Ref. to LAN(diag)-6, TIME STAMP, CAUTION, General Description.>
		Was the trouble cause found?	Go to step 4.
		Repair or replace the cause of trouble.	Go to step 5.
		System is normal.	

Check List for Interview

AUTO HEADLIGHT BEAM LEVELER SYSTEM (DIAGNOSTICS)

2. Check List for Interview

A: CHECK

- Inspect the following items regarding the vehicle's state.
- Print out this page for interviewing customers.

Auto Headlight Beam Leveler System Check List for Interview			
Date the Vehicle is Received	Year	Month	Day
Customer's name		Registration No.	Initial year of registration Year Month Date
		Vehicle model	Frame number
Interviewer	Inspector	Engine type	Odometer reading
Customer specified content • • •			
Date and time when the trouble occurred		Frequency of trouble occurrence	Always occurs Sometimes occurs (times per day, times per month)
Condition of trouble occurrence (How the trouble occurs)		Weather	Fine • Cloudy • Rainy • Snowy • Others ()
		Temperature	°C (°F) — °C (°F)
Road conditions		Occurrence location	
Accessory installation condition			
Confirmation of trouble condition			
☐ Diagnostic code			



General Description

AUTO HEADLIGHT BEAM LEVELER SYSTEM (DIAGNOSTICS)

3. General Description

A: CAUTION

1. AIRBAG SYSTEM

CAUTION:

- Do not use the electrical test equipment on the airbag system wiring harnesses and connector circuits.
- Be careful not to damage the airbag system wiring harness.

B: INSPECTION

1. BASIC INSPECTION

Before performing the diagnosis, check the following items which may cause problems relating the wiper or light.

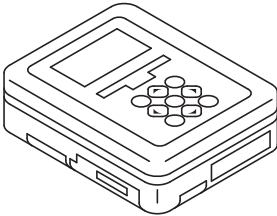
- 1) Check the battery.
- 2) Check the relay and fuse condition. <Ref. to LI-4, Relay and Fuse.>
- 3) Check the connecting condition of harness and harness connector.

2. FUNCTION CHECK

With the ignition switch ON and the lighting switch set at 2 (HEAD), change the vehicle posture while the vehicle is stopped. Check that the beam moves, when the vehicle condition is kept for three seconds or more.

C: PREPARATION TOOL

1. SPECIAL TOOL

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST1B022XU0	1B022XU0	SUBARU SELECT MONITOR III KIT	Used for troubleshooting the electrical system.

2. GENERAL TOOL

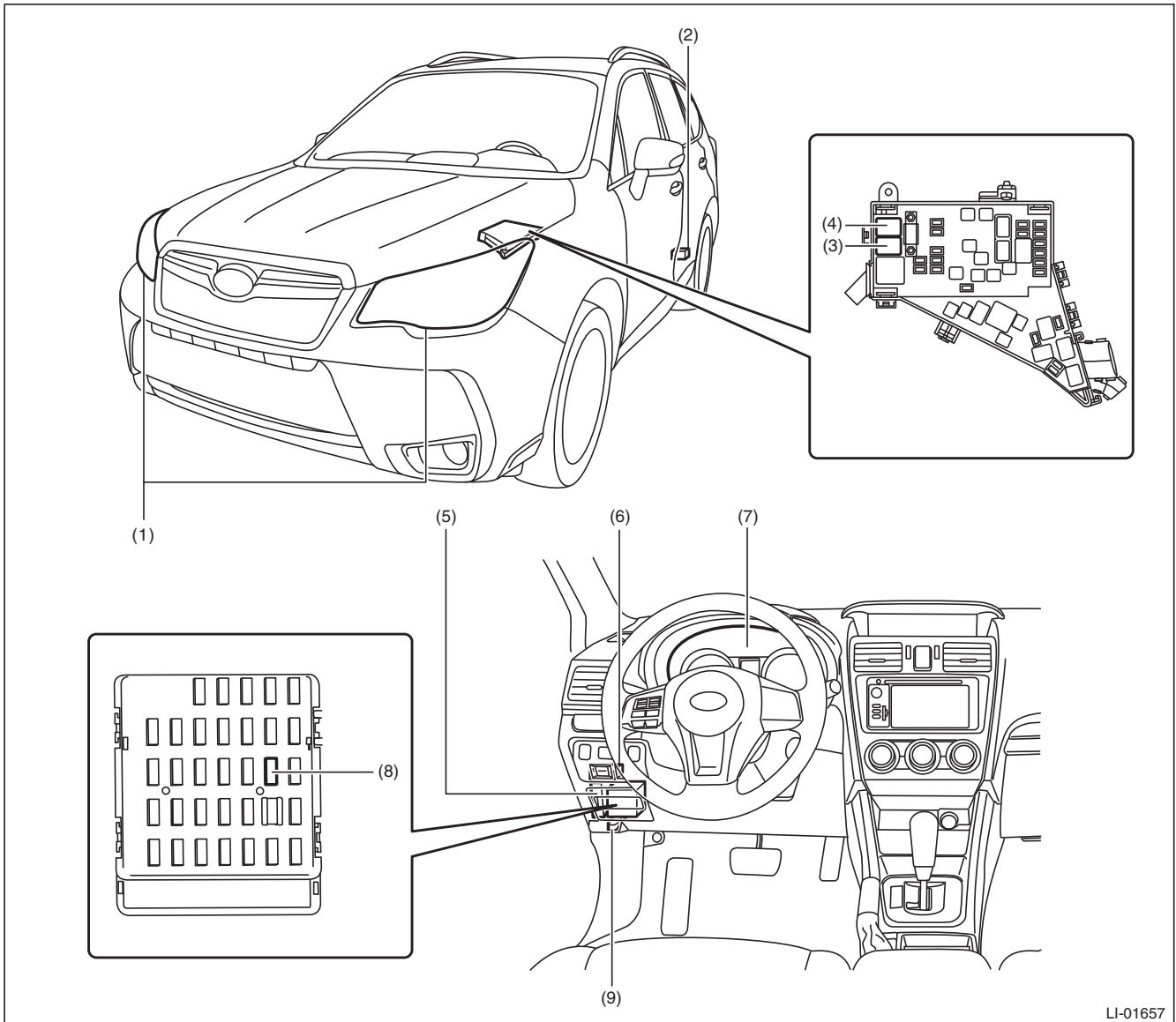
TOOL NAME	REMARKS
Circuit tester	Used for measuring resistance, voltage and current.

Electrical Component Location

AUTO HEADLIGHT BEAM LEVELER SYSTEM (DIAGNOSTICS)

4. Electrical Component Location

A: LOCATION



- | | | |
|---|------------------------------------|--|
| (1) Headlight ASSY
– Headlight beam leveler actuator | (4) Headlight relay (Hi) | (7) Combination meter |
| (2) Rear vehicle height sensor | (5) Body integrated unit | (8) Fuse 10 A (auto headlight beam leveler CM) |
| (3) Headlight relay (Lo) | (6) Auto headlight beam leveler CM | (9) Data link connector |

Subaru Select Monitor

AUTO HEADLIGHT BEAM LEVELER SYSTEM (DIAGNOSTICS)

6. Subaru Select Monitor

A: OPERATION

- For operation procedures, refer to the "PC application help for Subaru Select Monitor".
- If the auto headlight beam leveler CM can not communicate with Subaru Select Monitor, perform "COMMUNICATION FOR INITIALIZING IMPOSSIBLE". <Ref. to AL(diag)-8, INSPECTION, Subaru Select Monitor.>

Subaru Select Monitor

AUTO HEADLIGHT BEAM LEVELER SYSTEM (DIAGNOSTICS)

B: INSPECTION

1. COMMUNICATION FOR INITIALIZING IMPOSSIBLE

Communication error with auto headlight beam leveler CM

DETECTING CONDITION:

- Defective harness connector
- Power supply circuit malfunction
- Defective auto headlight beam leveler CM
- Defective CAN communication circuit
- Defective Subaru Select Monitor

TROUBLE SYMPTOM:

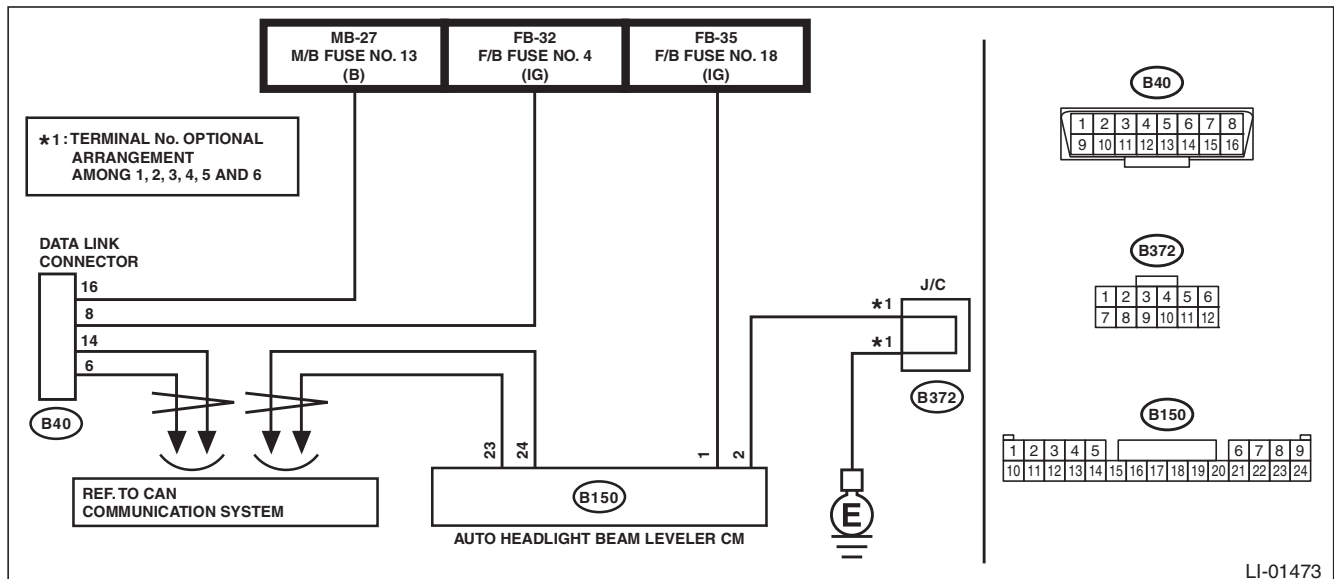
Communication is impossible between auto headlight beam leveler CM and Subaru Select Monitor.

CAUTION:

Initialization is required after replacing the auto headlight beam leveler CM.

WIRING DIAGRAM:

Headlight beam leveler system <Ref. to WI-260, WIRING DIAGRAM, Headlight Beam Leveler System.>



	Step	Check	Yes	No
1	CHECK OTHER COMMUNICATION. Communicate with the system other than the auto headlight beam leveler CM using the Subaru Select Monitor.	Is the communication to other control module possible?	Go to step 2.	Perform the “Communication for Initializing Impossible” of LAN system. <Ref. to LAN(diag)-11, COMMUNICATION FOR INITIALIZING IMPOSSIBLE, Subaru Select Monitor.>
2	CHECK LAN SYSTEM. Inspect LAN system. <Ref. to LAN(diag)-2, PROCEDURE, Basic Diagnostic Procedure.>	Is there any fault?	Perform the inspection according to the diagnosis for LAN system.	Go to step 3.

Subaru Select Monitor

AUTO HEADLIGHT BEAM LEVELER SYSTEM (DIAGNOSTICS)

Step	Check	Yes	No
3 CHECK FOR POOR CONTACT. 1) Turn the ignition switch to OFF. 2) Disconnect the auto headlight beam leveler CM connector. 3) Connect the disconnected connectors. 4) Communicate with the auto headlight beam leveler CM using the Subaru Select Monitor.	Is communication possible?	It is possible that temporary poor communication occurs.	Replace the auto headlight beam leveler CM. <Ref. to LI-72, Auto Headlight Beam Leveler Control Module.>

Read Diagnostic Trouble Code (DTC)

AUTO HEADLIGHT BEAM LEVELER SYSTEM (DIAGNOSTICS)

7. Read Diagnostic Trouble Code (DTC)

A: OPERATION

- For operation procedures, refer to the "PC application help for Subaru Select Monitor".
- For details concerning DTC, refer to the List of Diagnostic Trouble Codes (DTC). <Ref. to AL(diag)-13, LIST, List of Diagnostic Trouble Code (DTC).>

Clear Memory Mode

AUTO HEADLIGHT BEAM LEVELER SYSTEM (DIAGNOSTICS)

8. Clear Memory Mode

A: OPERATION

For operation procedures, refer to the "PC application help for Subaru Select Monitor".

Read Current Data

AUTO HEADLIGHT BEAM LEVELER SYSTEM (DIAGNOSTICS)

9. Read Current Data

A: OPERATION

For detailed operation procedures, refer to “PC application help for Subaru Select Monitor”.

B: LIST

Item Name	Content	Standard	Note
Trip Count	Information of timestamp, trip counter	—	—
Count	Information of timestamp, original counter identification information	—	—
Time Count	Information of timestamp, time counter	—	—
F Sensor Signal	Output voltage value from front vehicle height sensor Display range: 0.00 — 5.00 V	5V	Fixed at 5 V because front vehicle height sensor is not equipped.
R Sensor Signal	Output voltage value from rear vehicle height sensor Display range: 0.00 — 5.00 V	Approx. 2.5 V	Changes according to vehicle condition.
Actuator Signal	Power supply voltage value to headlight beam leveler actuator Display range: 0% — 100%	Not in operation: 0% In operation: 10 — 90% (17 seconds)	Changes according to vehicle condition.
ECU ACC	IG voltage condition of auto headlight beam leveler CM Display range: 0.00 — 25.76 V	8 — 16 V	—
Indicator Signal	Meter indicator condition Display range: Light off/Light up/Flashing	Light off: Normal Light up: Abnormal Blink: Not initialized	—
Vehicle speed signal	Vehicle speed condition Display range: 0.00 — 3686.34 km/h	Show vehicle speed	—
H/L Lo Signal	Headlight lighting condition Display range: Light off/Light up	Light off: light switch OFF Light up: light switch HEAD or light switch AUTO with light sensor operated	—

NOTE:

For detailed operation procedures, refer to “PC application help for Subaru Select Monitor”.

List of Diagnostic Trouble Code (DTC)

AUTO HEADLIGHT BEAM LEVELER SYSTEM (DIAGNOSTICS)

10. List of Diagnostic Trouble Code (DTC)

A: LIST

DTC	Item	Content of diagnosis	Reference
U0073	Control Module Communication Bus "A" Off	Detected when CAN line abnormality is detected.	<Ref. to AL(diag)-14, DTC U0073 CONTROL MODULE COMMUNICATION BUS "A" OFF, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
U0122	Lost Communication With Vehicle Dynamics Control Module	Detected when CAN data from VDC (vehicle speed signal) does not arrive.	<Ref. to AL(diag)-14, DTC U0122 LOST COMMUNICATION WITH VEHICLE DYNAMICS CONTROL MODULE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
U0140	Lost Communication With Body Control Module	Detected when CAN data from body integrated unit (headlight ON signal) does not arrive.	<Ref. to AL(diag)-14, DTC U0140 LOST COMMUNICATION WITH BODY CONTROL MODULE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
B2900	AHLCU Error	Detected when an error occurred in auto headlight beam leveler CM.	<Ref. to AL(diag)-15, DTC B2900 AHLCU ERROR, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
B2902	Rear Height Sensor Error	Detected when an error occurred in rear vehicle height sensor.	<Ref. to AL(diag)-16, DTC B2902 REAR HEIGHT SENSOR ERROR, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
B2903	VDC Data Error	Detected when data from VDC (vehicle speed signal) is abnormal.	<Ref. to AL(diag)-17, DTC B2903 VDC DATA ERROR, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>



Diagnostic Procedure with Diagnostic Trouble Code (DTC)

AUTO HEADLIGHT BEAM LEVELER SYSTEM (DIAGNOSTICS)

11. Diagnostic Procedure with Diagnostic Trouble Code (DTC)

A: DTC U0073 CONTROL MODULE COMMUNICATION BUS “A” OFF

Detected when CAN line abnormality is detected.

NOTE:

Perform the diagnosis for LAN system. <Ref. to LAN(diag)-2, PROCEDURE, Basic Diagnostic Procedure.>

B: DTC U0122 LOST COMMUNICATION WITH VEHICLE DYNAMICS CONTROL MODULE

Detected when CAN data (vehicle speed signal) is not received from VDC.

NOTE:

Perform the diagnosis for LAN system. <Ref. to LAN(diag)-2, PROCEDURE, Basic Diagnostic Procedure.>

C: DTC U0140 LOST COMMUNICATION WITH BODY CONTROL MODULE

Detected when CAN data (headlights ON signal) is not received from the body integrated unit.

NOTE:

Perform the diagnosis for LAN system. <Ref. to LAN(diag)-2, PROCEDURE, Basic Diagnostic Procedure.>

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

AUTO HEADLIGHT BEAM LEVELER SYSTEM (DIAGNOSTICS)

D: DTC B2900 AHLCU ERROR

DTC DETECTING CONDITION:

Detected when internal malfunction occurs in the auto headlight beam leveler CM.

TROUBLE SYMPTOM:

The auto headlight beam leveler does not operate.

CAUTION:

Initialization is required after replacing the auto headlight beam leveler CM.

Step	Check	Yes	No
1 CHECK DTC. 1) Turn the ignition switch to OFF. 2) Using the Subaru Select Monitor, clear the auto headlight beam leveler system memory. 3) Turn the ignition switch to OFF → ON. 4) Use the Subaru Select Monitor and read DTCs.	Is DTC B2900 displayed? (current malfunction)	Replace the auto headlight beam leveler CM. <Ref. to LI-72, Auto Headlight Beam Leveler Control Module.>	System is normal. It is possible that temporary poor contact occurs.



Diagnostic Procedure with Diagnostic Trouble Code (DTC)

AUTO HEADLIGHT BEAM LEVELER SYSTEM (DIAGNOSTICS)

E: DTC B2902 REAR HEIGHT SENSOR ERROR

DTC DETECTING CONDITION:

Detected when error occurs in the rear height sensor.

TROUBLE SYMPTOM:

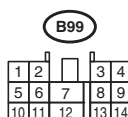
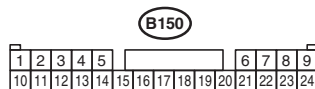
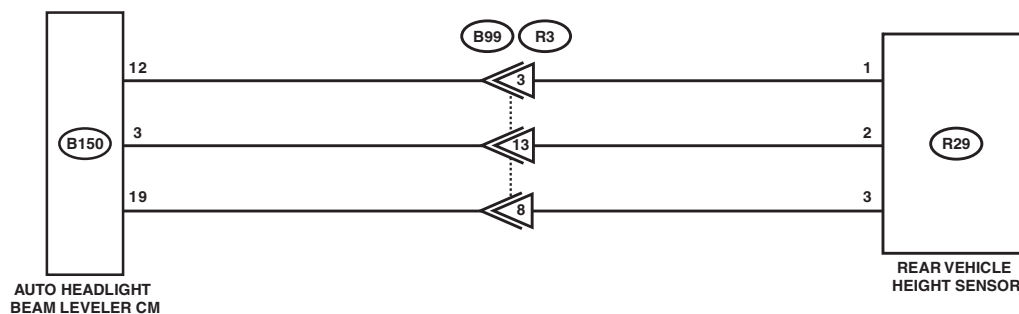
The auto headlight beam leveler does not operate.

CAUTION:

Initialization is required after replacing the auto headlight beam leveler CM.

WIRING DIAGRAM:

Headlight beam leveler system <Ref. to WI-260, WIRING DIAGRAM, Headlight Beam Leveler System.>



LI-01471

Step	Check	Yes	No
1 CHECK DTC. 1) Turn the ignition switch to OFF. 2) Using the Subaru Select Monitor, clear the auto headlight beam leveler system memory. 3) Turn the ignition switch to OFF → ON. 4) Use the Subaru Select Monitor and read DTCs.	Is DTC B2902 displayed? (current malfunction)	Go to step 2.	System is normal. It is possible that temporary poor contact occurs.
2 CHECK CURRENT DATA. Display {R Sensor Signal} using Subaru Select Monitor.	Does the data indicate the standard value?	Replace the auto headlight beam leveler CM. <Ref. to LI-72, Auto Headlight Beam Leveler Control Module.>	Go to step 3.
3 CHECK CURRENT DATA. 1) Display {R Sensor Signal} using Subaru Select Monitor. 2) Change the vehicle posture.	Does the data change?	Go to step 6.	Go to step 4.
4 CHECK OUTPUT VOLTAGE BETWEEN AUTO HEADLIGHT BEAM LEVELER CM AND VEHICLE HEIGHT SENSOR. 1) Disconnect the vehicle height sensor connector. 2) Turn the ignition switch to ON. 3) Measure the voltage between the vehicle height sensor connector and chassis ground. Connector & terminal (R29) No. 1 (+) — Chassis ground (-):	Is the voltage 5±0.25 V?	Go to step 5.	Replace the auto headlight beam leveler CM. <Ref. to LI-72, Auto Headlight Beam Leveler Control Module.>

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

AUTO HEADLIGHT BEAM LEVELER SYSTEM (DIAGNOSTICS)

Step	Check	Yes	No
5 CHECK REAR HEIGHT SENSOR. 1) Remove the rear vehicle height sensor. 2) Perform the inspection of rear height sensor unit. <Ref. to LI-75, INSPECTION, Rear Height Sensor.>	Is the rear height sensor normal?	Go to step 6.	Replace the rear height sensor. <Ref. to LI-74, Rear Height Sensor.>
6 CHECK HARNESS. 1) Disconnect the auto headlight beam leveler CM connector. 2) Using a tester, measure the resistance between the auto headlight beam leveler CM connector and rear height sensor connector. Connector & terminal <i>(B150) No. 12 — (R29) No. 1:</i> <i>(B150) No. 3 — (R29) No. 2:</i> <i>(B150) No. 19 — (R29) No. 3:</i>	Is there continuity?	Go to step 7.	Repair or replace the open circuit of harness.
7 CHECK HARNESS. Using a tester, measure the resistance between the auto headlight beam leveler CM connector and chassis ground. Connector & terminal <i>(B150) No. 3 — Chassis ground:</i> <i>(B150) No. 19 — Chassis ground:</i> <i>(B150) No. 12 — Chassis ground:</i>	Is the resistance 10 kΩ or more?	Replace the auto headlight beam leveler CM. <Ref. to LI-72, Auto Headlight Beam Leveler Control Module.>	Repair or replace the short circuit of the harness.

F: DTC B2903 VDC DATA ERROR

DTC DETECTING CONDITION:

Detected when data (vehicle speed signal) from VDC CM is abnormal.

TROUBLE SYMPTOM:

The auto headlight beam leveler does not operate.

NOTE:

Perform the diagnosis for VDC. <Ref. to VDC(diag)-2, PROCEDURE, Basic Diagnostic Procedure.>

Diagnostics with Phenomenon

AUTO HEADLIGHT BEAM LEVELER SYSTEM (DIAGNOSTICS)

12. Diagnostics with Phenomenon

A: INSPECTION

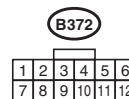
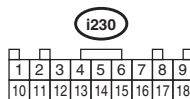
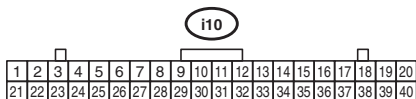
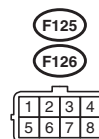
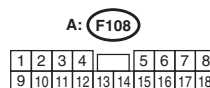
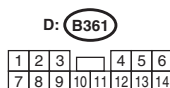
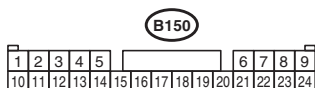
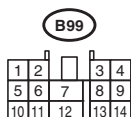
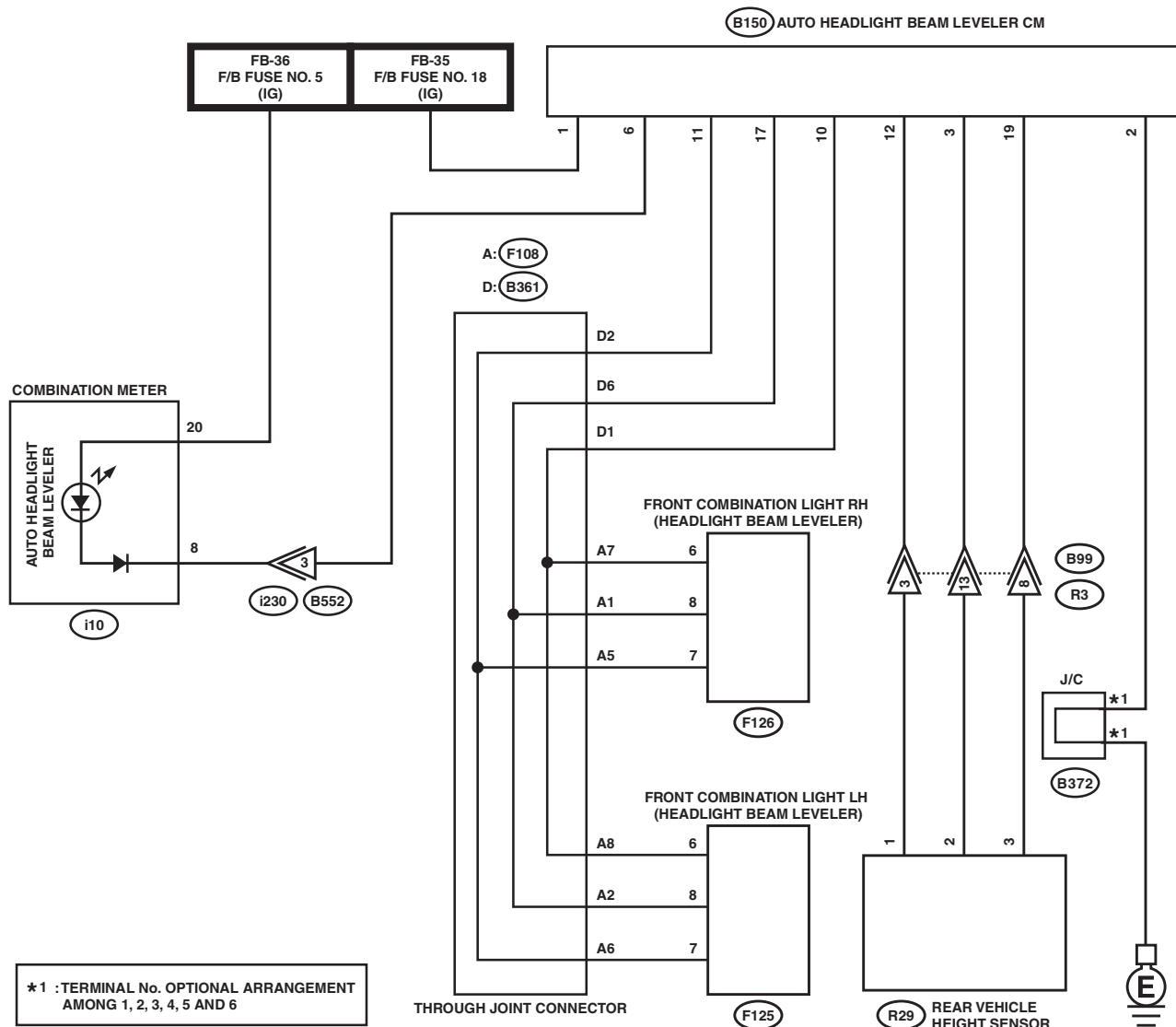
1. BEAM LEVEL CONTROL DOES NOT FUNCTION

CAUTION:

- Before performing diagnosis, check the fuse in this circuit.
- Initialization is required after replacing the auto headlight beam leveler CM.

WIRING DIAGRAM:

Headlight beam leveler system <Ref. to WI-260, WIRING DIAGRAM, Headlight Beam Leveler System.>



LI-01650

Diagnostics with Phenomenon

AUTO HEADLIGHT BEAM LEVELER SYSTEM (DIAGNOSTICS)

Step	Check	Yes	No
1 CHECK CURRENT DATA. Display {ECU ACC} using Subaru Select Monitor.	Does the current data indicate the standard value?	Go to step 3.	Go to step 2.
2 CHECK HARNESS BETWEEN POWER SUPPLY — AUTO HEADLIGHT BEAM LEVELER CM. 1) Disconnect the auto headlight beam leveler CM connector. 2) Turn the ignition switch to ON. 3) Measure the voltage between the auto headlight beam leveler CM connector and chassis ground. Connector & terminal (B150) No. 1 (+) — Chassis ground (-):	Is the voltage 8 — 16 V?	Replace the auto headlight beam leveler CM. <Ref. to LI-72, Auto Headlight Beam Leveler Control Module.>	Repair or replace the harness.
3 CHECK INDICATOR OUTPUT. Turn the ignition switch to ON.	Does the warning indicator turn on for three seconds?	Go to step 5.	Go to step 4.
4 CHECK CURRENT DATA. 1) Display {Indicator Signal} using Subaru Select Monitor. 2) Turn the ignition switch to ON.	Is it set as ON for 3 seconds?	Go to step 6.	Replace the auto headlight beam leveler CM. <Ref. to LI-72, Auto Headlight Beam Leveler Control Module.>
5 CHECK INDICATOR OUTPUT. Leave the ignition switch to ON for 10 seconds.	Does the warning indicator light go off?	Go to step 9.	Go to step 13.
6 CHECK HARNESS BETWEEN BATTERY — INDICATOR BULB — AUTO HEADLIGHT BEAM LEVELER CM. 1) Disconnect the auto headlight beam leveler CM connector. 2) Turn the ignition switch to ON. 3) Measure the voltage between the auto headlight beam leveler CM (indicator bulb) connector and chassis ground. Connector & terminal (B150) No. 6 (+) — Chassis ground (-):	Is the voltage 12 V?	Replace the auto headlight beam leveler CM. <Ref. to LI-72, Auto Headlight Beam Leveler Control Module.>	Go to step 7.
7 CHECK INDICATOR BULB. 1) Disconnect the combination meter connector. 2) Measure the continuity between combination meter terminals. Connector & terminal (i10) No. 20 — (i10) No. 8:	Is there continuity?	Go to step 8.	Replace the meter case assembly. <Ref. to IDI-18, Combination Meter.>
8 CHECK HARNESS BETWEEN AUTO HEADLIGHT BEAM LEVELER CM AND INDICATOR BULB. 1) Turn the ignition switch to OFF. 2) Measure the continuity between the auto headlight beam leveler CM and the combination meter. Connector & terminal (B150) No. 6 — (i10) No. 8:	Is there continuity?	Replace the auto headlight beam leveler CM. <Ref. to LI-72, Auto Headlight Beam Leveler Control Module.>	Repair the open circuit and poor contact of the connector in the harness between the auto headlight beam leveler CM and indicator.

Diagnostics with Phenomenon

AUTO HEADLIGHT BEAM LEVELER SYSTEM (DIAGNOSTICS)

Step	Check	Yes	No
9 CHECK HEADLIGHT ASSEMBLY (ACTUATOR) DRIVE. 1) Connect the auto headlight beam leveler CM connector. 2) Turn the ignition switch to ON, and within 10 seconds, repeat the OFF → 2 (HEAD) operation of headlight switch 5 times. 3) Check that the headlight beam drops once, then returns to normal. 4) Then, after waiting for 30 seconds or more with the ignition ON, turn the ignition switch to OFF.	Does the headlight beam drop down once, and then return?	Replace the auto headlight beam leveler CM. <Ref. to LI-72, Auto Headlight Beam Leveler Control Module.>	Go to step 10.
10 CHECK HEADLIGHT ASSEMBLY (ACTUATOR) OUTPUT. 1) Display {Actuator Signal} using Subaru Select Monitor. 2) Turn the ignition switch to ON, and within 10 seconds, repeat the OFF → 2 (HEAD) operation of headlight switch 5 times. 3) Check that the headlight beam drops once, then returns to normal. 4) Then, after waiting for 30 seconds or more with the ignition ON, turn the ignition switch to OFF.	Does the current data indicate the standard value? (Does the value change at 10 — 90%?)	Go to step 11.	Replace the auto headlight beam leveler CM. <Ref. to LI-72, Auto Headlight Beam Leveler Control Module.>
11 CHECK OUTPUT VOLTAGE BETWEEN HEADLIGHT ASSEMBLY (ACTUATOR). 1) Disconnect the auto headlight beam leveler CM connector. 2) Turn the ignition switch to ON. 3) Measure the voltage between the auto headlight beam leveler CM connector and chassis ground. Connector & terminal (B150) No. 10 (+) — Chassis ground (–):	Is the voltage 12 V?	Replace the headlight assembly. <Ref. to LI-26, Headlight Assembly.>	Go to step 12.
12 CHECK HARNESS BETWEEN AUTO HEADLIGHT BEAM LEVELER CM AND HEADLIGHT ASSEMBLY (ACTUATOR). 1) Disconnect the connector of headlight assembly. 2) Measure the continuity between the auto headlight beam leveler CM connector and headlight assembly (actuator) connector. Connector & terminal • Headlight beam leveler RH (B150) No. 10 — (F126) No. 6: (B150) No. 17 — (F126) No. 8: (B150) No. 11 — (F126) No. 7: • Headlight beam leveler LH (B150) No. 10 — (F125) No. 6: (B150) No. 17 — (F125) No. 8: (B150) No. 11 — (F125) No. 7:	Is there continuity?	Replace the auto headlight beam leveler CM. <Ref. to LI-72, Auto Headlight Beam Leveler Control Module.>	Repair the open circuit or poor contact of the connector in the harness between headlight assembly and auto headlight beam leveler CM.
13 CHECK DTC. Display DTC using the Subaru Select Monitor.	Is DTC displayed?	Perform the diagnosis according to DTC. <Ref. to AL(diag)-13, LIST, List of Diagnostic Trouble Code (DTC).>	Replace the auto headlight beam leveler CM. <Ref. to LI-72, Auto Headlight Beam Leveler Control Module.>