

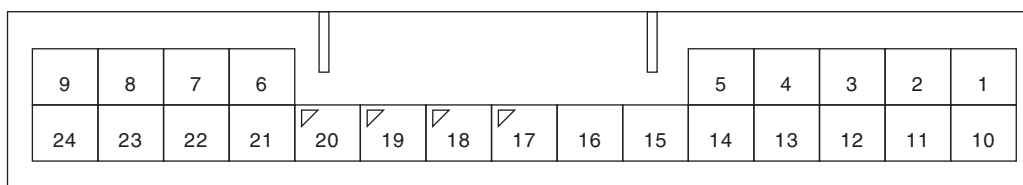
10. Auto Headlight Beam Leveler System

A: WIRING DIAGRAM

<Ref. to WI-100, WIRING DIAGRAM, Headlight Beam Leveler System.>

B: SPECIFICATION

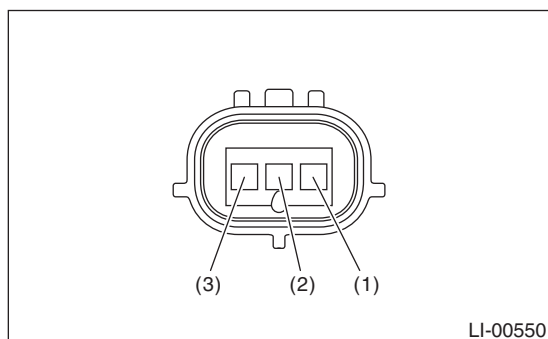
1. ECM CONNECTOR TERMINAL LAYOUT



LI-00549

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

2. VEHICLE HEIGHT SENSOR UNIT TERMINAL LAYOUT



LI-00550

- (1) GND
- (2) Output
- (3) Power supply

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LIGHTING SYSTEM

C: INSPECTION

1. SYMPTOM CHART

- No beam level control

Step	Check	Yes	No
1 CHECK INDICATOR OUTPUT. Turn the ignition switch to ON.	Does the warning indicator illuminate for three seconds?	Go to step 2.	Go to step 5.
2 CHECK INDICATOR OUTPUT. Turn the ignition switch to ON and hold there for at least 10 seconds.	Does the warning indicator light turn off?	Go to step 10.	Go to step 3.
3 CHECK OUTPUT VOLTAGE BETWEEN HEADLIGHT LEVELER CONTROL MODULE AND VEHICLE HEIGHT SENSOR. 1) Disconnect the vehicle height sensor connector. (Front, rear) 2) Turn the ignition switch to ON. 3) Measure the voltage between the vehicle height sensor and chassis ground. Connector & terminal • Front vehicle height sensor: (F8) No. 3 (+) — Chassis ground (-): • Rear vehicle height sensor: (R29) No. 3 (+) — Chassis ground (-):	Is the voltage 5±0.25 V?	Go to step 8.	Go to step 4.
4 CHECK HARNESS BETWEEN HEADLIGHT LEVELER CONTROL MODULE AND VEHICLE HEIGHT SENSOR. 1) Turn the ignition switch to OFF. 2) Disconnect the ECM connector. 3) Check for continuity between headlight leveler control module and vehicle height sensor. Connector & terminal • Front vehicle height sensor: (B150) No. 22 — (F8) No. 1: (B150) No. 20 — (F8) No. 2: (B150) No. 13 — (F8) No. 3: • Rear vehicle height sensor: (B150) No. 21 — (R29) No. 1: (B150) No. 19 — (R29) No. 2: (B150) No. 12 — (R29) No. 3:	Is there continuity?	Replace the headlight leveler control module.	Repair the open circuit or poor contact of the connector in the harness between the headlight leveler control module and vehicle height sensor.
5 CHECK HARNESS BETWEEN BATTERY — INDICATOR BULB — ECM. 1) Disconnect the connector of ECM. 2) Turn the ignition switch to ON. 3) Measure the voltage between the indicator bulb and chassis ground. Connector & terminal (B150) No. 6 (+) — Chassis ground (-):	Is the voltage 12 V?	Replace the headlight leveler control module.	Go to step 6.
6 CHECK INDICATOR BULB. Check indicator bulb for open circuit or poor contact.	Is there an open circuit or poor contact?	Go to step 7.	Replace the indicator bulb.

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Step	Check	Yes	No
7 CHECK HARNESS BETWEEN HEADLIGHT LEVELER CONTROL MODULE AND INDICATOR BULB. 1) Turn the ignition switch to OFF. 2) Disconnect the connector of ECM. 3) Disconnect the combination meter connector. 4) Check for continuity between headlight leveler control module and combination meter. Connector & terminal (B150) No. 6 — (i10) No. 7:	Is there continuity?	Replace the headlight leveler control module.	Repair the open circuit or poor contact of the connector in the harness between the headlight leveler control module and indicator.
8 CHECK OUTPUT SIGNAL OF VEHICLE HEIGHT SENSOR. 1) Connect three batteries (1.5 V) in series. 2) Connect the No. 3 terminal of the sensor unit to the (+) side of the batteries and the No. 1 terminal to the (–) side of the batteries, applying 4.5 V between No. 3 — No. 1. 3) With the voltage applied, slowly move the sensor unit link up and down, and use a tester to measure the voltage between terminal No. 2 — No. 1. Connector & terminal Sensor unit No. 2 (+) — No. 1 (–):	Is the voltage 0.5 — 4.1 V?	Go to step 9.	Replace the vehicle height sensor.
9 CHECK HARNESS BETWEEN HEADLIGHT LEVELER CONTROL MODULE AND VEHICLE HEIGHT SENSOR. 1) Turn the ignition switch to OFF. 2) Disconnect the ECM connector. 3) Check for continuity between headlight leveler control module and vehicle height sensor. Connector & terminal • Front vehicle height sensor: (B150) No. 22 — (F8) No. 1: (B150) No. 20 — (F8) No. 2: (B150) No. 13 — (F8) No. 3: • Rear vehicle height sensor: (B150) No. 21 — (R29) No. 1: (B150) No. 19 — (R29) No. 2: (B150) No. 12 — (R29) No. 3:	Is there continuity?	Replace the headlight leveler control module.	Repair the open circuit or poor contact of the connector in the harness between the headlight leveler control module and vehicle height sensor.
10 CHECK HEADLIGHT ON SIGNAL. 1) Disconnect the headlight leveler control module connector. 2) Turn the ignition switch to ON. 3) Turn the headlight switch to ON. 4) Measure the voltage between the headlight relay and chassis ground. Connector & terminal (B150) No. 3 (+) — Chassis ground (–):	Is the voltage 12 V?	Go to step 11.	Repair the open circuit or poor contact of the connector in the harness between the headlight relay and headlight leveler control module.
11 CHECK HEADLIGHT ASSEMBLY (LEVELING ACTUATOR) MOTOR. 1) Stop the vehicle completely. 2) Turn the ignition switch to ON, and, within 10 seconds, turn the headlight switch OFF ⇒ ON five successive times. 3) Check that the headlight beam returns to the original position after lowering once. 4) While keeping the ignition ON, wait 30 seconds or more after the previous step, and turn the ignition switch to OFF.	Does the headlight beam go completely down once and then return to the original position?	Replace the headlight leveler control module.	Go to step 12.

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Step	Check	Yes	No
12 CHECK OUTPUT VOLTAGE BETWEEN HEADLIGHT LEVELER CONTROL MODULE AND HEADLIGHT ASSEMBLY (LEVELING ACTUATOR). 1) Disconnect the headlight assembly (leveling actuator) connector. 2) Turn the ignition switch to ON. 3) Measure the voltage between the leveling actuator and chassis ground. Connector & terminal (B150) No. 10 (+) — Chassis ground (–):	Is the voltage 12 V?	Replace the headlight assembly.	Go to step 13.
13 CHECK HARNESS BETWEEN HEADLIGHT LEVELER CONTROL MODULE AND HEADLIGHT ASSEMBLY (LEVELING ACTUATOR). Check for continuity between the headlight leveler control module and headlight assembly (leveling actuator). Connector & terminal • Headlight leveler RH: (B150) No. 10 — (F59) No. 3: (B150) No. 17 — (F59) No. 2: (B150) No. 23 — (F59) No. 1: • Headlight leveler LH: (B150) No. 10 — (F58) No. 3: (B150) No. 17 — (F58) No. 2: (B150) No. 23 — (F58) No. 1:	Is there continuity?	Replace the headlight leveler control module.	Repair the open circuit or poor contact of the connector in the harness between the headlight assembly and headlight leveler control module.

D: PROCEDURE

When parts related to the auto headlight beam leveling 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.
- When determining whether to perform initialization or reinitialization, refer to the following:

Initialization	• When the headlight leveler control module has been replaced with a new part.
Reinitialization	• When the headlight leveler control module has been replaced with a part from a different vehicle. • When suspension parts have been removed or replaced. (Crossmember, transverse link, lateral link, strut) • When the vehicle height sensor has been replaced or removed.

1. INITIALIZATION

- 1) Confirm that the indicator in the meter is repeatedly flashing twice.
- 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 ON, and within a period over 1.5 seconds and under 20 seconds, repeat headlight switch OFF $\Rightarrow$ ON 3 times or more.
- 5) Confirm that the indicator in the meter flashes 3 times and turns OFF, completing the initialization. (At this time, the headlight beam adjustment is lowered, and then returns to the original position.)
- 6) Perform beam adjustment for the headlight. <Ref. to LI-18, 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 ON, and within a period over 1.5 seconds and under 10 seconds, repeat headlight switch OFF $\Rightarrow$ ON 5 times or more.
- 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 a period over 1.5 seconds and under 10 seconds, repeat headlight switch OFF $\Rightarrow$ ON 5 times or more.
- 7) Confirm that the indicator in the meter flashes 3 times and turns OFF, completing the reinitialization. (At this time, the headlight beam adjustment is lowered, and then returns to the original position.)
- 8) Perform beam adjustment for the headlight. <Ref. to LI-18, ADJUSTMENT, Headlight Assembly.>

CAUTION:

If the indicator does not flash 3 times or the headlight beam does not operate, there is a possibility of an open circuit or faulty connection in the harness between the headlight leveler control module, front and rear vehicle height sensors and headlight assembly. Perform inspection and repair according to the inspection results, then perform initialization/reinitialization again. <Ref. to LI-12, INSPECTION, Auto Headlight Beam Leveler System.> <Ref. to LI-15, PROCEDURE, Auto Headlight Beam Leveler System.>