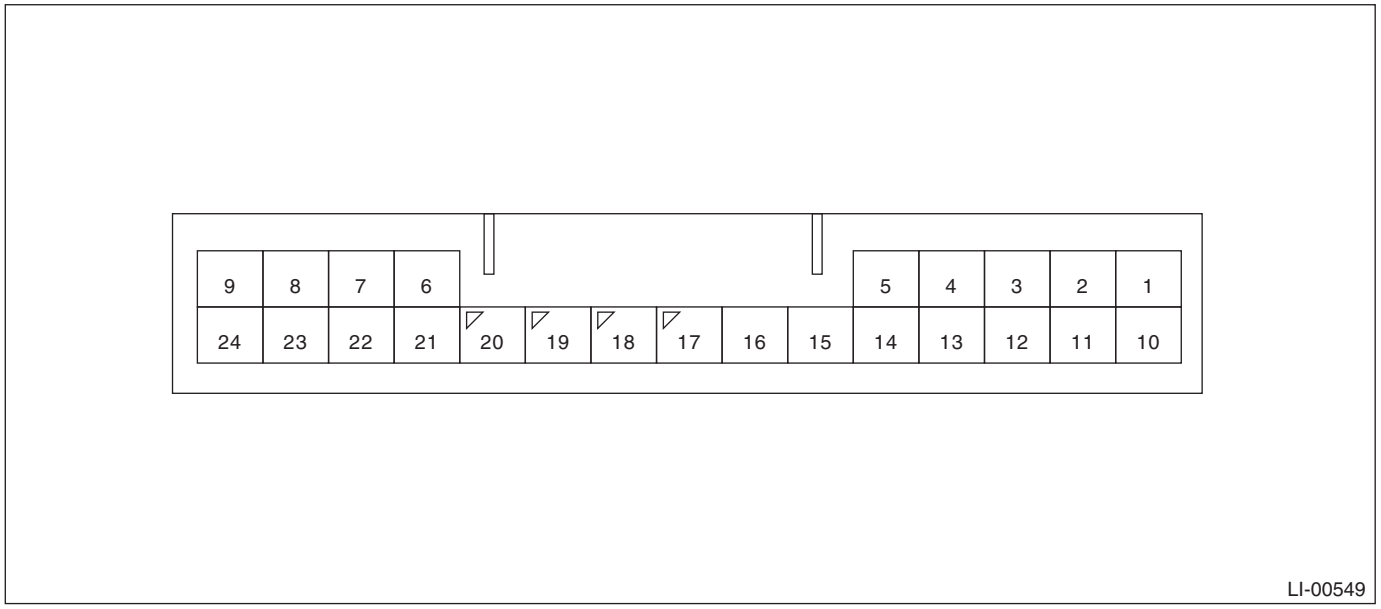
10.Auto Headlight Beam Leveler System

A: WIRING DIAGRAM

Refer to “Headlight Beam Leveler System” in the wiring diagram. <Ref. to WI-101, WIRING DIAGRAM, Headlight Beam Leveler System.>

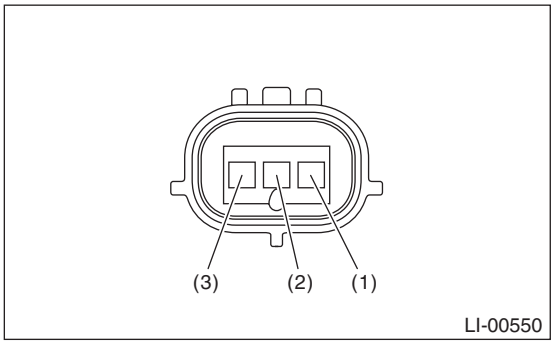
B: SPECIFICATION

1. ECM CONNECTOR TERMINAL LAYOUT



(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)	Not used
(5)	Not used	(13)	Not used	(21)	Rear sensor GND
(6)	Indicator output	(14)	Not used	(22)	Not used
(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



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

C: INSPECTION

1. SYMPTOM CHART

- Beam level control does not function

Step		Check	Yes	No
1	**CHECK INDICATOR OUTPUT.** Turn the ignition switch to ON.	Does the warning indicator turn on 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 go off?	Go to step **10**.	Go to step **3**.
3	**CHECK OUTPUT VOLTAGE BETWEEN AUTO HEADLIGHT BEAM LEVELER CONTROL MODULE AND VEHICLE HEIGHT SENSOR.** 1) Disconnect the vehicle height sensor connector. (rear) 2) Turn the ignition switch to ON. 3) Measure the voltage between the vehicle height sensor connector and chassis ground. ***Connector & terminal*** ***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 AUTO HEADLIGHT BEAM LEVELER CONTROL MODULE AND VEHICLE HEIGHT SENSOR.** 1) Turn the ignition switch to OFF. 2) Disconnect the auto headlight beam leveler control module connector. 3) Measure the continuity between the auto headlight beam leveler control module connector and the vehicle height sensor connector. ***Connector & terminal*** ***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 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 control module and vehicle height sensor.
5	**CHECK HARNESS BETWEEN BATTERY — INDICATOR BULB — AUTO HEADLIGHT BEAM LEVELER CONTROL MODULE.** 1) Disconnect the auto headlight beam leveler control module connector. 2) Turn the ignition switch to ON. 3) Measure the voltage between auto headlight beam leveler control module and chassis ground. ***Connector & terminal*** ***(B150) No. 6 (+) — Chassis ground (–):***	Is the voltage 12 V?	Replace the auto headlight beam leveler control module.	Go to step **6**.
6	**CHECK INDICATOR BULB.** 1) Turn the ignition switch to OFF. 2) Disconnect the combination meter connector. 3) Measure the resistance between combination meter body terminals. ***Connector & terminal*** ***(i10) No. 2 — (i10) No. 7:***	Is there continuity?	Go to step **7**.	Replace the meter case assembly.

	Step	Check	Yes	No
7	**CHECK HARNESS BETWEEN AUTO HEADLIGHT BEAM LEVELER CONTROL MODULE AND INDICATOR BULB.** 1) Turn the ignition switch to OFF. 2) Disconnect the auto headlight beam leveler control module connector. 3) Disconnect the combination meter connector. 4) Measure the continuity between the auto headlight beam leveler control module connector and the combination meter connector. ***Connector & terminal*** ***(B150) No. 6 — (i10) No. 7:***	Is there continuity?	Replace the 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 control module and indicator.
8	**CHECK VEHICLE HEIGHT SENSOR OUTPUT SIGNAL.** 1) Connect three dry cell 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 voltage applied, use a tester to measure the voltage between the No. 2 — No. 1 terminals when the sensor body link is moved slowly up and down. ***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 AUTO HEADLIGHT BEAM LEVELER CONTROL MODULE AND VEHICLE HEIGHT SENSOR.** 1) Turn the ignition switch to OFF. 2) Disconnect the auto headlight beam leveler control module connector. 3) Measure the continuity between the auto headlight beam leveler control module connector and the vehicle height sensor connector. ***Connector & terminal*** ***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 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 control module and vehicle height sensor.
10	**CHECK HEADLIGHT ON SIGNAL.** 1) Disconnect the auto headlight beam leveler control module connector. 2) Turn the ignition switch to ON. 3) Turn the headlight switch to ON. 4) Measure the voltage between auto headlight beam leveler control module connector and chassis ground. ***Connector & terminal*** ***(B150) No. 3 (+) — Chassis ground (–):***	Is the voltage 12 V?	Go to step **11**.	Repair the open circuit and poor contact of the connector in the harness between the auto headlight relay and headlight beam leveler control module.

	Step	Check	Yes	No
11	**CHECK HEADLIGHT ASSEMBLY (LEVELER ACTUATOR) DRIVE.** 1) Set the vehicle in a parked state. 2) Turn the ignition switch to ON, and within 10 seconds, repeat OFF ⇒ ON 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 control module.	Go to step **12**.
12	**CHECK OUTPUT VOLTAGE BETWEEN AUTO HEADLIGHT BEAM LEVELER CONTROL MODULE AND HEADLIGHT ASSEMBLY (LEVELER ACTUATOR).** 1) Disconnect the headlight assembly (leveler actuator) connector. 2) Turn the ignition switch to ON. 3) Measure the voltage between auto headlight beam leveler control module connector 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 AUTO HEADLIGHT BEAM LEVELER CONTROL MODULE AND HEADLIGHT ASSEMBLY (LEVELER ACTUATOR).** Measure the continuity between the auto headlight beam leveler control module connector and headlight assembly (leveler actuator) connector. ***Connector & terminal*** ***• Headlight beam leveler RH*** ***(B150) No. 10 — (F59) No. 3:*** ***(B150) No. 17 — (F59) No. 2:*** ***(B150) No. 23 — (F59) No. 1:*** ***• Headlight beam 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 auto headlight beam leveler control module.	Repair the open circuit and poor contact of the connector in the harness between the auto headlight assembly and headlight beam leveler control module.

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	• If the headlight beam leveler control module was replaced with a new module.
Reinitialization	• If the headlight beam leveler control module was replaced with one from another vehicle. • If any parts related to the suspension were removed/installed or replaced. (Crossmember, 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 ⇒ 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-19, 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) Within 30 seconds of confirming step 4), turn the ignition switch to OFF.
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 lowers once and returns to the original position.)
8) Perform headlight beam adjustment. <Ref. to LI-19, ADJUSTMENT, Headlight Assembly.>

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 a harness of the headlight beam leveler control module, front/back vehicle height sensors or headlight assembly. Always perform initialization or reinitialization after checking or repairing according to check procedures. <Ref. to LI-13, INSPECTION, Auto Headlight Beam Leveler System.> <Ref. to LI-16, PROCEDURE, Auto Headlight Beam Leveler System.>

3. REFERENCE

For operation procedures of each component of the auto headlight beam leveler system, refer to the respective section.
- Auto headlight beam leveler control module <Ref. to LI-40, Auto Headlight Beam Leveler Control Module.>
- Rear vehicle height sensor <Ref. to LI-41, Rear Height Sensor.>