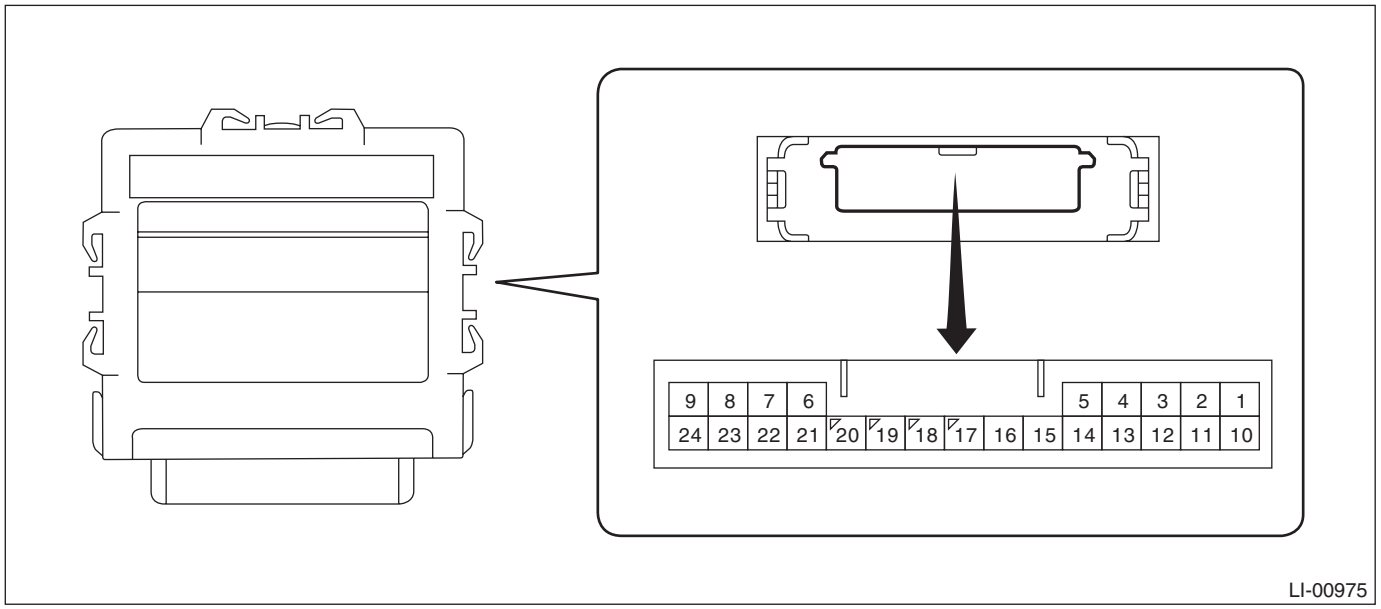
11.Auto Headlight Beam Leveler System

A: WIRING DIAGRAM

Refer to “Headlight Beam Leveler System” in the wiring diagram. <Ref. to WI-95, WIRING DIAGRAM, Headlight Beam Leveler System.>

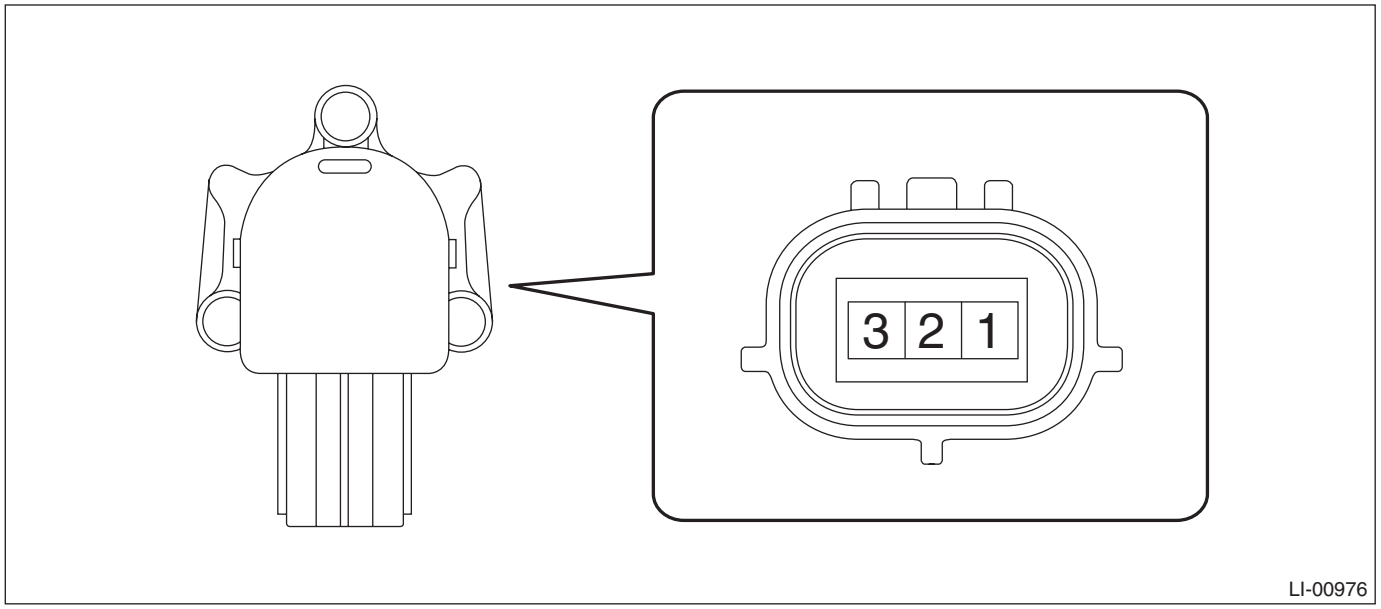
B: SPECIFICATION

1. TERMINAL ARRANGEMENT OF AUTO HEADLIGHT BEAM LEVELER CM



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

2. TERMINAL LAYOUT OF VEHICLE HEIGHT SENSOR



(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.** Leave the ignition switch to ON for 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 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. 3 (+) — Chassis ground (–):***	Is the voltage 5 V ±0.25 V?	Go to step **8**.	Go to step **4**.
4	**CHECK HARNESS BETWEEN AUTO HEADLIGHT BEAM LEVELER CM AND VEHICLE HEIGHT SENSOR.** 1) Turn the ignition switch to OFF. 2) Disconnect the auto headlight beam leveler CM connector. 3) Measure the continuity between the auto headlight beam leveler CM and the vehicle height sensor. ***Connector & terminal*** ***(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 CM.	Repair the open circuit and poor contact of the connector in the harness between the auto headlight beam leveler CM and vehicle height sensor.

	Step	Check	Yes	No
5	**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.	Go to step **6**.
6	**CHECK INDICATOR BULB.** 1) Disconnect the connector of combination meter. 2) Measure the continuity between combination meter terminals. <Ref. to IDI(diag)-6, ELECTRICAL SPECIFICATION, Control Module I/O Signal.> ***Terminals*** ***No. 20 — No. 8:***	Is there continuity?	Go to step **7**.	Replace the meter case assembly.
7	**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.	Repair the open circuit and poor contact of the connector in the harness between the auto headlight beam leveler CM and indicator.
8	**CHECK VEHICLE HEIGHT SENSOR OUTPUT SIGNAL.** Check the vehicle height sensor. <Ref. to LI-93, INSPECTION, Rear Height Sensor.>	Is the vehicle height sensor normal?	Go to step **9**.	Replace the vehicle height sensor.
9	**CHECK HARNESS BETWEEN AUTO HEADLIGHT BEAM LEVELER CM AND VEHICLE HEIGHT SENSOR.** 1) Turn the ignition switch to OFF. 2) Disconnect the auto headlight beam leveler CM connector. 3) Measure the continuity between the auto headlight beam leveler CM and the vehicle height sensor. ***Connector & terminal*** ***(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 CM.	Repair the open circuit and poor contact of the connector in the harness between the auto headlight beam leveler CM and vehicle height sensor.
10	**CHECK HEADLIGHT ON SIGNAL.** 1) Disconnect the auto headlight beam leveler CM connector. 2) Turn the ignition switch to ON. 3) Turn the headlight switch to OFF. 4) Measure the voltage between the auto headlight beam leveler CM (headlight relay) connector 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 headlight relay and auto headlight beam leveler CM.

	Step	Check	Yes	No
11	**CHECK HEADLIGHT ASSEMBLY (LEVELER 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 → switch 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-90, Auto Headlight Beam Leveler Control Module.>	Go to step **12**.
12	**CHECK OUTPUT VOLTAGE BETWEEN HEADLIGHT ASSEMBLY (LEVELER 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.	Go to step **13**.
13	**CHECK HARNESS BETWEEN AUTO HEADLIGHT BEAM LEVELER CM AND HEADLIGHT ASSEMBLY (LEVELER ACTUATOR).** 1) Disconnect the connector of headlight assembly. 2) Measure the continuity between the auto headlight beam leveler CM and headlight assembly (leveler actuator). ***Connector & terminal*** ***• Headlight beam leveler RH*** ***(B150) No. 10 — (F126) No. 6:*** ***(B150) No. 17 — (F126) No. 8:*** ***(B150) No. 23 — (F126) No. 7:*** ***• Headlight beam leveler LH*** ***(B150) No. 10 — (F125) No. 6:*** ***(B150) No. 17 — (F125) No. 8:*** ***(B150) No. 23 — (F125) No. 7:***	Is there continuity?	Replace the auto headlight beam leveler CM.	Repair the open circuit or poor contact of the connector in the harness between headlight assembly and auto headlight beam leveler CM.

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-19, INITIALIZATION, PROCEDURE, Auto Headlight Beam Leveler System.>**
- **Reinitialization: <Ref. to LI-19, REINITIALIZATION, PROCEDURE, Auto Headlight Beam Leveler 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-35, 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-35, 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-90, Auto Headlight Beam Leveler Control Module.>
- Vehicle height sensor: <Ref. to LI-92, Rear Height Sensor.>