LIGHTING SYSTEM

GENERAL INFORMATION

Description

Light Position Diagram

1 - Headlight High Beam	2 - Low Beam Light

3 - Turn Signal Light	4 - Position Light and Daytime Running Light
5 - Turn Light	6 - High Mounted Stop Light
7 - Position Light	8 - Back-up Light
9 - Turn Signal Light	10 - Brake Light
11 - Rear Fog Light	12 - License Plate Light

System Assembly Diagram

1 - Instrument Panel Relay Box	2 - Body Control Module (BCM)
3 - Headlight Adjustment Switch	4 - Combination Switch
5 - Hazard Warning Light Switch	6 - Dome Light Switch

Lighting system on this model consists of vehicle lighting device and light signal device, which are used for normal operation of vehicle and ensuring safety when driving at night or in fog.
Lighting system consists of headlight assembly (including headlight (high beam (auxiliary high beam)/low beam), front position light, turn signal light, daytime running light), side turn signal light, front dome light, foot light and door scuff plate light, instrument panel backlight, rear combination light assembly (including turn signal light, rear position light, brake light), rear fog light (rear fog light and reflector), back-up light, license plate light, high mounted stop light and luggage compartment light. Headlight assembly and rear combination light assembly use semi-closed structure for easy inspection and repair.

Specifications

Bulb Specifications

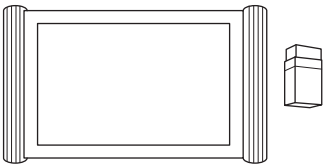
Bulb Name	Nominal Voltage (V)	Nominal Light Source (Model/Type)
Headlight	12 V	LED
Rear Fog Light	12 V	Bulb/P21W
Daytime Running Light	12 V	LED
Front Position Light	12 V	LED
Rear Position Light	12 V	LED
Brake light	12 V	Bulb/P21W
Back-up Light	12 V	Bulb/W16W
Front Turn Signal Light	12 V	LED
Rear Turn Signal Light	12 V	Bulb/PY21W
Side Turn Signal Light	13.5 V	4414AAY/605ACM
License Plate Light	12 V	LED
High Mounted Stop Light	12 V	LED
Front Fog Light	/	/
Front Position Light	/	/
Rear Position Light	/	/
Parking Light	/	/
Front Retro-reflector	/	/
Side Retro-reflector	/	/
Rear Retro-reflector	/	/
Triangle Retro-reflector	/	/
Side Sign Light	/	/

Torque Specifications

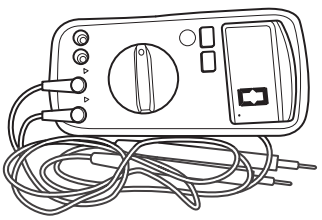
Description	Torque (N·m)
Headlight Assembly Fixing Bolt	3.5 ± 0.5
Daytime Running Light Fixing Screw	1.5 ± 0.5
High Mounted Stop Light Fixing Nut	2.0 ± 0.5
Rear Fog Light Fixing Screw	1.5 ± 0.5
Interior Front Dome Light Fixing Screw	2.5 ± 0.5
Rear Combination Light Movable Part Nut	3.5 ± 0.5
Rear Combination Light Fixed Part Nut	1.5 ± 0.5
License Plate Light Protector Fixing Screw	1.5 ± 0.5

Tools

Special Tool

Diagnostic Tester	 RCH000106

General Tool

Digital Multimeter	 RCH0002006

DIAGNOSIS & TESTING

Problem Symptoms Table

Hint:

Use symptoms table below to help determine cause of problem. Check each suspected area in sequence. Repair or adjust faulty components, or replace as necessary.

Rear combination light fixed part consists of 2 brake light bulbs and position light bulbs. If one damaged bulb and the other does not come on, you need to check the two bulbs simultaneously and contact CHERY service station to check and repair if necessary.

Symptom	Suspected Area
Low beam light does not come on (one side)	Fuse
	Wire harness or connector
Low beam lights do not come on (both sides)	Fuse
	Combination light switch assembly
	Low beam relay
	Wire harness or connector
	Body Control Module (BCM)
High beam light does not come on (one side)	Fuse
	Wire harness or connector
High beam light does not come on (both sides)	Fuse
	Combination light switch assembly
	High beam relay
	Wire harness and connector
	Body Control Module (BCM)
Position light does not come on (one side)	Position light bulb
	Wire harness or connector
Position lights do not come on (both sides)	Position light bulbs (all)
	Wire harness or connector
	Combination light switch assembly
	Body Control Module (BCM)

Daytime Running Light

Symptom	Suspected Area
Daytime running light does not come on	Daytime running light bulb
	Wire harness or connector
	Body Control Module (BCM)

Rear Fog Light

Symptom	Suspected Area
Rear fog light does not come on	Rear fog light bulb
	Combination light switch
	Wire harness or connector
	Body Control Module (BCM)

Turn Signal Light and Hazard Warning Light

Symptom	Suspected Area
Hazard warning light and turn signal light do not come on	Bulb
	Combination light switch
	Wire harness or connector
	Body Control Module (BCM)
	Hazard warning light switch
Hazard warning light does not come on (turn signal light is normal)	Hazard warning light switch
	Wire harness or connector
	Body Control Module (BCM)
Turn signal light does not come on (hazard warning light is normal)	Combination light switch
	Wire harness or connector
	Body Control Module (BCM)

License Plate Light

Symptom	Suspected Area
License plate light does not come on	Combination light switch assembly
	Wire harness or connector
	Body Control Module (BCM)

Luggage Compartment Light

Symptom	Suspected Area
Luggage compartment light does not come on	Luggage compartment light bulb
	Luggage compartment lock assembly
	Wire harness or connector
	Body Control Module (BCM)

Brake Light

Symptom	Suspected Area
Brake lights do not come on (all)	Fuse
	Brake light switch
	Wire harness connector
	Body Control Module (BCM)
Only one brake light does not come on	Brake light bulb
	Wire harness or connector

Front Dome Light

Symptom	Suspected Area
Front dome light does not come on	Front dome light bulb
	Wire harness or connector
	Front dome light assembly
	Body Control Module (BCM)

Back-up Light

Symptom	Suspected Area
Back-up lights do not come on (all)	Transmission Control Unit (TCU)
	Back-up light switch (MT)
	Body Control Module (BCM)
	Wire harness or connector
	CAN network failure
	Gear switch

Diagnostic Tools

Diagnostic Tester

When connecting the diagnostic tester:

- Connect the diagnostic tester (the latest software) to data link connector for communication with vehicle.
- Diagnostic tester connector is located on instrument panel left lower protector.
- Diagnostic tester connector uses a trapezoidal design which can hold 16 terminals.

Digital Multimeter

When using digital multimeter:

- Troubleshoot electrical malfunctions and wire harness system.
- Look for basic malfunction.
- Measure voltage, current and resistance.

Diagnostic Help

When using diagnostic tester:

1. Connect the diagnostic tester (the latest software) to data link connector, and make it communicate with vehicle electronic module through data network.
2. Confirm that malfunction is current, and carry out diagnostic test and repair procedures.
3. If Diagnostic Trouble Code (DTC) cannot be cleared, it indicates that there is a current malfunction.
4. Only use a digital multimeter to measure voltage of electronic system.
5. Refer to any Technical Bulletin that may apply to this malfunction.
6. Visually check related wire harness and connector.
7. Check and clean all lighting system grounds related to the latest BCM.
8. If multiple trouble codes were set, use circuit diagrams and look for any common ground circuit or power supply circuit applied to DTC.

DTC Confirmation Procedure

Confirm that battery voltage is no less than 12 V before performing following procedures.

- Turn ENGINE START STOP switch to OFF.
- Connect the diagnostic tester (the latest software) to data link connector.
- Turn ENGINE START STOP switch to ON.
- Use the diagnostic tester to record and clear DTCs stored in lighting system.
- Turn ENGINE START STOP switch to OFF and wait for a few seconds.
- Turn ENGINE START STOP switch to ON and then select Read DTC.
- If DTC is detected, it indicates current malfunction. Go to diagnostic procedure - Step 1.
- If no DTC is detected, malfunction indicated by the DTC is intermittent.

System Diagnosis

1. Description
   (a) Lighting system data and Diagnostic Trouble Codes can be read from Data Link Connector of vehicle. When system seems to be malfunctioning, use diagnostic tester to check for a malfunction and perform repairs.
2. Check battery voltage
   (a) Standard voltage:
   Not less than 12 V
   If voltage is below 12 V, check battery before proceeding to next step.

DTC Check/Clear

1. Check for DTCs
   (a) Connect the diagnostic tester to data link connector.
   (b) Turn the ENGINE START STOP switch to ON, and turn on the diagnostic tester.
   (c) Select following menu items to read the current malfunctions: T1E / BCM (Body Control Module) / Read Fault Code.
   (d) Read DTCs by following indications on tester screen.
2. Clear DTCs
   (a) Connect the diagnostic tester to data link connector.

(b) Turn the ENGINE START STOP switch to ON, and turn on the diagnostic tester.
(c) Select following menu items: T1E / BCM (Body Control Module) / Clear Fault Memory.
(d) Clear DTCs by following the directions on tester screen.

Intermittent DTC Troubleshooting

If malfunction is intermittent, perform the followings:

- Check if connector is loose.
- Check if wire harness is worn, pierced, pinched or partially broken.
- Wiggle related wire harness and connector and observe if signal in related circuit is interrupted.
- If possible, try to duplicate the conditions under which DTC was set.
- Look for data that has changed or DTC to reset during wiggle test.
- Look for broken, bent, protruded or corroded terminals.
- Inspect the mounting conditions of lighting system, wire harness or wire harness connector and so on for damage, foreign matter, etc. that will cause incorrect signals.
- Check and clean all wire harness connectors and ground parts related to DTC.
- Remove the Body Control Module (BCM) from malfunctioning vehicle, then install it to a new vehicle and perform a test. If DTC cannot be cleared, the Body Control Module (BCM) is malfunctioning. If DTC can be cleared, reinstall the Body Control Module (BCM) to original vehicle.
- If multiple trouble codes were set, refer to circuit diagrams to look for any common ground circuit or power supply circuit applied to DTC.
- Refer to any Technical Bulletin that may apply to this malfunction.

Ground Inspection

Groundings are very important to entire circuit system, which are normal or not can seriously affect the entire circuit system. Ground points are often exposed to moisture, dirt and other corrosive environments. Corrosion (rust) and oxidation may increase load resistance. This case will seriously affect normal operation of circuit. Check the ground points as follows:

1. Remove ground bolt or nut.
2. Check all contact surfaces for tarnish, dirt and rust, etc.
3. Clean as necessary to ensure that contact is in good condition.
4. Reinstall ground bolt or nut securely.
5. Check if add-on accessories interfere with ground circuit.
6. If several wire harnesses are crimped into one ground terminal, check for proper crimps. Make sure that all wire harnesses are clean and securely fastened while providing a good ground path.

Lighting Control Principle

1. Turn signal light function
   (a) Operating conditions for left turn signal light: IGN-ON; left turn signal light switch is activated.
   (b) When left turn signal light is operating: The flashing frequency of left turn signal light is 400 ms on and 400 ms off.
      - When left turn signal light is operating: Key is switched from ON to OFF, left turn signal light stops operating and meter stops flashing.
   (c) When left turn signal light is operating: The corresponding bulb is intact, BCM sends LHTurnLightSts (Bcan) and the load operating frequency is the same as that of left turn signal light; If the corresponding 21W bulb is damaged, BCM will send LHTurnLightSts and the frequency will be 2 times of normal operating frequency of bulb. No matter whether the bulb is damaged or not, BCM will send DirectionIndLeft (Bcan) signal all the time.
   (d) Operating conditions for right turn signal light: IGN-ON; right turn signal light switch is activated.
   (e) When right turn signal light is operating: The load flashing frequency of right turn signal light is 400 ms on and 400 ms off.
      - When right turn signal light is operating: Key is switched from ON to OFF, right turn signal light stops operating and meter stops flashing.

(f) When right turn signal light is operating: The corresponding bulb is intact, BCM sends RHTurnsignalSts and the load operating frequency is the same as that of right turn signal light; If the corresponding 21W bulb is damaged, BCM will send RHTurnsignalSts and the frequency will be 2 times of normal operating frequency of bulb. No matter whether the bulb is damaged or not, BCM will send DirectionIndRight signal all the time.
(g) When left/right turn signal light is operating: Left/right turn signal light input cancel is activated, left/right turn signal light should stop operating immediately.
(h) When left/right turn signal light is operating: Key is switched from IGN ON to ACC or OFF, and left/right turn signal light stops operating immediately.

2. Lane change function
(a) Operating conditions for left lane change: IGN ON; left turn signal light switch activates shortly (50 ms ~ 1,000 ms).
(b) When left lane change is operating: Left turn signal light flashes 3 times at frequency of 400 ms on and 400 ms off.
(c) When left lane change is operating: The corresponding bulb is intact, BCM sends LHTurnsignalSts and load operating frequency is the same as that of left turn signal light; If the corresponding 21 W bulb is damaged, BCM will send LHTurnsignalSts and the frequency will be 2 times of that when bulb is intact. No matter whether the bulb is damaged or not, BCM will send DirectionIndLeft signal all the time.
(d) During left lane change operation: Left turn signal light switch is activated (50 ms ~ 1,000 ms) shortly again, and left turn signal light flashes 3 times again.
(e) When left lane change is operating: Left turn signal switch remains active (>1,000 ms) and automatically switches to left turn signal light operating logic.
(f) When left lane change is operating: Key is switched from IGN ON to ACC or OFF, and left turn signal light stops operating immediately.
(g) When left lane change is operating: After flashing 3 times, left turn signal light should stop operating immediately.
(h) Operating conditions for right lane change: IGN ON; right turn signal light switch activates shortly (50 ms ~ 1,000 ms).
(i) When right lane change is operating: Right turn signal light flashes 3 times at frequency of 400 ms on and 400 ms off.
(j) When right lane change is operating: The corresponding bulb is intact, BCM sends RHTurnsignalSts and load operating frequency is the same as that of right turn signal light; the corresponding bulb is damaged, BCM will send RHTurnsignalSts and the frequency will be 2 times as that when bulb is intact. No matter whether the bulb is damaged or not, BCM will send DirectionIndRight signal all the time.
(k) During right lane change operation: Right turn signal light switch is activated (50 ms ~ 1,000 ms) shortly again, and right turn signal light flashes 3 times again.
(l) When right lane change is operating: Right turn signal switch remains active (>1,000 ms) and automatically switches to right turn signal light operating logic.
(m) When right lane change is operating: Key is switched from IGN ON to ACC or OFF, and right turn signal light stops operating immediately.
(n) When right lane change is operating: After flashing 3 times, right turn signal light should stop operating immediately.

3. Hazard warning light function
(a) Activation conditions for hazard warning light: Hazard warning light switch is activated when hazard warning light is not activated.
(b) When hazard warning light is activated: Flashing frequency of left/right turn signal light and hazard warning light indicator are 400 ms on and 400 ms off.

(c) When hazard warning light is activated: The corresponding bulb is intact, BCM sends LHTurnsignalSts and RHTurnsignalSts and load operating frequency is the same as that of turn signal light; If any 21 W bulb is damaged, the flashing frequency of turn signal light CAN signal (LHTurnsignalSts and RHTurnsignalSts) and hazard warning light will be 2 times of that when bulb is intact.
(d) When hazard warning light is activated: Hazard warning light switch is activated again and hazard warning light function is turned off; left/right turn signal light stops operating immediately.
(e) When ABM sends a collision signal, hazard warning light function should be activated automatically (CAN signal of left/right turn signal light, indicator and turn signal light). Automatically activated hazard warning light function due to collision can be canceled as key is switched to OFF, then to ON or hazard warning light button is pressed.
(f) When turn signal light function and hazard warning light function are both effective, BCM should perform the next action.
(g) Note: In an ignition cycle, BCM responds to collision signal only once.

4. Position light
   (a) Activation conditions for position light: IGN ON or ACC; position light input or low beam light input is activated.
   (b) When position light is operating: BCM should send ParkLightSts = 1 (Bcan).
   (c) When position light is operating: When position light input and low beam input are deactivated, position light stops operating.
   (d) When position light is operating: When key is switched to OFF, position light stops operating and sends ParkLightSts = 0 (Bcan).
5. Parking light
   (a) Activation conditions for parking light: Key is switched to OFF; position light switch is activated.
   (b) When parking light is activated: Position light comes on and BCM should send ParkLightSts = 1 (Bcan).
   (c) When parking light is activated: Position light switch is deactivated and position light is turned off, BCM should send ParkLightSts = 0 (Bcan).
6. Low beam light
   (a) Activation conditions for low beam light: IGN ON; Low beam light switch is activated.
   (b) When low beam light is activated: BCM sends LowBeamSts = 1.
   (c) When low beam light is activated: When low beam switch input is canceled, low beam light turns off immediately.
   (d) When low beam light is activated: Key is switched from IGN ON to ACC or OFF, low beam light turns off immediately.
7. Follow me home
   (a) Light is in manual mode
      (1) Activation conditions for FMH function: Flash switch is activated within 2 minutes after key is switched to OFF, and it can be activated again within 2 minutes regardless of whether FMH function is manually turned off or automatically turned off due to timeout.
      (2) When FMH function is activated: Low beam light and position light are illuminated, and all LowBeamSts=1, ParkTailLightSts=1(Bcan) and FMH time (FollowMeTime) are sent.
      (3) When FMH function is activated: Default duration is 30 seconds. Activating Flash switch again for a short time will increase duration of FMH function by 30 seconds each time, but no more than 8 times.
      (4) When FMH function is activated: Flash switch is activated for 2 seconds, FMH function will be manually turned off - low beam light and position light will turn off immediately and cumulative duration of FMH will be reset.
      (5) When FMH function is activated: Key is switched to ACC or IGN ON, FMH function will be turned off - low beam light and position light will turn off immediately and cumulative duration of FMH will be reset.

(6) When FMH function is activated: FMH function will be automatically turned off after set FMH working time is reached: Low beam light and position light will turn off immediately.

(b) Light is in automatic mode

(1) The vehicle meets fortification condition, light combination switch is in AUTO, remote controller lock button is pressed, and BCM receives valid signal sent from rain sensor, and low beam light and position light are automatically turned on for 30 seconds.

(2) After 30 seconds or ignition key is switched to OFF/ON/ACC or light combination switch is switched from AUTO, low beam light and position light are turned off.

8. Lead me to the car

(a) Light is in manual mode

(1) Activation condition for LMC function: IGN OFF; FMH is activated in this same ignition cycle (ON->ACC->OFF) and automatically turns off due to timeout; Remote control unlock signal is received; Four doors are closed.

(2) When LMC function is activated: Low beam light and position light are on and send ParkTailLightSts = 1 (Bcan).

(3) When LMC function is activated: FMH function cannot be activated, low beam light and position light operate in LMC mode.

(4) When LMC function is activated: Remote control lock signal (four doors are closed) is received, LMC function is turned off - low beam light and position light are off.

(5) When LMC function is activated: any door is open, LMC function is turned off -- low beam light and small light are off.

(6) When LMC function is activated: Any key is switched to ACC or IGN ON, LMC function is turned off - low beam light and position light are off.

(7) When LMC function is activated: After receiving remote control unlock signal, LMC function delays 60 seconds (subject to remote control unlock time received).

(8) When LMC function is activated: Longest duration is 60 seconds, LMC function will turn off automatically after timeout.

(b) Light is in automatic mode

(1) The key is in OFF, light combination switch is in AUTO, remote controller unlock button is pressed, and BCM receives valid signal sent from rain sensor, and low beam light and position light turn on for 30 seconds.

(2) After 30 seconds or ignition key is switched to ACC, low beam light and position light are turned off.

(3) When "Lead me to the car" function is activated, if the activation conditions are met again or "Follow me home" function is activated, it counts for 30 seconds again and the light will not flash.

9. Automatic lighting

(a) Low beam light and position light turn on if the following conditions are met.

(1) IGN=ON.

(2) Light switch is switched to AUTO.

(3) LIN valid signal sent from rain sensor is received.

(b) BCM sends low beam light and position light CAN signal to meter after automatic lighting is activated.

(c) Low beam lights turn off if any condition is met.

(1) IGN ≠ ON.

(2) Light switch is switched away from AUTO.

(3) Rain sensor LIN signal is invalid.

(d) Position lights turn off if any condition is met.

(1) IGN ≠ ON.

(2) After light switch is switched away from AUTO for 2 seconds.

(3) After rain sensor LIN signal becomes invalid for 5 seconds.

10. High beam light
    (a) Operating conditions for high beam light: IGN ON; low beam lights are in activated status, high beam light switch is activated.
    (b) When high beam light is operating: High beam lights come on and send HighBeamSts=1.
    (c) When high beam light is operating: When vehicle cranks, high beam lights temporarily stop operating but CAN data will be sent continuously and resume operation after cranking.
    (d) When high beam light is operating: High beam light switch is deactivated and high beam lights turn off.
    (e) When high beam light is operating: Low beam light switch is deactivated and high beam lights turn off.
    (f) When high beam light is operating: Key is switched from IGN ON to ACC or OFF, high beam lights turn off.
11. Flash function
    (a) Flash operating conditions: IGN-ON; Flash switch is activated.
    (b) When Flash is operating: High beam lights turn on and send HighBeamSts=1.
    (c) When Flash is operating: When vehicle cranks, high beam lights temporarily stop operating, but CAN data will be sent continuously, and resume operation after cranking.
    (d) When Flash is operating: When Flash switch is deactivated, high beam lights turn off.
    (e) When Flash is operating: Key is switched from IGN ON to ACC or OFF, high beam lights turn off.
12. Front fog light control
    (a) Operating conditions for front fog light: IGN ON; position lights are in activated status, front fog light switch is activated.
    (b) When front fog light is operating: Front fog light comes on and send FrontFogLightSts = 1.
    (c) When front fog light is operating: Front fog light turns off after front fog light switch is deactivated.
    (d) When front fog light is operating: Key is switched from IGN ON to ACC or OFF, front fog lights turn off.
    (e) When front fog light is operating: Turn off position light, front fog lights turn off and send FrontFogLightSts = 0.
13. Rear fog light control
    (a) Operating conditions for rear fog light: IGN-ON; Front fog light or low beam lights are activated; Rear fog light switch is activated.
    (b) When rear fog light is operating: Rear fog light comes on and sends RearFogLightSts = 1.
    (c) When rear fog light is operating: When rear fog light switch is activated again, rear fog lights turn off.
    (d) When rear fog light is operating: When key is switched from IGN ON to ACC or OFF, rear fog lights turn off.
    (e) When rear fog light is operating: When low beam light or front fog light is turned off, rear fog light turns off at the same time.
14. Daytime running light
    (a) Operating conditions for daytime running light: Engine starts; low and high beam lights and front fog lights are not activated.
    (b) When daytime running light is operating: When engine stops, daytime running light function is turned off.
    (c) When daytime running light is operating: The activation of position light, low beam light and front fog light will cause daytime running lights to be turned off.
    (d) When daytime running light is operating: Flash function does not affect daytime running light operation.
15. Battery save
    (a) Battery save function remains active during IGN ON or IGN ACC.
    (b) Battery save function remains active without other wake-up sources within 15 minutes after IGN OFF.

(c) Within 15 minutes of battery save timing after key is switched to OFF: Opening any door or luggage compartment door, receiving remote unlock signal, inserting and removing key will reset timing to 15 minutes.
Warning:
Battery save includes: Key light, dome light and luggage compartment light.

(d) BCM enters sleeping mode after 3 minutes when fortifying is successful.
Warning:
Note: Battery Save can be woken up by central control unlock or mechanical unlock after Battery Save is turned off.

16. Dome light

(a) Key insertion and removal, dome light and key light control:
(1) When key is removed, BCM turns on dome light and key light for 3 minutes (fades in and fades out).
(2) Within 3 minutes of dome light operation: Key insertion does not affect the operation timing of dome light and key light.
(3) Within 3 minutes of dome light operation: When the key is turned to IGN ON, dome light and key light will fade out immediately.
(4) Within 3 minutes of dome light operation: if all doors are closed after any door is opened, dome light and key light continue to work for 8 seconds, and then fade out.

(b) Door status, dome light and key light control
(1) If any of doors is opened and remains open, dome light comes on for 3 minutes (fades in and fades out).
(2) Within 3 minutes of dome light operation: If another door is opened while one door remains open, dome light continues to come on for 3 minutes, and then fads out.
(3) Within 3 minutes of dome light operation: When the key is turned to ON, all doors are closed, dome light will fade out immediately.
(4) Within 3 minutes of dome light operation: When the key is turned to OFF or ACC and all doors are closed, dome light will fade out after 8 seconds; If the key is turned to IGN ON within 8 seconds, dome light will fade out immediately.

(c) Remote control key, dome light and key light control:
(1) When BCM receives unlock signal from remote controller: No matter what status the door is in, dome light comes on for 15 seconds (fades in and fades out).
(2) Within 15 seconds of dome light operation: When the key is turned to ING ON, the dome light will fade out immediately.
(3) Within 15 seconds of dome light operation: When RF is fortified successfully, dome light will turn off immediately.
(4) Within 15 seconds of dome light operation: When any door is opened, dome light enters into mode 2.

(d) Collision signal, dome light and key light control:
(1) With IGN-ON, regardless of door status, if CAN signal value "CrashOutputSts" is not "00", BCM will illuminate dome light for 30 minutes. There is no fade-in process, including fade-out process.
(2) Within 30 minutes of dome light illumination: If key is switched to OFF, dome light will fade out immediately.
(3) Within 30 minutes of dome light illumination: If BCM receives RF key lock signal, dome light turns off immediately and there is no fade-out process.
Warning:
Please turn rear dome light switch to door control gear to test above function logic.
Warning:
In any of above conditions (key insertion and removal, door status, remote control key) triggers dome light to come on, another event is triggered again, and dome light illumination time is reset.

17. Rear view mirror foot light
    (a) Remote control and foot light function
        (1) In OFF/ACC status, when unlocking with key or wireless control, foot light comes on for 15 seconds.
        (2) In OFF status, BCM receives remote control fortification/wireless control fortification/PLG fortification signals, and vehicle enters fortifying mode successfully, foot light comes on for 15 seconds.
        (3) Foot light turns off when key is turned to ON or after 15-second timing ends.
    (b) Door state signal controlled foot light function
        (1) In OFF/ACC/ON status, open any door, and BCM controls foot light to remain on for 3 minutes.
        (2) Within 3 minutes after foot light is activated: If another door is opened while one door remains open, foot light continues to come on for 3 minutes, and then fades out.
        (3) In OFF/ACC status, foot light comes on, four doors close, BCM controls foot light to come on for 8 seconds and then go off; Turn key to ON within 8 seconds after foot light is on, and foot light turns off immediately.
        (4) When foot light comes on, if key is turned to ON, four doors close and foot light turns off immediately.
        Warning:
        When foot light comes on, open the door, and BCM enters door status signal controlled foot light logic.
        Opening back door does not make foot light come on.
        When foot light comes on, BCM enters fortifying mode successfully or fortifying deactivation mode, BCM enters remote control signal/PEPS signal controlled foot light logic.
18. PEPS ENGINE START STOP switch backlight control
    (a) When position light turns on
    (1) BCM continuously sends CAN signal to turn on the PEPS backlight.
    (b) When position light turns off:
    (c) Door status change:
        (1) When any door is opened, BCM continuously sends CAN signal to turn on the backlight for 3 minutes, and then sends CAN signal after 3 minutes to turn off the backlight.
        (2) Within 3 minutes of backlight illumination, if another door is opened, timing will restart again.
        (3) In IGN-ON state, within 3 minutes of backlight illumination, if all doors are closed, backlight will be turned off after 3 seconds.
        (4) In IGN-OFF/ACC state, within 3 minutes of backlight illumination, if all doors are closed, backlight will be turned off after it is continuously turned on for 11 seconds.
    (d) PEPS SMART/RKE control:
        (1) When BCM receives Order information=2 (unlock) (regardless of door status), BCM continuously illuminates backlight for 18 seconds and then turn it off.
        (2) If key is switched to ON within 18 seconds, backlight will turn off immediately.
        (3) If key lock signal is received within 18 seconds, backlight will be turned off immediately.
        (4) If any door is opened within 18 seconds, it is performed according to door status control strategy.
19. Back-up light control
    (a) Operating conditions for back-up light: IGN=ON.
    (b) After receiving reverse switch signal or CAN signal sent from TCU, BCM turns on backup light.
    (c) If there is no switch signal and CAN signal, it will turn off back-up light.
20. Sudden braking hazard warning light alarm function
    (a) If the following conditions are met, hazard warning light is activated (CAN signals of left/right turn signal light, indicator light and turn signal light flash at frequency of 140 ms ON/140ms OFF):
        (1) The key is in ON position.
        (2) CAN signal (HLRequestController=1) sent from ESP is received.

(b) If any of following conditions is met, stop the hazard warning light (left/right turn signal light, indicator light and turn signal light CAN signal) flashing:
(1) CAN signal (HLRequestController=0) sent from ESP is received.
(2) Key is turned to OFF position.
Warning:
When hazard warning light of this function is operating, operate hazard warning light switch, this function stops immediately.
Warning:
During this operation, BCM receives collision signal ("CrashOutputSt ≠ 00) and function stops immediately.

21. Auxiliary steering lighting
(a) When following conditions are met for starting of fog light auxiliary lighting function:
(1) IGN=ON.
(2) Turn signal light turns on or steering column is turned by more than 45° (corresponding CAN signal is SteeringAngle).
(3) Low beam light is turned on.
(4) Vehicle speed is lower than 40 km/h.
(b) Fog light auxiliary lighting function will be turned off when any of the following conditions is met:
(1) IGN=ACC or OFF.
(2) Turn signal light turns off and steering column is turned by less than 10° (corresponding CAN signal is SteeringAngle).
(3) Low beam light is turned on.
(4) Vehicle speed is more than 40km/h.
(c) Meter indicator is not activated when fog auxiliary lighting function is activated.
(d) This function can perform a on-line configuration.

22. Brake light control
(a) When any of following conditions is met, turn on the brake light function.
(1) When brake switch is pressed, brake switch is a high level self-locking switch.
(2) CAN signal "BrakeLightsRequest=1" sent from EPB is received.
(3) CAN signal "BLRequestController=1" sent from ESP is received.
(b) When brake light function is turned on, left and right brake lights and high mounted stop light turn on at the same time.
(c) When all the above conditions are not met, left and right brake lights and high mounted stop light turn off simultaneously.

23. LIN ambient light
(a) Initial status
After vehicle is off-line and powered on for the first time or battery is powered on again after battery is disconnected from vehicle, ambient light function is set to ON by default, after that, system turns on/off according to DVD settings.
(b) Turning on/off ambient light
When all following conditions are met, BCM sends LIN signal TheaterDimmingRequest=01 (ON) (ambient light ON).
Position light output is in activated status.
DVD setting is turned on.
Ambient light turns off when position light output is deactivated or DVD settings is turned off.
(c) Door control logic related to ambient light
(1) When all following conditions are met, BCM sends LIN signal TheaterDimmingRequest=01 (ON) (ambient light ON).
(2) Position light output is deactivated.
(3) Vehicle is in fortifying deactivation mode.
(4) Any door is open.
(5) DVD setting is turned on.

(d) Ambient light turns on for 3 minutes.
(e) Close all doors within 3 minutes after ambient light comes on, and the light turns off after 8 seconds delay.
(f) Open any other door within 3 minutes after ambient light comes on, and then count again for 3 minutes after last door is opened.
(g) When position light output is not activated and any of the following conditions is met, BCM sends LIN signal TheaterDimmingRequest=00 (OFF) (ambient light OFF) immediately.
(1) Vehicle enters fortifying mode successfully.
(2) DVD setting is turned off.
(h) Ambient light color
(1) Initial status.
(2) After vehicle is off-line and powered on for the first time or battery is powered on again after battery is disconnected from vehicle, the relative driving mode is set to OFF by default. Then it turns on/off according to DVD setting.
(3) When relative driving mode is OFF: Ambient light color is blue by default, and then the different colors can be selected according to DVD settings.
(4) When relative driving mode is ON.
(5) In ECO mode, ambient light is green.
(6) In Sport mode, ambient light is red.
(7) In normal mode, ambient light is blue.
(i) Ambient light brightness (music rhythm)
(1) Initial status.
(2) After vehicle is off-line and powered on for the first time or battery is powered on again after battery is disconnected from vehicle, the music rhythm mode is set to OFF by default.
(3) When music rhythm mode is OFF: Ambient light brightness level is Level 3, and then different brightnesses can be selected according to DVD settings.
(4) When music rhythm mode is ON: The zero degree changes with music rhythm according to different brightness level signal sent from IHU.

Intelligent Headlight

24. Function description
(a) The main function of intelligent headlight control system is the intelligent low/high beam switching. The system can request high beam ON/OFF according to the traffic and environmental factors. If there are no relevant traffic participants in front, the system will activate high beam; With system activated, if there is a meeting or following vehicle or street lighting, high beam will be turned off.

25. Control principle
(a) After IGN ON, system switch is turned to ON, and headlight is in AUTO, camera will detect vehicle status, surrounding environment and road condition in front. If IHC opening conditions are met, system will request high beam to be turned ON; When followings, oncomings or vehicles related environment (including the existence of multiple street lights, if external environment brightness is higher than the threshold, etc.) do not meet the IHC open conditions, system will request high beam to be turned off, once the system ON conditions resume, system will follow a certain delay mechanism and send high beam request without interfering with other traffic participants (ECE48 defined vehicles driving in opposite or same directions, ECE50 defined motorbikes driving in opposite or same directions, electric motorcars with light as well as bicycles with light driving in same direction, light size must be more than 150*150 mm and light intensity is greater than 30 cd). The request of low/high beam switching is transmitted to BCM from multi-function front camera via CAN signal, and driver can change lighting state at any time using light rod.

26. System operating precondition
(a) IGN ON.
(b) Headlight switch is in AUTO.

(c) Low beam light turns on automatically.
(d) BCM judges that all the above conditions are met, then BCM sends corresponding system switch requests according to functional logic. If any condition is not met, it will send HWASW = 0 continuously and system cancels activation requests.

27. High beam light request condition
(a) IHC function is activated.
(b) Vehicle speed ⩾ 40 km/h.
(c) Ambient light ＜ 6 lux.
(d) There is no related light source ahead.
(e) If all the above high beam light ON conditions are met and related suppression conditions are not met, the system requests high beam light to be turned on.

28. Minimum ON time of high beam light
(a) To avoid frequent switching between low beam and high beam, it is recommended to follow the following delay strategy when turning on high beam light.
If following several traffic conditions are detected, the system will request to use high beam light. After the relevant traffic participants leave the corresponding conditions, there will be a delay in the corresponding light state switching, refer to table below for details.

Low Beam Light Operation Condition			High Beam Light Switching Request Condition	Delay Time
Operation condition		Operation condition range		
Driving in same direction	Overtaking	< 50 m	The vehicle in front is detected within 50 m of your vehicle and overtook by your vehicle (regardless of left or right);	4 seconds
	Following	< 50 m	The vehicle in front is detected within 50 m of your vehicle and then disappears;	2 seconds
	Following	50 - 200 m	The vehicle in front is detected within 50 - 200 m of your vehicle and then disappears;	3 seconds
	There is a vehicle in front	> 200 m	The vehicle in front is detected within 200 m of your vehicle and then disappears;	2 seconds
Driving in opposite direction	Meeting	< 50 m	The vehicle in front is detected within 50 m of your vehicle and meets with your vehicle on the left;	0.5 seconds
	Driving in opposite direction	50 - 200 m	The vehicle in front is detected within 50 - 200 m of your vehicle and then disappears;	2 seconds
	There is a vehicle in front	> 200 m	The vehicle in front is detected within 200 m of your vehicle and then disappears;	2 seconds

29. High beam OFF request
(a) With system turned off, system will send 0x0 signal by default and request high beam light to be turned off.
(b) The system will request high beam light to be turned off if following faults occur in multi-function front camera:
(1) Permanent system hardware failure
(2) Temporary system hardware failure

(3) Permanent lighting failure (lighting failure time is more than 45 minutes)
(4) Temporary lighting failure (lighting failure time is no more than 1.5 minutes)
(5) Overheat protection
(6) Overvoltage
(7) Hot restart
(8) Communication fault
(9) Signal fault

(c) The system will request high beam light to be turned off when multi-function front camera detects the following auto-glare status.
(1) Heavy fog weather.
(2) Fog light is activated.
(3) Wiper running speed achieves second level (continue fast signal) or above.

(d) Road lighting
(1) If three or more street lights (including tunnels) are detected, the system will request high beam light to be turned off. Reflectors on the side of highway are not allowed to be misidentified as lighting sources.

(e) Ambient brightness
(1) If ambient brightness is too high (ambient light > 12 lux, which is directly obtained from the camera), the system will request high beam light to be turned off.

(f) Vehicle speed
(1) The system will request high beam light to be turned off when vehicle speed is lower than 30 km/h (adjustable).

(g) Traffic condition
(1) If a traffic participant is detected in front of your vehicle, the system will request high beam light to be turned off.
Signs on the road are not allowed to be misidentified as vehicles driving in opposite or same direction.

(h) Other descriptions
(1) Auto position: System status light is allowed to be turned on only when system is in Auto position and low beam light ON conditions are met.
(2) Low beam light status: In Auto position, the system is allowed to be turned on after low beam light comes on automatically.
(3) High beam OFF request: System can request high beam light to be turned off when any of high beam OFF request condition is met.
(4) High priority light changing suppression: System does not change the light distribution request of the vehicle's current state under high priority light suppression conditions.
(5) Low priority light changing suppression: System will maintain the light distribution request of the vehicle's current state under low priority light suppression condition. At this time, if the system is in low beam light state and the conditions of high beam light are met, it is not allowed to switch to the high beam light state; If the system is in high beam light state and the conditions of low beam light are met, it is allowed to switch to low beam light state.
(6) High beam request: Under the function activation condition, the system will request high beam to be turned on if all low beam requests and suppression conditions are not met.
(7) Priority mechanism: Driver can change light distribution using headlight lever at any time.
(8) HC function switch: Multi-function front camera memorizes the IHC function audio setting items. After the next power on, the last memorized switch state will be sent.

Diagnostic Procedure

Hint

Use following procedures to troubleshoot the lighting system.

1	**Vehicle brought to workshop**

Result

Proceed to
Next

Next

2	**Check battery voltage**

Check if battery voltage is normal.

OK

Standard voltage: Not less than 12 V.

Result

Proceed to
OK
NG

NG → **Recharge or replace battery**

OK

3	**Customer problem analysis**

Result

Proceed to
Next

Next

4	**Check for DTCs (current DTC and history DTC)**

Result

Proceed to
No DTC
Current DTC
History DTC

History DTC

5	Problem repair (no DTC), then go to step 8

Result

Proceed to
Next

Next → Go to step

6	Troubleshoot according to Diagnostic Trouble Code (DTC) Chart, then go to step 8

Result

Proceed to
Next

Next → Go to step

7	Troubleshoot according to Problem Symptoms Table, then go to step 8

Result

Proceed to
Next

Next

8	Conduct test and confirm malfunction has been repaired

Result

Proceed to
Next

Next → End

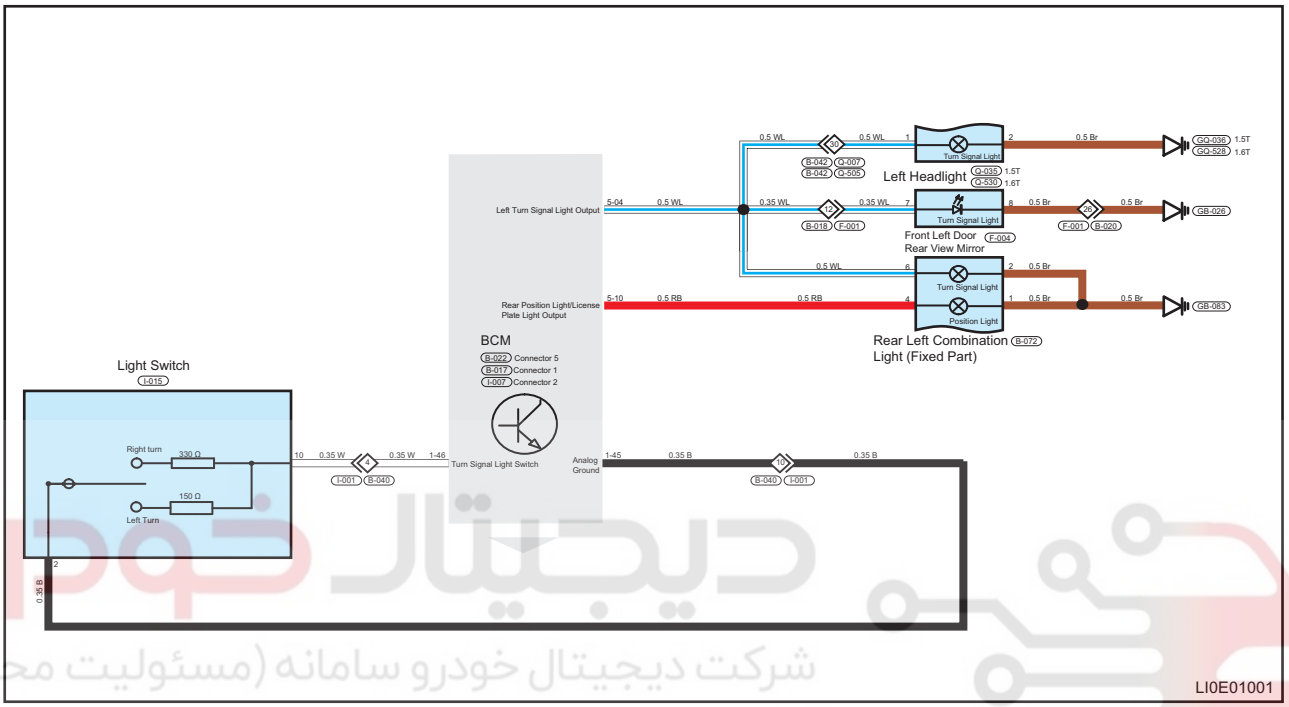
Diagnostic Trouble Code (DTC) Chart

DTC	DTC Definition
B1001-11	Left Side Turn Lamp Control Circuit-Circuit Short to Ground
B1001-13	Left Side Turn Lamp Control Circuit-Circuit Short to Ground
B1002-11	Right Side Turn Lamp Control Circuit-Circuit Short to Ground
B1002-13	Right Side Turn Lamp Control Circuit-Circuit Open
B1003-11	Left Park Light Output Control Circuit-Circuit Short to Ground
B1003-13	Left Park Light Output Control Circuit-Circuit Open
B1004-11	Right Park Light Output Control Circuit-Circuit Short to Ground
B1004-13	Right Park Light Output Control Circuit-Circuit Open
B1005-11	Front Park Light Output Control Circuit-Circuit Short to Ground
B1005-13	Front Park Light Output Control Circuit
B100A-11	Fixed Part of The Rear Left Park Light Output Control Circuit-Circuit Short to Ground
B100A-13	Fixed Part of The Rear Left Park Light Output Control Circuit-Circuit Open
B100B-11	Fixed Part of The Rear Right Park Light Output Control Circuit-Circuit Short to Ground
B100B-13	Fixed Part of The Rear Right Park Light Output Control Circuit-Circuit Open
B1006-11	Rear Park Light Output Control Circuit-Circuit Short to Ground
B1006-13	Rear Park Light Output Control Circuit-Circuit Open
B1008-11	Rear Fog Control Circuit-Circuit Short to Ground
B1008-13	Rear Fog Control Circuit-Circuit Open
B1008-71	Rear Fog Control Circuit-Actuator Stuck
B101E-11	L-DRL Control Circuit-Circuit Short to Ground
B101E-13	L-DRL Control Circuit-Circuit Open
B101F-11	R-DRL Control Circuit-Circuit Short to Ground
B101F-13	R-DRL Control Circuit-Circuit Open
B1035-11	Brake Light Control Circuit-Circuit Short to Ground
B1035-13	Brake Light Control Circuit-Circuit Open
B1037-11	Left Brake Light Control Circuit-Circuit Short to Ground
B1037-13	Left Brake Light Control Circuit-Circuit Open
B1038-11	Right Brake Light Control Circuit-Circuit Short to Ground
B1038-13	Right Brake Light Control Circuit-Circuit Open
B1036-11	H-Brake Light Control Circuit-Circuit Short to Ground
B1036-13	H-Brake Light Control Circuit-Circuit Open
B1039-11	NTC Iutput Circuit / Reversing Lamp Control Circuit-Circuit Short to Ground
B1039-13	NTC Iutput Circuit / Reversing Lamp Control Circuit-Circuit Open

DTC	B1001-11	Left Side Turn Lamp Control Circuit-Circuit Short to Ground

DTC	B1001-13	Left Side Turn Lamp Control Circuit-Circuit Open

Circuit Diagram



Description

DTC	DTC Definition	DTC Detection Condition	Possible Cause
B1001-11	Left Side Turn Lamp Control Circuit-Circuit Short to Ground	ENGINE START STOP switch is turned to ON and engine is running	• Damaged wire harness or connector • Damaged bulb • Turn signal light switch • BCM
B1001-13	Left Side Turn Lamp Control Circuit-Circuit Open		

44

DTC Confirmation Procedure

Confirm that battery voltage is not less than 12 V before performing the following procedures.

- Turn ENGINE START STOP switch to OFF.
- Connect the diagnostic tester (the latest software) to data link connector.
- Turn ENGINE START STOP switch to ON.
- Use the diagnostic tester to record and clear DTCs stored in lighting system.
- Turn ENGINE START STOP switch to OFF and wait for several seconds.
- Turn ENGINE START STOP switch to ON, select "Read DTC".
- If DTC is detected, malfunction indicated by DTC is current. Go to diagnostic procedure - Step 1.
- If DTC is not detected, malfunction indicated by DTC is intermittent.

Warning/Caution/Hint

Caution:

- When performing electrical equipment diagnosis and test, always refer to circuit diagram for related circuit and component information.

Diagnostic Procedure

1	Check left turn signal light bulb

(a) Turn off all electrical equipment and ENGINE START STOP switch.
(b) Disconnect the negative battery cable.
(c) Remove the left turn signal light bulb, and check if left turn signal light bulb filament is blown.

Result

Proceed to
OK
NG

NG → **Replace left turn signal light bulb**

OK →

2	Using diagnostic tester to perform active test

(a) Turn ENGINE START STOP switch to ON.
(b) Connect the diagnostic tester, perform active test for left turn signal light.

Result

Proceed to
OK
NG

NG → **Check actuator circuit wire harness**

OK →

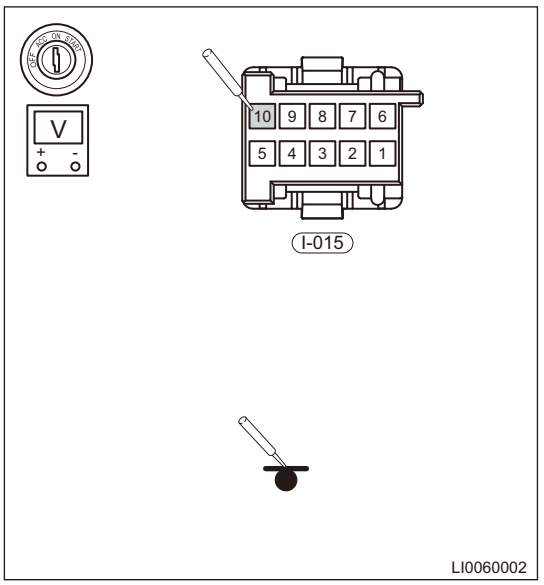
3	Check left turn signal light control circuit

(a) Turn ENGINE START STOP switch to OFF.
(b) Disconnect the negative battery cable.
(c) Disconnect the combination switch connector I-015.
(d) Connect the negative battery cable.
(e) Turn ENGINE START STOP switch to ON.

(f) Using a digital multimeter, measure voltage between combination switch connector I-015 (10) and body ground according to table below.

Standard Condition

Multimeter Connection	Condition	Specified Condition
I-015 (10) - Body ground	Always	Not less than 12 V



Result

Proceed to
OK
NG

NG → **Repair or replace faulty wire harness**

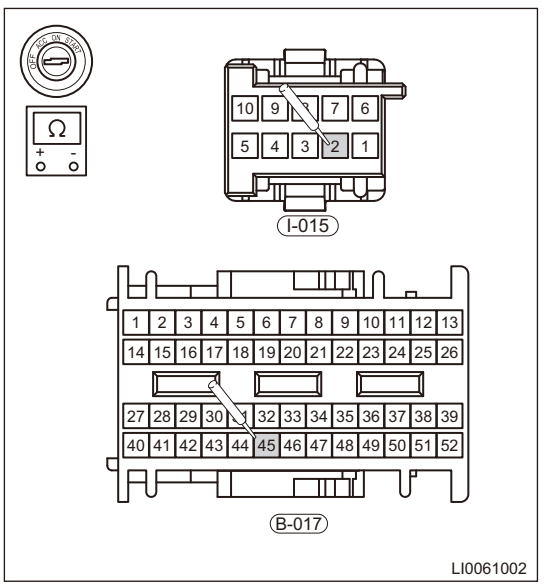
OK →

4	Check combination switch control circuit

(a) Turn ENGINE START STOP switch to OFF.
(b) Disconnect the negative battery cable.
(c) Disconnect the body controller connector B-017.
(d) Disconnect the combination switch connector I-015.
(e) Using a digital multimeter, measure if resistance between connectors I-015 (2) and B-017 (1-45) is normal according to table below.

Standard Condition

Multimeter Connection	Condition	Specified Condition
I-015 (2) - B-017 (1-45)	Always	⩽ 1 Ω



Result

Proceed to
OK
NG

NG → **Repair or replace faulty wire harness**

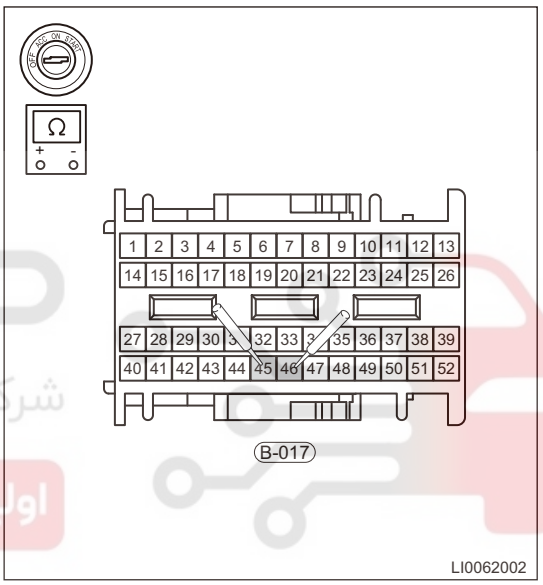
OK

5 Check combination switch

(a) Turn ENGINE START STOP switch to OFF.
(b) Disconnect the negative battery cable.
(c) Disconnect the body controller connector B-017.
(d) Using a digital multimeter, measure if resistance between connectors B-017 (1-46) and B-017 (1-45) when turning on left turn signal light is normal according to table below.

Standard Condition

Multimeter Connection	Condition	Specified Condition
B-017 (1-46) - B-017 (1-45)	Always	150 Ω



Result

Proceed to
OK
NG

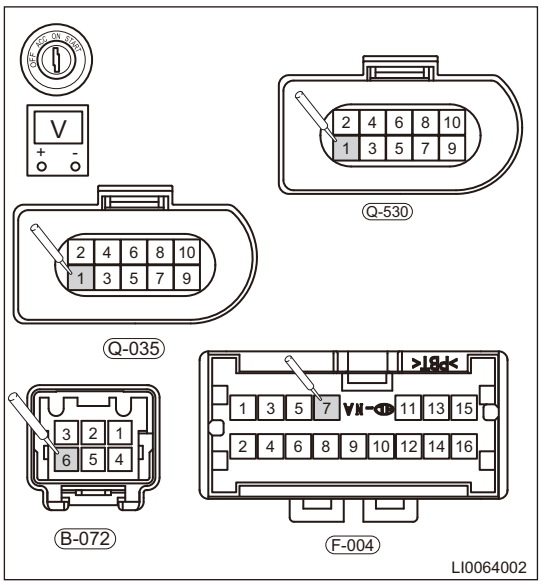
NG → **Replace combination switch**

OK

6 Check left turn signal light actuator circuit

(a) Turn ENGINE START STOP switch to OFF.
(b) Disconnect the negative battery cable.
(c) Disconnect the left turn signal light connectors Q-035/Q-530, F-004, B-072.
(d) Connect the negative battery cable.
(e) Turn ENGINE START STOP switch to ON.

(f) Using a digital multimeter, measure voltage between left turn signal light connectors Q-035/Q-530 (1), F-004 (7), B-072 (6) and body ground.



Standard Condition

Multimeter Connection	Condition	Specified Condition
Q-035/Q-530 (1) - body ground	Always	Not less than 12 V
F-004 (7) - Body ground	Always	Not less than 12 V
B-072 (6) - Body ground	Always	Not less than 12 V

Result

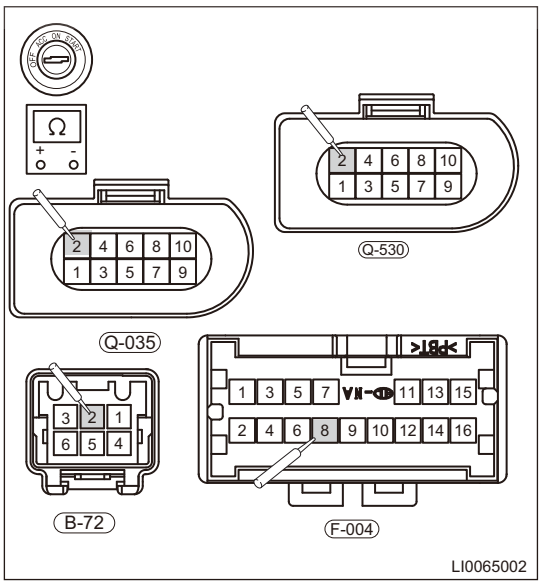
Proceed to
OK
NG

NG → **Repair or replace faulty wire harness**

OK

7 Check output circuit ground for continuity

(a) Turn ENGINE START STOP switch to OFF.
(b) Disconnect the negative battery cable.
(c) Disconnect the left turn signal light connectors Q-035/Q-530, F-004, B-072.
(d) Using a digital multimeter, check for continuity between left turn signal light connectors Q-035/Q-530 (2), F-004 (8), B-072 (2) and body ground.



Standard Condition

Multimeter Connection	Condition	Specified Condition
Q-035/Q-530 (2) - body ground	Always	⩽ 1 Ω
F-004 (8) - Body ground	Always	⩽ 1 Ω
B-072 (2) - Body ground	Always	⩽ 1 Ω

Result

Proceed to
OK

Proceed to
NG

NG → Repair or replace faulty wire harness

OK

8	Reconfirm DTCs

(a) Connect all connectors.
(b) Connect the negative battery cable.
(c) Turn ENGINE START STOP switch to ON.
(d) Check if same DTCs or same problem symptoms are output.

Result

Proceed to
OK
NG

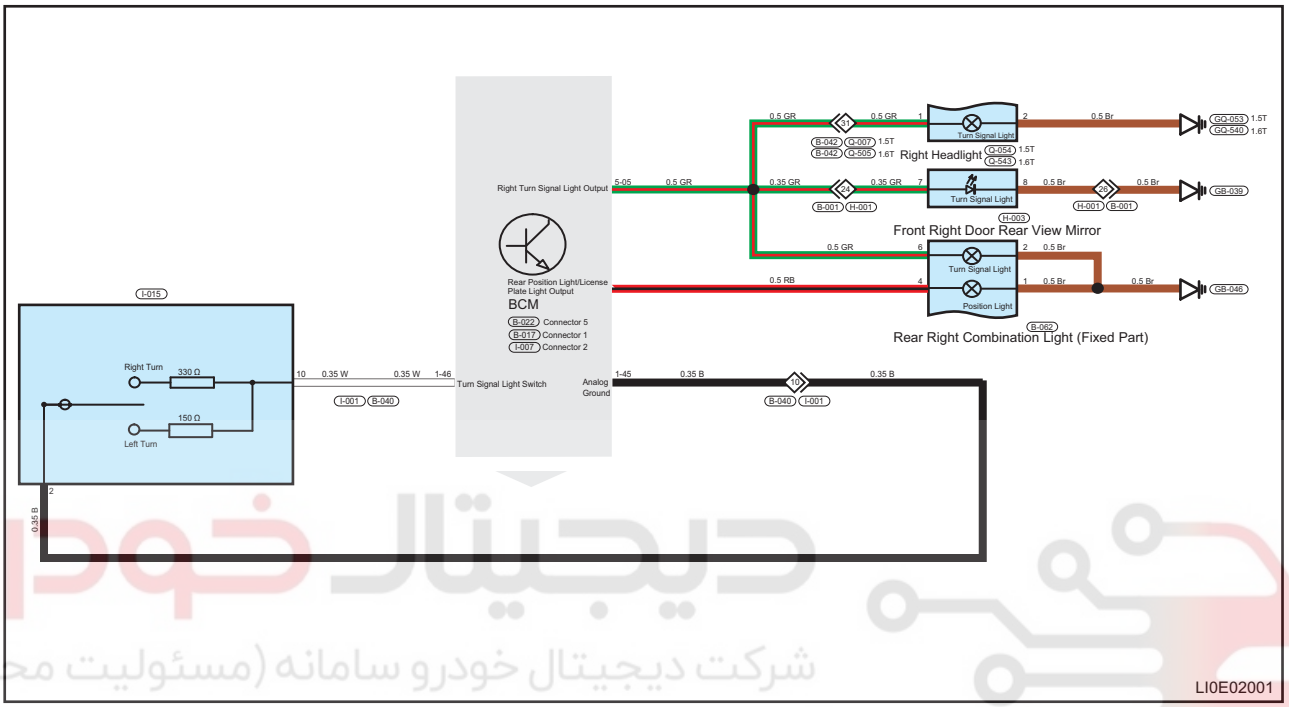
OK → System operates normally

NG → Replace body control module

DTC	B1002-11	Right Side Turn Lamp Control Circuit-Circuit Short to Ground

DTC	B1002-13	Right Side Turn Lamp Control Circuit-Circuit Open

Circuit Diagram



Description

DTC	DTC Definition	DTC Detection Condition	Possible Cause
B1002-11	Right Side Turn Lamp Control Circuit-Circuit Short to Ground	ENGINE START STOP switch is turned to ON and engine is running	• Damaged wire harness or connector • Damaged bulb • Turn signal light switch • BCM
B1002-13	Right Side Turn Lamp Control Circuit-Circuit Open		

44

DTC Confirmation Procedure

Confirm that battery voltage is not less than 12 V before performing the following procedures.

- Turn ENGINE START STOP switch to OFF.
- Connect the diagnostic tester (the latest software) to data link connector.
- Turn ENGINE START STOP switch to ON.
- Use the diagnostic tester to record and clear DTCs stored in lighting system.
- Turn ENGINE START STOP switch to OFF and wait for several seconds.
- Turn ENGINE START STOP switch to ON, select "Read DTC".
- If DTC is detected, malfunction indicated by DTC is current. Go to diagnostic procedure - Step 1.
- If DTC is not detected, malfunction indicated by DTC is intermittent.

Warning/Caution/Hint

Caution:

- When performing electrical equipment diagnosis and test, always refer to circuit diagram for related circuit and component information.

Diagnostic Procedure

1	Check right turn signal light bulb

(a) Turn off all electrical equipment and ENGINE START STOP switch.
(b) Disconnect the negative battery cable.
(c) Remove right turn signal light bulb, and check if right turn signal light bulb filament is blown.

Result

Proceed to
OK
NG

NG → **Replace right turn signal light bulb**

OK

2	Using diagnostic tester to perform active test

(a) Turn ENGINE START STOP switch to ON.
(b) Connect the diagnostic tester, perform active test for right turn signal light.

Result

Proceed to
OK
NG

NG → **Check actuator circuit wire harness**

OK

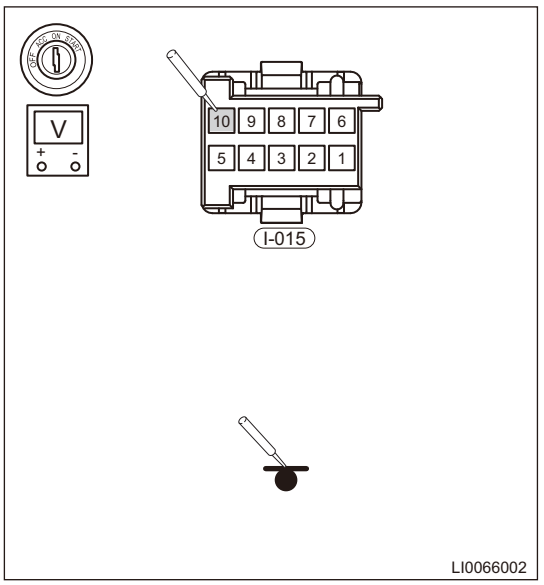
3	Check control circuit output voltage

(a) Turn ENGINE START STOP switch to OFF.
(b) Disconnect the negative battery cable.
(c) Disconnect the combination switch connector I-015.
(d) Connect the negative battery cable.
(e) Turn ENGINE START STOP switch to ON.

(f) Using a digital multimeter, measure voltage between combination switch connector I-015 (10) and body ground according to table below.

Standard Condition

Multimeter Connection	Condition	Specified Condition
I-015 (10) - Body ground	Always	Not less than 12 V



Result

Proceed to
OK
NG

NG → **Repair or replace faulty wire harness**

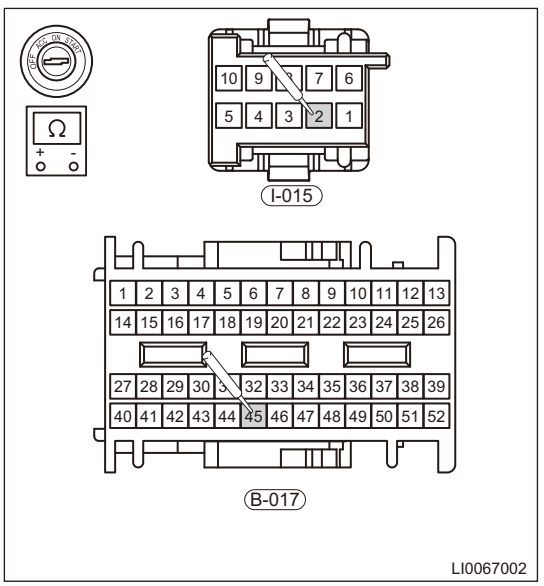
OK →

4	Check combination switch control circuit

(a) Turn ENGINE START STOP switch to OFF.
(b) Disconnect the negative battery cable.
(c) Disconnect the body controller connector B-017.
(d) Disconnect the combination switch connector I-015.
(e) Using a digital multimeter, measure if resistance between connectors I-015 (2) and B-017 (1-45) is normal according to table below.

Standard Condition

Multimeter Connection	Condition	Specified Condition
I-015 (2) - B-017 (1-45)	Always	⩽ 1 Ω



Result

Proceed to
OK
NG

NG → **Repair or replace faulty wire harness**

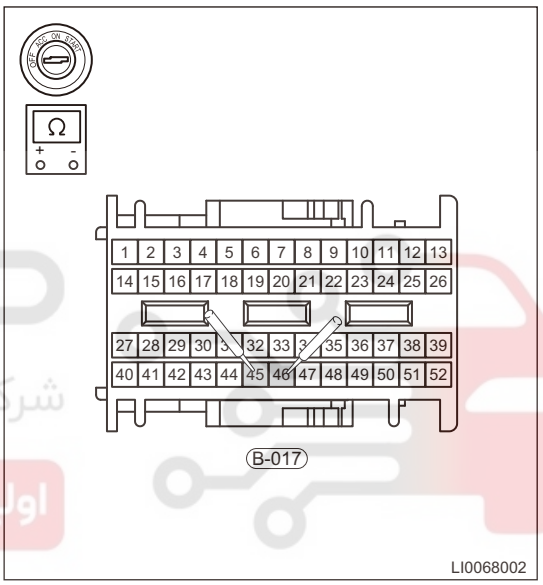
OK →

5 Check combination switch

(a) Turn ENGINE START STOP switch to OFF.
(b) Disconnect the negative battery cable.
(c) Disconnect the body controller connector B-017.
(d) Using a digital multimeter, measure if resistance between connectors B-017 (1-46) and B-017 (1-45) when turning on right turn signal light is normal according to table below.

Standard Condition

Multimeter Connection	Condition	Specified Condition
B-017 (1-46) - B-017 (1-45)	Always	330 Ω



Result

44

Proceed to
OK
NG

NG → **Replace combination switch**

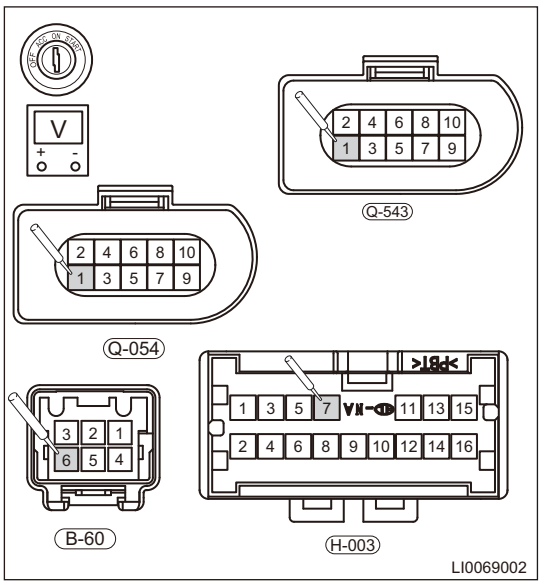
OK →

6 Check right turn signal light actuator circuit

(a) Turn ENGINE START STOP switch to OFF.
(b) Disconnect the negative battery cable.
(c) Disconnect the right turn signal light connectors Q-054/Q-543, H-003, B-060.
(d) Connect the negative battery cable.

(e) Turn ENGINE START STOP switch to ON.

(f) Using a digital multimeter, measure voltage between right turn signal light connectors Q-054/Q-543 (1), H-003 (7), B-060 (6) and body ground.



Standard Condition

Multimeter Connection	Condition	Specified Condition
Q-054/Q-543 (1) - Body ground	Always	Not less than 12 V
H-003 (7) - Body ground	Always	Not less than 12 V
B-060 (6) - Body ground	Always	Not less than 12 V

Result

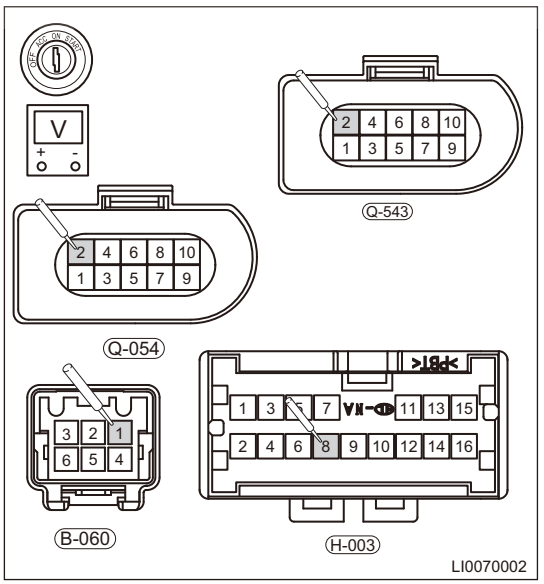
Proceed to
OK
NG

NG → **Repair or replace faulty wire harness**

OK

7 Check output circuit ground for continuity

(a) Turn ENGINE START STOP switch to OFF.
(b) Disconnect the negative battery cable.
(c) Disconnect the right turn signal light connectors Q-054/Q-543, H-003, B-060.
(d) Using a digital multimeter, measure for continuity between right turn signal light connectors Q-054/Q-543 (2), H-003 (8), B-060 (2) and body ground.



Standard Condition

Multimeter Connection	Condition	Specified Condition
Q-054/Q-543 (2) - Body ground	Always	⩽ 1 Ω
H-003 (8) - Body ground	Always	⩽ 1 Ω
B-060 (2) - Body ground	Always	⩽ 1 Ω

Result

Proceed to
OK

Proceed to
NG

NG → Repair or replace faulty wire harness

OK

8	Reconfirm DTCs

(a) Connect all connectors.
(b) Connect the negative battery cable.
(c) Turn ENGINE START STOP switch to ON.
(d) Check if same DTCs or same problem symptoms are output.

Result

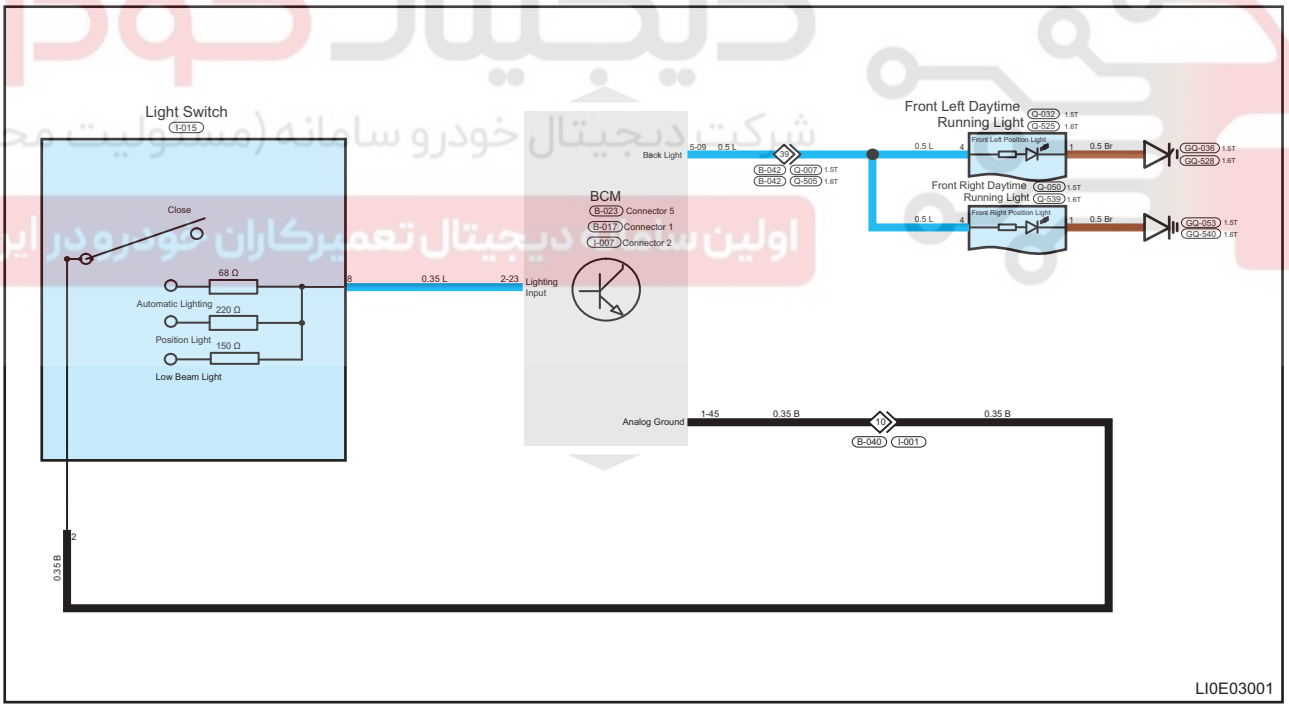
Proceed to
OK
NG

OK → System operates normally

NG → Replace body control module

DTC	B1005-11	Front Park Light Output Control Circuit-Circuit Short to Ground
DTC	B1005-13	Front Park Light Output Control Circuit-Circuit Open
DTC	B1003-11	Left Park Light Output Control Circuit-Circuit Short to Ground
DTC	B1003-13	Left Park Light Output Control Circuit-Circuit Open
DTC	B1004-11	Right Park Light Output Control Circuit-Circuit Short to Ground
DTC	B1004-13	Right Park Light Output Control Circuit-Circuit Open

Circuit Diagram



Description

DTC	DTC Definition	DTC Detection Condition	Possible Cause
B1005-11	Front Park Light Output Control Circuit-Circuit Short to Ground	ENGINE START STOP switch is turned to ON and engine is running	• Damaged wire harness or connector • Damaged bulb • Front position light switch • BCM
B1005-13	Front Park Light Output Control Circuit-Circuit Open		
B1003-11	Left Park Light Output Control Circuit-Circuit Short to Ground		
B1003-13	Left Park Light Output Control Circuit-Circuit Open		
B1004-11	Right Park Light Output Control Circuit-Circuit Short to Ground		
B1004-13	Right Park Light Output Control Circuit-Circuit Open		

DTC Confirmation Procedure

Confirm that battery voltage is not less than 12 V before performing the following procedures.

- Turn ENGINE START STOP switch to OFF.
- Connect the diagnostic tester (the latest software) to data link connector.
- Turn ENGINE START STOP switch to ON.
- Use the diagnostic tester to record and clear DTCs stored in lighting system.
- Turn ENGINE START STOP switch to OFF and wait for several seconds.
- Turn ENGINE START STOP switch to ON, select "Read DTC".
- If DTC is detected, malfunction indicated by DTC is current. Go to diagnostic procedure - Step 1.
- If DTC is not detected, malfunction indicated by DTC is intermittent.

Warning/Caution/Hint

Caution:

- When performing electrical equipment diagnosis and test, always refer to circuit diagram for related circuit and component information.

Diagnostic Procedure

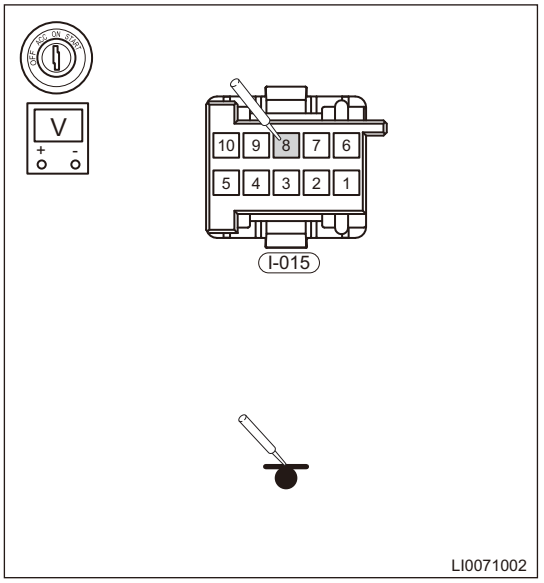
1	**Check front position light control circuit**

(a) Turn ENGINE START STOP switch to OFF.
(b) Disconnect the negative battery cable.
(c) Disconnect the combination switch connector I-015.
(d) Connect the negative battery cable.
(e) Turn ENGINE START STOP switch to ON.

(f) Using a digital multimeter, measure voltage between combination switch connector I-015 (8) and body ground according to table below.

Standard Condition

Multimeter Connection	Condition	Specified Condition
I-015 (8) - Body ground	Always	Not less than 12 V



Result

Proceed to
OK
NG

NG → **Repair or replace faulty wire harness**

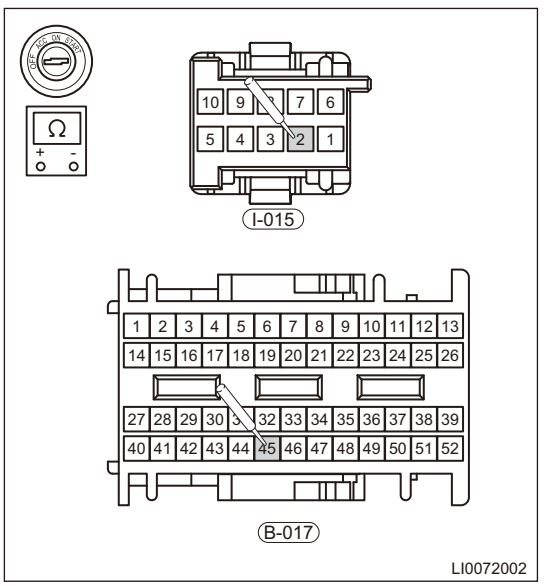
OK

2 Check combination switch control circuit

(a) Turn ENGINE START STOP switch to OFF.
(b) Disconnect the negative battery cable.
(c) Disconnect the body controller connector B-017.
(d) Disconnect the combination switch connector I-015.
(e) Using a digital multimeter, measure if resistance between connectors I-015 (2) and B-017 (1-45) is normal according to table below.

Standard Condition

Multimeter Connection	Condition	Specified Condition
I-015 (2) - B-017 (1-45)	Always	⩽ 1 Ω



Result

Proceed to
OK
NG

NG → **Repair or replace faulty wire harness**

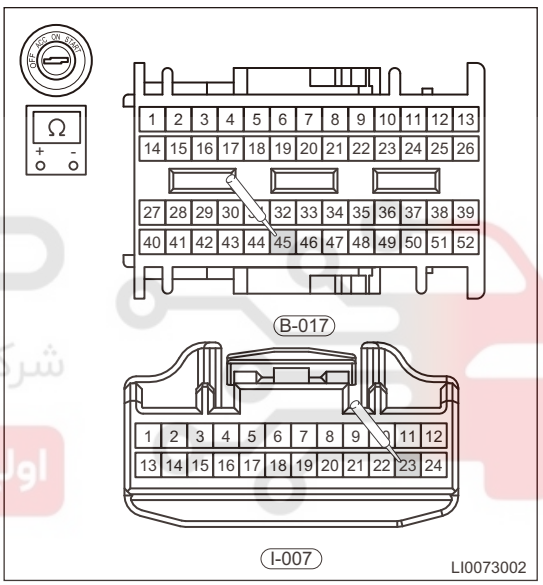
OK

3 Check combination switch

(a) Turn ENGINE START STOP switch to OFF.
(b) Disconnect the negative battery cable.
(c) Disconnect the body controller connector B-017.
(d) Disconnect the body controller connector I-007.
(e) Using a digital multimeter, measure if resistance between connectors I-007 (2-23) and B-017 (1-45) when turning on position light is normal according to table below.

Standard Condition

Multimeter Connection	Condition	Specified Condition
I-007 (2-23) - B-017 (1-45)	Always	220 Ω



44

Result

Proceed to
OK
NG

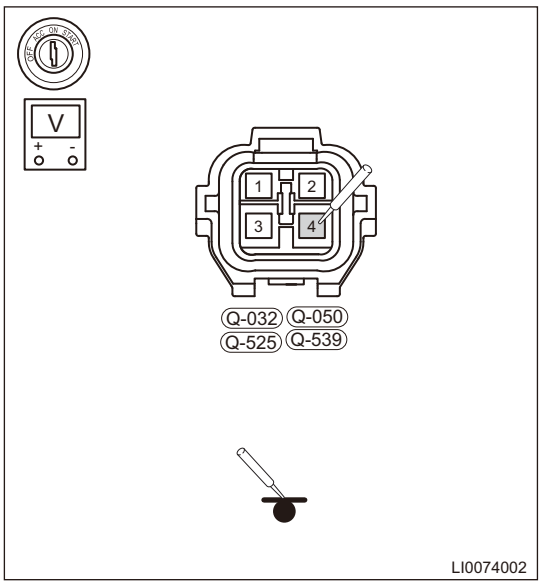
NG → **Replace combination switch**

OK

4 Check front position light output circuit

(a) Turn ENGINE START STOP switch to OFF.
(b) Disconnect the negative battery cable.
(c) Disconnect the front position light connectors Q-032/Q-525, Q-050/Q-539.
(d) Connect the negative battery cable.
(e) Turn ENGINE START STOP switch to ON and turn on position light.

(f) Using a digital multimeter, measure voltage between front position light connectors Q-032/Q-525 (4), Q-050/Q-539 (4) and body ground.



Standard Condition

Multimeter Connection	Condition	Specified Condition
Q-032/Q-525 (4) - Body ground	Always	Not less than 12 V
Q-050/Q-539 (4) - Body ground	Always	Not less than 12 V

Result

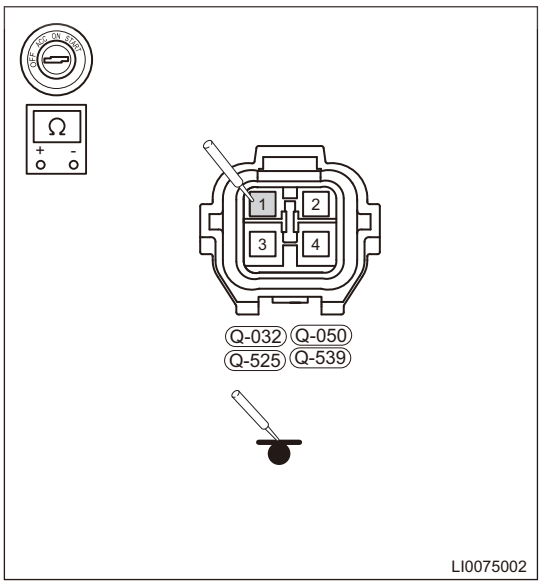
Proceed to
OK
NG

NG → **Repair or replace faulty wire harness**

OK →

5	Check output circuit ground for continuity

(a) Turn ENGINE START STOP switch to OFF.
(b) Disconnect the negative battery cable.
(c) Disconnect the front position light connectors Q-032/Q-525, Q-050/Q-539.
(d) Using a digital multimeter, measure for continuity between front position light connectors Q-032/Q-525 (1), Q-050/Q-539 (1) and body ground.



Standard Condition

Multimeter Connection	Condition	Specified Condition
Q-032/Q-525 (1) - Body ground	Always	⩽ 1 Ω
Q-050/Q-539 (1) - Body ground	Always	⩽ 1 Ω

Result

Proceed to
OK

Proceed to
NG

NG → Repair or replace faulty wire harness

OK

6	Reconfirm DTCs

(a) Connect all connectors.
(b) Connect the negative battery cable.
(c) Turn ENGINE START STOP switch to ON.
(d) Check if same DTCs or same problem symptoms are output.

Result

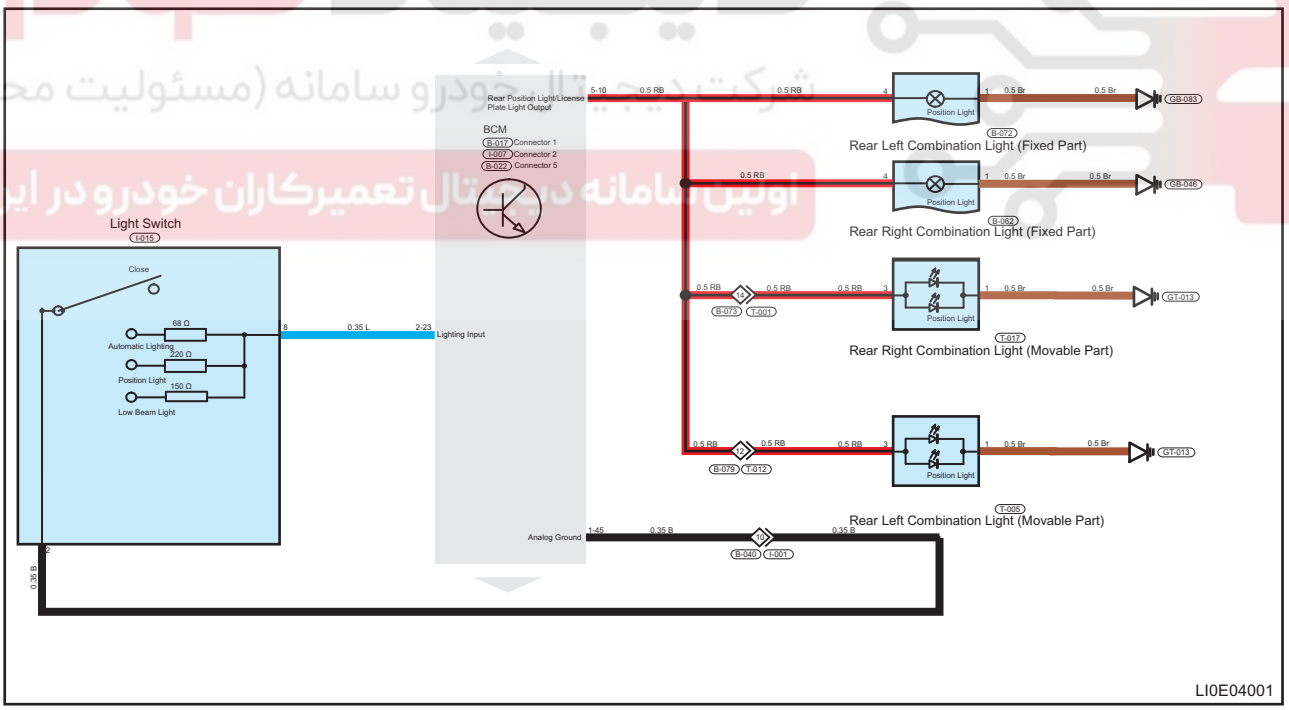
Proceed to
OK
NG

OK → System operates normally

NG → Replace body control module

DTC	B1006-11	Rear Park Light Output Control Circuit-Circuit Short to Ground
DTC	B1006-13	Rear Park Light Output Control Circuit-Circuit Open
DTC	B100A-11	Fixed Part of The Rear Left Park Light Output Control Circuit-Circuit Short to Ground
DTC	B100A-13	Fixed Part of The Rear Left Park Light Output Control Circuit-Circuit Open
DTC	B100B-11	Fixed Part of The Rear Right Park Light Output Control Circuit-Circuit Short to Ground
DTC	B100B-13	Fixed Part of The Rear Right Park Light Output Control Circuit-Circuit Open

Circuit Diagram



Description

DTC	DTC Definition	DTC Detection Condition	Possible Cause
B1006-11	Rear Park Light Output Control Circuit-Circuit Short to Ground	ENGINE START STOP switch is turned to ON and engine is running	• Damaged wire harness or connector • Damaged bulb • Position light switch • BCM
B1006-13	Rear Park Light Output Control Circuit-Circuit Open		
B100A-11	Fixed Part of The Rear Left Park Light Output Control Circuit-Circuit Short to Ground		
B100A-13	Fixed Part of The Rear Left Park Light Output Control Circuit-Circuit Open		
B100B-11	Fixed Part of The Rear Right Park Light Output Control Circuit-Circuit Short to Ground		
B100B-13	Fixed Part of The Rear Right Park Light Output Control Circuit-Circuit Open		

DTC Confirmation Procedure

Confirm that battery voltage is not less than 12 V before performing following procedures.

- Turn ENGINE START STOP switch to OFF.
- Connect the diagnostic tester (the latest software) to data link connector.
- Turn ENGINE START STOP switch to ON.
- Use the diagnostic tester to record and clear DTCs stored in lighting system.
- Turn ENGINE START STOP switch to OFF and wait for several seconds.
- Turn ENGINE START STOP switch to ON, select "Read DTC".
- If DTC is detected, malfunction indicated by DTC is current. Go to diagnosis procedure - Step 1.
- If DTC is not detected, malfunction indicated by DTC is intermittent.
  Click here

Warning/Caution/Hint

Caution:

- When performing electrical equipment diagnosis and test, always refer to circuit diagram for related circuit and component information.

Diagnosis Procedure

44

1	Check rear position light bulb

(a) Turn off all electrical equipment and ENGINE START STOP switch.
(b) Disconnect the negative battery cable.

2	Using diagnostic tester to perform active test

(a) Turn ENGINE START STOP switch to ON.
(b) Connect the diagnostic tester, perform active test for rear position light.

Result

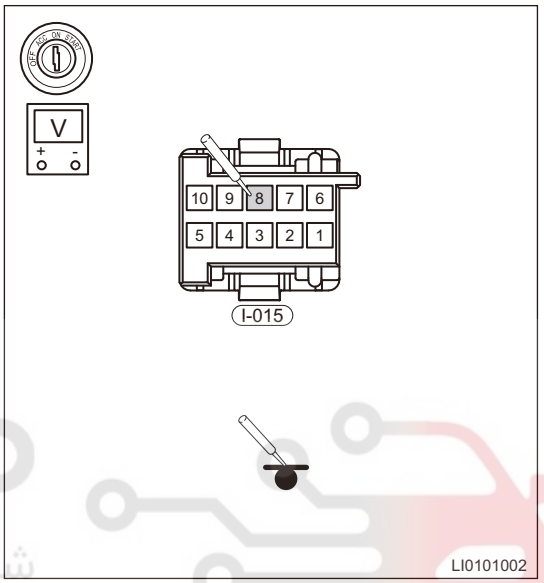
Proceed to
OK
NG

NG → **Check actuator circuit wire harness**

OK

3	Check rear position light control circuit

(a) Turn ENGINE START STOP switch to OFF.
(b) Disconnect the negative battery cable.
(c) Disconnect the combination switch connector I-015.
(d) Connect the negative battery cable.
(e) Turn ENGINE START STOP switch to ON.
(f) Using a digital multimeter, measure voltage between combination switch connector I-015 (8) and body ground according to table below.



Standard Condition

Multimeter Connection	Condition	Specified Condition
I-015 (8) - Body ground	Always	Not less than 12 V

Result

Proceed to
OK
NG

NG → **Repair or replace faulty wire harness**

44

OK

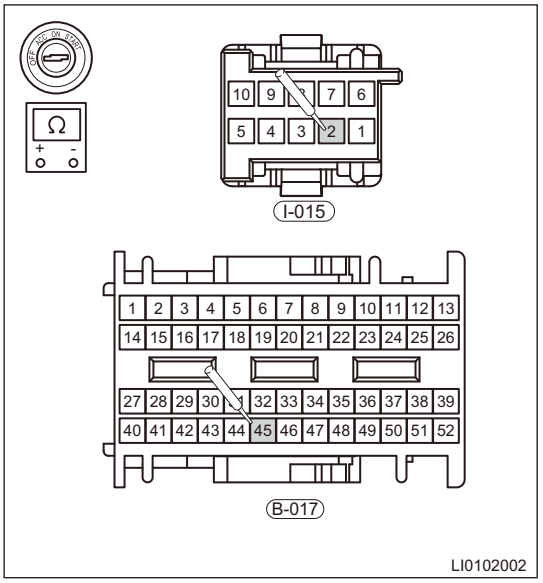
4	Check combination switch control circuit

(a) Turn ENGINE START STOP switch to OFF.
(b) Disconnect the negative battery cable.
(c) Disconnect the body controller connector B-017.
(d) Disconnect the combination switch connector I-015.

(e) Using a digital multimeter, measure if resistance between connectors I-015 (2) and B-017 (1-45) is normal according to table below.

Standard Condition

Multimeter Connection	Condition	Specified Condition
I-015 (2) - B-017 (1-45)	Always	⩽ 1 Ω



Result

Proceed to
OK
NG

NG → **Repair or replace faulty wire harness**

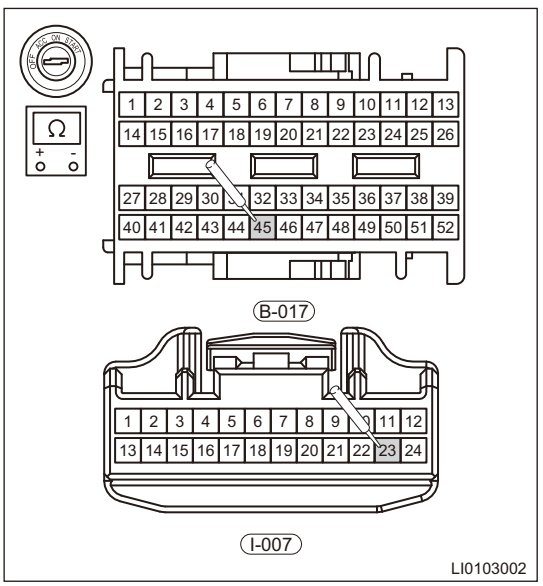
OK →

5	Check combination switch

(a) Turn ENGINE START STOP switch to OFF.
(b) Disconnect the negative battery cable.
(c) Disconnect the body controller connector B-017.
(d) Disconnect the body controller connector I-007.
(e) Using a digital multimeter, measure if resistance between connectors I-007 (2-23) and B-017 (1-45) when turning on position light is normal according to table below.

Standard Condition

Multimeter Connection	Condition	Specified Condition
I-017 (2-23) - B-017 (1-45)	Always	220 Ω



Result

Proceed to
OK
NG

NG → **Replace combination switch**

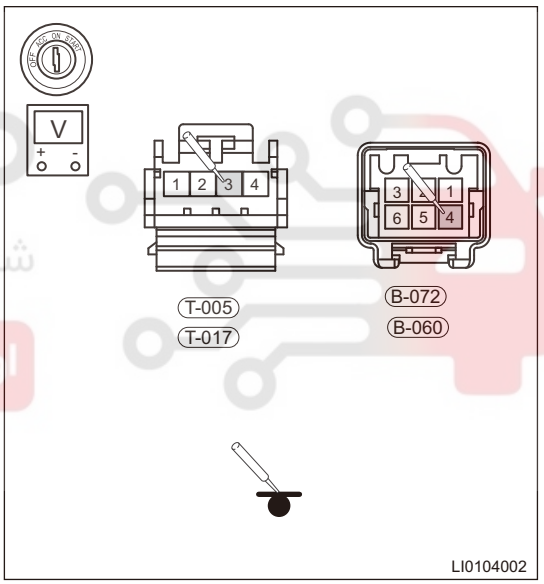
OK

6 Check rear position light output circuit

(a) Turn ENGINE START STOP switch to OFF.
(b) Disconnect the negative battery cable.
(c) Disconnect rear left combination light (movable part) connector T-005, rear right combination light (movable part) connector T-017, rear left combination light (fixed part) connector B-072, rear right combination light (fixed part) connector B-060.
(d) Connect the negative battery cable.
(e) Turn ENGINE START STOP switch to ON.
(f) Using a digital multimeter, measure voltage between rear position light connectors T-005 (3), T-017 (3), B-072 (4), B-060 (4) and body ground.

Standard Condition

Multimeter Connection	Condition	Specified Condition
T-005 (3) - Body ground	Always	Not less than 12 V
T-017 (3) - Body ground	Always	Not less than 12 V
B-072 (4) - Body ground	Always	Not less than 12 V
B-060 (4) - Body ground	Always	Not less than 12 V



Result

Proceed to
OK
NG

NG → **Repair or replace faulty wire harness**

OK

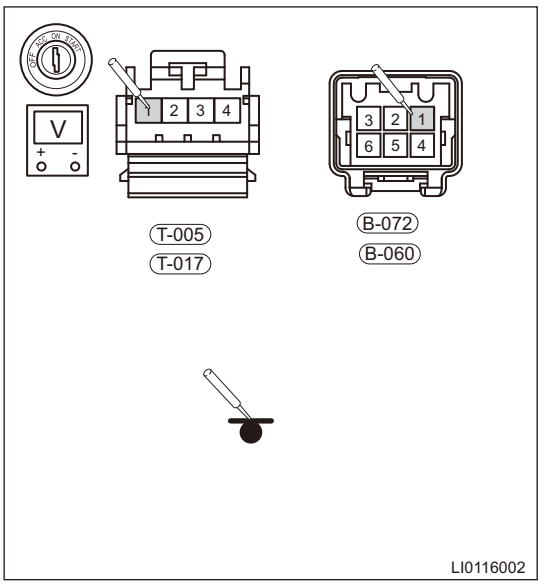
7 Check output circuit ground for continuity

(a) Turn ENGINE START STOP switch to OFF.
(b) Disconnect the negative battery cable.
(c) Disconnect rear position light connectors B-072, B-060, T-017, T-005.

(d) Using a digital multimeter, measure for continuity between rear position light connectors B-072 (1), B-060 (1), T-005 (1), T-017 (1) and body ground.

Standard Condition

Multimeter Connection	Condition	Specified Condition
B-072 (1) - Body ground	Always	⩽ 1 Ω
B-060 (1) - Body ground	Always	⩽ 1 Ω
T-005 (1) - Body ground	Always	⩽ 1 Ω
T-017 (1) - Body ground	Always	⩽ 1 Ω



Result

Proceed to
OK
NG

NG → **Repair or replace faulty wire harness**

OK

8 Reconfirm DTCs

(a) Connect all connectors.
(b) Connect the negative battery cable.
(c) Turn ENGINE START STOP switch to ON.
(d) Check if same DTCs or same problem symptoms are output.

Result

Proceed to
OK
NG

OK → **System operates normally**

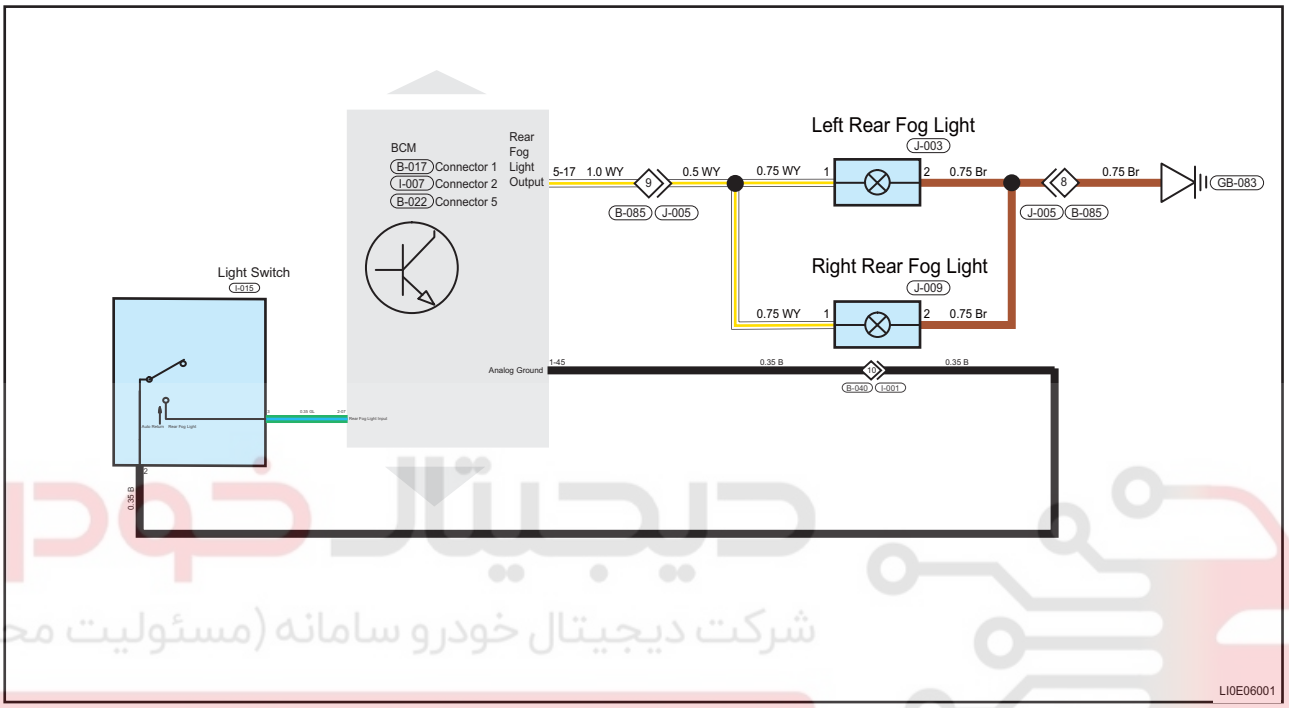
NG → **Replace body control module**

DTC	B1008-11	Rear Fog Control Circuit-Circuit Short to Ground

DTC	B1008-13	Rear Fog Control Circuit-Circuit Open

DTC	B1008-71	Rear Fog Control Circuit-Actuator Stuck

Circuit Diagram



Description

DTC	DTC Definition	DTC Detection Condition	Possible Cause
B1008-11	Rear Fog Control Circuit-Circuit Short to Ground	ENGINE START STOP switch is turned to ON and engine is running	• Damaged wire harness or connector • Damaged rear fog light • BCM
B1008-13	Rear Fog Control Circuit-Circuit Open		
B1008-71	Rear Fog Control Circuit-Actuator Stuck		

44

DTC Confirmation Procedure

Confirm that battery voltage is not less than 12 V before performing following procedures.

- Turn ENGINE START STOP switch to OFF.
- Connect the diagnostic tester (the latest software) to data link connector.
- Turn ENGINE START STOP switch to ON.
- Use the diagnostic tester to record and clear DTCs stored in lighting system.
- Turn ENGINE START STOP switch to OFF and wait for several seconds.
- Turn ENGINE START STOP switch to ON, select "Read DTC".
- If DTC is detected, malfunction indicated by DTC is current. Go to diagnostic procedure - Step 1.
- If DTC is not detected, malfunction indicated by DTC is intermittent.

Warning/Caution/Hint

Caution:

- When performing electrical equipment diagnosis and test, always refer to circuit diagram for related circuit and component information.

Diagnostic Procedure

1	Check rear fog light bulb

(a) Turn off all electrical equipment and ENGINE START STOP switch.
(b) Disconnect the negative battery cable.
(c) Remove the rear fog light bulb, and check if bulb filament is blown.

Result

Proceed to
OK
NG

NG → **Replace rear fog light bulb**

OK →

2	Using diagnostic tester to perform active test

(a) Turn ENGINE START STOP switch to ON.
(b) Connect the diagnostic tester, perform active test for rear fog light.

Result

Proceed to
OK
NG

NG → **Check actuator circuit wire harness**

OK →

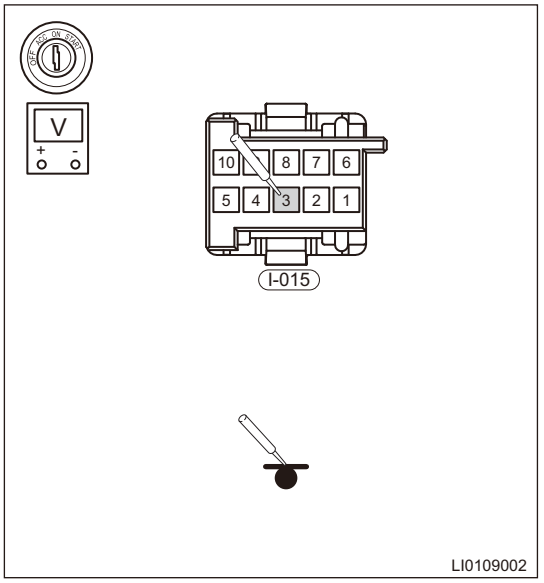
3	Check rear fog light control circuit

(a) Turn ENGINE START STOP switch to OFF.
(b) Disconnect the negative battery cable.
(c) Disconnect the combination switch connector I-015.
(d) Connect the negative battery cable.
(e) Turn ENGINE START STOP switch to ON.

(f) Using a digital multimeter, measure voltage between combination switch connector I-015 (3) and body ground according to table below.

Standard Condition

Multimeter Connection	Condition	Specified Condition
I-015 (3) - Body ground	Always	Not less than 12 V



Result

Proceed to
OK
NG

NG → **Repair or replace faulty wire harness**

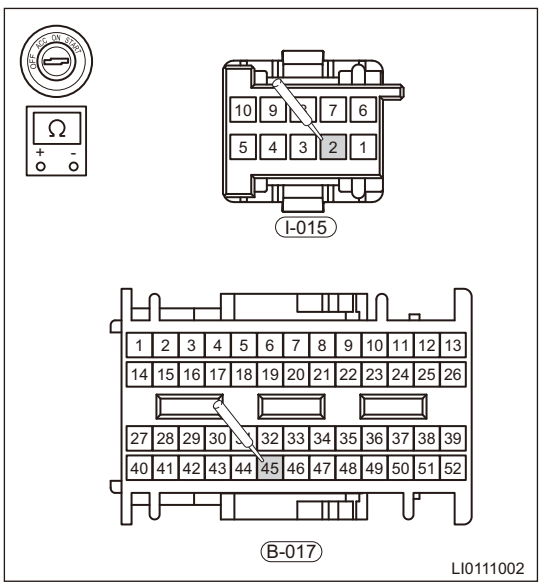
OK →

4	Check combination switch control circuit

(a) Turn ENGINE START STOP switch to OFF.
(b) Disconnect the negative battery cable.
(c) Disconnect the body controller connector B-017.
(d) Disconnect the combination switch connector I-015.
(e) Using a digital multimeter, measure if resistance between connectors I-015 (2) and B-017 (1-45) is normal according to table below.

Standard Condition

Multimeter Connection	Condition	Specified Condition
I-015 (2) - B-017 (1-45)	Always	⩽ 1 Ω



Result

Proceed to
OK
NG

NG → **Repair or replace faulty wire harness**

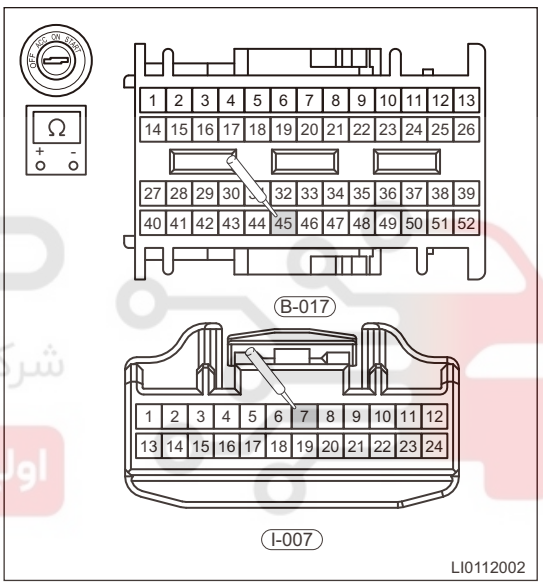
OK

5 Check combination switch

(a) Turn ENGINE START STOP switch to OFF.
(b) Disconnect the negative battery cable.
(c) Disconnect the body controller connector B-017.
(d) Disconnect the body controller connector I-007.
(e) Using a digital multimeter, measure if resistance between connectors I-007 (2-07) and B-017 (1-45) when turning on fog light is normal according to table below.

Standard Condition

Multimeter Connection	Condition	Specified Condition
I-017 (2-07) - B-017 (1-45)	Always	⩽ 1 Ω



44

Result

Proceed to
OK
NG

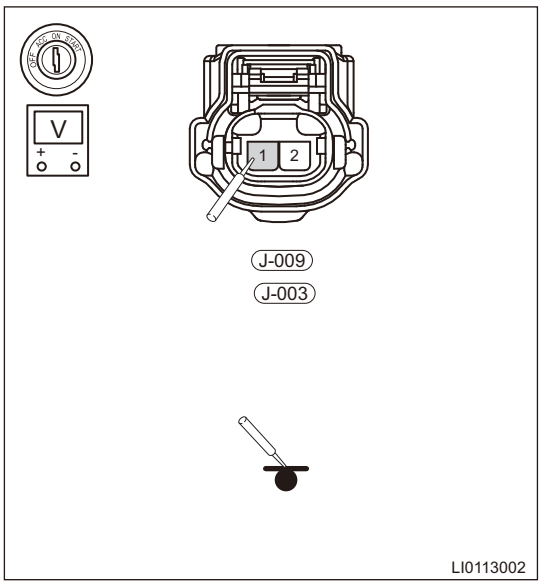
NG → **Replace combination switch**

OK

6 Check rear fog light output circuit

(a) Turn ENGINE START STOP switch to OFF.
(b) Disconnect the negative battery cable.
(c) Disconnect the rear fog light connectors J-003 and J-009.
(d) Connect the negative battery cable.
(e) Turn ENGINE START STOP switch to ON.

(f) Using a digital multimeter, measure voltage between rear fog light connectors J-003 (1), J-009 (1) and body ground according to table below.



Standard Condition

Multimeter Connection	Condition	Specified Condition
J-003 (1) - Body ground	Always	Not less than 12 V
J-009 (1) - Body ground	Always	Not less than 12 V

Result

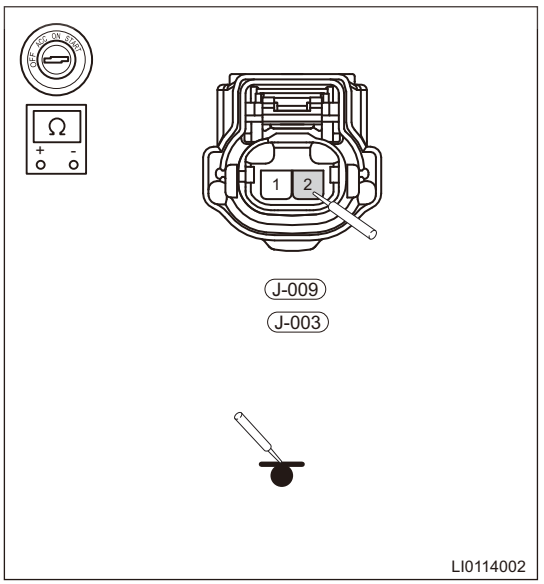
Proceed to
OK
NG

NG → **Repair or replace faulty wire harness**

OK

7	Check output circuit ground for continuity

(a) Turn ENGINE START STOP switch to OFF.
(b) Disconnect the negative battery cable.
(c) Disconnect the rear fog light connectors J-003 and J-009.
(d) Using a digital multimeter, check for continuity between rear fog light connectors J-003 (2), J-009 (2) and body ground according to table below.



Standard Condition

Multimeter Connection	Condition	Specified Condition
J-003 (1) - Body ground	Always	⩽ 1 Ω
J-009 (1) - Body ground	Always	⩽ 1 Ω

Result

Proceed to
OK

Proceed to
NG

NG → Repair or replace faulty wire harness

OK

8	Reconfirm DTCs

(a) Connect all connectors.
(b) Connect the negative battery cable.
(c) Turn ENGINE START STOP switch to ON.
(d) Check if same DTCs or same problem symptoms are output.

Result

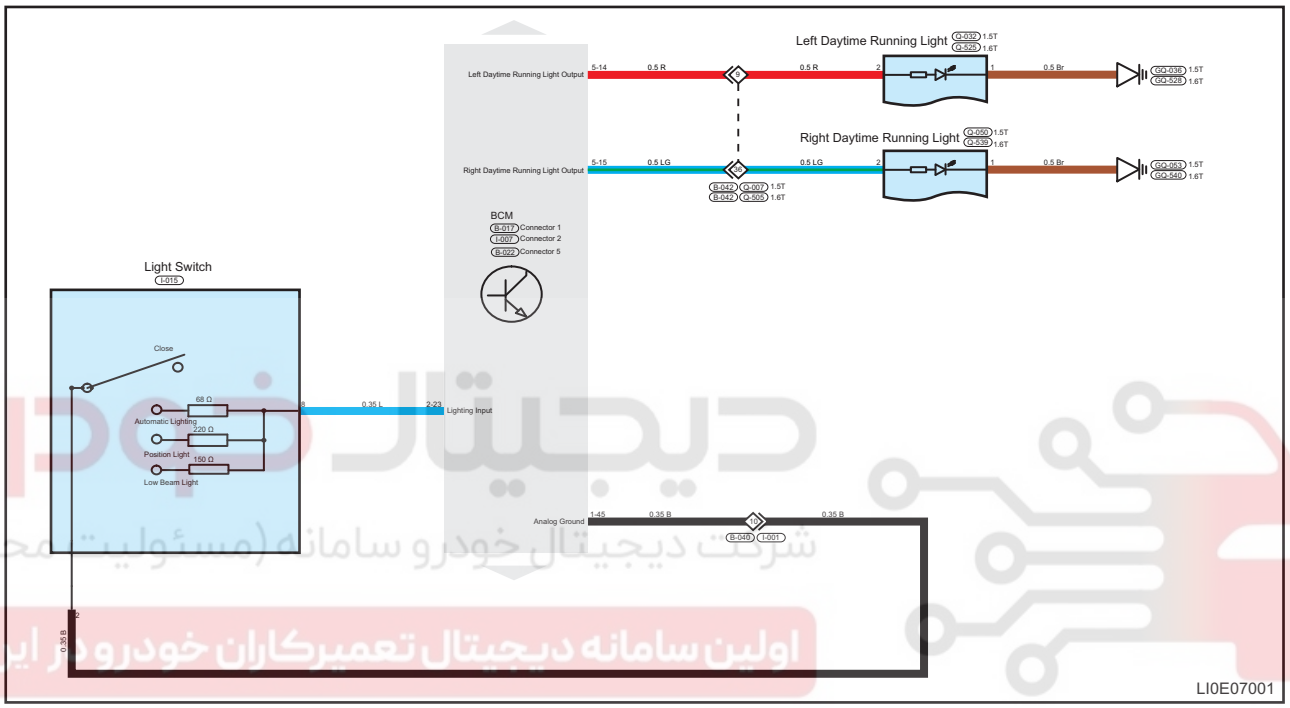
Proceed to
OK
NG

OK → System operates normally

NG → Replace body control module

DTC	B101E-11	L-DRL Control Circuit-Circuit Short to Ground
DTC	B101E-13	L-DRL Control Circuit-Circuit Open
DTC	B101F-11	R-DRL Control Circuit-Circuit Short to Ground
DTC	B101F-13	R-DRL Control Circuit-Circuit Open

Circuit Diagram



Description

DTC	DTC Definition	DTC Detection Condition	Possible Cause
B101E-11	L-DRL Control Circuit-Circuit Short to Ground	ENGINE START STOP switch is turned to ON and engine is running	• Damaged wire harness or connector • Daytime running light damaged • BCM
B101E-13	L-DRL Control Circuit-Circuit Open		
B101F-11	R-DRL Control Circuit-Circuit Short to Ground		
B101F-13	R-DRL Control Circuit-Circuit Open		

DTC Confirmation Procedure

Confirm that battery voltage is not less than 12 V before performing following procedures.

- Turn ENGINE START STOP switch to OFF.
- Connect the diagnostic tester (the latest software) to data link connector.
- Turn ENGINE START STOP switch to ON.
- Use the diagnostic tester to record and clear DTCs stored in lighting system.
- Turn ENGINE START STOP switch to OFF and wait for several seconds.
- Turn ENGINE START STOP switch to ON, select "Read DTC".
- If DTC is detected, malfunction indicated by DTC is current. Go to diagnostic procedure - Step 1.
- If DTC is not detected, malfunction indicated by DTC is intermittent.

Warning/Caution/Hint

Caution:

- When performing electrical equipment diagnosis and test, always refer to circuit diagram for related circuit and component information.

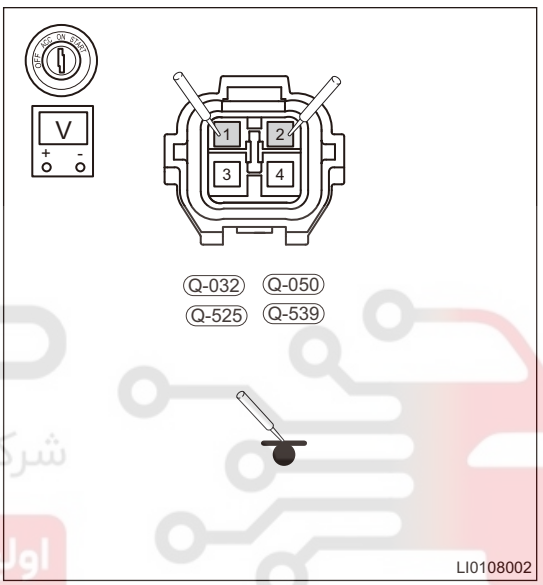
Diagnostic Procedure

1	Check for output voltage of daytime running light

(a) Turn ENGINE START STOP switch to OFF.
(b) Disconnect the negative battery cable.
(c) Disconnect the daytime running light connectors Q-032/Q-525, Q-050/Q-539.
(d) Connect the negative battery cable.
(e) Turn ENGINE START STOP switch to ON.
(f) Using a digital multimeter, measure daytime running light connectors Q-032/Q-525, Q-050/Q-539 to check its output voltage and ground according to table below.

Standard Condition

Multimeter Connection	Condition	Specified Condition
Q-032/Q-525 (2) - Q-032/Q-525 (1)	Always	Not less than 12 V
Q-050/Q-539 (2) - Q-050/Q-539 (1)	Always	Not less than 12 V



Result

Proceed to
OK
NG

OK → Replace daytime running light

NG

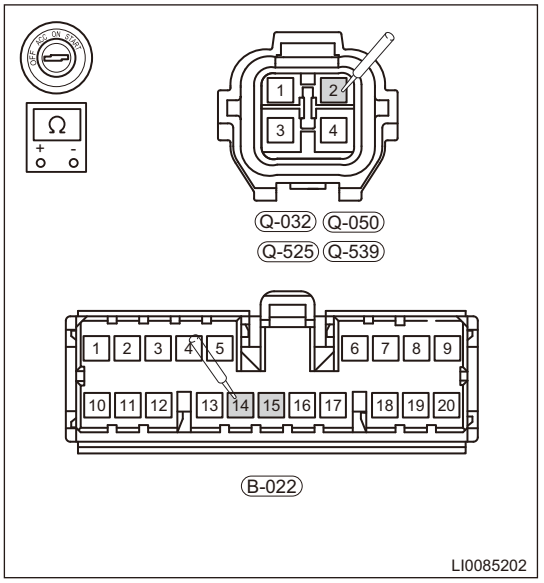
2	Check daytime running light wire harness

(a) Turn ENGINE START STOP switch to OFF.
(b) Disconnect the negative battery cable.
(c) Disconnect the body controller B-022.
(d) Disconnect the daytime running light connectors Q-032/Q-525, Q-050/Q-539.

(e) Using a digital multimeter, measure if resistance between connectors B-022 (5-14), B-022 (5-15) and daytime running light connectors Q-032/Q-525 (2), Q-050/Q-539 (2) is normal according to table below.

Standard Condition

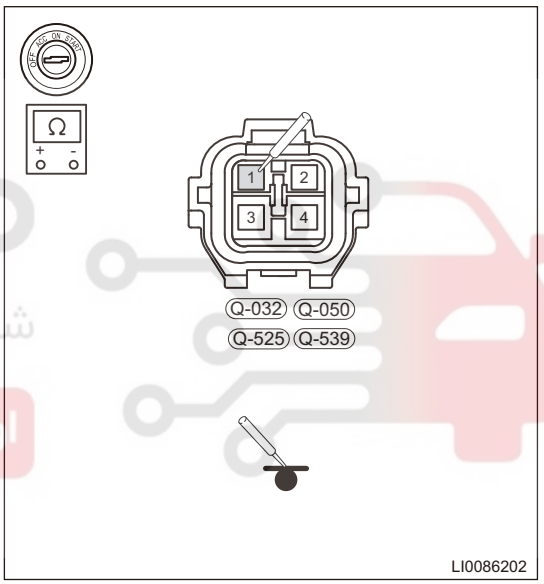
Multimeter Connection	Condition	Specified Condition
B-022 (5-14) - Q-032/Q-525 (2)	Always	⩽ 1 Ω
B-022 (5-15) - Q-050/Q-539 (2)	Always	⩽ 1 Ω



(f) Using a digital multimeter, measure if resistance between daytime running light connectors Q-032/Q-525 (1), Q-050/Q-539 (1) and body ground is normal according to table below.

Standard Condition

Multimeter Connection	Condition	Specified Condition
Q-032/Q-525 (1) - Body ground	Always	⩽ 1 Ω
Q-050/Q-539 (1) - Body ground	Always	⩽ 1 Ω



Result

Proceed to
OK
NG

NG → **Repair or replace faulty wire harness**

OK

3 Reconfirm DTCs

(a) Connect all connectors.
(b) Connect the negative battery cable.
(c) Turn ENGINE START STOP switch to ON.
(d) Check if same DTCs or same problem symptoms are output.

Result

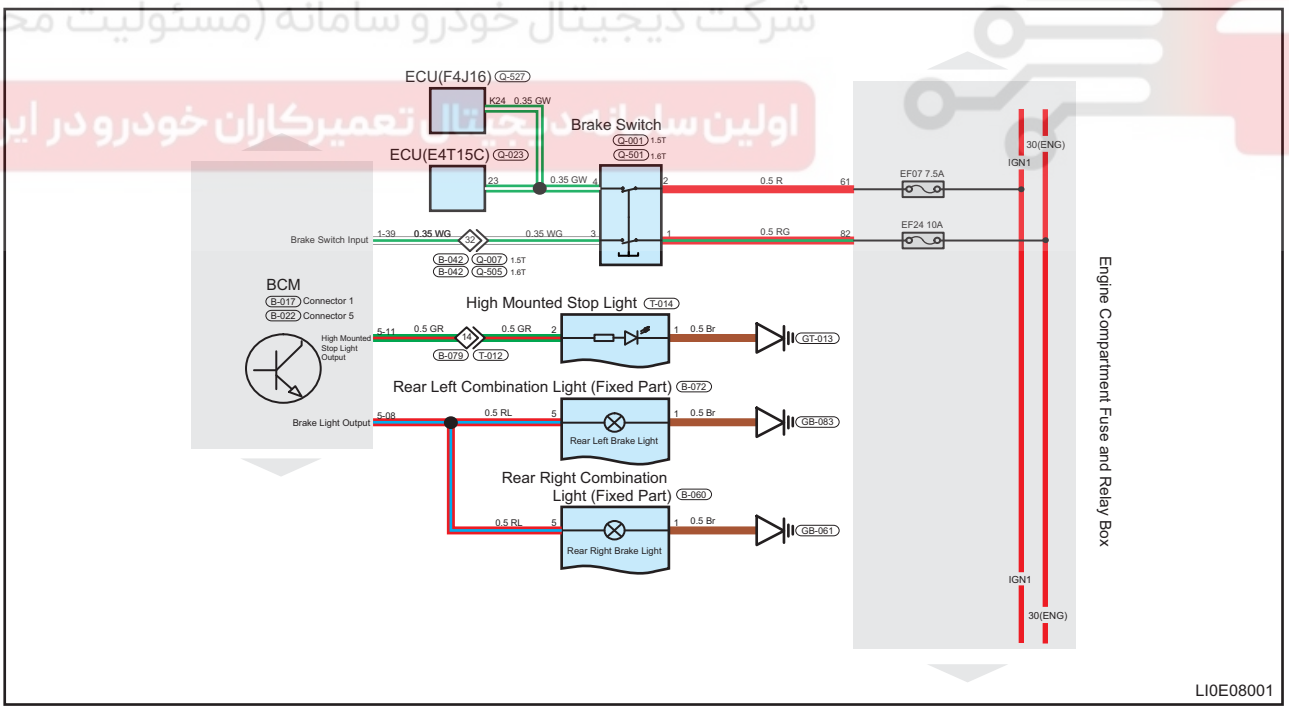
Proceed to
OK
NG

OK → **System operates normally**

NG	Replace body control module assembly

DTC	B1036-11	H-Brake Light Control Circuit-Circuit Short to Ground
DTC	B1036-13	H-Brake Light Control Circuit-Circuit Open
DTC	B1035-11	Brake Light Control Circuit-Circuit Short to Ground
DTC	B1035-13	Brake Light Control Circuit-Circuit Open
DTC	B1037-11	Left Brake Light Control Circuit-Circuit Short to Ground
DTC	B1037-13	Left Brake Light Control Circuit-Circuit Open
DTC	B1038-11	Right Brake Light Control Circuit-Circuit Short to Ground
DTC	B1038-13	Right Brake Light Control Circuit-Circuit Open

Circuit Diagram



Description

DTC	DTC Definition	DTC Detection Condition	Possible Cause
B1036-11	H-Brake Light Control Circuit-Circuit Short to Ground	ENGINE START STOP switch is turned to ON and engine is running	• Damaged wire harness or connector • Damaged brake light • Damaged brake light switch • BCM • Fuse
B1036-13	H-Brake Light Control Circuit-Circuit Open		
B1035-11	Brake Light Control Circuit-Circuit Short to Ground		
B1035-13	Brake Light Control Circuit-Circuit Open		
B1037-11	Left Brake Light Control Circuit-Circuit Short to Ground		
B1037-13	Left Brake Light Control Circuit-Circuit Open		
B1038-11	Right Brake Light Control Circuit-Circuit Short to Ground		
B1038-13	Right Brake Light Control Circuit-Circuit Open		

DTC Confirmation Procedure

Confirm that battery voltage is not less than 12 V before performing following procedures.

- Turn ENGINE START STOP switch to OFF.
- Connect the diagnostic tester (the latest software) to data link connector.
- Turn ENGINE START STOP switch to ON.
- Use the diagnostic tester to record and clear DTCs stored in lighting system.
- Turn ENGINE START STOP switch to OFF and wait for several seconds.
- Turn ENGINE START STOP switch to ON, select "Read DTC".
- If DTC is detected, malfunction indicated by DTC is current. Go to diagnostic procedure - Step 1.
- If DTC is not detected, malfunction indicated by DTC is intermittent.
  Click here

Warning/Caution/Hint

Caution:

- When performing electrical equipment diagnosis and test, always refer to circuit diagram for related circuit and component information.

Diagnostic Procedure

44

1	Check fuse

(a) Turn ENGINE START STOP switch to OFF.
(b) Disconnect the negative battery cable.
(c) Remove the fuse EF24 (10A)/ EF07 (7.5A) from engine compartment fuse box.
(d) Check if fuse is blown.

Result

Proceed to
OK
NG

NG → **Replace fuse**

OK

2	Check brake light bulb

(a) Turn off all electrical equipment and ENGINE START STOP switch.
(b) Disconnect the negative battery cable.
(c) Remove the brake light bulb, and check if bulb filament is blown.

Result

Proceed to
OK
NG

NG → **Replace brake light bulb**

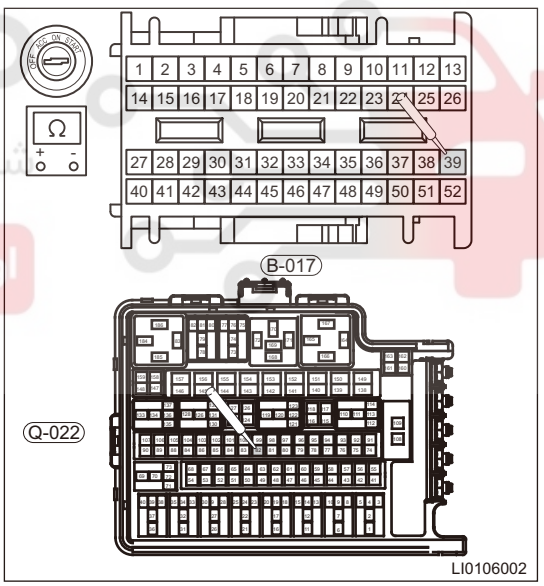
OK →

3	Check brake switch

(a) Turn ENGINE START STOP switch to OFF.
(b) Disconnect the negative battery cable.
(c) Disconnect body controller connector B-017 and engine compartment fuse and relay box Q-022.
(d) Using a digital multimeter, measure if resistance between connectors B-017 (1-39) and Q-022 (82) with brake pedal depressed is normal according to table below.

Standard Condition

Multimeter Connection	Condition	Specified Condition
B-017 (1-39) - Q-022 (82)	Always	⩽ 1 Ω



Result

Proceed to
OK
NG

NG → **Replace brake switch**

OK →

4	Using diagnostic tester to perform active test

(a) Turn ENGINE START STOP switch to ON.
(b) Connect the diagnostic tester, perform active test for brake light.

Result

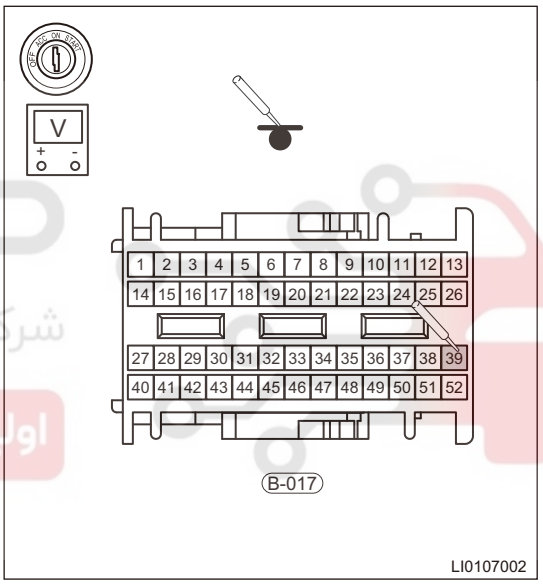
Proceed to
OK
NG

NG → **Check actuator circuit wire harness**

OK →

5 Check brake light control circuit

(a) Turn ENGINE START STOP switch to OFF.
(b) Disconnect the negative battery cable.
(c) Disconnect the body controller connector B-017.
(d) Connect the negative battery cable.
(e) Turn ENGINE START STOP switch to ON, depress brake pedal.
(f) Using a digital multimeter, measure voltage between body controller connector B-017 (1-39) and body ground according to table below.



Standard Condition

Multimeter Connection	Condition	Specified Condition
B-017 (1-39) - Body ground	Always	Not less than 12 V

44

Result

Proceed to
OK
NG

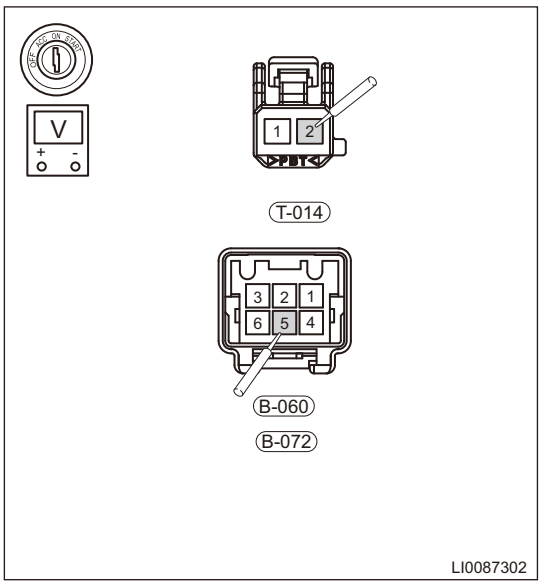
NG → **Repair or replace faulty wire harness**

OK →

6 Check brake light output circuit

(a) Turn ENGINE START STOP switch to OFF.
(b) Disconnect the negative battery cable.
(c) Disconnect the brake light connectors T-014, B-072 and B-060.
(d) Connect the negative battery cable.
(e) Turn ENGINE START STOP switch to ON, depress brake pedal.

(f) Using a digital multimeter, measure voltage between brake light connectors T-014 (2), B-072 (5), B-060 (5) and body ground according to table below.



Standard Condition

Multimeter Connection	Condition	Specified Condition
T-014 (2) - Body ground	Always	Not less than 12 V
B-072 (5) - Body ground	Always	Not less than 12 V
B-060 (5) - Body ground	Always	Not less than 12 V

Result

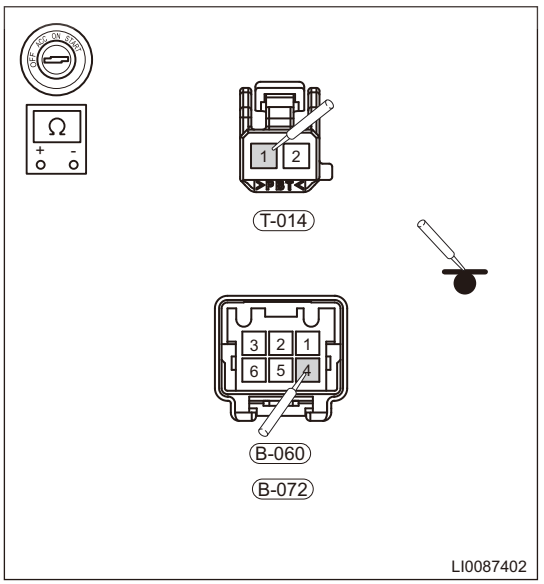
Proceed to
OK
NG

NG → **Repair or replace faulty wire harness**

OK

7	Check output circuit ground for continuity

(a) Turn ENGINE START STOP switch to OFF.
(b) Disconnect the negative battery cable.
(c) Disconnect the brake light connectors T-014, B-072 and B-060.
(d) Using a digital multimeter, check for continuity between brake light connectors T-014 (1), B-072 (1), B-060 (1) and body ground according to table below.



Standard Condition

Multimeter Connection	Condition	Specified Condition
T-014 (1) - Body ground	Always	⩽ 1 Ω
B-072 (1) - Body ground	Always	⩽ 1 Ω
B-060 (1) - Body ground	Always	⩽ 1 Ω

Result

Proceed to
OK

Proceed to
NG

NG → Repair or replace faulty wire harness

OK

8	Reconfirm DTCs

(a) Connect all connectors.
(b) Connect the negative battery cable.
(c) Turn ENGINE START STOP switch to ON.
(d) Check if same DTCs or same problem symptoms are output.

Result

Proceed to
OK
NG

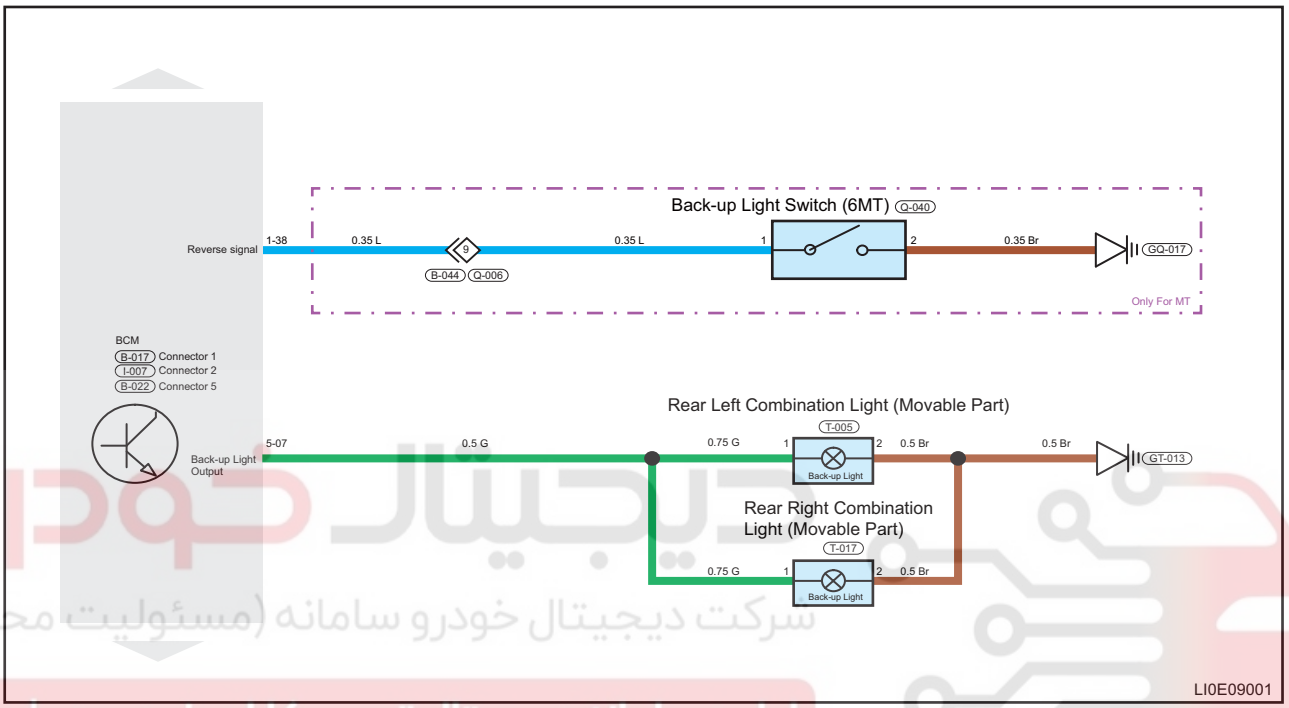
OK → System operates normally

NG → Replace body control module assembly

DTC	B1039-11	NTC Iutput Circuit / Reversing Lamp Control Circuit-Circuit Short to Ground

DTC	B1039-13	NTC Iutput Circuit / Reversing Lamp Control Circuit-Circuit Open

Circuit Diagram



Description

DTC	DTC Definition	DTC Detection Condition	Possible Cause
B1039-11	NTC Iutput Circuit / Reversing Lamp Control Circuit-Circuit Short to Ground	ENGINE START STOP switch is turned to ON and engine is running	• Damaged wire harness or connector • Damaged bulb • BCM
B1039-13	NTC Iutput Circuit / Reversing Lamp Control Circuit-Circuit Open		

44

DTC Confirmation Procedure

Confirm that battery voltage is not less than 12 V before performing the following procedures.

- Turn ENGINE START STOP switch to OFF.
- Connect the diagnostic tester (the latest software) to data link connector.
- Turn ENGINE START STOP switch to ON.
- Use the diagnostic tester to record and clear DTCs stored in lighting system.
- Turn ENGINE START STOP switch to OFF and wait for several seconds.
- Turn ENGINE START STOP switch to ON, select "Read DTC".
- If DTC is detected, malfunction indicated by DTC is current. Go to diagnostic procedure - Step 1.
- If DTC is not detected, malfunction indicated by DTC is intermittent.

Warning/Caution/Hint

Caution:

- When performing electrical equipment diagnosis and test, always refer to circuit diagram for related circuit and component information.

Diagnostic Procedure

1	Check back-up light bulb

(a) Turn off all electrical equipment and ENGINE START STOP switch.
(b) Disconnect the negative battery cable.
(c) Remove back-up light bulb, and check if bulb filament is blown.

Result

Proceed to
OK
NG

NG → **Replace back-up light bulb**

OK →

2	Using diagnostic tester to perform active test

(a) Turn ENGINE START STOP switch to ON.
(b) Connect the diagnostic tester, perform active test for back-up light.

Result

Proceed to
OK
NG

NG → **Check actuator circuit wire harness**

OK →

3	Check back-up light switch

(a) Turn ENGINE START STOP switch to OFF.
(b) Disconnect the negative battery cable.
(c) Remove back-up light switch and perform ON/OFF measurement.

Standard Condition

Switch Condition	Condition	Specified Condition
Pushed	Always	ON
Not pushed	Always	OFF

Result

Proceed to
OK
NG

NG → **Replace back-up light switch**

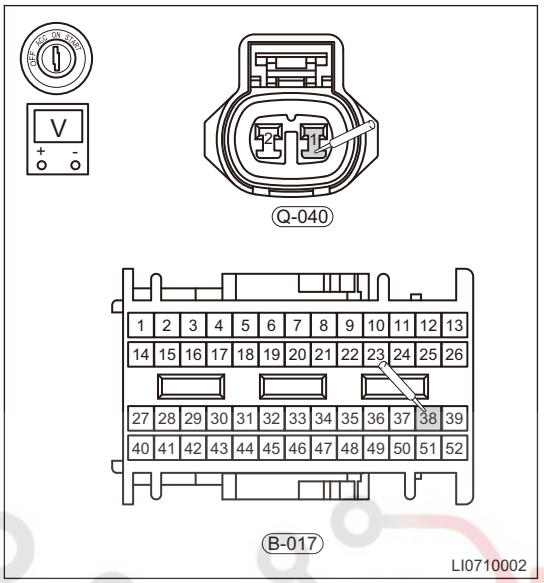
OK →

4	Check back-up light control circuit (6MT)

(a) Turn ENGINE START STOP switch to OFF.
(b) Disconnect the negative battery cable.
(c) Disconnect the back-up light switch connector Q-040.
(d) Connect the negative battery cable.
(e) Using a digital multimeter, measure voltage between BCM connector B-017 (1-38) and back-up light switch Q-040 (1) according to table below.

Standard Condition

Multimeter Connection	Condition	Specified Condition
B-017 (1-38) and Q-040 (1)	Always	Not less than 12 V



Result

Proceed to
OK
NG

NG → **Repair or replace faulty wire harness**

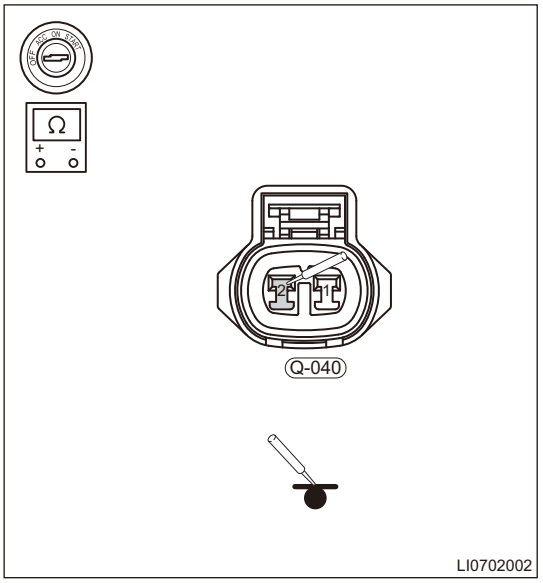
OK

44

5	Check back-up light switch control circuit (6MT)

(a) Turn ENGINE START STOP switch to OFF.
(b) Disconnect the negative battery cable.
(c) Disconnect the back-up light switch connector Q-040.

(d) Using a digital multimeter, measure if resistance between connector Q-040 (2) and ground is normal according to table below.



Standard Condition

Multimeter Connection	Condition	Specified Condition
Q-040 (2) - Ground	Always	⩽ 1 Ω

Result

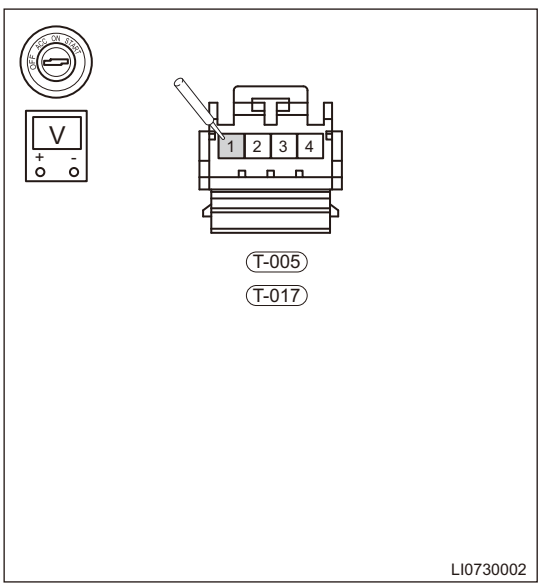
Proceed to
OK
NG

NG → **Repair or replace faulty wire harness**

OK

6	Check back-up light output circuit

(a) Turn ENGINE START STOP switch to OFF.
(b) Disconnect the negative battery cable.
(c) Disconnect left back-up light connector T-005 and right back-up light connector T-017.
(d) Connect the negative battery cable.
(e) Turn ENGINE START STOP switch to ON.
(f) Using a digital multimeter, measure voltage between left back-up light connector T-005 (1), right back-up light connector T-017 (1) and ground according to table below.



Standard Condition

Multimeter Connection	Condition	Specified Condition
T-005 (1) - Body ground	Always	Not less than 12 V
T-017 (1) - Body ground	Always	Not less than 12 V

Result

Proceed to
OK
NG

NG → **Repair or replace faulty wire harness**

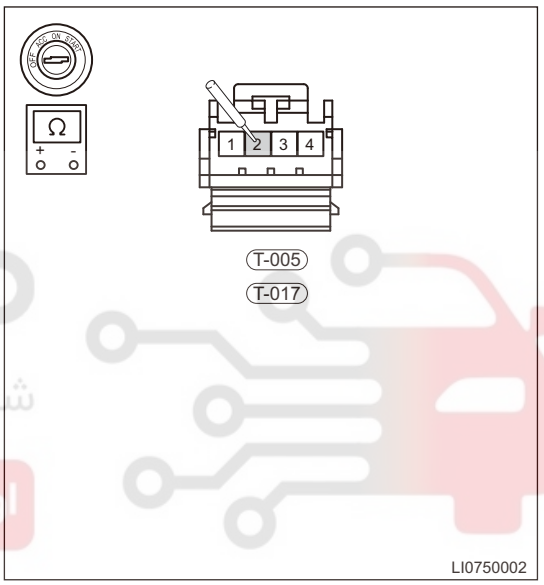
OK

7 Check output circuit ground for continuity

(a) Turn ENGINE START STOP switch to OFF.
(b) Disconnect the negative battery cable.
(c) Disconnect back-up light connectors T-005 and T-017.
(d) Using a digital multimeter, check for continuity between left turn signal light connectors T-005 (2), T-017 (2) and body ground according to table below.

Standard Condition

Multimeter Connection	Condition	Specified Condition
T-005 (2) - Body ground	Always	⩽ 1 Ω
T-017 (2) - Body ground	Always	⩽ 1 Ω



Result

Proceed to
OK
NG

NG → **Repair or replace faulty wire harness**

OK

8 Reconfirm DTCs

(a) Connect all connectors.
(b) Connect the negative battery cable.
(c) Turn ENGINE START STOP switch to ON.
(d) Check if same DTCs or same problem symptoms are output.

Result

Proceed to
OK
NG

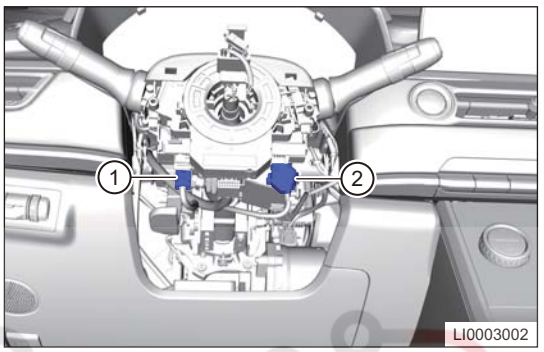
OK	System operates normally
NG	Replace body control module

ON-VEHICLE SERVICE

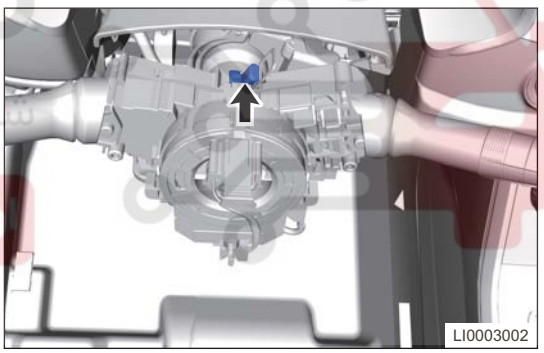
Combination Light Switch Assembly

Removal

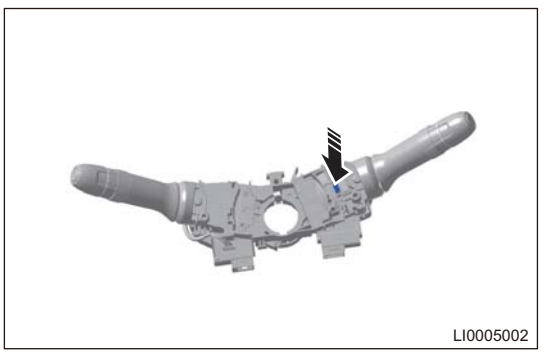
1. Turn off all electrical equipment and ENGINE START STOP switch.
2. Disconnect the negative battery cable.
3. Remove the driver airbag.
4. Remove the steering wheel.
5. Remove the combination switch cover.
6. Remove the spiral cable assembly.
7. Remove the combination switch assembly.
   (a) Disconnect combination light switch connector (1) and wiper switch connector (2).



   (b) Loosen combination switch fixing clamp (arrow), pull combination switch outward, then disconnect combination switch from steering column to remove combination switch.

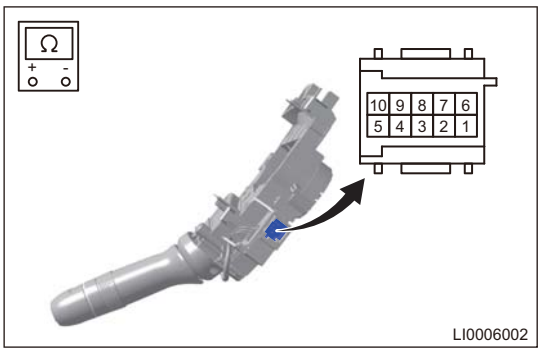


   (c) Loosen wiper switch fixing clip (arrow) and remove combination light switch.



Inspection

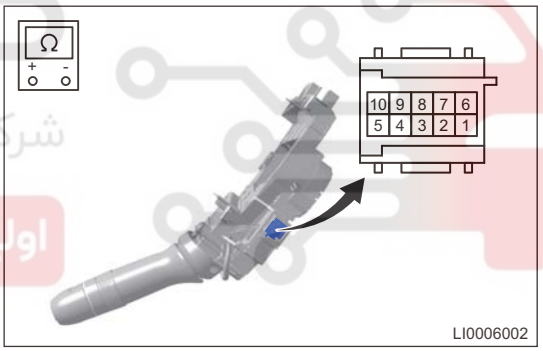
1. Check the combination light switch.



(a) Using ohm band of digital multimeter, measure resistance between terminals as shown in table. Combination light switch assembly (position light/low beam light/high beam light switch)

Multimeter Connection	Condition	Specified Condition
Terminal 8 - Terminal 2	Switch in OFF position	∞
Terminal 8 - Terminal 2	Switch in position light position	220 Ω
Terminal 8 - Terminal 2	Switch in low beam position	150 Ω
Terminal 9 - Terminal 2	Switch in high beam position	150 Ω
Terminal 9 - Terminal 2	Switch in overtaking light position	330 Ω

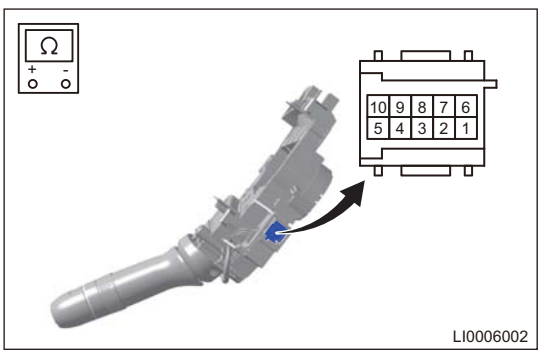
(b) Using ohm band of digital multimeter, check for continuity between terminals as shown in table. Combination light switch assembly (rear fog light switch)



Multimeter Connection	Condition	Specified Condition
Terminal 3 - Terminal 2	Switch in rear fog light position	⩽ 1 Ω
Terminal 3 - Terminal 2	Switch in OFF position	∞

If result is not as specified, replace combination light switch assembly.

(c) Using ohm band of digital multimeter, measure resistance between terminals as shown in table. Combination light switch assembly (turn signal light switch)



Multimeter Connection	Condition	Specified Condition
Terminal 10 - Terminal 2	Switch in left turn position	150 Ω
Terminal 10 - Terminal 2	Switch in right turn position	330 Ω

If result is not as specified, replace combination light switch assembly.

Installation

1. Installation is in the reverse order of removal.

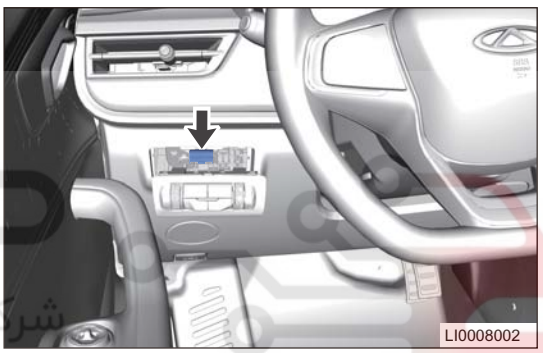
   Caution:
   - Always install spiral cable correctly according to specified operating instructions.
   - Check that horn operates normally after installation.
   - Check SRS warning light after installation, and make sure that supplemental restraint system operates normally.

Adjustment Switch Assembly

Removal

1. Turn off all electrical equipment and ENGINE START STOP switch.
2. Disconnect the negative battery cable.
3. Remove the adjustment switch assembly.
   (a) Using a screwdriver wrapped with protective tape, carefully pry off adjustment switch assembly.

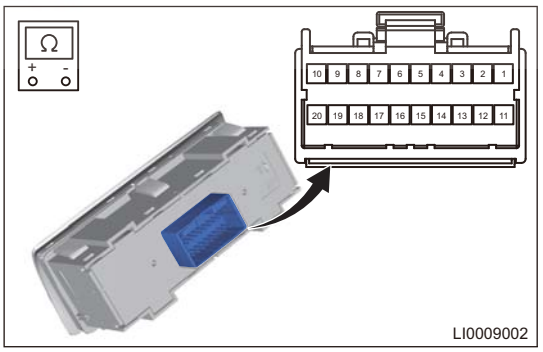
   (b) Disconnect adjustment switch wire harness connector (arrow), and remove adjustment switch assembly.



Inspection

1. Check the headlight leveling switch.
   (a) Check the resistance of headlight leveling switch.
   Standard Condition

Multimeter Connection	Condition	Specified Condition
Terminal 2 - Terminal 13	Headlight leveling switch (0 to 3 bands) turned	Resistance value increases gradually
Terminal 13 - Terminal 12		Resistance value decreases gradually
Terminal 2 - Terminal 12		Resistance value does not change



Installation

1. Installation is in the reverse order of removal.

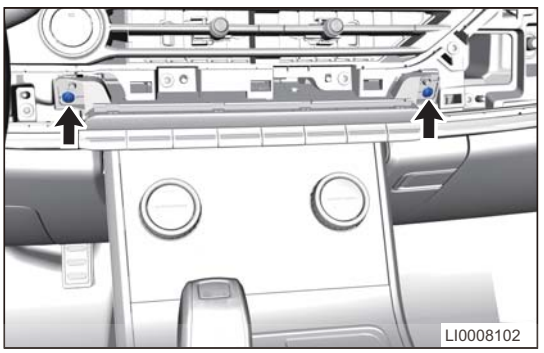
Warning Light Switch

Removal

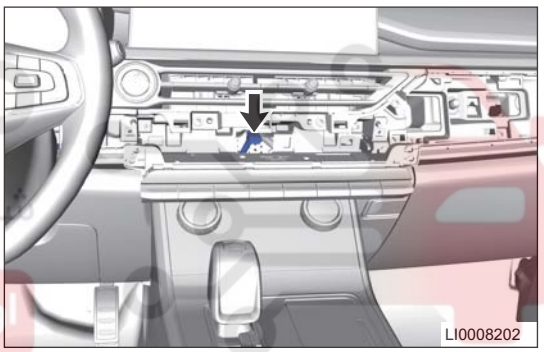
Hint

Warning light switch is installed on the center console switch assembly and it cannot be disassembled.

1. Turn off all electrical equipment and ENGINE START STOP switch.
2. Disconnect the negative battery cable.
3. Remove the center control panel assembly.
4. Remove the warning light switch.
   (a) Remove 2 fixing screws (arrow) from center console switch assembly.



   (b) Disconnect wire harness connector (arrow) from center console switch assembly.

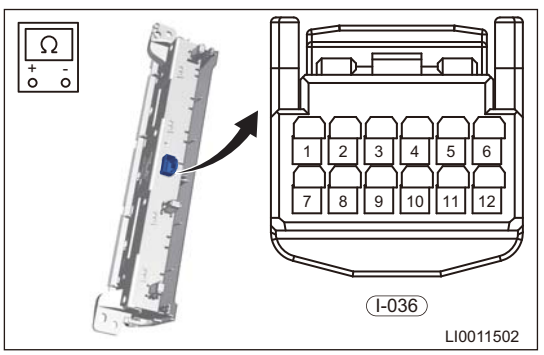


   (c) Remove the center console switch assembly.

Inspection

1. Check the warning light switch.
   (a) Using ohm band of digital multimeter, check for continuity between terminals of warning light switch as shown in table.

Multimeter Connection	Condition	Specified Condition
Terminal 3 - Terminal 7	Switch pressed	⩽ 1 Ω
Terminal 3 - Terminal 7	Switch released	∞



Installation

1. Installation is in the reverse order of removal.

Headlight Assembly

Removal

Hint

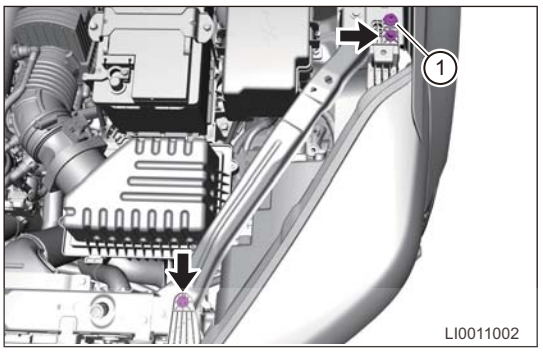
Use same procedures for right headlight assembly and left headlight assembly. Operation procedures listed below are for left headlight assembly.

1. Turn off all electrical equipment and ENGINE START STOP switch.
2. Disconnect the negative battery cable.
3. Remove the front bumper.
4. Remove the headlight assembly.

(a) Remove 2 fixing bolts from upper part of headlight assembly, then remove headlight plastic clip (1) with a cross screwdriver.

Tightening torque

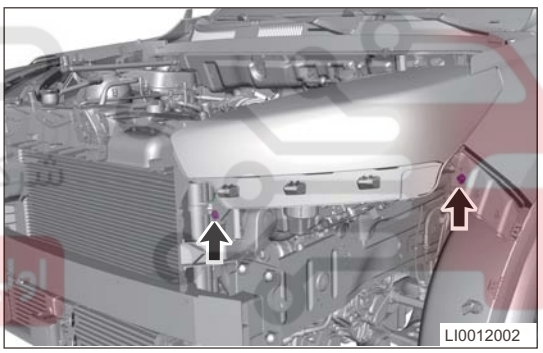
3.5 ± 0.5 N·m



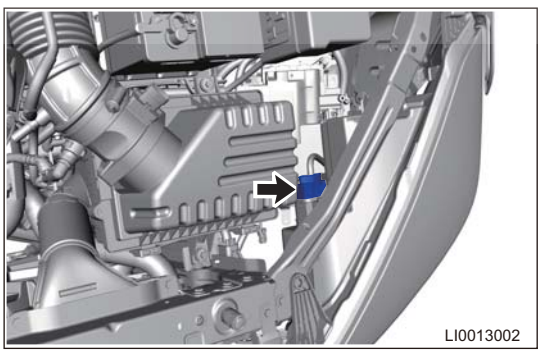
(b) Remove 2 fixing bolts (arrow) from lower part of headlight assembly.

Tightening torque

3.5 ± 0.5 N·m



(c) Disconnect wire harness connector (arrow) from headlight assembly and remove headlight assembly.



Installation

1. Installation is in the reverse order of removal.

Caution:

- When installing headlight assembly, make sure headlight assembly is well fitted with hood, front wing and front bumper. Adjust it as necessary.

Adjustment

1. Preparations:
   (a) Tire inflation pressure comes up to standard.
   (b) Vehicle is unloaded (besides spare tire and tool kit, it is generally specified to include the weight of driver).
   (c) Park vehicle on a level ground or workplace.
   (d) Keep lens surface of headlight free from dirt.
   (e) Check if power supply operates normally and bulbs are installed correctly.
   Low Beam Detection Equipment Parameter Table

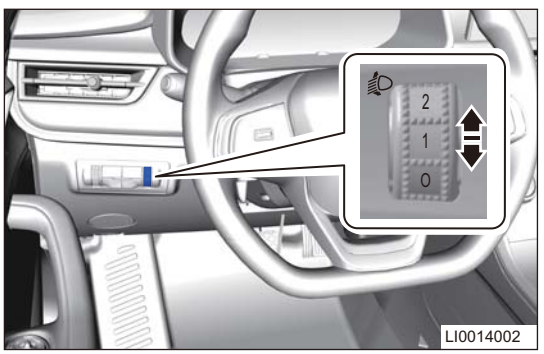
Equipment Name	Basis Parameter Required	T1E Headlight (LED Headlight)	Note
Headlight Tester	Base center height of headlight low beam	918	Unit: mm
	Base center distance between both low beam lights	1410	
	Up and down value of low beam	Cutoff line corner height: 783 mm to 833 mm.	Confirm followings when adjusting light: 1. Headlight leveling switch is in "0" position; 2. Keep 10 m from light core to light detection screen; 3. Be sure to operate in accordance with "Installation and Adjustment Manual", make sure lens (reflector) will not interfere with rim to cause light adjustment mechanism to fall off, due to incorrect adjustment. 4. Adjust it up and down first and then adjust left and right.
	Left and right value of low beam	Offset for left and right low beam: Left ⩽ 150 mm; Right ⩽ 300 mm	
	High beam light intensity detection	Light intensity is higher than 18,000 cd and lower than 430,000 cd	The high beam is two-light type (the center of high beam center is the center of reflector, and the equipment is aimed at the center of high beam reflector)

(f) Detection on screen with a distance of 10 m should be performed according to GB7258 requirements:

Configuration	Function	Up and Down Values	Left offset Values (LHD)	Right offset Values (LHD)
High Configuration Headlight	Left low beam lights	618 to 868 mm	No more than 170 mm	No more than 350 mm
	Right low beam lights		No more than 170 mm	No more than 350 mm

(g) Headlight leveling can be adjusted according to the number of passengers and loading condition of vehicle. There are 4 adjustment bands to select on headlight leveling knob: 0, 1, 2 and 3.
   (1) Turn up: Raise headlight beam.
   (2) Turn down: Lower headlight beam.
   (3) Adjust the light according to the table below.

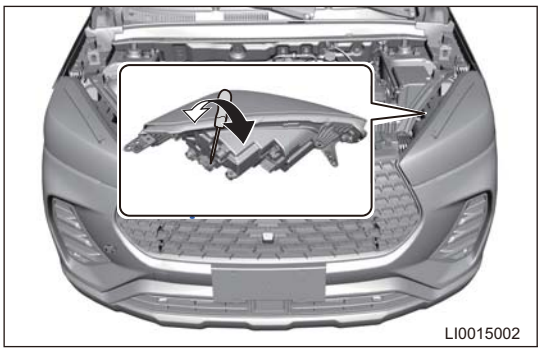
Occupant and Luggage Loading Condition		Knob Position
Occupant	Luggage load	
Driver	None	0
Driver + Front Passenger	None	1
Full Occupied	None	2
Full Occupied	Full-loaded Luggage	3
Driver	Full-loaded Luggage	2



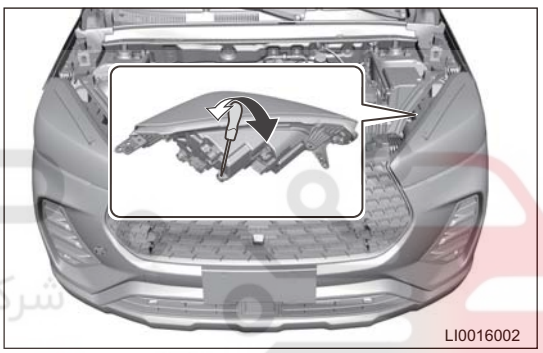
(h) Whether headlight leveling is correct or not will directly affects driving safety. Be sure to adjust the beam with special tool according to related specification.

2. Manual headlight leveling: The headlight leveling can be changed by adjusting the following areas manually as shown in the illustration. Adjustment method for left headlight.

(a) Low beam left/right adjustment
(1) When rotating inner hexagon clockwise: Beam moves upward;
(2) When rotating inner hexagon counterclockwise: Beam moves downward.


LI0015002

(b) Low beam up/down adjustment
(1) When rotating inner hexagon clockwise: Beam moves right;
(2) When rotating inner hexagon counterclockwise: Beam moves left.


LI0016002

(c) When adjusting light up and down for TIE headlight, low and high beams are adjusted synchronously and only the low beam is adjusted; When the light is adjusted left and right, only the low beam is adjusted, high beam is not adjusted.
(d) Headlight adjustment direction

Light Adjustment Direction	Rotation Direction for Screwdriver	Adjustment Direction	
		Left	Right
Left-and-right Direction	Clockwise	Right	Left
	Counterclockwise	Left	Right
Up-and-down Direction	Clockwise	Up	Up
	Counterclockwise	Down	Down

Rear Combination Light Assembly (Fixed Part)

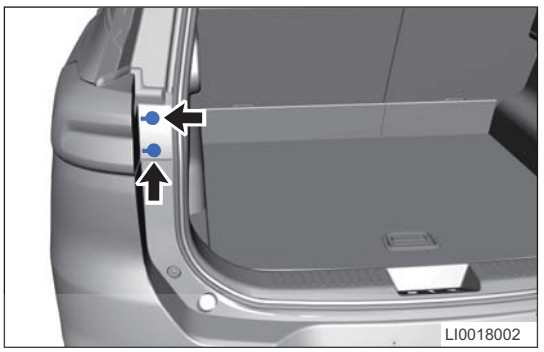
Removal

Hint:

Use same procedures for rear right combination light assembly (fixed part) and rear left combination light assembly (fixed part).

Operation procedures listed below are for rear left combination light assembly (fixed part).

1. Turn off all electrical equipment and ENGINE START STOP switch.
2. Disconnect the negative battery cable.
3. Remove the rear combination light assembly (fixed part).
   (a) Using a screwdriver wrapped with protective tape, pry off rear left combination light plugs (arrow).



   (b) Remove 2 fixing screws from rear left combination light assembly, and disconnect rear left combination light connector.

   Tightening torque

   1.5 ± 0.5N·m

   (c) Remove the rear left combination light assembly (fixed part).

Installation

Caution

- When installing rear combination light assembly (fixed part), make sure rear combination light assembly is well fitted with luggage compartment and rear bumper. Adjust it as necessary.

1. Installation is in the reverse order of removal.

Rear Combination Light Assembly (Movable Part)

Removal

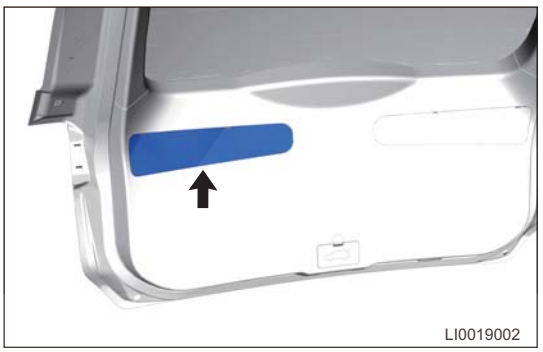
Hint:

Use same procedures for rear right combination light assembly (movable part) and rear left combination light assembly (movable part).

Operation procedures listed below are for rear left combination light assembly (movable part).

1. Turn off all electrical equipment and ENGINE START STOP switch.
2. Disconnect the negative battery cable.
3. Remove the rear combination light assembly (movable part).

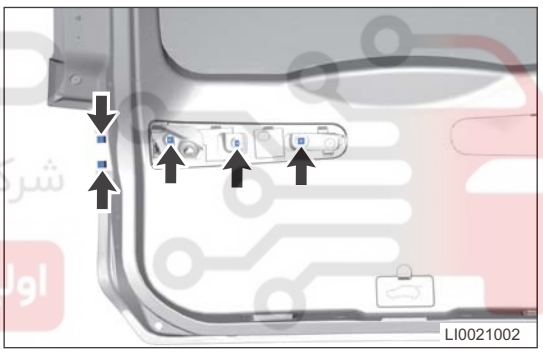
(a) Using a screwdriver wrapped with protective tape, pry off plug (arrow) from back door.



(b) Remove 5 fixing nuts (arrow) from rear left combination light assembly (movable part).

Tightening torque

3.5 ± 0.5 N·m



(c) Disconnect wire harness connector (1) from rear combination light assembly (movable part).

(d) Remove the rear left combination light assembly (movable part).

Installation

Caution

- When installing rear combination light assembly (movable part), make sure rear combination light assembly is well fitted with luggage compartment and rear bumper. Adjust it as necessary.

1. Installation is in the reverse order of removal.

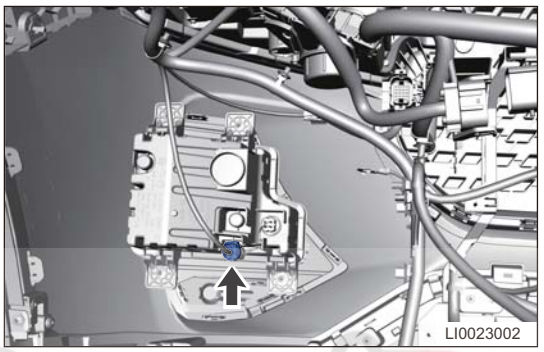
Daytime Running Light Assembly

Removal

Hint:

Use same procedures for right daytime running light assembly and left daytime running light assembly. Removal procedures listed below are for left daytime running light assembly.

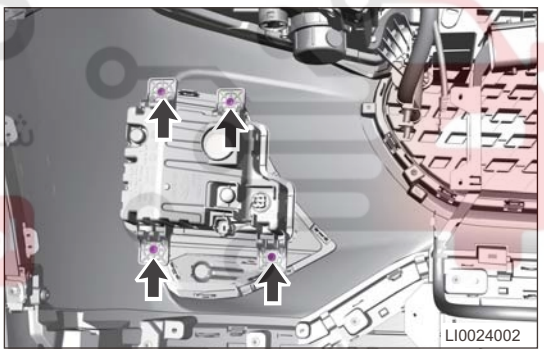
1. Turn off all electrical equipment and ENGINE START STOP switch.
2. Disconnect the negative battery cable.
3. Raise vehicle on a lift.
4. Remove the engine lower protector assembly .
5. Remove the left daytime running light assembly.
   (a) Disconnect the left daytime running light connector (arrow).



   (b) Remove 4 fixing screws (arrow) from left daytime running light assembly.

   Tightening torque

   1.5 ± 0.5 N·m



   (c) Remove the left daytime running light assembly.

Installation

1. Installation is in the reverse order of removal.

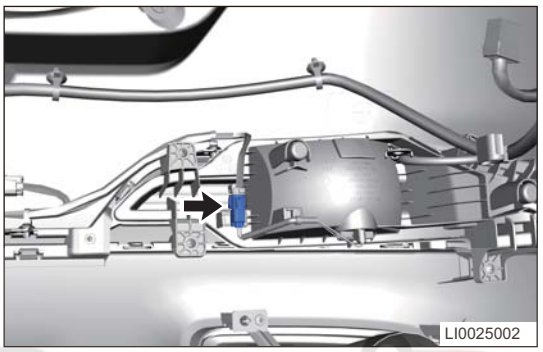
Rear Fog Light Assembly

Removal

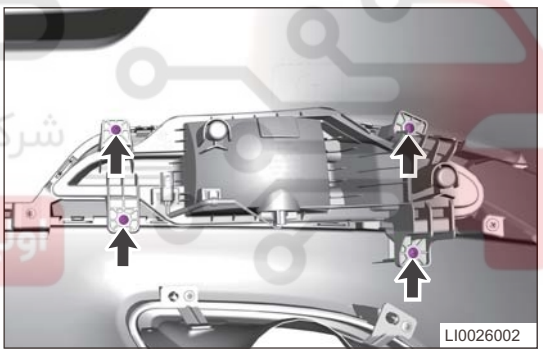
Hint:

Use same removal procedures for rear left fog light assembly and rear right fog light assembly.
Removal procedures listed below are for rear left fog light assembly.

1. Turn off all electrical equipment and ENGINE START STOP switch.
2. Disconnect the negative battery cable.
3. Raise vehicle on a lift.
4. Remove the rear bumper assembly (See page 61-26).
5. Remove the rear left fog light assembly.
   (a) Disconnect the left rear fog light connector (arrow).



   (b) Remove 4 fixing screws (arrow) from rear left fog light assembly.
   Tightening torque
   1.5 ± 0.5 N·m



   (c) Remove the rear left fog light assembly.

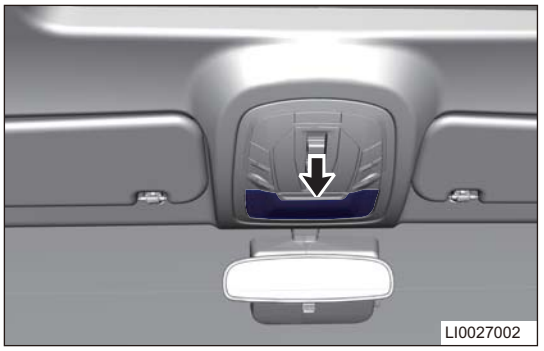
Installation

1. Installation is in the reverse order of removal.

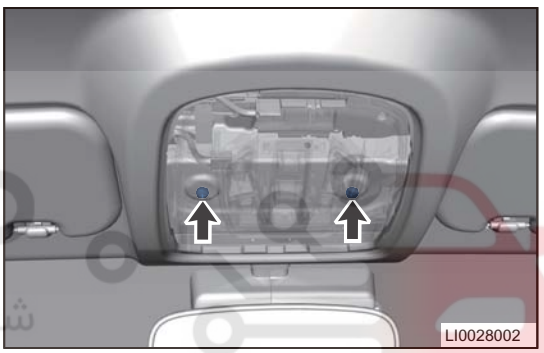
Front Dome Light Assembly

Removal

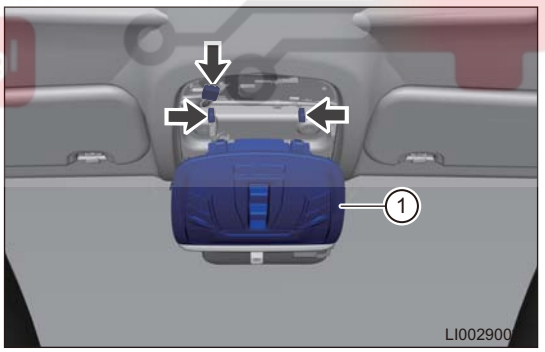
1. Turn off all electrical equipment and ENGINE START STOP switch.
2. Disconnect the negative battery cable.
3. Remove the front dome light assembly.
   (a) Open the glasses box (arrow) on front dome light as shown in illustration.



   (b) Remove 2 fixing screws (arrow) from front dome light assembly.
   Tightening torque
   2.5 ± 0.5 N·m



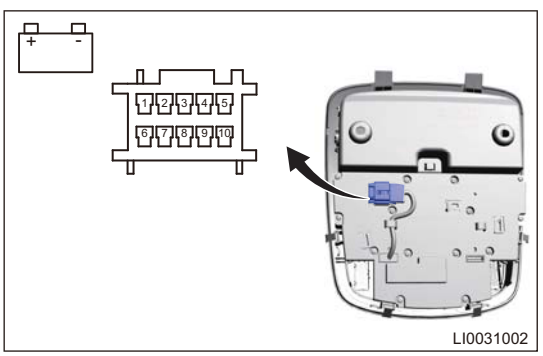
   (c) Disconnect each wire harness connector (arrow) and remove interior dome light assembly (1).



Inspection

1. Check the front dome light assembly.
   (a) Measure front dome light assembly as shown in table.

Multimeter Connection	Condition	Specified Condition
Battery positive (+) - Terminal 4 Battery negative (-) - Terminal (10)	Dome light switch in DOOR position	Dome light comes on
Battery positive (+) - Terminal 4 Battery negative (-) - Terminal (5)	Dome light switch in ON position	Dome light comes on



If result is not as specified, replace front dome light assembly.

Installation

1. Installation is in the reverse order of removal.

Second Row Dome Light

Removal

Hint

Use same procedures for second row left dome light and second row right dome light. Operation procedures listed below are for second row left dome light.

1. Turn off all electrical equipment and ENGINE START STOP switch.
2. Disconnect the negative battery cable.
3. Remove the second row dome light.
   (a) Push light towards switch direction with force, remove second dome light with an interior crow plate after detaching one side clips.
   (b) Disconnect second row dome light connector and remove second row dome light.

Installation

1. Installation is in the reverse order of removal.

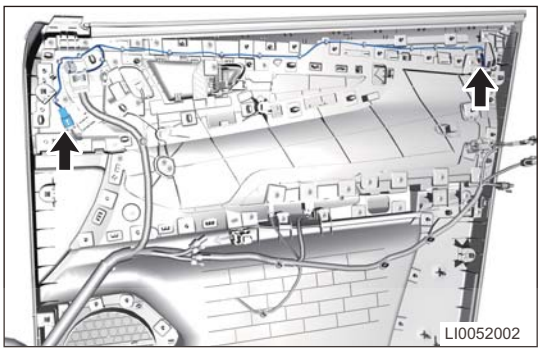
Front Door Ambient Light

Removal

Hint

Use same procedures for front left door ambient light and front right door ambient light. Operation procedures listed below are for front left door ambient light.

1. Turn off all electrical equipment and ENGINE START STOP switch.
2. Disconnect the negative battery cable.
3. Remove the front door protector assembly.
4. Remove the front left door ambient light.
   (a) Disconnect 2 front left door ambient light connectors (arrow) from front left door, and detach clip.



   (b) Remove the front left door ambient light.

Installation

1. Installation is in the reverse order of removal.

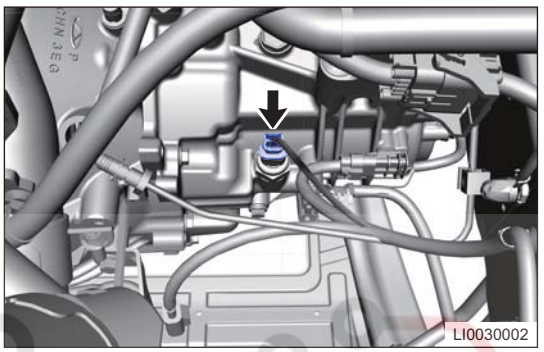
Back-up Light Switch Assembly

Removal

Caution

- Be sure to wear necessary safety equipment to prevent accidents, when removing back-up light switch.
- Check if safety lock of lift is locked when repairing or inspecting the lifted vehicle.

1. Turn off all electrical equipment and ENGINE START STOP switch.
2. Disconnect the negative battery cable.
3. Raise the vehicle with a lift.
4. Remove the engine lower protector.
5. Remove the back-up light switch assembly.
   (a) Disconnect wire harness connector (arrow) from back-up light switch assembly.



   (b) Remove the back-up light switch assembly.

Tightening torque

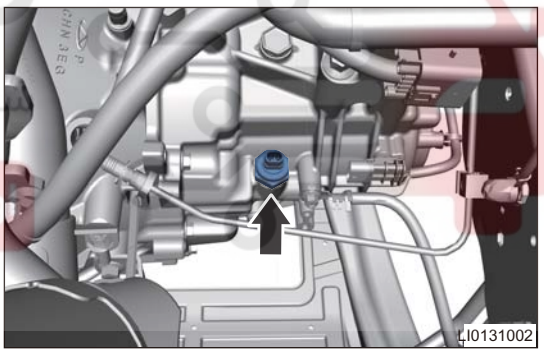
44 ± 8.8 N·m

Hint:

Transmission oil may flow out when removing back-up light switch assembly. Recycle it with a appropriate tool.

Warning:

- Drained transmission oil should be collected with a recovering container.

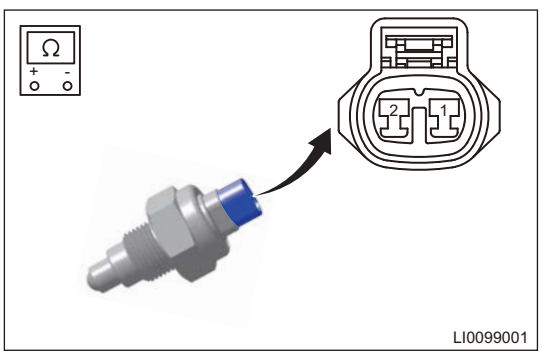


Inspection

1. Check the back-up light switch assembly.
   (a) Using the ohm band of digital multimeter, check for continuity between terminals of back-up light switch assembly as shown in the table.

Multimeter Connection	Condition	Specified Condition
Terminal 1 - Terminal 2	Switch pressed	⩽ 1 Ω
Terminal 1 - Terminal 2	Switch released	∞

If result is not as specified, replace back-up light switch assembly.



Installation

1. Before installing back-up light switch assembly, apply thread adhesive on thread to remove transmission oil on contact part between transmission and back-up light switch assembly; then firmly install back-up light switch assembly.

License Plate Light Assembly

Removal

Hint:

Use same procedures for right license plate light and left license plate light. Operation procedures listed below are for left license plate light.

1. Open the back door.
2. Turn off all electrical equipment and ENGINE START STOP switch.
3. Disconnect the negative battery cable.
4. Remove the license plate light assembly.
   (a) Using a screwdriver wrapped with protective tape to pry off left license plate light, disconnect left license plate light connector to remove left license plate light assembly.

   (b) Remove the left license plate light assembly.

Installation

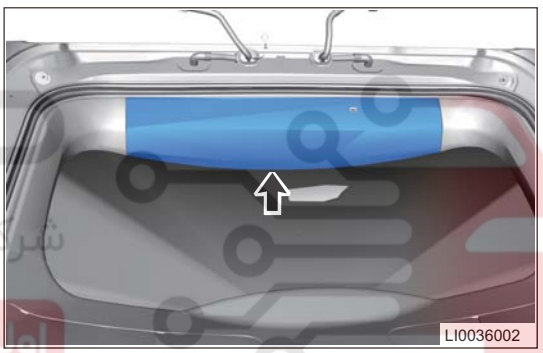
1. Installation is in the reverse order of removal.

High Mounted Stop Light Assembly

Removal

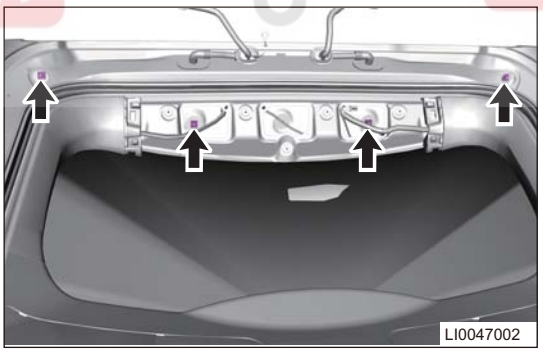
1. Open the back door.
2. Turn off all electrical equipment and ENGINE START STOP switch.
3. Disconnect the negative battery cable.
4. Remove the back door upper protector assembly.
5. Remove the high mounted stop light assembly.
   (a) Remove 2 rubber plugs (arrow) from back door.

   (b) Remove the back door upper protector assembly (arrow).



   (c) Remove 4 spoiler fixing nuts (arrow) from back door.

   Tightening torque
   5 ± 1 N·m

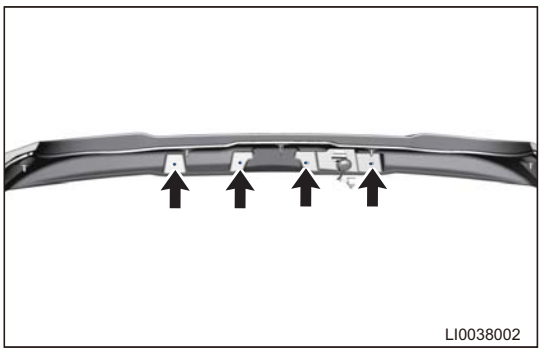


   (d) Disconnect the high mounted stop light connector (arrow).

   (e) Remove rear spoiler plate from back door.

(f) Remove 4 fixing screws (arrow) of high mounted stop light from rear spoiler plate, and remove high mounted stop light.

Tightening torque
2 ± 0.5 N·m



Installation

1. Installation is in the reverse order of removal.

Side Turn Signal Light

Removal

Warning/Caution/Hint

- Use same procedures for right turn signal light and left turn signal light.
- Side turn signal light is integrated on outside rear view mirror. For removal and installation of left turn signal light, refer to "Rear View Mirror" section.

Rear Combination Light (Fixed Part) Brake Light Bulb

Removal

Warning/Caution/Hint

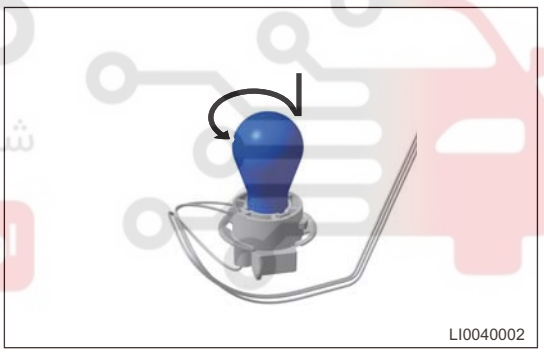
- Use same procedures for rear right combination light (fixed part) brake light/position light bulb and rear left combination light (fixed part) brake light/position light bulb.
- Operation procedure listed below are for rear left combination light (fixed part) brake light/position light.

1. Turn off all electrical equipment and ENGINE START STOP switch.
2. Disconnect the negative battery cable.
3. Remove the rear combination light (fixed part) brake light.
   (a) Remove the rear left combination light fixed part.
   (b) Turn brake light counterclockwise to remove brake light socket.


LI0039002

   (c) Lightly press and rotate bulb to remove bulb.

   Caution:
   - Do not touch glass part of bulb directly with your hands. Hold only plastic or metal part of bulb. If bulb is scratched or dropped, it may crack or break.


LI0040002

Installation

1. Installation is in the reverse order of removal, make sure bulb is in place.
   Caution:
   - Check that brake light/position light operates normally after installation.

Rear Combination Light (Fixed Part) Turn Signal Light Bulb

Removal

Warning/Caution/Hint

- Use same procedures for rear right combination light (fixed part) turn signal light bulb and rear left combination light (fixed part) turn signal light bulb.
- Operation procedures listed below are for rear left combination light (fixed part) turn signal light.

1. Turn off all electrical equipment and ENGINE START STOP switch.
2. Disconnect the negative battery cable.
3. Remove the rear combination light (fixed part) turn signal light bulb.
   (a) Remove the rear left combination light fixed part.
   (b) Turn rear turn signal light socket counterclockwise to remove socket.


LI0041002

   (c) Lightly press and rotate bulb to remove bulb.

   Caution:
   - Do not touch glass part of bulb directly with your hands. Hold only plastic or metal part of bulb. If bulb is scratched or dropped, it may crack or break.


LI0042002

44

Installation

1. Installation is in the reverse order of removal, make sure bulb is in place.
   Caution:
   - Check that rear left combination light and turn signal light operate normally after installation.

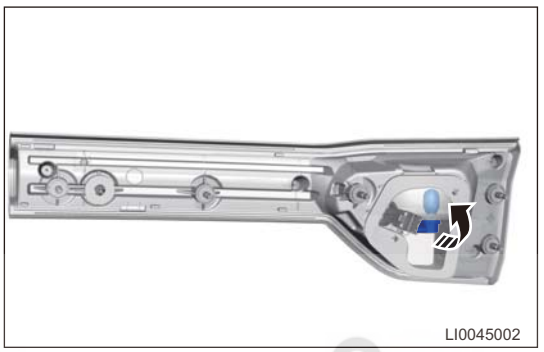
Rear Back-up Light Bulb (Movable Part)

Removal

Warning/Caution/Hint

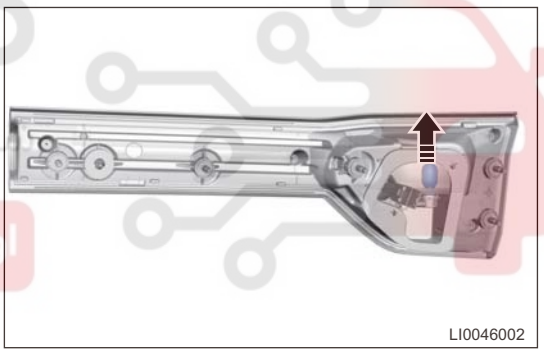
- Use same procedures for rear left back-up light bulb (movable part) and rear right back-up light bulb (movable part).
- Operation procedures listed below are for rear left back-up light bulb (movable part).

1. Turn off all electrical equipment and ENGINE START STOP switch.
2. Disconnect the negative battery cable.
3. Remove the back-up light bulb (movable part)
   (a) Remove the rear left combination light movable part.
   (b) Turn back-up light socket counterclockwise to remove back-up light.


LI0045002

   (c) Lightly pull out bulb in direction of arrow.

   Caution:
   - Do not touch glass part of bulb directly with your hands. Hold only plastic or metal part of bulb. If bulb is scratched or dropped, it may crack or break.


LI0046002

Installation

1. Installation is in the reverse order of removal, make sure bulb is in place.
   Caution:
   - Check that rear left back-up light bulb (movable part) operates normally after installation.

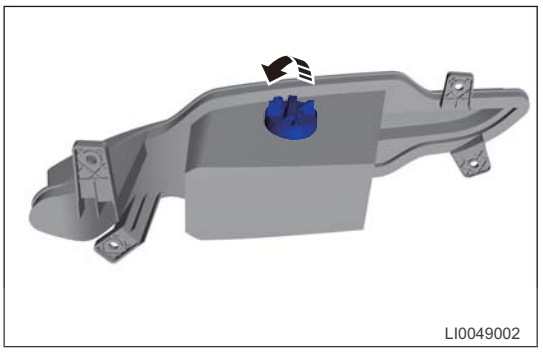
Rear Fog Light Bulb

Removal

Warning/Caution/Hint

- Use same procedures for rear right fog light bulb and rear left fog light bulb.
- Operation procedures listed below are for rear left fog light bulb.

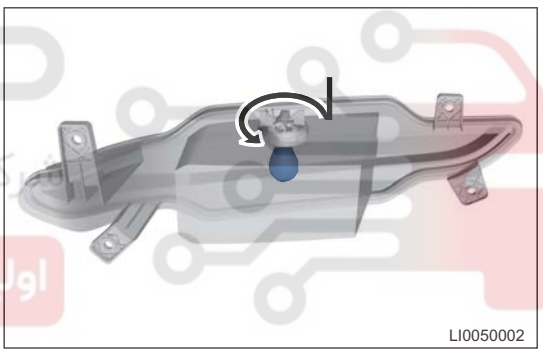
1. Turn off all electrical equipment and ENGINE START STOP switch.
2. Disconnect the negative battery cable.
3. Remove the rear fog light bulb.
   (a) Remove the rear fog light assembly.
   (b) Turn rear fog light socket counterclockwise to remove rear fog light socket.


LI0049002

   (c) Lightly press and rotate bulb to remove bulb.

Caution:

- Do not touch glass part of bulb directly with your hands. Hold only plastic or metal part of bulb. If bulb is scratched or dropped, it may crack or break.


LI0050002

Installation

1. Installation is in the reverse order of removal, make sure bulb is in place.

Caution:

- Check that rear left fog light bulb operates normally after installation.