LIGHTING SYSTEM

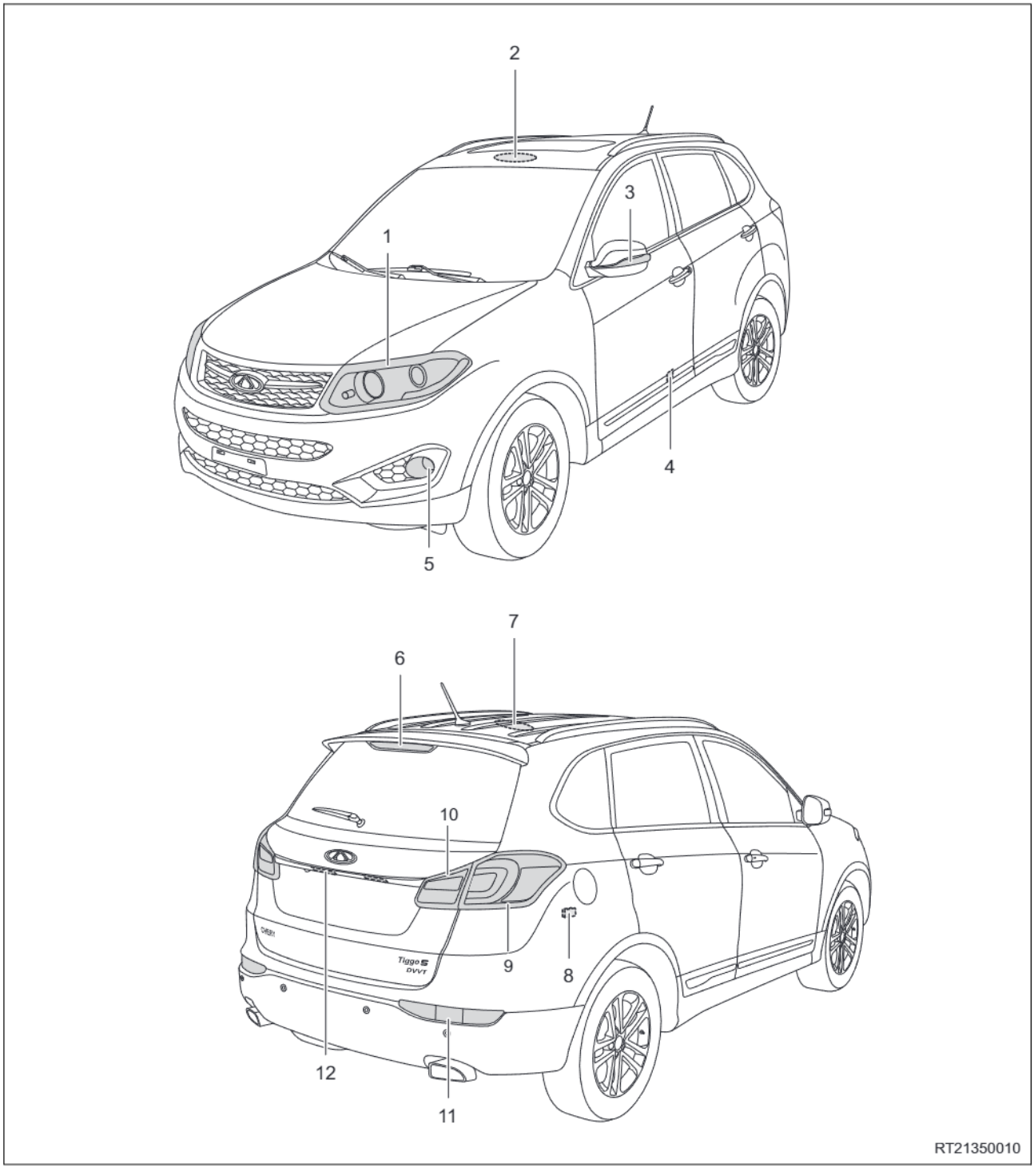
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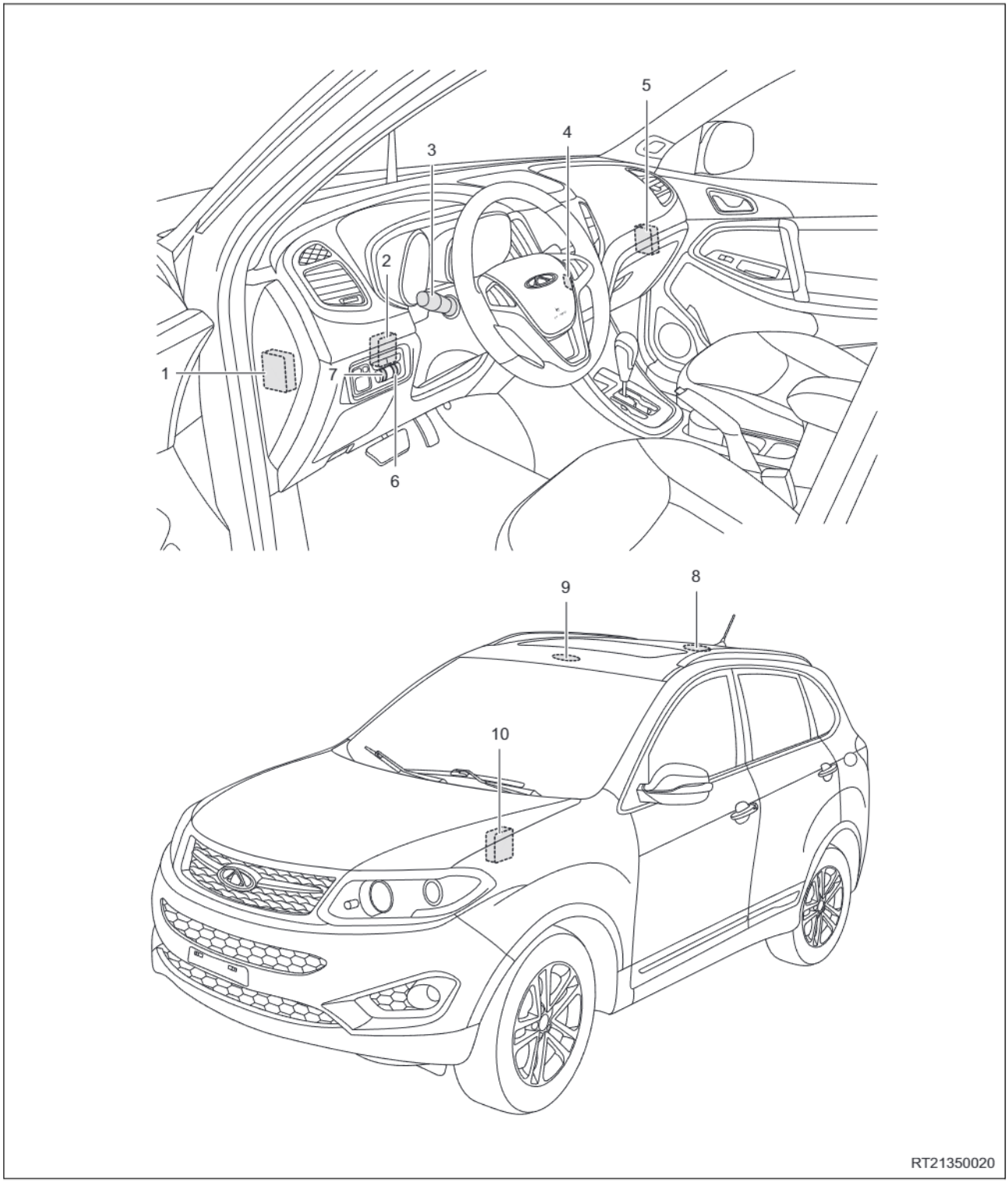
GENERAL INFORMATION

Light Position Diagram



1 - Headlight Assembly (Low Beam Light, High Beam Light, Position Light, Turn Signal Light)	2 - Interior Front Dome Light
3 - Side Turn Signal Light	4 - Front Door Courtesy Light
5 - Front Fog Light	6 - High Mounted Stop Light
7 - Interior Rear Dome Light	8 - Luggage Compartment Light
9 - Rear Combination Light (Fixed Part) (Turn Signal Light, Position Light, Brake Light)	10 - Rear Combination Light (Movable Part) (Back-up Light)
11 - Rear Fog Light	12 - License Plate Light

System Assembly Diagram



1 - Instrument Panel Fuse and Relay Box A	2 - Body Control Module (BCM)
3 - Headlight Adjustment Switch Assembly	4 - Hazard Warning Light Switch
5 - Instrument Panel Fuse and Relay Box B	6 - Headlight Leveling Switch
7 - Backlight Adjustment Switch	8 - Interior Rear Dome Light Switch
9 - Interior Front Dome Light Switch	10 - Engine Compartment Fuse and Relay Box

Description

Lighting system on this model consists of vehicle lighting device and light signal device, which are used for normal operation of vehicle to ensure safety when driving at night or in fog.

Lighting system consists of headlight assembly (including low beam light, high beam light, position light and turn signal light), front fog light, side turn signal light, front dome light, front door courtesy light, instrument panel backlight, rear combination light (including turn signal light, position light, brake light and back-up light), rear fog light (rear fog light and reflector), license plate light, high mounted stop light, rear dome light and luggage compartment light. The headlight assembly and rear combination light use semi-closed structure for easy inspection and repair.

Specifications

Bulb Specifications

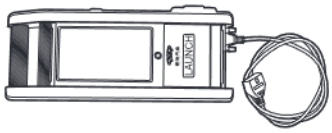
Bulb Name	Nominal Light Source (Model/Type)
Headlight (High Beam/Low Beam)	H1/H7
Front Position Light	LED
Front Turn Signal Light	PY21W
Brake Light	LED
Front Fog Light	H7
Rear Fog Light	P21W
License Plate Light	C5W
High Mounted Stop Light	LED
Rear Position Light	LED
Rear Turn Signal Light	PY21W
Back-up Light	W16W
Side Turn Signal Light	LED
Front Dome Light	C10W
Rear Dome Light	10W
Luggage Compartment Light	C5W
Front Door Courtesy Light	3W

Torque Specifications

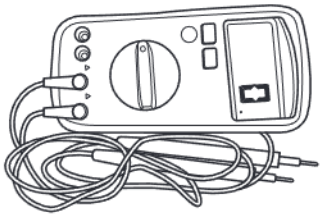
Description	Torque (N·m)
Headlight Assembly Fixing Bolt	3.5 ± 0.5
Front Fog Assembly Fixing Screw	1.5 ± 0.5
Rear Combination Light Assembly Fixing Nut	4.5 ± 1
Rear Combination Light Assembly Fixing Screw	1.5 ± 0.5
Front Dome Light Assembly Fixing Screw	1.5 ± 0.5
Rear Dome Light Assembly Fixing Screw	1.5 ± 0.5
Rear Fog Light & Reflector Assembly Fixing Screw	1.5 ± 0.5
High Mounted Stop Light Fixing Nut	3.5 ± 0.5
Back-up Light Switch	20 ± 2

Tools

Special Tool

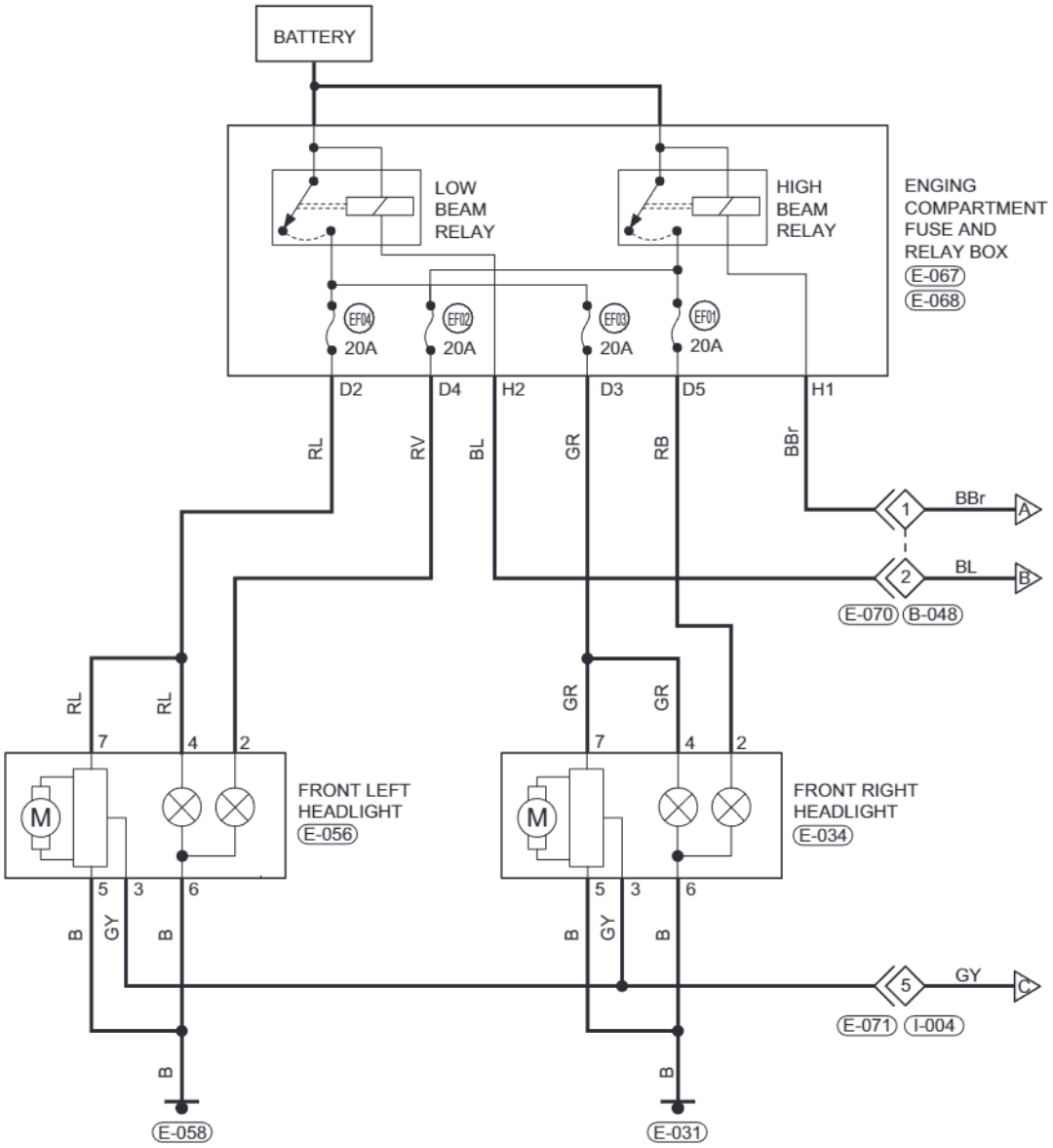
X-431 3G Diagnostic Tester	 RCH0000001

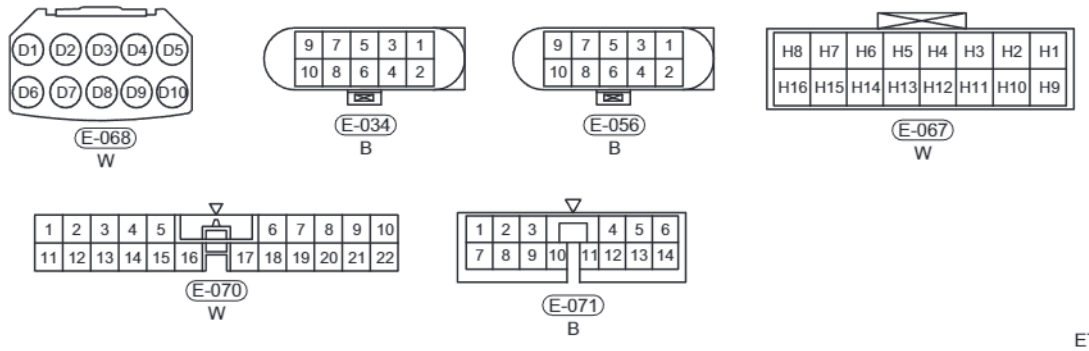
General Tool

Digital Multimeter	 RCH0000002

Circuit Diagram

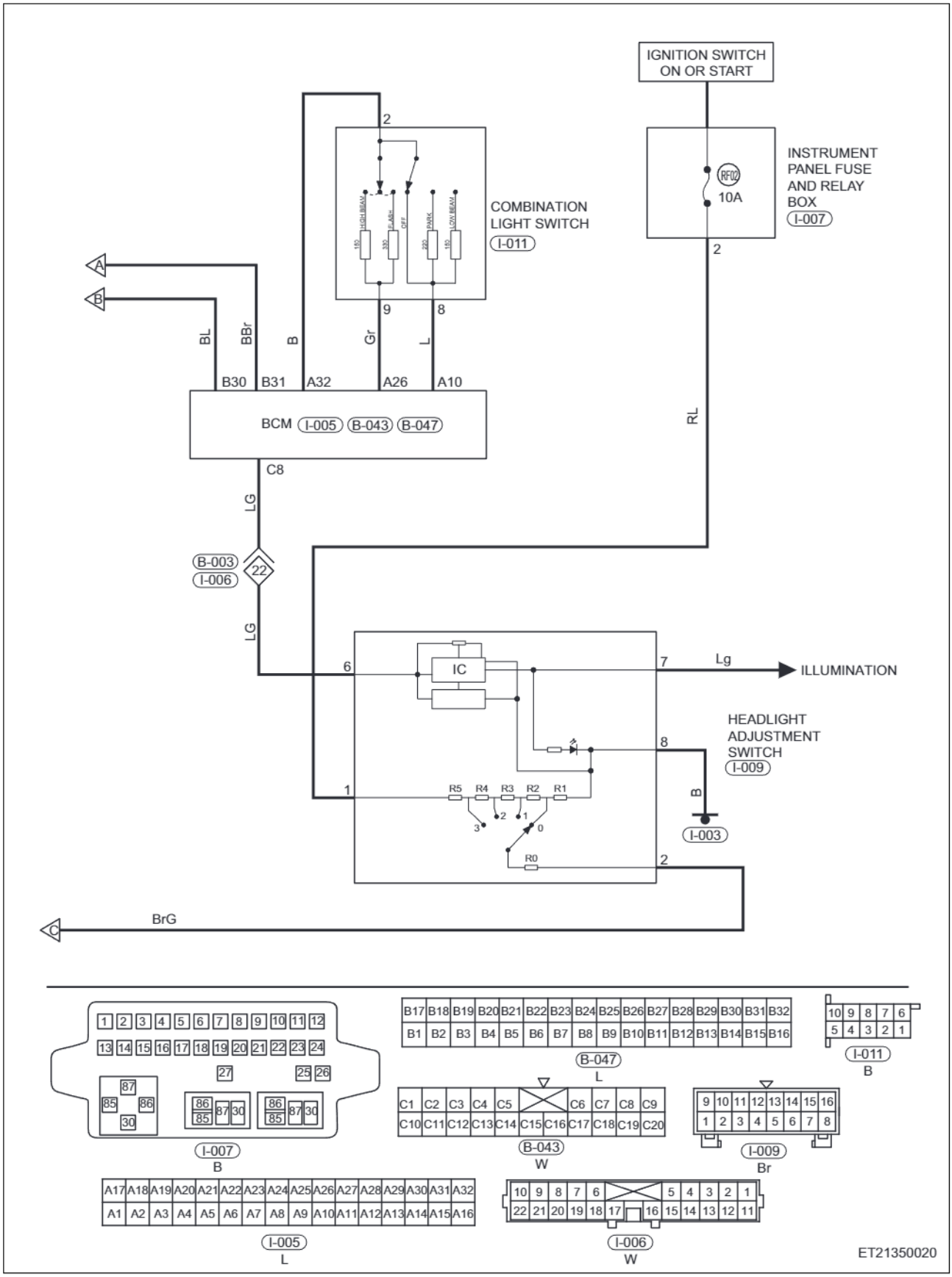
High/Low Beam Light (Page 1 of 2)



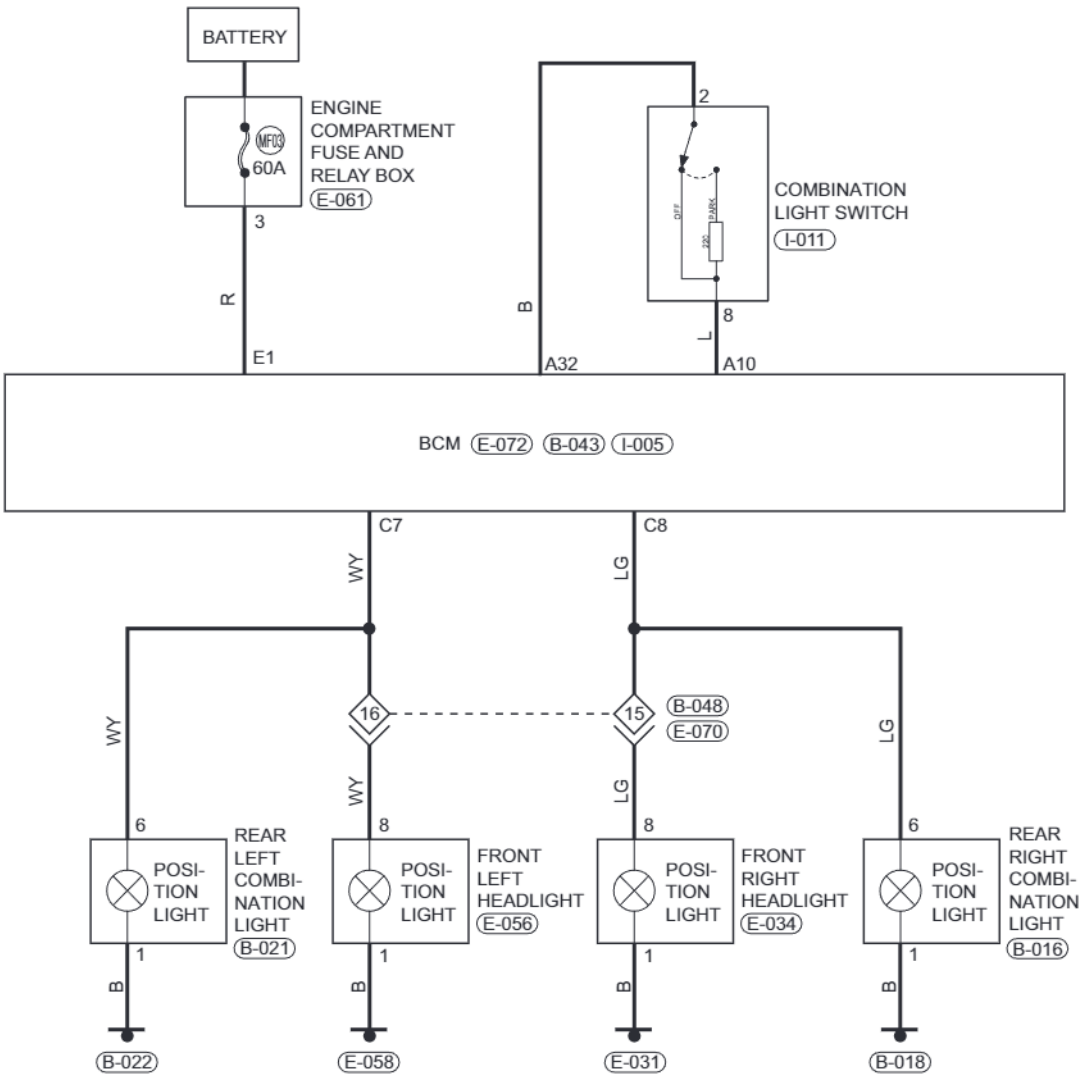


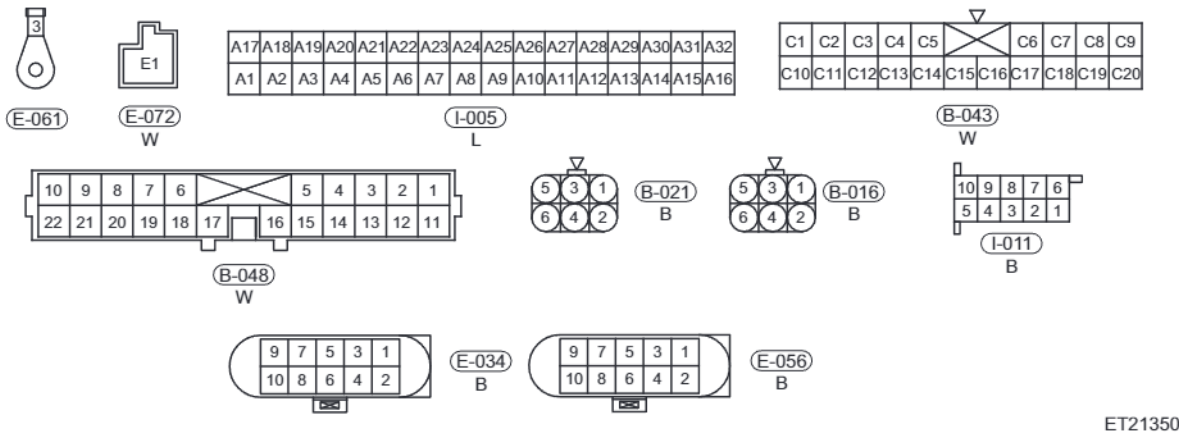
ET21350010

High/Low Beam Light (Page 2 of 2)



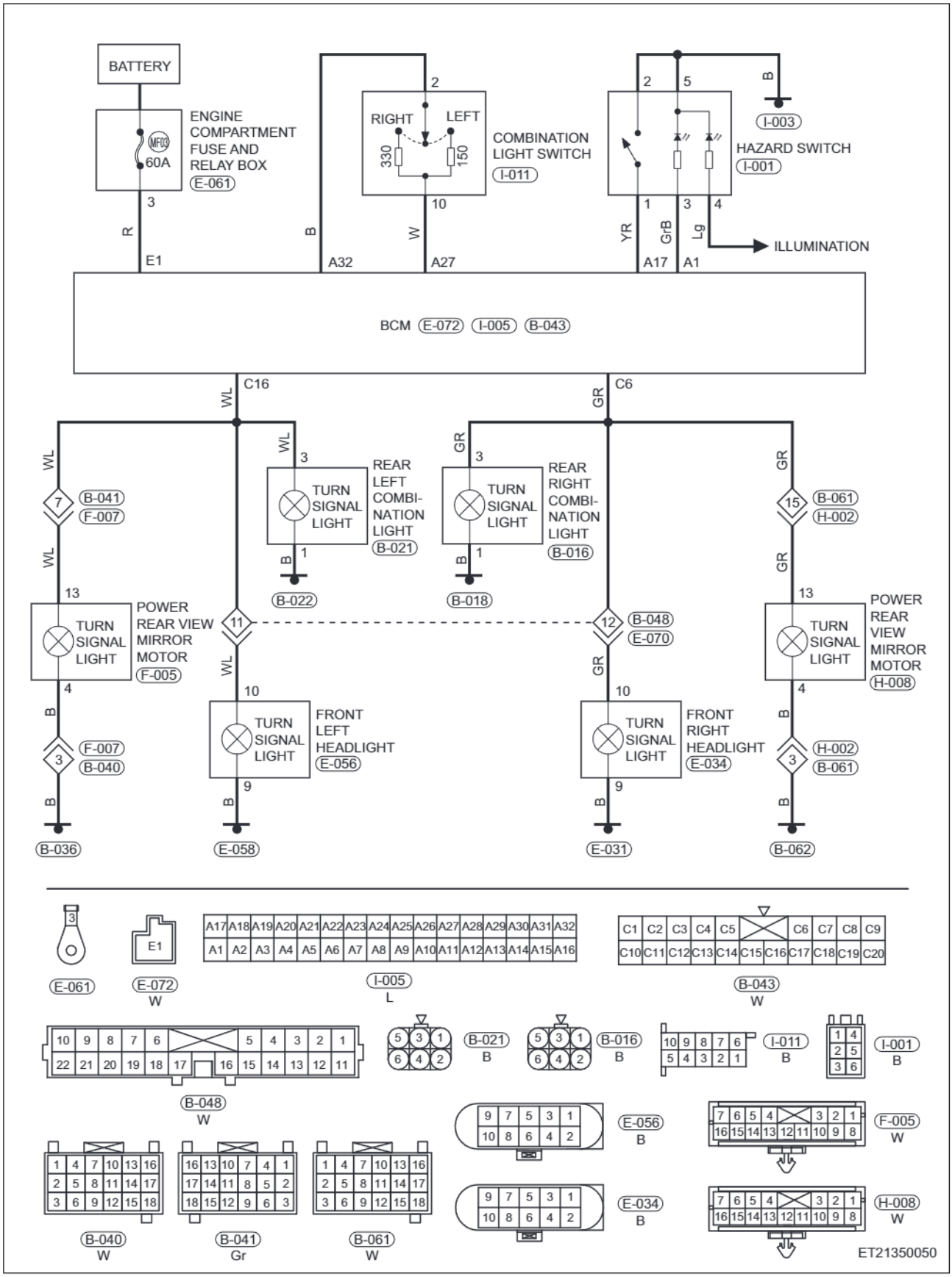
Position Light



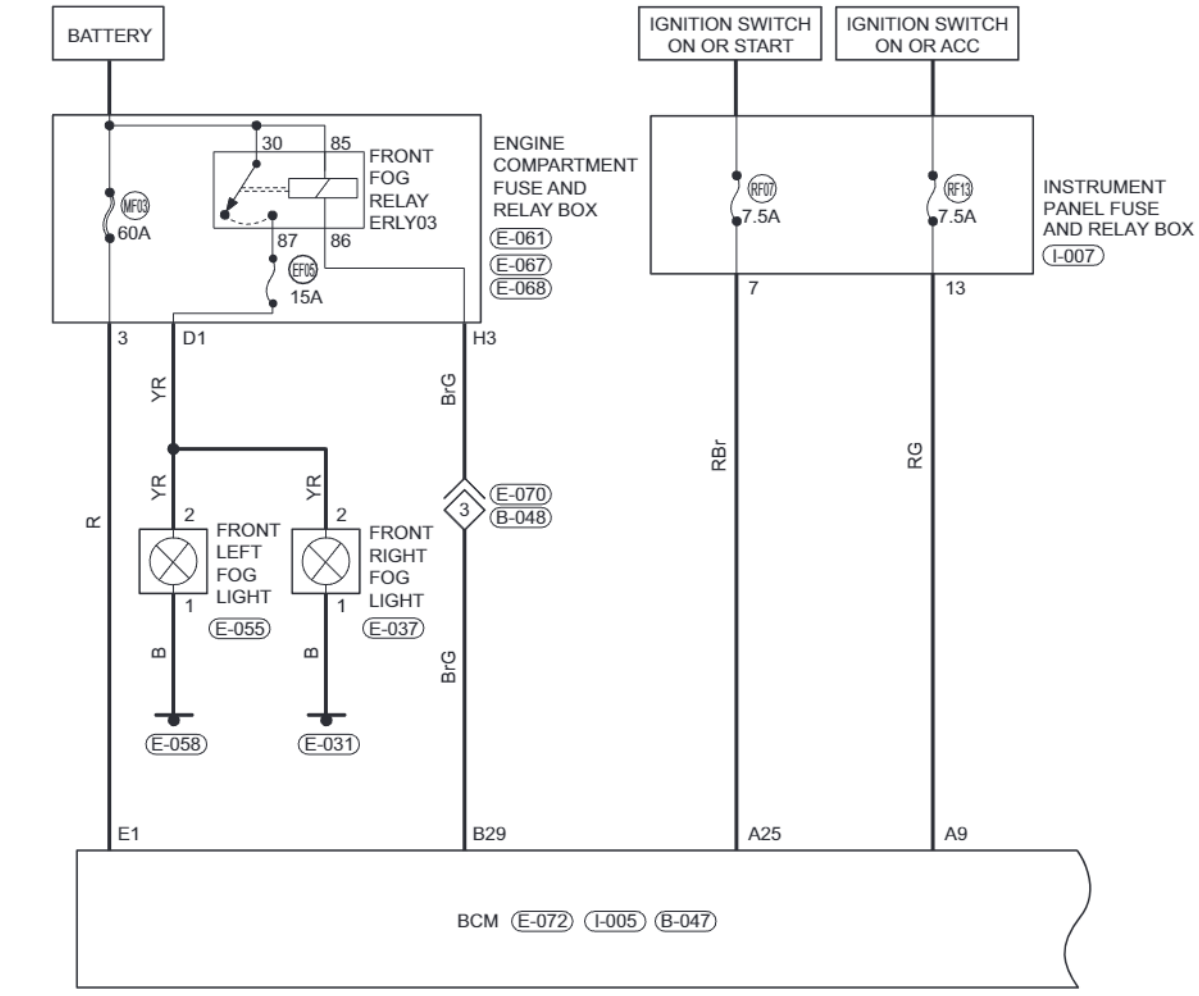


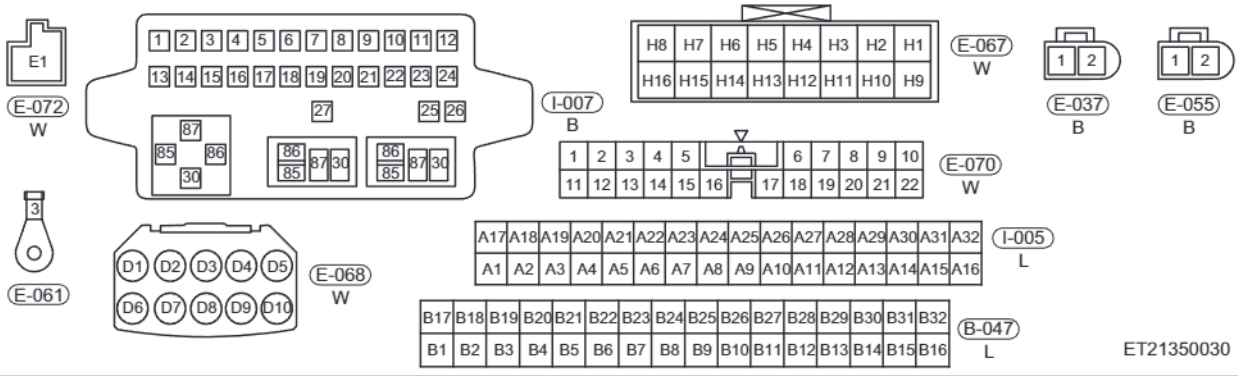
ET21350060

Turn Signal Light

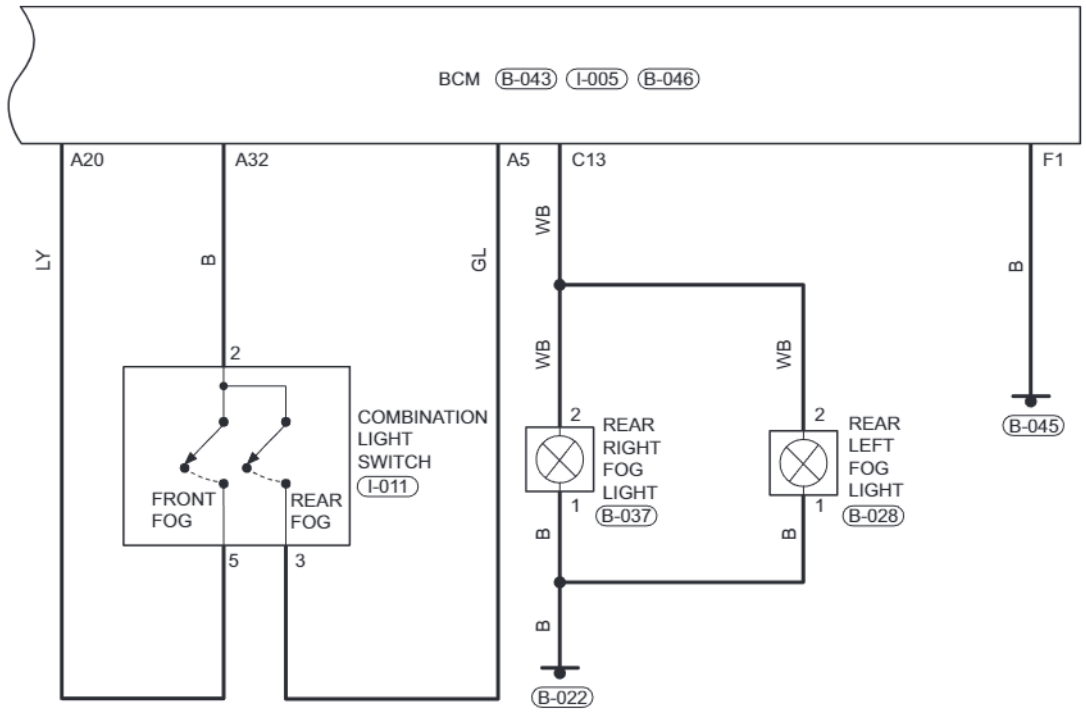


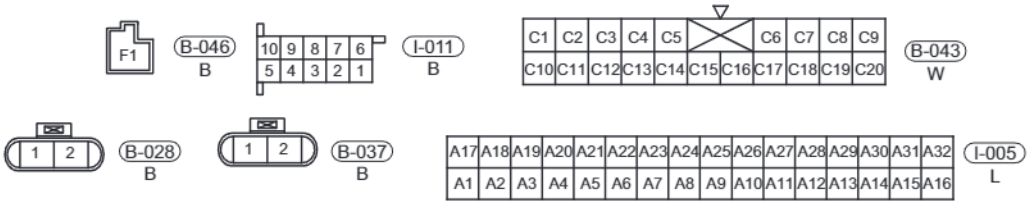
Fog Light (Page 1 of 2)





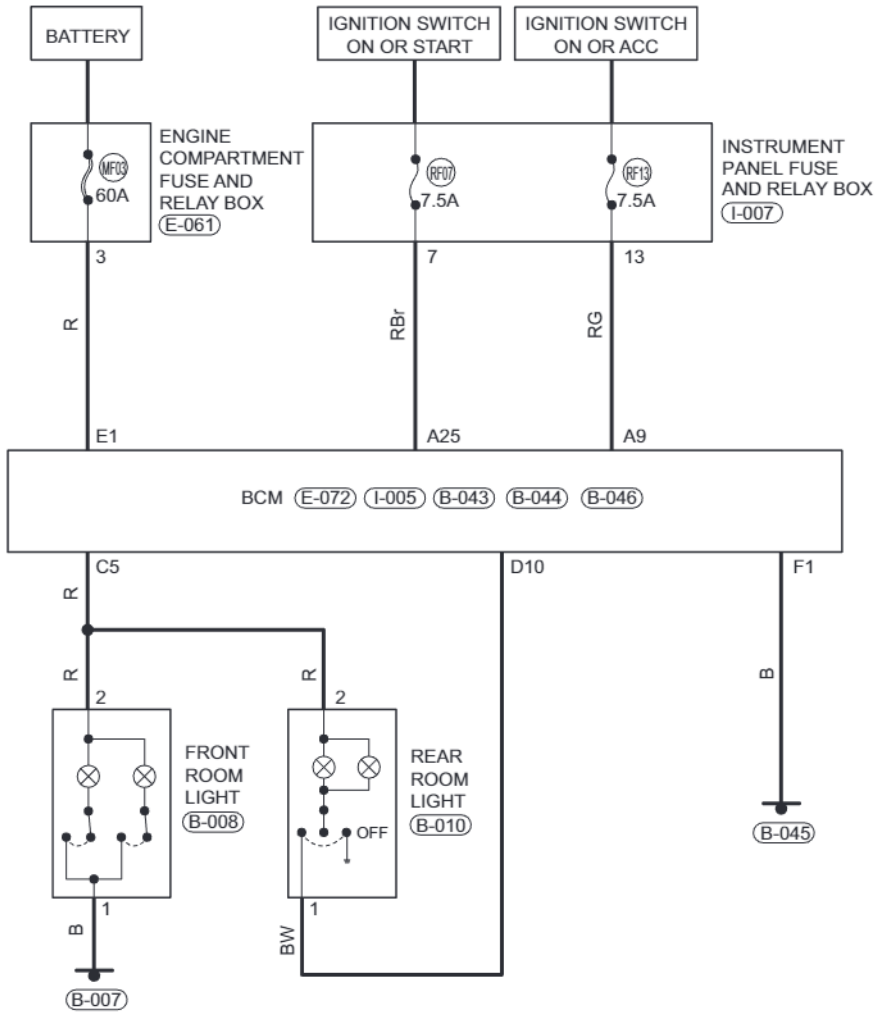
Fog Light (Page 2 of 2)

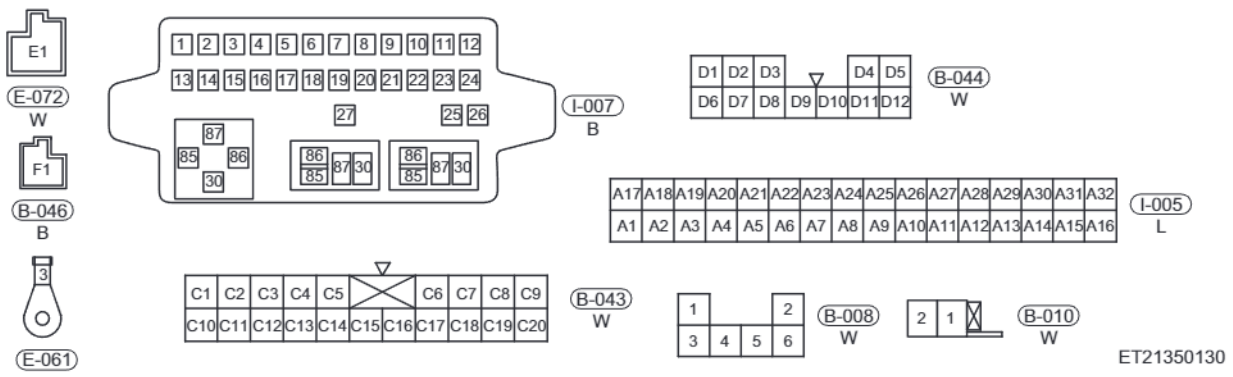




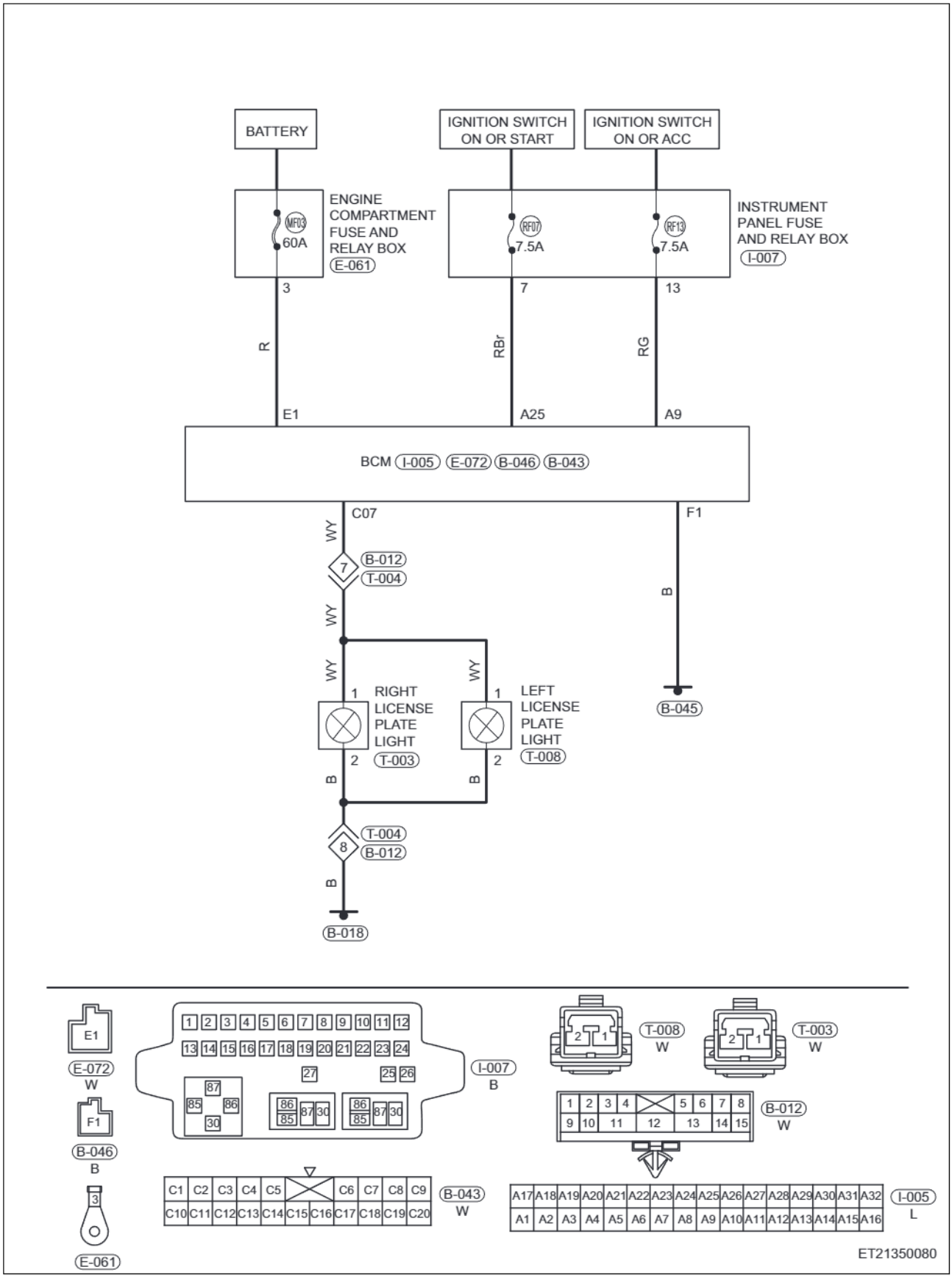
ET21350040

Dome Light

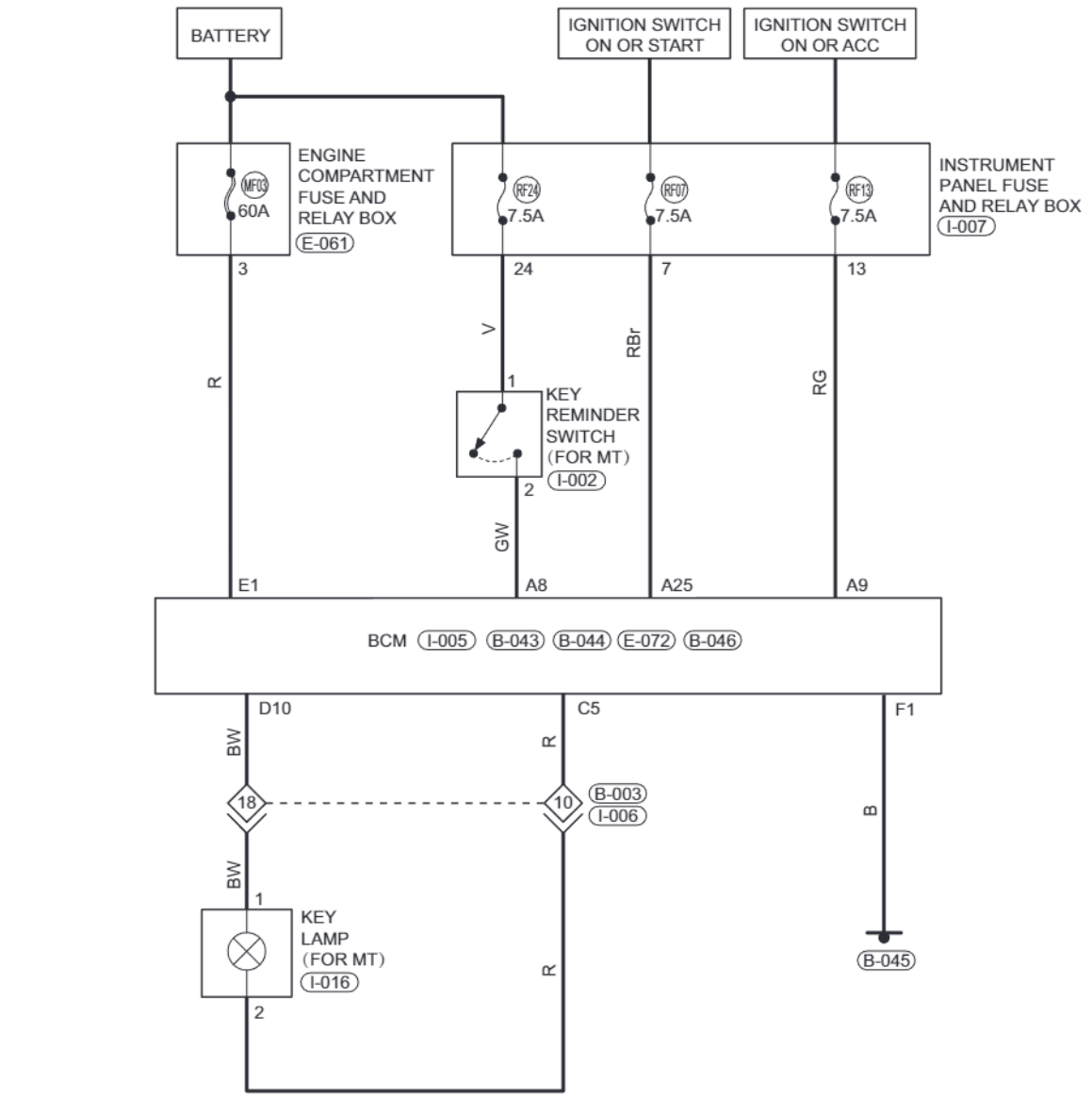

BATTERY
IGNITION SWITCH ON OR START
IGNITION SWITCH ON OR ACC
MF03
60A
ENGINE COMPARTMENT FUSE AND RELAY BOX
E-061
RF07
7.5A
RF13
7.5A
INSTRUMENT PANEL FUSE AND RELAY BOX
I-007
3
7
13
R
RBr
RG
E1
A25
A9
BCM E-072 I-005 B-043 B-044 B-046
C5
D10
F1
R
R
R
2
2
B
FRONT ROOM LIGHT
B-008
REAR ROOM LIGHT
B-010
OFF
B-045
1
1
B
BW
B-007

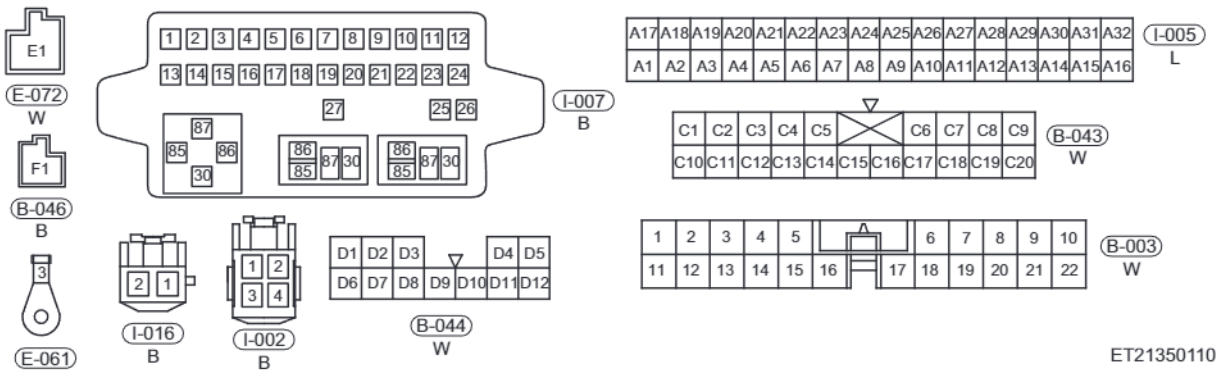

E1
E-072
W
F1
B-046
B
3
E-061
1 2 3 4 5 6 7 8 9 10 11 12
13 14 15 16 17 18 19 20 21 22 23 24
27
25 26
I-007
B
D1 D2 D3 D4 D5
D6 D7 D8 D9 D10 D11 D12
B-044
W
A17 A18 A19 A20 A21 A22 A23 A24 A25 A26 A27 A28 A29 A30 A31 A32
A1 A2 A3 A4 A5 A6 A7 A8 A9 A10 A11 A12 A13 A14 A15 A16
I-005
L
C1 C2 C3 C4 C5 C6 C7 C8 C9
C10 C11 C12 C13 C14 C15 C16 C17 C18 C19 C20
B-043
W
1 2 3 4 5 6
B-008
W
2 1
B-010
W
ET21350130

License Plate Light



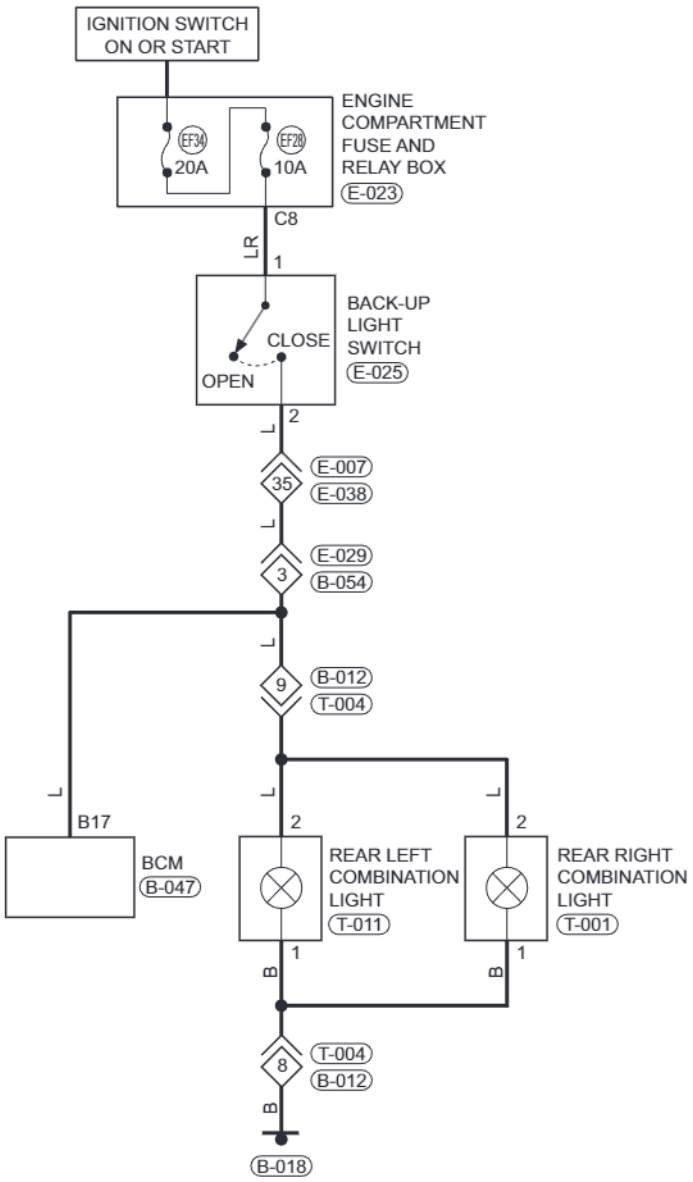
Ignition Switch Illumination

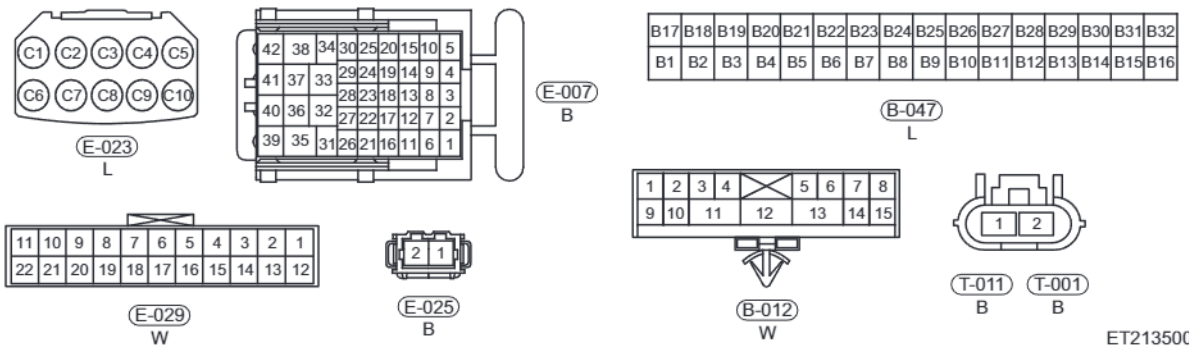




Back-up Light (Page 1 of 2)

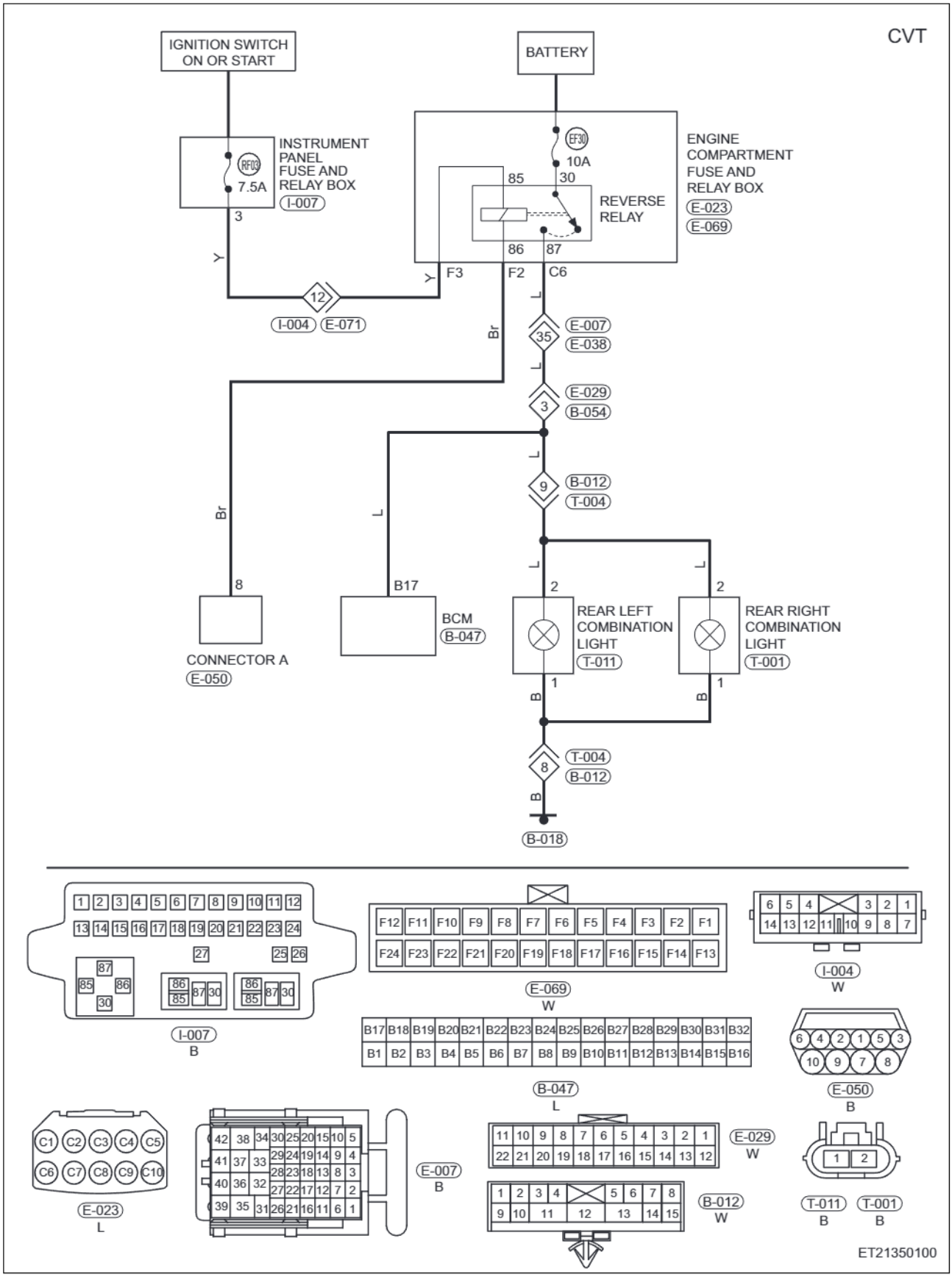
MT



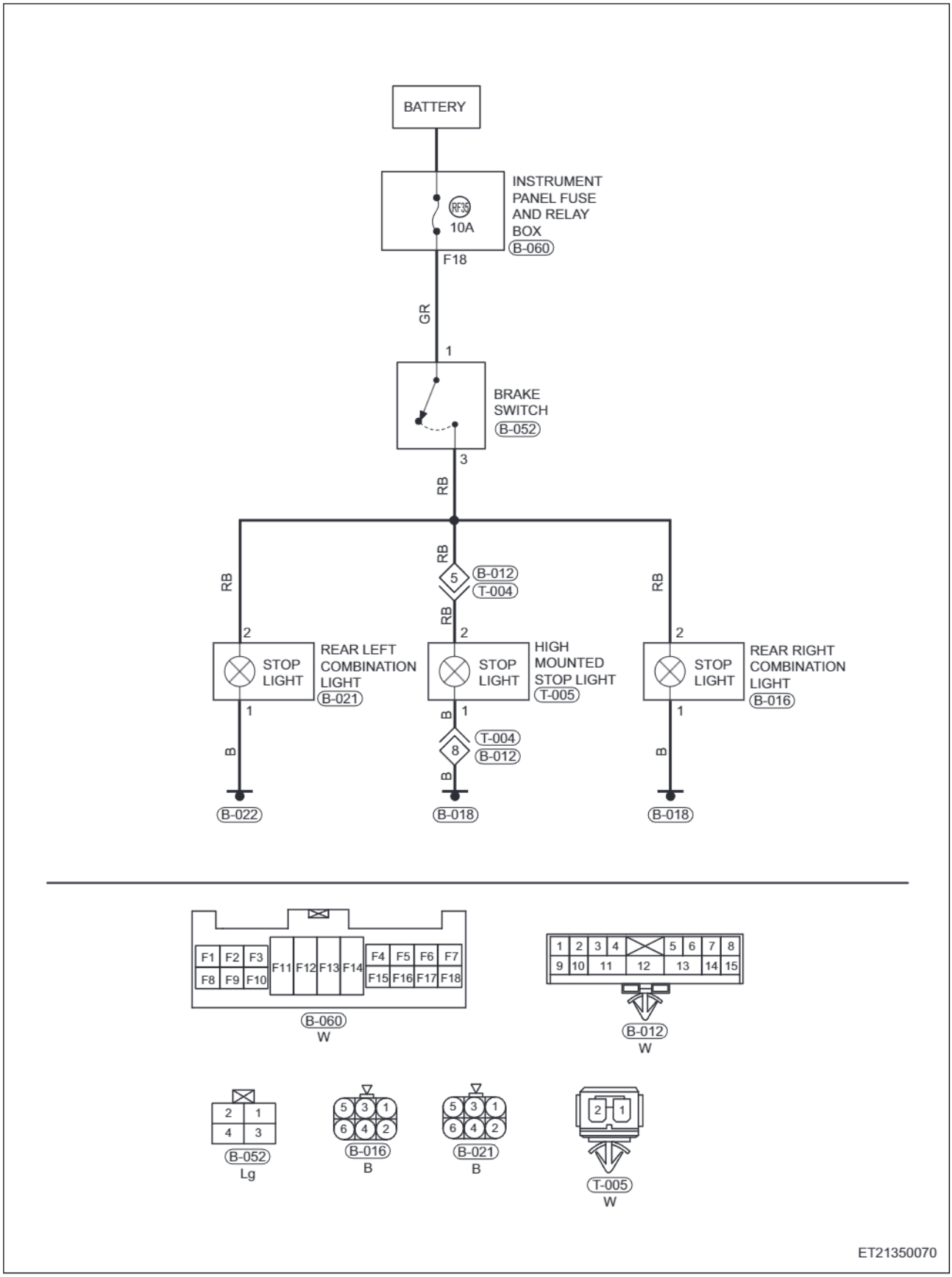


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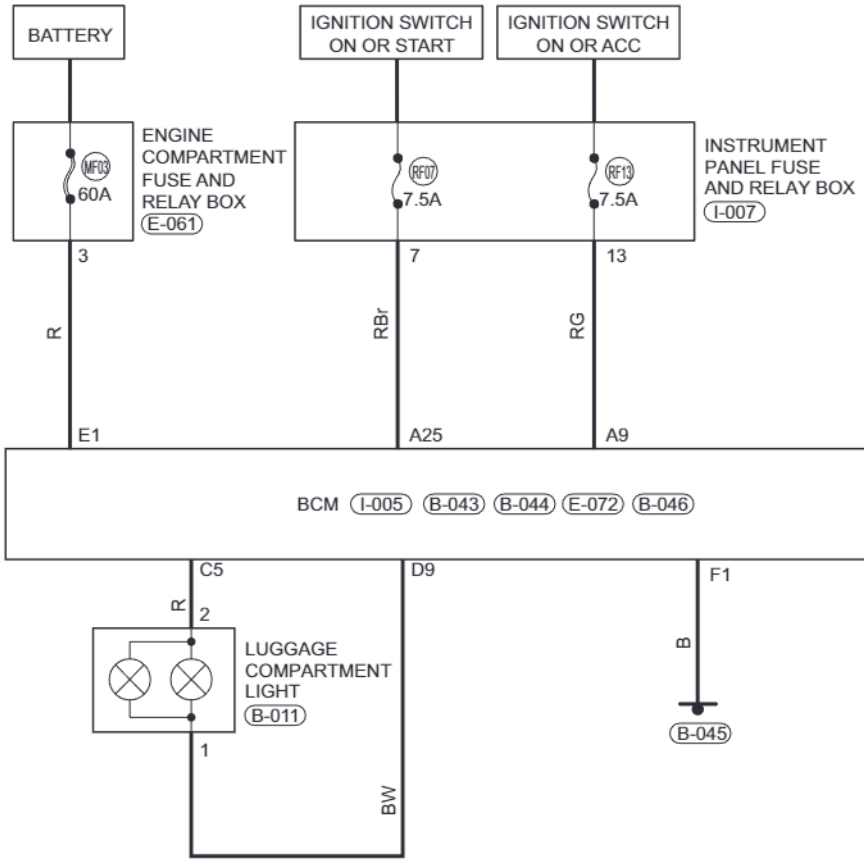
Back-up Light (Page 1 of 2)

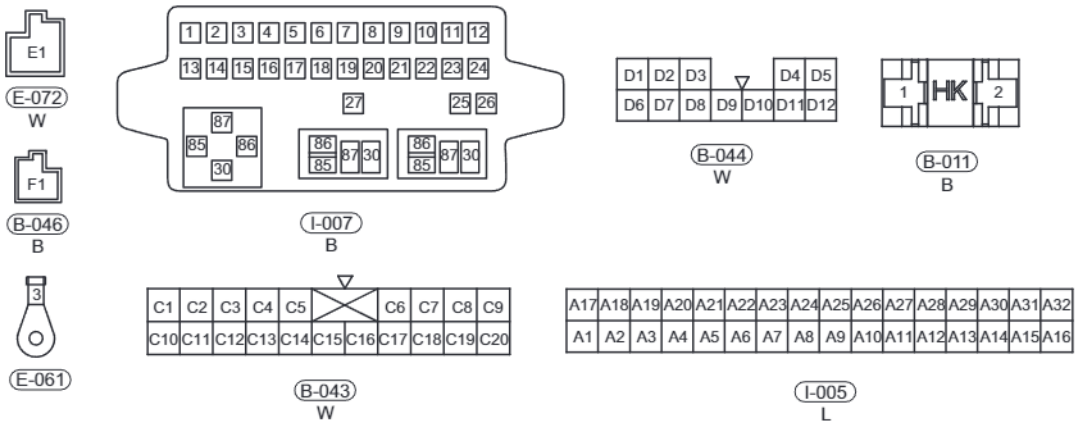


Brake Light


BATTERY
INSTRUMENT PANEL FUSE AND RELAY BOX
B-060
RF35
10A
F18
GR
1
BRAKE SWITCH
B-052
3
RB
RB
5
B-012
T-004
RB
RB
RB
2
STOP LIGHT
REAR LEFT COMBINATION LIGHT
B-021
2
STOP LIGHT
HIGH MOUNTED STOP LIGHT
T-005
2
STOP LIGHT
REAR RIGHT COMBINATION LIGHT
B-016
1
B
B-022
1
B
T-004
B-012
8
B
B-018
1
B
B-018
F1 F2 F3 F8 F9 F10 F11 F12 F13 F14 F4 F5 F6 F7 F15 F16 F17 F18
B-060
W
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
B-012
W
2 1 4 3
B-052
Lg
5 3 1 6 4 2
B-016
B
5 3 1 6 4 2
B-021
B
2 1
T-005
W
ET21350070

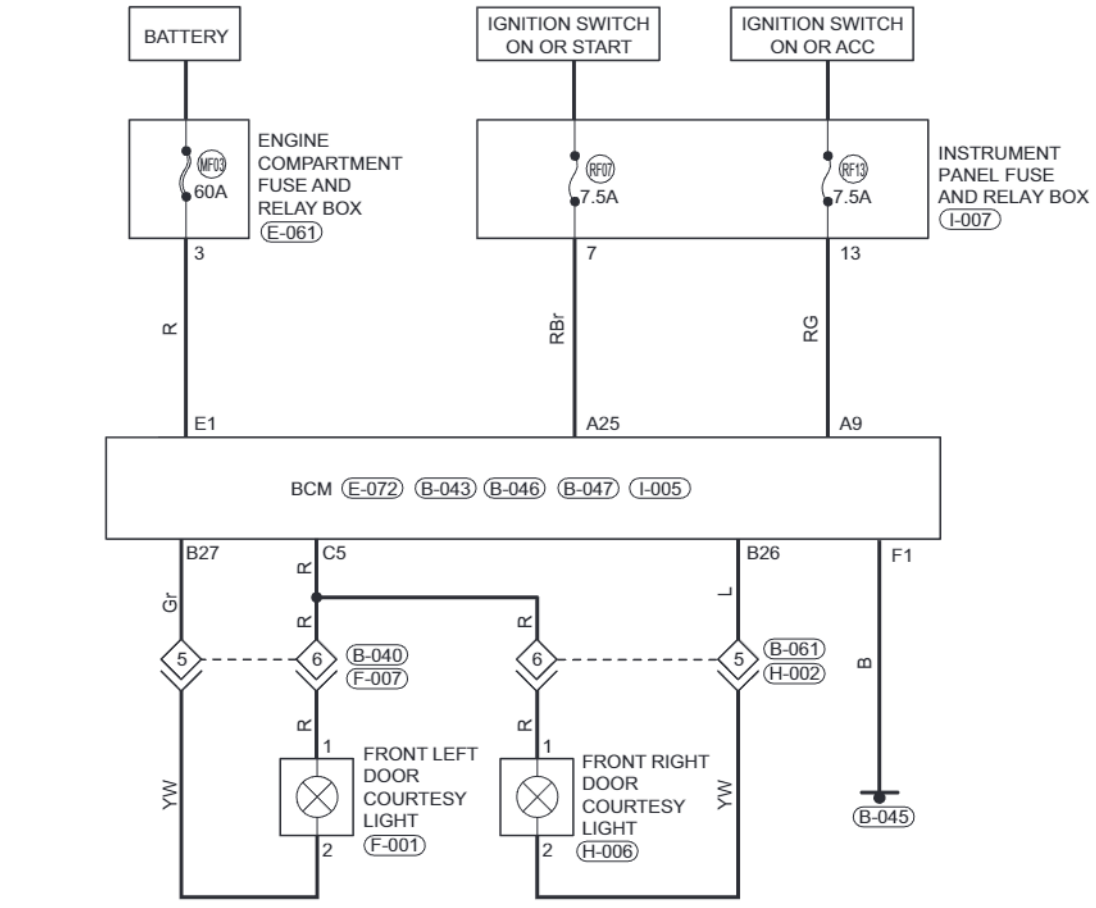
Luggage Compartment Light

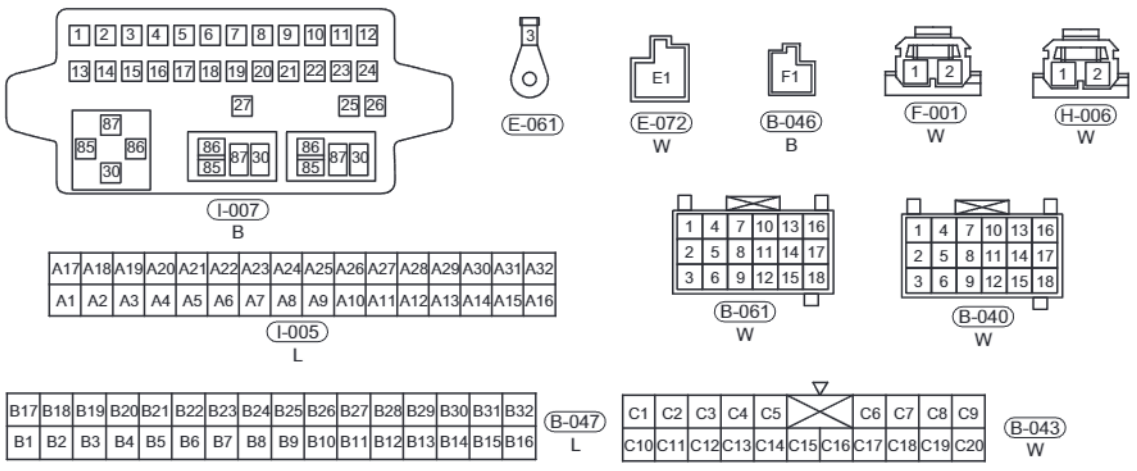




ET21330140

Front Door Courtesy Light





ET21350120

DIAGNOSIS & TESTING

Problem Symptoms Table

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

Position Light, Low Beam Light, High Beam Light

Symptom	Suspected Area	See page
Low beam does not come on (one side)	Fuse	51-34
	Low beam bulb	-
	Wire harness or connector	-
Low beam does not come on (both sides)	Fuse	51-34
	Low beam bulb	-
	Headlight adjustment switch assembly	35-64
	Low beam relay	51-34
	Wire harness or connector	-
	Body Control Module (BCM)	-
High beam does not come on (one side)	Fuse	51-34
	High beam bulb	-
	Wire harness or connector	-
High beam does not come on (both sides)	Fuse	51-34
	High beam bulb	-
	Headlight adjustment switch assembly	35-64
	High beam relay	51-34
	Wire harness or connector	-
	Body Control Module (BCM)	-
Position light does not come on (all)	Position light bulb (all)	-
	Wire harness or connector	-
	Headlight adjustment switch assembly	35-64
	Body Control Module (BCM)	-
Position light does not come on (one side)	Position light bulb	-
	Wire harness or connector	-

Front Fog Light

Symptom	Suspected Area	See page
Front fog light does not come on	Fuse	51-34
	Relay	51-34
	Front fog light bulb	-
	Headlight adjustment switch assembly	35-64
	Wire harness or connector	-
	Body Control Module (BCM)	-

Rear Fog Light

Symptom	Suspected Area	See page
Rear fog light does not come on	Rear fog light bulb	-
	Headlight adjustment switch assembly	35-64
	Wire harness or connector	-
	Body Control Module (BCM)	-

Turn Signal Light and Hazard Warning Light

Symptom	Suspected Area	See page
Hazard warning light and turn signal light do not come on	Bulb	-
	Wire harness or connector	-
	Hazard Warning Light Switch	35-90
	Headlight adjustment switch assembly	35-64
	Body Control Module (BCM)	-
Hazard warning light does not come on (turn signal light is normal)	Hazard Warning Light Switch	35-90
	Wire harness or connector	-
Turn signal light does not come on (hazard warning light is normal)	Headlight adjustment switch assembly	35-64
	Wire harness or connector	-

License Plate Light

Symptom	Suspected Area	See page
License plate light does not come on	License plate light bulb	-
	Headlight adjustment switch assembly	35-64
	Wire harness or connector	-
	Body Control Module (BCM)	-

Luggage Compartment Light

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

Front Door Courtesy Light

Symptom	Suspected Area	See page
Front door courtesy light does not come on	Front door courtesy light bulb	-
	Wire harness or connector	-
	Body Control Module (BCM)	-

Brake Light

Symptom	Suspected Area	See page
Brake light does not come on (all)	Brake light bulb	-
	Brake light switch	26-26
	Wire harness or connector	-
Only one brake light does not come on	Brake light bulb	-
	Wire harness or connector	-

Front Dome Light

Symptom	Suspected Area	See page
Front dome light does not come on	Front dome light bulb	-
	Wire harness or connector	-
	Front dome light assembly	35-80
	Body Control Module (BCM)	-

Rear Dome Light

Symptom	Suspected Area	See page
Rear dome light does not come on	Rear dome light bulb	-
	Wire harness or connector	-
	Rear dome light assembly	35-82
	Body Control Module (BCM)	-

Back-up Light

Symptom	Suspected Area	See page
Back-up light does not come on (all)	Fuse	51-34
	Relay (CVT model)	51-34
	Back-up light bulb	-
	Back-up light switch	35-88
	Wire harness or connector	-

DTC Confirmation Procedure

Confirm that battery voltage is over 12 V before performing the following procedures.

- Turn ignition switch to LOCK.
- Connect X-431 3G diagnostic tester (the latest software) to Data Link Connector (DLC).
- Turn ignition switch to ON.
- Use X-431 3G diagnostic tester to record and clear the DTCs stored in the lighting system.
- Turn ignition switch to LOCK and wait for a few seconds.
- Turn ignition switch to ON and then select Read Code.
- If DTC is detected, the malfunction indicated by the DTC is current. Go to the diagnosis procedure - Step 1.
- If DTC is not detected, the malfunction indicated by the DTC is intermittent. Please refer to the Intermittent DTC Troubleshooting.

Intermittent DTC Troubleshooting

If malfunction is intermittent, perform the followings:

- Check if connectors are loose.
- Check if wire harnesses are worn, pierced, pinched or partially broken.
- Monitor X-431 3G diagnostic tester (the latest software) data that is related to this circuit.
- Wiggle related wire harnesses and connectors and observe if signal is interrupted in the related circuit.
- If possible, try to duplicate the conditions under which the DTC was set.
- Look for the data that has changed or the DTC to be reset during the wiggle test.
- Look for broken, bent, protruded or corroded terminals.
- Inspect the mounting areas of headlight adjustment switch assembly and light assemblies and so on for damage, foreign matter, etc. that will cause incorrect signals.
- If multiple trouble codes were set, refer to the circuit diagrams to look for any common ground circuit or power supply circuit applied to the DTC.
  Refer to Technical Bulletin that is applied to the 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 situation will seriously affect the normal operation of the circuit.

Electronically controlled circuits are very sensitive to proper grounding. A loose or corroded ground can affect the electronically controlled circuit. The operations to check the ground points are as follows:

1. Remove the ground bolt or nut.
2. Check all contact surfaces for tarnish, dirt and rust, etc.
3. Clean as necessary to ensure that contacting is in a good condition.
4. Reinstall the ground bolt or nut securely.

5. Check if add-on accessories interfere with the ground circuit.
6. If several wire harnesses are crimped into one ground terminal, check if they are installed correctly. Make sure all wire harnesses are clean, securely fastened and providing a good ground path.

System Diagnosis

1. Description
   a. Lighting system data and Diagnostic Trouble Codes (DTCs) can be read from the Data Link Connector 3 (DLC3) of vehicle. When system seems to be malfunctioning, use X-431 3G diagnostic tester to check for a malfunction and perform repairs.
2. Check battery voltage

   Standard Voltage: 11 to 14 V

   If voltage is below 11 V, recharge or replace the battery before proceeding to next step.

DTC Check/Clear

1. Check DTCs
   a. Connect X-431 3G diagnostic tester to Data Link Connector (DLC).
   b. Turn ignition switch to ON, and turn X-431 3G diagnostic tester on.
   c. Enter the following menus to read the current malfunction: T21/BCM/Read fault code/Read present fault code.
   d. Read DTCs.
2. Clear DTCs.
   a. Connect X-431 3G diagnostic tester to Data Link Connector (DLC).
   b. Turn ignition switch to ON, and turn X-431 3G diagnostic tester on.
   c. Enter the following menus: T21/BCM/Erase fault code.
   d. Clear the DTCs by following the indications on the tester screen.

Data List/Active Test

1. Read the Data List.

   HINT:
   Using the X-431 3G diagnostic tester Data List to perform Active Tests allows the values or states of switches, sensors, actuators and other items to be read without removing any parts. This non-intrusive inspection can be very useful because intermittent problems or signals may be discovered before parts or wiring is disturbed. Reading the Data List information early in troubleshooting is one way to save diagnostic time.

CAUTION

- In the table below, the values listed under "Normal Condition" are reference values. Do not depend solely on these reference values when deciding whether a part is faulty or not.

   a. Connect X-431 3G diagnostic tester to Data Link Connector (DLC).
   b. Turn ignition switch to ON, and turn X-431 3G diagnostic tester on.
   c. Enter the following menus: T21/BCM/Read data strean/Input status (Light).
   d. Read the Data List according to the display on the tester.

Tester Display	Measurement Item/Range	Normal Condition
Left Hand Turn Light	Left turn signal/On or Off	Left turn signal On: Active Left turn signal Off: Inactive
Right Hand Turn Light	Right turn signal/On or Off	Right turn signal On: Active Right turn signal Off: Inactive
Front Fog Light	Front fog light signal/On or Off	Front fog light signal On: Active Front fog light signal Off: Inactive
Rear Fog Light	Rear fog light signal/On or Off	Rear fog light signal On: Active Rear fog light signal Off: Inactive
Position Light	Position light signal/On or Off	Position light signal On: Active Position light signal Off: Inactive
Low Beam	Low beam light signal/On or Off	Low beam light signal On: Active Low beam light signal Off: Inactive
High Beam	High beam light signal/On or Off	High beam light signal On: Active High beam light signal Off: Inactive
Hazard	Hazard light signal/On or Off	Hazard light signal On: Active Hazard light signal Off: Inactive
Reversing Light	Reversing light signal/On or Off	Reversing light signal On: Active Reversing light signal Off: Inactive
Passing Light	Passing light signal/On or Off	Passing light signal On: Active Passing light signal Off: Inactive

2. Perform the Active Test.

HINT:
Using theX-431 3G diagnostic tester to perform Active Tests allows items to be tested without removing any parts. This non-intrusive functional inspection can be very useful because intermittent problems may be discovered before parts or wiring is disturbed. Perform the Active Test early in troubleshooting is one way to save diagnostic time.The Data List information can be displayed when performing the Active Test.

a. Connect X-431 3G diagnostic tester to Data Link Connector (DLC).
b. Turn ignition switch to ON, and turn X-431 3G diagnostic tester on.
c. Enter the following menus: T21/BCM/Action Test.
d. Perform the Active Test according to the tester display.

Tester Part	Control Range
Left Hand Turn Light	Active/Inactive
Right Hand Turn Light	Active/Inactive
Position Light	Active/Inactive
Low Beam	Active/Inactive
High Beam	Active/Inactive
Front Fog Light	Active/Inactive
Rear Fog Light	Active/Inactive
Dome Lamp	Active/Inactive

Tester Part	Control Range
Welcome Lamp	Active/Inactive
Security Indicator	Active/Inactive

Diagnosis Procedure

HINT:
Perform troubleshooting according to the procedures below.

1	**Vehicle brought to workshop**

NEXT

2	**Check battery voltage**

35

Standard voltage: 11 to 14 V

If the voltage is below 11 V, recharge or replace the battery before proceeding to next step.

NEXT

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

DTC occurs	For current DTC, go to step 4
No DTC	For history DTC, go to step 5

4	**Diagnostic Trouble Code (DTC) chart**

NEXT

5	**Circuit inspection**

NEXT

6	**Repair or replace**

NEXT

7	**Clear DTCs (current DTC and history DTC)**

NEXT

8	Check for DTCs (current DTC and history DTC)

DTC output	Go to step 4
NO DTC output	Go to next step

9	Confirmation test

NEXT

10	End

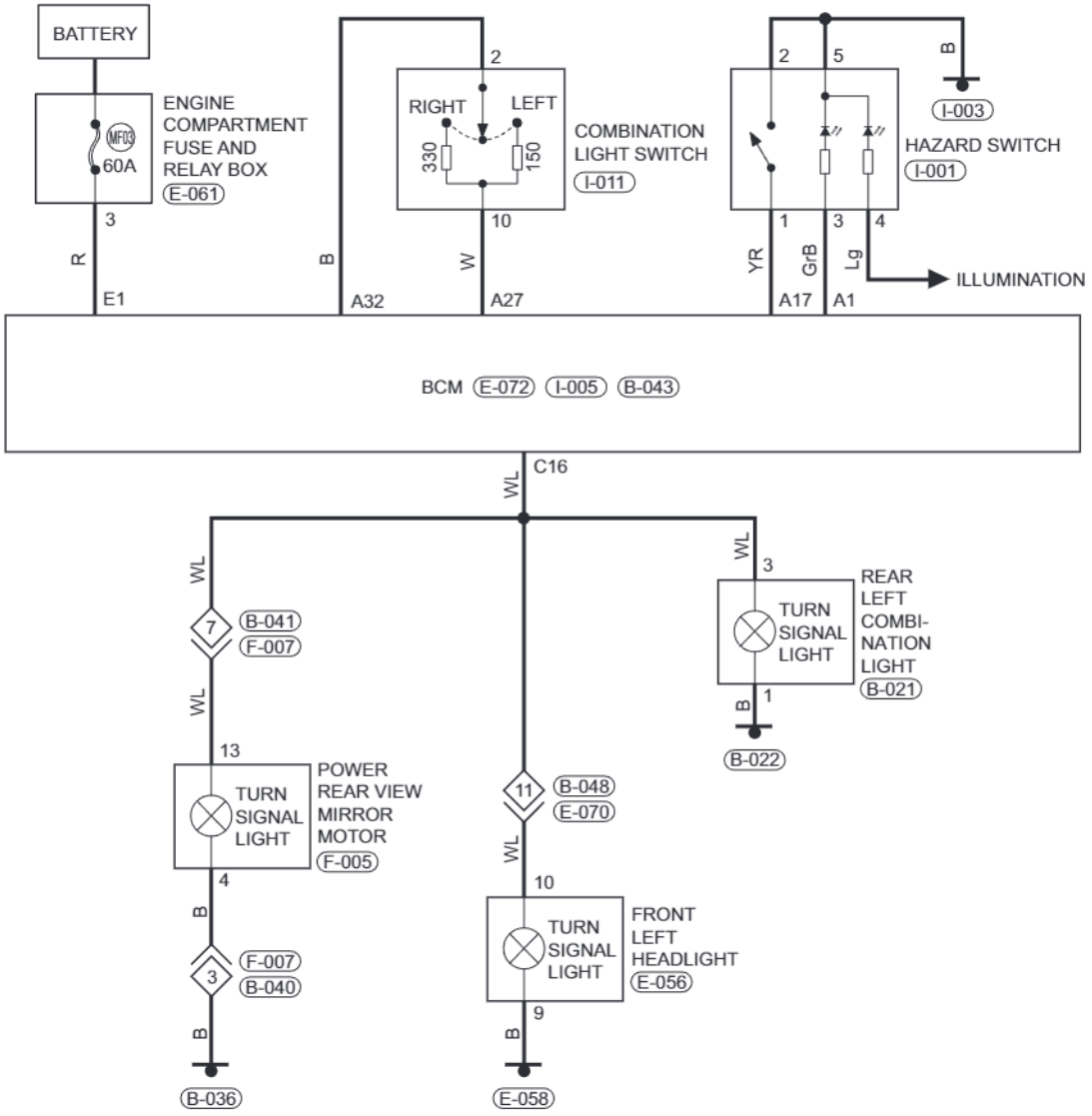
Diagnostic Trouble Code (DTC) chart

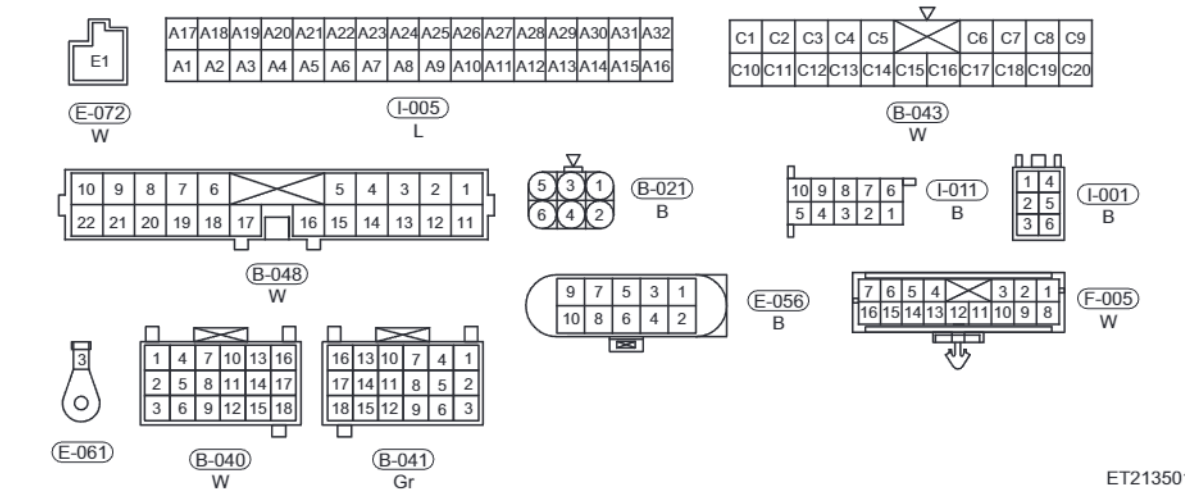
DTC Code	DTC Definition
B100111	Left Side Turn Lamp Control Circuit Circuit Short to Ground
B100113	Left Side Turn Lamp Control Circuit Circuit Open
B100119	Left Side Turn Lamp Control Circuit Circuit Current Above Threshold
B100211	Right Side Turn Lamp Control Circuit Circuit Short to Ground
B100213	Right Side Turn Lamp Control Circuit Circuit Open
B100219	Right Side Turn Lamp Control Circuit Circuit Current Above Threshold
B100311	Left Park Light Output Control Circuit Circuit Short to Ground
B100313	Left Park Light output Control Circuit Circuit Open
B100319	Left Park Light Output Control Circuit Circuit Current Above Threshold
B100411	Right Park Light Output Control Circuit Circuit Short to Ground
B100413	Right Park Light output Control Circuit Circuit Open
B100419	Right Park Light Output Control Circuit Circuit Current Above Threshold
B100813	Rear Fog Control Circuit Circuit Open
B100871	Rear Fog Control Circuit Actuator Stuck

DTC	B100111	Left Side Turn Lamp Control Circuit Circuit Short to Ground

DTC	B100113	Left Side Turn Lamp Control Circuit Circuit Open

DTC	B100119	Left Side Turn Lamp Control Circuit Circuit Current Above Threshold


BATTERY
ENGINE COMPARTMENT FUSE AND RELAY BOX
E-061
MF03
60A
3
R
E1
B
2
RIGHT
LEFT
330
150
COMBINATION LIGHT SWITCH
I-011
10
W
A32
A27
2
5
B
I-003
HAZARD SWITCH
I-001
1
3
4
YR
GrB
Lg
ILLUMINATION
A17
A1
BCM E-072 I-005 B-043
C16
WL
7
B-041
F-007
13
TURN SIGNAL LIGHT
POWER REAR VIEW MIRROR MOTOR
F-005
4
F-007
B-040
B-036
11
B-048
E-070
10
TURN SIGNAL LIGHT
FRONT LEFT HEADLIGHT
E-056
9
E-058
3
REAR LEFT COMBI-NATION LIGHT
B-021
1
B-022


E1
E-072
W
A17 A18 A19 A20 A21 A22 A23 A24 A25 A26 A27 A28 A29 A30 A31 A32
A1 A2 A3 A4 A5 A6 A7 A8 A9 A10 A11 A12 A13 A14 A15 A16
I-005
L
C1 C2 C3 C4 C5 C6 C7 C8 C9
C10 C11 C12 C13 C14 C15 C16 C17 C18 C19 C20
B-043
W
10 9 8 7 6 5 4 3 2 1
22 21 20 19 18 17 16 15 14 13 12 11
B-048
W
5 3 1
6 4 2
B-021
B
10 9 8 7 6
5 4 3 2 1
I-011
B
1 4
2 5
3 6
I-001
B
9 7 5 3 1
10 8 6 4 2
E-056
B
7 6 5 4 3 2 1
16 15 14 13 12 11 10 9 8
F-005
W
3
E-061
1 4 7 10 13 16
2 5 8 11 14 17
3 6 9 12 15 18
B-040
W
16 13 10 7 4 1
17 14 11 8 5 2
18 15 12 9 6 3
B-041
Gr

ET21350150

Self-diagnosis Detection Logic

DTC Code	DTC Definitions	DTC Detection Conditions	DTC Setting Conditions
B100111	Left Side Turn Lamp Control Circuit Circuit Short to Ground	Ignition switch ON	• Turn signal light bulb • Wire harness or connector • Body Control Module (BCM)
B100113	Left Side Turn Lamp Control Circuit Circuit Open		
B100119	Left Side Turn Lamp Control Circuit Circuit Current Above Threshold		

HINT:
While performing the electrical diagnosis and testing, always refer to the relevant circuit diagram for the special circuit and component information.

Diagnosis Procedure

1	Check turn signal light bulb

a. Remove the turn signal light bulb, and check if the turn signal light bulb filament is blown.

NG → **Replace turn signal light bulb**

OK

2	Check wire harness and connector

Use the circuit diagram as a guide to perform the following procedures:

a. Turn ignition switch to LOCK, and disconnect the negative battery cable.
b. Disconnect the Body Control Module (BCM) connectors B-043 and E-072.
c. Disconnect the left turn signal light wire harness connectors F-005, E-056 and B-021.
d. Disconnect the body wire harness connectors B-048 and B-041, front left door wire harness connector F-007 and engine compartment wire harness connector E-070.
e. Check if wire harnesses are worn, pierced, pinched or partially broken.
f. Look for broken, bent, protruded or corroded terminals.
g. Check if the related connector terminal contact pins are in good condition.

NG → **Repair or replace related wire harness and connector**

OK

3	Check left turn signal light control circuit

a. Turn ignition switch to LOCK.

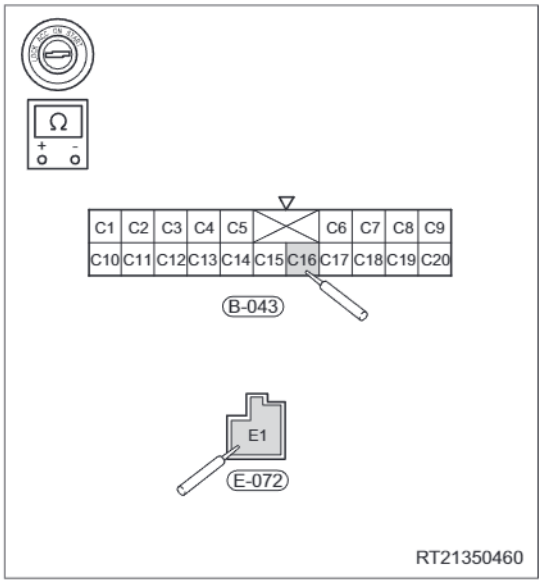
b. Disconnect the negative battery cable.

c. Disconnect the Body Control Module (BCM) connectors B-043 and E-072.

d. Using a digital multimeter, check for continuity between terminal C16 of BCM connector B-043 and terminal E1 of BCM connector E-072 to check if it is short to power supply according to the table below.

Standard Condition

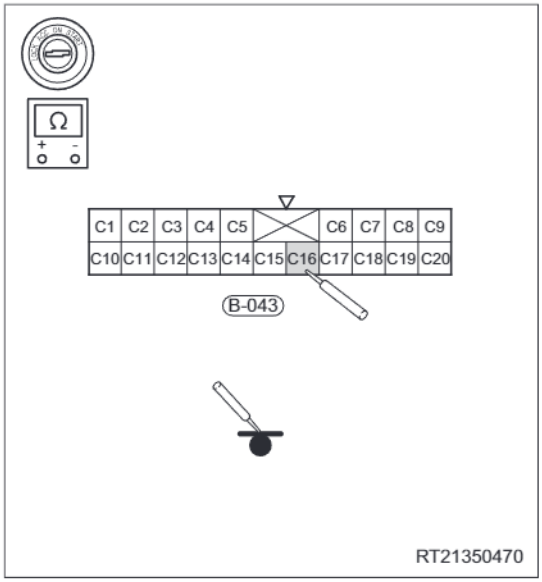
Multimeter Connection	Condition	Specified Condition
B-043 (C16) - E-072 (E1)	Always	No continuity



e. Using a digital multimeter, check for continuity between terminal C16 of BCM connector B-043 and body ground to check if it is short to ground according to the table below.

Standard Condition

Multimeter Connection	Condition	Specified Condition
B-043 (C16) - Body ground	Always	No continuity



NG → **Repair or replace related wire harness and connector**

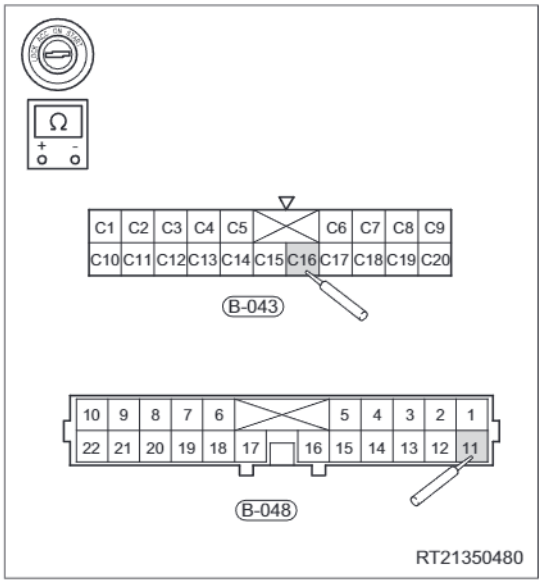
OK →

4	Check wire harness and connector (left turn signal light - Body Control Module (BCM))

a. Turn ignition switch to LOCK.
b. Disconnect the negative battery cable.
c. Disconnect the Body Control Module (BCM) connector B-043.
d. Disconnect the left turn signal light wire harness connectors F-005, E-056 and B-021.
e. Disconnect the body wire harness connectors B-048 and B-041, front left door wire harness connector F-007 and engine compartment wire harness connector E-070.
f. Using a digital multimeter, check for continuity between terminal C16 of BCM connector B-043 and terminal 11 of body wire harness connector B-048 according to the table below.

Standard Condition

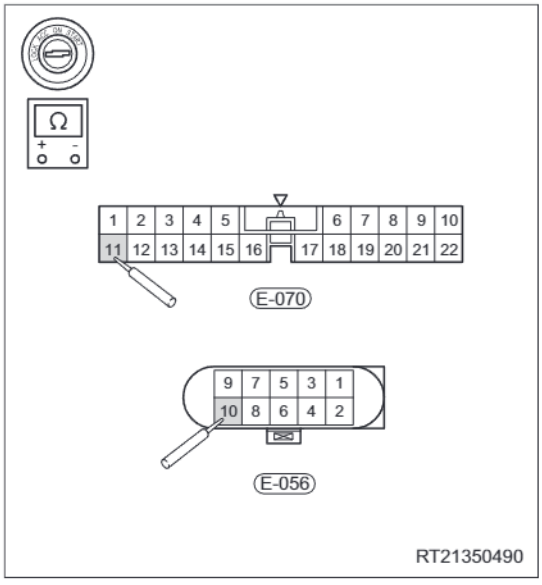
Multimeter Connection	Condition	Specified Condition
B-043 (C16) - B-048 (11)	Always	Continuity



g. Using a digital multimeter, check for continuity between terminal 11 of engine compartment wire harness connector E-070 and terminal 10 of front left headlight wire harness connector E-056 according to the table below.

Standard Condition

Multimeter Connection	Condition	Specified Condition
E-070 (11) - E-056 (10)	Always	Continuity

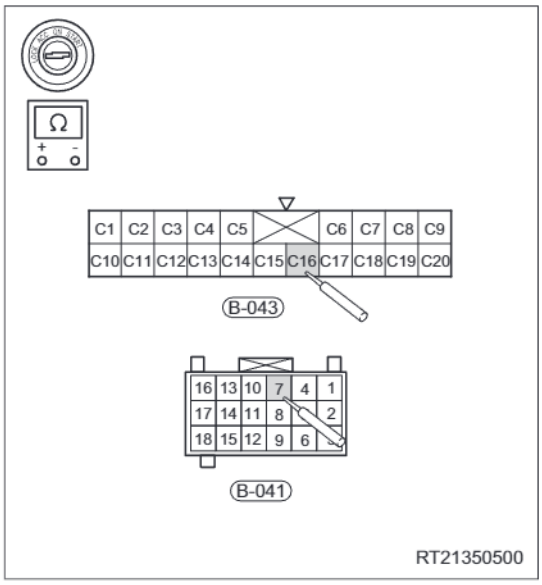


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h. Using a digital multimeter, check for continuity between terminal C16 of BCM connector B-043 and terminal 7 of body wire harness connector B-041 according to the table below.

Standard Condition

Multimeter Connection	Condition	Specified Condition
B-043 (C16) - B-041 (7)	Always	Continuity

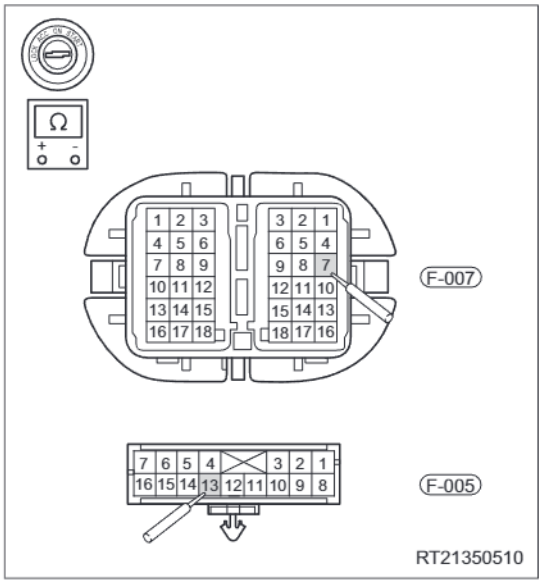


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i. Using a digital multimeter, check for continuity between terminal 7 of front left door wire harness connector F-007 and terminal 13 of left outside rear view mirror wire harness connector F-005 according to the table below.

Standard Condition

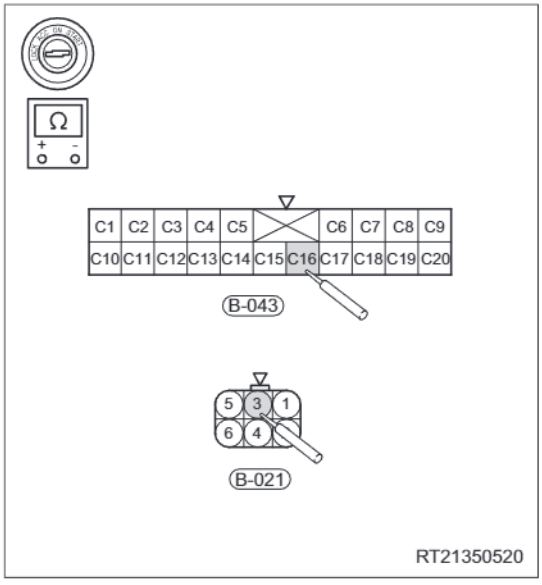
Multimeter Connection	Condition	Specified Condition
F-007 (7) - F-005 (13)	Always	Continuity



j. Using a digital multimeter, check for continuity between terminal C16 of BCM connector B-043 and terminal 3 of rear left combination light wire harness connector B-021 according to the table below.

Standard Condition

Multimeter Connection	Condition	Specified Condition
B-043 (C16) - B-021 (3)	Always	Continuity



NG	Repair or replace related wire harness and connector

OK

5	Reconfirm DTCs

a. Firmly reconnect all disconnected connectors.
b. Connect the negative battery cable.
c. Turn ignition switch to ON.
d. Use X-431 3G diagnostic tester (the latest software) to record and clear the DTCs stored in the Body Control Module (BCM).
e. Turn ignition switch to LOCK and wait for a few seconds.
f. Turn ignition switch to ON.
g. Use X-431 3G diagnostic tester to read the DTCs in the Body Control Module (BCM) again.

Result	Precede to
DTC B100111, B100113 and B100119 are output	NG
No DTC is output	OK

NG → Replace Body Control Module (BCM)

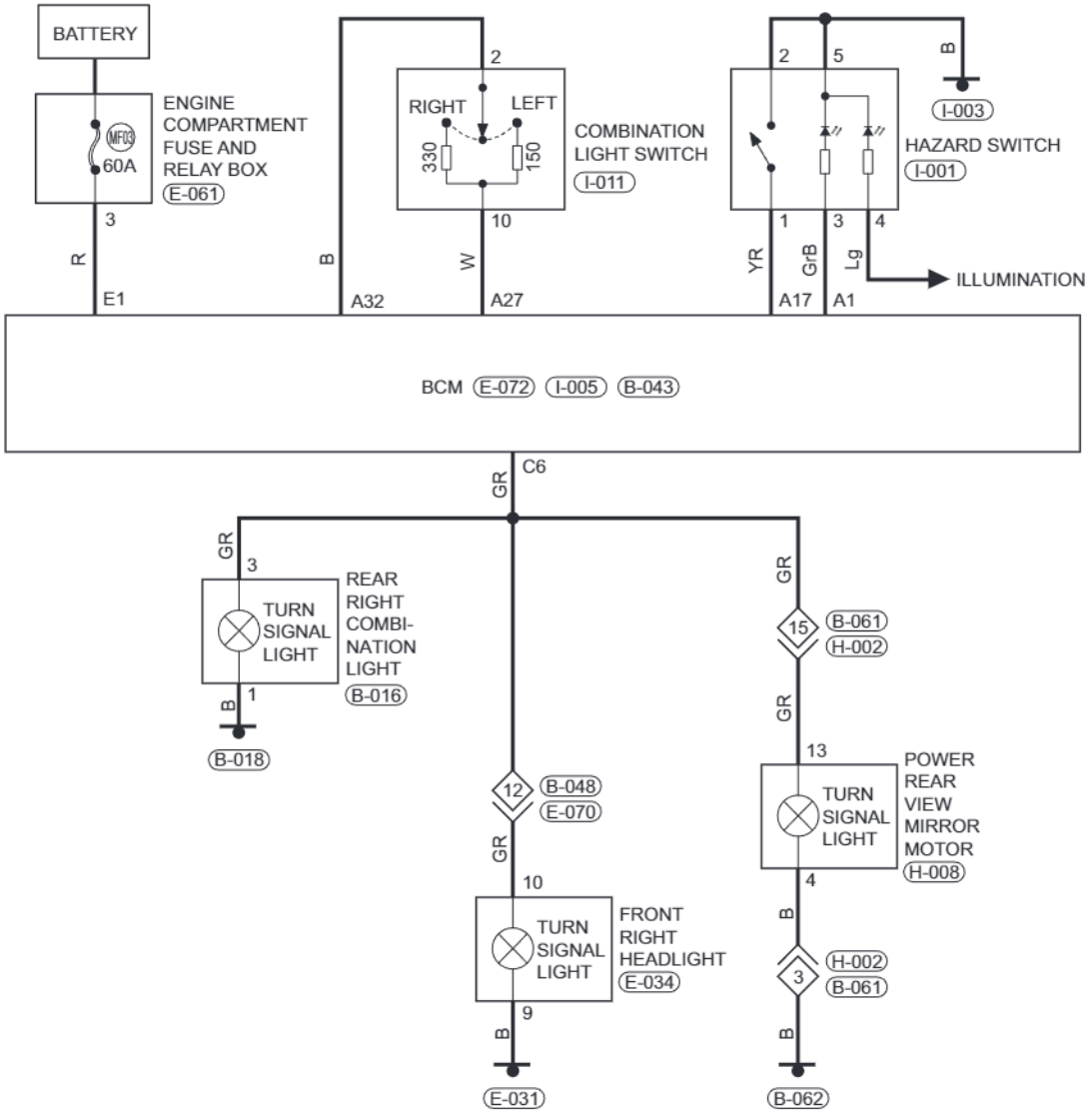
OK

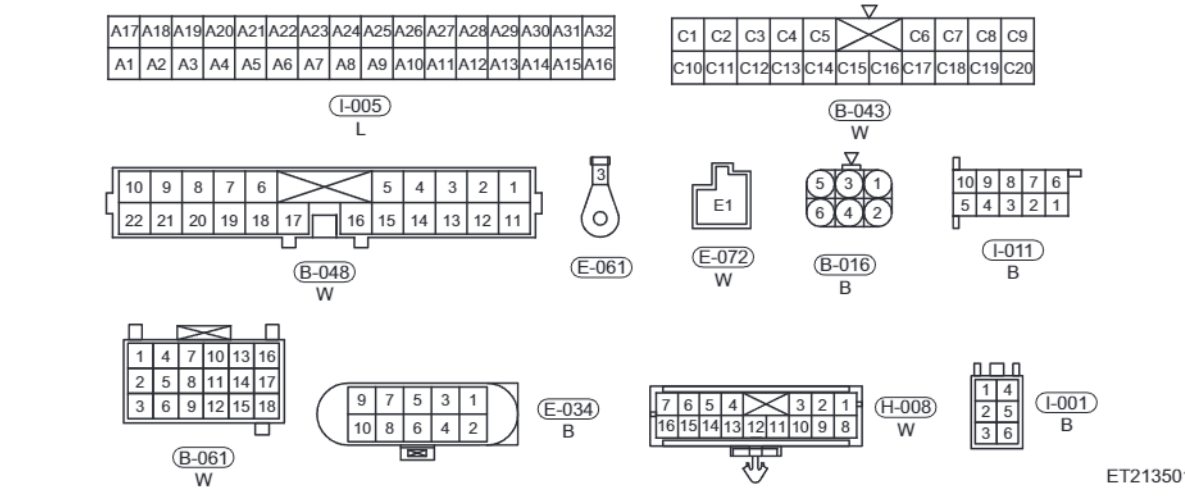
System is normal

DTC	B100211	Right Side Turn Lamp Control Circuit Circuit Short to Ground

DTC	B100213	Right Side Turn Lamp Control Circuit Circuit Open

DTC	B100219	Right Side Turn Lamp Control Circuit Circuit Current Above Threshold


BATTERY
ENGINE COMPARTMENT FUSE AND RELAY BOX
E-061
MF03
60A
3
R
E1
B
2
RIGHT
LEFT
330
150
COMBINATION LIGHT SWITCH
I-011
10
W
A32
A27
2
5
B
I-003
HAZARD SWITCH
I-001
1
3
4
YR
GrB
Lg
ILLUMINATION
A17
A1
BCM E-072 I-005 B-043
GR
C6
GR
3
TURN SIGNAL LIGHT
REAR RIGHT COMBI-NATION LIGHT
B-016
B
1
B-018
12
B-048
E-070
GR
10
TURN SIGNAL LIGHT
FRONT RIGHT HEADLIGHT
E-034
B
9
E-031
GR
15
B-061
H-002
GR
13
TURN SIGNAL LIGHT
POWER REAR VIEW MIRROR MOTOR
H-008
4
B
3
H-002
B-061
B
B-062


A17 A18 A19 A20 A21 A22 A23 A24 A25 A26 A27 A28 A29 A30 A31 A32
A1 A2 A3 A4 A5 A6 A7 A8 A9 A10 A11 A12 A13 A14 A15 A16
I-005
L
C1 C2 C3 C4 C5 C6 C7 C8 C9
C10 C11 C12 C13 C14 C15 C16 C17 C18 C19 C20
B-043
W
10 9 8 7 6 5 4 3 2 1
22 21 20 19 18 17 16 15 14 13 12 11
B-048
W
3
E-061
E1
E-072
W
5 3 1
6 4 2
B-016
B
10 9 8 7 6
5 4 3 2 1
I-011
B
1 4 7 10 13 16
2 5 8 11 14 17
3 6 9 12 15 18
B-061
W
9 7 5 3 1
10 8 6 4 2
E-034
B
7 6 5 4 3 2 1
16 15 14 13 12 11 10 9 8
H-008
W
1 4
2 5
3 6
I-001
B
ET21350160

Self-diagnosis Detection Logic

DTC Code	DTC Definitions	DTC Detection Conditions	DTC Setting Conditions
B100211	Right Side Turn Lamp Control Circuit Circuit Short to Ground	Ignition switch ON	• Turn signal light bulb • Wire harness or connector • Body Control Module (BCM)
B100213	Right Side Turn Lamp Control Circuit Circuit Open		
B100219	Right Side Turn Lamp Control Circuit Circuit Current Above Threshold		

HINT:
While performing the electrical diagnosis and testing, always refer to the relevant circuit diagram for the special circuit and component information.

Diagnosis Procedure

1	Check turn signal light bulb

a. Remove the turn signal light bulb, and check if the turn signal light bulb filament is blown.

NG → **Replace turn signal light bulb**

OK

2	Check wire harness and connector

Use the circuit diagram as a guide to perform the following procedures:

a. Turn ignition switch to LOCK, and disconnect the negative battery cable.
b. Disconnect the Body Control Module (BCM) connectors B-043 and E-072.
c. Disconnect the right turn signal light wire harness connectors H-008, E-034 and B-016.
d. Disconnect the body wire harness connectors B-048 and B-061, front right door wire harness connector H-002 and engine compartment wire harness connector E-070.
e. Check if wire harnesses are worn, pierced, pinched or partially broken.
f. Look for broken, bent, protruded or corroded terminals.
g. Check if the related connector terminal contact pins are in good condition.

NG → **Repair or replace related wire harness and connector**

OK

3	Check right turn signal light control circuit

a. Turn ignition switch to LOCK.

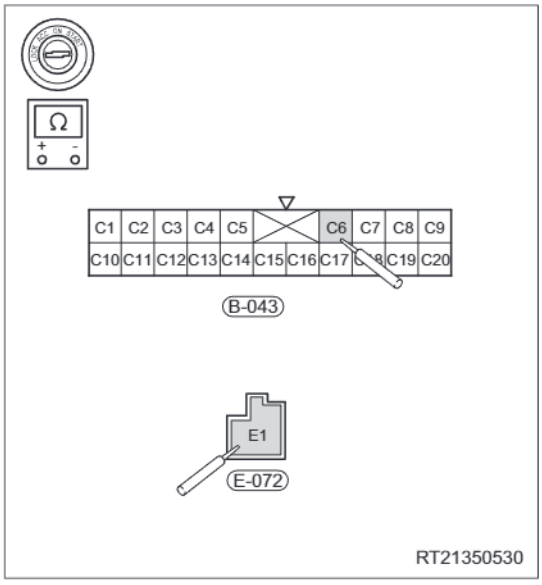
b. Disconnect the negative battery cable.

c. Disconnect the Body Control Module (BCM) connectors B-043 and E-072.

d. Using a digital multimeter, check for continuity between terminal C6 of BCM connector B-043 and terminal E1 of BCM connector E-072 to check if it is short to power supply according to the table below.

Standard Condition

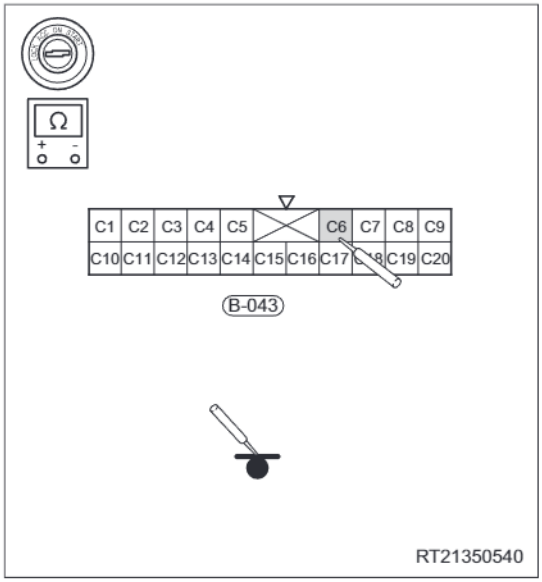
Multimeter Connection	Condition	Specified Condition
B-043 (C6) - E-072 (E1)	Always	No continuity



e. Using a digital multimeter, check for continuity between terminal C6 of BCM connector B-043 and body ground to check if it is short to ground according to the table below.

Standard Condition

Multimeter Connection	Condition	Specified Condition
B-043 (C6) - Body ground	Always	No continuity



NG → **Repair or replace related wire harness and connector**

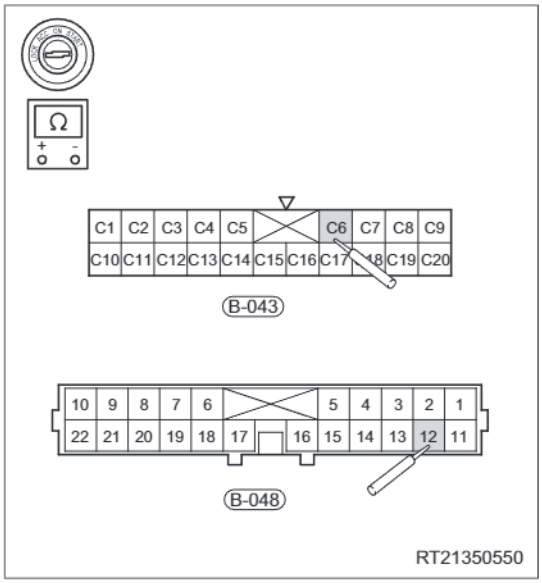
OK

4	Check wire harness and connector (right turn signal light - Body Control Module (BCM))

a. Turn ignition switch to LOCK.
b. Disconnect the negative battery cable.
c. Disconnect the Body Control Module (BCM) connector B-043.
d. Disconnect the right turn signal light wire harness connectors H-008, E-034 and B-016.
e. Disconnect the body wire harness connectors B-048 and B-061, front right door wire harness connector H-002 and engine compartment wire harness connector E-070.
f. Using the digital multimeter, check for continuity between terminal C6 of BCM connector B-043 and terminal 12 of body wire harness connector B-048 according to the table below.

Standard Condition

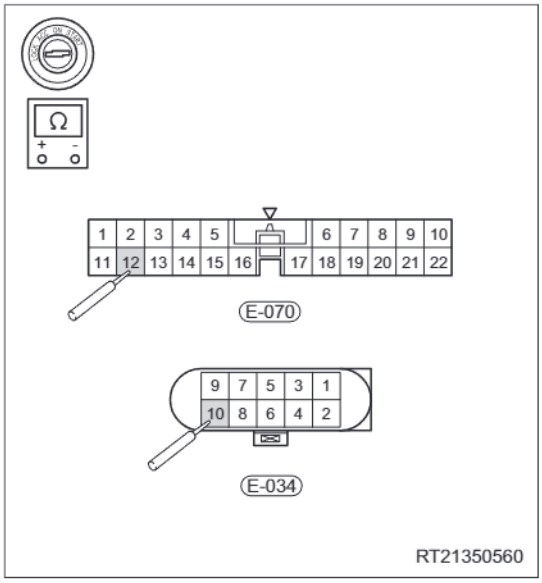
Multimeter Connection	Condition	Specified Condition
B-043 (C6) - B-048 (12)	Always	Continuity



g. Using a digital multimeter, check for continuity between terminal 12 of engine compartment wire harness connector E-070 and terminal 10 of front right headlight wire harness connector E-034 according to the table below.

Standard Condition

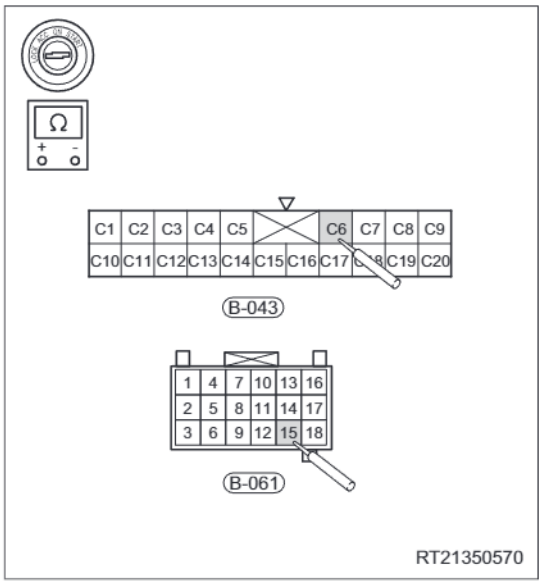
Multimeter Connection	Condition	Specified Condition
E-070 (12) - E-034 (10)	Always	Continuity



h. Using a digital multimeter, check for continuity between terminal C6 of BCM connector B-043 and terminal 15 of body wire harness connector B-061 according to the table below.

Standard Condition

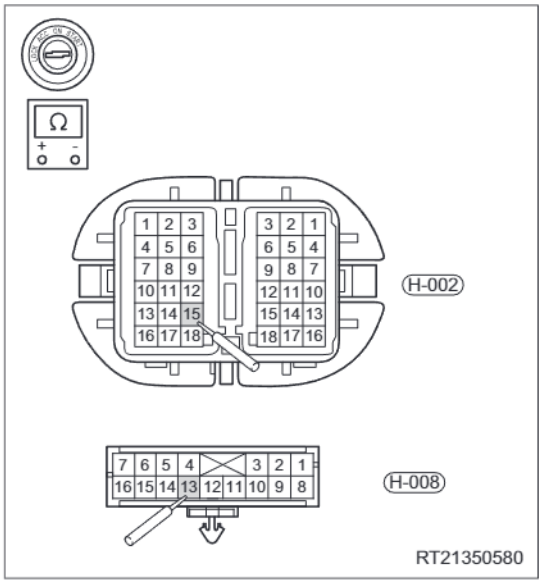
Multimeter Connection	Condition	Specified Condition
B-043 (C6) - B-061 (15)	Always	Continuity



i. Using a digital multimeter, check for continuity between terminal 15 of front right door wire harness connector H-002 and terminal 13 of right outside rear view mirror wire harness connector H-008 according to the table below.

Standard Condition

Multimeter Connection	Condition	Specified Condition
H-002 (15) - H-008 (13)	Always	Continuity

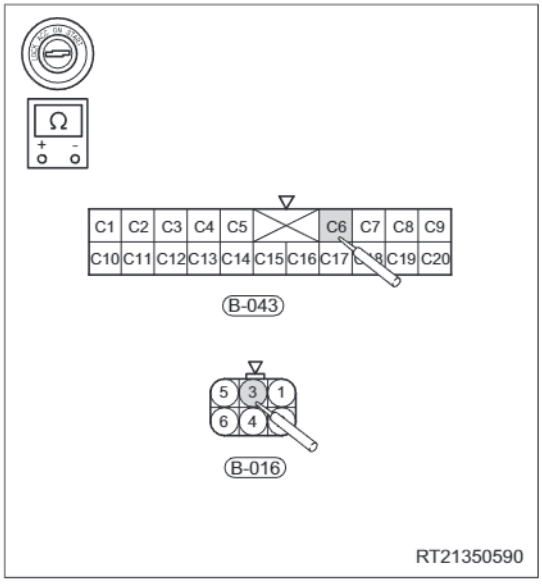


j. Using a digital multimeter, check for continuity between terminal C6 of BCM connector B-043 and terminal 3 of rear right combination light wire harness connector B-016 according to the table below.

Standard Condition

Multimeter Connection	Condition	Specified Condition
B-043 (C6) - B-016 (3)	Always	Continuity

NG	Repair or replace related wire harness and connector



OK

5	Reconfirm DTCs

a. Firmly reconnect all disconnected connectors.
b. Connect the negative battery cable.
c. Turn ignition switch to ON.
d. Use X-431 3G diagnostic tester (the latest software) to record and clear the DTCs stored in the Body Control Module (BCM).
e. Turn ignition switch to LOCK and wait for a few seconds.
f. Turn ignition switch to ON.
g. Use X-431 3G diagnostic tester to read the DTCs in the Body Control Module (BCM) again.

Result	Precede to
DTC B100211, B100213 and B100219 are output	NG
No DTC is output	OK

NG → Replace Body Control Module (BCM)

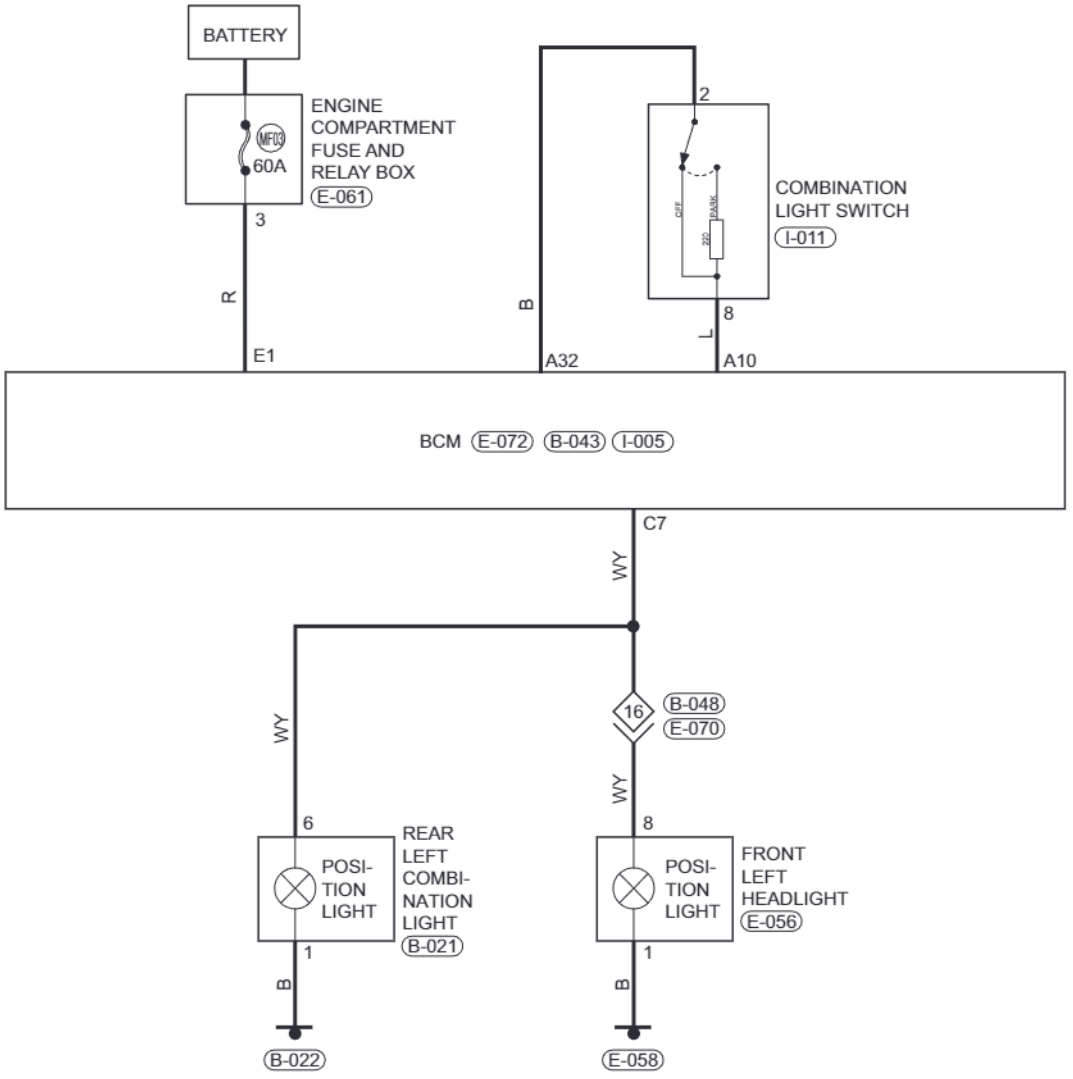
OK

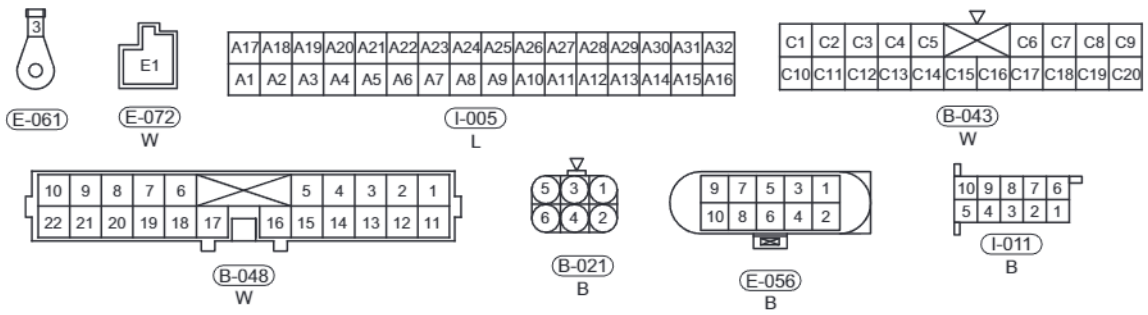
System is normal

DTC	B100311	Left Park Light Output Control Circuit Circuit Short to Ground

DTC	B100313	Left Park Light output Control Circuit Circuit Open

DTC	B100319	Left Park Light Output Control Circuit Circuit Current Above Threshold


BATTERY
ENGINE COMPARTMENT FUSE AND RELAY BOX
E-061
MF03
60A
3
R
E1
B
2
COMBINATION LIGHT SWITCH
I-011
OFF
PARK
220
L
8
A32
A10
BCM E-072 B-043 I-005
C7
WY
WY
16
B-048
E-070
WY
6
8
REAR LEFT COMBI-NATION LIGHT
B-021
POSI-TION LIGHT
1
B
B-022
POSI-TION LIGHT
FRONT LEFT HEADLIGHT
E-056
1
B
E-058


3
E-061
E1
E-072
W
A17 A18 A19 A20 A21 A22 A23 A24 A25 A26 A27 A28 A29 A30 A31 A32
A1 A2 A3 A4 A5 A6 A7 A8 A9 A10 A11 A12 A13 A14 A15 A16
I-005
L
C1 C2 C3 C4 C5 C6 C7 C8 C9
C10 C11 C12 C13 C14 C15 C16 C17 C18 C19 C20
B-043
W
10 9 8 7 6 5 4 3 2 1
22 21 20 19 18 17 16 15 14 13 12 11
B-048
W
5 3 1
6 4 2
B-021
B
9 7 5 3 1
10 8 6 4 2
E-056
B
10 9 8 7 6
5 4 3 2 1
I-011
B

ET21350170

Self-diagnosis Detection Logic

DTC Code	DTC Definitions	DTC Detection Conditions	DTC Setting Conditions
B100311	Left Park Light Output Control Circuit Circuit Short to Ground	Ignition switch ON	• Position light bulb • Wire harness or connector • Body Control Module (BCM)
B100313	Left Park Light output Control Circuit Circuit Open		
B100319	Left Park Light Output Control Circuit Circuit Current Above Threshold		

HINT:
While performing the electrical diagnosis and testing, always refer to the relevant circuit diagram for the special circuit and component information.

Diagnosis Procedure

1	Check position light bulb

a. Remove the position light bulb, and check if the position light bulb filament is blown.

NG → **Replace position light bulb**

OK

2	Check wire harness and connector

Use the circuit diagram as a guide to perform the following procedures:

a. Turn ignition switch to LOCK, and disconnect the negative battery cable.
b. Disconnect the Body Control Module (BCM) connectors B-043 and E-072.
c. Disconnect the front left headlight wire harness connector E-056 and rear left combination light wire harness connector B-021.
d. Disconnect the body wire harness connector B-048 and engine compartment wire harness connector E-070.
e. Check if wire harnesses are worn, pierced, pinched or partially broken.
f. Look for broken, bent, protruded or corroded terminals.
g. Check if the related connector terminal contact pins are in good condition.

NG → **Repair or replace related wire harness and connector**

OK

3	Check left position light control circuit

a. Turn ignition switch to LOCK.

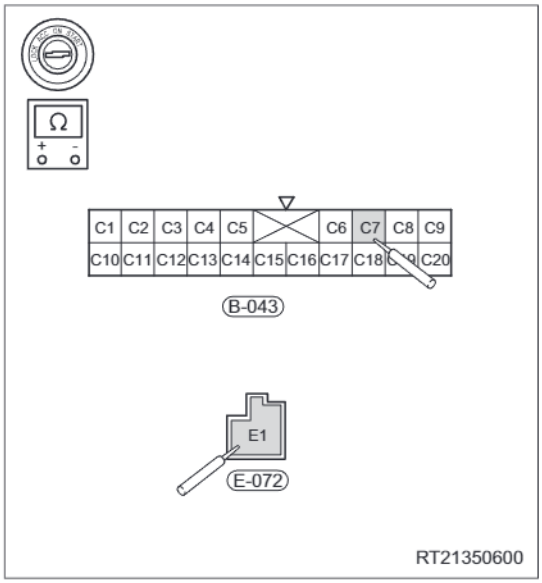
b. Disconnect the negative battery cable.

c. Disconnect the Body Control Module (BCM) connectors B-043 and E-072.

d. Using a digital multimeter, check for continuity between terminal C7 of BCM connector B-043 and terminal E1 of BCM connector E-072 to check if it is short to power supply according to the table below.

Standard Condition

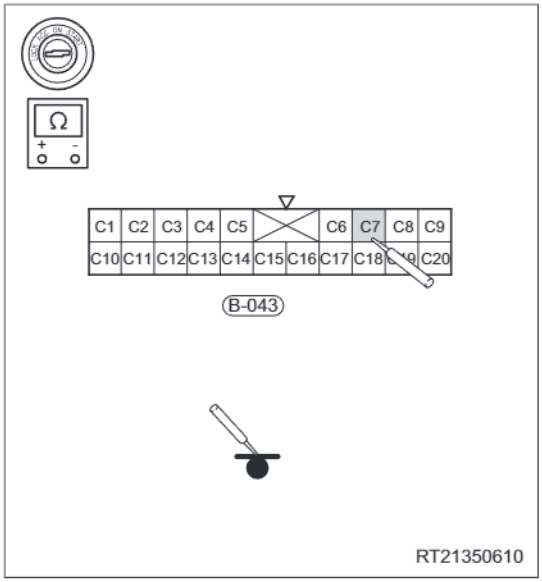
Multimeter Connection	Condition	Specified Condition
B-043 (C7) - E-072 (E1)	Always	No continuity



e. Using a digital multimeter, check for continuity between terminal C7 of BCM connector B-043 and body ground to check if it is short to ground according to the table below.

Standard Condition

Multimeter Connection	Condition	Specified Condition
B-043 (C7) - Body ground	Always	No continuity



NG → **Repair or replace related wire harness and connector**

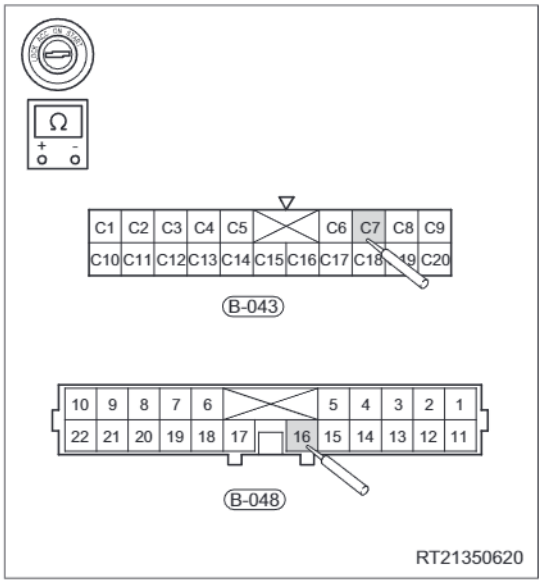
OK →

4	Check wire harness and connector (left position light - Body Control Module (BCM))

a. Turn ignition switch to LOCK.
b. Disconnect the negative battery cable.
c. Disconnect the Body Control Module (BCM) connector B-043.
d. Disconnect the front left headlight wire harness connector E-056 and rear left combination light wire harness connector B-021.
e. Disconnect the body wire harness connector B-048 and engine compartment wire harness connector E-070.
f. Using the digital multimeter, check for continuity between terminal C7 of BCM connector B-043 and terminal 16 of body wire harness connector B-048 according to the table below.

Standard Condition

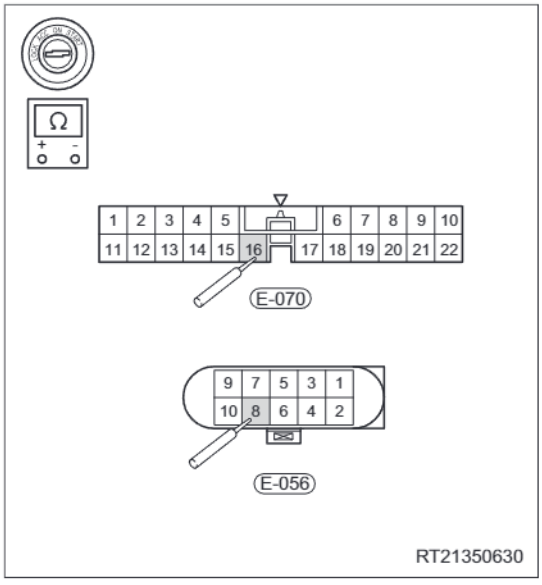
Multimeter Connection	Condition	Specified Condition
B-043 (C7) - B-048(16)	Always	Continuity



g. Using a digital multimeter, check for continuity between terminal 16 of engine compartment wire harness connector E-070 and terminal 8 of front left headlight wire harness connector E-056 according to the table below.

Standard Condition

Multimeter Connection	Condition	Specified Condition
E-070 (16) - E-056 (8)	Always	Continuity

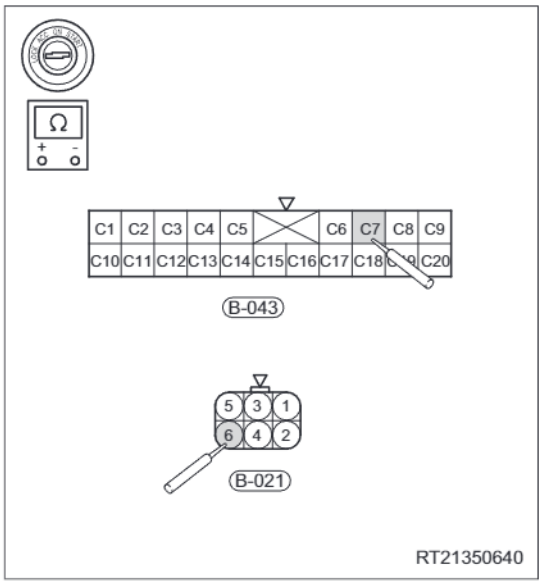


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h. Using a digital multimeter, check for continuity between terminal C7 of BCM connector B-043 and terminal 6 of rear left combination light wire harness connector B-021 according to the table below.

Standard Condition

Multimeter Connection	Condition	Specified Condition
B-043 (C7) - B-021 (6)	Always	Continuity



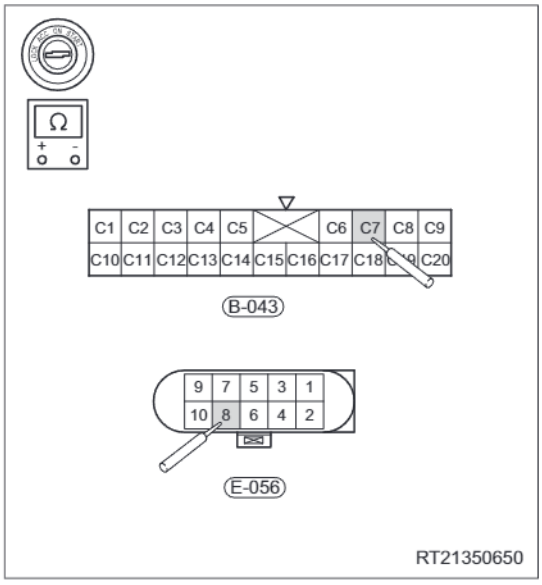
35

i. Disconnect the body wire harness connector B-048 and engine compartment wire harness connector E-070.

j. Using a digital multimeter, check for continuity between terminal C7 of BCM connector B-043 and terminal 8 of rear left combination light wire harness connector E-056 according to the table below.

Standard Condition

Multimeter Connection	Condition	Specified Condition
B-043 (C7) - E-056 (8)	Always	Continuity



NG → **Repair or replace related wire harness and connector**

OK

5	Reconfirm DTCs

a. Firmly reconnect all disconnected connectors.
b. Connect the negative battery cable.
c. Turn ignition switch to ON.
d. Use X-431 3G diagnostic tester (the latest software) to record and clear the DTCs stored in the Body Control Module (BCM).
e. Turn ignition switch to LOCK and wait for a few seconds.
f. Turn ignition switch to ON.
g. Use X-431 3G diagnostic tester to read the DTCs in the Body Control Module (BCM) again.

Result	Precede to
DTC B100311, B100313 and B100319 are output	NG
No DTC is output	OK

NG → **Replace Body Control Module (BCM)**

35

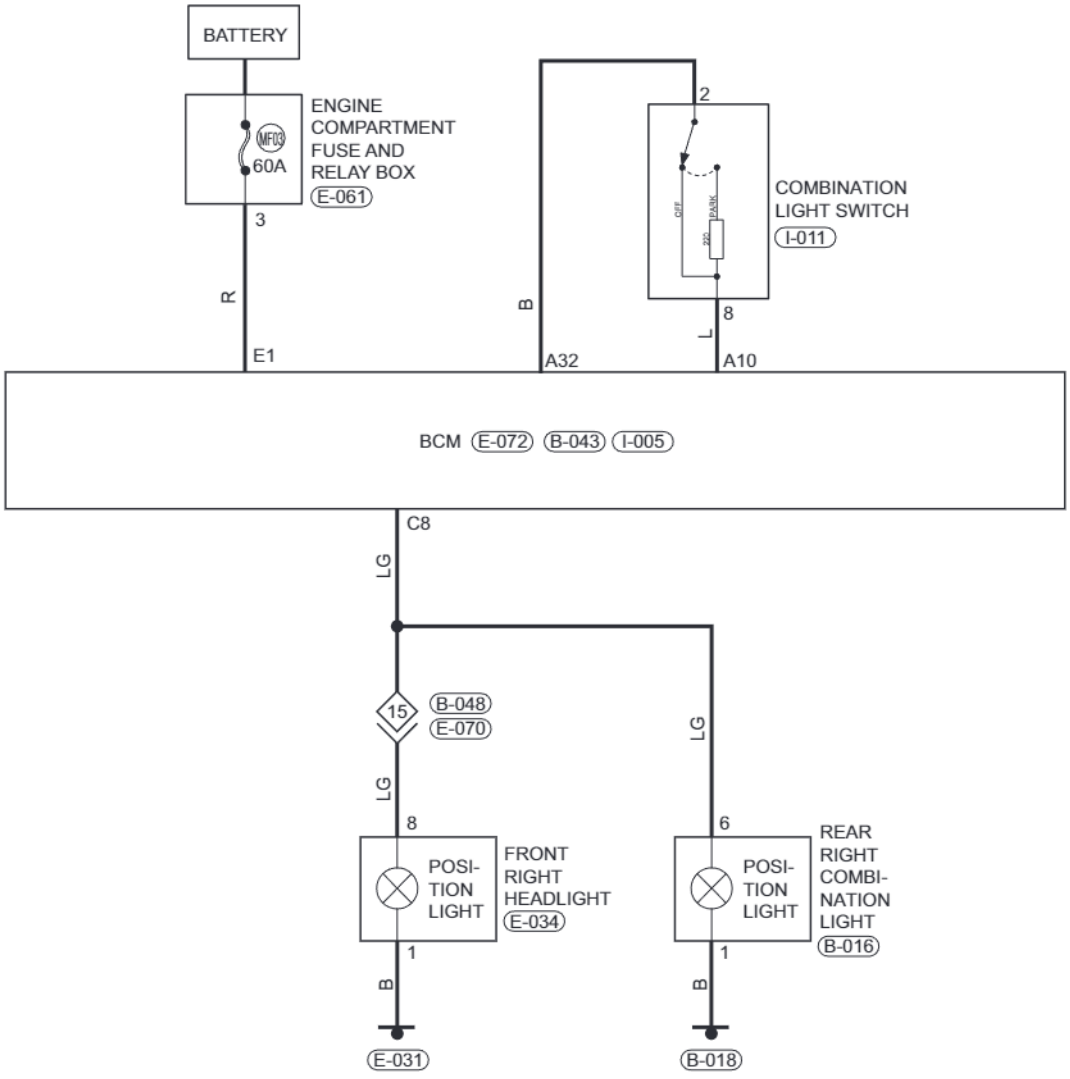
OK ↓

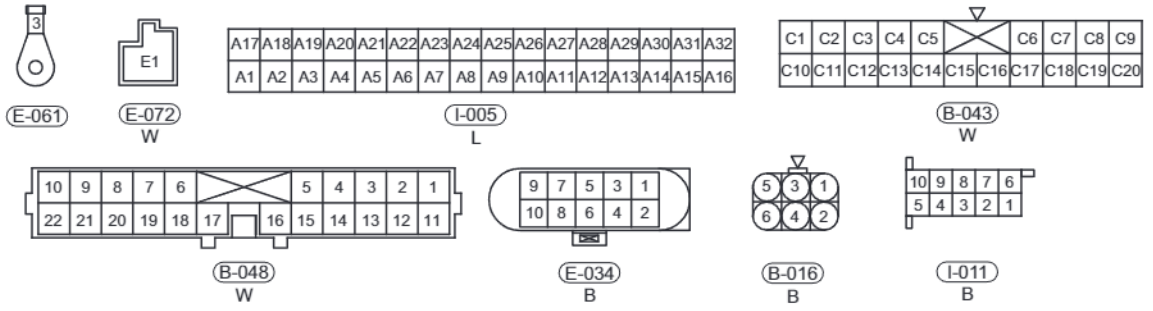
System is normal

DTC	B100411	Right Park Light Output Control Circuit Circuit Short to Ground

DTC	B100413	Right Park Light output Control Circuit Circuit Open

DTC	B100419	Right Park Light Output Control Circuit Circuit Current Above Threshold


BATTERY
ENGINE COMPARTMENT FUSE AND RELAY BOX
E-061
MF03
60A
3
R
E1
B
2
COMBINATION LIGHT SWITCH
I-011
OFF
PARK
220
8
L
A32
A10
BCM E-072 B-043 I-005
C8
LG
15
B-048
E-070
LG
8
POSI-TION LIGHT
FRONT RIGHT HEADLIGHT
E-034
1
B
E-031
LG
6
POSI-TION LIGHT
REAR RIGHT COMBI-NATION LIGHT
B-016
1
B
B-018


3
E-061
E1
E-072
W
A17 A18 A19 A20 A21 A22 A23 A24 A25 A26 A27 A28 A29 A30 A31 A32
A1 A2 A3 A4 A5 A6 A7 A8 A9 A10 A11 A12 A13 A14 A15 A16
I-005
L
C1 C2 C3 C4 C5 C6 C7 C8 C9
C10 C11 C12 C13 C14 C15 C16 C17 C18 C19 C20
B-043
W
10 9 8 7 6 5 4 3 2 1
22 21 20 19 18 17 16 15 14 13 12 11
B-048
W
9 7 5 3 1
10 8 6 4 2
E-034
B
5 3 1
6 4 2
B-016
B
10 9 8 7 6
5 4 3 2 1
I-011
B

ET21350180

Self-diagnosis Detection Logic

DTC Code	DTC Definitions	DTC Detection Conditions	DTC Setting Conditions
B100411	Right Park Light Output Control Circuit Circuit Short to Ground	Ignition switch ON	• Position light bulb • Wire harness or connector • Body Control Module (BCM)
B100413	Right Park Light output Control Circuit Circuit Open		
B100419	Right Park Light Output Control Circuit Circuit Current Above Threshold		

HINT:
While performing the electrical diagnosis and testing, always refer to the relevant circuit diagram for the special circuit and component information.

Diagnosis Procedure

1	Check position light bulb

a. Remove the position light bulb, and check if the position light bulb filament is blown.

NG → **Replace position light bulb**

OK

2	Check wire harness and connector

Use the circuit diagram as a guide to perform the following procedures:

a. Turn ignition switch to LOCK, and disconnect the negative battery cable.
b. Disconnect the Body Control Module (BCM) connectors B-043 and E-072.
c. Disconnect the front right headlight wire harness connector E-034 and rear right combination light wire harness connector B-016.
d. Disconnect the body wire harness connector B-048 and engine compartment wire harness connector E-070.
e. Check if wire harnesses are worn, pierced, pinched or partially broken.
f. Look for broken, bent, protruded or corroded terminals.
g. Check if the related connector terminal contact pins are in good condition.

NG → **Repair or replace related wire harness and connector**

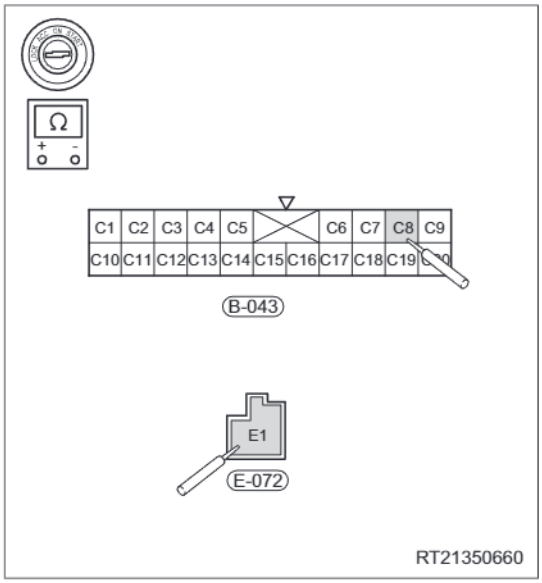
OK

3	Check right position light control circuit

a. Turn ignition switch to LOCK.
b. Disconnect the negative battery cable.
c. Disconnect the Body Control Module (BCM) connectors B-043 and E-072.
d. Using a digital multimeter, check for continuity between terminal C8 of BCM connector B-043 and terminal E1 of BCM connector E-072 to check if it is short to power supply according to the table below.

Standard Condition

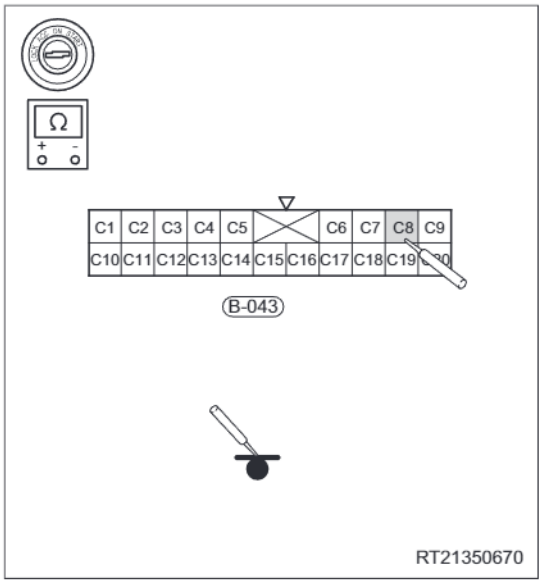
Multimeter Connection	Condition	Specified Condition
B-043 (C8) - E-072 (E1)	Always	No continuity



e. Using a digital multimeter, check for continuity between terminal C8 of BCM connector B-043 and body ground to check if it is short to ground according to the table below.

Standard Condition

Multimeter Connection	Condition	Specified Condition
B-043 (C8) - Body ground	Always	No continuity



NG → **Repair or replace related wire harness and connector**

OK

4	Check wire harness and connector (right position light - Body Control Module (BCM))

a. Turn ignition switch to LOCK.

b. Disconnect the negative battery cable.

c. Disconnect the Body Control Module (BCM) connector B-043.

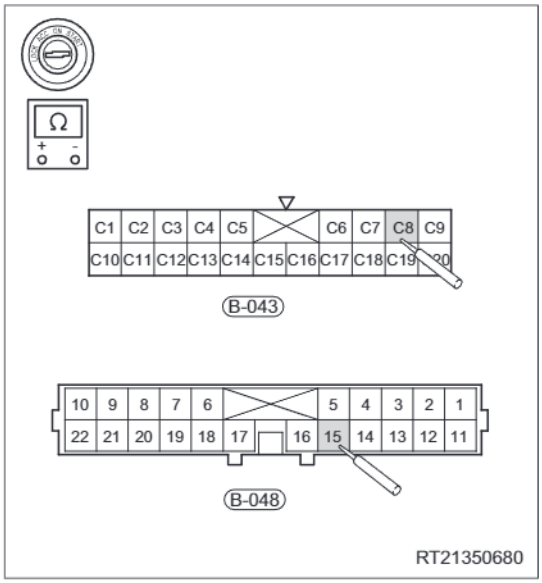
d. Disconnect the front right headlight wire harness connector E-034 and rear right combination light wire harness connector B-016.

e. Disconnect the body wire harness connector B-048 and engine compartment wire harness connector E-070.

f. Using the digital multimeter, check for continuity between terminal C8 of BCM connector B-043 and terminal 15 of body wire harness connector B-048 according to the table below.

Standard Condition

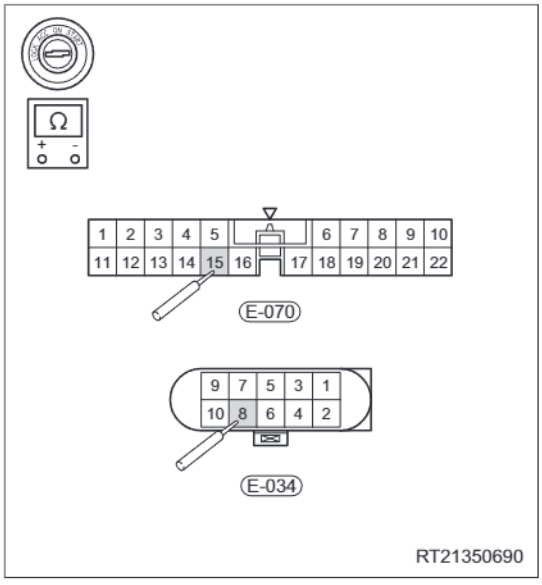
Multimeter Connection	Condition	Specified Condition
B-043 (C8) - B-048 (15)	Always	Continuity



g. Using a digital multimeter, check for continuity between terminal 15 of engine compartment wire harness connector E-070 and terminal 8 of front right headlight wire harness connector E-034 according to the table below.

Standard Condition

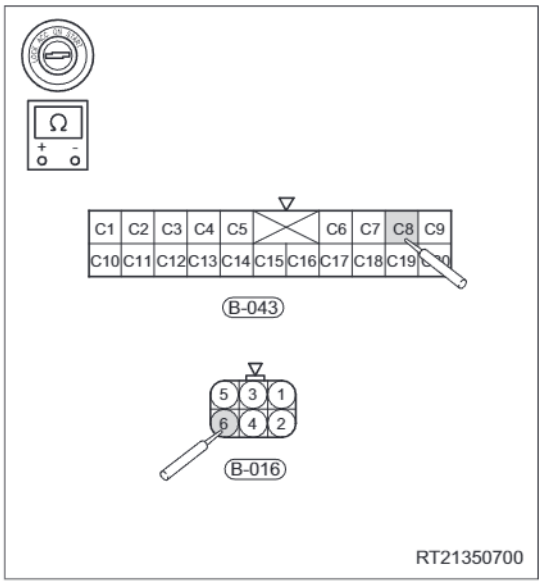
Multimeter Connection	Condition	Specified Condition
E-070 (15) - E-034 (8)	Always	Continuity



h. Using a digital multimeter, check for continuity between terminal C8 of BCM connector B-043 and terminal 6 of rear right combination light wire harness connector B-016 according to the table below.

Standard Condition

Multimeter Connection	Condition	Specified Condition
B-043 (C8) - B-016 (6)	Always	Continuity

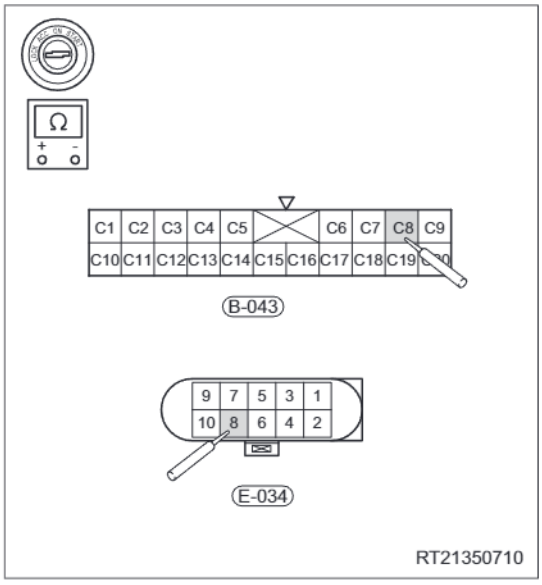


i. Disconnect the body wire harness connector B-048 and engine compartment wire harness connector E-070.

j. Using a digital multimeter, check for continuity between terminal C8 of BCM connector B-043 and terminal 8 of front right headlight wire harness connector E-034 according to the table below.

Standard Condition

Multimeter Connection	Condition	Specified Condition
B-043 (C8) - E-034 (8)	Always	Continuity



NG → **Repair or replace related wire harness and connector**

OK

35

5	Reconfirm DTCs

a. Firmly reconnect all disconnected connectors.
b. Connect the negative battery cable.
c. Turn ignition switch to ON.
d. Use X-431 3G diagnostic tester (the latest software) to record and clear the DTCs stored in the Body Control Module (BCM).
e. Turn ignition switch to LOCK and wait for a few seconds.
f. Turn ignition switch to ON.
g. Use X-431 3G diagnostic tester to read the DTCs in the Body Control Module (BCM) again.

Result	Precede to
DTC B100411, B100413 and B100419 are output	NG
No DTC is output	OK

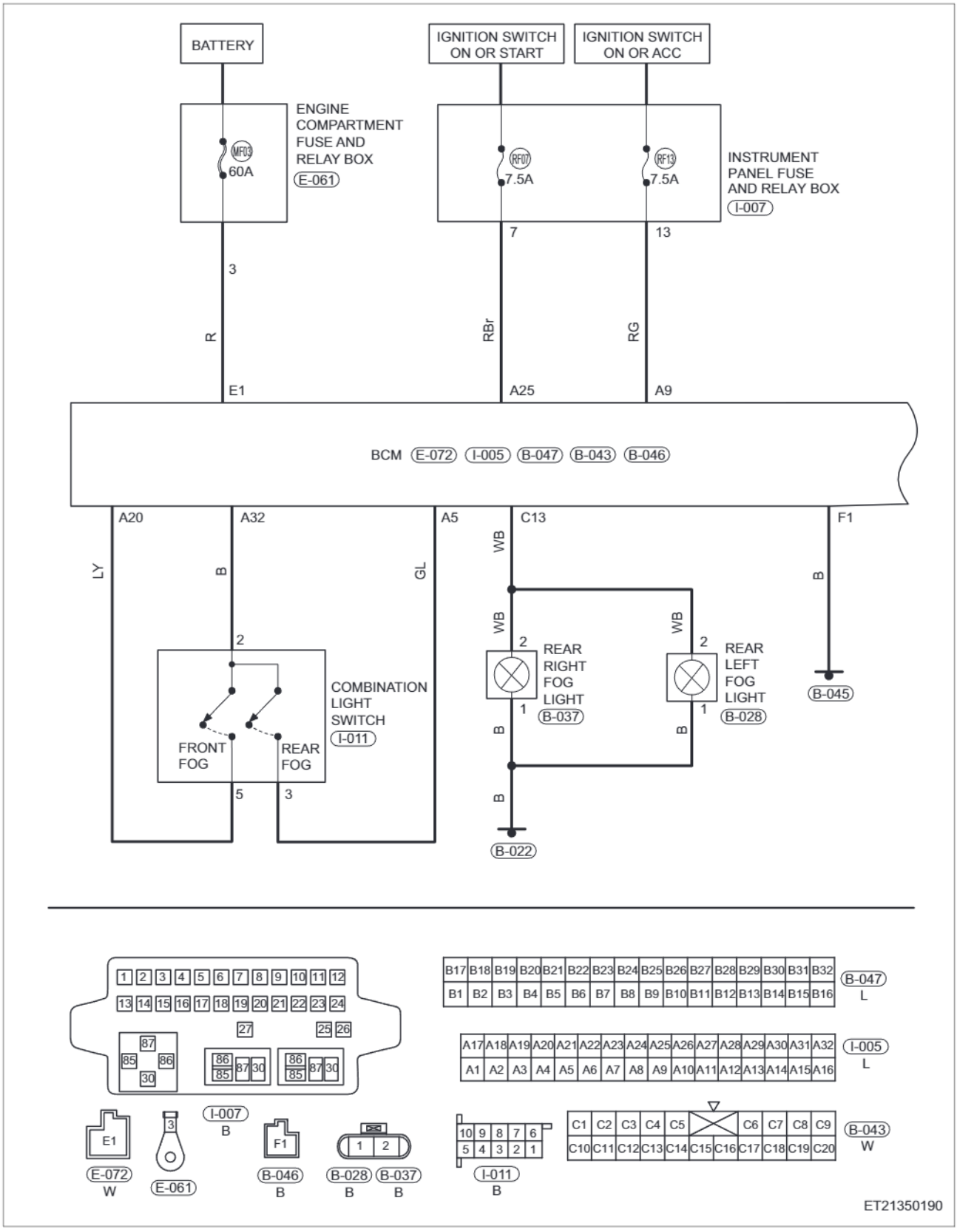
NG → **Replace Body Control Module (BCM)**

OK ↓

System is normal

DTC	B100813	Rear Fog Control Circuit Circuit Open

DTC	B100871	Rear Fog Control Circuit Actuator Stuck



Self-diagnosis Detection Logic

DTC Code	DTC Definitions	DTC Detection Conditions	DTC Setting Conditions
B100813	Rear Fog Control Circuit Circuit Open	Ignition switch ON	• Rear fog light bulb • Wire harness or connector • Body Control Module (BCM)
B100871	Rear Fog Control Circuit Actuator Stuck		

HINT:
While performing the electrical diagnosis and testing, always refer to the relevant circuit diagram for the special circuit and component information.

Diagnosis Procedure

1	Check rear fog light bulb

a. Remove the rear fog light bulb, and check if the rear fog light bulb filament is blown.

NG → Replace rear fog light bulb

OK

2	Check wire harness and connector

Use the circuit diagram as a guide to perform the following procedures:

a. Turn ignition switch to LOCK, and disconnect the negative battery cable.
b. Disconnect the Body Control Module (BCM) connectors B-043 and E-072.
c. Disconnect the rear left fog light wire harness connector B-028 and rear right fog light wire harness connector B-037.
d. Check if wire harnesses are worn, pierced, pinched or partially broken.
e. Look for broken, bent, protruded or corroded terminals.
f. Check if the related connector terminal contact pins are in good condition.

NG → Repair or replace related wire harness and connector

OK

3	Check rear fog light control circuit

a. Turn ignition switch to LOCK.

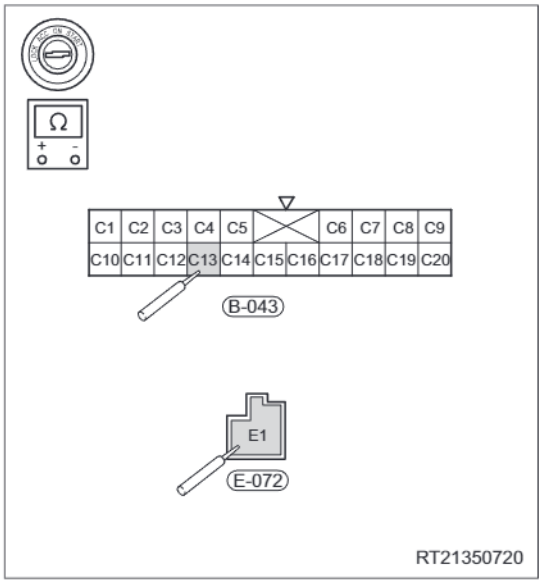
b. Disconnect the negative battery cable.

c. Disconnect the Body Control Module (BCM) connectors B-043 and E-072.

d. Using a digital multimeter, check for continuity between terminal C13 of BCM connector B-043 and terminal E1 of BCM connector E-072 to check if it is short to power supply according to the table below.

Standard Condition

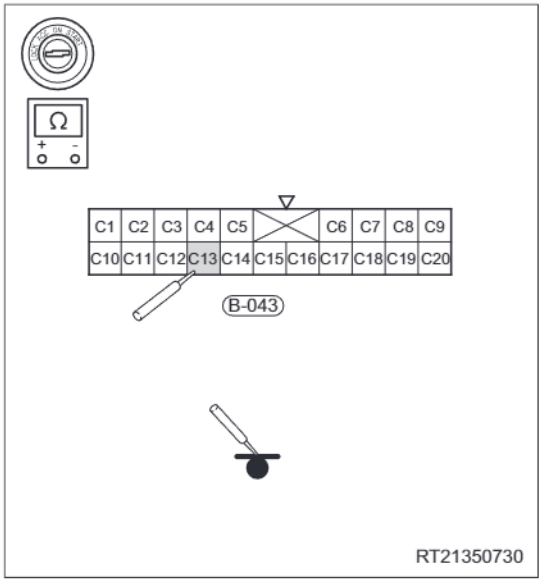
Multimeter Connection	Condition	Specified Condition
B-043 (C13) - E-072 (E1)	Always	No continuity



e. Using a digital multimeter, check for continuity between terminal C13 of BCM connector B-043 and body ground to check if it is short to ground according to the table below.

Standard Condition

Multimeter Connection	Condition	Specified Condition
B-043 (C13) - Body ground	Always	No continuity



NG → **Repair or replace related wire harness and connector**

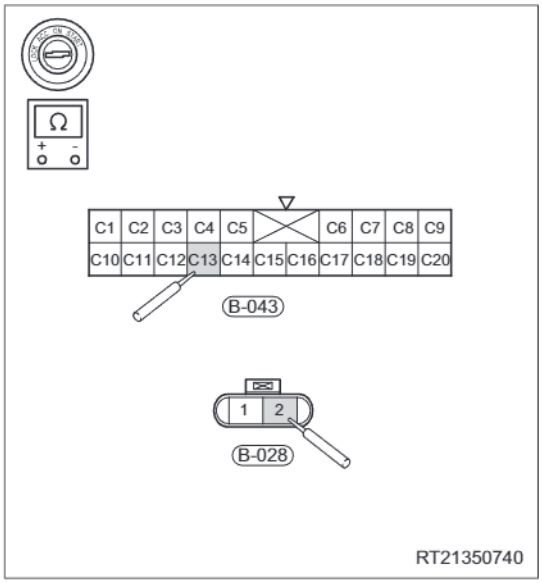
OK

4	Check wire harness and connector (rear fog light - Body Control Module (BCM))

a. Turn ignition switch to LOCK.
b. Disconnect the negative battery cable.
c. Disconnect the Body Control Module (BCM) connector B-043.
d. Disconnect the rear left fog light wire harness connector B-028 and rear right fog light wire harness connector B-037.
e. Using a digital multimeter, check for continuity between terminal C13 of BCM connector B-043 and terminal 2 of rear left fog light wire harness connector B-028 according to the table below.

Standard Condition

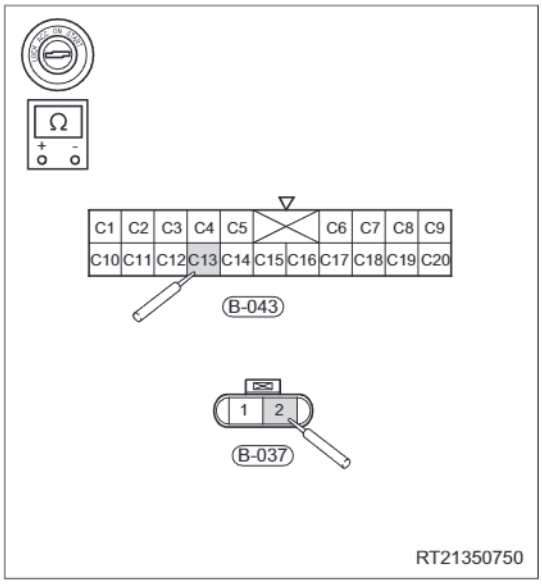
Multimeter Connection	Condition	Specified Condition
B-043 (C13) - B-028 (2)	Always	Continuity



f. Using a digital multimeter, check for continuity between terminal C13 of BCM connector B-043 and terminal 2 of rear right fog light wire harness connector B-037 according to the table below.

Standard Condition

Multimeter Connection	Condition	Specified Condition
B-043 (C13) - B-037 (2)	Always	Continuity



NG → **Repair or replace related wire harness and connector**

OK

5	Reconfirm DTCs

a. Firmly reconnect all disconnected connectors.
b. Connect the negative battery cable.
c. Turn ignition switch to ON.
d. Use X-431 3G diagnostic tester (the latest software) to record and clear the DTCs stored in the Body Control Module (BCM).
e. Turn ignition switch to LOCK and wait for a few seconds.
f. Turn ignition switch to ON.
g. Use X-431 3G diagnostic tester to read the DTCs in the Body Control Module (BCM) again.

Result	Precede to
DTC B100813 and B100871 are output	NG
No DTC is output	OK

NG → **Replace Body Control Module (BCM)**

OK ↓

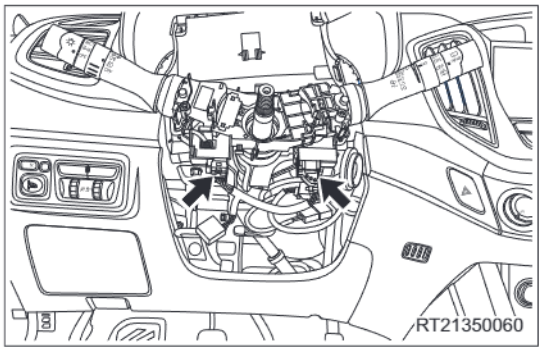
System is normal

ON-VEHICLE SERVICE

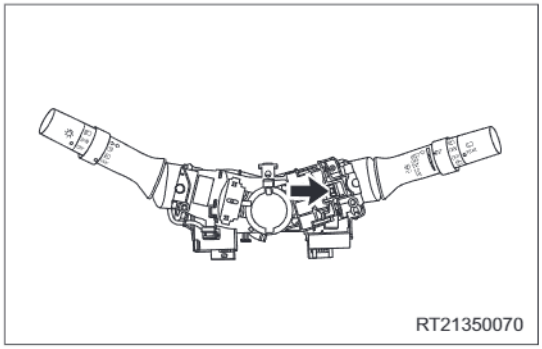
Headlight Adjustment Switch Assembly

Removal

1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the driver airbag (See page 32-64).
4. Remove the steering wheel assembly (See page 28-10).
5. Remove the combination switch cover (See page 28-13).
6. Remove the spiral cable (See page 32-67).
7. Remove the headlight adjustment switch assembly.
   a. Remove the headlight adjustment switch assembly and wiper switch assembly wire harness connectors (arrow).



   b. Remove the combination switch assembly from steering column.
   c. Press the claw (arrow) on wiper switch assembly, and separates it from headlight adjustment switch assembly.

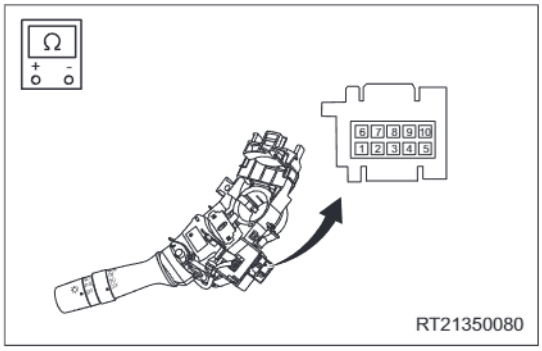


   d. Remove the headlight adjustment switch assembly.

Inspection

1. Check headlight adjustment switch assembly.

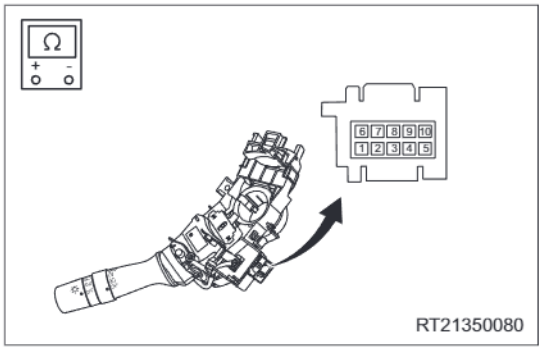
a. Using ohm band of digital multimeter, check for continuity between terminals as shown in the table.
Headlight Adjustment Switch Assembly (Position Light/Low Beam Light/High Beam Light Switch)



Multimeter Connection	Switch Condition	Specified Condition
Terminal 2 - Terminal 8	Switch OFF	No continuity
Terminal 2 - Terminal 8	Switch in position light	220 Ω
Terminal 2 - Terminal 8	Switch in low beam	150 Ω
Terminal 2 - Terminal 9	Switch in high beam	150 Ω
Terminal 2 - Terminal 9	Switch in passing light	330 Ω

If result is not as specified, replace headlight adjustment switch assembly.

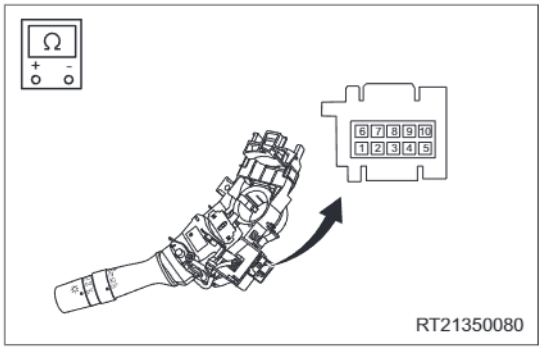
b. Using ohm band of digital multimeter, check for continuity between terminals as shown in the table.
Headlight Adjustment Switch Assembly (Front Fog Light/Rear Fog Light Switch)



Multimeter Connection	Switch Condition	Specified Condition
Terminal 2 - Terminal 5	Switch in front fog light	Continuity
Terminal 2 - Terminal 3	Switch in rear fog light	Continuity

If result is not as specified, replace headlight adjustment switch assembly.

c. Using ohm band of digital multimeter, check for continuity between terminals as shown in the table.
Headlight Adjustment Switch Assembly (Turn Signal Light Switch)



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

If result is not as specified, replace headlight adjustment switch assembly.

Installation

Installation is in the reverse order of removal.

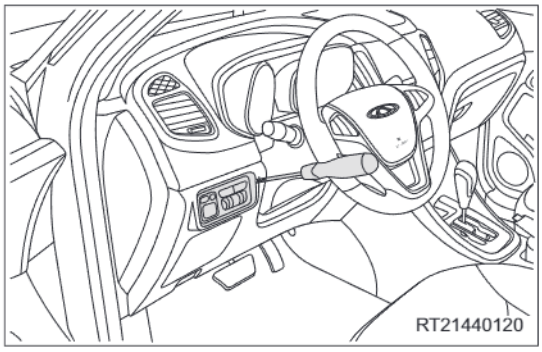
CAUTION

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

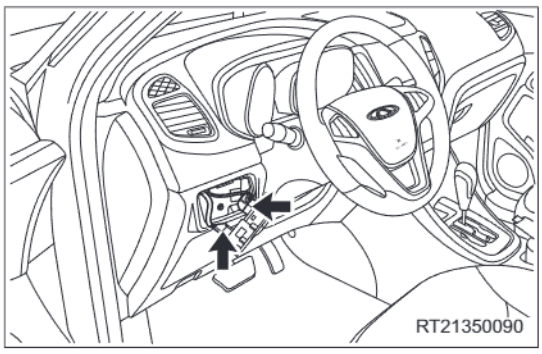
Combination Light Adjustment Switch

Removal

1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the combination light adjustment switch.
   a. Using a screwdriver wrapped with protective tape, pry both ends of combination light adjustment switch carefully to remove it.



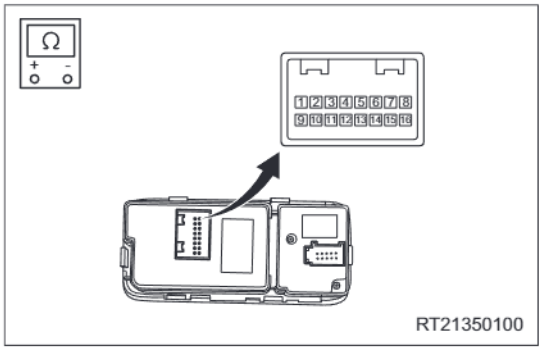
   b. Disconnect the combination light adjustment switch wire harness connectors (arrow).



   c. Remove the combination light adjustment switch.

Inspection

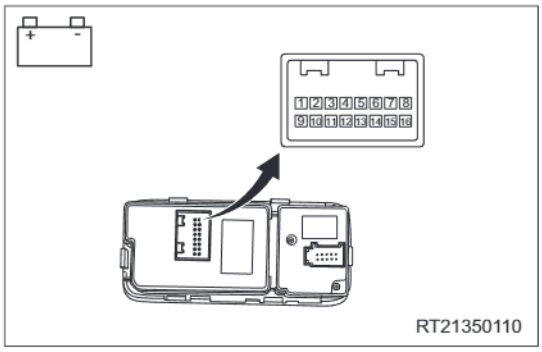
1. Check combination light adjustment switch (headlight leveling switch).
   a. Turn digital multimeter to ohm band, and connect red probe of multimeter to terminal 1, and black probe to terminal 2.
   Observe resistance change on the digital multimeter while turning the headlight leveling switch to each position.



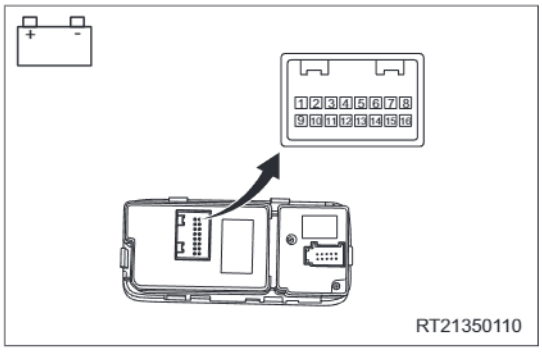
Multimeter Connection	Switch Position	Specified Condition (KΩ)
Terminal 1 - Terminal 2	0	1.297
Terminal 1 - Terminal 2	1	1.808
Terminal 1 - Terminal 2	2	2.735
Terminal 1 - Terminal 2	3	3.945

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

2. Check combination light adjustment switch (backlight switch).
   a. Connect positive battery lead to terminal 6 and negative battery lead to terminal 8 of combination light adjustment switch. Check if the backlight comes on. Observe if the backlight brightness changes gradually while turning the backlight switch.
   OK: Comes on and changes gradually.



   b. Connect positive battery lead to terminal 7 and negative battery lead to terminal 8 of combination light adjustment switch. Check if the backlight comes on.
   OK: Comes on.
   If result is not as specified, replace combination light adjustment switch.



Installation

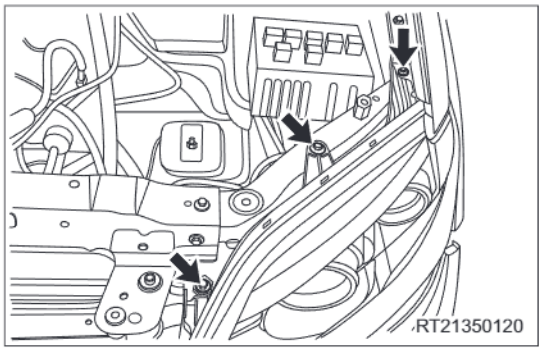
Installation is in the reverse order of removal.

Headlight Assembly

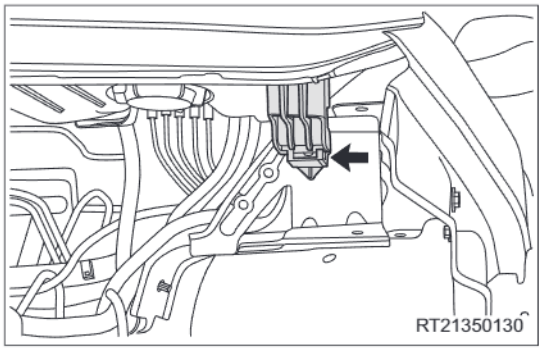
Removal

HINT:
Use the same procedures for the right side and left side.
Procedures listed below are for the left side.

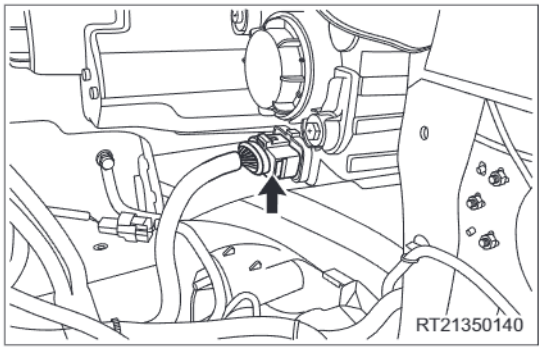
1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the radiator grille assembly (See page 48-8).
4. Remove the water tank upper crossmember trim board (See page 48-10).
5. Remove the headlight assembly.
   a. Remove 3 fixing bolts (arrow) from headlight assembly.
   (Tightening torque: 3.5 ± 0.5 N·m)



   b. Move the headlight assembly along vehicle driving direction, and detach the fixing clip (arrow) between headlight assembly and mounting bracket.



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



Installation

Installation is in the reverse order of removal.

CAUTION

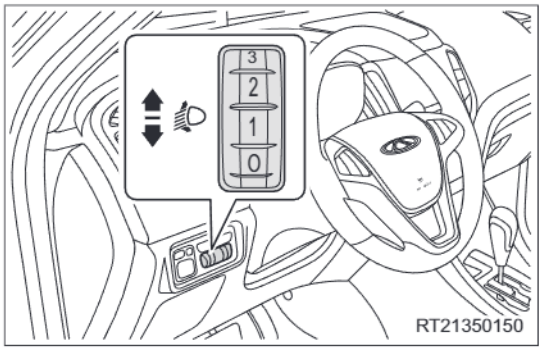
- When installing headlight assembly, make sure the fitting clearance between headlight and hood, front fender, front bumper is appropriate. Adjust as necessary.

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 a workplace.
   d. Keep lens surface of headlight free from dirt.
   e. Check if power supply operates normally and bulbs are installed correctly.
   f. Headlight beam can be adjusted up and down, left and right by using headlight leveling switch or adjustment area at the rear of headlight. Always perform adjustment according to the international standard.

No.	Item	Standard
1	Reference center height of headlight low beam	H = 903 mm
2	Up and down offset of left/right low beam	Adjust center: 0.85H = 768 mm Adjust range: 0.8H - 0.9H = 722 - 813 mm
3	Left and right offset of left low beam	Left offset no more than 170 mm, right offset no more than 350 mm
4	Left and right offset of right low beam	Left offset no more than 170 mm, right offset no more than 350 mm
5	Left and right offset of left high beam	Left offset no more than 170 mm, right offset no more than 350 mm
6	Left and right offset of right high beam	Left offset no more than 350 mm, right offset no more than 350 mm
7	High beam light intensity	≥ 39000 cd

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



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

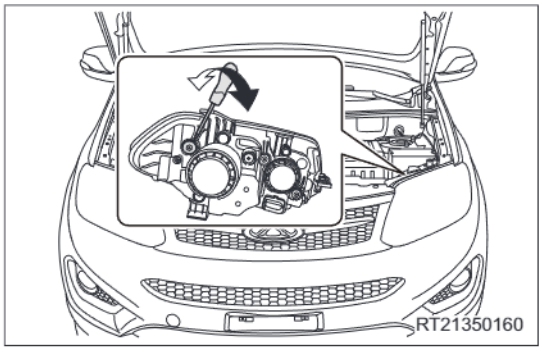
CAUTION

- Whether headlight leveling is correct or not will directly affects driving safety. Be sure to adjust it according to the related specification.

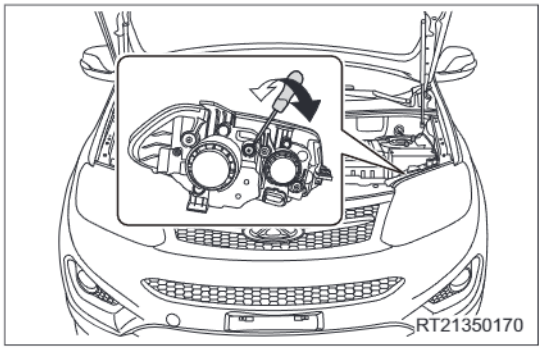
3. Manual headlight leveling: the headlight leveling can be changed by adjusting the following areas manually as shown in the illustration.

   Adjustment method for left headlight

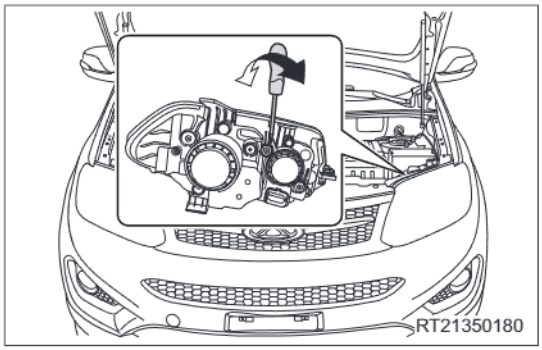
   a. Low beam left/right adjustment
   When rotating the screwdriver clockwise, the beam move to left; when rotating the screwdriver counterclockwise, the beam move to right.



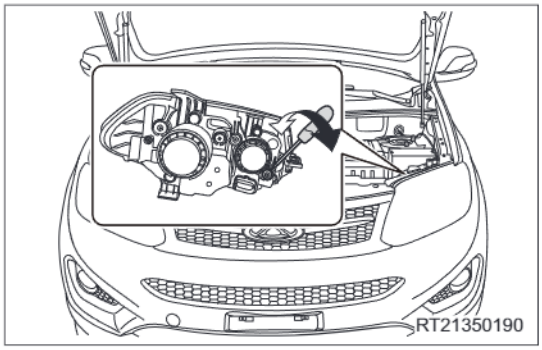
   b. Low beam up/down adjustment
   When rotating the screwdriver clockwise, the beam move downward; when you rotating the screwdriver counterclockwise, the beam move upward.



c. High beam left/right adjustment
When rotating the screwdriver clockwise, the beam move to left; when rotating the screwdriver counterclockwise, the beam move to right.



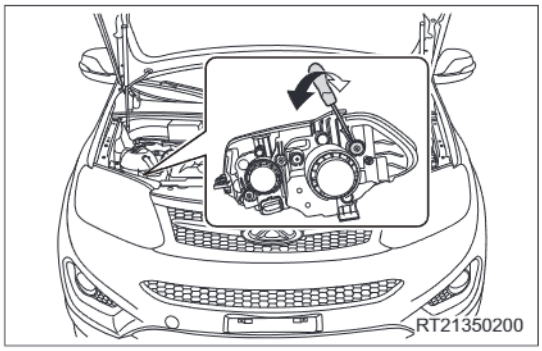
d. High beam up/down adjustment
When rotating the screwdriver clockwise, the beam move upward; when rotating the screwdriver counterclockwise, the beam move downward.



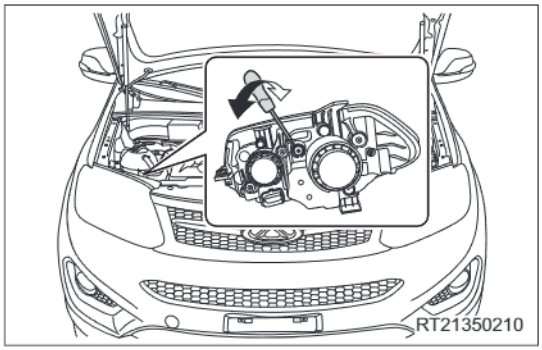
35

Adjustment method for right headlight

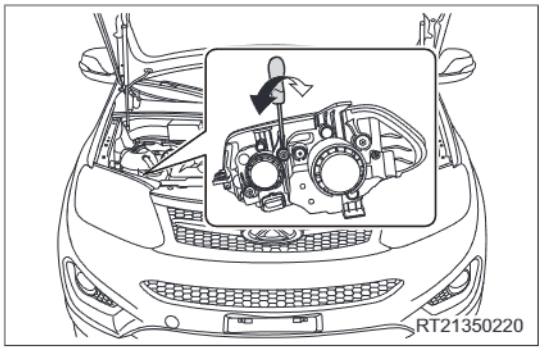
a. Low beam left/right adjustment
When rotating the screwdriver clockwise, the beam move to left; when rotating the screwdriver counterclockwise, the beam move to right.



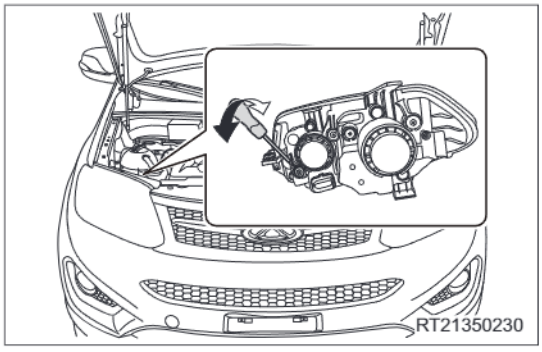
b. Low beam up/down adjustment
When rotating the screwdriver clockwise, the beam move downward; when you rotating the screwdriver counterclockwise, the beam move upward.



c. High beam left/right adjustment
When rotating the screwdriver clockwise, the beam move to left; when rotating the screwdriver counterclockwise, the beam move to right.



d. High beam up/down adjustment
When rotating the screwdriver clockwise, the beam move upward; when rotating the screwdriver counterclockwise, the beam move downward.



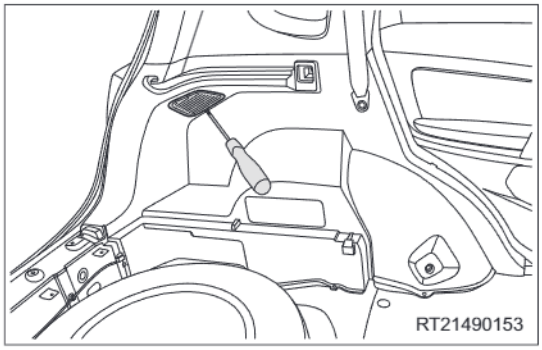
Rear Combination Light Assembly (Fixed Part)

Removal

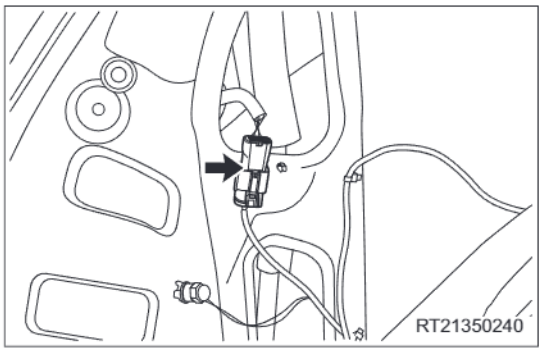
HINT:

- Use the same procedures for the right side and left side.
- Procedures listed below are for rear left combination light.

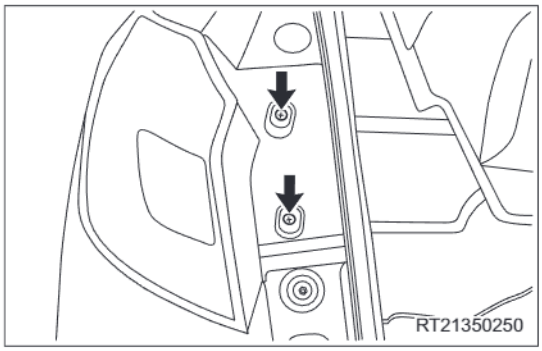
1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the rear combination light assembly (fixed part).
   a. Using a flat tip screwdriver wrapped with protective tape, pry up and remove the rear combination light service cover.



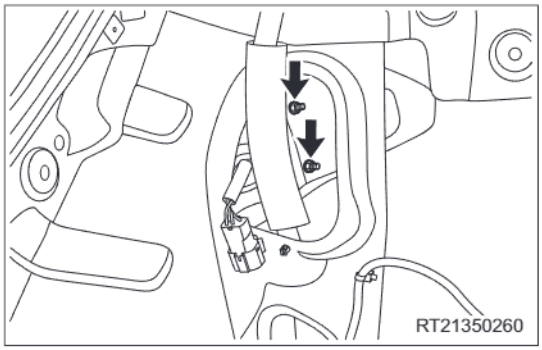
   b. Disconnect the rear combination light assembly (fixed part) wire harness connector (arrow), and detach the wire harness fixing clip.



   c. Remove 2 fixing screws (arrow) from outer part of rear combination light assembly (fixed part).
   (Tightening torque: 1.5 ± 0.5 N·m)



d. Remove 2 fixing nuts (arrow) from inner part of rear combination light assembly (fixed part), and detach the inner fixing clip.
(Tightening torque: 4.5 ± 1 N·m)



e. Remove the rear combination light assembly (fixed part).

Installation

Installation is in the reverse order of removal.

CAUTION

- When installing rear combination light assembly, make sure the fitting clearance between rear combination light assembly and back door, rear bumper is appropriate. Adjust it as necessary.

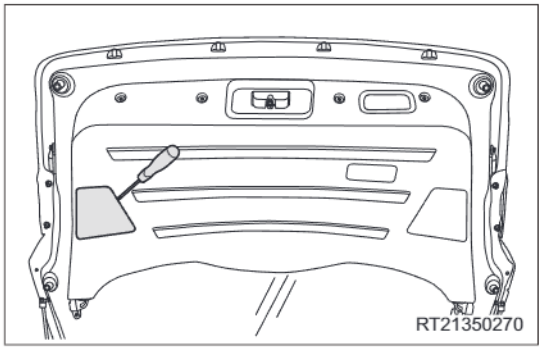
Rear Combination Light Assembly (Movable Part)

Removal

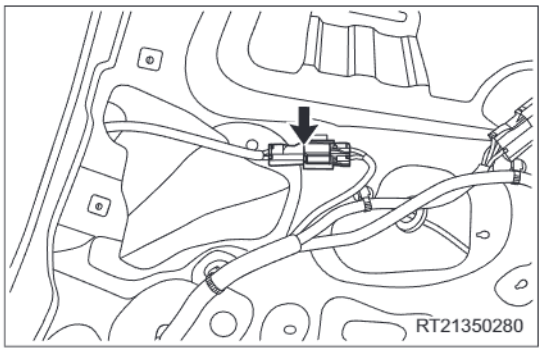
HINT:

- Use the same procedures for the right side and left side.
- Procedures listed below are for the left side.

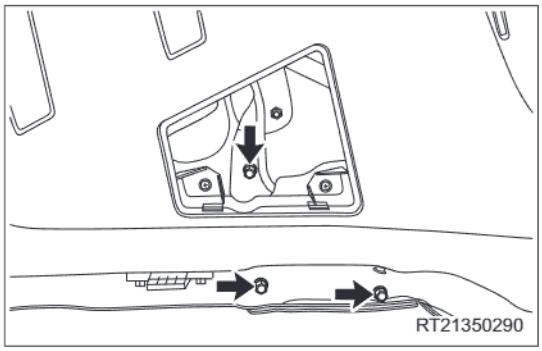
1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the rear combination light assembly (movable part).
   a. Using a flat tip screwdriver wrapped with protective tape, pry up and remove the rear left combination light service cover on back door.



   b. Disconnect the rear combination light assembly (movable part) wire harness connector (arrow), and detach the wire harness fixing clip.



   c. Remove 3 fixing nuts (arrow) from rear combination light assembly (movable part).
   (Tightening torque: 4.5 ± 1 N·m)



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

Installation

Installation is in the reverse order of removal.

CAUTION

- When installing rear combination light assembly, make sure the fitting clearance between rear combination light assembly and back door, rear bumper is appropriate. Adjust it as necessary.

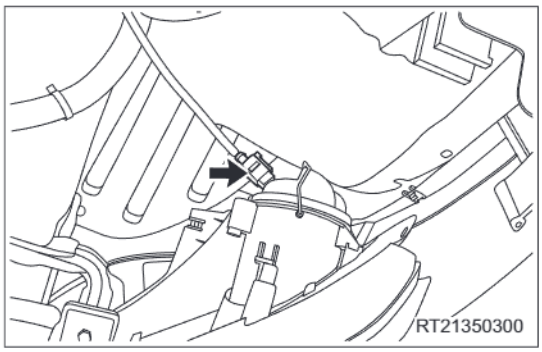
Front Fog Light Assembly

Removal

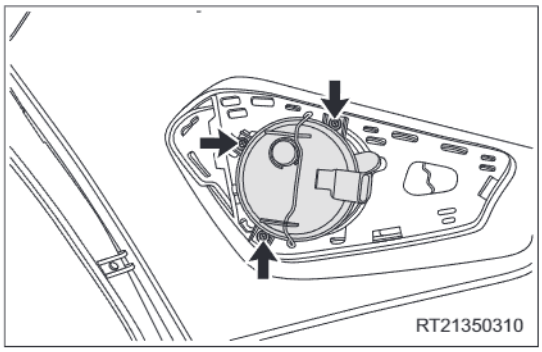
HINT:

- Use the same procedures for the right side and left side.
- Procedures listed below are for the left side.

1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the front wheel house protector assembly (See page 48-24).
4. Remove the front fog light assembly.
   a. Disconnect the front fog light assembly wire harness connector (arrow).



   b. Remove 3 fixing crews (arrow) from front fog light assembly.
   (Tightening torque: 1.5 ± 0.5 N·m)



   c. Remove the front fog light assembly.

Installation

Installation is in the reverse order of removal.

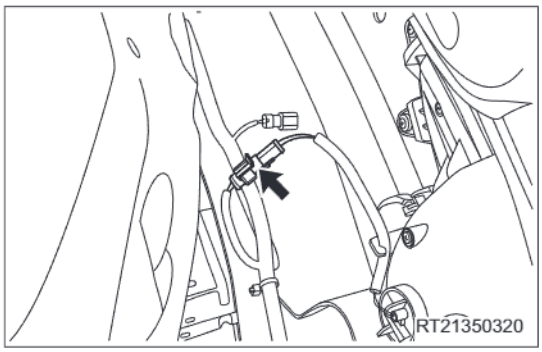
Rear Fog Light & Reflector Assembly

Removal

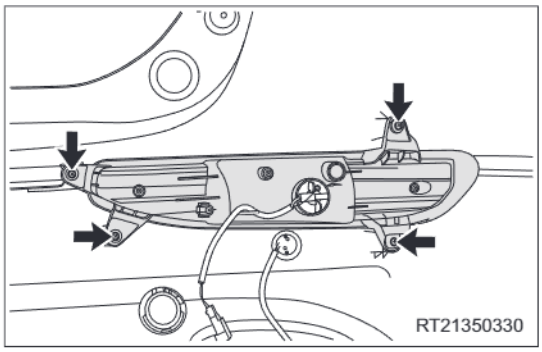
HINT:

- Use the same procedures for the right side and left side.
- Procedures listed below are for the left side.

1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the rear bumper assembly (See page 48-30).
4. Remove the rear fog light & reflector assembly.
   a. Disconnect the rear fog light & reflector assembly wire harness connector (arrow).



   b. Remove 4 fixing crews (arrow) from rear fog light & reflector assembly.
   (Tightening torque: 1.5 ± 0.5 N·m)



   c. Remove the rear fog light & reflector assembly.

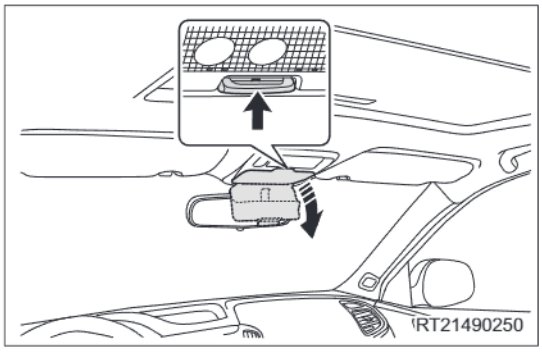
Installation

Installation is in the reverse order of removal.

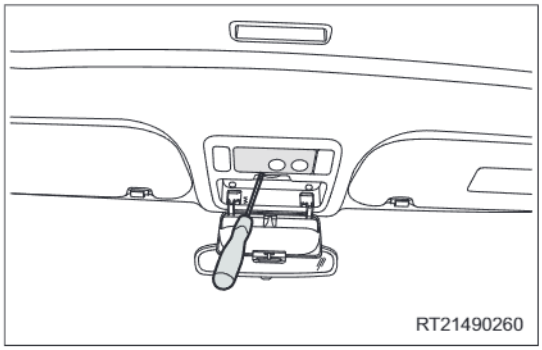
Front Dome Light Assembly

Removal

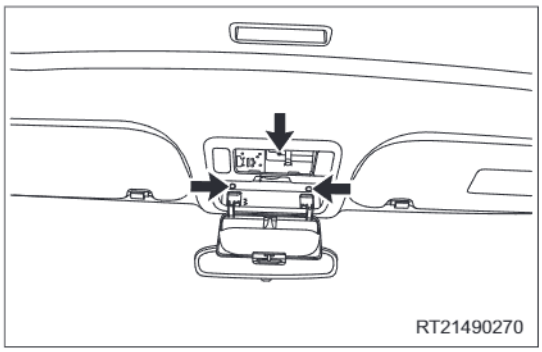
1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the front dome light assembly.
   a. Open the glasses box in the direction of arrow as shown in the illustration.



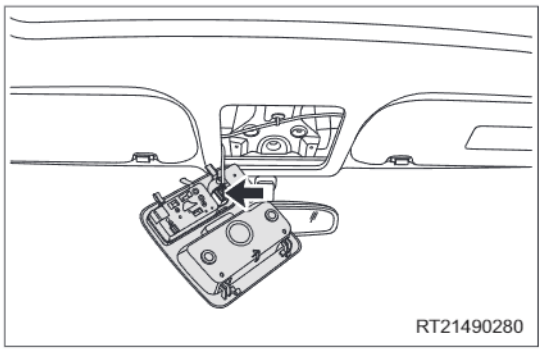
   b. Using a flat tip screwdriver wrapped with protective tape, remove the front dome light assembly cover.



   c. Remove 3 fixing crews (arrow) from front dome light assembly.
   (Tightening torque: 1.5 ± 0.5 N·m)



   d. Disconnect the front dome light assembly wire harness connector (arrow).

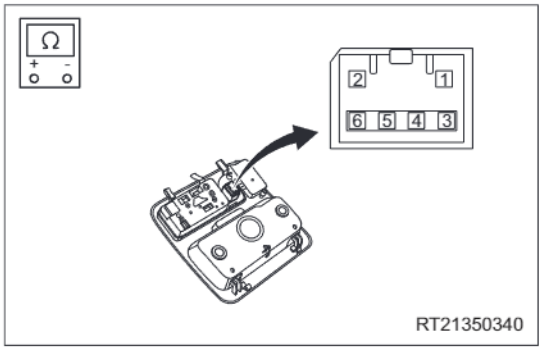


   e. Remove the front dome light assembly.

Inspection

1. Check front dome light assembly.
   a. Using ohm band of digital multimeter, check for continuity between terminals of front dome light assembly as shown in the table.

Multimeter Connection	Switch Position	Specified Condition
Terminal 1 - Terminal 2	Switch pushed	Continuity
Terminal 1 - Terminal 2	Switch released	No continuity



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

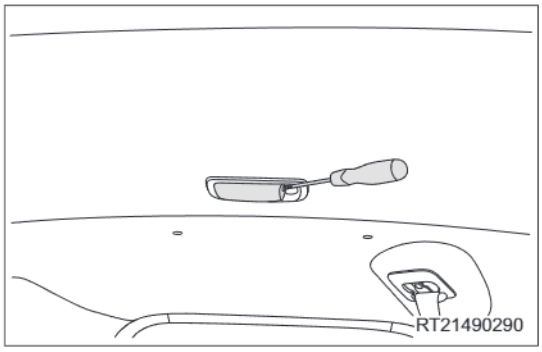
Installation

Installation is in the reverse order of removal.

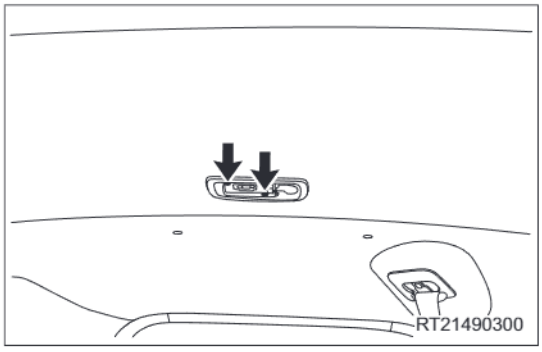
Rear Dome Light Assembly

Removal

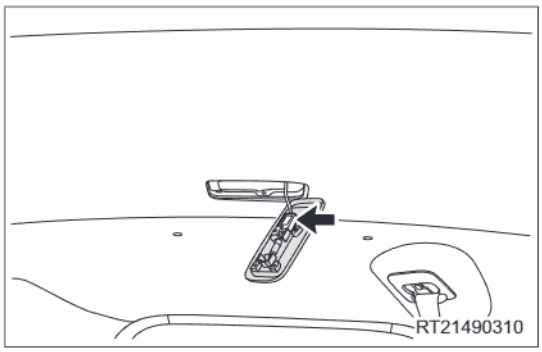
1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the rear dome light assembly.
   a. Using a flat tip screwdriver wrapped with protective tape, remove the rear dome light assembly cover.



   b. Remove 2 fixing screws (arrow) from rear dome light assembly.
   (Tightening torque: 1.5 ± 0.5 N·m)



   c. Disconnect the rear dome light assembly wire harness connector (arrow).



   d. Remove the rear dome light assembly.

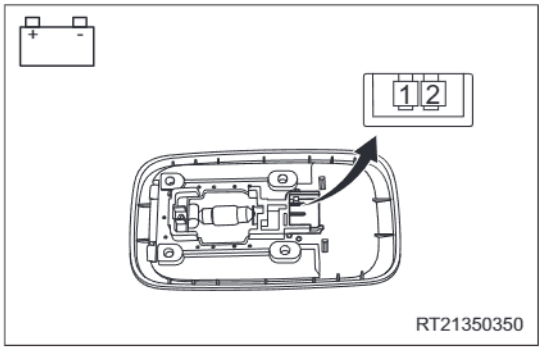
Inspection

1. Check rear dome light assembly.
   a. Connect battery positive (+) to terminal 2 of rear dome light assembly, and battery negative (-) to terminal 1. Check operation of rear dome light when turn rear dome light assembly switch to ON, OFF and DOOR position.

      Standard Condition:

      Switch ON: Does not come on.
      Switch OFF: Does not come on.
      Switch DOOR: Comes on.

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



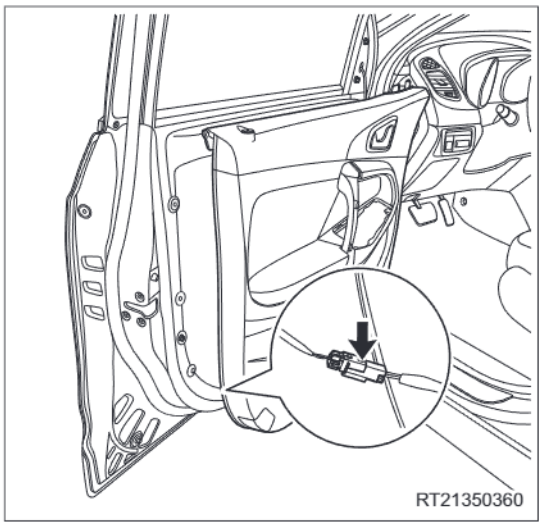
Installation

Installation is in the reverse order of removal.

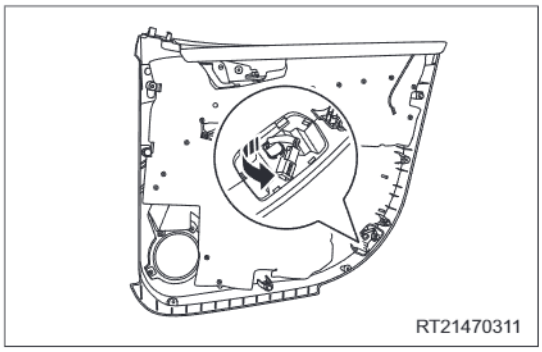
Front Door Courtesy Light

Removal

1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the front door protector assembly. (See page 47-23).
4. Remove the front door courtesy light.
   a. Disconnect the front door courtesy light wire harness connector (arrow).



   b. Turn the front door courtesy light counterclockwise, and remove it from front door protector assembly.



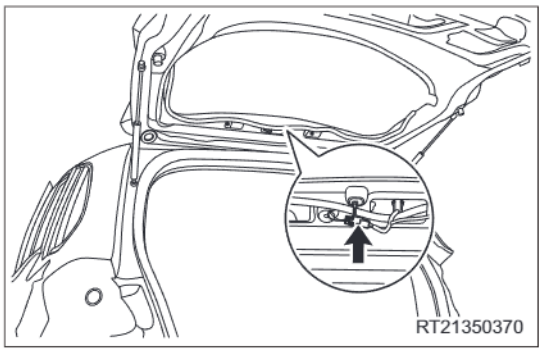
Installation

Installation is in the reverse order of removal.

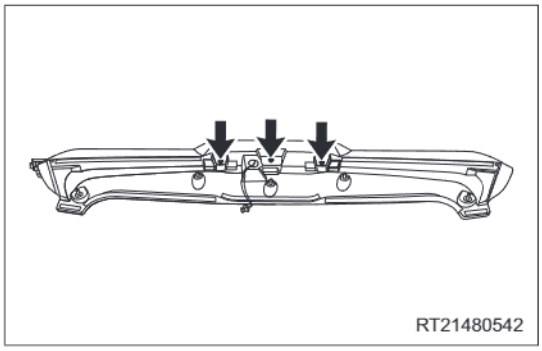
High Mounted Stop Light Assembly

Removal

1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the back door protector assembly (See page 47-47).
4. Remove the high mounted stop light assembly.
   a. Disconnect the high mounted stop light assembly wire harness connector (arrow).



   b. Remove the rear spoiler assembly (See page 48-43).
   c. Remove 3 fixing nuts (arrow) from high mounted stop light assembly.
   (Tightening torque: 3.5 ± 0.5 N·m)



   d. Remove the high mounted stop light assembly from rear spoiler assembly.

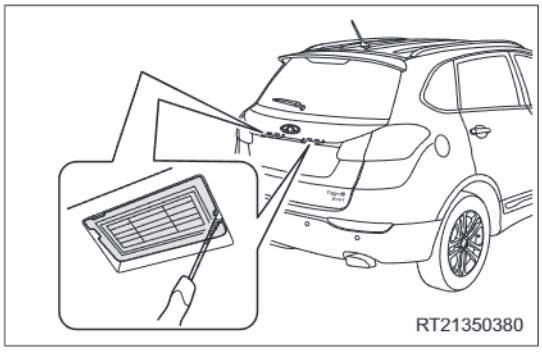
Installation

Installation is in the reverse order of removal.

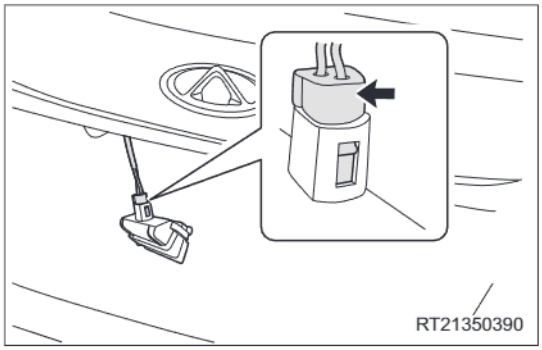
License Plate Light Assembly

Removal

1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the license plate light assembly.
   a. Using a flat tip screwdriver wrapped with protective tape, pry out the license plate light assembly.



   b. Disconnect the license plate light assembly wire harness connector (arrow).



   c. Remove the license plate light assembly.

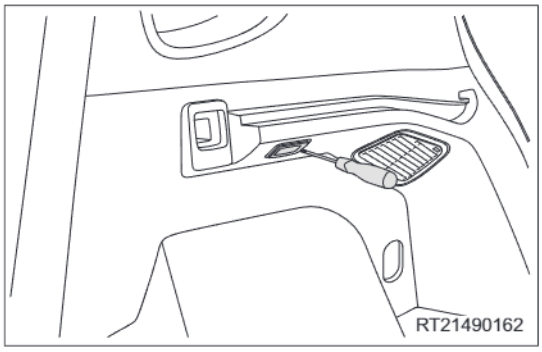
Installation

Installation is in the reverse order of removal.

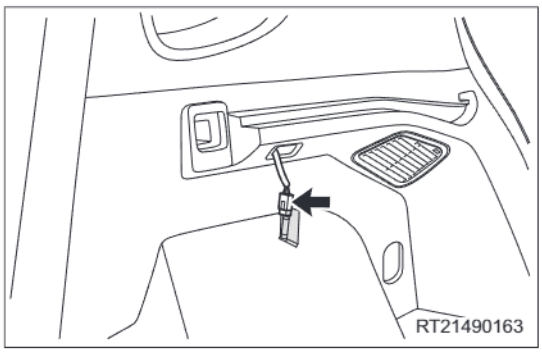
Luggage Compartment Light Assembly

Removal

1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the luggage compartment light assembly.
   a. Using a flat tip screwdriver wrapped with protective tape, pry out the luggage compartment light assembly cover (right side).



   b. Disconnect the luggage compartment light assembly wire harness connector (arrow).



   c. Remove the luggage compartment light assembly.

Installation

Installation is in the reverse order of removal.

Back-up Light Switch Assembly

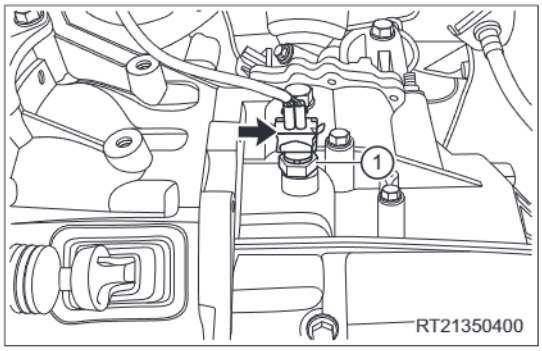
Removal

1. Remove the back-up light switch assembly.
   a. Stop the vehicle on a lifter, and support it with the lifter.
   b. Turn off all the electrical equipment and ignition switch.
   c. Disconnect the negative battery cable.
   d. Raise the vehicle with the lifter.

⚠ WARNING

- Bear sure to wear necessary safety equipments to avoid accidents.
- Check if safety lock of lifter is locked when performing vehicle lift repair and inspection.

   e. Disconnect the back-up light switch assembly wire harness connector (arrow).
   f. Remove the back-up light switch assembly (1).



HINT:
Transmission oil may flow out when removing back-up light switch assembly. Use a container to collect the oil.

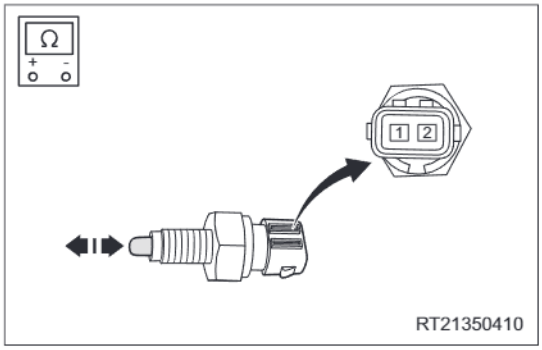
♻ ENVIRONMENTAL PROTECTION

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

Inspection

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

Multimeter Connection	Switch Position	Specified Condition
Terminal 1 - Terminal 2	Switch pushed	Continuity
Terminal 1 - Terminal 2	Switch released	No continuity



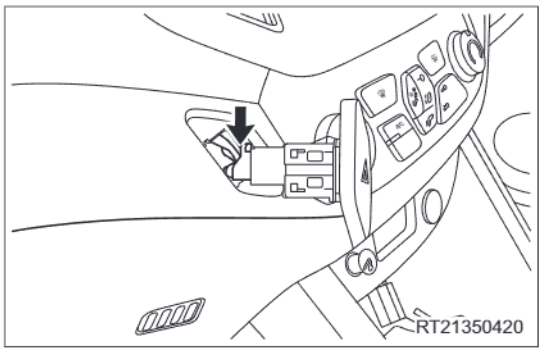
Installation

1. Apply thread locker to the threads of back-up light, and clean the transmission oil on the area between transmission and back-up light switch assembly before installing the back-up light switch assembly. Then install and tighten the back-up light switch.
   (Tightening torque: 20 ± 2 N·m)
2. Check if the transmission oil level is in the proper position after installation.
   a. It is not necessary to do anything, if it is in the proper position.
   b. It is necessary to fill transmission oil to the specified position, if it is not in the proper position (fill the oil until it flows out of retaining plug).

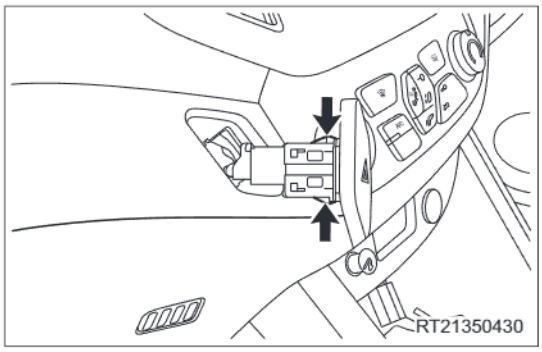
Hazard Warning Light Switch

Removal

1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the combination switch cover (See page 28-13).
4. Remove the hazard warning light switch.
   a. Disconnect the hazard warning light switch wire harness connector (arrow).



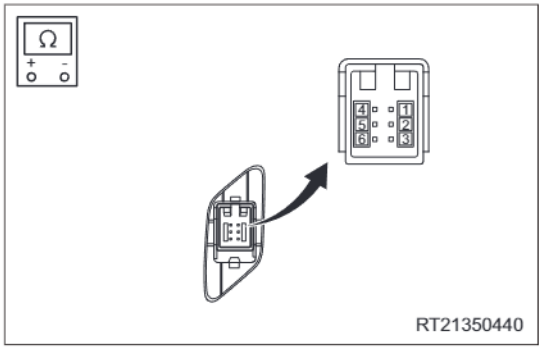
   b. Press the claws (arrow) on both ends of the hazard warning light switch by hand, and push outward forcefully to remove it.



Inspection

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

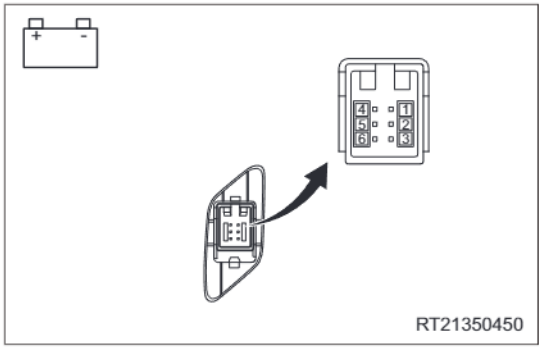
Multimeter Connection	Switch Condition	Specified Condition
Terminal 1 - Terminal 2	Switch pushed	Continuity
Terminal 1 - Terminal 2	Switch released	No continuity



   If result is not as specified, replace hazard warning light switch.

2. Check hazard warning light switch illumination.
   a. Connect positive (+) battery lead to terminal 3 and negative (-) battery lead to terminal 5, then check that the switch illumination comes on.
      OK: LED comes on.
   b. Connect the positive (+) battery lead to terminal 4 and negative (-) battery lead to terminal 5, then check that the switch illumination comes on.
      OK: LED comes on.

   If result is not as specified, replace hazard warning light switch.



Installation

Installation is in the reverse order of removal.