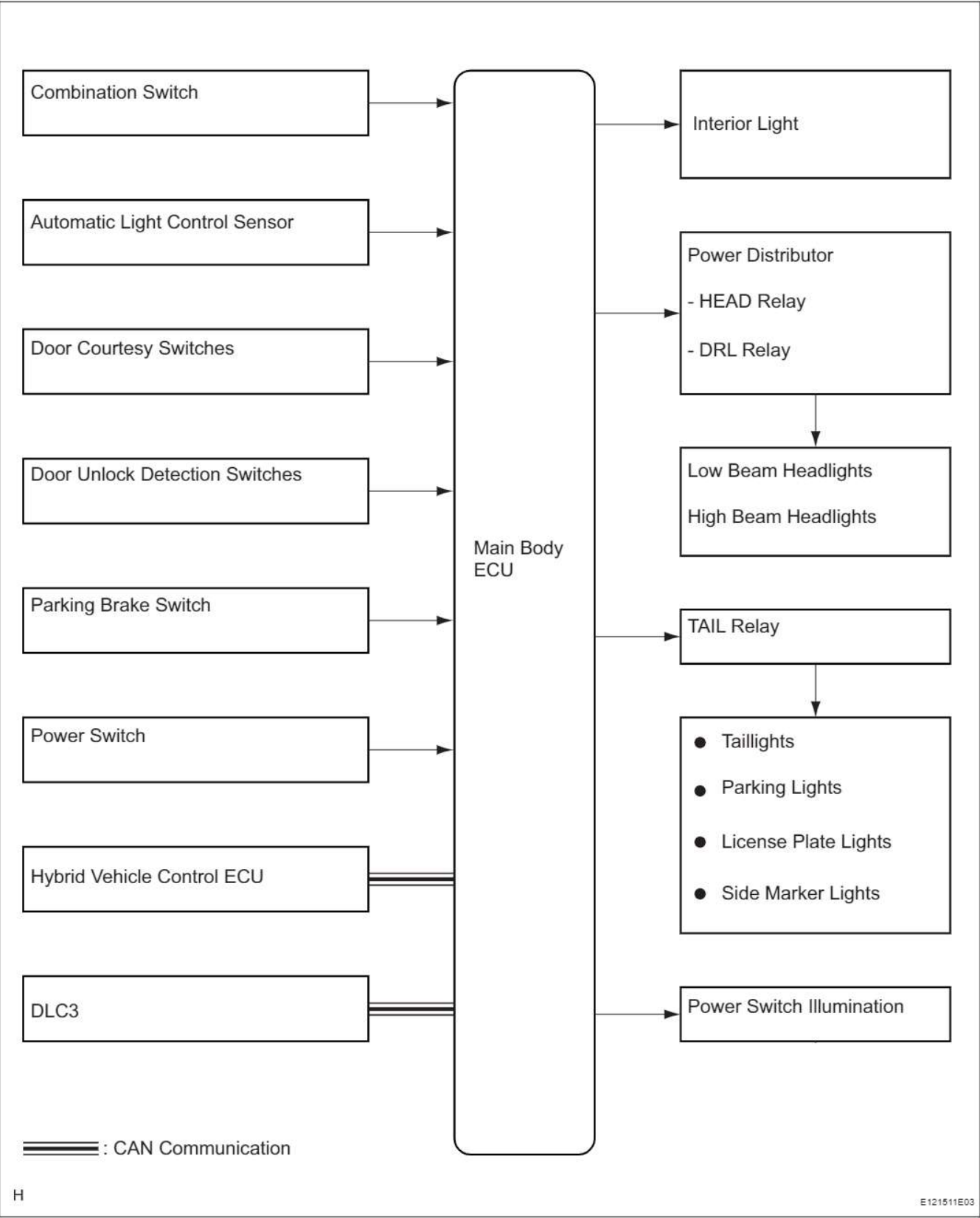


SYSTEM DIAGRAM



LIGHTING – LIGHTING SYSTEM

LI-7

SYSTEM DESCRIPTION**1. MANUAL LIGHT CONTROL SYSTEM**

This system functions if the lights such as the headlights and taillights come on by manual operation of the light control switch.

- (a) The main body ECU controls this system based on the signals listed below.

Input	Output	Lights that illuminate
Light control switch TAIL signal	Taillight relay drive signal	• Taillights • License plate lights • Side marker lights • Parking lights
Light control switch HEAD signal	Headlight relay drive signal	Low beam headlights

2. AUTOMATIC LIGHT CONTROL SYSTEM

When the light control switch is in the AUTO position, the automatic light control sensor detects ambient light, converts it into an electrical signal, and outputs it to the main body ECU. The main body ECU automatically turns the headlights and taillights on or off according to the signal.

- (a) The main body ECU controls this system based on the signals listed below.

Input	Output	Lights that illuminate
• Light control switch AUTO signal • Automatic light control sensor signal	• Headlight relay drive signal • Taillight relay drive signal	• Low beam headlights • Taillights • License plate lights • Side marker lights • Parking lights

3. LIGHT AUTO TURN OFF SYSTEM

When the headlights and taillights are on through the operation of the automatic light control system or through the light control switch, if the power switch is turned off and all doors are closed, this system continues to illuminate the headlights and taillights for approximately 30 seconds, and then turns off the headlights and taillights.

However, if the power switch is turned off and all doors are locked, this system turns off the headlights and taillights immediately.

- (a) The main body ECU controls this system based on the signals listed below.

Input	Output	Lights that operate
• Door courtesy switch signal • Power switch signal	• Headlight relay OFF demand • Taillight relay OFF demand • DRL relay OFF demand	• Low beam headlights • Taillights, license plate lights, parking lights, and side marker lights • High beam headlights

LI-8

LIGHTING – LIGHTING SYSTEM

4. DAYTIME RUNNING LIGHT SYSTEM

This function is designed to automatically illuminate the headlights (dimmed HI beams), during the daytime to make the car more visible to other vehicles.

- The main body ECU and power distributor control this system. The main body ECU transmits a turn ON signal to the power distributor and the power distributor illuminates the HI beams using a duty control.
 - This system is enabled when the conditions given below are met:
 - Power switch is on (IG).
 - READY condition signal is received.
 - Light control switch is in OFF*, TAIL or AUTO position (if headlight-on control is not being performed by the automatic light control).
- HINT:
*: only for Canadian package models.
- Parking brake switch is OFF.

5. ILLUMINATED ENTRY SYSTEM

When a door is unlocked through a key or transmitter operation, or if a door is opened, the illuminated entry system turns on the interior light and the power switch illumination.

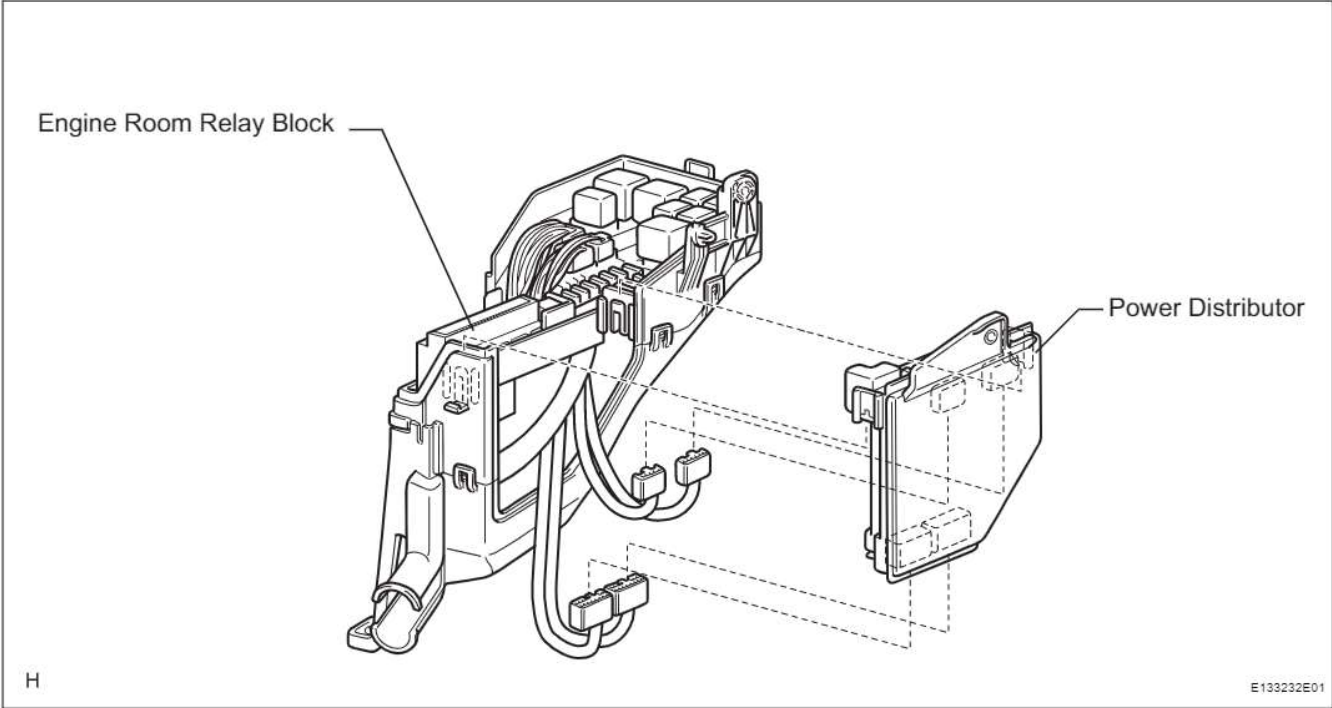
- (a) The main body ECU controls this system. The operation and condition of the illuminated entry system are described below.

Operation	Condition
Fade in	When any of the following conditions is met, the interior light and power switch illumination fade in. • Any door is opened. • Any door is unlocked when the power switch is off and all doors are closed. • Power switch is turned from on (ACC) to off when all doors are closed.
Fade out immediately	When either of the following conditions is met, the interior light and ignition key cylinder light fade out immediately. • Power switch is turned from off to on (ACC or IG) when all doors are closed. • All doors are locked when the power switch is off.
Illuminate for approximately 15 seconds, and then fade out	All doors are closed when the power switch is off.
Fade out (Battery saving)	When the following conditions are met, the interior light and power switch illumination fade out. • A key is not in the actuation area (with smart key system). • There are no changes in the condition of the doors for 20 minutes.

6. POWER DISTRIBUTOR**(a) General**

- The power distributor is built into the engine room relay block, and uses a small mechanical relay and semiconductor relay for a compact and lightweight design.
- The power distributor has a headlight control function. This function dims the high beam headlights in accordance with operation signals from the main body ECU while the daytime running light system is operating.
- The power distributor dims the high beam headlights using a duty control.

- When a short circuit occurs between the power distributor and high beam headlight bulb, a fail-safe function operates to stop the DRL relay operation.



(b) The components of the power distributor are shown below.

Component	Relay
Mechanical Relay	• Horn Relay • A/F Relay • Security Horn Relay • EFI Relay • Circuit Opening Relay • Headlight Relay RH • Headlight Relay LH
Semiconductor Relay	• Daytime Running Light Relay

INSTALLATION

1. INSTALL VANITY LIGHT ASSEMBLY (See page [IR-29](#))

LI

LI-10

LIGHTING – LIGHTING SYSTEM

HOW TO PROCEED WITH TROUBLESHOOTING

HINT:

- Use the following procedures to troubleshoot the lighting system.
- *: Use the intelligent tester.

1 VEHICLE BROUGHT TO WORKSHOP


 NEXT

2 CUSTOMER PROBLEM ANALYSIS CHECK AND SYMPTOM CHECK

NEXT

3 INSPECT BATTERY VOLTAGE

Standard voltage:

11 to 14 V

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

NEXT

4 INSPECT CAN COMMUNICATION SYSTEM*

- (a) Use the intelligent tester to check if the CAN communication system is functioning normally.

Result

Result	Proceed to
CAN communication system DTC is not output	A
CAN communication system DTC is output	B

B

Go to step 8

A

5 CHECK FOR DTC*

Result

Result	Proceed to
DTC is not output	A
DTC is output	B

B

Go to step 8

A

LIGHTING – LIGHTING SYSTEM

6 PROBLEM SYMPTOMS TABLE

Result

Result	Proceed to
Fault is not listed in problem symptoms table	A
Fault is listed in problem symptoms table	B

B Go to step 8

A

LI

7 OVERALL ANALYSIS AND TROUBLESHOOTING*

- (a) Data List / Active Test (See page [LI-20](#))
- (b) Terminals of ECU (See page [LI-16](#))

NEXT

8 ADJUST, REPAIR OR REPLACE

NEXT

9 CONFIRMATION TEST

NEXT

END

LI-12

LIGHTING – LIGHTING SYSTEM

CUSTOMIZE PARAMETERS

HINT:

The followings are the possible items to be customized.

NOTICE:

- Before attempting to customize vehicle settings, confirm whether it is possible to make the change that the customer has requested.
- Be sure to record the current value before customizing.
- In case of performing the troubleshooting, pay attention because there is a possibility that the function has been disabled by customizing. (Example: In case of the symptom in which "The wireless operation does not function", check that the wireless operation has not been disabled by customizing, then perform the troubleshooting.)

ILLUMINATED ENTRY:

Display	Default	Contents	Setting
LIGHTING TIME	15 s	Changes the lighting time of the interior light and power switch illumination.	7.5 s / 15 s / 30 s
I/L ON / UNLOCK	ON	Lights up the interior light and power switch illumination when a door is unlocked.	ON / OFF
I/L ON / ACC OFF	ON	Lights up the interior light and power switch illumination when the power switch is turned from on (ACC) to off	ON / OFF

LIGHT CONTROL:

Display	Default	Contents	Setting
LIGHT OFF DELAY	30 s	Keeps the headlights on for a certain period of time after turning the power switch off and closing all the doors with the headlights on.	OFF / 30 s / 60 s / 90 s
SENSITIVITY	NORMAL	Adjusts the sensitivity of the automatic light control system. *1	LIGHT 2 / LIGHT 1 / NORMAL / DARK 1 / DARK 2
DRL FUNCTION	ON	ON / OFF of the DRL function (for U.S.A package models)	ON / OFF
DISP EX ON SEN	NORMAL	Changes the ambient brightness level required to dim the lights such as the indicator lights of the combination meter, A/C indicator light, and clock. *1	LIGHT 2 / LIGHT 1 / NORMAL / DARK 1 / DARK 2
DISP EX OFF SEN	NORMAL	Changes the ambient brightness level required to cancel the dimming of the lights such as the indicator lights of the combination meter, A/C indicator light, and clock.	LIGHT 2 / LIGHT 1 / NORMAL / DARK 1 / DARK 2

HINT:

Sensitivity adjustment can hardly be confirmed. Check by driving the customer's vehicle.

Illustration *1

Ambient Brightness Level	Dark ← → Bright
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LIGHTING – LIGHTING SYSTEM

LI-13

Setting	DARK2	DARK1	NORMAL	LIGHT1	LIGHT2
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LI

LI-14

LIGHTING – LIGHTING SYSTEM

PROBLEM SYMPTOMS TABLE

1. Headlight system:

Symptom	Suspected Area	See page
One side LO-beam headlight does not illuminate	1. H-LP RL fuse or H-LP LL fuse	-
	2. Bulb	-
	3. Harness or connector	-
	4. Power distributor (Engine room J/B)	-
Both left and right LO-beam headlights do not illuminate	1. H-LP RL fuse and H-LP LL fuse	-
	2. Bulb	-
	3. Light control switch circuit	LI-38
	4. Headlight relay circuit	LI-26
	5. Main body ECU (Instrument panel J/B)	-
One side HI-beam headlight does not illuminate	1. H-LP RH fuse or H-LP LH fuse	-
	2. Bulb	-
	3. Harness or connector	-
	4. Power distributor (Engine room J/B)	-
Both left and right HI-beam headlights do not illuminate	1. H-LP RH fuse and H-LP LH fuse	-
	2. Bulb	-
	3. Light control switch circuit	LI-38
	4. Headlight (HI-BEAM) circuit	LI-30
	5. Main body ECU (Instrument panel J/B)	-
"Flash" headlights do not illuminate	1. Light control switch circuit	LI-38
	2. Main body ECU (Instrument panel J/B)	-
LO-beam headlights or HI-beam headlights do not go off	1. Headlight dimmer switch assembly	LI-96
	2. Power distributor (Engine room J/B)	-
	3. Harness or connector	-
	4. Main body ECU (Instrument panel J/B)	-

2. Daytime running light system:

Symptom	Suspected Area	See page
Day time running light system does not operate	1. Light control switch circuit	LI-38
	2. Parking brake switch circuit	LI-52
	3. Power distributor (Engine room J/B)	-
	4. Main body ECU (Instrument panel J/B)	-
	5. ECM	-

3. Taillight system:

Symptom	Suspected Area	See page
Front parking light does not illuminate	1. Bulb	-
	2. Harness or connector	-
Rear taillight does not illuminate	1. Rear combination light assembly	-
	2. Harness or connector	-
License plate light does not illuminate	1. Bulb	-
	2. Harness or connector	-
Front side marker light does not illuminate	1. Bulb	-
	2. Harness or connector	-
Taillight system does not operate (Taillights, front side marker lights, parking lights, and license plate lights do not illuminate)	1. TAIL fuse	-
	2. Taillight relay	LI-116
	3. Light control switch circuit	LI-38
	4. Taillight relay circuit	LI-54
	5. Main body ECU (Instrument panel J/B)	-

LIGHTING – LIGHTING SYSTEM

LI-15

4. Stop light system:

Symptom	Suspected Area	See page
Stop light system does not operate	1. Stop fuse	-
	2. Stop light switch	LI-102
	3. Harness or connector	-
One side stop light does not illuminate	1. Rear combination light assembly	-
	2. Harness or connector	-
Hi-mounted stop light does not illuminate	1. High mounted stop light assembly	-
	2. Harness or connector	-

5. Turn signal and hazard warning system:

Symptom	Suspected Area	See page
Hazard warning lights do not operate (Turn signal lights are normal)	1. HAZ fuse	-
	2. Hazard warning signal switch	LI-100
	3. Clock assembly	OT-4
	4. Turn signal flasher assembly	LI-113
	5. Harness or connector	-
Turn signal lights do not operate (Hazard warning lights are normal)	1. GAUGE No. 1 fuse	-
	2. Headlight dimmer switch assembly (Turn signal switch)	LI-96
	3. Turn signal flasher assembly	LI-113
	4. Harness or connector	-
"Hazard" and "Turn" do not operate	1. HAZ fuse and GAUGE No. 1 fuse	-
	2. Bulb	-
	3. Turn signal flasher assembly	LI-113
	4. Hazard warning signal switch	LI-100
	5. Headlight dimmer switch assembly (Turn signal switch)	LI-96
	6. Clock assembly	OT-4
	7. Harness or connector	-
Turn signal lights do not operate in one direction	1. Headlight dimmer switch assembly (Turn signal switch)	LI-96
	2. Turn signal flasher assembly	LI-113
	3. Harness or connector	-
Only one bulb does not operate	1. Bulb	-
	2. Harness or connector	-

6. Buck-up light system:

Symptom	Suspected Area	See page
One side back-up light does not illuminate	1. Bulb	-
	2. Harness or connector	-
Both left and right back-up lights do not illuminate	1. Bulb	-
	2. GAUGE No. 1 fuse	-
	3. Buck-up light relay	LI-117
	4. Back-up light circuit	LI-35
	5. Park/Neutral position switch	HX-5
	6. Harness or connector	-
	7. Hybrid vehicle control ECU	-

7. Illuminated entry system:

Symptom	Suspected Area	See page
Only interior light installed in personal light assembly does not illuminate	1. Bulb	-
	2. Personal light assembly	LI-84
	3. Harness or connector	-

LI-16

LIGHTING – LIGHTING SYSTEM

Symptom	Suspected Area	See page
Only interior light installed in rear room light assembly does not illuminate	1. Bulb	-
	2. Rear room light assembly	LI-87
	3. Harness or connector	-
Only power switch illumination does not comes on	1. Power switch illumination circuit	LI-50
	2. Harness or connector	-
Interior light and power switch illumination do not operate normally	1. DOME fuse	-
	2. Personal light assembly	LI-84
	3. Rear room light assembly	LI-87
	4. Power switch	ST-127
	5. Door courtesy switch circuit	LI-41
	6. Door lock position switch circuit	LI-44
	7. Interior light circuit	LI-46
	8. Power switch illumination circuit	LI-50
	9. Main body ECU (Instrument panel J/B)	-

8. Vanity light system:

Symptom	Suspected Area	See page
Vanity light does not illuminate	1. Bulb	-
	2. Vanity light assembly	LI-93
	3. Visor assembly (Vanity light switch)	-
	4. Harness or connector	-

9. Luggage compartment light system:

Symptom	Suspected Area	See page
Luggage compartment light does not illuminate	1. Luggage compartment light	LI-90
	2. Luggage compartment door lock assembly (Door courtesy switch)	LI-109
	3. Harness or connector	-

10. Glove box light system:

Symptom	Suspected Area	See page
Glove box light does not illuminate	1. Bulb	-
	2. Glove box light assembly	LI-92
	3. Harness or connector	-

11. Door courtesy light system:

Symptom	Suspected Area	See page
Door courtesy light does not illuminate	1. Door courtesy light	LI-88
	2. Door courtesy switch	LI-105
	3. Harness or connector	-

13. Automatic light control system:

Symptom	Suspected Area	See page
Automatic light control system does not operate normally	1. Light control switch circuit	LI-38
	2. Automatic light control sensor circuit	LI-23
	3. Main body ECU (Instrument panel J/B)	-

14. Light auto turn off system:

Symptom	Suspected Area	See page
Light auto turn off system does not operate normally	1. Light control switch circuit	LI-38
	2. Door courtesy switch circuit	LI-41
	3. Main body ECU (Instrument panel J/B)	-

LIGHTING – LIGHTING SYSTEM

LI-17

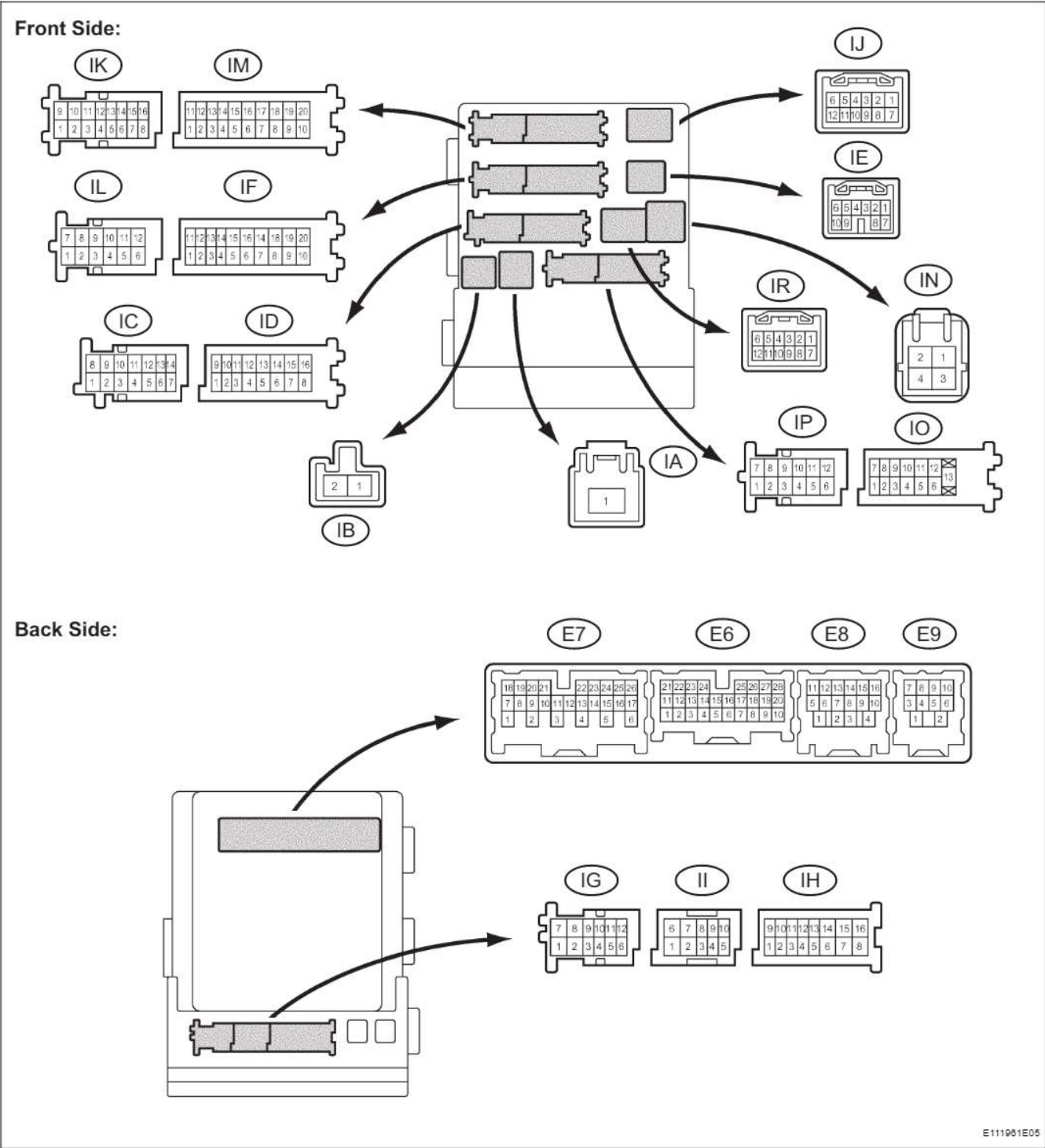
15. Battery saving system:

Symptom	Suspected Area	See page
Battery saving function does not operate	1. Door courtesy switch circuit	LI-41
	2. Main body ECU (Instrument panel J/B)	-

LI

TERMINALS OF ECU

1. CHECK MAIN BODY ECU (INSTRUMENT PANEL J/B)



- (a) Disconnect the IA, ID, IF and IM J/B connectors.
- (b) Measure the voltage and resistance between the specified terminals of the wire harness side connectors and body ground.

Standard voltage

Symbols	Wiring Color	Terminal Description	Condition	Specified Condition
IA-1 - Body ground	B - Body ground	Battery power supply	Always	10 to 14 V

LIGHTING – LIGHTING SYSTEM

Symbols	Wiring Color	Terminal Description	Condition	Specified Condition
ALTB (ID-16) - Body ground	W - Body ground	Power supply	Always	10 to 14 V

Standard resistance

Symbols	Wiring Color	Terminal Description	Condition	Specified Condition
GND1 (IF-10) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω
GND2 (IM-9) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω

If the result is not as specified, there may be a malfunction on the wire harness side.

- (c) Reconnect the IA, ID, IF, and IM J/B connectors.
- (d) Measure the resistance and voltage between the specified terminals of the J/B connectors and body ground.

Standard resistance

Symbols	Wiring Color	Terminal Description	Condition	Specified Condition
CLTE (E6-18) - Body ground	BR - Body ground	Automatic light control sensor ground	Always	Below 1 Ω

Standard voltage

Symbols	Wiring Color	Terminal Description	Condition	Specified Condition
PKB (IC-14) - Body ground	L - Body ground	Parking brake switch input	Parking brake switch ON	Below 1 V
			Parking brake switch OFF	10 to 14 V
HRLY (ID-3) - Body ground	P - Body ground	Headlight relay drive output	Light control switch in HEAD	Below 1 V
			Light control switch not in HEAD	10 to 14 V
DRL (ID-9) - Body ground	V - Body ground	High beam headlights drive output	Dimmer switch in HIGH or HIGH FLASH	Below 1 V
			Dimmer switch in LOW	10 to 14 V
HU (IG-5) - Body ground	LG - Body ground	Dimmer switch HIGH input	Dimmer switch in HIGH or HIGH FLASH	10 to 14 V
			Dimmer switch in LOW	Below 1 V
ILE (IR-5) - Body ground	BR - Body ground	Interior light drive output	Interior light ON	Below 1 V
			Interior light OFF	10 to 14 V
LCTY (IO-7) - Body ground	LG - Body ground	Rear left door courtesy switch input	Rear left door open	Below 1 V
			Rear left door closed	10 to 14 V
LSWL (IP-5) - Body ground	GR - Body ground	Rear left door lock position switch input	Rear left door locked	10 to 14 V
			Rear left door unlocked	Below 1 V
HEAD (E6-17) - Body ground	P - Body ground	Light control switch HEAD input	Light control switch in HEAD	Below 1 V
			Light control switch not in HEAD	10 to 14 V
CLTS (E6-19) - Body ground	G - Body ground	Automatic light control sensor signal input	Power switch off	Below 1 V
			Automatic light control system operates	Pulse generation (See waveform 1)
CLTB (E6-20) - Body ground	B - Body ground	Automatic light control sensor power supply output	Power switch off	Below 1 V
			Power switch on (IG) and light control switch in AUTO	10 to 14 V

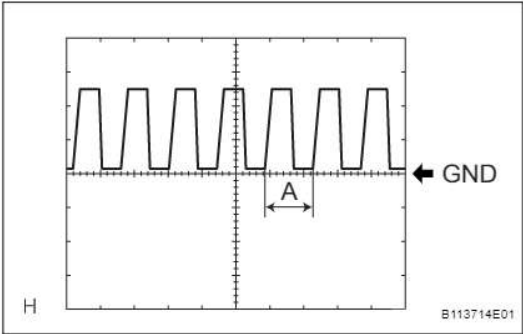
LI-20

LIGHTING – LIGHTING SYSTEM

Symbols	Wiring Color	Terminal Description	Condition	Specified Condition
PCTY (E6-21) - Body ground	Y - Body ground	Passenger side door courtesy switch input	Passenger side door open	Below 1 V
			Passenger side door closed	10 to 14 V
LGCY (E6-25) - Body ground	W - Body ground	Luggage courtesy switch input	Luggage compartment door open	Below 1 V
			Luggage compartment door closed	10 to 14 V
LSWP (E6-27) - Body ground	LG - Body ground	Passenger side door lock position switch input	Passenger side door locked	10 to 14 V
			Passenger side door unlocked	Below 1 V
LSWR (E6-5) - Body ground	V - Body ground	Rear right door lock position switch input	Rear right door locked	10 to 14 V
			Rear right door unlocked	Below 1 V
RCTY (E6-7) - Body ground	GR - Body ground	Rear right door courtesy switch input	Rear right door open	Below 1 V
			Rear right door closed	10 to 14 V
HF (E7-13) - Body ground	R - Body ground	Dimmer switch HIGH FLASH signal input	Dimmer switch in HIGH FLASH position	Below 1 V
			Dimmer switch not in HIGH FLASH position	10 to 14 V
SSW2 (E7-16) - Body ground	V - Body ground	Power switch input	Power switch not pushed	10 to 14 V
			Power switch pushed	Below 1 V
SSW1 (E7-17) - Body ground	L - Body ground	Power switch input	Power switch not pushed	10 to 14 V
			Power switch pushed	Below 1 V
A (E7-21) - Body ground	G - Body ground	Light control switch AUTO signal input	Light control switch in AUTO	Below 1 V
			Light control switch not in AUTO	10 to 14 V
ACCD (E7-22) - Body ground	W - Body ground	Accessory relay drive output	Power switch on (ACC)	Below 1 V
			Power switch off	10 to 14 V
TAIL (E7-23) - Body ground	B - Body ground	Light control switch TAIL signal input	Light control switch in TAIL or HEAD	Below 1 V
			Light control switch in neither TAIL nor HEAD	10 to 14 V
DCTY (E7-24) - Body ground	L - Body ground	Driver side door courtesy switch input	Driver side door open	Below 1 V
			Driver side door closed	10 to 14 V
IG1D (E7-3) - Body ground	P - Body ground	Ignition 1 relay drive output	Power switch on (IG)	Below 1 V
			Power switch off	10 to 14 V
LSWD (E7-9) - Body ground	L - Body ground	Driver side door lock position switch input	Driver side door locked	10 to 14 V
			Driver side door unlocked	Below 1 V
CANH (E8-5) - Body ground	B - Body ground	Control system CAN communication	Power switch on (IG)	Pulse generation
			Power switch off	Below 1 V
CANL (E8-6) - Body ground	W - Body ground	Control system CAN communication	Power switch on (IG)	Pulse generation
			Power switch off	Below 1 V

If the result is not as specified, the main body ECU (Instrument panel J/B) may have a malfunction.

(1) Waveform 1

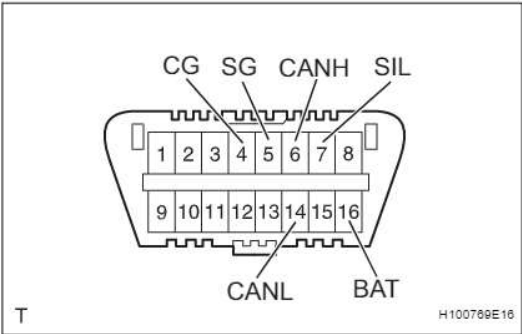


Item	Contents
Tool setting	5 V/DIV., 5 ms./DIV.

HINT:
If the ambient light becomes brighter, width A becomes narrower.

DIAGNOSIS SYSTEM

1. DESCRIPTION
- (a) Lighting system data and the Diagnostic Trouble Codes (DTCs) can be read from the Data Link Connector 3 (DLC3) of the vehicle. When the system seems to be malfunctioning, use the intelligent tester to check for malfunctions and perform repairs.
2. CHECK DLC3
- (a) The ECU uses ISO 15765-4 for communication. The terminal arrangement of the DLC3 complies with SAE J1962 and matches the ISO 15765-4 format.

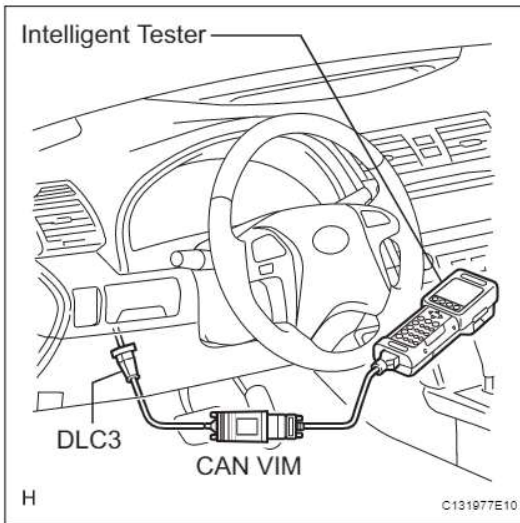


Symbols (Terminal No.)	Terminal Description	Condition	Specified Condition
SIL (7) - SG (5)	Bus "+" line	During transmission	Pulse generation
CG (4) - Body ground	Chassis ground	Always	Below 1 Ω
SG (5) - Body ground	Signal ground	Always	Below 1 Ω
BAT (16) - Body ground	Battery positive	Always	11 to 14 V
CANH (6) - CANL (14)	CAN bus line	Power switch off*	54 to 69 Ω
CANH (6) - CG (4)	HIGH-level CAN bus line	Power switch off*	200 Ω or higher
CANL (14) - CG (4)	LOW-level CAN bus line	Power switch off*	200 Ω or higher
CANH (6) - BAT (16)	HIGH-level CAN bus line	Power switch off*	6 kΩ or higher
CANL (14) - BAT (16)	LOW-level CAN bus line	Power switch off*	6 kΩ or higher

NOTICE:
*Before measuring the resistance, leave the vehicle as is for at least 1minute and do not operate the ignition switch, any other switches, or the doors.
If the result is not as specified, the DLC3 may have a malfunction. Repair or replace the harness and connector.

LIGHTING – LIGHTING SYSTEM

LI-23



- (b) Connect the cable of the intelligent tester to the DLC3, turn the power switch on (IG) and attempt to use the tester. If the display indicates that a communication error has occurred, there is a problem either with the vehicle or with the tester.

HINT:

- If communication is normal when the tester is connected to another vehicle, inspect the DLC3 of the original vehicle.
- If communication is still not possible when the tester is connected to another vehicle, the problem may be in the tester itself. Consult the Service Department listed in the tester's instruction manual.

3. INSPECT BATTERY VOLTAGE**Standard voltage:****11 to 14 V**

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

DTC CHECK / CLEAR**1. CHECK DTC**

- Connect the intelligent tester to the DLC3.
- Turn the power switch on (IG).
- Read the DTCs by following the directions on the tester screen.

HINT:

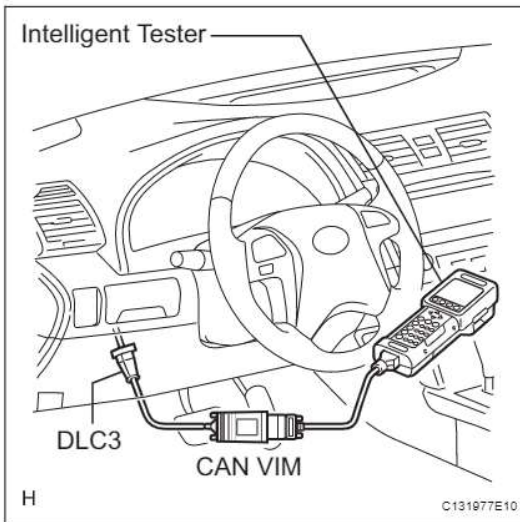
Refer to the intelligent tester operator's manual for further details.

2. CLEAR DTC

- Connect the intelligent tester to the DLC3.
- Turn the power switch on (IG).
- Erase the DTCs by following the directions on the tester screen.

HINT:

Refer to the intelligent tester operator's manual for further details.



DATA LIST / ACTIVE TEST

1. READ DATA LIST

HINT:

Using the intelligent tester DATA LIST allows switch, actuator and other item values to be read without removing any parts. Reading the DATA LIST early in troubleshooting is one way to save time.

- Connect the intelligent tester to the DLC3.
- Turn the power switch on (IG).
- Read the DATA LIST according to the display on the tester.



MAIN BODY (MAIN BODY ECU):

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
ACC SW	Power switch ACC signal / ON or OFF	ON: Power switch on (ACC or IG) OFF: Power switch off	-
IG SW	Power switch IG signal / ON or OFF	ON: Power switch on (IG) OFF: Power switch off	-
D DOR CTY SW	Driver side door courtesy switch signal / ON or OFF	ON: Driver side door is open OFF: Driver side door is closed	-
P DOR CTY SW	Passenger side door courtesy switch signal / ON or OFF	ON: Front passenger side door is open OFF: Front passenger side door is closed	-
RR DOR CTY SW	Rear right door courtesy switch signal / ON or OFF	ON: Rear right door is open OFF: Rear right door is closed	-
RL DOR CTY SW	Rear left door courtesy switch signal / ON or OFF	ON: Rear left door is open OFF: Rear left door is closed	-
D LOCK POS SW	Driver side door lock position switch signal / ON or OFF	ON: Driver side door is unlocked OFF: Driver side door is locked	-
P LOCK POS SW	Passenger side door lock position switch signal / ON or OFF	ON: Front passenger side door is unlocked OFF: Front passenger side door is locked	-
RR LOCK POS SW	Rear right door lock position switch signal / ON or OFF	ON: Rear right door is unlocked OFF: Rear right door is locked	-
RL LOCK POS SW	Rear left door lock position switch signal / ON or OFF	ON: Rear left door is unlocked OFF: Rear left door is locked	-
DIMMER SW	Dimmer switch HIGH signal / ON or OFF	ON: Dimmer switch in HIGH or HIGH FLASH OFF: Dimmer switch in LOW	-
HIGH FLASHER SW	Dimmer switch HIGH FLASH signal / ON or OFF	ON: Dimmer switch in HIGH FLASH OFF: Dimmer switch not in HIGH FLASH	-
AUTO LIGHT SW	Light control switch AUTO signal / ON or OFF	ON: Light control switch in AUTO OFF: Light control switch not in AUTO	-
HEAD LIGHT SW	Light control switch HEAD signal / ON or OFF	ON: Light control switch in HEAD OFF: Light control switch not in HEAD	-
TAIL LIGHT SW	Light control switch TAIL signal / ON or OFF	ON: Light control switch in TAIL or HEAD OFF: Light control switch not in TAIL or HEAD	-
ILLUMINATE RATE	Illumination rate information / 0 ms to 99.99 ms	0.8 ms to 22.0 ms (Value is output according to ambient illuminance)	-
PARKING BRAKE SW	Parking brake switch signal / ON or OFF	ON: Parking brake switch is ON OFF: Parking brake switch is OFF	-

2. PERFORM ACTIVE TEST

- HINT:
Performing the intelligent tester ACTIVE TEST allows a relay, VSV, actuator, and other items to be operated without removing any parts. Performing the ACTIVE TEST early in troubleshooting is one way to save time. The DATA LIST can be displayed during the ACTIVE TEST.
- (a) Connect the intelligent tester to the DLC3.
 - (b) Turn the power switch on (IG).
 - (c) Perform the ACTIVE TEST according to the display on the tester.

LI

MAIN BODY (MAIN BODY ECU):

Tester Display	Test Part	Control Range	Diagnostic Note
HEAD LIGHT	Headlight relay	ON / OFF	-
HEAD LIGHT (HI)	High beam headlights	ON / OFF	-
TAIL LIGHT	Taillight	ON / OFF	-
DIMMER SIG	Dimmer signal	ON / OFF	-
ILLUMI OUTPUT	Interior light (Interior light switch in DOOR position and all doors are closed)	ON / OFF	-

LI-26

LIGHTING – LIGHTING SYSTEM

DIAGNOSTIC TROUBLE CODE CHART

LIGHTING SYSTEM:

DTC Code	Detection Item	Suspected Area	See page
B1244	Light Sensor Circuit Malfunction	1. Automatic light control sensor 2. Harness or connector 3. Main body ECU (Instrument panel J/B)	LI-23



DTC	B1244	Light Sensor Circuit Malfunction
-----	-------	----------------------------------

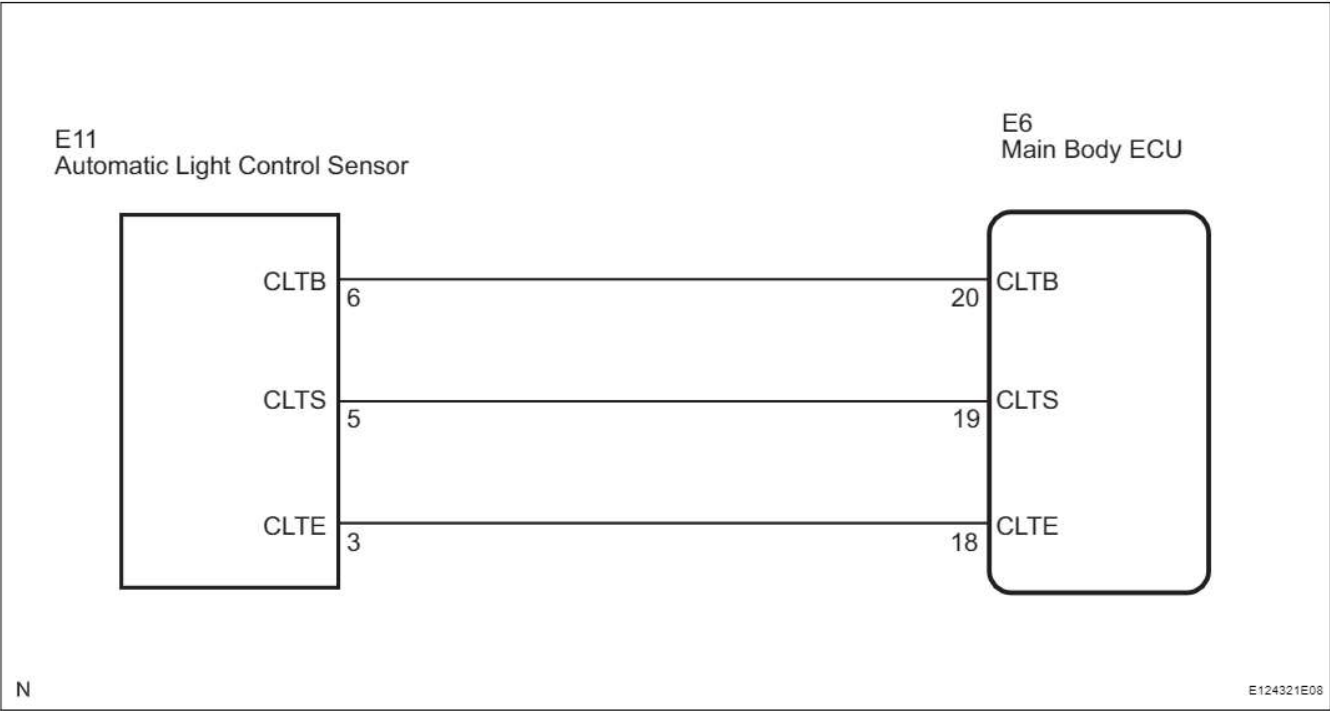
DESCRIPTION

The automatic light control sensor detects ambient light, converts it into an electrical signal, and outputs it to the main body ECU. The main body ECU turns on or off the headlights and taillights according to the signal.

DTC No.	DTC Detecting Condition	Trouble Area
B1244	- Malfunction in automatic light control sensor - Open or short in automatic light control sensor circuit	- Automatic light control sensor - Harness or connector - Main body ECU (Instrument panel J/B)

LI

WIRING DIAGRAM



INSPECTION PROCEDURE

1	READ VALUE OF INTELLIGENT TESTER
---	----------------------------------

- (a) Connect the intelligent tester to the DLC3.
- (b) Turn the power switch on (IG) and turn the intelligent tester main switch on.
- (c) Select the item below in the DATA LIST, and read the display on the intelligent tester.

MAIN BODY (MAIN BODY ECU):

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
ILLUMINATE RATE	Illumination rate information / 0 ms to 99.99 ms	0.8 ms to 22.0 ms (Value is output according to ambient illuminance)	-

OK:
Normal condition listed above is displayed.

LI-28

LIGHTING – LIGHTING SYSTEM

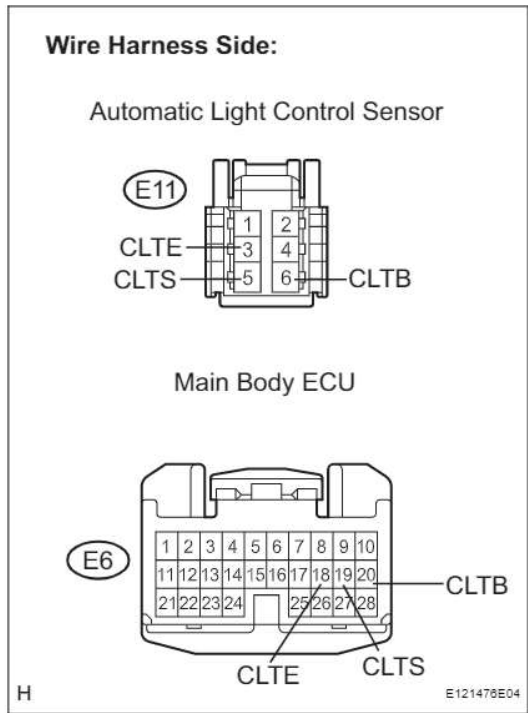
OK

REPLACE INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY

NG

2

CHECK HARNESS AND CONNECTOR (MAIN BODY ECU - AUTOMATIC LIGHT CONTROL SENSOR)



- (a) Disconnect the E11 automatic light control sensor connector.
- (b) Disconnect the E6 main body ECU connector.

Standard resistance

Tester Connection	Condition	Specified Condition
E6-18 (CLTE) - E11-3 (CLTE)	Always	Below 1 Ω
E6-19 (CLTS) - E11-5 (CLTS)	Always	Below 1 Ω
E6-20 (CLTB) - E11-6 (CLTB)	Always	Below 1 Ω
E6-18 (CLTE) - Body ground	Always	10 kΩ or higher
E6-19 (CLTS) - Body ground	Always	10 kΩ or higher
E6-20 (CLTB) - Body ground	Always	10 kΩ or higher

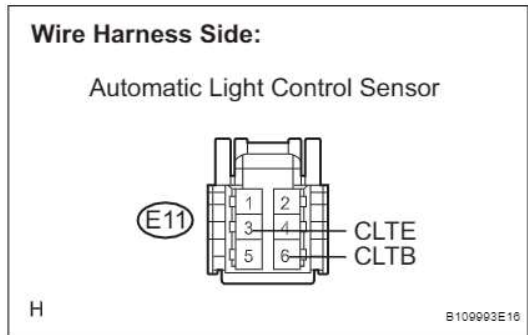
NG

REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

3

INSPECT MAIN BODY ECU (INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY)



- (a) Reconnect the main body ECU connector.
- (b) Measure the voltage and resistance according to the value(s) in the table below.

Standard voltage

Tester Connection	Condition	Specified Condition
E11-6 (CLTB) - E11-3 (CLTE)	Power switch off	Below 1 V
E11-6 (CLTB) - E11-3 (CLTE)	Power switch on (IG)	10 to 14 V

Standard resistance

Tester Connection	Condition	Specified Condition
E11-3 (CLTE) - Body ground	Always	Below 1 Ω

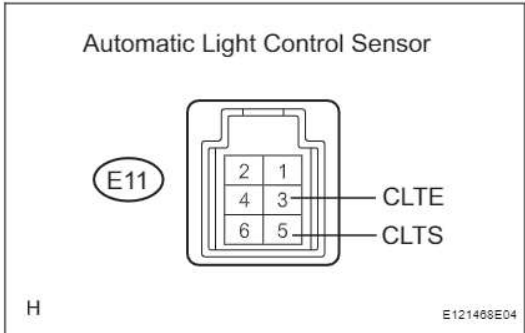
NG

REPLACE INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY

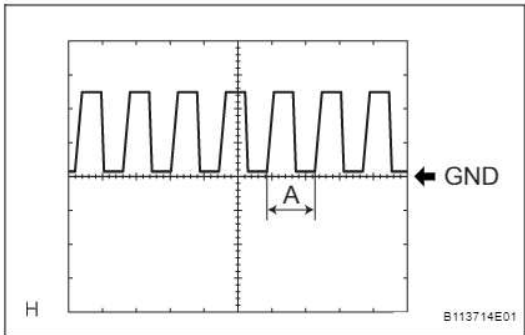
LIGHTING – LIGHTING SYSTEM

OK

4 INSPECT AUTOMATIC LIGHT CONTROL SENSOR



- (a) Reconnect the automatic light control sensor connector.
- (b) Connect an oscilloscope to the automatic light control sensor connector.



- (c) Check the waveform.
OK

Tester Connection	Tool Setting	Condition	Specified Condition
E11-3 (CLTE) - E11-5 (CLTS)	5 V/DIV., 5 ms./DIV.	Power switch on (IG), light control switch in AUTO	Correct waveform is as shown

HINT:
If the ambient light becomes brighter, width A becomes narrower.

NG

REPLACE AUTOMATIC LIGHT CONTROL SENSOR

OK

REPLACE INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY

LI-30

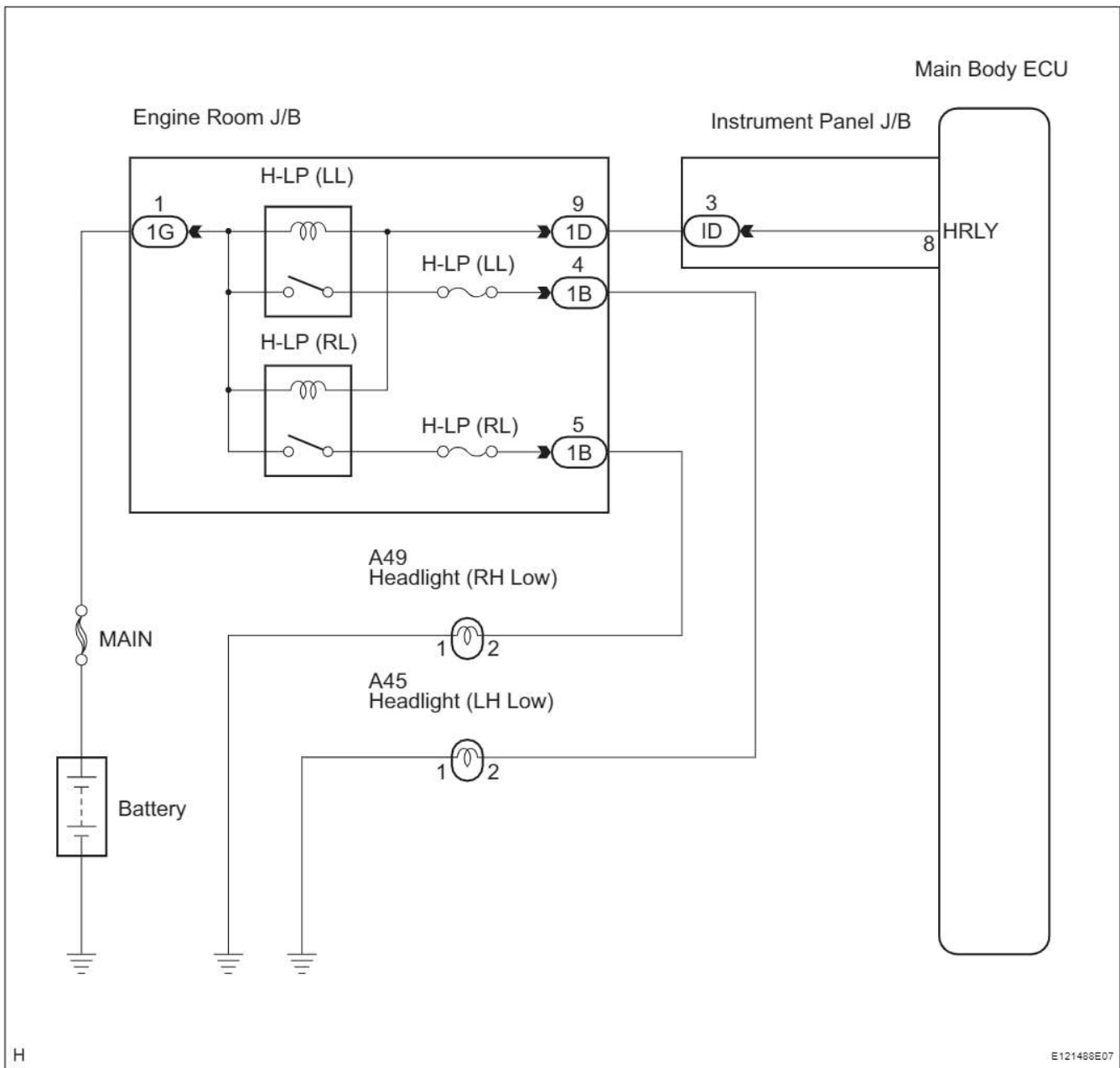
LIGHTING – LIGHTING SYSTEM

Headlight Relay Circuit

DESCRIPTION

The main body ECU receives a light control switch HEAD signal from the headlight dimmer switch assembly, and turns the low beam headlights on. The headlight relay is installed in the power distributor (engine room J/B assembly).

WIRING DIAGRAM



INSPECTION PROCEDURE

1 | PERFORM ACTIVE TEST USING INTELLIGENT TESTER

- (a) Connect the intelligent tester to the DLC3.

LIGHTING – LIGHTING SYSTEM

LI-31

- (b) Turn the power switch on (IG) and turn the intelligent tester main switch on.
- (c) Select the item below in the ACTIVE TEST and then check that the relay operates.

MAIN BODY (MAIN BODY ECU):

Tester Display	Test Part	Control Range	Diagnostic Note
HEAD RELAY	Headlight Relay	ON / OFF	-

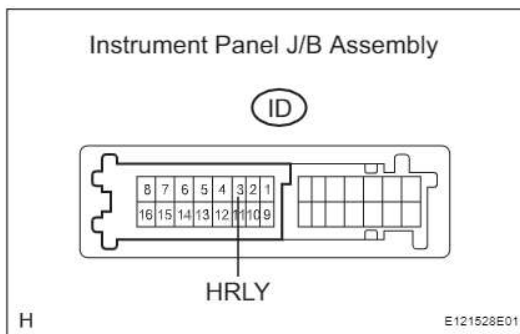
OK:

The headlight relay operates. (Low beam headlights illuminate.)

OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

NG

2**INSPECT INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY**

- (a) Measure the voltage according to the value(s) in the table below.

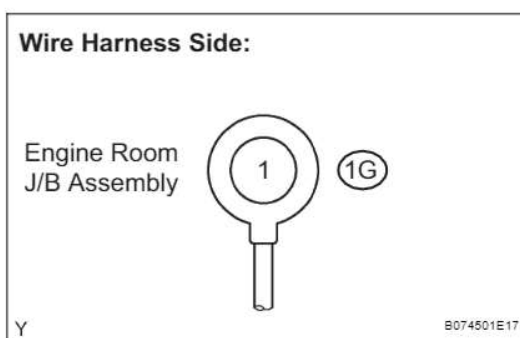
Standard voltage

Tester Connection	Condition	Specified Condition
ID-3 (HRLY) - Body ground	Light control switch OFF → HEAD	10 to 14 V → Below 1 V

OK

Go to step 6

NG

3**CHECK HARNESS AND CONNECTOR (BATTERY - ENGINE ROOM J/B ASSEMBLY)**

- (a) Disconnect the 1G engine room J/B assembly connector.
- (b) Measure the voltage according to the value(s) in the table below.

Standard voltage

Tester Connector	Condition	Specified Condition
1G - Body ground	Always	10 to 14 V

NG

REPAIR OR REPLACE HARNESS OR CONNECTOR

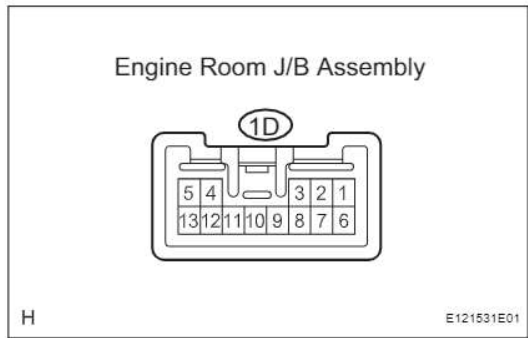
OK

4**INSPECT ENGINE ROOM J/B BLOCK ASSEMBLY**

- (a) Reconnect the 1G engine room J/B assembly connector.

LI-32

LIGHTING – LIGHTING SYSTEM



- (b) Disconnect the 1D engine room J/B assembly connector.
(c) Measure the voltage according to the value(s) in the table below.

Standard voltage

Tester Connection	Condition	Specified Condition
1D-9 - Body ground	Always	10 to 14 V

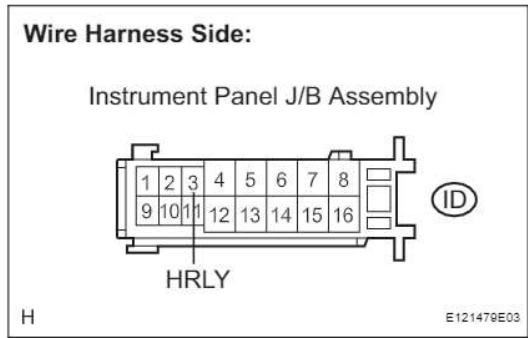
NG

REPLACE ENGINE ROOM JUNCTION
BLOCK ASSEMBLY (POWER DISTRIBUTOR)

OK

5

CHECK HARNESS AND CONNECTOR (ENGINE ROOM J/B ASSEMBLY - INSTRUMENT
PANEL J/B ASSEMBLY)



- (a) Reconnect the 1D engine room J/B assembly connector.
(b) Disconnect the ID instrument panel J/B assembly connector.
(c) Measure the voltage according to the value(s) in the table below.

Standard voltage

Tester Connection	Condition	Specified Condition
ID-3 (HRLY) - Body ground	Always	10 to 14 V

NG

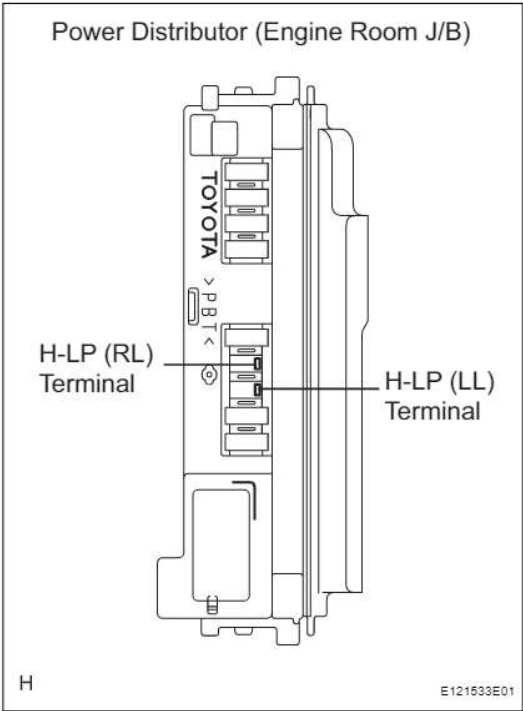
REPAIR OR REPLACE HARNESS OR
CONNECTOR

OK

REPLACE INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY

6

INSPECT ENGINE ROOM JUNCTION BLOCK ASSEMBLY



- (a) Remove the H-LP (RL) fuse and H-LP (LL) fuse from the engine room J/B assembly.
- (b) Measure the voltage between the loading slot of each fuse and body ground.

Standard voltage

Tester Connection	Condition	Specified Condition
H-LP (RL) Terminal - Body ground	Light control switch in HEAD	10 to 14 V
H-LP (LL) Terminal - Body ground	Light control switch in HEAD	10 to 14 V

NG

REPLACE ENGINE ROOM JUNCTION BLOCK ASSEMBLY (POWER DISTRIBUTOR)

OK

REPAIR OR REPLACE HARNESS OR CONNECTOR (FUSE - BODY GROUND)

LI-34

LIGHTING – LIGHTING SYSTEM

Headlight (HI-BEAM) Circuit

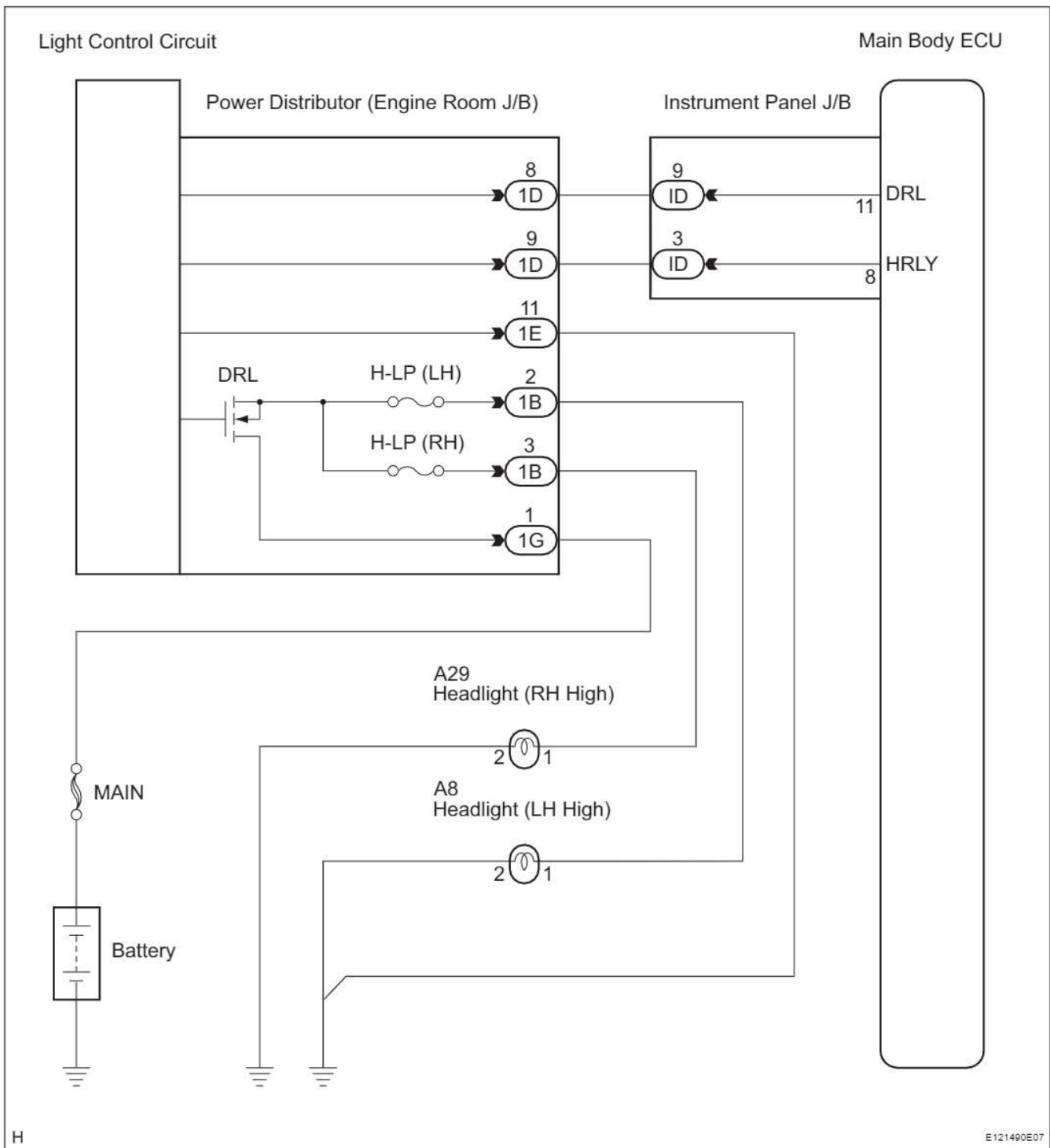
DESCRIPTION

The main body ECU receives dimmer switch HIGH signal and light control switch HEAD signal from the headlight dimmer switch assembly, and turns the high beam headlights on.

HINT:

When a short circuit occurs between the power distributor (engine room J/B assembly) and high beam headlight, the power distributor stops the DRL relay operation (Fail-safe function).

WIRING DIAGRAM



LIGHTING – LIGHTING SYSTEM

LI-35

INSPECTION PROCEDURE

1 PERFORM ACTIVE TEST USING INTELLIGENT TESTER

- (a) Connect the intelligent tester to the DLC3.
- (b) Turn the power switch on (IG) and turn the intelligent tester main switch on.
- (c) Select the item below in the ACTIVE TEST and then check that the relay operates.

MAIN BODY (MAIN BODY ECU):

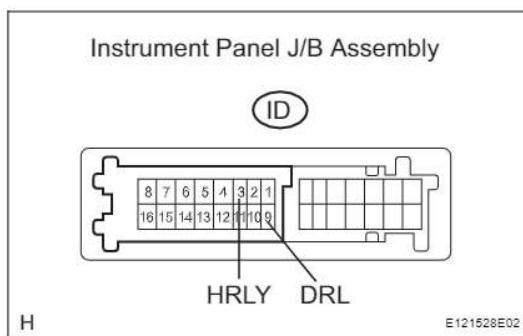
Tester Display	Test Part	Control Range	Diagnostic Note
HEAD LIGHT (HI)	High beam headlights	ON / OFF	-

OK:

The relay operates. (High beam headlights illuminate.)

OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

NG**2 INSPECT INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY**

- (a) Measure the voltage according to the value(s) in the table below.

Standard voltage

Tester Connection	Condition	Specified Condition
ID-3 (HRLY) - Body ground	Light control switch OFF → HEAD	10 to 14 V → Below 1 V
ID-9 (DRL) - Body ground	Light control switch in HEAD, dimmer switch LOW → HIGH	10 to 14 V → Below 1 V

OK

Go to step 6

NG**3 CHECK HARNESS AND CONNECTOR (ENGINE ROOM J/B ASSEMBLY - BATTERY AND BODY GROUND)**

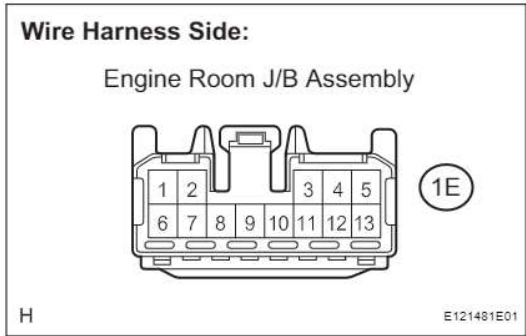
- (a) Disconnect the 1G engine room J/B assembly connector.
- (b) Measure the voltage according to the value(s) in the table below.

Standard voltage

Tester Connection	Condition	Specified Condition
1G-1 - Body ground	Always	10 to 14 V

LI-36

LIGHTING – LIGHTING SYSTEM



- (c) Disconnect the 1E engine room J/B assembly connector.
- (d) Measure the resistance according to the value(s) in the table below.

Standard resistance

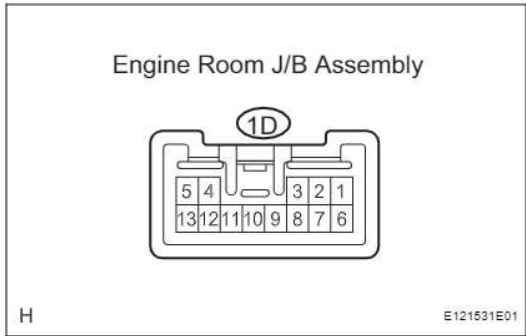
Tester Connection	Condition	Specified Condition
1E-11 - Body ground	Always	Below 1 Ω

NG

REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

4 INSPECT ENGINE ROOM JUNCTION BLOCK ASSEMBLY



- (a) Reconnect the 1G and 1E engine room J/B assembly connectors.
- (b) Disconnect the 1D engine room J/B assembly connector.
- (c) Measure the voltage according to the value(s) in the table below.

Standard voltage

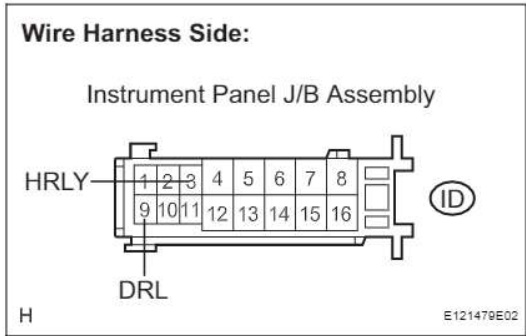
Tester Connection	Condition	Specified Condition
1D-8 - Body ground	Always	10 to 14 V
1D-9 - Body ground	Always	10 to 14 V

NG

REPLACE ENGINE ROOM JUNCTION BLOCK ASSEMBLY (POWER DISTRIBUTOR)

OK

5 CHECK HARNESS AND CONNECTOR (ENGINE ROOM J/B ASSEMBLY - INSTRUMENT PANEL J/B ASSEMBLY)



- (a) Reconnect the 1D engine room J/B assembly connector.
- (b) Disconnect the ID instrument panel J/B connector.
- (c) Measure the voltage according to the value(s) in the table below.

Standard voltage

Tester Connection	Condition	Specified Condition
ID-3 (HRLY) - Body ground	Always	10 to 14 V
ID-9 (DRL) - Body ground	Always	10 to 14 V

NG

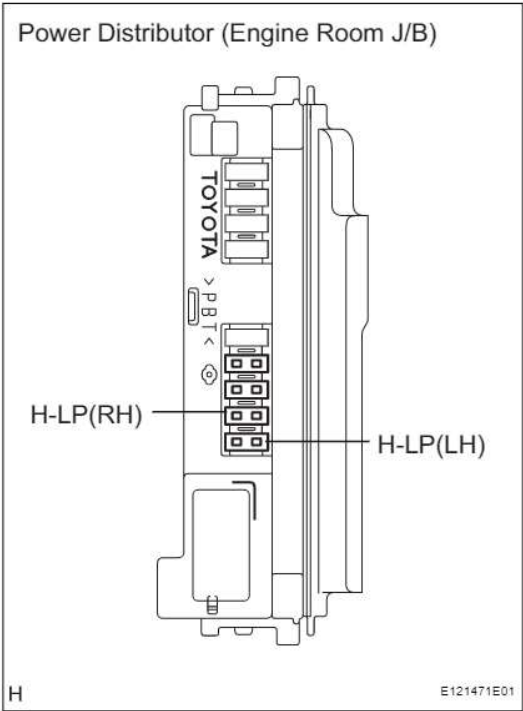
REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY

6

CHECK HARNESS AND CONNECTOR (SHORT IN RELAY-DRIVEN CIRCUIT)



- (a) Remove the H-LP (RH) fuse from the engine room J/B assembly.
- (b) Turn the light control switch to the HEAD position and turn the dimmer switch to the HIGH position.
- (c) Check if the high beam headlight LH illuminates.
- (d) Turn the dimmer switch to the LOW position.
- (e) Install the H-LP (RH) fuse and remove the H-LP (LH) fuse.
- (f) Turn the dimmer switch to the HIGH position.
- (g) Check if the high beam headlight RH illuminates.

OK:
Either high beam headlight LH or RH illuminates.

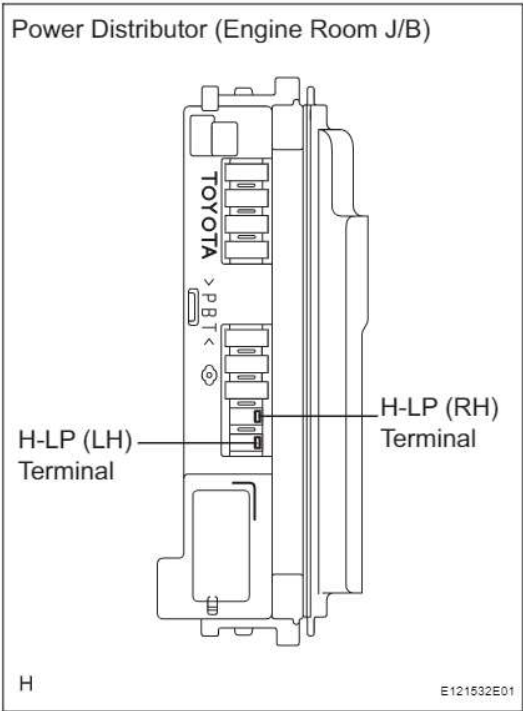
OK

REPAIR OR REPLACE HARNESS OR CONNECTOR (SHORT CIRCUIT BETWEEN FUSE AND BULB)

NG

7

INSPECT ENGINE ROOM JUNCTION BLOCK ASSEMBLY



- (a) Remove the H-LP (RH) fuse and H-LP (LH) fuse from the engine room J/B assembly.
- (b) Measure the voltage between the loading slot of each fuse and body ground.

Standard voltage

Tester Connection	Condition	Specified Condition
H-LP (RH) Terminal - Body ground	Light control switch in HEAD and dimmer switch in HIGH	10 to 14 V
H-LP (LH) Terminal - Body ground	Light control switch in HEAD and dimmer switch in HIGH	10 to 14 V

NG

REPLACE ENGINE ROOM JUNCTION BLOCK ASSEMBLY (POWER DISTRIBUTOR)

LI-38**LIGHTING – LIGHTING SYSTEM**

OK

REPAIR OR REPLACE HARNESS OR CONNECTOR (OPEN CIRCUIT BETWEEN FUSE AND BODY GROUND)

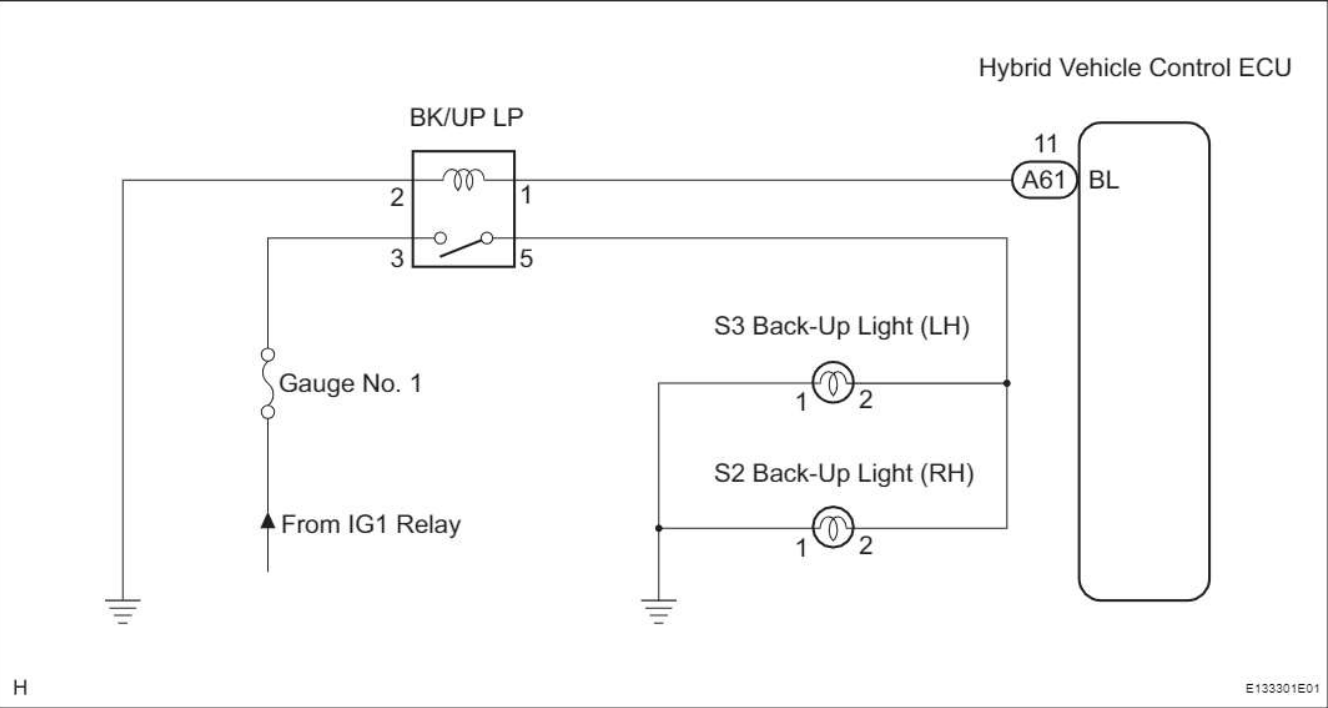
LI

Back-up Light Circuit

DESCRIPTION

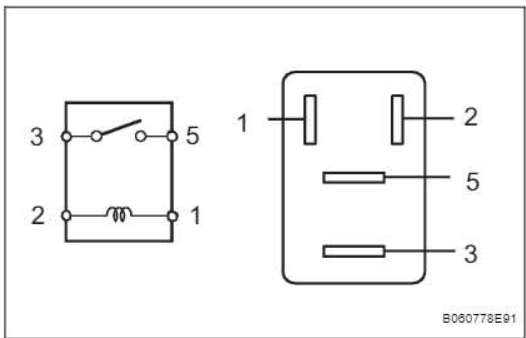
The HV control ECU receives shift position R signal and controls the back-up light relay.

WIRING DIAGRAM



INSPECTION PROCEDURE

1 INSPECT BACK-UP LIGHT RELAY



- (a) Remove the back-up light relay from the engine room relay block.
- (b) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester Connection	Specified Condition
3 - 5	10 kΩ or higher
	Below 1 Ω (When battery voltage is applied to terminals 1 and 2)

NG

REPLACE BACK-UP LIGHT RELAY

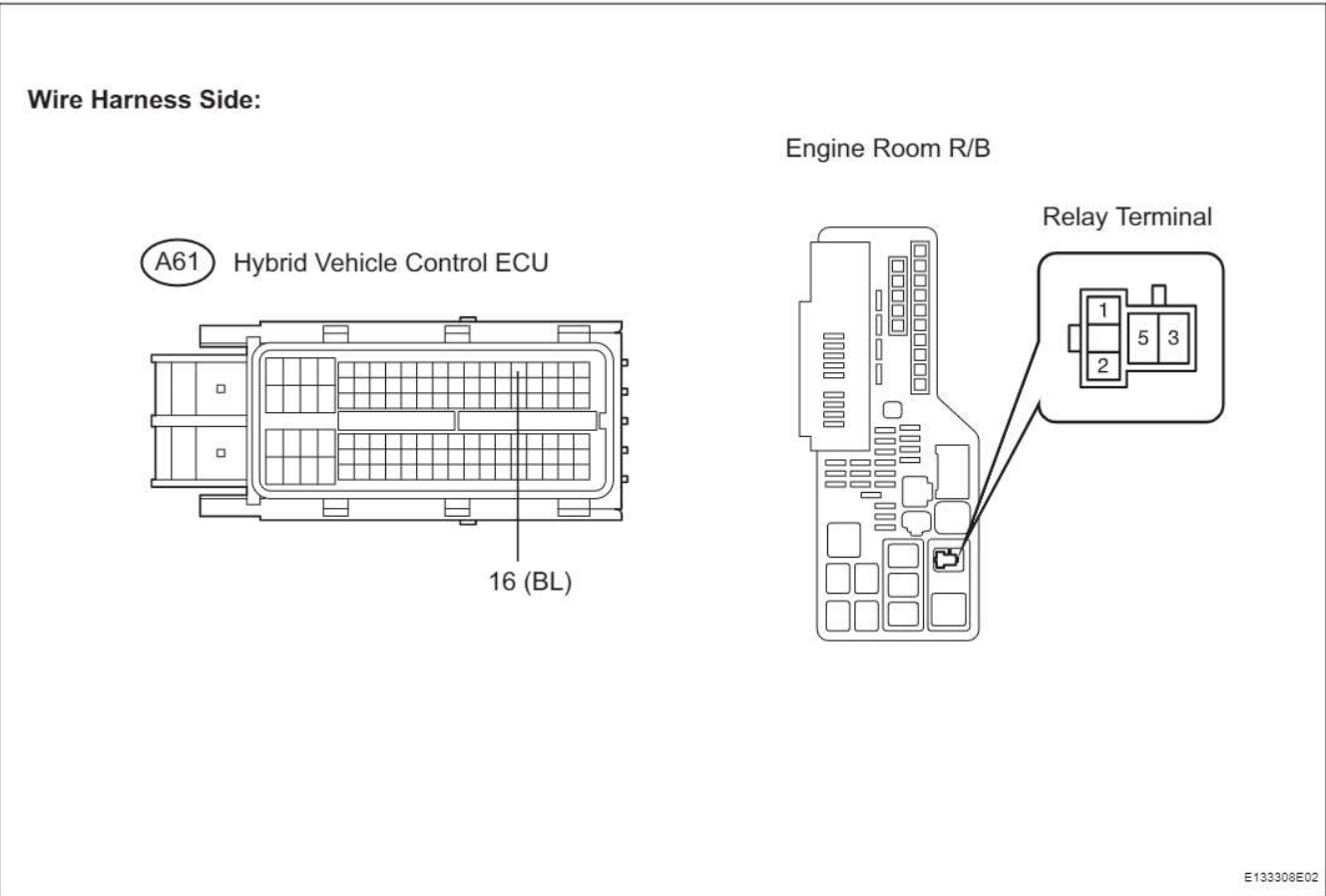
OK

2 CHECK HARNESS AND CONNECTOR (RELAY - HYBRID VEHICLE CONTROL ECU AND BODY GROUND)

- (a) Disconnect the A61 hybrid vehicle ECU connector.

LI-40

LIGHTING – LIGHTING SYSTEM



- (b) Remove the back-up relay from the engine room relay block.
- (c) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester connection	Condition	Specified value
A61-16 - Relay terminal 1	Always	Below 1 Ω
Relay terminal 2 - Body ground	Always	Below 1 Ω

NG

REPAIR OR REPLACE HARNESS OR CONNECTOR

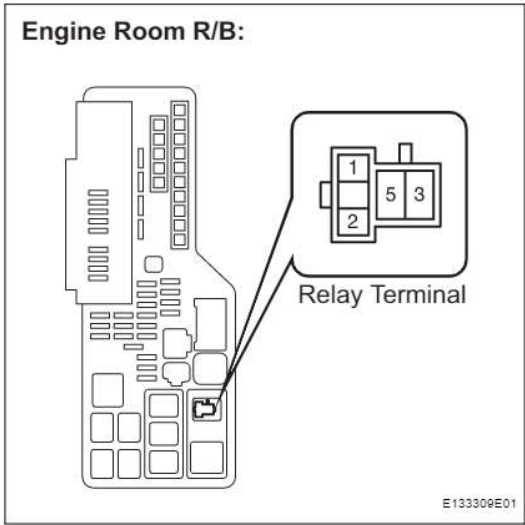
OK

3

INSPECT HYBRID VEHICLE CONTROL ECU

- (a) Reconnect the hybrid vehicle control ECU connector.

LIGHTING – LIGHTING SYSTEM



OK

(b) Measure the voltage according to the value(s) in the table below.

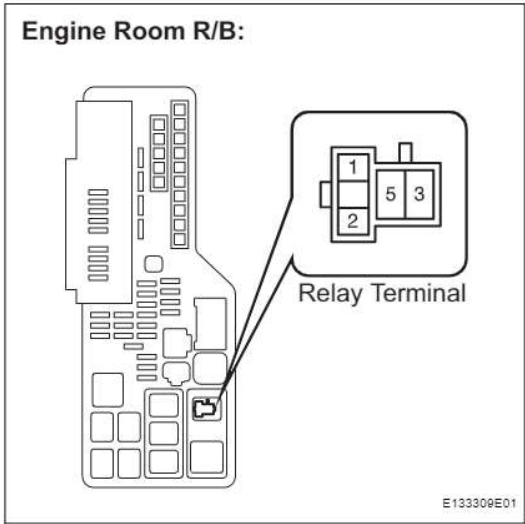
Standard voltage

Tester connection	Condition	Specified value
Relay terminal 1 - Body ground	Shift lever in R position	10 to 14 V
Relay terminal 1 - Body ground	Shift lever not in R position	Below 1 V

NG

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

4 CHECK HARNESS AND CONNECTOR (BATTERY - RELAY)



OK

(a) Measure the voltage according to the value(s) in the table below.

Standard voltage

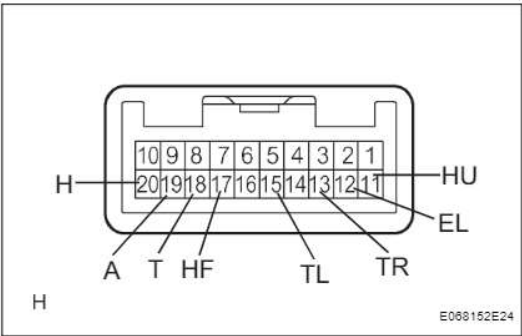
Tester connection	Condition	Specified value
Relay terminal 3 - Body ground	Power switch on (IG)	10 to 14 V
Relay terminal 3 - Body ground	Power switch off	Below 1 V

NG

REPAIR OR REPLACE HARNESS OR CONNECTOR (BATTERY - RELAY)

REPAIR OR REPLACE HARNESS OR CONNECTOR (BULB - RELAY AND BODY GROUND)

LIGHTING – HEADLIGHT DIMMER SWITCH



INSPECTION

1. INSPECT HEADLIGHT DIMMER SWITCH ASSEMBLY
- (a) Measure the resistance according to the value(s) in the table below.
- Standard resistance:**
Light control switch

Tester Connection	Switch Condition	Specified Condition
12 (EL) - 20 (H) - 18 (T) - 19 (A)	OFF	10 kΩ or higher
12 (EL) - 18 (T)	TAIL	Below 1 Ω
12 (EL) - 20 (H) - 18 (T)	HEAD	Below 1 Ω
12 (EL) - 19 (A)	AUTO	Below 1 Ω

Dimmer switch

Tester Connection	Switch Condition	Specified Condition
17 (HF) - 12 (EL)	FLASH	Below 1 Ω
11 (HU) - 12 (EL)	HIGH	Below 1 Ω

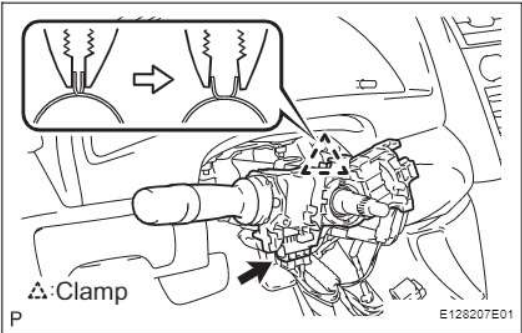
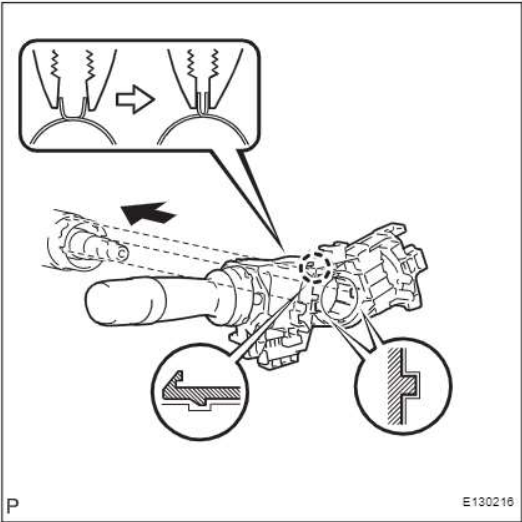
Turn signal switch

Tester Connection	Switch Condition	Specified Condition
13 (TR) - 12 (EL) - 15 (TL)	OFF	10 kΩ or higher
13 (TR) - 12 (EL)	RH	Below 1 Ω
15 (TL) - 12 (EL)	LH	Below 1 Ω

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

INSTALLATION

1. INSTALL HEADLIGHT DIMMER SWITCH ASSEMBLY
- (a) Engage the claw while loosening the clamp as shown in the illustration.



- (b) Install the headlight dimmer switch assembly with the clamp.
- (c) Connect the connector.
2. INSTALL WINDSHIELD WIPER SWITCH ASSEMBLY (See page [WW-22](#))
3. INSTALL SPIRAL CABLE WITH STEERING ANGLE SENSOR (See page [RS-359](#))
4. INSTALL STEERING COLUMN COVER (See page [SR-41](#))

LI-98

LIGHTING – HEADLIGHT DIMMER SWITCH

5. **INSTALL STEERING WHEEL ASSEMBLY** (See page [SR-42](#))
6. **INSPECT STEERING WHEEL CENTER POINT**
7. **INSTALL STEERING PAD** (See page [RS-346](#))
8. **INSTALL NO. 3 LOWER STEERING WHEEL COVER**
(See page [RS-347](#))
9. **INSTALL NO. 2 LOWER STEERING WHEEL COVER**
(See page [RS-347](#))
10. **CONNECT CABLE TO NEGATIVE BATTERY
TERMINAL**
11. **INSPECT STEERING PAD** (See page [RS-347](#))
12. **INSPECT SRS WARNING LIGHT**
(See page [RS-33](#))
13. **PERFORM INITIALIZATION**
NOTICE:
Some systems need initialization after reconnecting
the cable to the negative battery terminal (See page
[IN-43](#)).

LI

INSTALLATION

1. INSTALL STOP LIGHT SWITCH ASSEMBLY (See page [BR-74](#))
2. INSTALL COMBINATION METER ASSEMBLY (See page [ME-67](#))
3. INSTALL INSTRUMENT CLUSTER FINISH PANEL (See page [ME-69](#))
4. INSTALL LOWER INSTRUMENT PANEL FINISH PANEL (See page [ME-69](#))
5. INSTALL NO. 1 INSTRUMENT PANEL SUB-ASSEMBLY (See page [IP-34](#))
6. INSTALL LOWER INSTRUMENT PANEL FINISH PANEL LH (See page [ME-69](#))
7. INSTALL COWL SIDE TRIM SUB-ASSEMBLY LH (See page [IR-41](#))
8. INSTALL FRONT DOOR SCUFF PLATE LH (See page [IR-41](#))

LI

LI-110

LIGHTING – BACK DOOR COURTESY SWITCH

INSTALLATION

1. INSTALL LUGGAGE COMPARTMENT DOOR LOCK ASSEMBLY (See page [ED-89](#))
2. INSTALL LUGGAGE COMPARTMENT DOOR COVER (See page [ET-53](#))

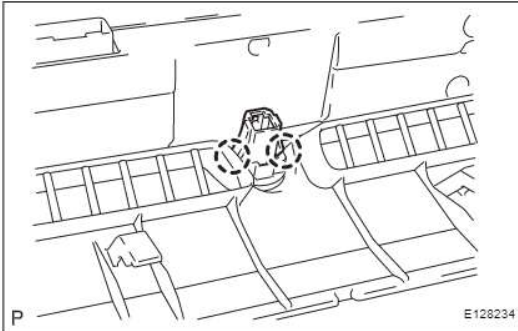
LI

LI-112

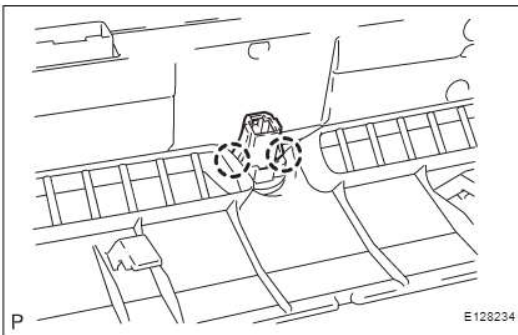
LIGHTING – AUTOMATIC LIGHT CONTROL SENSOR

REMOVAL

1. **REMOVE NO. 1 DEFROSTER NOZZLE GARNISH**
(See page [IP-20](#))
2. **REMOVE AUTOMATIC LIGHT CONTROL SENSOR**
(a) Disengage the 2 claws and remove the automatic light control sensor.

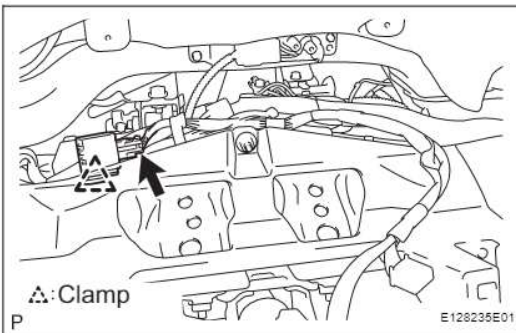
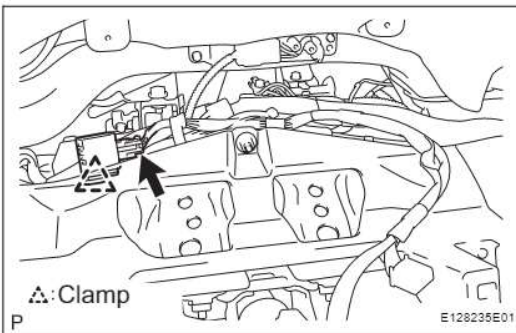
**INSTALLATION**

1. **INSTALL AUTOMATIC LIGHT CONTROL SENSOR**
(a) Engage the 2 claws and install the automatic light control sensor.
2. **INSTALL NO. 1 DEFROSTER NOZZLE GARNISH** (See page [IP-28](#))



REMOVAL

1. REMOVE FRONT DOOR SCUFF PLATE LH (See page [IR-13](#))
2. REMOVE COWL SIDE TRIM SUB-ASSEMBLY LH (See page [IR-14](#))
3. REMOVE LOWER INSTRUMENT PANEL FINISH PANEL LH (See page [ME-64](#))
4. REMOVE STEERING COLUMN COVER (See page [ME-64](#))
5. REMOVE NO. 1 INSTRUMENT PANEL SUB-ASSEMBLY (See page [IP-12](#))
6. REMOVE LOWER INSTRUMENT PANEL FINISH PANEL (See page [IP-12](#))
7. REMOVE INSTRUMENT CLUSTER FINISH PANEL (See page [ME-66](#))
8. REMOVE COMBINATION METER ASSEMBLY (See page [ME-66](#))
9. REMOVE TURN SIGNAL FLASHER ASSEMBLY
 - (a) Disconnect the connector.
 - (b) Remove the clamp and the turn signal flasher assembly.



INSTALLATION

1. INSTALL TURN SIGNAL FLASHER ASSEMBLY
 - (a) Install the clamp and the turn signal flasher assembly.
 - (b) Connect the connector.
2. INSTALL COMBINATION METER ASSEMBLY (See page [ME-67](#))
3. INSTALL INSTRUMENT CLUSTER FINISH PANEL (See page [ME-69](#))
4. INSTALL LOWER INSTRUMENT PANEL FINISH PANEL (See page [IP-34](#))
5. INSTALL NO. 1 INSTRUMENT PANEL SUB-ASSEMBLY (See page [IP-34](#))
6. INSTALL STEERING COLUMN COVER (See page [ME-69](#))
7. INSTALL LOWER INSTRUMENT PANEL FINISH PANEL LH (See page [ME-69](#))
8. INSTALL COWL SIDE TRIM SUB-ASSEMBLY LH (See page [IR-41](#))

LI-116

LIGHTING – TURN SIGNAL FLASHER ASSEMBLY

9. **INSTALL FRONT DOOR SCUFF PLATE LH** (See page [IR-41](#))

LI

LIGHTING – LIGHTING SYSTEM

This circuit detects the condition of the headlight dimmer switch assembly.

LI



LIGHTING – LIGHTING SYSTEM

LI-43

INSPECTION PROCEDURE

1 READ VALUE OF INTELLIGENT TESTER

- (a) Connect the intelligent tester to the DLC3.
- (b) Turn the power switch on (IG) and turn the intelligent tester main switch on.
- (c) Select the items below in the DATA LIST, and read the display on the intelligent tester.

MAIN BODY (MAIN BODY ECU):

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
DIMMER SW	Dimmer switch HIGH signal / ON or OFF	ON: Dimmer switch in HIGH or FLASH OFF: Dimmer switch in neither HIGH nor FLASH	-
HIGH FLASHER SW	Dimmer switch FLASH signal / ON or OFF	ON: Dimmer switch in FLASH OFF: Dimmer switch not in FLASH	-
AUTO LIGHT SW	Light control switch AUTO signal / ON or OFF	ON: Light control switch in AUTO OFF: Light control switch not in AUTO	-
HEAD LIGHT SW	Light control switch HEAD signal / ON or OFF	ON: Light control switch in HEAD OFF: Light control switch not in HEAD	-
TAIL LIGHT SW	Light control switch TAIL signal / ON or OFF	ON: Light control switch in TAIL or HEAD OFF: Light control switch in neither TAIL nor HEAD	-

OK:

Normal conditions listed above are displayed.

OK**PROCEED TO NEXT CIRCUIT INSPECTION
SHOWN IN PROBLEM SYMPTOMS TABLE****NG****2 INSPECT HEADLIGHT DIMMER SWITCH ASSEMBLY**

- (a) Inspect the headlight dimmer switch assembly (See page [LI-96](#)).

OK:

The headlight dimmer switch assembly is normal.

NG**REPLACE HEADLIGHT DIMMER SWITCH
ASSEMBLY****OK**

LI-44

LIGHTING – LIGHTING SYSTEM

3

CHECK HARNESS AND CONNECTOR (INSTRUMENT PANEL J/B ASSEMBLY - SWITCH ASSEMBLY)

Wire Harness Side:

Headlight Dimmer Switch Assembly

Main Body ECU

Main Body ECU

Instrument Panel J/B Assembly

LI

(a) Disconnect the E21 headlight dimmer switch assembly connector.

(b) Disconnect the E6 and E7 main body ECU connectors.

(c) Disconnect the IG instrument panel J/B connector.

(d) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester Connection	Condition	Specified Condition
E21-11 (HU) - IG-5 (HU)	Always	Below 1 Ω
E21-17 (HF) - E7-13 (HF)	Always	Below 1 Ω
E21-18 (T) - E7-23 (TAIL)	Always	Below 1 Ω
E21-19 (A) - E7-21 (A)	Always	Below 1 Ω
E21-20 (H) - E6-17 (HEAD)	Always	Below 1 Ω
E21-11 (HU) - Body ground	Always	10 kΩ or higher
E21-17 (HF) - Body ground	Always	10 kΩ or higher
E21-18 (T) - Body ground	Always	10 kΩ or higher
E21-19 (A) - Body ground	Always	10 kΩ or higher
E21-20 (H) - Body ground	Always	10 kΩ or higher
E21-12 (EL) - Body ground	Always	Below 1 Ω

NG

REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY

H

E121507E08

https://cardiagn.com/lighting-camry-hybrid-07/

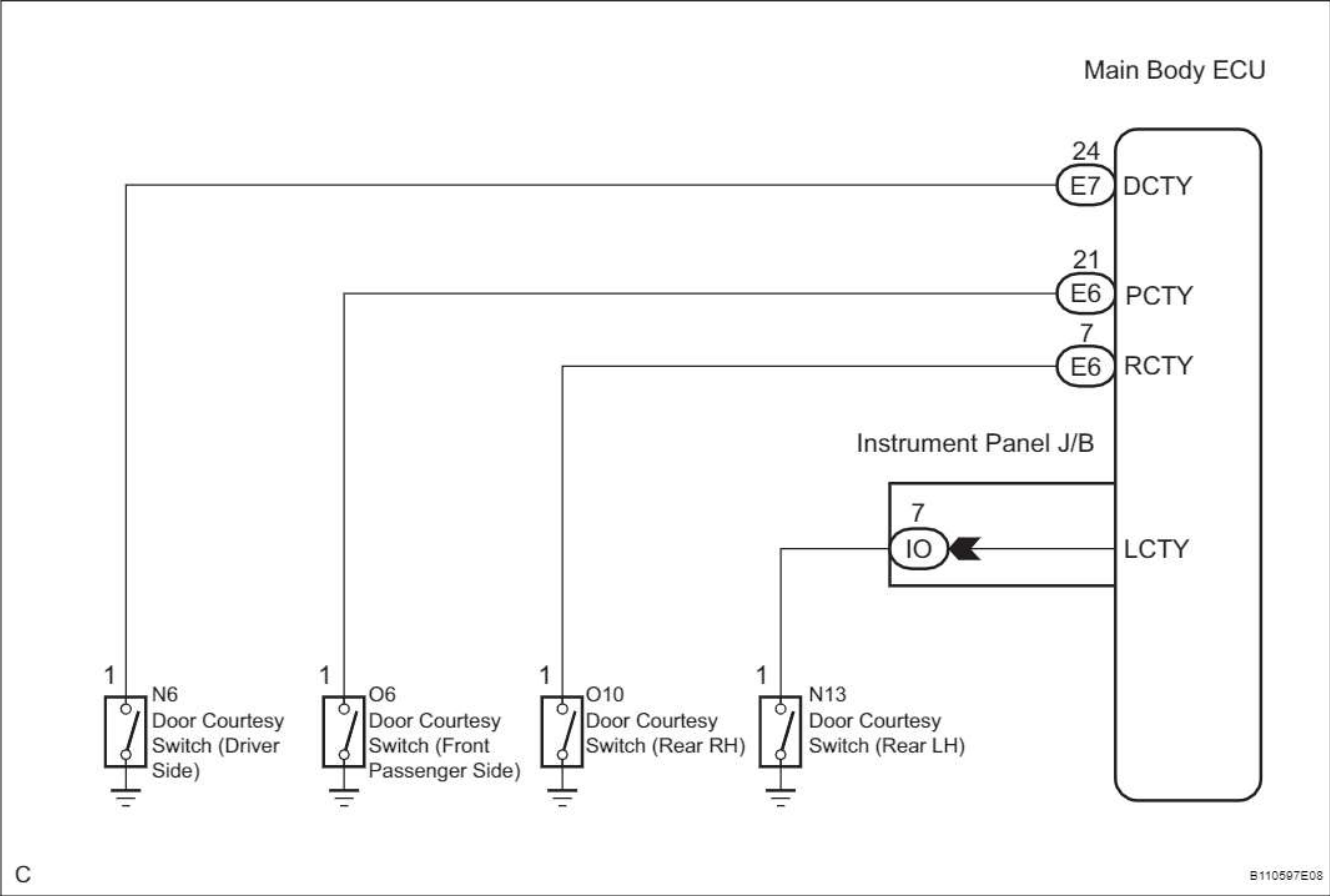
47/131

Door Courtesy Switch Circuit

DESCRIPTION

The main body ECU detects the condition of the door courtesy switches.

WIRING DIAGRAM



INSPECTION PROCEDURE

1

READ VALUE OF INTELLIGENT TESTER

- (a) Connect the intelligent tester to the DLC3.
- (b) Turn the power switch on (IG) and turn the intelligent tester main switch on.
- (c) Select the items below in the DATA LIST, and read the display on the intelligent tester.

MAIN BODY (MAIN BODY ECU):

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
D DOR CTY SW	Driver side door courtesy switch signal / ON or OFF	ON: Driver side door is open OFF: Driver side door is closed	-
P DOR CTY SW	Passenger side door courtesy switch signal / ON or OFF	ON: Passenger side door is open OFF: Passenger side door is closed	-
RR DOR CTY SW	Rear right door courtesy switch signal / ON or OFF	ON: Rear right door is open OFF: Rear right door is closed	-

LI-46

LIGHTING – LIGHTING SYSTEM

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
RL DOR CTY SW	Rear left door courtesy switch signal / ON or OFF	ON: Rear left door is open OFF: Rear left door is closed	-

OK:

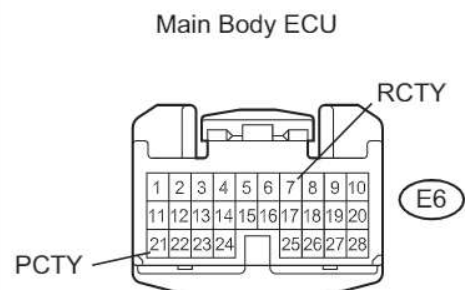
Normal conditions listed above are displayed.

OK**PROCEED TO NEXT CIRCUIT INSPECTION
SHOWN IN PROBLEM SYMPTOMS TABLE****NG****LI****2****INSPECT DOOR COURTESY SWITCH**

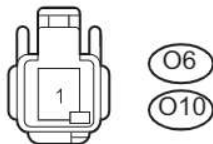
- (a) Inspect the front door courtesy switch (See page [LI-105](#)).
 (b) Inspect the rear door courtesy switch (See page [LI-107](#)).

OK:

Door courtesy switches are normal.

NG**REPLACE DOOR COURTESY SWITCH****OK****3****CHECK HARNESS AND CONNECTOR (MAIN BODY ECU - DOOR COURTESY SWITCH)****Wire Harness Side:**

Switch



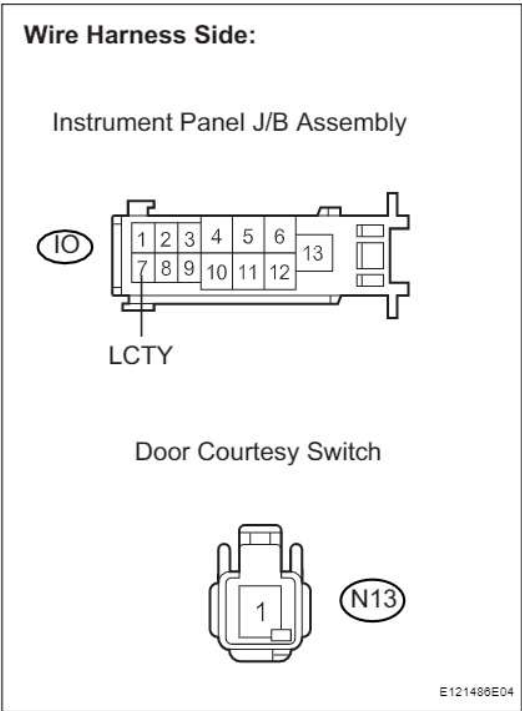
E108574E15

- (a) Check the harness and connector between the main body ECU and door courtesy switches (passenger side and rear RH).
 (1) Disconnect the E6 main body ECU connector.
 (2) Disconnect the O6 and O10 switch connectors.
 (3) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester Connection	Condition	Specified Condition
E6-7 (RCTY) - O10-1 (Rear RH)	Always	Below 1 Ω
E6-21 (PCTY) - O6-1 (Front passenger side)	Always	Below 1 Ω
O10-1 (Rear RH) - Body ground	Always	10 k Ω or higher
O6-1 (Front passenger side) - Body ground	Always	10 k Ω or higher

LIGHTING – LIGHTING SYSTEM

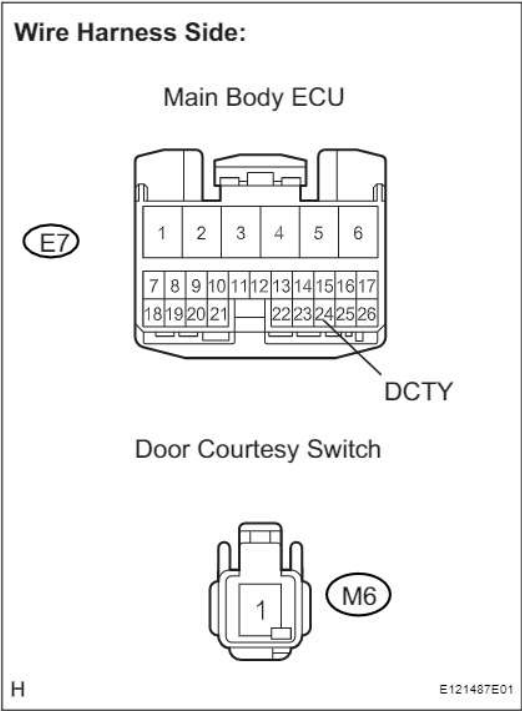


- (b) Check the harness and connector between the instrument panel J/B assembly and rear LH door courtesy switch.
- (1) Disconnect the IO instrument panel J/B assembly connector.
 - (2) Disconnect the N13 switch connector.
 - (3) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester Connection	Condition	Specified Condition
IO-7 (LCTY) - N13-1 (Rear LH)	Always	Below 1 Ω
IO-7 (LCTY) - Body ground	Always	10 kΩ or higher

LI



- (c) Check the harness and connector between the main body ECU and driver side door courtesy switch.
- (1) Disconnect the E7 main body ECU connector.
 - (2) Disconnect the M6 switch connector.
 - (3) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester Connection	Condition	Specified Condition
E7-24 (DCTY) - M6-1 (Driver side)	Always	Below 1 Ω
E7-24 (DCTY) - Body ground	Always	10 kΩ or higher

NG

REPAIR OR REPLACE HARNESS OR CONNECTOR

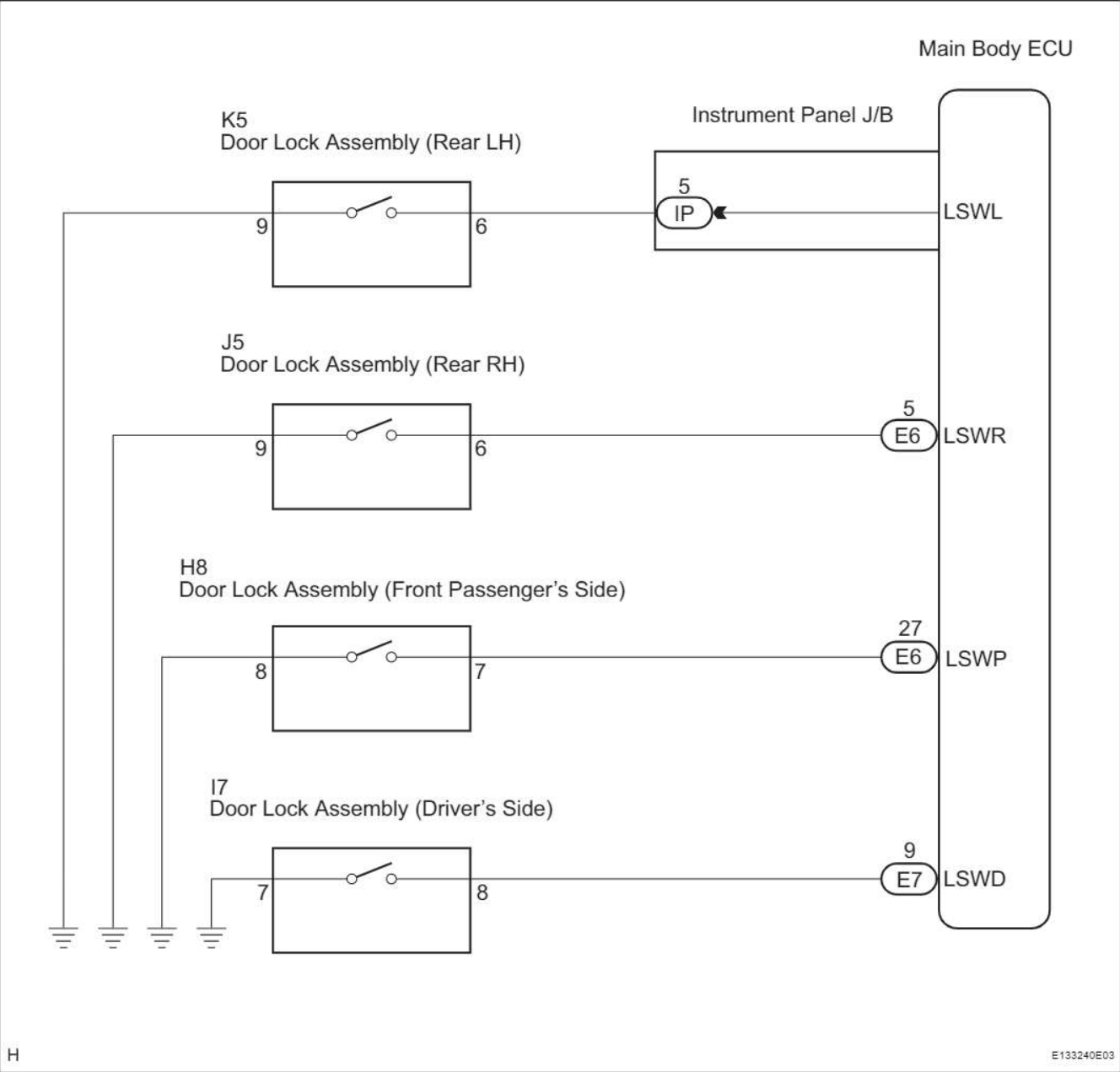
OK

REPLACE INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY

Door LOCK Position Circuit

DESCRIPTION
The main body ECU receives each door lock position switch signal to control the illuminated entry system.

WIRING DIAGRAM



INSPECTION PROCEDURE

1 READ VALUE OF INTELLIGENT TESTER

- (a) Connect the intelligent tester to the DLC3.
- (b) Turn the power switch on (IG) and turn the intelligent tester main switch on.

LIGHTING – LIGHTING SYSTEM**LI-49**

- (c) Select the items below in the DATA LIST, and read the display on the intelligent tester.

MAIN BODY (MAIN BODY ECU):

Item	Measurement Item / Display (Range)	Normal Condition	Diagnostic Note
D LOCK POS SW	Driver side door lock position switch signal / ON or OFF	ON: Driver side door is unlocked OFF: Driver side door is locked	-
P LOCK POS SW	Passenger side door lock position switch signal / ON or OFF	ON: Passenger side door is unlocked OFF: Passenger side door is locked	-
RR LOCK POS SW	Rear right door lock position switch signal / ON or OFF	ON: Rear right door is unlocked OFF: Rear right door is locked	-
RL LOCK POS SW	Rear left door lock position switch signal / ON or OFF	ON: Rear left door is unlocked OFF: Rear left door is locked	-

OK:

Normal conditions listed above are displayed.

NG

GO TO POWER DOOR LOCK CONTROL SYSTEM

OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

LI

LI-50

LIGHTING – LIGHTING SYSTEM

Interior Light Circuit

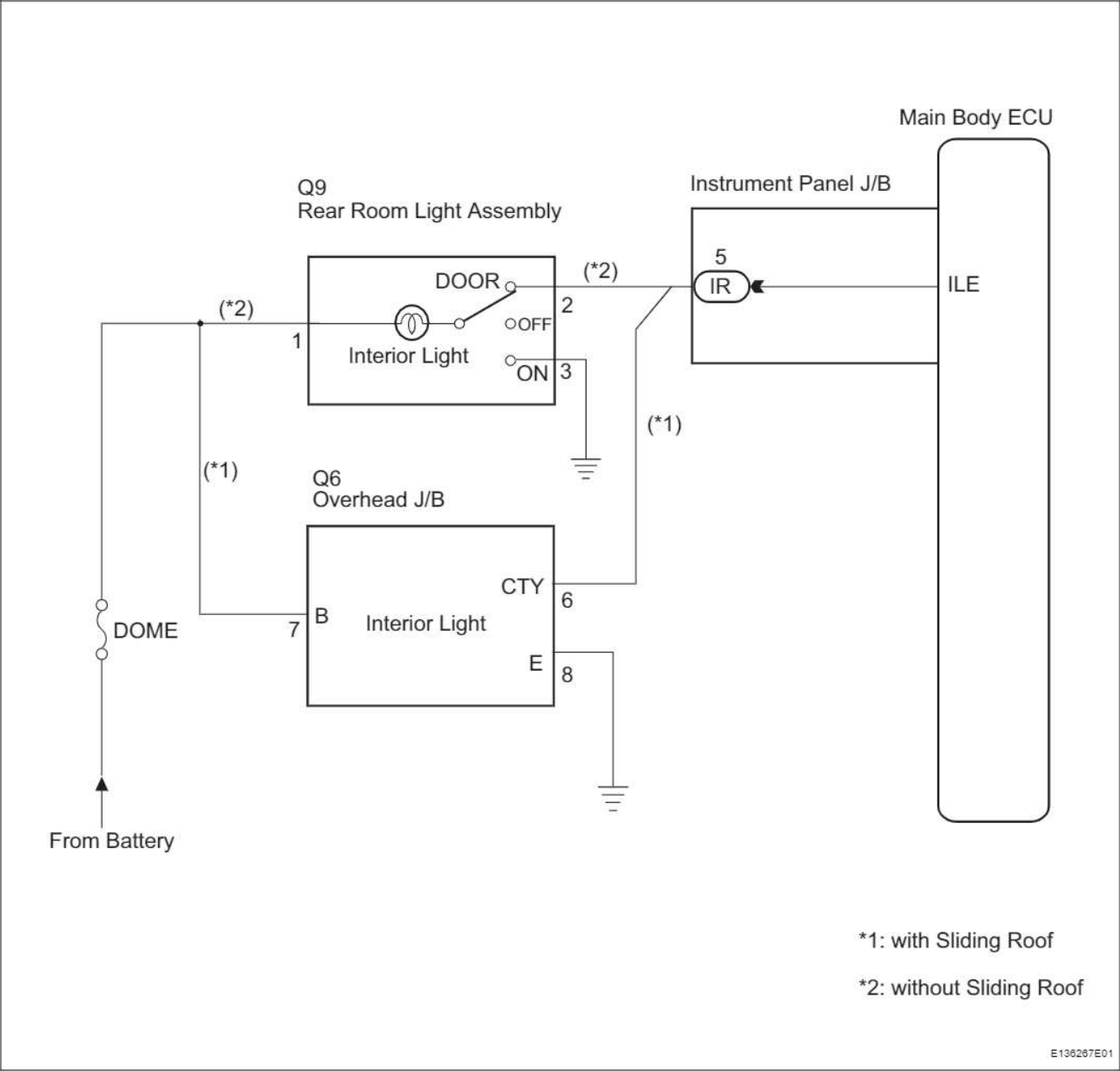
DESCRIPTION

The interior light is controlled by the main body ECU. The operation and condition of this control are described below.

Operation	Condition
Fade in	When any of the following conditions is met, the interior light will fade in. - Any door is opened. - Any door is unlocked when the power switch is off and all doors are closed. - Power switch is turned from on (ACC) to off when all doors are closed.
Fade out immediately	When either of the following conditions is met, the interior light will fade out. - Power switch is turned from off to on (ACC or IG) when all doors are closed. - All doors are locked when the power switch is off.
Illuminate for approximately 15 seconds, and then fade out	All doors are closed when the power switch is off.



WIRING DIAGRAM



INSPECTION PROCEDURE

1	PERFORM ACTIVE TEST USING INTELLIGENT TESTER
---	--

- (a) Connect the intelligent tester to the DLC3.
- (b) Turn the power switch on (IG) and turn intelligent tester main switch on.

LI-52

LIGHTING – LIGHTING SYSTEM

- (c) Select the item(s) below in the ACTIVE TEST, and check the operation.

MAIN BODY (MAIN BODY ECU):

Tester Display	Test Part	Control Range	Diagnostic Note
INTERIOR LAMP	Interior light (Interior light switch in DOOR position and all doors are closed).	ON / OFF	-

OK:

The interior light illuminates.

OK

**PROCEED TO NEXT CIRCUIT INSPECTION
SHOWN IN PROBLEM SYMPTOMS TABLE**

LI

NG

2

CHECK VEHICLE CONDITION

- (a) Check the vehicle condition.

Result

Condition	Proceed to
without Sliding Roof	A
with Sliding Roof	B

B

Go to step 4

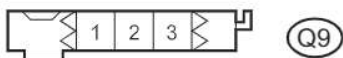
A

3

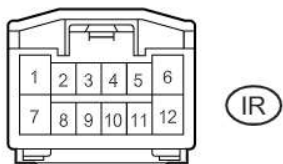
CHECK HARNESS AND CONNECTOR (LIGHT - BATTERY AND INSTRUMENT PANEL J/B ASSEMBLY)

Wire Harness Side:

Rear Room Light Assembly



Instrument Panel J/B Assembly



E136858E01

- (a) Disconnect the Q9 rear room light assembly connector.
 (b) Disconnect the IR instrument panel J/B assembly connector.
 (c) Measure the voltage and resistance according to the value(s) in the table below.

Standard voltage

Tester Connection	Condition	Specified Condition
Q9-1 - Body ground	Always	10 to 14 V

Standard resistance

Tester Connection	Condition	Specified Condition
IR-5 - Q9-2	Always	Below 1 Ω
IR-5 - Body ground	Always	10 k Ω or higher

NG

**REPAIR OR REPLACE HARNESS OR
CONNECTOR**

LIGHTING – LIGHTING SYSTEM

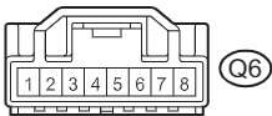
OK

REPLACE INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY

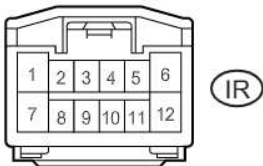
4 CHECK HARNESS AND CONNECTOR (LIGHT - BATTERY AND INSTRUMENT PANEL J/B ASSEMBLY)

Wire Harness Side:

Overhead J/B



Instrument Panel J/B Assembly



E136859E01

- (a) Disconnect the Q6 overhead J/B connector.
- (b) Disconnect the IR instrument panel J/B assembly connector.
- (c) Measure the voltage and resistance according to the value(s) in the table below.

Standard voltage

Tester Connection	Condition	Specified Condition
Q6-7 - Body ground	Always	10 to 14 V

Standard resistance

Tester Connection	Condition	Specified Condition
IR-5 - Q6-6	Always	Below 1 Ω
IR-5 - Body ground	Always	10 kΩ or higher

NG

REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY

Power Switch Illumination Circuit

DESCRIPTION

The power switch illumination is controlled by the main body ECU. The operation and condition of this control are described below.

Operation	Condition
Fade in	When any of the following conditions is met, the power switch illumination will fade in. - Any door is opened. - Any door is unlocked when the power switch is off and all doors are closed. - Power switch is turned from on (ACC) to off when all doors are closed.
Fade out immediately	When either of the following conditions is met, the power switch illumination will fade out. - Power switch is turned from off to on (ACC or IG) when all doors are closed. - All doors are locked when the power switch is off.
Illuminate for approximately 15 seconds, and then fade out	All doors are closed when the power switch is off.

WIRING DIAGRAM

INSPECTION PROCEDURE

1PERFORM ACTIVE TEST USING INTELLIGENT TESTER

- (a) Connect the intelligent tester to the DLC3.
- (b) Turn the power switch on (IG).
- (c) Turn the intelligent tester main switch on.
- (d) Select the item(s) below in the ACTIVE TEST, and check the operation.

MAIN BODY (MAIN BODY ECU):

Tester Display	Test Part	Control Range	Diagnostic Note
LIGHTING IND	Power switch illumination	ON / OFF	-

OK:

The power switch illumination comes on.

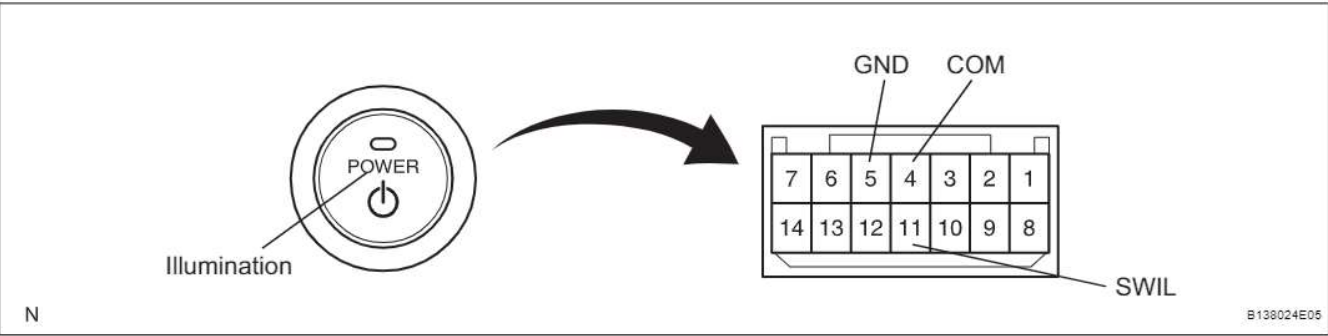
OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

NG

2INSPECT POWER SWITCH

- (a) Remove the power switch.



LIGHTING – LIGHTING SYSTEM

- (b) Apply the battery voltage to the power switch.
- (c) Check that the illumination comes on.
- OK

Measurement Condition	Specified Condition
Battery positive (+) → Terminal 11 (SWIL) Battery negative (-) → Terminal 5 (GND) or 4 (COM)	Power switch illumination comes on

NG

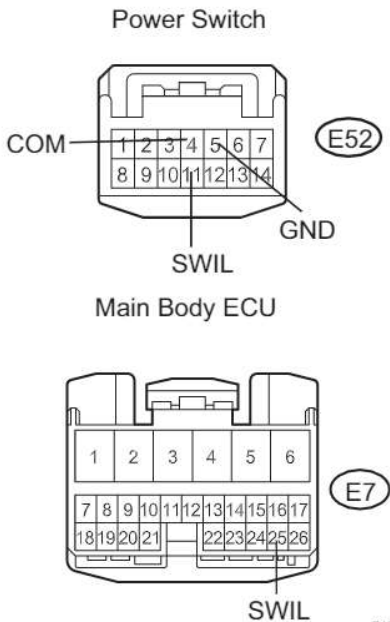
REPLACE POWER SWITCH

OK

LI

3 CHECK HARNESS AND CONNECTOR

Wire Harness Side:



- (a) Disconnect the E7 main body ECU connector.
- (b) Disconnect the E52 power switch connector.
- (c) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester Connection	Condition	Specified Condition
E52-11 (SWIL) - E7- 25 (SWIL)	Always	Below 1 Ω
E52-4 (COM) or E52-5 (GND) - Body ground	Always	Below 1 Ω
E7-25 (SWIL) - Body ground	Always	Below 10 kΩ or higher

NG

REPAIR OR REPLACE HARNESS OR CONNECTOR

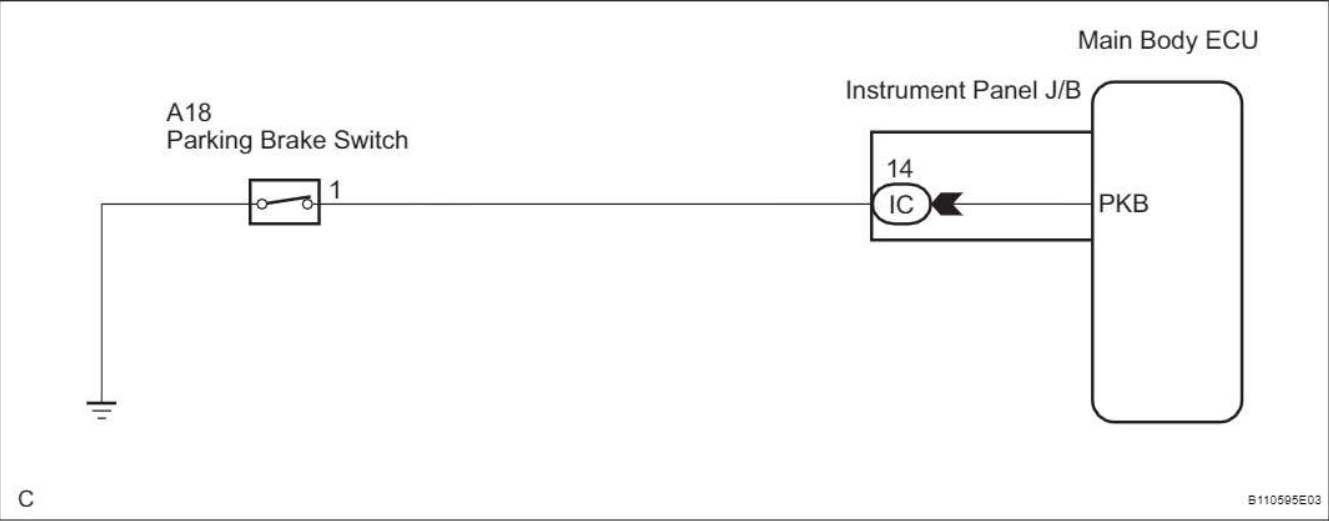
OK

REPLACE INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY

Parking Brake Switch Circuit

DESCRIPTION
The main body ECU receives a parking brake switch signal to control the daytime running light system.

WIRING DIAGRAM



INSPECTION PROCEDURE

1

READ VALUE OF INTELLIGENT TESTER

- (a) Connect the intelligent tester to the DLC3.
- (b) Turn the power switch on (IG) and turn the intelligent tester main switch on.
- (c) Select the item below in the DATA LIST, and read the display on the intelligent tester.

MAIN BODY (MAIN BODY ECU):

Item	Measurement Item/ Display (Range)	Normal Condition	Diagnostic Note
PARKING BRAKE SW	Parking brake SW signal / ON or OFF	ON: Parking brake switch is ON OFF: Parking brake switch is OFF	-

OK:
Normal conditions listed above are displayed.

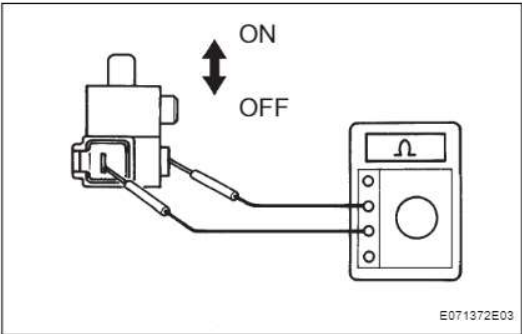
OK

PROCEED TO NEXT CIRCUIT INSPECTION
SHOWN IN PROBLEM SYMPTOMS TABLE

NG

2

INSPECT PARKING BRAKE SWITCH ASSEMBLY



- (a) Remove the parking brake switch assembly.
(b) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester Connection	Condition	Specified Condition
1 - Switch body	Shaft is pushed in	10 kΩ or higher
1 - Switch body	Shaft is not pushed in	Below 1 Ω

NG

REPLACE PARKING BRAKE SWITCH ASSEMBLY

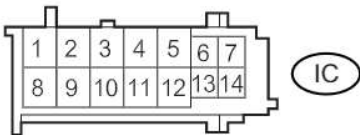
OK

3

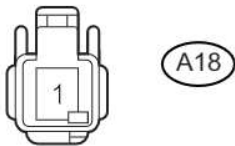
CHECK HARNESS AND CONNECTOR (SWITCH - INSTRUMENT PANEL J/B ASSEMBLY)

Wire Harness Side:

Instrument Panel J/B Assembly



Parking Brake Switch



H

E121500E01

- (a) Disconnect the IC instrument panel J/B assembly connector.
(b) Disconnect the A18 switch connector.
(c) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester Connection	Condition	Specified Condition
IC-14 - A18-1	Always	Below 1 Ω
IC-14 - Body ground	Always	10 kΩ or higher

NG

REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

LI-58

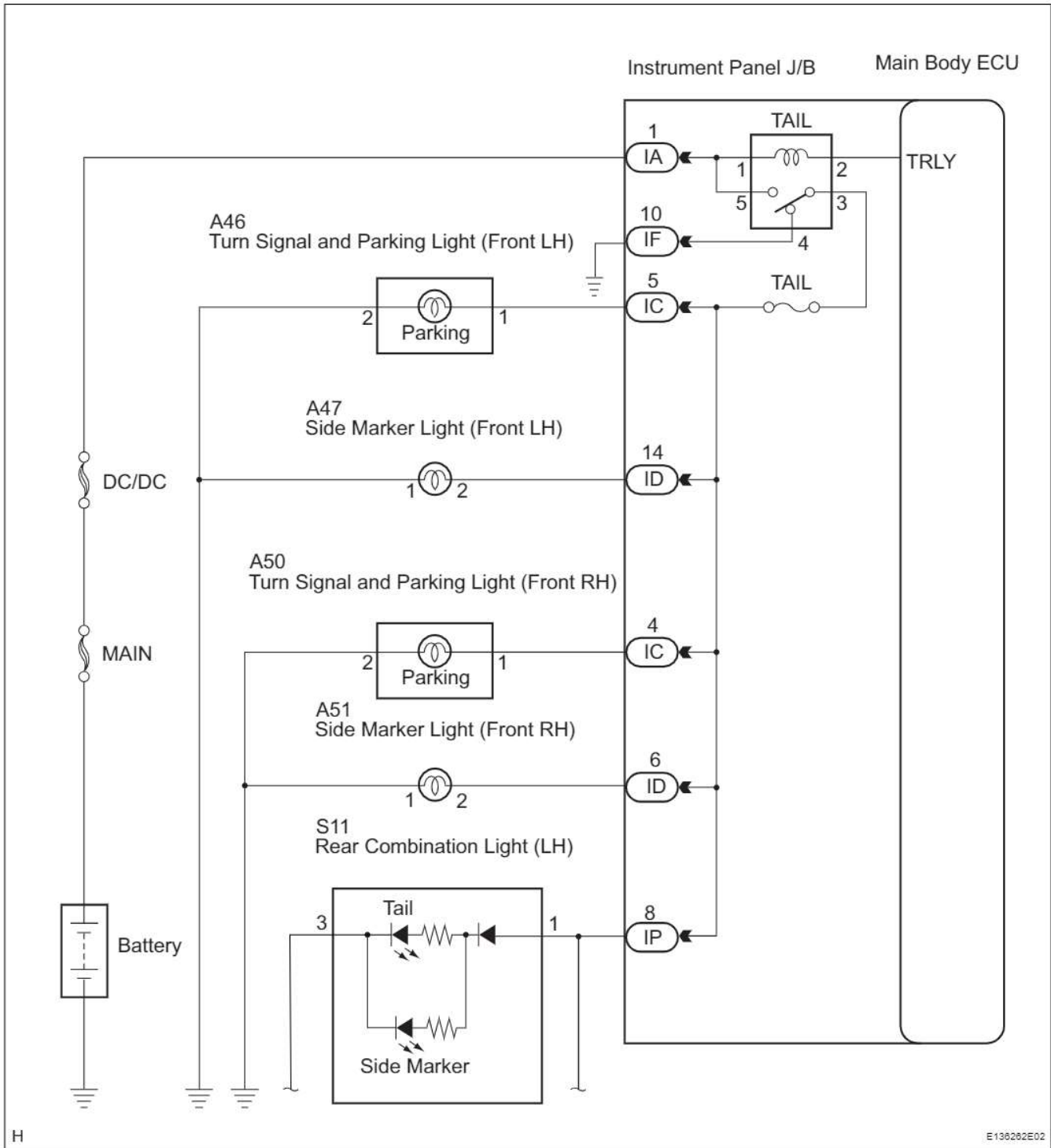
LIGHTING – LIGHTING SYSTEM

Taillight Relay Circuit

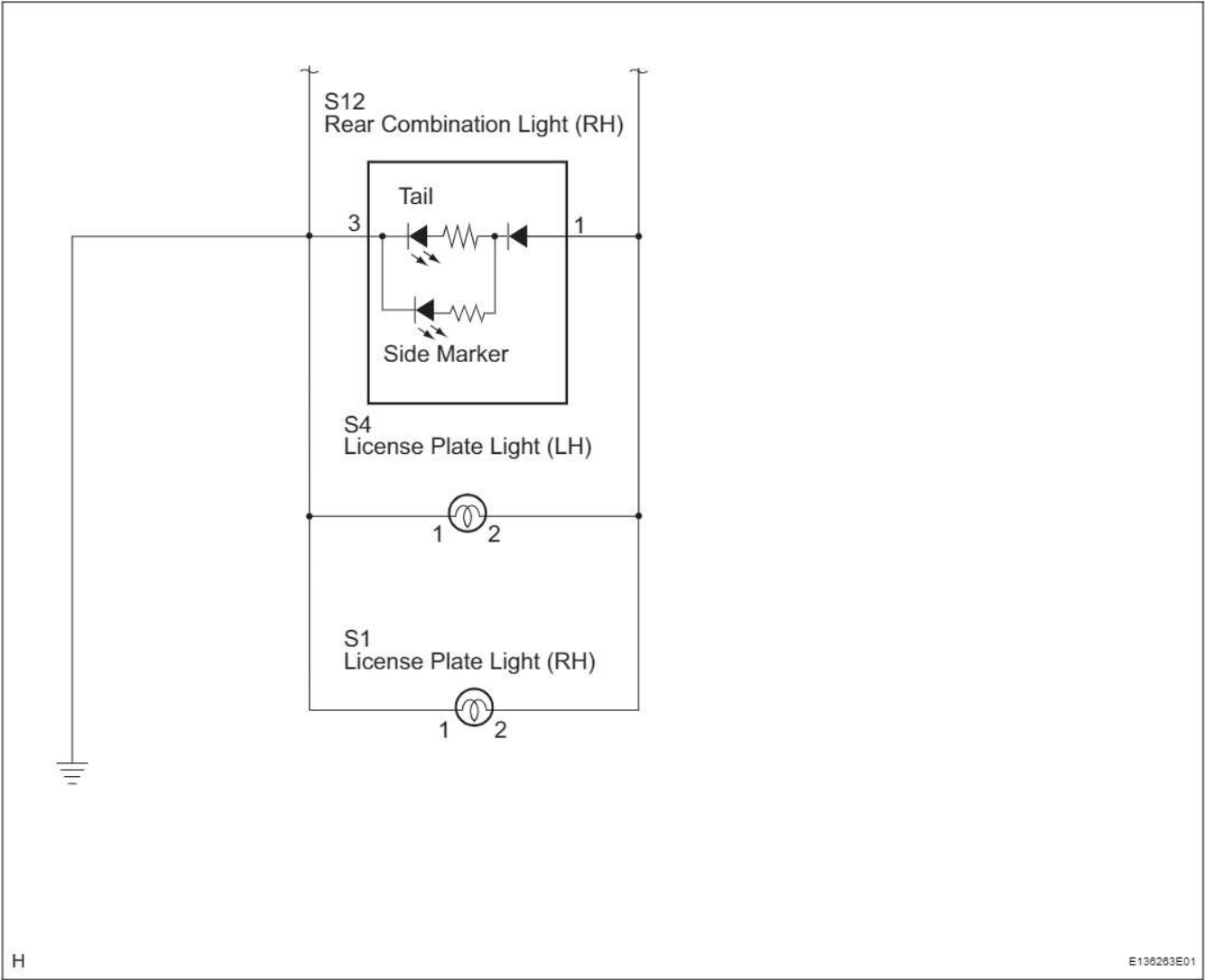
DESCRIPTION

The main body ECU receives a light control switch TAIL signal from the headlight dimmer switch assembly, and turns the taillight relay on.

WIRING DIAGRAM



LIGHTING – LIGHTING SYSTEM



LI

INSPECTION PROCEDURE

1	PERFORM ACTIVE TEST BY INTELLIGENT TESTER
---	---

- (a) Connect the intelligent tester to the DLC3.
- (b) Turn the power switch on (IG) and turn the intelligent tester main switch on.
- (c) Select the item below in the ACTIVE TEST and then check that the relay operates.

MAIN BODY (MAIN BODY ECU):

Item	Test Details	Diagnostic Note
TAIL LIGHT	Taillight relay ON / OFF	-

OK:
The taillight relay operates. (Taillights illuminate.)

OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

LI-60

LIGHTING – LIGHTING SYSTEM

NG

2

INSPECT FUSE (TAIL)

- (a) Remove the TAIL fuse from the instrument panel J/B assembly.
- (b) Measure the resistance of the fuse.
- Standard resistance:
Below 1 Ω

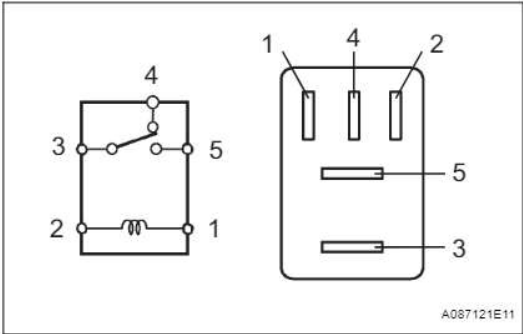
NG

REPLACE FUSE

OK

3

INSPECT TAILLIGHT RELAY



- (a) Remove the taillight relay from the instrument panel J/B assembly.
- (b) Measure the resistance according to the value(s) in the table below.
- Standard resistance

Tester Connection	Specified Condition
3 - 5	10 kΩ or higher
	Below 1 Ω (When battery voltage is applied to terminals 1 and 2)
3 - 4	Below 1 Ω
	10 kΩ or higher (When battery voltage is applied to terminals 1 and 2)

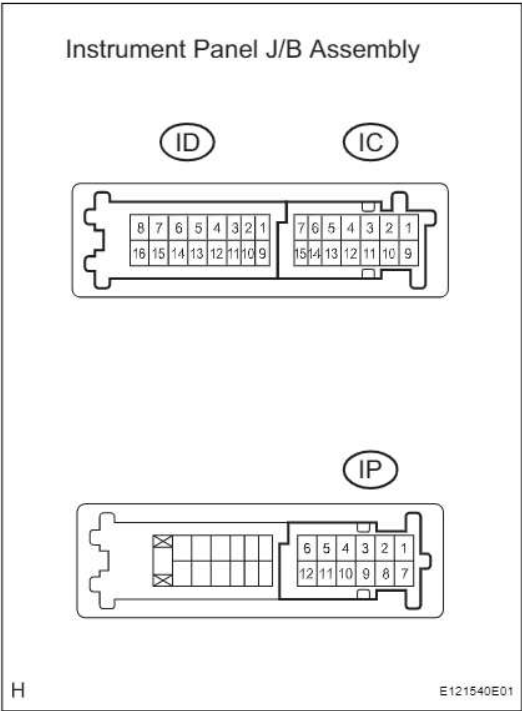
NG

REPLACE TAILLIGHT RELAY

OK

4

INSPECT INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY



(a) Measure the voltage according to the value(s) in the table below.

Standard voltage

Tester Connection	Condition	Specified Condition
IC-4 - Body ground	Light control switch OFF → TAIL	Below 1 V → 10 to 14 V
IC-5 - Body ground	Light control switch OFF → TAIL	Below 1 V → 10 to 14 V
ID-6 - Body ground	Light control switch OFF → TAIL	Below 1 V → 10 to 14 V
ID-14 - Body ground	Light control switch OFF → TAIL	Below 1 V → 10 to 14 V
IP-8 - Body ground	Light control switch OFF → TAIL	Below 1 V → 10 to 14 V

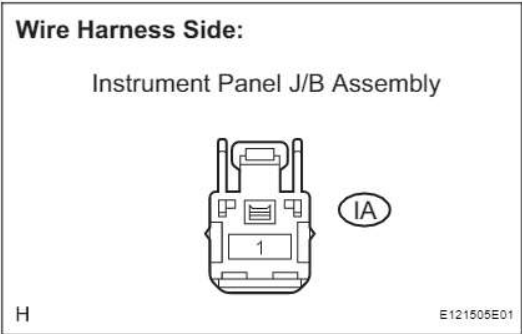
OK

REPAIR OR REPLACE HARNESS OR
CONNECTOR (INSTRUMENT PANEL
JUNCTION BLOCK ASSEMBLY - BODY
GROUND)

NG

5

CHECK HARNESS AND CONNECTOR (BATTERY - INSTRUMENT PANEL JUNCTION
BLOCK ASSEMBLY)



- (a) Disconnect the IA instrument panel J/B assembly connector.
- (b) Measure the voltage according to the value(s) in the table below.

Standard voltage

Tester Connection	Condition	Specified Condition
IA-1 - Body ground	Always	10 to 14 V

NG

REPAIR OR REPLACE HARNESS OR
CONNECTOR

OK

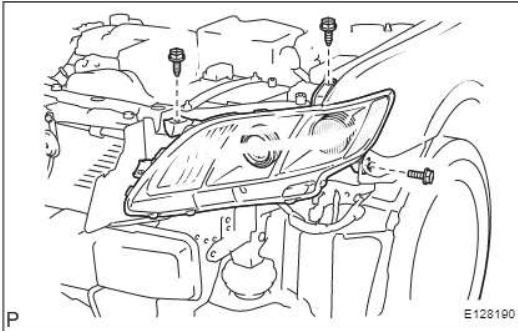
REPLACE INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY

LI-60

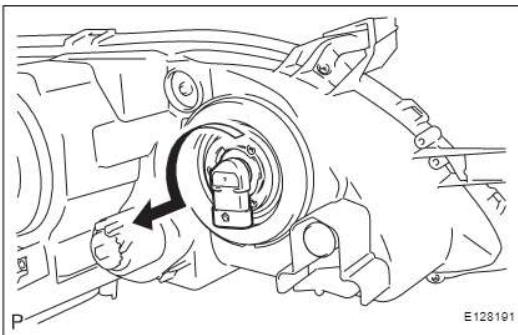
LIGHTING – HEADLIGHT ASSEMBLY

REMOVAL

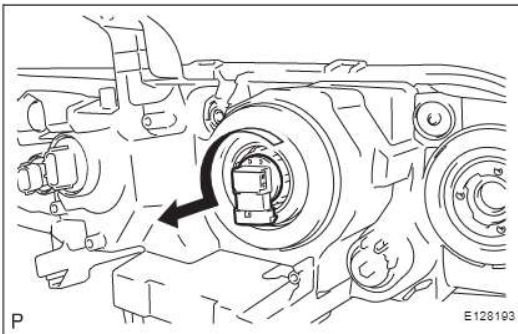
1. **REMOVE FRONT BUMPER ASSEMBLY** (See page [ET-3](#))
2. **REMOVE HEADLIGHT ASSEMBLY**
 - (a) Remove the bolt and 2 screws.
 - (b) Disconnect the connectors and remove the headlight assembly.

**DISASSEMBLY**

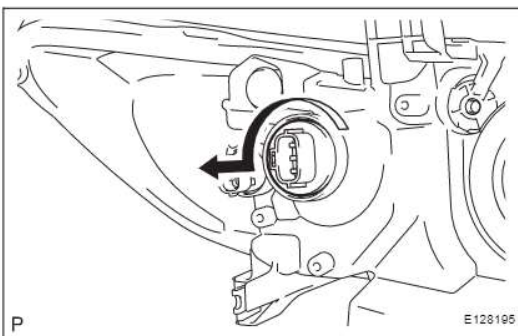
1. **REMOVE NO. 1 HEADLIGHT BULB**
 - (a) Remove the No. 1 headlight bulb as shown in the illustration.

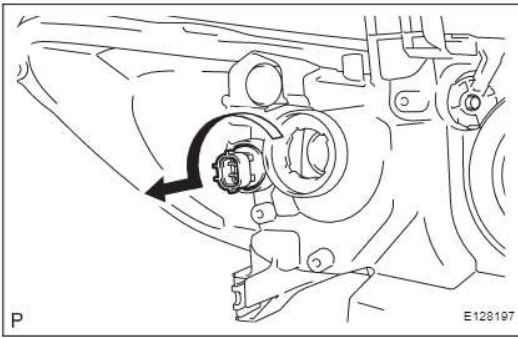


2. **REMOVE NO. 2 HEADLIGHT BULB**
 - (a) Remove the No. 2 headlight bulb as shown in the illustration.



3. **REMOVE FRONT TURN SIGNAL LIGHT BULB**
 - (a) Turn the front turn signal light bulb and the front turn signal light socket in the direction indicated by the arrow and remove them as a unit.
 - (b) Remove the front turn signal light bulb from the front turn signal light socket.



LIGHTING – HEADLIGHT ASSEMBLY**LI-61****4. REMOVE FRONT SIDE MARKER LIGHT BULB**

- (a) Turn the front side marker light bulb and the front side marker light socket in the direction indicated by the arrow and remove them as a unit.
- (b) Remove the front side marker light bulb from the front side marker light socket.

LI

LI-62

LIGHTING – HEADLIGHT ASSEMBLY

ADJUSTMENT

HINT:

It is possible that a bulb is incorrectly installed, affecting headlight aim. Bulb installation should be considered prior to performing the adjustment procedure.

1. VEHICLE PREPARATION FOR HEADLIGHT AIM ADJUSTMENT

(a) Prepare the vehicle according to the following conditions:

- Ensure there is no damage or deformation to the body around the headlights.
- Fill the fuel tank.
- Make sure that the oil is filled to the specified level.
- Make sure that the coolant is filled to the specified level.
- Inflate the tires to the appropriate pressure.
- Unload the trunk and vehicle, ensuring that the spare tire, tools, and jack are in their original positions.
- Sit a person of average weight (68 kg, 150 lb) in the driver's seat.

2. PREPARATION FOR HEADLIGHT AIMING (Using a headlight aim test machine)

(a) Adjust the headlight aim in accordance with the headlight aim test machine instructions.

3. PREPARATION FOR HEADLIGHT AIMING (Using a Screen)

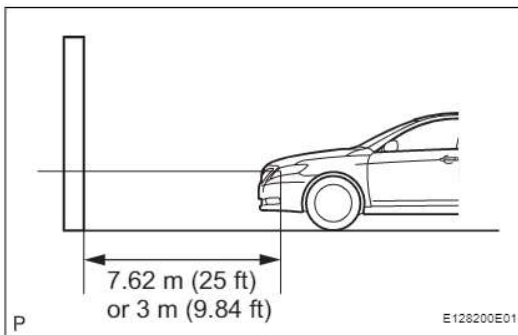
(a) Prepare the vehicle:

- Place the vehicle in a location that is dark enough to clearly observe the cutoff line. The cutoff line is a distinct line, below which light from the headlights can be observed and above which it cannot.
- Place the vehicle at a 90° angle to the wall.
- Create a 7.62 m (25 ft) distance between the vehicle (headlight bulb center) and the wall.
- Make sure that the vehicle is on a level surface.
- Bounce the vehicle up and down to settle the suspension.

NOTICE:

A distance of 7.62 m (25 ft) between the vehicle (headlight bulb center) and the wall is necessary for proper aim adjustment. If sufficient space is not available, secure a distance of exactly 3 m (9.84 ft) to allow for checking and adjustment of headlight aim. (The size of the target zone will change with the distance, so follow the instructions in the illustration.)

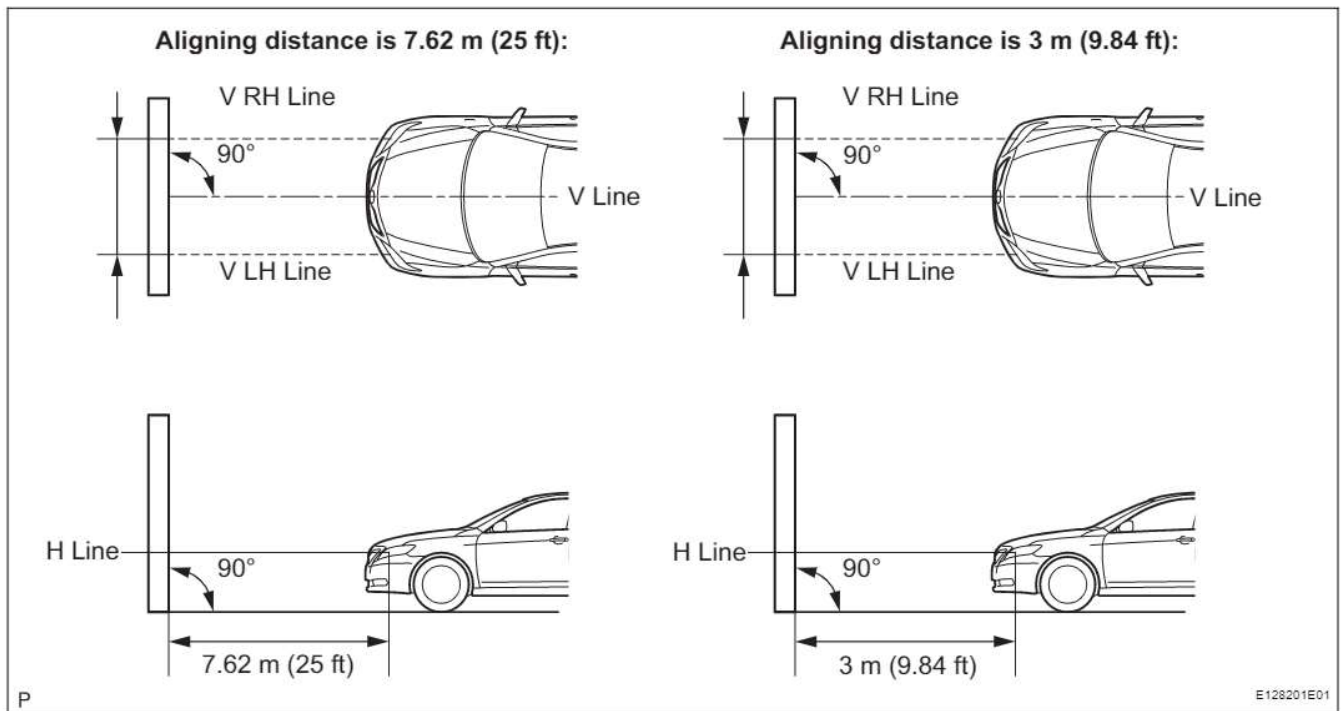
(b) Prepare a piece of thick white paper (approximately 2 m (6.6 ft) (height) x 4 m (13.1 ft) (width)) to use as a screen.



LIGHTING – HEADLIGHT ASSEMBLY

LI-63

- (c) Draw a vertical line down the center of the screen (V line).
 (d) Set the screen as shown in the illustration.



HINT:

- Stand the screen perpendicular to the ground.
- Align the V line on the screen with the center of the vehicle.

- (e) Draw base lines (H, V LH, and V RH lines) on the screen as shown in the illustration.

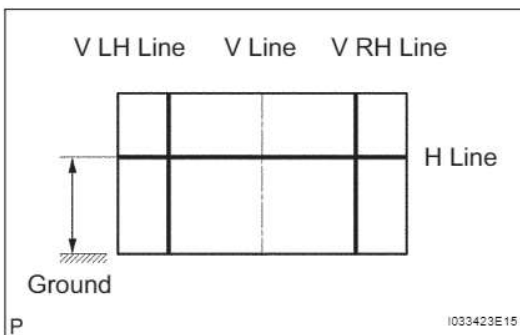
HINT:

- The base lines differ for "low-beam inspection" and "high-beam inspection".
- Mark the headlight bulb center marks on the screen. If the center mark cannot be observed on the headlight, use the center of the headlight bulb or the manufacturer's name marked on the headlight as the center mark.

- (1) H Line (Headlight height):

Draw a horizontal line across the screen so that it passes through the center marks. The H line should be at the same height as the headlight bulb center marks of the low-beam headlights.

- (2) V LH Line, V RH Line (Center mark position of left-hand (LH) and right-hand (RH) headlights): Draw two vertical lines so that they intersect the H line at each center mark (aligned with the center of the low-beam headlight bulbs).



4. HEADLIGHT AIMING INSPECTION

- (a) Cover the headlight or disconnect the connector of the headlight on the opposite side to prevent light from the headlight that is not being inspected from affecting the headlight aiming inspection.

NOTICE:

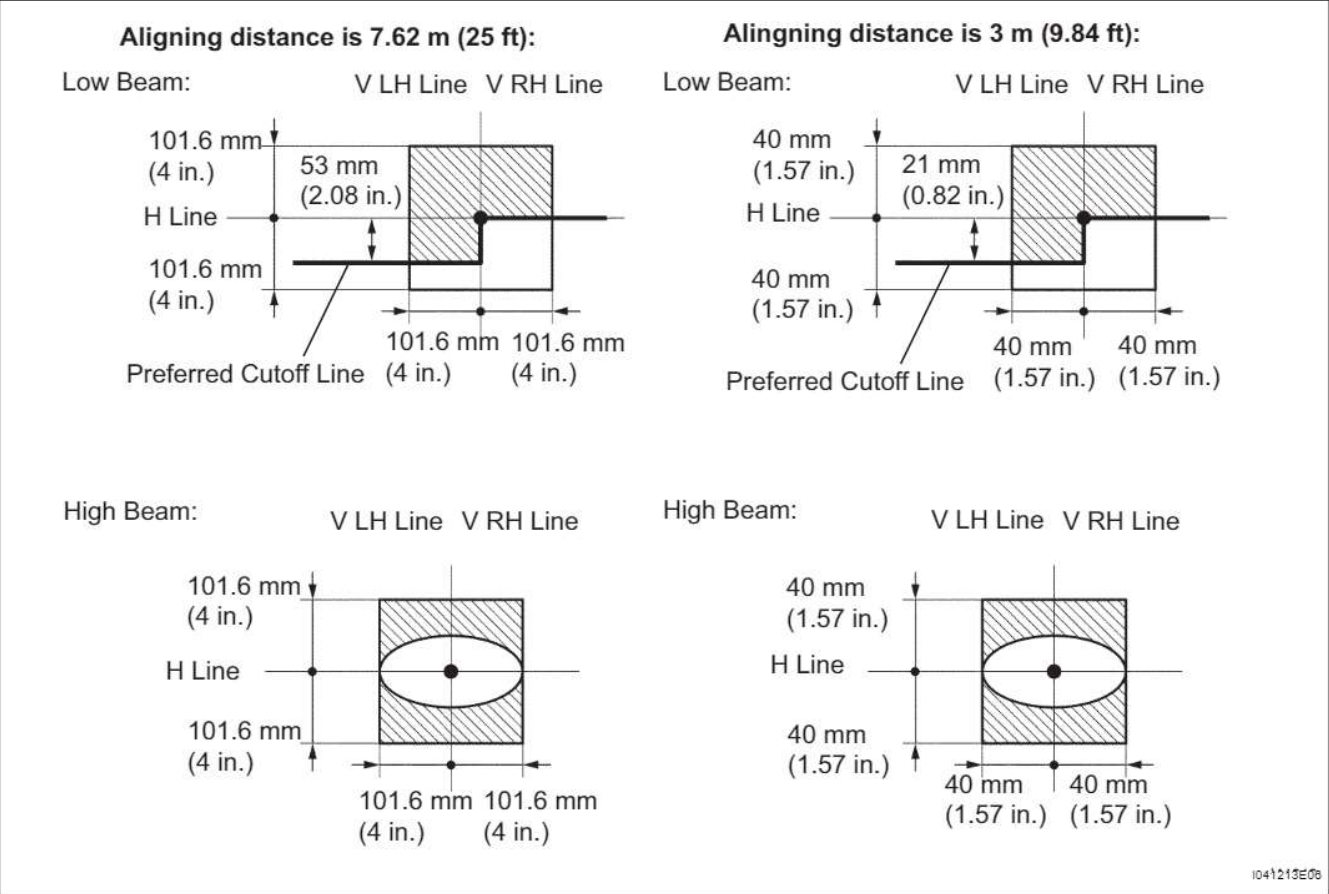
Do not keep the headlight covered for more than 3 minutes. The headlight lens is made of synthetic resin, which may melt or be damaged due to excessive heat.

HINT:

When checking the aim of the high-beam, cover the low-beam or disconnect the connector.

- (b) Start the engine.
(c) Replacement text:

Turn on the headlight and check if the cutoff line matches the preferred cutoff line in the following illustration.



HINT:

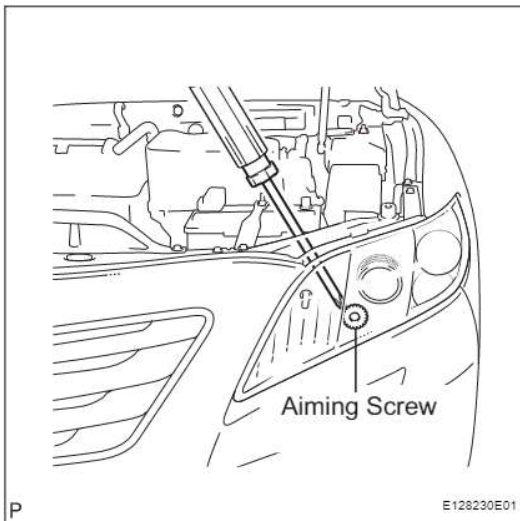
- Since the low-beam light and the high-beam light are a unit, if the aim on the low beam is correct, the high beam should also be correct. However, check both beams just to make sure.

LIGHTING – HEADLIGHT ASSEMBLY

LI-65

- If the alignment distance is 7.62 m (25 ft):
The cutoff line should be within 101.6 mm (4 in.) above or below the H line as well as 101.6 mm (4 in.) left or right of the V line with low-beam (SAE J599).
- If the alignment distance is 3 m (9.84 ft):
The low beam cutoff line should be within 40 mm (1.57 in.) above or below the H line as well as 40 mm (1.57 in.) left or right of the V line (SAE J599).
- If the alignment distance is 7.62 m (25 ft):
The high beam center of intensity should be within 101.6 mm (4 in.) above or below the H line as well as 101.6 mm (4 in.) left or right of the V line (SAE J599).
- If the alignment distance is 3 m (9.84 ft):
The high beam center of intensity should be within 40 mm (1.57 in.) above or below the H line as well as 40 mm (1.57 in.) left or right of the V line (SAE J599).
- If the alignment distance is 7.62 m (25 ft):
The low beam cutoff line should be 53 mm (2.08 in.) below the H line (preferred cutoff line target).
- If the alignment distance is 3 m (9.84 ft):
The low beam cutoff line should be 21 mm (0.82 in.) below the H line (preferred cutoff line target).

LI



5. HEADLIGHT AIMING ADJUSTMENT

- (a) Adjust the aim vertically:

Adjust the headlight aim into the specified range by turning aiming screw with a screwdriver.

NOTICE:

The final turn of the aiming screw should be made in the clockwise direction. If the screw is tightened excessively, loosen it and then retighten it, so that the final turn of the screw is in the clockwise direction.

HINT:

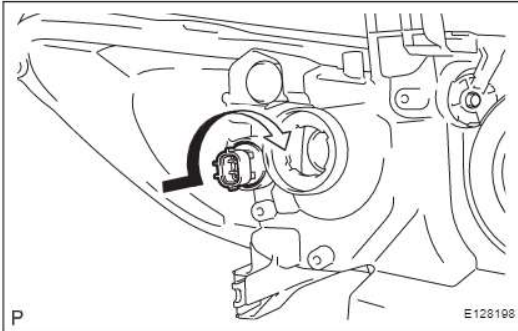
- Since the low-beam light and high-beam light are a unit, if the aim on the low beam is correct, the high beam should also be correct. If it is not possible to correctly adjust headlight aim, check bulb, headlight unit, and headlight unit reflector installation.
- The headlight aim moves up when turning the aiming screw clockwise, and moves down when turning the aiming screw counterclockwise.

LI-66

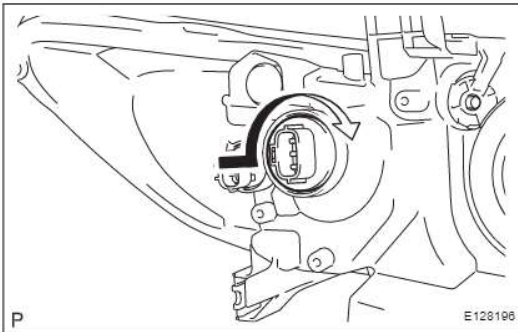
LIGHTING – HEADLIGHT ASSEMBLY

REASSEMBLY**1. INSTALL FRONT SIDE MARKER LIGHT BULB**

- (a) Install the front side marker light bulb to the front side marker light socket.
- (b) Turn the front side marker light bulb and front side marker light socket in the direction indicated by the arrow and install them as a unit.

**2. INSTALL FRONT TURN SIGNAL LIGHT BULB**

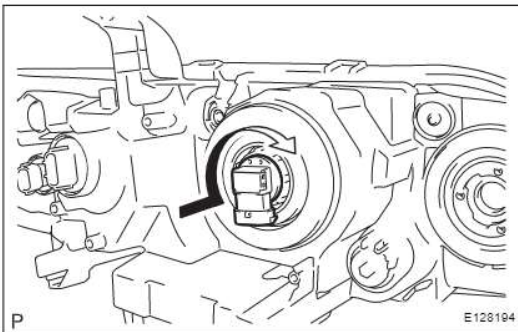
- (a) Install the front turn signal light bulb to the front turn signal light socket.



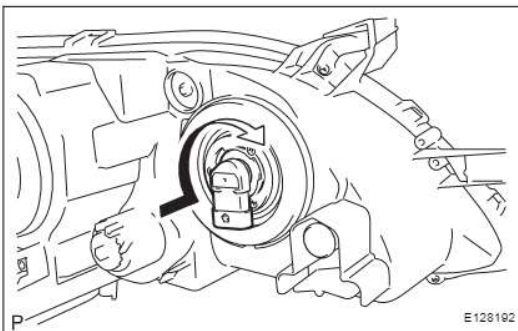
- (b) Turn the front turn signal light bulb and front turn signal light socket in the direction indicated by the arrow and install them as a unit.

3. INSTALL NO. 2 HEADLIGHT BULB

- (a) Install the No. 2 headlight bulb as shown in the illustration.

**4. INSTALL NO. 1 HEADLIGHT BULB**

- (a) Install the No. 1 headlight bulb as shown in the illustration.



INSTALLATION

1. INSTALL HEADLIGHT ASSEMBLY

(a) Connect the connectors.

(b) Install the headlight assembly with the bolt and 2 screws.

Torque: 5.4 N*m (55 kgf*cm, 48 in.*lbf)

2. INSTALL FRONT BUMPER ASSEMBLY (See page [ET-9](#))

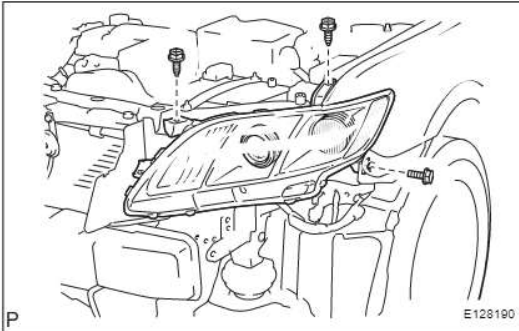
3. VEHICLE PREPARATION FOR HEADLIGHT AIM ADJUSTMENT (See page [LI-60](#))

4. PREPARATION FOR HEADLIGHT AIMING (Using a headlight aim test machine) (See page [LI-61](#))

5. PREPARATION FOR HEADLIGHT AIMING (Using a screen) (See page [LI-61](#))

6. HEADLIGHT AIMING INSPECTION (See page [LI-63](#))

7. HEADLIGHT AIMING ADJUSTMENT (See page [LI-64](#))

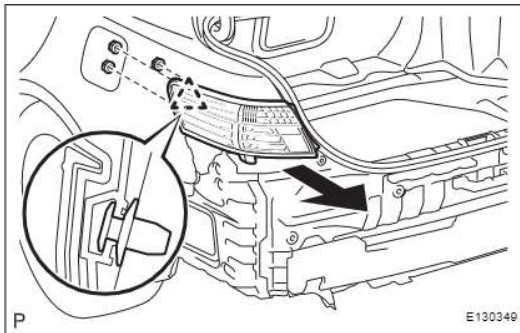
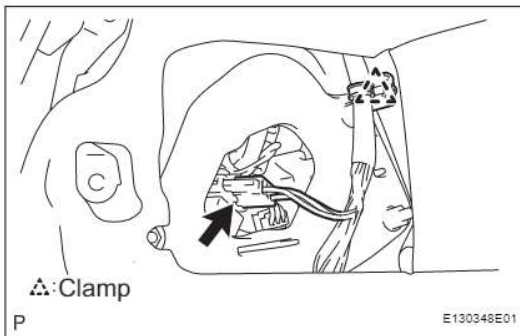
**LI**

LI-70

LIGHTING – REAR COMBINATION LIGHT ASSEMBLY

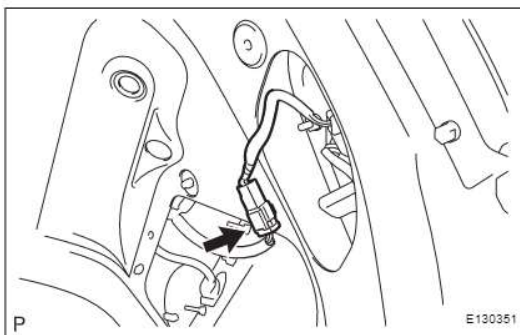
REMOVAL

1. REMOVE REAR BUMPER ASSEMBLY (See page [ET-12](#))
2. REMOVE LUGGAGE COMPARTMENT FLOOR MAT
3. REMOVE SPARE WHEEL COVER CLAMP
4. REMOVE SPARE WHEEL COVER ASSEMBLY
5. REMOVE NO. 1 LUGGAGE COMPARTMENT TRIM HOOK (See page [ED-97](#))
6. REMOVE REAR FLOOR FINISH PLATE (See page [ED-97](#))
7. REMOVE REAR COMBINATION LIGHT ASSEMBLY
 - (a) Disconnect the connector and clamp.



- (b) Remove the 3 nuts.
- (c) Disengage the clip and remove the rear combination light assembly.

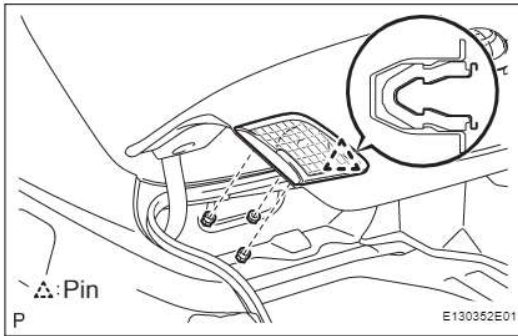
8. REMOVE LUGGAGE COMPARTMENT DOOR COVER (See page [ET-50](#))



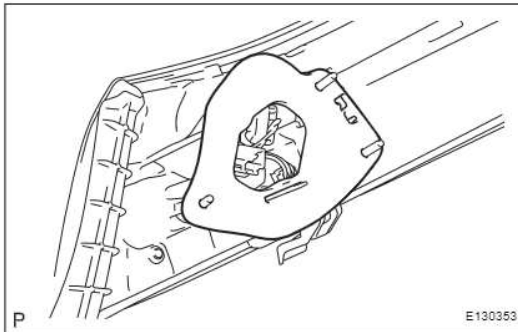
9. REMOVE REAR LIGHT ASSEMBLY
 - (a) Disconnect the connector.

LIGHTING – REAR COMBINATION LIGHT ASSEMBLY

LI-71



- (b) Remove the 3 nuts.
- (c) Disengage the pin and remove the rear light assembly.



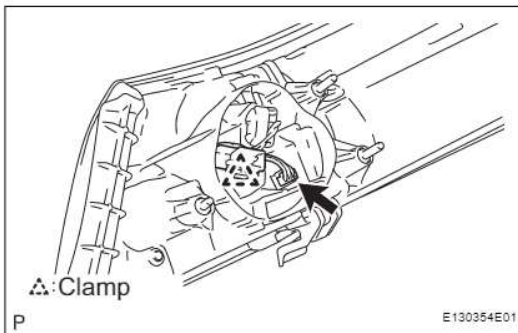
DISASSEMBLY

1. REMOVE REAR COMBINATION LIGHT GASKET

- (a) Remove the rear combination light gasket.

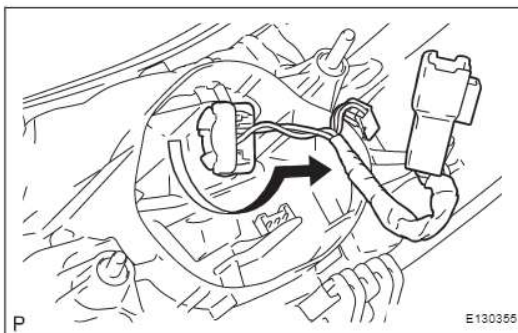
NOTICE:

- Be sure to remove the all traces of the old gasket from the body.
- Do not reuse the removed gasket. Be sure to install a new rear combination light gasket to prevent water ingress.

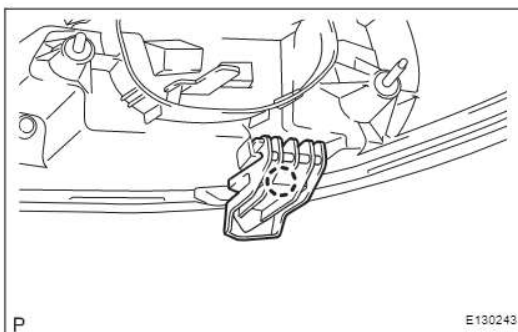


2. REMOVE REAR TURN SIGNAL LIGHT BULB

- (a) Disconnect the connector and clamp.



- (b) Turn the rear turn signal light bulb and the rear combination light socket and wire in the direction indicated by the arrow and disconnect them as a unit.
- (c) Remove the rear turn signal light bulb from the rear combination light socket and wire.

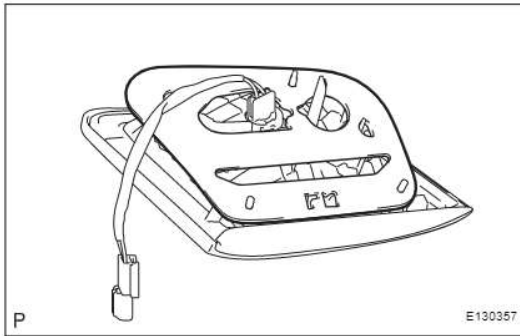


3. REMOVE REAR BUMPER RETAINER UPPER

- (a) Disengage the claw and remove the rear bumper retainer upper.

LI-72

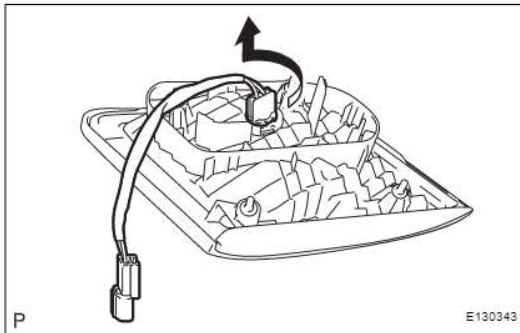
LIGHTING – REAR COMBINATION LIGHT ASSEMBLY

**4. REMOVE REAR LIGHT GASKET**

- (a) Remove the rear light gasket.

NOTICE:

- Be sure to remove all traces of the old gasket from the body.
- Do not reuse the removed gasket. Be sure to install a new rear light gasket to prevent water ingress.

**5. REMOVE BACK UP LIGHT BULB**

- (a) Turn the back up light bulb and the rear light socket and wire in the direction indicated by the arrow and remove them as a unit.
- (b) Remove the back up light bulb from the rear light socket and wire.

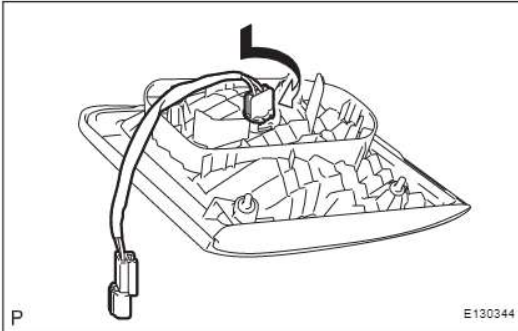
LIGHTING – REAR COMBINATION LIGHT ASSEMBLY

LI-73

REASSEMBLY

1. INSTALL BACK UP LIGHT BULB

- (a) Install the back up light bulb to the rear light socket and wire.
- (b) Turn the back up light bulb and rear light socket and wire in the direction indicated by the arrow and install them as a unit.

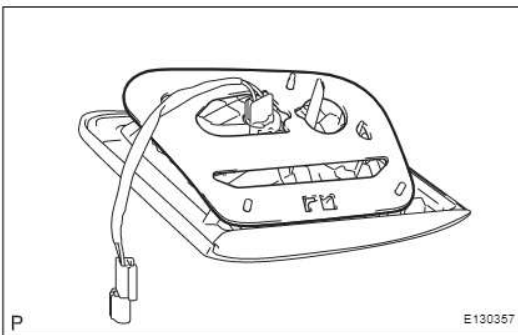


2. INSTALL REAR LIGHT GASKET

- (a) Install a new rear light gasket.

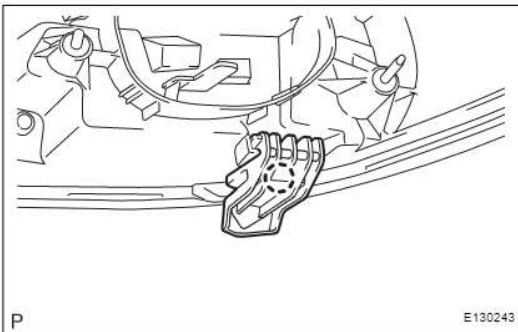
NOTICE:

- Be sure to remove all traces of the old gasket from the body.
- Do not reuse the removed gasket. Be sure to install a new rear light gasket to prevent water ingress.



3. INSTALL REAR BUMPER RETAINER UPPER

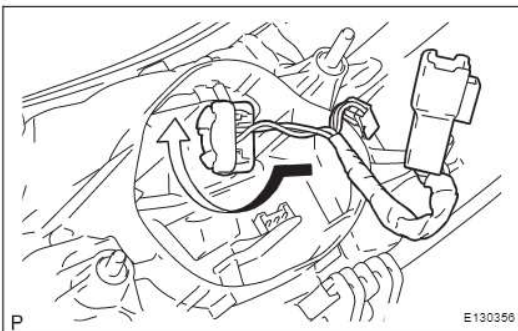
- (a) Engage the claw and install the rear bumper retainer upper.



4. INSTALL REAR TURN SIGNAL LIGHT BULB

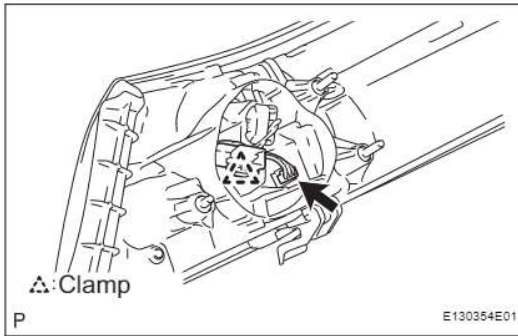
- (a) Install the rear turn signal light bulb to the rear combination light socket and wire.

- (b) Turn the rear turn signal light bulb and rear combination light socket and wire in the direction indicated by the arrow and install them as a unit.

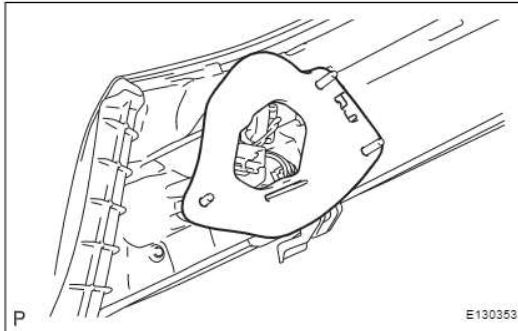


LI-74

LIGHTING – REAR COMBINATION LIGHT ASSEMBLY



(c) Connect the connector and clamp.

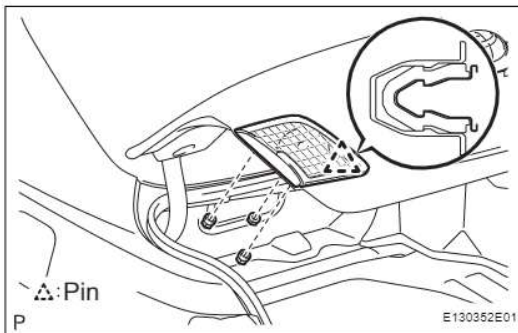


5. INSTALL REAR COMBINATION LIGHT GASKET

(a) Install a new rear combination light gasket.

NOTICE:

- Be sure to remove all traces of the old gasket from the body.
- Do not reuse the removed gasket. Be sure to install a new rear combination light gasket to prevent water ingress.



INSTALLATION

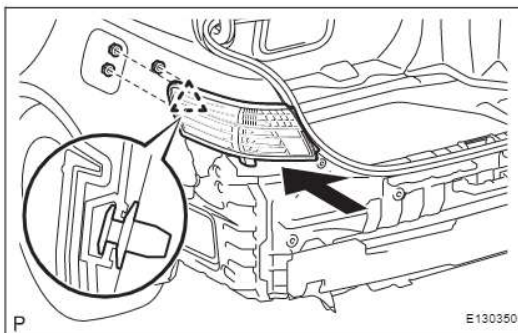
1. INSTALL REAR LIGHT ASSEMBLY

(a) Engage the pin and install the rear light assembly.

(b) Install the 3 nuts.

Torque: 5.4 N*m (55 kgf*cm, 48 in.*lbf)

2. INSTALL LUGGAGE COMPARTMENT DOOR COVER (See page [ET-53](#))

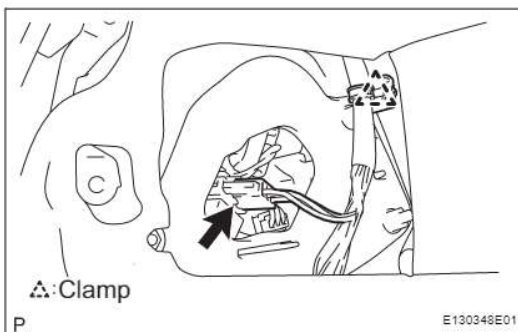


3. INSTALL REAR COMBINATION LIGHT ASSEMBLY

(a) Engage the clip and install the rear combination light assembly.

(b) Install the 3 nuts.

Torque: 5.4 N*m (55 kgf*cm, 48 in.*lbf)



(c) Connect the connector and clamp.

4. INSTALL REAR FLOOR FINISH PLATE (See page [ED-103](#))

5. INSTALL NO. 1 LUGGAGE COMPARTMENT TRIM HOOK (See page [ED-103](#))

6. INSTALL SPARE WHEEL COVER ASSEMBLY

7. INSTALL SPARE WHEEL COVER CLAMP

8. INSTALL LUGGAGE COMPARTMENT FLOOR MAT

LIGHTING – REAR COMBINATION LIGHT ASSEMBLY

LI-75

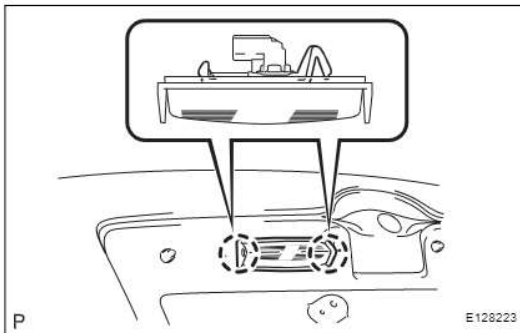
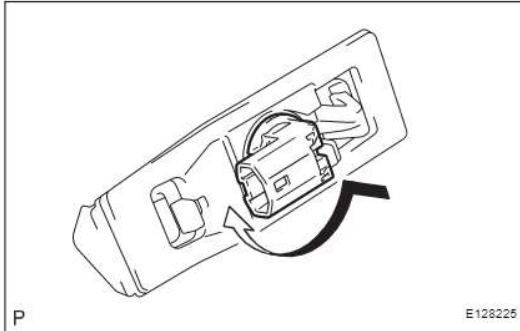
- 9. INSTALL REAR BUMPER ASSEMBLY (See page [ET-16](#))**

LI

REASSEMBLY

1. INSTALL LICENSE PLATE LIGHT BULB

- (a) Install the license plate light bulb to the license plate light socket.
- (b) Turn the license plate light bulb and the license plate light socket in the direction indicated by the arrow and install them as a unit.



INSTALLATION

1. INSTALL LICENSE PLATE LIGHT ASSEMBLY

- (a) Engage the 2 claws to install the license plate light assembly.
- (b) Connect the connector.

2. INSTALL LUGGAGE COMPARTMENT DOOR OUTSIDE GARNISH (See page [ET-52](#))

3. INSTALL LUGGAGE COMPARTMENT DOOR LOCK CYLINDER ASSEMBLY (See page [ED-87](#))

4. INSTALL LUGGAGE DOOR OPENING SWITCH ASSEMBLY (See page [DL-193](#))

5. INSTALL LUGGAGE COMPARTMENT DOOR COVER (See page [ET-53](#))

LI

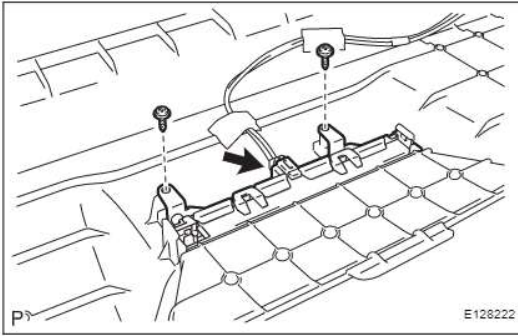
REMOVAL

1. REMOVE REAR SEAT CUSHION ASSEMBLY (See page [SE-44](#))
2. REMOVE REAR SEAT HEADREST ASSEMBLY
3. REMOVE REAR CENTER SEAT HEADREST ASSEMBLY
4. REMOVE SEPARATE TYPE REAR SEATBACK ASSEMBLY LH (See page [SE-44](#))
5. REMOVE SEPARATE TYPE REAR SEATBACK ASSEMBLY RH (See page [SE-44](#))
6. REMOVE REAR SIDE SEATBACK ASSEMBLY LH (See page [SE-45](#))
7. REMOVE REAR SIDE SEATBACK ASSEMBLY RH (See page [SE-45](#))
8. REMOVE REAR DOOR SCUFF PLATE LH (See page [IR-13](#))
9. DISCONNECT REAR DOOR OPENING TRIM WEATHERSTRIP LH
10. REMOVE REAR DOOR SCUFF PLATE RH (See page [IR-13](#))
11. DISCONNECT REAR DOOR OPENING TRIM WEATHERSTRIP RH
12. REMOVE CHILD RESTRAINT SEAT ANCHOR BRACKET SUB-ASSEMBLY LH (See page [SB-51](#))
13. DISCONNECT REAR SEAT INNER WITH CENTER BELT ASSEMBLY LH (See page [SB-33](#))
14. REMOVE ROOF SIDE INNER GARNISH LH (See page [IR-15](#))
15. REMOVE ROOF SIDE INNER GARNISH RH (See page [IR-15](#))
16. DISCONNECT REAR SEAT OUTER BELT ASSEMBLY (for LH Side) (See page [SB-40](#))
17. DISCONNECT REAR SEAT OUTER BELT ASSEMBLY (for RH Side) (See page [SB-41](#))
18. REMOVE REAR SEAT SHOULDER BELT COVER (See page [SB-33](#))
19. REMOVE REAR SEAT SHOULDER BELT HOLE COVER (See page [SB-33](#))
20. REMOVE PACKAGE TRAY TRIM PANEL ASSEMBLY (See page [SB-33](#))

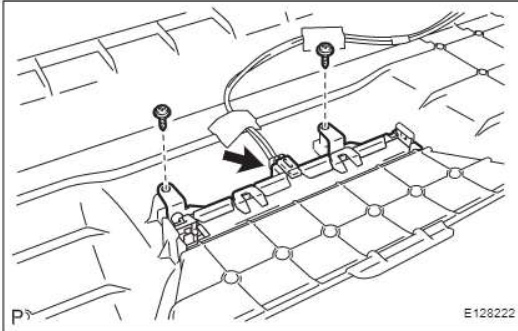
LI

LI-82

LIGHTING – HIGH MOUNTED STOP LIGHT ASSEMBLY

**21. REMOVE CENTER STOP LIGHT SET**

- (a) Disconnect the connector.
- (b) Remove the 2 screws and the center stop light set.

**INSTALLATION****1. INSTALL CENTER STOP LIGHT SET**

- (a) Connect the connector.
- (b) Install the center stop light set with the 2 screws.
Torque: 1.6 N*m (16 kgf*cm, 14 in.*lbf)

2. INSTALL PACKAGE TRAY TRIM PANEL ASSEMBLY
(See page [SB-34](#))**3. INSTALL REAR SEAT SHOULDER BELT HOLE COVER** (See page [SB-35](#))**4. INSTALL REAR SEAT SHOULDER BELT COVER** (See page [SB-35](#))**5. CONNECT REAR SEAT OUTER BELT ASSEMBLY**
(for LH Side) (See page [SB-42](#))**6. CONNECT REAR SEAT OUTER BELT ASSEMBLY**
(for RH Side) (See page [SB-42](#))**7. INSTALL ROOF SIDE INNER GARNISH LH** (See page [IR-39](#))**8. INSTALL ROOF SIDE INNER GARNISH RH** (See page [IR-39](#))**9. CONNECT REAR SEAT INNER WITH CENTER BELT ASSEMBLY LH** (See page [SB-35](#))**10. INSTALL CHILD RESTRAINT SEAT ANCHOR BRACKET SUB-ASSEMBLY LH** (See page [SB-51](#))**11. CONNECT REAR DOOR OPENING TRIM WEATHERSTRIP LH****12. INSTALL REAR DOOR SCUFF PLATE LH** (See page [IR-41](#))**13. CONNECT REAR DOOR OPENING TRIM WEATHERSTRIP RH****14. INSTALL REAR DOOR SCUFF PLATE RH** (See page [IR-43](#))**15. INSTALL REAR SIDE SEATBACK ASSEMBLY LH**
(See page [SE-54](#))**16. INSTALL REAR SIDE SEATBACK ASSEMBLY RH****17. INSTALL SEPARATE TYPE REAR SEATBACK ASSEMBLY LH** (See page [SE-54](#))

LIGHTING – HIGH MOUNTED STOP LIGHT ASSEMBLY**LI-83**

18. **INSTALL SEPARATE TYPE REAR SEATBACK ASSEMBLY RH (See page [SE-54](#))**
19. **INSTALL REAR CENTER SEAT HEADREST ASSEMBLY**
20. **INSTALL REAR SEAT HEADREST ASSEMBLY**
21. **INSTALL REAR SEAT CUSHION ASSEMBLY (See page [SE-55](#))**

LI

LI-86**LIGHTING – PERSONAL LIGHT ASSEMBLY**

INSTALLATION

1. **INSTALL ROOF CONSOLE BOX ASSEMBLY (See page [IR-38](#))**

LI

LI-88**LIGHTING – REAR ROOM LIGHT ASSEMBLY**

INSTALLATION

1. INSTALL NO. 1 ROOM LIGHT ASSEMBLY (w/o Sliding Roof) (See page [IR-36](#))
2. INSTALL SPOT LIGHT ASSEMBLY (w/ Sliding Roof) (See page [IR-35](#))

LI

LI-90

LIGHTING – DOOR COURTESY LIGHT

INSTALLATION

1. INSTALL DOOR COURTESY LIGHT ASSEMBLY (See page [ED-42](#))

LI

LIGHTING SYSTEM

PRECAUTION

NOTICE:
When disconnecting the cable from the negative (-) battery terminal, initialize the following system after the cable is reconnected.

System Name	See procedure
SFI System	IN-43

- LI
1. PRECAUTION FOR USING BATTERY DURING INSPECTION

(a) While using the battery during inspection, do not bring the positive and negative tester probes too close to each other as a short circuit may occur.
2. PRECAUTION FOR HEADLIGHT BULB REPLACEMENT

(a) If even a thin film of oil is left on the surface of the halogen light, the bulb may be damaged because the light will burn at a higher temperature.

(b) Handle any halogen light with great care. Dropping, hitting or damaging the bulb, in any way, may result in exploding and shattering because the internal pressure is high.

(c) Always prepare a new bulb for immediate replacement. While replacing the bulb, the lens may attract dust and moisture if removed from the vehicle for too long.

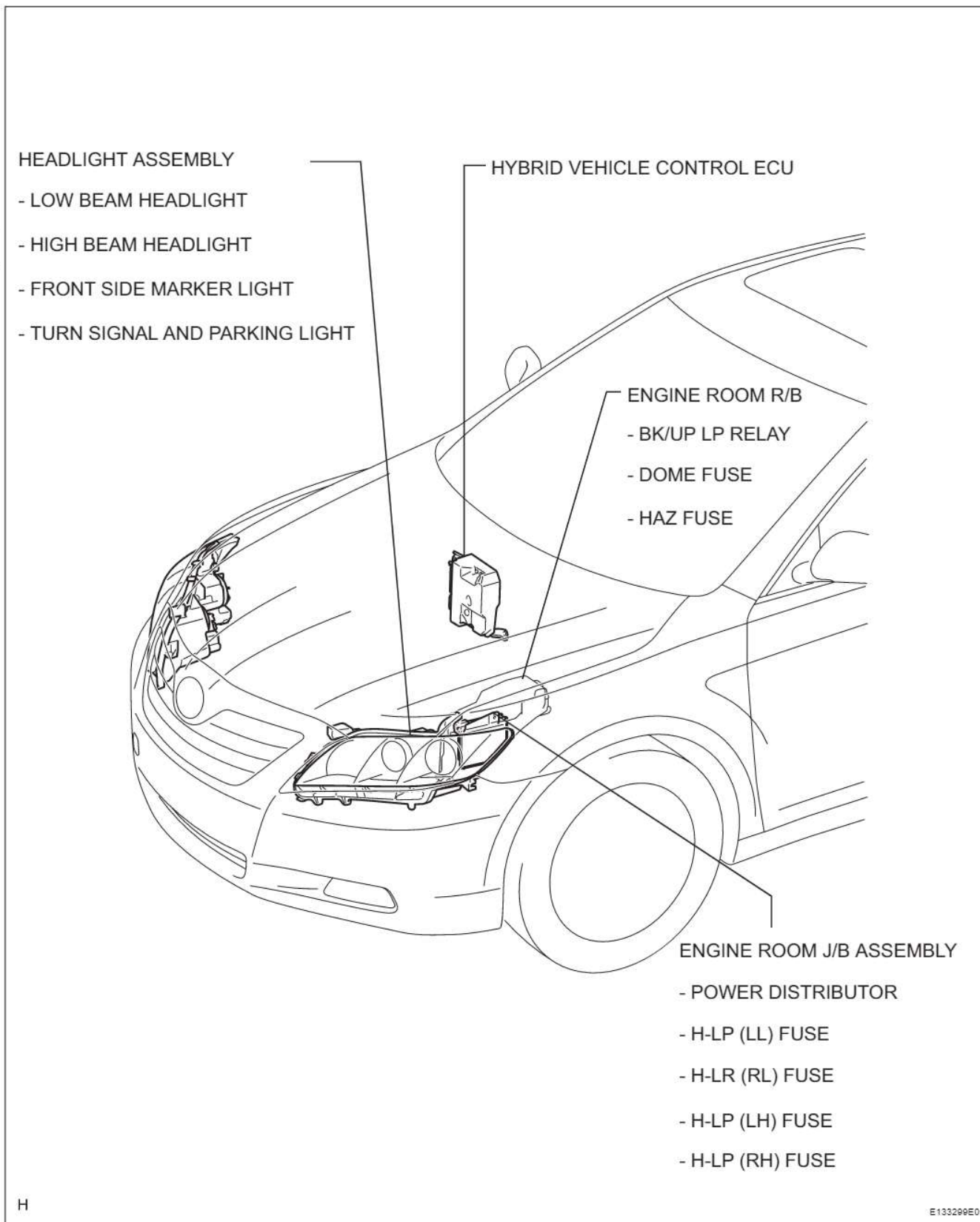
(d) Always use a bulb of the same wattage for replacement.

(e) Firmly reinstall the socket after bulb replacement. The lens may become cloudy or the light cavity may fill with water through the gaps around the socket.

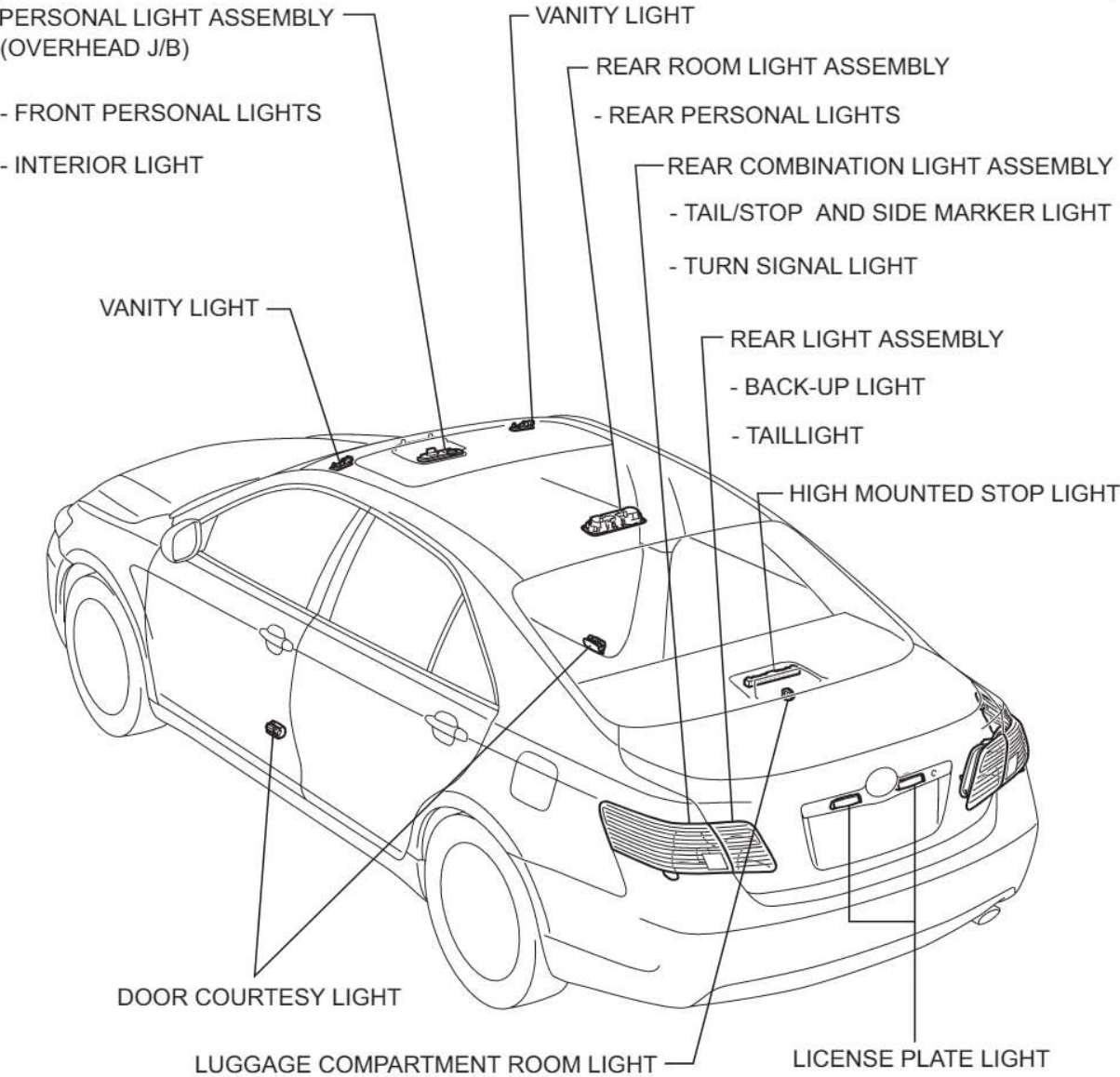
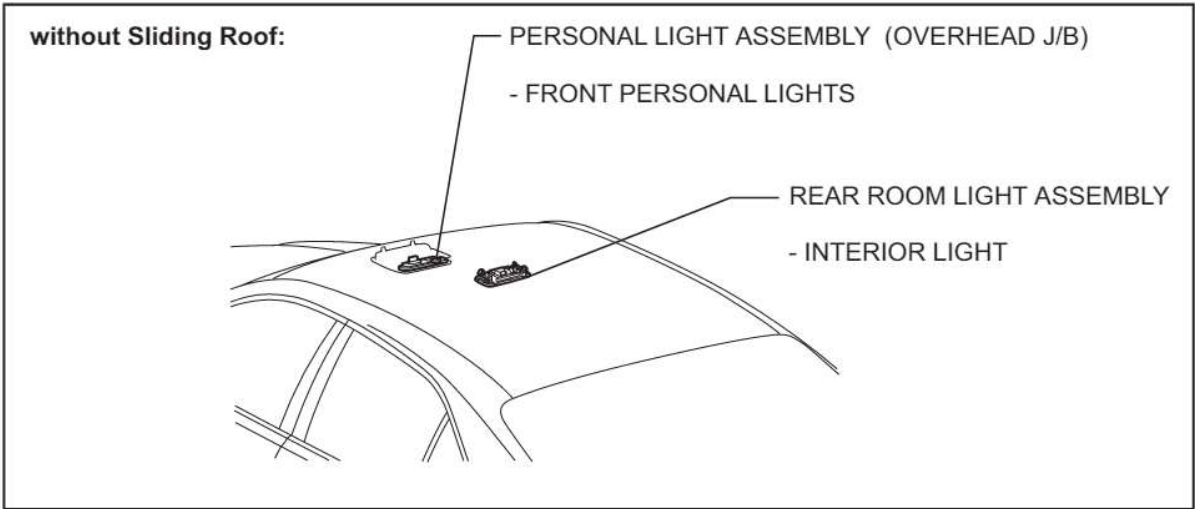
LI-2

LIGHTING – LIGHTING SYSTEM

PARTS LOCATION

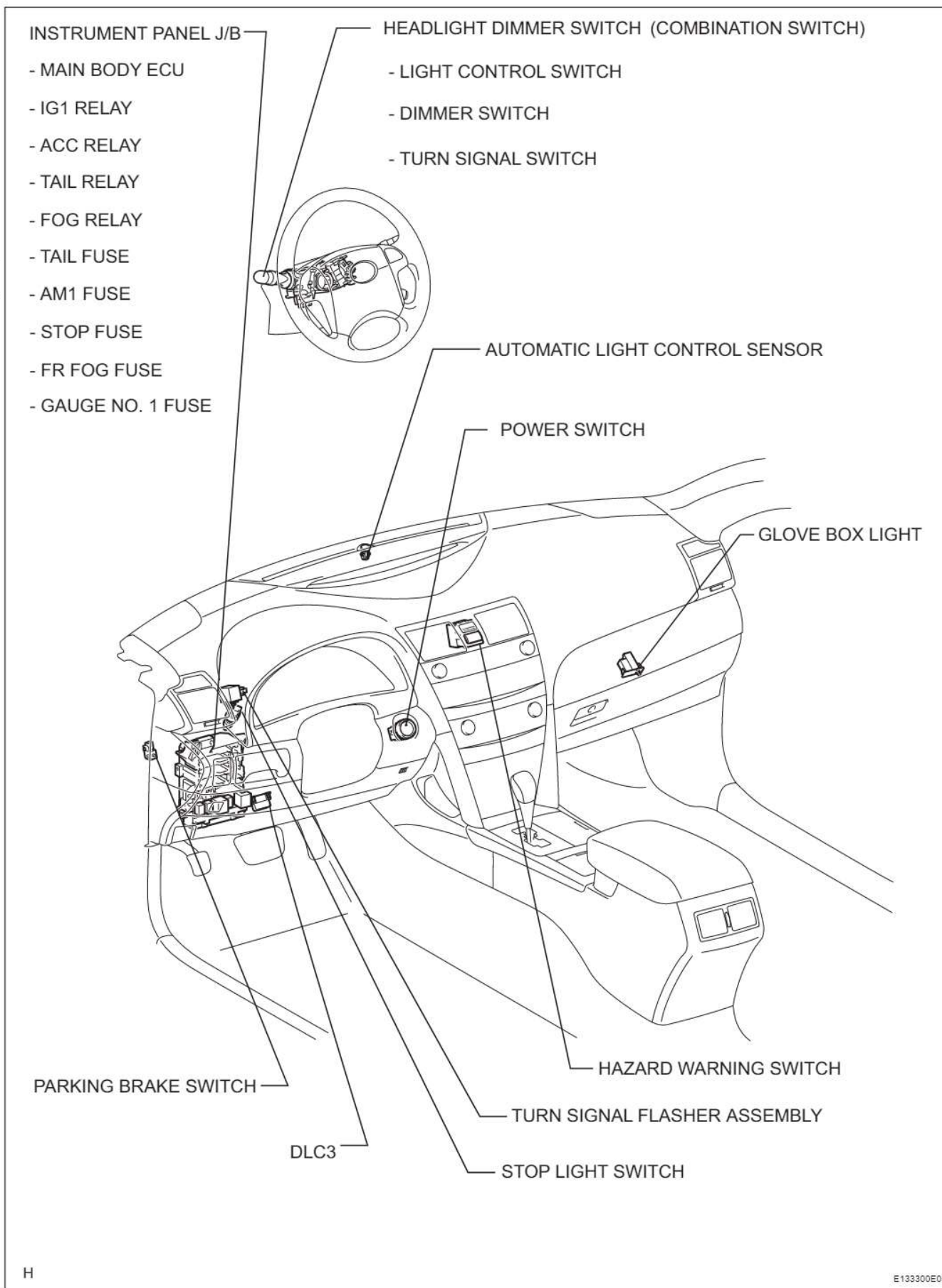


LIGHTING – LIGHTING SYSTEM



LI-4

LIGHTING – LIGHTING SYSTEM

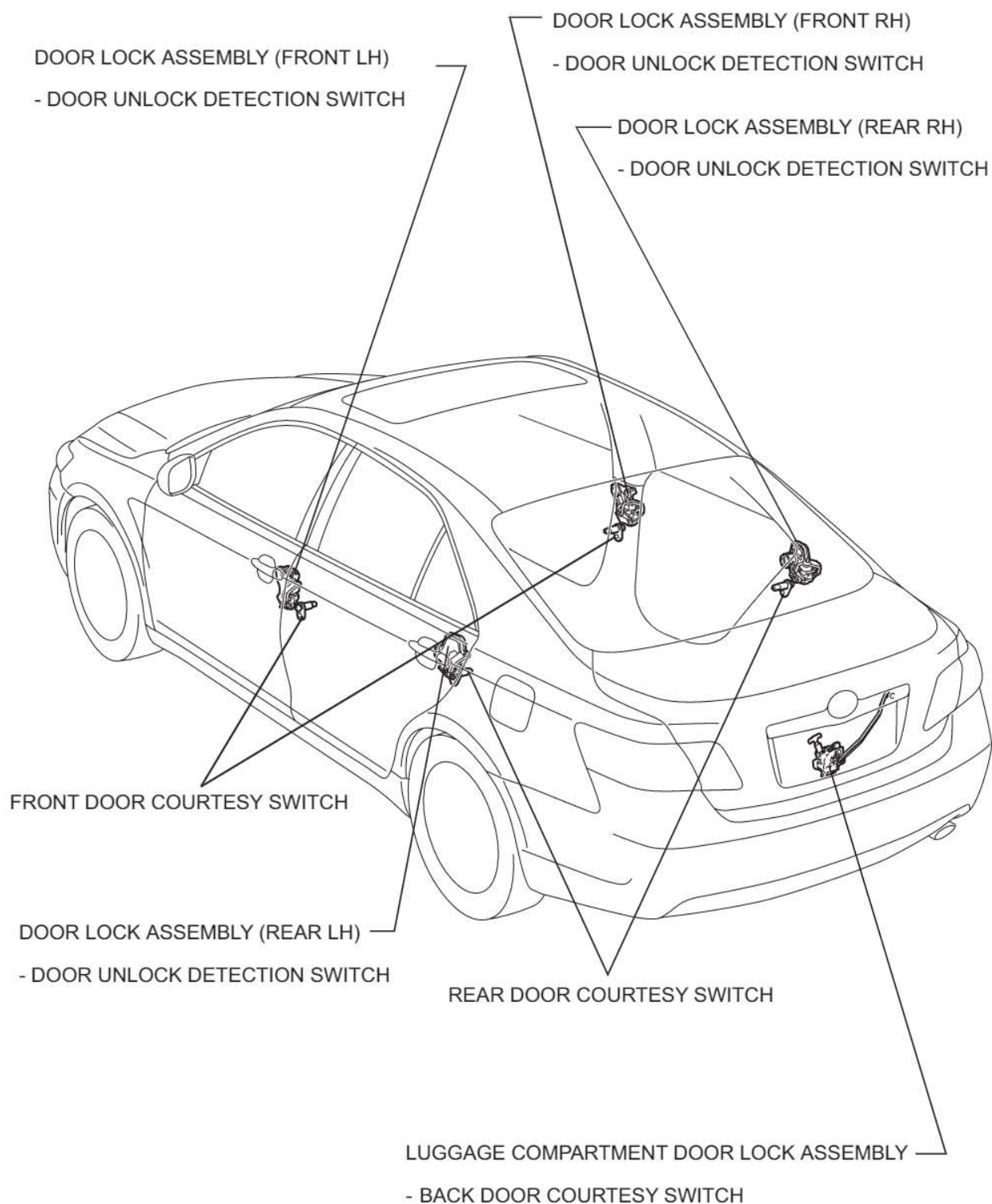


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LIGHTING – LIGHTING SYSTEM

LI-5



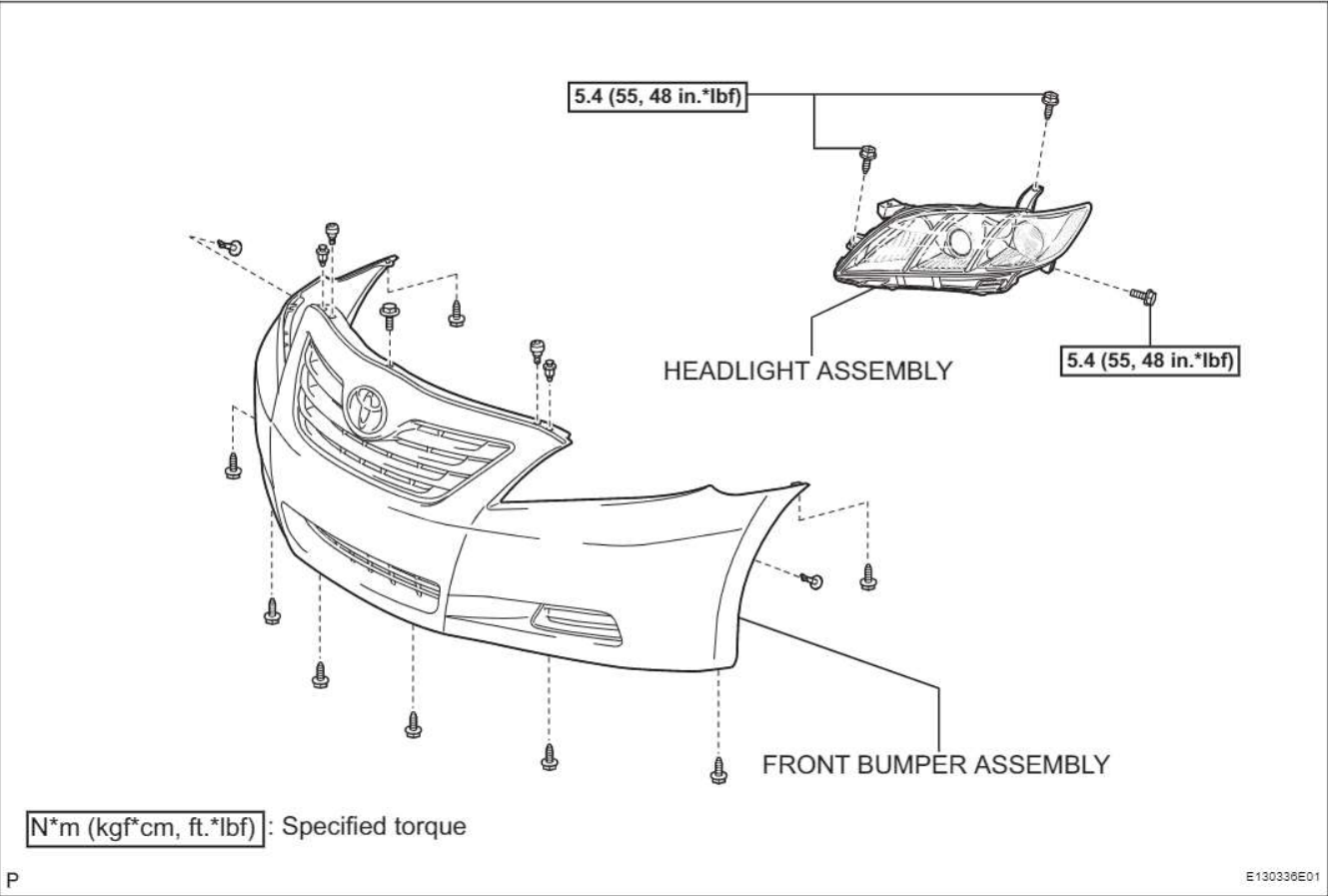
H

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LI-58

LIGHTING – HEADLIGHT ASSEMBLY

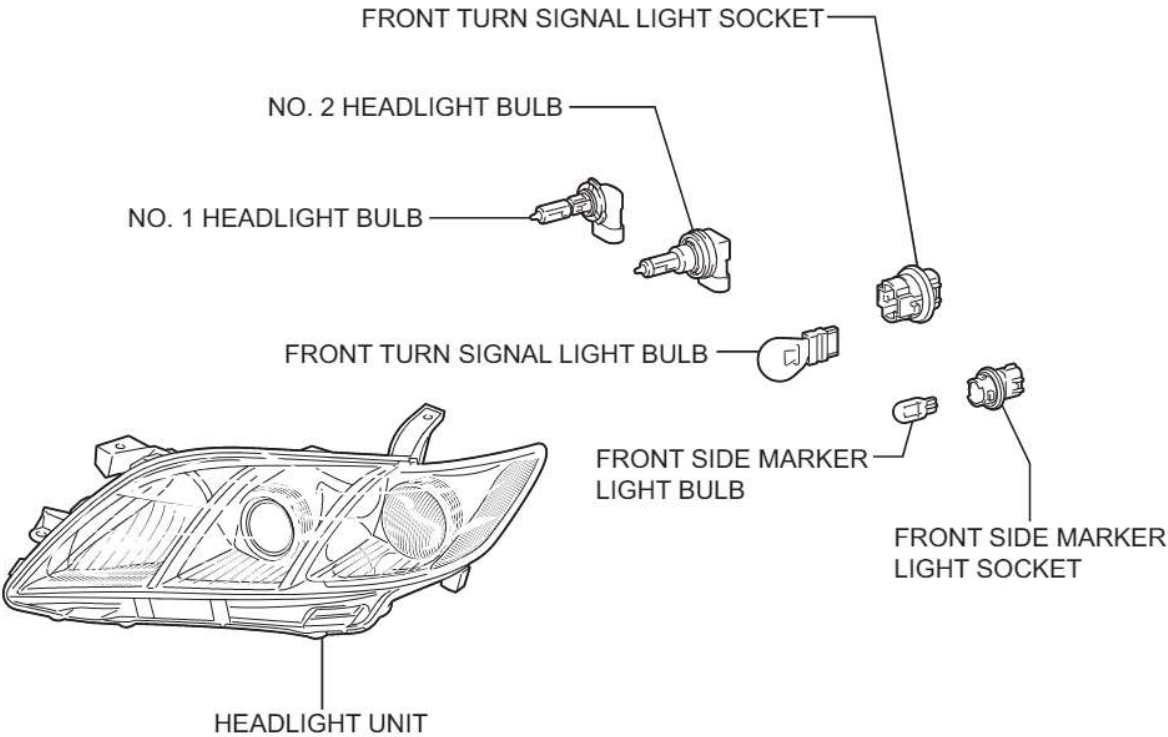
HEADLIGHT ASSEMBLY
COMPONENTS



LIGHTING – HEADLIGHT ASSEMBLY

LI-59

LI



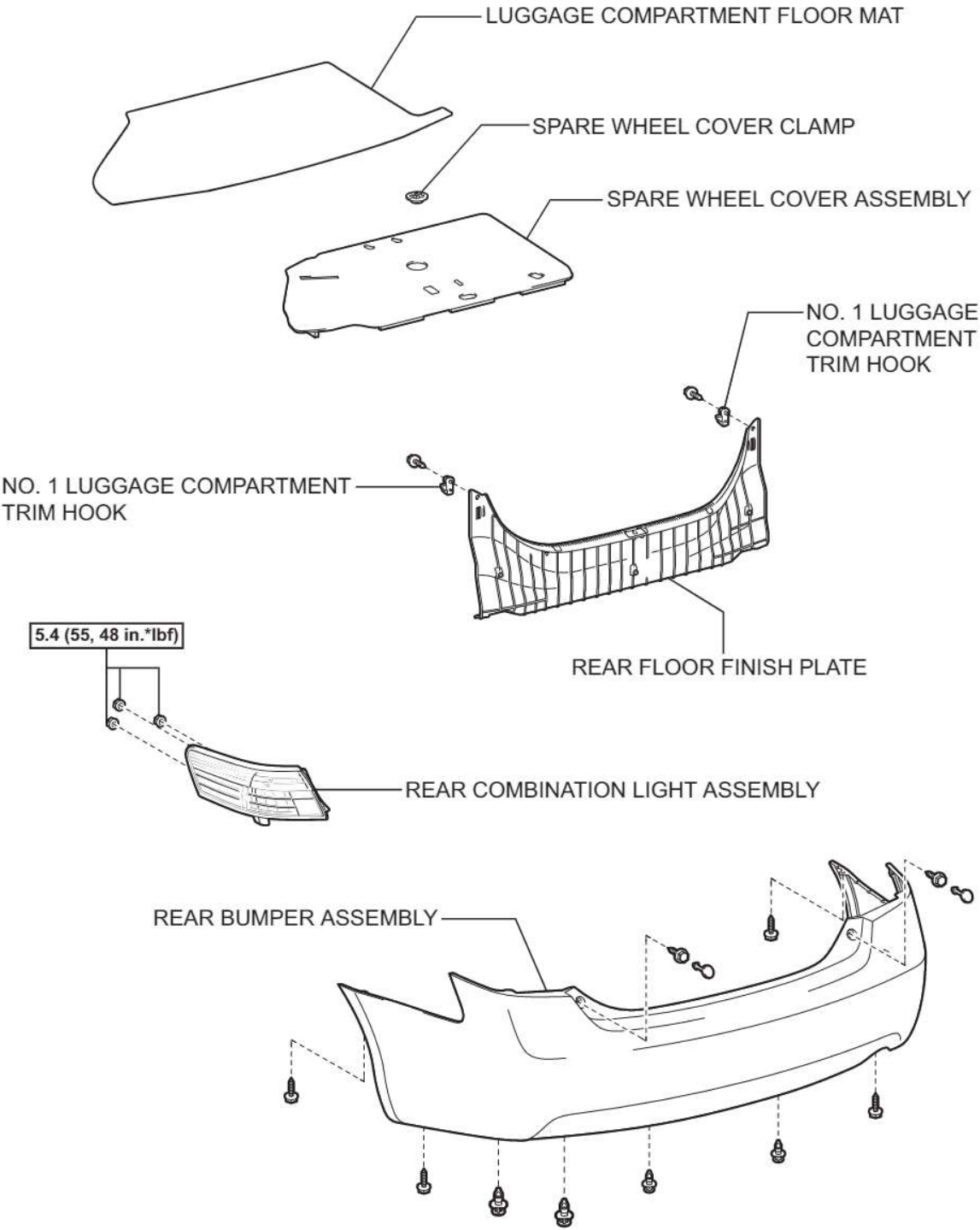
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LIGHTING – REAR COMBINATION LIGHT ASSEMBLY

REAR COMBINATION LIGHT ASSEMBLY
COMPONENTS

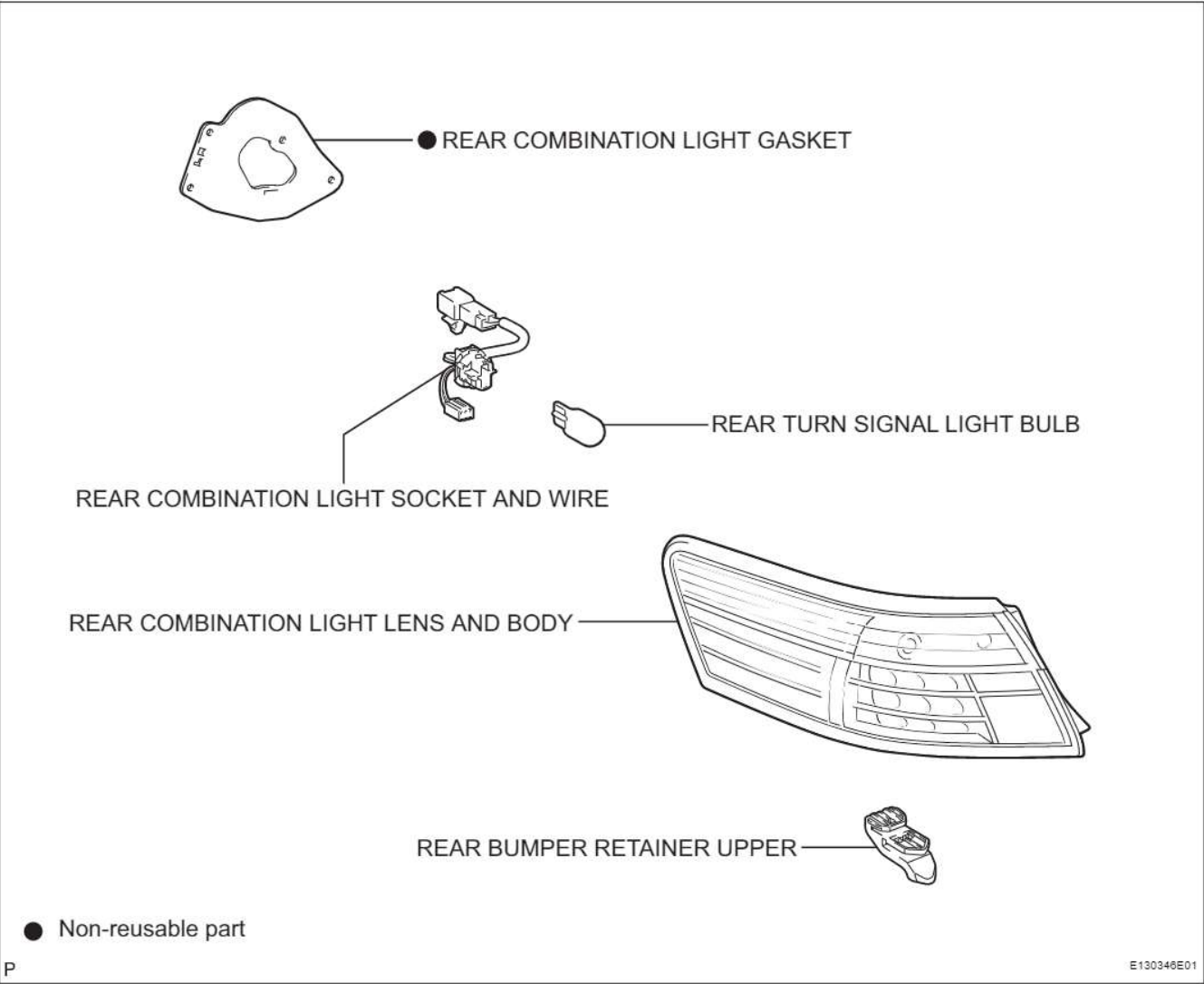
LI



N*m (kgf*cm, ft.*lbf): Specified torque

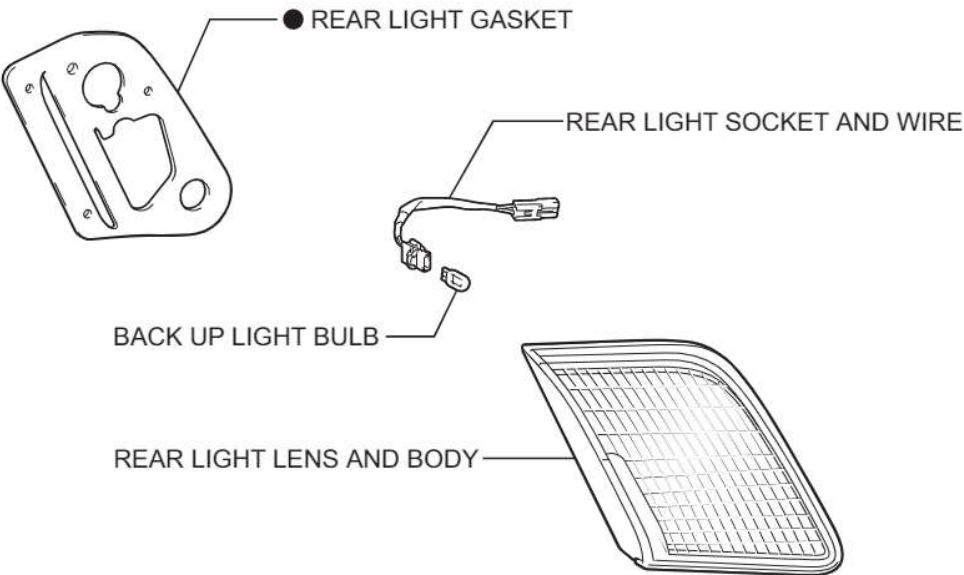
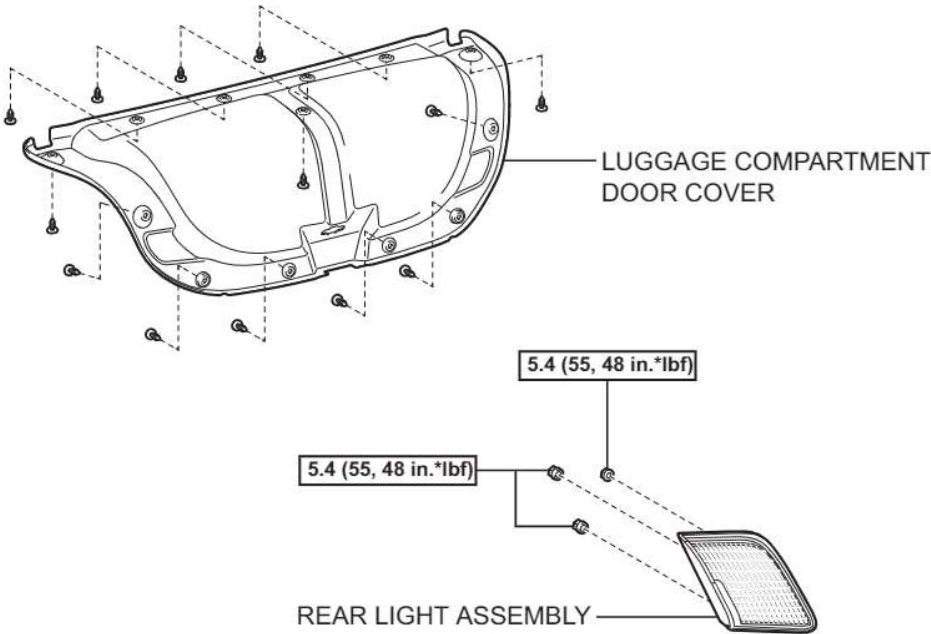
LI-68

LIGHTING – REAR COMBINATION LIGHT ASSEMBLY



LIGHTING – REAR COMBINATION LIGHT ASSEMBLY

LI-69



N*m (kgf*cm, ft.*lbf) : Specified torque

● Non-reusable part

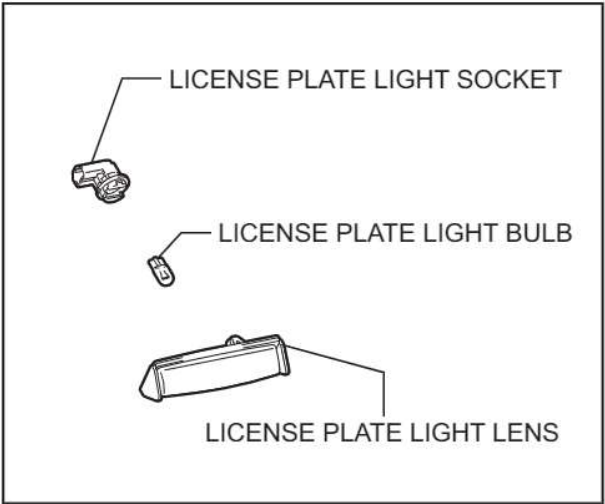
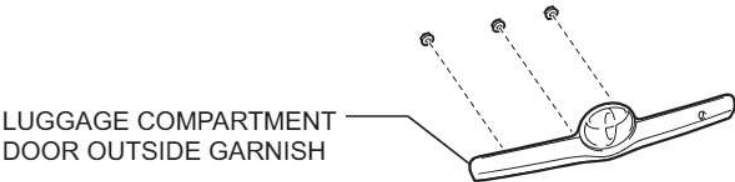
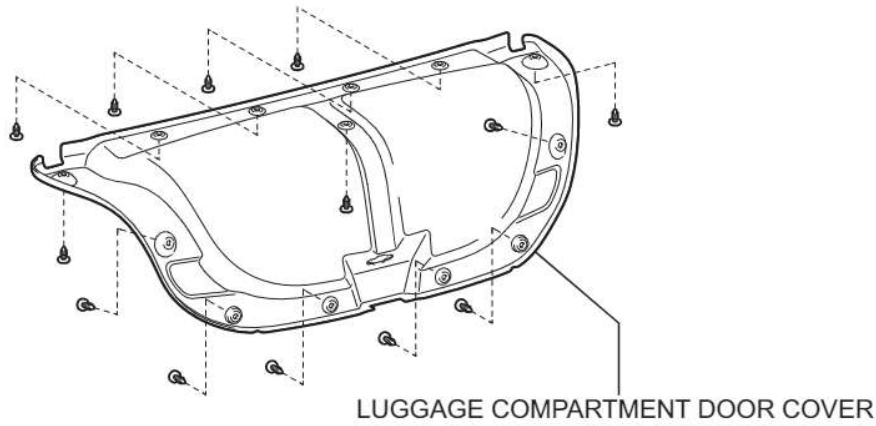
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LIGHTING – LICENSE PLATE LIGHT ASSEMBLY

LICENSE PLATE LIGHT ASSEMBLY
COMPONENTS

LI



P

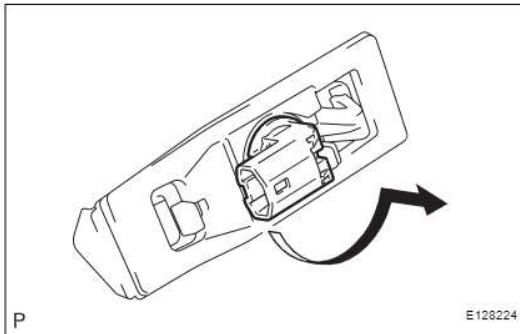
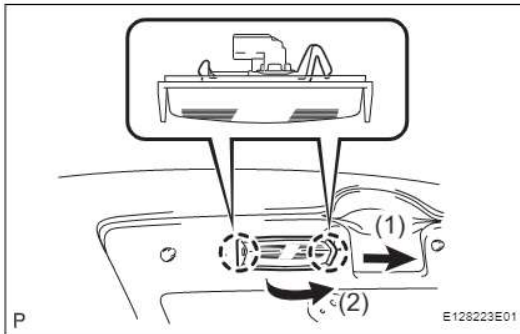
E128168E03

LI-76

LIGHTING – LICENSE PLATE LIGHT ASSEMBLY

REMOVAL

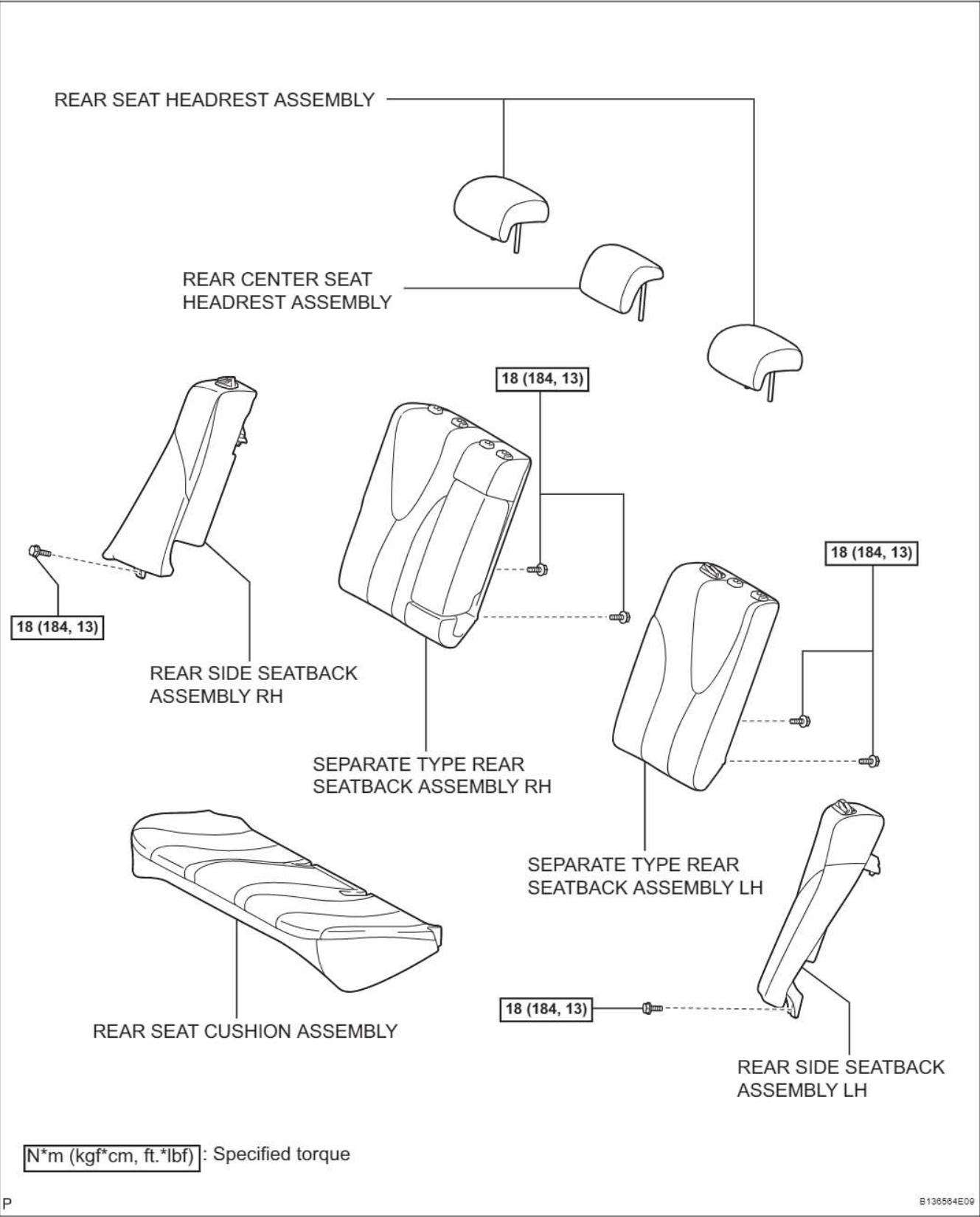
1. REMOVE LUGGAGE COMPARTMENT DOOR COVER (See page [ET-50](#))
2. REMOVE LUGGAGE DOOR OPENING SWITCH ASSEMBLY (See page [DL-193](#))
3. REMOVE LUGGAGE COMPARTMENT DOOR LOCK CYLINDER ASSEMBLY (See page [ET-50](#))
4. REMOVE LUGGAGE COMPARTMENT DOOR OUTSIDE GARNISH (See page [ET-50](#))
5. REMOVE LICENSE PLATE LIGHT ASSEMBLY
 - (a) Disconnect the connector.
 - (b) Disengage the 2 claws and remove the license plate light assembly as shown in the illustration.

**DISASSEMBLY**

1. REMOVE LICENSE PLATE LIGHT BULB
 - (a) Turn the license plate light bulb and the license plate light socket in the direction indicated by the arrow and remove them as a unit.
 - (b) Remove the license plate light bulb from the license plate light socket.

HIGH MOUNTED STOP LIGHT ASSEMBLY

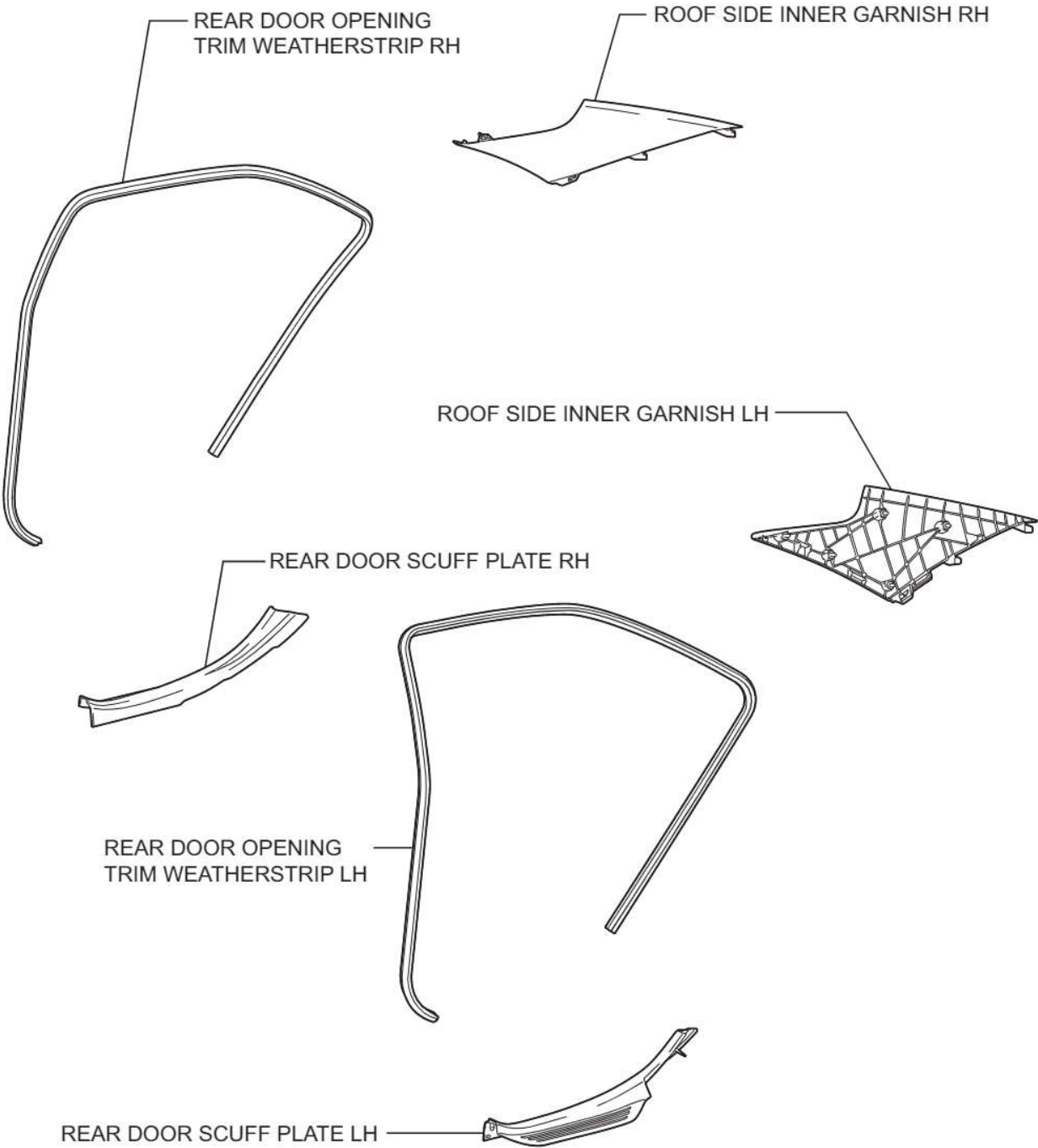
COMPONENTS



LIGHTING – HIGH MOUNTED STOP LIGHT ASSEMBLY

LI-79

LI

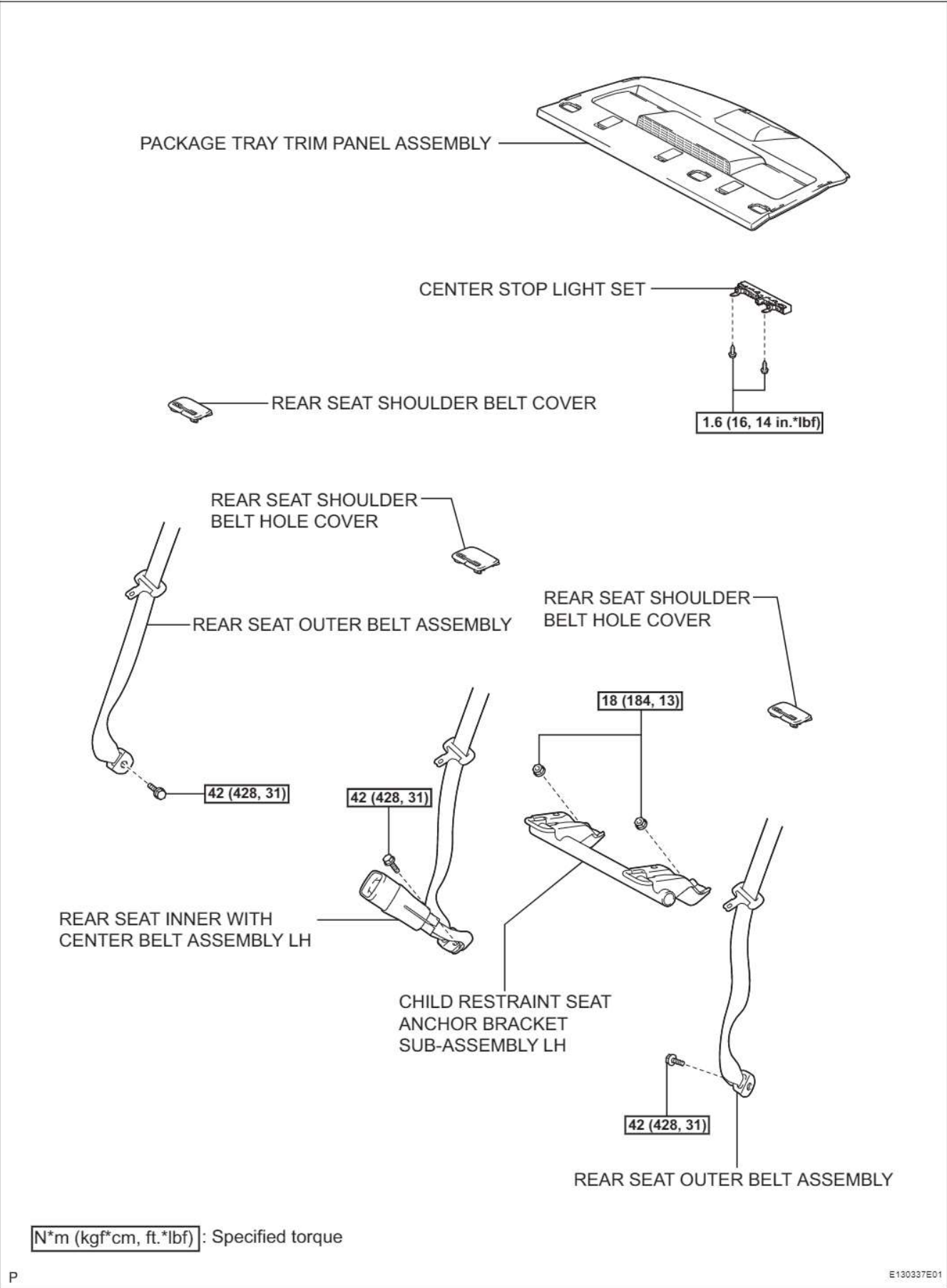


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LI-80

LIGHTING – HIGH MOUNTED STOP LIGHT ASSEMBLY

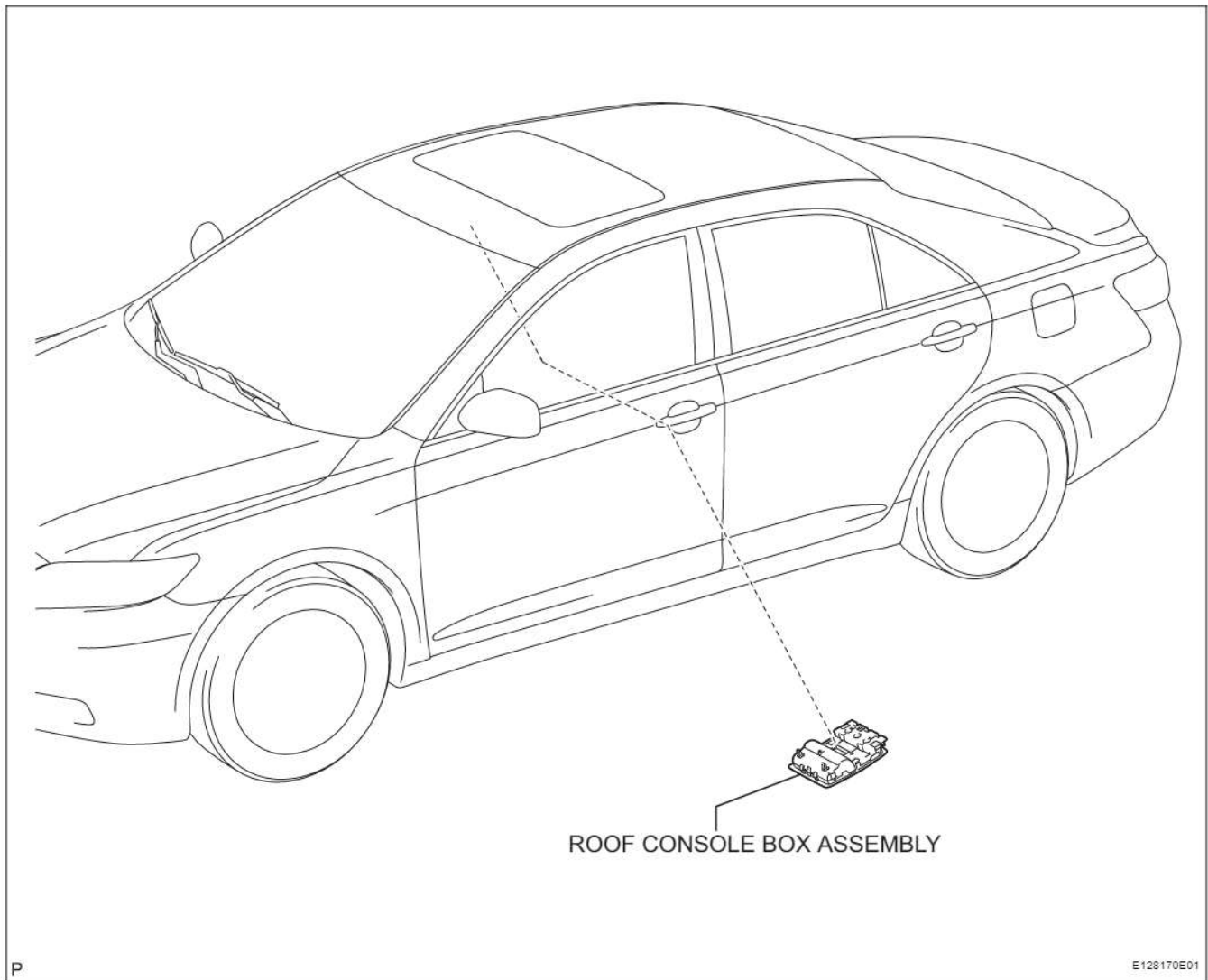


LI-84

LIGHTING – PERSONAL LIGHT ASSEMBLY

PERSONAL LIGHT ASSEMBLY COMPONENTS

LI



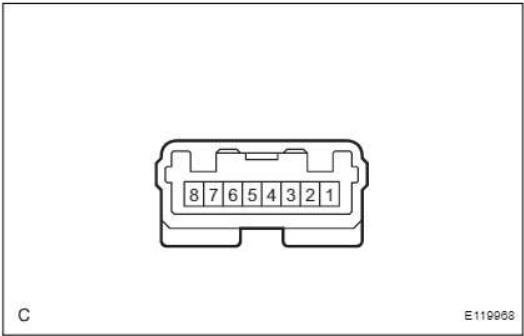
LIGHTING – PERSONAL LIGHT ASSEMBLY

REMOVAL

1. REMOVE ROOF CONSOLE BOX ASSEMBLY (See page IR-17)

INSPECTION

1. INSPECT ROOF CONSOLE BOX ASSEMBLY (with Sliding Roof)
- (a) Apply battery voltage to the roof console box assembly.
 - (b) Check that the interior light and personal lights come on.
- OK

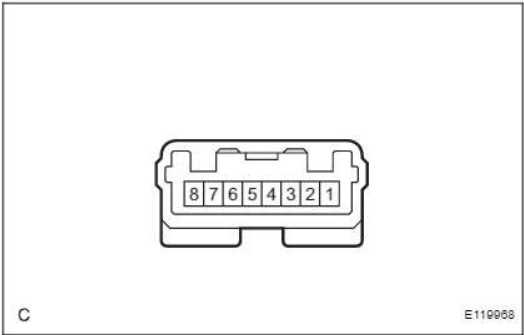


Measurement Condition	Switch Condition	Specified Condition
Battery positive (+) → Terminal 7 Battery negative (-) → Terminal 6	Interior light switch in DOOR	Interior light comes on
Battery positive (+) → Terminal 7 Battery negative (-) → Terminal 8	Interior light switch ON	Interior light comes on
Battery positive (+) → Terminal 7 Battery negative (-) → Terminal 8	Front RH personal light switch ON	Front RH personal light comes on
Battery positive (+) → Terminal 7 Battery negative (-) → Terminal 8	Front LH personal light switch ON	Front LH personal light comes on

If the result is not as specified, replace the roof console box assembly.

2. INSPECT ROOF CONSOLE BOX ASSEMBLY (without Sliding Roof)

- (a) Apply battery voltage to the roof console box assembly.
 - (b) Check that each personal light comes on.
- OK



Measurement Condition	Switch Condition	Specified Condition
Battery positive (+) → Terminal 7 Battery negative (-) → Terminal 8	Front RH personal light switch ON	Front RH personal light comes on
Battery positive (+) → Terminal 7 Battery negative (-) → Terminal 8	Front LH personal light switch ON	Front LH personal light comes on

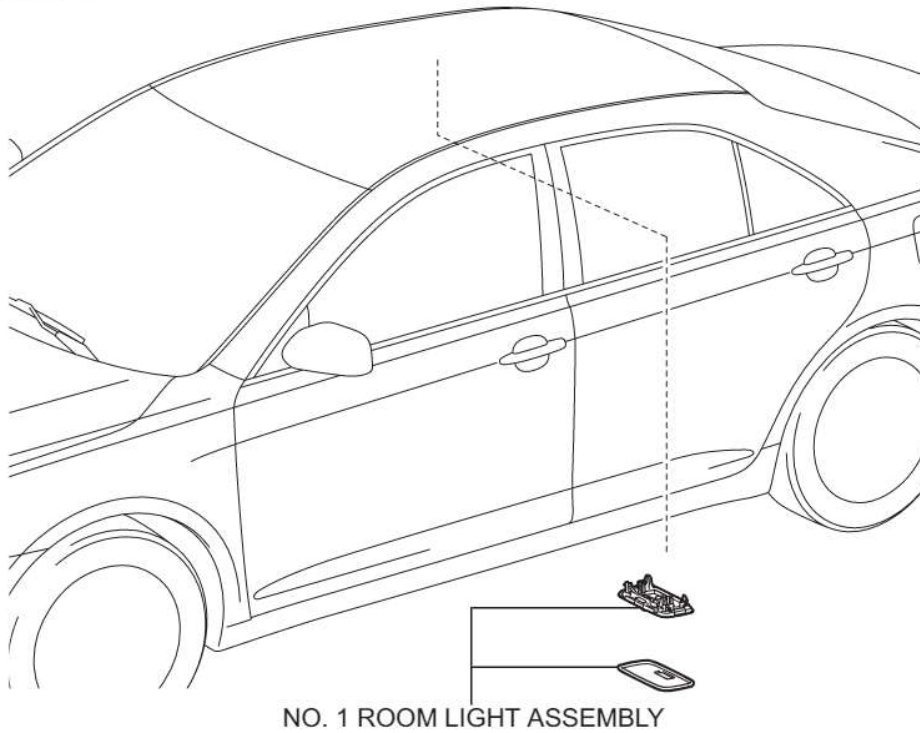
If the result is not as specified, replace the roof console box assembly.

LI-86

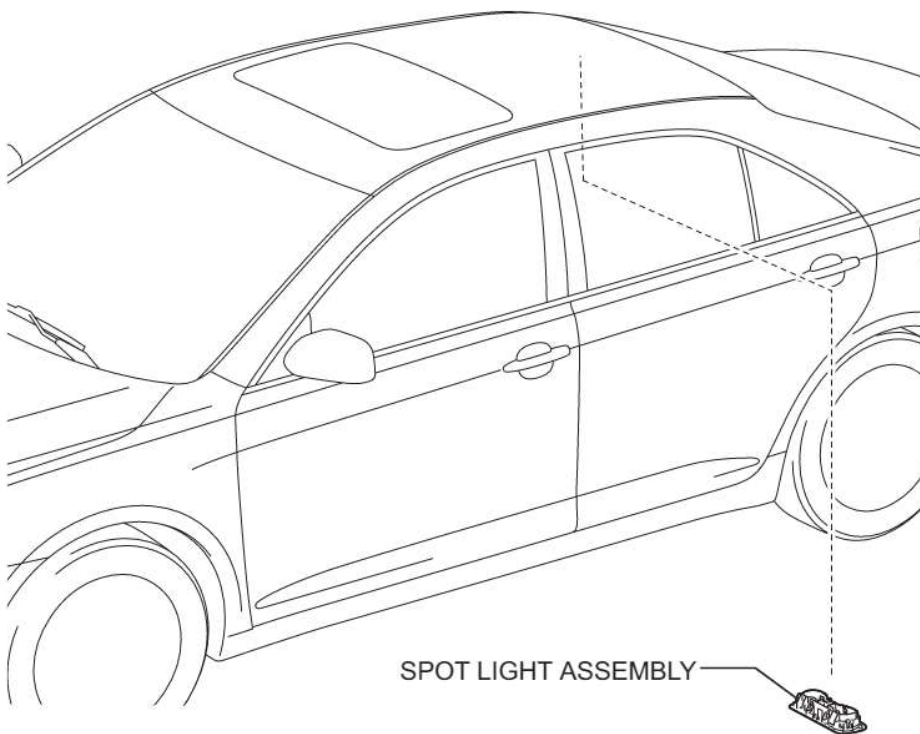
LIGHTING – REAR ROOM LIGHT ASSEMBLY

REAR ROOM LIGHT ASSEMBLY COMPONENTS

without Sliding Roof:



with Sliding Roof:



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LIGHTING – REAR ROOM LIGHT ASSEMBLY

REMOVAL

1. REMOVE NO. 1 ROOM LIGHT ASSEMBLY (w/o Sliding Roof) (See page [IR-19](#))
2. REMOVE SPOT LIGHT ASSEMBLY (w/ Sliding Roof) (See page [IR-19](#))

INSPECTION

1. INSPECT NO. 1 ROOM LIGHT ASSEMBLY (without Sliding Roof)

(a) Apply battery voltage to the No. 1 room light assembly connector.

(b) Check that the interior light comes on.

OK

Measurement Condition	Switch Condition	Specified Condition
Battery positive (+) → Terminal 1 Battery negative (-) → Terminal 2	DOOR	Interior light comes on
Battery positive (+) → Terminal 1 Battery negative (-) → Terminal 3	ON	Interior light comes on

If the result is not as specified, replace the room light assembly.

2. INSPECT SPOT LIGHT ASSEMBLY (with Sliding Roof)

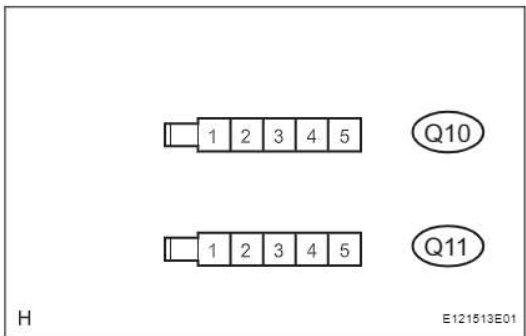
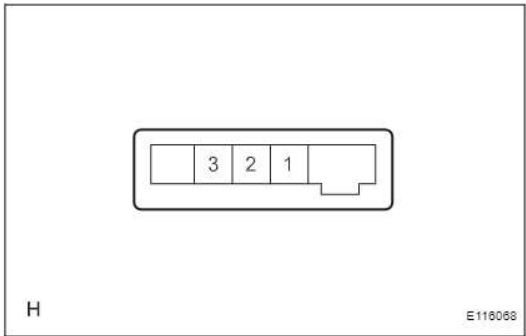
(a) Apply battery voltage to the spot light assembly connector.

(b) Check that the rear personal light comes on.

OK

Measurement Condition	Switch Condition	Specified Condition
Battery positive (+) → Terminal Q10-2 Battery negative (-) → Terminal Q10-4	Pushed (ON)	Rear RH personal light comes on
Battery positive (+) → Terminal Q10-2 Battery negative (-) → Terminal Q10-3	Always	Rear RH personal light comes on
Battery positive (+) → Terminal Q11-2 Battery negative (-) → Terminal Q11-4	Pushed (ON)	Rear LH personal light comes on
Battery positive (+) → Terminal Q11-2 Battery negative (-) → Terminal Q11-5	Always	Rear LH personal light comes on

If the result is not as specified, replace the spot light assembly.

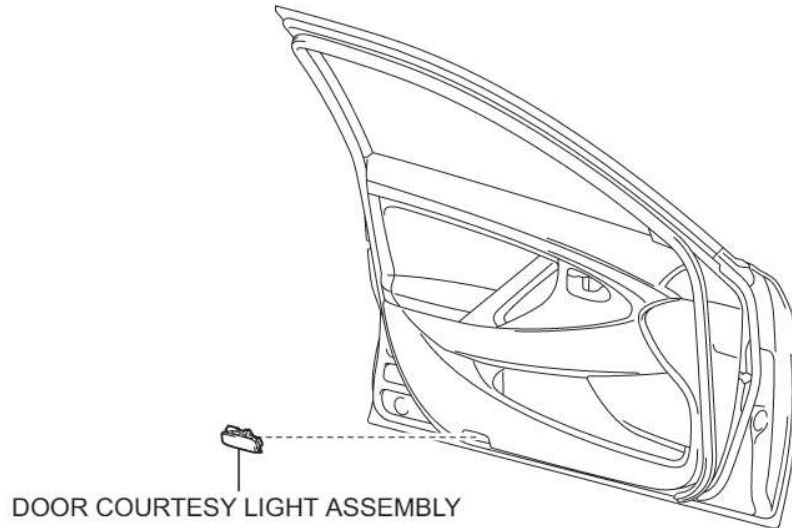


LI-88

LIGHTING – DOOR COURTESY LIGHT

DOOR COURTESY LIGHT COMPONENTS

LI



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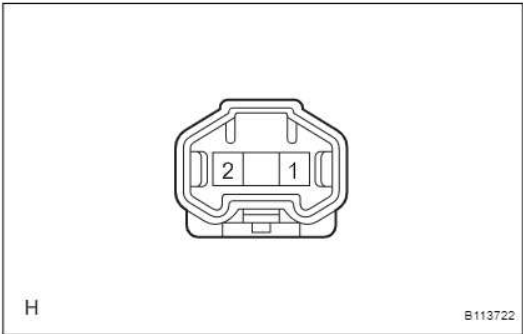
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REMOVAL

- 1. REMOVE DOOR COURTESY LIGHT ASSEMBLY (See page ED-42)

INSPECTION

- 1. INSPECT DOOR COURTESY LIGHT ASSEMBLY
 - (a) Apply battery voltage to the door courtesy light assembly connector.
 - (b) Check that the door courtesy light comes on.OK

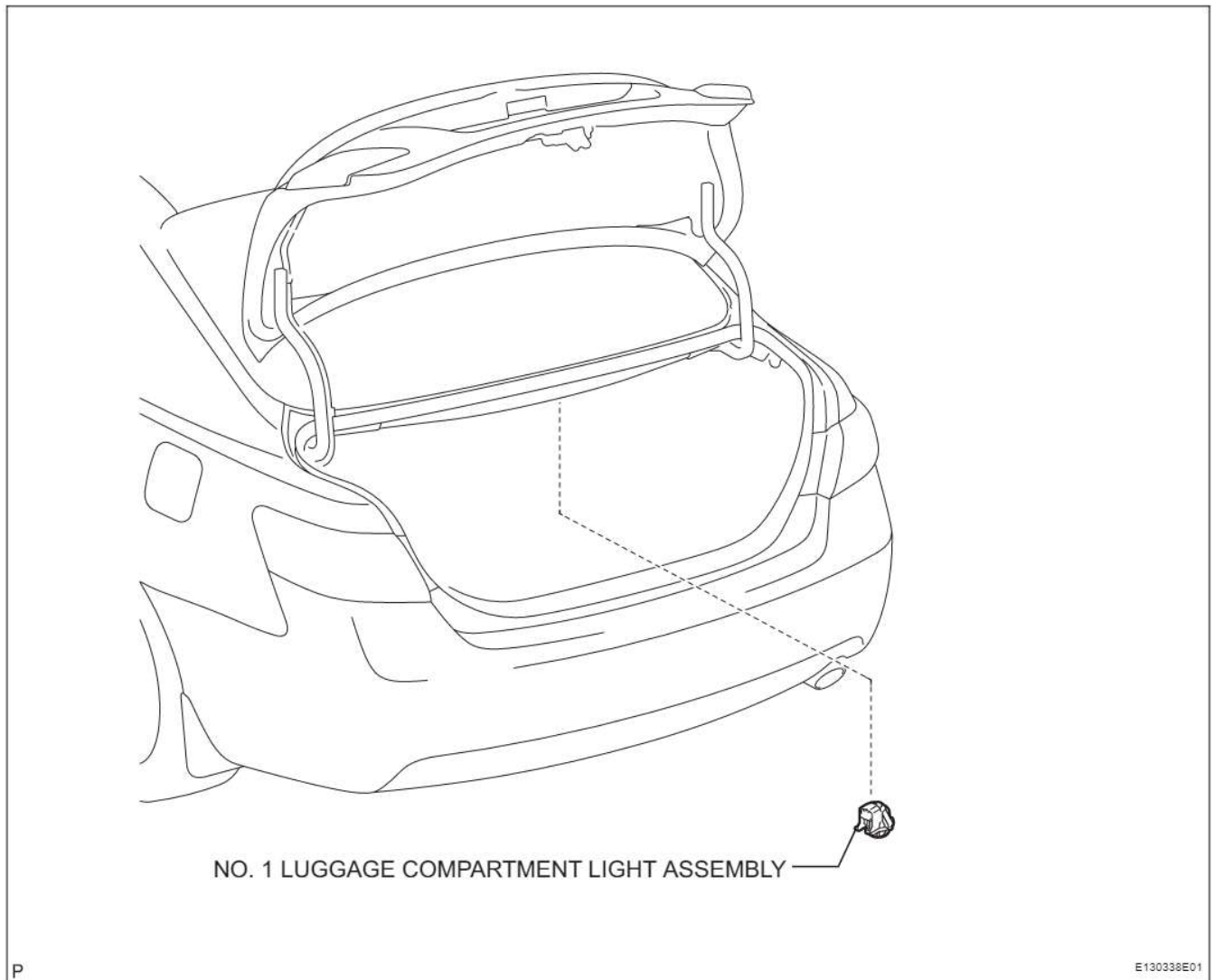


Measurement Condition	Specified Condition
Battery positive (+) → Terminal 1 Battery negative (-) → Terminal 2	Door courtesy light comes on

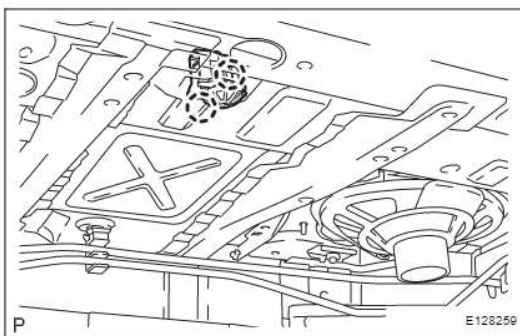
If the result is not as specified, replace the door courtesy light assembly.

LI

LUGGAGE COMPARTMENT ROOM LIGHT COMPONENTS



LI

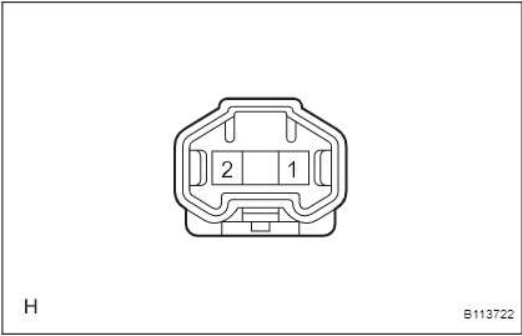


REMOVAL

1. **REMOVE NO. 1 LUGGAGE COMPARTMENT LIGHT ASSEMBLY**
 - (a) Disengage the 2 claws and disconnect the No. 1 luggage compartment light assembly.
 - (b) Disconnect the connector and remove the No. 1 luggage compartment light assembly.

LI-90

LIGHTING – LUGGAGE COMPARTMENT ROOM LIGHT



INSPECTION

1. INSPECT NO. 1 LUGGAGE COMPARTMENT LIGHT ASSEMBLY

- (a) Apply battery voltage to the No. 1 luggage compartment light assembly connector.
- (b) Check that the No. 1 luggage compartment light comes on.

OK

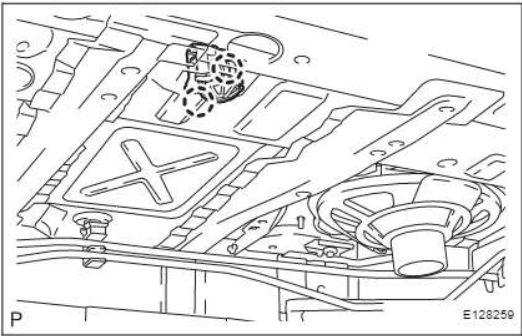
Measurement Condition	Specified Condition
Battery positive (+) → Terminal 1	Luggage compartment light comes on
Battery negative (-) → Terminal 2	

If the result is not as specified, replace the luggage compartment light assembly.

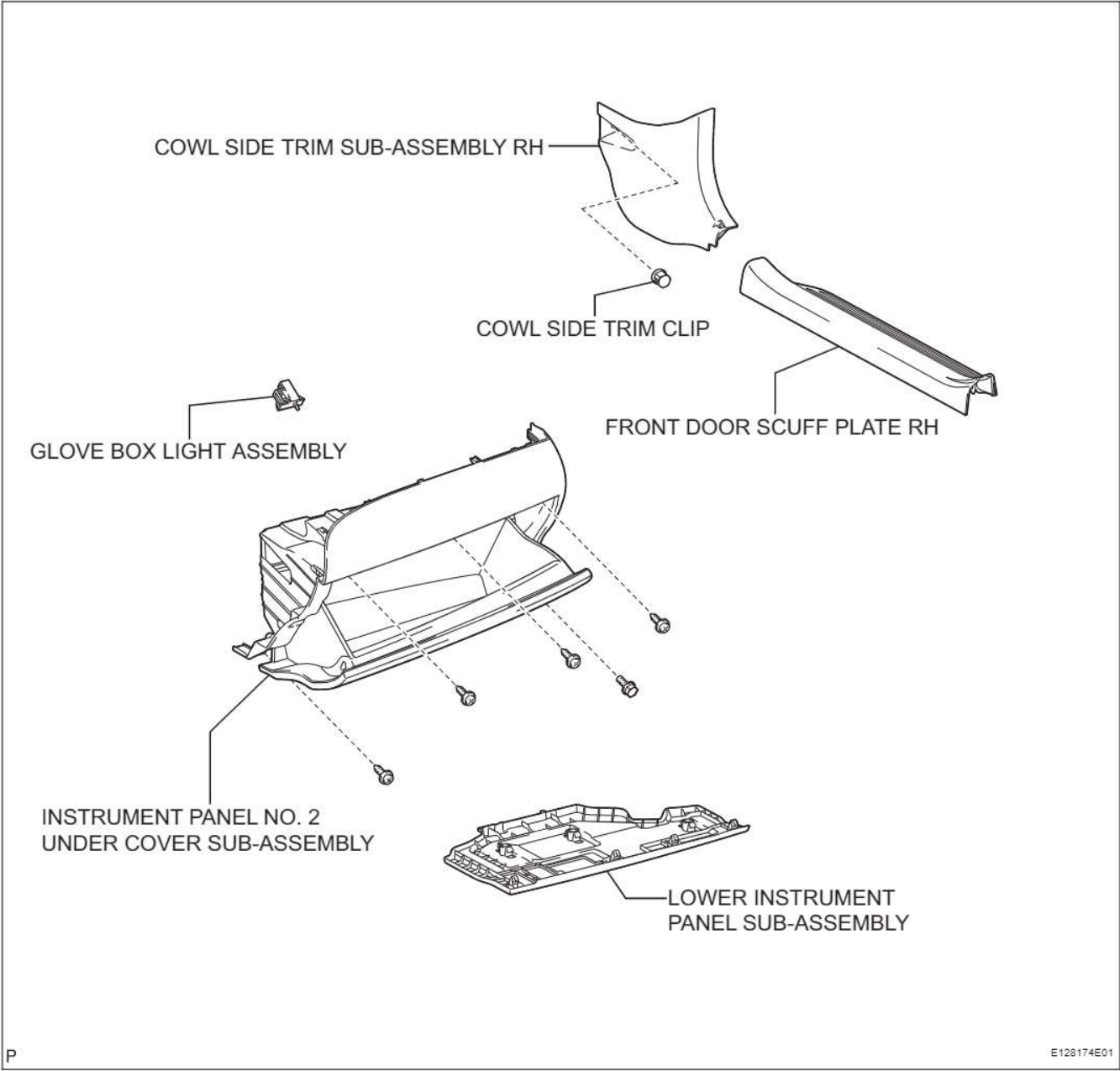
INSTALLATION

1. INSTALL NO. 1 LUGGAGE COMPARTMENT LIGHT ASSEMBLY

- (a) Connect the connector.
- (b) Engage the 2 claws and install the No. 1 luggage compartment light assembly.

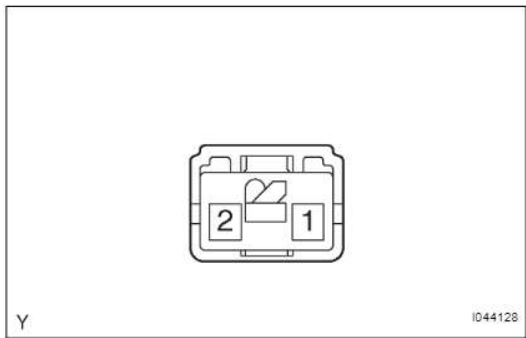
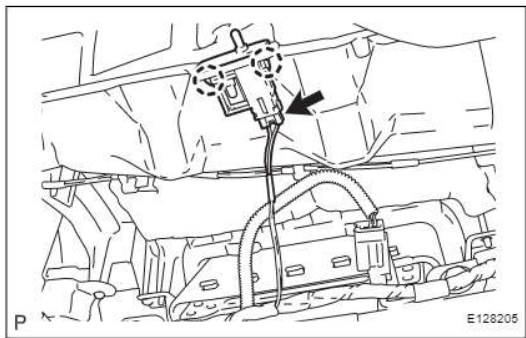


GLOVE BOX LIGHT
COMPONENTS



REMOVAL

- 1. REMOVE FRONT DOOR SCUFF PLATE RH (See page IR-15)
- 2. REMOVE COWL SIDE TRIM SUB-ASSEMBLY RH (See page IR-15)
- 3. REMOVE INSTRUMENT PANEL NO. 2 UNDER COVER SUB-ASSEMBLY (See page IP-13)
- 4. REMOVE LOWER INSTRUMENT PANEL SUB-ASSEMBLY (See page IP-14)
- 5. REMOVE GLOVE BOX LIGHT ASSEMBLY
 - (a) Disconnect the connector.
 - (b) Disengage the 2 claws and remove the glove box light assembly.



INSPECTION

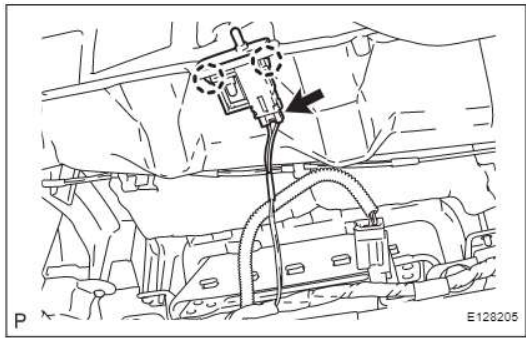
- 1. INSPECT GLOVE BOX LIGHT ASSEMBLY
 - (a) Apply battery voltage to the glove box light assembly connector.
 - (b) Check that the glove box light comes on.
- OK

Measurement Condition	Switch Condition	Specified Condition
Battery positive (+) → Terminal 2 Battery negative (-) → Terminal 1	Glove box light switch ON	Glove box light comes on

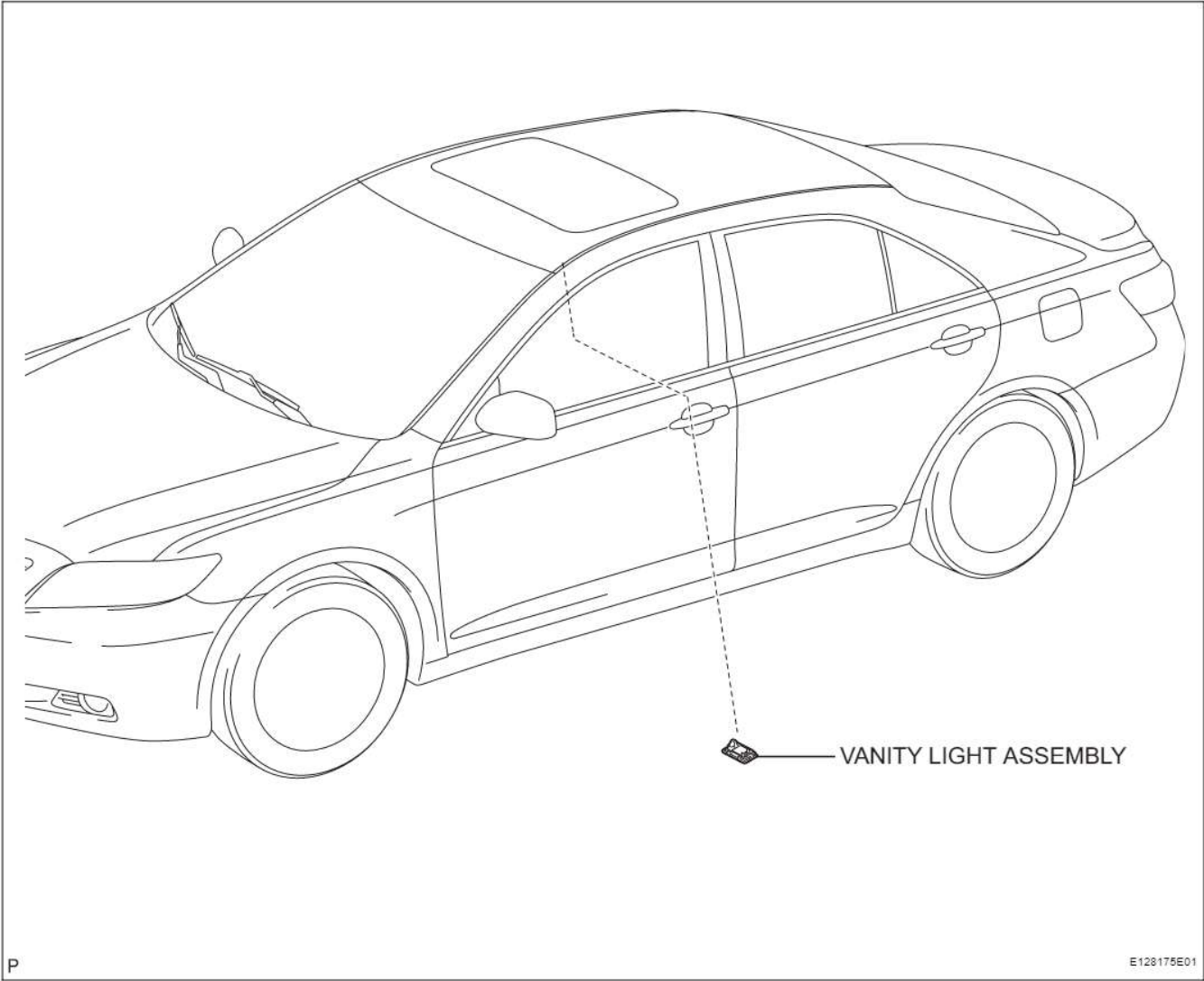
If the result is not as specified, replace the glove box light assembly.

INSTALLATION

- 1. INSTALL GLOVE BOX LIGHT ASSEMBLY
 - (a) Engage the 2 claws and install the glove box light assembly.
 - (b) Connect the connector.
- 2. INSTALL LOWER INSTRUMENT PANEL SUB-ASSEMBLY (See page IP-33)
- 3. INSTALL INSTRUMENT PANEL NO. 2 UNDER COVER SUB-ASSEMBLY (See page IP-33)
- 4. INSTALL COWL SIDE TRIM SUB-ASSEMBLY RH (See page IR-42)
- 5. INSTALL FRONT DOOR SCUFF PLATE RH (See page IR-42)



VANITY LIGHT
COMPONENTS

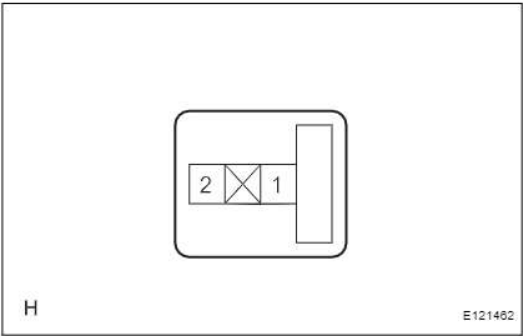


REMOVAL

1. REMOVE VANITY LIGHT ASSEMBLY (See page [IR-24](#))

INSPECTION

1. INSPECT VANITY LIGHT ASSEMBLY
- (a) Apply battery voltage to the vanity light assembly connector.
 - (b) Check that the vanity light comes on.
- OK



Measurement Condition	Specified Condition
Battery positive (+) → Terminal 1 Battery negative (-) → Terminal 2	Vanity light comes on

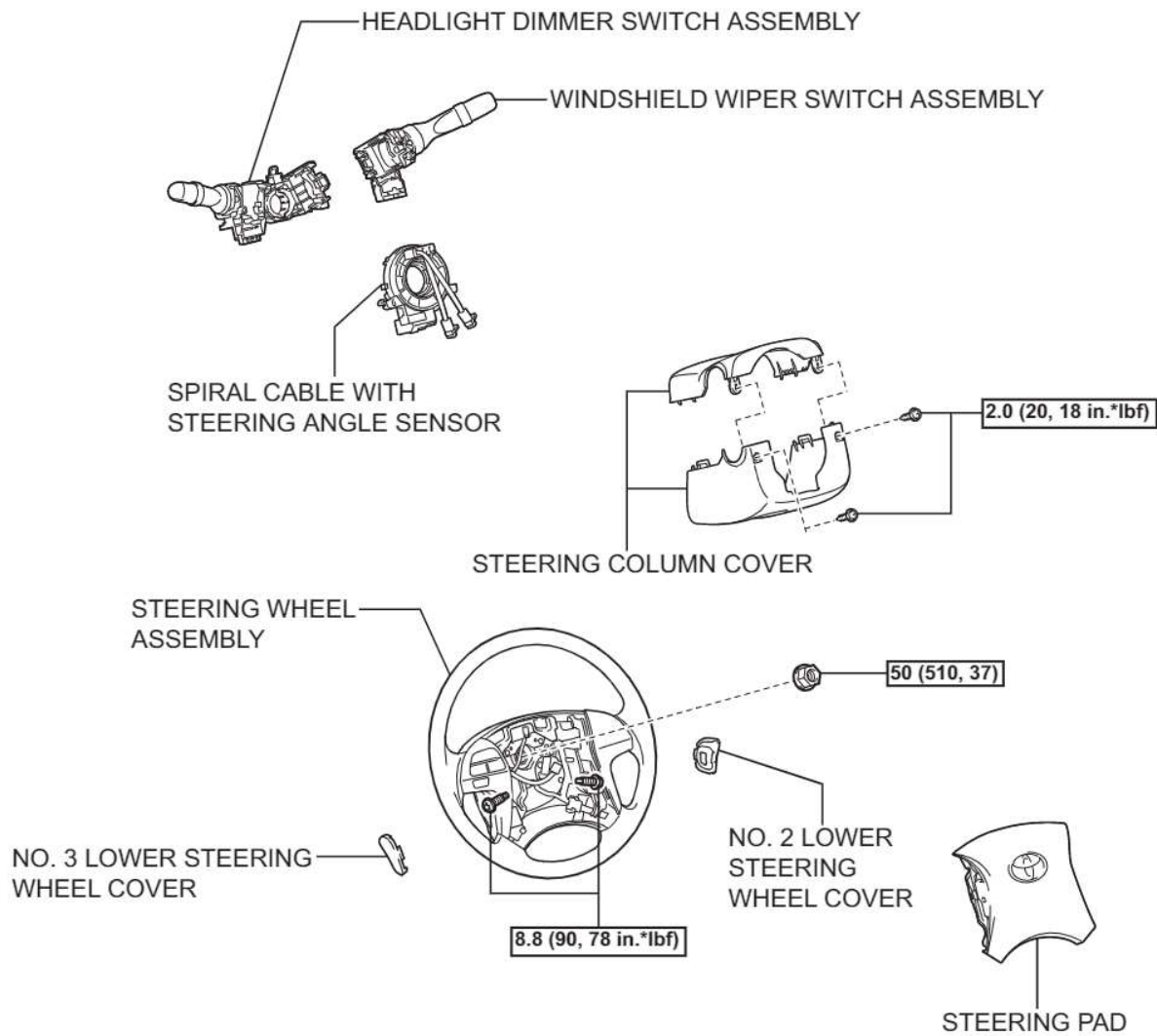
If the result is not as specified, replace the vanity light assembly.

LIGHTING – HEADLIGHT DIMMER SWITCH

HEADLIGHT DIMMER SWITCH

COMPONENTS

LI



N*m (kgf*cm, ft.*lbf) : Specified torque

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LI-96

LIGHTING – HEADLIGHT DIMMER SWITCH

REMOVAL

1. PRECAUTION

CAUTION:

Be sure to read "PRECAUTION" thoroughly before servicing (See page [RS-1](#)).

2. ALIGN FRONT WHEELS FACING STRAIGHT AHEAD

3. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

NOTICE:

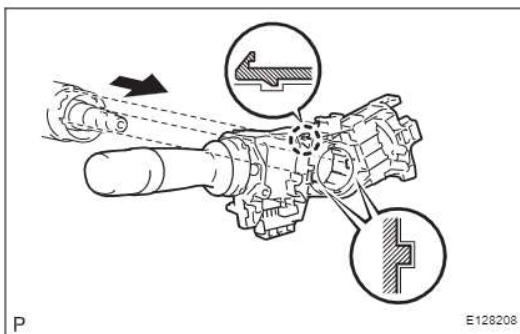
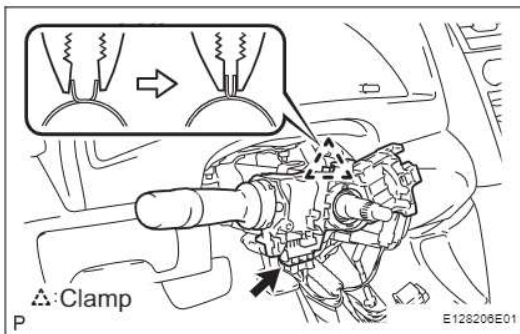
Wait for 90 seconds after disconnecting the cable to prevent airbag deployment.

4. REMOVE NO. 2 LOWER STEERING WHEEL COVER (See page [RS-345](#))5. REMOVE NO. 3 LOWER STEERING WHEEL COVER (See page [RS-345](#))6. REMOVE STEERING PAD (See page [RS-345](#))7. REMOVE STEERING WHEEL ASSEMBLY (See page [SR-36](#))8. REMOVE STEERING COLUMN COVER (See page [SR-36](#))9. REMOVE SPIRAL CABLE WITH STEERING ANGLE SENSOR (See page [RS-357](#))10. REMOVE WINDSHIELD WIPER SWITCH ASSEMBLY (See page [WW-20](#))

11. REMOVE HEADLIGHT DIMMER SWITCH ASSEMBLY

(a) Disconnect the connector.

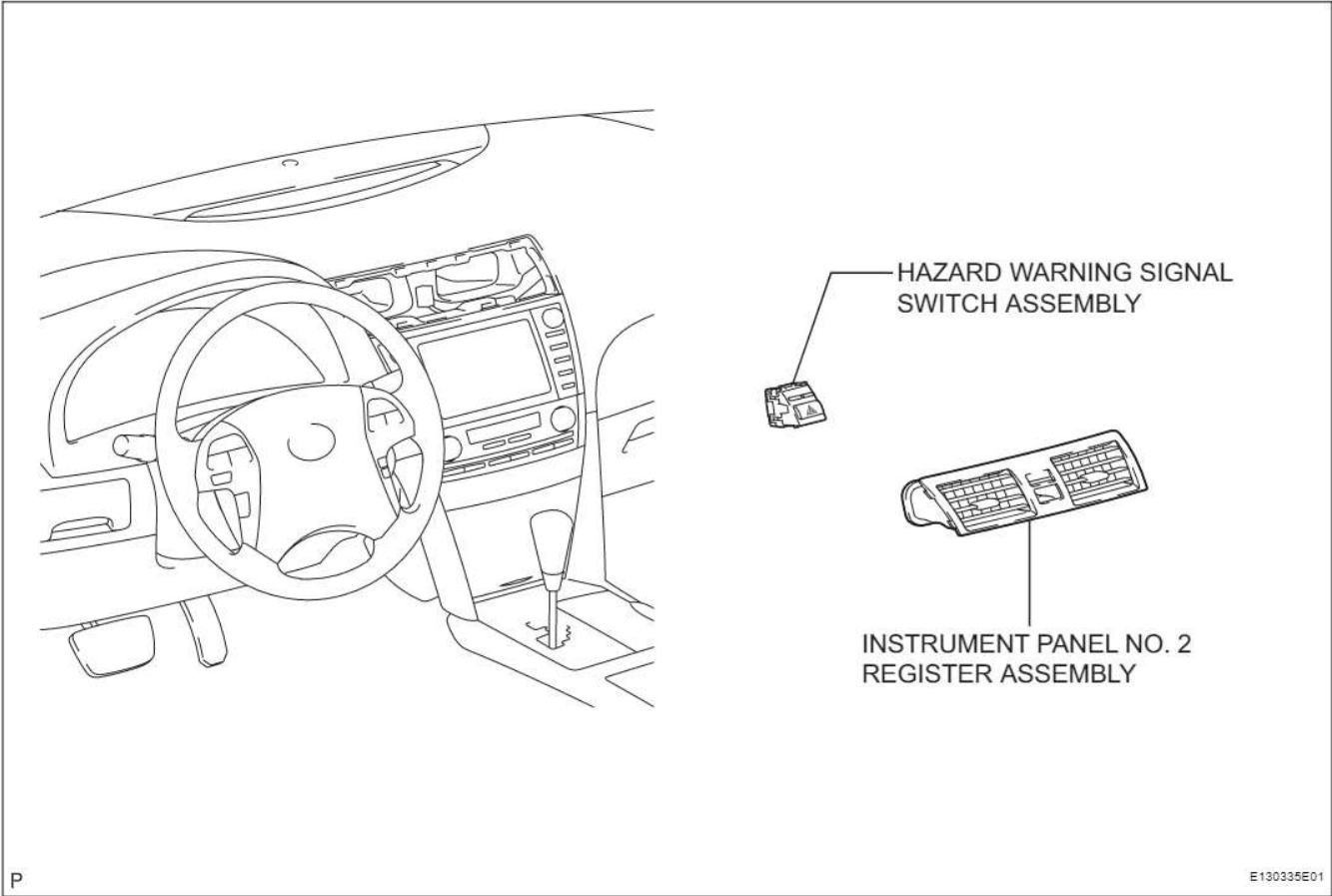
(b) Disengage the clamp as shown in the illustration.



(c) Disengage the claw and remove the headlight dimmer switch assembly as shown in the illustration.

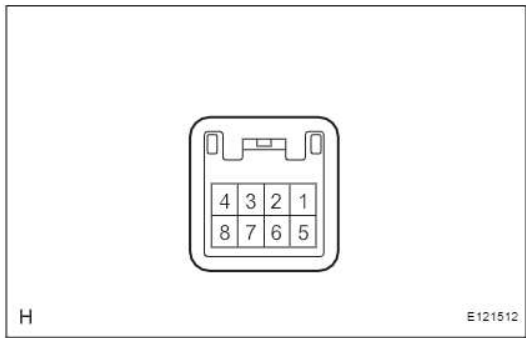
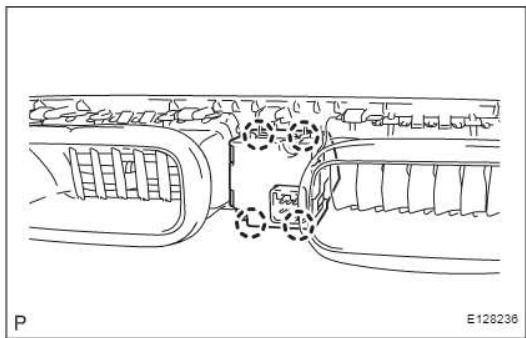
HAZARD WARNING SWITCH

COMPONENTS



REMOVAL

1. REMOVE INSTRUMENT PANEL NO. 2 REGISTER ASSEMBLY (See page [IP-16](#))
2. REMOVE HAZARD WARNING SIGNAL SWITCH ASSEMBLY
- (a) Disengage the 4 claws and remove the hazard warning signal switch assembly.



INSPECTION

1. INSPECT HAZARD WARNING SIGNAL SWITCH ASSEMBLY
- (a) Measure the resistance according to the value(s) in the table below.
- Standard resistance

Tester Connection	Condition	Specified Condition
5 - 4	OFF	10 k Ω or higher
5 - 4	ON	Below 1 Ω

If the result is not as specified, replace the hazard warning signal switch assembly.

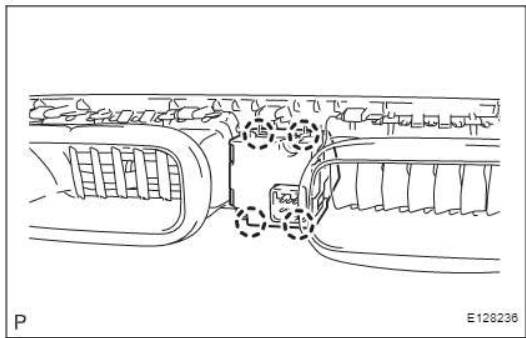
- (b) Apply battery voltage to the hazard warning signal switch assembly connector.
- OK

Measurement Condition	Specified Condition
Battery positive (+) → Terminal 7 Battery negative (-) → Terminal 8	Illumination comes on

If the result is not as specified, replace the hazard warning signal switch assembly.

INSTALLATION

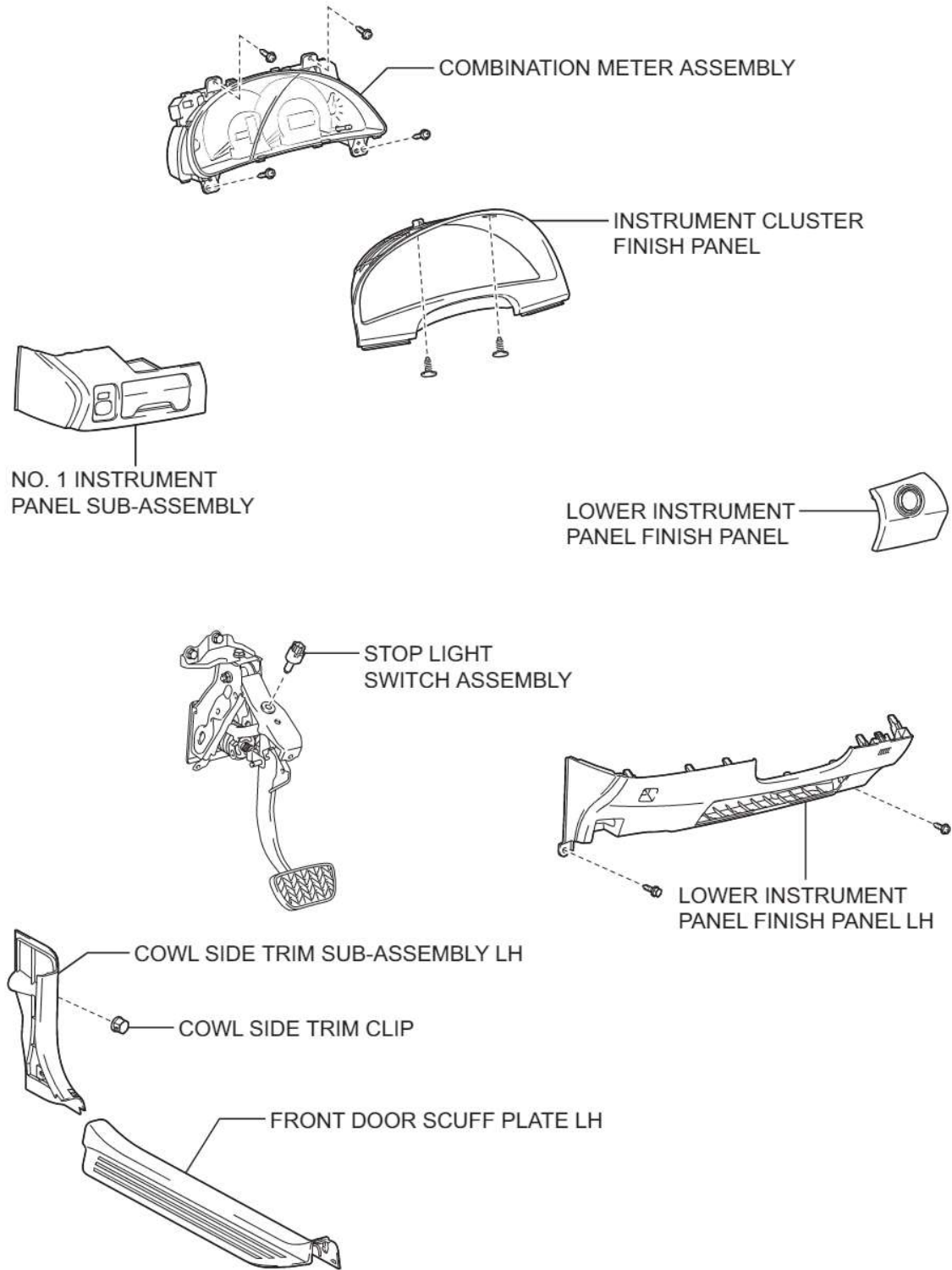
1. INSTALL HAZARD WARNING SIGNAL SWITCH ASSEMBLY
- (a) Engage the 4 claws and install the hazard warning signal switch assembly.
2. INSTALL INSTRUMENT PANEL NO. 2 REGISTER ASSEMBLY (See page [IP-31](#))



LIGHTING – STOP LIGHT SWITCH

STOP LIGHT SWITCH
COMPONENTS

LI



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REMOVAL

- 1. REMOVE FRONT DOOR SCUFF PLATE LH (See page [IR-13](#))
- 2. REMOVE COWL SIDE TRIM SUB-ASSEMBLY LH (See page [IR-14](#))
- 3. REMOVE LOWER INSTRUMENT PANEL FINISH PANEL LH (See page [ME-64](#))
- 4. REMOVE NO. 1 INSTRUMENT PANEL SUB-ASSEMBLY (See page [IP-12](#))
- 5. REMOVE LOWER INSTRUMENT PANEL FINISH PANEL (See page [IP-12](#))
- 6. REMOVE INSTRUMENT CLUSTER FINISH PANEL (See page [ME-66](#))
- 7. REMOVE COMBINATION METER ASSEMBLY (See page [ME-66](#))
- 8. REMOVE STOP LIGHT SWITCH ASSEMBLY (See page [BR-73](#))

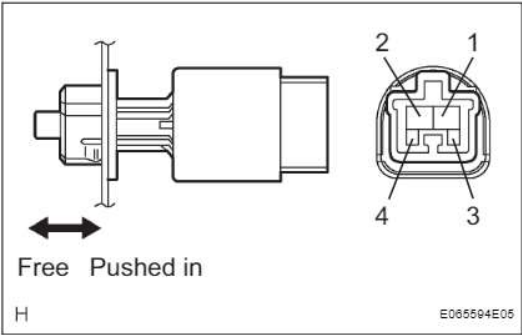
INSPECTION

- 1. INSPECT STOP LIGHT SWITCH ASSEMBLY
 - (a) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester Connection	Switch Position	Specified Condition
1 - 2	Switch pin free	10 kΩ or higher
3 - 4	Switch pin free	Below 1 Ω
1 - 2	Switch pin pushed in	Below 1 Ω
3 - 4	Switch pin pushed in	10 kΩ or higher

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

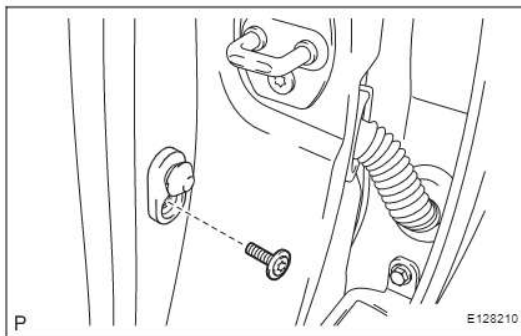
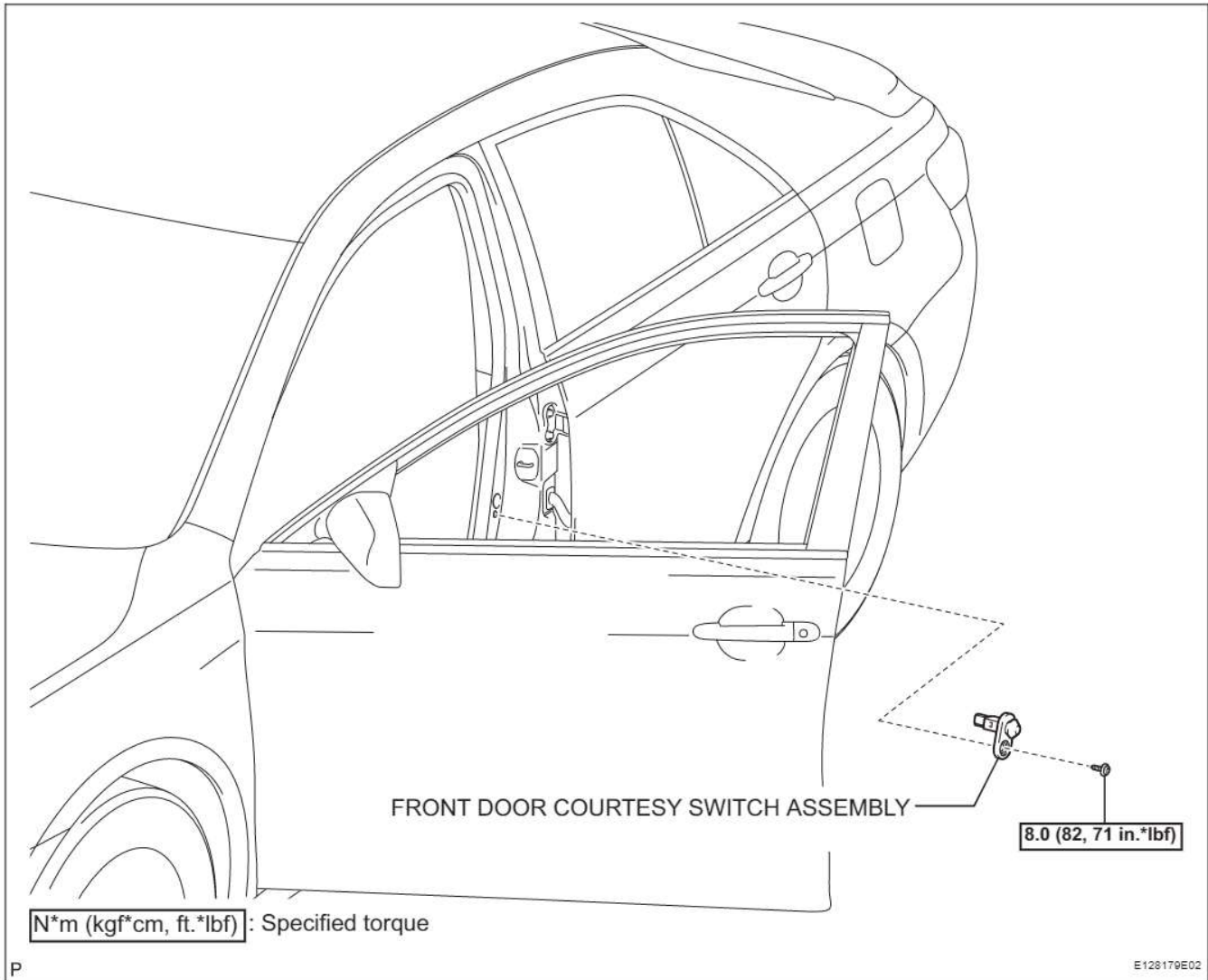


LI-104

LIGHTING – FRONT DOOR COURTESY SWITCH

FRONT DOOR COURTESY SWITCH

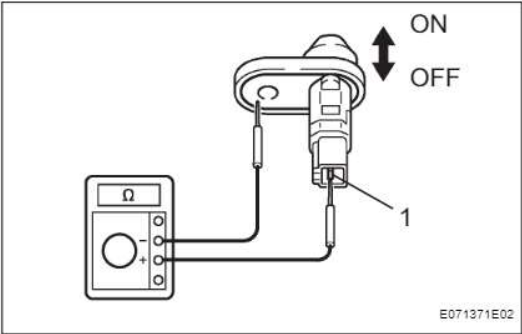
COMPONENTS



REMOVAL

1. REMOVE FRONT DOOR COURTESY SWITCH ASSEMBLY

- Using a "TORX" socket wrench (T30), remove the "TORX" bolt.
- Disconnect the connector and remove the front door courtesy switch assembly.



INSPECTION

1. INSPECT FRONT DOOR COURTESY LIGHT SWITCH ASSEMBLY

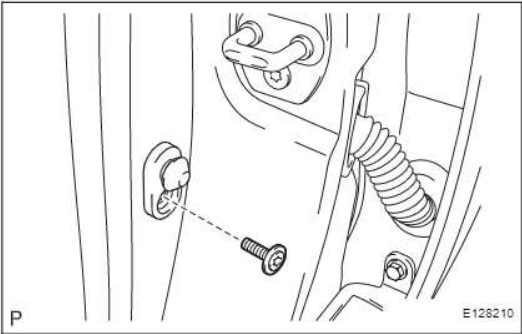
- (a) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester Connection	Switch Operation	Specified Condition
1 - Switch body	Not pushed (ON)	Below 1 Ω
	Pushed (OFF)	10 kΩ or higher

If the result is not as specified, replace the front door courtesy light switch assembly.

LI



INSTALLATION

1. INSTALL FRONT DOOR COURTESY SWITCH ASSEMBLY

- (a) Connect the connector.
- (b) Using a "TORX" socket wrench (T30), install the front door courtesy switch assembly with the "TORX" bolt.

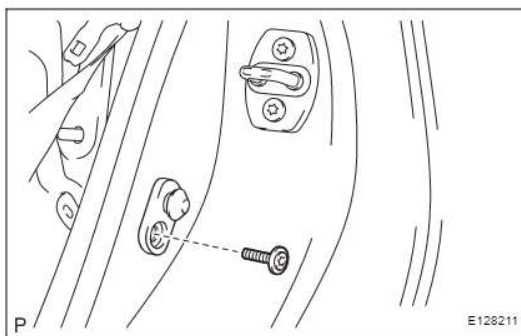
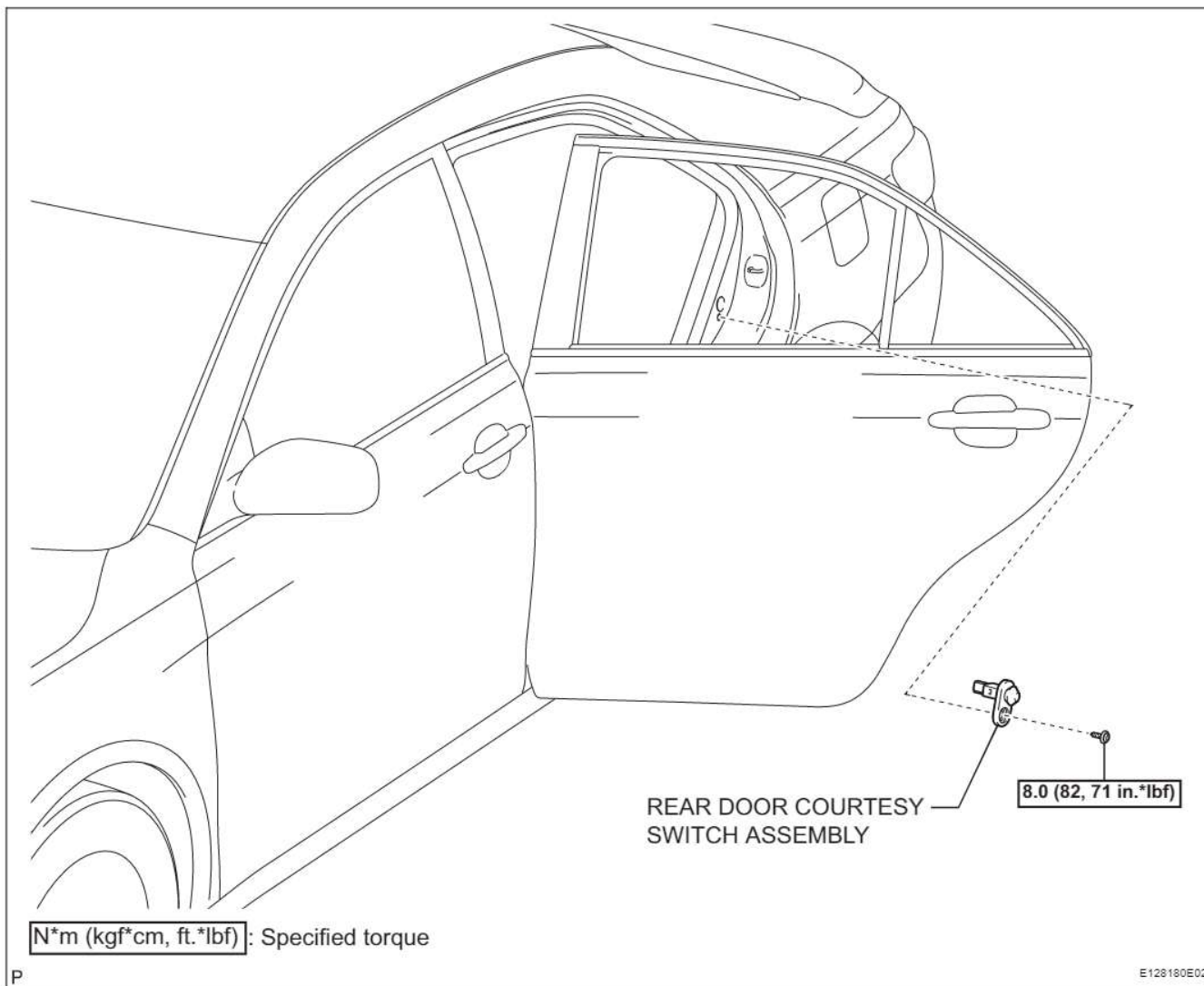
Torque: 8.0 N*m (82 kgf*cm, 71 in.*lbf)

LI-106

LIGHTING – REAR DOOR COURTESY SWITCH

REAR DOOR COURTESY SWITCH

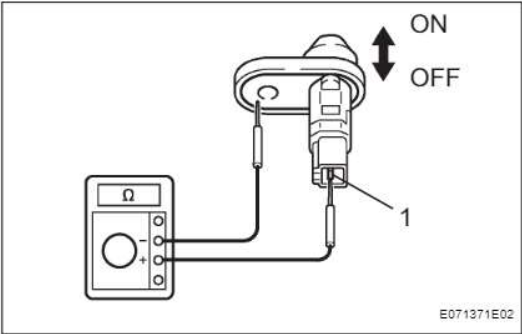
COMPONENTS



REMOVAL

1. REMOVE REAR DOOR COURTESY SWITCH ASSEMBLY

- Using a "TORX" socket wrench (T30), remove the "TORX" bolt.
- Disconnect the connector and remove the rear door courtesy switch assembly.



INSPECTION

1. INSPECT REAR DOOR COURTESY LIGHT SWITCH ASSEMBLY

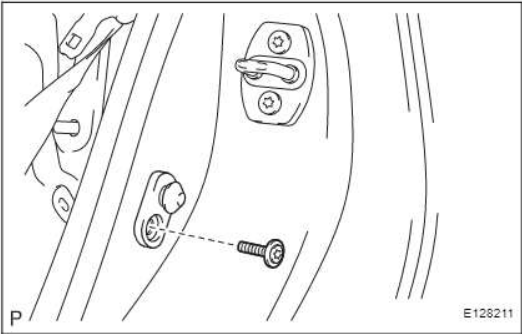
- (a) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester Connection	Switch Operation	Specified Condition
1 - Switch body	Not pushed (ON)	Below 1 Ω
	Pushed (OFF)	10 k Ω or higher

If the result is not as specified, replace the rear door courtesy light switch assembly.

LI



INSTALLATION

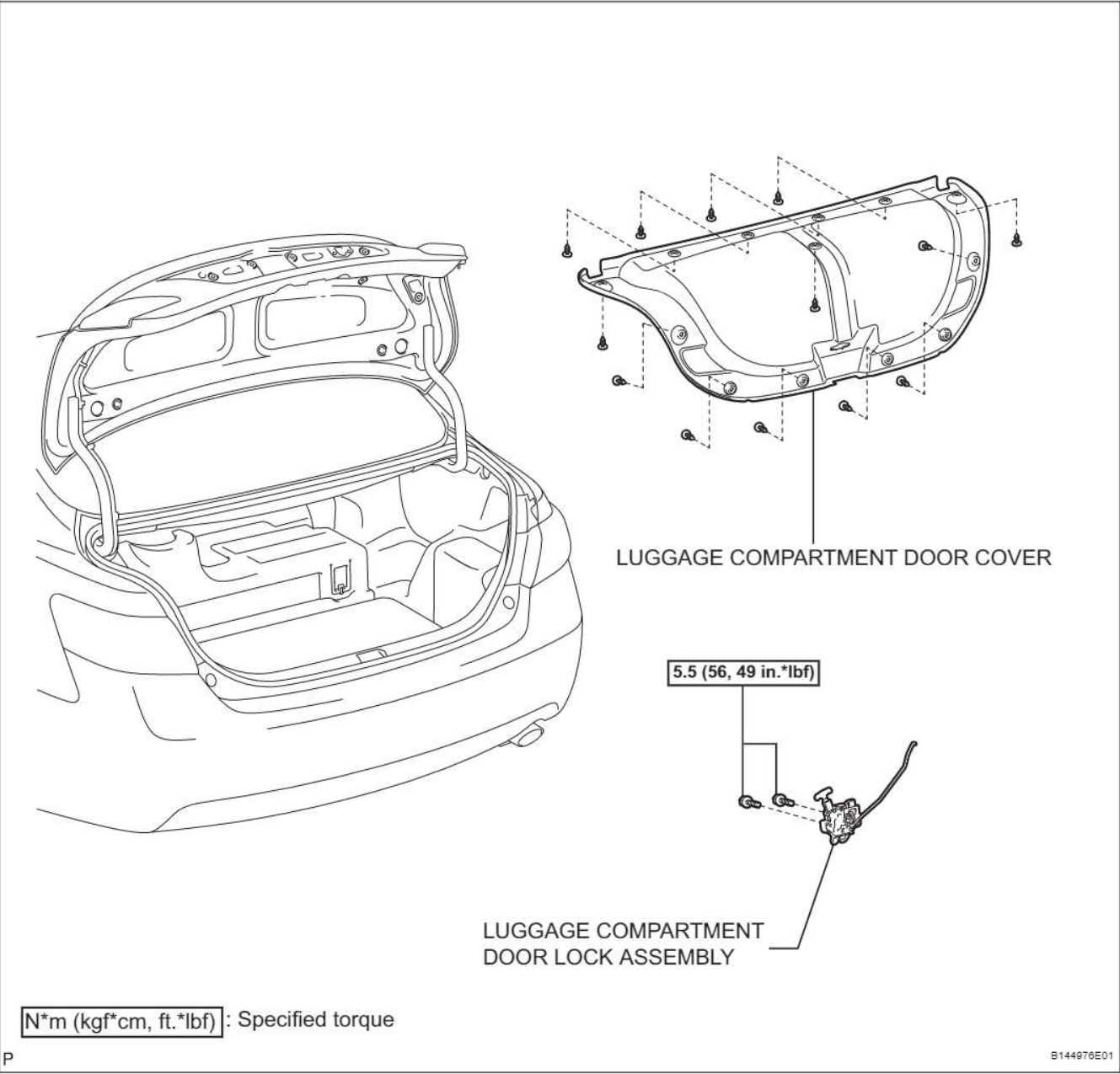
1. INSTALL REAR DOOR COURTESY SWITCH ASSEMBLY

- (a) Connect the connector.
- (b) Using a "TORX" socket wrench (T30), install the rear door courtesy switch assembly with the "TORX" bolt.

Torque: 8.0 N*m (82 kgf*cm, 71 in.*lbf)

BACK DOOR COURTESY SWITCH

COMPONENTS



REMOVAL

- 1. REMOVE LUGGAGE COMPARTMENT DOOR COVER (See page ET-50)
- 2. REMOVE LUGGAGE COMPARTMENT DOOR LOCK ASSEMBLY (See page ED-89)

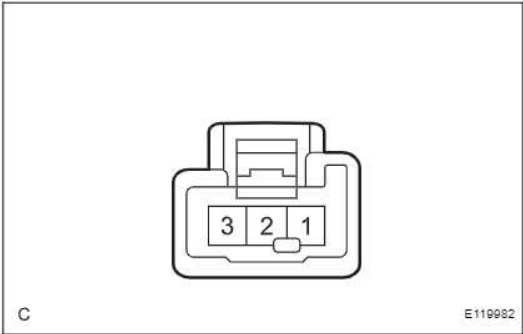
INSPECTION

- 1. INSPECT LUGGAGE COMPARTMENT DOOR LOCK ASSEMBLY
 - (a) Measure the resistance according to the value(s) in the table below.

Standard resistance

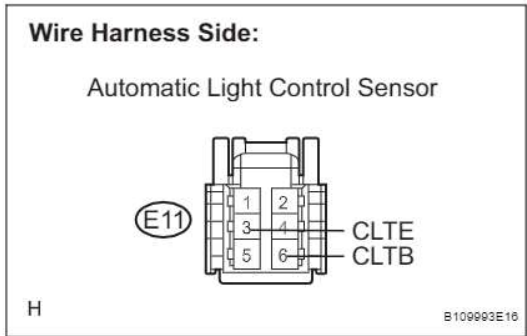
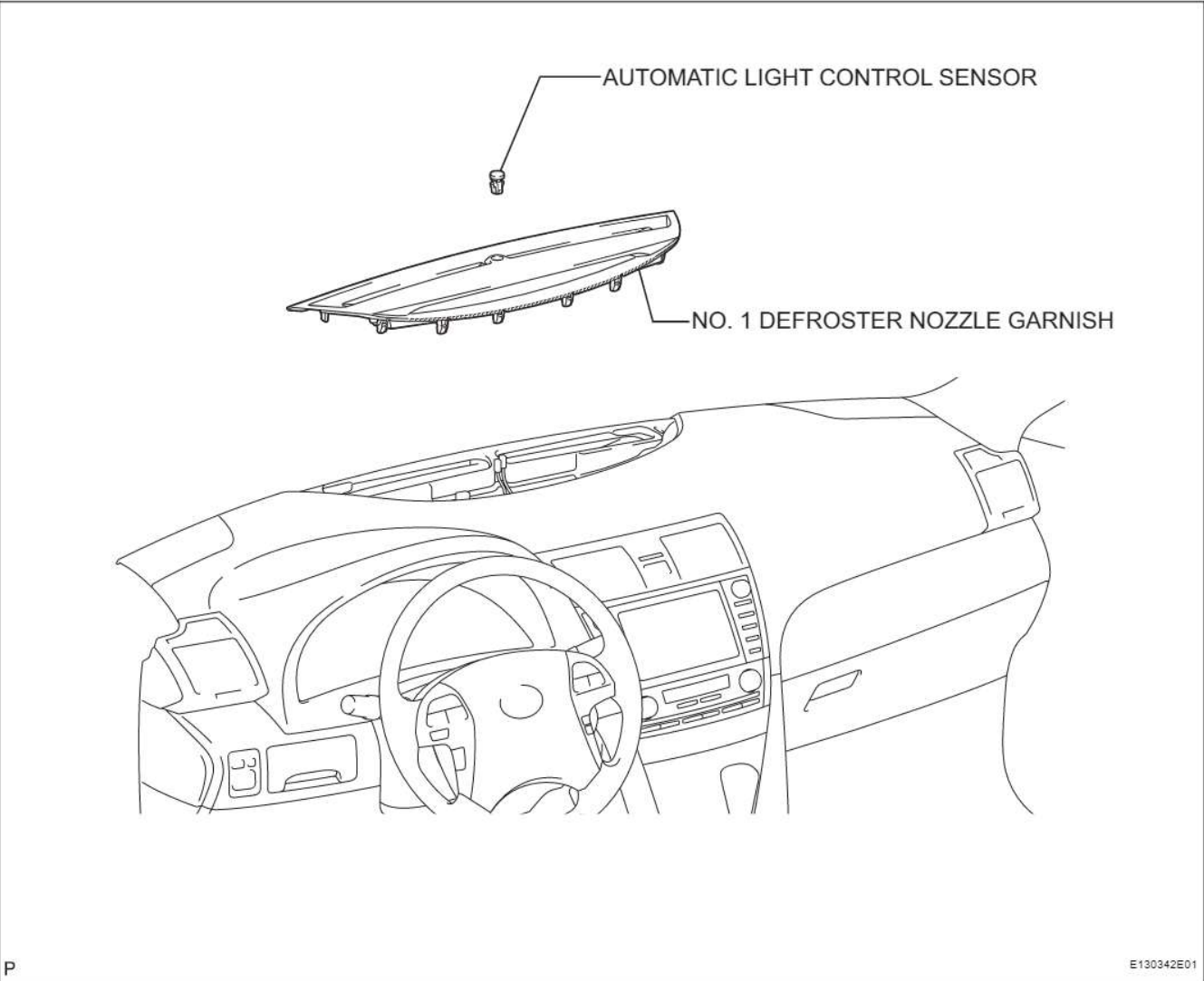
Tester Connection	Condition	Specified Condition
1 - 2	Door is closed	10 kΩ or higher
1 - 2	Door is open	Below 1 Ω

If the result is not as specified, replace the luggage compartment door lock assembly.



AUTOMATIC LIGHT CONTROL SENSOR

COMPONENTS



ON-VEHICLE INSPECTION

1. INSPECT AUTOMATIC LIGHT CONTROL SENSOR
- (a) Disconnect the E11 automatic light control sensor connector.
 - (b) Measure the voltage and resistance according to the value(s) in the table below.
- Standard voltage**

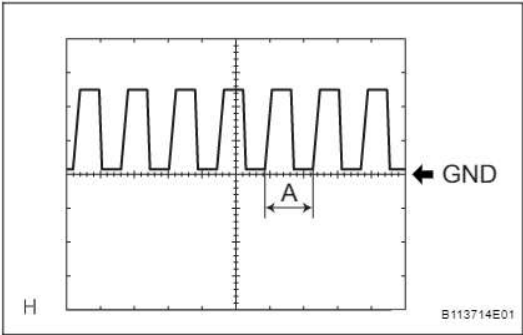
Tester Connection	Condition	Specified Condition
E11-6 (CLTB) - E11-3 (CLTE)	Power switch off	Below 1 V
	Power switch on (IG)	10 to 14 V

Standard resistance

Tester Connection	Specified Condition
E11-3 (CLTE) - Body ground	Below 1 Ω

If the result is not as specified, there may be a malfunction on the wire harness side.

- (c) Reconnect the automatic light control sensor connector.
- (d) Connect an oscilloscope to the automatic light control sensor connector.
- (e) Check the waveform.
- OK



Tester Connection	Tool Setting	Condition	Specified Condition
E11-3 (CLTE) - E11-5 (CLTS)	5 V/DIV., 5 ms./DIV	Power switch on (IG), light control switch in AUTO	Correct waveform is as shown

HINT:

If the ambient light becomes brighter, width A becomes narrower.

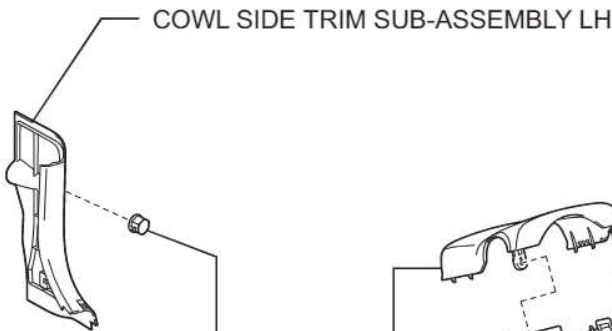
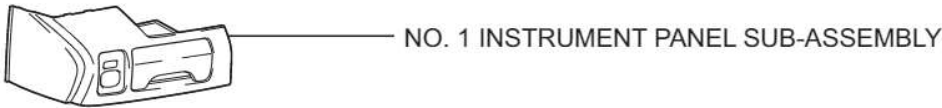
If the result is not as specified, replace the automatic light control sensor.

LI-112

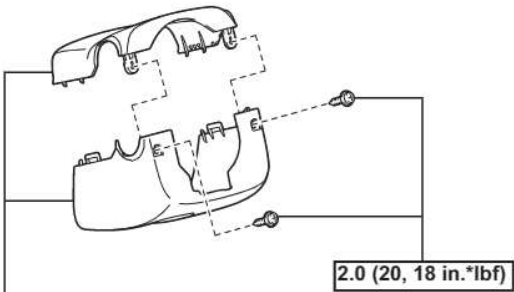
LIGHTING – TURN SIGNAL FLASHER ASSEMBLY

TURN SIGNAL FLASHER ASSEMBLY
COMPONENTS

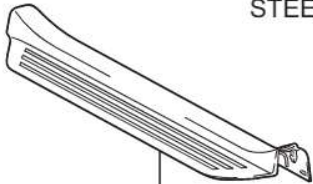
LI



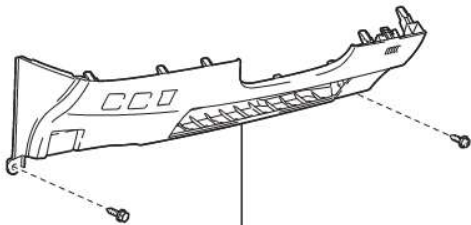
COWL SIDE TRIM CLIP



STEERING COLUMN COVER



FRONT DOOR SCUFF PLATE LH



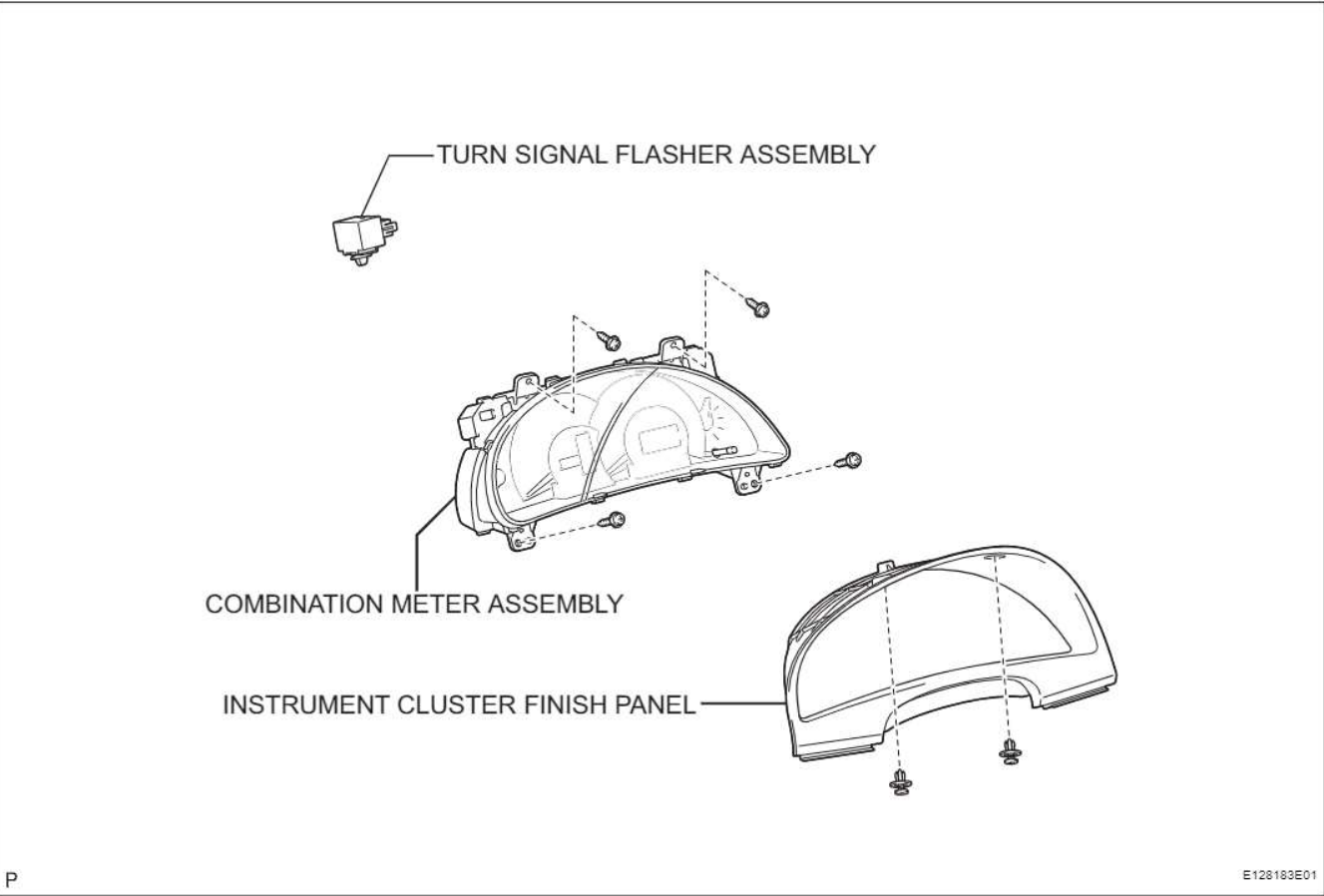
LOWER INSTRUMENT PANEL FINISH PANEL LH

N*m (kgf*cm, ft.*lbf) : Specified torque

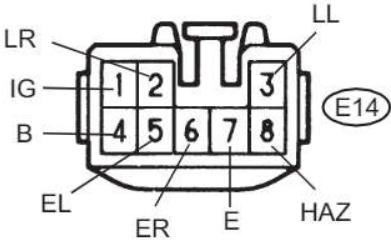
P

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Wire Harness Side:



ON-VEHICLE INSPECTION

1. INSPECT TURN SIGNAL FLASHER ASSEMBLY
- (a) Disconnect the E14 turn signal flasher assembly connector.
 - (b) Measure the voltage and resistance according the value(s) in the table below.

Standard voltage

Tester Connection	Condition	Specified Condition
E14-1 (IG) - Body ground	Power switch off	Below 1 V
E14-1 (IG) - Body ground	Power switch on (IG)	10 to 14 V
E14-4 (B) - Body ground	Always	10 to 14 V

Standard resistance

Tester Connection	Condition	Specified Condition
E14-5 (EL) - Body ground	Turn signal switch OFF	10 kΩ or higher
E14-5 (EL) - Body ground	Turn signal switch in LH position	Below 1 Ω
E14-6 (ER) - Body ground	Turn signal switch OFF	10 kΩ or higher
E14-6 (ER) - Body ground	Turn signal switch in RH position	Below 1 Ω
E14-7 (E) - Body ground	Always	Below 1 Ω
E14-8 (HAZ) - Body ground	Hazard warning switch OFF	10 kΩ or higher

LI-114

LIGHTING – TURN SIGNAL FLASHER ASSEMBLY

Tester Connection	Condition	Specified Condition
E14-8 (HAZ) - Body ground	Hazard warning switch ON	Below 1 Ω

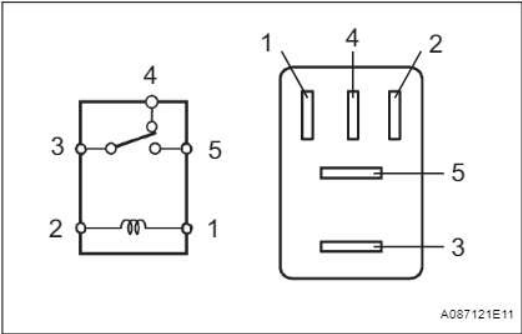
If the result is not as specified, there may be a malfunction on the wire harness side.

- (c) Reconnect the turn signal flasher assembly connector.
- (d) Measure the voltage according to the valve(s) in the table below.

Standard voltage

Tester Connection	Condition	Specified Condition
E14-2 (LR) - Body ground	Hazard warning switch OFF	Below 1 V
E14-2 (LR) - Body ground	Hazard warning switch ON	10 to 14 V (60 to 120 times per minute)
E14-2 (LR) - Body ground	Turn signal switch OFF	Below 1 V
E14-2 (LR) - Body ground	Power switch on (IG) and turn signal switch in RH position	10 to 14 V (60 to 120 times per minute)
E14-3 (LL) - Body ground	Hazard warning switch OFF	Below 1 V
E14-3 (LL) - Body ground	Hazard warning switch ON	10 to 14 V (60 to 120 times per minute)
E14-3 (LL) - Body ground	Turn signal switch OFF	Below 1 V
E14-3 (LL) - Body ground	Power switch on (IG) and turn signal switch in LH position	10 to 14 V (60 to 120 times per minute)
E14-5 (EL) - Body ground	Power switch on (IG) and turn signal switch OFF	10 to 14 V
E14-5 (EL) - Body ground	Power switch on (IG) and turn signal switch in LH position	Below 1 V
E14-6 (ER) - Body ground	Power switch on (IG) and turn signal switch OFF	10 to 14 V
E14-6 (ER) - Body ground	Power switch on (IG) and turn signal switch in RH position	Below 1 V
E14-8 (HAZ) - Body ground	Hazard warning switch OFF	10 to 14 V
E14-8 (HAZ) - Body ground	Hazard warning switch ON	Below 1 V

If the result is not as specified, replace the turn signal flasher assembly.



TAILLIGHT RELAY

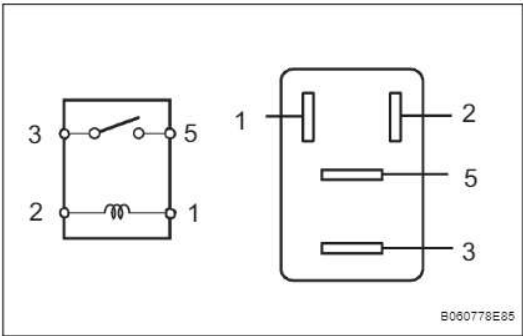
ON-VEHICLE INSPECTION

1. INSPECT TAILLIGHT RELAY
- (a) Remove the taillight relay from the instrument panel J/B assembly.
 - (b) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester Connection	Specified Condition
3 - 5	10 kΩ or higher
	Below 1 Ω (When battery voltage is applied to terminals 1 and 2)
3 - 4	Below 1 Ω
	10 kΩ or higher (When battery voltage is applied to terminals 1 and 2)

If the result is not as specified, replace the taillight relay.



BACK-UP LIGHT RELAY

ON-VEHICLE INSPECTION

1. INSPECT BACK-UP LIGHT RELAY
- (a) Remove the back-up light relay from the engine room relay block.
 - (b) Measure the resistance according to the value(s) in the table below.
- Standard resistance**

Tester Connection	Specified Condition
3 - 5	10 kΩ or higher
	Below 1 Ω (When battery voltage is applied to terminals 1 and 2)

If the result is not as specified, replace the back-up light relay.