LIGHTING SYSTEM

PRECAUTION

1. PRECAUTION FOR DISCONNECTING THE BATTERY CABLE

NOTICE:

When disconnecting the negative (-) battery terminal, initialize the following systems after the terminal is reconnected.

System Name	See procedure
Lighting System (Adaptive Front-Lighting System)	LI-17
Power Window Control System	WS-12
Power Back Door System	ED-33
Sliding Roof System	RF-22 and RF-4

2. PRECAUTION FOR HEADLIGHT BULB REPLACEMENT (HALOGEN BULB)

(a) Halogen bulbs have pressurized gas inside and require special handling. They can burst if scratched or dropped. Hold the bulb only by its plastic or metal case. Do not touch the glass part of a bulb with bare hands.

3. PRECAUTION FOR HEADLIGHT BULB REPLACEMENT (HID BULB)

(a) When any defects such as deformation, crack, dent, chipping, etc. are identified on the HID headlight (especially, on the light control ECU), replace it with a new one.

(b) Even if the operation seems to be normal, the fail-safe function may be defective.

(c) Be careful not to scratch or drop bulbs of the HID headlight and halogen bulbs (for high beam headlights and fog lights) as they have pressurized gas inside and can be easily broken.

(d) Touching the high voltage socket of the HID headlight with the headlight dimmer switch ON could generate momentary high voltage of 20,000 V and lead to a serious injury.

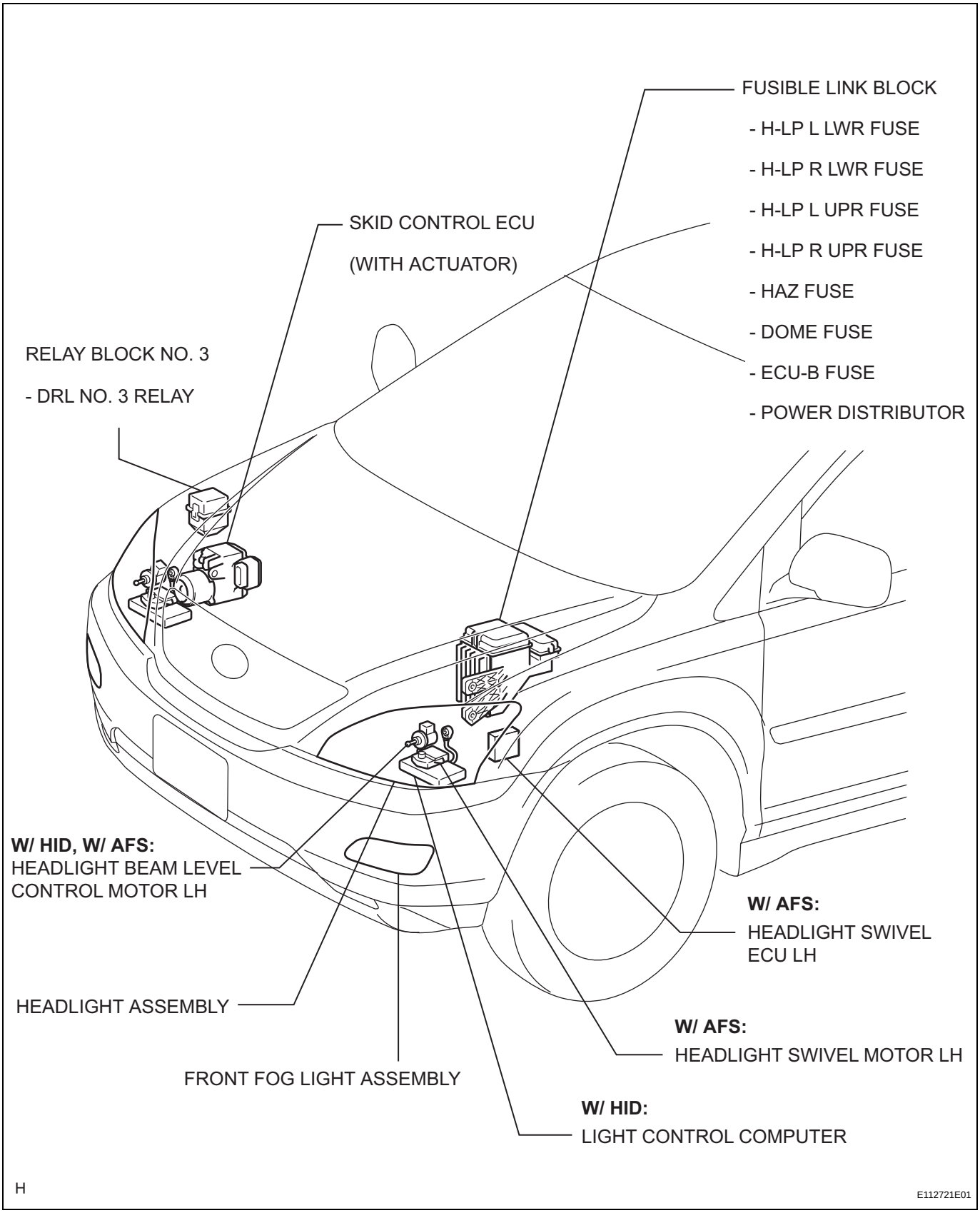
(e) Never connect a tester to the high voltage socket of the HID headlight for measurement, as this may lead to a serious injury because of high voltage.

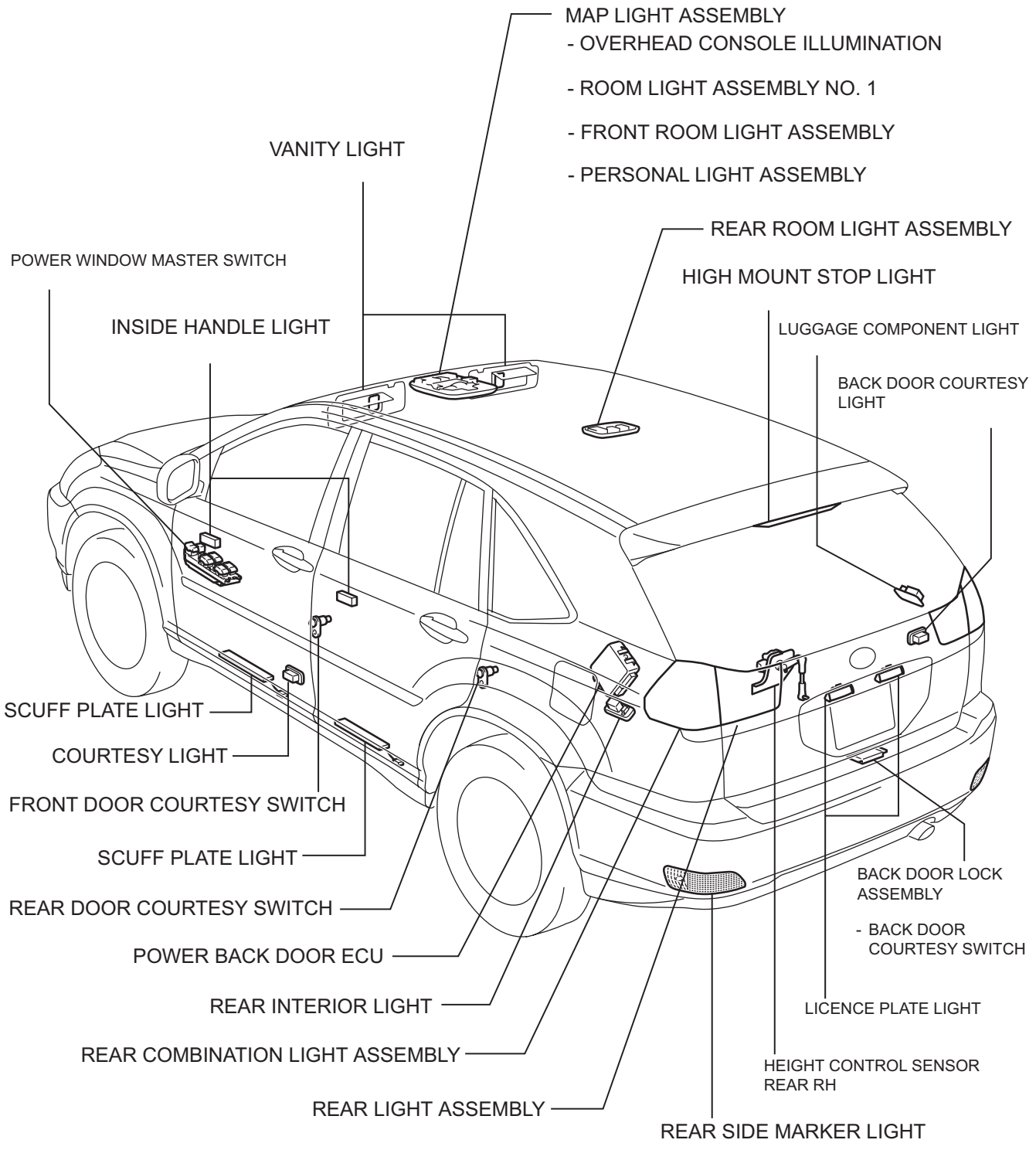
(f) When servicing the HID headlight, keep it away from water including rain, turn off the light control switch, and disconnect the battery terminal and the connector of the light control ECU in advance to avoid electric shock.

(g) When operating the HID headlight, operate it after assembling is completed and never turn on the lights without a bulb installed.

(h) Do not turn on the HID headlight using another power source except the vehicle's.

PARTS LOCATION





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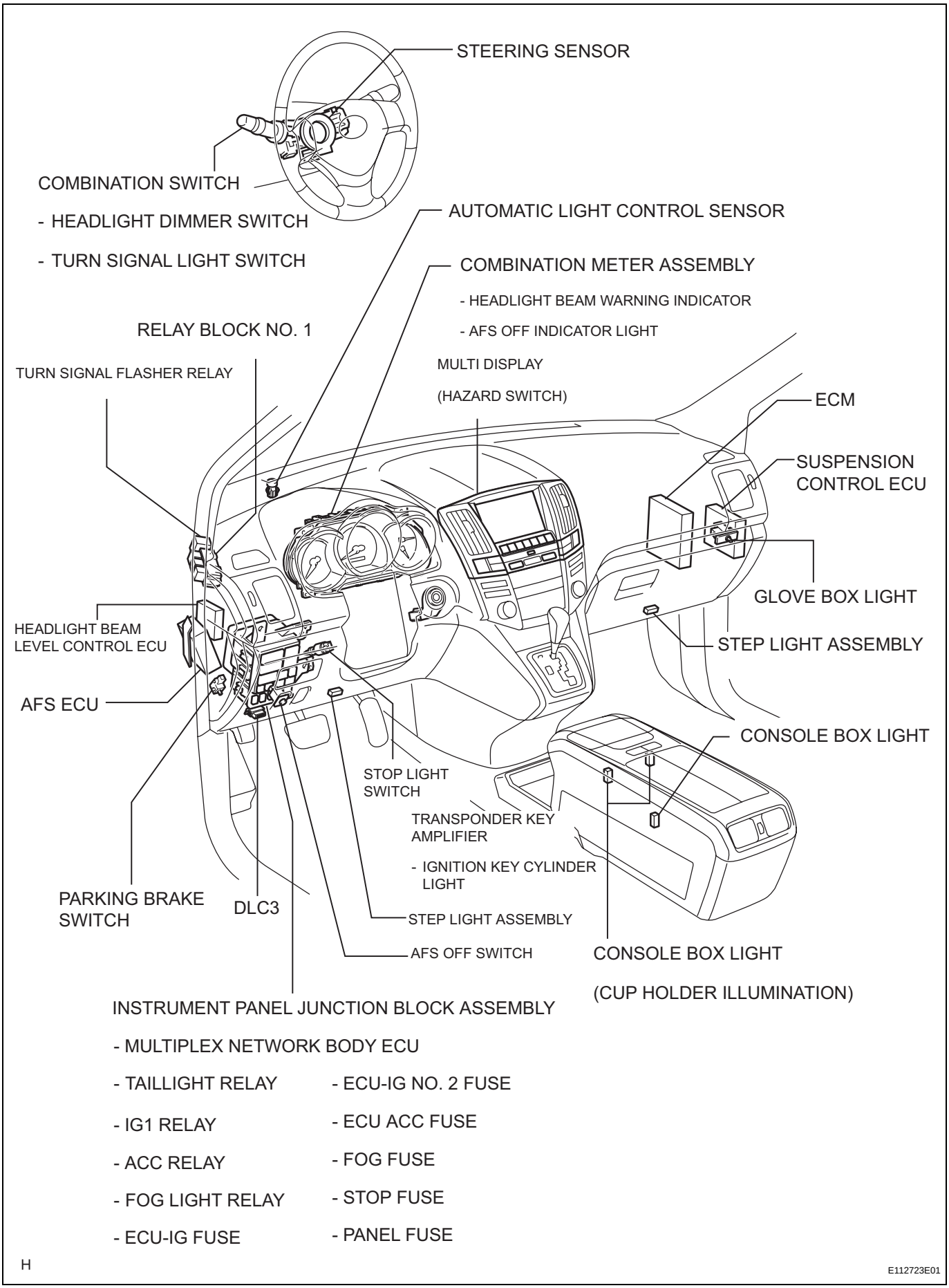
STEERING SENSOR
COMBINATION SWITCH
- HEADLIGHT DIMMER SWITCH
- TURN SIGNAL LIGHT SWITCH
AUTOMATIC LIGHT CONTROL SENSOR
COMBINATION METER ASSEMBLY
- HEADLIGHT BEAM WARNING INDICATOR
- AFS OFF INDICATOR LIGHT
RELAY BLOCK NO. 1
TURN SIGNAL FLASHER RELAY
MULTI DISPLAY
(HAZARD SWITCH)
ECM
SUSPENSION CONTROL ECU
GLOVE BOX LIGHT
STEP LIGHT ASSEMBLY
HEADLIGHT BEAM LEVEL CONTROL ECU
AFS ECU
CONSOLE BOX LIGHT
STOP LIGHT SWITCH
TRANSPONDER KEY AMPLIFIER
- IGNITION KEY CYLINDER LIGHT
PARKING BRAKE SWITCH
DLC3
STEP LIGHT ASSEMBLY
AFS OFF SWITCH
CONSOLE BOX LIGHT
(CUP HOLDER ILLUMINATION)
INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY
- MULTIPLEX NETWORK BODY ECU
- TAILLIGHT RELAY
- IG1 RELAY
- ACC RELAY
- FOG LIGHT RELAY
- ECU-IG FUSE
- ECU-IG NO. 2 FUSE
- ECU ACC FUSE
- FOG FUSE
- STOP FUSE
- PANEL FUSE
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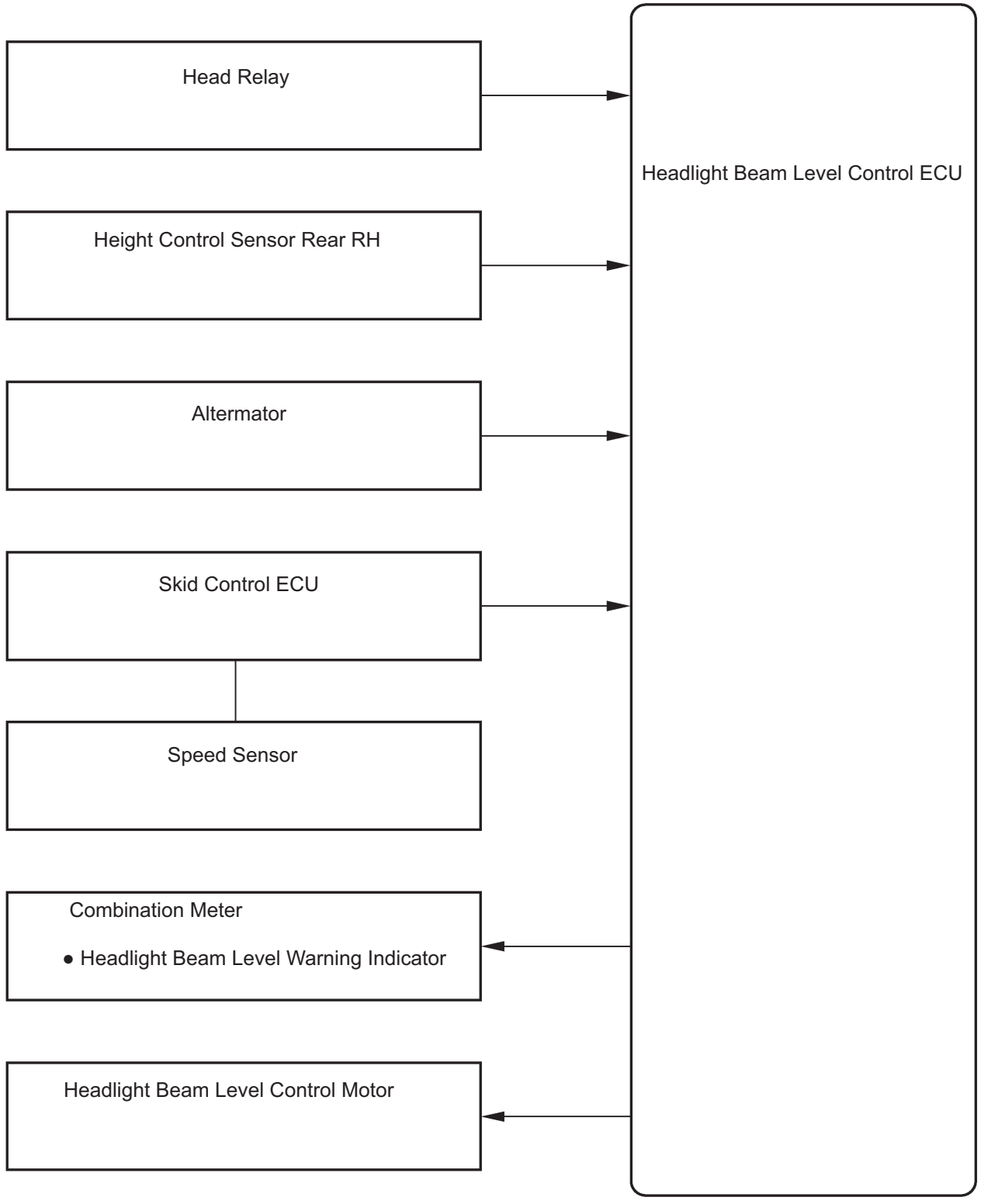
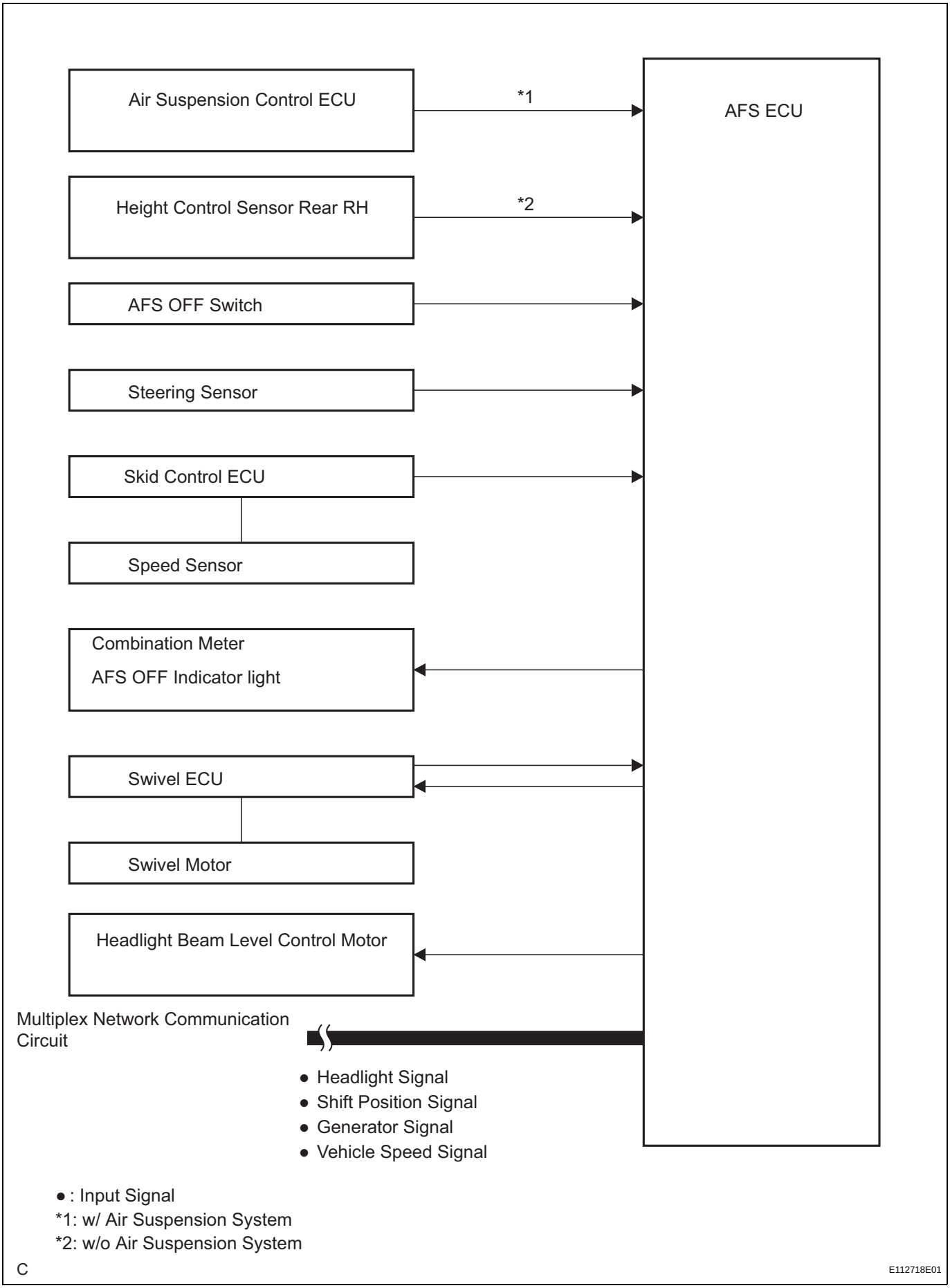
SYSTEM DIAGRAM

Headlight Beam Level Control System:



LI


Air Suspension Control ECU
*1
AFS ECU
Height Control Sensor Rear RH
*2
AFS OFF Switch
Steering Sensor
Skid Control ECU
Speed Sensor
Combination Meter
AFS OFF Indicator light
Swivel ECU
Swivel Motor
Headlight Beam Level Control Motor
Multiplex Network Communication Circuit
● Headlight Signal
● Shift Position Signal
● Generator Signal
● Vehicle Speed Signal
● : Input Signal
*1: w/ Air Suspension System
*2: w/o Air Suspension System
C
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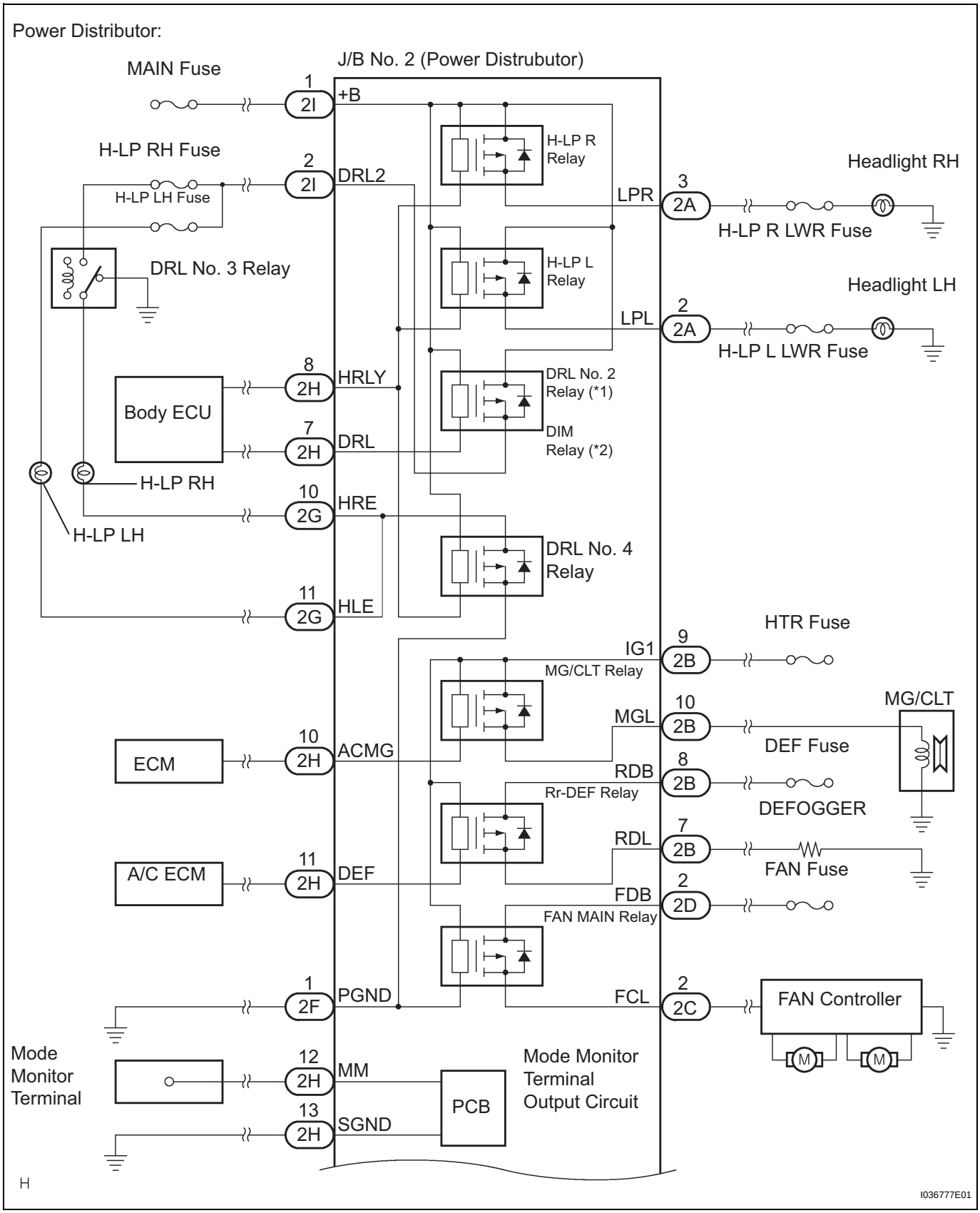
Power Distributor:
MAIN Fuse
J/B No. 2 (Power Distrubutor)
1
2I
+B
H-LP RH Fuse
2
2I
DRL2
H-LP LH Fuse
H-LP R Relay
Headlight RH
3
2A
LPR
H-LP R LWR Fuse
DRL No. 3 Relay
H-LP L Relay
Headlight LH
2
2A
LPL
H-LP L LWR Fuse
8
2H
HRLY
Body ECU
DRL No. 2 Relay (*1)
7
2H
DRL
DIM Relay (*2)
H-LP RH
10
2G
HRE
H-LP LH
DRL No. 4 Relay
11
2G
HLE
HTR Fuse
9
2B
IG1
MG/CLT Relay
MG/CLT
10
2B
MGL
10
2H
ACMG
ECM
DEF Fuse
8
2B
RDB
Rr-DEF Relay
DEFOGGER
7
2B
RDL
FAN Fuse
11
2H
DEF
A/C ECM
2
2D
FDB
FAN MAIN Relay
1
2F
PGND
2
2C
FCL
FAN Controller
M
M
Mode Monitor Terminal
12
2H
MM
PCB
Mode Monitor Terminal Output Circuit
13
2H
SGND
H
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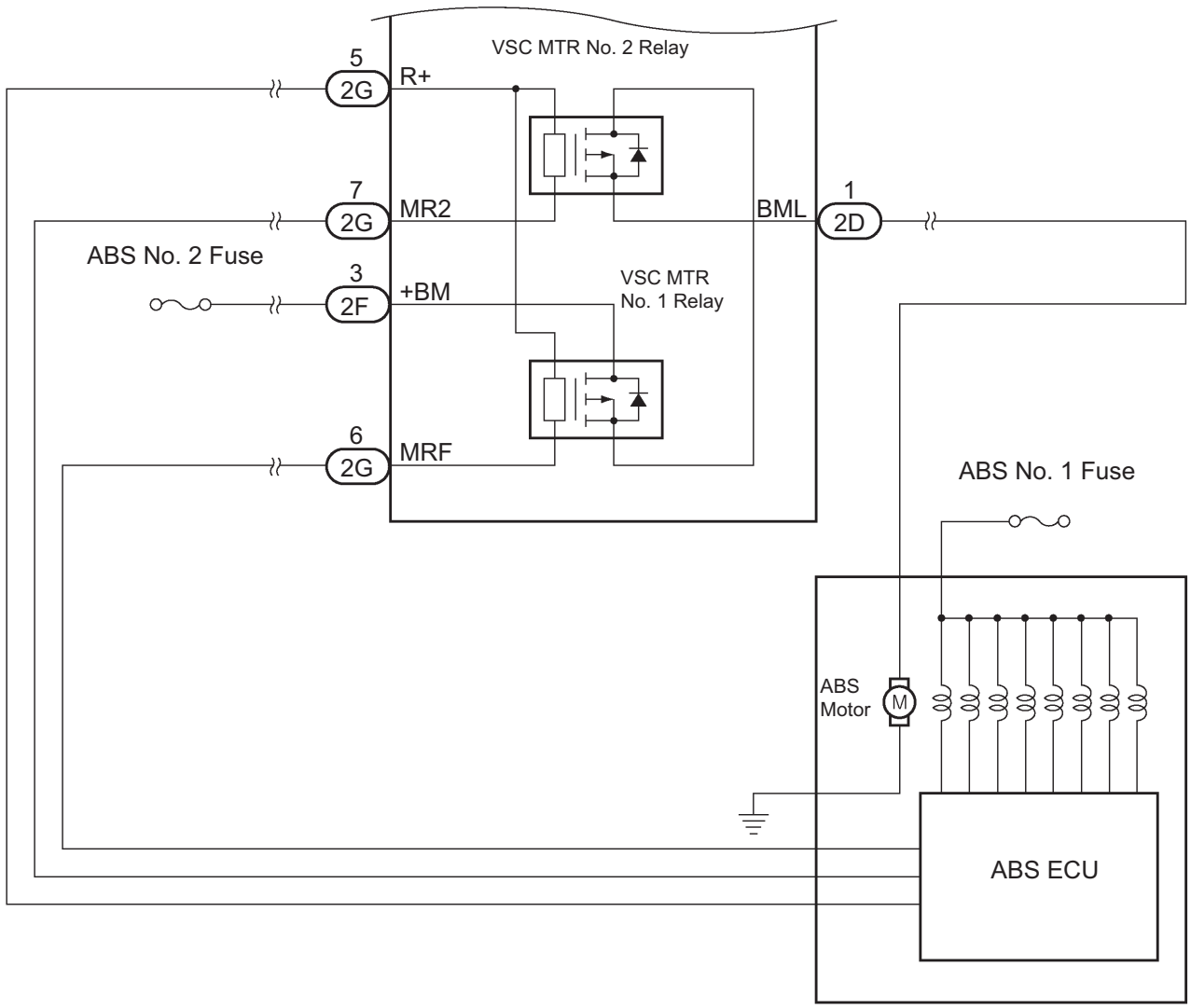
LI



*1: w/ Daytime Running Light
*2: w/o Daytime Running Light

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Headlight Relay Circuit

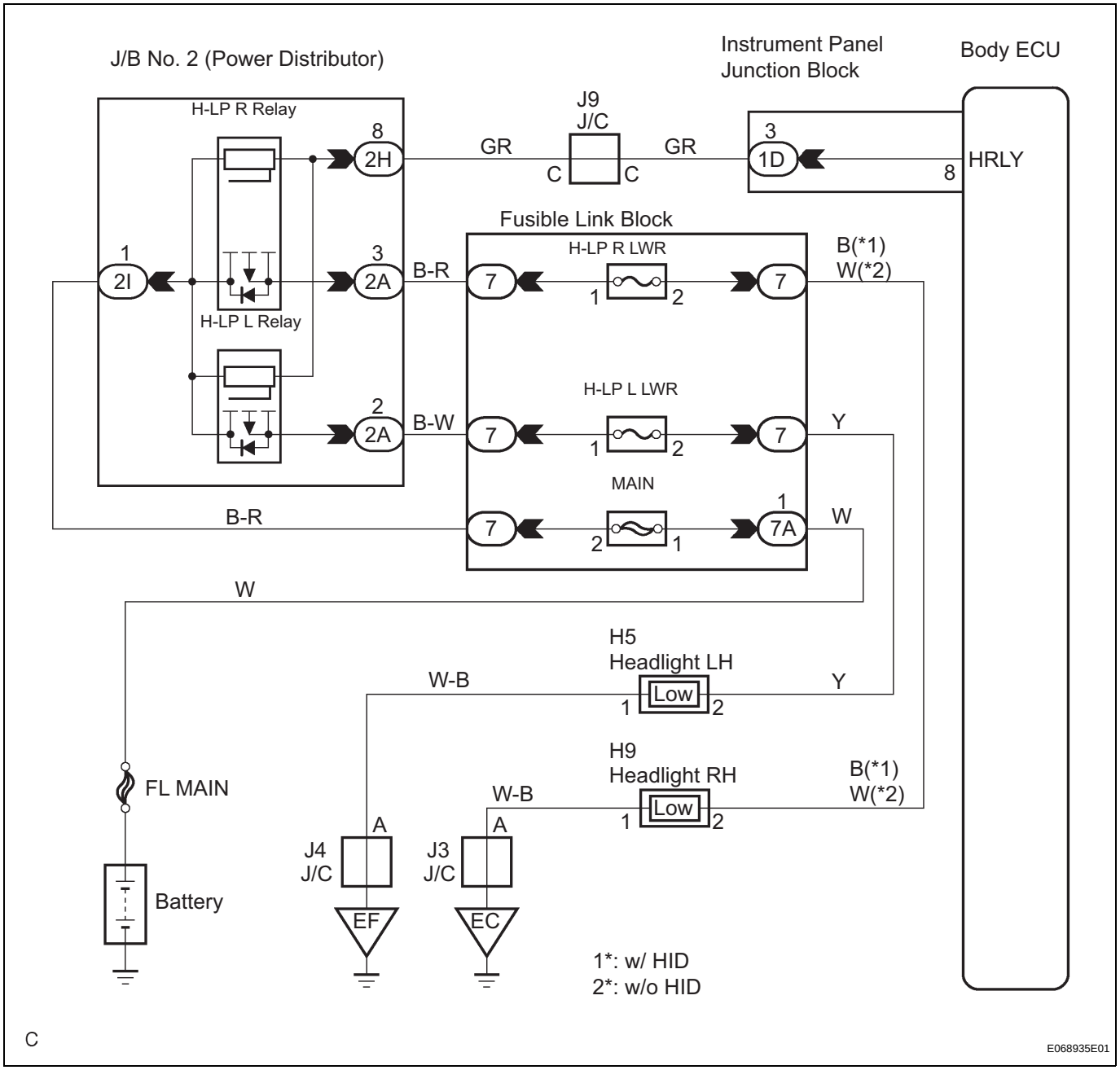
DESCRIPTION

The multiplex network body ECU controls headlight relay (H-LP R, H-LP L) when signal is received from the headlight dimmer switch assembly.
The headlight relay installed in the power distributor.

1. Description
   (a) The power distributor installed in the J/B No. 2 uses the no-contact type relay with a semiconductor.
   (b) The power distributor has a function to protect the power distributor circuit if overcurrent is applied to the power distributor or overheating occurs.
      * Malfunction is detected in the wire harness connected to the J/B No. 2.
      * Malfunction is detected in the interior relay of the J/B No. 2.
   (c) The power distributor has a mode monitor terminal for external checking of the operating condition (normal or protect condition) of the power distributor.
   (d) The operating condition (normal or protect condition) of the semiconductor relay can be checked using the output voltage from the mode monitor terminal.
      NOTICE:
      Check that no DTCs are output in the ABS and VSC motor relay.
      If any DTC (C0273/13, C0274/14, C1361/91) is detected, inspect the ABS and VSC motor relay in accordance with the troubleshooting of the brake system. (See page BC-39)
   (e) When the semiconductor relay is operation normally, the mode monitor terminal outputs approximately 6 V. When the semiconductor relay operates in protect mode, the mode monitor terminal outputs about 0 V. However, the mode monitor terminal outputs for the overall operating condition of the power distributor, so it is not possible to specify the semiconductor relay during protect operation.
   (f) When the fail-safe function operates, the power distributor performs the following operations:
      * Stops the operation of the troubled semiconductor relay only.
      * Stops the power supply to the troubled semiconductor relay circuit only.
        HINT:
        Normal semiconductor relay or circuit operates properly.
   (g) While the fail-safe function operates, check for a short circuit in the following areas:
      * Wire harness driven by relay on the terminal side and body ground.
      * Inside the power distributor (including the semiconductor relay)
2. Recovery from Fail-Safe
   (a) The power distributor soon restores the semiconductor relay function, but if a load abnormality still continues, the power distributor again stops the semiconductor relay function. (except Rr-DEF Relay)
   (b) The power distributor and the semiconductor relay function stop until the rear defogger switch turns on again.
      Then the rear defogger switch turns on again, the semiconductor relay function recovers, but if the load abnormality is not corrected by this time, the Power Distributor again stops the semiconductor relay function.
      If the load abnormality is corrected, the semiconductor relay function recovers when the rear defogger switch turns on again. (Rr-DEF Relay)

LI

WIRING DIAGRAM



HINT:
Start the inspection from step 1 when using the intelligent tester, and start from step 2 when not using the intelligent tester.

1	PERFORM ACTIVE TEST BY INTELLIGENT TESTER

(a) Connect the intelligent tester to the DLC3.
(b) Turn the ignition switch to ON position and press the intelligent tester main switch ON.

(c) Select the item below in the ACTIVE TEST and then check that the relay operates.

BODY No. 1

Item	Test Details	Diagnostic Note
HEAD LIGHT	Turn Headlight relay ON/OFF	-

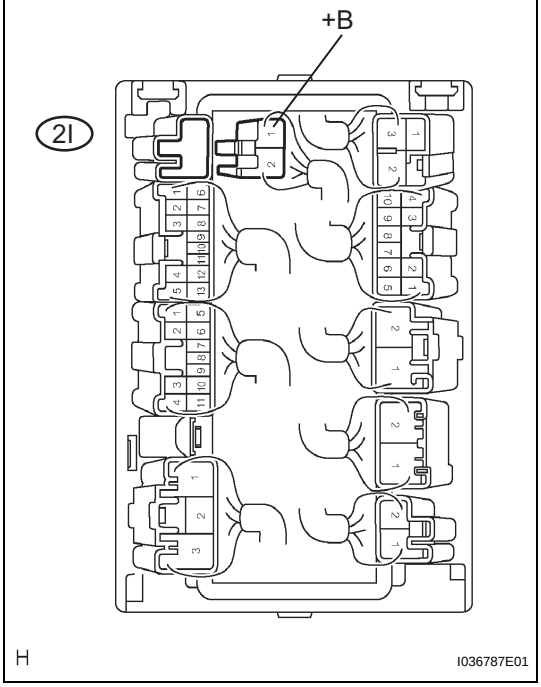
NG → **Go to step 2**

OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

2 CHECK HARNESS AND CONNECTOR (POWER SOURCE CIRCUIT)

J/B No.2:



(a) Disconnect the connector from the J/B No. 2 (power distributor).
(b) Measure the voltage according to the value(s) in the table below.
Voltage

Tester connection	Condition	Specified value
2I-1 (+B) - Body ground	Always	10 to 14 V

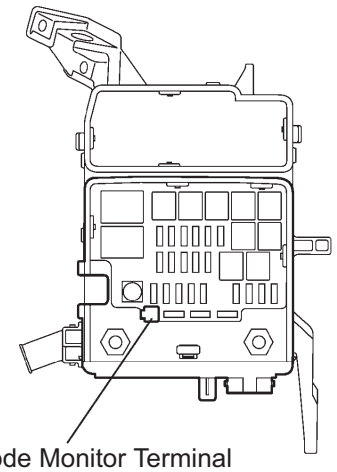
NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

3 CHECK MODE MONITOR TERMINAL (H-LP R RELAY, H-LP L RELAY)

(a) Preparation
(1) Connect the connector.
(2) Remove the cover of the fusible link block assembly.
(3) Set the vehicle to the following condition.
- Ignition switch ON.
- Headlight dimmer switch LO.
- Light control switch ON.

Fusible Link Block:



(b) Check voltage
(1) Measure the voltage between the Mode Monitor Terminal and body ground.
RESULT

Condition	Proceed to
6.3 +- 2V	A
Approx. 1 V	B

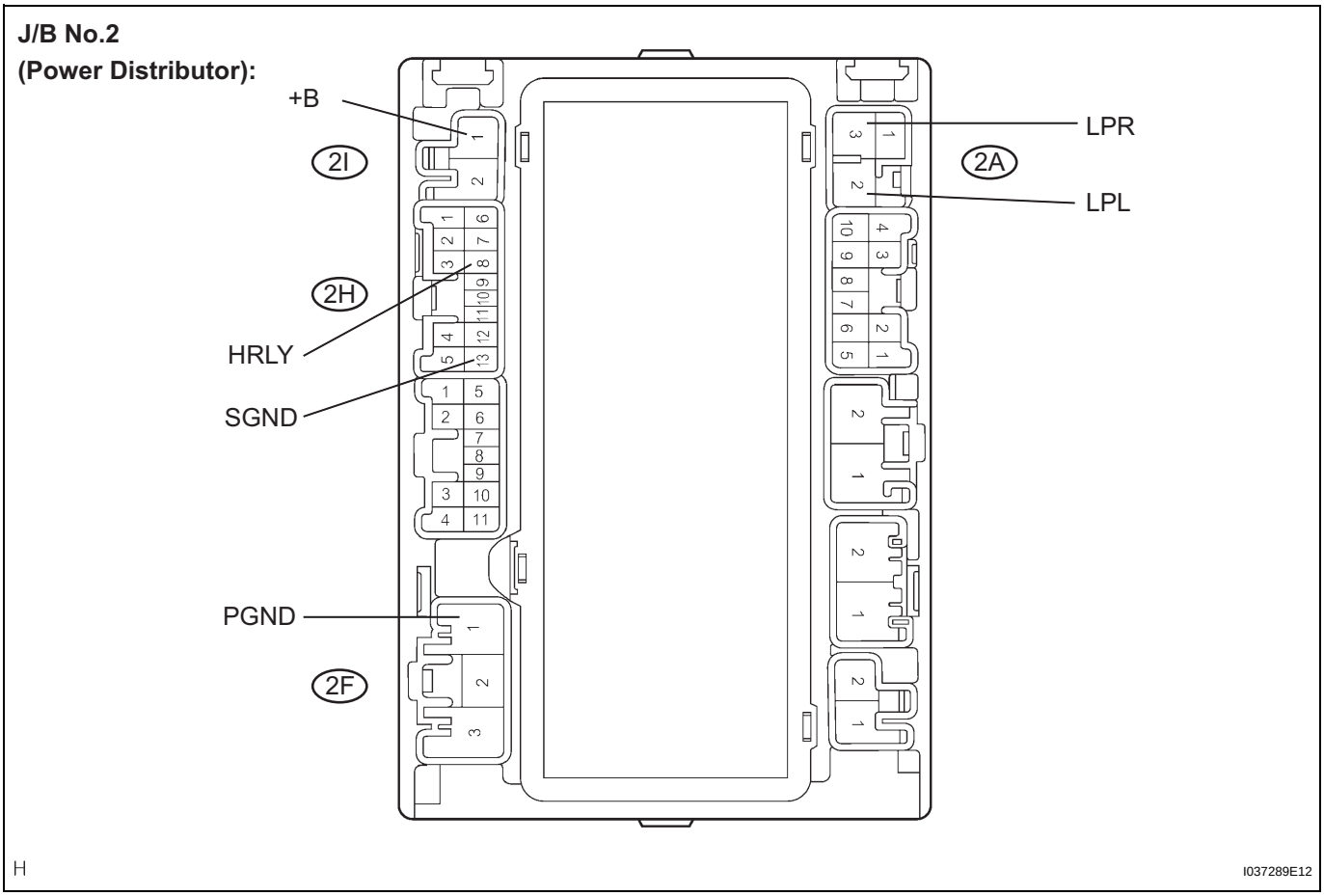
B → **Go to step 9**

A

4	INSPECT JUNCTION BLOCK NO.2 (HEAD LIGHT RELAY)

(a) Turn the ignition switch to OFF position.
(b) Remove the J/B No.2.
(c) Inspect the H-LP R.

LI



(1) Connect the positive battery lead to terminal +B of the J/B No.2 and the negative lead to terminal SGND, PGND.

Symbols (terminals No.)	Connection
+B (2I-1) - SGND (2H-13), PGND (2F-1)	Positive - Negative

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

Voltage

Tester Connection	Specified Condition
LPR (2A-3) - Battery negative terminal	**Below 1 V**

(3) Connect the battery negative lead to terminal HRLY of the J/B No.2.

Symbols (terminals No.)	Connection
HRLY (2H-8)	Negative

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

Voltage

Tester Connection	Specified Condition
LPR (2A-3) - Battery negative terminal	**10 to 14 V**

(d) Inspect the H-LP L.

(1) Connect the positive battery lead to terminal +B of the J/B No.2 and the negative lead to terminal SGND, PGND.

Symbols (terminals No.)	Connection
+B (2I-1) - SGND (2H-13), PGND (2F-1)	Positive - Negative

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

Voltage

Tester Connection	Specified Condition
LPL (2A-2) - Battery negative terminal	Below 1 V

(3) Connect the battery negative lead to terminal HRLY of the J/B No.2.

Symbols (terminals No.)	Connection
HRLY (2H-8)	Negative

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

Voltage

Tester Connection	Specified Condition
LPL (2A-2) - Battery negative terminal	10 to 14 V

LI

NG → **REPLACE JUNCTION BLOCK NO.2**

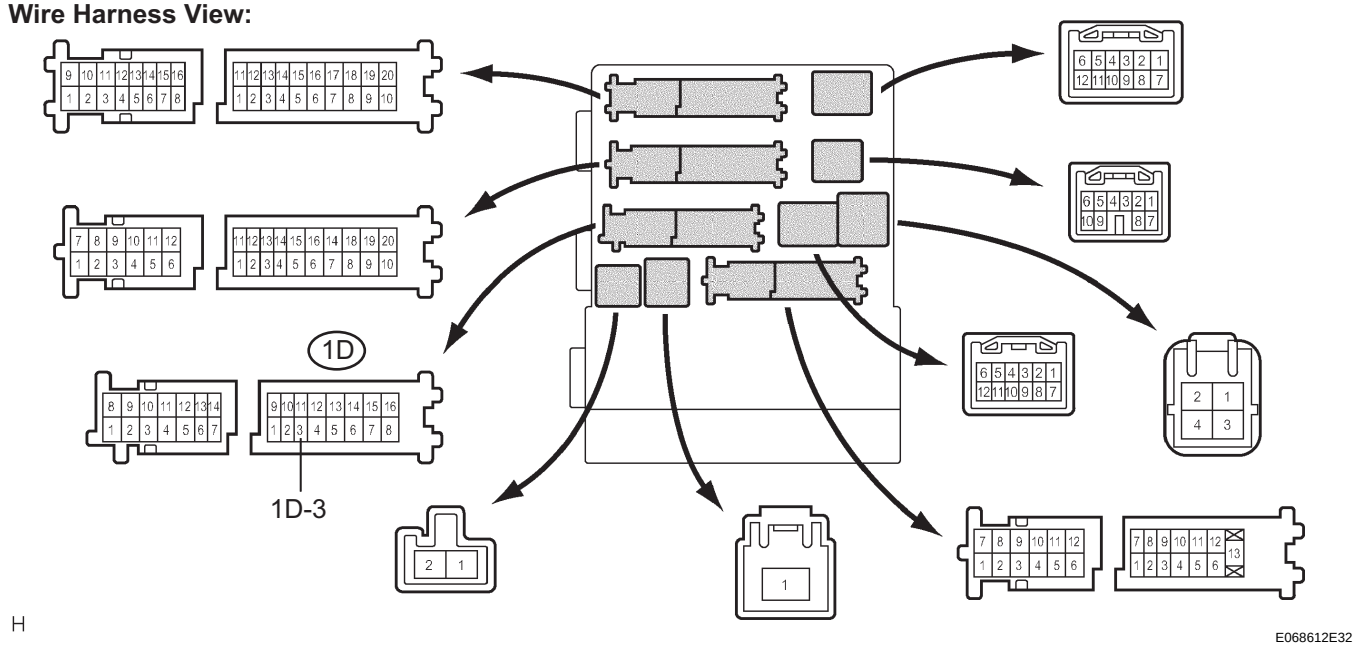
OK

5	CHECK HARNESS AND CONNECTOR (HRLY SIGNAL CIRCUIT)

(a) Disconnect the connector from the instrument panel J/B.

Instrument Panel Junction Block Assembly Front Side

Wire Harness View:



HINT:
Reconnect the J/B No. 2 connector.

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

Voltage

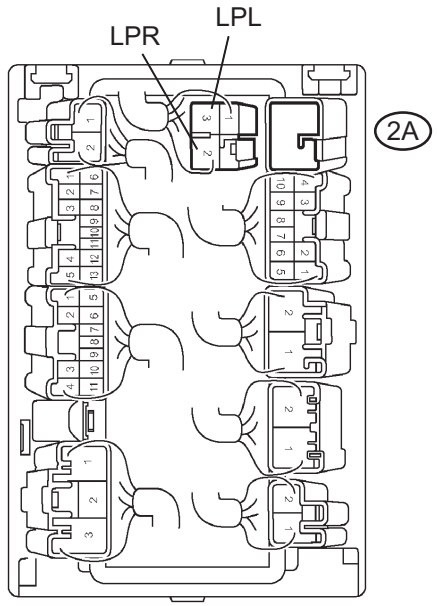
Tester connection	Condition	Specified value
1D-3 - Body ground	Always	10 to 14 V

NG → **Go to step 8**

OK

6 CHECK HARNESS AND CONNECTOR (J/B NO. 2 - BULB)

J/B No. 2:



(a) Disconnect the connector from the J/B No. 2 (power distributor).

Headlight Bulb Connector Front View:

(b) Disconnect the connectors from the headlight bulbs.
(c) Measure the resistance according to the value(s) in the table below.

Resistance

Tester connection	Condition	Specified value
2A-2 (LPL) - H5-2 (Headlight LH)	Always	Below 1 Ω
2A-3 (LPL) - H9-2 (Headlight RH)	Always	Below 1 Ω
2A-2 (LPL) - Body ground	Always	10 kΩ or higher
2A-3 (LPL) - Body ground	Always	10 kΩ or higher

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

7 CHECK HARNESS AND CONNECTOR (BULB - BODY GROUND)

Headlight Bulb Connector Front View:

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

Resistance

Tester connection	Condition	Specified value
H5-1 (Headlight LH) - Body ground	Always	Below 1 Ω
H9-1 (Headlight RH) - Body ground	Always	Below 1 Ω

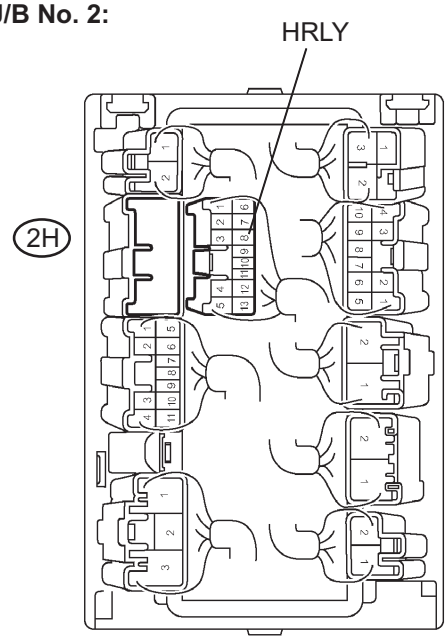
NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

8 CHECK HARNESS AND CONNECTOR (J/B NO. 2 - INSTRUMENT PANEL J/B)

J/B No. 2:



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(a) Disconnect the connectors from the J/B No. 2 (power distributor) and instrument panel J/B.

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

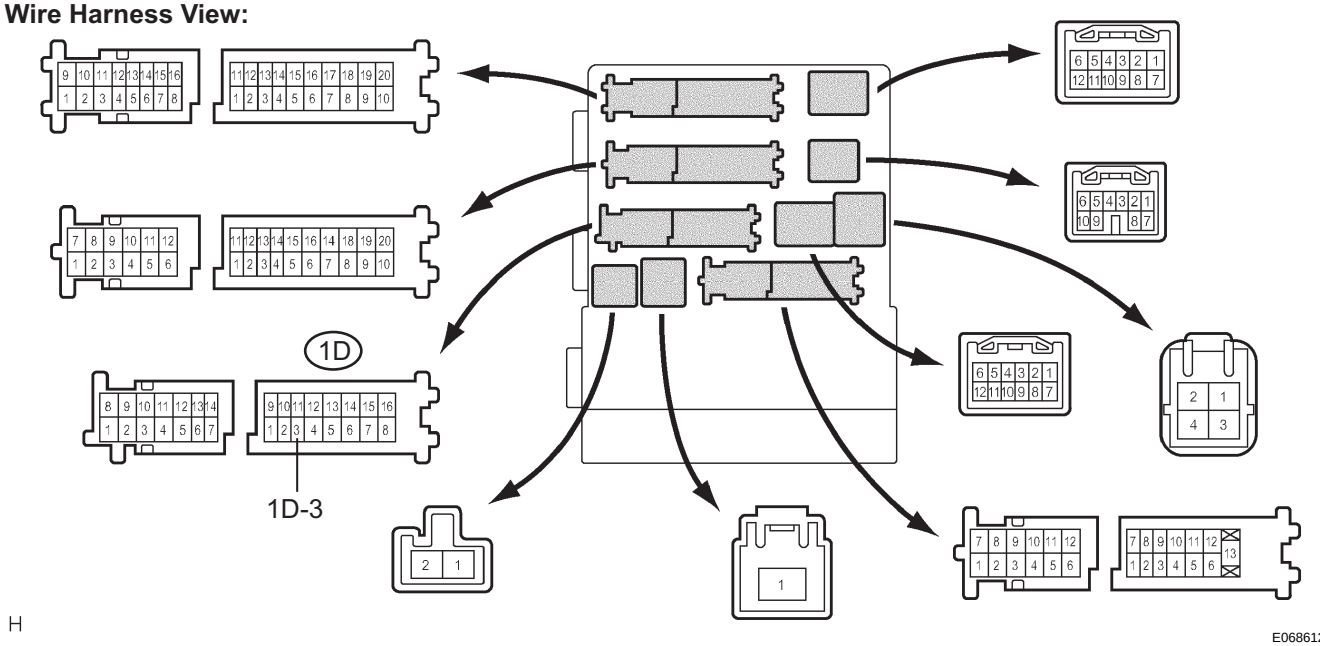
Resistance

Tester connection	Condition	Specified value
2H-8 (HRLY) - 1D-3	Always	Below 1 Ω
2H-8 (HRLY) - Body ground	Always	10 kΩ or higher

LI

Instrument Panel Junction Block Assembly Front Side

Wire Harness View:



LI

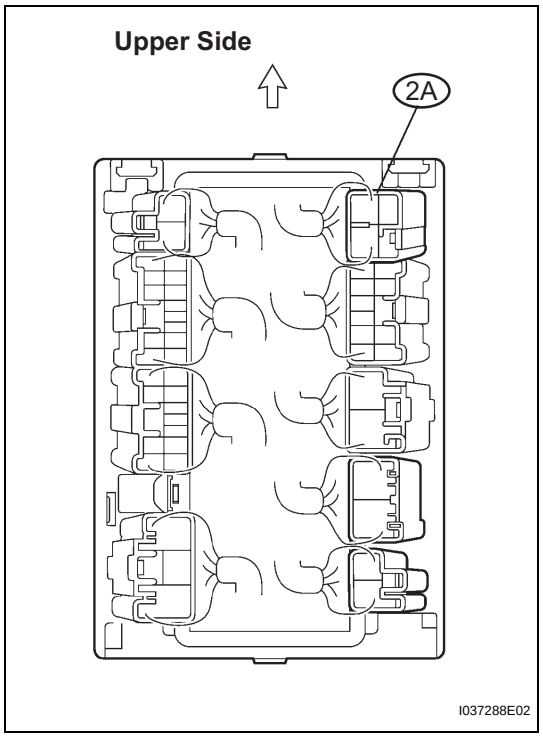
NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

9	CHECK HARNESS AND CONNECTOR (SHORT CIRCUIT DRIVEN SIDE BY RELAY)

(a) Preparation
(1) For easier disconnection remove the J/B No.2 and then take apart the connectors.



(2) Disconnect only the connector "2A".

(b) Check voltage

(1) Measure the voltage between the Mode Monitor Terminal and body ground.

RESULT

Condition	Proceed to
6.3 +- 2 V	A
Approx. 1 V	B

B → **REPLACE JUNCTION BLOCK NO.2**

A

REPAIR OR REPLACE HARNESS OR CONNECTOR (SHORT CIRCUIT BETWEEN HEADLIGHT LO AND J/B NO.2)

SYSTEM DESCRIPTION

1. AFS (Adaptive Front-Lighting System)

(a) The AFS operates to illuminate the best position for smooth driving by projecting the low beam depending on the vehicle speed and steering angle.

(b) Standard Operation

(1) The AFS ECU moves the low beam in the headlight considering the vehicle running condition, etc.

Vehicle Turning Condition	Head Light (Right Side)	Head Light (Left Side)
Right turn while driving	Turns to right by maximum 5°	Does not turn
Left turn while driving	Does not turn	Turns to left by maximum 15°

(c) Start-up Conditions

(1) The AFS starts operating when the following conditions are met:

Items	Conditions
Shift Position	Other than R and N
Engine	Running
Headlight	Comes on
Vehicle Speed	30 km/h (19 mph) or more
Steering Angle	12° or more (varies depending on the vehicle speed)
AFS OFF Switch	Not pushed in

HINT:

- The AFS continues operation as long as vehicle speed is kept above 6 km/h (3.6 mph) when operation has started once after vehicle speed reaches 30 km/h (19 mph) or more.
- The AFS continues operation as long as steering angle is kept at 10° or more when operation has started once after steering angle reaches 12° or more.

(d) Operation Stop Condition

(1) The AFS stops operating if any of the following condition are met:

Items	Conditions
Shift Position	R or N
Engine	Stops
Headlight	Goes Off
Vehicle Speed	5 km/h (3 mph) or less
Steering Angle	9° or less
AFS OFF Switch	Pushed in

HOW TO PROCEED WITH TROUBLESHOOTING

The intelligent tester can be used at step 4, 5, 6, 12.

1	**VEHICLE BROUGHT TO WORK SHOP**

NEXT

2	**CUSTOMER PROBLEM ANALYSIS**

(a) Confirm problem symptoms.

NEXT

3	**PROBLEM SYMPTOM CONFIRMATION**

→ **SYMPTOM DOES NOT OCCUR (GO TO STEP 4)**

→ **SYMPTOM OCCURS (GO TO STEP 5)**

4	**CHECK BODY MULTIPLEX COMMUNICATION SYSTEM**

(a) Check for the DTC outputs.

→ **MULTIPLEX DTC OUTPUTS (PROCEED TO "BODY MULTIPLEX COMMUNICATION SYSTEM")**

→ **NO MULTIPLEX DTC (GO TO STEP 5)**

5	**DTC CHECK (OTHER THAN MULTIPLEX DTC)**

→ **MALFUNCTION CODE (GO TO STEP 6)**

→ **NORMAL CODE (GO TO STEP 7)**

6	**DTC CHART**

→ **GO TO STEP 9**

7	**PROBLEM SYMPTOMS TABLE**

NEXT

8	**TERMINALS OF ECU**

NEXT

9	**CIRCUIT INSPECTION**

NEXT

10	**IDENTIFICATION OF PROBLEM**

NEXT

11	**REPAIR OR REPLACE**

NEXT

12	**CONFIRMATION TEST**

NEXT

END

OPERATION CHECK

1. ILLUMINATED ENTRY SYSTEM OPERATION CHECK

(a) Illuminated entry system controls the following lights:
- Key cylinder light
- Scuff plate illumination
- Front room light and rear room light

(b) Check that the lights come on when unlocking any of the doors that are closed and locked with the ignition switch off. Then check that the lights fade out under the following conditions:
(1) Leave the doors unlocked for 15 seconds.
(2) Turn the ignition switch to the ACC or ON position.
(3) Lock all the doors.

(c) Check that the lights stay ON for at least 15 seconds after opening any of the doors before fading out. Then check that the lights fade out 15 seconds after closing all the doors.

(d) Check that the lights stay lit after turning the ignition switch off with all the doors closed and the ignition switch in the ACC or ON position. Then check that the lights fade out under the following conditions:
(1) Leave the doors unlocked for 15 seconds.
(2) Turn the ignition switch to the ACC or ON position.
(3) Lock all the doors.

(e) Check that the lights stay ON for at least 15 seconds after opening any of the doors. Then check that the lights fade out 15 seconds after closing all the doors.

(f) Check that the lights come on when opening any of the doors and fade out when closing and locking all the doors or turning the ignition switch to the ACC or ON position.

2. OVERHEAD CONSOLE ILLUMINATION OPERATION CHECK

(a) Turn the ignition switch to the ACC position, and check that the center console spot illumination in the overhead console comes on.

(b) Turn the ignition switch off, and check that the center console spot illumination in the overhead console goes off immediately.

3. STEP LIGHT AND INSIDE HANDLE ILLUMINATION OPERATION CHECK

(a) Check that the lights come on when unlocking any of the doors that are closed and locked with the ignition switch off. Then check that the lights fade out under the following conditions:
(1) Leave the doors unlocked for 15 seconds.
(2) Lock all the closed doors and turn the ignition switch off.

(b) Check that the lights stay ON for at least 15 seconds under the following conditions before going off.
  (1) Turn the ignition switch to the ON position, and adjust the shift lever to the P position.
  (2) Open any of the doors.
(c) Check that the lights dim before going off when turning the ignition switch ON and shifting into any position other than P.
(d) Check the conditions below before the lights go off.
  (1) The lights dim when shifting into a position other than P and closing all the doors with the ignition switch ON.
  (2) The lights come on for 15 seconds and fade out when shifting into the P position and closing all the doors with the ignition switch off.
(e) Check that the lights come on after opening any of the doors.
(f) Check that the lights fade out in 15 seconds after closing all the doors, or locking all the doors.
(g) Check that the lights come on gradually with the ignition switch ON and the shift lever in the P position.
(h) Check that the lights dim when shifting from P into other position with all the doors closed.
(i) Check that the lights stay dimmed with the ignition switch ON and the shift lever in a position other than P.

4. BATTERY SAVER OPERATION CHECK

(a) Remove the ignition key and close all the doors.
(b) Open any door to turn the room light on, and leave it open. Check that the light goes off after about 20 minutes.
(c) After the room light goes off, close the driver's door.
(d) Open any door to turn the room light on, and then open another door. Check that the room light goes off within 20 minutes after opening the doors.
(e) Close all the doors. With the ignition key inserted, open any door to turn the room light on, and then remove the ignition key. Check that the room light goes off within 20 minutes.

5. LIGHT AUTO TURN OFF OPERATION CHECK

(a) Turn the ignition switch to the ON position, and switch the headlights into the TAIL or HEAD position.
(b) Turn the ignition switch off and open the driver's door, and check that the headlights go off after about 30 seconds.
(c) Turn the ignition switch to the ON position, and switch the headlights to the TAIL or HEAD position.
(d) Turn the ignition switch off and open the driver's door. Before the headlight goes off after about 30 seconds, lock all the doors. Check that the headlights go off immediately.

6. AUTOMATIC LIGHT CONTROL OPERATION CHECK

(a) Turn the ignition switch to the ON position.

(b) Turn the headlight dimmer switch to the AUTO position.

(c) Cover the automatic light control sensor and check that the taillights and headlights come on in order.

(d) Uncover the automatic light control sensor and check that the headlights and taillights go off in order.

7. DAYTIME RUNNING LIGHT OPERATION CHECK

(a) Check that the high beams come on when the headlight switch is off with the engine running and the parking brake released. Then check that the lights go off under the following condition:

(1) Turn the headlight dimmer switch into the TAIL or HEAD(LOW) position.

(2) Turn the ignition switch off.

8. HEADLIGHT BEAM LEVEL CONTROL OPERATION CHECK

(a) Check that the initialization (determination of the initial position) of the leveling motor is performed at engine-start.

(b) Check that the warning indicator in the combination meter assembly comes on for approximately 3 seconds when the ignition switch is turned on and then goes off.

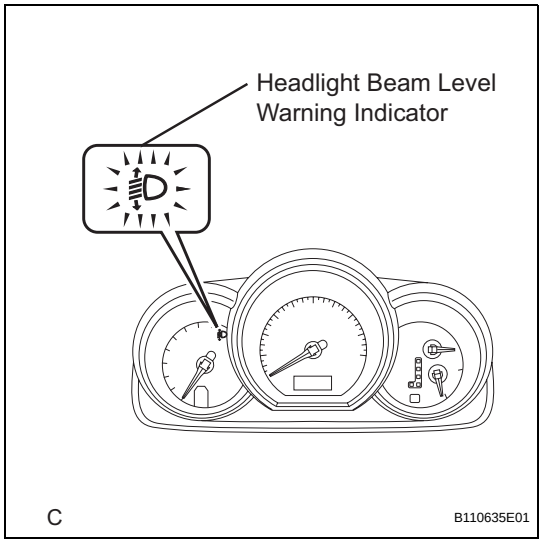
(c) Check that the projector moves when: Moving the rear of the vehicle up or down while the engine is running, vehicle is stopped, and the headlight dimmer switch is in the HEAD position.

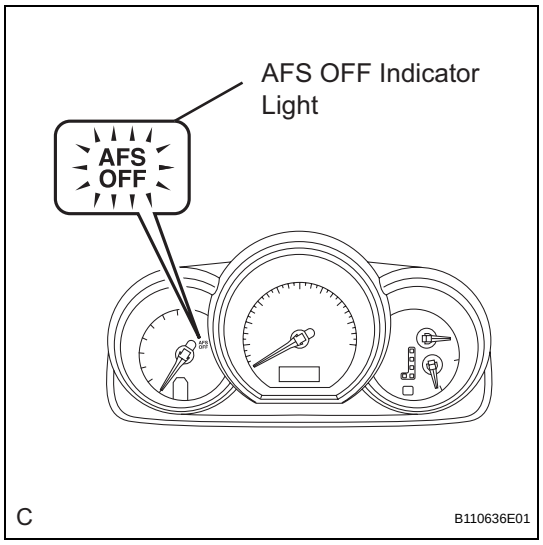
NOTICE:

Make sure to change the vehicle's height slowly.

9. AFS OPERATION CHECK

(a) Check that the initialization (determination of the initial position) of the leveling motor and swivel motor is performed at engine-start.





(b) Check that the warning indicator in the combination meter assembly comes on for approximately 3 seconds when the ignition switch is turned on and then goes off.
(c) Check that the warning indicator in the combination meter assembly comes on when the AFS OFF switch is pressed.
(d) Check that the warning indicator in the combination meter assembly goes off when the AFS OFF switch is not pressed.

CUSTOMIZE PARAMETERS

HINT:
The followings are the possible items to be customized.
NOTICE:

- **After confirming whether the items of the customer's request is applicable or not for the customized items, perform the customize operation.**
- **Be sure to record the current value before customizing.**
- **In case of performing the troubleshooting, pay attention as there is a possibility that the function is OFF by customizing. (Example: In case of the symptom in which "The wireless operation does not function", check that the wireless operation is not OFF by customizing, then perform the troubleshooting.)**

ILLUMINATED ENTRY

DISPLAY (ITEM)	DEFAULT	CONTENTS	SETTING
LIGHTING TIME (Lighting Time)	15 s	To change the lighting time after closing the door. (It will quickly fade out in case of turning the ignition ON.)	7.5 s / 15 s / 30 s
ILLUMI SYSTEM (Operation of illumination)	ON	Function to light up the step light, center console light and door inside handle light when one of the following occurs; the ignition turned ON, door unlock or door open.	ON / OFF
LIGHT CONTROL (Light control)	ON	Function to light up the step light and door inside handle light when the ignition switch is ON and the shift position is not P.	ON / OFF
I/L ON / UNLOCK (Interior light ON w/ door key unlock)	ON	Function to light up the interior light*, ignition light and step light when unlocking with the door key cylinder. *: Interior light comes on when the interior light switch is at the DOOR position.	ON / OFF
I/L ON / ACC OFF (Illumination system with ACC OFF)	ON	Function to light the interior light* and door courtesy light when the ignition switch is operated from "ACC" to "LOCK". *: interior light comes on when the interior light switch is at the DOOR position.	ON / OFF

LIGHT CONTROL

DISPLAY (ITEM)	DEFAULT	CONTENTS	SETTING
LIGHT OFF DELAY (Light Auto OFF Delay)	30 s	Function to keep on lighting the headlight for a certain period of time after closing all the doors with the ignition switch turned OFF from ON under the condition that the light control switch is at HEAD or AUTO with the headlight ON.	OFF / 30 s / 60 s / 90 s
LIGHT CTRL TYPE (Control Type)	CURRENT	To change the control logic when the light control switch is AUTO position. Refer to the *1 illustration.	CURRENT / OLD

DISPLAY (ITEM)	DEFAULT	CONTENTS	SETTING
SENSITIVITY (Turn ON luminous intensity)	NORMAL	To adjust the sensitivity of the lighting illumination. Refer to the *2 illustration.	DARK2 / DARK1 / NORMAL / LIGHT1 / LIGHT2
DISP EX ON SEN (Display Extinction Luminous Intensity)	NORMAL	To change the brightness of lowering the lights such as the indicator light of the combination meter, A/C indicator light, clock. Refer to *3 illustration.	DARK2 / DARK1 / NORMAL / LIGHT1 / LIGHT2
DISP EX OFF SEN (Display Extinction Release Luminous Intensity)	NORMAL	To change the brightness of canceling the lowering the lights such as the indicator light of the combination meter, A/C indicator light, clock. Refer to *4 illustration.	DARK2 / DARK1 / NORMAL / LIGHT1 / LIGHT2

HINT:
Sensitivity adjustment can hardly be confirmed. Please check by customer's actual driving.

Illustration *1

	Brightness of the surrounding when lighting	Lighting delay	Delay of turning light off	**2
OLD	Old logic	6 sec.	6 sec.	3 sec.
CURRENT	New logic **1 ('97/8-)	15 sec.	15 sec.	15 sec.

**1: The new one has the logic to light up two times brighter than the old logic.
**2: Delay time until the headlight is turned on when it suddenly gets dark.

Illustration *2

Lighting brightness	**Dark** ⟷ **Bright**
Setting	DARK2 —— DARK1 —— NORMAL —— LIGHT1 —— LIGHT2

Illustration *3

Brightness of lowering the light	**Dark** ⟷ **Bright**
Setting	DARK2 —— DARK1 —— NORMAL —— LIGHT1 —— LIGHT2

Illustration *4

Brightness when canceling the lowering of the lights	Dark ⟷ **Bright**
Setting	DARK2 —— DARK1 —— NORMAL —— LIGHT1 —— LIGHT2

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INITIALIZATION

1. AFS ECU INITIALIZATION

NOTICE:

Steering neutral point automatic correction (AFS ECU INITIALIZATION) is necessary under the following condition.

- **Disconnecting the battery.**
- **Replacing the steering sensor or AFS ECU.**

(a) Run the vehicle on the place where few curve or traffic congestion exist at least 100 m at the speed between 20 km/h (12 mph) and 80 km/h (48 mph).

HINT:

- Steering neutral point correction begins automatically when starting the engine immediately after installing the battery.
- Steering neutral point correction is automatically performed by vehicle running. AFS operation is prohibited when steering neutral point automatic correction is not performed or during automatic correction.
- AFS operation restarts when steering neutral point automatic correction is completed normally.

2. AFS ECU RE-INITIALIZATION (WHEN NOT USING INTELLIGENT TESTER)

NOTICE:

This operation manually initializes the steering sensor when AFS operation is not normal due to abnormal automatic correction after completion of AFS INITIALIZATION.

HINT:

- If it is necessary to initialize the steering sensor when not disconnecting the battery, it is also possible to re-set the signal from the steering sensor.
- When the centering point memorized in the steering sensor differs from the normal point, the AFS ECU malfunctions. In the case, re-initialize it.
- If the operation does not finish within a specified time period, the system goes off the AFS indicator light and starts steering neutral point automatic correction.

1	SHIFT TO INITIALIZATION

(a) Engine is running and shift range is in the P position.

(b) Press the AFS OFF switch eight times at approximately one-second interval (once for ON and once more for OFF, i.e. 4 times ON and 4 times OFF).

HINT:

- The AFS OFF indicator light starts to blink twice per second.
- Initialization can be started when the AFS OFF switch is either in the "ON" or "OFF" position.
- When the AFS OFF switch is pressed eight times, it will return to its original state.

NEXT

2	INITIALIZATION OF AFS ECU

(a) Turn the steering wheel to adjust the tires so that they point straight ahead.
(b) Do not change the steering wheel position. Press the AFS OFF switch twice (once ON and once OFF).
HINT:
- The AFS OFF indicator light stays lit for two seconds.
- When the AFS OFF switch is pressed twice, it will return to its original state.

(c) Do not change the steering wheel position and press the AFS OFF switch twice within 3 to 10 seconds.
HINT:
- The AFS OFF indicator light stays lit for two seconds.
- When the AFS OFF switch is pressed twice, it will return to its original state.

(d) Do not change the steering wheel position and press the AFS OFF switch twice again within 3 to 10 seconds.

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NEXT

3	CHECK COMPLETION OF AFS ECU INITIALIZATION

(a) When the initialization of the steering sensor signal is completed normally, the AFS OFF indicator light goes off, comes on, or blinks depending on the specific condition 3 second after the indicator light goes off.

Result

Proceed to	Result
A	**Goes off: Initialization is started with the AFS OFF switch OFF (not pressed)** **Comes on: Initialization is started with the AFS OFF switch ON (pressed)**
B	**Blinks: Blinks twice per second**

HINT:
- Failure to complete initialization. Proceed to step 2 within 10 seconds.
- If 10 seconds elapse, the system starts steering neutral point automatic correction.

B → **GO TO STEP 2**

A

END

3. AFS ECU RE-INITIALIZATION (WHEN USING INTELLIGENT TESTER)

NOTICE:

This operation manually initializes the steering sensor when AFS operation is not normal due to abnormal automatic correction after completion of AFS INITIALIZATION.

HINT:

- If it is necessary to initialize the steering sensor when not disconnecting the battery, it is also possible to re-set the signal from the steering sensor.
- When the centering point memorized in the steering sensor differs from the normal point, the AFS ECU malfunctions. In the case, re-initialize it.
- If the operation does not finish within a specified time period, the system goes off the AFS indicator light and starts steering neutral point automatic correction.

(a) Connect the intelligent tester to the DLC3.

(b) Turn the ignition switch to the ON position and press the intelligent tester main switch ON.

(c) Select "STEER SENS INIT" on "DIAGNOSTICS MENU AFS" display.

(d) Turn the steering wheel with the engine starting until the tires face straight ahead, and press "ENTER".

(e) Check "CONFIRM" display and press "YES".

NOTICE:

Do not turn the steering wheel while initializing and keep the tires facing straight ahead.

(f) Check the display for completion of the operation.

HINT:

If the operation above cannot be completed after several attempts, a malfunction in the steering sensor circuit is suspected.

PROBLEM SYMPTOMS TABLE

1. HEADLIGHT AND TAILLIGHT SYSTEM

Symptom	Suspected area	See page
"Low beam" does not comes on (One side).	1. MAIN fuse, H-LP L LWR fuse, H-LP R LWR fuse	-
	2. Bulb	-
	3. Light control switch circuit	LI-123
	4. Headlight relay circuit	LI-85
	5. Instrument panel junction block assembly	-
"Low beam" does not come on (Both side).	1. MAIN fuse, H-LP L LWR fuse, H-LP R LWR fuse	-
	2. Bulb	-
	3. Light control switch circuit	LI-123
	4. Headlight relay circuit	LI-85
	5. Instrument panel junction block assembly	-
"High beam" does not come on (One side).	1. MAIN fuse, H-LP L UPR fuse, H-LP R UPR fuse	-
	2. Bulb	-
	3. Light control switch circuit	LI-123
	4. Dimmer relay circuit	LI-95
	5. Instrument panel junction block assembly	-
"High beam" does not comes on (Both side).	1. MAIN fuse, H-LP L UPR fuse, H-LP R UPR fuse	-
	2. Bulb	-
	3. Light control switch circuit	LI-123
	4. Dimmer relay circuit	LI-95
	5. Instrument panel junction block assembly	-
"Low beam" and " High beam" does not come on (One side).	1. MAIN fuse, DRL fuse, H-LP L UPR fuse, H-LP R UPR fuse, H-LP L LWR fuse, H-LP R LWR fuse	-
	2. Bulb	-
	3. Light control switch circuit	LI-123
	4. Headlight relay circuit	LI-85
	5. Dimmer relay circuit	LI-95
	6. Instrument panel junction block assembly	-
"Low beam" and "High beam" do not come on (Both side).	1. MAIN fuse, DRL fuse, H-LP L UPR fuse, H-LP R UPR fuse, H-LP L LWR fuse, H-LP R LWR fuse	-
	2. Bulb	-
	3. Light control switch circuit	LI-123
	4. Headlight relay circuit	LI-85
	5. Dimmer relay circuit	LI-95
	6. Instrument panel junction block assembly	-
"Flash" do not come on. (Low beam and Hi-Beam are normal)	1. Light control switch circuit	LI-123
	2. Instrument panel junction block assembly	-
Headlight is dark.	1. Bulb	-
	2. Wire harness or connector	-
Taillight does not come on (All).	1. TAIL fuse	-
	2. Light control switch circuit	LI-123
	3. TAIL relay circuit	LI-153
	4. Ignition switch circuit	LI-78
	5. Door courtesy switch circuit	LI-130
	6. Instrument panel junction block assembly	-
Only one taillight comes on.	1. Bulb	-
	2. Wire harness or connector	-
Rear combination light does not come on.	1. Rear combination light assembly	-
	2. Wire harness or connector	-

Symptom	Suspected area	See page
Daytime running light system does not operate.	1. Light control switch circuit	LI-123
	2. Generator signal circuit	LI-143
	3. Parking brake switch circuit	LI-151
	4. Ignition switch circuit	LI-78
	5. Dimmer relay circuit	LI-95
	6. Instrument panel junction block assembly	-

2. AUTOMATIC LIGHT CONTROL SYSTEM

Symptom	Suspected area	See page
Automatic light control system does not operate.	1. Light control switch circuit	LI-123
	2. Ignition switch circuit	LI-78
	3. Automatic light control sensor circuit	LI-127
	4. Instrument panel junction block assembly	-

3. LIGHT AUTO TURN OFF SYSTEM

Symptom	Suspected area	See page
Light auto turn off system does not operate.	1. Light control switch circuit	LI-123
	2. Ignition switch circuit	LI-78
	3. Door courtesy switch circuit	LI-130
	4. Instrument panel junction block assembly	-

4. FOG LIGHT SYSTEM

Symptom	Suspected area	See page
Front fog light does not come on with light control switch in TAIL or HEAD position.	1. FOG fuse	-
	2. FOG, TAIL relay	-
	3. Light control switch circuit	LI-123
	4. Front fog light circuit	LI-115
	5. Instrument panel junction block assembly	-
Only one front fog light does not come on.	1. Bulb	-
	2. Wire harness or connector	-

5. TURN SIGNAL AND HAZARD WARNING SYSTEM

Symptom	Suspected area	See page
"Hazard" and "Turn" do not come on.	1. HAZ fuse	-
	2. GAUGE fuse	-
	3. IG1 relay	-
	4. Ignition switch	-
	5. Turn signal flasher relay	LI-231
	6. Wire harness or connector	-
Hazard warning light does not come on (Turn is normal).	1. Hazard warning switch	LI-233
	2. Wire harness or connector	-
Turn signal does not come on (Hazard is normal).	1. Headlight dimmer switch (turn signal switch)	LI-228
	2. Wire harness or connector	-
Turn signal does not come on in one direction.	1. Headlight dimmer switch (turn signal switch)	LI-228
	2. Wire harness or connector	-
Only one bulb does not come on.	1. Bulb	-
	2. Wire harness or connector	-

6. STOP LIGHT SYSTEM

Symptom	Suspected area	See page
Stop light does not operate (All).	1. STOP fuse	-
	2. BRK relay	-
	3. Stop light switch	LI-234
	4. Rear Junction Block	-
	5. Wire harness or connector	-
Only one stop light does not operate.	1. Rear Junction Block	-
	2. Rear combination light assembly	-
	3. Wire harness or connector	-

7. ILLUMINATED ENTRY SYSTEM

Symptom	Suspected area	See page
Illuminated entry of Multiplex network body ECU control does not operate (All).	1. Ignition switch circuit	LI-78
	2. Door lock position circuit	LI-133
	3. Door courtesy switch circuit	LI-130
	4. Illumination circuit	LI-146
	5. Instrument panel junction block assembly	-

8. OVERHEAD CONSOLE ILLUMINATION SYSTEM

Symptom	Suspected area	See page
Overhead console illumination of multiplex network body ECU control does not operate.	1. Overhead ECU	-
	2. Ignition switch circuit	LI-78
	3. Overhead console illumination circuit	LI-137
	4. Instrument panel junction block assembly	-

9. STEP LIGHT SYSTEM

Symptom	Suspected area	See page
Step light of body ECU control does not operate.	1. Ignition switch circuit	LI-78
	2. Park/neutral position switch	AX-138
	3. Door lock position circuit	LI-133
	4. Door courtesy switch circuit	LI-130
	5. Step illumination circuit	LI-141
	6. Instrument panel junction block assembly	-

10. INSIDE HANDLE ILLUMINATION LIGHT SYSTEM

Symptom	Suspected area	See page
Inside handle illumination light of body ECU control does not operate.	1. Ignition switch circuit	LI-78
	2. Park/neutral position switch	AX-138
	3. Door lock position circuit	LI-133
	4. Door courtesy switch circuit	LI-130
	5. Inside handle illumination light circuit	LI-139
	6. Instrument panel junction block assembly	-

11. HEADLIGHT BEAM LEVEL CONTROL SYSTEM

Symptom	Suspected area	See page
Headlight beam level control system does not operate.	1. Headlight beam level control actuator circuit	LI-176
	2. Height control sensor circuit	LI-173
	3. Headlight beam level control ECU communication circuit	LI-160
	4. Headlight beam level control ECU power source circuit	LI-165
	5. Headlight beam level control ECU	-

Symptom	Suspected area	See page
Headlight beam warning light comes on (Headlight beam level control is normal).	1. Combination meter assembly	-
	2. Wire harness or connector	-
	3. Headlight beam level control ECU	-
Headlight beam warning light does not come on (Headlight beam level control is normal).	1. GAUGE fuse	-
	2. Combination meter assembly	-
	3. Wire harness or connector	-
	4. Headlight beam level control ECU	-

12. AFS

Symptom	Suspected area	See page
AFS does not operate. (Does not initialize)	1. AFS ECU power source circuit	LI-181
	2. AFS ECU	-
Does not initialize. (AFS is normal)	1. BEAN communication malfunction	LI-74
	2. Vehicle speed sensor malfunction	LI-59
	3. AFS ECU	-
Only one swivel motor is not initialized.	1. Headlight assembly or swivel motor stuck	-
	2. Headlight swivel ECU communication malfunction	LI-41
	3. Headlight swivel motor malfunction	LI-50
	4. AFS ECU	-
Each side swivel motor is not initialized.	1. AFS ECU power source circuit	LI-181
	2. Headlight swivel ECU communication malfunction	LI-41
	3. AFS ECU	-
Headlight leveling motor is not initialized.	1. Headlight beam level control motor malfunction	LI-70
	2. AFS ECU	-
Only swivel control does not operate or malfunction.	1. Steering sensor calibration malfunction (Go to RE-INITIALIZATION)	-
	2. Steering position sensor malfunction	LI-56
	3. Vehicle speed sensor malfunction	LI-59
	4. BEAN communication malfunction	LI-74
	5. Headlight swivel ECU communication malfunction	LI-41
	6. Headlight swivel motor malfunction	LI-50
	7. AFS ECU	-
Swivel control and leveling control does not operate.	1. Height control sensor malfunction	LI-62
	2. AFS ECU	-
AFS OFF indicator light does not come on.	1. Bulb	-
	2. Combination meter assembly	-
	3. AFS OFF switch circuit	LI-188
	4. AFS ECU	-

13. OTHERS

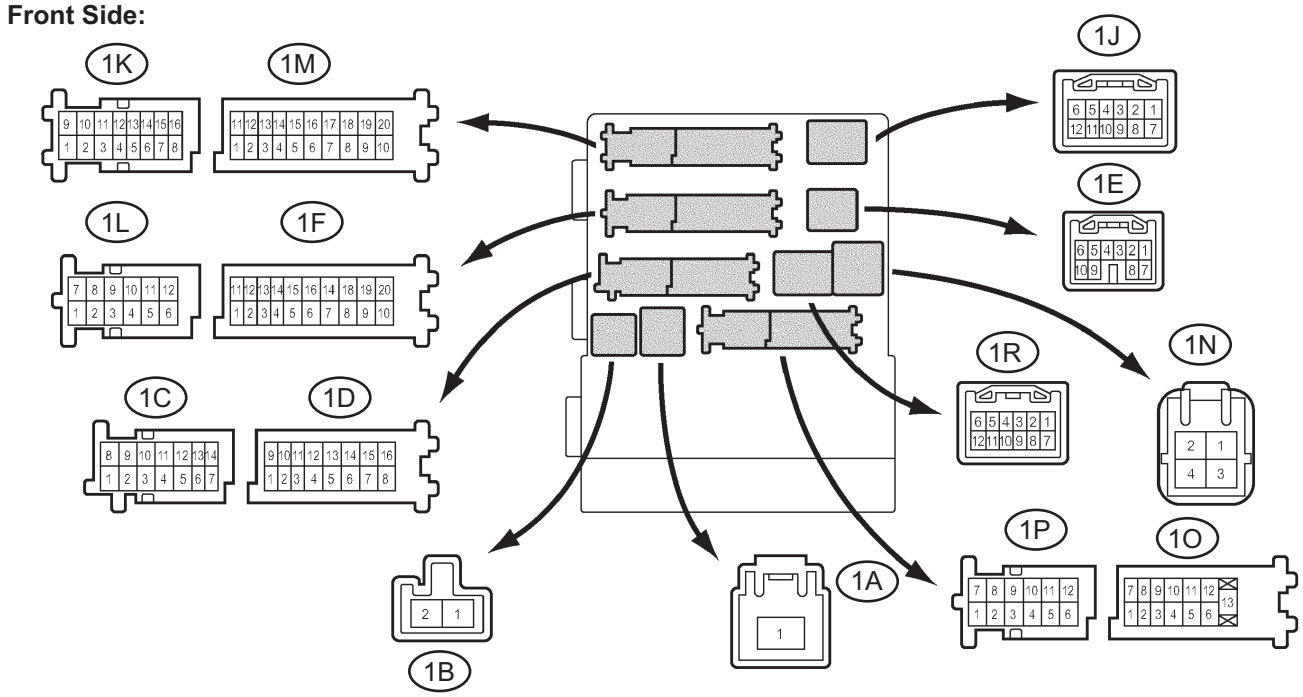
Symptom	Suspected area	See page
Vanity light does not operate.	1. Bulb	-
	2. Wire harness or connector	-
Back up light does not come on (All).	1. GAUGE Fuse	-
	2. IG1 relay	-
	3. Park / neutral position switch	-
	4. Wire harness or connector	-

Symptom	Suspected area	See page
Rear interior light, back door courtesy light and luggage light does not come on (All).	1. Bulb	-
	2. TAIL fuse	-
	3. TAIL relay	-
	4. Wire harness or connector	-
	5. Instrument panel junction block assembly	-

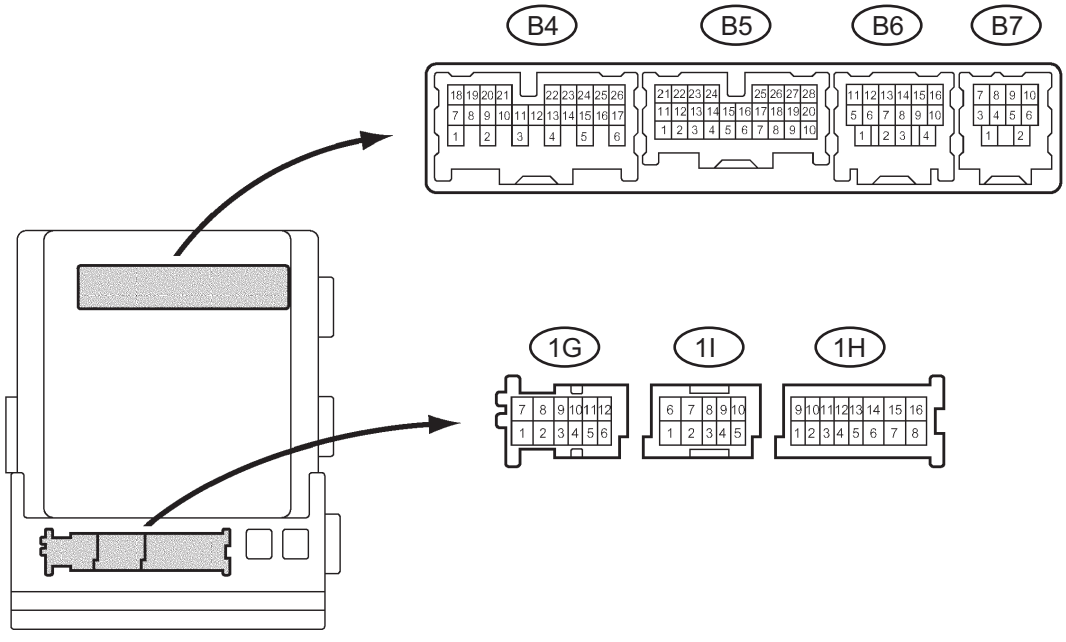
TERMINALS OF ECU

1. INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY (BODY ECU)

Front Side:



Back Side:



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Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
ACC, IG (1A-1) - GND1 (1F-10)	B - W-B (*2) B - W-B (*3)	Battery (Power source circuit)	Always	10 to 14 V
PKB (1C-14) - GND1 (1F-10)	LG - W-B	Parking brake switch	Parking brake is depressed	Below 1 V
PKB (1C-14) - GND1 (1F-10)	LG - W-B	Parking brake switch	Parking brake is released	10 to 14 V

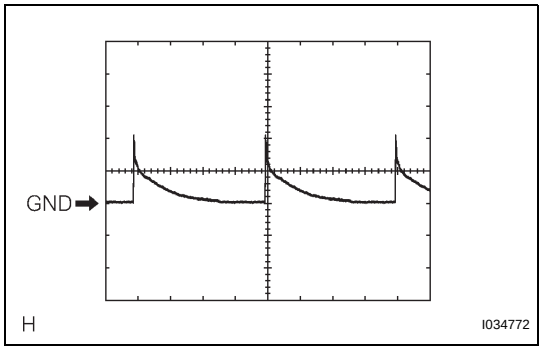
Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
HRLY (1D-3) - GND1 (1F-10)	GR - W-B	HEAD Relay (HEAD signal)	Light control switch is OFF or TAIL	10 to 14 V
HRLY (1D-3) - GND1 (1F-10)	GR - W-B	HEAD Relay (HEAD signal)	Light control switch is HEAD	Below 1 V
DRL (1D-9) - GND1 (1F-10)	P - W-B	DRL Relay (DRL signal)	Ignition switch is ON and engine is running	Below 1 V
DRL (1D-9) - GND1 (1F-10)	P - W-B	DRL Relay (DRL signal)	Ignition switch is OFF	10 to 14 V
BECU (1D-10) - GND1 (1F-10)	L-B - W-B	Battery (B+ circuit)	Always	10 to 14 V
ALTB (1D-16) - GND1 (1F-10)	W - W-B	Battery (ALT fuse)	Always	10 to 14 V
MPX1 (1E-7) - GND1 (1F-10)	BR - W-B	Multiplex communication	Ignition switch is OFF	Below 1 V
MPX1 (1E-7) - GND1 (1F-10)	BR - W-B	Multiplex communication	Ignition switch is ON	Signal waveform
BECU (1F-1) - GND1 (1F-10)	SB - W-B	Overhead ECU (B+ circuit)	Always	10 to 14 V
GND1 (1F-10) - Body ground	W-B - Body ground	Body ground	Always	Below 1 V
HRLY (1H-13) - GND1 (1F-10)	R - W-B	Headlight cleaner switch (HEAD signal)	Light control switch is OFF or TAIL	10 to 14 V
HRLY (1H-13) - GND1 (1F-10)	R - W-B	Headlight cleaner switch (HEAD signal)	Light control switch is HEAD	Below 1 V
ILE (1I-10) - GND1 (1F-10)	R - W-B	Key cylinder light (Illumination signal)	Ignition key cylinder light is OFF	10 to 14 V
ILE (1I-10) - GND1 (1F-10)	R - W-B	Key cylinder light (Illumination signal)	Ignition key cylinder light is ON	Below 1 V
TRLY (1L-3) - GND1 (1F-10)	Y - W-B	TAIL relay (TAIL signal)	Light control switch is OFF	Below 1 V
TRLY (1L-3) - GND1 (1F-10)	Y - W-B	TAIL relay (TAIL signal)	Light control switch is TAIL and fog light switch is ON	10 to 14 V
GND2 (1M-9) - GND1 (1F-10)	W-B - W-B	Body ground	Always	Below 1 V
HU (1N-2) - GND1 (1F-10)	G - W-B	Headlight dimmer switch (HIGH signal)	Headlight dimmer switch is LOW	10 to 14 V
HU (1N-2) - GND1 (1F-10)	G - W-B	Headlight dimmer switch (HIGH signal)	Headlight dimmer switch is HIGH	Below 1 V
LCTY (1O-7) - GND1 (1F-10)	B - W-B	Courtesy switch (Rear left door circuit)	Rear left door is open	Below 1 V
LCTY (1O-7) - GND1 (1F-10)	B - W-B	Courtesy switch (Rear left door circuit)	Rear left door is closed	Pulse generation (*1)
LSWL (1P-5) - GND1 (1F-10)	GR - W-B	Door lock position switch (Rear left door circuit)	Rear left door is in unlock position	Below 1 V
LSWL (1P-5) - GND1 (1F-10)	GR - W-B	Door lock position switch (Rear left door circuit)	Rear left door is in lock position	Pulse generation (*1)
ILE (1R-5) - GND1 (1F-10)	SB - W-B	Front interior illumination (Illumination signal)	Front interior light is OFF	10 to 14 V
ILE (1R-5) - GND1 (1F-10)	SB - W-B	Front interior illumination (Illumination signal)	Front interior light is ON	Below 1 V
MPX1 (1R-9) - GND1 (1F-10)	LG - W-B	Multiplex communication signal	Ignition switch is OFF	Below 1 V
MPX1 (1R-9) - GND1 (1F-10)	LG - W-B	Multiplex communication signal	Ignition switch is ON	Signal waveform
HDLO (B7-4) - GND1 (1F-10)	SB - W-B	Headlight cleaner relay (DRL signal)	Ignition switch is ON and engine is running	10 to 14 V
HDLO (B7-4) - GND1 (1F-10)	SB - W-B	Headlight cleaner relay (DRL signal)	Ignition switch is OFF	Below 1 V

Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
FFGO (B7-7) - GND1 (1F-10)	LG - W-B	Front fog relay (Front fog circuit)	Front fog light is OFF	Below 1 V
FFGO (B7-7) - GND1 (1F-10)	LG - W-B	Front fog relay (Front fog circuit)	Front fog light is ON	10 to 14 V
DCYL (B6-13) - GND1 (1F-10)	SB - W-B	Courtesy light (Front left door circuit)	Front left courtesy light is OFF	10 to 14 V
DCYL (B6-13) - GND1 (1F-10)	SB - W-B	Courtesy light (Front left door circuit)	Front left courtesy light is ON	Below 1V
DCTY (B6-14) - GND1 (1F-10)	L - W-B	Courtesy switch (Front left door circuit)	Front left door is open	Below 1 V
DCTY (B6-14) - GND1 (1F-10)	L - W-B	Courtesy switch (Front left door circuit)	Front left door is closed	10 to 14 V
RCTY (B6-16) - GND1 (1F-10)	GR - W-B	Courtesy switch (Rear right door circuit)	Rear right door is open	Below 1 V
RCTY (B6-16) - GND1 (1F-10)	GR - W-B	Courtesy switch (Rear right door circuit)	Rear right door is closed	Pulse generation (*1)
CLTE (B4-4) - GND1 (1F-10)	LG - W-B	Automatic light control sensor (Ground circuit)	Always	Below 1 V
CLTS (B4-5) - GND1 (1F-10)	B - W-B	Automatic light control sensor (Signal circuit)	Ignition switch is ON	Below 1 V
CLTS (B4-5) - GND1 (1F-10)	B - W-B	Automatic light control sensor (Signal circuit)	Ignition switch is OFF	10 to 14 V
CLTB (B4-6) - GND1 (1F-10)	P - W-B	Automatic light control sensor (Power source circuit)	Ignition switch is OFF	10 to 14 V
CLTB (B4-6) - GND1 (1F-10)	P - W-B	Automatic light control sensor (Power source circuit)	Ignition switch is ON	Below 1 V
HF (B4-15) - GND1 (1F-10)	Y - W-B	Headlight dimmer switch (FLASH signal)	Headlight dimmer switch is OFF	10 to 14 V
HF (B4-15) - GND1 (1F-10)	Y - W-B	Headlight dimmer switch (FLASH signal)	Headlight dimmer switch is FLASH	Below 1 V
A (B4-16) - GND1 (1F-10)	BR - W-B	Light control switch (AUTO signal)	Light control switch is OFF	10 to 14 V
A (B4-16) - GND1 (1F-10)	BR - W-B	Light control switch (AUTO signal)	Light control switch is AUTO	Below 1 V
TAIL (B4-17) - GND1 (1F-10)	O - W-B	Light control switch (TAIL signal)	Light control switch is OFF	10 to 14 V
TAIL (B4-17) - GND1 (1F-10)	O - W-B	Light control switch (TAIL signal)	Light control switch is TAIL	Below 1 V
FFOG (B4-22) - GND1(1F-10)	P - W-B	Front fog light switch (Front fog light signal)	Fog light switch is OFF	10 to 14 V
FFOG (B4-22) - GND1(1F-10)	P - W-B	Front fog light switch (Front fog light signal)	Fog light switch is ON	Below 1 V
HEAD (B4-23) - GND1 (1F-10)	V - W-B	Light control switch (HEAD signal)	Light control switch is OFF	Below 1 V
HEAD (B4-23) - GND1 (1F-10)	V - W-B	Light control switch (HEAD signal)	Light control switch is HEAD	10 to 14 V
LSWR (B5-5) - GND1 (1F-10)	B - W-B	Door lock position switch (Rear right door circuit)	Rear right door is in unlock position	Below 1 V
LSWR (B5-5) - GND1 (1F-10)	B - W-B	Door lock position switch (Rear right door circuit)	Rear right door is in lock position	Pulse generation (*1)
CSPT (B5-14) - GND1 (1F-10)	G - W-B	Overhead illumination circuit	Overhead console illumination is OFF	10 to 14 V
CSPT (B5-14) - GND1 (1F-10)	G - W-B	Overhead illumination circuit	Overhead console illumination is ON	Below 1 V

Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
FSPT (B5-15) - GND1 (1F-10)	LG - W-B	Step light, inside handle illumination circuit	Inside handle illumination and step light are OFF	10 to 14 V
FSPT (B5-15) - GND1 (1F-10)	LG - W-B	Step light, inside handle illumination circuit	Inside handle illumination and step light are ON	Below 1 V
MPX2 (B5-21) - GND1 (1F-10)	GR - W-B	Multiplex communication signal	Ignition switch is OFF	Below 1 V
MPX2 (B5-21) - GND1 (1F-10)	GR - W-B	Multiplex communication signal	Ignition switch is ON	Signal waveform
PCTY (B5-23) - GND1 (1F-10)	L - W-B	Courtesy switch (Front right door circuit)	Front right door is open	Below 1 V
PCTY (B5-23) - GND1 (1F-10)	L - W-B	Courtesy switch (Front right door circuit)	Front right door is closed	10 to 14 V
PCYL (B5-24) - GND1 (1F-10)	SB - W-B	Courtesy light (Front right door circuit)	Front right courtesy light is OFF	10 to 14 V
PCYL (B5-24) - GND1 (1F-10)	SB - W-B	Courtesy light (Front right door circuit)	Front right courtesy light is ON	Below 1 V
BCTY (B5-25) - GND1 (1F-10)	P - W-B	Courtesy switch (Back door circuit)	Back door is open	Below 1 V
BCTY (B5-25) - GND1 (1F-10)	P - W-B	Courtesy switch (Back door circuit)	Back door is closed	10 to 14 V
LSWP (B5-27) - GND1 (1F-10)	Y - W-B	Door lock position switch (Front light door circuit)	Front right door is in unlock position	Below 1 V
LSWP (B5-27) - GND1 (1F-10)	Y - W-B	Door lock position switch (Front light door circuit)	Front right door is in lock position	10 to 14 V

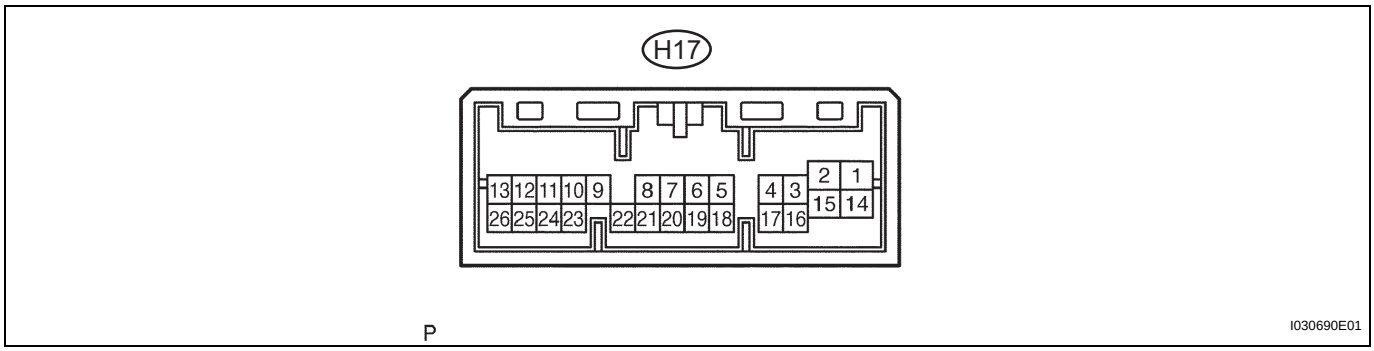
LI

*2: w/ Air suspension system
*3: w/o Air suspension system



(a) *1: Oscilloscope wave
HINT:
- Gauge set: 5 V/DIV. 5 ms/DIV
- Condition: Ignition switch ON

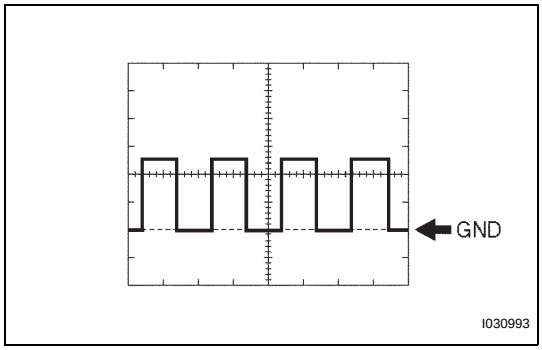
2. HEADLIGHT BEAM LEVEL CONTROL ECU



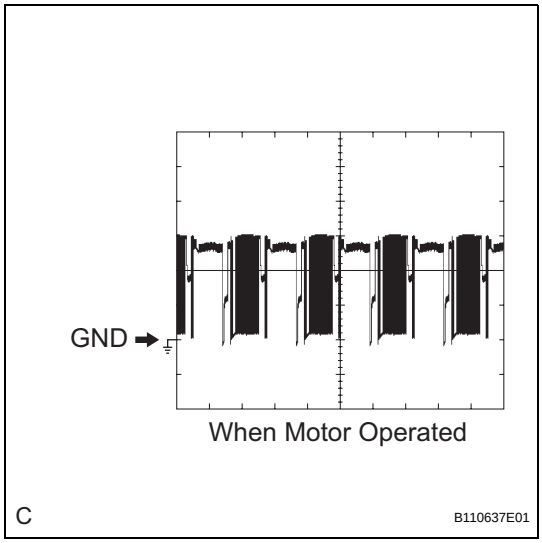
Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
GND (H17-1) - Body ground	W-B - Body ground	Body ground	Always	Below 1 V
SPDL (H17-5) - GND (H17-1)	P - W-B	Skid control ECU (Vehicle speed signal)	Drive at about 30 km/h (19 mph)	Pulse generation (*1)
SPDR (H17-6) - GND (H17-1)	O - W-B	Skid control ECU (Vehicle speed signal)	Drive at about 30 km/h (19 mph)	Pulse generation (*1)

Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
HDLP (H17-7) - GND (H17-1)	GR - W-B	Headlight relay (HEAD signal)	Light control switch is OFF	10 to 14 V
HDLP (H17-7) - GND (H17-1)	GR - W-B	Headlight relay (HEAD signal)	Light control switch is HEAD	Below 1 V
RHG (H17-9) - GND (H17-1)	B - W-B	Headlight beam control actuator RH	Always	Below 1 V
RH3 (H17-10) - GND (H17-1)	V - W-B	Headlight beam control actuator RH	Ignition switch is OFF	Below 1 V
RH3 (H17-10) - GND (H17-1)	V - W-B	Headlight beam control actuator RH	Engine running, light control switch in HEAD, vehicle stationary and bounced	Pulse generation (*2)
RH1 (H17-11) - GND (H17-1)	R - W-B	Headlight beam control actuator RH	Ignition switch is OFF	Below 1 V
RH1 (H17-11) - GND (H17-1)	R - W-B	Headlight beam control actuator RH	Engine running, light control switch in HEAD, vehicle stationary and bounced	Pulse generation (*2)
RH4 (H17-12) - GND (H17-1)	W - W-B	Headlight beam control actuator RH	Ignition switch is OFF	Below 1 V
RH4 (H17-12) - GND (H17-1)	W - W-B	Headlight beam control actuator RH	Engine running, light control switch in HEAD, vehicle stationary and bounced	Pulse generation (*2)
RH2 (H17-13) - GND (H17-1)	BR - W-B	Headlight beam control actuator RH	Ignition switch is OFF	Below 1 V
RH2 (H17-13) - GND (H17-1)	BR - W-B	Headlight beam control actuator RH	Engine running, light control switch in HEAD, vehicle stationary and bounced	Pulse generation (*2)
IG (H17-14) - GND (H17-1)	P - W-B	Ignition (Power source circuit)	Ignition switch OFF	Below 1 V
IG (H17-14) - GND (H17-1)	P - W-B	Ignition (Power source circuit)	Ignition switch ON	10 to 14 V
SGR (H17-16) - GND (H17-1)	V - W-B	Height control sensor signal	Always	Below 1 V
SHR (H17-18) - SGR (H17-16)	W - V	Height control sensor signal	Ignition switch OFF	Below 1 V
SHR (H17-18) - SGR (H17-16)	W - V	Height control sensor signal	Ignition switch ON, vehicle stationary and bounced	0.5 to 4.5 V
SBR (H17-20) - SGR (H17-16)	R - V	Height control sensor signal	Ignition switch OFF	Below 1 V
SBR (H17-20) - SGR (H17-16)	R - V	Height control sensor signal	Ignition switch ON	4.5 to 5.5 V
WNG (H17-21) - GND (H17-1)	LG - W-B	Combination meter (Indicator light circuit)	Headlight beam warning light goes off	10 to 14 V
WNG (H17-21) - GND (H17-1)	LG - W-B	Combination meter (Indicator light circuit)	Headlight beam warning light comes on	Below 1 V
LHG (H17-22) - GND (H17-1)	G - W-B	Headlight beam control actuator LH	Always	Below 1 V
LH3 (H17-23) - GND (H17-1)	Y - W-B	Headlight beam control actuator LH	Ignition switch OFF	Below 1 V
LH3 (H17-23) - GND (H17-1)	Y - W-B	Headlight beam control actuator LH	Engine running, light control switch in HEAD or DRL system ON, vehicle stationary and bounced	Pulse generation (*2)
LH1 (H17-24) - GND (H17-1)	O - W-B	Headlight beam control actuator LH	Ignition switch OFF	Below 1 V

Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
LH1 (H17-24) - GND (H17-1)	O - W-B	Headlight beam control actuator LH	Engine running, light control switch in HEAD or DRL system ON, vehicle stationary and bounced	Pulse generation (*2)
LH4 (H17-25) - GND (H17-1)	R - W-B	Headlight beam control actuator LH	Ignition switch OFF	Below 1 V
LH4 (H17-25) - GND (H17-1)	R - W-B	Headlight beam control actuator LH	Engine running, light control switch in HEAD or DRL system ON, vehicle stationary and bounced	Pulse generation (*2)
LH2 (H17-26) - GND (H17-1)	L-B - W-B	Headlight beam control actuator LH	Ignition switch OFF	Below 1 V
LH2 (H17-26) - GND (H17-1)	L-B - W-B	Headlight beam control actuator LH	Engine running, light control switch in HEAD or DRL system ON, vehicle stationary and bounced	Pulse generation (*2)



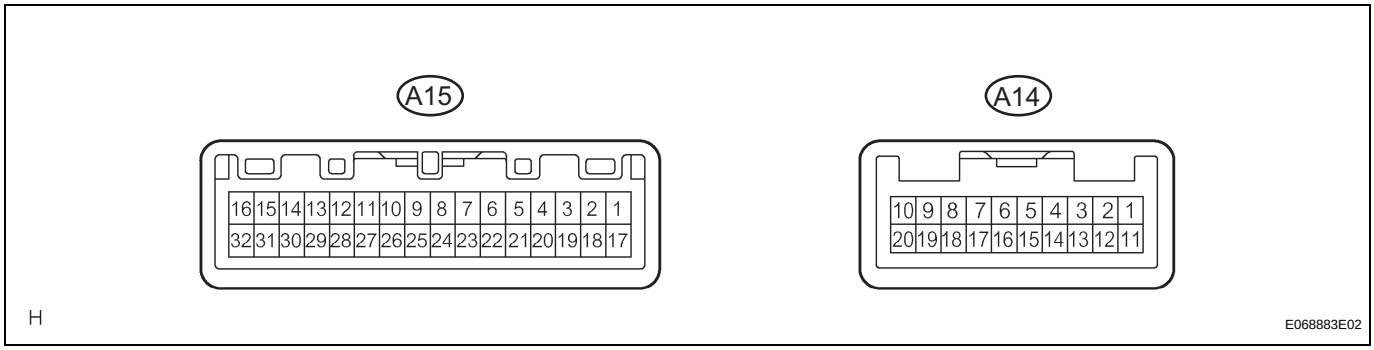
(a) *1: Oscilloscope wave
HINT:
- Terminal: SPDL - GND, SPDR - GND
- Gauge set: 5 V/DIV. 2 ms/DIV
- Condition: Drive at about 30 km/h (19 mph)



(b) *2: Oscilloscope wave
HINT:
- Terminal: RH1. RH2. RH3. RH4 - GND LH1. LH2. LH3. LH4 - GND
- Gauge set: 5 V/DIV. 10 ms/DIV
- Condition: The DRL system is on with the engine running or the light control switch is in the HEAD position when the vehicle is stationary or being bounced.

If the value is not within the standard range, some defects on the vehicle side are possible. Inspect the fuse, wire harness and connector.

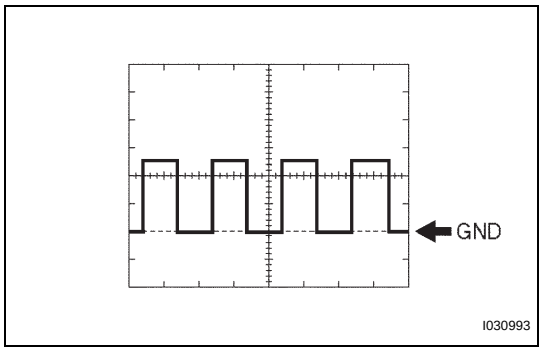
3. AFS ECU



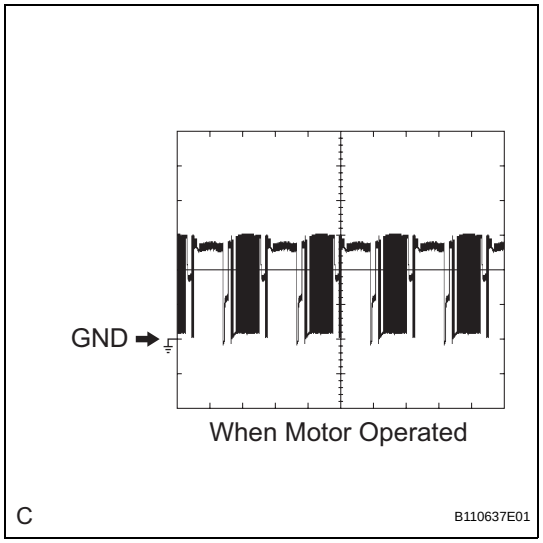
Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
E1 (A14-1) - Body ground	W-B - Body ground	Body ground	Always	Below 1 V
IG (A14-2) - E1 (A14-1)	P - W-B	Ignition switch (Power source circuit)	Ignition switch OFF	Below 1 V
IG (A14-2) - E1 (A14-1)	P - W-B	Ignition switch (Power source circuit)	Ignition switch ON	10 to 14 V
MSW (A14-4) - E1 (A14-1)	LG - W-B	AFS OFF switch	AFS OFF switch is not pressed	4.5 to 5.5 V
MSW (A14-4) - E1 (A14-1)	LG - W-B	AFS OFF switch	AFS OFF switch is pressed	Below 1 V
MPX1 (A14-5) - E1 (A14-1)	W - W-B	Multiplex communication signal	Ignition switch ON	Signal waveform
SS+ (A14-7) - SS- (A14-8)	LG - Y	Steering sensor	Engine idling, slowly turn steering wheel	Pulse generation
SHRL (A14-9) - SGR (A14-20)	GR - V	Height control ECU (Vehicle height signal)	Ignition switch OFF	Below 1 V (*3)
SHRL (A14-9) - SGR (A14-20)	W - V	Height control sensor rear RH (Vehicle height signal)	Ignition switch OFF	Below 1 V
SHRL (A14-9) - SGR (A14-20)	GR - V	Height control ECU (Vehicle height signal)	Ignition switch ON, vehicle stationary and bounced	0.5 to 4.5 V (*3)
SHRL (A14-9) - SGR (A14-20)	W - V	Height control sensor rear RH (Vehicle height signal)	Ignition switch ON, vehicle stationary and bounced	0.5 to 4.5 V (*4)
SBR (A14-10) - SGR (A14-20)	R - V	Height control ECU (Vehicle height signal)	Ignition switch OFF	Below 1 V (*3)
SBR (A14-10) - SGR (A14-20)	R - V	Height control sensor rear RH (Vehicle height signal)	Ignition switch OFF	Below 1 V (*4)
SBR (A14-10) - SGR (A14-20)	R - V	Height control ECU (Vehicle height signal)	Ignition switch ON	4.5 to 5.5 V(*3)
SBR (A14-10) - SGR (A14-20)	R - V	Height control sensor rear RH (Vehicle height signal)	Ignition switch ON	4.5 to 5.5 V(*4)
E1S (A14-11) - Body ground	W-B - Body ground	Body ground	Always	Below 1 V
IGS (A14-12) - E1 (A14-1)	P - W-B	Ignition switch (Signal power source)	Ignition switch OFF	Below 1 V
IGS (A14-12) - E1 (A14-1)	P - W-B	Ignition switch (Signal power source)	Ignition switch ON	10 to 14 V
WNG (A14-13) - E1 (A14-1)	B - W-B	Combination meter (Indicator light circuit)	AFS OFF indicator light goes off	10 to 14 V
WNG (A14-13) - E1 (A14-1)	B - W-B	Combination meter (Indicator light circuit)	AFS OFF indicator light comes on	Below 1 V
SGR (A14-20) - E1 (A14-1)	V - W-B	Height control ECU (Vehicle height signal)	Always	Below 1 V (*3)
SGR (A14-20) - E1 (A14-1)	V - W-B	Height control sensor rear RH (Vehicle height signal)	Always	Below 1 V (*4)
SHFL (A15-2) - SGR (A14-20)	G - V	Height control ECU (Vehicle height signal)	Ignition switch OFF	Below 1 V (*3)
SHFL (A15-2) - SGR (A14-20)	G - V	Height control ECU (Vehicle height signal)	Ignition switch ON, vehicle stationary and bounced	0.5 to 4.5 V (*3)
SPDL (A15-6) - E1 (A14-1)	P - W-B	Skid control ECU (Vehicle speed signal)	Drive at about 30 km/h (19 mph)	Pulse generation (*1)
SPDR (A15-7) - E1 (A14-1)	O - W-B	Skid control ECU (Vehicle speed signal)	Drive at about 30 km/h (19 mph)	Pulse generation (*1)
SBLR (A15-9) - SBGR (A15-10)	L - B	Headlight swivel ECU RH	Ignition switch OFF	Below 1 V

Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
SBLR (A15-9) - SBGR (A15-10)	L - B	Headlight swivel ECU RH	Ignition switch ON	Signal waveform
IGSR (A15-12) - E1 (A14-1)	R - W-B	Headlight swivel ECU RH	Ignition switch OFF	Below 1 V
IGSR (A15-12) - E1 (A14-1)	R - W-B	Headlight swivel ECU RH	Ignition switch ON	10 to 14 V
LR1+ (A15-13) - E1 (A14-1)	B - W-B	Headlight leveling actuator RH	Ignition switch OFF	Below 1 V
LR1+ (A15-13) - E1 (A14-1)	B - W-B	Headlight leveling actuator RH	Engine running, light control switch in HEAD, vehicle stationary and bounced	Pulse generation (*2)
LR1- (A15-14) - E1 (A14-1)	LG - W-B	Headlight leveling actuator RH	Ignition switch OFF	Below 1 V
LR1- (A15-14) - E1 (A14-1)	LG - W-B	Headlight leveling actuator RH	Engine running, light control switch in HEAD, vehicle stationary and bounced	Pulse generation (*2)
LR2+ (A15-15) - E1 (A14-1)	V - W-B	Headlight leveling actuator RH	Ignition switch OFF	Below 1 V
LR2+ (A15-15) - E1 (A14-1)	V - W-B	Headlight leveling actuator RH	Engine running, light control switch in HEAD, vehicle stationary and bounced	Pulse generation (*2)
LR2- (A15-16) - E1 (A14-1)	W - W-B	Headlight leveling actuator RH	Ignition switch OFF	Below 1 V
LR2- (A15-16) - E1 (A14-1)	W - W-B	Headlight leveling actuator RH	Engine running, light control switch in HEAD, vehicle stationary and bounced	Pulse generation (*2)
SBLL (A15-25) - SBGL (A15-26)	P - BR	Headlight swivel ECU LH	Ignition switch OFF	Below 1 V
SBLL (A15-25) - SBGL (A15-26)	P - BR	Headlight swivel ECU LH	Ignition switch ON	Signal waveform
IGSL (A15-28) - E1 (A14-1)	Y - W-B	Headlight swivel ECU LH	Ignition switch OFF	Below 1 V
IGSL (A15-28) - E1 (A14-1)	Y - W-B	Headlight swivel ECU LH	Ignition switch ON	10 to 14 V
LL1+ (A15-29) - E1 (A14-1)	W - W-B	Headlight leveling actuator LH	Ignition switch OFF	Below 1 V
LL1+ (A15-29) - E1 (A14-1)	W - W-B	Headlight leveling actuator LH	Engine running, light control switch in HEAD, vehicle stationary and bounced	Pulse generation (*2)
LL1- (A15-30) - E1 (A14-1)	O - W-B	Headlight leveling actuator LH	Ignition switch OFF	Below 1 V
LL1- (A15-30) - E1 (A14-1)	O - W-B	Headlight leveling actuator LH	Engine running, light control switch in HEAD, vehicle stationary and bounced	Pulse generation (*2)
LL2+ (A15-31) - E1 (A14-1)	GR - W-B	Headlight leveling actuator LH	Ignition switch OFF	Below 1 V
LL2+ (A15-31) - E1 (A14-1)	GR - W-B	Headlight leveling actuator LH	Engine running, light control switch in HEAD, vehicle stationary and bounced	Pulse generation (*2)
LL2- (A15-32) - E1 (A14-1)	B - W-B	Headlight leveling actuator LH	Ignition switch OFF	Below 1 V

Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
LL2- (A15-32) - E1 (A14-1)	B - W-B	Headlight leveling actuator LH	Engine running, light control switch in HEAD, vehicle stationary and bounced	Pulse generation (*2)
ESR (A15-11) - P GND (H10-4)	W-B - W-B	Headlight swivel ECU RH earth circuit	Always	Below 1 V (*4)
ESL (A15-11) - P GND (H6-4)	W-B - W-B	Headlight swivel ECU LH earth circuit	Always	Below 1 V (*4)

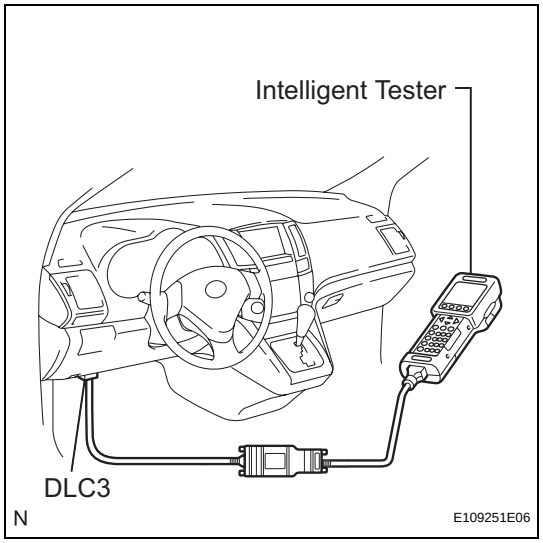


(a) *1: Oscilloscope wave
HINT:
- Terminal: SPDL - GND, SPDR - GND
- Gauge set: 5 V/DIV. 2 ms/DIV
- Condition: Drive at about 30 km/h (19 mph)



(b) *2: Oscilloscope wave
HINT:
- Terminal: LR1+. LR1-. LR2+. LH2- - GND LL1+. LL1-. LL2+. LL2- - GND
- Gauge set: 5 V/DIV. 10 ms / DIV
- Condition: The DRL system is on with the engine running or the light control switch is in the HEAD position when the vehicle is stationary or being bounced.

If the value is not within the standard range, some defects on the vehicle side are possible. Inspect the fuse, wire harness and connector.



DTC CHECK / CLEAR

1. DTC CHECK

(a) Connect the intelligent tester to the DLC3.
(b) Turn the ignition switch to the ON position.
(c) Read DTCs by following the prompts on the tester screen.
HINT:
Refer to the intelligent tester operator's manual for further details.

2. DTC CLEAR

(a) DTCs can be erased by operating the intelligent tester.
HINT:
Refer to the intelligent tester operator's manual for further details.

LI

FAIL-SAFE CHART

1. Light control ECU (HID)

Trouble Area	Condition
High voltage circuit open	Lighting of the headlight stops, the condition is maintained until power is turned ON again (headlight dimmer switch OFF → ON).
Short between high voltage	Lighting of the headlight stops within 1 second and the condition is maintained until power is turned ON again (headlight dimmer switch OFF → ON).
Leakage between high voltage terminal and body ground	Lighting of the headlight stops, the condition is maintained until power is turned ON again (headlight dimmer switch OFF → ON).
Low light voltage	Lighting of the headlight stops, the condition is maintained until power is turned ON again (headlight dimmer switch OFF → ON).
High light voltage	Lighting of the headlight stops, the condition is maintained until power is turned ON again (headlight dimmer switch OFF → ON).
Bulb flashing	• The condition is maintained more than 60 seconds. • Lighting of the headlight stops, the condition is maintained until power is turned ON again (headlight dimmer switch OFF → ON).
Battery voltage high	As soon as the voltage comes within the range of operation voltage (9 to 16 V), the headlight comes on again.
Battery voltage low	Even when voltage goes from 9.5 V → 7.5 V, lighting condition is maintained. Lighting condition changes when voltage is too low (Below 6 V). As soon as the voltage comes back within the range of operation voltage (more than 9 V), the headlights come on again.

LI

2. Headlight Leveling ECU Assembly

HINT:

The Headlight Leveling Control ECU performs fail-safe when detecting the following troubles.

Trouble Area	Condition	Warning indicator light
1. Headlight leveling actuator circuit is open	Stop leveling operation	Light up
2. Headlight leveling actuator circuit is short	Stop leveling operation	Light up
3. Vehicle speed sensor signal error	Controlling continues	Light up
4. Height control sensor signal level error	Stop leveling operation	Light up
5. Headlight leveling actuator high voltage	Stop leveling operation	Goes off
6. Pitch angle calculation error (w/ Air Suspension System)	Stop leveling operation	Light up

Recovery condition: Ignition switch off or signal level error cancellation.

3. Headlight Swivel ECU Assembly

HINT:

The Headlight Swivel ECU performs fail-safe when detecting the following troubles. The AFS OFF indicator light on the combination meter comes on at the same time.

Trouble Area	Headlight Leveling Motor	Swivel Motor	AFS OFF indicator light
Vehicle speed sensor signal malfunction	Controlling continues	Stops operation after returning to initial position	Blinks (*1)
Vehicle height signal malfunction	Stops operation after returning to initial position (Fail at higher than initial position) Stops at current condition (Fail at lower than initial position)	Stops operation after returning to initial position	Blinks (*1)
Leveling actuator malfunction	Stops at current condition	Stops operation after returning to initial position	Blinks (*1)

Trouble Area	Headlight Leveling Motor	Swivel Motor	AFS OFF indicator light
Steering sensor malfunction	Lowers by 0.8° than current position and then re-starts controlling	Stops at current condition and then returning to initial position after 10 seconds	Blinks (*1)
Communication signal malfunction	Controlling continues	Stops operation after returning to initial position	Blinks (*1)
Swivel actuator action malfunction	Lowers by 0.8° than initial position	Stops operation after returning to initial position (Stops at current condition when unable to operate)	Blinks (*1)
Swivel actuator communication signal malfunction	Lowers by 0.8° than initial position	Stops operation after returning to initial position (Stops at current condition when unable to operate)	Blinks (*1)

*1: 1 Blinks/1 second

DATA LIST / ACTIVE TEST

1. DATA LIST

HINT:

Using the DATA LIST displayed on the intelligent tester, you can read the value of the switch, sensor, actuator, etc. without removing any parts. Reading the DATA LIST as the first step in troubleshooting is one of the methods to shorten labor time.

(a) Connect the intelligent tester to the DLC3.
(b) Turn the ignition switch to the ON position.
(c) According to the display on the tester, read the "DATA LIST".

BODY (Multiplex Network Body ECU):

Item	Measurement Item/ Display (Range)	Normal Condition	Diagnostic Note
ACC SW	ACC SW signal/ON or OFF	ON: Ignition key is in ACC, ON or START position OFF: Ignition key is in OFF position	-
IG SW	IG SW signal/ON or OFF	ON: Ignition key is in ON or START position OFF: Ignition key is in OFF or ACC position	-
D DOR CTY SW	Driver's door courtesy SW signal/ ON or OFF	ON: Driver's door is open OFF: Driver's door is closed	-
P DOR CYT SW	Passenger's door courtesy SW signal/ON or OFF	ON: Front passenger's door is open OFF: Front passenger's door is closed	-
Rr DOR CTY SW	Rear door courtesy SW signal/ ON or OFF	ON: Either right or left rear door is open OFF: Both the right and left doors are closed	-
P LOCK POS SW	Front passenger's door lock position SW signal/ON or OFF	ON: Front passenger's door lock is in unlock position OFF: Front passenger's door lock is in lock position	-
Rr. LOCK POS SW	Rear door lock position SW signal/ON or OFF	ON: Rear door lock is in unlock position OFF: Rear door lock is in lock position	-
DIMMER SW	Headlight dimmer SW signal/ON or OFF	ON: Headlight dimmer switch is in HI or FLASH position OFF: Headlight dimmer switch is in LO position	-
HIGH FLASHER SW	Headlight dimmer SW signal/ON or OFF	ON: Headlight dimmer switch is in FLASH position OFF: Headlight dimmer switch is in except FLASH position	-
F FOG LIGHT SW	Front fog light SW signal/ON or OFF	ON: Front fog light switch is ON position OFF: Front fog light switch is OFF position	-
AUTO LIGHT SW	Auto light SW signal/ON or OFF	ON: Headlight dimmer switch is in AUTO position OFF: Headlight dimmer switch is in except AUTO position	-
HEAD LIGHT SW	Head light control SW signal/ON or OFF	ON: Light control switch is in HEAD position OFF: Light control switch is in except HEAD position	-

Item	Measurement Item/ Display (Range)	Normal Condition	Diagnostic Note
TAIL LIGHT SW	Taillight SW signal/ON or OFF	ON: Light control switch is in TAIL or HEAD position OFF: Light control switch is in OFF position	-
ILLUMINATE RATE	Illuminate rate/ON or OFF	ON: Illuminate rate ON OFF: Illuminate rate OFF	-
D LOCK POS SW	Driver's door lock position SW signal/ON or OFF	ON: Door lock is in unlock position OFF: Door lock is in lock position	-
LIGHTING TIME	Lighting time/7.5 s, 15 s or 30 s	Customized value will be displayed.	-
ILLUMI SYSTEM	Illumination system/ON or OFF	ON: Illumination operation is ON OFF: Illumination operation is OFF	-
LIGHT CONTROL	Light control/ON or OFF	ON: Light control system is ON OFF: Light control system is OFF	-
I/L ON/ACC OFF	Light the I/L when ACC OFF/ON or OFF	Customized value will be displayed.	-
I/L ON/UNLOCK	Interior light ON w/unlock/ON or OFF	Customized value will be displayed.	-
LIGHT CTRL TYPE	Light control type/CRNT or OLD	Customized value will be displayed.	-
LIGHT OFF DELAY	Light auto OFF delay/OFF, 30 s, 60 s, 90 s	Customized value will be displayed.	-

LI

BACK-DOOR (Back Door ECU):

Item	Measurement Item/ Display (Range)	Normal Condition	Diagnostic Note
COURTESY SW	Back door courtesy SW signal/ ON or OFF	ON: Back door is open OFF: Back door is closed	-

AFS (AFS ECU):

Item	Measurement Item/ Display (Range)	Normal Condition	Diagnostic Note
AFS OFF SW	AFS OFF SW/ON or OFF	ON: AFS OFF switch ON OFF: AFS OFF switch OFF	-
SHIFT POSITION-R	Transmission position R signal/ ON or OFF	ON: Shift position is R OFF: Shift position is except R	-
SHIFT POSITION-N	Transmission position N signal/ ON or OFF	ON: Shift position is N OFF: Shift position is except N	-
GENERATOR SIG	Generator signal/ON or OFF	ON: Engine is running OFF: Engine is stopped	-
HEADLIGHT SIG	Headlight signal/ON or OFF	ON: Light control switch is HEAD OFF: Light control switch is except HEAD	-
HEAD AUTO SIG	Headlight auto signal/ON or OFF	ON: Automatic light control system operated OFF: Automatic light control system stopped	-
+B	Battery voltage value/0 to 20 V	Condition sign can be displayed	-
HEIGHT SENS VOL	Height sensor power supply value/0 to 5 V	Condition sign can be displayed	-
FR HEIGHT SENS	Front height sensor signal value/0 to 5 V	Condition sign can be displayed	-
RR HEIGHT SENS	Rear height sensor signal value/0 to 5 V	Condition sign can be displayed	-
STEER SENS SIG	Steering sensor signal value/-256° to +255°	Condition sign can be displayed	-

Item	Measurement Item/ Display (Range)	Normal Condition	Diagnostic Note
STR CENTER POS	Steering sensor center position/ -256° to +255°	Condition sign can be displayed	-

2. ACTIVE TEST

HINT:

Performing the ACTIVE TEST using the intelligent tester allows the relay, VSV, actuator, etc. to operate without removing any part. Performing the ACTIVE TEST as the first step of troubleshooting is one of the methods to shorten labor time. The DATA LIST can be displayed during the ACTIVE TEST.

(a) Connect the intelligent tester to the DLC3.
(b) Turn the ignition switch to the ON position.
(c) According to the display on the tester, perform the "ACTIVE TEST".

BODY (Multiplex Network Body ECU):

Item	Test Details	Diagnostic Note
HAZARD	Turn Hazard light flasher relay ON/OFF	-
F FOG LIGHT RLY	Turn Front fog light relay ON/OFF	-
HEAD LIGHT	Turn Headlight relay ON/OFF	-
HEAD LIGHT (HI)	Turn Headlight dimmer relay (Headlight dimmer switch HI position) ON/OFF	-
TAIL LIGHT	Turn Tail light relay ON/OFF	-
DRL RELAY	(Test Details) Turn daytime running light relay ON/OFF (Vehicle Condition) Ignition SW is ON, engine is stopped and light control SW is in OFF position.	-
DIMMER SIG	Turn Dimmer relay ON/OFF	-
ILLUMI OUTPUT	(Test Details) Turn Interior light and Key illumination ON/ OFF (Vehicle Condition) Interior light SW is in door position and all doors are closed	-
CONSOLE LIGHT	Center console illumination ON/OFF	-
STEP LIGHT	Step light and inside handle illumination ON/ OFF	-

BACK-DOOR (Back Door ECU):

Item	Test Details	Diagnostic Note
COURTESY SW SIG	Courtesy switch signal ON/OFF	-

AFS (AFS ECU):

Item	Test Details	Diagnostic Note
LEVEL CONTROL MTR	Drive the leveling motor UP/OFF	-
LEVEL CONTROL MTR	Drive the leveling motor DOWN/OFF	-
SWIVEL MTR (RH)	Drive the swivel motor RIGHT/OFF	-
SWIVEL MTR (LH)	Drive the swivel motor LEFT/OFF	-
AFS OFF IND	AFS OFF indicator light ON/OFF	-

DIAGNOSTIC TROUBLE CODE CHART

If a malfunction code is displayed during the DTC check, check the suspected area listed for that code in the table below, and proceed to the appropriate page.

Lighting system

DTC No.	Detection Item	Suspected Area	See page
B1244	Light Sensor Circuit Malfunction	1. Automatic light control sensor 2. Harness or connector 3. Instrument panel J/B assembly	LI-39
B2410	Headlight Swivel ECU LH Communication Malfunction	1. Headlight swivel ECU LH 2. Harness or connector 3. AFS ECU	LI-41
B2411	Headlight Swivel ECU RH Communication Malfunction	1. Headlight swivel ECU RH 2. Harness or connector 3. AFS ECU	LI-41
B2412	Headlight Swivel Motor LH Malfunction	1. Headlight swivel motor LH 2. Headlight swivel ECU LH 3. Harness or connector 4. AFS ECU	LI-50
B2413	Headlight Swivel Motor RH Malfunction	1. Headlight swivel motor RH 2. Headlight swivel ECU RH 3. Harness or connector 4. AFS ECU	LI-50
B2414	Steering Position Sensor Malfunction	1. Steering sensor 2. Harness or connector 3. AFS ECU	LI-56
B2415	Vehicle Speed Sensor Malfunction	1. Skid control ECU 2. Harness or connector 3. AFS ECU	LI-59
B2416	Height Control Sensor Malfunction	1. Suspension control ECU (w/ air suspension) 2. Height control sensor sub-assembly rear RH 3. Harness or connector 4. AFS ECU	LI-62
B2417	Headlight Beam Level Control Motor LH Malfunction	1. Headlight beam level control motor LH 2. Harness or connector 3. AFS ECU	LI-70
B2418	Headlight Beam Level Control Motor RH Malfunction	1. Headlight beam level control motor RH 2. Harness or connector 3. AFS ECU	LI-70
B2419	BEAN Communication Malfunction	1. Multiplex network body ECU 2. Multiplex communication system 3. Harness or connector 4. AFS ECU	LI-74
B2420	AFS ECU Malfunction	AFS ECU	LI-75
B2421	Steering Neutral Point Automatic Correction Incompletion	1. Steering sensor 2. Harness or connector 3. Skid control ECU 4. AFS ECU	LI-76
B2423	AFS ECU Installation Error	AFS ECU	LI-77

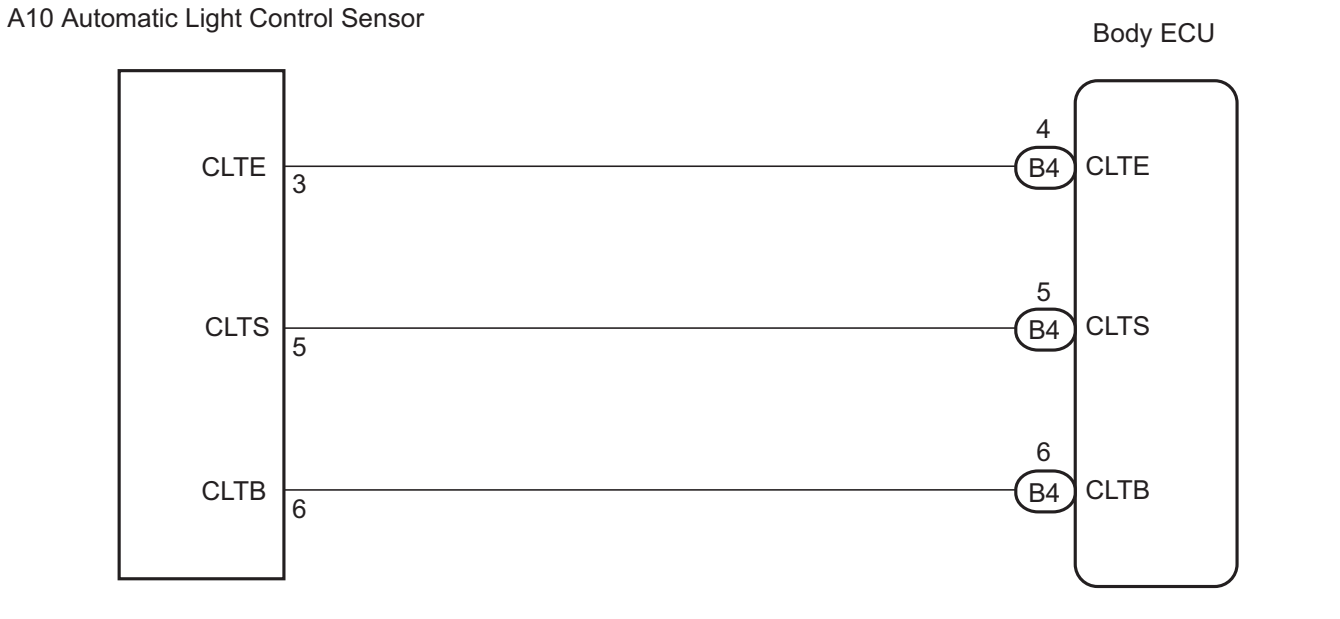
DTC	B1244	Light Sensor Circuit Malfunction

DESCRIPTION

This DTC is output when failure in the light sensor circuit is detected.

DTC No.	DTC Detecting Condition	Trouble Area
B1244	• Malfunction of automatic light control sensor • Open or short of automatic light control sensor circuit	• Automatic light control sensor • Harness or connector • Instrument panel junction block assembly

WIRING DIAGRAM



1	READ VALUE OF INTELLIGENT TESTER

(a) Connect the intelligent tester to the DLC3.
(b) Turn the ignition switch to the ON position and press the intelligent tester main switch ON.
(c) Select the items below in the DATA LIST, and read the displays on the intelligent tester.

BODY

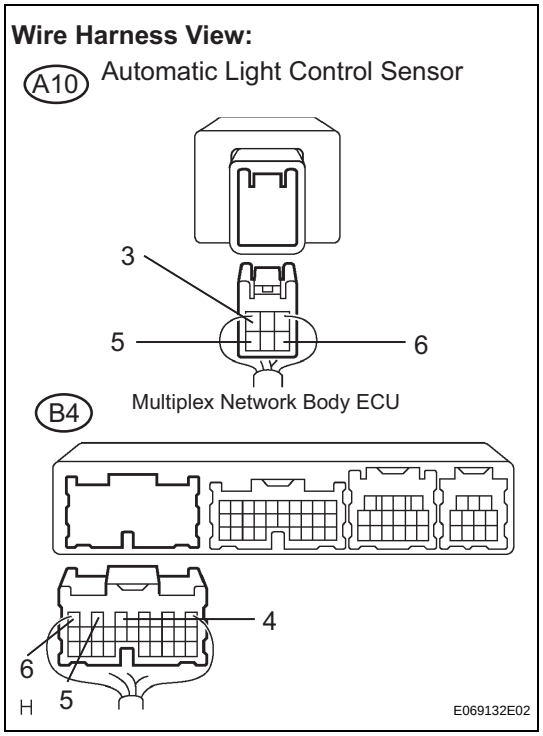
Item	Measurement Item/ Display (Range)	Normal Condition	Diagnostic Note
ILLUMINATE RATE	Illuminate rate/ON or OFF	ON: Illuminate rate ON OFF: Illuminate rate OFF	-

NG → **Go to step 2**

OK

REPLACE INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY

2	CHECK HARNESS OR CONNECTOR (BODY ECU - AUTOMATIC LIGHT CONTROL SENSOR)



(a) Disconnect the automatic light control sensor connector and body ECU connector.
(b) Measure the resistance according to the value(s) in the table below.

Resistance

Tester connection	Condition	Specified Condition
CLTE (A10-3) - CLTE (B4-4)	Always	Below 1 Ω
CLTS (A10-5) - CLTS (B4-5)	Always	Below 1 Ω
CLTB (A10-6) - CLTB (B4-6)	Always	Below 1 Ω

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

3	REPLACE AUTOMATIC LIGHT CONTROL SENSOR

(a) Return to normal operation.

NG → **REPLACE INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY**

OK

END

LI

DTC	B2410	Headlight Swivel ECU LH Communication Malfunction

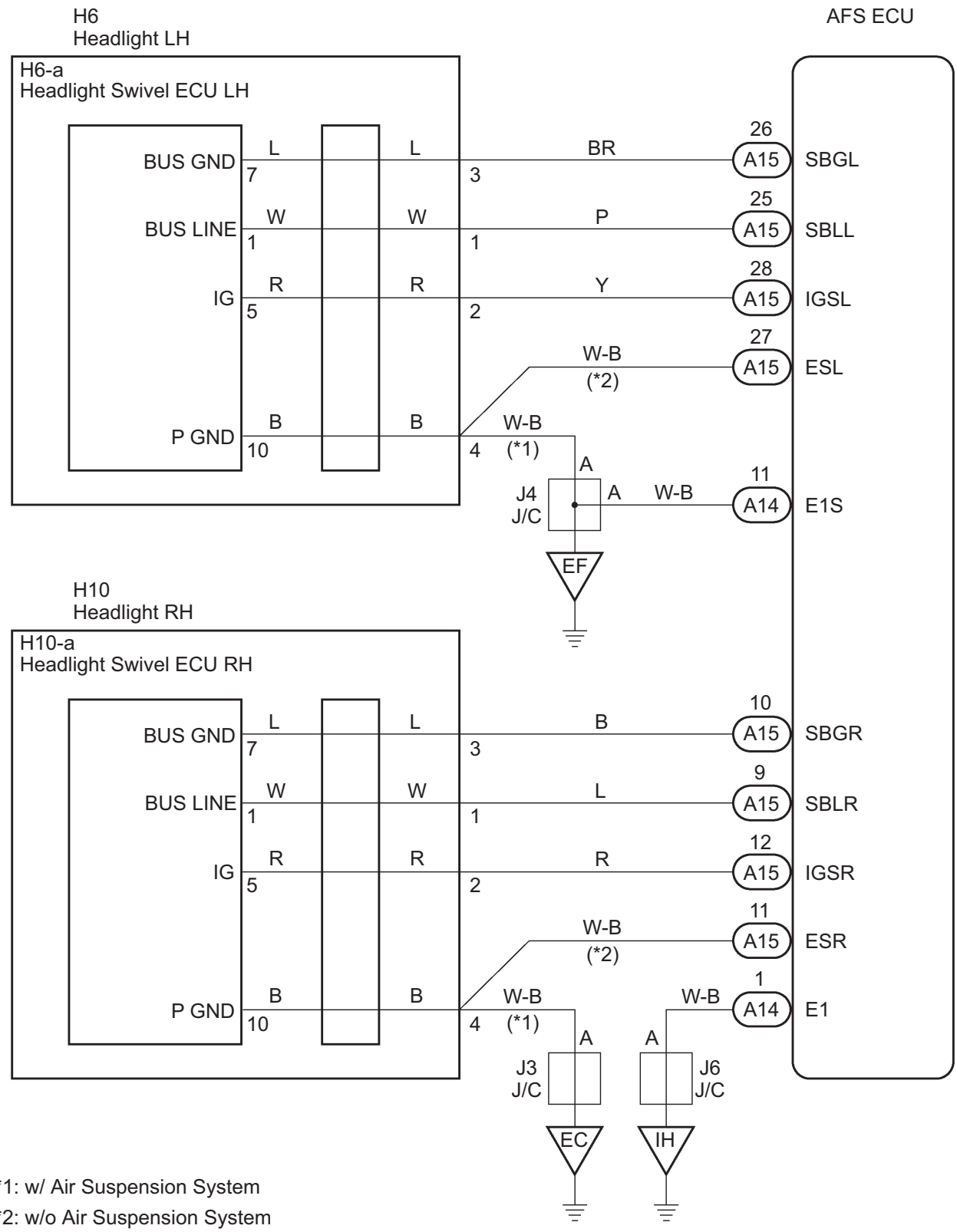
DTC	B2411	Headlight Swivel ECU RH Communication Malfunction

DESCRIPTION

The headlight swivel ECU converts the signal from the AFS ECU to operate the headlight swivel motor, and receives the signal regarding the direction of the headlight and condition of the headlight swivel motor.

DTC No.	DTC Detecting Condition	Trouble Area
B2410	• Malfunction of headlight swivel ECU LH • Open or short in headlight swivel ECU LH circuit	• Headlight swivel ECU LH • Harness or connector • AFS ECU
B2411	• Malfunction of headlight swivel ECU RH • Open or short in headlight swivel ECU RH circuit	• Headlight swivel ECU RH • Harness or connector • AFS ECU

WIRING DIAGRAM



1 CHECK VEHICLE CONDITION

(a) Check the vehicle condition.

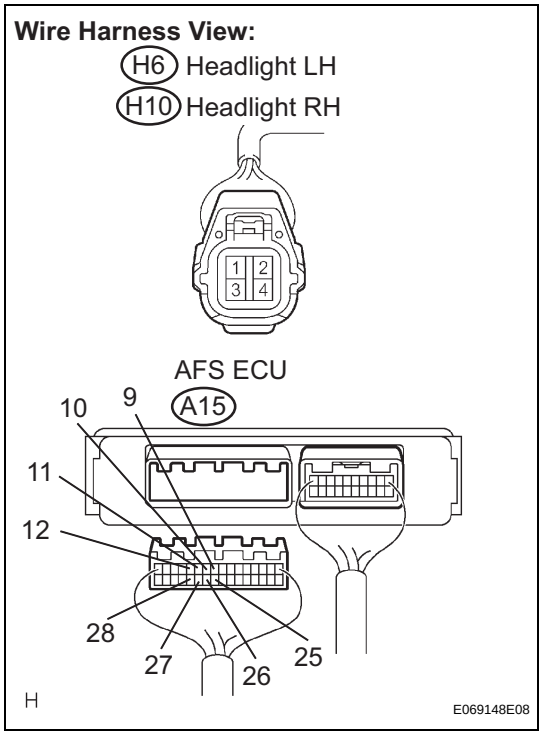
Result

Condition	Proceed to
w/o Air Suspension System	A
w/ Air Suspension System	B

B → **Go to step 5**

A

2 CHECK HARNESS AND CONNECTOR (AFS ECU - HEADLIGHT SWIVEL ECU)



(a) Disconnect the AFS ECU connector and headlight connector on the headlight swivel ECU side.

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

Resistance:

LH Side (B2410)

Tester connection	Condition	Specified condition
A15-25 (SBLL) - H6-1	Always	Below 1 Ω
A15-26 (SBGL) - H6-3	Always	Below 1 Ω
A15-28 (IGSL) - H6-2	Always	Below 1 Ω
A15-27 (ESL) - H6-4	Always	Below 1 Ω
A15-25 - Body ground	Always	10 kΩ or higher
A15-26 - Body ground	Always	10 kΩ or higher
A15-28 - Body ground	Always	10 kΩ or higher

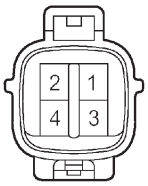
RH Side (B2411)

Tester connection	Condition	Specified condition
A15-9 (SBLR) - H10-1	Always	Below 1 Ω
A15-10 (SBGR) - H10-3	Always	Below 1 Ω
A15-12 (IGSR) - H10-2	Always	Below 1 Ω
A15-11 (ESR) - H10-4	Always	Below 1 Ω

Tester connection	Condition	Specified condition
A15-9 - Body ground	Always	10 kΩ or higher
A15-10 - Body ground	Always	10 kΩ or higher
A15-12 - Body ground	Always	10 kΩ or higher

Connector Front View:

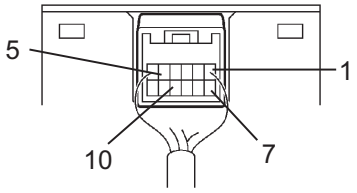
H6 Headlight LH H10 Headlight RH



Wire Harness View:

H6-a Headlight Swivel ECU LH

H10-a Headlight Swivel ECU RH



H

E069149E02

(c) Disconnect the headlight connector on the headlight swivel ECU side and the headlight swivel ECU connector.

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

Resistance:

LH Side (B2410)

Tester connection	Condition	Specified condition
H6-1 - H6-a-1 (BUS LINE)	Always	Below 1 Ω
H6-2 - H6-a-5 (IG)	Always	Below 1 Ω
H6-3 - H6-a-7 (BUS GND)	Always	Below 1 Ω
H6-4 - H6-a-10 (P GND)	Always	Below 1 Ω

RH Side (B2411)

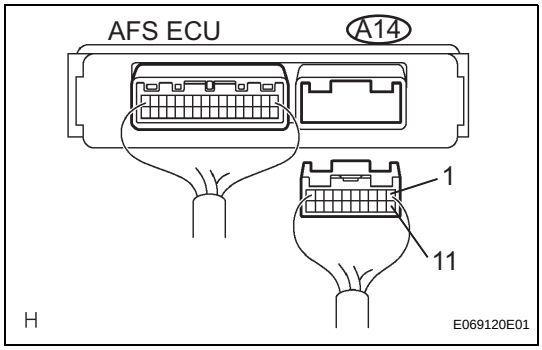
Tester connection	Condition	Specified condition
H10-1 - H10-a-1 (BUS LINE)	Always	Below 1 Ω
H10-2 - H10-a-5 (IG)	Always	Below 1 Ω
H10-3 - H10-a-7 (BUS GND)	Always	Below 1 Ω
H10-4 - H10-a-10 (P GND)	Always	Below 1 Ω

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

LI

3 CHECK HARNESS AND CONNECTOR (AFS ECU GROUND CIRCUIT)



(a) Disconnect the AFS ECU connector.
(b) Measure the resistance according to the value(s) in the table below.

Resistance

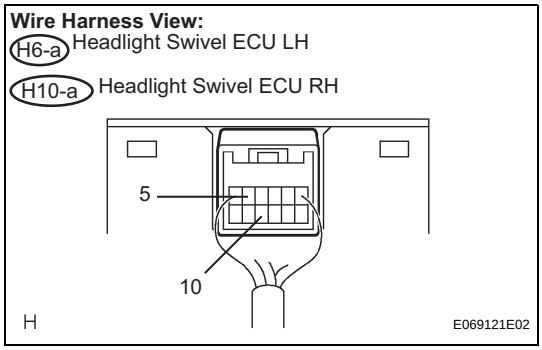
Tester connection	Condition	Specified condition
A14-1 (E1) - Body ground	Always	Below 1 Ω
A14-11 (E1S) - Body ground	Always	Below 1 Ω

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

LI

OK

4 INSPECT HEADLIGHT SWIVEL ECU



(a) Disconnect the headlight swivel ECU connector.
(b) Measure the voltage according to the value(s) in the table below.

Voltage:

LH Side (B2410)

Tester connection	Condition	Specified condition
IG (H6-a-5) - P GND (H6-a-10)	Ignition switch OFF → ON	Below 1 V → 10 to 14 V

RH Side (B2411)

Tester connection	Condition	Specified condition
IG (H10-a-5) - P GND (H10-a-10)	Ignition switch OFF → ON	Below 1 V → 10 to 14 V

Result

Condition	Proceed to
NG	A
OK (When checking from the DTC)	B
OK (When checking from the PROBLEM SYMPTOMS TABLE)	C

B → **Go to step 9**

C → PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

A

REPLACE AFS ECU

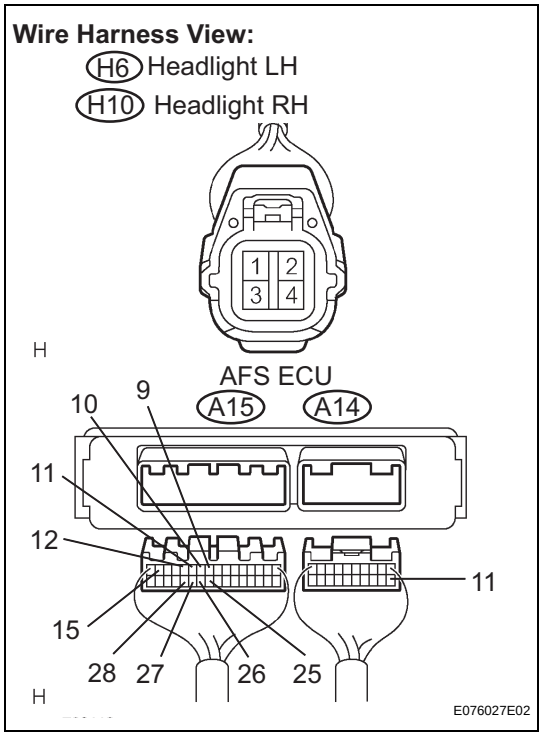
5 CHECK DTC OUTPUT (AIR SUSPENSION SYSTEM)

(a) Check the DTC of the air suspension system (See page SC-8).
OK:
Normal system code is output.

NG → GO TO FLOW CHART

OK

6 CHECK HARNESS AND CONNECTOR (AFS ECU - HEADLIGHT SWIVEL ECU)

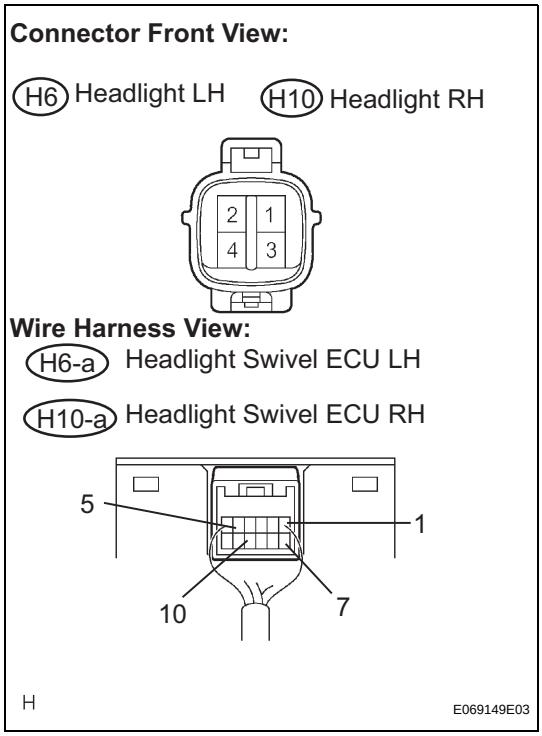


(a) Disconnect the AFS ECU connector and headlight connector on the headlight swivel ECU side.
(b) Measure the resistance according to the value(s) in the table below.
Resistance:
LH Side (B2410)

Tester connection	Condition	Specified condition
A15-25 (SBLL) - H6-1	Always	Below 1 Ω
A15-26 (SBGL) - H6-3	Always	Below 1 Ω
A15-28 (IGSL) - H6-2	Always	Below 1 Ω
A15-25 - Body ground	Always	10 kΩ or higher
A15-26 - Body ground	Always	10 kΩ or higher
A15-28 - Body ground	Always	10 kΩ or higher

RH Side (B2411)

Tester connection	Condition	Specified condition
A15-9 (SBLR) - H10-1	Always	Below 1 Ω
A15-10 (SBGR) - H10-3	Always	Below 1 Ω
A15-12 (IGSR) - H10-2	Always	Below 1 Ω
A15-9 - Body ground	Always	10 kΩ or higher
A15-10 - Body ground	Always	10 kΩ or higher
A15-12 - Body ground	Always	10 kΩ or higher



(c) Disconnect the headlight connector on the headlight swivel ECU side and the headlight swivel ECU connector.

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

Resistance:

LH Side (B2410)

Tester connection	Condition	Specified condition
H6-1 - H6-a-1 (BUS LINE)	Always	Below 1 Ω
H6-2 - H6-a-5 (IG)	Always	Below 1 Ω
H6-3 - H6-a-7 (BUS GND)	Always	Below 1 Ω
H6-4 - H6-a-10 (P GND)	Always	Below 1 Ω

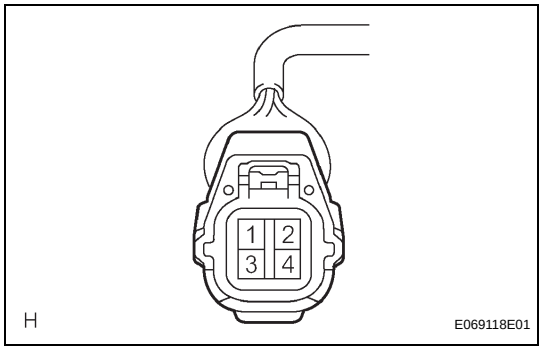
RH Side (B2411)

Tester connection	Condition	Specified condition
H10-1 - H10-a-1 (BUS LINE)	Always	Below 1 Ω
H10-2 - H10-a-5 (IG)	Always	Below 1 Ω
H10-3 - H10-a-7 (BUS GND)	Always	Below 1 Ω
H10-4 - H10-a-10 (P GND)	Always	Below 1 Ω

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

7 CHECK HARNESS AND CONNECTOR (HEADLIGHT SWIVEL ECU GROUND CIRCUIT)



(a) Disconnect the headlight connector on the headlight swivel ECU side.
(b) Measure the resistance according to the value(s) in the table below.
Resistance:
LH Side (B2410)

Tester connection	Condition	Specified condition
H6-4 - Body ground	Always	Below 1 Ω

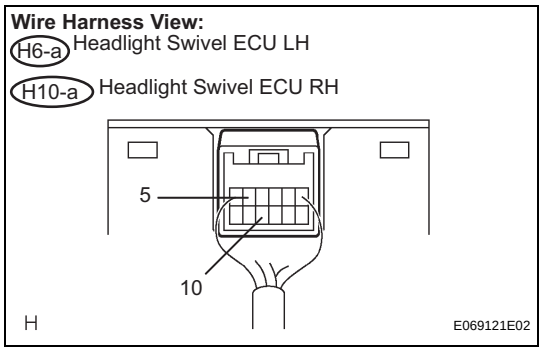
RH Side (B2411)

Tester connection	Condition	Specified condition
H10-4 - Body ground	Always	Below 1 Ω

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

8 INSPECT HEADLIGHT SWIVEL ECU



(a) Disconnect the headlight swivel ECU connector.
(b) Measure the voltage according to the value(s) in the table below.
Voltage:
LH Side (B2410)

Tester connection	Condition	Specified condition
H6-a-5(IG) - H6-a-10 (P GND)	Ignition switch OFF → ON	Below 1 V → 10 to 14 V

RH Side (B2411)

Tester connection	Condition	Specified condition
H10-a-5 (IG) - H10-a-10 (P GND)	Ignition switch OFF → ON	Below 1 V → 10 to 14 V

Result

Condition	Proceed to
OK (When checking from the DTC)	A
OK (When checking from the PROBLEM SYMPTOMS TABLE)	B
NG	C

B	**PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE**
C	**REPLACE AFS ECU**

A

9	**REPLACE HEADLIGHT SWIVEL ECU**

OK:
Returns to normal operation.

NG	**REPLACE AFS ECU**

OK

END

DTC	B2412	Headlight Swivel Motor LH Malfunction

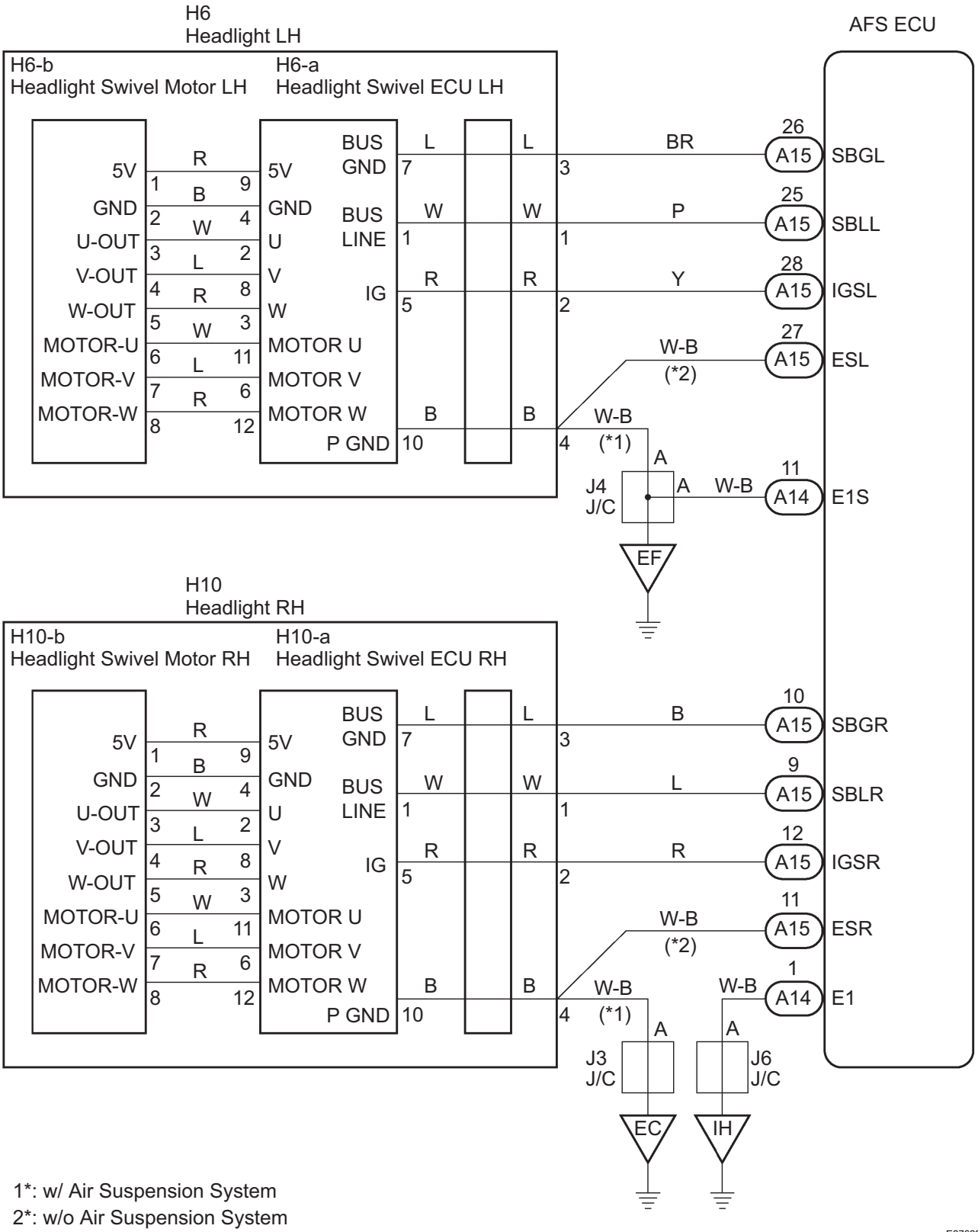
DTC	B2413	Headlight Swivel Motor RH Malfunction

DESCRIPTION

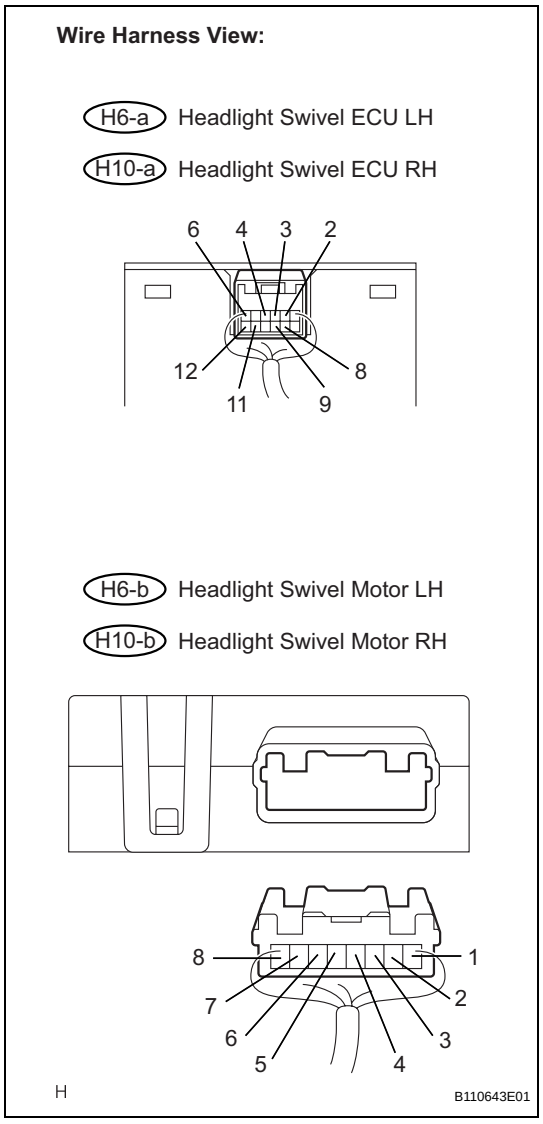
The swivel actuator receives the signal from the AFS ECU via the headlight swivel ECU to operate and sends the signal regarding direction of the headlight and condition of the headlight swivel motor to the headlight swivel ECU.

DTC No.	DTC Detecting Condition	Trouble Area
B2412	• Malfunction of headlight swivel motor LH • Open or short in headlight swivel motor LH circuit	• Headlight swivel motor LH • Headlight swivel ECU LH • Harness or connector • AFS ECU
B2413	• Malfunction of headlight swivel motor RH • Open or short in headlight swivel motor RH circuit	• Headlight swivel motor RH • Headlight swivel ECU RH • Harness or connector • AFS ECU

WIRING DIAGRAM



1	CHECK HARNESS AND CONNECTOR (HEADLIGHT SWIVEL ECU - HEADLIGHT SWIVEL MOTOR)



(a) Disconnect the headlight swivel ECU connector and headlight swivel motor connector.

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

Resistance:

LH Side (B2412)

Tester connection	Condition	Specified condition
U (H6-a-2) - U-OUT (H6-b-3)	Always	Below 1 Ω
W (H6-a-3) - W-OUT (H6-b-5)	Always	Below 1 Ω
GND (H6-a-4) - GND (H6-b-2)	Always	Below 1 Ω
MOTOR V (H6-a-6) - MOTOR-V (H6-b-7)	Always	Below 1 Ω
V (H6-a-8) - V-OUT (H6-b-4)	Always	Below 1 Ω
5V (H6-a-9) - 5V (H6-b-1)	Always	Below 1 Ω
MOTOR U (H6-a-11) - MOTOR-U (H6-b-6)	Always	Below 1 Ω
MOTOR W (H6-a-12) - MOTOR-W (H6-b-8)	Always	Below 1 Ω

RH Side (B2413)

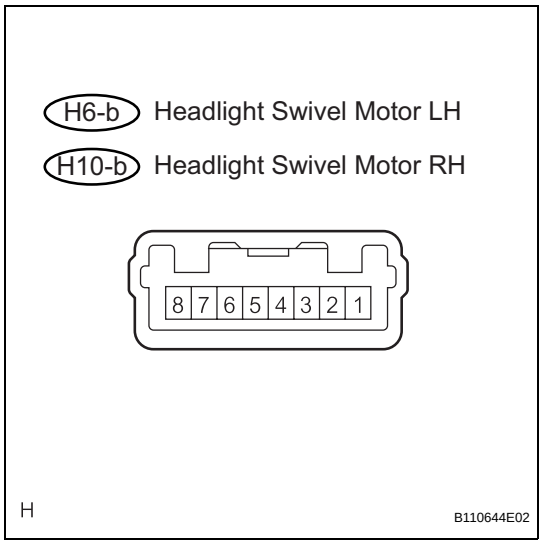
Tester connection	Condition	Specified condition
U (H10-a-2) - U-OUT (H10-b-3)	Always	Below 1 Ω
W (H10-a-3) - W-OUT (H10-b-5)	Always	Below 1 Ω
GND (H10-a-4) - GND (H10-b-2)	Always	Below 1 Ω
MOTOR V (H10-a-6) - MOTOR- V (H10-b-7)	Always	Below 1 Ω

Tester connection	Condition	Specified condition
V (H10-a-8) - V-OUT (H10-b-4)	Always	Below 1 Ω
5V (H10-a-9) - 5V (H10-b-1)	Always	Below 1 Ω
MOTOR U (H10-a-11) - MOTOR-U (H10-b-6)	Always	Below 1 Ω
MOTOR W (H10-a-12) - MOTOR-W (H10-b-8)	Always	Below 1 Ω

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

2 INSPECT HEADLIGHT SWIVEL MOTOR



(a) Disconnect the headlight swivel motor connector.
(b) Measure the resistance according to the value(s) in the table below.

Resistance:

LH Side (B2412)

Tester connection	Condition	Specified condition
MOTOR-U (H6-b-6) - MOTOR-V (H6-b-7)	Always	8.5 to 10.5 Ω
MOTOR-V (H6-b-7) - MOTOR-W (H6-b-8)	Always	8.5 to 10.5 Ω
MOTOR-W (H6-b-8) - MOTOR-U (H6-b-6)	Always	8.5 to 10.5 Ω

RH Side (B2413)

Tester connection	Condition	Specified condition
MOTOR-U (H10-b-6) - MOTOR-V (H10-b-7)	Always	8.5 to 10.5 Ω
MOTOR-V (H10-b-7) - MOTOR-W (H10-b-8)	Always	8.5 to 10.5 Ω
MOTOR-W (H10-b-8) - MOTOR-U (H10-b-6)	Always	8.5 to 10.5 Ω

NG → **REPLACE HEADLIGHT SWIVEL MOTOR**

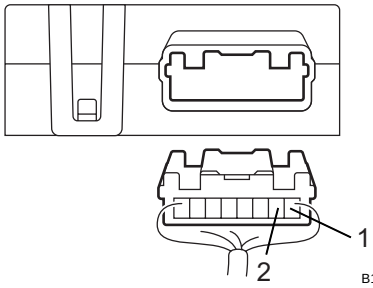
OK

3	INSPECT HEADLIGHT SWIVEL ECU

Wire Harness View:

H6-b Headlight Swivel Motor LH

H10-b Headlight Swivel Motor RH



(a) Disconnect the headlight swivel motor connector.
(b) Measure the voltage according to the value(s) in the table below.

Voltage:

LH Side (B2412)

Tester connection	Condition	Specified condition
5V (H6-b-1) - GND (H6-b-2)	Ignition switch OFF → ON	Below 1 V → 4.5 to 5.5 V

RH Side (B2413)

Tester connection	Condition	Specified condition
5V (H10-b-1) - GND (H10-b-2)	Ignition switch OFF → ON	Below 1 V → 4.5 to 5.5 V

Result

Condition	Proceed to
OK	A
NG (When checking from the PROBLEM SYMPTOMS TABLE)	B
NG (When checking from the DTC)	C

B → PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

C → REPLACE HEADLIGHT SWIVEL ECU

A

4	REPLACE HEADLIGHT SWIVEL MOTOR

OK:

Returns to normal operation.

NG → Go to step 5

OK

END

5	**REPLACE HEADLIGHT SWIVEL ECU**

OK:
Returns to normal operation.

NG → **REPLACE AFS ECU**

OK

END

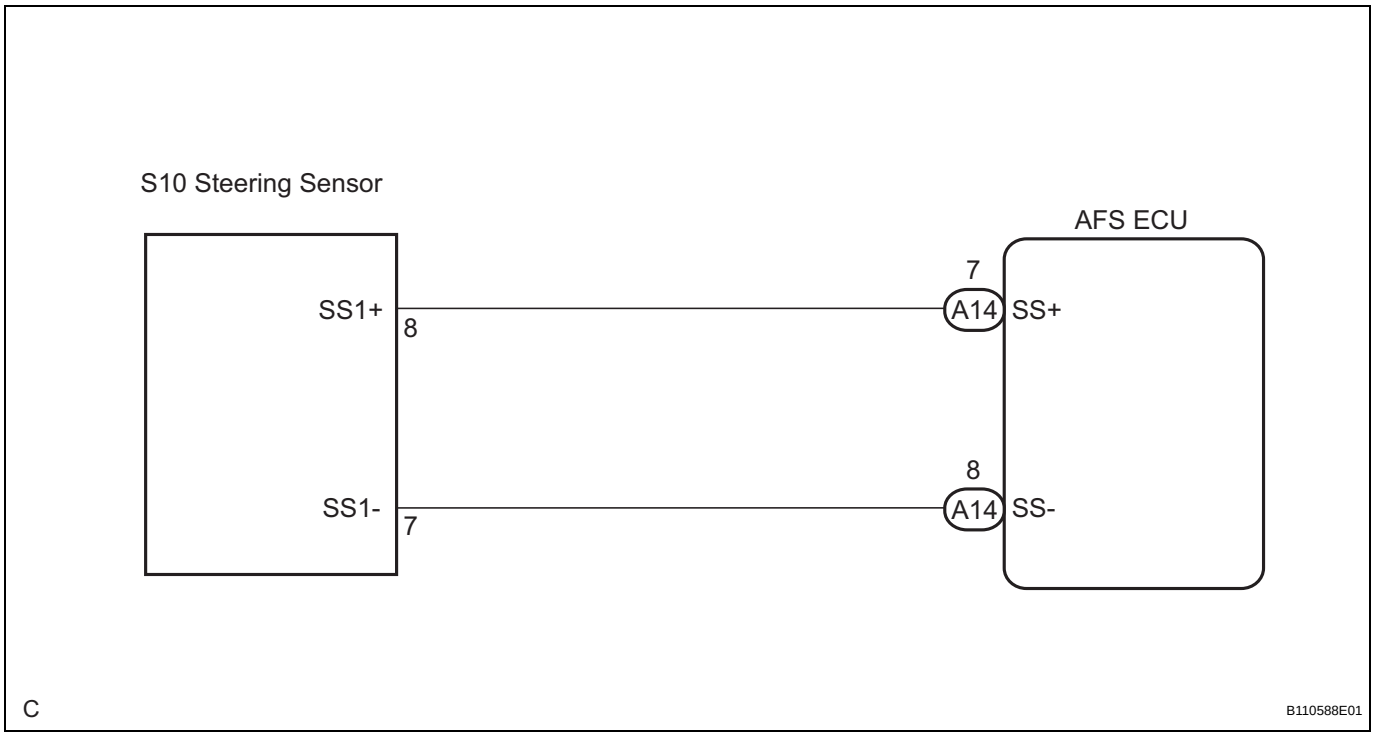
DTC	B2414	Steering Position Sensor Malfunction

DESCRIPTION

The AFS ECU receives the signal regarding a swerve-angle from the steering sensor in the steering wheel.

DTC No.	DTC Detecting Condition	Trouble Area
B2414	• Malfunction of steering sensor • Open or short of steering sensor circuit	• Steering sensor • Harness or connector • AFS ECU

WIRING DIAGRAM



LI

1	CHECK DTC (ABS WITH EBD & BA & TRAC & VSC SYSTEM)

(a) Check the ABS with EBD & BA & TRAC & VSC system (See page BC-16).

OK:

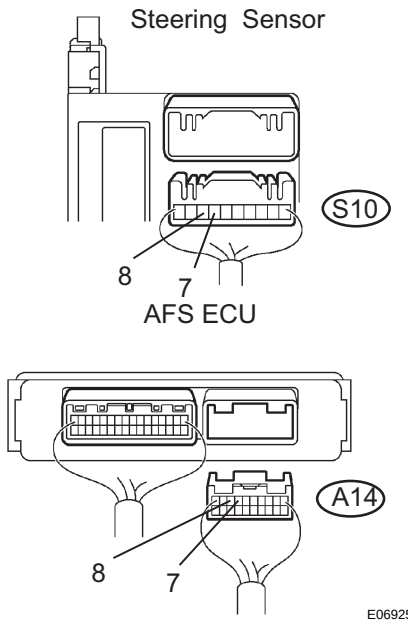
DTC is not output.

NG → **GO TO FLOW CHART**

OK

2	CHECK HARNESS AND CONNECTOR (STEERING SENSOR - AFS ECU)

Wire Harness View:



(a) Disconnect the steering sensor connector and AFS ECU connector.
(b) Measure the resistance according to the value(s) in the table below.

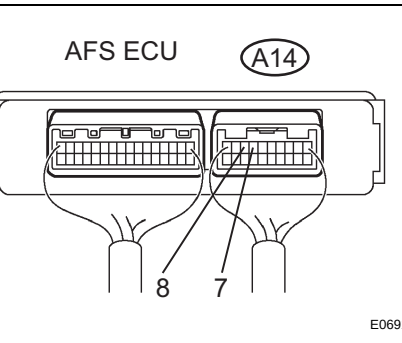
Resistance

Tester connection	Condition	Specified condition
SS1- (S10-7) - SS- (A14-8)	Always	Below 1 Ω
SS1+ (S10-8) - SS+ (A14-7)	Always	Below 1 Ω
SS- (S14-8) - Body ground	Always	10 kΩ or higher
SS+ (S14-7) - Body ground	Always	10 kΩ or higher

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

3	INSPECT AFS ECU



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

Voltage

Tester connection	Condition	Specified condition
SS+ (A14-7) - SS- (A14-8)	Ignition switch ON	0 to 5 V (Pulse generation)

Result

Condition	Proceed to
OK (When checking from the DTC)	A
OK (When checking from the PROBLEM SYMPTOMS TABLE)	B
NG	C

B → PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

C → REPLACE STEERING SENSOR

A

REPLACE AFS ECU

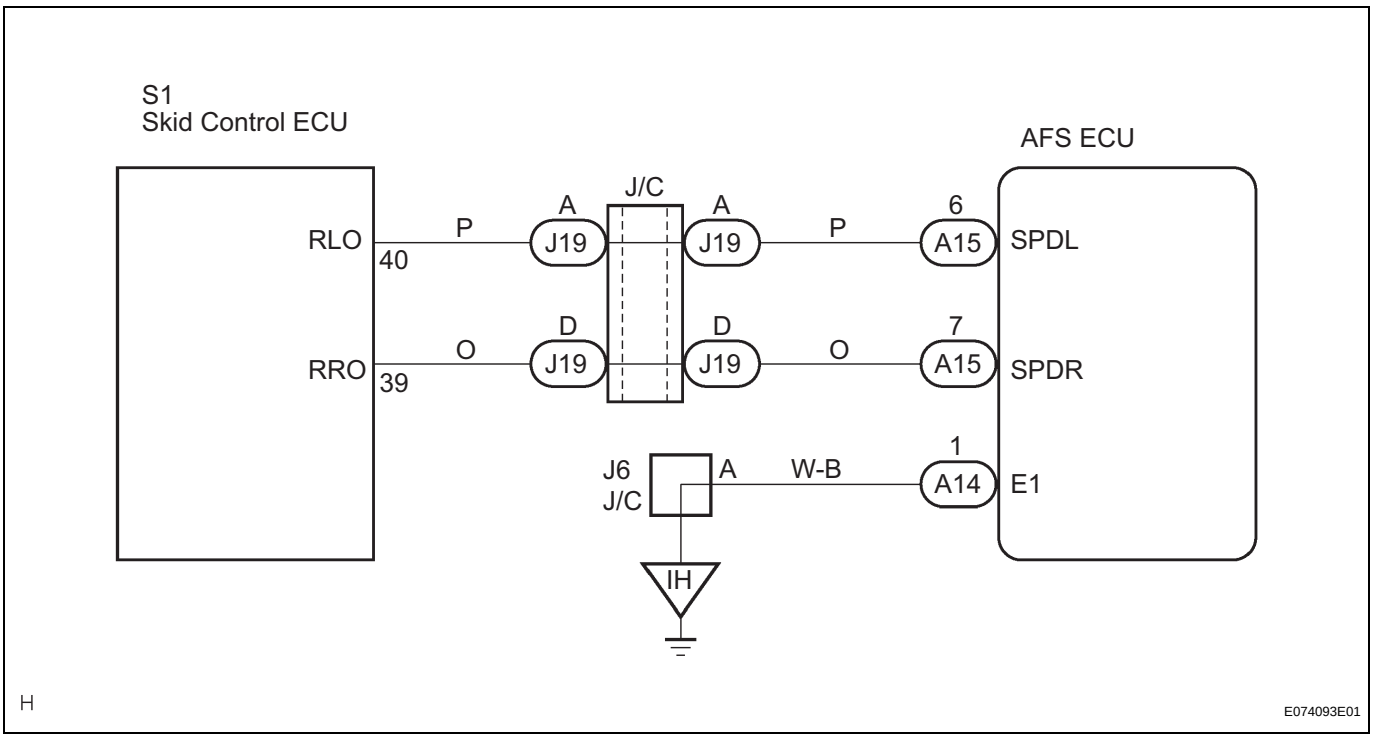
DTC	B2415	Vehicle Speed Sensor Malfunction

DESCRIPTION

The AFS ECU receives the vehicle speed signal of the rear wheels from the skid control ECU.

DTC No.	DTC Detecting Condition	Trouble Area
B2415	• Malfunction of skid control ECU • Open or short of vehicle speed sensor circuit	• Skid control ECU • Harness or connector • AFS ECU

WIRING DIAGRAM



LI

1	CHECK DTC (ABS WITH EBD & BA & TRAC & VSC SYSTEM)

(a) Check the DTC of ABS with EBD & BA & TRAC & VSC system (See page BC-16).

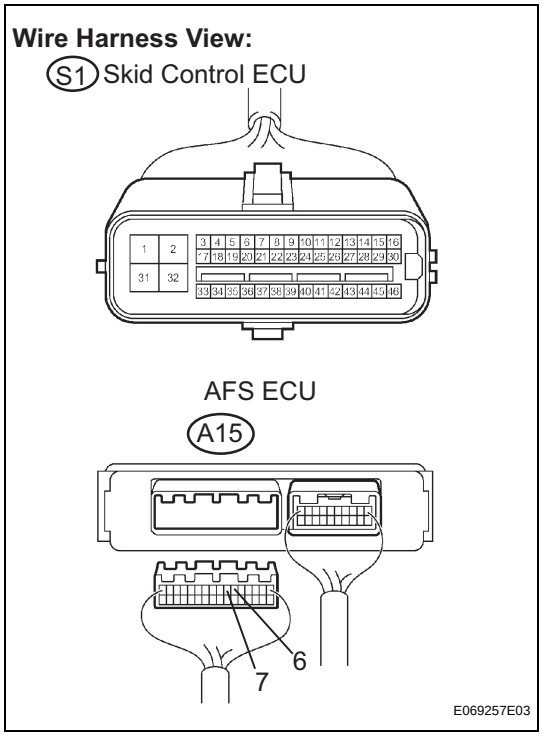
OK:

DTC is not output.

NG → **GO TO FLOW CHART**

OK

2 CHECK HARNESS AND CONNECTOR (SKID CONTROL ECU - AFS ECU)



(a) Disconnect the skid control ECU connector and AFS ECU connector.
(b) Measure the resistance according to the value(s) in the table below.

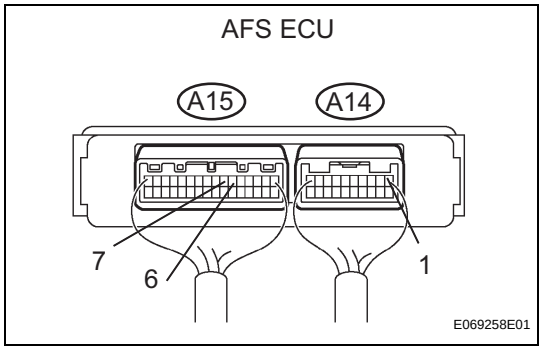
Resistance

Tester connection	Condition	Specified condition
RRO (S1-39) - SPDR (A15-7)	Always	Below 1 Ω
RLO (S1-40) - SPDL (A15-6)	Always	Below 1 Ω
SPDR (A15-7) - Body ground	Always	10 kΩ or higher
SPDL (A15-6) - Body ground	Always	10 kΩ or higher

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

3 INSPECT AFS ECU

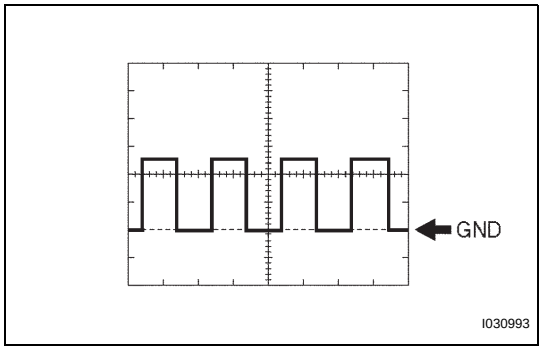


(a) Measure the voltage according to the value(s) in the table below.

LI

Voltage

Tester connection	Condition	Specified condition
SPDL (A15-6) - E1 (A14-1)	Drive at about 30 km/h (19 mph)	0 to 14 V Pulse generation(*1)
SPDR (A15-7) - E1 (A14-1)	Drive at about 30 km/h (19 mph)	0 to 14 V Pulse generation (*1)



(b) *1: Oscilloscope wave
HINT:
- Gauge set: 5 V/DIV, 2 ms/DIV
- Condition: Drive at about 30 km/h (19 mph)

Result

Condition	Proceed to
OK (When checking from the DTC)	A
OK (When checking from the PROBLEM SYMPTOMS TABLE)	B
NG	C

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

C → **REPLACE ABS AND TRACTION ACTUATOR ASSEMBLY**

A

REPLACE AFS ECU

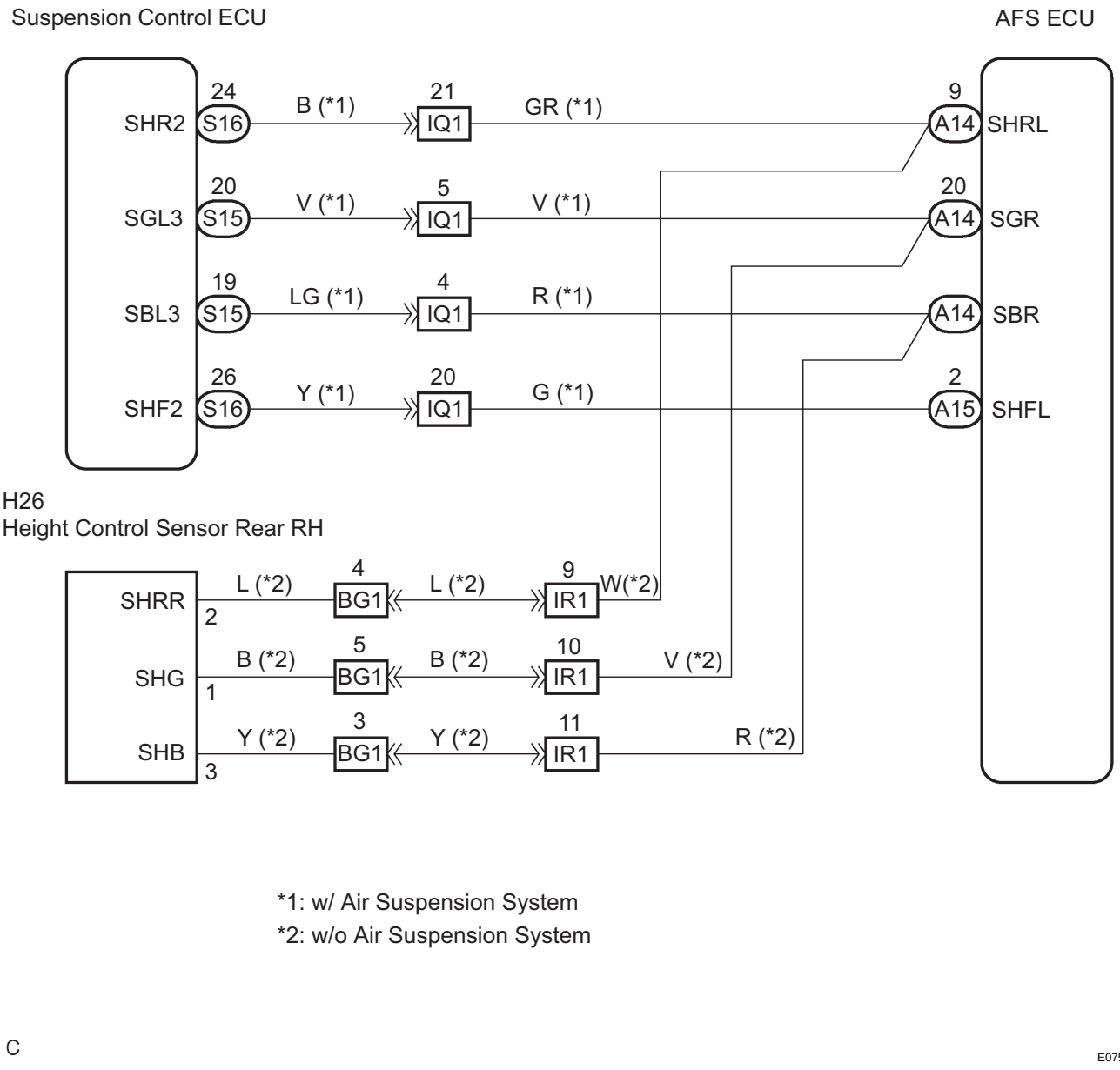
DTC	B2416	Height Control Sensor Malfunction

DESCRIPTION

w/ Air suspension system:
The AFS ECU receives signals regarding the height of the front / rear of the vehicle from the suspension control ECU.
w/o Air suspension system:
The AFS ECU receives the signals from the height control sensor rear RH.

DTC No.	DTC Detecting Condition	Trouble Area
B2416	• Malfunction of suspension control ECU • Open or short in suspension control ECU circuit • Open or short in height control sensor rear RH circuit	• Suspension control ECU (w/ air suspension) • Height control sensor sub-assembly rear RH (w/o air suspension) • Harness or connector • AFS ECU

WIRING DIAGRAM



1	CHECK VEHICLE CONDITION

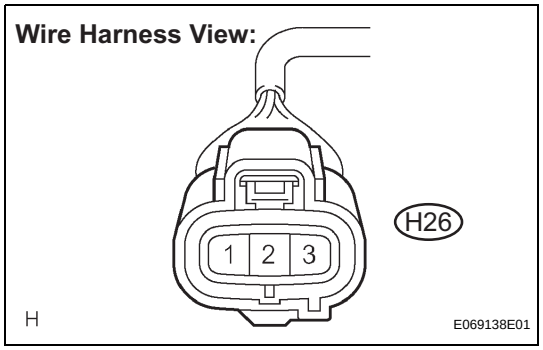
(a) Check the vehicle condition.

Condition	Proceed to
w/o Air Suspension System	A
w/ Air Suspension System	B

B → Go to step 6

A

2	CHECK HARNESS AND CONNECTOR (HEIGHT CONTROL SENSOR SUB-ASSEMBLY REAR RH POWER SOURCE)



(a) Disconnect the H26 connector from the height control sensor rear RH.
(b) Measure the voltage according to the value(s) in the table below.

Voltage

Tester connection	Condition	Specified condition
SHB (H26-3) - SHG (H26-1)	Ignition switch ON	4.5 to 5.5 V

NG → **Go to step 5**

OK

3	INSPECT HEIGHT CONTROL SENSOR SUB-ASSEMBLY REAR RH

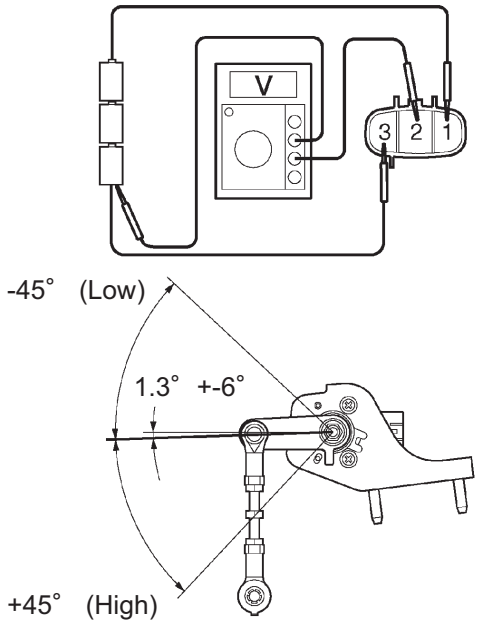
(a) Connect 3 dry cell batteries (1.5 V) in a series.
(b) Connect the positive (+) lead from the battery to terminal 1 and the negative (-) lead from the battery to terminal 3.
(c) Measure the voltage between terminal 2 and terminal 3 when slowly moving the link up and down.

Voltage

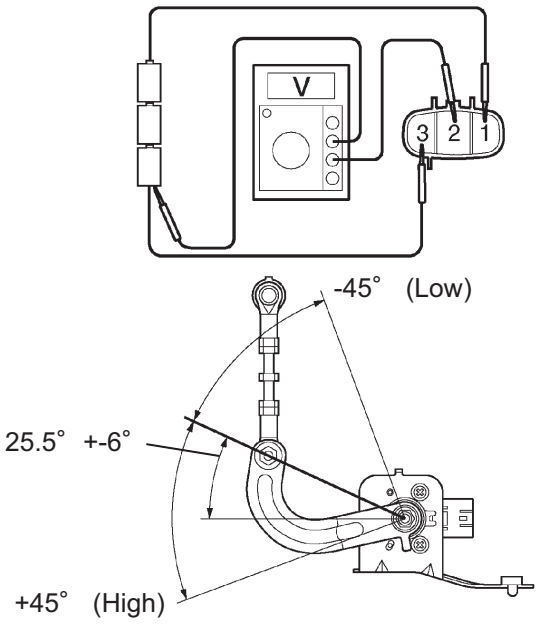
Link Angle	Standard voltage
+45°(High)	4.5 V
0°(Normal)	2.5 V
-45°(Low)	0.5 V

LI

FF:



4WD:



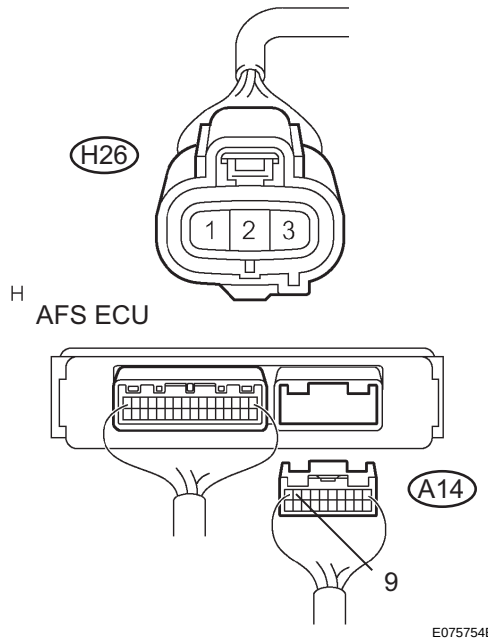
E068634E01

NG → **REPLACE HEIGHT CONTROL SENSOR SUB-ASSEMBLY REAR RH**

OK

4	CHECK HARNESS AND CONNECTOR (AFS ECU - HEIGHT CONTROL SENSOR SUB-ASSEMBLY REAR RH)

Wire Harness View:



E075754E01

(a) Disconnect the A14 connector from the AFS ECU.
(b) Disconnect the H26 connector from the height control sensor sub-assembly rear RH.
(c) Measure the resistance according to the value(s) in the following table.

Resistance

Tester connection	Condition	Specified condition
SHRL (A14-9) - SHRR (H26-2)	Always	Below 1 Ω
SHRL (A14-9) - Body ground	Always	10 kΩ or higher

Result

Condition	Proceed to
OK (When checking from the DTC)	A
OK (When checking from the PROBLEM SYMPTOMS TABLE)	B
NG	C

B → PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

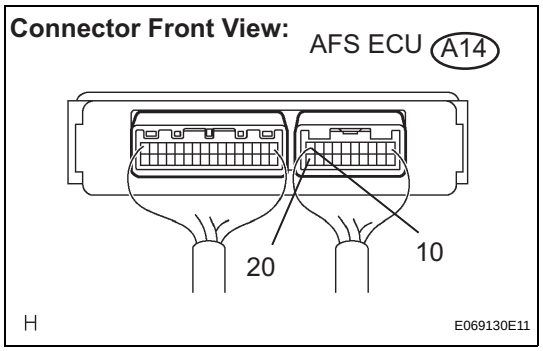
C → REPAIR OR REPLACE HARNESS OR CONNECTOR

A

REPLACE AFS ECU

LI

5 INSPECT AFS ECU



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

Voltage

Tester connection	Condition	Specified condition
SBR (A14-10) - SGR (A14-20)	Ignition switch ON	4.5 to 5.5 V

Result

Condition	Proceed to
OK	A
NG (When checking from the DTC)	B
NG (When checking from the PROBLEM SYMPTOMS TABLE)	C

B → REPLACE AFS ECU

C → PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

A

REPAIR OR REPLACE HARNESS OR CONNECTOR (AFS ECU - HEIGHT CONTROL SENSOR REAR RH)

6	CHECK DTC (AIR SUSPENSION SYSTEM)

(a) Check the DTC of the air suspension system (See page SC-8).
OK:
Normal system code is output.

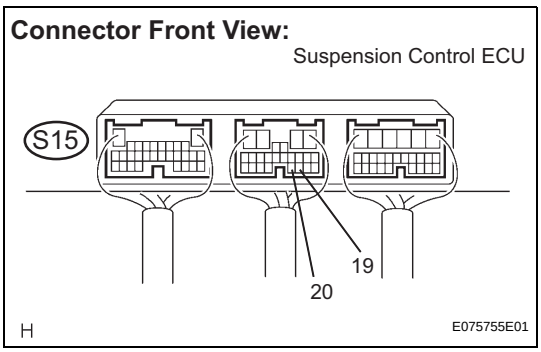
NG → **GO TO FLOW CHART**

OK

7	CHECK HARNESS AND CONNECTOR (SUSPENSION CONTROL ECU HEIGHT SIGNAL POWER SOURCE)

LI

Connector Front View:
Suspension Control ECU



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

Voltage

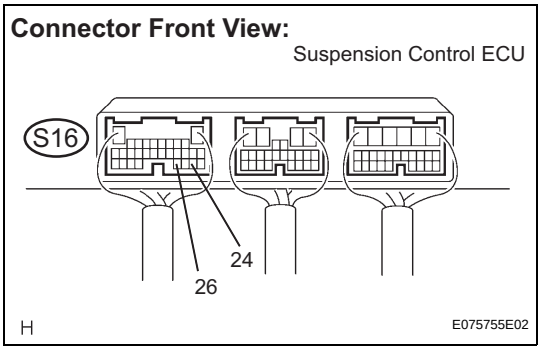
Tester connection	Condition	Specified condition
SBL3 (S15-19) - SGL3 (S15-20)	Ignition switch ON	4.5 to 5.5 V

NG → **Go to step 10**

OK

8	INSPECT SUSPENSION CONTROL ECU

Connector Front View:
Suspension Control ECU



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

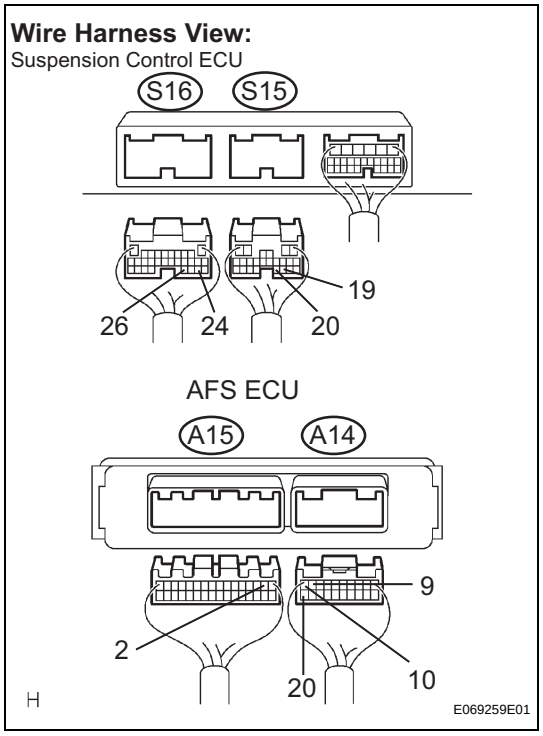
Voltage

Tester connection	Condition	Specified condition
SHR2 (S16-24) - Body ground	Ignition switch ON	0.5 to 4.5 V
SHF2 (S16-26) - Body ground	Ignition switch ON	0.5 to 4.5 V

NG → REPLACE SUSPENSION CONTROL ECU

OK

9 CHECK HARNESS AND CONNECTOR (SUSPENSION CONTROL ECU - AFS ECU)



(a) Disconnect the suspension control ECU connector and AFS ECU connector.
(b) Measure the resistance according to the value(s) in the table below.

Resistance

Tester connection	Condition	Specified condition
SHRL (A14-9) - SHR2 (S16-24)	Always	Below 1 Ω
SGR (A14-20) - SGL3 (S15-20)	Always	Below 1 Ω
SBR (A14-10) - SBL3 (S15-19)	Always	Below 1 Ω
SHFL (A15-2) - SHF2 (S16-26)	Always	Below 1 Ω
SHRL (A14-9) - Body ground	Always	10 kΩ or higher
SGR (A14-20) - Body ground	Always	10 kΩ or higher
SBR (A14-10) - Body ground	Always	10 kΩ or higher
SHFL (A15-2) - Body ground	Always	10 kΩ or higher

Result

Condition	Proceed to
OK (When checking from the DTC)	A
OK (When checking from the PROBLEM SYMPTOMS TABLE)	B
NG	C

B → PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

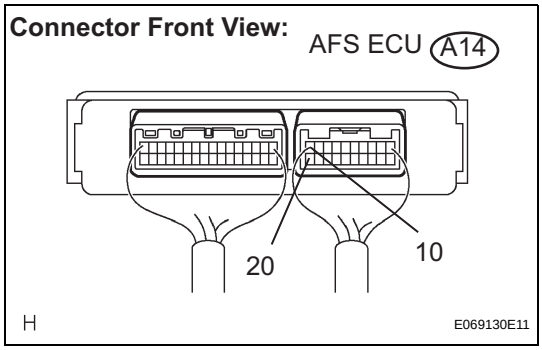
LI

C → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

A

REPLACE AFS ECU

10 INSPECT AFS ECU



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

Voltage

Tester connection	Condition	Specified condition
SBR (A14-10) - SGR (A14-20)	Ignition switch ON	4.5 to 5.5 V

Result

Condition	Proceed to
OK	A
NG (When checking from the DTC)	B
NG (When checking from the PROBLEM SYMPTOMS TABLE)	C

B → **REPLACE AFS ECU**

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

A

REPAIR OR REPLACE HARNESS OR CONNECTOR (AFS ECU - SUSPENSION CONTROL ECU)

LI

DTC	B2417	Headlight Beam Level Control Motor LH Malfunction

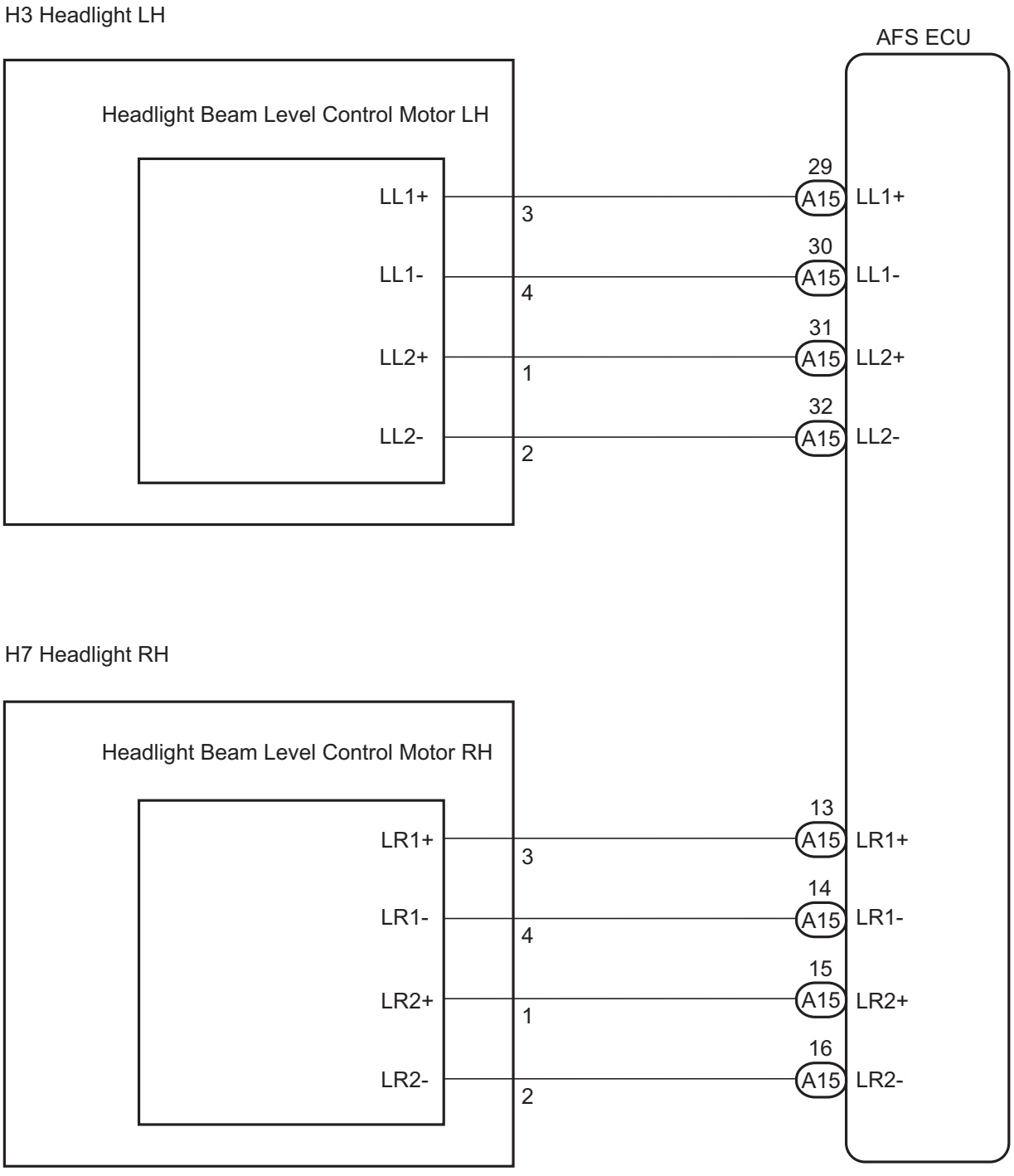
DTC	B2418	Headlight Beam Level Control Motor RH Malfunction

DESCRIPTION

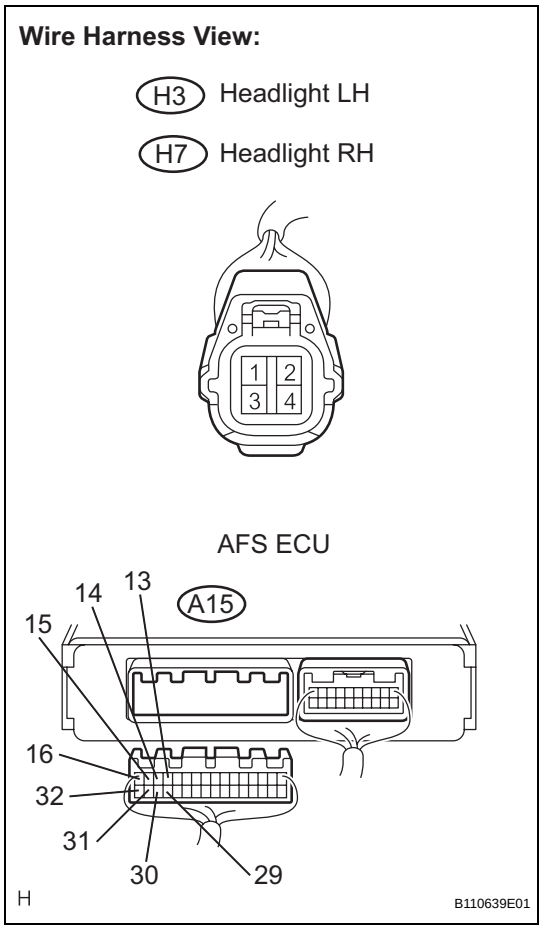
The leveling actuator receives the signal from the AFS ECU to operate. The AFS ECU receives the signal regarding the operating conditions of the leveling actuator.

DTC No.	DTC Detecting Condition	Trouble Area
B2417	• Malfunction of headlight beam level control motor LH • Open or short of headlight beam level control motor LH circuit	• Headlight beam level control motor LH • Harness or connector • AFS ECU
B2418	• Malfunction of headlight beam level control motor RH • Open or short of headlight beam level control motor RH circuit	• Headlight beam level control motor RH • Harness or connector • AFS ECU

WIRING DIAGRAM



1	CHECK HARNESS AND CONNECTOR (HEADLIGHT BEAM LEVEL CONTROL MOTOR - AFS ECU)



(a) Disconnect the headlight connector of headlight beam level control motor side and AFS ECU connector.

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

Resistance:

LH Side (B2417)

Tester connection	Condition	Specified condition
LL2+ (H3-1) - LL2+ (A15-31)	Always	Below 1 Ω
LL2- (H3-2) - LL2- (A15-32)	Always	Below 1 Ω
LL1+ (H3-3) - LL1+ (A15-29)	Always	Below 1 Ω
LL1- (H3-4) - LL1- (A15-30)	Always	Below 1 Ω
LL1+ (A15-29) - Body ground	Always	10 kΩ or higher
LL1- (A15-30) - Body ground	Always	10 kΩ or higher
LL2+ (A15-31) - Body ground	Always	10 kΩ or higher
LL2- (A15-32) - Body ground	Always	10 kΩ or higher

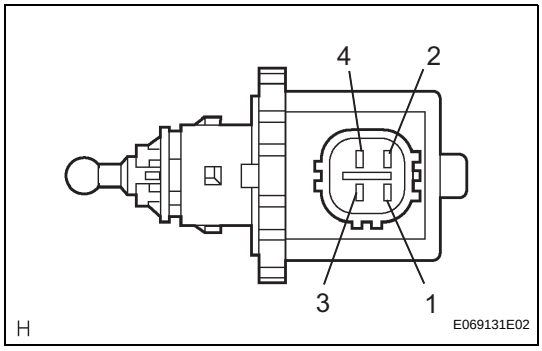
RH Side (B2418)

Tester connection	Condition	Specified condition
LR2+ (H7-1) - LR2+ (A15-15)	Always	Below 1 Ω
LR2- (H7-2) - LR2- (A15-16)	Always	Below 1 Ω
LR1+ (H7-3) - LR1+ (A15-13)	Always	Below 1 Ω
LR1- (H7-4) - LR1- (A15-14)	Always	Below 1 Ω
LR1+ (A15-13) - Body ground	Always	10 kΩ or higher
LR1- (A15-14) - Body ground	Always	10 kΩ or higher
LR2+ (A15-15) - Body ground	Always	10 kΩ or higher
LR2- (A15-16) - Body ground	Always	10 kΩ or higher

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

2 INSPECT HEADLIGHT BEAM LEVEL CONTROL MOTOR



(a) Disconnect the headlight connector of headlight beam level control motor side.
(b) Measure the resistance according to the value(s) in the table below.

Resistance:

LH Side (B2417)

Tester connection	Condition	Specified condition
LL2+ (1) - LL2- (2)	Always	5.8 to 12.5 Ω
LL1+ (3) - LL1- (4)	Always	5.8 to 12.5 Ω

RH Side (B2418)

Tester connection	Condition	Specified condition
LR2+ (1) - LR2- (2)	Always	5.8 to 12.5 Ω
LR1+ (3) - LR1- (4)	Always	5.8 to 12.5 Ω

Result

Condition	Proceed to
OK (When checking from the DTC)	A
OK (When checking from the PROBLEM SYMPTOMS TABLE)	B
NG	C

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

C → **REPLACE HEADLIGHT BEAM LEVEL CONTROL MOTOR**

A

REPLACE AFS ECU

DTC	B2419	BEAN Communication Malfunction

DESCRIPTION

The AFS ECU receives the signal regarding lighting condition of the headlight, shift position signal of the transaxle, READY condition signal from HV control ECU and vehicle speed signal from the combination meter using multiplex communication.
When the DTC (B2419) is output, the other DTCs are output at the same time.

DTC No.	DTC Detecting Condition	Trouble Area
B2419	• Malfunction of multiplex communication system • Open or short of multiplex communication system circuit	• Multiplex communication system • Harness or connector • AFS ECU

1	GO TO MULTIPLEX COMMUNICATION SYSTEM

Result

Condition	Proceed to
OK (When checking from the DTC)	A
OK (When checking from the PROBLEM SYMPTOMS TABLE)	B
NG	C

LI

B → PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

C → GO TO FLOW CHART

A

REPLACE AFS ECU

DTC	B2420	AFS ECU Malfunction

DESCRIPTION

When the AFS ECU detects a malfunction in itself, a DTC is output.

DTC No.	DTC Detecting Condition	Trouble Area
B2420	• Malfunction of AFS ECU	• AFS ECU

1	**REPLACE AFS ECU**

NEXT

END

DTC	B2421	Steering Neutral Point Automatic Correction Incompletion

DESCRIPTION

This DTC is output when AFS ECU does not finish steering neutral point automatic correction. AFS operation is prohibited while this DTC is being output. This DTC is completed and AFS operation starts when AFS ECU records the steering neutral point correctly. If this DTC is not automatically erased, perform repair or replacement by following the procedures below.

DTC No.	DTC Detecting Condition	Trouble Area
B2421	• Steering neutral point correction recording • Steering position sensor circuit	• Steering sensor • Harness or connector • Skid Control ECU • AFS ECU

1	CHECK DTC

(a) Check that DTC B2414 and B2415 are not output (See page LI-56).

OK:

DTC is not output.

NG → **GO TO FLOW CHART**

OK ↓

2	AFS ECU RE-INITIALIZATION

(a) Return to normal condition.

OK:

DTC is not output.

NG → **REPLACE AFS ECU**

OK ↓

END

DTC	B2423	AFS ECU Installation Error

DESCRIPTION

This DTC is output if the AFS ECU is not installed properly. (The AFS ECU for vehicles with coil suspension is installed on vehicles with air suspension.)

DTC No.	DTC Detecting Condition	Trouble Area
B2423	• AFS ECU installation error (AFS ECU for vehicles with coil suspension is installed on vehicles with air suspension.)	• AFS ECU

1	REPLACE AFS ECU

NEXT

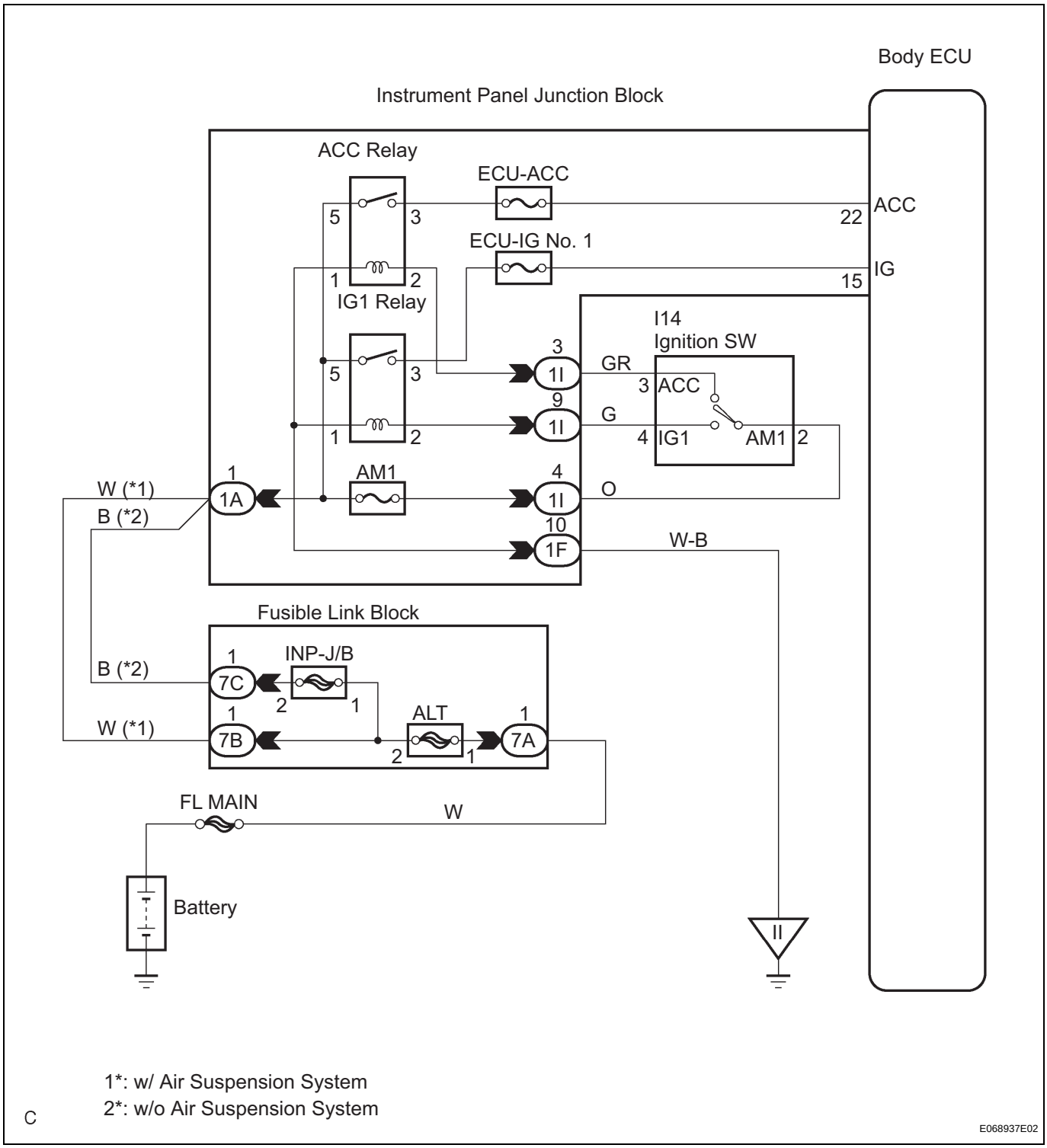
END

Ignition Switch Circuit

DESCRIPTION

This circuit detects the state of the ignition switch and sends it to the body ECU.

WIRING DIAGRAM



1	READ VALUE OF INTELLIGENT TESTER

(a) Connect the intelligent tester to the DLC3.
(b) Turn the ignition switch to the ON position and press the intelligent tester main switch ON.
(c) Select the items below in the DATA LIST, and read the displays on the intelligent tester.

BODY:

Item	Measurement Item/ Display (Range)	Normal Condition	Diagnostic Note
ACC SW	ACC SW signal/ON or OFF	ON: Ignition key is in ACC, ON or START position OFF: Ignition key is in OFF position	-
IG SW	IG SW signal/ON or OFF	ON: Ignition key is in ON or START position OFF: Ignition key is in OFF or ACC position	-

NG → **Go to step 2**

OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

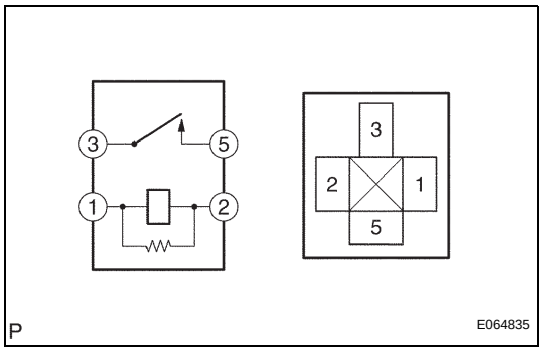
2	INSPECT FUSE

(a) Inspect the ECU-ACC fuse, ECU-IG No.1 fuse and AM1 fuse in the instrument panel junction block assembly.
Resistance:
Below 1 Ω

NG → **REPLACE FUSE**

OK

3	INSPECT RELAY

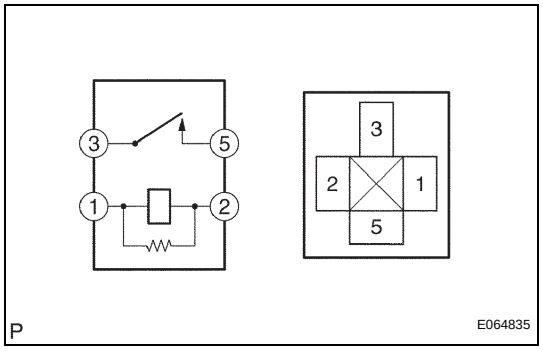


(a) Inspect ACC relay continuity.
(1) Remove the ACC relay from the instrument panel J/B.
(2) Measure the resistance according to the value(s) in the table below.

Resistance

Tester connection	Condition	Specified resistance
3 - 5	Always	10 kΩ or higher

Tester connection	Condition	Specified resistance
3 - 5	Apply B+ between the terminal 1 and 2	Below 1 Ω



(b) Inspect IG1 relay continuity.
(1) Remove the IG1 relay from the instrument panel J/B.
(2) Measure the resistance according to the value(s) in the table below.

Resistance

Tester connection	Condition	Specified resistance
3 - 5	Always	10 kΩ or higher
3 - 5	Apply B+ between the terminal 1 and 2	Below 1 Ω

NG → REPLACE RELAY

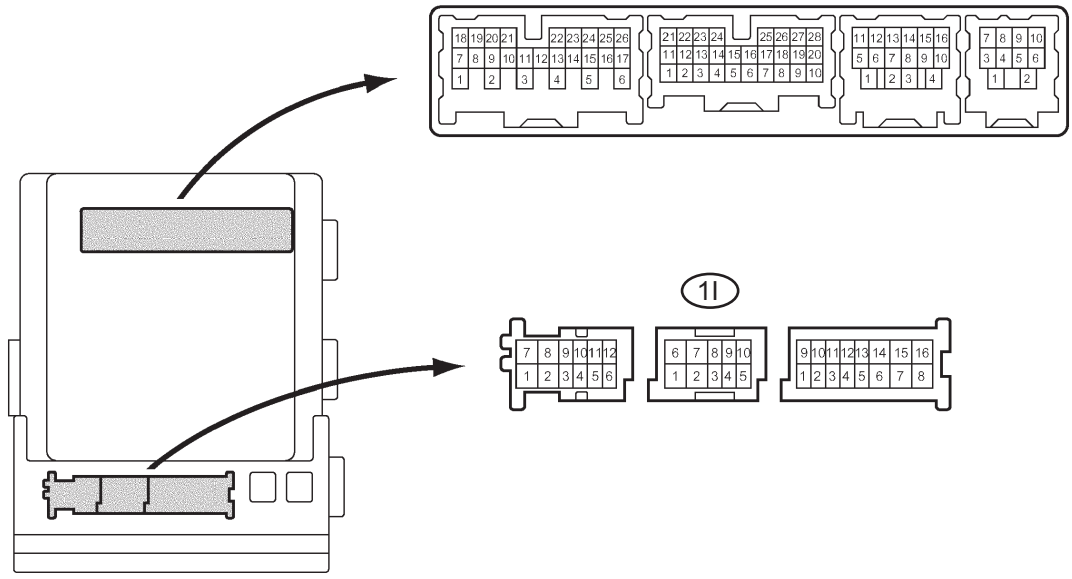
OK

LI

4 INSPECT INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY (ACC, IG)

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

Instrument Panel Junction Block Assembly Back Side Wire Harness View:



Voltage

Tester connection	Condition	Specified condition
1I-3 - Body ground	Ignition switch is OFF → ACC, ON	Below 1 V → 10 to 14 V
1I-9 - Body ground	Ignition switch is OFF → ON	Below 1 V → 10 to 14 V

NG	Go to step 5

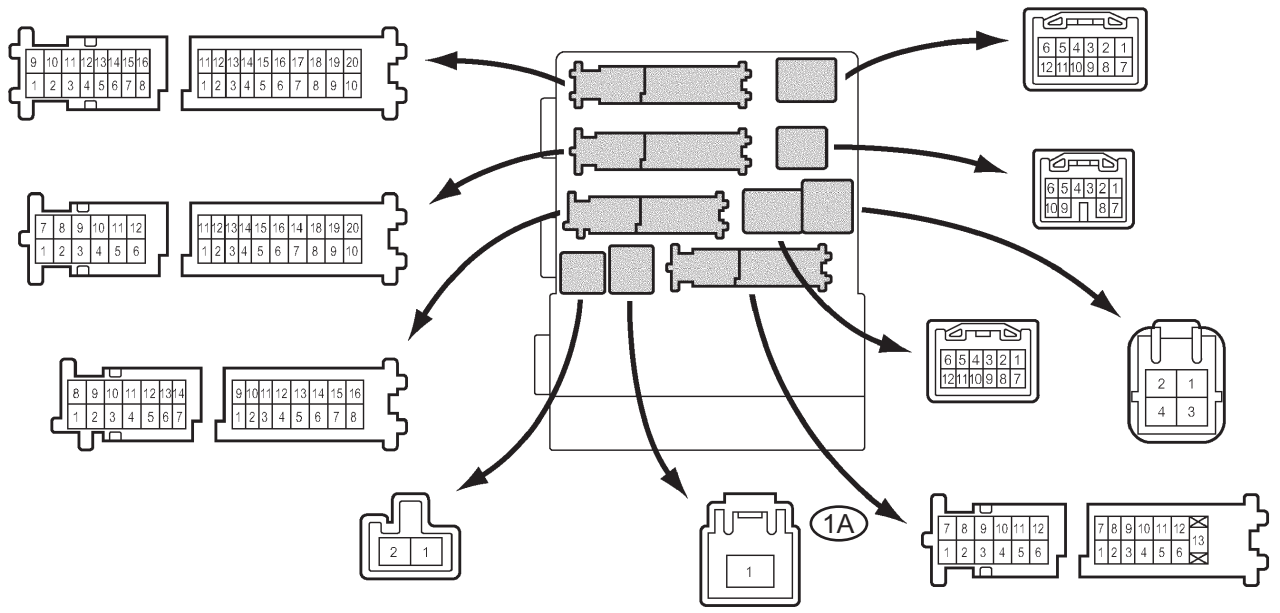
OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

5 INSPECT JUNCTION BLOCK NO.2 (POWER SOURCE CIRCUIT)

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

Instrument Panel Junction Block Assembly Front Side Wire Harness View:



Voltage

Tester connection	Tester connection Condition	Specified condition
1A-1 - Body ground	Always	10 to 14 V

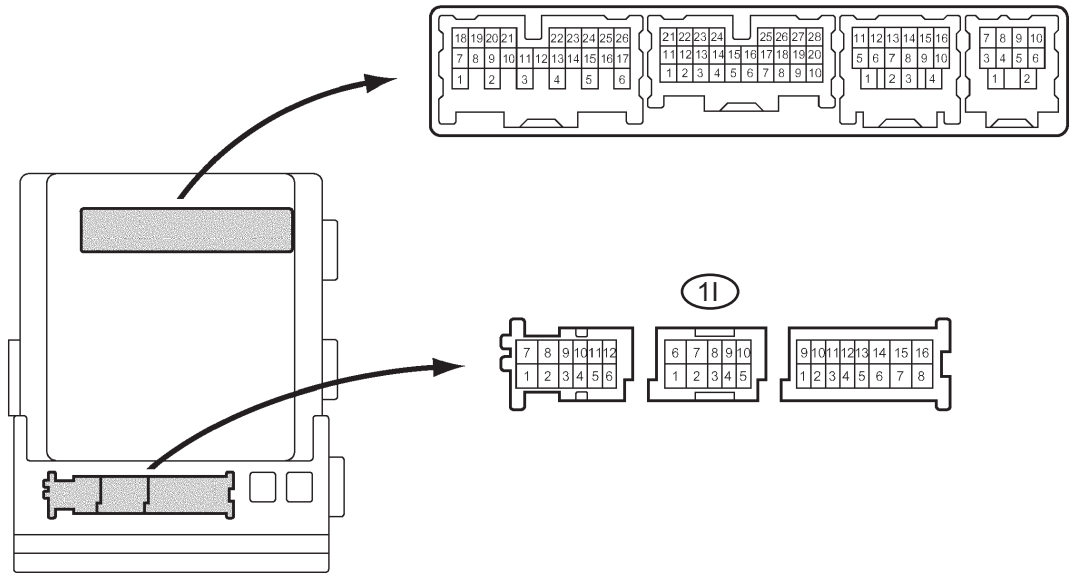
NG	REPAIR OR REPLACE HARNESS OR CONNECTOR (BATTERY - INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY)

OK

6 INSPECT INSTRUMENT PANEL J/B ASSEMBLY

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

Instrument Panel Junction Block Assembly Back Side Wire Harness View:



Voltage

Tester connection	Condition	Specified condition
1I-4 - Body ground	Always	10 to 14 V

NG → **REPLACE INSTRUMENT PANEL J/B ASSEMBLY**

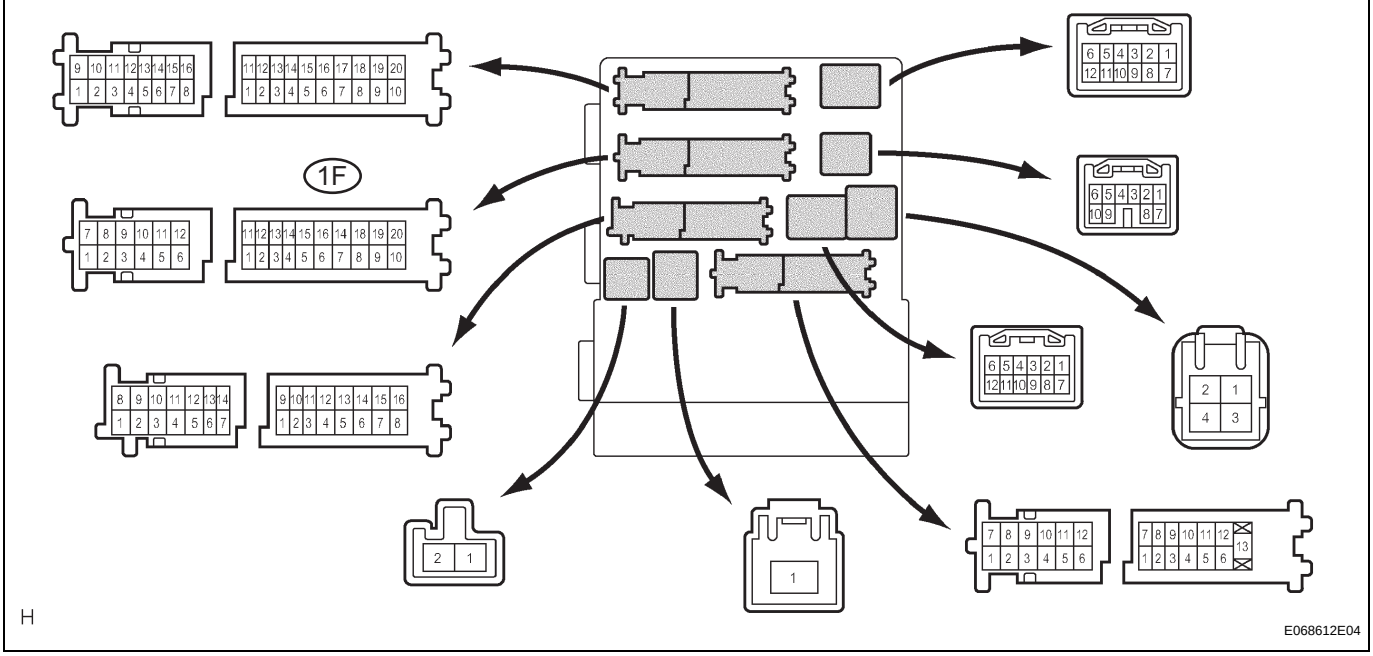
OK

7	CHECK HARNESS AND CONNECTOR (INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY - BODY GROUND)

(a) Disconnect the 1F connector from the instrument panel junction block assembly.
(b) Measure the resistance according to the value(s) in the table below.

LI

Instrument Panel Junction Block Assembly Front Side Wire Harness View:



LI

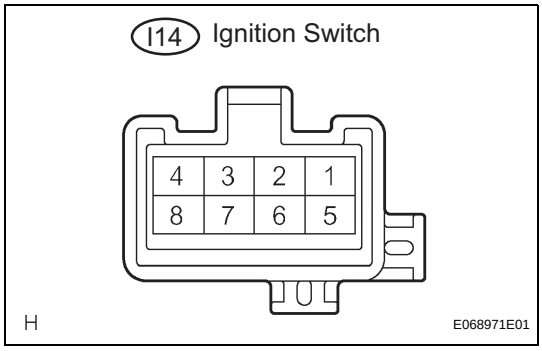
Resistance

Tester connection	Condition	Specified condition
1F-10 - Body ground	Always	Below 1 Ω

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

8 INSPECT IGNITION SWITCH



(a) Disconnect the ignition switch connector.
(b) Measure the resistance according to the value(s) in the table below.

Resistance

Tester connection	Condition	Specified condition
2 - 3	Ignition switch OFF	10 kΩ or higher
2 - 4	Ignition switch OFF	10 kΩ or higher
2 - 3	Ignition switch ACC	Below 1 Ω
2 - 4	Ignition switch ON	Below 1 Ω

NG → **REPLACE IGNITION SWITCH**

OK

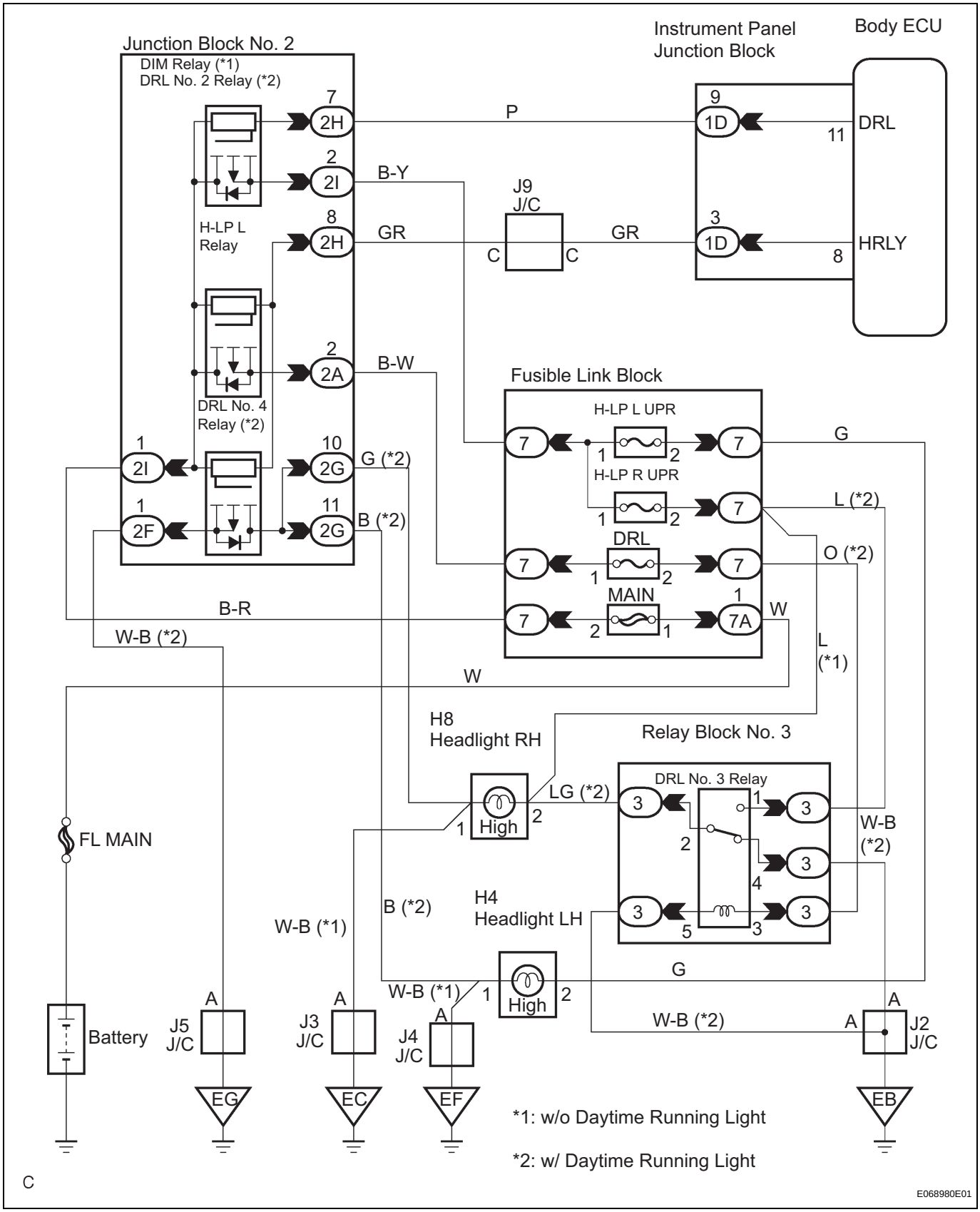
REPAIR OR REPLACE HARNESS OR CONNECTOR (INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY - IGNITION SWITCH)

DRL Relay Circuit

DESCRIPTION

The multiplex network body ECU controls the DIMMER, DRL No. 2 and DRL No. 4 relays.
The DIM, DRL No. 2 and DRL No. 4 relays installed in the power distributor.
1. Description (See page LI-9)

WIRING DIAGRAM



HINT:
Start the inspection from step 1 when using the intelligent tester, and start from step 2 when not using the intelligent tester.

1	PERFORM ACTIVE TEST BY INTELLIGENT TESTER

(a) Connect the intelligent tester to DLC3.
(b) Turn the ignition switch ON and push the intelligent tester main switch ON.
(c) Select the item below in the ACTIVE TEST and then check that the relay operates.

BODY NO. 1

Item	Test Details	Diagnostic Note
DIMMER SIG	Turn DRL No.2 and No.4 relays ON/OFF	w/ DRL
DIMMER SIG	Turn Dimmer relay ON/OFF	w/o DRL

NG → **Go to step 2**

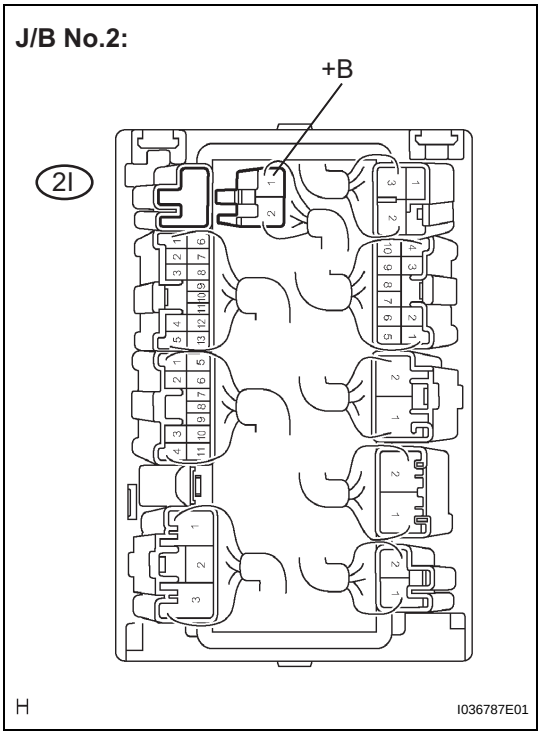
OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

LI

2	CHECK HARNESS AND CONNECTOR (POWER SOURCE CIRCUIT)

J/B No.2:



(a) Disconnect the connector from the J/B No.2 (power distributor).
(b) Measure the voltage according to the value(s) in the table below.

Voltage

Tester connection	Condition	Specified value
2I - 1 (+B) - Body ground	Always	10 to 14 V

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

3	CONFIRM MODEL

Result:

A:

w/ DRL

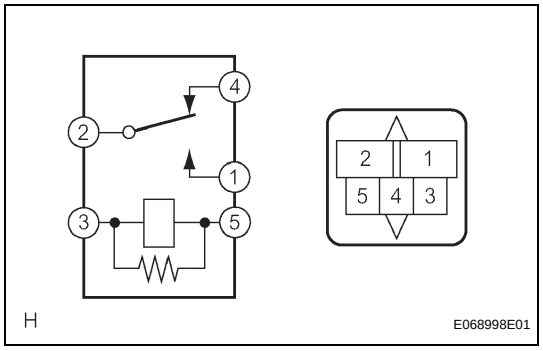
B:

w/o DRL

B → **Go to step 14**

A

4 INSPECT DAY TIME RUNNING LIGHT RELAY NO.3 (DRL NO. 3 RELAY)



(a) Inspect DRL relay continuity.
(1) Check the resistance between the each of the terminals as shown in the table below.
Resistance

Terminal No.	Specified condition
1 - 2	10 kΩ or higher
	Below 1 Ω (When battery voltage is applied to terminals 3 and 5)
2 - 4	Below 1 Ω
	10 kΩ or higher (When battery voltage is applied to terminals 3 and 5)

NG → **REPLACE DAY TIME RUNNING LIGHT RELAY NO.3**

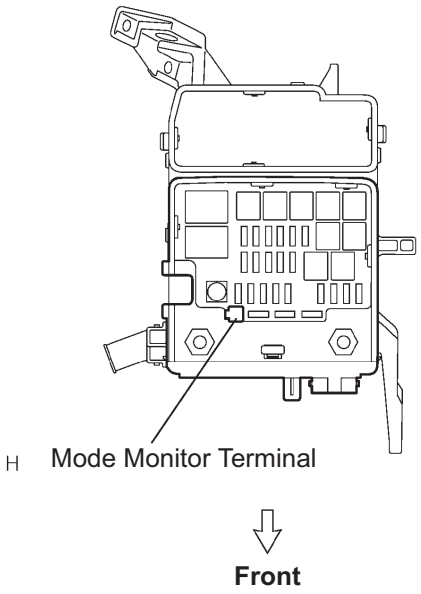
OK

5 CHECK MODE MONITOR TERMINAL (DRL NO. 2, DRL NO. 4 RELAY)

(a) Preparation
(1) Connect the connector.
(2) Remove the cover of the fusible link block assembly.
(3) Set the vehicle to the following condition.
- Ignition switch ON.
- Headlight dimmer switch HI (FLASH).
- Light control switch ON.

LI

Fusible Link Block:



(b) Check voltage
(1) Measure the voltage between the Mode Monitor Terminal and body ground.
RESULT

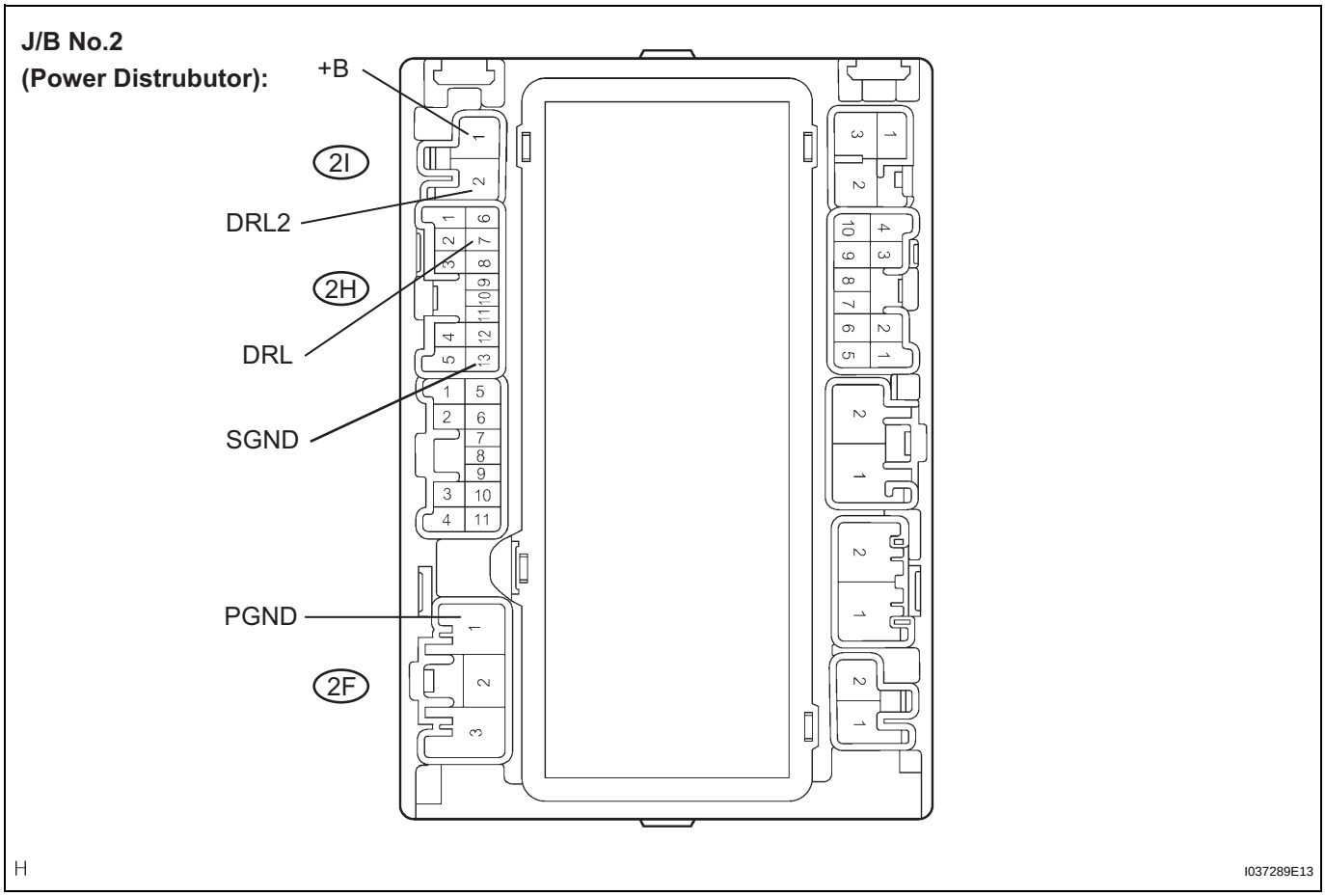
Condition	Proceed to
6.3 +- 2 V	A
Approx. 1 V	B

B → **Go to step 13**

A

6	INSPECT JUNCTION BLOCK NO.2 (DRL NO. 2, DRL NO. 4 RELAY)

(a) Turn the ignition switch to OFF position.
(b) Remove the J/B No. 2.
(c) Inspect the DRL No. 2 relay.



(1) Connect the positive battery lead to terminal +B of the J/B No. 2 and the negative lead to terminal SGND, PGND.

Symbols (terminals No.)	Connection
+B (2I-1) - SGND (2H-13), PGND (2F-1)	Positive - Negative

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

Voltage

Tester Connection	Specified Condition
DRL2 (2I-2) - Battery negative terminal	**Below 1 V**

(3) Connect the battery negative lead to terminal DRL of the J/B No.2.

Symbols (terminals No.)	Connection
DRL (2H-7)	Negative

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

Voltage

Tester Connection	Specified Condition
DRL2 (2I-2) - Battery negative terminal	**10 to 14 V**

(d) Inspect the DRL No.4 relay.

(1) Connect terminal HRE and DRL with wire.

Symbols (terminals No.)	Connection
HRE (2G-10) - DRL (2H-7)	Using wire harness

LI

(2) Connect the positive battery lead to terminal +B of the J/B No.2 and the negative lead to terminal SGND, PGND.

Symbols (terminals No.)	Connection
+B (2I-1) - SGND (2H-13), PGND (2F-1)	Positive - Negative

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

Voltage

Tester Connection	Specified Condition
DRL2 (2I-2) - Battery negative terminal	**Below 1 V**

(4) Connect the battery negative lead to terminal HRLY of the J/B No.2.

Symbols (terminals No.)	Connection
HRLY (2H-8)	Negative

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

Voltage

Tester Connection	Specified Condition
DRL2 (2I-2) - Battery negative terminal	**10 to 14 V**

LI

NG → **REPLACE JUNCTION BLOCK NO.2**

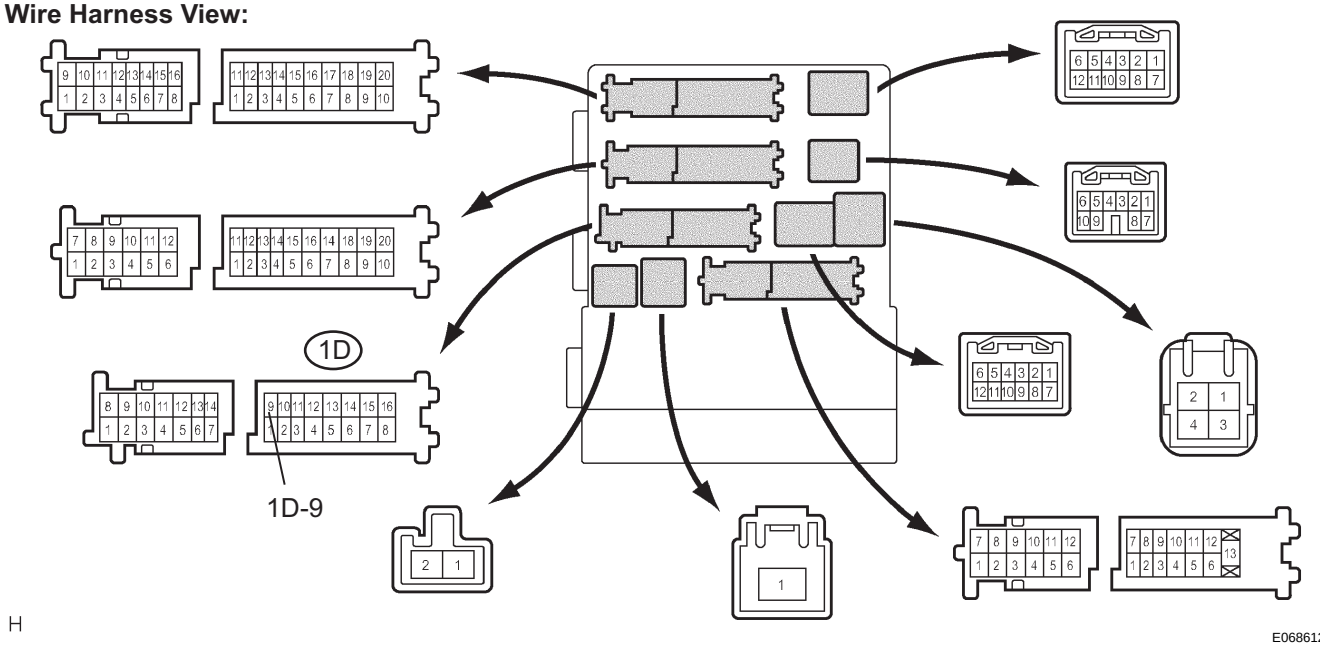
OK

7 INSPECT INSTRUMENT PANEL JUNCTION BLOCK ASSY (DRL SIGNAL CIRCUIT)

(a) Disconnect the connectors from the instrument panel J/B.

Instrument Panel Junction Block Assembly Front Side

Wire Harness View:



HINT:
Reconnect the J/B No. 2 connector.

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

Voltage

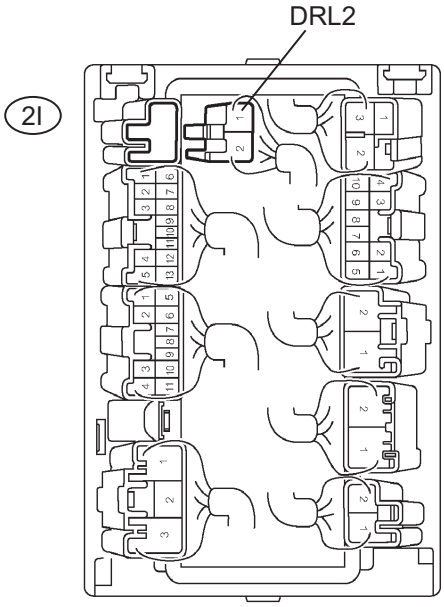
Tester Connection	Condition	Specified Condition
1D-9 - Body ground	Always	10 to 14 V

B → **Go to step 12**

OK

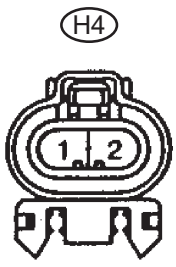
8 CHECK HARNESS AND CONNECTOR (J/B NO. 2 - BULB)

J/B No. 2:



(a) Disconnect the connectors from the J/B No.2 (power distributor).

Headlight Bulb Connector Front View:



(b) Disconnect the connector from the headlight bulb.

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

Resistance

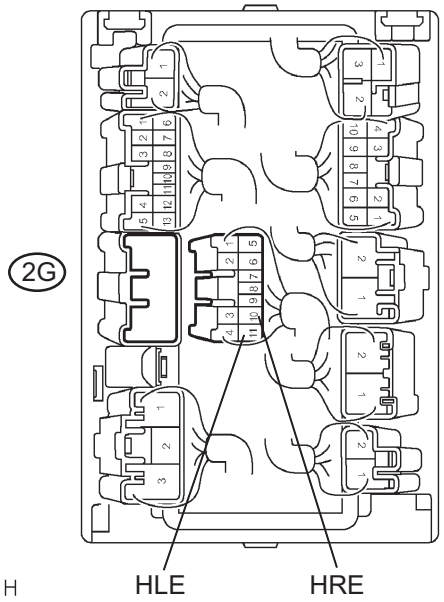
Tester connection	Condition	Specified value
2I-2 (DRL2) - H5-2 (Headlight LH)	Always	Below 1 Ω
2I-2 (DRL2) - body ground	Always	10 kΩ or higher

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

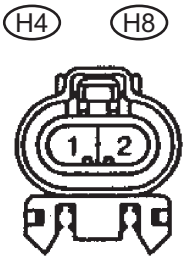
9	CHECK HARNESS AND CONNECTOR (BULB - J/B NO. 2)

J/B No. 2:



(a) Disconnect the connectors from the J/B No.2 (power distributor).

Headlight Bulb Connector Front View:



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

Resistance

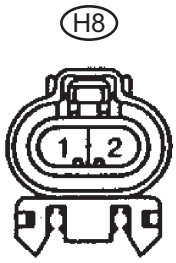
Tester connection	Condition	Specified value
2G-11 (HLE) - H4-1 (Headlight LH)	Always	Below 1 Ω
2G-11 (HLE) - Body ground	Always	10 kΩ or higher
2G-10 (HRE) - H8-1 (Headlight RH)	Always	Below 1 Ω
2G-10 (HRE) - Body ground	Always	10 kΩ or higher

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

10 CHECK HARNESS AND CONNECTOR (BULB - BODY GROUND)

Headlight Bulb Connector Front View:



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

Resistance

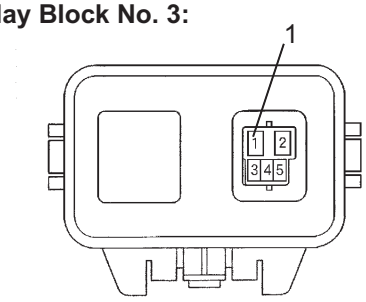
Tester connection	Condition	Specified value
H8-2 (Headlight RH) - Body ground	Always	Below 1 Ω

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

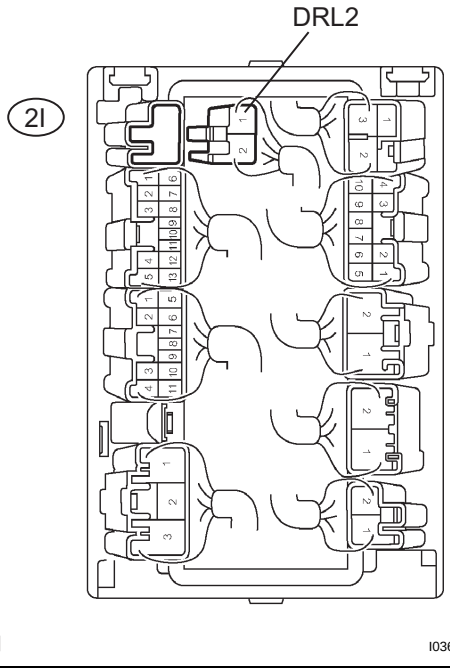
11 CHECK HARNESS AND CONNECTOR (J/B NO. 2 - RELAY BLOCK NO. 3)

Relay Block No. 3:



(a) Remove the DRL No.3 relay from the relay block No.3.

J/B No. 2:



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

Resistance

Tester connection	Condition	Specified value
2I-2 (DRL2) - 1 (Relay block No.3)	Always	Below 1 Ω
2I-2 (DRL2) - Body ground	Always	10 kΩ or higher

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

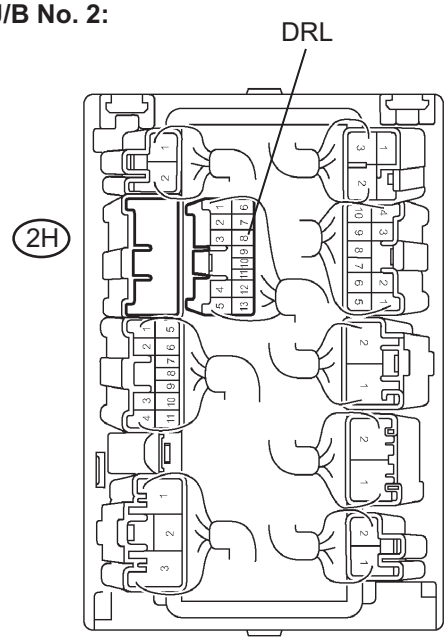
LI

OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

12 CHECK HARNESS AND CONNECTOR (J/B NO. 2 - INSTRUMENT PANEL J/B)

J/B No. 2:



H I036788E02

(a) Disconnect the connectors from the instrument panel J/B.

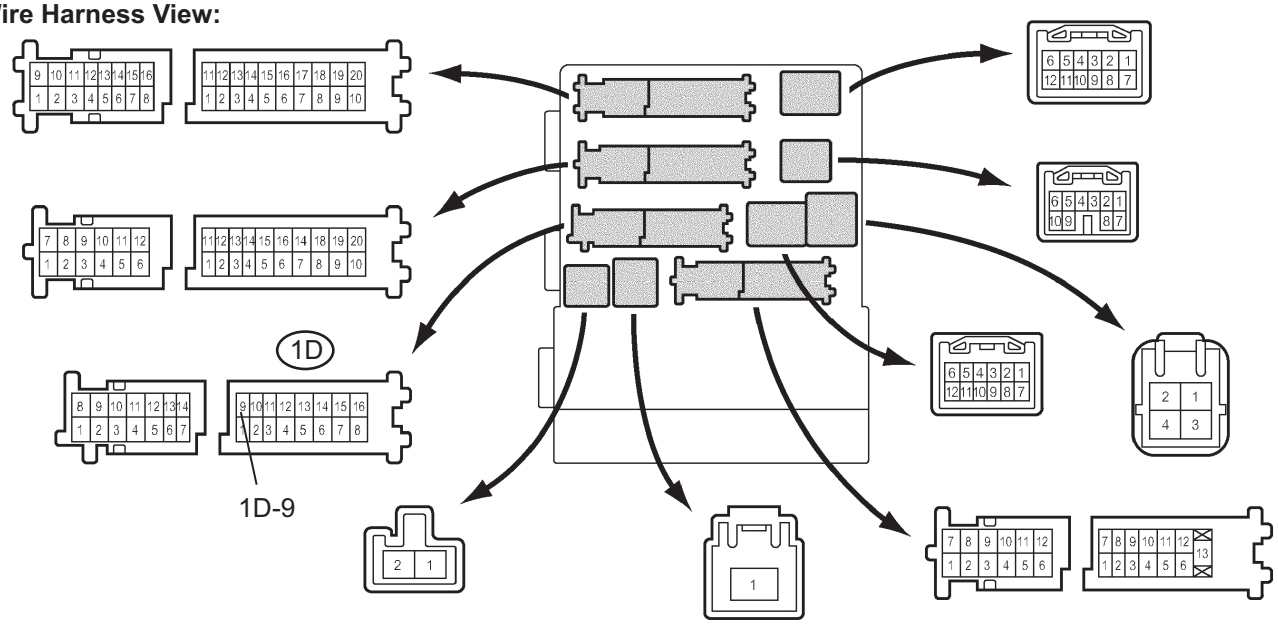
(b) Measure the resistance according to the value(s) in the table below.

Resistance

Tester connection	Condition	Specified value
2H-7 (DRL) - 1D-9	Always	Below 1 Ω
2H-7 (DRL) - Body ground	Always	10 kΩ or higher

Instrument Panel Junction Block Assembly Front Side

Wire Harness View:



H E068612E35

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

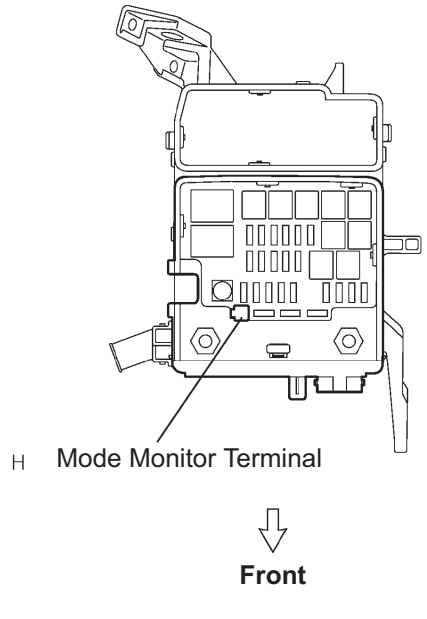
PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

13 CHECK MODE MONITOR TERMINAL (SHORT CIRCUIT DRIVEN SIDE BY RELAY)

(a) Connect the connectors.
(b) Remove the headlight bulbs.
(c) Ignition switch ON.
(d) Check voltage
  (1) Measure the voltage between the Mode Monitor Terminal and body ground.
  RESULT

Condition	Proceed to
6.3 +- 2 V	A
Approx. 1 V	B

Fusible Link Block:



B → REPAIR OR REPLACE HARNESS OR CONNECTOR

A

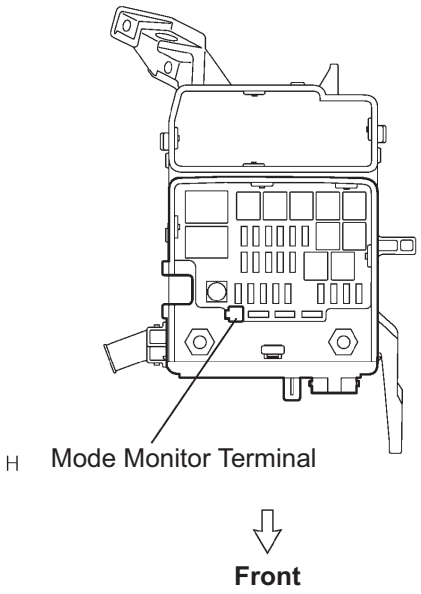
REPLACE BULB

14 CHECK MODE MONITOR TERMINAL (DIM RELAY)

(a) Preparation
  (1) Connect the connector.
  (2) Remove the cover of the fusible link block assembly.
  (3) Set the vehicle to the following condition.
    • Ignition switch ON.
    • Headlight dimmer switch HI (FLASH).
    • Light control switch ON.

LI

Fusible Link Block:



(b) Check voltage
(1) Measure the voltage between the Mode Monitor Terminal and body ground.
RESULT

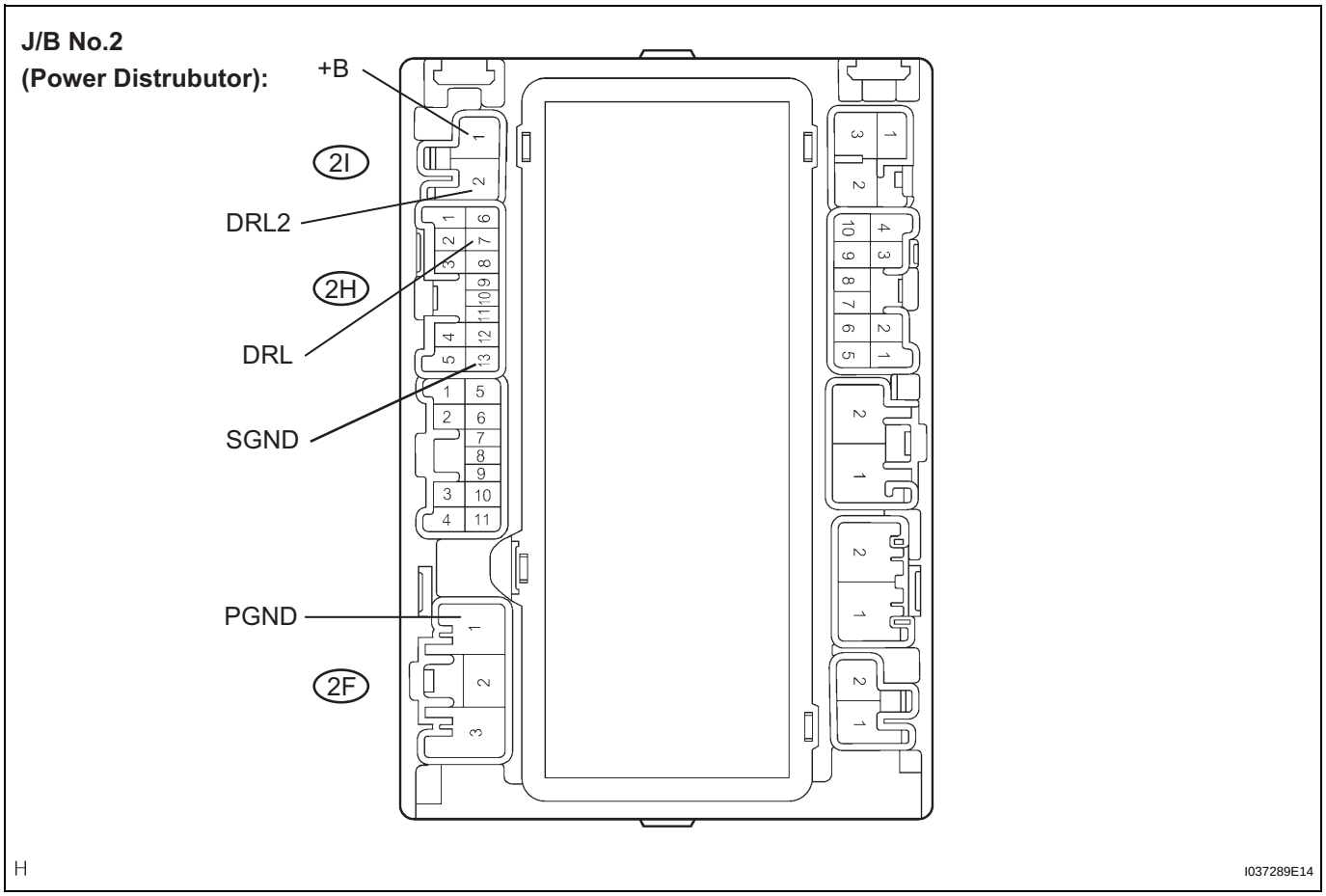
Condition	Proceed to
6.3 +- 2 V	A
Approx. 1 V	B

B → **Go to step 20**

A

15	INSPECT JUNCTION BLOCK NO.2 (DIM RELAY)

(a) Turn the ignition switch to OFF position.
(b) Remove the J/B No. 2.
(c) Inspect the DRL relay.



(1) Connect the positive battery lead to terminal +B of the J/B No. 2 and the negative lead to terminal SGND, PGND.

Symbols (terminals No.)	Connection
+B (2I-1) - SGND (2H-13), PGND (2F-1)	Positive - Negative

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

Voltage

Tester Connection	Specified Condition
DRL2 (2I-2) - Battery negative terminal	**Below 1 V**

(3) Connect the battery negative lead to terminal DRL of the J/B No. 2.

Symbols (terminals No.)	Connection
DRL (2H-7)	Negative

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

Voltage

Tester Connection	Specified Condition
DRL2 (2I-2) - Battery negative terminal	**10 to 14 V**

NG → **REPLACE JUNCTION BLOCK NO.2**

OK

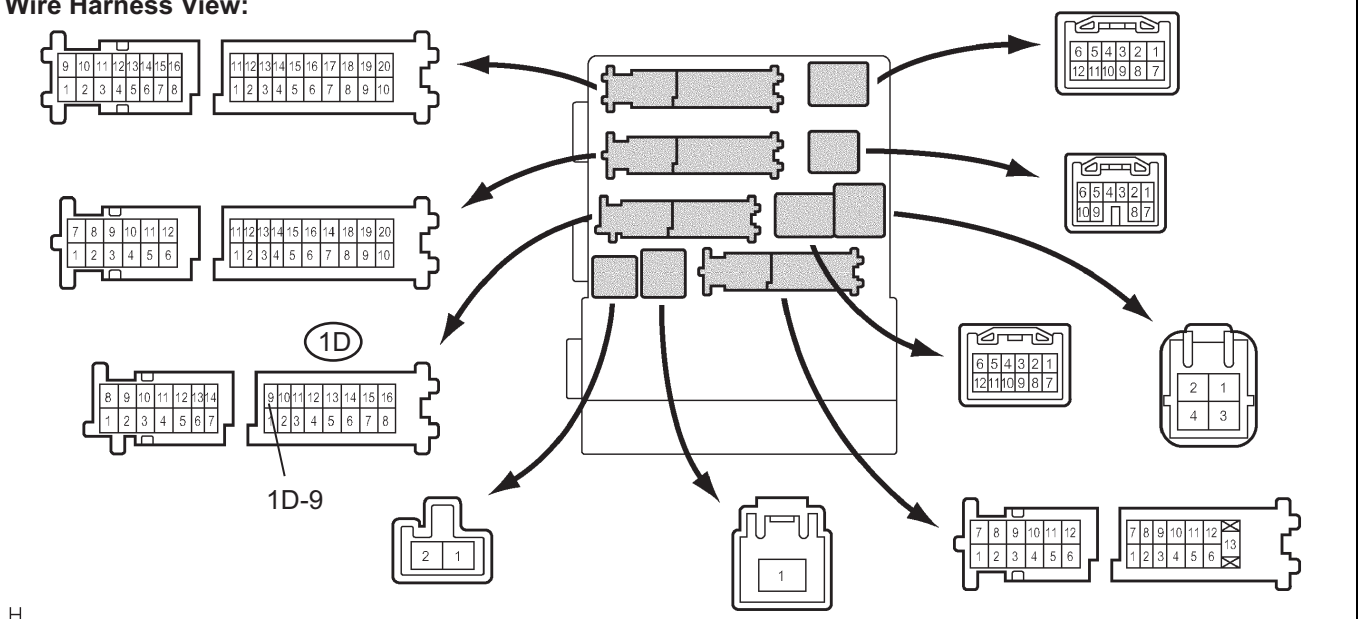
LI

16	INSPECT INSTRUMENT PANEL JUNCTION BLOCK ASSY (DRL SIGNAL CIRCUIT)

(a) Disconnect the connector from the instrument panel J/B.

Instrument Panel Junction Block Assembly Front Side

Wire Harness View:



HINT:
Reconnect the J/B No. 2 connector.

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

Voltage

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

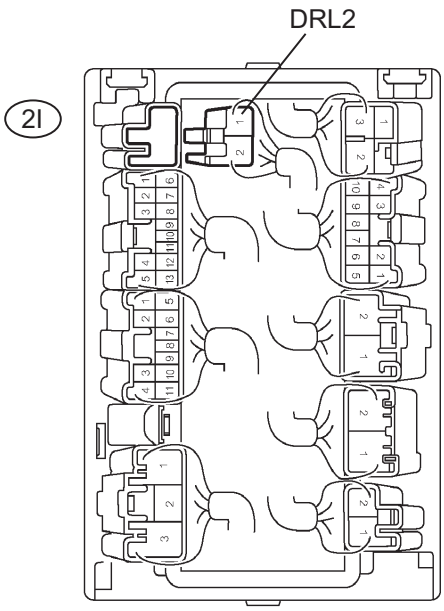
NG → **Go to step 19**

OK

LI

17	CHECK HARNESS AND CONNECTOR (J/B NO. 2 - BULB)

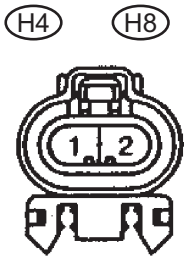
J/B No. 2:



I036787E06

(a) Disconnect the connectors from the J/B No. 2 (power distributor).

Headlight Bulb Connector Front View:



I037585E08

(b) Disconnect the connector from the headlight bulb.
(c) Measure the resistance according to the value(s) in the table below.

Resistance

Tester connection	Condition	Specified value
2I-2 (DRL2) - H4-2 (Headlight LH)	Always	Below 1 Ω
2I-2 (DRL2) - H8-2 (Headlight RH)	Always	Below 1 Ω
2I-2 (DRL2) - body ground	Always	10 kΩ or higher

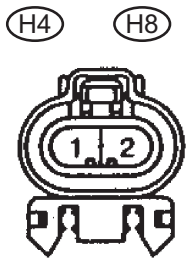
NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

LI

18	CHECK HARNESS AND CONNECTOR (BULB - BODY GROUND)

Headlight Bulb Connector Front View:



I037585E09

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

Resistance

Tester connection	Condition	Specified value
H4-1 (Headlight LH) - body ground	Always	Below 1 Ω
H8-1 (Headlight RH) - body ground	Always	Below 1 Ω

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

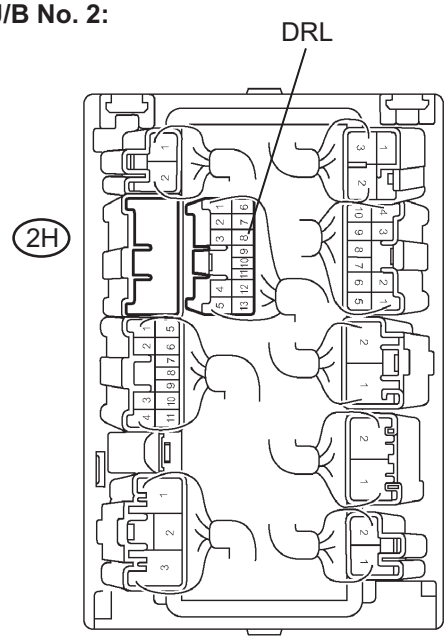
OK

REPLACE JUNCTION BLOCK NO.2

LI

19	CHECK HARNESS AND CONNECTOR (J/B NO. 2 - INSTRUMENT PANEL J/B)

J/B No. 2:



H

I036788E03

(a) Disconnect the connectors from the instrument panel J/B.

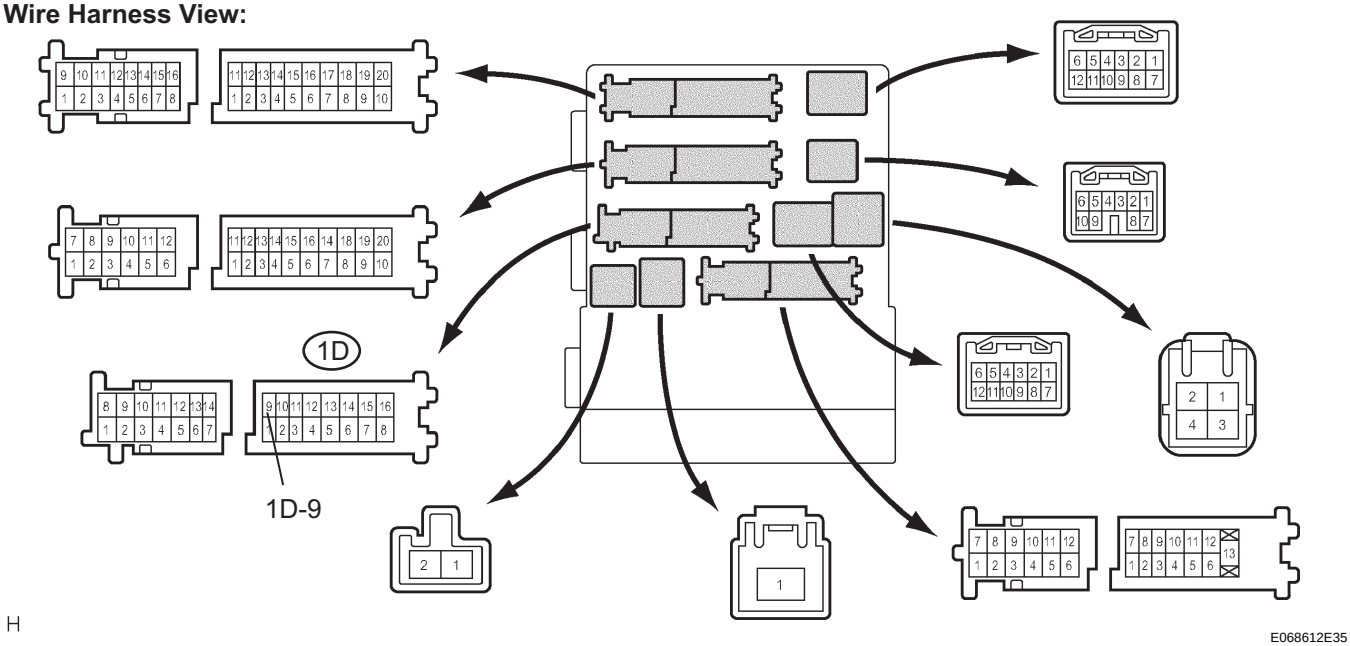
(b) Measure the resistance according to the value(s) in the table below.

Resistance

Tester connection	Condition	Specified value
2H-7 (DRL) - 1D-9	Always	Below 1 Ω
2H-7 (DRL) - Body ground	Always	10 kΩ or higher

Instrument Panel Junction Block Assembly Front Side

Wire Harness View:



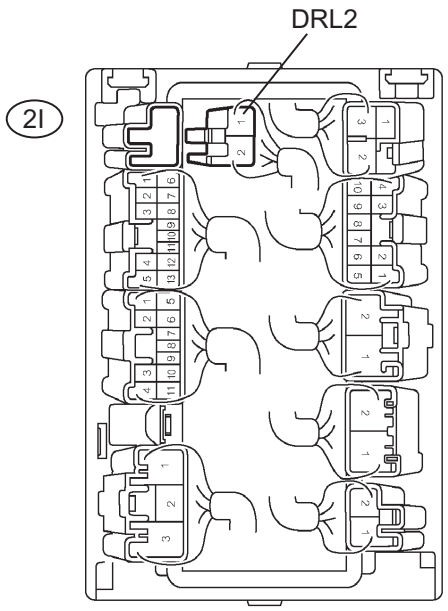
NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

20 CHECK HARNESS AND CONNECTOR (J/B NO. 2 - BULB)

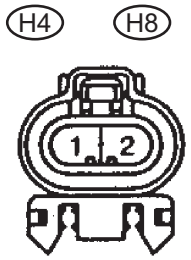
J/B No. 2:



I036787E07

(a) Disconnect the connectors from the J/B No. 2 (power distributor) and headlight bulb.

Headlight Bulb Connector Front View:



I037585E10

(b) Disconnect the connector from the headlight bulb.
(c) Measure the resistance according to the value(s) in the table below.

Resistance

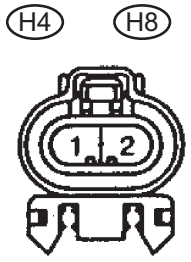
Tester connection	Condition	Specified value
2I-2 (DRL2) - H4-2 (Headlight LH)	Always	Below 1 Ω
2I-2 (DRL2) - H8-2 (Headlight RH)	Always	Below 1 Ω

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

21 CHECK HARNESS AND CONNECTOR (BULB - BODY GROUND)

Headlight Bulb Connector Front View:



I037585E11

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

Resistance

Tester connection	Condition	Specified value
H4-1 (Headlight LH) - body ground	Always	Below 1 Ω
H8-1 (Headlight RH) - body ground	Always	Below 1 Ω

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

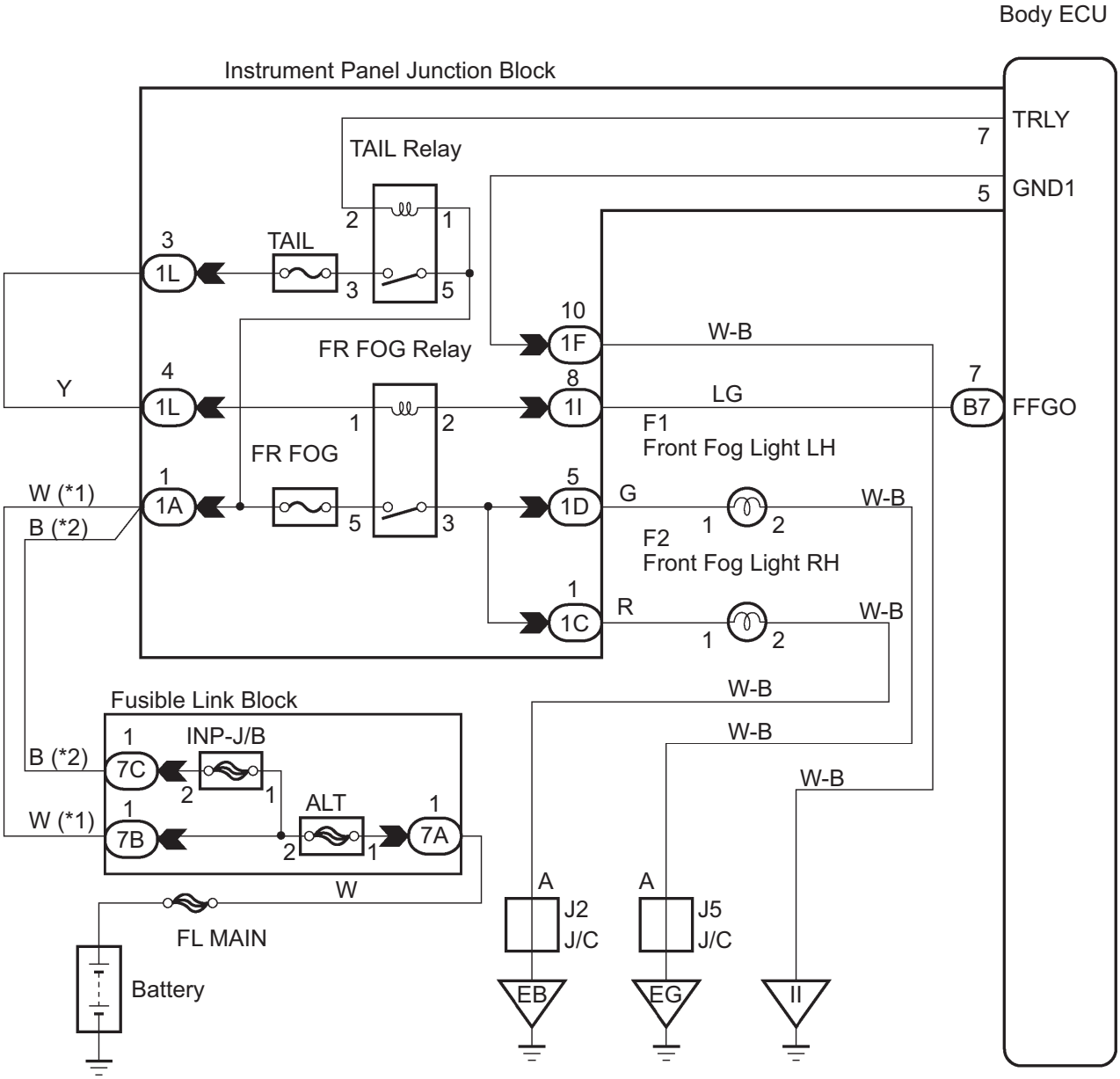
REPLACE JUNCTION BLOCK NO.2

Front Fog Light Circuit

DESCRIPTION

The body ECU controls FOG relay when signal is received from headlight dimmer switch assembly.

WIRING DIAGRAM



1	PERFORM ACTIVE TEST BY INTELLIGENT TESTER

(a) Connect the intelligent tester to DLC3.
(b) Turn the ignition switch to the ON position and press the intelligent tester main switch ON.
(c) Select the item below in the ACTIVE TEST and then check that the relay operates.

BODY

Item	Test Details	Diagnostic Note
F FOG LIGHT RLY	Trun Front fog light relay ON/OFF	-

NG → **Go to step 2**

OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

2	INSPECT FUSE

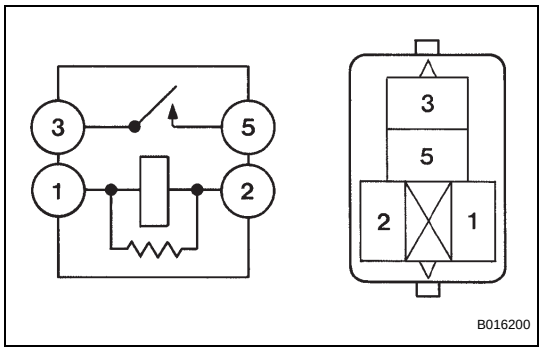
(a) Inspect the FR FOG fuse and TAIL fuse in the instrument panel junction block assembly.
Resistance:
Below 1 Ω

NG → **REPLACE FUSE**

OK

3	INSPECT RELAY

(a) Inspect fog light relay continuity.
(1) Remove the fog light relay from the instrument panel J/B assembly.
(2) Measure the resistance according to the value(s) in the table below.

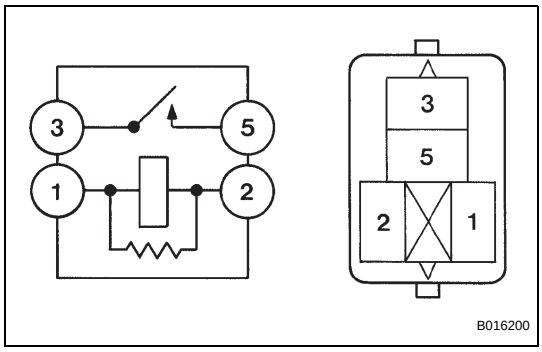


Resistance

Tester connection	Condition	Specified resistance
3 - 5	Always	10 kΩ or higher
3 - 5	Apply B+ between the terminal 1 and 2	Below 1 Ω

(b) Inspect tail relay continuity.

(1) Remove the tail relay from the instrument panel J/B assembly.
(2) Measure the resistance according to the value(s) in the table below.



Resistance

Tester connection	Condition	Specified resistance
3 - 5	Always	10 kΩ or higher
3 - 5	Apply B+ between the terminal 1 and 2	Below 1 Ω

NG → **REPLACE RELAY**

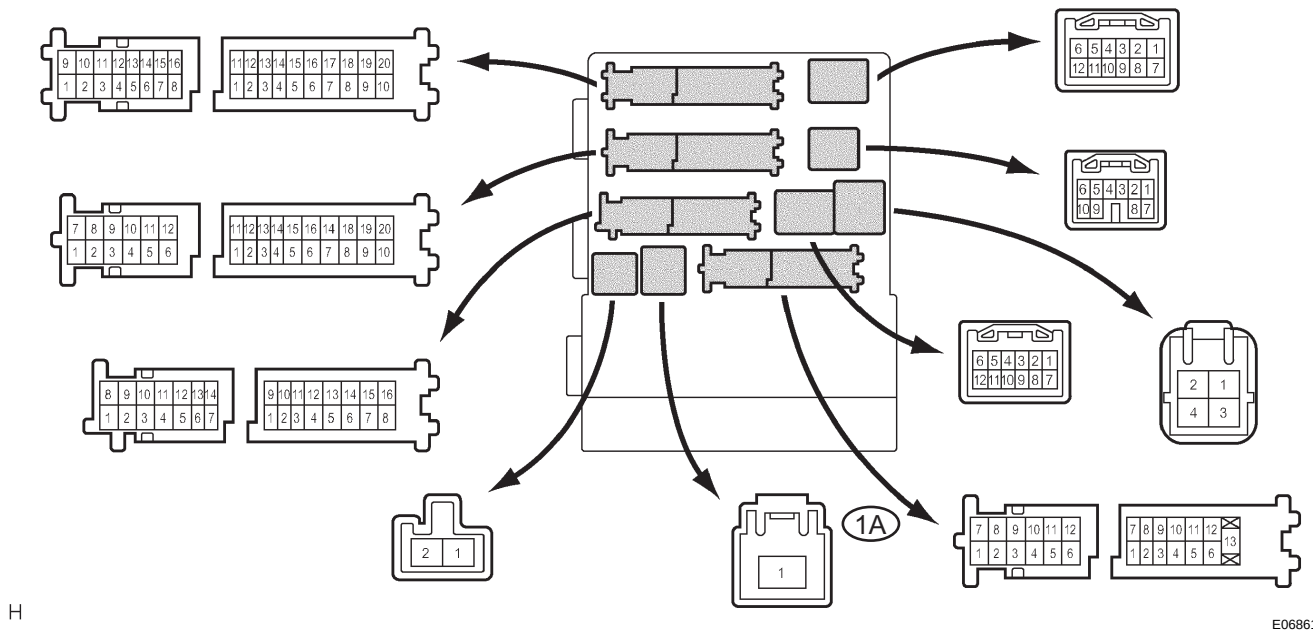
OK

LI

4	INSPECT INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY (POWER SOURCE CIRCUIT)

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

Instrument Panel Junction Block Assembly Front Side Wire Harness View:



Voltage

Tester connection	Condition	Specified condition
1A-1 - Body ground	Always	10 to 14 V

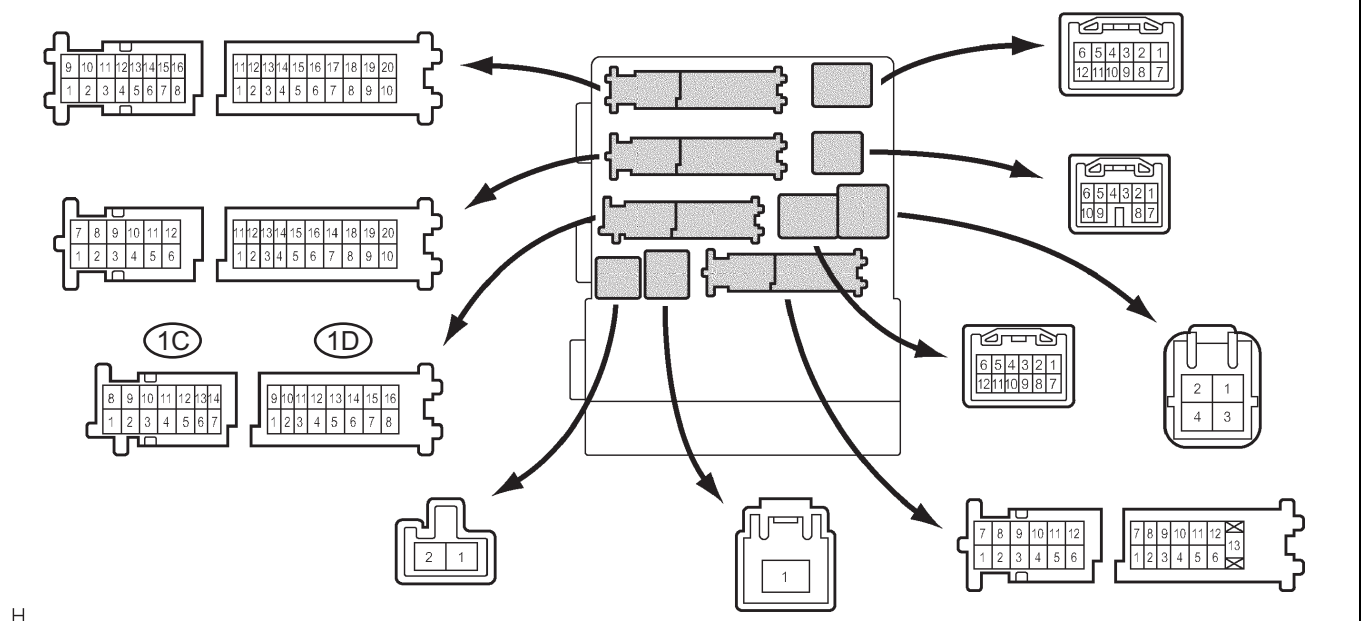
NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR (BATTERY - INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY)**

OK

5	INSPECT INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY

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

Instrument Panel Junction Block Assembly Front Side Wire Harness View:



Voltage

Tester connection	Condition	Specified condition
1C-1 - Body ground	Light control switch TAIL and Front fog light switch OFF → ON	Below 1 V → 10 to 14 V
1D-5 - Body ground	Light control switch TAIL and Front fog light switch OFF → ON	Below 1 V → 10 to 14 V

NG → **Go to step 6**

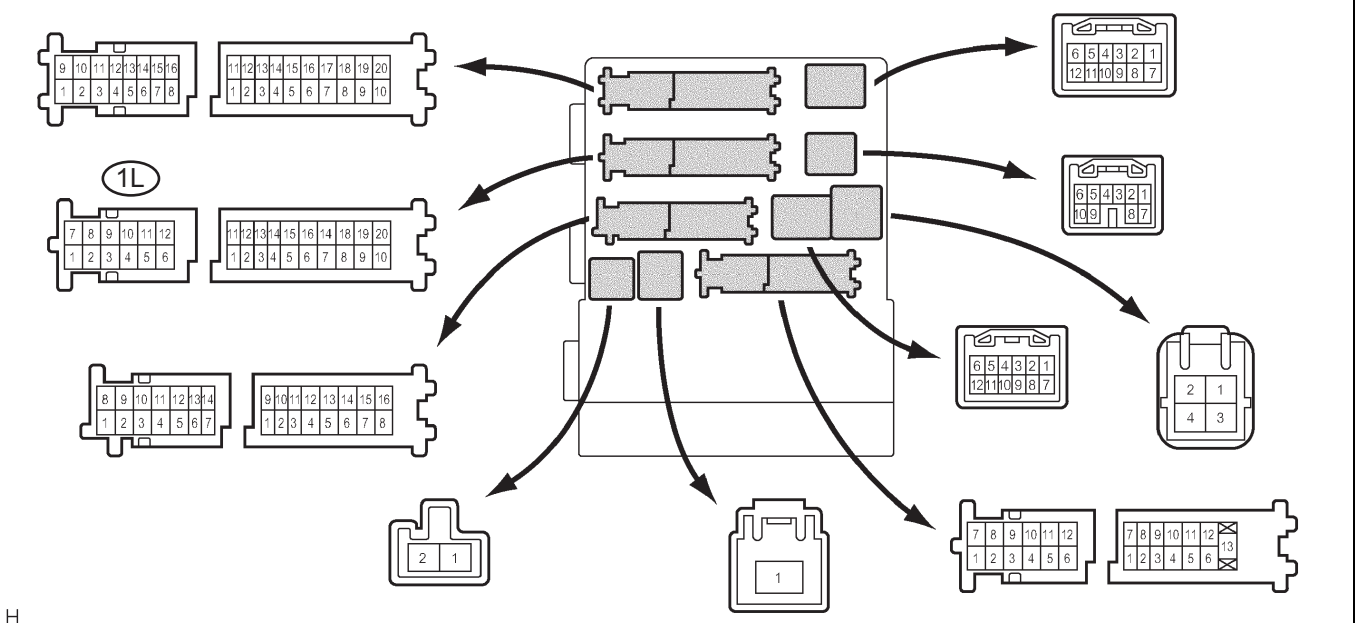
OK

REPAIR OR REPLACE HARNESS OR CONNECTOR

6	INSPECT INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY

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

Instrument Panel Junction Block Assembly Front Side Wire Harness View:



LI

Voltage

Tester connection	Condition	Specified condition
1L-3 - Body ground	Light control switch OFF → TAIL	Below 1 V → 10 to 14 V

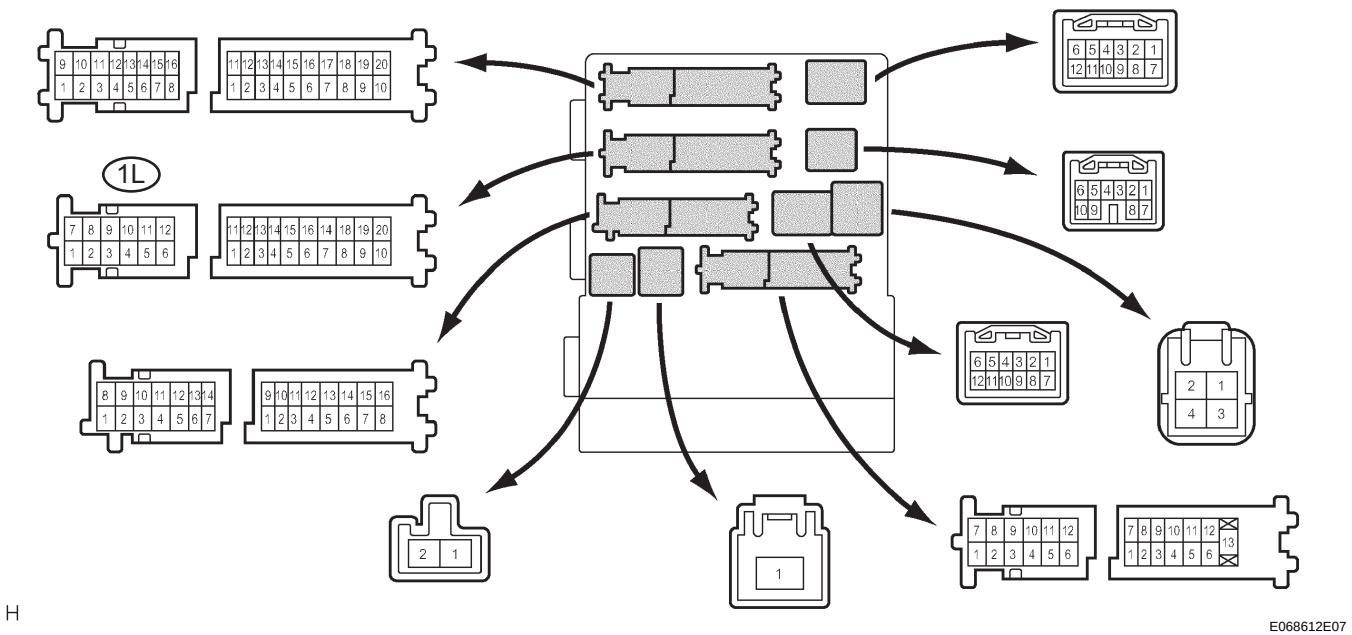
NG → **PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE**

OK

7	CHECK HARNESS AND CONNECTOR

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

Instrument Panel Junction Block Assembly Front Side Wire Harness View:



Voltage

Tester connection	Condition	Specified condition
1L-4 - Body ground	Light control switch OFF → TAIL	Below 1 V → 10 to 14 V

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

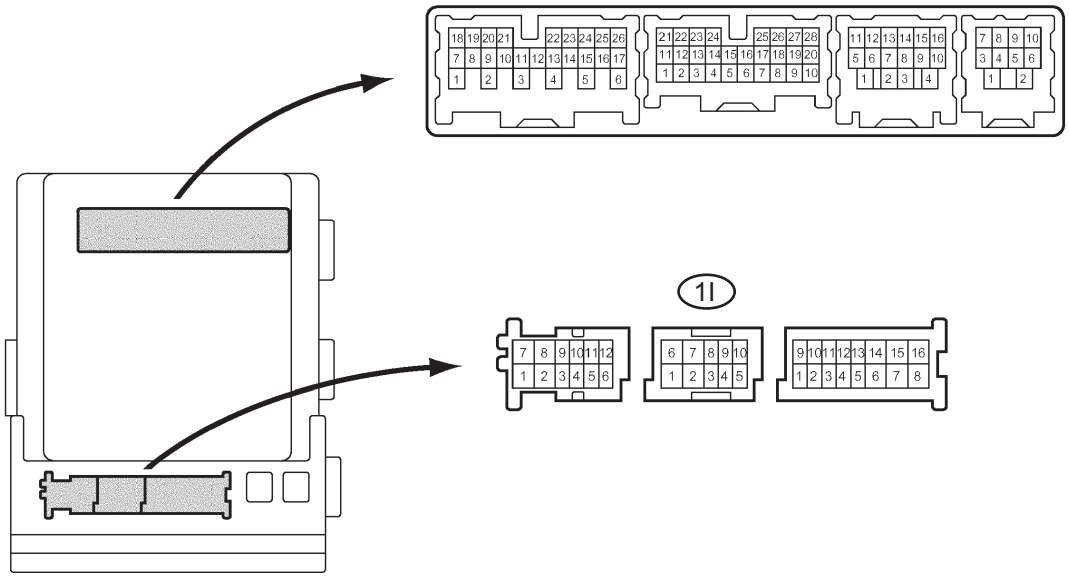
OK

8	INSPECT INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY

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

LI

Instrument Panel Junction Block Assembly Back Side Wire Harness View:



LI

Voltage

Tester connection	Condition	Specified condition
1I-8 - Body ground	Light control switch OFF → TAIL	Below 1 V → 10 to 14 V

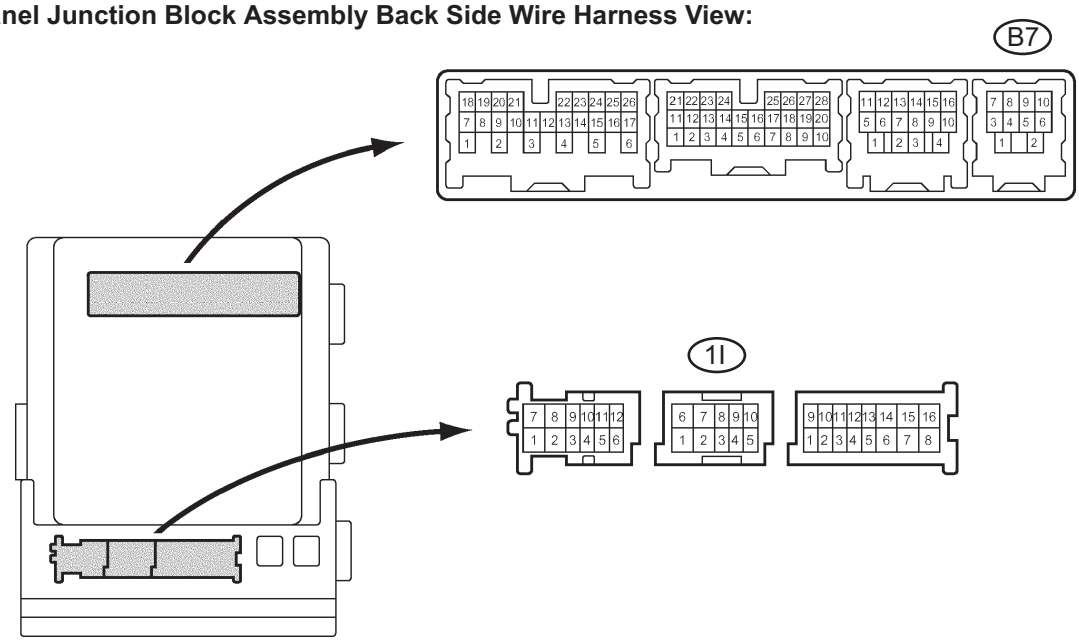
NG → **REPLACE INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY**

OK

9	**CHECK HARNESS AND CONNECTOR (MULTIPLEX NETWORK BODY ECU - INSTRUMENT PANEL JUNCTION BLOCK)**

(a) Disconnect the B7 connector of multiplex network body ECU and the 1I connector of the instrument panel junction block assembly.
(b) Measure the resistance according to the value(s) in the table below.

Instrument Panel Junction Block Assembly Back Side Wire Harness View:



Resistance

Tester connection	Condition	Specified condition
B7-7 - 1I-8	Always	Below 1 Ω

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

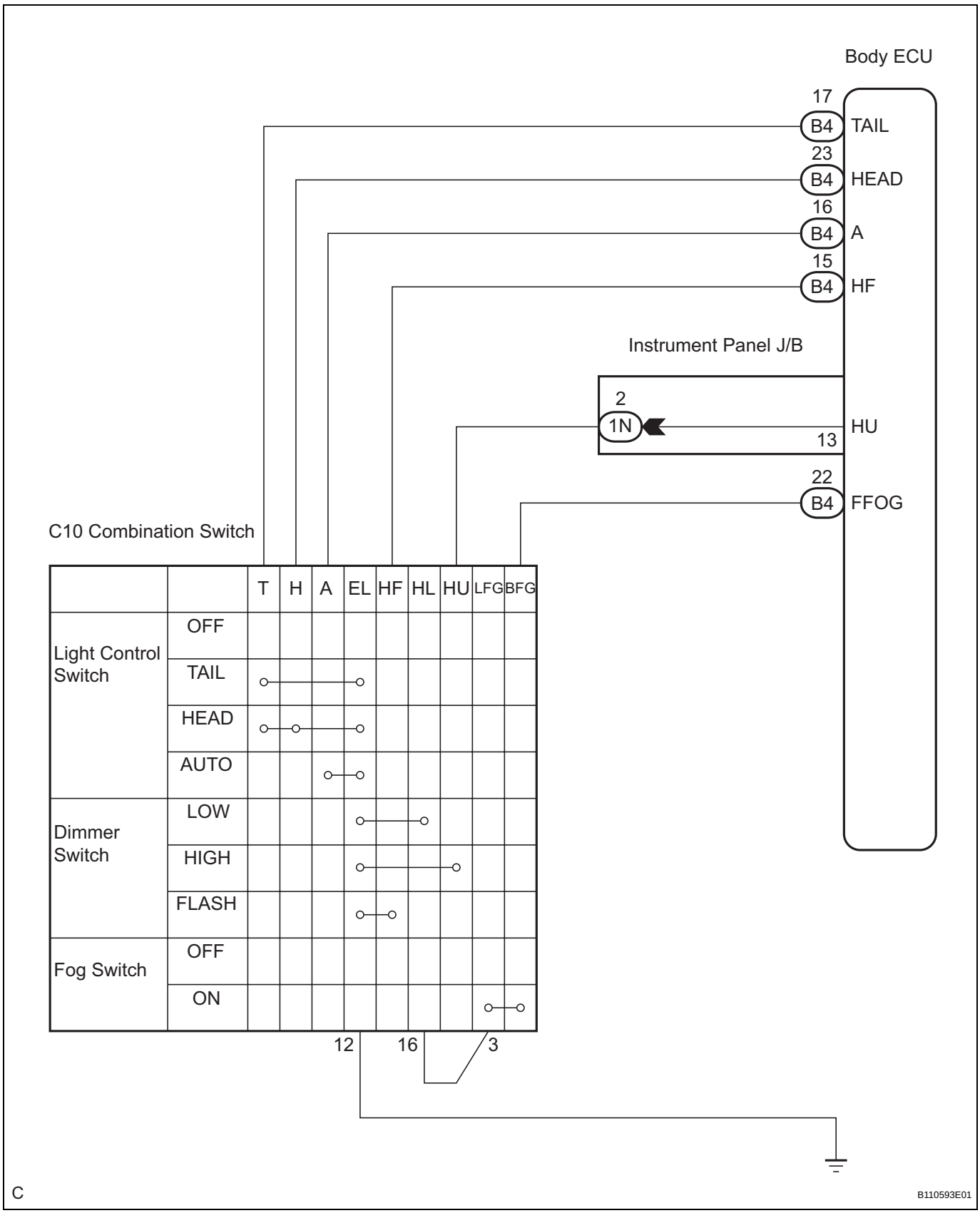
PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

Light Control Switch Circuit

DESCRIPTION

This circuit detects the state of the headlight dimmer switch.

WIRING DIAGRAM



LI

1	READ VALUE OF INTELLIGENT TESTER

(a) Connect the intelligent tester to the DLC3.
(b) Turn the ignition switch to the ON position and press the intelligent tester main switch ON.
(c) Select the items below in the DATA LIST, and read the displays on the intelligent tester.

BODY

Item	Measurement/ Display (Range)	Normal Condition	Diagnostic Note
DIMMER SW	Headlight dimmer SW signal/ON or OFF	ON: Headlight dimmer switch is in HI or FLASH position OFF: Headlight dimmer switch is in LO position	-
HIGH FLASHER SW	Headlight dimmer SW signal/ON or OFF	ON: Headlight dimmer switch is in FLASH position OFF: Headlight dimmer switch is in except FLASH position	-
F FOG LIGHT SW	Front fog light SW signal/ON or OFF	ON: Front fog light switch is in ON position OFF: Front fog light switch is OFF position	-
AUTO LIGHT SW	Auto light SW signal/ ON or OFF	ON: Headlight dimmer switch is in AUTO position OFF: Headlight dimmer switch is in except AUTO position	-
HEAD LIGHT SW	Head light control SW signal/ON or OFF	ON: Light control switch is in HEAD position OFF: Light control switch is in except HEAD position	-
TAIL LIGHT SW	Taillight SW signal/ON or OFF	ON: Light control switch is in TAIL or HEAD position OFF: Light control switch is in OFF position	-

LI

NG → **Go to step 2**

OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

2	INSPECT HEADLIGHT DIMMER SWITCH ASSEMBLY

(a) Inspect the headlight dimmer switch assembly (See page LI-228).

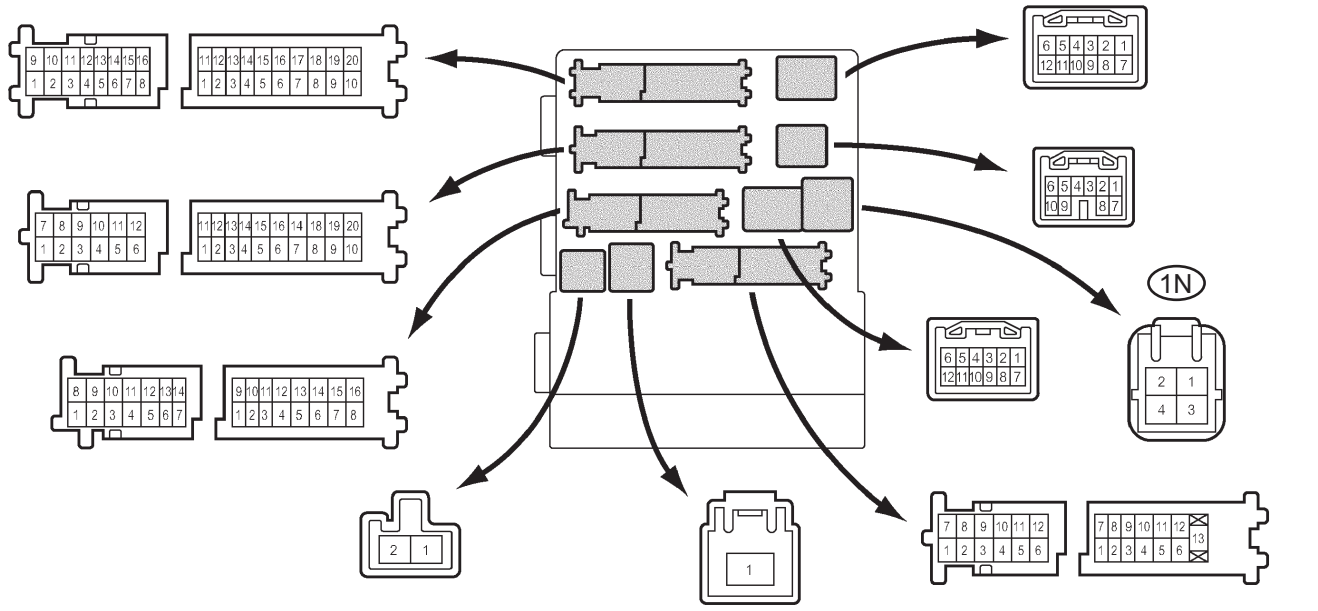
NG → **REPLACE HEADLIGHT DIMMER SWITCH ASSEMBLY**

OK

3	INSPECT INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY

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

Instrument Panel Junction Block Assembly Front Side Wire Harness View:



Multiplex Network Body ECU:

Voltage

Tester connection	Condition	Specified condition
1N-2 - Body ground	Headlight dimmer switch LOW → HIGH	10 to 14 V → Below 1 V
B4-15 - Body ground	Headlight dimmer switch LOW → FLASH	10 to 14 V → Below 1 V
B4-16 - Body ground	Light control switch OFF → AUTO	10 to 14 V → Below 1 V
B4-17 - Body ground	Light control switch OFF → TAIL	10 to 14 V → Below 1 V
B4-22 - Body ground	Front fog light switch OFF → ON	10 to 14 V → Below 1 V
B4-23 - Body ground	Light control switch OFF → HEAD	10 to 14 V → Below 1 V

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

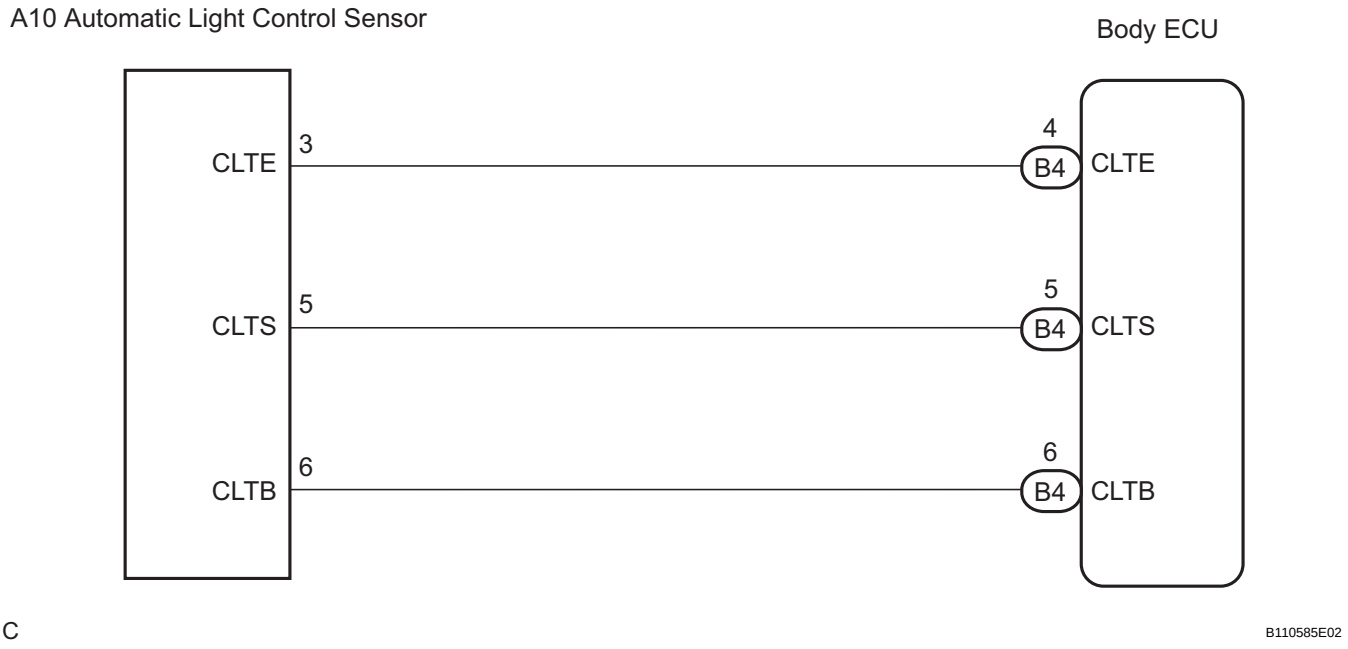
PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

Automatic Light Control Sensor Circuit

DESCRIPTION

The body ECU receives the signal from the automatic light control sensor.

WIRING DIAGRAM



1	READ VALUE OF INTELLIGENT TESTER

(a) Connect the intelligent tester to the DLC3.
(b) Turn the ignition switch to the ON position and press the intelligent tester main switch ON.
(c) Select the items below in the DATA LIST, and read the displays on the intelligent tester.

BODY

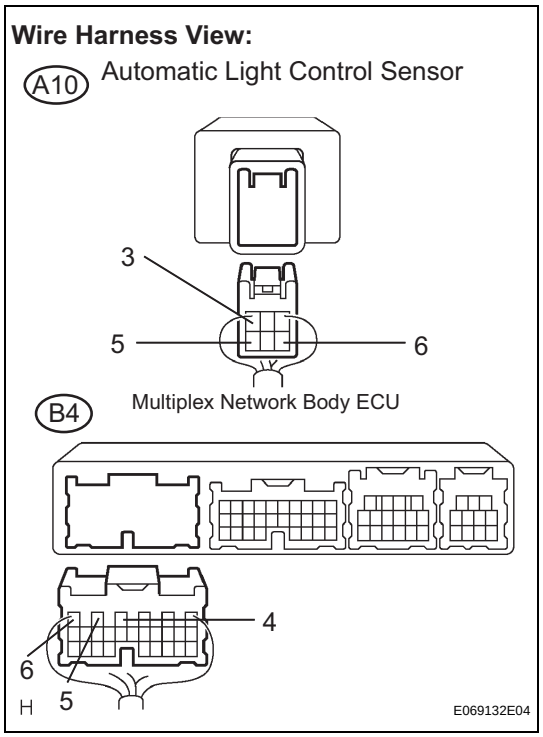
Item	Measurement Item/ Display (Range)	Normal Condition	Diagnostic Note
ILLUMINATE RATE	Illuminate rate/ON or OFF	ON: Illuminate rate ON OFF: Illuminate rate OFF	-

NG → **Go to step 2**

OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

2	CHECK HARNESS AND CONNECTOR (MULTIPLEX NETWORK BODY ECU - AUTOMATIC LIGHT CONTROL SENSOR)



(a) Disconnect the automatic light control sensor connector and multiplex network body ECU connector.
(b) Measure the resistance according to the value(s) in the table below.

Resistance

Tester connection	Condition	Specified condition
CLTE (A10-3) - CLTE (B4-4)	Always	Below 1 Ω
CLTS (A10-5) - CLTS (B4-5)	Always	Below 1 Ω
CLTB (A10-6) - CLTB (B4-6)	Always	Below 1 Ω
CLTE (B4-4) - Body ground	Always	10 kΩ or higher
CLTS (B4-5) - Body ground	Always	10 kΩ or higher
CLTB (B4-6) - Body ground	Always	10 kΩ or higher

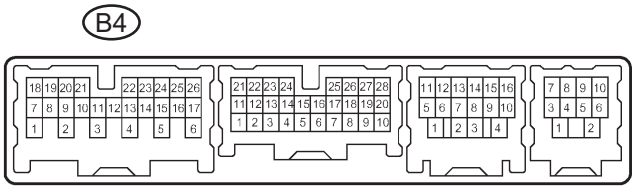
NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

3	INSPECT INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY

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

Multiplex Network Body ECU:



E068632E02

Voltage

Tester connection	Condition	Specified voltage
CLTE (B4-4) - CLTB (B4-6)	Ignition switch OFF → ON	Below 1 V → 10 to 14 V

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

OK

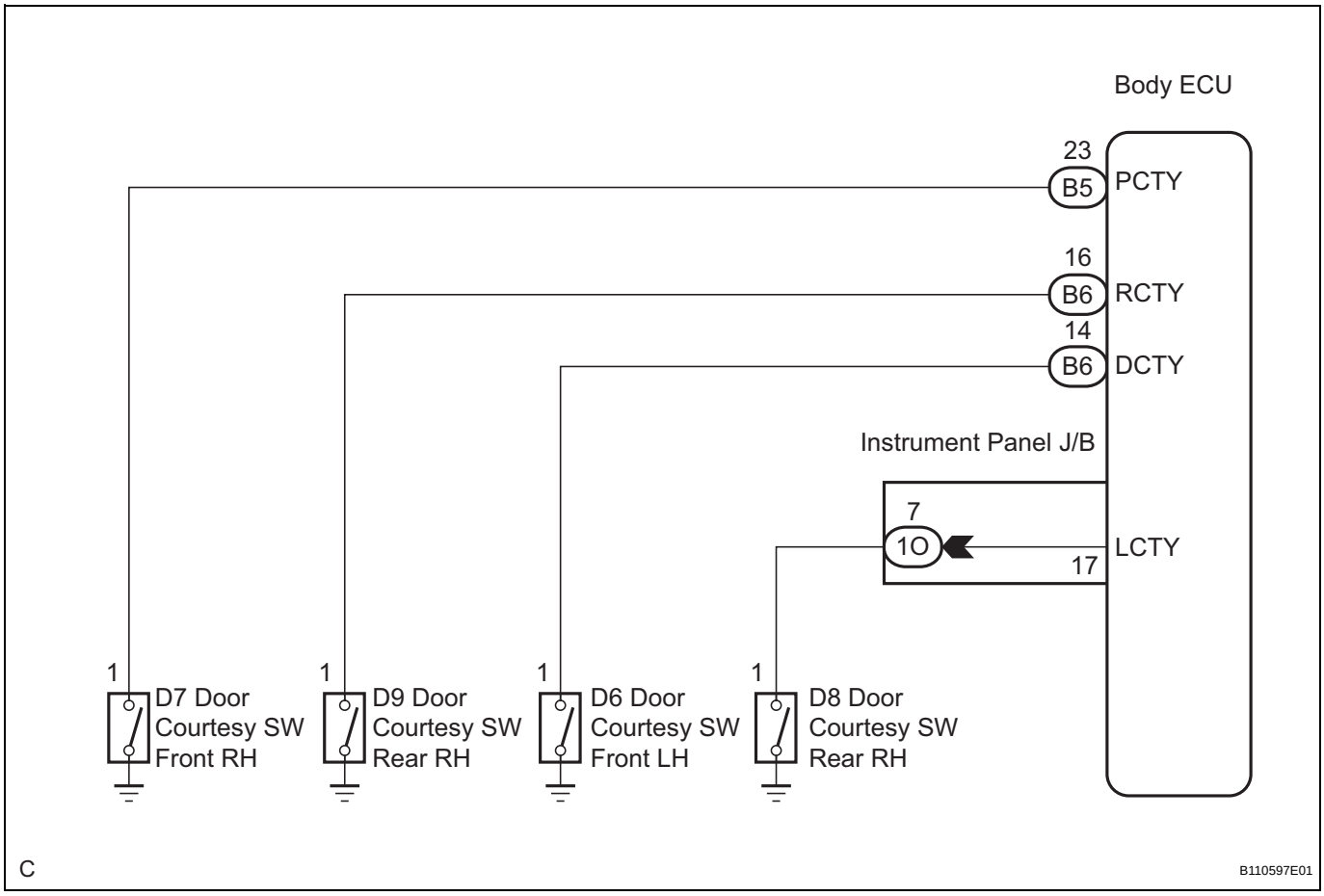
REPLACE AUTOMATIC LIGHT CONTROL SENSOR

Door Courtesy Switch Circuit

DESCRIPTION

The body ECU detects the condition of the door courtesy switch assembly.

WIRING DIAGRAM



LI

1	READ VALUE OF INTELLIGENT TESTER

(a) Connect the intelligent tester to the DLC3.
(b) Turn the ignition switch to the ON position and press the intelligent tester main switch ON.
(c) Select the items below in the DATA LIST, and read the displays on the intelligent tester.

BODY

Item	Measurement Item/ Display (Range)	Normal Condition	Diagnostic Note
D DOR CTY SW	Driver's door courtesy SW signal/ ON or OFF OK	ON: Driver's door is open OFF: Driver's door is closed	-
P DOR CYT SW	Passenger's door courtesy SW signal/ON or OFF	ON: Front passenger door is open OFF: Front passenger door is closed	-

Item	Measurement Item/ Display (Range)	Normal Condition	Diagnostic Note
Rr DOR CTY SW	Rear slide door courtesy SW signal/ON or OFF	ON: Either right or left rear door is open OFF: Both the right and left doors are closed	-

NG → **Go to step 2**

OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

2 INSPECT COURTESY LIGHT SWITCH

(a) Inspect front door courtesy switch (See page LI-235).
(b) Inspect rear door courtesy switch (See page LI-236).

NG → **REPLACE COURTESY LIGHT SWITCH**

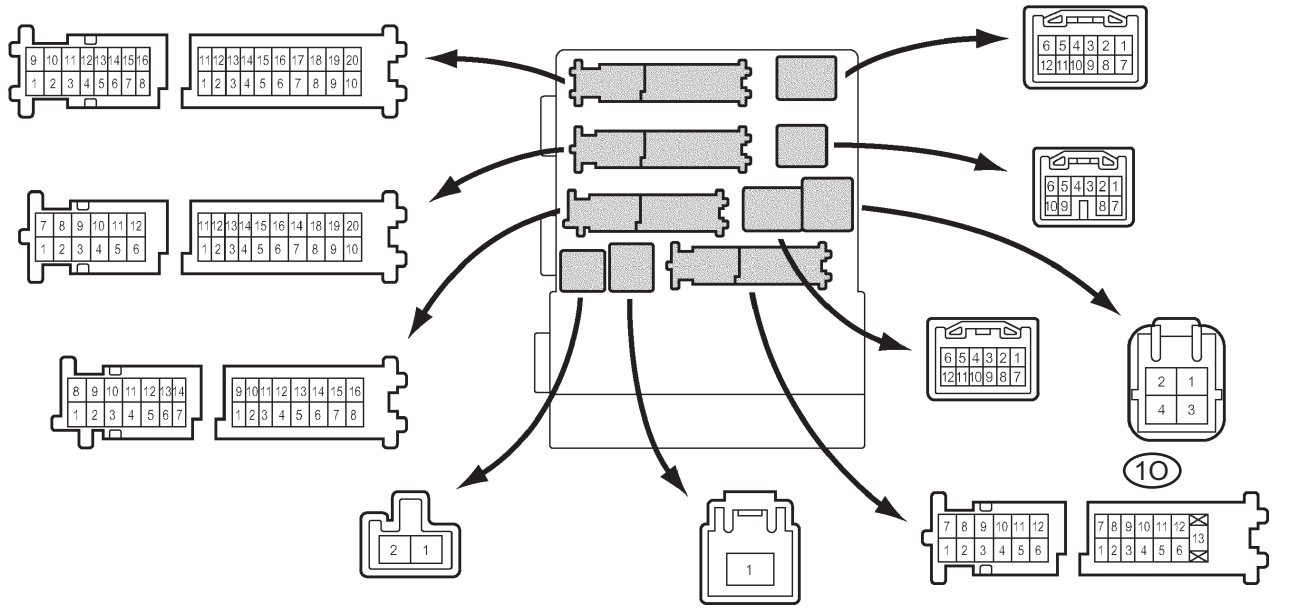
OK

LI

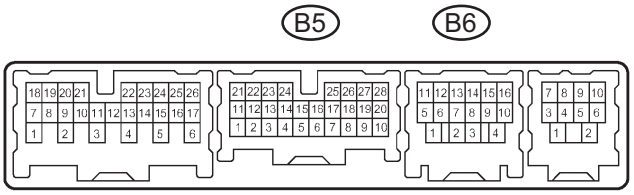
3 CHECK HARNESS AND CONNECTOR (COURTESY LIGHT SWITCH - INSTRUMENT PANEL J/B ASSEMBLY)

(a) Disconnect the 1O, B5 and B6 connectors from the instrument panel junction block assembly.
(b) Measure the resistance according to the value(s) in the table below.

Instrument Panel Junction Block Assembly Front Side Wire Harness View:



Multiplex Network Body ECU:



E111818E02

Resistance

Tester connection	Condition	Specified condition
B6-14 - Body ground	Front driver door is OPEN Front driver door is CLOSE	Below 1 Ω 10 kΩ or higher
B5-23 - Body ground	Front passenger door is OPEN Front passenger door is CLOSE	Below 1 Ω 10 kΩ or higher
1O-7 - Body ground	Rear LH door is OPEN Rear LH door is CLOSE	Below 1 Ω 10 kΩ or higher
B6-16 - Body ground	Rear RH door is OPEN Rear RH door is CLOSE	Below 1 Ω 10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

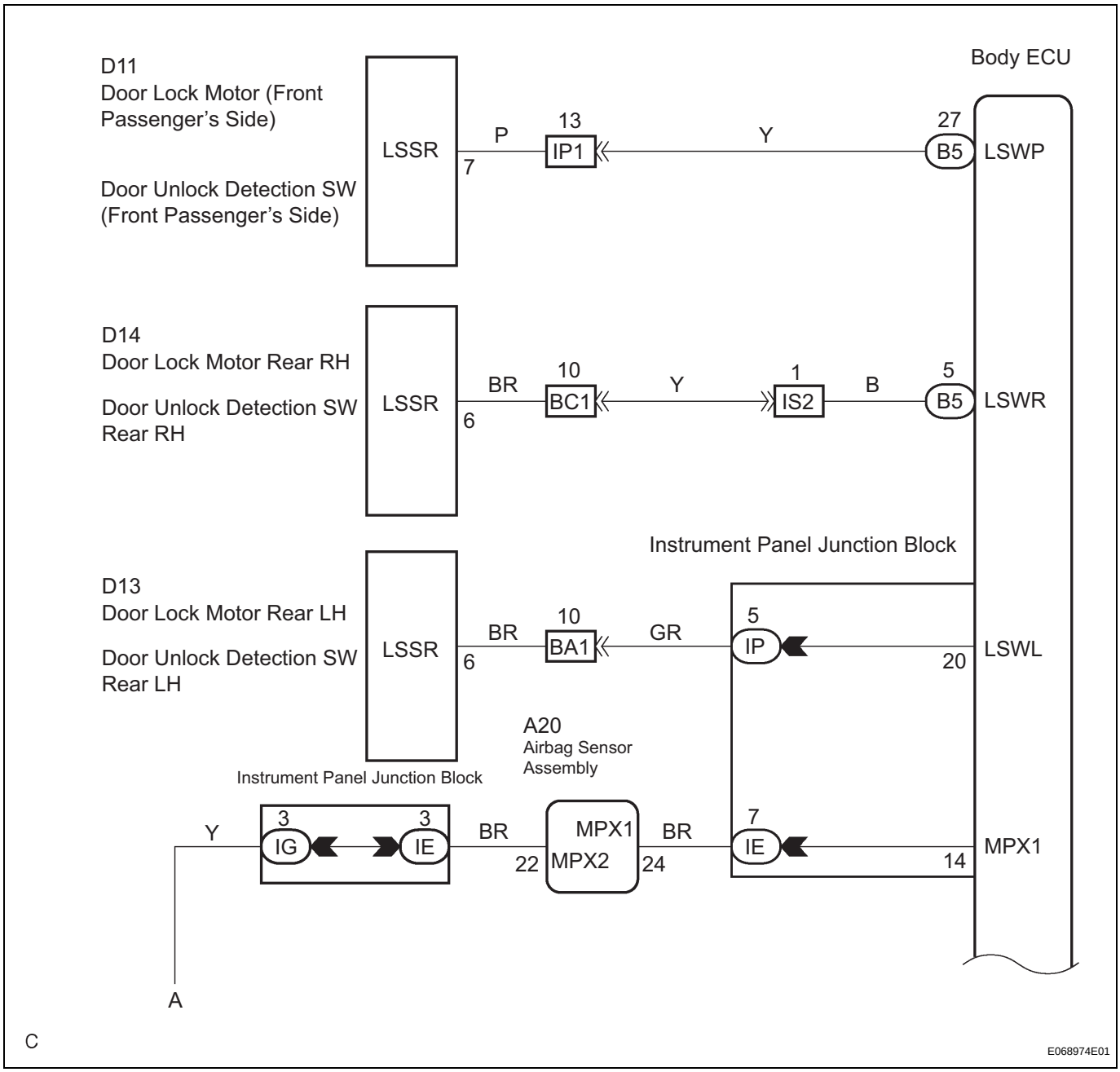
PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

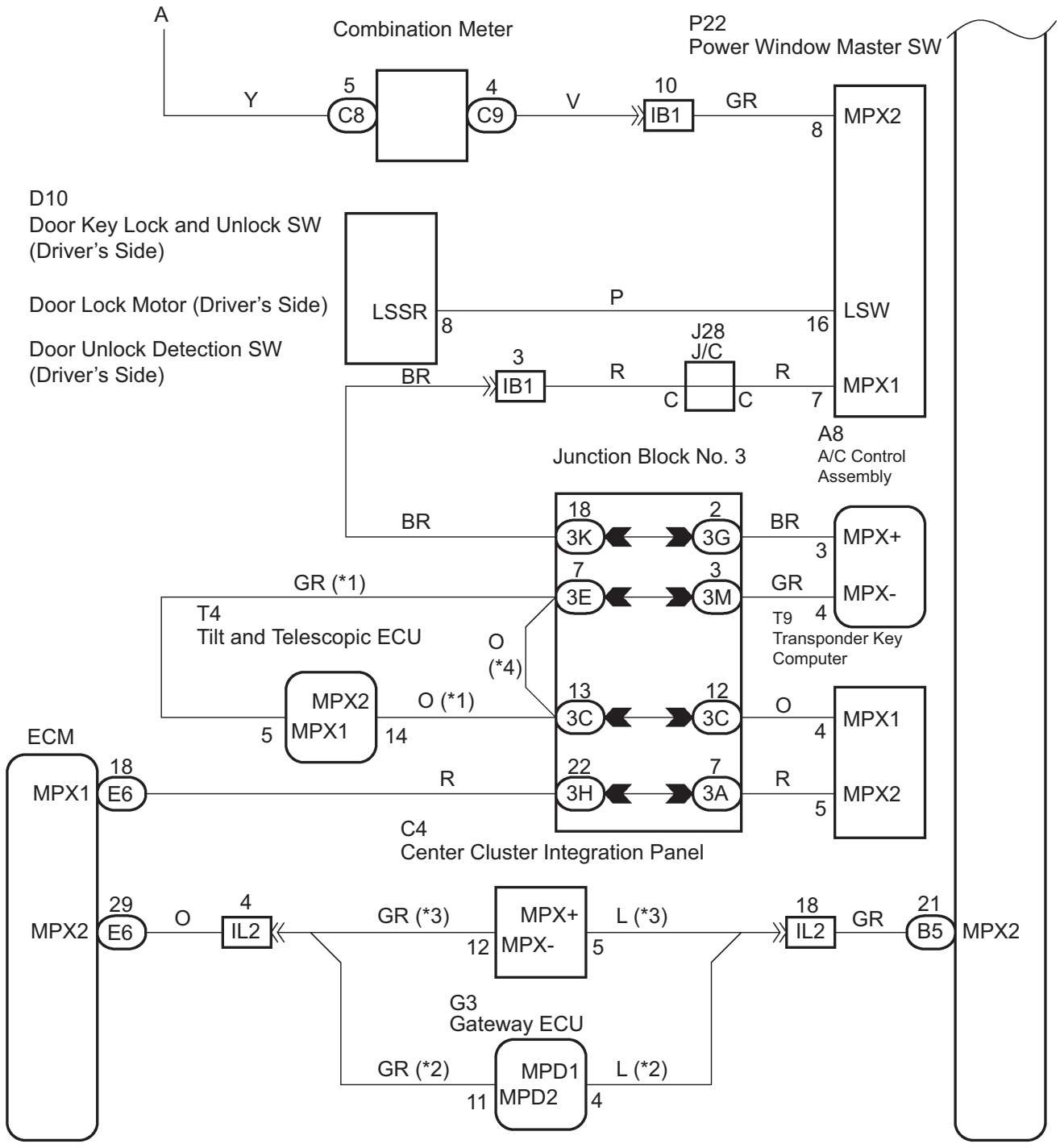
Door LOCK Position Circuit

DESCRIPTION

This circuit detects the state of the door lock detection switch and send it to the multiplex network body ECU.

WIRING DIAGRAM





*1: w/ Power Tilt and Power Telescopic

*2: w/ LEXUS Navigation System

*3: w/o LEXUS Navigation System

*4: w/o Power Tilt and Power Telescopic

C

E068975E01

LI

1	READ VALUE OF INTELLIGENT TESTER

(a) Connect the intelligent tester to the DLC3.
(b) Turn the ignition switch to the ON position and press the intelligent tester main switch ON.
(c) Select the items below in the DATA LIST, and read the displays on the intelligent tester.

BODY

Item	Measurement Item/ Display (Range)	Normal Condition	Diagnostic Note
P LOCK POS SW	Front passenger's door lock position SW signal/ON or OFF	ON: Front passenger's door lock is in unlock position OFF: Front passenger's door lock is in lock position	-
Rr. LOCK POS SW	Rear slide door lock position SW signal/ON or OFF	ON: Rear slide door lock is in unlock position OFF: Rear slide door lock is in lock position	-
D LOCK POS SW	Driver's door lock position SW signal/ON or OFF	ON: Door lock is in unlock position OFF: Door lock is in lock position	-

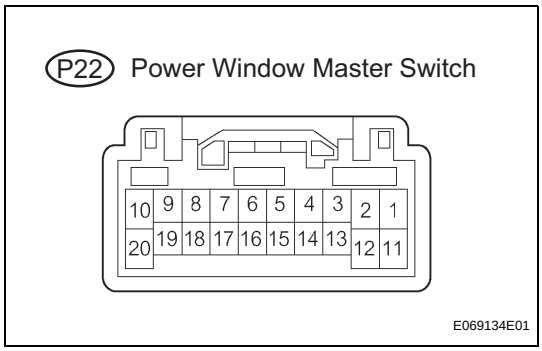
LI

NG → **Go to step 2**

OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

2	INSPECT INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY



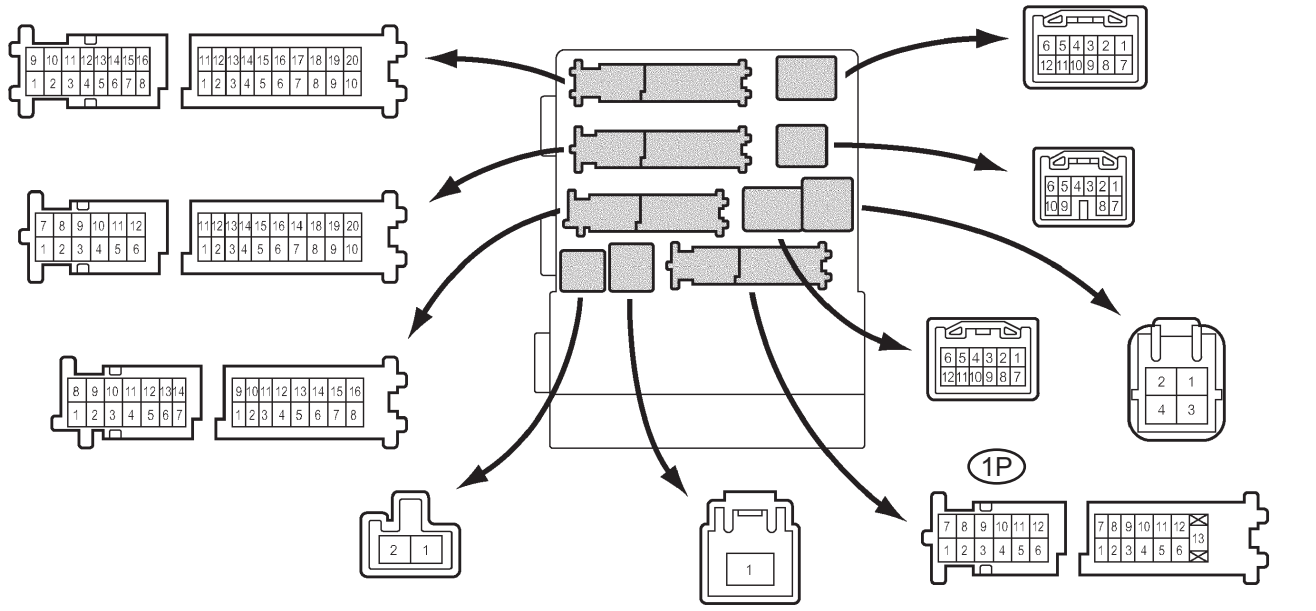
(a) Measure the voltage according to the value(s) in the table below.

Voltage

Tester connection	Condition	Specified condition
P22-16 - Body ground	Driver side door is lock → unlock	Below 1 V → 10 to 14 V

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

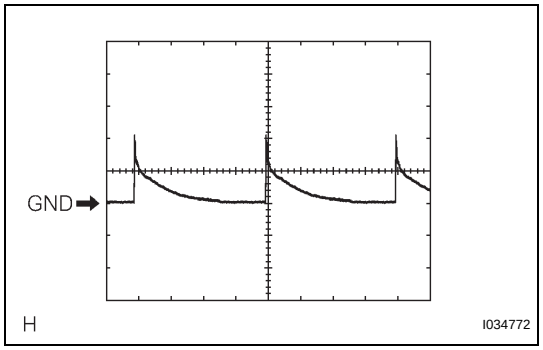
Instrument Panel Junction Block Assembly Front Side Wire Harness View:



Multiplex Network Body ECU:

Voltage

Tester connection	Condition	Specified condition
1P-5 - Body ground	Rear LH door is lock → unlock	Below 1 V → Pulse generation (*1)
B5-5 - Body ground	Rear RH door is lock → unlock	Below 1 V → Pulse generation (*1)
B5-27 - Body ground	Front passenger door is lock → unlock	Below 1 V → 10 to 14 V



(c) *1: Oscilloscope wave
HINT:
- Gauge set: 5 V/DIV. 5 ms/DIV
- Condition: Ignition switch ON

NG → **GO TO POWER DOOR LOCK CONTROL SYSTEM**

OK

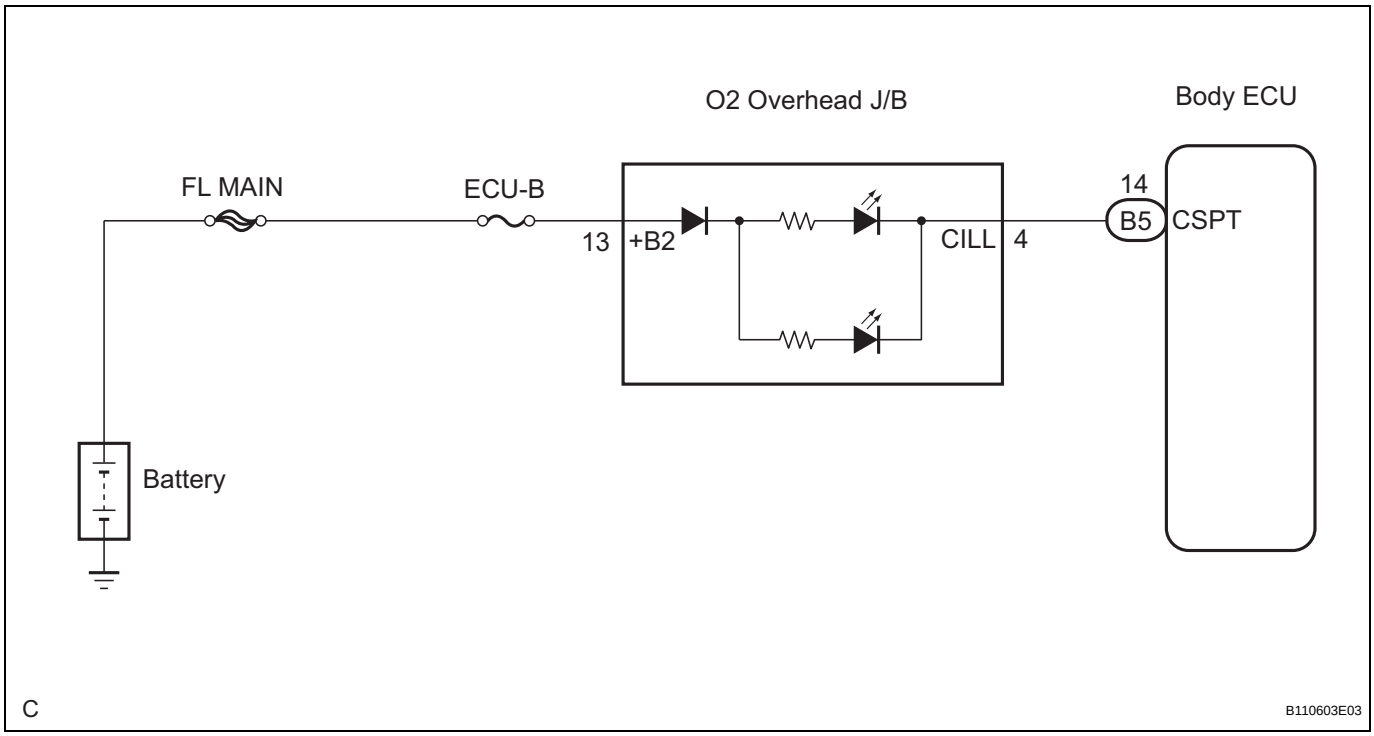
PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

Overhead Console Illumination Light Circuit

DESCRIPTION

The body ECU controls the overhead console illumination light.

WIRING DIAGRAM



LI

1	PERFORM ACTIVE TEST BY INTELLIGENT TESTER

(a) Connect the intelligent tester to the DLC3.
(b) Turn the ignition switch to the ON position and press the intelligent tester main switch ON.
(c) Select the items below in the ACTIVE TEST, and then check that the light comes on.

BODY

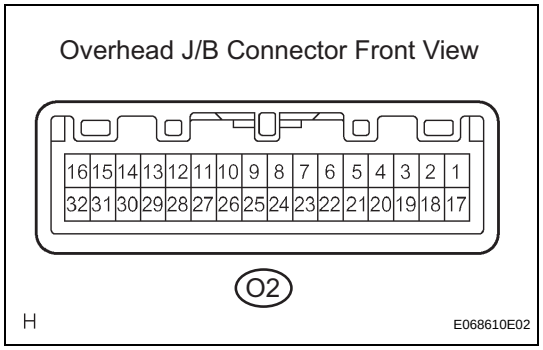
Item	Test Details	Diagnostic Note
CONSOLE LIGHT	Center console illumination ON/OFF	-

NG → **Go to step 2**

OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

2	INSPECT PERSONAL LIGHT ASSEMBLY



(a) Disconnect the overhead junction block connector.
(b) Connect the positive (+) lead from the battery to the terminal 13 and negative (-) lead from the battery to the terminal 4.
(c) Inspect the overhead console illumination light comes on.

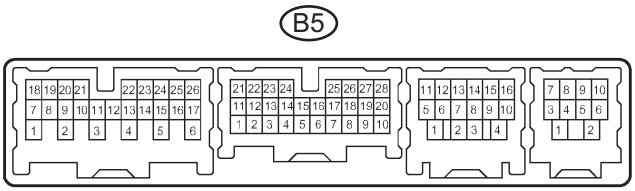
NG → **REPLACE PERSONAL LIGHT ASSEMBLY**

OK

3	INSPECT INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY

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

Multiplex Network Body ECU:



Voltage

Tester connection	Condition	Specified condition
B5-14 - Body ground	All door is closed → Front or rear door is open	10 to 14 V → Below 1 V

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

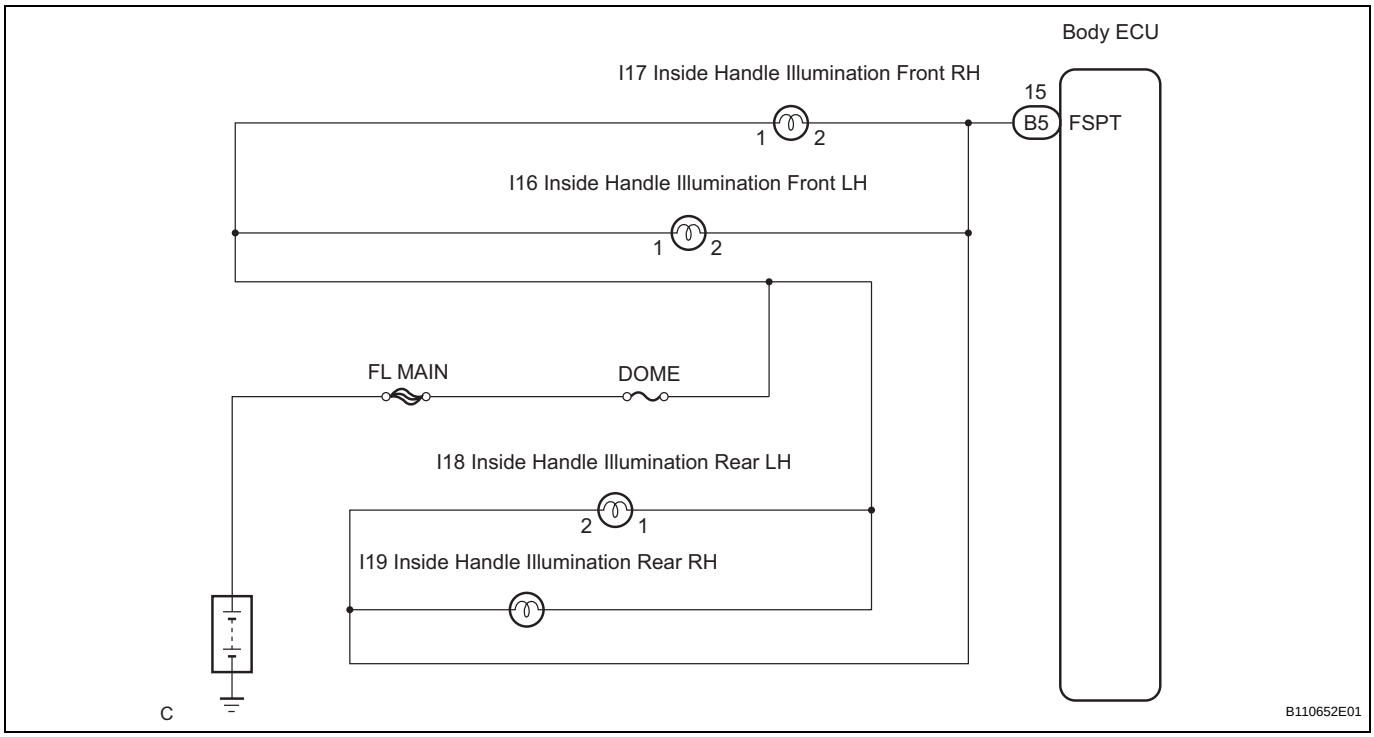
LI

Inside Handle Illumination Light Circuit

DESCRIPTION

The body ECU receives information regarding the door lock position switch and ignition switch, and turns on each inside handle illumination. It also receives shift position information and controls the illumination.

WIRING DIAGRAM



1	PERFORM ACTIVE TEST BY INTELLIGENT TESTER

(a) Connect the intelligent tester to the DLC3.
(b) Turn the ignition switch to the ON position and press the intelligent tester main switch ON.
(c) Select the items below in the ACTIVE TEST, and then check that the relay operates.

BODY

Item	Test Details	Diagnostic Note
STEP LIGHT	Inside handle illumination ON/OFF	-

NG → **Go to step 2**

OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

2	INSPECT INTERIOR LIGHT

(a) Inspect each inside handle illumination (See page LI-225).

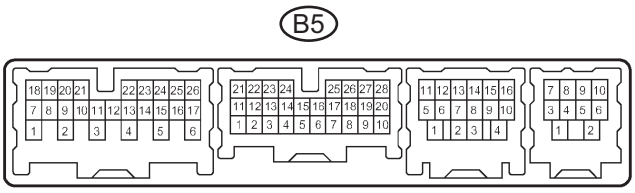
NG → REPLACE INTERIOR LIGHT

OK

3	INSPECT INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY

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

Multiplex Network Body ECU:



E068632E03

Voltage

Tester connection	Condition	Specified condition
B5-15 - Body ground	All door is closed → Front or rear door is open	10 to 14 V → Below 1 V

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

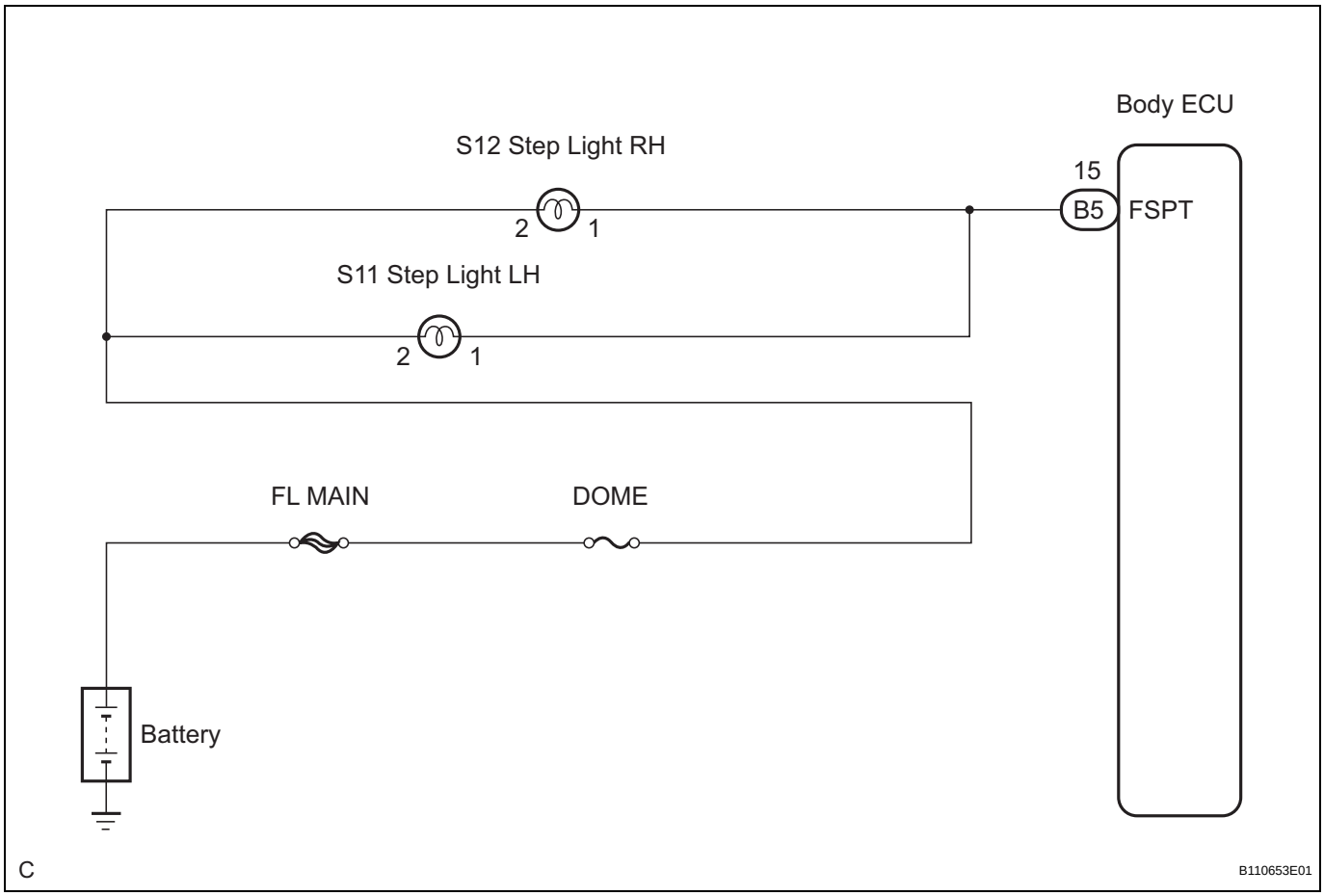
PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

Step Illumination Circuit

DESCRIPTION

The body ECU receives information regarding the door lock position switch and ignition switch, and turns on each step light. It also receives shift position information and controls the illumination.

WIRING DIAGRAM



1	PERFORM ACTIVE TEST BY INTELLIGENT TESTER

(a) Connect the intelligent tester to the DLC3.
(b) Turn the ignition switch to the ON position and press the intelligent tester main switch ON.
(c) Select the items below in the ACTIVE TEST and then check that the relay operates.

BODY

Item	Test Details	Diagnostic Note
STEP LIGHT	Step light ON/OFF	-

NG → **Go to step 2**

OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

2	INSPECT INTERIOR LIGHT

(a) Inspect the step light (See page LI-220).

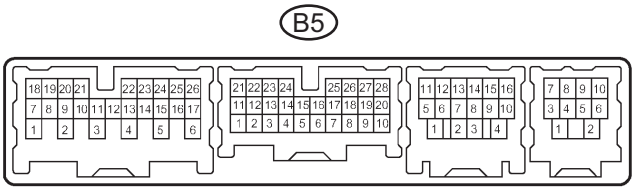
NG → **REPLACE INTERIOR LIGHT**

OK

3	INSPECT INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY

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

Multiplex Network Body ECU:



E068632E03

Voltage

Tester connection	Condition	Specified condition
B5-15 - Body ground	All door is closed → Front or rear door is open	10 to 14 V → Below 1 V

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

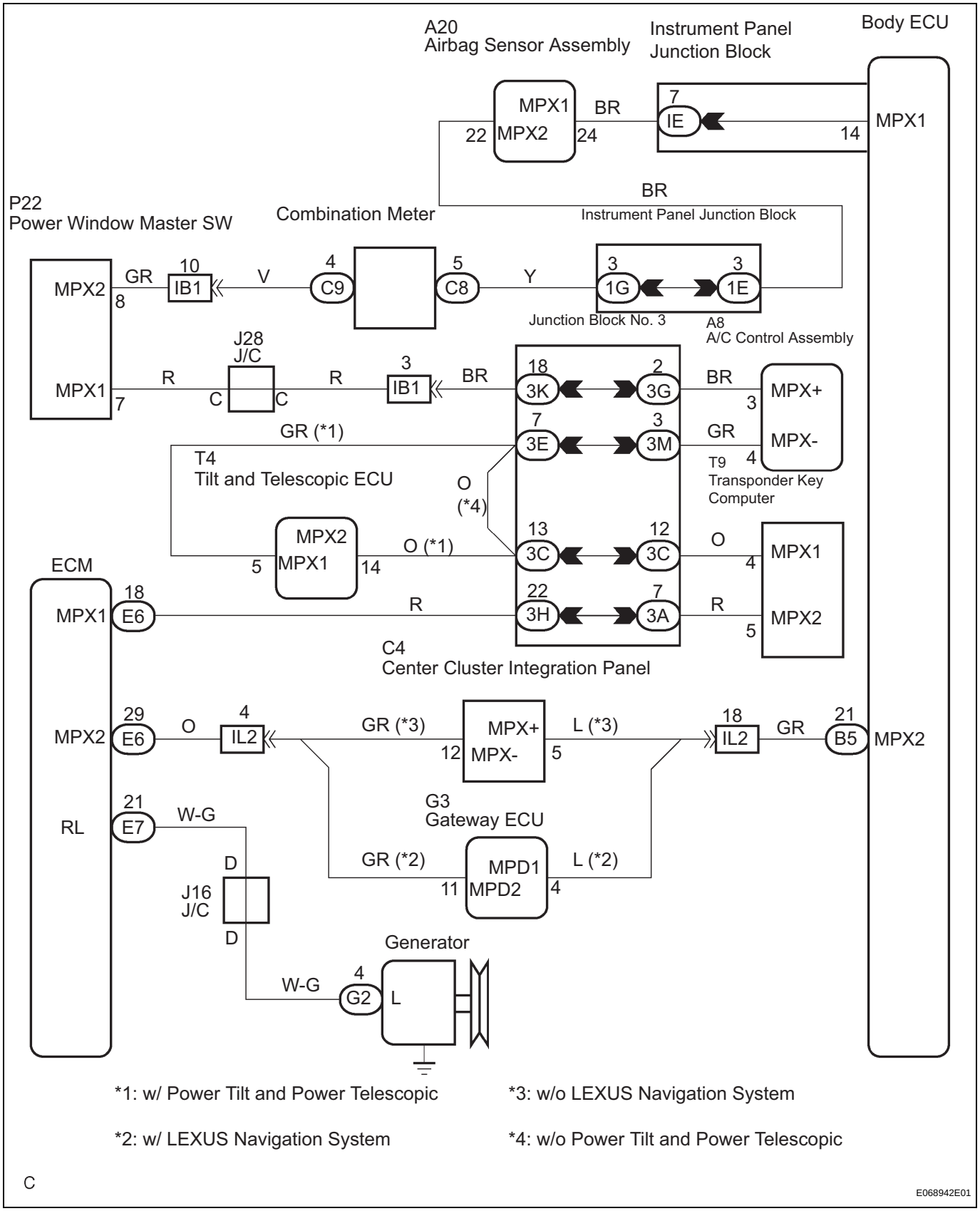
LI

Generator Signal Circuit

DESCRIPTION

The multiplex network body ECU receives engine condition (ON or OFF) by generator signal.

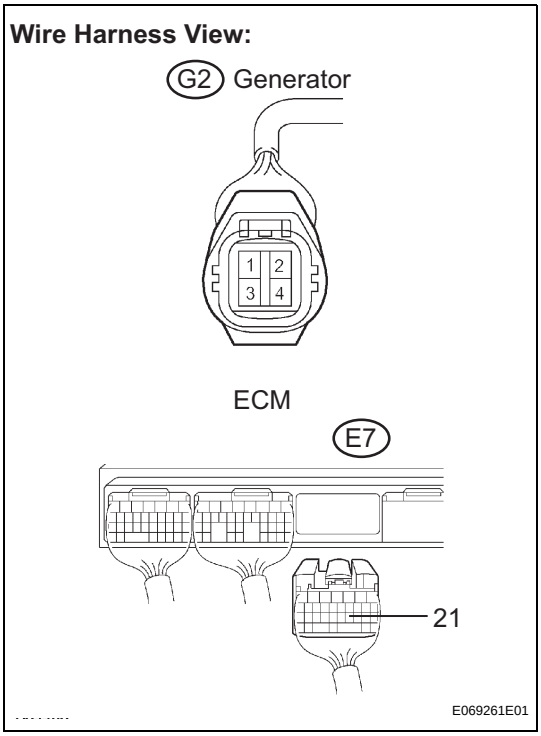
WIRING DIAGRAM



LI

1	CHECK HARNESS AND CONNECTOR (ECM - GENERATOR ASSEMBLY)

Wire Harness View:



(a) Disconnect the G2 connector of generator assembly and the E7 connector of ECM.
(b) Measure the resistance according to the value(s) in the table below.

Resistance

Tester Connection	Condition	Specified Condition
L (G2-4) - RL (E7-21)	Always	Below 1 Ω

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

2	INSPECT GENERATOR ASSEMBLY

(a) Inspect generator assembly (See page CH-3).

NG → **CHECK AND REPLACE GENERATOR ASSEMBLY**

OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

LI

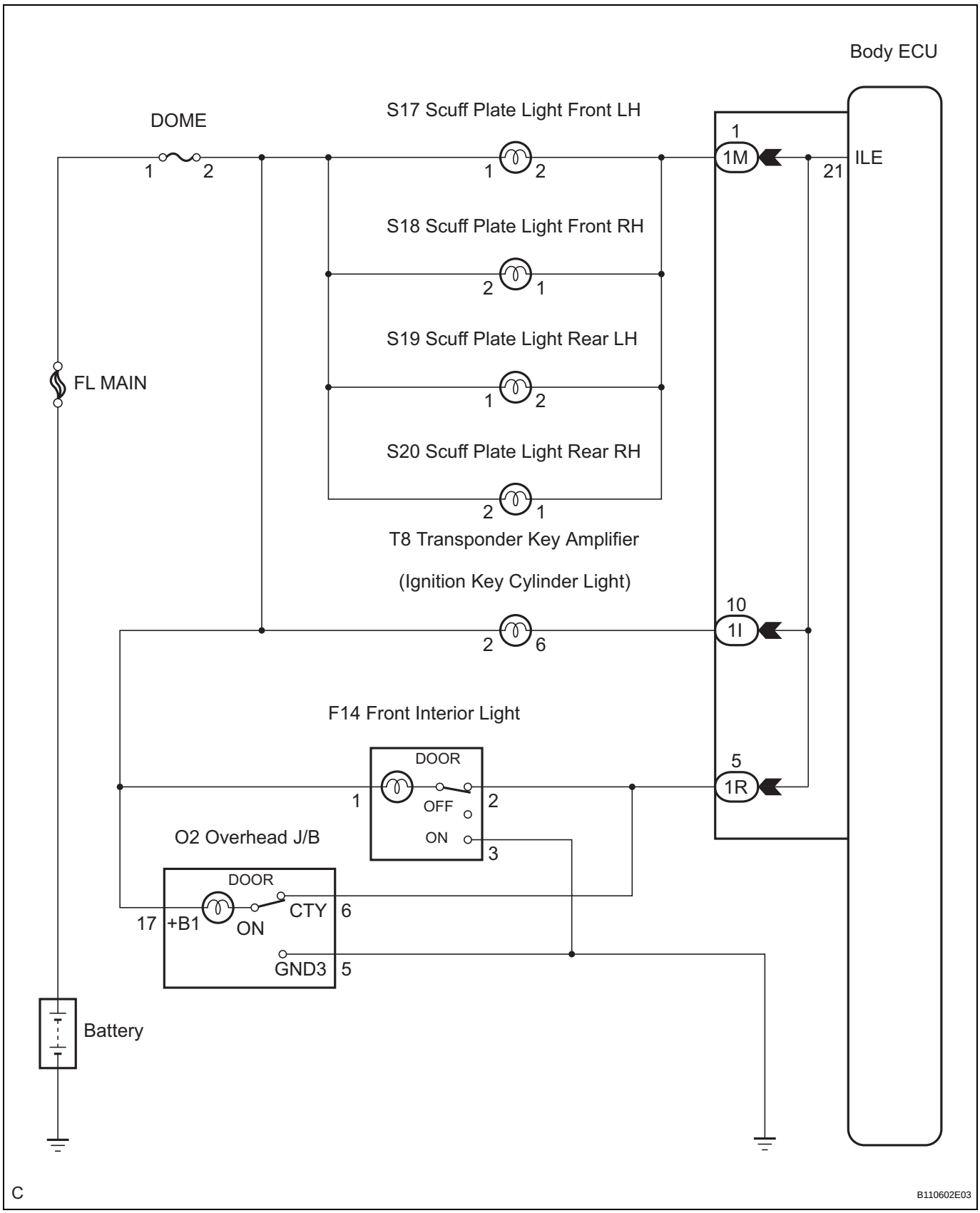
Illumination Circuit

DESCRIPTION

The body ECU controls the illumination light as shown below.

1. Ignition key cylinder light
2. Scuff plate illumination
3. Front room light

WIRING DIAGRAM



1	PERFORM ACTIVE TEST BY INTELLIGENT TESTER

(a) Connect the intelligent tester to the DLC3.
(b) Turn the ignition switch to the ON position and press the intelligent tester main switch ON.
(c) Select the items below in the ACTIVE TEST and then check that the relay operates.

BODY

Item	Test Details	Diagnostic Note
ILLUMI OUTPUT	(Test Details) Turn Interior light and Key illumination ON/OFF (Vehicle Condition) Interior light SW is in Door position and all doors are closed	-

NG → **Go to step 2**

OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

LI

2	INSPECT INTERIOR LIGHT

(a) Inspect ignition key cylinder light (See page LI-221).
(b) Inspect scuff plate illumination (See page LI-226).
(c) Inspect front room light (See page LI-218).

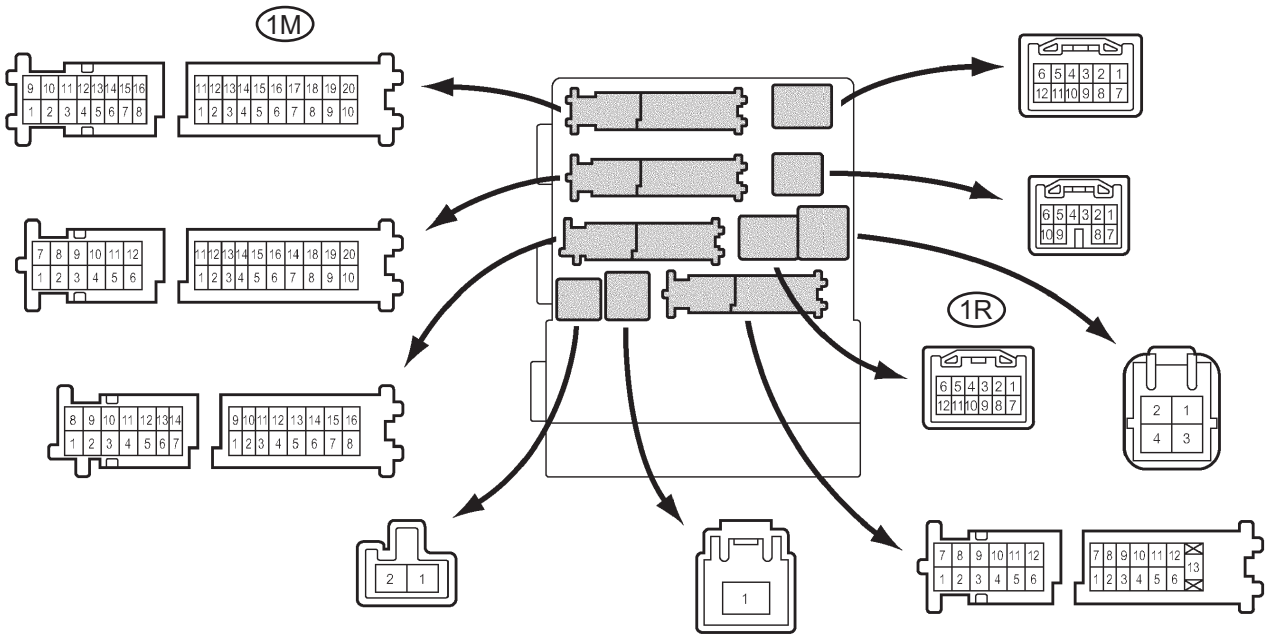
NG → **REPLACE INTERIOR LIGHT**

OK

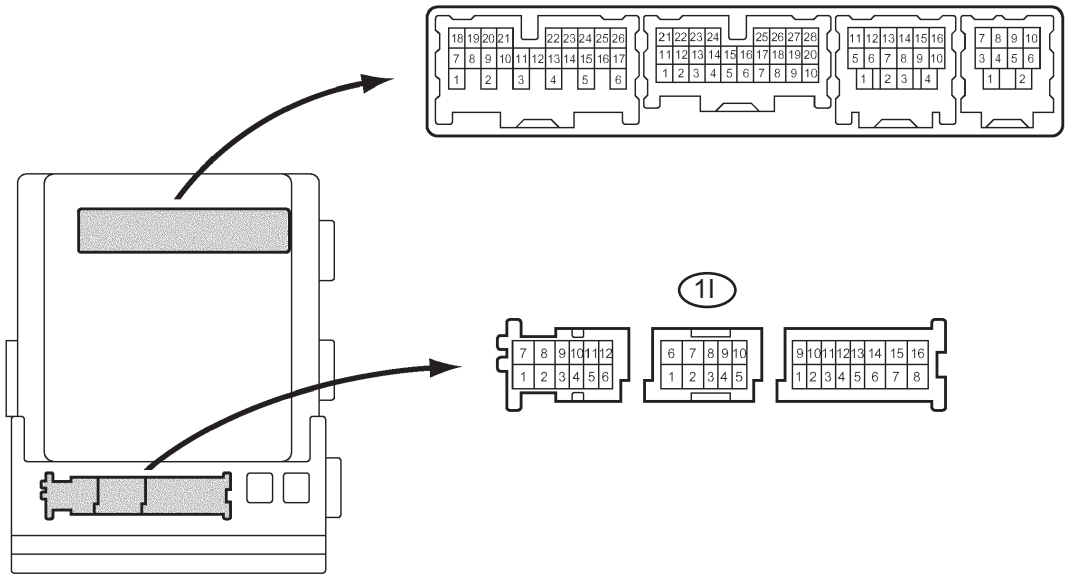
3	INSPECT INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY

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

Instrument Panel Junction Block Assembly Front Side Wire Harness View:



Instrument Panel Junction Block Assembly Back Side Wire Harness View:



E111840E01

Voltage

Tester connection	Condition	Specified condition
1I-10 - Body ground	All door is closed → Front or rear door is open	10 to 14 V → Below 1 V
1M-1 - Body ground	All door is closed → Front or rear door is open	10 to 14 V → Below 1 V
1R-5 - Body ground	All door is closed → Front or rear door is open	10 to 14 V → Below 1 V

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

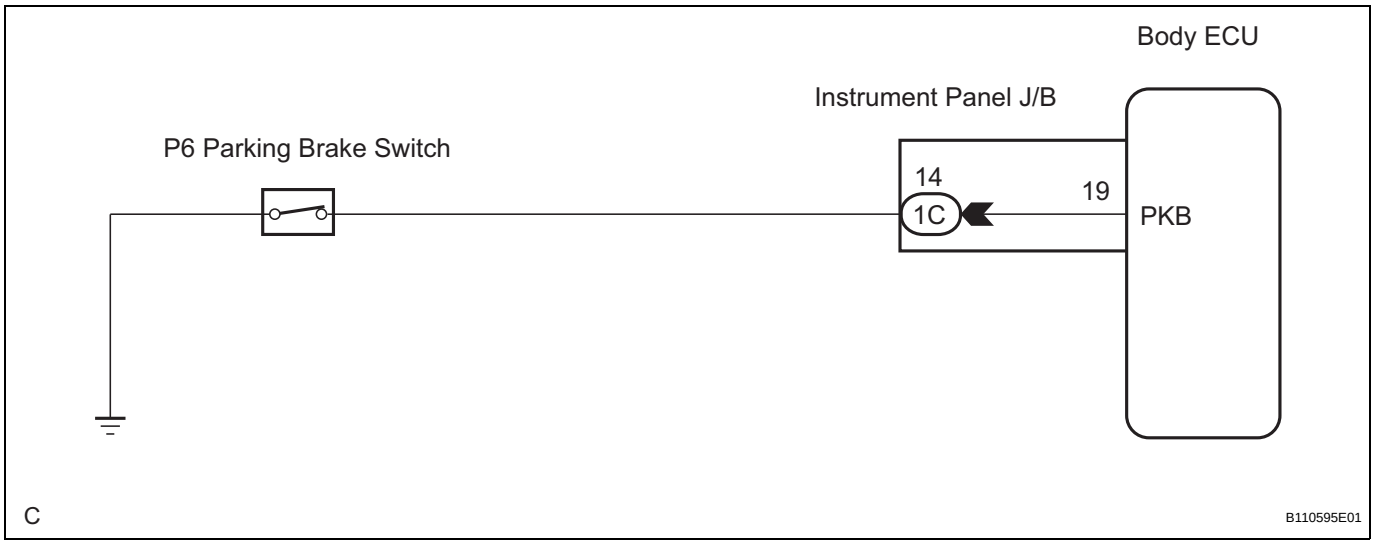
PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

Parking Brake Switch Circuit

DESCRIPTION

The Multiplex network body ECU receives the parking brake switch signal.

WIRING DIAGRAM



LI

1	READ VALUE OF INTELLIGENT TESTER

(a) Connect the intelligent tester to the DLC3.
(b) Turn the ignition switch to the ON position and press the intelligent tester main switch ON.
(c) Select the items below in the DATA LIST, and read the displays on the intelligent tester.

BODY

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	-

NG → **Go to step 2**

OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

2	INSPECT PARKING BRAKE SWITCH ASSEMBLY

(a) Disconnect the parking brake switch connector.
(b) Measure the resistance according to the value(s) in the table below.

Resistance

Tester connection	Condition	Specified condition
1 - Body ground	Shaft is pressed	10 kΩ or higher
1 - Body ground	Shaft is not pressed	Below 1 Ω

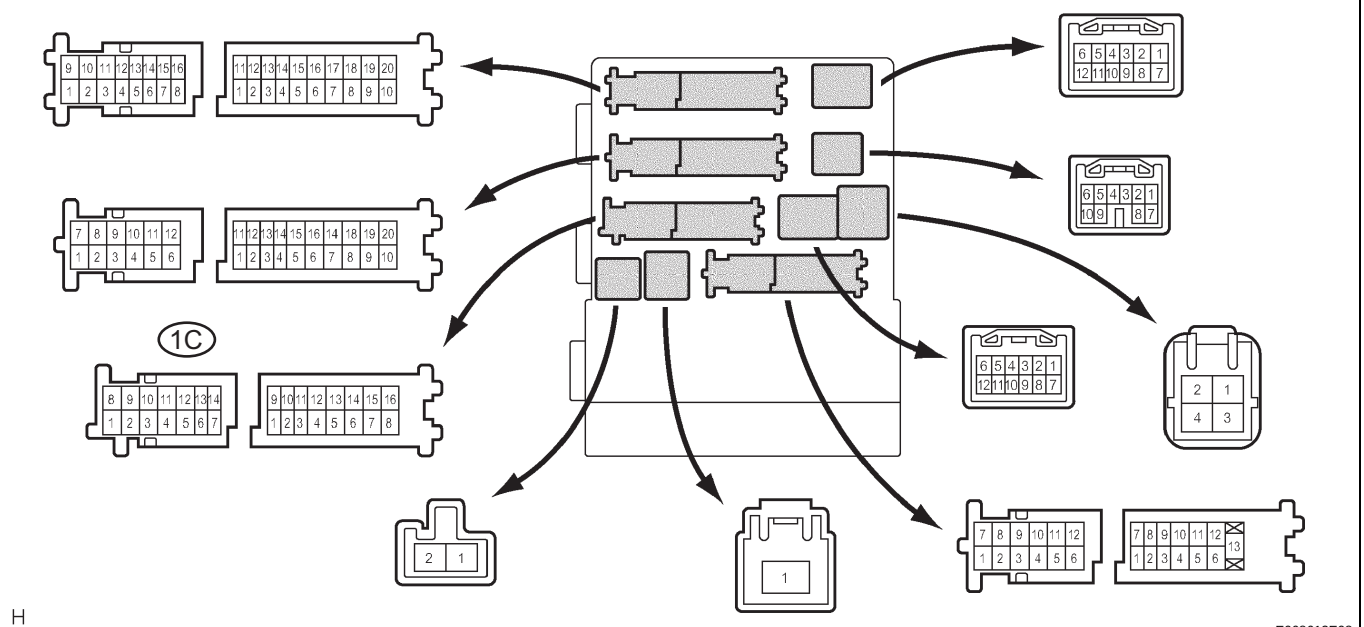
NG → **REPLACE PARKING BRAKE SWITCH ASSEMBLY**

OK

3	CHECK HARNESS AND CONNECTOR (INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY - BODY GROUND)

(a) Disconnect the 1C connector from instrument panel junction block assembly.
(b) Measure the resistance according to the value(s) in the table below.

Instrument Panel Junction Block Assembly Front Side Wire Harness View:



Resistance

Tester connection	Condition	Specified condition
1C-14 - Body ground	Shaft of parking brake switch is pressed	10 kΩ or higher
1C-14 - Body ground	Shaft of parking brake switch is not pressed	Below 1 Ω

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

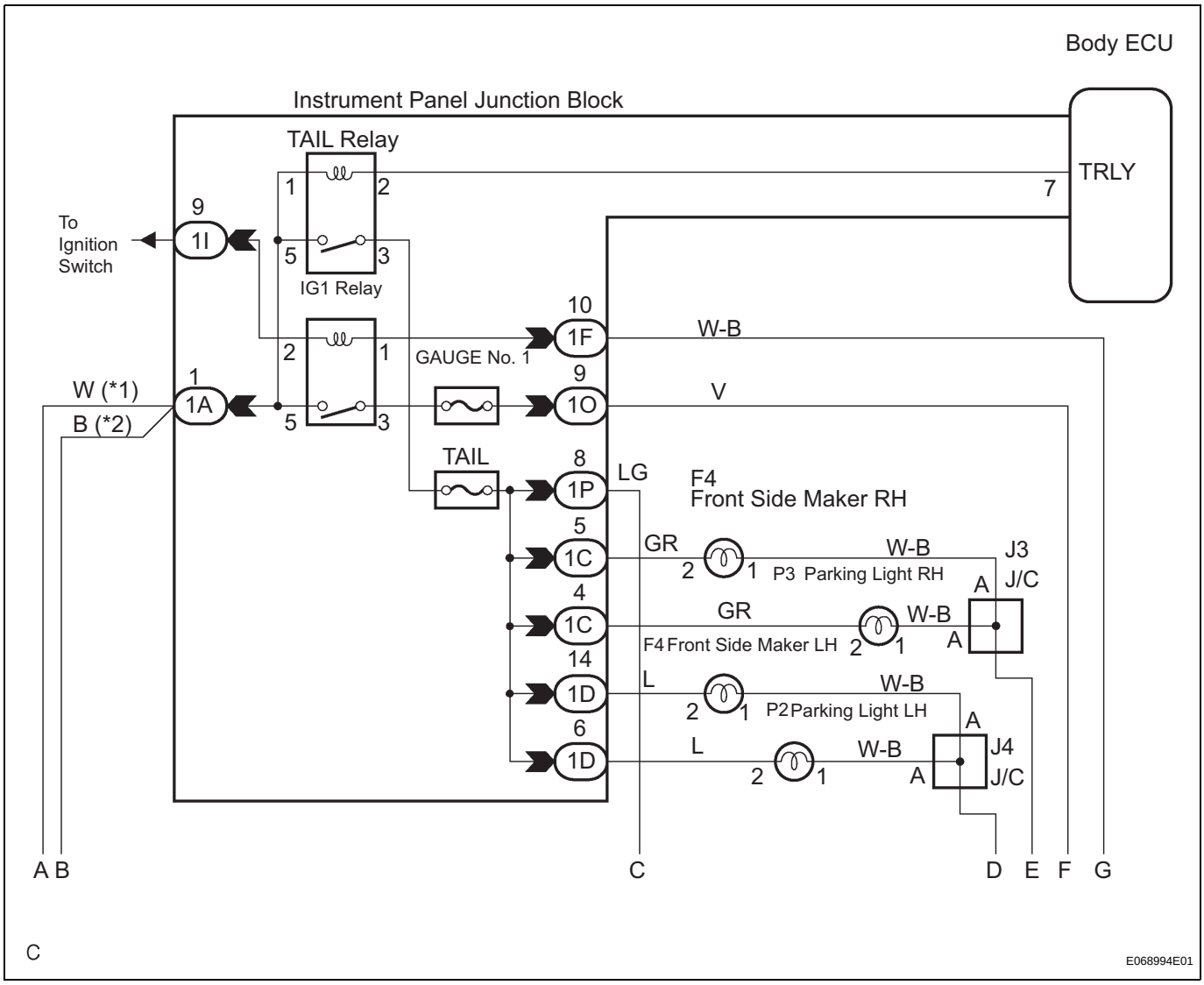
PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

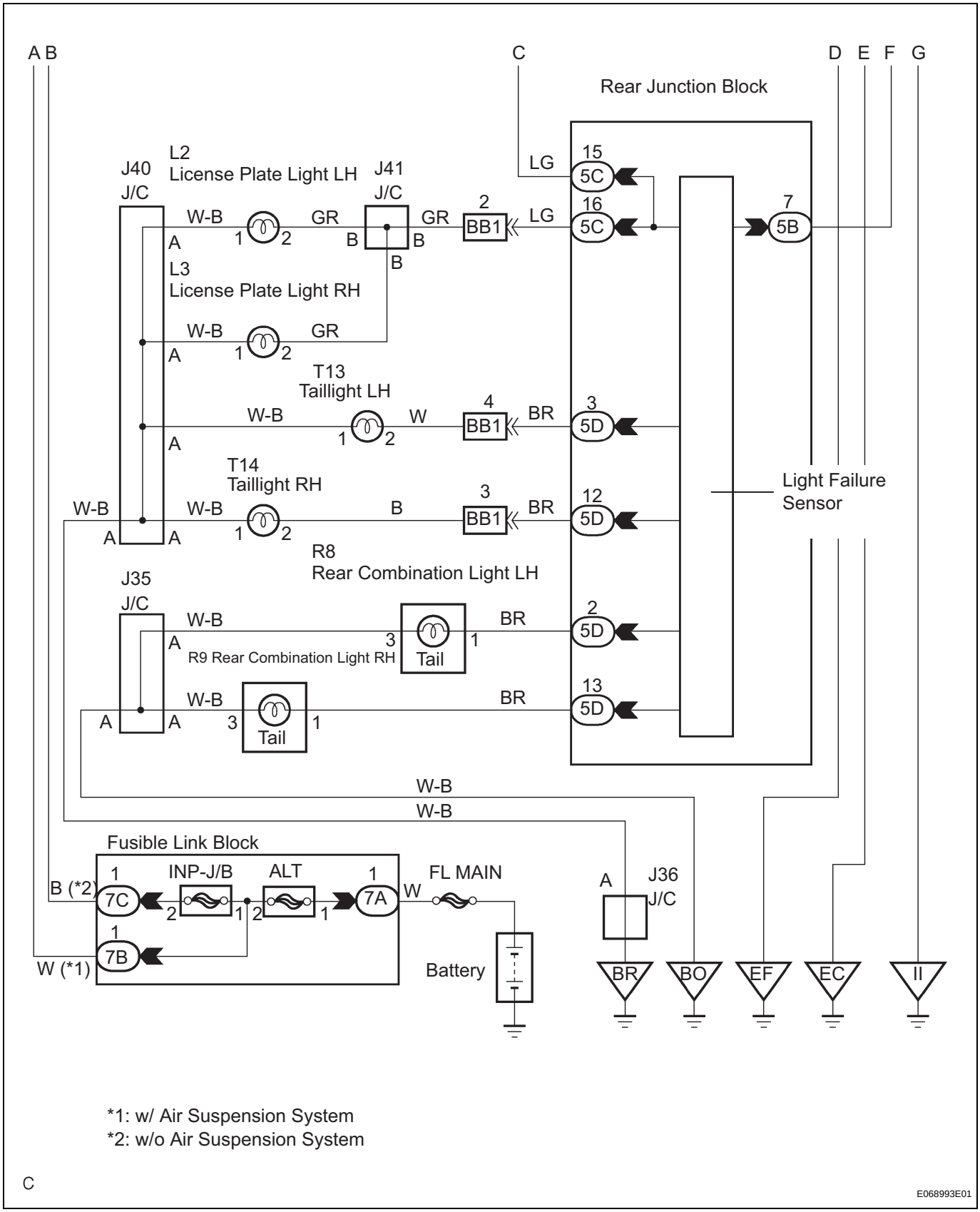
Taillight Relay Circuit

DESCRIPTION

The body ECU controls TAIL relay when the signal is received from the headlight dimmer switch assembly.

WIRING DIAGRAM




A B
C
D E F G
Rear Junction Block
L2
License Plate Light LH
J40
J/C
J41
J/C
W-B
GR
GR
LG
15
5C
16
5C
2
BB1
7
5B
L3
License Plate Light RH
T13
Taillight LH
W-B
W
BR
4
BB1
3
5D
T14
Taillight RH
W-B
W-B
B
BR
3
BB1
12
5D
Light Failure
Sensor
R8
Rear Combination Light LH
J35
J/C
W-B
BR
2
5D
R9 Rear Combination Light RH
Tail
W-B
BR
13
5D
Tail
W-B
W-B
Fusible Link Block
B (*2)
W (*1)
7C
7B
INP-J/B
ALT
7A
FL MAIN
Battery
A
J36
J/C
BR
BO
EF
EC
II
*1: w/ Air Suspension System
*2: w/o Air Suspension System
C
E068993E01

LI

1	PERFORM ACTIVE TEST BY INTELLIGENT TESTER

(a) Connect the intelligent tester to the DLC3.
(b) Turn the ignition switch to the ON position and press the intelligent tester main switch ON.
(c) Select the items below in the ACTIVE TEST and then check that the relay operates.

BODY

Item	Test Details	Diagnostic Note
TAIL LIGHT	Turn Tail light relay ON/OFF	-

NG → **Go to step 2**

OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

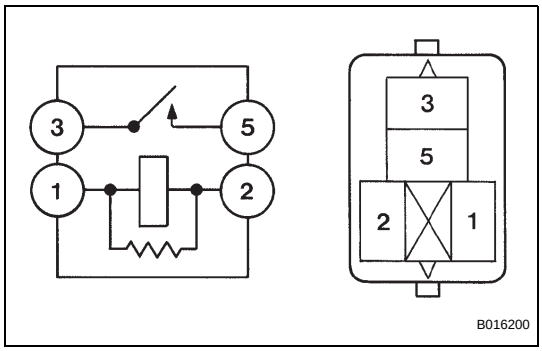
2	INSPECT FUSE

(a) Inspect TAIL fuse and GAUGE No.1 fuse in the instrument panel junction block assembly.
Resistance:
Below 1 Ω

NG → **REPLACE FUSE**

OK

3	INSPECT RELAY



(a) Inspect TAIL relay continuity.
(1) Remove the TAIL relay from the instrument panel J/B assembly.
(2) Measure the resistance according to the value(s) in the table below.

Resistance

Tester connection	Condition	Specified condition
3 - 5	Always	10 kΩ or higher
3 - 5	Apply B+ between the terminal 1 and 2	Below 1 Ω

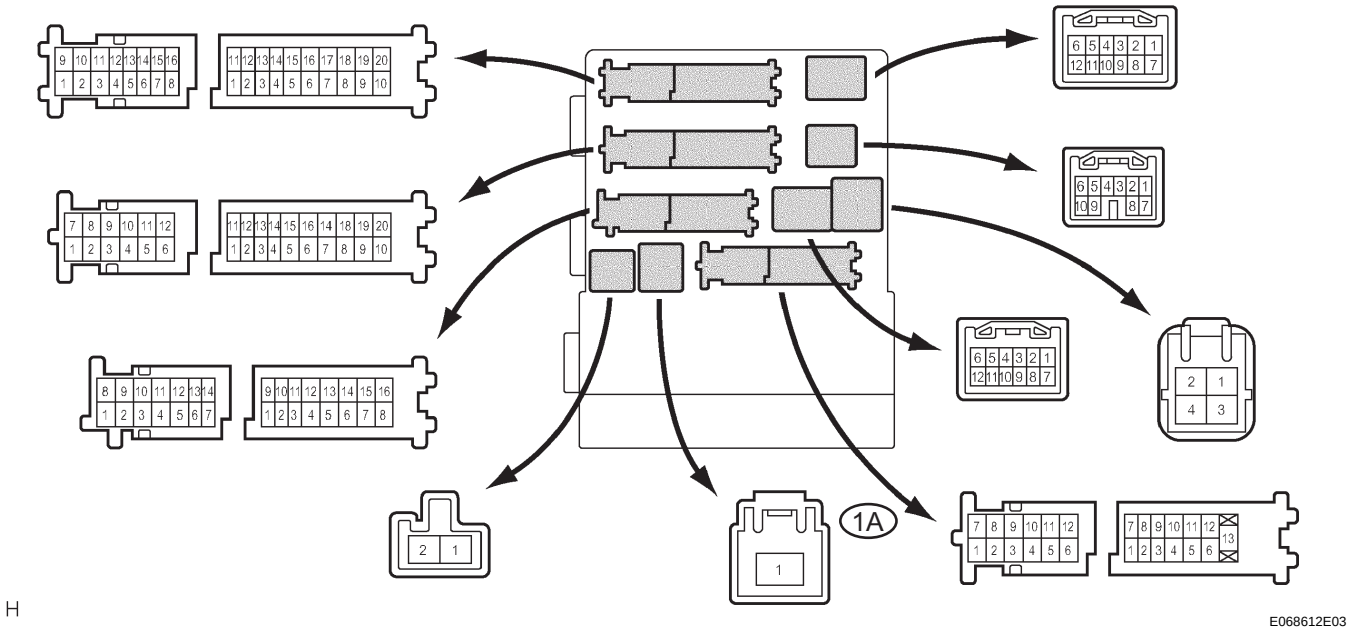
NG → **REPLACE RELAY**

OK

4	INSPECT INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY (POWER SOURCE CIRCUIT)

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

Instrument Panel Junction Block Assembly Front Side Wire Harness View:



Voltage

Tester connection	Condition	Specified condition
1A-1 - Body ground	Always	10 to 14 V

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR (BATTERY - INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY)**

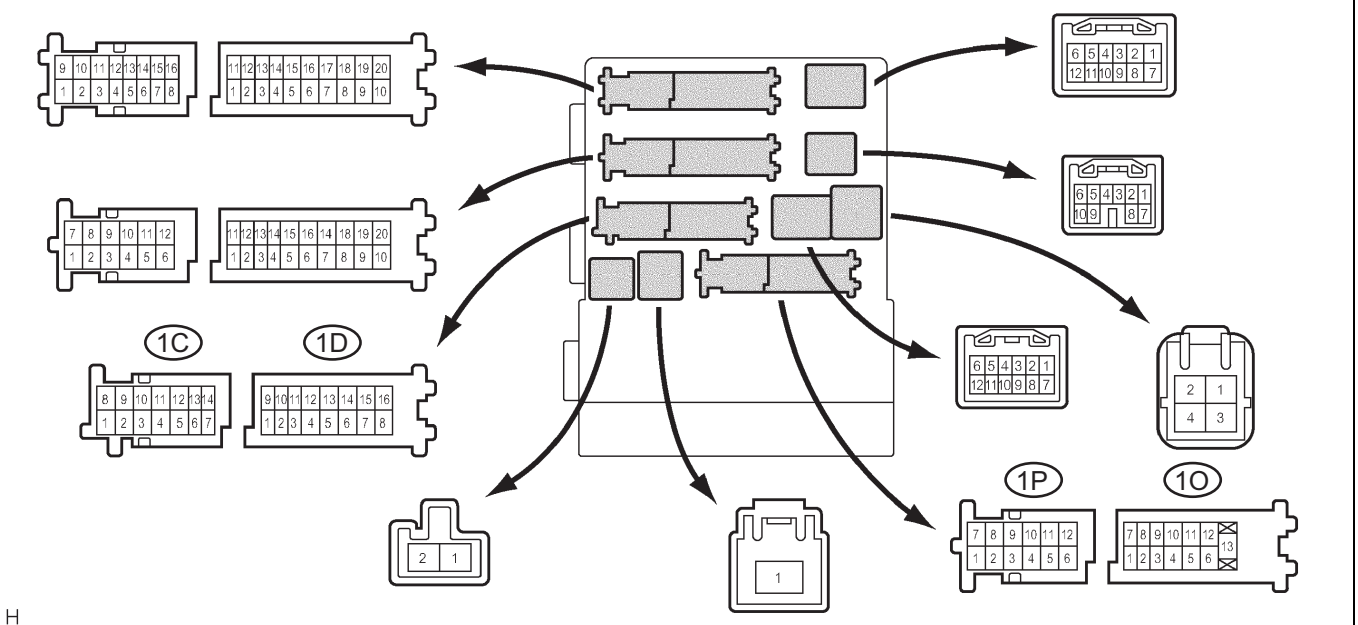
OK

5	INSPECT INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY

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

LI

Instrument Panel Junction Block Assembly Front Side Wire Harness View:



LI

Voltage

Tester connection	Condition	Specified condition
1C-4 - Body ground	Light control switch OFF → TAIL	Below 1 V → 10 to 14 V
1C-5 - Body ground	Light control switch OFF → TAIL	Below 1 V → 10 to 14 V
1D-6 - Body ground	Light control switch OFF → TAIL	Below 1 V → 10 to 14 V
1D-14 - Body ground	Light control switch OFF → TAIL	Below 1 V → 10 to 14 V
1P-8 - Body ground	Light control switch OFF → TAIL	Below 1 V → 10 to 14 V
1O-9 - Body ground	Ignition switch ON	Below 1 V → 10 to 14 V

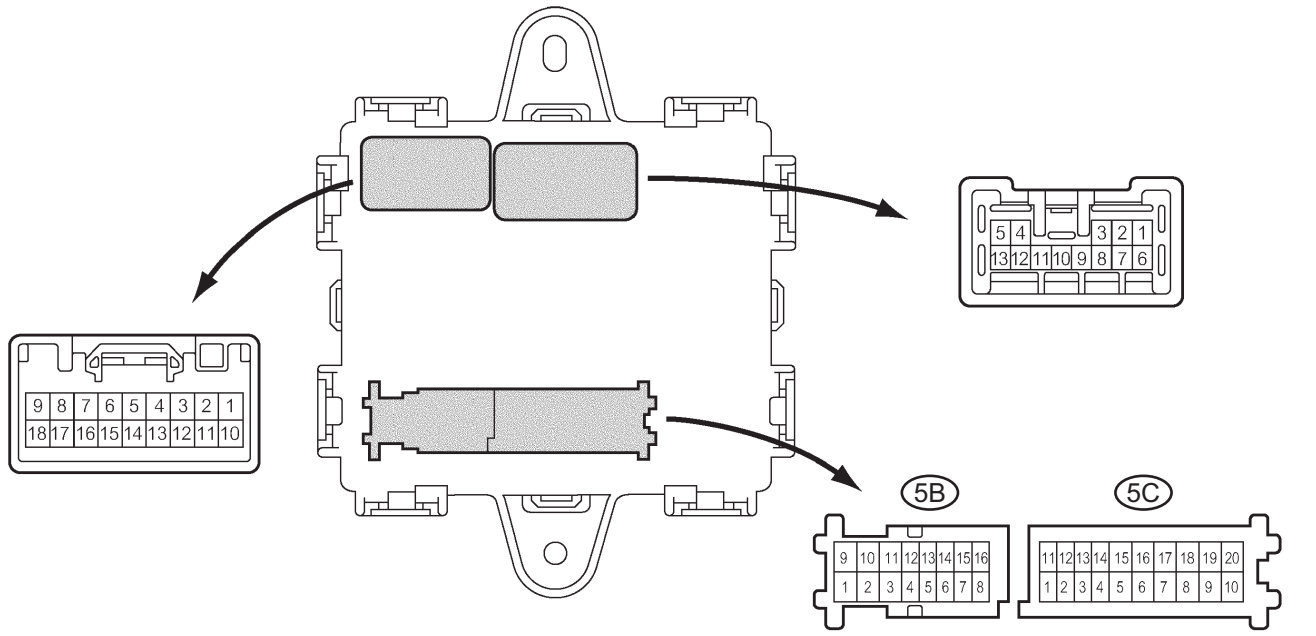
NG → **PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE**

OK

6	INSPECT REAR JUNCTION BLOCK

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

Rear Junction Block Assembly Wire Harness View:



Voltage

Tester connection	Condition	Specified condition
5B-7 - Body ground	Ignition switch OFF → ON	Below 1 V → 10 to 14 V
5C-15 - Body ground	Light control switch OFF → TAIL	Below 1 V → 10 to 14 V

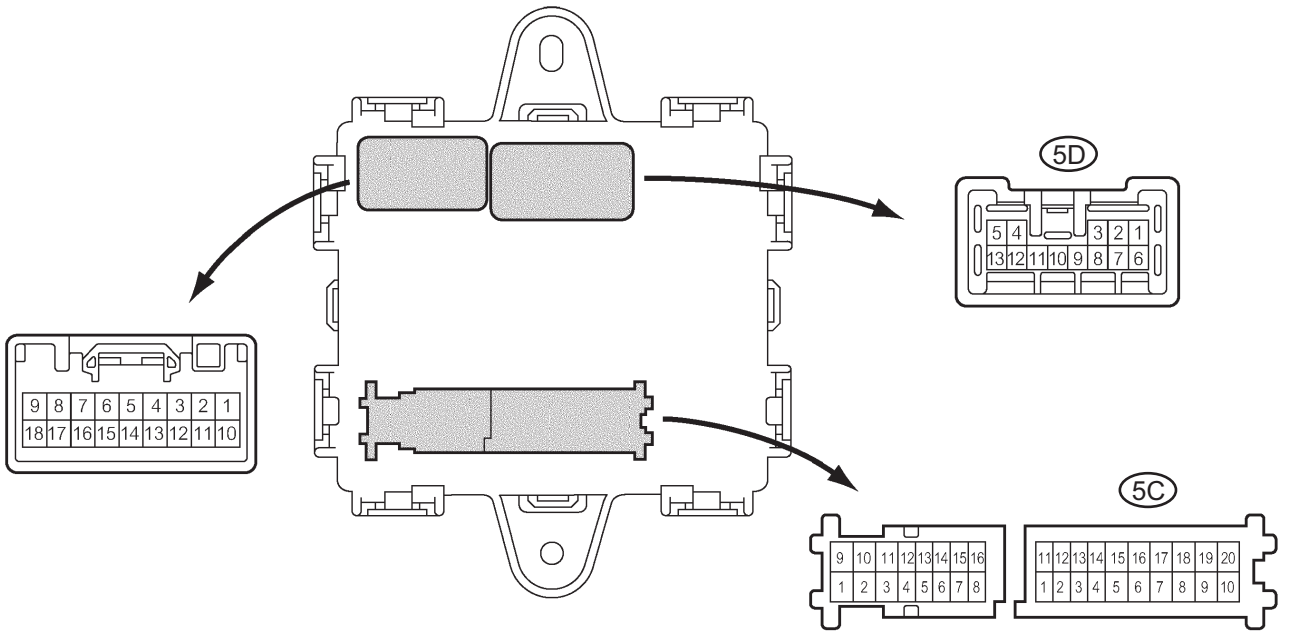
NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR (INSTRUMENT PANEL J/B ASSEMBLY - REAR JUNCTION BLOCK)**

OK

7	INSPECT REAR JUNCTION BLOCK

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

Rear Junction Block Assembly Wire Harness View:



LI

Voltage

Tester connection	Condition	Specified condition
5C-16 - Body ground	Headlight dimmer switch OFF → TAIL	Below 1 V → 10 to 14 V
5D-5 - Body ground	Headlight dimmer switch OFF → TAIL	Below 1 V → 10 to 14 V
5D-9 - Body ground	Headlight dimmer switch OFF → TAIL	Below 1 V → 10 to 14 V
5D-10 - Body ground	Headlight dimmer switch OFF → TAIL	Below 1 V → 10 to 14 V
5D-11 - Body ground	Headlight dimmer switch OFF → TAIL	Below 1 V → 10 to 14 V

NG → **REPLACE REAR JUNCTION BLOCK**

OK

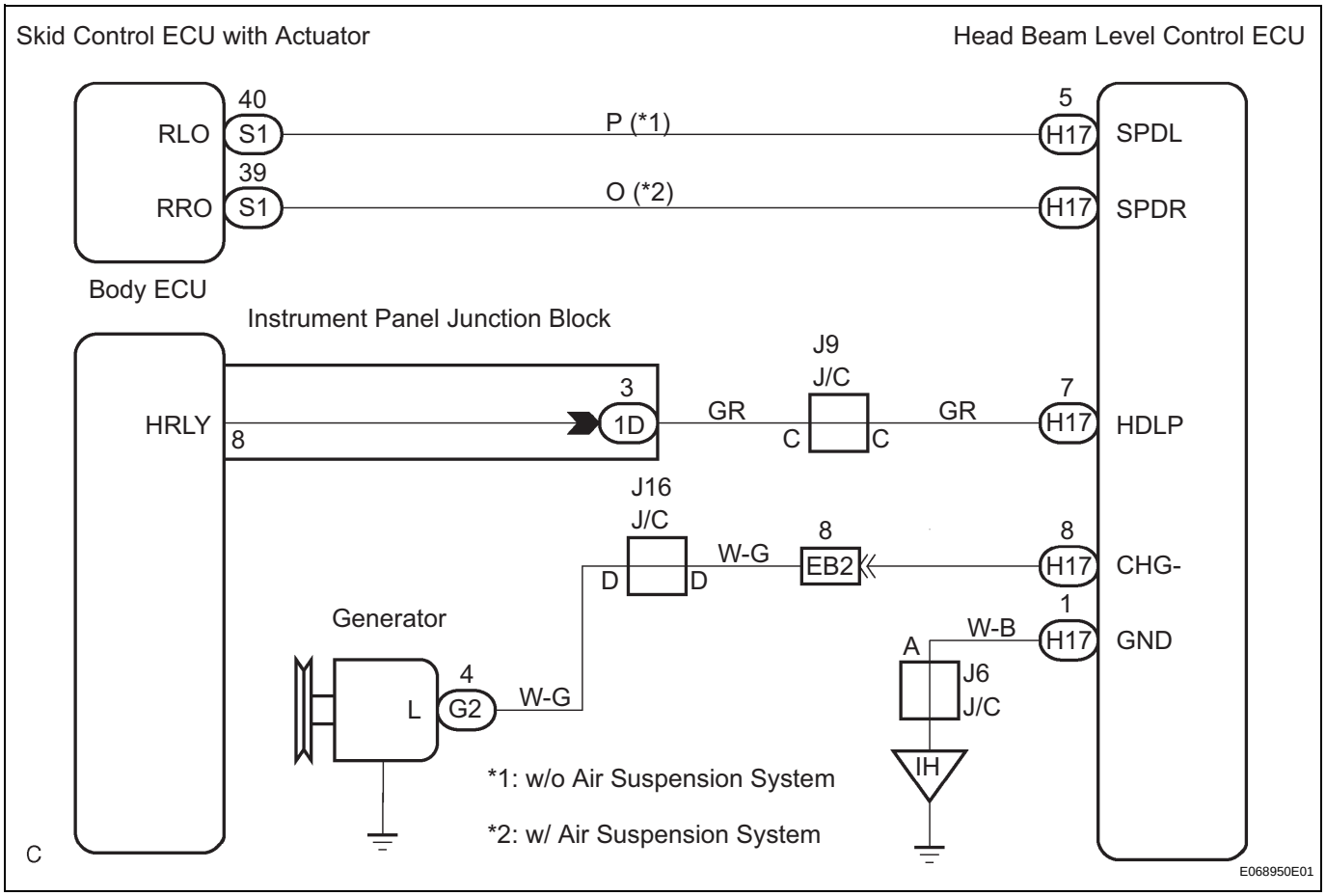
REPAIR OR REPLACE HARNESS OR CONNECTOR

Headlight Beam Level Control ECU Communication Circuit

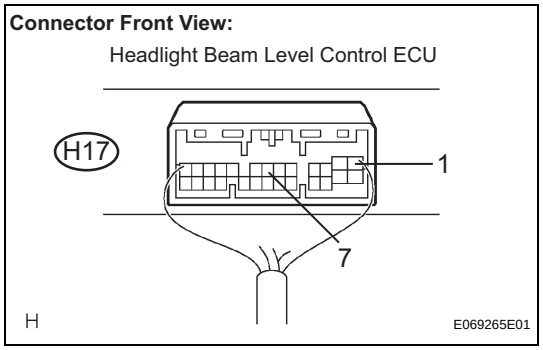
DESCRIPTION

Multiplex network body ECU sends signals that the headlight is ON and the daytime running light is on to the headlight beam level control ECU and operates the headlight beam level control system.
Headlight beam level control ECU receives the vehicle speed signal from the skid control ECU, and engine condition from the generator assembly.

WIRING DIAGRAM



1	INSPECT HEADLIGHT BEAM LEVEL CONTROL ECU



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

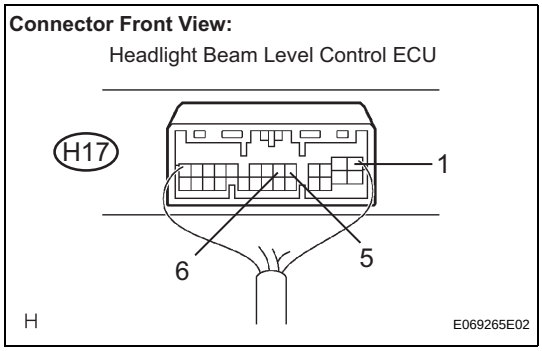
Voltage

Tester Connection	Condition	Specified Condition
H17-7 (HDLP) - H17-1 (GND)	Light Control switch OFF → HEAD	10 to 14 V → Below 1 V

NG → **Go to step 4**

OK

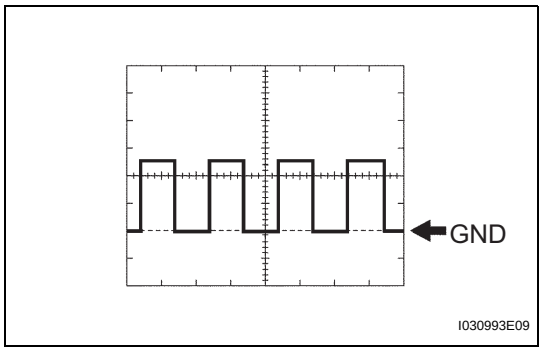
2 INSPECT HEADLIGHT BEAM LEVEL CONTROL ECU



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

Voltage

Tester Connection	Condition	Specified Condition
H17-5 (SPDL) - H17-1 (GND)	Drive at about 30 km/h (19 mph)	0 to 14 V Pulse generation (*1)
H17-6 (SPDR) - H17-1 (GND)	Drive at about 30 km/h (19 mph)	0 to 14 V Pulse generation (*1)



(b) *1: Oscilloscope wave

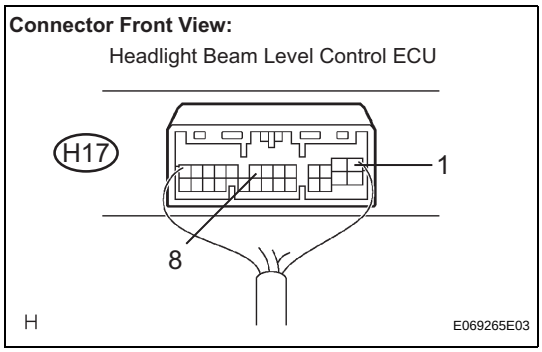
HINT:

- Gauge set: 5 V/DIV. 2 ms/DIV
- Condition: Drive at about 30 km/h (19 mph)

NG → **Go to step 5**

OK

3 INSPECT HEADLIGHT BEAM LEVEL CONTROL ECU



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

Voltage

Tester Connection	Condition	Specified Condition
H17-8 (CHG-) - H17-1 (GND)	Engine is running	10 to 14 V

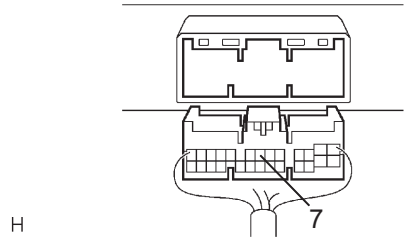
NG → Go to step 6

OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

4 CHECK HARNESS AND CONNECTOR (INSTRUMENT PANEL J/B - HEADLIGHT BEAM LEVEL CONTROL ECU)

Wire Harness View:
H17 Headlight Beam Level Control ECU

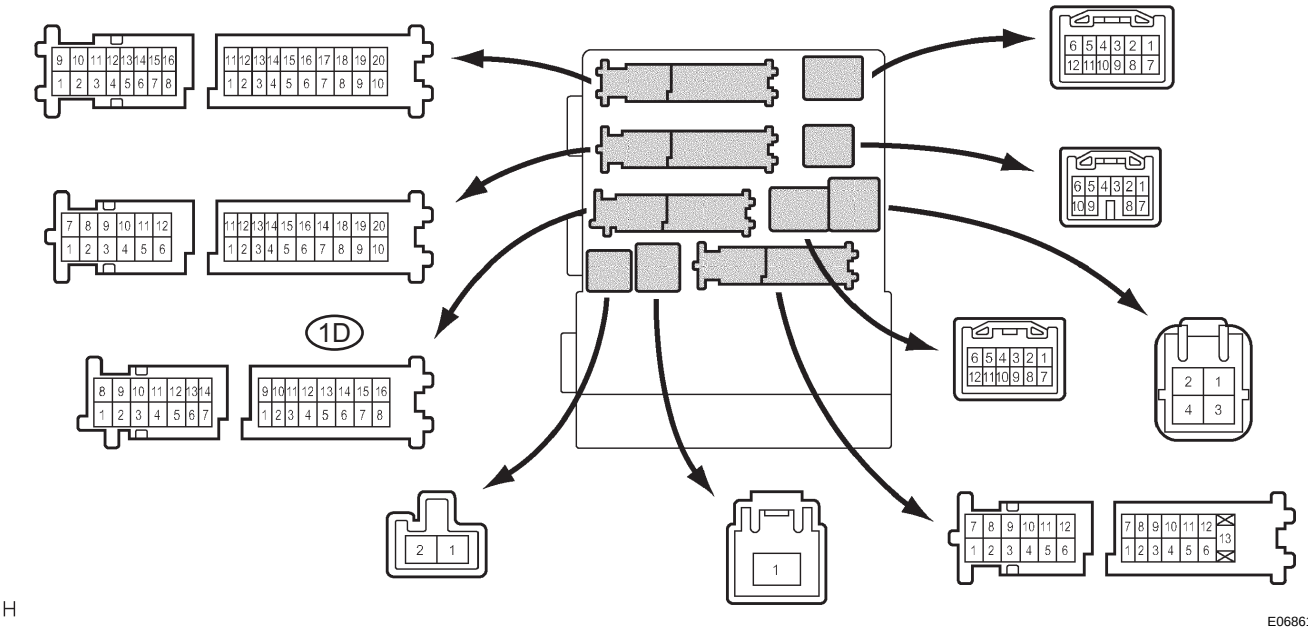


(a) Disconnect the 1D connector of instrument panel junction block assembly and the H17 connector of headlight beam level control ECU.
(b) Measure the resistance according to the value(s) in the table below.

Resistance

Tester connection	Condition	Specified condition
1D-3 - H17-7	Always	Below 1 Ω

Instrument Panel Junction Block Assembly Front Side Wire Harness View:



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

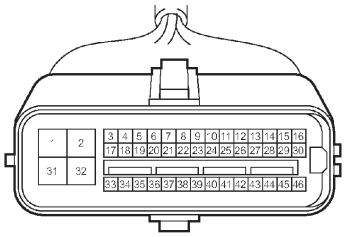
OK

GO TO FLOW CHART (HEADLIGHT RELAY CIRCUIT)

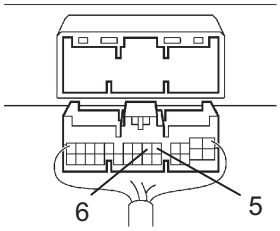
5	CHECK HARNESS AND CONNECTOR (SKID CONTROL ECU - HEADLIGHT BEAM LEVEL CONTROL ECU)

Wire Harness View:

(S1) Skid Control ECU with Actuator



(H17) Headlight Beam Level Control ECU



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(a) Disconnect the S1 connector of skid control ECU and the H17 connector of headlight beam level control ECU.
(b) Measure the resistance according to the value(s) in the table below.

Resistance

Tester connection	Condition	Specified condition
S1-39 (RRO) - H17-6 (SPDR)	Always	Below 1 Ω
S1-40 (RLO) - H17-5 (SPDL)	Always	Below 1 Ω

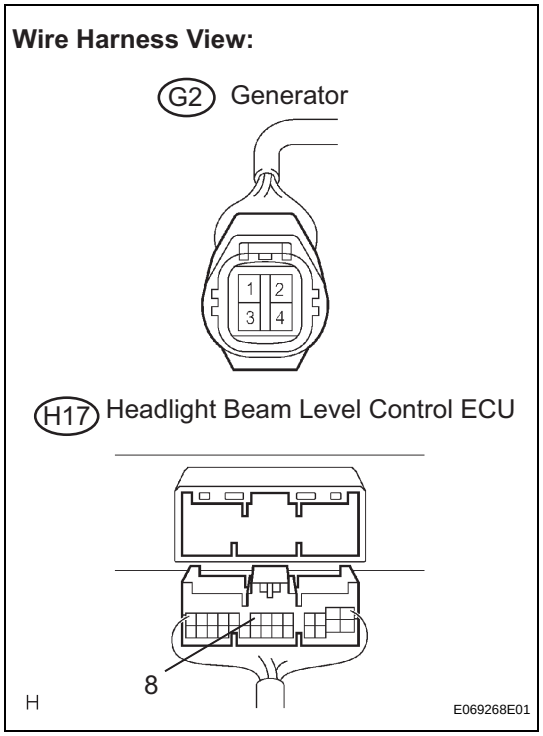
NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

GO TO FLOW CHART OR PROBLEM SYMPTOMS TABLE

6	CHECK HARNESS AND CONNECTOR (GENERATOR ASSEMBLY - HEADLIGHT BEAM LEVEL CONTROL ECU)

Wire Harness View:



(a) Disconnect the G2 connector generator and the H17 connector of headlight beam level control ECU.
(b) Measure the resistance according to the value(s) in the table below.

Resistance

Tester connection	Condition	Specified condition
G2-4 (L) - H17-8 (CHG-)	Always	Below 1 Ω

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

REPAIR OR REPLACE GENERATOR ASSEMBLY

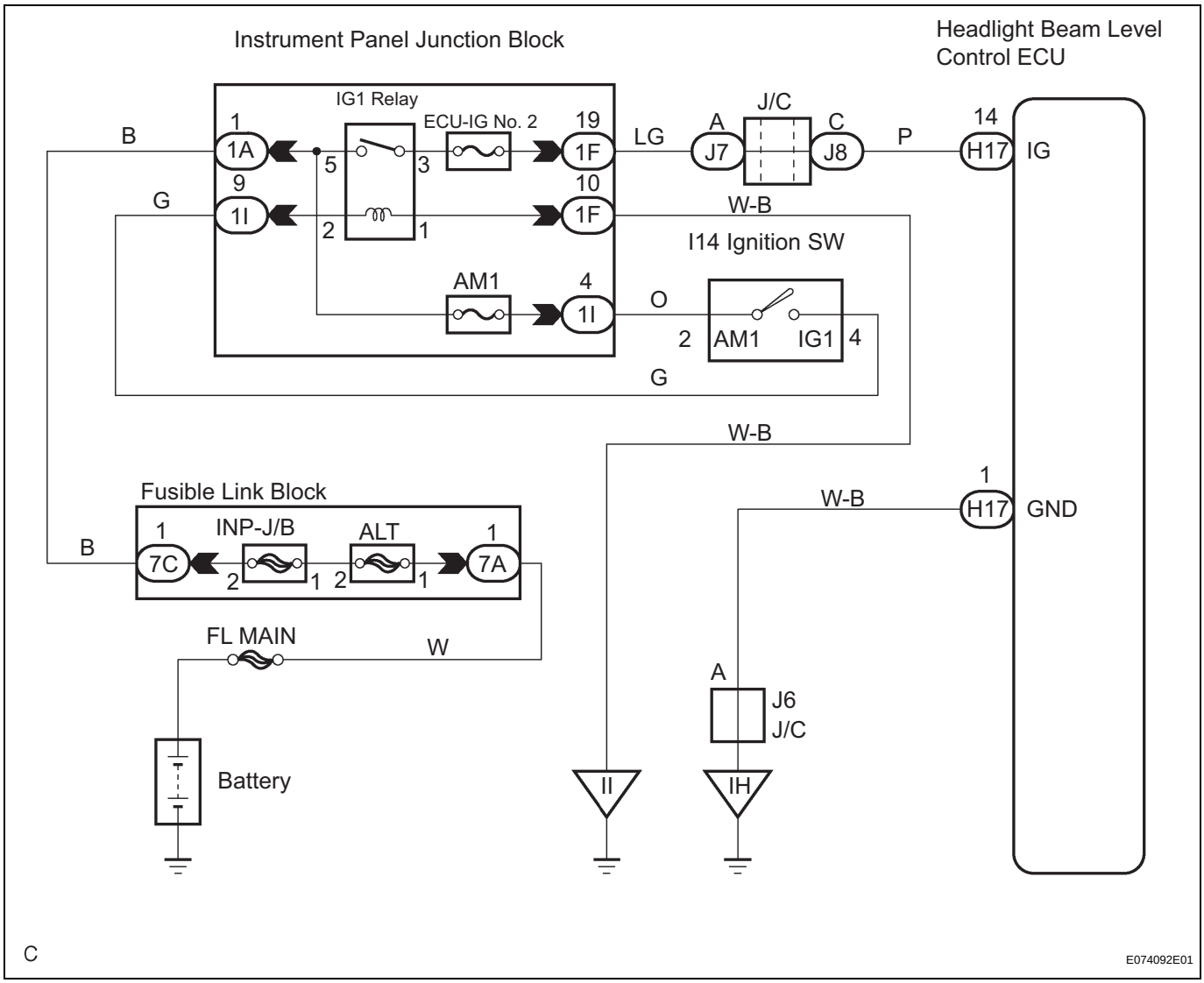
LI

Headlight Beam Level Control ECU Power Source Circuit

DESCRIPTION

This circuit provides power to operate the headlight beam level control ECU.

WIRING DIAGRAM



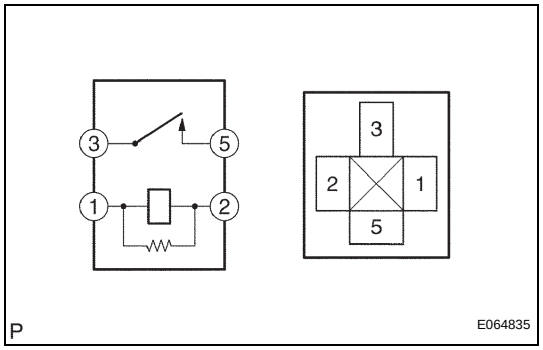
1	INSPECT FUSE

(a) Inspect the ECU-IG No.2 fuse in the instrument panel junction block assembly.
Resistance:
Below 1 Ω

NG → **REPLACE FUSE**

OK

2 INSPECT IG1 RELAY



(a) Inspect IG1 relay continuity.
  (1) Remove the IG1 relay from the instrument panel J/B assembly.
  (2) Measure the resistance according to the value(s) in the table below.

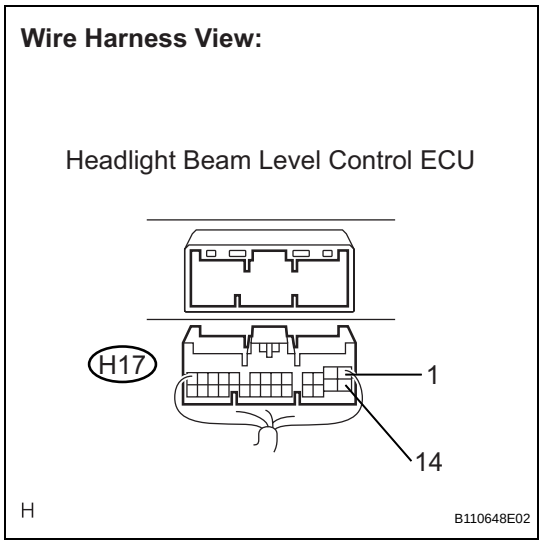
Resistance

Tester connection	Condition	Specified resistance
3 - 5	Always	10 kΩ or higher
3 - 5	Apply B+ between the terminal 1 and 2	Below 1 Ω

NG → REPLACE RELAY

OK

3 INSPECT HEADLIGHT BEAM LEVEL CONTROL ECU



(a) Disconnect the H17 connector of headlight beam level control ECU.
(b) Measure the voltage according to the value(s) in the table below.

Voltage

Tester connection	Condition	Specified condition
H17-14 (IG) - H17-1 (GND)	Ignition switch OFF → ON	Below 1 V → 10 to 14 V

NG → Go to step 4

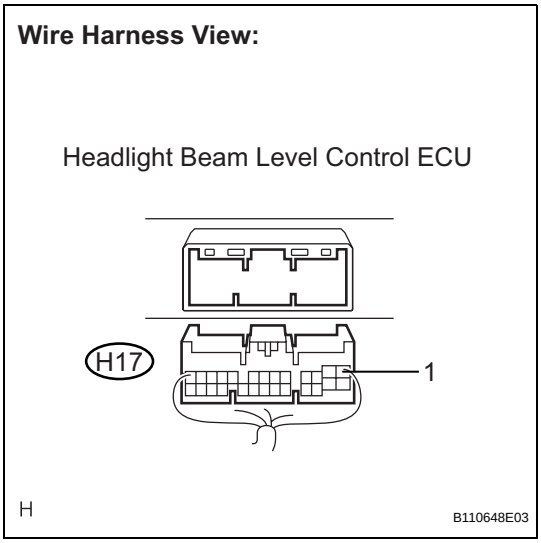
OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

LI

4	CHECK HARNESS AND CONNECTOR (HEADLIGHT BEAM LEVEL CONTROL ECU - BODY GROUND)

Wire Harness View:



(a) Disconnect the H17 connector of headlight beam level control ECU.
(b) Measure the resistance according to the value(s) in the table below.

Resistance

Tester connection	Condition	Specified condition
H17-1 (GND) - Body ground	Always	Below 1 Ω

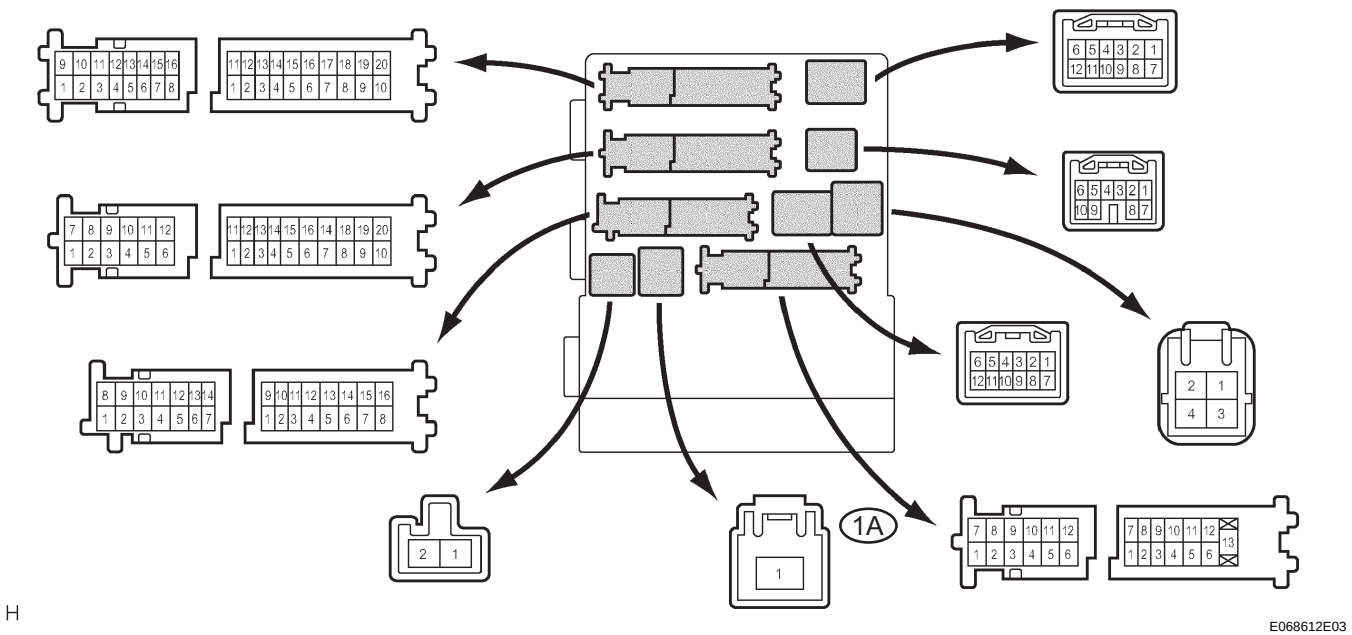
NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

5	INSPECT INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY (POWER SOURCE CIRCUIT)

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

Instrument Panel Junction Block Assembly Front Side Wire Harness View:



Voltage

Tester connection	Condition	Specified condition
1A-1 - Body ground	Always	10 to 14 V

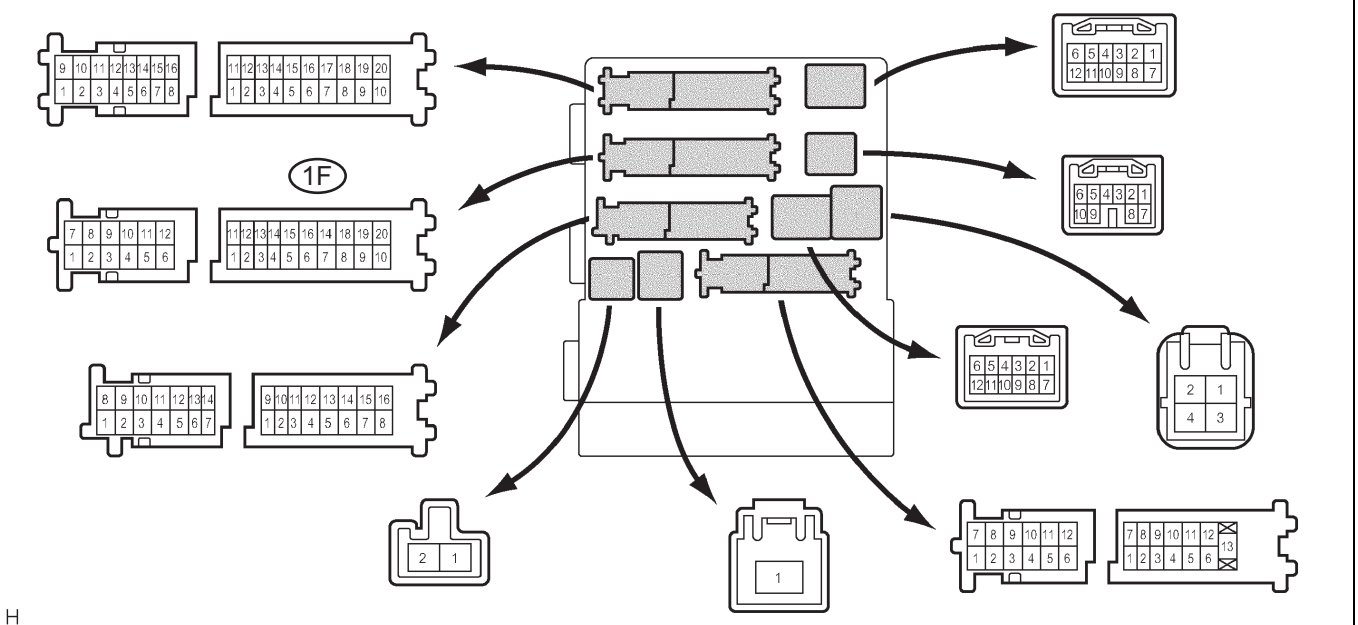
NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR (BATTERY - INSTRUMENT PANEL J/B ASSEMBLY)**

OK

6	INSPECT INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY

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

Instrument Panel Junction Block Assembly Front Side Wire Harness View:



LI

Voltage

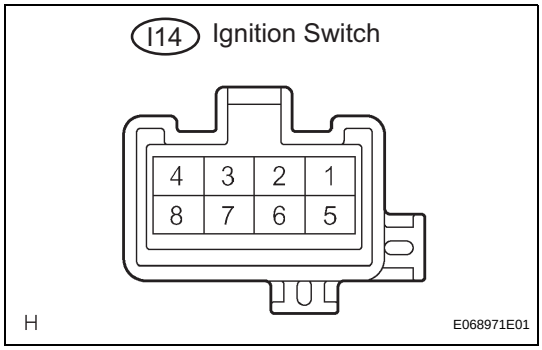
Tester connection	Condition	Specified condition
1F-19 - Body ground	Ignition switch OFF → ON	Below 1 V → 10 to 14 V

NG → **Go to step 7**

OK

REPAIR OR REPLACE HARNESS OR CONNECTOR (INSTRUMENT PANEL J/B ASSEMBLY - LEVEL CONTROL ECU)

7 INSPECT IGNITION SWITCH



(a) Disconnect the ignition switch connector.
(b) Measure the resistance according to the value(s) in the table below.

Resistance

Tester connection	Condition	Specified resistance
2 - 4	Ignition switch OFF	10 kΩ or higher
2 - 4	Ignition switch ON	Below 1 Ω

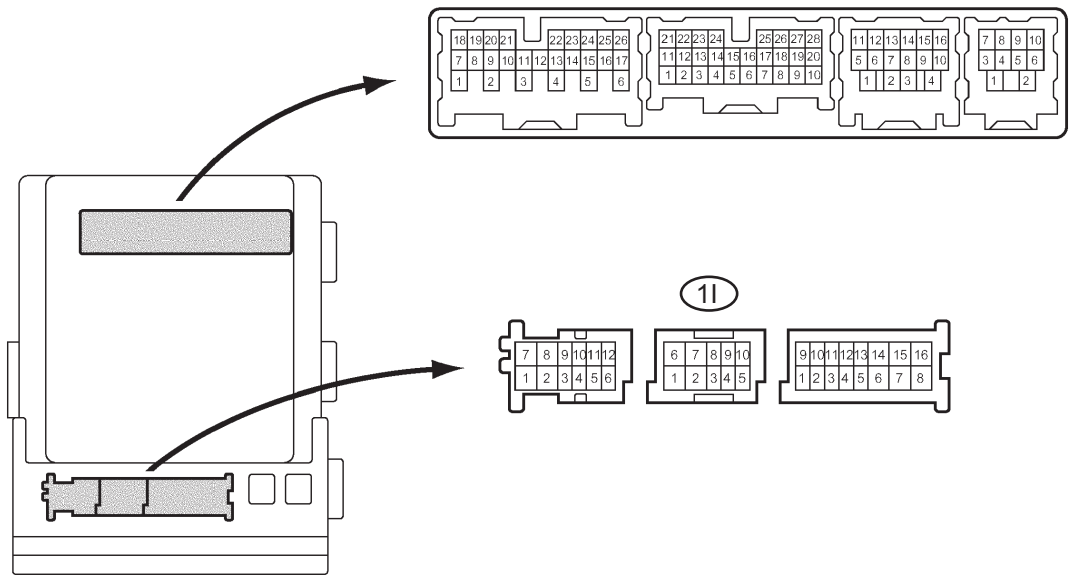
NG → **REPLACE IGNITION SWITCH**

OK

8	INSPECT INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY

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

Instrument Panel Junction Block Assembly Back Side Wire Harness View:



Voltage

Tester connection	Condition	Specified condition
1I-4 - Body ground	Always	10 to 14 V

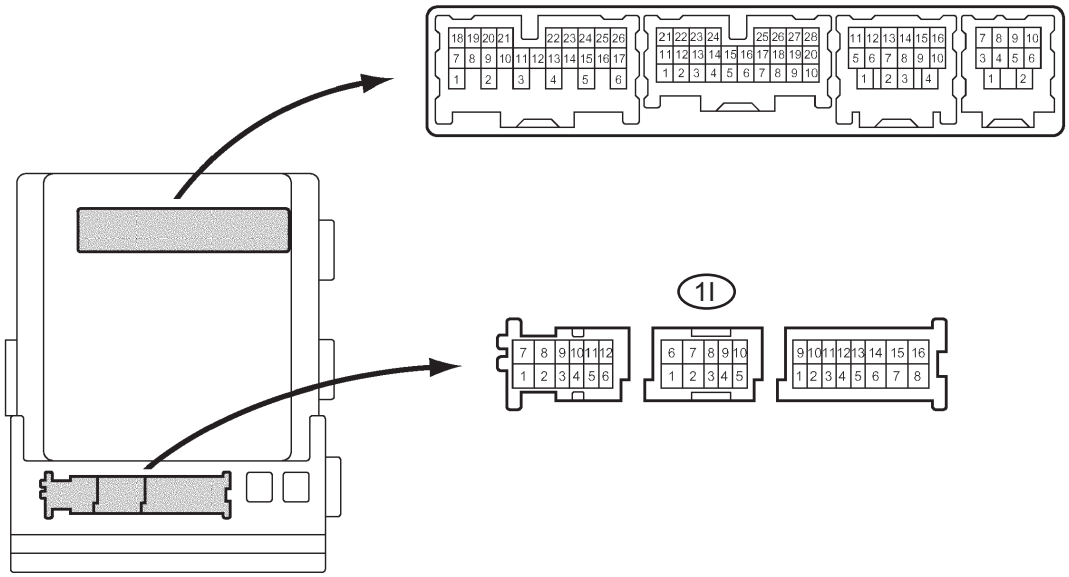
NG → REPLACE INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY

OK

9	INSPECT INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY

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

Instrument Panel Junction Block Assembly Back Side Wire Harness View:



LI

Voltage

Tester connection	Condition	Specified condition
1I-9 - Body ground	Ignition switch OFF → ON	Below 1 V → 10 to 14 V

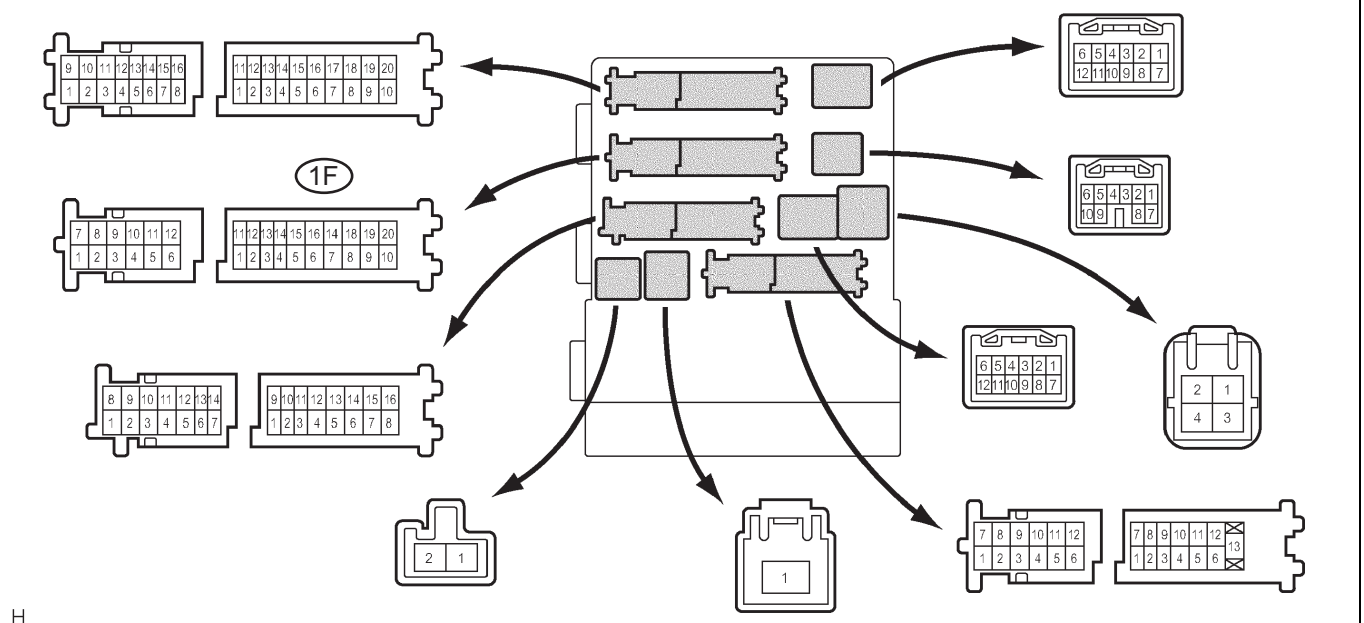
NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

10	**CHECK HARNESS AND CONNECTOR (INSTRUMENT PANEL J/B ASSEMBLY - BODY GROUND)**

(a) Disconnect the 1F connector from the instrument panel junction block assembly.
(b) Measure the resistance according to the value(s) in the table below.

Instrument Panel Junction Block Assembly Front Side Wire Harness View:



Resistance

Tester connection	Condition	Specified condition
1F-10 - Body ground	Always	Below 1 Ω

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

REPLACE INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY

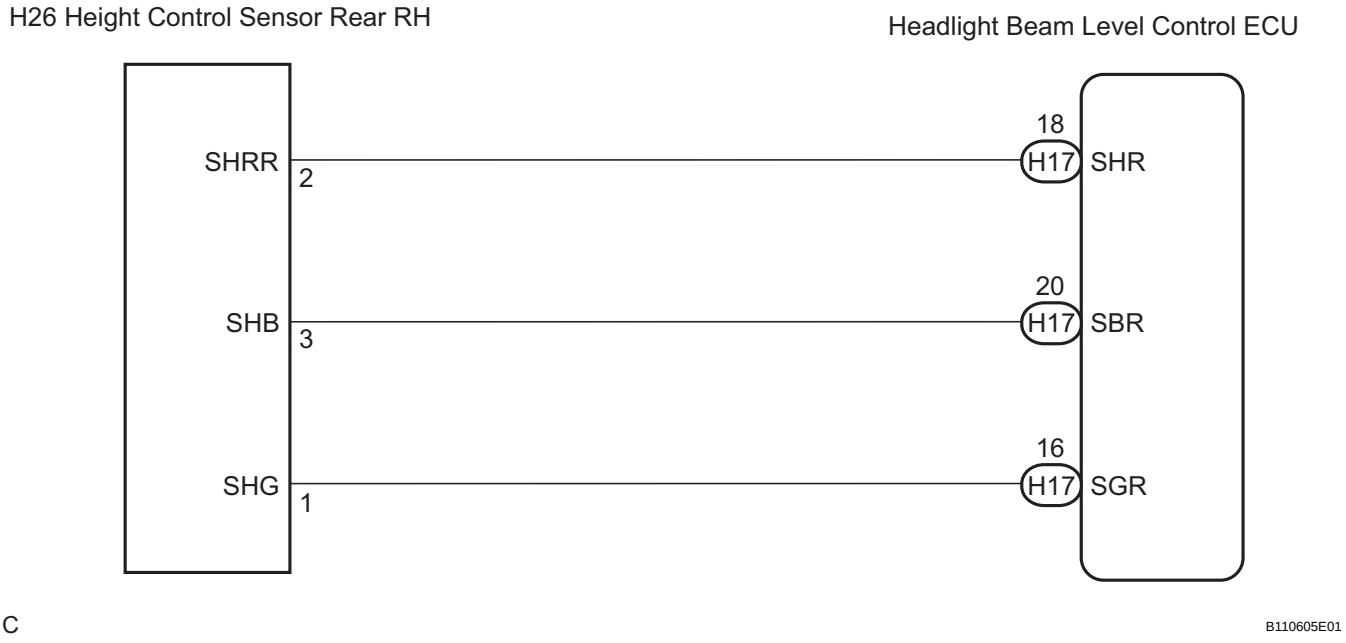
LI

Height Control Sensor Circuit

DESCRIPTION

The headlight beam level control ECU receives the height control sensor signal from the height control sensor sub-assembly or headlight control ECU.
The headlight beam level control ECU calculates a height value from the height control signal. The voltage at the power source of the height control sensor is corrected when SHF or SHR is detected.

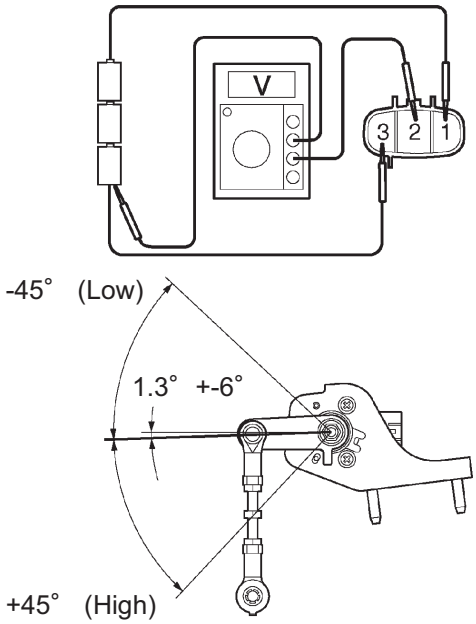
WIRING DIAGRAM



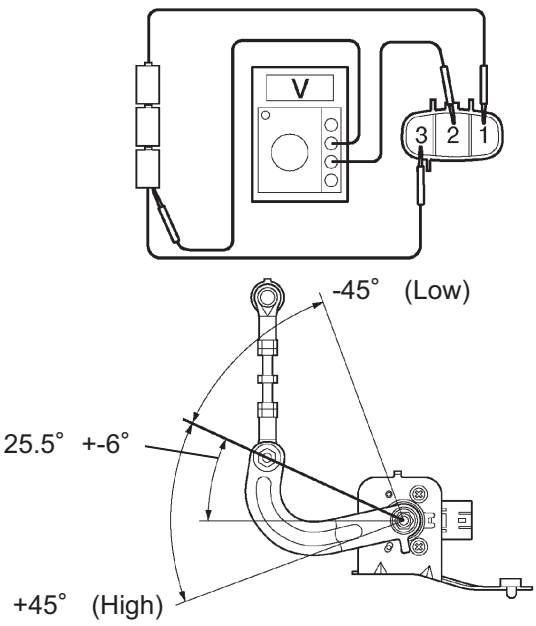
1	INSPECT HEIGHT CONTROL SENSOR SUB-ASSEMBLY REAR RH

(a) Connect 3 dry cell batteries (1.5 V) in a series.
(b) Connect the positive (+) lead from the battery to terminal 1 and negative (-) lead from the battery to terminal 3.
(c) Measure voltage between terminal 2 and terminal 3 when slowly move the link up and down.

FF:



4WD:



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Voltage

Link Angle	Standard voltage
+45° (High)	**4.5 V**
0° (Normal)	**2.5 V**
-45° (Low)	**0.5 V**

NG → **REPLACE HEIGHT CONTROL SENSOR SUB-ASSEMBLY REAR RH**

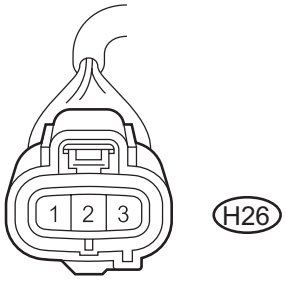
OK

LI

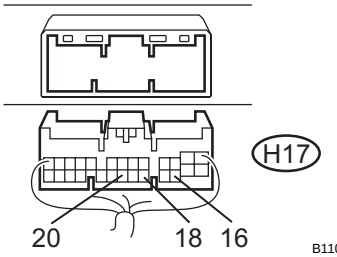
2	CHECK HARNESS AND CONNECTOR (HEIGHT CONTROL SENSOR REAR RH - LEVEL CONTROL ECU)

Wire Harness View:

Height Control Sensor Rear RH



Headlight Beam Level Control ECU



(a) Disconnect the H26 connector of height control sensor sub-assembly and the H17 connector of headlight leveling ECU assembly.
(b) Measure the resistance according to the value(s) in the table below.

Resistance

Tester connection	Condition	Specified condition
H17-16 (SGR) - H26-1 (SHG)	Always	Below 1 Ω
H17-18 (SHR) - H26-2 (SHRR)	Always	Below 1 Ω
H17-20 (SBR) - H26-3 (SHB)	Always	Below 1 Ω
H26-1 (SHG) - Body ground	Always	10 kΩ or higher
H26-2 (SHRR) - Body ground	Always	10 kΩ or higher
H26-3 (SHB) - Body ground	Always	10 kΩ or higher

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

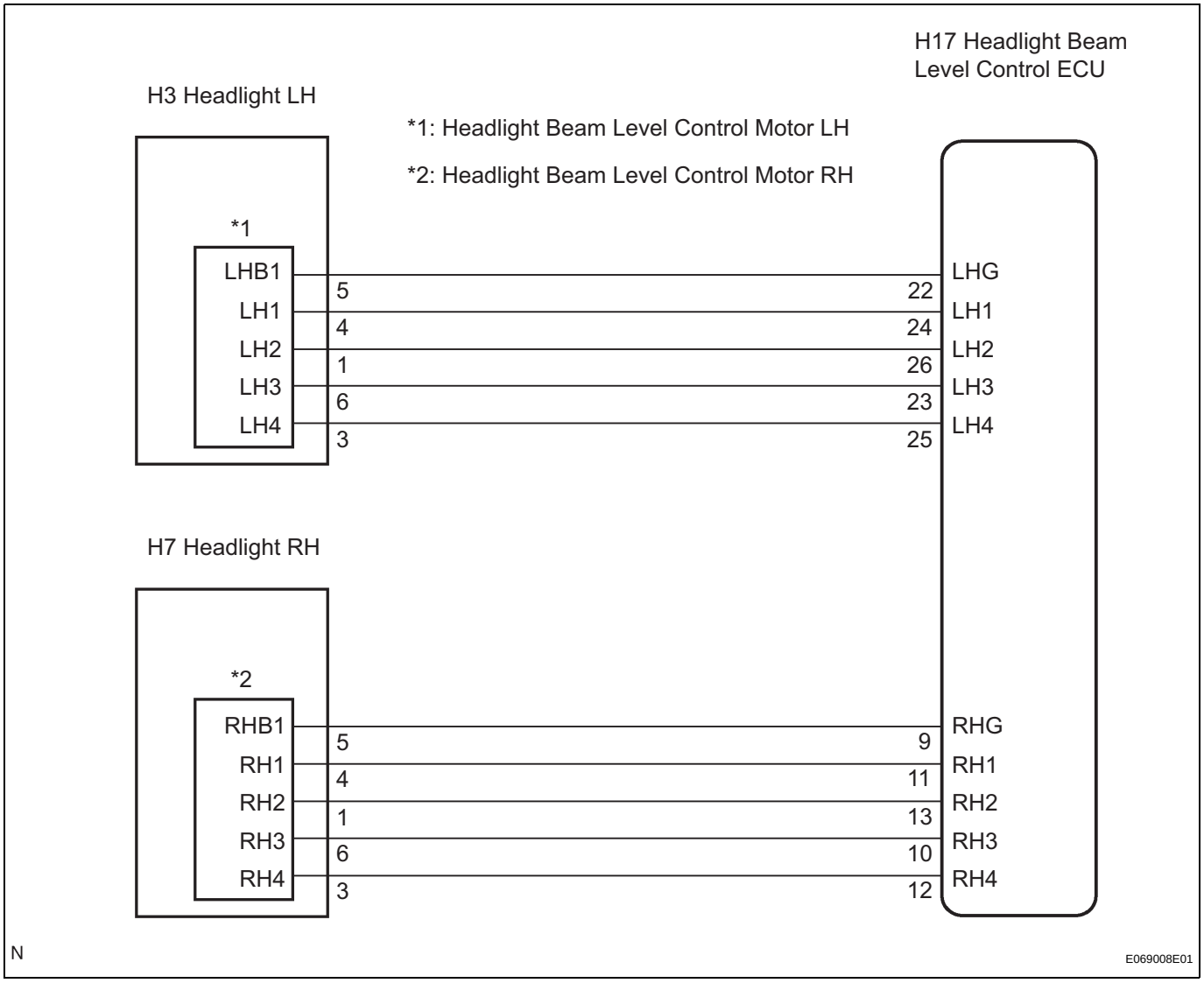
PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

Headlight Beam Level Control Actuator Circuit

DESCRIPTION

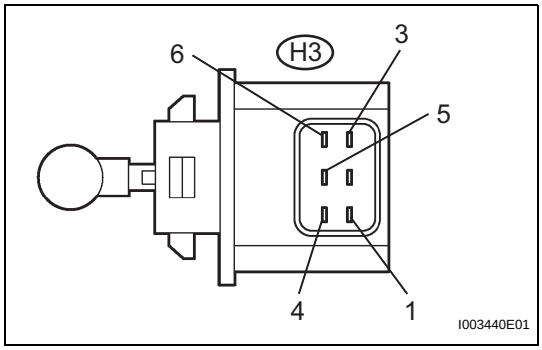
When the actuator is received a signal from the headlight beam level control ECU, the step motor is activated and the angle of the reflector in the headlight will be adjusted.

WIRING DIAGRAM



LI

1	INSPECT HEADLIGHT BEAM LEVEL CONTROL MOTOR LH



(a) Disconnect the connector from headlight beam level control motor LH.
(b) Measure the resistance according to the value(s) in the table below.

Resistance

Tester connection	Condition	Specified condition
1 (LH2) - 5 (LHB1)	Always	26 to 30 Ω
3 (LH4) - 5 (LHB1)	Always	26 to 30 Ω
4 (LH1) - 5 (LHB1)	Always	26 to 30 Ω
6 (LH3) - 5 (LHB1)	Always	26 to 30 Ω

LI

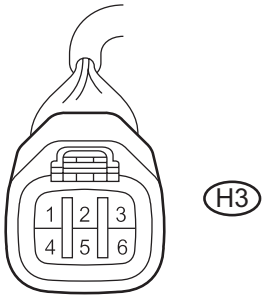
NG → **REPLACE HEADLIGHT BEAM LEVEL CONTROL MOTOR LH**

OK

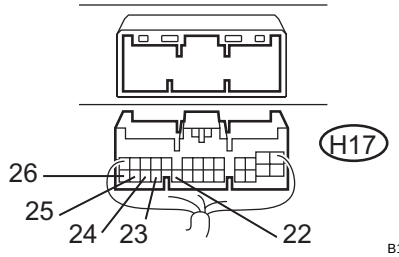
2	CHECK HARNESS AND CONNECTOR (LEVEL CONTROL MOTOR LH - LEVEL CONTROL ECU)

Wire Harness View:

Headlight Beam Level Control Motor LH



Headlight Beam Level Control ECU



(a) Disconnect the H3 connector of headlight beam level control motor LH and the H17 connector of the headlight beam level control ECU.

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

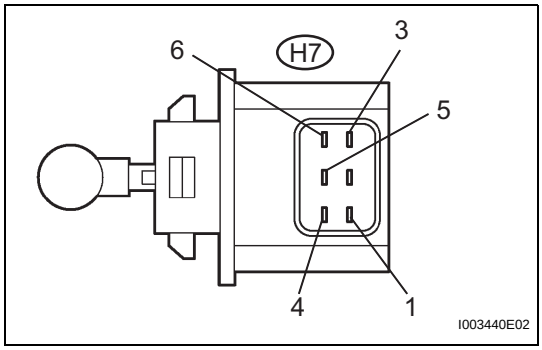
Resistance

Tester connection	Condition	Specified condition
H3-1 (LH2) - H17-26 (LH2)	Always	Below 1 Ω
H3-3 (LH4) - H17-25 (LH4)	Always	Below 1 Ω
H3-4 (LH1) - H17-24 (LH1)	Always	Below 1 Ω
H3-5 (LHB1) - H17-22 (LHG)	Always	Below 1 Ω
H3-6 (LH3) - H17-23 (LH3)	Always	Below 1 Ω
H17-26 (LH2) - Body ground	Always	10 kΩ or higher
H17-25 (LH4) - Body ground	Always	10 kΩ or higher
H17-24 (LH1) - Body ground	Always	10 kΩ or higher
H17-22 (LHG) - Body ground	Always	10 kΩ or higher
H17-23 (LH3) - Body ground	Always	10 kΩ or higher

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

3	INSPECT HEADLIGHT BEAM LEVEL CONTROL MOTOR RH



(a) Disconnect the connector from headlight leveling motor RH.
(b) Measure the resistance according to the value(s) in the table below.

Resistance

Tester connection	Condition	Specified condition
1 (RH2) - 5 (RHB1)	Always	26 to 30 Ω
3 (RH4) - 5 (RHB1)	Always	26 to 30 Ω
4 (RH1) - 5 (RHB1)	Always	26 to 30 Ω
6 (RH3) - 5 (RHB1)	Always	26 to 30 Ω

LI

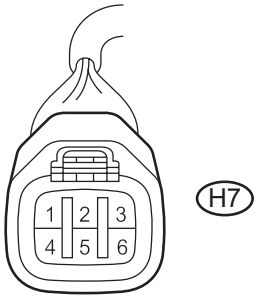
NG → **REPLACE HEADLIGHT BEAM LEVEL CONTROL MOTOR RH**

OK

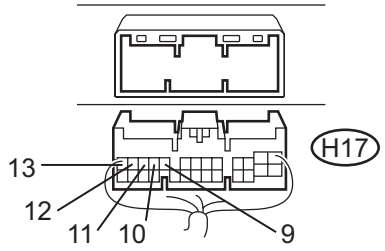
4	CHECK HARNESS AND CONNECTOR (LEVEL CONTROL MOTOR RH - LEVEL CONTROL ECU)

Wire Harness View:

Headlight Beam Level Control Motor RH



Headlight Beam Level Control ECU



(a) Disconnect the H7 connector of headlight beam level control motor RH and the H17 connector of the headlight beam level control ECU.

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

Resistance

Tester connection	Condition	Specified condition
H7-1 (RH2) - H17-13 (RH2)	Always	Below 1 Ω
H7-3 (RH4) - H17-12 (RH4)	Always	Below 1 Ω
H7-4 (RH1) - H17-11 (RH1)	Always	Below 1 Ω
H7-5 (RHB1) - H17-9 (RHG)	Always	Below 1 Ω
H7-6 (RH3) - H17-10 (RH3)	Always	Below 1 Ω
H17-13 (RH2) - Body ground	Always	10 kΩ or higher
H17-12 (RH4) - Body ground	Always	10 kΩ or higher
H17-11 (RH1) - Body ground	Always	10 kΩ or higher
H17-9 (RHG) - Body ground	Always	10 kΩ or higher
H17-10 (RH3) - Body ground	Always	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

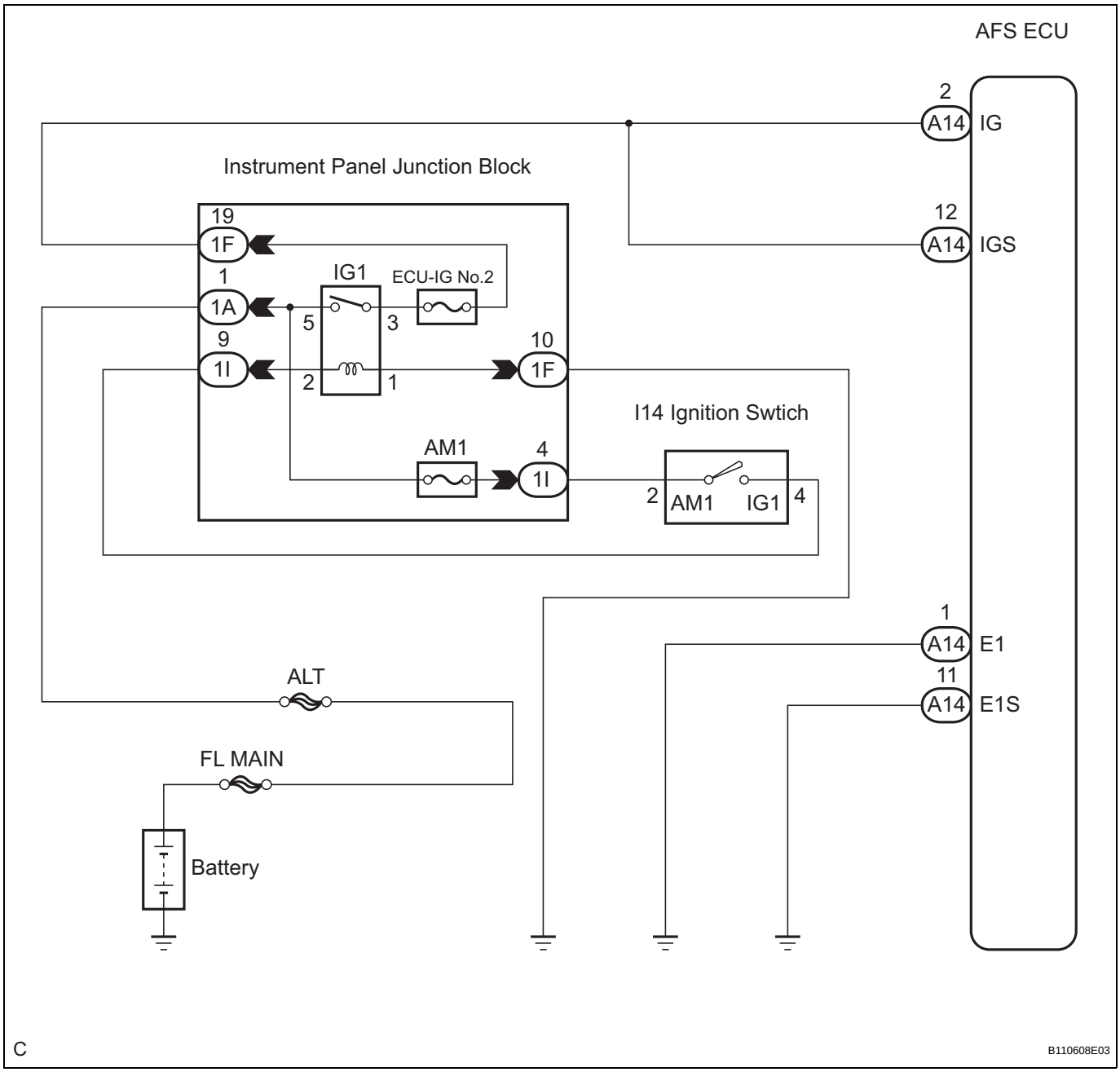
PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

AFS ECU Power Source Circuit

DESCRIPTION

This circuit detects the state of the ignition switch and send it to the AFS ECU.

WIRING DIAGRAM



1	INSPECT FUSE

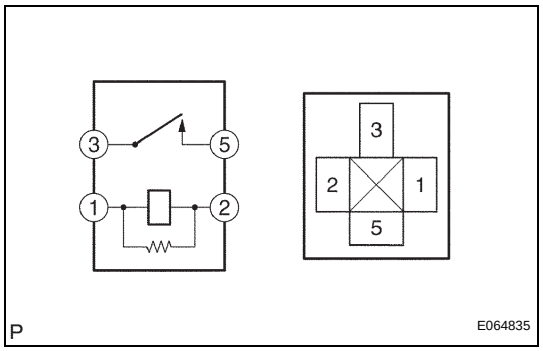
(a) Inspect the ECU-IG No.2 fuse and AM1 fuse in the instrument panel junction block assembly.
Resistance:
Below 1 Ω

NG → REPLACE FUSE

OK

2 INSPECT RELAY

(a) Remove the IG1 relay from the instrument panel J/B assembly.
(b) Measure the resistance according to the value(s) in the table below.



Resistance

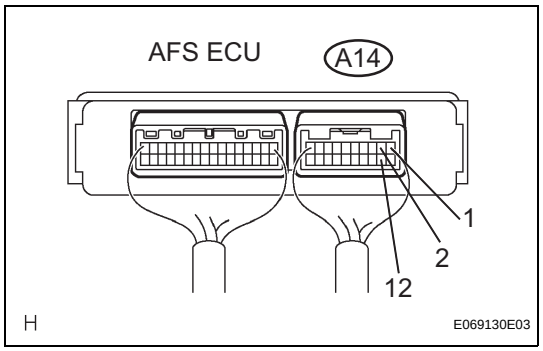
Tester connection	Condition	Specified resistance
3 - 5	Always	10 kΩ or higher
3 - 5	Apply B+ between the terminal 1 and 2	Below 1 Ω

NG → REPLACE RELAY

OK

3 INSPECT AFS ECU

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



Voltage

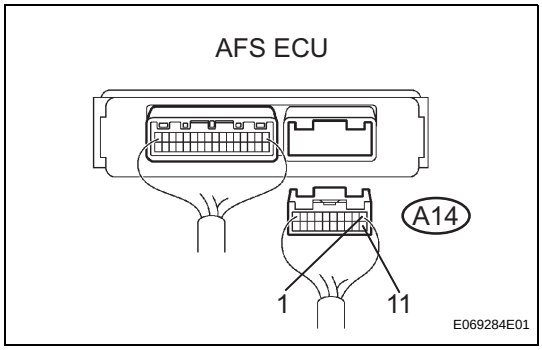
Tester connection	Condition	Specified condition
A14-2 (IG) - A14-1 (E1)	Ignition switch OFF → ON	Below 1 V → 10 to 14 V
A14-12 (IGS) - A14-1 (E1)	Ignition switch OFF → ON	Below 1 V → 10 to 14 V

NG → Go to step 4

OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

4	CHECK HARNESS AND CONNECTOR (AFS ECU - BODY GROUND)



(a) Disconnect the A14 connector from headlight swivel ECU assembly.
(b) Measure the resistance according to the value(s) in the table below.

Resistance

Tester connection	Condition	Specified condition
A14-1 (E1) - Body ground	Always	Below 1 Ω
A14-11 (E1S) - Body ground	Always	Below 1 Ω

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

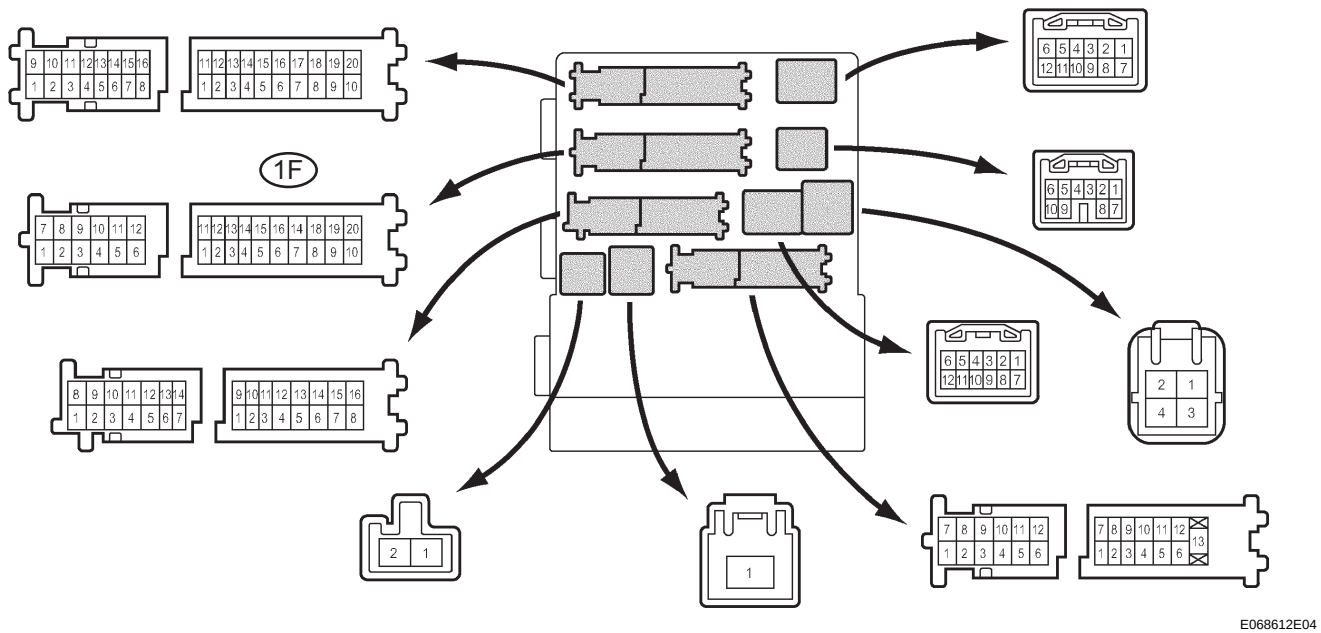
LI

OK

5	INSPECT INSTRUMENT PANEL J/B ASSEMBLY

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

Instrument Panel Junction Block Assembly Front Side Wire Harness View:



Voltage

Tester connection	Condition	Specified condition
1F-19 - Body ground	Ignition switch OFF → ON	Below 1 V → 10 to 14 V

NG → Go to step 6

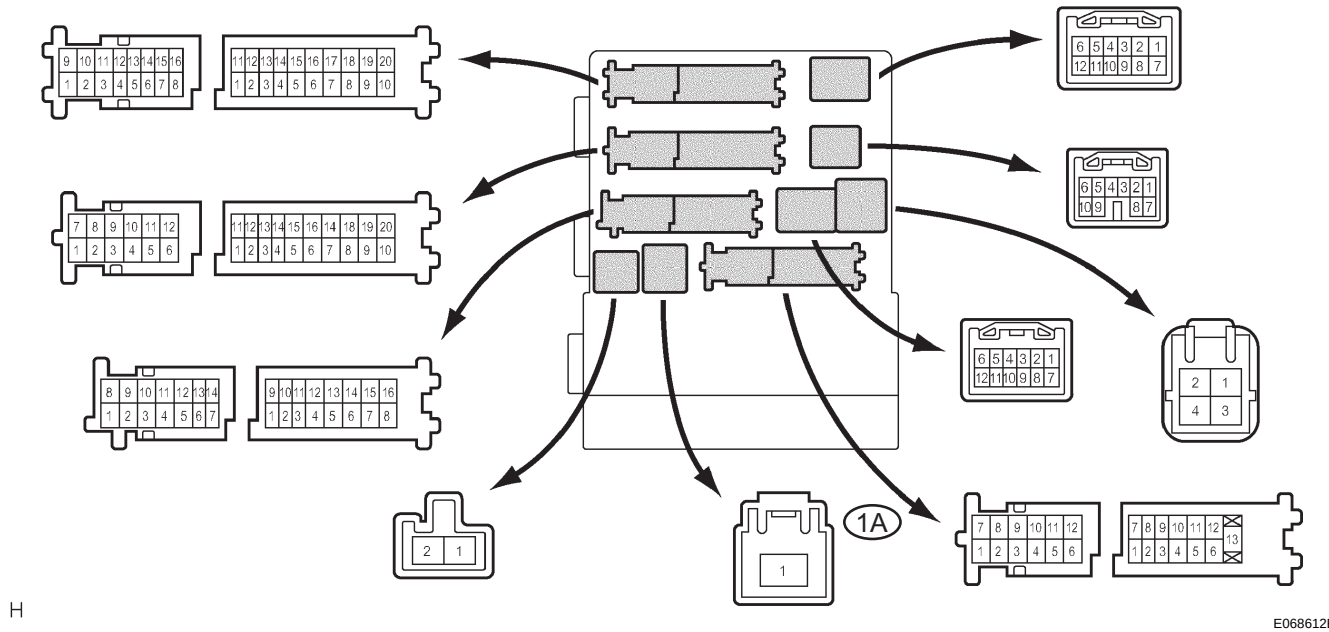
OK

REPAIR OR REPLACE HARNESS OR CONNECTOR (INSTRUMENT PANEL J/B ASSEMBLY - AFS ECU)

6	INSPECT INSTRUMENT PANEL J/B ASSEMBLY (POWER SOURCE CIRCUIT)

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

Instrument Panel Junction Block Assembly Front Side Wire Harness View:



Voltage

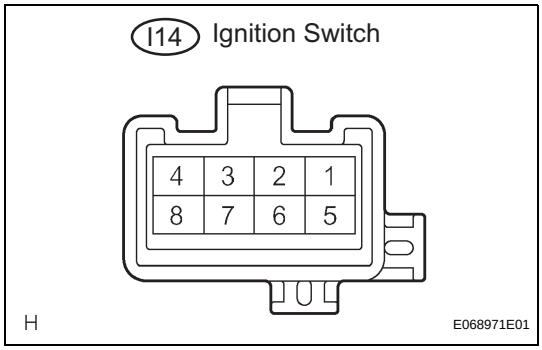
Tester connection	Condition	Specified condition
1A-1 - Body ground	Always	10 to 14 V

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR (BATTERY - INSTRUMENT PANEL J/B ASSEMBLY)

OK

LI

7 INSPECT IGNITION SWITCH



(a) Disconnect the ignition switch connector.
(b) Measure the resistance according to the value(s) in the table below.

Resistance

Tester connection	Condition	Specified condition
2 - 4	Ignition switch OFF	10 kΩ or higher
2 - 4	Ignition switch ON	Below 1 Ω

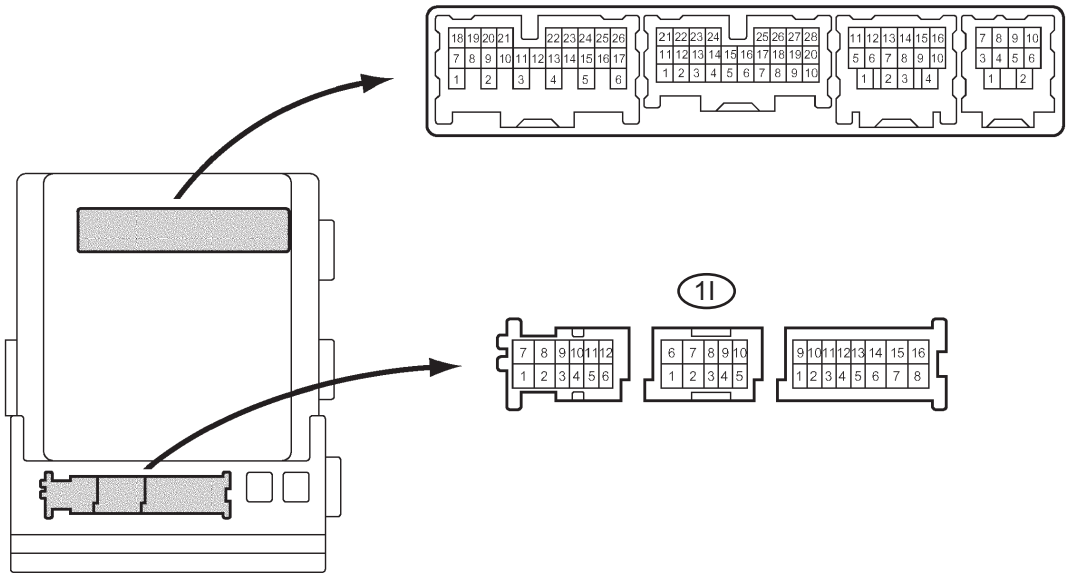
NG → **REPLACE IGNITION SWITCH**

OK

8 INSPECT INSTRUMENT PANEL J/B ASSEMBLY

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

Instrument Panel Junction Block Assembly Back Side Wire Harness View:



Voltage

Tester connection	Condition	Specified condition
1I-4 - Body ground	Always	10 to 14 V

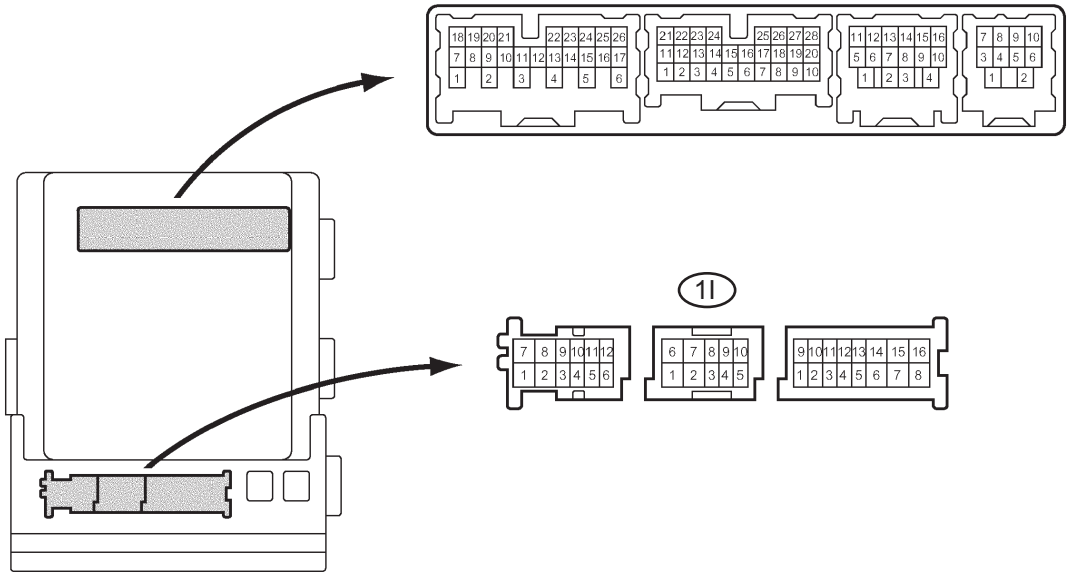
NG → REPLACE INSTRUMENT PANEL J/B ASSEMBLY

OK

9	INSPECT INSTRUMENT PANEL J/B ASSEMBLY

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

Instrument Panel Junction Block Assembly Back Side Wire Harness View:



Voltage

Tester connection	Condition	Specified condition
1I-9 - Body ground	Ignition switch OFF → ON	Below 1 V → 10 to 14 V

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

10	CHECK HARNESS AND CONNECTOR (INSTRUMENT PANEL J/B ASSEMBLY - BODY GROUND)

(a) Disconnect the 1F connector from the instrument panel junction block assembly.
(b) Measure the resistance according to the value(s) in the table below.

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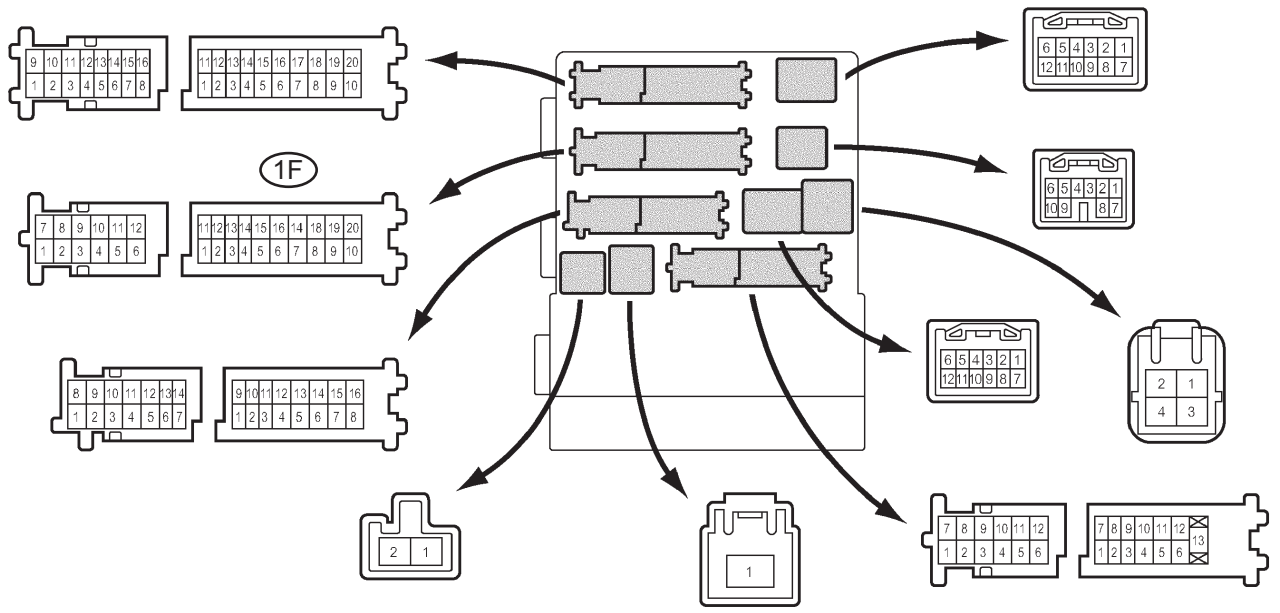
Instrument Panel Junction Block Assembly Front Side Wire Harness View:



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Resistance

Tester connection	Condition	Specified condition
1F-10 - Body ground	Always	Below 1 Ω

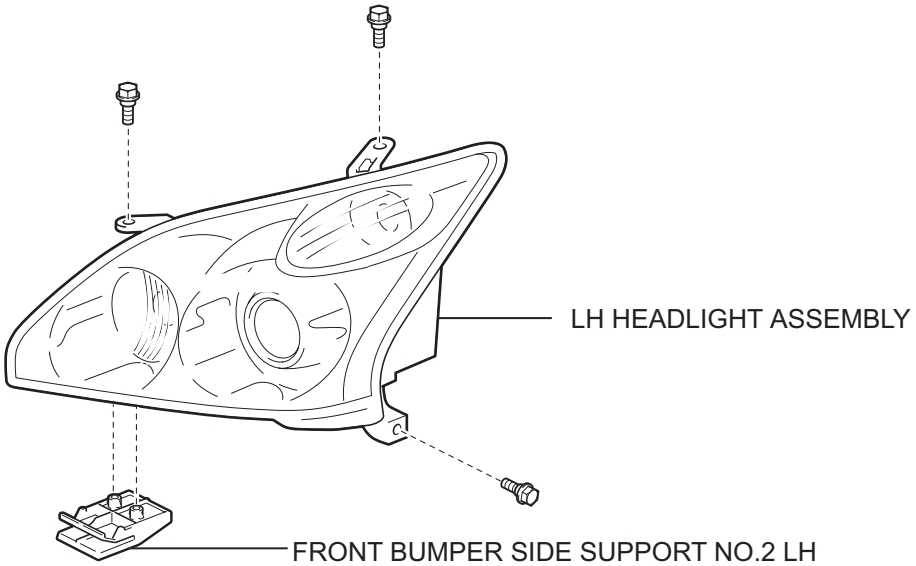
NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

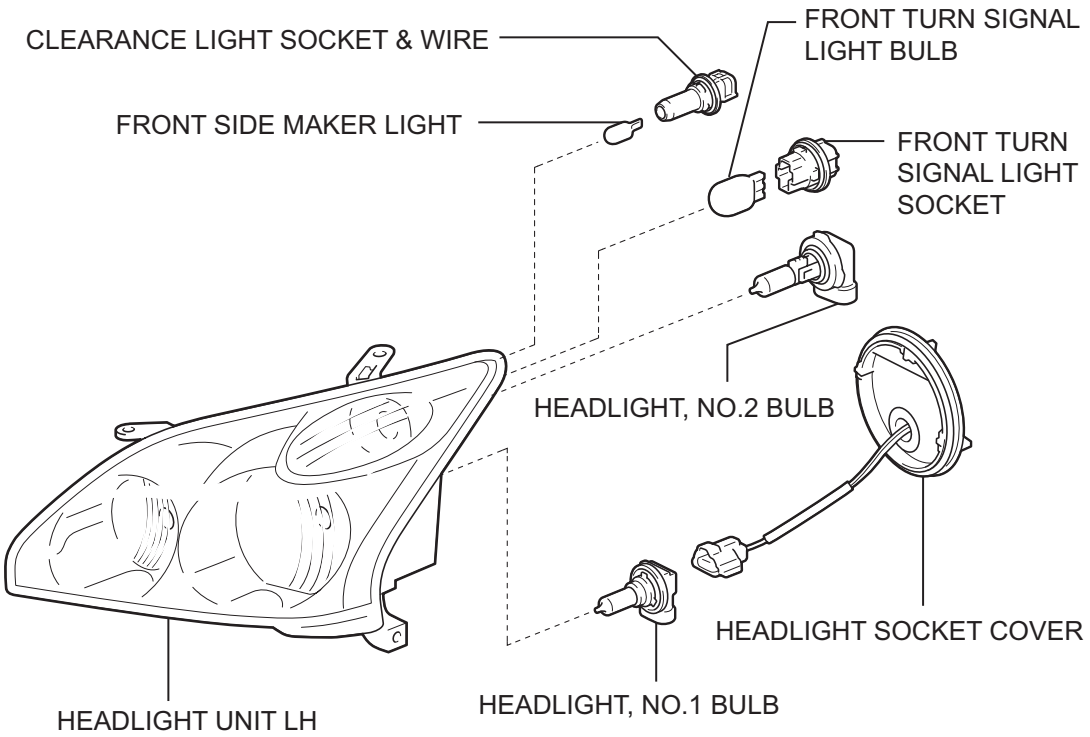
REPLACE INSTRUMENT PANEL J/B ASSEMBLY

HEADLIGHT ASSEMBLY

COMPONENTS



HALOGEN HEADLIGHT:



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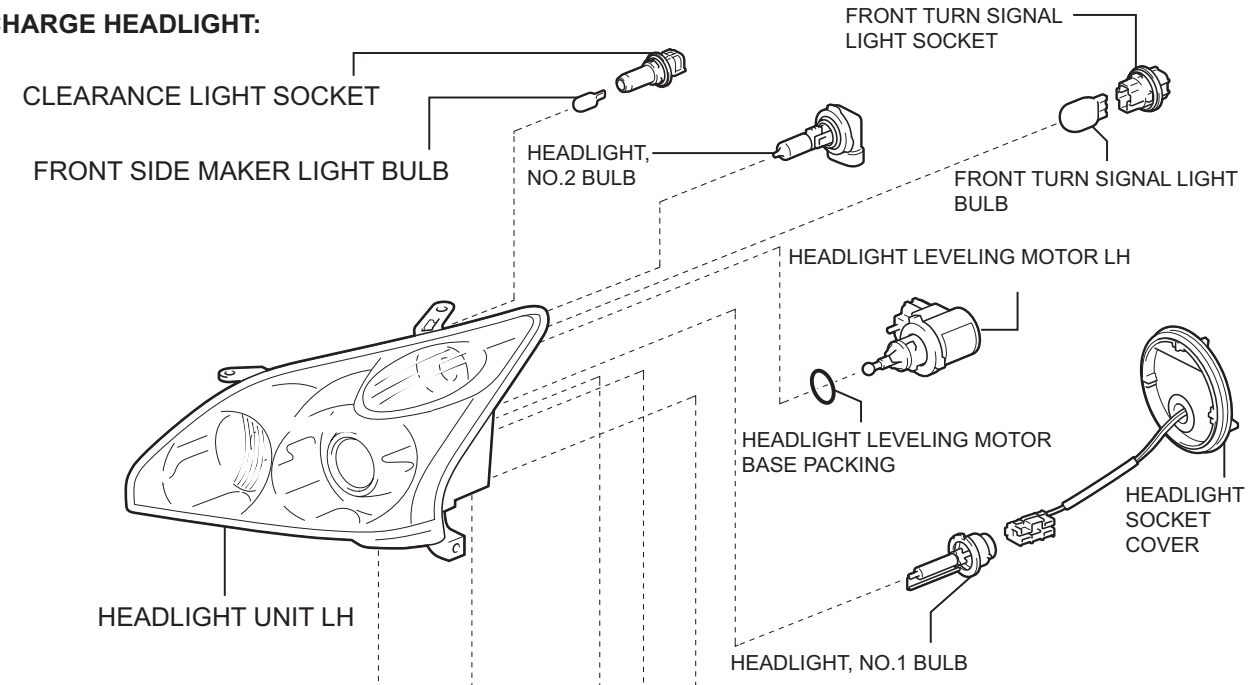
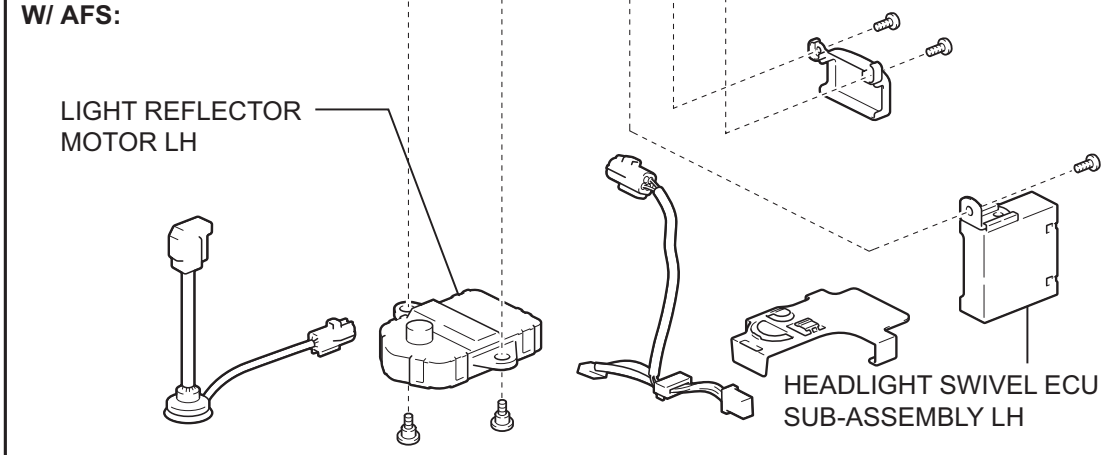
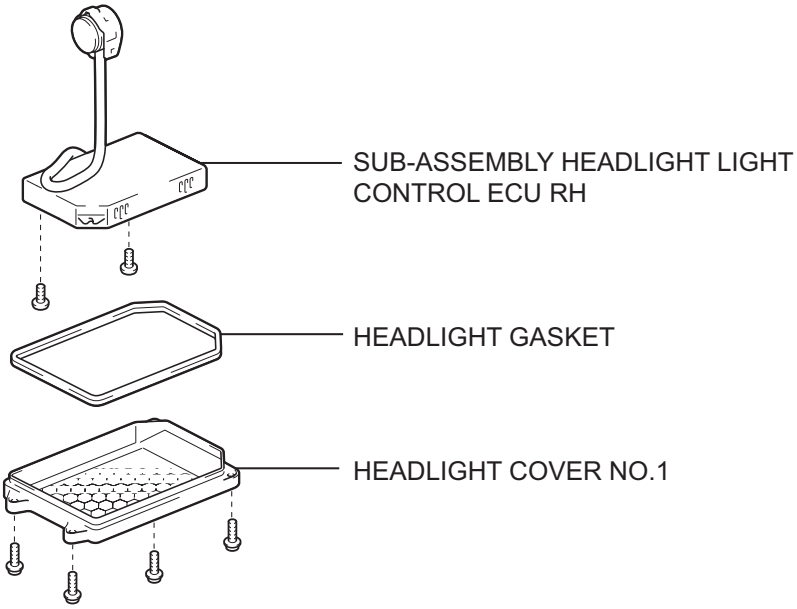
DISCHARGE HEADLIGHT:



W/ AFS:





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AFS OFF Switch Circuit

DESCRIPTION

The AFS ECU receives a signal from the AFS OFF switch.

WIRING DIAGRAM

1	INSPECT AFS OFF SWITCH

(a) Disconnect the AFS OFF switch connector.
(b) Measure the resistance according to the value(s) in the table below.

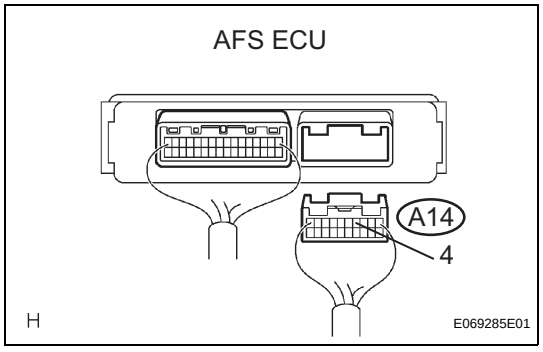
Resistance

Tester connection	Condition	Specified resistance
1 - 2	AFS OFF switch is pushed	Below 1 Ω
1 - 2	AFS OFF switch is not pushed	10 kΩ or higher

NG → REPLACE AFS OFF SWITCH

OK

2	INSPECT AFS ECU



(a) Disconnect the AFS ECU connector.
(b) Measure the resistance according to the value(s) in the table below.

Resistance

Tester connection	Condition	Specified condition
A14-4 - Body ground	AFS OFF switch is pushed	Below 1 Ω
A14-4 - Body ground	AFS OFF switch is not pushed	10 kΩ or higher

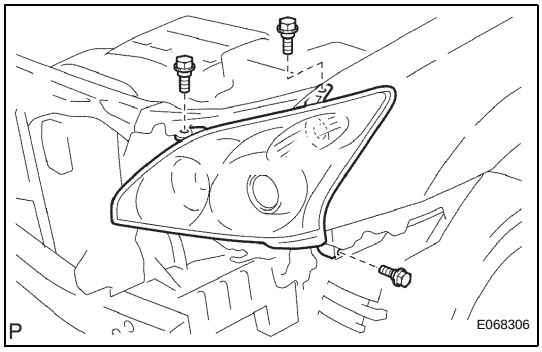
NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

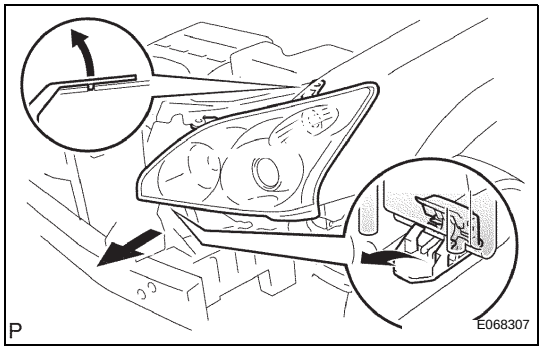
OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

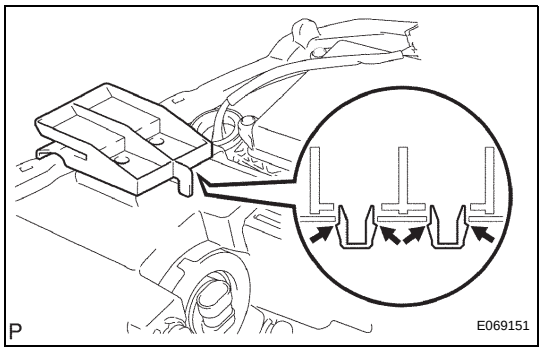
REMOVAL

1. **REMOVE ENGINE UNDER COVER NO.1 (See page ET-2)**
2. **REMOVE FRONT FENDER SPLASH SHIELD SUB-ASSEMBLY LH (See page ET-2)**
3. **REMOVE FRONT FENDER SPLASH SHIELD SUB-ASSEMBLY RH (See page ET-2)**
4. **REMOVE FRONT BUMPER COVER (See page ET-2)**
5. **REMOVE LH HEADLIGHT ASSEMBLY**
   (a) Remove the 3 screws.





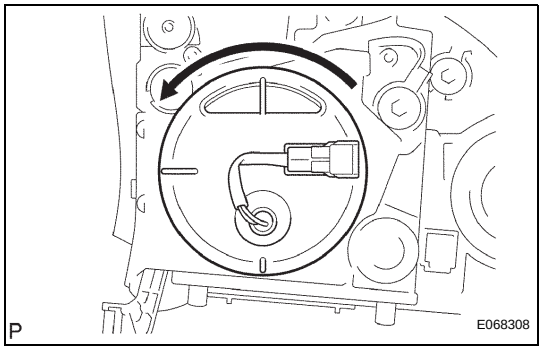
   (b) Pull out the LH headlight assembly forward, then release the headlight bracket.
   (c) Disconnect the connectors and remove the LH headlight assembly.

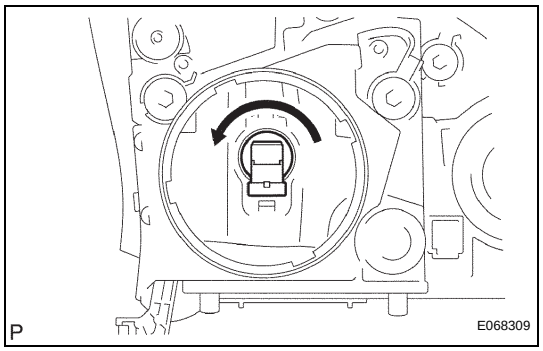


   (d) Using a needle nose plier, release the 2 claw fittings and remove the front bumper side support No. 2 from the LH headlight assembly.
6. **REMOVE FRONT BUMPER SIDE SUPPORT NO.2 LH**

DISASSEMBLY

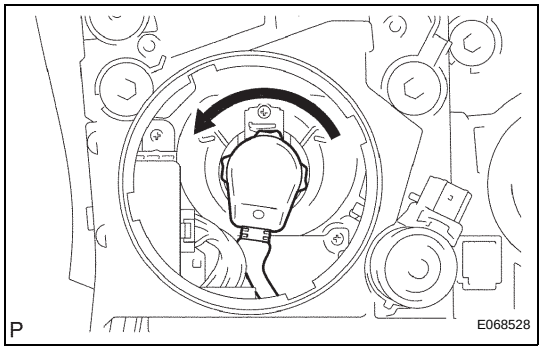
1. **REMOVE HEADLIGHT SOCKET COVER**
   (a) Disconnect the headlight socket cover as shown in the illustration.
   (b) Remove the headlight socket cover from the headlight cord.



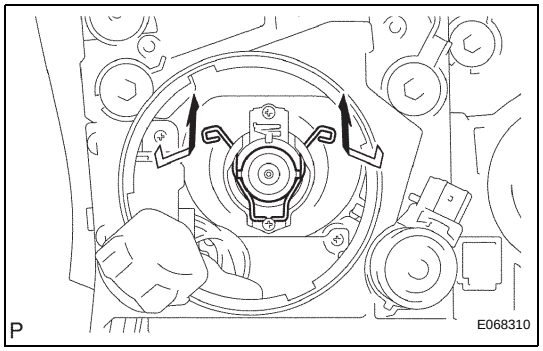


2. REMOVE HEADLIGHT, NO.1 BULB

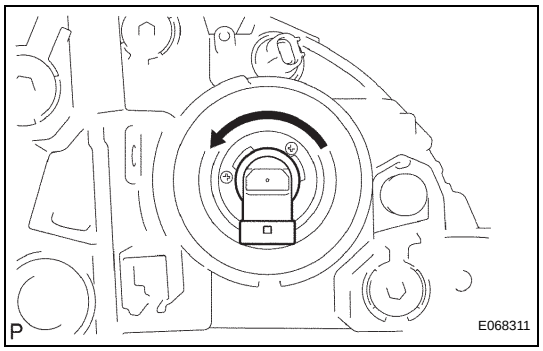
(a) Halogen headlight:
Remove the headlight, No. 1 bulb as shown in the illustration.



(b) Discharge headlight:
Remove the headlight, No. 1 bulb as shown in the illustration.

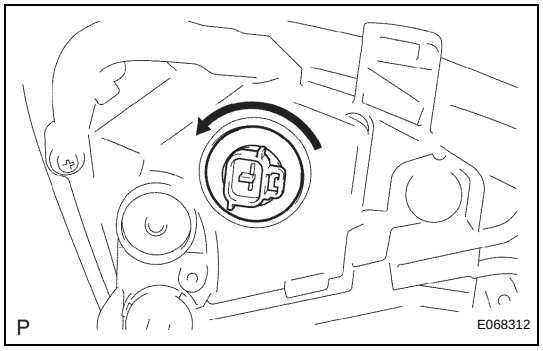


(c) Discharge headlight:
Release the lock of the set spring and remove the headlight, No. 1 bulb.



3. REMOVE HEADLIGHT, NO.2 BULB

(a) Remove the headlight, No. 2 bulb as shown in the illustration.



4. REMOVE FRONT TURN SIGNAL LIGHT BULB

(a) Remove the front turn signal light bulb, the front turn signal light socket as shown in the illustration.
(b) Remove the turn signal light bulb from the front turn signal light socket.

5. REMOVE FRONT TURN SIGNAL LIGHT SOCKET

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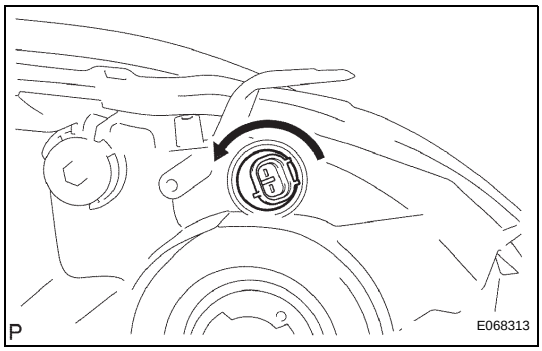


6. REMOVE FRONT SIDE MAKER LIGHT BULB

(a) Remove the front side marker light bulb, the socket as shown in the illustration.

(b) Remove the front side marker light bulb from the socket.

7. REMOVE CLEARANCE LIGHT SOCKET & WIRE

(a) w/ Halogen Head Light:

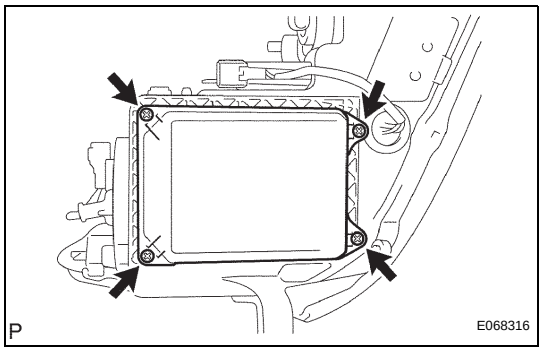
(1) Remove the clearance light socket and wire.

8. REMOVE CLEARANCE LIGHT SOCKET (w/ HID)

9. REMOVE CLEARANCE LIGHT SOCKET & WIRE

(a) w/ Discharge and AFS Head Light:

(1) Remove the clearance light socket and wire.



10. REMOVE HEADLIGHT COVER NO.1 (w/ HID)

(a) Remove the 4 screws and the headlight cover No. 1.

11. REMOVE HEADLIGHT COVER NO.1

HINT:

Following the same procedure as for the headlight cover No. 1 (discharge head light).

(a) w/ Discharge and AFS Head Light:

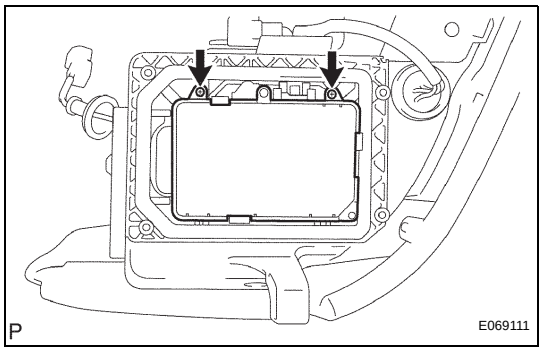
(1) Remove the headlight cover No. 1.

12. REMOVE HEADLIGHT GASKET (w/ HID)

13. REMOVE HEADLIGHT GASKET

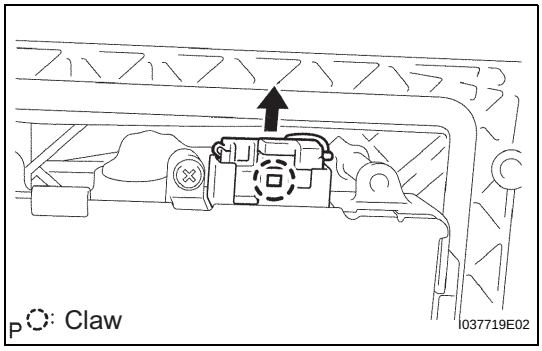
(a) w/ Discharge and AFS Head Light:

(1) Remove the headlight gasket.



14. REMOVE SUB-ASSEMBLY HEADLIGHT LIGHT CONTROL ECU RH (w/ HID)

(a) Remove the 2 screws and disconnect the sub-assembly headlight light control ECU RH.

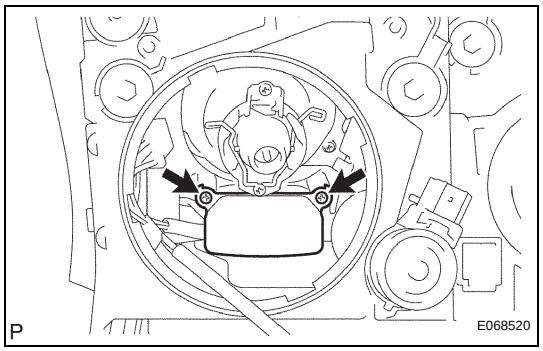


(b) Release the claw fitting, disconnect the connector and remove the sub-assembly headlight control ECU RH.

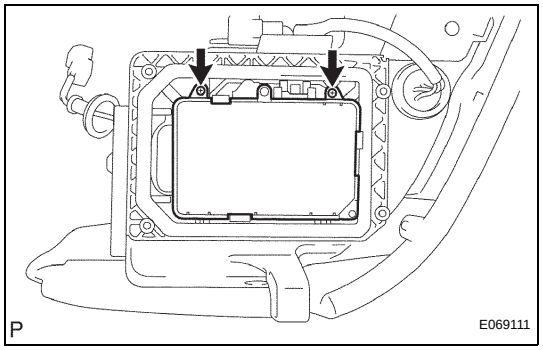
15. REMOVE SUB-ASSEMBLY HEADLIGHT LIGHT CONTROL ECU RH

(a) w/ Discharge and AFS Head Light:

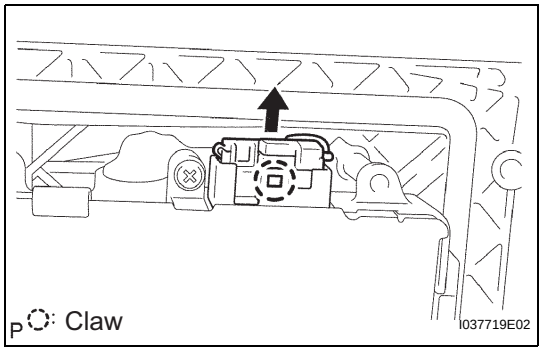
(1) Remove the sub-assembly headlight light control ECU RH.



(b) Remove the 2 screws and the cover.



(c) Remove the 2 screws and disconnect the sub-assembly headlight control ECU RH.



(d) Release the claw fitting, disconnect the connector and remove the sub-assembly headlight control ECU RH.
(e) Remove the sub-assembly headlight light control ECU RH from the cover.

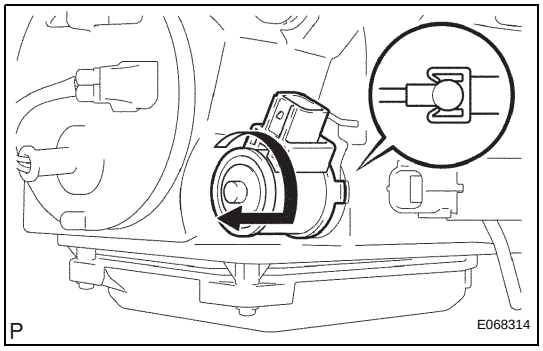
16. REMOVE HEADLIGHT LENS RH

(a) w/ Discharge and AFS Head Light:
(1) Remove the headlight lens RH.

17. REMOVE HEADLIGHT CORD (w/ HID)

18. REMOVE HEADLIGHT CORD

(a) w/ Discharge and AFS Head Light:
(1) Remove the headlight cord.



19. REMOVE HEADLIGHT LEVELING MOTOR LH (w/ HID)

(a) Remove the headlight leveling motor LH as shown in the illustration.

20. REMOVE HEADLIGHT LEVELING MOTOR LH

HINT:
Following the same procedure as for the headlight leveling motor LH (discharge head light).

(a) w/ Discharge and AFS Head Light:
(1) Remove the headlight leveling motor LH.

21. REMOVE HEADLIGHT LEVELING MOTOR BASE PACKING (w/ HID)

22. REMOVE HEADLIGHT LEVELING MOTOR BASE PACKING

(a) w/ Discharge and AFS Head Light:
(1) Remove the headlight levering motor base packing.

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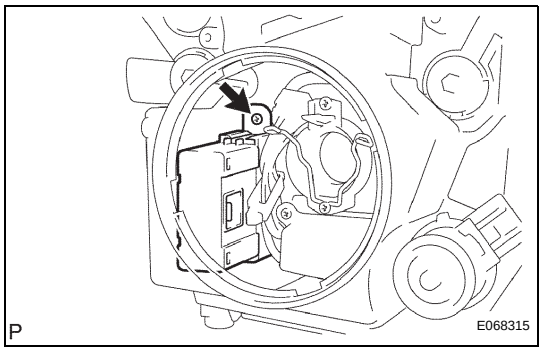
23. REMOVE HEADLIGHT SWIVEL ECU SUB-ASSEMBLY LH

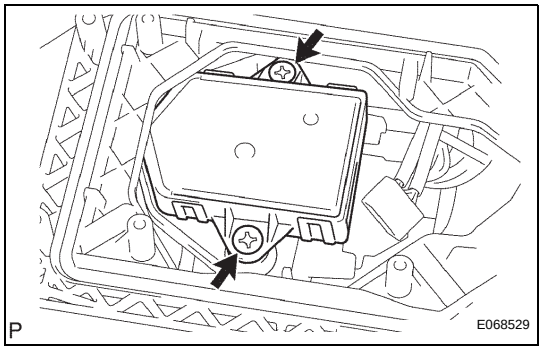
(a) w/ Discharge and AFS Head Light:
  (1) Remove the headlight swivel ECU sub-assembly LH.



(b) Disconnect the connector.
(c) Remove the screw and the headlight swivel ECU sub-assembly LH.

24. REMOVE LIGHT REFLECTOR MOTOR LH

(a) w/ Discharge and AFS Head Light:
  (1) Remove the light reflector motor LH.



(b) Disconnect the connector.
(c) Remove the 2 screws and the light reflector motor LH.

25. REMOVE HEADLIGHT UNIT LH

(a) w/ Halogen Head Light:
  (1) Remove the headlight unit LH.

26. REMOVE HEADLIGHT UNIT LH (w/ HID)

27. REMOVE HEADLIGHT UNIT LH

(a) w/ Discharge and AFS Head Light:
  (1) Remove the headlight unit LH.

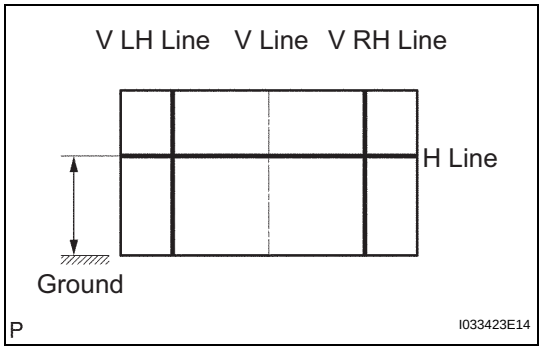
ADJUSTMENT

1. HEADLIGHT AIM ONLY

HINT:

- Perform aiming adjustment with Low-beam.
- Since the Low-beam light and the High-beam light are a unit, if aiming on either side is correct, the other side should also be correct.
  However, check both beams just to make sure.

(a) Prepare vehicle in the following conditions.
- Check that any damage or deformation does not exist on the body around the headlights.
- Fuel tank is full.
- The tire inflation pressure is at the specified level. (See page TW-1)
- Vehicle is parked at a level surface.
- A person having an average weight (68 kg) sits in the driver's seat.
- Vehicle is bounced up and down to stabilize the suspension to the normal position.

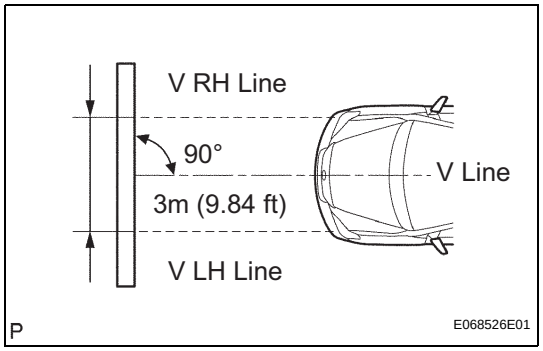


(b) Prepare a thick white paper (Draw base lines).
HINT:
- Stand the paper perpendicular as against a wall.
- The base lines differ for "Low-beam inspection" and "High-beam inspection".

(1) V line (Vehicle Center position)
Draw a vertical line down the center of the paper in order to align it with the center of the vehicle.

(2) H Line (Headlight height)
Draw a horizontal line across the paper at the same height from the ground as the center mark for the Low-beam lights.

(3) V LH Line, V RH Line (Center mark position of right and left headlights)
Draw vertical lines, for left & right, at the same position as the center mark for the Low-beam lights.
HINT:
Follow the same procedures when adjusting the High-beam lights.



(c) Check the headlight aiming.

(1) Align the paper with the center of the vehicle.
- Make a distance of 3 m (9.84 ft) between the headlights and the paper, and put the paper against a wall with the H line being at the same height as the center mark.
- Align the center of the vehicle with the V line on the paper, and ensure that the paper is at a 90° angle in accordance to the V line.

(2) Start the engine.

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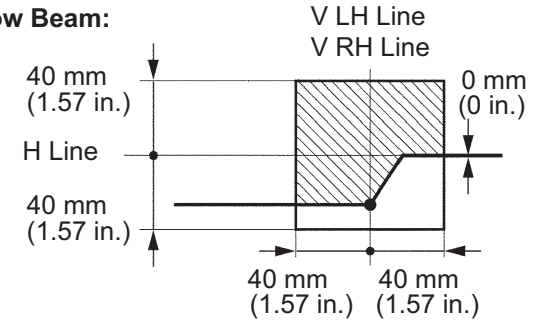
(3) Turn on the headlights and check that the aim is with in the specified valves shown in the illustration.

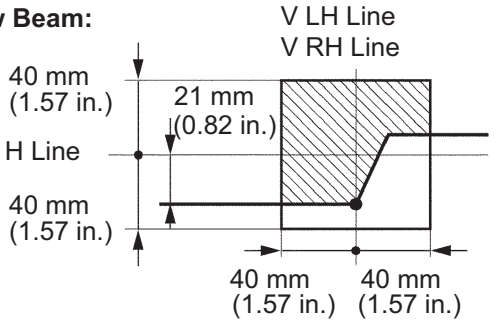
Halogen Headlight:

Low Beam:



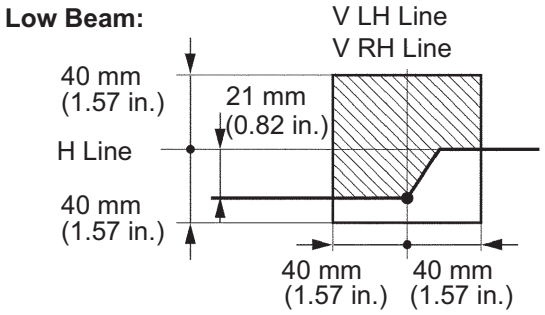
Discharge Headlight:

Low Beam:

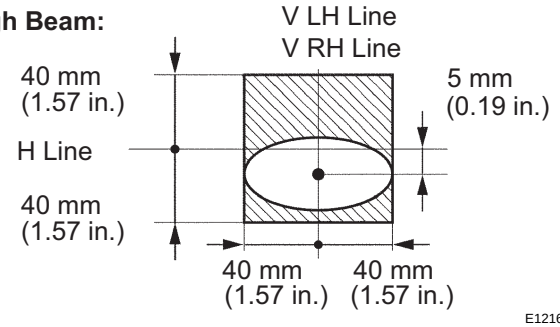


Discharge Headlight + AFS:

Low Beam:



High Beam:



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NOTICE:

- **When covering the headlights, finish it within 3 minutes.**
- **The headlight lens is made of synthetic resin, so it is easily.**

HINT:

When checking the aiming of the High-beam, shut off the Low-beam or disconnect the Low-beam headlight connector.

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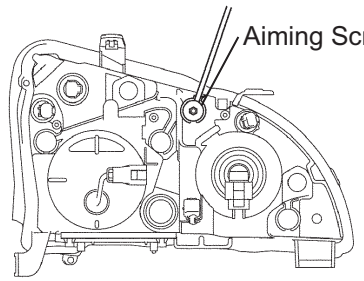
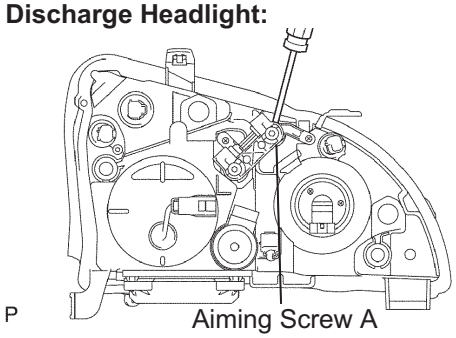
Halogen Headlight:



Discharge Headlight:



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(d) Adjust the aim in the vertical direction:
Using a screwdriver, adjust the headlight aim within the specified range by turning the aiming screw A.
NOTICE:
- **Adjust the headlight aim by turning the screw in the tightening direction.**
- **When the screw is tightened excessively, loosen it once and re-tighten it to adjust the headlight aim.**

HINT:
The optical axis aim moves downward when turning the screwdriver clockwise, and it moves upward when turning the screwdriver counterclockwise.

REASSEMBLY

1. **INSTALL HEADLIGHT UNIT LH**
   (a) w/ Discharge and AFS Head Light:
      (1) Install the headlight unit LH.
2. **INSTALL HEADLIGHT UNIT LH (w/ HID)**
3. **INSTALL HEADLIGHT UNIT LH**
   (a) w/ Halogen Head Light:
      (1) Install the headlight unit LH.
4. **INSTALL LIGHT REFLECTOR MOTOR LH**
   (a) w/ Discharge and AFS Head Light:
      (1) Install the light reflector motor LH.
5. **INSTALL HEADLIGHT SWIVEL ECU SUB-ASSEMBLY LH**
   (a) w/ Discharge and AFS Head Light:
      (1) Install the headlight swivel ECU sub-assembly LH.
6. **INSTALL HEADLIGHT LEVELING MOTOR BASE PACKING**
   (a) w/ Discharge and AFS Head Light:
      (1) Install the headlight leveling motor base packing.
7. **INSTALL HEADLIGHT LEVELING MOTOR BASE PACKING (w/ HID)**
8. **INSTALL HEADLIGHT LEVELING MOTOR LH**
   (a) w/ Discharge and AFS Head Light:
      (1) Install the headlight leveling motor LH.
9. **INSTALL HEADLIGHT LEVELING MOTOR LH (w/ HID)**
10. **INSTALL HEADLIGHT CORD**
    (a) w/ Discharge and AFS Head Light:
       (1) Install the headlight cord.
11. **INSTALL HEADLIGHT CORD (w/ HID)**
12. **INSTALL HEADLIGHT LENS RH**
    (a) w/ Discharge and AFS Head Light:
       (1) Install the headlight lens RH.
13. **INSTALL SUB-ASSEMBLY HEADLIGHT LIGHT CONTROL ECU RH**
    (a) w/ Discharge and AFS Head Light:
       (1) Install the sub-assembly headlight control ECU RH.
14. **INSTALL SUB-ASSEMBLY HEADLIGHT LIGHT CONTROL ECU RH (w/ HID)**
15. **INSTALL HEADLIGHT GASKET**
    (a) w/ Discharge and AFS Head Light:
       (1) Install the headlight gasket.
16. **INSTALL HEADLIGHT GASKET (w/ HID)**

17. INSTALL HEADLIGHT COVER NO.1
(a) w/ Discharge and AFS Head Light:
(1) Install the headlight cover No. 1.

18. INSTALL HEADLIGHT COVER NO.1 (w/ HID)

19. INSTALL CLEARANCE LIGHT SOCKET & WIRE
(a) w/ Discharge and AFS Head Light:
(1) Install the clearance light socket and wire.

20. INSTALL CLEARANCE LIGHT SOCKET (w/ HID)

21. INSTALL CLEARANCE LIGHT SOCKET & WIRE
(a) w/ Halogen Head Light:
(1) Install the clearance light socket and wire.

22. INSTALL FRONT SIDE MAKER LIGHT BULB

23. INSTALL FRONT TURN SIGNAL LIGHT SOCKET

24. INSTALL FRONT TURN SIGNAL LIGHT BULB

25. INSTALL HEADLIGHT, NO.2 BULB

26. INSTALL HEADLIGHT, NO.1 BULB

27. INSTALL HEADLIGHT SOCKET COVER

28. INSTALL FRONT BUMPER SIDE SUPPORT NO.2 LH

INSTALLATION

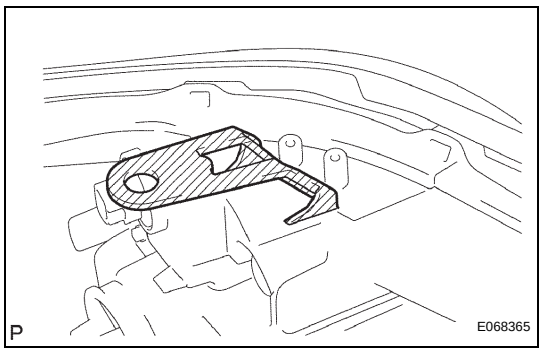
1. **INSTALL LH HEADLIGHT ASSEMBLY**
2. **INSTALL FRONT BUMPER COVER (See page ET-3)**
3. **INSTALL FRONT FENDER SPLASH SHIELD SUB-ASSEMBLY RH (See page ET-4)**
4. **INSTALL FRONT FENDER SPLASH SHIELD SUB-ASSEMBLY LH (See page ET-4)**
5. **INSTALL ENGINE UNDER COVER NO.1**

REPAIR

1. INSTALL HEADLIGHT PROTECTOR RETAINER UPPER

HINT:

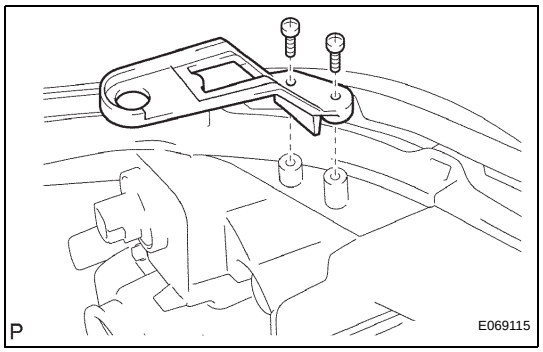
- If the installation area of the headlight assembly is damaged, use the supply bracket for low-cost repair.
- Ensure that the headlight assembly is not damaged.



(a) Cut off the part shaded in the illustration and sand smooth with sandpaper.

NOTICE:

After cutting off the part, place the headlight protector retainer upper against the bosses and gradually file away until installation is possible.

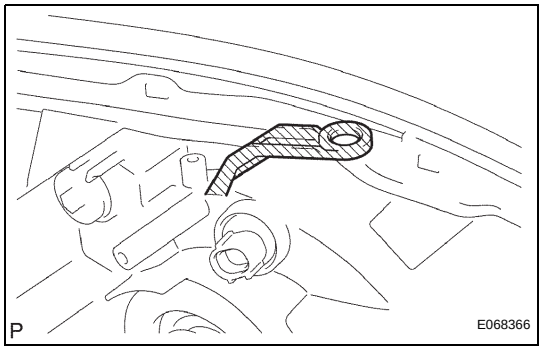


(b) Install the headlight protector retainer upper with the 2 screws.

2. INSTALL HEADLIGHT PLATE

HINT:

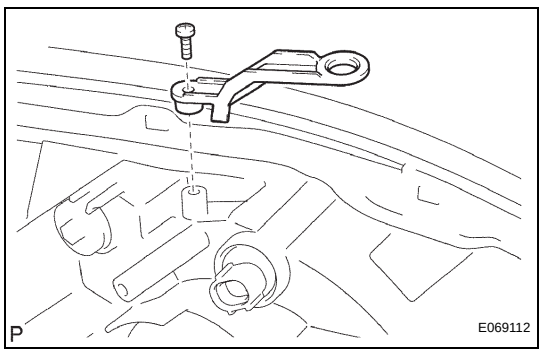
- If the installation area of the headlight assembly is damaged, use the supply bracket for low-cost repair.
- Ensure that the headlight assembly is not damaged.



(a) Cut off the part shaded in the illustration and sand smooth with sandpaper.

NOTICE:

After cutting off the part, place the headlight plate against the bosses and gradually file away until installation is possible.



(b) Install the headlight plate with the screw.

3. INSTALL HEADLIGHT PROTECTOR RETAINER LOWER

HINT:

- If the installation area of the headlight assembly is damaged, use the supply bracket for low-cost repair.
- Ensure that the headlight assembly is not damaged.

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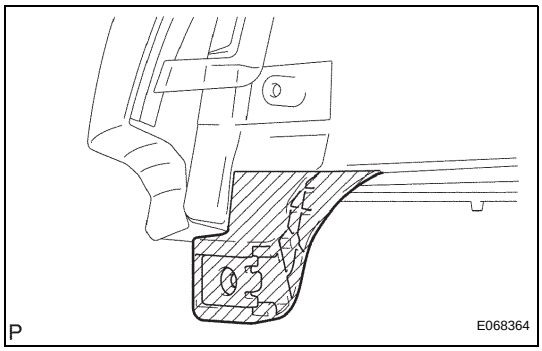
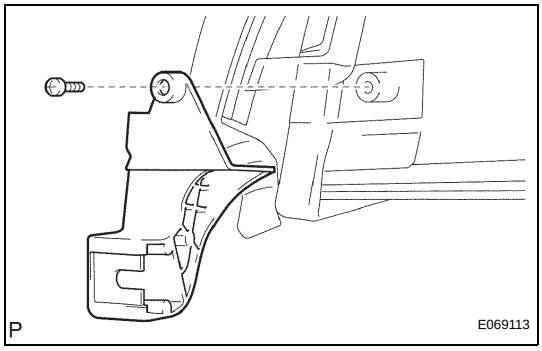


(a) Cut off the part shaded in the illustration and sand smooth with sandpaper.
NOTICE:
After cutting off the part, place the headlight protector retainer lower against the bosses and gradually file away until installation is possible.

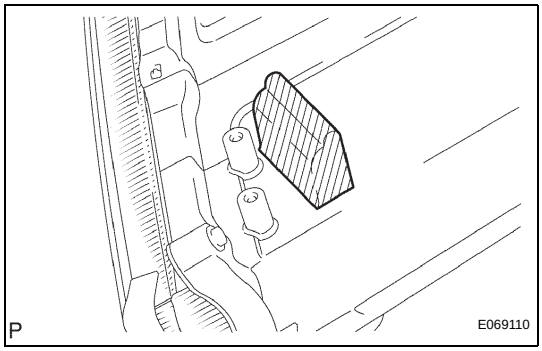


(b) Install the headlight protector retainer lower with the screw.

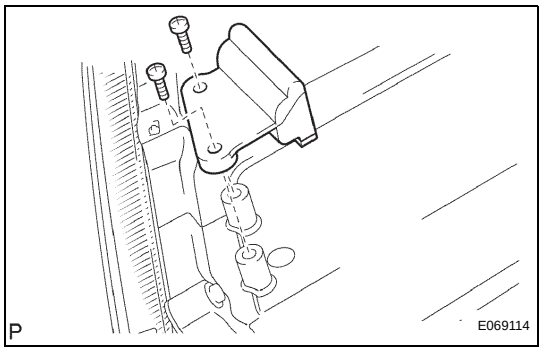
4. INSTALL HEADLIGHT BRACKET LOWER

HINT:

- If the installation area of the headlight assembly is damaged, use the supply bracket for low-cost repair.
- Ensure that the headlight assembly is not damaged.



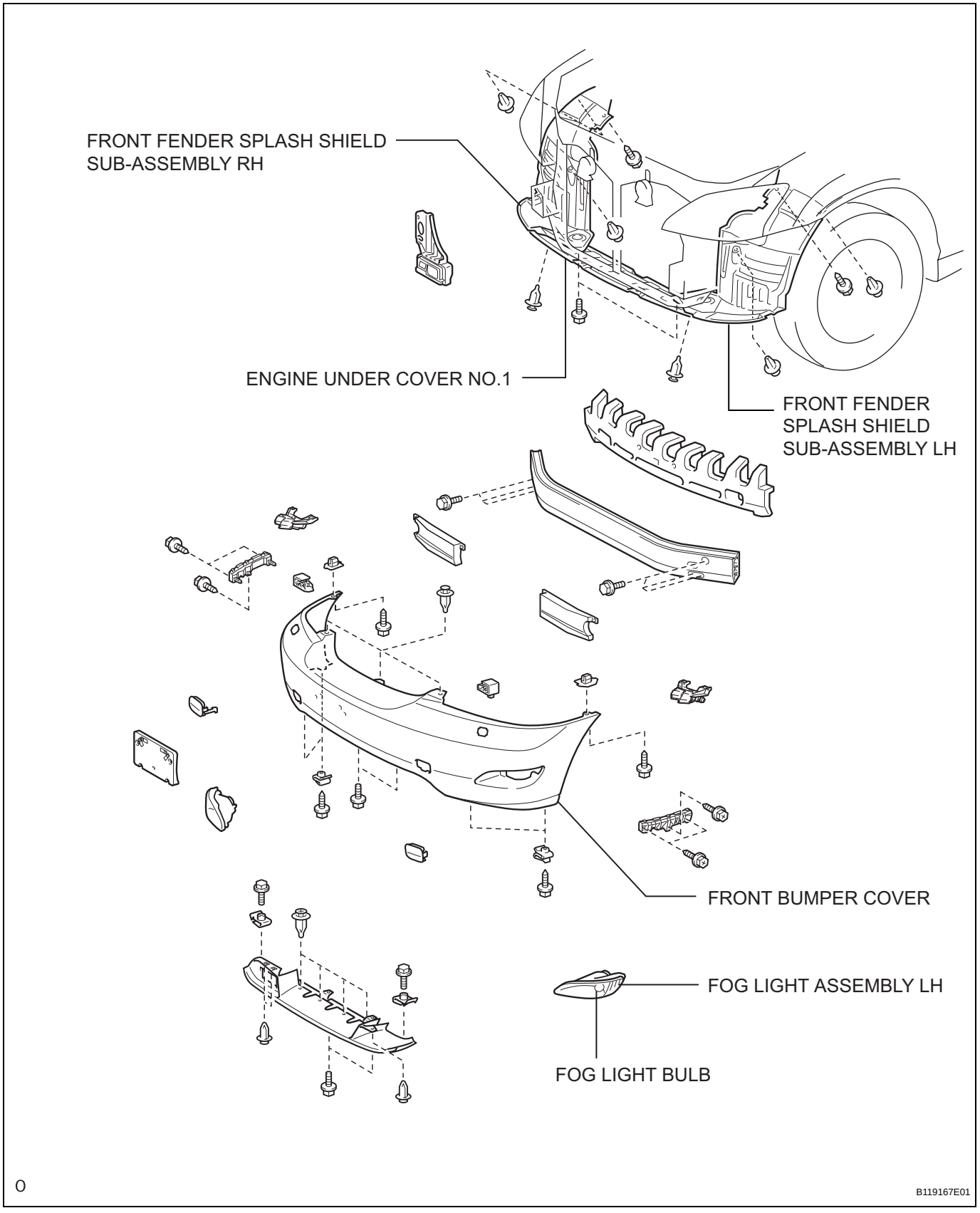
(a) Cut off the part shaded in the illustration and sand smooth with sandpaper.
NOTICE:
After cutting off the part, place the headlight bracket lower against the bosses and gradually file away until installation is possible.



(b) Install the headlight bracket lower with the 2 screws.

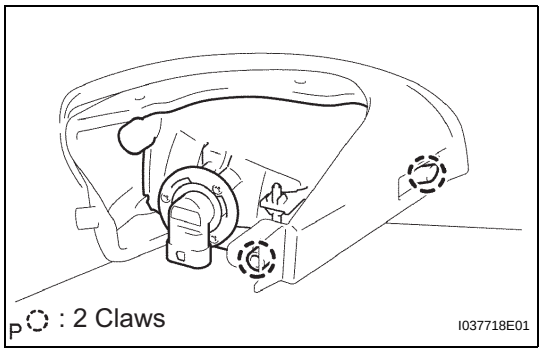
FOG LIGHT ASSEMBLY

COMPONENTS



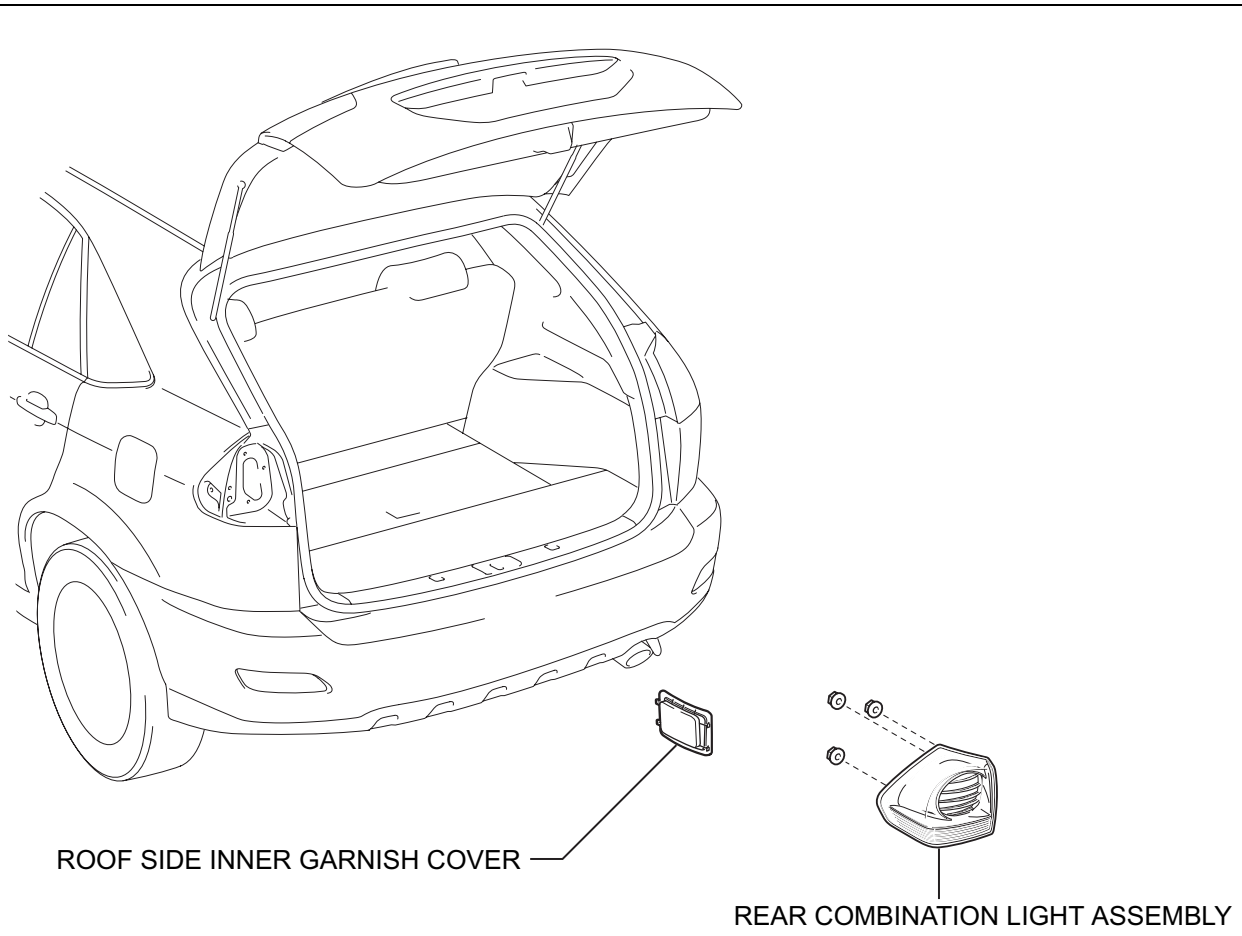
REMOVAL

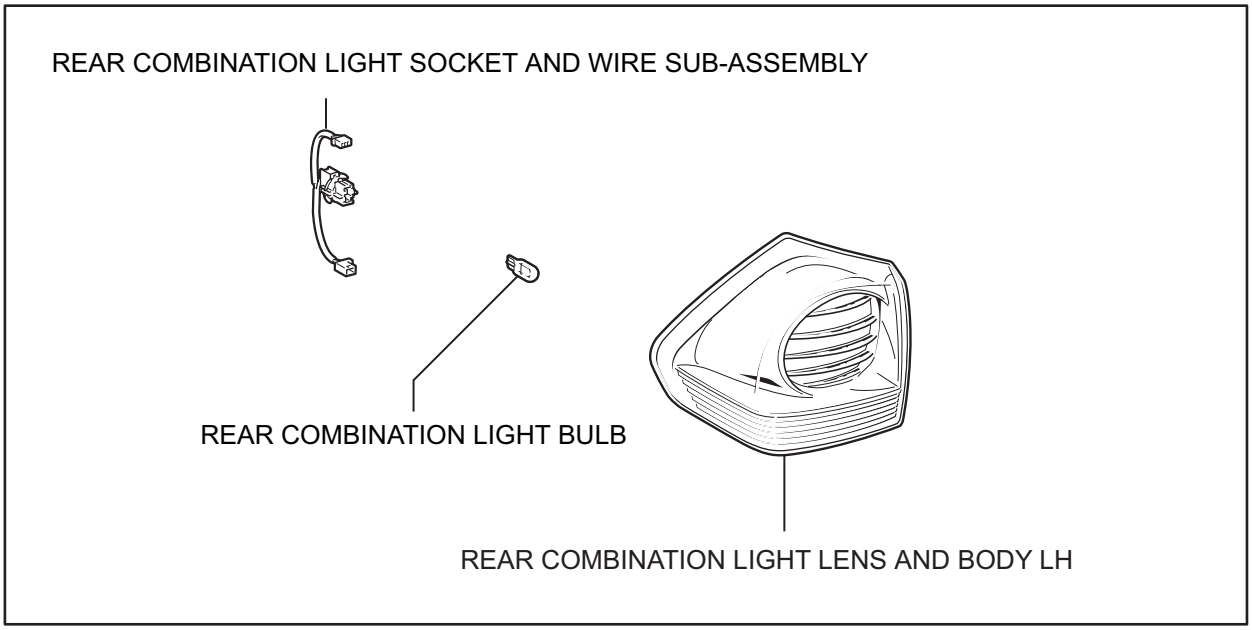
1. **REMOVE ENGINE UNDER COVER NO.1 (See page ET-2)**
2. **REMOVE FRONT FENDER SPLASH SHIELD SUB-ASSEMBLY LH (See page ET-2)**
3. **REMOVE FRONT FENDER SPLASH SHIELD SUB-ASSEMBLY RH (See page ET-2)**
4. **REMOVE FRONT BUMPER COVER (See page ET-2)**
5. **REMOVE FOG LIGHT ASSEMBLY LH**
   (a) Release the 2 claw fittings, then pull out the fog light assembly LH.



REAR COMBINATION LIGHT ASSEMBLY

COMPONENTS





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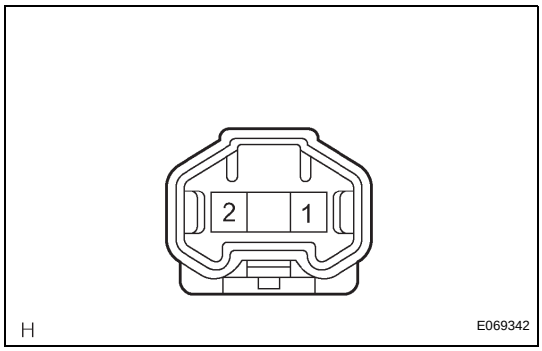


ON-VEHICLE INSPECTION

1. INSPECT REAR COMBINATION LIGHT ASSEMBLY

(a) Disconnect the rear combination light assembly connector.

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

Voltage

Tester connection	Condition	Specified condition
1 - 2	Brake pedal released	Below 1 V
1 - 2	Brake pedal depressed	10 to 14 V

(c) Measure the resistance of the rear combination light according to the value(s) in the table below.

Resistance

Tester connection	Condition	Specified condition
1 - 2	Always	317 to 347 Ω

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

DISASSEMBLY

1. REMOVE FOG LIGHT BULB

(a) Remove the fog light bulb from the fog light assembly LH.

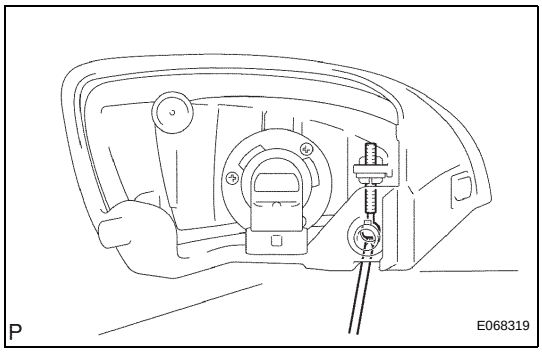
2. REMOVE FOG LIGHT UNIT LH

ADJUSTMENT

1. PUT VEHICLE THESE CONDITIONS

(a) Tire inflation pressure is in the specified value. (See page TW-1)

(b) Start the engine.



2. ADJUST FOG LIGHT AIM

(a) The fog light aim can be adjusted by moving the aiming screw in the vertical direction.

HINT:

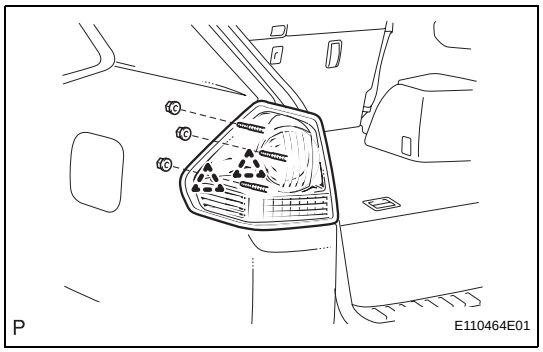
The optical aim moves upward when turning the screwdriver clockwise, while it moves downward when turning the screwdriver counterclockwise.

REMOVAL

1. REMOVE ROOF SIDE INNER GARNISH COVER

2. REMOVE REAR COMBINATION LIGHT ASSEMBLY

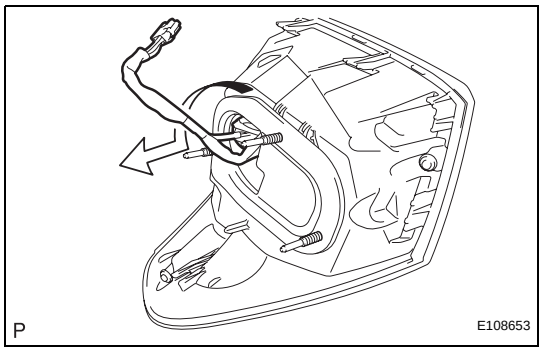
(a) Disconnect the connector.
(b) Remove the 3 nuts.
(c) Disengage the 2 pins and remove the rear combination light assembly.



DISASSEMBLY

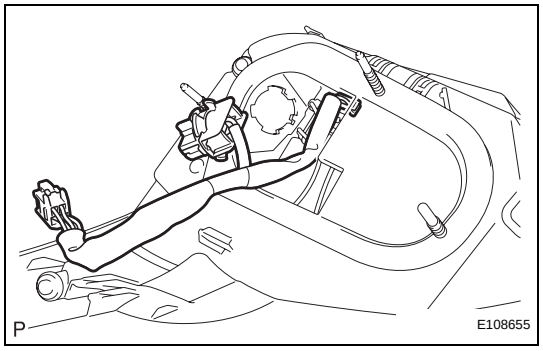
1. REMOVE REAR COMBINATION LIGHT BULB

(a) Turn in the direction indicated by the arrow and separate the rear combination light bulb and the rear combination light socket and wire sub-assembly as a unit.
(b) Remove the rear combination light bulb from the rear combination light socket and wire sub-assembly.



2. REMOVE REAR COMBINATION LIGHT SOCKET AND WIRE SUB-ASSEMBLY

(a) Disconnect the connector and remove the rear combination light socket and wire sub-assembly.



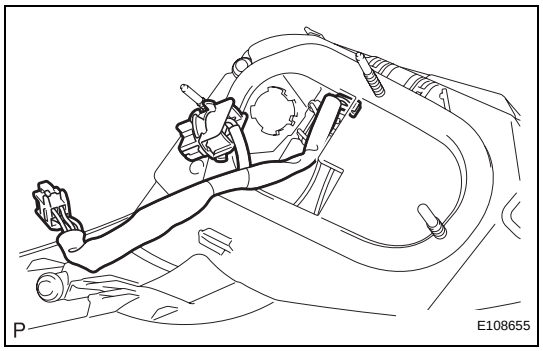
REASSEMBLY

1. INSTALL REAR COMBINATION LIGHT SOCKET AND WIRE SUB-ASSEMBLY

(a) Connect the connector and install the rear combination light socket and wire sub-assembly.

2. INSTALL REAR COMBINATION LIGHT BULB

(a) Install the rear combination light bulb.



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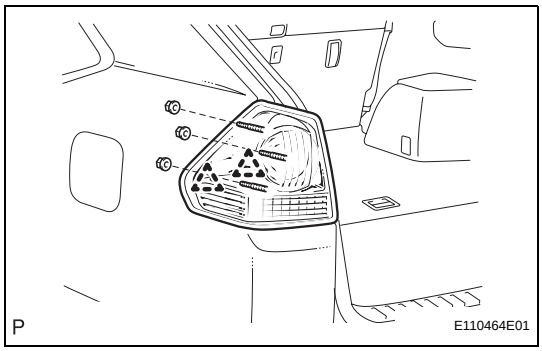


INSTALLATION

1. INSTALL REAR COMBINATION LIGHT ASSEMBLY

(a) Install the rear combination light assembly with the 3 nuts and the 2 pins.

2. INSTALL ROOF SIDE INNER GARNISH COVER

REASSEMBLY

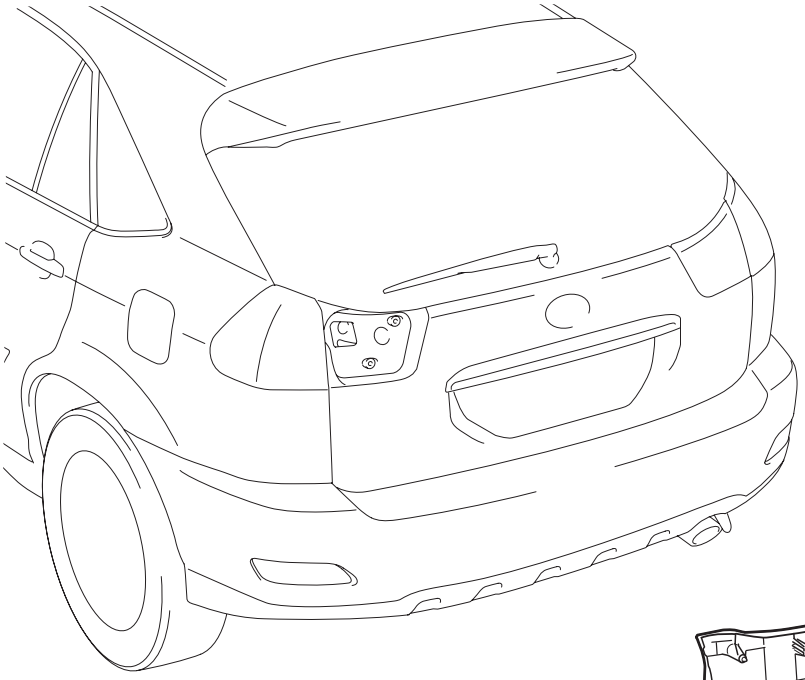
1. **INSTALL FOG LIGHT UNIT LH**
2. **INSTALL FOG LIGHT BULB**

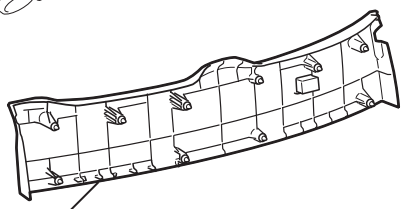
INSTALLATION

1. **INSTALL FOG LIGHT ASSEMBLY LH**
2. **INSTALL FRONT BUMPER COVER (See page ET-3)**
3. **INSTALL FRONT FENDER SPLASH SHIELD SUB-ASSEMBLY LH (See page ET-4)**
4. **INSTALL FRONT FENDER SPLASH SHIELD SUB-ASSEMBLY RH (See page ET-4)**
5. **PUT VEHICLE THESE CONDITIONS (See page LI-204)**
6. **ADJUST FOG LIGHT AIM (See page LI-204)**

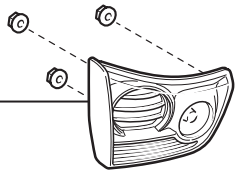
BACK-UP LIGHT ASSEMBLY

COMPONENTS





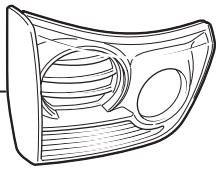
BACK DOOR TRIM PANEL ASSEMBLY UPPER



BACK-UP LIGHT ASSEMBLY

NO.2 SOCKET PLUG

BACK-UP LIGHT BULB



BACK-UP LIGHT LENS

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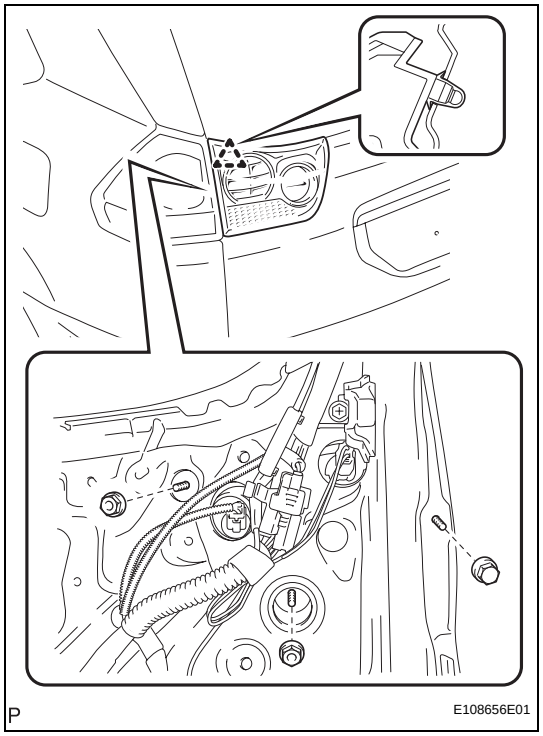
REMOVAL

1. REMOVE BACK DOOR TRIM PANEL ASSEMBLY UPPER

2. REMOVE BACK-UP LIGHT ASSEMBLY

(a) Disconnect each connector.

(b) Remove the 3 nuts and disengage the clip, and remove the back-up light assembly.



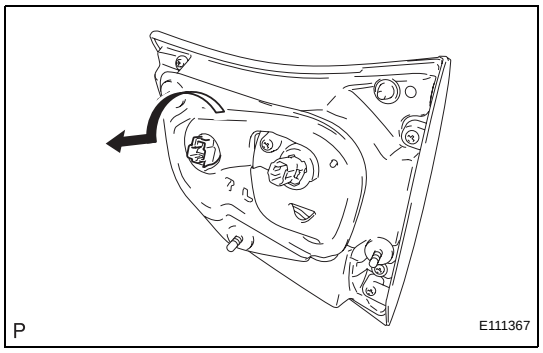
DISASSEMBLY

1. REMOVE BACK-UP LIGHT BULB

(a) Turn in the direction indicated by the arrow and remove the back-up light bulb and No.2 socket plug as a unit.

2. REMOVE NO.2 SOCKET PLUG

(a) Remove the back-up light bulb from the No.2 socket plug.



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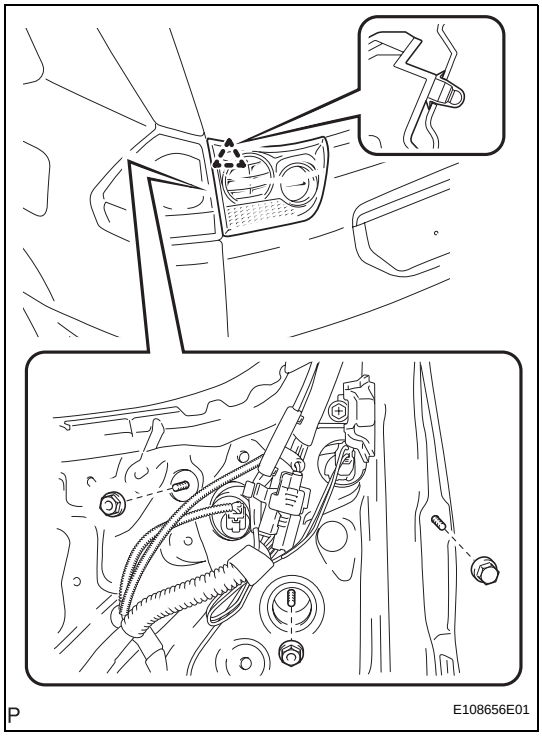


REASSEMBLY

1. INSTALL NO.2 SOCKET PLUG

2. INSTALL BACK-UP LIGHT BULB

(a) Install the back-up light bulb.

INSTALLATION

1. INSTALL BACK-UP LIGHT ASSEMBLY

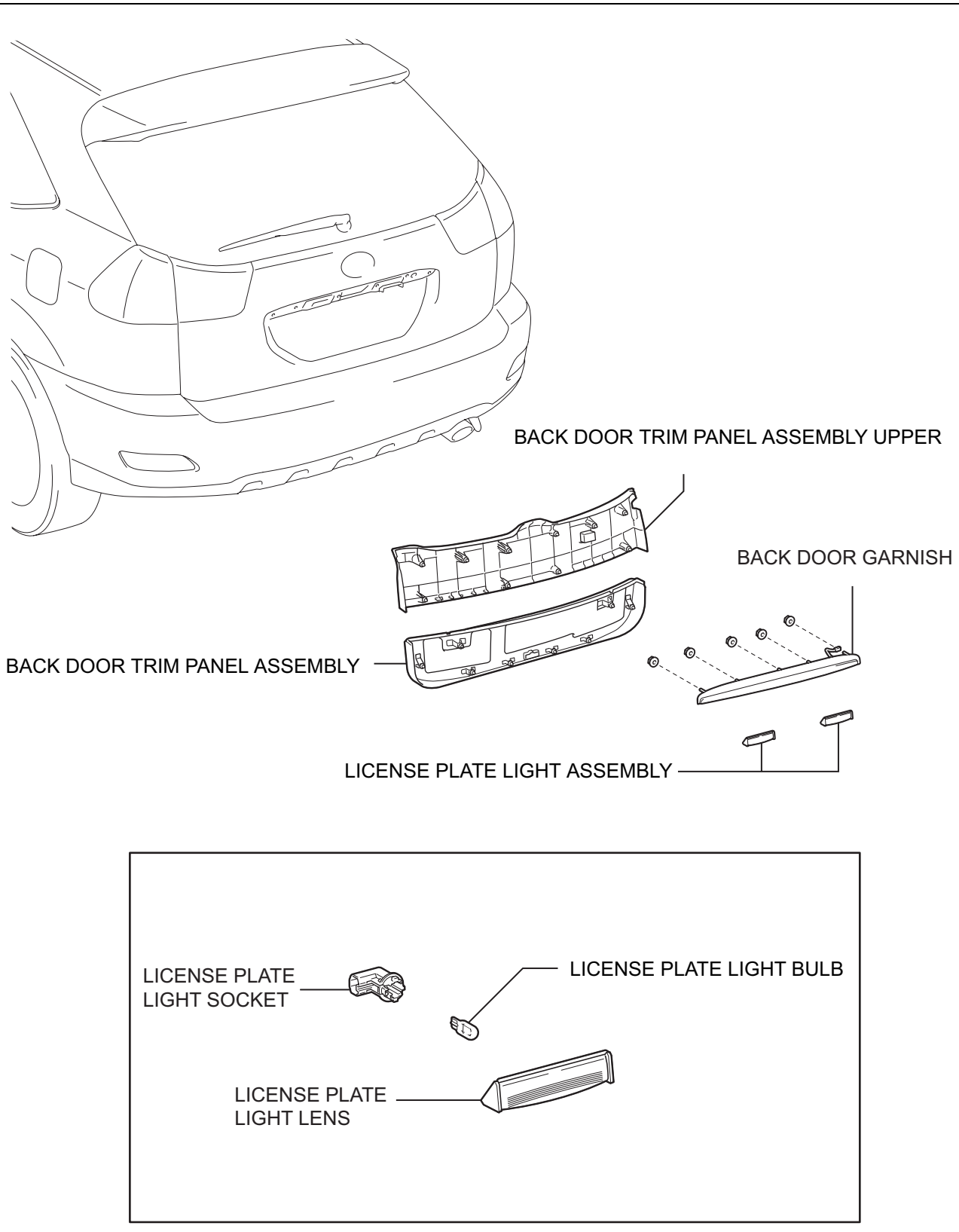
(a) Connect each connector.

(b) Install the back-up light assembly with the 3 nuts and the clip.

2. INSTALL BACK DOOR TRIM PANEL ASSEMBLY UPPER

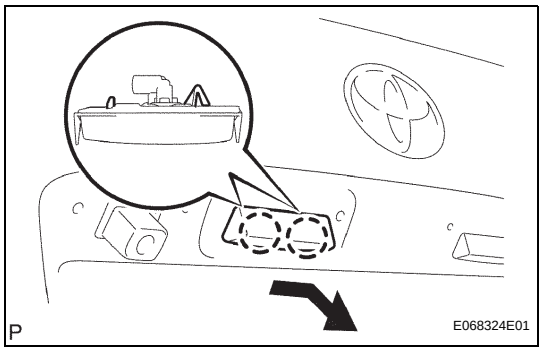
LICENSE PLATE LIGHT ASSEMBLY

COMPONENTS



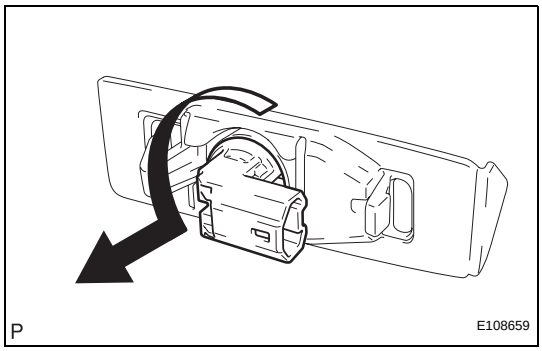
REMOVAL

1. **REMOVE BACK DOOR TRIM PANEL ASSEMBLY UPPER (See page ED-124)**
2. **REMOVE BACK DOOR TRIM PANEL ASSEMBLY (See page ED-125)**
3. **REMOVE BACK DOOR GARNISH (See page ET-35)**
4. **REMOVE LICENSE PLATE LIGHT ASSEMBLY**
   (a) Disengage the 2 claws and separate the license plate light assembly.
   (b) Disconnect the connector and remove the license plate light assembly.



DISASSEMBLY

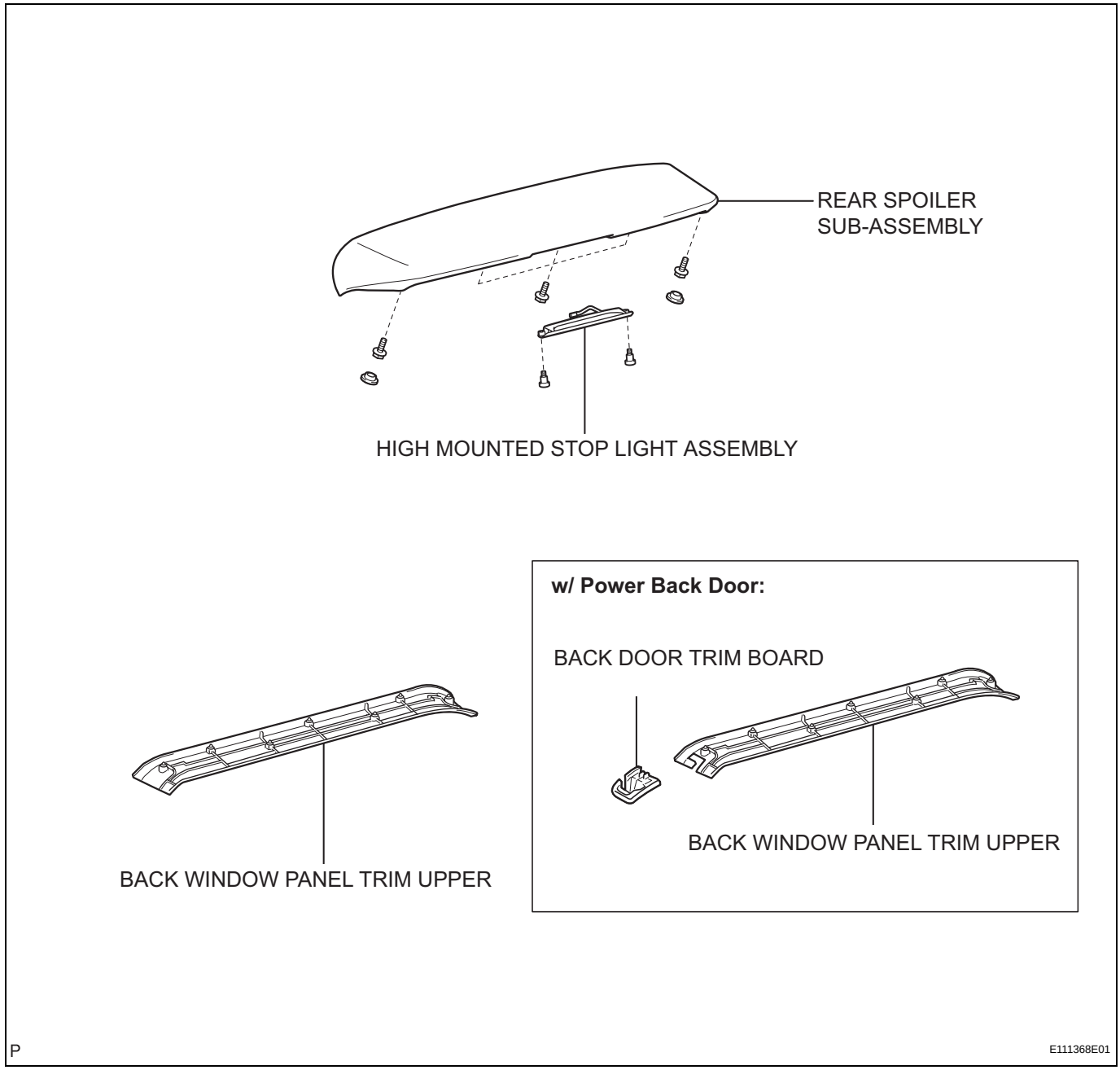
1. **REMOVE LICENSE PLATE LIGHT BULB**
   (a) Turn in the direction indicated by the arrow and remove the license plate light bulb and the license plate light socket as a unit.
   (b) Remove the license plate light bulb from the license plate light socket.



LI

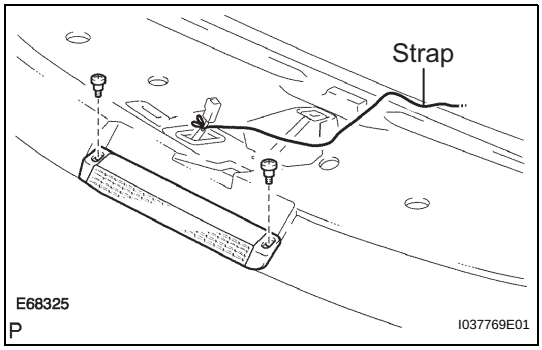
HIGH MOUNTED STOP LIGHT ASSEMBLY

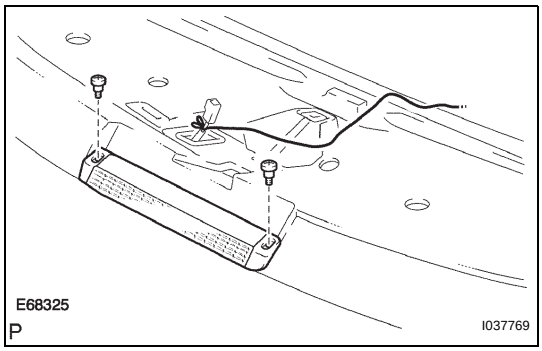
COMPONENTS



REMOVAL

1. **REMOVE BACK WINDOW PANEL TRIM UPPER (w/o Power Back Door) (See page ED-124)**
2. **REMOVE BACK DOOR TRIM BOARD (w/ Power Back Door) (See page ED-124)**
3. **REMOVE BACK WINDOW PANEL TRIM UPPER (w/ Power Back Door) (See page ED-124)**
4. **REMOVE REAR SPOILER SUB-ASSEMBLY (See page ET-12)**
5. **REMOVE HIGH MOUNTED STOP LIGHT ASSEMBLY**
   (a) Install the strap to the connector of the high mounted stop light assembly.
   (b) Remove the 2 screws.
   (c) Pass the connector through the inside of the rear spoiler and remove the high mounted stop light assembly.
   HINT:
   Leave the strap inside the rear spoiler.





INSTALLATION

1. **INSTALL HIGH MOUNTED STOP LIGHT ASSEMBLY**
   (a) Install the strap to the connector of the high mounted stop light assembly.
   HINT:
   Leave the strap inside the rear spoiler.
   (b) Pass the connector through the inside of the rear spoiler and install the high mounted stop light assembly with the 2 screws.
2. **INSTALL REAR SPOILER SUB-ASSEMBLY (See page ET-12)**
3. **INSTALL BACK WINDOW PANEL TRIM UPPER (w/ Power Back Door)**
4. **INSTALL BACK DOOR TRIM BOARD (w/ Power Back Door)**
5. **INSTALL BACK WINDOW PANEL TRIM UPPER (w/o Power Back Door)**

REASSEMBLY

1. INSTALL LICENSE PLATE LIGHT BULB

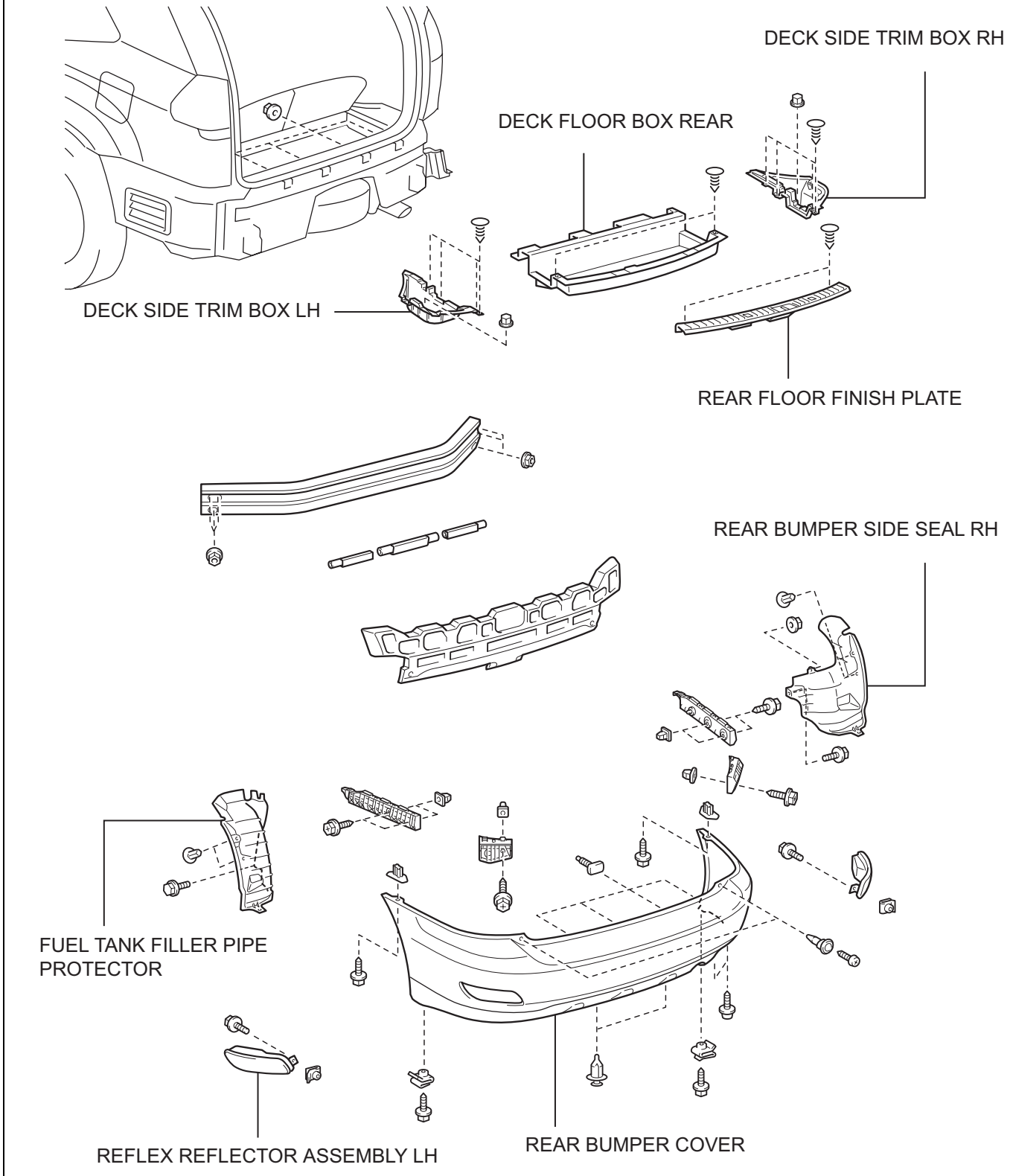
(a) Install the license plate light bulb.

INSTALLATION

1. **INSTALL LICENSE PLATE LIGHT ASSEMBLY**
   (a) Install the license plate light assembly with the 2 claws.
   (b) Connect the connector.
2. **INSTALL BACK DOOR GARNISH (See page ET-35)**
3. **INSTALL BACK DOOR TRIM PANEL ASSEMBLY**
4. **INSTALL BACK DOOR TRIM PANEL ASSEMBLY UPPER**

REAR SIDE MARKER LIGHT ASSEMBLY

COMPONENTS



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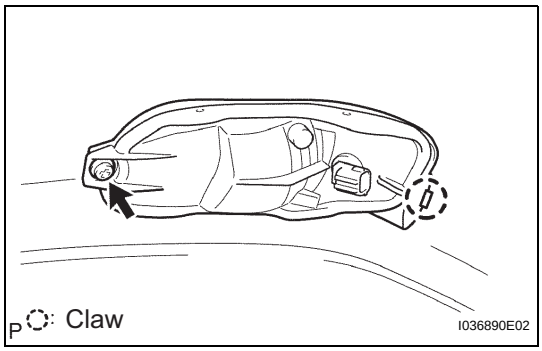
REMOVAL

1. **REMOVE REAR FLOOR FINISH PLATE (See page IR-8)**
2. **REMOVE DECK FLOOR BOX REAR (See page IR-8)**
3. **REMOVE DECK SIDE TRIM BOX LH (See page IR-8)**
4. **REMOVE DECK SIDE TRIM BOX RH**
5. **REMOVE REAR BUMPER SIDE SEAL RH**
6. **REMOVE FUEL TANK FILLER PIPE PROTECTOR (See page ET-6)**
7. **REMOVE REAR BUMPER COVER (See page ET-6)**
8. **REMOVE REFLEX REFLECTOR ASSEMBLY LH**
   (a) Release the claw fitting and remove the screw and the reflex reflector assembly LH.



DISASSEMBLY

1. REMOVE REFLEX REFLECTOR BULB

(a) Remove the reflex reflector bulb, the reflex reflector LH socket plug.

(b) Remove the reflex reflector bulb from the reflex reflector LH socket plug.

2. REMOVE REFLEX REFLECTOR LH SOCKET PLUG

3. REMOVE REFLEX REFLECTOR LENS REAR LH

REASSEMBLY

1. **INSTALL REFLEX REFLECTOR LENS REAR LH**
2. **INSTALL REFLEX REFLECTOR LH SOCKET PLUG**
3. **INSTALL REFLEX REFLECTOR BULB**

PERSONAL LIGHT ASSEMBLY

INSPECTION

1. INSPECT PERSONAL LIGHT ASSEMBLY

(a) Remove the personal light assembly.

(b) Connect the battery positive (+) lead to terminal 17 and negative (-) lead to terminal 6.

(c) Turn the personal light switch in DOOR position.

(d) Check that the light comes on.

(e) Connect the battery positive (+) lead to terminal 17 and negative (-) lead to terminal 5.

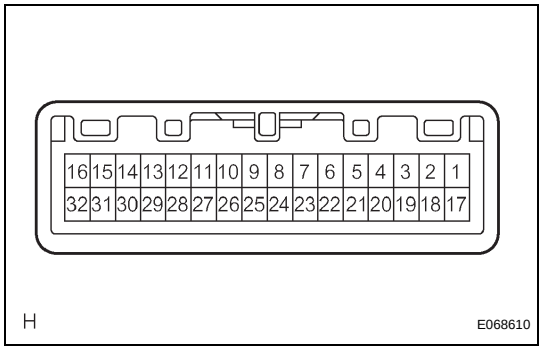
(f) Turn the personal light switch in ON position.

(g) Check that the light comes on.

OK:

Comes on

If the light does not come on, replace the personal light assembly.



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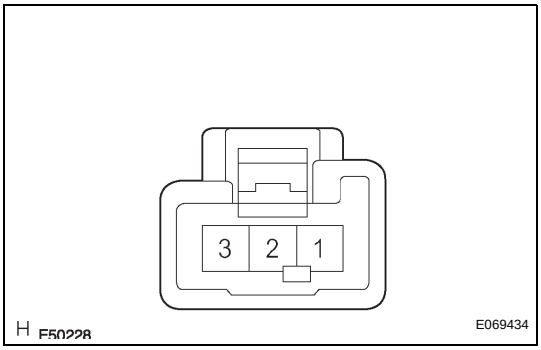
FRONT ROOM LIGHT ASSEMBLY

INSPECTION

1. INSPECT FRONT ROOM LIGHT ASSEMBLY

(a) Remove the front room light assembly.



(b) Connect the battery positive (+) lead to terminal 3 and negative (-) lead to terminal 2.

(c) Turn the front room light switch in DOOR position.

(d) Check that the light comes on.

(e) Connect the battery positive (+) lead to terminal 1 and negative (-) lead to terminal 3.

(f) Turn the front room light switch in ON position.

(g) Check that the light comes on.

OK:

Comes on

If the light does not come on, replace the front room light assembly.

INSTALLATION

1. **INSTALL REFLEX REFLECTOR ASSEMBLY LH**
2. **INSTALL FRONT BUMPER COVER**
3. **INSTALL FUEL TANK FILLER PIPE PROTECTOR**
4. **INSTALL REAR BUMPER SIDE SEAL RH**
5. **INSTALL DECK SIDE TRIM BOX RH**
6. **INSTALL DECK SIDE TRIM BOX LH**
7. **INSTALL DECK FLOOR BOX REAR**
8. **INSTALL REAR FLOOR FINISH PLATE**

REAR ROOM LIGHT ASSEMBLY

INSPECTION

1. INSPECT REAR ROOM LIGHT ASSEMBLY

(a) Remove the rear room light assembly.

(b) Connect the battery positive (+) lead to terminal 2 and negative (-) lead to terminal 1.

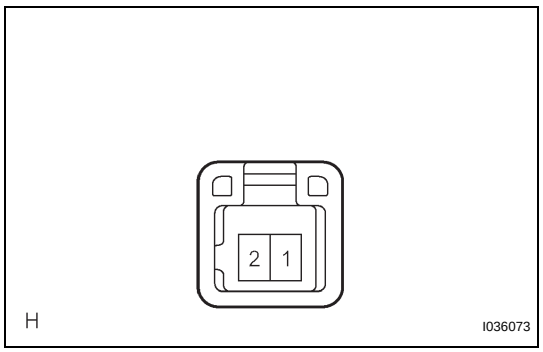
(c) Turn on the rear room light switch.

(d) Check that the light comes on.

OK:

Comes on

If the light does not come on, replace the rear room light assembly.



STEP LIGHT ASSEMBLY

INSPECTION

1. INSPECT STEP LIGHT

(a) Remove the step light.

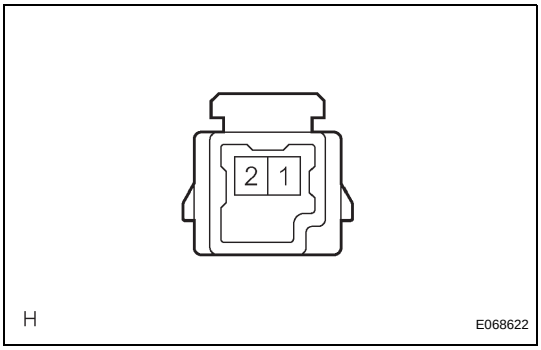
(b) Connect the battery positive (+) lead to terminal 2 and negative (-) lead to terminal 1.

(c) Check that the light comes on.

OK:

Comes on

If the light does not come on, replace the light.



IGNITION KEY CYLINDER LIGHT

INSPECTION

1. INSPECT IGNITION KEY CYLINDER LIGHT

(a) Remove the transponder key amplifier (ignition key cylinder light).

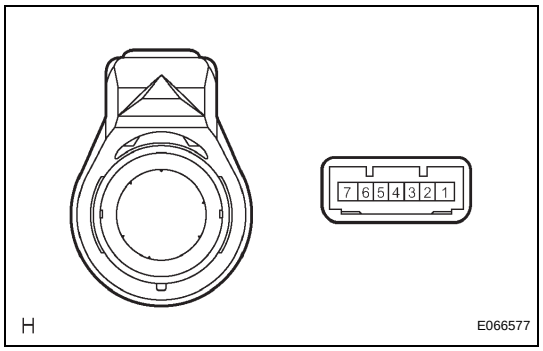
(b) Connect the battery positive (+) lead to terminal 2 and negative (-) lead to terminal 6.

(c) Check that the light comes on.

OK:

Comes on

If the light does not come on, replace the transponder key amplifier (ignition key cylinder light).



GLOVE BOX LIGHT

INSPECTION

1. INSPECT GLOVE BOX LIGHT

(a) Remove the glove box light assembly.

(b) Connect the battery positive (+) lead to terminal 2 and negative (-) lead to terminal 1.

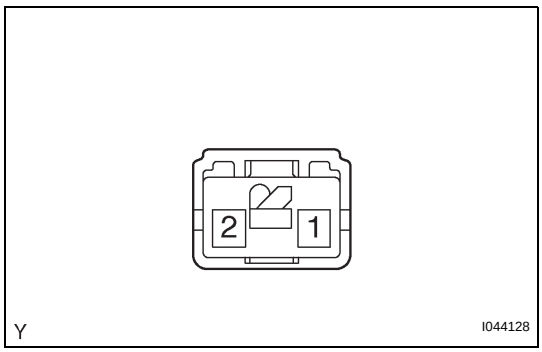
(c) Turn on the glove box light switch.

(d) Check that the light comes on.

OK:

Comes on

If the light does not come on, replace the light assembly.



VANITY LIGHT

INSPECTION

1. INSPECT VANITY LIGHT

(a) Remove the vanity light.

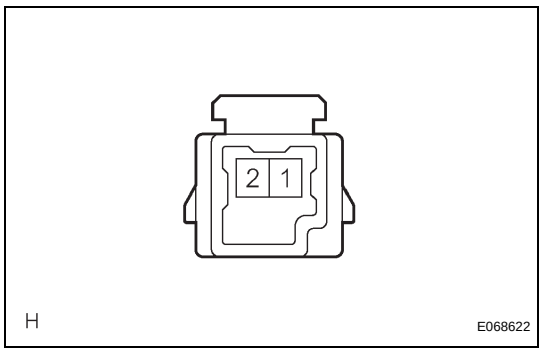
(b) Connect the battery positive (+) lead to terminal 2 and negative (-) lead to terminal 1.

(c) Check that the light comes on.

OK:

Comes on

If the light does not come on, replace the light.



CONSOLE BOX LIGHT

INSPECTION

1. INSPECT CONSOLE BOX LIGHT

(a) Remove the console box light.

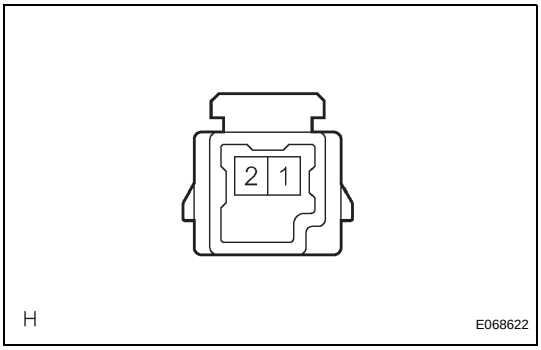
(b) Connect the battery positive (+) lead to terminal 2 and negative (-) lead to terminal 1.

(c) Check that the light comes on.

OK:

Comes on

If the light does not come on, replace the light.



INSIDE HANDLE LIGHT

INSPECTION

1. INSPECT INSIDE HANDLE LIGHT

(a) Remove the inside handle light.

(b) Connect the battery positive (+) lead to terminal 2 and negative (-) lead to terminal 1.

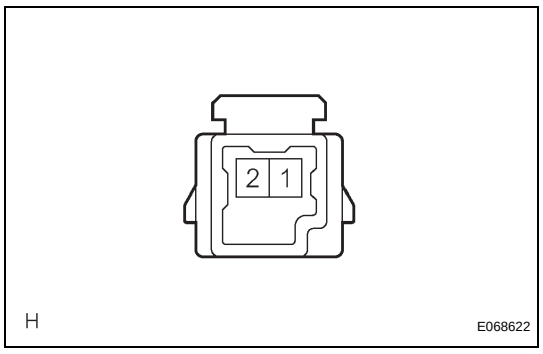
(c) Turn on the glove box light switch.

(d) Check that the light comes on.

OK:

Comes on

If the light does not come on, replace the light.



SCUFF PLATE LIGHT

INSPECTION

1. INSPECT SCUFF PLATE LIGHT

(a) Remove the scuff plate light.

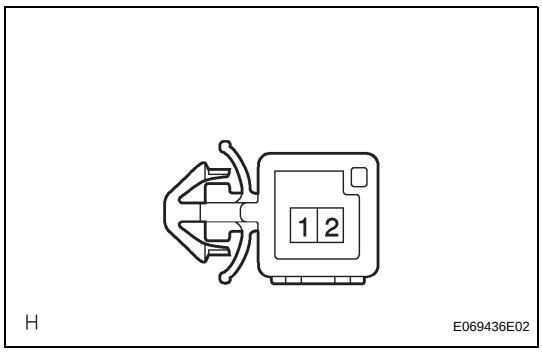
(b) Connect the battery positive (+) lead to terminal 2 and negative (-) lead to terminal 1.

(c) Check that the light comes on.

OK:

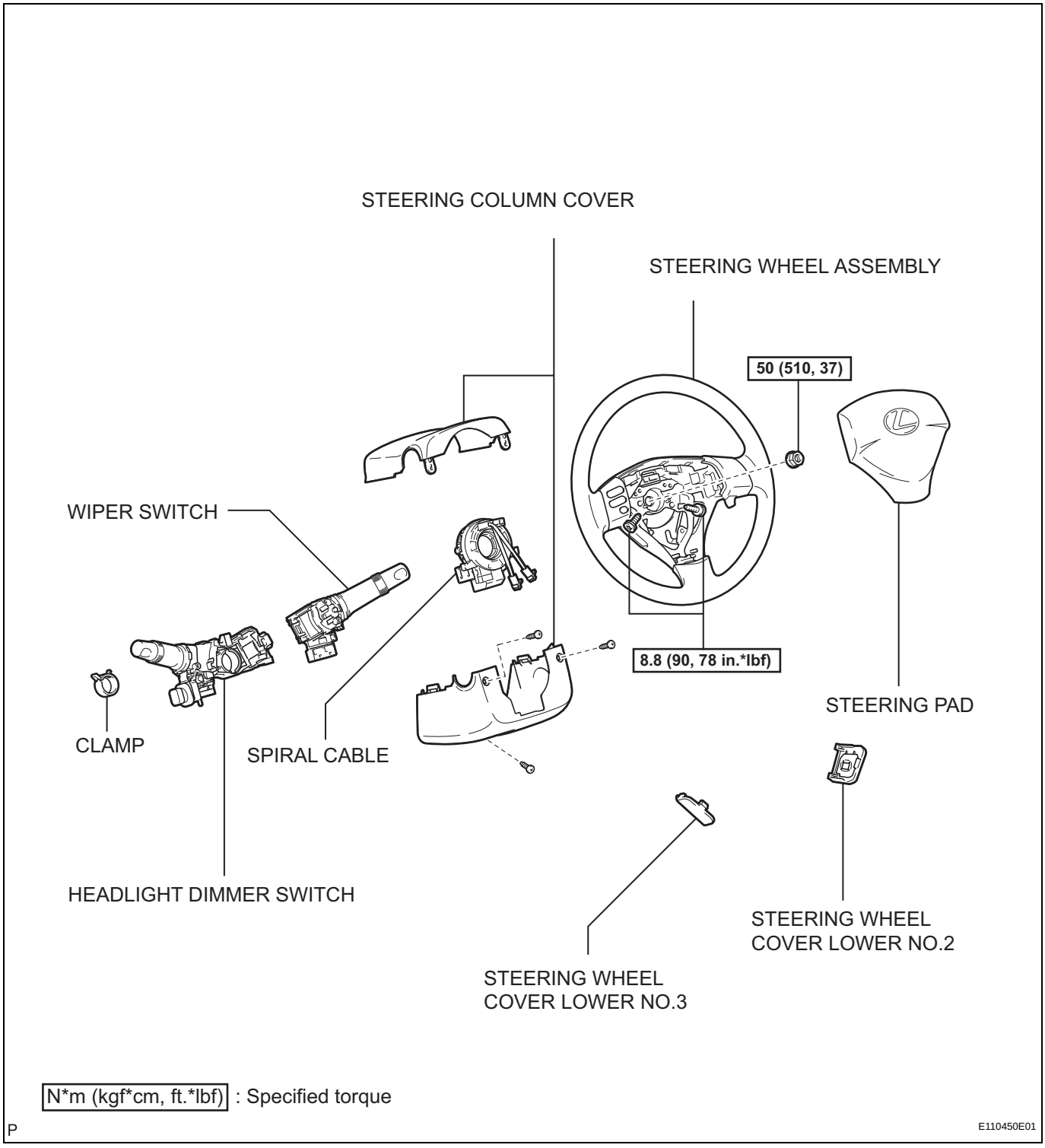
Comes on

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



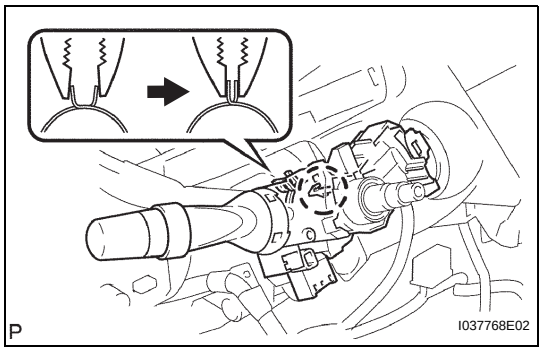
HEADLIGHT DIMMER SWITCH

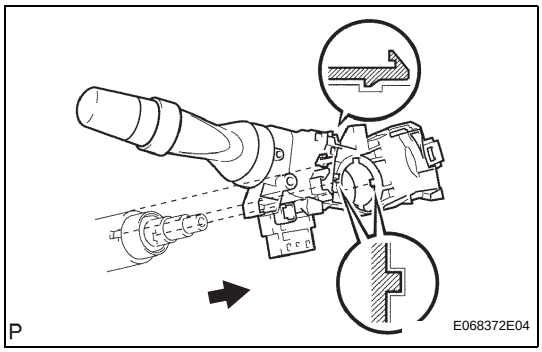
COMPONENTS



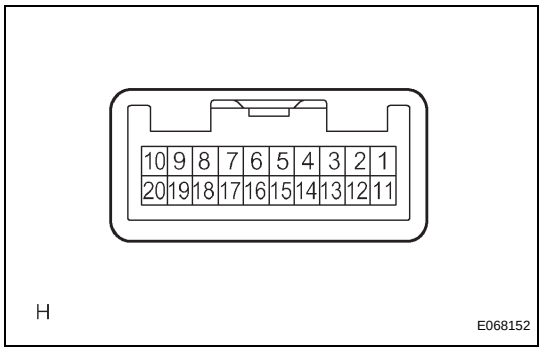
REMOVAL

1. **PRECAUTION**
   (See page RS-1)
2. **PLACE FRONT WHEELS FACING STRAIGHT AHEAD**
3. **DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL**
   (See page RS-1)
4. **REMOVE STEERING WHEEL COVER LOWER NO.2 (See page RS-387)**
5. **REMOVE STEERING WHEEL COVER LOWER NO.3 (See page RS-387)**
6. **REMOVE STEERING PAD (See page RS-388)**
7. **REMOVE STEERING WHEEL ASSEMBLY (for Manual Tilt) (See page SR-40)**
8. **REMOVE STEERING WHEEL ASSEMBLY (for Power Tilt and Power Telescopic) (See page SR-50)**
9. **REMOVE STEERING COLUMN COVER (for Manual Tilt) (See page SR-40)**
10. **REMOVE STEERING COLUMN COVER (for Power Tilt and Power Telescopic) (See page SR-51)**
11. **REMOVE SPIRAL CABLE (See page RS-399)**
12. **REMOVE WIPER SWITCH (See page WW-49)**
13. **REMOVE HEADLIGHT DIMMER SWITCH**
    (a) Disconnect the connector.
    (b) Disengage the claw as shown in the illustration.





(c) Remove the headlight dimmer switch as shown in the illustration.



INSPECTION

1. INSPECT HEADLIGHT DIMMER SWITCH

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

Resistance:

Light control switch

Tester connection	Switch condition	Specified condition
12 - 18	OFF	10 kΩ or higher
18 - 19	OFF	10 kΩ or higher
19 -20	OFF	10 kΩ or higher
12 - 18	TAIL	Below 1 Ω
12 - 18	HEAD	Below 1 Ω
18 - 20	HEAD	Below 1 Ω
12 - 19	AUTO	Below 1 Ω

Headlight dimmer switch

Tester connection	Switch condition	Specified condition
12 - 17	FLASH	Below 1 Ω
12 - 16	LOW BEAM	Below 1 Ω
11 - 12	HI BEAM	Below 1 Ω

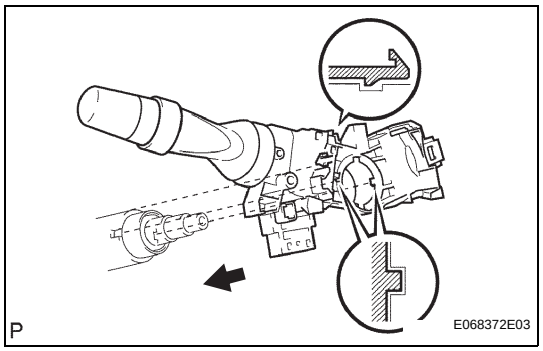
Turn signal switch

Tester connection	Switch condition	Specified condition
12 - 13	Right turn	Below 1 Ω
12 - 13	Neutral	10 kΩ or higher
13 - 15	Neutral	10 kΩ or higher
12 - 15	Left turn	Below 1 Ω

Fog light switch

Tester connection	Switch condition	Specified condition
3 - 4	OFF	10 kΩ or higher
3 - 4	Fog light switch ON	Below 1 Ω

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



INSTALLATION

1. INSTALL HEADLIGHT DIMMER SWITCH

(a) Install the headlight dimmer switch as shown in the illustration.

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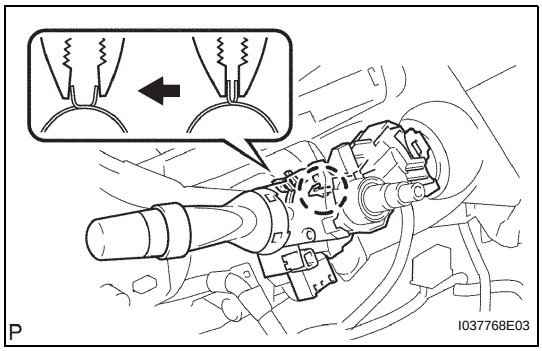


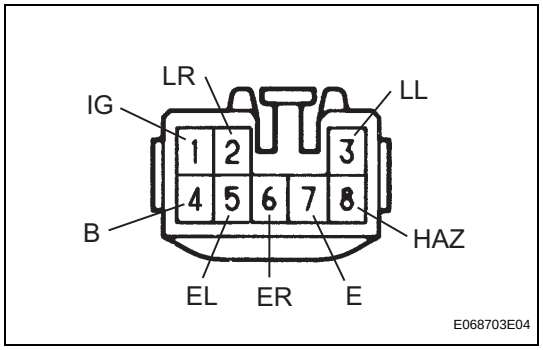
(b) Install the headlight dimmer switch with the claw and the clamp.
(c) Connect the connector.

2. **INSTALL WIPER SWITCH**
3. **INSTALL SPIRAL CABLE (See page RS-399)**
4. **INSTALL STEERING COLUMN COVER (for Power Tilt and Power Telescopic) (See page SR-57)**
5. **INSTALL STEERING COLUMN COVER (for Manual Tilt) (See page SR-45)**
6. **ADJUST SPIRAL CABLE (See page RS-400)**
7. **INSTALL STEERING WHEEL ASSEMBLY (for Power Tilt and Power Telescopic) (See page SR-57)**
8. **INSTALL STEERING WHEEL ASSEMBLY (for Manual Tilt) (See page SR-45)**
9. **INSPECT STEERING WHEEL CENTER POINT**
10. **INSTALL STEERING PAD (See page RS-388)**
11. **INSTALL STEERING WHEEL NO.2 COVER LOWER (See page RS-389)**
12. **INSTALL STEERING WHEEL NO.3 COVER LOWER (See page RS-389)**
13. **CONNECT CABLE TO NEGATIVE BATTERY TERMINAL**
14. **INSPECT STEERING PAD (See page RS-389)**
15. **PERFORM INITIALIZATION**
16. **INSPECT SUPPLEMENTAL RESTRAINT SYSTEM WARNING LIGHT**
    (See page RS-25)

TURN SIGNAL LIGHT SWITCH

ON-VEHICLE INSPECTION

1. INSPECT TURN SIGNAL FLASHER



(a) Disconnect the turn signal flasher connector.

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

Voltage

Tester Connection	Condition	Specified Condition
1 - Body ground	Ignition switch OFF	Below 1 V
1 - Body ground	Ignition switch ON	10 to 14 V
4 - Body ground	Always	10 to 14 V
7 - Body ground	Always	Below 1 V

(c) Reconnect the turn signal flasher connector.

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

Voltage

Tester Connection	Condition	Specified Condition
2 - Body ground	Hazard warning switch OFF	Below 1 V
2 - Body ground	Hazard warning switch ON	10 to 14 V (60 to 120 times per minute)
2 - Body ground	Ignition switch ON and turn signal switch (right turn) OFF	Below 1 V
2 - Body ground	Ignition switch ON and turn signal switch (right turn) ON	10 to 14 V (60 to 120 times per minute) Below 1 V
3 - Body ground	Hazard warning switch OFF	Below 1 V
3 - Body ground	Hazard warning switch ON	10 to 14 V (60 to 120 times per minute)
3 - Body ground	Ignition switch ON and turn signal switch (left turn) OFF	Below 1 V
3 - Body ground	Ignition switch ON and turn signal switch (left turn) ON	10 to 14 V (60 to 120 times per minute) Below 1 V
5 - Body ground	Ignition switch ON and turn signal switch (left turn) OFF	10 to 14 V
5 - Body ground	Ignition switch ON and turn signal switch (left turn) ON	Below 1 V
6 - Body ground	Ignition switch ON and turn signal switch (right turn) OFF	10 to 14 V
6 - Body ground	Ignition switch ON and turn signal switch (right turn) ON	Below 1 V
8 - Body ground	Hazard warning switch OFF	10 to 14 V
8 - Body ground	Hazard warning switch ON	Below 1 V

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

HAZARD WARNING SWITCH

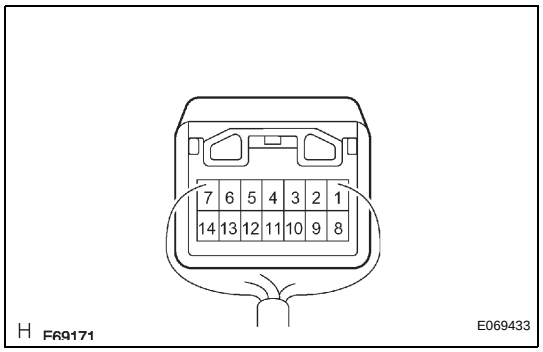
INSPECTION

1. INSPECT HAZARD WARNING SWITCH (w/o Navigation System)

(a) Remove the center cluster integration switch assembly.

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

Resistance



Tester Connection	Condition	Specified Condition
7 - 11	OFF	10 kΩ or higher
7 - 11	ON	Below 1 Ω

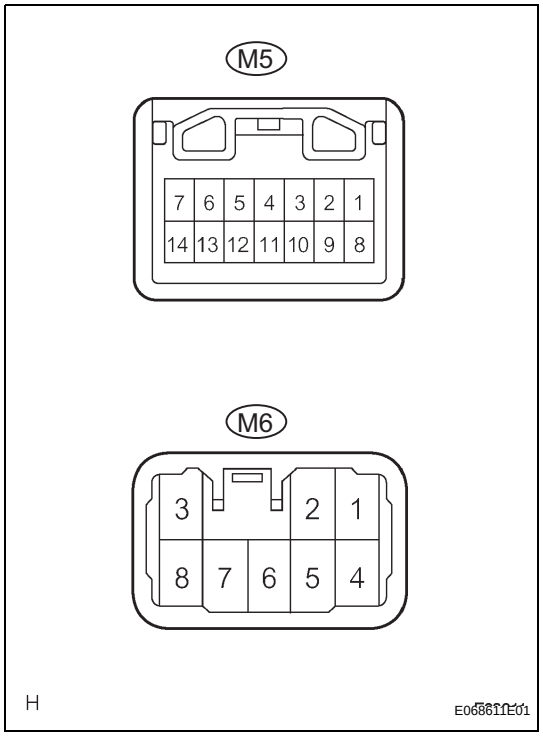
If the result is not as specified, replace the center cluster integration switch assembly (hazard warning switch).

2. INSPECT HAZARD WARNING SWITCH (w/ Navigation System)

(a) Remove the multi-display assembly.

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

Resistance



Tester Connection	Condition	Specified Condition
M5-12 - M6-6	OFF	10 kΩ or higher
M5-12 - M6-6	ON	Below 1 Ω

If the result is not as specified, replace the multi-display assembly (hazard warning switch).

LI

STOP LIGHT SWITCH

INSPECTION

1. INSPECT STOP LIGHT SWITCH

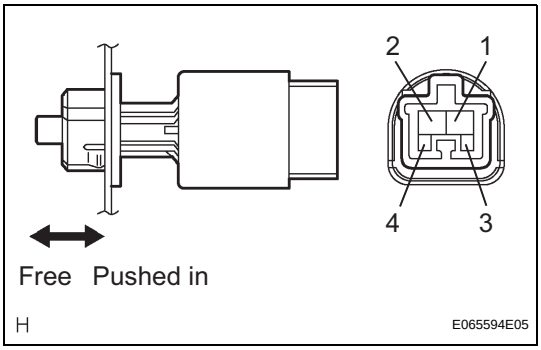
(a) Remove the stop light switch.

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

Resistance

Tester Connection	Condition	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.



FRONT DOOR COURTESY SWITCH

INSPECTION

1. INSPECT FRONT DOOR COURTESY SWITCH

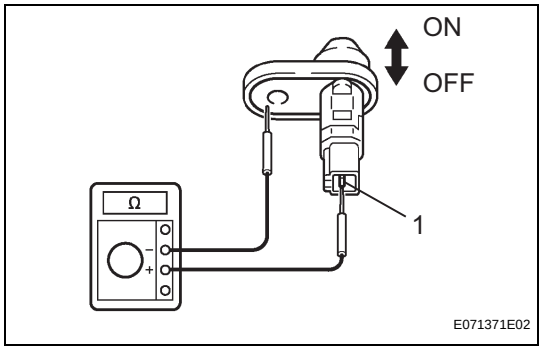
(a) Remove the front door courtesy switch.

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

Resistance

Tester Connection	Condition	Specified Condition
1 - Switch body	Pushed	10 kΩ or higher
1 - Switch body	Not pushed	Below 1 Ω

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



LI

REAR DOOR COURTESY SWITCH

INSPECTION

1. INSPECT REAR DOOR COURTESY SWITCH

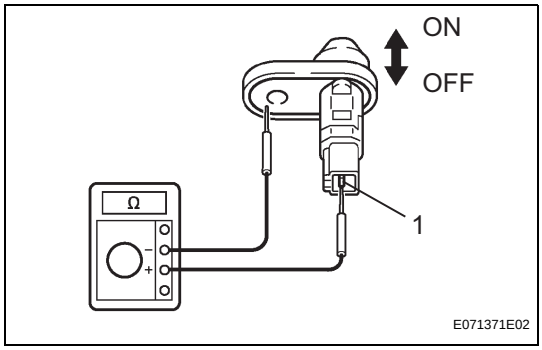
(a) Remove the rear door courtesy switch.

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

Resistance

Tester Connection	Condition	Specified Condition
1 - Switch body	Pushed	10 kΩ or higher
1 - Switch body	Not pushed	Below 1 Ω

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



BACK DOOR COURTESY SWITCH

INSPECTION

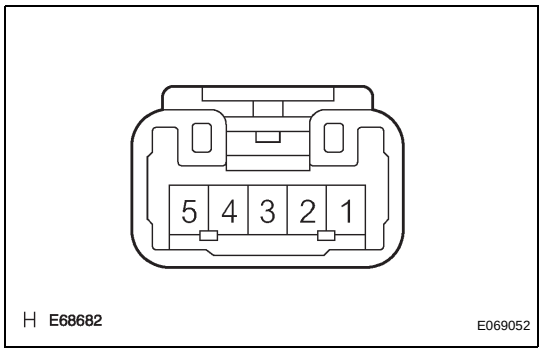
1. INSPECT BACK DOOR COURTESY SWITCH

(a) W/o Power Back Door:

(1) Remove the back door lock assembly (back door courtesy switch).

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

Resistance



Tester Connection	Condition	Specified Condition
1 - 2	Closed	10 kΩ or higher
1 - 2	Opened	Below 1 Ω

If the result is not as specified, replace the back door lock assembly (back door courtesy switch).

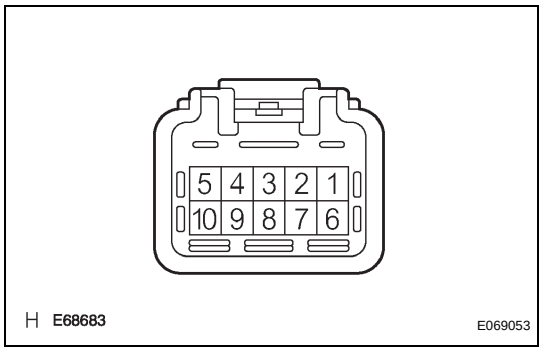
2. INSPECT BACK DOOR COURTESY SWITCH

(a) W/ Power Back Door:

(1) Remove the back door lock assembly (back door courtesy switch).

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

Resistance



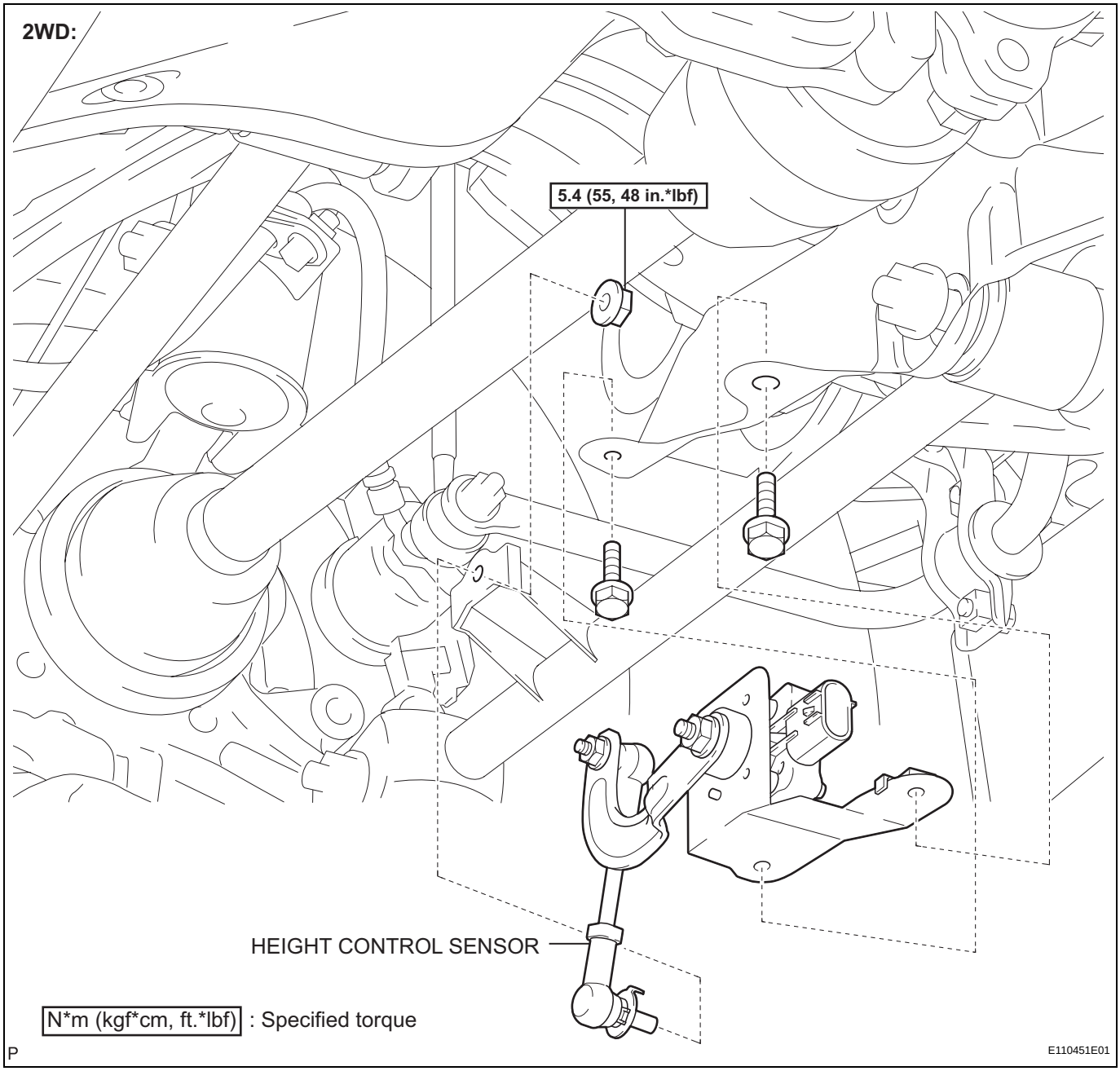
Tester Connection	Condition	Specified Condition
1 - 6	Closed	10 kΩ or higher
1 - 6	Opened	Below 1 Ω

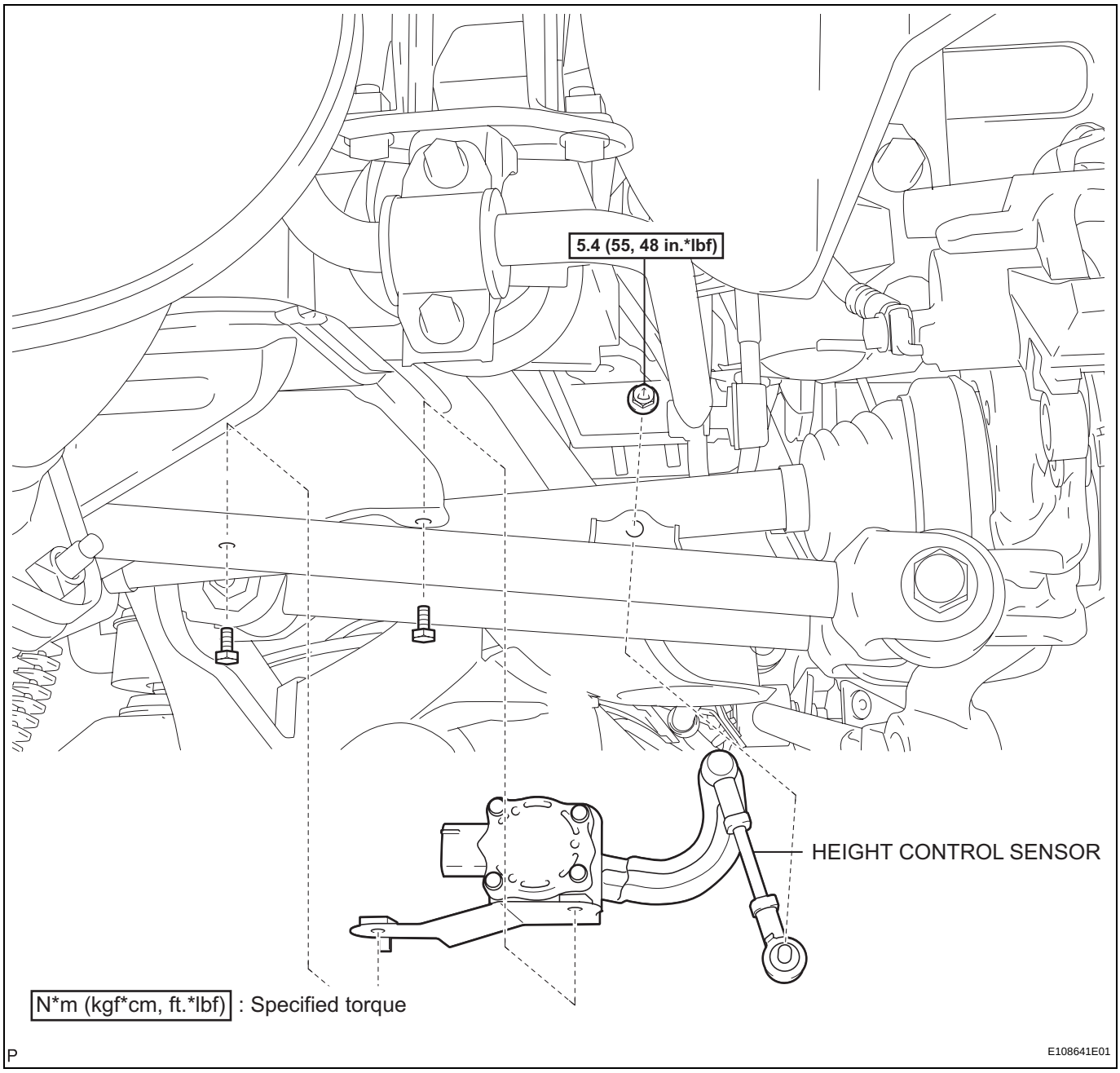
If the result is not as specified, replace the back door lock assembly (back door courtesy switch).

LI

HEIGHT CONTROL SENSOR

COMPONENTS




5.4 (55, 48 in.*lbf)
HEIGHT CONTROL SENSOR
N*m (kgf*cm, ft.*lbf) : Specified torque
P
E108641E01

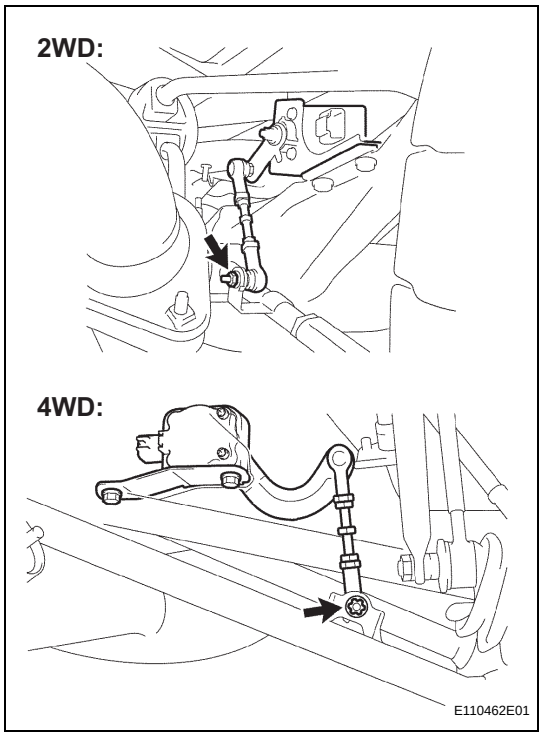
REMOVAL

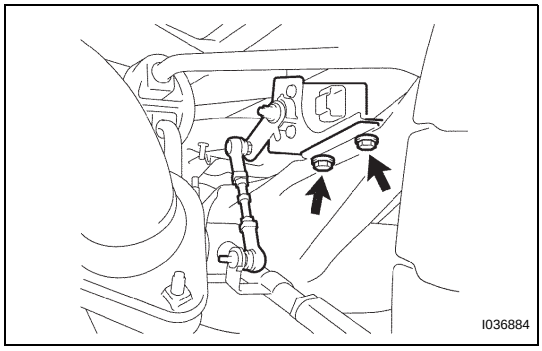
1. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL
(See page RS-1)

2. REMOVE HEIGHT CONTROL SENSOR

(a) Disconnect the connector.

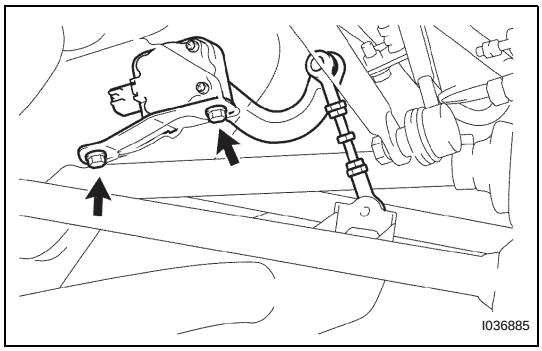
(b) Remove the nut and separate the height control sensor link.





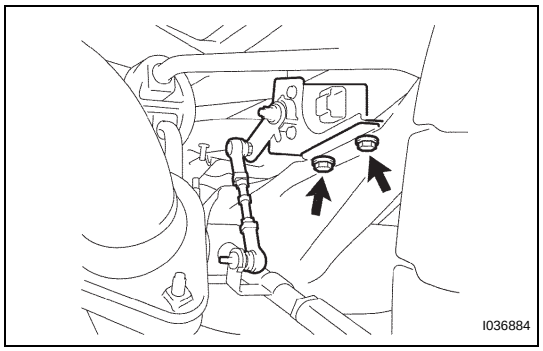
(c) 2WD:

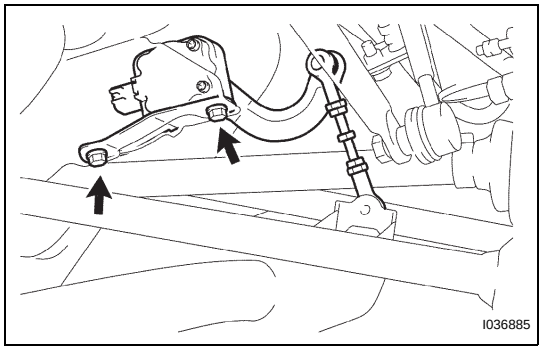
(1) Remove the 2 bolts and the height control sensor.

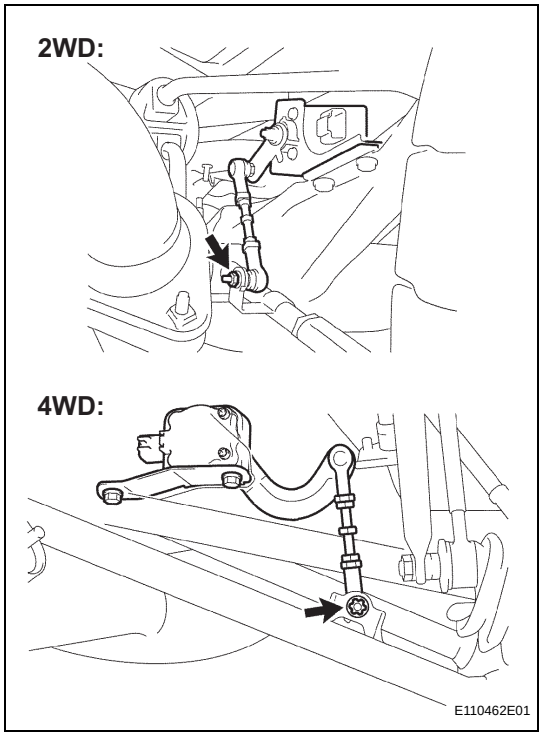


(d) 4WD:

(1) Remove the 2 bolts and the height control sensor.







INSTALLATION

1. INSTALL HEIGHT CONTROL SENSOR

(a) 2WD:

(1) Install the height control sensor with the 2 bolts.

(b) 4WD:

(1) Install the height control sensor with the 2 bolts.

(c) Install the height control sensor link with the nut.
Torque: 5.4 N*m (55 kgf*cm, 48 in.*lbf)

(d) Connect the connector.

2. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

3. PERFORM INITIALIZATION

4. VEHICLE PREPARATION FOR HEADLIGHT AIM

5. PREPARATION FOR HEADLIGHT AIM (Using a tester)

(a) Using a tester:

(1) Preparation for headlight aim (See page LI-196).

6. PREPARATION FOR HEADLIGHT AIM (Using a screen)

(a) Using a screen:

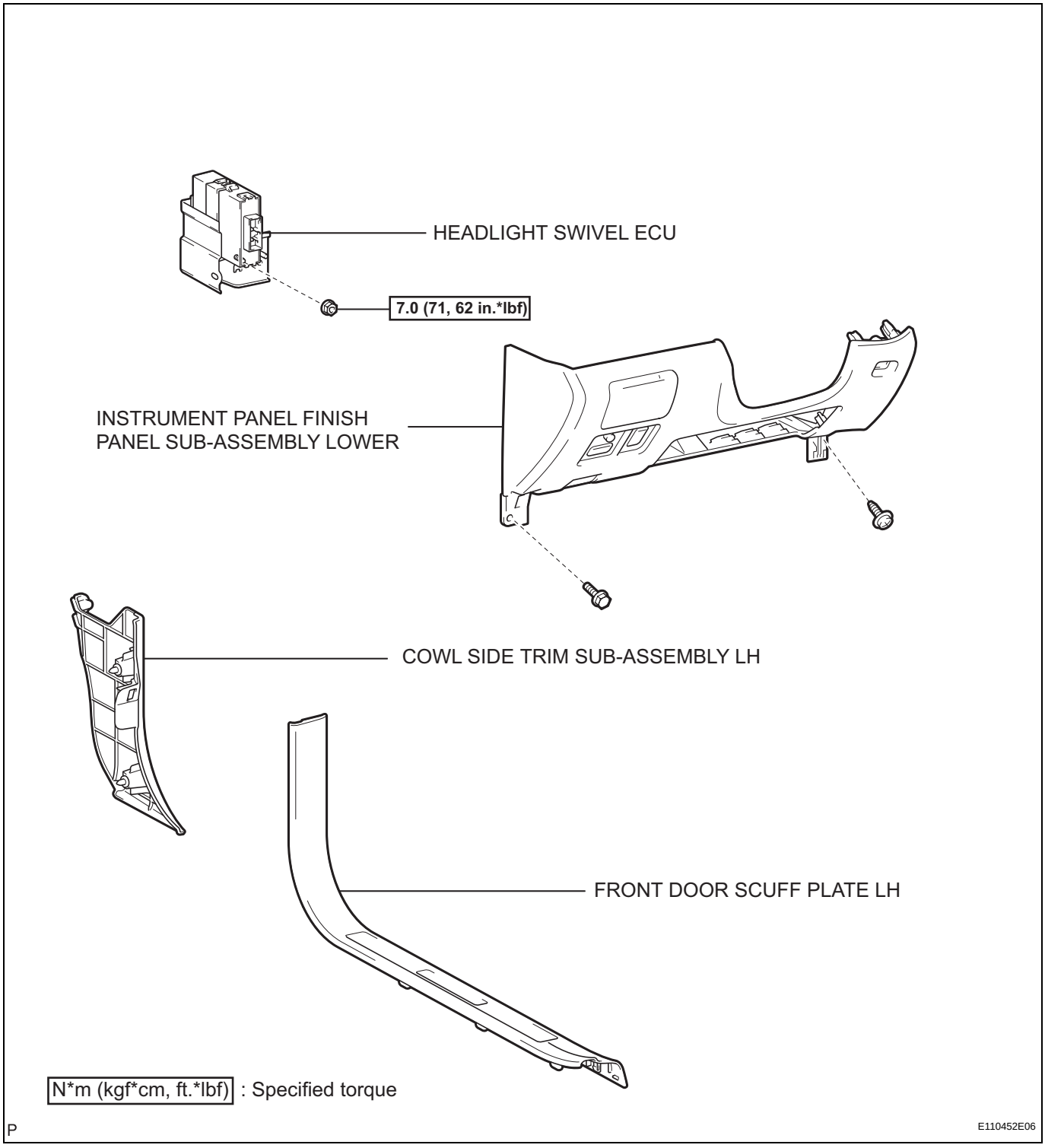
(1) Preparation for headlight aim (See page LI-196).

7. HEADLIGHT AIMING INSPECTION

8. HEADLIGHT AIMING ADJUSTMENT

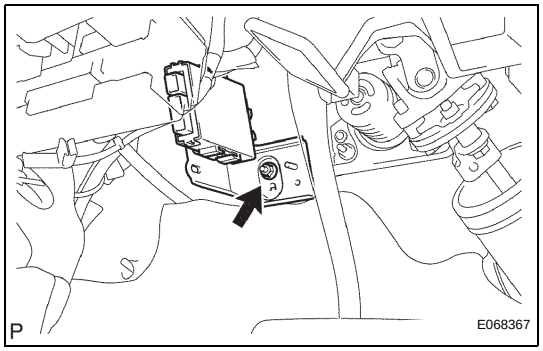
HEADLIGHT SWIVEL ECU

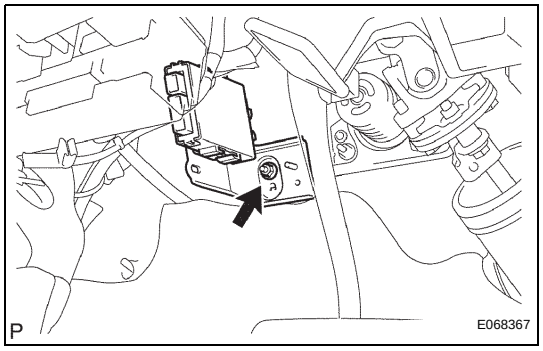
COMPONENTS



REMOVAL

1. **DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL**
   HINT:
   (See page RS-1)
2. **REMOVE FRONT DOOR SCUFF PLATE LH (See page IR-6)**
3. **REMOVE COWL SIDE TRIM SUB-ASSEMBLY LH (See page IP-12)**
4. **REMOVE INSTRUMENT PANEL FINISH PANEL SUB-ASSEMBLY LOWER (See page IP-12)**
5. **REMOVE HEADLIGHT SWIVEL ECU**
   (a) Disconnect the connector.
   (b) Remove the nut and headlight swivel ECU.



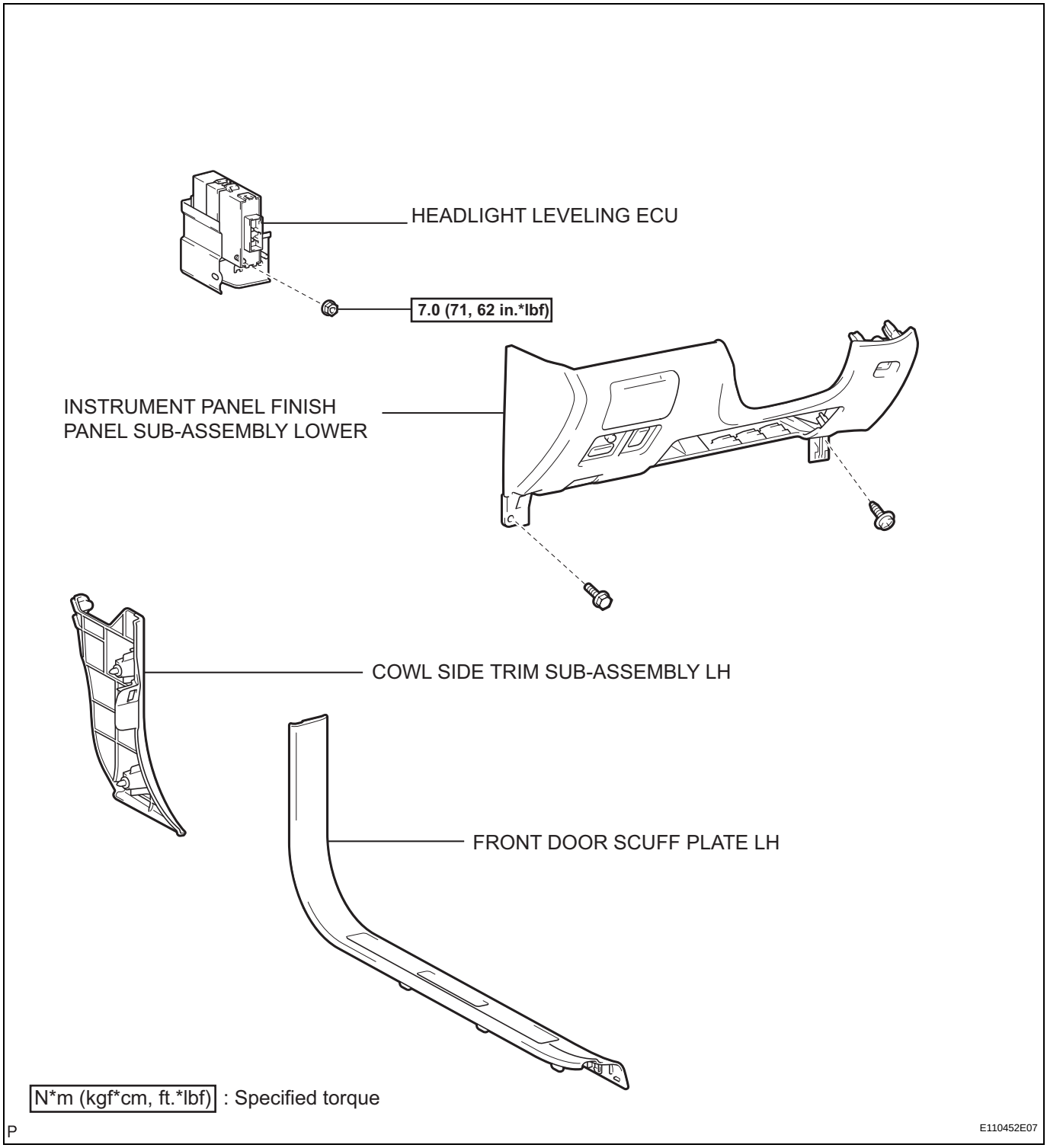


INSTALLATION

1. **INSTALL HEADLIGHT SWIVEL ECU**
   (a) Install the headlight swivel ECU with the nut.
   Torque: 7.0 N*m (71 kgf*cm, 62 in.*lbf)
   (b) Connect the connector.
2. **INSTALL INSTRUMENT PANEL FINISH PANEL SUB-ASSEMBLY LOWER (See page IP-29)**
3. **INSTALL COWL SIDE TRIM SUB-ASSEMBLY LH (See page IP-29)**
4. **INSTALL FRONT DOOR SCUFF PLATE LH**
5. **CONNECT CABLE FROM NEGATIVE BATTERY TERMINAL**
6. **PERFORM INITIALIZATION**

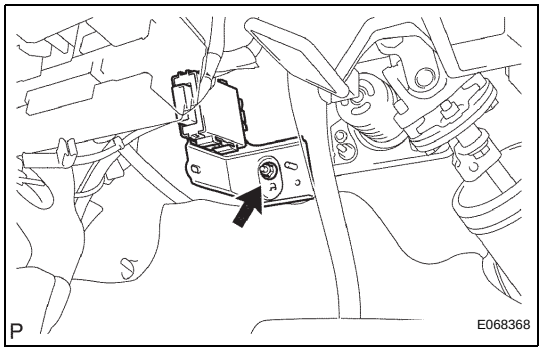
HEADLIGHT LEVELING ECU

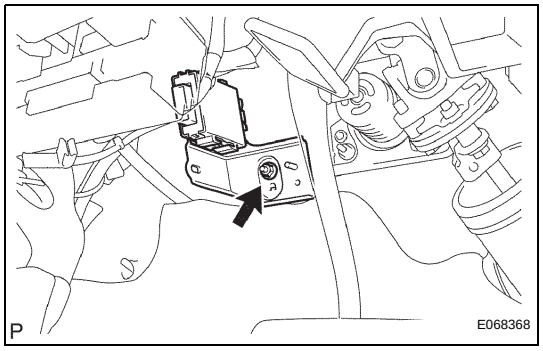
COMPONENTS



REMOVAL

1. **DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL**
   HINT:
   (See page RS-1)
2. **REMOVE FRONT DOOR SCUFF PLATE LH (See page IR-6)**
3. **REMOVE COWL SIDE TRIM SUB-ASSEMBLY LH (See page IP-12)**
4. **REMOVE INSTRUMENT PANEL FINISH PANEL SUB-ASSEMBLY LOWER (See page IP-12)**
5. **REMOVE HEADLIGHT LEVELING ECU**
   (a) Disconnect the connector.
   (b) Remove the nut and the headlight leveling ECU assembly.





INSTALLATION

1. **INSTALL HEADLIGHT LEVELING ECU**
   (a) Install the headlight leveling ECU with the nut.
   Torque: 7.0 N*m (71 kgf*cm, 62 in.*lbf)
   (b) Connect the connector.
2. **INSTALL INSTRUMENT PANEL FINISH PANEL SUB-ASSEMBLY LOWER (See page IP-29)**
3. **INSTALL COWL SIDE TRIM SUB-ASSEMBLY LH (See page IP-29)**
4. **INSTALL FRONT DOOR SCUFF PLATE LH**
5. **CONNECT CABLE FROM NEGATIVE BATTERY TERMINAL**
6. **PERFORM INITIALIZATION**

TAILLIGHT RELAY

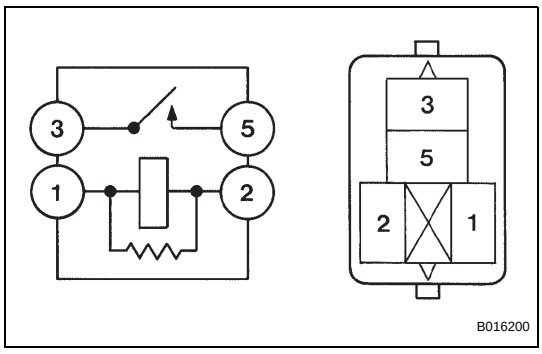
ON-VEHICLE INSPECTION

1. INSPECT TAILLIGHT RELAY

(a) Remove the taillight relay

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

Resistance



Tester Connection	Condition	Specified Condition
3 - 5	Always	10 kΩ or higher
3 - 5	When battery voltage is applied to terminal 1-2	Below 1 Ω

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

FOG LIGHT RELAY

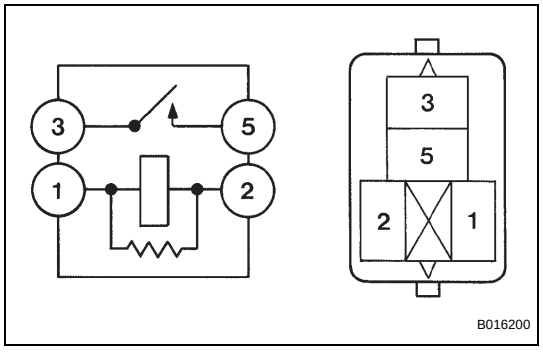
ON-VEHICLE INSPECTION

1. INSPECT FOG LIGHT RELAY

(a) Remove the fog light relay

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

Resistance



Tester Connection	Condition	Specified Condition
3 - 5	Always	10 kΩ or higher
3 - 5	When battery voltage is applied to terminal 1-2	Below 1 Ω

If the result is not as specified, replace the fog light relay.