BODY ELECTRICAL SYSTEM

BE01I-15

PRECAUTION

HINT:

Take care to observe the following precautions when performing inspections or removal and replacement of body electrical related parts.

1. HEADLIGHT SYSTEM

- Halogen bulbs have pressurized gas inside and require special handling. They can burst if scratched or dropped. Hold a bulb only by its plastic or metal case. Don't touch the glass part of a bulb with bare hands.
- When high voltage socket of discharge headlight is touched with the light control switch HEAD, high voltage of 20,000 V is momentarily generated. This might lead to a serious accident.
- Never connect the tester to the high voltage socket of discharge headlight for measurement, as this leads to a serious accident because of high voltage.
- When performing operation related to the discharge headlight, make sure to do it in the place with no water of rain to prevent electric shock, with light control switch OFF, battery terminal removed, connector of light control ECU disconnected.
- When performing operation related to the discharge headlight, make sure to do it after assembling has been completely over and never light up without a bulb installed.
- Do not light up the discharge headlight using another power source except vehicle's.
- When there is a defect on the discharge headlight or any shock has been applied to it, replace the light with a new one.
  Even if the light operates normally, there is a possibility that the fail-safe function works.

2. SRS (SUPPLEMENTAL RESTRAINT SYSTEM)

The LEXUS IS300 is equipped with an SRS (Supplemental Restraint System) such as the driver airbag, front passenger airbag, side airbag, curtain shield airbag. Failure to carry out service operation in the correct sequence could cause the SRS to unexpectedly deploy during servicing, possibly leading to a serious accident. Before servicing (including removal or installation of parts, inspection or replacement), be sure to read the precautionary notices in the RS section.

3. AUDIO SYSTEM

If the negative (-) terminal cable is disconnected from the battery, the preset AM, FM 1 and FM 2 stations stored in memory are erased, so make sure to note the stations and reset them after the negative (-) terminal cable is reconnected to the battery.

4. MOBILE COMMUNICATION SYSTEM

If the vehicle is equipped with a mobile communication system, refer to precautions in the IN section.

TROUBLESHOOTING

BE16S-06

PROBLEM SYMPTOMS TABLE

IGNITION SWITCH AND

This system uses the multiplex communication system, so check diagnosis system of the multiplex communication system before you proceed with troubleshooting.

Symptom	Suspect Area	See page
Ignition switch is not set to each position.	11. Ignition switch 12. Power source circuit	BE-21 -

KEY UNLOCK WARNING SWITCH

This system uses the multiplex communication system, so check diagnosis system of the multiplex communication system before you proceed with troubleshooting.

Symptom	Suspect Area	See page
Key unlock warning system does not operate. (The buzzer sounds when the ignition key is ACC or ON)	1. Ignition Switch 2. Key Unlock Warning Switch 3. Body ECU 4. Combination Meter 5. Wire Harness	BE-21 BE-21 DI-893 BE-90 -

w/o Daytime running light system:

HEADLIGHT AND TAILLIGHT SYSTEM

This system uses the multiplex communication system, so check diagnosis system of the multiplex communication system before you proceed with troubleshooting.

HINT:

To inspect the bulb and light control ECU, replace them with the ones working normally and judge whether they work normally or not.

Symptom	Suspect Area	See page
”Automatic light control system” does not operate.	1. Automatic Light Control Sensor 2. Light Control Switch 3. Door Courtesy Switch 4. Wire Harness 5. Theft Deterrent ECU 6. Body ECU	BE-31 BE-31 BE-58 - DI-776 DI-893
Auto turn-off system does not operate when the driver’s door is opened.	1. Drivers Door Courtesy Switch 2. Body ECU	BE-58 DI-893
Auto turn-off system: Headlight and taillight do not come on.	1. Body ECU 2. Wire Harness	DI-893 -
Auto turn-off system: Headlight and taillight stay on.	1. Body ECU 2. Wire Harness	DI-893 -
Only one headlight comes on.	1. Bulb 2. Light Control Sensor 3. Wire Harness	- BE-31 -
”LO-Beam” does not light (All).	1. Headlight Control Relay 2. Light Control Sensor 3. Wire Harness	BE-31 BE-31 -
”LO-Beam” does not light (One side).	1. Bulb 2. H-LP L-LWR Fuse 3. H-LP R-LWR Fuse 4. Wire Harness	- BE-15 BE-15 -
”HI-Beam” does not light (All).	1. Headlight Dimmer Switch 2. Wire Harness	BE-31 -

”HI-Beam” does not light (One side).	1. Bulb 2. H-LP L-UPR Fuse 3. H-LP R-UPR Fuse 4. Wire Harness	- BE-15 BE-15 -
”Flash” does not light.	1. H-LP L-UPR Fuse 2. H-LP R-UPR Fuse 3. Headlight Dimmer Switch 4. Light Control ECU 5. Wire Harness	BE-15 BE-15 BE-31 - -
”Flash” does not light.	1. Bulb 2. Light Control ECU 3. Wire Harness	- - -
Headlight does not come on.	1. Headlight Control Relay 2. Light Control Switch 3. Light Control ECU 4. Wire Harness	BE-31 BE-31 - -
Headlight does not come on.	1. Bulb 2. Light Control ECU 3. Wire Harness	- - -
Headlight flickers.	1. Bulb 2. Light Control ECU 3. Wire Harness	- - -
Headlight is dark.	1. Bulb 2. Light Control ECU 3. Wire Harness	- - -
Only one taillight comes on.	1. Bulb 2. Wire Harness	- -
Taillight does not come on. (Headlight is normal)	1. TAIL Fuse 2. GAUGE Fuse 3. Taillight Control Relay 4. Light Failure Relay 5. Light Control Switch 6. Wire Harness	BE-15 BE-15 BE-31 BE-31 BE-31 -
Taillight does not come on. (Headlight does not light)	1. Light Control Switch 2. Wire Harness	BE-31 -
Rear combination light does not come on.	1. Light Failure Relay 2. Wire Harness 3. Bulb	BE-31 - -

w/ Daytime running light system:

HEADLIGHT AND TAILLIGHT SYSTEM

This system uses the multiplex communication system, so check diagnosis system of the multiplex communication system before you proceed with troubleshooting.

HINT:

To inspect the bulb and light control ECU, replace them with the ones working normally and judge whether they work normally or not.

Symptom	Suspect Area	See page
”Automatic light control system” does not operate.	1. Automatic Light Control Sensor 2. Light Control Switch 3. Door Courtesy Switch 4. Wire Harness 5. Theft Deterrent ECU 6. Body ECU	BE-31 BE-31 BE-58 - DI-776 DI-893
Auto turn-off system does not operate when the driver’s door is opened.	1. Drivers Door Courtesy Switch 2. Body ECU	BE-58 DI-893
Auto turn-off system: Headlight and taillight do not come on.	1. Body ECU 2. Wire Harness	DI-893 -
Auto turn-off system: Headlight and taillight stay on.	1. Body ECU 2. Wire Harness	DI-893 -
Only one headlight comes on.	1. Daytime Running Light No. 2 Relay 2. Daytime Running Light Main Relay 3. Bulb 4. Light Control ECU 5. Wire Harness 6. Combination Meter	BE-31 BE-31 - - - BE-90
”LO-Beam” does not light (All).	1. Headlight Control Relay 2. Light Control ECU 3. Wire Harness	BE-31 - -
”LO-Beam” does not light (One side).	1. Bulb 2. H-LP L-LWR Fuse 3. H-LP R-LWR Fuse 4. Light Control ECU 5. Wire Harness	- BE-15 BE-15 - -
”HI-Beam” does not light (All).	1. Headlight Dimmer Switch 2. Daytime Running Light Main Relay 3. Wire Harness 4. Combination Meter	BE-31 BE-31 - BE-90
”HI-Beam” does not light (One side).	1. Bulb 2. H-LP L-UPR Fuse 3. H-LP R-UPR Fuse 4. Daytime Running Light No. 2 Relay 5. Wire Harness	- BE-15 BE-15 BE-31 -
”Flash” does not light.	1. Headlight Dimmer Switch 2. Daytime Running Light Main Relay 3. Wire Harness 4. Combination Meter	BE-31 BE-31 - BE-90

Headlight does not come on.	1. Headlight Control Relay 2. Daytime Running Light Main Relay 3. Daytime Running Light No.2 Relay 4. Headlight Dimmer Switch 5. Light Control Switch 6. Wire Harness 7. Light Control ECU 8. Bulb 9. Combination Meter	BE-31 BE-31 BE-31 BE-31 BE-31 - - - BE-90
Headlight does not come on with light control switch in HEAD.	1. Light Control Switch 2. Light Control ECU 3. Wire Harness	BE-31 - -
Headlight does not go out with light control switch in OFF.	1. Headlight Control Relay 2. Light Control ECU 3. Wire Harness	BE-31 - -
Headlight flickers.	1. Bulb 2. Light Control ECU 3. Wire Harness	- - -
Headlight is dark.	1. Bulb 2. Light Control ECU 3. Wire Harness	- - -
Taillight does not come on with light control switch in TAIL.	1. Taillight Control Relay 2. Light Control Switch 3. Wire Harness	BE-31 BE-31 -
Taillight does not go out with light control switch in OFF.	1. Taillight Control Relay 2. Light Control Switch 3. Wire Harness	BE-31 BE-31 -
Headlight does not come on with engine running and light control switch in OFF.	1. ECU-B Fuse 2. GAUGE Fuse 3. Daytime Running Light Main Relay 4. Daytime Running Light No.2 Relay 5. Generator L Terminal 6. Parking Brake Switch 7. Wire Harness 8. Combination Meter	BE-15 BE-15 BE-31 BE-31 BE-90 BE-90 - -

HID type headlight:
HEADLIGHT BEAM LEVEL CONTROL SYSTEM

Symptom	Suspect Area	See page
Beam axis is not controlled. (It is not initialized.) Headlight Beam Level Control System does not operate.	1. ECU-IG Fuse 2. Headlight Beam Level Control Actuator 3. Headlight Beam Level Control ECU 4. Wire Harness Side	BE-15 BE-31 BE-31 -
Beam axis is not controlled. (It is initialized.) Headlight Beam Level Control System does not operate.	1. Height Control Sensor 2. Headlight Beam Level Control ECU 3. Wire Harness Side	- BE-31 -
Controlled angle of head light is unusual. (The angle is controlled.)	1. Height Control Sensor 2. Headlight Beam Level Control ECU 3. Headlights 4. Wire Harness Side	- BE-31 BE-31 -
Beam axis position is not stable during driving.	1. ABS System 2. Headlights 3. Wire Harness	- BE-31 -

FOG LIGHT SYSTEM

This system uses the multiplex communication system, so check diagnosis system of the multiplex communication system before you proceed with troubleshooting.

Symptom	Suspect Area	See page
Front fog light does not light up with light control SW TAIL or HEAD (LO-beam only). (Headlight is normal.)	1. Bulbs 2. FR FOG Fuse 3. Front Fog Light Relay 4. Front Fog Light Switch 5. Wire Harness	- BE-15 BE-48 BE-48 -
Only one light does not light.	1. Bulbs 2. Wire Harness	- -
Rear fog light does not light with light control SW HEAD. (Headlight is normal.)	1. Bulbs 2. ECU-B2 Fuse 3. Rear Fog Light Switch 4. Wire Harness	- BE-15 BE-48 -
Rear fog light does not light with light control SW HEAD. (Headlight does not light.)	1. Inspect Headlight and Taillight System 2. Wire Harness	BE-2 -
Only one light does not light.	1. Bulbs 2. Wire Harness	- -

TURN SIGNAL AND HAZARD WARNING SYSTEM

This system uses the multiplex communication system, so check diagnosis system of the multiplex communication system before you proceed with troubleshooting.

Symptom	Suspect Area	See page
”Hazard” and ”Turn” do not light up.	1. GAUGE Fuse 2. TURN HAZ Fuse 3. Ignition Switch 4. Turn Signal Flasher Relay 5. Wire Harness	BE-15 BE-15 BE-21 BE-53 -
Hazard warning light does not light up. (Turn is normal)	1. A/C Control Panel 2. Wire Harness	AC-79 -
Turn signal does not light up. (Hazard is normal)	1. Turn Signal Switch 2. Wire Harness	BE-53 -
Turn signal does not light up in one direction.	1. Turn Signal Switch 2. Wire Harness	BE-53 -
Only one bulb does not light up.	1. Bulb 2. Wire Harness	- -

INTERIOR LIGHT SYSTEM

This system uses the multiplex communication system, so check diagnosis system of the multiplex communication system before you proceed with troubleshooting.

Symptom	Suspect Area	See page
All the lights do not come ON.	DOME Fuse	BE-15
The driver door courtesy light does not come ON when the driver's door is opened.	1. Driver's Door Courtesy Switch 2. Wire Harness 3. Body ECU	BE-58 - DI-893
The passenger door courtesy light does not come ON when the passenger's door is opened.	1. Passenger's Door Courtesy Switch 2. Wire Harness 3. Body ECU	BE-58 - DI-893
The room light does not come on when the rear-right door is opened.	1. Rear-Right Door Courtesy Switch 2. Wire Harness 3. Body ECU 4. Room Light	BE-58 - DI-893 BE-58

The room light does not come on when the rear-left door is opened.	1. Rear-Left Door Courtesy Switch 2. Wire Harness 3. Body ECU 4. Room Light	BE-58 - DI-893 BE-58
Only one of the bulbs comes ON.	Bulb	-
The illumination does not fade out when all the doors are closed.	1. Courtesy Switch 2. Wire Harness 3. Body ECU	BE-58 - DI-893
The illumination does not fade out immediately when the ignition switch is turned to ACC or ON within 15 seconds after all the doors are closed.	1. Ignition Switch 2. RADIO NO.2 Fuse 3. GAUGE Fuse 4. Wire Harness 5. Body ECU	BE-21 BE-15 BE-15 - DI-893
The illumination does not fade out immediately when all the doors are locked within 15 seconds after they are closed.	1. Door Unlock Detection Switch 2. Wire Harness 3. Body ECU	BE-121 - DI-893
Interior light does not light up. (in front personal light)	1. Bulb 2. Front Personal Light 3. Wire Harness	- BE-58 -
Front personal light does not light up.	1. Bulb 2. Front Personal Light 3. Wire Harness	- BE-58 -
Rear personal light does not light up.	1. Bulb 2. Rear Personal Light 3. Wire Harness	- BE-58 -
Vanity light does not light up.	1. Bulb 2. Vanity Light 3. Wire Harness	- BE-58 -
Luggage compartment light does not light up.	1. Bulb 2. Luggage Compartment Door Courtesy Switch 3. Wire Harness	- BE-58 -
Courtesy light does not light up.	1. Bulb 2. Door Courtesy Switch 3. Wire Harness 4. Body ECU	- BE-58 - DI-893

BACK-UP LIGHT SYSTEM

Symptom	Suspect Area	See page
Back-Up Light does not light up.	1. GAUGE Fuse 2. Ignition Switch 3. Wire Harness 4. Bulb	BE-15 BE-21 - -
Back-Up Light remains always on.	1. Park/Neutral Position Switch (A/T) Back-up Light Switch (M/T) 2. Wire Harness	DI-371 BE-65 -
Only one light does not light up.	1. Bulb 2. Wire Harness	- -

STOP LIGHT SYSTEM

Symptom	Suspect Area	See page
Stop light does not light up.	1. STOP Fuse 2. Stop Light Switch 3. Light Failure Relay 4. Wire Harness	BE-15 BE-68 BE-31 -
Stop light always lights up.	1. Stop Light Switch 2. Wire Harness	BE-68 -
Only one light always lights up.	Wire Harness	-
Only one light does not light up.	1. Bulb 2. Wire Harness	- -

HEADLIGHT CLEANER SYSTEM

Symptom	Suspect Area	See page
”Headlight Cleaner System” does not operate (All)	1. H-LP CLN Fuse 2. WASHER Fuse 3. Ignition Switch 4. Headlight Cleaner Switch 5. Headlight Cleaner Relay 6. Headlight Cleaner Motor 7. Headlight Cleaner Nozzle and Hose 8. Wire Harness	BE-15 BE-15 BE-21 BE-70 BE-70 BE-70 - -
Washer fluid does not spray.	Headlight Cleaner Nozzle and Hose	-

WIPER AND WASHER SYSTEM

Symptom	Suspect Area	See page
Wipers and washer do not operate.	1. WIP Fuse 2. Wiper Switch 3. Wiper Motor 4. Wire Harness	BE-15 BE-75 BE-75 -
Wipers do not operate in LO, HI or MIST.	1. Wiper Switch 2. Wiper Motor 3. Wire Harness	BE-75 BE-75 -
Wipers do not operate in INT.	1. Wiper Switch 2. Wiper Motor 3. Wire Harness	BE-75 BE-75 -
Washer motor does not operate.	1. WASHER Fuse 2. Washer Switch 3. Washer Motor 4. Wire Harness	BE-15 BE-75 BE-75 -
Wipers do not operate when washer switch ON.	1. WASHER Fuse 2. Washer Switch 3. Wiper Motor 4. Wire Harness	BE-15 BE-75 BE-75 -
Washer fluid does not operate.	Washer Hose and Nozzle	-
● When wiper switch is in HI position, the wiper blade is in contact with the body. ● When the wiper switch is OFF, the wiper blade does not retract or the retract position is wrong.	1. Wiper Motor *1 2. Wire harness *1	BE-75 -
Rear wiper does not operate.	1. WIPER Fuse 2. Rear Wiper Motor 3. Rear Wiper Switch 4. Wire Harness	- BE-75 BE-75 -

Rear wiper does not operate in INT or ON position.	1. Rear Wiper Switch 2. Wire Harness	BE-75 -
Rear wiper does not return to OFF position.	1. Rear Wiper Motor 2. Wire Harness	BE-75 -
Rear Washer Motor does not operate.	1. Rear Washer Motor 2. Rear Washer Switch 3. Wire Harness	BE-75 BE-75 -

*1: Inspect wiper arm and blade set positions.

COMBINATION METER

- This system uses the multiplex communication system, so check diagnosis system of the multiplex communication system before you proceed with troubleshooting.
- Refer to DI section for warning light or indicator light not described in the table below.

Symptom	Suspect Area	See page
Driver seat belt warning light does not light up.	1. Bulb 2. Driver Buckle Switch CIrcuit 3. Meter Circuit Plate 4. Wire Harness 5. Body ECU	- BE-90 BE-90 - DI-893
Passenger seat belt warning light does not light up. (in A/C control panel)	1. Passenger Buckle Switch CIrcuit 2. Occupant Detection Sensor 3. A/C Control Panel 4. Wire Harness 5. A/C ECU	BE-90 BE-90 DI-1009 - DI-1009
SRS warning light does not light up.	1. MPX-B Fuse 2. SRS-B Fuse 3. Bulb 4. Meter Circuit Plate 5. Wire Harness 6. Airbag Sensor Assembly	BE-15 BE-15 - BE-90 - DI-605
Hi-beam indicator light does not light up.	1. Bulb 2. Meter Circuit Plate 3. Wire Harness 4. Headlight System	- BE-90 - BE-31
Turn indicator light does not light up.	1. Bulb 2. Meter Circuit Plate 3. Wire Harness 4. Turn Signal and Hazard Warning System	- BE-90 - BE-53
ABS warning light does not light up.	1. GAUGE Fuse 2. Bulb 3. Meter Circuit Plate 4. Wire Harness 5. ABS ECU	BE-15 - BE-90 - DI-435
TRAC warning light does not light up.	1. GAUGE Fuse 2. Bulb 3. Meter Circuit Plate 4. Wire Harness 5. ABS ECU	BE-15 - BE-90 - DI-435

Check engine warning light does not light up.	1. Bulb 2. Meter Circuit Plate 3. Wire Harness 4. ECM	- BE-90 - DI-1
Fuel level warning light does not light up.	1. Bulb 2. Fuel Level Warning Switch 3. Meter Circuit Plate 4. Wire Harness	- BE-90 BE-90 -

DEFOGGER SYSTEM

This system uses the multiplex communication system, so check diagnosis system of the multiplex communication system before you proceed with troubleshooting.

Symptom	Suspect Area	See page
Rear window defogger does not operate.	1. HTR Fuse 2. DEF M-Fuse 3. Defogger Relay Circuit 4. Defogger Switch (in A/C Panel Switch) 5. Defogger Wire 6. Wire Harness 7. Body ECU 8. Noise Filter 9. A/C ECU	BE-15 BE-15 DI-940 DI-1009 BE-102 - DI-893 - DI-1009
Mirror heater does not operate.	1. MIR-HTR Fuse (Passenger Side J/B) 2. Mirror Heater Relay 3. Mirror Heater 4. Wire Harness	BE-15 BE-102 BE-102 -

POWER WINDOW CONTROL SYSTEM

This system uses the multiplex communication system, so check diagnosis system of the multiplex communication system before you proceed with troubleshooting.

Symptom	Suspect Area	See page
All the power windows do not operate. (Power Door Lock System is normal.)	1. Power Window Master Switch 2. Wire Harness 3. Body ECU	BE-115 - DI-893
Only the driver's window does not operate.	1. Power Window Master Switch 2. Power Window Switch 3. Power Window Motor 4. Wire Harness	BE-115 BE-115 BE-115 -
"Window lock function" does not operate.	Power Window Master Switch	BE-115
Power window control system abnormal operation.	TROUBLESHOOTING	BE-104

POWER DOOR LOCK CONTROL SYSTEM

This system uses the multiplex communication system, so check diagnosis system of the multiplex communication system before you proceed with troubleshooting.

Symptom	Suspect Area	See page
All the doors cannot be locked or unlocked. (Power Window Control System is normal.)	1. Door Lock Control Switch 2. Wire Harness 3. Body ECU	BE-121 - DI-893
Only one side door lock control does not operate.	1. Door Lock Motor 2. Wire Harness	BE-121 -
Door key related function does not operate.	1. Door Key Lock and Unlock Switch 2. Wire Harness 3. Body ECU	BE-121 - DI-893

Key confinement prevention function does not operate.	1. Key Unlock Warning Switch 2. Door Courtesy Switch 3. Wire Harness 4. Body ECU	BE-21 BE-58 - DI-893
Luggage compartment door opener function does not operate.	1. Luggage Compartment Door Opener Switch 2. Luggage Compartment Door Opener Motor 3. Wire Harness 4. Body ECU	BE-121 BE-121 - DI-893

THEFT DETERRENT SYSTEM

- This system uses the multiplex communication system, so check diagnosis system of the multiplex communication system before you proceed with troubleshooting.
- Refer to DI section for warning light or indicator light not described in the table below.

Symptom	Suspect Area	See page
The system cannot be set.	1. Indicator Light 2. Key Unlock Warning Switch 3. Door Unlock Detection Switch 4. Engine Hood Courtesy Switch 5. Luggage Compartment Door Courtesy Switch 6. Wire Harness 7. Theft Deterrent ECU	BE-127 BE-21 BE-121 BE-58 BE-58 - DI-776
The system cannot be canceled when the ignition switch is turned to ON with key.	1. Key Unlock Warning Switch 2. Ignition Switch 3. RAD NO. 2 Fuse 4. Wire Harness 5. Theft Deterrent ECU	BE-21 BE-21 BE-15 - DI-776
The system cannot be canceled when the luggage compartment door is unlocked with key.	1. Luggage Compartment Door Courtesy Switch 2. Wire Harness 3. Theft Deterrent ECU	BE-58 - DI-776
The system does not operate when the engine hood is opened.	1. Engine Hood Courtesy Switch 2. Wire Harness 3. Theft Deterrent ECU	BE-58 - DI-776
The system does not operate when the ignition switch is turned to ACC without using a key or transmitter.	1. Ignition Switch 2. Key Unlock Warning Switch 3. Transmitter 4. Wire Harness 5. Theft Deterrent ECU	BE-21 BE-21 BE-136 - DI-776
Some of the system does not operate. (Headlight does not light up.)	1. Headlight System 2. Wire Harness 3. Theft Deterrent ECU	BE-31 - DI-776
Some of the system does not operate. (Taillight does not light up.)	1. Taillight System 2. Wire Harness 3. Theft Deterrent ECU	BE-31 - DI-776
Some of the system does not operate. (Self power siren or Horn does not sound.)	1. HORN Fuse 2. Self Power Siren 3. Horn 4. Horn Relay 5. Wire Harness 6. Theft Deterrent ECU	BE-15 BE-127 BE-233 BE-233 - DI-776
While the warning is given, the system cannot be canceled by unlocking the door with key or transmitter.	1. Door Key Lock and Unlock Switch 2. Wire Harness 3. Theft Deterrent ECU	BE-121 - DI-776

While the warning is given, the system cannot be canceled by turning the ignition switch to ACC or ON with key.	1. Ignition Switch 2. Key Unlock Warning Switch 3. RAD NO. 2 Fuse 4. ECU-IG Fuse 5. Wire Harness 6. Theft Deterrent ECU	BE-21 BE-21 BE-15 BE-15 - DI-776
The system operates for more than 30 seconds.	Theft Deterrent ECU	DI-776

WIRELESS DOOR LOCK CONTROL SYSTEM

This system uses the multiplex communication system, so check diagnosis system of the multiplex communication system before you proceed with troubleshooting.

HINT:

- Troubleshooting of the wireless door lock control system is based on the premise that the door lock control system is operating normally. Accordingly, before troubleshooting the wireless door lock control system, first make certain that the door lock control system is operating normally.
- If the trouble still reappears even though there are no abnormalities in any of the other circuits, then check and replace the Wireless Door Lock Control Receiver as the last step.

Symptom	Suspect Area	See page
All functions of wireless door lock control system do not operate.	1. Transmitter 2. Wireless Door Lock Control Receiver 3. Wire Harness 4. Body ECU	BE-136 BE-136 - DI-893

SLIDING ROOF SYSTEM:

HINT:

The sliding roof system must be initialized after any of the following is done:

- The battery is disconnected.
- The S/ROOF fuse is replaced.
- The sliding roof assembly (sliding roof ECU) is replaced.
- The sliding roof is removed and reinstalled or replaced.

Initialize the sliding roof system as follows:

- Using the tilt switch, tilt the roof fully upward, and then fully downward.
- Using the slide switch, fully open the roof, and then fully close it.

Symptom	Suspect Area	See page
Sliding roof system does not operate.	1. S/ROOF Fuse 2. ECU-IG Fuse 3. Front Personal Light (Sliding Roof Switch) 4. Sliding Roof Control Assembly 5. Wire Harness	BE-15 BE-15 BE-145 BE-145 -
Sliding roof system stops operation halfway. (Sliding roof reverses during close (down) operation.)	1. Foreign object between sliding roof rail and glass 2. Incorrect sliding roof adjustment 3. Sliding Roof Control Assembly	- BO-126 BE-145
Only "Key-off Sliding Roof Operation*" does not operate.	1. Drivers Door Courtesy Switch 2. Sliding Roof Control Assembly 3. Body ECU 4. Wire Harness	BE-58 BE-145 DI-893 -

*: The sliding roof can be operated for approximately 45 seconds, after the ignition switch is turned from ON to OFF with all doors closed. However, if the driver side door is opened during this time, the operation is canceled.

POWER SEAT CONTROL SYSTEM

Symptom	Suspect Area	See page
Driver's seat does not operate.	1. P/SEAT Fuse 2. Power Seat Switch 3. Wire Harness	BE-15 BE-151 -
"Slide operation" does not operate.	1. Power Seat Switch 2. Wire Harness 3. Slide Motor	BE-151 - BE-151
"Front Vertical Operation" does not operate.	1. Power Seat Switch 2. Wire Harness 3. Front Vertical Motor	BE-151 - BE-151
"Lifter Operation" does not operate.	1. Power Seat Switch 2. Wire Harness 3. Lifter Motor	BE-151 - BE-151
"Reclining Operation" does not operate.	1. Power Seat Switch 2. Wire Harness 3. Reclining Motor	BE-151 - BE-151

(D): Driver's Seat
(P): Passenger's Seat

POWER MIRROR CONTROL SYSTEM

This system uses the multiplex communication system, so check diagnosis system of the multiplex communication system before you proceed with troubleshooting.

Symptom	Suspect Area	See page
Both right and left mirrors do not operate.	1. Mirror Switch 2. Wire Harness	BE-159 -
Only one side of mirror does not operate.	1. Mirror Motor 2. Wire Harness	BE-159 -

SEAT HEATER SYSTEM

Symptom	Suspect Area	See page
Driver's seat heater does not operate.	1. SEAT HTR Fuse 2. Seat Heater Switch (D, P) 3. Seat Heater 4. Wire Harness	BE-15 BE-165 BE-165 -
Passenger's seat heater does not operate.	1. SEAT HTR Fuse 2. Seat Heater Switch (D, P) 3. Seat Heater 4. Wire Harness	BE-15 BE-165 BE-165 -
Seat heater temperature is too hot.	Seat Heater	BE-165

AUDIO SYSTEM

Symptom	Suspect Area	See page
Audio system abnormal operation.	TROUBLESHOOTING	BE-179

CLOCK SYSTEM (in A/C Control Panel)

Symptom	Suspect Area	See page
Passenger seat belt warning system does not light up.	TROUBLESHOOTING NO. 1	BE-210
Clock will not operate.	TROUBLESHOOTING NO. 1	BE-210
Clock loses or gains time.	TROUBLESHOOTING NO. 2	BE-210

ENGINE IMMOBILIZER SYSTEM

Symptom	Suspect Area	See page
Engine immobilizer system does not operate.	See DIAGNOSIS SYSTEM	DI-849

HORN SYSTEM

Symptom	Suspect Area	See page
Horn system does not operate.	1. HORN Fuse 2. Horn Relay 3. Horn Switch 4. Horn 5. Wire Harness	BE-15 BE-233 BE-233 BE-233 -
Horns blow all the time.	1. Horn Relay 2. Horn Switch 3. Wire Harness	BE-233 BE-233 -
One horn operates but the other horn does not operate.	1. Horn 2. Wire Harness	BE-233 -
Horns operate abnormally.	1. Horn Relay 2. Horn 3. Wire Harness	BE-233 BE-233 -

GARAGE DOOR OPENER SYSTEM

Symptom	Suspect Area	See page
The equipment of which code has been registered does not operate.	1. Garage Door Opener 2. Wire Harness 3. *	BE-219 - -
LED does not light up. (Even though either switch is pressed.)	1. Garage Door Opener 2. Wire Harness	BE-219 -
LED does not light up. (Only one switch is pressed.)	Garage Door Opener	BE-219

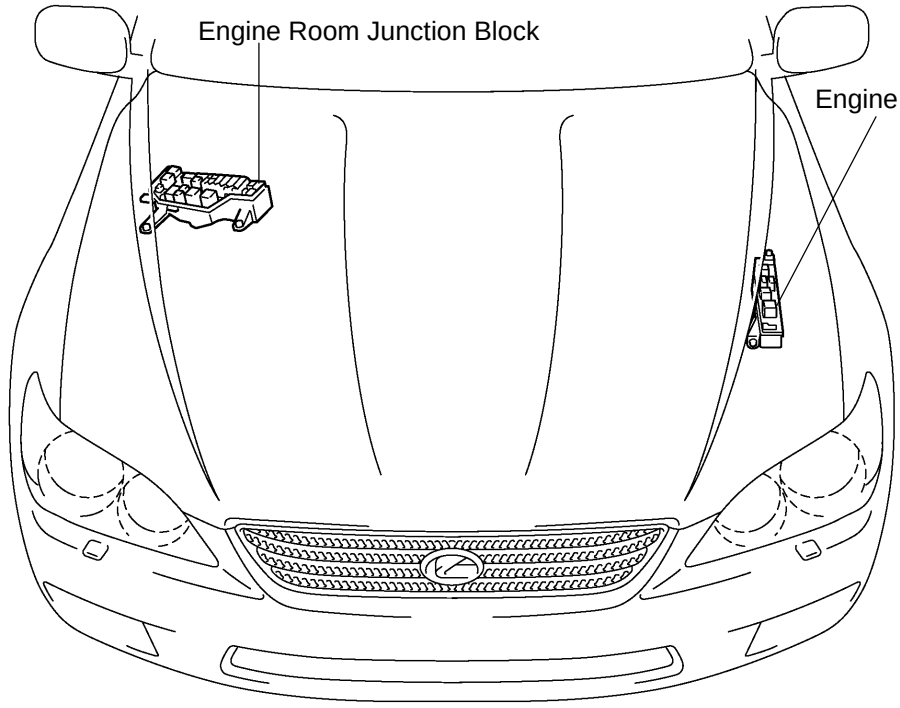
* As the GARAGE DOOR OPENER on the vehicle side seems to be normal, check the OPENER on the equipment side, of which code has been registered.

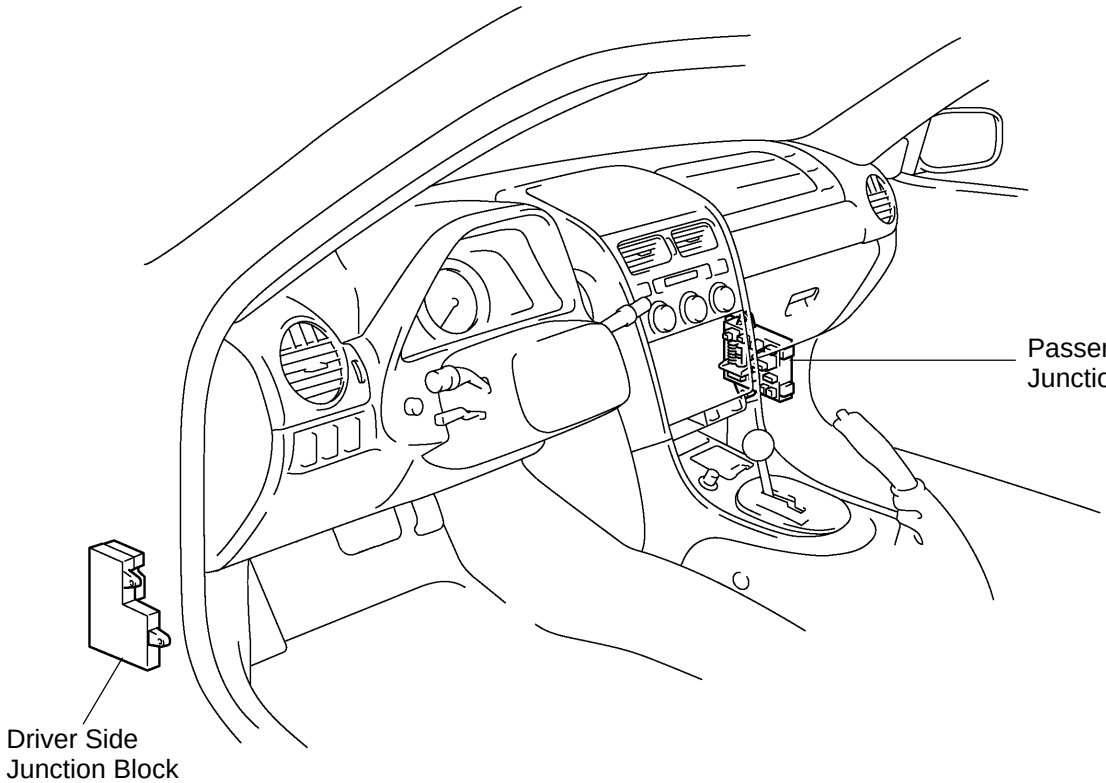
POWER SOURCE

LOCATION

BE1WP-04

Power Source

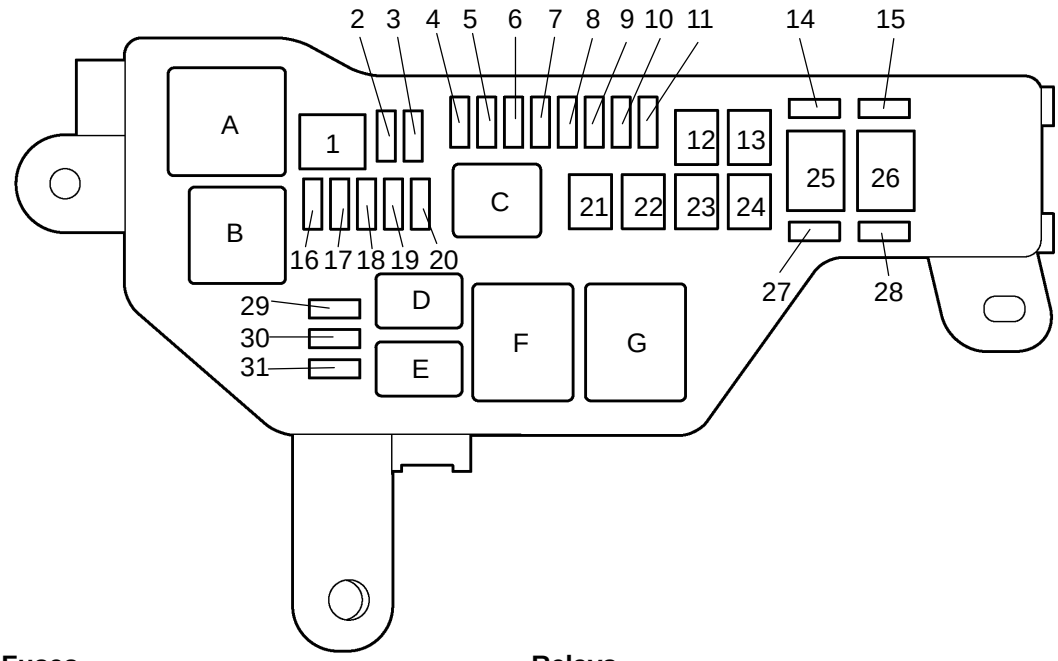




C

I27323

● **Engine Room Junction Block**



Fuses

1. MAIN FL 40A
2. ECU-B1 20A
3. -
4. ALT-S 7.5A
5. ETCS 15A
6. AM2 20A
7. HORN 10A
8. -
9. RADIO NO. 1 20A
10. TURN-HAZ 15A
11. EFI 25A
12. P/SEAT 30A
13. H-LP CLN 30A
14. SPARE
15. SPARE
16. DRL NO. 2 7.5A
17. DRL NO. 1 7.5A
18. H-LP L LWR 15A
19. H-LP R LWR 15A
20. ABS2 7.5A
21. -
22. -
23. CDS FAN 30A
24. RDI FAN 30A
25. ALT 120A
26. ABS1 60A
27. SPARE
28. SPARE
29. H-LP L UPR 10A
30. H-LP R UPR 10A
31. -

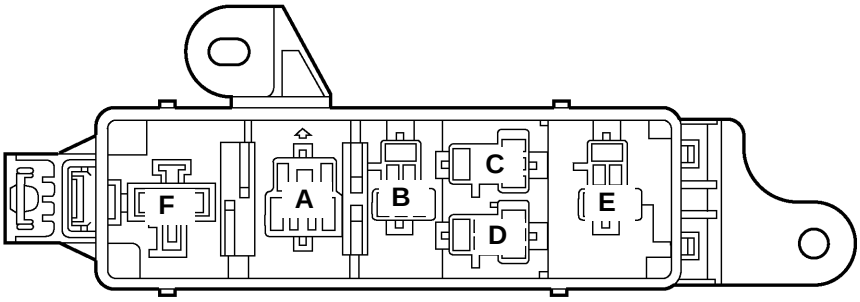
Relays

A. HEAD LP Relay
B. Starter relay
C. Circuit Opening Relay
D. Horn Relay
E. EFI Relay
F. ABS MTR Relay
G. ABS SOL Relay

N

I11570

● **Engine Room Relay Block**



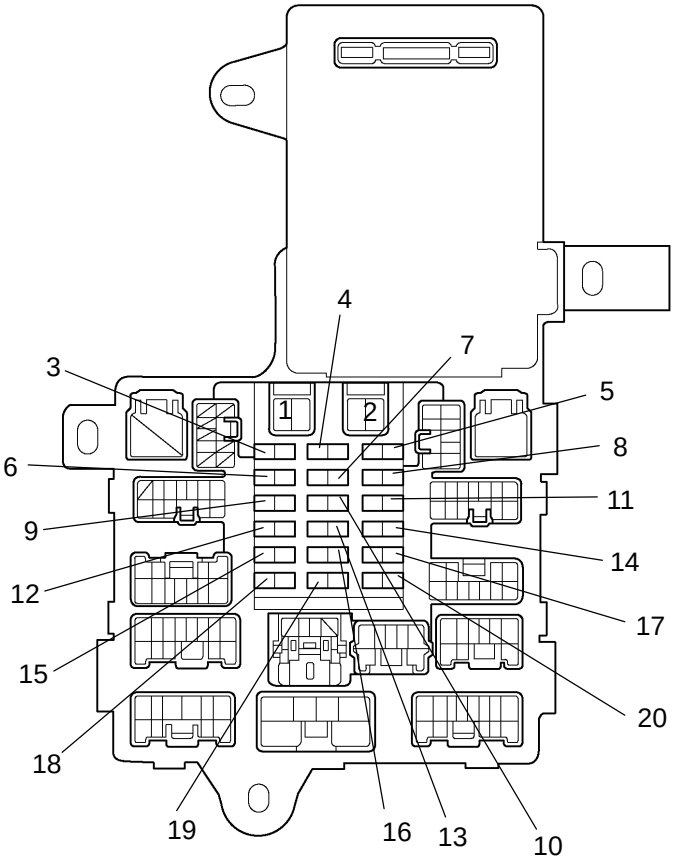
Relays

A. DIMMER Relay
B. A/C COMP Relay
C. FAN NO.3 Relay
D. FAN NO.2 Relay
E. FAN NO.1 Relay
F. FUEL PMP Relay

C

I23236

● **Driver Side Junction Block**

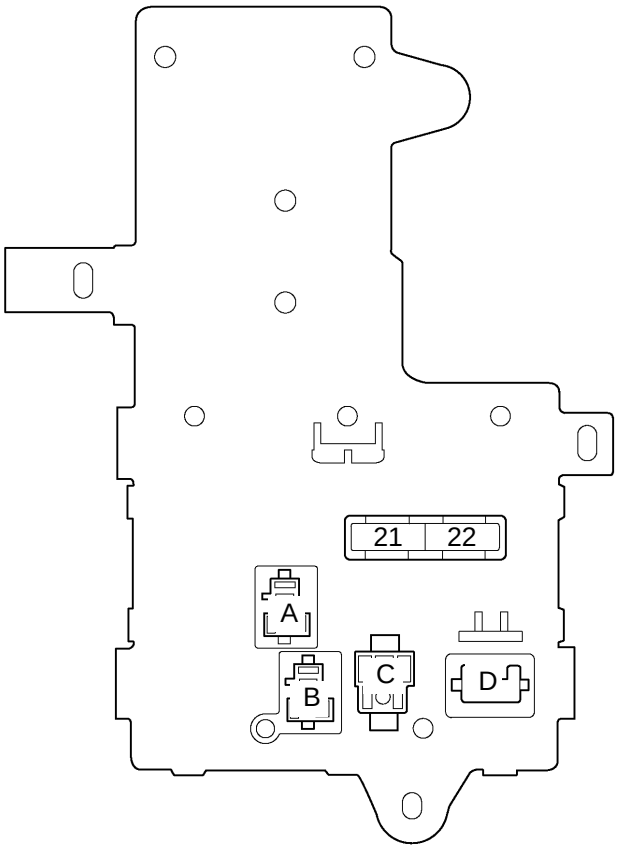


Fuses

1. RR DEF 40A
2. AM1 40A
3. D FR P/W 20A
4. TAIL 10A
5. GAUGE 10A
6. DOOR 20A
7. PANEL 7.5A
8. WASHER 15A
9. STARTER 7.5A
10. FR DEF 20A
11. A/C 10A
12. SEAT HTR 15A
13. CIG 15A
14. S/ROOF 30A
15. ECU-IG 10A
16. SRS-ACC 10A
17. STOP 15A
18. WIPER 25A
19. RADIO NO.2 10A
20. -

Condenser

21. DEF CDS
22. DEF CDS



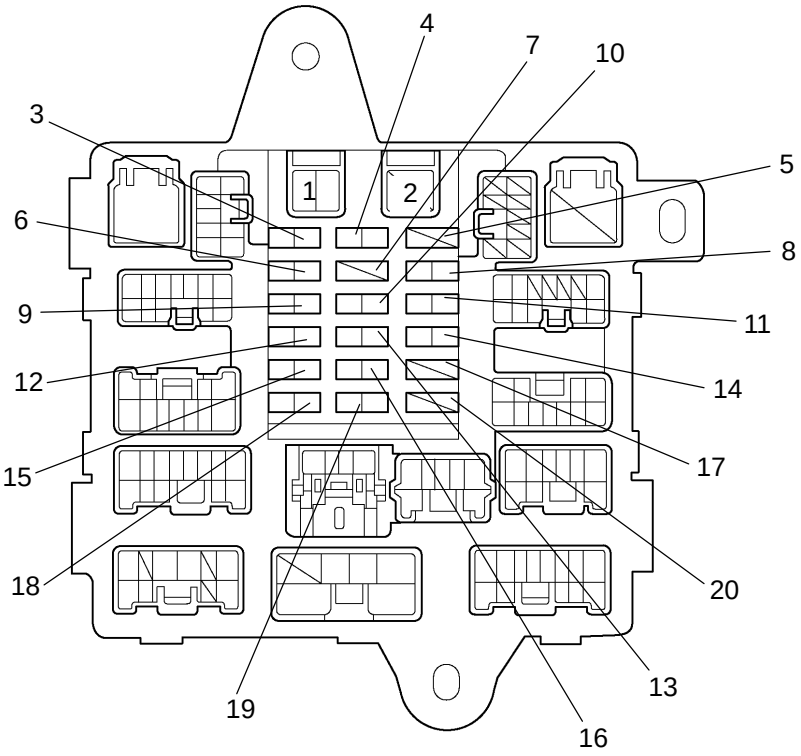
Relays

A. Deicer Relay
B. TAIL Relay
C. RR DEF Relay
D. FLSH Relay

N

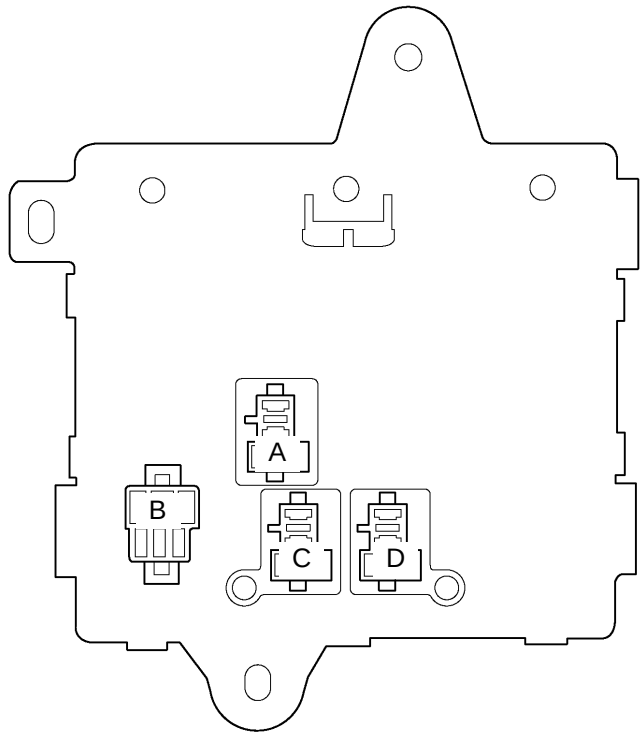
I11547

● **Passenger Side Junction Block**



Fuses

1. HEATER 40A
2. -
3. DOOR DL 15A
4. DOME 7.5A
5. -
6. FR FOG 15A
7. -
8. P FR P/W 20A
9. PWR OUTLET 15A
10. ECU-B2 7.5A
11. D RR P/W 20A
12. MIR HIR 15A
13. MPX-B 10A
14. P RR P/W 20A
15. SRS-B 7.5A
16. TV 7.5A
17. -
18. OBD 7.5A
19. IGN 7.5A
20.-



Relays

A. FR FOG Relay
B. HTR Relay
C. MIR HTR Relay
D. P/W Relay

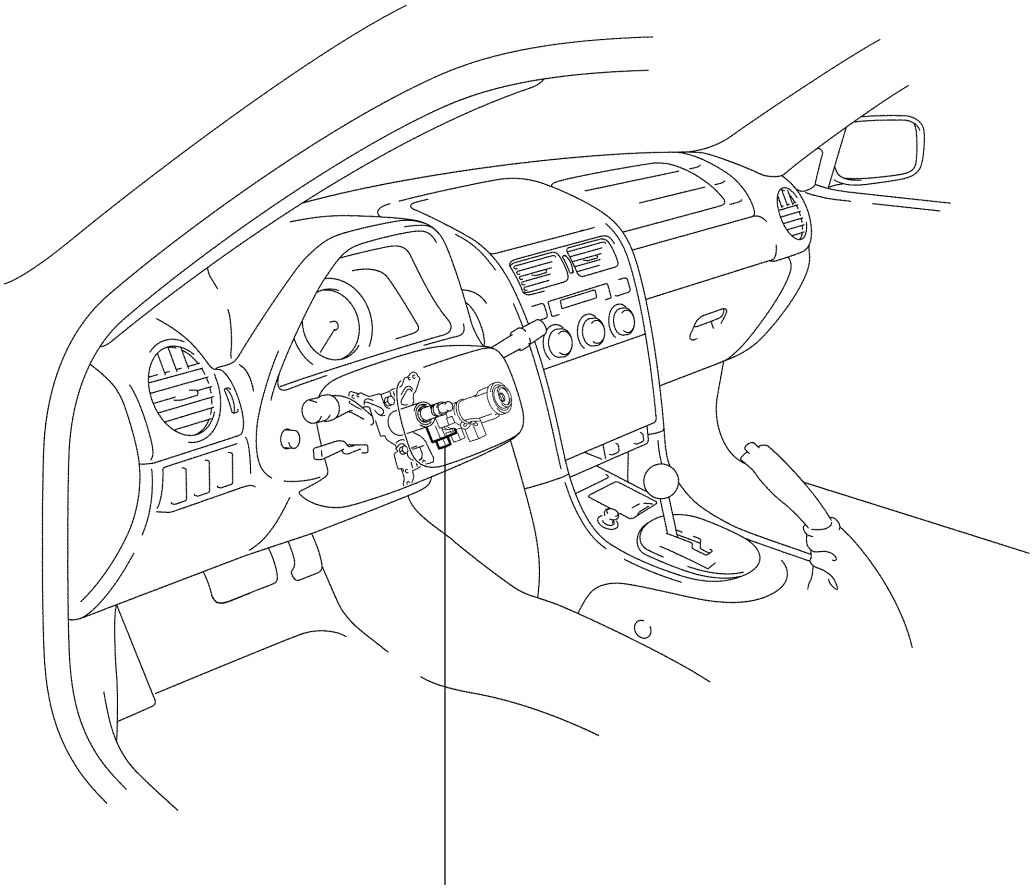
N

I11548

IGNITION SWITCH AND KEY UNLOCK WARNING SWITCH

BE01L-18

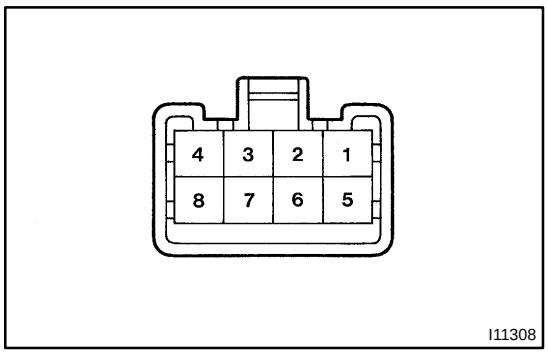
LOCATION



Ignition Switch and
Key Unlock Warning Switch

I27324

BE15W-04

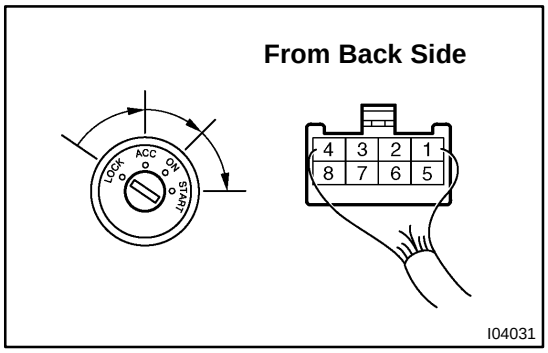


INSPECTION

1. INSPECT IGNITION SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
LOCK	-	No continuity
ACC	2 - 3	Continuity
ON	2 - 3 - 4 6 - 7	Continuity
START	1 - 2 - 4 6 - 7 - 8	Continuity

If continuity is not as specified, replace the switch.

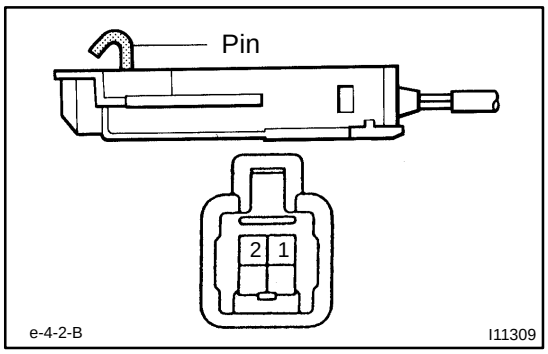


2. INSPECT IGNITION SWITCH CIRCUIT

Connect the switch connector and inspect the connector on wire harness side from the back side, as shown.

Tester connection	Condition	Specified condition
2 - Ground	Always	Battery Positive Voltage
3 - Ground	Ignition switch ACC or ON	Battery Positive Voltage
4 - Ground	Ignition switch ON	Battery Positive Voltage
6 - Ground	Ignition switch ON or START	Battery Positive Voltage
7 - Ground	Always	Battery Positive Voltage
8 - Ground	Ignition switch START	Battery Positive Voltage

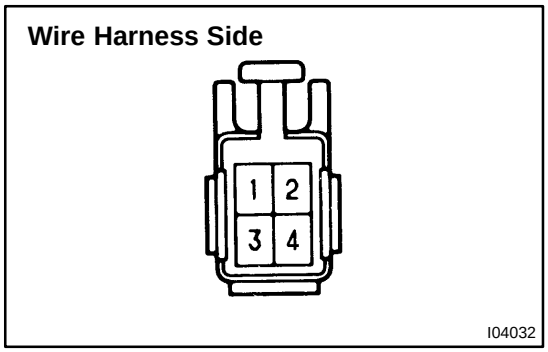
If circuit is not as specified, inspect the circuits connected to other parts.



3. INSPECT KEY UNLOCK WARNING SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
OFF (Key removed)	1 - 2	No continuity
ON (Key set)	1 - 2	Continuity

If continuity is not as specified, replace the switch.



4. INSPECT KEY UNLOCK WARNING SWITCH CIRCUIT (See page DI-915)

Connect the switch connector and inspect the connector on wire harness side from the back side, as shown.

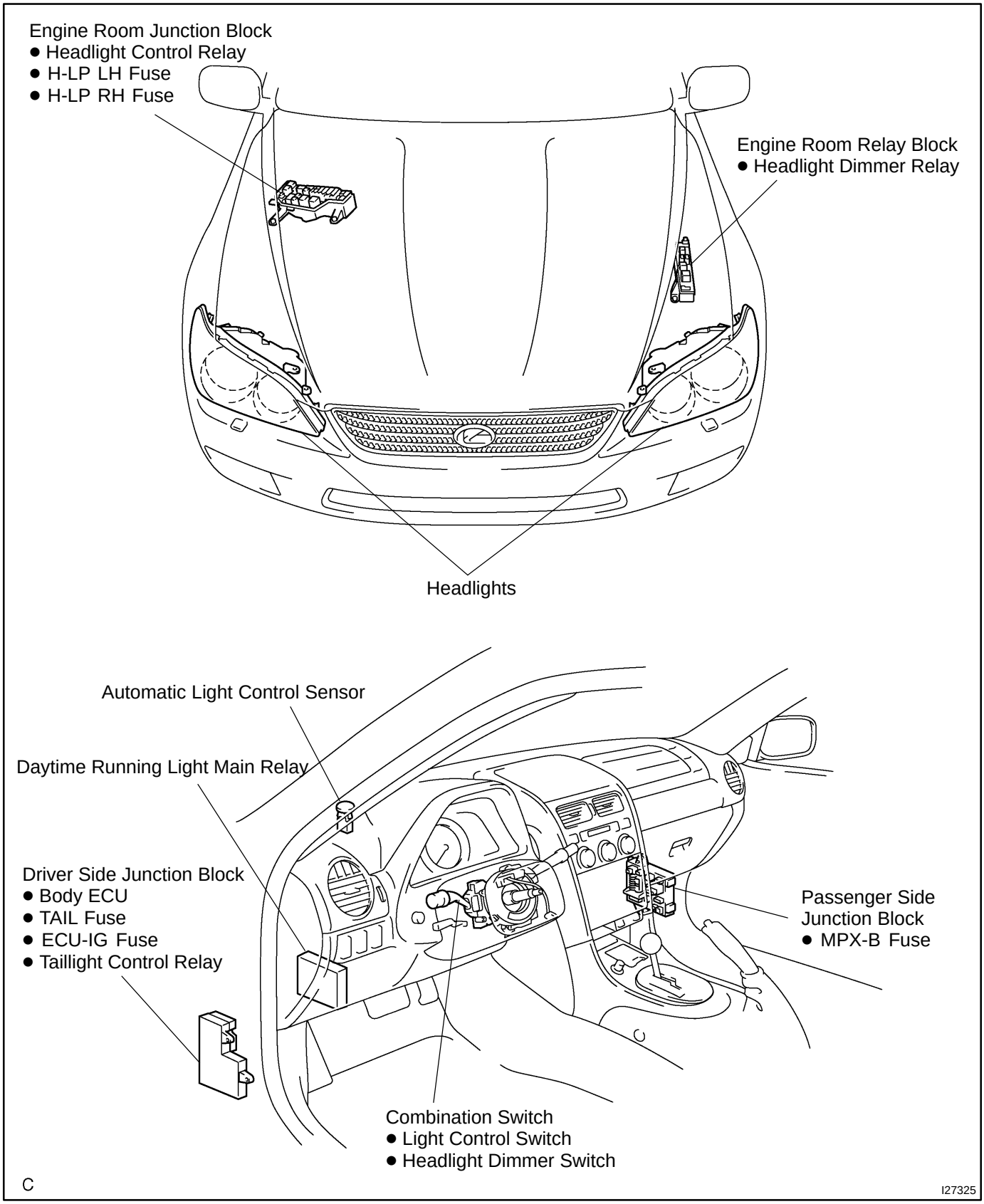
Tester connection	Condition	Specified condition
1 - Ground	Always	Continuity

If circuit is not as specified, inspect the circuits connected to other parts.

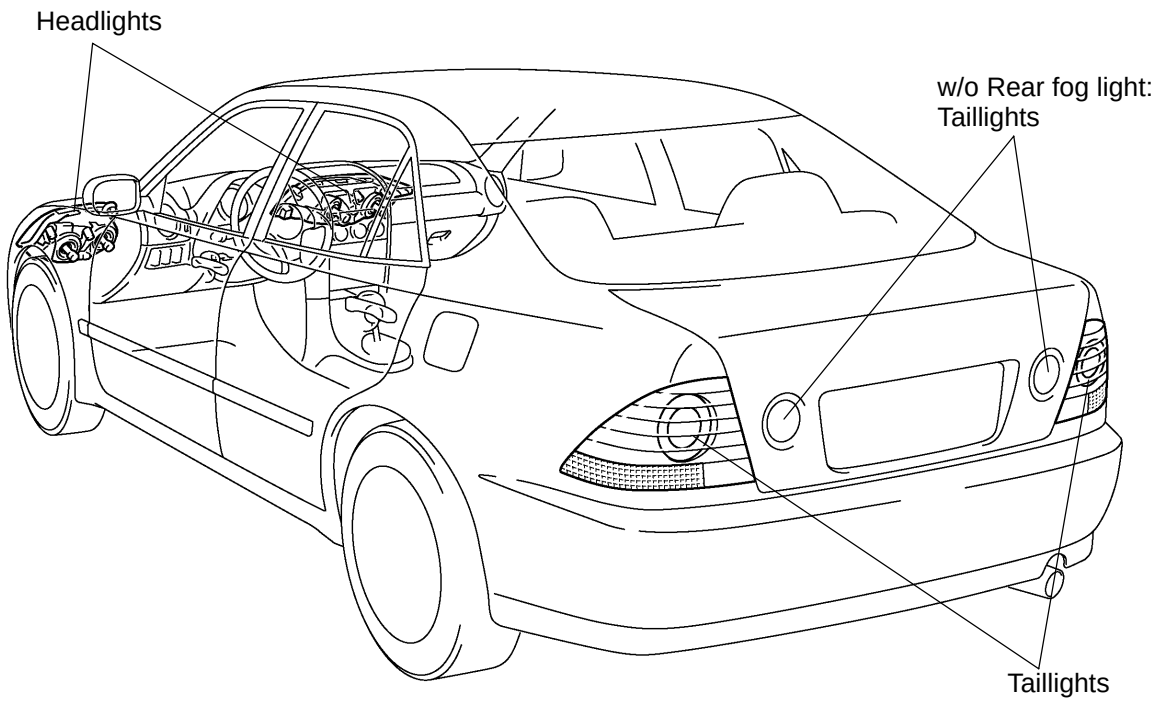
HEADLIGHT AND TAILLIGHT SYSTEM

BE29M-02

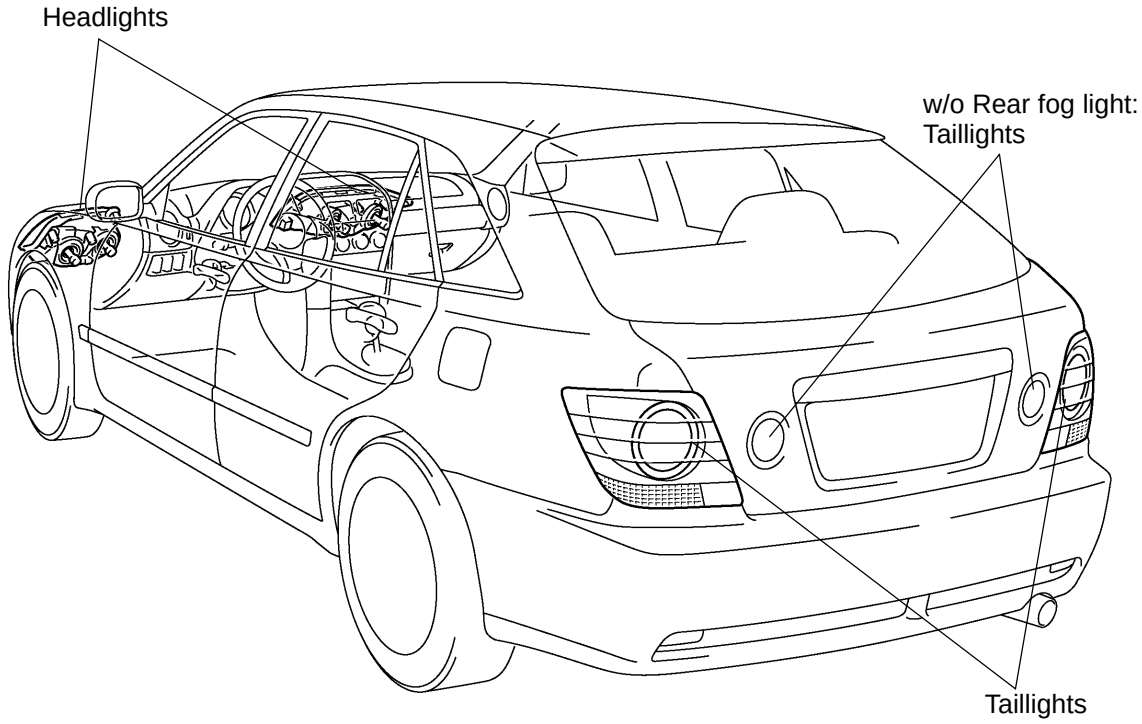
LOCATION



Sedan:



Wagon:

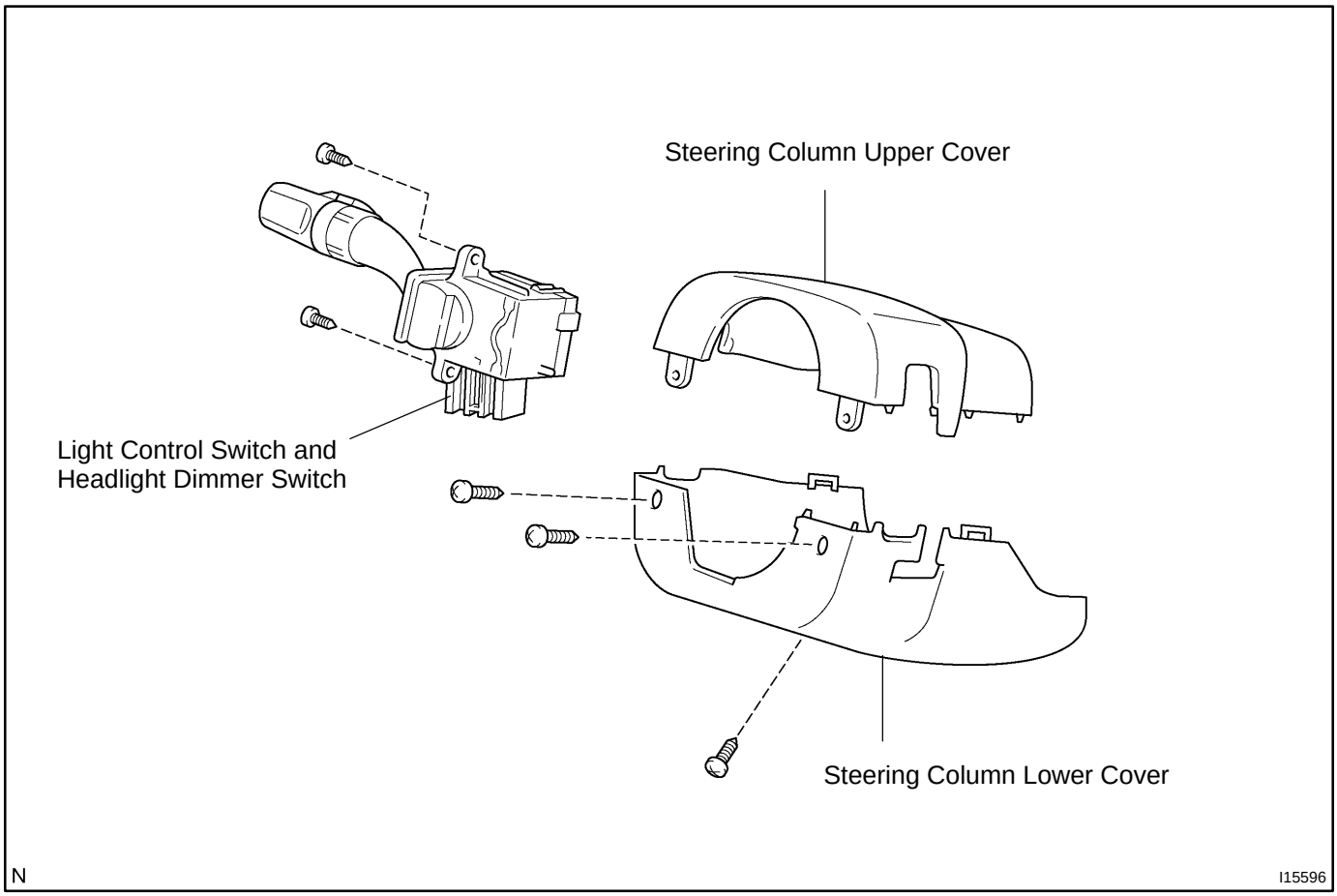


C

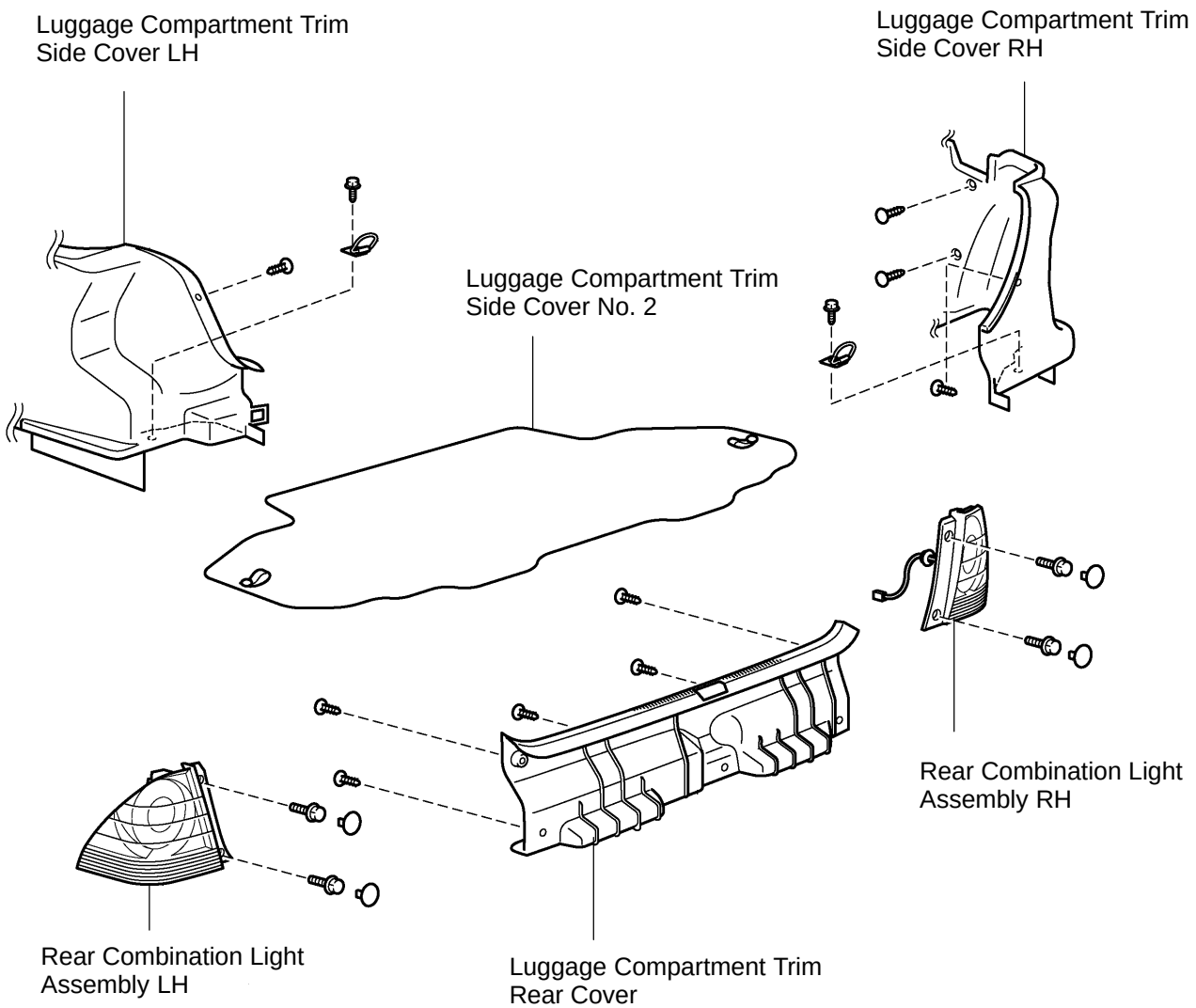
I23132

BE29N-02

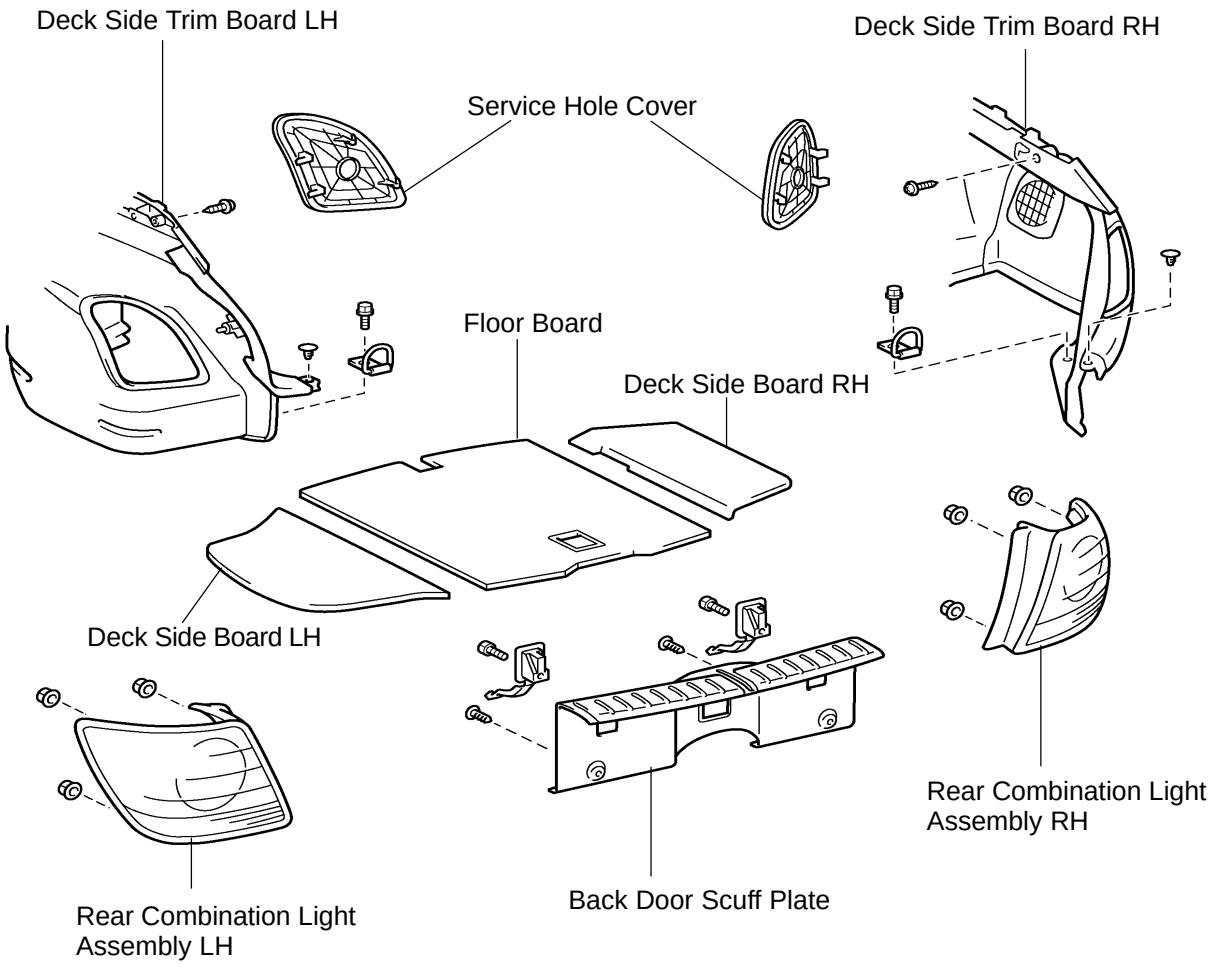
COMPONENTS



Sedan:


Luggage Compartment Trim Side Cover LH
Luggage Compartment Trim Side Cover RH
Luggage Compartment Trim Side Cover No. 2
Rear Combination Light Assembly RH
Rear Combination Light Assembly LH
Luggage Compartment Trim Rear Cover
H
I11324

Wagon:

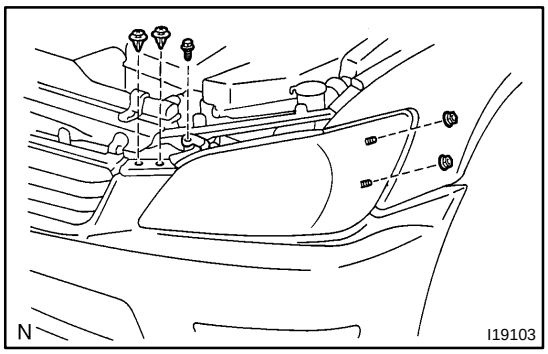


C

I23133

BE29O-02

REMOVAL

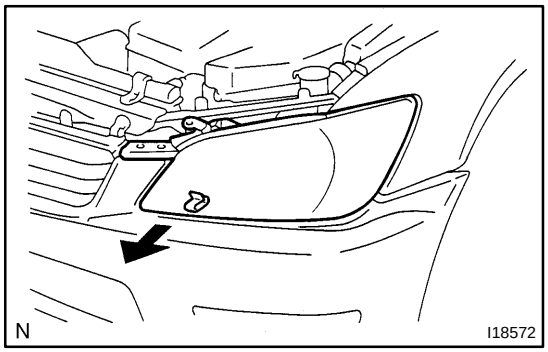


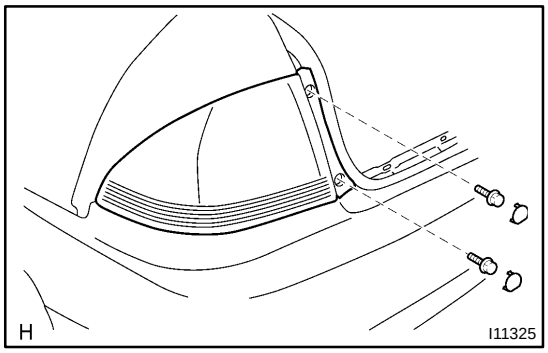
1. REMOVE HEADLIGHT

HINT:

Follow the same procedure for RH as for LH.

(a) Remove a part of LH front fender liner.
(b) Remove a part of front bumper cover.
(c) Remove the bolt, 2 nuts and 2 clips.
(d) Lift up the front bumper and pull the headlight assembly towards the front of the vehicle, and disconnect the engagement of the headlight assembly.
(e) Install LH headlight assembly.
(f) Install a part of front bumper cover.
(g) Install a part of front fender liner.
(h) Inspect and adjust optical axis of headlight (See page BE-38).



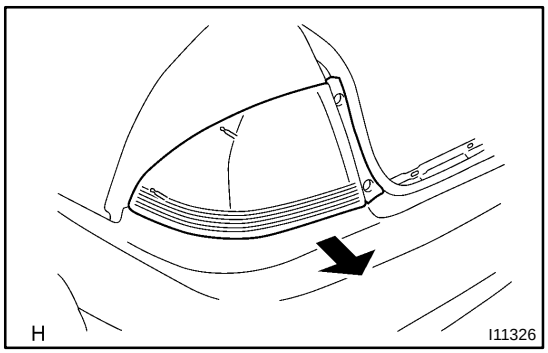


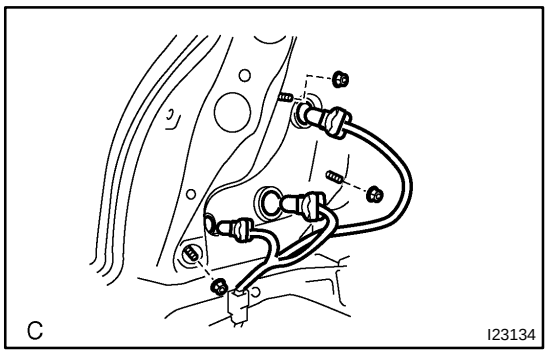
2. Sedan: REMOVE REAR COMBINATION LIGHT

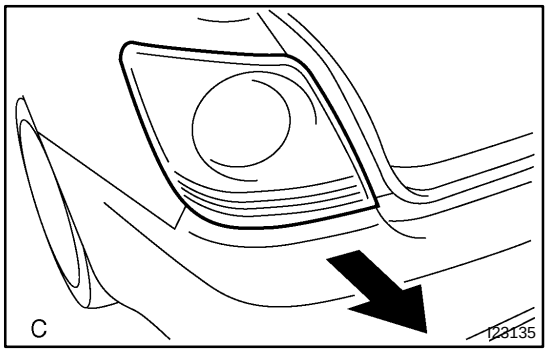
HINT:

- Installation is in the reverse order of removal. Only if there is a specified procedure for installation it is shown.
- Follow the same procedure for RH as for LH.

(a) Remove luggage compartment trim side cover No. 2.
(b) Remove luggage compartment trim rear cover.
(c) Remove a part of LH luggage compartment trim side cover.
(d) Remove the 2 rear light covers and 2 bolts.
(e) Pull the pin toward the rear of the vehicle, and disconnect the engagement of 2 pins.
(f) From the inside of the luggage room, separate the connector and disconnect the LH rear combination light assembly.





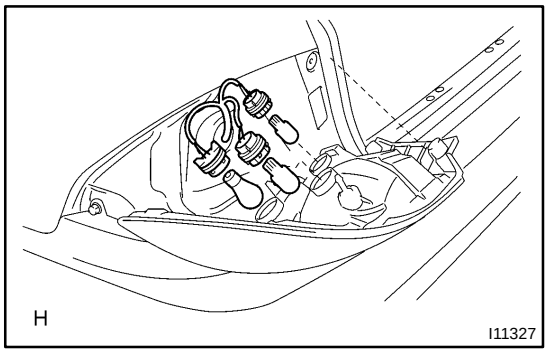


3. Wagon:
REMOVE REAR COMBINATION LIGHT

HINT:

- Installation is in the reverse order of removal. Only if there is a specified procedure for installation it is shown.
- Follow the same procedure for RH as for LH.

(a) Remove floor board and deck side board LH.
(b) Remove back door scuff plate.
(c) Remove a part of deck side trim board LH.
(d) Disconnect the bulb sockets and 3 nuts.
(e) Remove the combination light assembly.



4. Sedan:
REMOVE REAR COMBINATION BULB

HINT:

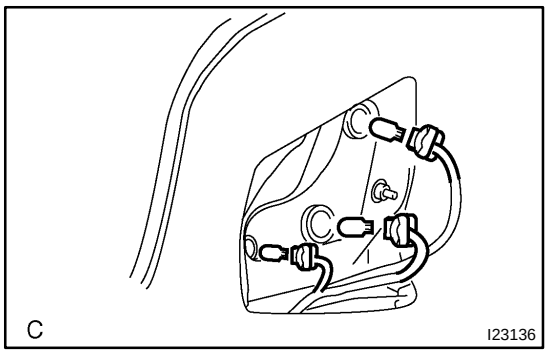
- Installation is in the reverse order of removal. Only if there is a specified procedure for installation it is shown.
- Follow the same procedure for RH as for LH.

(a) Remove a part of LH combination light assembly.

HINT:

Remove the light unit from only the outside of the vehicle.

(b) Remove the bulb sockets and remove the bulbs.

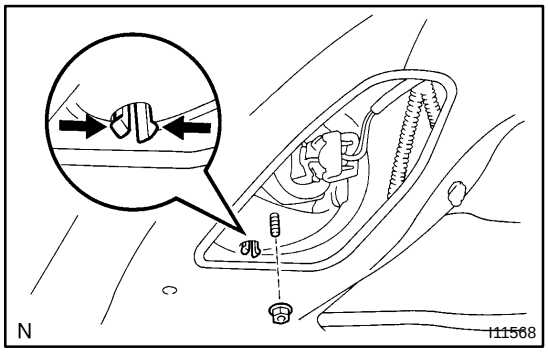


5. Wagon:
REMOVE REAR COMBINATION BULB

HINT:

- Installation is in the reverse order of removal. Only if there is a specified procedure for installation it is shown.
- Follow the same procedure for RH as for LH.

(a) Remove a service hole cover.
(b) Remove the bulb sockets and remove the bulbs.



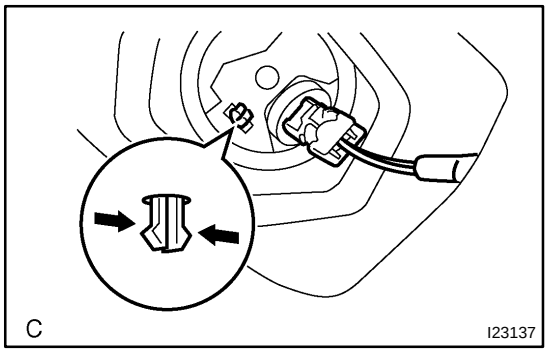
6. Sedan:
REMOVE REAR LAMP ASSEMBLY

HINT:

- Installation is in the reverse order of removal. Only if there is a specified procedure for installation it is shown.
- Follow the same procedure for RH as for LH.

(a) Remove a part of luggage compartment door trim.
(b) Remove the nut.
(c) Compress the claw to disconnect the engagement as shown in the illustration.

(d) Separate the connector and remove the rear light assembly.

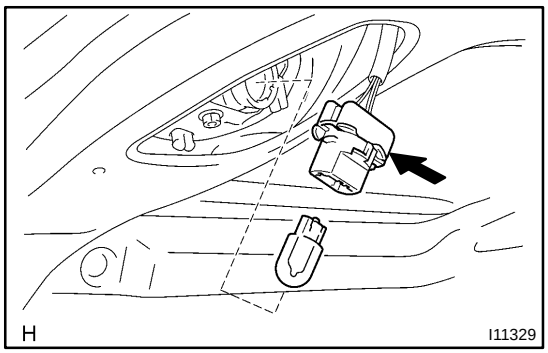


7. Wagon:
REMOVE REAR LAMP ASSEMBLY

HINT:

- Installation is in the reverse order of removal. Only if there is a specified procedure for installation it is shown.
- Follow the same procedure for RH as for LH.

(a) Remove the back door trim service hole cover.
(b) Compress the claw to disconnect the engagement as shown in the illustration.
(c) Separate the connector and remove the rear light assembly.

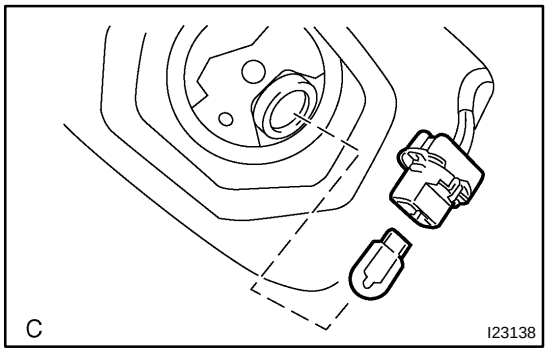


8. Sedan:
REMOVE REAR LAMP BULB

HINT:

Installation is in the reverse order of removal. Only if there is a specified procedure for installation it is shown.

(a) Remove a part of luggage compartment door trim.
(b) Remove the bulb socket and bulb.



9. Wagon:
REMOVE REAR LAMP BULB

HINT:

Installation is in the reverse order of removal. Only if there is a specified procedure for installation it is shown.

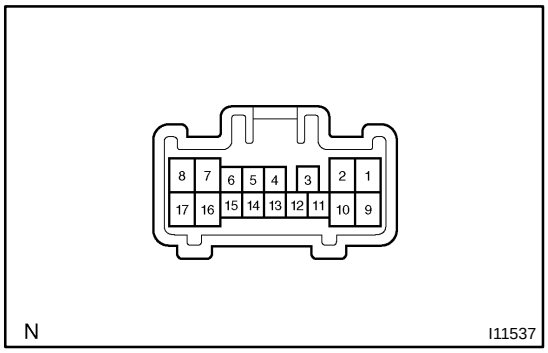
(a) Remove the back door trim service hole cover.
(b) Remove the bulb socket and bulb.

BE1WQ-04

INSPECTION

1. FAIL-SAFE FUNCTION (Light Control ECU)

When input error is inspected.	When input voltage is not within the range of operation voltage (9 to 16 V), lighting of the headlight stops. As soon as the voltage comes within the range, it lights up again. However if the input voltage becomes low after lighting up, sufficient voltage is maintained until light of bulb completely goes off.
When output error is inspected (Open or short). When light flushing is inspected.	When an error occurs in the output voltage (open or short) or flushing symptom occurs on the bulb, lighting of the headlight stops, the condition is maintained until power is turned ON again (headlight dimmer switch OFF → ON). In this case, it can not be judged whether lighting malfunction is caused by an output error or other reasons (fuse blown out, etc.). Check that there is no error in fuse and wiring (including power source) and replace the bulb in the first place, when the error still appears, replace the light control ECU.



2. INSPECT LIGHT CONTROL SWITCH CONTINUITY

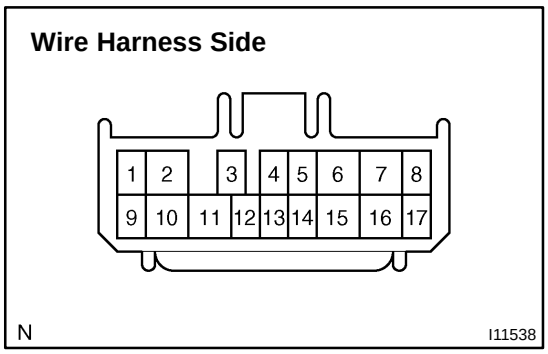
Switch position	Tester connection	Specified condition
OFF	-	No continuity
TAIL	14 - 16	Continuity
HEAD	13 - 14 - 16	Continuity
AUTO	13 - 16	Continuity

If continuity is not as specified, replace the switch.

3. INSPECT HEADLIGHT DIMMER SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
Low beam	16 - 17	Continuity
High beam	7 - 16	Continuity
Flash	7 - 8 - 16	Continuity

If continuity is not as specified, replace the switch.

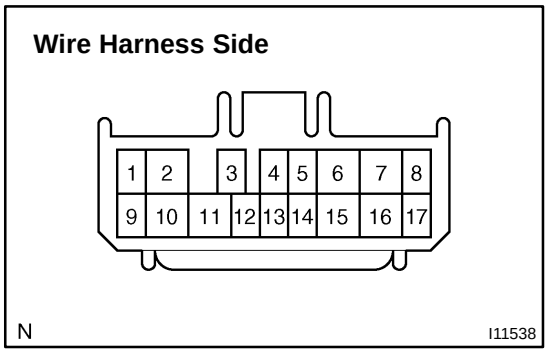


4. Connector disconnected:
INSPECT LIGHT CONTROL SWITCH CIRCUIT(See page DI-802)

Disconnect the connector from the switch and inspect the connector on the wire harness side, as shown.

Tester connection	Condition	Specified condition
16 - Ground	Always	Continuity

If circuit is not as specified, inspect the wire harness.

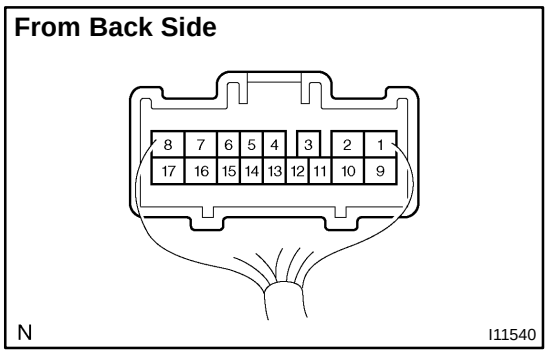


5. Connector disconnected:
INSPECT HEADLIGHT DIMMER SWITCH CIRCUIT (See page DI-802)

Disconnect the connector from the switch and inspect the connector on the wire harness side, as shown.

Tester connection	Condition	Specified condition
16 - Ground	Always	Continuity
13 - Ground	Light control switch HEAD	Battery Positive Voltage

If circuit is not as specified, inspect the wire harness.

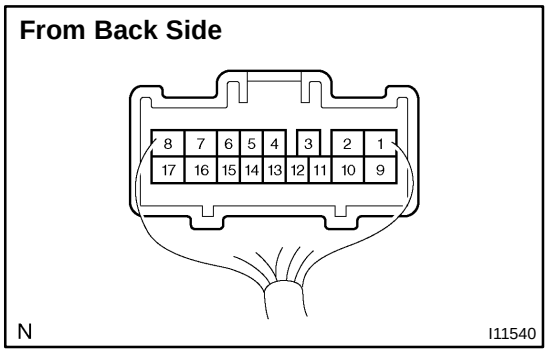


6. Connector connected:
INSPECT LIGHT CONTROL SWITCH CIRCUIT

Connect the wire harness side connector to the light control and dimmer switch and inspect the connector from the back side, as shown.

Tester connection	Condition	Specified condition
12 - Ground	Light control switch OFF, TAIL or HEAD	Battery Positive Voltage
12 - Ground	Light control switch AUTO	No voltage
13 - Ground	Light control switch OFF or TAIL	Battery Positive Voltage
13 - Ground	Light control switch HEAD	No voltage
14 - Ground	Light control switch OFF	Battery Positive Voltage
14 - Ground	Light control switch TAIL or HEAD	No voltage

If circuit is not as specified, inspect the wire harness.

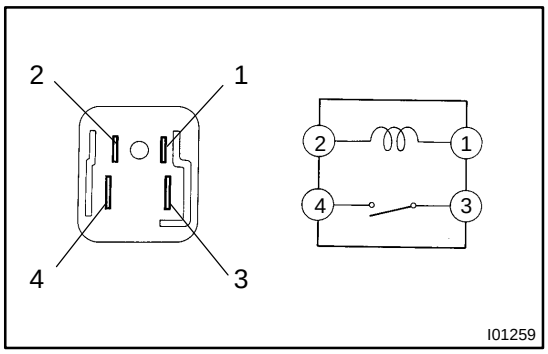


7. Connector connected:
INSPECT HEADLIGHT DIMMER SWITCH CIRCUIT

Connect the wire harness side connector to the light control and dimmer switch and inspect the connector from the back side, as shown.

Tester connection	Condition	Specified condition
7 - Ground	Headlight dimmer switch FLASH Light control switch HEAD and dimmer switch HIGH	No voltage
7 - Ground	Light control switch HEAD and dimmer switch LOW	Battery Positive Voltage
17 - Ground	Light control switch HEAD and dimmer switch LOW and fog light switch ON	No voltage
17 - Ground	Light control switch HEAD and dimmer switch HIGH or FLASH and fog light switch ON	Battery Positive Voltage

If circuit is not as specified, inspect the wire harness.

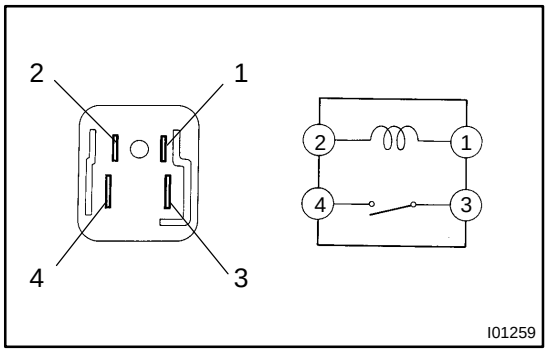


8. INSPECT HEADLIGHT CONTROL RELAY CONTINUITY

Condition	Tester connection	Specified condition
Always	1 - 2	Continuity
Apply B+ between terminals 1 and 2.	3 - 4	Continuity

If continuity is not as specified, replace the relay.

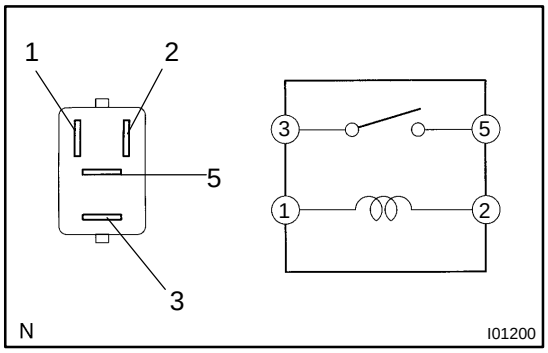
9. INSPECT HEADLIGHT CONTROL RELAY CIRCUIT (See page DI-805)



10. INSPECT HEADLIGHT DIMMER (DAYTIME RUNNING LIGHT NO. 2) RELAY CONTINUITY

Condition	Tester connection	Specified condition
Always	1 - 2	Continuity
Apply B+ between terminals 1 and 2.	3 - 4	Continuity

If continuity is not as specified, replace the relay.

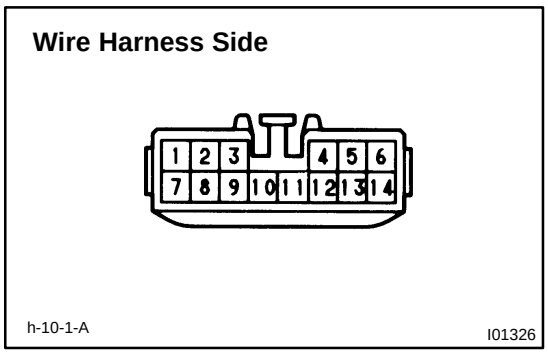


11. INSPECT TAILLIGHT CONTROL RELAY CONTINUITY

Condition	Tester connection	Specified condition
Always	1 - 2	Continuity
Apply B+ between terminals 1 and 2.	3 - 5	Continuity

If continuity is not as specified, replace the relay.

12. INSPECT TAILLIGHT CONTROL RELAY CIRCUIT (See page DI-913)

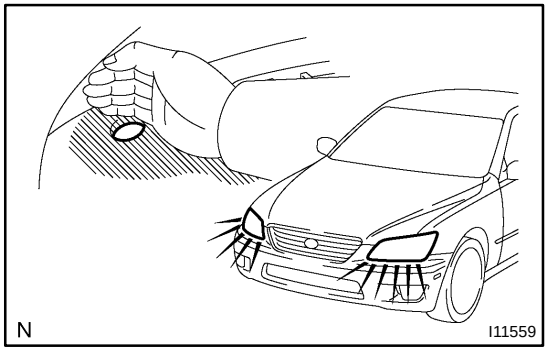


13. INSPECT DAYTIME RUNNING LIGHT MAIN RELAY CIRCUIT

Disconnect the connector from the relay and inspect the connector on the wire harness side.

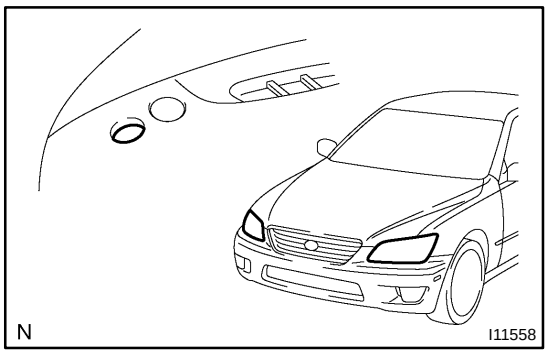
Tester connection	Condition	Specified condition
2 - Ground	Light control switch OFF	No continuity
2 - Ground	Light control switch TAIL or HEAD	Continuity
4 - Ground	Light control switch OFF or TAIL	No continuity
4 - Ground	Light control switch HEAD	Continuity
6 - Ground	Headlight dimmer switch FLASH	Continuity
8 - Ground	Engine running	Battery Positive Voltage
7 - Ground	Always	Continuity
10 - Ground	Always	Continuity
13 - Ground	Headlight dimmer switch FLASH or HI	Continuity
12 - Ground	Always	Battery Positive Voltage
1 - Ground	Ignition switch OFF	No voltage
1 - Ground	Ignition switch ON	Battery Positive Voltage
9 - Ground	Terminal 3 ground	Battery Positive Voltage
11 - Ground	Rear fog light switch ON, terminal 3 ground	Battery Positive Voltage
5 - Ground	Always	Battery Positive Voltage
14 - Ground	Terminal 5 ground	Battery Positive Voltage

If circuit is specified, try replacing the relay with a new one.
If circuit is not as specified, inspect the circuits connected to other parts.



14. Auto on function:
INSPECT AUTOMATIC LIGHT CONTROL SYSTEM

(a) Turn the ignition switch ON.
(b) Turn the light control switch to AUTO.
(c) Gradually cover the top of the sensor.
(d) Check the accessory lights and the headlights should turn ON.



15. Auto off function:
INSPECT AUTOMATIC LIGHT CONTROL SYSTEM

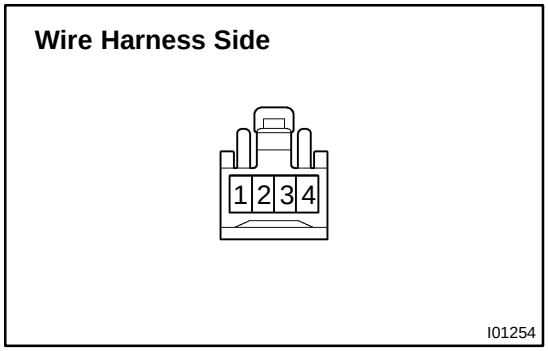
(a) Gradually expose the sensor.
(b) Check the headlights and the accessory lights should turn OFF.

16. INSPECT LIGHT-OFF CONDITION

(a) Turn the ignition switch ON.
(b) Gradually cover the top of the sensor.
Lights auto ON:
(c) Check that the lights go off under the following conditions.
(1) Light control switch is OFF.
(2) The area surrounding the sensor gets bright.
(3) The driver's door is opened with the ignition switch OFF.

17. INSPECT LIGHTS-ON CONDITION

(a) Open the driver's door while the ignition switch is OFF.
(b) Turn the light control switch to AUTO leaving the door open and cover the top of the sensor, and verify that the lights go on when the ignition switch is turned ON.



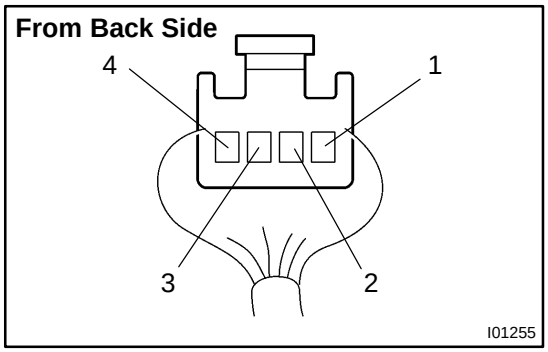
18. Connector disconnected:
INSPECT AUTOMATIC LIGHT CONTROL SENSOR CIRCUIT

Disconnect the connector from the sensor and inspect the connector on the wire harness side, as shown in the table.

Tester connection	Condition	Specified condition
3 - Ground	Always	Continuity
1 - Ground	Ignition switch LOCK or ACC	No voltage
1 - Ground	Ignition switch ON	Battery Positive Voltage
4 - Ground	Ignition switch LOCK or ACC	No voltage
4 - Ground	Ignition switch ON	5.2 - 9.0 V

If circuit is as specified, perform the inspection on the following page.

If the circuit is not as specified, inspect the circuit connected to other parts.



19. Connector connected:
INSPECT AUTOMATIC LIGHT CONTROL SENSOR CIRCUIT

Connect the wire harness side connector to the sensor and inspect wire harness side connector from the back side, as shown.

HINT:

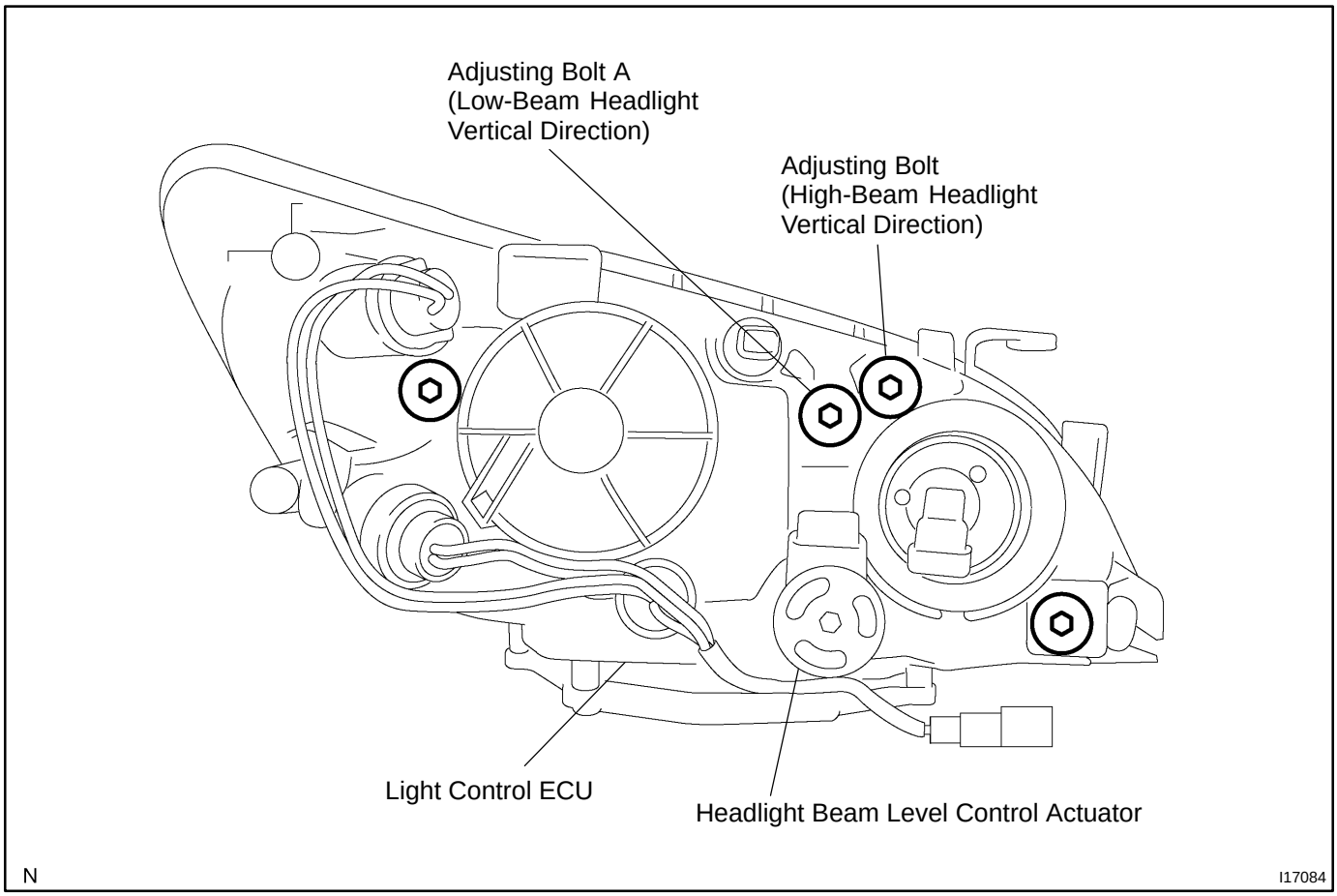
- Ignition switch ON.
- Light control switch AUTO.
- Vehicle's surroundings are bright.

Tester connection	Condition	Specified condition
3 - Ground	Always	Continuity
1 - Ground	Ignition switch LOCK or ACC	No voltage
1 - Ground	Ignition switch ON	9.5 V or more
Vehicle is under the direct sun light. (Sensor is not covered)		Taillight and Headlight are ON.

If circuit is as specified, try replacing the sensor with a new one.
If the circuit is not as specified, inspect the circuit connected to other parts.

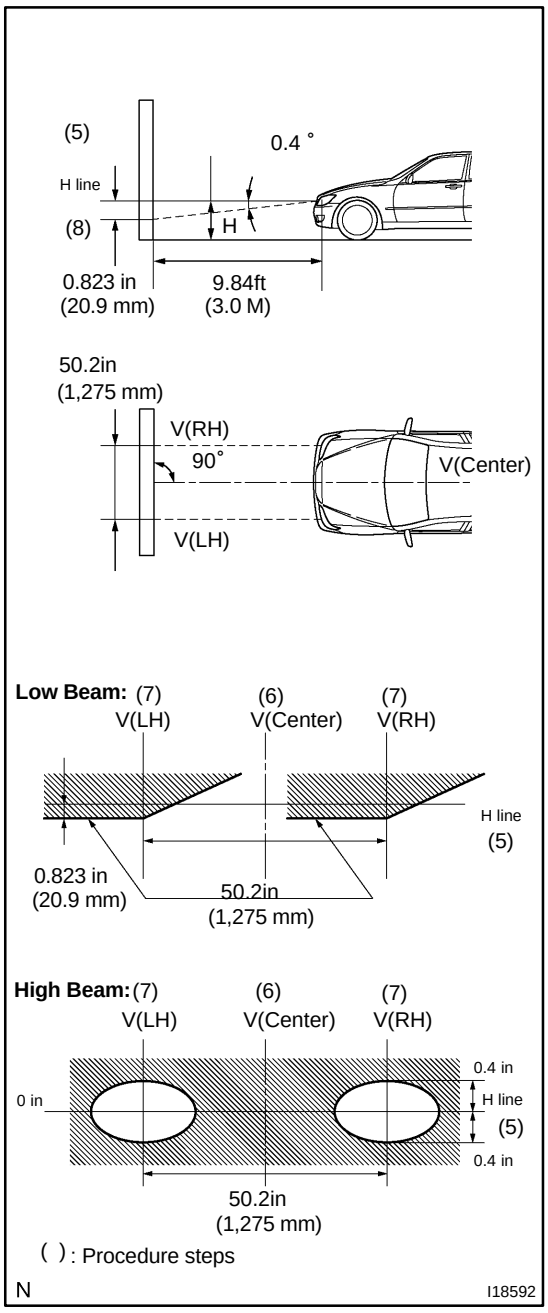
BE160-04

ADJUSTMENT



NOTICE:

- **Disconnect the connector of the other light to avoid heat affection from the light because the outer lens of the head light assembly is made of synthetic resin. When connecting the connector again take care not to wake the aiming out of adjustment.**
- **When covering the headlight, finish it within 3 minutes.**



ADJUSTING HEADLIGHT AIM

(a) Put the vehicle in below conditions.
- Make sure the body around the headlight is not deformed.
- Park the vehicle on a level spot.
- Tire inflation pressure is the specified value.
- Height control operation completes.
- Tire inflation pressure is the specified value.
- The driver gets into the driver's seat and puts the vehicle in a state ready for driving (with a full tank).
- Bounce the vehicle several times.

(b) Check the headlight aiming.
(1) Prepare the thick white colored paper.
(2) Stand the paper perpendicularly and ensure the distance from it to the head lights is 9.84 ft.
(3) Ensure that the center line of vehicle and the paper are at a 90 degree angle as shown in the illustration.
(4) Engine running.
(5) Draw a horizontal line (H line) on the paper where the head lights of the vehicle are to be.
(6) Draw a vertical line on the paper where the center line of the vehicle is to be. (V line)
(7) Draw the vertical lines on the paper where the headlights (low-beam and high-beam center marks) of the vehicle are to be (V RH and V LH lines).
(8) Draw the vertical lines on the paper where the headlights (low beam center marks) of the vehicle are to be. (V RH and LH lines)
(9) Turn the head lights ON.
(10) Check that the head lights light up the paper as shown in the illustration.
(11) When the paper is not lighted up properly, adjust the lights in the vertical direction.

HINT:

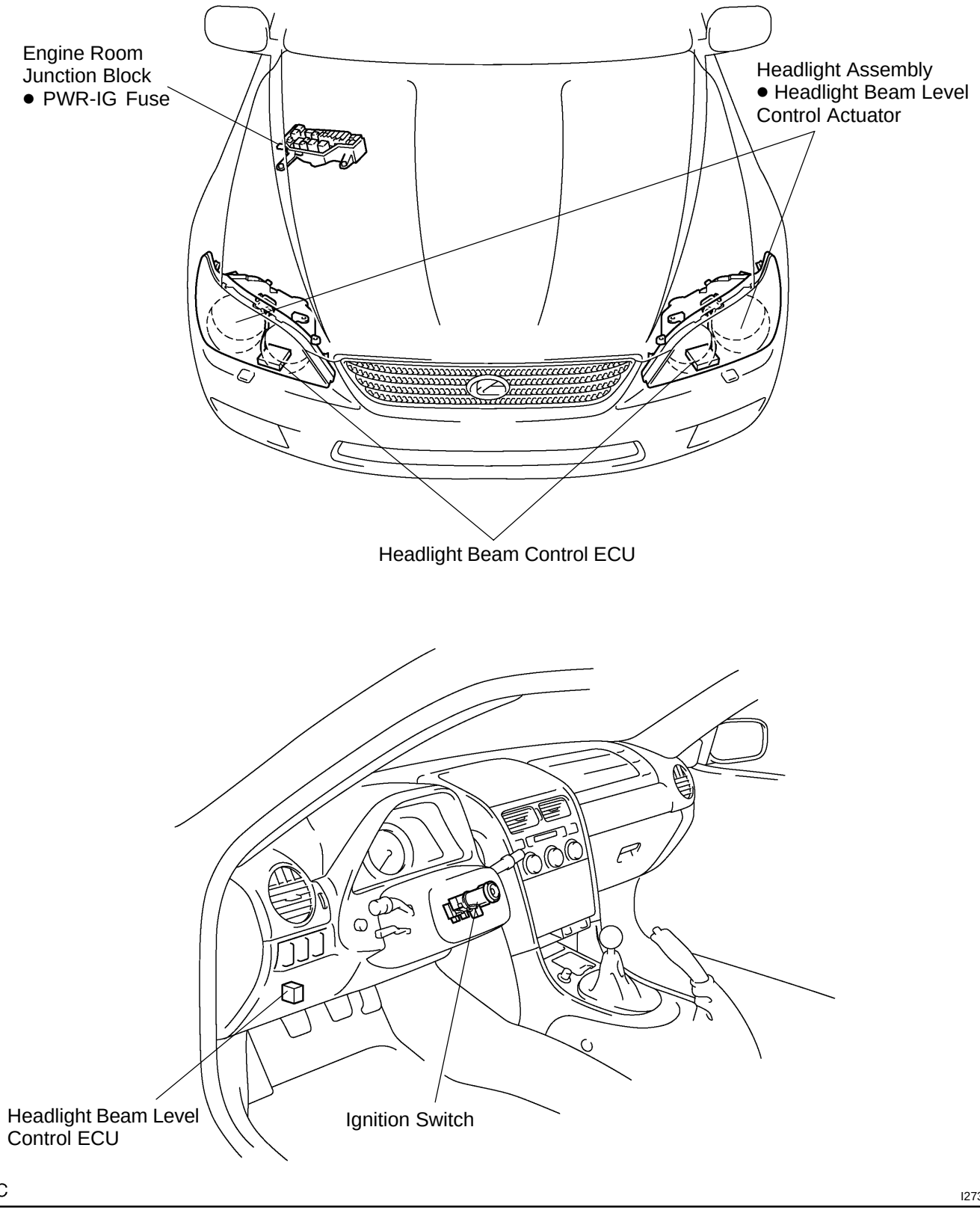
As shown in the illustration, adjust aiming of the LH and RH lights respectively.

(c) Adjust the headlight in vertical direction.
Using adjusting bolt A, adjust the headlight aim to within the specifications.

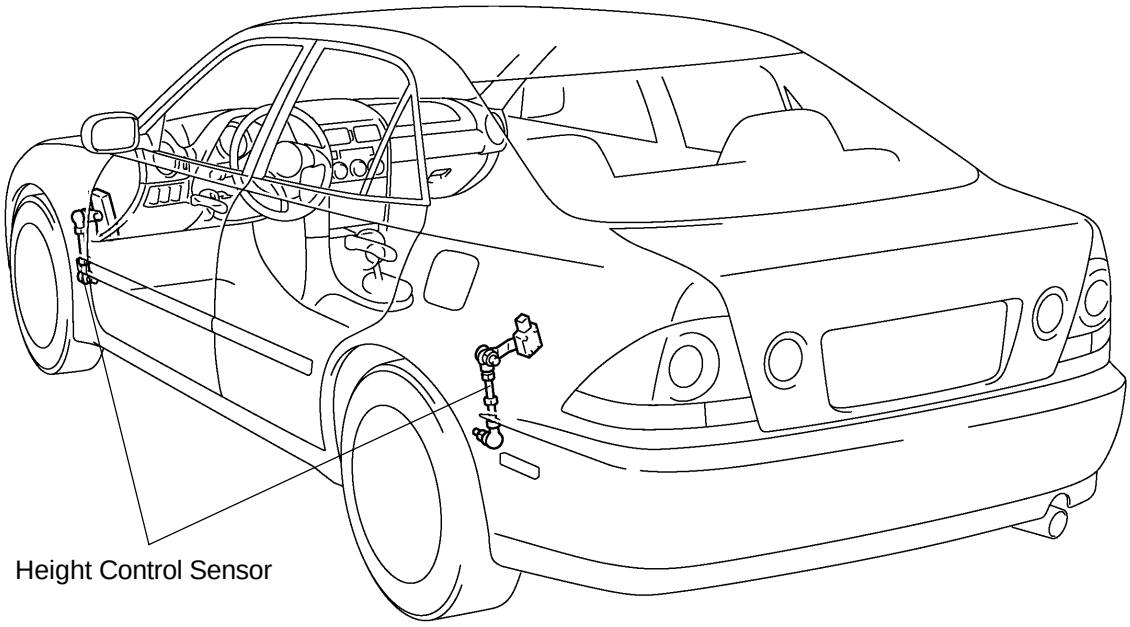
HEADLIGHT BEAM LEVEL CONTROL SYSTEM

LOCATION

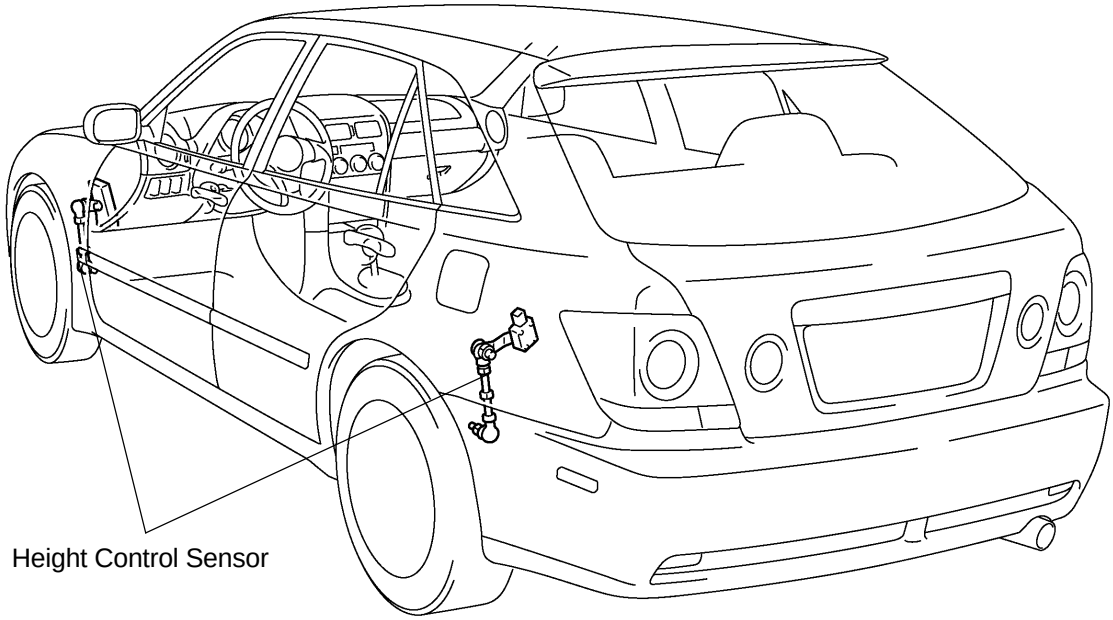
BE29P-02



Sedan:



Wagon:



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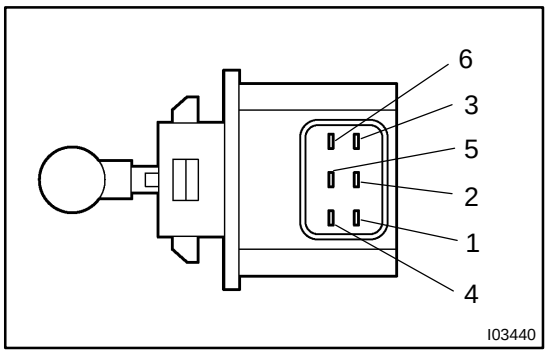
BE0BI-04

INSPECTION



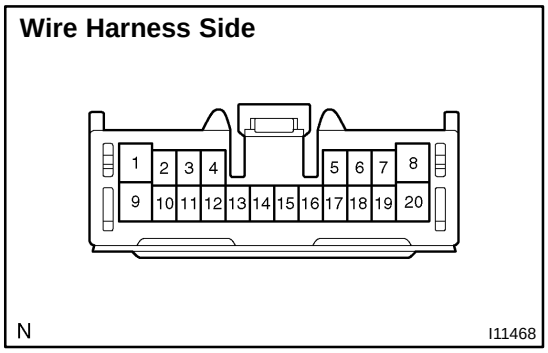
1. INSPECT HEADLIGHT BEAM LEVEL CONTROL ACTUATOR RESISTANCE

(a) Check that continuity exists between terminal 2 and 5.

(b) Check that resistance exists between terminal, as shown in the chart.

Terminal	Resistance (Ω)
2 - 1	26 - 30
2 - 3	26 - 30
2 - 4	26 - 30
2 - 6	26 - 30
5 - 1	26 - 30
5 - 3	26 - 30
5 - 4	26 - 30
5 - 6	26 - 30

If resistance value is not as specified, replace the actuator.

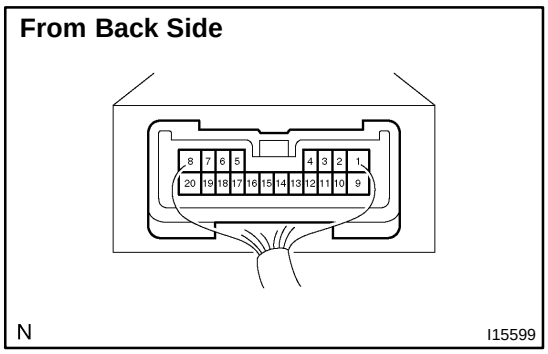


2. Connector disconnected:
INSPECT HEADLIGHT BEAM LEVEL CONTROL ECU CIRCUIT

Disconnect the connector from the ECU and inspect the connector on the wire harness side, as shown.

Tester connection	Condition	Specified condition
1 - 13	Ignition switch OFF	26 - 30 Ω
1 - 15	Ignition switch OFF	26 - 30 Ω
1 - 14	Ignition switch OFF	26 - 30 Ω
1 - 16	Ignition switch OFF	26 - 30 Ω
1 - 4	Ignition switch OFF	26 - 30 Ω
1 - 2	Ignition switch OFF	26 - 30 Ω
1 - 12	Ignition switch OFF	26 - 30 Ω
1 - 3	Ignition switch OFF	26 - 30 Ω
6 - 10	Ignition switch OFF	Continuity
7 - 11	Ignition switch OFF	Continuity
10 - 17	Ignition switch OFF	Continuity
5 - 11	Ignition switch OFF	Continuity
20 - Ground	Ignition switch OFF	Continuity

If circuit is not as specified, perform the inspection on the following page.



3. Connector connected:
INSPECT HEADLIGHT BEAM LEVEL CONTROL ECU CIRCUIT

Connect the connector from the ECU and inspect the connector on the back side, as shown in the chart.

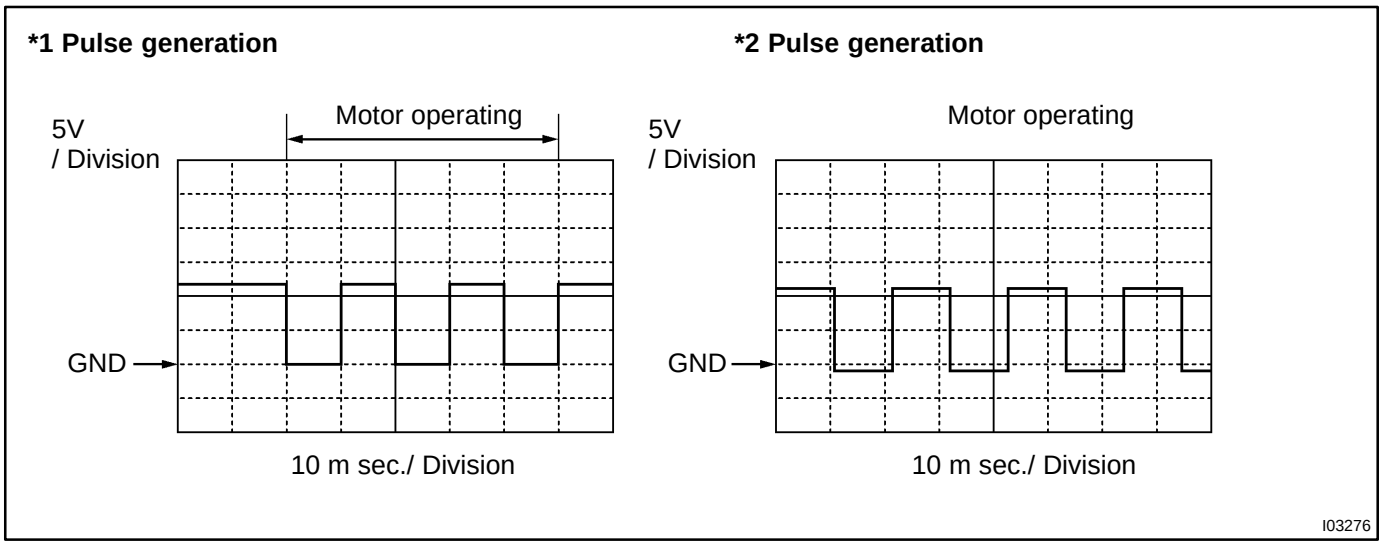
Tester connection	Condition	Specified condition
1 - 20	Ignition switch ON	Battery positive voltage
13 - 20	Ignition switch ON, when keep and bounce the vehicle	*1 Pulse generation
15 - 20	Ignition switch ON, when keep and bounce the vehicle	*1 Pulse generation
14 - 20	Ignition switch ON, when keep and bounce the vehicle	*1 Pulse generation
16 - 20	Ignition switch ON, when keep and bounce the vehicle	*1 Pulse generation
10 - 17	Ignition switch ON	Approx. 2.5 V
18 - 20	Ignition switch ON	No continuity
4 - 20	Ignition switch ON, when keep and bounce the vehicle	*1 Pulse generation
2 - 20	Ignition switch ON, when keep and bounce the vehicle	*1 Pulse generation
12 - 20	Ignition switch ON, when keep and bounce the vehicle	*1 Pulse generation
3 - 20	Ignition switch ON, when keep and bounce the vehicle	*1 Pulse generation
5 - 11	Ignition switch ON	Approx. 2.5 V
11 - 20	Ignition switch OFF	Continuity
10 - 17	Ignition switch OFF	Continuity
6 - 10	Ignition switch ON	5 V
7 - 11	Ignition switch ON	5 V
10 - 20	Ignition switch OFF	Continuity
20 - Body ground	Ignition switch OFF	Continuity

If the circuit is not as specified, replace the ECU.

Reference INSPECTION USING OSCILLOSCOPE

HINT:

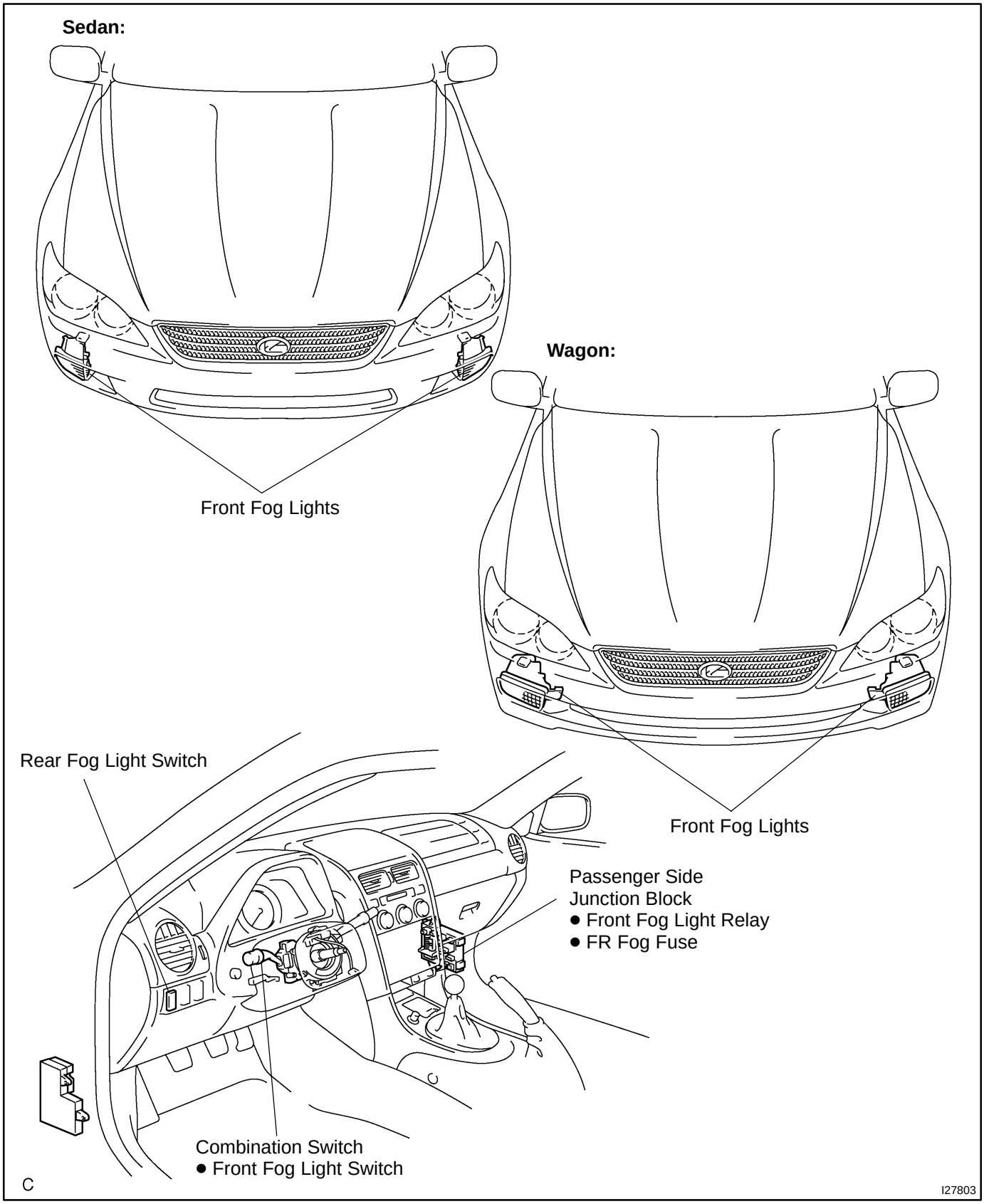
The correct waveform is as shown in the illustration.



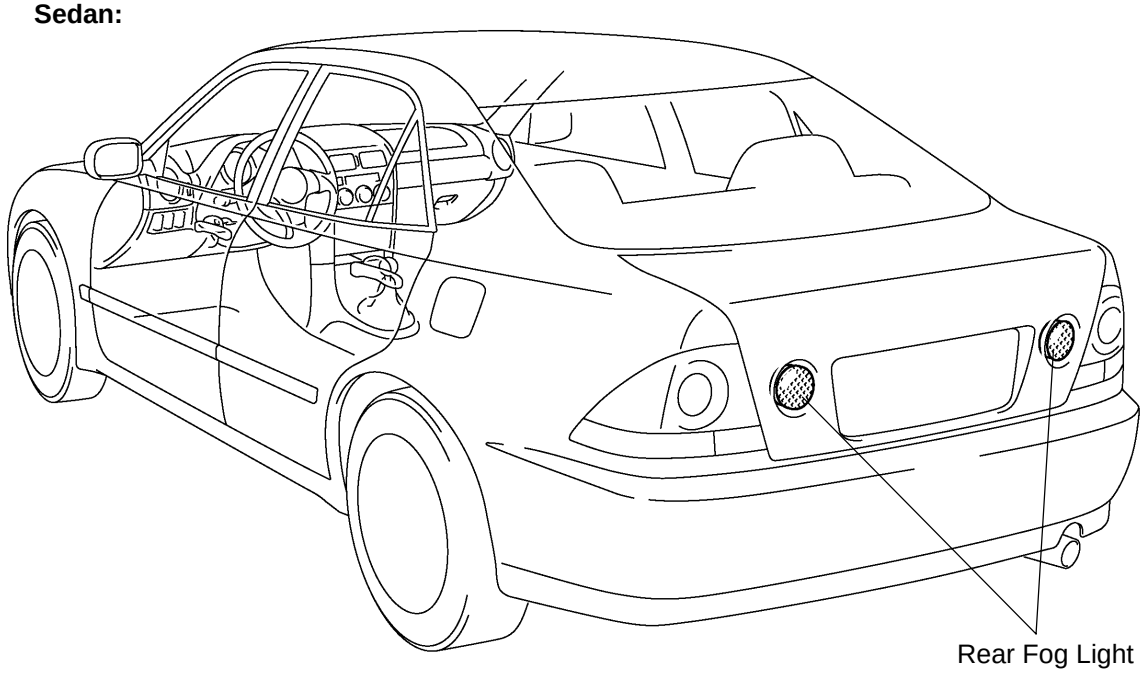
FOG LIGHT SYSTEM

LOCATION

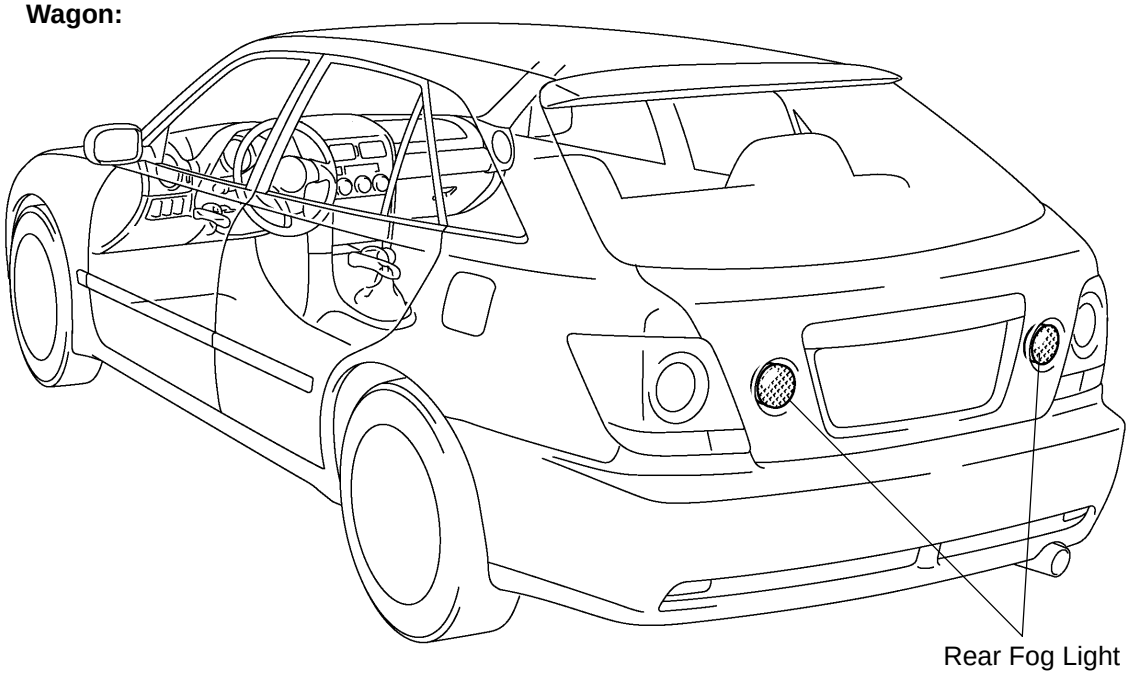
BE29Q-02



Sedan:



Wagon:



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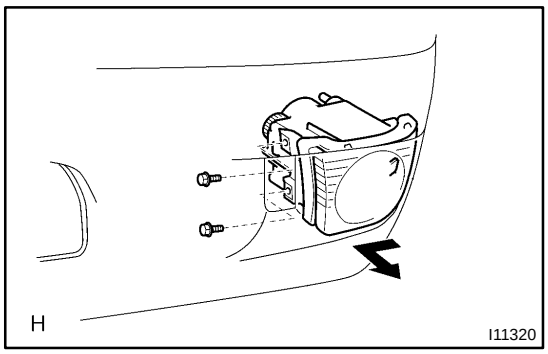
BE29R-02

REMOVAL

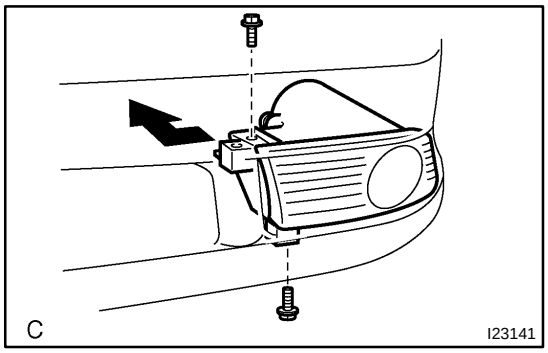


1. Sedan:
REMOVE FRONT FOG LIGHT ASSEMBLY

HINT:

- Installation is in the reverse order of removal. Only if there is a specified procedure for installation it is shown.
- Follow the same procedure for RH as for LH.

(a) Remove the front portion of fender liner.
(b) Disconnect the connecter.
(c) Remove the 2 bolts.
(d) Remove the front fog light assembly, as shown in the illustration.
(e) Install front fog light assembly.
(f) Adjust optical axis of fog light (See page BE-50).

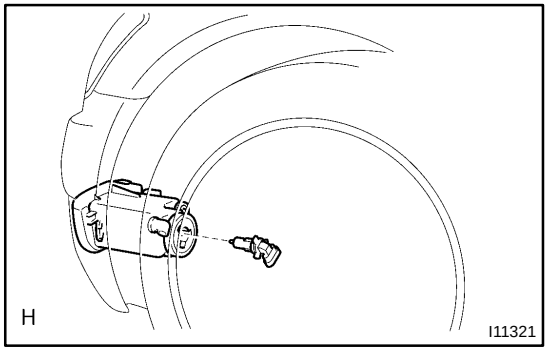


2. Wagon:
REMOVE FRONT FOG LIGHT ASSEMBLY

HINT:

- Installation is in the reverse order of removal. Only if there is a specified procedure for installation it is shown.
- Follow the same procedure for RH as for LH.

(a) Remove the front portion of fender liner.
(b) Disconnect the connecter.
(c) Remove the 2 bolts.
(d) Remove the front fog light assembly, as shown in the illustration.
(e) Install front fog light assembly.
(f) Adjust optical axis of fog light (See page BE-50).



3. REMOVE FRONT FOG LIGHT BULB

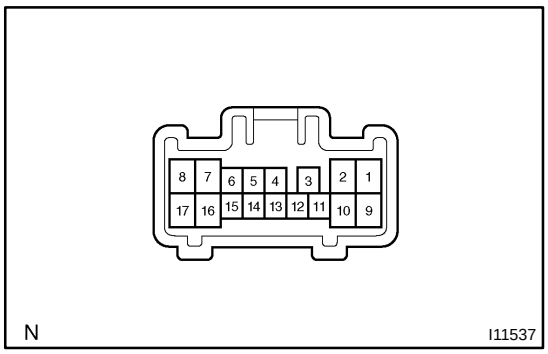
HINT:

Follow the same procedure for RH as for LH.

(a) Remove a part of LH front fender liner.
(b) Separate the connector and remove the bulb.

BE29S-03

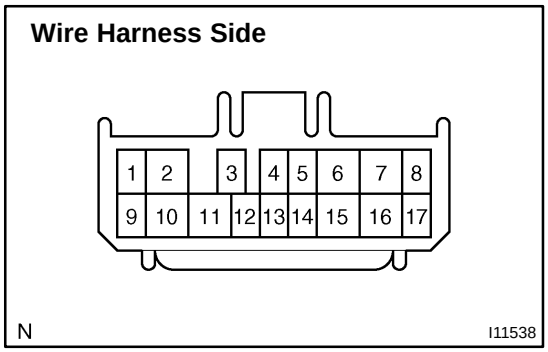
INSPECTION



1. INSPECT FRONT FOG LIGHT SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
OFF	-	No continuity
ON	10 - 11	Continuity

If continuity is not as specified, replace the switch.

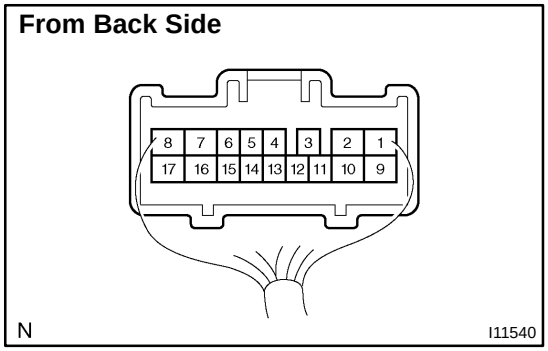


2. Connector disconnected: INSPECT FRONT FOG LIGHT SWITCH CIRCUIT

Disconnect the connector from the switch and inspect the connector on the wire harness side, as shown.

Tester connection	Condition	Specified condition
10 - 17	Always	Continuity

If circuit is not as specified, inspect the wire harness.



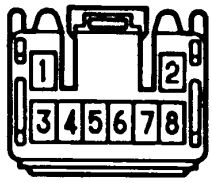
3. Connector connected: INSPECT FRONT FOG LIGHT SWITCH CIRCUIT

Connect the wire harness side connector to the light control and dimmer switch and inspect the connector from the back side, as shown.

Tester connection	Condition	Specified condition
11 - Ground	Light control switch HEAD and headlight dimmer switch LO and fog light switch ON	No voltage
11 - Ground	Light control switch HEAD and headlight dimmer switch LO and fog light switch OFF	Battery Positive Voltage

If circuit is not as specified, inspect the wire harness.

Wire Harness Side



I11315

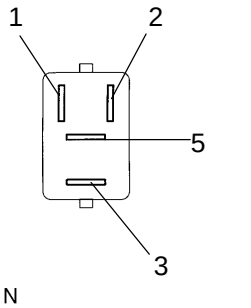
4. INSPECT REAR FOG LIGHT SWITCH CIRCUIT

Disconnect the connector from the switch and inspect the connector on the wire harness side, as shown.

Tester connection	Condition	Specified condition
1 - Ground	Always	* Continuity
2 - Ground	Light control switch TAIL or HEAD	Continuity
3 - Ground	Always	Battery voltage
5 - Ground	Light control switch HEAD	Continuity
7 - Ground	Always	Continuity
8 - Ground	Always	Continuity

*: There is resistance because this circuit is ground through the bulb.

If the circuit is not as specified, replace the wire harness.



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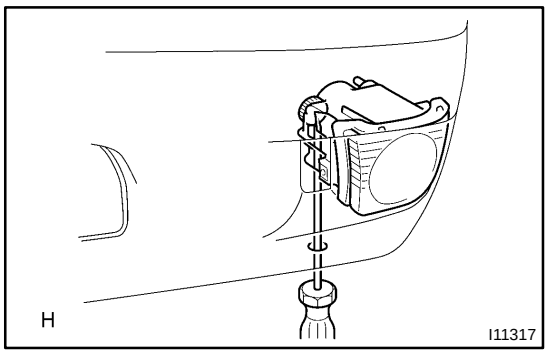
5. INSPECT FRONT FOG LIGHT RELAY CONTINUITY

Condition	Tester connection	Specified condition
Always	1 - 2	Continuity
Apply B+ between terminals 1 and 2.	3 - 5	Continuity

If continuity is not as specified, replace the relay.

BE164-05



ADJUSTMENT

ADJUST FRONT FOG LIGHT AIM

A-bolt: Vertical Direction

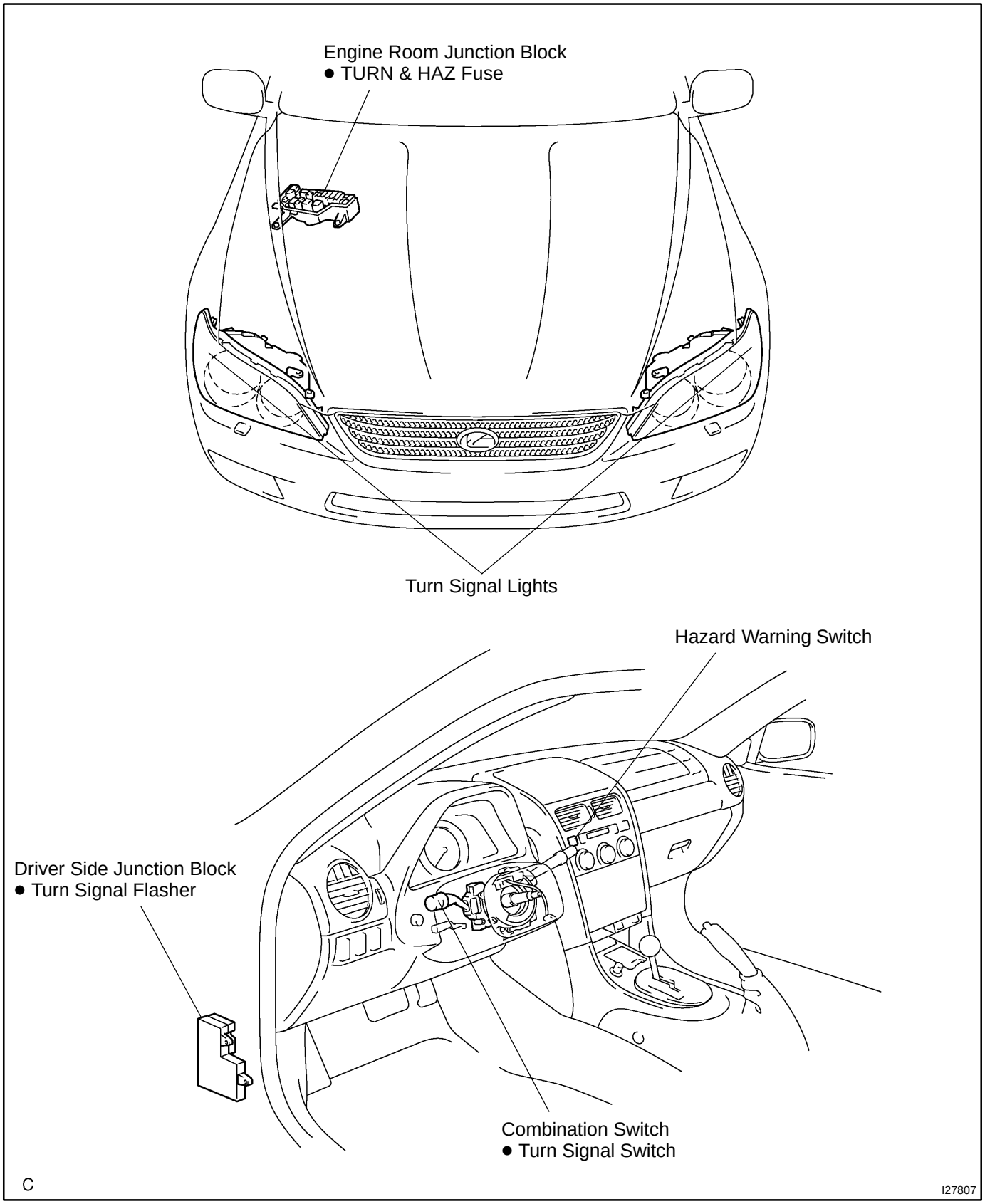
HINT:

Insert a driver into the hole for aiming in the fender liner to perform aiming.

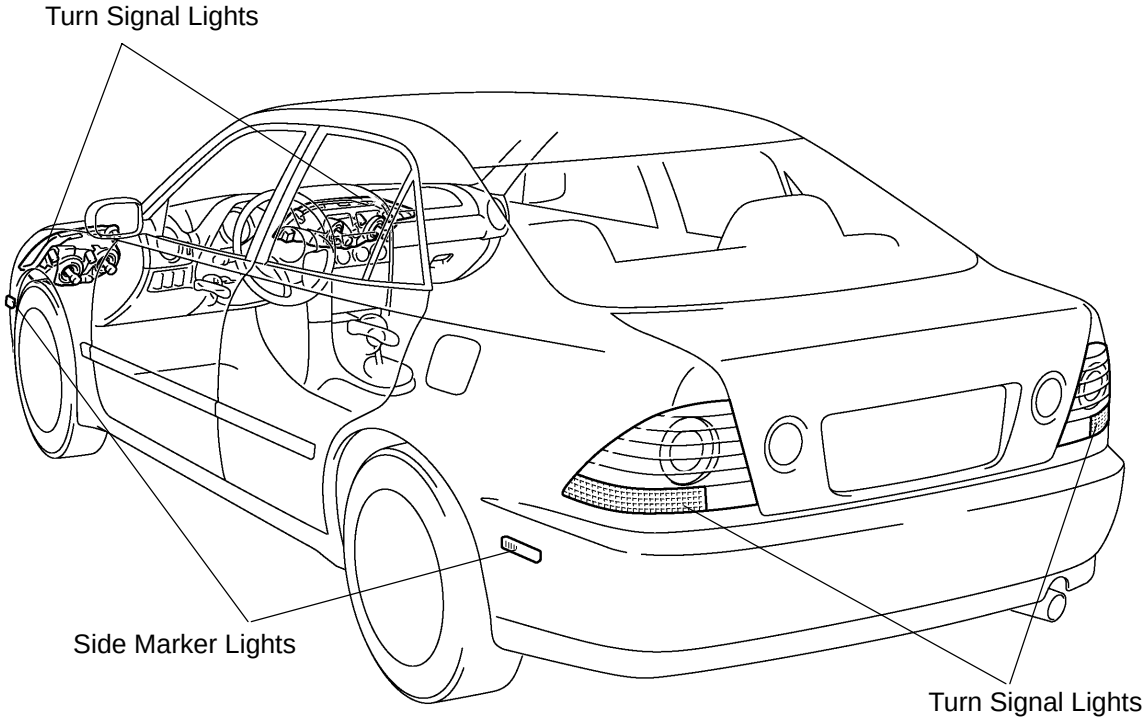
TURN SIGNAL AND HAZARD WARNING SYSTEM

BE29T-02

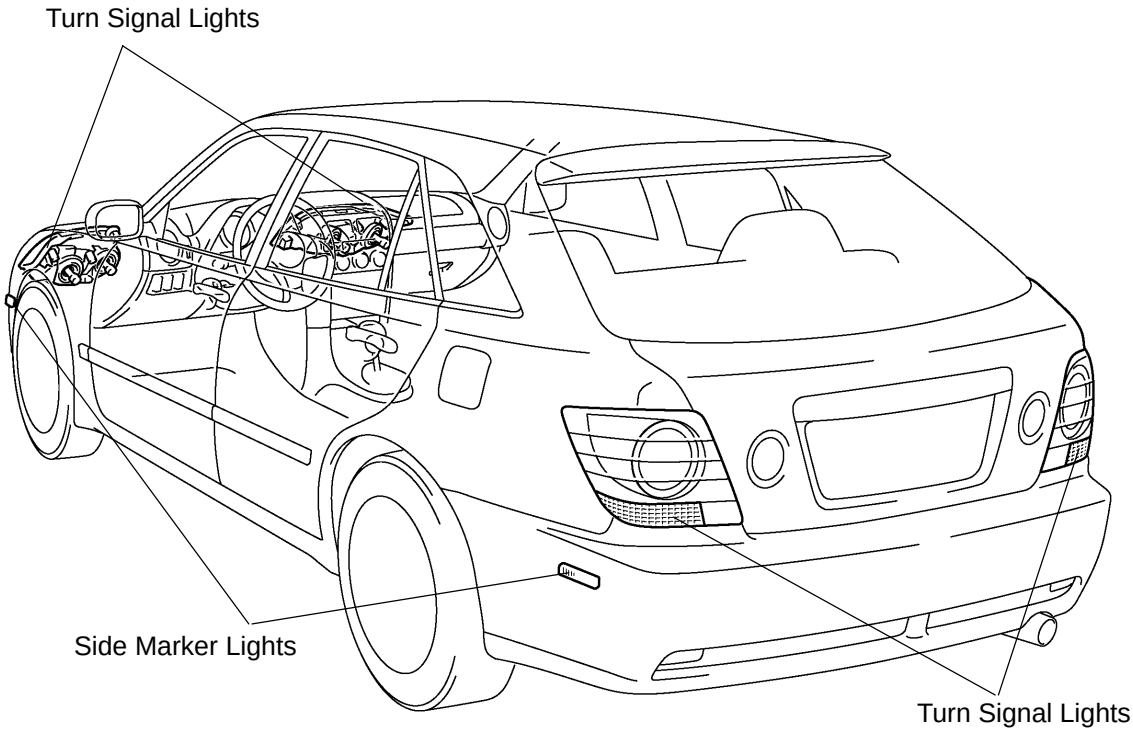
LOCATION



Sedan:



Wagon:



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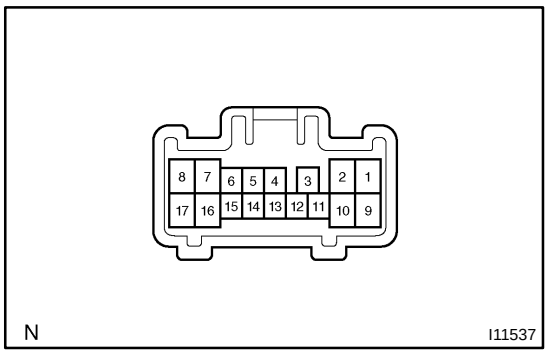
BE1WS-03

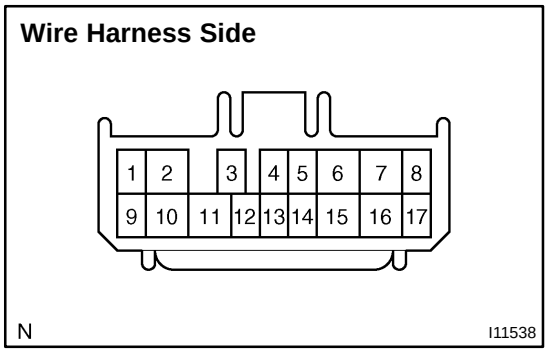
INSPECTION



1. INSPECT TURN SIGNAL SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
Left turn	1 - 2	Continuity
Neutral	-	No continuity
Right turn	2 - 3	Continuity

If continuity is not as specified, replace the switch.

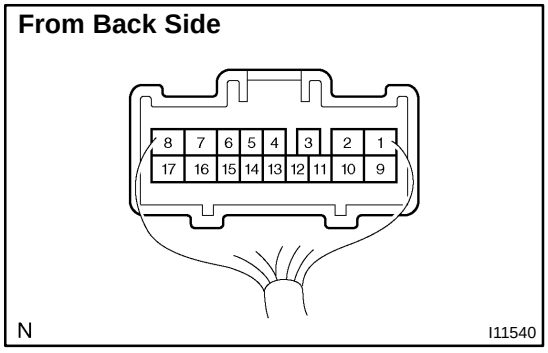


2. Connector disconnected: INSPECT TURN SIGNAL SWITCH CIRCUIT

Disconnect the connector from the combination switch and inspect the connector on the wire harness side, as shown.

Tester connection	Condition	Specified condition
2 - Ground	Always	Continuity

If circuit is not as specified, inspect the wire harness.



3. Connector connected: INSPECT TURN SIGNAL SWITCH CIRCUIT

Connect the wire harness side connector to the combination switch and inspect the connector form the back side, as shown.

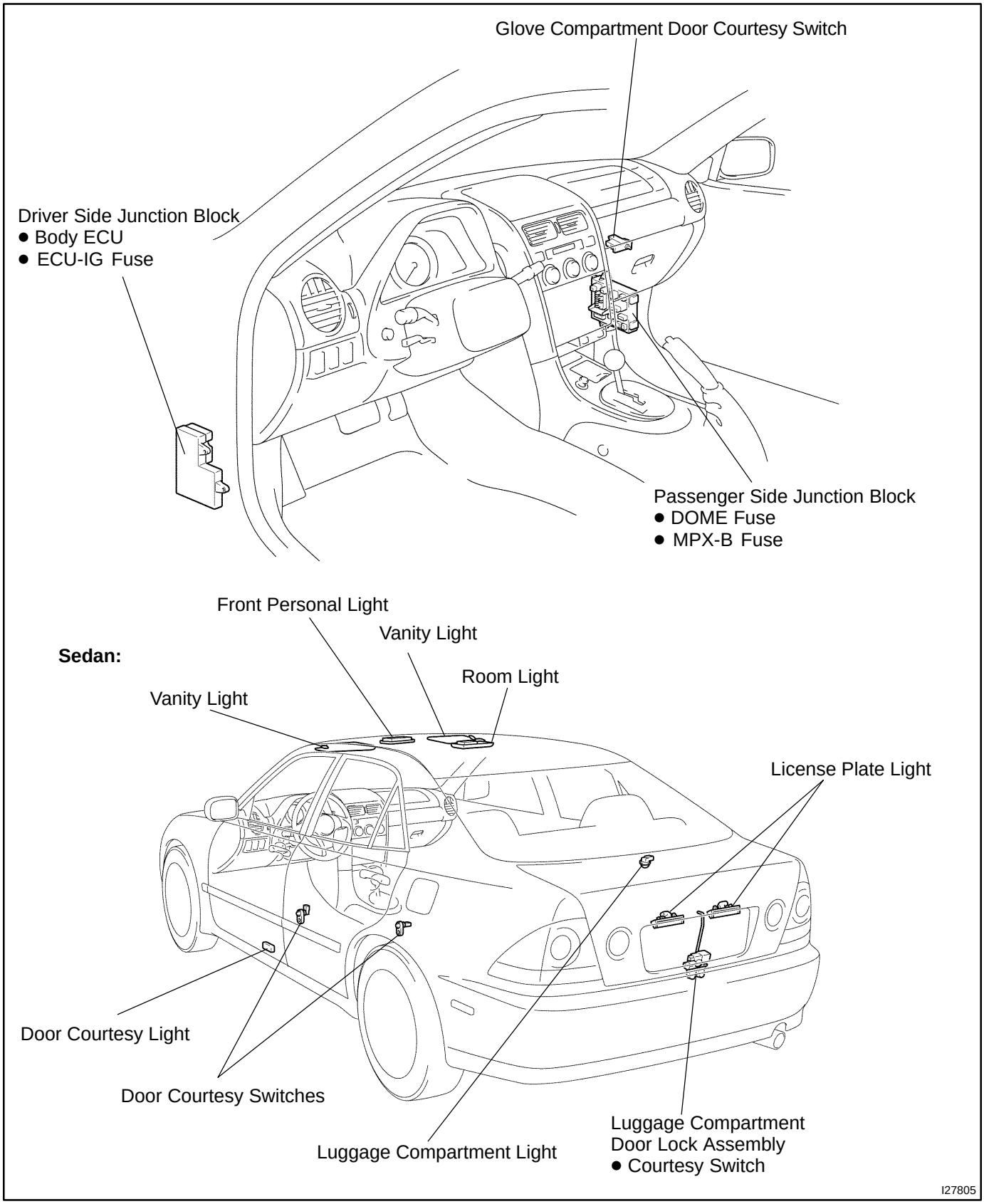
Tester connection	Condition	Specified condition
2 - Ground	Ignition switch ON and turn signal switch Neutral	No voltage
1 - Ground	Ignition switch ON and turn signal switch Left	Battery Positive Voltage ↔ 0 V
3 - Ground	Ignition switch ON and turn signal switch Right	Battery Positive Voltage ↔ 0 V

If circuit is not as specified, inspect the circuits connected to other parts.

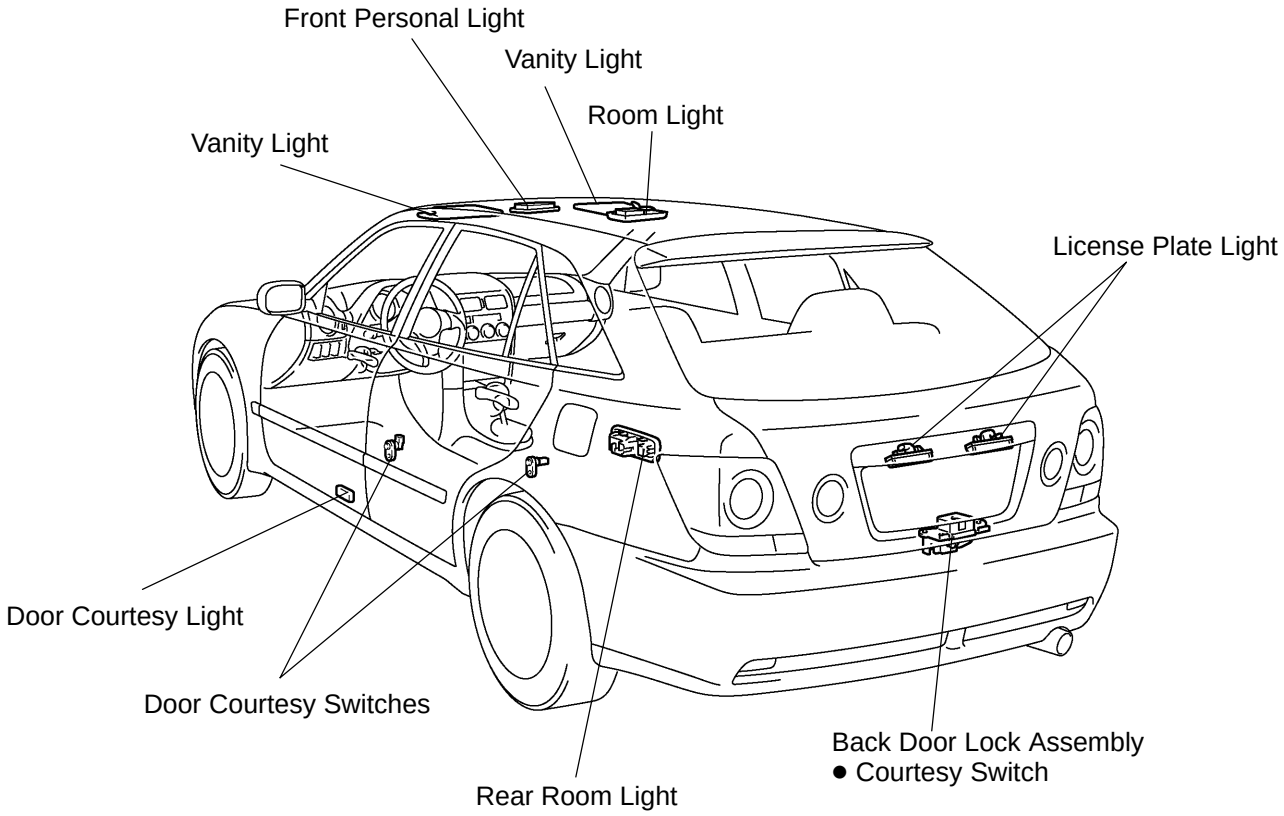
INTERIOR LIGHT SYSTEM

LOCATION

BE29U-02



Wagon:



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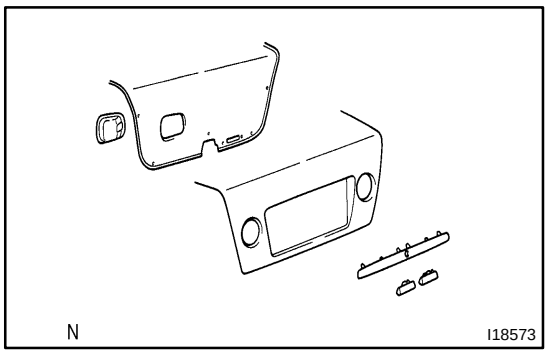
BE29V-02

REMOVAL

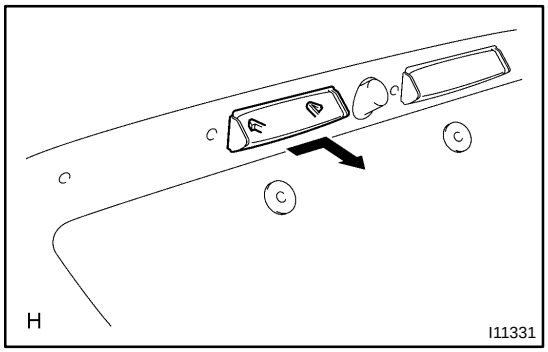


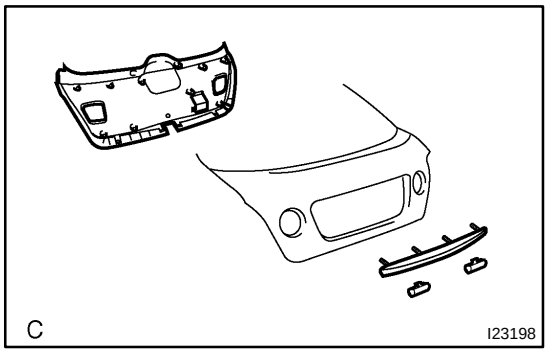
1. Sedan:
REMOVE LICENSE PLATE LIGHT

HINT:

- Installation is in the reverse order of removal. Only if there is a specified procedure for installation it is shown.
- Follow the same procedure for RH as for LH.

(a) Remove the Internal Trunk Release Handle.
(b) Remove a part of luggage compartment door trim.
(c) Remove the 4 nuts.
(d) Remove luggage compartment door outer garnish.
(e) Disconnect the connector.
(f) Pull the claw towards the inside of the vehicle as shown in the illustration, disconnect the engagement of 2 claws, and remove the license plate light assembly.



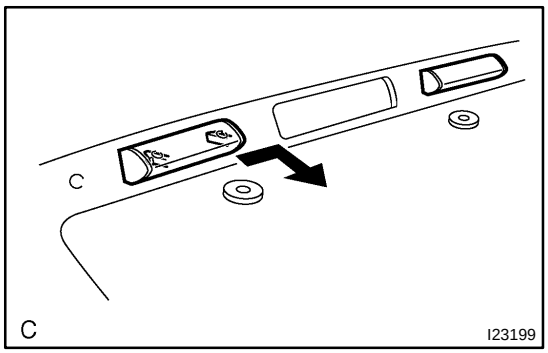


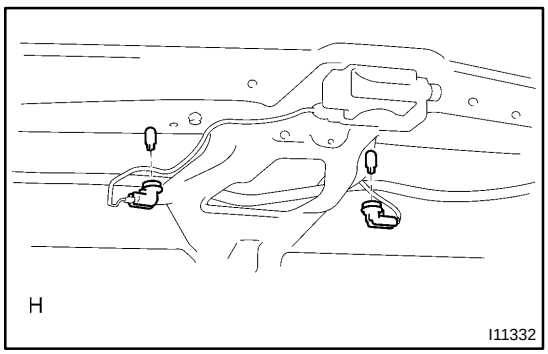
2. Wagon:
REMOVE LICENSE PLATE LIGHT

HINT:

- Installation is in the reverse order of removal. Only if there is a specified procedure for installation it is shown.
- Follow the same procedure for RH as for LH.

(a) Remove the back door trim.
(b) Remove the 4 nuts.
(c) Remove back door outer garnish.
(d) Disconnect the connector.
(e) Pull the claw towards the inside of the vehicle as shown in the illustration, disconnect the engagement of 2 claws, and remove the license plate light assembly.



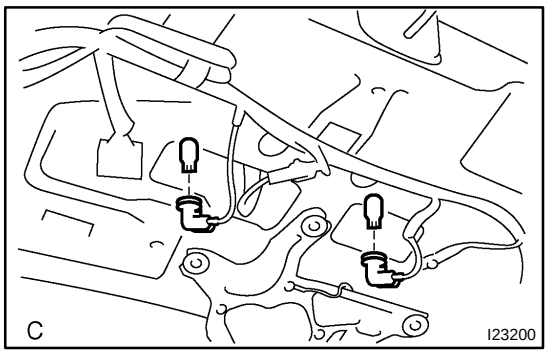


3. Sedan:
REMOVE LICENSE PLATE BULB

HINT:

Installation is in the reverse order of removal. Only if there is a specified procedure for installation it is shown.

(a) Remove a part of luggage compartment door trim.
(b) Disconnect the bulb sockets and remove the bulbs.



4. Wagon:
REMOVE LICENSE PLATE BULB

HINT:

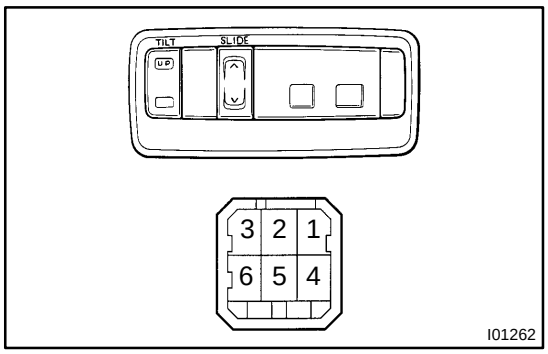
Installation is in the reverse order of removal. Only if there is a specified procedure for installation it is shown.

(a) Remove the back door trim.

(b) Disconnect the bulb sockets and remove the bulbs.

BE29W-03

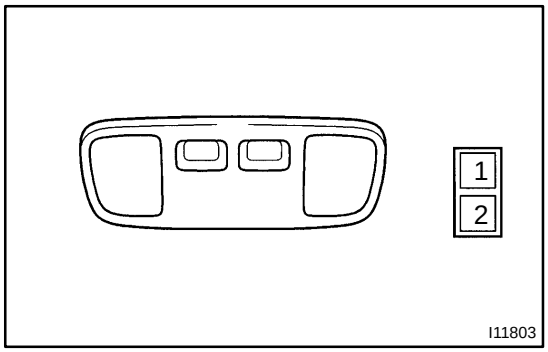
INSPECTION



1. w/ Sliding Roof:
INSPECT FRONT PERSONAL LIGHT SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
OFF	-	No continuity
ON	1 - 4	Continuity

If continuity is not as specified, replace the light assembly or bulb.

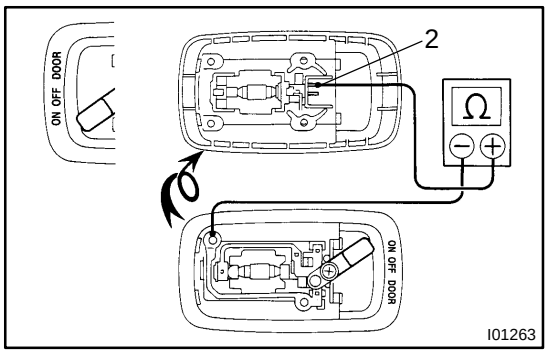


2. w/o Sliding Roof:
INSPECT FRONT PERSONAL LIGHT SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
OFF	-	No continuity
ON	1 - 2	Continuity

If continuity is not as specified, replace the light assembly or bulb.

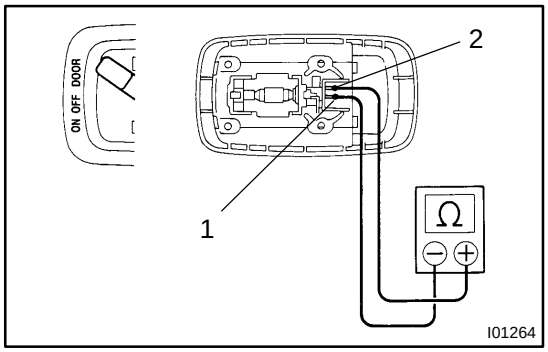
3. INSPECT FRONT PERSONAL LIGHT SWITCH CIRCUIT (See page DI-907)



4. w/o Reader sensor:
INSPECT ROOM LIGHT CONTINUITY

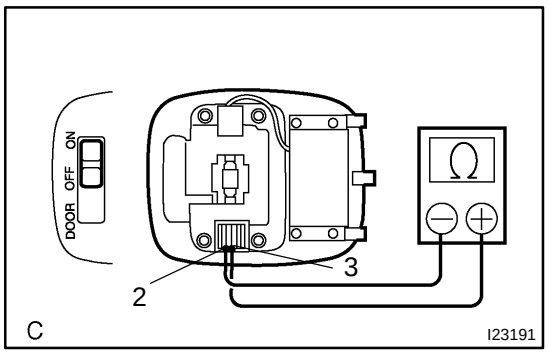
(a) Disconnect the connector from the room light.

(b) Turn the room light switch ON, check that continuity exists between terminal 2 and body ground.



(c) Turn the room light switch DOOR, check that continuity exists between terminals 1 and 2.

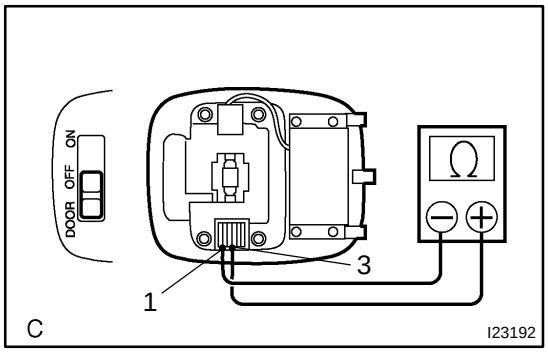
If continuity is not as specified, replace the light assembly or bulb.



5. w/ Reader sensor:
INSPECT ROOM LIGHT CONTINUITY

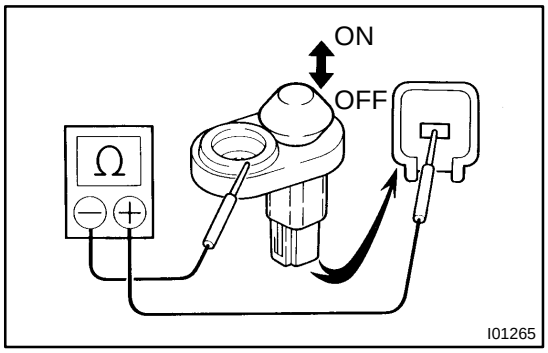
(a) Disconnect the connector from the room light.

(b) Turn the room light switch ON, check that continuity exists between terminal 2 and 3.



(c) Turn the room light switch DOOR, check that continuity exists between terminals 1 and 3.

If continuity is not as specified, replace the light assembly or bulb.

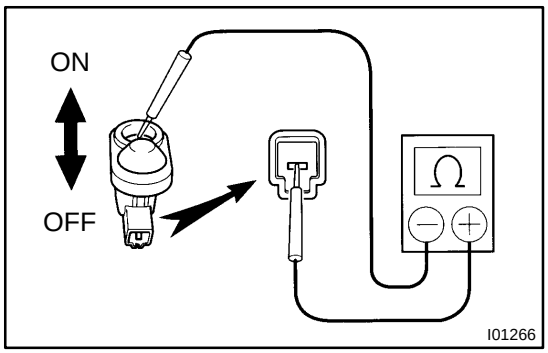


6. INSPECT FRONT DOOR COURTESY SWITCH CONTINUITY

(a) Check that continuity exists between terminals and the switch body with the switch ON (switch pin released: opened door).

(b) Check that no continuity exists between terminals and the switch body with the switch OFF (switch pin pushed in: closed door).

If operation is not as specified, replace the switch.

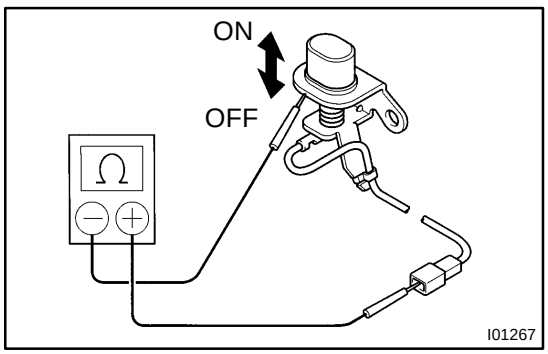


7. INSPECT REAR DOOR COURTESY SWITCH CONTINUITY

(a) Check that continuity exists between terminals and the switch body with the switch ON (switch pin released: opened door).

(b) Check that no continuity exists between terminals and the switch body with the switch OFF (switch pin pushed in: closed door).

If operation is not as specified, replace the switch.

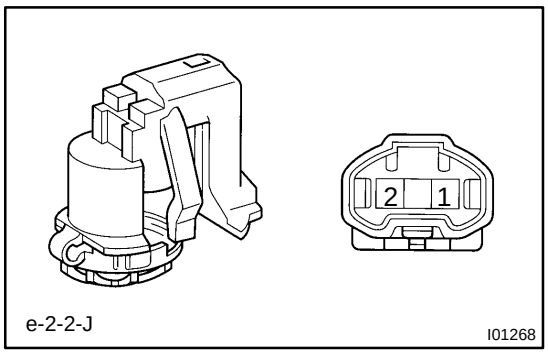


8. INSPECT LUGGAGE COMPARTMENT DOOR COURTESY SWITCH CONTINUITY

(a) Check that continuity exists between terminals and the switch body with the switch ON (switch pin released: opened door).

(b) Check that no continuity exists between terminals and the switch body with the switch OFF (switch pin pushed in: closed door).

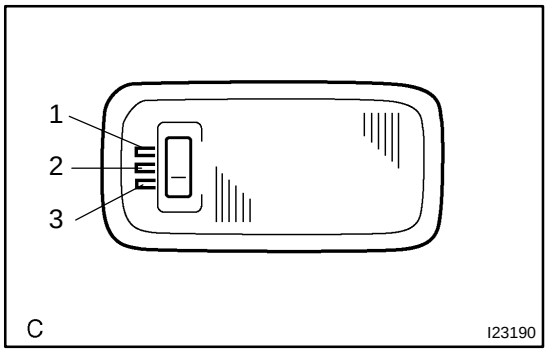
If operation is not as specified, replace the switch.



9. INSPECT LUGGAGE COMPARTMENT LIGHT CONTINUITY

Using the ohmmeter, check that continuity exists between terminals.

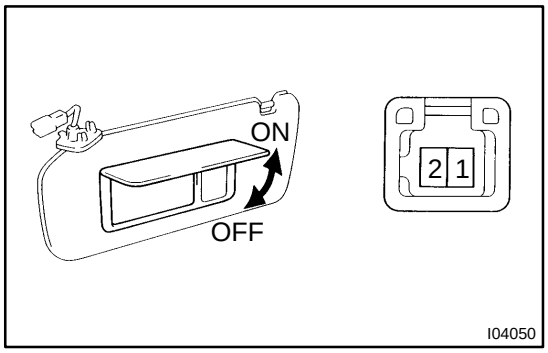
If continuity is not as specified, replace the light assembly or bulb.



10. REAR ROOM LIGHT SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
OFF	1 - 2	No continuity
ON	2 - 3	Continuity

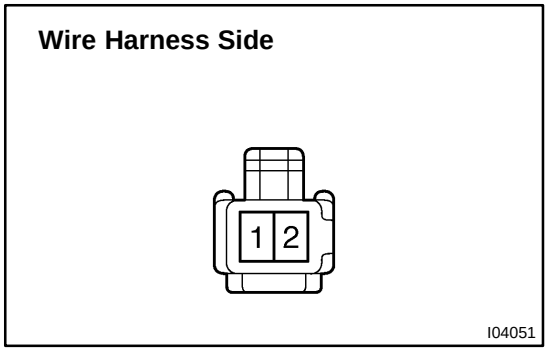
If continuity is not as specified, replace the light assembly or bulb.



11. INSPECT VANITY LIGHT CONTINUITY

Switch position	Tester connection	Specified condition
OFF (closed)	-	No continuity
ON (opened)	1 - 2	Continuity

If continuity is not as specified, replace the vanity light assembly or bulb.



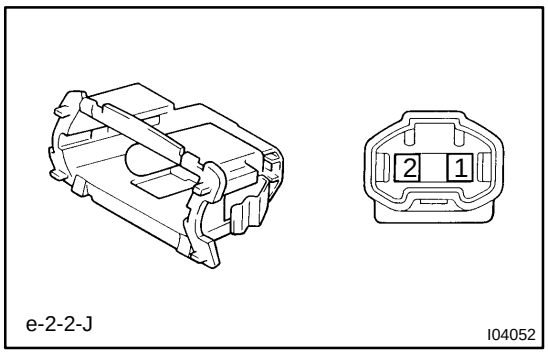
12. INSPECT VANITY LIGHT CIRCUIT

(See page DI-907)

Disconnect the connector from the light and inspect the connector on the wire harness side, as shown.

Tester connection	Condition	Specified condition
2 - Ground	Always	Continuity
1 - Ground	Always	Battery Positive Voltage

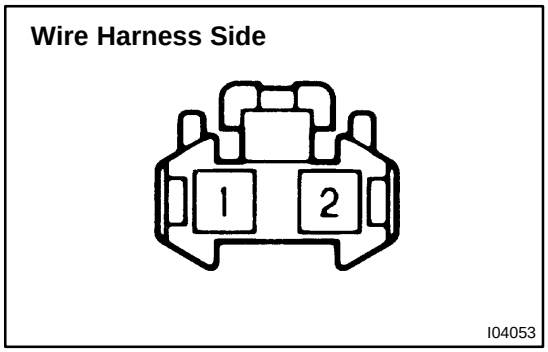
If circuit is not as specified, inspect power source or wire harness.



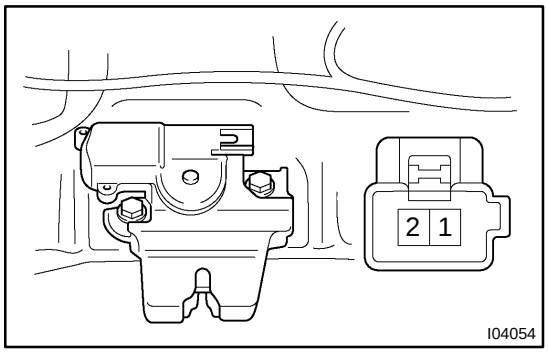
13. INSPECT DOOR COURTESY LIGHT CONTINUITY

Using an ohmmeter, check that continuity exists between terminals.

If continuity is not as specified, replace the light assembly or bulb.



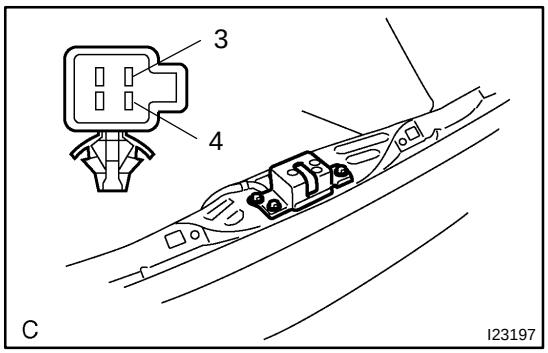
14. INSPECT DOOR COURTESY LIGHT CIRCUIT
(See page DI-907)



15. INSPECT LUGGAGE COMPARTMENT DOOR COURTESY SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
OFF (closed)	-	No continuity
ON (opened)	2 - Switch body	Continuity

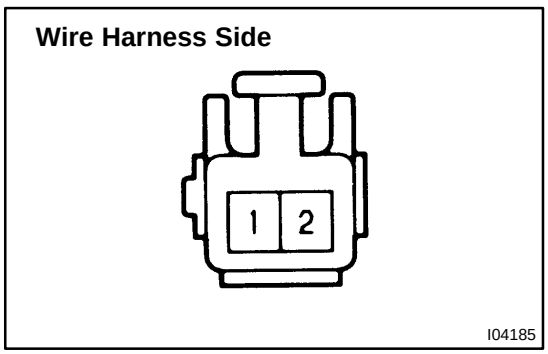
If continuity is not as specified, replace the switch.



16. BACK DOOR COURTESY SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
OFF (closed)	-	No continuity
ON (opened)	3 - 4	Continuity

If continuity is not as specified, replace the switch.

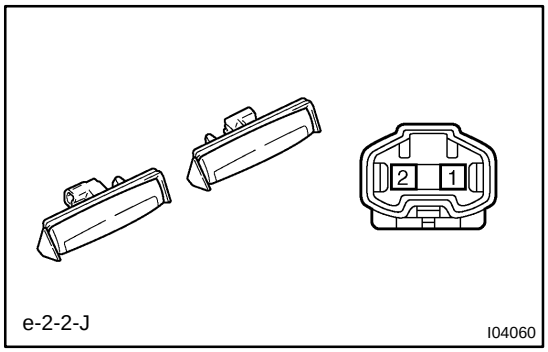


17. INSPECT LUGGAGE COMPARTMENT DOOR COURTESY SWITCH CIRCUIT
(See page DI-923)

Disconnect the connector from the switch and inspect the connector on the wire harness side, as shown.

Tester connection	Condition	Specified condition
2 - Body ground	Luggage compartment door courtesy switch ON (door opened)	Continuity

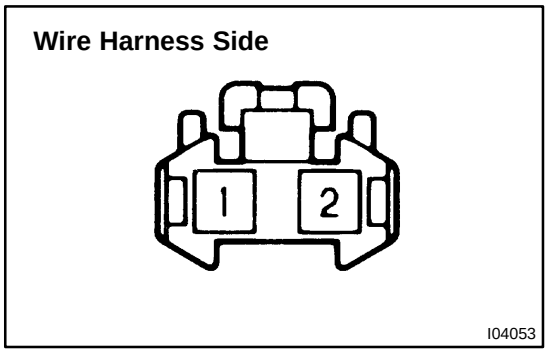
If circuit is not as specified, inspect power source or wire harness.



18. INSPECT LICENSE PLATE LIGHT CONTINUITY

Using an ohmmeter, check that continuity exists between terminals.

If continuity is not as specified, replace the light assembly or bulb.



19. INSPECT LICENSE PLATE LIGHT CIRCUIT

Disconnect the connector from the light and inspect the connector on the wire harness side, as shown.

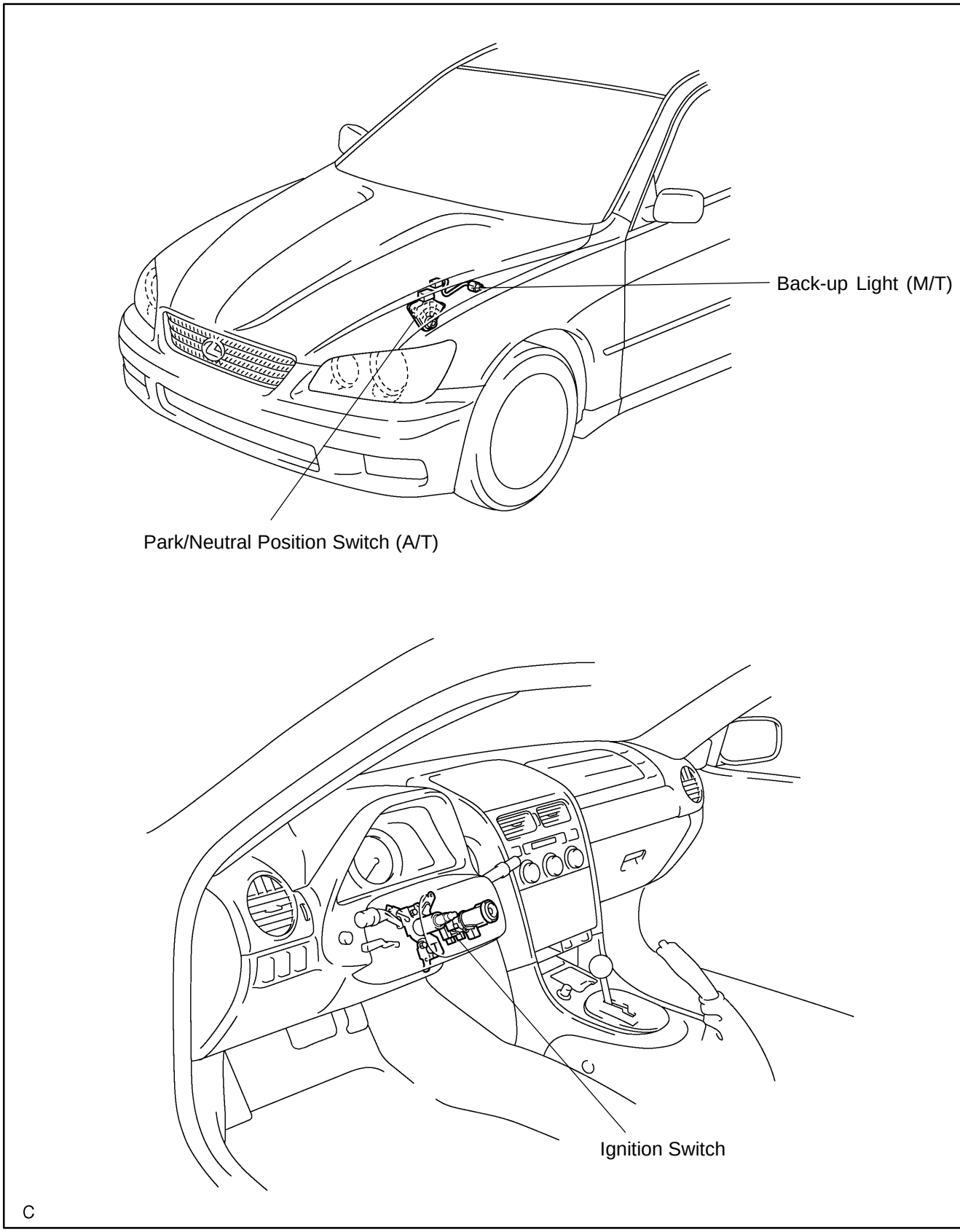
Tester connection	Condition	Specified condition
1 - Ground	Always	Continuity
2 - Ground	Light control switch TAIL or HEAD	Battery Positive Voltage

If circuit is not as specified, inspect power source or wire harness.

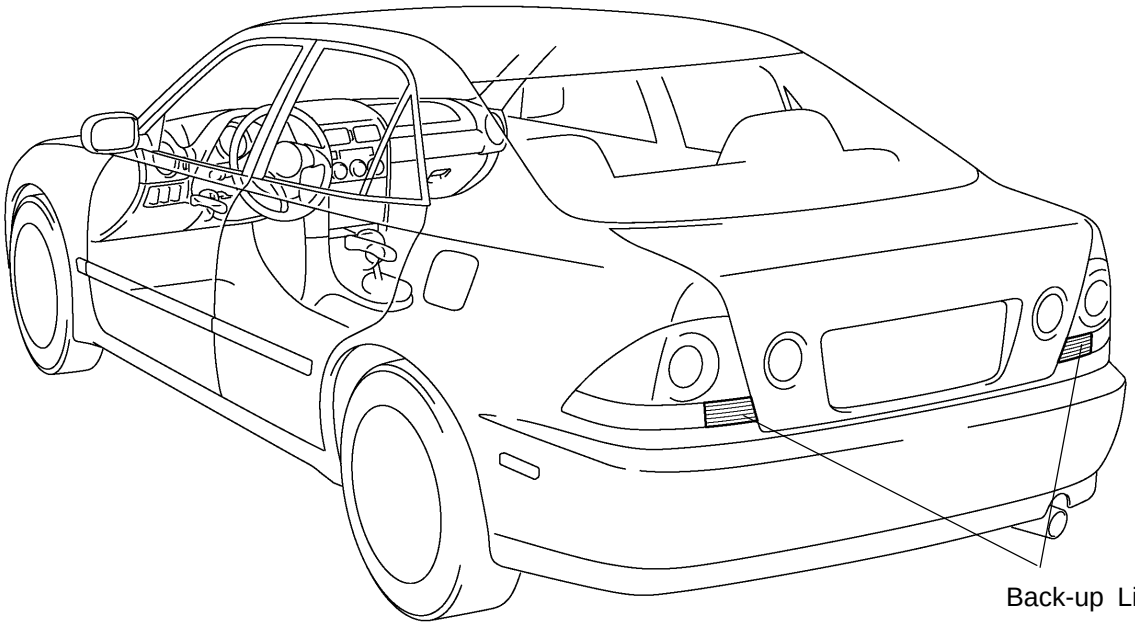
BACK-UP LIGHT SYSTEM

LOCATION

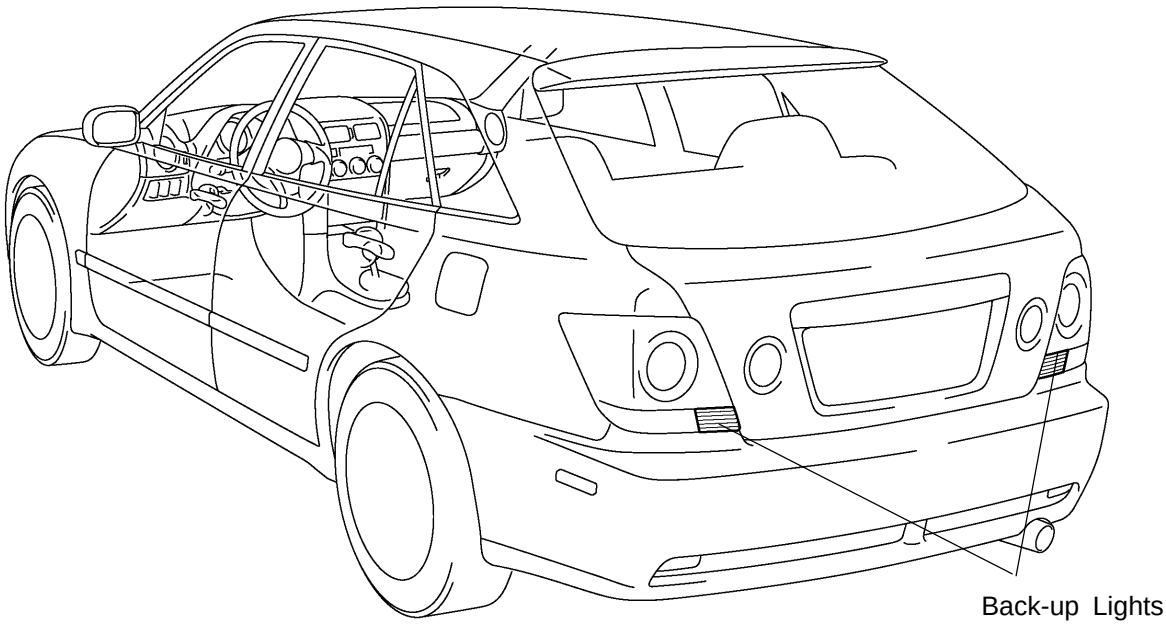
BE29X-03



Sedan:



Wagon:



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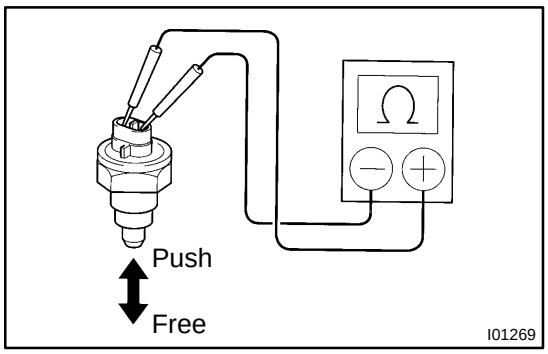
BE169-05



INSPECTION

1. INSPECT BACK- UP LIGHT SWITCH CONTINUITY (M/T)

Switch position	Specified condition
Push	Continuity
Free	No continuity

If continuity is not as specified, replace the switch.

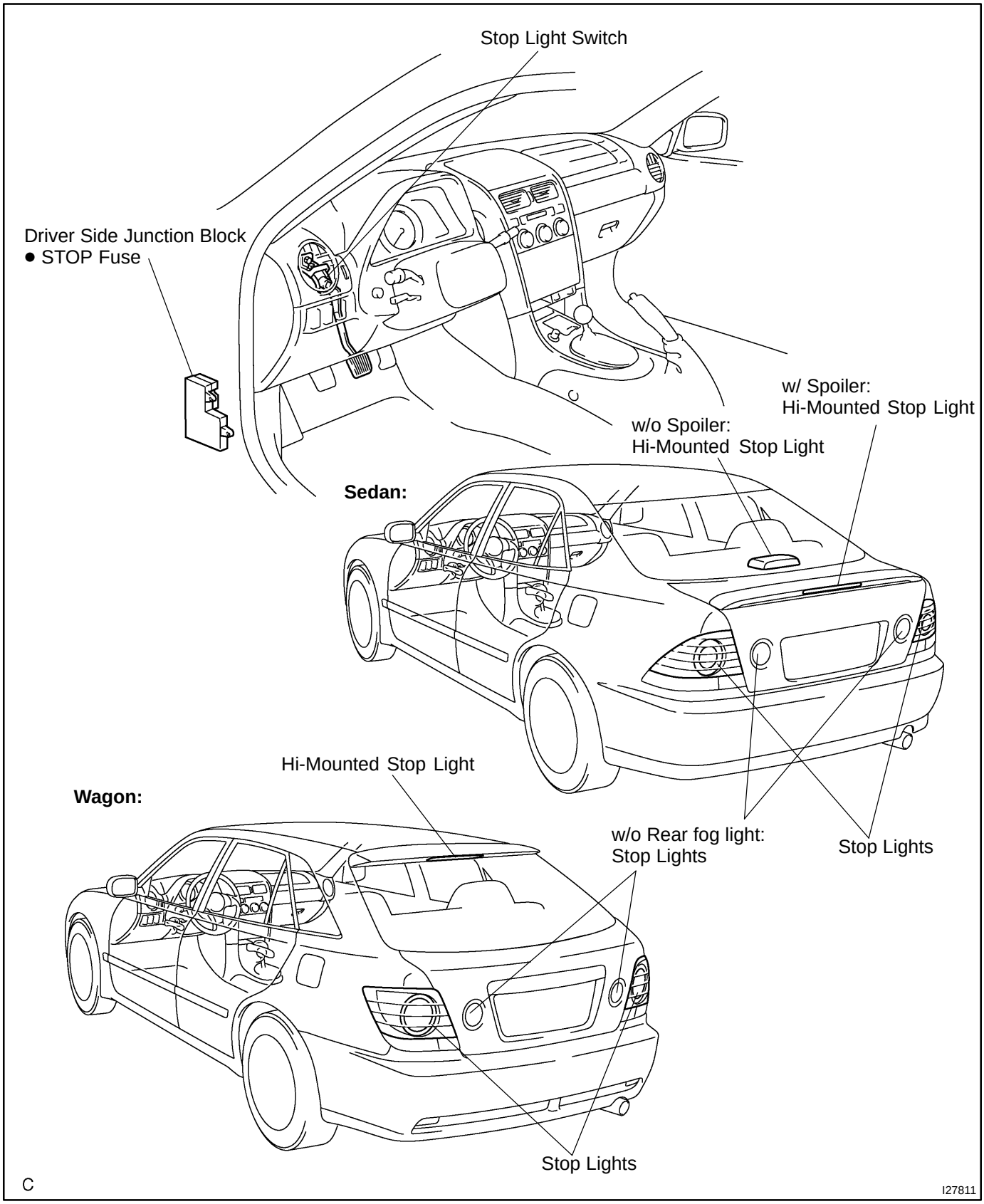
2. INSPECT PARK/NEUTRAL POSITION SWITCH CONTINUITY (A/T)

(See page DI-371)

STOP LIGHT SYSTEM

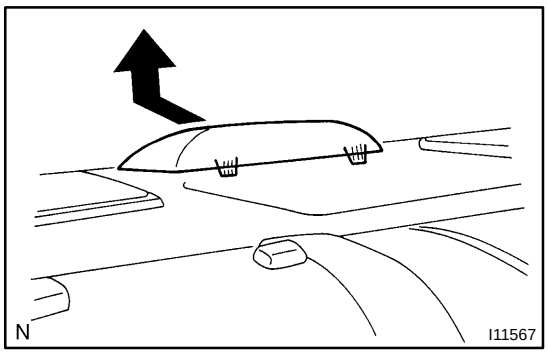
LOCATION

BE0H6-14



BE16A-04

REMOVAL



1. w/o Spoiler:
REMOVE HI-MOUNTED STOP LIGHT ASSEMBLY

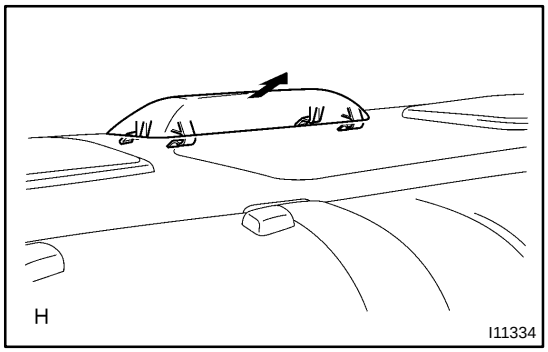
HINT:

Installation is in the reverse order of removal. Only if there is a specified procedure for installation it is shown.

(a) Insert the clip remover in the position as shown in the illustration, pull it upwards, and disconnect the engagement of the 2 front claws.

(b) Pull the center stop light assembly in the direction as shown in the illustration, and disconnect the engagement of 4 claws.

(c) Separate the connector, and remove the center stop light assembly.



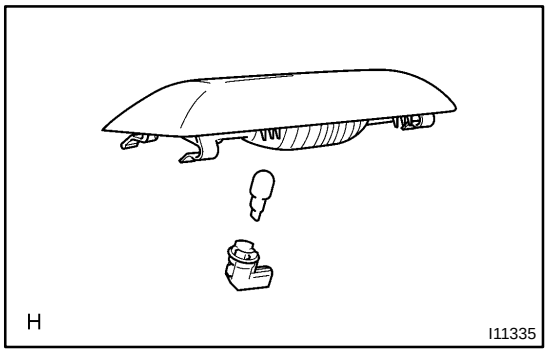
2. w/o Spoiler:
REMOVE HI-MOUNTED STOP LIGHT BULB

HINT:

Installation is in the reverse order of removal. Only if there is a specified procedure for installation it is shown.

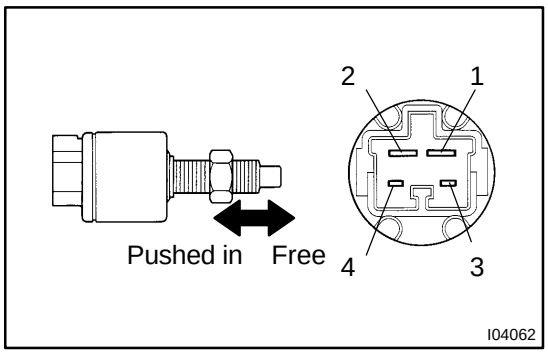
(a) Remove center stop light assembly.

(b) Remove the bulb sockets and bulbs.



BE29Y-03

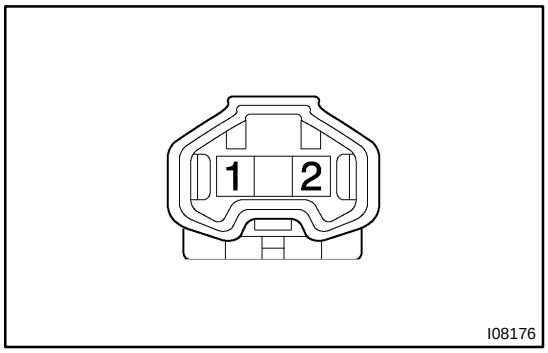
INSPECTION



1. INSPECT STOP LIGHT SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
Switch pin pushed in (Pedal released)	1 - 2	Continuity
Switch pin free (Pedal depressed)	1 - 2	No continuity
Switch pin free (Pedal depressed)	3 - 4	Continuity
Switch pin pushed in (Pedal released)	3 - 4	No continuity

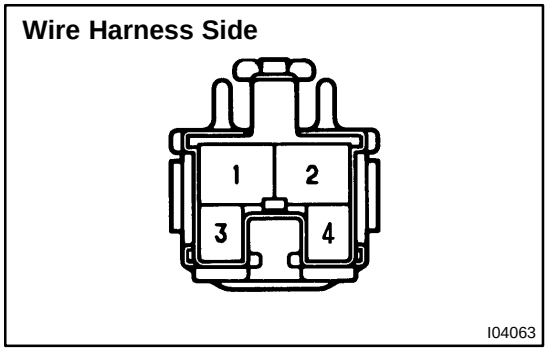
If continuity is not as specified, replace the switch.



2. w/ Spoiler: INSPECT HI- MOUNTED STOP LIGHT ASSEMBLY CONTINUITY

Using the ohmmeter, check that continuity exists between terminals.

If continuity is not as specified, replace the bulb or light assembly.



3. INSPECT STOP LIGHT SWITCH CIRCUIT

(See page DI-830)

Disconnect the connector from the switch and inspect the connector on the wire harness side, as shown.

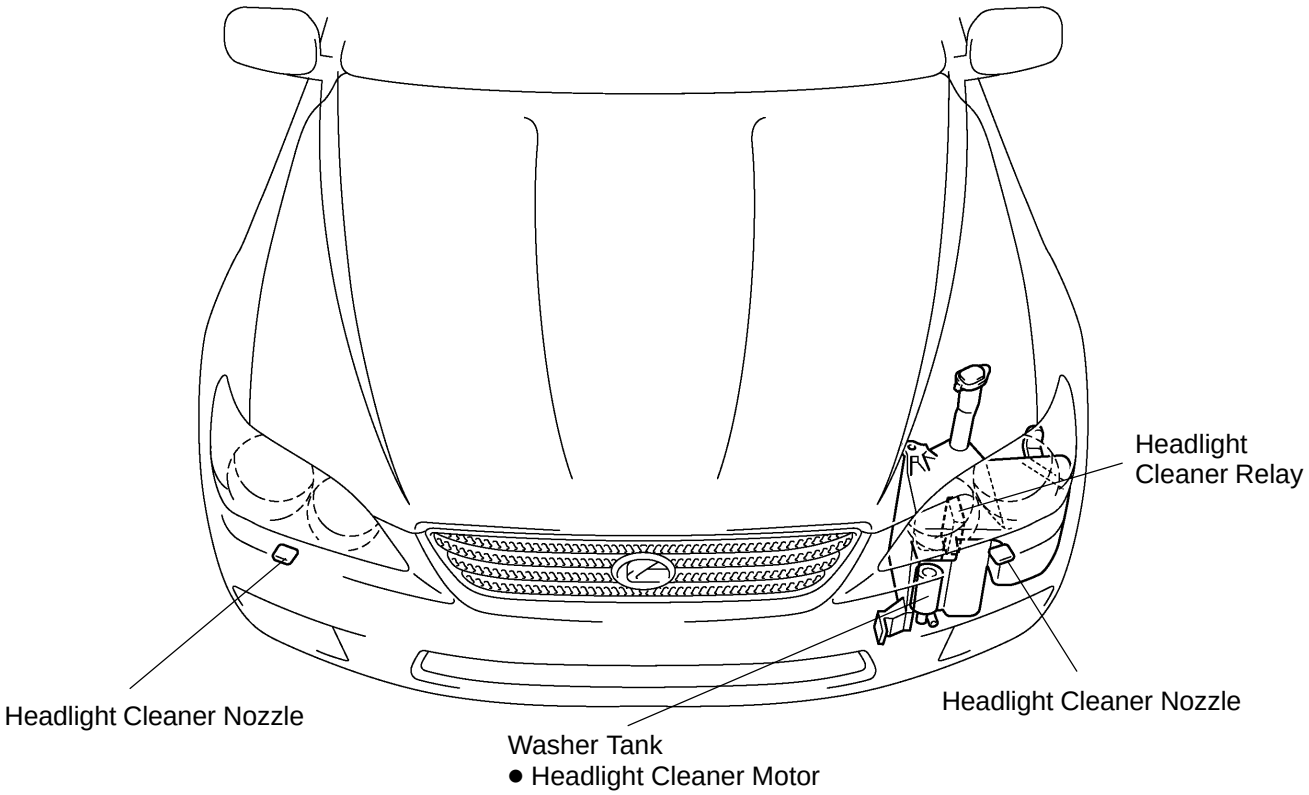
Tester connection	Condition	Specified condition
2 - Ground	Always	Battery Positive Voltage

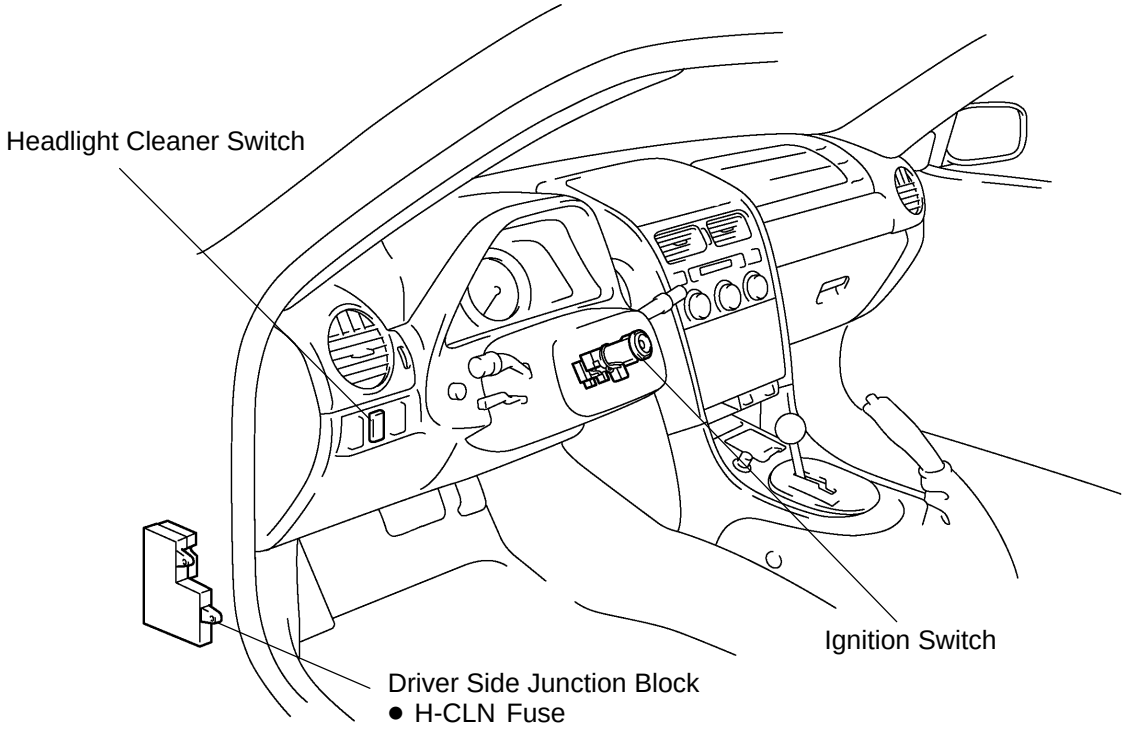
If circuit is not as specified, inspect the power source or wire harness.

HEADLIGHT CLEANER SYSTEM

LOCATION

BE023-13



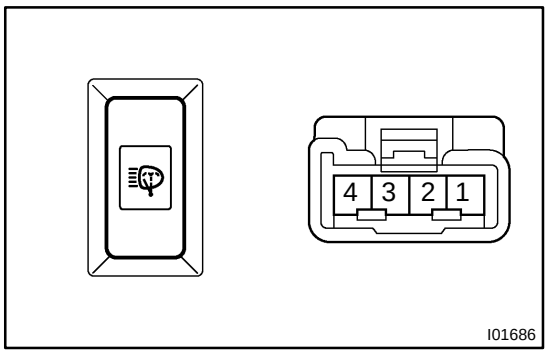


C

I27812

BE0HM-07

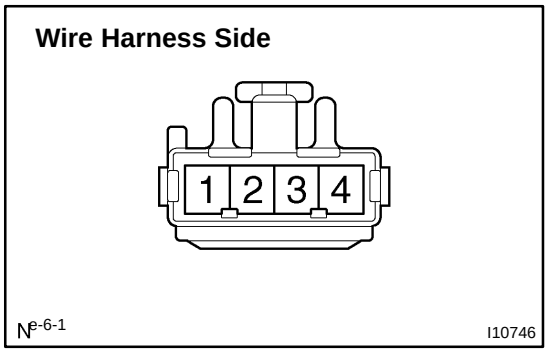
INSPECTION



1. INSPECT HEADLIGHT CLEANER SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
OFF	-	No continuity
ON	1 - 4	Continuity
Illumination circuit	2 - 3	Continuity

If continuity is not as specified, replace the switch.

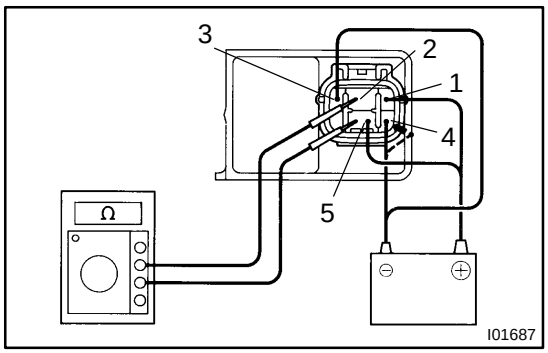


2. INSPECT HEADLIGHT CLEANER SWITCH CIRCUIT

Disconnect the switch connector and inspect the connector on wire harness side, as shown.

Tester connection	Condition	Specified condition
1 - Ground	Headlight ON	Continuity
1 - Ground	Headlight OFF	No continuity

If circuit is not as specified, inspect the circuits connected to other parts.



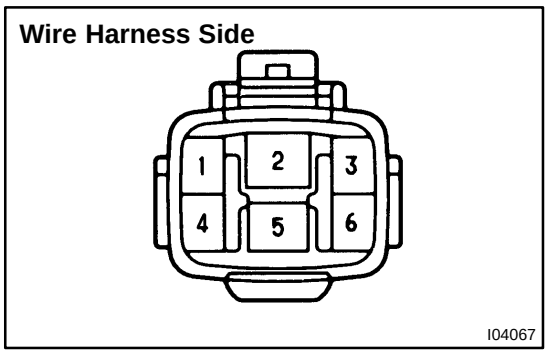
3. INSPECT HEADLIGHT CLEANER RELAY OPERATION

(a) Check that no continuity exists between terminals 2 and 5.

(b) Connect the positive (+) lead from the battery to terminals 1 and 5, and the negative (-) lead to terminal 3.

(c) Connect the negative (-) lead from the battery to terminal 4, and check that continuity exists between terminals 2 and 5 for 0.9 - 1.1 seconds, then no continuity exists.

If operation is not as specified, replace the motor.

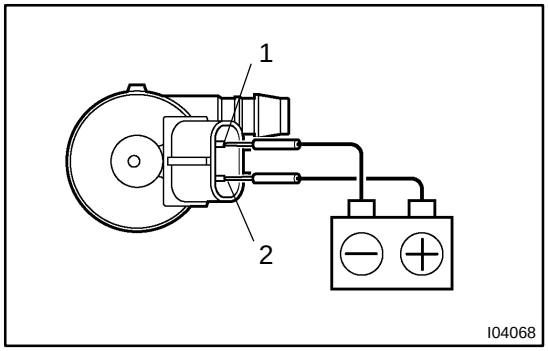


4. INSPECT HEADLIGHT CLEANER RELAY CIRCUIT

Disconnect the connector from the relay and inspect the connector on wire harness side, as shown.

Tester connection	Condition	Specified condition
2 - Ground 3 - Ground	Always	Continuity
4 - Ground	Ignition switch ON, light control switch in HEAD and cleaner switch OFF	No continuity
4 - Ground	Ignition switch ON, light control switch in HEAD and cleaner switch ON or daytime running light system operating	Continuity
1 - Ground	Ignition switch OFF or ACC	No voltage
1 - Ground	Ignition switch ON	Battery voltage
5 - Ground	Always	Battery voltage

If circuit is not as specified, inspect the circuits connected to other parts.



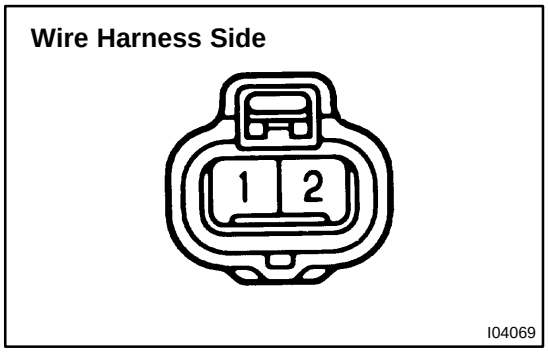
5. INSPECT HEADLIGHT CLEANER MOTOR OPERATION

Connect the positive (+) lead from the battery to terminal 2 and the negative (-) lead to terminal 1, check that the motor operates.

NOTICE:

These tests must be performed quickly (within 20 seconds) to prevent the coil from burning out.

If operation is not as specified, replace the motor.



6. INSPECT HEADLIGHT CLEANER MOTOR CIRCUIT

Disconnect the connector from the cleaner motor and inspect the connector on wire harness side, as shown.

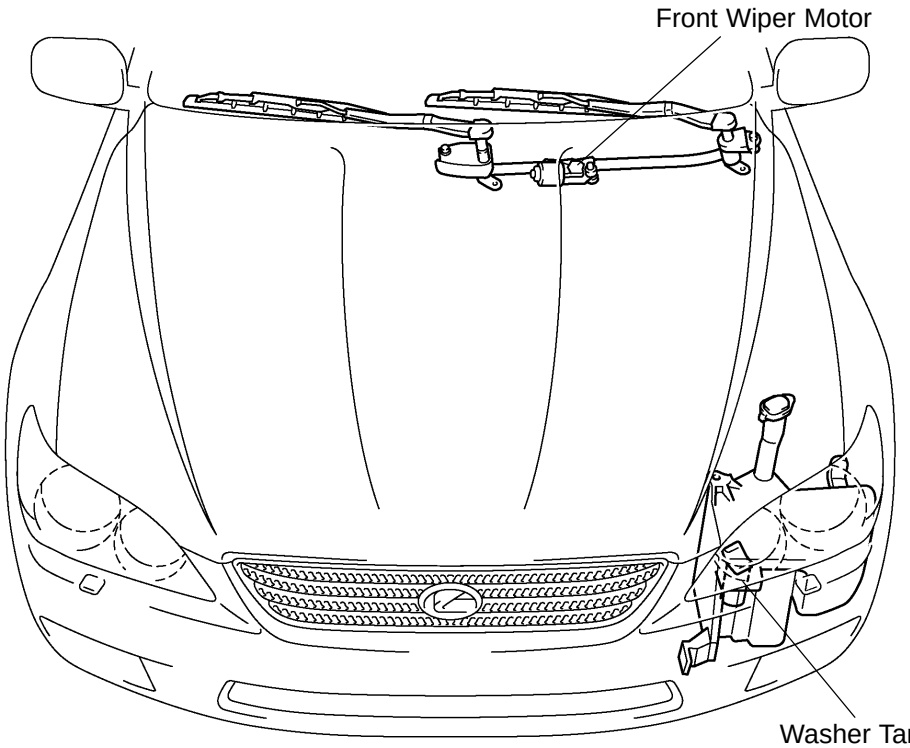
Tester connection	Condition	Specified condition
2 - Ground	Always	Continuity

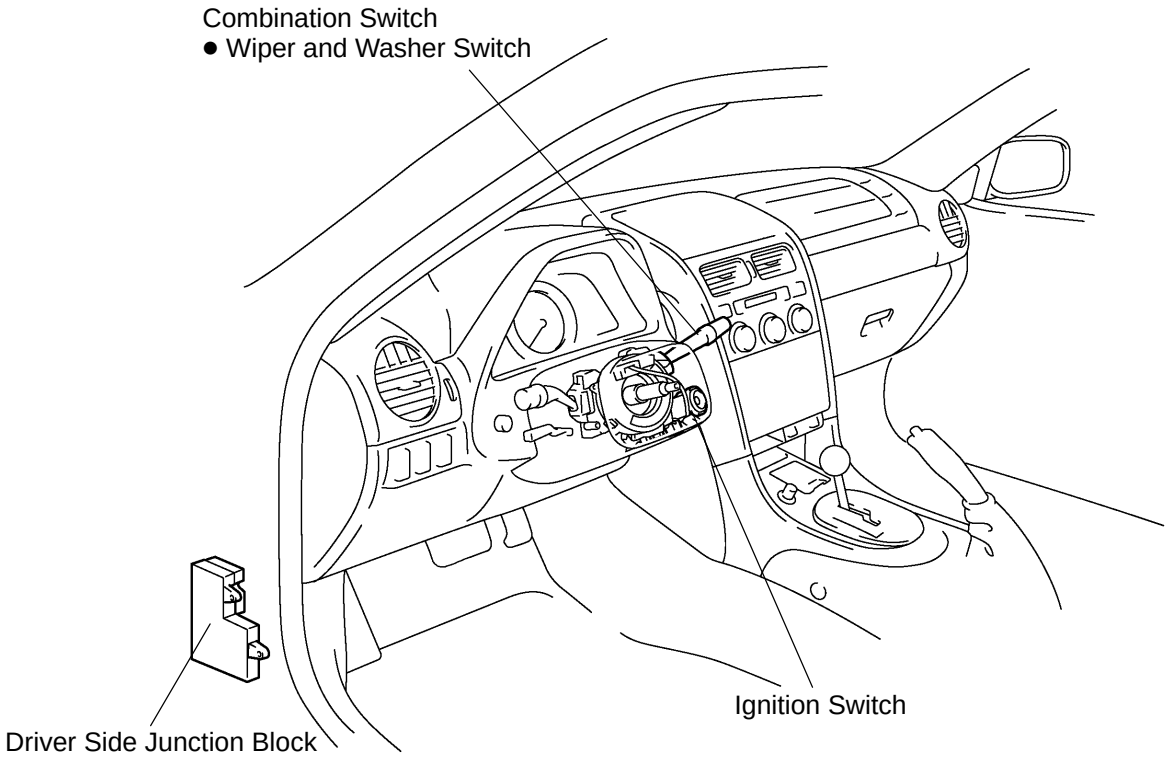
If circuit is not as specified, inspect the circuits connected to other parts.

WIPER AND WASHER SYSTEM

BE29Z-04

LOCATION





C

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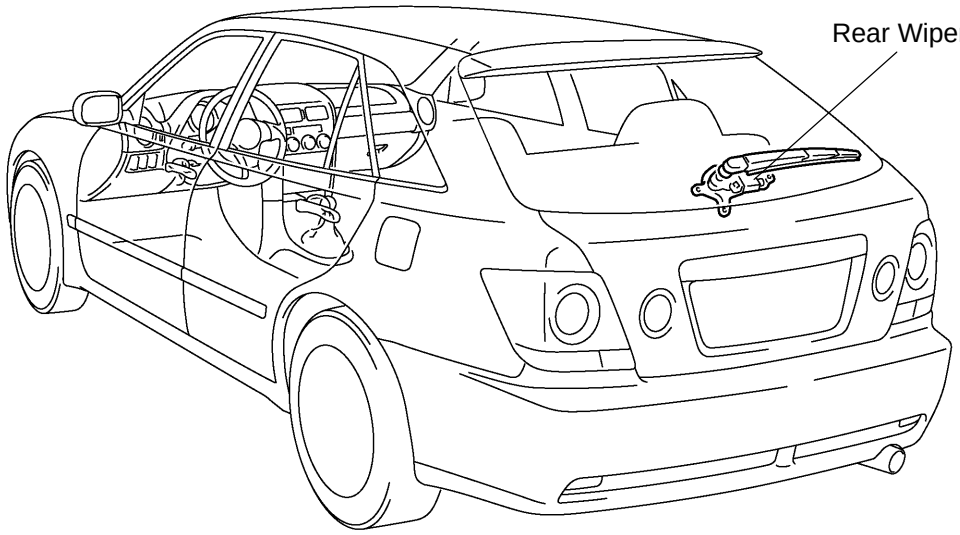
Wagon:



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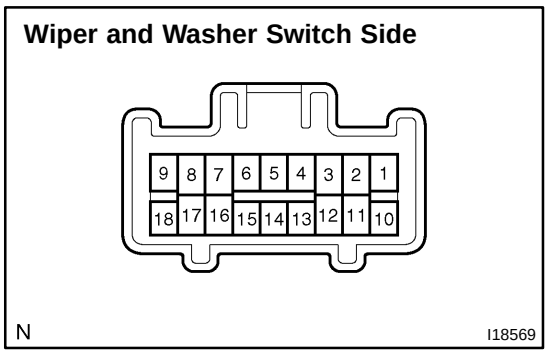
BE2MV-02



INSPECTION

1. INSPECT FRONT WIPER AND WASHER SWITCH CONTINUITY

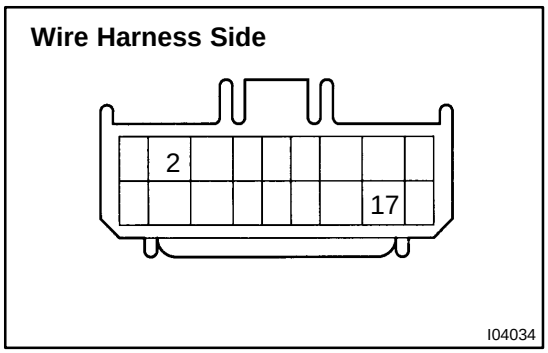
Switch position	Tester connection	Specified condition
OFF	7 - 16	Continuity
INT	7 - 16	Continuity
LO	7 - 17	Continuity
HI	8 - 17	Continuity
Washer OFF	-	No continuity
Washer ON	2 - 11	Continuity

If continuity is not as specified, replace the switch.

2. INSPECT REAR WIPER AND WASHER SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
OFF	-	Continuity
INT	2 - 13	Continuity
ON	2 - 10	Continuity
Washer OFF	-	No continuity
Washer ON	2 - 12	Continuity

If continuity is not as specified, replace the switch.

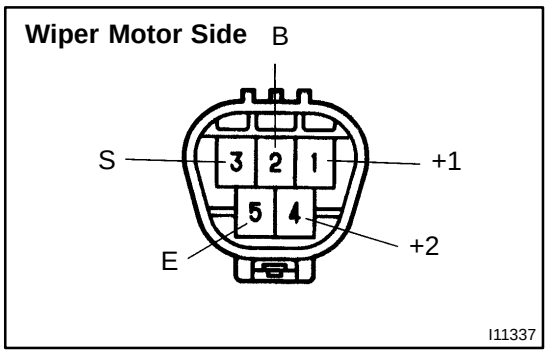


3. Connector disconnected: INSPECT WIPER AND WASHER SWITCH CIRCUIT

Disconnect the connector from the motor and inspect the connector on the wire harness side, as shown.

Tester connection	Condition	Specified condition
2 - Ground	Always	Continuity
17 - Ground	Ignition switch LOCK or ACC	No voltage
17 - Ground	Ignition switch ON	Battery Positive Voltage

If circuit is not as specified, inspect the circuits connected to other parts.



4. Low speed:
INSPECT FRONT WIPER MOTOR OPERATION

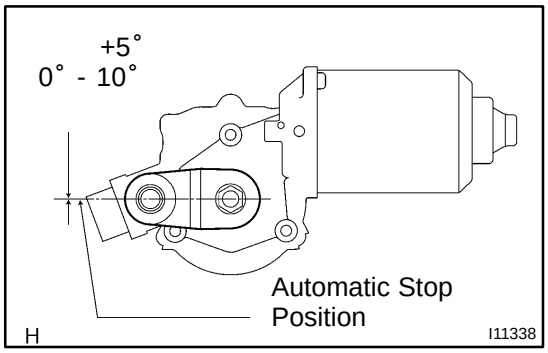
Connect the positive (+) lead from the battery to terminal 1 and the negative (-) lead to terminal 5, check that the motor operates at low speed.

If operation is not as specified, replace the motor.

5. High speed:
INSPECT FRONT WIPER MOTOR OPERATION

Connect the positive (+) lead from the battery to terminal 4 and the negative (-) lead to terminal 5, check that the motor operates at high speed.

If operation is not as specified, replace the motor.



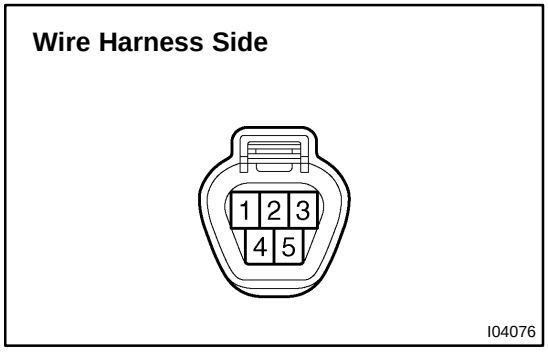
6. Stopping at stop position:
INSPECT FRONT WIPER MOTOR OPERATION

(a) Operate the motor at low speed and stop the motor operation anywhere except at the stop position by disconnecting positive (+) lead from terminal 1.

(b) Connect terminals 1 and 3.

(c) Connect the positive (+) lead from the battery to terminal 2 and negative (-) lead to terminal 5, check that the motor stops running at the stop position after the motor operates again.

If operation is not as specified, replace the motor.

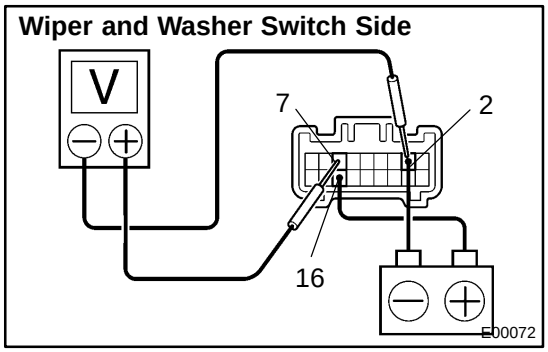


7. Connector disconnected:
INSPECT FRONT WIPER MOTOR CIRCUIT

Disconnect the connector from the motor and inspect the connector on the wire harness side, as shown.

Tester connection	Condition	Specified condition
4 - Ground	Always	Continuity
2 - Ground	Ignition switch LOCK or ACC	No voltage
2 - Ground	Ignition switch ON	Battery Positive Voltage

If circuit is not as specified, inspect the circuits connected to other parts.

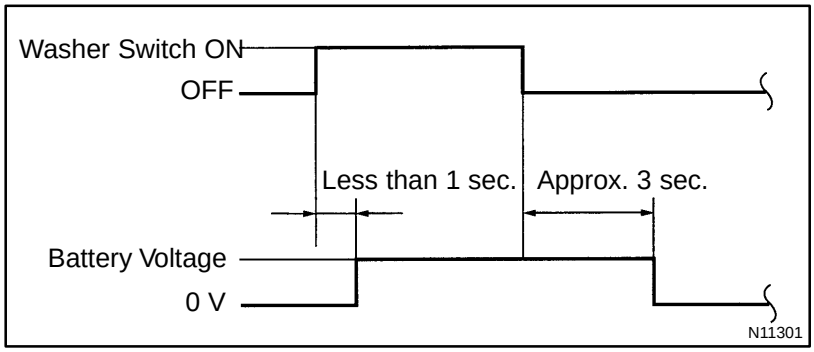


8. INSPECT FRONT WASHER LINKED OPERATION

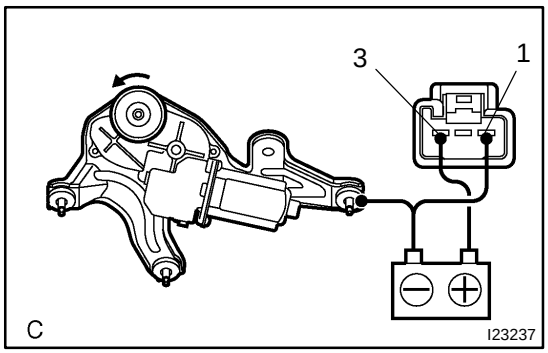
(a) Connect the positive (+) lead from the battery to terminal 16 and the negative (-) lead to terminal 2.

(b) Connect the positive (+) lead from the voltmeter to terminal 7 and the negative (-) lead to terminal 2.

(c) Push in the washer switch, and check that the voltage changes as shown in the table.

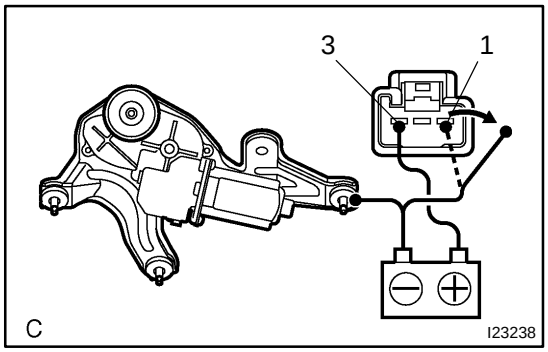


If operation is not as specified, replace the wiper and washer switch.



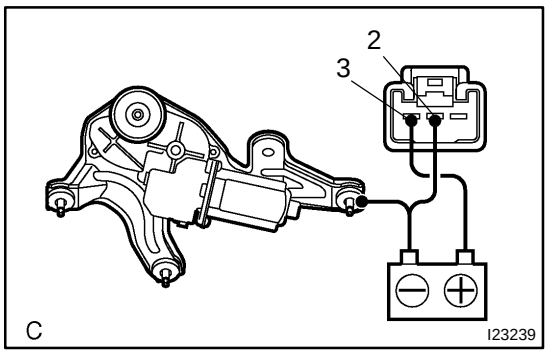
9. INSPECT REAR WIPER MOTOR OPERATION

(a) Connect the positive (+) lead from the battery to terminal 3 and negative (-) lead to terminal 1 and the motor body, check that the motor operates.



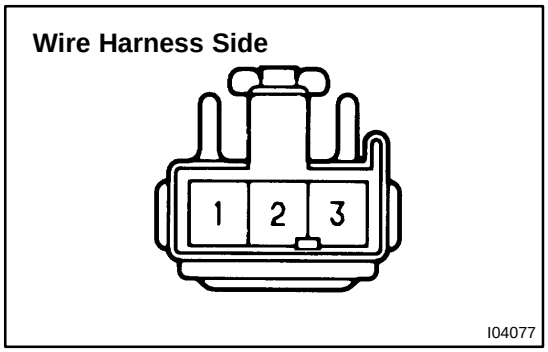
(b) Disconnect the negative (-) lead from terminal 1, check that the motor stops running at the stop position.

If operation is not as specified, replace the motor.



10. Intermittent:
INSPECT REAR WIPER MOTOR OPERATION

Connect the positive (+) lead from the battery to terminal 3 and the negative (-) lead to terminal 2 and the motor body, check that the motor operates intermittently for 9-15 seconds.
If operation is not as specified, replace the motor.



11. Connector disconnected:
INSPECT REAR WIPER MOTOR CIRCUIT

Disconnect the connector from the motor and inspect the connector on the wire harness side, as shown.

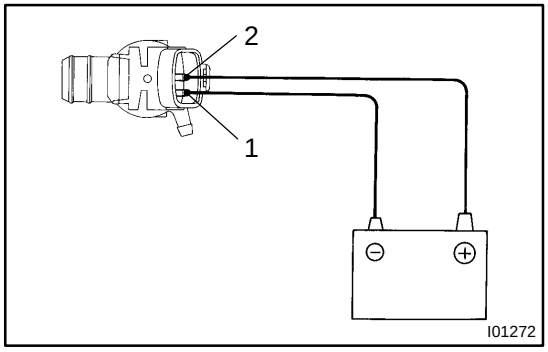
Tester connection	Condition	Specified condition
1 - Ground	Always	Continuity
2 - Ground	Always	Continuity
3 - Ground	Ignition switch OFF or ACC	No voltage
3 - Ground	Ignition switch ON	Battery positive voltage

If circuit is not as specified, inspect the circuits connected to other parts.

12. Wagon:
INSPECT REAR WASHER LINKED OPERATION

Make sure that the rear wiper operates simultaneously with the washer when the rear washer switch is turned ON.

- If the rear wiper does not operates, inspect the rear wiper motor.
- If washer fluid dose not come out, inspect the washer motor.
- If necessary, replace the wiper and washer switch.



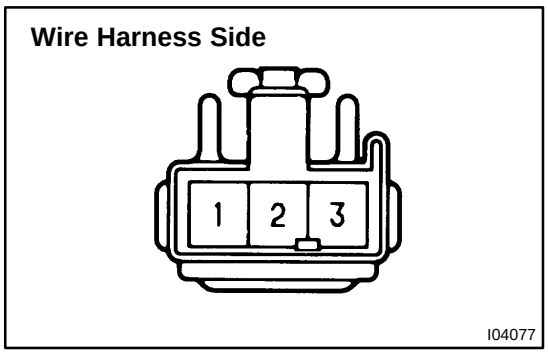
13. Sedan:
INSPECT WASHER MOTOR OPERATION

Connect the positive (+) lead from the battery to terminal 2 and the negative (-) lead to terminal 1, check that the motor operates.

NOTICE:

These tests must be performed quickly (within 20 seconds) to prevent the coil from burning out.

If operation is not as specified, replace the motor.

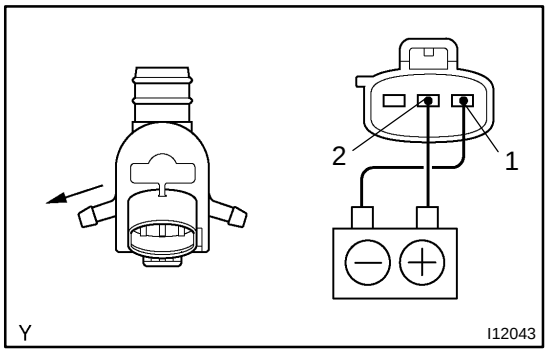


14. Sedan, Connector disconnected:
INSPECT FRONT WASHER MOTOR CIRCUIT

Disconnect the connector from the motor and inspect the connector on the wire harness side, as shown.

Tester connection	Condition	Specified condition
2 - Ground	Ignition switch ON	Battery Positive Voltage

If circuit is not as specified, inspect the power source, wire harness and wiper switch.



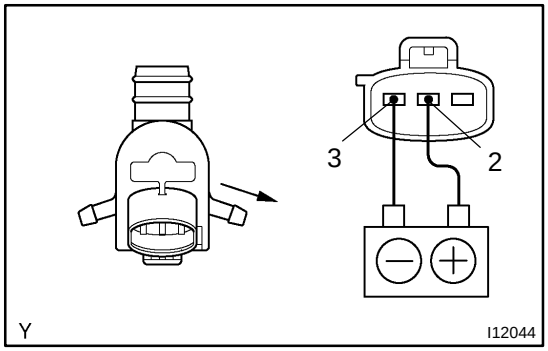
15. Wagon:
INSPECT FRONT WASHER MOTOR OPERATION

Connect the positive (+) lead from the battery to terminal 2 and the negative (-) lead to terminal 1, check that the motor operates.

NOTICE:

These tests must be performed quickly (within 20 seconds) to prevent the coil from burning out.

If operation is not as specified, replace the motor.



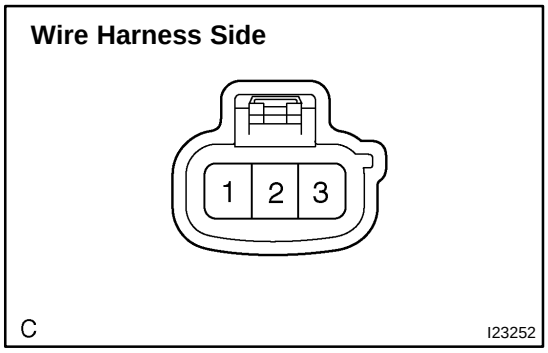
16. INSPECT REAR WASHER MOTOR OPERATION

Connect the positive (+) lead from the battery to terminal 2 and the negative (-) lead to terminal 3, check that the motor operates.

NOTICE:

These tests must be performed quickly (within 20 seconds) to prevent the coil from burning out.

If operation is not as specified, replace the motor.



17. Wagon, Connector disconnected:
INSPECT WASHER MOTOR CIRCUIT

Disconnect the connector from the motor and inspect the connector on the wire harness side, as shown.

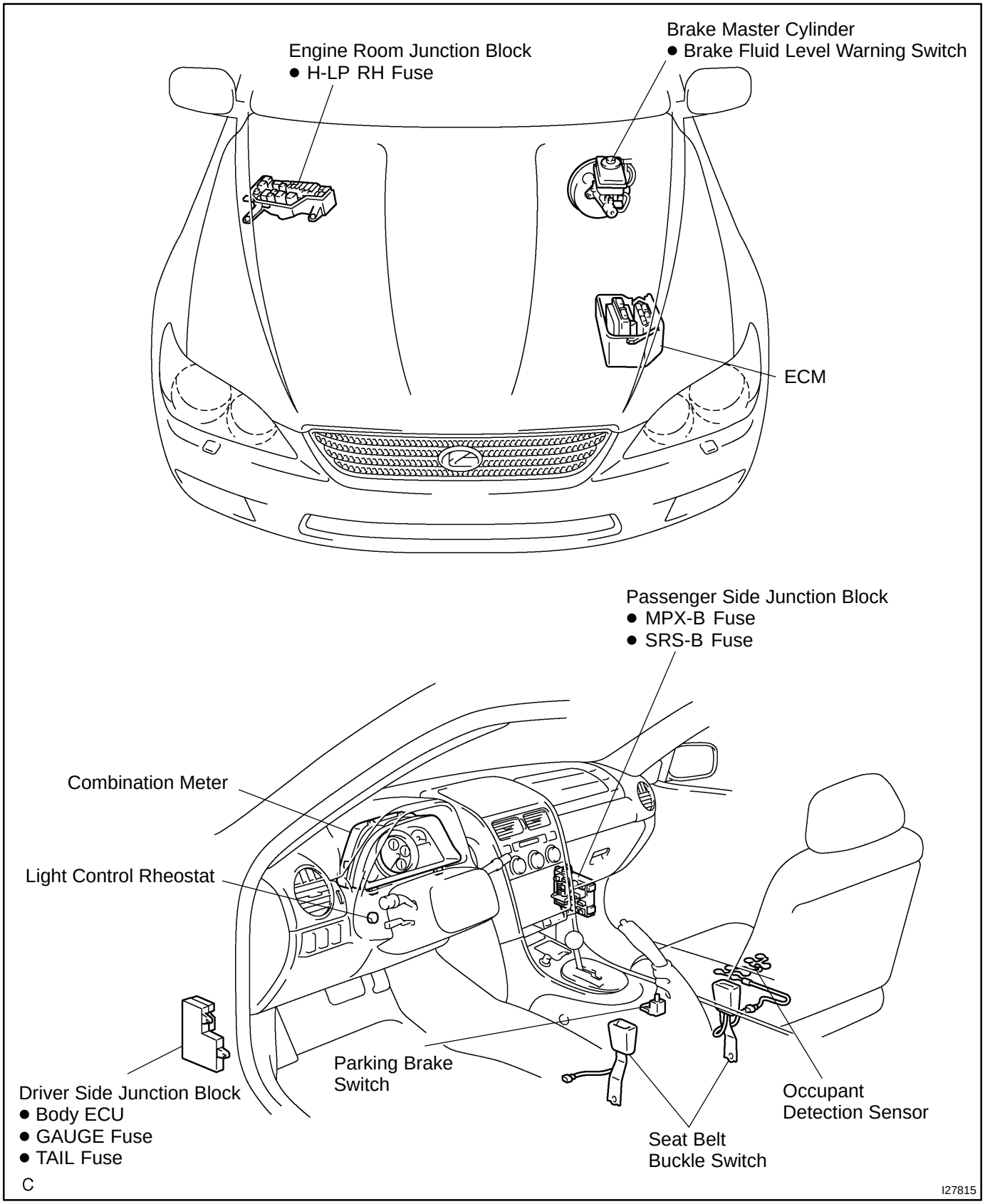
Tester connection	Condition	Specified condition
2 - Ground	Ignition switch ON	Battery positive voltage

If circuit is not as specified, inspect the power source, wire harness and wiper switch.

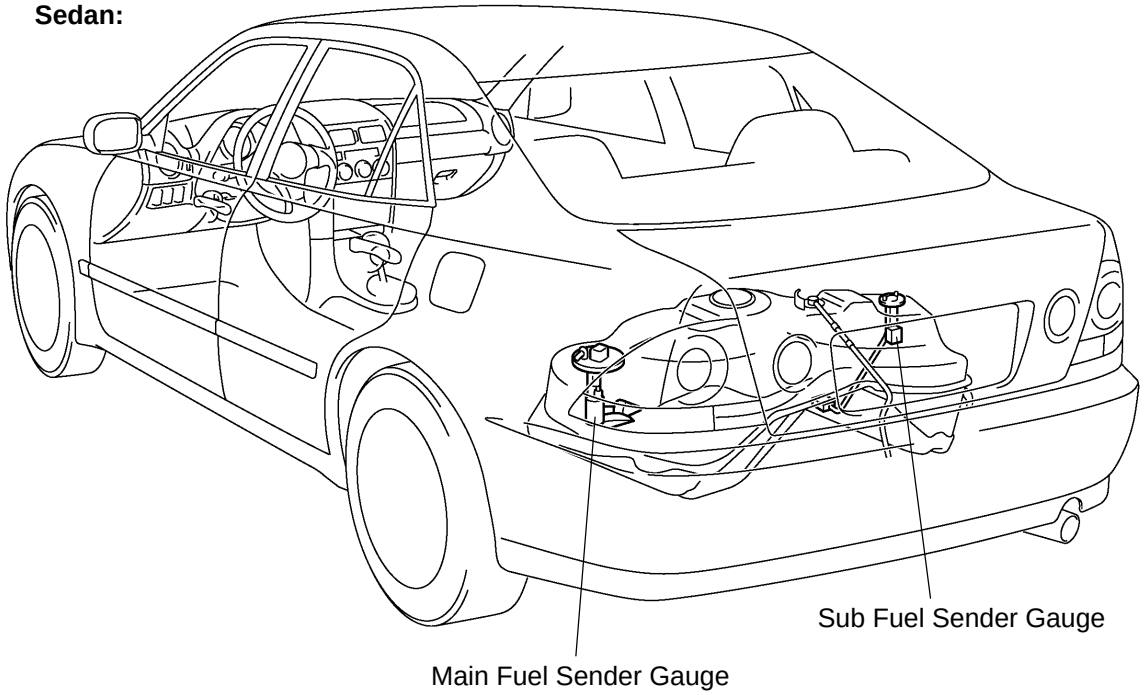
COMBINATION METER

LOCATION

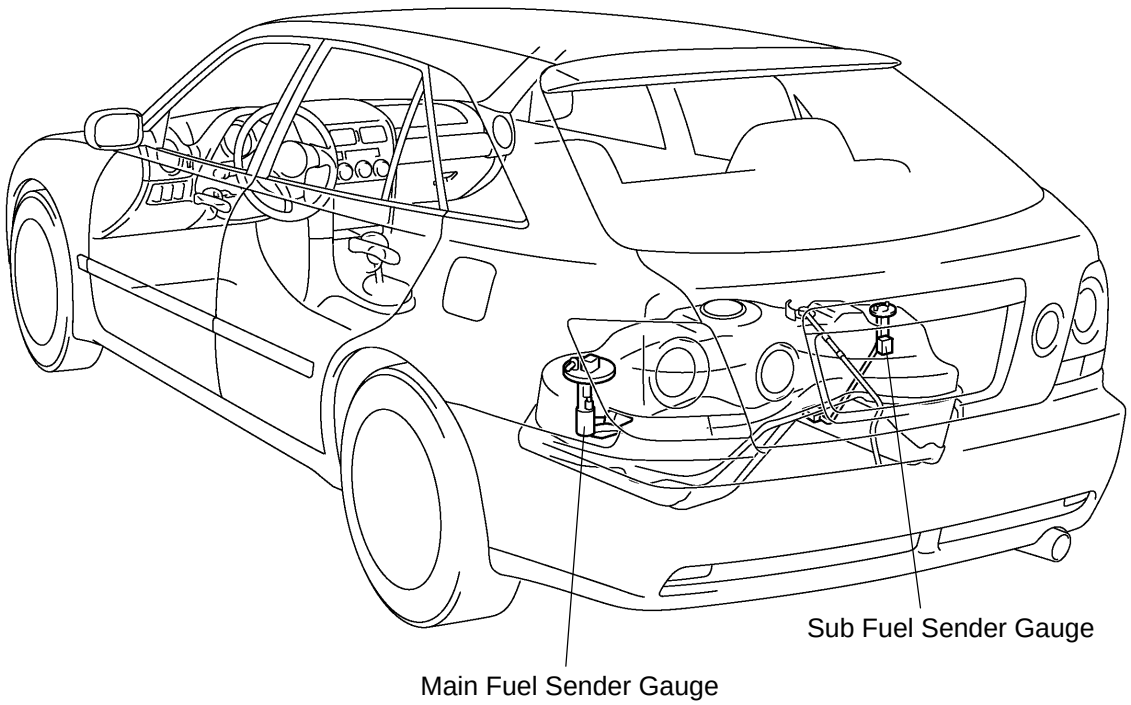
BE2A1-03



Sedan:

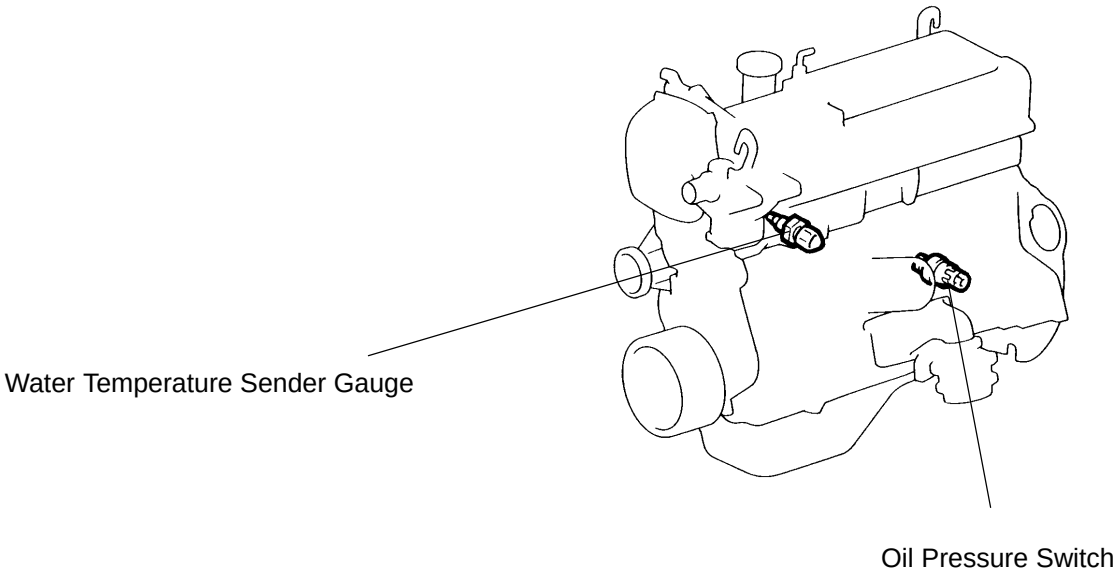


Wagon:

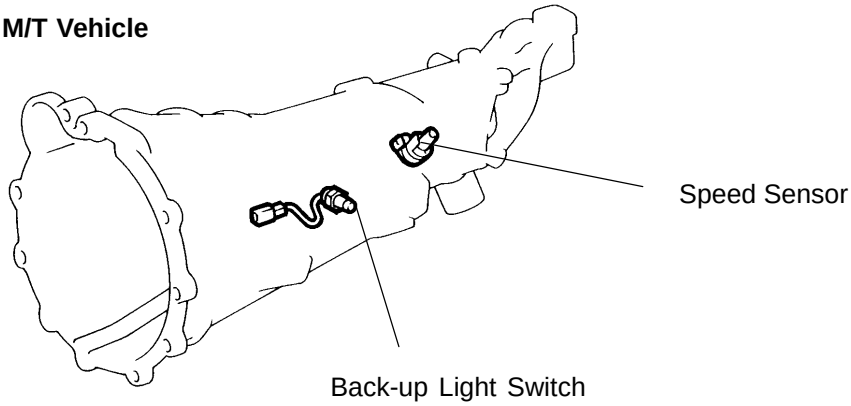


C

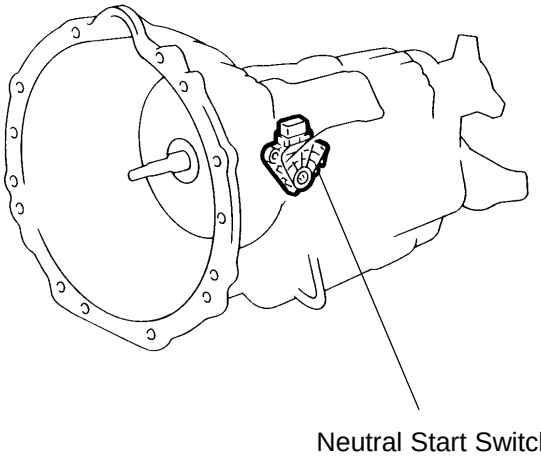
I27816



M/T Vehicle



A/T Vehicle



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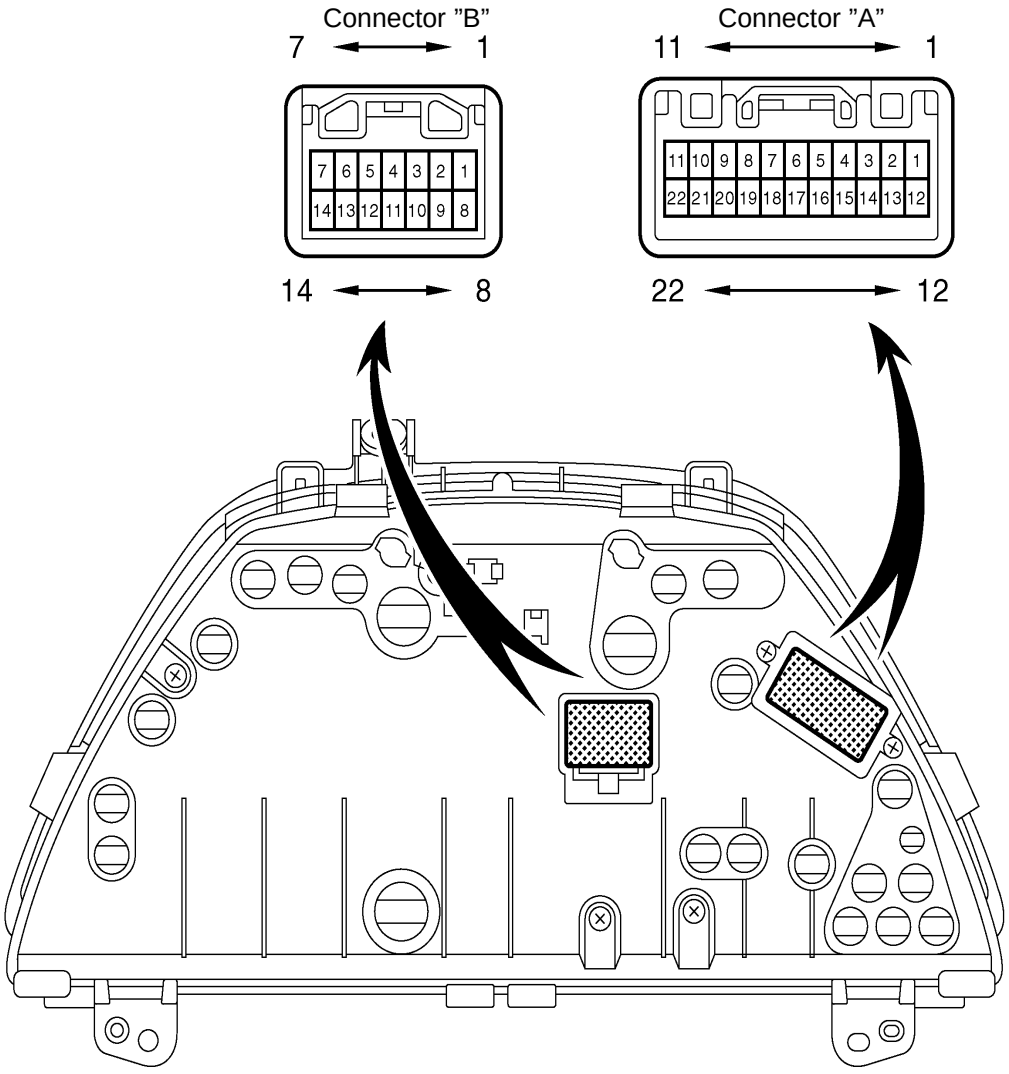
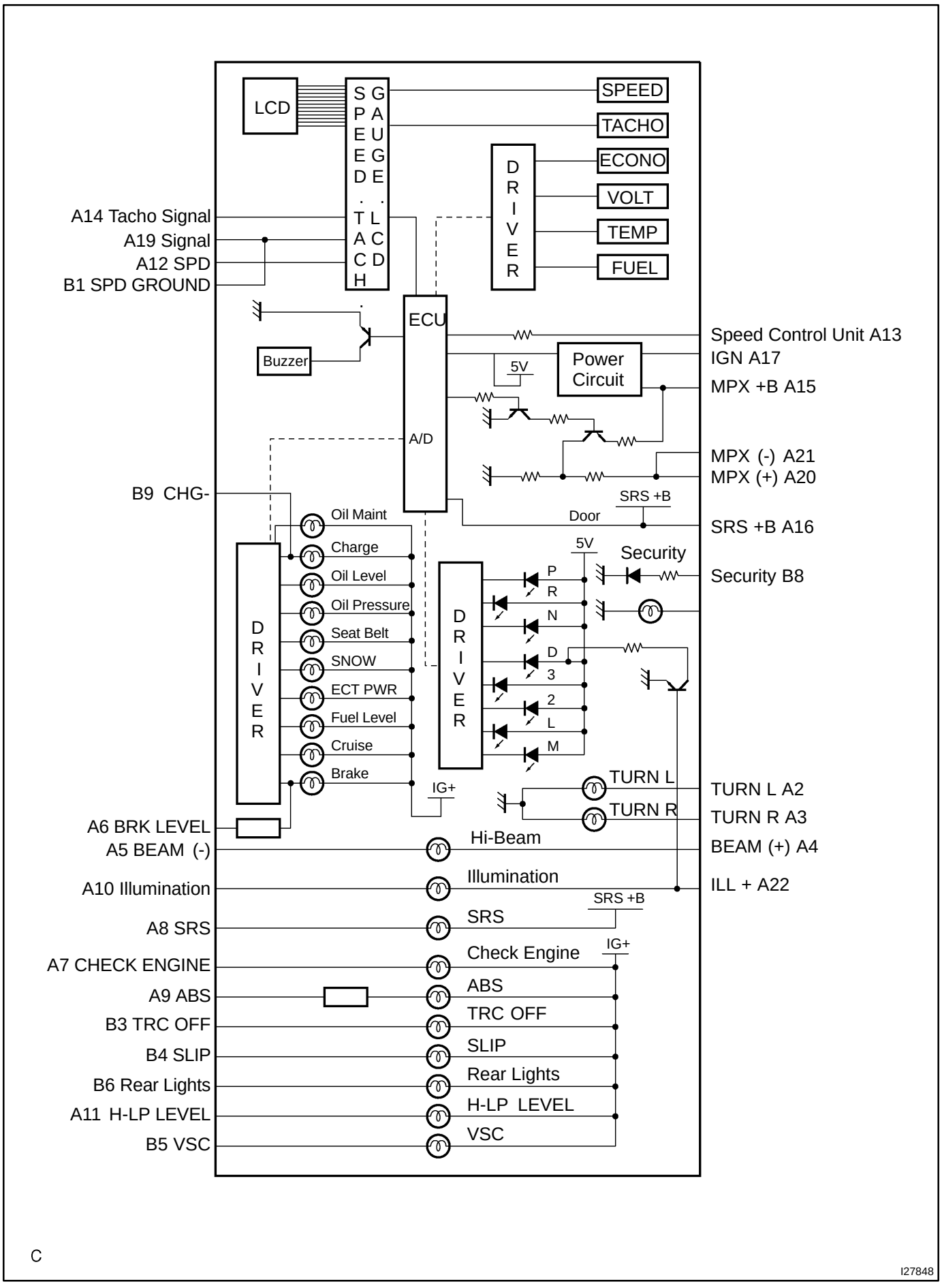
BE16C-04

CIRCUIT



N

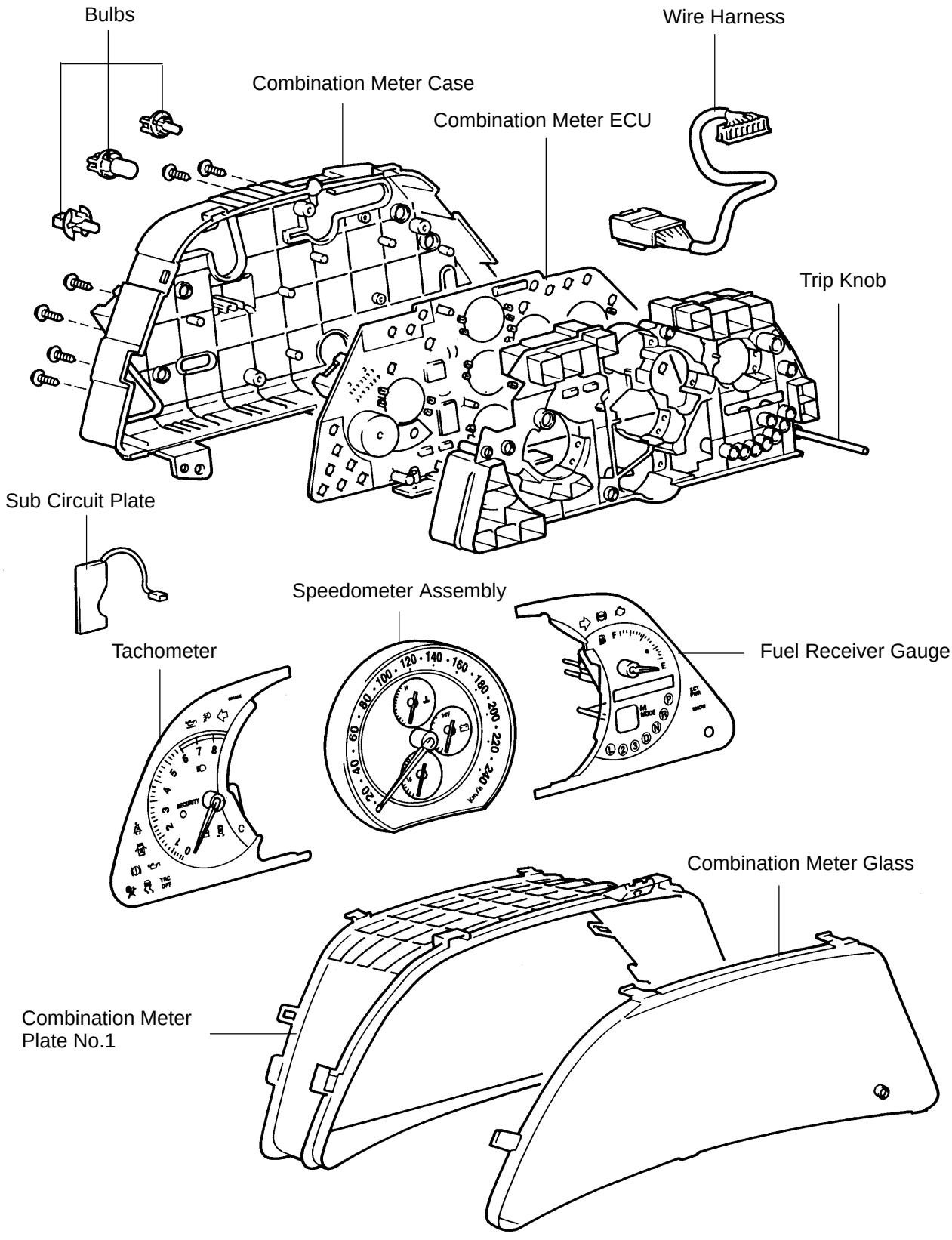
I18580


LCD
SPEED. TACH
GAUGE. LCD
SPEED
TACHO
ECONO
VOLT
TEMP
FUEL
DRIVER
A14 Tacho Signal
A19 Signal
A12 SPD
B1 SPD GROUND
ECU
A/D
Buzzer
5V
Power Circuit
Speed Control Unit A13
IGN A17
MPX +B A15
MPX (-) A21
MPX (+) A20
B9 CHG-
SRS +B
Door
SRS +B A16
Oil Maint
Charge
Oil Level
Oil Pressure
Seat Belt
SNOW
ECT PWR
Fuel Level
Cruise
Brake
DRIVER
DRIVER
5V
Security
Security B8
P
R
N
D
3
2
L
M
IG+
TURN L
TURN R
TURN L A2
TURN R A3
A6 BRK LEVEL
A5 BEAM (-)
Hi-Beam
BEAM (+) A4
A10 Illumination
Illumination
ILL + A22
SRS +B
A8 SRS
SRS
IG+
A7 CHECK ENGINE
Check Engine
A9 ABS
ABS
B3 TRC OFF
TRC OFF
B4 SLIP
SLIP
B6 Rear Lights
Rear Lights
A11 H-LP LEVEL
H-LP LEVEL
B5 VSC
VSC
C
I27848

No.		Wiring connector side
A	2	Turn signal light switch (Left)
	3	Turn signal light switch (Right)
	4	HEAD Fuse
	5	Headlight dimmer switch
	6	Brake fluid level warning switch
	7	ECM
	8	Airbag sensor assembly
	9	ABS ECU
	10	Rheostat light control volume
	11	Headlight beam level control ECU
	12	Speed sensor (M/T) or ABS ECU (A/T)
	13	Speed control unit
	14	ECM
	15	MPX+B Fuse
	16	SRS+B Fuse
	17	GAUGE Fuse
	18	Power ground
	19	Signal ground
	20	Multiplex communication circuit (MPX+)
	21	Multiplex communication circuit (MPX-)
	22	TAIL Fuse
B	1	Speed signal ground (M/T vehicle only)
	3	ABS and TRC ECU
	4	ABS and TRC ECU
	5	ABS and TRC ECU (w/ VSC)
	6	Light failure sensor
	8	Theft deterrent ECU
	9	Daytime running light ECU

BE0HJ-13

COMPONENTS



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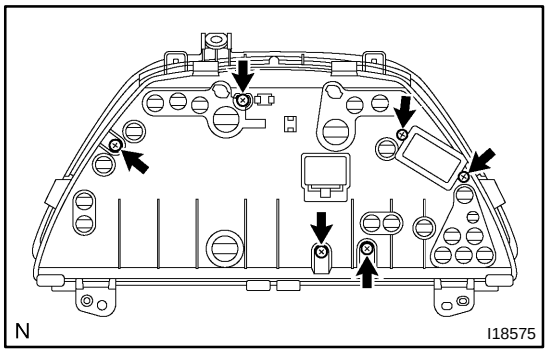
BE16D-04

DISASSEMBLY

HINT:

Installation is in the reverse order of removal. Only if there is a specified procedure for installation it is shown.

1. **REMOVE INSTRUMENT PANEL LWR**
   (See page BO-135)
2. **REMOVE INSTRUMENT CLUSTER FINISH PANEL**
3. **REMOVE COMBINATION METER ASSEMBLY**
4. **REMOVE COMBINATION METER GLASS**
5. **REMOVE COMBINATION METER PLATE NO. 1**

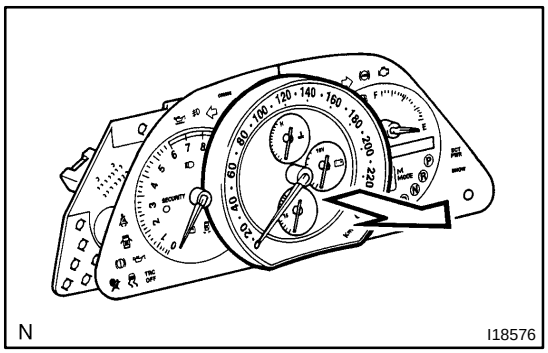


6. **REMOVE COMBINATION METER CASE**

(a) Separate the wire harness connector at the upper side of the combination meter assembly from the combination meter computer.

(b) Remove the 6 screws as shown in the illustration, and remove the combination meter.

7. **REMOVE THE WIRE HARNESS**



8. **REMOVE SPEEDOMETER ASSEMBLY**

Pull the speed meter assembly in the direction indicated by the arrow in the illustration and disconnect the engagement of the combination meter computer assembly to remove the speed meter assembly.

NOTICE:

Use gloves so as not to scratch or stain the panel surface.
Do not apply unnatural force.

9. **REMOVE ENGINE TACHO METER ASSEMBLY**

HINT:

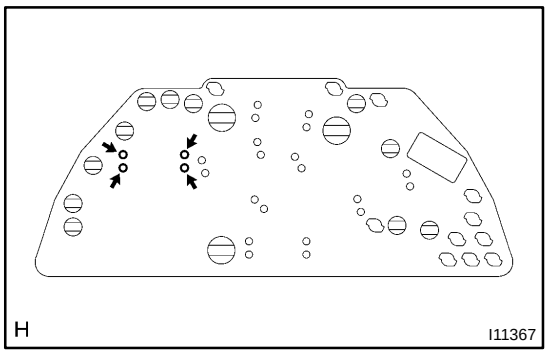
Remove it in the same procedure as for the speed meter assembly.

10. **REMOVE FUEL RECEIVER GAUGE.**

HINT:

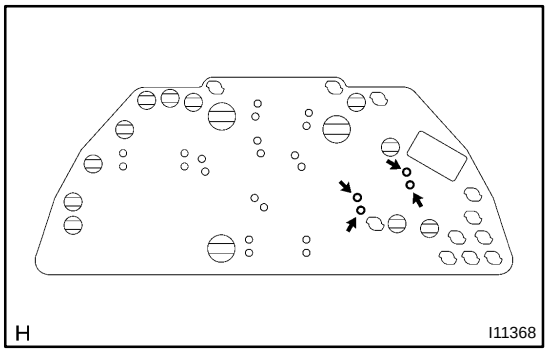
Remove it in the same procedure as for the speed meter assembly.

11. **REMOVE TRIP KNOB**
12. **REMOVE COMBINATION METER COMPUTER ASSEMBLY**



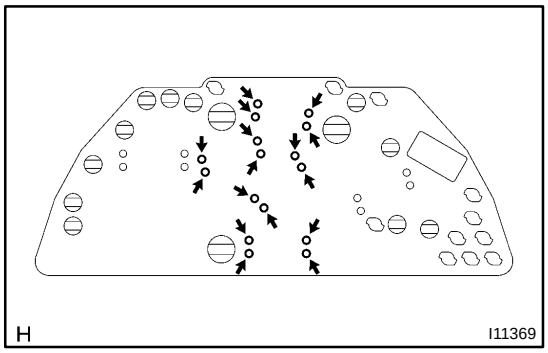
13. INSTALL FUEL RECEIVER GAUGE

Install the fuel receiver gauge to the combination meter computer assembly, and check that the gauge terminal shown in the illustration are fitted in securely.



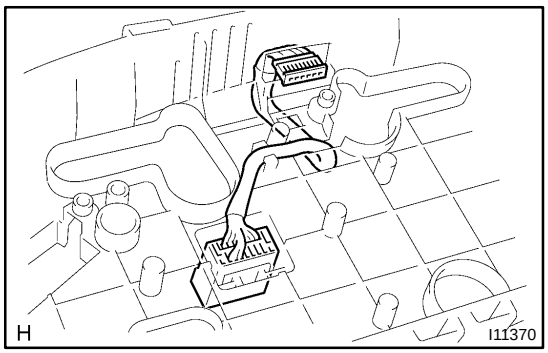
14. INSTALL ENGINE TACHO METER ASSEMBLY

Install the engine tacho meter assembly to the combination meter computer assembly, and check that the gauge terminals shown in the illustration are fitted in securely.



15. INSTALL SPEEDOMETER ASSEMBLY

Install the speedometer assembly to the combination meter computer assembly, and check that the gauge terminals shown in the illustration are fitted in securely.



16. INSTALL WIRE HARNESS

Route the wire harness as shown in the illustration and install it to the combination meter case.

BE1WU-04

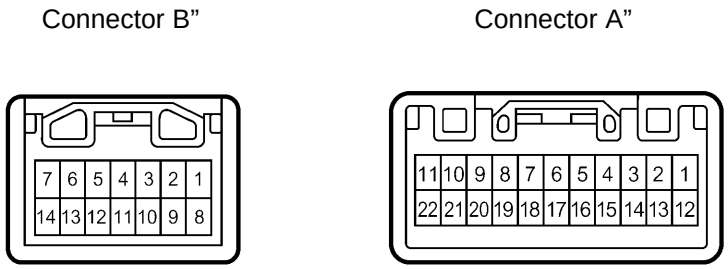
INSPECTION

1. INSPECT COMBINATION METER CIRCUIT

Connector connected:

Connect connector ”A” and ”B” from the combination meter and inspect the connectors on the wire harness side as shown in the table.

Connector connected



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Tester connection	Condition	Specified condition
A2 - Ground (Turn L)	Ignition switch ON and turn signal switch Left	Battery voltage
A3 - Ground (Turn R)	Ignition switch ON and turn signal switch Right	Battery voltage
A4 - Ground (Beam +)	Always	Battery voltage
A5 - Ground (Beam -)	Headlight dimmer switch HI	Battery voltage
A6 - Ground (BRK level)	Ignition switch ON and Brake fluid level warning switch LO	Battery voltage
A7 - Ground (Check engine)	Ignition switch ON and engine running	Battery voltage
A8 - Ground (SRS)	SRS warning light does not light up	Battery voltage
A9 - Ground (ABS)	Ignition switch ON and ABS warning does not lights up	Battery voltage
A10 - Ground (ILL-)	Light control switch TAIL or HEAD	Continuity
A11 - Ground (Headlight beam level)	Headlight beam level control system is operation	Battery voltage
A12 - Ground (Speed signal input)	Ignition switch ON and turn propeller shaft slowly	Battery voltage
A13 - Ground (Speed signal output)	Ignition switch ON and turn propeller shaft slowly	1 V to 4.5 - 5.5 V
A14 - Ground (Tachometer signal)	Engine running	Pulse generation *1
A15 - Ground (MPX +B)	Always	Battery voltage

A16 - Ground (DOME +B)	Always	Battery voltage
A17 - Ground (IGN)	Ignition switch ON	Battery voltage
A18 - Ground (Power ground)	Always	Continuity
A19 - Ground (Signal ground)	Always	Continuity
A20 - Ground (MPX+)	Ignition switch ON	Pulse generation
A21 - Ground (MPX-)	Ignition switch ON	Pulse generation
A22 - Ground (ILL+)	Light control switch TAIL or HEAD	Battery voltage
B1 - Ground (SP ground)	Always	Continuity
B3 - Ground (TRC OFF)	Ignition switch ON and TRC OFF indicator does not light up	Battery voltage
B4 - Ground (SLIP)	Ignition switch ON and SLIP indicator does not light up	Battery voltage
B5 - Ground (VSC)	Ignition switch ON and VSC indicator does not light up	Battery voltage
B6 - Ground (Rear Lights)	Ignition Switch ON and rear lights bulb is blown	Battery voltage
B8 - Ground (Security)	Theft deterrent system is operating	Battery voltage
B9 - Ground (Alternator L terminal)	Engine running	Battery voltage

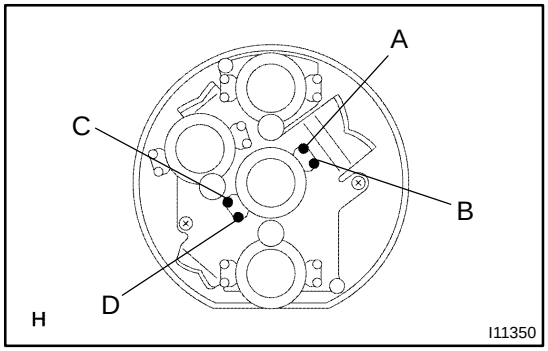
If circuit is not as specified, wiring diagram and inspect the circuits connected to other parts.

2. INSPECT SPEEDOMETER/ON-VEHICLE

Using a speedometer tester, inspect the speedometer for allowable indication error and check the operation of the odometer.
HINT:
Tire wear and tire over or under inflation will increase the indication error.

USA (mph)		CANADA (km/h)	
Standard indication	Allowable range	Standard indication	Allowable range
20	18.5 - 21.5	20	18 - 23
40	38 - 41.5	40	40 - 44
60	58 - 62	60	60 - 64.5
80	77.5 - 82	80	80 - 85
100	97 - 102	100	100 - 105
120	116.5 - 122	120	120 - 125.5
140	136 - 142	140	140 - 146
		160	160 - 167
		180	180 - 188
		200	200 - 209
		220	220 - 230
		240	240 - 251

If error is excessive, replace the speedometer.



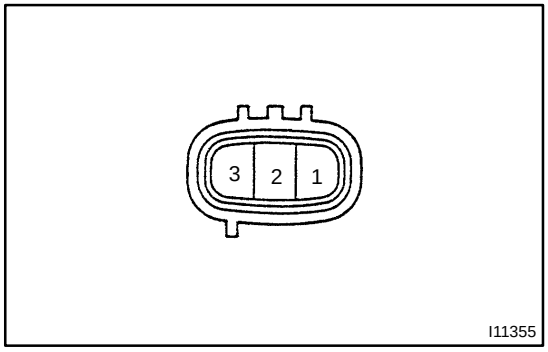
3. INSPECT SPEEDOMETER RESISTANCE

(See page DI-877)

Measure the resistance between terminals with fixing pointer to the stopper.

Tester connection	Resistance (Ω)
A - D	160
B - C	160

If resistance value is not as the specified, replace the meter.



4. INSPECT VEHICLE SPEED SENSOR OPERATION

(See page DI-885)

(a) Connect the positive (+) lead from battery to terminal 1 and negative (-) lead to terminal 2.
(b) Connect the positive (+) lead from tester to terminal 3 and negative (-) lead to terminal 2.
(c) Rotate shaft.
(d) Check that there is a voltage change from approx. 0 V to 11 V or more between terminals 2 and 3.

HINT:
The voltage change should be 4 times for every revolution of the speed sensor shaft.
If operation is not as specified, replace the sensor.

5. INSPECT TACHOMETER/ON-VEHICLE

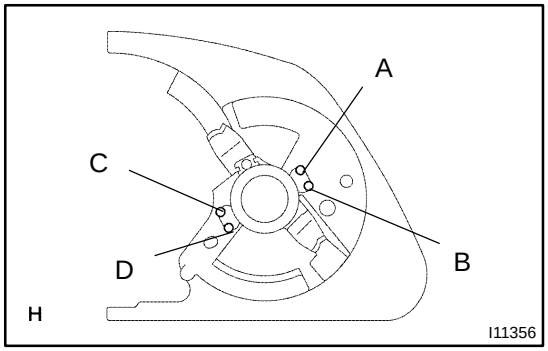
(a) Connect a tune-up test tachometer, and start the engine.

NOTICE:

- **Reversing the connection of the tachometer will damage the transistors and diodes inside.**
- **When removing or installing the tachometer, be careful not to drop or subject it to heavy shocks.**

(b) Compare the tester and tachometer indications.
DC 13.5 V 25 ˚C at (77˚F)

Standard indication	Allowable range
700	630 - 770
1,000	(900 - 1,100)
2,000	(1,850 - 2,150)
3,000	2,850 - 3,150
4,000	(3,800 - 4,200)
5,000	4,800 - 5,200
6,000	(5,750 - 6,250)
7,000	6,700 - 7,300
8,000	7,700 - 8,300

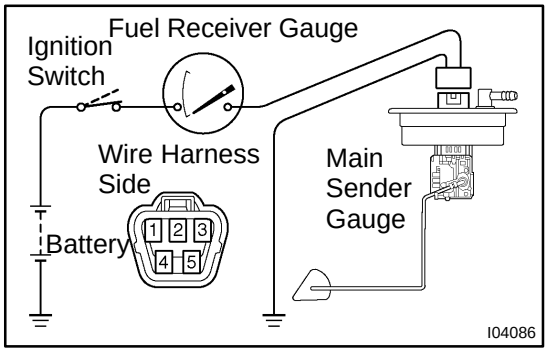


6. INSPECT TACHOMETER RESISTANCE
(See page DI-878)

Measure the resistance between terminals with fixing pointer to the stopper.

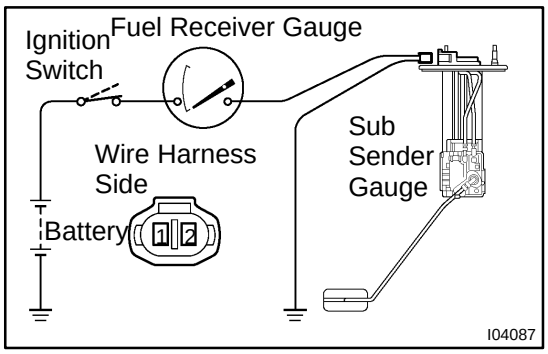
Tester connection	Resistance (Ω)
A - D	160
B - C	160

If resistance value is not as specified, replace the meter.



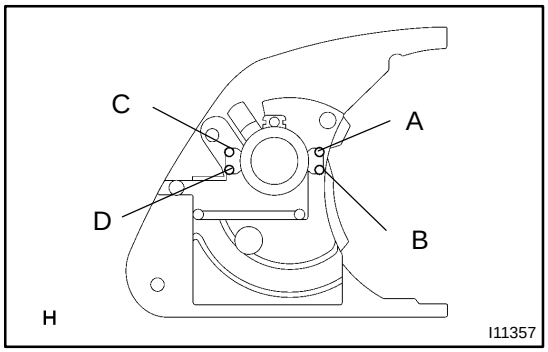
7. INSPECT FUEL RECEIVER GAUGE OPERATION (See page DI-879)

(a) Disconnect the connector from the main sender gauge.
(b) Turn the ignition switch ON, check that the receiver gauge needle indicates EMPTY.



(c) Connect the main sender gauge.
(d) Disconnect the connector from the sub sender gauge.
(e) Turn the ignition switch ON, check that the receiver gauge needle indicates EMPTY.

HINT:
Because of the silicon oil in the gauge, it will take a short time for needle to stabilize.
If operation is not as specified, inspect the receiver gauge resistance.

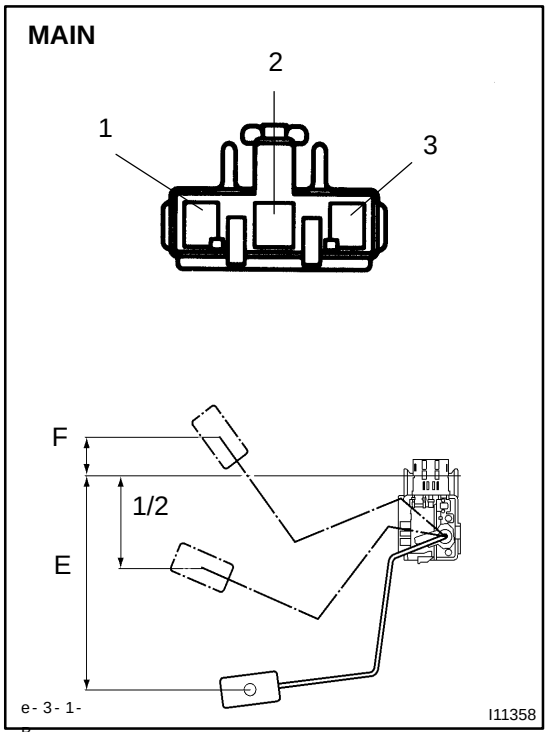


8. INSPECT FUEL RECEIVER GAUGE RESISTANCE (See page DI-919)

Measure the resistance between terminals with fixing pointer to the stopper.

Tester connection	Resistance (Ω)
A - D	160
B - C	160

If resistance value is not as specified, replace the receiver gauge.

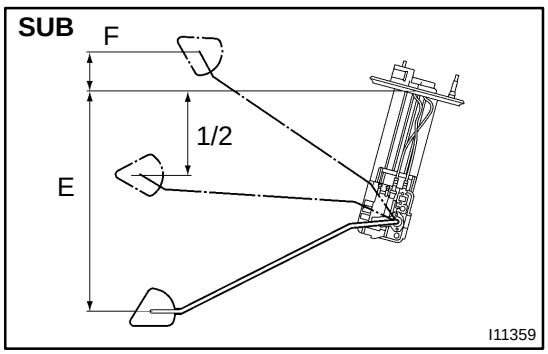


9. INSPECT FUEL MAIN SENDER GAUGE RESISTANCE

Measure the resistance between terminals 1 and 2 for each float position.

Float position mm (in.)	Resistance (Ω)
F: Approx. 22.9 (0.90) ± 3 (0.12)	Approx. 2.0 ± 1.0
1/2: Approx. 58.3 (2.30) ± 3 (0.12)	Approx. 30.3 ± 3.0
E: Approx. 133.6 (5.26) ± 3 (0.12)	Approx. 55.0 ± 1.0

If resistance value is not as specified, replace the main sender gauge.



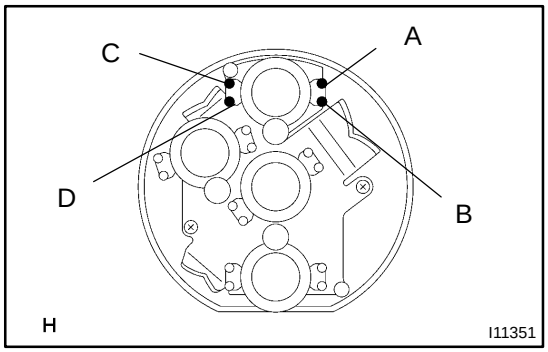
10. INSPECT FUEL SUB SENDER GAUGE RESISTANCE

Measure the resistance between terminals 1 and 2 for each float position.

Float position mm (in.)	Resistance (Ω)
F: Approx. 29.1 (1.15) ± 3 (0.12)	Approx. 2.0 ± 1.0
1/2: Approx. 65.8 (2.59) ± 3 (0.12)	Approx. 29.7 ± 3.0
E: Approx. 169.5 (6.67) ± 3 (0.12)	Approx. 55 ± 1.0

If resistance value is not as specified, replace the sub sender gauge.

11. INSPECT WATER TEMPERATURE RECEIVER GAUGE OPERATION (See page DI-881)



12. INSPECT WATER TEMPERATURE RECEIVER GAUGE RESISTANCE

Measure the resistance between terminals with fixing pointer to the stopper.

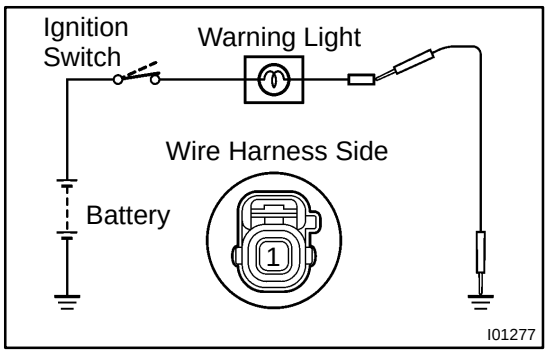
Tester connection	Resistance (Ω)
A - D	160
B - C	160

If resistance value is not as specified, replace the receiver gauge.

HINT:

This circuit includes the diode.

If resistance value is not as specified, replace the receiver gauge.

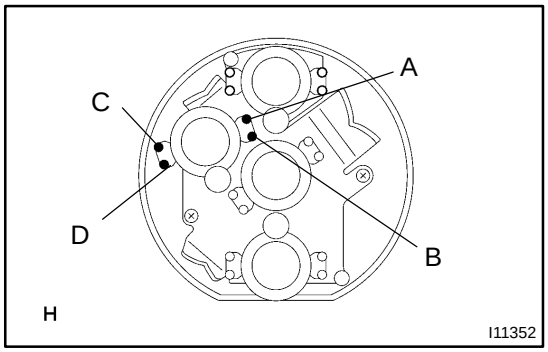


13. INSPECT LOW OIL PRESSURE WARNING LIGHT

(a) Disconnect the connector from the warning switch and ground terminal on the wire harness side connector.

(b) Turn the ignition switch ON and check that the warning light lights up.

If the warning light does not light up, test the bulb.

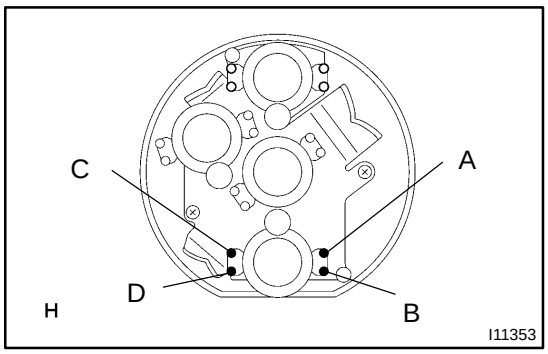


14. INSPECT VOLTAGE GAUGE RESISTANCE (See page DI-883)

Measure the resistance between terminals with fixing pointer to the stopper.

Tester connection	Resistance (Ω)
A - D	160
B - C	160

If resistance value is not as specified, replace the receiver gauge.

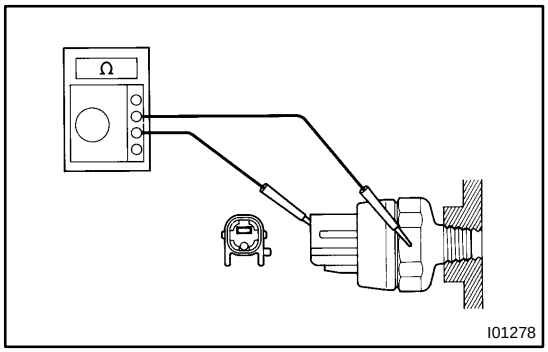


15. INSPECT SPECIFIC FUEL CONSUMPTION GAUGE RESISTANCE (See page DI-884)

Measure the resistance between terminals with fixing pointer to the stopper.

Tester connection	Resistance (Ω)
A - D	160
B - C	160

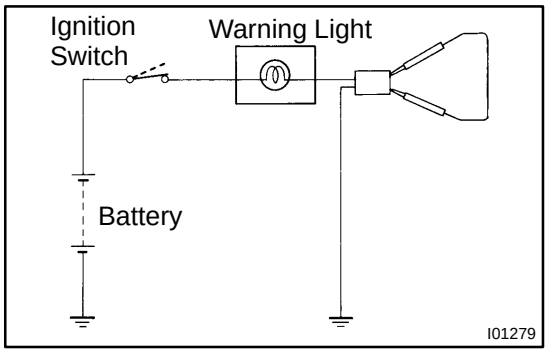
If resistance value is not as specified, replace the meter.



16. INSPECT OIL PRESSURE SENDER CONTINUITY

(a) Disconnect the connector from the oil presser sender.
(b) Check that no continuity exists between terminal and ground with the engine stopped.
(c) Check that continuity exists between terminal and ground with the engine running.

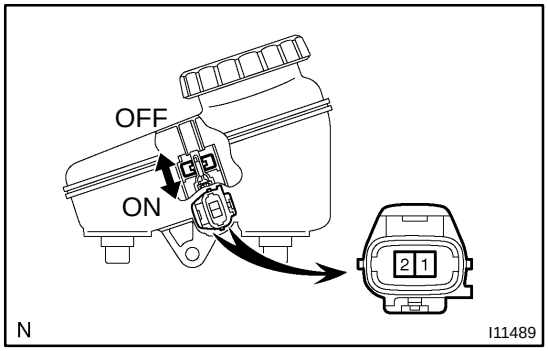
HINT:
Oil pressure should be over 24.5 kPa (0.25 kgf/cm^2, 3.55 psi).
If operation is not as specified, replace the oil pressure sender.



17. INSPECT BRAKE WARNING LIGHT

(a) Disconnect the connector from the brake fluid warning switch.
(b) Release the parking brake pedal.
(c) Connect the terminals on the wire harness side of the level warning switch connector.
(d) Start the engine, check that the warning light lights up.

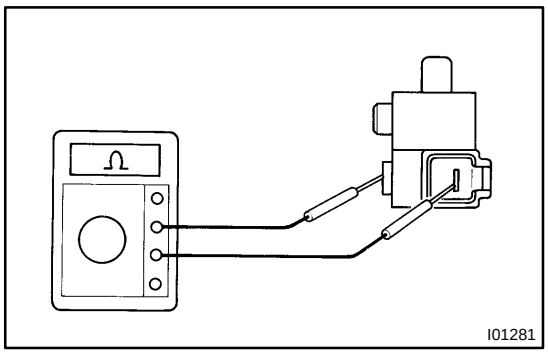
If the warning light does not light up, test the bulb or wire harness.



18. INSPECT BRAKE FLUID LEVEL WARNING SWITCH CONTINUITY

(a) Remove the reservoir tank cap and strainer.
(b) Disconnect the connector.
(c) Check that no continuity exists between the terminals with the switch OFF (float up).
(d) Use siphon, etc. to take fluid out of the reservoir tank.
(e) Check that continuity exists between the terminals with the switch ON (float down).
(f) Pour the fluid back in the reservoir tank.

If operation is not as specified, replace the switch.

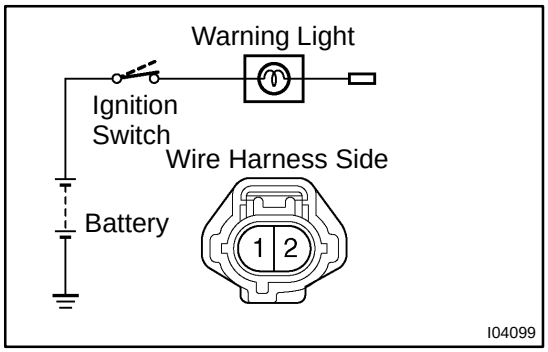


19. INSPECT PARKING BRAKE SWITCH CONTINUITY

(a) Check that continuity exists between the terminal and switch body with the switch ON (switch pin released).

(b) Check that no continuity exists between the terminal and switch body with the switch OFF (switch pin pushed in).

If operation is not as specified, replace the switch or inspect ground point.



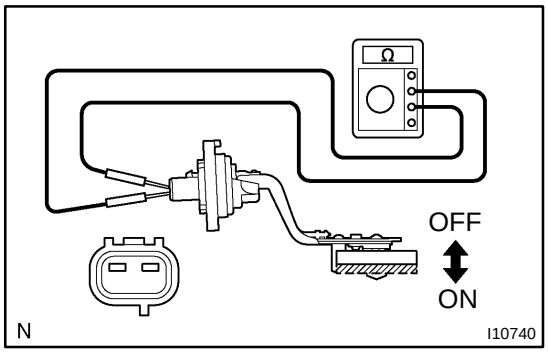
20. INSPECT ENGINE OIL LEVEL WARNING LIGHT

(a) Disconnect the connector from the switch.

(b) Run the engine.

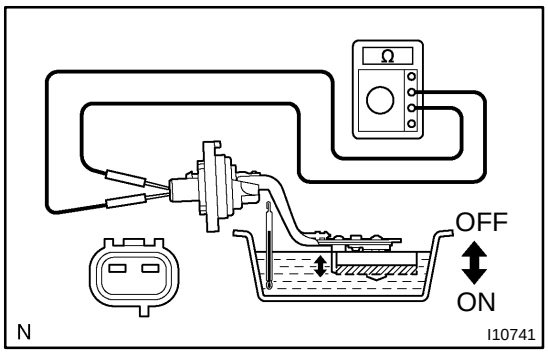
(c) Turn the ignition switch ON, check that the warning light lights up approximately 40 seconds later.

If the warning light does not light up, inspect bulb or wire harness.



21. INSPECT ENGINE OIL LEVEL WARNING SENSOR

(a) Check that continuity exists between terminals when the sensor-sensed temperature drops to 40 °C or less with the float down.

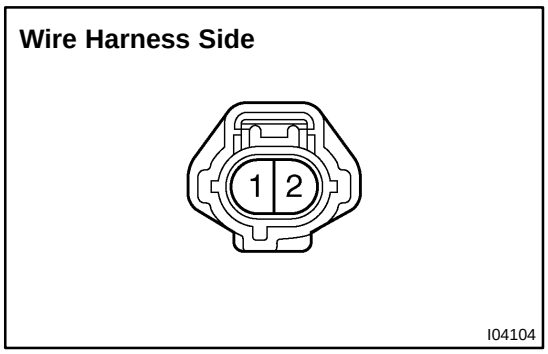


(b) Heat the switch to above 60 °C (140 °F) in an oil bath.

(c) Check that there is continuity between terminals with the switch ON (float down).

(d) Check that there is no continuity between terminals with the switch OFF (float up).

If operation is not as specified, replace the sensor.

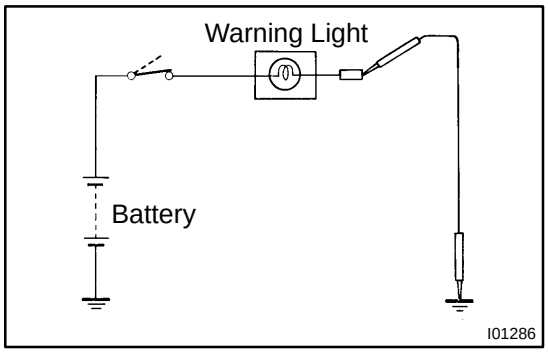


22. INSPECT ENGINE OIL LEVEL WARNING SENSOR CIRCUIT

Disconnect the switch connector and inspect the connector on wire harness side, as shown.

Tester connection	Condition	Specified condition
2 - Ground	Always	Continuity

If continuity is not as specified, inspect the wire harness or ground point.

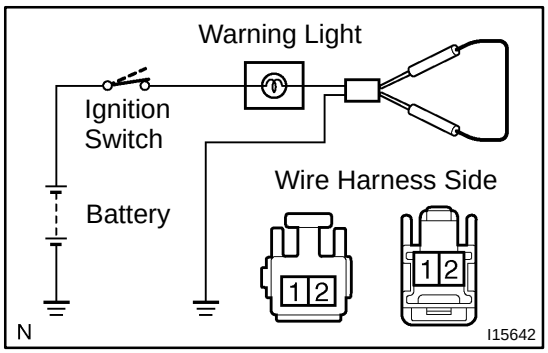


23. INSPECT OPEN DOOR WARNING LIGHT

Disconnect the connector from the door courtesy switch and ground terminal 1 on the wire harness side, and check that the warning light lights up.

If the warning light does not light up, inspect the bulb or wire harness.

24. INSPECT DOOR COURTESY SWITCH CONTINUITY AND CIRCUIT (See page DI-921)



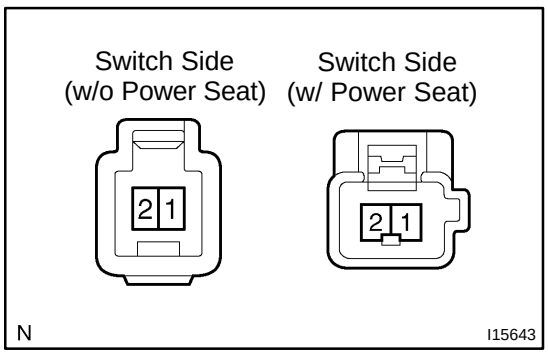
25. INSPECT SEAT BELT WARNING LIGHT

(a) Disconnect the connector from the buckle switch.

(b) Connect terminal on the wire harness side of the buckle switch connector.

(c) Turn the ignition switch ON and check that the warning light lights up.

If the warning light does not light up, inspect the bulb or wire harness.



26. INSPECT SEAT BELT BUCKLE SWITCH CONTINUITY

(a) Check that continuity exists between the terminals 1 and 2 on the switch side connector with the switch ON (belt fastened).

(b) Check that continuity exists between the terminals 1 and 2 on the switch side connector with the switch OFF (belt unfastened).

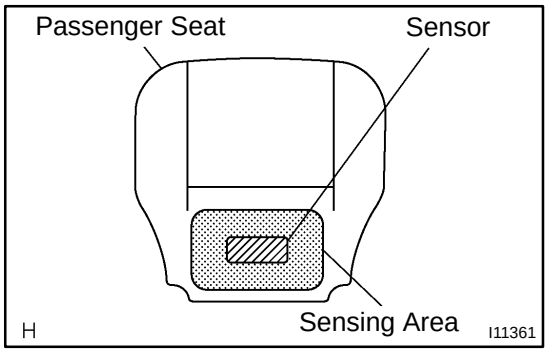
If operation is not as specified, replace the switch.

27. INSPECT SEAT BELT BUCKLE SWITCH CIRCUIT (See page DI-917)

Disconnect the switch connector and inspect the connector on wire harness side, as shown.

Tester connection	Condition	Specified condition
2 - Ground	Always	Continuity

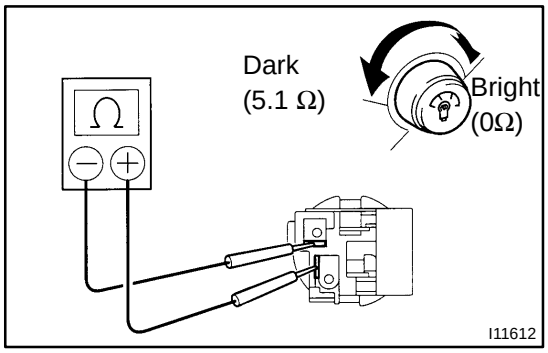
If continuity is not as specified, inspect the circuits connected to other parts.



28. Passenger seat only: INSPECT SEAT BELT WARNING OCCUPANT DETECTION SENSOR CONTINUITY

Check that continuity exists between the terminals 1 and 2 when pressing the sensing part.

If operation is not as specified, replace the sensor.

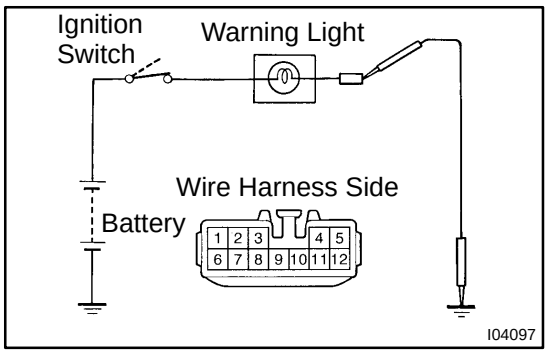


29. INSPECT LIGHT CONTROL RHEOSTAT OPERATION

(a) Turn the rheostat knob max. dark side and check that the resistance 5.1 Ω. (Rheostat knob turned to fully counterclockwise)

(b) Gradually, turn the rheostat knob from the dark side to bright side and check that the resistance decreases from 5.1 to 0 Ω. (Rheostat knob turned to clockwise)

If operation is not as specified, replace the rheostat light control.

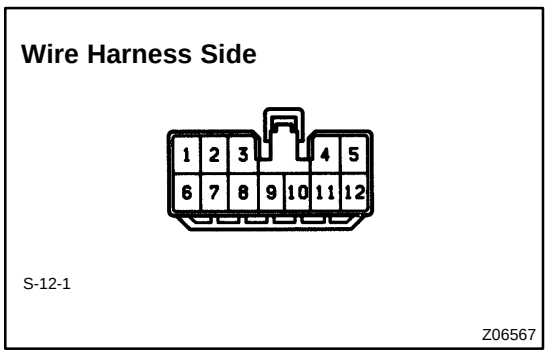


30. INSPECT REAR LIGHTS WARNING LIGHT

(a) Disconnect the connector from the light failure sensor and ground terminal 4, 5 or 9 on the wire harness side connector.

(b) Start the engine, check that the warning light lights up.

If the warning light does not light up, inspect the bulb or wire harness.



31. INSPECT LIGHT FAILURE SENSOR CIRCUIT

Disconnect the connector from the sensor and inspect the connector on the wire harness side, as shown.

Tester connection	Condition	Specified condition
1 - Ground	Always	* Continuity
2 - Ground	Always	* Continuity
3 - Ground	Taillight ON	Battery Positive Voltage
9 - Ground	Always	* Continuity
11 - Ground	Always	Continuity
3 - Ground	Taillight or Headlight OFF	No voltage
3 - Ground	Taillight or Headlight ON	Battery Positive Voltage
4 - Ground	Ignition switch LOCK or ACC	No voltage
4 - Ground	Ignition switch ON	Battery Positive Voltage
7 - Ground	Stop light switch OFF	No voltage
7 - Ground	Stop light switch ON	Battery Positive Voltage
8 - Ground	Ignition switch LOCK or ACC	No voltage
8 - Ground	Ignition switch ON	Battery Positive Voltage

*: There is resistance because this circuit is grounded through the bulb.

If the circuit is not as specified, inspect the circuits connected to other parts.

32. MAINTENANCE LIQUID RESETTING PROCEDURE

Indicator Condition:

State	Condition	Specified condition
Blinking	The vehicle runs 4,500 miles after the previous setting.	The indicator blinks for 15 seconds after the ignition switch is turned on (Incluing 3 seconds for a valve check)
Continuously illuminated	The vehicle runs 5,000 miles after the previous setting.	The indicator is continuously illuminated after the ignition switch is turned on.

(a) Set the display window to ODO.

(b) Turn the ignition switch off.

(c) Pressing the reset switch, turn the ignition switch (Keep pressing for at least 5 seconds).

(d) The reset procedure is completed.

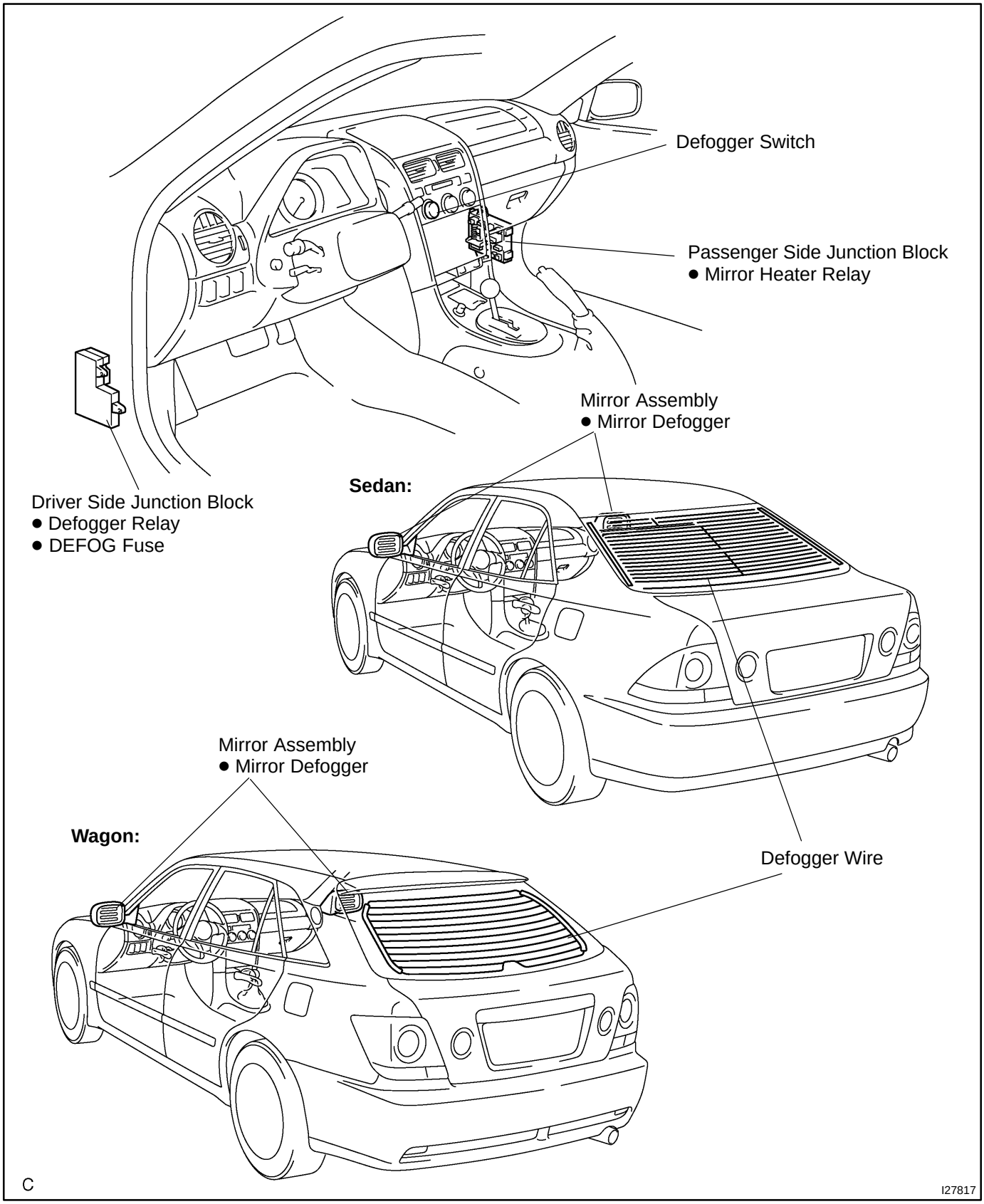
HINT:

- If the ignition switch is turned off during the reset procedure, reset mode is canceled.
- If the reset switch is turned off during the reset procedure, reset mode is canceled.

DEFOGGER SYSTEM

LOCATION

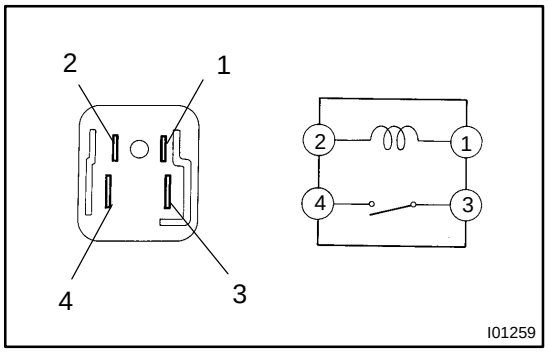
BE0GS-21



BE1WV-03

INSPECTION

1. INSPECT DEFOGGER SWITCH (See page AC-88)

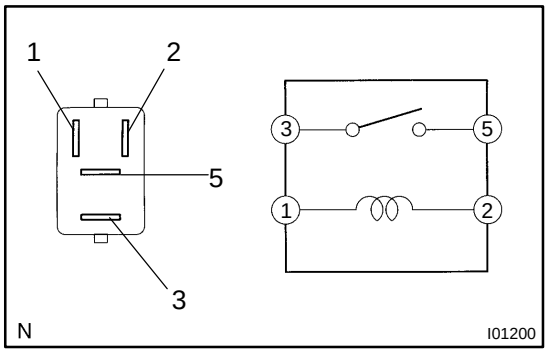


2. INSPECT DEFOGGER RELAY CONTINUITY

Condition	Tester connection	Specified condition
Always	1 - 2	Continuity
Apply B+ between terminals 1 and 2.	3 - 4	Continuity

If continuity is not as specified, replace the relay.

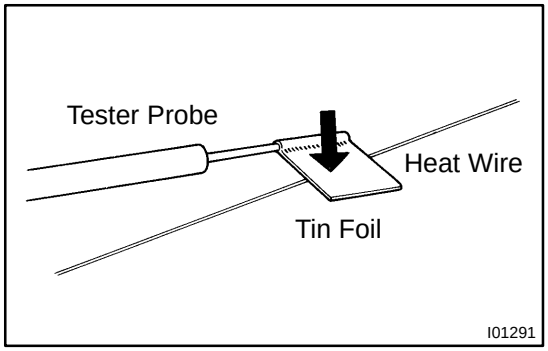
3. INSPECT DEFOGGER RELAY CIRCUIT (See page DI-940)



4. INSPECT MIRROR DEFOGGER RELAY CONTINUITY

Condition	Tester connection	Specified condition
Always	1 - 2	Continuity
Apply B+ between terminals 1 and 2.	3 - 5	Continuity

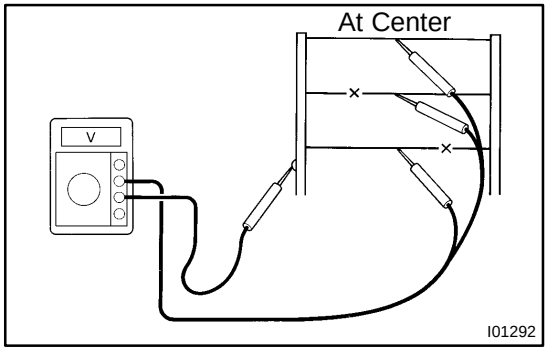
If continuity is not as specified, replace the relay.



5. INSPECT DEFOGGER WIRE

NOTICE:

- **When cleaning the glass, use a soft, dry cloth, and wipe the glass in the direction of the wire. Take care not to damage the wires.**
- **Do not use detergents or glass cleaners with abrasive ingredients.**
- **When measuring voltage, wrap a piece of tin foil around the tip of the negative probe and press the foil against the wire with your finger, as shown.**

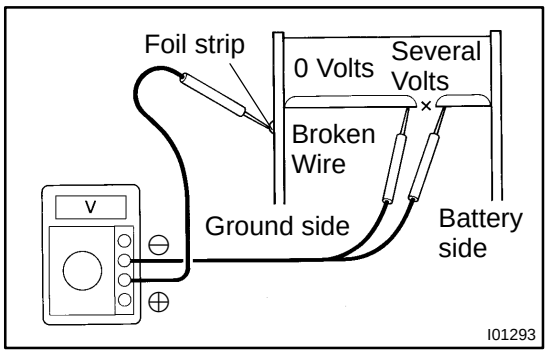


(a) Turn the ignition switch ON.

(b) Turn the defogger switch ON.

(c) Inspect the voltage at the center of each heat wire, as shown.

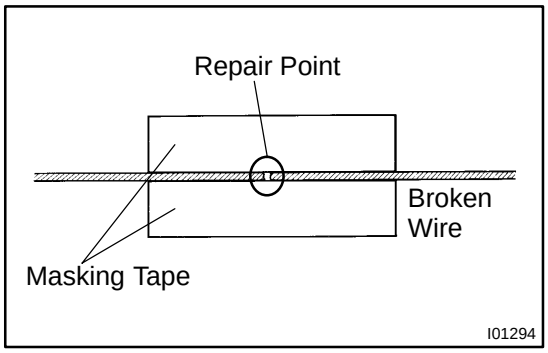
Voltage	Criteria
Approx. 5V	Okay (No break in wire)
Approx. 10V or 0V	Broken wire



HINT:
If there is approximately 10 V, the wire is broken between the center of the wire and the positive (+) end. If there is no voltage, the wire is broken between the center of the wire and ground.

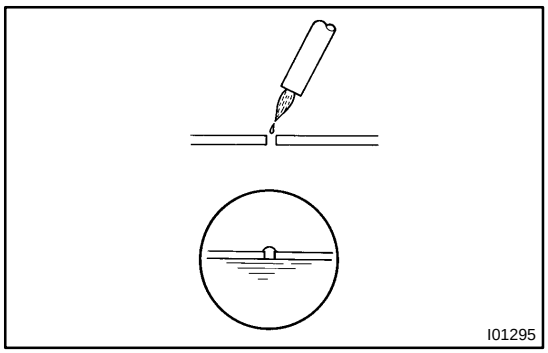
(d) Place the voltmeter positive (+) lead against the defogger wire on the battery side.
(e) Place the voltmeter negative (-) lead with the foil strip against the wire on the ground side.
(f) Slide the positive (+) lead from battery to ground side.
(g) The point where the voltmeter deflects from several V to zero V is the place where the defogger wire is broken.

HINT:
If the heat wire is not broken, the voltmeter indicates 0 V at the positive (+) end of the heat wire but gradually increases to about 12 V as the meter probe moves to the other end.

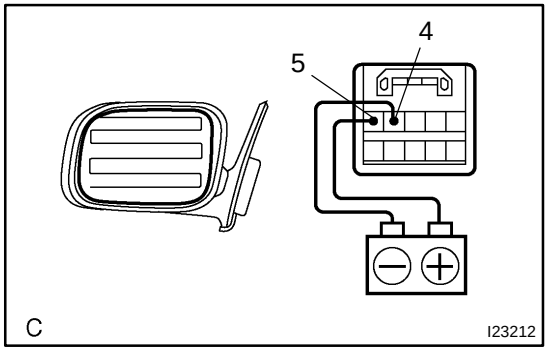


6. IF NECESSARY, REPAIR DEFOGGER WIRE

(a) Clean the broken wire tips with grease, wax and silicone remover.
(b) Place the masking tape along both sides of the wire for repair.
(c) Thoroughly mix the repair agent (Dupont paste No. 4817).



(d) Using a fine tip brush, apply a small amount of the agent to the wire.
(e) After a few minutes, remove the masking tape.
(f) Do not repair the defogger wire for at least 24 hours.



7. w/ Mirror heater:
INSPECT MIRROR DEFOGGER OPERATION

(a) Connect the positive (+) lead from the battery to terminal 5 and the negative (-) lead to terminal 4.
(b) Check that the mirror becomes warm.

HINT:
It will take a short time for the mirror to become warm.

POWER WINDOW CONTROL SYSTEM

BE02C-15

TROUBLESHOOTING

Malfunction symptoms	Applicable chart
Driver's door does not operate.	1
Passenger's and all rear doors do not operate by using the switches at each seat.	2
Any of passenger's and rear doors does not operate by using the switches of each seat.	3
Passenger's and all rear doors are not controlled remotely by using the master switch. (Switches of each door can be operated.)	4
AUTO UP and AUTO DOWN does not operate. (Prepare a normal master switch.)	5
DOWN operation operates during door glass AUTO UP operation.	6
Even though a foreign object is caught, DOWN operation does not function.	7
After ignition switch has been turned to OFF by using a key, power window function does not operate.	8

1	**Driver's door does not operate.**

Remove the power window regulator master switch and disconnect the connector.

Check there is voltage of 10 of 14 V between terminal 1 of vehicle side connector of master switch and body ground.

No → Wire harness defective (between power fuse terminal 1 of master switch.)

Yes

With ignition switch ON, is there voltage of 10 to 14 V between the terminal 2 and 4 of vehicle side connector of the master switch and body ground.

Yes → Wire harness (between terminal of the power main relay and 2 or 4 terminal of the master switch.)

No

Does continuity exist between 9 terminal of vehicle side connector of the master switch and body ground?

No → Wire harness defective (between 9 terminal of the master switch and body ground.)

Yes

When battery voltage is supplied to the vehicle side connector of the master switch, check if the door glass operate.

Yes → Power window regulator master switch defective.

Connection	Glass operation
Battery positive - 8 terminal Battery negative - 20 terminal	UP
Battery positive - 20 terminal Battery negative - 8 terminal	DOWN

No

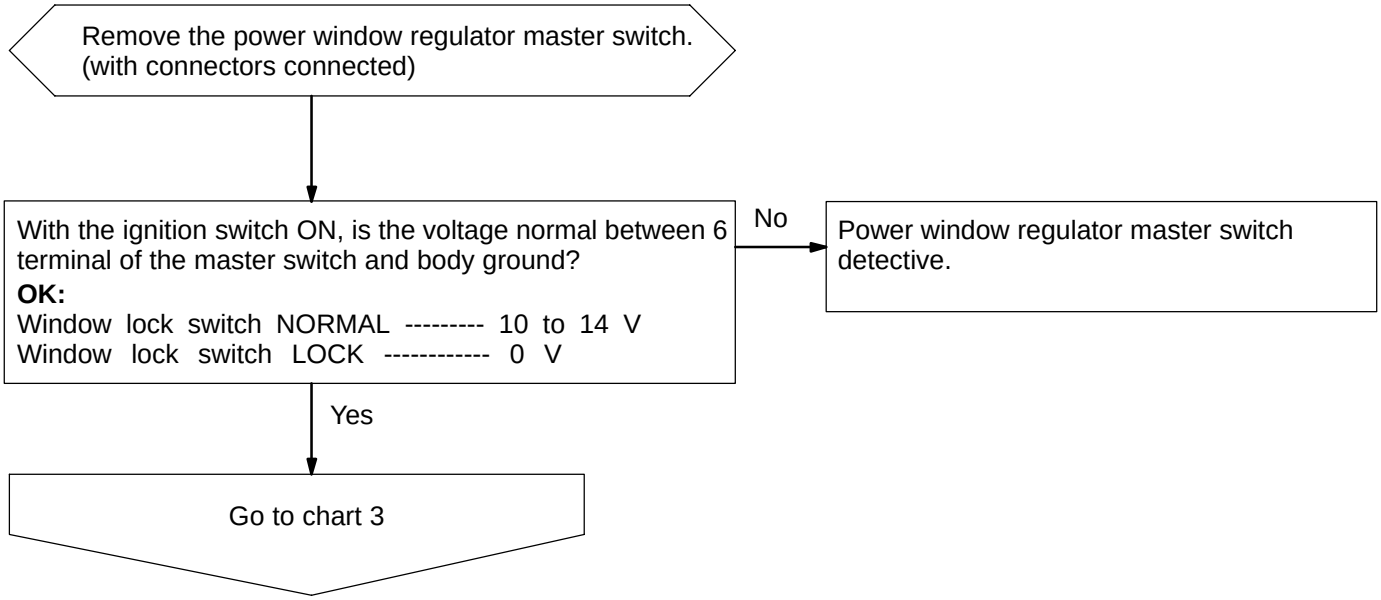
Is the power motor normal?

No → Power window motor defective.

Yes

Wire harness (between 20 terminal of the master switch and 2 terminal of the power window motor or 8 terminal of the master switch and 1 terminal of the power window).

2	**Passenger's and all rear doors do not operate by using the switches of each seat.**



3	**Any of passenger's and all rear doors does not operate by using the switches at each seat.**

Remove the power window regulator switch at the seat where the operation is unavailable and disconnect the connector.

With the ignition switch ON and window lock switch NORMAL, is there voltage of 10 to 14 V between 11 terminal of the vehicle side connector of the regulator switch and body ground?

- No → Wire harness defective (between 6 terminal of master switch and 11 terminal of regulator.)
- Yes ↓

Is there the voltage of 10 to 14 V between 7 terminal of vehicle side connector of the regulator switch and body ground?

- Yes → Wire harness defective (between POWER fuse and 7 terminal of the regulator.)
- No ↓

Is there continuity between 7 terminal of the vehicle side connector of the regulator switch and body ground.

- No → Wire harness defective (between 12 terminal of the regulator and body ground.)
- Yes ↓

When battery voltage is supplied to the vehicle side connector of the regulator switch, check if the door glass operate.

- Yes → Power window regulator master switch defective.

Connection	Glass operation
Battery positive - 6 terminal Battery negative - 1 terminal	UP
Battery positive - 1 terminal Battery negative - 6 terminal	DOWN

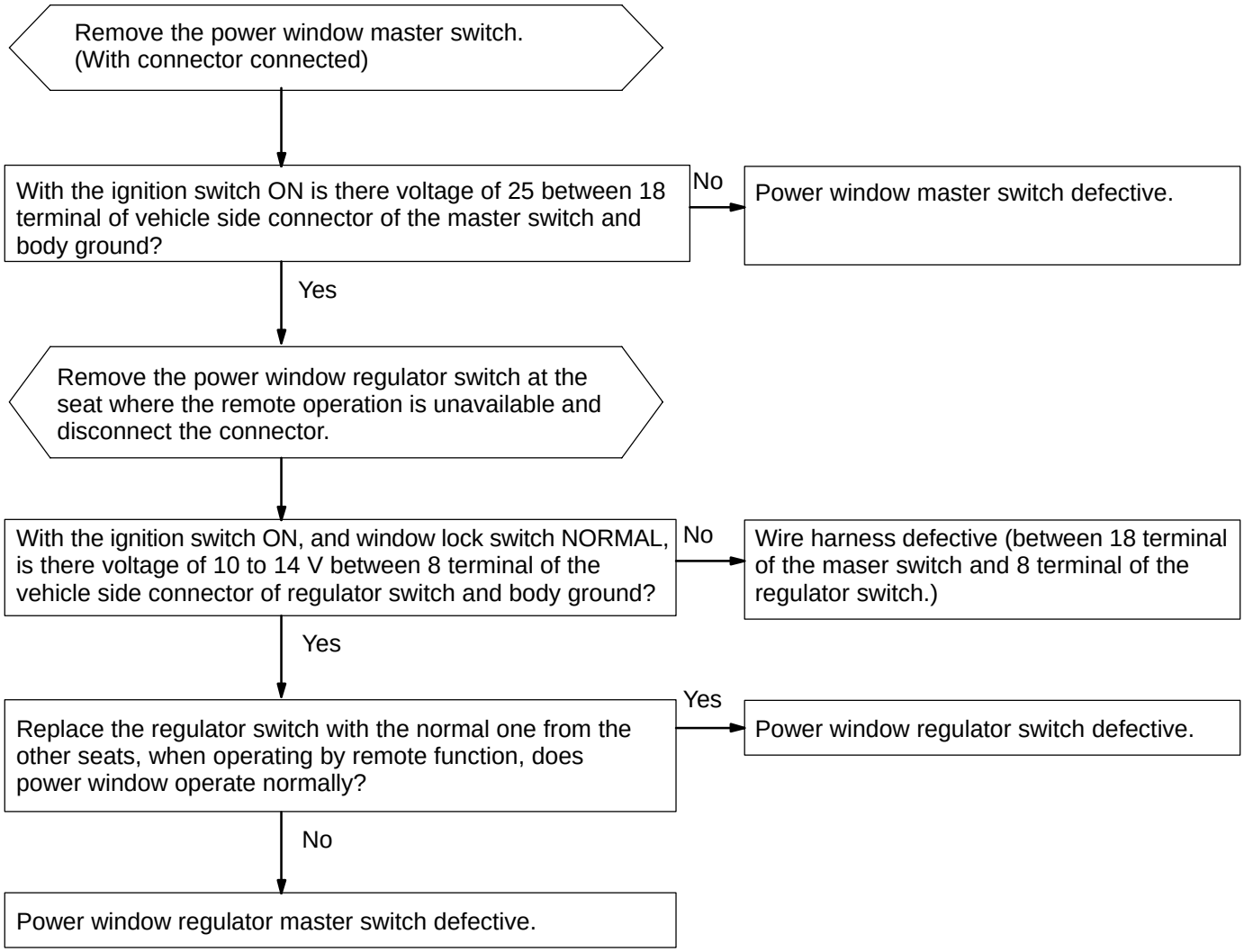
- No ↓

Is the power motor normal?

- No → Power window motor defective.
- Yes ↓

Wire harness (between 6 terminal of the regulator switch and 4 terminal of the power window motor or 1 terminal of the regulator switch and 1 terminal of the power window motor).

4	**Passenger's and all rear doors are not controlled remotely by using the master switch. (Switches at each door can be operated.)**



5	**AUTO UP and AUTO DOWN do not operate. (Prepare a normal master switch.)**

Remove the master switch or regulator switch at the seat where AUTO UP and AUTO DOWN is unavailable. (With connectors connected)

Master of regulator switch inspection:
Are the voltage and continuity of the connectors connected to the master switch or regulator switch normal?

OK:

Terminal No.		Item	Inspection condition	Standard
13	3	Voltage	Fully open by manual operation → fully close → switch OFF	Less than 1 → 10 V to 14 → 0 V
12	4	Voltage	During power window operation	Approx. 5.5 V
10	2	Continuity	Constant	Continuity

No

Yes → Master or regulator switch defective.

Disconnect the connectors of the master switch or regulator switch and power window motor.

Does continuity exist between connectors of the following vehicle side connectors?
Switch side ↔ Motor side
13 (3) terminal ↔ 3 terminal
12 (4) terminal ↔ 4 terminal
10 (2) terminal ↔ 2 terminal
The number in parenthesis shows the terminal No.

No → Wire harness defective (Open circuit in each terminal)

Yes

Does continuity exist between 13 (3), 12 (4) and 10 (2) terminals on the switch side or 3, 4, 2 terminals and body ground?

No → Wire harness defective (Short circuit).

Yes

Connect the connector of power window motor.

Connect the normal master switch or regulator switch and check if AUTO UP and DOWN operates.

Yes → Master switch or regulator switch.

No

Power window motor defective.

6	DOWN operates during door glass AUTO UP operation.

When UP operates by AUTO UP operation or starting up by key OFF operation, is there any factor to increase the sliding resistance of door glass around the reverse position?

Yes → Disassemble the door and repair or replace the malfunction part.

No ↓

Remove the window regulator assembly.

↓

After assembling and raising the door glass manually, does it slide smoothly without being caught?

No → Inspect and replace the door glass run and window guide.

Yes ↓

Remove the power window motor from the power window regulator assembly?

↓

When the power window regulator is slide manually, does it slide smoothly without being caught or is there any damage to the gear parts?

No → Power window regulator defective.

Yes ↓

Does the power window motor rotate smoothly?

No → Power window motor defective.

Yes ↓

Reset the power window motor (Initial position setting of limit switch), assemble the power window regulator to the vehicle.

↓

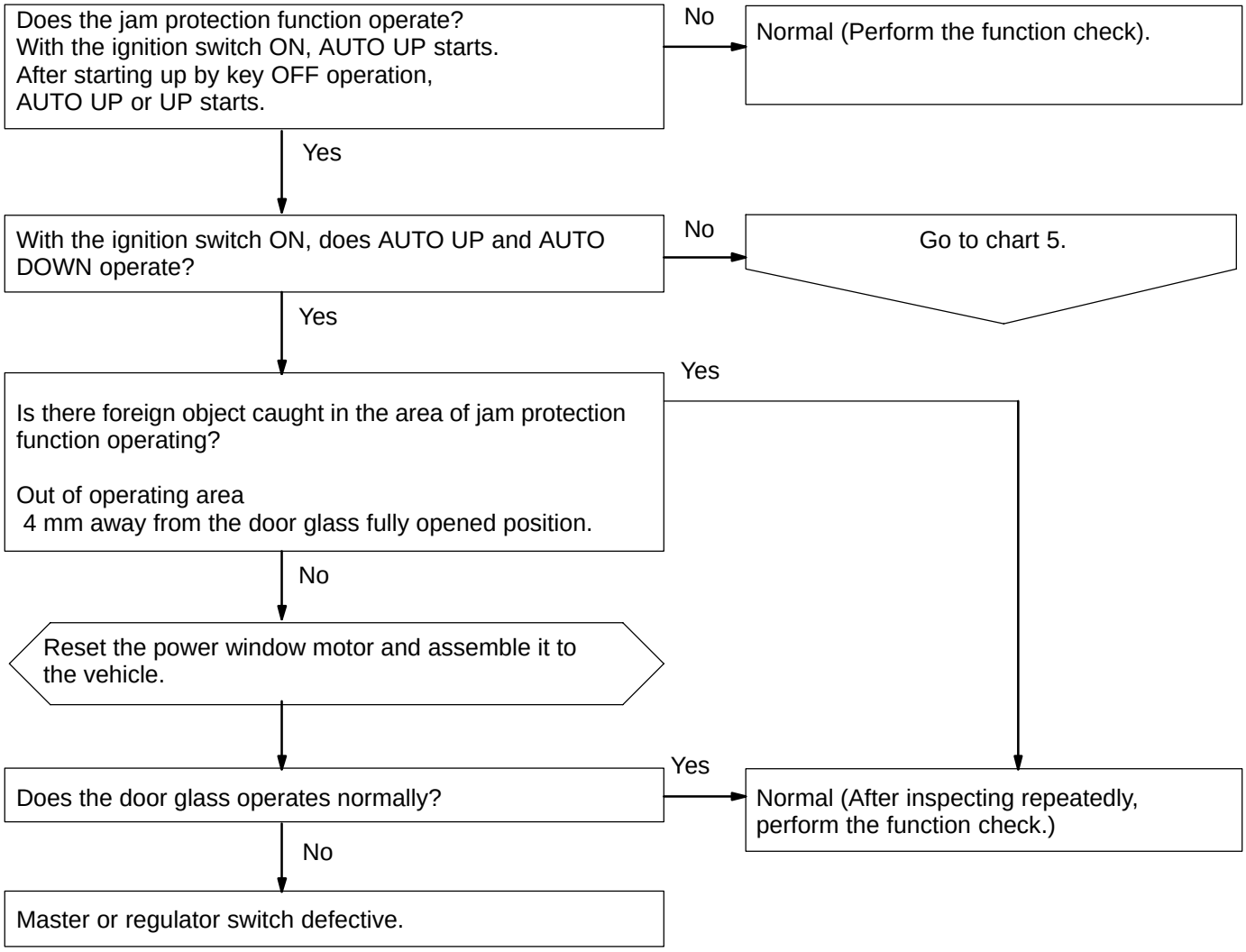
Does the door glass operates normally?

Yes → Normal (Perform the function check.)

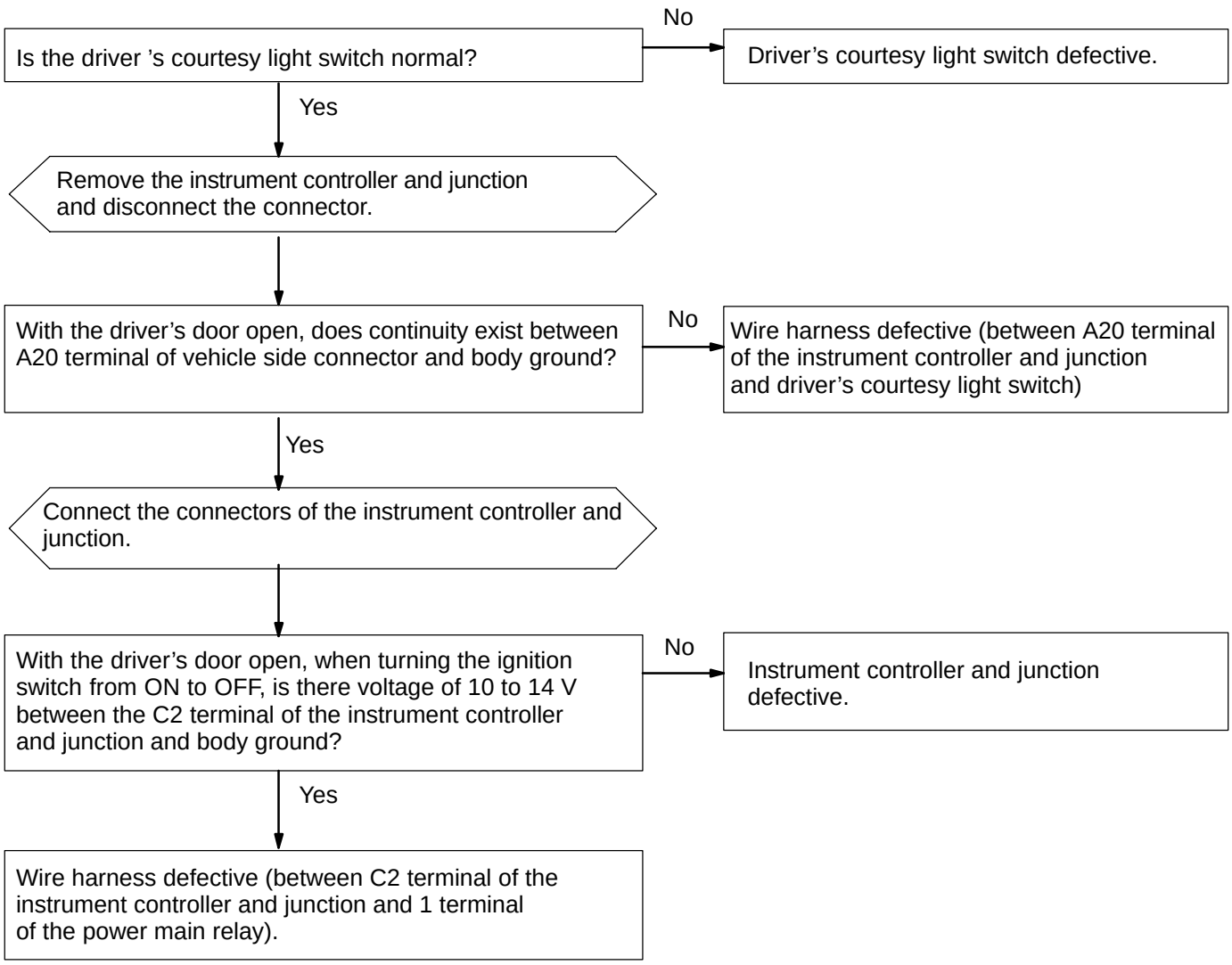
No ↓

Master or regulator switch defective.

7	**Even through a foreign object is caught, DOWN operation does not function.**

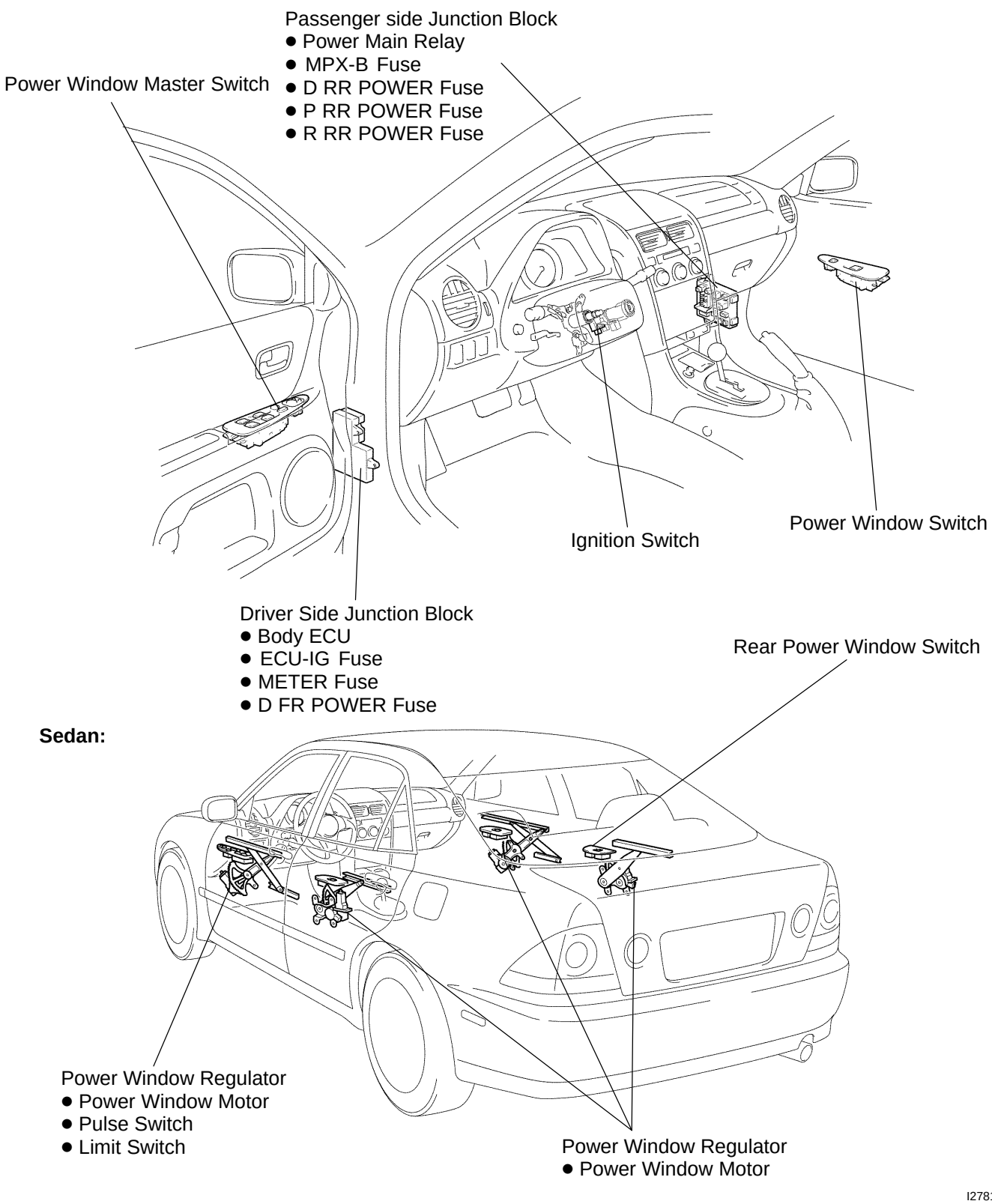


8	**After ignition switch has been turned OFF by using a key, power window function does not operate.**

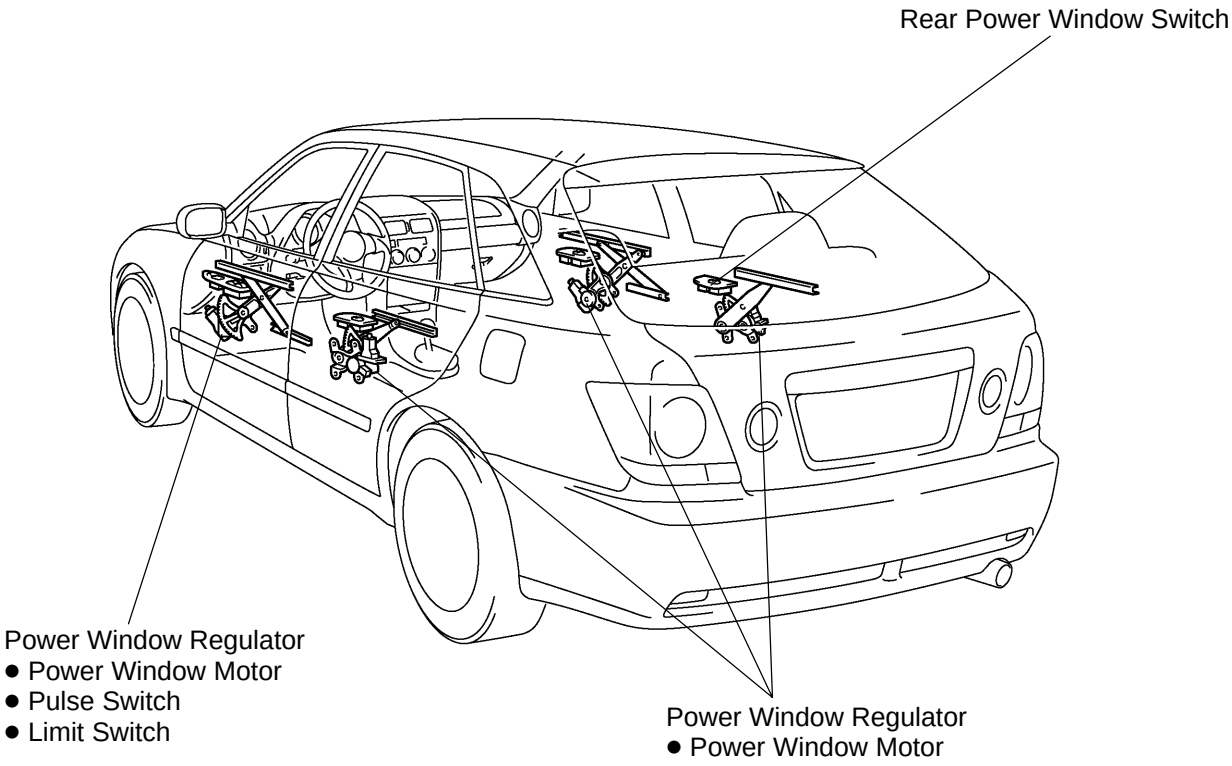


BE2A2-02

LOCATION



Wagon:


Rear Power Window Switch
Power Window Regulator
● Power Window Motor
● Pulse Switch
● Limit Switch
Power Window Regulator
● Power Window Motor
C
I27819

BE16F-04

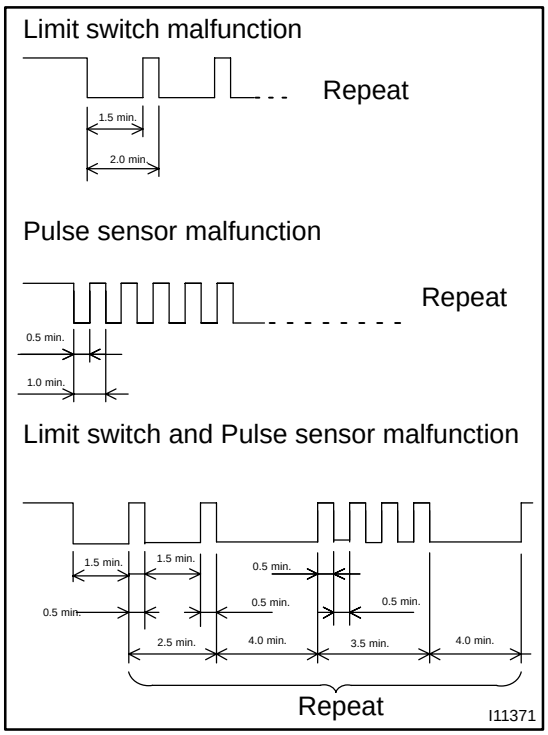
INSPECTION

1. INSPECT DIAGNOSIS CODE IS OUTPUT

Check that the master switch assembly automatic light flash under the condition of KEY off operation (for 45 secs. after the starter switch has been turned from ON to OFF with the driver's door open.)

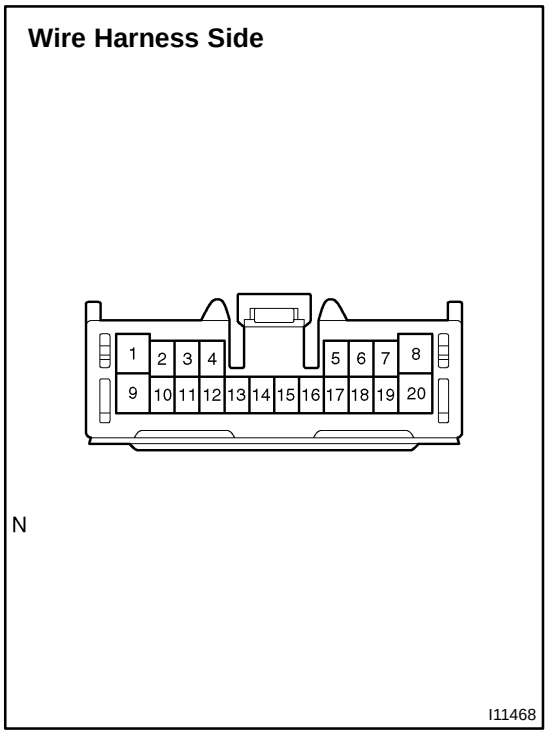
HINT:

- Limit switch malfunction:
  Even though the glass goes down from the fully closed position, the power window regulator switch assembly does not detect a change in limit switch signal within 2.0 secs. after the operation has started.
- Pulse sensor malfunction:
  Even though the glass goes down from the fully closed position, the power window regulator switch assembly does not detect a change in pulse switch signal within 2.0 secs. after the operation has started.



2. Connector disconnected:
INSPECT POWER WINDOW MASTER SWITCH CIRCUIT

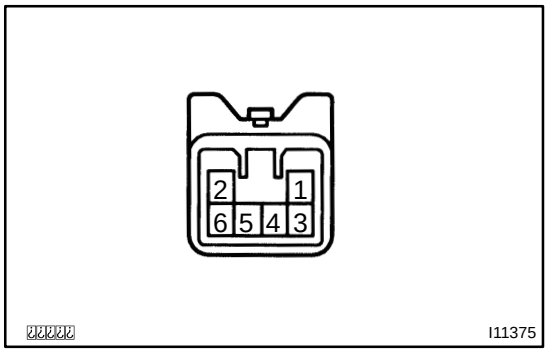
Disconnect the connectors from the switch and inspect connector on the wire harness side.



Tester connection	Condition	Specified condition
9 - Ground	Always	Continuity
1, 5 - Ground	Always	Battery Positive Voltage
2, 4 - Ground	Ignition switch LOCK	No voltage
2, 4 - Ground	Ignition switch ACC or ON	Battery Positive Voltage

If circuit is not as specified, replace the switch.

3. INSPECT POWER WINDOW MASTER SWITCH CIRCUIT (See page DI-935)



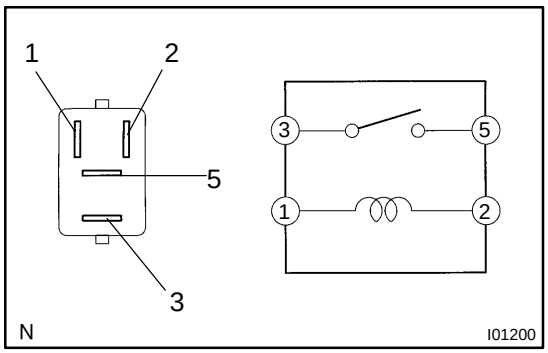
4. INSPECT POWER WINDOW SWITCH CONTINUITY

Connect the positive (+) lead from the battery to terminal 3 and the negative (-) lead to terminal 6.

Switch position	Tester connection	Specified condition
UP	2 - 3 4 - 5	Continuity
OFF	-	No continuity
DOWN	2 - 4 3 - 5	Continuity

If continuity is not as specified, replace the switch.

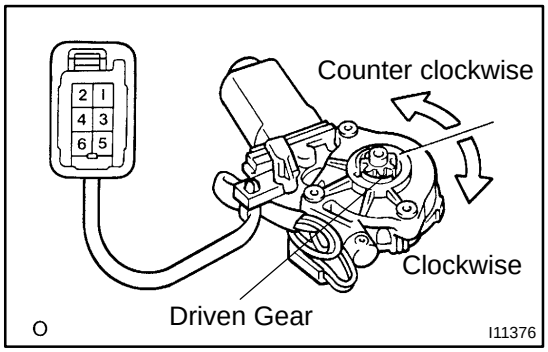
5. INSPECT POWER WINDOW SWITCH CIRCUIT (See page DI-938)



6. INSPECT POWER MAIN RELAY CONTINUITY

Condition	Tester connection	Specified condition
Always	1 - 2	Continuity
Apply B+ between terminals 1 and 2.	3 - 5	Continuity

If continuity is not as specified, replace the relay.

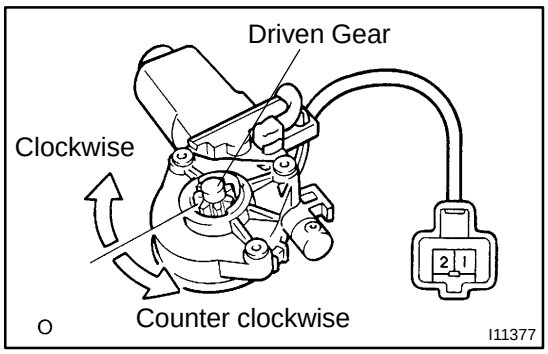


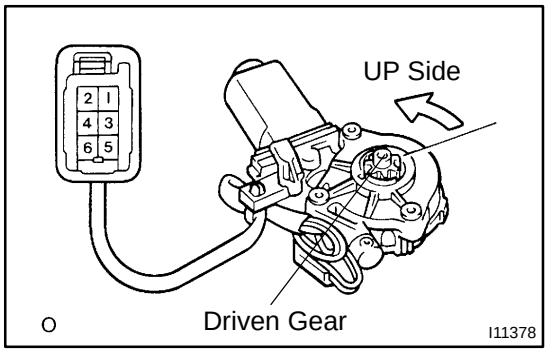
7. Driver's door:
INSPECT POWER WINDOW MOTOR OPERATION

(a) Connect the positive (+) lead from the battery to terminal 1 and the negative (-) lead to terminal 2, and check that the motor turns clockwise.

(b) Reverse the polarity, check that the motor turns counter-clockwise.

If operation is not as specified, replace the motor.





8. Front passenger's door and rear door:
INSPECT POWER WINDOW MOTOR OPERATION

(a) Connect the positive (+) lead from the battery to terminal 1 and the negative (-) lead to terminal 2, and check that the motor turns clockwise.

(b) Reverse the polarity, check that the motor turns counter-clockwise.

If operation is not as specified, replace the motor.

9. INSPECT POWER WINDOW MOTOR CIRCUIT (See page DI-935)

10. INSPECT POWER WINDOW MOTOR PTC OPERATION

(a) Disconnect the connector from the master switch.

(b) Connect the positive (+) lead from the battery to terminal 1 and the negative (-) lead to terminal 2 on the wire harness side connector and raise the window to full closed position.

(c) Continue to apply voltage, check that there is a PTC operation noise within approximately 4 to 90 seconds.

(d) Reverse the polarity, check that the window begins to descend within approximately 60 seconds.

If operation is not as specified, replace the motor.

11. INSPECT JAM PROTECTION FUNCTION

NOTICE:

Never, ever be caught any part of your body when checking.

HINT:

In case of performing resetting of the limit switch, do checking after repeating up and down of the glass with automatic operation.

(a) Confirmation of AUTO up operation:
Confirm that the window will be fully close with AUTO up operation.

(b) Checking of the operation of the jam protection function:
(1) Move up the window with AUTO up operation and check that the window will go down when it touches the handle of the hammer stetted.
(2) Confirm that the window will then stop going down about 200 mm.

HINT:

In case of removing the glass, glass guide, regulator and etc. be sure to perform checking of the jam protection function.

If the jam protection is not functioned properly, adjust power window motor reset switch and pulse switch.

BE0HG-21

ADJUSTMENT

HOW TO RESET POWER WINDOW MOTOR (RESET SWITCH AND PULSE SWITCH)

If the jam protection is not functioned properly, perform the following procedure.

HINT:

It is necessary to reset the power window motor (in initial position for the limit switch) when separating the window regulator from the power window motor or operating the window regulator with the door glass not installed.

(a) Remove the power window motor (See page BO-17 , BO-28).

HINT:

Place the matchmarks on the power window motor and window regulator gear.

(b) Connect the power window motor and power window switch to wire harness of the vehicle.

(c) Turn the ignition switch ON and operate the power window switch to idle the power window motor in UP side direction for more than 6 rotations or less than 10 rotates (4 seconds or more).

(d) Assemble the power window motor and regulator.

HINT:

- Install the motor when the regulator arm is below the middle point.
- Align the matchmarks on the power window motor and window regulator gear.

(e) Assemble the power window regulator and door glass.

HINT:

Never rotate the motor to the down direction until the completion of the window glass installation.

(f) Connect power window switch to wire harness and turn the ignition switch ON.

(g) Repeat UP and DOWN operation several times manually.

(h) Check if AUTO UP → AUTO DOWN operates in automatic operation.

HINT:

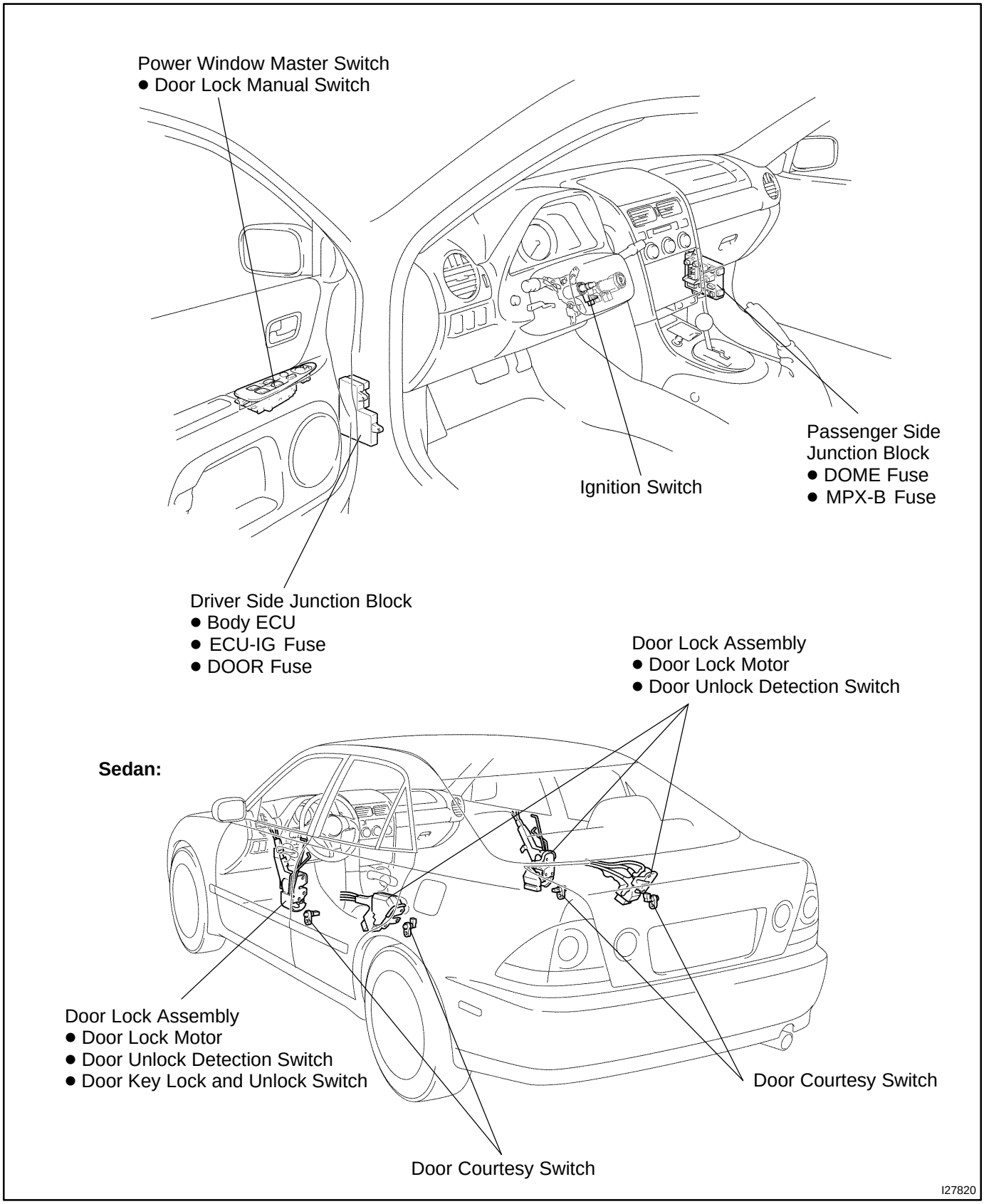
- Take care that the jam protection function does not operate just after resetting.
- Reset the regulator again when performing the reverse operating after closing the window fully by AUTO UP operation.

(i) Check the power window function.

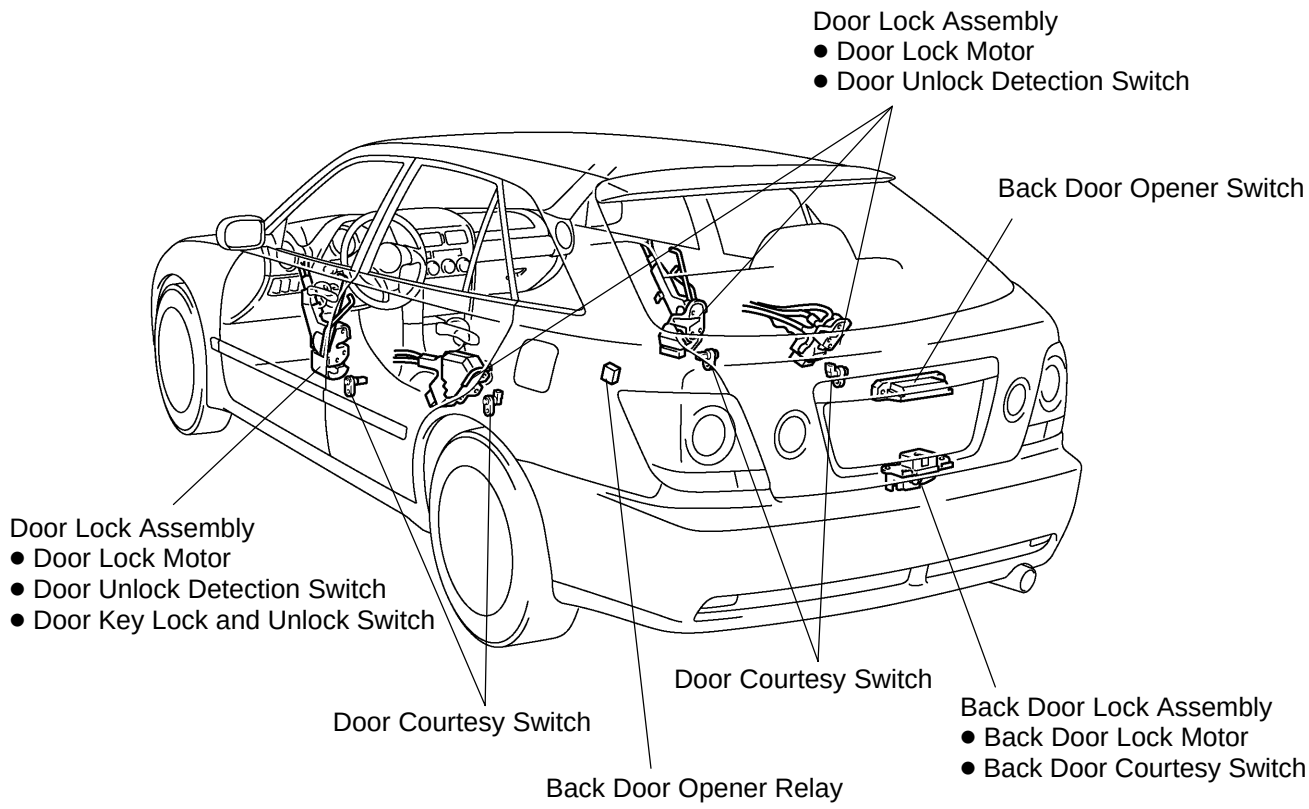
POWER DOOR LOCK CONTROL SYSTEM

LOCATION

BE2A3-02



Wagon:



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I27821

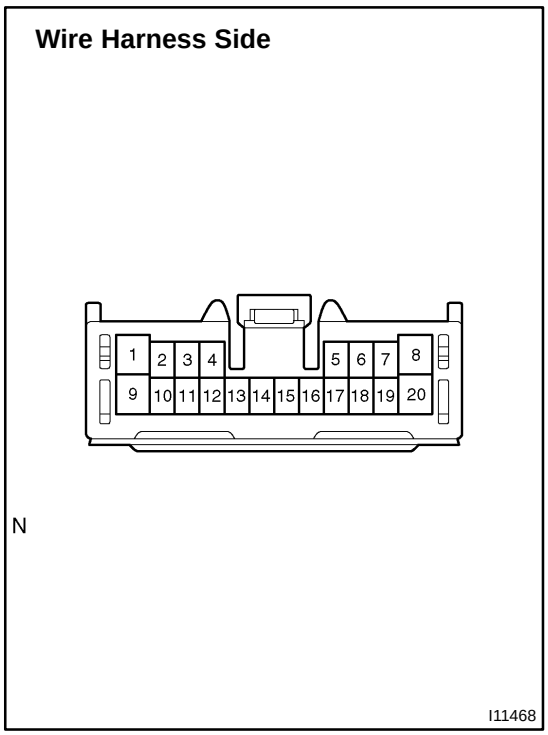
BE2A4-02

INSPECTION

1. Connector disconnected:

INSPECT POWER WINDOW MASTER SWITCH CIRCUIT

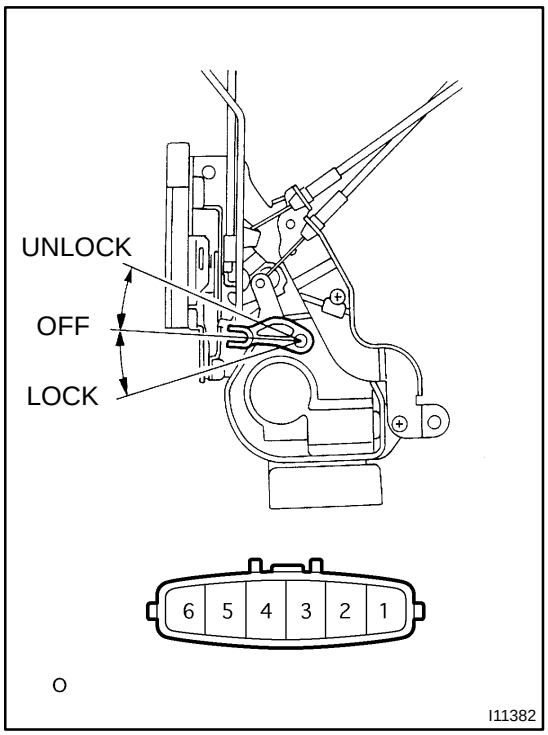
Disconnect the connectors from the switch and inspect connector on the wire harness side.



Tester connection	Condition	Specified condition
9 - Ground	Always	Continuity
1, 5 - Ground	Always	Battery Positive Voltage
2, 4 - Ground	Ignition switch LOCK	No voltage
2, 4 - Ground	Ignition switch ACC or ON	Battery Positive Voltage
15 - Ground (LHD)	Driver's door key lock and unlock switch LOCK	No Continuity
15 - Ground (LHD)	Driver's door key lock and unlock UNLOCK	Continuity
16 - Ground	Each door courtesy switch ON (door opened)	No Continuity
16 - Ground	Each door courtesy switch OFF (door closed)	Continuity
6 - Ground (RHD)	Driver's door key lock and unlock switch LOCK	No Continuity
6 - Ground (RHD)	Driver's door lock and unlock switch UNLOCK	Continuity

If circuit is not as specified, inspect power source or wire harness.

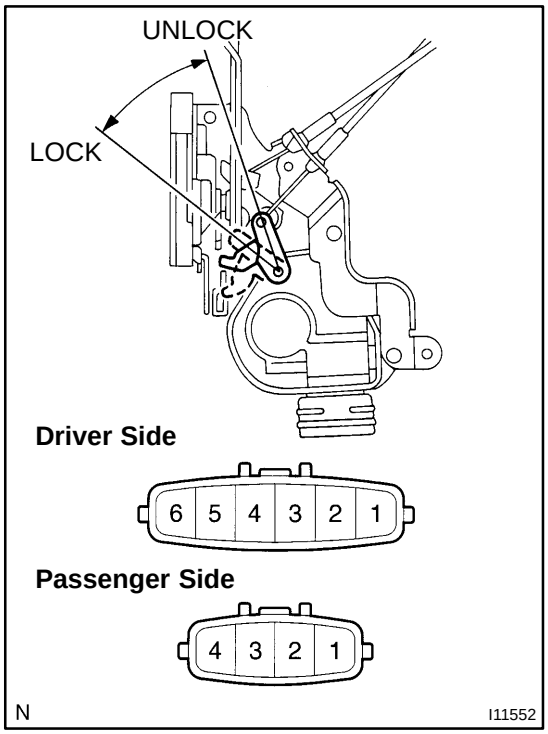
2. INSPECT POWER WINDOW MASTER SWITCH CIRCUIT (See page DI-935)



3. INSPECT DOOR KEY LOCK AND UNLOCK SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
LOCK	2 - 4	Continuity
OFF	-	No continuity
UNLOCK	2 - 3	Continuity

If continuity is not as specified, replace the door lock assembly.



4. INSPECT DRIVER SIDE DOOR UNLOCK DETECTION SWITCH CONTINUITY

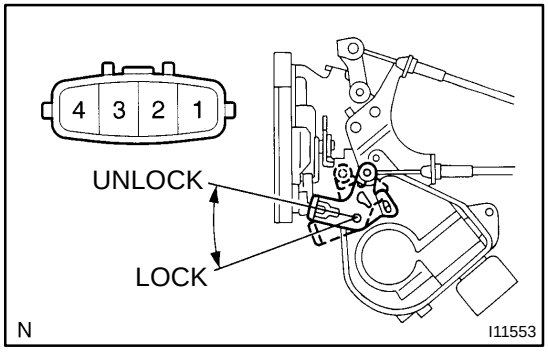
Switch position	Tester connection	Specified condition
OFF (Door Lock set to LOCK)	-	No continuity
ON (Door Lock set to UNLOCK)	1 - 2	Continuity

If continuity is not as specified, replace the door lock assembly.

5. INSPECT PASSENGER DOOR UNLOCK DETECTION SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
OFF (Door Lock set to LOCK)	-	No continuity
ON (Door Lock set to UNLOCK)	3 - 4	Continuity

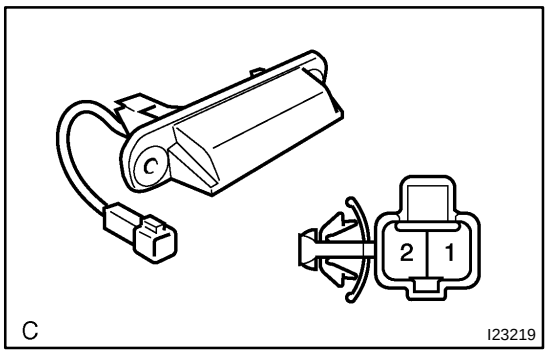
If continuity is not as specified, replace the door lock assembly.



6. INSPECT REAR DOOR UNLOCK DETECTION SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
OFF (Door Lock set to LOCK)	-	No continuity
ON (Door Lock set to UNLOCK)	1 - 2 (LH side) 3 - 4 (RH side)	Continuity

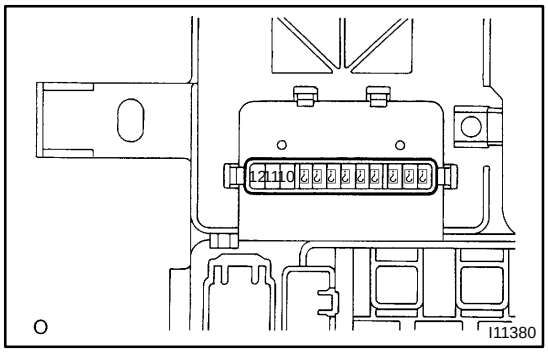
If continuity is not as specified, replace the door lock assembly.



7. INSPECT BACK DOOR OPENER SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
OFF	-	No continuity
ON	1 - 2	Continuity

If continuity is not as specified, replace the switch.



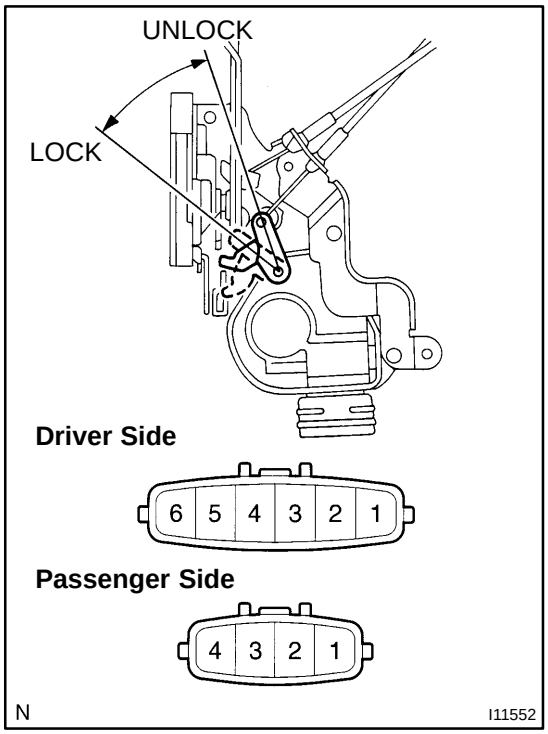
8. INSPECT DOOR LOCK MOTOR AND J/B CIRCUIT

(a) Remove the body ECU from the driver's side junction block.

(b) Connect the positive (+) lead from the battery to J/B terminal 9 and the negative (-) lead to J/B terminal 10, and check that the door lock link moves to LOCK position.

(c) Reverse the polarity and check that the door link moves to UNLOCK position.

If operation is not as specified, inspect door lock motor.



9. INSPECT DRIVER SIDE DOOR LOCK MOTOR OPERATION

(a) Connect the positive (+) lead from the battery to terminal 5 and the negative (-) lead to terminal 6, and check that the door lock link moves to LOCK position.

(b) Reverse the polarity and check that the door lock link moves to UNLOCK position.

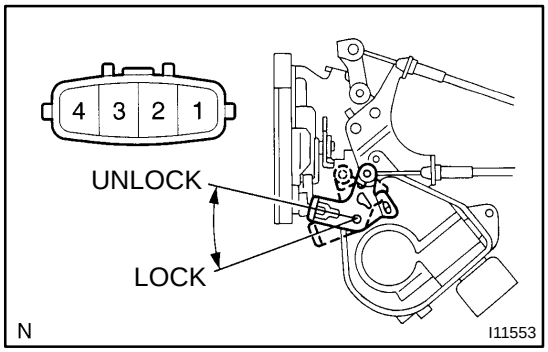
If operation is not as specified, replace the door lock assembly.

10. INSPECT PASSENGER SIDE DOOR LOCK MOTOR OPERATION

(a) Connect the positive (+) lead from the battery to terminal 1 and the negative (-) lead to terminal 2, and check that the door lock link moves to LOCK position.

(b) Reverse the polarity and check that the door lock link moves to UNLOCK position.

If operation is not as specified, replace the door lock assembly.



11. INSPECT REAR DOOR LOCK MOTOR OPERATION ( ): RH side

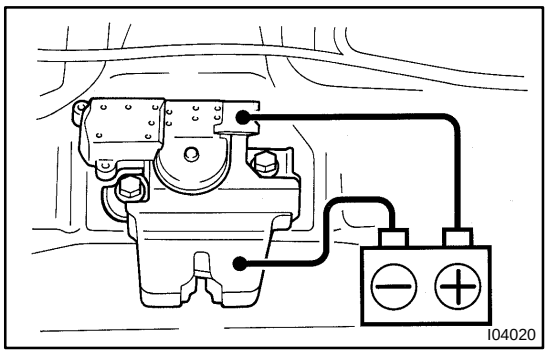
(a) Connect the positive (+) lead from the battery to terminal 3 (1) and the negative (-) lead to terminal 4 (2), and check that the door lock link moves to LOCK position.

(b) Reverse the polarity and check that the door lock link moves to UNLOCK position.

If operation is not as specified, replace the door lock assembly.

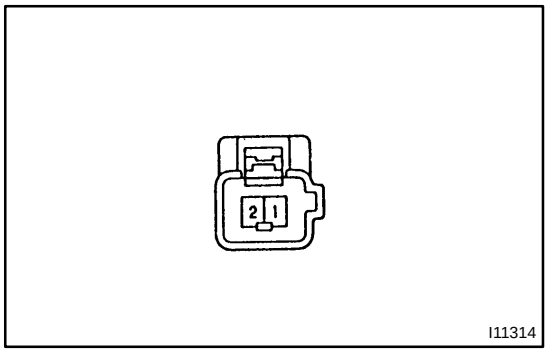
12. INSPECT DOOR LOCK MOTOR CIRCUIT

(See page DI-931)

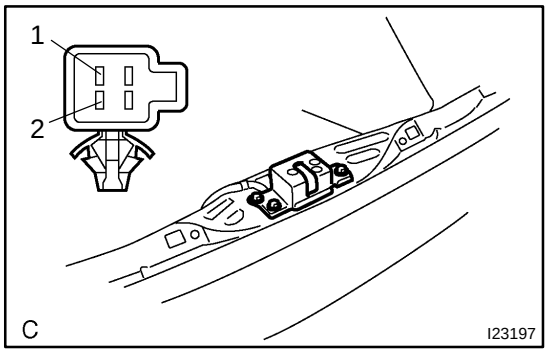


13. INSPECT LUGGAGE COMPARTMENT DOOR OPENER MOTOR OPERATION

Connect positive (+) lead to the terminal 1 and negative (-) lead to the opener motor body, and check that the motor operates.
If operation is not as specified, replace the motor assembly.



14. INSPECT LUGGAGE COMPARTMENT DOOR OPENER MOTOR CIRCUIT (See page DI-927)



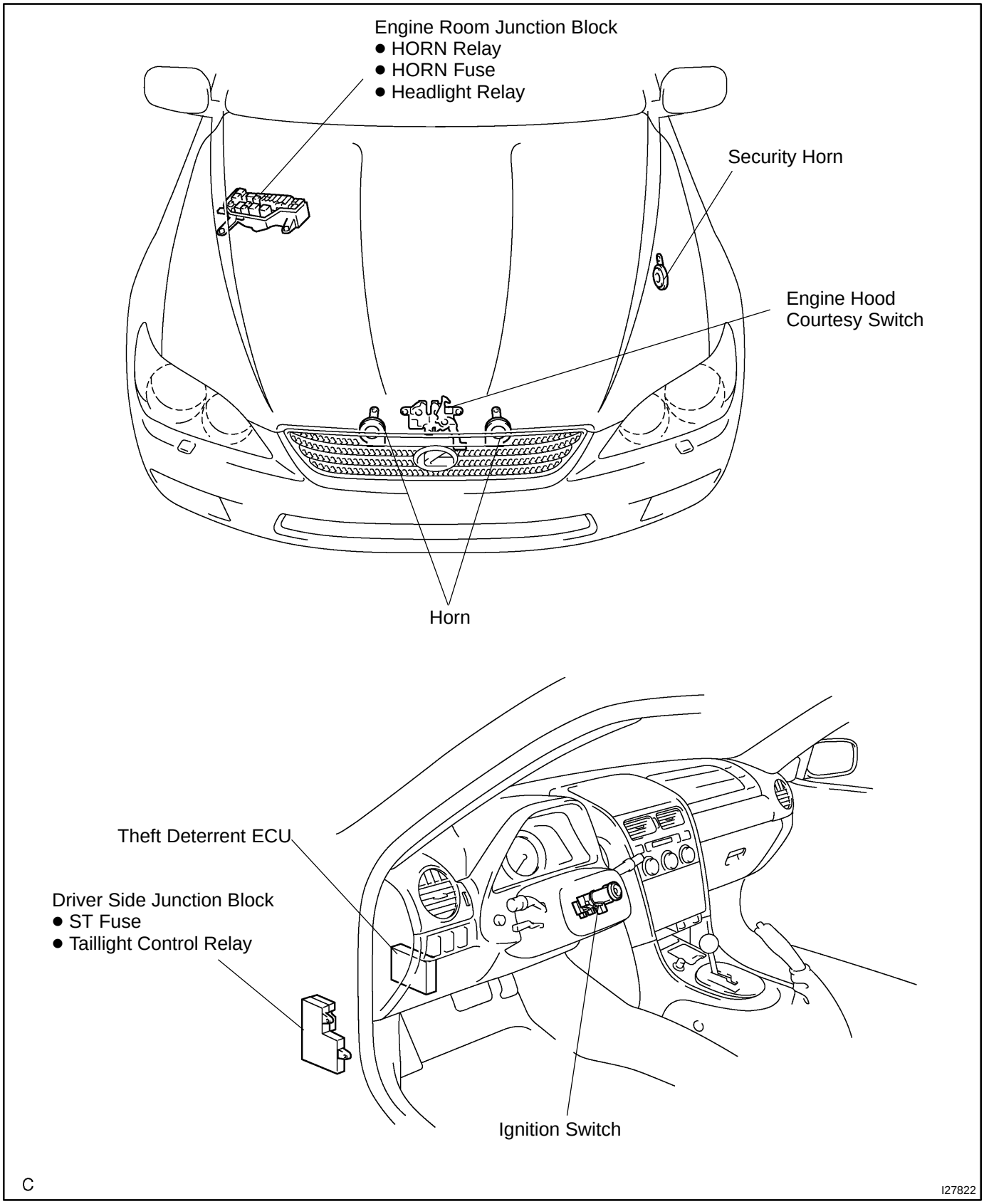
15. INSPECT BACK DOOR OPENER MOTOR OPERATION

Connect positive (+) lead to the terminal 1 and negative (-) lead to the terminal 2, and check that the motor operates.
If operation is not as specified, replace the motor assembly.

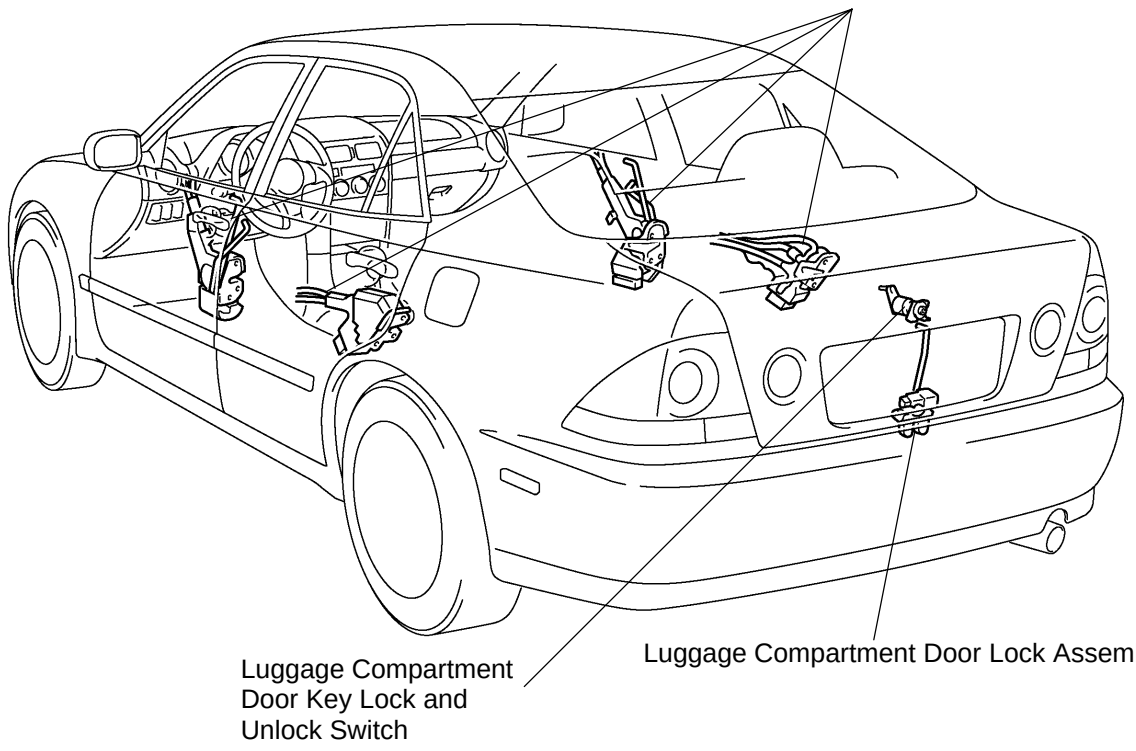
THEFT DETERRENT SYSTEM

BE2A5-02

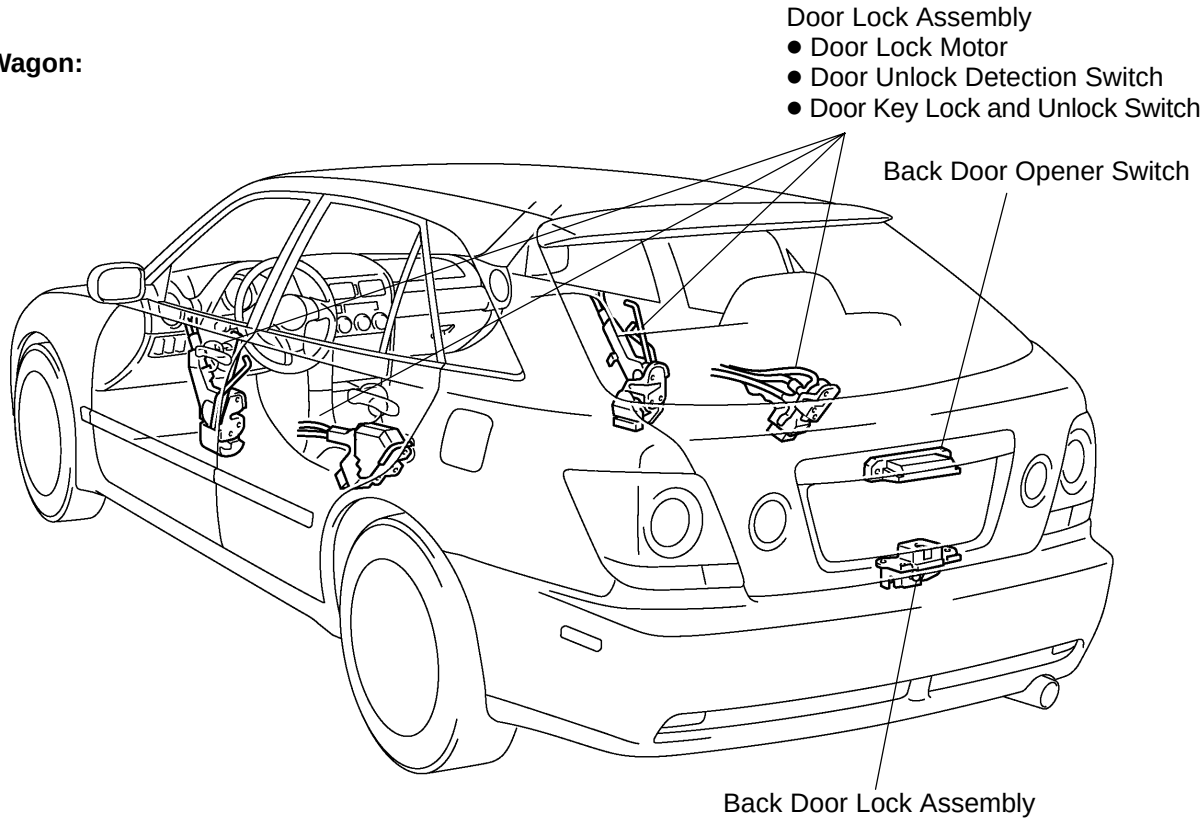
LOCATION



Sedan:



Wagon:



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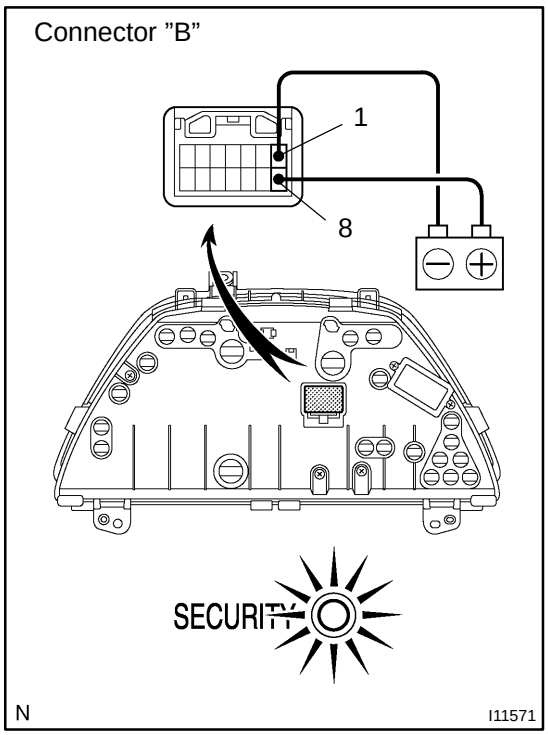
BE16R-03

INSPECTION



1. INSPECT THEFT DETERRENT INDICATOR LIGHT OPERATION

(a) Remove the combination meter.

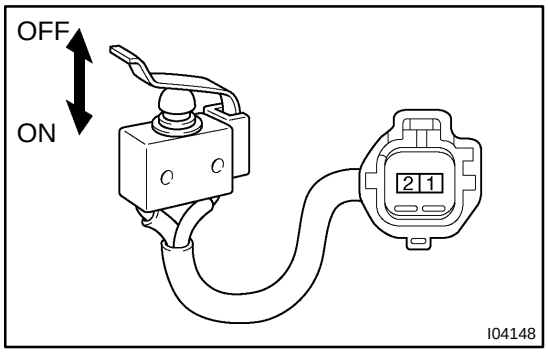
(b) Disconnect the combination meter connector.

(c) Check indicator light lights up when connect the positive (+) lead from the battery to terminal B8 and the negative (-) lead to terminal B1 of combination meter connector.

If operation is not as specified, replace the indicator light.

2. INSPECT THEFT DETERRENT INDICATOR LIGHT CIRCUIT

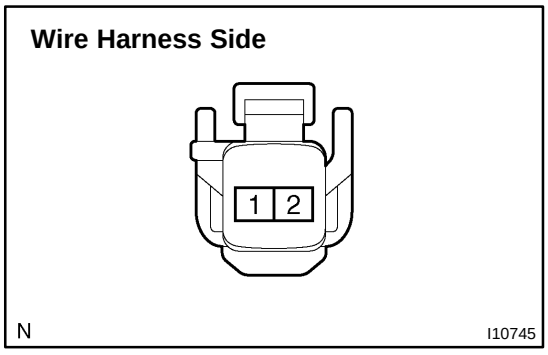
(See page DI-790)



3. INSPECT ENGINE HOOD COURTESY SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
OFF (closed)	-	No continuity
ON (opened)	1 - 2	Continuity

If continuity is not as specified, replace the switch.



4. INSPECT ENGINE HOOD COURTESY SWITCH CIRCUIT

(See page DI-816)

Disconnect the connector from the switch and inspect the connector on the wire harness side, as shown.

Tester connection	Condition	Specified condition
2 - Ground	Always	Continuity

If circuit is not as specified, inspect power source or wire harness.

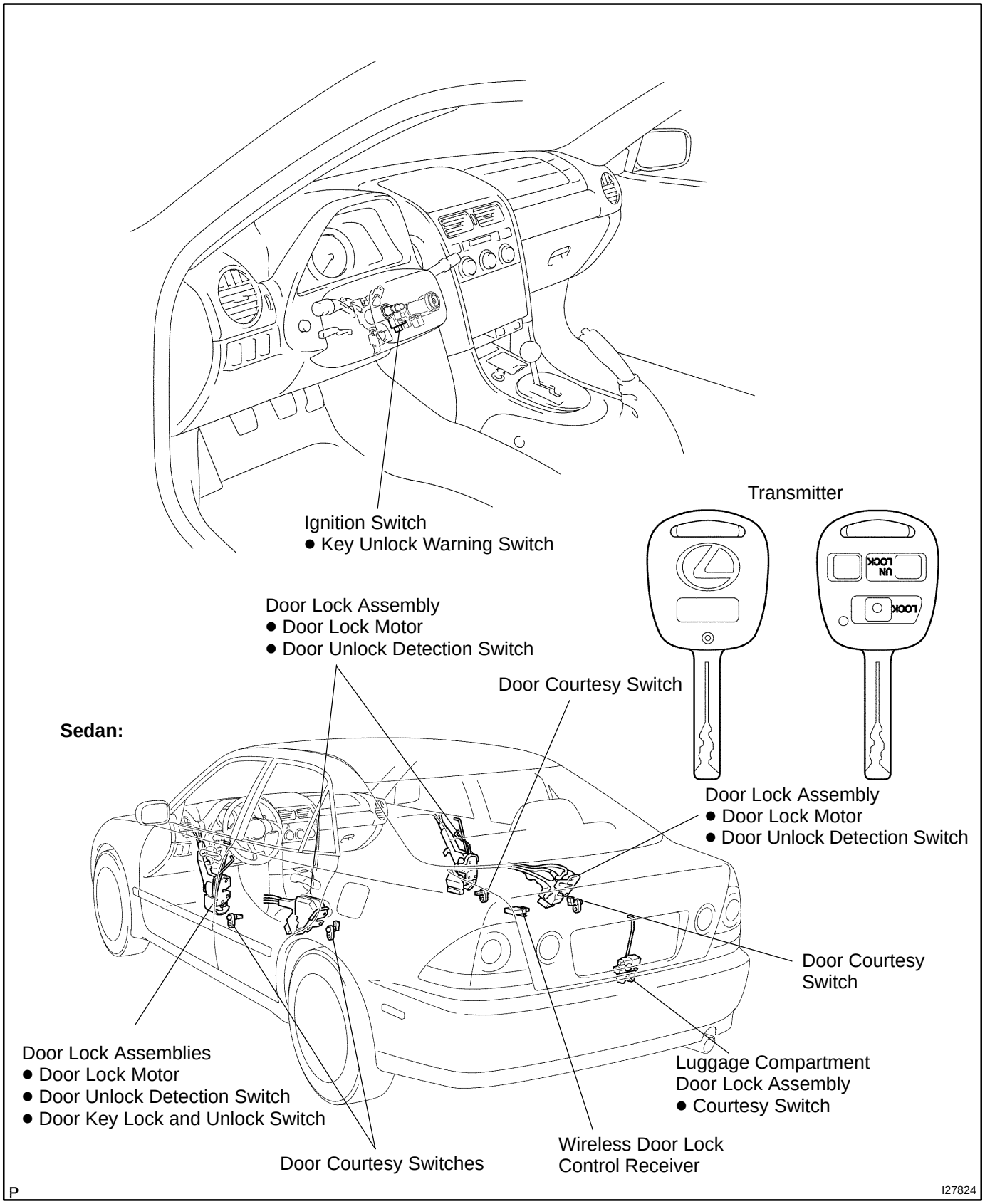
5. INSPECT THEFT DETERRENT SIREN BATTERY

(a) The internal battery is fully discharged.
(b) Set the system inside the vehicle.
(c) Disconnect the connector of theft deterrent ECU in this condition, and sounds the siren for open detection.
(d) The siren battery is normal when the siren sounds for 30 seconds, stops, then after 5 seconds, seconds again.
(e) Replace the siren battery when the siren stops sounding before 30 seconds elapse the battery because the battery life has run out.

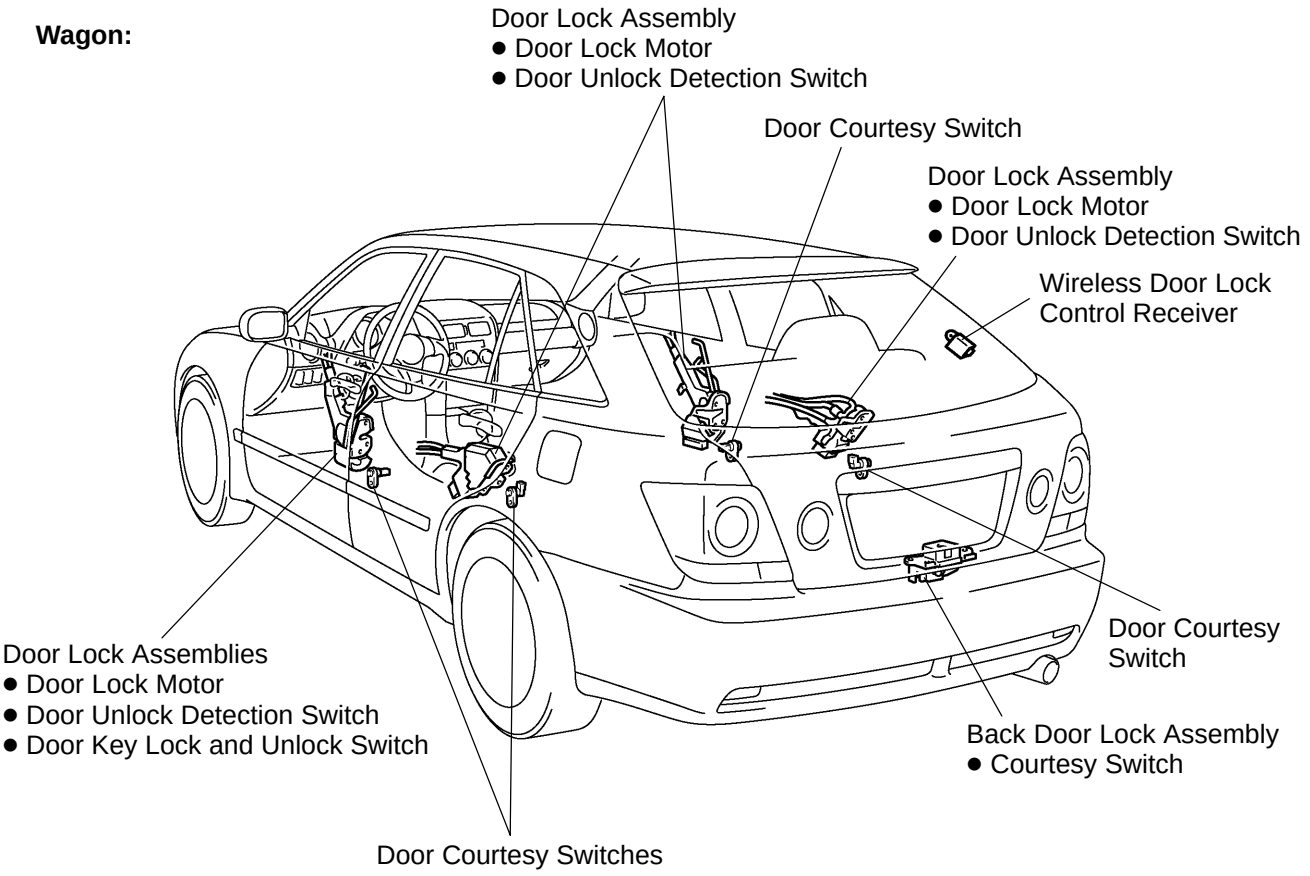
WIRELESS DOOR LOCK CONTROL SYSTEM

LOCATION

BE2A6-03



Wagon:



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BE0GN-11

PRE-CHECK

Only wireless function (Remote control) will not operate.
(If a new transmitter or a transmitter of the same type that works properly with the vehicle is not available.)

Make the vehicle in the initialized condition:
The initialized condition is the condition when the following conditions are satisfied.
(1) Key plate has not been inserted in the ignition key cylinder.
(2) All the doors are closed. (Door warning light is OFF.)
(3) All the doors are locked.

Basic function check:

Under the standard operation, when repeating UNLOCK and LOCK switch 3 times or more alternately, check the UNLOCK-LOCK operation from 3rd time onward.
● Following procedures are standard operation.
(1) Keep about 1 M away to the right direction from the outside handle of a driver's seat.
(2) Face the transmitter toward the vehicle and press one of transmitter switches for about 1 sec.
<Reference>
● As of the security function, even the wireless function is normal, there may be the case that only UNLOCK operation will not work.

No

Yes

Transmitter LED inspection:

Check when pressing UNLOCK switch and LOCK switch under standard operation, that the transmitter LED lights up once more.

No

Yes

Normal
<Reference>
● Operative distance may differ according to an operator, the way of holding the transmitter or position.
● Because weak electric wave is used, when there is strong wave or noise in the used frequency ,operation distance might be shortened.

Transmitter battery check:

Replace the transmitter battery with a new or normal one and check UNLOCK-LOCK function works under the standard operation.
<Reference>
● The battery should be replaced by only the shops with sufficient skill as new or normal battery is necessary.
● Battery quality can be judged by checking the remnant volume of the battery.

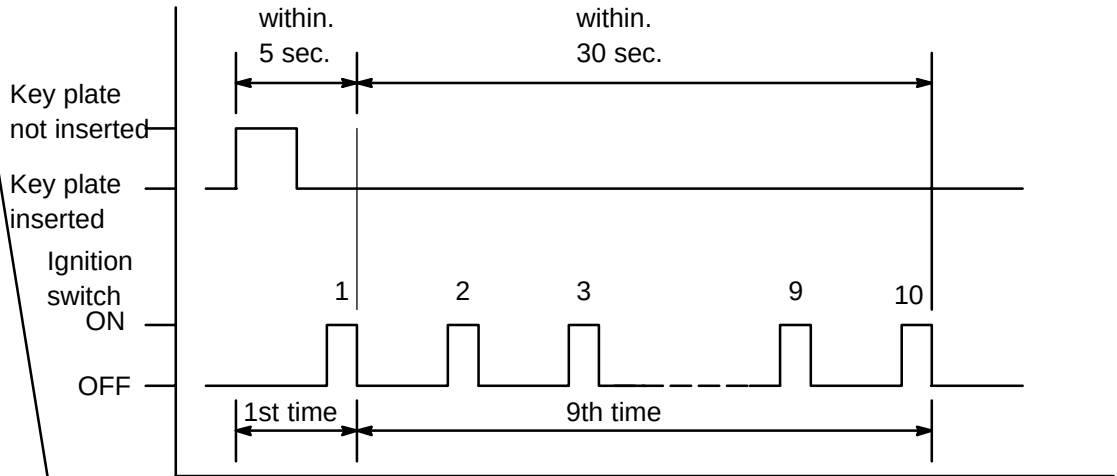
Yes → Battery faulty.

No

Make the vehicle be in the initialized condition.

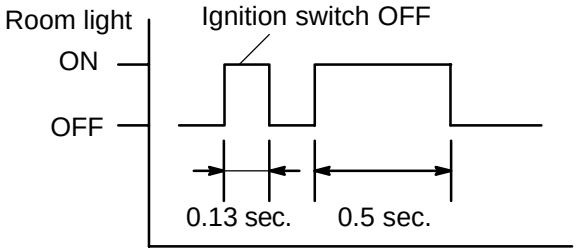
Inspection start by using self diagnostic mode:

Enter into the self diagnostic mode.
If operating door control receiver in the order of 1 through 2, the mode turns to diagnostic mode.
(1) Insert the key plate in the ignition key cylinder and pull out, then insert it again and turn ignition switch OFF → ON → OFF once within 5 seconds after pulling out.
(2) After completing the procedure within 30 seconds, turn the ignition switch OFF → ON → OFF 9 times.
HINT:
In the case that either (1) or (2) condition is not satisfied, transfer to normal mode.
<Reference>
When completing self diagnostic mode, turn the ignition switch ON.
LOCK and UNLOCK operation and output of luggage door opener signal are not performed under the self diagnostic mode.



Self diagnostic mode operation check:

After the self diagnostic mode input operation has been performed, check that the room light



No
(Not entered in self diagnostic mode)

Is the method to enter into the diagnostic mode correct?

No

Yes

Is the chirping function of operation confirmation room light normal?

No

Check door control room light

Yes

Yes
(Entered in self diagnostic mode)

Key unlock warning switch inspection:

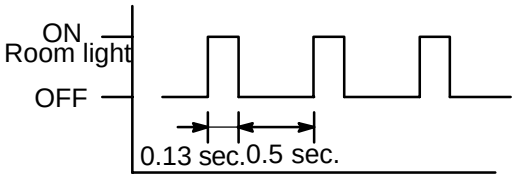
Check that continuity exists between connector terminal A3 of MPX body ECU on the vehicle side and ground by inserting the key plate into the ignition key cylinder.

Check key unlock warning switch.

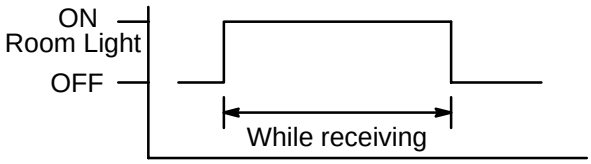
Self diagnostic mode check:

Check that how the room light when pressing each transmitter switch.

(1) Receiver normal wave of LOCK, UNLOCK or TRUCK switch.



(2) Incompatibility of the recognition code or out from synchronization of rolling code.



<Reference>:
While turning the ignition switch ON in the self diagnostic mode, the mode returns to normal mode.

(2) is output.
(All room light response is same.)

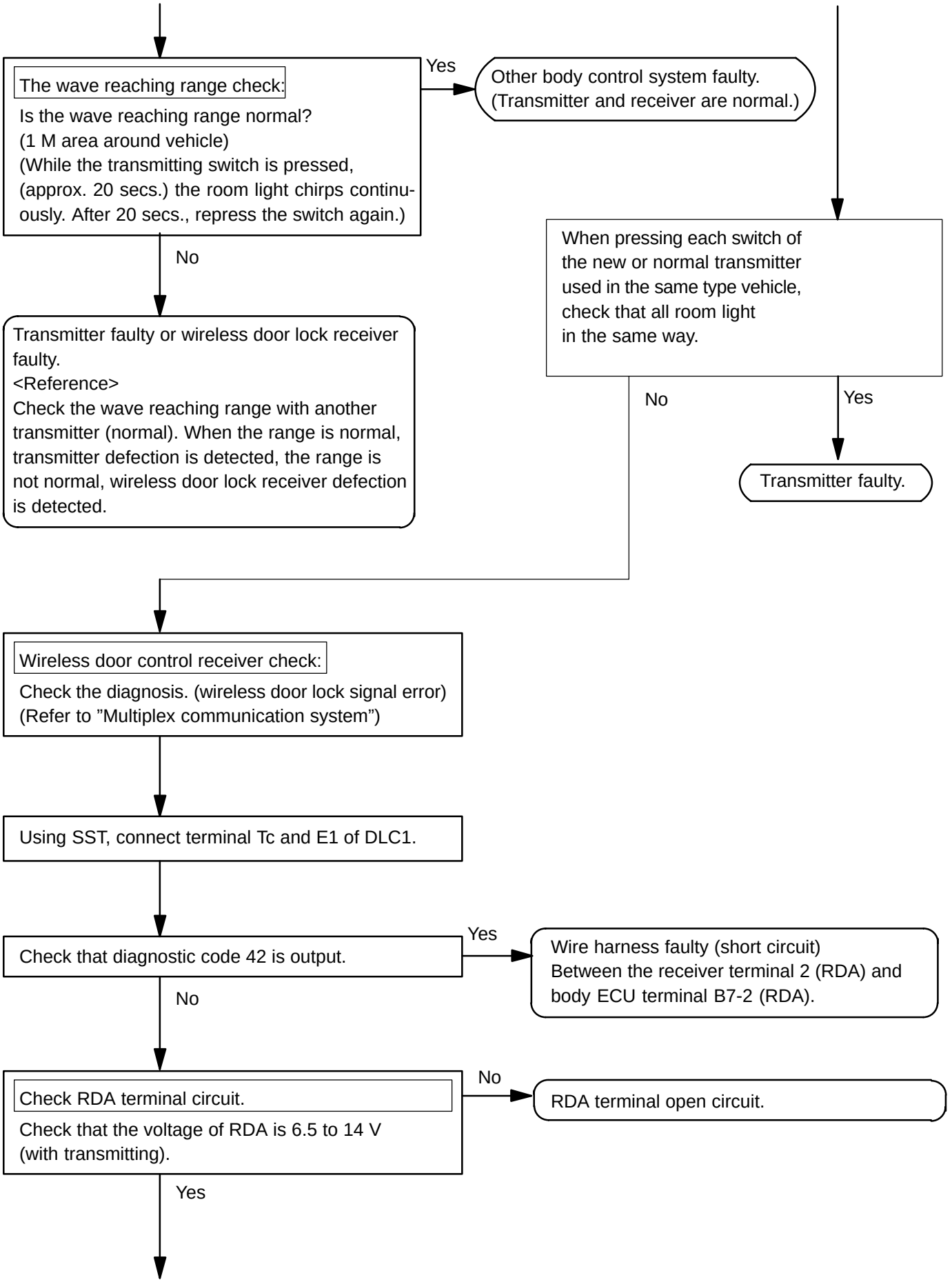
Recognition code registration function check:

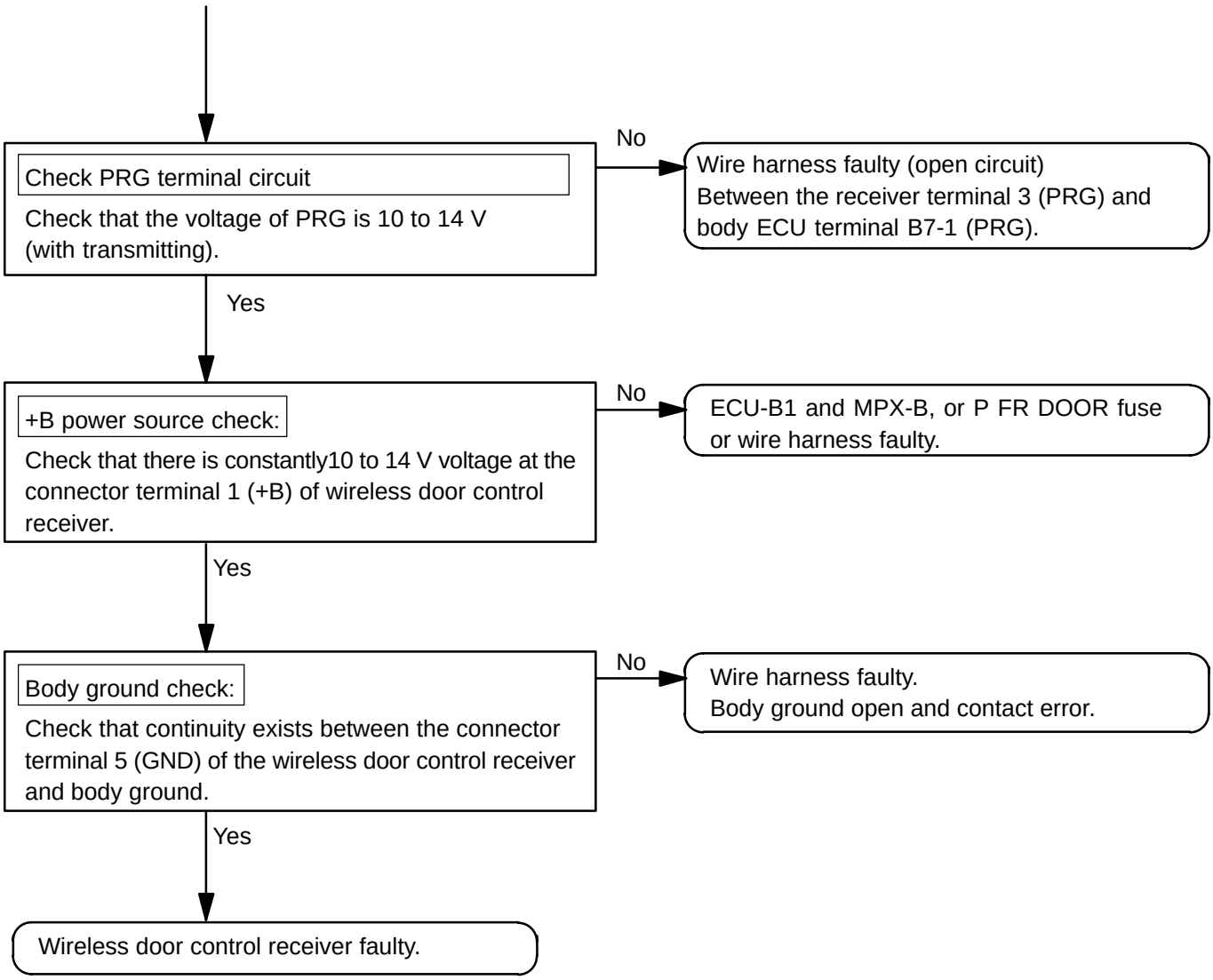
Check that it is possible to enter into rewrite mode or add mode.
(Refer to "Wireless door lock receiver and transmitter" - "Recognition code registration".)

Wireless door lock operates normally when recognition code is registered.

No response from room light

(1) is output.


The wave reaching range check:
Is the wave reaching range normal?
(1 M area around vehicle)
(While the transmitting switch is pressed, (approx. 20 secs.) the room light chirps continuously. After 20 secs., repress the switch again.)
Yes
Other body control system faulty.
(Transmitter and receiver are normal.)
No
Transmitter faulty or wireless door lock receiver faulty.
<Reference>
Check the wave reaching range with another transmitter (normal). When the range is normal, transmitter defection is detected, the range is not normal, wireless door lock receiver defection is detected.
When pressing each switch of the new or normal transmitter used in the same type vehicle, check that all room light in the same way.
No
Yes
Transmitter faulty.
Wireless door control receiver check:
Check the diagnosis. (wireless door lock signal error)
(Refer to ”Multiplex communication system”)
Using SST, connect terminal Tc and E1 of DLC1.
Check that diagnostic code 42 is output.
Yes
Wire harness faulty (short circuit)
Between the receiver terminal 2 (RDA) and body ECU terminal B7-2 (RDA).
No
Check RDA terminal circuit.
Check that the voltage of RDA is 6.5 to 14 V (with transmitting).
No
RDA terminal open circuit.
Yes


Check PRG terminal circuit
Check that the voltage of PRG is 10 to 14 V (with transmitting).
No
Wire harness faulty (open circuit)
Between the receiver terminal 3 (PRG) and body ECU terminal B7-1 (PRG).
Yes
+B power source check:
Check that there is constantly10 to 14 V voltage at the connector terminal 1 (+B) of wireless door control receiver.
No
ECU-B1 and MPX-B, or P FR DOOR fuse or wire harness faulty.
Yes
Body ground check:
Check that continuity exists between the connector terminal 5 (GND) of the wireless door control receiver and body ground.
No
Wire harness faulty.
Body ground open and contact error.
Yes
Wireless door control receiver faulty.

BE1WW-02

INSPECTION

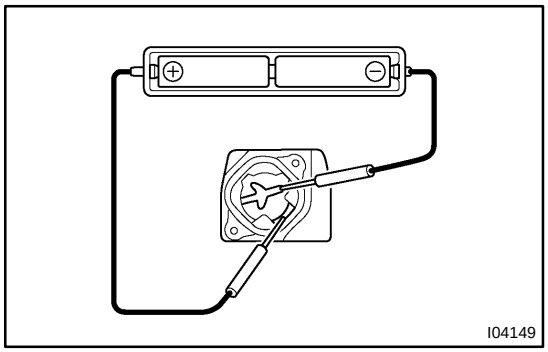
1. INSPECT WIRELESS DOOR LOCK TRANSMITTER OPERATION

HINT:

Refer to "Wireless door lock control transmitter battery replacement" on page BE-140 .

(a) Using a screwdriver, remove the screw and cover.

(b) Remove the battery (lithium battery).



(c) Install a new or normal battery (lithium battery).

HINT:

When a new or normal battery can not be obtained, connect 2 new 1.5 V batteries in series, connect the battery (+) to the battery receptacle side terminal and battery (-) to the bottom terminal, then apply 3 V voltage to the transmitter.

(d) In the location where is approx. 1 M away from driver's outside handle in the right direction, face the key plate of the transmitter to the vehicle, and check the transmitter operation when pressing transmission switch on the side of the transmitter body.

Standard:

- **Remote control of vehicle door lock can be operated.**
- **LED lights up more than once.**

HINT:

- The minimum operation distance differs according to operator, the way of holding the transmitter, and location.
- As weak wave is used, operation distance might be shortened when noise is detected in strong wave or used frequency.

(e) Install the battery (lithium battery).

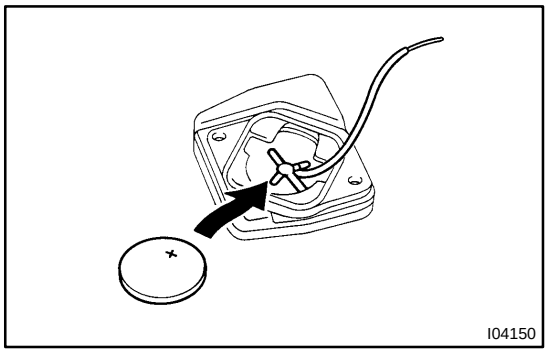
(f) Install a cover so that O-ring is not distorted or slipped off.

(g) Using a screwdriver, tighten the screw.

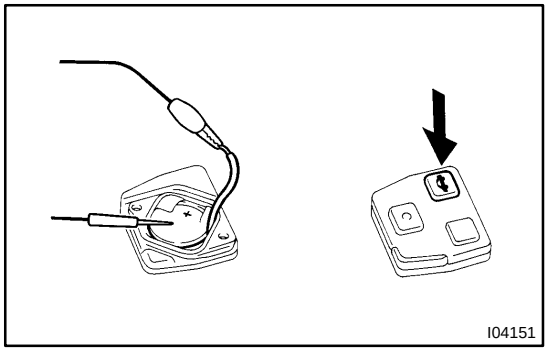
2. CHECK BATTERY CAPACITY

HINT:

- Make sure to use the LEXUS electrical tester.
- With the battery unloaded, judge can not be made whether the battery is available or not on the test.
- When the transmitter is faulty, the energy amount left in the battery might not be checked correctly.
- On the lithium battery used for the transmitter, the voltage more than 2.5 V with the battery unloaded is shown on the tester until the energy is completely consumed.
  Accordingly when inspecting the energy amount left in the battery, it is necessary to measure the voltage when the battery is loaded. (1.2 kΩ).



(a) Remove the screws and cover using a (-) driver.
(b) Remove the battery (lithium battery) from the transmitter.
(c) Connect the lead to the (-) terminal of the transmitter and install the battery.

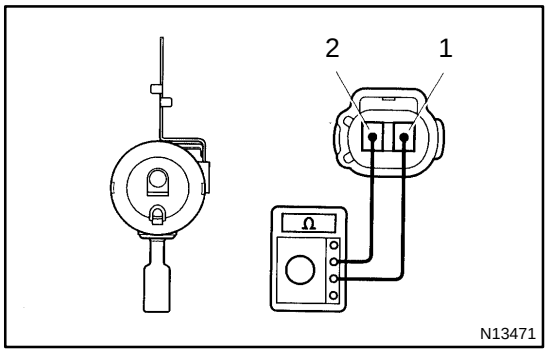


(d) Connect the (+) tester to the (+) battery (lithium battery), and (-) tester to the lead respectively.
(e) Press one of the transmitting switches on the transmitter for approx. 1 second.
(f) Press the transmitting switch on the transmitter again to check the voltage.
Standard: 2.1 V or more

HINT:

- When the temperature of the battery is low, the judge can not be made correctly.
  When the outcome of the test is less than 2.1 V, conduct the test again after leaving the battery in the place at 18 °C for more than 30 minutes.
- By auto power off function, the voltage becomes no load voltage (more than 2.5 V) condition 0.8 seconds after the switch was pressed.
  Make sure to read the voltage before of it.
- High voltage might be shown 1 to 2 times after leaving the battery, judge should be made with the voltage shown at the 3rd time or later.

(g) Disconnect the lead.
(h) Set the battery (lithium battery) in the transmitter.
(i) Install the cover, so that the O-ring is not distorted or slipped off.
(j) Using a screwdriver, tighten the screws.

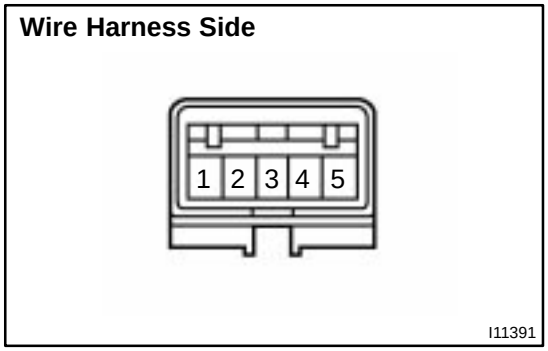


3. INSPECT WIRELESS DOOR LOCK BUZZER OPERATION

Connect the positive (+) lead from the ohmmeter to terminal 1 and the negative (-) lead to terminal 2, and measure resistance of approx. 1 kΩ.

If resistance is not as specified, replace the buzzer.

4. INSPECT WIRELESS DOOR LOCK BUZZER CIRCUIT (See page DI-945)



5. Connector disconnected:
INSPECT WIRELESS DOOR LOCK CONTROL RECEIVER CIRCUIT (See page DI-905)

Disconnect the connector from the receiver and inspect the connector on the wire harness side, as shown.

Tester connection	Condition	Specified condition
1 - Ground	Always	Continuity
5 - Ground	Always	Battery Positive Voltage

If the circuit is not as specified, inspect the circuits connected to other parts.

6. Connector connected:
INSPECT WIRELESS DOOR LOCK CONTROL RECEIVER CIRCUIT

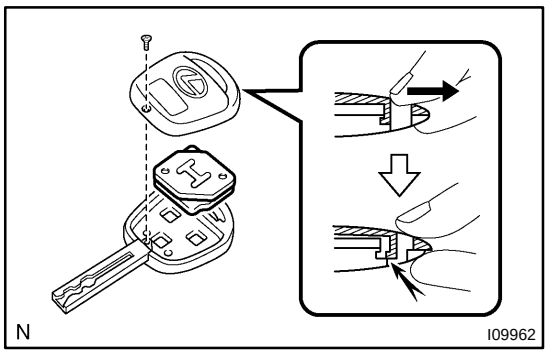
Connect the wire harness side connector to the receiver and inspect the wire harness side connector from the back side, as shown.

Tester connection	Condition	Specified condition
3 - Ground	Always	Battery Positive Voltage
2 - Ground	All door closed Transmitter OFF → ON	0 V - 6 V → 0 V

If circuit is as specified, replace the receiver.
If the circuit is not as specified, inspect the circuits connected to other parts.

BE0GP-17

REPLACEMENT



1. REPLACE TRANSMITTER (LITHIUM) BATTERY

NOTICE:

Special caution should be taken for handling each component as they are precision electronic components.

(a) Using a screwdriver, remove the screw and cover.

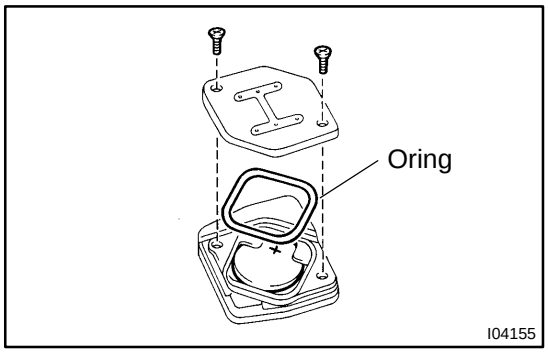
NOTICE:

Do not pry out the cover forcibly.

HINT:

Push the cover with a finger as shown in the illustration, so that there becomes clearance, then pry out the cover from that clearance.

(b) Remove the transmitter.

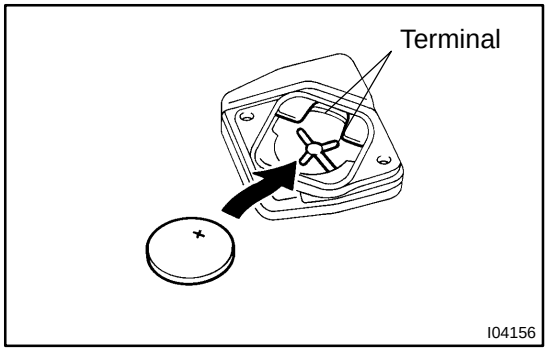


(c) Using a screwdriver, remove the 2 screws and cover.

(d) Remove the battery (lithium battery).

NOTICE:

- **Do not push the terminals with a finger.**
- **If prying up the battery (lithium battery) forcibly to remove, the terminals are deformed.**



(e) Install a battery (lithium battery) as shown in the illustration.

NOTICE:

Face the battery upward. Take care not to deform the terminals.

(f) Check that O-ring is not distorted or slipped off, and install the cover.

(g) Using a screwdriver, tighten the 2 screws.

NOTICE:

When the shrews are tightened loosely, it might cause faulty contact of battery (lithium battery) and terminals.

(h) Assemble the transmitter to the key plate and the cover.

(i) Using a screwdriver, tighten the screw.

2. REPLACE DOOR CONTROL RECEIVER AND TRANSMITTER

NOTICE:

When replacing the door control receiver and transmitter, registration of recognition code is necessary because they are provided as single components.

(a) Select which operation mode should be performed from the following modes.
- Add mode
- Rewrite mode
- Prohibition mode
- Confirmation mode

HINT:
- The add mode is used to retain codes already registered while you register new recognition codes. This mode is used when adding a transmitter. However, if the number of registered codes exceeds 4 codes, previously registered codes are correspondingly erased in order, starting from the first registered code.
- The rewrite mode is used to erase all previously registered codes and register only new recognition codes.
- The prohibition mode is used to erase all registered codes and cancels the wireless door lock function. Use this mode when the transmitter is lost.
- The confirmation mode is for confirming how many recognition codes are already registered before you register additional recognition codes.

(b) Follow the chart on the following pages to register the transmitter recognition code at the wireless door lock control receiver.

HINT:
- When procedure is out of the specified, the operation returns to normal operation.
- Maximum 4 recognition codes can be registered.

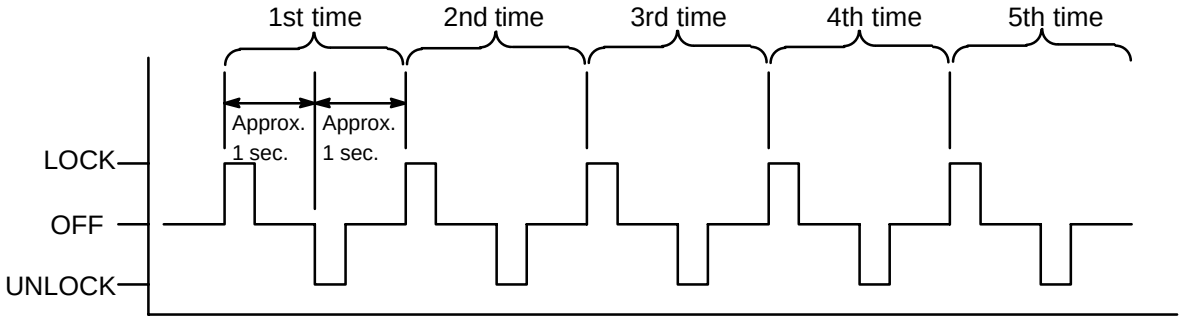
Start registration of recognition code

The vehicle should be in the following conditions.
- The key is not inserted in the ignition key cylinder.
- Driver's door is OPEN. (Other doors are CLOSED)
- Driver's door is UNLOCKED.

Insert the key into the ignition key cylinder, then pull it out.

Within 40 secs.

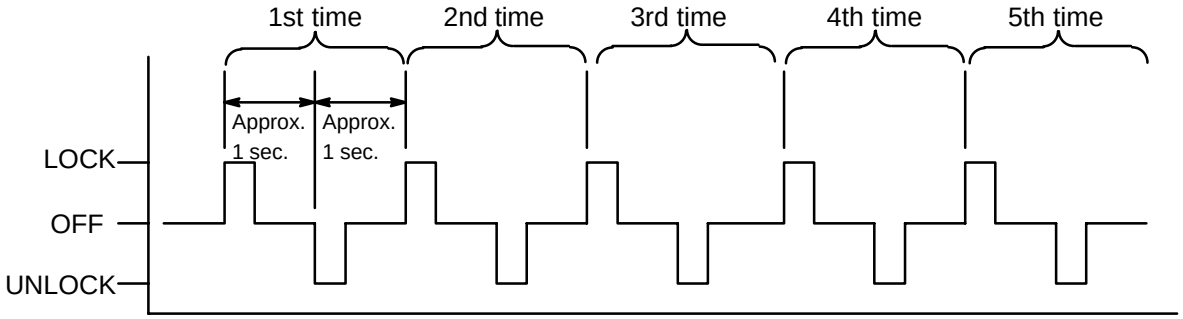
Press the door lock control switch (for manual operation) 5 times to LOCK/UNLOCK at approx. 1 sec. interval.



Close the driver's door, then open it.

Within 40 secs.

Again press the door lock control switch (for manual operation) 5 times to LOCK/UNLOCK at approx. 1 sec. interval.

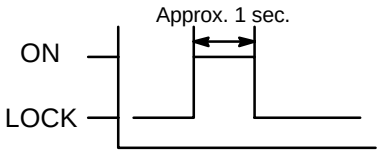


Insert the key into the ignition key cylinder.

Turn the ignition switch from ON to LOCK at approx. 1 sec. interval 1 to 5 times to select the mode.

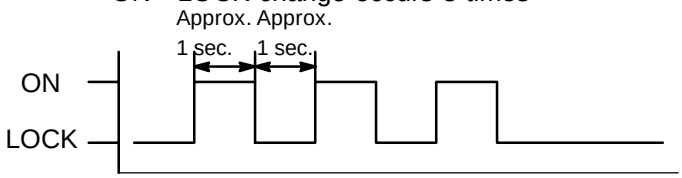
Add mode

ON - LOCK change occurs 1 time



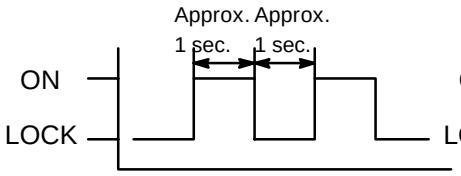
Confirmation mode

ON - LOCK change occurs 3 times



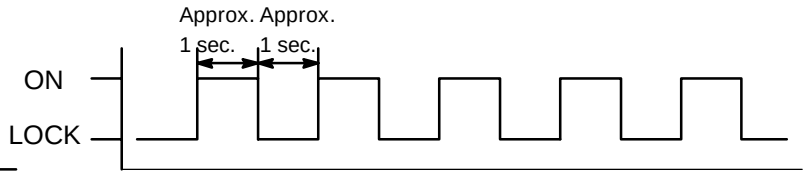
Rewrite mode

ON - LOCK change occurs 2 times



Prohibition mode

ON - LOCK change occurs 5 times



Pull out the key plate from the ignition key cylinder.

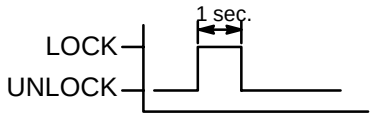
When add mode or rewrite mode is selected.

MPX body ECU automatically performs the LOCK-UNLOCK operation once or twice at 1 sec. interval to inform the operator that either the add mode or rewrite mode has been selected.

Within 3 secs.

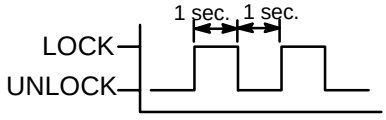
LOCK-UNLOCK occurs once

Indicates that add mode has been selected.



LOCK-UNLOCK occurs twice

Indicates that rewrite mode has been selected.

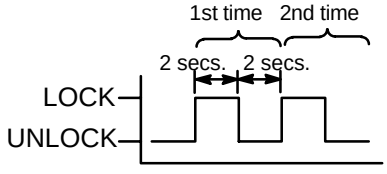


When prohibition mode is selected.

When confirmation mode is selected.

MPX body ECU automatically performs the LOCK-UNLOCK operation 1 to 4 times at 2 sec. interval to inform the operator of the number of the registered codes.
HINT:
When the number of the registered code is 0, the operation is automatically performed 5 times.

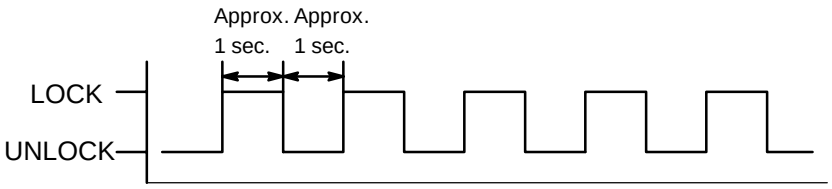
Example:
When the operation is performed twice, it directs that 2 types of recognition code have been registered.



Registration of recognition code (Confirmation mode and prohibition mode) is completed.

When prohibition mode is selected.

MPX body performs LOCK-UNLOCK operation 5 times at a 1 sec. interval to inform the operator that prohibition mode has been selected.



Within 40 secs.

Press the lock and unlock switches on the transmitter simultaneously within. 1.5 sec.

Within 3 secs.

Press again either one of 3 switches on the transmitter for more than 1 sec.

Within 3 secs.

MPX body ECU automatically performs LOCK-UNLOCK operation once or twice at a 1 sec. interval to inform the operator that the receiver has received the signal from the transmitter.

LOCK-UNLOCK occurs once

Registration of recognition code is completed

LOCK-UNLOCK occurs twice

Registration of recognition code has not been completed.
- Recognition code received first time and second time did not match.

If LOCK-UNLOCK operation can not be performed at all, the mode returns to the normal mode, then start with ”Start registration of recognition code”.

Proceed to finish registration

Proceed to continue registration

Within 40 secs.

If even one of the following conditions is satisfied, registration of recognition codes is completed.
- 40 secs. elapses since the MPX body ECU response.
- The driver’s door is closed.
- The key plate is inserted in the ignition key cylinder.
- 4 type recognition codes are registration at one time.

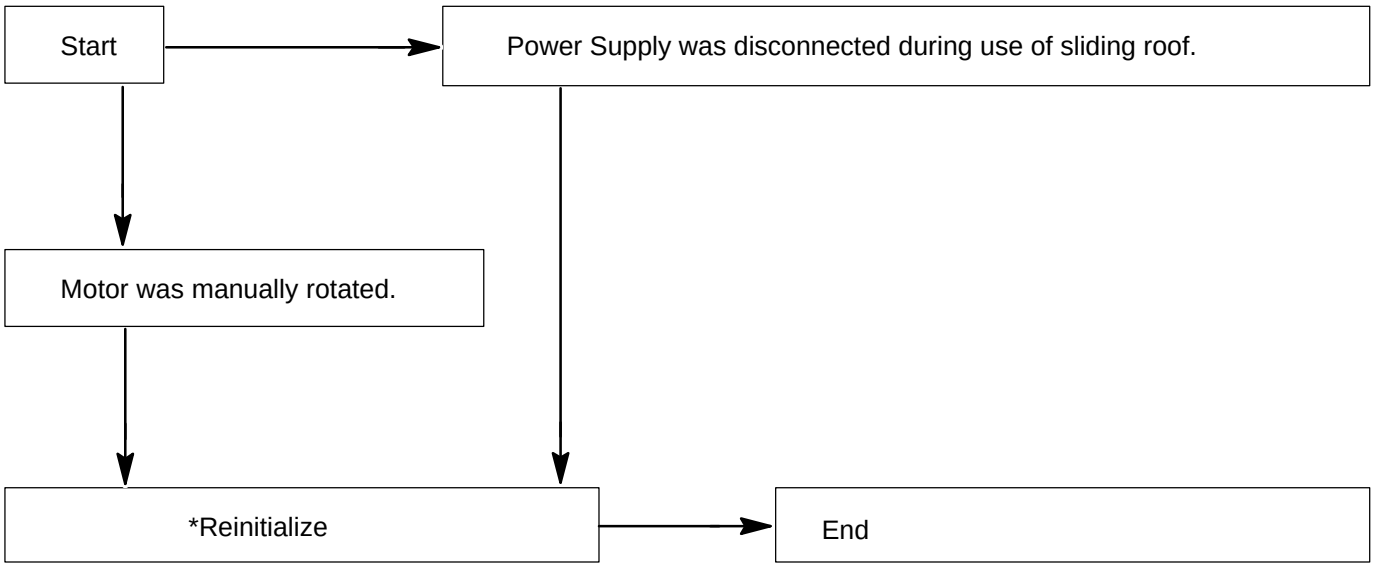
Registration of recognition codes (add mode or rewrite mode) is completed.

SLIDING ROOF SYSTEM

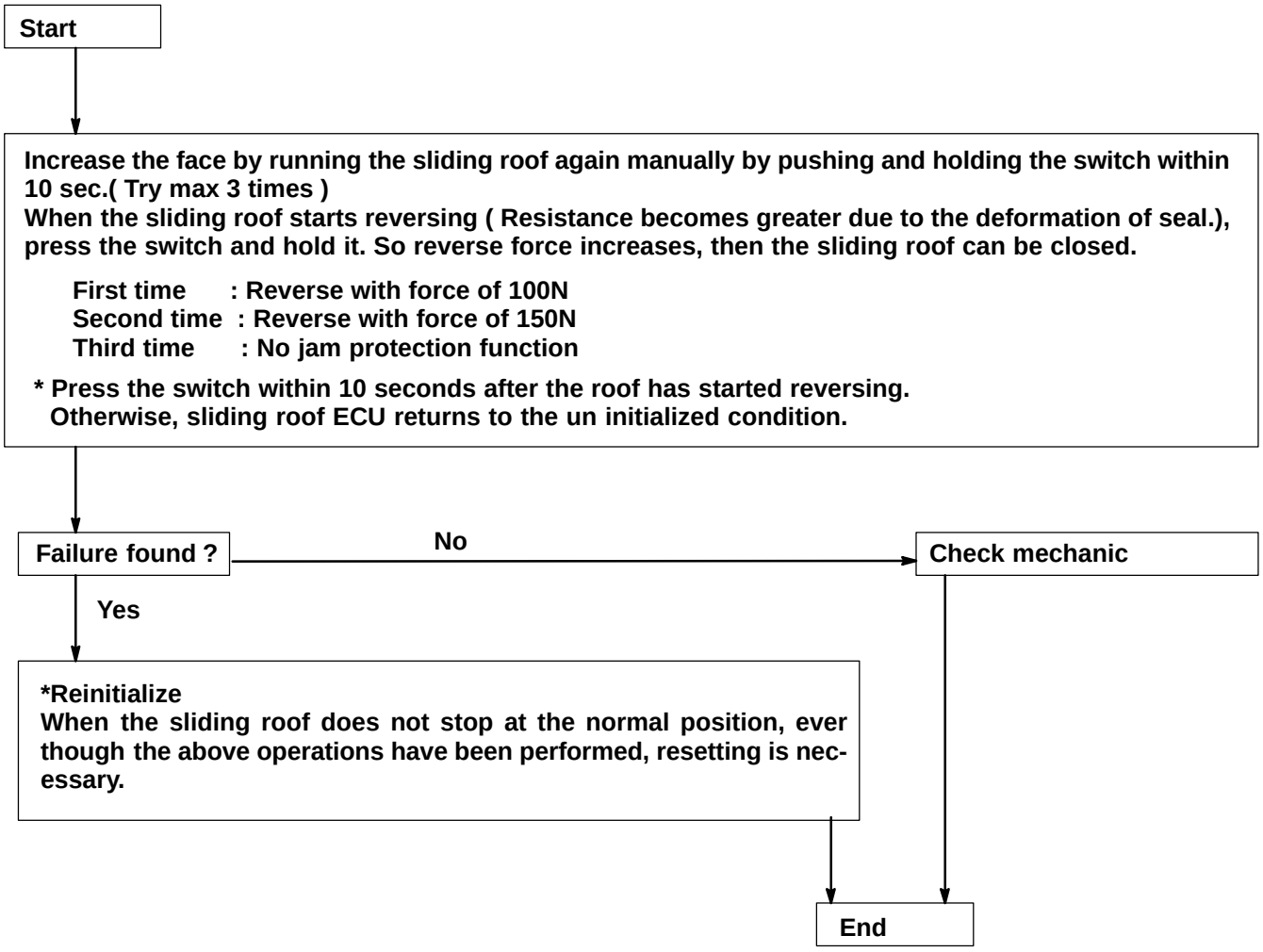
TROUBLESHOOTING

BE0O9-08

1	**Sliding Roof does not stop at correct position.**



2	**Sliding Roof always reopens (anti trap function).**

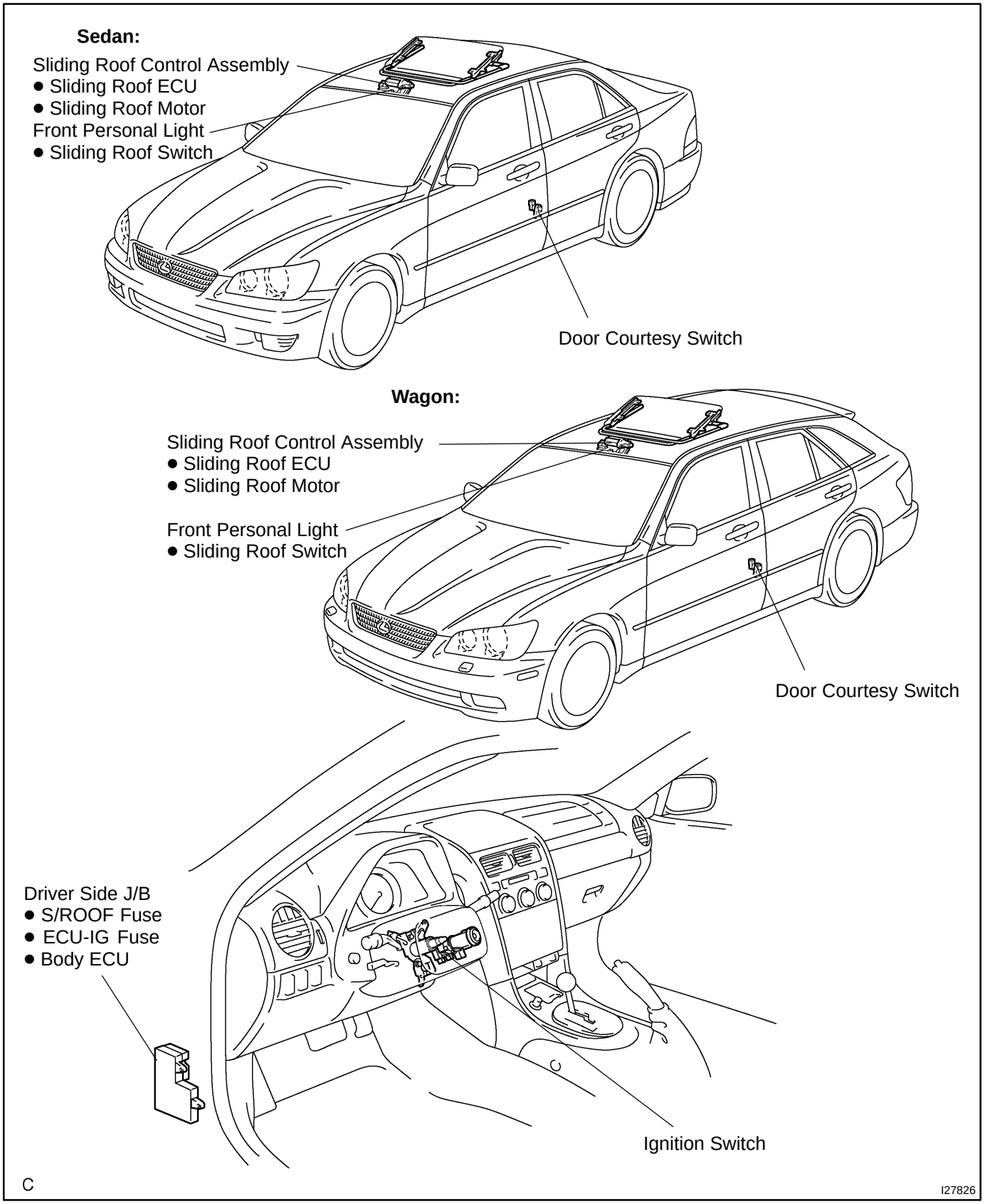


*Reinitializing method
(a) Move the sliding roof to the maximum tilted position.
(b) Release the switch, press the switch again and hold it for 10 secs.
(c) The sliding roof operates in a cycle of TILT DOWN → SLIDE OPEN → SLIDE CLOSE → TILT UP.
THis completes reinitializing.

SLIDING ROOF SYSTEM

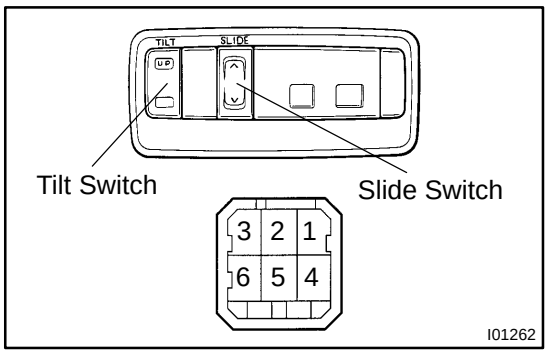
LOCATION

BE05Q-07



BE10K-05

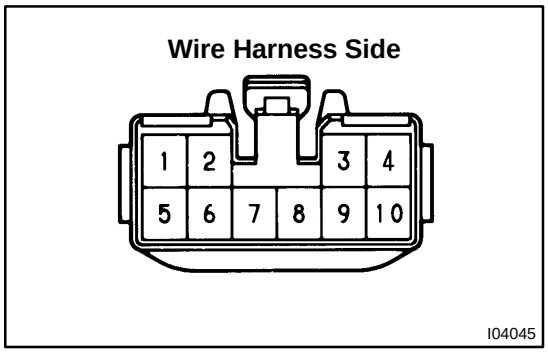
INSPECTION



1. INSPECT SLIDING ROOF SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
SLIDE OPEN	3 - 4	Below 10 Ω
SLIDE OFF	3 - 4, 4 - 6	10k Ω or higher
SLIDE CLOSE	4 - 6	Below 10 Ω
TILT DOWN	2 - 4	Below 10 Ω
TILT OFF	2 - 4, 4 - 5	10k Ω or higher
TILT UP	4 - 5	Below 10 Ω

If continuity is not as specified, replace the front personal light (sliding roof switch).



2. INSPECT SLIDING ROOF CONTROL ASSEMBLY CIRCUIT

Disconnect the connector from the sliding roof control assembly and inspect the connector on the wire harness side, as shown in the chart below.

Tester connection	Condition	Specified condition
5 - Ground	Sliding roof control switch (TILT) UP	Below 100 Ω
6 - Ground	Sliding roof control switch (TILT) DOWN	Below 100 Ω
1 - Ground	Sliding roof control switch (SLIDE) CLOSE	Below 100 Ω
2 - Ground	Sliding roof control switch (SLIDE) OPEN	Below 100 Ω
8, 7 - Ground	Always	Below 1 V
10 - Ground	Front door is opened	Below 1 Ω
3 - Ground	Ignition switch LOCK or ACC	Below 2 V
3 - Ground	Ignition switch ON	10 to 14 V
4 - Ground	Always	10 to 14 V

If the circuit condition is as specified, replace the sliding roof control assembly.

3. CHECK AUTO SLIDE-OPEN/CLOSE OPERATION

NOTICE:

If the sliding roof system has not been initialized, then AUTO slide open/close operation does not work.

HINT:

Initialize the sliding roof system after any of the following is done:

- The battery is disconnected.
- The S/ROOF fuse is replaced.
- The sliding roof assembly (sliding roof ECU) is replaced.
- The sliding roof is removed and then reinstalled or replaced.

(a) Initialize the sliding roof system.
  (1) Turn the ignition switch to the ON position.
  (2) Using the tilt switch, tilt the roof fully upward, and then fully downward.
  (3) Using the slide switch, fully open the roof, and then fully close it.

(b) Check AUTO slide-open operation.
  (1) Turn the ignition switch to the ON position.
  (2) If the roof glass is not fully closed, slide or tilt it so that it is fully closed.
  (3) Press the sliding roof OPEN switch for 0.3 seconds or more. The roof glass should automatically slide open and stop slightly before the fully open position.

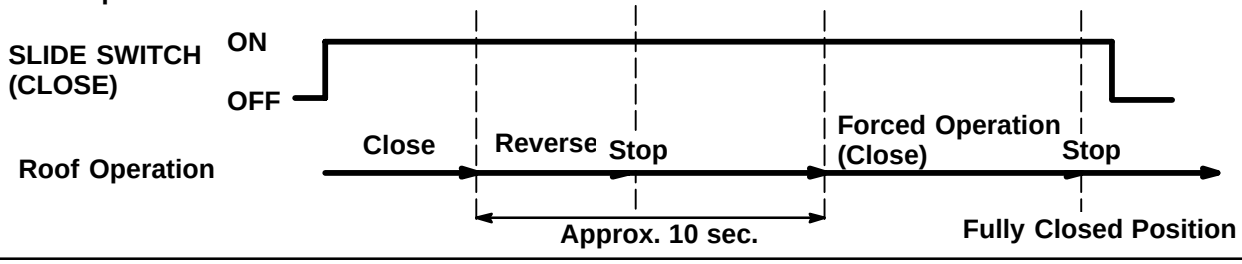
(c) Check the AUTO slide-close operation.
  (1) Turn ignition switch to the ON position.
  (2) Press the sliding roof CLOSE switch for 0.3 seconds or more. The roof glass should automatically close.
  (3) If the CLOSE, OPEN, UP, or DOWN switch is pressed while the roof glass is in motion, the roof glass will stop moving.
  (4) If the roof glass cannot be fully closed using AUTO operation (opens due to the jam protection function):
  - Visually check if there is any foreign object between the sliding roof rail and the sliding roof glass.
  - Check if the alignment of the sliding roof glass is within the specified range (see page BO-126).

  If no problems are found with the above checks, then perform the following operation to fully close the roof glass forcibly and check if AUTO operation return to normal. (Forced operation)

Perform forced operation.*

Caution:
The jam protection function does not operate during forced operation.
Be careful not to get any part of your body caught between the vehicle body and the roof glass.

***: Pressing and holding the CLOSE switch inhibits the jam protection function approx.10 sec. after starting the reverse operation.**
If the switch is kept pressed, the sliding roof starts close operation and stops when detecting the fully closed position.



If the roof glass does not operate normally even after performing above procedures, then replace the sliding roof control assembly.

4. CHECK AUTO TILT-UP/DOWN OPERATION

NOTICE:

If the sliding roof system has not been initialized, then AUTO slide tilt-up/down operation does not work.

HINT:

Initialize the sliding roof system after any of the following is done:

- The battery is disconnected.
- The S/ROOF fuse is replaced.
- The sliding roof assembly (sliding roof ECU) is replaced.
- The sliding roof is removed and then reinstalled or replaced.

(a) Initialize the sliding roof system.
  (1) Turn the ignition switch to the ON position.
  (2) Using the tilt switch, tilt the roof fully upward, and then fully downward.
  (3) Using the slide switch, fully open the roof, and then fully close it.

(b) Check AUTO tilt-up operation.
  (1) Turn the ignition switch to the ON position.
  (2) If the roof glass is not fully closed, slide or tilt it so that it is fully closed.
  (3) Press the sliding roof UP switch for 0.3 seconds or more. The roof glass should automatically tilt upward until it is fully open.

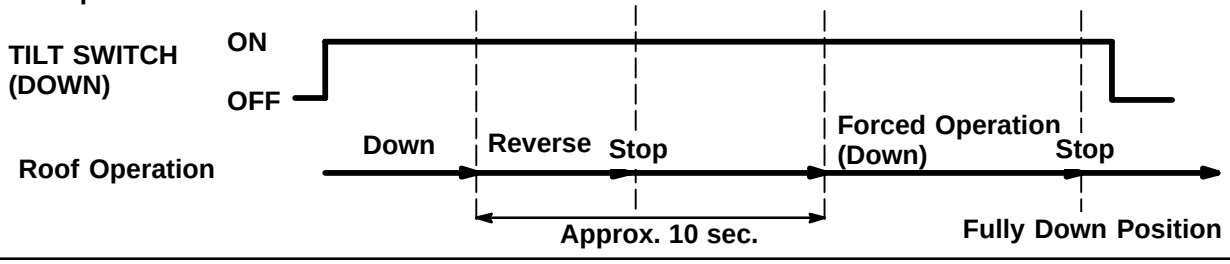
(c) Check the AUTO tilt-down operation.
  (1) Turn the ignition switch to the ON position.
  (2) When the roof glass is fully tilted upward, press the sliding roof DOWN switch for 0.3 seconds or more. The roof glass should automatically tilt downward until it is fully closed.
  (3) If the CLOSE, OPEN, UP, or DOWN switch is pressed while the roof glass is in motion, the roof glass will stop moving.
  (4) If the roof glass cannot be fully tilted using AUTO operation (opens due to the jam protection function):
  - Visually check if there is any foreign object between the sliding roof rail and the sliding roof glass.
  - Check if the alignment of the sliding roof glass is within the specified range (see page BO-126).

  If no problems are found with the above checks, then perform the following operation to fully down the roof glass forcibly and check if AUTO operation return to normal. (Forced operation)

Perform forced operation.*

Caution:
The jam protection function does not operate during forced operation.
Be careful not to get any part of your body caught between the vehicle body and the roof glass.

***: Pressing and holding the DOWN switch inhibits the jam protection function approx.10 sec. after starting the reverse operation.**
If the switch is kept pressed, the sliding roof starts down operation and stops when detecting the fully down position.



If the roof glass does not operate normally even after performing above procedures, then replace the sliding roof control assembly.

5. CHECK KEY-OFF SLIDING ROOF OPERATION

HINT:

The sliding roof can be operated for approximately 45 seconds after the ignition switch is turned from ON to OFF with all doors closed. However, if the driver side door is opened during this time, the operation is canceled.

(a) Check the sliding roof operation function after the ignition switch is turned from ON to OFF.

(1) Turn the ignition switch from ON to OFF. Sliding roof AUTO operation should be possible. However, opening either of the front doors should disable AUTO operation.

(2) Turn the ignition switch from ON to OFF. Wait approximately 45 seconds. AUTO operation should be prohibited.

(3) Turn the ignition switch from ON to OFF with either of the front doors open. AUTO operation should immediately stop functioning.

If operation is not as specified, then inspect each part following the problem symptom table
(see page BE-2).

6. CHECK JAM PROTECTION FUNCTION

HINT:

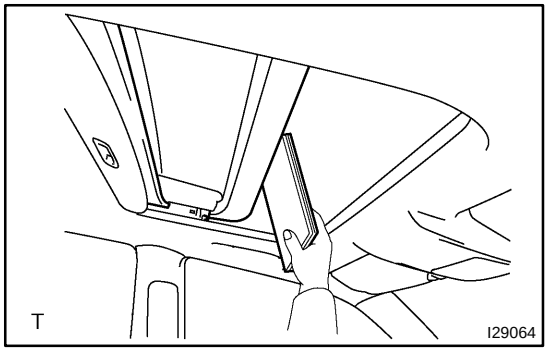
When sliding roof AUTO operation is being used, the jam protection function prevents objects from being caught between the vehicle body and the roof glass.

Operative condition:

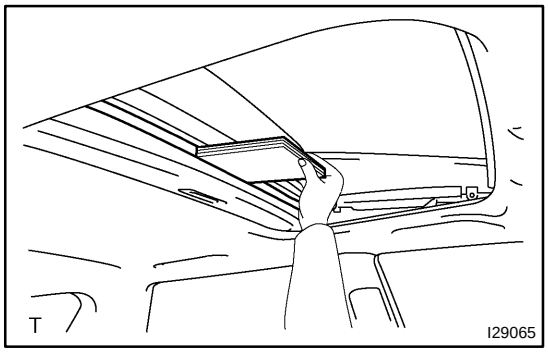
- AUTO CLOSE with ignition switch ON.
- AUTO CLOSE during sliding operation after the ignition switch is turned OFF.
- AUTO TILT-DOWN with ignition switch ON.
- AUTO TILT-DOWN during sliding operation after the ignition switch is turned OFF.

CAUTION:

- **Do not use any part of your body such as your hand, or any object to check the jam protection function. Do not allow anything to become caught in the sliding roof by accident during this procedure.**
- **The jam protection function may not work against an object less than 5 mm (0.20 in.) in width.**



(a) When sliding roof AUTO operation is being used:
check that the roof glass should open a distance of 200 mm (7.87 in.) from the point of contact with the object, or fully open if 200 mm (7.87 in.) of opening distance is not available when an object is caught between the vehicle body and the roof glass.



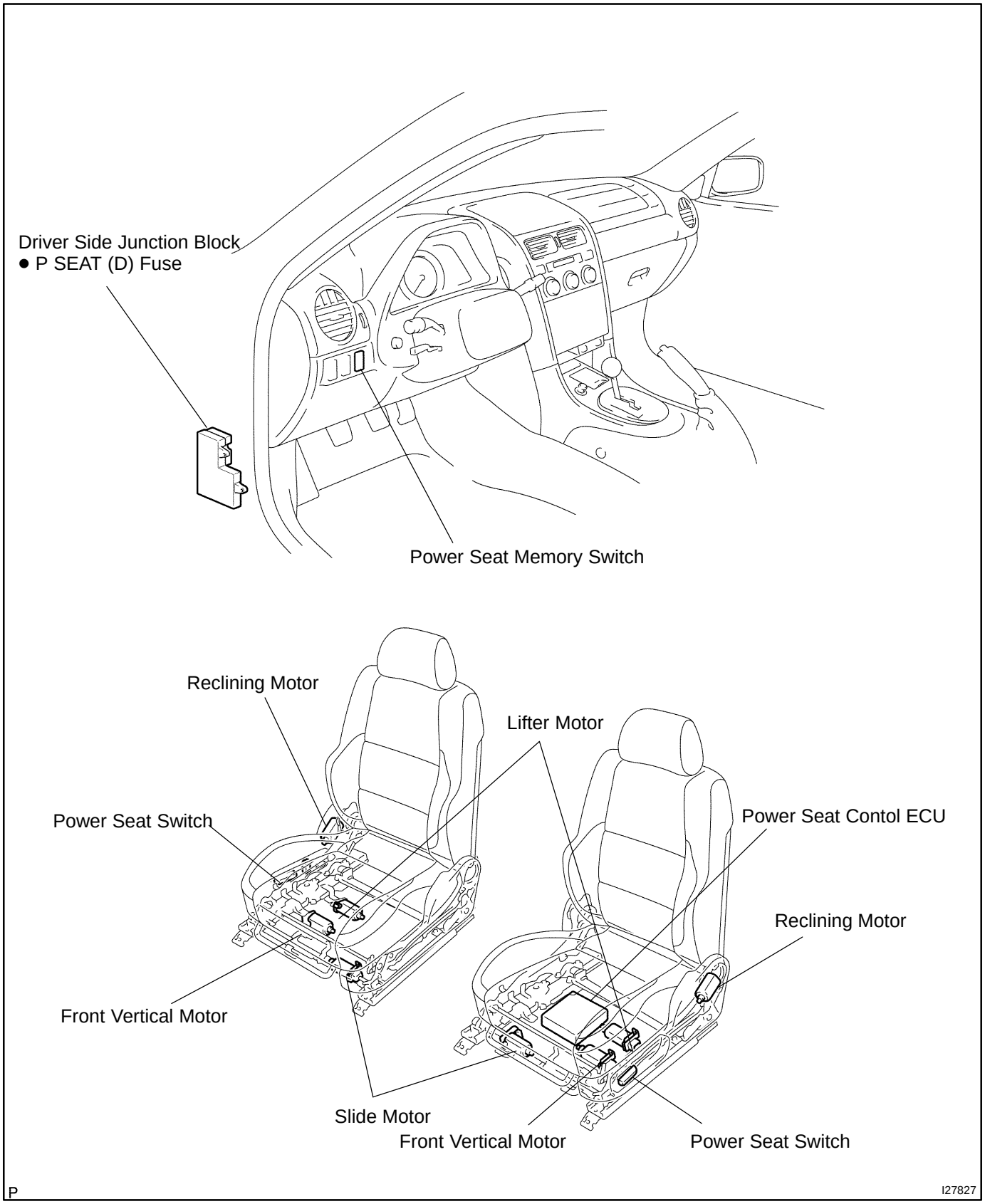
(b) When the tilt-down operation is being used:
Check that the sliding roof fully tilts up when an object is caught between the vehicle body and the roof glass.

If operation is not as specified, then replace the sliding roof control assembly.

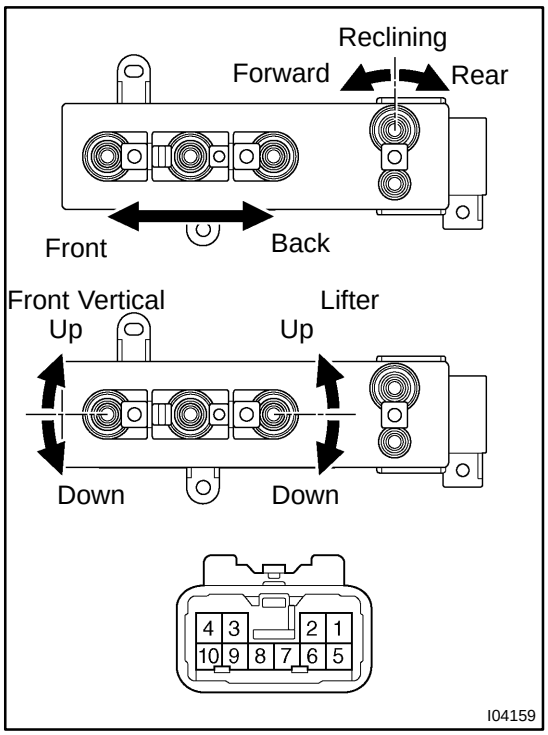
POWER SEAT CONTROL SYSTEM

LOCATION

BE0GK-11



BE2JV-01



INSPECTION

1. INSPECT DRIVER'S POWER SEAT SWITCH CONTINUITY

Slide switch:

Switch position	Tester connection	Specified condition
FRONT	1 - 9 4 - 6	Continuity
OFF	4 - 6 4 - 9	Continuity
BACK	1 - 6 4 - 9	Continuity

Front vertical switch:

Switch position	Tester connection	Specified condition
UP	1 - 10 4 - 5 (*1)	Continuity
OFF	4 - 5 (*1) 4 - 10 (*1)	Continuity
DOWN	1 - 5 4 - 10 (*1)	Continuity

Lifter switch:

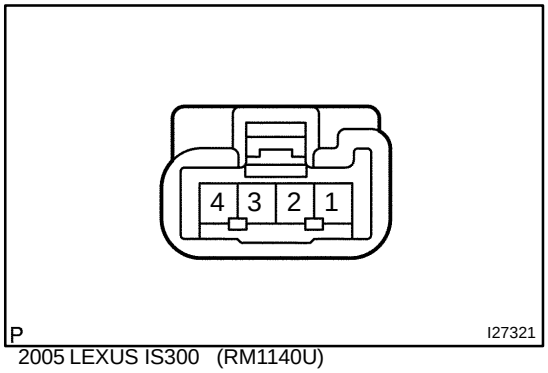
Switch position	Tester connection	Specified condition
UP	1 - 7 4 - 8 (*1)	Continuity
OFF	4 - 7 (*1) 4 - 8 (*1)	Continuity
DOWN	1 - 8 4 - 7 (*1)	Continuity

Reclining switch:

Switch position	Tester connection	Specified condition
FORWARD	1 - 3 2 - 4	Continuity
OFF	2 - 4 3 - 4	Continuity
REAR	1 - 2 3 - 4	Continuity

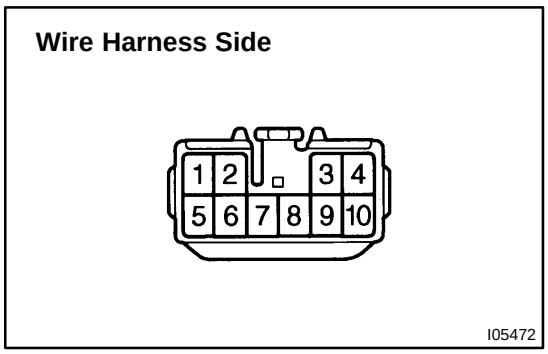
*1: w/ power seat memory switch

If continuity is not as specified, replace the switch.



2. INSPECT POWER SEAT MEMORY SWITCH

Switch position	Tester connection	Specified condition
SET	1 - 4	Continuity
SW1	2 - 4	Continuity
SW2	3 - 4	Continuity



3. INSPECT DRIVER'S POWER SEAT SWITCH CIRCUIT

(a) Disconnect the switch connector and connect the seat wire harness to the floor wire harness.

(b) Inspect the connector on the wire harness side.

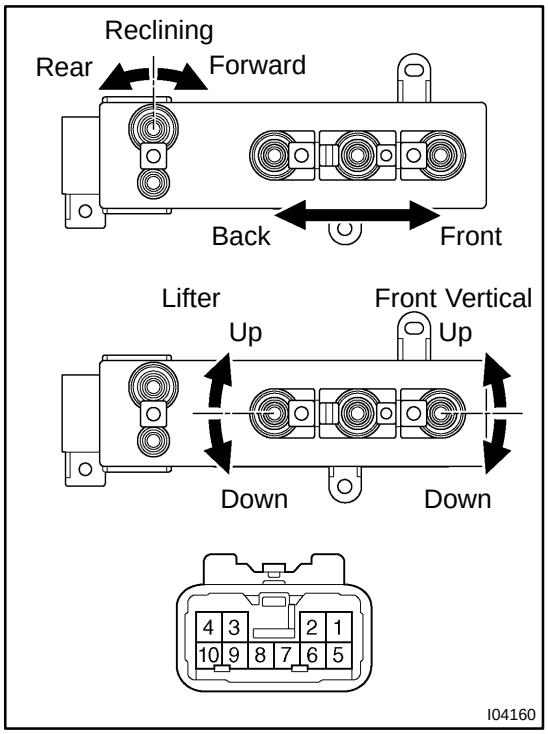
w/o Power seat memory switch:

Tester connection	Condition	Specified condition
4 - Ground	Always	Continuity
1 - Ground	Always	Battery Positive Voltage

w/ Power seat memory switch:

Tester connection	Condition	Specified condition
1 - Ground	Always	Continuity

If circuit is not as specified, inspect the circuits connected to other parts.



4. INSPECT PASSENGER'S POWER SEAT SWITCH CONTINUITY

Slide switch:

Switch position	Tester connection	Specified condition
FRONT	1 - 9 4 - 6	Continuity
OFF	4 - 6 4 - 9	Continuity
BACK	1 - 6 4 - 9	Continuity

Front vertical switch:

Switch position	Tester connection	Specified condition
UP	1 - 5 4 - 10	Continuity
OFF	4 - 5 4 - 10	Continuity
DOWN	1 - 10 4 - 5	Continuity

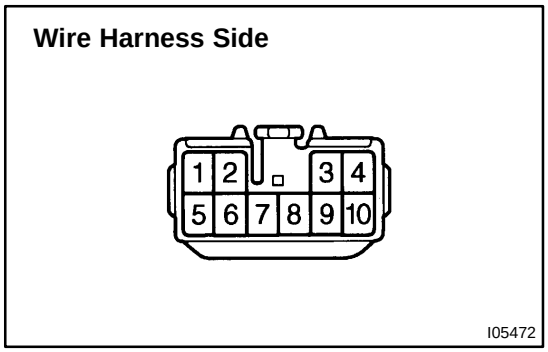
Lifter switch:

Switch position	Tester connection	Specified condition
UP	1 - 8 4 - 7	Continuity
OFF	4 - 7 4 - 8	Continuity
DOWN	1 - 7 4 - 8	Continuity

Reclining switch:

Switch position	Tester connection	Specified condition
FORWARD	1 - 3 2 - 4	Continuity
OFF	2 - 4 3 - 4	Continuity
REAR	1 - 2 3 - 4	Continuity

If continuity is not as specified, replace the switch.



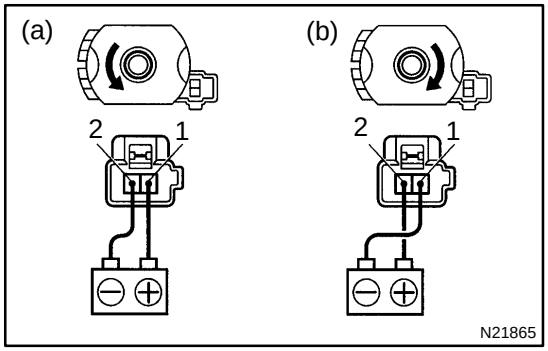
5. INSPECT PASSENGER'S POWER SEAT SWITCH CIRCUIT

(a) Disconnect the switch connector and connect the seat wire harness to the floor wire harness.

(b) Inspect the connector on the wire harness side.

Tester connection	Condition	Specified condition
4 - Ground	Always	Continuity
1 - Ground	Always	Battery positive voltage

If circuit is not as specified, inspect the circuits connected to other parts.

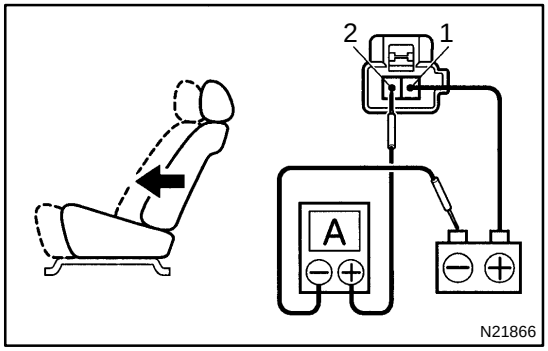


6. INSPECT SLIDE MOTOR OPERATION

(a) Connect the positive (+) lead from the battery to terminal 1 and the negative (-) lead to terminal 2, check that the motor turns counterclockwise.

(b) Reverse the polarity, check that the motor turns clockwise.

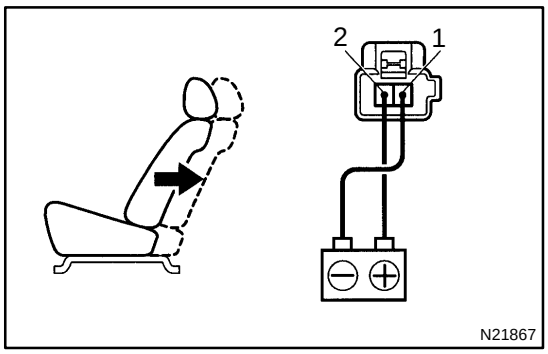
If operation is not as specified, replace the seat adjuster.



7. INSPECT SLIDE MOTOR PTC THERMISTOR OPERATION

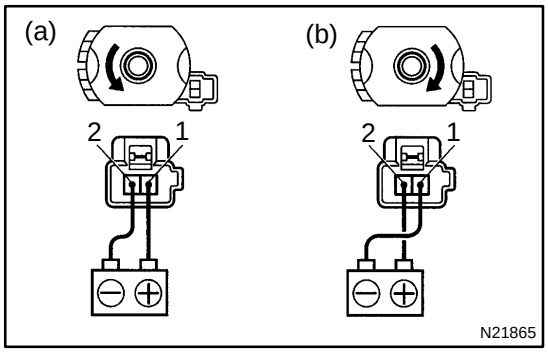
(a) ( ): Passenger side
Connect the positive (+) lead from the battery to terminal 1 (2), the positive (+) lead from the ammeter to terminal 2 (1) and the negative (-) lead to the battery negative (-) terminal, then move the seat cushion to the front position.

(b) Continue to apply voltage, check that current changes to less than 1 ampere within 4 to 90 seconds.



(c) Disconnect the leads from terminals.
(d) Approximately 60 seconds later, connect the positive (+) lead from the battery to terminal 2 (1) and the negative (-) lead to terminal 1 (2), check that the seat cushion begins to move backwards.

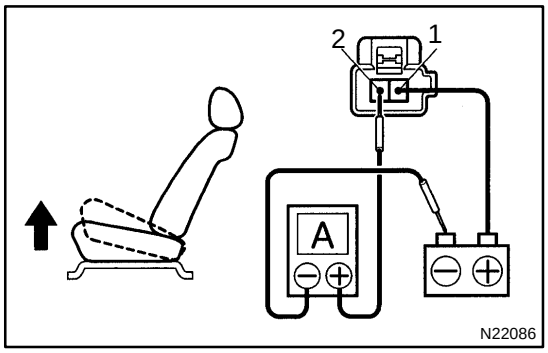
If operation is not as specified, replace the seat adjuster.



8. INSPECT FRONT VERTICAL MOTOR OPERATION

(a) Connect the positive (+) lead from the battery to terminal 1 and the negative (-) lead to terminal 2, check that the motor turns counterclockwise.
(b) Reverse the polarity, check that the motor turns clockwise.

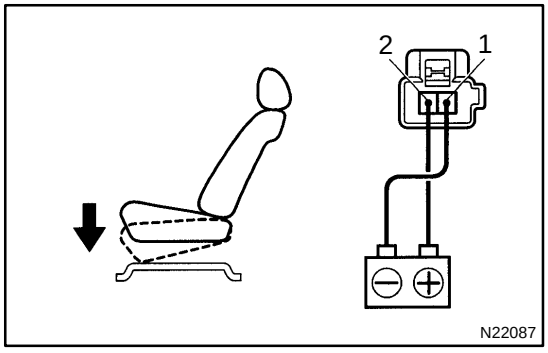
If operation is not as specified, replace the seat adjuster.

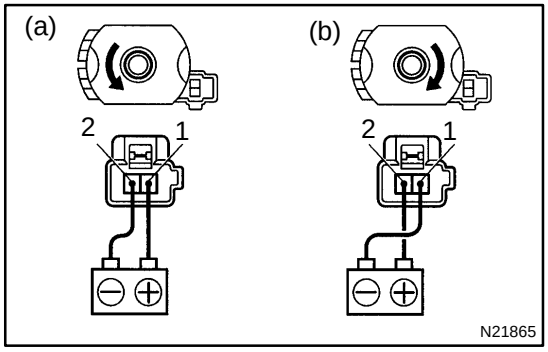


9. INSPECT FRONT VERTICAL MOTOR PTC THERMISTOR OPERATION

(a) ( ): Passenger side
Connect the positive (+) lead from the battery to terminal 1 (2), the positive (+) lead from the ammeter to terminal 2 (1) and the negative (-) lead to the battery negative (-) terminal, then move the seat cushion to the highest position.
(b) Continue to apply voltage, check that the current changes to less than 1 ampere within 4 to 90 seconds.
(c) Disconnect the leads from the terminals.
(d) Approximately 60 seconds later, connect the positive (+) lead from the battery to terminal 2 (1) and the negative (-) lead to terminal 1 (2), check that the seat cushion begins to descend.

If operation is not as specified, replace the seat adjuster.

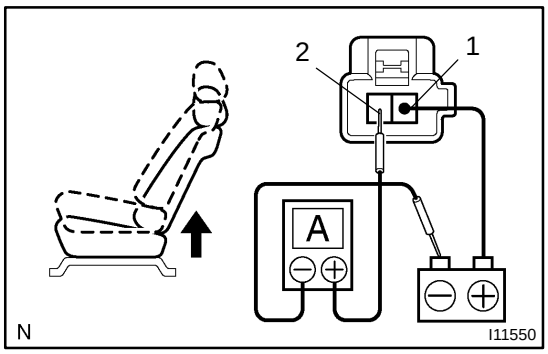




10. INSPECT LIFTER MOTOR OPERATION

(a) Connect the positive (+) lead from the battery to terminal 1 and the negative (-) lead to terminal 2, check that the motor turns counterclockwise.
(b) Reverse the polarity, check that the motor turns clockwise.

If operation is not as specified, replace the seat adjuster.



11. INSPECT LIFTER MOTOR PTC THERMISTOR OPERATION

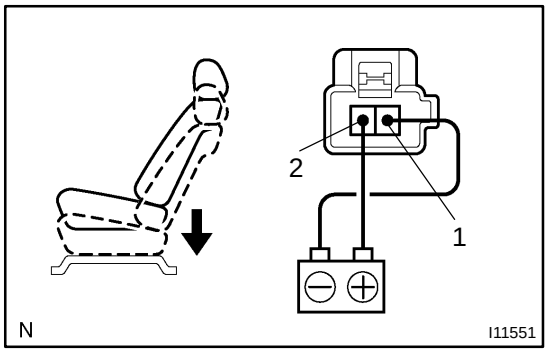
(a) ( ): Passenger side
Connect the positive (+) lead from the battery to terminal 1 (2), the positive (+) lead from the ammeter to terminal 2 (1) and the negative (-) lead to the battery negative (-) terminal, then move the seat cushion to the highest position.

(b) Continue to apply voltage, check that the current changes to less than 1 ampere within 4 to 90 seconds.

(c) Disconnect the leads from the terminals.

(d) Approximately 60 seconds later, connect the positive (+) lead from the battery to terminal 2 (1) and the negative (-) lead to terminal 1 (2), check that the seat cushion begins to descend.

If operation is not as specified, replace the seat adjuster.

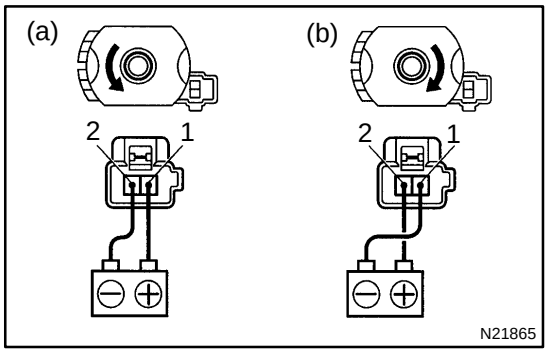


12. INSPECT RECLINING MOTOR OPERATION

(a) Connect the positive (+) lead from the battery to terminal 1 and the negative (-) lead to terminal 2, check that the motor turns counterclockwise.

(b) Reverse the polarity, check that the motor turns clockwise.

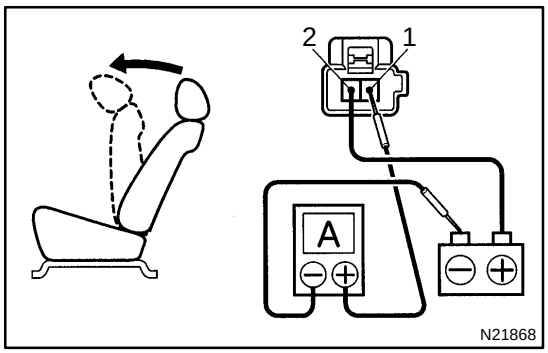
If operation is not as specified, replace the seat adjuster.



13. INSPECT RECLINING MOTOR PTC THERMISTOR OPERATION

(a) Connect the positive (+) lead from the battery to terminal 2, the positive (+) lead from the ammeter to terminal 1 and the negative (-) lead to the battery negative (-) terminal, then recline the seat back to the most forward position.

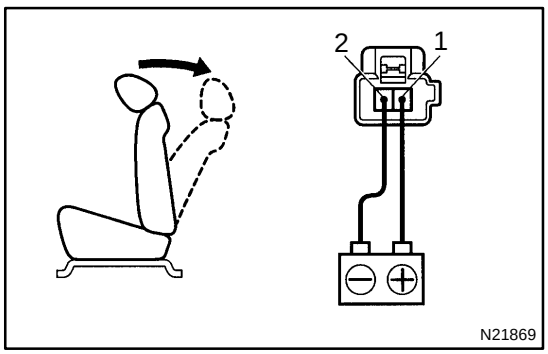
(b) Continue to apply voltage, check that the current changes to less than 1 ampere within 4 to 90 seconds.



(c) Disconnect the leads from the terminals.

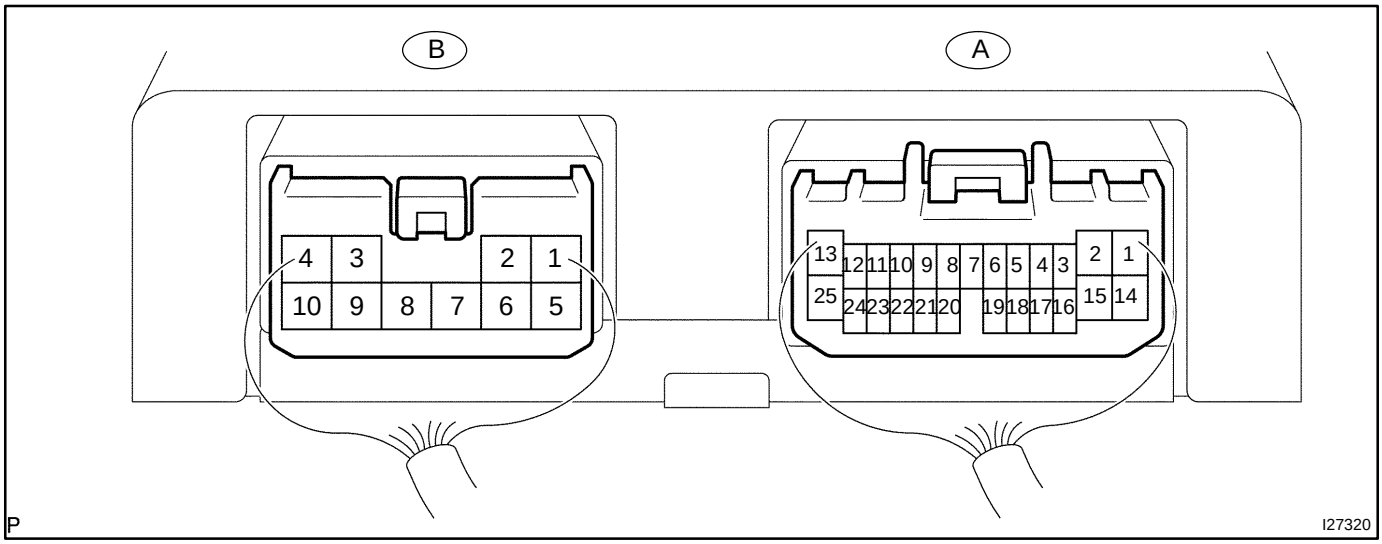
(d) Approximately 60 seconds later, connect the positive (+) lead from the battery to terminal 1 and the negative (-) lead to terminal 2, check that the seat back begins to fall backward.

If operation is not as specified, replace the seat adjuster.



14. INSPECT POWER SEAT CONTROL ECU

(a) Check power seat control ECU with connector A and B still connected.



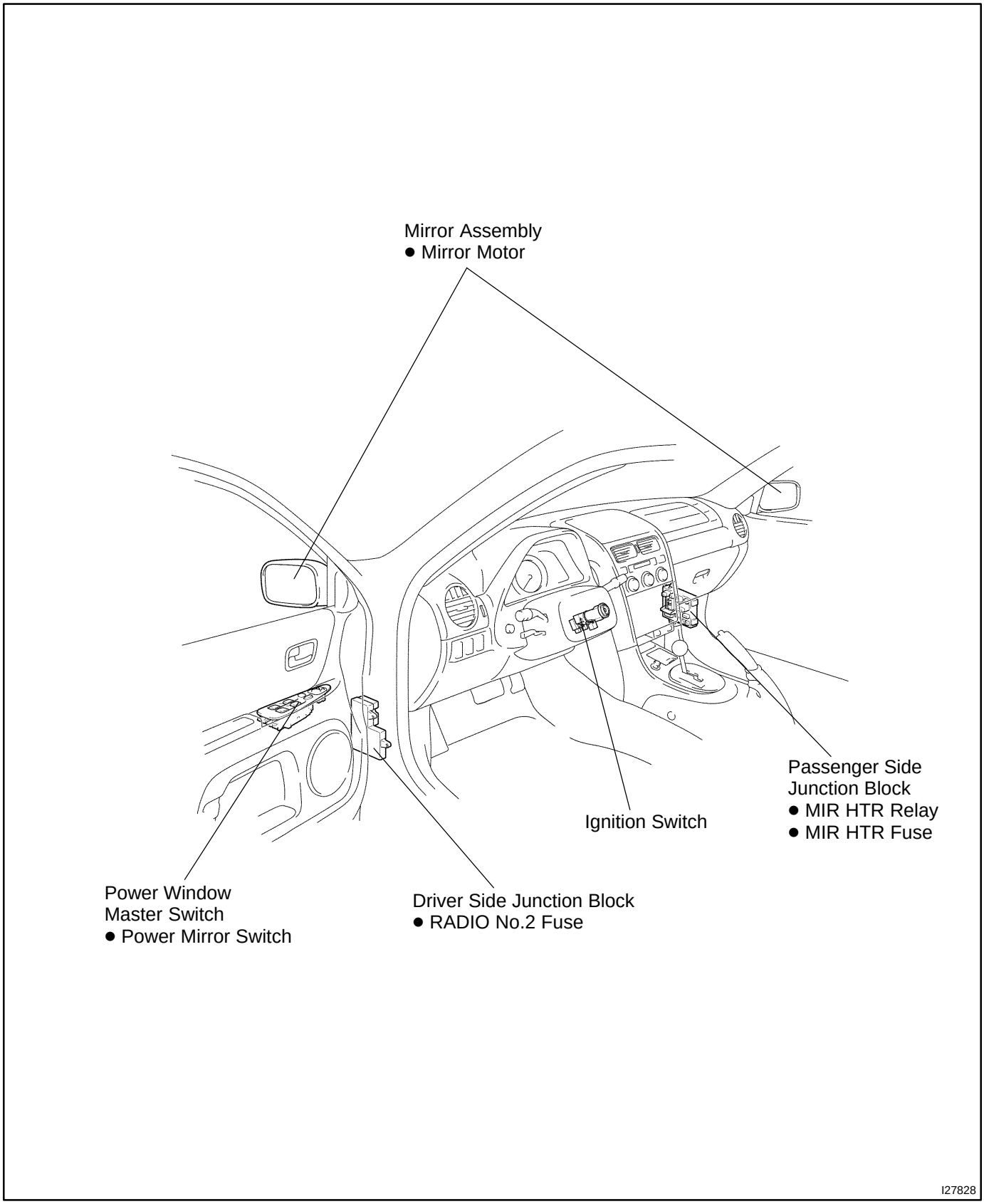
Symbols (Terminal No.)	Condition	Specified condition
PKB (A-1) - Body ground	Parking brake switch ON	Blow 2 V
P (A-2) - Body ground	Neutral position switch is P	10-14 V
SSRS (A-3) - Body ground	Slide position sensor OFF → ON	Blow 2 V → 6.6 V or higher
SSFV (A-4) - Body ground	Front vertical sensor OFF → ON	Blow 2 V → 6.6 V or higher
PCVV (A-5) - Body ground	Ignition switch ON	Blow 8 V
SLDF (A-6) - Body ground	Manual switch (Front slide) OFF → ON	1 kΩ or higher → Below 10 Ω
SLDR (A-8) - Body ground	Manual switch (Rear slide) OFF → ON	1 kΩ or higher → Below 10 Ω
MMRY (A-9) - Body ground	Memory switch OFF → ON	10 kΩ or higher → Below 100 Ω
RCLF (A-10) - Body ground	Manual switch (Rear reclining) OFF → ON	1 kΩ or higher → Below 10 Ω
RDWN (A-11) - Body ground	Manual switch (Rear vertical down) OFF → ON	1 kΩ or higher → Below 10 Ω
RCLR (A-12) - Body ground	Manual switch (Front reclining) OFF → ON	1 kΩ or higher → Below 10 Ω
IG (A-13) - Body ground	Ignition switch ON	10-14 V
SI (A-14)	Communication line	-
DCTY (A-15) - Body ground	Door courtesy switch OFF → ON	10 kΩ or higher → Below 100 Ω
SSRR (A-16) - Body ground	Reclining position sensor OFF → ON	Blow 1 V → Blow 2 V
SSRV (A-17) - Body ground	Rear vertical sensor OFF → ON	Blow 2 V → 6.6 V or higher
SGND (A-19) - Body ground	Always	Blow 1 Ω
SW2 (A-20) - Body ground	Memory switch OFF → ON	10 kΩ or higher → Below 100 Ω
SW1 (A-21) - Body ground	Memory switch OFF → ON	10 kΩ or higher → Below 100 Ω
RUP (A-22) - Body ground	Manual switch (Rear vertical up) OFF → ON	1 kΩ or higher → Below 10 Ω
FUP (A-23) - Body ground	Manual switch (Front vertical up) OFF → ON	1 kΩ or higher → Below 10 Ω
FDWN (A-24) - Body ground	Manual switch (Front vertical down) OFF → ON	1 kΩ or higher → Below 10 Ω
RCL- (B-1) - Body ground	Manual switch (Rear reclining) OFF → ON	Blow 1 V → 10-14 V
RCL+ (B-2) - Body ground	Manual switch (Front reclining) OFF → ON	Blow 1 V → 10-14 V
SLD- (B-3) - Body ground	Manual switch (Rear slide) OFF → ON	Blow 1 V → 10-14 V
SLD+ (B-4) - Body ground	Manual switch (Front slide) OFF → ON	Blow 1 V → 10-14 V
RRV- (B-5) - Body ground	Manual switch (Rear vertical down) OFF → ON	Blow 1 V → 10-14 V
RRV+ (B-6) - Body ground	Manual switch (Rear vertical up) OFF → ON	Blow 1 V → 10-14 V

GND (B-7) - Body ground	Always	Blow 1 Ω
+B (B-8) - Body ground	Always	10-14 V
FRV- (B-9) - Body ground	Manual switch (Front vertical down) OFF → ON	Blow 1 V → 10-14 V
FRV+ (B-10) - Body ground	Manual switch (Front vertical up) OFF → ON	Blow 1 V → 10-14 V

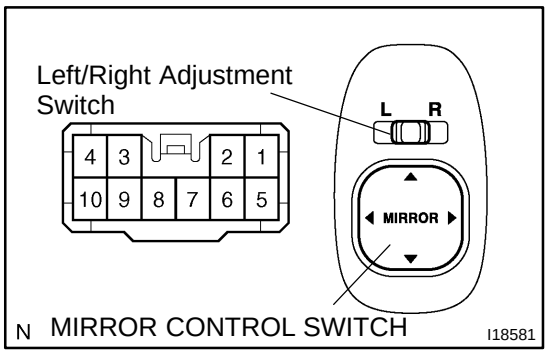
POWER MIRROR CONTROL SYSTEM

BE02J-17

LOCATION



BE1X6-01



INSPECTION

1. Left/right adjustment switch (Left side): INSPECT MIRROR SWITCH CONTINUITY

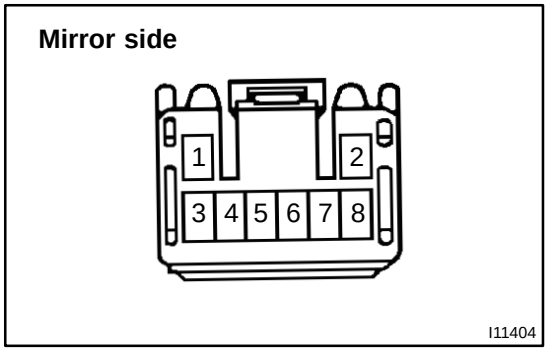
Switch position	Specified condition
UP	1 - 10 3 - 4
RIGHT	1 - 3 9 - 4
DOWN	1 - 3 10 - 4
LEFT	1 - 9 3 - 4

If continuity is not as specified, replace the switch.

2. Left/right adjustment switch (Right side): INSPECT MIRROR SWITCH CONTINUITY

Switch position	Specified condition
UP	1 - 6 3 - 4
RIGHT	1 - 3 2 - 4
DOWN	1 - 3 6 - 4
LEFT	1 - 2 3 - 4

If continuity is not as specified, replace the switch.



3. INSPECT MIRROR MOTOR OPERATION

(a) Connect the positive (+) lead from the battery to terminal 8 and the negative (-) lead to terminal 7, and check that the mirror turns to the upward.

(b) Reverse the polarity, and check that the mirror turns to the downward.

(c) Connect the positive (+) lead from the battery to terminal 6 and the negative (-) lead to terminal 7, and check that the mirror turns to the inside.

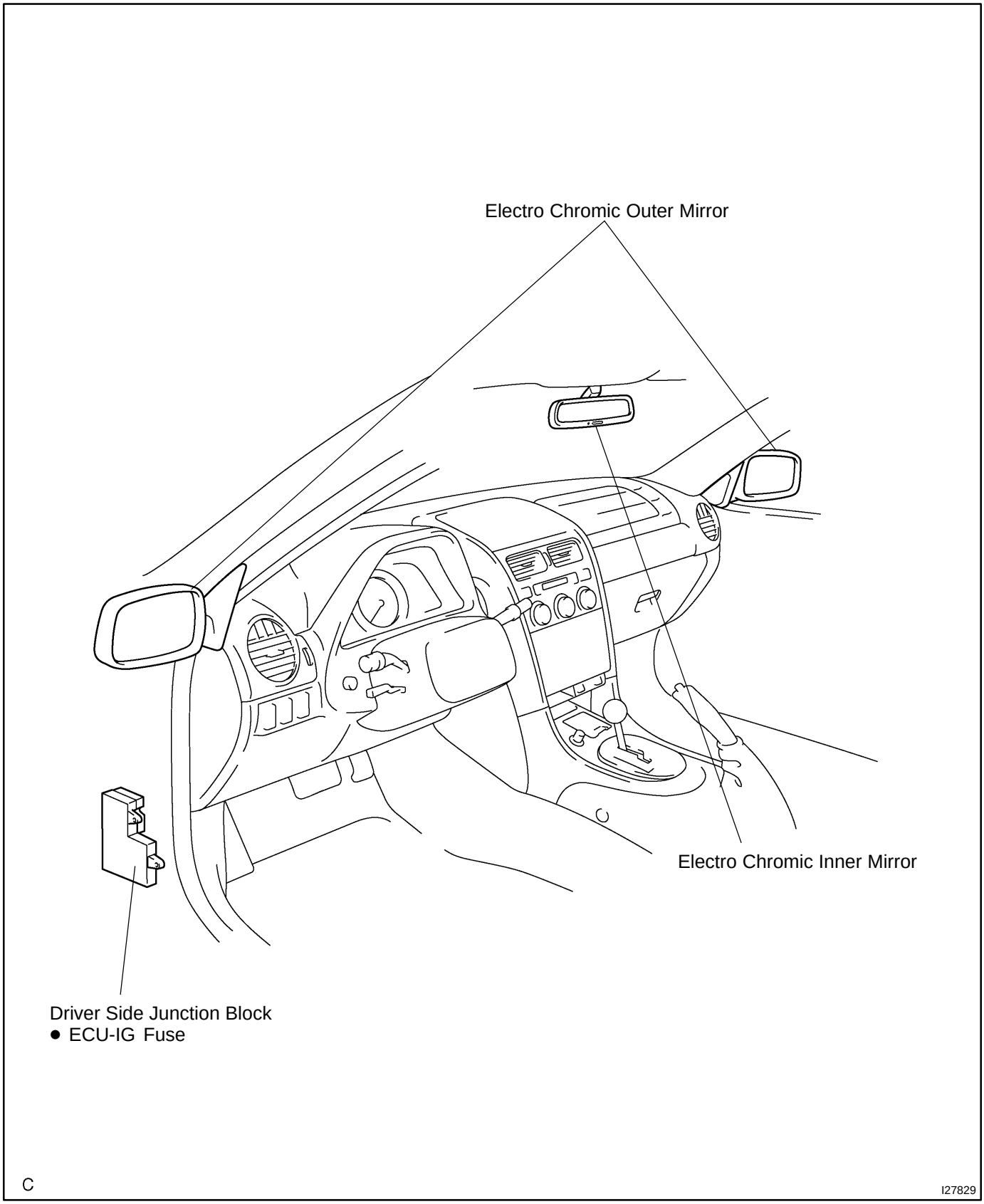
(d) Reverse the polarity, and check that the mirror turns outside.

If operation is not as specified, replace the mirror assembly.

ELECTRO CHROMIC MIRROR SYSTEM

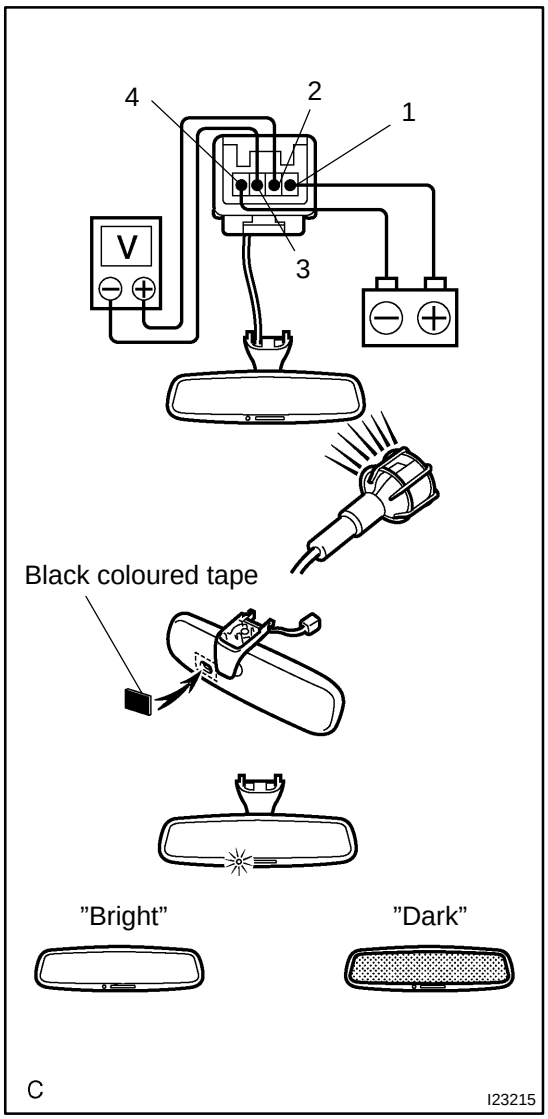
BE0HC-13

LOCATION



BE2A7-02

INSPECTION



1. INSPECT ELECTRO CHROMIC INNER MIRROR OPERATION

(a) Connect the positive (+) lead from the battery to terminal 1 and the negative (-) lead to terminal 4.

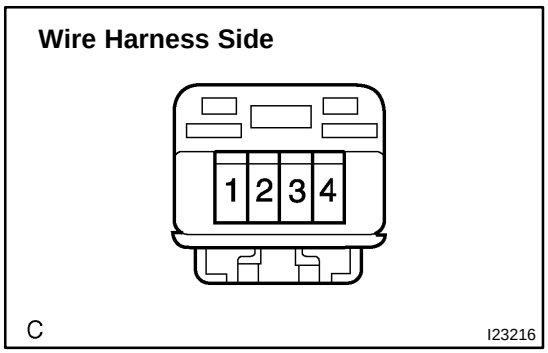
(b) Connect the positive (+) lead from the voltmeter to terminal 2 and the negative (-) lead to terminal 3.

(c) Attach a black coloured tape to forward sensor to prevent it from sensing.

(d) When the mode is turned to AUTO, check that indicator light lights up.

(e) Light up the mirror with an electric light, and check that there is battery positive voltage and mirror surface changes ”bright” to ”dark”.

If operation is not as specified, replace the inner mirror.

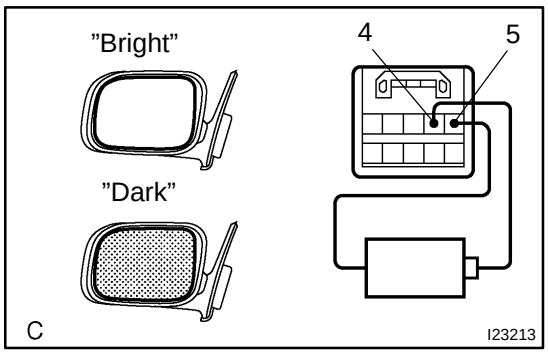


2. INSPECT ELECTRO CHROMIC INNER MIRROR CIRCUIT

Disconnect the connector from the mirror and inspect the connector on the wire harness side, as shown.

Tester connection	Condition	Specified condition
4 - Ground	Always	Continuity
1 - Ground	Ignition switch LOCK or ACC	No voltage
1 - Ground	Ignition switch ON	Battery positive voltage

If circuit is not as specified, inspect the circuits connected to other parts.



3. INSPECT ELECTRO CHROMIC OUTER MIRROR OPERATION

(a) Disconnect the outer mirror connector.

(b) Connect the positive (+) lead from the dry cell battery to terminal 4 and the negative (-) lead to terminal 5, then check that the mirror surface changes to ”dark”.

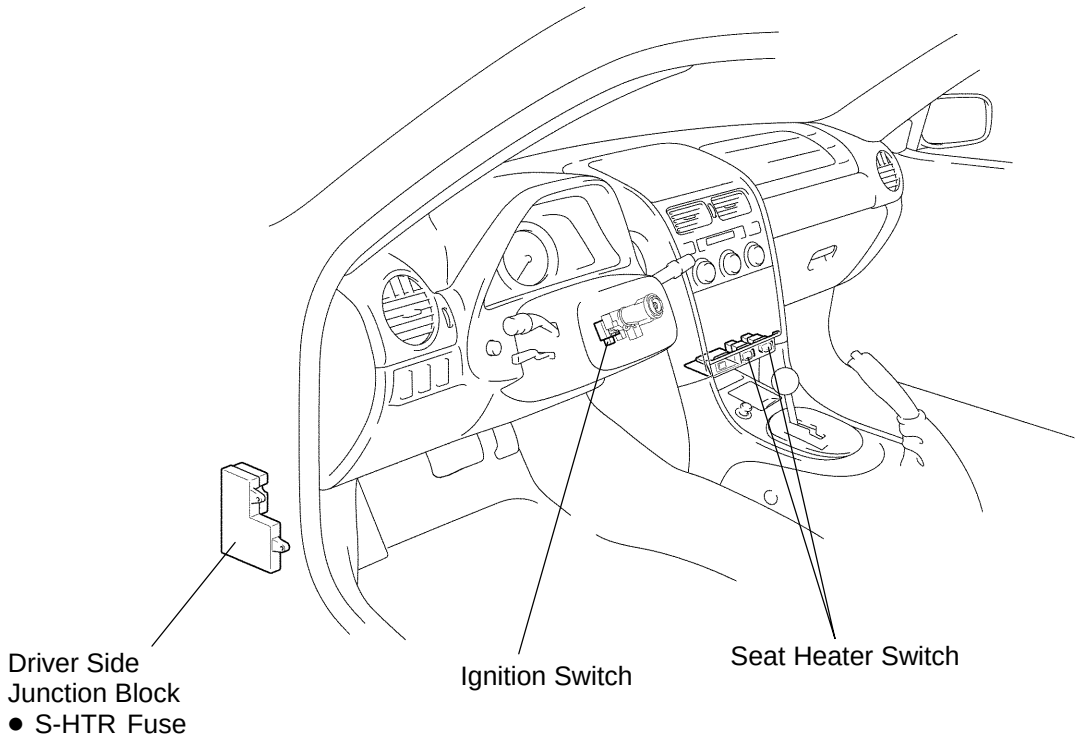
(c) Check the mirror turns to ”bright” after disconnecting the battery.

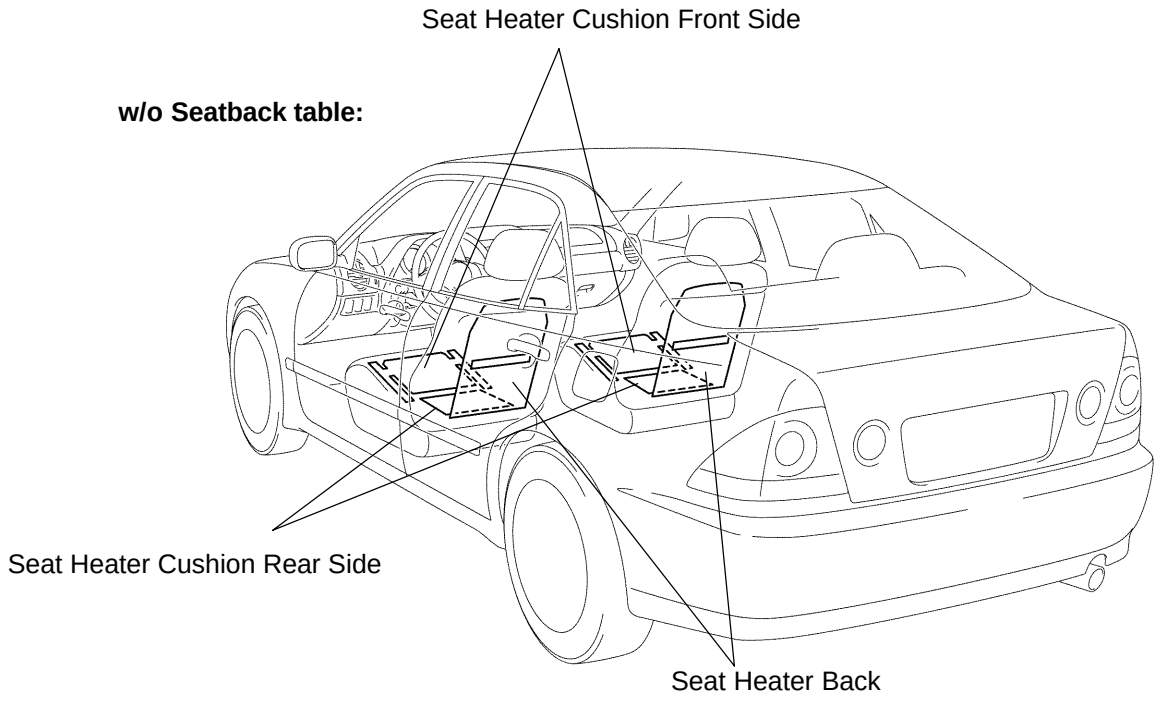
If operation is not as specified, replace the mirror assembly.

SEAT HEATER SYSTEM

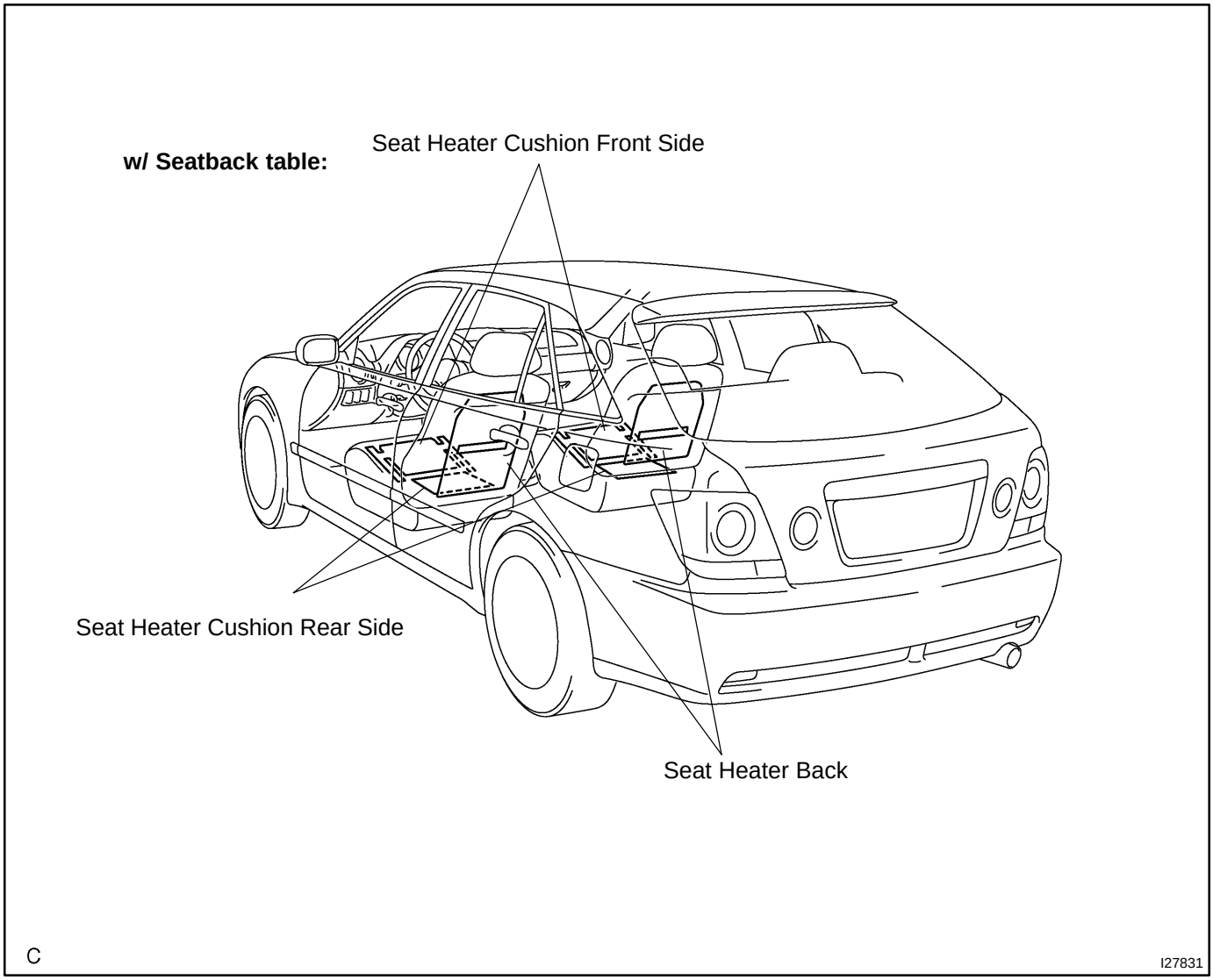
BE2A8-03

LOCATION



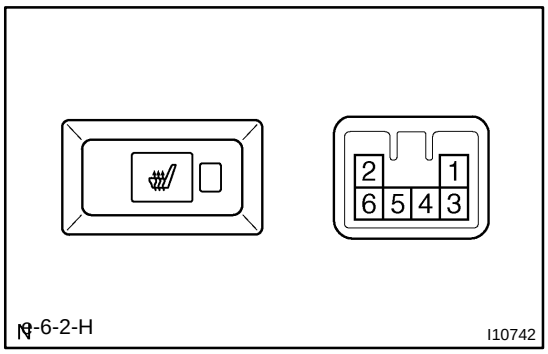


I27830


w/ Seatback table:
Seat Heater Cushion Front Side
Seat Heater Cushion Rear Side
Seat Heater Back
C
I27831

BE2F1-01

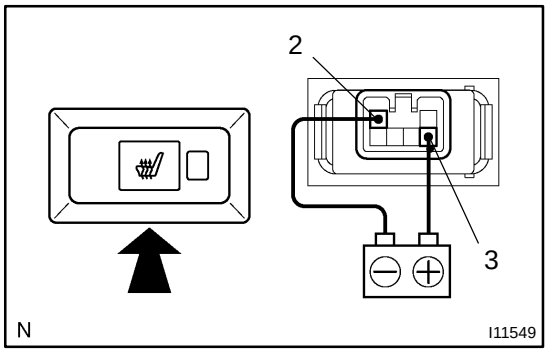
INSPECTION



1. INSPECT SEAT HEATER SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
ON	2 - 3 - 6	Continuity
OFF	-	No continuity
Illumination circuit	1 - 4	Continuity

If continuity is not as specified, replace the switch.

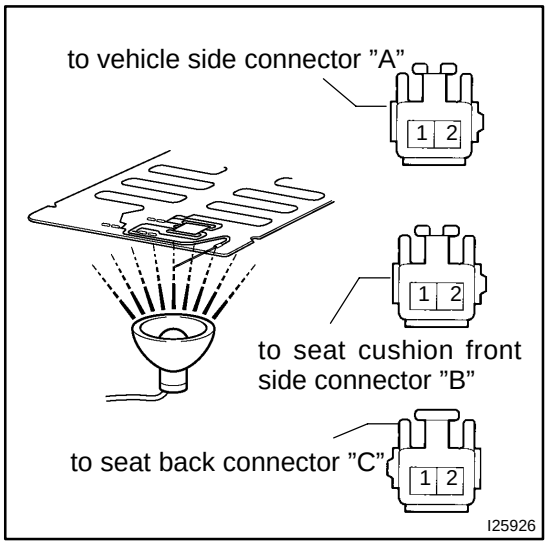


2. INSPECT SEAT HEATER INDICATOR LIGHT OPERATION

(a) Connect the positive (+) lead from the battery to terminal 3 and the negative (-) lead to terminal 2.

(b) Push the seat heater switch ON that the indicator light lights up.

If operation is not as specified, replace the switch and inspect the circuits connected to other parts.



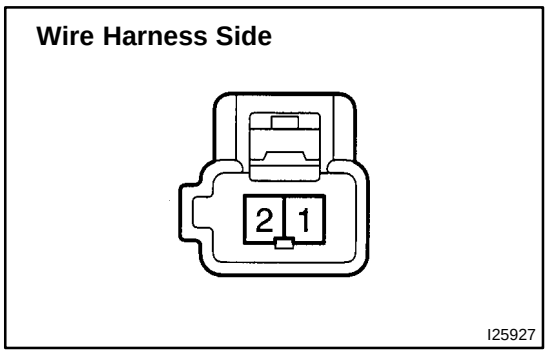
3. INSPECT SEAT HEATER CUSHION REAR SIDE CONTINUITY

(a) Heat the thermostat with a light.

(b) Inspect the seat heater cushion continuity between terminals, as shown.

Tester connection	Condition	Specified condition
A1 - B2	Seat heater temperature below 25 °C (77 °F)	Continuity
A1 - B2	Seat heater temperature above 45 °C (113 °F)	No continuity
A2 - B1	Always	Continuity
A2 - C1	Always	Continuity
B2 - C2	Always	Continuity

If continuity is not as specified, replace the seat cushion pad.

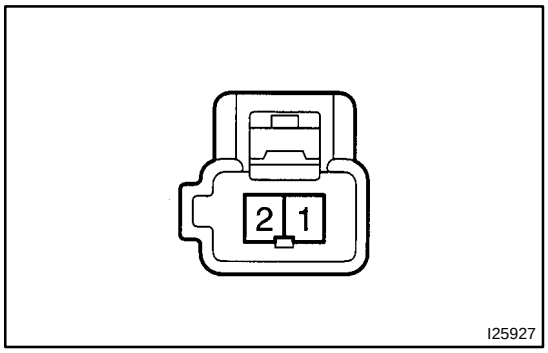


4. INSPECT SEAT HEATER CUSHION CIRCUIT

Disconnect the connector from the seat heater cushion and inspect the connector on wire harness side, as shown.

Tester connection	Condition	Specified condition
2 - Body ground	Seat heater switch ON	Battery Positive Voltage

If circuit is not as specified, inspect the wire harness.

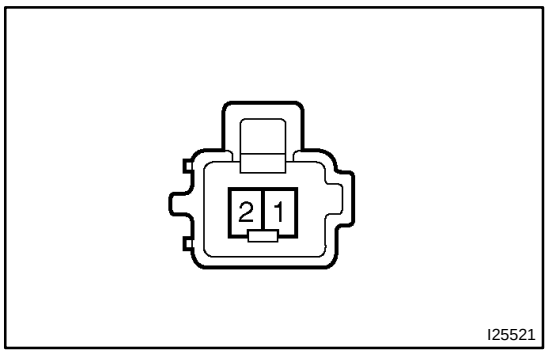


5. INSPECT SEAT CUSHION FRONT SIDE CONTINUITY

Inspect the seat cushion front side continuity between terminals, as shown.

Tester connection	Condition	Specified condition
1 - 2	Always	Continuity

If continuity is not as specified, replace the seat cushion pad.



6. INSPECT SEAT BACK CONTINUITY

Inspect the seat back continuity between terminals, as shown.

Tester connection	Condition	Specified condition
1 - 2	Always	Continuity

If continuity is not as specified, replace the seat back pad.

AUDIO SYSTEM

DESCRIPTION

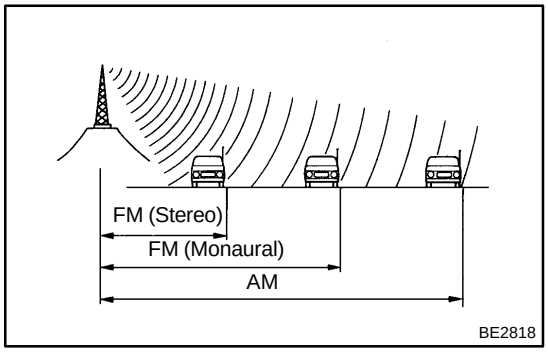
BE1X4-03

1. RADIO WAVE BAND

The radio wave bands used in radio broadcasting are as follows:

Frequency	30 kHz	300 kHz	3 MHz	30 MHz	300 MHz
Designation	LF	MF	HF	VHF	
Radio wave	LW ⟷	AM (MW) ⟷	SW ⟷	FM (UKW) ⟷	
Modulation	Amplitude modulation			Frequency modulation	

LF: Low Frequency
MF: Medium Frequency
HF: High Frequency
VHF: Very High Frequency

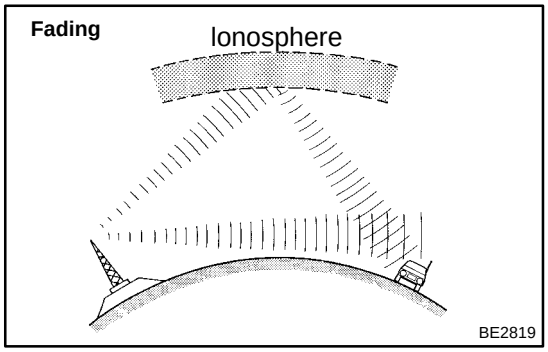


2. SERVICE AREA

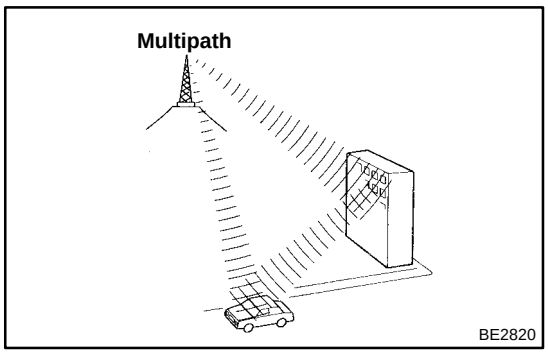
There are great differences in the size of the service area for AM and FM monaural. Sometimes FM stereo broadcasts cannot be received even through AM can be received in very clearly.
Not only does FM stereo have the smallest service area, but it also picks up static and other types of interference (”noise”) easily.

3. RECEPTION PROBLEMS

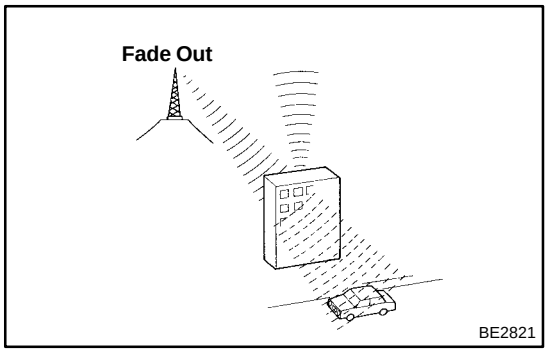
Besides the problem of static, there are also the problems called ”fading”, ”multipath” and ”fade out”. These problems are caused not by electrical noise but by the nature of the radio waves themselves.



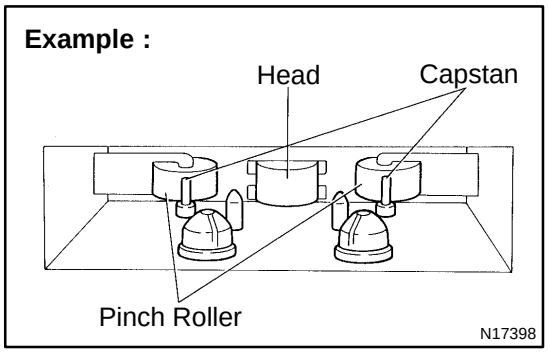
- Fading
  Besides electrical interference, AM broadcasts are also susceptible to other types of interference, especially at night. This is because AM radio waves bounce off the ionosphere at night. These radio waves then interfere with the signals from the same transmitter that reach the vehicle’s antenna directly. This type of interference is called ”fading”.



- Multipath
  One type of interference caused by the bounce of radio waves off of obstructions is called ”multipath”. Multipath occurs when a signal from the broadcast transmitter antenna bounces off buildings and mountains and interferes with the signal that is received directly.



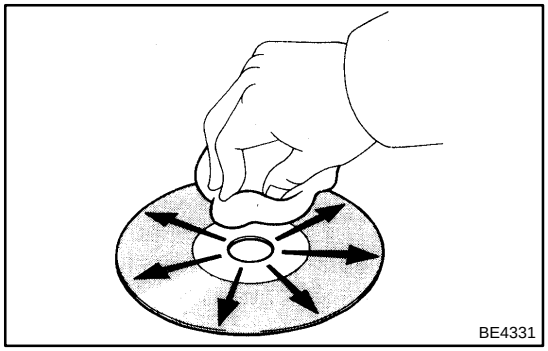
- Fade Out
  Because FM radio waves are of higher frequencies than AM radio waves, they bounce off buildings, mountains, and other obstructions. For this reason, FM signals often seem to gradually disappear or fade away as the vehicle goes behind a building or other obstruction. This is called ”fade out”.



4. Tape Player/Head Cleaning:
MAINTENANCE

(a) Raise the cassette door with your finger.
Next, using a pencil or similar object, push in the guide.

(b) Using a cleaning pen or cotton applicator soaked in cleaner, clean the head surface, pinch rollers and capstans.



5. CD Player/Disc Cleaning:
MAINTENANCE

If the disc gets dirty, clean the disc by wiping the surface from the center to outside in the radial directions with a soft cloth.

NOTICE:

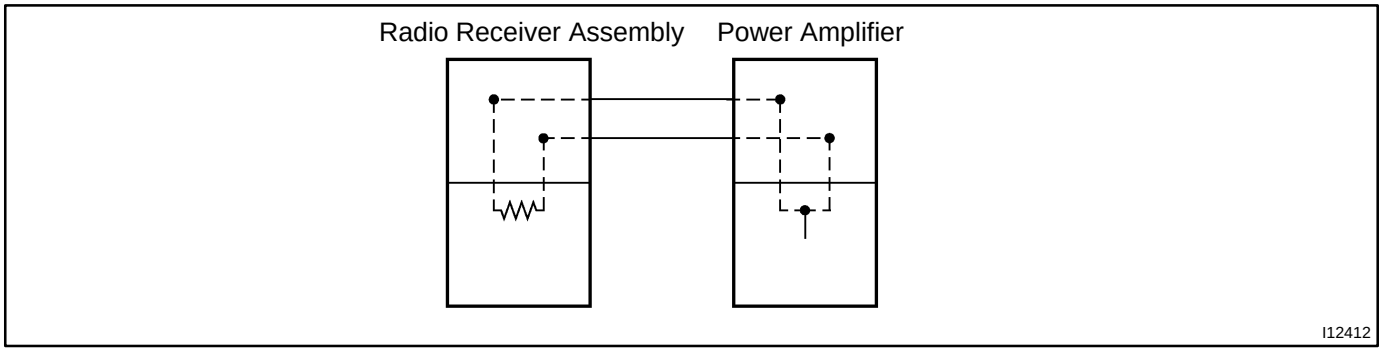
Do not use a conventional record cleaner or anti-static preservative.

6. OUTLINE OF AVC-LAN

(a) What is AVC-LAN?

AVC-LAN is the abbreviation, which stands for Audio Visual Communication-Local Area Network. This is a unified standard co-developed by 6 audio manufactures associated with Toyota Motor Corporation.

The Unified standard covers signals, such as audio signal, visual signal, signal for switch indication and communication signal.



(b) Objectives

Recently the car audio system has been rapidly developed and functions have been changed drastically. The conventional system has been switched to the multi-media type such as a navigation system. At the same time the level of customers needs to audio system has been upgraded. This lies behind this standardization.

The concrete objectives are explained below.

(1) When products by different manufactures were combined together, there used to be a case that malfunction occurred such as sound did not come out. This problem has been resolved by standardization of signals.

(2) Various types of after market products have been able to add or replace freely.

(3) Because of the above (2), each manufacture has become able to concentrate on developing products in their strongest field. This has enabled many types of products provided inexpensively.

(4) Conventionally, a new product developed by a manufacture could not be used due to a lack of compatibility with other manufactures products. Because of this new standard, users can enjoy compatible products provided for them timely.

The above descriptions are the objectives to introduce AVC-LAN. By this standardization, development of new products will no longer cause systematic errors. Thus, this is very effective standard for a product in the future.

HINT:

- When +B short or GND short is detected in AVC-LAN circuit, communication stops. Accordingly the audio system does not function normally.
- When audio system is not equipped with a navigation system, audio head unit is the master unit. (When audio system is equipped with a navigation system, navigation ECU is the master unit.)
- The car audio system using AVC-LAN circuit has a diagnosis function.
- Each product has its own specified numbers called physical address. Numbers are also allotted to each function in one product, which are called logical address.

7. DIAGNOSIS FUNCTION

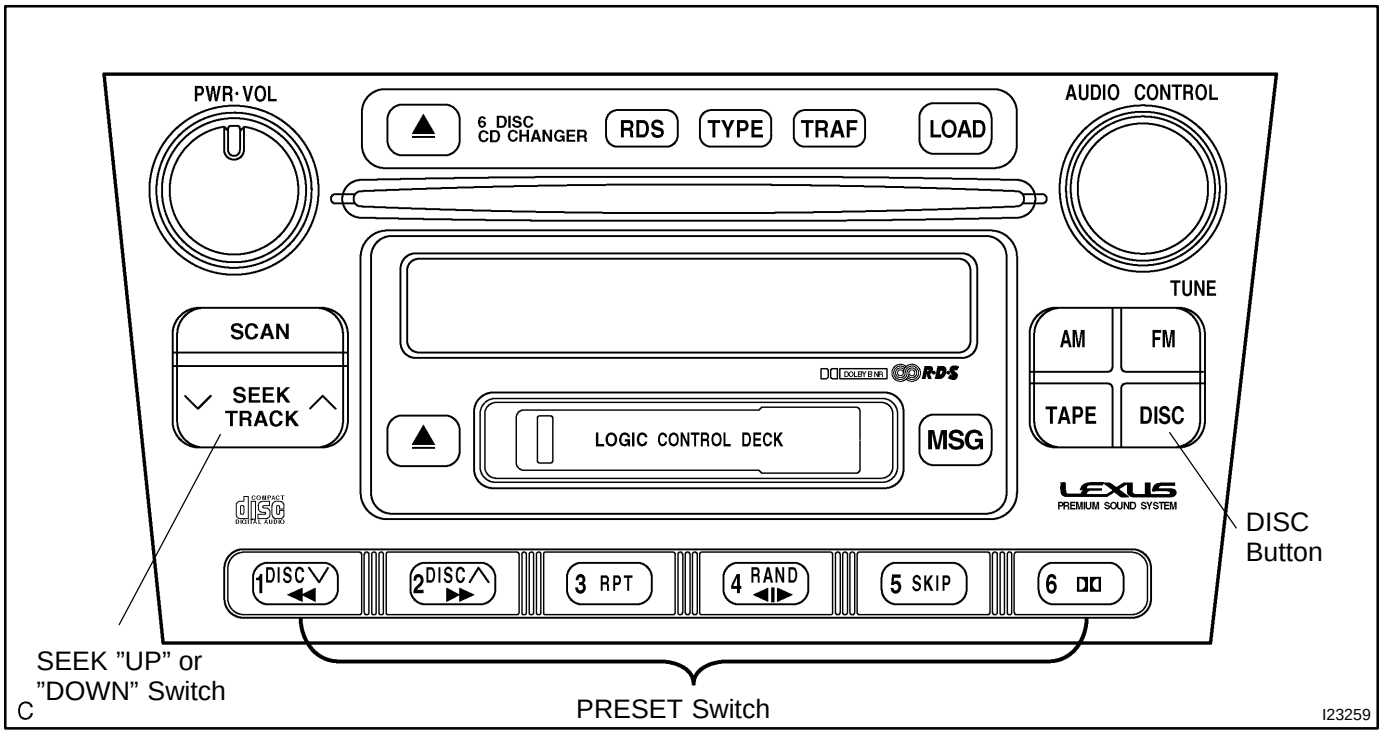
Error codes over tuner and connected equipment are displayed on the screen of tuner.

(a) Starting and Finishing Diagnosis Mode

With the audio system OFF and the ignition switch in ACC, while simultaneously pressing the preset buttons ”1” and ”6”, push ”DISC” or ”CD” 3 times.

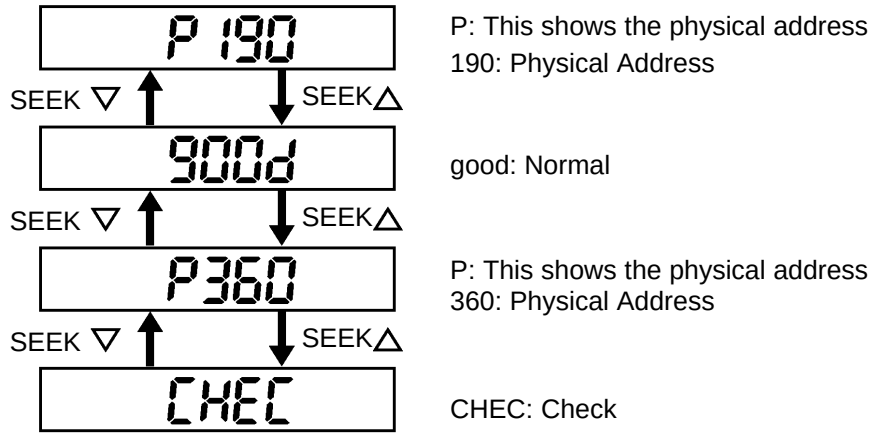
HINT:

- A beep sound 3 times and the system goes on to the Service Check Mode.
- System check and diagnosis memory check is performed in the Service Check Mode and the check result is displayed in ascending order of the component codes.
- It may take about 40 sec. to complete these checks.



(b) Displaying Result in Service Check Mode (For checking the system condition at present and in the past)

(1) By the ”SEEK” switch operation, confirm the check result of each component.



- This illustration shows an example that the system has components of code 190 and 360 and an error occurs in the physical address 360.
- Component codes are displayed in ascending order, and each of them is followed by its check result.

N I18570

Code No. (physical address) List

Code No. (physical address)	Equipment name
190	Radio receiver assembly (Audio head unit)
440	Power amplifier

(2) If ”CHEC” or ”ECHm” is detected in a component, activate the Detail Display mode and check its DTC.

(3) To restart the Service Check, press the preset button ”1”.

(4) To exit the diagnosis mode, press ”DISC” or ”CD” for 2 sec. or more, or turn the ignition switch OFF.

(c) DISPLAYING RESULTS

Results for each check are displayed as follows:

( ): Meaning

- good (Normal)
  No DTC is detected for both ”System Check Confirmation” and ”Diagnosis Memory Response”.
- nCon(No connection)
  Although identified by the system at the time of registration, it has transmitted no response when the diagnosis mode is started.
- CHEC(Check)
  If this is displayed, activate the Detail Display Mode and Check the DTC.
- ECHn(Exchange)
  -ditto-
- OLd (Old Version)
  An old version diagnosis system applies to this component.
- nrES (No Response)
  In spite of response identified when the diagnosis mode is started, no diagnostic information has been responded.

(d) Detail Display Mode (For displaying DTC of erratic components)

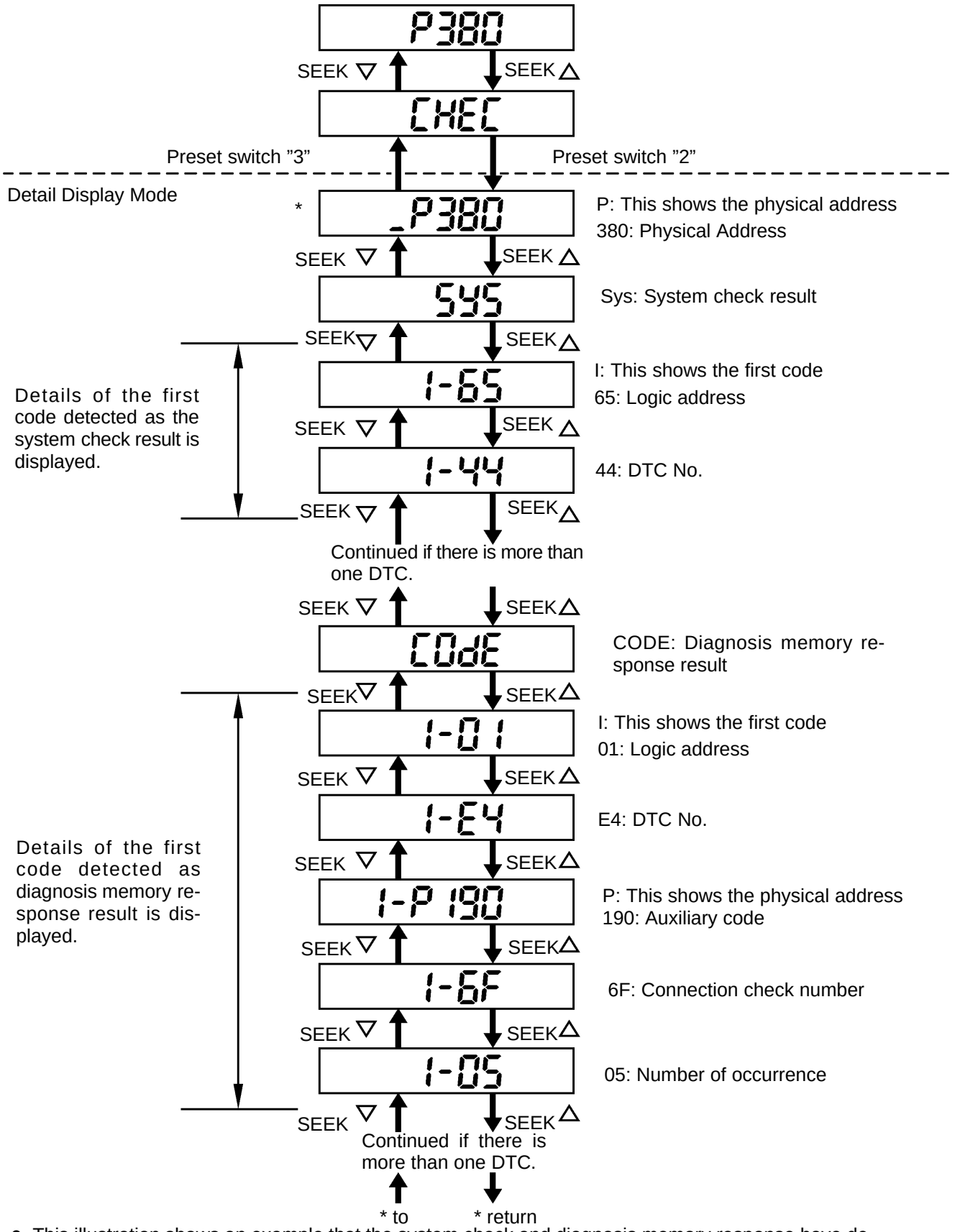
(1) While ”CHEC” or ECHn” is displayed, press the preset button ”2” to go on to the Detail Display Mode.

(2) By the ”SEEK” switch operation, ”the system check result (SYS)” and ”the diagnosis memory response result (COdE)” can be displayed.

(3) Refer to the diagnosis code list and inspect the defective part(s).

(4) Press the preset button ”3” to return to the Service Check Mode.

(e) Service Check Mode



- This illustration shows an example that the system check and diagnosis memory response have detected DTC "44" and "E4" in the component code 380.
- In the Detail Display Mode, a system check result is displayed before the diagnosis memory response result.
- If a DTC does not have any auxiliary code, no auxiliary code is displayed.

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(f) DISPLAY IN DETAIL DISPLAY MODE

Segment for DTC	Meaning	Display Order by "SEEK UP" button operation (Reverse order when operating "SEEK DOWN" button)
Sys	System check result	Physical address → DTC
COdE	Diagnosis memory response result	Physical address → DTC → Auxiliary code → Connection check number → Number of occurrence

(g) Deleting DTC memory (Deleting DTC stored in the past)

(1) After repairing defective part(s), start the diagnosis mode.

(2) Press the preset button "5" for 2 sec. or more. (Display: "CLr")

HINT:

When DTC memory is completely deleted, a beep sounds once.

(3) Pressing the preset button "1", perform the Service Check again and confirm that no error is displayed for all component codes.

8. DIAGNOSTIC TROUBLE CODE CHART

Terms	Meaning
Physical address	Three-digit code (shown in hexadecimal) which is given to each component comprising the AVC - LAN Corresponding to the function, individual symbols are specified..
Logical address	Two-digit code (shown in hexadecimal) which is given to each function comprising the inner system of the AVC - LAN.

Physical address: 440 Power amplifier

Logical address	DTC	Diagnosis item	Diagnosis content	Countermeasure and inspected parts
01 (Communication control)	21	ROM Error	Abnormal condition of ROM is detected.	Replace power amplifier.
01 (Communication control)	22	RAM Error	Abnormal condition of RAM is detected.	Replace power amplifier.
01 (Communication Control)	D6	Absence of Master	Component in which this code is recorded has been disconnected from system with ignition in ACC or ON. Or, when this code was recorded, power amplifier was disconnected.	● Check harness for power supply system of radio receiver assembly. ● Check harness for communication system of radio receiver assembly. ● Check harness for power supply system of power amplifier. ● Check harness for communication system of power amplifier.
01 *6 (Communication Control)	D7	Connection Check Error	Component in which this code is recorded has been disconnected from system after engine start. Or, when this code was recorded, power amplifier was disconnected.	● Check harness for power supply system of radio receiver assembly. ● Check harness for communication system of radio receiver assembly. ● Check harness for power supply system of power amplifier. ● Check harness for communication system of power amplifier.
01 (Communication Control)	DC	Transmission Error	Transmission to component shown by auxiliary code has been failed. (This code does not necessarily mean actual failure.)	If same auxiliary code is recorded in other component(s), check harness for power supply and communication system of components shown sub code.
01 (Communication Control)	DD	Master Reset (Momentary Interruption)	After engine is started, power amplifier was disconnected from system.	● Check harness for power supply system of power amplifier. ● Check harness for communication system of power amplifier. ● If error occurs frequently, replace power amplifier.
01 (Communication Control)	DF	Master Error	Due to defective condition of component with a display, master function is switched to audio equipment . Error occurs in communication between sub-master (audio) and master component.	● Check harness for power supply of power amplifier. ● Check harness for communication system of power amplifier. ● Check harness for communication system between power amplifier and sub-master component.

01 (Communication Control)	E2	ON/OFF Instruction Parameter Error	Error is detected in ON/OFF control command from power amplifier.	Replace power amplifier.
01 (Communication Control)	E4	Plural Frame Abort	Plural frame transmission is aborted.	● Since this DTC is provided for engineering purpose, it may be detected when no actual failure exists.

*6: When 210 sec. has passed after pulling out the power supply connector of the master component with the ignition switch in ACC or ON, this code is stored.

Physical address: 190 Radio receiver assembly

Logical address	DTC	Diagnosis item	Diagnosis content	Countermeasure and inspected parts
01 (Communication Control)	21	ROM Error	Error is detected in internal ROM.	Replace radio receiver assembly.
01 (Communication Control)	22	RAM Error	Error is detected in internal RAM.	Replace radio receiver assembly.
01 *3 (Communication Control)	D8	No Response to Connection Check	Component shown by auxiliary code is or had been disconnected from system after engine start.	● Check harness for power supply system of component shown by auxiliary code. ● Check harness for communication system of component shown by auxiliary code.
01 *2 (Communication Control)	D9	Last Mode Error	Component operated (sounds and/or images were provided) before engine stop is or has been disconnected with ignition switch in ACC or ON.	Check harness for power supply system of component shown by auxiliary code. Check harness for communication system of component shown by auxiliary code.
01 (Communication Control)	DA	No Response to ON/OFF Instruction	No response is identified when changing mode (audio and visual mode change). Detected when sound and picture does not change by button operation.	● Check harness for power supply of component shown by auxiliary code. ● Check harness for communication system of component shown by auxiliary code. ● If error occurs again, replace component shown by auxiliary code.
01 *2 (Communication Control)	DB	Mode Status Error	Dual alarm is detected.	● Check harness for power supply of component shown by auxiliary code. ● Check harness for communication system of component shown by auxiliary code.
01 *4 (Communication Control)	DC	Transmission Error	Transmission to component shown by auxiliary code has been failed. (Detecting this DTC does not necessary mean actual failure.)	● If same auxiliary code is recorded in other component, check harness for power supply and communication system of components shown sub code.

01 *5 (Communication Control)	DD	Master Reset (Momentary Interruption)	After engine is started, multi-display assembly was disconnected from system.	● If this error occurs frequently, replace multi-display assembly.
01 *5 (Communication Control)	DE	Slave Reset (Momentary Interruption)	After engine is started, slave component was disconnected from system.	● Check harness for power supply of component shown by auxiliary code. ● Check harness for communication system of component shown by auxiliary code.
01 *6 (Communication Control)	DF	Master Error	Due to defective condition of radio receiver assembly, master function is switched to audio equipment. Error occurs in communication between sub-master (audio) and radio receiver assembly.	● Check harness for power supply of multi-display assembly. ● Check harness for communication system of radio receiver assembly. ● Check harness for communication system between radio receiver assembly and sub-master component.
01 *2 (Communication Control)	E1	Audio processor ON error	While source equipment is operating, AMP output is stopped.	● Check harness for power supply of multi-display assembly. ● Check harness for communication system of radio receiver assembly.
01 (Communication Control)	E2	ON/OFF Instruction Parameter Error	Error occurs in ON/OFF controlling command from radio receiver assembly.	● Replace radio receiver assembly.
01 (Communication Control)	E4	Plural Frame Abort	Plural frame transmission is aborted.	● Since this DTC is provided for engineering purpose, it may be detected when no actual failure exists.
60 (Radio receiver assembly)	43	AM Tuner Error	Abnormal condition is detected in AM tuner. Inspect radio receiver assembly.	Replace radio receiver assembly.
60 (Radio receiver assembly)	44	FM Tuner Error	Abnormal condition is detected in FM tuner.	Replace radio receiver assembly.
61 (Cassette switch)	40	Mechanical or Media Error	Malfunction due to mechanical failure is identified. Or, cassette tape is cut or entangled.	Inspect cassette tape.
63 (In-dash CD changer)	47	CD High Temp	High temperature is detected in CD changer.	Replace radio receiver assembly.
63 (In-dash CD changer)	48	CD Excess Current	Excess current is applied to CD changer.	Replace radio receiver assembly.

*2: Even if no failure is detected, it may be stored depending on the battery condition or voltage for starting an engine.

*3: It is stored when 180 sec. has passed after the power supply connector is pulled out after engine start.

*4: It may be stored when the engine key is turned again 1 min. after engine start.

*5: It may be stored when the engine key is turned again after engine start.

*6: When 210 sec. has passed after pulling out the power supply connector of the master component with the ignition switch in ACC or ON, this code is stored.

BE1X5-03

TROUBLESHOOTING

NOTICE:

When replacing the internal mechanism (computer part) of the audio system, be careful that no part of your body or clothing comes in contact with the terminals of the leads from the IC, etc. of the replacement part (spare part).

HINT:

This inspection procedure is a simple troubleshooting which should be carried out on the vehicle during system operation and was prepared on the assumption of system component troubles (except for the wires and connectors, etc.).

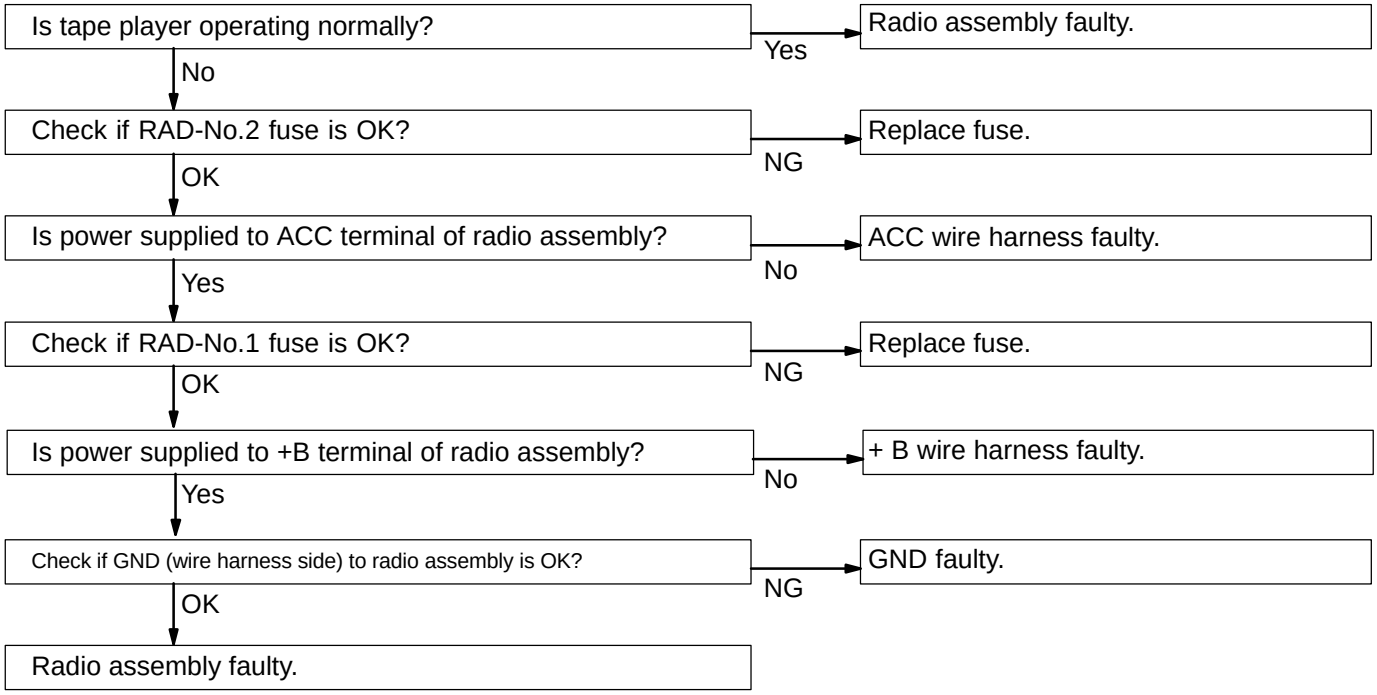
Always inspect the trouble taking the following items into consideration.

- Open or short circuit of the wire harness
- Connector or terminal connection fault

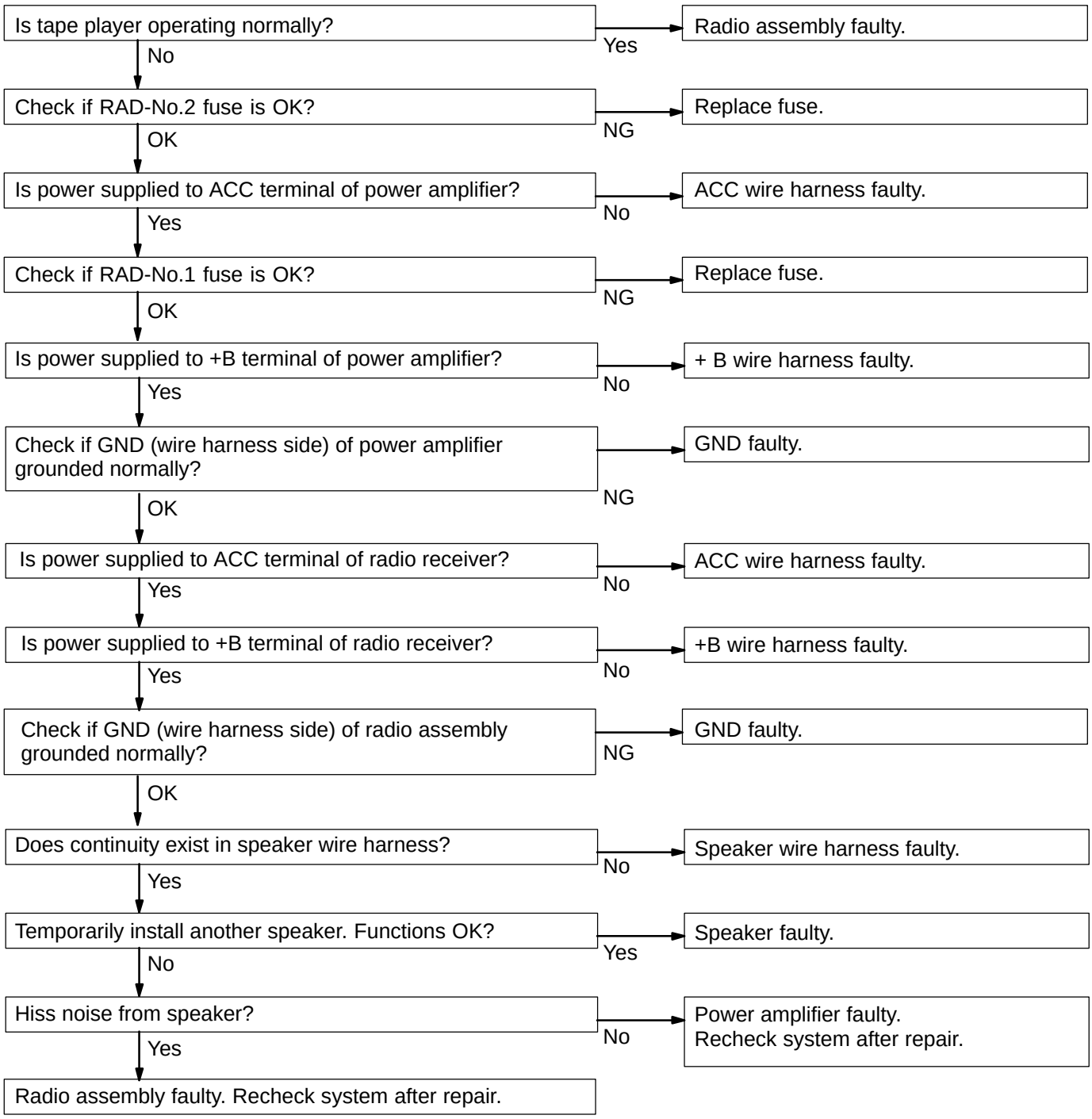
	Problem	No.
Radio	Radio not operating when power switch turned to 'ON'.	1
	Display indicates when power switch turned to 'ON', but no sound (including 'noise') is produced.	2
	Noise present, but AM - FM not operating.	3
	Any speaker does not work.	4
	Any AM or FM does not work.	5
	Few preset turning bands.	5
	Reception poor.	6
	Sound quality poor.	7
	Preset memory disappears.	8
Tape Player	Cassette tape cannot be inserted.	9
	Cassette tape inserted, but no power.	10
	Power coming in, but tape player not operating.	11
	Any speaker does not work.	12
	Sound quality poor.	13
	Tape jammed, malfunction with tape speed or auto-reverse.	14
	Cassette tape will not eject.	15
CD Player	CD cannot be inserted.	16
	CD inserted, but no power.	17
	Power coming in, but CD player not operating.	18
	Sound jumps.	19
	Sound quality poor (Volume faint).	20
	Any speaker does not work.	21
	CD will not be ejected.	22
Power Amplifier	No power coming in.	23
	Power coming in, but power amplifier not operating.	24
	Any speaker does not work.	25
Noise	Noise occurs	26
	Noise produced by vibration or shock while driving.	27
	Noise produced when engine starts.	28

The term "AM" includes LW, MW and SW, and the term "FW" includes UKW.

1	Radio	RADIO NOT OPERATING WHEN POWER SWITCH TURNED TO ”ON”



2	Radio	DISPLAY INDICATES WHEN POWER SWITCH TURNED TO ”ON”, BUT NO SOUND (INCLUDING ”NOISE”) IS PRODUCED

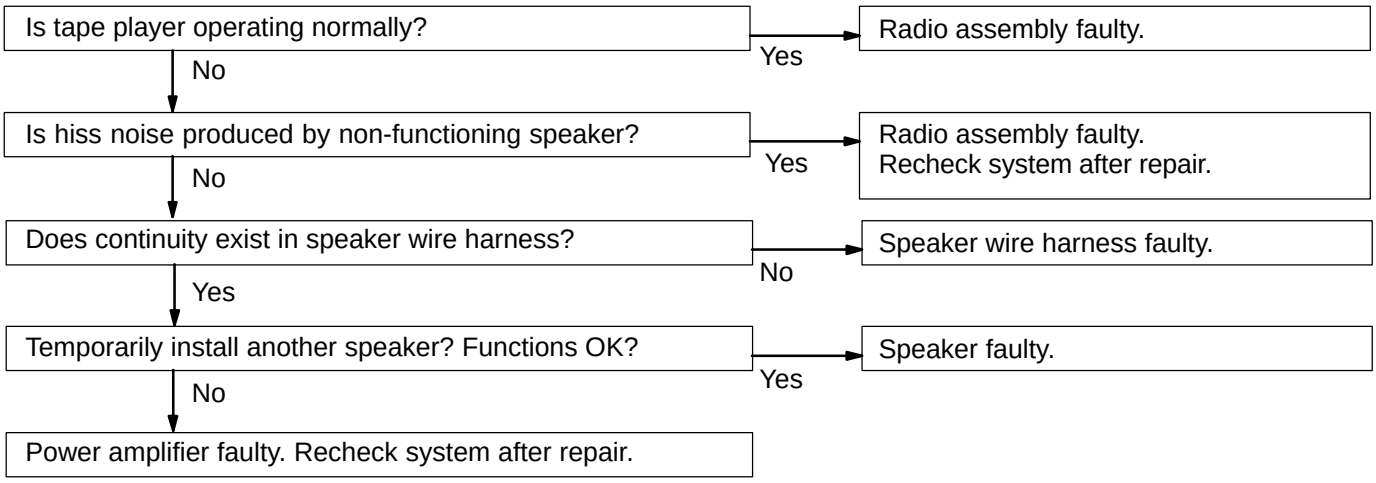


3	Radio	NOISE PRESENT, BUT AM-FM NOT OPERATING

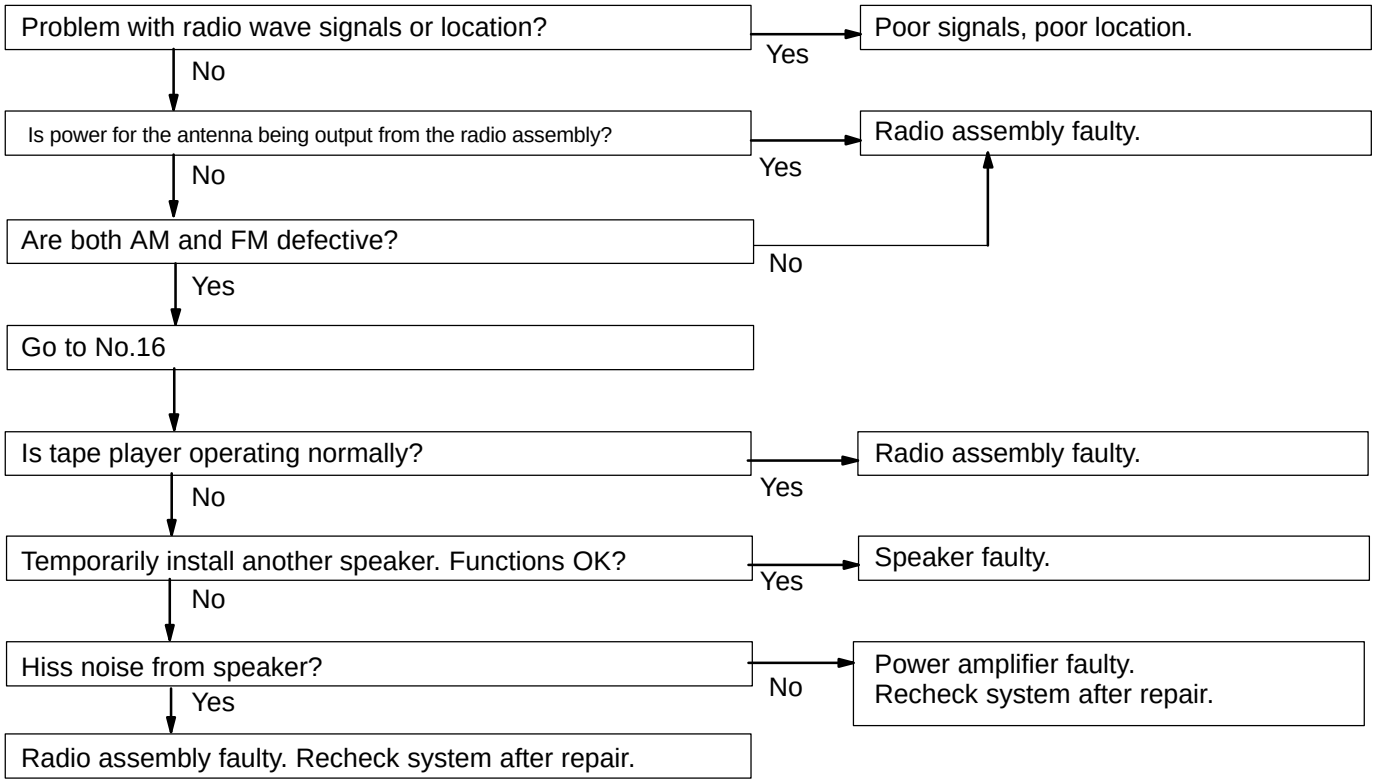
Go to No.25

If radio side faulty. → Radio faulty.

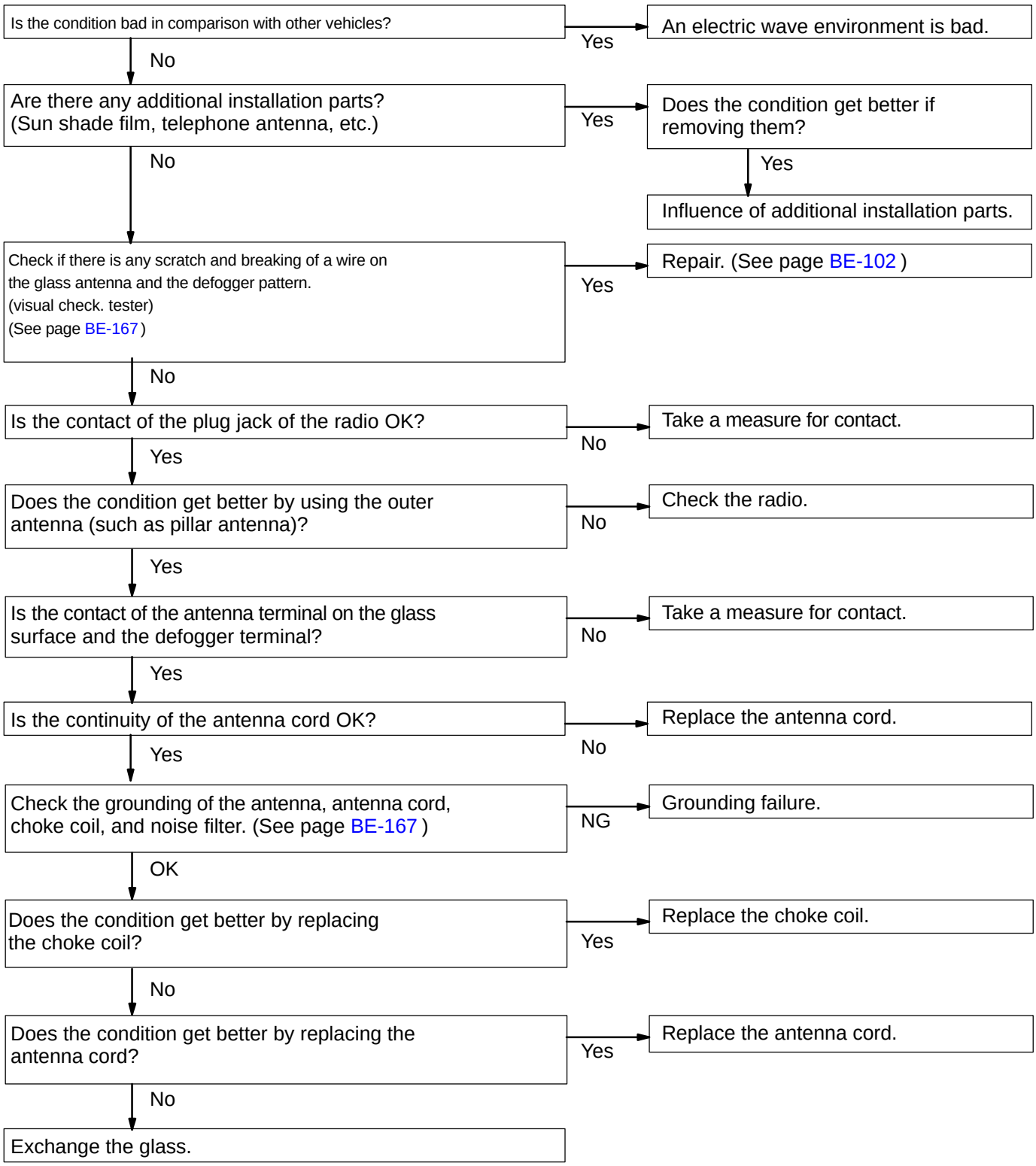
4	Radio	ANY SPEAKER DOSE NOT WORK



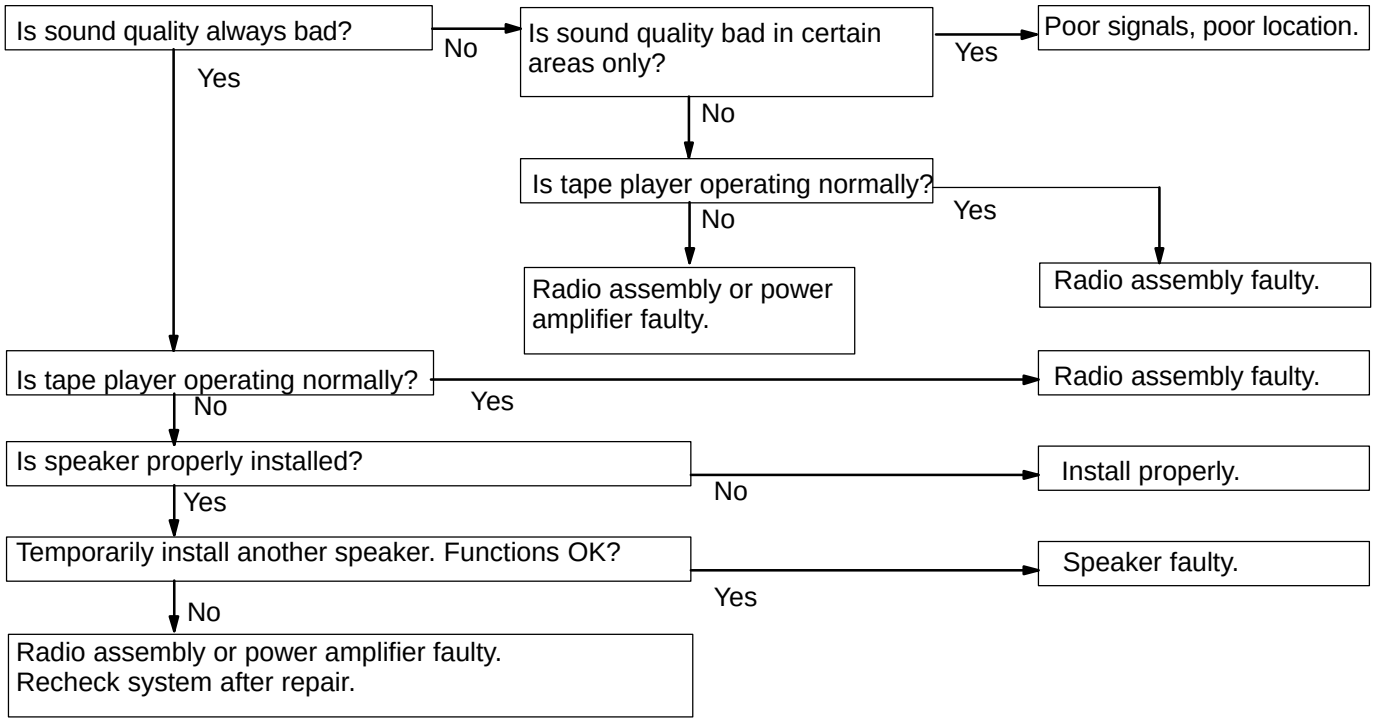
5	Radio	ANY AM OR FM DOES NOR WORK FEW PRESET TUNING BANDS



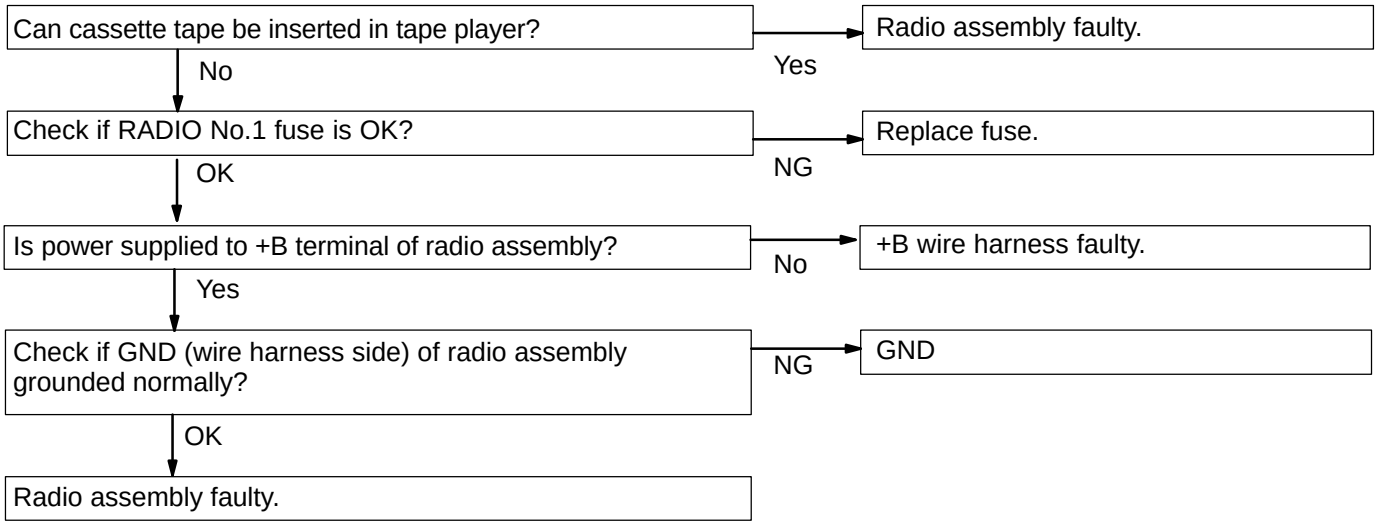
6	Radio	POOR RECEPTION



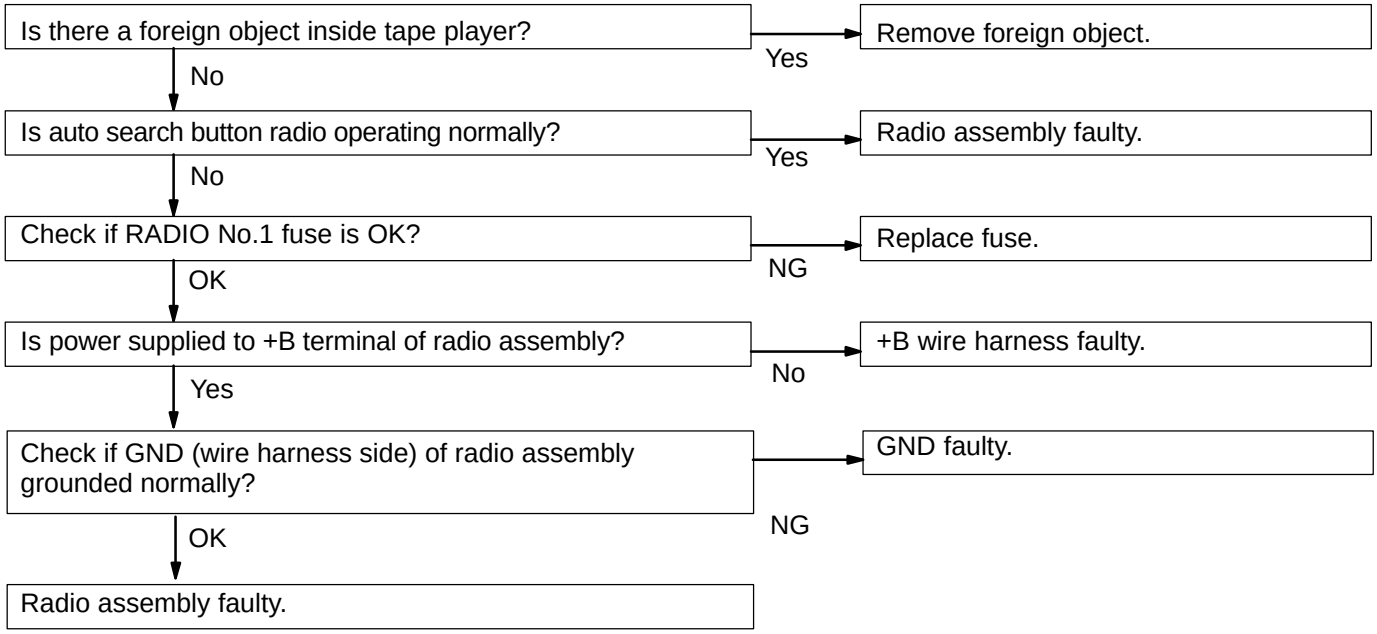
7	Radio	SOUND QUALITY POOR



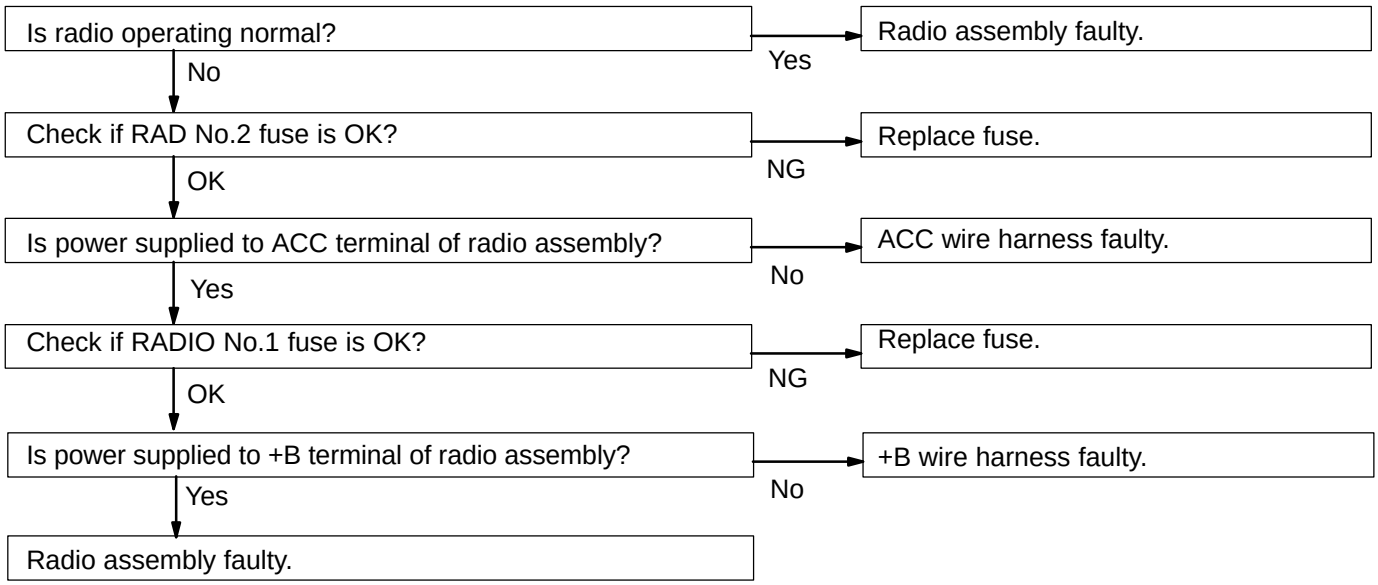
8	Radio	PRESET MEMORY DISAPPEARS



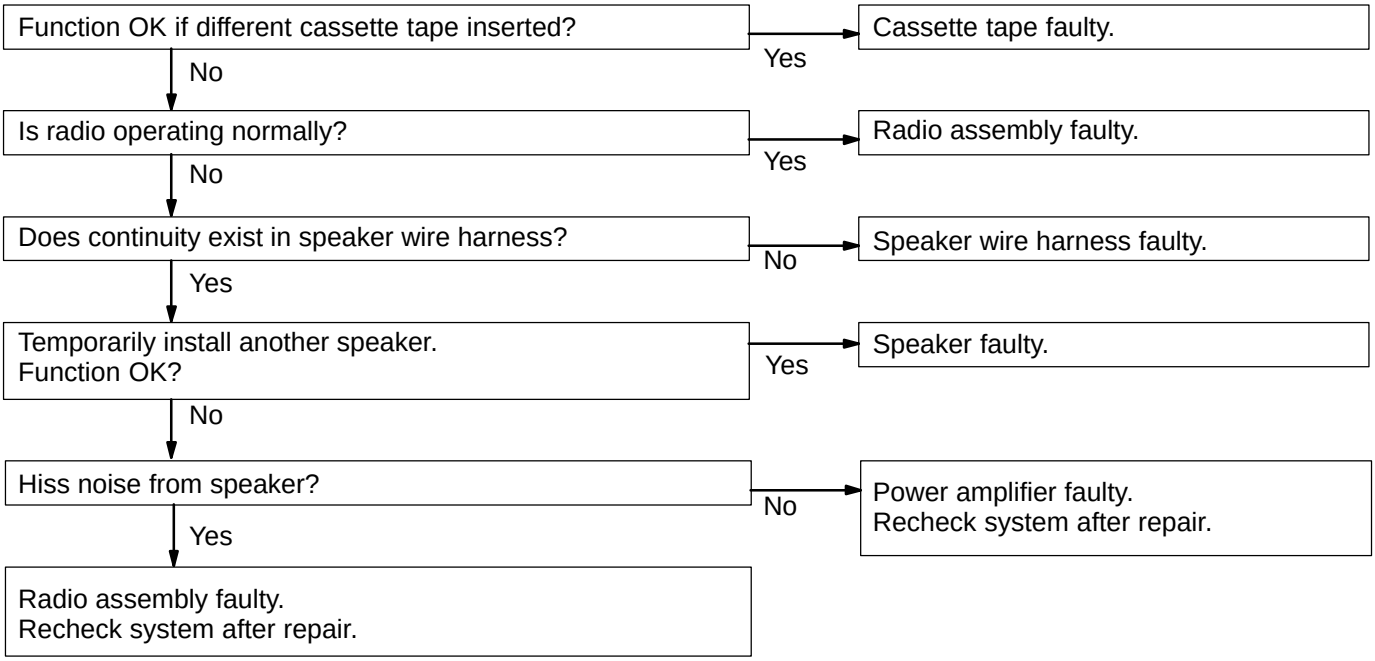
9	Tape Player	CASSETTE TAPE CANNOT BE INSERTED



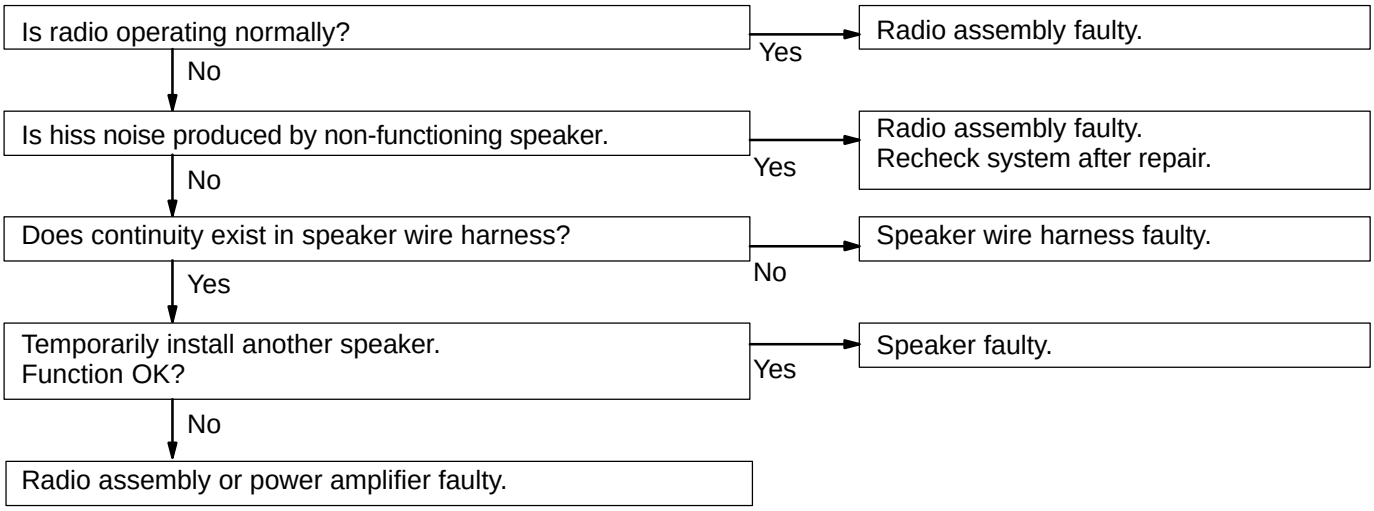
10	Tape Player	CASSETTE TAPE INSERTED, BUT NO POWER



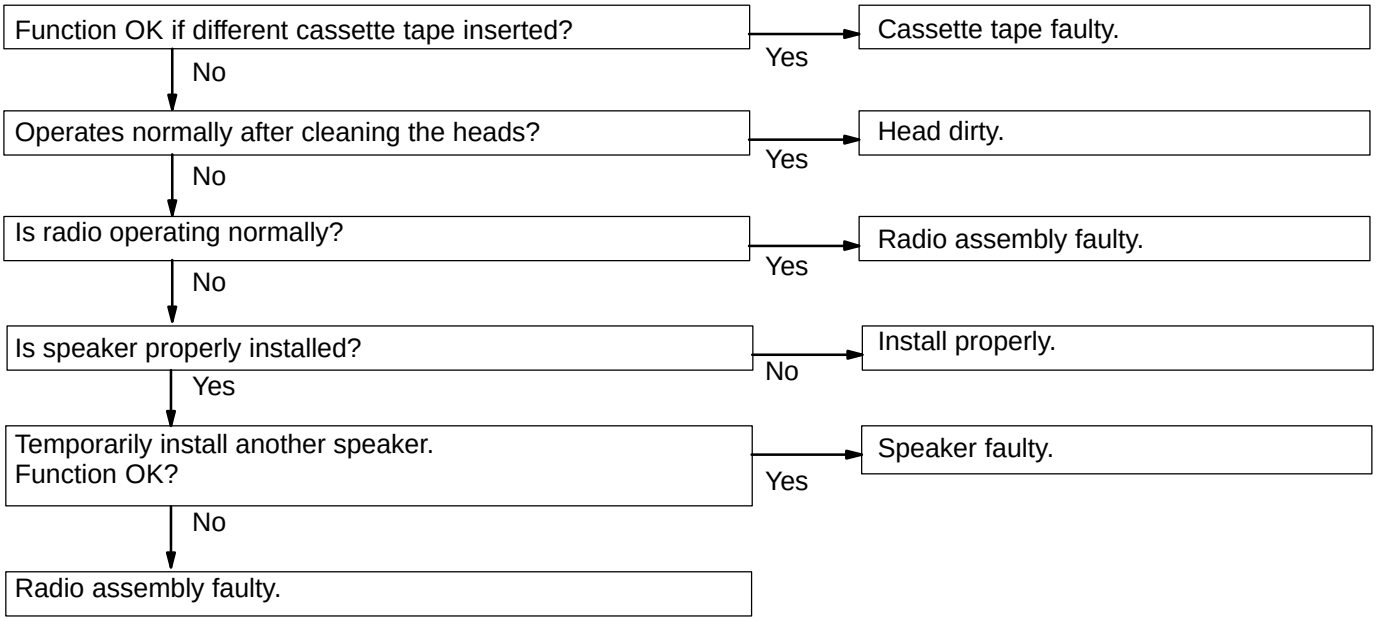
11	Tape Player	POWER COMING IN, BUT TAPE PLAYER NOT OPERATING



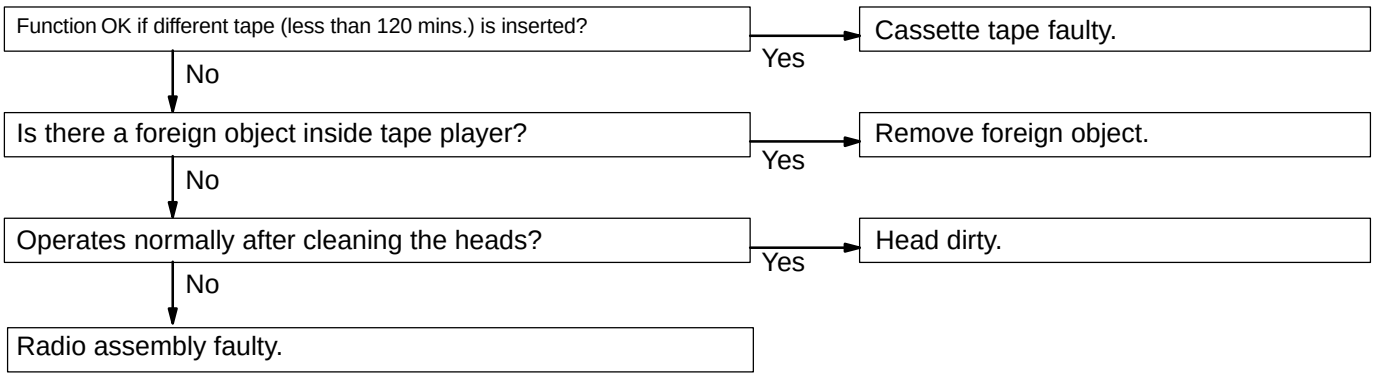
12	Tape Player	ANY SPEAKER DOES NOT WORK



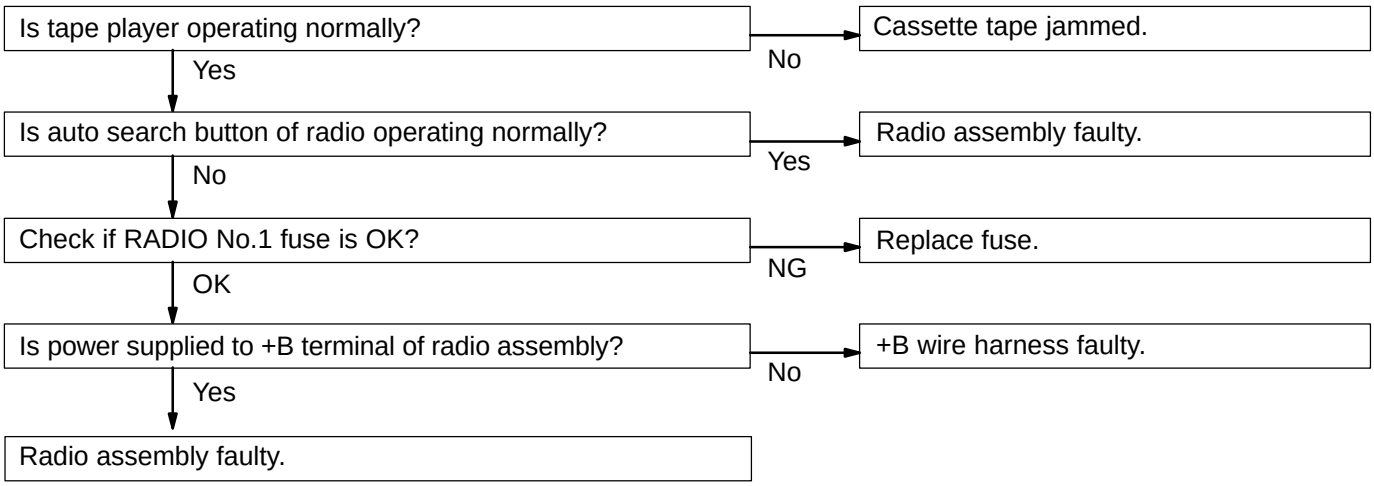
13	Tape Player	SOUND QUALITY POOR (VOLUME FAINT)



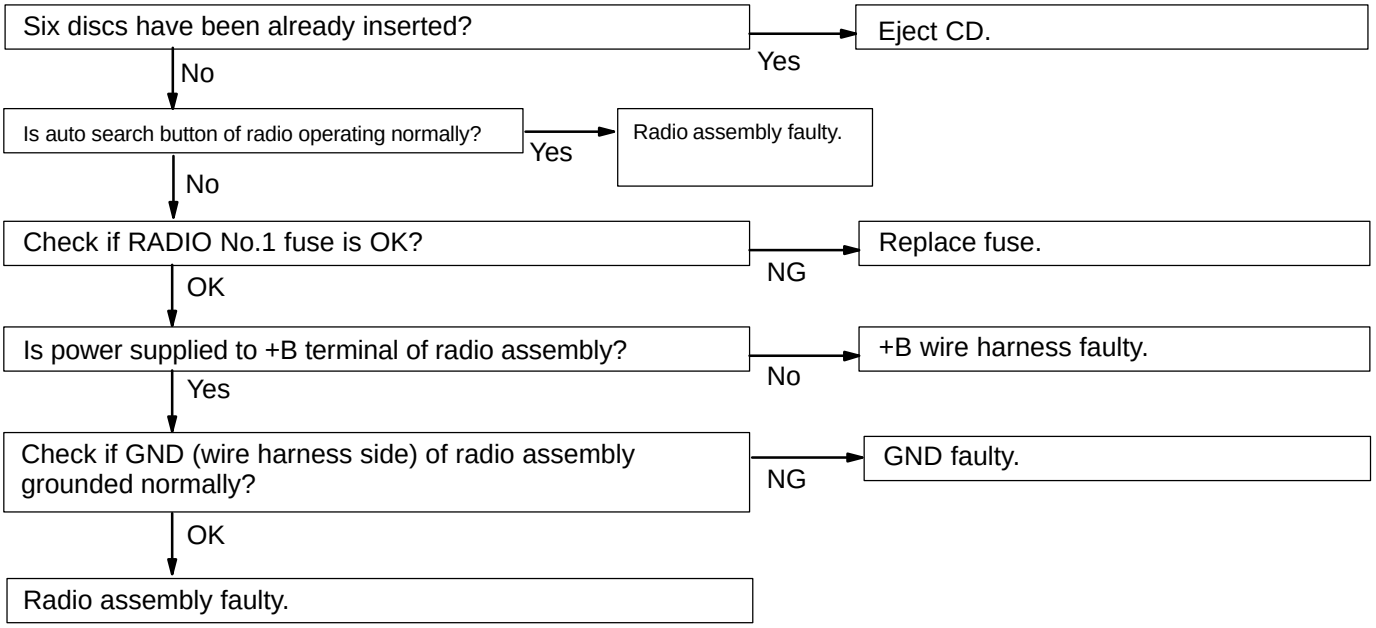
14	Tape Player	TAPE JAMMED MALFUNCTION WITH TAPE SPEED OR AUTO-REVERSE



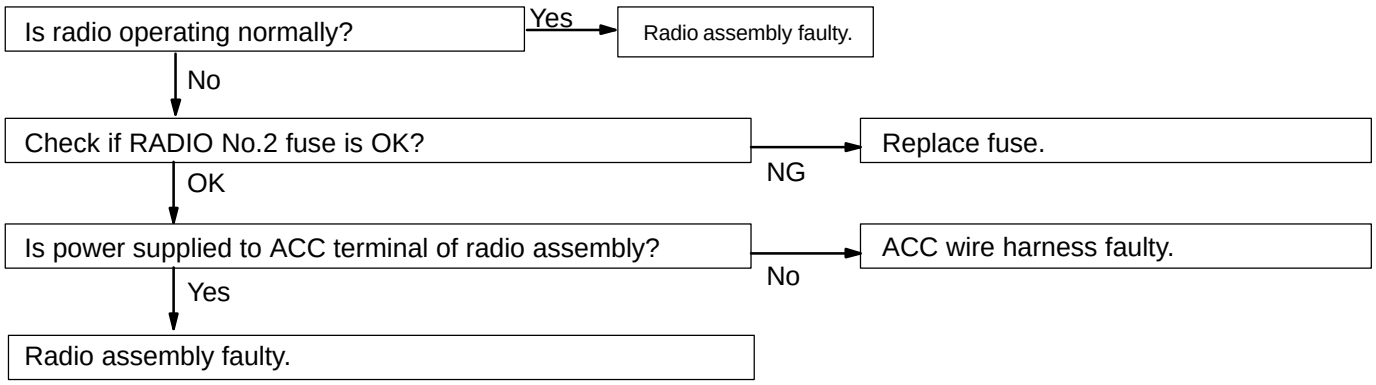
15	Tape Player	CASSETTE TAPE WILL NOT BE EJECTED



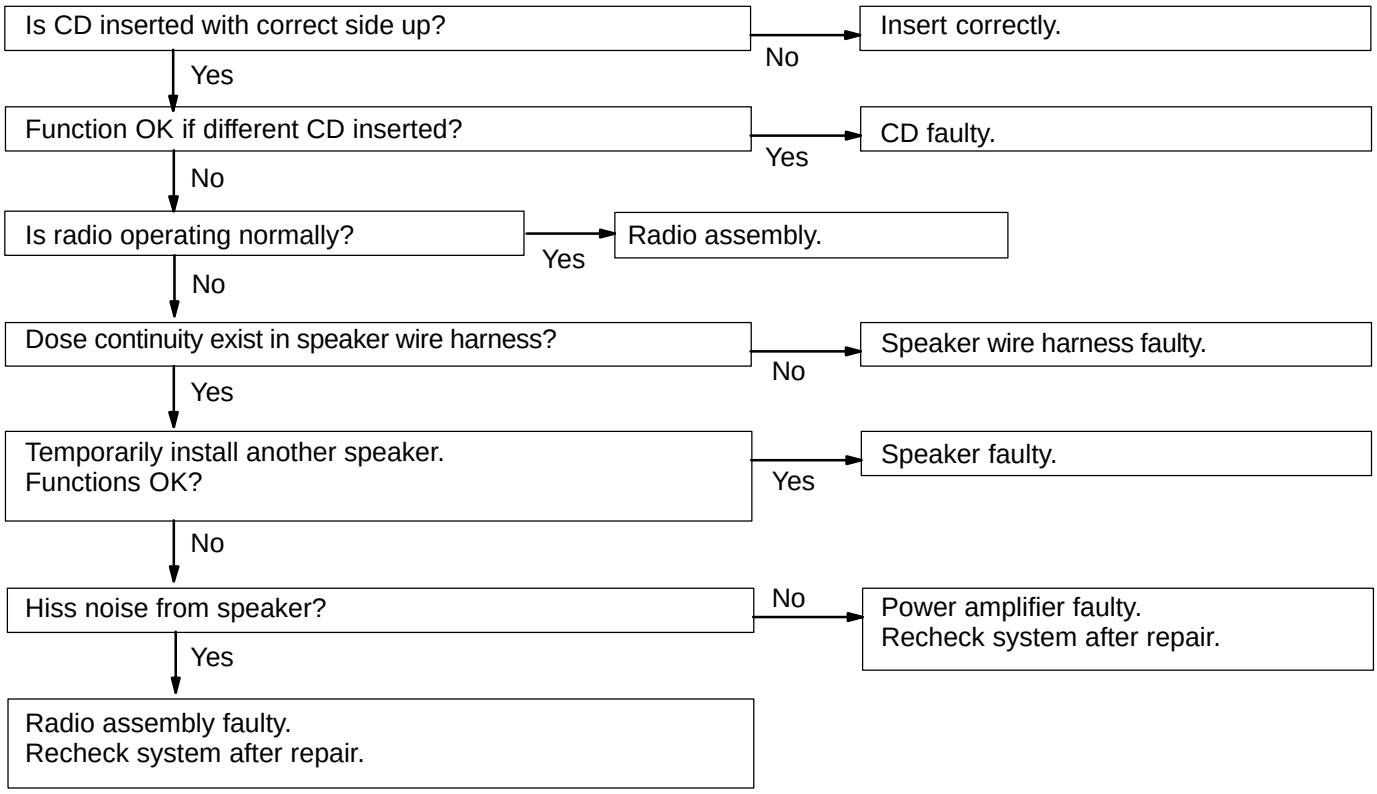
16	CD Player	CD CANNOT BE INSERTED



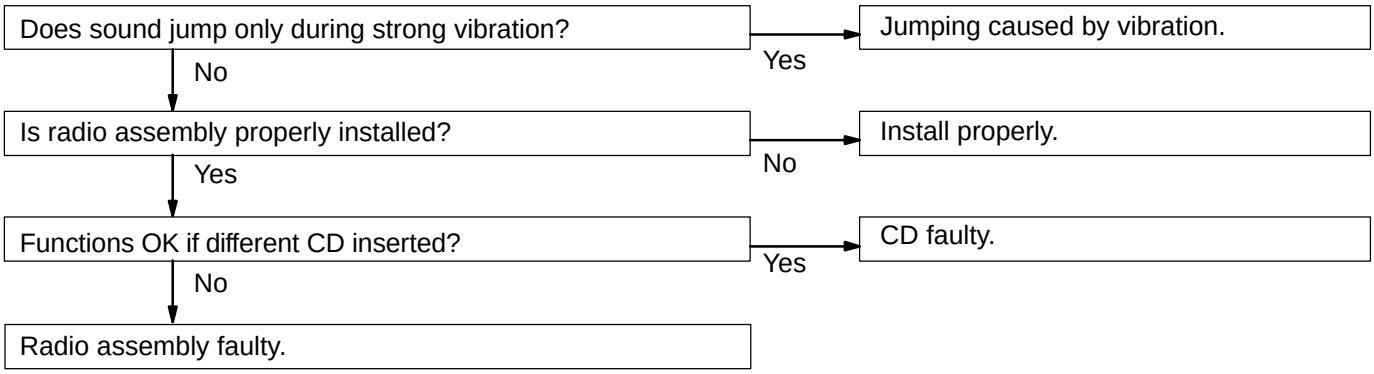
17	CD Player	CD INSERTED, BUT NO POWER



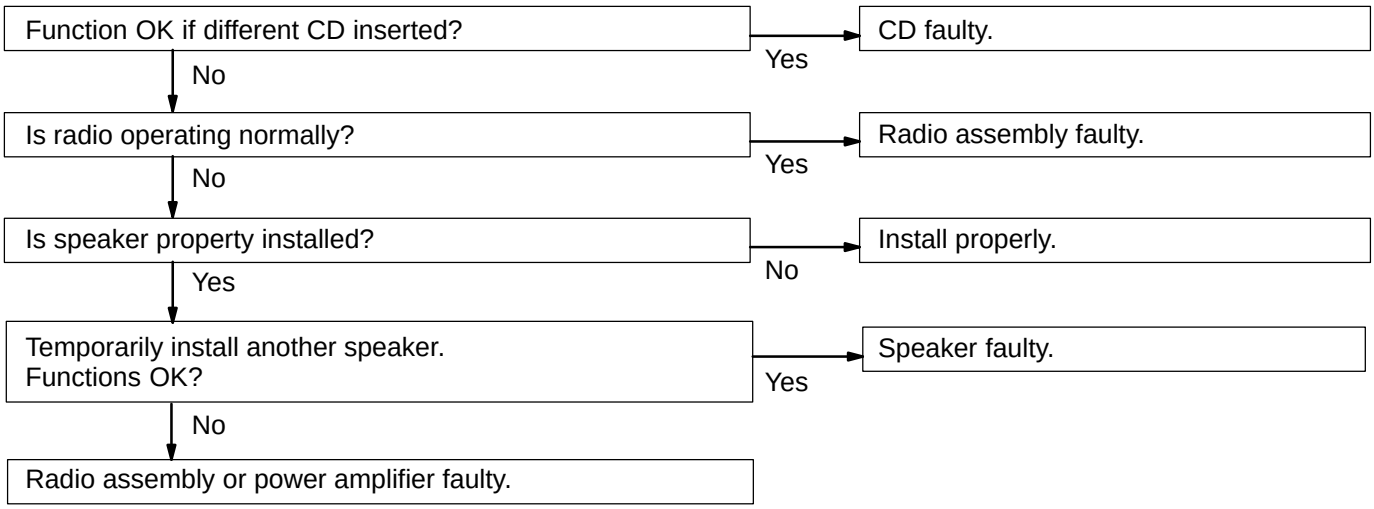
18	CD Player	POWER COMING IN, BUT CD PLAYER NOT OPERATING



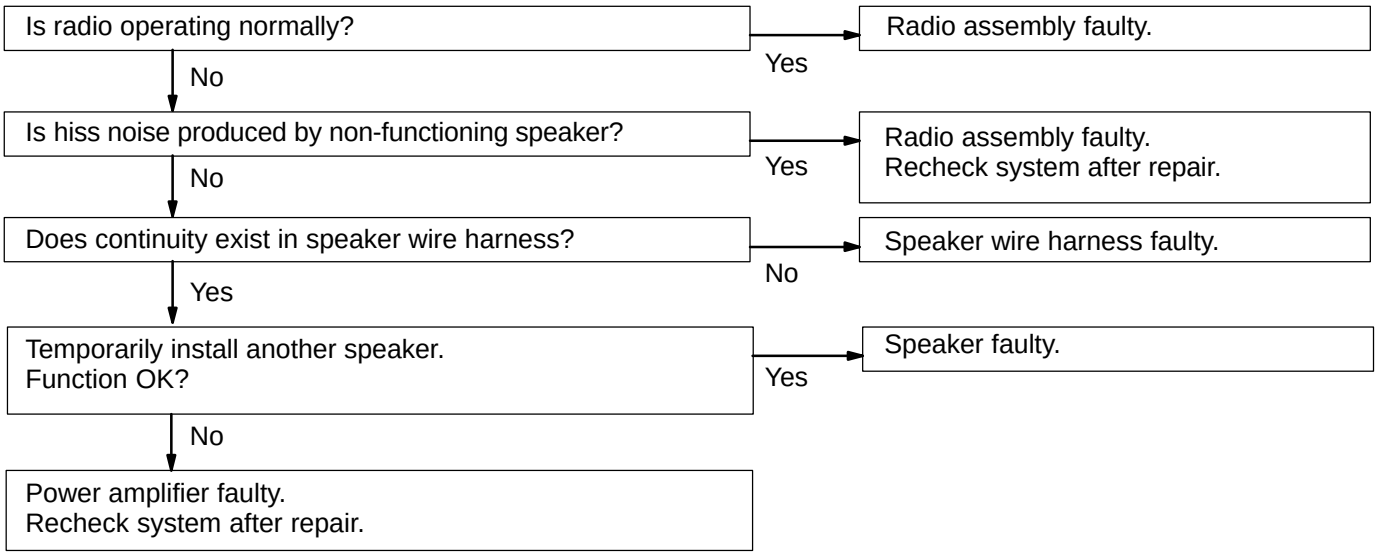
19	CD Player	SOUND JUMPS



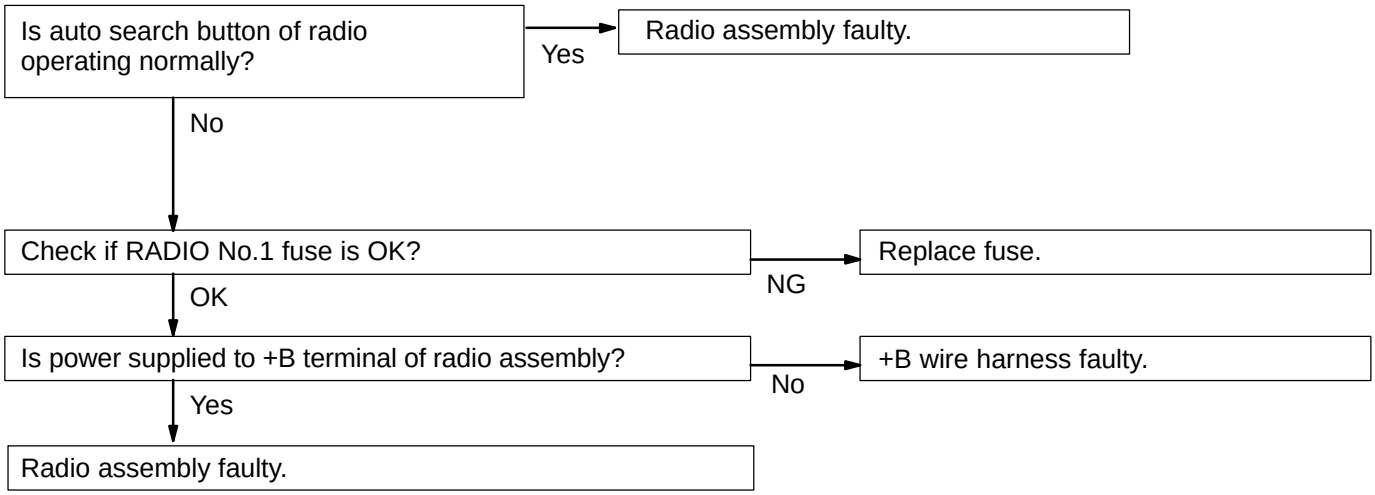
20	CD Player	SOUND QUALITY POOR (VOLUME FAINT)



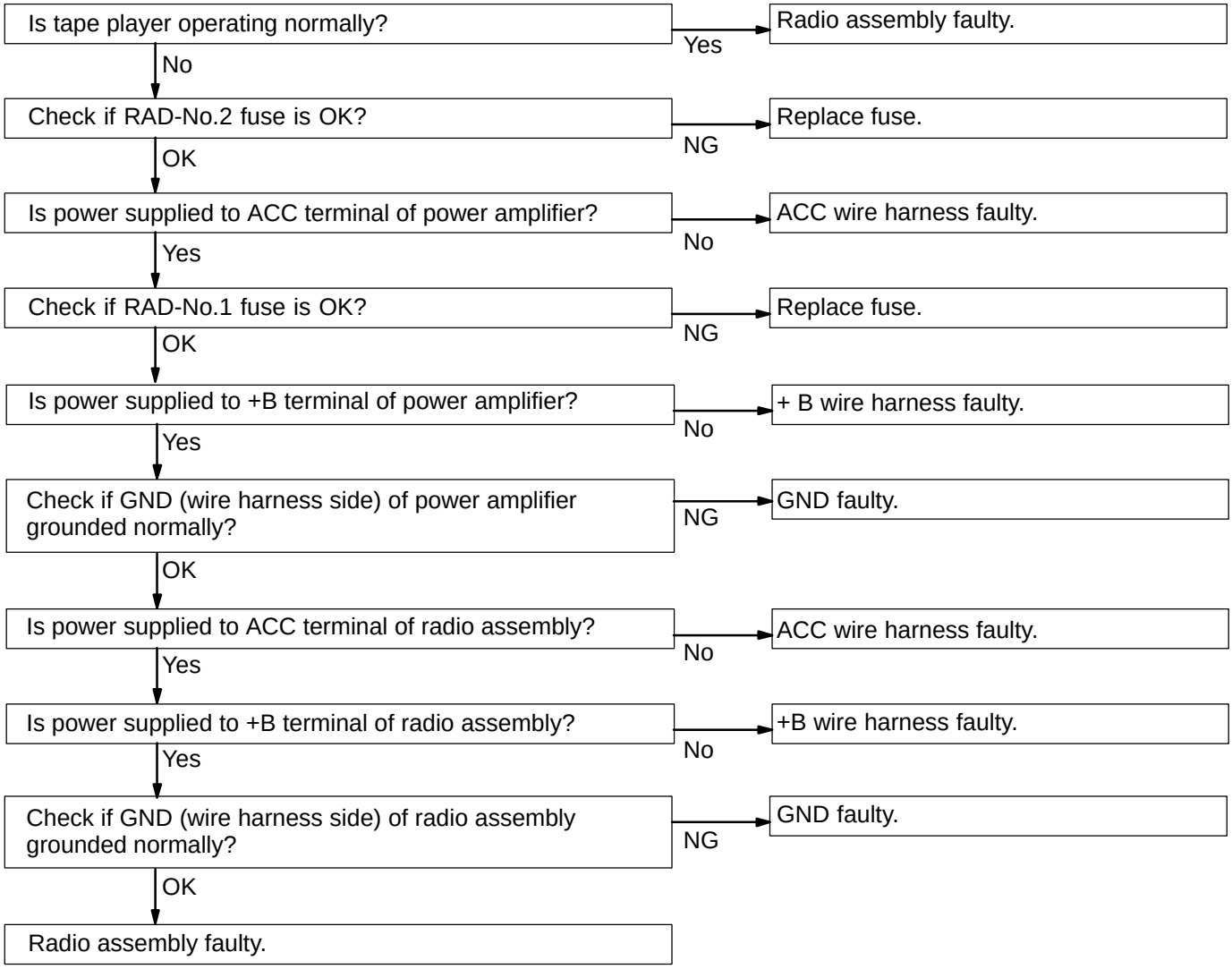
21	CD Player	ANY SPEAKER DOES NOT WORK



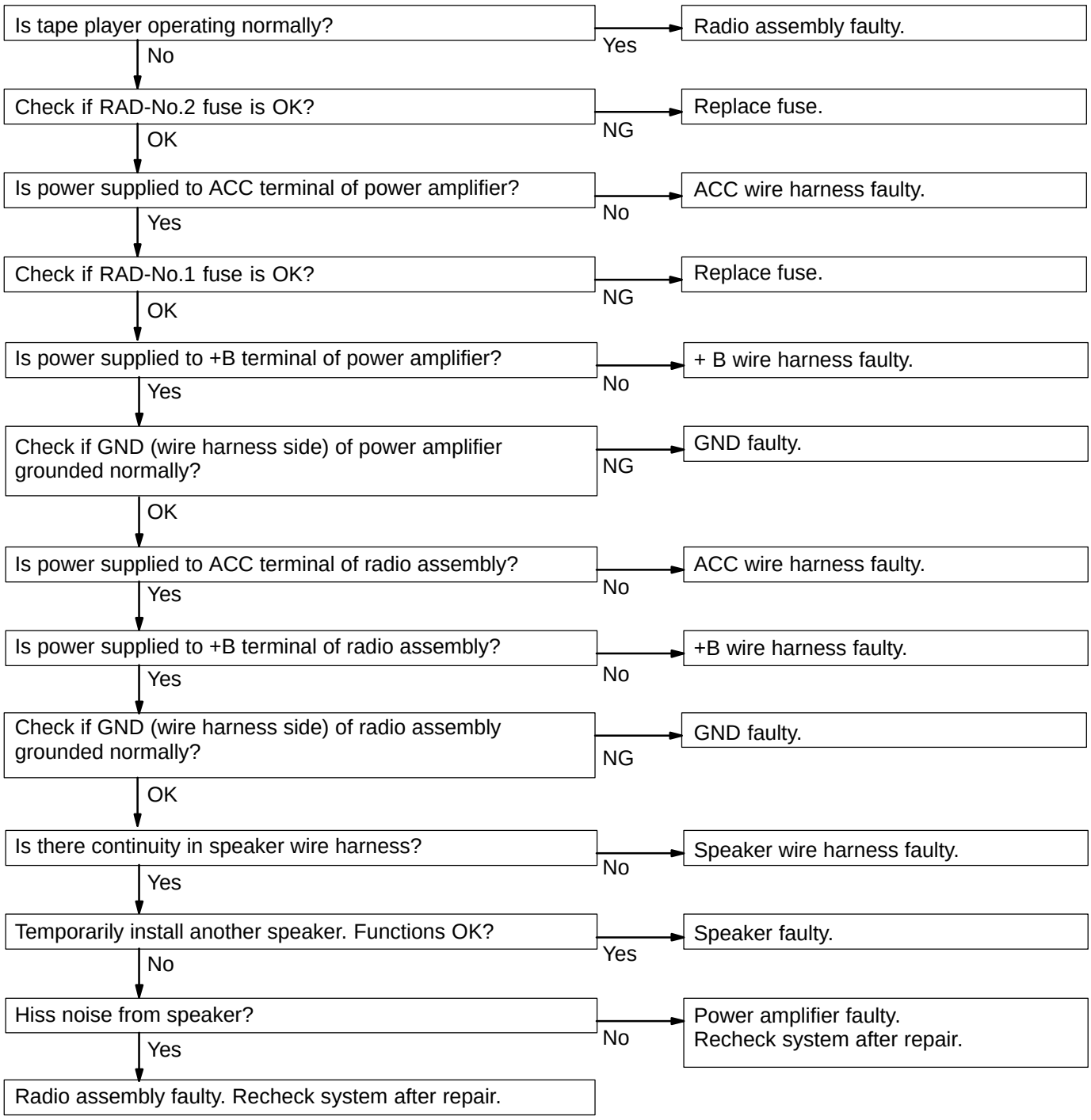
22	CD Player	CD WILL NOT BE EJECTED



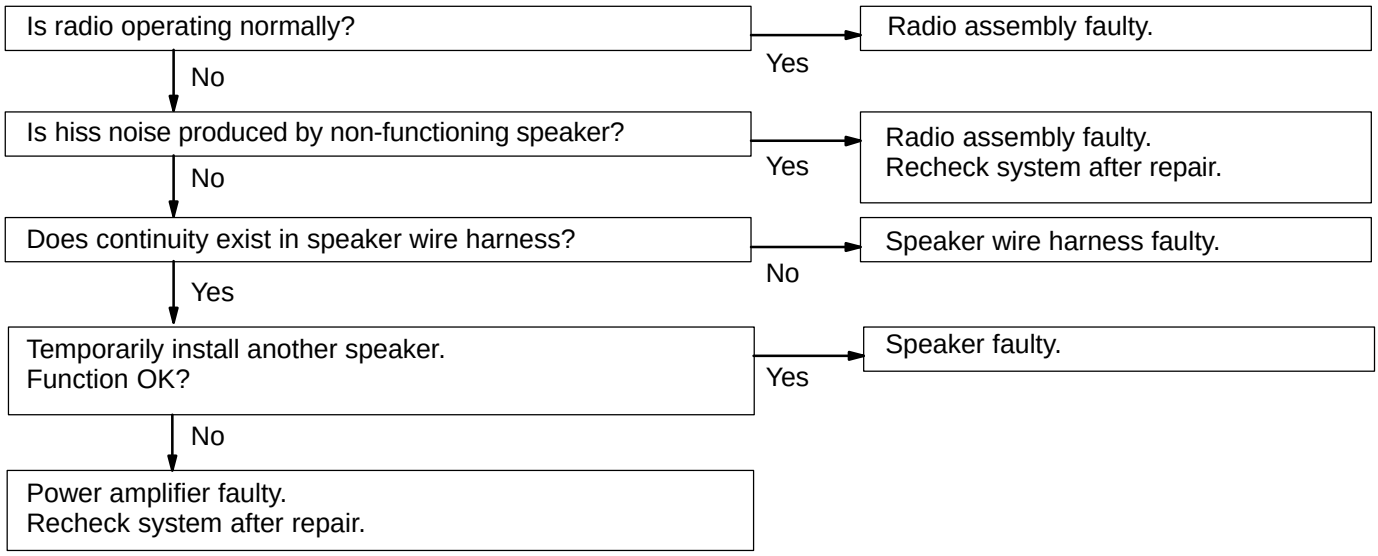
23	Power Amplifier	NO POWER COMING IN



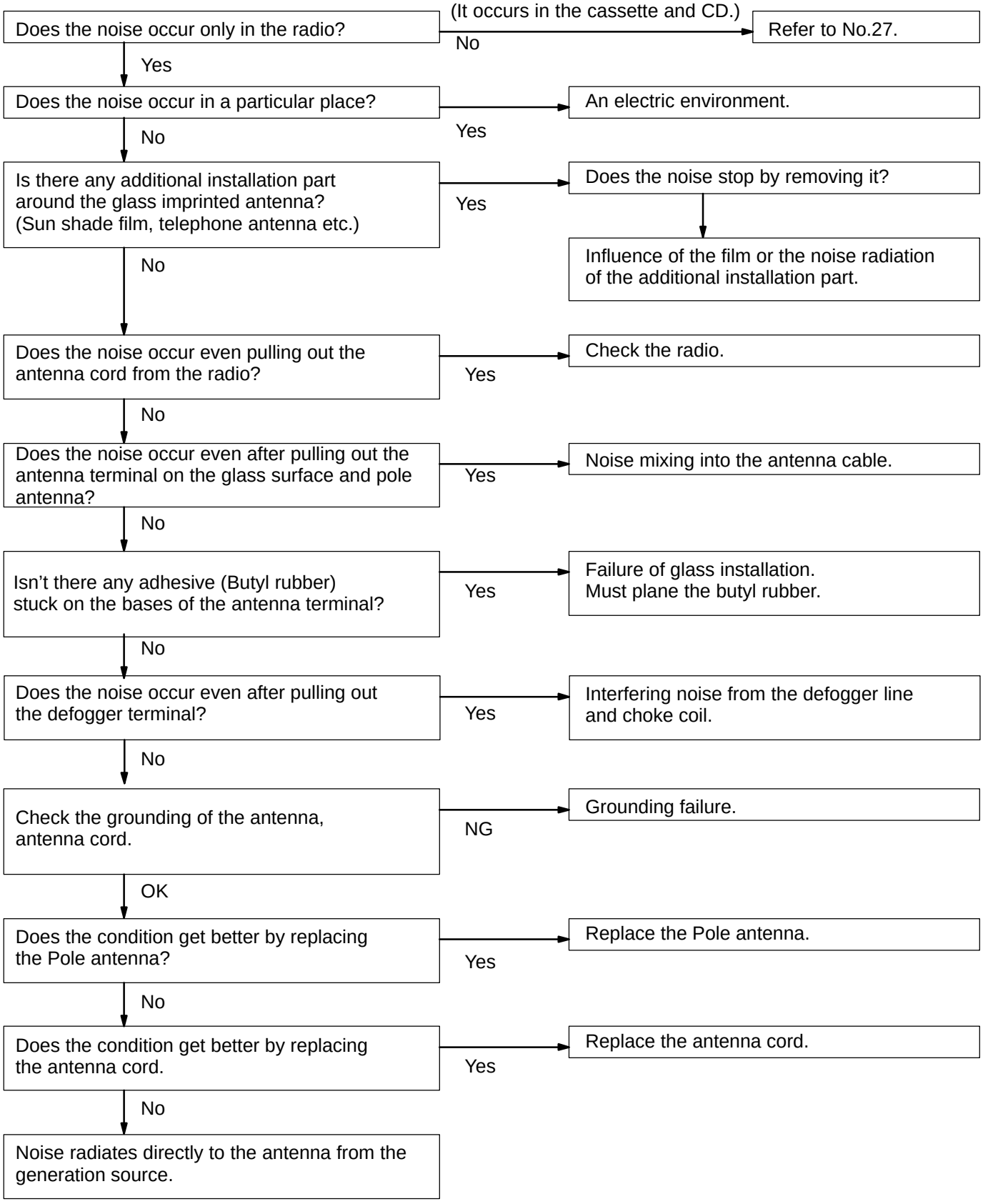
24	Power Amplifier	POWER COMING IN, BUT WOOFER (POWER) AMPLIFIER NOT OPERATING



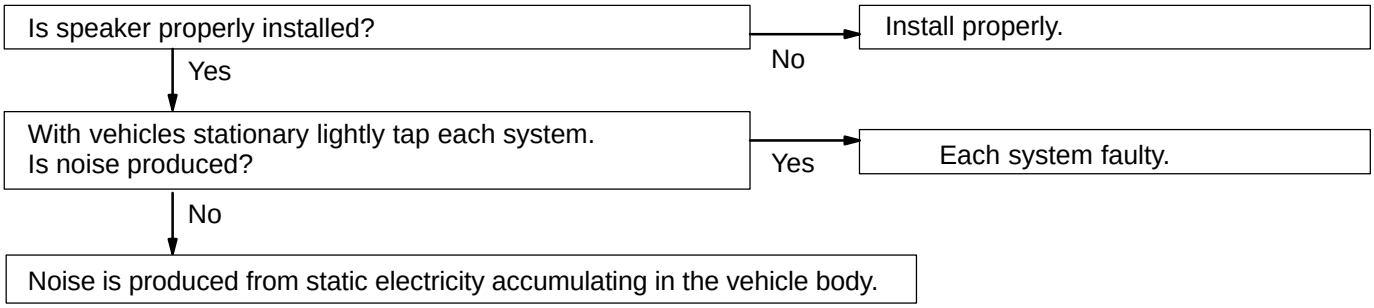
25	Power Amplifier	ANY SPEAKER DOES NOT WORK



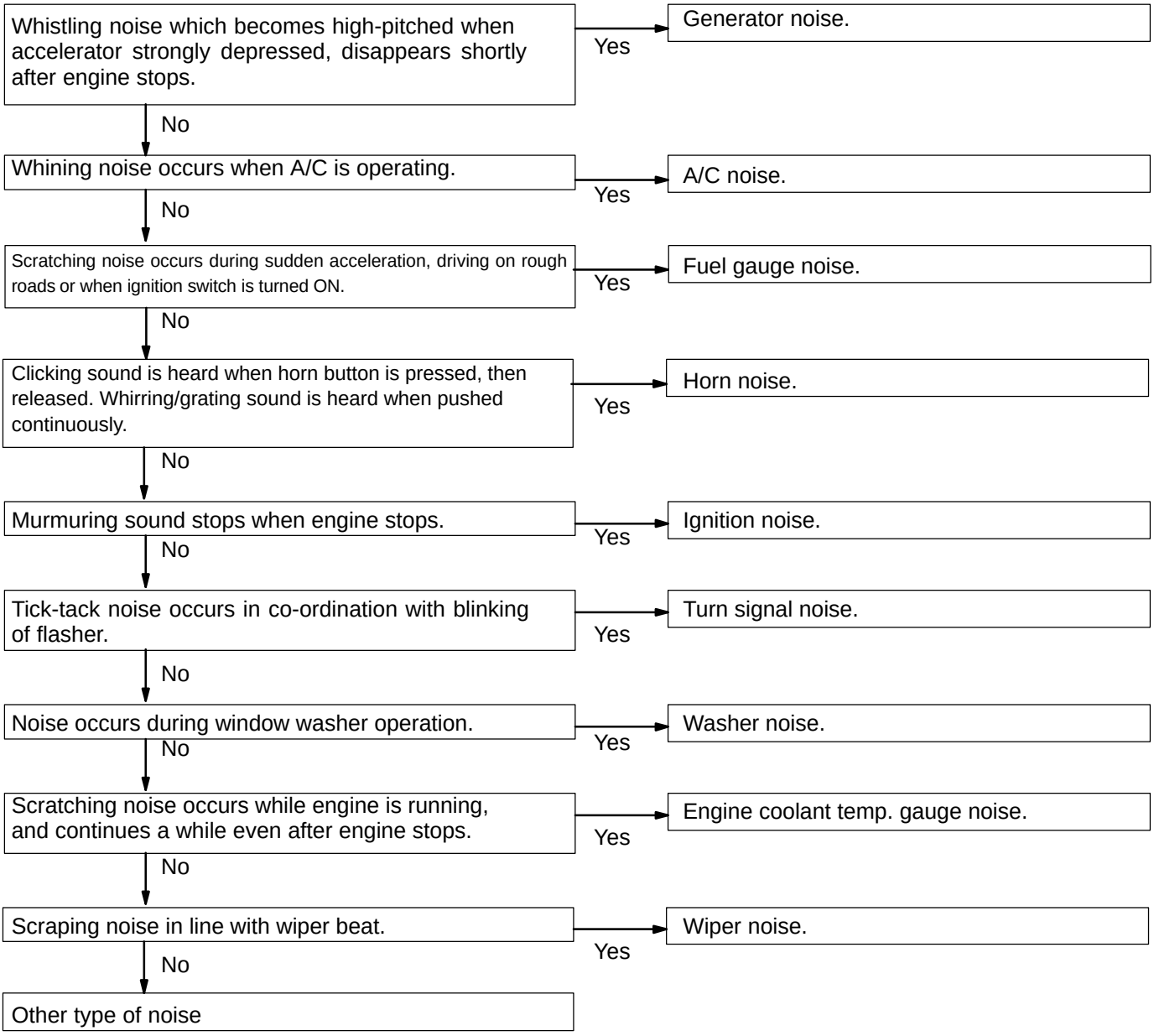
26	Noise	NOISE OCCURS



27	Noise	NOISE PRODUCED BY VIBRATION OR SHOCK WHILE DRIVING

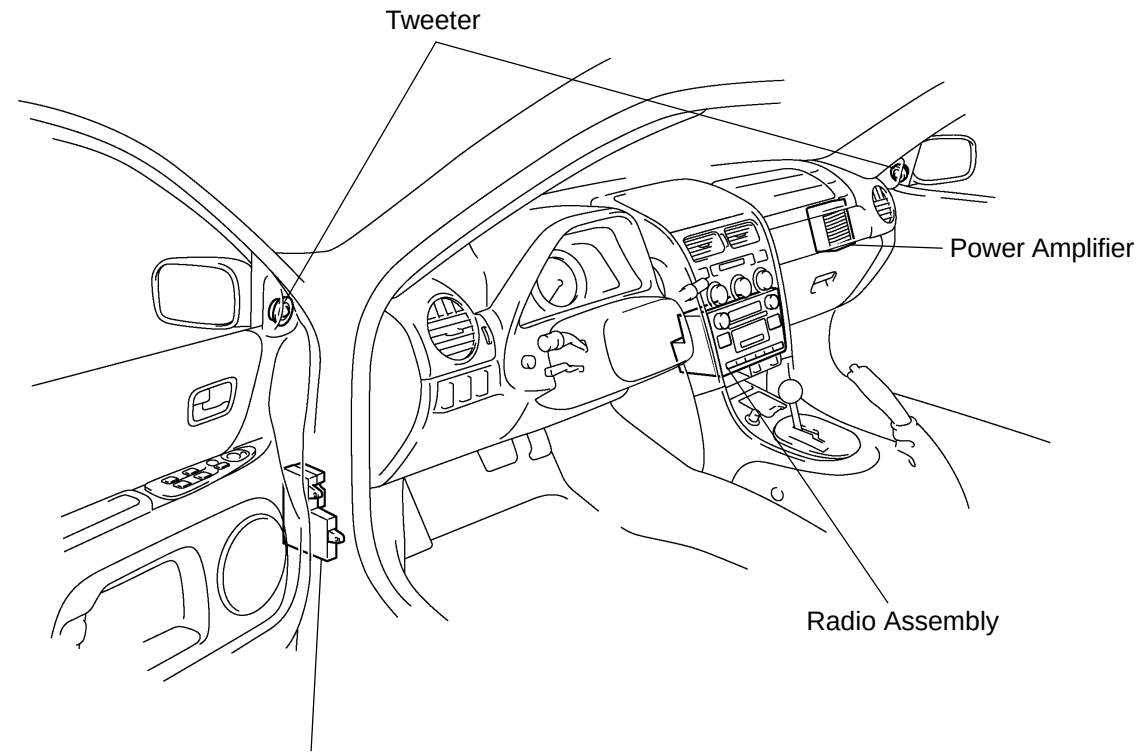


28	Noise	NOISE PRODUCED WHEN ENGINE STARTS

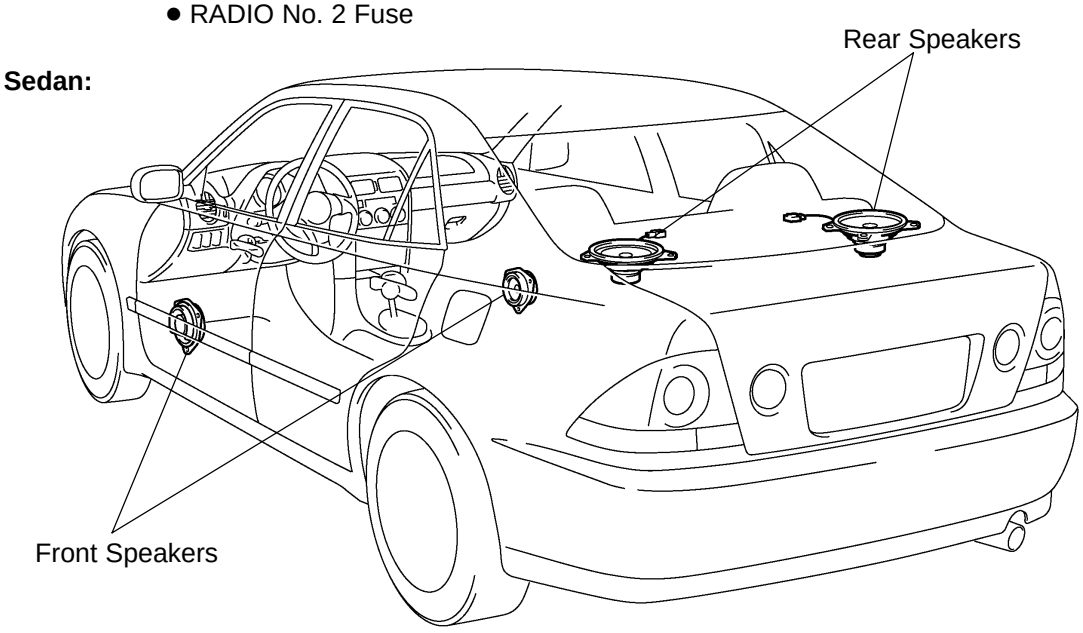


BE2A9-02

LOCATION



Sedan:



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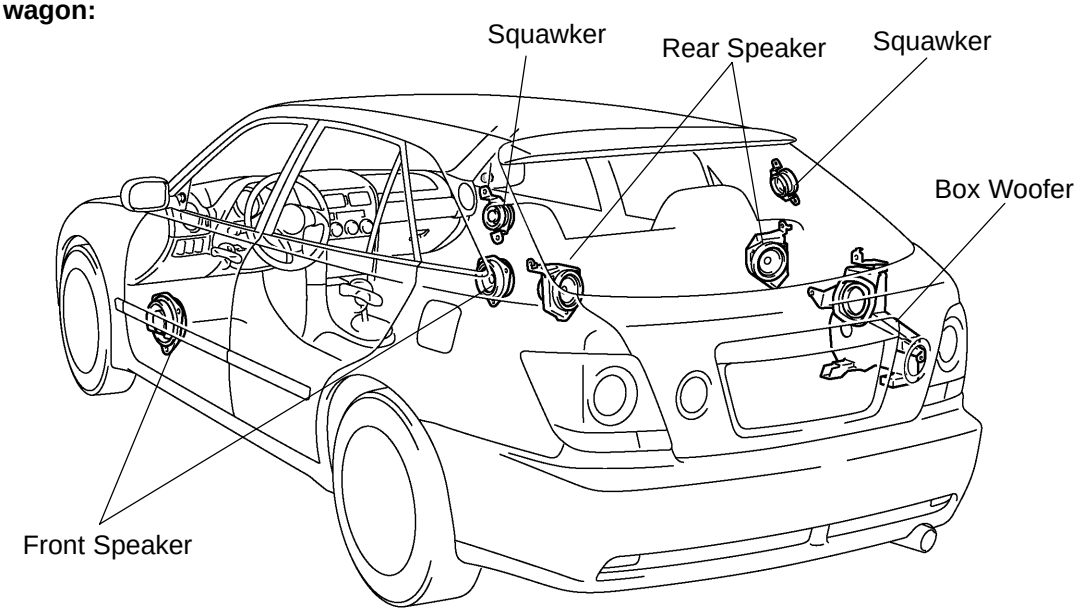
wagon:



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BE16M-07

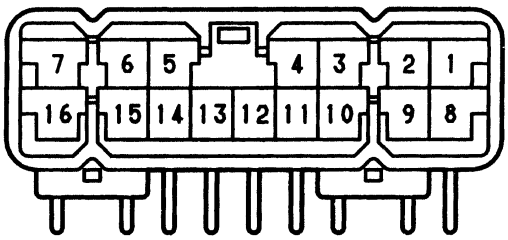
INSPECTION

1. INSPECT POWER AMPLIFIER CIRCUIT

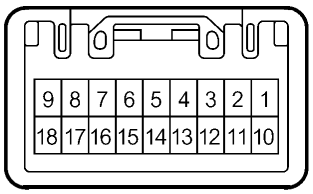
Connect the connector from power amplifier and inspect the connector on the wire harness side.

Power amplifier side

Connector "A"



Connector "B"



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Tester connection	Condition	Specified condition
A1 - Ground (FL+)	Audio sounding	5 - 7 V
A2 - Ground (FR+)	Audio sounding	5 - 7 V
A3 - Ground (RL+)	Audio sounding	5 - 7 V
A4 - Ground (WL+)	Audio sounding	5 - 7 V
A5 - Ground (RR+)	Audio sounding	5 - 7 V
A6 - Ground (WR+)	Audio sounding	5 - 7 V
A7 - Ground (BU+)	Audio sounding	Battery voltage
A8 - Ground (FL-)	Audio sounding	5 - 7 V
A9 - Ground (FR-)	Audio sounding	5 - 7 V
A10 - Ground (RL-)	Audio sounding	5 - 7 V
A11 - Ground (WL-)	Audio sounding	5 - 7 V
A12 - Ground (GND)	Constant	Continuity
A14 - Ground (RR-)	Audio sounding	5 - 7 V
A15 - Ground (WR-)	Audio sounding	5 - 7 V
A16 - Ground (ACC)	Ignition switch ACC	Battery voltage
B1 - Ground (TX+)	Constant	Battery voltage
B2 - Ground (CTX+)	Radio power switch ON	Battery voltage

B5 - Ground (N-MUTE)	Audio sounding	Battery voltage
B6 - Ground (T-MUTE)	Audio sounding	Battery voltage
B7 - Ground (MUTE)	Audio sounding	1 V or below
B8 - Ground (L+)	Audio sounding	1 V or below
B9 - Ground (R+)	Audio sounding	1 V or below
B10 - Ground (TX-)	Constant	Continuity
B11 - Ground (CTX-)	Constant	Continuity
B14 - Ground (GND)	Constant	Continuity
B15 - Ground (GND)	Constant	Continuity
B17 - Ground (L-)	Audio sounding	1 V or below
B18 - Ground (R-)	Audio sounding	1 V or below

If the circuit is not as specified, inspect the circuits connected to other parts.

2. INSPECT RADIO RECEIVER ASSEMBLY CIRCUIT

Connect the connectors from the radio receiver assembly, and inspect the connector on the wire harness side.

Radio Receiver Side

N

I15534

Tester connection	Condition	Specified condition
A1 - Ground (B)	Constant	Battery Positive Voltage
A2 - Ground (ILL+)	Light switch ON	Battery Positive Voltage
A3 - Ground (AMP)	Ignition switch ACC	10 - 14 V
A7 - Ground (MUTE)	Ignition switch ACC and Audio OFF	1 V or below
A8 - Ground (CDR+)	Audio sounding	Approx. 0.7 V
A9 - Ground (CDL+)	Audio sounding	Approx. 0.7 V
A11 - Ground (ACC)	Ignition switch ACC	Battery Positive Voltage
A12 - Ground (ILL-)	Light switch ON	0 - 14 V (Variable)
A13 - Ground (ANT)	Radio power switch ON	Battery Positive Voltage
A16 - Ground (SGND)	Constant	Continuity
A18 - Ground (CDR-)	Audio sounding	Approx. 0.7 V
A19 - Ground (CDL-)	Audio sounding	Approx. 0.7 V
A20 - Ground (E)	Constant	Continuity
B9 - Ground (TX-)	System check mode	-
B10 - Ground (TX+)	System check mode	-

*: w/ LEXUS navigation system

If the circuit is not as specified, inspect the circuits connected to other parts.

HINT:
Check the wire harness between radio receiver assembly and power amplifier.

3. INSPECT GLASS IMPRINTED ANTENNA

Use same procedure as for ”INSPECT DEFOGGER WIRES” on page BE-102 .

4. REPAIR GLASS IMPRINTED ANTENNA

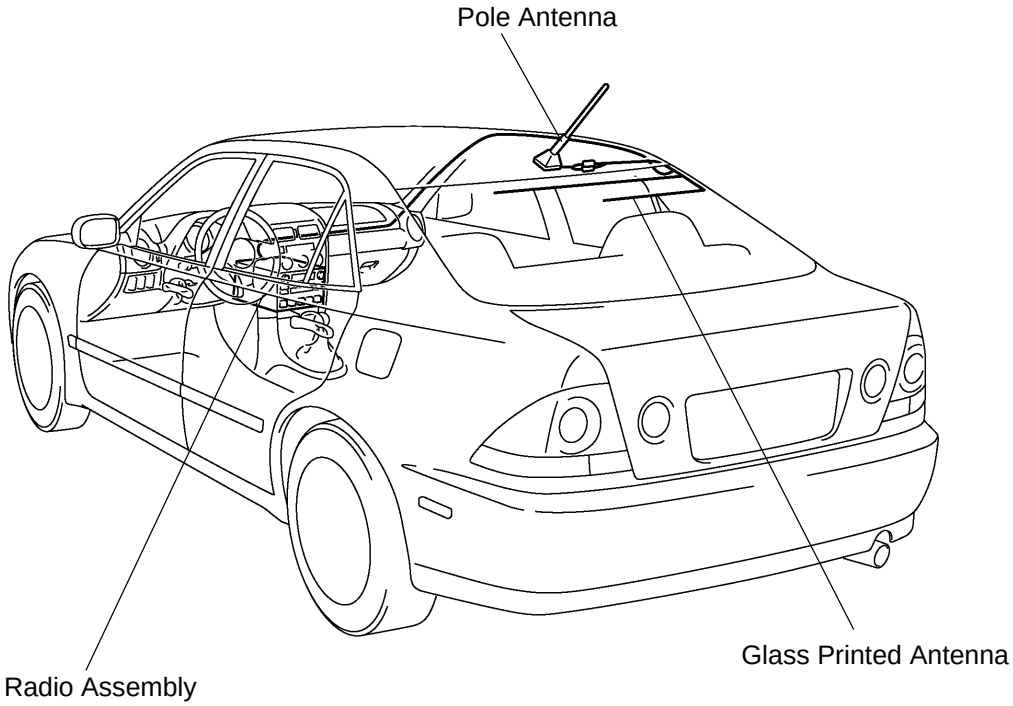
Use same procedure as for ”REPAIR DEFOGGER WIRES” on page BE-102 .

ANTENNA

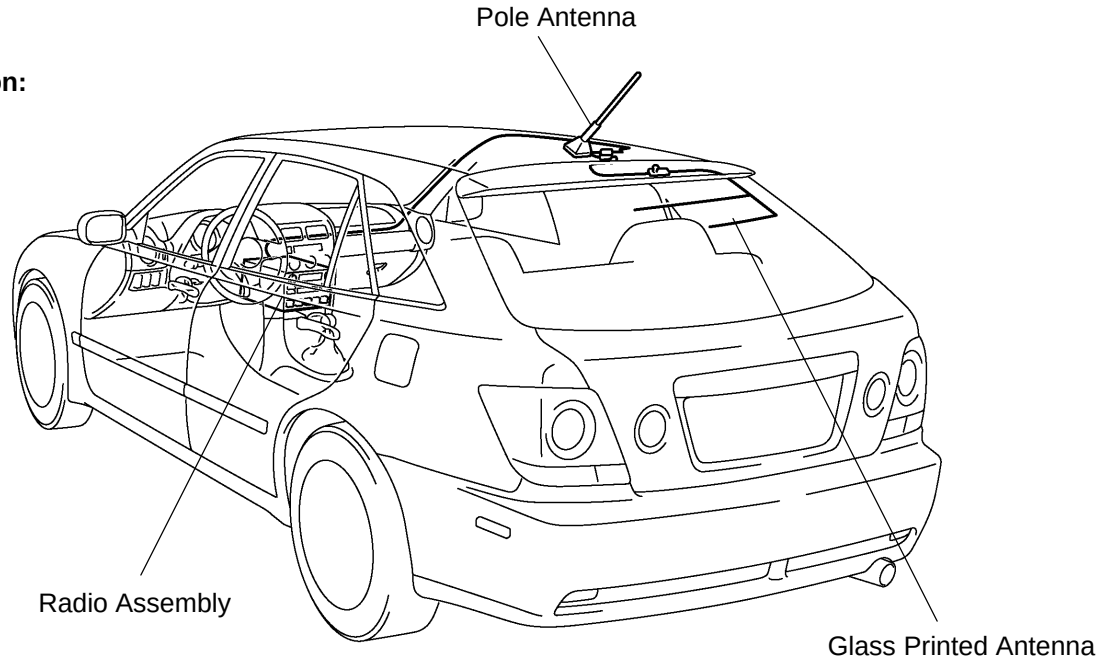
LOCATION

BE16N-04

Sedan:



Wagon:



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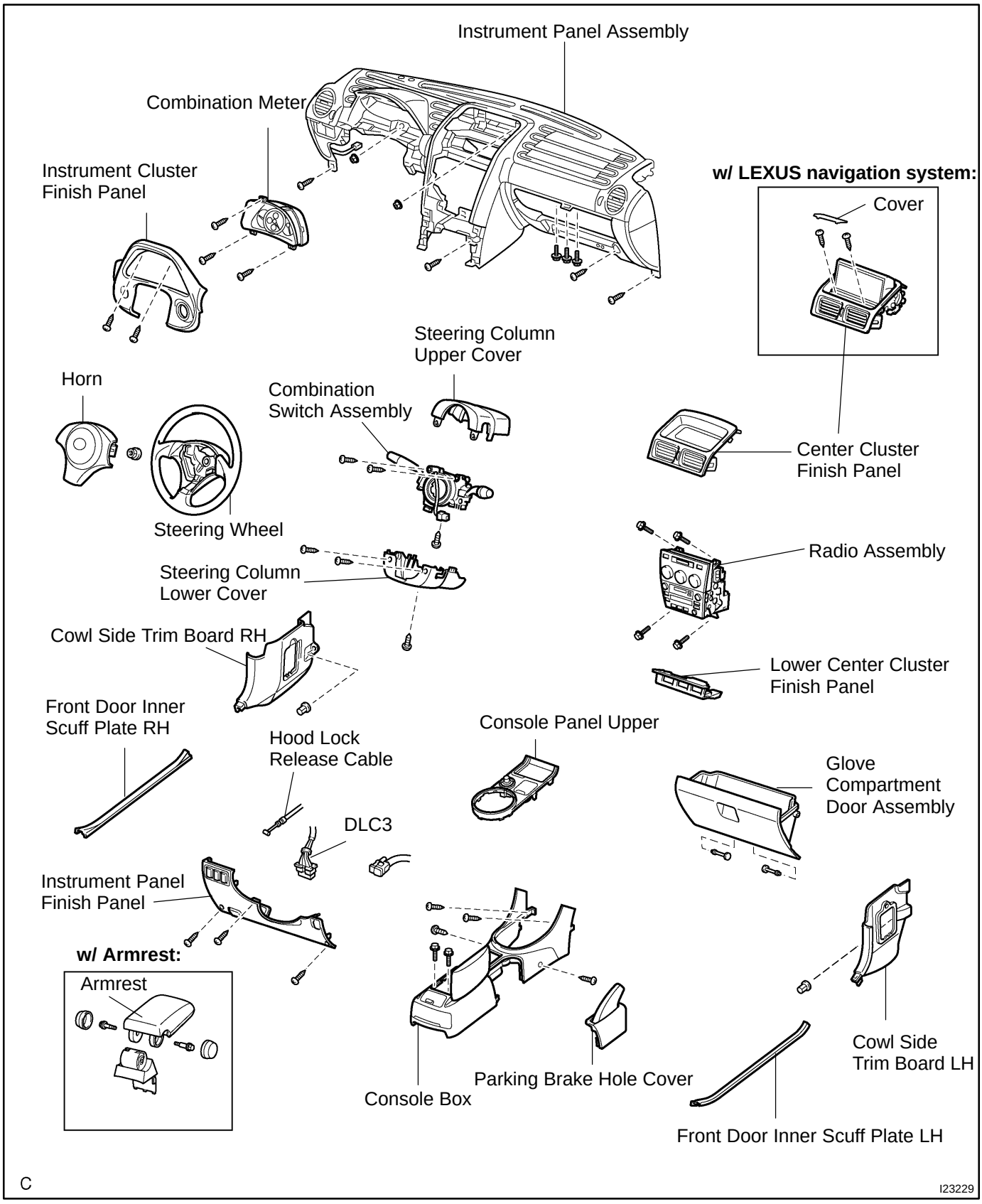
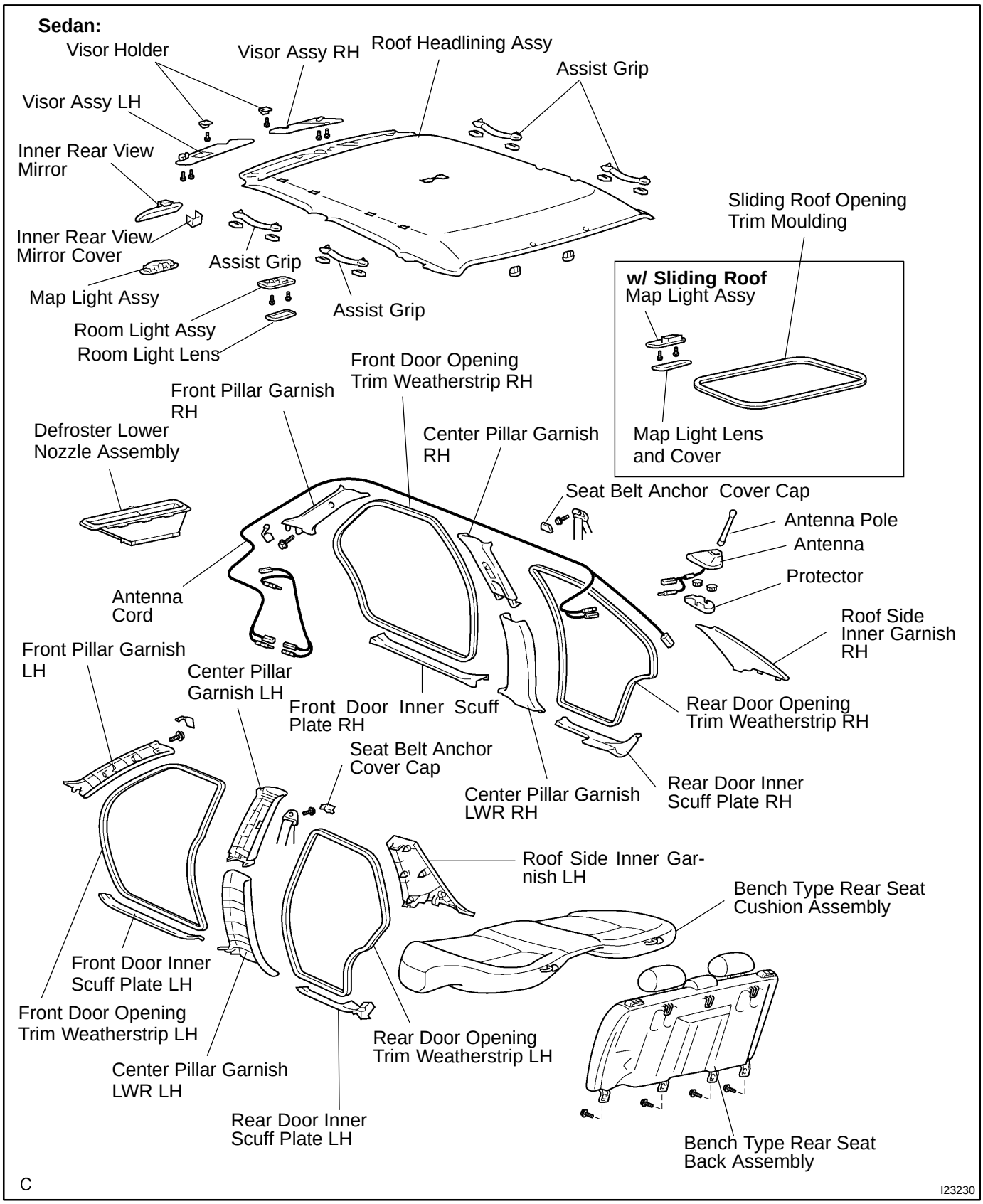
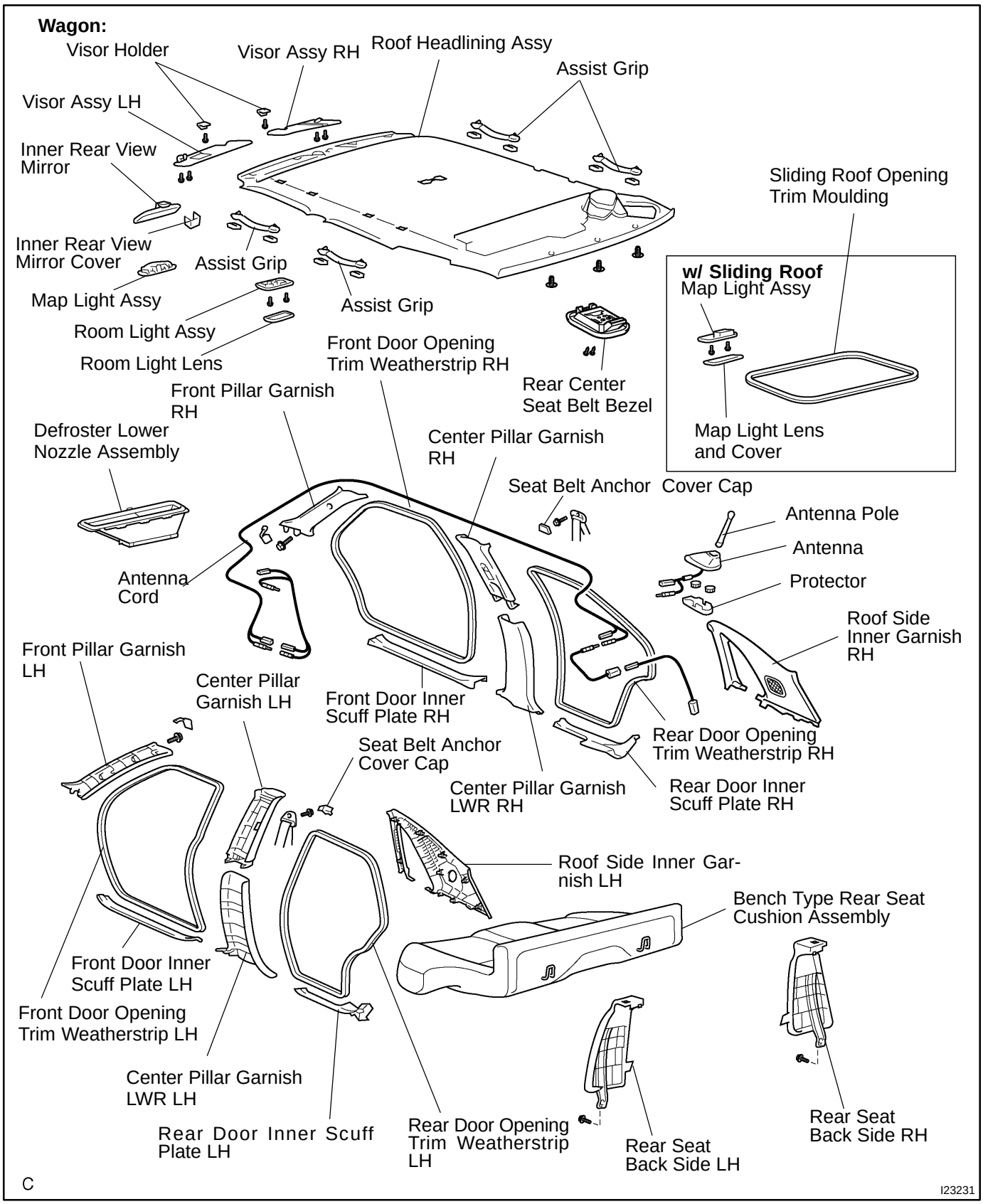
BE2AA-01

COMPONENTS




Sedan:
Visor Holder
Visor Assy RH
Roof Headlining Assy
Assist Grip
Visor Assy LH
Inner Rear View Mirror
Sliding Roof Opening Trim Moulding
Inner Rear View Mirror Cover
Assist Grip
w/ Sliding Roof
Map Light Assy
Map Light Assy
Assist Grip
Room Light Assy
Room Light Lens
Front Door Opening Trim Weatherstrip RH
Front Pillar Garnish RH
Defroster Lower Nozzle Assembly
Center Pillar Garnish RH
Map Light Lens and Cover
Seat Belt Anchor Cover Cap
Antenna Pole
Antenna
Protector
Antenna Cord
Roof Side Inner Garnish RH
Front Pillar Garnish LH
Center Pillar Garnish LH
Front Door Inner Scuff Plate RH
Rear Door Opening Trim Weatherstrip RH
Seat Belt Anchor Cover Cap
Center Pillar Garnish LWR RH
Rear Door Inner Scuff Plate RH
Roof Side Inner Garnish LH
Bench Type Rear Seat Cushion Assembly
Front Door Inner Scuff Plate LH
Front Door Opening Trim Weatherstrip LH
Rear Door Opening Trim Weatherstrip LH
Center Pillar Garnish LWR LH
Rear Door Inner Scuff Plate LH
Bench Type Rear Seat Back Assembly
C
I23230


Wagon:
Visor Holder
Visor Assy RH
Roof Headlining Assy
Assist Grip
Visor Assy LH
Inner Rear View Mirror
Sliding Roof Opening Trim Moulding
Inner Rear View Mirror Cover
Assist Grip
w/ Sliding Roof
Map Light Assy
Map Light Assy
Assist Grip
Room Light Assy
Room Light Lens
Front Door Opening Trim Weatherstrip RH
Rear Center Seat Belt Bezel
Front Pillar Garnish RH
Defroster Lower Nozzle Assembly
Center Pillar Garnish RH
Seat Belt Anchor Cover Cap
Map Light Lens and Cover
Antenna Pole
Antenna
Protector
Antenna Cord
Roof Side Inner Garnish RH
Front Pillar Garnish LH
Center Pillar Garnish LH
Front Door Inner Scuff Plate RH
Rear Door Opening Trim Weatherstrip RH
Seat Belt Anchor Cover Cap
Center Pillar Garnish LWR RH
Rear Door Inner Scuff Plate RH
Roof Side Inner Garnish LH
Bench Type Rear Seat Cushion Assembly
Front Door Inner Scuff Plate LH
Front Door Opening Trim Weatherstrip LH
Center Pillar Garnish LWR LH
Rear Door Inner Scuff Plate LH
Rear Door Opening Trim Weatherstrip LH
Rear Seat Back Side LH
Rear Seat Back Side RH
C
I23231

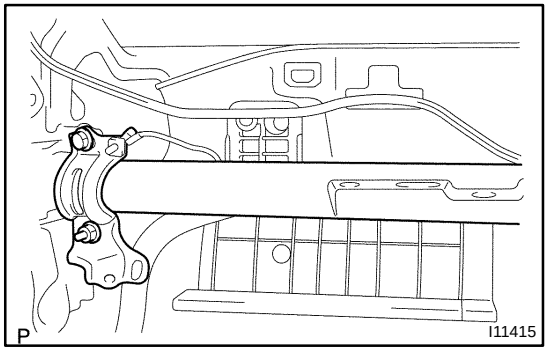
BE16P-02

REMOVAL

HINT:

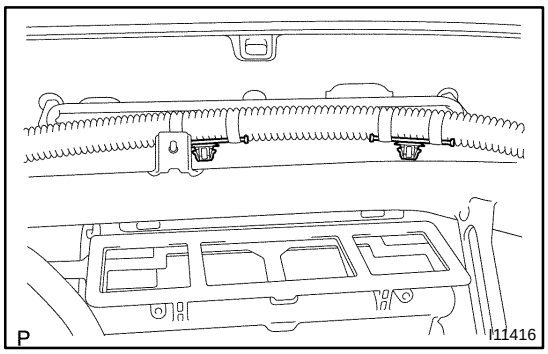
Installation is in the reverse order of removal.

1. **REMOVE INSTRUMENT CLUSTER FINISH PANEL CENTER**
2. **REMOVE INSTRUMENT CLUSTER FINISH PANEL CENTER LOWER**
3. **REMOVE AIR CONDITIONER ASSEMBLY**
4. **REMOVE CONSOLE PANEL UPPER**
5. **REMOVE PARKING BRAKE HOLE COVER**
6. **REMOVE CONSOLE BOX**
7. **REMOVE GLOVE COMPARTMENT DOOR ASSEMBLY**
8. **REMOVE HORN BUTTON**
9. **REMOVE STEERING WHEEL**
10. **REMOVE STEERING COLUMN LOWER COVER**
11. **REMOVE STEERING COLUMN UPPER COVER**
12. **REMOVE TURN SIGNAL SWITCH ASSEMBLY**
13. **REMOVE INSTRUMENT PANEL FINISH PANEL LOWER**
14. **REMOVE INSTRUMENT CLUSTER FINISH PANEL**
15. **REMOVE COMBINATION METER**
16. **REMOVE FRONT DOOR INNER SCUFF PLATE RH**
17. **REMOVE FRONT DOOR INNER SCUFF PLATE LH**
18. **REMOVE COWL SIDE TRIM BOARD RH**
19. **REMOVE COWL SIDE TRIM BOARD LH**
20. **REMOVE FRONT DOOR OPENING TRIM WEATHERSTRIP RH**
21. **REMOVE FRONT DOOR OPENING TRIM WEATHERSTRIP LH**
22. **REMOVE FRONT PILLAR GARNISH RH**
23. **REMOVE FRONT PILLAR GARNISH LH**
24. **DISCONNECT PASSENGER AIRBAG CONNECTOR**
25. **REMOVE INSTRUMENT PANEL ASSEMBLY**



26. **REMOVE INSTRUMENT PANEL REINFORCEMENT BRACKET**

Remove the bolt and nut and pull instrument panel reinforcement.



27. REMOVE A PART OF INSTRUMENT PANEL WIRE

Remove the 2 clips and a part of instrument panel wire.

28. REMOVE DEFROSTER LOWER NOZZLE

29. REMOVE BENCH TYPE REAR SEAT CUSHION ASSEMBLY

30. REMOVE BENCH TYPE REAR SEAT BACK ASSEMBLY

31. REMOVE REAR DOOR INNER SCUFF PLATE RH

32. REMOVE REAR DOOR INNER SCUFF PLATE LH

33. REMOVE REAR DOOR OPENING TRIM WEATHER STRIP RH

34. REMOVE REAR DOOR OPENING TRIM WEATHER STRIP LH

35. REMOVE CENTER PILLAR GARNISH LOWER RH

36. REMOVE CENTER PILLAR GARNISH LOWER LH

37. REMOVE SEAT BELT ANCHOR COVER CAP

38. REMOVE FRONT SEAT OUTER BELT ASSEMBLY RH

39. REMOVE FRONT SEAT OUTER BELT ASSEMBLY LH

40. REMOVE CENTER PILLAR GARNISH RH

41. REMOVE CENTER PILLAR GARNISH LH

42. REMOVE ROOF SIDE INNER GARNISH RH

43. REMOVE ROOF SIDE INNER GARNISH LH

44. REMOVE ASSIST GRIP COVER

45. REMOVE ASSIST GRIP

46. REMOVE VISOR ASSEMBLY RH

47. REMOVE VISOR ASSEMBLY LH

48. REMOVE INNER REAR VIEW MIRROR STAY HOLDER COVER

49. REMOVE INNER REAR VIEW MIRROR

50. REMOVE MAP LIGHT ASSEMBLY

51. REMOVE ROOM LIGHT ASSEMBLY

52. w/ Sliding Roof:
REMOVE SLIDING ROOF OPENING TRIM MOULDING

53. REMOVE VISOR HOLDER

54. REMOVE ROOF HEADLINING ASSEMBLY

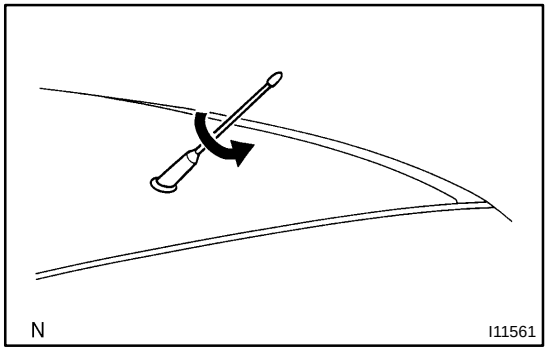
55. REMOVE ANTENNA ASSEMBLY

(a) Remove the 2 nuts and disconnect the connector.

(b) Remove the antenna assembly.

56. REMOVE ANTENNA COED

Remove the clamp and the antenna cord.



57. REMOVE ANTENNA POLE

Turn the antenna pole counterclockwise to remove.

CLOCK

TROUBLESHOOTING

BE0G0-13

HINT:

Troubleshoot the clock according to the table below.

Troubleshooting	No.
Passenger seat belt warning light does not light up.	1
Clock will not operate	1
Clock loses or gains time	2

± 1.5 seconds / day

1. INSPECT CLOCK CIRCUIT (See page DI-1009)

2. TROUBLESHOOTING NO. 1

1	**PASSENGER SEAT BELT WARNING LIGHT DOES NOT OPERATE**
	CLOCK WILL NOT OPERATE

(a) Check that the battery positive voltage is 10 - 16 V.

If voltage is not as specified, replace the battery.

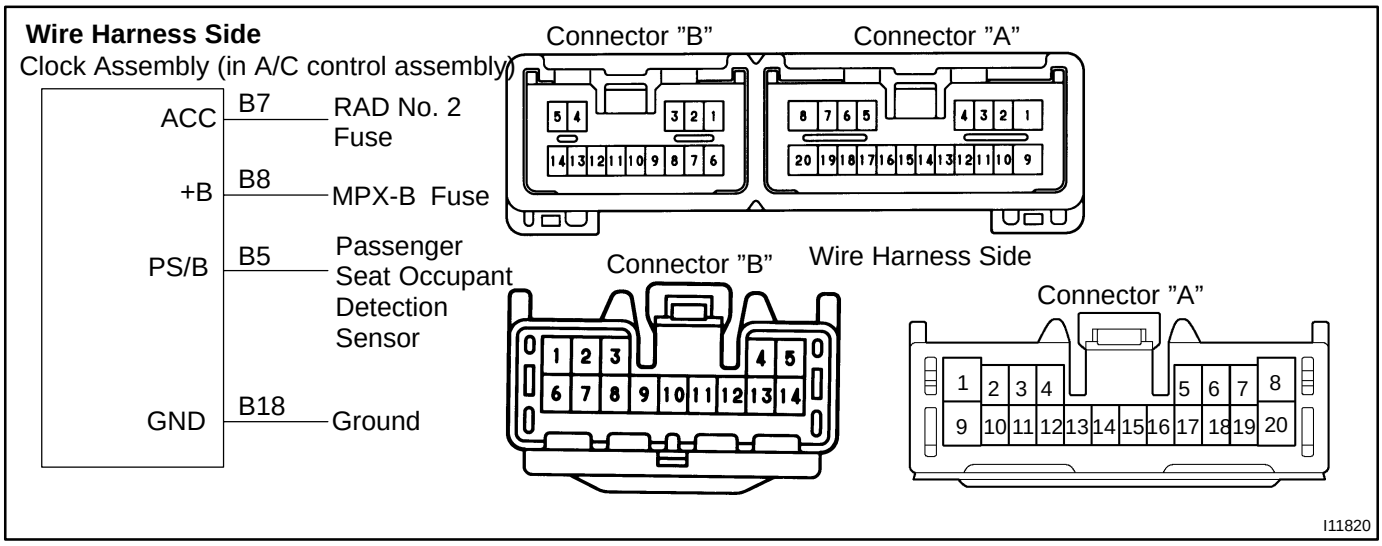
(b) Check that the MPX-B and RAD No. 2 fuses are not blown.

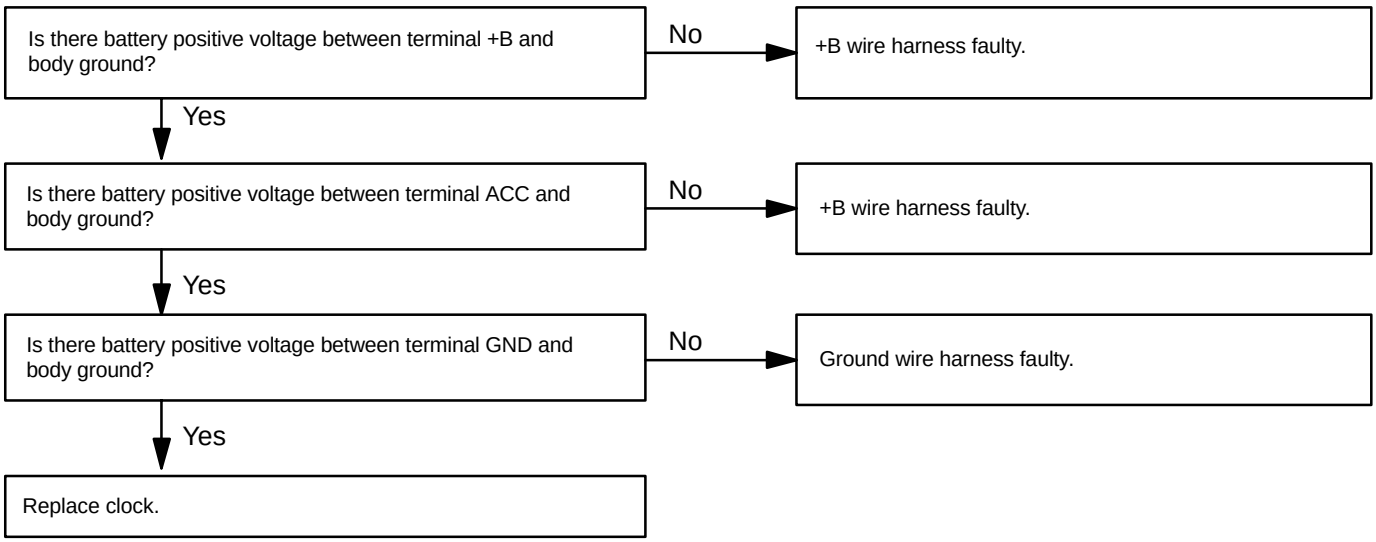
If the fuse is blown, replace the fuse and check for short.

(c) Troubleshoot the clock as follows.

HINT:

Inspect the connector on the wire harness side.





3. TROUBLESHOOTING NO. 2

2	**CLOCK LOSES OR GAINS TIME**

(a) Check that the battery positive voltage is 10 - 16 V.

If voltage is not as specified, replace the battery.

(b) Inspect the error of the clock.

Allowable error (per day): ± 1.5 seconds

If the error exceeds the allowable error, replace the clock.

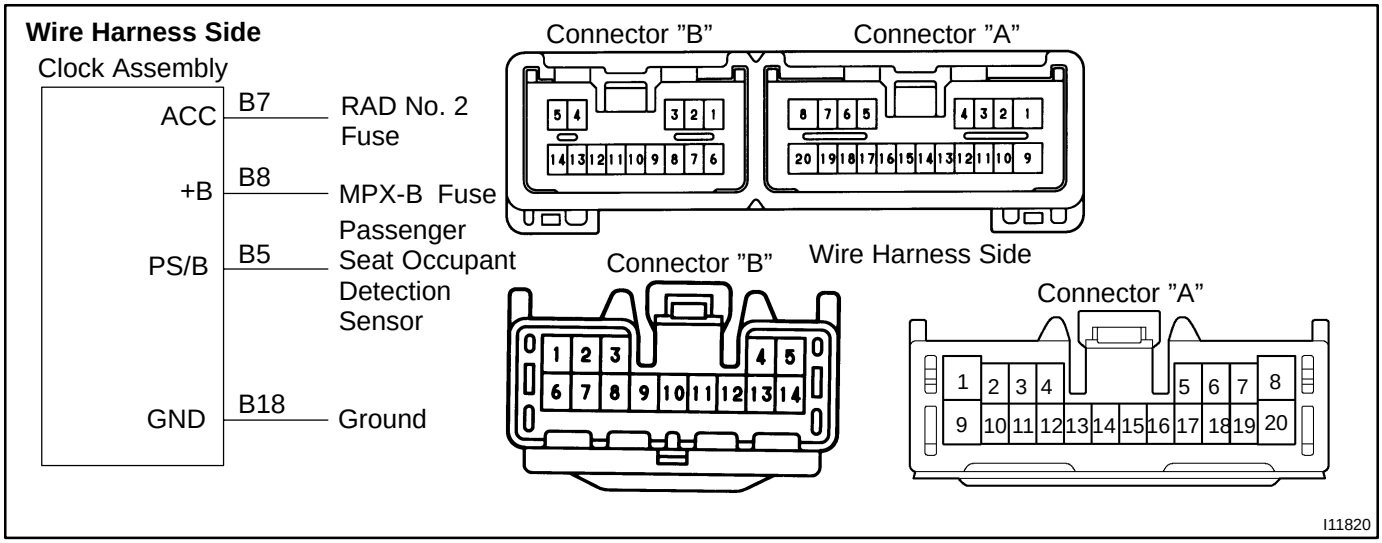
(c) Check that the clock adjusting button is sticking in position and has failed to return.

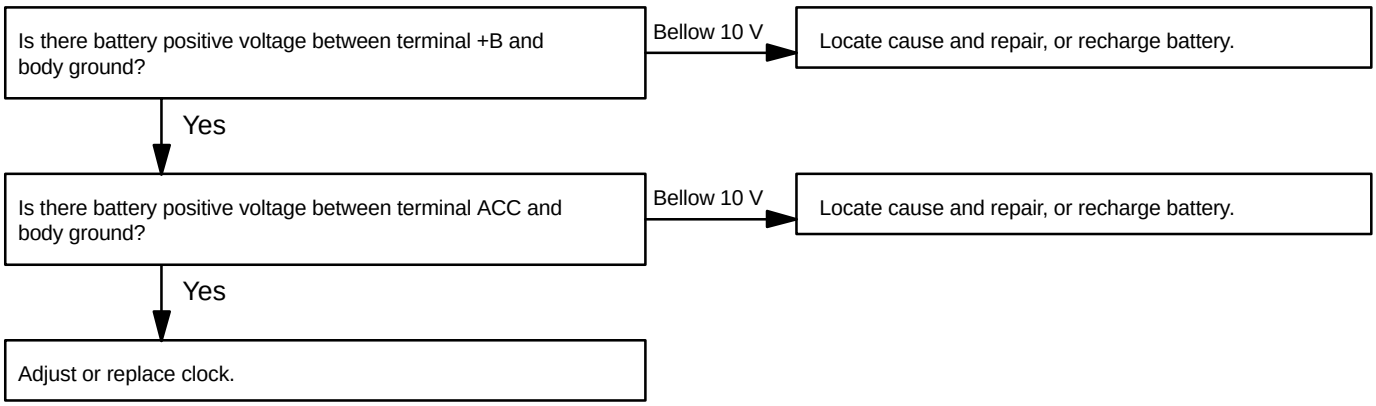
If the error exceeds the allowable error, replace the clock.

(d) Troubleshoot the clock as follows.

HINT:

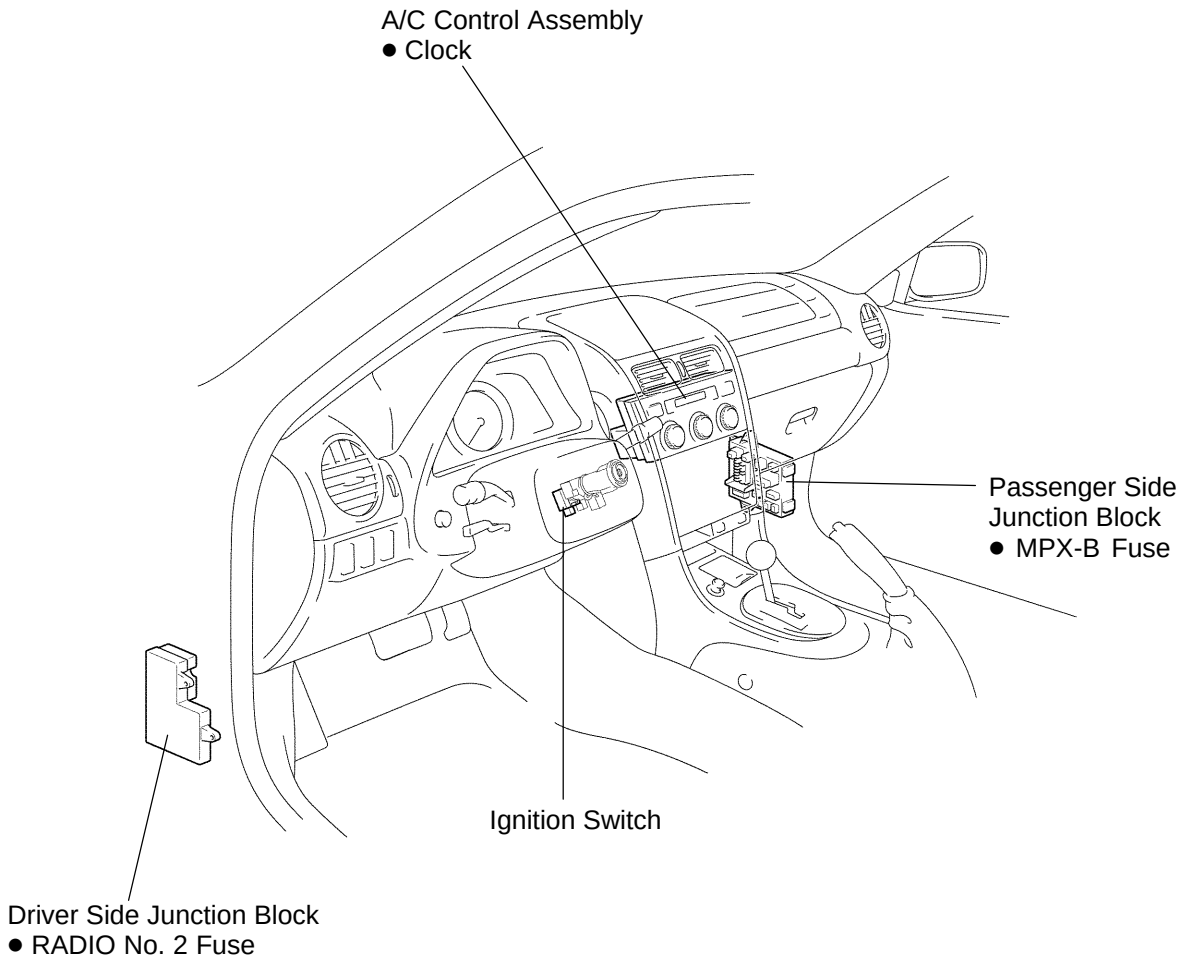
Inspect the connector on the wire harness side.




Is there battery positive voltage between terminal +B and body ground?
Bellow 10 V
Locate cause and repair, or recharge battery.
Yes
Is there battery positive voltage between terminal ACC and body ground?
Bellow 10 V
Locate cause and repair, or recharge battery.
Yes
Adjust or replace clock.

BE0G1-13

LOCATION



I27835

GARAGE DOOR OPENER SYSTEM

BE0L6-04

REGISTRATION PROCEDURE

1. NEW CODE REGISTRATION

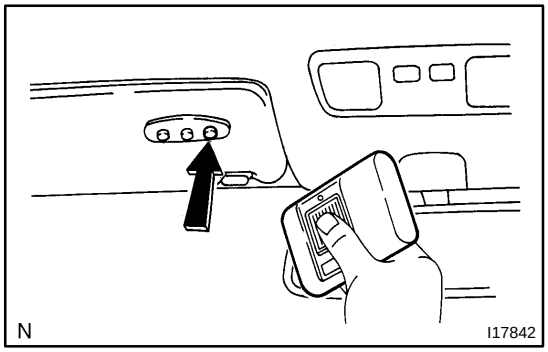
NOTICE:

- **If pressing the switch of the original transmitter to register the code, the system might operate.**
- **When registering the transmitter codes such as for garage or gate, check that there is nobody around those places then register.**

(a) Press the switch for the item to be registered for 20 seconds

HINT:

When transferring to registration mode, LED (red) blinks in 1 Hz cycle.

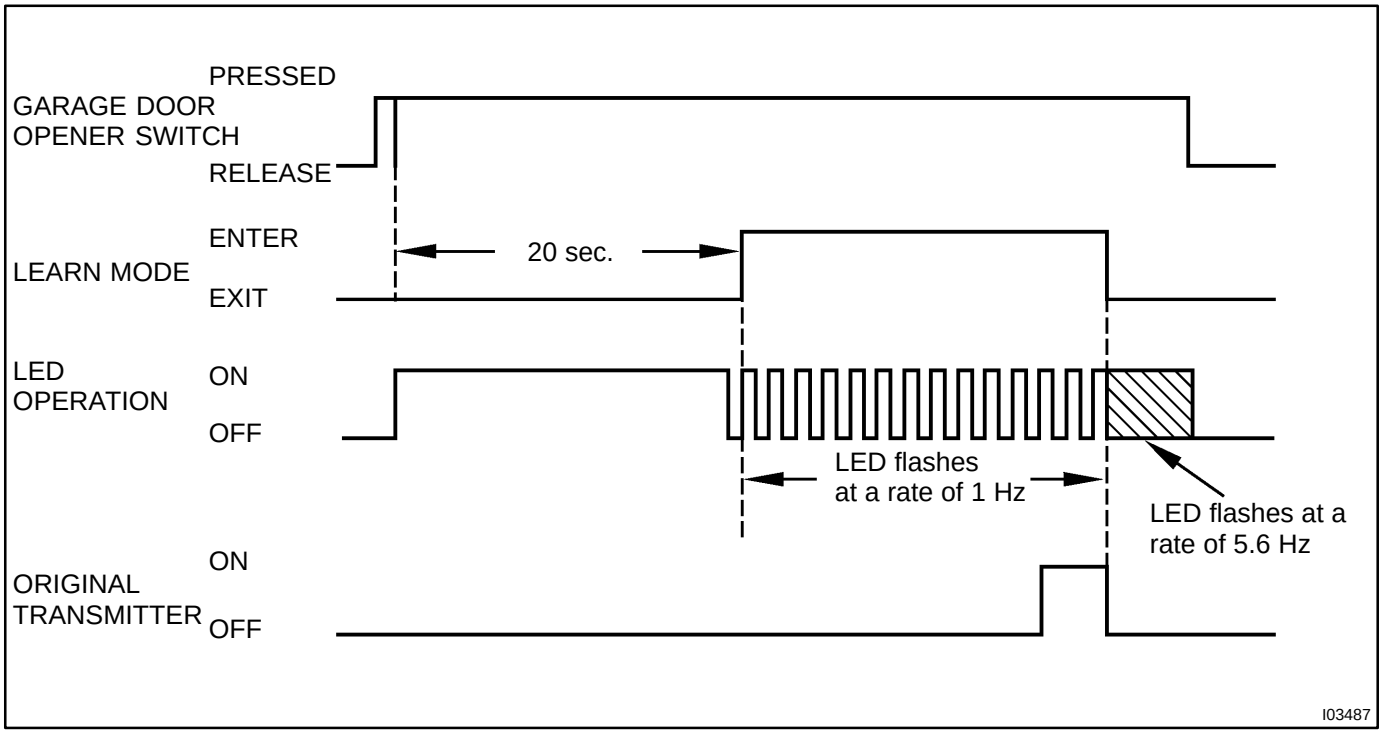


(b) In the condition of (a), bring the original transmitter to within 1-inch area around the garage door opener and press the switch. (code transmitting).

HINT:

When code registration completes correctly, LED (red) blinks in 5.6 Hz cycle.

New code registration timing chart



If a code can not be registered, observe the following conditions.

HINT:

- If the battery of original transmitter is consumed.
- Press the switch of the transmitter repeatedly in registration mode, as some transmitters stop transmitting for 1 to 2 seconds.
- This system is not applicable to the garage door opener which had been made before 1982.

2. CODE DELETION

(a) Press the switches at both ends of garage door opener simultaneously for 20 seconds.

HINT:

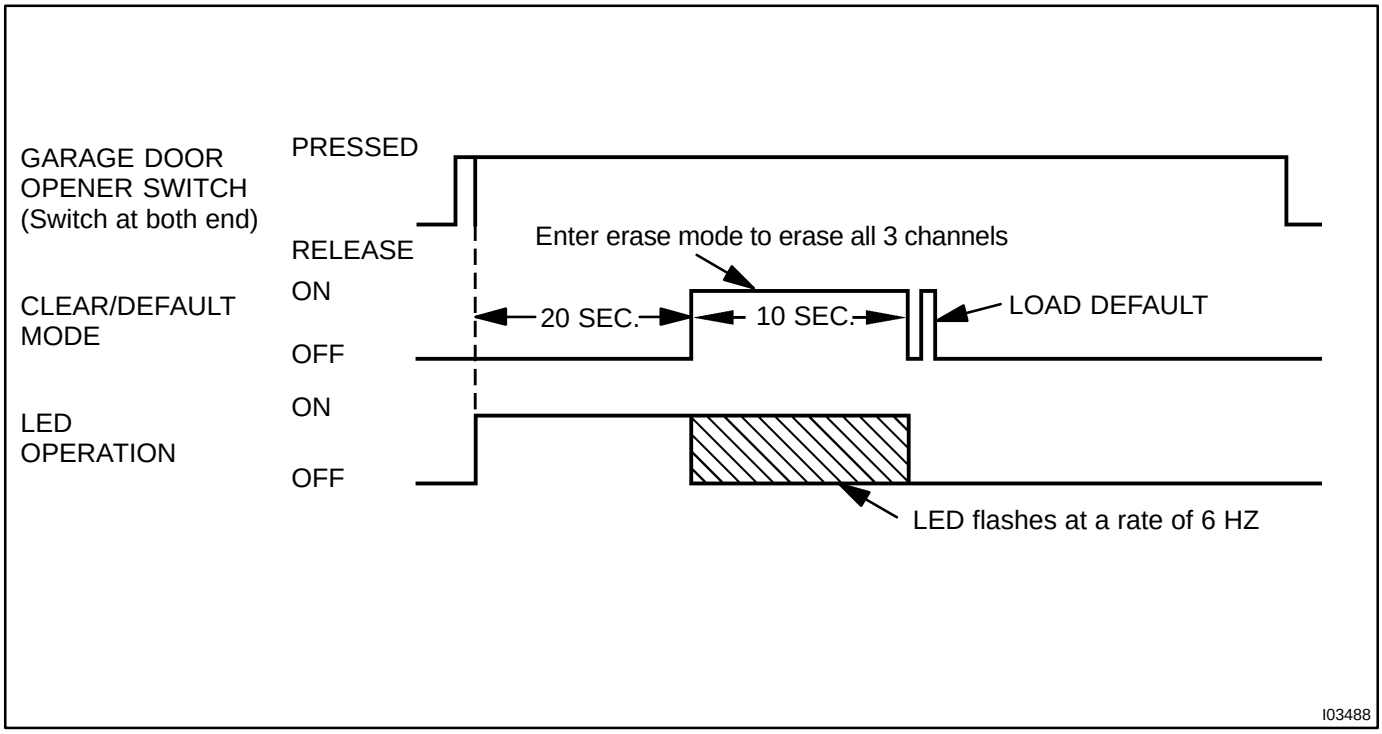
When transferring to deletion mode, LED (red) blinks in 6 Hz cycle.

(b) When releasing the switch within 10 seconds after transferring to deletion mode, all the registered codes will be erased.

HINT:

Press the switch until blinking in 6 Hz cycle stops, so that the default code for check is set.

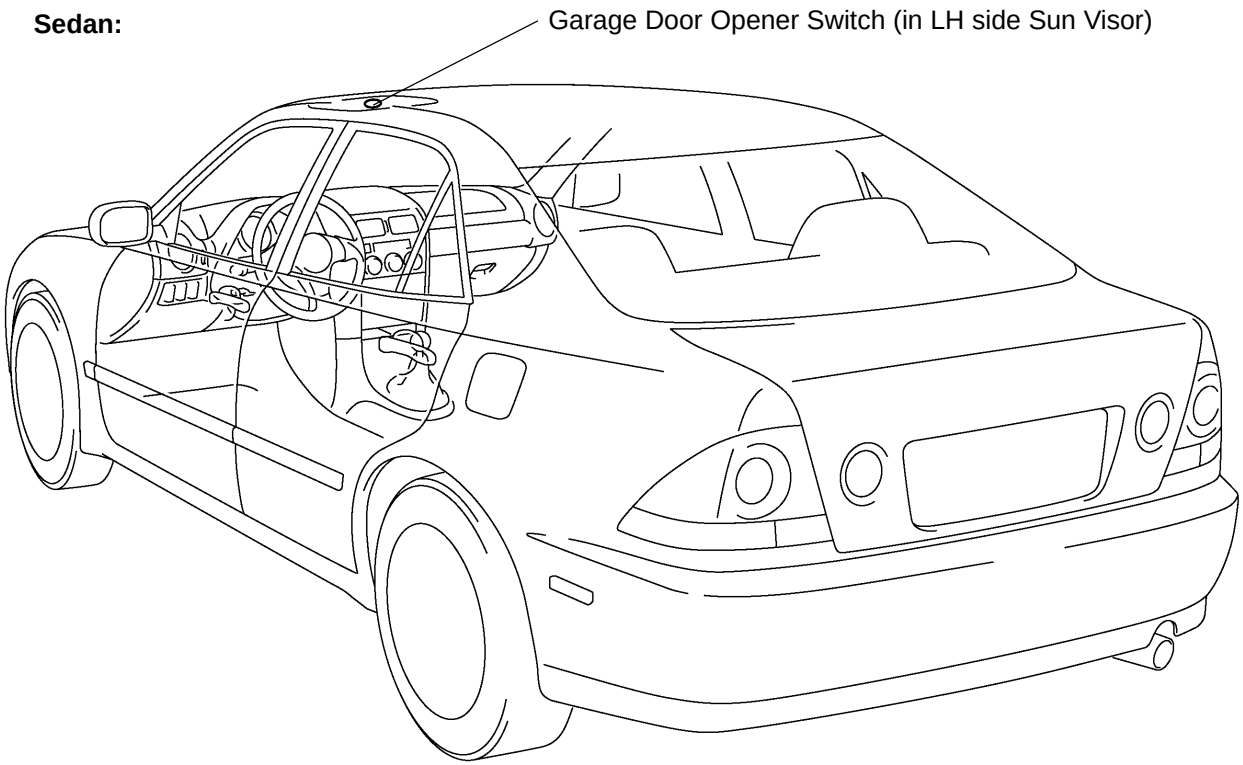
Code deletion timing chart



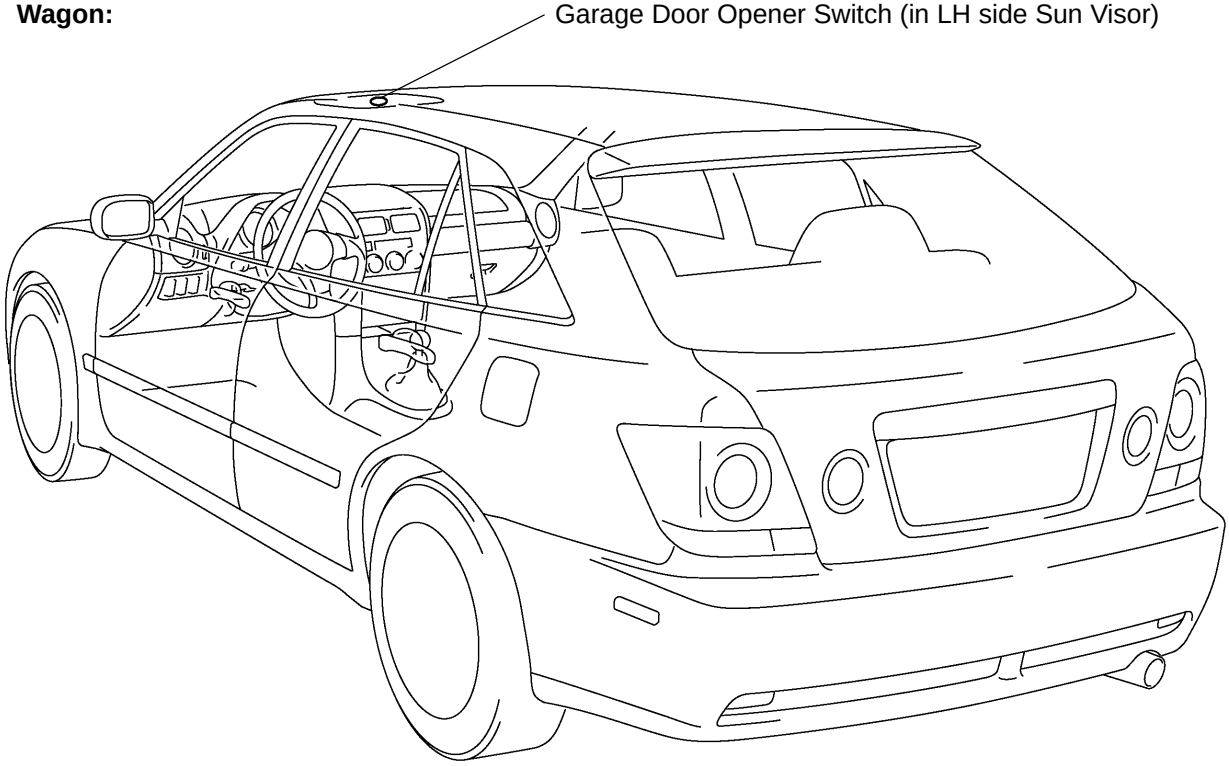
BE0L7-05

LOCATION

Sedan:



Wagon:



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BE0L8-02

REMOVAL

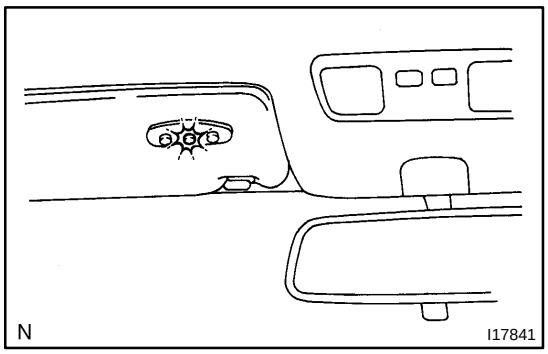
REMOVE LH SIDE SUN VISOR

(a) Remove the 2 screws.

(b) Disconnect the garage door opener switch connector.

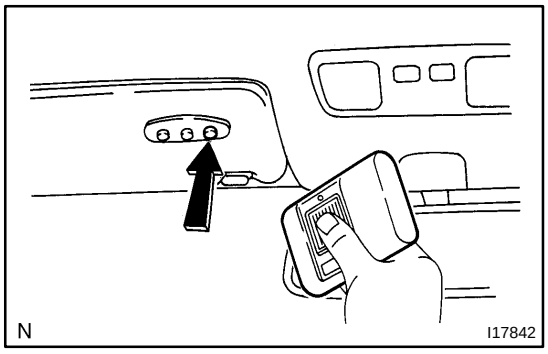
BE0L9-04

INSPECTION



1. INSPECT GARAGE DOOR OPENER

Press the switch and check that each LED (red) lights up.
Even if only one switch is found not to light up, replace it.

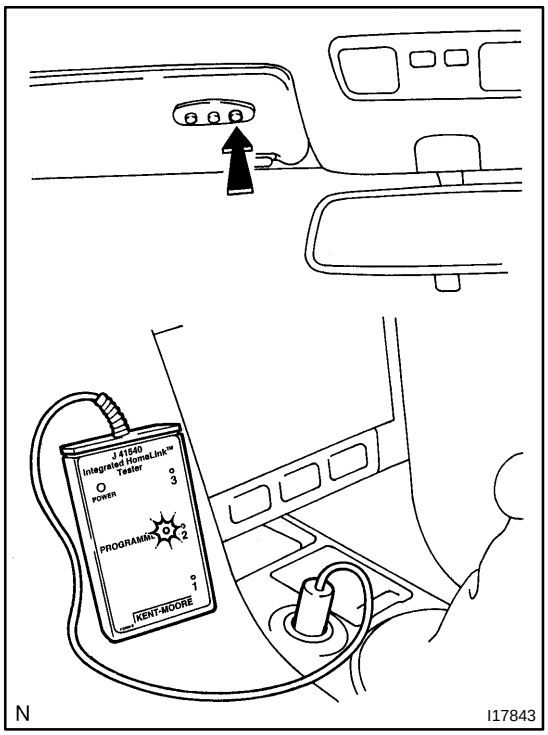


2. INSPECT GARAGE DOOR OPENER REGISTRATION AND TRANSMITTING

HINT:
Use the home link tester made by KENT MORE for this test.
As it is necessary to record the code of the hand held transmitter, customer's code will be erased. When the inspection completes, please register the customer's again.

(a) Check that the code of hand held transmitter for inspection can be recorded.
(See page BE-213)

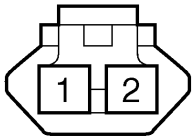
If the code can not be registered, replace garage door opener.



(b) Press the switch which an inspection code has been registered for and check that LED (green) of the home link tester lights up.

If the LED (green) does not light up, replace the garage door opener.

Wire Harness Side



I04287

3. INSPECT GARAGE DOOR OPENER CIRCUIT

Disconnect the connector from the switch and inspect the connector on the wire harness side, as shown.

Tester connection	Condition	Specified condition
2 - Ground	Always	Continuity
1 - Ground	Always	Battery positive voltage

If the circuit is not as specified, inspect the circuits connected to other parts.

BE0LA-02

INSTALLATION

INSTALL GARAGE DOOR OPENER SWITCH

(a) Connect the garage door opener switch connector.

(b) Install the 2 screws and the LH side sun visor.

ENGINE IMMOBILISER SYSTEM

BE27I-02

REGISTRATION PROCEDURE

HINT:

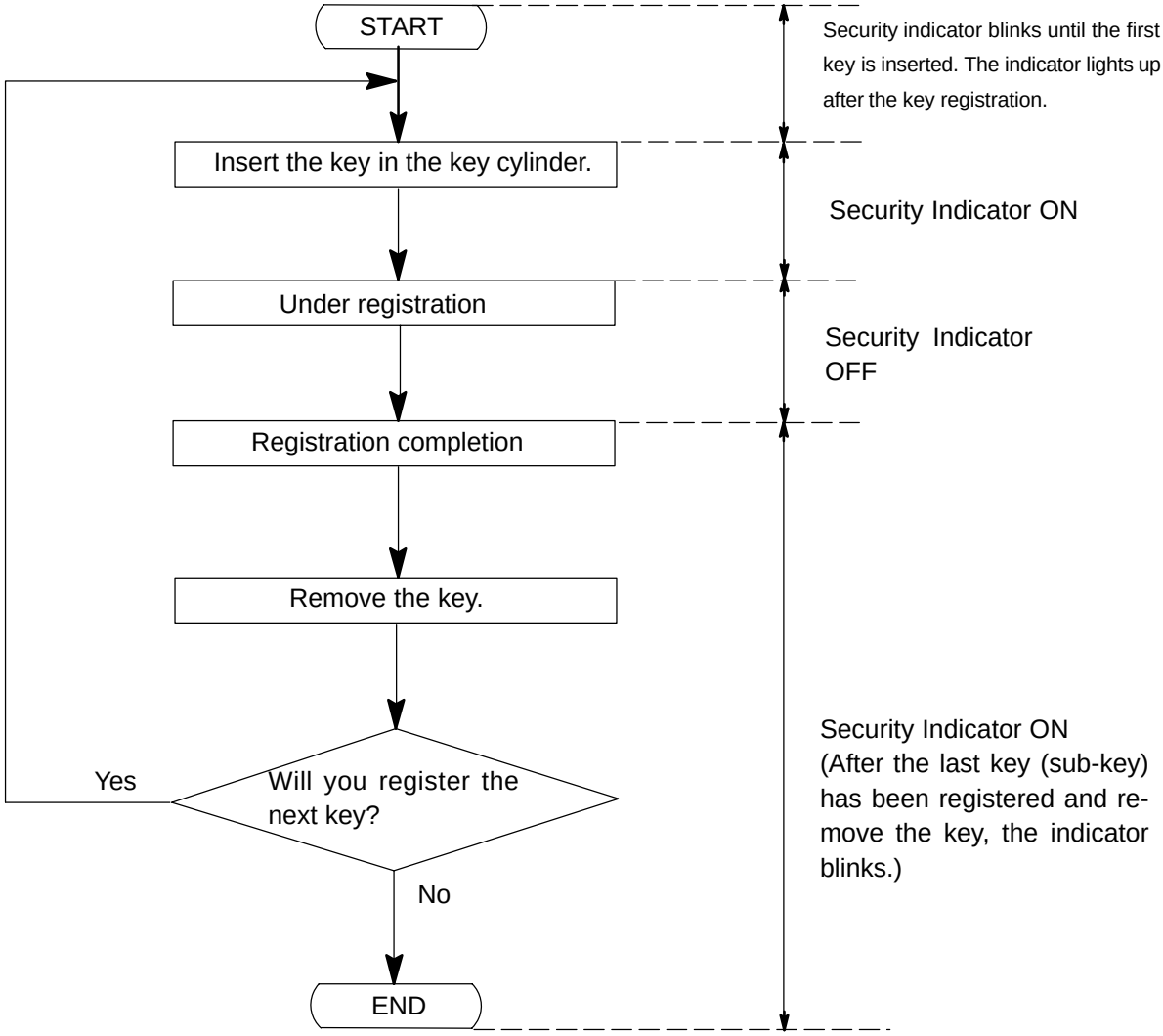
In case of having lost all the already registered master keys, you are not able to do additional registration or deletion. Change the ECM and then must register the new key codes according to the following registration procedure of the automatic registration mode.

1. KEY REGISTRATION IN AUTOMATIC REGISTRATION MODE

(a) Registration of a new transponder key.

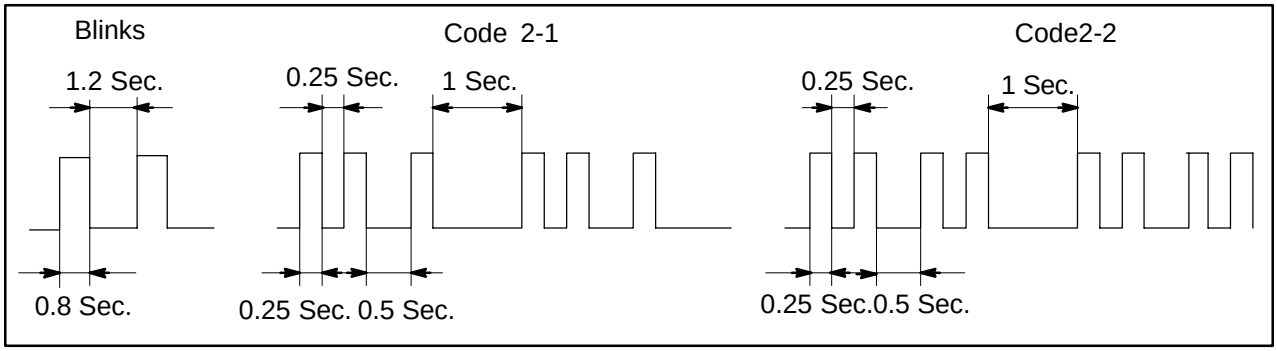
HINT:

- This must be done when you install a new ECM.
- The new ECM is on the automatic key code registration mode. The already fixed number of key codes for this ECM can be registered.
  On this type of vehicle, up to 3 key codes can be registered.
- In the automatic registration mode, the last key registered becomes sub-key.



HINT:

- When a key is not inserted in the key cylinder on the automatic registration mode, the security indicator always lights on.
- When the immobiliser system operates normally and the key is pull out, the security indicator blinks.
- When key code registration could not be performed on the automatic registration mode, code 2-1 is output from the security indicator and when inserting the already registered key, code 2-2 is output.



(b) Automatic registration mode completion

If completing the mode forcibly when more than 1 key code have been registered on the automatic registration mode, perform the following procedures.

After 1 more key code have been registered with master key, perform step (1) or (2) without pulling the key out or inserting the already registered key.

(1) Depress and release brake pedal 5 times or more within 15 sec.

(2) With the hand-held tester, require automatic registration mode completion.

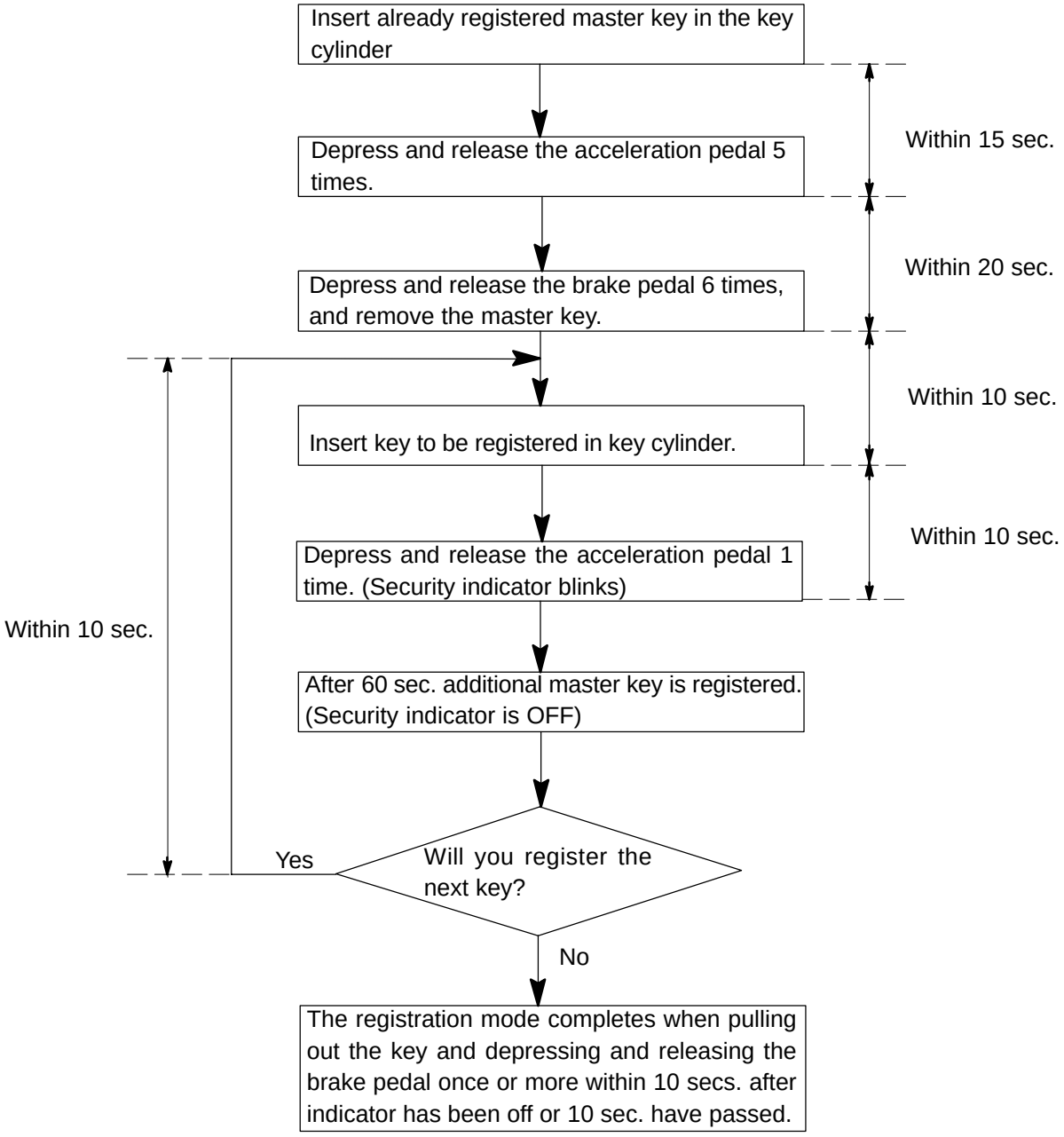
2. REGISTRATION OF ADDITIONAL MASTER KEY

There are 2 ways for registration of additional master key, one way is depressing brake pedal and acceleration pedal and the other way is using hand-held tester.

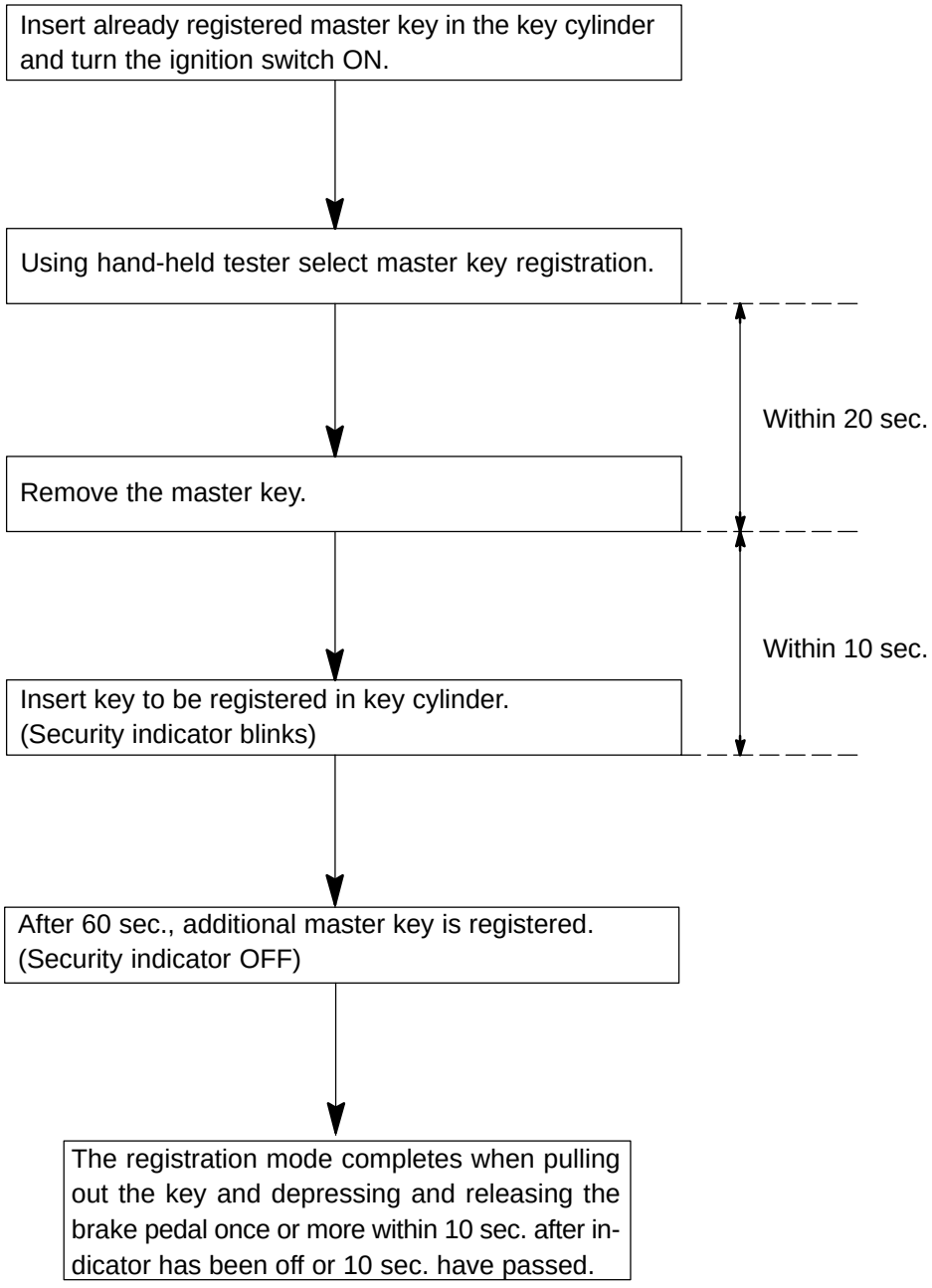
HINT:

- It is possible to register up to 7 master key codes including the already registered key code.
- When any operation time described below is over, registration mode completes.
- When the next procedure is performed while the timer is working, the timer completes counting time, then next timer starts.
- When replacing ”Ignition Cylinder Key Set” or ”Lock Cylinder Set” and register according to the following procedure using the original master key. However, after the registration of the additional master key, as the original master key and the original sub-key is not necessary any more, so erase registration of those key codes.

(1) Depressing brake pedal and acceleration pedal:



(2) Using hand-held tester:



HINT:
Please follow the screen of the hand-held tester for more detailed procedure.

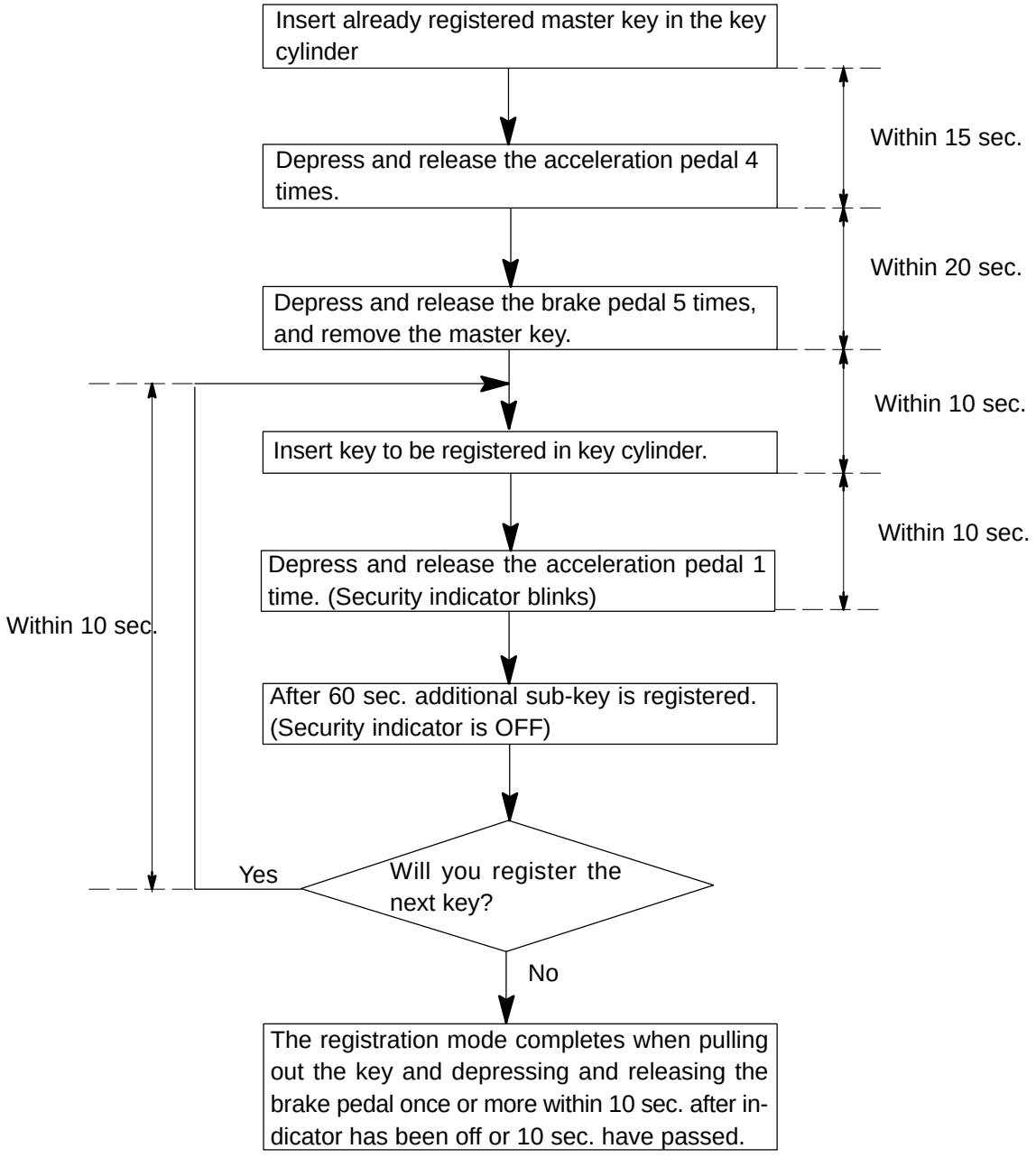
3. REGISTRATION OF ADDITIONAL SUB-KEY

There are 2 ways for registration of additional sub-key, one way is depressing brake pedal and acceleration pedal and the other way is using hand-held tester.

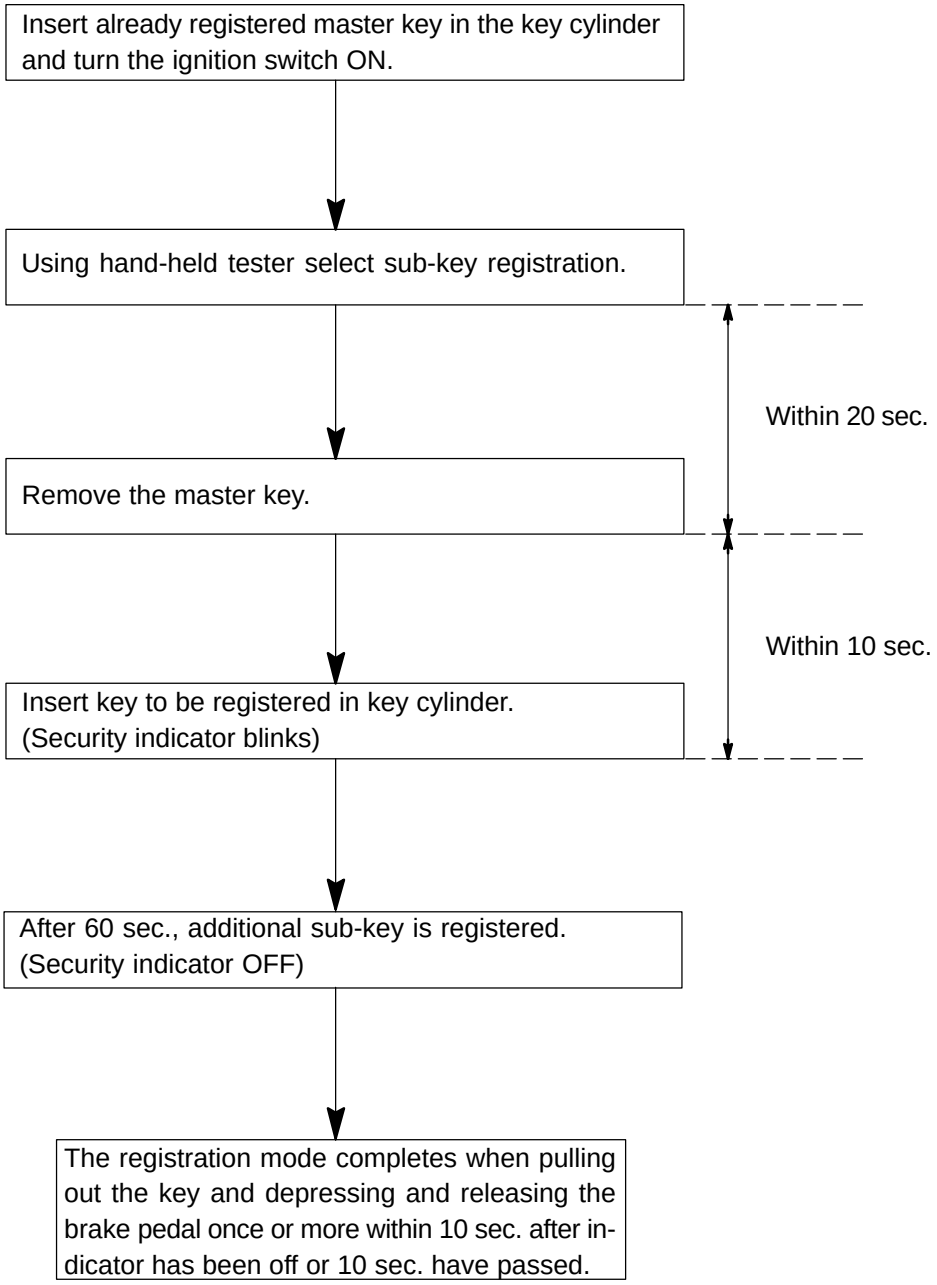
HINT:

- It is possible to register up to 3 sub-key codes including the already registered key code.
- When any operation time described below is over, registration mode completes.
- When the next procedure is performed while the timer is working, the timer completes counting time, then next timer starts.

(1) Depressing brake pedal and acceleration pedal:



(2) Using hand-held tester:



HINT:
Please follow the screen of the hand-held tester for more detailed procedure.

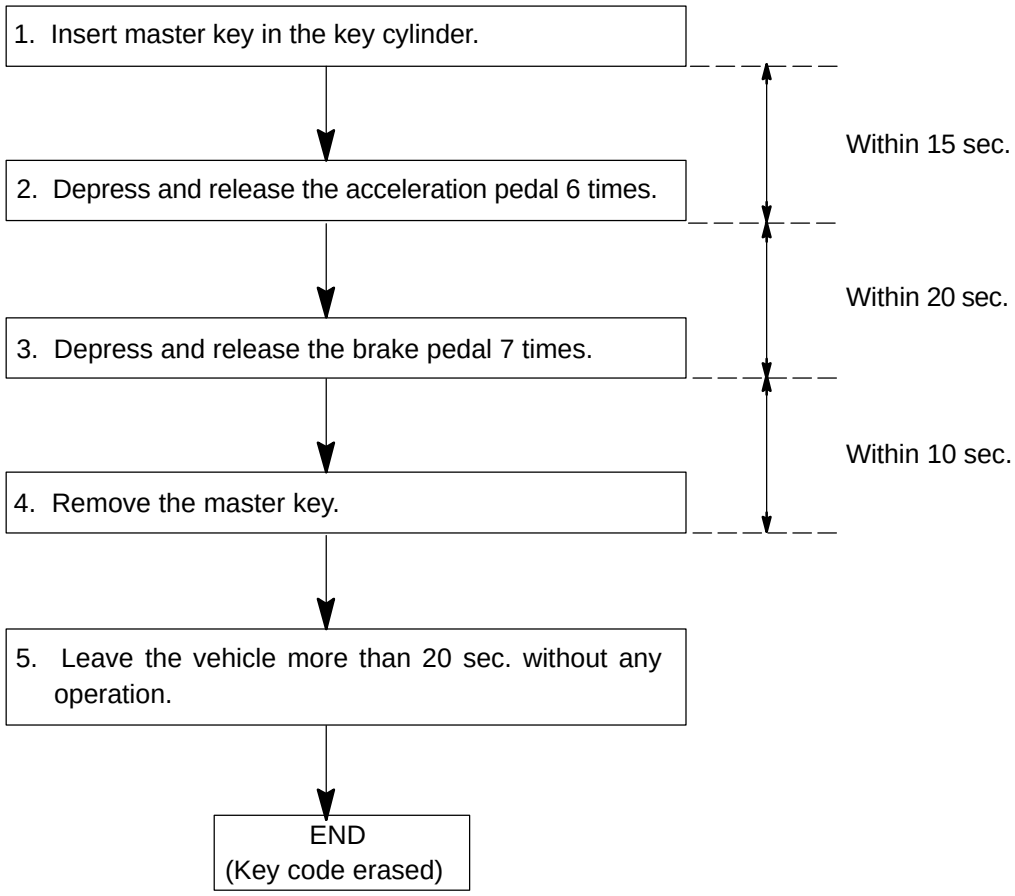
4. ERASURE OF TRANSPONDER KEY CODE

There are 2 ways for erasure of transponder key code, one way is depressing brake pedal and acceleration pedal and the other way is using hand-held tester.

HINT:

- Delete all other master and sub-key codes leaving the master key code to use the operation. When using the key which was used before deletion, it is necessary to register the code again.
- When any operation time described below is over, registration mode completes.
- When the next procedure is performed while the timer is working, the timer completes counting time, then next timer starts.

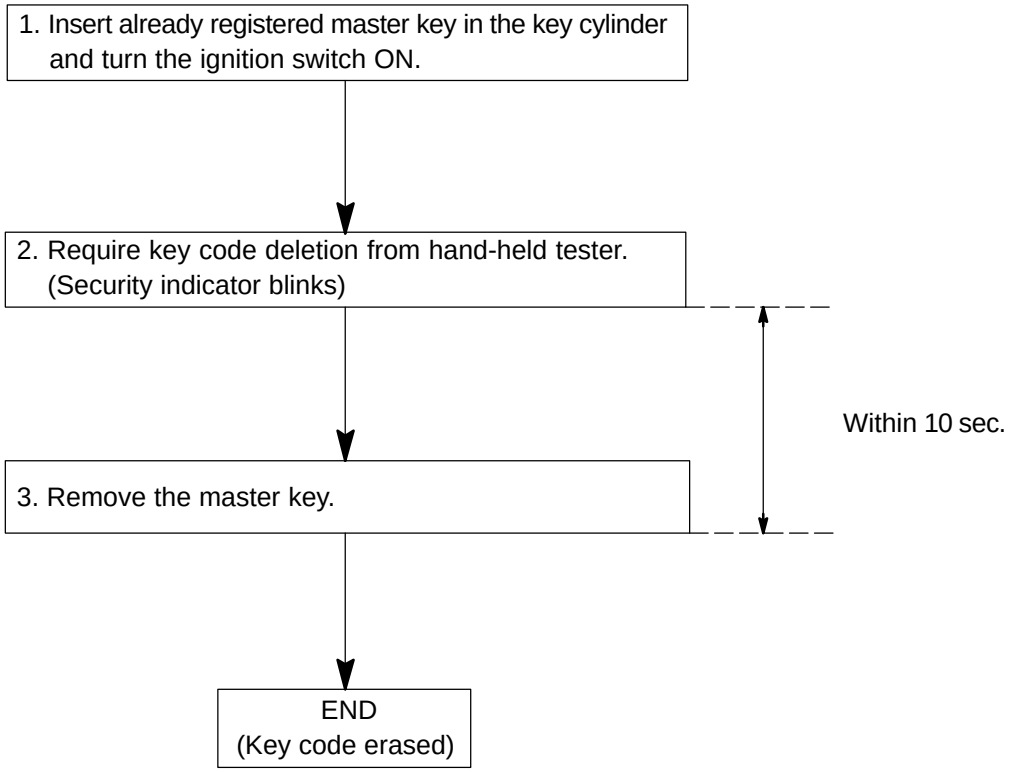
(1) Depressing brake pedal and acceleration pedal:



HINT:

If the key cannot be pulled out within 30 sec. from the first brake depression in the step 3, the key code deletion is canceled.

(2) Using hand-held tester:

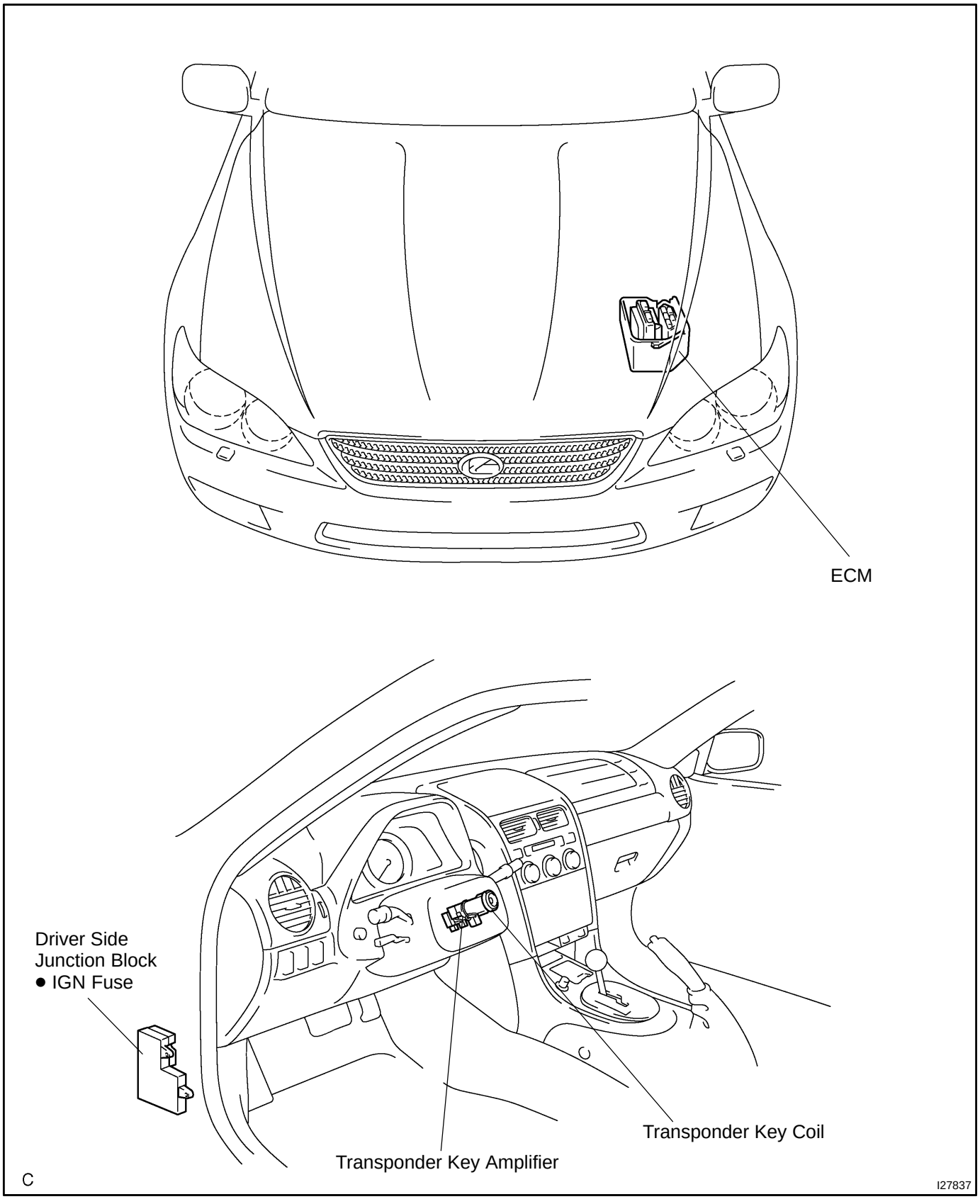


HINT:

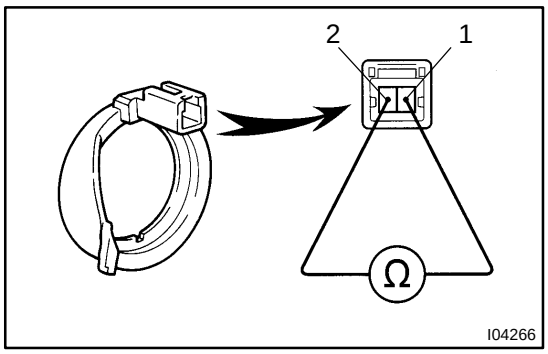
- When the key cannot be pulled out in the step 3, key code deletion is canceled. (Security indicator is OFF.)
- Please follow the screen of the hand-held tester for more detailed procedure.

BE02Q-26

LOCATION



BE0G8-10



INSPECTION

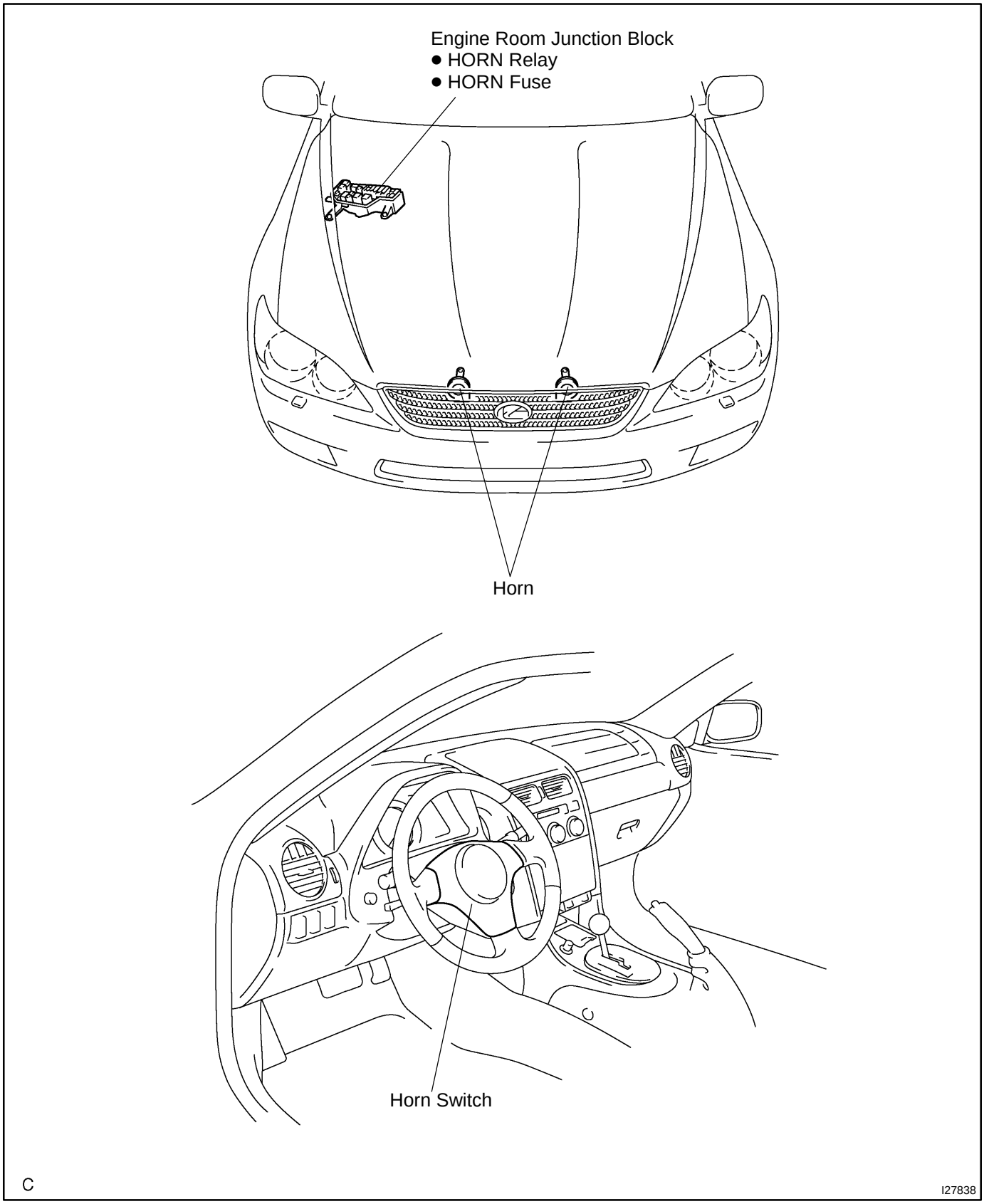
INSPECTION TRANSPONDER KEY COIL CONTINUITY

Check that continuity exists between terminals 1 and 2.
If continuity is not as specified, replace the coil.

HORN SYSTEM

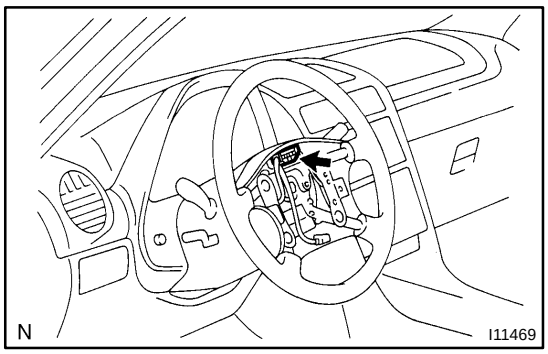
LOCATION

BE0FY-31



BE0FZ-20

INSPECTION

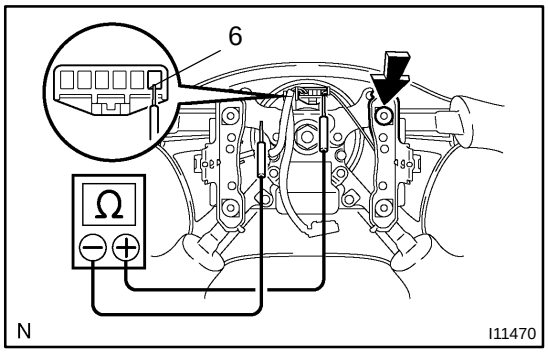


1. INSPECT HORN SWITCH

(a) Disconnect the negative (-) terminal from the battery.
(b) Remove the left and right covers from the steering wheel.
(c) Using a torx socket wrench, loosen the 2 bolts.
(d) Pull up the horn pad and place it on the steering column, as shown.

HINT:
Do not disconnect the connector from the horn pad.

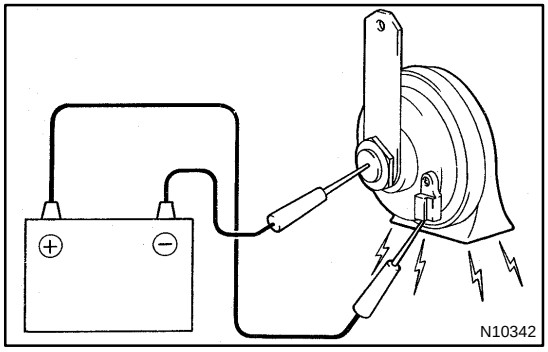
(e) Disconnect the connector from the slip ring.



(f) Check that no continuity exists between terminal 6 of the connector and body ground.
(g) Check that continuity exists between terminal 6 of the connector and body ground when the horn contact plate is pressed against the steering spoke assembly.

If continuity is not as specified, repair or replace the steering wheel or wire harness as necessary.

(h) Install the horn pad in place and using a torx socket wrench, torque the 2 bolts.
Torque: 7.1 N·m (72 kgf·cm, 62 in.·lbf)
(i) Install the left and right covers.
(j) Connect the negative (-) terminal to the battery.

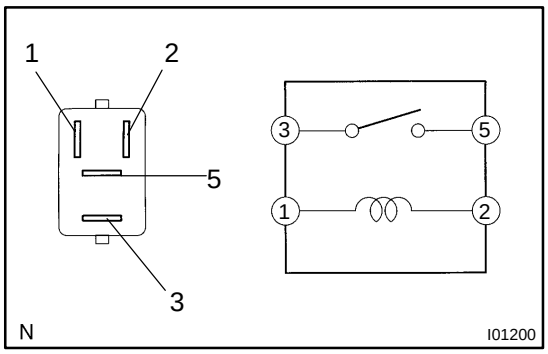


2. INSPECT HORN OPERATION

Connect the positive (+) lead from the battery to the terminal and negative (-) lead to the horn body and check that the horn blows.

If operation is not as specified, replace the horn.

3. INSPECT HORN SWITCH CIRCUIT
(See page DI-800)



4. INSPECT HORN RELAY CONTINUITY

Condition	Tester connection	Specified condition
Always	1 - 2	Continuity
Apply B+ between terminals 1 and 2.	3 - 5	Continuity

If continuity is not as specified, replace the relay.

5. INSPECT HORN RELAY CIRCUIT

(See page DI-800)