BODY ELECTRICAL SYSTEM

BE0DC–01

PRECAUTION

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

1. SUPPLEMENTAL RESTRAINT SYSTEM (SRS)

The Lexus LS400 is equipped with an SRS (Supplemental Restraint System) such as the driver airbag and front passenger airbag. failure to carry out service operation in the correct sequence could cause the SRS to unexpectedly deployed 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 codices in the RS section.

2. COMBINATION METER SYSTEM

The cold cathode tube connectors (Connectors ”N”, ”P” and ”Q”) in the combination meter are charged with high voltage AC current when power is supplied, so do not touch them when they are charged.

3. MICRO COMPUTER PRESET DRIVING POSITION SYSTEM
Power Seat Control System
Power Mirror Control System
Power Tilt and Telescopic Steering System

If the battery negative (–) terminal is disconnected, the preset driving positions stored in memory are erased, so be sure to note the positions and reset them after the battery terminal is reconnected.

4. AUDIO SYSTEM

- If the battery negative (–) terminal is disconnected, the preset AM, FM 1 and FM 2 stations stored in memory are erased, so be sure to not the stations and reset them after the battery terminal is reconnected.
- If the battery negative (–) terminal is disconnected, the ”ANTI–THEFT SYSTEM” will operate when the terminal is reconnected, but the radio, tape player and CD player will not operate. Be sure to input the correct ID number so that the radio, tape player and CD player can be operated again.

5. MOBILE COMMUNICATION SYSTEM

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

6. LIGHTING SYSTEM

- Halogen bulbs have pressurized gas inside and require special handling.
  They can burst or scatter 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 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 not works.

BE0DD–04

TROUBLESHOOTING

PROBLEM SYMPTOMS TABLE

The table below will be useful for you in troubleshooting these electrical problems. The most likely causes of the malfunction are shown in the order of their probability. Inspect each part in the order shown, and replace the part when it is found to be faulty.

POWER OUTLET

Symptom	Suspect Area	See page
Electric power source cannot be taken out of the power outlet	1. Battery 2. RR CIG Fuse (Instrument panel J/B) 3. Wire Harness	

IGNITION 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
Ignition switch is not set to each position.	1. Ignition switch 2. Power source circuit	BE–33 BE–23

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 does not sound when the driver's door is opened with the ignition OFF and key inserted)	1. Key Unlock Warning Switch 2. Door Courtesy Switch 3. Driver Door ECU 4. Multiplex Communication Circuit 5. Body ECU 6. Wire Harness	BE–33 BE–70 DI–727 DI–838 DI–661
Key unlock warning system does not operate. (The buzzer sounds when the ignition key is ACC or ON)	1. Ignition Switch 2. RADIO No.2 Fuse (Instrument Panel J/B) 3. GAUGE Fuse (Instrument Panel J/B) 4. Wire Harness	BE–33

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.

(AUTOMATIC LIGHT CONTROL SYSTEM)

Symptom	Suspect Area	See page
"Automatic light control system" does not operate.	1. ECU–IG Fuse (Instrument Panel J/B) 2. DOME Fuse (Engine Room J/B) 3. Automatic Light Control Sensor 4. Light Control Switch 5. Door Courtesy Switch 6. Body ECU 7. Driver Door ECU 8. Wire Harness	 BE–38 BE–38 BE–70 DI–661 DI–727

(AUTO TURN OFF SYSTEM)

Symptom	Suspect Area	See page
Auto turn–off system does not operate when the driver's door is opened.	1. Drivers Door Courtesy Switch 2. Driver Door ECU 3. Multiplex Communication Circuit 4. Body ECU	BE–70 DI–727 DI–838 DI–661
Headlight and taillight does not come on.	1. Body ECU 2. Wire Harness	DI–661
Headlight and taillight stays on.	1. Body ECU 2. Wire Harness	DI–661

(USA)

Symptom	Suspect Area	See page
Only one headlight comes on. (Headlight main)	1. H–LP Fuse (LH–LWR) (Engine Room No.1 R/B) 2. H–LP Fuse (RH–LWR) (Engine Room No.1 R/B) 3. Headlight Main Bulb 4. *Light Control ECU 5. Wire Harness	BE–38
Only one headlight comes on. (Headlight sub)	1. H–LP Fuse (LH–UPR) (Engine Room J/B) 2. H–LP Fuse (RH–UPR) (Engine Room J/B) 3. Headlight Sub Bulb 4. *Light Control ECU 5. Wire Harness	BE–38
"LO–Beam" does not light.	1. H–LP Fuse (LH–LWR) (Engine Room No.1 R/B) 2. H–LP Fuse (RH–LWR) (Engine Room No.1 R/B) 3. Headlight Dimmer Relay (Engine Room J/B) 4. Headlight Dimmer Switch 5. Headlight Main Bulb 6. *Light Control ECU 7. Wire Harness	BE–38 BE–38 BE–38
"HI–Beam" does not light. (Headlight main and sub)	1. H–LP Fuse (LH–UPR) (Engine Room J/B) 2. H–LP Fuse (RH–UPR) (Engine Room J/B) 3. Headlight Dimmer Relay (Engine Room J/B) 4. Headlight Dimmer Switch 5. *Light Control ECU 6. Wire Harness	BE–38 BE–38 BE–38
"HI–Beam" does not light. (Headlight main or sub)	1. Headlight Main or Sub Bulb 2. *Light Control ECU 3. Wire Harness	BE–38
"Flash" does not light. (Headlight main and sub)	1. H–LP Fuse (LH–UPR) (Engine Room J/B) 2. H–LP Fuse (RH–UPR) (Engine Room J/B) 3. Headlight Dimmer Relay (Engine Room J/B) 4. Headlight Dimmer Switch 5. *Light Control ECU 6. Wire Harness	BE–38 BE–38 BE–38
"Flash" does not light. (Headlight main or sub)	1. Headlight Main or Sub Bulb 2. *Light Control ECU 3. Wire Harness	BE–38
Headlight does not come on. (Headlight main and sub)	1. Headlight Control Relay (Engine Room J/B) 2. Headlight Dimmer Relay (Engine Room J/B) 3. Light Control Switch 4. Body ECU 5. *Light Control ECU 6. Wire Harness	BE–38 BE–38 BE–38 DI–661 BE–38

Headlight does not come on. (Headlight main or sub)	1. Headlight Main or Sub 2. *Light Control ECU 3. Wire Harness	BE–38
Headlight is flicker.	1. Headlight Main or Sub Bulb 2. Headlight Dimmer Relay (Engine Room J/B) 3. *Light Control ECU 4. Wire Harness	BE–38 BE–38
Headlight is dark.	1. Headlight Main or Sub Bulb 2. *Light control ECU 3. Wire Harness	BE–38
Only one taillight comes on.	1. Taillight Bulb 2. Wire Harness	
Taillight does not come on. (Headlight is normal)	1. TAIL Fuse (Instrument Panel J/B) 2. GAUGE Fuse (Instrument Panel J/B) 3. Taillight Control Relay (Instrument Panel J/B) 4. Light Failure Sensor 5. Light Control Switch 6. Body ECU 7. Wire Harness	BE–38 BE–76 BE–38 DI–661
Taillight does not come on. (Headlight does not light)	1. Light Control Switch 2. Wire Harness	BE–38
Rear combination light does not come on.	1. Light Failure Sensor 2. Wire Harness 3. Bulb	BE–76

*: HID Type

CANADA:

Symptom	Suspect Area	See page
Only one headlight comes on. (Headlight main)	1. H–LP Fuse (LH) (Engine Room R/B No.1) 2. H–LP Fuse (RH) (Engine Room R/B No.1) 3. Headlight Main Bulb 4. *Light Control ECU 5. Wire Harness	BE–38
Only one headlight comes on. (Headlight sub RH)	1. H–LP Fuse (LH–UPR) (Engine Room J/B) 2. H–LP Fuse (RH–UPR) (Engine Room J/B) 3. Daytime Running Light No.3 Relay 4. Headlight Sub Bulb 5. *Light Control ECU 6. Wire Harness	BE–38 BE–38
Only one headlight comes on. (Headlight sub LH)	1. H–LP Fuse (LH–UPR) (Engine Room J/B) 2. H–LP Fuse (RH–UPR) (Engine Room J/B) 3. Headlight Sub Bulb 4. *Light Control ECU 5. Wire Harness	BE–38
”LO–Beam” does not light (All). (Headlight main)	1. Headlight Dimmer Switch 2. *Light Control ECU 3. Wire Harness	BE–38 BE–38
”LO–Beam” does not light (One side). (Headlight main)	1. Headlight Main Bulb 2. *Light Control ECU 3. Wire Harness	BE–38
”HI–Beam” does not light (All). (Headlight main)	1. Headlight Dimmer Switch 2. *Light Control ECU 3. Wire Harness	BE–38 BE–38

”HI–Beam” does not light (One side). (Headlight main)	1. Headlight Main Bulb 2. *Light Control ECU 3. Wire Harness	 BE–38
”Flash” does not light. (Headlight main)	1. Headlight Dimmer Switch 2. *Light Control ECU 3. Wire Harness	BE–38 BE–38
Headlight does not come on. (Headlight main)	1. Headlight Control Relay (Engine Room J/B) 2. Daytime Running Light Relay 3. Headlight Dimmer Switch 4. Light Control Switch 5. Body ECU 6. Wire Harness 7. *Light Control ECU 8. Headlight Main Bulb	BE–38 BE–38 BE–38 BE–38 DI–661 BE–38
Headlight does not come on. (Headlight sub)	1. Headlight Dimmer Relay (Engine Room J/B) 2. Daytime Running Light Relay 3. Daytime Running Light No.4 Relay 4. *Light Control ECU 5. Wire Harness	BE–38 BE–38 BE–38 BE–38
Headlight does not come on with light control switch in HEAD. (Headlight main)	1. Light Control Switch 2. Body ECU 3. *Light Control ECU 4. Wire Harness	BE–38 DI–661 BE–38
Headlight does not go out with light control switch in OFF. (Headlight main	1. Headlight Control Relay (Engine Room J/B) 2. *Light Control ECU 3. Wire Harness	BE–38 BE–38
Headlight is flicker.	1. Headlight Main or sub Bulb 2. Headlight Dimmer Relay (Engine Room J/B) 3. *Light Control ECU 4. Wire Harness	 BE–38 BE–38
Headlight is dark.	1. Headlight Main or Sub Bulb 2. *Light control ECU 3. Wire Harness	 BE–38
Taillight does not come on with light control switch in TAIL. (Headlight main)	1. Taillight Control Relay (Instrument Panel J/B) 2. Light Control Switch 3. Wire Harness	BE–38 BE–38
Taillight does not go out with light control switch in OFF. (Headlight main)	1. Taillight Control Relay (Instrument Panel J/B) 2. Light Control Switch 3. Wire Harness	BE–38 BE–38
Headlight do not come on with engine running and light control switch in OFF. (Headlight main)	1. ECU–B Fuse (Engine Room J/B) 2. GAUGE Fuse (Instrument Panel J/B) 3. DRL Fuse (Engine Room R/B No.1) 4. Daytime Running Light Relay 5. Daytime Running Light No.3 and No.4 Relay 6. Body ECU 7. Generator L Terminal 8. Parking Brake Switch 9. Brake Fluid Level Warning Switch 10. *Light Control ECU 11. Wire Harness	 BE–38 BE–38 DI–661 BE–98 BE–98 BE–38

*: HID Type

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. PWR–IG Fuse (Engine Room J/B) 2. Headlight Beam Level Control Actuator 3. Headlight Beam Level Control ECU 4. Wire Harness Side	 BE–52 BE–52
Beam axis is not controlled. (It is initialized.) Headlight Beam Level Control System does not operate.	1. Headlight Beam Level Control ECU 2. Power Source Circuit 3. Height Control Sensor 4. Suspension ECU 5. Headlight Beam Level Control ECU 6. Wire Harness Side	BE–52 BE–19 DI–251 IN–32 BE–52
Controlled angle of head light is nnusual. (The angle is controlled.)	1. Height Control Sensor 2. Suspension ECU 3. Headlights 4. Wire Harness Side	DI–251 IN–32
Beam axis position is not stable during driving.	1. ABS System 2. Headlights 3. Wire Harness Side	

FOG LIGHT SYSTEM

Symptom	Suspect Area	See page
Fog light does not light up with light control SW HEAD (Headlight is normal.)	1. FOG Fuse (Instrument Panel J/B) 2. Fog Light Relay (Instrument Panel J/B) 3. Fog Light Switch 4. Wire Harness	 BE–56 BE–38
Fog light does not light up with light control SW HEAD (Headlight does not light).	1. *1 Other Parts 2. Wire Harness	
Only one light does not light up.	1. Bulb 2. Wire Harness	

*1: Inspect Headlight System

TURN SIGNAL AND HAZARD WARNING SYSTEM

Symptom	Suspect Area	See page
”Hazard” and ”Turn” do not light up.	1. Hazard Warning Switch 2. Turn Signal Switch 3. Turn Signal Flasher 4. Wire Harness	BE–59 BE–38 BE–59
The flashing frequency is abnormal.	1. Bulb 2. Turn Signal Switch 3. Wire Harness	 BE–38
Hazard warning light does not light up. (Turn is normal)	1. HAZ Fuse (Engine Room J/B) 2. Wire Harness	
Hazard warning light does not light up in one direction.	1. Hazard Warning Switch 2. Wire Harness	BE–59
*1 Turn signal does not light up.	1. Ignition Switch 2. TURN Fuse (Instrument Panel J/B) 3. Turn Signal Switch 4. Wire Harness	BE–33 BE–38
*2 Turn signal does not light up.	1. TURN Fuse (Instrument Panel J/B) 2. Turn Signal Switch 3. Wire Harness	 BE–38

Turn signal does not light up in one direction.	1. Turn Signal Switch 2. Wire Harness	BE–38
Only one bulb does not light up.	1. Bulb 2. Wire Harness	

*1: Combination Meter, Wiper and Washer do not operate.
*2: Combination Meter, Wiper and Washer are normal.

ILLUMINATION 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
Illumination light do not light. (Taillight is normal)	1. PANEL Fuse (Instrument Panel J/B) 2. Rheostat Light Control 3. Wire Harness	BE–62
Illumination light do not light. (Taillight does not light)	1. Taillight Control Relay (Instrument Panel J/B) 2. Taillight System 3. Rheostat Light Control 4. Wire Harness 5. PANEL Fuse (Instrument Panel J/B)	BE–38 BE–38 BE–62
Only one light does not light.	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.	1. DOME Fuse (Engine Room J/B) 2. DOME Fuse (Engine Room J/B) 3. Body ECU	DI–661
The light does not come ON when the driver's door is opened.	1. Driver's Door Courtesy Switch 2. Driver Door ECU 3. Multiplex Communication Circuit 4. Body ECU 5. Wire Harness	BE–70 DI–727 DI–838 DI–661
The light does not come ON when the passenger's door is opened.	1. Passenger's Door Courtesy Switch 2. Front Passenger Door ECU 3. Multiplex Communication Circuit 4. Body ECU 5. Wire Harness	BE–70 DI–760 DI–838 DI–661
The light does not come on when the rear–right door is opened.	1. Rear–Right Door Courtesy Switch 2. Body ECU 3. Wire Harness	BE–70 DI–661
The light does not come on when the rear–left door is opened.	1. Rear–Left Door Courtesy Switch 2. Body ECU 3. Wire Harness	BE–70 DI–661
Only one of the bulbs comes ON.	1. Bulb	
The illumination does not fade out when all the doors are closed.	1. Courtesy Switch 2. Driver Door ECU 3. Front Passenger Door ECU 4. Multiplex Communication Circuit 5. Body ECU 6. Wire Harness	BE–70 DI–727 DI–760 DI–838 DI–661

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 (Instrument Panel J/B) 3. GAUGE Fuse (Instrument Panel J/B) 4. Body ECU 5. Wire Harness	BE–33 DI–661
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. Driver Door ECU 3. Front Passenger Door ECU 4. Multiplex Communication Circuit 5. Body ECU 6. Wire Harness	BE–139 DI–727 DI–760 DI–838 DI–661
Interior light does not light up. (in front personal light)	1. Bulb 2. Front Personal Light 3. Wire Harness	BE–70
Front personal light does not light up.	1. Bulb 2. Front Personal Light 3. Wire Harness	BE–70
Rear personal light does not light up.	1. Bulb 2. Rear Personal Light 3. Wire Harness	BE–70
Vanity light does not light up.	1. Bulb 2. Vanity Light 3. Wire Harness	BE–70
Luggage compartment light does not light up.	1. Bulb 2. Luggage Compartment Door Courtesy Switch 3. Wire Harness	BE–70
Courtesy light does not light up.	1. Bulb 2. Door Courtesy Switch 3. Wire Harness	BE–70

STOP LIGHT SYSTEM

Symptom	Suspect Area	See page
Stop light does not light up.	1. STOP Fuse (Instrument Panel J/B) 2. Stop Light Switch 3. Light Failure Sensor 4. Wire Harness	 BE–76 BE–76
Stop light always lights up.	1. Stop Light Switch 2. Wire Harness	BE–76
Only one light always lights up.	1. 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 (Using light control switch)	1. Light control switch 2. Wire Harness	BE–38
”Headlight Cleaner System” does not operate (When operating ”Running Light System”)	1. Daytime Running Light Relay (Main) 2. Wire Harness	BE–38

”Headlight Cleaner System” does not operate (All)	1. AM1 H–Fuse 2. WIPER 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–33 BE–79 BE–79 BE–79
Washer fluid does not spray	1. Headlight Cleaner Nozzle and Hose	

WIPER AND WASHER 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
Wiper and washers do not operate.	1. WIPER Fuse (Instrument Panel J/B) 2. Wiper Switch 3. Wiper Motor 4. Body ECU 5. Wire Harness	 BE–82 BE–82 DI–661
Wipers do not operate in LO, HI or MIST.	1. Wiper Switch 2. Wiper Motor 3. Wire Harness	BE–82 BE–82
Wipers do not operate in INT.	1. Wiper Switch 2. Wiper Motor 3. Body ECU 4. Wire Harness	BE–82 BE–82 DI–661
Washer motor does not operate.	1. Washer Switch 2. Washer Motor 3. Wire Harness	BE–82 BE–82
Wipers do not operate when washer switch in ON.	1. Washer Motor 2. Body ECU 3. Wire Harness	BE–82 DI–661
Washer fluid does not operate.	1. Washer Hose and Nozzle	
● When wiper switch is at 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 wrong.	1. Wiper Motor * 2. Wire harness * 3. Body ECU	BE–82 DI–661

*: Inspect wiper arm and blade set position.

COMBINATION METER

Symptom	Suspect Area	See page
SRS warning light does not light up.	1. MPX–B Fuse 2. Bulb 3. Meter Circuit Plate 4. Wire Harness 5. Airbag Sensor Assembly	 BE–86 DI–574
Hi–beam indicator light does not light up.	1. Bulb 2. Meter Circuit Plate 3. Wire Harness 4. Headlight System	 BE–86 BE–36
Turn indicator light does not light up.	1. Bulb 2. Meter Circuit Plate 3. Wire Harness 4. Turn Signal and Hazard Warning System	 BE–86 BE–58

ABS warning light does not light up.	1. GAUGE Fuse 2. Bulb 3. Meter Circuit Plate 4. Wire Harness 5. ABS, TRAC and VSC ECU	 BE–86 DI–305
TRAC warning light does not light up.	1. GAUGE Fuse 2. Bulb 3. Meter Circuit Plate 4. Wire Harness 5. ABS, TRAC and VSC ECU	 BE–86 DI–364
AIRSUS warning light does not light up.	1. Bulb 2. Meter Circuit Plate 3. Wire Harness 4. Suspension ECU	 BE–86 IN–32
Malfunction indicator light does not light up.	1. Bulb 2. Meter Circuit Plate 3. Wire Harness 4. ECM	 BE–86
Fuel level warning light does not light up.	1. Bulb 2. Fuel level warning switch 3. Meter Circuit Plate 4. Wire Harness	 BE–98 BE–86

ELECTRIC TENSION REDUCER SYSTEM

Symptom	Suspect Area	See page
Tension Reducer does not operate. (Driver's and Passenger's)	1. PWR–IG Fuse (Instrument Panel J/B) 2. Wire Harness	
Tension Reducer does not operate. (Only one side)	1. Buckle Switch 2. Tension Reducer Solenoid 3. Wire Harness	BE–113 BE–113

DEFOGGER SYSTEM

Symptom	Suspect Area	See page
All defogger systems do not operate.	1. HTR Fuse (Instrument Panel J/B) 2. DEF H–Fuse (Engine Room J/B) 3. Defogger Switch 4. Defogger Relay (Engine Room J/B) 5. Wire Harness	 BE–116 BE–116
Rear window defogger does not operate.	1. Defogger Wire 2. Wire Harness	BE–116
Mirror defogger does not operate.	1. MIR–HTR Fuse (Engine Room J/B) 2. Mirror Defogger 3. Wire Harness	 BE–116

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	BE–126
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–126 BE–126 BE–126
"Window lock function" does not operate.	1. Power Window Master Switch	BE–126

Window does not operate with power window master switch. (Manual or Automatic operation can be performed.)	TROUBLESHOOTING NO.1	BE–120
Remove control of all windows (Except driver's) does not functions with master switch. (Window operate normally with each of master switch.)	TROUBLESHOOTING NO.2	BE–120
The Key related power window operations does not operate with driver side door key cylinder. (Master switch operation is normal.)	TROUBLESHOOTING NO.3	BE–120
Power window does not operate with multi–function transmitter. (Windows operate normally with master switch.)	TROUBLESHOOTING NO.4	BE–120
Window moves down without being ordered during the up operation.	TROUBLESHOOTING NO.5	BE–120

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.	1. Door Lock Control Switch 2. Driver Door ECU 3. Front Passenger Door ECU 4. Multiplex Communication Circuit 5. Body ECU 6. Wire Harness	BE–139 DI–727 DI–760 DI–838 DI–661
Only driver's side door lock control does not operate.	1. Driver Door ECU 2. Driver's Door Lock Motor 3. Wire Harness	DI–727 BE–139
Other doors than the driver's side door do not operate.	1. Driver Door ECU 2. Multiplex Communication Circuit 3. Body ECU 4. Wire Harness 5. Door Lock Motor	DI–727 DI–838 DI–661 BE–139
Door key related function does not operate.	1. Door Key Lock and Unlock Switch 2. Wire Harness	BE–139
Key confinement prevention function does not operate.	1. Key Unlock Warning Switch 2. Wire Harness 3. Body ECU	BE–33 DI–661
Luggage compartment door opener function does not operate.	1. Luggage Compartment Door Opener Switch 2. Luggage Compartment Door Key Lock and Unlock Switch 3. Luggage Compartment Door Opener Motor 4. Wire Harness 5. Body ECU	BE–139 BE–139 BE–139 DI–661

THEFT DETERRENT 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
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 Room Door Courtesy Switch 6. Wire Harness 7. Body ECU 8. Driver Door ECU 9. Multiplex Communication Circuit 10. Transmitter	BE–151 BE–33 BE–139 BE–151 BE–70 DI–661 DI–727 DI–838
The system cannot be canceled when the ignition switch is turned to ACC with key.	1. Key Unlock Warning Switch 2. Ignition Switch 3. Body ECU 4. RADIO NO.2 Fuse (Instrument panel J/B) 5. Wire Harness	BE–33 BE–33 DI–661
The system cannot be canceled when the luggage compartment door is unlocked with key.	1. Luggage Room Door Courtesy Switch 2. Body ECU 3. Wire Harness	BE–70 DI–661
The system does not operate when the engine hood is opened.	1. Engine Hood Courtesy Switch 2. Body ECU 3. Wire Harness	BE–151 DI–661
The system does not operate when the door is opened or unlocked without using a key or transmitter.	1. Door Courtesy Switch 2. Driver Door ECU 3. Front Passenger Door ECU 4. Body ECU 5. Multiplex Communication Circuit 6. Door Unlock Detection Switch 7. Wire Harness 8. Transmitter	BE–70 DI–727 DI–760 DI–661 DI–838 BE–139
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. Body ECU 4. Wire Harness 5. Transmitter	BE–33 BE–33 DI–661
Some of the does not operate. (Headlight does not light up)	1. Headlight System 2. Wire Harness 3. Body ECU	BE–36 DI–661
Some of the system does not operate. (Taillight does not light up)	1. Taillight System 2. Wire Harness 3. Body ECU	BE–36 DI–661
Some of the system does not operate. (Theft deterrent horn or horn does not sound)	1. Theft Deterrent Horn 2. Horn 3. Horn Relay 4. HORN Fuse (Engine Room J/B) 5. Wire Harness 6. Body ECU	BE–151 BE–257 BE–257 DI–661

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. Body ECU 3. Wire Harness 4. Driver Door ECU 5. Front Passenger Door ECU 6. Multiplex Communication Circuit 7. Transmitter	BE–139 DI–661 DI–727 DI–760 DI–838
While the warning is given, the system cannot be canceled by turning the ignition switch to ON with key.	1. Ignition Switch 2. Key Unlock Warning Switch 3. RADIO NO.2 Fuse (Instrument Panel J/B) 4. GAUGE Fuse (Instrument Panel J/B) 5. Body ECU 6. Wire Harness	BE–33 BE–33 DI–661
The system operates for more then 60 seconds.	1. Body ECU	BE–33

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.

Whole wireless door lock control system does not operate.

Problem occurs only at a specific locality→ Precheck type I (See page BE–154)

Problem occurs everywhere→ Precheck type II (See page BE–154)

Some functions of wireless door lock control system do not operate.

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. Wireless Door Lock Control Receiver 2. Wire Harness	BE–161
Wireless door lock operates, but the buzzer does not sound.	1. Wireless Door Lock Buzzer 2. Wireless Door Lock Control Receiver 3. Wire Harness	BE–161 BE–161

POWER SEAT CONTROL SYSTEM

Symptom	Suspect Area	See page
Power seat does not operate. (Door lock does not operate.)	1. Wire Harness 2. Power Seat Switch (D) 3. Power Seat Switch (P)	 BE–172 BE–172
Power seat does not operate. (Door lock is normal.)	1. Wire Harness 2. Power Seat Switch (D) 3. Power Seat Switch (P)	 BE–172 BE–172
Driver's seat does not operate.	1. Power Seat Switch (D) 2. Wire Harness	BE–172
Passenger's seat does not operate.	1. Power Seat Switch (P) 2. Wire Harness	BE–172
"Slide operation" does not operate.	1. Power Seat Switch (D) 2. Power Seat Switch (P) 3. Wire Harness 4. Slide Motor (D, P)	BE–172 BE–172 BE–172

”Front Vertical Operation” does not operate.	1. Power Seat Switch (D) 2. Power Seat Switch (P) 3. Wire Harness 4. Front Vertical Motor (D, P)	BE–172 BE–172 BE–172
”Rear Vertical Operation” does not operate.	1. Power Seat Switch (D) 2. Wire Harness 3. Rear Vertical Motor (D, P)	BE–172 BE–172
”Reclining Operation” does not operate.	1. Power Seat Switch (D) 2. Power Seat Switch (P) 4. Wire Harness 4. Reclining Motor (D, P)	BE–172 BE–172 BE–172
”Lumbar Support Operation” does not operate.	1. Power Seat Switch (D, P) 2. Wire Harness 3. Lumbar Support Motor (D, P)	BE–172 BE–172

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

w/ Memory System:

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 mirror does not operate.	1. RADIO NO.2 Fuse (Instrument Panel J/B) 2. Mirror Switch 3. Tilt & Telescopic ECU 4. Multiplex Communication Circuit 5. Wire Harness	 BE–183 DI–408 DI–838
Only one side of interior does not operate.	1. Driver Door ECU (Left Side Mirror) 2. Front Passenger Door ECU (Right Side Mirror) 3. Mirror Motor 4. Wire Harness	DI–727 DI–760 BE–183
The mirror does not return to the memorized position.	1. Driving Position Memory (Position is not set) 2. Driving Position Switch 3. Driver Door ECU 4. Multiplex Communication Circuit 5. Wire Harness	BE–183 BE–183 DI–727 DI–838
The memorized position is moved.	1. Driving Position Memory (Position is not set) 2. Wire Harness	DI–727

w/o Memory System:

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
Mirror does not operate.	1. RADIO NO.2 Fuse (Instrument Panel J/B) 2. Mirror Switch 3. Mirror Motor 4. Wire Harness	 DI–727 DI–727
Mirror operates abnormally.	1. Mirror Switch 2. Mirror Motor 3. Wire Harness	DI–727 DI–727

POWER SHOULDER BELT ANCHORAGE 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
Driver's belt anchor can not be operated manually.	1. Shoulder Belt Adjust Switch (Driver's) 2. Driver Door ECU 3. Multiplex Communication Circuit 4. Tilt and Telescopic ECU 5. Height Adjustable Anchor Motor 6. Wire Harness	BE–188 DI–727 DI–838 DI–408 BE–188
The anchor does not return to the memorized position.	1. Driving Position Memory and Return Switch 2. Driver Door ECU 3. Multiplex Communication Circuit 4. Tilt and Telescopic ECU 5. Wire Harness	BE–188 DI–727 DI–838 DI–408
The memorized position is moved.	1. Height Adjustable Anchor Sensor	BE–188
Passenger's belt anchor can not be operated manually.	1. Shoulder Belt Adjust Switch (Passenger's) 2. Shoulder Belt Anchor Relay 3. Wire Harness 4. Height Adjustable Anchor Motor	BE–188 BE–188 BE–188

ELECTRO CHROMIC MIRROR SYSTEM

Symptom	Suspect Area	See page
Electro Chromic Inner Mirror does not operate.	1. ECU–IG Fuse (Instrument Panel J/B) 2. Elector Chromic Inner Mirror 3. Wire Harness	BE–195
Electro Chromic Outer Mirror does not operate.	1. ECU–IG Fuse (Instrument Panel J/B) 2. Electro Chromic Outer Mirror 3. Elector Chromic Inner Mirror 4. Wire Harness	BE–195 BE–195

SEAT HEATER SYSTEM

Symptom	Suspect Area	See page
Seat heaters do not operate. (Driver's and Passenger's)	1. FR S/HTR Fuse (Engine Room J/B) 2. Engine Main Relay (Engine Room J/B) 3. Seat Heater Switch 4. Wire Harness 5. Seat Heater	BE–198 BE–198 BE–198
Driver's seat heater does not operate.	1. Seat Heater Switch 2. Wire Harness	BE–198
Passenger's seat heater does not operate.	1. Seat Heater Switch 2. Wire Harness	BE–198
Seat heater temperature is too hot.	1. Seat Heater	BE–198

FUEL LID OPENER SYSTEM

Symptom	Suspect Area	See page
Fuel lid opener system does not operate.	1. FUEL OPN Fuse (Instrument Panel J/B) 2. Fuel Lid Opener Switch 3. Fuel Lid Opener Solenoid 4. Wire Harness	BE–202 BE–202

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–242
LED does not light up. (Even though either switch is pressed.)	1. Garage Door Opener 2. Wire Harness	BE–242
LED does not light up. (Only one switch is pressed.)	1. Garage Door Opener	BE–242

* 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.

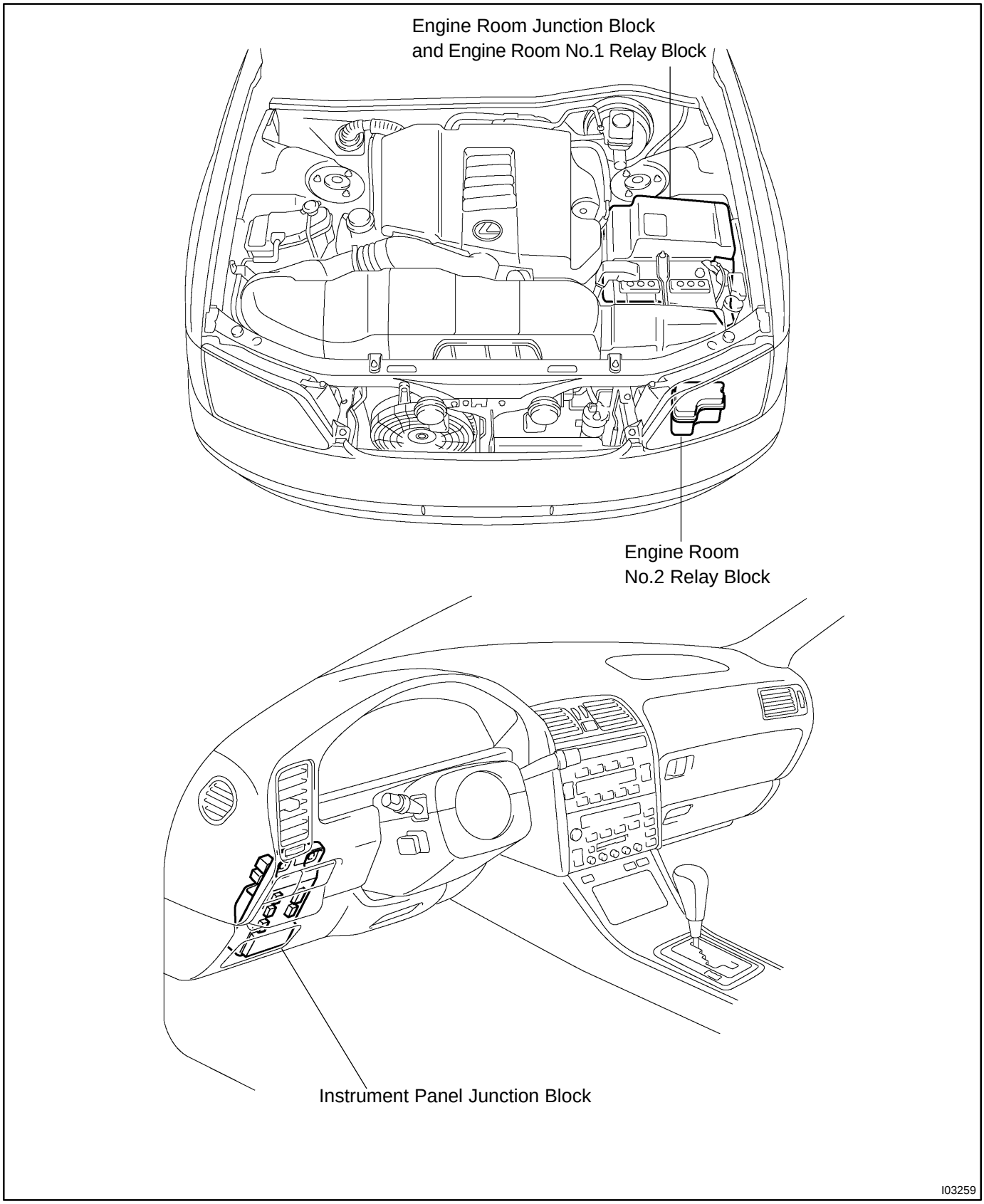
HORN SYSTEM

Symptom	Suspect Area	See page
Horn system does not operate.	1. HORN Fuse (Engine Room J/B) 2. Horn Relay (Engine Room J/B) 3. Horn Switch 4. Horn 5. Wire Harness	 BE–257 BE–257 BE–257
Horns blow all the time.	1. Horn Relay (Engine Room J/B) 2. Horn Switch 3. Wire Harness	BE–257 BE–257
One horn operates but other horn does not operate.	1. Horn 2. Wire Harness	BE–257
Horns operate abnormally.	1. Horn Relay (Engine Room J/B) 2. Horn 3. Wire Harness	BE–257 BE–257

POWER SOURCE

LOCATION

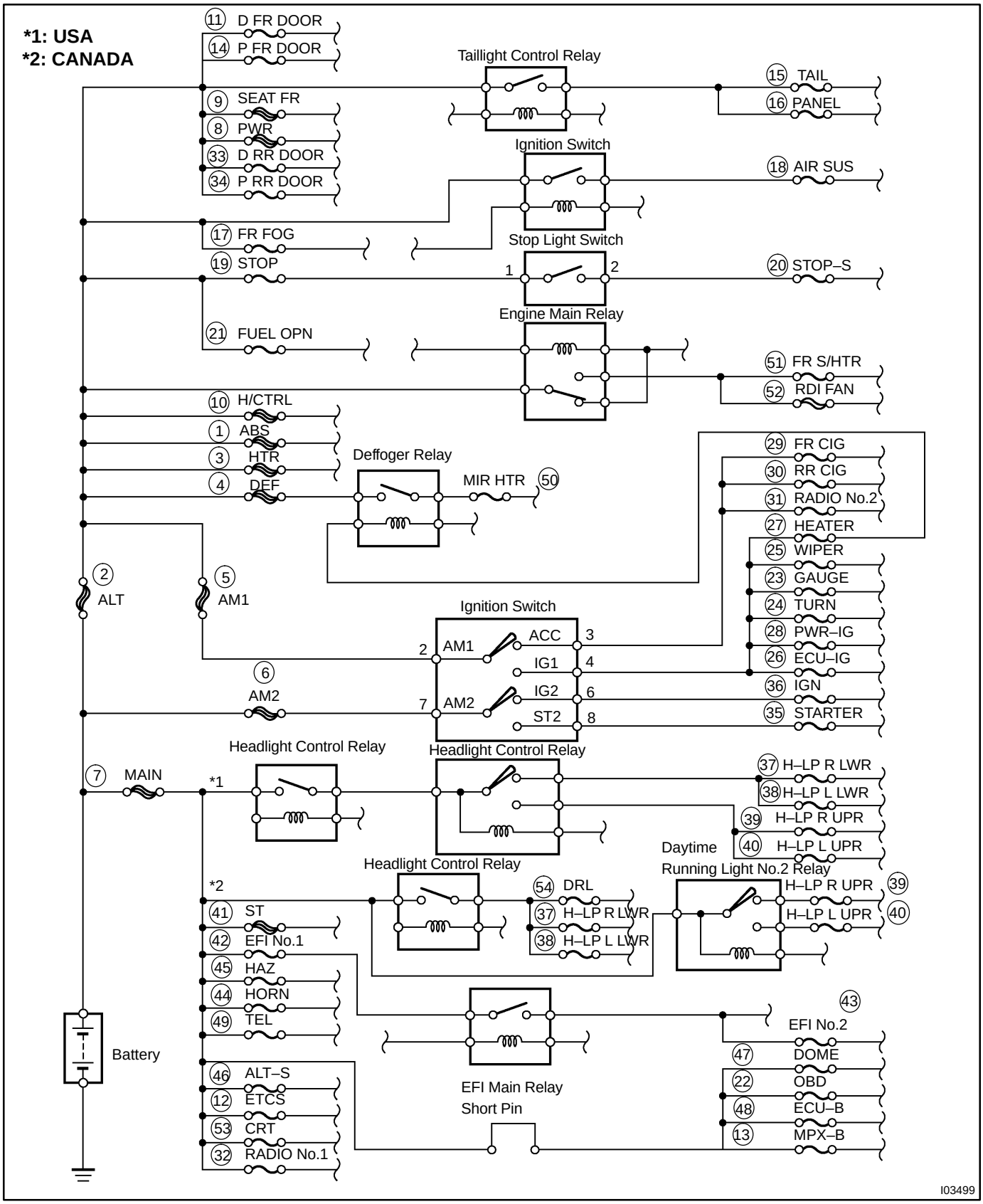
BE0B6–01



BE0B7–01

CIRCUIT

1. WIRING DIAGRAM



The power source supplies power to each of the vehicle's electrical devices. It is composed of the battery, fuses and relays, which are located centrally at engine room junction block, engine room No.1 relay block, fusible link block and engine room No.2 relay block in the engine compartment, and instrument panel junction block in the cabin near the driver's feet.

2. RELATED SYSTEMS FOR EACH FUSIBLE LINK, MEDIUM CURRENT FUSE AND FUSE

Parts Name	Related Systems or Parts	Related Systems or Parts
1. ABS H–Fuse	● ABS System	● TRAC System
2. ALT H–Fuse	● A/C System ● Air Suspension System ● Defogger System ● Electrically Controlled Transmission System ● Fog Light System ● Fuel Lid Opener System ● Illumination Light System ● Light Fuiler Relay	● Power Shoulder Belt Anchorage System ● Radiator Fan System ● Rear Combination Light System ● Seat Heater System ● Stop Light System ● Tailight System ● Tilt & Telescopic Steering System ● VSC
3. HTR H–Fuse	● A/C System	
4. DEF H–Fuse	● Defogger System	
5. AM1 H–Fuse	● A/C System ● Air Suspension System ● Audio System ● Auto Antenna System ● Back–up Light System ● Body ECU System ● Cellular Phone ● Cigarette Lighter System ● Combination Meter ● Deffoger System ● Electro Chromic Mirror System ● Electric Tension Reducer System ● Electrically Controlled Transmission System ● EMV	● Generator System ● Headlight Cleaner System ● Heater System ● Illuminated Entry System ● Light Failure Sensor ● Shift Lock System ● Power Seat System ● Progressive Power Steering System ● Rheostat Light Control ● SRS ● Tilt & Telescopic Steering System ● Turn Signal Light System ● VSC System ● Wiper System
6. AM2 H–Fuse	● Electrically Controlled Transmission System ● Engine	● Starter
7. MAIN H–Fuse	● A/C System ● Air Suspension System ● Auto Antenna System ● Cellular Phone ● Check Connector ● Combination Meter System ● Daytime Running Light System ● Deffoger System ● Electrically Controlled Transmission System ● Engine ● Generator System	● Hazard Warning System ● Heater System ● Headlight System ● Horn ● OBD II ● Power Seat Control System ● Power Shoulder Belt Anchorage System ● SRS ● Starter ● Tilt & Telescopic Steering System
8. PWR H–Fuse	● Power Shoulder Belt Anchorage System ● Sliding Roof System	● Tilt & Telescopic Steering System
9. SEAT FR H–Fuse	● Power Seat System	
10. H/CTRL H–Fuse	● Air Suspension System	

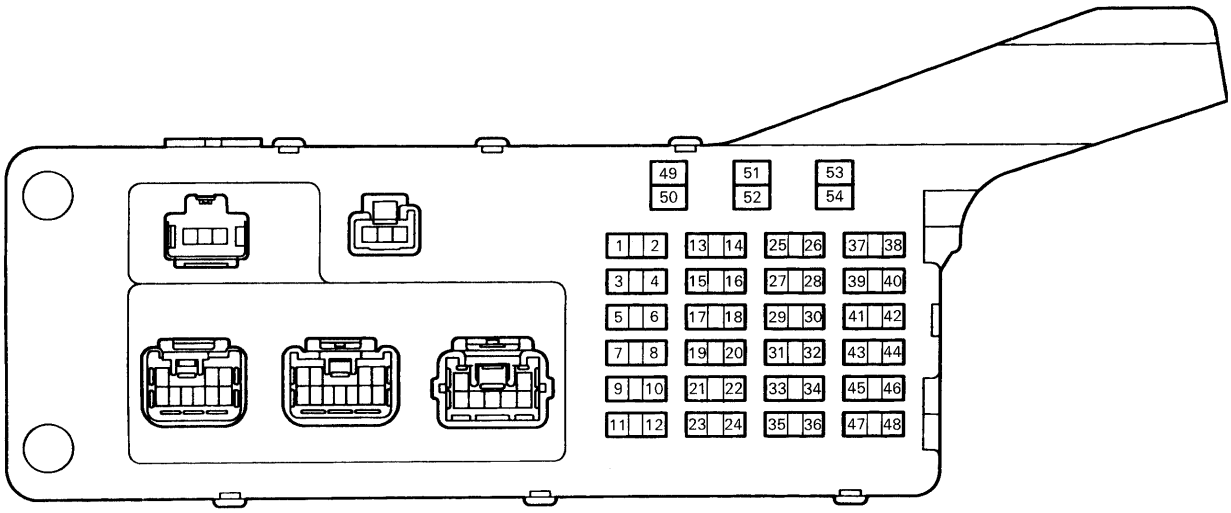
11. D FR DDOR Fuse	● Driver Door Control System	
12. ETCS Fuse	● Engine	
13. MPX–B Fuse	● Combination Meter	● MPX
14. P FR DOOR Fuse	● Front Passenger Door Control System	
15. TAIL Fuse	● Parking Light ● Rear Combination Light	● Side Marker Light ● Taillight
16. PANEL Fuse	● Illumination Light System	
17. FR FOG LP Fuse	● Fog Light System	
18. AIR SUS Fuse	● Air Suspension System	
19. STOP Fuse	● Stop Light System	
20. STOP–S Fuse	● Electrically Controlled Transmission System ● Shift Lock System	● Stop Light System
21. FUEL OPN Fuse	● Power Shoulder Belt Anchorage System	● Fuel Lid Opener System
22. OBD Fuse	● OBD II	
23. GAUGE Fuse	● Back–up Light System ● Combination Meter ● Daytime Running Light System ● Electrically Controlled Transmission System ● Engine ● Illuminated Entry System	● Light Failure Sensor ● Power Shoulder Belt Anchorage System ● Rheostat Light Control ● Shift Lock System ● Tilt & Telescopic System
24. TURN Fuse	● Turn Signal Light System	
25. WIPER Fuse	● Headlight Cleaner System	● Wiper and Washer System
26. ECU–IG Fuse	● Air Suspension System ● Cellular Phon ● Electro Chromic Inner Mirror System ● Generator	● Power Seat System ● Progressive Power Steering ● Shift Lock System ● VSC
27. HEATER Fuse	● A/C System ● Defogger System	● Heater System
28. PWR–IG Fuse	● Auto Antenna System ● Electric Tension Reducer System	● Headlight Level Control System ● MPX
29. FR CIG Fuse	● A/C System ● Front Cigarette Lighter	● SRS
30. RR CIG Fuse	● Rear Cigarette Lighter	● Shift Lock System
31. RADIO No.2 Fuse	● Audio System ● Auto Antenna System	● Body Control System ● EMV
32. RADIO No.1 Fuse	● Audio System ● EMV System	
33. D RR DOOR Fuse	● Rear Door Control System	
34. P RR DOOR-Fuse	● Rear Door Control System	
35. STARTER Fuse	● Starter	
36. IGN Fuse	● Electrically Controlled Transmission System ● Engine	● SRS

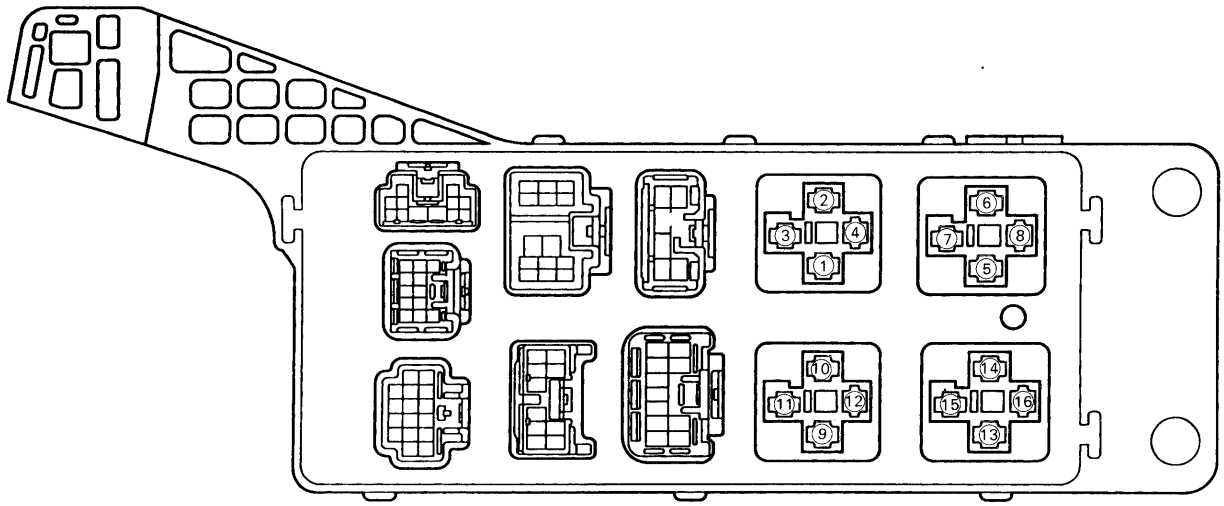
37. H–LP R LWR Fuse	● Headlight (RH)	
38. H–LP L LWR LH Fuse	● Headlight (LH)	
39. H–LP R UPR RH Fuse (CANADA)	● Headlight HI–Beam (RH)	
40. H–LP L UPR LH Fuse (CANADA)	● Headlight HI–Beam (LH)	
41. ST H–Fuse	● Starter	
42. EFI No.1 Fuse	● Check Connecter ● Electrically Controlled Transmission System	● Engine
43. EFI No.2 Fuse	● Engine	
44. HORN Fuse	● Horn	
45. HAZ Fuse	● Hazard Warning System	
46. ALT–S Fuse	● Generator	
47. DOME Fuse	● MPX	● Power Seat Control System
48. ECU–B Fuse	● Air Suspension System ● Daytime running Light System	● SRS ● VSC
49. TEL Fuse	● Cellular Phone	
50. MIR HTR Fuse	● Mirror Defogger System	
51. FR S/HTR HTR Fuse	● Seat Heater System	
52. RDI FAN M–Fuse	● Radiator Fan	
53. CRT Fuse	● EMV	
54. DRL Fuse	● Daytime Running Light System	

BE0B8–01

INSPECTION

1. INSPECT INSTRUMENT PANEL JUNCTION BLOCK





N13426
N13427

Z14947

2. FUSE CIRCUIT

Remove the fuse from the junction block and inspect the connector on junction block side.
Connect numbers are shown in the illustration.

Fuse	Tester connection	Condition	Specified condition
PANEL	3 – Ground	Light control switch TAIL or HEAD	Battery positive voltage
A/C	5 – Ground	Constant	Battery positive voltage
ECU–IG	10 – Ground	Ignition switch ON	Battery positive voltage
TURN	12 – Ground	Ignition switch ON	Battery positive voltage
WASHER	14 – Ground	Ignition switch ON	Battery positive voltage
ST	15 – Ground	Ignition switch START	Battery positive voltage
P RR DOOR	18 – Ground	Constant	Battery positive voltage
FUEL OPN	20 – Ground	Constant	Battery positive voltage
PWR–IG	21 – Ground	Ignition switch ON	Battery positive voltage
WIPER	24 – Ground	Ignition switch ON	Battery positive voltage
AIR SUS	25 – Ground	Ignition switch ON	Battery positive voltage
TAIL	27 – Ground	Light control switch TAIL or HEAD	Battery positive voltage
STOP	29 – Ground	Constant	Battery positive voltage
RR CIG	32 – Ground	Ignition switch ACC or ON	Battery positive voltage
GAUGE	33 – Ground	Ignition switch ON	Battery positive voltage
HEATER	35 – Ground	Ignition switch ON	Battery positive voltage
D RR DOOR	38 – Ground	Constant	Battery positive voltage
STOP–S	39 – Ground	Stop light switch ON	Battery positive voltage
RADIO No.2	42 – Ground	Ignition switch ACC or ON	Battery positive voltage
FR CIG	44 – Ground	Ignition switch ACC or ON	Battery positive voltage
IGN	46 – Ground	Ignition switch ON	Battery positive voltage
FR FOG	47 – Ground	Constant	Battery positive voltage
SEAT FR H	49 – Ground	Constant	Battery positive voltage
PWR H	51 – Ground	Constant	Battery positive voltage

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

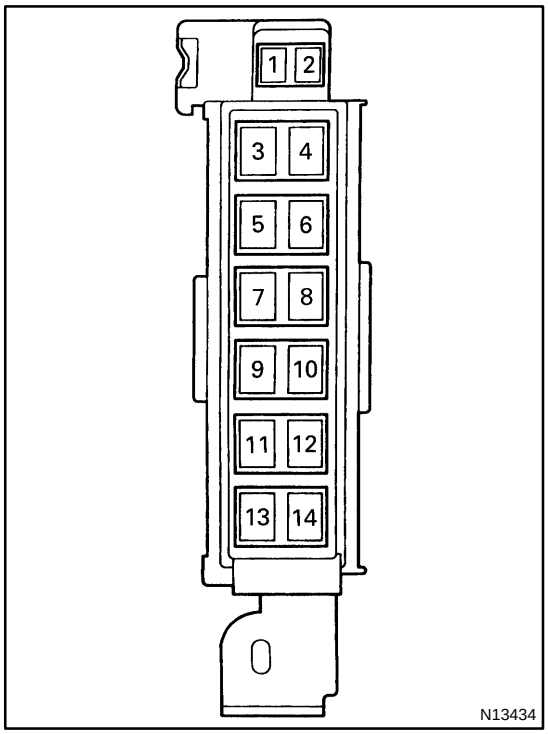
3. RELAY CIRCUIT

Remove the relay from the junction block and inspect the connector on junction block side.

Connect numbers are shown in the illustration.

Relay	Tester connection	Condition	Specified condition
Taillight Control	(2) – Ground	Light control switch TAIL or HEAD	Continuity
Taillight Control	(3) – Ground	Constant	Continuity
Taillight Control	(1) – Ground	Constant	Battery positive voltage
Taillight Control	(4) – Ground	Constant	Battery positive voltage
Ignition Main	(6) – Ground	Constant	Continuity
Ignition Main	(7) – Ground	Constant	Continuity
Ignition Main	(5) – Ground	Ignition switch ON	Battery positive voltage
Power Main	(12) – Ground	Constant	Battery positive voltage
Fog Light Control	(13) – Ground	Light control switch HEAD	Battery positive voltage
Fog Light Control	(16) – Ground	Constant	Battery positive voltage

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



4. Bolted type:
FUSIBLE LINK CIRCUIT

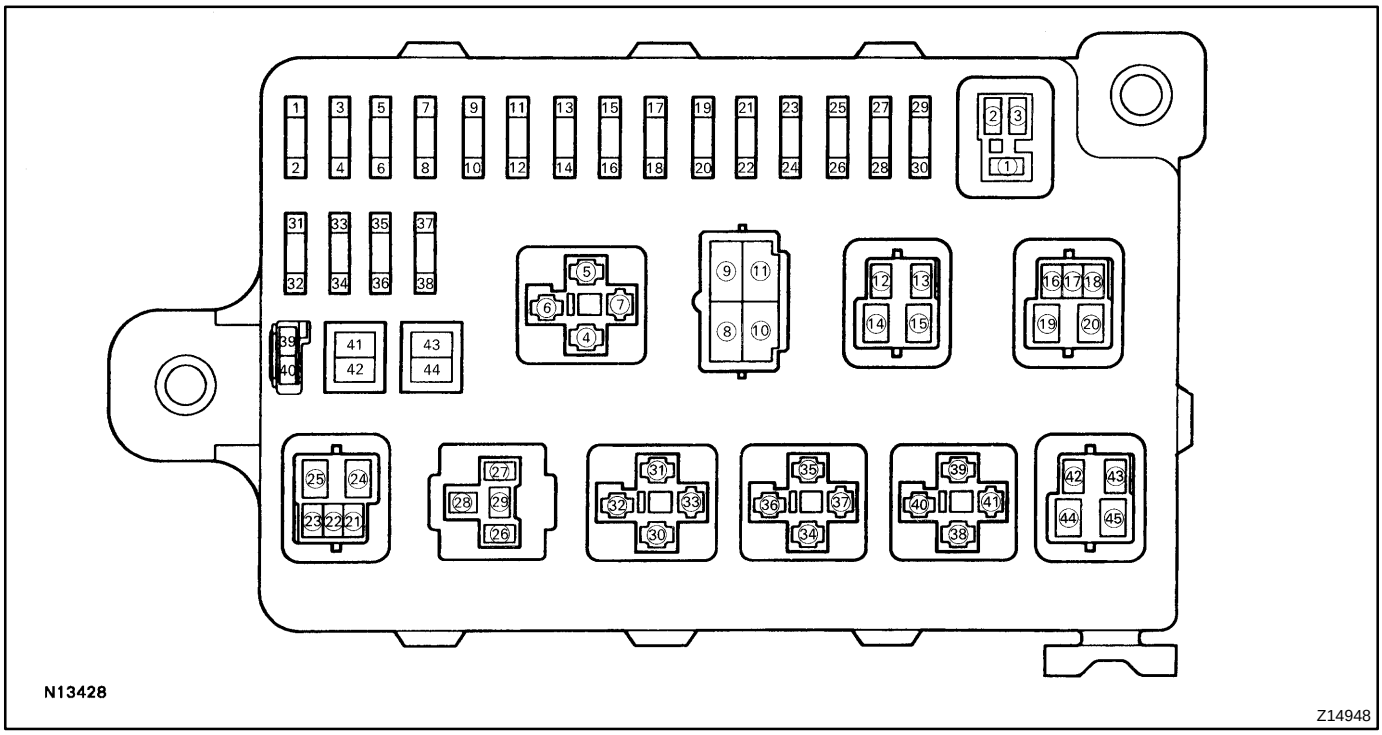
(a) Remove the battery.
(b) Remove the fusible link set bolts.
(c) Inspect the continuity between terminals and connected parts.
(d) Connect numbers are shown in the illustration.

Terminal	Connected parts
1	Ignition switch
2	Battery positive voltage
3	ALT–S Fuse
3	ST Fuse
3	HORN Fuse
3	HAZ Fuse
3	EFI Fuse
3	RADIO Fuse
3	TEL Fuse
3	SRS Fuse
4	Battery positive voltage
6	Battery positive voltage
6	HTR H–Fuse
6	AM1 H–Fuse
6	ABS H–Fuse
6	DEF H–Fuse
6	H/CTRL H–Fuse
6	FOG Fuse
6	STOP Fuse
6	OBD Fuse

6	FUEL OPN Fuse
6	IG1 Main Relay
7	ABS H–Fuse
8	ABS Motor Relay
8	ABS SOL Relay
9	HTR H–Fuse
10	Heater Main Relay
11	DEF H–Fuse
12	Defogger Relay
13	AM1 H–Fuse
14	Ignition switch

If circuit is not as specified, inspect wire harness between fusible link and connected parts.

5. INSPECT ENGINE ROOM JUNCTION BLOCK



6. FUSE CIRCUIT

Remove the fuse from the junction block and inspect the connector on junction block side.

Connect numbers are shown in the illustration.

Fuse	Tester connection	Condition	Specified Condition
ECU–B	2 – Ground	Light control switch TAIL or HEAD	Battery positive voltage
MPX–B	4 – Ground	Constant	Battery positive voltage
RADIO NO.1	5 – Ground	Constant	Battery positive voltage
CRT	8 – Ground	Engine Running	Battery positive voltage
TEL	9 – Ground	Constant	Battery positive voltage
ALT–S	11 – Ground	Constant	Battery positive voltage
FR S/HTR	14 – Ground	Engine Running	Battery posidive voltage
MIR–HTR	16 – Ground	Ignition switch ON and Defogger switch ON	Battery positive voltage
EFI NO.2	18 – Ground	Engine Running	Battery positive voltage
H–LP R–UPR	19 – Ground	*Engine running or Light control switch HEAD and Dimmer switch HI	Battery positive voltage
H–LP L–UPR	21 – Ground	*Engine running or Light control switch HEAD and Dimmer switch HI	Battery positive voltage
ETCS	27 – Ground	Constant	Battery positive voltage
HORN	29 – Ground	Constant	Battery positive voltage
OBD	32 – Ground	Constant	Battery positive voltage
DOME	33 – Ground	Constant	Battery positive voltage
EFI NO.1	35 – Ground	Constant	Battery positive voltage
HAZ	38 – Ground	Constant	Battery positive voltage
Short Pin	40 – Ground	Ignition switch ACC or ON	Battery positive voltage
ST H	41 – Ground	Constant	Battery positive voltage
RDI FAN H	43 – Ground	Engine Running	Battery positive voltage

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

7. RELAY CIRCUIT

Remove the relay from the relay block and inspect the connector on relay block side.

Connect numbers are shown in the illustration.

Relay	Tester connection	Condition	Specified condition
Horn	(1) – Ground	Horn switch ON	Continuity
Horn	(2) – Ground	Constant	Continuity
Horn	(3) – Ground	Constant	Battery positive voltage
Starter	(4) – Ground	Ignition switch START	Battery positive voltage
Starter	(7) – Ground	Constant	Battery positive voltage
*1Headlight Dimmer	(8) – Ground	Constant	Continuity
*1Headlight Dimmer	(9) – Ground	Headlight dimmer switch HI	Continuity
*1Headlight Dimmer	(10) – Ground	Constant	Continuity
*1Headlight Dimmer	(11) – Ground	Light control switch HEAD	Battery positive voltage
*2Headlight Dimmer	(8) – Ground	Constant	No continuity
*2Headlight Dimmer	(9) – Ground	Light control switch HEAD and Headlight dimmer switch HI	Continuity
*2Headlight Dimmer	(10) – Ground	Constant	Continuity

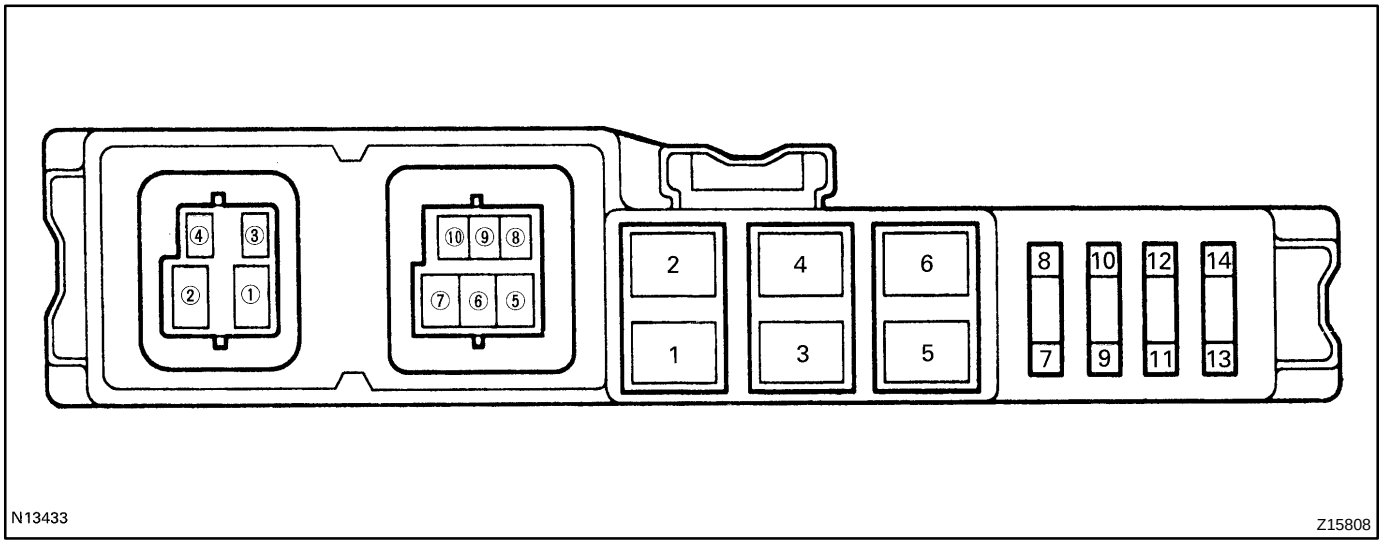
*2Headlight Dimmer	(11) – Ground	Constant	Battery positive voltage
Headlight Control	(13) – Ground	Light control switch HEAD	Continuity
Headlight Control	(12) – Ground	Constant	Battery positive voltage
Headlight Control	(14) – Ground	Light control switch HEAD	Battery positive voltage
Headlight Control	(15) – Ground	Constant	Battery positive voltage
Engine Main	(17) – Ground	Constant	Continuity
Engine Main	(18) – Ground	Constant	Continuity
Engine Main	(20) – Ground	Constant	Battery positive voltage
Engine Main	(16) – Ground	Ignition switch ON	Battery positive voltage
Heater Main	(22) – Ground	Constant	Continuity
Heater Main	(25) – Ground	Constant	Battery positive voltage
Heater Main	(21) – Ground	Ignition switch ON	Battery positive voltage
Fuel Pump	(26) – Ground	Engine running	Battery positive voltage
Fuel Pump	(29) – Ground	Engine running	Battery positive voltage
Fuel Pump	(27) – Ground	Engine running	Continuity
Circuit Opening	(31) – Ground	Engine running	Continuity
Circuit Opening	(30) – Ground	Engine running	Battery positive voltage
EFI Main	(35) – Ground	Constant	Continuity
EFI Main	(36) – Ground	Ignition switch ON	Battery positive voltage
A/C	(39) – Ground	A/C switch ON	Continuity
A/C	(41) – Ground	Ignition switch ON	Battery positive voltage
A/C	(38) – Ground	Ignition switch ON	Battery positive voltage
Defogger	(42) – Ground	Defogger switch ON	Continuity
Defogger	(44) – Ground	Defogger switch ON	Continuity
Defogger	(43) – Ground	Ignition switch ON	Battery positive voltage
Defogger	(45) – Ground	Constant	Battery positive voltage

*1: USA Models

*2: CANADA Models

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

8. INSPECT ENGINE ROOM NO.1 RELAY BLOCK



9. FUSE CIRCUIT

Remove the fuse from the junction block and inspect the connector on junction block side.

Connect numbers are shown in the illustration.

Fuse	Tester connection	Condition	Specified condition
H/CTRL H	1 – Ground	Constant	Battery positive voltage
*2DRL	7 – Ground	Engine running, Light control switch HEAD or Dimmer switch FLASH	Battery positive voltage
H–LP R LWR	9 – Ground	Light control switch HEAD or Dimmer switch FLASH	Battery positive voltage
H–LP L LWR	11 – Ground	Light control switch HEAD or Dimmer switch FLASH	Battery positive voltage

*1 USA models

*2 CANADA models

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

10. RELAY CIRCUIT

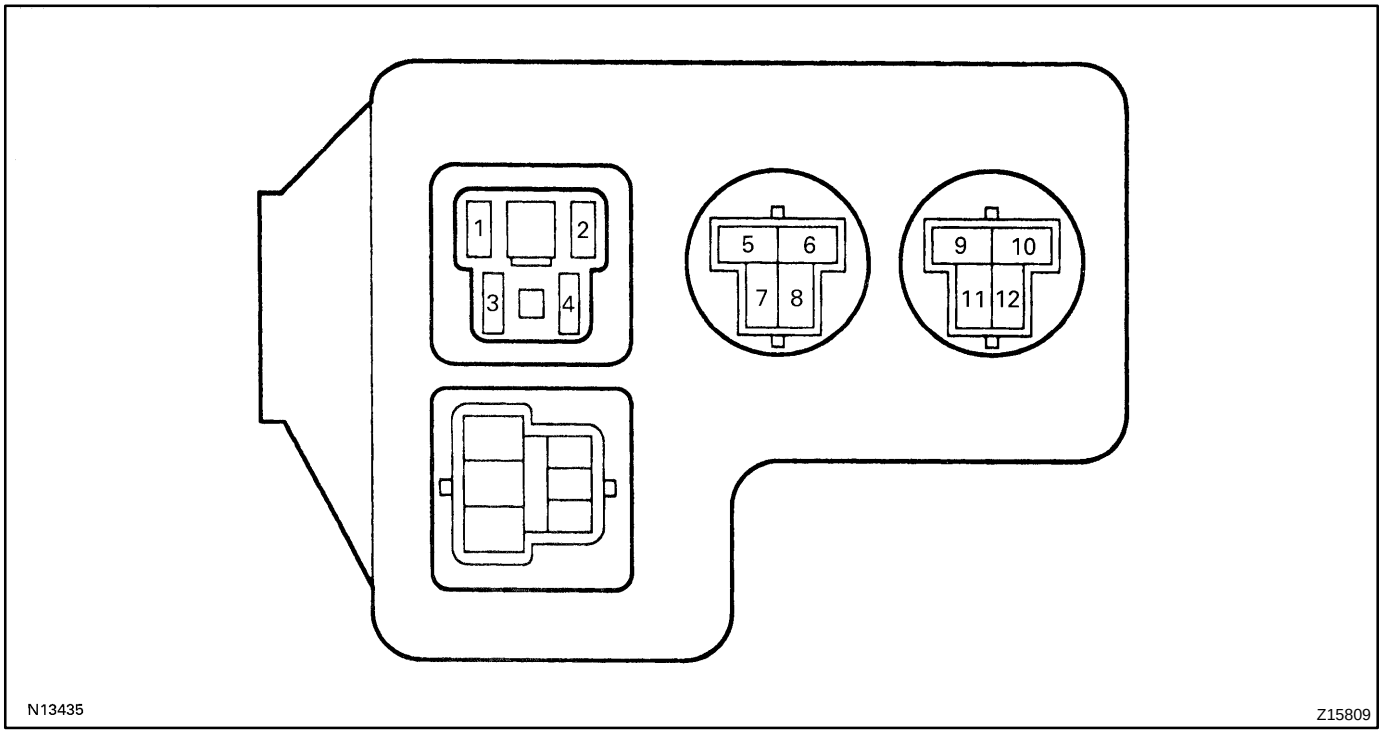
Remove the relay from the relay block and inspect the connector on relay block side.

Connect numbers are shown in the illustration.

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

Relay	Tester connection	Condition	Specified condition
ABS MTR	(1) – Ground	Constant	Battery positive voltage
ABS SOL	(6) – Ground	Constant	Continuity
ABS SOL	(5) – Ground	Constant	Battery positive voltage

11. INSPECT ENGINE ROOM RELAY BLOCK NO.2



12. RELAY CIRCUIT

Remove the relay from the relay block and inspect the connector on relay block side.

Connect numbers are shown in the illustration.

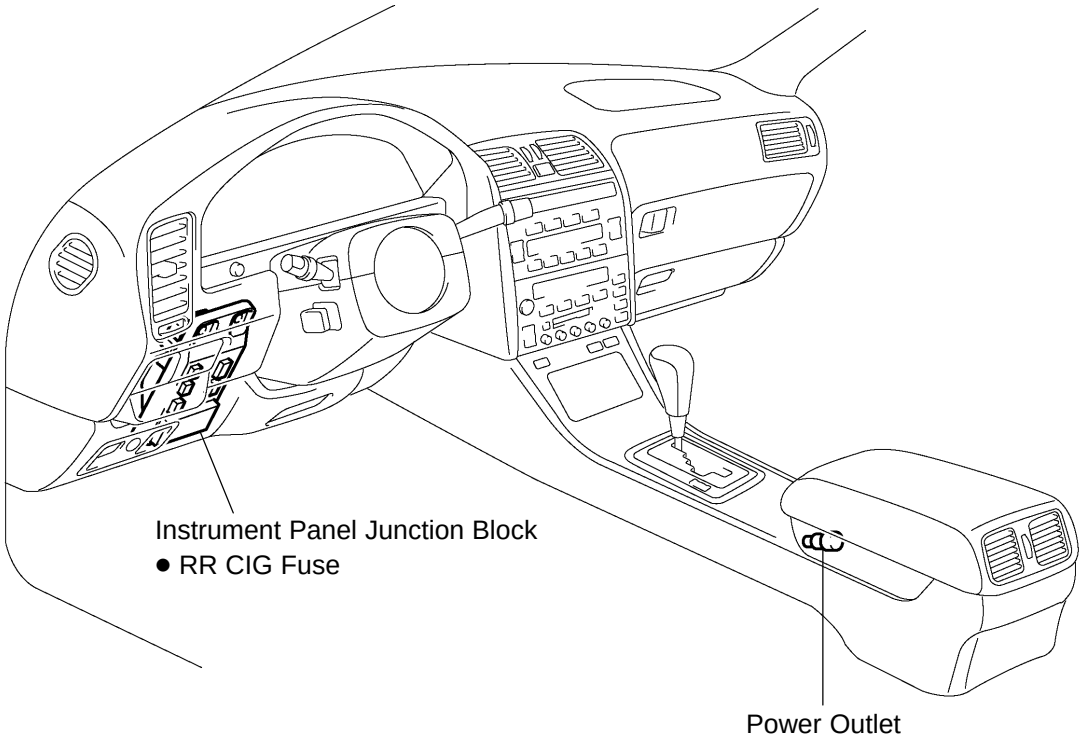
Relay	Tester connection	Condition	Specified condition
Height Control	(1) – Ground	Constant	Battery positive voltage
Condenser Fan No.1	(5) – Ground	Ignition switch ON	Battery positive voltage
Condenser Fan No.1	(8) – Ground	Ignition switch ON	Battery positive voltage
Condenser Fan No.2	(9) – Ground	Ignition switch ON	Battery positive voltage
Condenser Fan No.2	(12) – Ground	Ignition switch ON	Battery positive voltage

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

POWER OUTLET

LOCATION

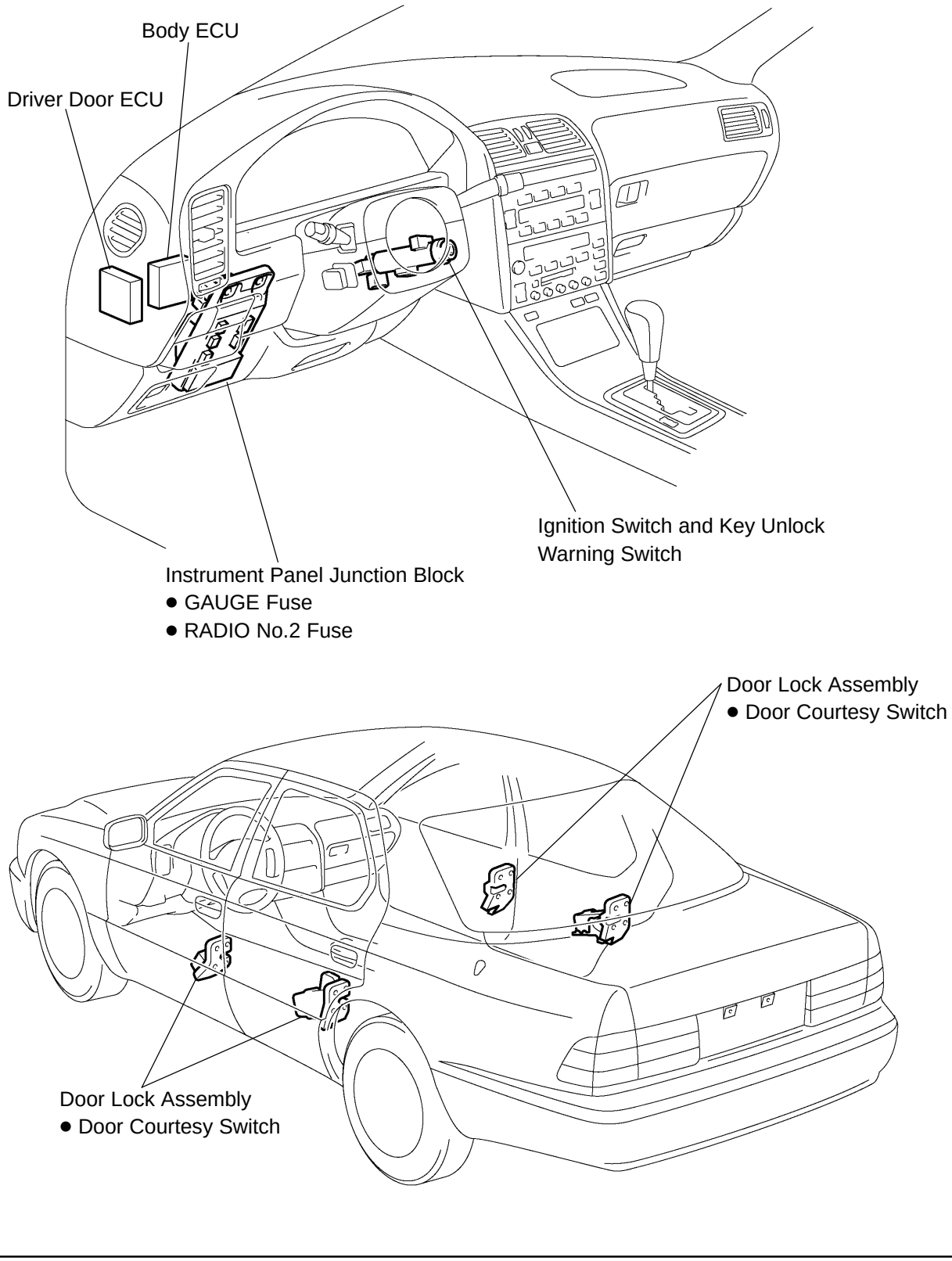
BE0B9–01



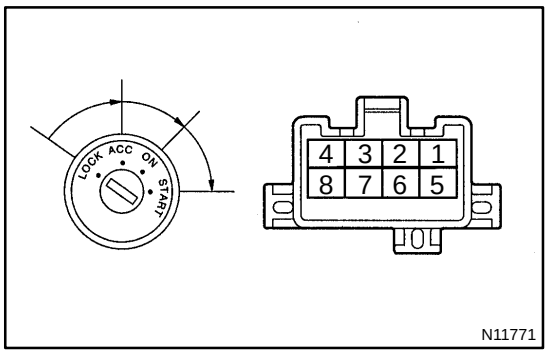
IGNITION SWITCH AND KEY UNLOCK WARNING SWITCH

BE0BA–01

LOCATION



BE0BB–01

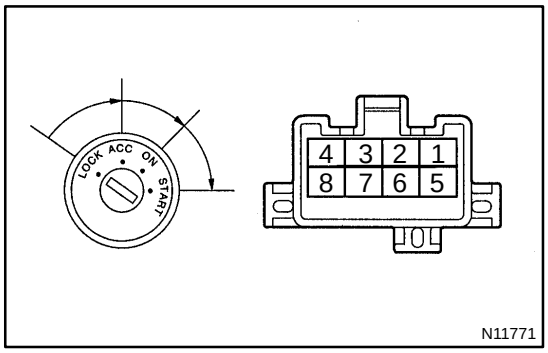


INSPECTION

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

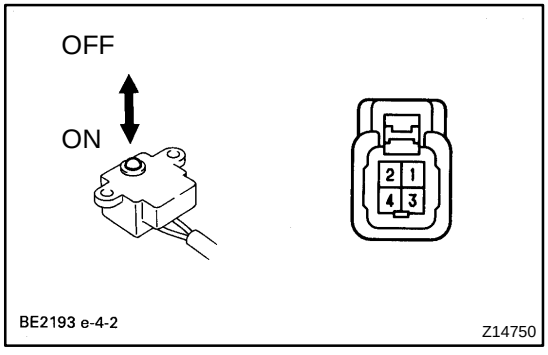
If continuity is not as specified, replace the switch.



2. INSPECT IGNITION SWITCH CIRCUIT

Connect the switch connector and inspect the connector on the wire harness side from the back side, as shown.
If circuit is not as specified, inspect the switch and circuits connected to other parts.

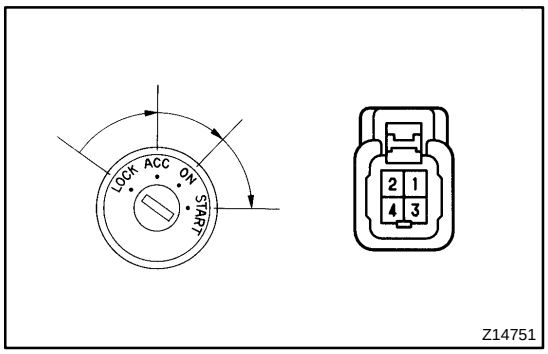
Tester connection	Condition	Specified condition
1– Ground	Ignition switch turned to START	Battery positive voltage
2 – Ground	Constant	Battery positive voltage
3 – Ground	Ignition switch turned to ACC or ON	Battery positive voltage
4 – Ground	Ignition switch turned to ON	Battery positive voltage
6 – Ground	Ignition switch turned to ON	Battery positive voltage
7 – Ground	Constant	Battery positive voltage
8– Ground	Ignition switch turned to START	Battery positive voltage



3. INSPECT KEY UNLOCK WARNING SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
OFF (Ignition key removed)	–	No continuity
ON (Ignition key set)	1 – 2	Continuity

If continuity is not as specified, replace the switch.



4. INSPECT KEY UNLOCK WARNING SWITCH CIRCUIT

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

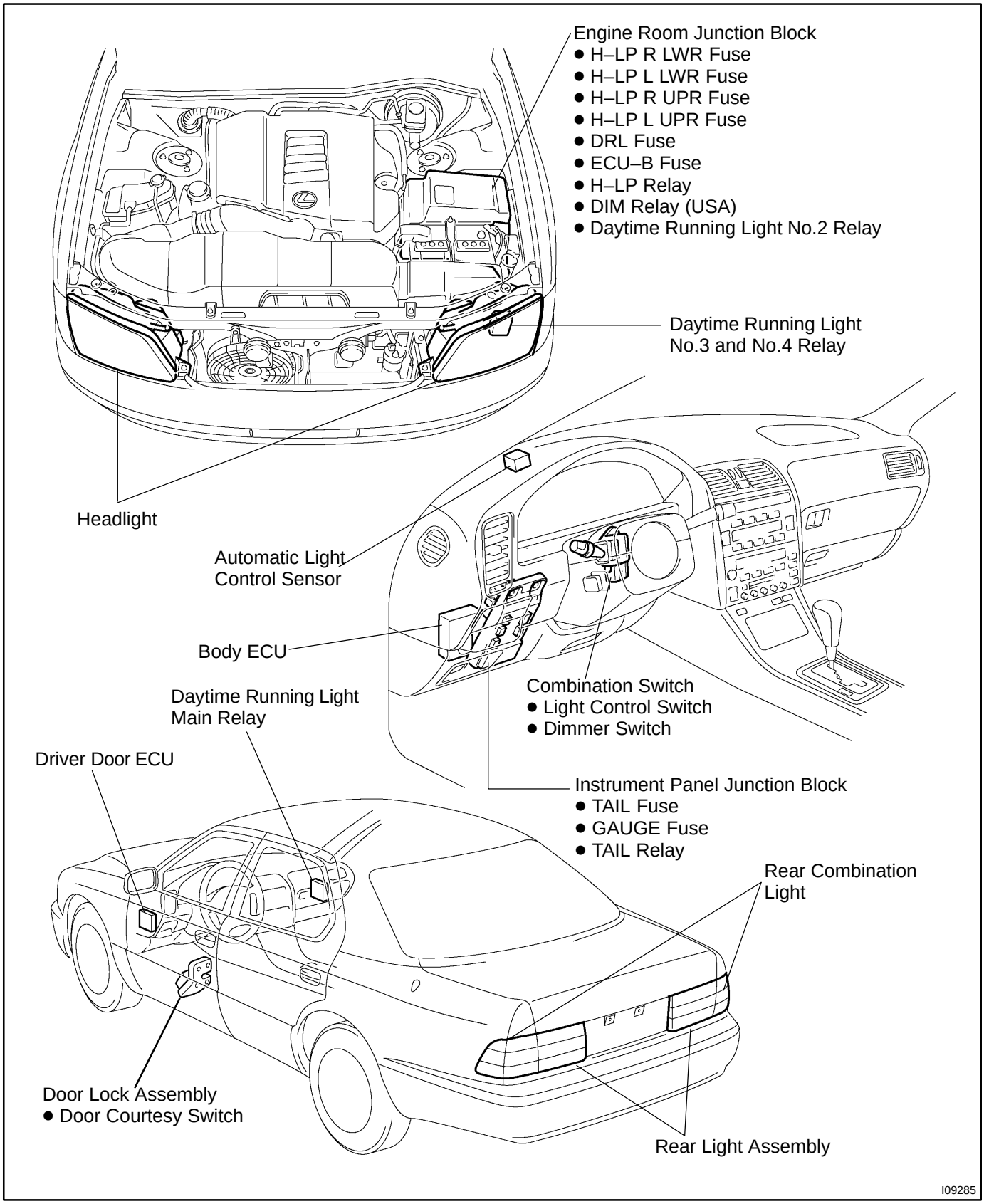
Tester connection	Condition	Specified condition
2 – Ground	Ignition key removed	No continuity
2 – Ground	Ignition key set	Continuity
1 – Ground	Constant	Continuity

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

HEADLIGHT AND TAILLIGHT SYSTEM

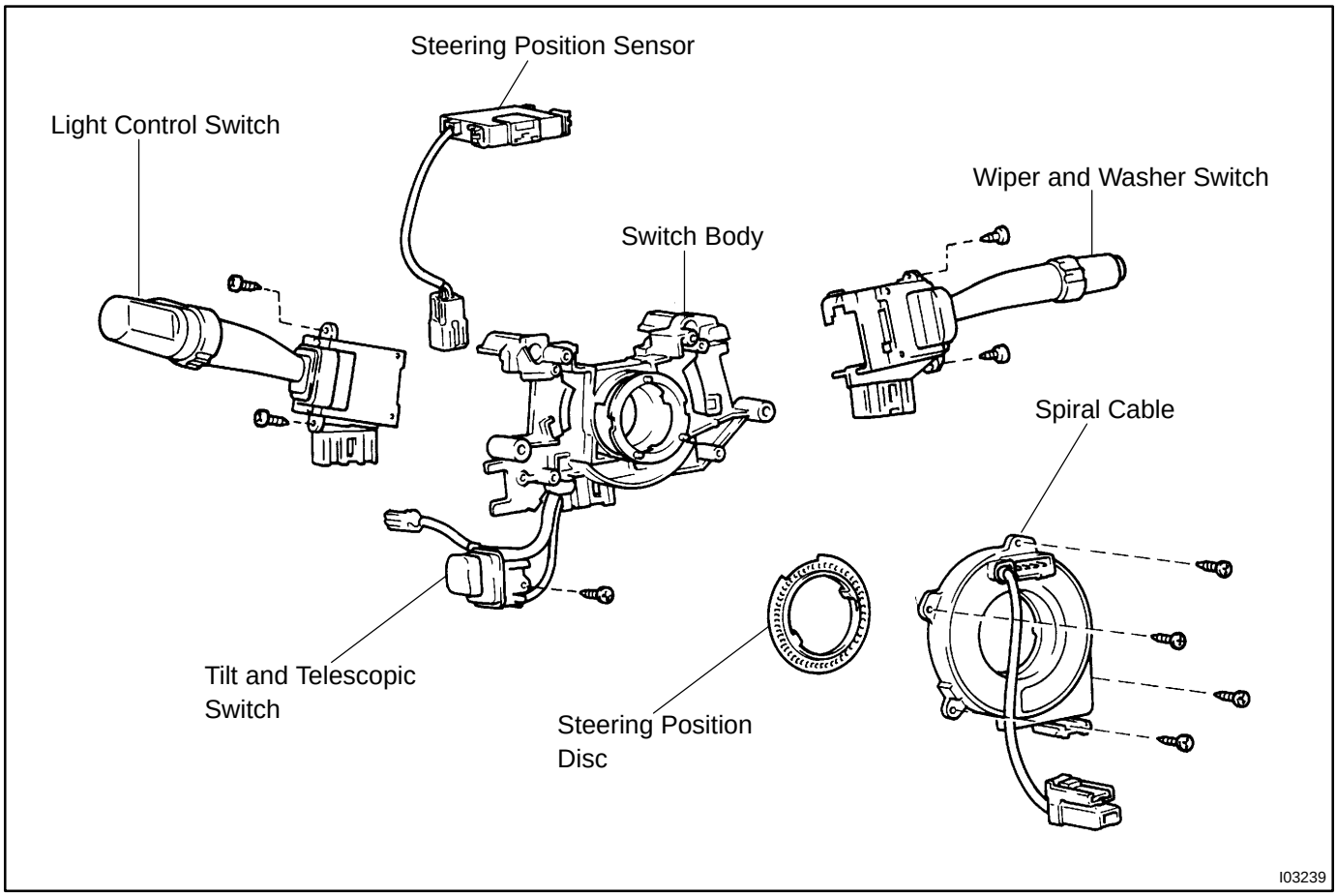
BE0BC–03

LOCATION



BE0BD–01

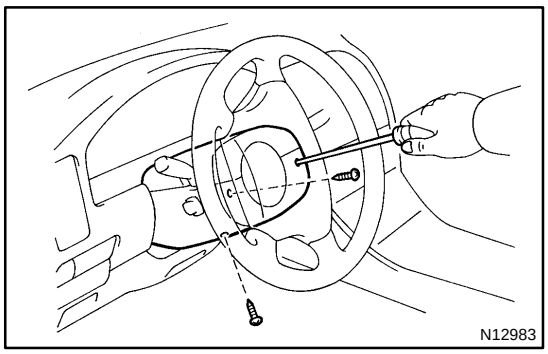
COMPONENTS



BE0BE–01

REMOVAL

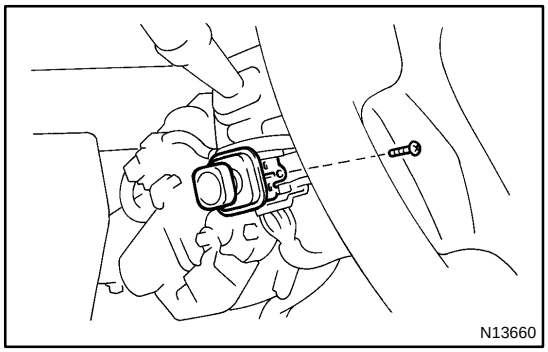
Installation is in the reverse order of removal.



1. REMOVE COLUMN COVER

(a) Remove the 3 screws.

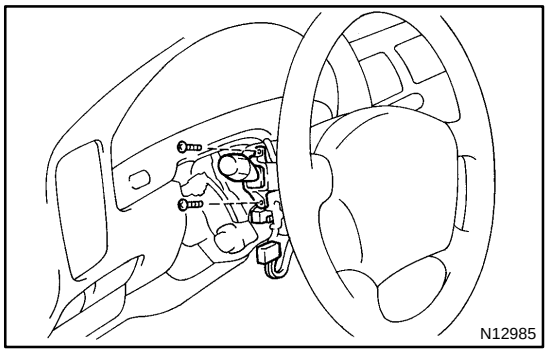
(b) Remove the column cover.



2. REMOVE POWER TILT AND TELESCOPIC SWITCH

(a) Remove the screw.

(b) Remove the power tilt and telescopic switch.

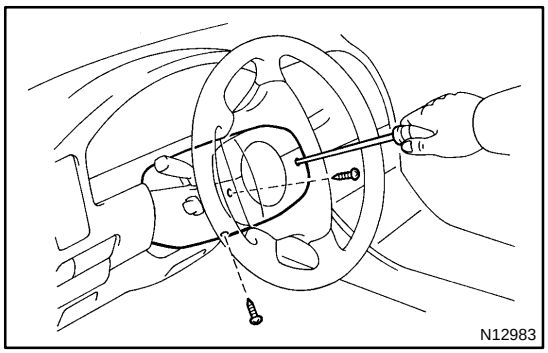


3. REMOVE LIGHT CONTROL SWITCH

(a) Disconnect the light control switch connector.

(b) Remove the 2 screws.

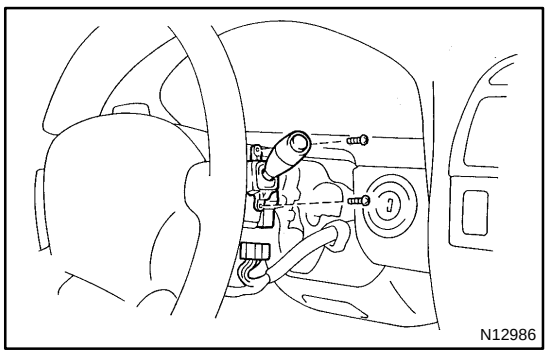
(c) Remove the switch.



4. REMOVE COLUMN COVER

(a) Remove the 3 screws.

(b) Remove the column cover.



5. REMOVE WIPER AND WASHER SWITCH

(a) Disconnect the wiper and washer switch connector.

(b) Remove the 2 screws.

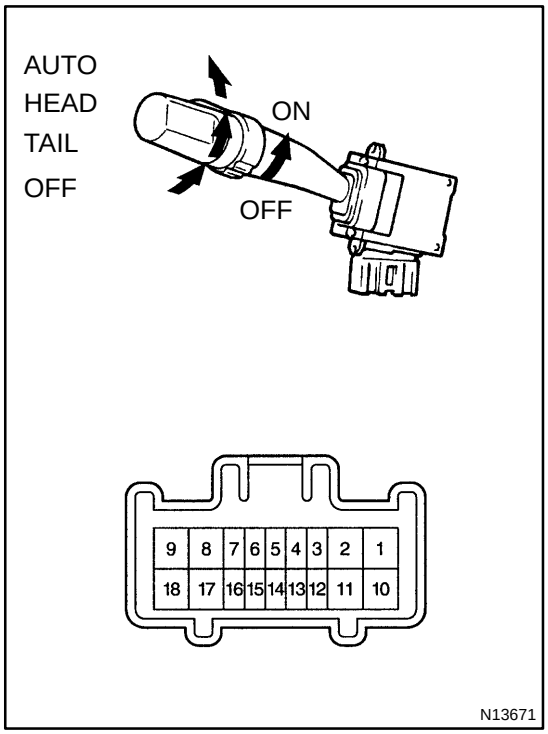
(c) Remove the switch.

BE0BF–01

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 it lit 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

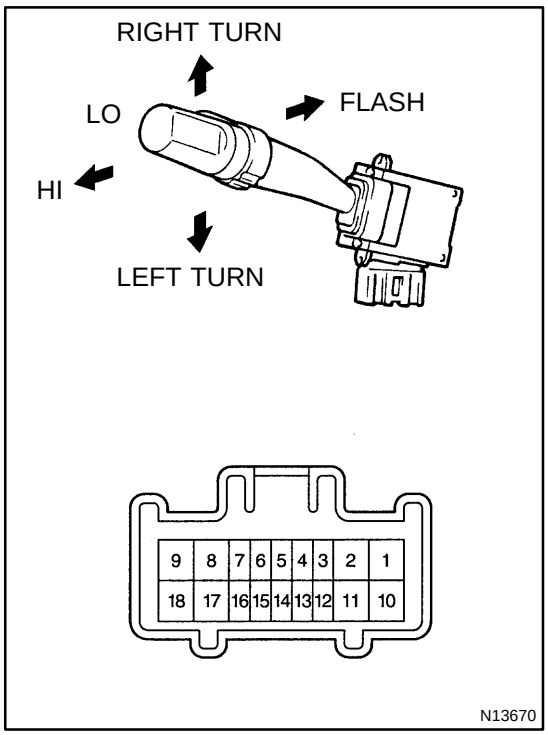
Switch position	Tester connection	Specified condition
OFF	–	No continuity
TAIL	15 – 16	Continuity
HEAD	14 – 15 – 16	Continuity
AUTO	13 – 16	Continuity

If continuity is not as specified, replace the switch.

3. INSPECT FOG LIGHT SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
OFF	–	No continuity
ON	11 – 12	Continuity

If continuity is not as specified, replace the switch.



4. INSPECT HEADLIGHT DIMMER SWITCH CONTINUITY

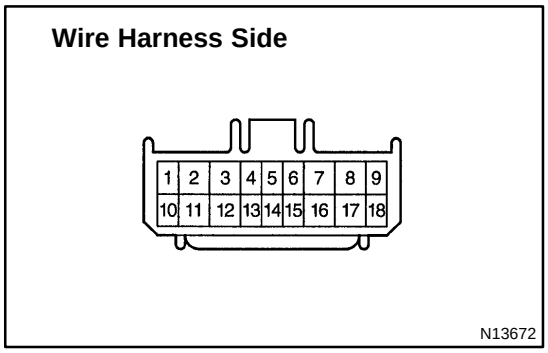
Switch position	Tester connection	Specified condition
Flash	8 – 9 – 17	Continuity
Low beam	17 – 18	Continuity
High beam	8 – 17	Continuity

If continuity is not as specified, replace the switch.

5. 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.



6. USA:
INSPECT SWITCH CIRCUIT

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

Light Control Switch Circuit

Tester connection	Condition	Specified condition
16 – Ground	Constant	Continuity

Fog Light Switch Circuit

Tester connection	Condition	Specified condition
11 – 18	Constant	Continuity
12 – Ground	Constant	Battery positive voltage

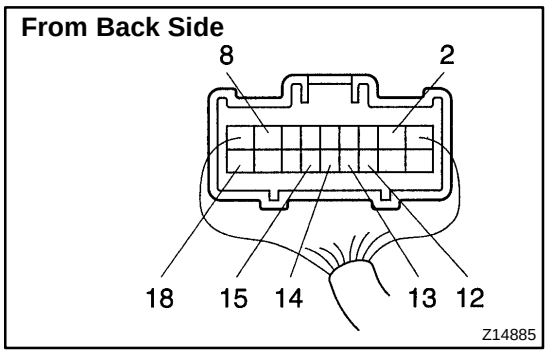
Dimmer Switch Circuit

Tester connection	Condition	Specified condition
17 – Ground	Constant	Continuity
9 – Ground	Constant	Battery positive voltage

Turn Signal Switch Circuit

Tester connection	Condition	Specified condition
2 – Ground	Constant	Continuity

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



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

Light Control Switch Circuit
See page DI–678

Fog Light Switch Circuit

Tester connection	Condition	Specified condition
12 – Ground	Light control switch HEAD and dimmer switch position HI or FLASH	No voltage
12 – Ground	Light control switch HEAD and dimmer switch position LO	Battery positive voltage

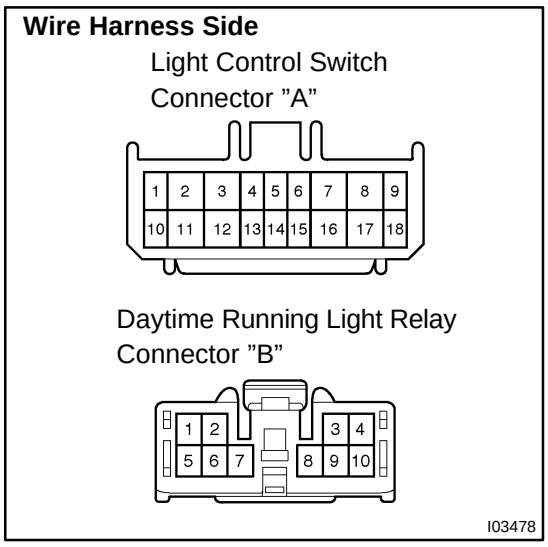
Dimmer Switch Circuit

Tester connection	Condition	Specified condition
8 – Ground	Light control switch HEAD and dimmer switch LOW	No voltage
8 – Ground	Headlight dimmer switch FLASH or Light control switch HEAD and dimmer switch HIGH	Battery positive voltage
18 – Ground	Light control switch HEAD and dimmer switch HIGH or FLASH	No voltage
18 – Ground	Light control switch HEAD and dimmer switch LOW	Battery positive voltage

Turn Signal Switch Circuit

Tester connection	Condition	Specified condition
1 – Ground	Ignition switch ON and turn signal switch position Left	Battery positive voltage
3 – Ground	Ignition switch ON and turn signal switch position Right	Battery positive voltage

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



7. CANADA:

INSPECT SWITCH CIRCUIT

(a) Disconnect the light control switch and daytime running light relay connectors, and inspect the each connector on the wire harness side, as shown.

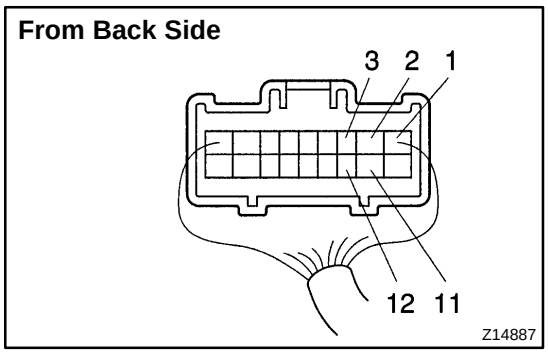
Light Control Switch Circuit

Tester connection	Condition	Specified condition
A16 – Ground	Constant	Continuity

Dimmer Switch Circuit

Tester connection	Condition	Specified condition
A17 – Ground	Constant	Continuity
A8 – B8	Constant	Continuity
A9 – B2	Constant	Continuity

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



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

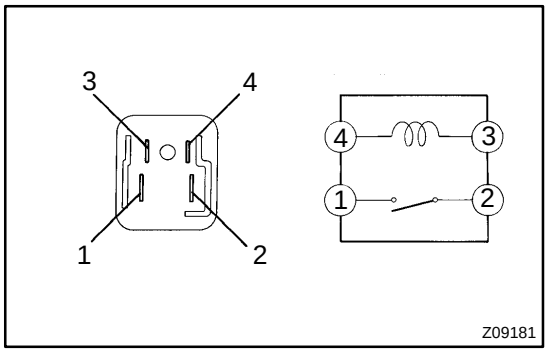
Fog Light Switch Circuit

Tester connection	Condition	Specified condition
11 – Ground	Light control switch OFF	No voltage
11 – Ground	Light control switch TAIL, HEAD or AUTO and Fog light switch ON	Battery positive voltage
12 – Ground	Light control switch OFF	No voltage
12 – Ground	Light control switch TAIL, HEAD or AUTO	Battery positive voltage

Turn Signal Switch Circuit

Tester connection	Condition	Specified condition
2 – Ground	Constant	Continuity
1 – Ground	Ignition switch ON and Turn signal switch position Left	No voltage
3 – Ground	Ignition switch ON and Turn signal switch position Right	Battery positive voltage

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

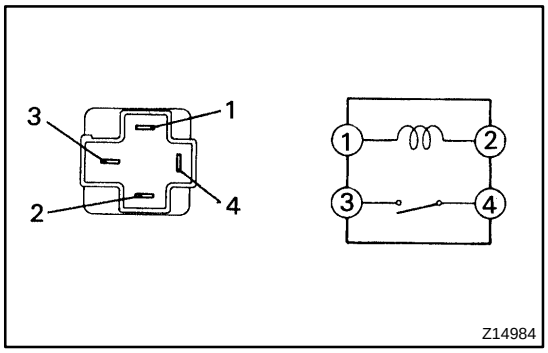


8. INSPECT HEADLIGHT CONTROL RELAY CONTINUITY

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

If continuity is not as specified, replace the relay.

9. INSPECT HEADLIGHT CONTROL RELAY CIRCUIT (See page BE–23)

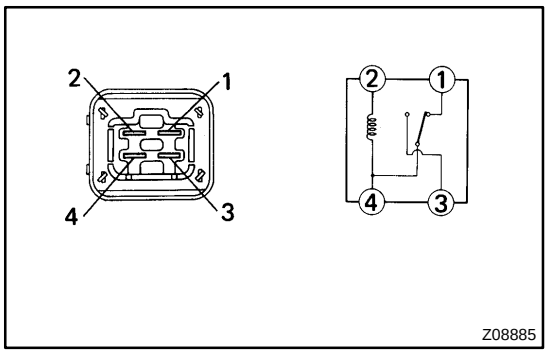


10. INSPECT TAILLIGHT CONTROL RELAY CONTINUITY

Condition	Tester connection	Specified condition
Constant	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 CIRCUIT (See page BE–23)



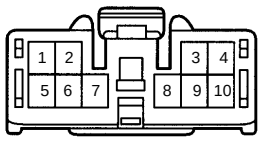
12. INSPECT HEADLIGHT DIMMER AND DAYTIME RUNNING LIGHT NO.2 RELAY CONTINUITY

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

If continuity is not as specified, replace the relay.

13. INSPECT HEADLIGHT DIMMER RELAY CIRCUIT (See page BE–23)

Wire Harness Side



h–10–1–A N21564

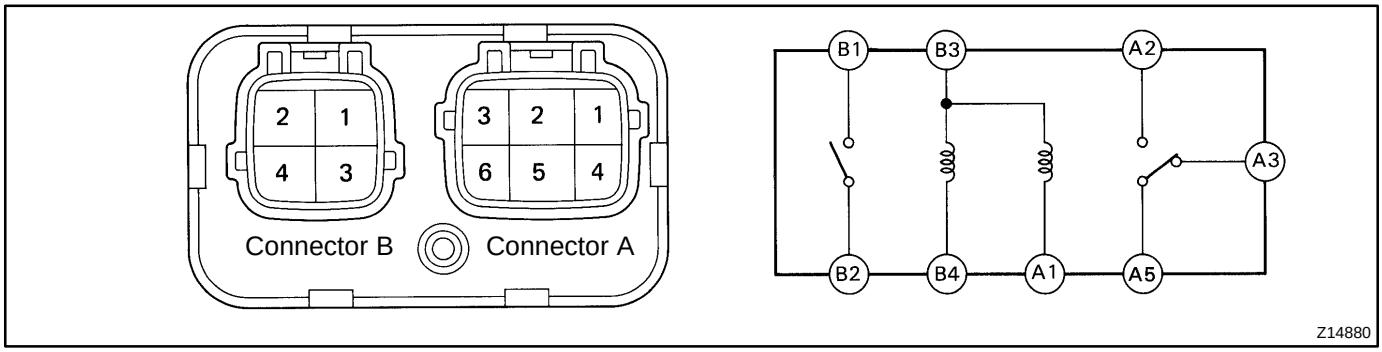
14. INSPECT DAYTIME RUNNING LIGHT RELAY CIRCUIT

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 position OFF or TAIL	No continuity
2 – Ground	Light control switch position HEAD	Continuity
4 – Ground	Parking brake switch position OFF (Parking brake lever released)	No continuity
4 – Ground	Parking brake switch position ON (Parking brake lever pulled up)	Continuity
6 – Ground	Constant	Continuity
8 – Ground	Headlight dimmer switch position Low beam	No continuity
8 – Ground	Headlight dimmer switch position High beam or Flash	Continuity
10 – Ground	Brake fluid level warning switch position OFF	No continuity
10 – Ground	Brake fluid level warning switch position ON	Continuity
1 – Ground	Ignition switch position LOCK or ACC	No voltage
1 – Ground	Ignition switch position ON or START	Battery positive voltage
5 – Ground	Engine Stop	No voltage
5 – Ground	Engine Running	Battery positive voltage
7 – Ground	Constant	Battery positive voltage
9 – Ground	Constant	Battery positive voltage

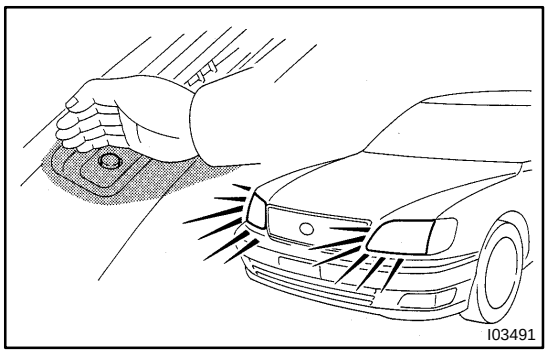
If circuit is as specified, try replacing the relay with a new one.
If circuit is not as specified, inspect the circuits connected to other parts.

15. INSPECT DAYTIME RUNNING LIGHT RELAY NO.3 AND NO.4 CONTINUITY



Tester connection	Condition	Specified condition
A1 – B3	Constant	Continuity
A3 – A5	Constant	Continuity
B3 – B4	Constant	Continuity
A2 – A5	Apply battery positive voltage between terminal A1 and B3.	Continuity
B1 – B2	Apply battery positive voltage between terminal B3 and B4.	Continuity

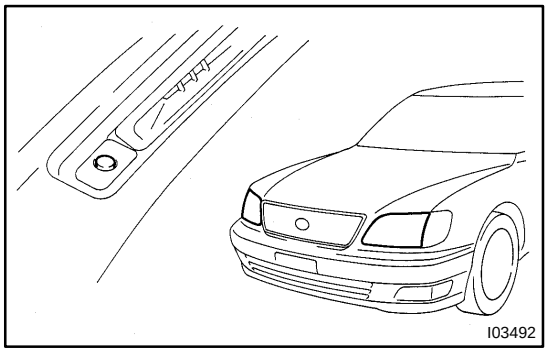
If continuity is not as specified, replace the relay.



16. INSPECT AUTOMATIC LIGHT CONTROL

AUTO ON:

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



17. INSPECT AUTOMATIC LIGHT CONTROL

AUTO OFF:

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

18. INSPECT LIGHT–OFF CONDITION

(a) Turn the ignition switch ON.

(b) Gradually cover the top of the sensor.
Lights auto ON:

(c) Verify that the lights will go out when light control switch position OFF or the area surrounding the sensor gets bright or open the driver's door while the ignition switch is OFF.

19. INSPECT LIGHTS–ON CONDITION

(a) Open the driver's door while the ignition switch is OFF.

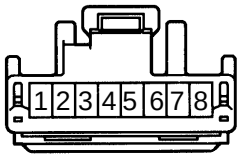
(b) Turn the light control switch to AUTO leaving the door open and cover the top of the sensor, and verify that the lights go on when the ignition switch is turned ON.

20. ADJUST AUTOMATIC LIGHT CONTROL SENSOR

Using the LEXUS hand–held tester with customize soft installed, adjust the automatic light control sensor.

- If response is too quick, turn the knob counterclockwise.
- If response is too slow, turn the knob clockwise.

Wire Harness Side



Z14888

21. INSPECT AUTOMATIC LIGHT CONTROL SENSOR CIRCUIT

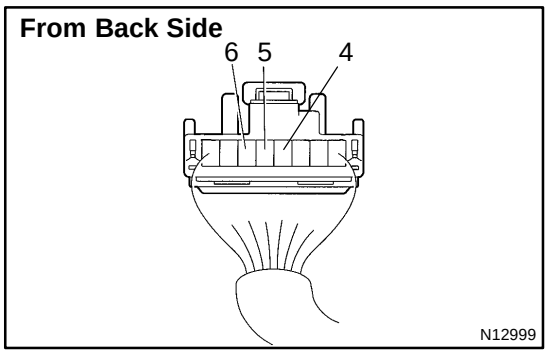
Connector disconnected

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

Tester connection	Condition	Specified condition
6 – Ground	Constant	Continuity
4 – Ground	Ignition switch position LOCK or ACC	No voltage
4 – Ground	Ignition switch position ON	5.2 – 9.0 V
5 – Ground	Ignition switch position LOCK or ACC	No voltage
5 – Ground	Ignition switch position ON	Battery positive voltage

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.



Connector connected

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
6 – Ground	Constant	1 V or less
5 – Ground	Ignition switch position LOCK or ACC	1 V or less
5 – Ground	Ignition switch position ON	9.5 V or more
4 – Ground	Vehicle's surroundings are dark. (Sensor is covered)	Taillight and headlight are ON

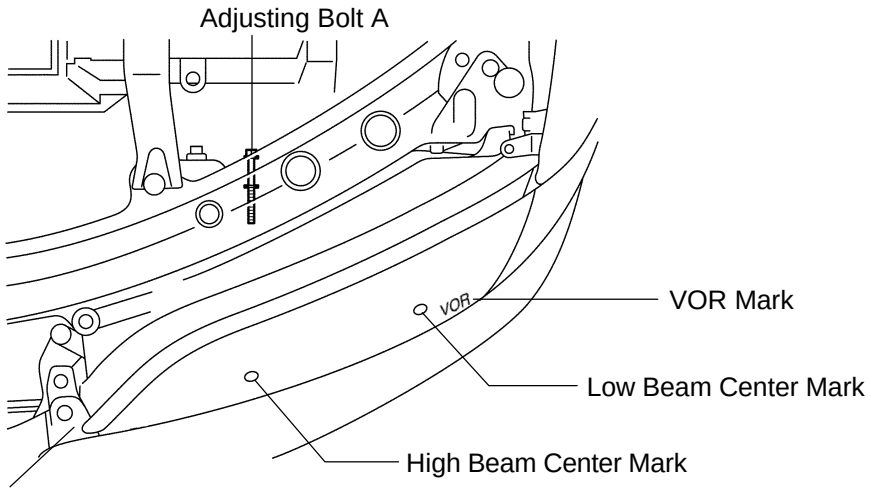
If circuit is as specified, try replacing the sensor with a new one.

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

BE11V–01

ADJUSTMENT

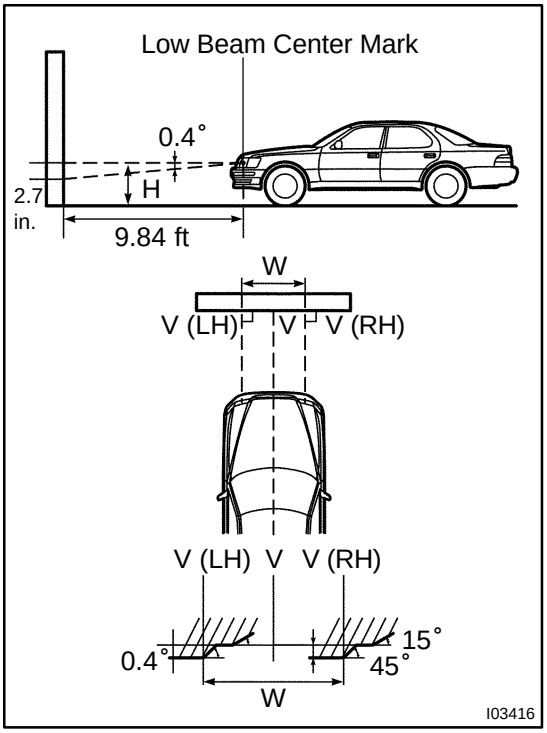
Halogen Type:



I09287

1. Halogen Type:
ADJUST HEADLIGHT AIM ONLY

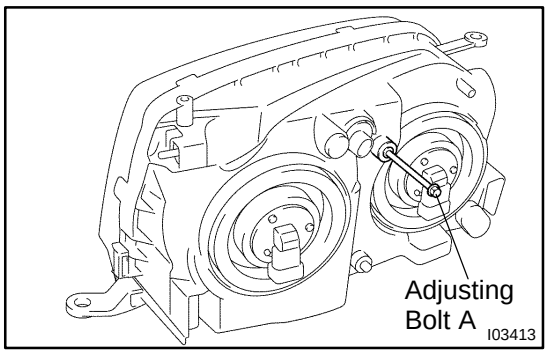
(a) Put the vehicle in below conditions.
- Make sure the body around the headlight is not deformed.
- Park the vehicle on a level spot.
- The driver gets into the driver's seat and puts the vehicle in a state ready for driving (with a full tank).
- Bounce the vehicle several times.



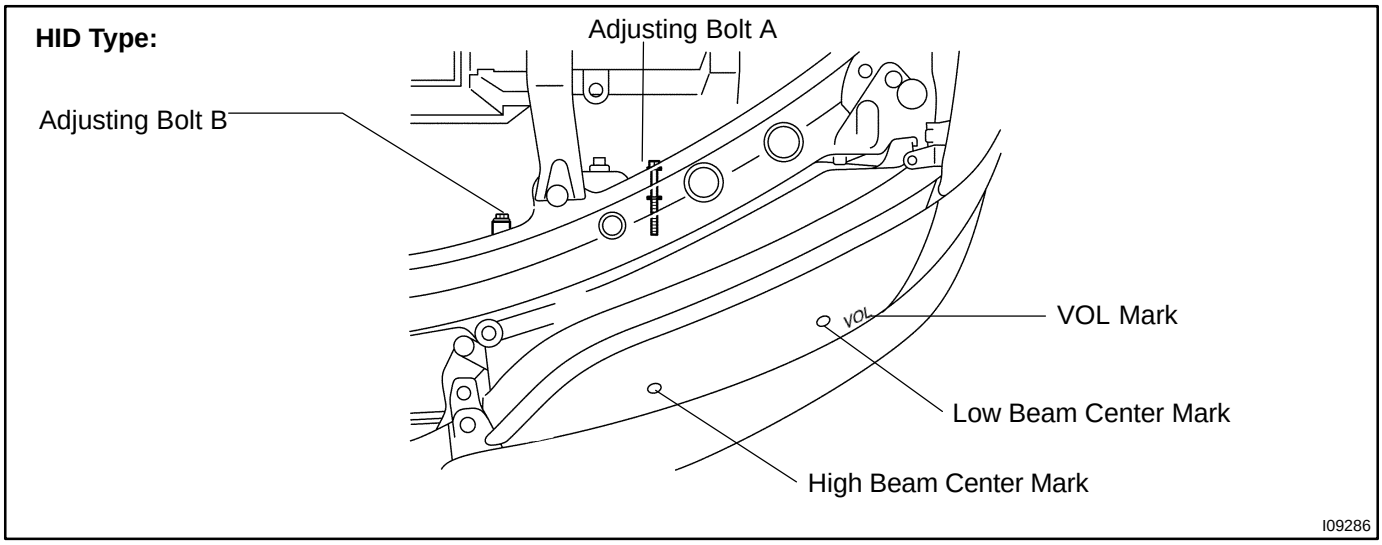
I03416

(b) Prepare the thick white colored paper.
(c) Stand the paper perpendicularly and ensure the distance from it to the head lights is 9.84 ft.
(d) Ensure that the center line of vehicle and the paper are at a 90 degree angle as shown in the illustration.
(e) Draw a horizontal line on the paper where the head lights (low beam center mark) of the vehicle are to be.
(f) Draw a vertical line on the paper where the center line of the vehicle is to be. (V line)
(g) Turn the head lights ON.
(h) Check that the head lights light up the paper as shown in the illustration.

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

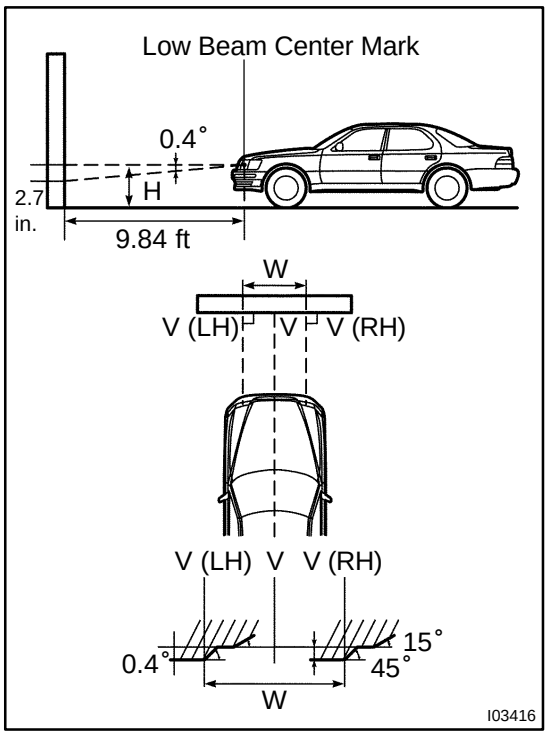


(i) When the paper is not lighted up properly, using the adjusting bolt A, adjust the lights in the vertical direction.



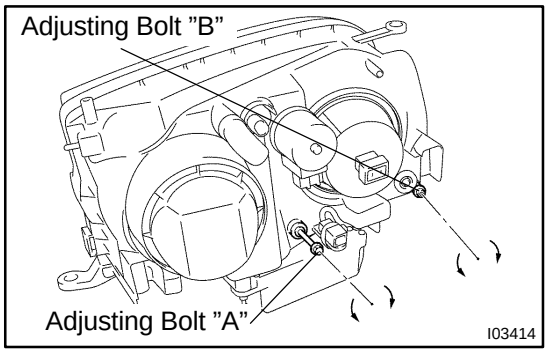
2. HID Type:
ADJUST HEADLIGHT AIM ONLY

(a) Put the vehicle in below conditions.
- Make sure the body around the headlight is not deformed.
- Park the vehicle on a level spot.
- 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) Prepare the thick white colored paper.
(c) Stand the paper perpendicularly and ensure the distance from it to the head lights is 9.84 ft.
(d) Ensure that the center line of vehicle and the paper are at a 90 degree angle as shown in the illustration.
(e) Engine running.
(f) Draw a horizontal line on the paper where the head lights of the vehicle are to be.
(g) Draw a vertical line on the paper where the center line of the vehicle is to be. (V line)
(h) Turn the head lights ON.
(i) Check that the head lights light up the paper as shown in the illustration.
(j) When the paper is not lighted up properly, adjust the lights in the vertical or horizontal direction.

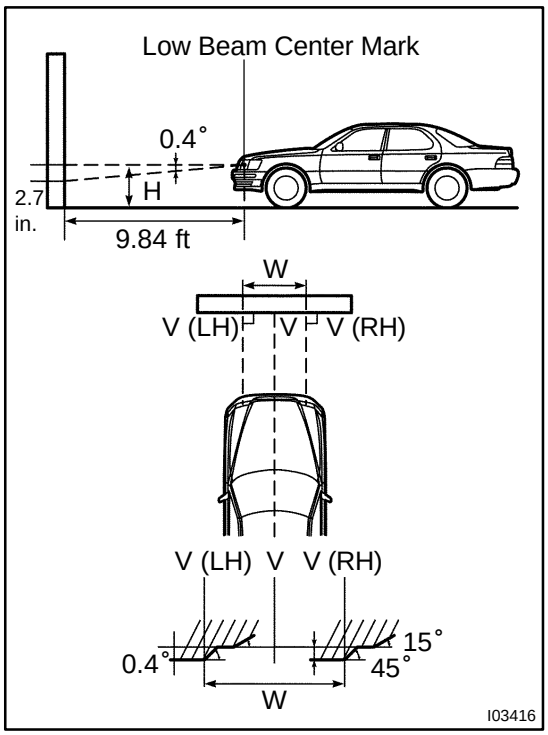
HINT:
As shown in the illustration, adjust aiming of the LH and RH lights respectively.



(k) Adjust headlight in vertical alignment.
  (1) Turn the verrical movement adjusting bolt ”A” in eithewr direction. At this time, keep the turning direction and number of turns in mind.
  (2) Turn the verrical movement adjusting bolt ”A” the same numb er of turns and in the same directionat step (1).

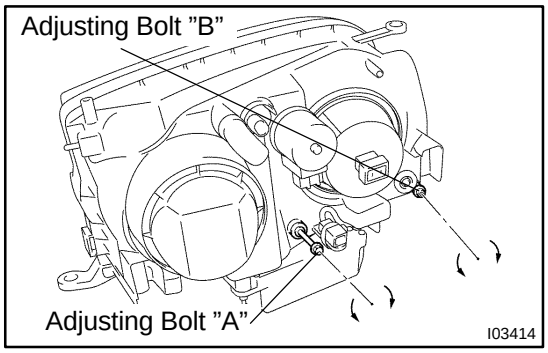
3. REPLACE HEADLIGHT

(a) Replace the headlight.
(b) Put the vehicle in below conditions.
- Make sure the body around the headlight is not deformed.
- Park the vehicle on a level spot.
- 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.



(c) Prepare the thick white colored paper.
(d) Stand the paper perpendicularly and ensure the distance from it to the head lights is 9.84 ft.
(e) Ensure that the center line of vehicle and the paper are at a 90 degree angle as shown in the illustration.
(f) Engine running.
(g) Draw a horizontal line on the paper where the head lights of the vehicle are to be.
(h) Draw a vertical line on the paper where the center line of the vehicle is to be. (V line)
(i) Turn the head lights ON.
(j) Check that the head lights light up the paper as shown in the illustration.
(k) When the paper is not lighted up properly, adjust the lights in the vertical or horizontal direction.

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

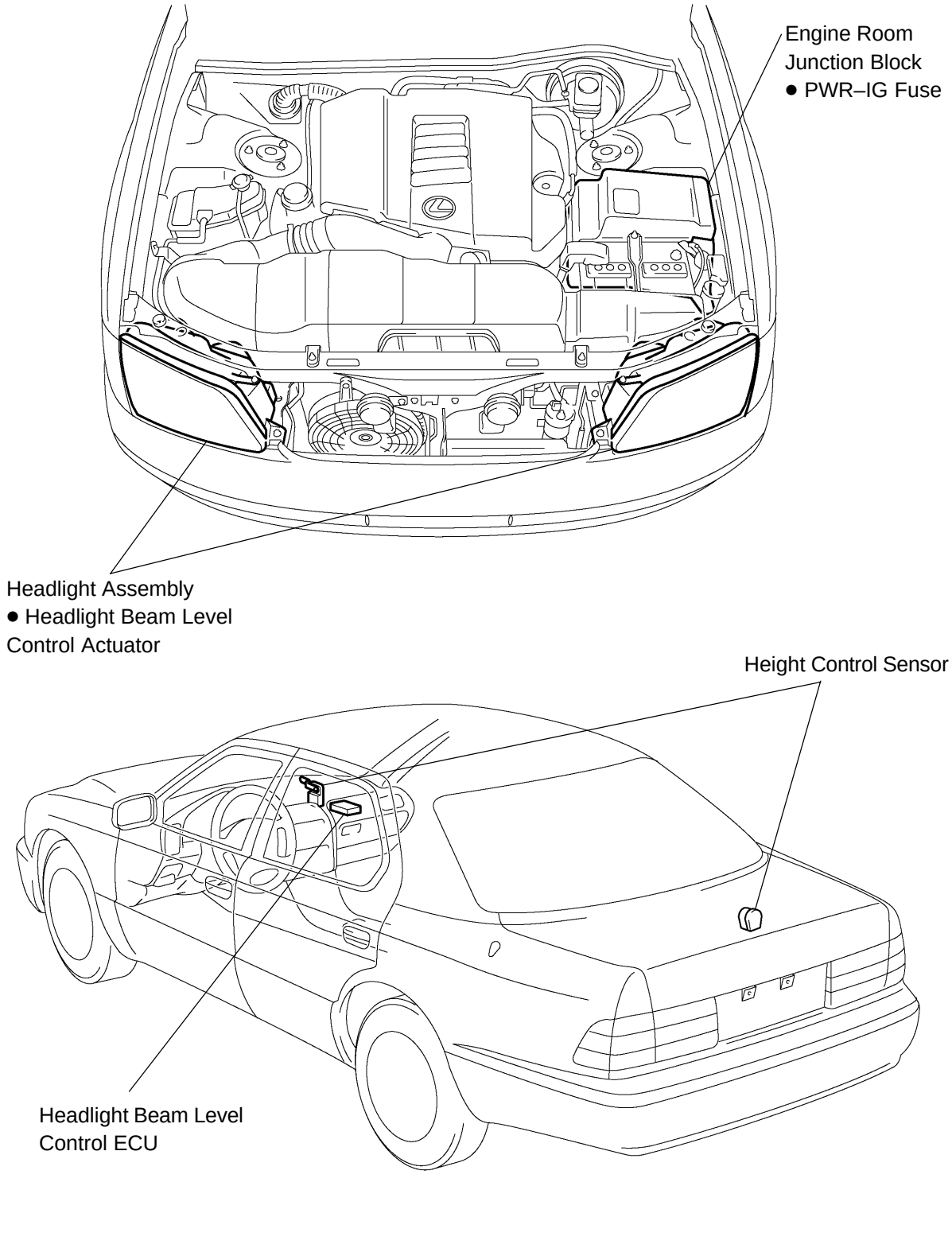


(l) Adjust headlight in vertical alignment.
  (1) Turn the verrical movement adjusting bolt ”A” in eithewr direction. At this time, keep the turning direction and number of turns in mind.
  (2) Turn the verrical movement adjusting bolt ”A” the same numb er of turns and in the same directionat step (1).

HEADLIGHT BEAM LEVEL CONTROL SYSTEM

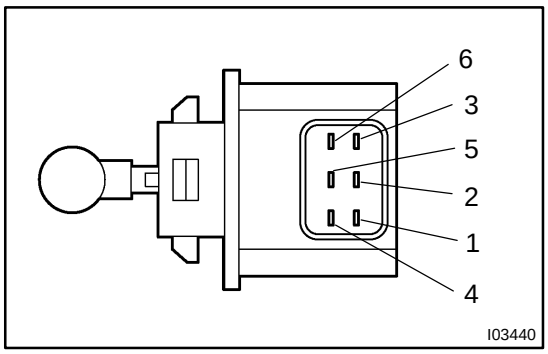
BE0BH–01

LOCATION



BE0BI–01

INSPECTION



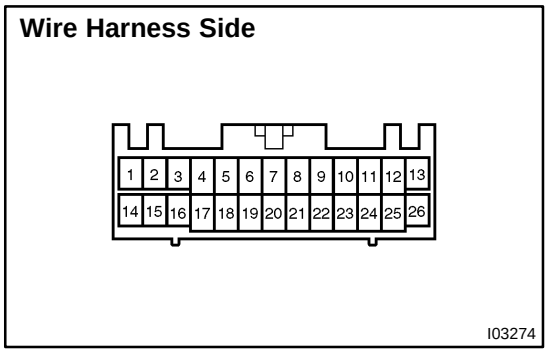
1. INSPECT HEADLIGHT BEAM LEVEL CONTROL ACTUATOR RESISTANCE

(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.



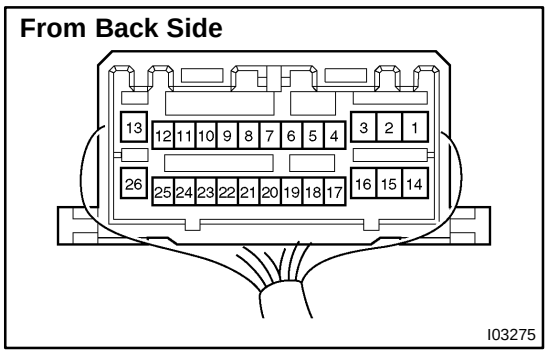
2. INSPECT HEADLIGHT BEAM LEVEL CONTROL ECU CIRCUIT

Connector disconnected:

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

Tester connection	Condition	Specified condition
1 – 4	Ignition switch OFF	26 – 30 Ω
1 – 5	Ignition switch OFF	26 – 30 Ω
1 – 6	Ignition switch OFF	26 – 30 Ω
1 – 7	Ignition switch OFF	26 – 30 Ω
1 – 17	Ignition switch OFF	26 – 30 Ω
1 – 18	Ignition switch OFF	26 – 30 Ω
1 – 19	Ignition switch OFF	26 – 30 Ω
1 – 20	Ignition switch OFF	26 – 30 Ω
10 – 25	Ignition switch OFF	Continuity
21 – 25	Ignition switch OFF	Continuity
24 – 25	Ignition switch OFF	Continuity
13 – Ground	Ignition switch OFF	Continuity
26 – Ground	Ignition switch OFF	Continuity

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



3. INSPECT HEADLIGHT BEAM LEVEL CONTROL ECU CIRCUIT

Connector connected:

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

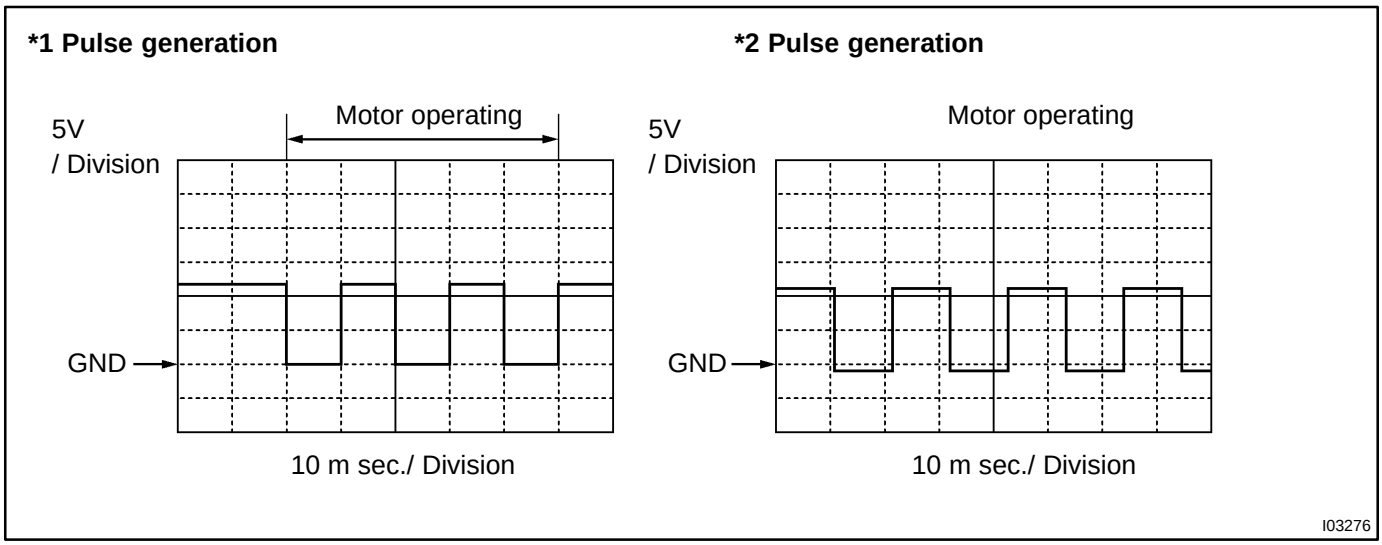
Tester connection	Condition	Specified condition
1 – 13	Ignition switch ON	Battery positive voltage
4 – 13, 26	Ignition switch ON, when keep and bounce the vehicle	*1 Pulse generation
5 – 13, 26	Ignition switch ON, when keep and bounce the vehicle	*1 Pulse generation
6 – 13, 26	Ignition switch ON, when keep and bounce the vehicle	*1 Pulse generation
7 – 13, 26	Ignition switch ON, when keep and bounce the vehicle	*1 Pulse generation
10 – 25	Ignition switch ON	Approx. 2.5 V
12 – 13	Ignition switch ON	No continuity
26 – Body ground	Ignition switch OFF	Continuity (w/ Electrical modulated air suspension)
13 – 15	Ignition switch ON and light control switch HEAD	Below 1.5 V
17 – 13, 26	Ignition switch ON, when keep and bounce the vehicle	*1 Pulse generation
18 – 13, 26	Ignition switch ON, when keep and bounce the vehicle	*1 Pulse generation
19 – 13, 26	Ignition switch ON, when keep and bounce the vehicle	*1 Pulse generation
20 – 13, 26	Ignition switch ON, when keep and bounce the vehicle	*1 Pulse generation
21 – 25	Ignition switch ON	Approx. 2.5 V
13 – 22		*2 Pulse generation
13 – 23		*2 Pulse generation
24 – 25	Ignition switch ON	5 V
13 – 25	Ignition switch OFF	Continuity
13 – Body ground	Ignition switch OFF	Continuity

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

Reference INSPECTION USING OSCILLOSCOPE

HINT:

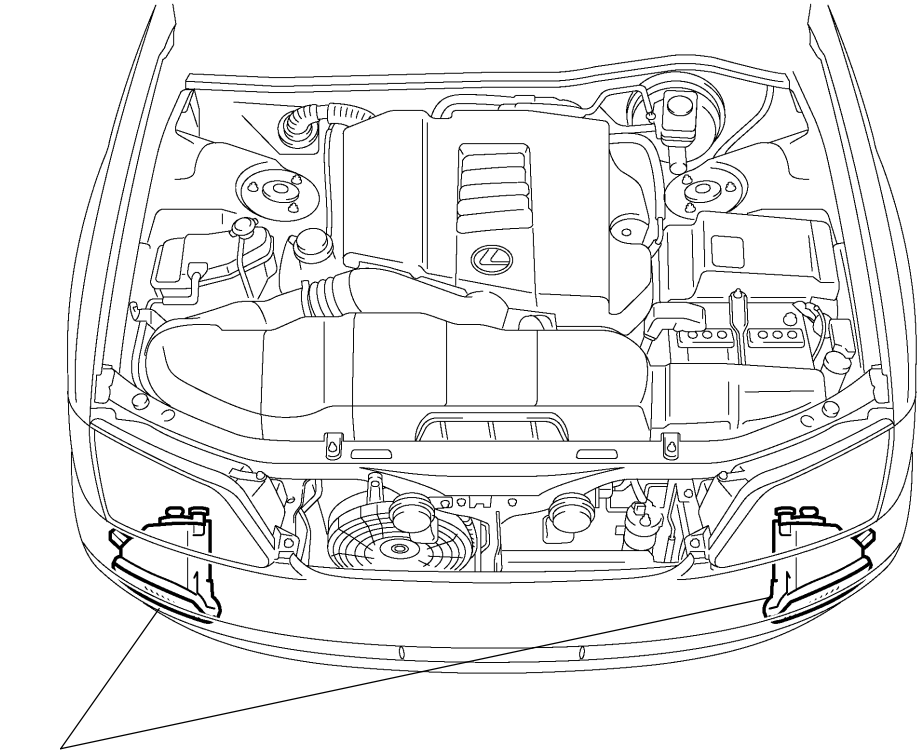
The correct waveform is as shown in the illustration.



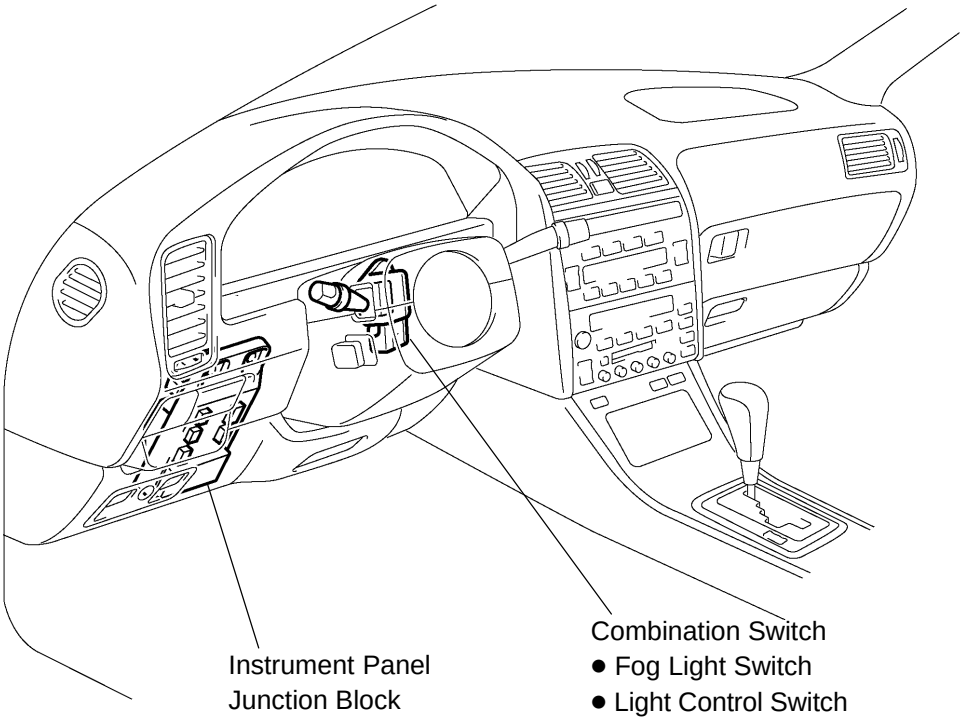
FOG LIGHT SYSTEM

LOCATION

BE0BJ–01



Headlight Assembly
- Fog Light

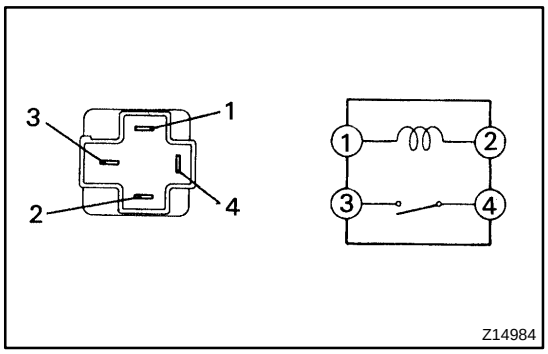


Instrument Panel
Junction Block
- FOG Fuse
- Fog Light Relay

Combination Switch
- Fog Light Switch
- Light Control Switch

I03229

BE0BK–01



INSPECTION

1. INSPECT FOG LIGHT RELAY CONTINUITY

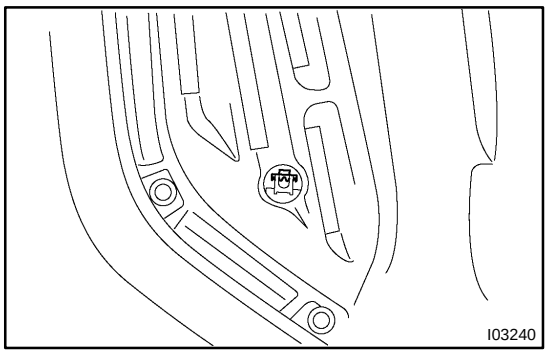
Condition	Tester connection	Specified condition
Constant	1 – 2	Continuity
Apply B+ between terminals 1 and 2.	3 – 4	Continuity

If continuity is not as specified, replace the relay.

2. INSPECT FOG LIGHT RELAY CIRCUIT

(See page BE–23)

BE0BL–01



ADJUSTMENT

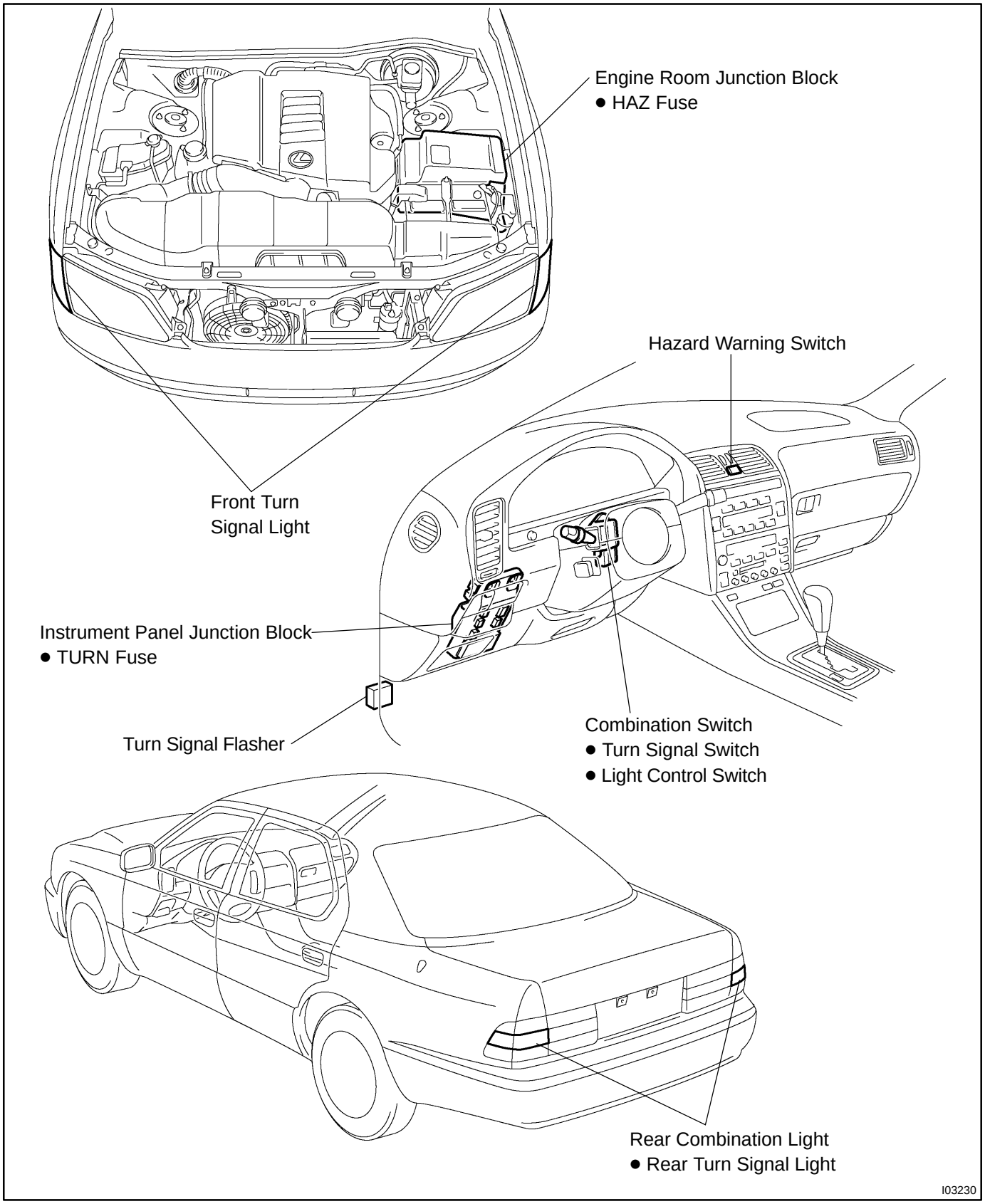
ADJUST FOG LIGHT AIM

A–bolt: Vertical Direction

TURN SIGNAL AND HAZARD WARNING SYSTEM

BE0BM–01

LOCATION

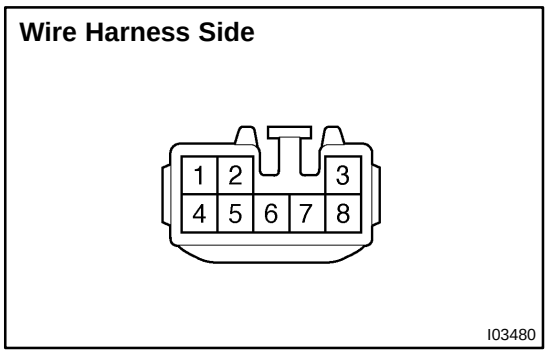


BE0BN–01

INSPECTION

1. INSPECT TURN SIGNAL FLASHER CIRCUIT

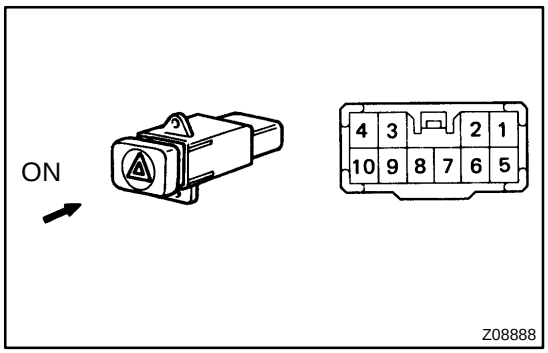
Disconnect the connector from the combination switch and inspect the connect on the wire harness side, as shown.



Tester connection	Condition	Specified condition
2 – Ground	Constant	Continuity
3 – Ground	Constant	Continuity
5 – Ground	Turn signal switch RIGHT or OFF	No continuity
5 – Ground	Turn signal switch LEFT	Continuity
6 – Ground	Turn signal switch LEFT	No continuity
6 – Ground	Turn signal switch RIGHT	Continuity
7 – Ground	Constant	Continuity
8 – Ground	Hazard warning switch OFF	No continuity
8 – Ground	Hazard warning switch ON	Continuity
1 – Ground	Ignition switch LOCK or ACC	No voltage
1 – Ground	Ignition switch ON	Battery positive voltage
4 – Ground	Constant	Battery positive voltage

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

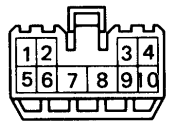
2. INSPECT HAZARD WARNING SWITCH CONTINUITY



Switch position	Tester connection	Specified condition
OFF	7 – 10	Continuity
ON	7 – 8	Continuity
Illumination circuit	2 – 3	Continuity

If continuity is not as specified, replace the switch.

Wire Harness Side



S-10-1

Z08740

3. INSPECT HAZARD WARNING SWITCH CIRCUIT

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

Tester connection	Condition	Specified condition
8 – Ground	Constant	Continuity
*2 – Ground	Light control switch position OFF	No voltage
*2 – Ground	Light control switch position TAIL or HEAD	Battery positive voltage

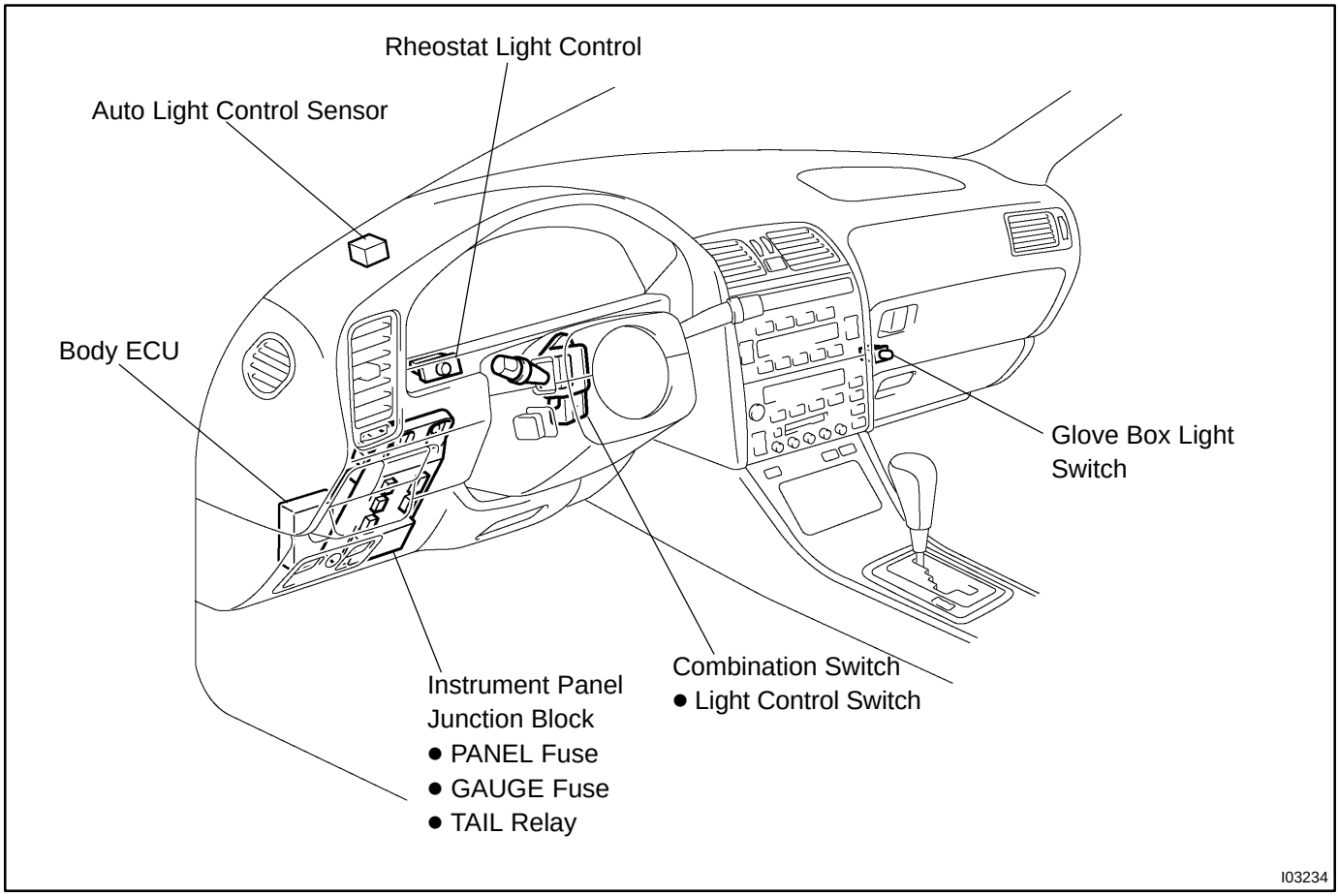
*: illumination

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

ILLUMINATION LIGHT SYSTEM

BE0BO–01

LOCATION



BE0BP–01

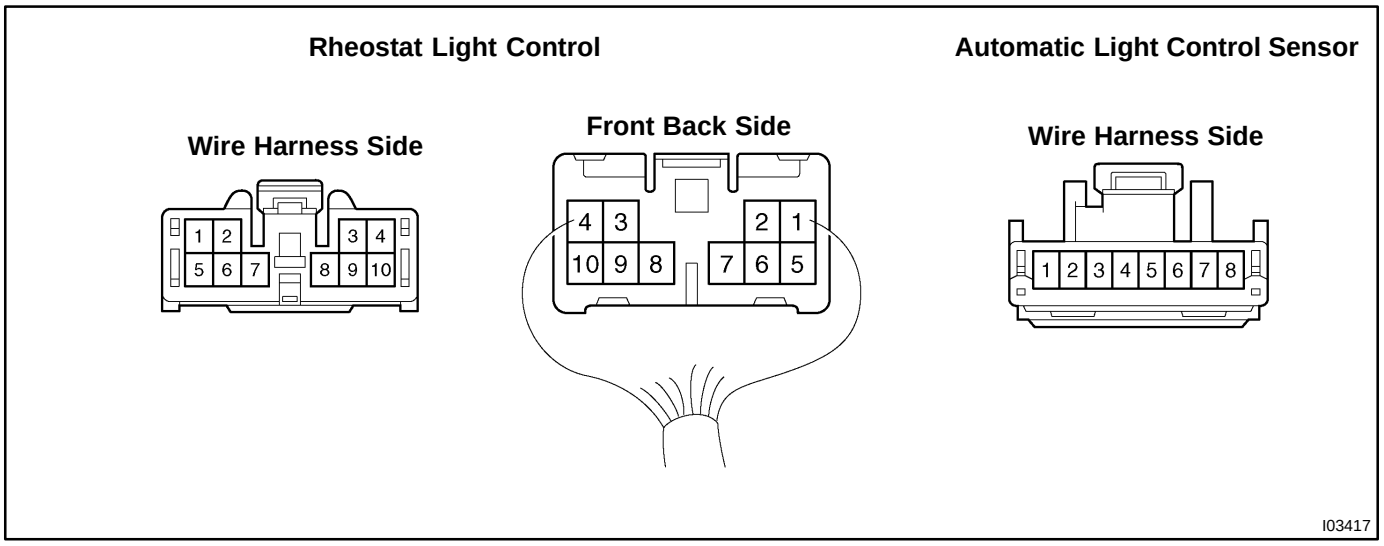
CIRCUIT

1. **When checking voltage, resistance, etc., use a high impedance type tester (It is impossible with a simple tester).**
2. **When the ignition switch is turned to START, all meters will go out but this is normal.**
3. **When replacing the internal mechanism (computer parts) of the meter, 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 parts (spare parts).**
4. **Do not disconnect the battery while the engine is running as this would cause an instant reverse charge, resulting in damage to the components.**
5. **Always disconnect the battery terminals before pulling apart connectors or terminals.**
6. **To prevent damage, handle meters with care.**

No.	Trouble
1	None of the illuminations can be adjusted.
2	Only the combination meter cannot be adjusted.
3	The combination meter can be adjusted, but not other illumination.
4	Tail cancellation does not work for the clock, air conditioner panel and combination meter.
5	Tail cancellation does not work for one of clock, air conditioner panel or combination meter.
6	Tail cancellation (illumination at 100 % brightness) does not occur when tail cancellation of the rheostat light control is released, the light control switch is put on AUTO and light strikes the automatic light control sensor. (Area surrounding vehicle is dark)

HINT:

Tail cancellation refers to the illumination brightness becoming 100 % when the rheostat light control is turned to the right beyond the moderate position. (Light is not applied to the automatic light control sensor at this time.)



1	None of the illuminations can be adjusted

HINT: While carrying, out the following inspection, make certain that the connectors and terminals are properly connected.

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

Ignition switch position ON.
Connect the positive (+) lead from the voltmeter to terminal 5 and negative (–) lead to the body ground. Is there battery positive voltage?

No → Replace GAUGE Fuse.
Then recheck system.

Yes

Turn light control switch to TAIL.
Taillight is normal?

No → Taillight system faulty. Inspect taillight circuit.
(See page BE–23)
Then recheck system.

Yes

With light control switch at TAIL, Connect the positive (+) lead from the voltage to terminal 6 and negative (–) lead to the body ground.
Is there battery positive voltage?

No → Replace PANEL Fuse.
Then recheck system.

Yes

Automatic light control system is normal?
(See page BE–38)

No → Automatic light control system faulty.
Replace automatic light control sensor.
Then recheck system.

Yes

Disconnect connectors from rheostat light control and automatic light control sensor, then inspect wire harness side connector.

Is there continuity when an ohmmeter is connected to connector terminal 1 on the wire harness side of the rheostat light control and connector terminal 8 on the wire harness side of automatic light control sensor?

No → Replace wire harness between connector terminal 1 rheostat side and connector terminal 8 on sensor side.

Yes

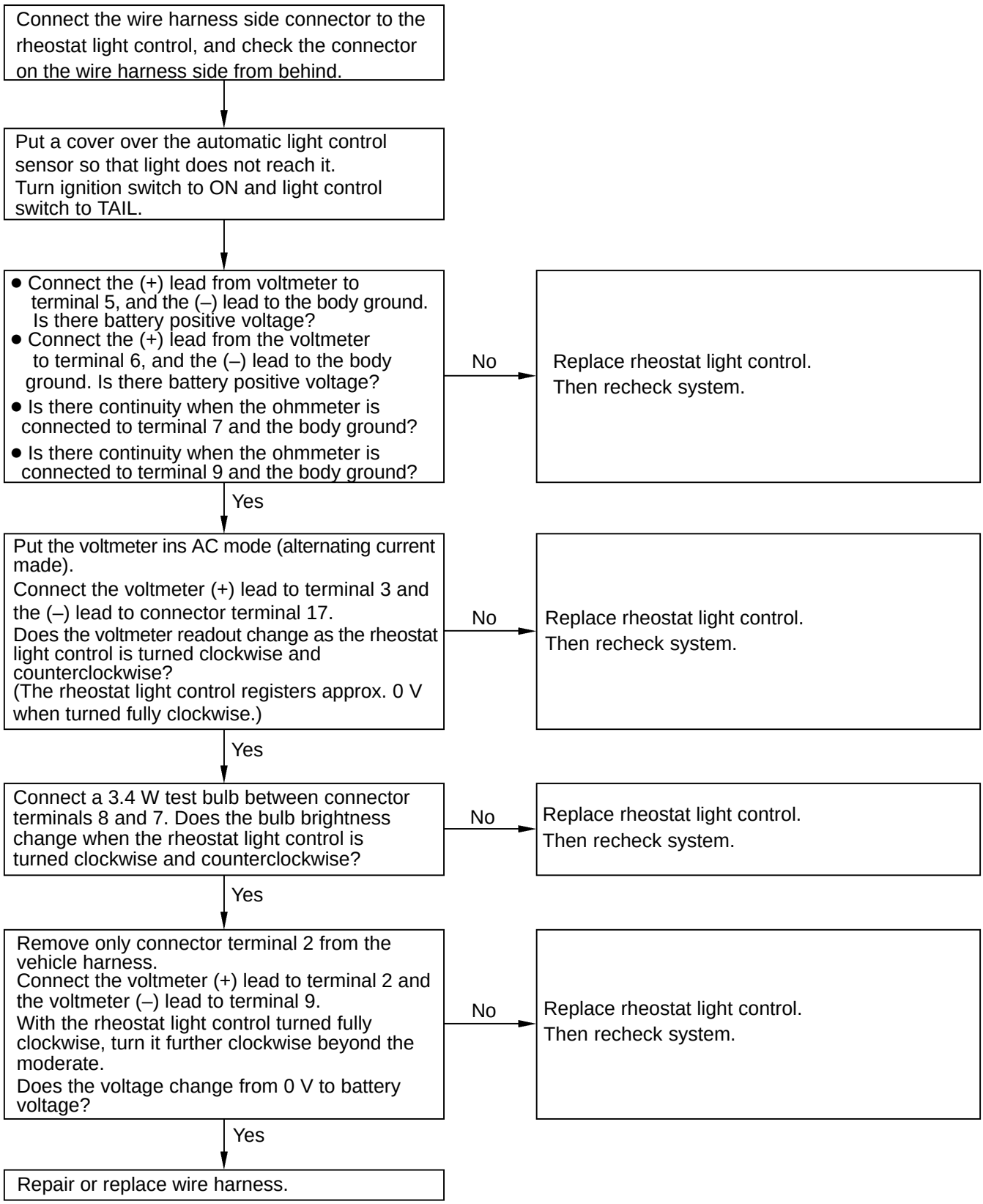
Is there continuity when and ohmmeter is connected to connector terminal 10 on wire harness side of rheostat light control and connector terminal 4 on wire harness side of automatic light control sensor?

No → Replace wire harness between connector terminal 10 on rheostat side and connector terminal 8 on sensor side.

Yes

CONTINUED ON NEXT PAGE

I03249


Connect the wire harness side connector to the rheostat light control, and check the connector on the wire harness side from behind.
Put a cover over the automatic light control sensor so that light does not reach it.
Turn ignition switch to ON and light control switch to TAIL.
● Connect the (+) lead from voltmeter to terminal 5, and the (–) lead to the body ground. Is there battery positive voltage?
● Connect the (+) lead from the voltmeter to terminal 6, and the (–) lead to the body ground. Is there battery positive voltage?
● Is there continuity when the ohmmeter is connected to terminal 7 and the body ground?
● Is there continuity when the ohmmeter is connected to terminal 9 and the body ground?
No
Replace rheostat light control.
Then recheck system.
Yes
Put the voltmeter ins AC mode (alternating current made).
Connect the voltmeter (+) lead to terminal 3 and the (–) lead to connector terminal 17.
Does the voltmeter readout change as the rheostat light control is turned clockwise and counterclockwise?
(The rheostat light control registers approx. 0 V when turned fully clockwise.)
No
Replace rheostat light control.
Then recheck system.
Yes
Connect a 3.4 W test bulb between connector terminals 8 and 7. Does the bulb brightness change when the rheostat light control is turned clockwise and counterclockwise?
No
Replace rheostat light control.
Then recheck system.
Yes
Remove only connector terminal 2 from the vehicle harness.
Connect the voltmeter (+) lead to terminal 2 and the voltmeter (–) lead to terminal 9.
With the rheostat light control turned fully clockwise, turn it further clockwise beyond the moderate.
Does the voltage change from 0 V to battery voltage?
No
Replace rheostat light control.
Then recheck system.
Yes
Repair or replace wire harness.

I03250

2	**Only the combination meter cannot be adjusted**

HINT: While carrying out the following inspection, make certain that the connectors and terminals are properly connected.

Check the combination meter illumination.
Meter illumination is normal?

No → Repair or replace combination meter.
Then recheck system.

Yes ↓

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

Yes ↓

Put a cover over the automatic light control so that light does not reach it.
Put the voltmeter in AC mode (alternating current mode).
Connect the voltmeter (+) lead to terminal 3, and the (–) lead to terminal 7.
Does the voltmeter reading change as the rheostat light control is turned clockwise and counterclockwise?
(The rheostat light control registers approx. 0 V when turned fully clockwise.)

No → Replace rheostat light control.
Then recheck system.

Yes ↓

Replace wire harness between combination meter and rheostat light control.

3	**The combination meter can be adjusted, but not other illumination**

HINT: While carrying out the following inspection, make certain that the connectors and terminals are properly connected.

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

↓

Put a cover over the automatic light control so that light does not reach it.
Connect a 3.4 W test bulb between connector terminals 8 and 7. Does the bulb brightness change when the rheostat light control is turned clockwise and counterclockwise?

No → Replace rheostat light control.
Then recheck system.

Yes ↓

Repair or replace the circuit of each system or wire harness.

I03251

4	**Tail cancellation does not work for the clock, air conditioner panel or combination meter**

HINT: While carrying out the following inspection, make certain that the connectors and terminals are properly connected.

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

↓

Put a cover over the automatic light control sensor so that light does not reach it.
Turn ignition switch to ON and light control switch to TAIL.
Remove only connector terminal 2 from the vehicle harness.
Connect the voltmeter (+) lead to terminal 2, and voltmeter (–) lead to terminal 9.
With the rheostat right control turned fully clockwise, turn it further clockwise beyond the moderate.
Does the voltage change from 0 V to battery positive voltage?

No → Replace rheostat light control. Then recheck system.

↓ Yes

Repair or replace wire harness.

5	**Tail cancellation does not work for one of clock, air conditioner panel or combination meter.**

HINT: While carrying out the following inspection, make certain that the connectors and terminals are properly connected.

Clock

Check the clock illumination.
Clock illumination is normal?

No → Replace clock.

↓ Yes

Replace wire harness between the rheostat and the clock

Air conditioner panel

Check the air conditioner panel illumination.
Air conditioner panel illumination is normal?

No → Replace air conditioner panel.

↓ Yes

Replace wire harness between rheostat light control and air conditioner panel.

Combination meter

Check the combination meter illumination.
Combination meter illumination is normal?

No → Replace combination meter.

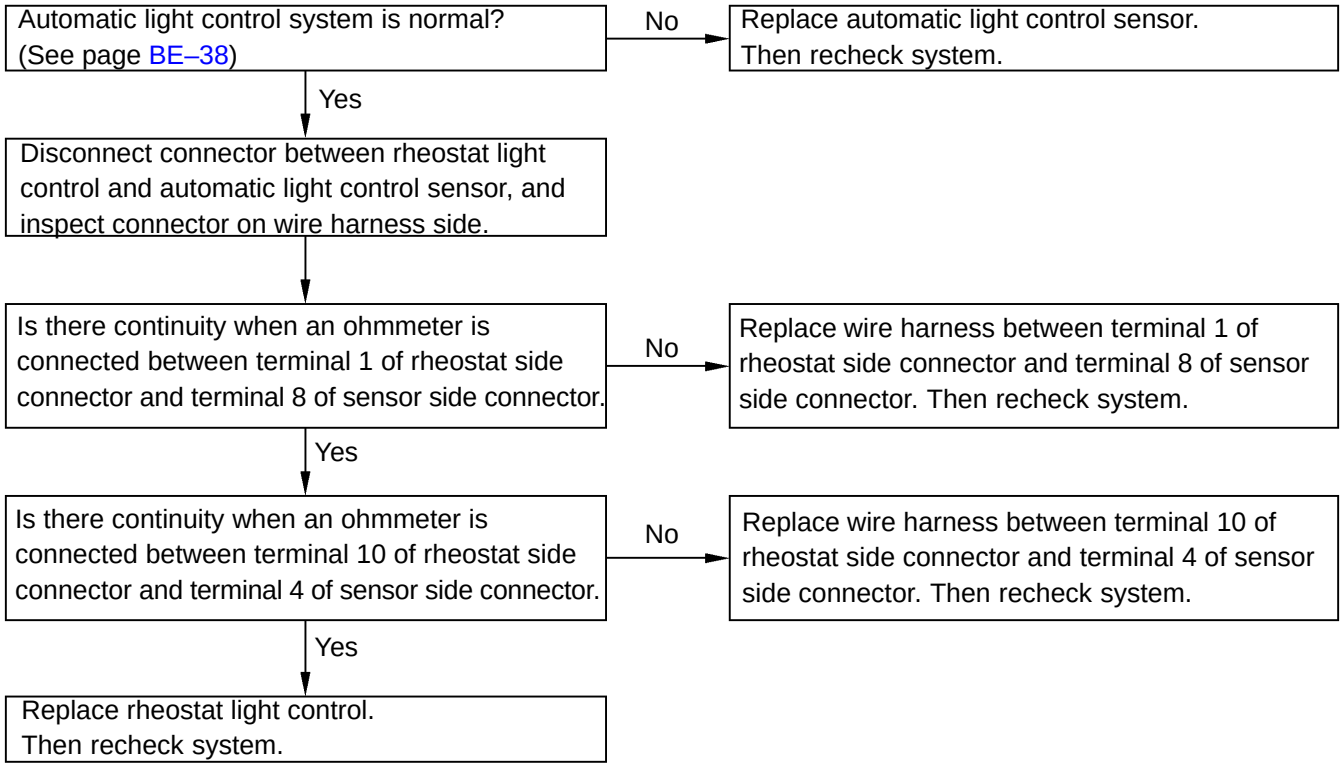
↓ Yes

Replace wire harness between rheostat light control and combination meter.

I03252

6	**Tail cancellation (illumination at 100% brightness) does not occur when tail cancellation of the rheostat light control is released, the light control switch is put on AUTO and light strikes the automatic light control sensor.** **(Area surrounding vehicle is dark.)**

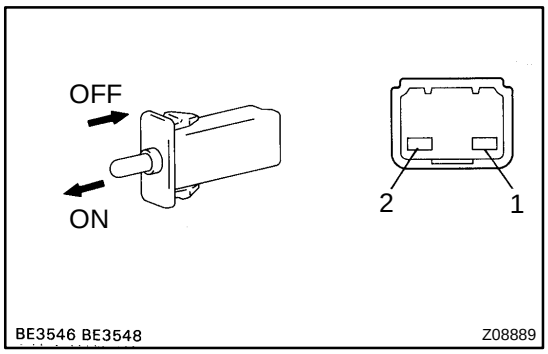
HINT: While carrying out the following inspection, make certain that the connectors and terminals are properly connected.



I03253

BE0BQ–01

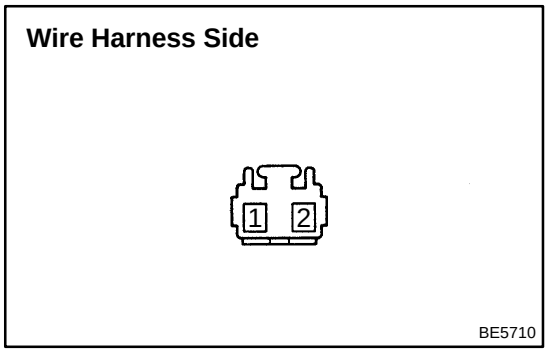
INSPECTION



1. INSPECT GLOVE BOX LIGHT 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 relay.



2. INSPECT GLOVE BOX LIGHT SWITCH CIRCUIT

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

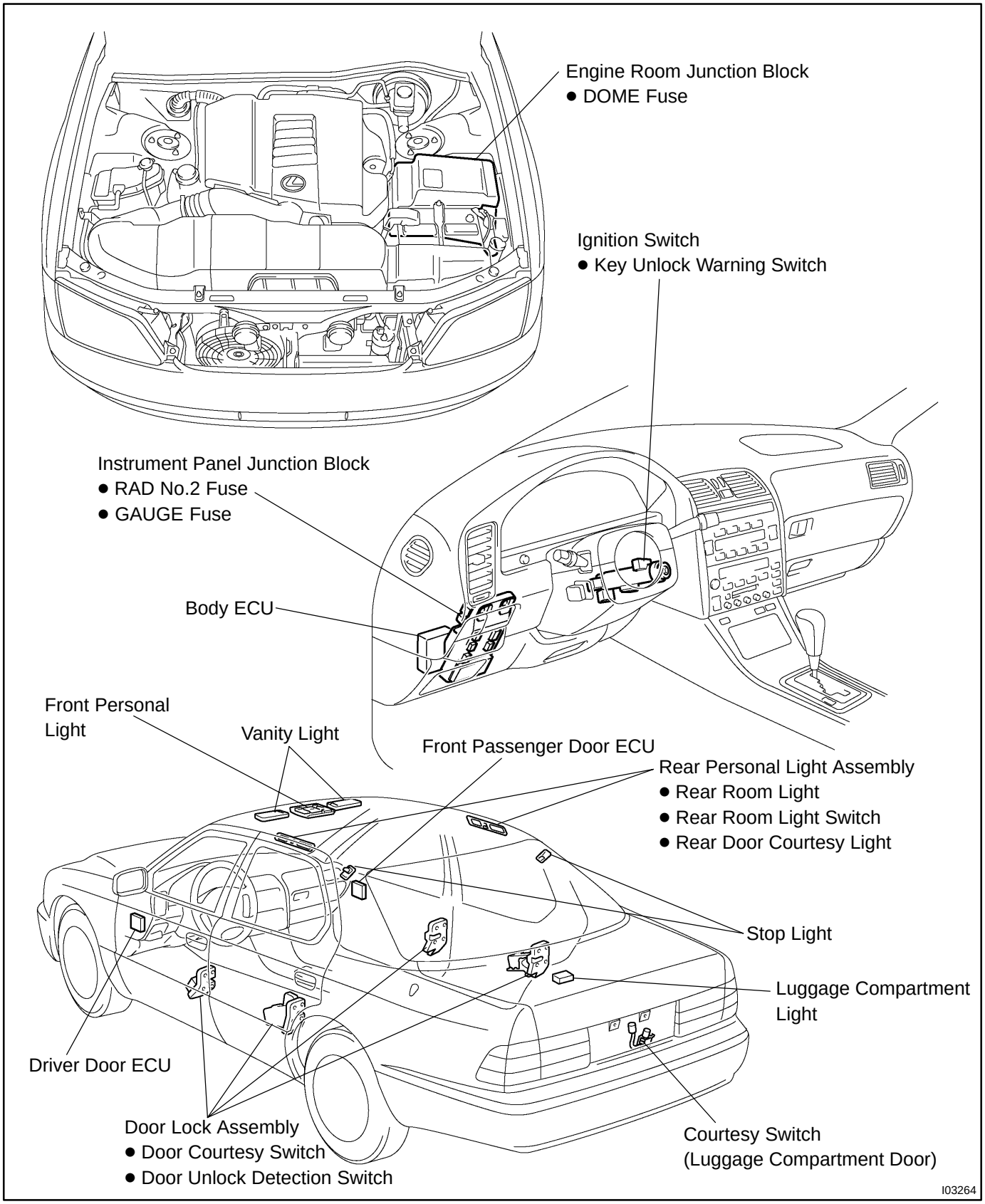
Tester connection	Condition	Specified condition
1 – Ground	Light control switch position OFF	No voltage
1 – Ground	Light control switch position TAIL or HEAD	Battery positive voltage
2 – Ground	Constant	Continuity

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

INTERIOR LIGHT SYSTEM

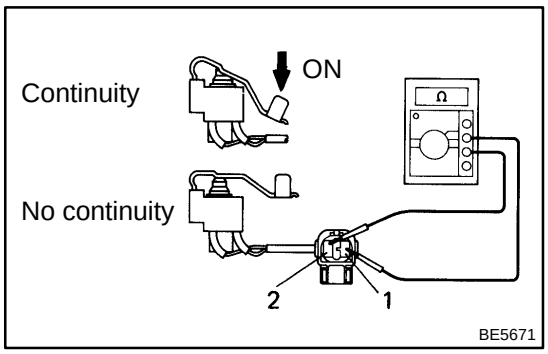
LOCATION

BE0BR–01



BE0BS–01

INSPECTION

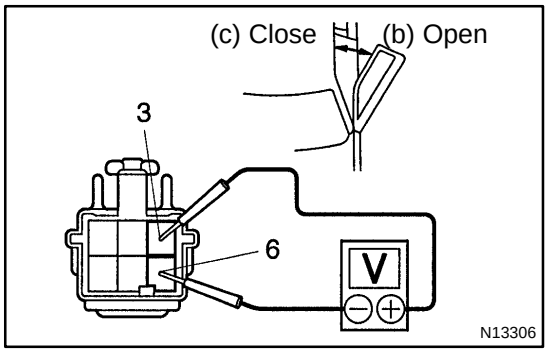


1. INSPECT DOOR OUTSIDE HANDLE SWITCH CONTINUITY

(a) Check that there is continuity between terminals 1 and 2 when door outside handle is pulled.

(b) Check that there is no continuity between terminals 1 and 2 when door outside handle is released.

If operation is not as specified, replace the switch.



2. INSPECT COURTESY SWITCH CONTINUITY

(a) Connect the connector to the driver door ECU.

(b) Check that there is continuity between terminals 3 and 6 when door is opened.

(c) Check that there is no continuity between terminals 3 and 6 when door is closed.

If continuity is not as specified, replace the switch.

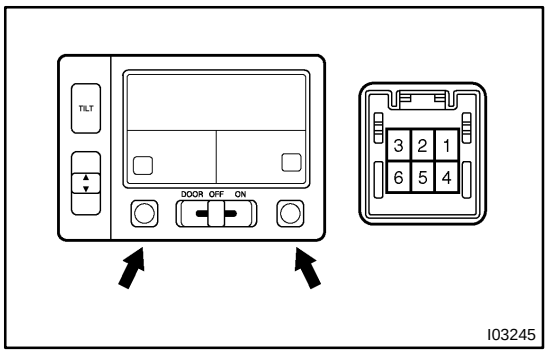
If continuity is as specified, inspect the switch circuit.

3. Driver's door:
INSPECT COURTESY SWITCH CIRCUIT
(See page DI–745)

4. Passenger's door:
INSPECT COURTESY SWITCH CIRCUIT
(See page DI–777)

5. Rear left door:
INSPECT COURTESY SWITCH CIRCUIT
(See page DI–805)

6. Rear right door:
INSPECT COURTESY SWITCH CIRCUIT
(See page DI–828)



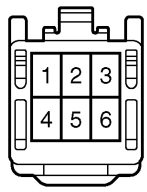
7. INSPECT FRONT PERSONAL LIGHT SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
Interior Light Switch OFF (Lever Switch)	–	No continuity
Interior Light Switch DOOR (Lever Switch)	1 – 3	Continuity
Interior Light Switch ON (Lever Switch)	1 – 2	Continuity
Personal Light OFF (Push Switch)	–	No continuity
* Personal Light ON (Push Switch)	1 – 2	Continuity

* Set to the interior light switch to OFF or DOOR

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

Wire Harness Side



I03432

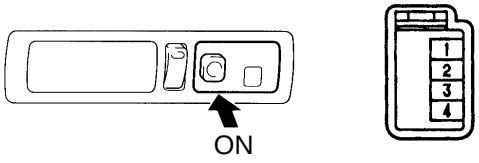
8. INSPECT FRONT PERSONAL LIGHT SWITCH CIRCUIT

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

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

Tester connection	Condition	Specified condition
2 – Ground	Constant	Continuity
5 – Ground	Constant	Continuity
1 – Ground	Constant	Battery positive voltage
4 – Ground	Constant	Battery positive voltage

Rear Room Light



Z14891

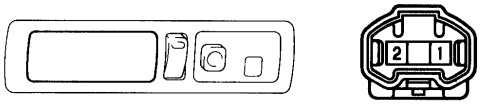
9. INSPECT REAR PERSONAL LIGHT ASSEMBLY CONTINUITY

Rear room light:

Switch position	Tester connection	Specified condition
Room light switch off and door close	–	No continuity
Room light switch on and door close	1 – 2	Continuity
Room light switch off or ON and door open	1 – 3	Continuity

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

Rear Door Courtesy Light



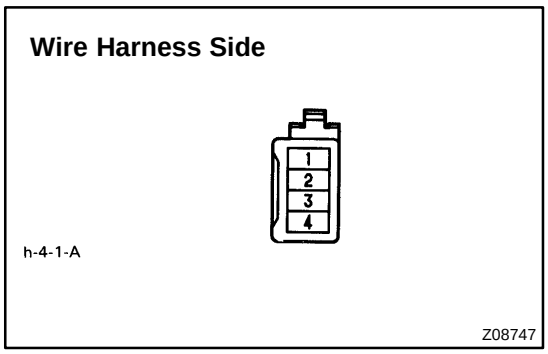
Z14892

10. INSPECT REAR PERSONAL LIGHT ASSEMBLY CONTINUITY

Rear door courtesy light:

Using the ohmmeter, check that there is continuity between terminals.

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

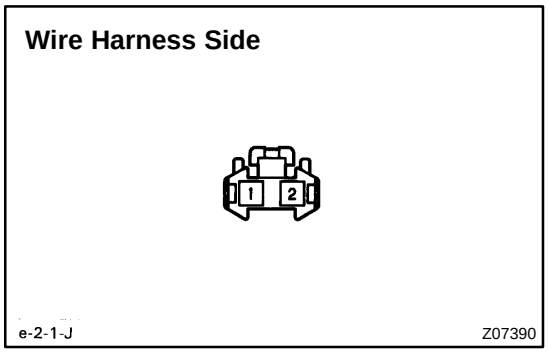


11. Rear room light:
INSPECT REAR PERSONAL LIGHT ASSEMBLY CIRCUIT

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

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

Terminal connection	Condition	Specified condition
2 – Ground	Constant	Continuity
1 – Ground	Constant	Battery positive voltage

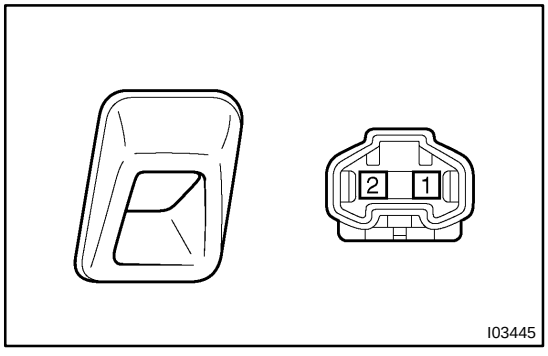


12. Rear door courtesy light:
INSPECT REAR PERSONAL LIGHT ASSEMBLY CIRCUIT

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

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

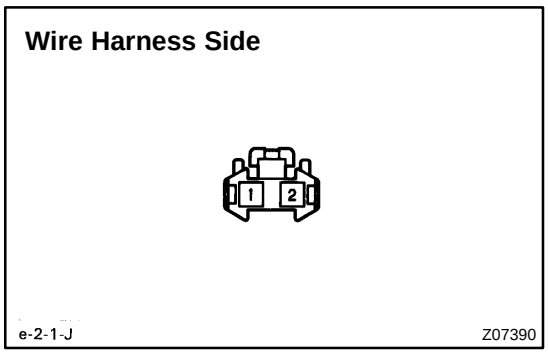
Terminal connection	Condition	Specified condition
1 – Ground	Constant	Battery positive voltage



13. INSPECT SPOT LIGHT CONTINUITY

Using the ohmmeter, check that there is continuity between terminals.

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

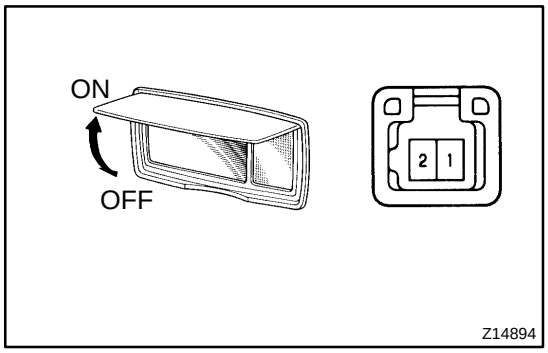


14. INSPECT SPOT LIGHT CIRCUIT

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

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

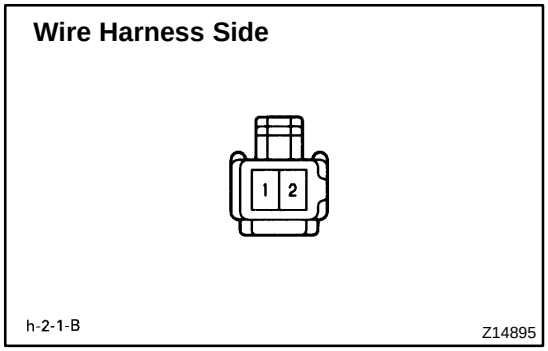
Terminal connection	Condition	Specified condition
1 – Ground	Constant	Battery positive voltage



15. INSPECT VANITY LIGHT 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 bulb or vanity light.

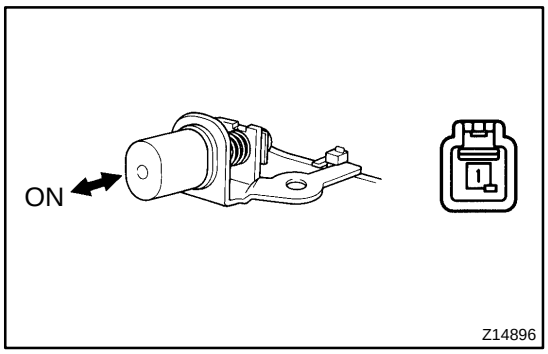


16. INSPECT VANITY LIGHT SWITCH CIRCUIT

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

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

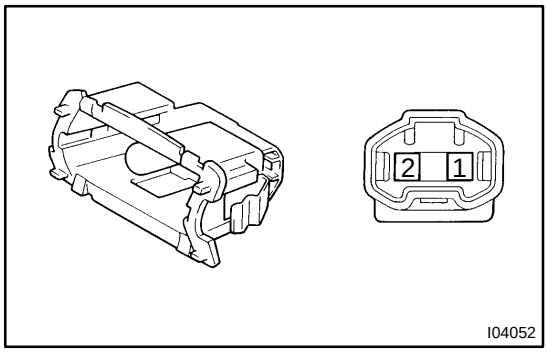
Tester connection	Condition	Specified condition
2 – Ground	Constant	Continuity
1 – Ground	Constant	Battery positive voltage



17. INSPECT LUGGAGE COMPARTMENT DOOR COURTESY SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
OFF (Closed)	–	No continuity
ON (Opened)	1 – Switch body	Continuity

If operation is not as specified, replace the switch.



18. INSPECT DOOR COURTESY LIGHT CONTINUITY

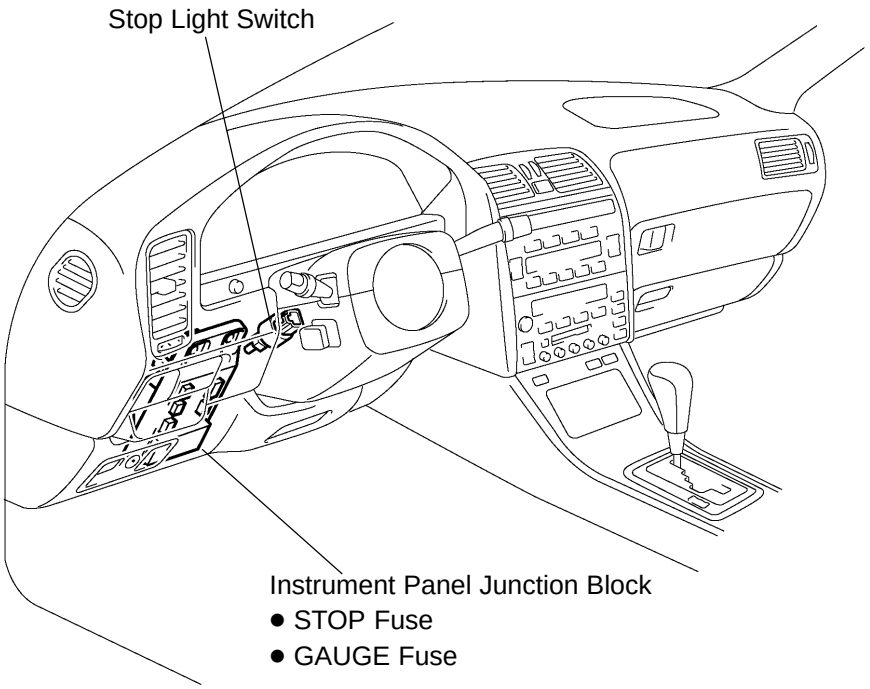
Using the ohmmeter, check that there is continuity between terminals.

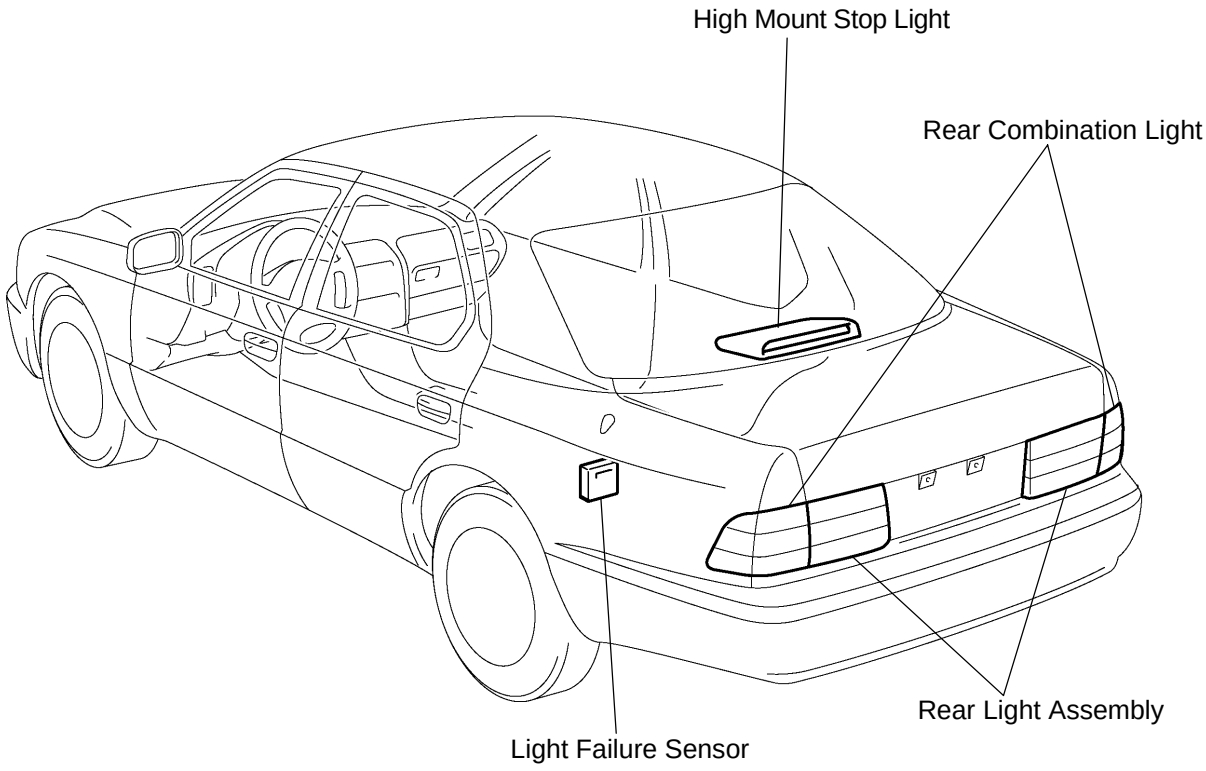
If continuity is not as specified, replace the light assembly or bulb.

STOP LIGHT SYSTEM

LOCATION

BE0BT–01

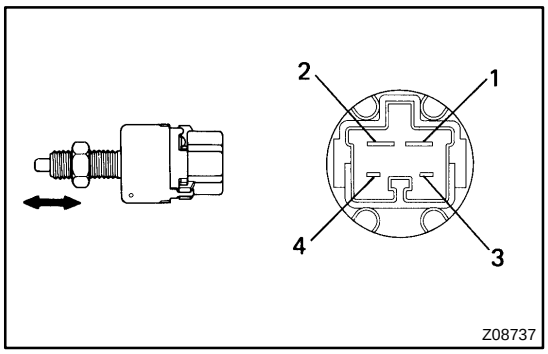




I03231

BE0BU–01

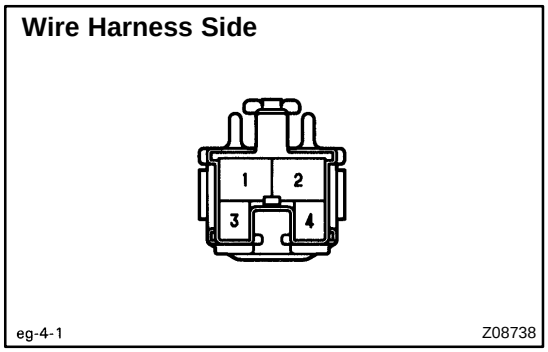
INSPECTION



1. INSPECT STOP LIGHT SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
Switch pin free	1 – 2	Continuity
Switch pin pushed in	3 – 4	Continuity

If continuity is not as specified, replace the switch.

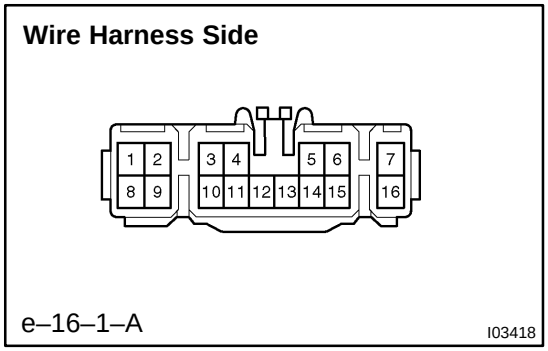


2. INSPECT STOP LIGHT SWITCH CIRCUIT

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

Tester connection	Condition	Specified condition
2 – Ground	Constant	Battery positive voltage

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



3. 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
2 – Ground	Constant	* Continuity
3 – Ground	Constant	* Continuity
4 – Ground	Constant	* Continuity
6 – Ground	Constant	* Continuity
7 – Ground	Constant	* Continuity
11 – Ground	Constant	Continuity
16 – Ground	Constant	* Continuity
1 – Ground	Stop light switch position OFF	No voltage

1 – Ground	Stop light switch position ON	Battery positive voltage
8 – Ground	Stop light switch position OFF	No voltage
8 – Ground	Stop light switch position ON	Battery positive voltage
9 – Ground	Ignition switch position LOCK or ACC	No voltage
9 – Ground	Ignition switch position ON	Battery positive voltage
14 – Ground	Ignition switch position LOCK or ACC	No voltage
14 – Ground	Ignition switch position ON	Battery positive voltage
16 – Ground	Light control switch position OFF	No voltage
16 – Ground	Light control switch position TAIL or HEAD	Battery positive voltage

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

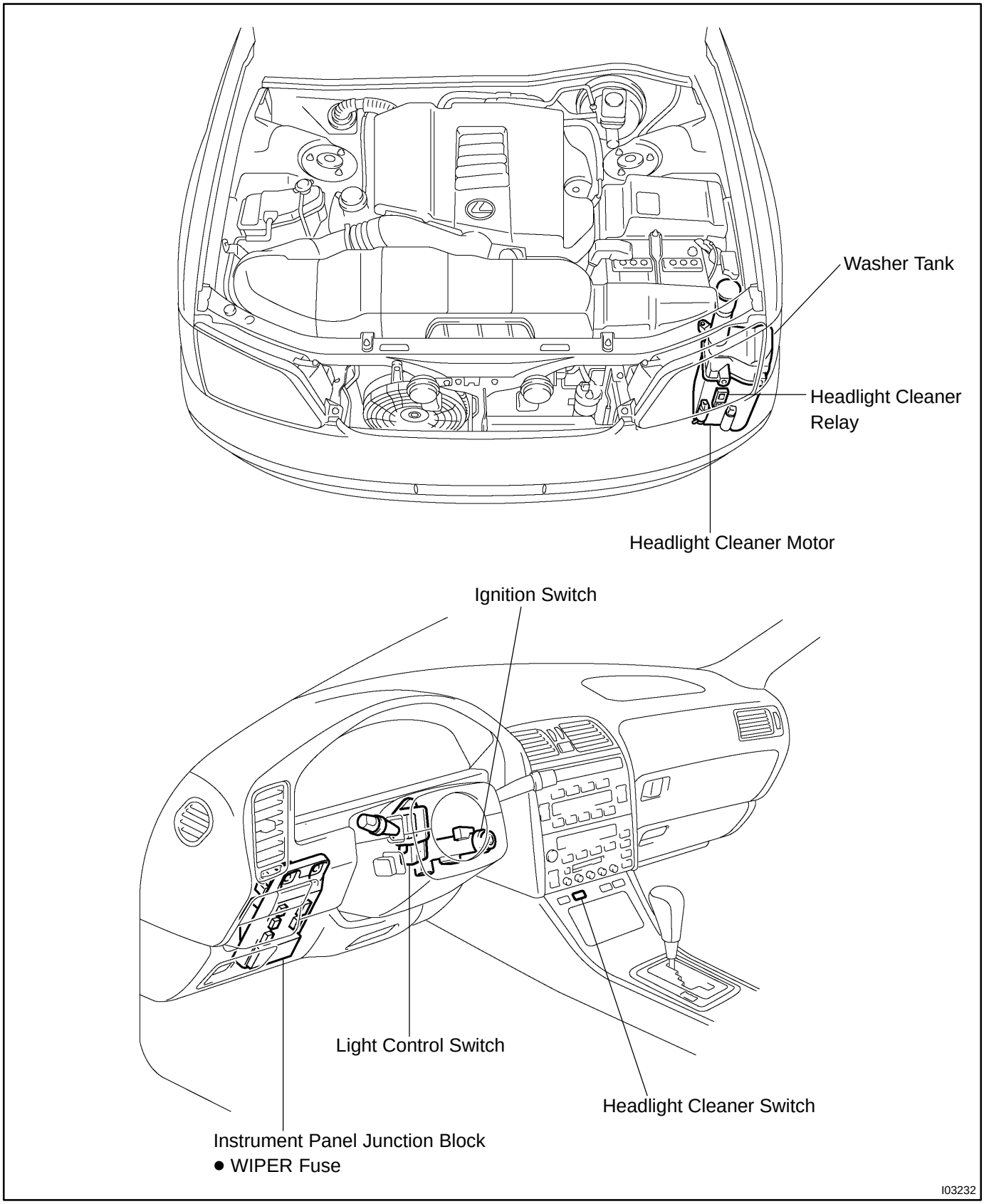
If circuit is as specified, try replacing the sensor with a new one.

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

HEADLIGHT CLEANER SYSTEM

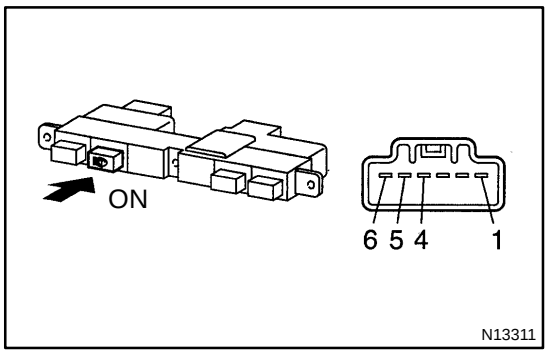
BE0BV–01

LOCATION



BE0BW–03

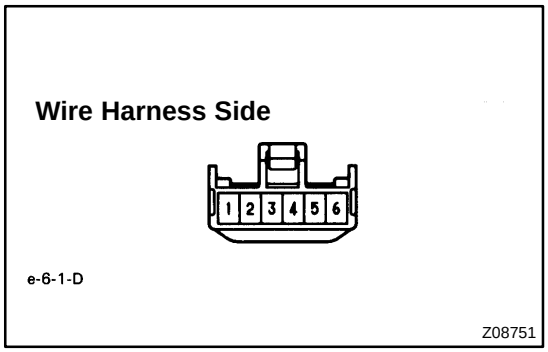
INSPECTION



1. INSPECT HEADLIGHT CLEANER SWITCH CONTINUITY

Condition	Tester connection	Specified condition
Switch OFF	–	No continuity
Switch ON	4 – 5	Continuity
Illumination circuit	1 – 6	Continuity

If continuity is not as specified, replace the switch.

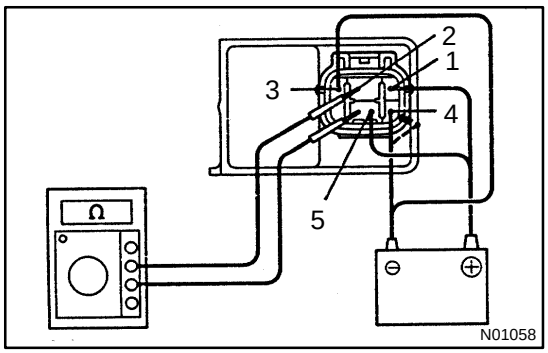


2. INSPECT HEADLIGHT CLEANER SWITCH CIRCUIT

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

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

Tester connection	Condition	Specified condition
5 – Ground	Headlight Light OFF	No continuity
5 – Ground	Headlight Light ON	Continuity
4 – Ground	Ignition switch position LOCK or ACC	No voltage
4 – Ground	Ignition switch position ON	Battery positive voltage
6 – Ground	Headlight or taillight Light ON	Battery positive voltage



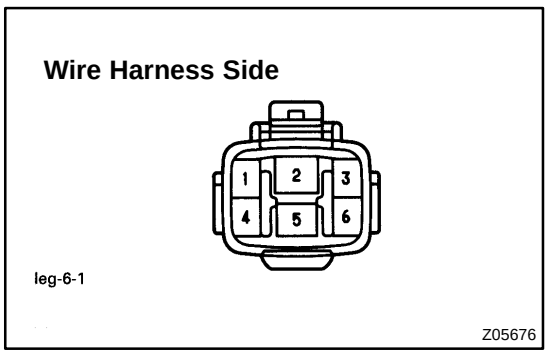
3. INSPECT HEADLIGHT CLEANER RELAY OPERATION

(a) Check that there is no continuity 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 there is continuity between terminals 2 and 5 for 0.4 – 0.6 seconds, then there is no continuity.

If operation is not as specified, replace the relay.

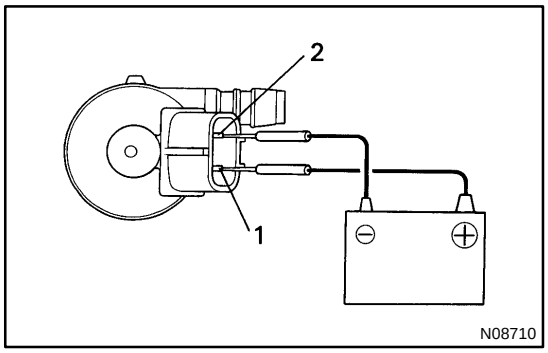


4. INSPECT HEADLIGHT CLEANER RELAY CIRCUIT

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

Tester connection	Condition	Specified condition
4 – Ground	Ignition switch ON and light control switch turned to HEAD cleaner switch OFF	No continuity
4 – Ground	Ignition switch ON and light control switch turned to HEAD cleaner switch ON	Continuity
3 – Ground 2 – Ground	Constant	Continuity
1 – Ground	Ignition switch position LOCK or ACC	No voltage
1 – Ground	Ignition switch position ON	Battery positive voltage
5 – Ground	Constant	Battery positive voltage

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



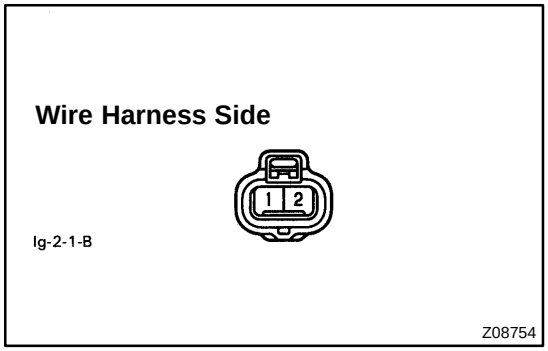
5. INSPECT HEADLIGHT CLEANER MOTOR OPERATION

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

NOTICE:

This 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 harness side, as shown.

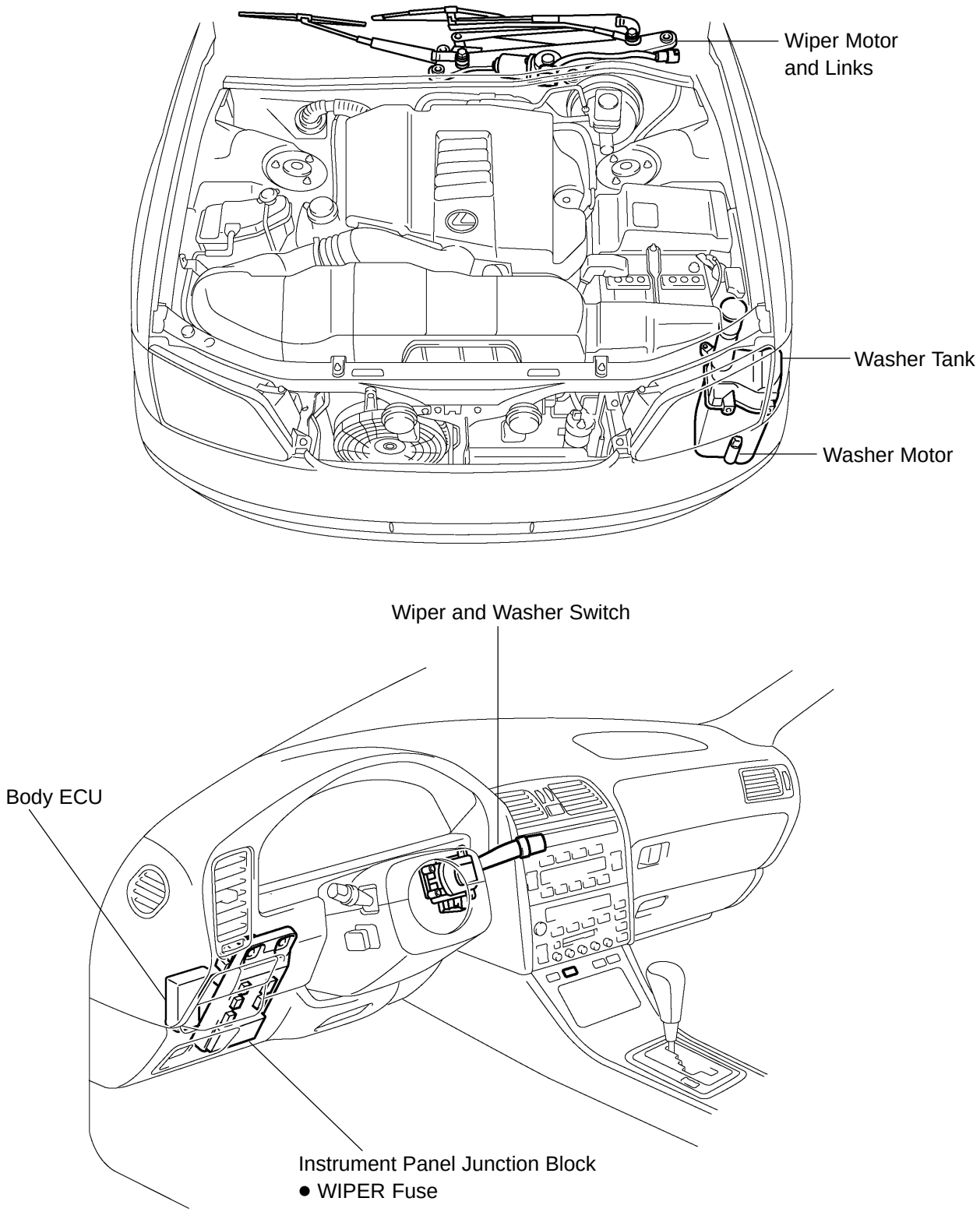
Tester connection	Condition	Specified condition
2 – Ground	Constant	Continuity
1 – Ground	Constant	Battery positive voltage

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

WIPER AND WASHER SYSTEM

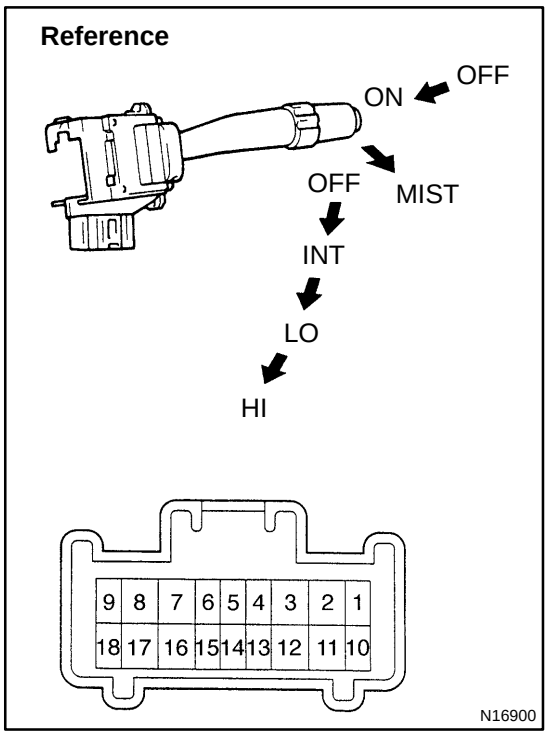
BE0BX–01

LOCATION



BE0BY–01

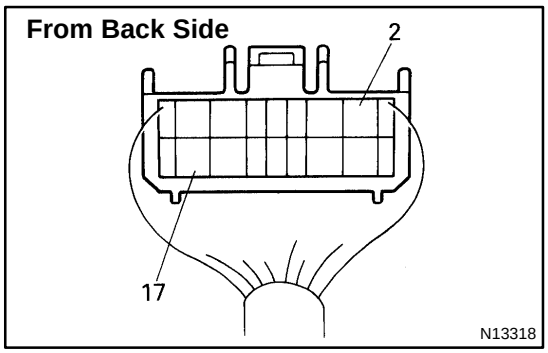
INSPECTION



1. INSPECT WIPER AND WASHER SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
Wiper OFF	7 – 16	Continuity
Wiper OFF and MIST	7 – 17	Continuity
Wiper INT	7 – 16 2 – 4	Continuity
Wiper INT and MIST	7 – 17 2 – 4	Continuity
Wiper LO	7 – 17	Continuity
Wiper LO and MIST	7 – 17	Continuity
Wiper HI	8 – 17 1 – 2	Continuity
Wiper HI and MIST	8 – 17 1 – 2	Continuity
Washer OFF	–	No continuity
Washer ON	2 – 11	Continuity

If continuity is not as specified, replace the switch.

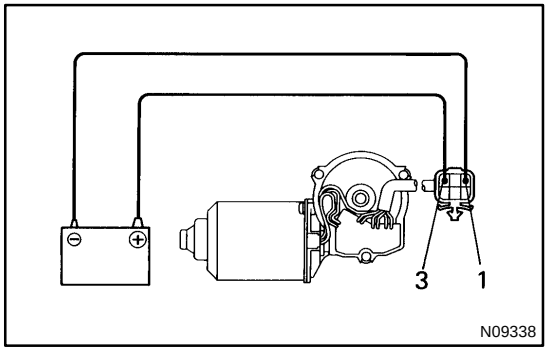


2. INSPECT WIPER AND WASHER SWITCH CIRCUIT

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

Tester connection	Condition	Specified condition
2 – Ground	Constant	Continuity
17 – Ground	Ignition switch LOCK or ACC	No voltage
17 – Ground	Ignition switch ON	Battery positive voltage

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

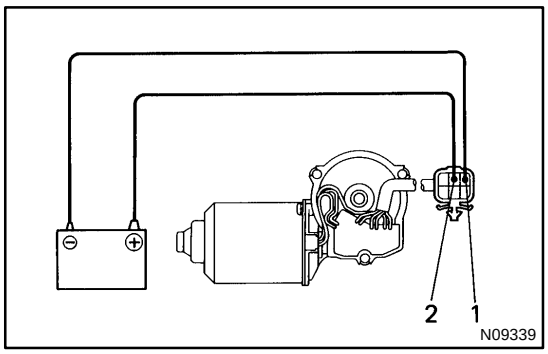


3. INSPECT WIPER MOTOR OPERATION

Low Speed:

Connect the positive (+) lead from the battery to terminal 3 and the negative (–) lead to terminal 1, and check that the motor operates at low speed.

If operation is not as specified, replace the motor.

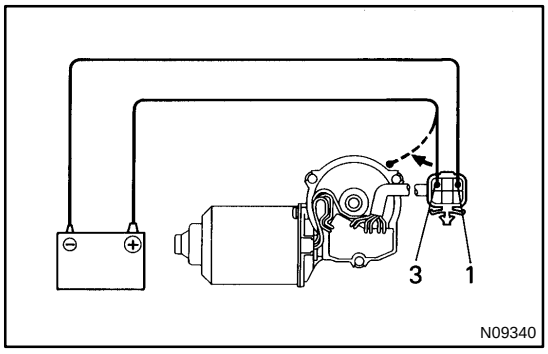


4. INSPECT WIPER MOTOR OPERATION

High Speed:

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

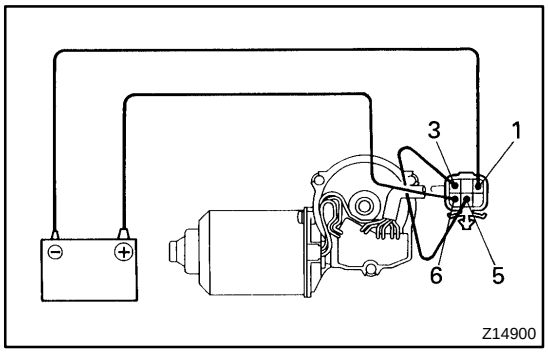
If operation is not as specified, replace the motor.



5. INSPECT WIPER MOTOR OPERATION

Stopping at Stop Position:

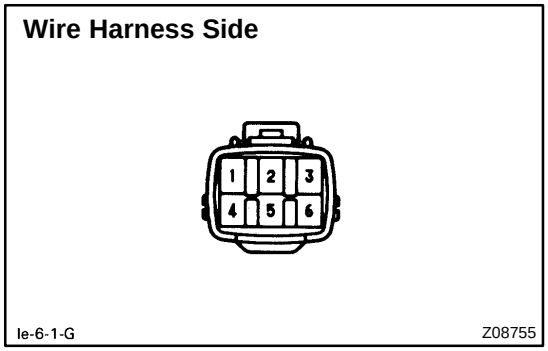
(a) Operate the motor at low speed and stop the motor operation anywhere except at the stop position by disconnecting positive (+) lead from terminal 3.



(b) Connect terminals 3 and 5.

(c) Connect the positive (+) lead from the battery to terminal 6 and the negative (–) lead to terminal 1, and check that the motor stops running at the stop position after the motor operates again.

If operation is not as specified, replace the motor.

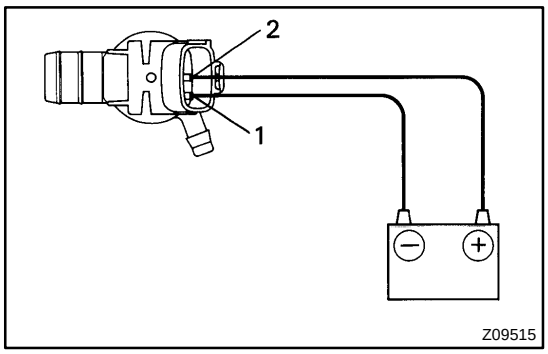


6. INSPECT WIPER MOTOR CIRCUIT

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

Tester connection	Condition	Specified condition
1 – Ground	Constant	Continuity
6 – Ground	Ignition switch position LOCK or ACC	No voltage
6 – Ground	Ignition switch position ON	Battery positive voltage

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



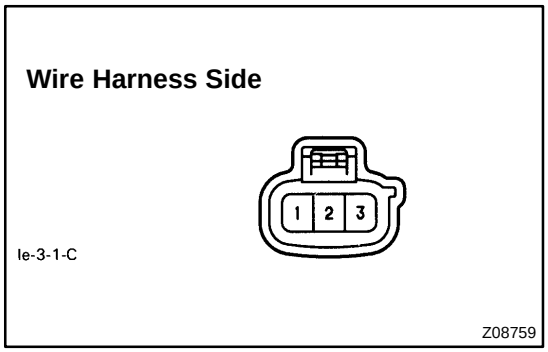
7. INSPECT WASHER MOTOR OPERATION

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

NOTICE:

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

If operation is not as specified, replace the motor.



8. INSPECT WASHER MOTOR CIRCUIT

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

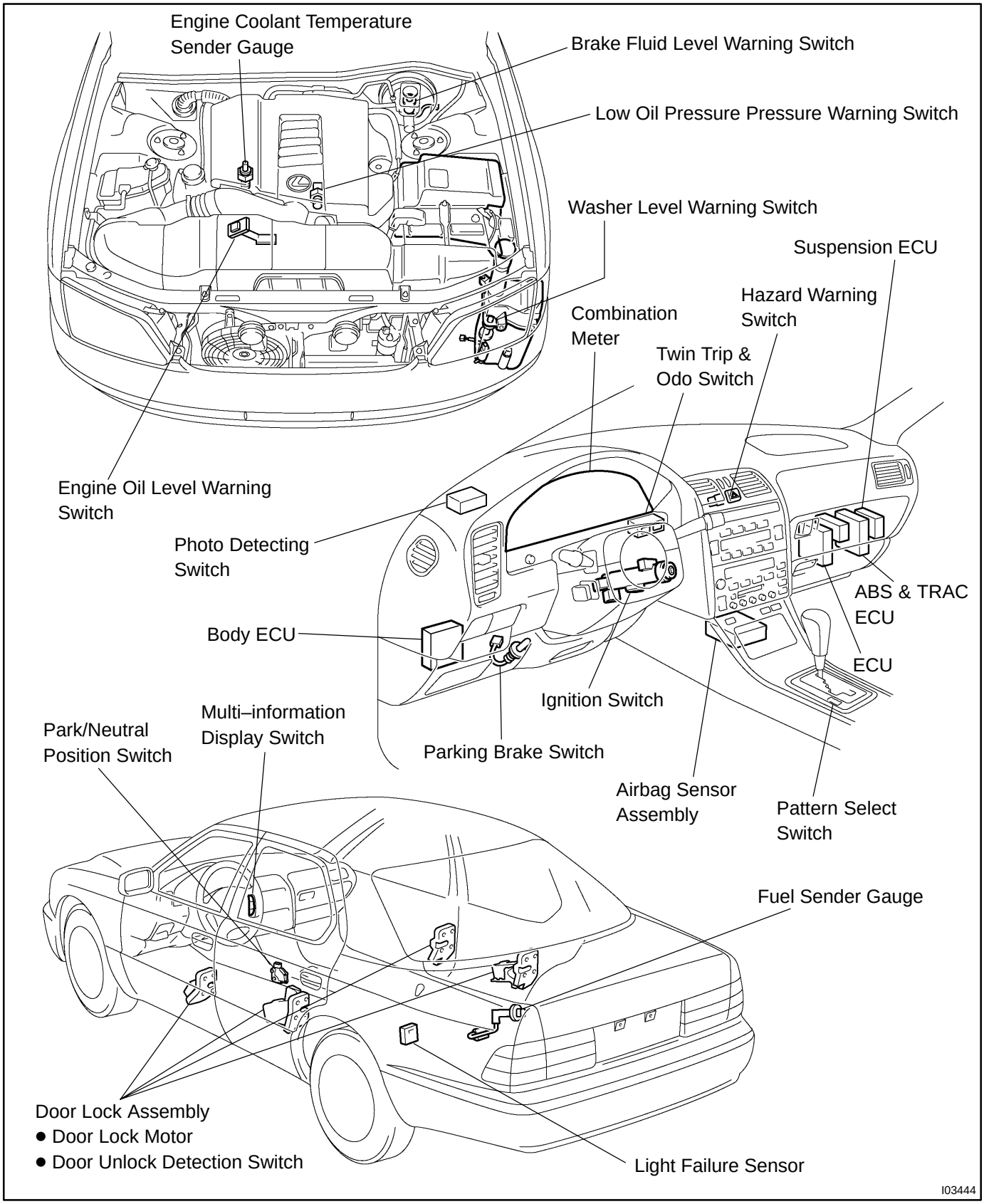
Tester connection	Condition	Specified condition
2 – Ground	Constant	Battery positive voltage

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

COMBINATION METER

LOCATION

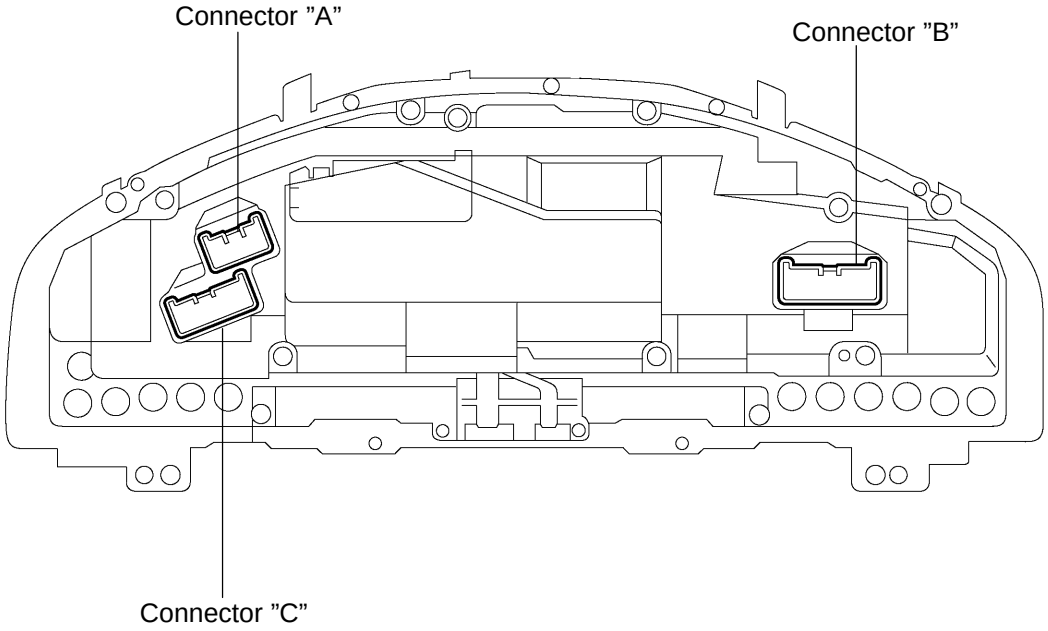
BE0BZ–01



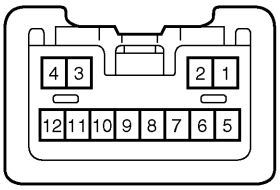
BE0C0–01

CIRCUIT

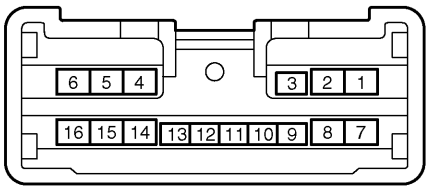
1. WIRING DIAGRAMS



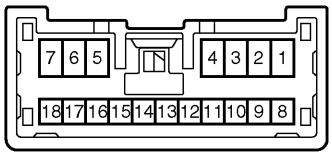
Connector ”A”



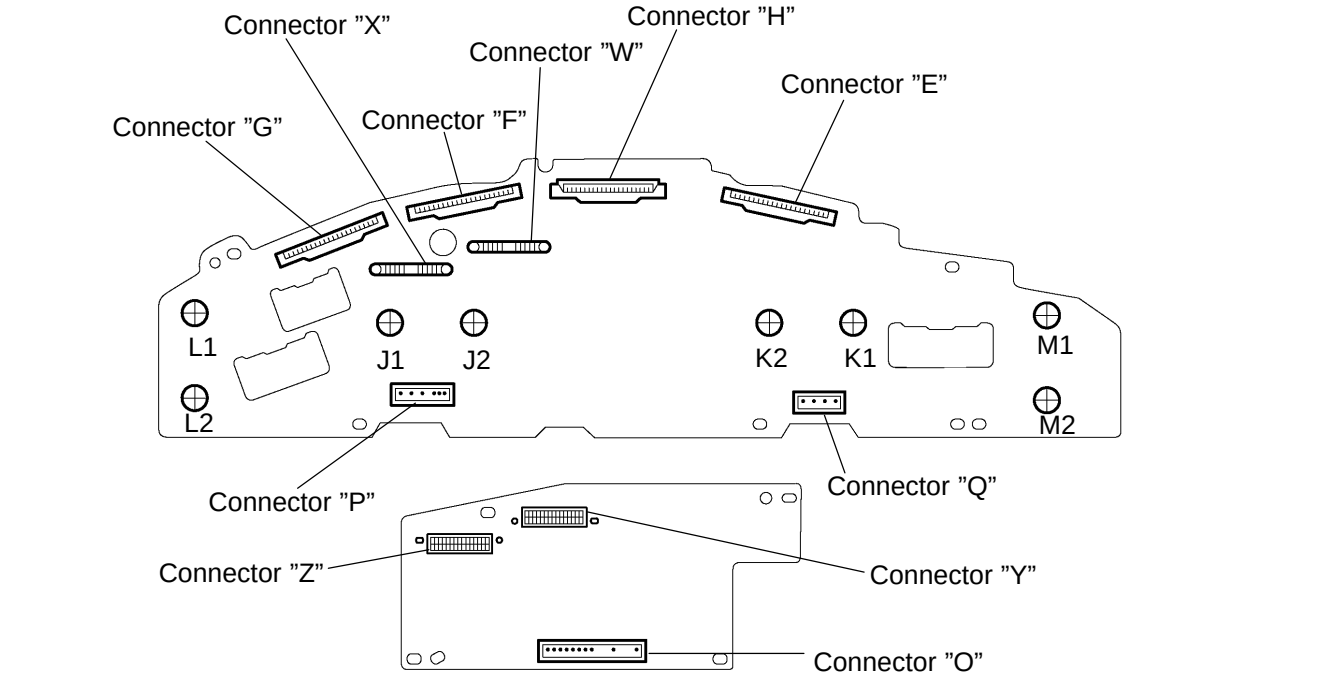
Connector ”B”

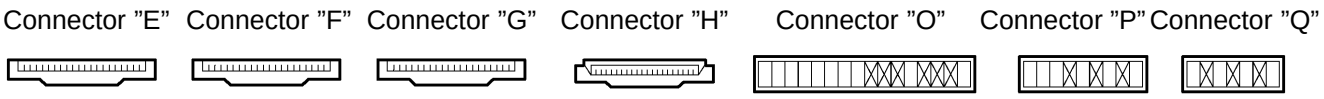


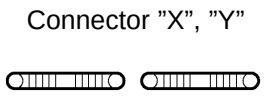
Connector ”C”

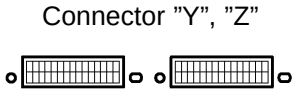


I03268

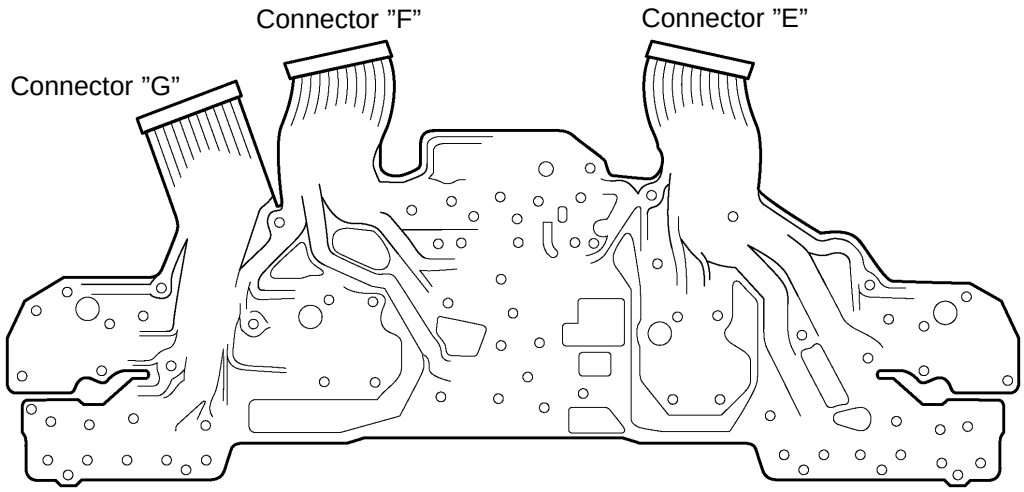






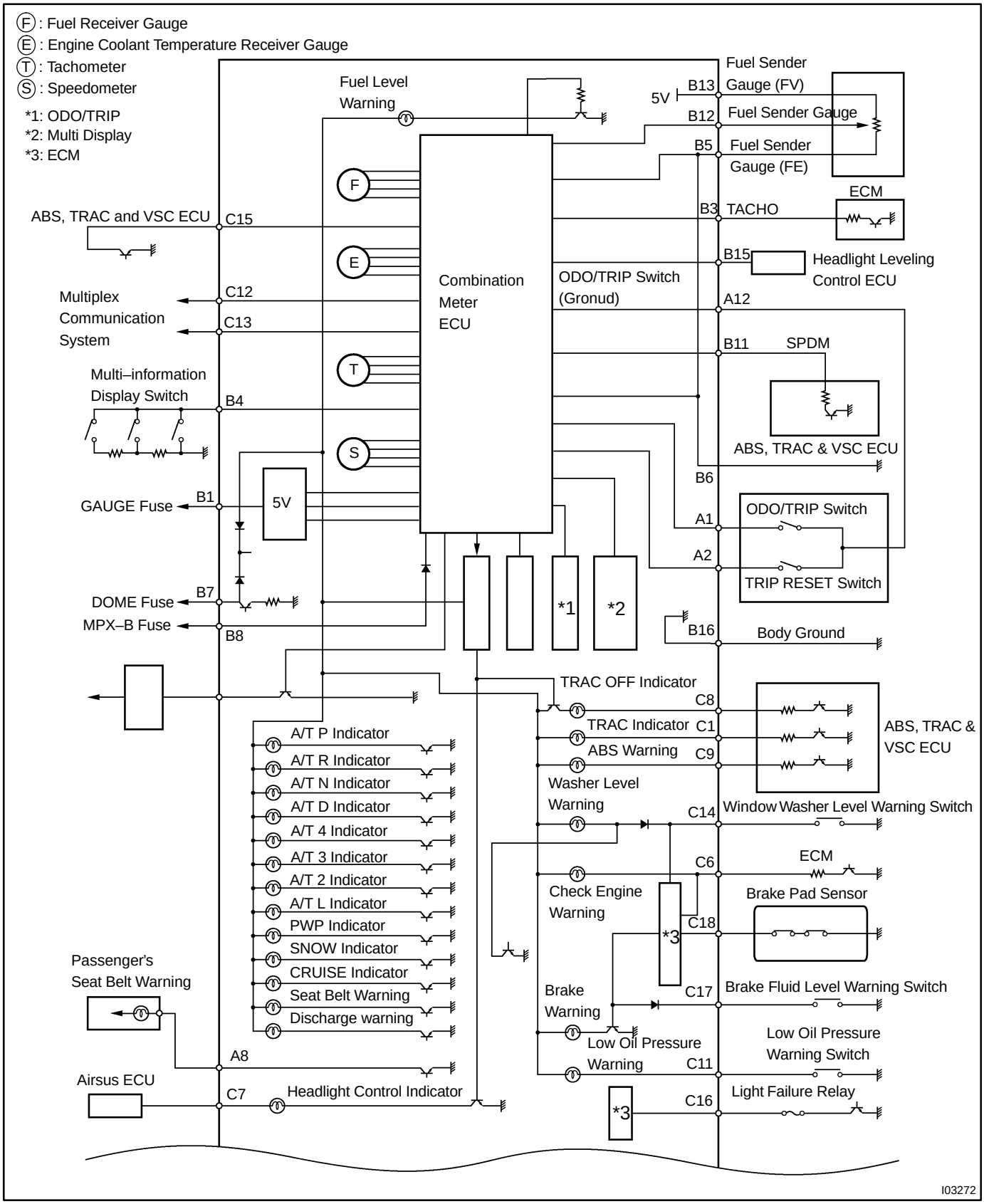


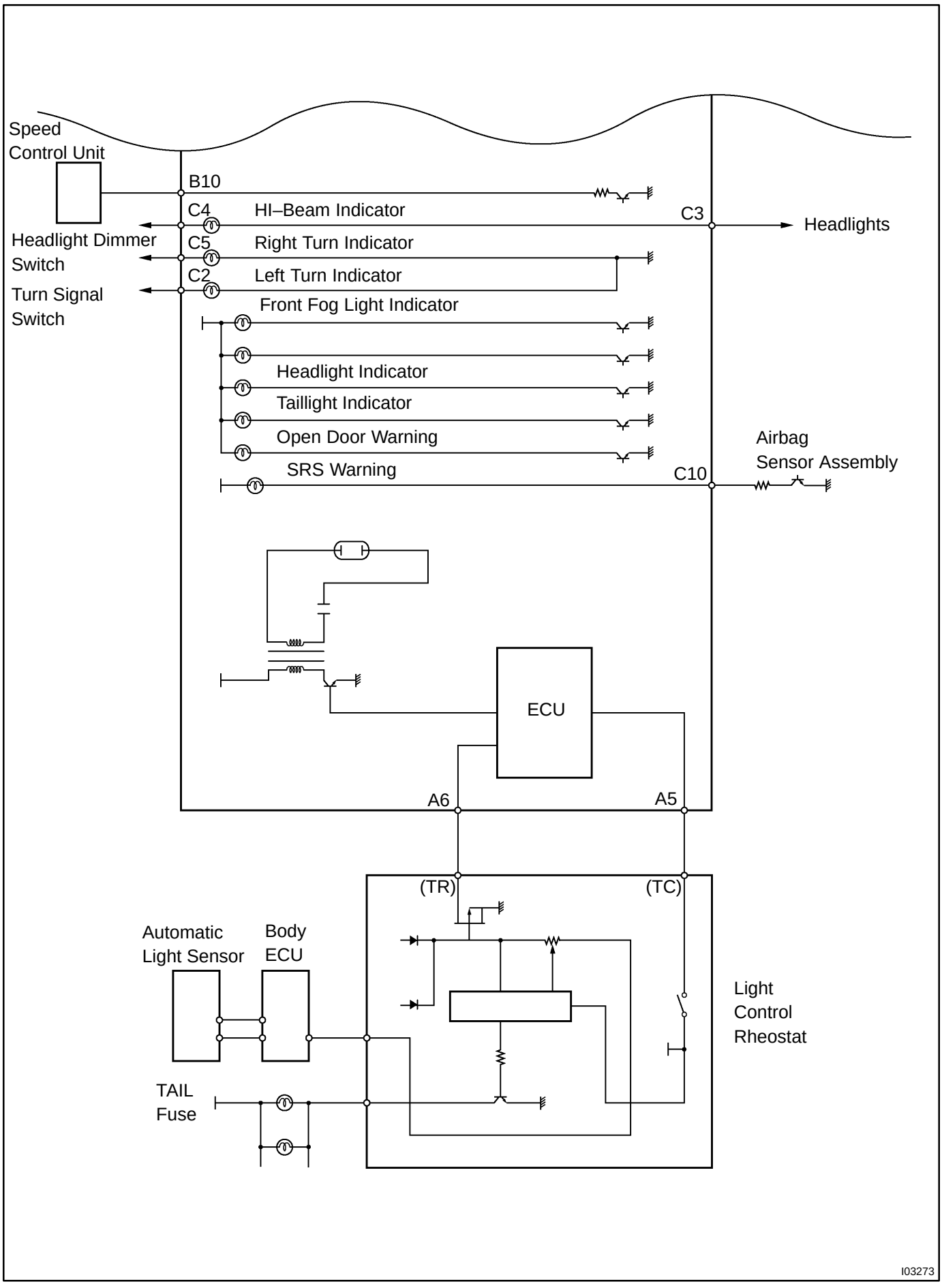
Circuit Plate

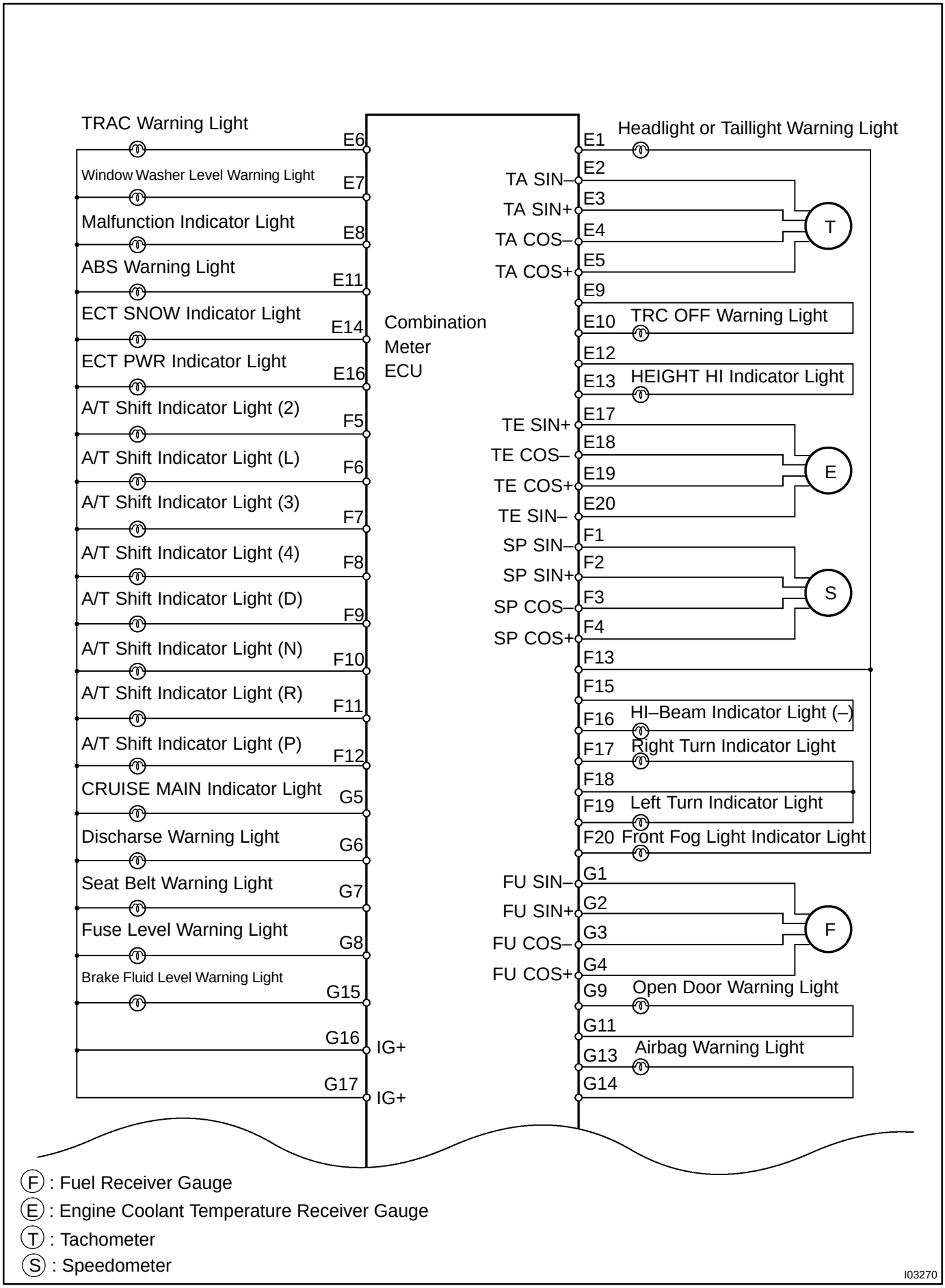


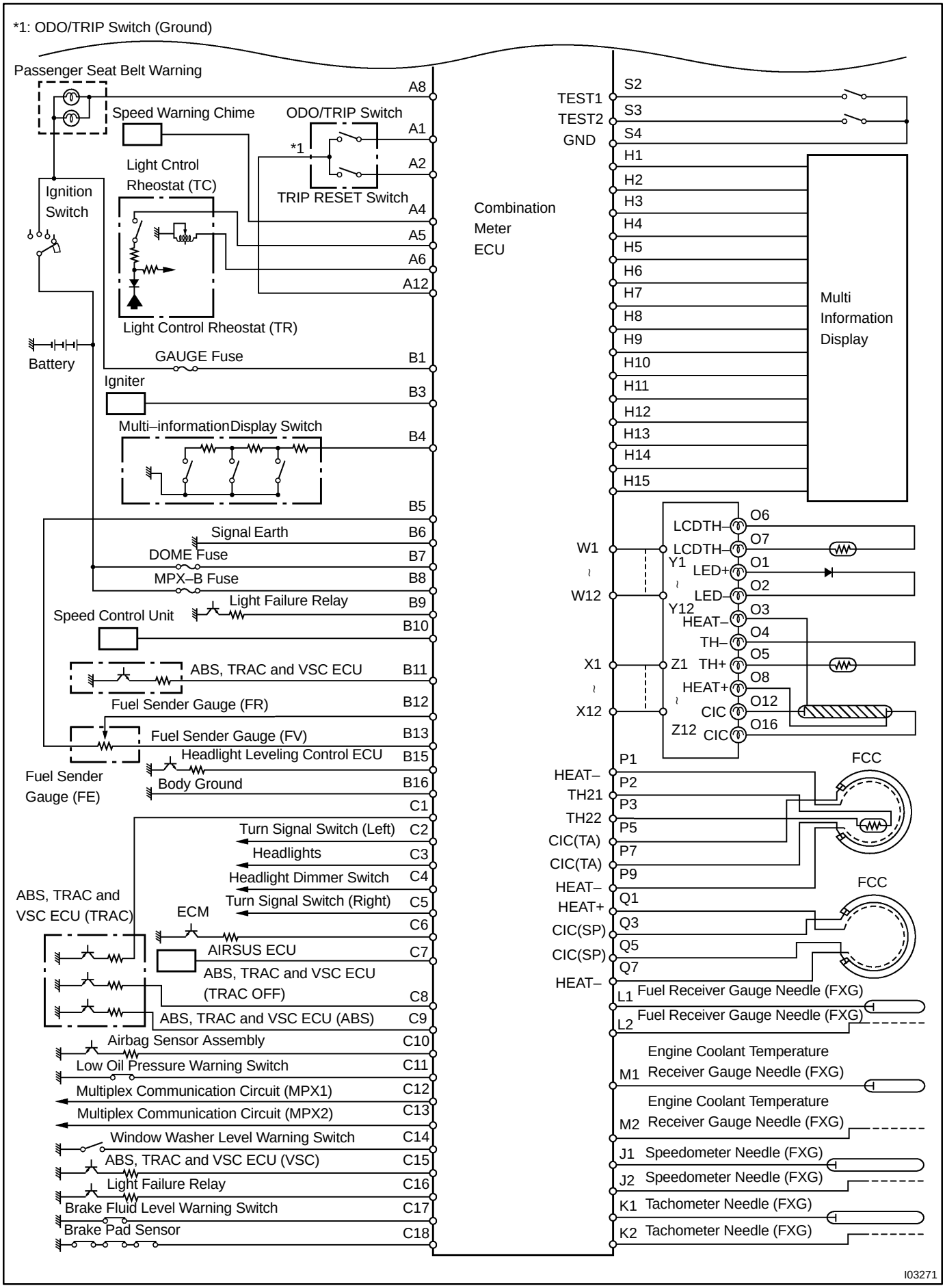
I03269

2. CONNECTOR DIAGRAMS




Speed
Control Unit
B10
C4
HI–Beam Indicator
C3
Headlights
Headlight Dimmer
Switch
C5
Right Turn Indicator
C2
Left Turn Indicator
Turn Signal
Switch
Front Fog Light Indicator
Headlight Indicator
Taillight Indicator
Open Door Warning
SRS Warning
C10
Airbag
Sensor Assembly
ECU
A6
A5
(TR)
(TC)
Automatic
Light Sensor
Body
ECU
Light
Control
Rheostat
TAIL
Fuse
I03273


TRAC Warning Light
E6
Window Washer Level Warning Light
E7
Malfunction Indicator Light
E8
ABS Warning Light
E11
ECT SNOW Indicator Light
E14
ECT PWR Indicator Light
E16
A/T Shift Indicator Light (2)
F5
A/T Shift Indicator Light (L)
F6
A/T Shift Indicator Light (3)
F7
A/T Shift Indicator Light (4)
F8
A/T Shift Indicator Light (D)
F9
A/T Shift Indicator Light (N)
F10
A/T Shift Indicator Light (R)
F11
A/T Shift Indicator Light (P)
F12
CRUISE MAIN Indicator Light
G5
Discharse Warning Light
G6
Seat Belt Warning Light
G7
Fuse Level Warning Light
G8
Brake Fluid Level Warning Light
G15
G16
IG+
G17
IG+
Combination Meter ECU
Headlight or Taillight Warning Light
E1
TA SIN–
E2
TA SIN+
E3
TA COS–
E4
TA COS+
E5
T
E9
E10
TRC OFF Warning Light
E12
E13
HEIGHT HI Indicator Light
TE SIN+
E17
TE COS–
E18
TE COS+
E19
TE SIN–
E20
E
SP SIN–
F1
SP SIN+
F2
SP COS–
F3
SP COS+
F4
S
F13
F15
F16
HI–Beam Indicator Light (–)
F17
Right Turn Indicator Light
F18
F19
Left Turn Indicator Light
F20
Front Fog Light Indicator Light
FU SIN–
G1
FU SIN+
G2
FU COS–
G3
FU COS+
G4
F
G9
Open Door Warning Light
G11
G13
Airbag Warning Light
G14
Ⓕ : Fuel Receiver Gauge
Ⓔ : Engine Coolant Temperature Receiver Gauge
Ⓣ : Tachometer
Ⓢ : Speedometer
I03270


*1: ODO/TRIP Switch (Ground)
Passenger Seat Belt Warning
A8
Speed Warning Chime
ODO/TRIP Switch
A1
*1
A2
Light Cntrol Rheostat (TC)
TRIP RESET Switch
Ignition Switch
A4
A5
A6
A12
Light Control Rheostat (TR)
Battery
GAUGE Fuse
B1
Igniter
B3
Multi–information Display Switch
B4
B5
Signal Earth
B6
DOME Fuse
B7
MPX–B Fuse
B8
Light Failure Relay
B9
Speed Control Unit
B10
ABS, TRAC and VSC ECU
B11
Fuel Sender Gauge (FR)
B12
Fuel Sender Gauge (FV)
B13
Headlight Leveling Control ECU
B15
Fuel Sender Gauge (FE)
Body Ground
B16
C1
Turn Signal Switch (Left)
C2
Headlights
C3
Headlight Dimmer Switch
C4
Turn Signal Switch (Right)
C5
ABS, TRAC and VSC ECU (TRAC)
ECM
C6
AIRSUS ECU
C7
ABS, TRAC and VSC ECU (TRAC OFF)
C8
ABS, TRAC and VSC ECU (ABS)
C9
Airbag Sensor Assembly
C10
Low Oil Pressure Warning Switch
C11
Multiplex Communication Circuit (MPX1)
C12
Multiplex Communication Circuit (MPX2)
C13
Window Washer Level Warning Switch
C14
ABS, TRAC and VSC ECU (VSC)
C15
Light Failure Relay
C16
Brake Fluid Level Warning Switch
C17
Brake Pad Sensor
C18
Combination Meter ECU
TEST1
TEST2
GND
S2
S3
S4
H1
H2
H3
H4
H5
H6
H7
H8
H9
H10
H11
H12
H13
H14
H15
Multi Information Display
W1
W12
Y1
Y12
X1
X12
Z1
Z12
LCDTH–
LCDTH–
LED+
LED–
HEAT–
TH–
TH+
HEAT+
CIC
CIC
O6
O7
O1
O2
O3
O4
O5
O8
O12
O16
FCC
HEAT–
TH21
TH22
CIC(TA)
CIC(TA)
HEAT–
HEAT+
CIC(SP)
CIC(SP)
HEAT–
P1
P2
P3
P5
P7
P9
Q1
Q3
Q5
Q7
FCC
L1 Fuel Receiver Gauge Needle (FXG)
L2 Fuel Receiver Gauge Needle (FXG)
Engine Coolant Temperature
M1 Receiver Gauge Needle (FXG)
Engine Coolant Temperature
M2 Receiver Gauge Needle (FXG)
J1 Speedometer Needle (FXG)
J2 Speedometer Needle (FXG)
K1 Tachometer Needle (FXG)
K2 Tachometer Needle (FXG)
I03271

No.		Wire Harness Side (terminal name or HINT)
A	1	ODO/TRIP switch
	2	TRIP RESET switch
	5	Light Control Rheostat (TC)
	6	Light Control Rheostat (TR)
	8	Passenger seat belt warning
	12	ODO/TRIP switch (Ground)
B	1	GAUGE Fuse
	3	Igniter
	4	Steering switch
	5	Fuel Sender Gauge (FE)
	6	Signal Earth
	7	DOME Fuse
	8	MPX–B Fuse
	9	Light Failure Relay
	10	Speed Control Unit
	11	ABS, TRAC and VSC ECU (SPDM)
	12	Fuel Sender Gauge (FR)
	13	Fuel Sender Gauge (FV)
	15	Headlight Leveling Control ECU
	16	Body Ground
C	1	ABS, TRAC and VSC ECU (TRAC)
	2	Turn Signal Switch (Left)
	3	Headlights
	4	Headlight Dimmer Switch
	5	Turn Signal Switch (Right)
	6	ECM
	7	AIRSUS ECU
	8	ABS, TRAC and VSC ECU (TRAC OFF)
	9	ABS, TRAC and VSC ECU (ABS)
	10	Airbag Sensor Assembly
	11	Low Oil Pressure Warning Switch
	12	Multiplex Communication Circuit (MPX1)
	13	Multiplex Communication Circuit (MPX2)
	14	Window Washer Level Warning Switch
	15	ABS, TRAC and VSC ECU (VSC)
	16	Light Failure Relay
	17	Brake Fluid Level Warning Switch
	18	Brake Pad Sensor

No.		Wire Harness Side (terminal name or HINT)
E	1	Headlight or Taillight Warning LIght
	2	Tachometer (SIN–)
	3	Tachometer (SIN+)
	4	Tachometer (COS–)
	5	Tachometer (COS+)
	6	TRAC Warning Light
	7	Window Washer Level Warning Light
	8	Mulfunction Indicator Light
	9	DIM+ terminal
	10	TRAC OFF Warning Light
	11	ABS Warning Light
	12	DIM– terminal
	13	HEIGHT HI Indicator Light
	14	ECT SNOW Indicator Light
	16	ECT PWR Indicator Light
	17	Engine Coolant Temperature Receiver Gauge (SIN+)
	18	Engine Coolant Temperature Receiver Gauge (COS–)
	19	Engine Coolant Temperature Receiver Gauge (COS+)
	20	Engine Coolant Temperature Receiver Gauge (SIN–)
F	1	Speedometer (SIN–)
	2	Speedometer (SIN+)
	3	Speedometer (COS–)
	4	Speedometer (COS+)
	5	A/T Shift Indicator Light (2)
	6	A/T Shift Indicator Light (L)
	7	A/T Shift Indicator Light (3)
	8	A/T Shift Indicator Light (4)
	9	A/T Shift Indicator Light (D)
	10	A/T Shift Indicator Light (N)
	11	A/T Shift Indicator Light (R)
	12	A/T Shift Indicator Light (P)
	14	DOME–B terminal
	15	Hi–Beam Indicator Light (+)
	16	Hi–Beam Indicator Light (–)
	17	Right Turn Indicator Light
	18	Turn Indicator Light (–)
	19	Left Turn Indicator Light (–)
	20	Front Fog Light Indicator Light

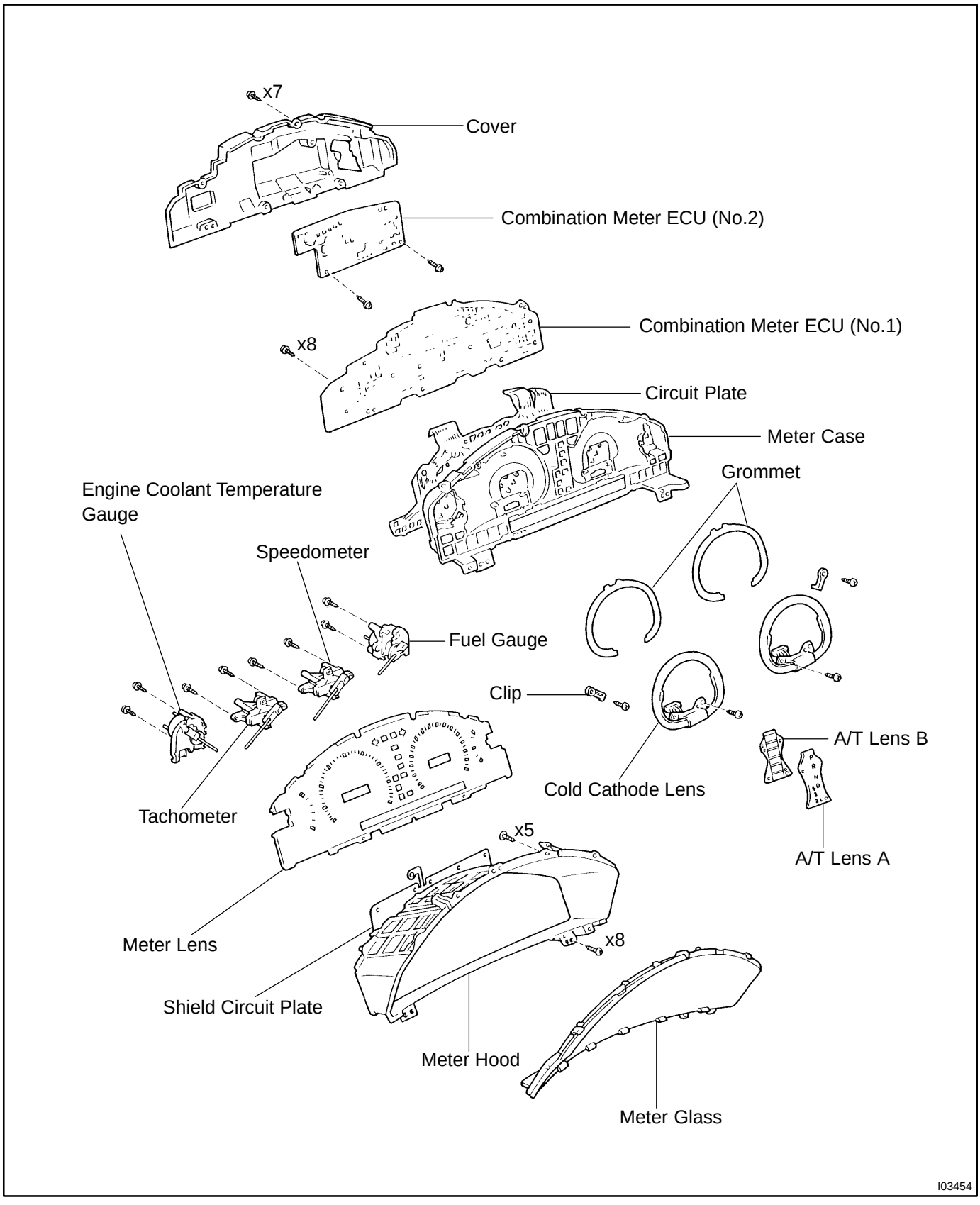
No.		Wire Harness Side (terminal name or HINT)
G	1	Fuel Receiver Gauge (SIN–)
	2	Fuel Receiver Gauge (SIN+)
	3	Fuel Receiver Gauge (COS–)
	4	Fuel Receiver Gauge (COS+)
	5	CRUISE MAIN Indicator Light
	6	Discharge Warning Light
	7	Seat Belt Warning Light
	8	Fuel Level Warning Light
	9	Open Door Warning Light
	11	DOME–B terminal
	13	Airbag Warning Light
	14	Airbag Warning terminal (+)
	15	Brake Fluid Level Warning Light
	16	IG+ terminal
	17	IG+ terminal
H	1	Multi Information Display and ODO/TRIP Display (VDISP)
	2	Multi Information Display and ODO/TRIP Display (5V IG)
	3	Multi Information Display and ODO/TRIP Display (BLK)
	4	Multi Information Display and ODO/TRIP Display (POR)
	5	Multi Information Display and ODO/TRIP Display (SCK)
	6	Multi Information Display and ODO/TRIP Display (SI)
	7	Multi Information Display and ODO/TRIP Display (A/D)
	8	Multi Information Display and ODO/TRIP Display (LATCH)
	9	Multi Information Display and ODO/TRIP Display (PTC)
	10	Multi Information Display and ODO/TRIP Display (BLKOD)
	11	Multi Information Display and ODO/TRIP Display (LAT)
	12	Multi Information Display and ODO/TRIP Display (CLK)
	13	Multi Information Display and ODO/TRIP Display (DIN)
	14	Multi Information Display and ODO/TRIP Display (CLIN)
	15	Ground
	16	Ground
	17	Ground
	18	Ground
	19	Ground
	20	Ground

No.		Wire Harness Side (terminal name or HINT)
J	1	Speedometer Needle (FXG)
	2	Speedometer Needle (FXG)
K	1	Tachometer Needle (FXG)
	2	Tachometer Needle (FXG)
L	1	Fuel Receiver Gauge Needle (FXG)
	2	Fuel Receiver Gauge Needle (FXG)
M	1	Engine Coolant Temperature Receiver Gauge Needle (FXG)
	2	Engine Coolant Temperature Receiver Gauge Needle (FXG)
O	1	LED+ terminal
	2	LED– terminal
	3	HEAT– terminal
	4	TH– terminal
	5	TH+ terminal
	6	LCDTH– terminal
	7	LCDTH+ terminal
	8	HEAT+ terminal
	12	C/C terminal
	16	C/C terminal
P	1	HEAT+ terminal
	2	TH21 terminal
	3	TH22 terminal
	5	C/C (TA) terminal
	7	C/C (TA) terminal
	9	HEAT– terminal
Q	1	HEAT+ terminal
	3	C/C (SP) terminal
	5	C/C (SP) terminal
	7	HEAT– terminal
W	1	FCC11V terminal
	2	FXG11V terminal
	3	FCC+ terminal
	4	FXG+ terminal
	5	FCC DIM terminal
	8	C/C C terminal
	9	C/C DIM terminal
	10	C/C M terminal
	11	TH terminal
	12	E1 terminal

No.		Wire Harness Side
X	1	HEAT+ terminal
	2	THLCD+ terminal
	3	C/C+ terminal
	4	THLCD– terminal
	5	HEAT– terminal
	8	SW d+B terminal
	9	9.1 V terminal
	10	LED– terminal
	11	E2 terminal
	12	E2 terminal
W	1	FCC11V terminal
	2	FXG11V terminal
	3	FCC+ terminal
	4	FXG+ terminal
	5	FCC DIM terminal
	8	C/C C terminal
	9	C/C DIM terminal
	10	C/C M terminal
	11	TH terminal
	12	E1 terminal
Z	1	HEAT+ terminal
	2	THLCD+ terminal
	3	C/C+ terminal
	4	THLCD– terminal
	5	HEAT– terminal
	8	SW d+B terminal
	9	9.1 V terminal
	10	LED– terminal
	11	E2 terminal
	12	E2 terminal

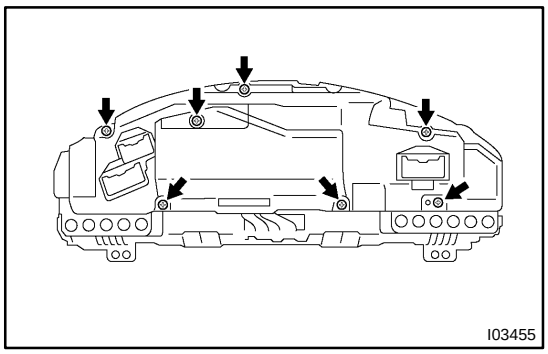
BE0C1–01

COMPONENTS



BE0C2–01

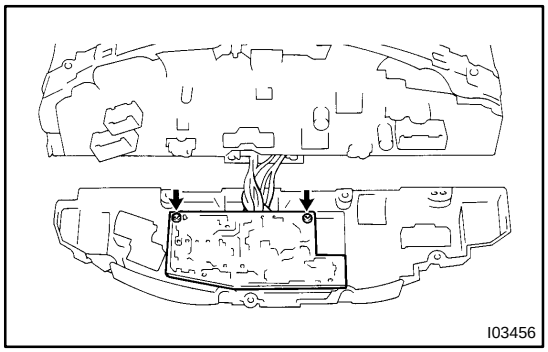
DISASSEMBLY



1. REMOVE COVER

(a) Remove the 7 screws.

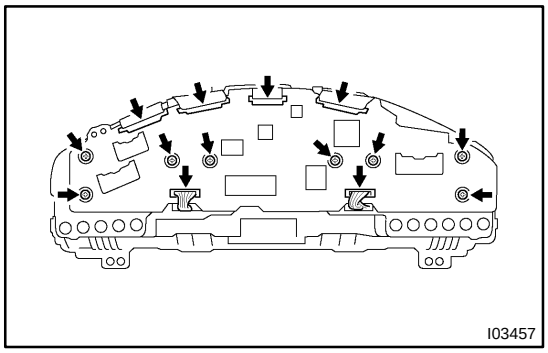
(b) Disconnect the cover from the meter case.



2. REMOVE COMBINATION METER ECU (No.2)

(a) Remove the 2 screws.

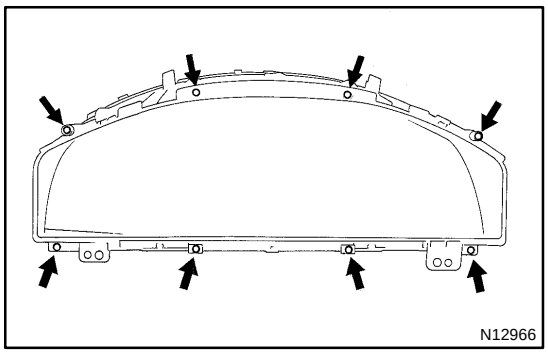
(b) Disconnect the connector.



3. REMOVE COMBINATION METER ECU (No.1)

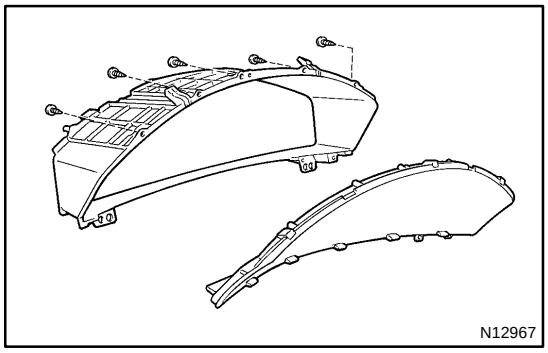
(a) Remove the 8 screws and 6 connectors.

(b) Remove the power source unit from the meter case.



4. REMOVE METER HOOD

Remove the 8 screws and the meter hood from the meter case.

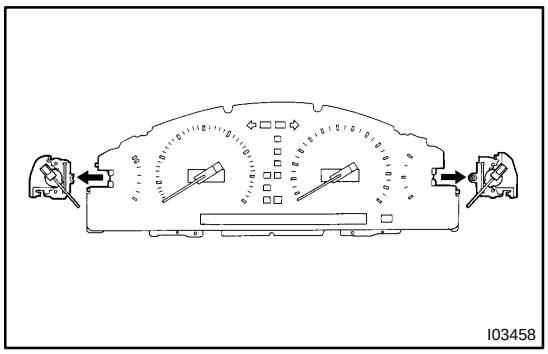


5. REMOVE METER GLASS

Remove the 5 screws and the meter glass.

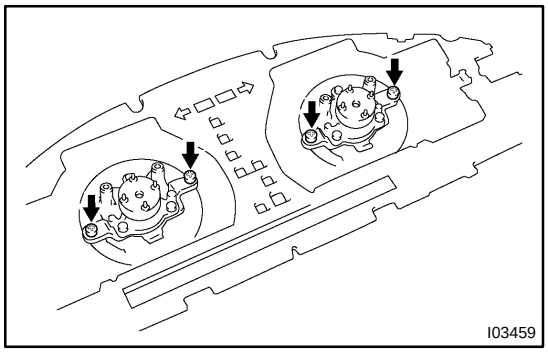
6. REMOVE METER LENS FROM CASE

Separate the meter lens together with the speedometer, tachometer and 2 gauges from the meter.



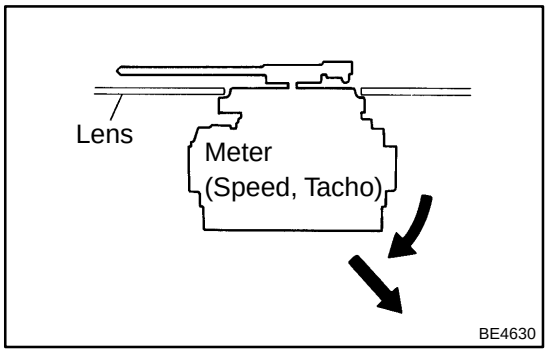
7. REMOVE FUEL AND TEMPERATURE GAUGE

Release and separate the 2 gauges from the lens.



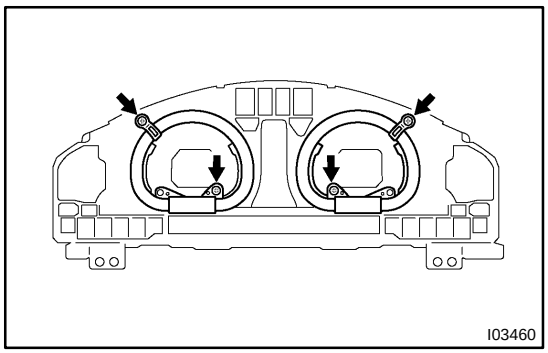
8. REMOVE SPEEDOMETER AND TACHOMETER

(a) Remove the 4 screws, and the speedometer and tachometer.



(b) Keep the indicator needle horizontal.

(c) Remove the indicator needle taking care not to strike the lens.



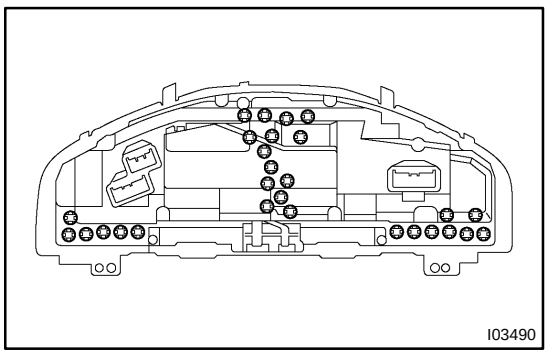
9. REMOVE 2 COLD CATHODE TUBES

(a) Remove the 4 screws and 2 clips.

(b) Remove the 2 cold cathode tubes.

(c) Remove the 2 grommets.

(d) Remove the A/T lens A and B.



10. REMOVE CIRCUIT PLATE

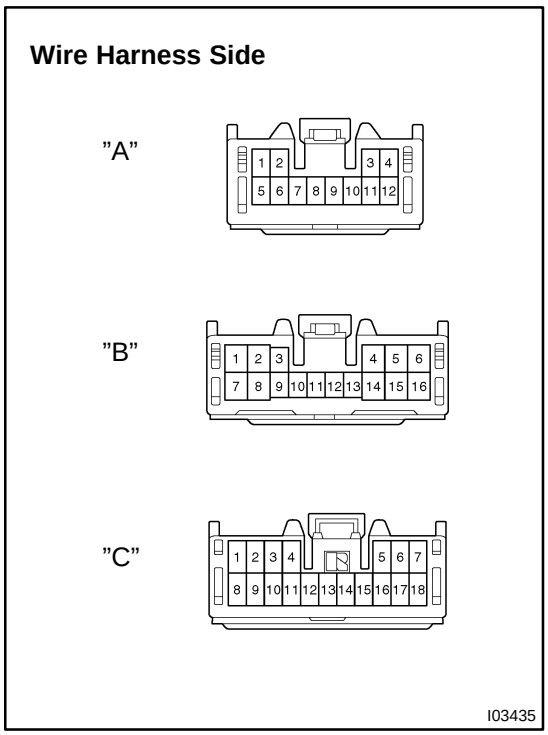
(a) Disconnect the A/T plate with the 2 screws.

(b) Remove the 28 warning lights.

(c) Remove the circuit plate from the case.

BE0C3–02

Wire Harness Side



INSPECTION

1. INSPECT COMBINATION METER CIRCUIT

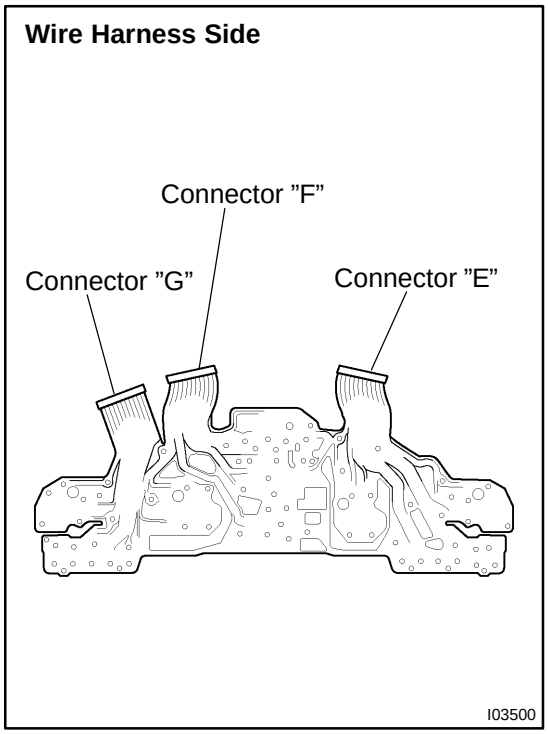
Connector disconnected:

Disconnect connector "A", "B" and "C" from the combination meter and inspect the connectors on the wire harness side as follows.

Tester connection	Condition	Specified condition
A1 – A12	Driving monitor switch MODE Free	No continuity
A1 – A12	Driving monitor switch MODE Pushed in	Continuity
A2 – A12	Driving monitor switch RESET Free	No continuity
A2 – A12	Driving monitor switch RESET Pushed in	Continuity
A5 – A6	Light control switch TAIL or HEAD and turn rheostat volume knob	Voltage changes no voltage or voltage fluctuates
A8 – Ground	Ignition switch OFF or ACC	No voltage
A8 – Ground	Ignition switch ON or START	Battery positive voltage
B1 – Ground	Ignition switch OFF or ACC	No voltage
B1 – Ground	Ignition switch ON or START	Battery positive voltage
B3 – Ground	Engine running	Voltage fluctuates
B4 – Ground	Steering pad switch FUNCTION	Continuity
B4 – Ground	Steering pad switch RESET	Resistance 360 Ω
B4 – Ground	Steering pad switch MODE	Resistance 1,110 Ω
B5 – B12	Fuel Sender Gauge Float position Full	Resistance Approx. 21 Ω
B5 – B12	Fuel Sender Gauge Float position 1/2	Resistance Approx. 145.8 Ω
B5 – B12	Fuel Sender Gauge Float position Empty	Resistance Approx. 276 Ω
B5 – B13	Constant	Resistance Approx. 300 Ω
B6 – Ground	Constant	Continuity
B7 – Ground	Constant	Battery positive voltage
B8 – Ground	Constant	Battery positive voltage
B16 – Ground	Constant	Continuity
C2 – Ground	Turn signal switch LEFT	Continuity
C3 – Ground	Constant	Continuity

C4 – Ground	Light control switch HI or FLASH	Battery positive voltage
C5 – Ground	Turn signal switch RIGHT	Continuity
C11 – Ground	Engine running	Continuity
C14 – Ground	Window washer level warning switch Float down	Continuity
C17 – Ground	Brake fluid level warning switch Float down	Continuity
C18 – Ground	Constant	Continuity

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



2. INSPECT COMBINATION METER CIRCUIT PLATE

Warning light circuit plate:

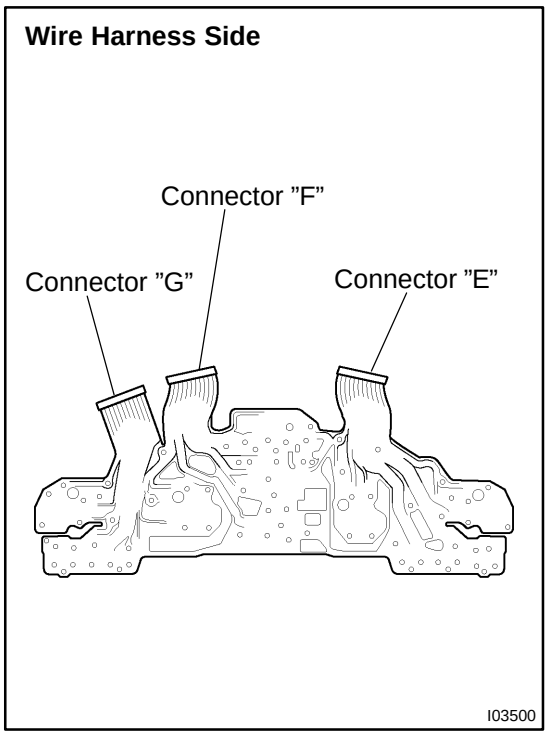
(a) Remove the cover.

(b) Disconnect connector ”E”, ”F” and ”G” from the combination meter and inspect the connectors on the wire harness side as follows.

Tester connection	Check indicator light circuit	specified condition
E1 (–) – F14 (+)	Headlight indicator (USA models) Taillight indicator (CANADA models)	Continuity
E6 (–) – G16 (+) E6 (–) – G17 (+)	TRAC indicator light	Continuity
E7 (–) – G16 (+) E7 (–) – G17 (+)	Window washer level warning light	Continuity
E8 (–) – G16 (+) E8 (–) – G17 (+)	Malfunction indicator light	Continuity
E9 (+) – E10 (–)	VSC OFF indicator light	Continuity
E11 (–) – G16 (+) E11 (–) – G17 (+)	ABS warning light	Continuity
E12 (+) – E13 (–)	HEIGHT HI indicator light	Continuity
E14 (–) – G16 (+) E14 (–) – G17 (+)	ECT SNOW indicator light	Continuity
E16 (–) – G16 (+) E16 (–) – G17 (+)	ECT PWR indicator light	Continuity
F5 (–) – G16 (+) F5 (–) – G17 (+)	A/T shift indicator light (2)	Continuity

F6 (–) – G16 (+) F6 (–) – G17 (+)	A/T shift indicator light (L)	Continuity
F7 (–) – G16 (+) F7 (–) – G17 (+)	A/T shift indicator light (3)	Continuity
F8 (–) – G16 (+) F8 (–) – G17 (+)	A/T shift indicator light (4)	Continuity
F9 (–) – G16 (+) F9 (–) – G17 (+)	A/T shift indicator light (D)	Continuity
F10 (–) – G16 (+) F10 (–) – G17 (+)	A/T shift indicator light (N)	Continuity
F11 (–) – G16 (+) F11 (–) – G17 (+)	A/T shift indicator light (R)	Continuity
F12 (–) – G16 (+) F12 (–) – G17 (+)	A/T shift indicator light (P)	Continuity
F15 (+) – F16 (–)	Hi–beam indicator light	Continuity
F17 (+) – F18 (–)	Right turn signal indicator light	Continuity
F19 (+) – F18 (–)	Left turn signal indicator light	Continuity
F20 (+) – F14 (+)	Front fog light indicator light	Continuity
G5 (–) – G16 (+) G5 (–) – G17 (+)	CRUISE MAIN indicator light	Continuity
G6 (–) – G16 (+) G6 (–) – G17 (+)	Discharge warning light	Continuity
G7 (–) – G16 (+) G7 (–) – G17 (+)	Seat belt warning light	Continuity
G8 (–) – G16 (+) G8 (–) – G17 (+)	Fuel level warning light	Continuity
G9 (–) – G11 (+)	Open door warning light	Continuity
G14 (+) – G13 (–)	SRS warning light	Continuity
G15 (–) – G16 (+) G15 (–) – G17 (+)	Brake warning light	Continuity

If circuit is not as specified, replace the bulb or circuit plate.



3. INSPECT COMBINATION METER CIRCUIT PLATE

From combination meter ECU to gauges:

(a) Remove the cover.

(b) Disconnect connector ”E”, ”F” and ”G” from the combination meter and inspect the connectors on the wire harness side as follows.

Terminal	Resistance (Ω)
E2 – E3	Approx. 151.8
E4 – E5	Approx. 164.2
E17 – E20	Approx. 151.8
E18 – E19	Approx. 164.2
F1 – F2	Approx. 151.8
F3 – F4	Approx. 164.2
G1 – G2	Approx. 151.8
G3 – G4	Approx. 164.2

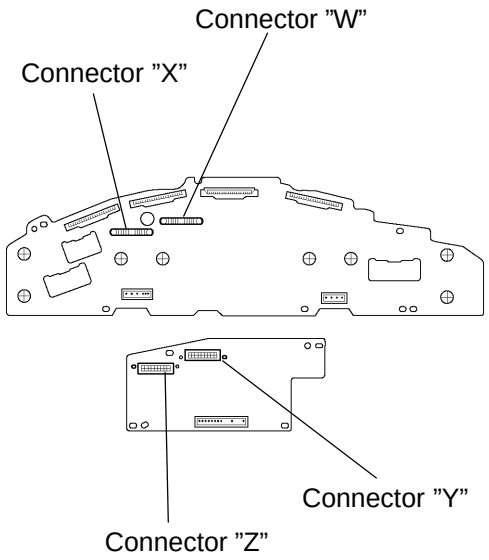
If circuit is not as specified, inspect gauge*1 or meter*2. Then recheck.

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

*1 : Fuel Receiver Gauge and Engine Coolant Temperature Receiver Gauge

*2 : Speedometer and Tachometer

Wire Harness Side



4. INSPECT COMBINATION METER CIRCUIT PLATE

From meter ECU main circuit plate to meter ECU sub circuit plate:

Disconnect connector "W", "X", "Y" and "Z" from the combination meter and inspect the connectors on the wire harness side as follows.

Terminal	Specified value
W1 – Y1	Continuity
W2 – Y2	Continuity
W3 – Y3	Continuity
W4 – Y4	Continuity
W5 – Y5	Continuity
W6 – Y6	Continuity
W7 – Y7	Continuity
W8 – Y8	Continuity
W9 – Y9	Continuity
W10 – Y10	Continuity
W11 – Y11	Continuity
W12 – Y12	Continuity
X1 – Z1	Continuity
X2 – Z2	Continuity
X3 – Z3	Continuity
X4 – Z4	Continuity
X5 – Z5	Continuity
X6 – Z6	Continuity
X7 – Z7	Continuity
X8 – Z8	Continuity
X9 – Z9	Continuity
X10 – Z10	Continuity
X11 – Z11	Continuity
X12 – Z12	Continuity

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

5. INSPECT RHEOSTAT LIGHT CONTROL
(See page BE–62)

6. INSPECT COMBINATION METER ILLUMINATION

NOTICE:

To avoid damage to the computer, be careful of the following.

- **Do not make an error with another terminal number.**
- **Do not cause a short with another terminal.**

Connect the connectors ”P”, ”Q” and ”H”.

7. 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.

If error is excessive, replace the speedometer.

mph (USA)		km/h (CANADA)	
Standard indication	Allowable range	Standard indication	Allowable range
20	18.5 – 21.5	20	18 – 23
40	40 – 43	40	38 – 42
60	60.5 – 64	60	57 – 61.5
80	81 – 85	80	76.5 – 81.5
100	102 – 107	100	96.5 – 101.5
120	122.5 – 128.5	120	116 – 121.5
140	136 – 142	160	155.5 – 162.5
180	175 – 183	200	194.5 – 203.5

8. INSPECT TACHOMETER ON–VEHICLE

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

NOTICE:

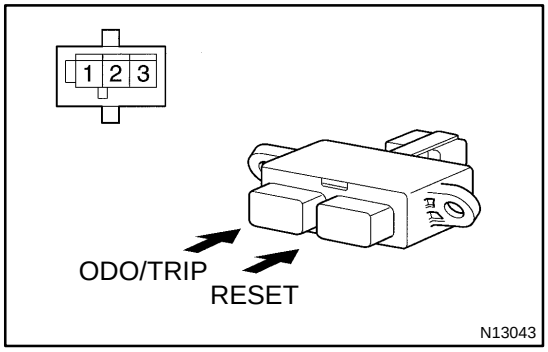
Reversing the connection of the tachometer will damage the transistors and diodes inside.

(b) Compare the tester and tachometer indications.

If error is excessive, replace the tachometer.

RPM(DC 13.5 V, 25 ˚C (77˚F))

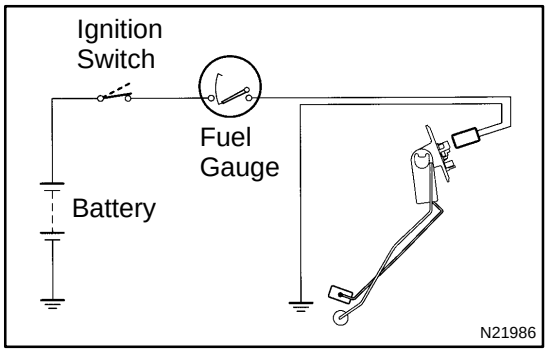
Standard indication	Allowable range
700	630 – 770
1000	925 – 1125
2000	1900 – 2200
3000	2845 – 3305
4000	3870 – 4330
5000	4925 – 5320
7000	6875 – 7475



9. INSPECT TWIN TRIP AND ODO SWITCH CONTINUITY

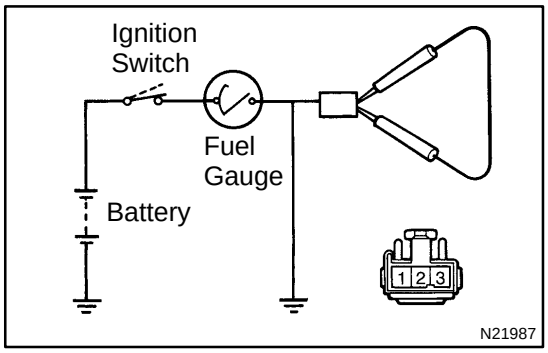
Switch position	Tester connection	Condition
ODO/TRIP Free	1 – 2	No continuity
ODO/TRIP Pushed in	1 – 2	Continuity
RESET Free	2 – 3	No continuity
RESET Pushed in	2 – 3	Continuity

If continuity is not as specified, replace the twin trip and odo switch.



10. INSPECT FUEL RECEIVER GAUGE OPERATION

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

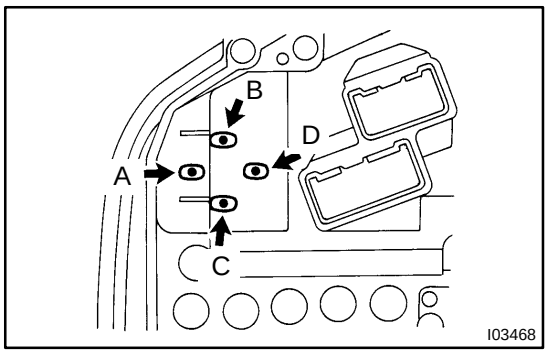


(c) Connect the terminals 3 and 2 on the wire harness side connector.
(d) Turn the ignition switch ON and check that the receiver gauge needle moves toward the full side.

HINT:
Because of the silicon oil in the gauge, it will take a short time for the needle to stabilize.

NOTICE:
Do not connect the terminals 1 and 3.

If operation is not as specified, inspect the power source unit.

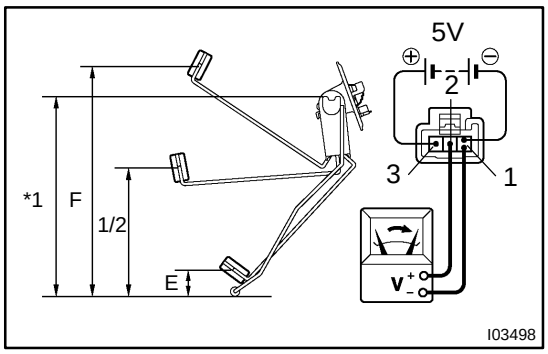


11. INSPECT FUEL RECEIVER GAUGE RESISTANCE

Measure the resistance between terminals.

Between terminals	Resistance (Ω)
A – B	Approx. 151.8
C – D	Approx. 164.2

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



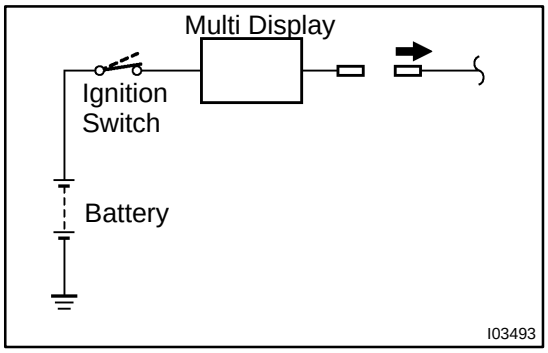
12. INSPECT FUEL SENDER GAUGE VOLTAGE

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

*1: Set value 270.7 mm (10.66 in.)

Float position mm (in.)		Voltage (V)
F	Approx. 310.5 (12.22)	Approx. 4.6
1/2	Approx. 172.0 (6.77)	Approx. 2.43
E	Approx. 34.3 (1.35)	Approx. 0.35

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



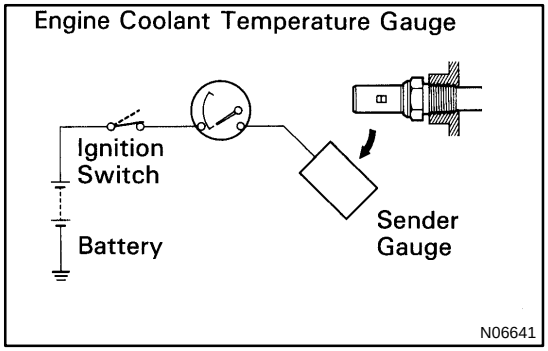
13. INSPECT BRAKE PAD SENSOR
(Front side: See page BR–23)
(Rear side: See page BR–33)

14. INSPECT BRAKE PAD INDICATOR LIGHT

(a) Disconnect the connector from the brake pad sensor.

(b) Turn the ignition switch ON, check that the indicator light lights up.

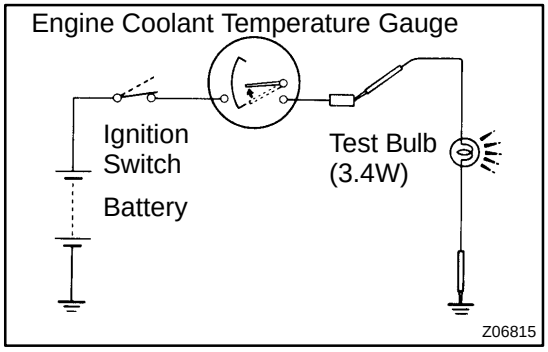
If the indicator light does not light up, test the bulb or inspect wire harness.



15. INSPECT ENGINE COOLANT TEMPERATURE RECEIVER GAUGE OPERATION

(a) Disconnect the connector from the sender gauge.

(b) Turn the ignition switch ON and check that the receiver gauge needle indicates COOL.

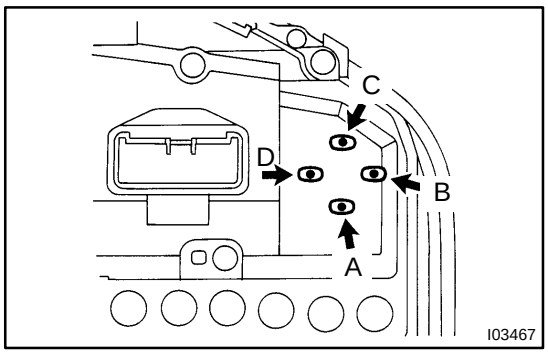


(c) Ground terminal on the wire harness side connector through a 3.4 W test bulb.

(d) Turn the ignition switch ON and check that the bulb lights up and the receiver gauge needle moves toward the hot side.

(e) Then recheck the system.

If operation is not as specified, measure the receiver gauge resistance.



16. INSPECT ENGINE COOLANT TEMPERATURE RECEIVER GAUGE RESISTANCE

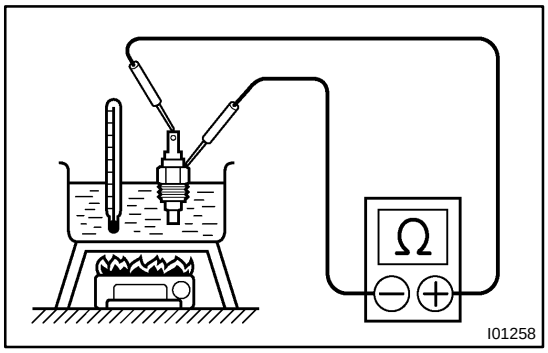
Measure the resistance between terminals.

HINT:

Connect the test leads so the current from the ohmmeter can flow according to the chart order.

Between terminals	Resistance (Ω)
A – B	Approx. 151.8
C – D	Approx. 164.2

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

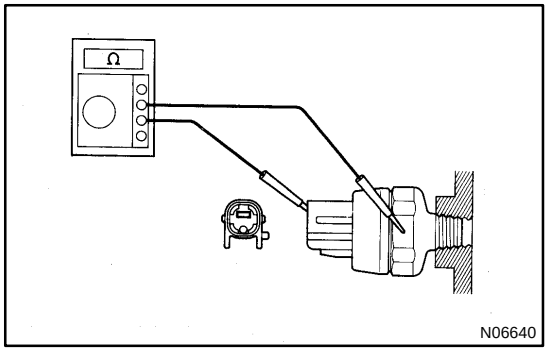


17. INSPECT ENGINE COOLANT TEMPERATURE SENDER GAUGE RESISTANCE

Measure the resistance between the terminal and gauge body.

Temperature °C(°F)	Resistance (Ω)
50 (122.0)	160 – 240
120 (248.0)	17.1 – 21.2

If resistance value is not as specified, replace the engine coolant temperature sender gauge.



18. INSPECT LOW OIL PRESSURE WARNING SWITCH

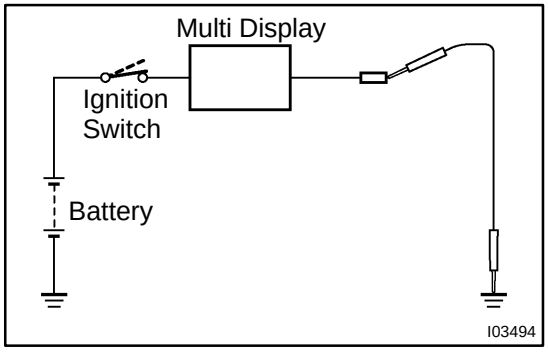
(a) Check that there is continuity between terminal and ground with the engine stopped.

(b) Check that there is no continuity between terminal and ground with the engine running.

HINT:

Oil pressure should be over 24.5 kPa (0.25 kgf/cm, 3.6 psi).

If operation is not as specified, replace the switch.

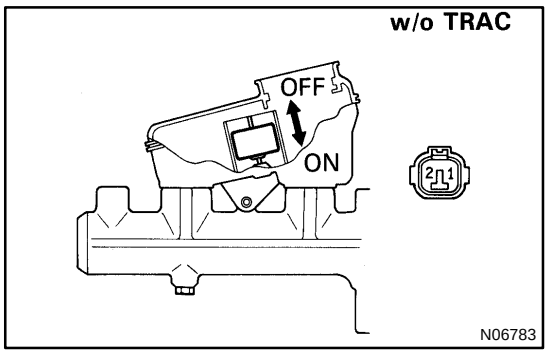


19. INSPECT LOW OIL PRESSURE WARNING LIGHT

(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.

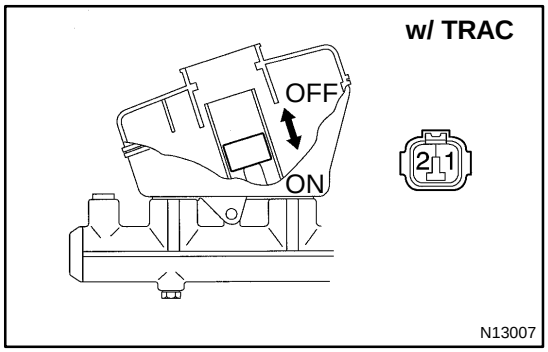
If the warning light does not light up, test the bulb or inspect the wire harness.

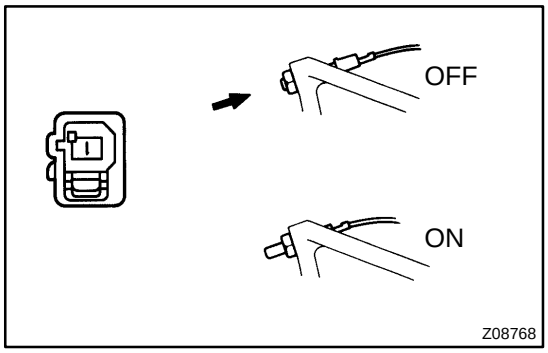


20. INSPECT BRAKE FLUID LEVEL WARNING SWITCH

(a) Disconnect the connector.
(b) Check that there is no continuity between terminals with the switch OFF (float up).
(c) Use syphon, etc. to take fluid out of the reservoir tank.
(d) Check that there is continuity between terminals with the switch ON (float down).
(e) Pour the fluid back in reservoir tank.

If operation is not as specified, replace the reservoir tank.

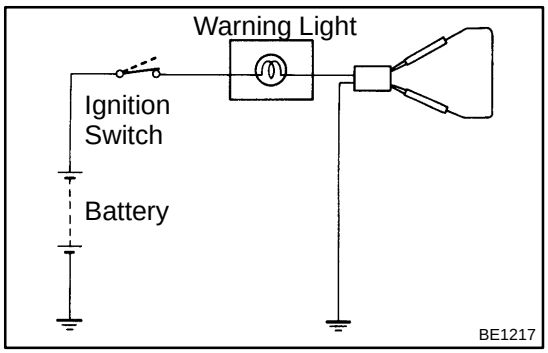




21. INSPECT PARKING BRAKE SWITCH

(a) Check that there is continuity between terminal and switch body with the switch ON (switch pin released).
(b) Check that there is no continuity between terminal and switch body with the switch OFF (switch pin pushed in).

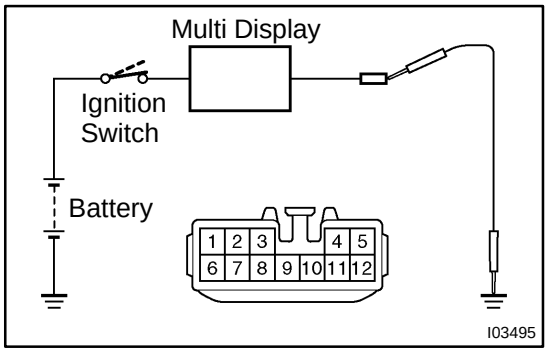
If continuity is not as specified, replace the switch or inspect ground point.



22. INSPECT BRAKE WARNING LIGHT

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

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

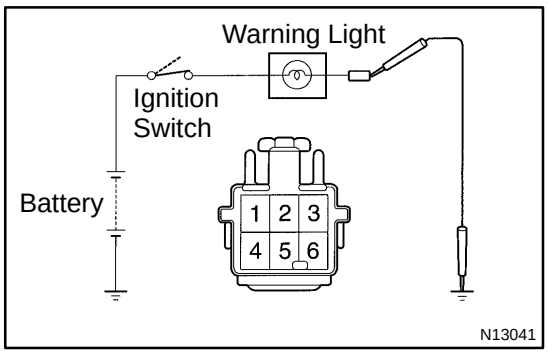


23. INSPECT LIGHT FAILURE SENSOR
(See page BE–76)

24. INSPECT REAR LIGHT WARNING LIGHT

(a) Disconnect the connector from the light failure sensor and ground terminal 4 on the wire harness side connector.
(b) Start the engine and check that the warning light lights up.

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

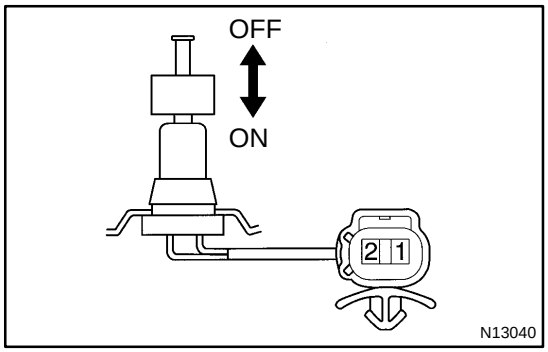


25. INSPECT COURTESY SWITCH
(See page BE–70)

26. INSPECT OPEN DOOR WARNING LIGHT

(a) Disconnect the connector from the door lock assembly and ground terminal 3 on the wire harness side connector, and check that the warning light lights up.

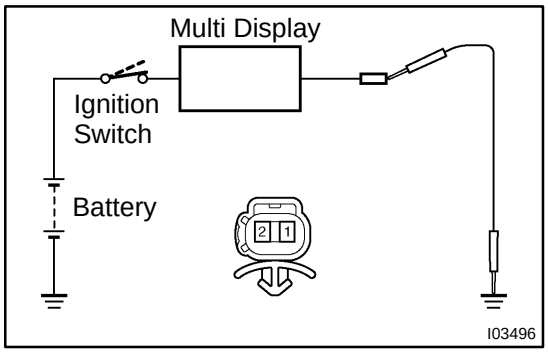
If the warning light does not light up, inspect the bulb or wire harness or body ECU.



27. INSPECT WASHER LEVEL WARNING SWITCH CONTINUITY

(a) Remove the washer tank.
(b) Check that there is continuity between terminals (float down).
(c) Check that there is no continuity between terminals (float up).

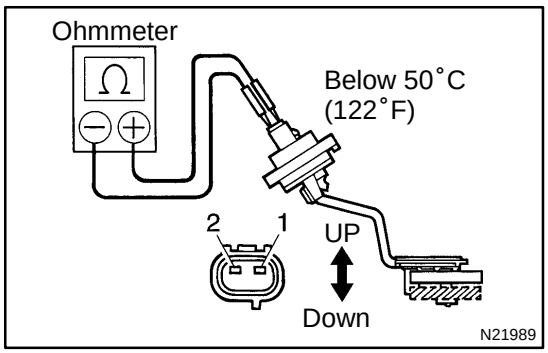
If continuity is not as specified, replace the switch.



28. INSPECT WASHER LEVEL WARNING LIGHT

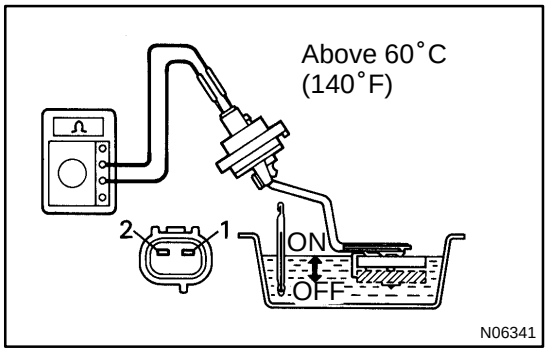
(a) Disconnect the connector from the washer level warning switch and ground terminal 2 on the wire harness side connector.
(b) Start the engine, check that the warning light lights up.

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



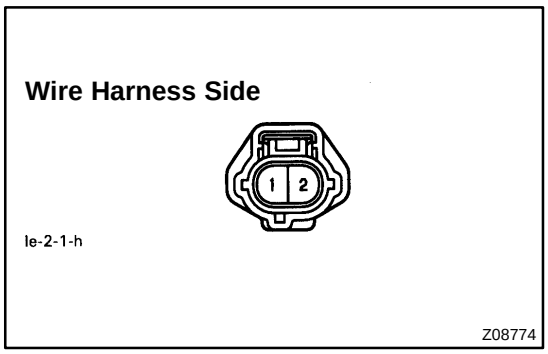
29. INSPECT ENGINE OIL LEVEL WARNING SWITCH CONTINUITY

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

If operation is not as specified, replace the switch.

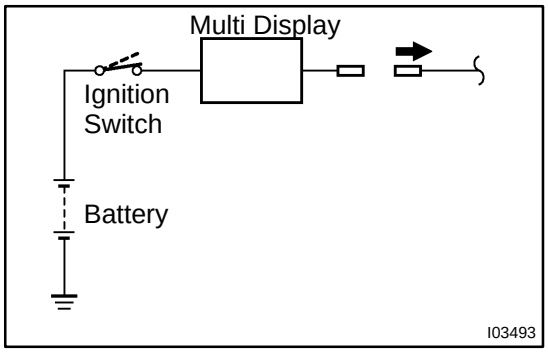


30. INSPECT ENGINE OIL LEVEL WARNING SWITCH CIRCUIT

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

Tester connection	Condition	Specified condition
2 – Ground	Constant	Continuity

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

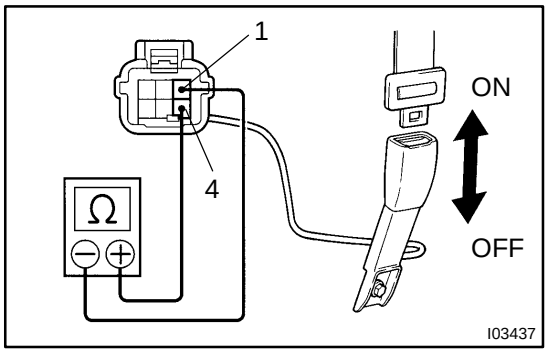


31. INSPECT ENGINE OIL LEVEL WARNING LIGHT

(a) Disconnect the connector from the switch.

(b) 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 the bulb or wire harness.

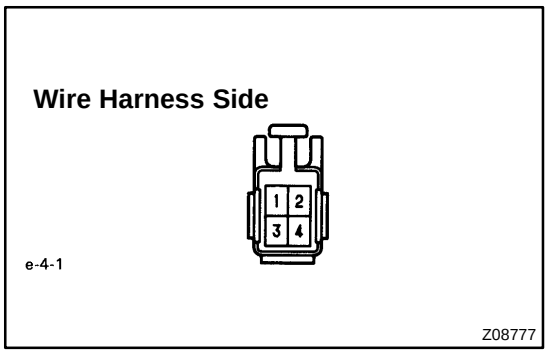


32. INSPECT BUCKLE SWITCH CONTINUITY

(a) Check that there is continuity between terminal 1 and 4 on the switch side connector with the switch ON (belt fastened).

(b) Check that there is no continuity between terminal 1 and 4 on the switch side connector with the switch OFF (belt unfastened).

If operation is not as specified, replace the seat belt inner.

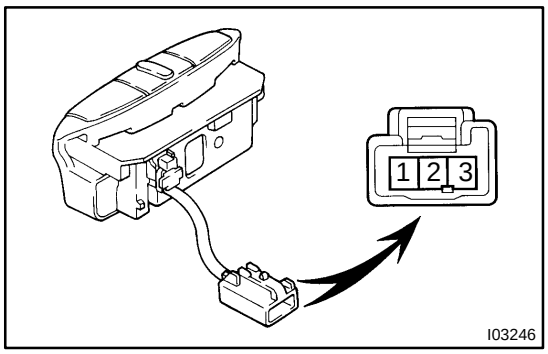


33. INSPECT SEAT BELT WARNING SWITCH CIRCUIT

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

Tester connection	Condition	Specified condition
–	Turn the ignition switch ON	Chime sounds for 4 – 8 sec.
–	Ground terminal 2 and turn the ignition switch ON	No chime sound
1 – Ground	Constant	Continuity

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



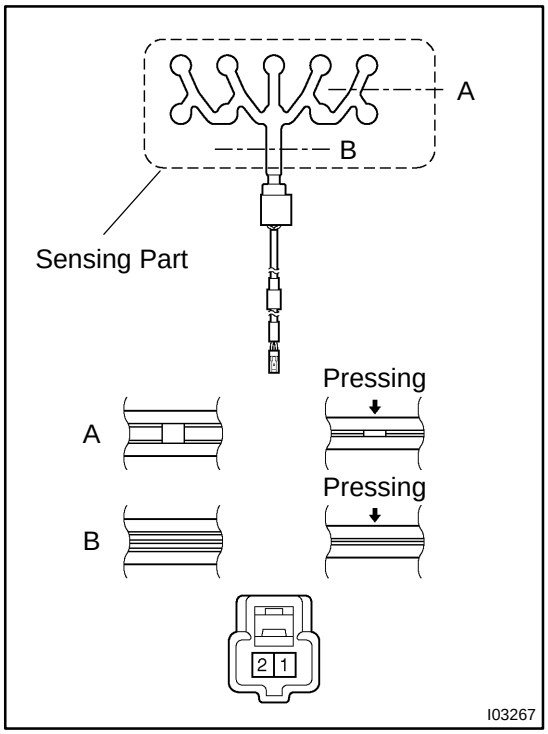
34. INSPECT MULTI–INFORMATION DISPLAY SWITCH

Measure the resistance between terminals 2 and 3.

Switch position	Resistance (Ω)
FUNCTION	0
RESET	Approx. 360
MODE	Approx. 1,110

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

35. INSPECT MULTI–INFORMATION DISPLAY SWITCH CIRCUIT (See page BE–86)



36. INSPECT SEAT BELT WARNING OCCUPANT DETECTION SENSOR

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

BE0C4–01

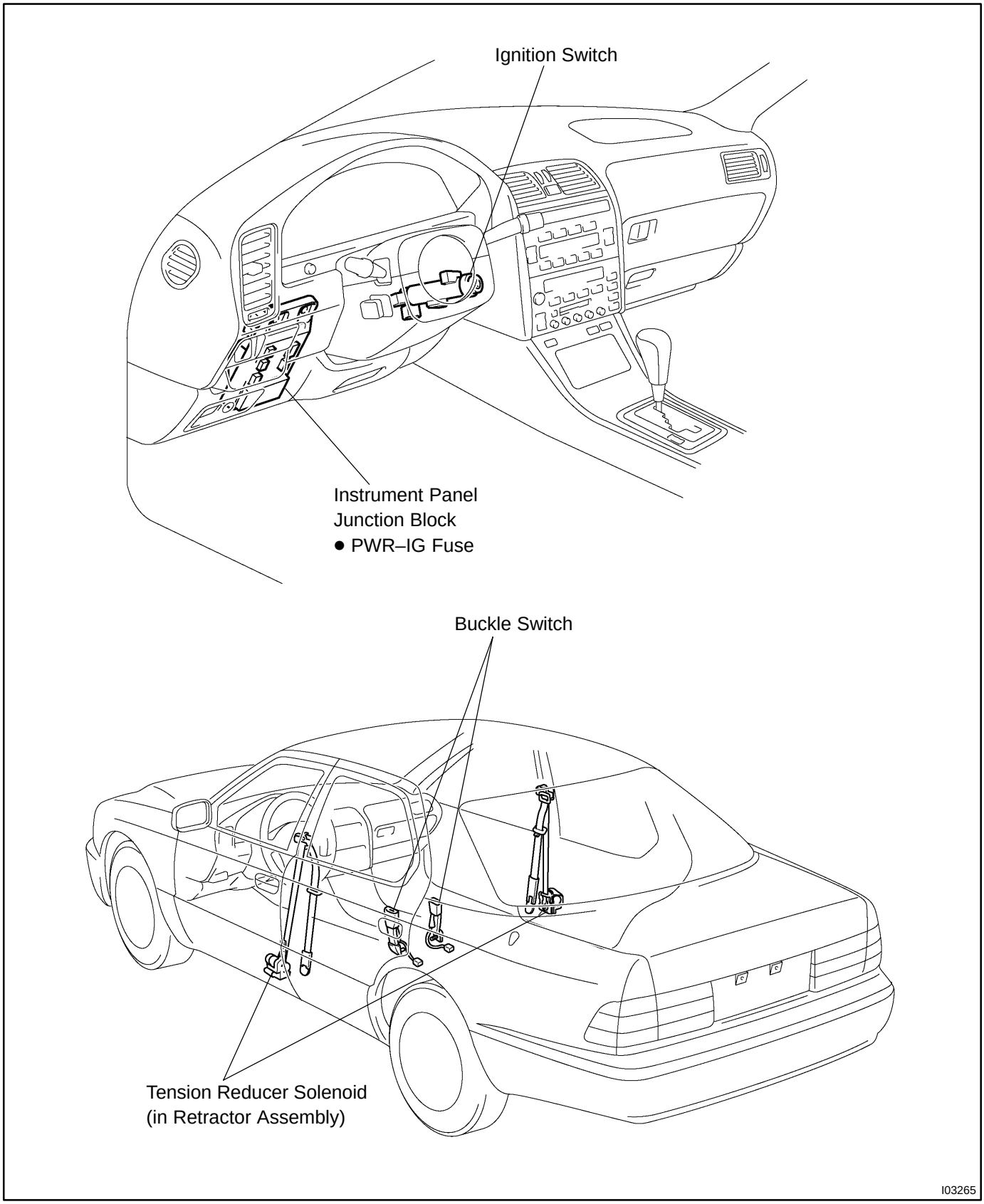
REASSEMBLY

Installation is in the reverse order of disassembly. (See page BE–96)

ELECTRIC TENSION REDUCER SYSTEM

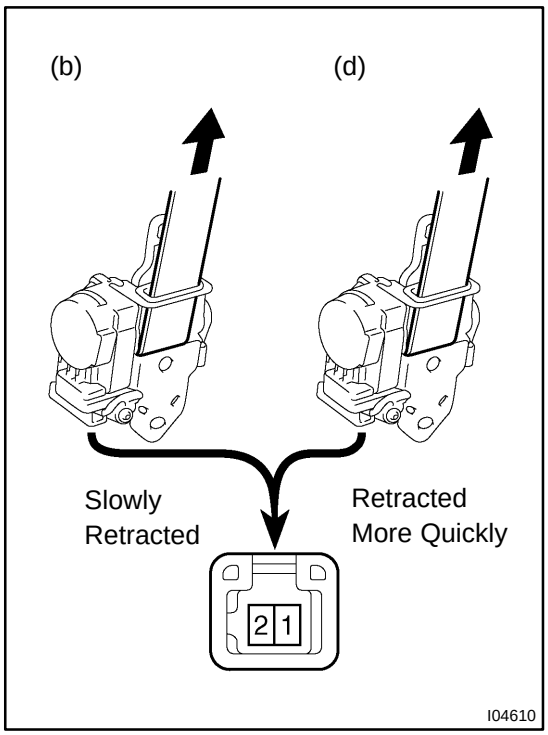
BE0C5–01

LOCATION



BE0C6–01

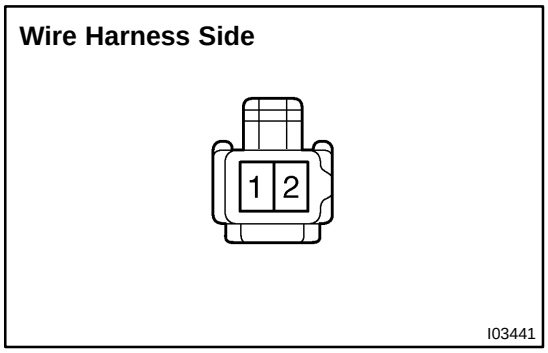
INSPECTION



1. INSPECT TENSION REDUCER SOLENOID OPERATION

(a) Connect the positive (+) lead from the battery to terminal 1, and negative (–) lead to terminal 2.
(b) Pull the belt upward and check that the belt is slowly retracted when released.
(c) Disconnect the lead from the battery.
(d) Pull the belt upward and check that the belt is retracted more quickly when released than in (b).

HINT:
Do not tilt the retractor.
If the operation is not as specified, replace the front seat outer belt assembly.

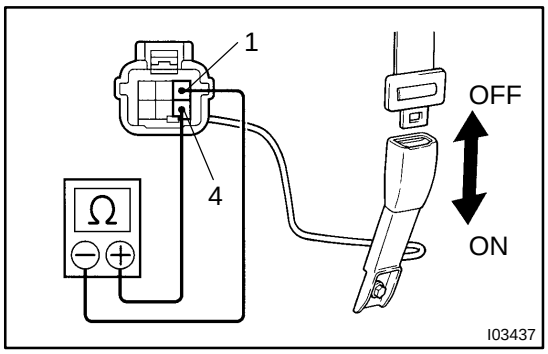


2. INSPECT TENSION REDUCER SOLENOID CIRCUIT

Disconnect the tension reducer solenoid connector and inspect the connector on wire harness side, as shown.

Tester connection	Condition	Specified condition
2 – Ground	Buckle switch position ON (belt fastened)	Continuity
2 – Ground	Buckle switch position OFF (belt unfastened)	No continuity
1 – Ground	Ignition switch ON	Battery positive voltage
1 – Ground	Ignition switch ACC or LOCK	No voltage

If the circuit is specified, replace the front seat outer belt assembly.
If the circuit is not as specified, inspect the circuits connected to other parts.

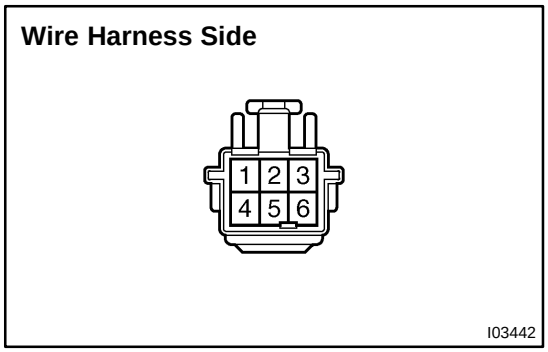


3. INSPECT BUCKLE SWITCH CONTINUITY

(a) Check that there is continuity between terminal 1 and 4 on the switch side connector with the switch ON (belt fastened).

(b) Check that there is no continuity between terminal 1 and 4 on the switch side connector with the switch OFF (belt unfastened).

If operation is not as specified, replace the seat belt inner.

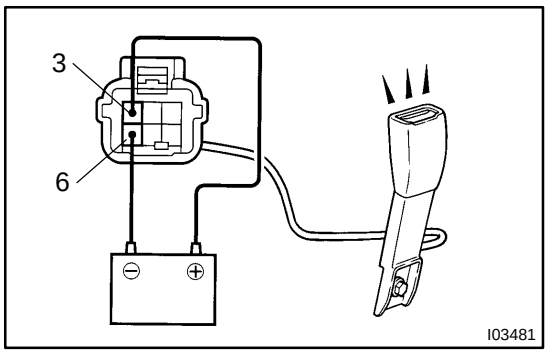


4. INSPECT BUCKLE SWITCH CIRCUIT

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

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

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



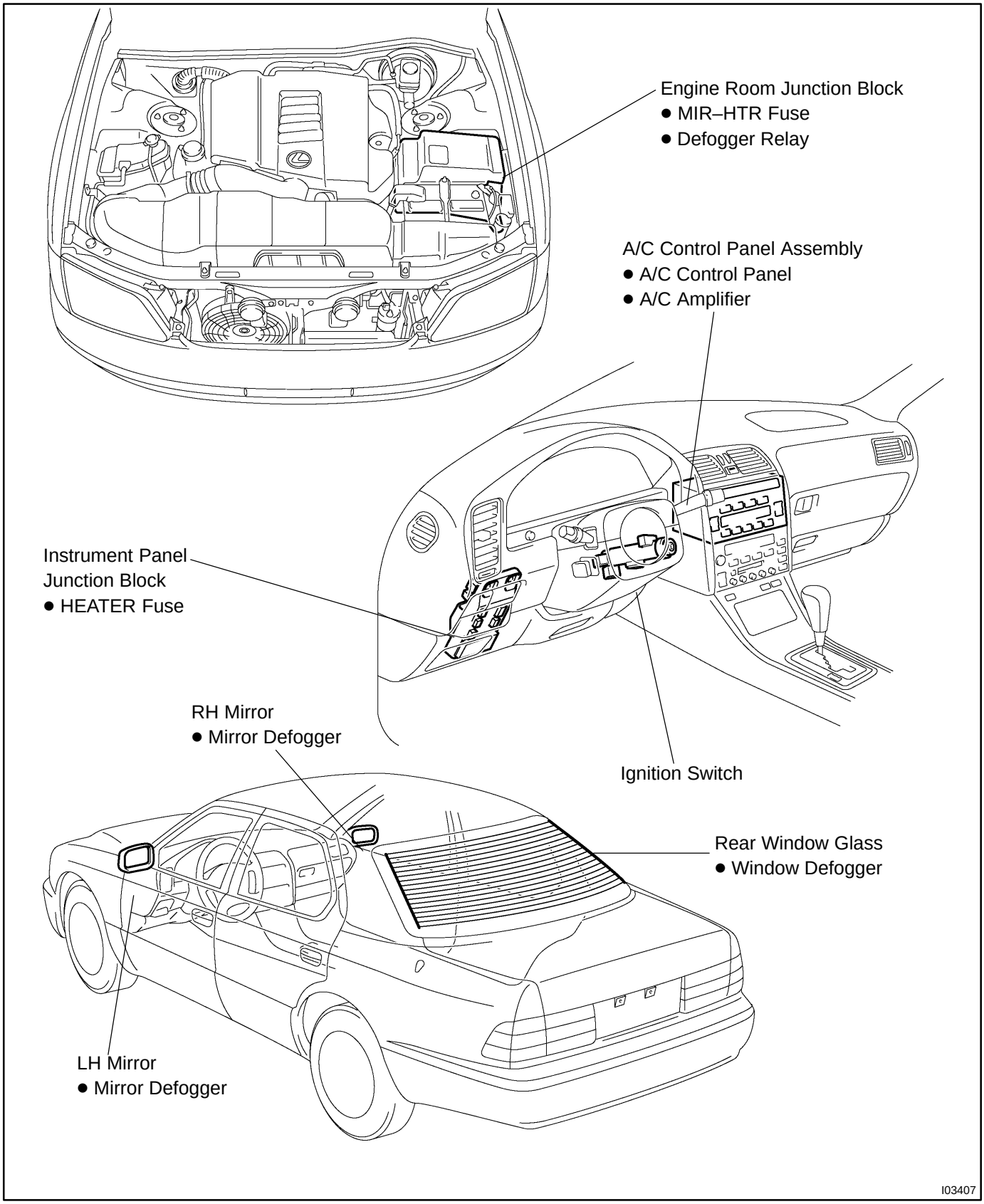
5. INSPECT BUCKLE SWITCH INDICATOR LIGHT OPERATION

Connect the positive (+) lead from the battery to terminal 3 and the negative (–) lead to terminal 6, and check that the indicator light does not light up, replace the switch.

DEFOGGER SYSTEM

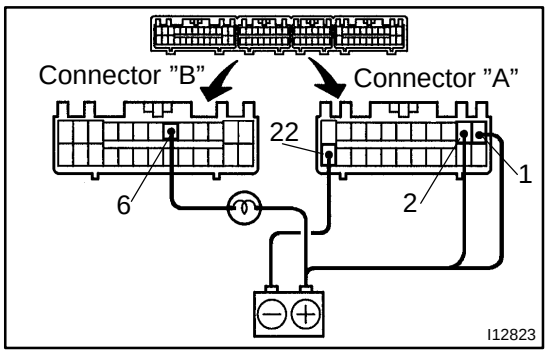
LOCATION

BE0C7–01



BE0C8–03

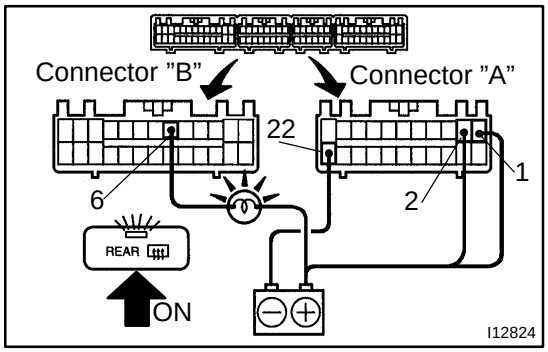
INSPECTION



1. A/C control panel assembly:
INSPECT DEFOGGER SWITCH OPERATION

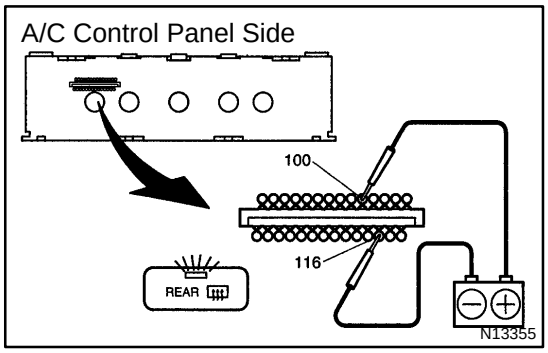
(a) Connect the positive (+) lead from the battery to terminal A1,A2 and negative (–) lead to terminal A22.

(b) Connect the positive (+) lead from the battery to terminal B6 through a 1.4 W test bulb.



(c) Turn the defogger switch ON and check that the test bulb and indicator light turn ON, then turn OFF after about 15 minutes.

If operation is not as specified, proceed to the next inspection.



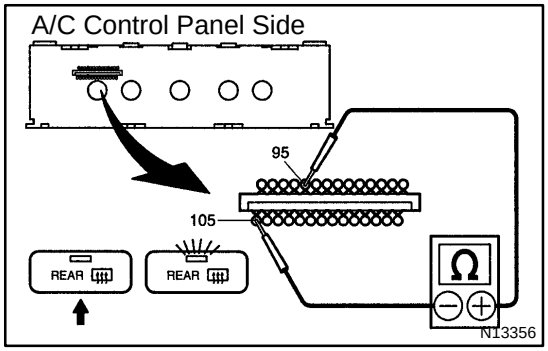
2. A/C control panel:
INSPECT DEFOGGER SWITCH INDICATOR

(a) Separate control panel and A/C amplifier.

(b) Connect the positive (+) lead from the battery to terminal 100 and the negative (–) lead to terminal 116.

(c) Push the switch and check that the indicator light lights up.

If operation is not as specified, replace the bulb.

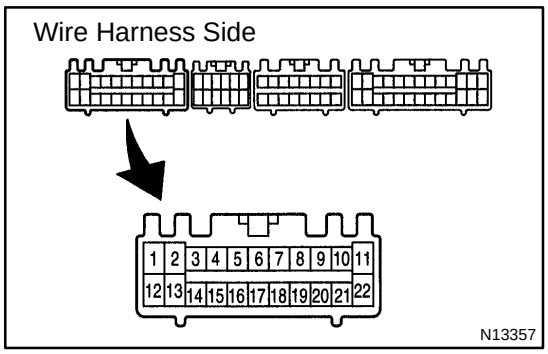


3. INSPECT DEFOGGER SWITCH CONTINUITY

Condition	Tester connection	Specified condition
OFF	–	No continuity
ON	95 – 105	Continuity

If operation is as specified, replace the A/C amplifier.

If continuity is not as specified, replace the control panel.

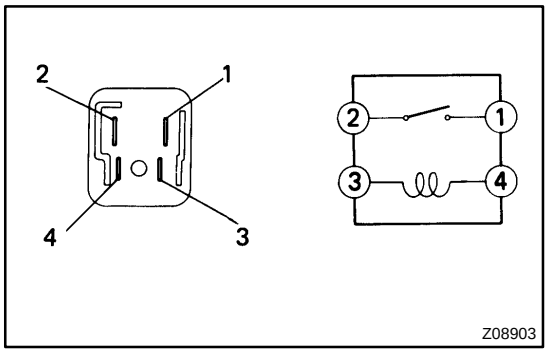


4. INSPECT DEFOGGER SWITCH CIRCUIT

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

Tester connection	Condition	Specified condition
11 – Ground	Constant	Continuity
2 – Ground	Ignition switch ON	Battery positive voltage
2 – Ground	Ignition switch ACC or LOCK	No voltage

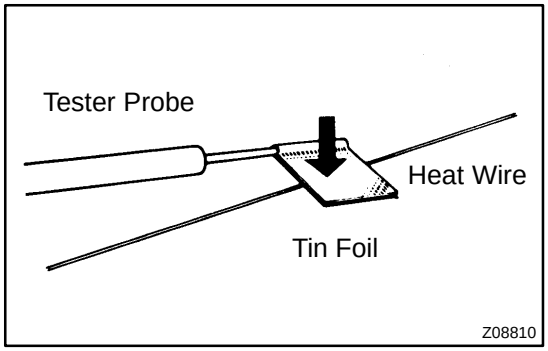
If the circuit is not as specified, inspect the circuits connected to other parts.



5. INSPECT DEFOGGER RELAY CONTINUITY

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

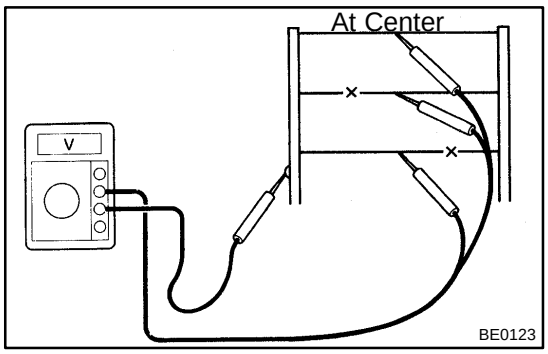
If continuity is not as specified, replace the relay.

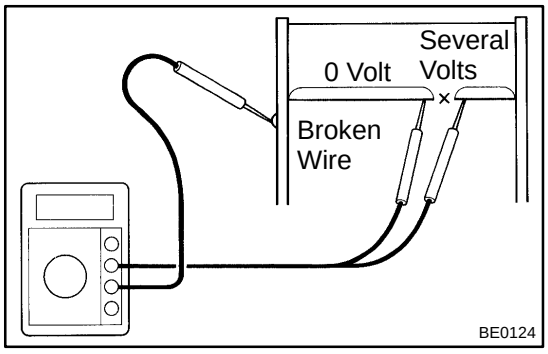


6. INSPECT DEFOGGER WIRES

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 wires. Do not use detergents or glass cleaners with abrasive ingredients. When measuring voltage, wind a piece of tin foil around the top of the negative probe and press the foil against the wire with your fingers, as shown.



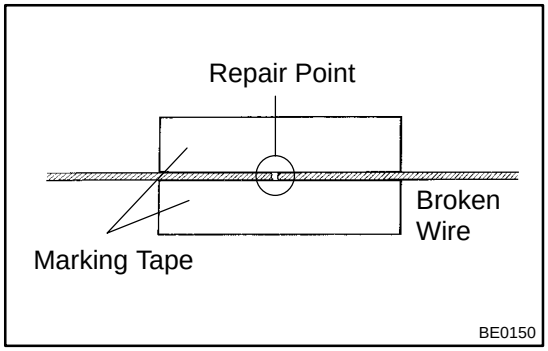


(a) Turn the ignition switch ON.
(b) Turn the defogger switch ON.
(c) Inspect the voltage at the center of each heat wire, as shown.

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

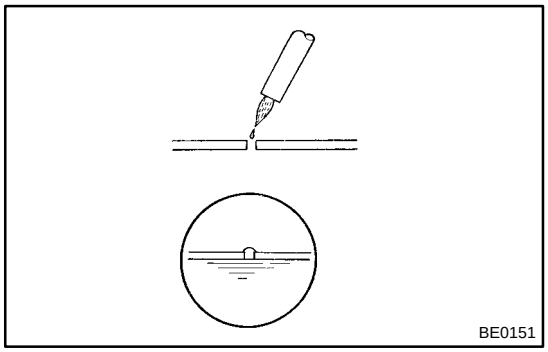
HINT:
If there is approximately 10 V, the wire is broken between the center of the wire and the positive (+) end. If there is no voltage, the wire is broken between the center of the wire and ground.
(d) Place the voltmeter positive (+) lead against the defogger positive (+) terminal.
(e) Place the voltmeter negative (–) lead with the foil strip against the heat wire at the positive (+) terminal end and slide it toward the negative (–) terminal end.
(f) The point where the voltmeter deflects from zero to several V is the place where the heat 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 is moved to the other end.

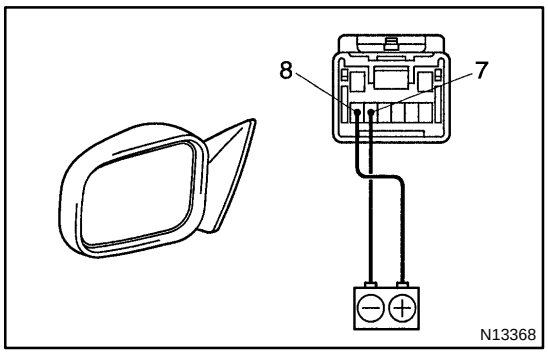


7. IF NECESSARY, REPAIR DEFOGGER WIRE

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



(d) Using a fine tip brush, apply a small amount to the wire.
(e) After a few minutes, remove the masking tape.
(f) Allow the repair to stand at least 24 hours.



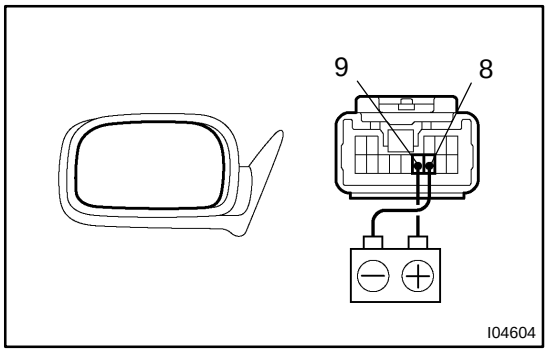
8. INSPECT MIRROR DEFOGGER
w/o Memory:

(a) Connect the positive (+) lead from the battery to terminal 8 and the negative (–) lead to terminal 7.

(b) Check that the mirror becomes warm.

HINT:

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



9. INSPECT MIRROR DEFOGGER
w/ Memory:

(a) Connect the positive (+) lead from the battery to terminal 9 and the negative (–) lead to terminal 8.

(b) Check that the mirror becomes warm.

HINT:

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

If mirror does not become warm, replace the mirror assembly.

POWER WINDOW CONTROL SYSTEM

BE0C9–03

TROUBLESHOOTING

1. WINDOW DOES NOT OPERATE WITH POWER WINDOW MASTER SWITCH. (MANUAL OR AUTOMATIC OPERATION CAN NOT BE PERFORMED.)

Trouble	Suspect Area (terminal No.)	Parts name
All windows do not operate with master switch of each window.	Body ECU does not PWS terminal output ● Body ECU PWS terminal (B16) output ● Master Switch PW terminal (10) output ● Check wire harness between PWS terminal and PW terminal (10)	● Body ECU ● Master switch
Windows except driver's do not operate with master switch of each window.	Master switch (window lock circuit) faulty ● Check continuity between master switch PW terminal (10) and W/L2 terminal (13) ● Check wire harness between master switch W/L2 terminal (13) and each power window switches PCT terminal (6)	● Master switch
Only specific window does not operate. (Manual and automatic operation can not be performed.)	FLOW CHART <A>	–
Only specific window does not operate. (Automatic operation can not be performed.)	When "Jam Protection" sensor is defective, automatic function as a fail–safe function might be unable.	● Master switch ● Power window switch ● Door control ECU

FLOW CHART <A>

1 **Only specific window does not operate. (Neither manual nor automatic operation is available.)**

Diagnosis check:
Check output diagnosis trouble code 21 – 26 when operating the master switch and power window switch.
(Refer to "Multiplex Communication System")

Yes → If the door lock of the applicable seat operates.

No → Wire harness faulty or DOOR M–fuse faulty.

Yes → Disconnect the driver door control ECU connector.

No (Driver side)

No (Except driver side)

Voltage check:
With ignition switch ON if 10 to 14 V power is supplied to PCT (6) to power window switch.

No → Wire harness faulty.
(Master switch W/L2 terminal (13) – power window switch PCT terminal (6)

Yes

Continuity check:
Check continuity master switch and power window switch.

No → Master switch faulty.

Yes

Wire harness check:

Master switch

Master switch		Driver door control ECU
AUTO (5)	⟷	AUTO (B6)
DDN (12)	⟷	MDN (B4)
DUP (4)	⟷	MUP (B5)

Power window switch

Power window switch		Each door control ECU
A (1)	⟷	AUTO (A22)
D (5)	⟷	MDN (A23)
U (2)	⟷	MUP (A24)

Yes

No → Wire harness faulty.

Continuity check:
Check continuity between UP terminal (A2) and GND terminal (C12), DN terminal (A11) and GND terminal (C12) of driver door control ECU .

No → Driver door control ECU faulty.

Yes

Power window motor check:
Disconnect the motor connector.
Connect the battery positive (+) lead to terminal UP (2) and negative (–) lead to terminal DN (1) of wire harness side motor connector, check that the motor operates.

Yes

When replacing with the normal driver door control ECU removed from another seat, if it operates normally.

No → (back to Voltage check)

Yes → Driver door control ECU faulty.

No → Check power window motor.

No → Power window motor faulty.

Yes → Wire harness faulty.

2. REMOVE CONTROL OF ALL WINDOWS (EXCEPT DRIVER'S) DOES NOT FUNCTIONS WITH MASTER SWITCH. (WINDOWS OPERATE NORMALLY WITH EACH OF MASTER SWITCH.

Trouble	Suspect Area (terminal No.)	Parts name
All windows (except driver's) do not operate by remote control.	Fail–safe mode caused by leaving the master switch ON or short circuit occurred in remote control control switch of master switch. ● Check continuity of master switch.	● Master switch
Only passenger's door does not operate. (UP, DOWN and AUTO DOWN does not operate.)	Driver door control ECU DT1 terminal does not output. ● Driver door control ECU DT1 terminal (B3) ● Master switch DT1 terminal (1) ● Check wire harness between terminal DT1 (B3) and DT1 (1)	● Driver door control ECU ● Master switch
Only passenger's door does not operate. (Each operation does not operate.)	Master switch faulty ● Check continuity of master switch.	
Only rear right side door does not operate. (UP, DOWN and AUTO DOWN does not operate.)	Driver door control ECU DT2 terminal does not output. ● Driver door control ECU DT2 terminal (B2) ● Master switch DT2 terminal (2) ● Check wire harness between terminal DT2 (B2) and DT2 (2)	● Driver door control ECU ● Master switch
Only rear right side door does not operate. (Each operate.)	Master switch faulty ● Check continuity of master switch.	
Only rear left side door does not operate. (UP, DOWN and AUTO DOWN does not operate.)	Driver door control ECU DT3 terminal does not output. ● Driver door control ECU DT3 terminal (B1) ● Master switch DT3 terminal (3) ● Check wire harness between terminal DT3 (B1) and DT3 (3)	● Driver door control ECU ● Master switch
Only rear left side door does not operate. (Each operate.)	Master switch faulty ● Check continuity of master switch.	● Driver door control ECU ● Master switch
Only UP operation does not operate. (All window (Except driver side) door.)	Master switch ON SC2 terminal does not output. Driver door control ECU SC2 terminal does not input. ● Master switch SC2 terminal (8) ● Driver door control ECU SC2 terminal (B10) ● Check wire harness between terminal SC2 (8) and SC2 (B10)	● Driver door control ECU ● Master switch
Only UP operation does not operate. (Only specific window does not operate.)	Master switch faulty ● Check continuity of master switch.	
Only DOWN operation does not operate. (All window (Except driver side) door.)	Master switch ON SC1 terminal does not output. Driver door control ECU SC1 terminal does not input. ● Master switch SC1 terminal (7) ● Driver door control ECU SC1 terminal (B9) ● Check wire harness between terminal SC1 (7) and SC1 (B9)	● Driver door control ECU ● Master switch
Only DOWN operation does not operate. (Only specific window does not operate.)	Master switch faulty ● Check continuity of master switch.	

Only AUTO DOWN operation does not operate. (All window (Except driver side) door.)	Master switch ON SC3 terminal does not output. Driver door control ECU SC3 terminal does not input. ● Master switch SC3 terminal (9) ● Driver door control ECU SC3 terminal (B11) ● Check wire harness between terminal SC3 (9) and SC3 (B11)	● Driver door control ECU ● Master switch
Only AUTO DOWN operation does not operate. (Only specific window does not operate.)	Master switch faulty ● Check continuity of master switch.	

3. THE KEY RELATED POWER WINDOW OPERATION DOES NOT OPERATE WITH DRIVER SIDE DOOR KEY CYLINDER. (MASTER SWITCH OPERATION IS NORMAL.)

Trouble	Suspect Area (terminal No.)	Parts name
Door lock system does not operate by door key.	Refer to ”POWER DOOR LOCK CONTROL SYSTEM”.	–
Door lock system do operate by door key.	Fail–safe mode caused by error on jam protection sensor of power window. (Operation of power window with multi–function transmitter is prohibited.) HINT: DTC 31 – 38 output	Refer to ”Multiplex Communication System”.

4. POWER WINDOW DOES NOT OPERATE WITH MULTI–FUNCTION TRANSMITTER. (WINDOWS OPERATE NORMALLY WITH MASTER SWITCH.)

Trouble	Suspect Area (terminal No.)	Parts name
Door lock and luggage compartment opener do not operate with multi–function transmitter.	Refer to ”WIRELESS DOOR LOCK CONTROL SYSTEM”.	–
Only luggage compartment opener operates with multi–function transmitter.	Wireless door lock transmitter faulty.	Check wireless door lock transmitter.
Door lock and luggage compartment opener operate with multi–function transmitter.	Fail–safe mode caused by error on jam protection sensor of power window. (Operation of power window with multi–function transmitter is prohibited.) HINT: DTC 31 – 38 output	Refer to ”Multiplex Communication System”.

5. WINDOW MOVES DOWN WITHOUT BEING ORDERED DURING THE UP OPERATION

Trouble	Suspect Area (terminal No.)	Parts name
After the window is fully closed, it starts to move down.	Power window motor limit switch wire harness faulty. ● Power window motor reset switch is reset. ● Driver door control ECU LMT terminal (B12)	● Driver door control ECU
The window moves down during the up operation.	FLOW CHART <B>	–

FLOW CHART <B>

2 **The window moves down during the up operation.**

Sliding resistance check:

With ignition switch ON, when performing the auto–up or manual –up operation, if the factor which increases the sliding resistance of window glass near the inverse position is recognized.

Yes → Disassemble the door and replace or repair the component.

No

Power window motor reset:

Reset the limit switch.

Check operation power window control is normal.

Yes → Normal.
(After checking the operation repeatedly, perform the function check.)

No

Remove power window regulator assembly.

Sliding resistance check:

When raising the assembled window glass by hand if the glass slides smoothly without being caught.

No → Check or repair door glass run and window guide frame.

Yes

Unit check:

If power window regulator and motor operate smoothly.

Replace the driver door control ECU with the normal one removed from another seat.

Power window motor reset:

Install power window regulator and reset the limit switch.

Check operation power window control is normal.

Yes → Driver door control ECU faulty.

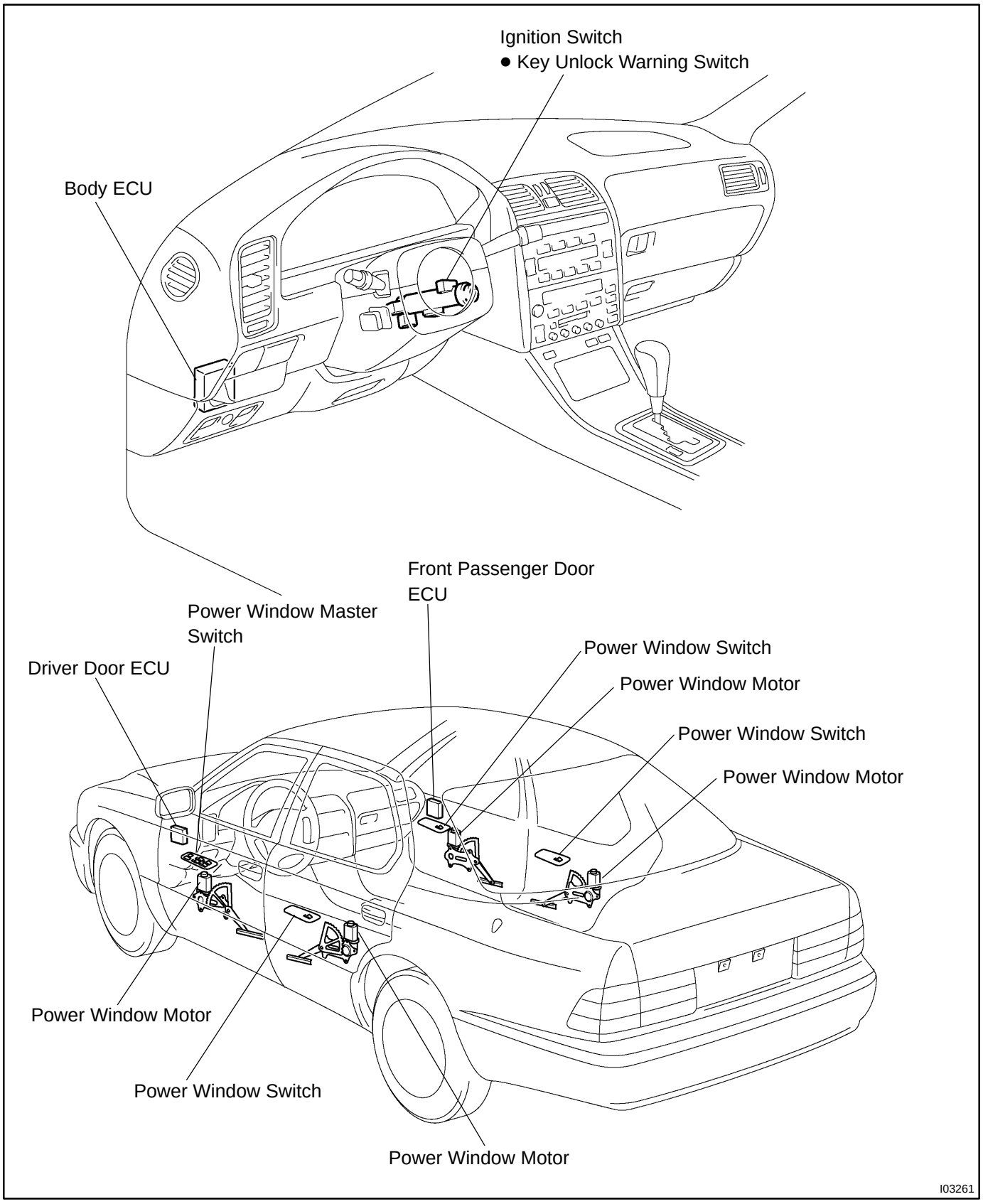
No

Power window motor faulty.

HINT: When difference of descending time comparing to the opposite window is recognized, there seems to be an error on sliding components (door glass run and window regulator.)

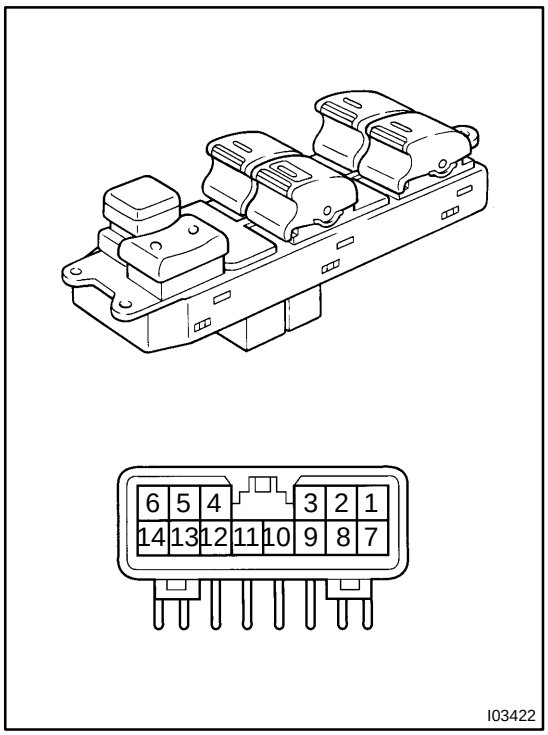
BE0CA–01

LOCATION



BE0CB–02

INSPECTION



1. INSPECT POWER WINDOW MASTER SWITCH CONTINUITY

Front Driver's Switch

Switch position	Tester connection	Specified condition
UP AUTO	4 – 10, 5 – 10	Continuity
UP	4 – 10	Continuity
OFF	–	No continuity
DOWN	10 – 12	Continuity
DOWN AUTO	10 – 12, 5 – 10	Continuity

Front Passenger's Switch

Switch position	Tester connection	Specified condition
UP AUTO	1 – 8, 1 – 9	Continuity
UP	1 – 8	Continuity
OFF	–	No continuity
DOWN	1 – 7	Continuity
DOWN AUTO	1 – 7, 1 – 9	Continuity

Rear Left Switch

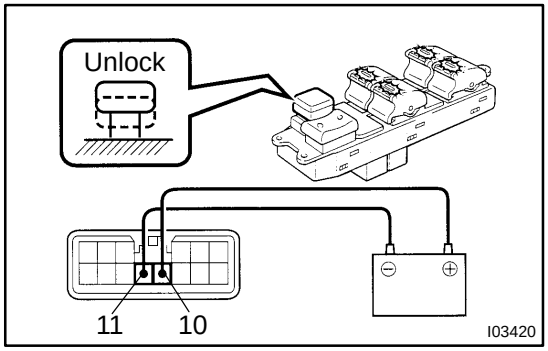
Switch position	Tester connection	Specified condition
UP AUTO	3 – 8, 7 – 9	Continuity
UP	3 – 8	Continuity
OFF	–	No continuity
DOWN	3 – 7	Continuity
DOWN AUTO	3 – 7, 3 – 9	Continuity

Rear Right Switch

Switch position	Tester connection	Specified condition
UP AUTO	2 – 8, 2 – 9	Continuity
UP	2 – 8	Continuity
OFF	–	No continuity
DOWN	2 – 7	Continuity
DOWN AUTO	2 – 7, 2 – 9	Continuity

If continuity is not as specified, replace the master switch.
If continuity is as specified, inspect the master switch circuit.

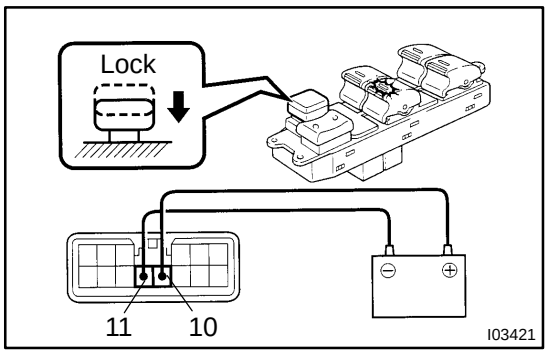
2. INSPECT POWER WINDOW MASTER SWITCH CIRCUIT (See page DI–737)



3. INSPECT POWER WINDOW MASTER SWITCH ILLUMINATION

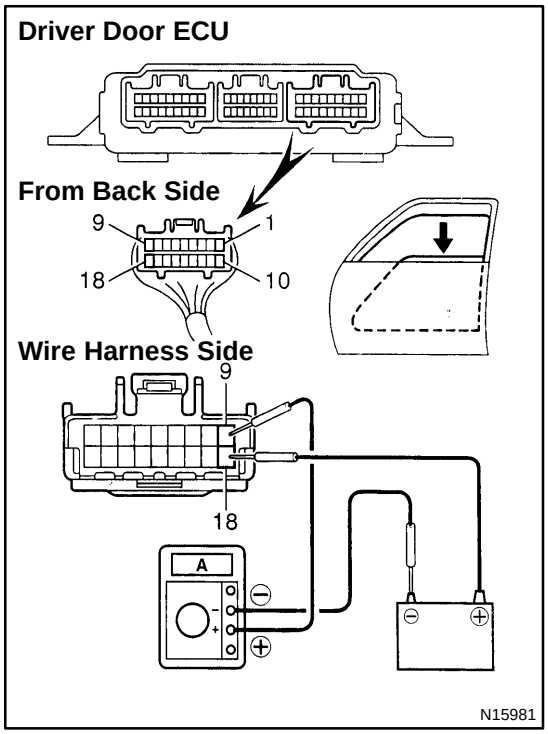
(a) Set the window lock switch to the unlock position.

(b) Connect the positive (+) lead from the battery to terminal 10 and the negative (–) lead to terminal 11, and check that all the illuminations light up.



(c) Set the window lock switch to the lock position and check that all the passenger's power window switch illuminations go out.

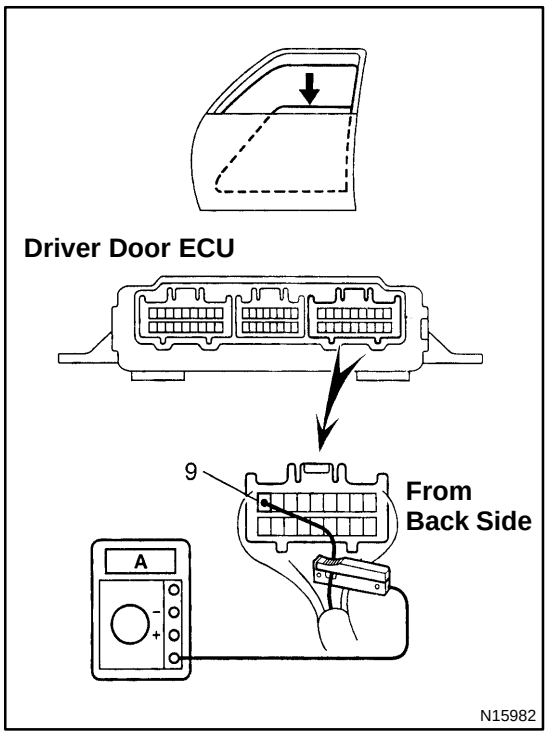
If operation is not as specified, replace the master switch.



4. Using an ammeter:
INSPECT ONE TOUCH POWER WINDOW SYSTEM/ CURRENT OF CIRCUIT

(a) Disconnect the connector from the driver door ECU.
(b) Connect the positive (+) lead from the ammeter to terminal 9 on the wire harness side connector and the negative (–) lead to negative terminal of the battery.
(c) Connect the positive (+) lead from the battery to terminal 18 on the wire harness side connector.
(d) As the window goes down, check that the current flow is approximately 7 A.
(e) Check that the current increases up to approximately 14.5 A or more when the window stops going down.

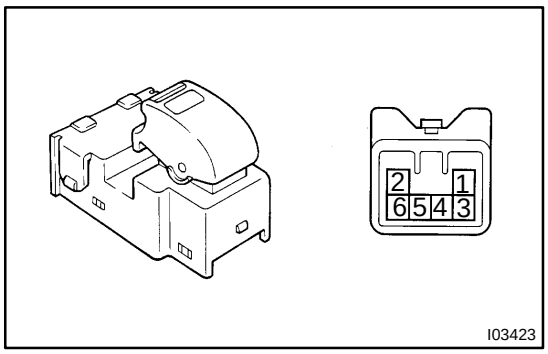
HINT:
The PTC opens some 4 – 90 seconds after the window stops going down, so check must be made before the PTC operates.
If the operation is as specified, replace the driver door ECU.



5. Using an ammeter with a current–measuring probe:
INSPECT ONE TOUCH POWER WINDOW SYSTEM/ CURRENT OF CIRCUIT

(a) Remove the driver door ECU with connector connected.
(b) Attach a current–measuring probe to terminal 9 of the wire harness.
(c) Turn the ignition switch ON and set the power window switch in the down position.
(d) As the window goes down, check that the current flow is approximately 7 A.
(e) Check that the current increases up to approximately 14.5 A or more when the window stops going down.

HINT:
The PTC opens some 4 – 90 seconds after the window stops going down, so check must be made before the PTC operates.
If operation is as specified, replace the driver door ECU.



6. Front Passenger's Door:
INSPECT POWER WINDOW SWITCH CONTINUITY

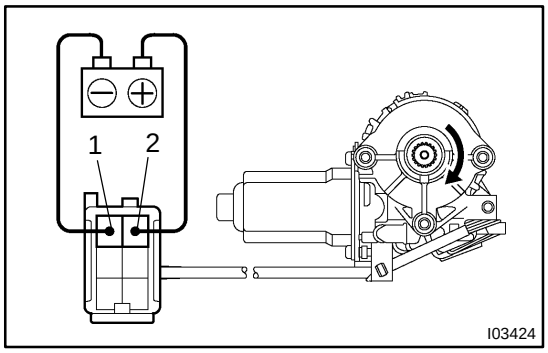
Switch position	Tester connection	Specified condition
UP AUTO	1 – 6, 2 – 6	Continuity
UP	2 – 6	Continuity
OFF	–	No continuity
DOWN	5 – 6	Continuity
DOWN AUTO	1 – 6, 5 – 6	Continuity

If continuity is not as specified, replace the switch.
If continuity is as specified, inspect the switch circuit.

7. Front passenger's door:
INSPECT POWER WINDOW SWITCH CIRCUIT
(See page DI–779)

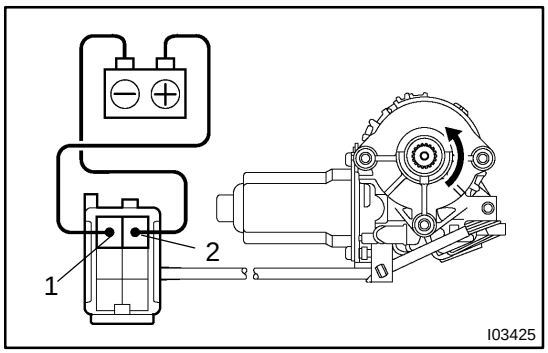
8. Rear left door:
INSPECT POWER WINDOW SWITCH CIRCUIT
(See page DI–807)

9. Rear left door:
INSPECT POWER WINDOW SWITCH CIRCUIT
(See page DI–830)



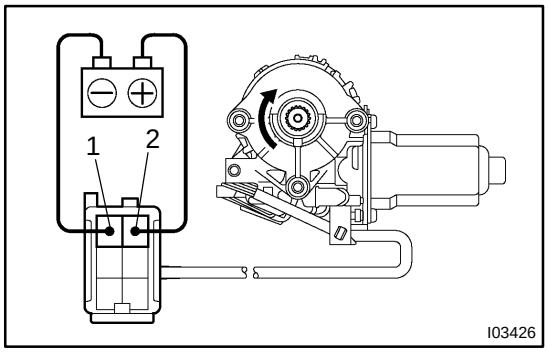
10. Driver's door:
INSPECT POWER WINDOW MOTOR OPERATION

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



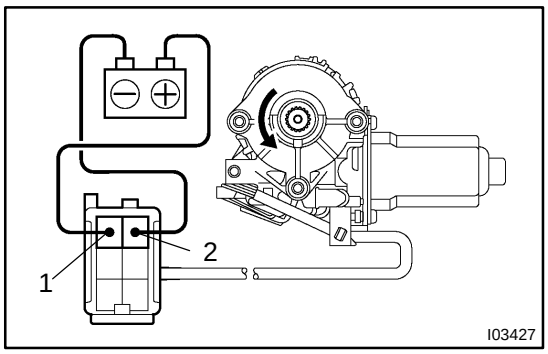
(b) Reverse the polarity and check that the motor turns counterclockwise.

If operation is not as specified, replace the motor.
HINT:
Since the jam protection may not work properly be sure to conduct procedures described in "How to Reset Power Window Motor (Reset switch and pulse switch)" after this inspection.



11. Front passenger's:
INSPECT POWER WINDOW MOTOR OPERATION

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

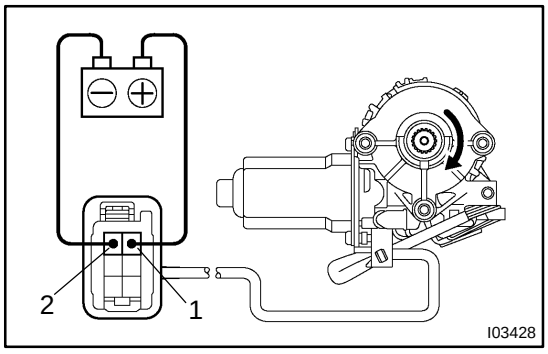


(b) Reverse the polarity and check that the motor turns counterclockwise.

If operation is not as specified, replace the motor.

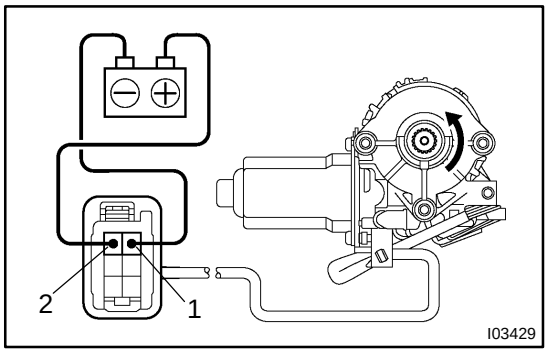
HINT:

Since the jam protection may not work properly be sure to conduct procedures described in ”How to Reset Power Window Motor (Reset switch and pulse switch)” after this inspection.



12. Rear left side:
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.

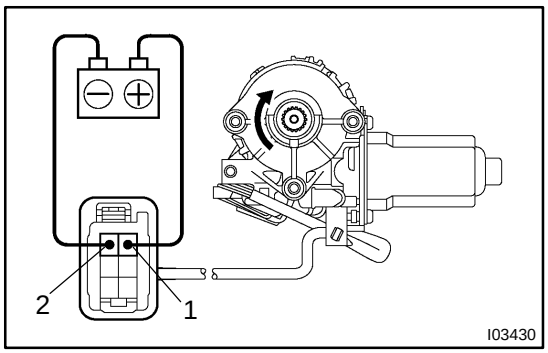


(b) Reverse the polarity and check that the motor turns counterclockwise.

If operation is not as specified, replace the motor.

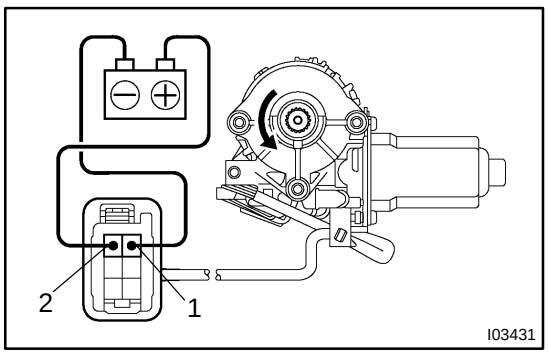
HINT:

Since the jam protection may not work properly be sure to conduct procedures described in ”How to Reset Power Window Motor (Reset switch and pulse switch)” after this inspection.



13. Rear right side:
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.

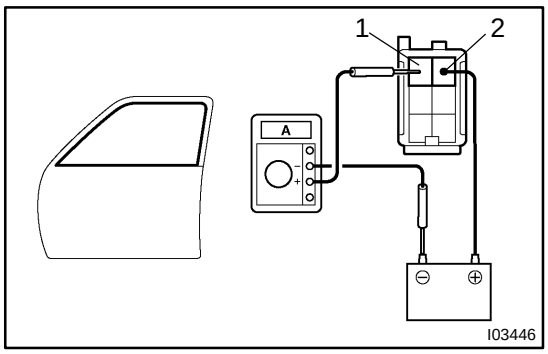


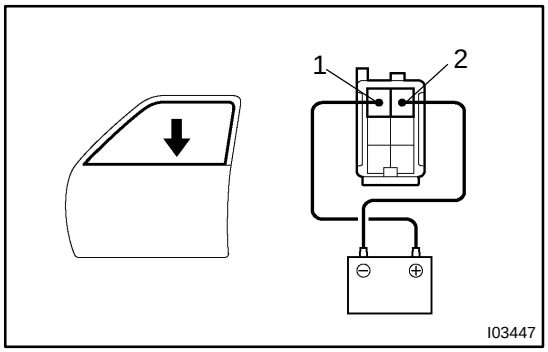
(b) Reverse the polarity and check that the motor turns counterclockwise.

If operation is not as specified, replace the motor.

HINT:

Since the jam protection may not work properly be sure to conduct procedures described in ”How to Reset Power Window Motor (Reset switch and pulse switch)” after this inspection.

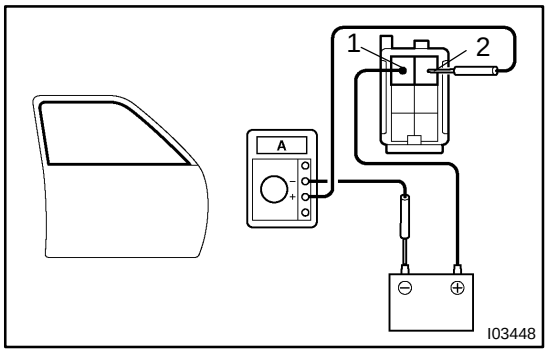


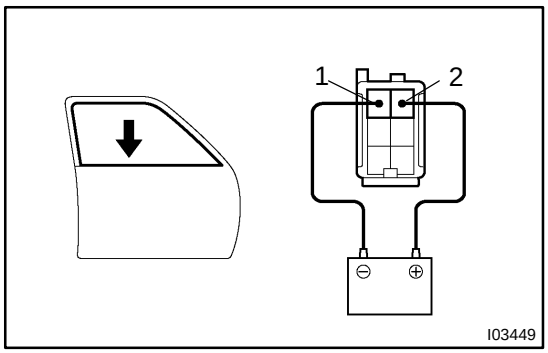


14. Driver's door:
INSPECT POWER WINDOW MOTOR PTC THERMISTOR OPERATION

(a) Disconnect the connector from the driver door ECU.
(b) Connect the positive (+) lead from the ammeter to terminal 1 on the wire harness side connector and the negative (–) lead to negative terminal of the battery.
(c) Connect the positive (+) lead from the battery to terminal 2 on the wire harness side connector, and raise the window to the fully position.
(d) Continue to apply voltage, and check that the current changes to less than 1 A with 4 to 90 seconds.
(e) Disconnect the leads from terminals.
(f) Approximately 60 seconds later, connect the positive (+) lead from the battery to terminal 1 and negative (–) lead to terminal 2, and check that the window begins to descend.

If operation is not as specified, replace the motor.

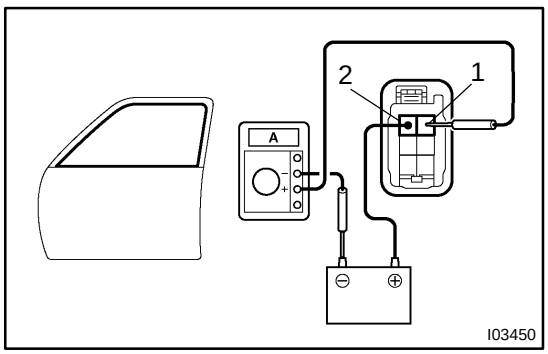




15. Front Passenger's door:
INSPECT POWER WINDOW MOTOR PTC THERMISTOR OPERATION

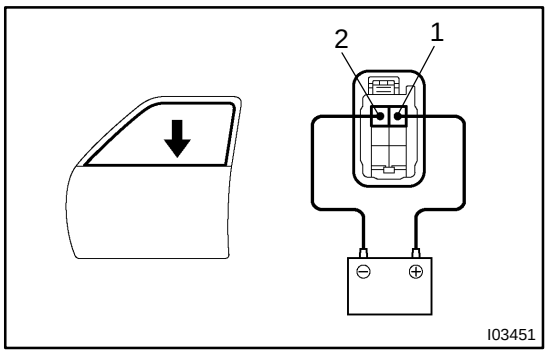
(a) Disconnect the connector from the front passenger door ECU .
(b) Connect the positive (+) lead from the ammeter to terminal 2 on the wire harness side connector and the negative (–) lead to negative terminal of the battery.
(c) Connect the positive (+) lead from the battery to terminal 1 on the wire harness side connector, and raise the window to the fully position.
(d) Continue to apply voltage and check that the current changes to less than 1 A within 4 to 90 seconds.
(e) Disconnect the leads from the terminals.
(f) Approximately 60 seconds later, connect the positive (+) lead from the battery to terminal 2 and the negative (–) lead to terminal 1, and check that the window begins to descend.

If operation is not as specified, replace the motor.



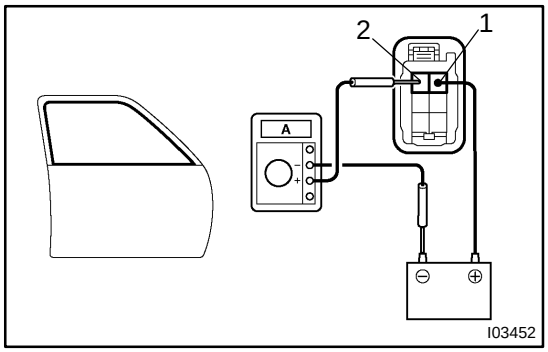
16. Rear LH door:
INSPECT POWER WINDOW MOTOR PTC THERMISTOR OPERATION

(a) Disconnect the connector from the Rear LH door ECU.
(b) Connect the positive (+) lead from the ammeter to terminal 1 on the wire harness side connector and the negative (–) lead to negative terminal of the battery.
(c) Connect the positive (+) lead from the battery to terminal 2 on the wire harness side connector, and raise the window to the fully position.



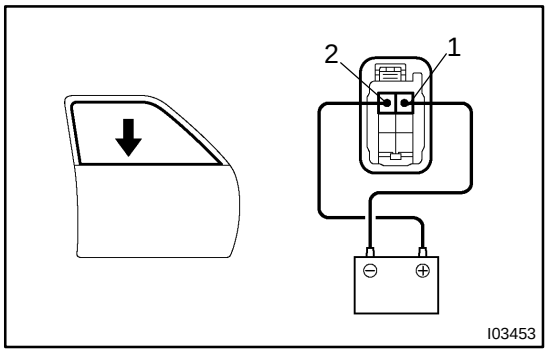
(d) Continue to apply voltage and check that the current changes to less than 1 A within 4 to 90 seconds.
(e) Disconnect the leads from the terminals.
(f) Approximately 60 seconds later, connect the positive (+) lead from the battery to terminal 1 and the negative (–) lead to terminal 2, and check that the window begins to descend.

If operation is not as specified, replace the motor.



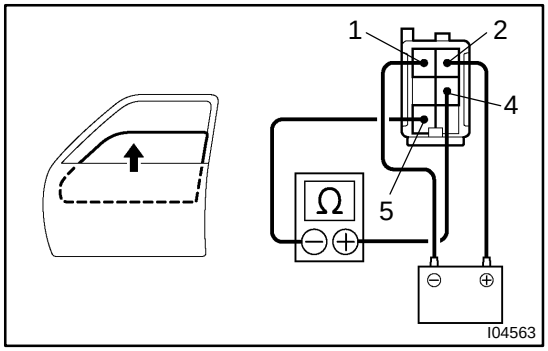
17. Rear RH door:
INSPECT POWER WINDOW MOTOR PTC THERMISTOR OPERATION

(a) Disconnect the connector from the Rear RH door ECU.
(b) Connect the positive (+) lead from the ammeter to terminal 2 on the wire harness side connector and the negative (–) lead to negative terminal of the battery.
(c) Connect the positive (+) lead from the battery to terminal 1 on the wire harness side connector, and raise the window to the fully position.



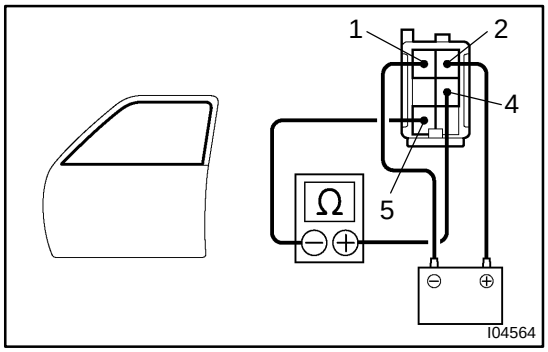
(d) Continue to apply voltage and check that the current changes to less than 1 A within 4 to 90 seconds.
(e) Disconnect the leads from the terminals.
(f) Approximately 60 seconds later, connect the positive (+) lead from the battery to terminal 2 and the negative (–) lead to terminal 1, and check that the window begins to descend.

If operation is not as specified, replace the motor.



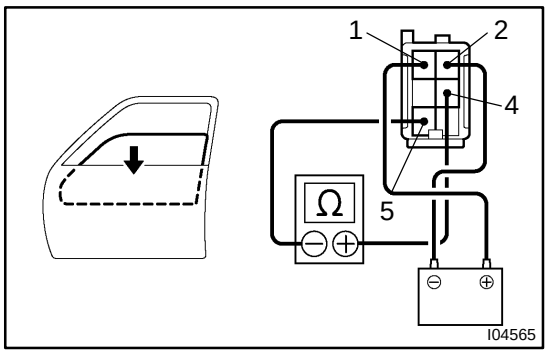
18. Driver's Door (Window Up):
INSPECT JAM PROTECTION LIMIT SWITCH

(a) Connect the positive (+) lead from the ohmmeter to terminal 4 and the negative (–) lead to terminal 5.
(b) Connect the positive (+) lead from the battery to terminal 2 and the negative (–) lead to terminal 1.
(c) Check that the continuity exists when the window goes up.



(d) Check that the no continuity exists when the window is in the fully closed position.

If operation is not as specified, replace the motor.

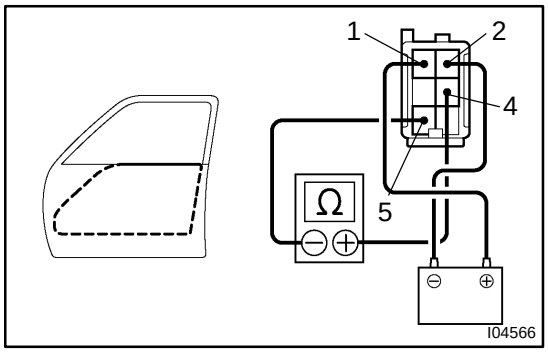


19. Driver's Door (Window Down): INSPECT JAM PROTECTION LIMIT SWITCH

(a) Connect the positive (+) lead from the ohmmeter to terminal 4 and the negative (–) lead to terminal 5.

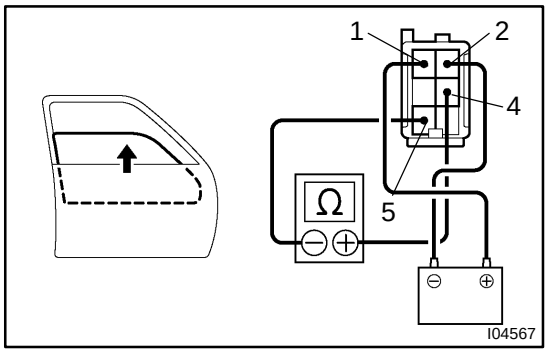
(b) Connect the positive (+) lead from the battery to terminal 1 and the negative (–) lead to terminal 2.

(c) Check that the continuity exists when the window goes down.



(d) Check that the no continuity exists when the window is in the fully opened position.

If operation is not as specified, replace the motor.

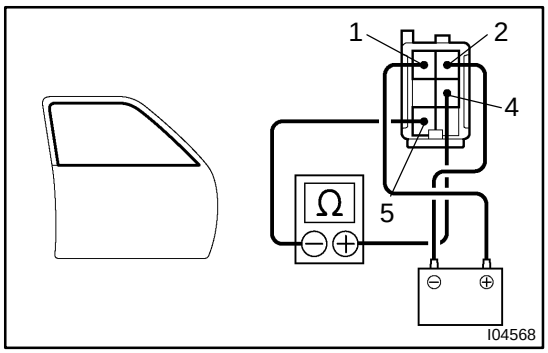


20. Front Passenger's Door (Window Up): INSPECT JAM PROTECTION LIMIT SWITCH

(a) Connect the positive (+) lead from the ohmmeter to terminal 4 and the negative (–) lead to terminal 5.

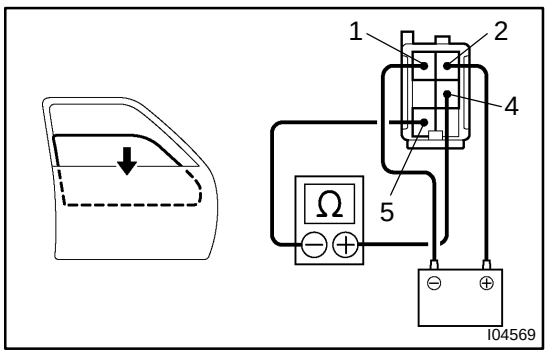
(b) Connect the positive (+) lead from the battery to terminal 1 and the negative (–) lead to terminal 2.

(c) Check that the continuity exists when the window goes up.



(d) Check that the no continuity exists when the window is in the fully closed position.

If operation is not as specified, replace the motor.

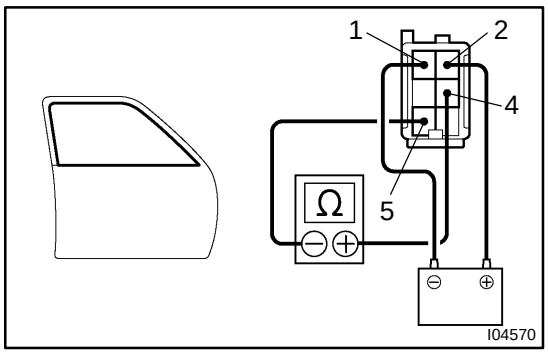


21. Front Passenger's Door (Window Down): INSPECT JAM PROTECTION LIMIT SWITCH

(a) Connect the positive (+) lead from the ohmmeter to terminal 4 and the negative (–) lead to terminal 5.

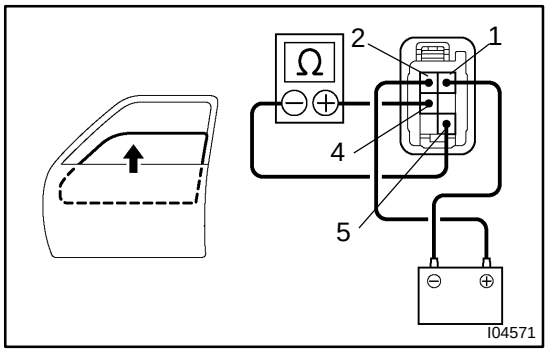
(b) Connect the positive (+) lead from the battery to terminal 2 and the negative (–) lead to terminal 1.

(c) Check that the continuity exists when the window goes down.



(d) Check that the no continuity exists when the window is in the fully opened position.

If operation is not as specified, replace the motor.

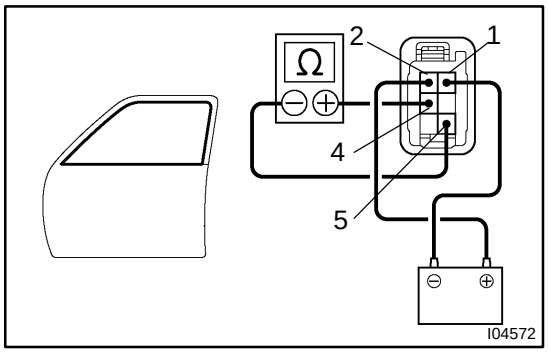


22. Rear LH Door (Window Up):
INSPECT JAM PROTECTION LIMIT SWITCH

(a) Connect the positive (+) lead from the ohmmeter to terminal 4 and the negative (–) lead to terminal 5.

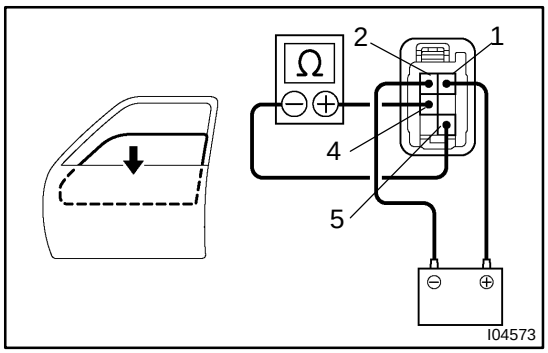
(b) Connect the positive (+) lead from the battery to terminal 2 and the negative (–) lead to terminal 1.

(c) Check that the continuity exists when the window goes up.



(d) Check that the no continuity exists when the window is in the fully closed position.

If operation is not as specified, replace the motor.

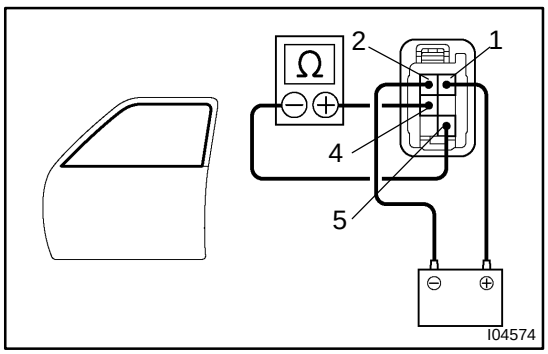


23. Rear LH Door (Window Down):
INSPECT JAM PROTECTION LIMIT SWITCH

(a) Connect the positive (+) lead from the ohmmeter to terminal 4 and the negative (–) lead to terminal 5.

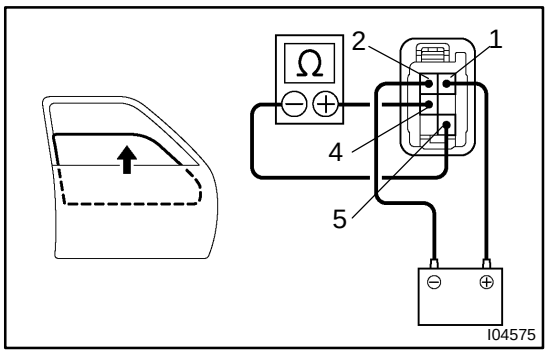
(b) Connect the positive (+) lead from the battery to terminal 1 and the negative (–) lead to terminal 2.

(c) Check that the continuity exists when the window goes down.



(d) Check that the no continuity exists when the window is in the fully opened position.

If operation is not as specified, replace the motor.

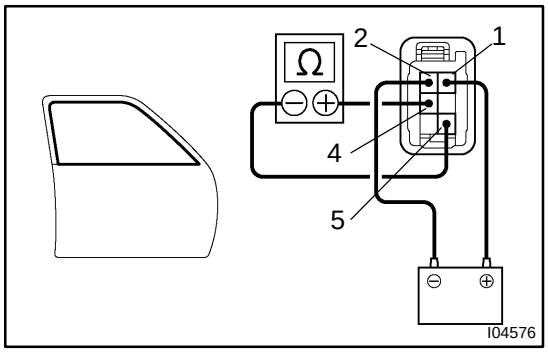


24. Rear RH Door (Window Up):
INSPECT JAM PROTECTION LIMIT SWITCH

(a) Connect the positive (+) lead from the ohmmeter to terminal 4 and the negative (–) lead to terminal 5.

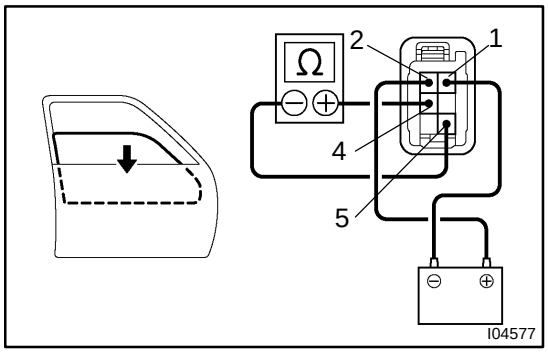
(b) Connect the positive (+) lead from the battery to terminal 1 and the negative (–) lead to terminal 2.

(c) Check that the continuity exists when the window goes up.



(d) Check that the no continuity exists when the window is in the fully closed position.

If operation is not as specified, replace the motor.

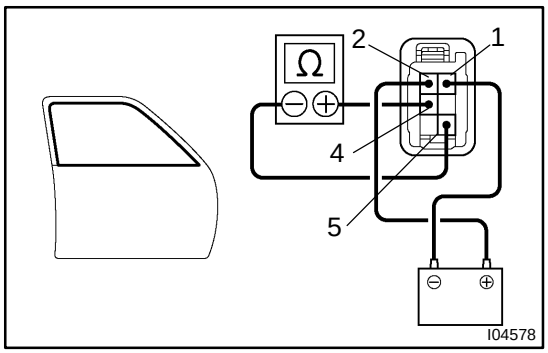


25. Rear RH Door (Window Down):
INSPECT JAM PROTECTION LIMIT SWITCH

(a) Connect the positive (+) lead from the ohmmeter to terminal 4 and the negative (–) lead to terminal 5.

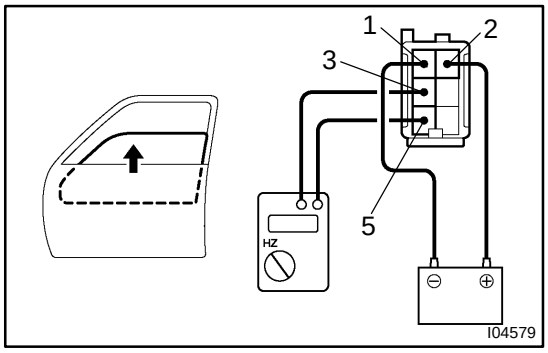
(b) Connect the positive (+) lead from the battery to terminal 2 and the negative (–) lead to terminal 1.

(c) Check that the continuity exists when the window goes down.



(d) Check that the no continuity exists when the window is in the fully opened position.

If operation is not as specified, replace the motor.

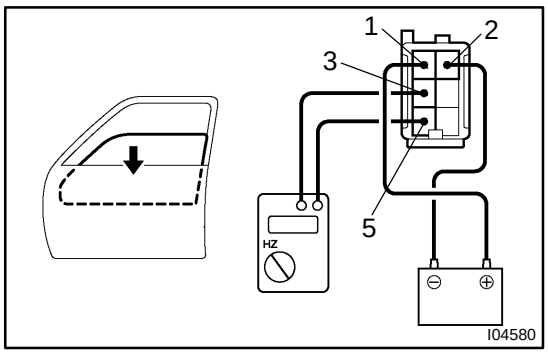


26. Driver's Door:
INSPECT JAM PROTECTION PULSE SWITCH

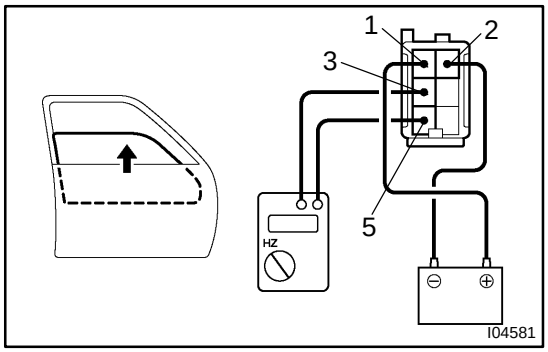
(a) Connect the positive (+) lead from the TOYOTA electrical tester to terminal 3 and the negative (–) lead to terminal 5.

(b) Connect the positive (+) lead from the battery to terminal 2 and the negative (–) lead to terminal 1.

(c) Check that pulse is generated during the motor running.

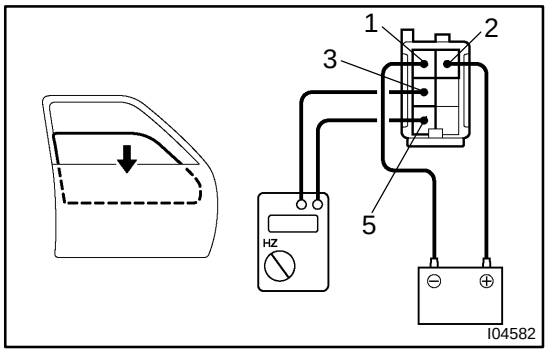


(d) Reverse the polarity and check that pulse is generated.
If operation is not as specified, replace the motor.

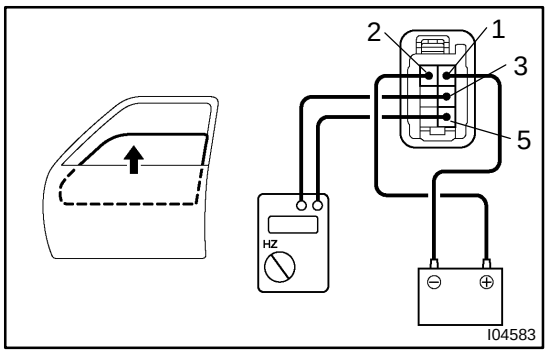


27. Front Passenger's Door:
INSPECT JAM PROTECTION PULSE SWITCH

(a) Connect the positive (+) lead from the TOYOTA electrical tester to terminal 3 and the negative (–) lead to terminal 5.
(b) Connect the positive (+) lead from the battery to terminal 1 and the negative (–) lead to terminal 2.
(c) Check that pulse is generated during the motor running.

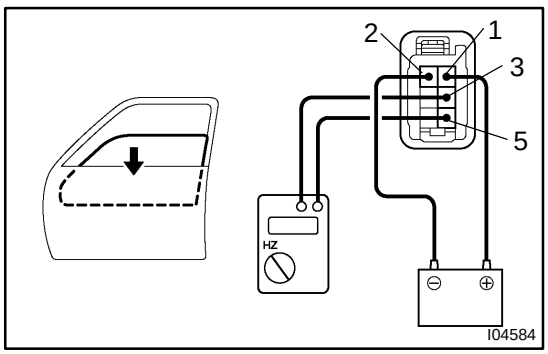


(d) Reverse the polarity and check that pulse is generated.
If operation is not as specified, replace the motor.

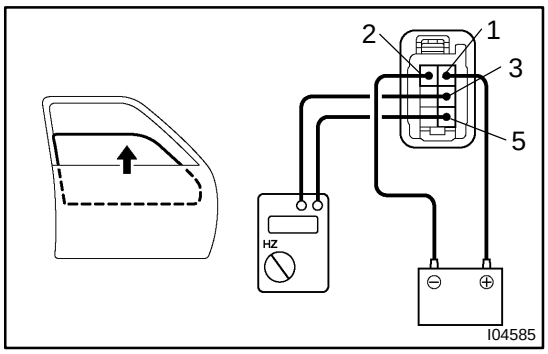


28. Rear LH Door:
INSPECT JAM PROTECTION PULSE SWITCH

(a) Connect the positive (+) lead from the TOYOTA electrical tester to terminal 3 and the negative (–) lead to terminal 5.
(b) Connect the positive (+) lead from the battery to terminal 2 and the negative (–) lead to terminal 1.
(c) Check that pulse is generated during the motor running.



(d) Reverse the polarity and check that pulse is generated.
If operation is not as specified, replace the motor.

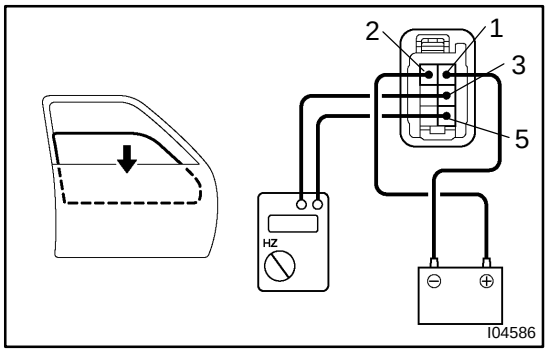


29. Rear RH Door:
INSPECT JAM PROTECTION PULSE SWITCH

(a) Connect the positive (+) lead from the TOYOTA electrical tester to terminal 3 and the negative (–) lead to terminal 5.

(b) Connect the positive (+) lead from the battery to terminal 1 and the negative (–) lead to terminal 2.

(c) Check that pulse is generated during the motor running.



(d) Reverse the polarity and check that pulse is generated.

If operation is not as specified, replace the motor.

30. 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 jamprotection is not function properly, adjust power window motor reset switch and pulse switch.

BE0HG–03

ADJUSTMENT

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

If the jamprotection 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–13, BO–19).

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:

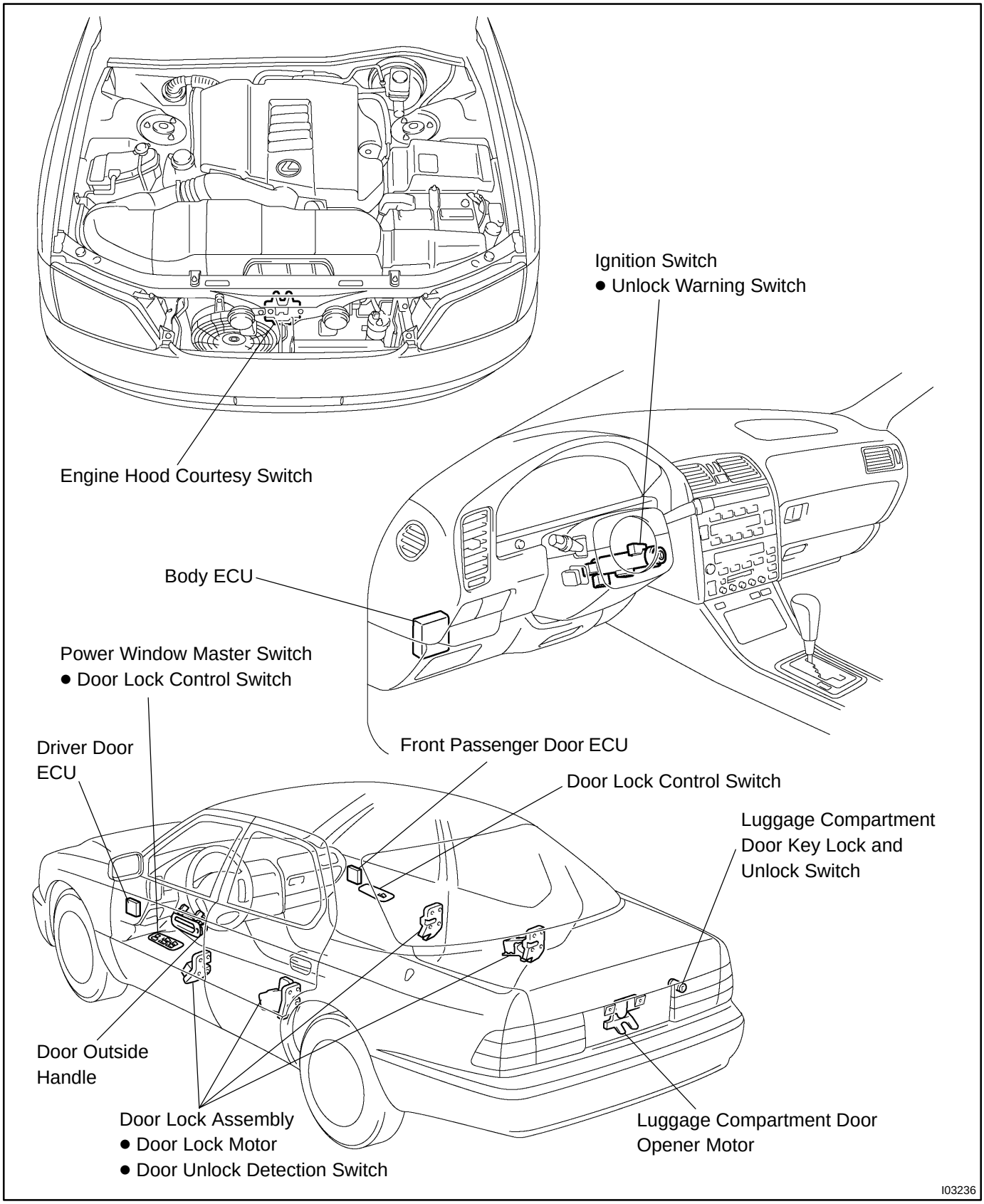
- Take care that the jam protection function does not operate just after resetting.
- Reset the regulator again when performing the reverse operating after closing the window fully by AUTO UP operation.

(i) Check the power window function.

POWER DOOR LOCK CONTROL SYSTEM

BE0CC–01

LOCATION

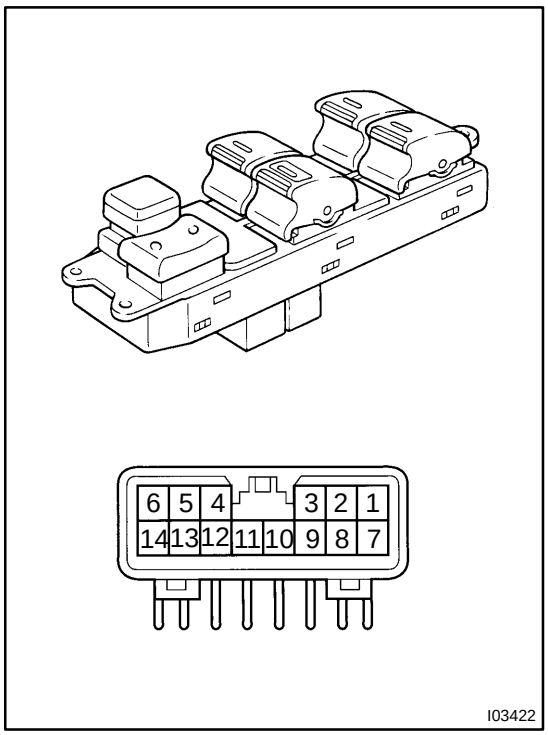


BE0CD–01

INSPECTION

1. INSPECT POWER WINDOW MASTER SWITCH CONTINUITY

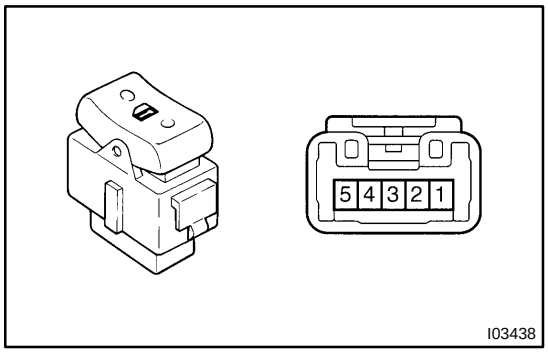
Master Switch: Driver's Door Lock Manual Switch



Switch position	Tester connection	Specified condition
LOCK	6 – 11	Continuity
OFF	–	No continuity
UNLOCK	11 – 14	Continuity

If continuity is not as specified, replace the switch.
If continuity is as specified, inspect the switch circuit.

2. INSPECT POWER WINDOW MASTER SWITCH CIRCUIT (See page BE–126)

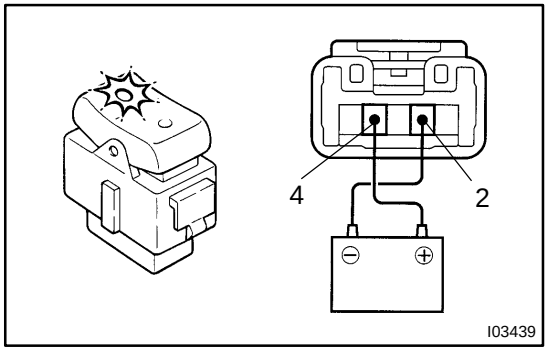


3. INSPECT PASSENGER'S DOOR LOCK CONTROL SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
LOCK	2 – 3	Continuity
OFF	–	No continuity
UNLOCK	1 – 2	Continuity

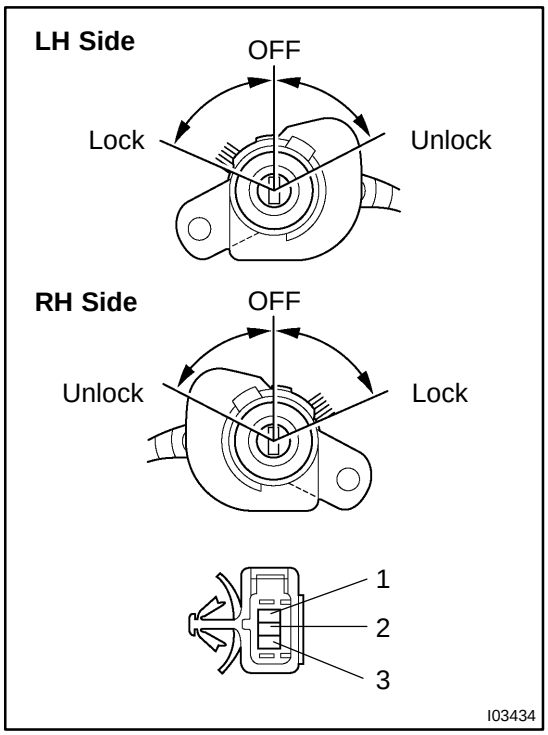
If continuity is not as specified, replace the switch.
If continuity is as specified, inspect the switch circuit.

4. INSPECT PASSENGER'S DOOR LOCK CONTROL SWITCH CIRCUIT (See page DI–769)



5. INSPECT PASSENGER'S DOOR LOCK CONTROL INDICATOR LIGHT OPERATION

Connect the positive (+) lead from the battery to terminal 4 and the negative (–) lead to terminal 2, and check that the indicator light does not light up, replace the switch.



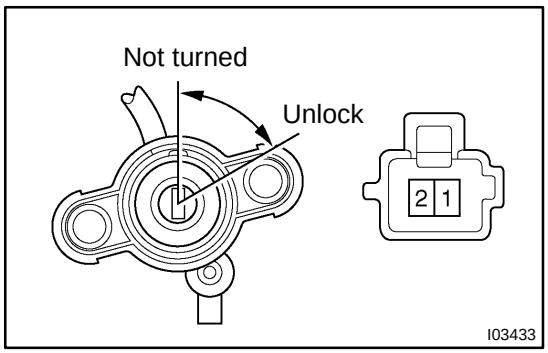
6. INSPECT DOOR KEY LOCK AND UNLOCK SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
LOCK	1 – 2	Continuity
OFF	–	No continuity
UNLOCK	2 – 3	Continuity

If continuity is not as specified, replace the switch.
HINT:
Door key lock and unlock switch is built into the front door lock assembly.
If continuity is as specified, inspect the switch circuit.

7. Driver's door:
INSPECT DOOR KEY LOCK AND UNLOCK SWITCH CIRCUIT (See page DI–743)

8. Passenger's door:
INSPECT DOOR KEY LOCK AND UNLOCK SWITCH CIRCUIT (See page DI–775)

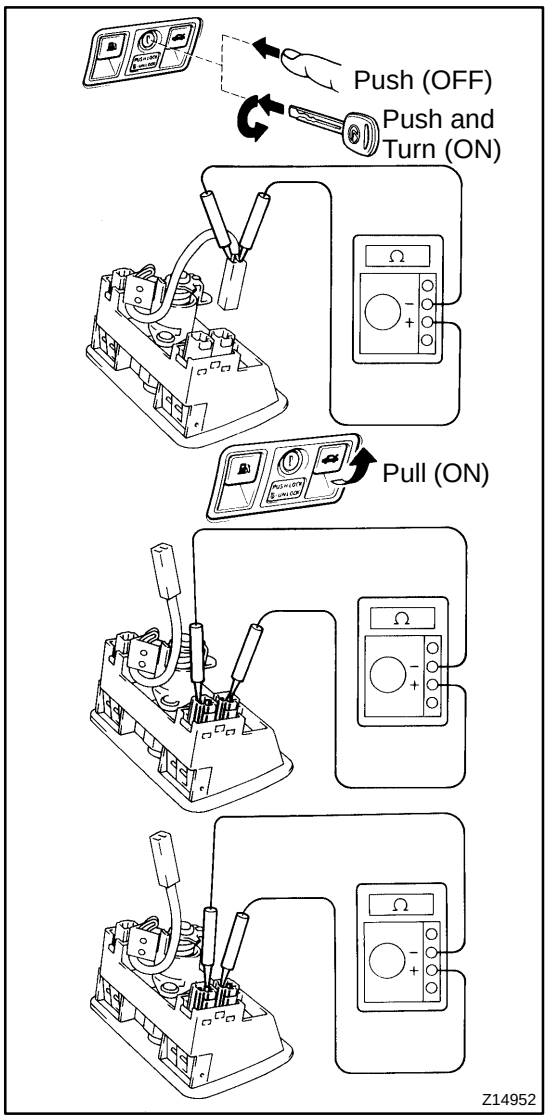


9. INSPECT LUGGAGE COMPARTMENT DOOR KEY LOCK AND UNLOCK SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
Not turned	–	No continuity
UNLOCK	1 – 2	Continuity

If continuity is not as specified, replace the switch.
If continuity is as specified, inspect the switch circuit.

10. INSPECT LUGGAGE COMPARTMENT DOOR KEY LOCK AND UNLOCK SWITCH CIRCUIT
(See page DI–711)



11. INSPECT LUGGAGE COMPARTMENT DOOR OPENER MAIN SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
OFF (Push)	–	No continuity
ON (Push and turn)	1 – 2	Continuity

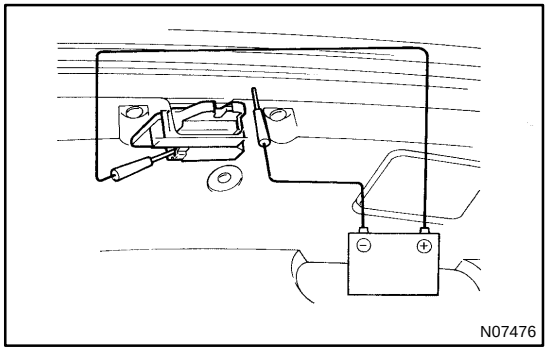
If continuity is not as specified, replace the switch.
If continuity is as specified, inspect the switch circuit.

12. INSPECT LUGGAGE COMPARTMENT DOOR OPENER SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
OFF	2 – B	Continuity
ON (Pull)	1 – L 2 – B	Continuity

If continuity is not as specified, replace the switch.
If continuity is as specified, inspect the switch circuit.

13. INSPECT LUGGAGE COMPARTMENT DOOR OPENER MAIN SWITCH AND OPENER SWITCH CIRCUIT (See page DI–692)

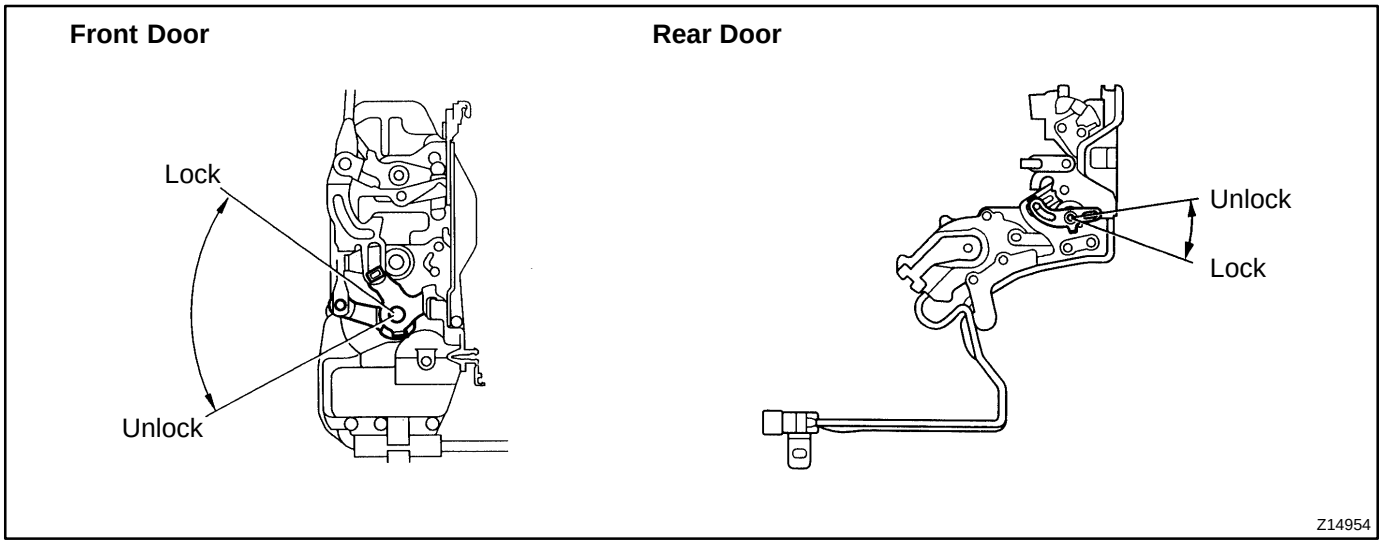


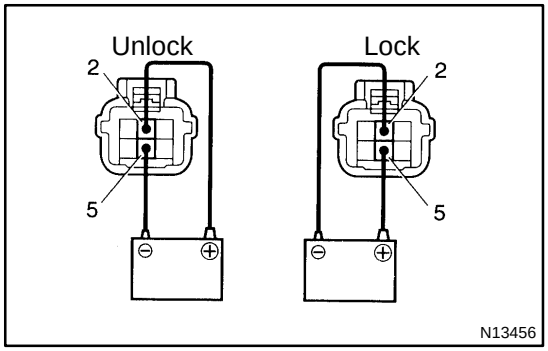
14. INSPECT LUGGAGE COMPARTMENT DOOR OPENER MOTOR OPERATION

Connect positive (+) lead to the opener motor connector and negative (–) lead to the body of the opener motor, and check that the motor operates.

15. INSPECT LUGGAGE COMPARTMENT DOOR OPENER MOTOR CIRCUIT (See page DI–694)

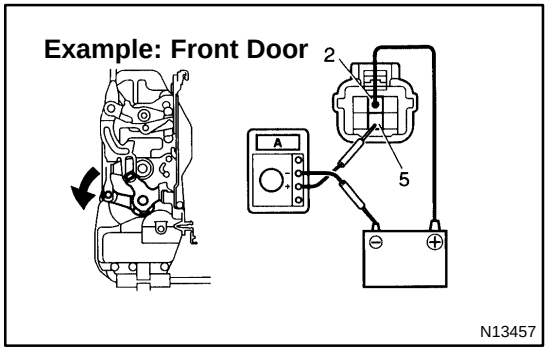
16. INSPECT DOOR LOCK MOTOR OPERATION





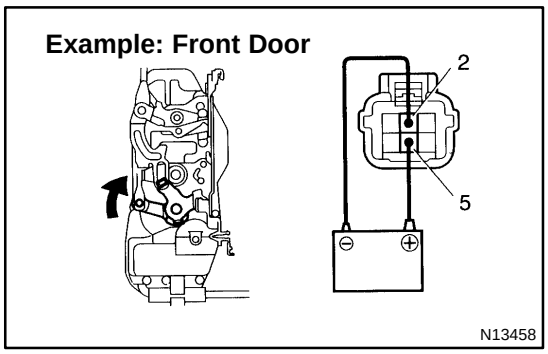
(a) Connect the positive (+) lead from the battery to terminal 2 and the negative (–) lead to terminal 5, and check that the door lock link moves to UNLOCK position.
(b) Reverse the polarity and check that the door lock link move to LOCK position.

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



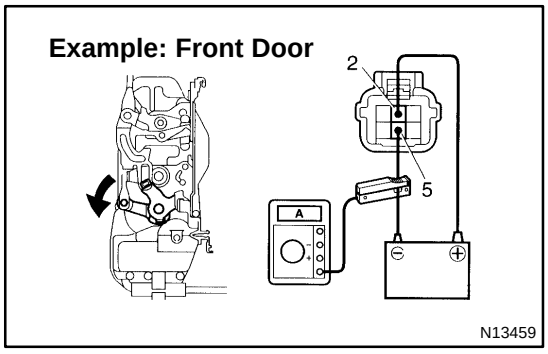
17. Using an ammeter:
INSPECT POWER DOOR LOCK MOTOR PTC THERMISTOR OPERATION

(a) Connect the positive (+) lead from the battery to terminal 2.
(b) Connect the positive (+) lead from the ammeter to terminal 5 and the negative (–) lead to battery negative (–) terminal, and check that the current changes from approximately 3.2 ampere to less than 0.5 ampere with 20 to 70 seconds.



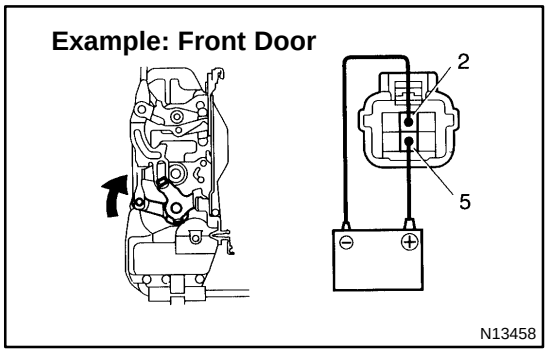
(c) Disconnect the leads from terminals.
(d) Approximately 60 seconds later, connect the positive (+) lead from the battery to terminal 5 and the negative (–) lead to terminal 2, and check that the door lock moves to LOCK position.

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



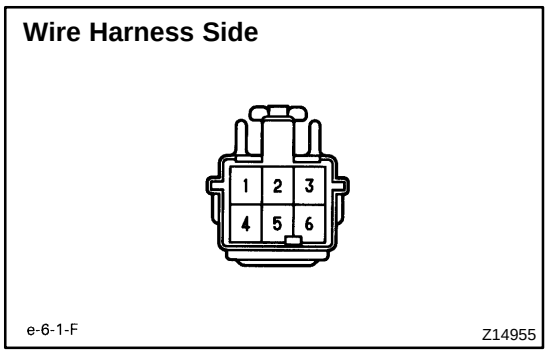
18. Using an ammeter with a current–measuring probe: INSPECT POWER DOOR LOCK MOTOR PTC THERMISTOR OPERATION

(a) Connect the positive (+) lead from the battery to terminal 2 and the negative (–) lead to terminal 5.
(b) Attach a current–measuring probe to either the positive (+) lead or the negative (–) lead, and check that the current changes from approximately 3.2 ampere to less than 0.5 ampere within 20 to 70 seconds.



(c) Disconnect the leads from terminals.
(d) Approximately 60 seconds later, reverse the polarity, then check that the door lock moves to LOCK position.

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



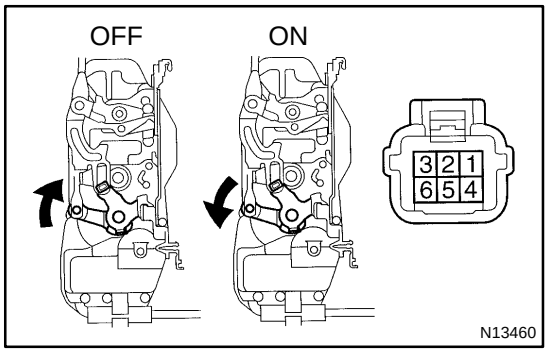
19. INSPECT POWER DOOR LOCK MOTOR CIRCUIT

(a) Disconnect the connector from the motor.
(b) Connect the connector to the driver door ECU, front passenger door ECU and Body ECU.
(c) Inspect the connector on the wire harness side, as shown.

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

Tester connection	Condition	Specified condition
2 – Ground	Ignition switch ON and door lock control switch LOCK	No voltage
2 – Ground	Ignition switch ON and door lock control switch UNLOCK	Battery positive voltage
5 – Ground	Ignition switch ON and door lock control switch UNLOCK	No voltage
5 – Ground	Ignition switch ON and door lock control switch LOCK	Battery positive voltage

2 – Ground	Ignition switch ON and master switch LOCK	No voltage
2 – Ground	Ignition switch ON and master switch UNLOCK	Battery positive voltage
5 – Ground	Ignition switch ON and master switch UNLOCK	No voltage
5 – Ground	Ignition switch ON and master switch LOCK	Battery positive voltage



20. INSPECT 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 – 4	Continuity

If continuity is not as specified, replace the door lock assembly.
HINT:
Door unlock detection switch is built into the door lock assembly.
If continuity is as specified, inspect the door lock assembly circuit.

21. Driver's door:
INSPECT DOOR LOCK ASSEMBLY CIRCUIT
(See page DI–741)

22. Front passenger's door:
INSPECT DOOR LOCK ASSEMBLY CIRCUIT
(See page DI–773)

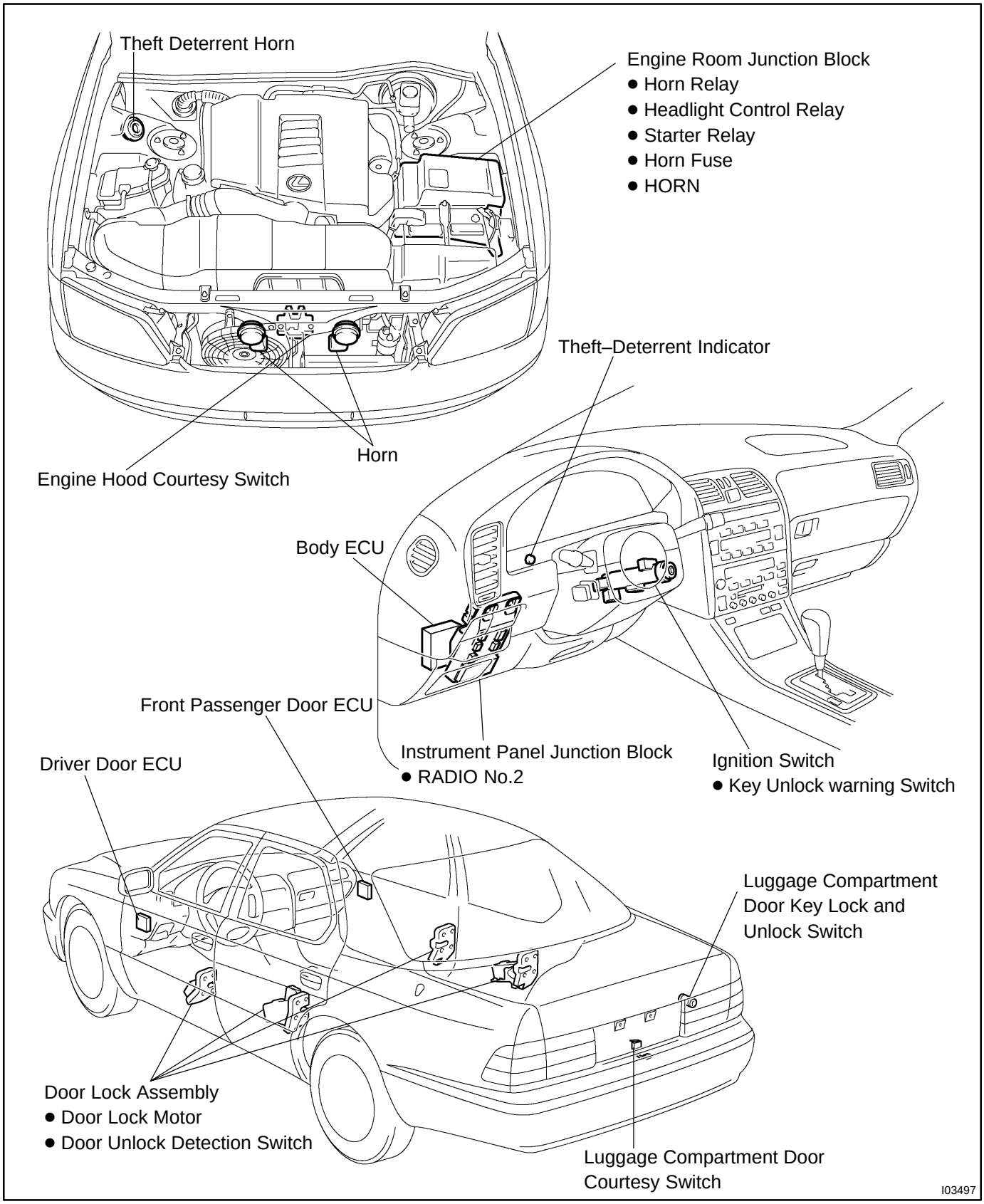
23. Rear left door:
INSPECT DOOR LOCK ASSEMBLY CIRCUIT
(See page DI–803)

24. Rear right door:
INSPECT DOOR LOCK ASSEMBLY CIRCUIT
(See page DI–826)

THEFT DETERRENT SYSTEM

LOCATION

BE0CE–01



BE0CF–01

PRE–CHECK

1. ACTIVE ARMING MODE:

SETTING THE THEFT DETERRENT MODE

The system will be automatically set to the theft deterrent mode about 30 seconds after the setting process listed below are performed.

Setting Processes: (do processes (1)～(4) in the order)

(1) Remove the ignition key from the key cylinder.

(2) Close all entry points (door, hood and luggage compartment door).

(3) Use any one of the following methods to lock all the doors depending on a given condition.

- Use the key to lock the driver or passenger side door. (as a result, all the doors(including the engine hood and luggage compartment door) will be closed and locked), or
- Use the remote control to lock any door (as a result, all the doors(including the engine hood and luggage compartment door) will be closed and locked), or
- If the front right or left door is unlocked when both the rear doors are already locked, lock and close the remaining unlocked door by hand (as a result, all the doors(including the engine hood and luggage compartment door) will be closed and locked).
- Close all doors and locked with the engine hood or luggage compartment door opened, and close the engine hood or all the doors(including the engine hood and luggage compartment door) will be closed and locked).

(4) About 30 seconds after the above process (3), the theft deterrent mode will automatically start.

HINT:

The closing/locking of all the entry points (doors, hood and luggage) must remain unchanged for about 30 seconds, the system will start the theft deterrent mode.

2. PASSIVE ARMING MODE:

SETTING THE THEFT DETERRENT MODE

The system will be automatically set to the theft deterrent mode about 30 seconds after the setting process listed below are performed.

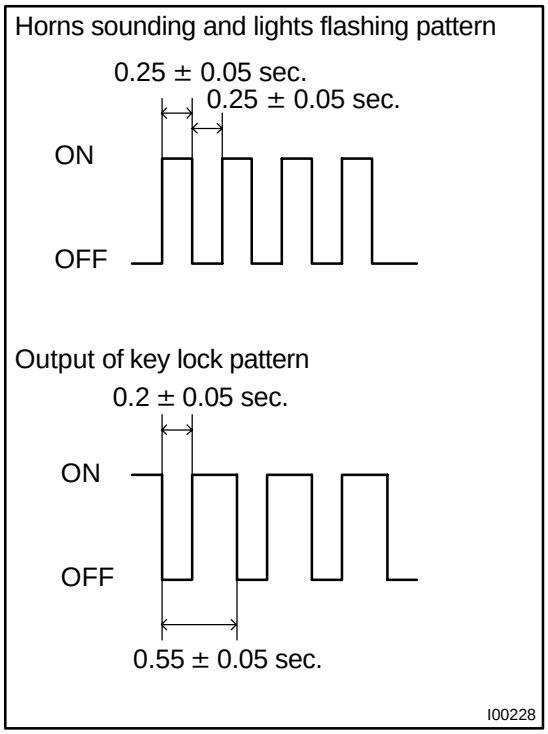
Setting Processes:

(1) Remove the ignition key from the key cylinder.

(2) Open and close any entry points (door, hood and luggage compartment door).
Now, all the entry points are closed.

(3) About 30 seconds after the above process–(2), the theft deterrent mode will automatically start.

HINT:
If, while following above steps, you use the key or the remote control to lock the door, the system will be set to ACTIVE ARMING MODE.



3. THEFT DETERRENT OPERATION

When the system is set to the theft deterrent mode and any of the following conditions are met, the system sounds the horns and flashes the headlights and the taillights for approx. 1 minute. At the same time the system locks all doors (If all door are not locked at once, the system repeats door locking operation every 0.55 seconds during the one minute alarm time).

Condition

(1) Any of the doors (Including the engine hood and luggage compartment door) is unlocked or opened without the key. *1

(2) The battery terminal is disconnected and reconnected. *2

(3) The system receives panic signal from remote keyless entry. *3

*1: Only active arming mode.

*2: When the ignition key is not inserted in the key cylinder.

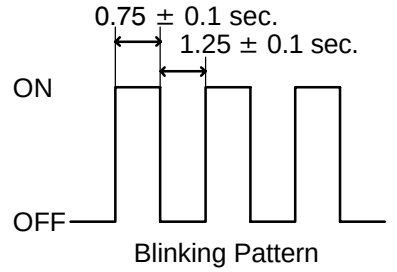
4. CANCELLATION OF THEFT DETERRENT OPERATION OR MODE

The theft deterrent operation or mode can be cancelled when any of the following conditions is met.

No.	Condition	Cancel of Operation	Cancel of Mode
1	Unlock front door with the key	Effective	Effective
2	Unlock doors with remote keyless entry	Effective	Effective
3	Insert key into ignition key cylinder and turn it to ON position	Effective	Effective
4	About 1 minute passes after theft deterrent operation begins	Automatic stop *1	–
5	Unlock the luggage compartment door with the key or keyless entry.	Uneffective	Effective
6	Unlock the luggage compartment door with the keyless entry.	Uneffective	Effective
7	If the system receives panic signal again or unlock signal when the system is activated by panic signal	Effective *2	Uneffective
6	If the system receives unlock signal when the system is activated by panic signal	Effective	Effective

*1: The system is set to the theft deterrent mode again in approx. 2 seconds after the operation stops, if all doors are closed.
*2: The alarm by the panic signal becomes the previous condition.

Security Only:



5. INDICATOR LIGHT (LED)

The indicator light functions as shown below according to the system condition in the theft deterrent mode. It remains off in the initial state.

System Condition	Indicator Light
During set preparation time	ON
When the mode is set*	OFF
When alarm is activated	ON
When is the system temporally cancelled*	OFF

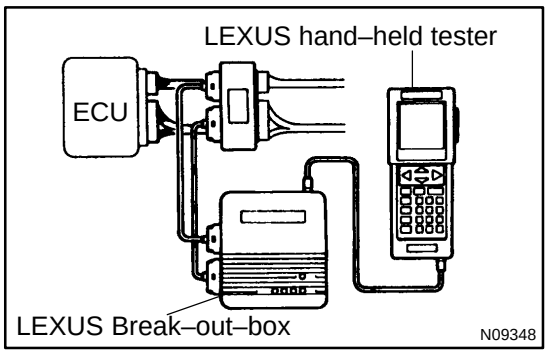
*: By the following 2 cases, the indicator flashes with the output from the immobiliser.

6. KEEPING POWER SUPPLY FUNCTION IN CASE OF DOME FUSE OPEN

Even if the dome fuse blows open on the theft deterrent mode, the system will keep working on the theft deterrent mode.

7. CHANGING METHOD OF PASSIVE MODE (ON or OFF)

Using a hand–held tester, the mode can be changed to the passive mode.



8. ECU TERMINAL VALUES MEASUREMENT BY USING LEXUS BREAK–OUT–BOX AND LEXUS HAND–HELD TESTER

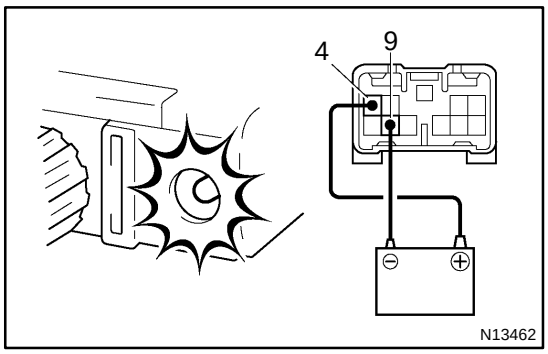
(a) Hook up the LEXUS break–out–box and LEXUS hand–held tester to the vehicle.

(b) Read the ECU input/ output values by following the prompts on the tester screen.

(c) Please refer to the LEXUS hand–held tester has a ”Snapshot” function. This records the measured data and is effective in the diagnosis of intermittent problems.

BE0CG–01

INSPECTION

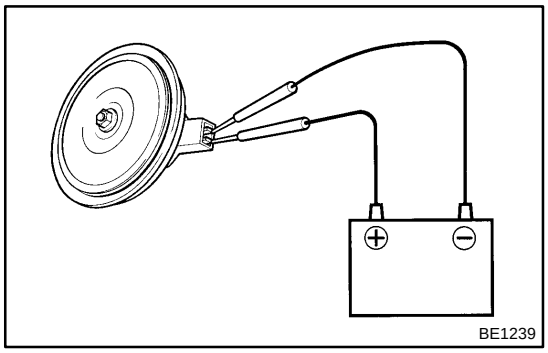


1. INSPECT RHEOSTAT LIGHT CONTROL VOLUME OPERATION

Connect the positive (+) lead from the battery to terminal 4 and negative (–) lead to terminal 9, and check that the warning light lights up.

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

2. INSPECT RHEOSTAT LIGHT CONTROL VOLUME CIRCUIT (See page BE–62)

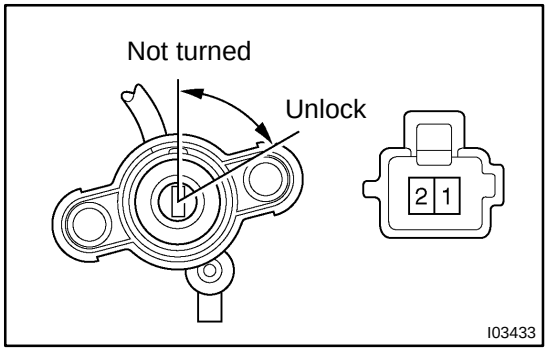


3. INSPECT HORN OPERATION

Connect positive (+) lead to terminal 1 and negative (–) lead to terminal 2 of theft deterrent horn connector, and that the theft deterrent horn blows.

If operation is not as specified, replace the horn.

4. INSPECT HORN CIRCUIT (See page DI–717)



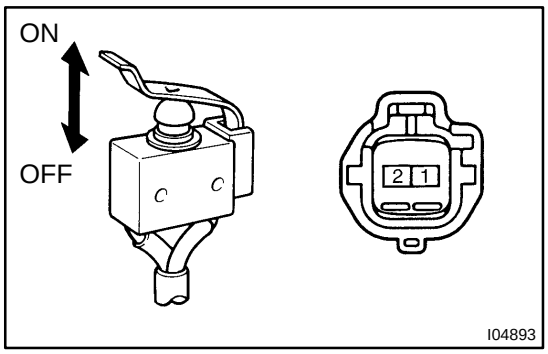
5. LUGGAGE COMPARTMENT DOOR KEY LOCK AND UNLOCK SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
Not turned	–	No continuity
UNLOCK	1 – 2	Continuity

If continuity is not as specified, replace the switch.

If continuity is as specified, inspect the switch circuit.

6. LUGGAGE COMPARTMENT DOOR KEY LOCK AND UNLOCK SWITCH CIRCUIT (See page DI–711)



7. ENGINE HOOD COURTESY SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
LOCK	–	No continuity
UNLOCK	1 – 2	Continuity

If continuity is not as specified, replace the switch.
If continuity is as specified, inspect the switch circuit.

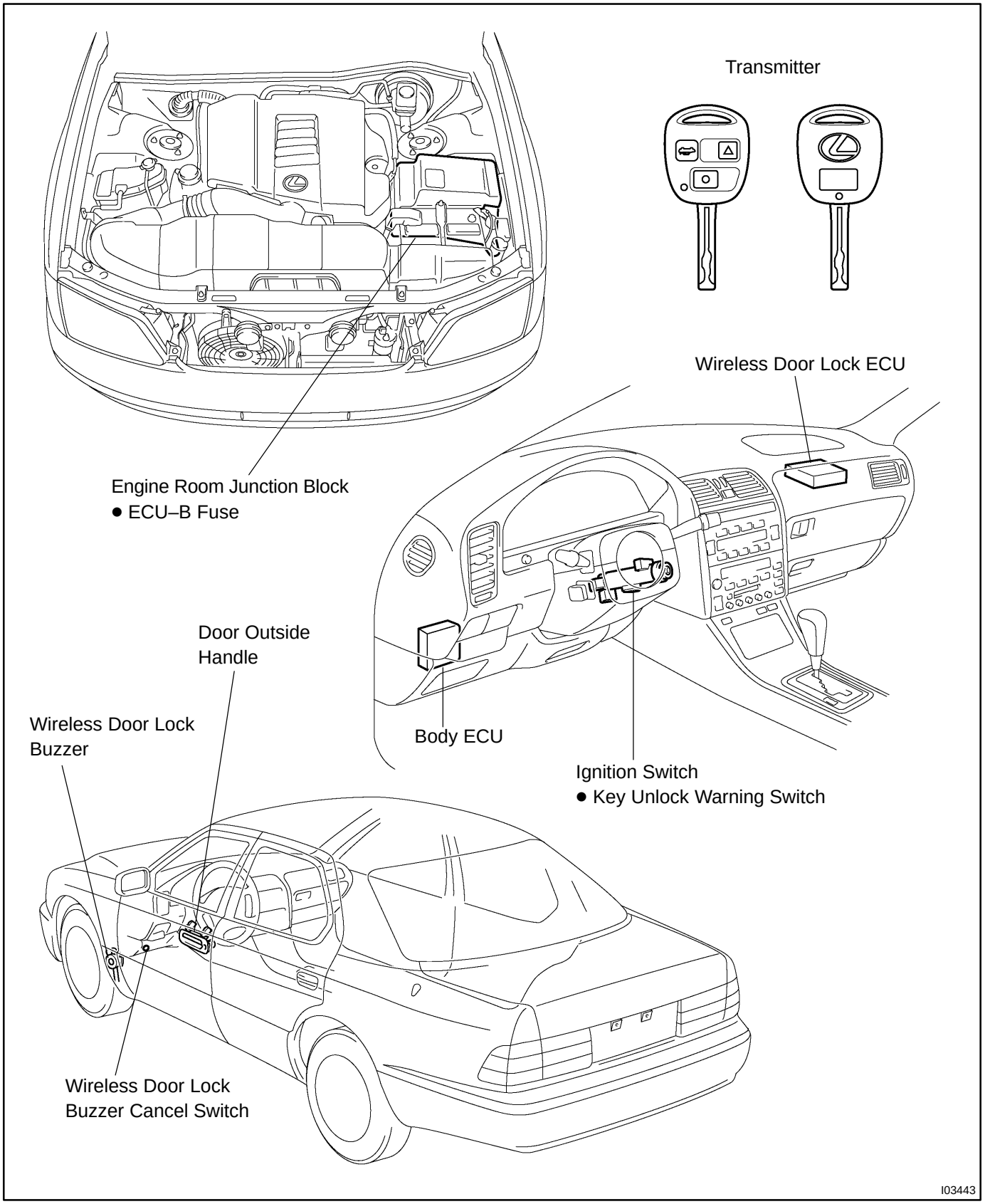
8. ENGINE HOOD COURTESY SWITCH CIRCUIT

(See page DI–707)

WIRELESS DOOR LOCK CONTROL SYSTEM

LOCATION

BE0CH–01



BE0CI–01

PRE–CHECK

1	**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.
(4) Wireless door lock control switch (Buzzer switch) is ON.

Basic function check:

Under the standard operation, when repeating the operation of 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.
● As of the UNLOCK operation times adjustment function of body customize function, when using LEXUS hand–held tester to set "operation twice", only driver's seat is unlocked by unlock operation performed once.

No

Yes

Transmitter LED inspection:

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

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.

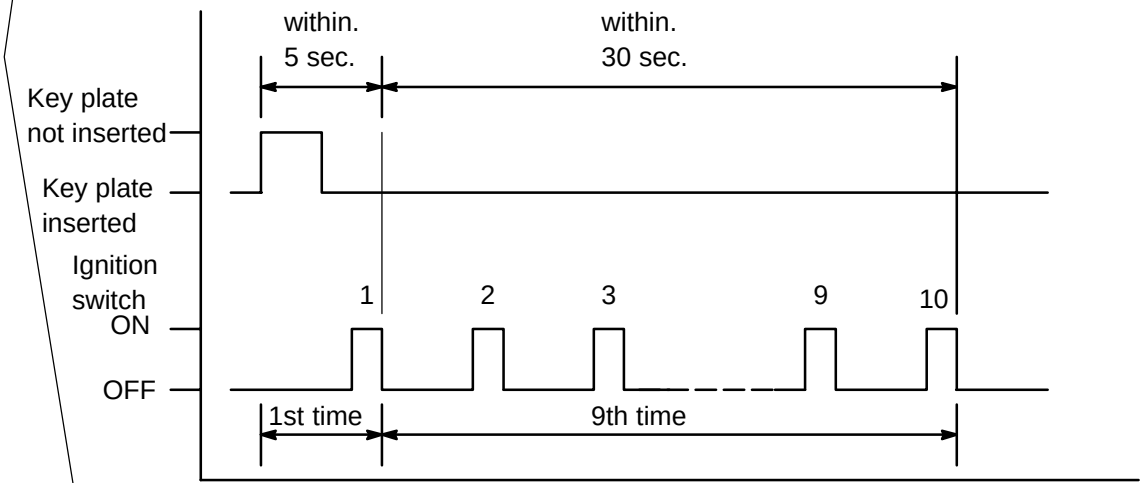
Yes → Battery faulty.

No

Make the vehicle be in the initialized condition.

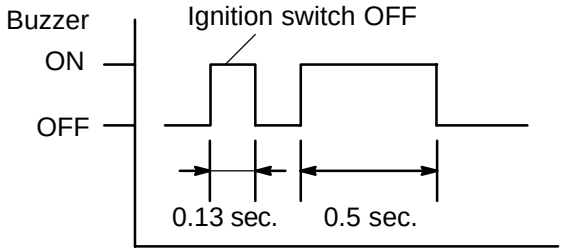
Inspection start by using self diagnostic mode:

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 of (1) and (2) conditions 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 buzzer chirps.



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 buzzer normal?

No

Refer to chart 2.

Yes

Yes
(Entered in self diagnostic mode)

Key unlock warning switch inspection:

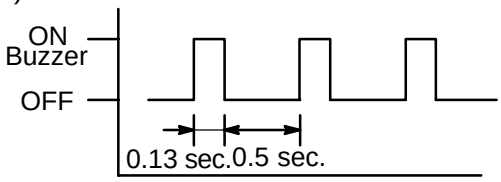
Check that continuity exists between connector terminal A3 of MPX body ECU on the vehicle side and ground by inserting the key plate into the ignition key cylinder.

Check key unlock warning switch.

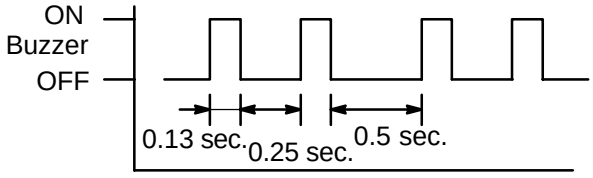
Self diagnostic mode check:

Check that how the buzzer chirps when pressing each transmitter switch.

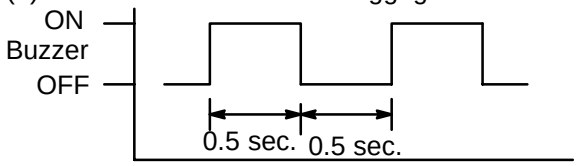
(1) Receiver normal wave of LOCK switch.



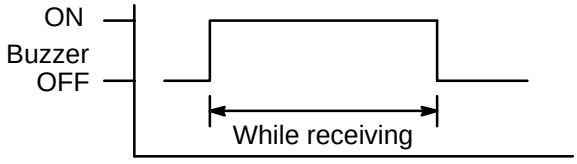
(2) Receiver normal wave of UNLOCK switch.



(3) Receiver normal wave of luggage door switch.



(4) 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.

(1), (2) or (3) are output.

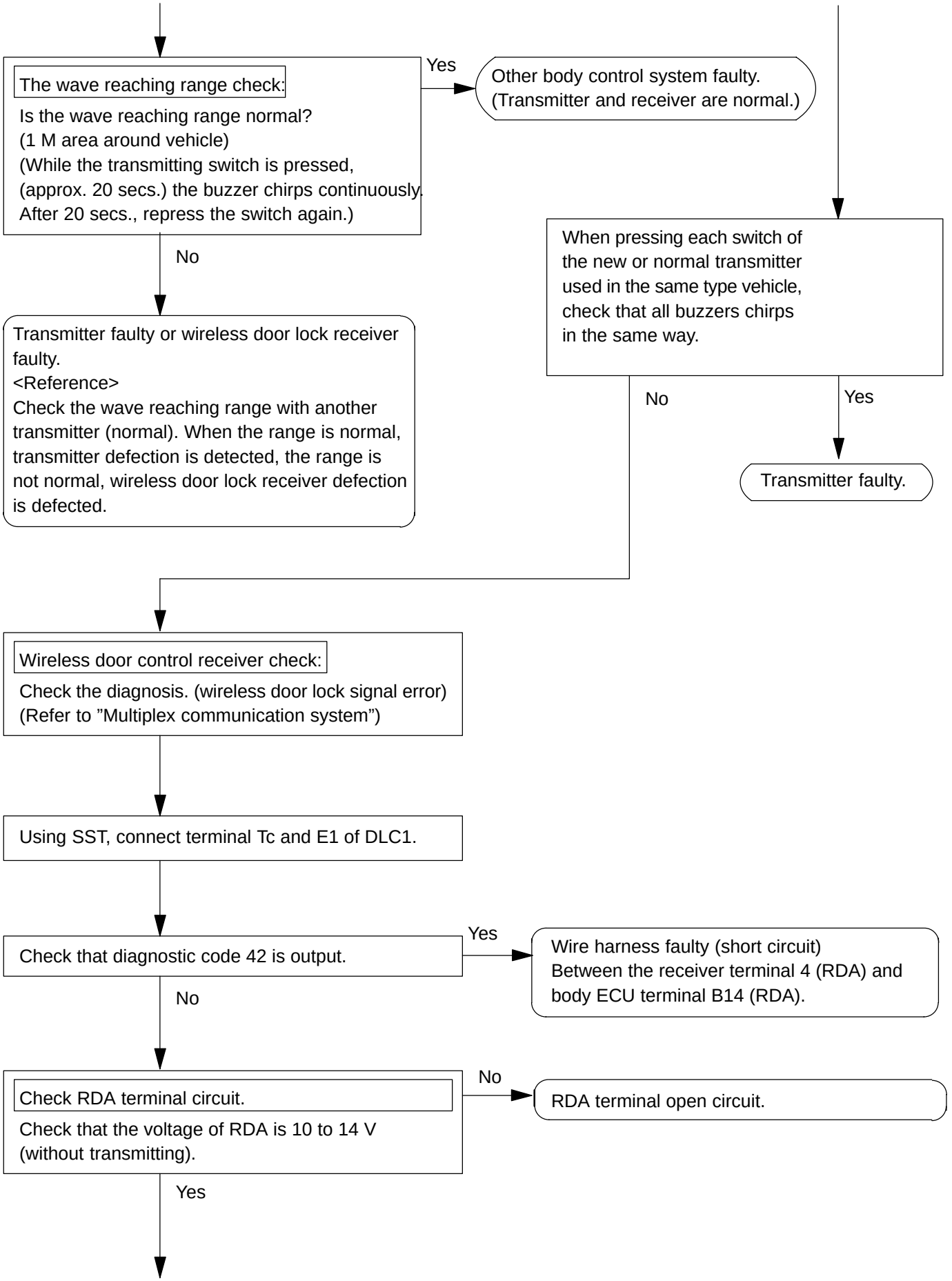
(4) is output.
(All buzzer's response are same.)

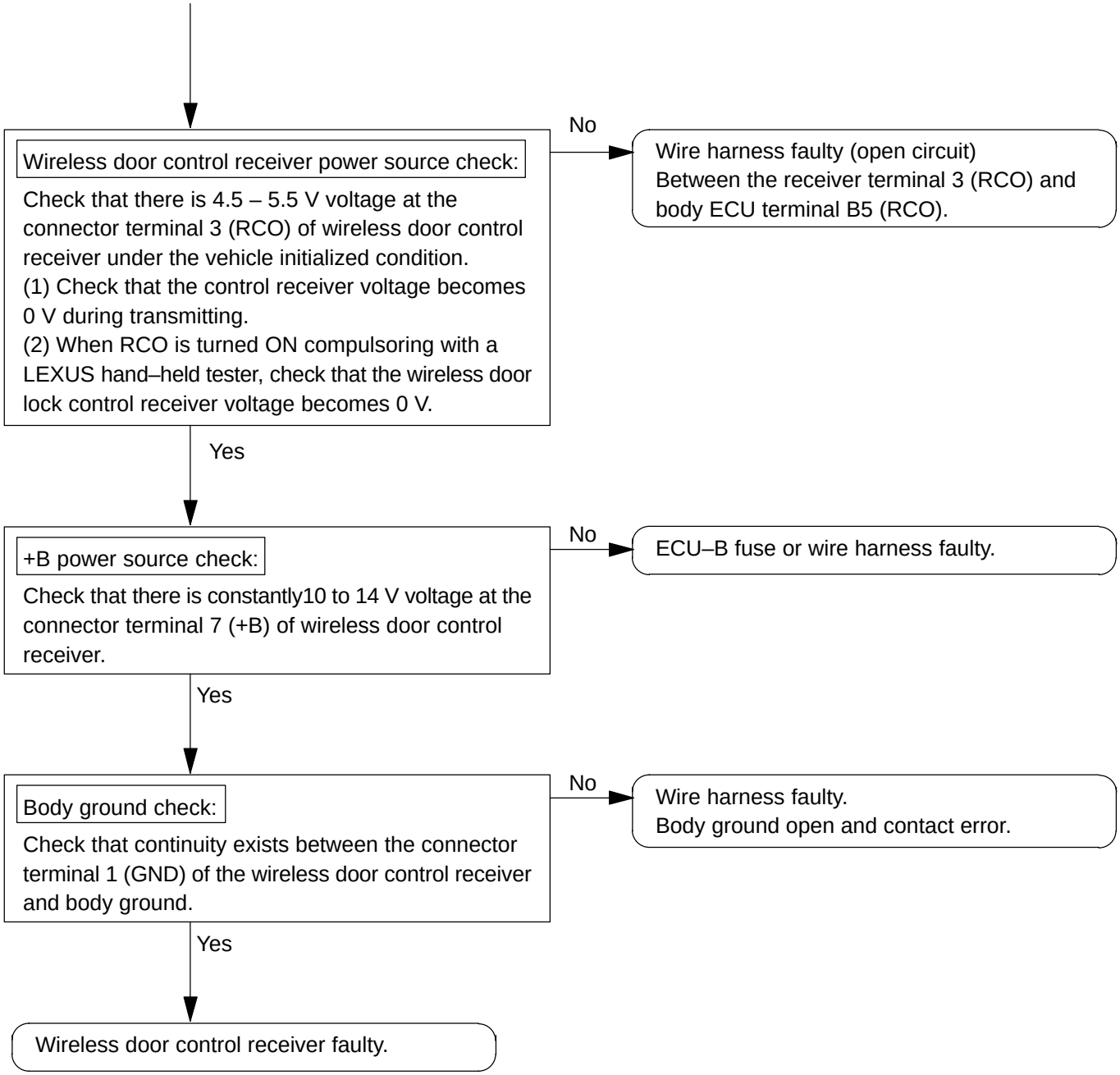
Recognition code registration function check:

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

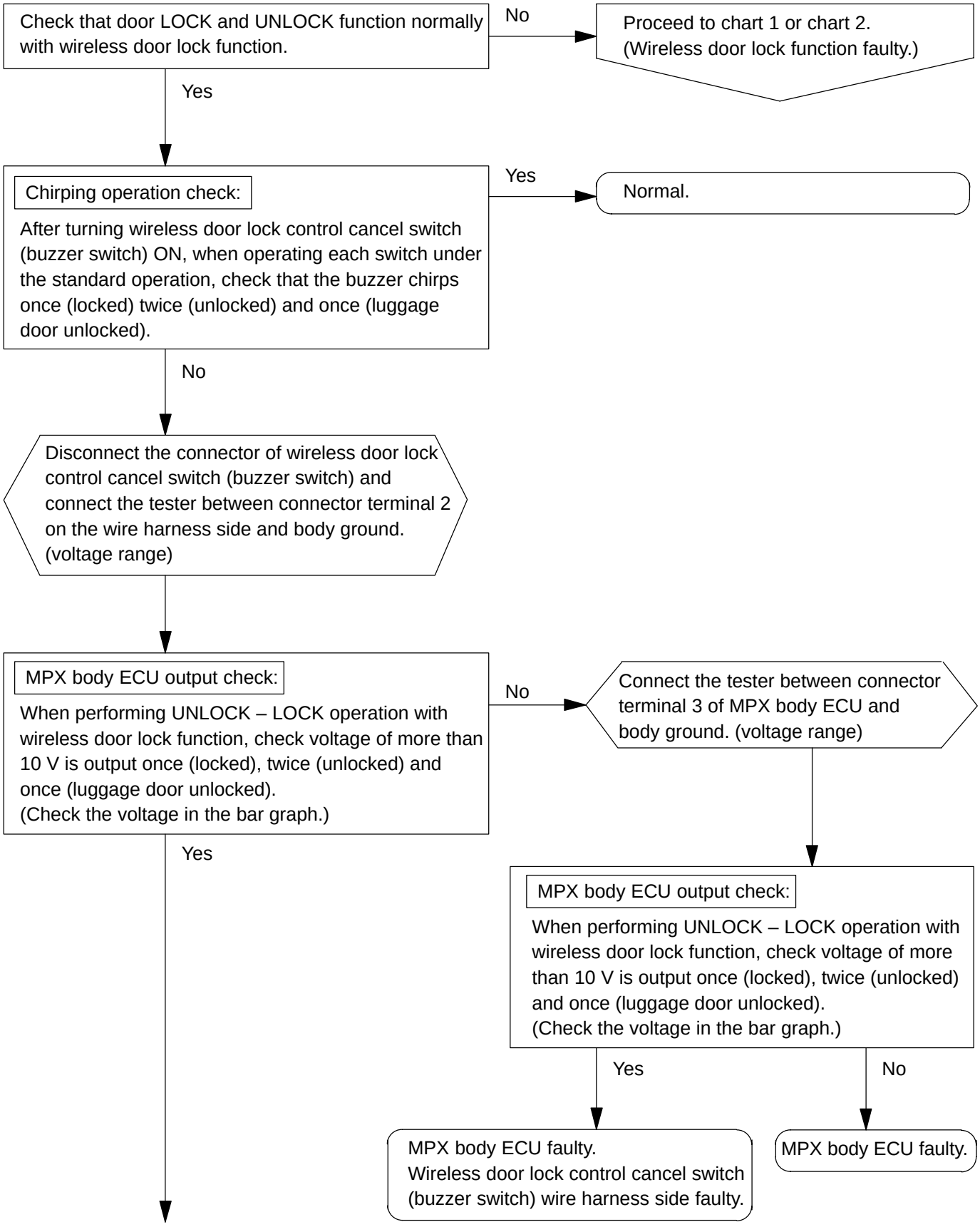
Wireless door lock operate normally when recognition code is registered.

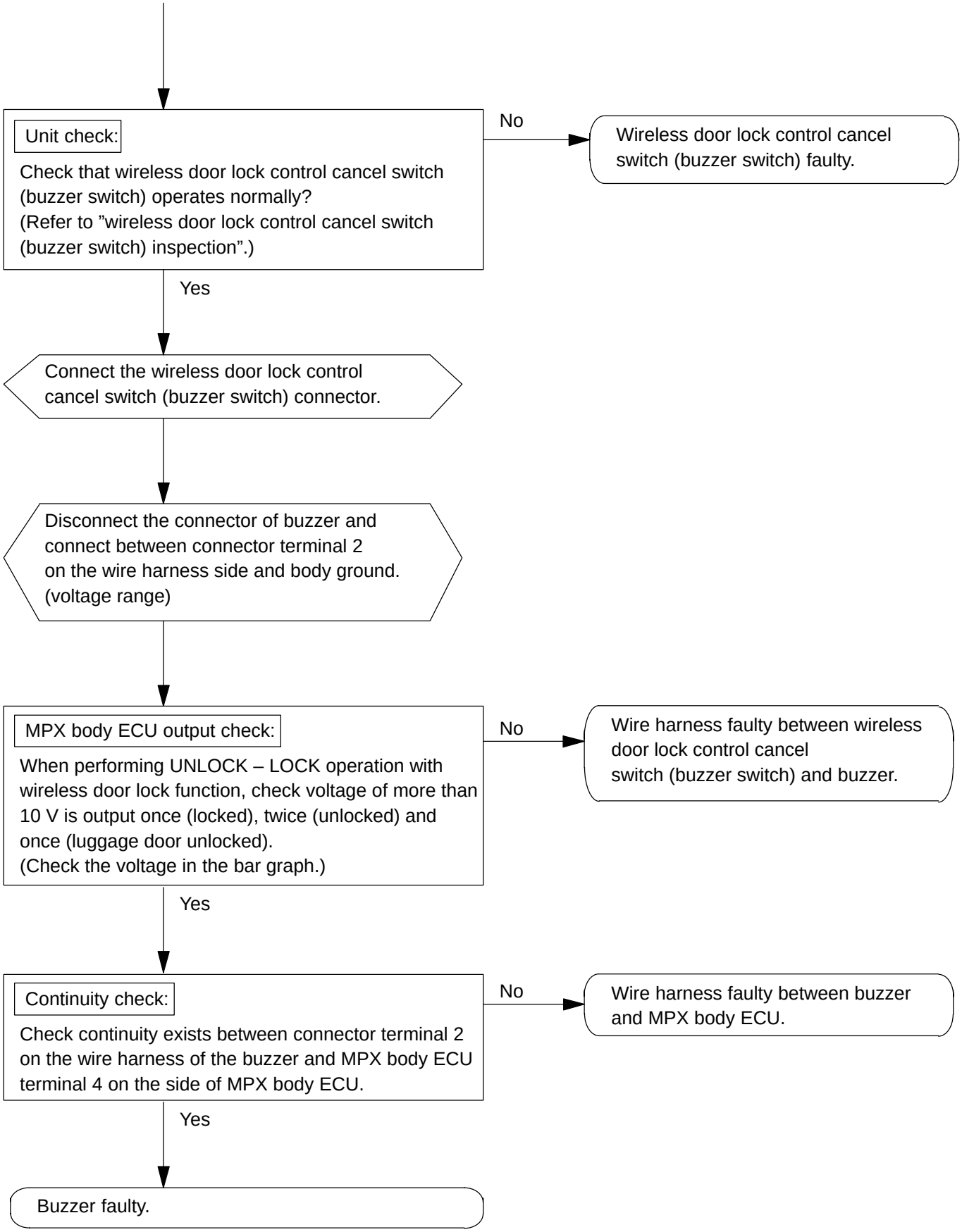
No response from buzzer.


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 buzzer 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 defected.
When pressing each switch of the new or normal transmitter used in the same type vehicle, check that all buzzers chirps 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 4 (RDA) and body ECU terminal B14 (RDA).
No
Check RDA terminal circuit.
Check that the voltage of RDA is 10 to 14 V
(without transmitting).
No
RDA terminal open circuit.
Yes


Wireless door control receiver power source check:
Check that there is 4.5 – 5.5 V voltage at the connector terminal 3 (RCO) of wireless door control receiver under the vehicle initialized condition.
(1) Check that the control receiver voltage becomes 0 V during transmitting.
(2) When RCO is turned ON compulsoring with a LEXUS hand–held tester, check that the wireless door lock control receiver voltage becomes 0 V.
No
Wire harness faulty (open circuit)
Between the receiver terminal 3 (RCO) and body ECU terminal B5 (RCO).
Yes
+B power source check:
Check that there is constantly10 to 14 V voltage at the connector terminal 7 (+B) of wireless door control receiver.
No
ECU–B fuse or wire harness faulty.
Yes
Body ground check:
Check that continuity exists between the connector terminal 1 (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.

2	Wireless door lock buzzer does not chirp.




Unit check:
Check that wireless door lock control cancel switch (buzzer switch) operates normally?
(Refer to ”wireless door lock control cancel switch (buzzer switch) inspection”.)
No
Wireless door lock control cancel switch (buzzer switch) faulty.
Yes
Connect the wireless door lock control cancel switch (buzzer switch) connector.
Disconnect the connector of buzzer and connect between connector terminal 2 on the wire harness side and body ground. (voltage range)
MPX body ECU output check:
When performing UNLOCK – LOCK operation with wireless door lock function, check voltage of more than 10 V is output once (locked), twice (unlocked) and once (luggage door unlocked).
(Check the voltage in the bar graph.)
No
Wire harness faulty between wireless door lock control cancel switch (buzzer switch) and buzzer.
Yes
Continuity check:
Check continuity exists between connector terminal 2 on the wire harness of the buzzer and MPX body ECU terminal 4 on the side of MPX body ECU.
No
Wire harness faulty between buzzer and MPX body ECU.
Yes
Buzzer faulty.

BE0CJ–01

INSPECTION

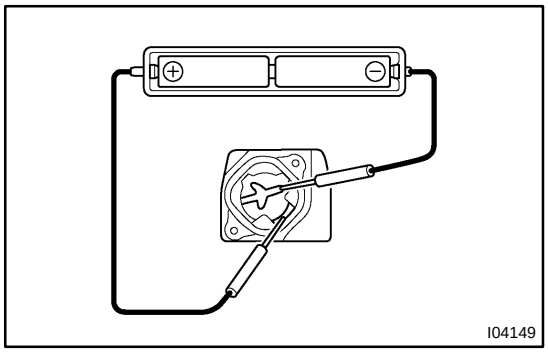
1. INSPECT WIRELESS DOOR LOCK TRANSMITTER OPERATION

HINT:

Refer to ”Wireless door lock control receiver and transmitter replacement”.

(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, 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).

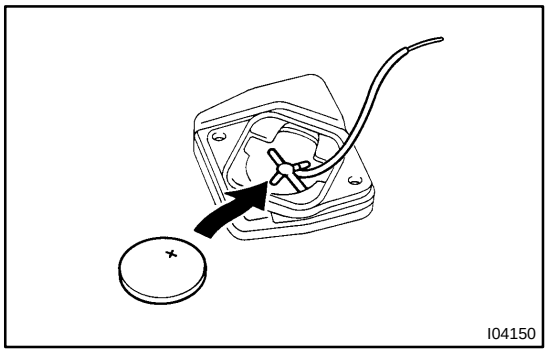
(f) Install a cover so that O–ring is not distorted or slipped off.

(g) Using a screwdriver, tighten the screw.

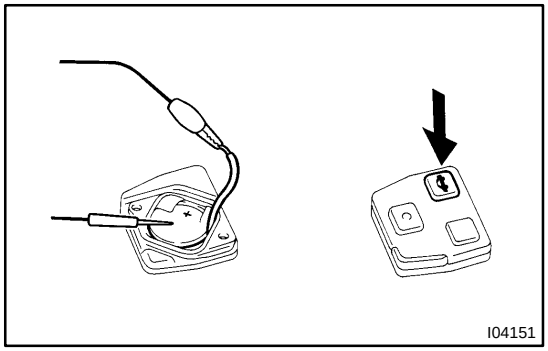
2. CHECK BATTERY CAPACITY

HINT:

- Make sure to use the TOYOTA 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.

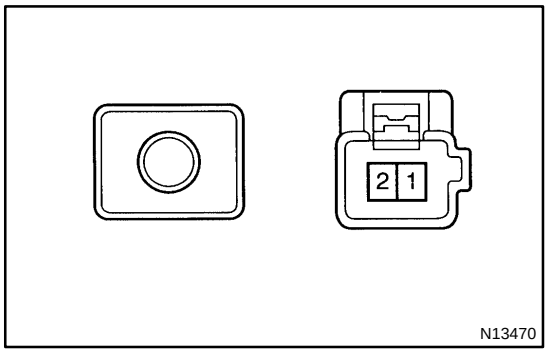


(d) Connect the (+) tester to the (+) battery (lithium battery), and (–) tester to the lead respectively.
(e) Press one of the transmitting switches on the transmitter for approx. 1 second.
(f) Press the transmitting switch on the transmitter again to check the voltage.
Standard: 2.1 V or more

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 after 0.8 seconds from 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.

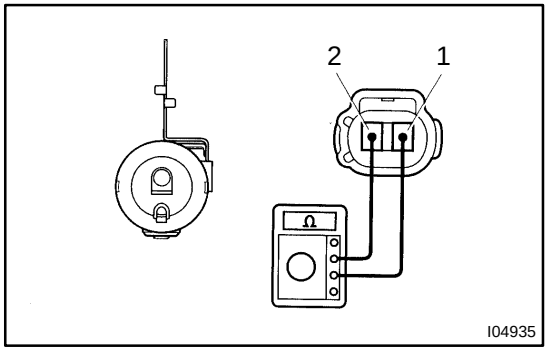


3. INSPECT WIRELESS DOOR LOCK CONTROL CANCEL SWITCH

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

If continuity is not as specified, replace the switch.
If continuity is as specified, inspect the switch circuit.

4. INSPECT WIRELESS DOOR LOCK CONTROL CANCEL SWITCH CIRCUIT (See page DI–689)

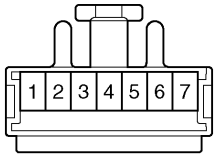


5. INSPECT WIRELESS DOOR LOCK BUZZER OPERATION

Connect the positive (+) lead from the ohmmeter to terminal 1 and the negative (–) lead to terminal 2, and measure resistance approx. 1 kΩ.
If resistance is not as specified, replace the buzzer.

6. INSPECT WIRELESS DOOR LOCK BUZZER CIRCUIT (See page DI–689)

Wire Harness Side



I04152

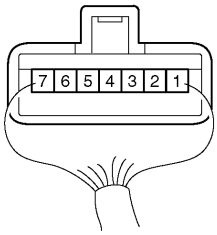
7. Connector disconnected:
INSPECT WIRELESS DOOR LOCK CONTROL RECEIVER CIRCUIT

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

Tester connection	Condition	Specified condition
7 – Ground	Constant	Continuity
1 – Ground	Constant	Battery positive voltage

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

From Back Side



I04153

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

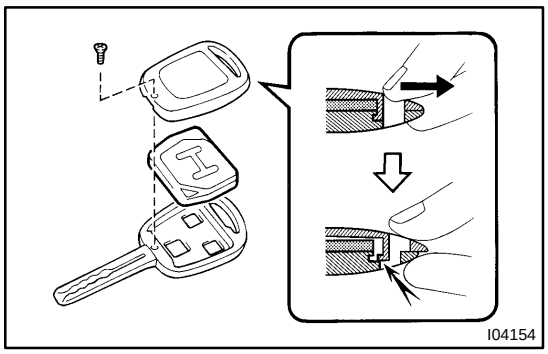
Connect the wire harness side connector to the receiver and inspect the wire harness side connector from the back side, as shown.

Tester connection	Condition	Specified condition
3 – Ground	Ignition switch position OFF Key removed Transmitter OFF → ON	4.5 – 5.5 V → below 1 V
3 – Ground	Ignition switch position OFF Key removed Transmitter OFF → ON	4.5 – 5.5 V → below 1 V
4 – Ground	Ignition switch position OFF Key removed Transmitter OFF	10 – 14 V

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

BE0CK–01

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.

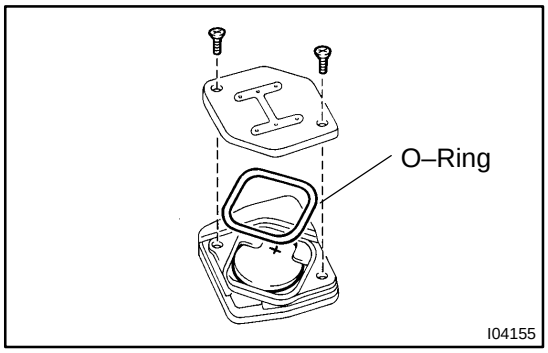
NOTICE:

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.



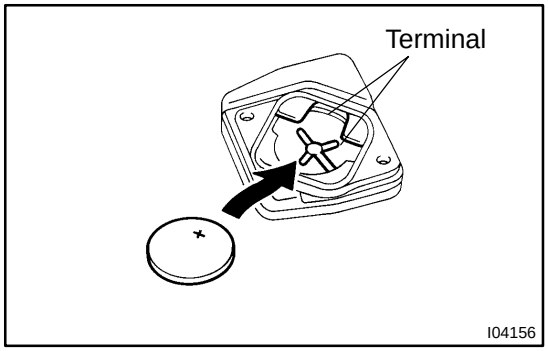
(c) Using a screwdriver, remove the 2 screws and cover.

(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 a single components.

(a) Select the operation mode to perform from the following operation 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 few many recognition codes ar already registered before you register additional recognition codes.

(b) Follow the chart on the following page 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.

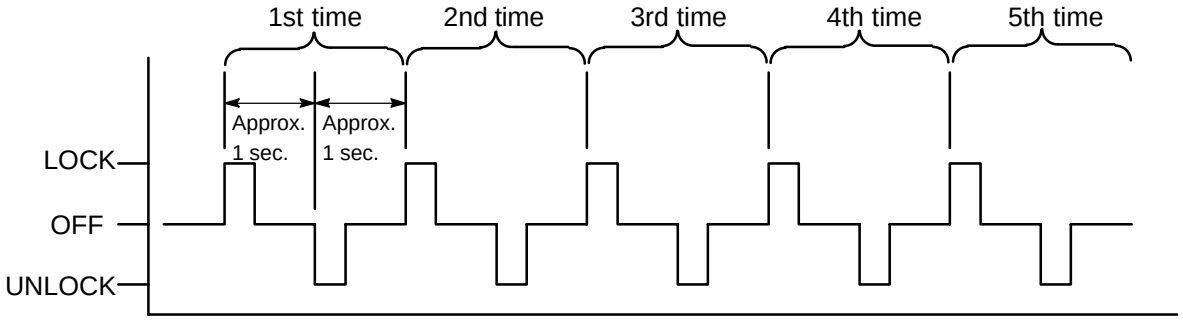
Start registration of recognition code

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. (Other doors are CLOSED)

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

Within 40 secs.

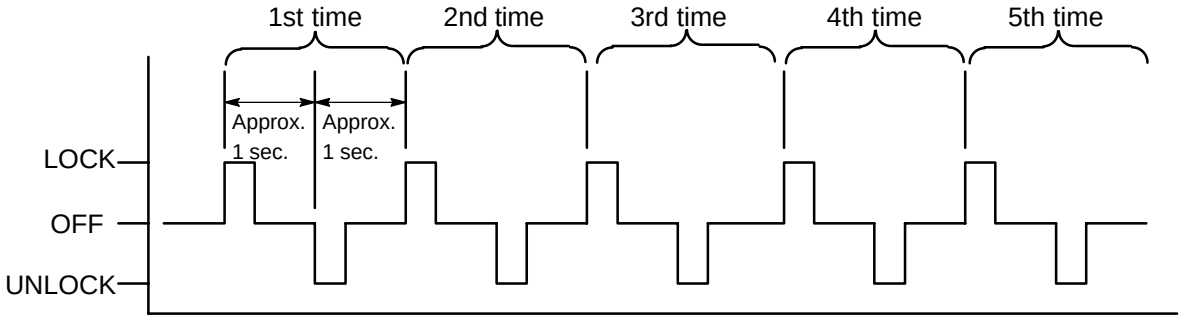
Press the door lock control switch (for manual operation) 5 times to LOCK/UNLOCK at approx. 1 sec. interval.



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.

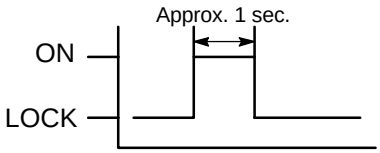


Insert the key into the ignition key cylinder.

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

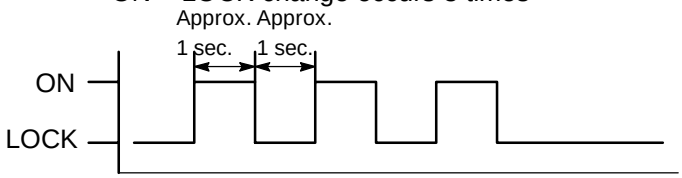
Add mode

ON – LOCK change occurs 1 time



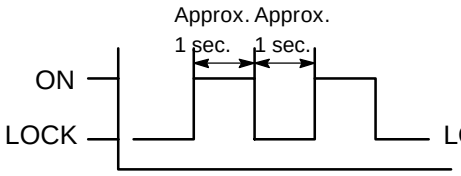
Confirmation mode

ON – LOCK change occurs 3 times



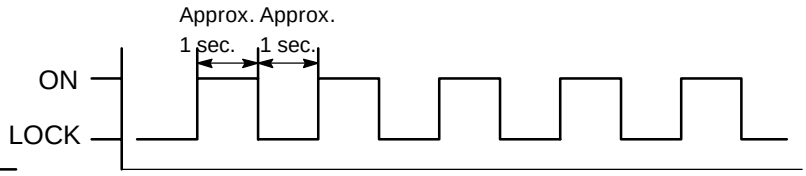
Rewrite mode

ON – LOCK change occurs 2 times



Prohibition mode

ON – LOCK change occurs 5 times



Pull out the key plate from the ignition key cylinder.

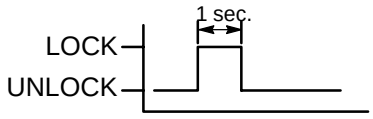
When add mode or rewrite mode is selected.

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.

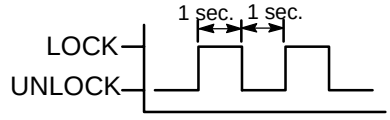
LOCK–UNLOCK occurs once

Indicates that add mode has been selected.



LOCK–UNLOCK occurs twice

Indicates that rewrite mode has been selected.

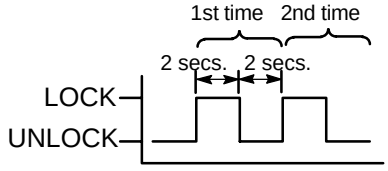


When prohibition mode is selected.

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.

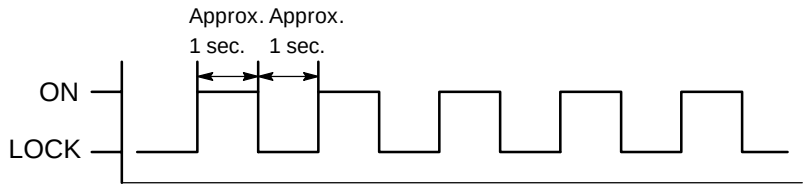
Example:
When the operation is performed twice, it directs that 2 type of recognition code have been registered.



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

When prohibition mode is selected.

MPX body performs operates 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 of 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 it 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 they are not performed, 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.

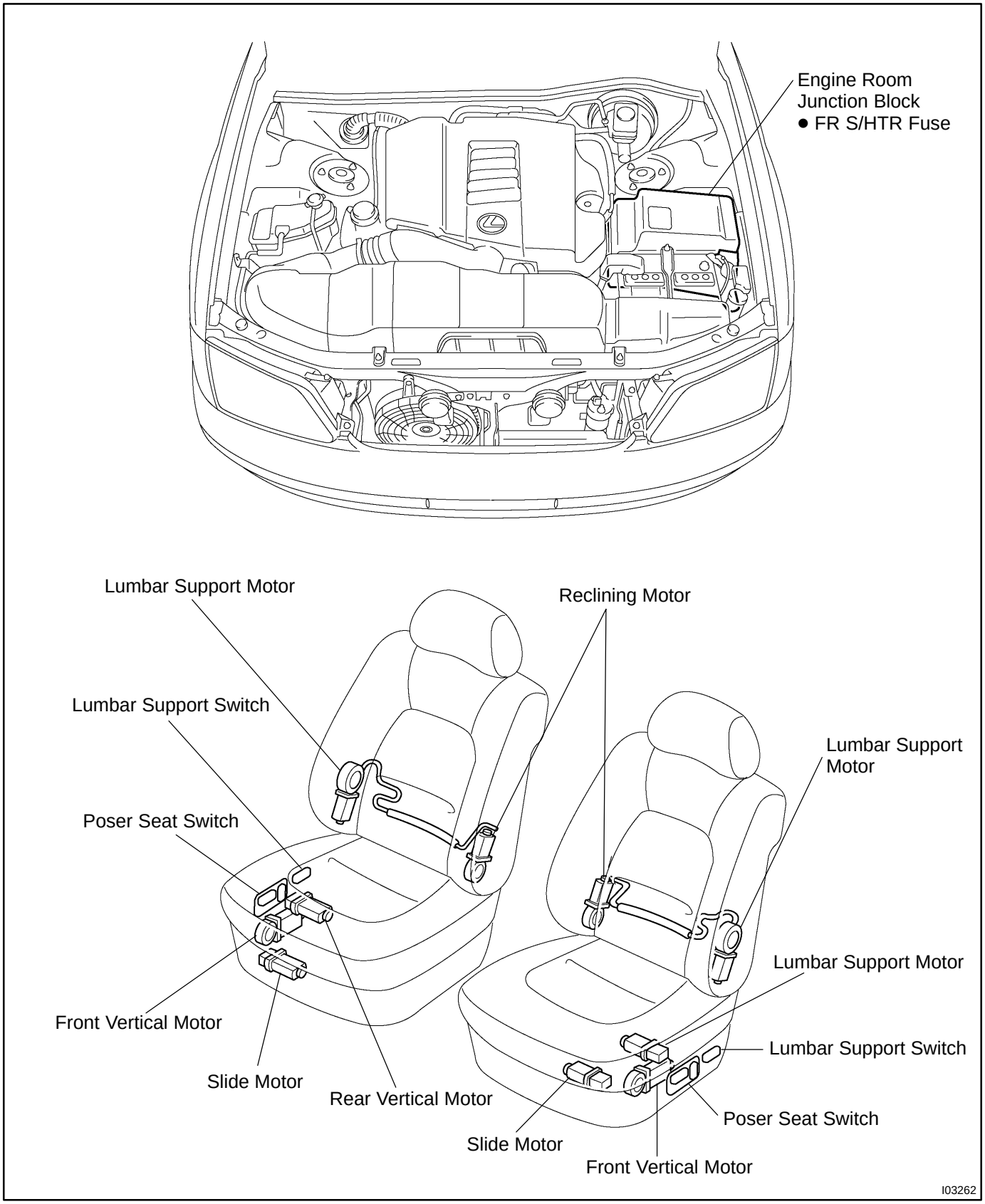
If even one of the following conditions is satisfied, registration of recognition codes in completed.
- 40 secs. elapses since the MPX body ECU response.
- The driver's door is closed.
- The key plate is inserted in the ignition key cylinder.
- 4 types recognition codes are registration at one time.

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

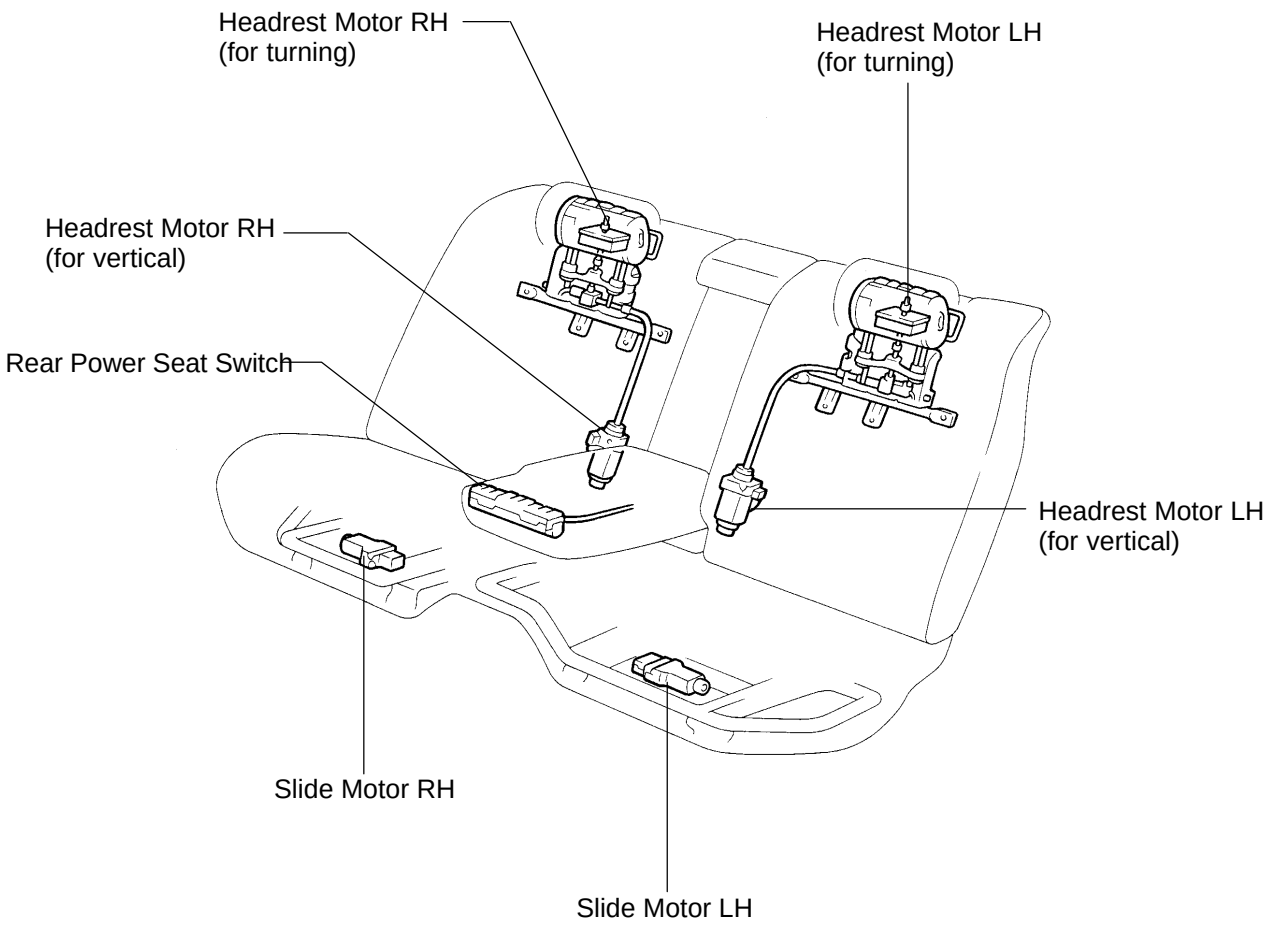
POWER SEAT CONTROL SYSTEM (w/o Driving Position Memory)

LOCATION

BE120–01

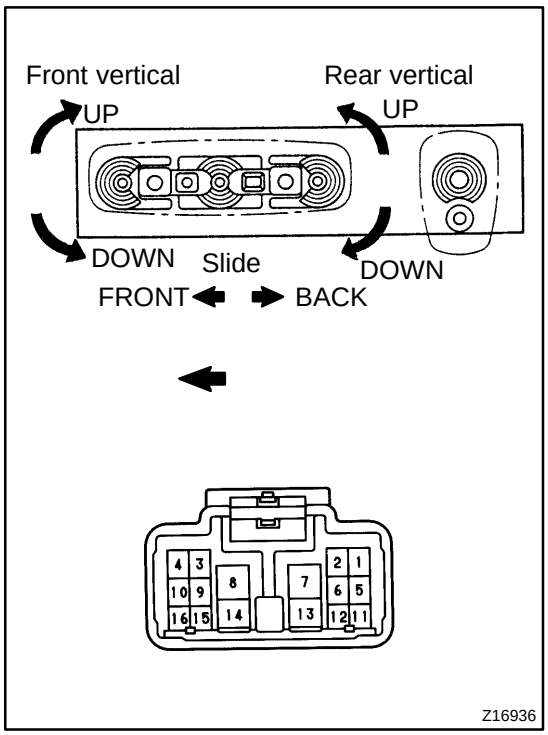


TAIWAN models:



N

BE121–01



INSPECTION

1. INSPECT FRONT POWER SEAT SWITCH CONTINUITY

Slide switch

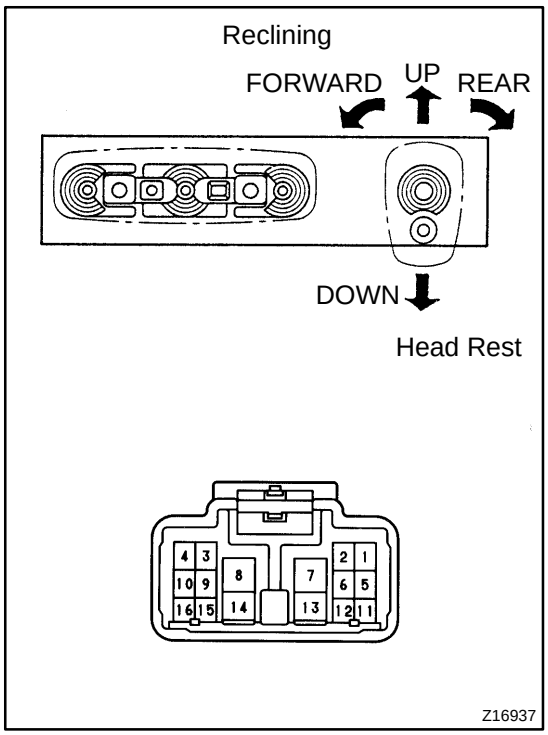
Switch position	Tester connection	Specified condition
FRONT	11 – 14 12 – 13	Continuity
OFF	11 – 13 12 – 13	Continuity
BACK	11 – 13 12 – 14	Continuity

Front vertical switch

Switch position	Tester connection	Specified condition
UP	9 – 14 10 – 13	Continuity
OFF	9 – 13 10 – 13	Continuity
DOWN	9 – 13 10 – 14	Continuity

Rear vertical switch

Switch position	Tester connection	Specified condition
UP	5 – 14 6 – 13	Continuity
OFF	5 – 13 6 – 13	Continuity
DOWN	5 – 13 6 – 14	Continuity



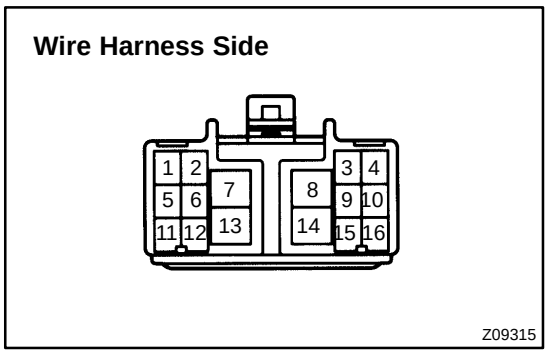
Reclining switch

Switch position	Tester connection	Specified condition
FORWARD	4 – 14 3 – 13	Continuity
OFF	4 – 13 3 – 13	Continuity
REAR	4 – 13 3 – 14	Continuity

Headrest switch

Switch position	Tester connection	Specified condition
UP	14 – 15 13 – 16	Continuity
OFF	13 – 15 13 – 16	Continuity
DOWN	13 – 15 14 – 16	Continuity

If continuity is not as specified, replace the switch.



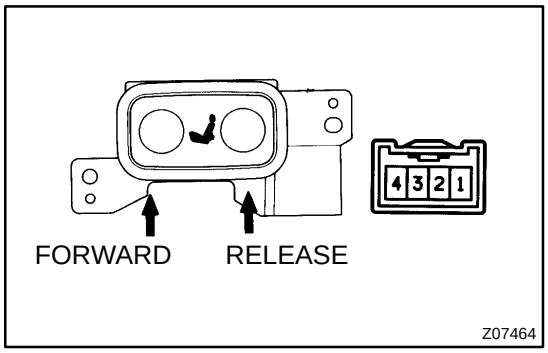
2. INSPECT POWER SEAT SWITCH CIRCUIT

(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, as shown.

Tester connection	Condition	Specified condition
13 – Ground	Constant	Continuity
14 – Ground	Constant	Battery positive voltage

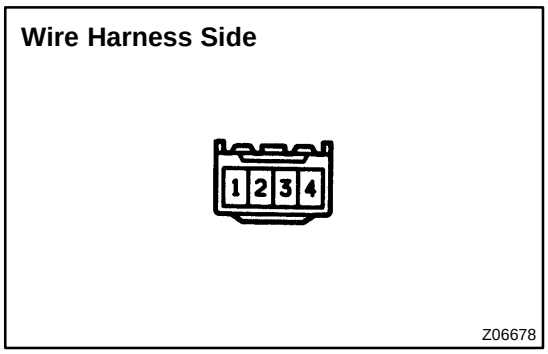
If circuit is not as specified, inspect the circuits connected to other parts.



3. INSPECT LUMBAR SUPPORT SWITCH CONTINUITY ( ): Passenger's Seat

Switch position	Tester connection	Specified condition
FORWARD	1(1) – 4(4) 2(2) – 3(3)	Continuity
OFF	1(2) – 3(3) 2(2) – 3(4)	Continuity
RELEASE	1(1) – 3(3) 2(2) – 4(4)	Continuity

If continuity is not as specified, replace the switch.



4. INSPECT LUMBAR SUPPORT SWITCH CIRCUIT

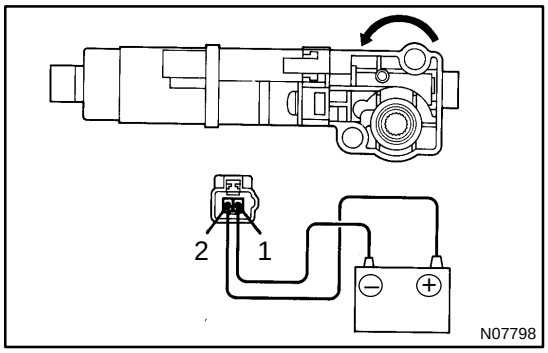
(a) Disconnect the switch connector and connect the seat wire harness to the floor wire harness.

(b) Inspect the connector on the wire harness side, as shown.

( ): Passenger's Seat

Tester connection	Condition	Specified condition
3 – Ground (2 – Ground)	Constant	Continuity
4 – Ground (1 – Ground)	Constant	Battery positive voltage

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

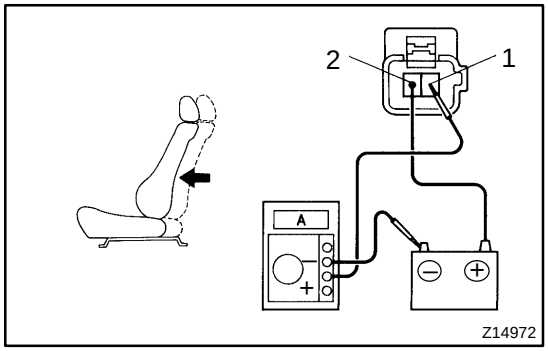


5. INSPECT SLIDE MOTOR OPERATION

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

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

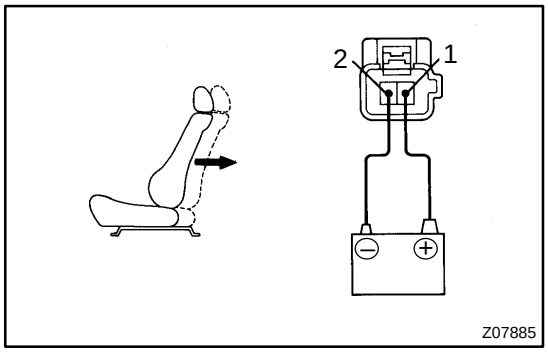
If operation is not as specified, replace the motor.



6. Driver's seat:
INSPECT SLIDE 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 battery negative (–) terminal, then move the seat to front position.

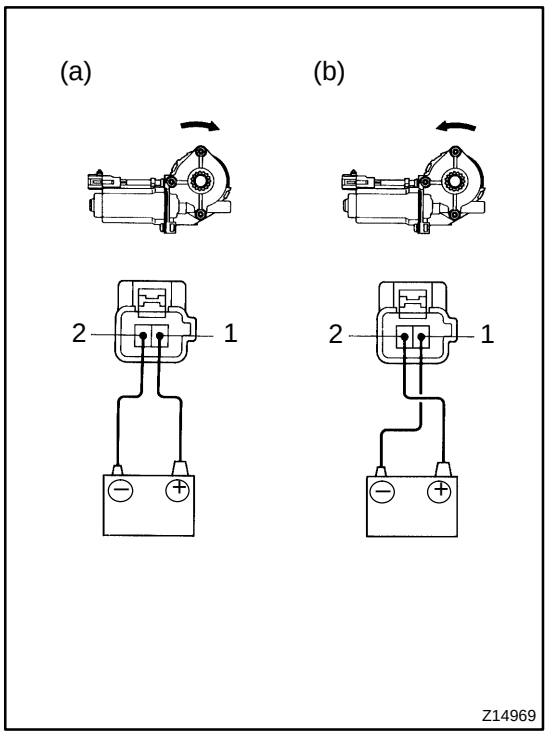
(b) Continue to apply voltage and check that the current changes to less than 1 ampere with 4 to 90 seconds.



(c) Disconnect the lead from terminals.

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

If operation is not as specified, replace the motor.

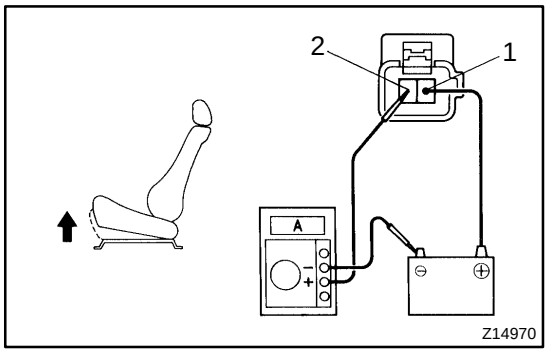


7. INSPECT FRONT VERTICAL MOTOR OPERATION

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

(b) Reverse the polarity and check that the motor turns counterclockwise.

If operation is not as specified, replace the motor.



8. Driver's Seat:
INSPECT FRONT VERTICAL MOTOR PTC THERMISTOR OPERATION

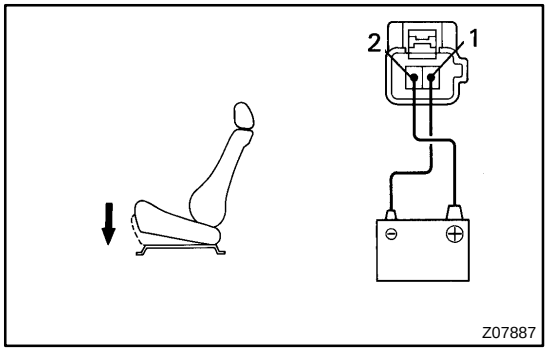
(a) Connect the positive (+) lead from the battery to terminal 1, the positive (+) lead from the ammeter to terminal 2 and the negative (–) lead to battery negative (–) terminal, then move the front edge of seat cushion to the highest position.

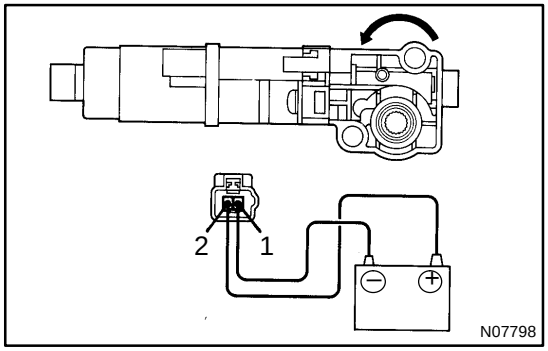
(b) Continue to apply voltage, and check the current changes to less than 1 ampere with 4 to 90 seconds.

(c) Disconnect the leads from terminals.

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

If operation is not as specified, replace the motor.



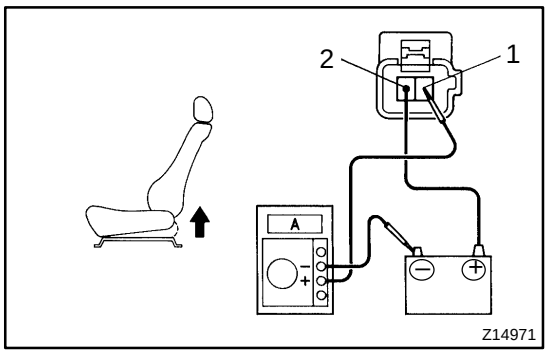


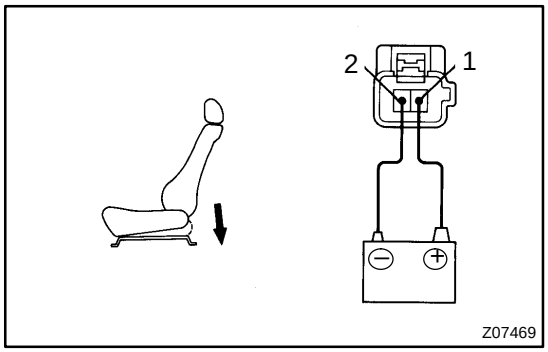
9. INSPECT REAR VERTICAL MOTOR OPERATION

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

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

If operation is not as specified, replace the motor.





10. Driver's seat:
INSPECT REAR VERTICAL MOTOR PTC THERMISTOR OPERATION

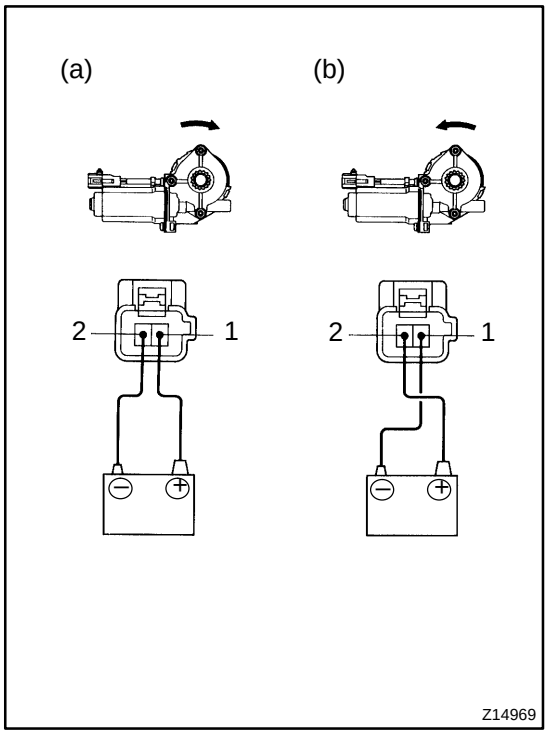
(a) Connect the positive (+) lead from the battery to terminal 2, the positive (+) lead from the ammeter to terminal 1 and the negative (–) lead to battery negative (–) terminal, then move the rear edge of seat cushion to the highest position.

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

(c) Disconnect the leads from terminals.

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

If operation is not as specified, replace the motor.

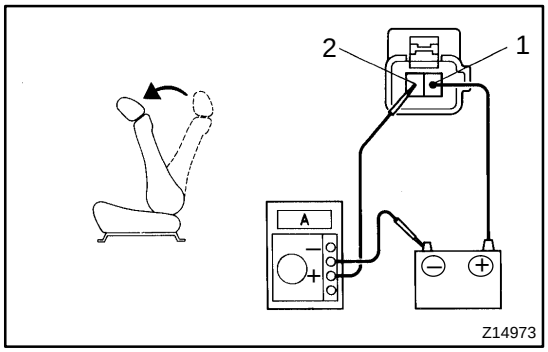


11. Driver's Seat:
INSPECT RECLINING MOTOR OPERATION

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

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

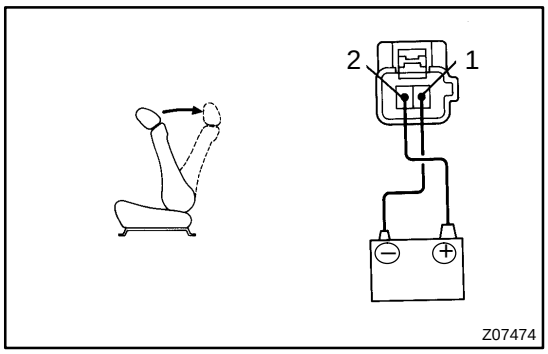
If operation is not as specified, replace the motor.



12. Driver's Seat:
INSPECT RECLINING MOTOR PTC THERMISTOR OPERATION

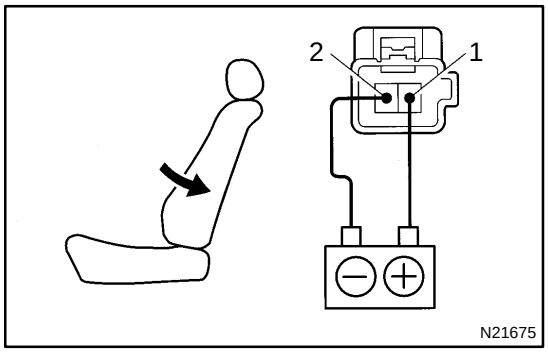
(a) Connect the positive (+) lead from the battery to terminal 1, the positive (+) lead from the ammeter to terminal 2 and the negative (–) lead to battery negative (–) terminal, then recline the seat back to the most forward position.

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



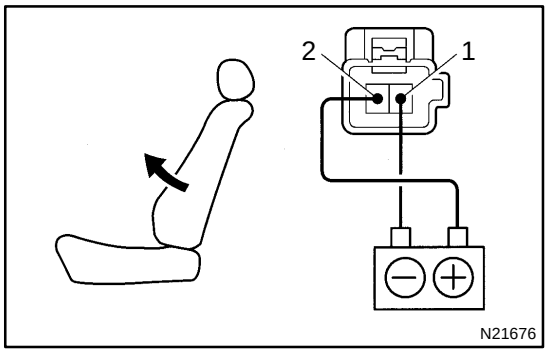
(c) Disconnect the lead from terminals.
(d) Approximately 60 seconds later, connect the positive (+) lead from battery to terminal 2 and the negative (–) lead to terminal 1, check that the seat back starts to fall backwards.

If operation is not as specified, replace the motor.



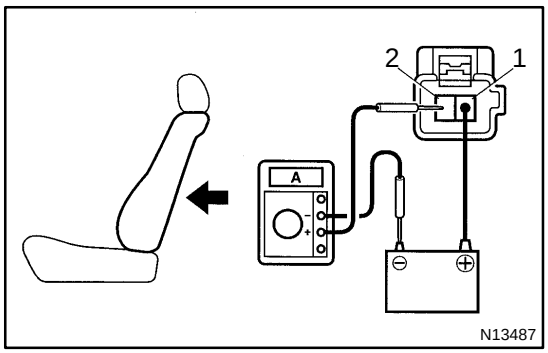
13. INSPECT LUMBAR SUPPORT MOTOR OPERATION

(a) Connect the positive (+) lead from the battery to terminal 1 and the negative (–) lead to terminal 2, and check that the lumbar support moves release side.



(b) Reverse the polarity, and check that the lumbar support moves forward.

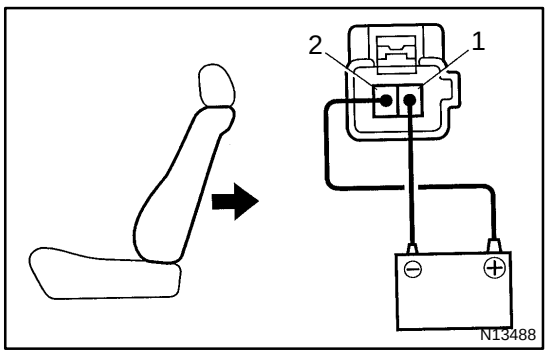
If operation is not as specified, replace the motor.

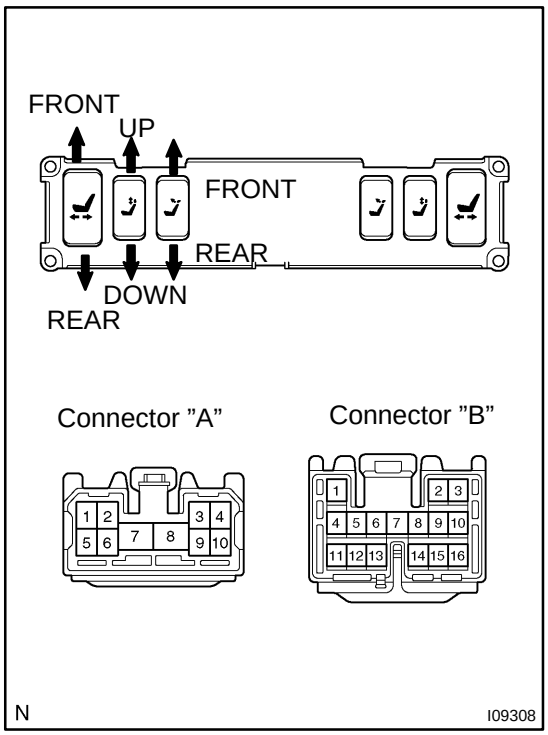


14. Driver's Seat:
INSPECT LUMBAR SUPPORT MOTOR PTC THERMISTOR OPERATION

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

If operation is not as specified, replace the motor.





15. Taiwan Models Only:
INSPECT REAR POWER SEAT SWITCH CONTINUITY

Slide switch LH:

Switch position	Tester connection	Specified condition
FRONT	B1 – B5 B5 – B7	Continuity
OFF	B1 – B7 B5 – B7	Continuity
REAR	B1 – B7 B5 – B6	Continuity

Slide switch RH:

Switch position	Tester connection	Specified condition
FRONT	B4 – B6 B9 – B7	Continuity
OFF	B4 – B7 B7 – B10	Continuity
REAR	B4 – B7 B7 – B10	Continuity

Headrest switch LH (for vertical):

Switch position	Tester connection	Specified condition
UP	B2 – B6 B7 – B8	Continuity
OFF	B2 – B7 B7 – B8	Continuity
DOWN	B2 – B7 B6 – B8	Continuity

Headrest switch RH (for vertical):

Switch position	Tester connection	Specified condition
UP	B3 – B6 B7 – B9	Continuity
OFF	B3 – B7 B7 – B9	Continuity
DOWN	B3 – B7 B6 – B9	Continuity

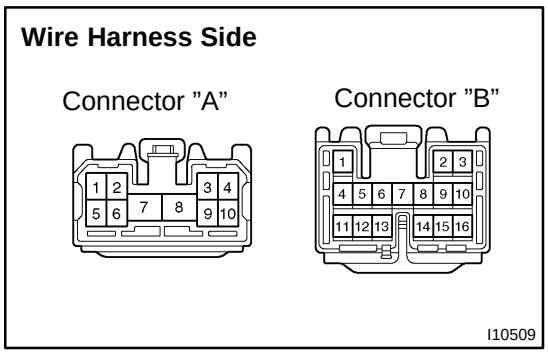
Headrest switch LH (for turning)

Switch position	Tester connection	Specified condition
FRONT	A4 –B7	Continuity
OFF	–	No continuity
REAR	A5 –B7	Continuity

Headrest switch RH (for turning)

Switch position	Tester connection	Specified condition
FRONT	A4 –B7	Continuity
OFF	–	No continuity
REAR	A5 –B7	Continuity

If continuity is not as specified, replace the switch.



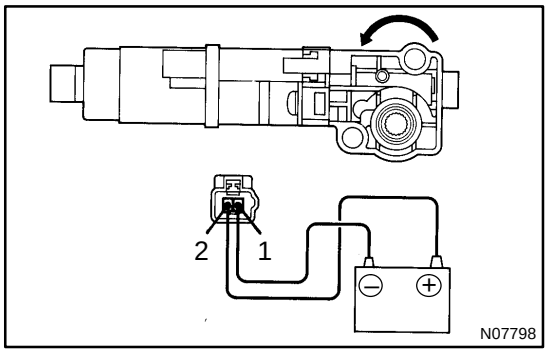
16. INSPECT REAR POWER SEAT SWITCH CIRCUIT

(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, as shown.

Tester connection	Condition	Specified condition
B7 – Ground	Constant	Continuity
B8 – Ground	Constant	Battery positive voltage

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

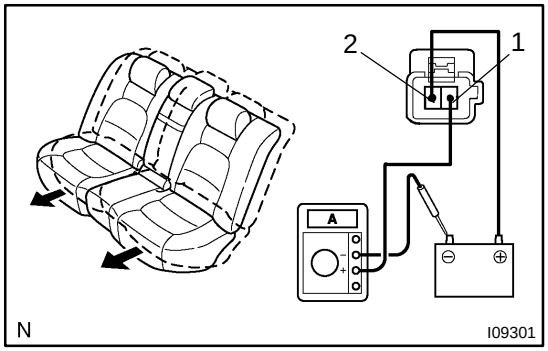


17. INSPECT SLIDE MOTOR OPERATION

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

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

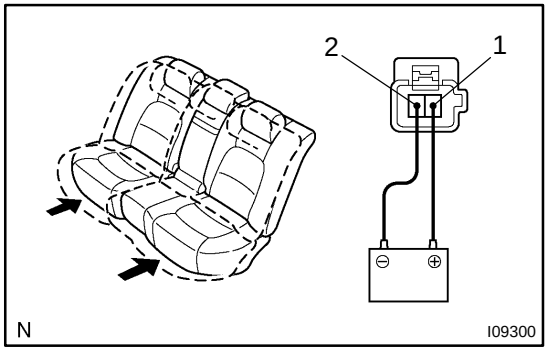
If operation is not as specified, replace the motor.



18. INSPECT SLIDE 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 battery negative (–) terminal, then move the seat to front position.

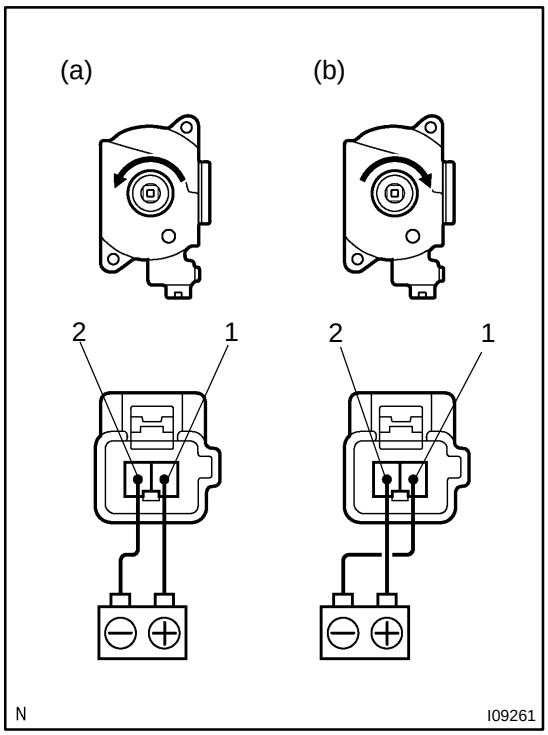
(b) Continue to apply voltage and check that the current changes to less than 1 ampere with 4 to 90 seconds.



(c) Disconnect the lead from terminals.

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

If operation is not as specified, replace the motor.

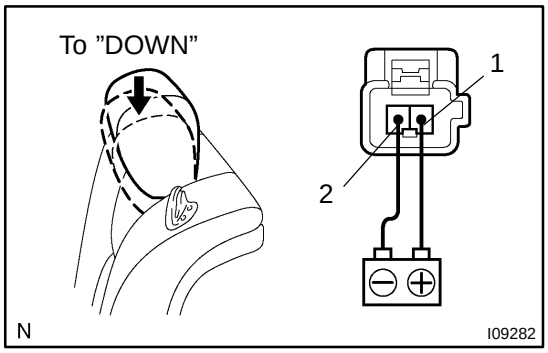


19. INSPECT HEADREST MOTOR OPERATION (For vertical)

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

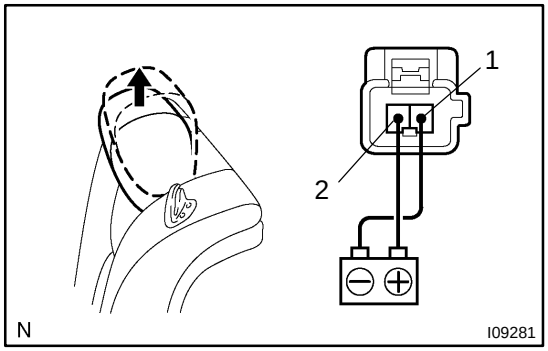
(b) Reverse the polarity, and check that the motor turns clockwise.

If operation is not as specified, replace the motor.



20. INSPECT HEADREST MOTOR CIRCUIT BREAKER OPERATION (For vertical)

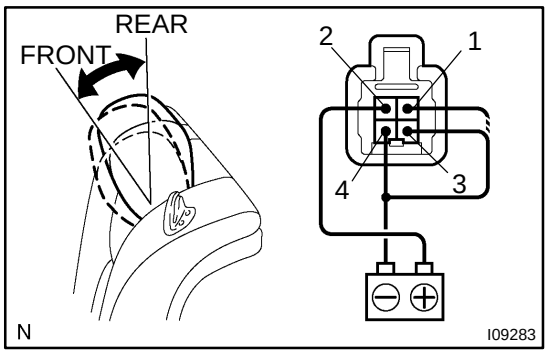
(a) Connect the positive (+) lead from the battery to terminal 1 and negative (–) lead to terminal 2 on the motor connector and move the headrest to DOWN position.



(b) Continue to apply voltage, check that there is a circuit breaker operation noise within 4 to 60 seconds.

(c) Reverse the polarity check that the headrest begins to move UP side within approx. 60 seconds.

If operation is not as specified, replace the headrest.



21. INSPECT HEADREST MOTOR OPERATION
(For turning)

(a) Connect the positive (+) lead from the battery to terminal 2 and negative (–) lead to terminal 4.

(b) Connect the negative (–) lead to each terminal and check that the headrest turns at each position, as shown in the chart.

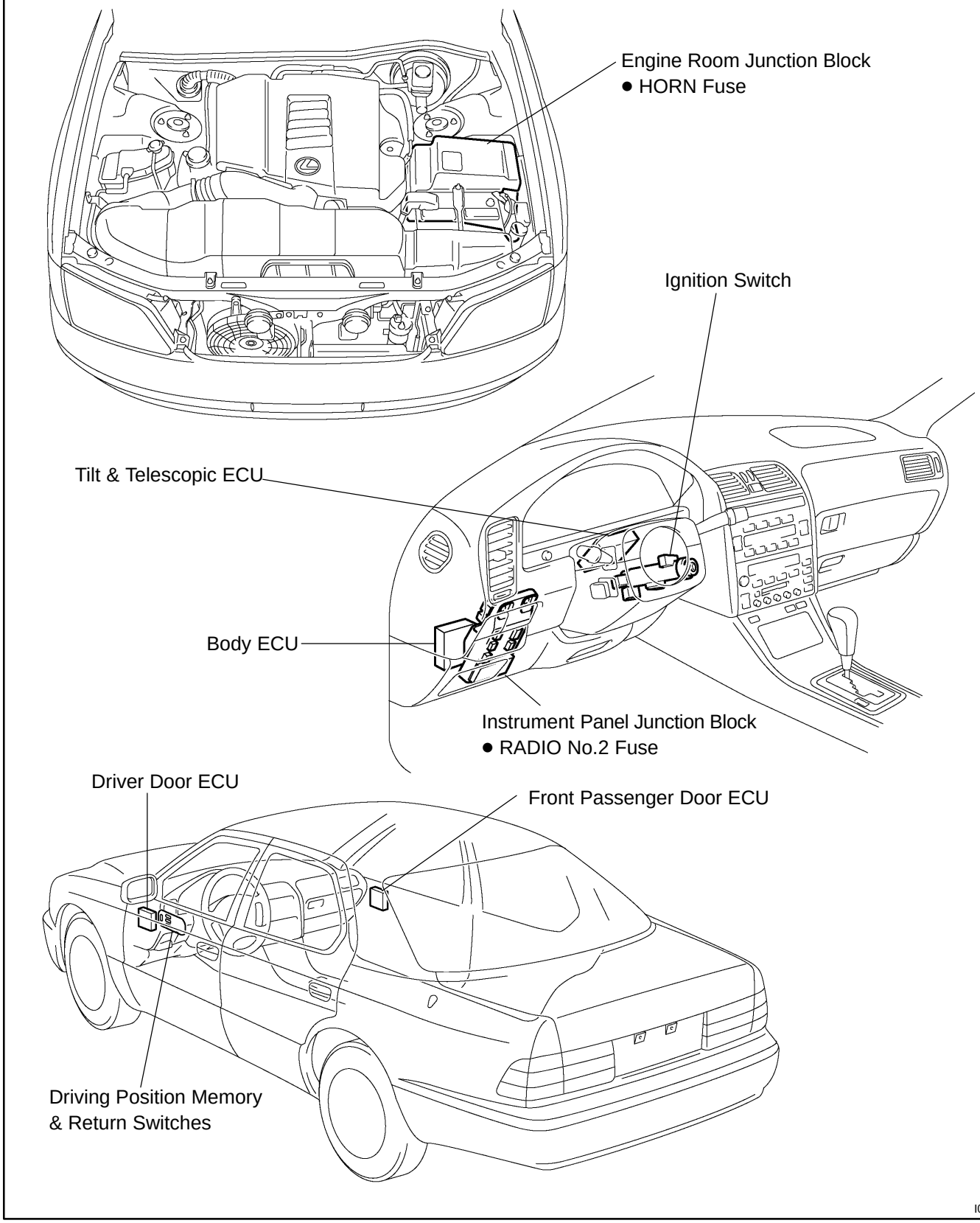
Tester connection	Position
1	FRONT
3	REAR

If operation is not as specified, replace the headrest.

POWER MIRROR CONTROL SYSTEM

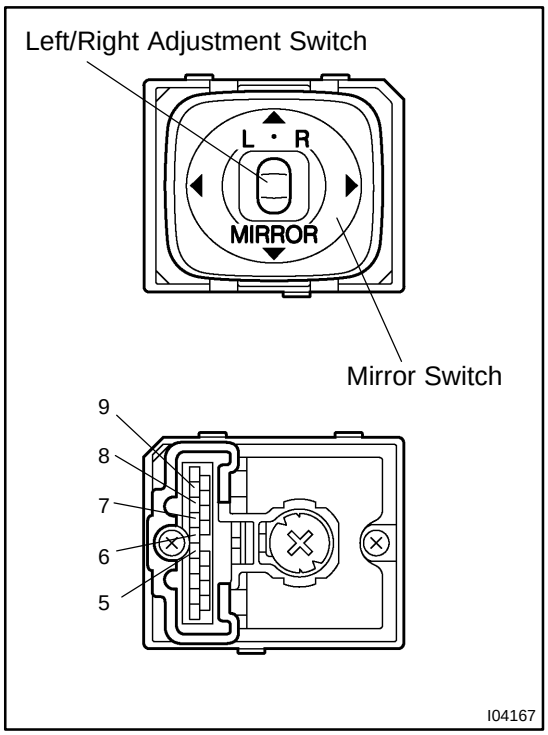
BE0CN–01

LOCATION



BE11W–01

INSPECTION



1. INSPECT MIRROR SWITCH CONTINUITY

Switch position	Tester connection	Resistance (Ω)
LEFT	8 – 9	100
RIGHT	8 – 9	0
Illumination	5 – 6	Continuity

If continuity is not as specified, replace the switch.

2. INSPECT MIRROR SWITCH RESISTANCE

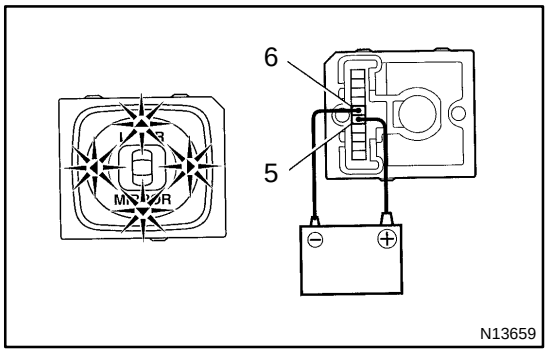
Measure resistance between terminals 7 and 9 at each switch position, as shown in the chart.

Switch position	Resistance (Ω)
UP	Approx. 100
RIGHT	250
DOWN	470
LEFT	800

If resistance is not as specified, replace the switch.

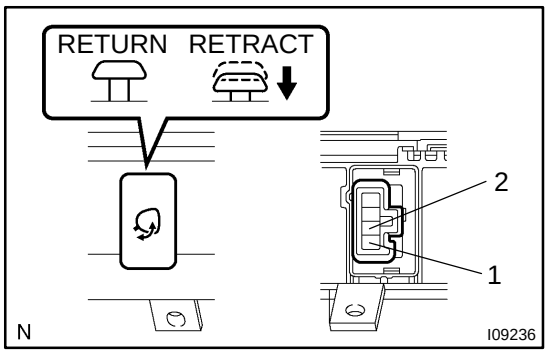
3. INSPECT MIRROR SWITCH CIRCUIT

(See page DI–452)



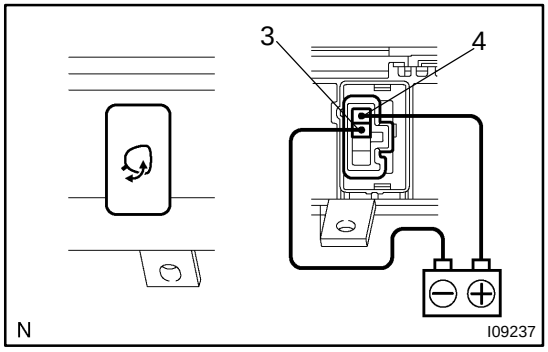
4. INSPECT MIRROR SWITCH INDICATOR LIGHT OPERATION

Connect the positive (+) lead from the battery to terminal 5 and the negative (–) lead to terminal 6, and check that the indicator light does not light up, replace the switch.



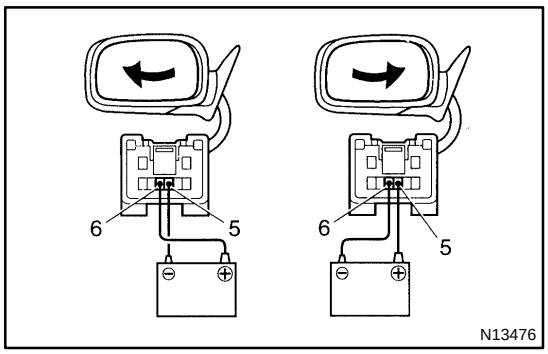
5. CANADA and TAIWAN models only: INSPECT RETRACT SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
RETURN	–	No continuity
RETRACT	1 – 2	Continuity



6. CANADA and TAIWAN models only: INSPECT RETRACT SWITCH INDICATOR OPERATION

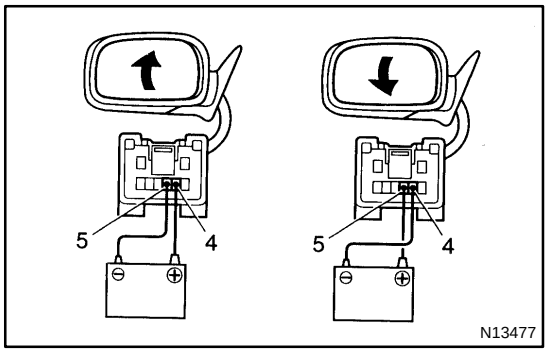
Connect the positive (+) lead from the battery to terminal 4 and negative (–) lead to terminal3 and check that the indicator does no light up, replace the switch.



7. INSPECT MIRROR MOTOR OPERATION
w/o Driving position memory:

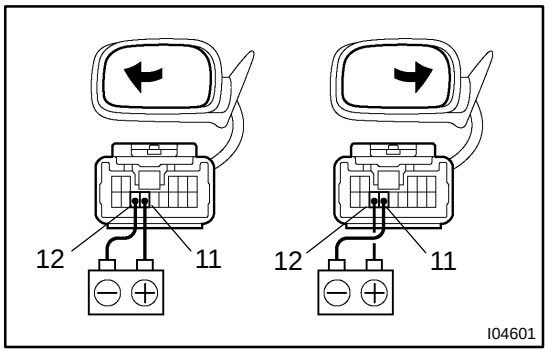
(a) Connect the positive (+) lead from the battery to terminal 6 and negative (–) lead to terminal 5, then check that the mirror turns to left side.

(b) Reverse the polarity and check that the mirror turns to right side.



(c) Connect the positive (+) lead from the battery to terminal 4 and negative (–) lead to terminal 5, then check that the mirror turns upward.

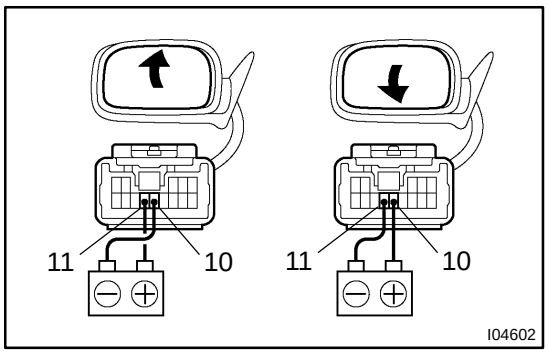
(d) Reverse the polarity and check that the mirror turns downward.



8. INSPECT MIRROR MOTOR OPERATION
w/ Driving position memory:

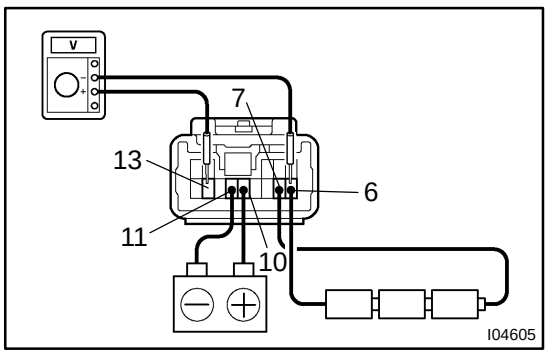
(a) Connect the positive (+) lead from the battery to terminal 11 and negative (–) lead to terminal 12, then check that the mirror turns to left side.

(b) Reverse the polarity and check that the mirror turns to right side.



(c) Connect the positive (+) lead from the battery to terminal 11 and negative (–) lead to terminal 10, then check that the mirror turns upward.

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



9. INSPECT MIRROR POSITION SENSORS

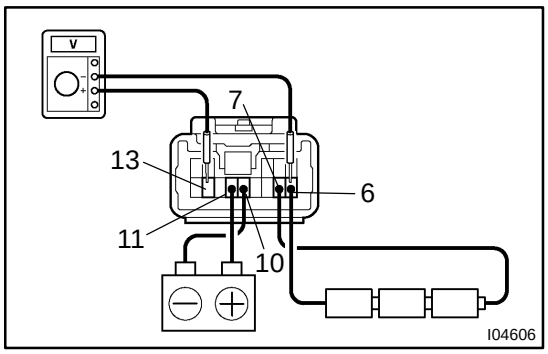
HINT:

Strip off the vinyl tape of the connector and remove terminals 6, 7, 10, 11, 12, 13 and 14 from the connector housing.

(a) Connect a series of three 1.5 V dry cell batteries.

(b) Connect the positive (+) lead from the dry cell batteries to terminal 7 and the negative (–) lead to terminal 6.

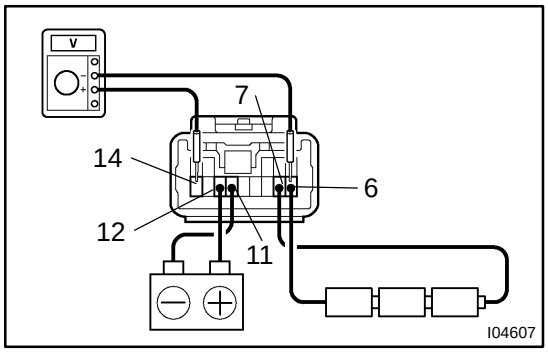
(c) Connect the positive (+) lead from the voltmeter to terminal 13 and the negative (–) lead to terminal 6.



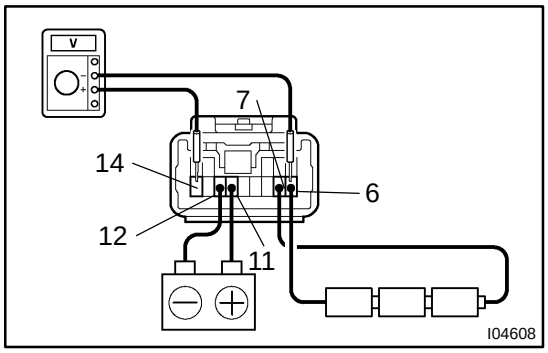
(d) Apply battery positive voltage to terminals 10 and 11, then check that the voltage gradually changes according to the table below while the mirror moves between the uppermost position and lowermost position.

Mirror position	Lowermost	Mirror position	Uppermost
Voltage	2.8 – 5.0	Changes gradually	0 – 0.9

If voltage value is not as specified, replace the motor assembly.

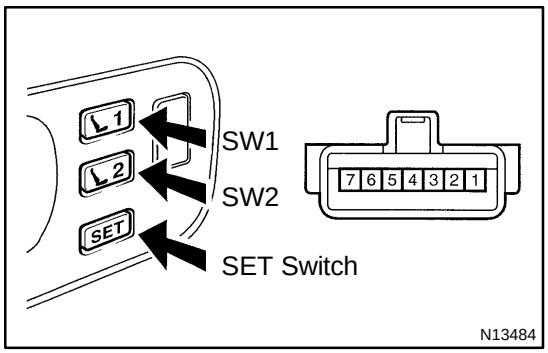


(e) Disconnect the 4 leads of the battery and voltmeter.
(f) Connect the positive (+) lead from the voltmeter to terminal 14 and negative (–) lead to terminal 6.
(g) Apply battery positive voltage to terminals 11 and 12, then inspect that the voltage gradually changes according to the table below while the mirror moves between the left–most position and right–most position.



Mirror position	Left–most	Mirror position	Right–most
Voltage LEFT	2.8 – 5.0	Changes gradually	0 – 0.9
Voltage RIGHT	0 – 0.9	Changes gradually	2.8 –5.0

If voltage value is not as specified, replace the motor assembly.

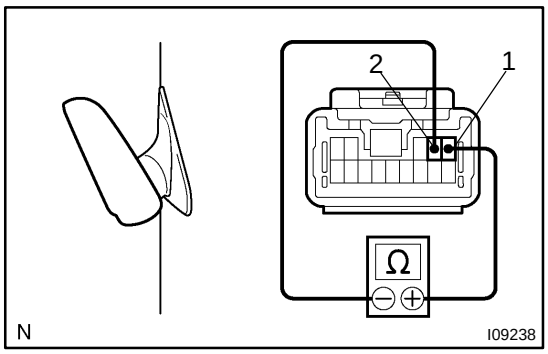


10. INSPECT DRIVING POSITION MEMORY AND RETURN SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
SET switch ON	3 – 4	Continuity
Return SW1 ON	3 – 7	Continuity
Return SW2 ON	3 – 6	Continuity

If continuity is not as specified, replace the switch.
If continuity is as specified, inspect the switch circuit.

11. INSPECT DRIVING POSITION MEMORY AND RETURN SWITCH CIRCUIT (See page DI–755)

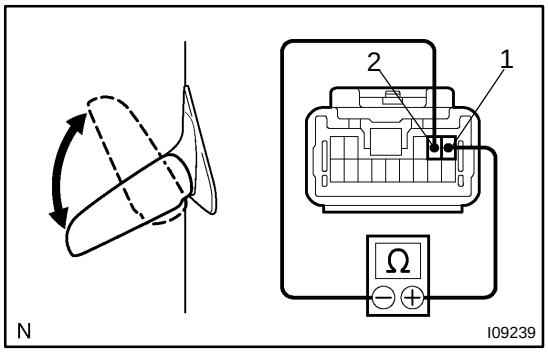


12. INSPECT ELECTRICAL RETRACT MOTOR CONTINUITY

(a) Connect the positive (+) lead from the battery to terminal 2 and negative (–) lead to terminal 1, check that the no continuity exists in folding position.

(b) Reverse the polarity, check that no continuity exists in driving position.

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



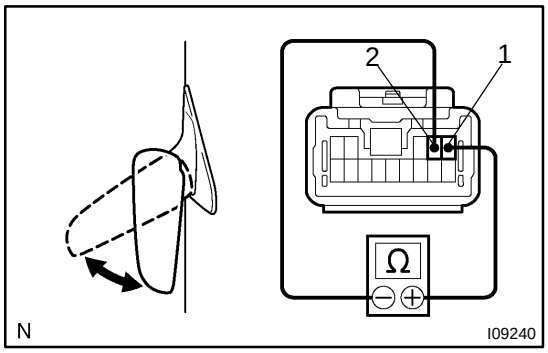
13. INSPECT ELECTRICAL RETRACT MOTOR CONTINUITY

At drive position:

(a) Connect the positive (+) lead from the battery to terminal 2 and negative (–) lead to terminal 1, check that continuity exists in folding position.

(b) Reverse the polarity, check that no continuity exists in driving position.

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



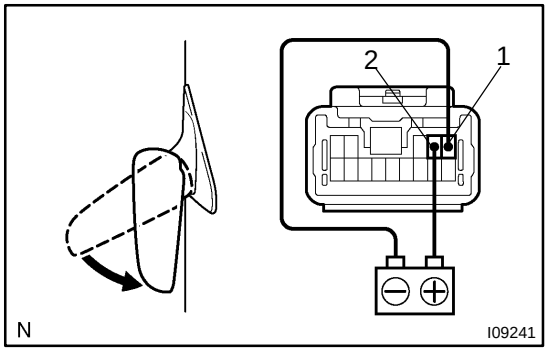
14. INSPECT ELECTRICAL RETRACT MOTOR CONTINUITY

Between drive position and retract position:

(a) Connect the positive (+) lead from the battery to terminal 2 and negative (–) lead to terminal 1, check that continuity exists in folding position.

(b) Reverse the polarity, check that no continuity exists in driving position.

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



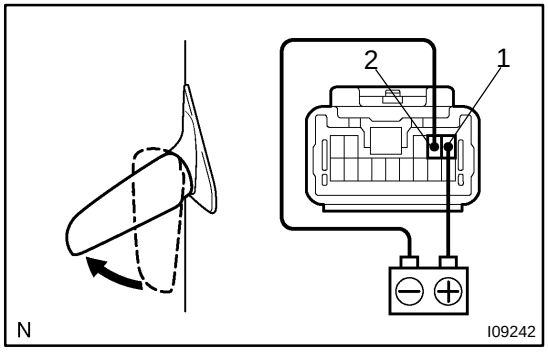
15. INSPECT MIRROR MOTOR OPERATION

(a) Connect the positive (+) lead from the battery to terminal 2 and negative (–) lead to terminal 1.

(b) Check that the motor turns (moves to folding position).

NOTICE:

These tests must be performed quickly (within 5 – 10 seconds) to prevent the coil from burning out.



(c) Connect the positive (+) lead from the battery to terminal 1 and negative (–) lead to terminal 2.

(d) Check that the motor turns (moves to driving position).

NOTICE:

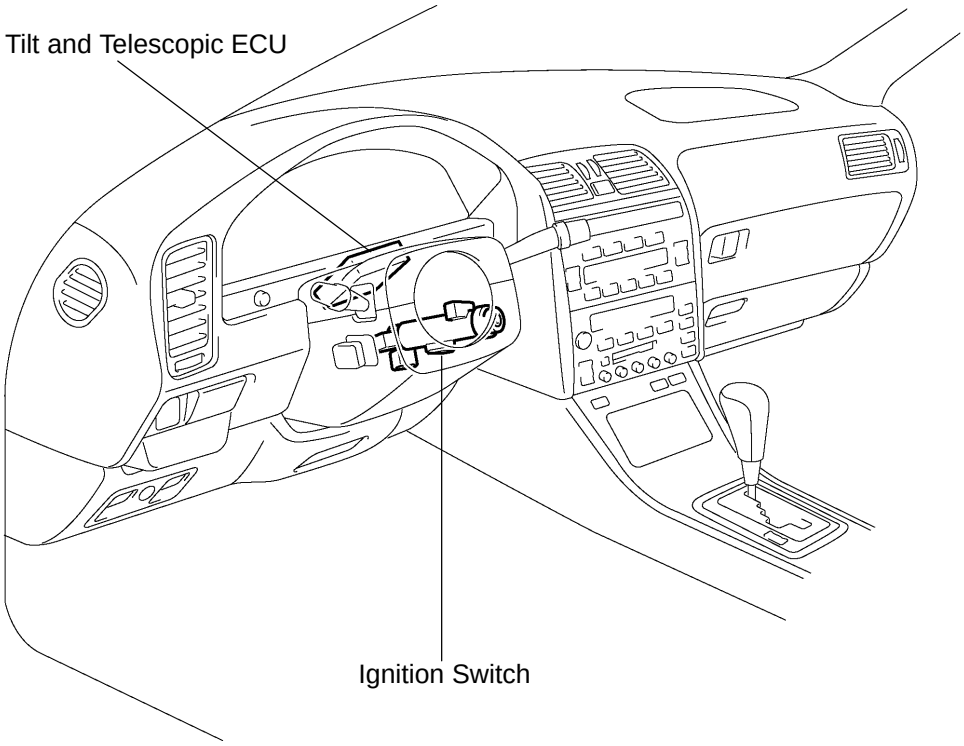
These tests must be performed quickly (within 5 – 10 seconds) to prevent the coil from burning out.

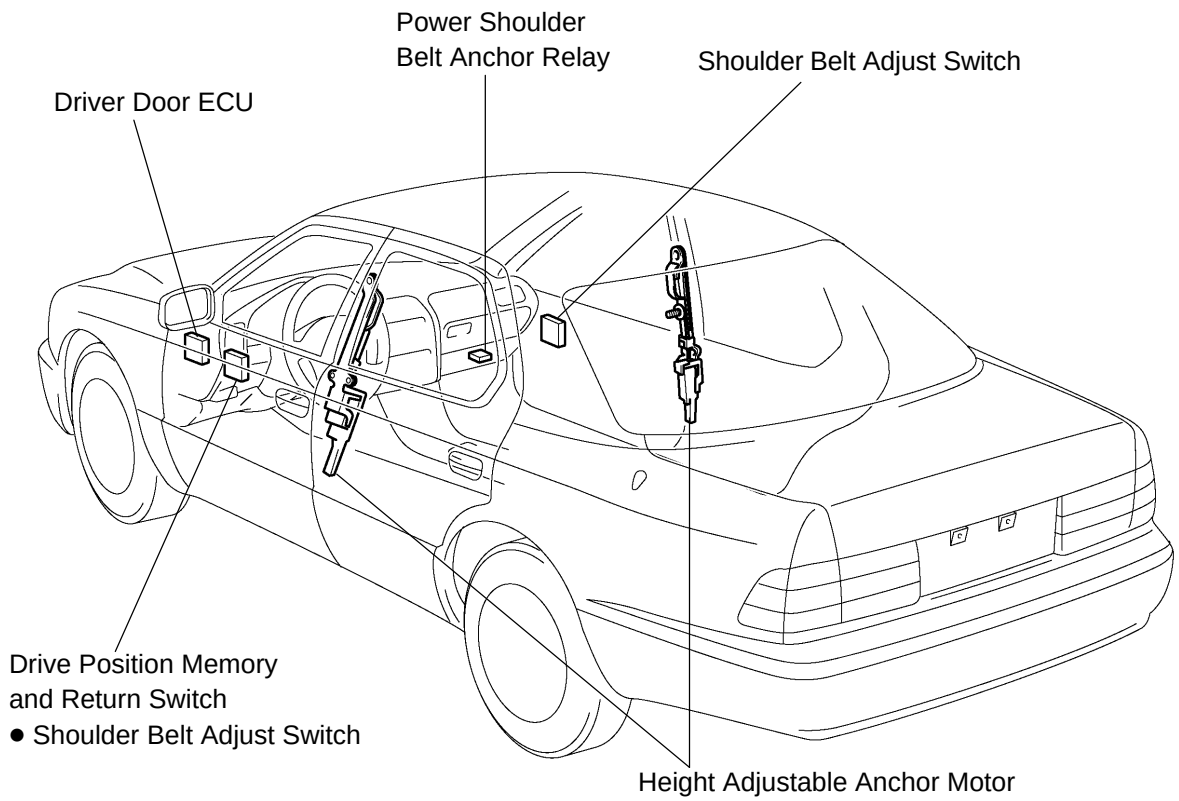
If operation is not as specified, replace the mirror assembly.

POWER SHOULDER BELT ANCHORAGE SYSTEM

LOCATION

BE0CP–01

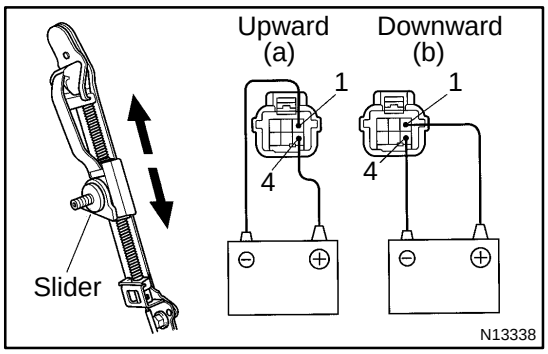




I03235

BE0CQ–01

INSPECTION

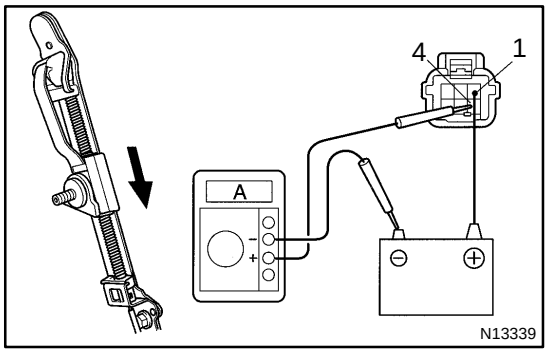


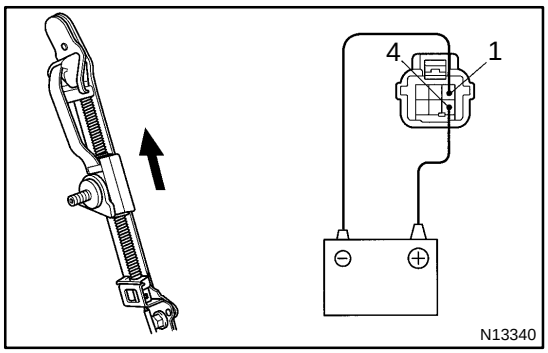
1. INSPECT DRIVER'S HEIGHT ADJUSTABLE ANCHOR MOTOR AND SENSOR OPERATION

(a) Connect the positive (+) lead from the battery to terminal 4 and the negative (–) lead to terminal 1, and check that the slider moves upward.

(b) Reverse the polarity and check that the slider moves downward.

If operation is not as specified, replace the height adjustable anchor motor.





2. Inspection using an ammeter:
INSPECT DRIVER'S HEIGHT ADJUSTABLE ANCHOR MOTOR AND SENSOR PTC THERMISTOR OPERATION

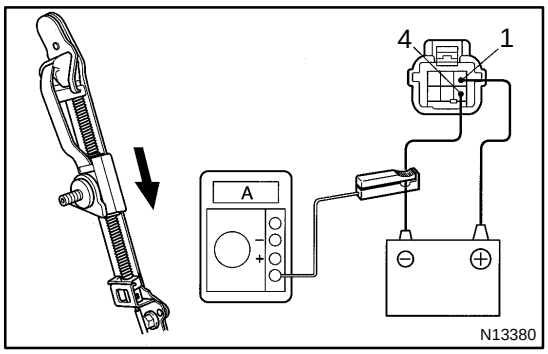
(a) Connect the positive (+) lead from the battery to terminal 1, the positive (+) lead from the ammeter to terminal 4, and the negative (–) lead to battery negative (–) terminal, then move the slider to end position.

(b) Continue to apply voltage and check the current changes to less than 0.1 A within 6 to 46 seconds.

(c) Disconnect the leads from terminals.

(d) Approximately 60 seconds later, connect the positive (+) lead from battery to terminal 4 and the negative (–) lead to terminal 1, and check that the slider moves to the opposite side.

If operation is not as specified, replace the height adjustable anchor motor.



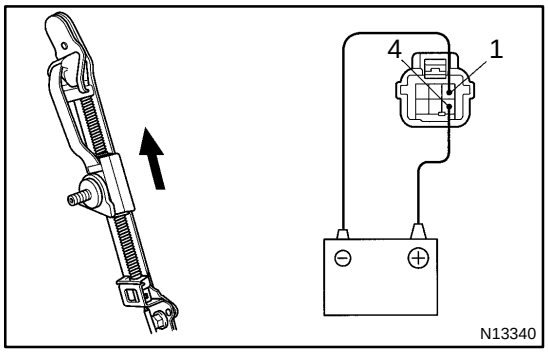
3. Inspection using an ammeter with a current–measuring probe:

INSPECT DRIVER'S HEIGHT ADJUSTABLE ANCHOR MOTOR AND SENSOR PTC THERMISTOR OPERATION

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

(b) Attach a current–measuring probe to the negative (–) lead, and move the slider to the end position.

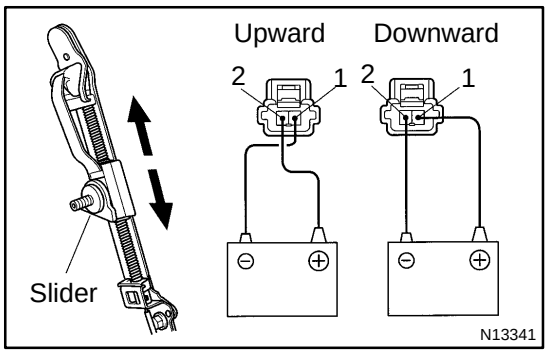
(c) Check the current changes to less than 0.1 A with 6 to 46 seconds.



(d) Disconnect the leads from terminals.

(e) Approximately 60 seconds later, reverse the polarity, and check that the slider moves to the opposite side.

If operation is not as specified, replace the height adjustable anchor motor.

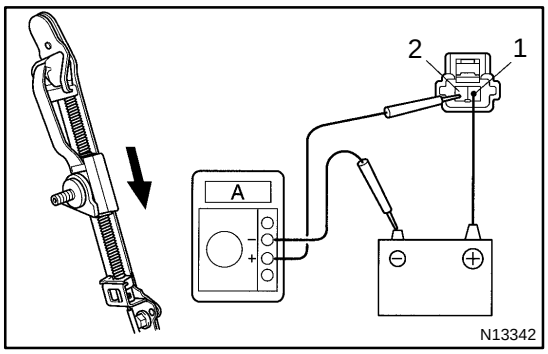


4. INSPECT PASSENGER'S HEIGHT ADJUSTABLE ANCHOR MOTOR AND SENSOR OPERATION

(a) Connect the positive (+) lead from the battery to terminal 2 and the negative (–) lead to terminal 1, and check that the slider moves upward.

(b) Reverse the polarity and check that the slider moves downward.

If operation is not as specified, replace the height adjustable anchor motor.

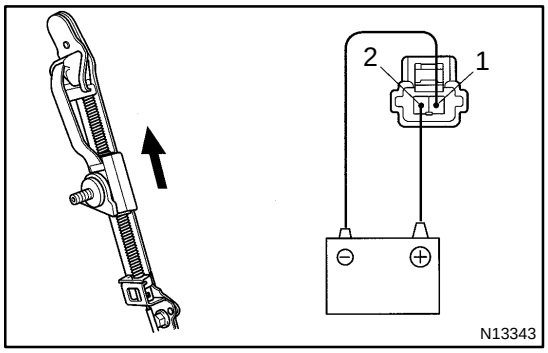


5. Inspection using an ammeter:
INSPECT PASSENGER'S HEIGHT ADJUSTABLE ANCHOR MOTOR AND SENSOR PTC THERMISTOR OPERATION

(a) Connect the positive (+) lead from the battery to terminal 1, the positive (+) lead from the ammeter to terminal 2, and the negative (–) lead to battery negative (–) terminal, then move the slider to end position.

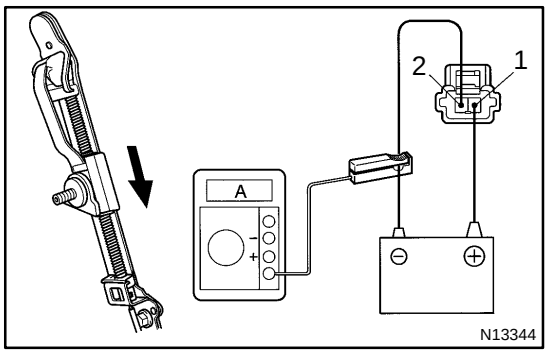
(b) Continue to apply voltage and check the current changes to less than 0.1 A within 6 to 46 seconds.

(c) Disconnect the leads from terminals.



(d) Approximately 60 seconds later, connect the positive (+) lead from battery to terminal 2 and the negative (–) lead to terminal 1, and check that the slider moves to the opposite side.

If operation is not as specified, replace the height adjustable anchor motor.

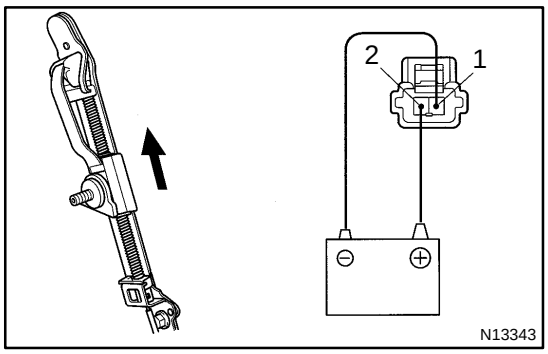


6. Inspection using an ammeter with a current–measuring probe:
INSPECT PASSENGER'S HEIGHT ADJUSTABLE ANCHOR MOTOR AND SENSOR PTC THERMISTOR OPERATION

(a) Connect the positive (+) lead from the battery to terminal 1 and the negative (–) lead to terminal 2.

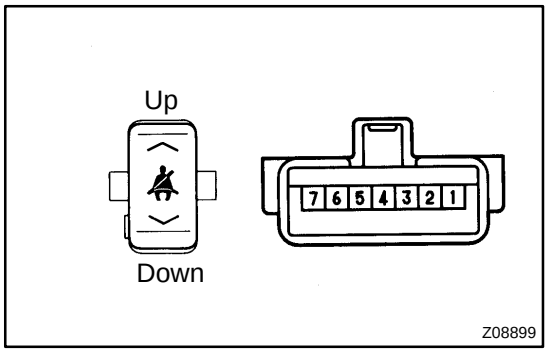
(b) Attach a current–measuring probe to the negative (–) lead, and move the slider to the end position.

(c) Check the current changes to less than 0.1 A within 6 to 46 seconds.



(d) Disconnect the leads from terminals.
(e) Approximately 60 seconds later, reverse the polarity and check that the slider moves to the opposite side.

If operation is not as specified, replace the height adjustable anchor motor.



7. INSPECT DRIVER'S SHOULDER BELT ADJUST SWITCH CIRCUIT (See page DI–755)

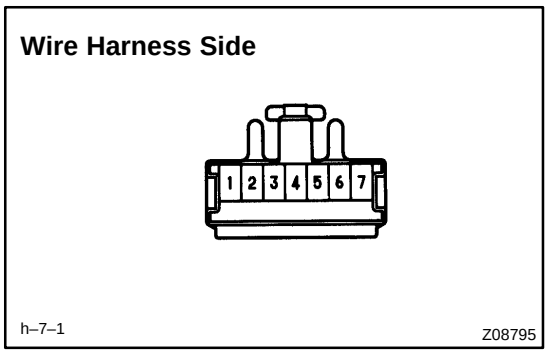
8. INSPECT DRIVER'S SHOULDER BELT ADJUST SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
UP	2 – 3	Continuity
OFF	–	No continuity
DOWN	1 – 3	Continuity

9. INSPECT PASSENGER'S SHOULDER BELT ADJUST SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
UP	1 – 7	Continuity
OFF	–	No continuity
DOWN	2 – 6	Continuity

If continuity is not as specified, replace the switch.

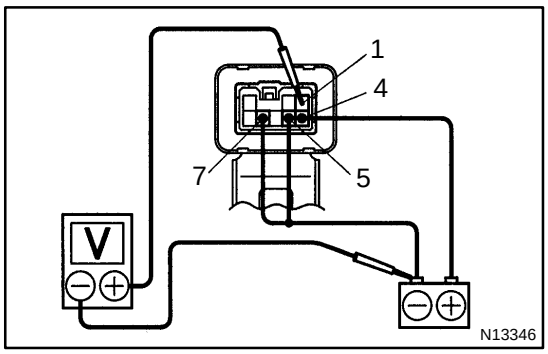


10. INSPECT PASSENGER'S SHOULDER BELT ADJUST SWITCH CIRCUIT

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

Tester connection	Condition	Specified condition
6 – Ground	Constant	Continuity
7 – Ground	Constant	Continuity

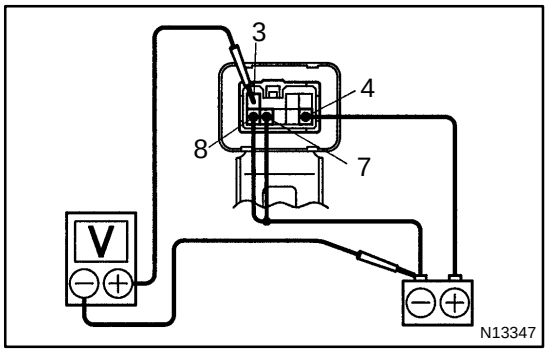
If circuit is not as specified, inspect wire harness.



11. Upward:
INSPECT SHOULDER BELT ANCHOR RELAY OPERATION

(a) Connect the positive (+) lead from the battery to terminal 4 and the negative (–) lead to terminal 5 and 7.

(b) Connect the positive (+) lead from the voltmeter to terminal 1 and negative (–) lead to battery negative (–) terminal, and check that there is battery positive voltage.

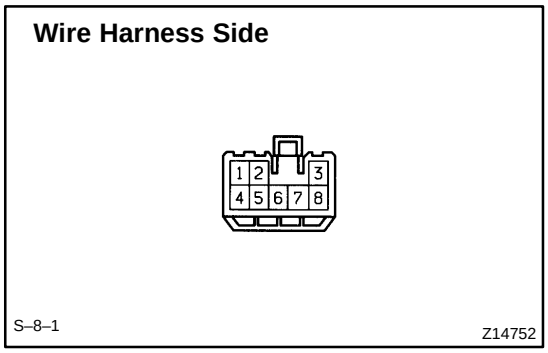


12. Downward:
INSPECT SHOULDER BELT ANCHOR RELAY OPERATION

(a) Connect the positive (+) lead from the battery to terminal 4 and the negative (–) lead to terminal 7 and 8.

(b) Connect the positive (+) lead from the voltmeter to terminal 3 and negative (–) lead to battery negative (–) terminal, and check that there is battery positive voltage.

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

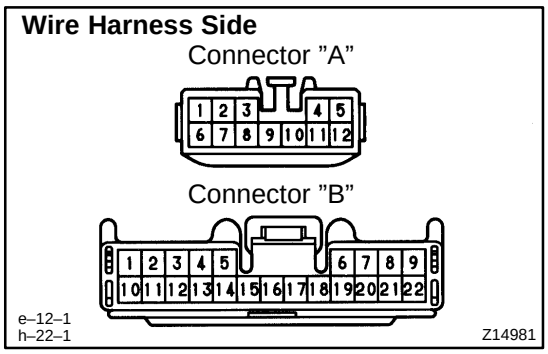


13. INSPECT SHOULDER BELT ANCHOR RELAY CIRCUIT

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

Tester connection	Condition	Specified condition
5 – Ground	Seat belt adjust switch position UP	Continuity
7 – Ground	Constant	Continuity
8 – Ground	Seat belt adjust switch position DOWN	Continuity
4 – Ground	Constant	Battery positive voltage

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



14. INSPECT TILT AND TELESCOPIC ECU CIRCUIT

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

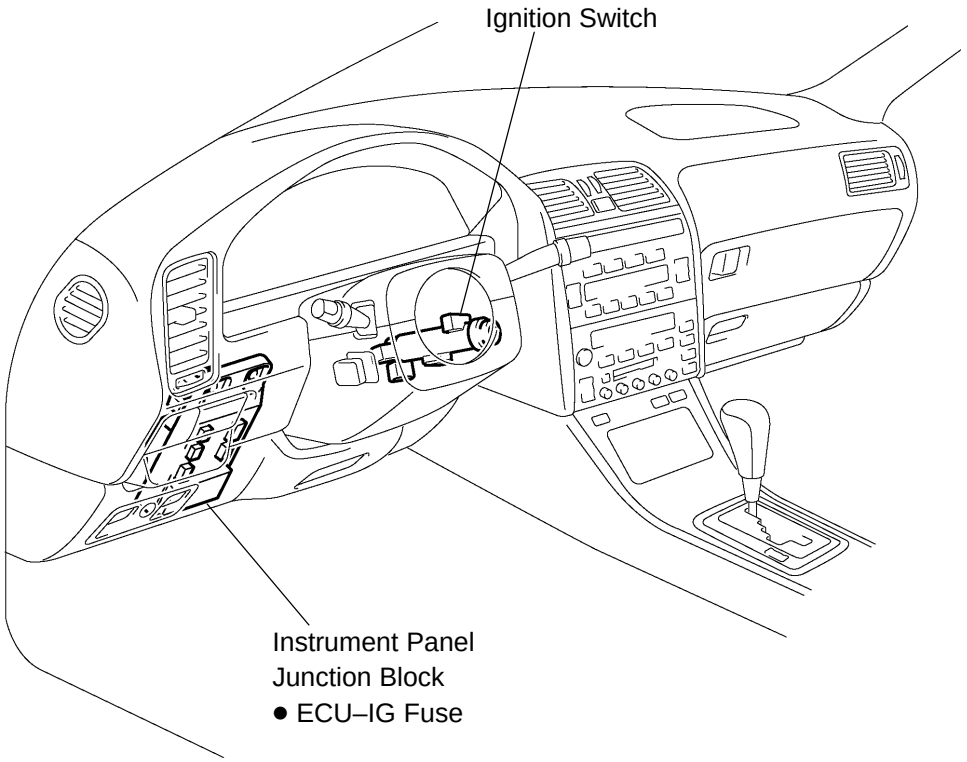
Tester connection	Condition	Specified condition
A7 – Ground B9 – Ground	Constant	Continuity
A4 – Ground B22 – Ground	Constant	Battery positive voltage
B15 – Ground	Ignition switch turned to ON	Battery positive voltage
A6 – B8	Move the driver's height adjustable anchor sensor	Resistance changes from Approx. 0 to 5 kΩ
B8 – B17	Constant	Approx. 4 – 6 kΩ

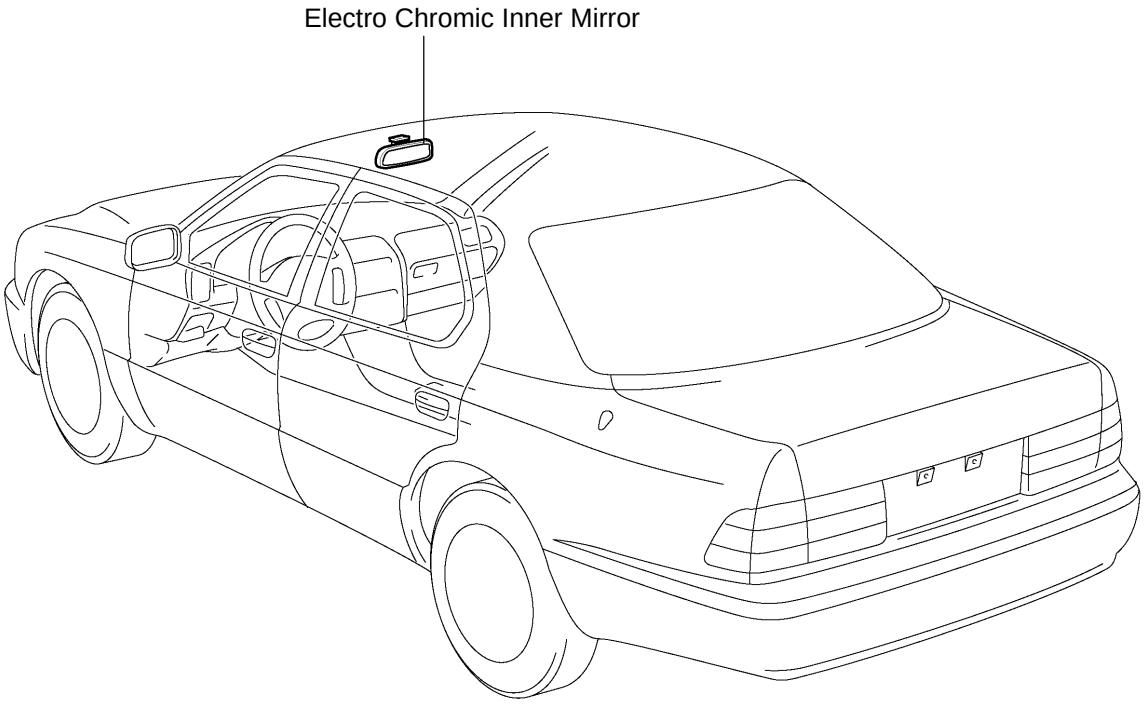
If circuit is not as specified, inspect the circuit connected to other parts.

ELECTRO CHROMIC MIRROR SYSTEM

BE0CR–01

LOCATION





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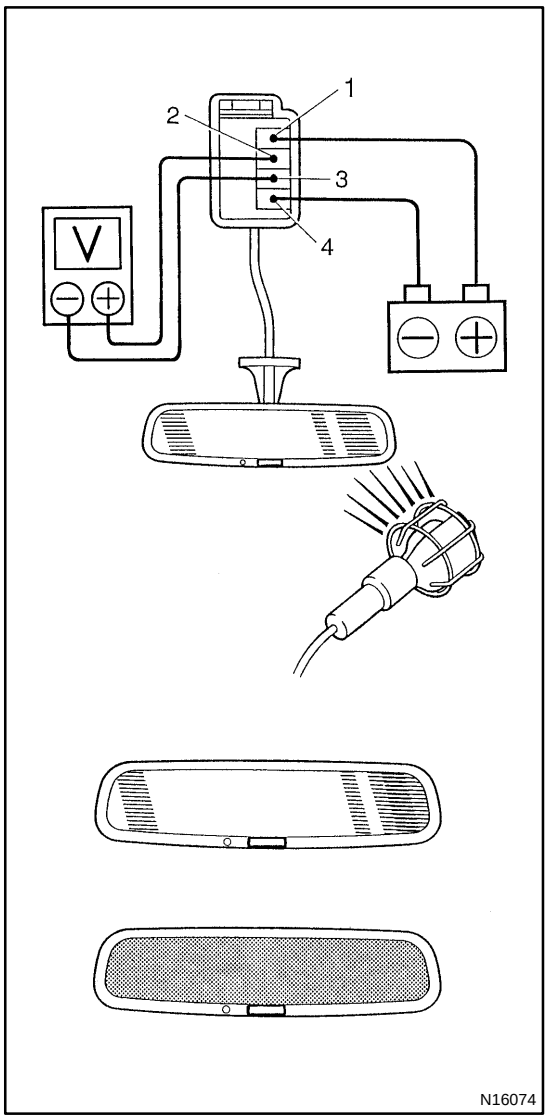
BE0CS–01

INSPECTION



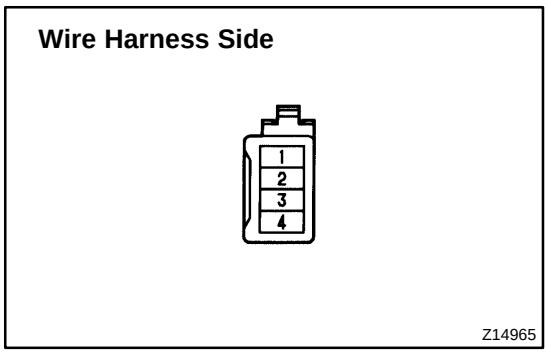
1. INSPECT ELECTRO CHROMIC INNER MIRROR OPERATION

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

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

(c) Shine an electric light on the mirror, and check that there is battery positive voltage and mirror surface becomes ”bright” to ”dark”.

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

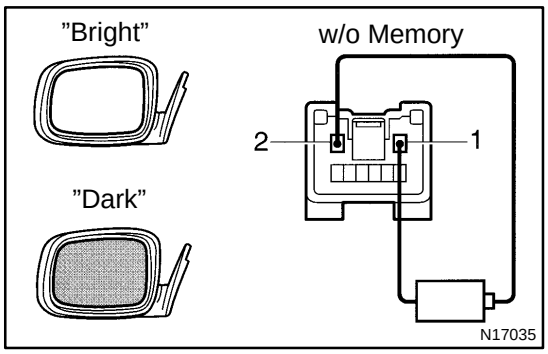


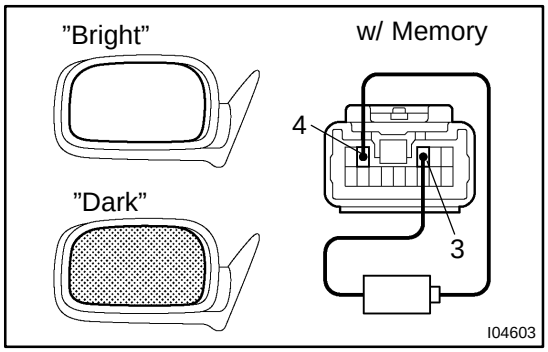
2. INSPECT ELECTRO CHROMIC INNER MIRROR CIRCUIT

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

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

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





3. INSPECT ELECTRO CHROMIC OUTER MIRROR OPERATION

w/o Driving position memory:

(a) Disconnect the outer mirror connector.

(b) Connect the positive (+) lead from the dry through battery to terminal 2 and the negative (–) lead to terminal 1, then check that the mirror surface become ”dark”.

(c) Reconnect to the dry through battery by the reverse order, then check that the mirror surface become ”bright”.

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

4. INSPECT ELECTRO CHROMIC OUTER MIRROR OPERATION

w/ Driving position memory:

(a) Disconnect the outer mirror connector.

(b) Connect the positive (+) lead from the dry through battery to terminal 4 and the negative (–) lead to terminal 3, then check that the mirror surface become ”dark”.

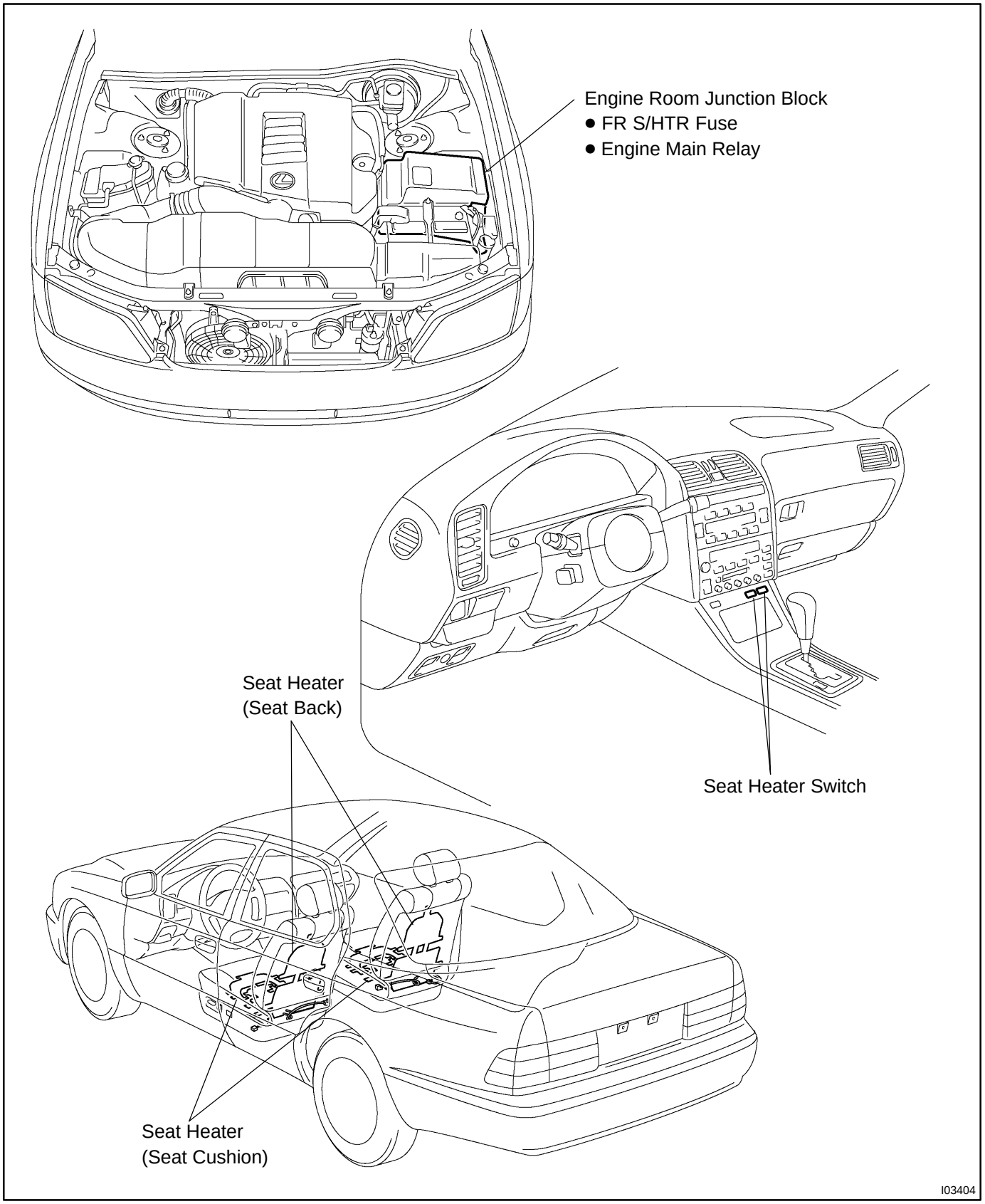
(c) Reconnect to the dry through battery by the reverse order, then check that the mirror surface become ”bright”.

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

SEAT HEATER SYSTEM

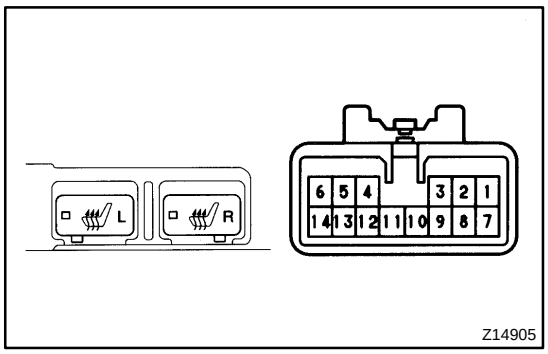
BE0CT–01

LOCATION



BE0CU–01

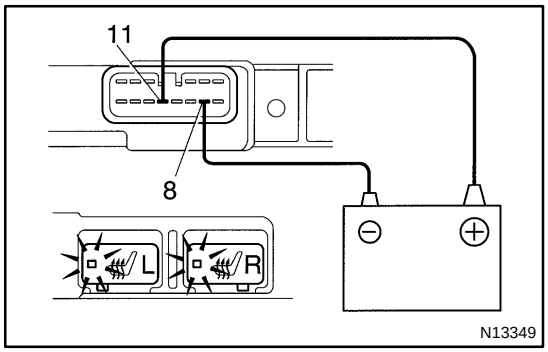
INSPECTION



1. INSPECT SEAT HEATER SWITCH CONTINUITY

Condition	Tester connection	Specified condition
OFF	–	No continuity
ON (Left)	8 – 9 – 11	Continuity
ON (Right)	8 – 11 – 13	Continuity
Illumination	10 – 12	Continuity

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

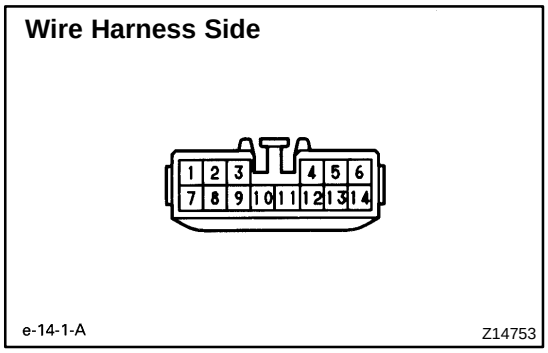


2. INSPECT SEAT HEATER SWITCH INDICATOR

(a) Connect the positive (+) lead from the battery to terminal 11 and the negative (–) lead to terminal 8.

(b) Push the switch and check that the indicator light lights up.

If operation is not as specified, replace the switch.



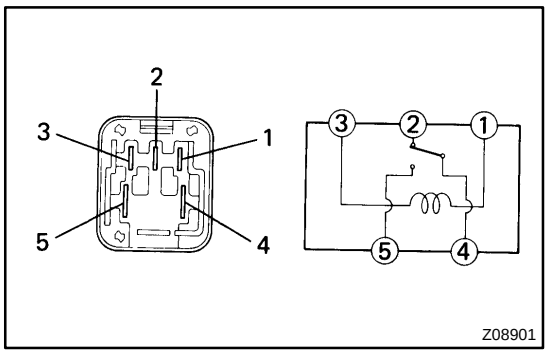
3. INSPECT SEAT HEATER SWITCH CIRCUIT

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

Tester connection to terminal number	Condition	Specified condition
8 – Ground	Constant	Continuity
9 – Ground	Constant	* Continuity
13 – Ground	Constant	* Continuity
11 – Ground	Ignition switch turned to ON	Battery positive voltage

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

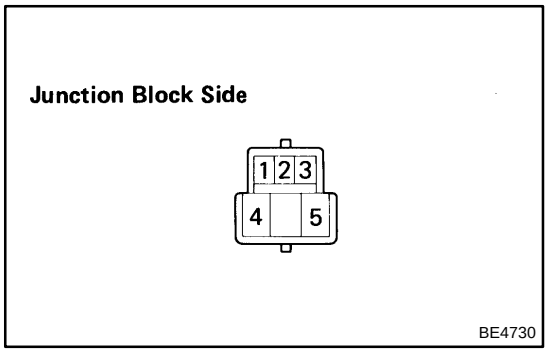
If circuit is not as specified, inspect the circuits connected to other parts.



4. INSPECT ENGINE MAIN RELAY CONTINUITY

Condition	Tester connection	Specified condition
Constant	1 – 3 2 – 4	Continuity
Apply B+ between terminals 1 and 3.	4 – 5	Continuity

If continuity is not as specified, replace the relay.

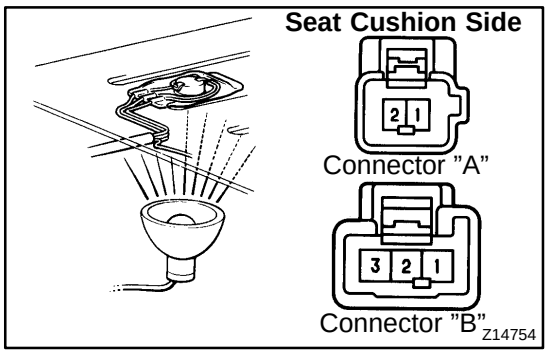


5. INSPECT ENGINE MAIN RELAY CIRCUIT

Remove the relay and inspect the connector on the junction block side, as shown.

Tester connection	Condition	Specified condition
2 – Ground	Constant	Continuity
3 – Ground	Constant	Continuity
1 – Ground	Ignition switch ON	Battery positive voltage
5 – Ground	Constant	Battery positive voltage

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



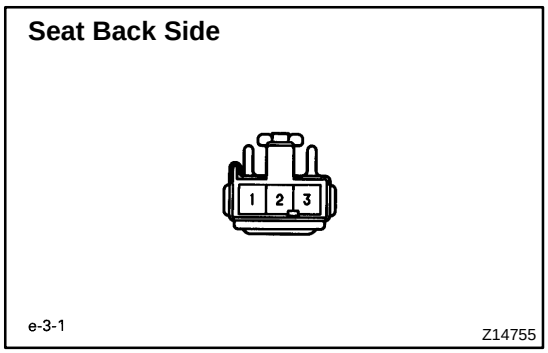
6. Seat Cushion:
INSPECT SEAT HEATER CONTINUITY

(a) Heat the thermostat with a light.

(b) Inspect the seat heater continuity between terminals.

Tester connection	Condition	Specified condition
A2 – B3	Constant	Continuity
A1 – B1	Seat heater temperature bellow 25˚C (77˚F)	Continuity
B1 – B2	Seat heater temperature bellow 25˚C (77˚F)	Continuity
A1 – B2	Seat heater temperature bellow 25˚C (77˚F)	Continuity
A1 – B1	Seat heater temperature above 55˚C (131˚F)	No continuity
B1 – B2	Seat heater temperature above 45˚C (113˚F)	No continuity
A1 – B2	Seat heater temperature above 45˚C (113˚F)	No continuity

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



7. Seat Back:
INSPECT SEAT HEATER CONTINUITY

Inspect the seat heater continuity between terminals, as shown.

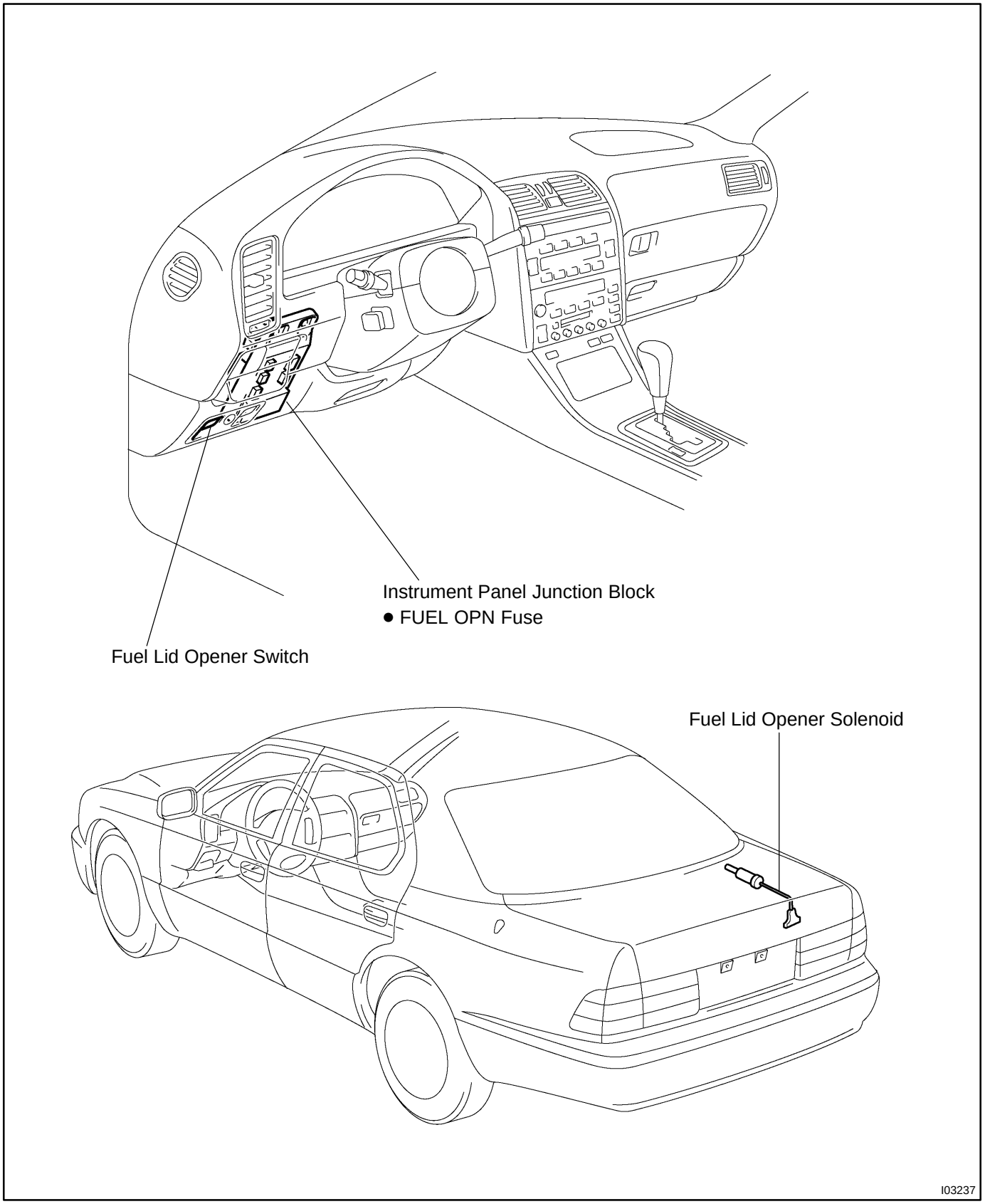
Tester connection	Condition	Specified condition
1 – 3	Constant	Continuity
2 – 3	Constant	Continuity

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

FUEL LID OPENER SYSTEM

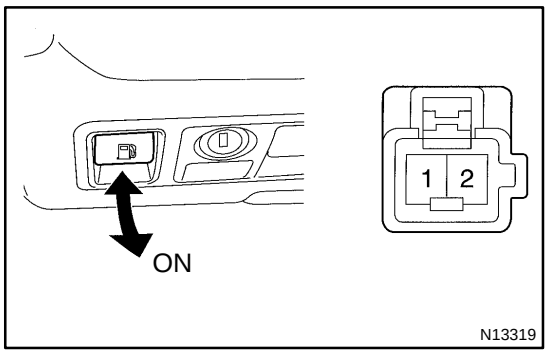
LOCATION

BE0CV–01



BE0CW–01

INSPECTION

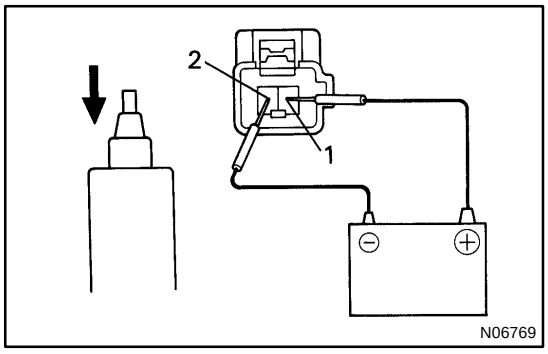


1. INSPECT FUEL LID OPENER SWITCH CONTINUITY

(a) Check that there is continuity between terminals with the switch ON (Lever pulled).

(b) Check that there is no continuity between terminals with the switch OFF (Lever free).

If continuity is not as specified, replace the switch assembly.



2. INSPECT FUEL LID OPENER SOLENOID OPERATION

(a) Apply battery positive voltage to the terminals.

(b) Check that the solenoid operates in the open direction.

If operation is not as specified, replace the solenoid.

AUDIO SYSTEM

BE0CX–03

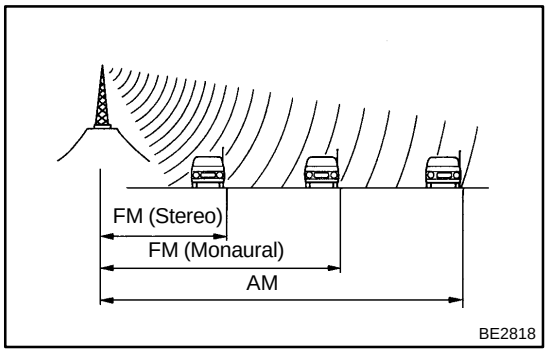
DESCRIPTION

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		AM		FM	
Modulation method	Amplitude modulation			Frequency modulation	

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

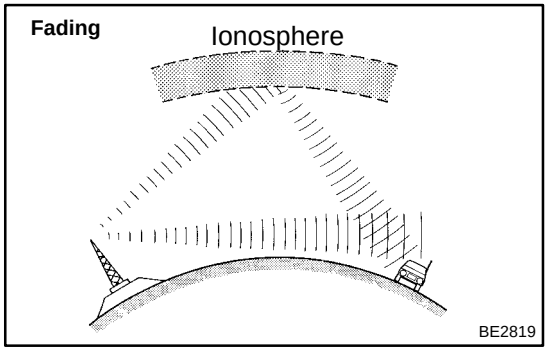


2. SERVICE AREA

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.

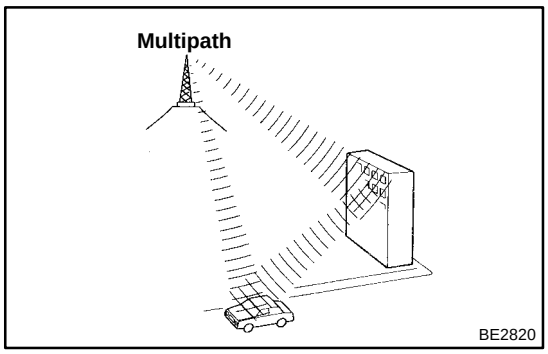
3. RECEPTION PROBLEMS

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.

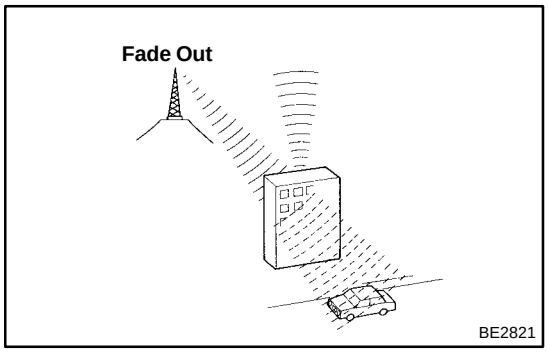


(1) Fading

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”.



(2) 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.



(3) 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. NOISE PROBLEMS

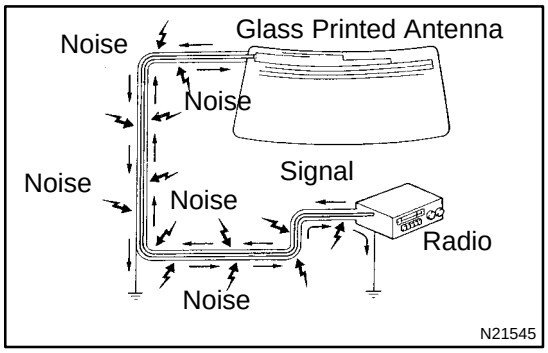
(a) Questionnaire for noise:
It is very important for noise troubleshooting to have good understanding of the claims from the customers, so that make the best use of following questionnaire and diagnose the problem accurately.

AM	Noise occurs at a specific place.	Strong possibility of foreign noise.
	Noise occurs when listening to faint broadcasting.	There is a case that the same program is broadcasted from each local station and that may be the case you are listening different station if the program is the same.
	Noise occurs only at night.	Strong possibility of the beat from a distant broadcasting.
FM	Noise occurs while driving and at a specific place.	Strong possibility of multipath noise and fading noise caused by the changes of FM waves.

HINT:
In the case that the noise occurrence condition does not meet any of the above questionnaire, check based on the ”Trouble Phenomenon”.
Refer to above descriptions for multipath and fading.

(b) Matters that require attention when checking:

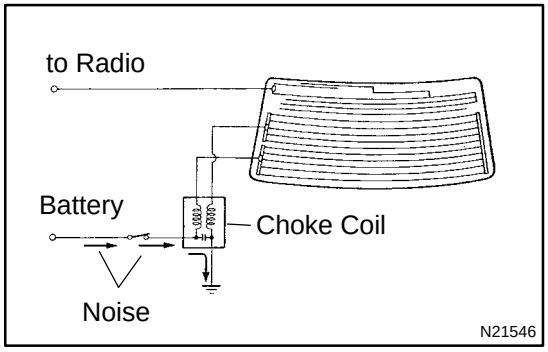
- Noise coming into the radio usually has no harm for practical use as the noise protection is taken and it is hardly thinkable for an extremely loud noise to come in. When extremely loud noise comes into the radio, check if the grounding is normal where the antenna is installed.
- Check if all the regular noise prevention parts are properly installed and if there is any installation of non–authorized parts and non–authorized wiring.
- If you leave the radio under out of tune (not tuning), it is easy to diagnose the phenomenon as noise occurs frequently.



(c) Antenna and noise:

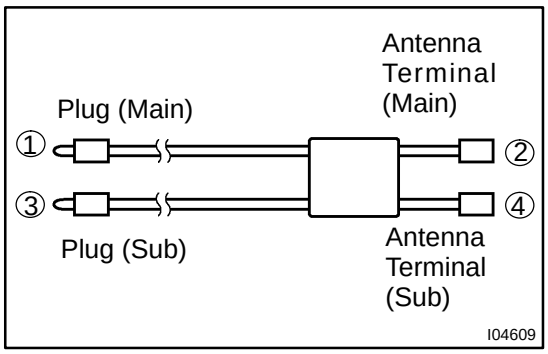
Electronic signal received by the antenna will reach to the radio transmitting through the core wire of the coaxial cable. Any noise wave other than radio wave is mixed into this core wire, that naturally causes noise in the radio and poor sound quality. In order to prevent these noises from mixing into the radio, the core wire inside the coaxial cable is covered with a mesh wire called shield wire. This shield wire shelters the noise and transmits it to the ground, thus preventing noise from mixing in.

If this shield wire has grounding failure, that causes noise.



(d) Choke coil and noise:

The choke coil is connected in the rear window defogger circuit. This is connected so to prevent noise from mixing into the radio by making the noise current included in the power source of the rear window defogger flow to the ground.

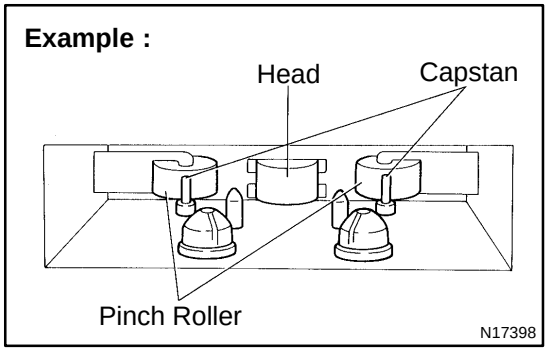


(e) Antenna code continuity check and grounding point:
HINT:
During troubleshooting, in case that the antenna code continuity check, grounding check and grounding check of the choke coil are needed, please check referring to the following illustration.

Terminal connection	Normal condition
(1) ↔ (2)	Continuity
(3) ↔ (4)	No continuity

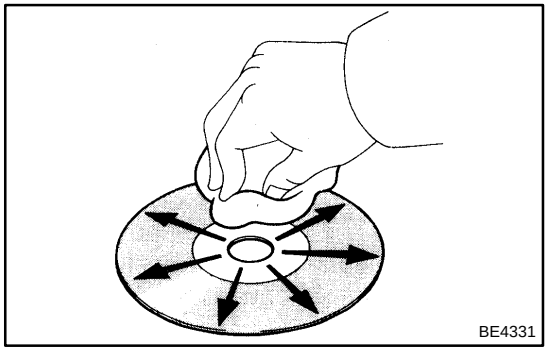
5. COMPACT DISC PLAYER

Compact Disc Players use a laser beam pick–up to read the digital signals recorded on the CD and reproduce analog signals of the music, etc.
HINT:
Never attempt to disassemble or oil any part of the player unit.
Do not insert any object other than a disc into the magazine.
NOTICE:
CD players use an invisible laser beam which could cause hazardous radiation exposure. Be sure to operate the player correctly as instructed.



6. 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.



7. 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.

8. 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 heightened. This lies behind this standardization.

The concrete objectives are explained below.

- 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.
- Various types of after market products have been able to add or replace freely.
- Thanks to 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.
- Conventionally, a new product developed by a manufacture could not be used due to a lack of compatibility with other manufactures products. Thanks to 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.
- 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.

BE0CY–01

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:

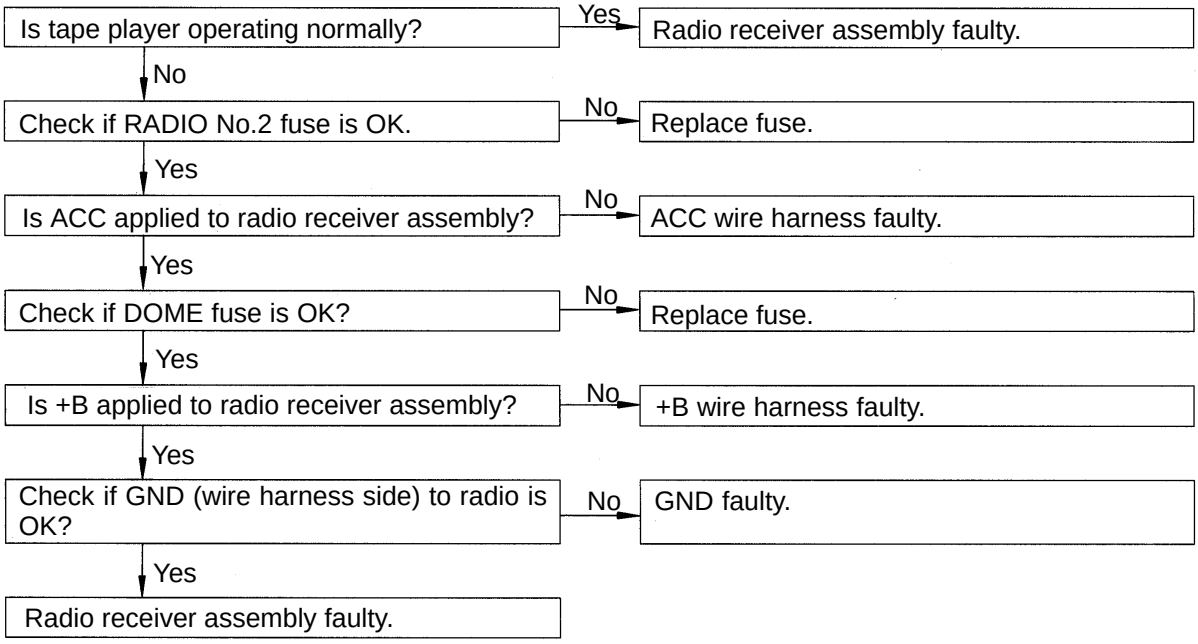
This inspection procedure is a simple troubleshooting which should be carried out on the vehicle during system operation and was prepared on the assumption of system component troubles (except for the wires and connectors, etc.).

Always inspect the trouble taking the following items into consideration.

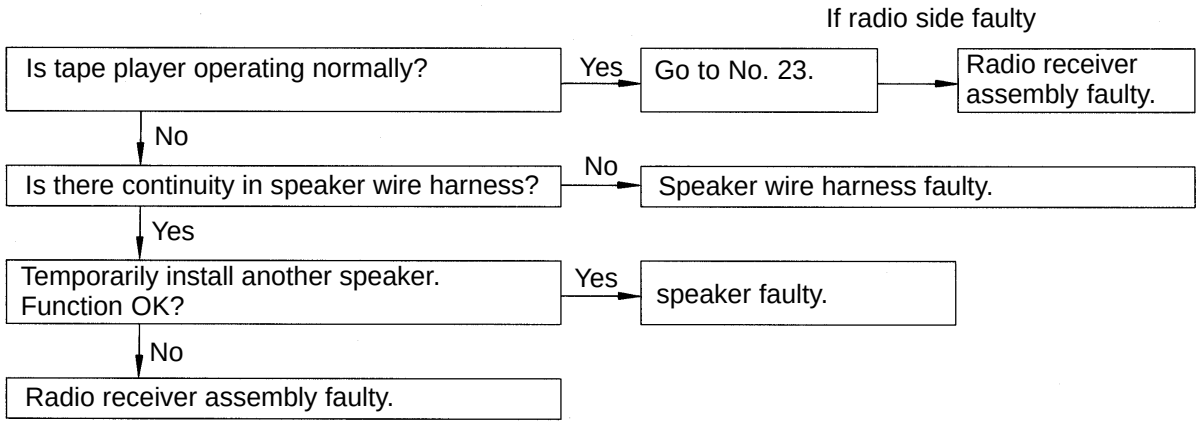
- Open or short circuit of the wire harness
- Connector or terminal connection fault

	Problem	No.
Radio	No power coming in.	1
	Power coming in, but radio not operating.	2
	Noise present, but AM – FM not operating.	3
	Either speaker does not work.	4
	Either AM or FM does not work.	5
	Reception poor (Volume faint).	5
	Few preset tuning bands.	5
	Sound quality poor.	6
	Cannot set station select button.	7
	Preset memory disappears.	7
Tape Player	Cassette tape cannot be inserted.	8
	Cassette tape inserts, but no power.	9
	Power coming in, but tape player not operating.	10
	Either speaker does not work.	11
	Sound quality poor (Volume faint).	12
	Tape jammed, malfunction with tape speed or auto–reverse.	13
	Cassette tape will not eject.	14
CD Player	CD cannot be inserted.	15
	CD inserts, but no power.	16
	Power coming in, but CD player not operating.	17
	Sound jumps.	18
	Sound quality poor (Volume faint).	19
	Either speaker does not work.	20
	CD will not eject.	21
Amplifier	No power coming in.	22
	Either speaker does not work.	23
Noise	Noise produced by vibration or shock while driving.	24
	Noise produced when engine starts.	25
	Noise occurs	26

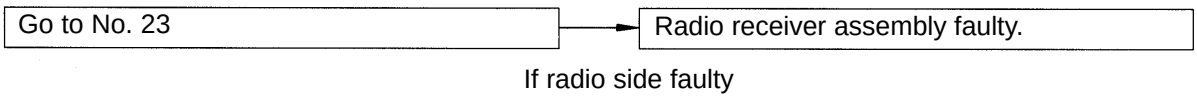
1	Radio	NO POWER COMING IN



2	Radio	POWER COMING IN, BUT RADIO NOT OPERATING



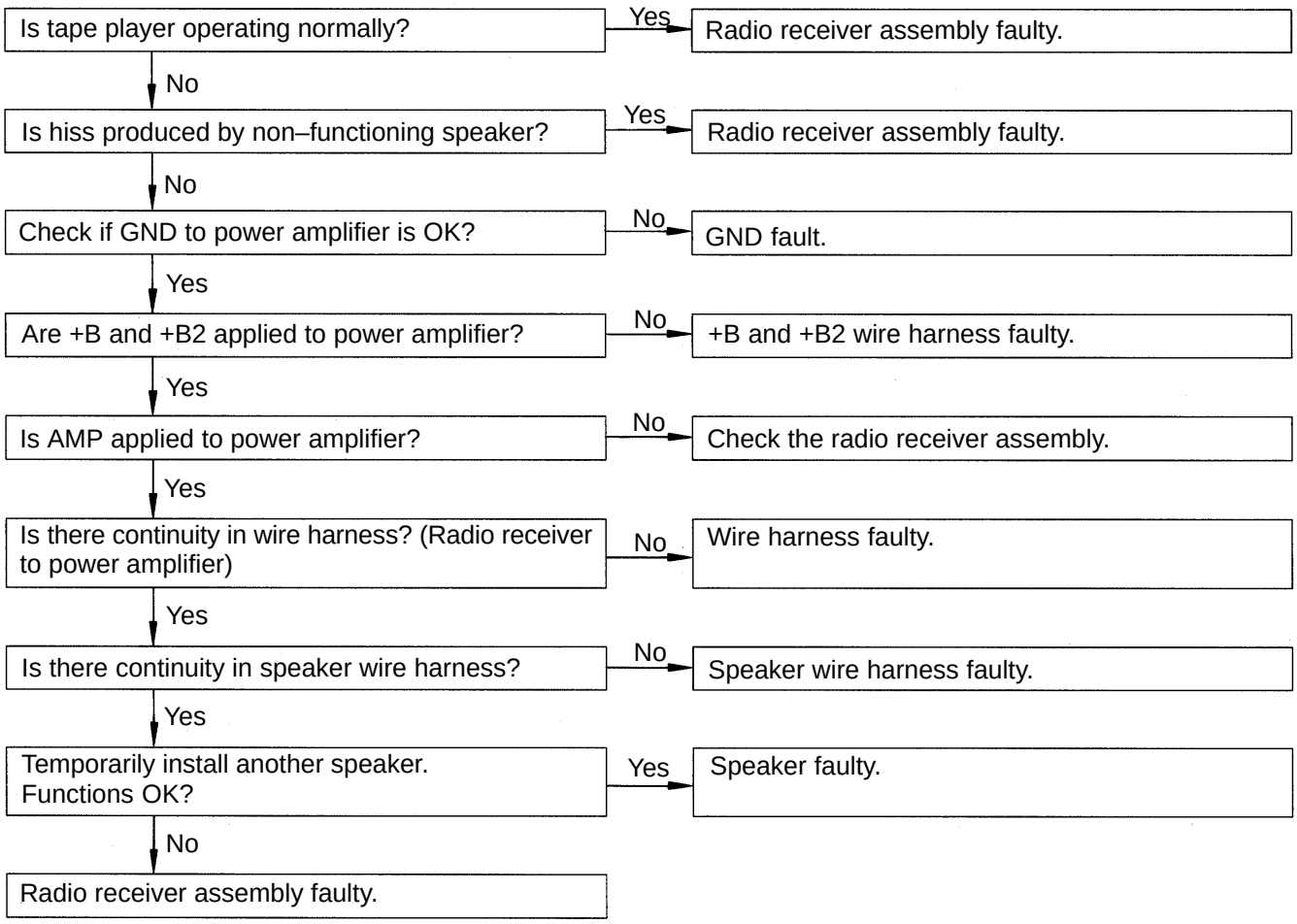
3	Radio	NOISE PRESENT, BUT AM–FM NOT OPERATING



If radio side faulty

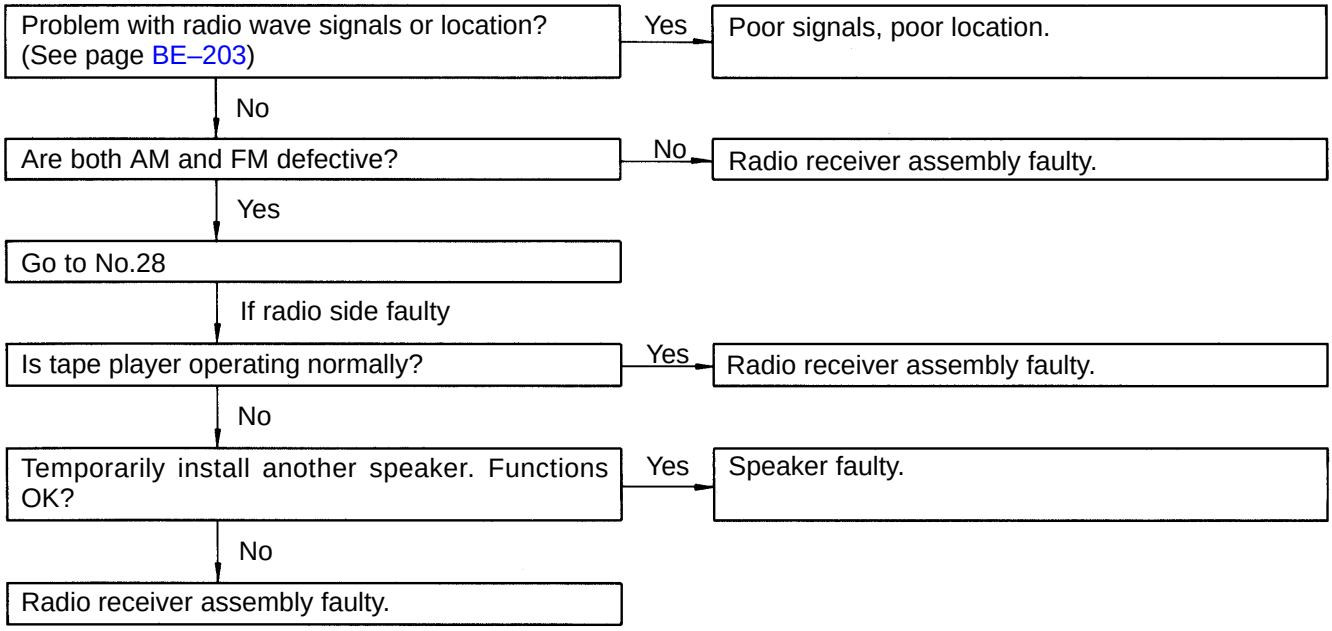
V06272

4	Radio	EITHER SPEAKER DOES NOT WORK

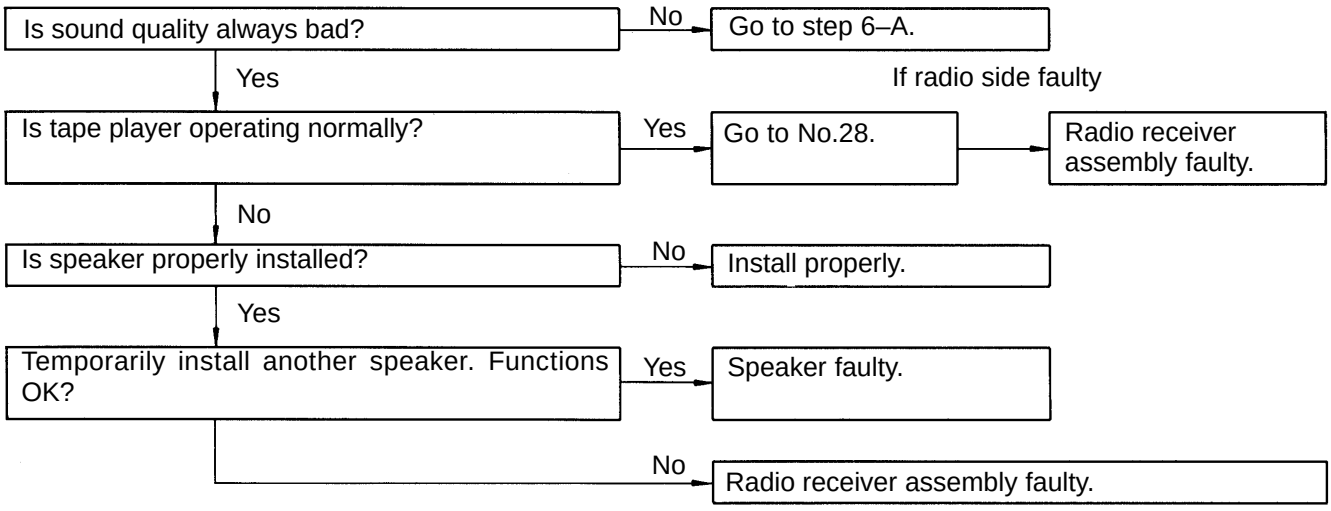


V06273

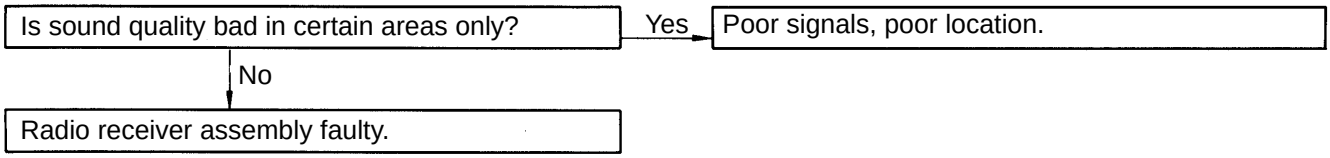
5	Radio	EITHER AM OR FM DOES NOT WORK, RECEPTION POOR (VOLUME FAINT), FEW PRESET TUNING BANDS



6	Radio	SOUND QUALITY POOR

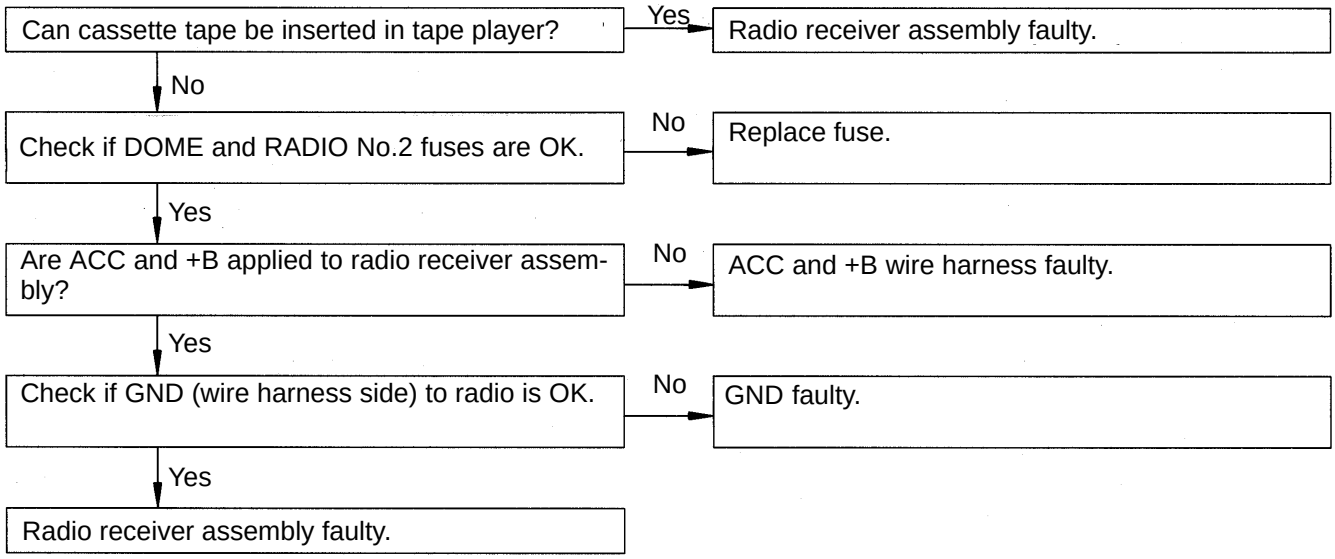


6–A.

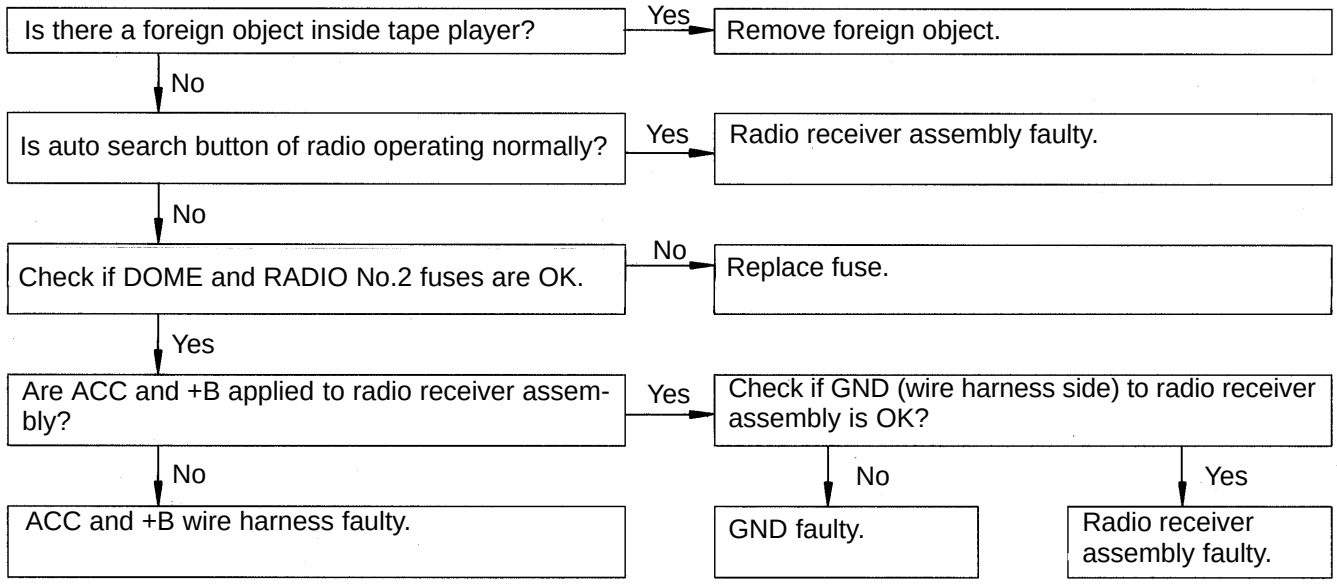


V03663

7	Radio	CANNOT SET STATION SELECT BUTTON, PRESET MEMORY DISAPPEARS

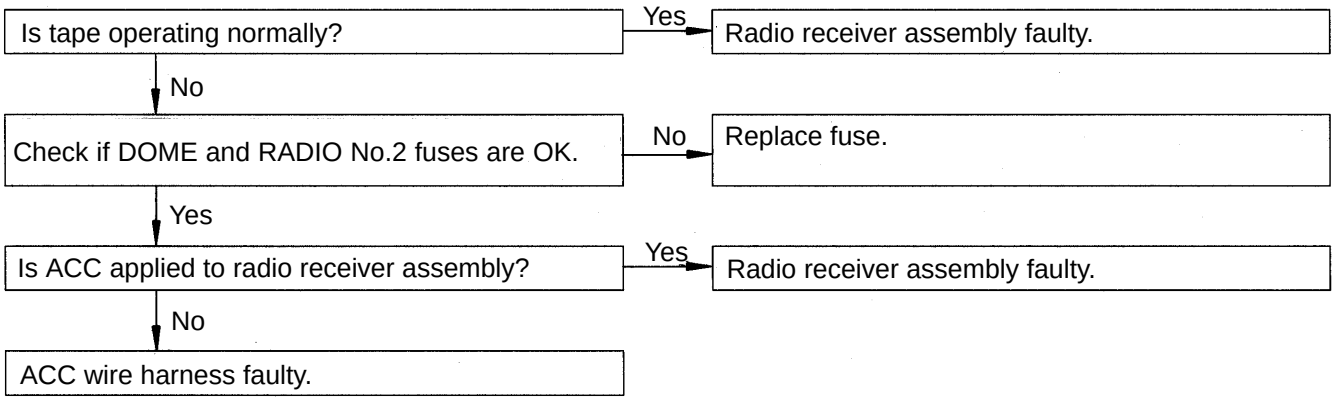


8	Tape Player	CASSETTE TAPE CANNOT BE INSERTED

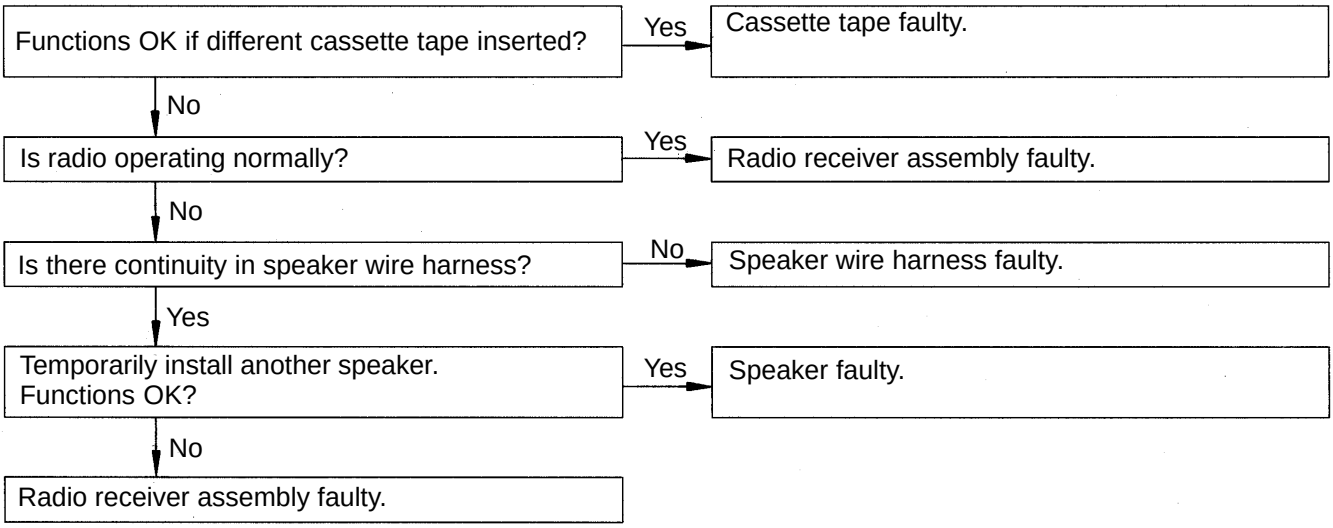


V06275

9	Tape Player	CASSETTE TAPE INSERTS, BUT NO POWER

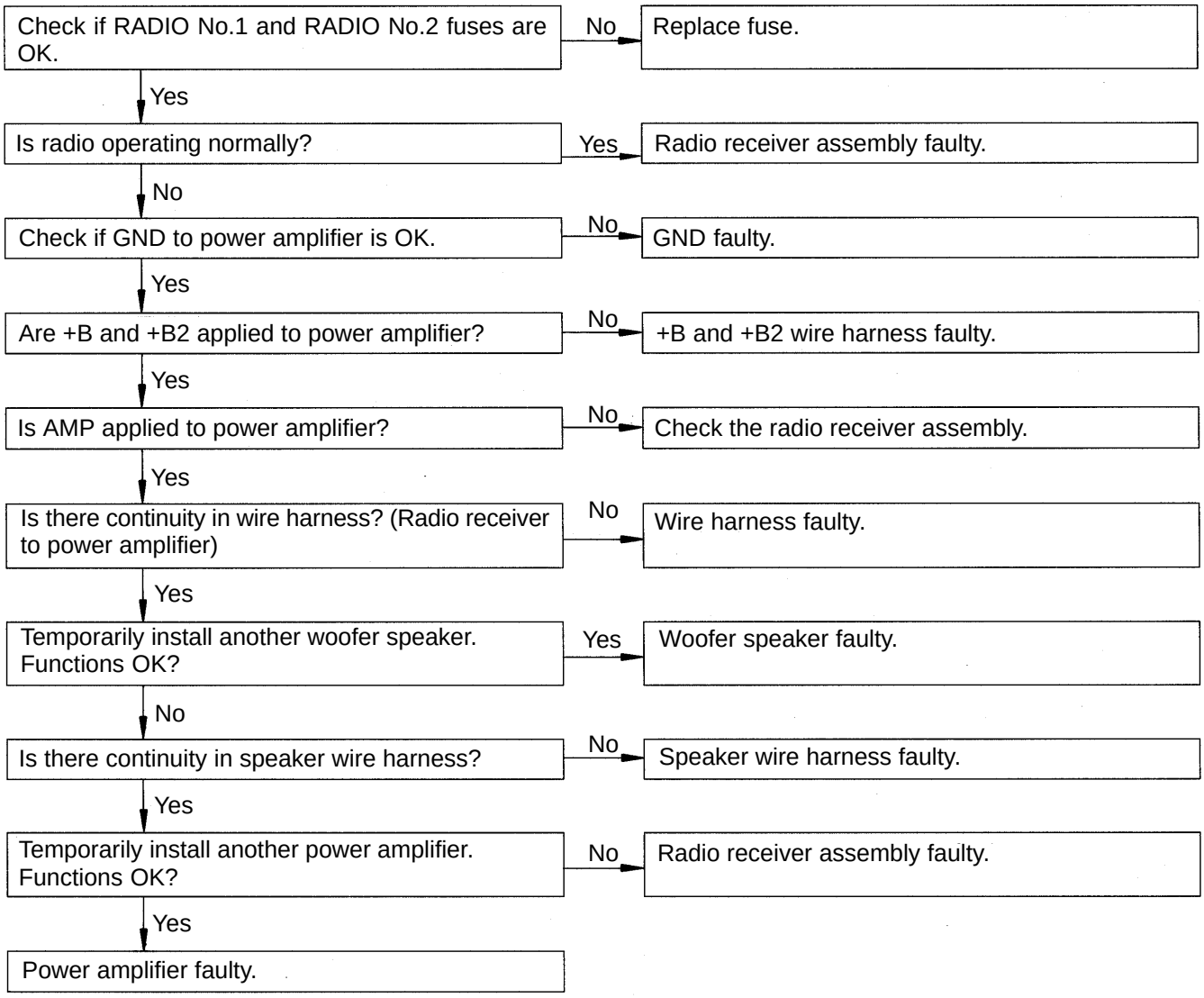


10	Tape Player	POWER COMING IN, BUT TAPE PLAYER NOT OPERATING



V06276

11	Tape Player	EITHER SPEAKER DOES NOT WORK



V06277

12	Tape Player	SOUND QUALITY POOR (VOLUME FAINT)

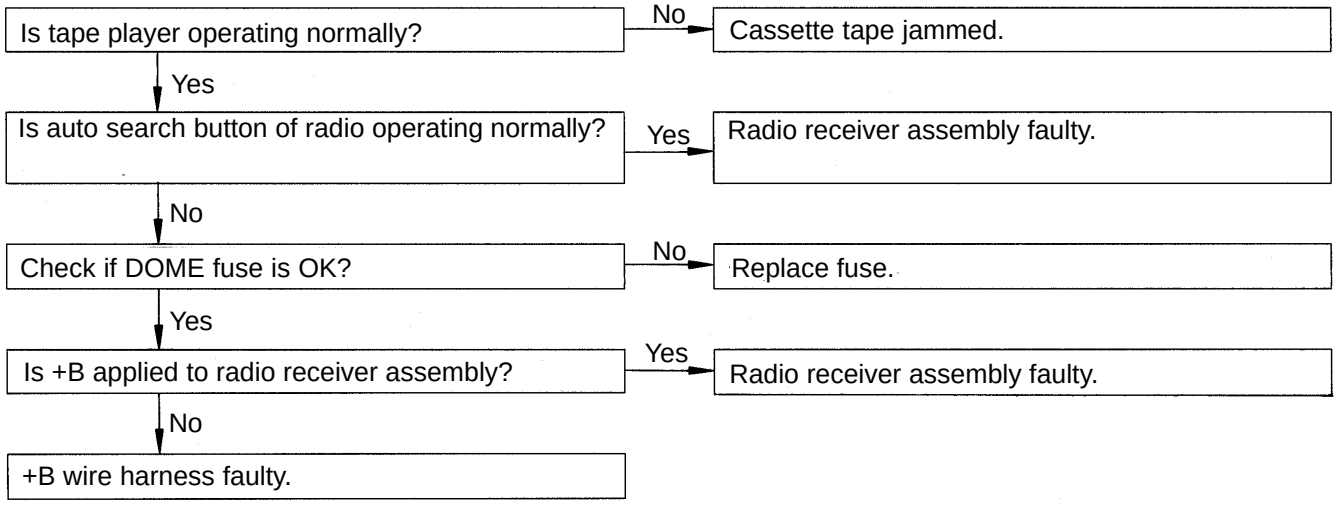
Functions OK if different cassette tape inserted?
- Yes → Cassette tape faulty.
- No → Operates normally after cleaning the heads? (See page BE–203)
  - Yes → Head dirty.
  - No → Is radio operating normally?
    - Yes → Radio receiver assembly faulty.
    - No → Is speaker properly installed?
      - No → Install properly.
      - Yes → Temporarily install another speaker. Functions OK?
        - Yes → Speaker faulty.
        - No → Radio receiver assembly faulty.

13	Tape Player	TAPE JAMMED, MALFUNCTION WITH TAPE SPEED OR AUTO–REVERSE

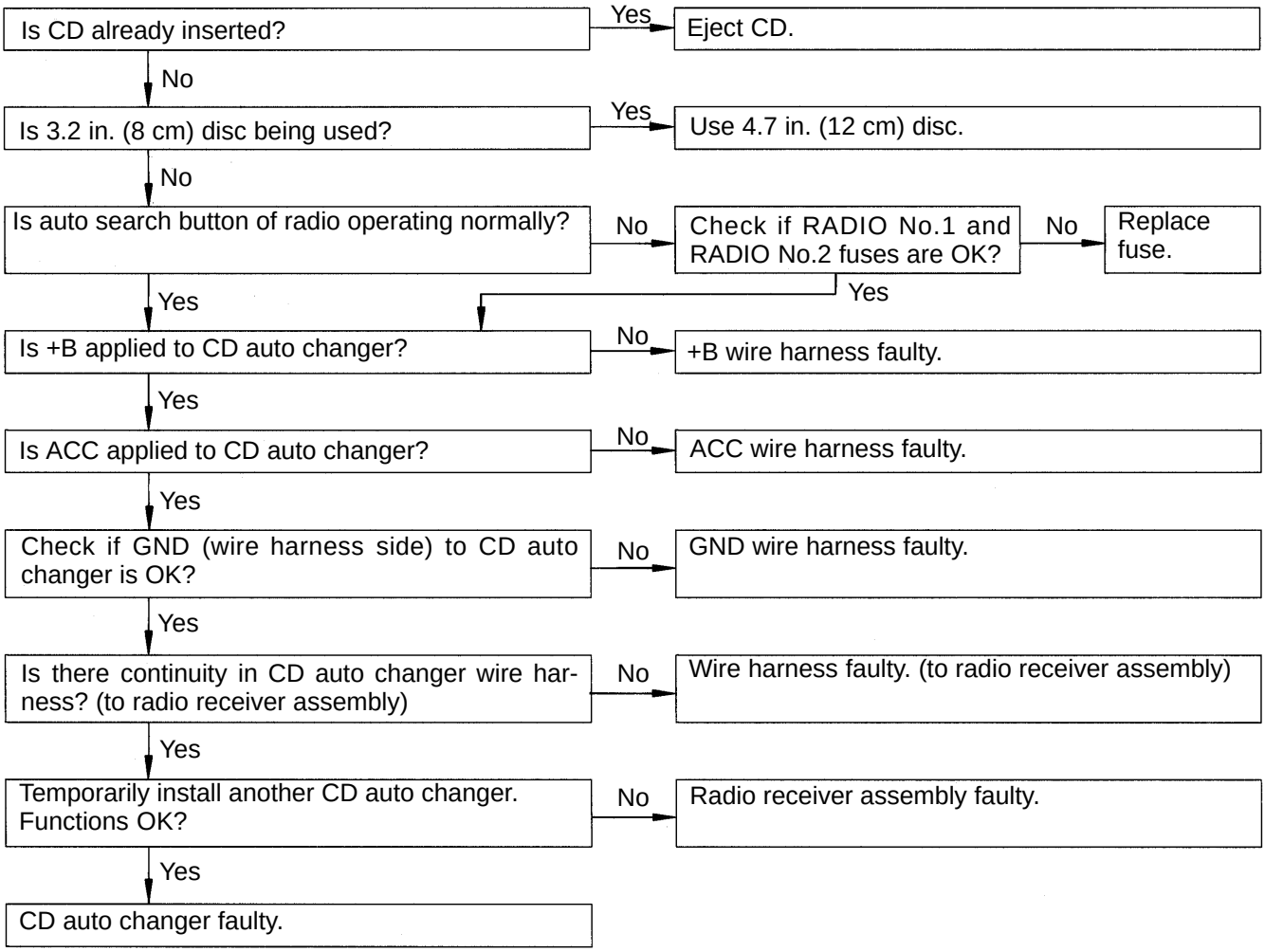
Functions OK if different tape (less than 120 mins.) is inserted?
- Yes → Cassette tape faulty.
- No → Is there a foreign object inside tape player?
  - Yes → Remove foreign object.
  - No → Operates normally after cleaning the heads? (See page BE–203)
    - Yes → Head dirty.
    - No → Radio receiver assembly faulty.

V03671

14	Tape Player	CASSETTE TAPE WILL NOT EJECT

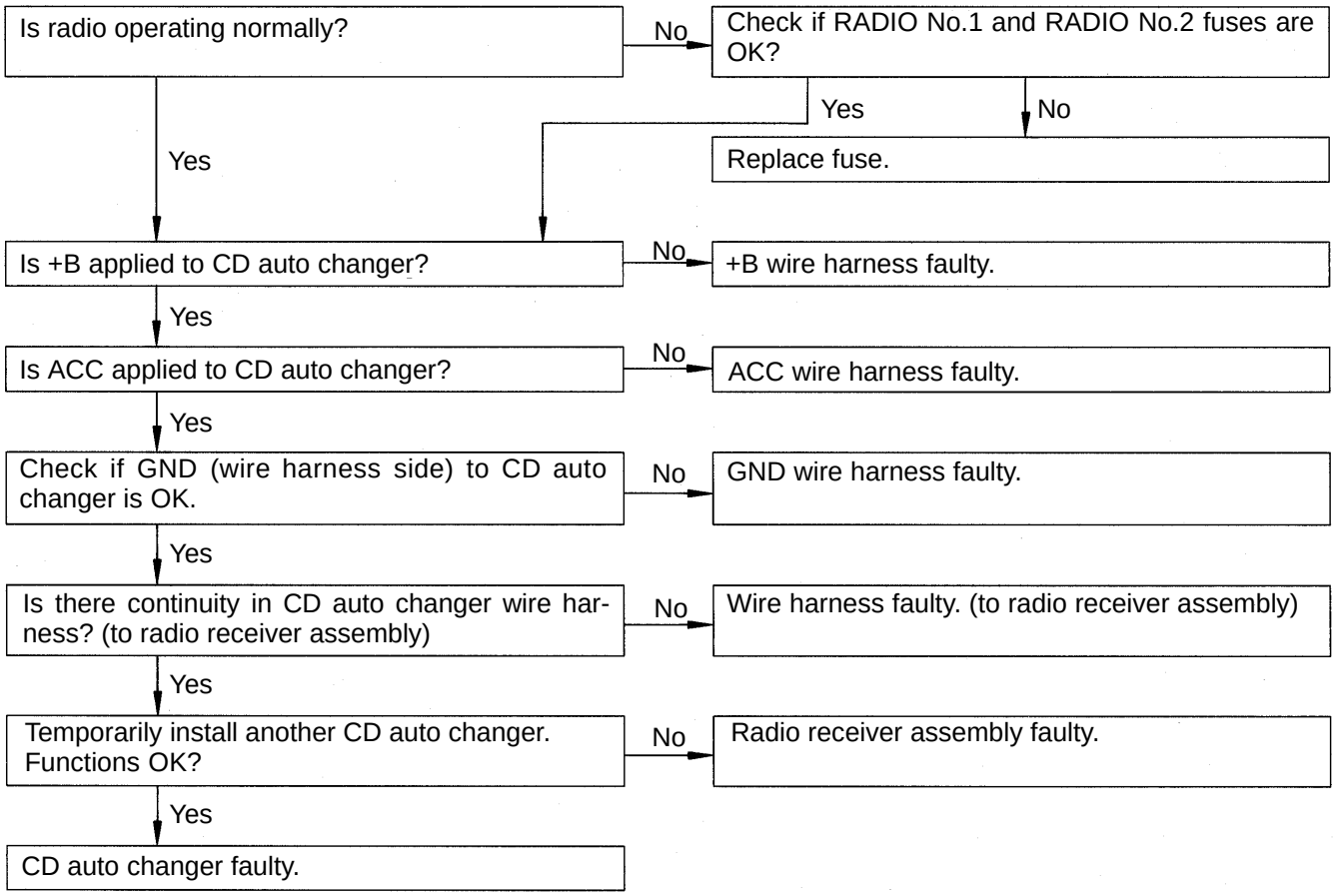


15	CD Player	CD CANNOT BE INSERTED



V06279

16	CD Player	CD INSERTS, BUT NO POWER



V06280

17	CD Player	POWER COMING IN, BUT PLAYER NOT OPERATING

Is CD inserted correct side up?
- No → Insert correctly.
- Yes ↓

Is 3.2 in. (8 cm) disc being used?
- Yes → Use 4.7 in. (12 cm) disc.
- No ↓

Functions OK if different CD inserted?
- Yes → CD faulty.
- No ↓

Is radio operating normally?
- No → Go to step 17–B.
- Yes ↓

Is temperature inside luggage compartment hot?
- Yes → Protective circuit in operation.
- No ↓

Does sudden temperature changer occur inside luggage compartment?
- Yes → Formation of condensation due to temp. change.
- No ↓

Go to step 17–A.

17–A.

Is +B applied to CD changer?
- No → +B wire harness faulty.
- Yes ↓

Is ACC applied to CD auto changer?
- No → ACC wire harness faulty.
- Yes ↓

Check if GND (wire harness side) to CD auto changer is OK?
- No → GND wire harness faulty.
- Yes ↓

Is there continuity in CD auto changer wire harness? (to radio receiver assembly)
- No → Wire harness faulty. (to radio receiver assembly)
- Yes ↓

Temporarily install another CD auto changer. Functions OK?
- No → Radio receiver assembly faulty.
- Yes ↓

CD auto changer faulty.

V06281

17–B.

Is there continuity in speaker wire harness? — No → Speaker wire harness faulty.

↓ Yes

Temporarily install another speaker. Functions OK? — Yes → speaker faulty.

↓ Yes

Go to step 17–A.

18	CD Player	SOUND JUMPS

Does sound jump only during strong vibration? — Yes → Jumping caused by vibration.

↓ No

Is CD auto changer properly installed? — No → Install properly.

↓ Yes

Functions OK if different CD inserted? — Yes → CD faulty.

↓ No

Does sudden temperature changer occur in luggage compartment? — Yes → Formation of condensation due to temp. change.

↓ No

Is +B applied to CD auto changer? — No → +B wire harness faulty.

↓ Yes

Is ACC applied to CD auto changer? — No → ACC wire harness faulty.

↓ Yes

Check if GND (wire harness side) to CD auto changer is OK? — No → GND wire harness faulty.

↓ Yes

Is there continuity in CD auto changer wire harness? (to radio receiver assembly) — No → Wire harness faulty. (to radio receiver assembly)

↓ Yes

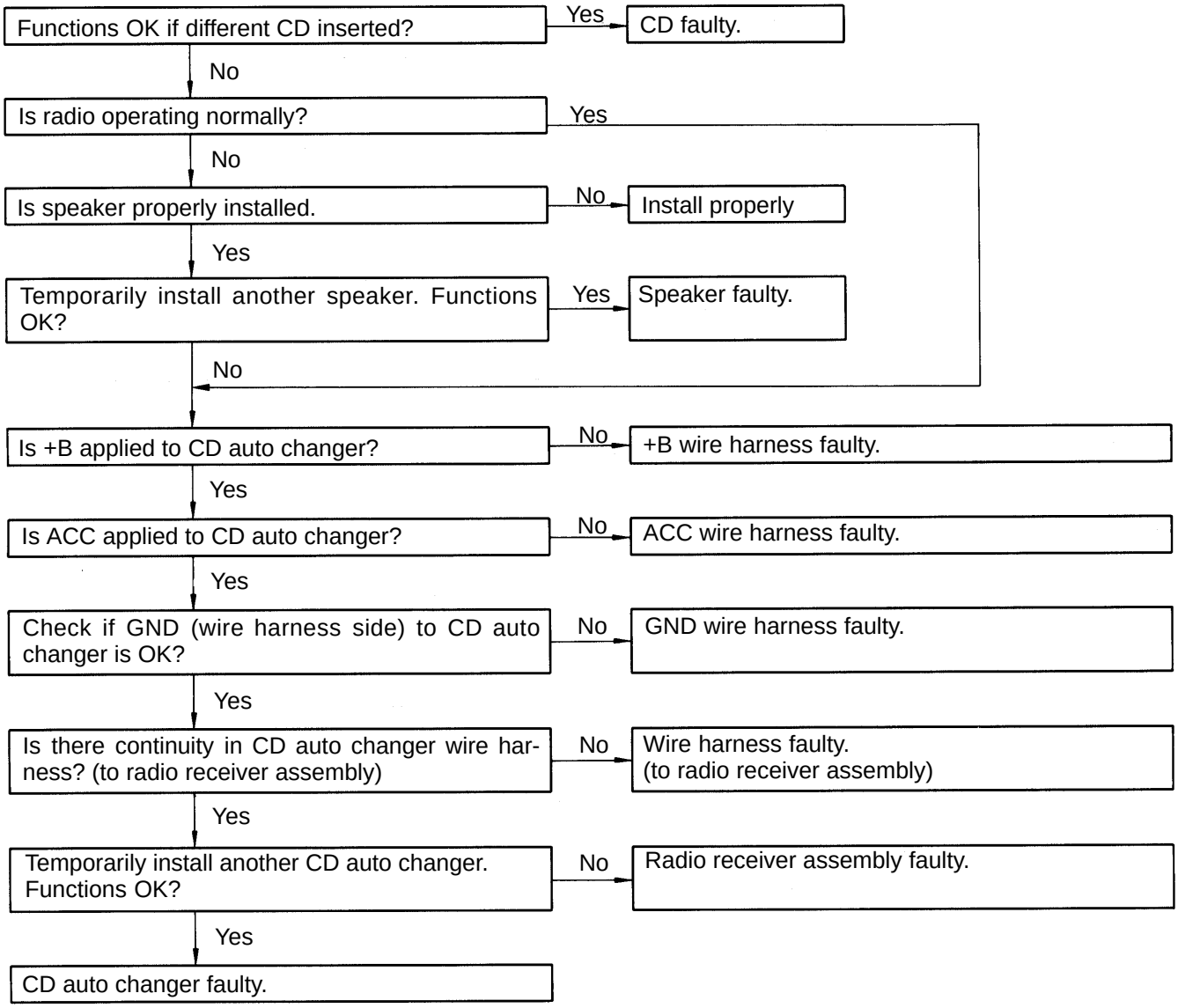
Temporarily install another CD auto changer. Functions OK? — No → Radio receiver assembly faulty.

↓ Yes

CD auto changer faulty.

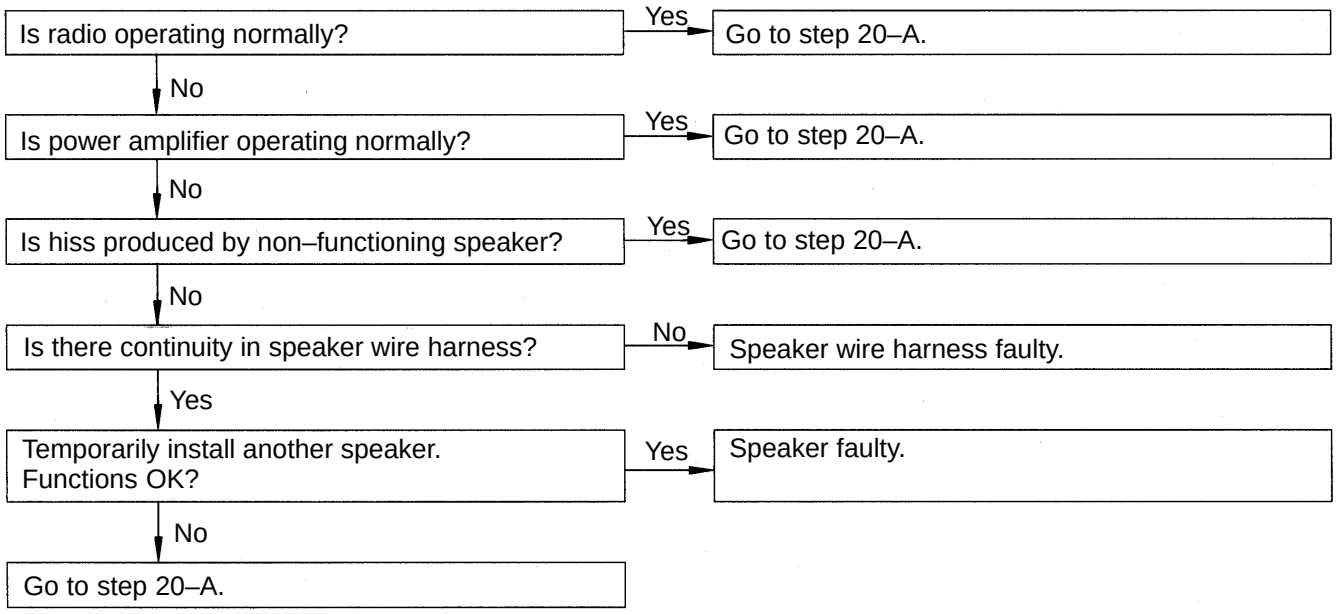
V06282

19	CD Player	SOUND QUALITY POOR (VOLUME FAINT)

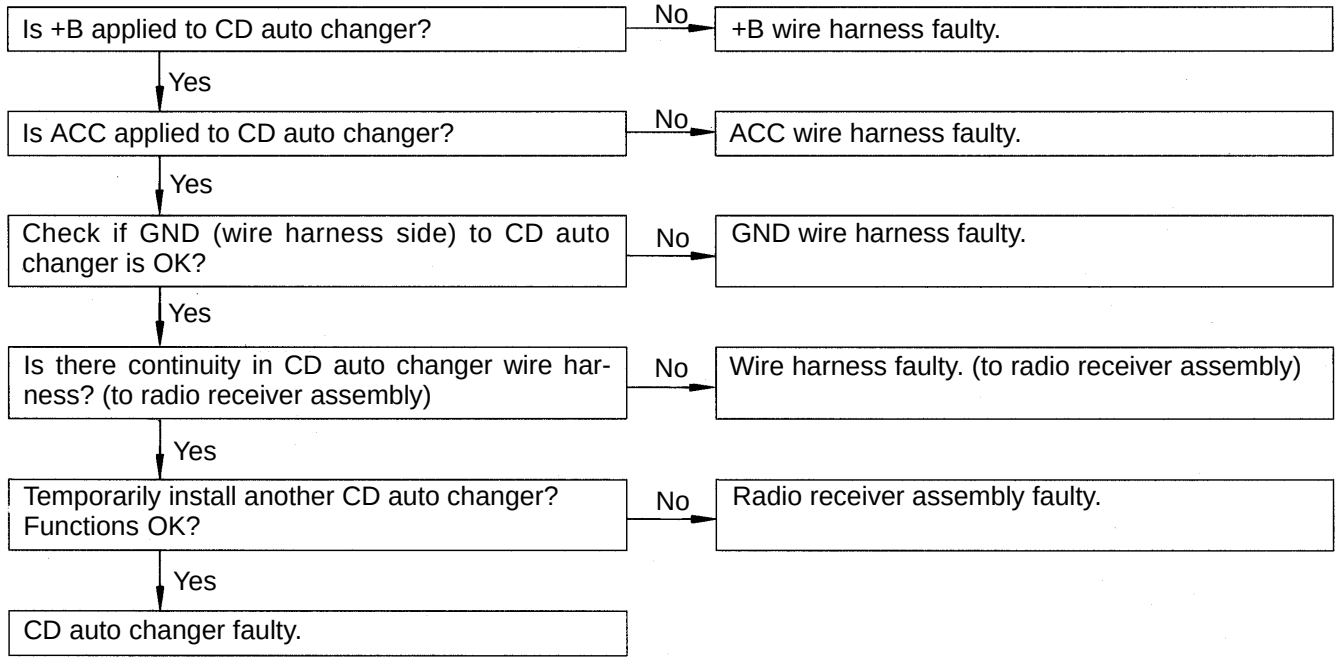


V03678

20	CD Player	EITHER SPEAKER DOES NOT WORK

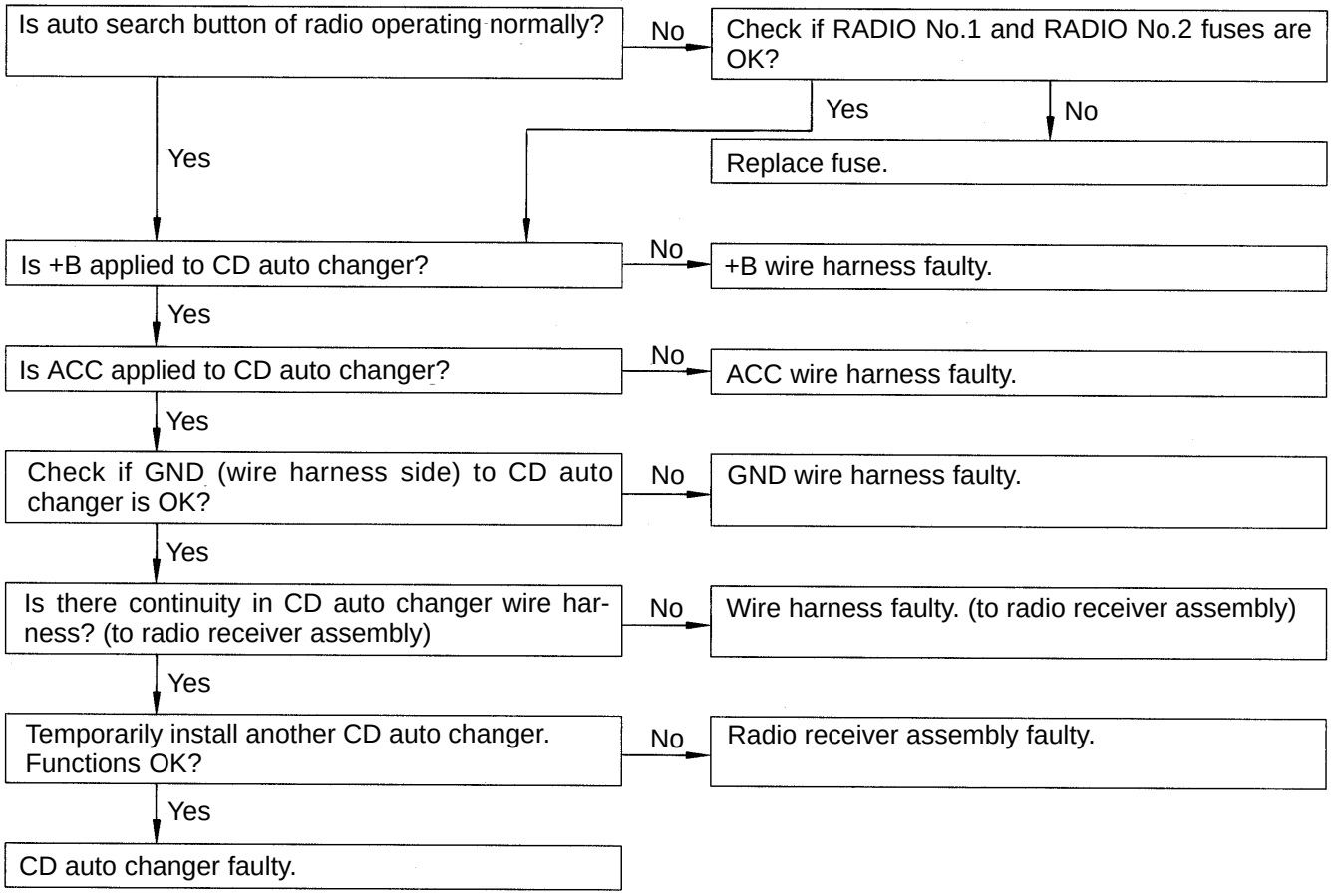


20–A

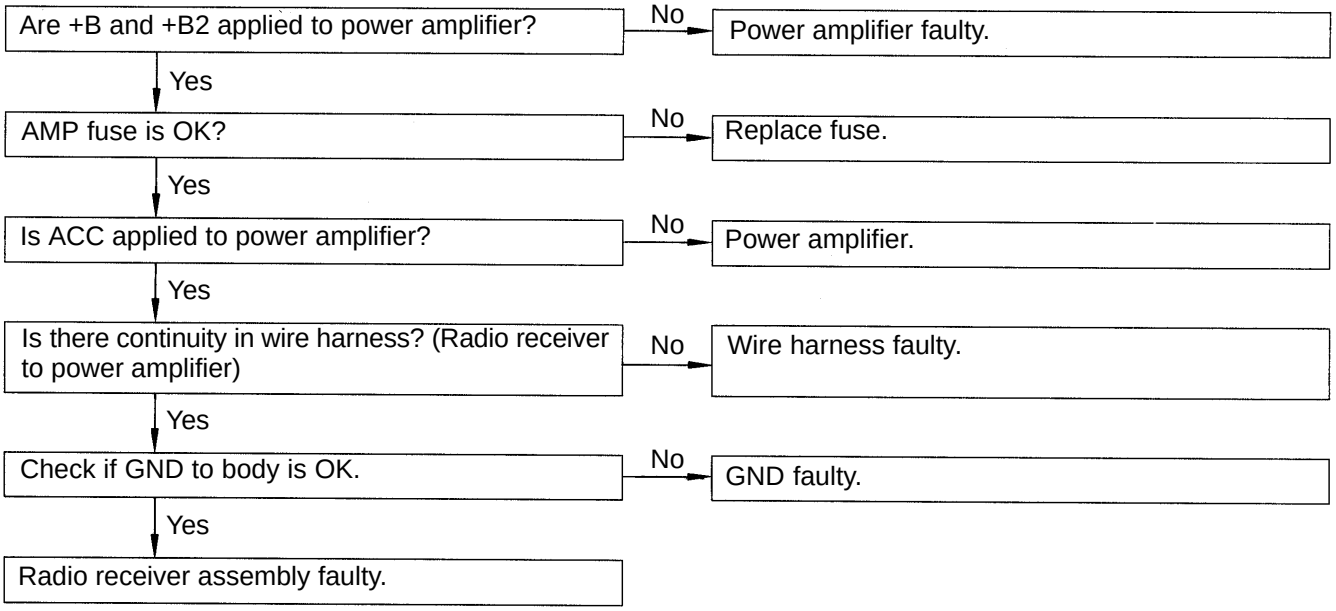


V06283

21	CD Player	CD WILL NOT EJECT

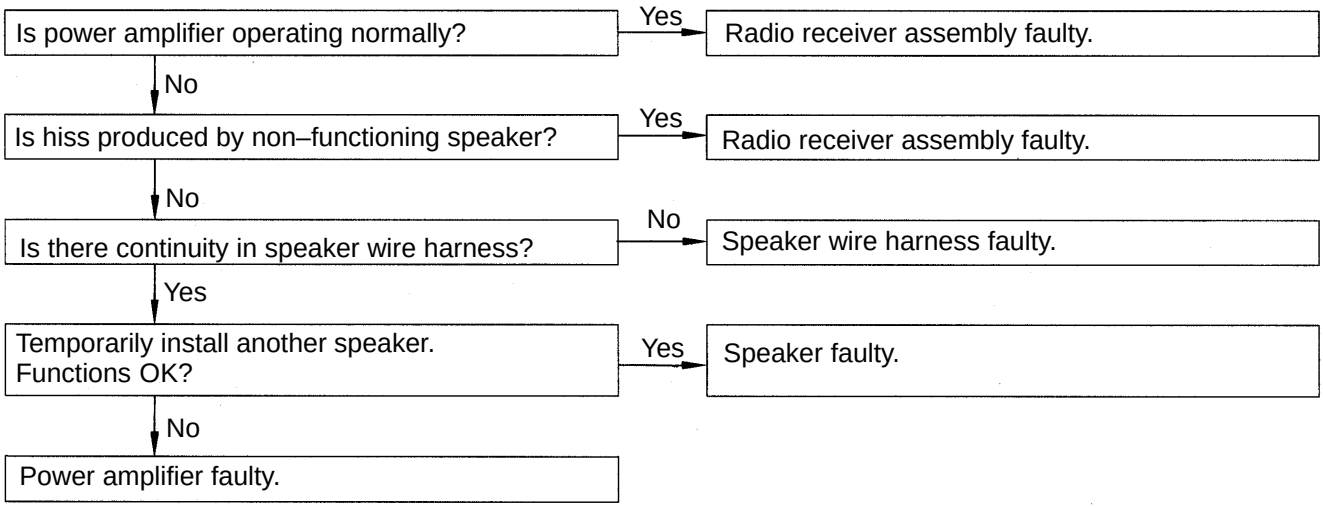


22	Amplifier	NO POWER COMING IN

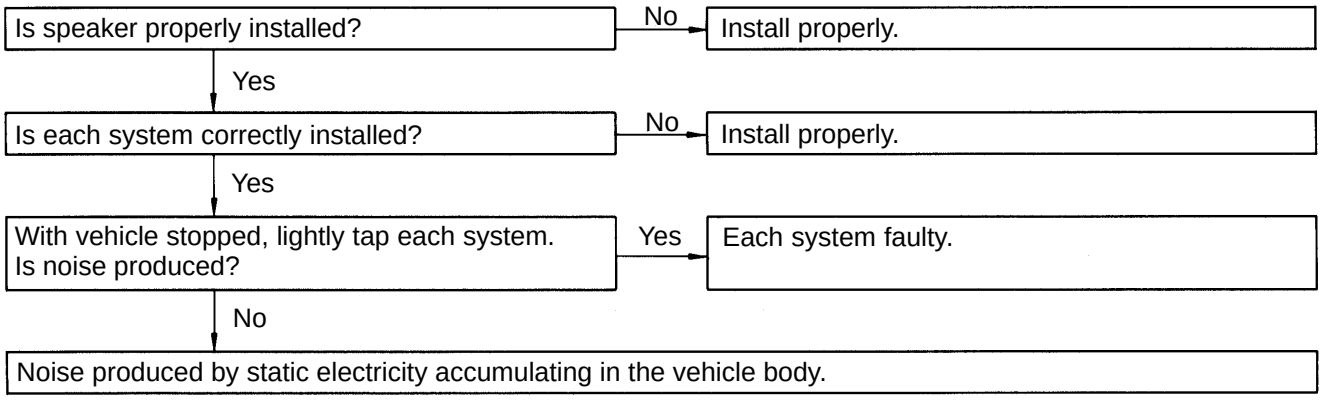


V06285

23	Amplifier	EITHER SPEAKER DOES NOT WORK

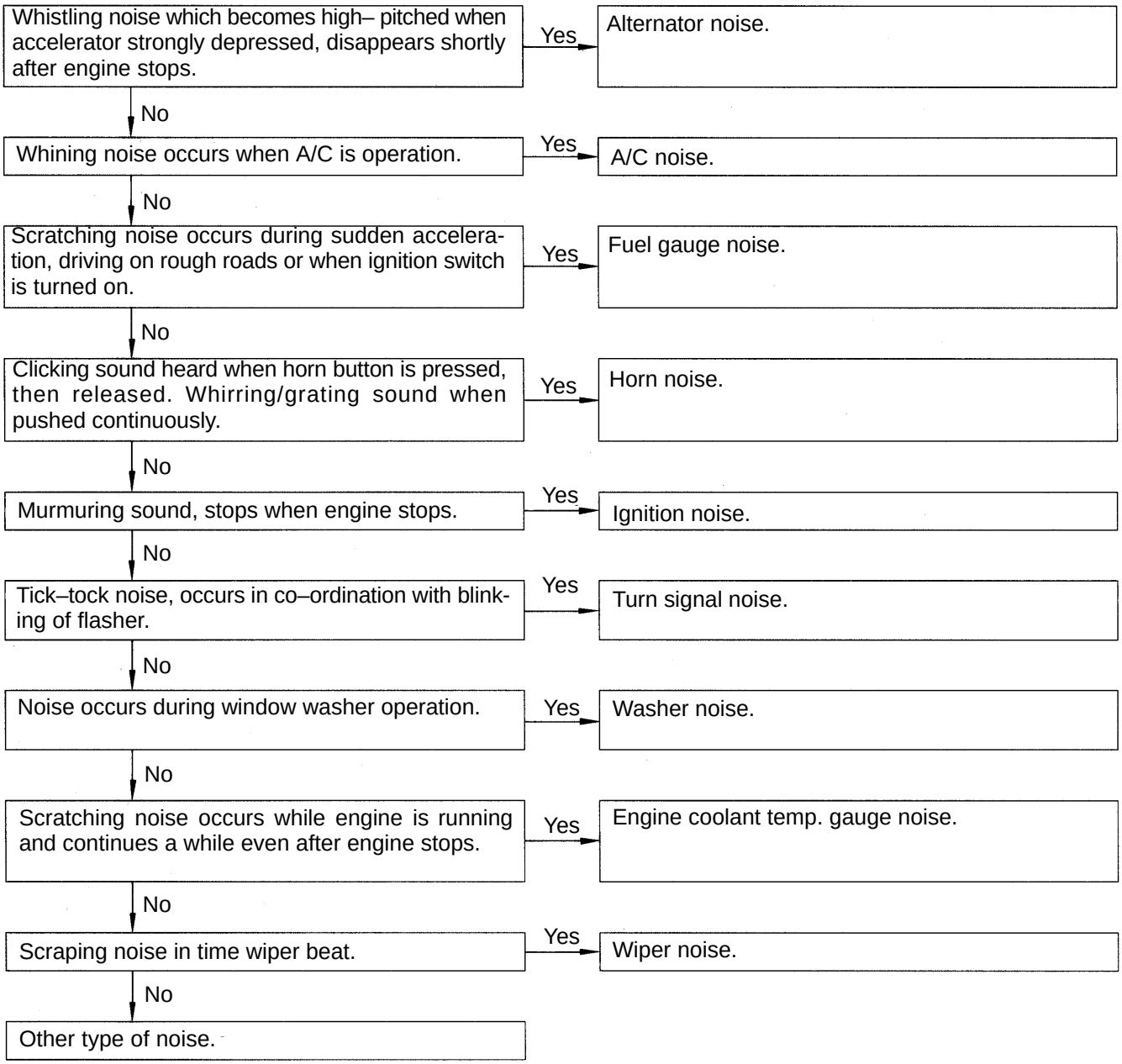


24	Noise	NOISE PRODUCED BY VIBRATION OR SHOCK WHILE DRIVING



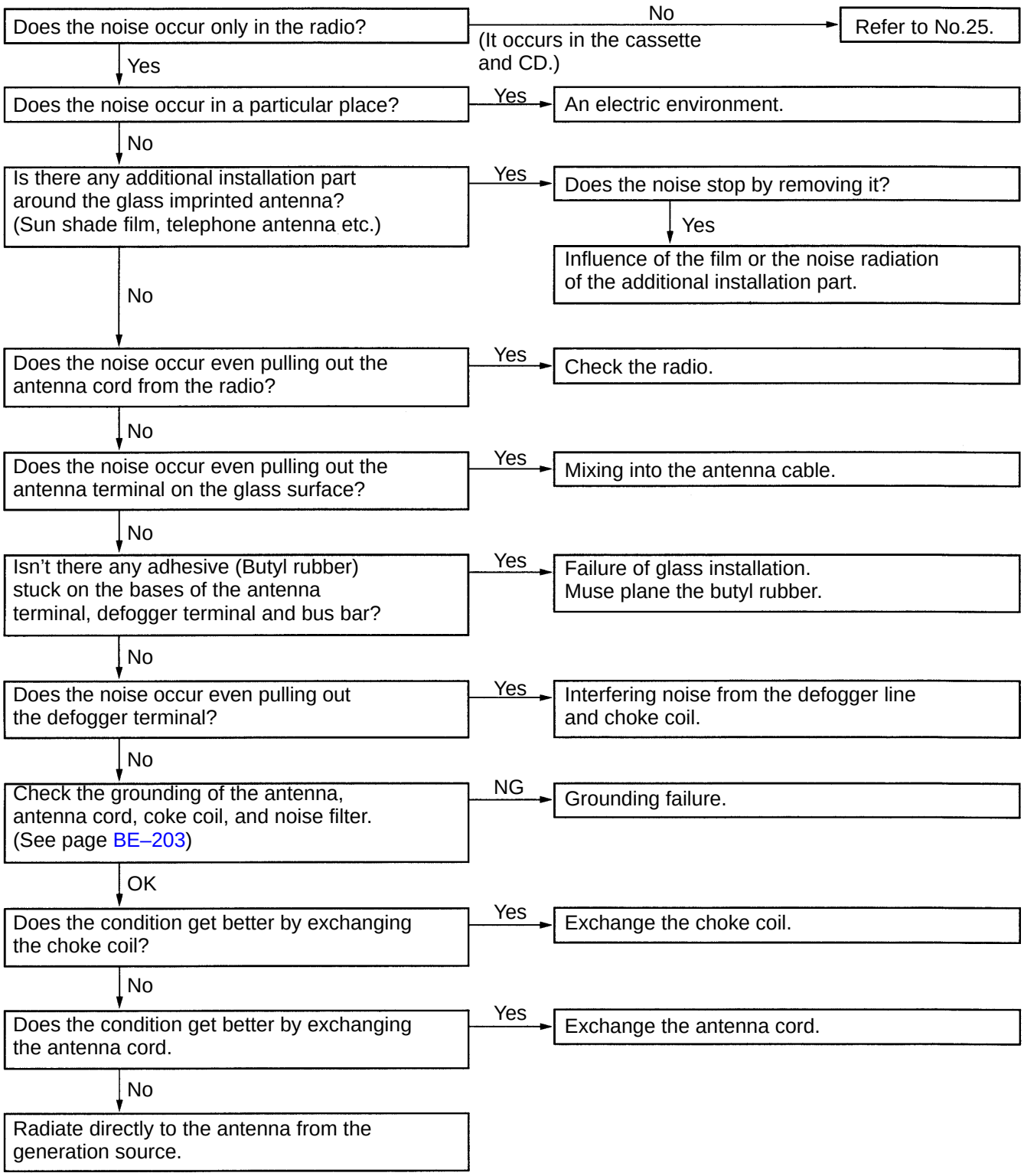
V06286

25	Noise	NOISE PRODUCED WHEN ENGINE STARTS



V06356

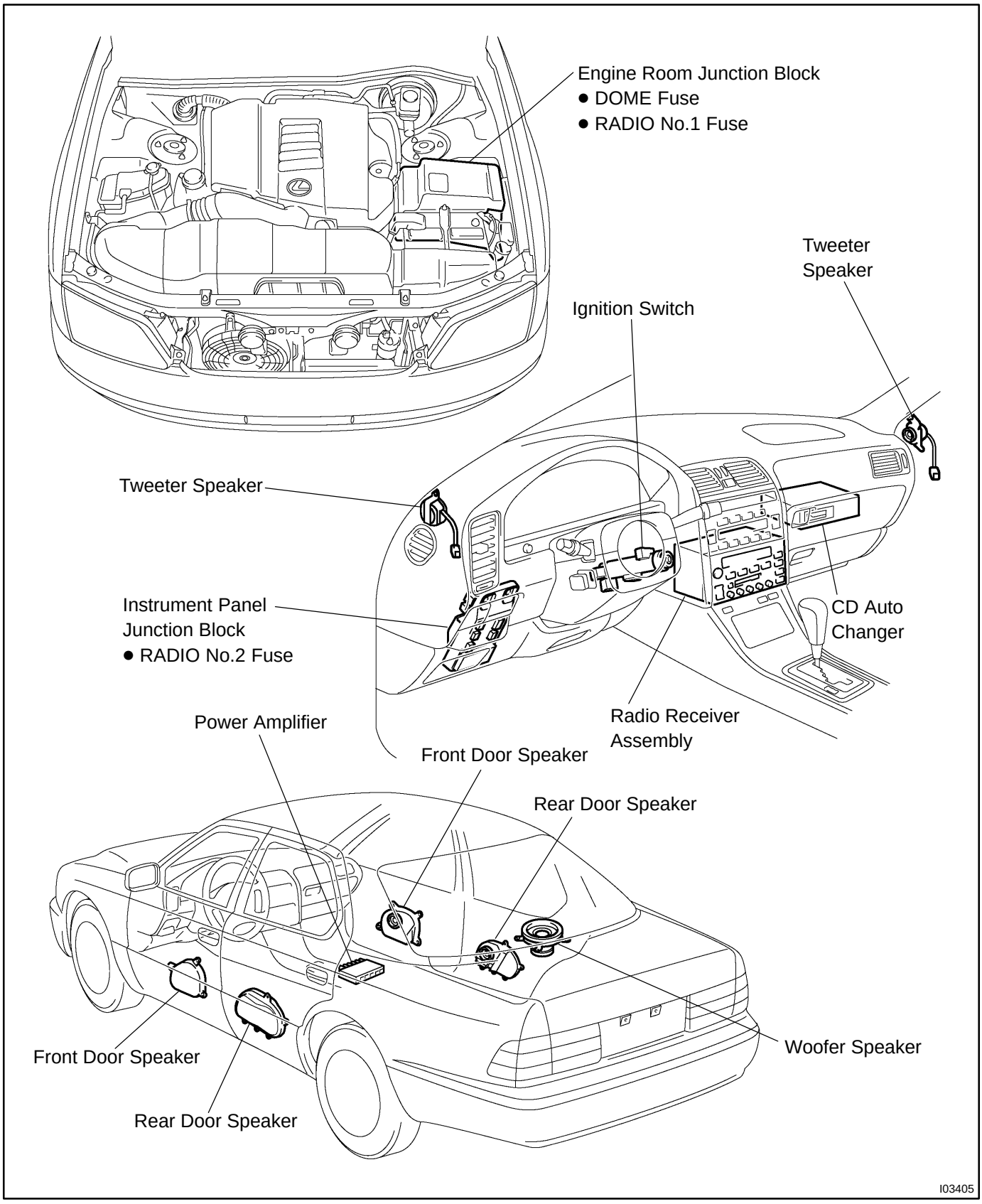
26	Noise	NOISE OCCURS



V08552

BE0CZ–01

LOCATION

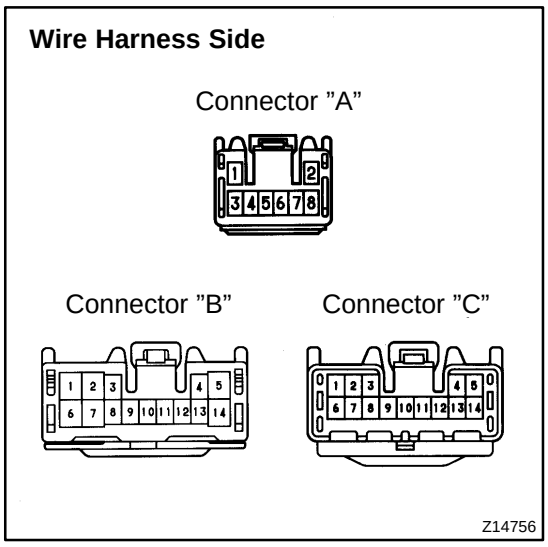


BE0D0–01

INSPECTION

1. Nakamichi made:
INSPECT RADIO RECEIVER ASSEMBLY CIRCUIT

Disconnect the connectors from the radio receiver assembly. And inspect the connector on the wire harness side, as shown.

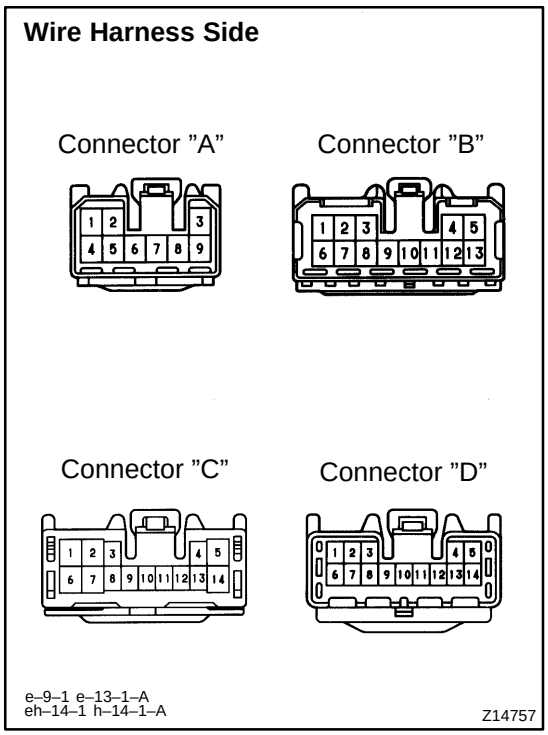


Tester connection	Condition	Specified condition
B14 – Ground	Constant	Continuity
B6 – Ground	Ignition switch position ACC or ON	Battery positive voltage
B6 – Ground	Ignition switch position LOCK	No voltage
B1 – Ground	Constant	Battery positive voltage

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

HINT:

Check the wire harness between radio receiver assembly and the CD auto changer, between radio receiver assembly and power amplifier.

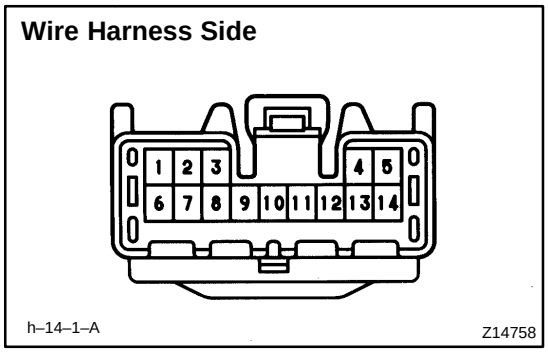


2. Nakamichi made:
INSPECT POWER AMPLIFIER CIRCUIT

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

Tester connection	Condition	Specified condition
A4 – Ground	Constant	Continuity
A5 – Ground	Constant	Battery positive voltage
A6 – Ground	Ignition switch position ACC or ON	Battery positive voltage
D6 – Ground	Ignition switch position ACC or ON Radio, Tape or CD switch ON	Battery positive voltage

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



3. Nakamichi made:
INSPECT CD AUTO CHANGER CIRCUIT

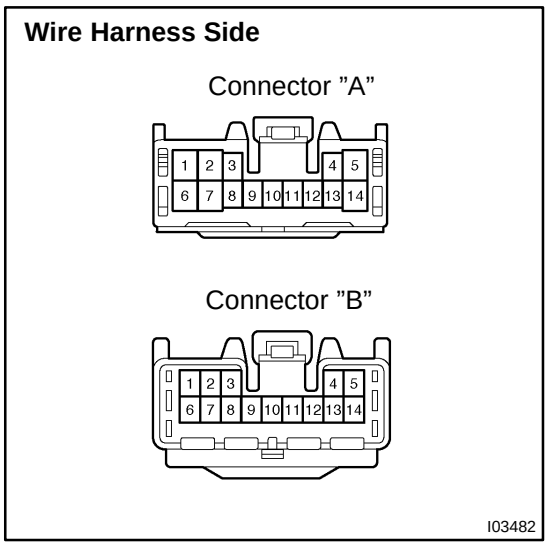
Disconnect the connectors from the controller and inspect the connector on the wire harness side, as shown.

Tester connection to terminal number	Condition	Specified condition
5 – Ground	Constant	Battery positive voltage
4 – Ground	Ignition switch LOCK	No voltage
4 – Ground	Ignition switch ACC or ON	Battery positive voltage

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

HINT:

Since the signals to and from the AP+, AP–, SGND, GND1 terminals are serial signals, they cannot ordinarily be measured with a tester.



4. Pioneer made:
INSPECT RADIO RECEIVER ASSEMBLY CIRCUIT

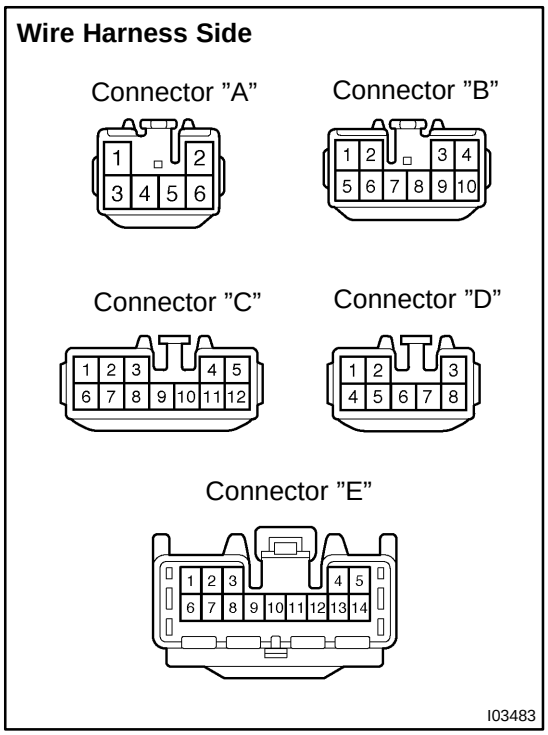
Disconnect the connectors from the radio receiver assembly. And inspect the connector on the wire harness side, as shown.

Tester connection	Condition	Specified condition
B1 – Ground	Constant	Continuity
A6 – Ground	Ignition switch position ACC or ON	Battery positive voltage
A6 – Ground	Ignition switch position LOCK	No voltage
A1 – Ground	Constant	Battery positive voltage

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

HINT:

Check the wire harness between power amplifier and the CD auto changer, between radio receiver assembly and power amplifier.



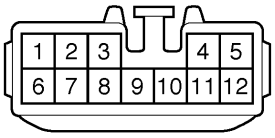
5. Pioneer made and LEXUS navigation system:
INSPECT POWER AMPLIFIER CIRCUIT

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

Tester connection	Condition	Specified condition
B7 – Ground	Constant	Continuity
B4 – Ground	Constant	Battery positive voltage
C12 – Ground	Ignition switch position ACC or ON	Battery positive voltage

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

Wire Harness Side



I03484

6. Pioneer made and LEXUS navigation system: INSPECT CD AUTO CHANGER CIRCUIT

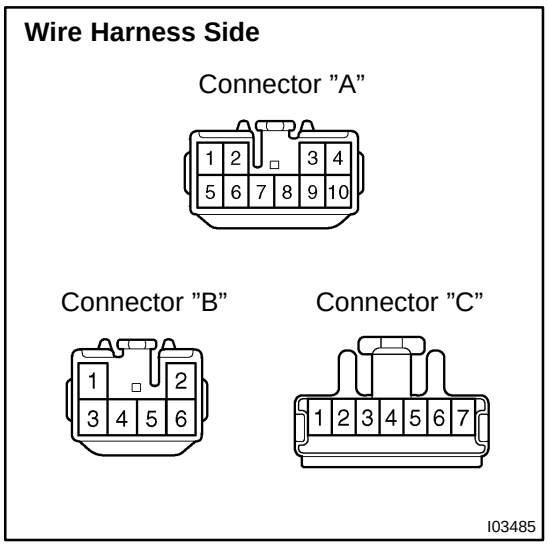
Disconnect the connectors from the controller and inspect the connector on the wire harness side, as shown.

Tester connection to terminal number	Condition	Specified condition
5 – Ground	Constant	Battery positive voltage
12 – Ground	Ignition switch LOCK	No voltage
12 – Ground	Ignition switch ACC or ON	Battery positive voltage

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

HINT:

Since the signals to and from the AP+, AP–, SGND, GND1 terminals are serial signals, they cannot ordinarily be measured with a tester.



7. LEXUS navigation system:
INSPECT RADIO RECEIVER ASSEMBLY CIRCUIT

Disconnect the connectors from the radio receiver assembly. And inspect the connector on the wire harness side, as shown.

Tester connection	Condition	Specified condition
B2 – Ground	Constant	Continuity
B1 – Ground	Ignition switch position ACC or ON	Battery positive voltage
B1 – Ground	Ignition switch position LOCK	No voltage
B4 – Ground	Constant	Battery positive voltage

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

HINT:

Check the wire harness between power amplifier and the CD auto changer, between radio receiver assembly and power amplifier.

8. INSPECT GLASS PRINTED ANTENNA

(Use same procedure as for ”INSPECT DEFOGGER WIRES” on page BE–116)

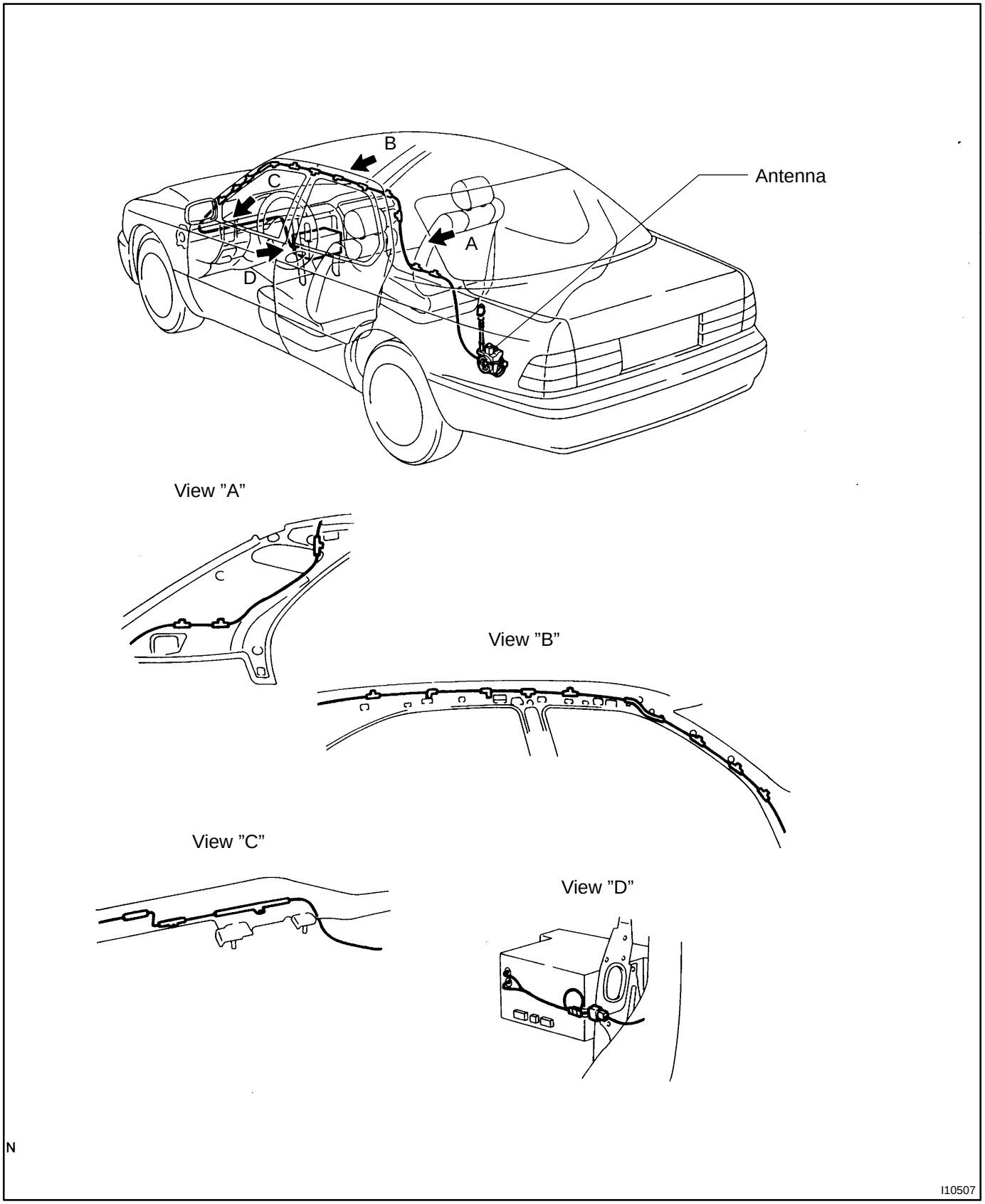
9. REPAIR GLASS PRINTED ANTENNA

(Use same procedure as for ”REPAIR DEFOGGER WIRES” on page BE–116)

ANTENNA

LOCATION

BE11X–01



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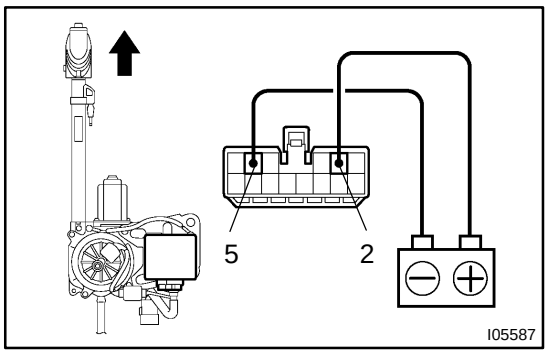
I10507

BE11Y–01

INSPECTION



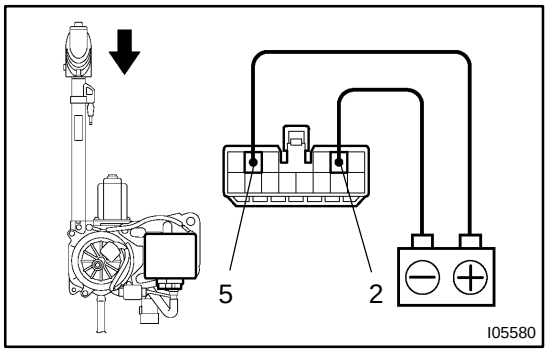
1. Auto Antenna Models:
INSPECT ANTENNA MOTOR

(a) Connect the positive (+) lead from the battery to terminal 2 and the negative (–) lead to terminal 5.

(b) Check that the motor turns (moves upward).

NOTICE:

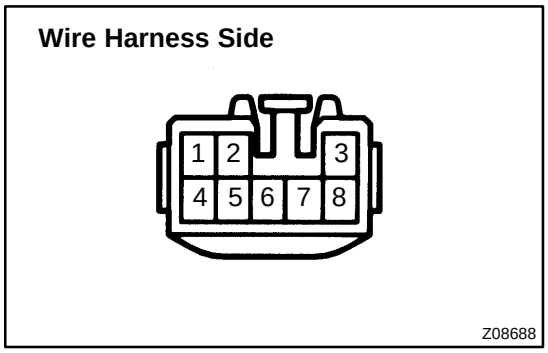
These tests must be done quickly (within 3 – 5 seconds) to prevent the coil from burning out.



(c) Then, reverse the polarity, check that the motor turns the opposite way (moves downward).

NOTICE:

These tests must be done quickly (within 3 – 5 seconds) to prevent the coil from burning out.

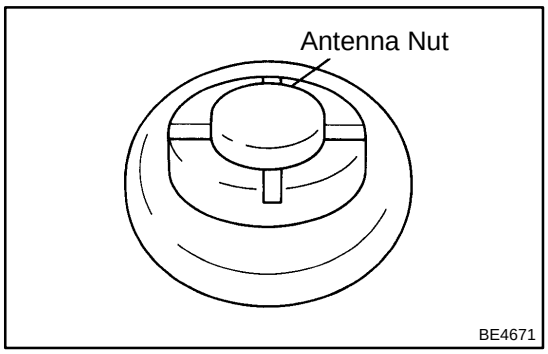


2. Auto Antenna Models:
INSPECT ANTENNA MOTOR CONTROL RELAY CIRCUIT

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

Tester connection	Condition	Specified condition
7 – Ground	Constant	Continuity
1 – Ground	Ignition switch ACC or ON, and radio switch ON and Others	No voltage
1 – Ground	Ignition switch ACC or ON, and radio switch ON and AM	Battery voltage
2 – Ground	Ignition switch ACC or ON, and radio or tape or CD switch OFF	No voltage
2 – Ground	Ignition switch ACC or ON, and radio or tape or CD switch ON	Battery voltage
3 – Ground	Constant	Battery voltage
5 – Ground	Ignition switch ACC or ON, and radio switch OFF	No voltage
5 – Ground	Ignition switch ACC or ON, and radio switch ON	Battery voltage

BE11Z–01



REPLACEMENT

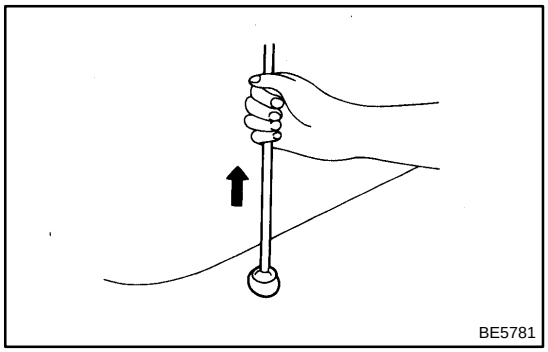
1. Auto Antenna Models:
REMOVE ANTENNA ROD

HINT:

Do this operation with the battery negative (–) cable connected to the battery terminal.

(a) Turn the ignition switch to ”LOCK” position.

(b) Remove the antenna nut.



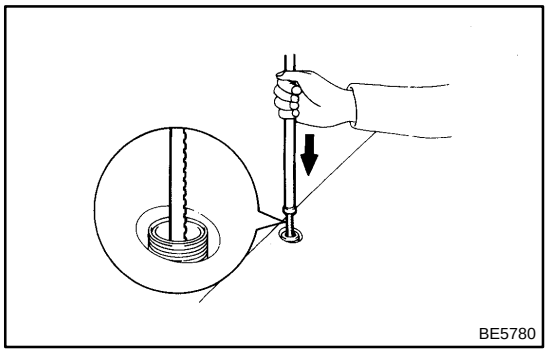
(c) Press the ”AM, FM” buttons on the radio receiver, and simultaneously turn the ignition switch to ”ACC” position.

HINT:

- The rod will extend fully and be released form the motor antenna.
- After removing the antenna rod, leave the ignition switch as ”ACC”.

NOTICE:

To prevent body damage when the antenna rod is released, hold the rod while it comes out.



2. IAuto Antenna Models:
NSTALL ANTENNA ROD

(a) Insert the cable of the rod until it reaches the bottom.

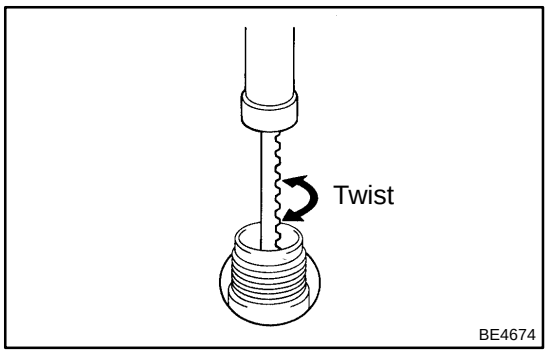
HINT:

- When inserting the cable, the teeth on the cable must face toward the rear of the vehicle.
- Insert the antenna approx. 300 mm (11.8 in.).

(b) Wind the cable to retract the rod by turning the ignition switch to ”LOCK” position.

HINT:

- If the ignition switch is already in ”LOCK” position, do step 1 (c) first, then turn the ignition switch to ”ACC” position.
- In case the cable is not wound, twist it, as shown in the illustration.
- Even if the rod has not retracted fully, install the antenna nut and inspect the antenna rod operation. It will finally retract fully.



(c) Inspect the antenna rod operation by pushing the radio wave band select buttons.

CLOCK

TROUBLESHOOTING

BE0D1–02

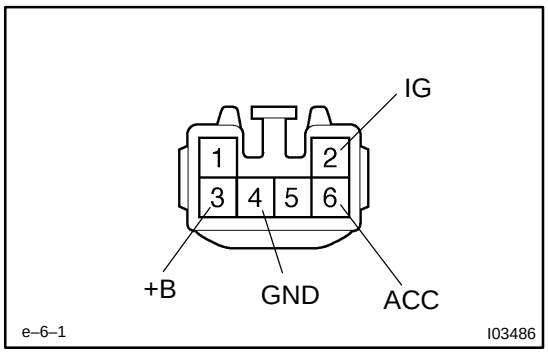
HINT:

Problem	No.
Clock will not operate	1
Clock loses or gains time	2

± 1.5 seconds / da

1. PROBLEM No.1

1	**CLOCK WILL NOT OPERATE**



(a) Turn the ignition switch ON.

(b) Check that the battery positive voltage is 10 – 16 V.

If voltage is not as specified, replace the battery.

(c) Check that the DOME FR, GAUGE and FR CIG fuses in not below.

If the fuse is blown, replace the fuse and check for short.

(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?
- No → Open or short circuit in wire harness between terminal +B and DOME fuse.
- Yes ↓

Is there battery positive voltage between terminal IG and body ground?
- No → Open or short circuit in wire harness between terminal IG and GAUGE fuse.
- Yes ↓

Is there battery positive voltage between terminal ACC and body ground?
- No → Open or short circuit in wire harness between terminal ACC and FR CIG fuse.
- Yes ↓

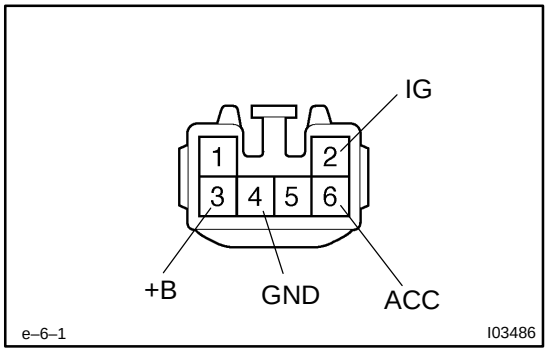
Is there continuity battery terminal GND and body ground?
- No → Open circuit in wire harness between terminal GND and body ground.
- Yes ↓

Is there battery positive voltage between terminal ILL and body ground when rheostat knob is turned to any position except fully clockwise? (Taillight switch ON)
- No → Rheostat light control or wire harness faulty.
- Yes ↓

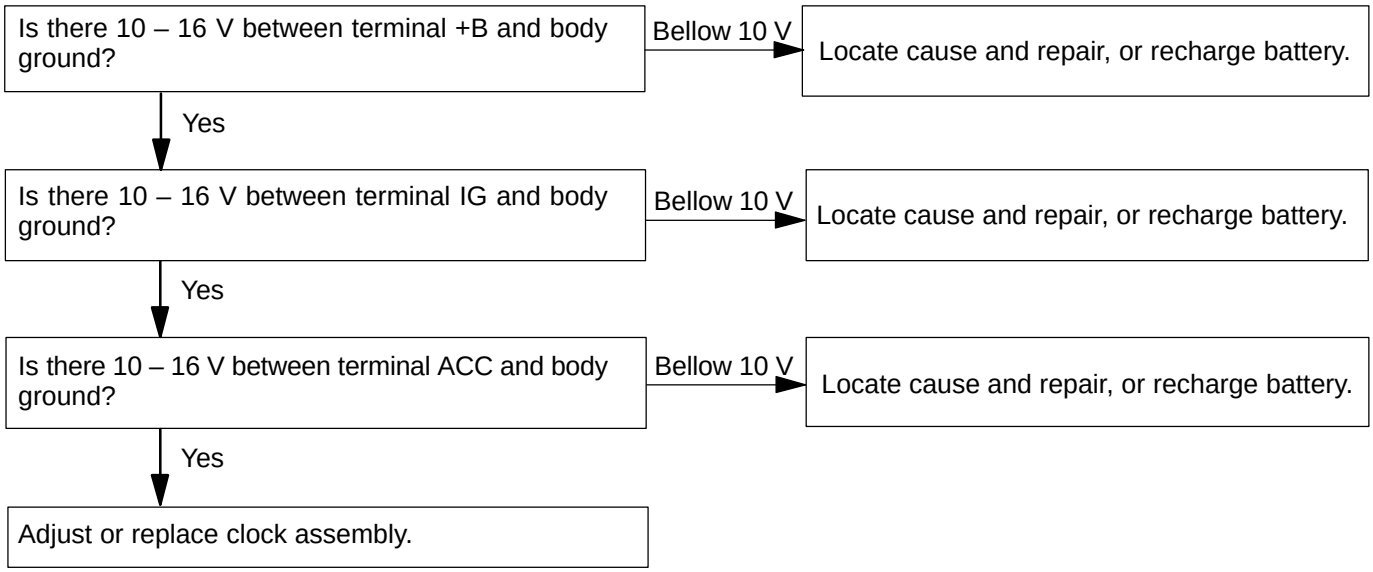
Replace clock assembly.

2. PROBLEM 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): ± 2.0 seconds
If the error exceeds the allowable error, replace the clock assembly.
(c) Check if the clock adjusting button is sticking in position and has failed to return.
(d) Troubleshoot the clock as follows.
HINT:
Inspect the connector on the wire harness side.



GARAGE DOOR OPENER SYSTEM

BE0D2–01

REGISTRATION PROCEDURE

1. NEW CODE REGISTRATION

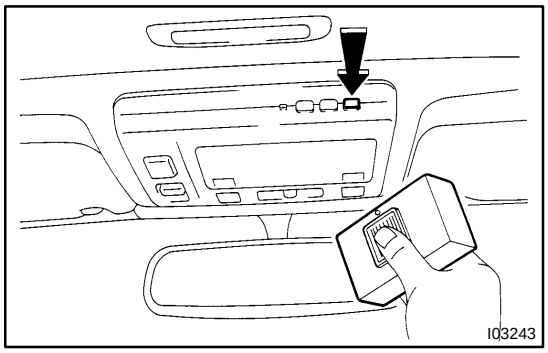
NOTICE:

- **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.

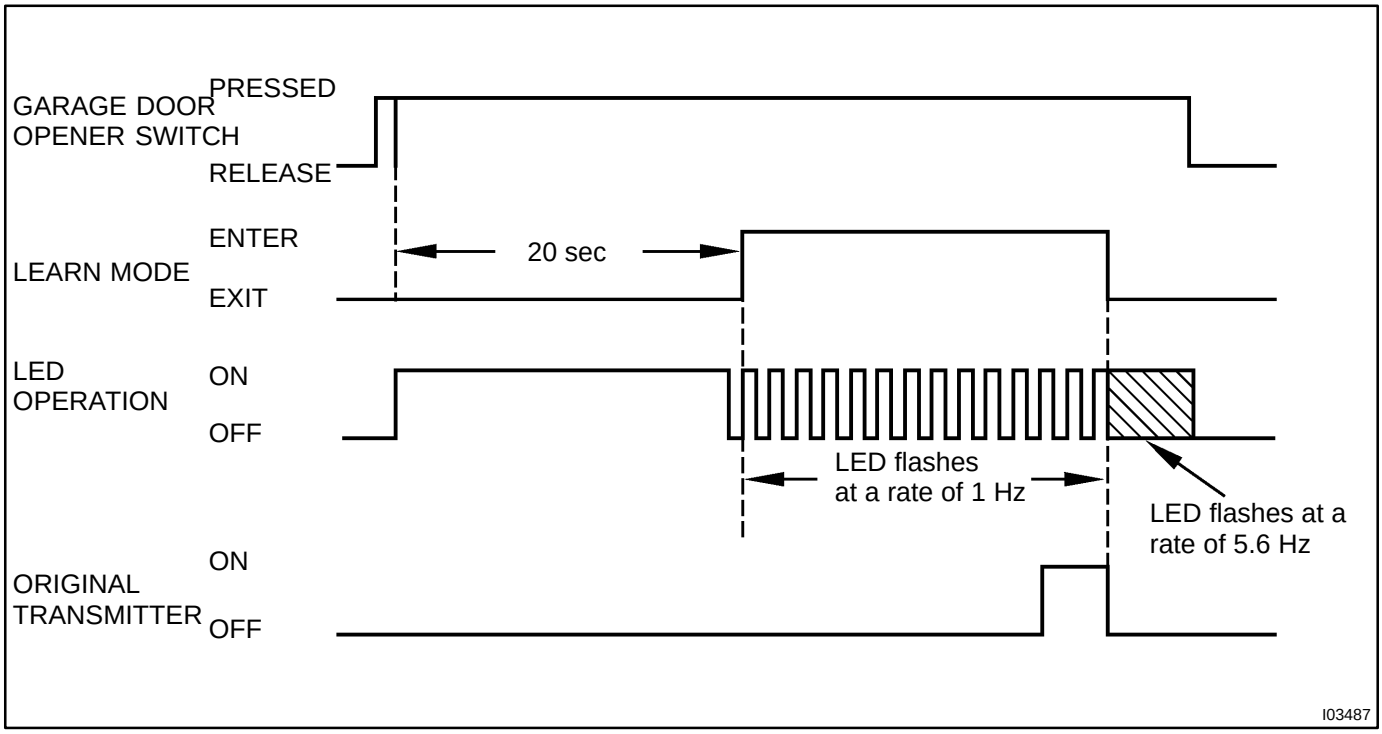


(b) In the condition of (a), bring the original transmitter to within 1–inch area around the garage door opener and press the switch. (code transmitting).

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:

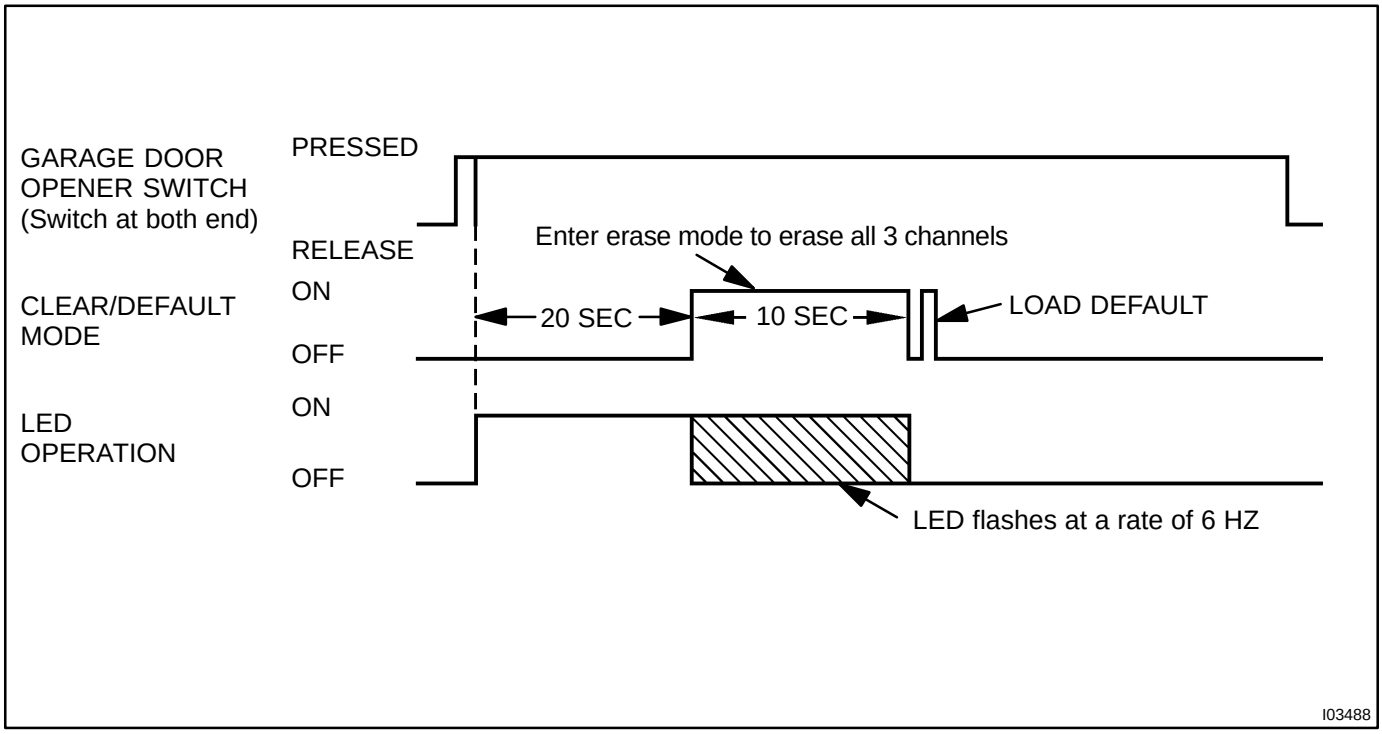
When transferring to deletion mode, LED (red) blinks in 6 Hz cycle.

(b) When releasing the switch within 10 seconds after transferring to deletion mode, all the registered codes will be erased.

HINT:

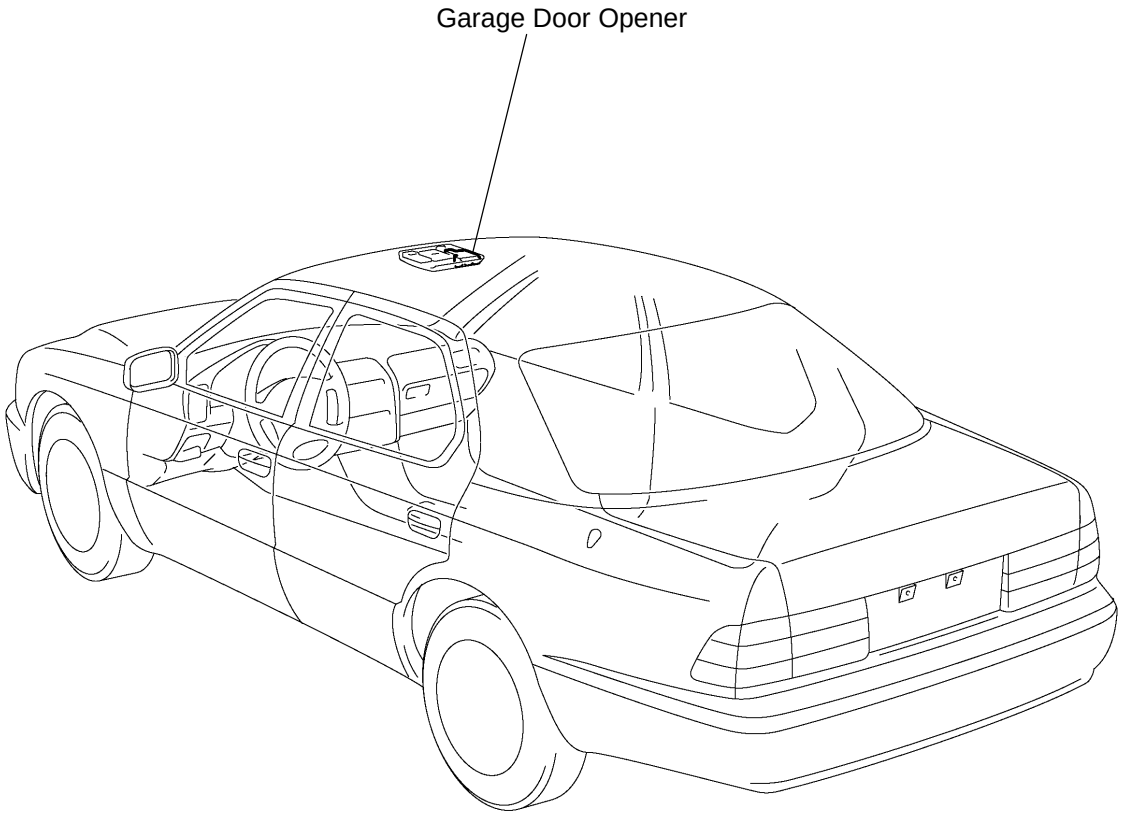
Press the switch until blinking in 6 Hz cycle stops, so that the default code for check is set.

Code deletion timing chart



BE0D3–01

LOCATION



I03403

BE0D4–01

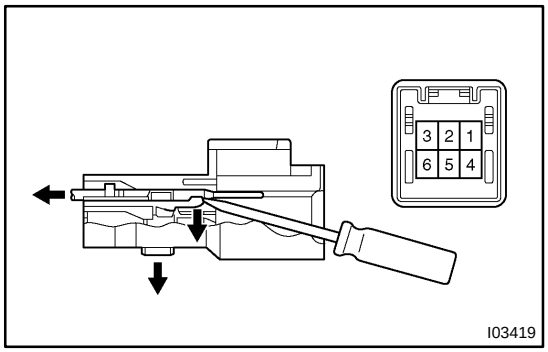
REMOVAL

1. REMOVE FRONT PERSONAL LIGHT LENS

2. REMOVE FRONT PERSONAL LIGHT

(a) Remove the 3 screws.

(b) Disconnect the 2 connectors.



3. REMOVE GARAGE DOOR OPENER

(a) Remove the 3 screws.

(b) Remove the garage door opener connector from the personal light.

(c) Disconnect the secondary locking device.

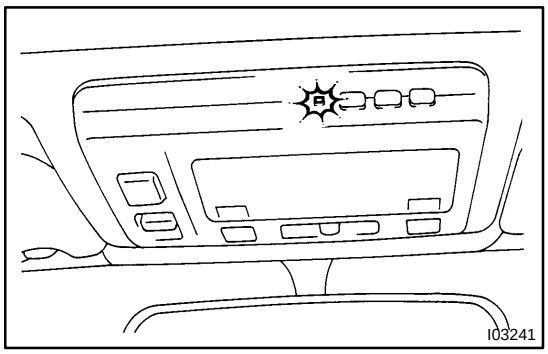
(d) Release the locking plug of the terminal 4 and 5, and pull the terminals out from the rear.

HINT:

Use a small screw driver.

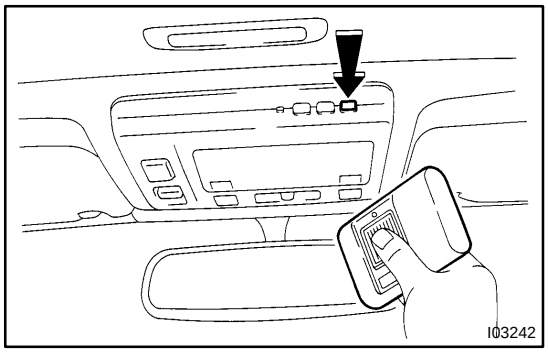
BE0D5–01

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.

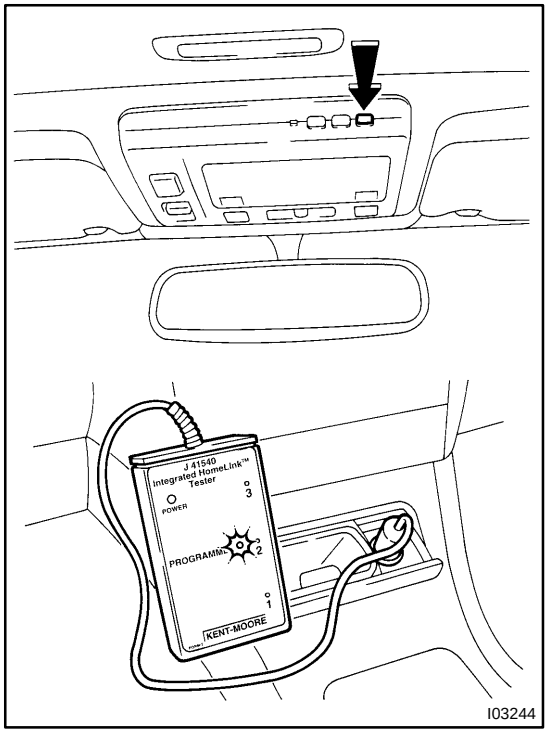


2. INSPECT GARAGE DOOR OPENER REGISTRATION AND TRANSMITTING

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

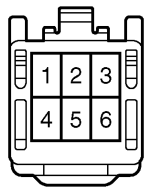
If the code can not be registered, replace garage door opener.



(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



I03432

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
5 – Ground	Constant	Continuity
4 – Ground	Constant	Battery positive voltage

BE0D6–01

INSTALLATION

1. INSTALL GARAGE DOOR OPENER

(a) Connect the wire harness to the terminal 4 and 5.

(b) Install the 3 screws.

2. INSTALL FRONT PERSONAL LIGHT

(a) Connect the 2 connectors.

(b) Install the 3 screws.

3. INSTALL FRONT PERSONAL LIGHT LENS

ENGINE IMMOBILISER SYSTEM

BE0D7–01

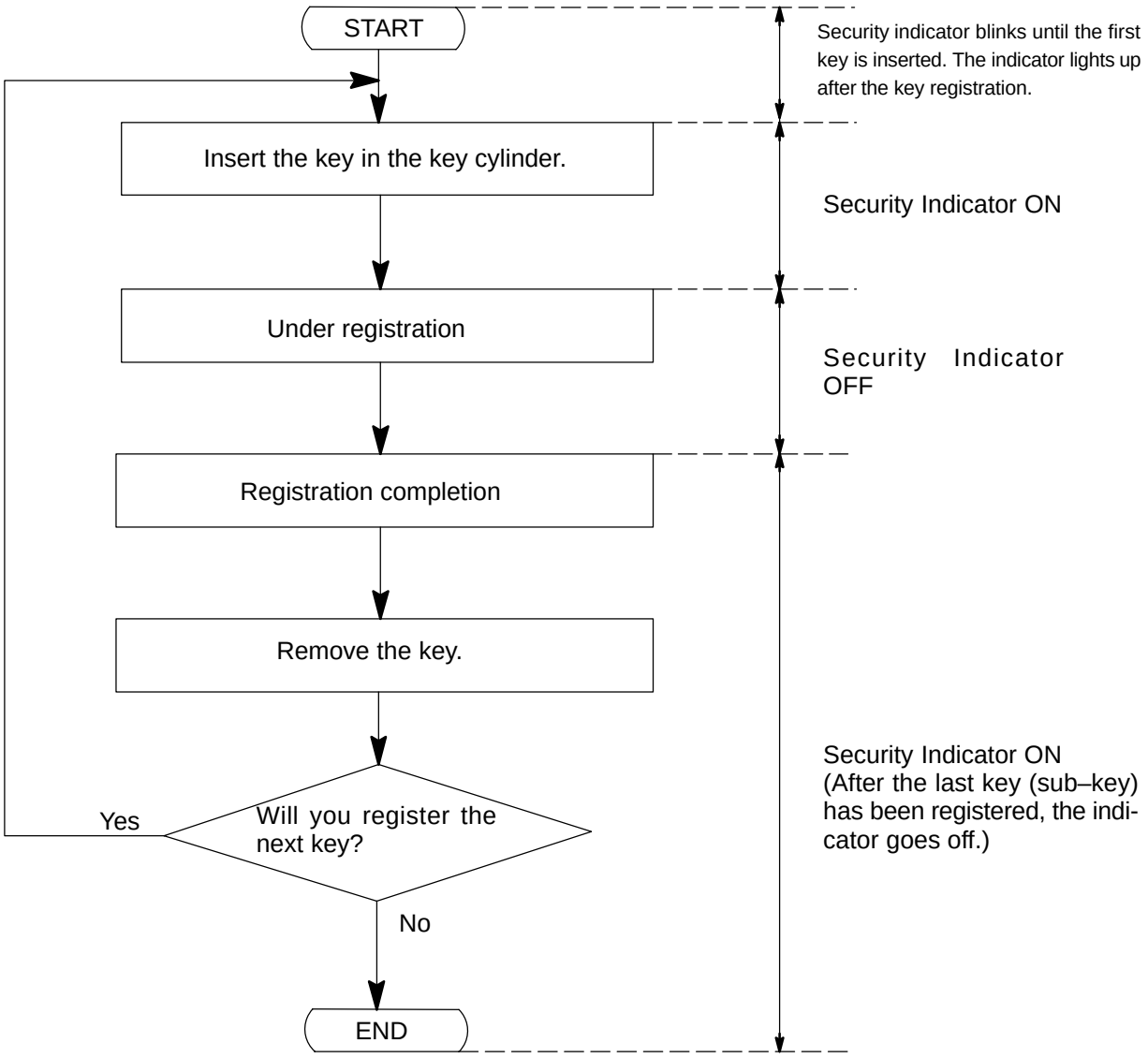
REGISTRATION PROCEDURE

1. KEY REGISTRATION IN AUTOMATIC REGISTRATION MODE

(a) Registration of a new transponder key.

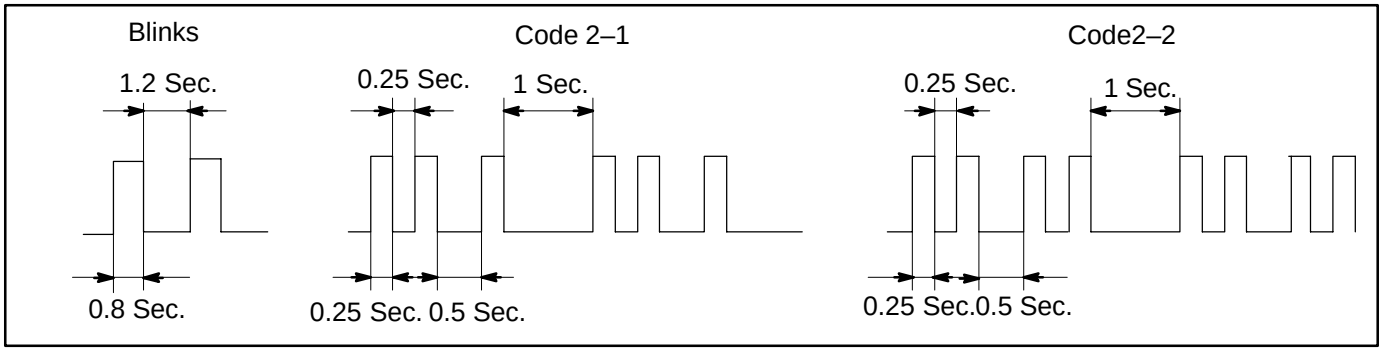
HINT:

- 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 4 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.

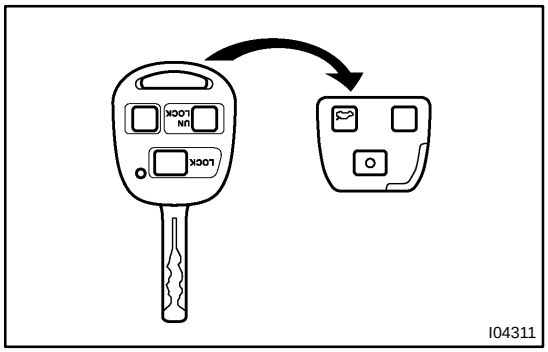
After 1 more key code have been registered with master key, perform step (1) or (2) without pulling the key out or inserting the already registered key.

(1) Depress and release brake pedal 5 times or more within 15 sec.

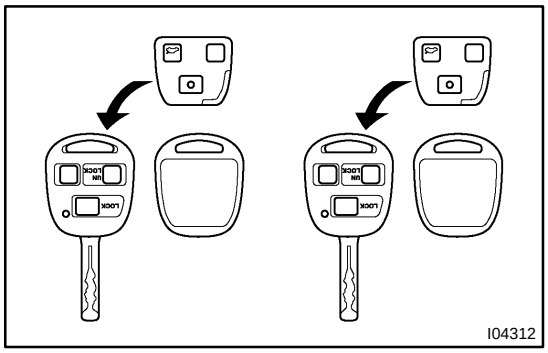
(2) With the LEXUS hand–held tester, require automatic registration mode completion.

2. KEY REGISTRATION OF PROCEDURE NEW MASTER KEY AND NEW SUB–KEY ON THIS IS DESCRIBED BELOW

HINT:
Key registration of new master key and new sub–key on this vehicle when new ignition cylinder and key set, and new lock cylinder set including ignition key cylinder are installed.



(a) Removing wire–less and immobiliser module from original master key.



(b) Masking new master key.
After replacing and installing new ignition cylinder, install removed original modules into new 2 key housing as supply parts.

(c) Registration of supplied new sub–key and /or master key
Register supplied new sub–key and /or master key by using new master key.
(See step 3 and 4)

NOTICE:
In case of replacing with ignition cylinder and key set, door locks cannot be opened by new ignition keys. Therefore, to avoid any trouble caused by empty battery of transmitter of new ignition key, please bring the original key while driving.

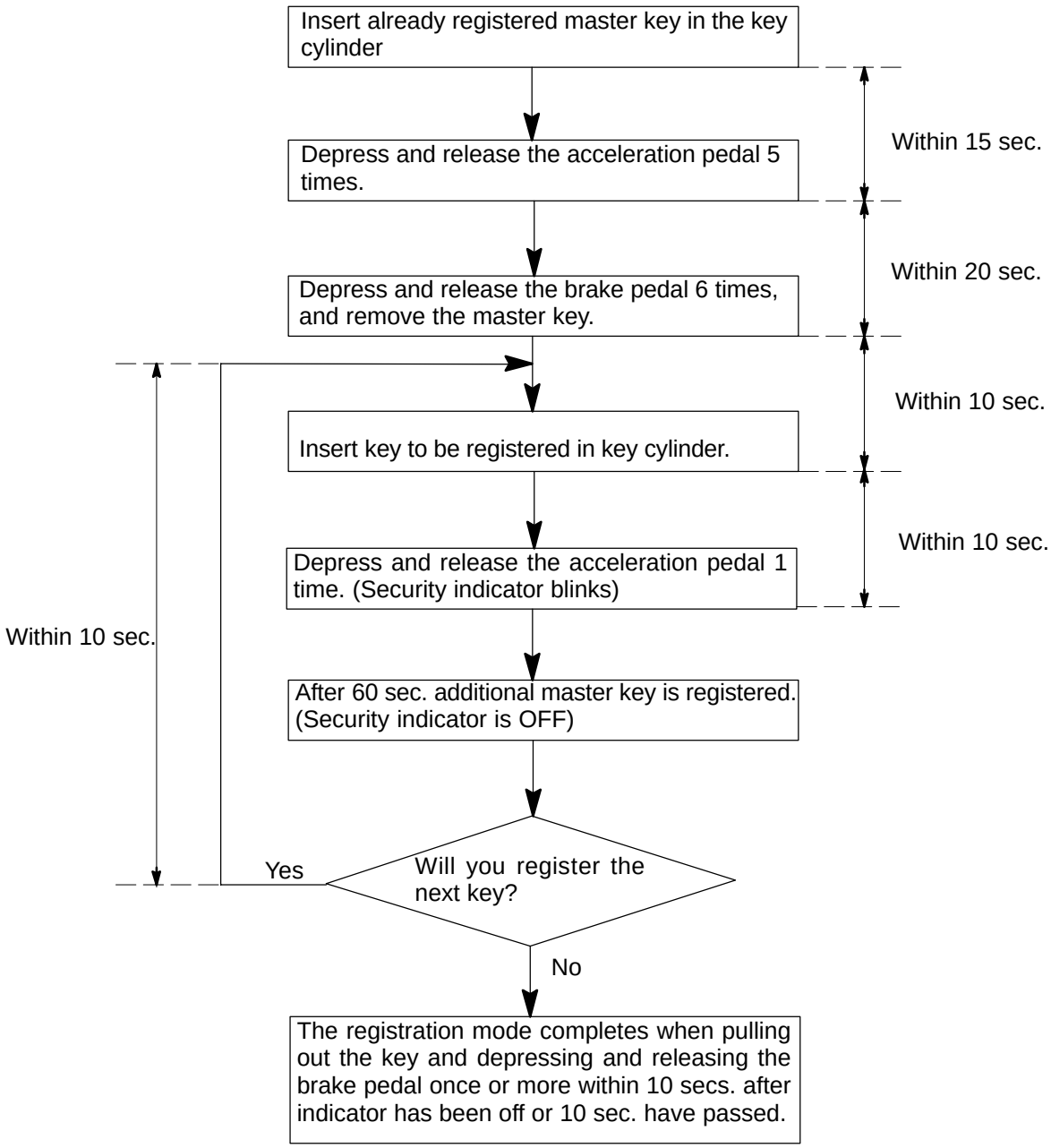
3. REGISTRATION OF ADDITIONAL MASTER KEY

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 LEXUS hand–held tester.

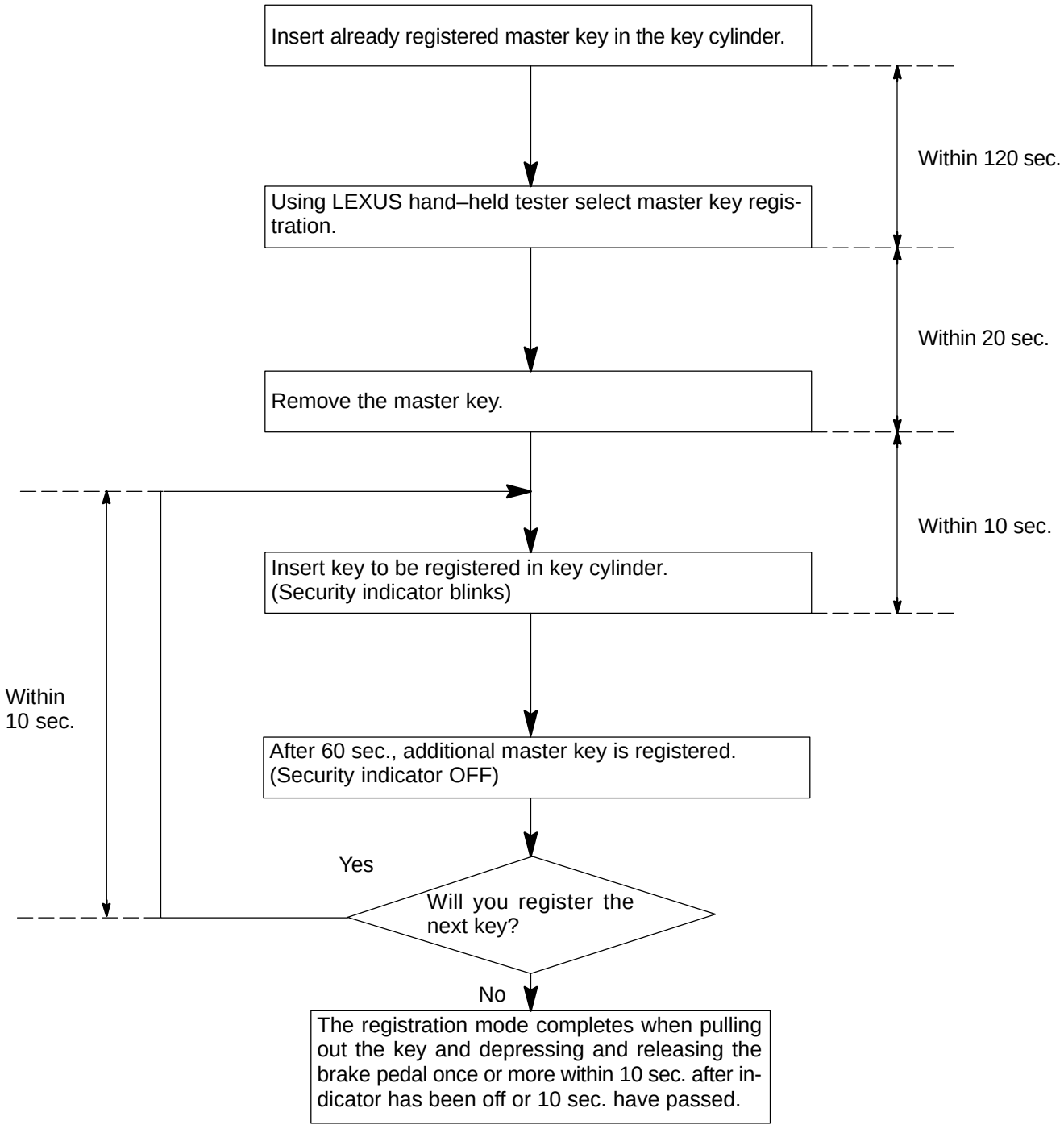
HINT:

- 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 LEXUS hand–held tester:



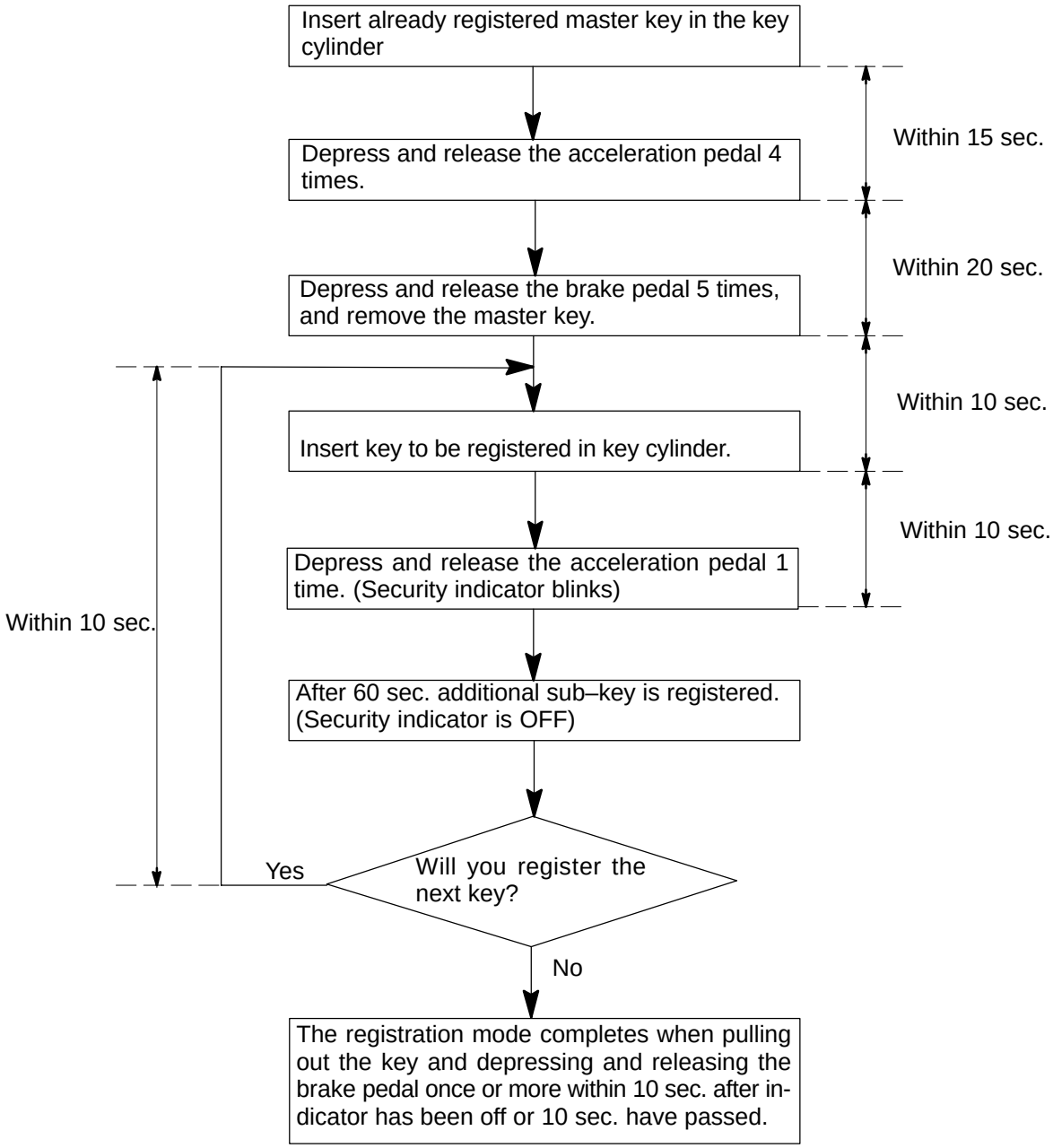
4. REGISTRATION OF ADDITIONAL SUB–KEY

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 LEXUS hand–held tester.

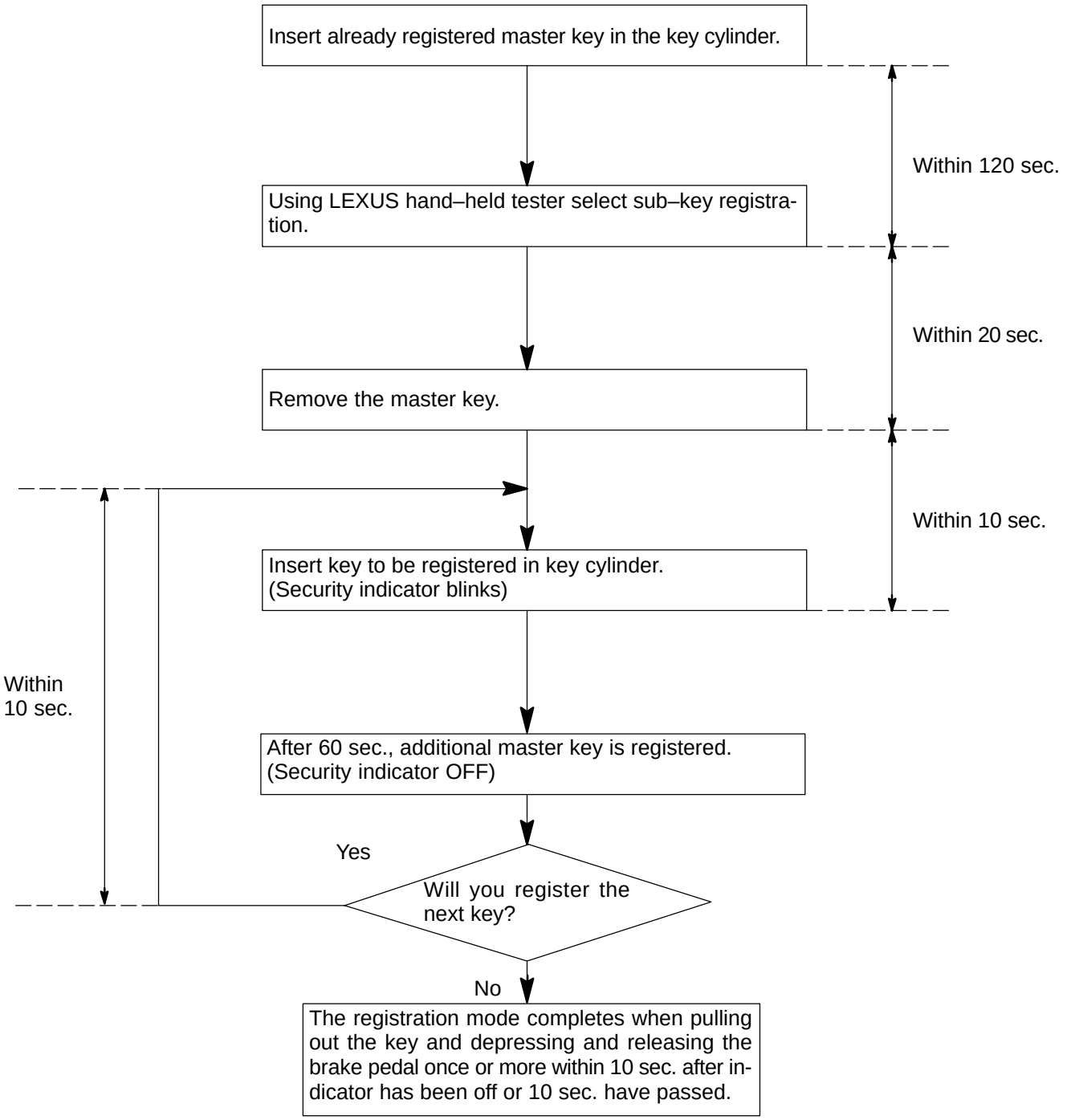
HINT:

- 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 LEXUS hand–held tester:



5. 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 LEXUS hand–held tester.

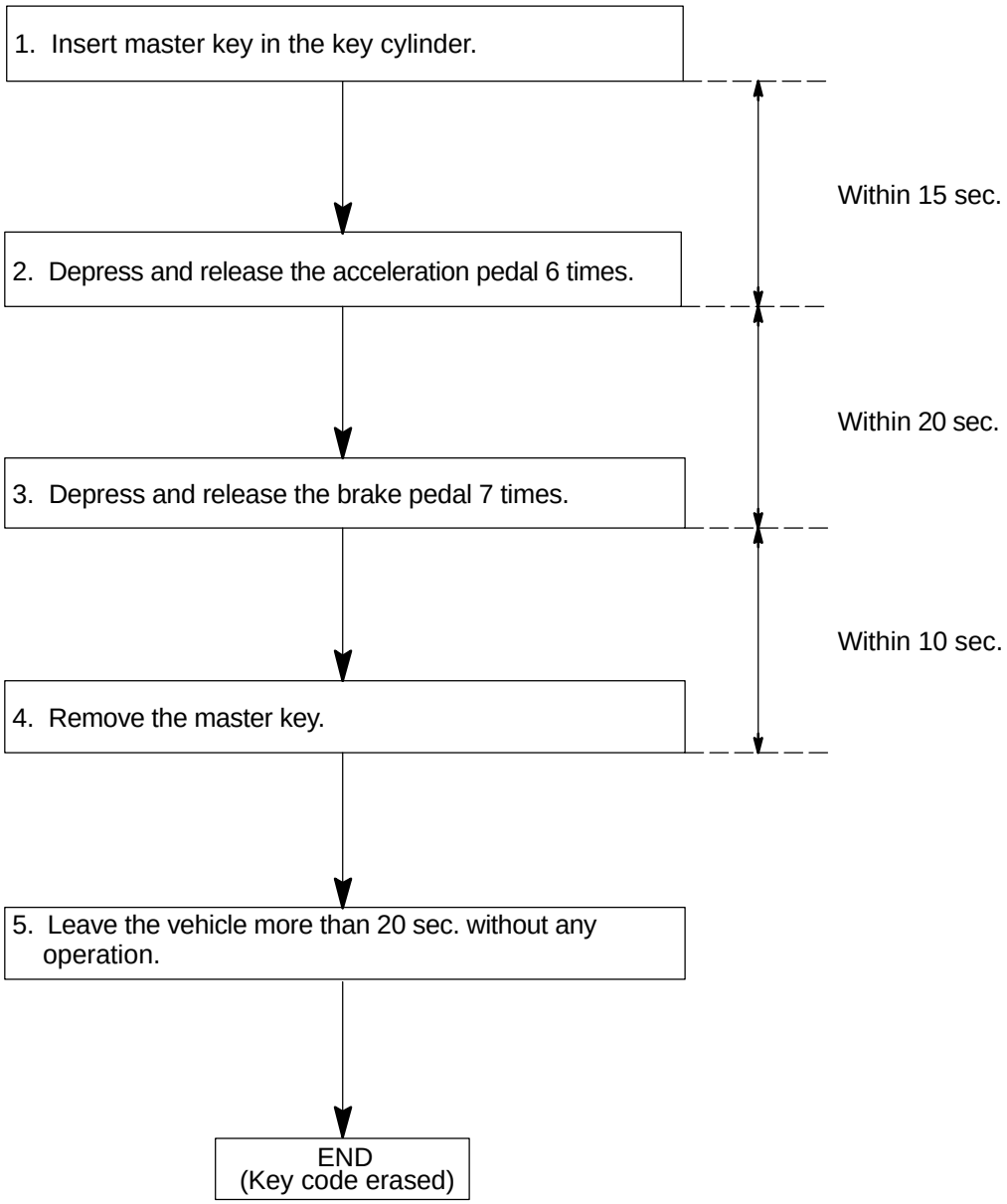
NOTICE:

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.

HINT:

- 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.

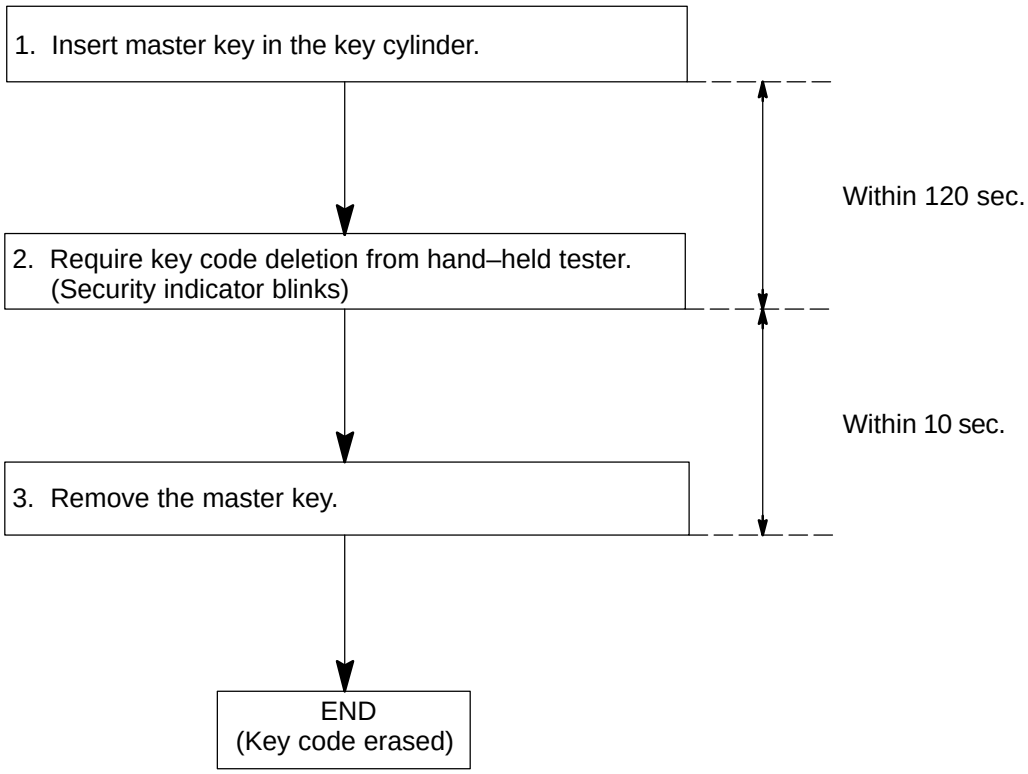
(1) Depressing brake pedal and acceleration pedal:



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 LEXUS hand–held tester:

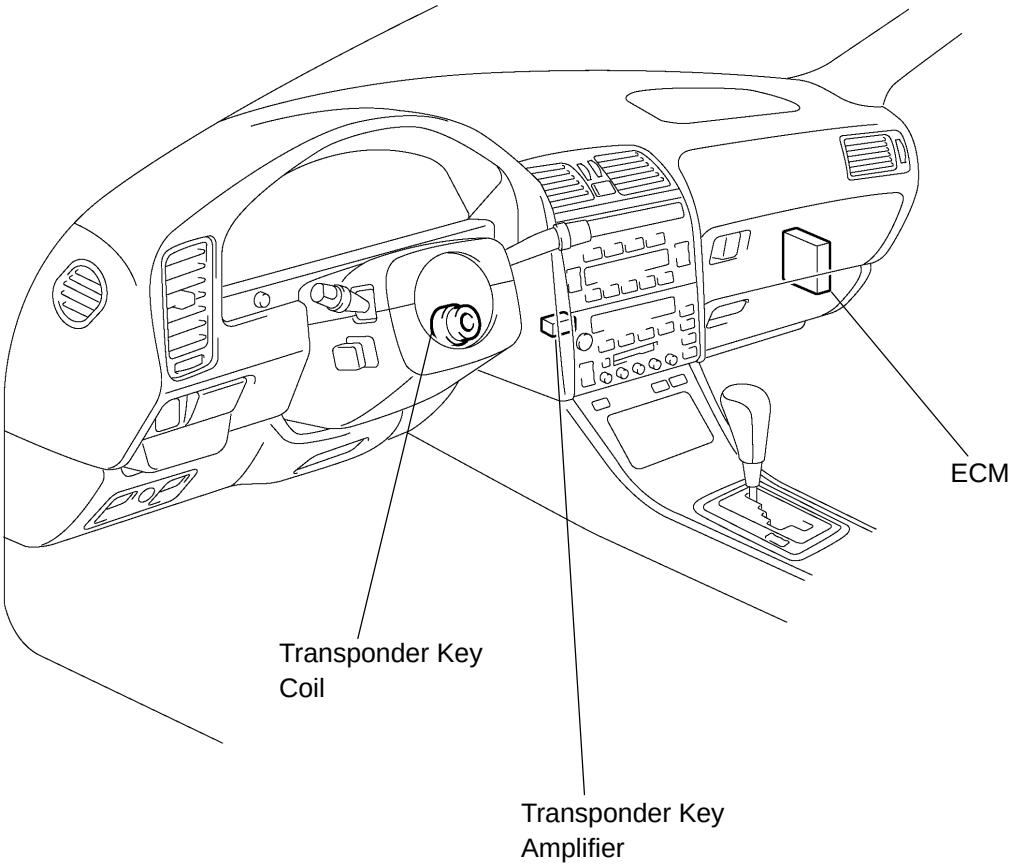


HINT:

When the key cannot be pulled out in the step 3, key code deletion is canceled.
(Security indicator is OFF.)

BE0D8–01

LOCATION



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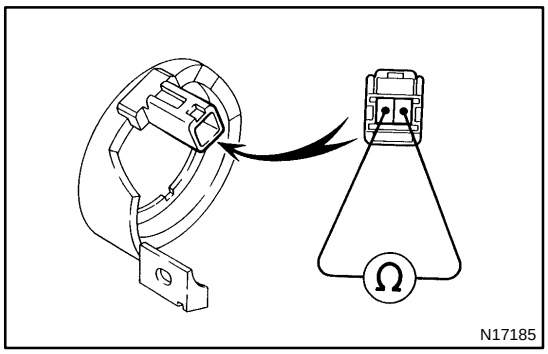
BE0D9–01



INSPECTION

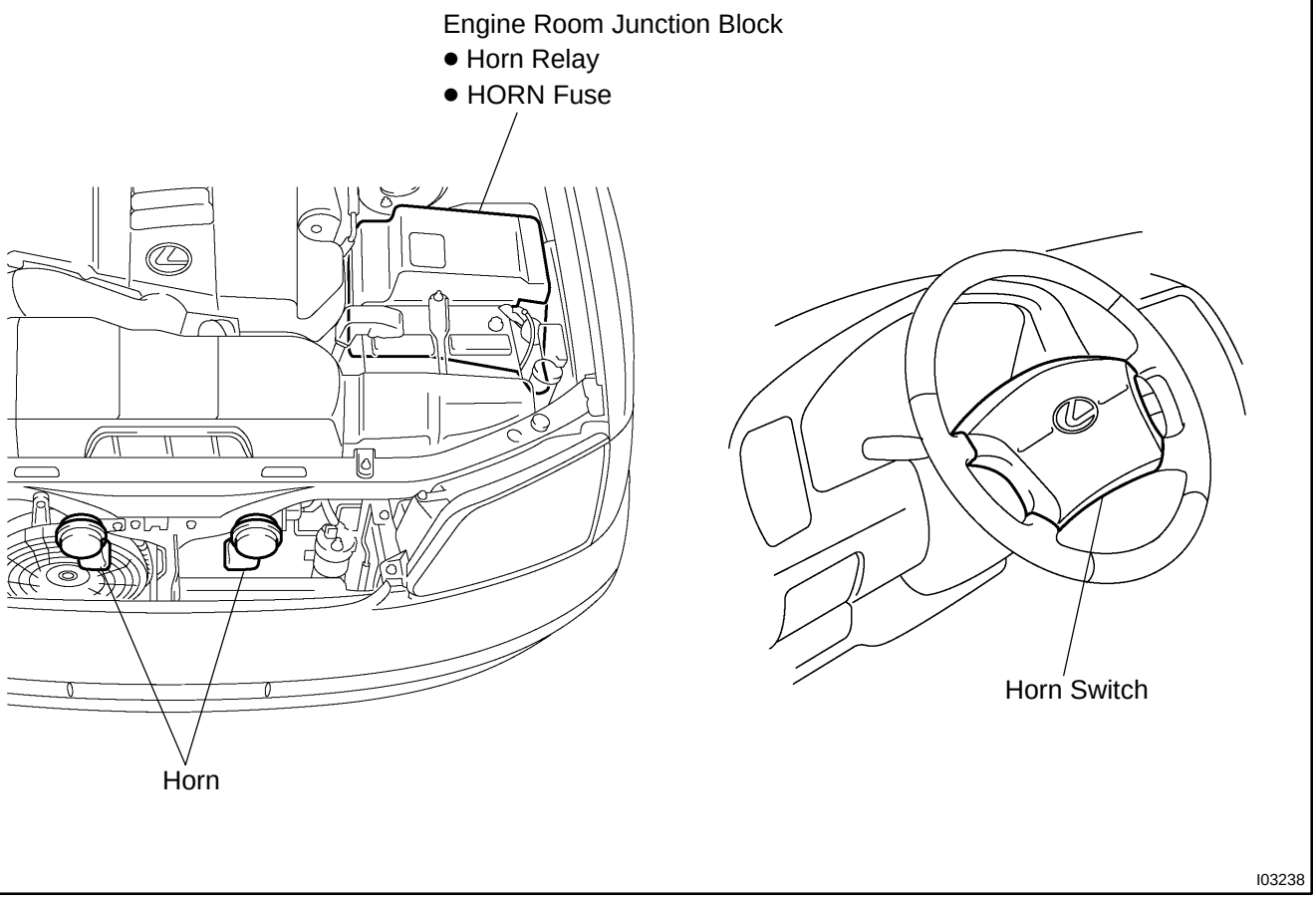
INSPECTION TRANSPONDER KEY COIL CONTINUITY

Check that there is continuity between terminal 1 and 2.
If continuity is not as specified, replace the coil.

HORN SYSTEM

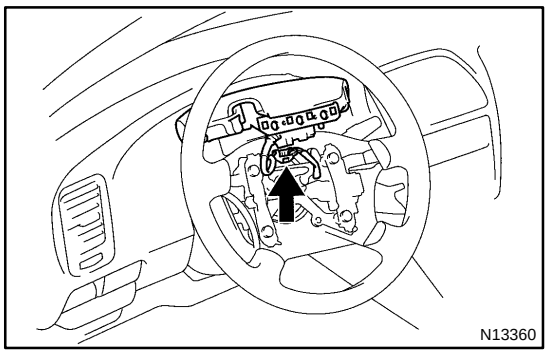
BE0DA–01

LOCATION



BE0DB–01

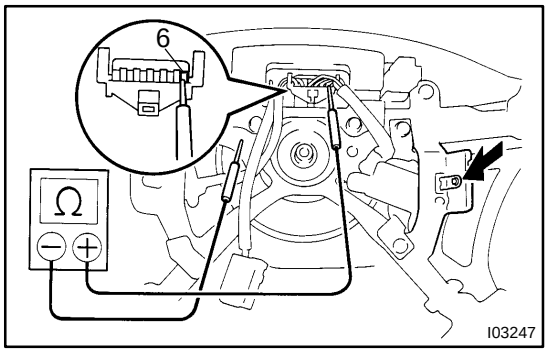
INSPECTION



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.

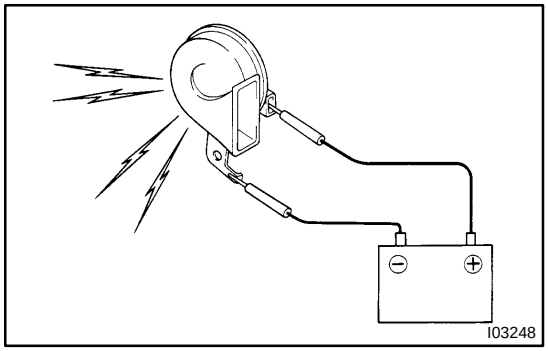
HINT:
Do not disconnect the connector from the horn pad.



(e) Disconnect the connector from the slip ring.
(f) Check that there is no continuity between terminal 6 of the connector and body ground.
(g) Check that there is continuity 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.

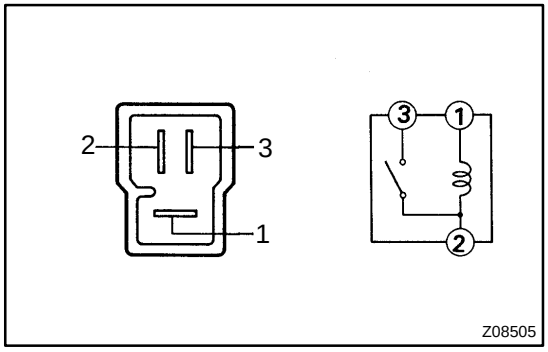
(h) Install the horn pad in place and using a torx socket wrench, torque the 2 bolts.
Torque: 7.1 N·m (72 kgf·cm, 62 in.·lbf)
(i) Install the left and right covers.
(j) Connect the negative (–) terminal to the battery.



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 RELAY CONTINUITY

Condition	Tester connection	Specified condition
Constant	1 – 2	Continuity
Apply B+ between terminals 1 and 2.	2 – 3	Continuity

If continuity is not as specified, replace the relay.