BODY ELECTRICAL SYSTEM

BE04P–01

PRECAUTION

HINT:

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

1. HEADLIGHT SYSTEM

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

2. SRS (SUPPLEMENTAL RESTRAINT SYSTEM)

The LEXUS ES300 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 deploy during servicing, possibly leading to a serious accident. Before servicing (including removal or installation of parts, inspection or replacement), be sure to read the precautionary notices in the RS section.

3. AUDIO SYSTEM

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

4. MOBILE COMMUNICATION SYSTEM

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

BE04Q–09

PROBLEM SYMPTOMS TABLE

1. POWER OUTLET

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

2. HEADLIGHT AND TAILLIGHT SYSTEM (USA):

Symptom	Suspect Area	See page
Headlight does not light. (Taillight is normal)	1. HEAD (LH, RH) Fuse (E/G Room J/B) 2. Headlight Control Relay (E/G Room J/B) 3. Headlight Bulbs 4. Wire Harness	– – – –
Headlight does not light. (Taillight does not light up)	1. Integration Relay (Instrument Panel J/B) 2. Light Control Switch 3. Wire Harness	BE–20 BE–27 –
Only one side light does not light.	1. HEAD (LH, RH) Fuse (E/G Room J/B) 2. Headlight Bulbs 3. Wire Harness	– – –
”Lo–Beam” does not light.	1. Light Control Switch 2. Headlight Dimmer Switch 3. Headlight Bulbs 4. Wire Harness	BE–27 BE–27 – –
”Hi–Beam” does not light.	1. Light Control Switch 2. Headlight Dimmer Switch 3. Headlight Bulbs 4. Wire Harness	BE–27 BE–27 – –
”Flash” does not light.	1. Headlight Dimmer Switch 2. Wire Harness	BE–27 –
”Auto Turn–off system” does not operate.	1. Integration Relay (Instrument Panel J/B) 2. GAUGE Fuse (Instrument Panel J/B) 3. Ignition Switch 4. Door Courtesy Switch (Driver’s) 5. Wire Harness 6. DOME Fuse (E/G Room J/B)	BE–20 – BE–20 BE–46 – –
Taillight does not light. (Headlight does not light)	1. Light Control Switch 2. Integration Relay (Instrument Panel J/B) 3. Wire Harness	BE–27 BE–20 –
Taillight does not light. (Headlight is normal)	1. TAIL Fuse (Instrument Panel J/B) 2. Taillight Control Relay (Instrument Panel J/B) 3. Wire Harness	– BE–27 –
Only one side light does not light.	1. Bulb 2. Wire Harness	– –
Rear Combination light does not light.	1. Wire Harness 2. Light Failure Sensor 3. Bulb	– BE–92 –
”Light Auto Turn–off system” does not operate.	1. Integration Relay 2. Wire Harness 3. DOME Fuse (E/G Room J/B) 4. Door Courtesy Switch (Driver’s)	BE–20 – – BE–46

3. HEADLIGHT AND TAILLIGHT SYSTEM (CANADA):

Symptom	Suspect Area	See page
Headlight does not light. (Taillight is normal)	1. Wire Harness	–
Headlight does not light. (Taillight does not light up)	1. Wire Harness	–
Only one side light does not light.	1. Headlight Bulb 2. Wire Harness	– –
”Lo–Beam” does not light.	1. Headlight Control Relay (E/G Room J/B) 2. Light Control Switch 3. Integration Relay (Instrument Panel J/B) 4. Wire Harness 5. HEAD LO (LH, RH) Fuse (E/G Room R/B No.2) 6. Headlight Bulb	BE–27 BE–27 BE–20 – – –
”Hi–Beam” does not light.	1. DRL No.2 Fuse (E/G Room R/B No.2) 2. Daytime Running Light Relay No.2 (E/G Room R/B No.2) 3. Daytime Running Light Relay 4. Daytime Running Light Relay No.3 (E/G Room R/B No.2) 5. Daytime Running Light Relay No.4 (E/G Room R/B No.2) 6. DOME Fuse (E/G Room J/B) 7. Headlight Dimmer Switch 8. Wire Harness 9. HEAD HI (LH, RH) Fuse (E/G Room J/B) 10. Headlight Bulb	– – BE–27 BE–27 – BE–27 – BE–27 – BE–27 – – –
”Flash” does not light.	1. DRL No.2 Fuse (E/G Room R/B No.2) 2. Daytime Running Light Relay No.2 (E/G Room R/B No.2) 3. Daytime Running Light Relay 4. Daytime Running Light Relay No.3 (E/G Room R/B No.2) 5. Daytime Running Light Relay No.4 (E/G Room R/B No.2) 6. DOME Fuse (E/G Room J/B) 7. Headlight Dimmer Switch 8. Wire Harness 9. HEAD HI (LH, RH) Fuse (E/G Room J/B) 10. Headlight Bulb	– – BE–27 BE–27 – BE–27 – BE–27 – BE–27 – – –
”Auto Turn–off System” dose not operate.	1. Integration Relay (Instrument Panel J/B) 2. GAUGE Fuse (Instrument Panel J/B) 3. Ignition Switch 4. Door Courtesy Switch (Driver’s) 5. Wire Harness 6. DOME Fuse (E/G Room J/B)	BE–27 – BE–27 BE–46 – –
Headlight does not light with engine running and light control SW OFF.	1. GAUGE Fuse (Instrument Panel J/B) 2. DOME Fuse (E/G Room J/B) 3. Other Parts* 4. Daytime Running Light Relay 5. Daytime Running Light Relay No.3 (E/G Room R/B No.2) 6. Wire Harness 7. HEAD HI (LH, RH) Fuse (E/G Room J/B) 8. Headlight Bulb	– – – BE–27 – BE–27 – – –

Taillight does not light. (Headlight does not light)	1. Light Control Switch 2. Integration Relay (Instrument Panel J/B) 3. Wire Harness	BE–27 BE–27 –
Taillight does not light. (Headlight is normal)	1. TAIL Fuse (Instrument Panel J/B) 2. Taillight Control Relay (Instrument Panel J/B) 3. Wire Harness	– BE–27 –
Only one side light does not light.	1. Bulb 2. Wire Harness	– –
Rear Combination light does not light.	1. Wire Harness 2. Light Failure Sensor 3. Bulb	– BE–92 –
”Light Auto Turn–off system” does not operate.	1. Integration Relay 2. Wire Harness 3. DOME Fuse (E/G Room J/B) 4. Door Courtesy Switch (Driver’s)	BE–27 – – BE–46

*: Parking Brake Switch and Terminal L of Generator

4. FOG LIGHT SYSTEM

Symptom	Suspect Area	See page
Fog light does not light with light control SW HEAD. (Headlight is normal)	1. FOG Fuse (Instrument Panel J/B) 2. Fog Light Relay 3. Fog Light Switch 4. Wire Harness	– BE–36 BE–36 –
Fog light does not light with light control SW HEAD. (Headlight does not light)	1. Other Parts*1 2. Wire Harness	– –
Only one light does not light.	1. Bulb 2. Wire Harness	– –

*1: Inspect Headlight System.

5. 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 Flasher 3. Wire Harness	 BE–40 –
The flashing frequency is abnormal.	1. Bulb 2. Turn Signal Switch 3. Wire Harness	– BE–40 –
Hazard warning light does not light up. (Turn signal is normal)	1. HAZARD Fuse (E/G Room J/B) 2. Wire Harness	– –
Either of hazard warning lights does not light up .	1. Hazard Warning Switch 2. Wire Harness	BE–40 –
*1 Turn signal does not light up.	1. Ignition Switch 2. Turn Signal Switch 3. Wire Harness	BE–20 BE–40 –
*2 Turn signal does not light up.	1. TURN Fuse (Instrument Panel J/B) 2. Turn Signal Switch 3. Wire Harness	– BE–40 –
Turn signal does not light up in one direction.	1. Turn Signal Switch 2. Wire Harness	BE–40 –
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.

6. ILLUMINATION LIGHT SYSTEM

Symptom	Suspect Area	See page
Illumination lights do not light up. (Taillight is normal)	1. PANEL Fuse (Instrument Panel J/B) 2. Wire Harness	– –
Illumination lights do not light up. (Taillight does not light)	1. Taillight Control Relay (Instrument Panel J/B) 2. Other parts* 3. Wire Harness	BE–27 – –
Illumination light with adjustable brightness do not light up.	1. Rheostat Light Control Volume 2. Wire Harness	BE–43 –
Only one light does not light up.	1. Bulb 2. Wire Harness	– –
Brightness does not chang when rheostat volume is trutned. (ALL)	1. Rheostat Light Control Volume 2. Wire Harness	BE–43 –
Brightness does not chang when rheostat volume is trutned. (Only Combination Meter)	1. Combination Meter Assembly 2. Wire Harness	BE–58 –
Glove box does not light up.	1. Glove Box Light Switch 2. Bulb 3. Wire Harness	BE–43 – –

*: Inspect Taillight System.

7. INTERIOR LIGHT SYSTEM

Symptom	Suspect Area	See page
Only one interior light does not light up.	1. Bulb 2. Wire Harness	– –
Interior lights do not light up (ALL).	1. DOME Fuse (E/G Room J/B) 2. Wire Harness	– –
”Illuminated Entry System” does not operate.	1. Integration Relay (Instrument Panel J/B) 2. Door Courtesy Switch 3. Wire Harness	– BE–46 –
Interior light does not light up.	1. Bulb 2. Interior Light Switch 3. Wire Harness	– BE–46 –
Front personal light does not light up.	1. Bulb 2. Personal Light Switch 3. Wire Harness	– BE–46 –
Vanity light does not light up.	1. Bulb 2. Vanity Light 3. Wire Harness	– BE–46 –
Luggage compartment light does not light up.	1. Bulb 2. Luggage Compartment Door Courtesy Switch 3. Wire Harness	– BE–46 –
Courtesy light does not light up.	1. Bulb 2. Door Courtesy Switch 3. Wire Harness	– BE–46 –

8. 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–51 BE–51 –
Stop light always lights up.	1. Stop Light Switch 2. Wire Harness	BE–51 –

Only one light always lights up.	1. Wire Harness	–
Only one light does not light.	1. Bulb 2. Wire Harness	– –

9. WIPER AND WASHER SYSTEM

Symptom	Suspect Area	See page
Wiper and washers do not operate.	1. WIPER Fuse (Instrument Panel J/B) 2. Wiper Switch 3. Wire Harness	– BE–54 –
Wipers do not operate in LO or HI.	1. Wiper Switch 2. Wiper Motor 3. Wire Harness	BE–54 BE–54 –
Wipers do not operate in INT.	1. Wiper Switch 2. Wiper Motor 3. Wire Harness	BE–54 BE–54 –
Washer motor does not operate.	1. Washer Switch 2. Washer Motor 3.Wire Harness	BE–54 BE–54 –
Wiper do not operate when washer switch is ON.	1. Washer Motor 2. Wire Harness	BE–54 –
Washer fluid does not operate.	1. Washer Hose and Nozzle	–
●At wiper switch HI position, the wiper blade is in contact with the body. ●When the wiper switch is OFF, the wiper blade does not retract or the retract position is wrong.	1. Wiper Switch* 2. Wire Harness	BE–54 – – – –

*: Inspect wiper arm and blade set position.

10. DEFOGGER SYSTEM

Symptom	Suspect Area	See page
All defogger systems do not operate.	1. DEFOG Fuse (Instrument Panel J/B) 2. HEATER Fuse (Instrument Panel J/B) 3. Defogger Relay (Instrument Panel J/B) 4. Defogger Switch 5. Wire Harness	– – BE–106 BE–106 –
Rear window defogger does not operate.	1. Defogger Wire 2. Choke Coil 3. Wire Harness	– – –
Mirror defogger does not operate.	1. MIRROR–HEATER Fuse (Instrument Panel J/B) 2. Mirror Defogger 3. Wire Harness	– BE–106 –

11. POWER WINDOW CONTROL SYSTEM

Symptom	Suspect Area	See page
*1 Power window does not operate.	1. Integration Relay (Instrument Panel J/B) 2. Wire Harness	BE–20 –
*2 Power window does not operate.	1. POWER Fuse (Instrument Panel J/B) 2. Integration Relay (Instrument Panel J/B) 3. Power Main Relay (Instrument Panel J/B) 4. Power Window Master Switch 5. Wire Harness	– BE–20 BE–110 BE–110 –
*2 ”One Touch Power Window System” does not operate.	1. Power Window Master Switch	BE–110

Only one window glass does not move.	1. Power Window Master Switch 2. Power Window Switch 3. Power Window Motor 4. Wire Harness	BE–110 BE–110 BE–110 –
”Window Lock System” does not operate.	1. Power Window Master Switch	BE–110
”Window Lock Illumination” does not lightup.	1. Power Window Master Switch	BE–110
Key–off power window does not operate.	1. GAUGE Fuse (Instrument Panel J/B) 2. Integration Relay (Instrument Panel J/B) 3. Ignition Switch 4. Door Courtesy Switch 5. Wire Harness	– BE–20 BE–20 BE–46 –

*1: Door Lock does not operate.
*2: Door Lock is normal.

12. POWER DOOR LOCK CONTROL SYSTEM

Symptom	Suspect Area	See page
”Door lock system” does not operate at all.	1. ECU–IG Fuse (Instrument Panel J/B) 3. DOOR Fuse (Instrument Panel J/B) 4. Integration Relay (Instrument Panel J/B) 5. Wire Harness	– – BE–20 –
Door lock system does not operate by manual switch.	1. Power Window Master Switch 2. Door Lock Control Switch 3. Integration Relay (Instrument Panel J/B) 4. Wire Harness	BE–110 BE–119 BE–20 –
Door lock system does not operate by door key.	1. Door Key Lock and Unlock Switch 2. Integration Relay (Instrument Panel J/B) 3. Wire Harness 4. Door Lock Link Disconnected	BE–119 BE–20 – –
Fault in 2–Operation unlock function of Driver’s side door key lock and unlock switch.	1. Door Key Lock and Unlock Switch 2. Integration Relay (Instrument Panel J/B) 3. Wire Harness	BE–119 BE–20 –
Fault in key confine prevention operate.	1. Integration Relay (Instrument Panel J/B) 2. Key Unlock Warning Switch 3. Door Courtesy Switch 4. Wire Harness	BE–20 BE–20 BE–46 –
Only one door lock does not operation.	1. Door Lock Motor 2. Wire Harness	BE–119 –

13. SLIDING ROOF SYSTEM

Symptom	Suspect Area	See page
*1 Sliding roof system does not operate.	1. Power Main Relay (Instrument Panel J/B) 2. Integration Relay (Instrument Panel J/B) 3. Wire Harness	BE–110 BE–20 –
*2 Sliding roof system does not operate.	1. POWER Fuse (Instrument Panel J/B) 2. Integration Relay (Instrument Panel J/B) 3. Sliding Roof Switch 4. Sliding Roof Control Relay 5. Sliding Roof Motor 6. Wire Harness	– BE–20 BE–125 BE–125 BE–125 –

Sliding roof system operates abnormally.	1. Sliding Roof Control Relay 2. Limit Switch 3. Sliding Roof Switch	BE–125 BE–125 BE–125
Sliding roof system stops operation half way.	1. Sliding Roof Control Relay 2. Limit Switch 3. Sliding Roof Switch 4. Sliding Roof Motor (Stones or foreign material trapped in motor assembly)	BE–125 BE–125 BE–125 BE–125 –

*1: Door Lock does not operate.
*2: Door Lock is normal.

14. POWER SEAT CONTROL SYSTEM

Symptom	Suspect Area	See page
Power seat does not operate. (Power door lock system does not operate)	1. Wire Harness 2. POWER Fuse (Instrument Panel J/B)	– –
Power seat does not operate. (Power door lock system is normal)	1. Wire Harness 2. Power Seat Switch (D,P)	– BE–129
Driver's seat does not operate.	1. Power seat Switch (D) 2. Wire Harness	BE–129 –
Passenger's seat does not operate.	1. Power Seat Switch (P) 2. Wire Harness	BE–129 –
"Slide operation" does not operate.	1. Power Seat Switch (D,P) 2. Wire Harness 3. Slide Motor (D,P)	BE–129 – BE–129
"Front vertical operation" does not operate.	1. Power Seat Switch (D,P) 2. Wire Harness 3. Front Vertical Motor (D,P)	BE–129 – BE–129
"Rear Vertical operation" does not operate.	1. Power Seat Switch (D,P) 2. Wire Harness 3. Rear Vertical Motor (D,P)	BE–129 – BE–129
"Reclining operation" does not operate.	1. Power Seat Switch (D,P) 2. Wire Harness 3. Reclining Motor (D,P)	BE–129 – BE–129

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

15. POWER MIRROR CONTROL SYSTEM

Symptom	Suspect Area	See page
Mirror does not operate.	1. CIG Fuse (Instrument Panel J/B) 2. Mirror Switch 3. Mirror Motor 4. Wire Harness	– BE–134 BE–134 –
Mirror operates abnormally.	1. Mirror Switch 2. Mirror Motor 3. Wire Harness	BE–134 BE–134 –

16. SEAT HEATER SYSTEM

Symptom	Suspect Area	See page
Seat heaters do not operate. (Driver's and Passenger's)	1. SEAT–HEATER Fuse (Instrument Panel J/B) 2. Wire Harness	– –
Driver's seat heater does not operate.	1. Seat Heater Switch (Driver's) 2. Seat Heater (Driver's) 3. Wire Harness	BE–137 BE–137 –

Passenger's seat heater does not operate.	1. Seat Heater Switch (Passenger's) 2. Seat Heater (Passenger's) 3. Wire Harness	BE–137 BE–137 –
Seat heater temperature is too high.	1. Seat Heater	BE–137

17. FUEL LID OPENER SYSTEM

Symptom	Suspect Area	See page
Fuel lid opener system does not operate.	1. DOOR Fuse (Instrument Panel J/B) 2. Fuel Lid Opener Switch 3. Fuel Lid Opener Solenoid 4. Wire Harness	– BE–140 BE–140 –

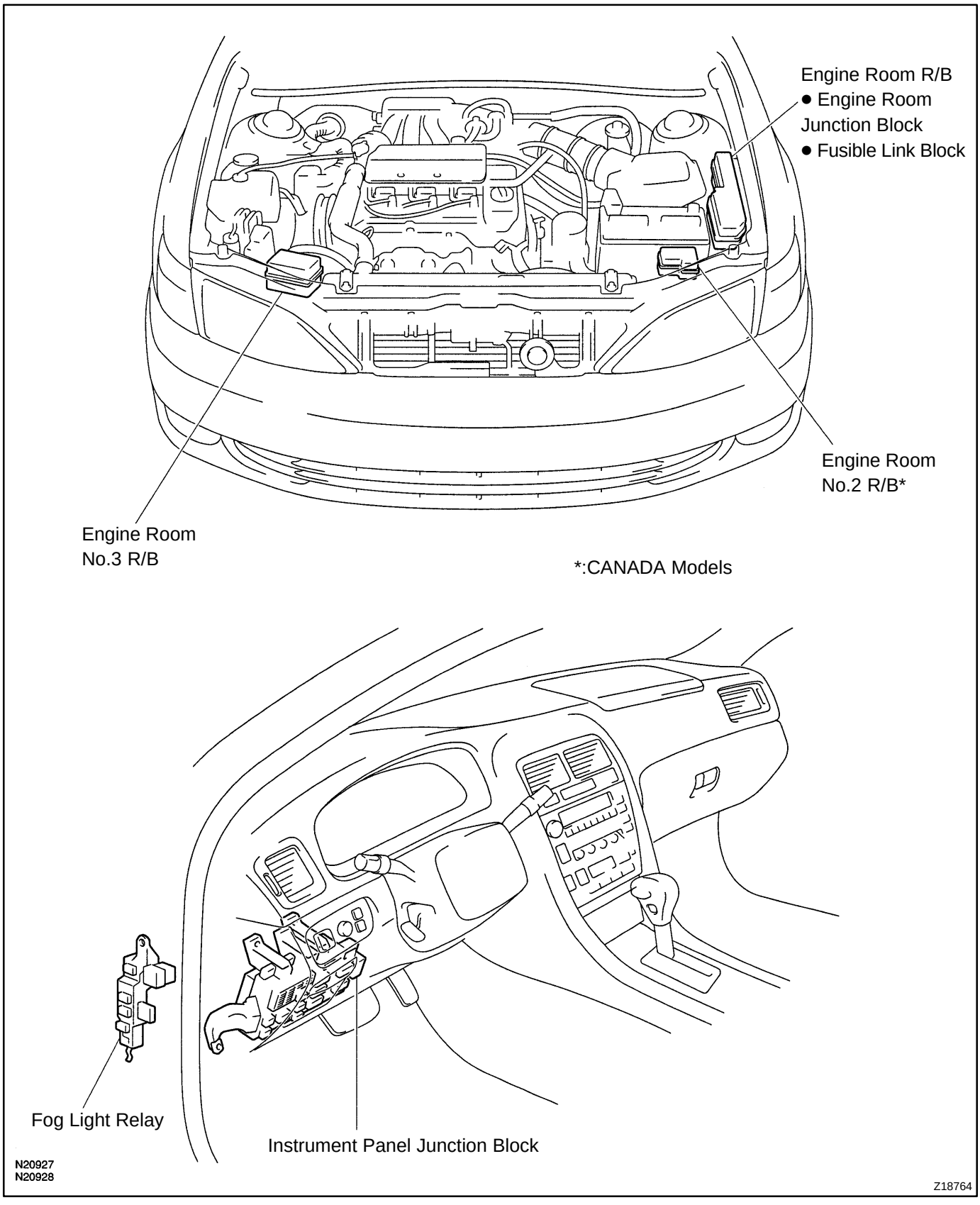
18. HORN SYSTEM

Symptom	Suspect Area	See page
Horn system does not operate.	1. HORN Fuse (E/G Room J/B) 2. Horn Relay (E/G Room J/B) 3. Horn Switch 4. Horn 5. Wire Harness	– BE–172 BE–172 BE–172 –
Horn blows all the time.	1. Horn Relay (E/G Room J/B) 2. Horn Switch 3. Wire Harness	BE–172 BE–172 –
One horn operates but the other horn does not operate.	1. Horn 2. Wire Harness	BE–172 –
Horns operate abnormally.	1. Horn Relay (E/G Room J/B) 2. Horn 3. Wire Harness	BE–172 BE–172 –

POWER SOURCE

LOCATION

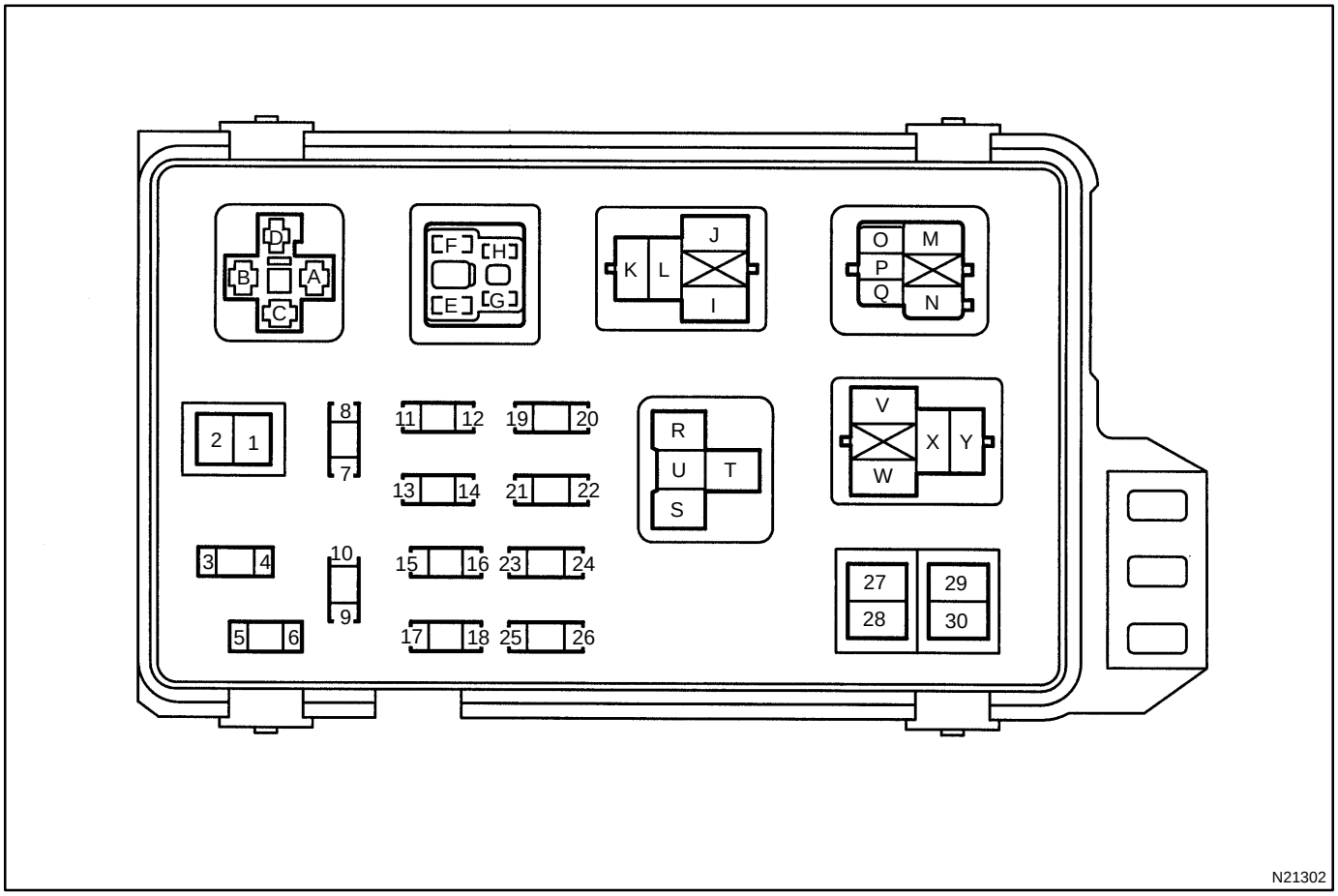
BE04R–01



BE04S–01

INSPECTION

1. INSPECT ENGINE ROOM JUNCTION BLOCK CIRCUIT



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

Fuse	Tester connection	Condition	Specified condition
MAIN	1 – Ground	Constant	Battery positive voltage
DOME	4 – Ground	Constant	Battery positive voltage
ECU–B	6 – Ground	Constant	Battery positive voltage
RADIO No.1	7 – Ground	Ignition switch turned to ACC or ON	Battery positive voltage
SHORT PIN	9 – Ground	Constant	Battery positive voltage
HAZARD	11 – Ground	Constant	Battery positive voltage
AM2	13 – Ground	Constant	Battery positive voltage
TEL	15 – Ground	Constant	Battery positive voltage
HEAD (LH)	17 – Ground	Constant	Battery positive voltage
ALT–S	19 – Ground	Constant	Battery positive voltage
HEAD (RH)	21 – Ground	Constant	Battery positive voltage
EFI	23 – Ground	Constant	Battery positive voltage
HORN	25 – Ground	Constant	Battery positive voltage
RDI	28 – Ground	Constant	Battery positive voltage
CDS	30 – Ground	Constant	Battery positive voltage

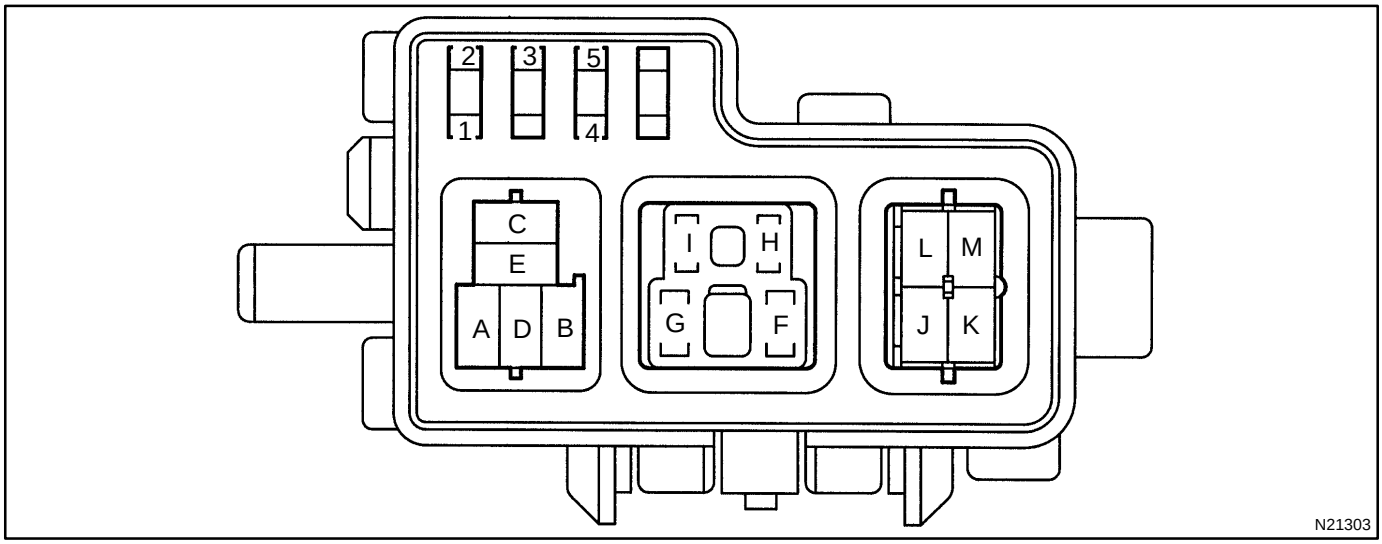
If the circuit is not as specified, inspect the circuits connected to other parts.

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

Relay	Tester connection	Condition	Specified condition
ST	C – Ground	Constant	Battery positive voltage
HEAD	E – Ground	Constant	Battery positive voltage
HEAD	H – Ground	Constant	Battery positive voltage
EFI	J – Ground	Constant	Continuity
ENGINE MAIN	M – Ground	Constant	Battery positive voltage
ENGINE MAIN	Q – Ground	Ignition switch turned to ON	Battery positive voltage
FAN No.1	U – Ground	Constant	Battery positive voltage
HORN	V – Ground	Constant	Battery positive voltage
HORN	Y – Ground	Constant	Battery positive voltage

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

2. CANADA Models Only:
INSPECT ENGINE ROOM No.2 RELAY BLOCK CIRCUIT



(a) Remove the fuse from the relay block and inspect the connector on relay block side.

Fuse	Tester connection	Condition	Specified condition
H – LP RH (LO)	2 – Ground	Constant	Battery positive voltage
H – LP LH (LO)	3 – Ground	Constant	Battery positive voltage
DRL No.2	5 – Ground	Constant	Battery positive voltage

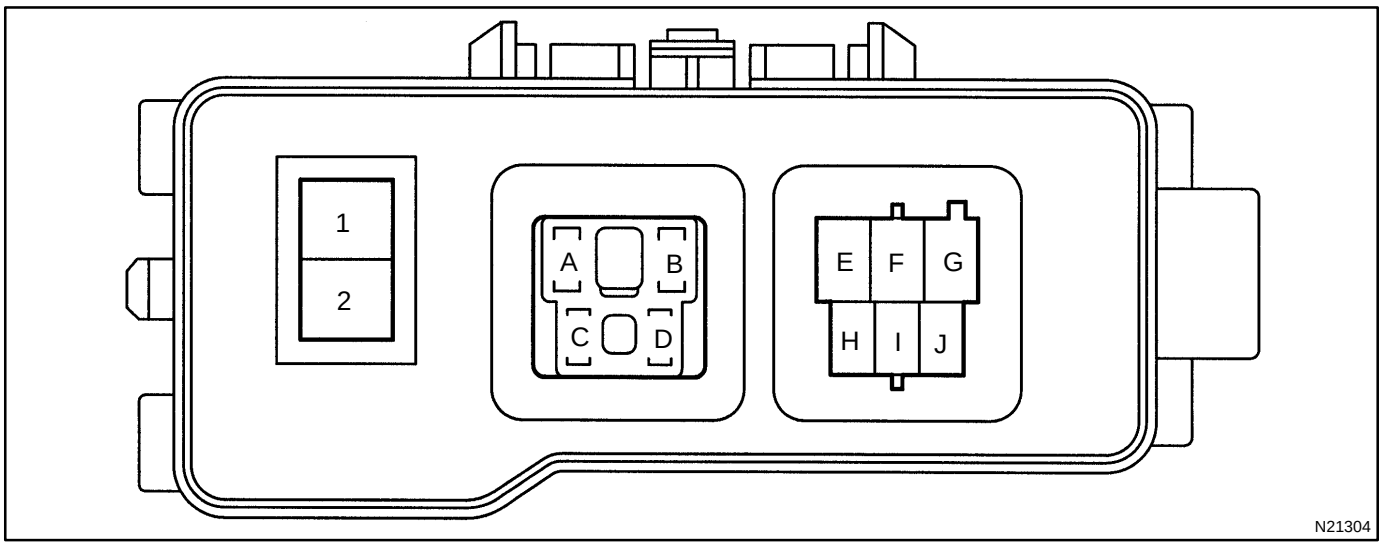
If the circuit is not as specified, inspect the circuits connected to other parts.

(b) Remove the relay from the relay block and inspect the connector on relay block side.

Relay	Tester connection	Condition	Specified condition
DRL No.3	D – Ground	Constant	Continuity
DRL No.3	A – Ground	Constant	Battery positive voltage
DRL No.3	E – Ground	Constant	Battery positive voltage
DRL No.4	H – Ground	Constant	Battery positive voltage
DRL No.4	I – Ground	Constant	Battery positive voltage
DIM	J – Ground	Constant	Battery positive voltage

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

3. INSPECT ENGINE ROOM No.3 RELAY BLOCK CIRCUIT



(a) Remove the fuse from the relay block and inspect the connector on relay block side.

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

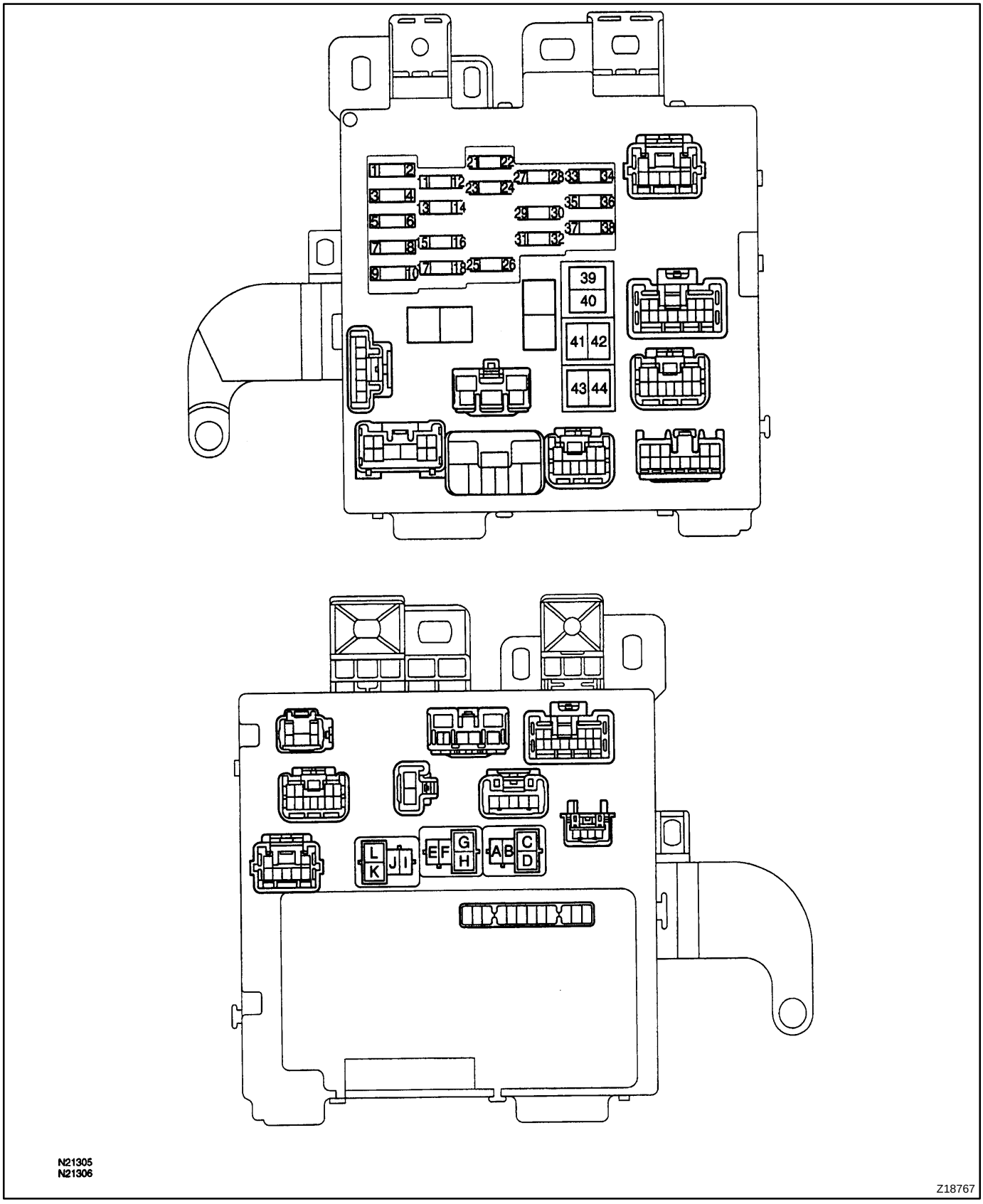
If the circuit is not as specified, inspect the circuits connected to other parts.

(b) Remove the relay from the relay block and inspect the connector on relay block side.

Relay	Tester connection	Condition	Specified condition
ABS SOL	F – Ground	Constant	Continuity
ABS SOL	E – Ground	Constant	Battery positive voltage
ABS MTR	G – Ground	Constant	Battery positive voltage

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

4. INSPECT INSTRUMENT PANEL JUNCTION BLOCK CIRCUIT



(a) Remove the fuse from the instrument panel junction block and inspect the connector on instrument panel junction block side.

Fuse	Tester connection	Condition	Specified condition
S – HTR	2 – Ground	Ignition switch turned to ON	Battery positive voltage
HEATER	3 – Ground	Ignition switch turned to ON	Battery positive voltage
GAUGE	6 – Ground	Ignition switch turned to ON	Battery positive voltage
WIPER	7 – Ground	Ignition switch turned to ON	Battery positive voltage
M – HTR	10 – Ground	Ignition switch turned to ON	Battery positive voltage
ECU – IG	11 – Ground	Ignition switch turned to ON	Battery positive voltage
IGN	14 – Ground	Ignition switch turned to ON	Battery positive voltage
STOP	16 – Ground	Constant	Battery positive voltage
TAIL	18 – Ground	Light control switch turned to TAIL or HEAD and Engine running	Battery positive voltage
PWR	22 – Ground	Ignition switch turned to ON	Battery positive voltage
OBD – 2	24 – Ground	Constant	Battery positive voltage
FOG	26 – Ground	Constant	Battery positive voltage
ST	28 – Ground	Constant	Battery positive voltage
DOOR	29 – Ground	Constant	Battery positive voltage
PANEL	31 – Ground	Constant	Battery positive voltage
TURN	33 – Ground	Ignition switch turned to ON	Battery positive voltage
RAD/2	35 – Ground	Ignition switch turned to ACC or ON	Battery positive voltage
CIG	38 – Ground	Ignition switch turned to ACC or ON	Battery positive voltage
DEF	39 – Ground	Constant	Battery positive voltage
POWER	41 – Ground	Constant	Battery positive voltage
AM1	44 – Ground	Constant	Battery positive voltage

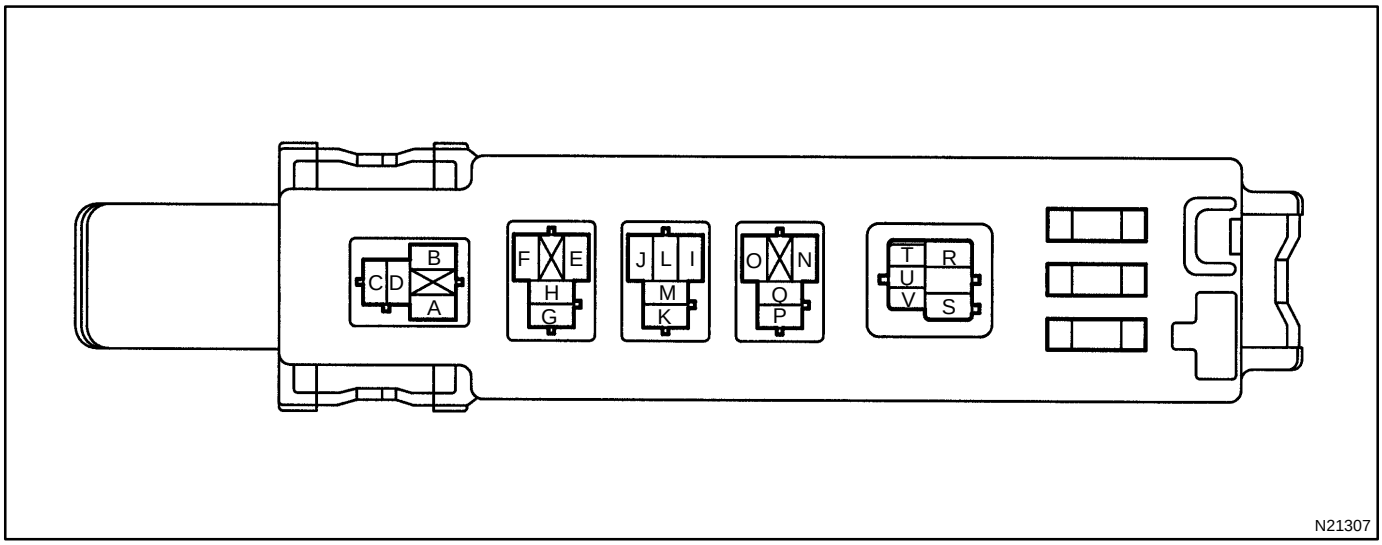
If the circuit is not as specified, inspect the circuits connected to other parts.

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

Relay	Tester connection	Condition	Specified condition
Taillight	B – Ground	Constant	Battery positive voltage
Taillight	D – Ground	Constant	Battery positive voltage
Defogger	F – Ground	Constant	Battery positive voltage
Defogger	G – Ground	Defogger switch ON	Battery positive voltage
Power Main	J – Ground	Constant	Battery positive voltage
Power Main	K – Ground	Constant	Continuity

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

5. INSPECT INSIDE ENGINE ROOM JUNCTION BLOCK CIRCUIT

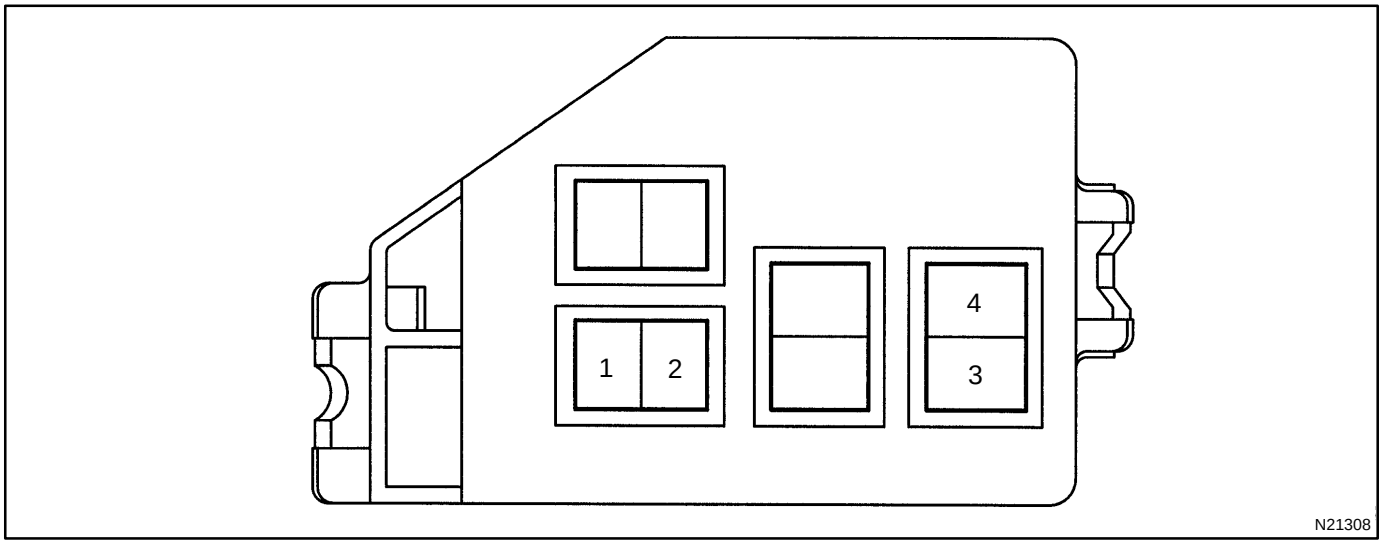


Remove the relay from the relay block and inspect the connector on relay block side.

Relay	Tester connection	Condition	Specified condition
MG/CLT	C – Ground	Constant	Continuity
MG/CLT	D – Ground	Ignition switch turned to ON	Battery positive voltage
C/OPN	G – Ground	Constant	Continuity
FAN No.2	L – Ground	Constant	Continuity
FAN No.2	J – Ground	Ignition switch turned to ON	Battery positive voltage
FAN No.2	K – Ground	Constant	Battery positive voltage
FAN No.3	P – Ground	Constant	Battery positive voltage
HEATER	U – Ground	Constant	Continuity
HEATER	R – Ground	Ignition switch turned to ON	Battery positive voltage
HEATER	V – Ground	Constant	Battery positive voltage

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

6. INSPECT FUSIBLE LINK BLOCK CIRCUIT



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

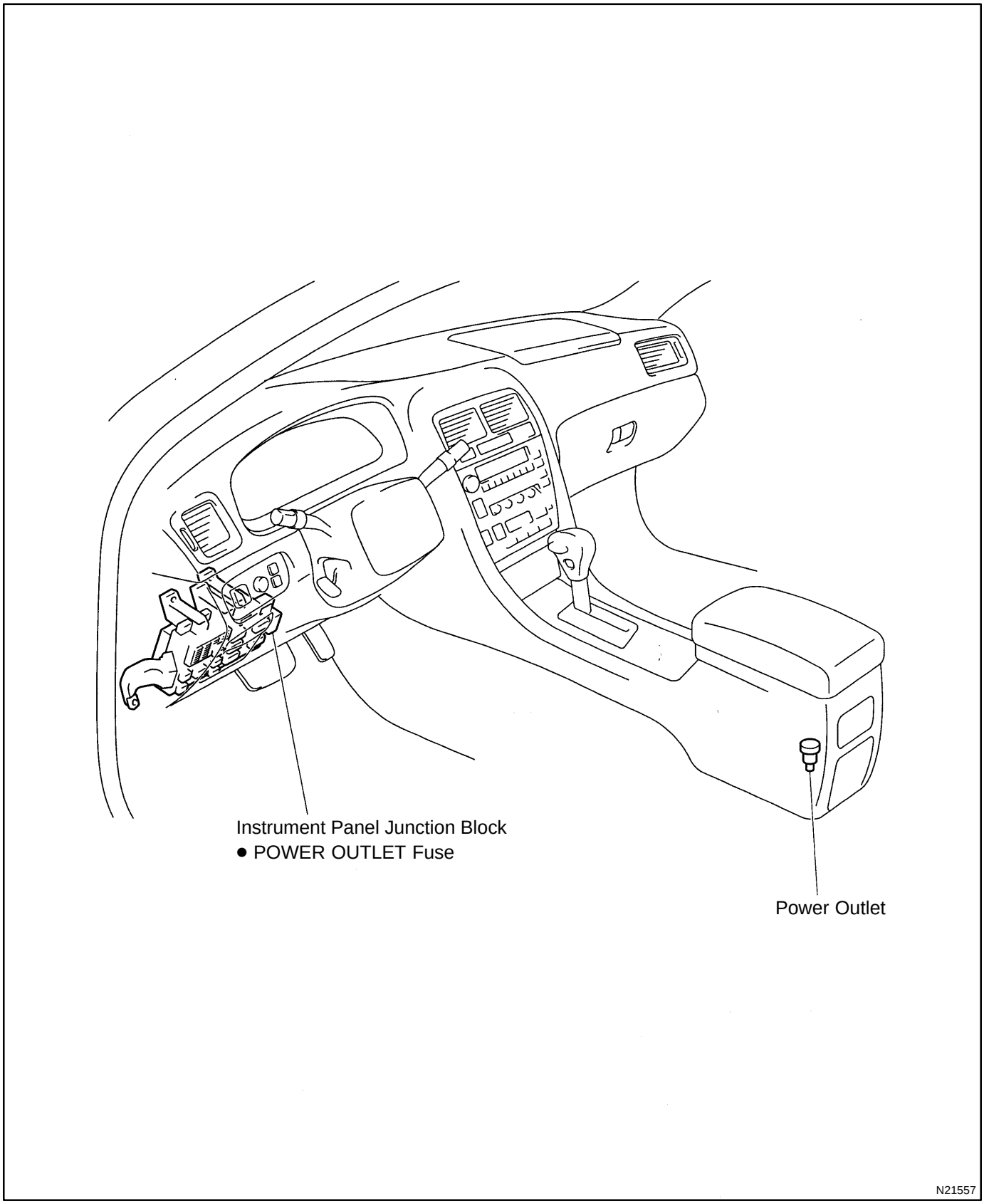
Fuse	Tester connection	Condition	Specified condition
HTR	1 – Ground	Ignition switch turned to ON	Battery positive voltage
ALT	4 – Ground	Constant	Battery positive voltage

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

POWER OUTLET

LOCATION

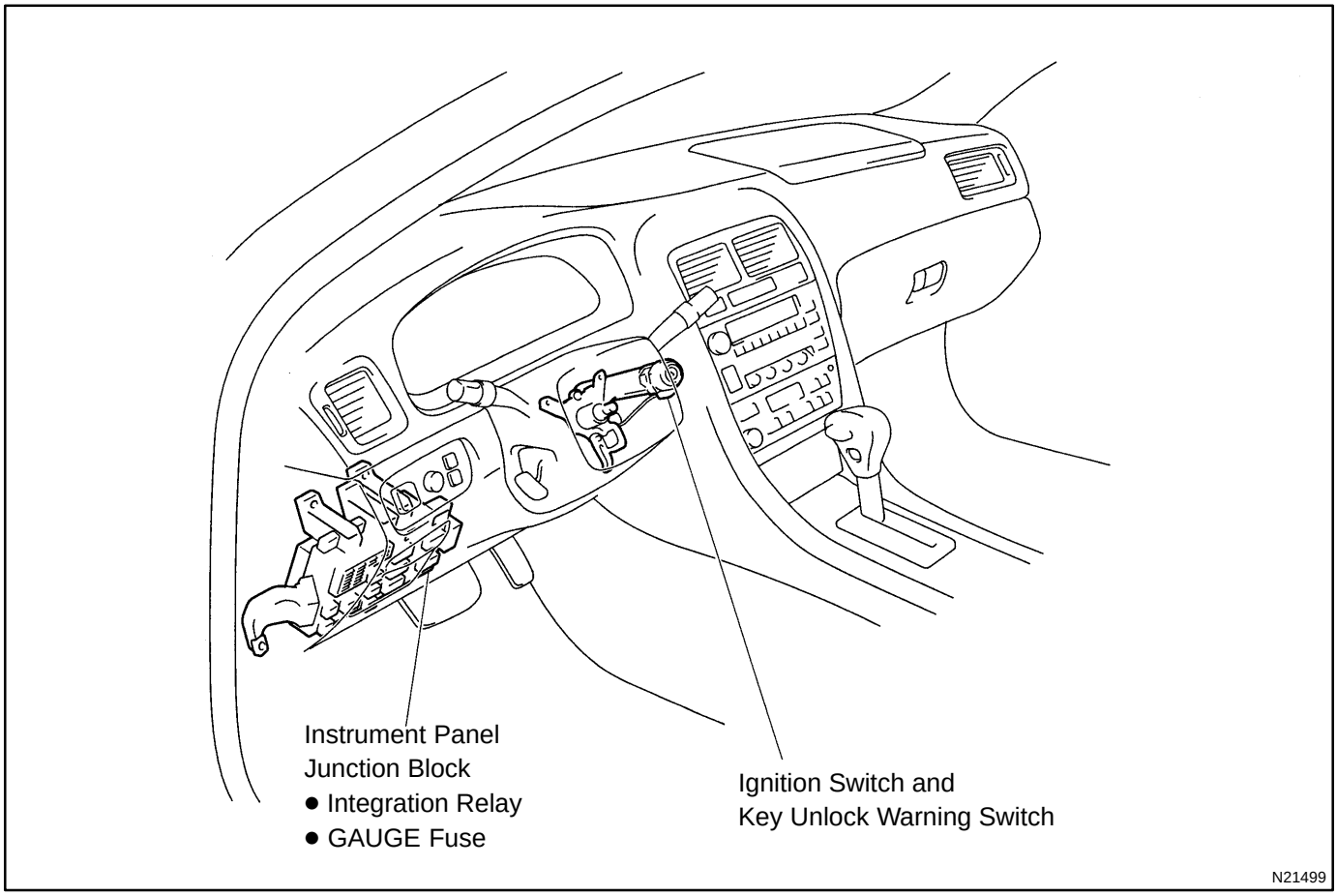
BE04T–01



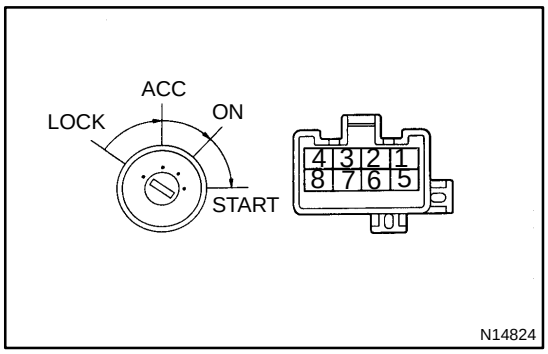
IGNITION SWITCH AND KEY UNLOCK WARNING SWITCH

BE04U–01

LOCATION



BE04V–01

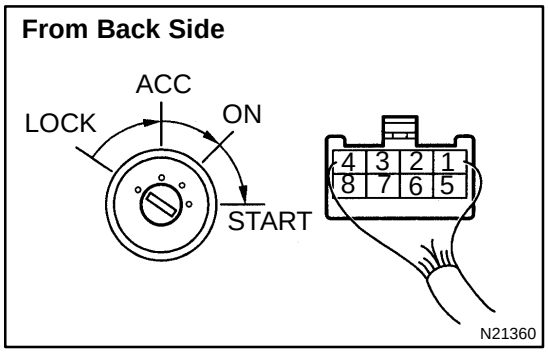


INSPECTION

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.

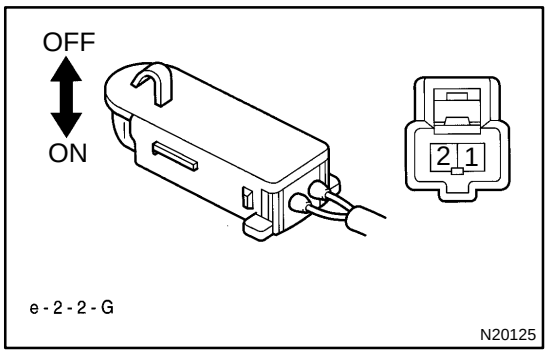


2. INSPECT IGNITION SWITCH CIRCUIT

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

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

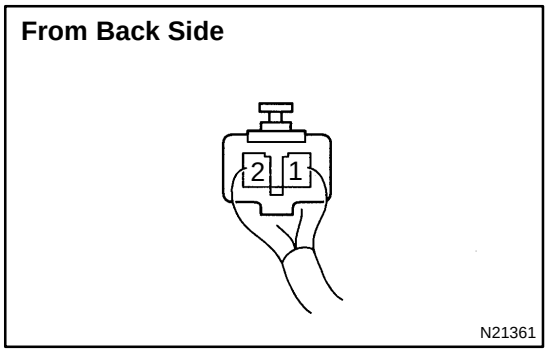
If circuit is not as specified, inspect the switch and circuits connected to other parts.



3. INSPECT KEY UNLOCK WARNING SWITCH CONTINUITY

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

If continuity is not as specified, replace the switch.

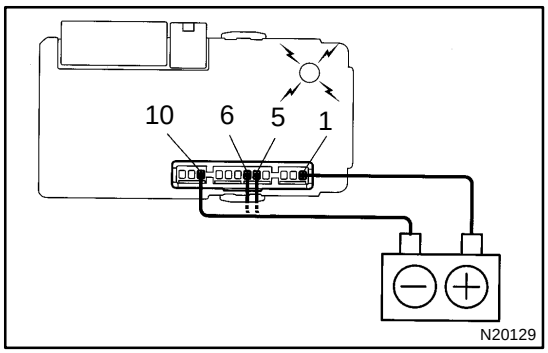


4. INSPECT KEY UNLOCK WARNING SWITCH CIRCUIT

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

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 and circuits connected to other parts.

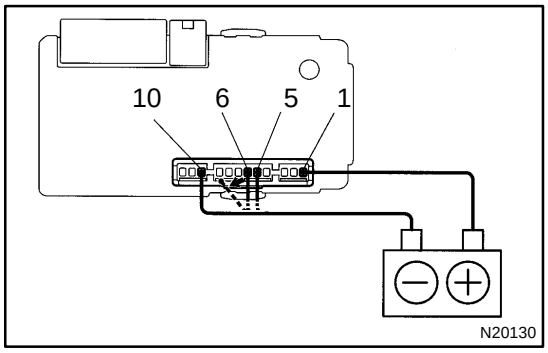


5. Key Unlock Warning System: INSPECT INTEGRATION RELAY OPERATION

(a) Connect the positive (+) lead from the battery to terminal 1.

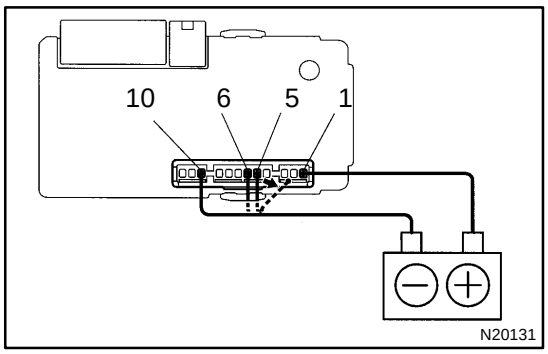
(b) Connect the negative (–) lead from the battery to terminals 5, 6 and 10.

(c) Check the buzzer sounds.



(d) Disconnect the negative (–) lead from the battery to terminal 6.

(e) Check that the buzzer stops sounding.

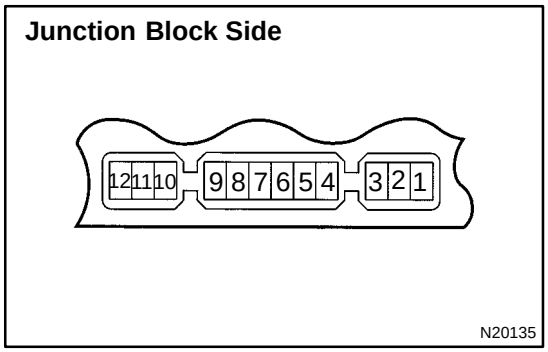


(f) Connect the negative (–) lead from the battery to terminal 6.

(g) Disconnect the negative (–) lead from the battery to terminal 5.

(h) Check that the buzzer stops sounding.

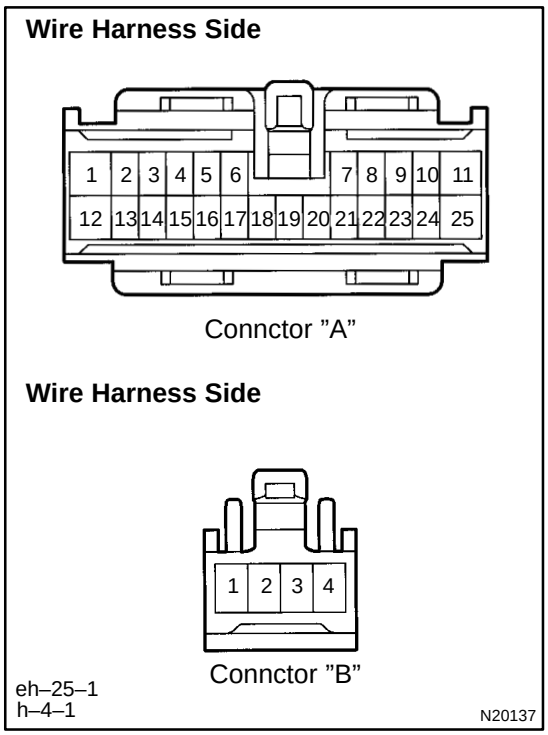
If operation is not as specified, replace the relay.



6. INSPECT INTEGRATION RELAY CIRCUIT

(a) Remove the relay from the junction block No.1 and inspect the connector on the junction block side.

Tester connection	Condition	Specified condition
2 – Ground	All door courtesy switches OFF (Door closed)	No continuity
2 – Ground	One of the door courtesy switches ON (Door opened)	Continuity
4 – Ground	Door courtesy switches except that of the driver's door OFF (Door closed)	No continuity
4 – Ground	One of the door courtesy switches except that of the driver's door ON (Door opened)	Continuity
3 – Ground	Door outside handle switch OFF	No continuity
3 – Ground	Door outside handle switch ON	Continuity
5 – Ground	Key unlock warning switch OFF	No continuity
5 – Ground	Key unlock warning switch ON	Continuity
6 – Ground	Driver's door courtesy switch OFF (Door closed)	No continuity
6 – Ground	Driver's door courtesy switch ON (Door opened)	Continuity
8 – Ground	Buckle switch OFF (Seat belt unfastened)	No continuity
8 – Ground	Buckle switch ON (Seat belt fastened)	Continuity
10 – Ground	Constant	Continuity
1 – Ground	Constant	Battery positive voltage
7 – Ground 9 – Ground	Ignition switch LOCK or ACC	No voltage
7 – Ground 9 – Ground	Ignition switch ON	Battery positive voltage
11 – Ground	Ignition switch LOCK	No voltage
11 – Ground	Ignition switch ACC or ON	Battery positive voltage



(b) Disconnect the connector from the integration relay and inspect the connectors on the wire harness side.

Tester connection	Condition	Specified condition
A3 – Ground	Constant	Continuity
A5 – Ground	Driver’s door unlock detection switch OFF (Door closed)	No continuity
A5 – Ground	Driver’s door unlock detection switch ON (Door opened)	Continuity
A6 – Ground	Passenger’s door courtesy switch OFF (Door closed)	No continuity
A6 – Ground	Passenger’s door courtesy switch ON (Door opened)	Continuity
A7 – Ground	Passenger’s door unlock detection switch OFF (Door closed)	No continuity
A7 – Ground	Passenger’s door unlock detection switch ON (Door opened)	Continuity
A9 – Ground	Rear door unlock detection switch OFF (Door closed)	No continuity
A9 – Ground	Rear door unlock detection switch ON (Door opened)	Continuity
A11 – A12 A12 – A25	Constant	Continuity
A16 – Ground	Door lock manual switch OFF or UNLOCK	No continuity
A16 – Ground	Door lock manual switch LOCK	Continuity
A17 – Ground	Door lock manual switch OFF or LOCK	No continuity
A17 – Ground	Door lock manual switch UNLOCK	Continuity
A18 – Ground	Driver’s and passenger’s door key lock and unlock switch OFF or UNLOCK	No continuity
A18 – Ground	Driver’s or passenger’s door key lock and unlock switch LOCK	Continuity

Tester connection	Condition	Specified condition
A19 – Ground	Driver's door key lock and unlock switch OFF or LOCK	No continuity
A19 – Ground	Driver's door key lock and unlock switch UNLOCK	Continuity
A20 – Ground	Passenger's door key lock and unlock switch OFF or LOCK	No continuity
A20 – Ground	Passenger's door key lock and unlock switch UNLOCK	Continuity
A1 – Ground	Constant	Battery positive voltage
B1 – Ground	Light control switch OFF	No voltage
B1 – Ground	Light control switch TAIL or HEAD	Battery positive voltage
B4 – Ground	Light control switch OFF or TAIL	No voltage
B4 – Ground	Light control switch HEAD	Battery positive voltage
B2 – Ground B3 – Ground	Constant	Battery positive voltage

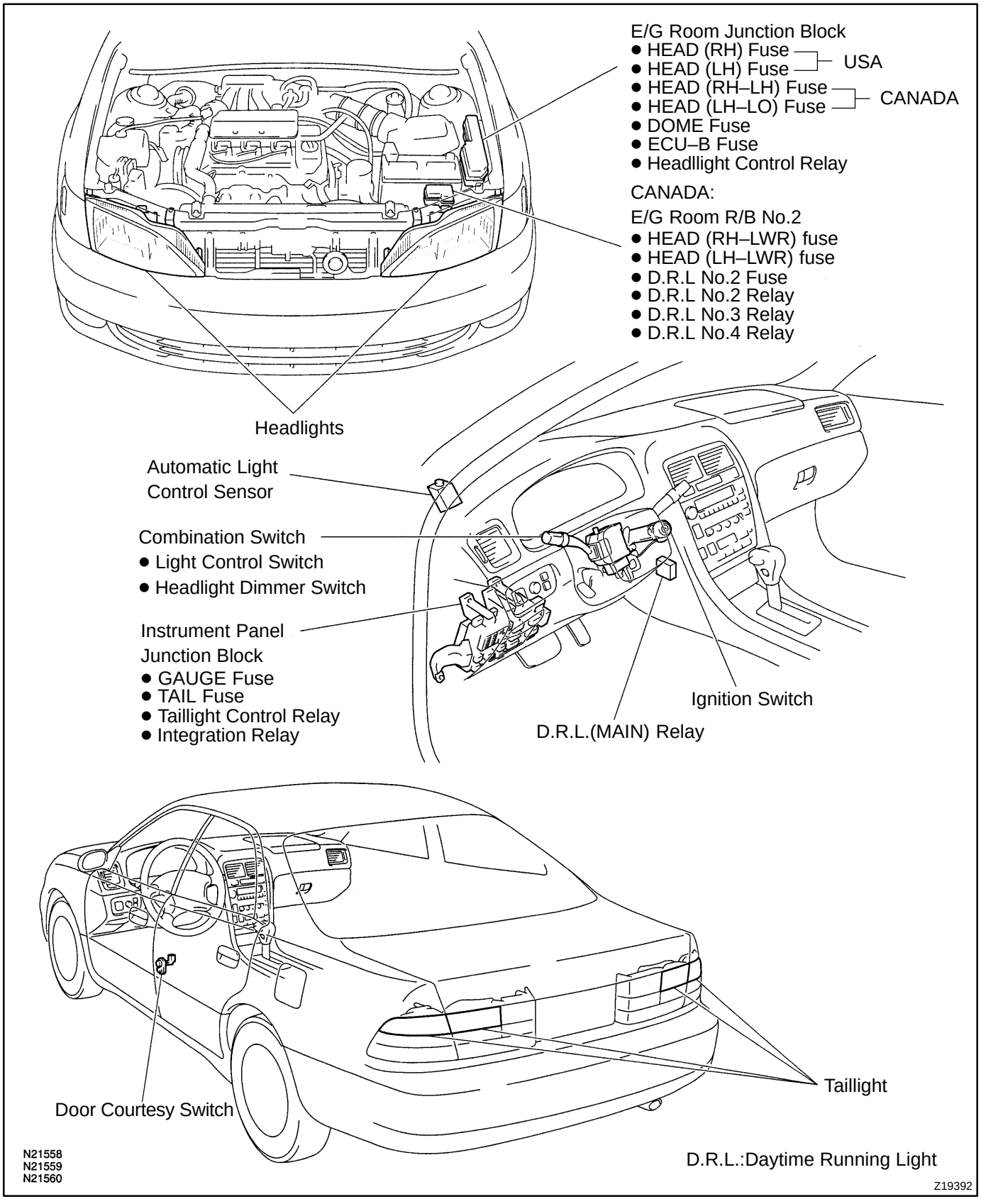
If the circuit is as specified, try replacing the relay with a new one.

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

HEADLIGHT AND TAILLIGHT SYSTEM

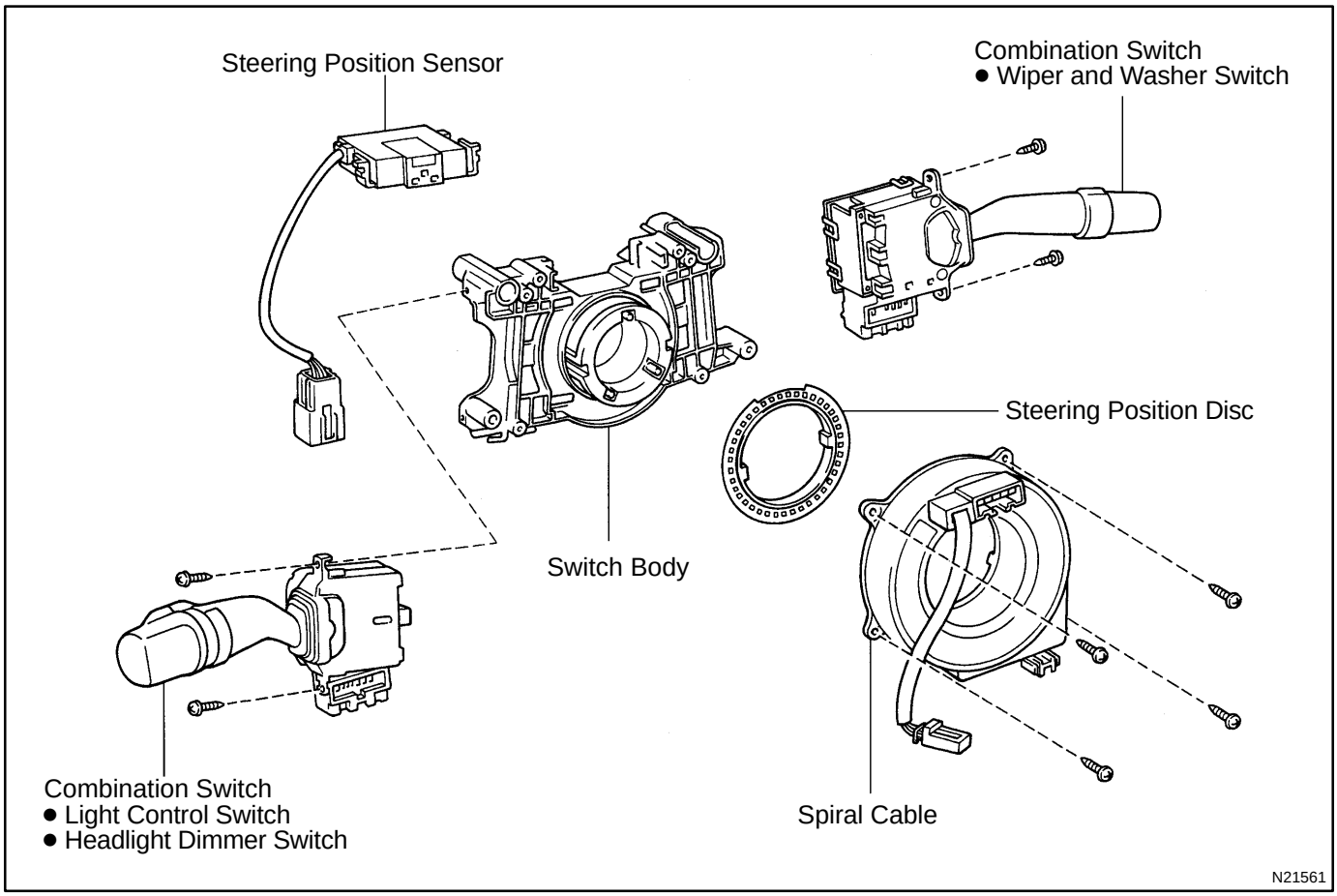
BE04W–01

LOCATION



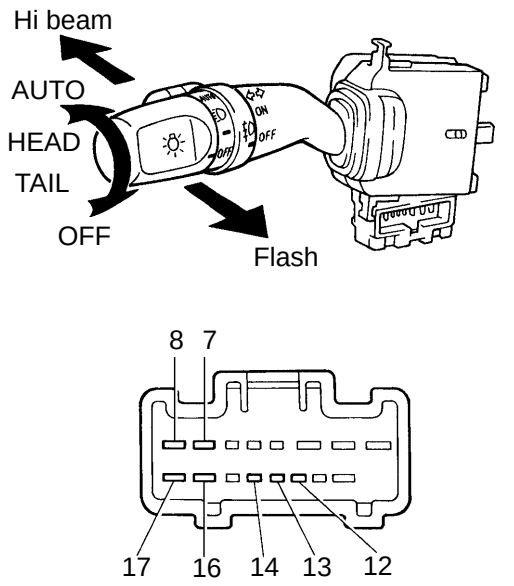
BE04X–01

COMPONENTS



BE04Y–02

INSPECTION



1. INSPECT LIGHT CONTROL SWITCH CONTINUITY

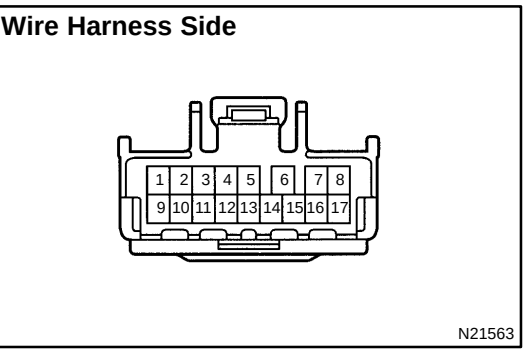
Switch position	Tester connection	Specified condition
OFF	–	No continuity
TAIL	14 – 16	Continuity
HEAD	13 – 14 – 16	Continuity
AUTO	12 – 16	Continuity

If continuity is not as specified, replace the switch.

2. INSPECT HEADLIGHT DIMMER SWITCH CONTINUITY

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

If continuity is not as specified, replace the switch.



3. INSPECT COMBINATION SWITCH CIRCUIT

Connect the wire harness side connector to the combination switch and inspect wire harness side connector from the back side.

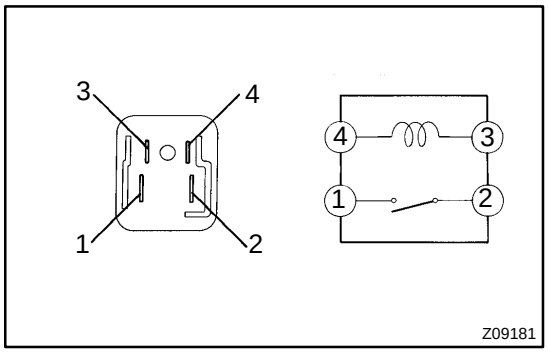
Light Control Switch:

Tester connection	Condition	Specified condition
16 – Ground	Constant	Continuity
12 – Ground	Light control switch OFF, TAIL or HEAD	No voltage
12 – Ground	Light control switch AUTO	Battery positive voltage
13 – Ground	Light control switch OFF or TAIL	No voltage
13 – Ground	Light control switch HEAD	Battery positive voltage
14 – Ground	Light control switch OFF	No voltage
14 – Ground	Light control switch TAIL or HEAD	Battery positive voltage

Headlight Dimmer Switch:

Tester connection	Condition	Specified condition
7 – Ground	Headlight dimmer switch Low Beam	No voltage
7 – Ground	Headlight dimmer switch High Beam or Flash	Battery positive voltage
8 – Ground	Headlight dimmer switch Low Beam or High Beam	No voltage
8 – Ground	Headlight dimmer switch Flash	Battery positive voltage
17– Ground	Headlight dimmer switch High Beam or Flash	No voltage
17– Ground	Headlight dimmer switch Low Beam	Battery positive voltage

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

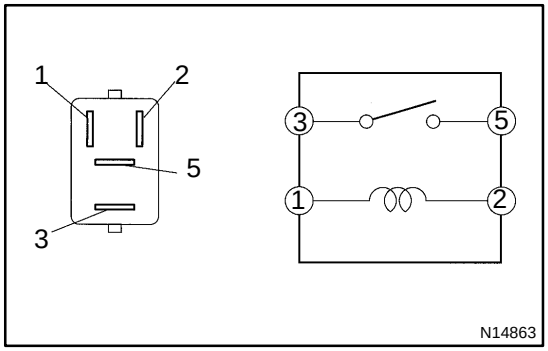


4. INSPECT HEADLIGHT CONTROL RELAY CONTINUITY

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.

5. INSPECT HEADLIGHT CONTROL RELAY CIRCUIT (See page BE–11)

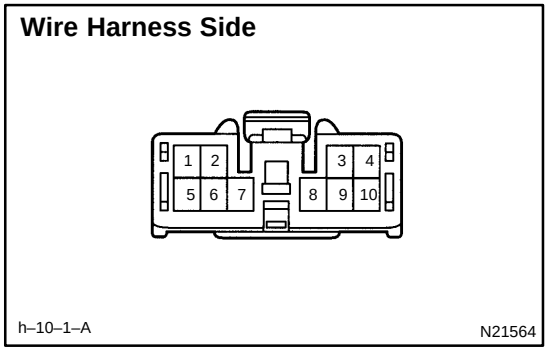


6. INSPECT TAILLIGHT CONTROL RELAY CONTINUITY

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

If continuity is not as specified, replace the relay.

7. INSPECT TAILLIGHT CONTROL RELAY CIRCUIT (See page BE–27)

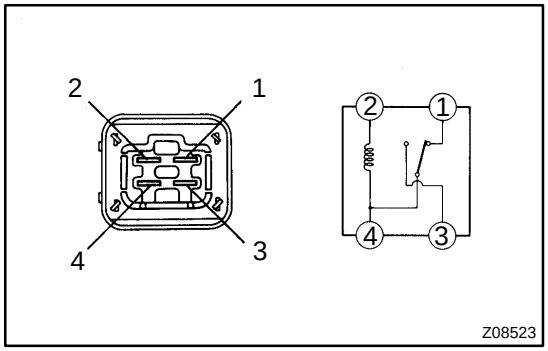


8. INSPECT DAYTIME RUNNING LIGHT RELAY CIRCUIT

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.

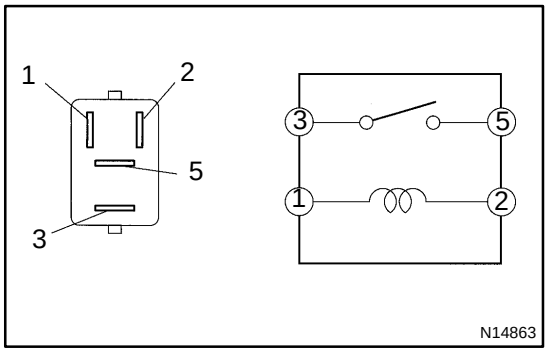


9. INSPECT HEADLIGHT DIMMER RELAY CONTINUITY

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.

10. INSPECT HEADLIGHT DIMMER RELAY CIRCUIT (See page BE–11)

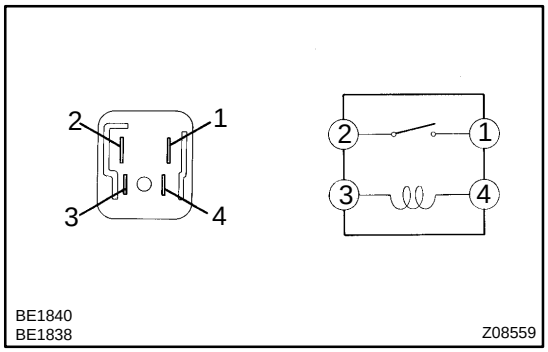


11. INSPECT DAYTIME RUNNING LIGHT NO.3 RELAY CONTINUITY

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

If continuity is not as specified, replace the relay.

12. INSPECT DAYTIME RUNNING LIGHT NO.3 RELAY CIRCUIT
(See page BE–11)



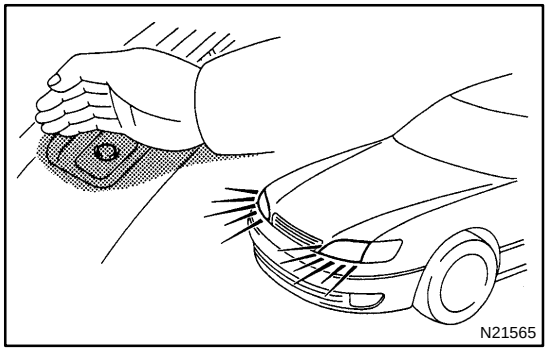
13. INSPECT DAYTIME RUNNING LIGHT NO.4 RELAY CONTINUITY

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.

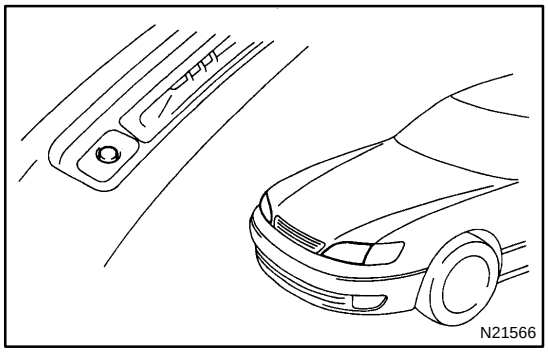
14. INSPECT DAYTIME RUNNING LIGHT NO.4 RELAY CIRCUIT
(See page BE–11)

15. INSPECT LIGHT AUTO TURN OFF SYSTEM
(See Integration relay circuit on page BE–20)



16. Auto ON:
INSPECT AUTOMATIC LIGHT CONTROL

(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 accessory lights and the headlights turn ON.



17. Auto OFF:
INSPECT AUTOMATIC LIGHT CONTROL

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

18. INSPECT LIGHT–OFF CONDITION

(a) Turn the ignition switch ON.

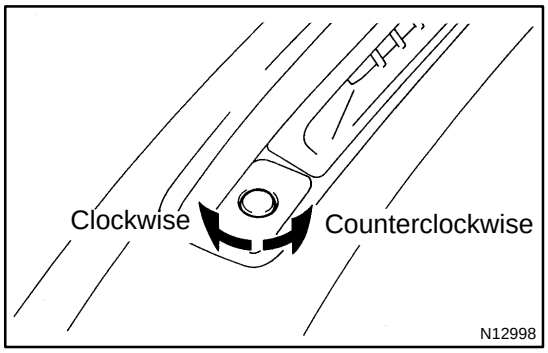
(b) Gradually cover the top of the sensor.
Lights auto ON:

(c) Verify that the lights will go out when light control switch position is 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.

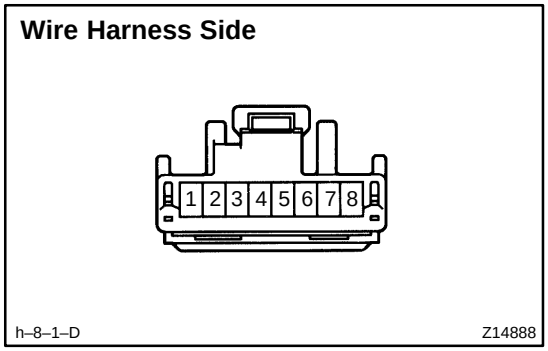


20. ADJUST AUTOMATIC LIGHT CONTROL SENSOR

(a) Adjustment of the light control is performed by turning the sensitivity knob on the sensor.

(b) This will determine at what light condition the automatic control will take place.

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



21. Connector disconnected:
INSPECT SENSOR CIRCUIT

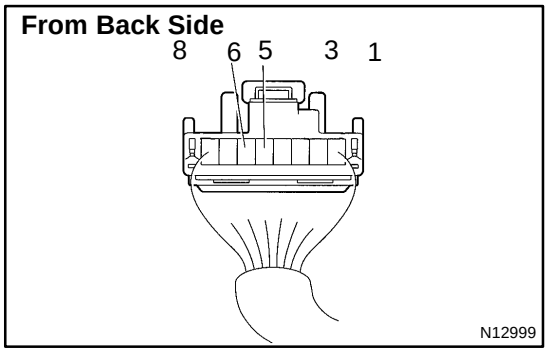
Disconnect the connector from the sensor and inspect the connector on the wire harness side, as shown in the chart.

Tester connection	Condition	Specified condition
3 – Ground	Door courtesy switch OFF	No continuity
3 – Ground	Door courtesy switch ON	Continuity
5 – Ground	Light control switch OFF, TAIL or AUTO	No continuity
5 – Ground	Light control switch HEAD	Continuity
6 – Ground	Light control switch OFF, TAIL or HEAD	No continuity
6 – Ground	Light control switch AUTO	Continuity
7 – Ground	Light Control Switch OFF or AUTO	No continuity
7 – Ground	Light Control Switch TAIL or HEAD	Continuity

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



22. Connector connected:
INSPECT SENSOR CIRCUIT

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

HINT:

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

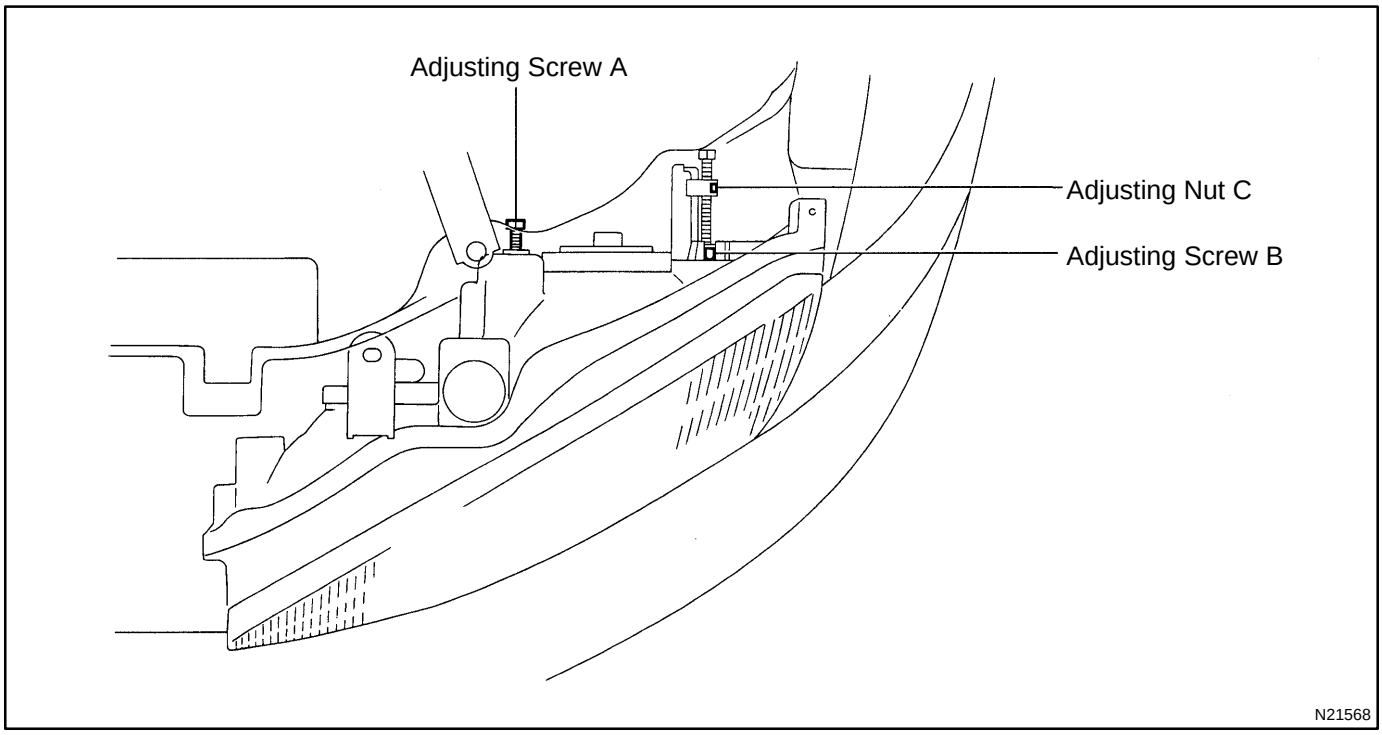
Tester connection	Condition	Specified condition
1 – Ground	Ignition switch position ON	10 V or more
1 – Ground	Ignition switch position OFF	1 V or less
3 – Ground	Door courtesy switch ON	1 V or less
3 – Ground	Door courtesy switch OFF	9 V or more
5 – Ground	Vehicle's surroundings are dark	1.8 V or less
5 – Ground	Dimmer switch position Flash	0.3 V or less
6 – Ground	Vehicle's surroundings are dark	1.5 V or less
8 – Ground	Vehicle is under the direct sun light. (Sensor is not covered)	3.7 V or more
8 – Ground	Vehicle's surroundings are dim. (Sensor is covered and taillights are ON)	1.32 ~ 2.32 V
8 – Ground	Vehicle's surroundings are dark. (Sensor is covered and headlights are ON)	0.42 V

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.

BE04Z–02

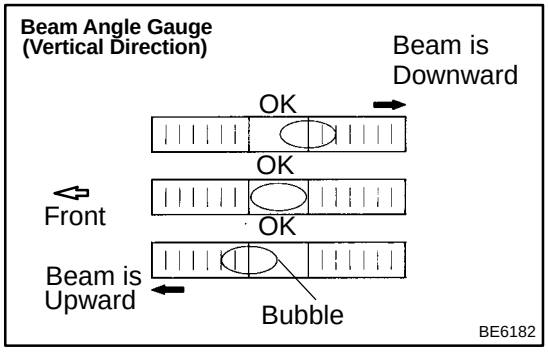
ADJUSTMENT



1. ADJUSTING HEADLIGHT AIM ONLY

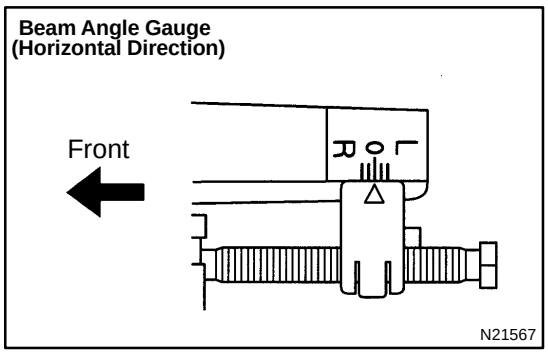
(a) Put the vehicle in below conditions.

- 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) Adjust the headlight in vertical direction.

If the bubble is outside the acceptable range of the beam angle gauge, adjust it using adjusting screw A.



(c) Adjust the headlight in horizontal direction.

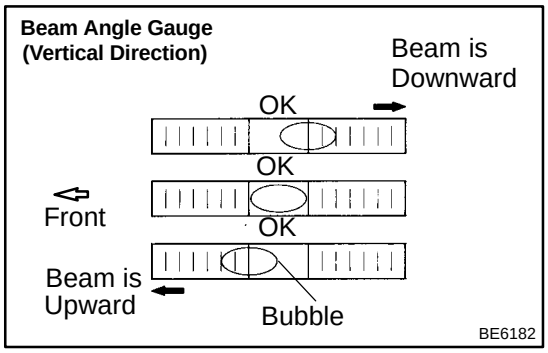
If the ”0” moves away from the mark beyond the acceptable range, adjust the ”0” back to the mark using adjusting screw B.

2. REPLACING 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) Adjust the headlight in vertical direction.

(1) Using adjusting screw A, adjust the headlight aim to within the specifications.

(2) Make sure that the gauge bubble is within the acceptable range.

HINT:

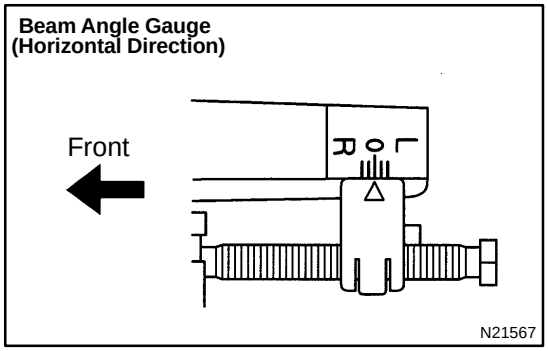
If the gauge bubble is outside the acceptable range, check that the vehecle is parked on a level place.

Readjust the headlight aim after parking the vehicle on a level place.

(d) Adjust the headlight in horizontal direction.

(1) Using adjusting screw B, adjust the headlight aim to within the specifications.

(2) Using adjusting nut C, adjust the ”0” back to the mark.

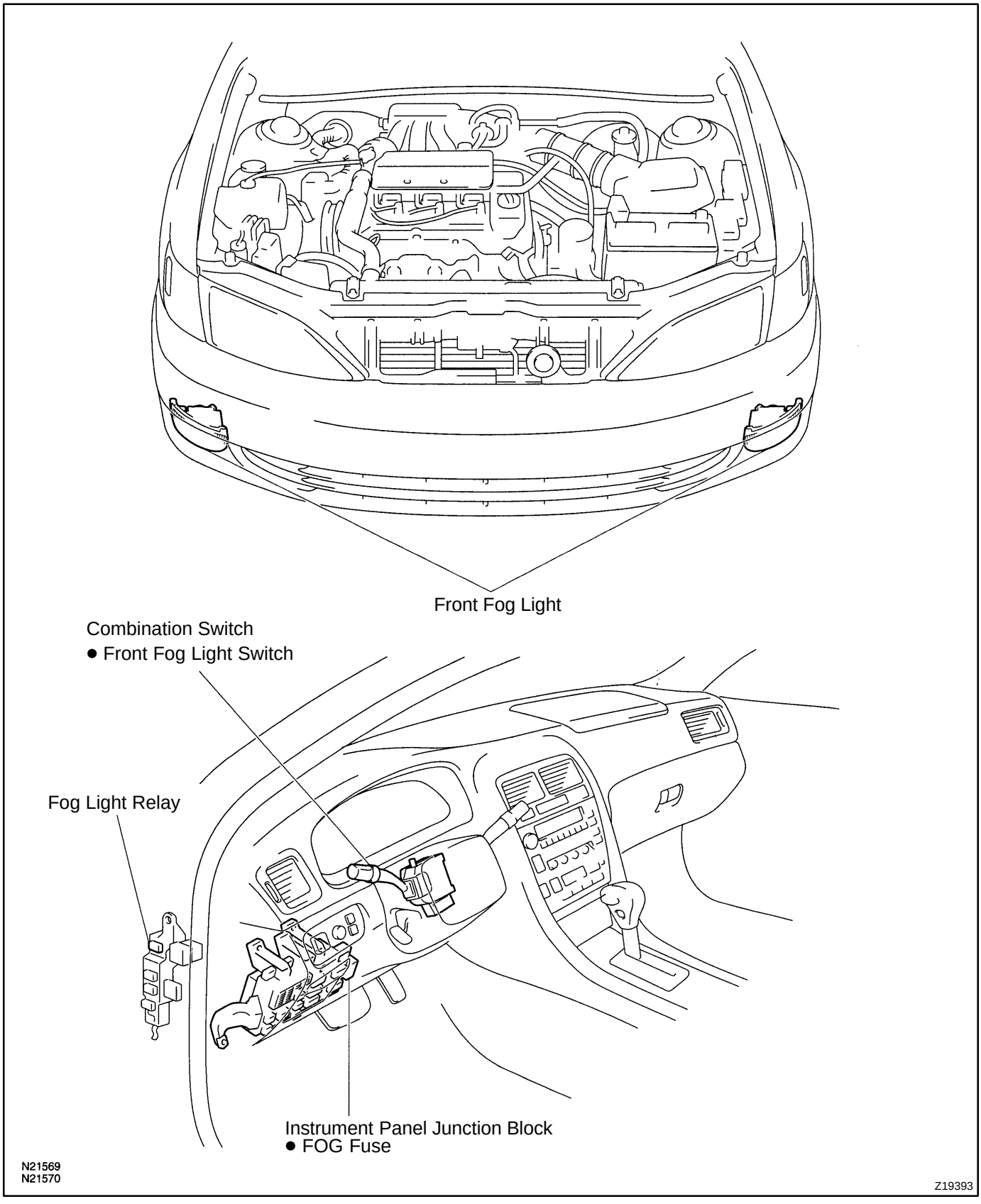


3. ADJUST SPIRAL CABLE

(See page SR–16)

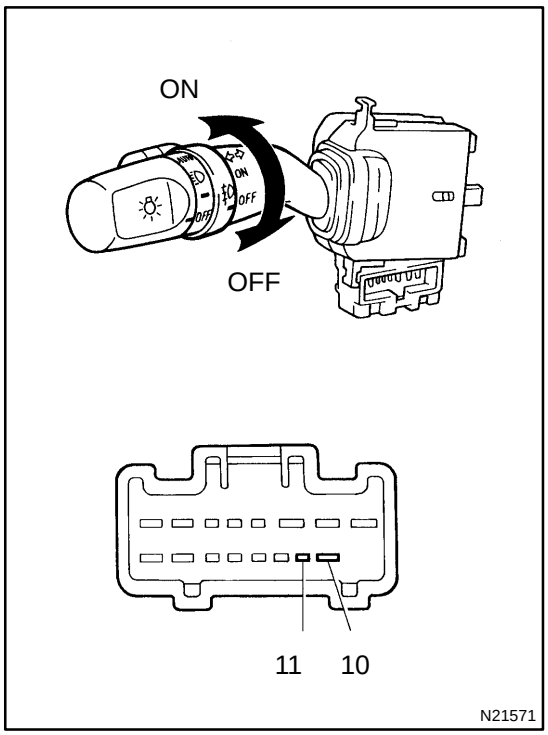
FOG LIGHT SYSTEM
LOCATION

BE050–01



BE051–01

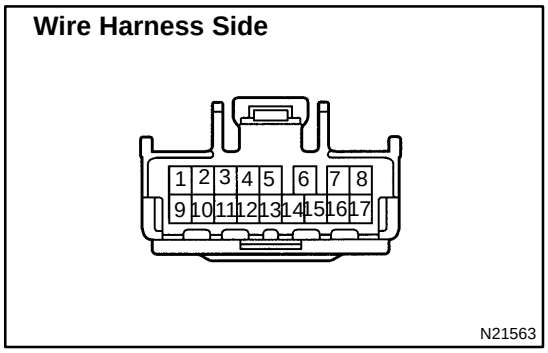
INSPECTION



1. INSPECT FOG LIGHT SWITCH CONTINUITY

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

If continuity is not as specified, replace the switch.

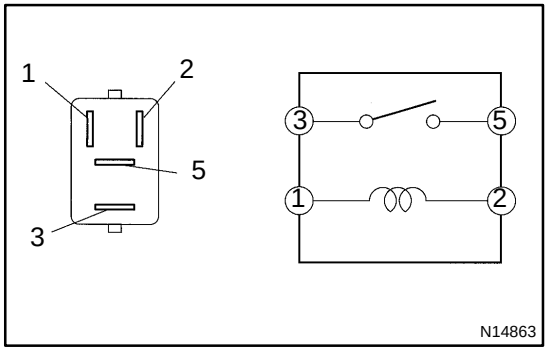


2. INSPECT COMBINATION SWITCH CIRCUIT

Connect the wire harness side connector to the combination switch and inspect wire harness side connector from the back side.

Tester connection	Condition	Specified condition
10– Ground	Headlight dimmer switch High Beam or Flash	No continuity
10– Ground	Headlight dimmer switch Low Beam	Continuity
11 – Ground	Light control switch OFF or TAIL	No voltage
11 – Ground	Light control switch HEAD	Battery positive voltage

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



3. INSPECT FOG LIGHT RELAY CONTINUITY

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

If continuity is not as specified, replace the relay.

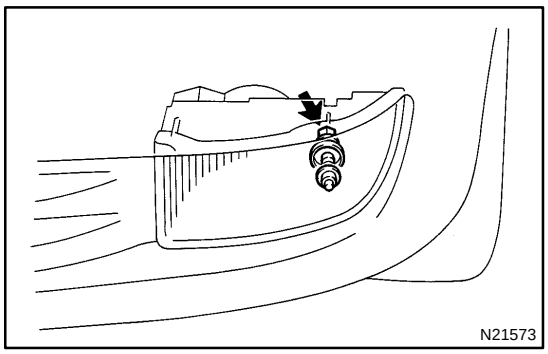
4. INSPECT FOG LIGHT RELAY CIRCUIT

Remove the relay from the driver's side relay block and inspect the connector on relay block side.

Tester connection	Condition	Specified condition
3 – Ground	Constant	Continuity
1 – Ground	Light control switch HEAD	Battery positive voltage
5 – Ground	Constant	Battery positive voltage

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

BE052–01



ADJUSTMENT

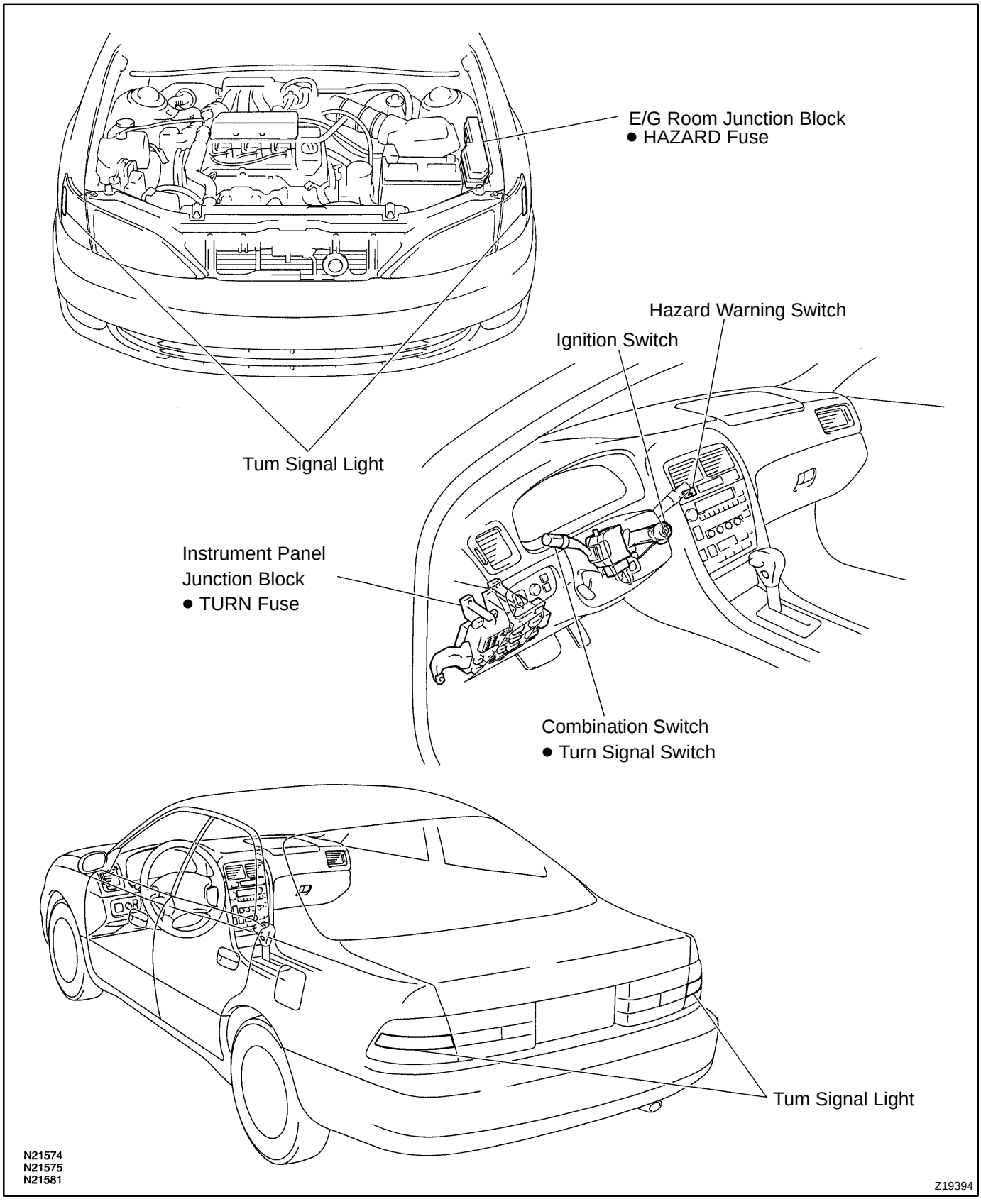
ADJUST FOG LIGHT AIM

A–bolt: Vertical Direction

TURN SIGNAL AND HAZARD WARNING SYSTEM

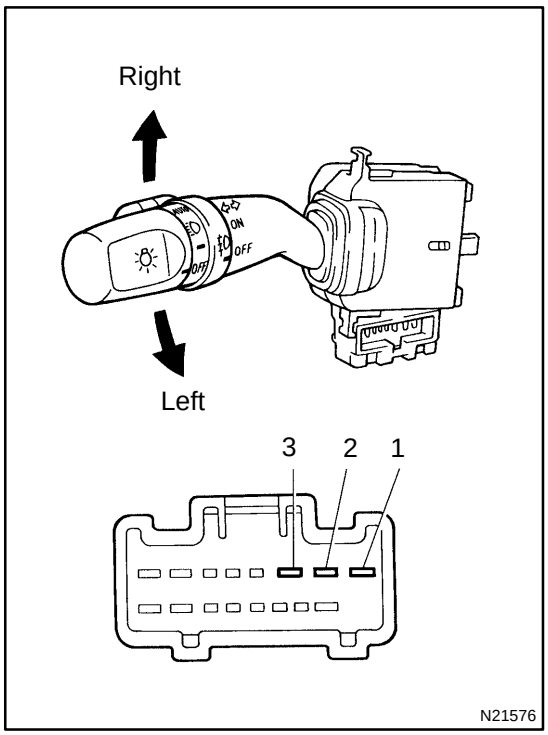
BE053–01

LOCATION



BE054–01

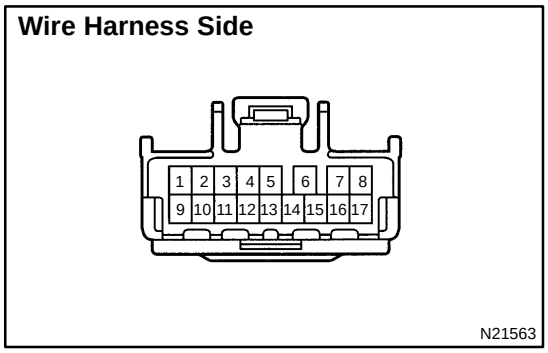
INSPECTION



1. INSPECT TURN SIGNAL SWITCH CONTINUITY

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

If continuity is not as specified, replace the switch.



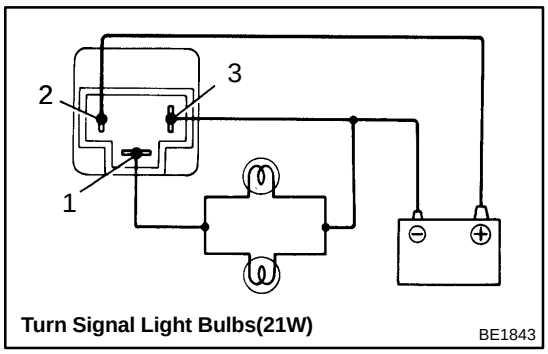
2. INSPECT COMBINATION SWITCH CIRCUIT

Connect the wire harness side connector to the combination switch and inspect wire harness side connector from the back side.

Tester connection	Condition	Specified condition
1 – Ground	Constant	*Continuity
3 – Ground	Constant	*Continuity
2 – Ground	Ignition switch ON and turn signal switch position Neutral	No voltage
2 – Ground	Hazard warning switch ON	Battery positive voltage
2 – Ground	Ignition switch ON and turn signal switch position Left or Right	Battery positive voltage

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

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



3. INSPECT TURN SIGNAL FLASHER OPERATION

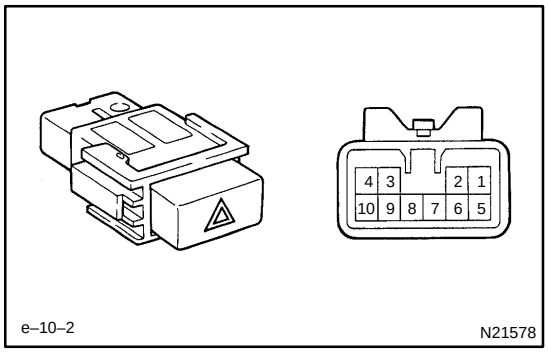
(a) Connect the positive (+) lead from the battery to terminal 2 and the negative (–) lead to terminal 3.

(b) Connect the 2 turn signal light bulbs in parallel to each other to terminals 1 and 3, check that the bulbs flash.

HINT:

The turn signal lights should flash 60 to 120 times per minute. If one of the front or rear turn signal lights has an open circuit, the number of flashes will be more than 140 per minute.

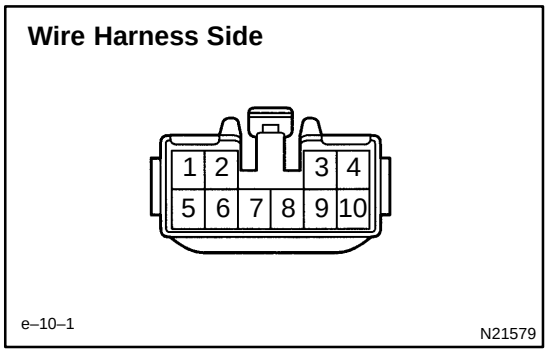
If operation is not as specified, replace the flasher.



4. INSPECT HAZARD WARNING SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
Switch OFF	5 – 7	Continuity
Switch ON	1 – 2 – 3 – 4 5 – 6	Continuity
Illumination circuit	8 – 9	Continuity

If continuity is not as specified, replace the switch.



5. INSPECT HAZARD WARNING SWITCH CIRCUIT

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

Tester connection	Condition	Specified condition
1 – Ground	Constant	*2Continuity
2 – Ground	Constant	*2Continuity
*19 – Ground	Constant	Continuity
6 – Ground	Constant	Battery positive voltage
7 – Ground	Ignition switch position LOCK or ACC	No voltage
7 – Ground	Ignition switch position ON	Battery positive voltage
*18 – Ground	Light control switch position OFF	No voltage
*18 – Ground	Light control switch position TAIL or HEAD	Battery positive voltage

*1: Illumination

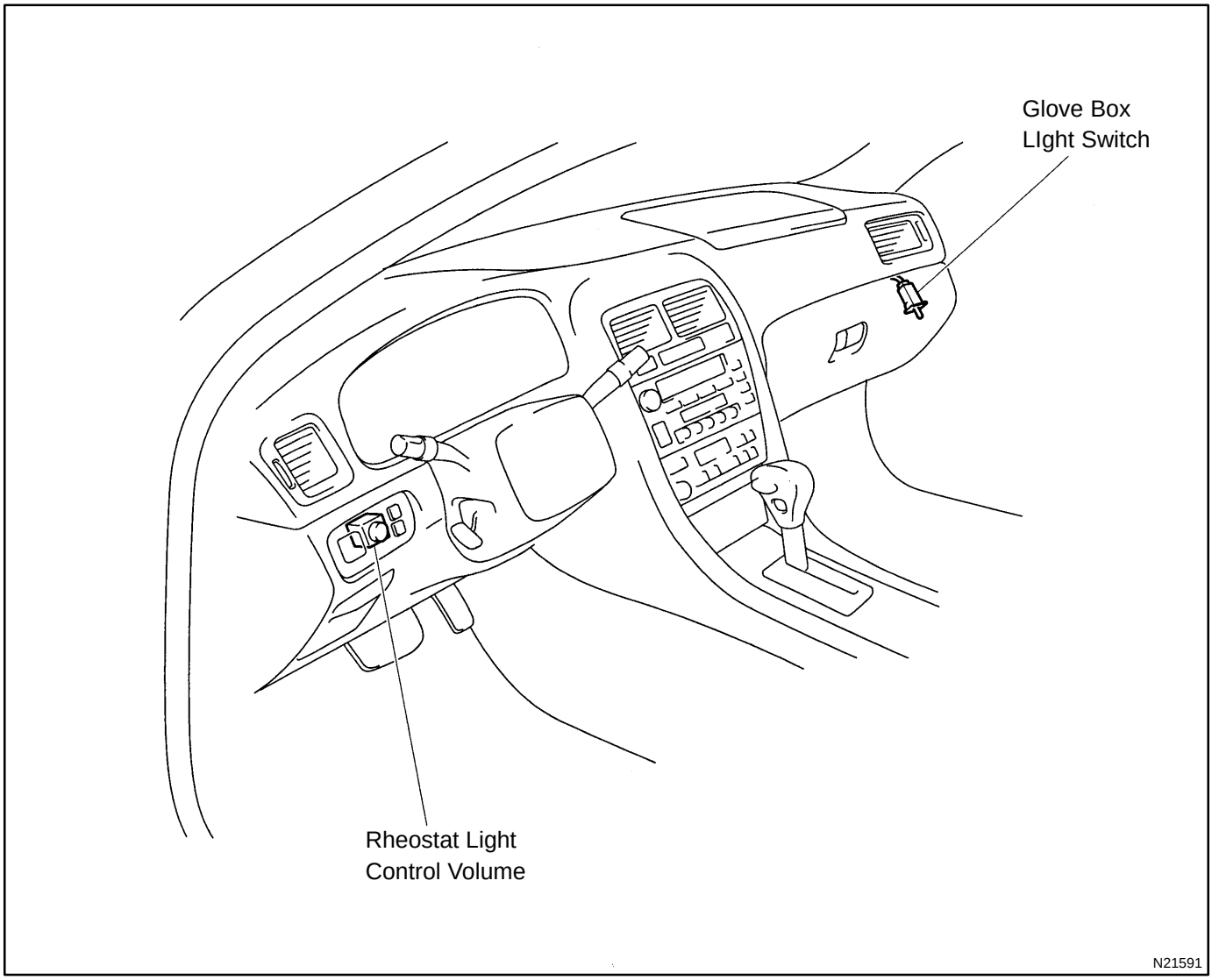
*2: There is resistance because this circuit is grounded through the bulb.

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

ILLUMINATION LIGHT SYSTEM

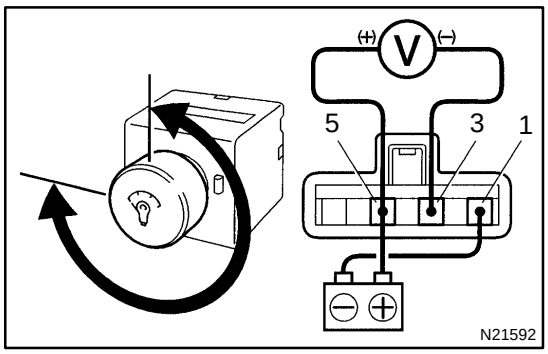
LOCATION

BE055–01



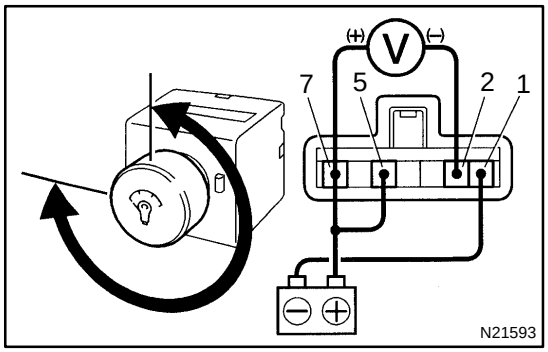
BE056–01

INSPECTION



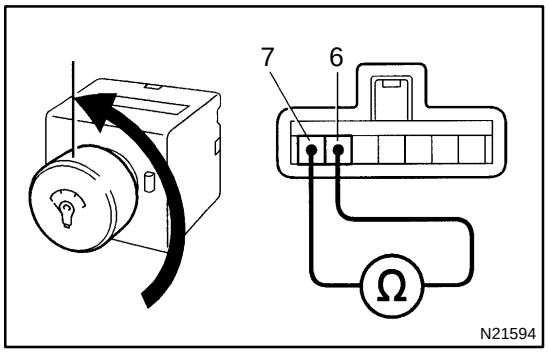
1. Combination Meter Adjustment:
INSPECT RHEOSTAT LIGHT CONTROL VOLUME

(a) Connect the positive (+) lead from the battery to terminal 5 and the negative (–) lead to terminal 1.
(b) Connect the positive (+) lead from the voltmeter to terminal 5 and negative (–) lead to terminal 3.
(c) Turn the rheostat knob and check that the voltage changes.



2. Illumination Adjustment:
INSPECT RHEOSTAT LIGHT CONTROL VOLUME

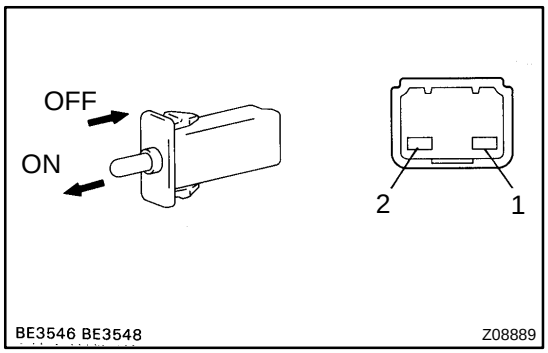
(a) Connect the positive (+) lead from the battery to terminal 5 and 7 and negative (–) lead to terminal 1.
(b) Connect the positive (+) lead from the voltmeter to terminal 7 and negative (–) lead to terminal 2.
(c) Turn the rheostat knob and check that the voltage changes.



3. Tail Cancel:
INSPECT RHEOSTAT LIGHT CONTROL VOLUME

(a) Connect the ohmmeter to terminals 6 and 7.
(b) Turn the rheostat knob fully clockwise and check that current flow stops.

If switch is not as specified, replace the volume.

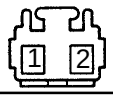


4. INSPECT GLOVE BOX LIGHT SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
OFF (Closed)	–	No continuity
ON (Opened)	1 – 2	Continuity

If continuity is not as specified, replace the relay.

Wire Harness Side



BE5710

5. INSPECT GLOVE BOX LIGHT SWITCH CIRCUIT

Disconnect the connector fromt the switch and inspect the connector on the wire harness side.

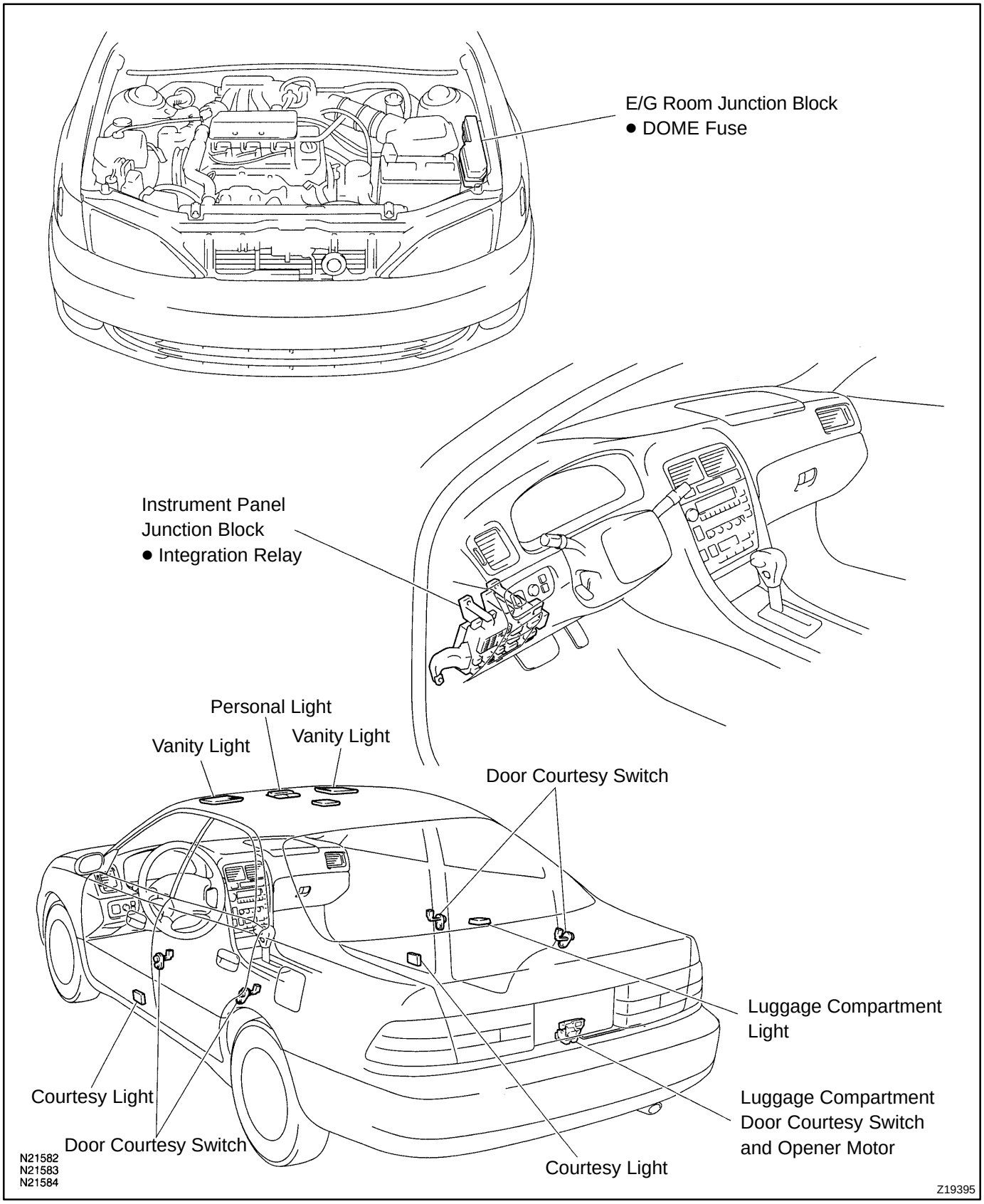
Tester connection	Condition	Specified condition
2 – Ground	Constant	Continuity
1 – Ground	Light control switch position OFF	No voltage
1 – Ground	Light control switch position TAIL or HEAD	Battery positive voltage

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

INTERIOR LIGHT SYSTEM

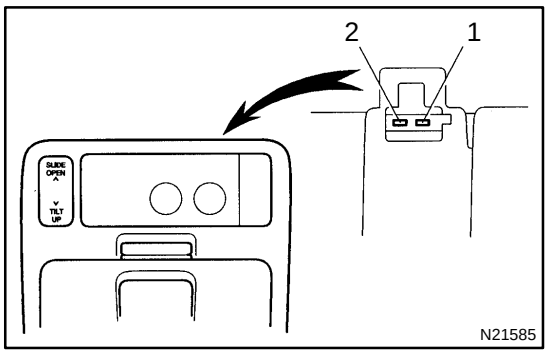
LOCATION

BE057–01



BE058–03

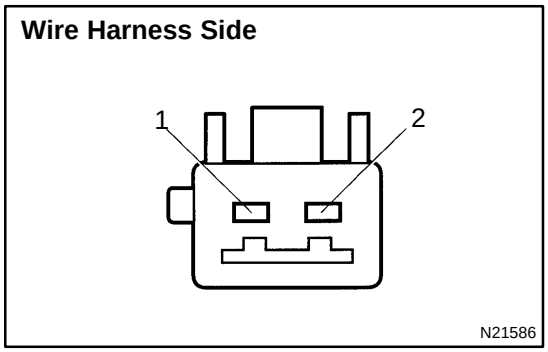
INSPECTION



1. INSPECT PERSONAL LIGHT SWITCH CONTINUITY

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

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

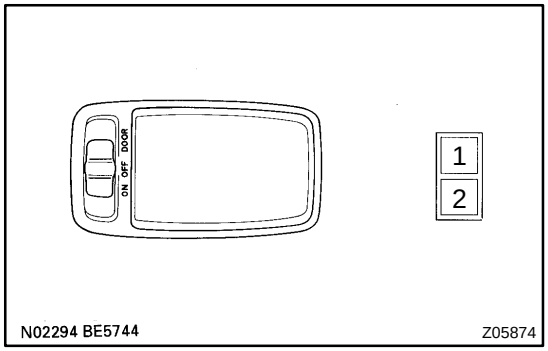


2. INSPECT PERSONAL LIGHT SWITCH CIRCUIT

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

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

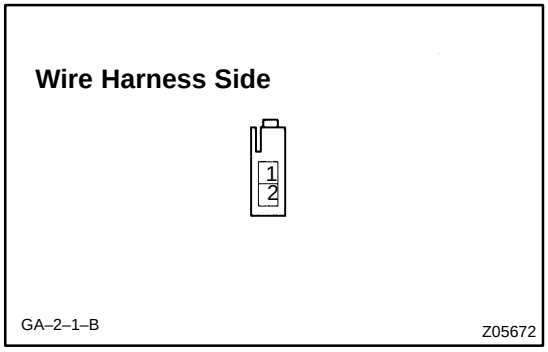
If the circuit is as specified, inspect power source or wire harness.



3. INSPECT INTERIOR LIGHT SWITCH CONTINUITY

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

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

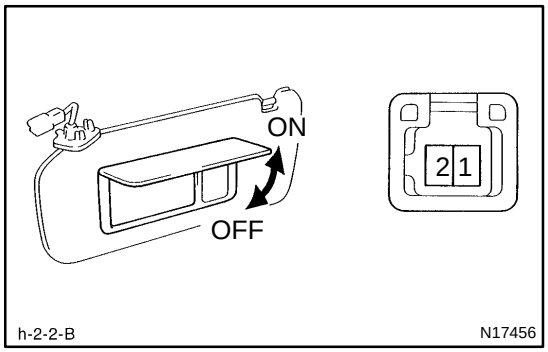


4. INSPECT INTERIOR LIGHT SWITCH CIRCUIT

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

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

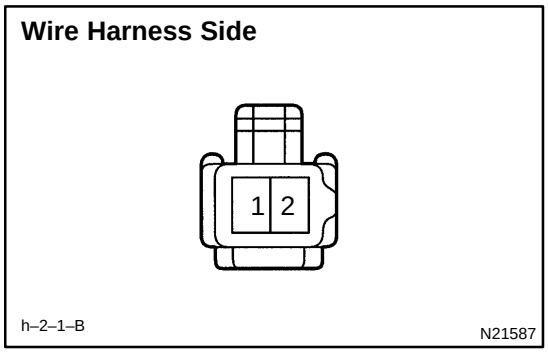
If the circuit is not as specified, inspect power source or wire harness.



5. INSPECT VANITY LIGHT CONTINUITY

Switch position	Tester connection	Specified condition
OFF (Closed)	–	No continuity
ON (Opened)	1 – 2	Continuity

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

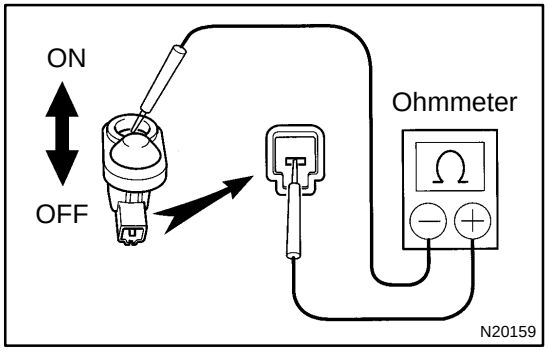


6. INSPECT VANITY LIGHT SWITCH CIRCUIT

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

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

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

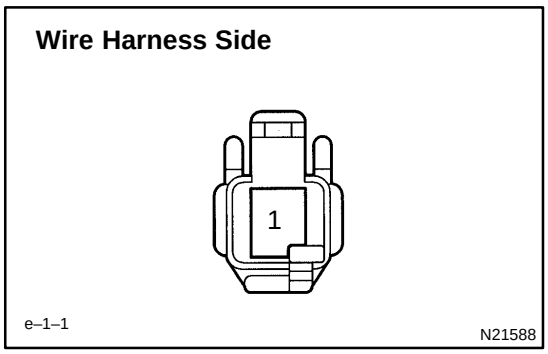


7. INSPECT DOOR COURTESY SWITCH CONTINUITY

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

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

If operation is not as specified, replace the switch.

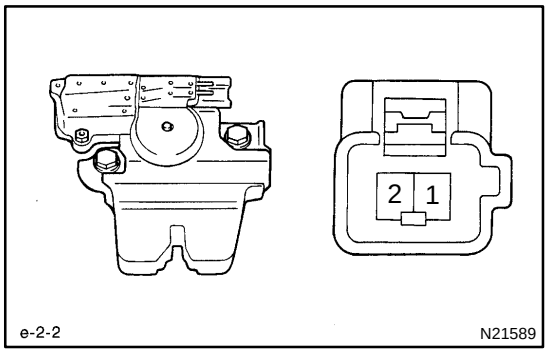


8. INSPECT DOOR COURTESY SWITCH CIRCUIT

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

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

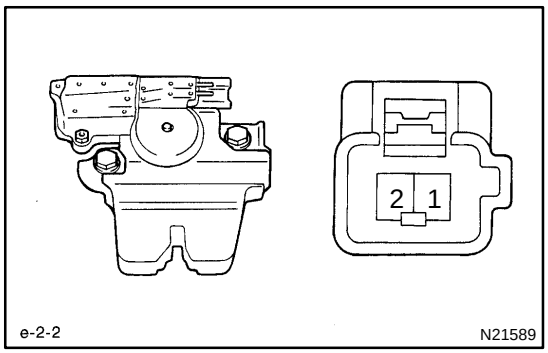
If the circuit is not as specified, inspect power source or wire harness.



9. INSPECT LUGGAGE COMPARTMENT DOOR COURTESY SWITCH CONTINUITY

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

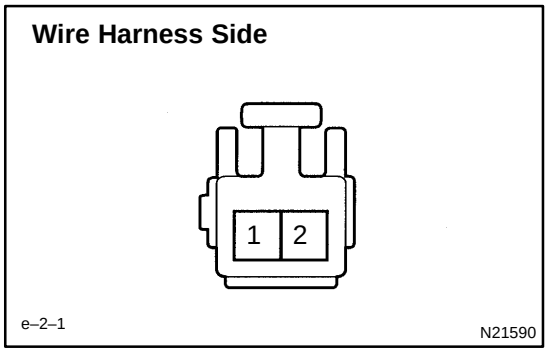
If continuity is not as specified, replace the switch and motor.



10. INSPECT LUGGAGE COMPARTMENT DOOR OPENER MOTOR OPERATION

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

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



11. INSPECT LUGGAGE COMPARTMENT DOOR COURTESY SWITCH AND OPENER MOTOR CIRCUIT

Disconnect the connector from the switch and opener motor, and inspect the connector on the wire harness side.

Tester connection	Condition	Specified condition
1 – Ground	Luggage compartment door opener switch OFF	No voltage
1 – Ground	Luggage compartment door opener switch ON	Battery positive voltage
2 – Ground	Constant	Battery positive voltage

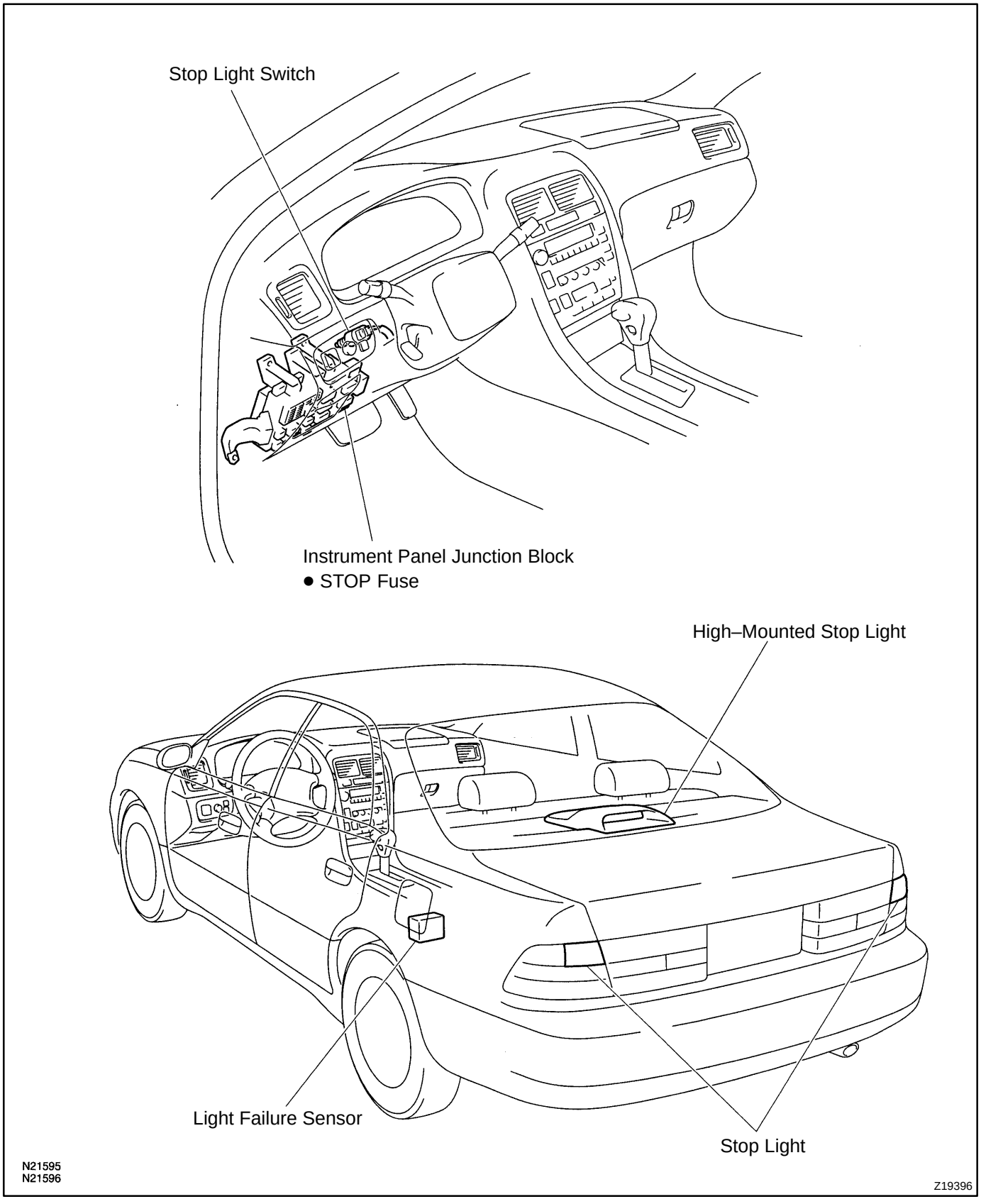
If the circuit is not as specified, inspect power source or wire harness.

12. INSPECT ILLUMINATED ENTRY SYSTEM
(See integration relay circuit on page BE–20)

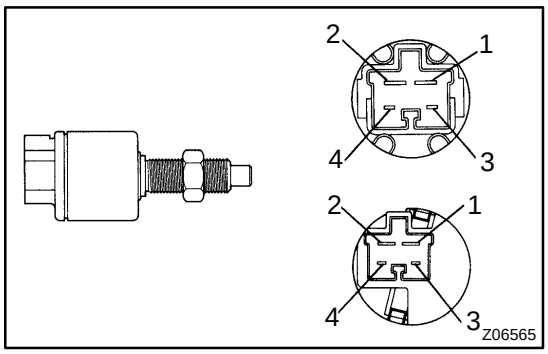
STOP LIGHT SYSTEM

LOCATION

BE059–01



BE05A–01

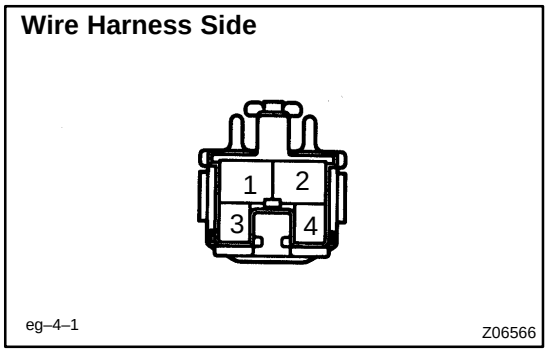


INSPECTION

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.

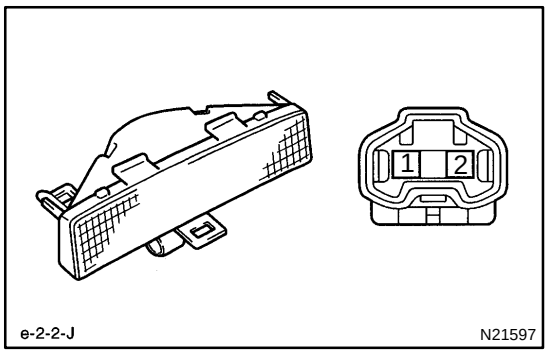


2. INSPECT STOP LIGHT SWITCH CIRCUIT

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

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

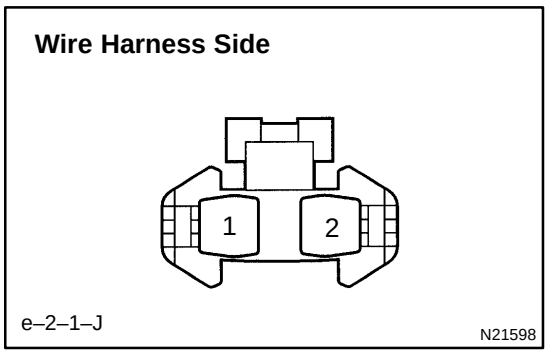
If circuit is not as specified, inspect the power source or wire harness.



3. INSPECT HIGH–MOUNTED STOP LIGHT ASSEMBLY CONTINUITY

Using the ohmmeter, check that continuity exists between terminals.

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

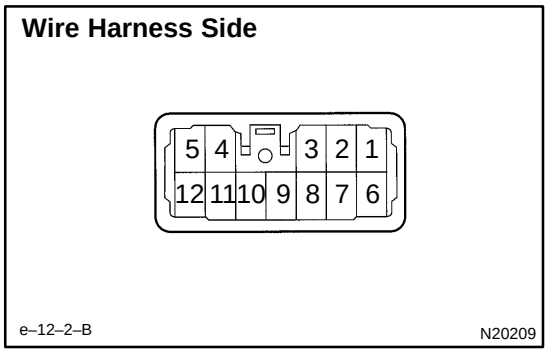


4. INSPECT HIGH–MOUNTED STOP LIGHT ASSEMBLY CIRCUIT

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

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

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



5. INSPECT LIGHT FAILURE SENSOR CIRCUIT

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

Tester connection	Condition	Specified condition
1 – Ground	Constant	Continuity*
2 – Ground	Constant	Continuity*
9 – Ground	Constant	Continuity*
11 – Ground	Constant	Continuity
3 – Ground	Light control switch OFF	No voltage
3 – Ground	Light control switch TAIL or HEAD	Battery positive voltage
4 – Ground	Ignition switch LOCK or ACC	No voltage
4 – Ground	Ignition switch ON	Battery positive voltage
7 – Ground	Stop light switch OFF	No voltage
7 – Ground	Stop light switch ON	Battery positive voltage
8 – Ground	Ignition switch LOCK or ACC	No voltage
8 – Ground	Ignition switch ON	Battery positive voltage

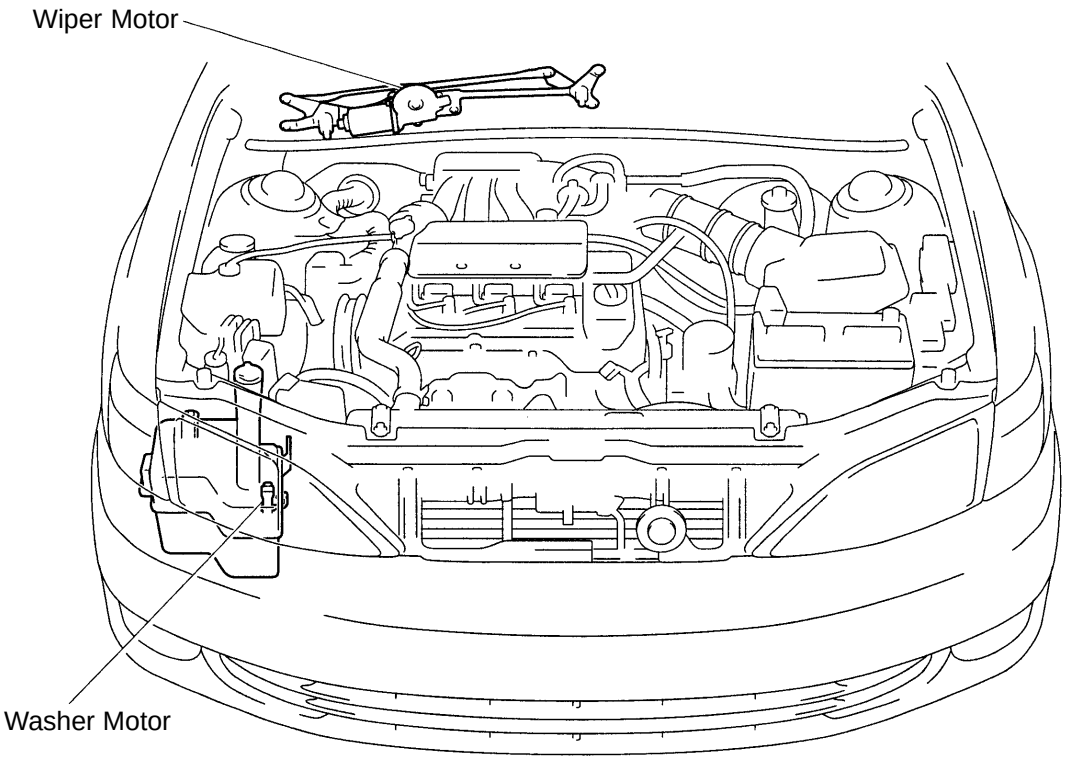
*: There is resistance because this circuit is grounded through the bulb.

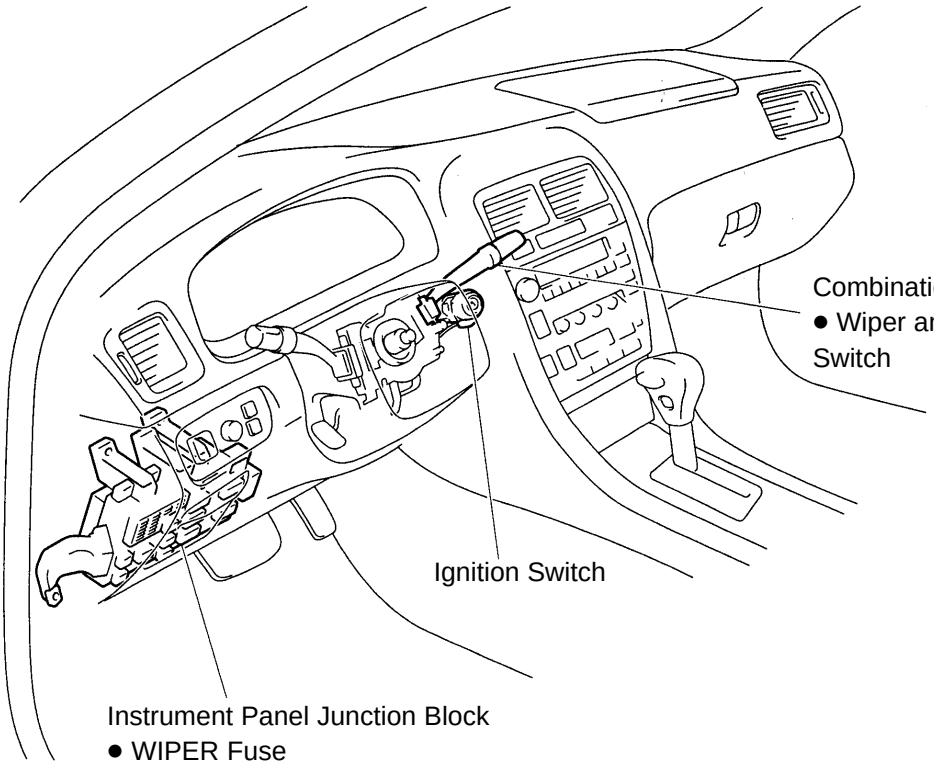
If the circuit is as specified, replace the sensor.

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

WIPER AND WASHER SYSTEM
LOCATION

BE05B–01



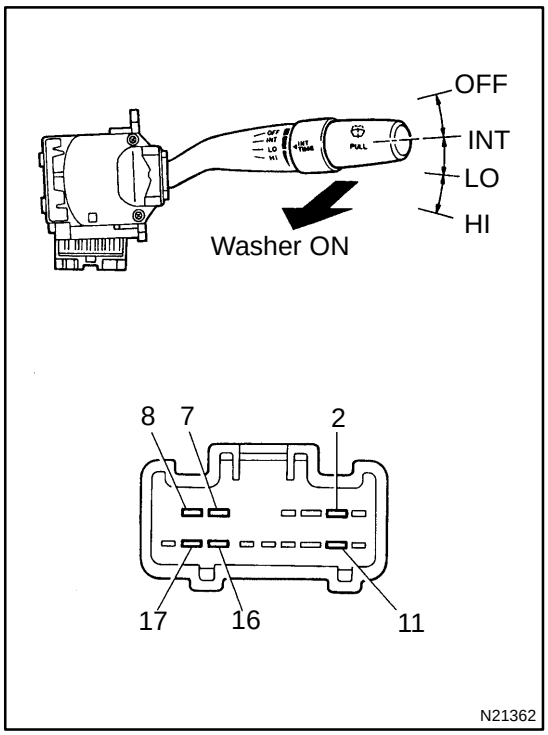


N21500
N21501

Z19354

BE05C–03

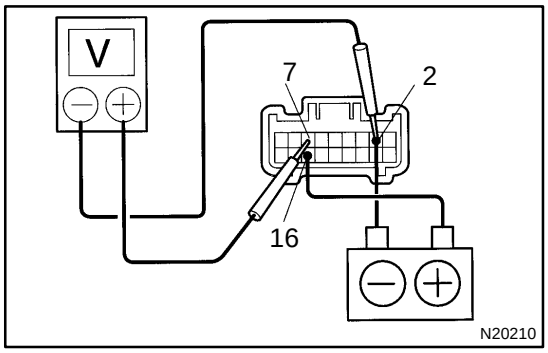
INSPECTION



1. INSPECT FRONT WIPER AND WASHER SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
OFF	7 – 16	Continuity
INT	7 – 16	Continuity
LO	7 – 17	Continuity
HI	8 – 17	Continuity
Washer ON	2 – 11	Continuity

If continuity is not as specified, replace the switch.



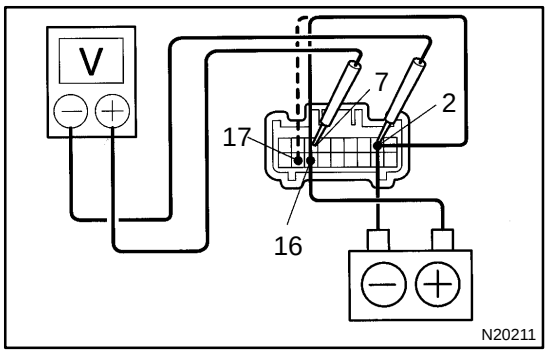
2. INSPECT INTERMITTENT OPERATION

(a) Turn the wiper switch to INT position.

(b) Turn the intermittent time control switch to FAST position.

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

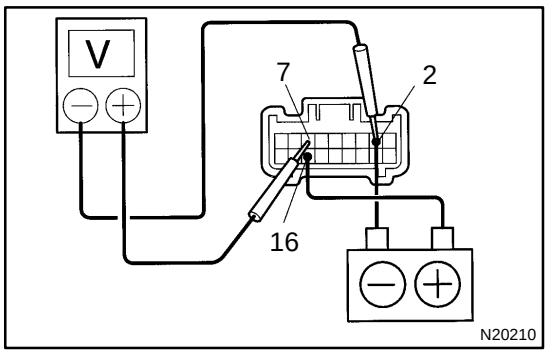
(d) Connect the positive (+) lead from the voltmeter to terminal 7 and the negative (–) lead to terminal 2, check that the meter needle indicates battery positive voltage.



(e) After connecting terminal 16 to terminal 17, connect it to terminal 2, check the voltage rises from 0 volt to battery positive voltage within the time, as shown in the table.

INT time control switch position	Voltage
FAST	Approx. 2 sec. → Battery positive voltage; 0 V
SLOW	10.7 ± 5 sec. → Battery positive voltage; 0 V
Non variable type	3.3 ± 1 sec. → Battery positive voltage; 0 V

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

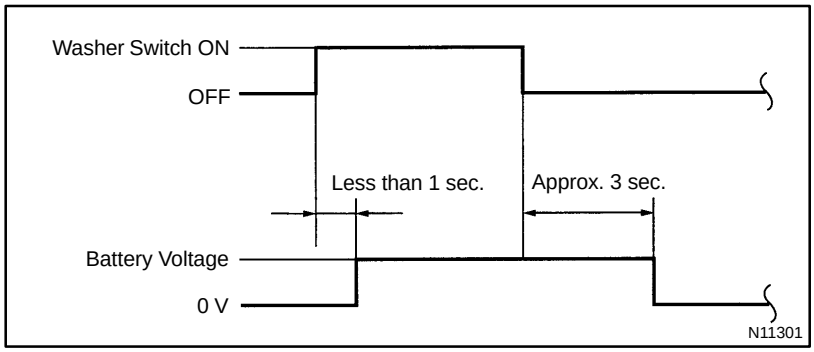


3. INSPECT WASHER LINKED OPERATION

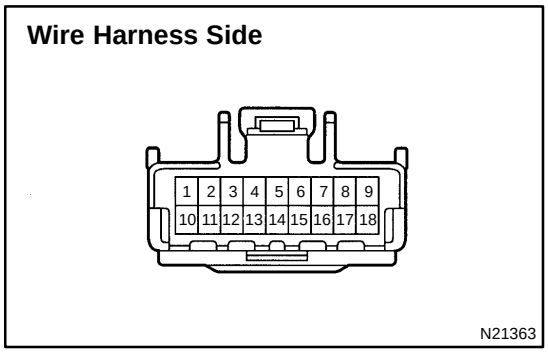
(a) Connect the positive (+) lead from the battery to terminal 16 and the negative (–) lead to terminal 2.

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

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



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

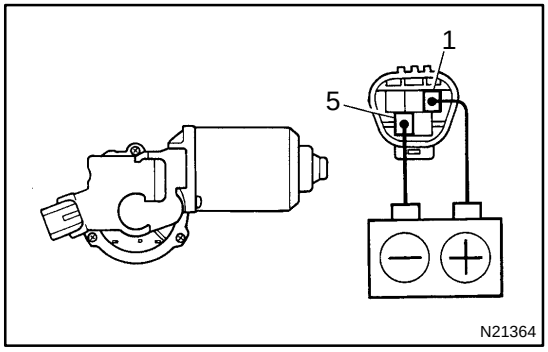


4. INSPECT WIPER SWITCH CIRCUIT

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	Continuity
11 – Ground	Ignition switch LOCK or ACC	No voltage
11 – Ground	Ignition switch ON	Battery positive voltage

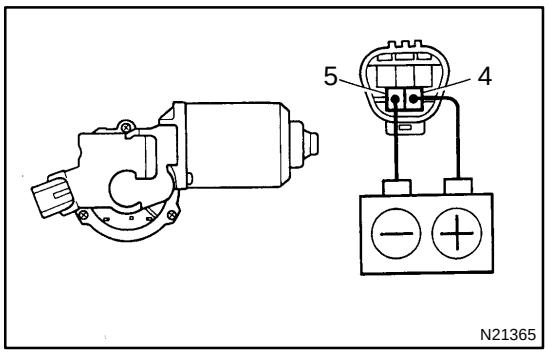
If circuit is not as specified, inspect the circuits connected to other parts.



5. Low Speed: INSPECT FRONT WIPER MOTOR OPERATION

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

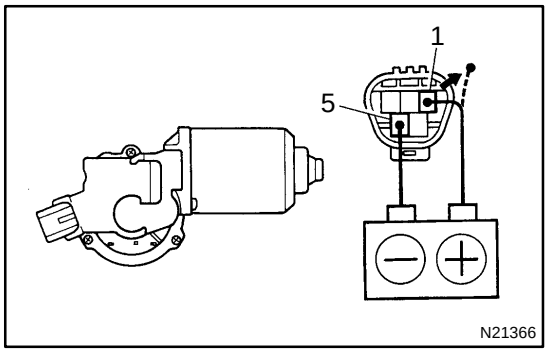
If operation is not as specified, replace the motor.



6. High Speed:
INSPECT FRONT WIPER MOTOR OPERATION

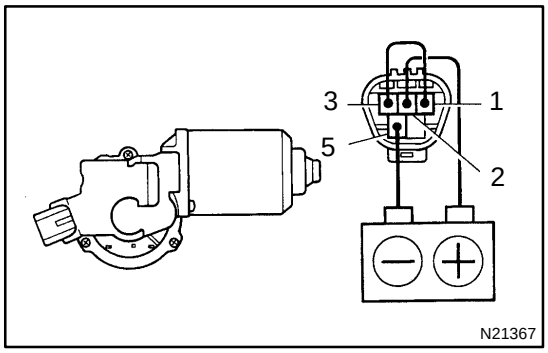
Connect the positive (+) lead from the battery to terminal 4 and the negative (–) lead to terminal 5, check that the motor operates at high speed.

If operation is not as specified, replace the motor.



7. Stopping at Stop Position:
INSPECT FRONT WIPER MOTOR OPERATION

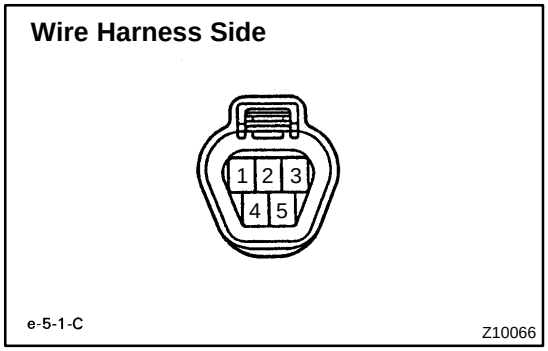
(a) Operate the motor at low speed and stop the motor operation anywhere except at the stop position by disconnecting positive (+) lead from terminal 1.



(b) Connect terminals 1 and 3.

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

If operation is not as specified, replace the motor.

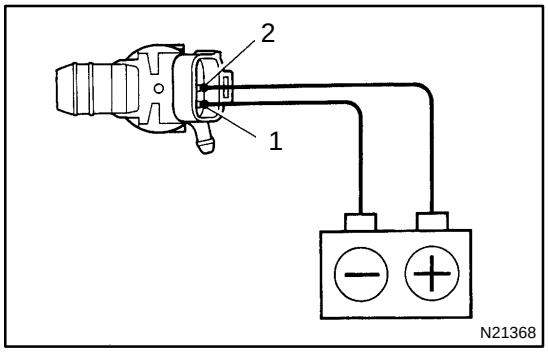


8. INSPECT WIPER MOTOR CIRCUIT

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

Tester connection	Condition	Specified condition
5 – Ground	Constant	Continuity
1 – Ground	* Wiper switch OFF or INT, HIGH	No voltage
1 – Ground	* Wiper switch LOW	Battery positive voltage
2 – Ground	Ignition switch LOCK or ACC	No voltage
2 – Ground	Ignition switch ON	Battery positive voltage
4 – Ground	* Wiper switch OFF or INT, LOW	No voltage
4 – Ground	* Wiper switch HIGH	Battery positive voltage

*: Turn ignition switch ON
If circuit is not as specified, inspect the circuits connected to other parts.



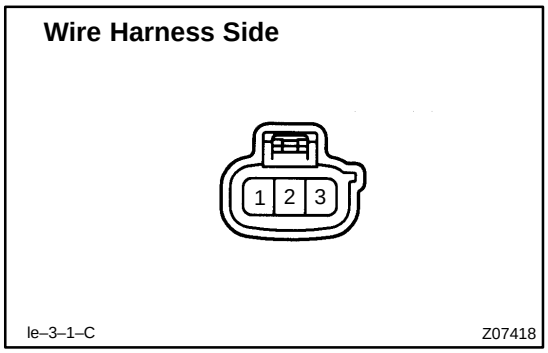
9. INSPECT WASHER MOTOR OPERATION

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

NOTICE:

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

If operation is not as specified, replace the motor.



10. INSPECT WASHER MOTOR CIRCUIT

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

Tester connection	Condition	Specified condition
1 – Ground	Washer switch OFF (released)	No continuity
1 – Ground	Washer switch ON (pushed in)	Continuity
2 – Ground	Ignition switch LOCK or ACC	No voltage
2 – Ground	Ignition switch ON	Battery positive voltage

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

COMBINATION METER

BE05D–03

TROUBLESHOOTING

PRECAUTIONS

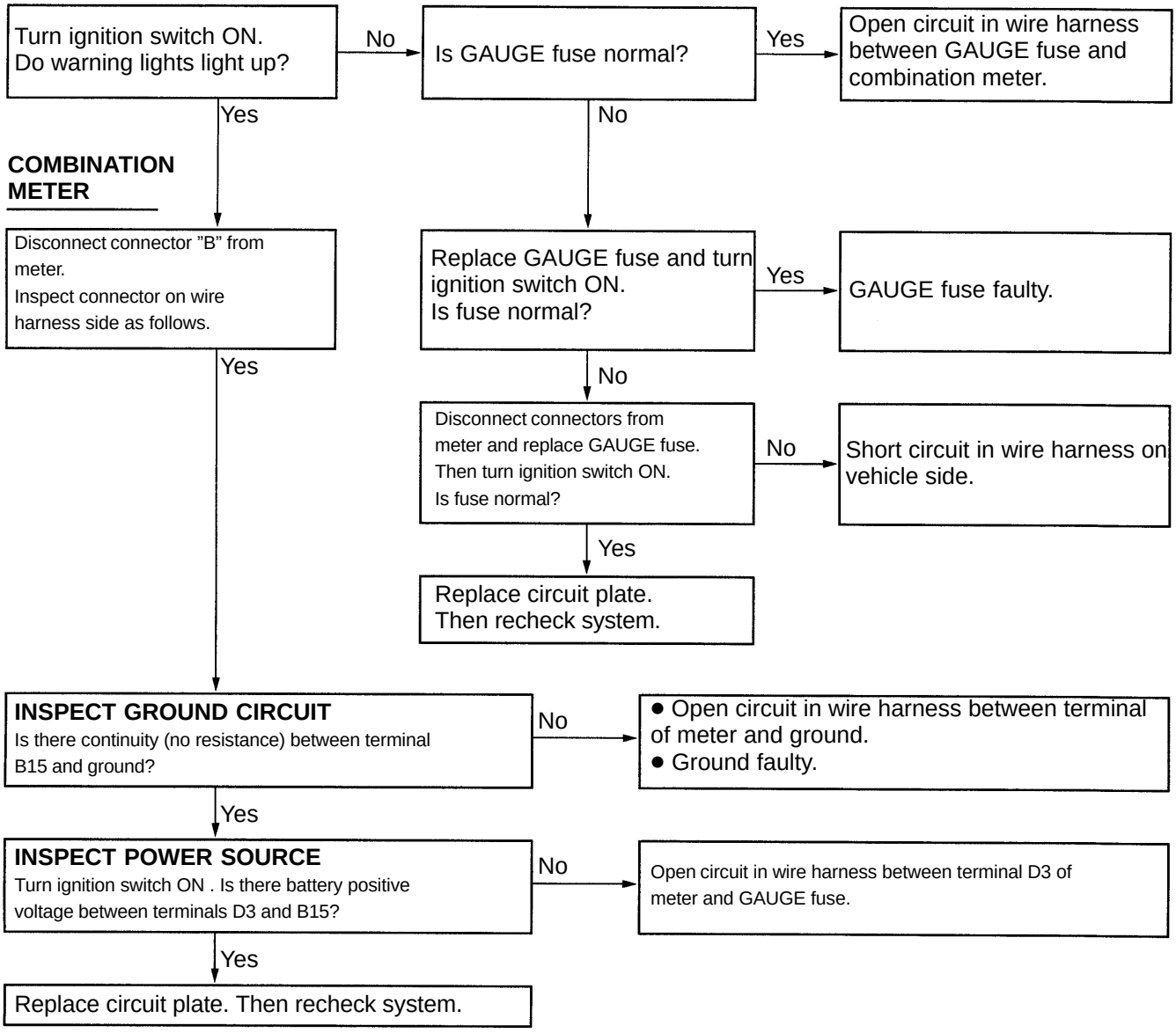
(a) When checking voltage, resistance, etc., use a high impedance type tester (It is impossible to use a simple tester).
(b) When the ignition switch is turned to START, all meters will go out but this is normal.
(c) When replacing the internal mechanism (computer parts) of the meter, be careful that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

Trouble		Refer to
All Meters, Gauges, and Illuminations	No display at all.	1
	The four indicator needles do not light up.	Replace combination meter computer.
	One indicator needle does not light up.	2
	The character plate is not illuminated at one or two locations.	3
	Brightness does not change even when light control switch is operated (OFF↔TAIL).	4
	Brightness does not change even when rheostat volume is turned.	5
	Remains dimmed when the light control switch is turned OFF.	Replace combination meter computer.
	Does not go out while starter running.	6
Speedometer	Speedometer does not operate while driving.	7
	Vehicle speed signal (4P) faulty.	8
Tachometer	Tachometer does not operate while engine running.	9
Fuel Gauge	Does not operate or operation is abnormal.	10
Fuel Level Warning	Warning light does not light up or always lights up.	11
Engine Coolant Temperature Gauge	Does not operate or operation is abnormal.	12
Low Oil Pressure warning	Abnormal operation or warning light does not light up.	13
Brake Warning	Abnormal operation or warning light does not light up.	14
Rear Lights Warning	Abnormal operation or warning light does not light up.	15
Open Door Warning	Abnormal operation or warning light does not light up.	16
Engine Oil Level Warning	Abnormal operation or warning light does not light up.	17
Seat Belt Warning Chime	Abnormal operation or chime does not operate.	BE–92
Seat Belt Warning	Abnormal operation or warning light does not light up.	18

Trouble		Refer to
Turn Signal Indicator	Abnormal operation or Indicator does not light up.	19
O/D OFF Indicator	Abnormal operation or Indicator does not light up.	20
Shift Position Indicator	Abnormal operation or Indicator does not light up.	21
Malfunction Indicator	Abnormal operation or warning light does not light up	22
ABS Warning	Abnormal operation or warning light does not light up.	23
CRUISE Indicator	Abnormal operation or Indicator does not light up.	24
SRS Warning	Abnormal operation or warning light does not light up.	25
Discharge Warning	Abnormal operation or warning light does not light up.	26
High Beam Indicator	Abnormal operation or Indicator does not light up.	27
Window Washer Warning	Abnormal operation or warning light does not light up.	28
Taillight Indicator	Abnormal operation or Indicator does not light up.	29
Headlight Indicator	Abnormal operation or Indicator does not light up.	30

1	**ALL METERS, GAUGES, AND ILLUMINATIONS**	**No display at all.**

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



V08429

2	**ALL METERS, GAUGES, AND ILLUMINATIONS**	**One indicator needle does not light up.**

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

Is LED OK?
- No → Replace the LED. Then recheck system.
- Yes ↓

Disconnect connector "B" from meter.
Inspect connector on wire harness side as follows

INSPECT GROUND CIRCUIT
Is there continuity (no resistance) between terminal B15 and ground?
- No → ● Open circuit in wire harness between terminal of meter and ground. ● Ground faulty.
- Yes ↓

INSPECT POWER SOURCE
Turn ignition switch ON . Is there battery positive voltage between terminals D3 and B15?
- No → Open circuit in wire harness between terminal D3 of meter and GAUGE fuse.
- Yes ↓

Replace circuit plate. Then recheck system.

3	**ALL METERS, GAUGES, AND ILLUMINATIONS**	**The character plate is illuminated on one side.**

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

Is bulb OK?
- No → Replace the LED. Then recheck system.
- Yes ↓

Disconnect connector "B" from meter.
Inspect connector on wire harness side as follows.

INSPECT GROUND CIRCUIT
Is there continuity (no resistance) between terminal B15 and ground?
- No → ● Open circuit in wire harness between terminal D3 of meter and ground. ● Ground faulty.
- Yes ↓

INSPECT POWER SOURCE
Turn ignition switch ON . Is there battery positive voltage between terminals D3 and B15?
- No → Open circuit in wire harness between terminal D3 of meter and GAUGE fuse.
- Yes ↓

Replace circuit plate. Then recheck system.

V08430

4	**ALL METERS, GAUGES, AND ILLUMINATIONS**	**Brightness does not change even when light control switch is operated. (OFF↔TAIL)**

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

COMBINATION METER

Disconnect connector "B" from meter.
Inspect connector on wire harness side as follows.

↓

INSPECT TAILLIGHT SIGNAL CIRCUIT
Does voltage change between terminal B8 and ground as follows?

Condition		Voltage
Light control switch position	OFF	No voltage
	TAIL or HEAD	Battery positive voltage

No → Taillight signal circuit faulty on vehicle side. Inspect illumination light system.

Yes ↓

Replace circuit plate. Then recheck system.

5	**ALL METERS, GAUGES, AND ILLUMINATIONS**	**Brightness does not change even when rheostat volume is turned.**

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

RHEOSTAT LIGHT CONTROL VOLUME

INSPECT RHEOSTAT LIGHT CONTROL VOLUME
(See page BE–)
Is operation normal?

No → Replace rheostat light control volume. Then recheck system.

Yes ↓

COMBINATION METER

Connect connector to rheostat volume.
Disconnect connector "D" from meter.
Inspect connector on wire harness side as follows.

↓

Turn ignition switch ON. Does voltage change evenly between terminal D1 and D2 when rheostat knob is turned?

No → Wire harness faulty between terminal D1 of meter and terminal D2 of rheostat volume and rheostat light control.

Yes ↓

Replace circuit plate. Then recheck system.

V08431

6	**ALL METERS, GAUGES, AND ILLUMINATIONS**	**Does not go out while starter running.**

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

Disconnect connector ”B” from meter.
Inspect connector on wire harness side as follows.

↓

Turn ignition switch START.
Is there battery positive voltage between terminal and ground or B16?

No → Wire harness faulty between terminal B16 of Meter and ST fuse.

↓ Yes

Replace circuit plate. Then recheck system.

7	**SPEEDOMETER**	**Speedometer does not operate while driving**

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

INSPECT ODOMETER OPERATION
Does odometer operate while driving?

Yes → **INSPECT TRIP METER OPERATION**
Does trip meter operate while driving?

Yes → Replace speedometer. Then recheck system.

No → Go to step 7–A

↓ No

COMBINATION METER

Disconnect connector ”C” from meter.
Inspect connector on wire harness side as follows.

↓

Jack up the vehicle.
Turn ignition switch ON. Rotate propeller shaft.
Does the voltage between terminals C9 and C10 change (approx. 0V to 11V or more) per revolution of propeller shaft?

Yes → Replace circuit plate. Then recheck system.

↓ No

CONTINUED ON NEXT PAGE

V08432

8	**SPEEDOMETER**	**Vehicle speed signal (4P) faulty**

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

INSPECT ODOMETER OPERATION
Does odometer operate while driving?
No → See chart 18.
Yes ↓

COMBINATION METER

Remove meter with connector connected.
Inspect connector "C" from back side as follows. ↓

Jack up the vehicle. Turn ignition switch ON.
Rotate propeller shaft. Does the voltage between terminals C10 and ground change (approx. 0V to 5V or more) per revolution of propeller shaft?
No → Replace circuit plate. Then recheck system.
Yes ↓

Wire harness between terminal C10 of meter and*ECU faulty.

- ECM
- Suspension ECU
- Power Steering ECU
- ABS and TRAC ECU
- Cruise Control ECU

9	**TACHOMETER**	**Tachometer dose not operate while engine running.**

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

Disconnect connectors "A" and "C" from meter.
Inspect connector on wire harness side as follows. ↓

*** INSPECT TACHOMETER CIRCUIT**
With engine running, does voltage between terminals A13 and C10 fluctuate?
No → Wire harness faulty between terminal A13 of meter and igniter.
Yes ↓

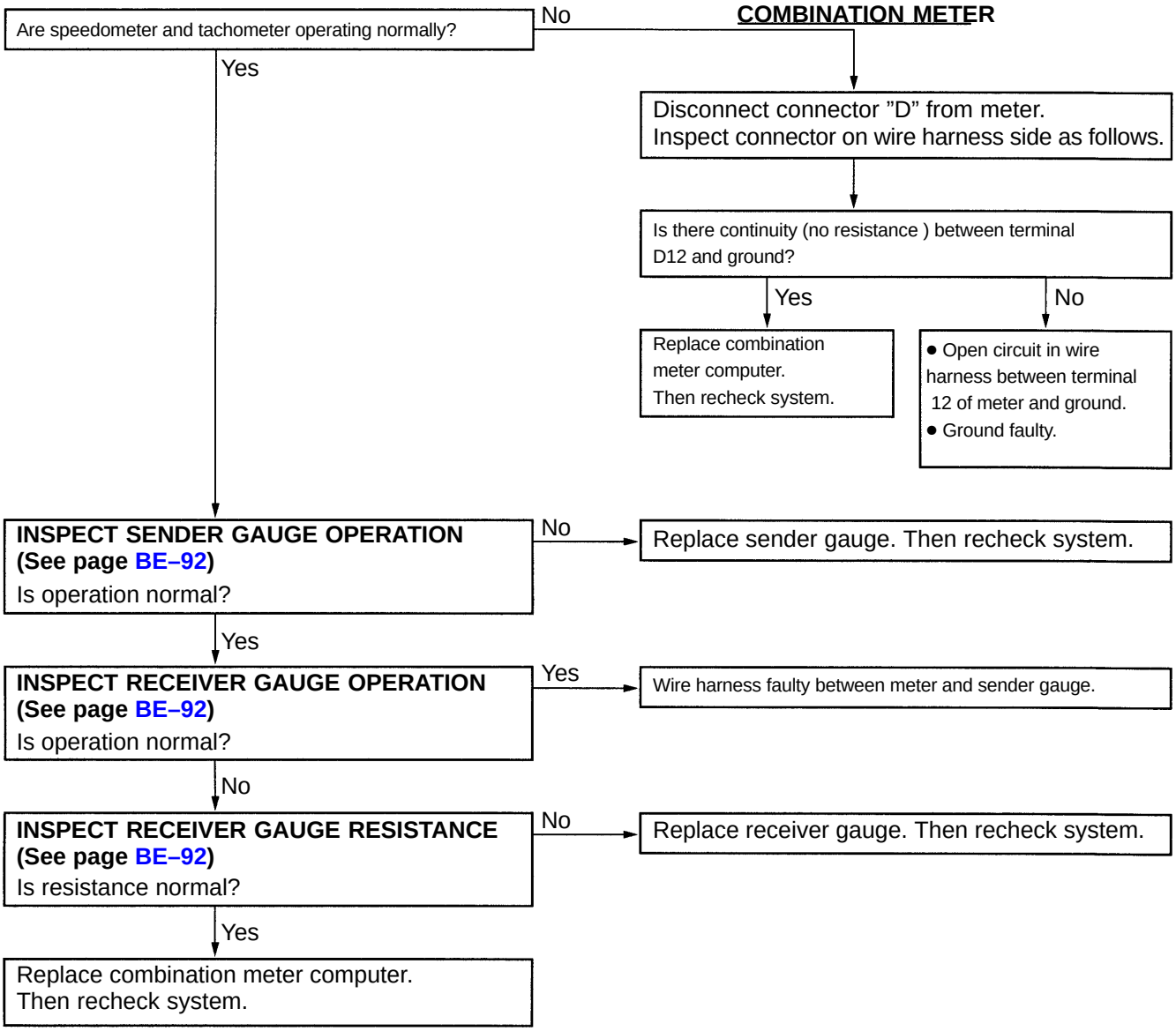
Replace circuit plate. Then recheck system.

* : An electrical tester availble to measure frrequency is necessary for this inspection.
REFERENCE : TOYOTA ELECTRICAL TESTER (09082–00050)

V08433

10	FUEL GAUGE	**Does not operate or operation is abnormal.**

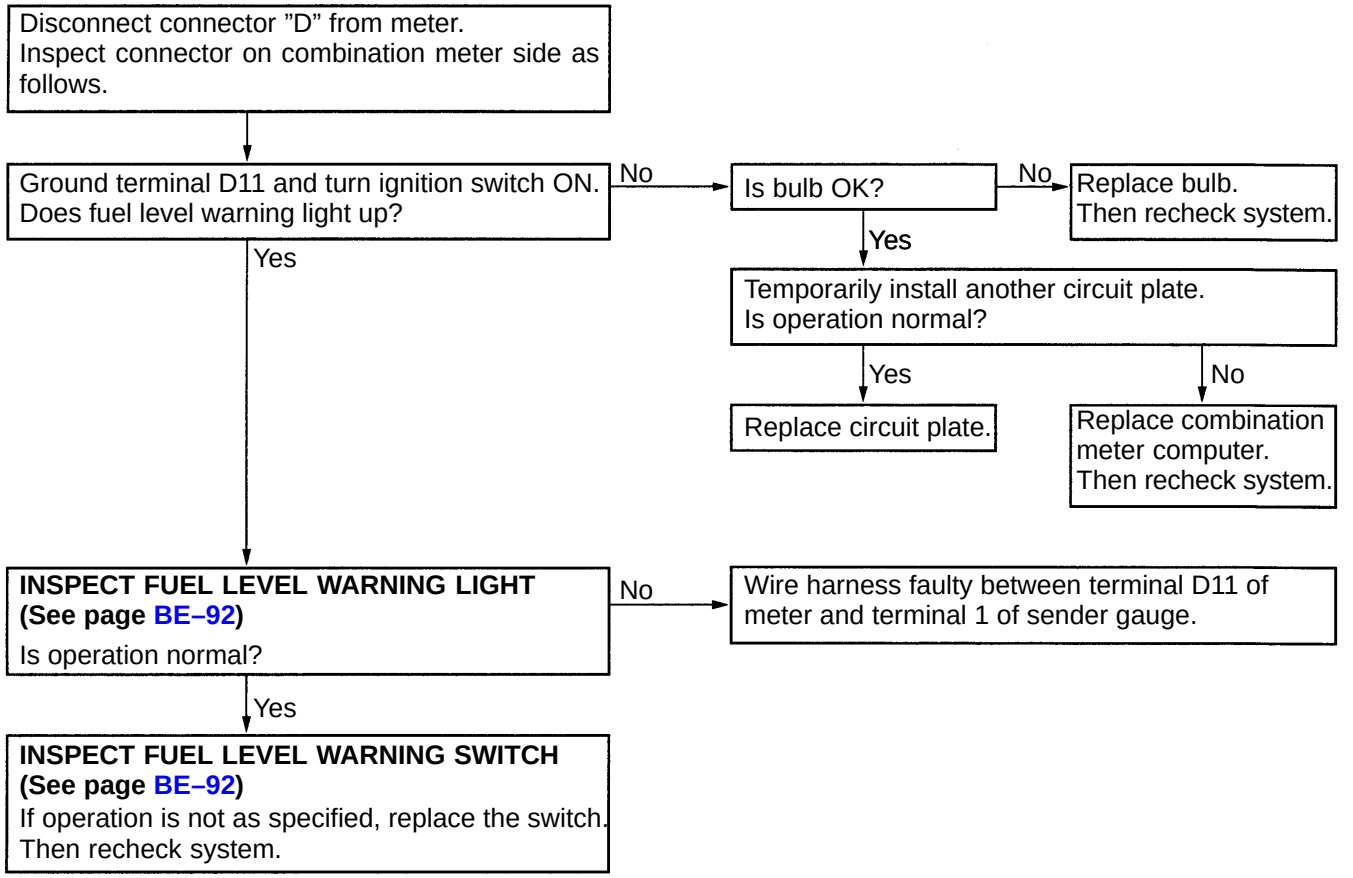
HINT : While carrying out the following inspection, make certain that the connectors and terminals are properly connected.



V08434

11	FUEL LEVEL WARNING	**Warning light does not light up or always lights up.**

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



12	**ENGINE COOLANT TEMPERATURE GAUGE**	**Does not operate or operation is abnormal.**

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

INSPECT SENDER GAUGE GROUND CONDITION
Is there continuity (no resistance) between gauge body and engine block?
- No → Sender gauge ground condition faulty.
- Yes ↓

INSPECT RECEIVER GAUGE OPERATION (See page BE–92)
Is operation normal?
- Yes → Replace sender gauge. Then recheck system.
- No ↓

COMBINATION METER

Disconnect connector "A" from meter.
Inspect connector on wire harness side. ↓

Is there continuity between terminal A1 and ground?
- No → Wire harness faulty between terminal A1 of meter and ground.
- Yes ↓

Is there continuity between terminal A3 and ground?
- No → Wire harness faulty between terminal A3 of meter and sender gauge.
- Yes ↓

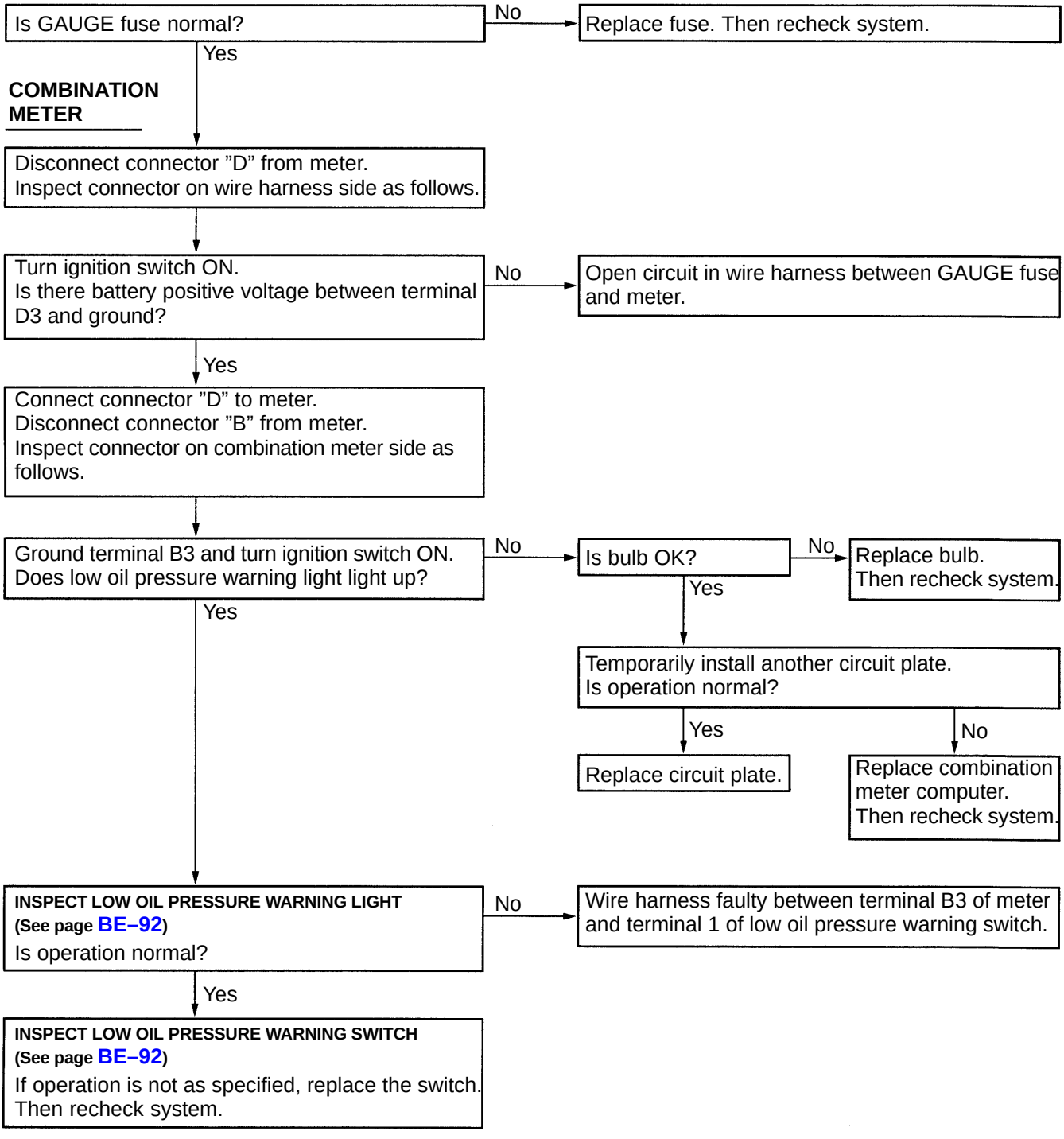
INSPECT RECEIVER GAUGE RESISTANCE (See page BE–92)
Is resistance normal?
- No → Replace receiver gauge. Then recheck system.
- Yes ↓

Replace combination meter computer.
Then recheck system.

V08436

13	LOW OIL PRESSURE WARNING	Abnormal operation or warning light does not light up.

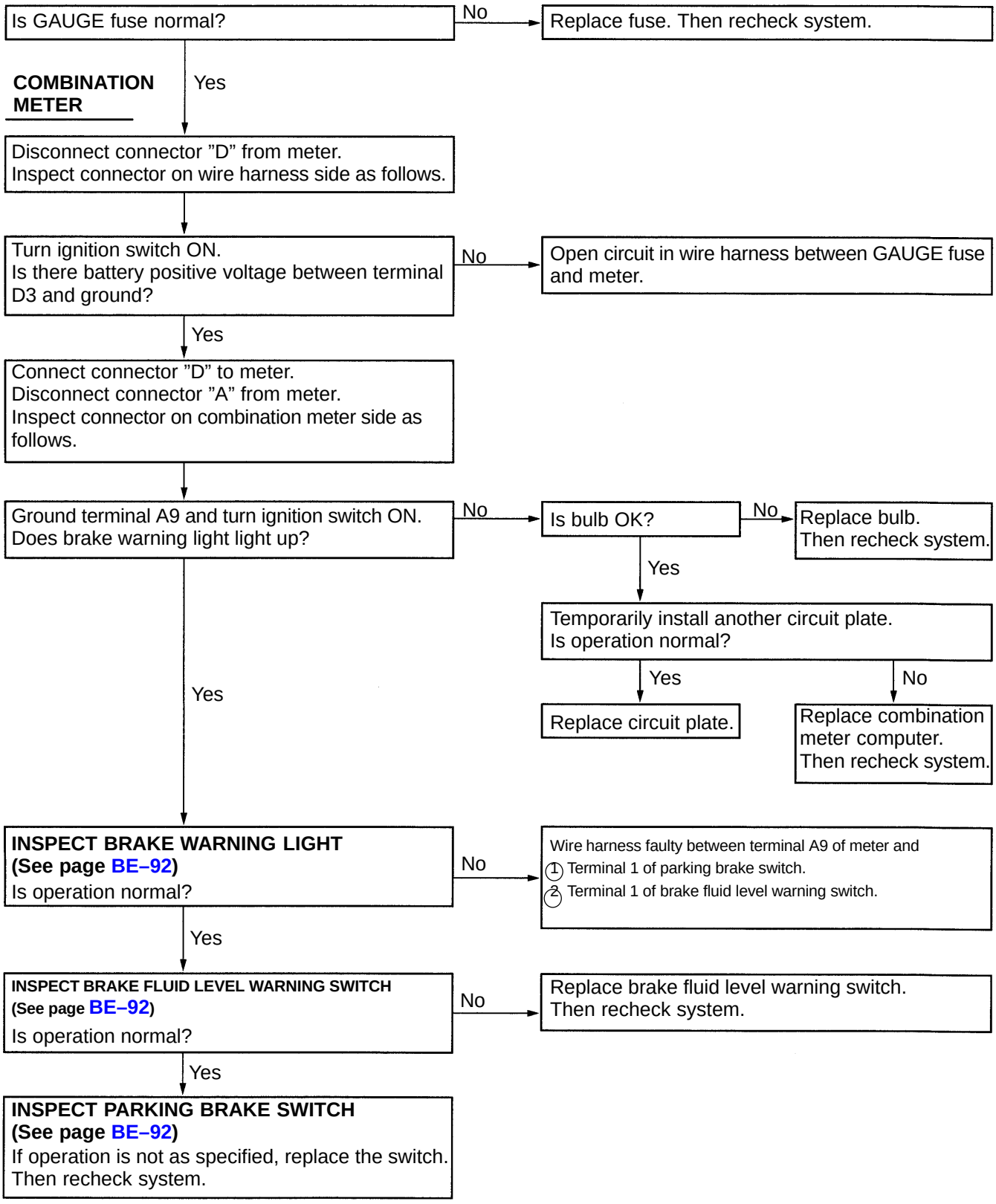
HINT : While carrying out the following inspection, make certain that the connectors and terminals are properly connected.



V08437

14	**BRAKE WARNING**	**Abnormal operation or warning light does not light up.**

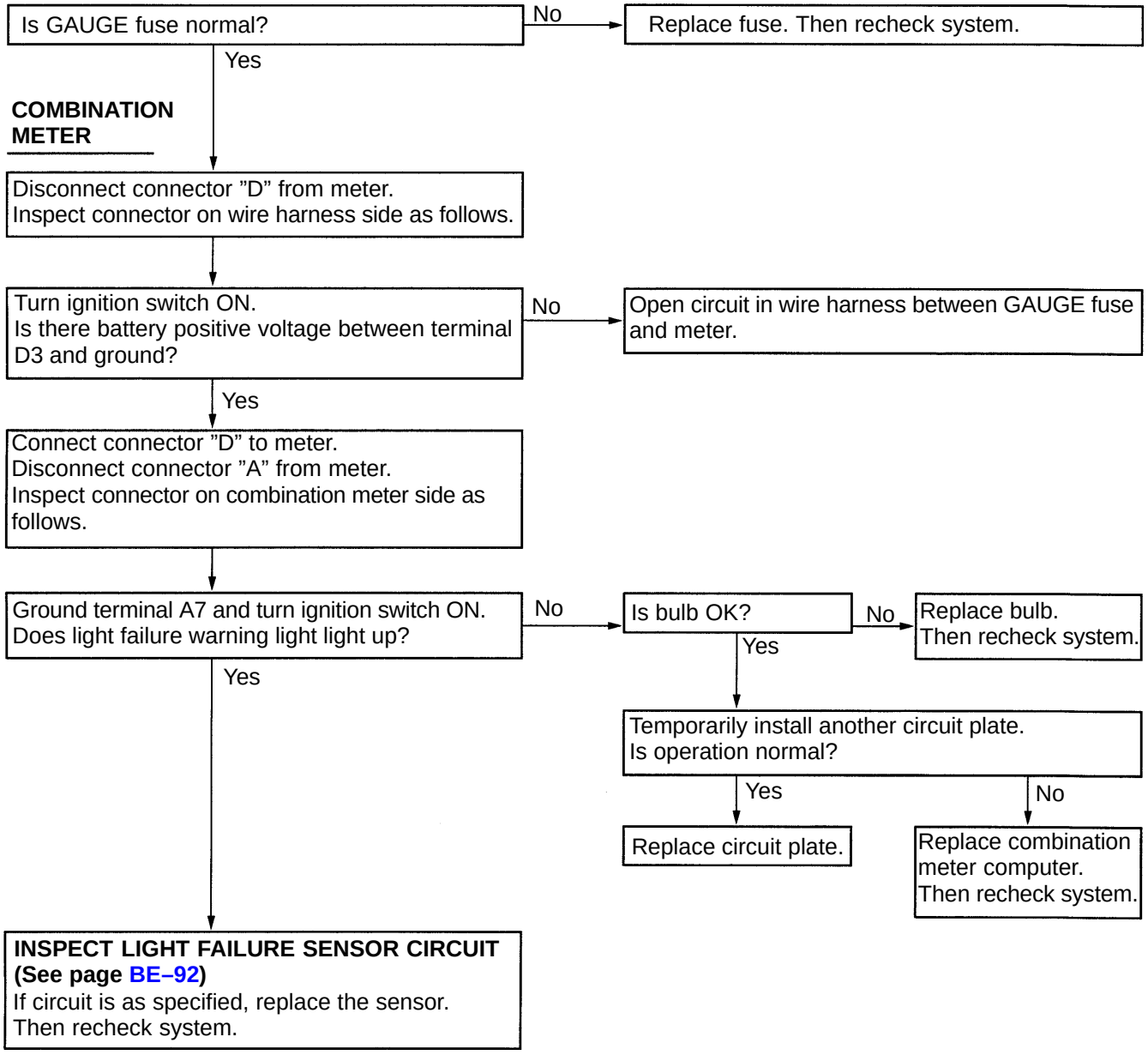
HINT : While carrying out the following inspection, make certain that the connectors and terminals are properly connected.



V08438

15	REAR LIGHTS WARNING	Abnormal operation or warning light does not light up.

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



V08439

16	**OPEN DOOR WARNING**	**Abnormal operation or warning light does not light up.**

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

Is DOME fuse normal?
- No → Replace fuse. Then recheck system.
- Yes ↓

COMBINATION METER

Disconnect connector "C" from meter.
Inspect connector on wire harness side as follows.

Is there battery positive voltage between terminal C6 and ground?
- No → Open circuit in wire harness between GAUGE fuse and meter.
- Yes ↓

Connect connector "C" to meter.
Disconnect connector "C" from meter.
Inspect connector on combination meter side as follows.

Ground terminal C6.
Does open door warning light light up?
- No → Is bulb OK?
  - No → Replace bulb. Then recheck system.
  - Yes ↓ Temporarily install another circuit plate. Is operation normal?
    - Yes → Replace circuit plate.
    - No → Replace combination meter computer. Then recheck system.
- Yes ↓

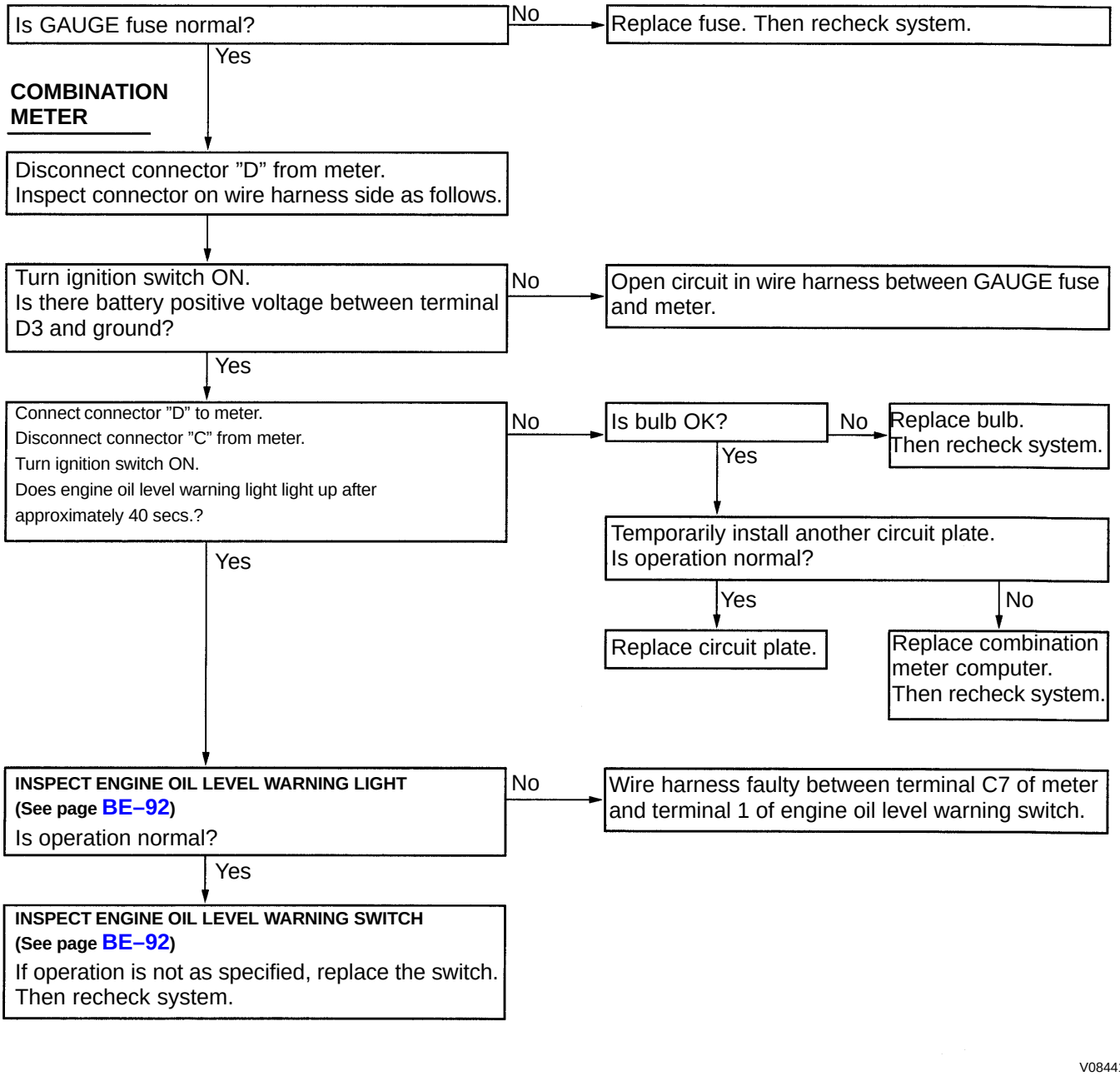
INSPECT OPEN DOOR WARNING LIGHT (See page BE–92)
Is operation normal?
- No → Wire harness faulty between terminal C6 of meter and terminal 1 of door courtesy switch.
- Yes ↓

INSPECT DOOR COURTESY SWITCH (See page BE–92)
If operation is not as specified, replace the switch. Then recheck system.

V08440

17	ENGINE OIL LEVEL WARNING	Abnormal operation or warning light does not light up.

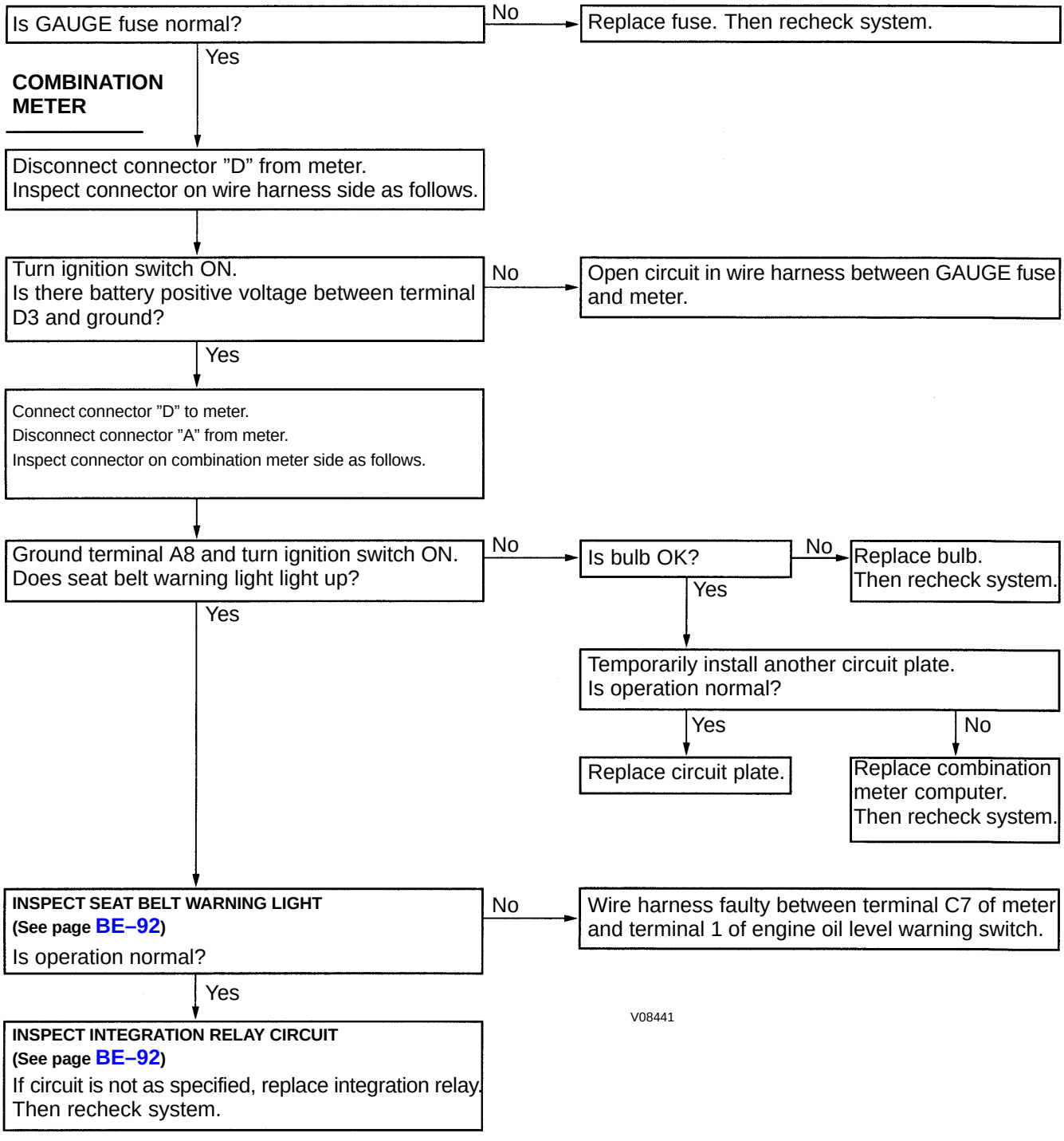
HINT : While carrying out the following inspection, make certain that the connectors and terminals are properly connected.



V08441

18	SEAT BELT WARNING	Abnormal operation or warning light does not light up.

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



V08442

19	**TURN SIGNAL INDICATOR**	**Abnormal operation or warning light does not light up.**

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

Disconnect connector "D" from meter.
Inspect connector on wire harness side as follows.

↓

Turn ignition switch ON.
Is there battery positive voltage between terminals xx and ground with the turn signal lever to left and right?

Turn signal to	Left	Right
Terminal xx	B11	B13

No → Turn signal indicator signal circuit faulty. Inspect the turn signal and hazard warning light system.

Yes ↓

Is bulb OK?

No → Replace the bulb. Then recheck system.

Yes ↓

Replace circuit plate. Then recheck system.

V08443

20	**TRAC OFF INDICATOR**	**Abnormal operation or indicator does not light up.**

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

Inspect connector on wire harness side as follows.

Yes ↓

Ground terminal D6 and turn ignition switch ON.
Does TRAC OFF indicator light up?

No → Inspect the wire harness between terminal D6 of meter and ABS & TRAC ECU or inspect ABS & TRAC ECU.

Yes ↓

Is bulb OK?

No → Replace the bulb. Then recheck system.

Yes ↓

Replace circuit plate. Then recheck system.

No → Replace power source unit.

21	**O/D OFF INDICATOR**	**Abnormal operation or indicator does not light up.**

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

Disconnect connector ”B” from meter.
Inspect connector on combination meter side as follows.

↓

Ground terminal B5 and turn ignition switch ON.
Does O/D OFF indicator light up?

Yes → O/D OFF indicator signal circuit faulty.

↓ No

Is bulb OK?

No → Replace the bulb.

↓ Yes

Replace circuit plate. Then recheck system.

22	**SHIFT POSITION INDICATOR**	**Abnormal operation or indicator does not light up.**

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

Disconnect connector ”D” from meter.
Inspect connector on wire harness side as follows.

↓

Turn ignition switch ON.
Is there battery positive voltage between terminals XX and ground with turn shift lever to P through L

Shift to	P	R	N	D	2	L
Terminal XX	B12	B14	C1	C2	B10	B9

No → Shift position indicator signal circuit faulty.

↓ Yes

Is bulb OK?

No → Replace the bulb. Then recheck system.

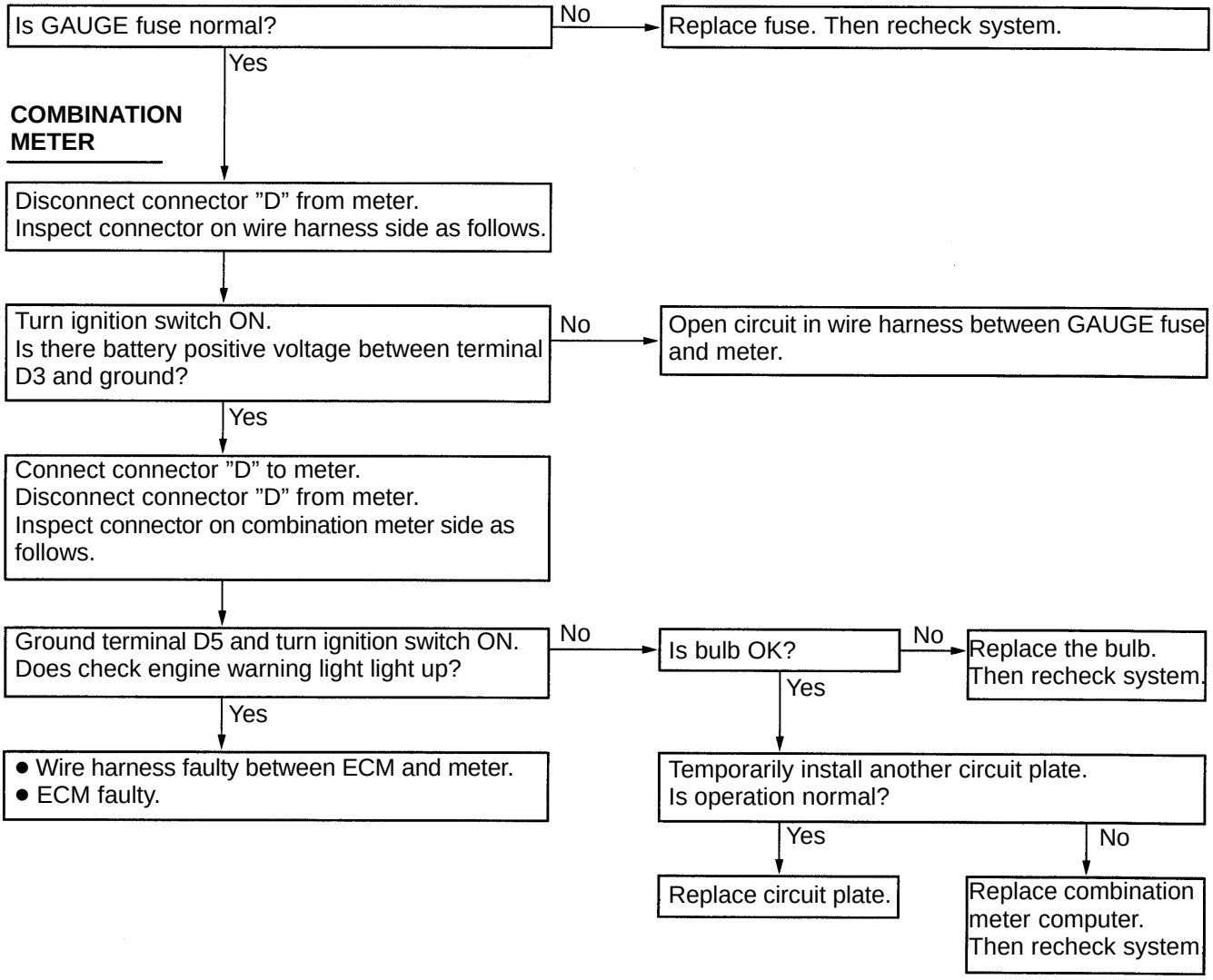
↓ Yes

Replace circuit plate. Then recheck system.

V08444

23	MALFUNCTION WARNING	**Abnormal operation or warning light does not light up.**

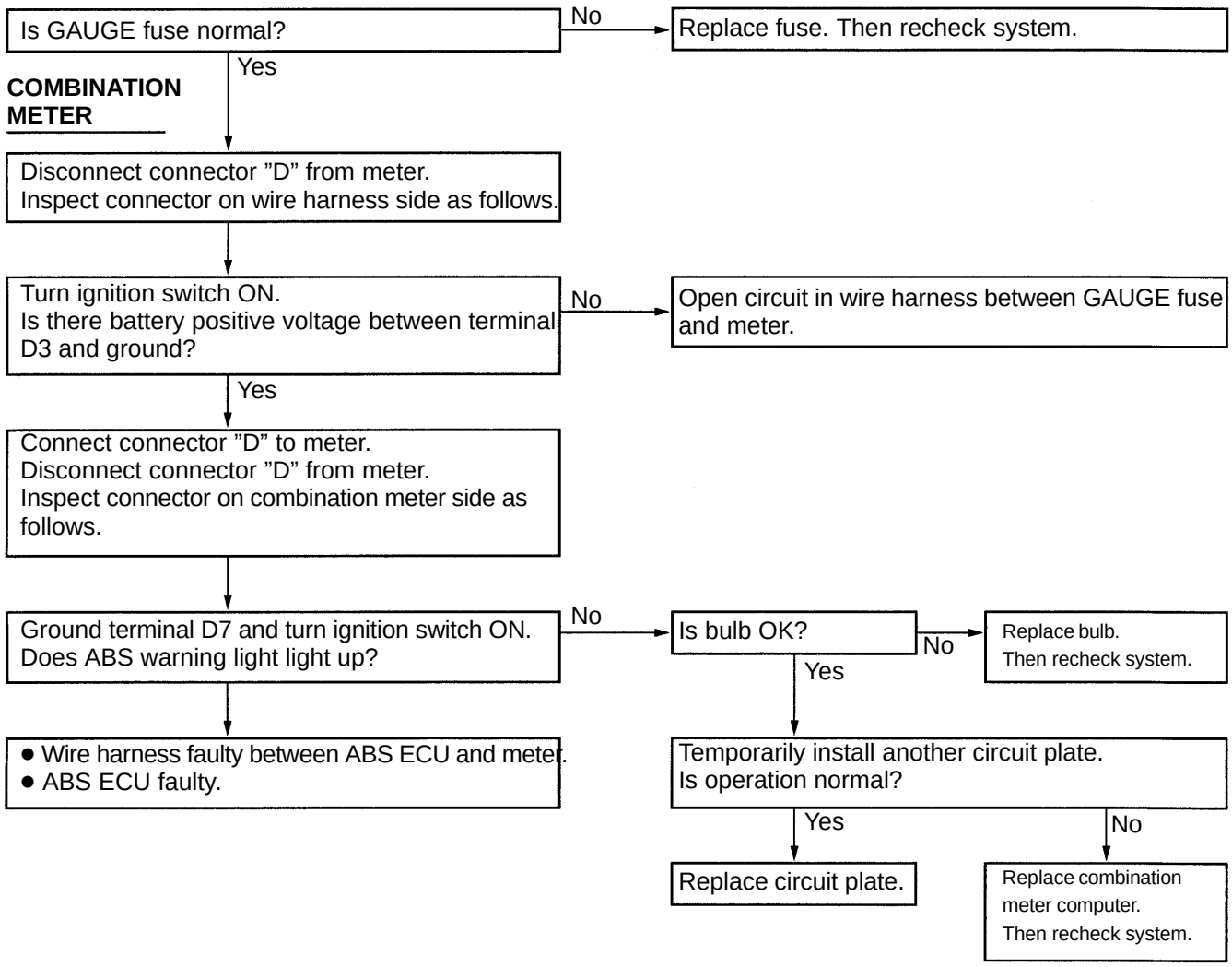
HINT : While carrying out the following inspection, make certain that the connectors and terminals are properly connected.



V08445

24	**ABS WARNING**	**Abnormal operation or warning light does not light up.**

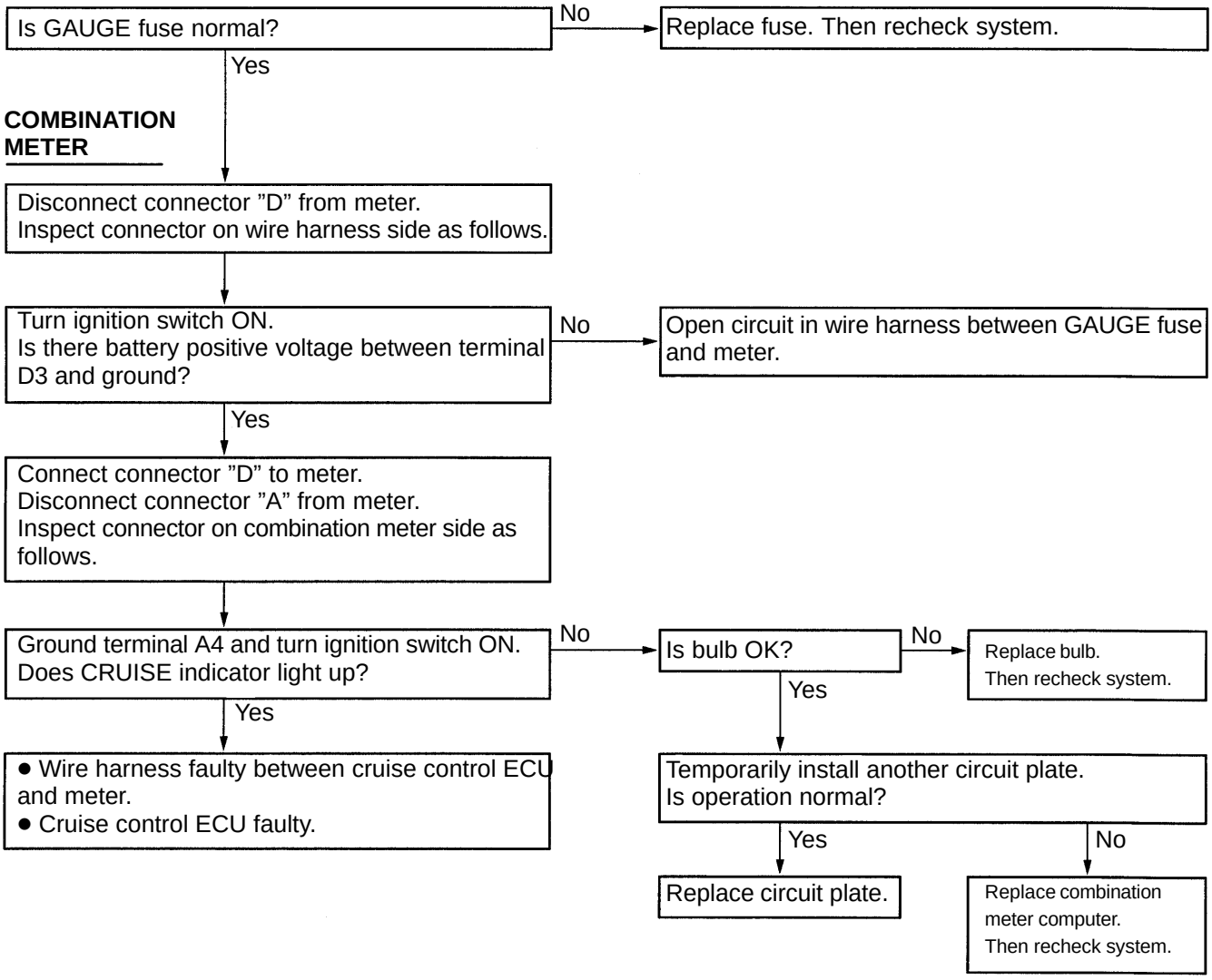
HINT : While carrying out the following inspection, make certain that the connectors and terminals are properly connected.



V08446

25	**CRUISE INDICATOR**	**Abnormal operation or indicator does not light up.**

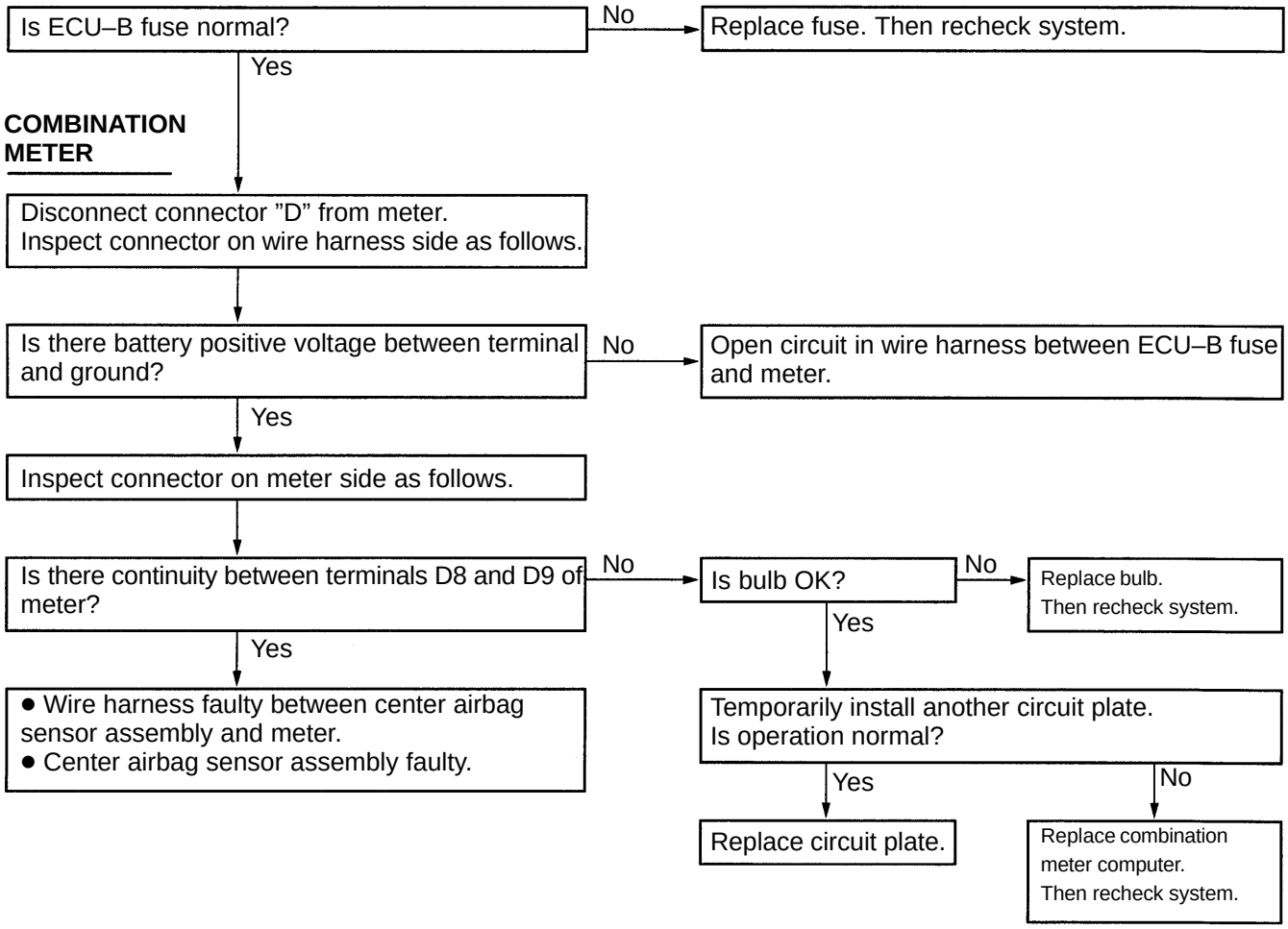
HINT : While carrying out the following inspection, make certain that the connectors and terminals are properly connected.



V08447

26	SRS WARNING	**Abnormal operation or warning light does not light up.**

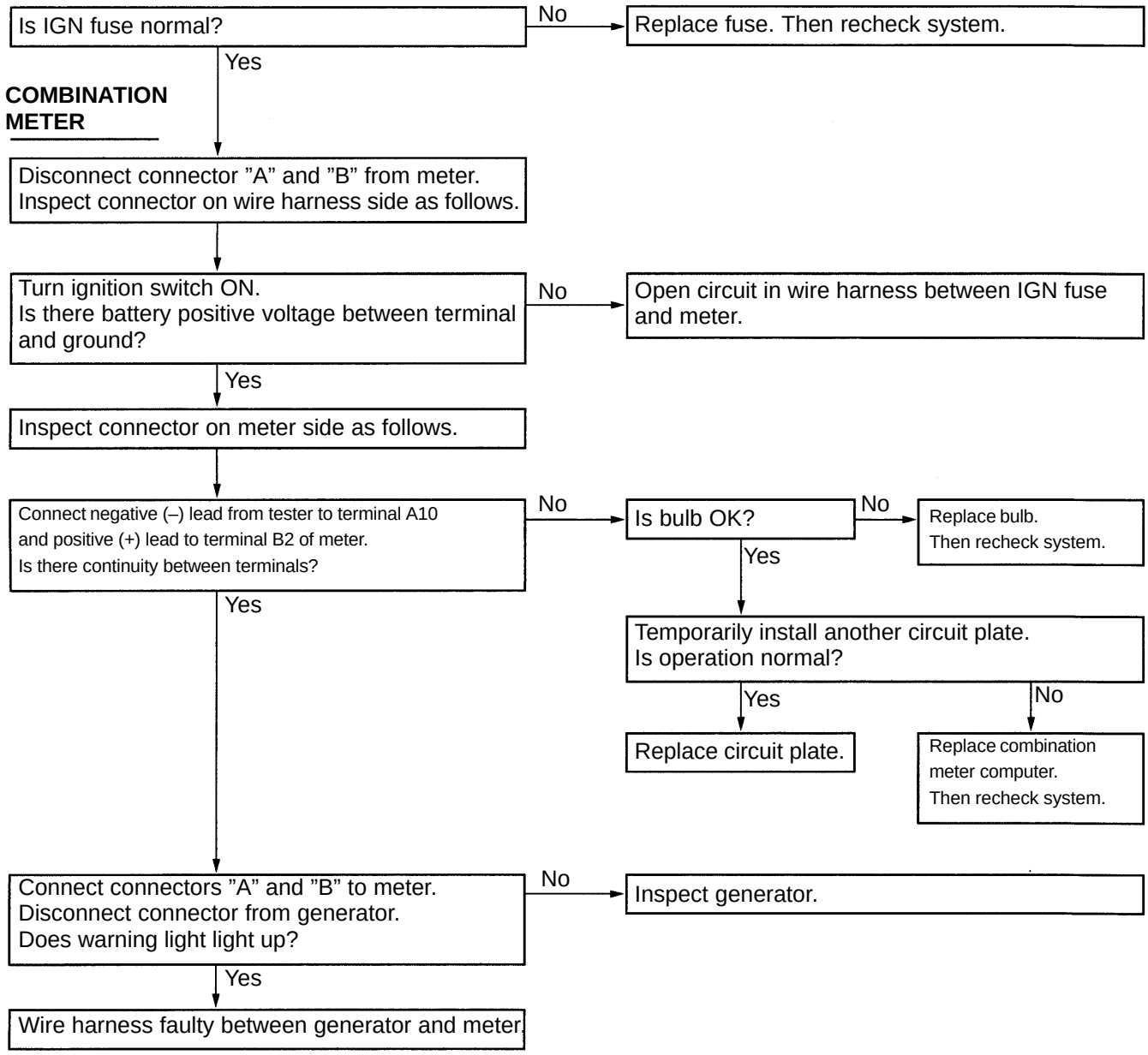
HINT : While carrying out the following inspection, make certain that the connectors and terminals are properly connected.



V08448

27	**DISCHARGE WARNING**	**Abnormal operation or warning light does not light up.**

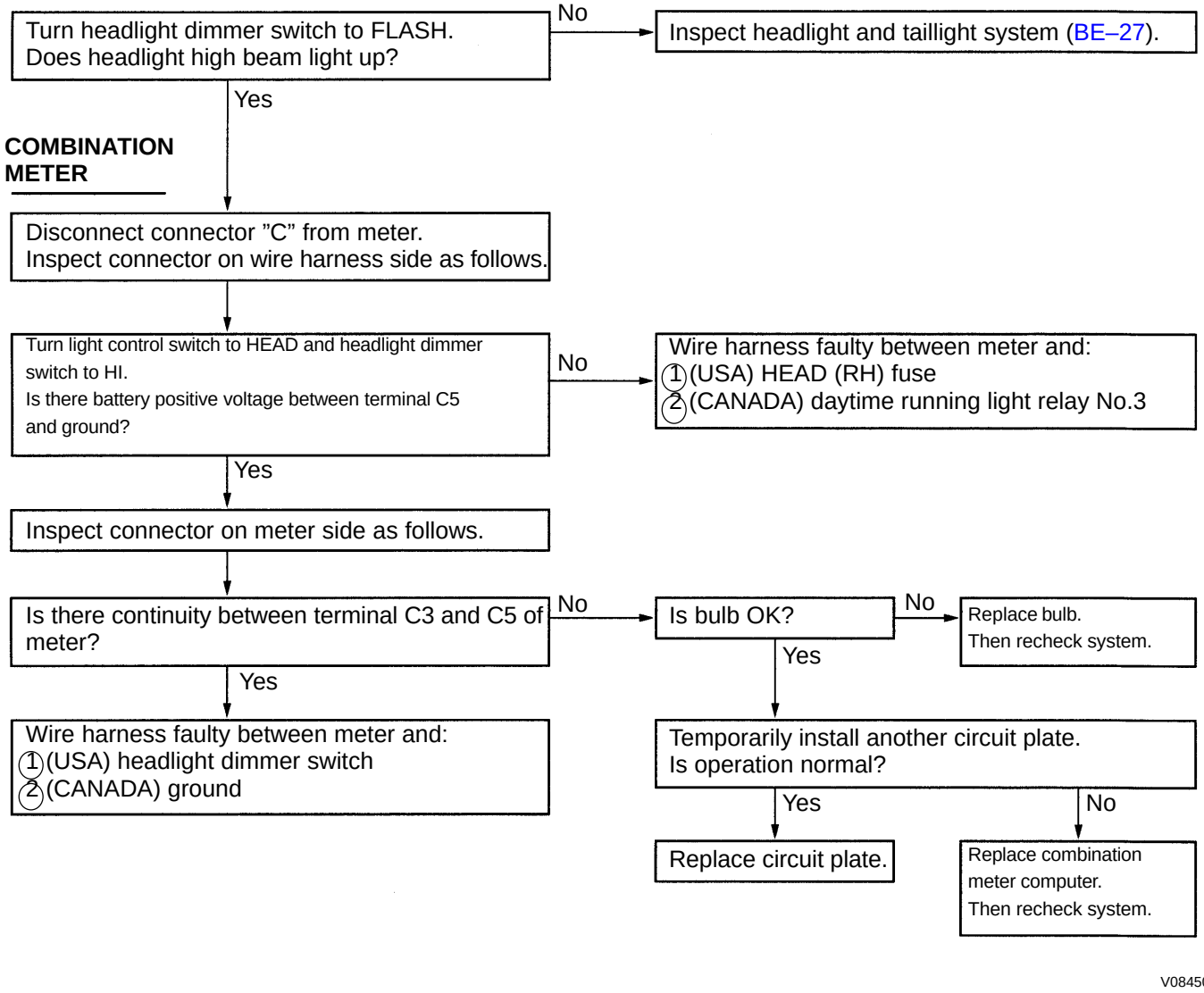
HINT : While carrying out the following inspection, make certain that the connectors and terminals are properly connected.



V08449

28	**HIGH BEAM INDICATOR**	**Abnormal operation or indicator does not light up.**

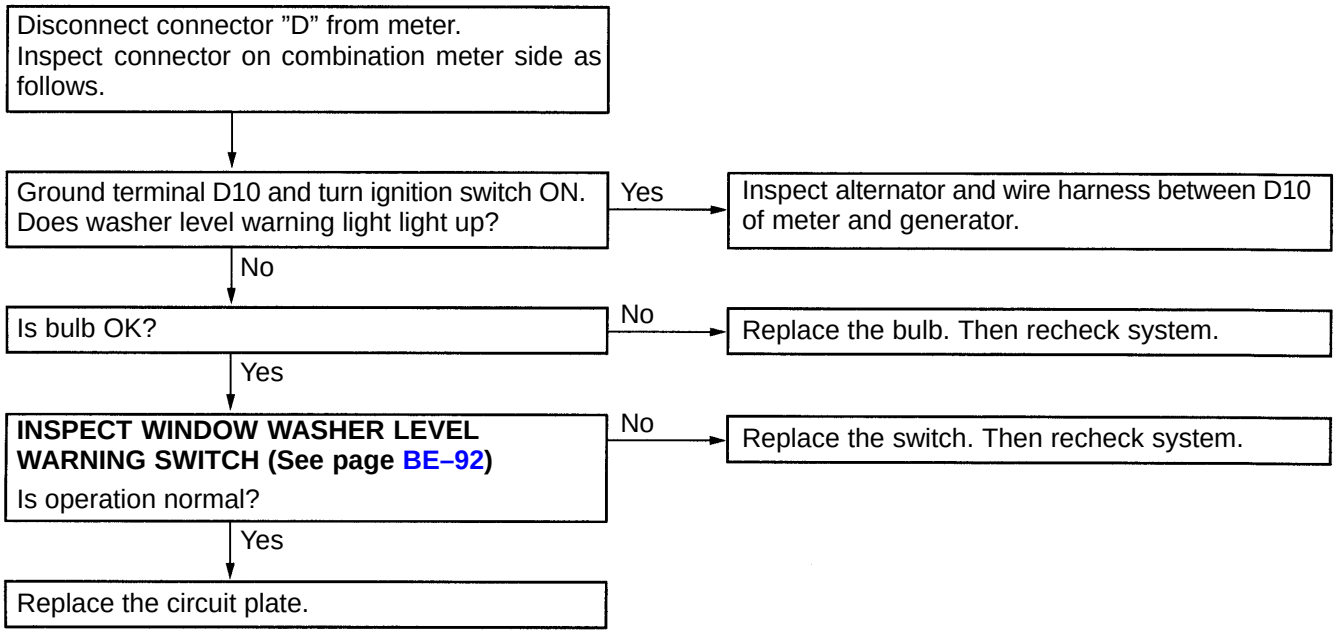
HINT : While carrying out the following inspection, make certain that the connectors and terminals are properly connected.



V08450

29	**WINDOW WASHER LEVEL WARNING SWITCH**	**Abnormal operation or indicator does not light up.**

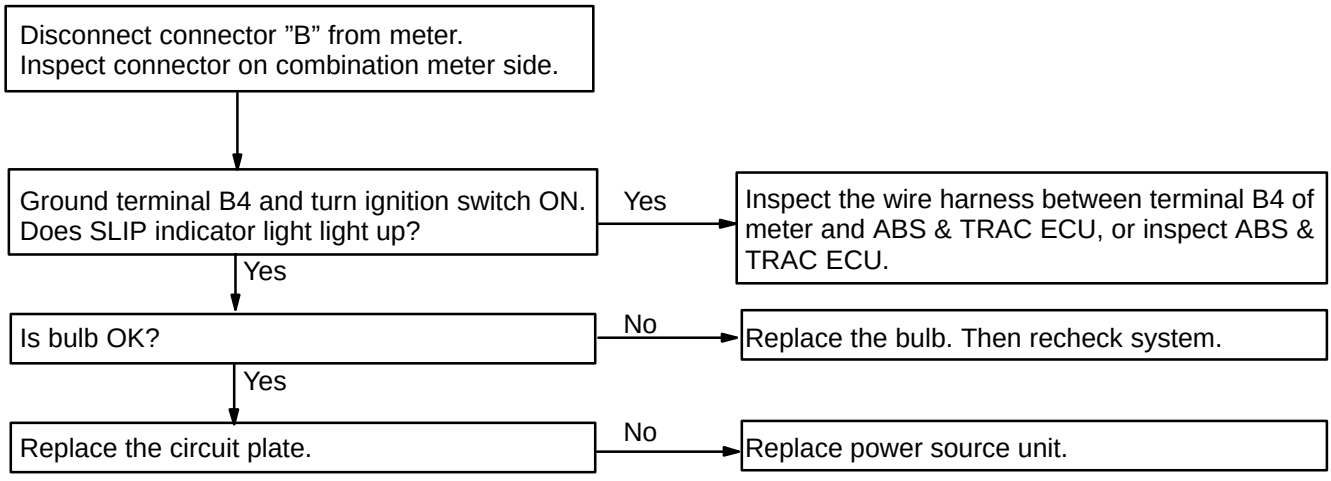
HINT : While carrying out the following inspection, make certain that the connectors and terminals are properly connected.



V08451

30	**SLIP INDICATOR**	**Abnormal operation or indicator does not light up.**

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



31	TAILLIGHT INDICATOR	**Abnormal operation or indicator does not light up.**

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

Turn the light control switch to TAIL.
Does taillight light up?

No → Inspect headlight and taillight system.
(See page BE–27).

Yes

COMBINATION METER

Disconnect connectors "C" from meter.
Inspect connector on wire harness side as follows.

Is there battery positive voltage (0 V ↔ battery positive voltage) between following terminals with light control switch TAIL?
- C5 and ground.

No → Wire harness faulty between meter and:
- Light control switch.
- Taillight Relay, Panel Relay (CANADA)

Yes

Connect connectors "B" to meter.
Disconnect connector "B" from meter.
Inspect connector on combination meter side as follows.

Ground terminal B7 and turn the light control switch to TAIL. Does taillight indicator light up?

No → Is bulb OK?

No → Replace bulb.
Then recheck system.

Yes → Temporarily install another circuit plate.
Is operation normal?

Yes → Replace circuit plate.

No → Replace combination meter computer.
Then recheck system.

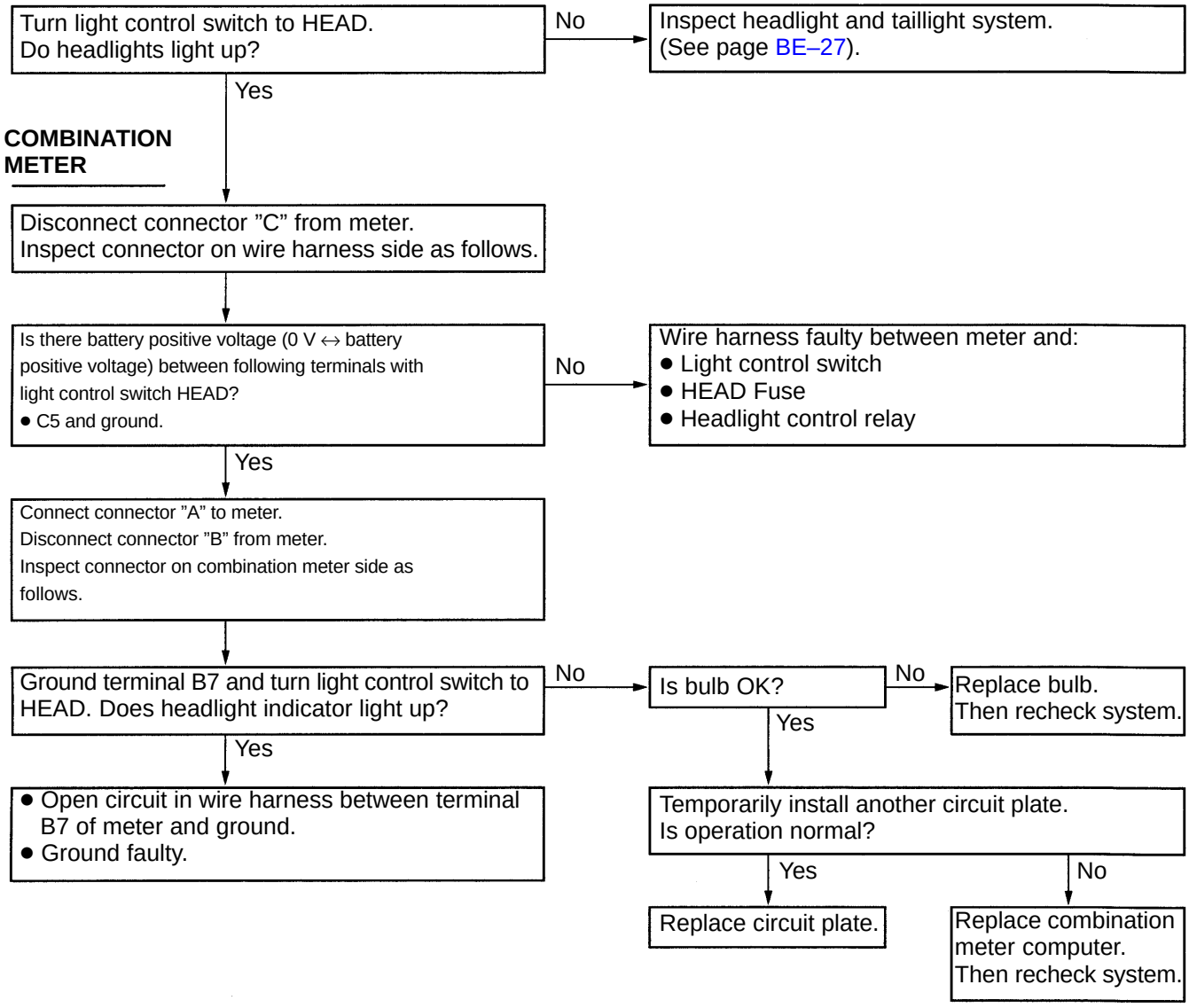
Yes

- Open circuit in wire harness between terminal B7 of meter and ground.
- Ground faulty.

V08452

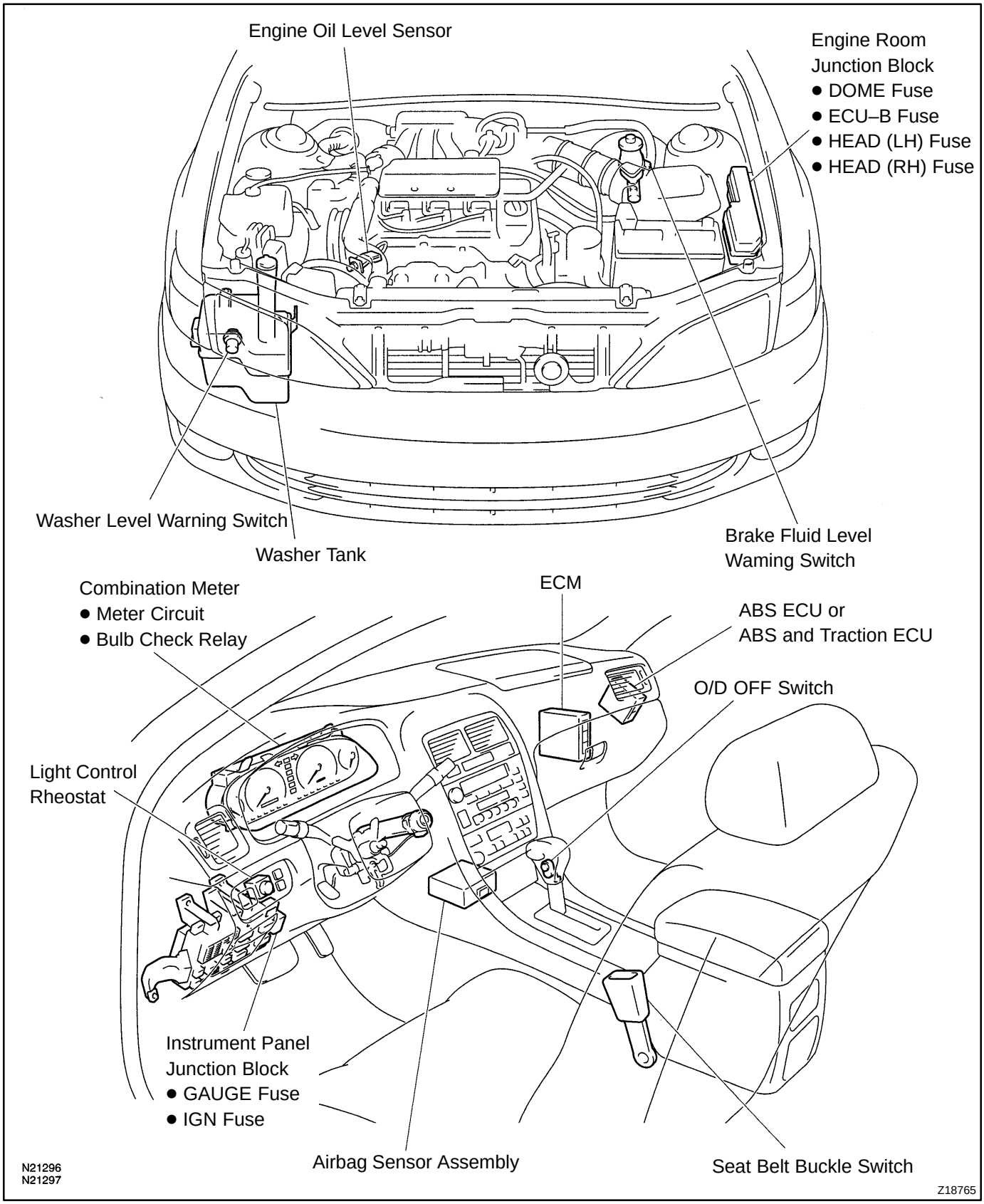
32	HEADLIGHT INDICATOR	Abnormal operation or indicator does not light up.

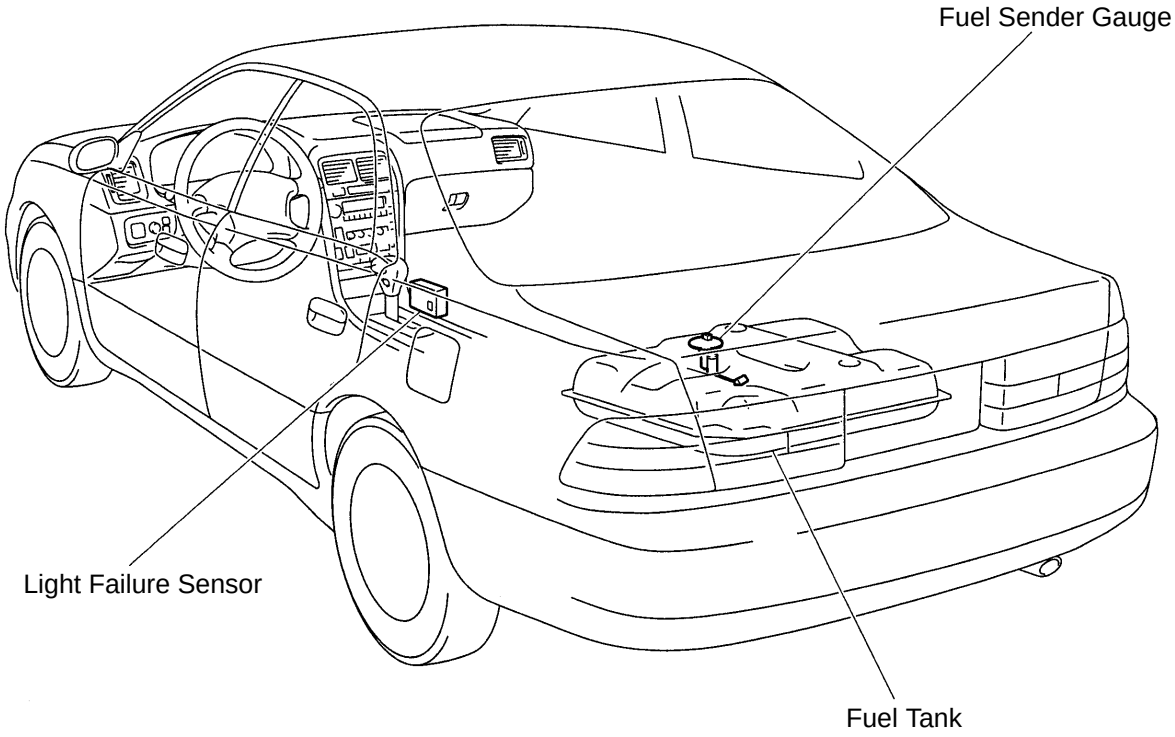
HINT : While carrying out the following inspection, make certain that the connectors and terminals are properly connected.

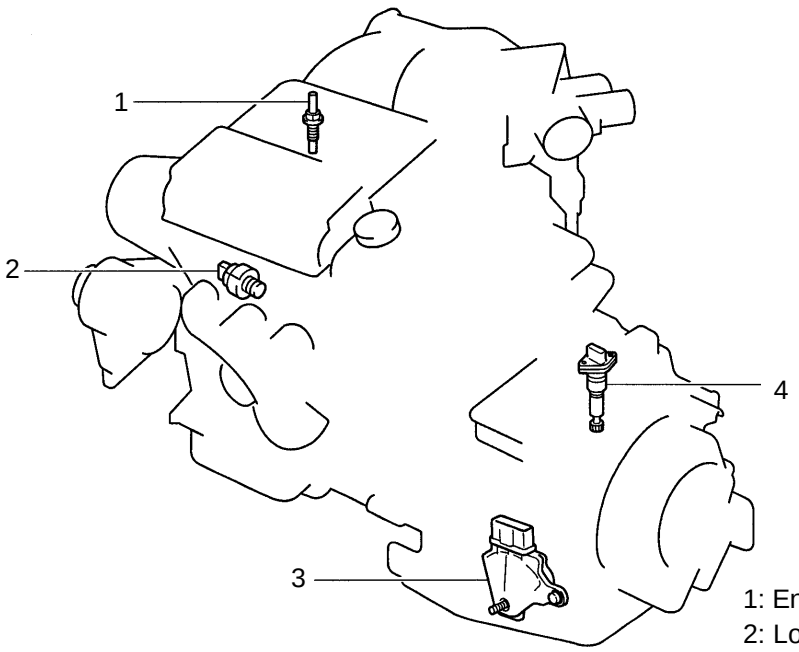


V08453

LOCATION


Engine Oil Level Sensor
Engine Room
Junction Block
● DOME Fuse
● ECU–B Fuse
● HEAD (LH) Fuse
● HEAD (RH) Fuse
Washer Level Warning Switch
Washer Tank
Brake Fluid Level
Waming Switch
Combination Meter
● Meter Circuit
● Bulb Check Relay
ECM
ABS ECU or
ABS and Traction ECU
O/D OFF Switch
Light Control
Rheostat
Instrument Panel
Junction Block
● GAUGE Fuse
● IGN Fuse
Airbag Sensor Assembly
Seat Belt Buckle Switch
N21296
N21297
Z18765





1: Engine Coolant Temperature Sender Gauge
2: Low Oil Pressure Switch
3: Park/Neutral Position Switch
4: Vehicle Speed Sensor

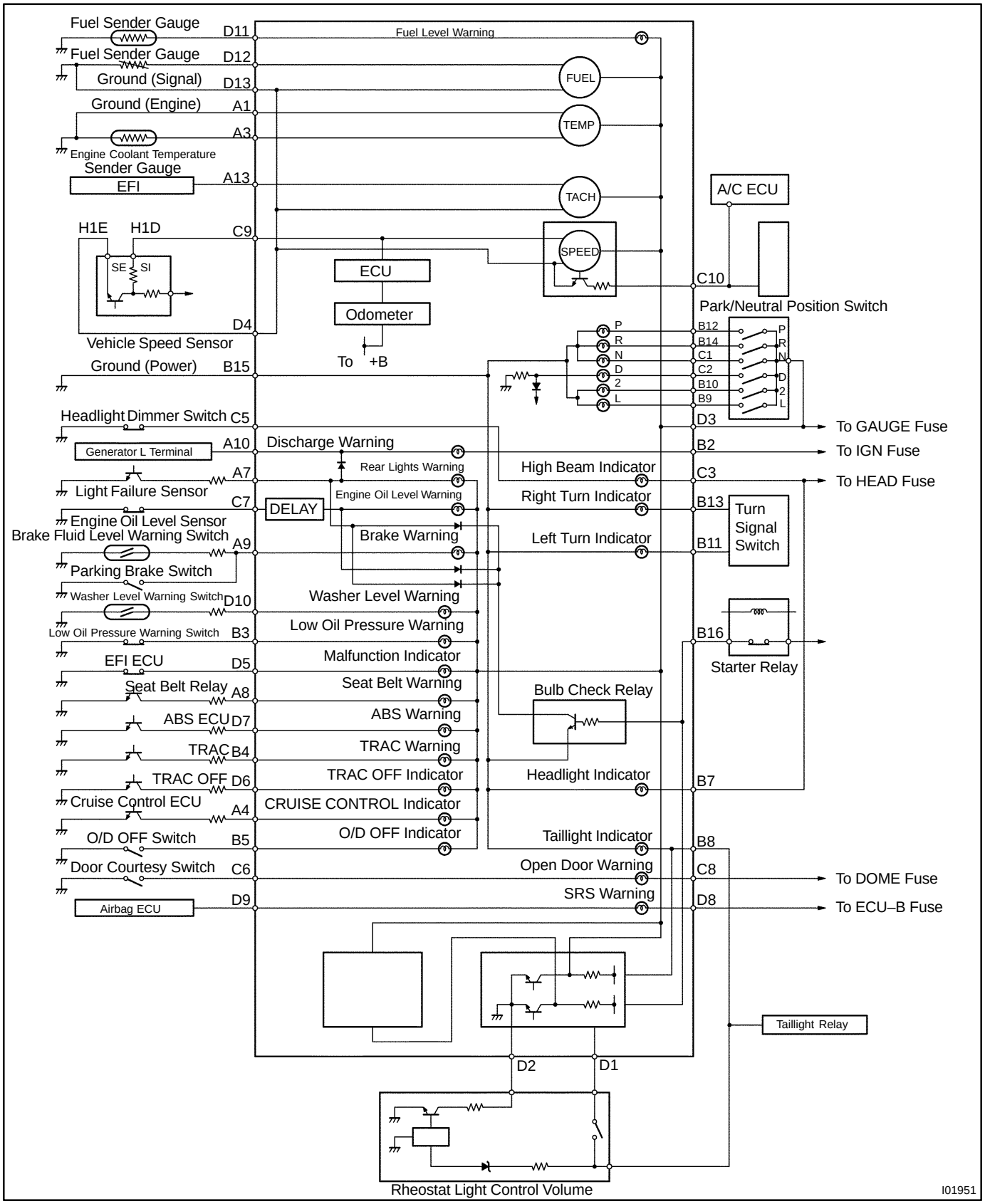
N21298
N21299

Z18766

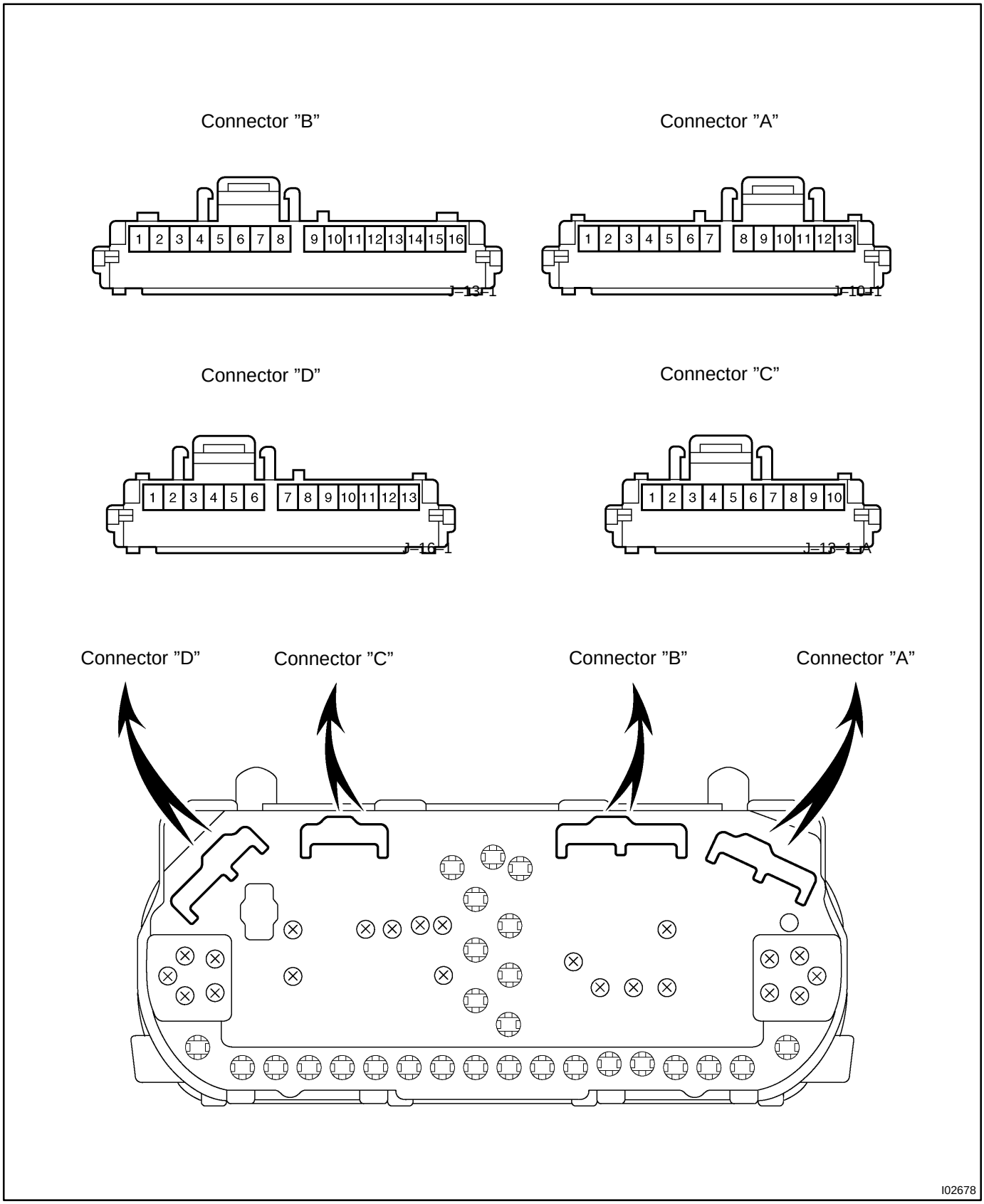
BE05F–05

CIRCUIT

1. WIRING DIAGRAM

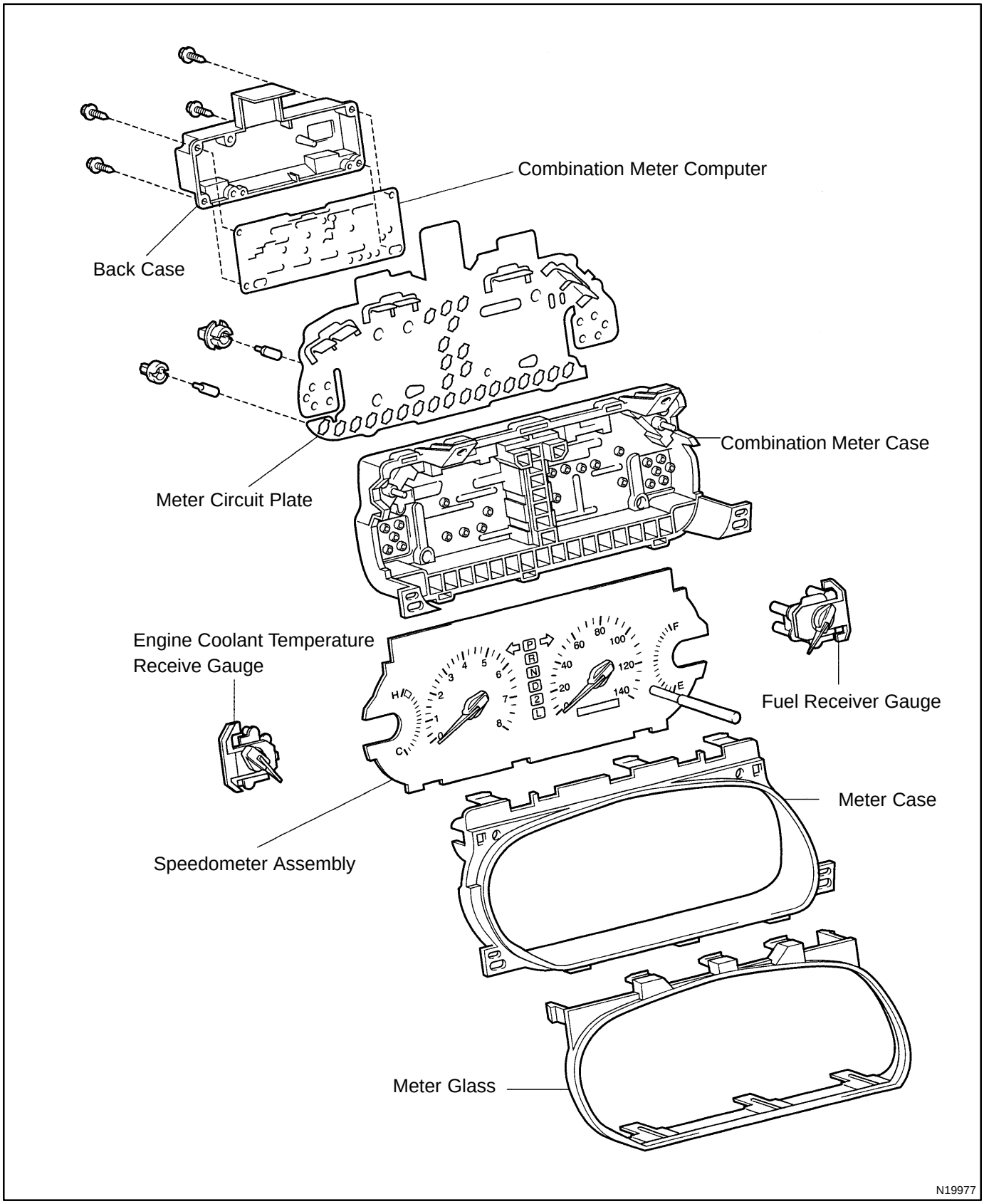


2. CONNECTOR DIAGRAMS



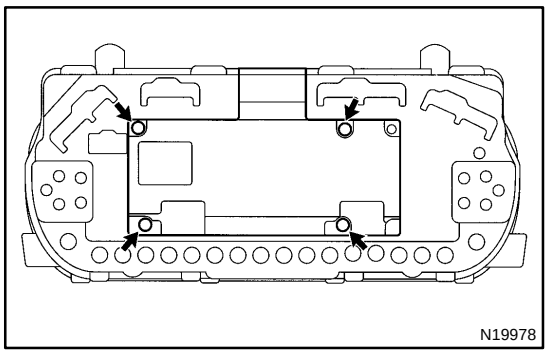
BE05G–01

COMPONENTS



BE05H–01

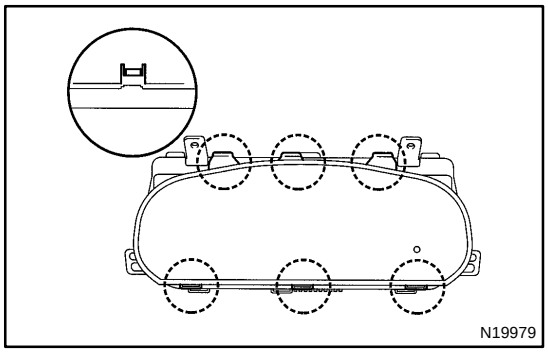
DISASSEMBLY



1. REMOVE BACK COVER

(a) Remove the 4 screws.

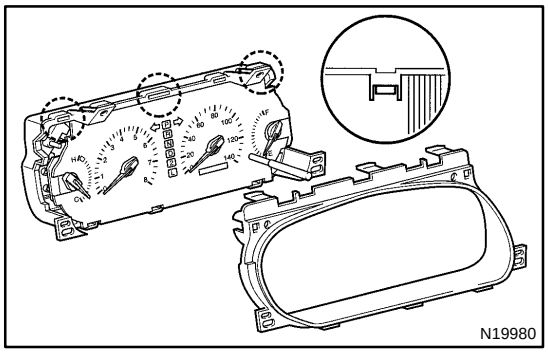
(b) Remove the back cover from the meter case.



2. REMOVE METER GLASS

(a) Remove the 6 claws.

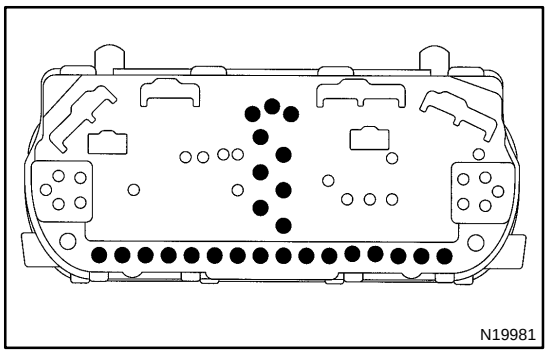
(b) Remove the meter glass from the meter case.



3. REMOVE METER PLATE

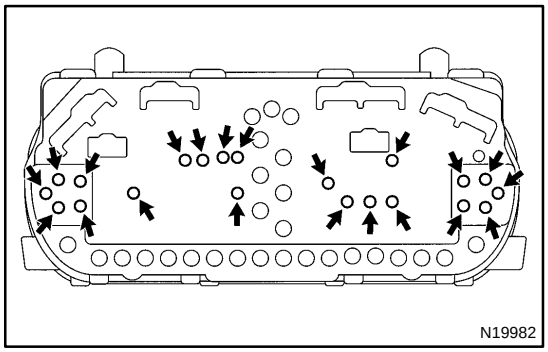
(a) Remove the 3 claws.

(b) Remove the meter plate from the meter case.



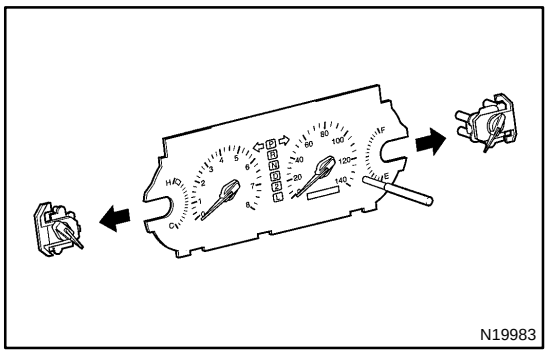
4. REMOVE METER CIRCUIT PLATE

(a) Remove the 27 bulbs.



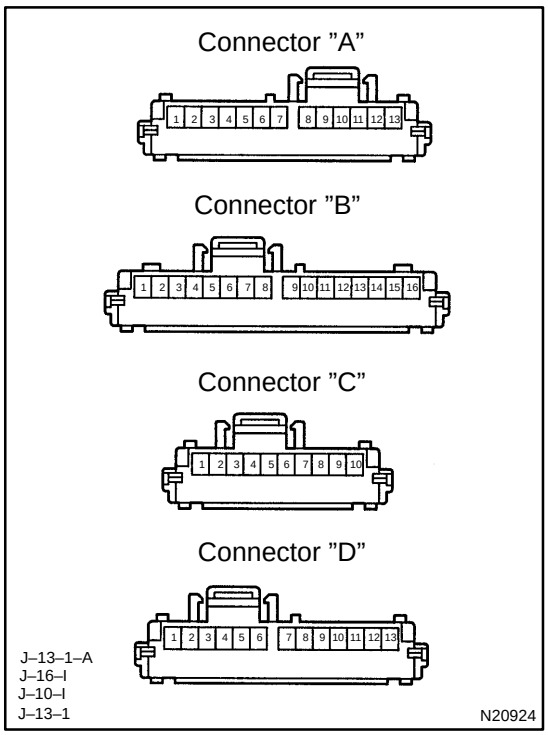
(b) Remove the 22 screws.

(c) Remove the meter circuit plate from the meter case.



5. **REMOVE SPEEDOMETER ASSEMBLY**
6. **REMOVE FUEL GAUGE**
7. **REMOVE ENGINE COOLANT TEMPERATURE GAUGE**

BE05I–03



INSPECTION

1. INSPECT COMBINATION METER WIRING CIRCUIT

Disconnect the connector ”A”, connector ”B”, connector ”C” and connector ”D” from the combination meter and inspect the connectors on the wire harness side.

Park/Neutral Position Switch:

Tester connection	Condition	Specified condition
B12 – Ground	Ignition switch ON and shift lever position ”P”	Battery positive voltage
B14 – Ground	Ignition switch ON and shift lever position ”R”	Battery positive voltage
C1 – Ground	Ignition switch ON and shift lever position ”N”	Battery positive voltage
C2 – Ground	Ignition switch ON and shift lever position ”D”	Battery positive voltage
B10 – Ground	Ignition switch ON and shift lever position ”2”	Battery positive voltage
B9 – Ground	Ignition switch ON and shift lever position ”L”	Battery positive voltage

Turn Signal Switch and Hazard Warning Switch:

Tester connection	Condition	Specified condition
B13 – Ground	Hazard warning switch ON	Battery positive voltage ↔ 0V
B13 – Ground	Ignition switch ON and turn signal switch to ”Right”	Battery positive voltage ↔ 0V
B11 – Ground	Hazard warning switch ON	Battery positive voltage ↔ 0V
B11 – Ground	Ignition switch ON and turn signal switch to ”Left”	Battery positive voltage ↔ 0V

Headlight:

Tester connection	Condition	Specified condition
C3 – C5	Light control switch ”HEAD” (Dimmer switch ”LO”)	No voltage
C3 – C5	Light control switch ”HEAD” (Dimmer switch ”HI” or ”Flash”)	Battery positive voltage

GAUGE Fuse:

Tester connection	Condition	Specified condition
D3 – Ground	Ignition switch position ACC, START	No voltage
D3 – Ground	Ignition switch position ON	Battery positive voltage

IGN Fuse:

Tester connection	Condition	Specified condition
B2 – Ground	*2 Ignition switch position LOCK, ACC, START	No voltage
B2 – Ground	*2 Ignition switch position ON	Battery positive voltage

Fuel Sender Gauge:

Tester connection	Condition	Specified condition
D12 – D13	Float position Full, Approx. 91.1 mm (3.587 in.)	Approx. 4.6V
D12 – D13	Float position 1/2, Approx. 34.2 mm (1.346 in.)	Approx. 2.4V
D12 – D13	Float position Empty, Approx. 30.8 mm (1.213 in.)	Approx. 0.3V
D11 – D12	Ignition switch ON	Approx. 5V

Ground (Signal):

Tester connection	Condition	Specified condition
D13 – Ground	Constant	Continuity

Ground (Engine):

Tester connection	Condition	Specified condition
A1 – Ground	Constant	Continuity

Ground (Power):

Tester connection	Condition	Specified condition
B15 – Ground	Constant	Continuity

Generator ”L” Terminal:

Tester connection	Condition	Specified condition
A10 – Ground	Engine stop	Continuity
A10 – Ground	Engine running	Battery positive voltage

Engine Oil Level Warning Switch:

Tester connection	Condition	Specified condition
C7 – Ground	Oil temperature above approx. 55 ˚C (131 ˚F) and switch position OFF (float down)	No continuity
C7 – Ground	Oil temperature below approx. 55 ˚C (131 ˚F)	Continuity
C7 – Ground	Oil temperature above approx. 55 ˚C (131 ˚F) and switch position ON (float up)	Continuity

DOME fuse:

Tester connection	Condition	Specified condition
C8 – Ground	Constant	Battery positive voltage

Rheostat Light Control:

Tester connection	Condition	Specified condition
D1 – Ground	Light control switch TAIL or HEAD and turn rheostat volume knob.	Voltage changes no voltage or voltage fluctuates

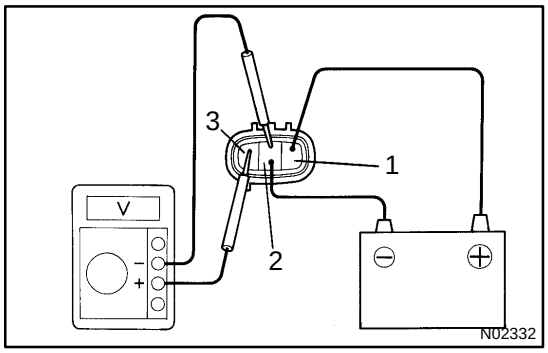
*2 Shift lever position is ”N” or ”P” position.

If circuit is not as specified, refer to BE–60 wiring diagram and inspect the circuit connected to other parts.

2. INSPECT SPEEDOMETER ON–VEHICLE

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

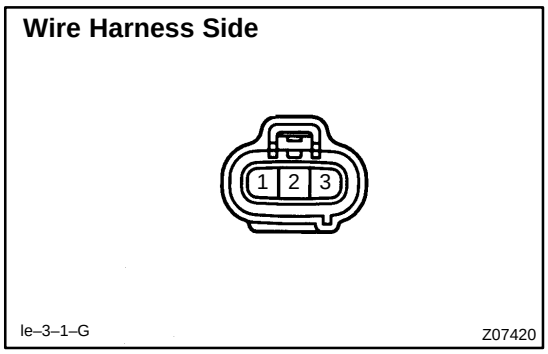
USA (mph)		CANADA (km/h)	
Standard indication	Allowable range	Standard indication	Allowable range
20	18 – 24	20	17 – 24
40	38 – 44	40	38 – 46
60	56 – 66	60	57.5 – 67
80	78 – 88	80	77 – 88
100	98 – 110	100	96 – 109
120	118 – 132	120	115 – 130
		140	134 – 151.5
		160	153 – 173



3. INSPECT VEHICLE SPEED SENSOR OPERATION

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

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



4. INSPECT VEHICLE SPEED SENSOR CIRCUIT

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

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

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

5. INSPECT TACHOMETER ON–VEHICLE

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

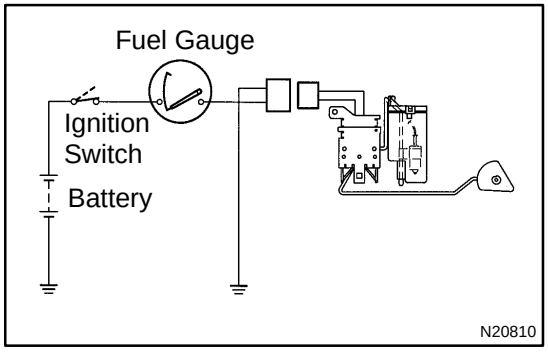
NOTICE:

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

(b) Compare the tester and tachometer readings.

DC 13.5 V 25 ˚C at (77˚F)

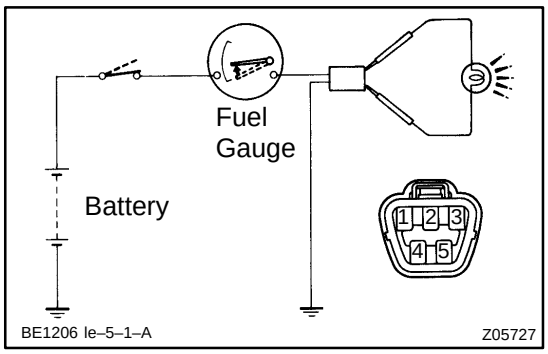
Standard indication	Allowable range
700	630 – 770
1,000	900 – 1,100
2,000	1,850 – 2,150
3,000	2,800 – 3,200
4,000	3,800 – 4,200
5,000	4,800 – 5,200
6,000	5,750 – 6,250
7,000	6,700 – 7,300



6. INSPECT FUEL RECEIVER GAUGE OPERATION

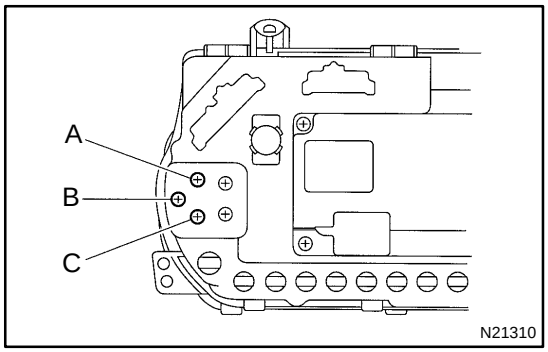
(a) Disconnect the connector from the sender gauge.

(b) Turn the ignition switch ON, check that the receiver gauge needle indicates EMPTY.



(c) Connect terminals 2 and 3 on the wire harness side connector through a 3.4–W test bulb.
(d) Turn the ignition switch ON, check that the bulb lights up and the receiver gauge needle moves toward ”E” side.

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

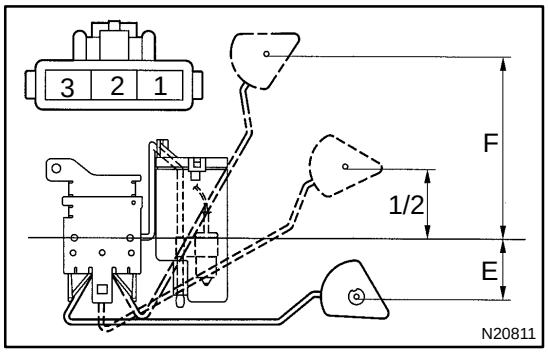


7. INSPECT FUEL RECEIVER GAUGE RESISTANCE

Measure the resistance between terminals.

Tester connection	Resistance (Ω)
A – B	Approx. 270.8
A – C	Approx. 91.3
B – C	Approx. 179.5

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

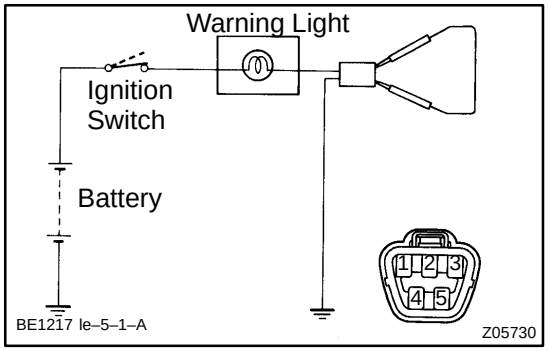


8. INSPECT FUEL SENDER GAUGE RESISTANCE

Measure the resistance between terminals 2 and 3 for each float position.

Float position mm (in.)	Resistance (Ω)
F: Approx. 91.1 (3.587)	Approx. 3.0
1/2: Approx. 34.2 (1.346)	Approx. 31.7
E: Approx. 30.8 (1.213)	Approx. 110.0

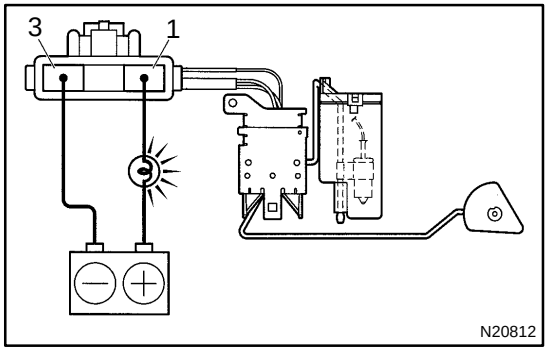
If resistance value is not as specified, replace the sender gauge.



9. INSPECT FUEL LEVEL WARNING LIGHT

(a) Disconnect the connector from the sender gauge.
(b) Connect terminals 1 and 3 on the wire harness side connector.
(c) Turn the ignition switch ON, check that the warning light lights up.

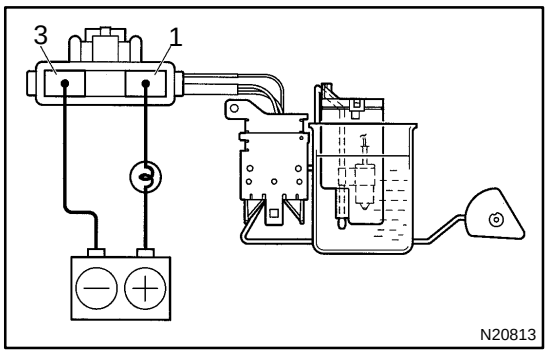
If the warning light does not light up, test the bulb or inspect wire harness.



10. INSPECT FUEL LEVEL WARNING SWITCH

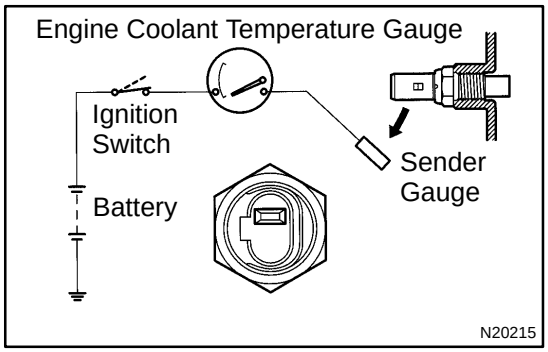
(a) Apply battery positive voltage between terminals 1 and 3 through a 3.4–W test bulb, check that the bulb lights up.

HINT:
It takes a short time for the bulb to light up.



(b) Submerge the switch in fuel, check that the bulb goes out.

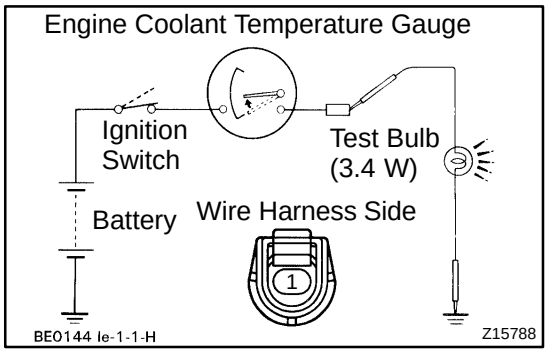
If operation is not as specified, replace the sender gauge.



11. 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.



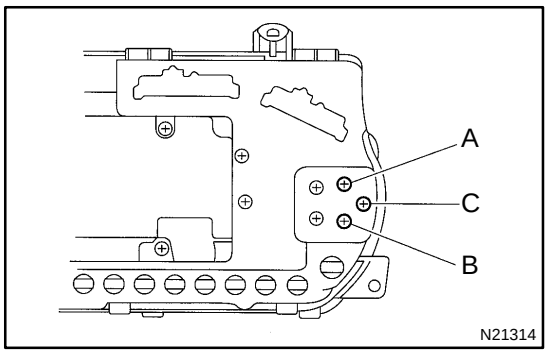
(c) Ground terminal on the wire harness side connector through a 3.4–W test bulb.

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

If operation is as specified, replace the sender gauge.

Then recheck the system.

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



12. INSPECT ENGINE COOLANT TEMPERATURE RECEIVER GAUGE RESISTANCE

Measure the resistance between terminals.

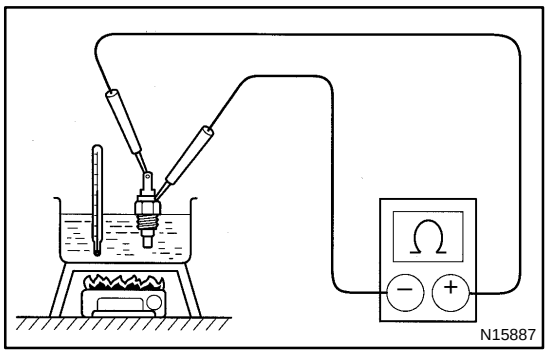
Tester connection	Resistance (Ω)
A – B	Approx. 54.0
A – C	Approx. 175.7
B – C	Approx. 229.7

HINT:

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

This circuit includes the diode.

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

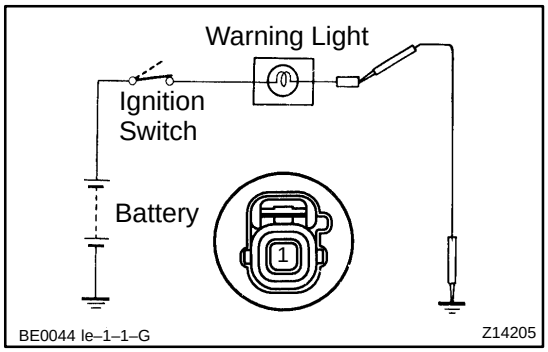


13. INSPECT ENGINE COOLANT TEMPERATURE SENDER GAUGE RESISTANCE

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

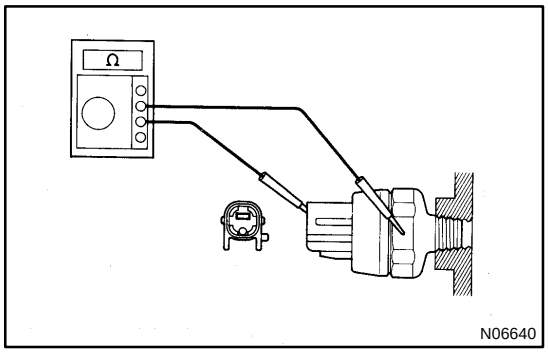
If resistance value is not as specified, replace the engine coolant temperature sender gauge.



14. 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.

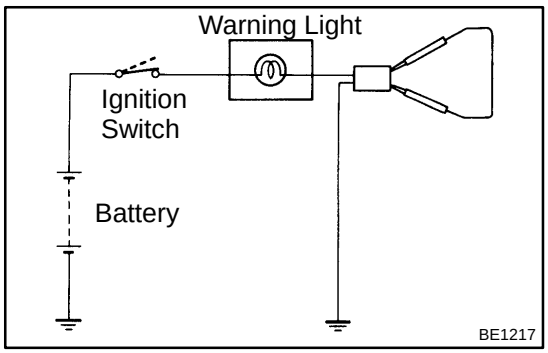
If the warning light does not light up, test the bulb.



15. INSPECT LOW OIL PRESSURE SWITCH

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

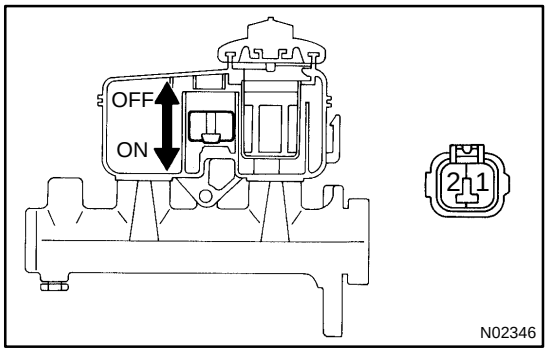
HINT:
Oil pressure should be over 24.5 kPa (0.25 kgf/cm^2, 3.55 psi).
If operation is not as specified, replace the switch.



16. INSPECT BRAKE SYSTEM WARNING LIGHT

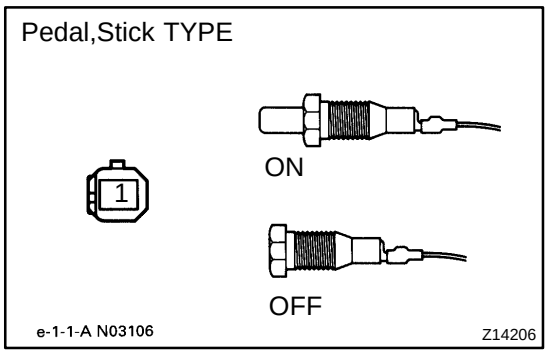
(a) Disconnect the connector from the brake fluid warning switch.
(b) Release the parking brake pedal.
(c) Connect the terminals on the wire harness side of the level warning switch connector.
(d) Start the engine, check that the warning light lights up.

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



17. INSPECT BRAKE FLUID LEVEL WARNING SWITCH

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



(f) Pour the fluid back in the reservoir tank.

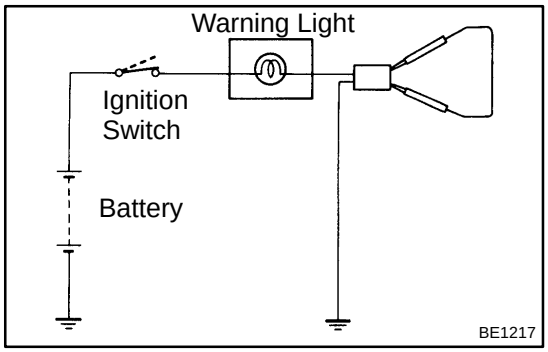
If operation is not as specified, replace the switch.

18. INSPECT PARKING BRAKE SWITCH

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

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

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



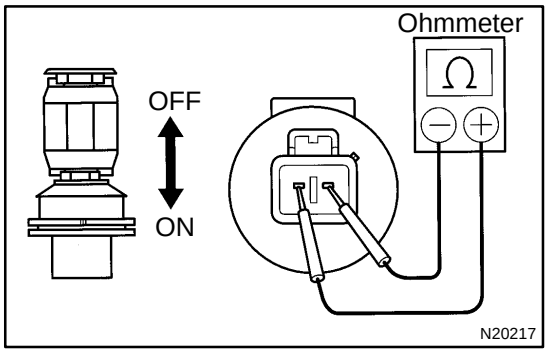
19. INSPECT WASHER LEVEL WARNING LIGHT

(a) Disconnect the connectors from the level warning switch and parking brake switch.

(b) Connect terminals on the wire harness side connector of the level warning switch connector.

(c) Remove the GAUGE fuse and turn the ignition switch ON, and check that the warning light comes on.

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

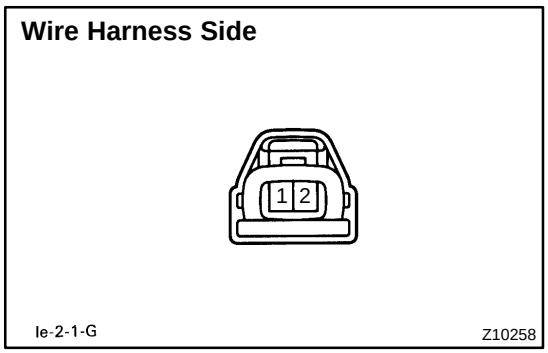


20. INSPECT WASHER LEVEL WARNING SWITCH

(a) Check that no continuity exists between terminals with the switch OFF (float up).

(b) Check that continuity exists between terminals with the switch ON (float down).

If operation is not as specified, replace the switch.

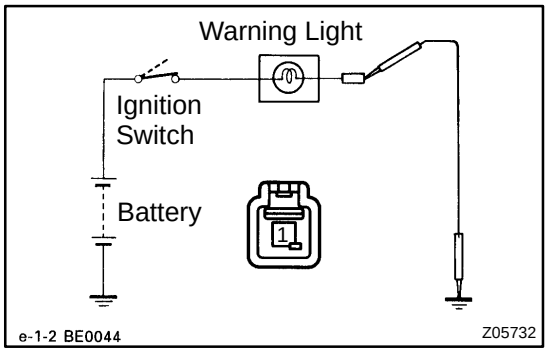


21. INSPECT WINDOW WASHER LEVEL WARNING SWITCH CIRCUIT

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

Tester connection	Condition	Specified condition
2 – Ground	Constant	Continuity

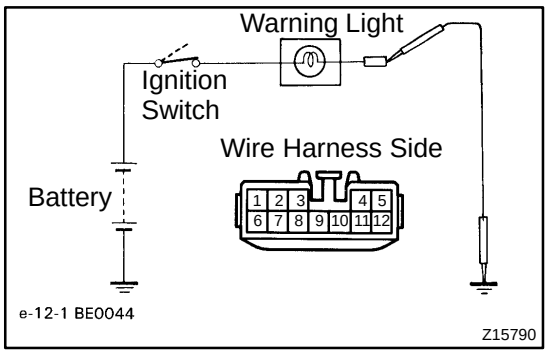
If continuity is not as specified, inspect the wire harness or ground point.



22. INSPECT OPEN DOOR WARNING LIGHT

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

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

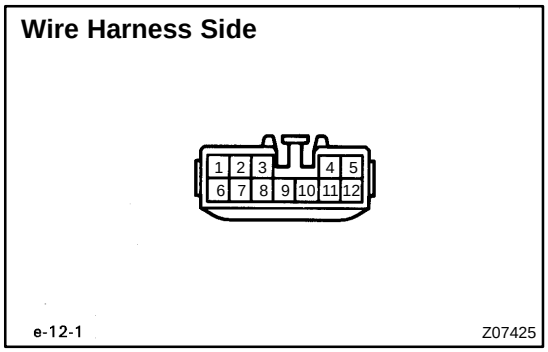


23. INSPECT WARNING LIGHT

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

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

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



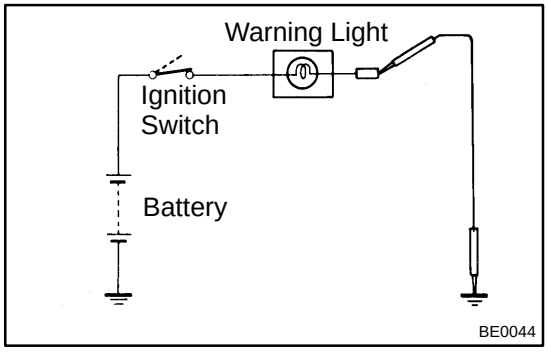
24. INSPECT LIGHT FAILURE SENSOR CIRCUIT

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

Tester connection	Condition	Specified condition
1 – Ground	Constant	Continuity*
2 – Ground	Constant	Continuity*
9 – Ground	Constant	Continuity*
10 – Ground	Constant	Continuity*
11 – Ground	Constant	Continuity*
12 – Ground	Constant	Continuity*
3 – Ground	Light control switch OFF	No voltage
3 – Ground	Light control switch TAIL or HEAD	Battery positive voltage
4.8 – Ground	Ignition switch LOCK or ACC	No voltage
4.8 – Ground	Ignition switch ON	Battery positive voltage
7 – Ground	Stop light switch OFF	No voltage
7 – Ground	Stop light switch ON	Battery positive voltage

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

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



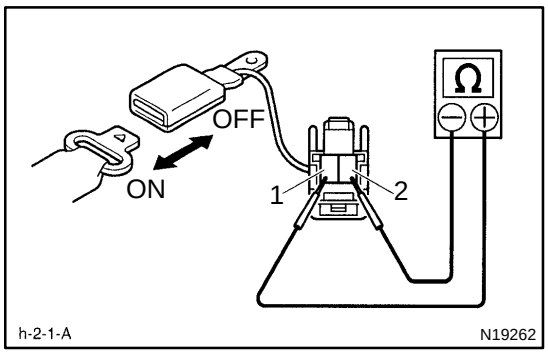
25. INSPECT SEAT BELT WARNING LIGHT

(a) Remove the integration relay from the instrument panel junction block.

(b) Ground terminal 2 on the integration relay with the connectors still connected.

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

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

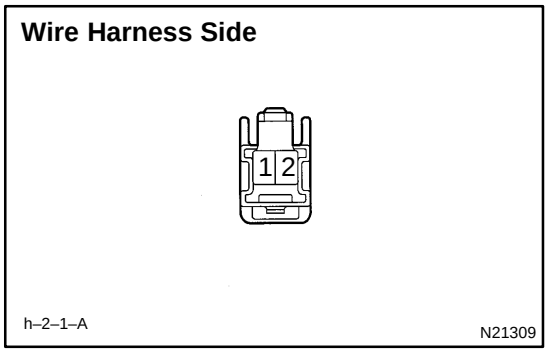


26. INSPECT BUCKLE SWITCH CONTINUITY

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

(b) Check that no continuity exists between terminals 1 and 2 on the switch side connector with the switch OFF (belt unfastened).

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

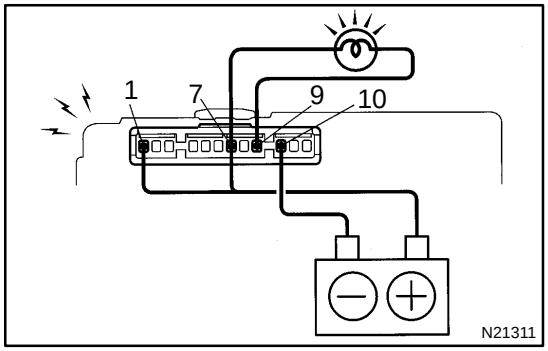


27. INSPECT BUCKLE SWITCH CIRCUIT

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

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

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



28. INSPECT INTEGRATION RELAY SEAT BELT WARNING SYSTEM OPERATION

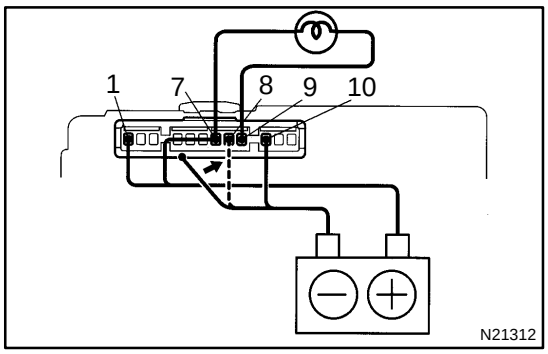
(a) Connect the positive (+) lead from the battery to terminals 1 and 7.

(b) Connect the terminal 7 to terminal 9 through the 3.4 W test bulb.

(c) Connect the negative (–) lead from the battery to terminal 10.

(d) Check that the bulb lights and the buzzer sounds for 4 to 8 seconds.

(e) Return to step (a) and operate the chime again.



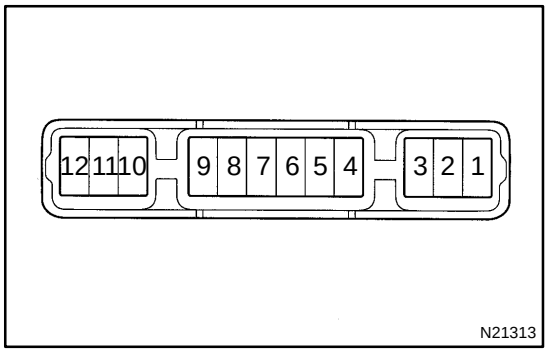
(f) Connect the negative (–) lead from the battery to terminal 8.

(g) Check that the buzzer stops sounding.

HINT:

Check the buzzer within a period of 4 to 8 seconds.

If operation is not as specified, replace the relay.



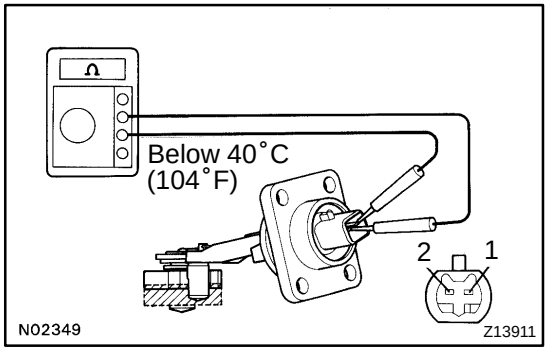
29. Seat belt warning : INSPECT INTEGRATION RELAY CIRCUIT

Remove the relay from the junction block No.1 and inspect the connectors on the junction block side.

Tester connection	Condition	Specified condition
8 – Ground	Driver's buckle switch OFF (Seat best unfastened)	No continuity
8 – Ground	Driver's buckle switch ON (Seat best fastened)	Continuity
10 – Ground	Constant	Continuity
1 – Ground	Constant	Battery positive voltage
7 – Ground 9 – Ground	Ignition switch position OFF or ACC	No voltage
7 – Ground 9 – Ground	Ignition switch position ON	Battery positive voltage

If the circuit is as specified, try to replace the relay with a new one.

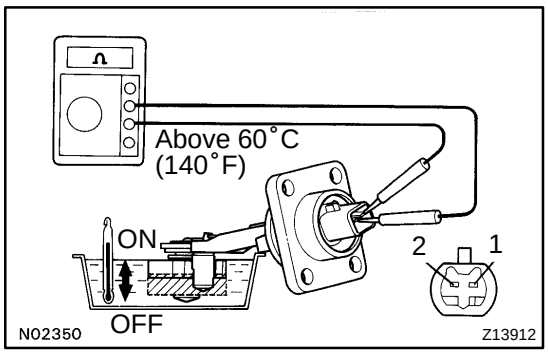
If the circuit is not as specified, inspect the circuits connected to other parts.



30. INSPECT ENGINE OIL LEVEL WARNING SWITCH CONTINUITY

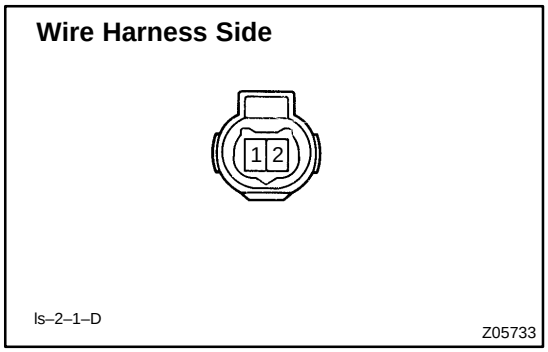
(a) Check that continuity exists between terminal with the switch in each position.

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



(c) Check that continuity exists between terminals with the switch ON (float up).
(d) Check that no continuity exists between terminals with the switch OFF (float down).

If operation is not as specified, replace the switch.

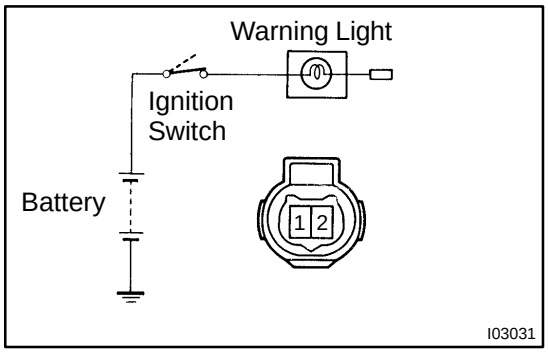


31. INSPECT ENGINE OIL LEVEL WARNING SWITCH CIRCUIT

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

Tester connection	Condition	Specified condition
2 – Ground	Constant	Continuity

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

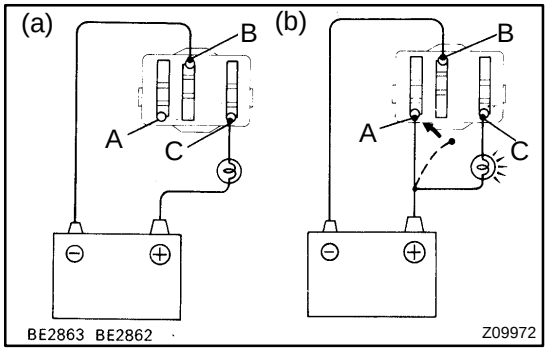


32. INSPECT ENGINE OIL LEVEL WARNING LIGHT

(a) Disconnect the connector from the switch.
(b) Turn the IG switch ON, the warning light lights up.
(c) The warning light lights up after 40 sec. from the engine has started.

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

33. INSPECT LIGHT CONTROL RHEOSTAT
(See page BE–43)



34. INSPECT BULB CHECK RELAY OPERATION

(a) Connect the positive (+) lead from the battery to terminal C through a 1.4–W test bulb and the negative (–) lead to terminal B, check that the test bulb does not light up.
(b) Connect the positive (+) lead from the battery to terminal A and check that the test bulb lights up.

If operation is not as specified, replace the relay.

BE05J–01

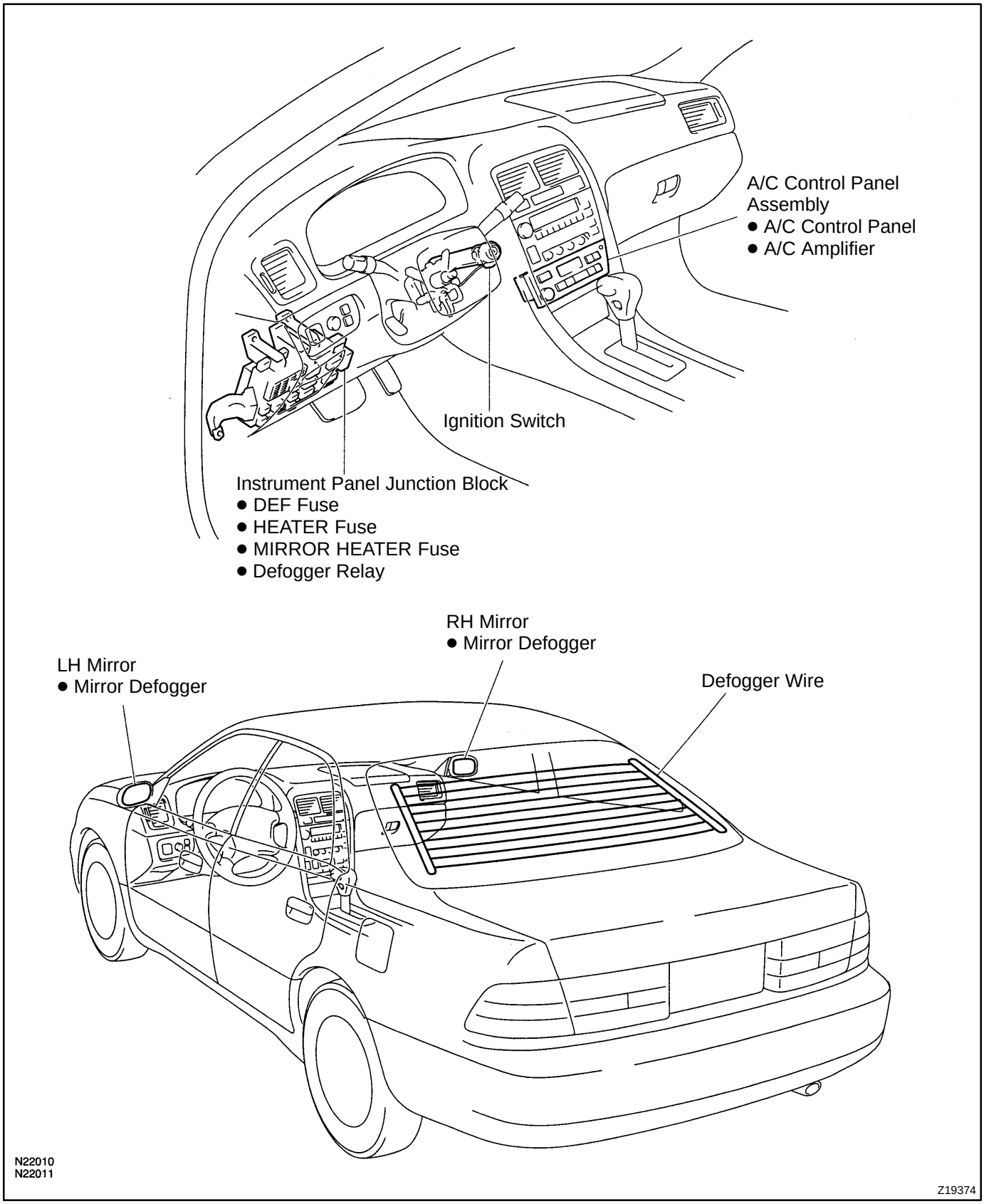
REASSEMBLY

Reassembly is in the reverse of the disassembly(See page BE–90).

DEFOGGER SYSTEM

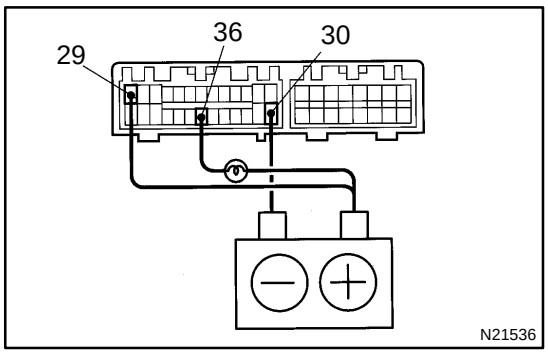
LOCATION

BE05K–04



BE05L–03

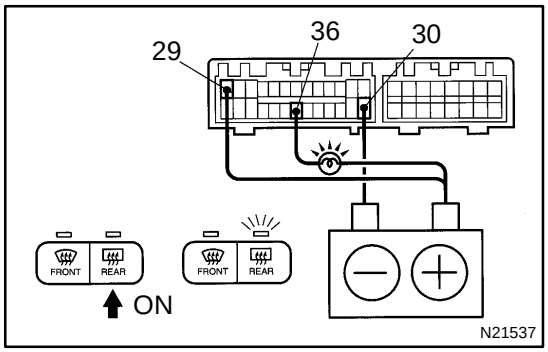
INSPECTION



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

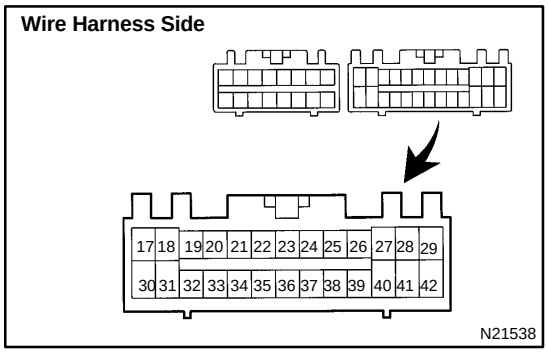
(a) Connect the positive (+) lead from the battery to terminal 29 and negative (–) lead to terminal 30.

(b) Connect the positive (+) lead from the battery to terminal 36 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 approx. 15 minutes.

If operation is not as specified, proceed to inspect the A/C control assembly.
(See page AC–105)

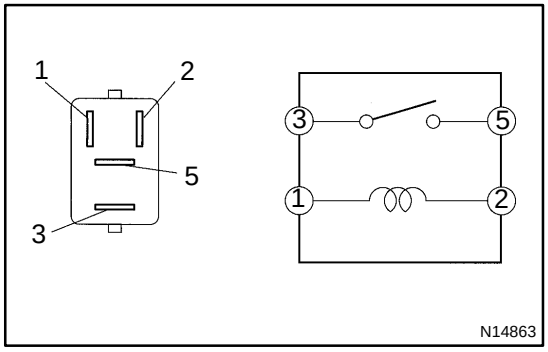


2. INSPECT DEFOGGER SWITCH CIRCUIT

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

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

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

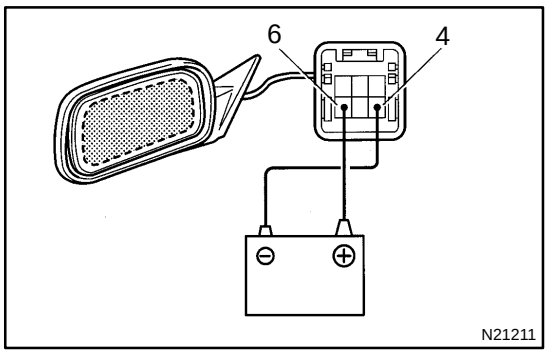


3. INSPECT DEFOGGER RELAY CONTINUITY

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

If continuity is not as specified, replace the relay.

4. INSPECT DEFOGGER RELAY CIRCUIT
(See page BE–11)



5. INSPECT MIRROR DEFOGGER OPERATION

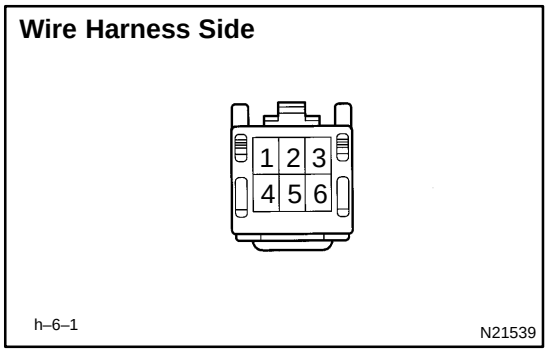
(a) Connect the positive (+) lead from the battery to terminal 6 and the negative (–) lead to terminal 4.

(b) Check that the mirror becomes warm.

HINT:

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

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

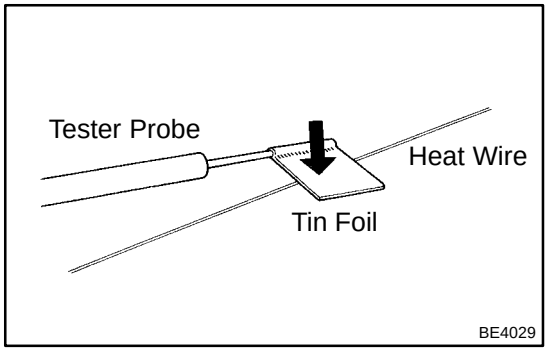


6. INSPECT MIRROR DEFOGGER CIRCUIT

Disconnect the connector from the outside mirror and inspect the connector on the wire harness side.

Tester connection	Condition	Specified condition
4 – Ground	Constant	Continuity
6 – Ground	Ignition switch position ON (Defogger switch OFF)	No voltage
6 – Ground	Ignition switch position ON (Defogger switch ON)	Battery positive voltage

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



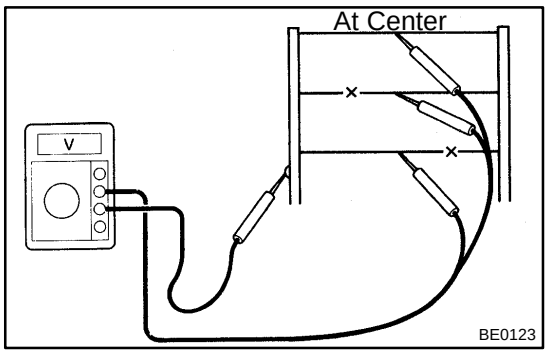
7. INSPECT DEFOGGER WIRE

NOTICE:

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

(a) Turn the ignition switch ON.

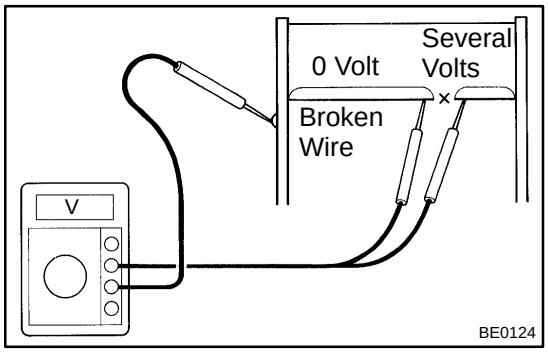
(b) Turn the defogger switch ON.



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

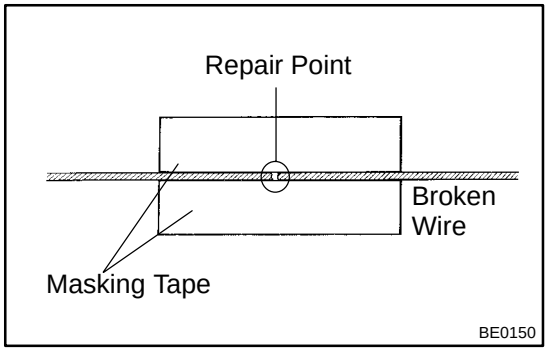
Voltage	Criteria
Approx. 5V	Okay (No break in wire)
Approx. 10V or 0V	Broken wire

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.



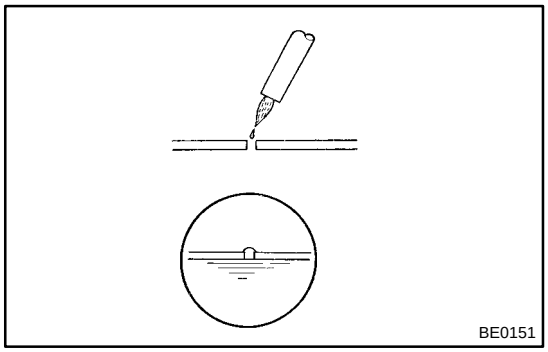
(d) Place the voltmeter positive (+) lead against the defogger positive (+) terminal.
(e) Place the voltmeter negative (–) lead with the foil strip against the heat wire at the positive (+) terminal end and slide it toward the negative (–) terminal end.
(f) The point where the voltmeter deflects from 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 voltage increases to approx. 12 V as the meter probe moves to the other end.



8. IF NECESSARY, REPAIR DEFOGGER WIRE

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

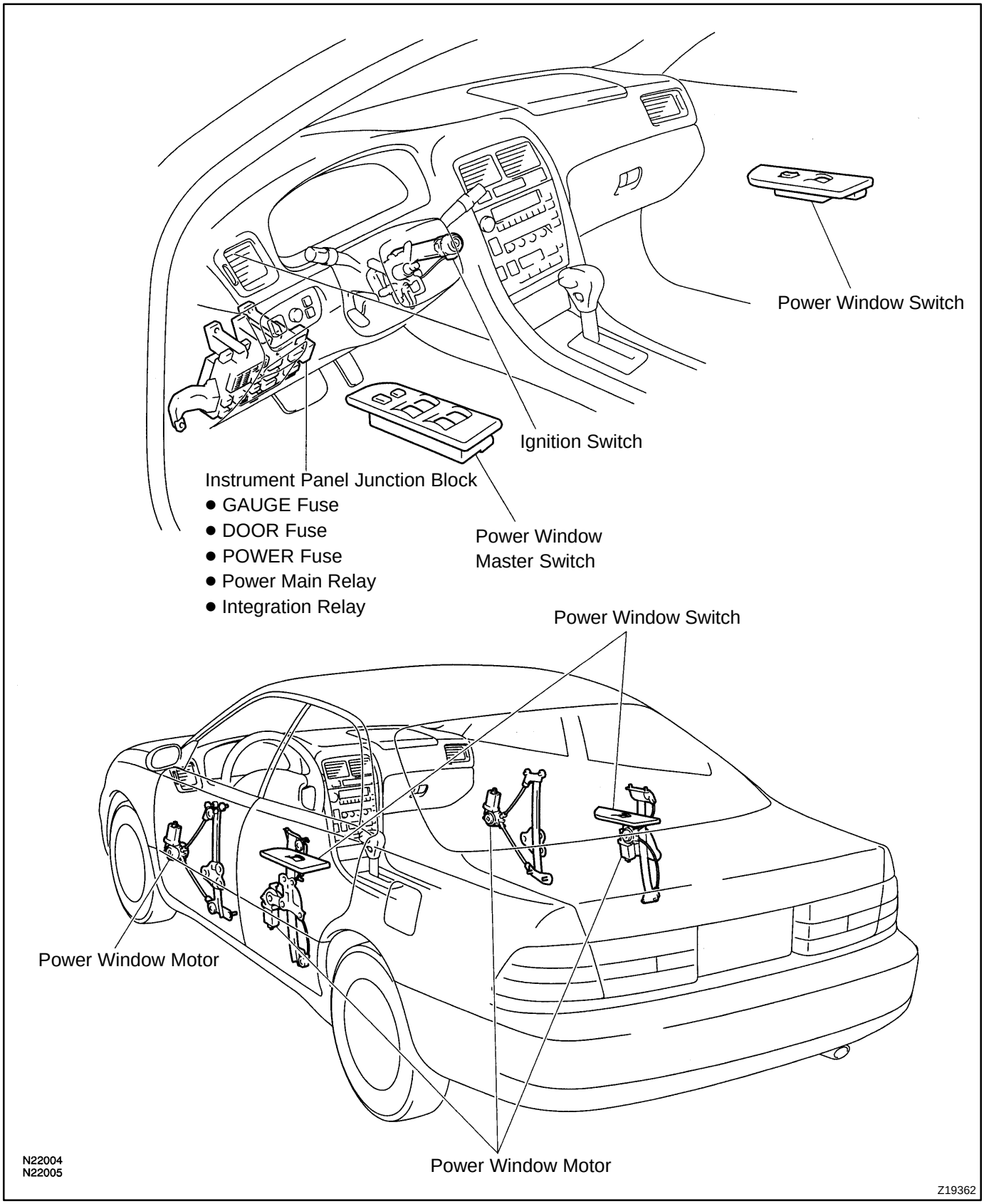


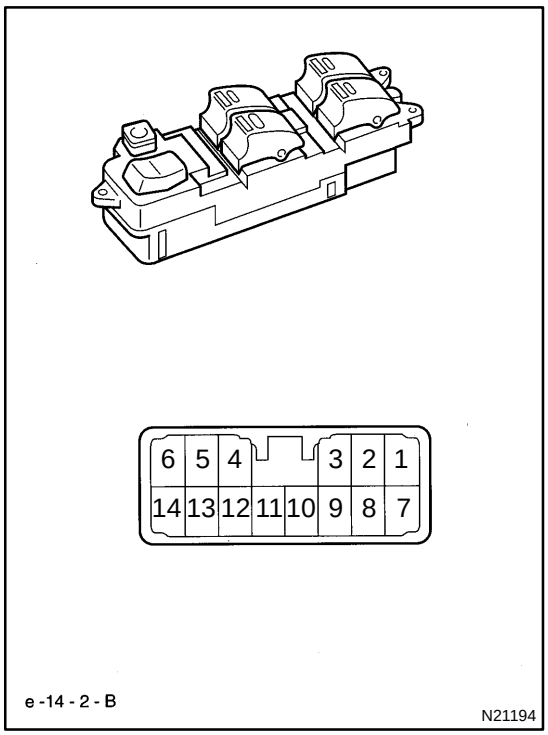
(d) Using a fine tip brush, apply a small amount of the agent to the wire.
(e) After a few minutes, remove the masking tape.
(f) Do not repair the defogger wire for at least 24 hours.

POWER WINDOW CONTROL SYSTEM

LOCATION

BE05M–01





BE05N–02

INSPECTION

1. INSPECT POWER WINDOW MASTER SWITCH CONTINUITY

(a) Inspect the front driver's switch.

Window unlock:

Switch position	Tester connection	Specified condition
UP	1 – 13 6 – 7	Continuity
OFF	1 – 6 – 13	Continuity
DOWN	1 – 6 7 – 13	Continuity

Window lock:

Switch position	Tester connection	Specified condition
UP	1 – 13 6 – 7	Continuity
OFF	1 – 6 – 13	Continuity
DOWN	1 – 6 7 – 13	Continuity

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

(b) Inspect the front passenger's switch.

Window unlock:

Switch position	Tester connection	Specified condition
UP	1 – 5 7 – 12	Continuity
OFF	1 – 5 – 12	Continuity
DOWN	1 – 12 5 – 7	Continuity

Window lock:

Switch position	Tester connection	Specified condition
UP	7 – 12	Continuity
OFF	5 – 12	Continuity
DOWN	5 – 7	Continuity

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

(c) Inspect the rear left switch.

Window unlock:

Switch position	Tester connection	Specified condition
UP	1 – 9 7 – 10	Continuity
OFF	1 – 9 – 10	Continuity
DOWN	1 – 10 7 – 9	Continuity

Window lock:

Switch position	Tester connection	Specified condition
UP	7 – 10	Continuity
OFF	9 – 10	Continuity
DOWN	7 – 9	Continuity

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

(d) Inspect the rear right switch.

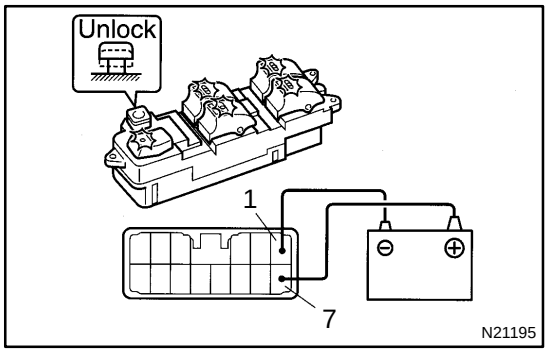
Window unlock:

Switch position	Tester connection	Specified condition
UP	1 – 14 7 – 11	Continuity
OFF	1 – 11 – 14	Continuity
DOWN	1 – 11 7 – 14	Continuity

Window lock:

Switch position	Tester connection	Specified condition
UP	7 – 11	Continuity
OFF	11 – 14	Continuity
DOWN	7 – 14	Continuity

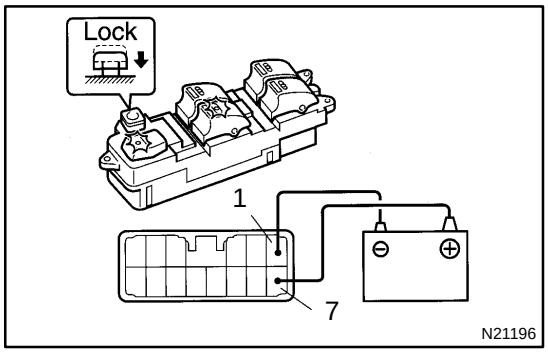
If continuity is not as specified, replace the master switch.



2. INSPECT POWER WINDOW MASTER SWITCH ILLUMINATION

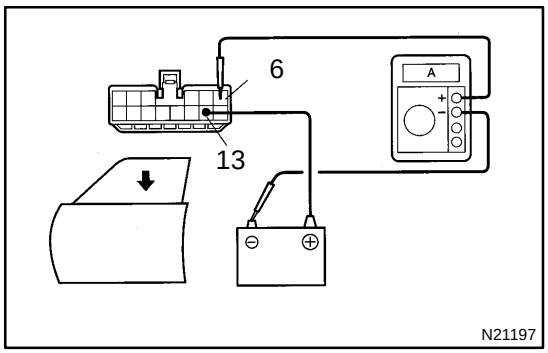
(a) Set the window lock switch to the unlock position.

(b) Connect the positive (+) lead from the battery to terminal 7 and the negative (–) lead to terminal 1, and check that all the illuminations light up.



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

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



3. INSPECT ONE TOUCH POWER WINDOW SYSTEM/ CURRENT OF CIRCUIT (Using an ammeter)

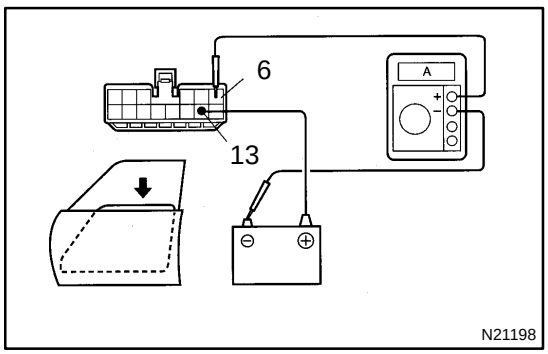
(a) Disconnect the connector from the master switch.

(b) Connect the positive (+) lead from the ammeter to terminal 6 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 13 on the wire harness side connector.

(d) As the window goes down, check that the current flow is approximately 7 A.

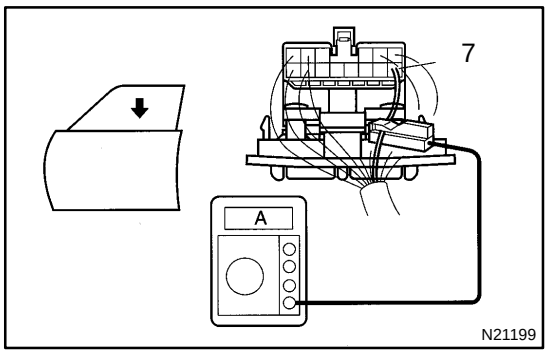
(e) Check that the current increases up to approximately 14.5 A or more when the window stops going down.



HINT:

The circuit breaker opens some 4 – 40 seconds after the window stops going down, so that check must be made before the circuit breaker operates.

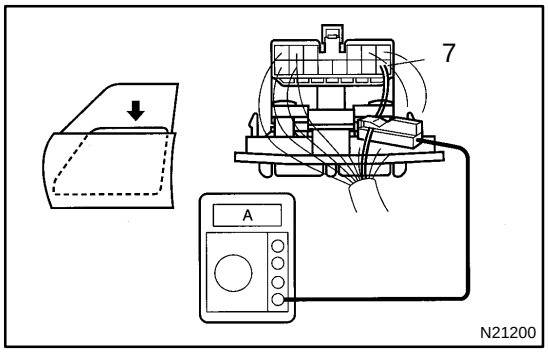
If the operation is as specified, replace the master switch.

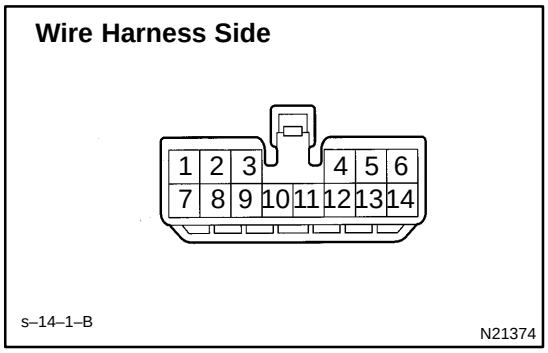


4. INSPECT ONE TOUCH POWER WINDOW SYSTEM/ CURRENT OF CIRCUIT (Using an ammeter with a current–measuring probe)

(a) Remove the master switch with connector connected.
(b) Attach a current–measuring probe to terminal 7 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 circuit breaker opens some 4 – 40 seconds after the window stops going down, so that check must be made before the circuit breaker operates.
If operation is as specified, replace the master switch.



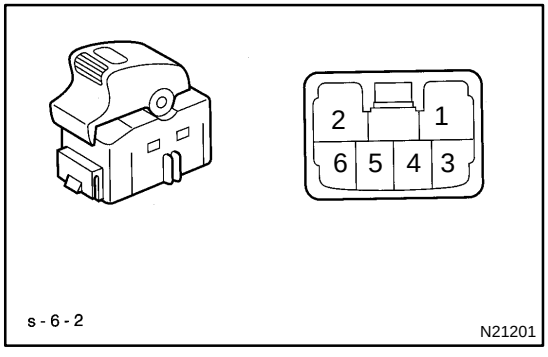


5. INSPECT POWER WINDOW MASTER SWITCH CIRCUIT

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

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

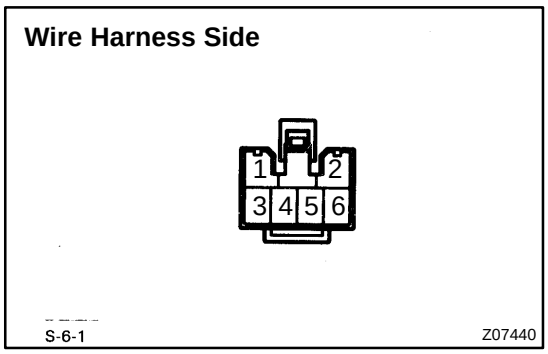
* Exceptions: During 60 seconds after the ignition switch is turned ON → OFF (ACC) or until driver or a passenger's door is opened after the ignition switch is turned ON → OFF (ACC).
If the circuit is not as specified, inspect the circuits connected to other parts.



6. INSPECT POWER WINDOW SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
UP	1 – 3 2 – 5	Continuity
OFF	1 – 3 2 – 4	Continuity
DOWN	2 – 4 3 – 5	Continuity

If continuity is not as specified, replace the switch.



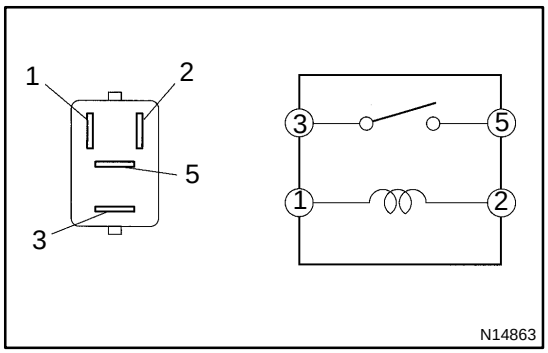
7. INSPECT POWER WINDOW SWITCH CIRCUIT

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

Tester connection	Condition	Specified condition
1 – Ground	Ignition switch position ON and master switch position OFF	No voltage
1 – Ground	Ignition switch positrion ON and master switch position DOWN	Battery positive voltage
4 – Ground	Ignition switch position ON and master switch position OFF	No voltage
4 – Ground	Ignition switch position ON and master switch position UP	Battery positive voltage
5 – Ground	Ignition switch position LOCK or ACC	*No voltage
5 – Ground	Ignition switch position ON	Battery positive voltage

*Exceptions: During 60 seconds period after the ignition switch is turned ON → OFF (ACC) or until driver or a passenger's door is opened after the ignition switch is turned ON → OFF (ACC).

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

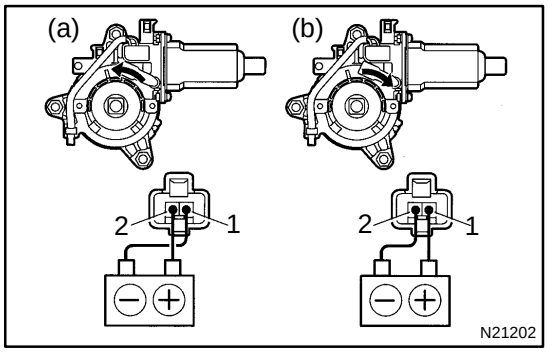


8. INSPECT POWER MAIN RELAY CONTINUITY

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

If continuity is not as specified, replace the relay.

9. INSPECT POWER MAIN RELAY CIRCUIT
(See page BE–11)

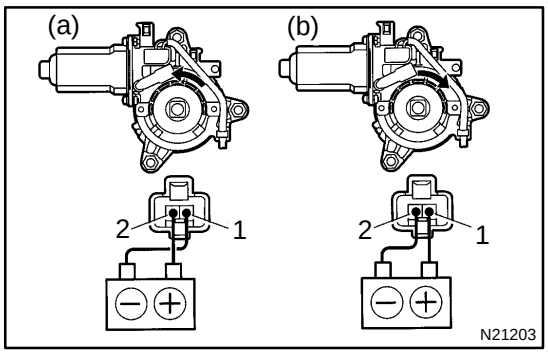


10. Driver's Door:
INSPECT POWER WINDOW MOTOR OPERATION

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

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

If operation is not as specified, replace the motor.

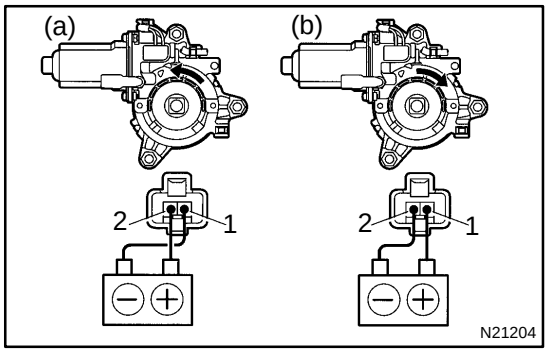


11. Front Passenger's Door:
INSPECT POWER WINDOW MOTOR OPERATION

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

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

If operation is not as specified, replace the motor.

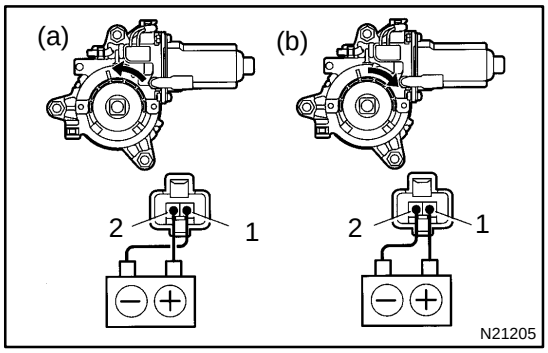


12. Rear Left Side Door:
INSPECT POWER WINDOW MOTOR OPERATION

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

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

If operation is not as specified, replace the motor.

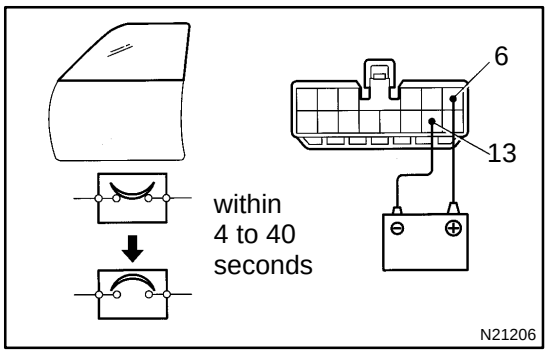


13. Rear Right Side Door:
INSPECT POWER WINDOW MOTOR OPERATION

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

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

If operation is not as specified, replace the motor.

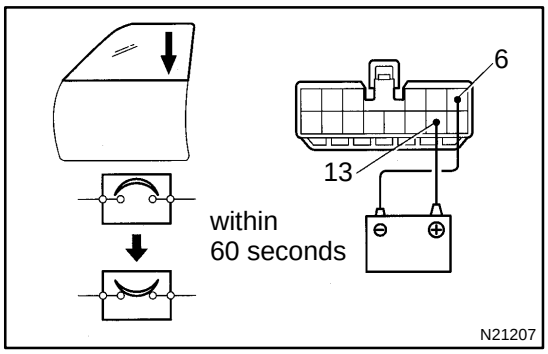


14. Driver's Door:
INSPECT POWER WINDOW MOTOR CIRCUIT BREAKER OPERATION

(a) Disconnect the connector from the master switch.

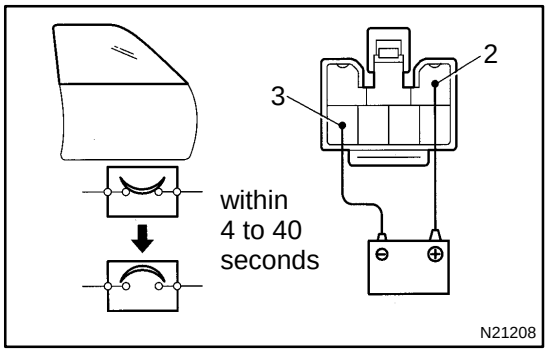
(b) Connect the positive (+) lead from the battery to terminal 6 and the negative (–) lead to terminal 13 on the wire harness side connector and raise the window to full closed position.

(c) Continue to apply voltage, check that there is a circuit breaker operation noise within approximately 4 to 40 seconds.



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

If operation is not as specified, replace the motor.

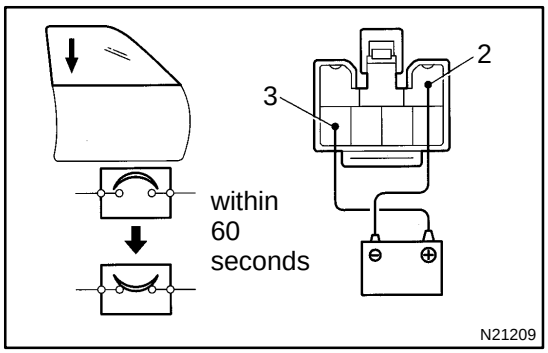


15. Front Passenger's Door Motor:
INSPECT POWER WINDOW MOTOR CIRCUIT BREAKER OPERATION

(a) Disconnect the connector from the power window switch.

(b) Connect the positive (+) lead from the battery to terminal 2 and the negative (–) lead to terminal 3 on the wire harness side connector, and raise the window to full closed position.

(c) Continue to apply voltage, check that there is a circuit breaker operation noise within approximately 4 to 40 seconds.



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

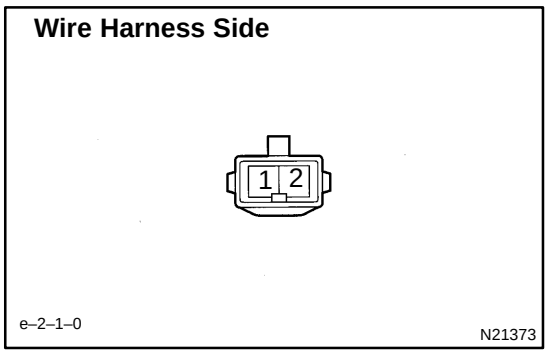
If operation is not as specified, replace the motor.

16. Rear Left Side Door:
INSPECT POWER WINDOW MOTOR CIRCUIT BREAKER OPERATION

See step of Front Passenger Door Motor.

17. Rear Right Side Door:
INSPECT POWER WINDOW MOTOR CIRCUIT BREAKER OPERATION

See step of Front Passenger Door Motor.



18. INSPECT POWER WINDOW MOTOR CIRCUIT

(a) Disconnect the connector from the motor.

(b) Connect the connector to the master switch and power window switch.

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

Driver's Door Motor

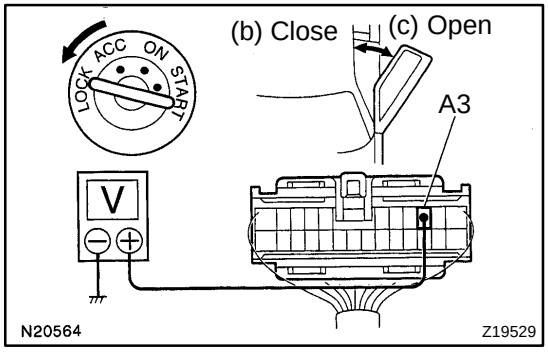
Tester connection	Condition	Specified condition
1 – Ground	*Master switch position DOWN or OFF	No voltage
1 – Ground	*Master switch position UP	Battery positive voltage
2 – Ground	*Master switch position UP or OFF	No voltage
2 – Ground	*Master switch position DOWN	Battery positive voltage

Except Driver's Door Motor

Tester connection	Condition	Specified condition
1 – Ground	*Master switch position UP or OFF	No voltage
1 – Ground	*Master switch position DOWN	Battery positive voltage
1 – Ground	*Power window switch position UP or OFF	No voltage
1 – Ground	*Power window switch position DOWN	Battery positive voltage
2 – Ground	*Master switch position DOWN or OFF	No voltage
2 – Ground	*Master switch position UP	Battery positive voltage
2 – Ground	*Power window switch position DOWN or OFF	No voltage
2 – Ground	*Power window switch position UP	Battery positive voltage

*: Set the window lock switch to the unlock position.(except driver's door motor)

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



19. Key–Off Power Window Signal: INSPECT INTEGRATION RELAY OPERATION

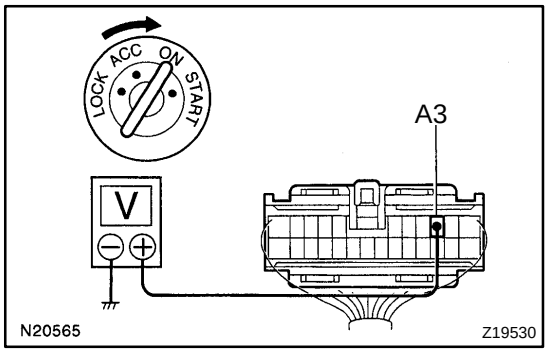
HINT:

When the relay circuit is as specified, inspect the key–off power window signal.

(a) Connect the positive (+) lead from the voltmeter to terminal A3 and the negative (–) lead to body ground.

(b) Close the door with ignition switch turned to LOCK or ACC, and check that the meter needle indicates battery positive voltage.

(c) Open the door and check that the meter needle indicates 0 V.



(d) Turn the ignition switch ON and check that the meter needle indicates battery positive voltage again.

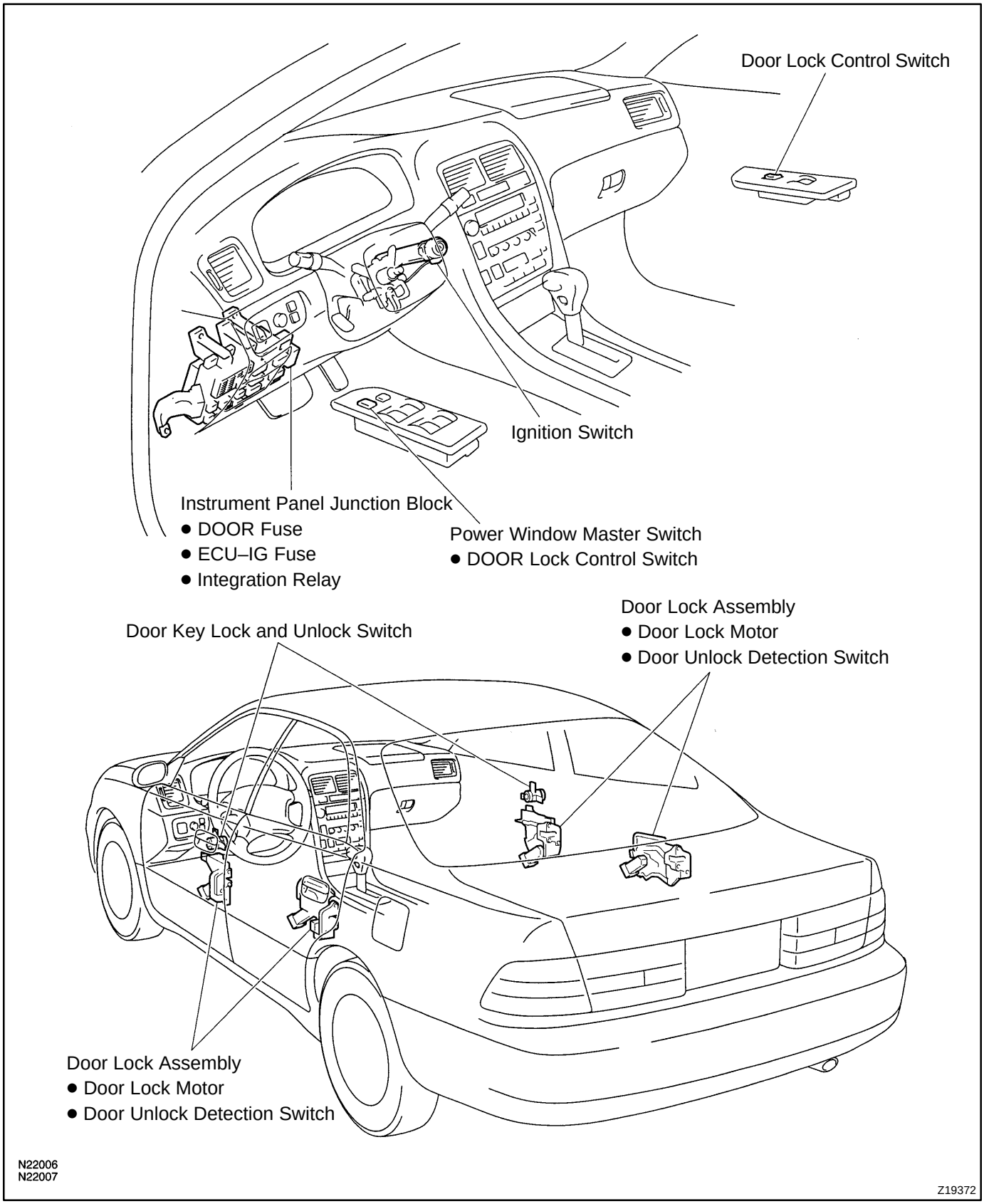
If operation is not as specified, replace the relay.

20. INSPECT INTEGRATION RELAY CIRCUIT
(See page BE–20)

POWER DOOR LOCK CONTROL SYSTEM

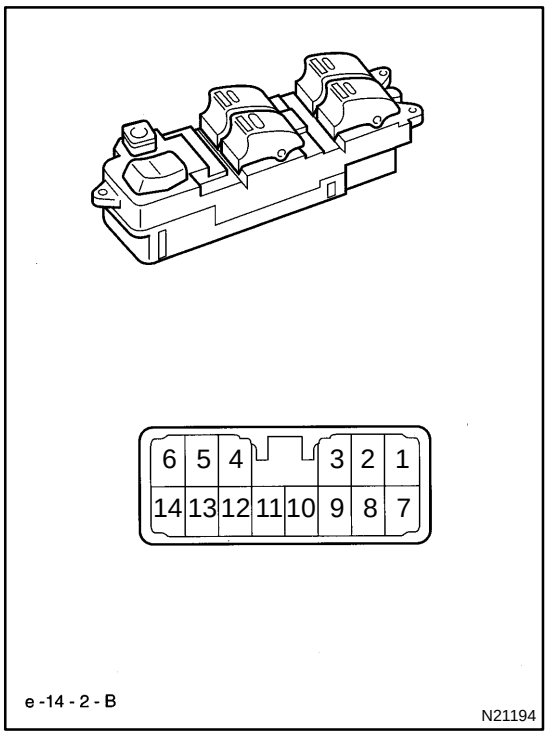
LOCATION

BE05O–01



BE05P–01

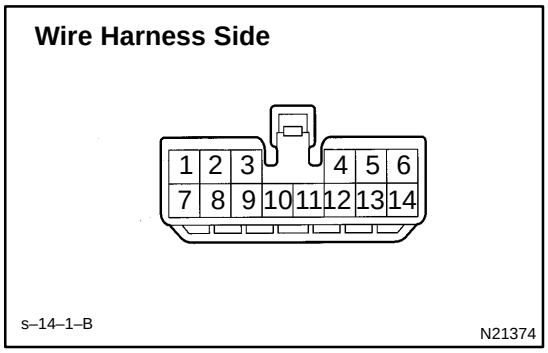
INSPECTION



1. Master Switch:
INSPECT DRIVER'S DOOR LOCK CONTROL SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
LOCK	1 – 4	Continuity
OFF	–	No continuity
UNLOCK	1 – 3	Continuity

If continuity is not as specified, replace the switch.

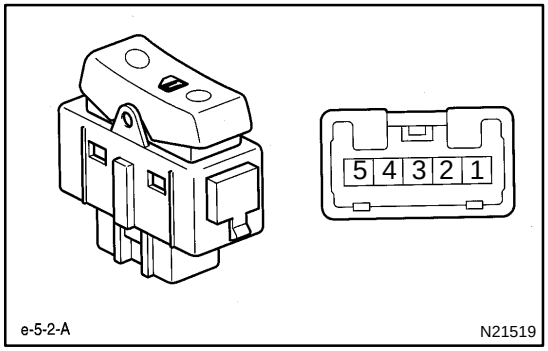


2. Master Switch:
INSPECT DRIVER'S DOOR LOCK CONTROL SWITCH CIRCUIT

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

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

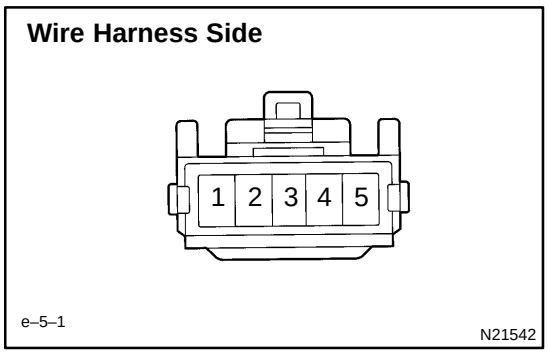
If the circuit is not as specified, inspect the circuits connected to other parts.



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.

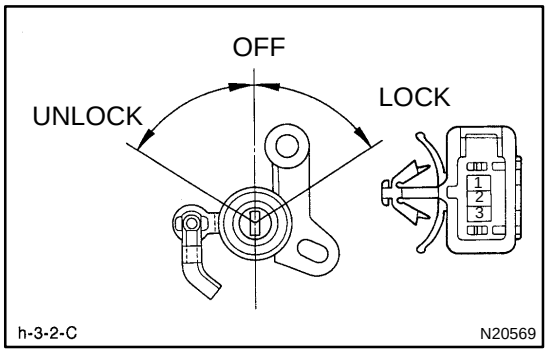


4. INSPECT PASSENGER'S DOOR LOCK CONTROL SWITCH CIRCUIT

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

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

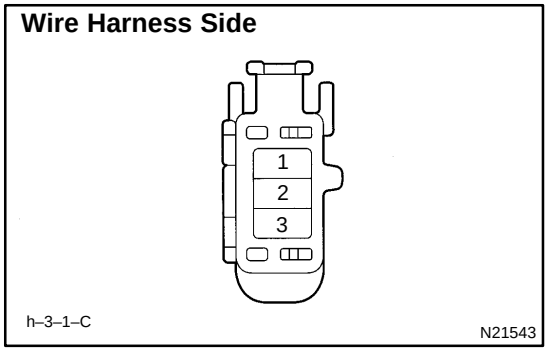
If the circuit is not as specified, inspect the circuits connected to other parts.



5. INSPECT DOOR KEY LOCK AND UNLOCK SWITCH CONTINUITY

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

If continuity is not as specified, replace the switch.

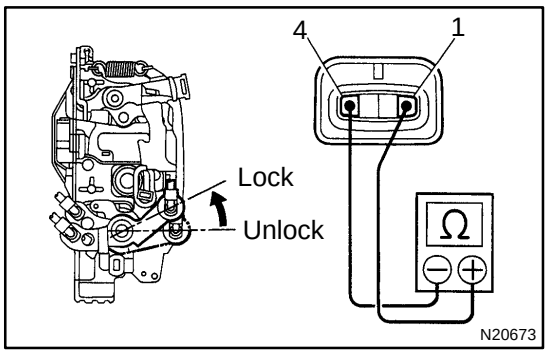


6. INSPECT DOOR KEY LOCK AND UNLOCK SWITCH CIRCUIT

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

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

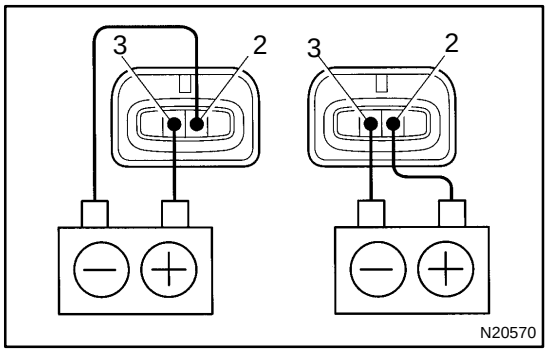
If the circuit is not as specified, inspect the circuits connected to other parts.



7. 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 switch.

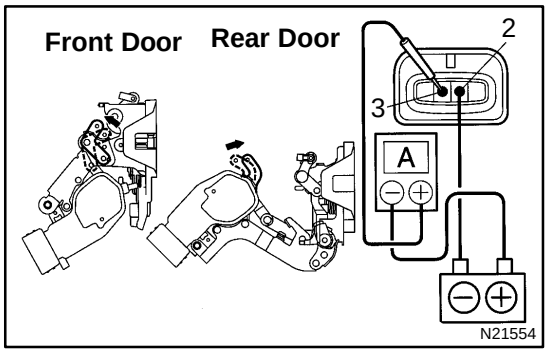


8. INSPECT MOTOR OPERATION

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

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

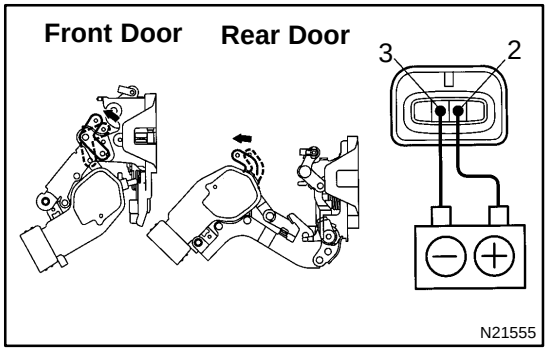
If operation is not as specified, replace the door lock assembly.



9. INSPECT PTC THERMISTOR OPERATION (Using an ammeter)

(a) Connect the positive (+) lead from the battery to terminal 3.

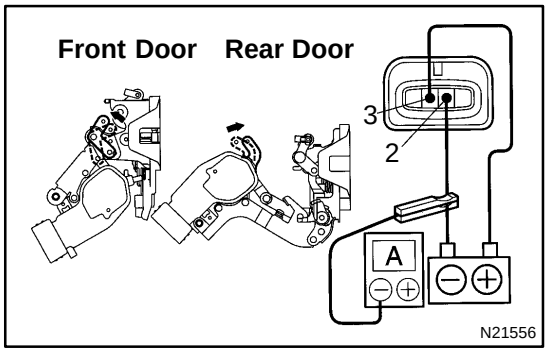
(b) Connect the positive (+) lead from the ammeter to terminal 2 and the negative (–) lead to battery negative (–) terminal, and check that the current changes from approximately 3.2 A to less than 0.5 A within 20 to 70 seconds.



(c) Disconnect the leads from terminals.

(d) Approximately 60 seconds later, connect the positive (+) lead from the battery to terminal 2 and the negative (–) lead to terminal 3, and check that the door lock moves to the LOCK position.

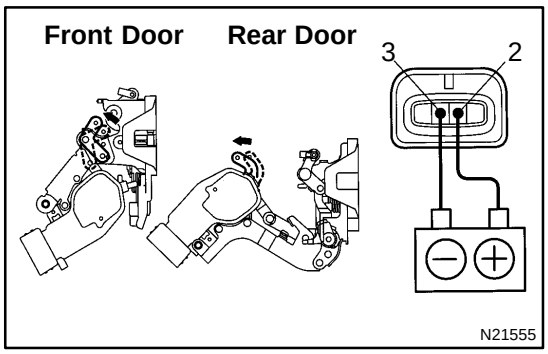
If operation is not as specified, replace the door lock assembly.



10. INSPECT PTC THERMISTOR OPERATION (Using an ammeter with a current–measuring probe)

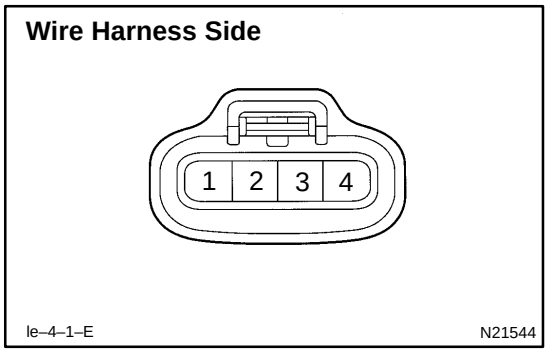
(a) Connect the positive (+) lead from the battery to terminal 3 and the negative (–) lead to terminal 2.

(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 A to less than 0.5 A within 20 to 70 seconds.



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

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

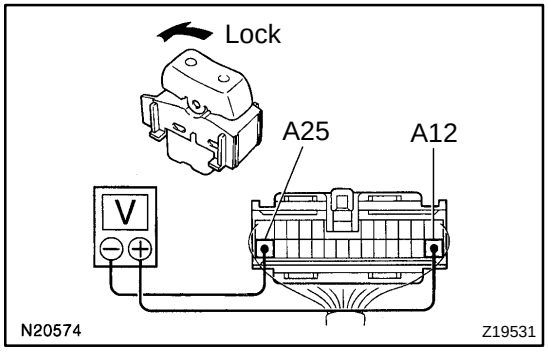


11. INSPECT DOOR LOCK ASSEMBLY CIRCUIT

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

Tester connection	Condition	Specified condition
4 – Ground	Constant	Continuity
1 – Ground 3 – Ground	Door lock manual switch OFF or LOCK	No voltage
1 – Ground 3 – Ground	Door lock manual switch UNLOCK	Battery positive voltage
2 – Ground	Door lock manual switch OFF or UNLOCK	No voltage
2 – Ground	Door lock manual switch LOCK	Battery positive voltage

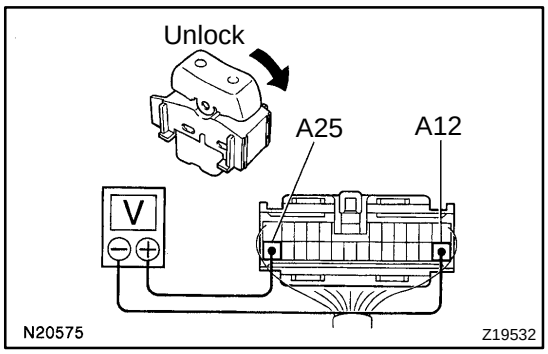
If the circuit is not as specified, inspect the circuits connected to other parts.



12. Door Lock Signal: INSPECT INTEGRATION RELAY OPERATION

HINT:
When the relay circuit is as specified, inspect the door lock signal.

(a) Connect the positive (+) lead from the voltmeter to terminal A12 and the negative (–) lead to terminal A25.
(b) Set the door lock control switch to UNLOCK and check that the voltage rises from 0 V to battery positive voltage for approximately 0.2 seconds.



(c) Reverse the polarity of the voltmeter leads.
(d) Set the door lock control switch to LOCK and check that the voltage rises from 0 V to battery positive voltage for approximately 0.2 seconds.

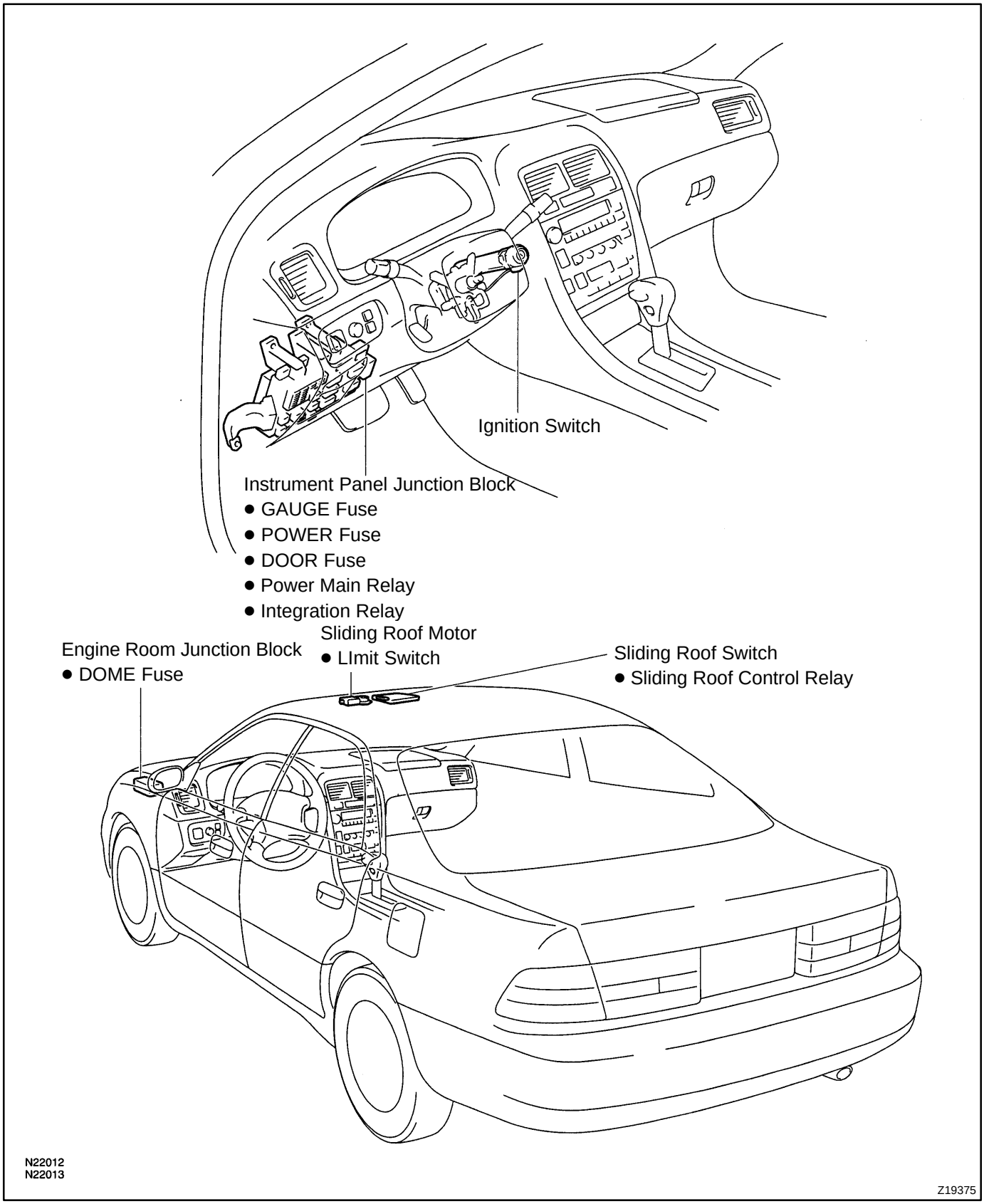
If operation is not as specified, replace the relay.

13. INSPECT INTEGRATION RELAY CIRCUIT
(See page BE–20)

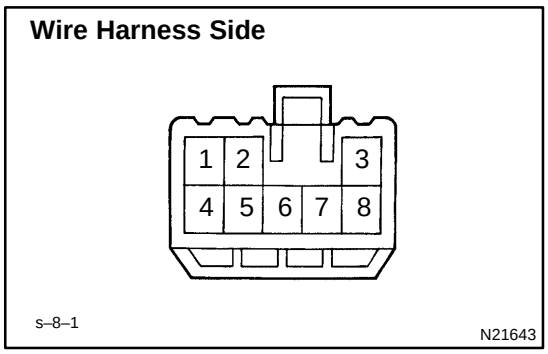
SLIDING ROOF SYSTEM

LOCATION

BE05Q–01



BE05R–01



INSPECTION

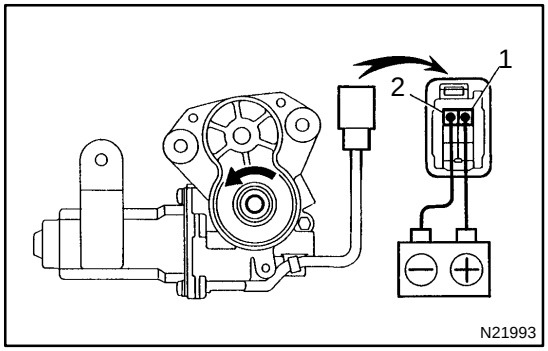
1. INSPECT SLIDING ROOF CONTROL RELAY AND SWITCH CIRCUIT

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

Tester connection	Condition	Specified condition
1 – 5	Constant	Continuity
2 – Ground	Constant	Continuity
3 – Ground	No.1 limit switch OFF (Sliding roof closed)	No continuity
3 – Ground	No.1 limit switch ON (Sliding roof opened)	Continuity
7 – Ground	No.2 limit switch OFF (Sliding roof tilted up or open approx. 200 mm (7.87 in.))	No continuity
7 – Ground	No.2 limit switch ON (Except for conditions mentioned above)	Continuity
4 – Ground	Ignition switch LOCK or ACC	*No voltage
	Ignition switch ON	Battery positive voltage

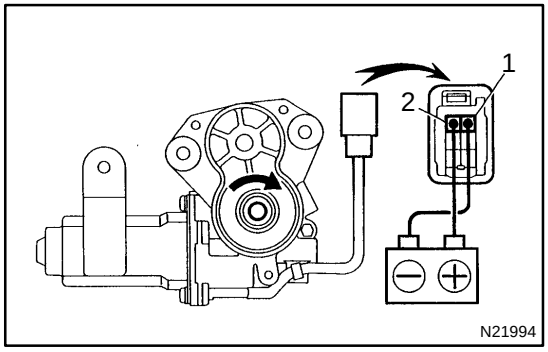
*Exceptions: For 60 seconds after the ignition switch is turned ON → OFF (ACC) or until driver or passenger door is opened after the ignition switch is turned ON → OFF (ACC).

If the circuit is as specified, replace the relay and switch.



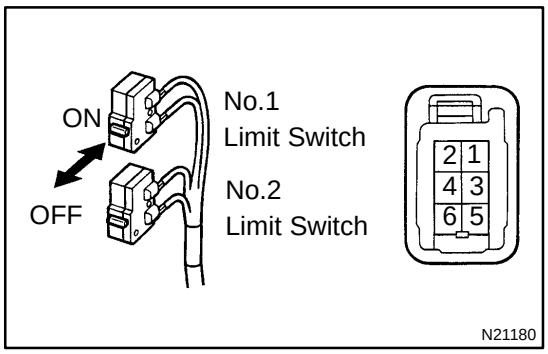
2. INSPECT SLIDING ROOF MOTOR OPERATION

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



(b) Reverse the polarity, check that the motor turns clockwise. (moves of the open and down side).

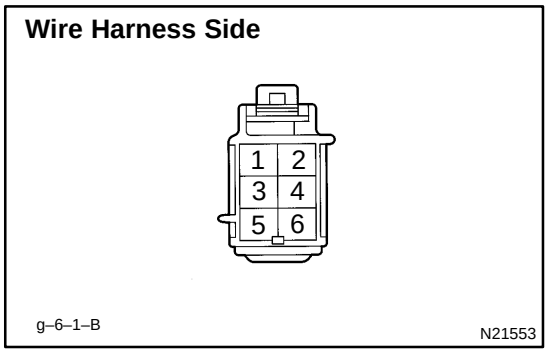
If operation is not as specified, replace the motor.



3. INSPECT SLIDING ROOF LIMIT SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
No.1 limit switch OFF (SW pin released)	4 – 5	No continuity
No.1 limit switch ON (SW pin pushed in)	4 – 5	Continuity
No.2 limit switch OFF (SW pin released)	4 – 6	No continuity
No.2 limit switch ON (SW pin pushed in)	4 – 6	Continuity

If continuity is not as specified, replace the switch.

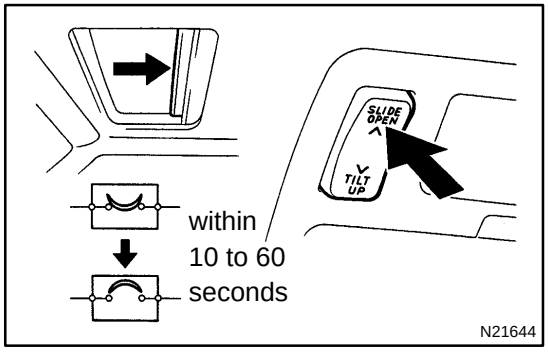


4. INSPECT SLIDING ROOF MOTOR AND LIMIT SWITCH CIRCUIT

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

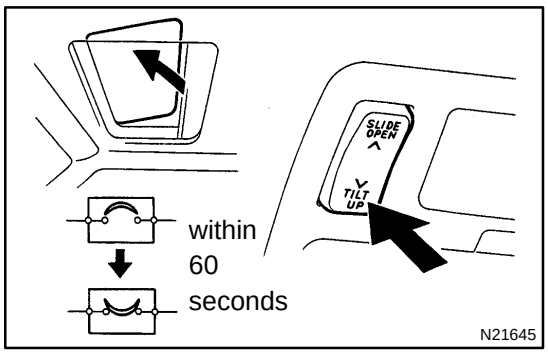
Tester connection	Condition	Specified condition
3 – Ground	Constant	Continuity
4 – Ground	Constant	Continuity

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



5. INSPECT CIRCUIT BREAKER OPERATION

(a) With the sliding roof in the fully opened position, hold the sliding roof switch in ”OPEN” position and check that there is a circuit breaker operation noise within 10 to 60 seconds.



(b) With the sliding roof in fully opened position, hold the sliding roof switch in "TILT UP" position and check that the sliding roof begins to close within 60 seconds.

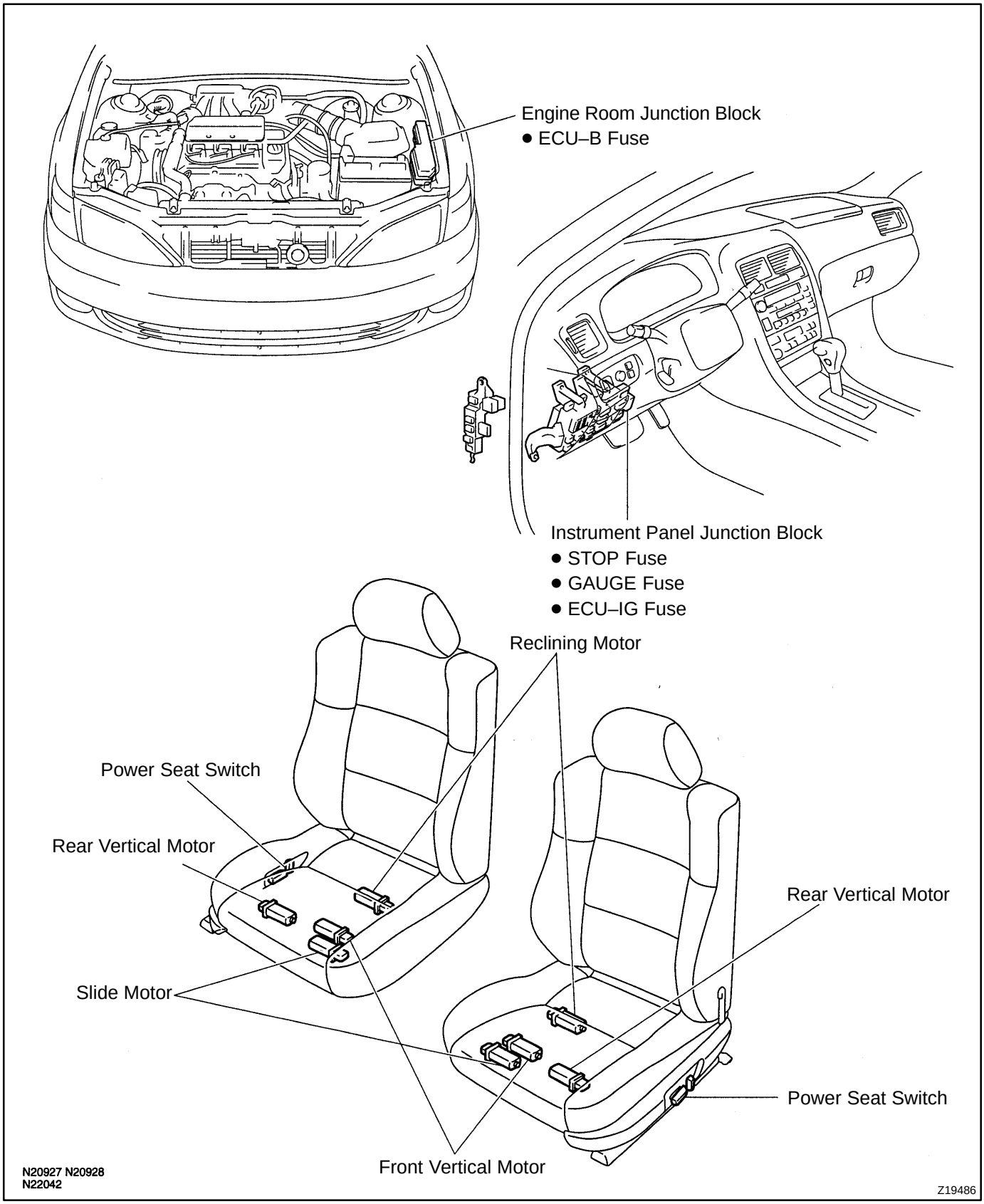
If operation is not as specified, replace the motor.

6. INSPECT KEY–OFF SLIDING ROOF OPERATION (See integration relay circuit on page BE–20)

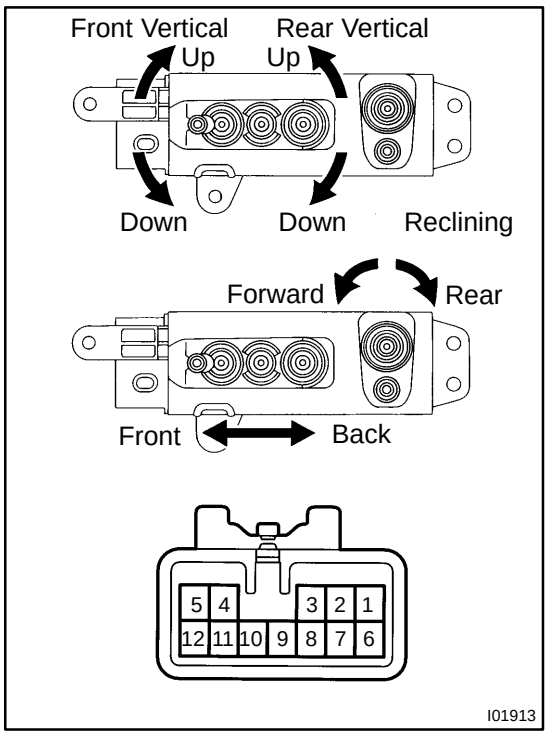
POWER SEAT CONTROL SYSTEM

BE05S–01

LOCATION



BE05T–03



INSPECTION

1. INSPECT DRIVER'S POWER SEAT SWITCH CONTINUITY

Slide Switch:

Switch position	Tester connection	Specified condition
FRONT	4 – 7 8 – 11	Continuity
OFF	4 – 7 – 8	Continuity
BACK	4 – 11 7 – 8	Continuity

Front vertical switch:

Switch position	Tester connection	Specified condition
UP	7 – 9 10 – 11	Continuity
OFF	7 – 9 – 10	Continuity
DOWN	7 – 10 9 – 11	Continuity

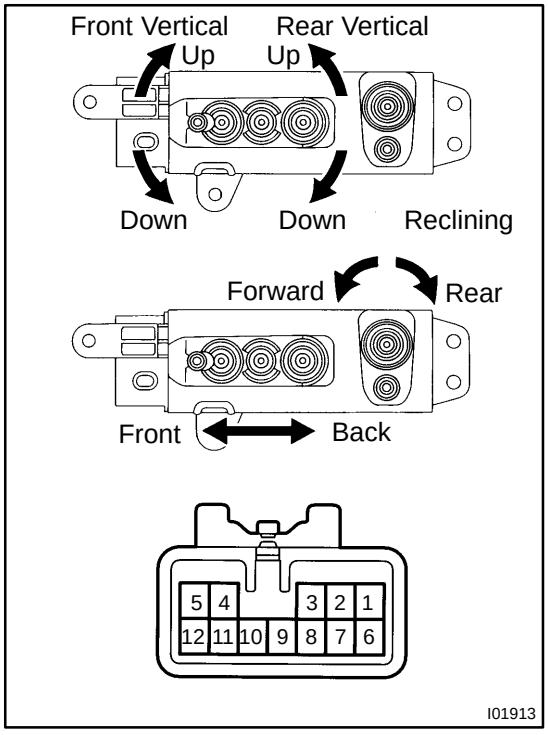
Rear vertical switch:

Switch position	Tester connection	Specified condition
UP	2 – 11 3 – 7	Continuity
OFF	2 – 3 – 7	Continuity
DOWN	2 – 7 3 – 11	Continuity

Reclining switch:

Switch position	Tester connection	Specified condition
FORWARD	1 – 11 5 – 7	Continuity
OFF	1 – 5 – 7	Continuity
REAR	1 – 7 5 – 11	Continuity

If continuity is not as specified, replace the switch.



2. INSPECT PASSENGER'S POWER SEAT SWITCH CONTINUITY

Slide switch:

Switch position	Tester connection	Specified condition
FRONT	4 – 7 8 – 11	Continuity
OFF	4 – 7 – 8	Continuity
BACK	4 – 11 7 – 8	Continuity

Front vertical switch:

Switch position	Tester connection	Specified condition
UP	7 – 10 9 – 11	Continuity
OFF	7 – 9 – 11	Continuity
DOWN	7 – 11 9 – 10	Continuity

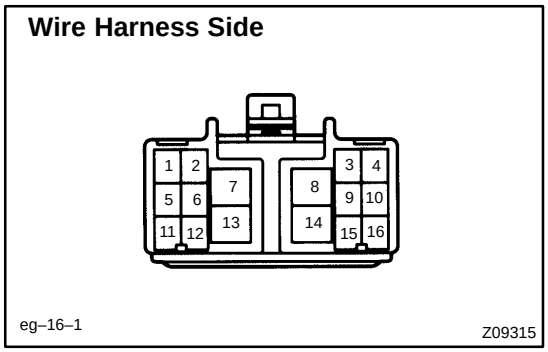
Rear vertical switch:

Switch position	Tester connection	Specified condition
UP	2 – 7 3 – 11	Continuity
OFF	2 – 3 – 7	Continuity
DOWN	2 – 11 3 – 7	Continuity

Reclining switch:

Switch position	Tester connection	Specified condition
FORWARD	1 – 11 5 – 7	Continuity
OFF	1 – 5 – 7	Continuity
REAR	1 – 7 5 – 11	Continuity

If continuity is not as specified, replace the switch.



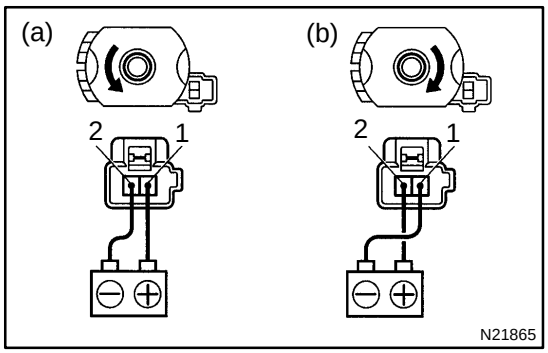
3. INSPECT POWER SEAT SWITCH CIRCUIT

(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.

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

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

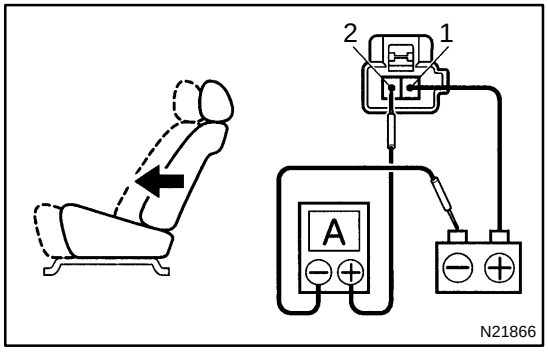


4. INSPECT SLIDE MOTOR OPERATION

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

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

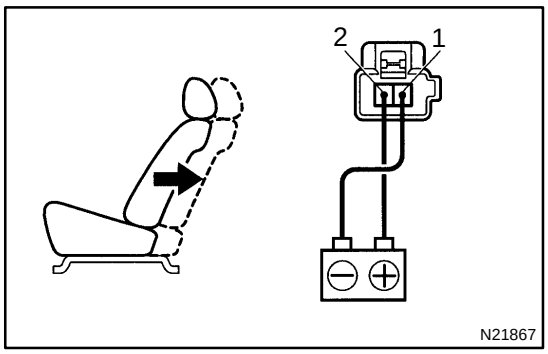
If operation is not as specified, replace the seat adjuster.



5. INSPECT SLIDE MOTOR PTC THERMISTOR OPERATION

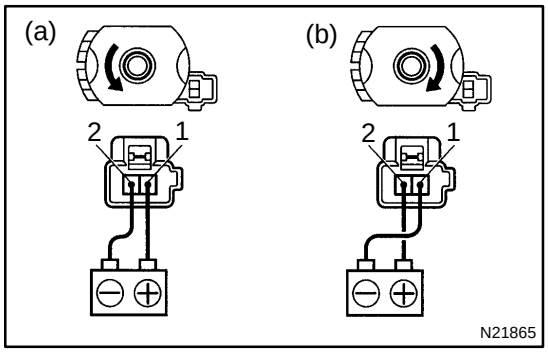
(a) Connect the positive (+) lead from the battery to terminal 1, the positive (+) lead from the ammeter to terminal 2 and the negative (–) lead to the battery negative (–) terminal, then move the seat cushion to the front position.

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



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

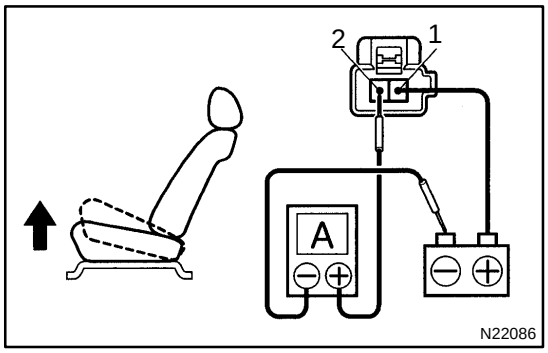
If operation is not as specified, replace the seat adjuster.



6. INSPECT FRONT VERTICAL MOTOR OPERATION

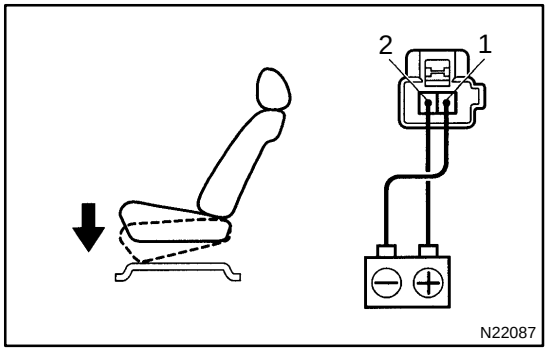
(a) Connect the positive (+) lead from the battery to terminal 1 and the negative (–) lead to terminal 2, check that the motor turns counterclockwise.
(b) Reverse the polarity, check that the motor turns clockwise.

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



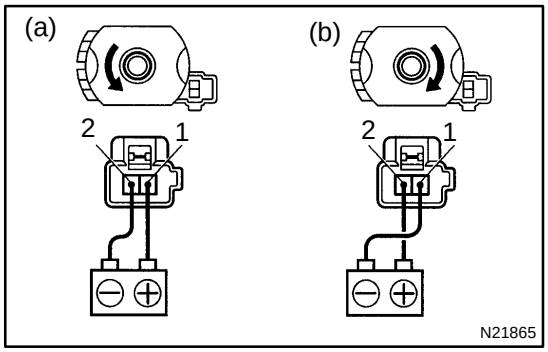
7. INSPECT FRONT VERTICAL MOTOR PTC THERMISTOR OPERATION

(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 the battery negative (–) terminal, then move the seat cushion to the highest position.
(b) Continue to apply voltage, check that the current changes to less than 1 ampere within 4 to 90 seconds.



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

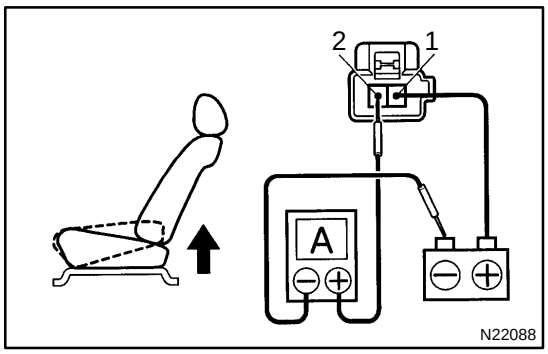
If operation is not as specified, replace the seat adjuster.



8. INSPECT REAR VERTICAL MOTOR OPERATION

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

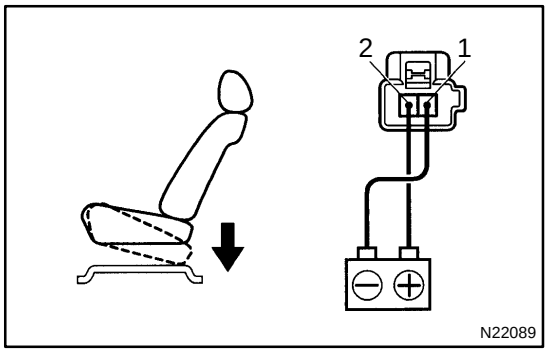
If operation is not as specified, replace the seat adjuster.



9. INSPECT REAR 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 the battery negative (–) terminal, then move the seat cushion to the highest position.

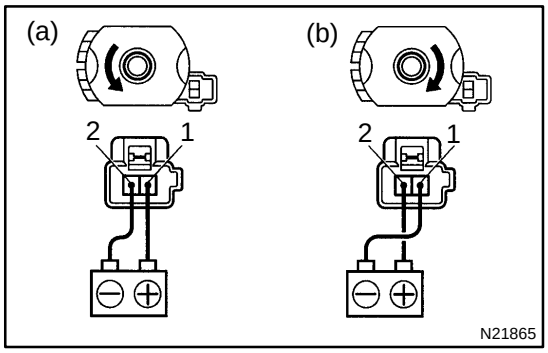
(b) Continue to apply voltage, check that the current changes to less than 1 ampere within 4 to 90 seconds.



(c) Disconnect the leads from the terminals.

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

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

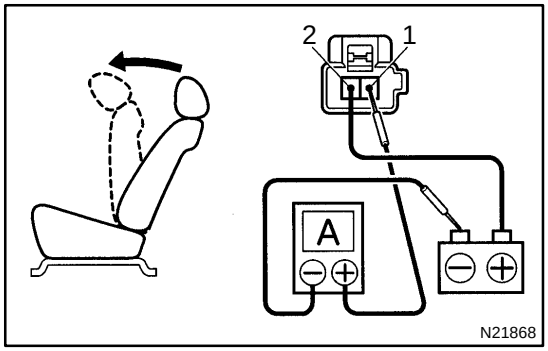


10. INSPECT RECLINING MOTOR OPERATION

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

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

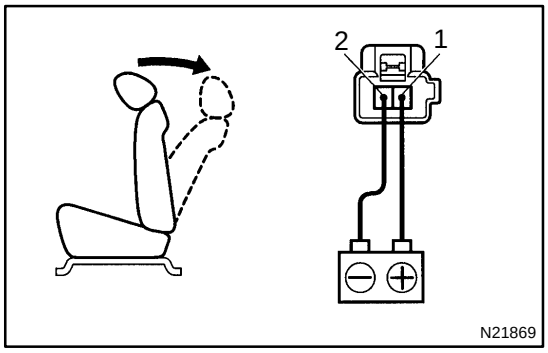
If operation is not as specified, replace the seat adjuster.



11. INSPECT RECLINING MOTOR PTC THERMISTOR OPERATION

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

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



(c) Disconnect the leads from the terminals.

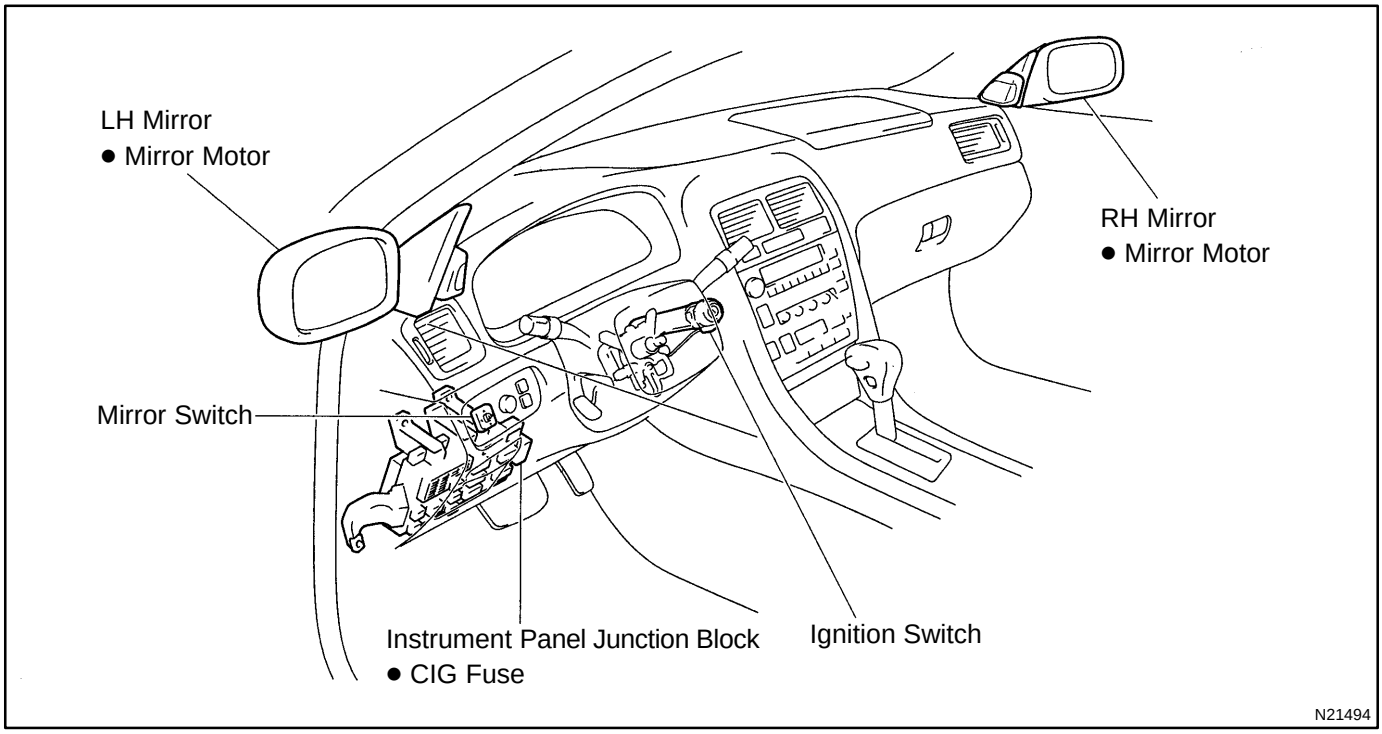
(d) Approximately 60 seconds later, connect the positive (+) lead from the battery to terminal 1 and the negative (–) lead to terminal 2, check that the seat back starts to fall backward.

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

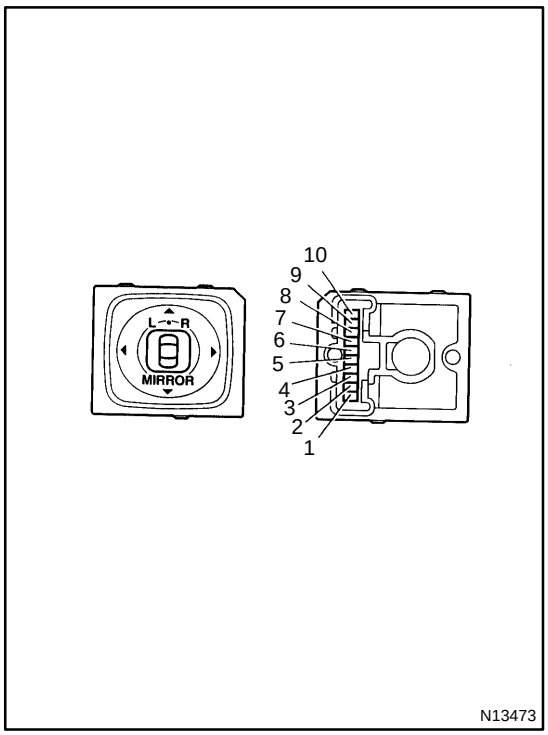
POWER MIRROR CONTROL SYSTEM

BE05U–01

LOCATION



BE05V–01



INSPECTION

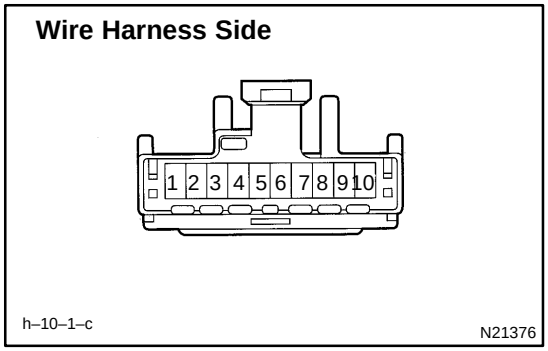
1. Master switch left side:
INSPECT MIRROR SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
OFF	–	No continuity
UP	3 – 4 7 – 8	Continuity
DOWN	3 – 8 4 – 7	Continuity
LEFT	4 – 9 7 – 8	Continuity
RIGHT	4 – 7 8 – 9	Continuity

2. Master switch right side:
INSPECT MIRROR SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
OFF	–	No continuity
UP	2 – 4 1 – 7 – 8	Continuity
DOWN	4 – 7 1 – 2 – 8	Continuity
LEFT	4 – 10 1 – 7 – 8	Continuity
RIGHT	4 – 7 1 – 8 – 10	Continuity

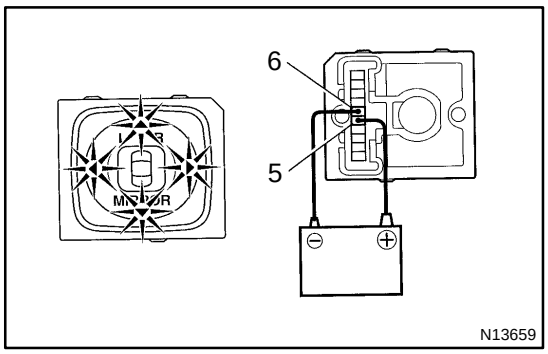
If continuity is not as specified, replace the switch.
If continuity is as specified. inspect the switch circuit.



3. INSPECT MIRROR SWITCH CIRCUIT
Disconnect the connector from the switch and inspect the connector on the wire harness side.

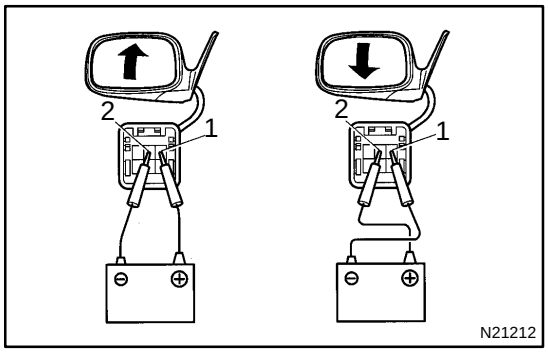
Tester connection	Condition	Specified condition
8 – Ground	Constant	Continuity
4 – Ground	Ignition switch position LOCK	No voltage
4 – Ground	Ignition switch position ACC or ON	Battery positive voltage

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



4. INSPECT INDICATOR LIGHT OPERATION

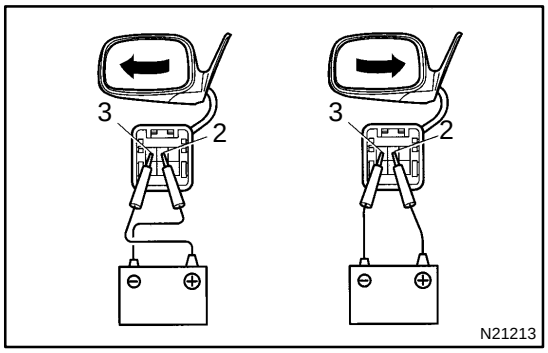
Connect the positive (+) lead from the battery to terminal 5 and the negative (–) lead to terminal 6, and check that the indicator light does not light up, replace the switch.



5. INSPECT MIRROR MOTOR OPERATION

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

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



(c) Connect the positive (+) lead from the battery to terminal 3 and the negative (–) lead to terminal 2, and check that the mirror turns to the left side.

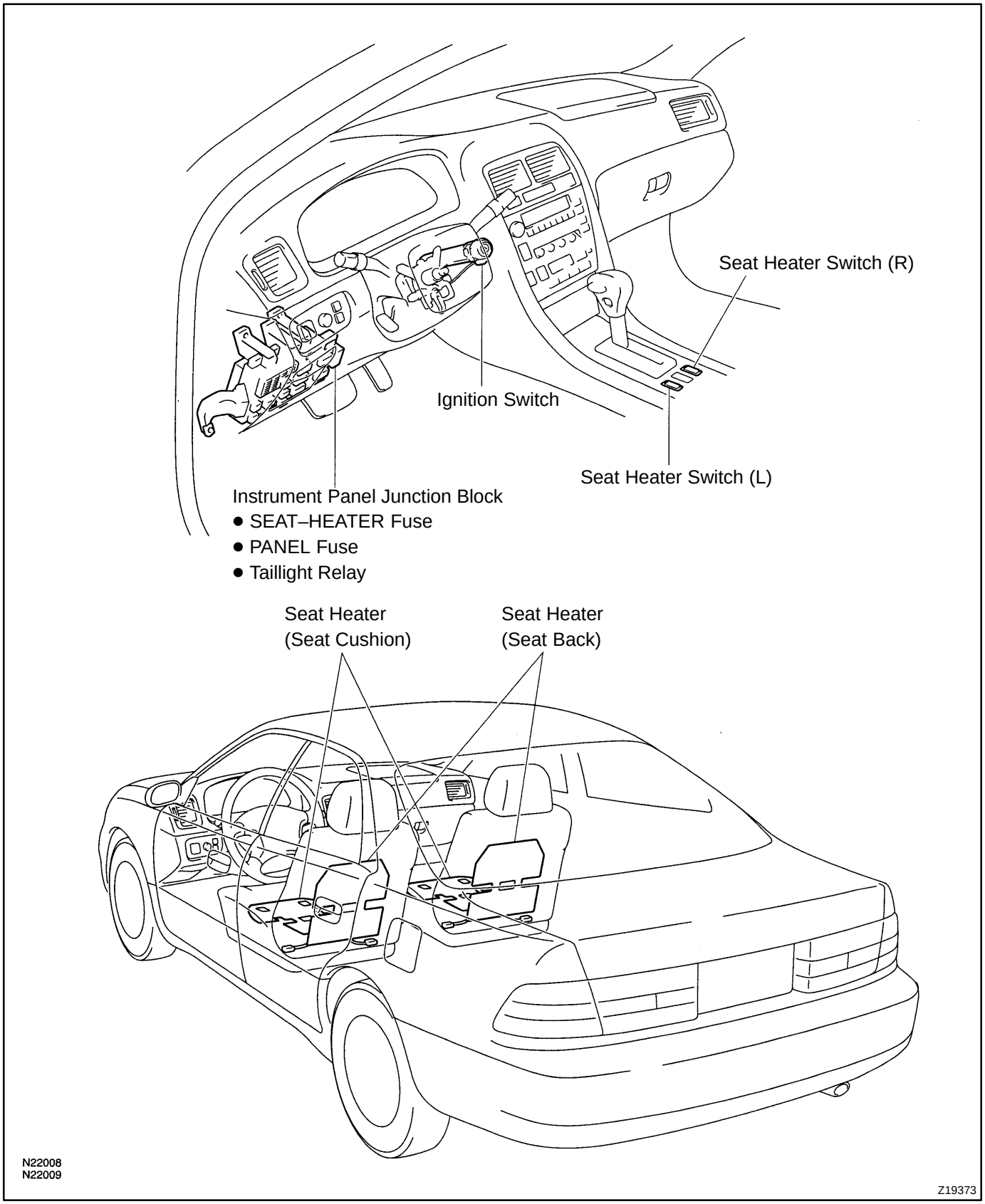
(d) Reverse the polarity, and check that the mirror turns to the right side.

If operation is not as specified, replace the mirror.

SEAT HEATER SYSTEM

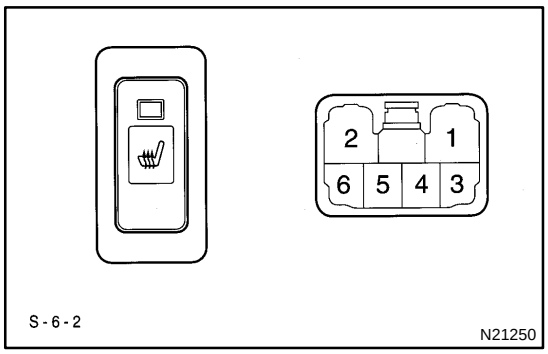
LOCATION

BE05W–01



BE05X–01

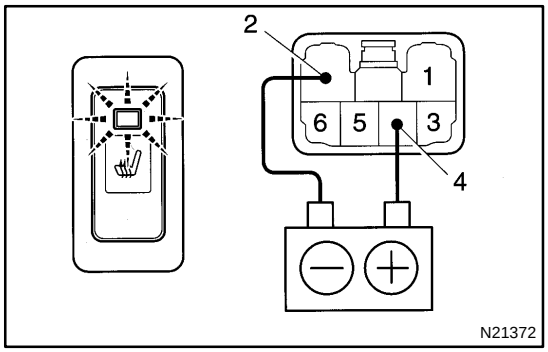
INSPECTION



1. INSPECT SEAT HEATER SWITCH CONTINUITY

Condition	Tester connection	Specified condition
OFF	2 – 6	Continuity
ON	2 – 4 – 6	Continuity
Illumination circuit	1 – 3	Continuity

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

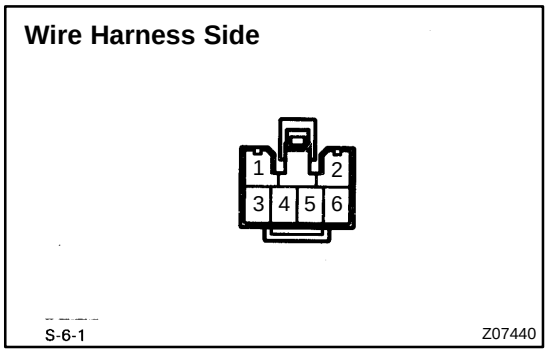


2. INSPECT SEAT HEATER SWITCH INDICATOR

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

(b) Push the switches, check that the indicator lights up.

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



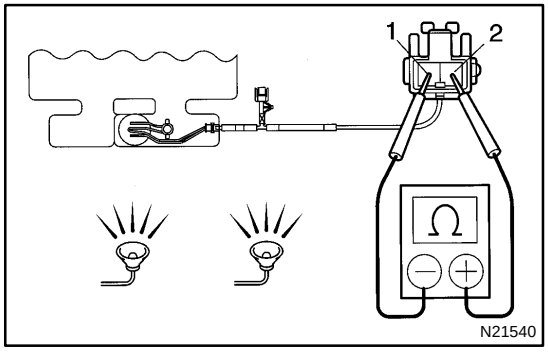
3. INSPECT SEAT HEATER SWITCH CIRCUIT

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

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

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

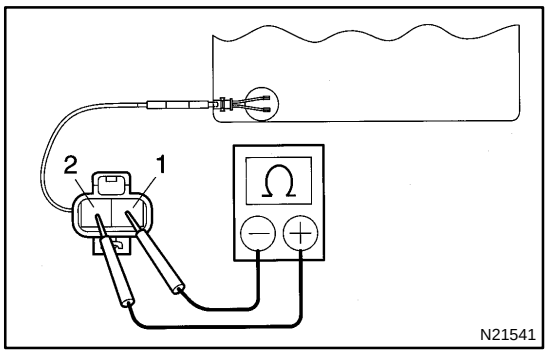
If the circuit is not as specified, inspect the circuits connected to other parts.



4. INSPECT SEAT CUSHION CONTINUITY

(a) Heat the 2 thermostats with light. Check that there is no continuity above 45˚C (113˚F) between terminals 1 and 2.

(b) Cool the 2 thermostats below 15˚C (59˚F). Check that there is continuity between terminals 1 and 2.



5. INSPECT SEAT BACK CONTINUITY

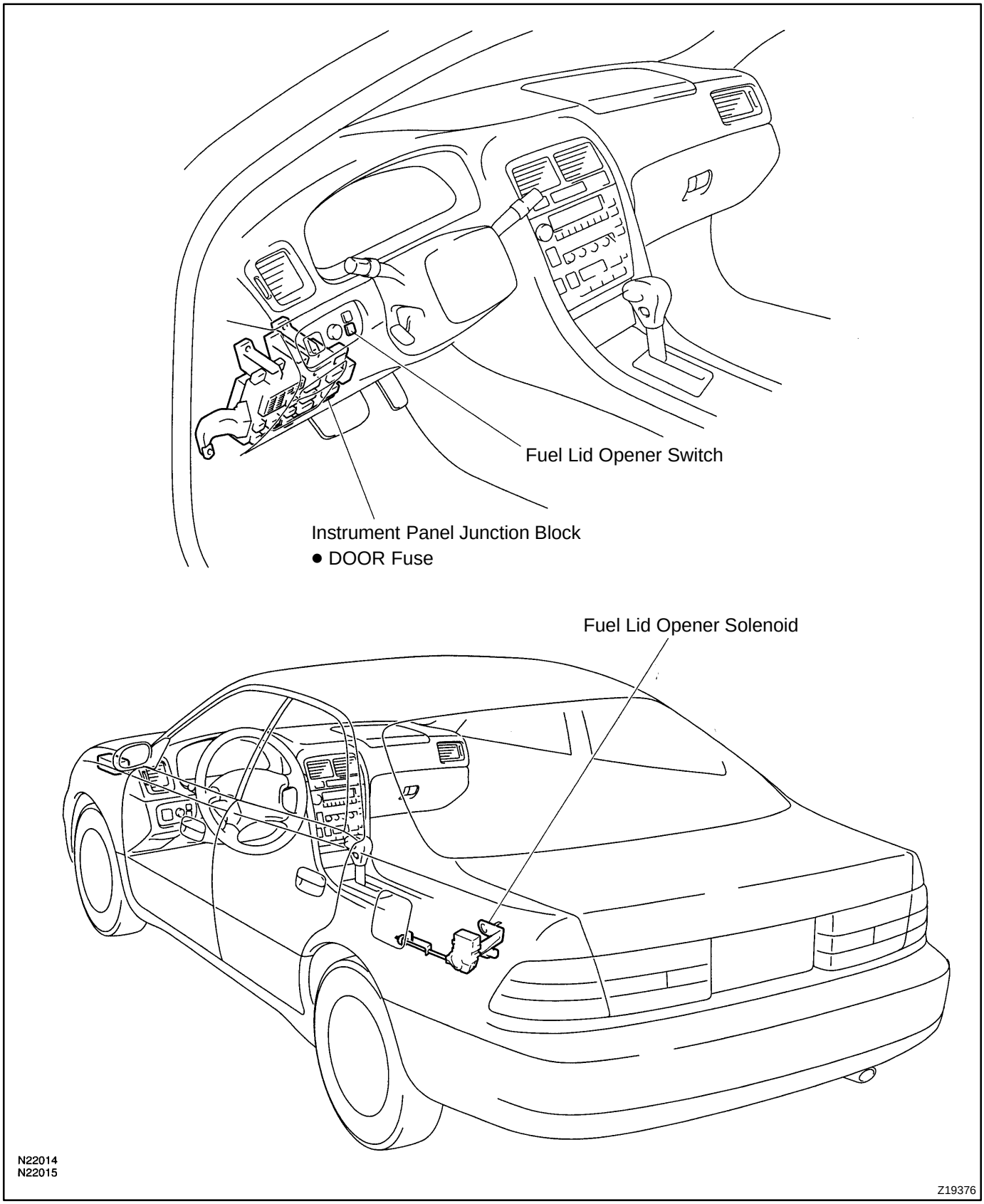
Check that there is continuity between terminals 1 and 2.

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

FUEL LID OPENER SYSTEM

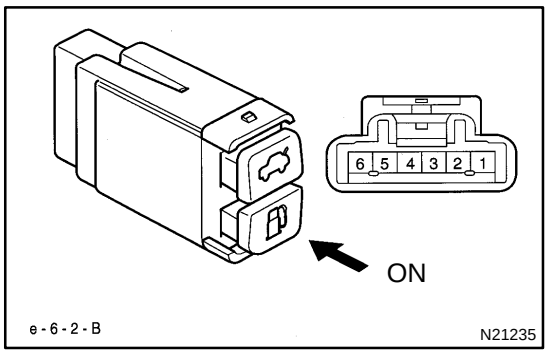
LOCATION

BE05Y–01



BE05Z–01

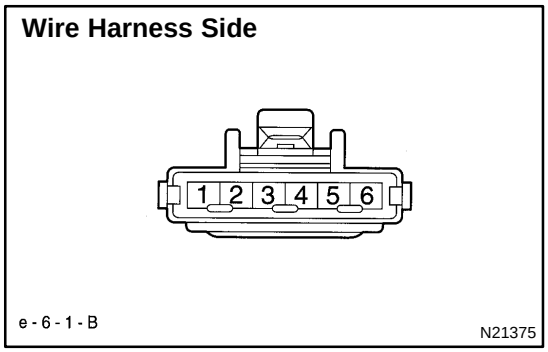
INSPECTION



1. INSPECT FUEL LID OPENER SWITCH CONTINUITY

(a) Check that continuity exists between terminals 2 and 3 with the switch ON.
(Switch button pushed)

(b) Check that no continuity exists between terminals 2 and 3 with the switch OFF.
(Switch button released)

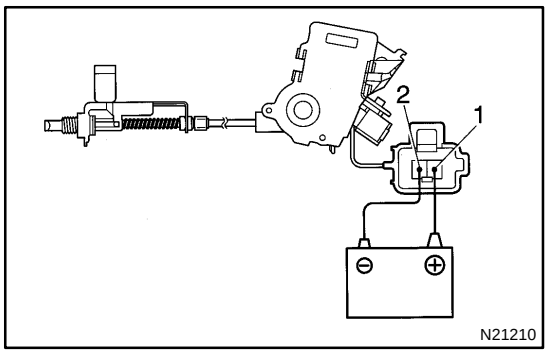


2. INSPECT FUEL LID OPENER SWITCH CIRCUIT

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	Continuity
3 – Ground	Constant	Battery positive voltage

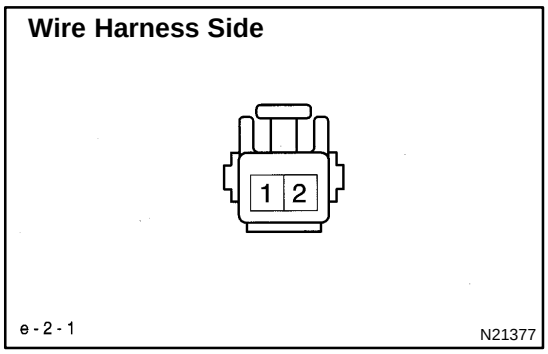
If the circuit is not specified, inspect power source or wire harness.



3. INSPECT FUEL LID OPENER SOLENOID OPERATION

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

If operation is not as specified, replace the solenoid.



4. INSPECT FUEL LID OPENER SOLENOID CIRCUIT

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

Tester connection	Condition	Specified condition
2 – Ground	Constant	Continuity
1 – Ground	Fuel lid opener switch OFF	No voltage
1 – Ground	Fuel lid opener switch ON	Battery positive voltage

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

AUDIO SYSTEM

BE060–01

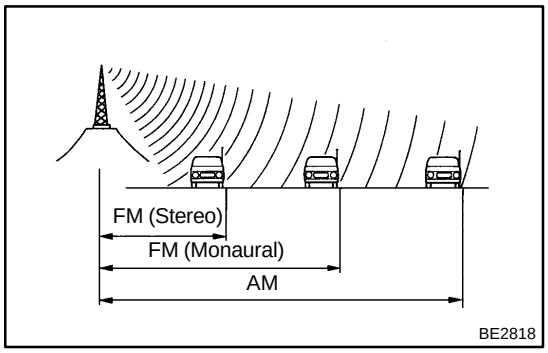
DESCRIPTION

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

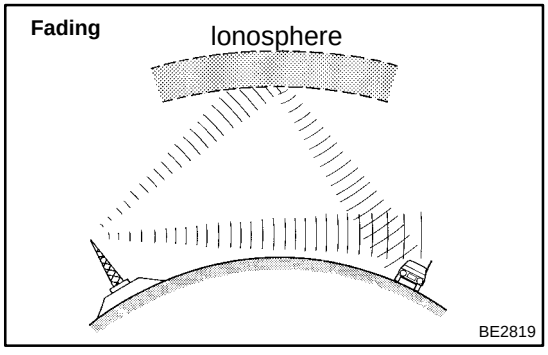


2. SERVICE AREA

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.

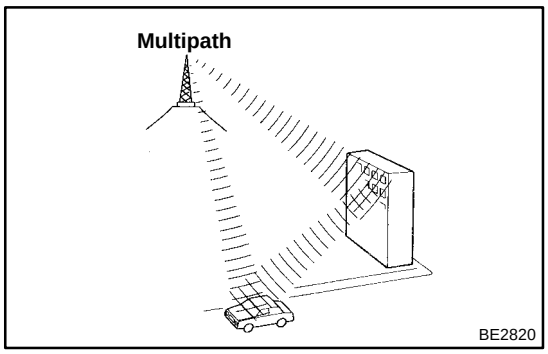
3. RECEPTION PROBLEMS

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.



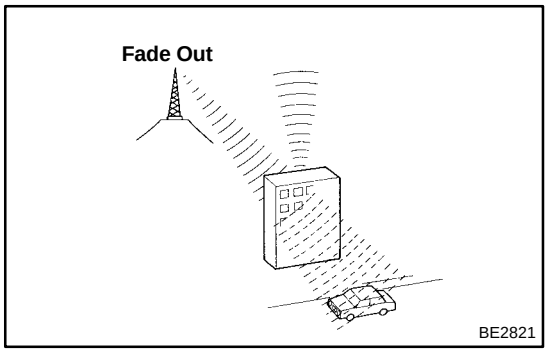
(a) Fading

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”.



(b) 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.



(c) 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.

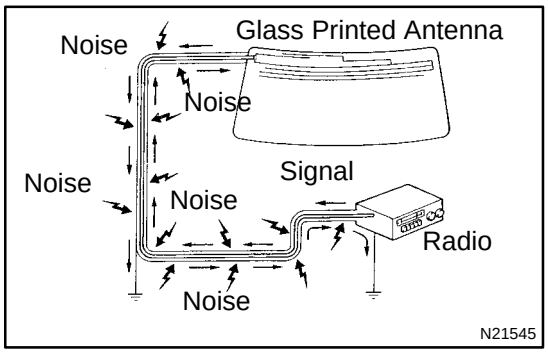
HINT:

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:

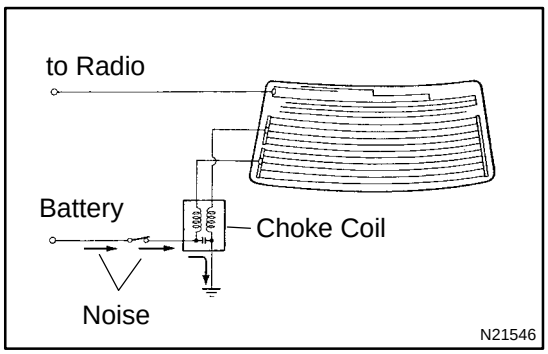
- Noise coming into the radio usually has no harm for practical use as the noise protection is taken and it is hardly thinkable for an extremely loud noise to come in. When extremely loud noise comes into the radio, check if the grounding is normal where the antenna is installed.
- Check if all the regular 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:

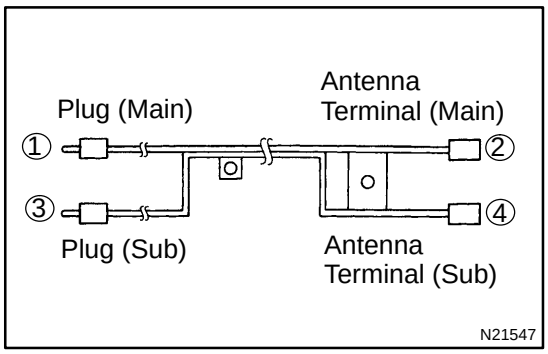
Electronic signal received by the antenna will reach to the radio transmitting through the core wire of the coaxial cable. Any noise wave other than radio wave is mixed into this core wire, that naturally causes noise in the radio and poor sound quality. In order to prevent these noises from mixing into 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.



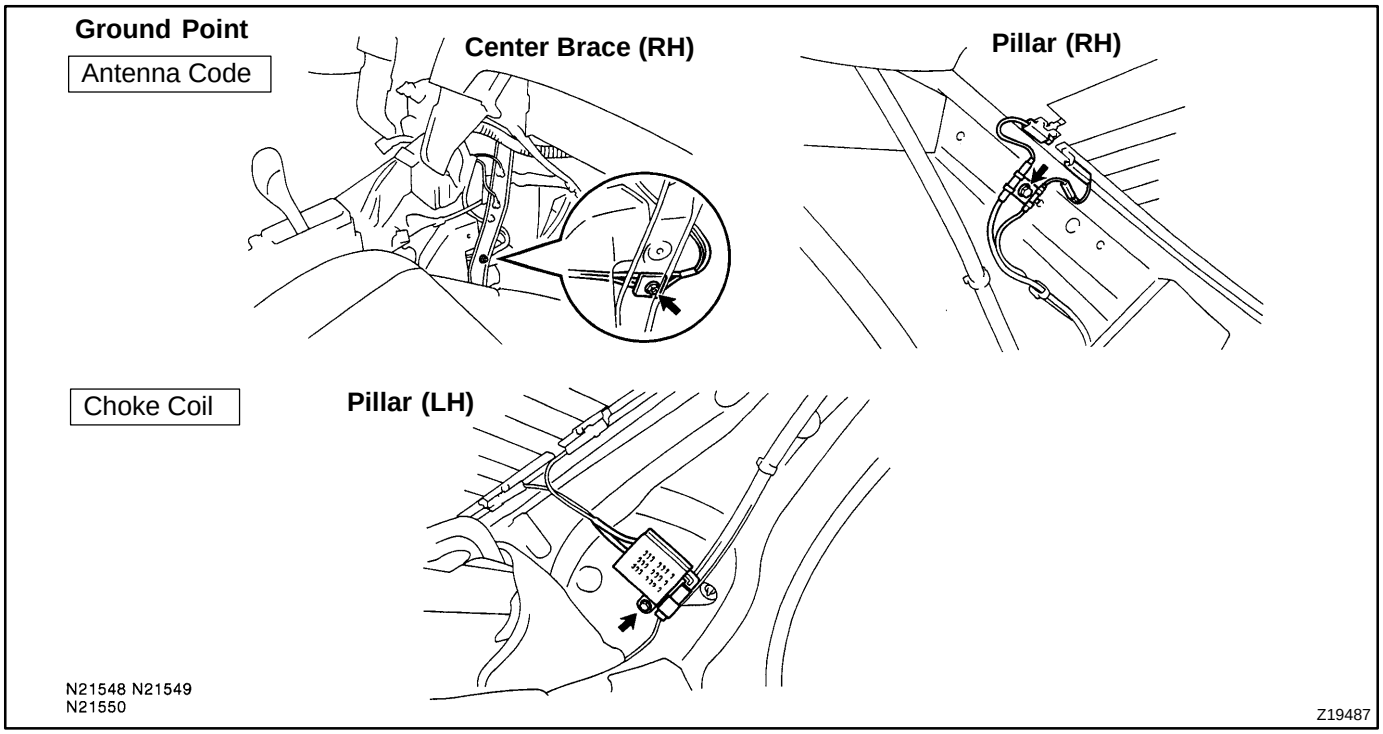
(d) Choke coil and noise:

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.



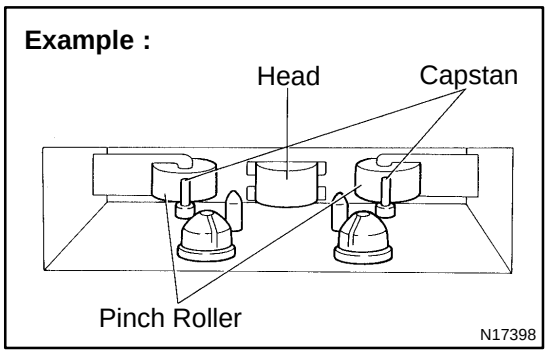
(e) Antenna code continuity check and grounding point:
HINT:
During troubleshooting, in case that the antenna code continuity check, grounding check and grounding check of the choke coil are needed, please check refering to the following illustration.

Terminal connection	Normal condition
(1) ↔ (2)	Continuity
(3) ↔ (4)	No continuity



5. COMPACT DISC PLAYER

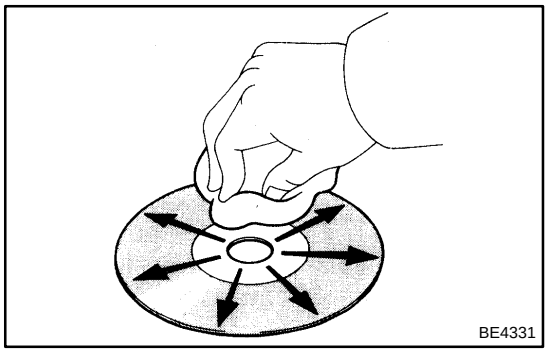
Compact Disc (hereafter called ”CD”) Players use a laser beam pick–up to read the digital signals recorded on the CD and reproduce analog signals of the music, etc. There are 4.7 in. (12 cm) and 3.2 in. (8 cm) discs in the CD player.
HINT:
Never attempt to disassemble or oil any part of the player unit. 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.

BE061–01

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

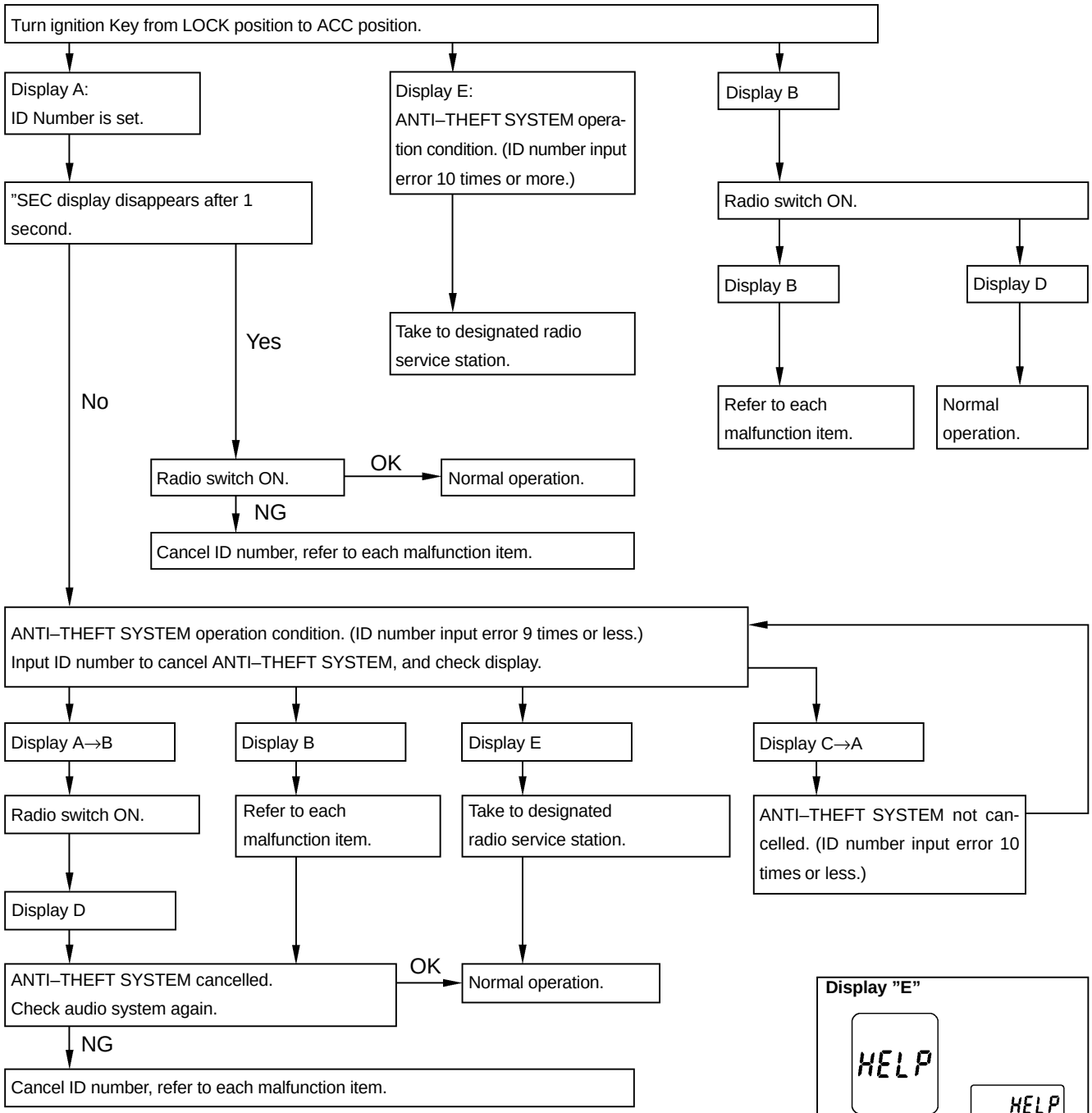
Connector or terminal connection fault

For audio systems with anti–theft system, troubleshooting items marked (*) indicate that ”Troubleshooting for ANTI–THEFT SYSTEM” should be carried out first.

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

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

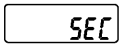
Troubleshooting for ANTI–THEFT SYSTEM



Liquid Crystal Display (LCD) or VFD for Audio System

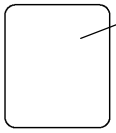
Display "A"

2 DIN Type

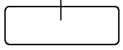


1 DIN Type

Display "B"

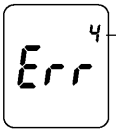


2 DIN Type

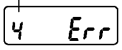


1 DIN Type

Display "C"



2 DIN Type



1 DIN Type

Display "D" Example:

2 DIN Type

1 DIN Type

Display "E"

2 DIN Type

1 DIN Type

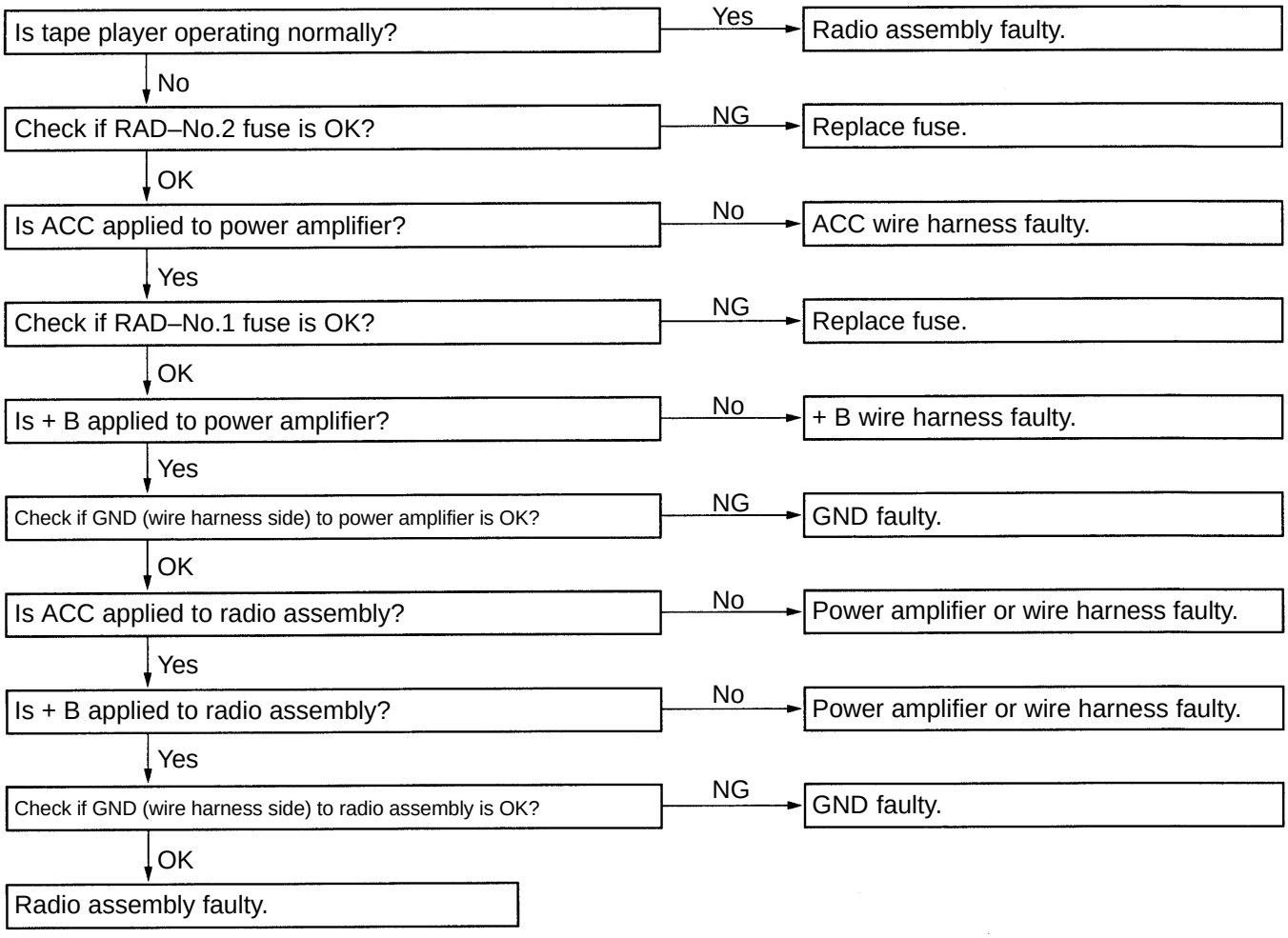
HINT:

- Refer to Owner's Manual for operation details of ANTI–THEFT SYSTEM.
- When the ID number has been cancelled, reset the same number after completing the operation, or inform the customer that it has been cancelled.

V08418

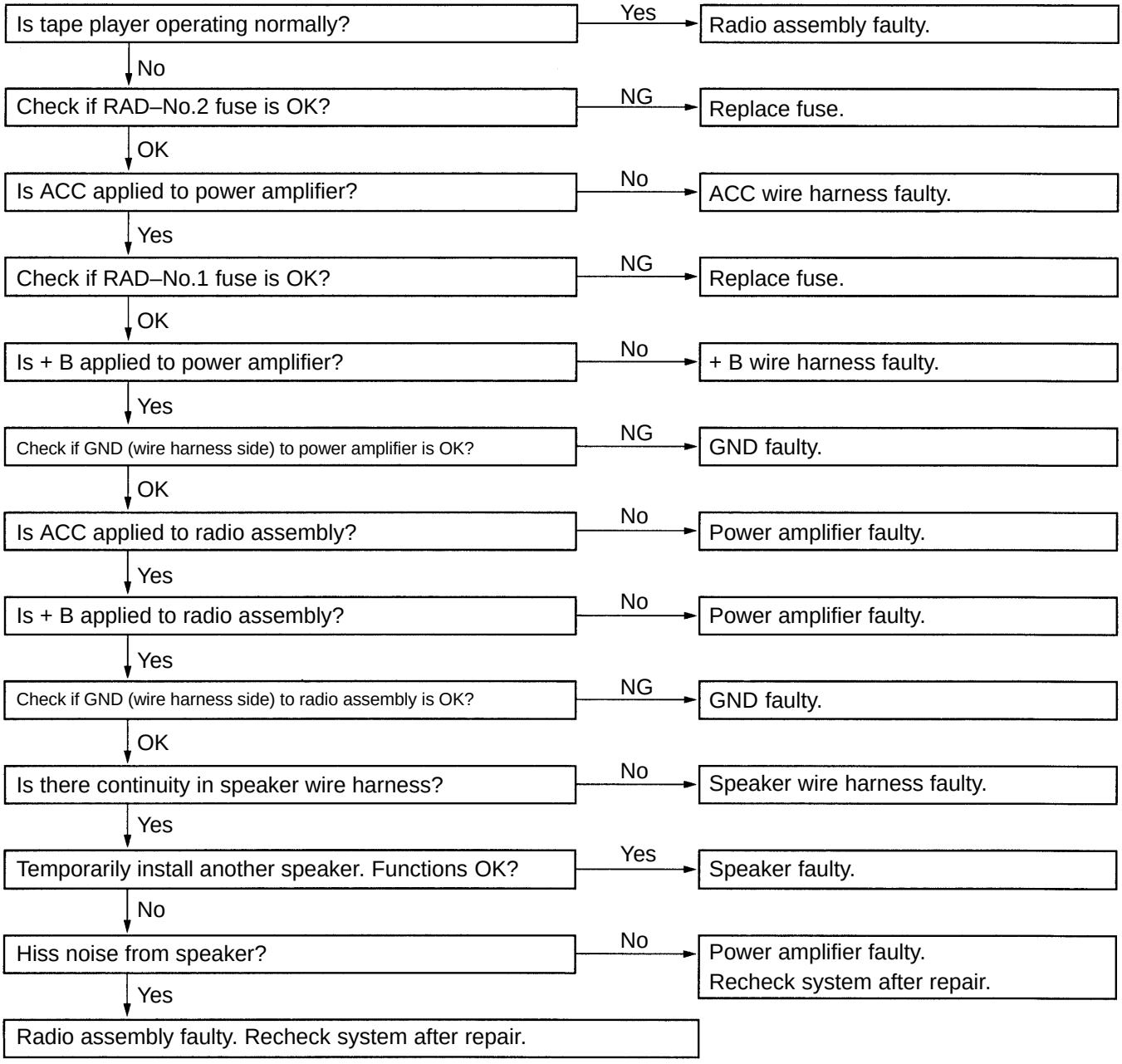
*

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



V08480

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



V08481

3	Radio	NOISE PRESENT, BUT AM–FM NOT OPERATING

Go to No.25

If radio side faulty. → Radio faulty.

4	Radio	ANY SPEAKER DOSE NOT WORK

Is tape player operating normally? Yes → Radio assembly faulty.

No

Is hiss noise produced by non–functioning speaker? Yes → Radio assembly faulty. Recheck system after repair.

No

Is there continuity in speaker wire harness? No → Speaker wire harness faulty.

Yes

Temporarily install another speaker? Functions OK? Yes → Speaker faulty.

No

Power amplifier faulty. Recheck system after repair.

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

Problem with radio wave signals or location? Yes → Poor signals, poor location.

No

Are both AM and FM defective? Yes → Radio assembly faulty.

No

Is power for the antenna being output from the radio assembly? No → Radio assembly faulty.

Yes

Go to No.16

Is tape player operating normally? Yes → Radio assembly faulty.

No

Temporarily install another speaker. Functions OK? Yes → Speaker faulty.

No

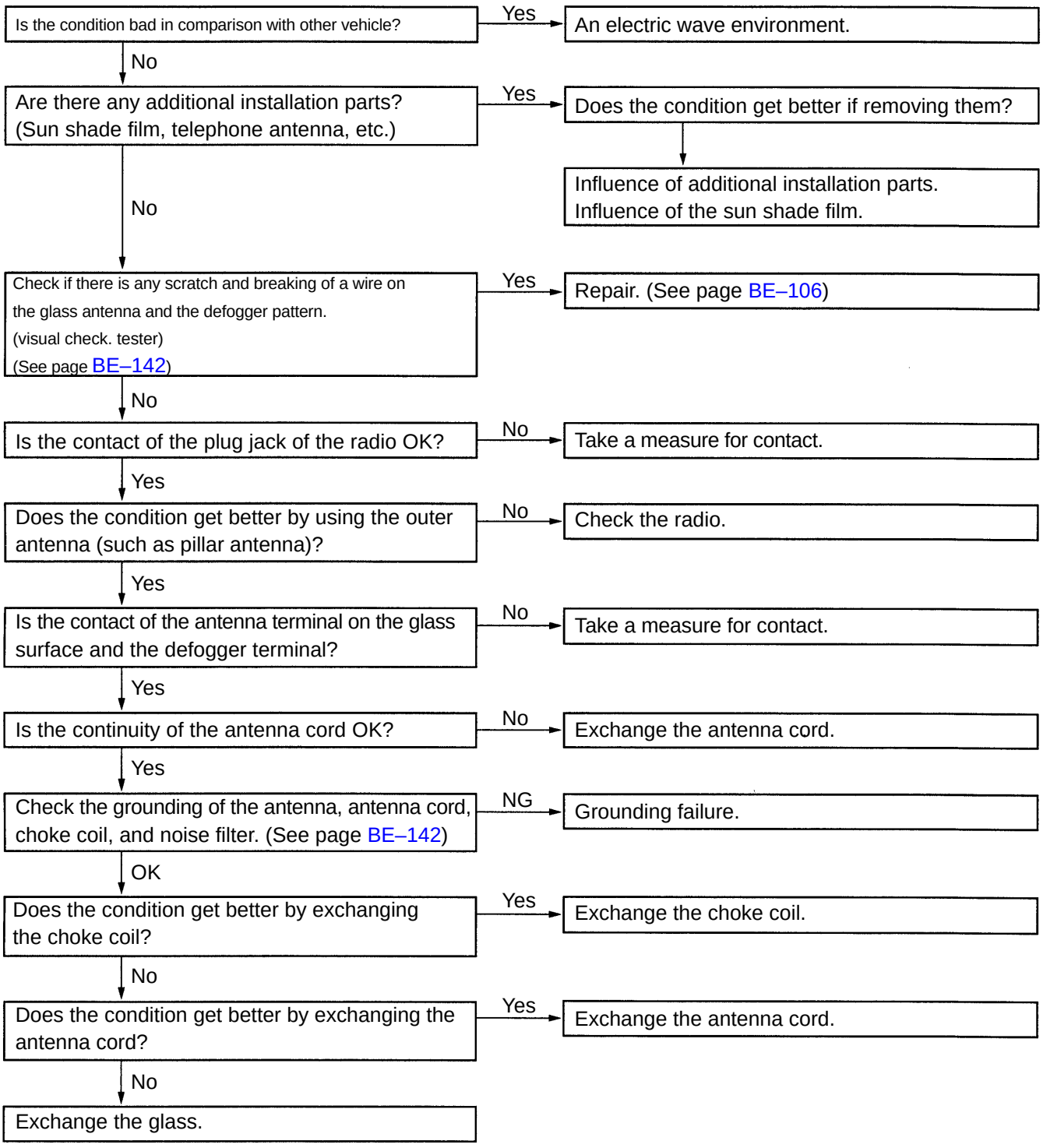
Hiss noise from speaker? No → Power amplifier faulty. Recheck system after repair.

Yes

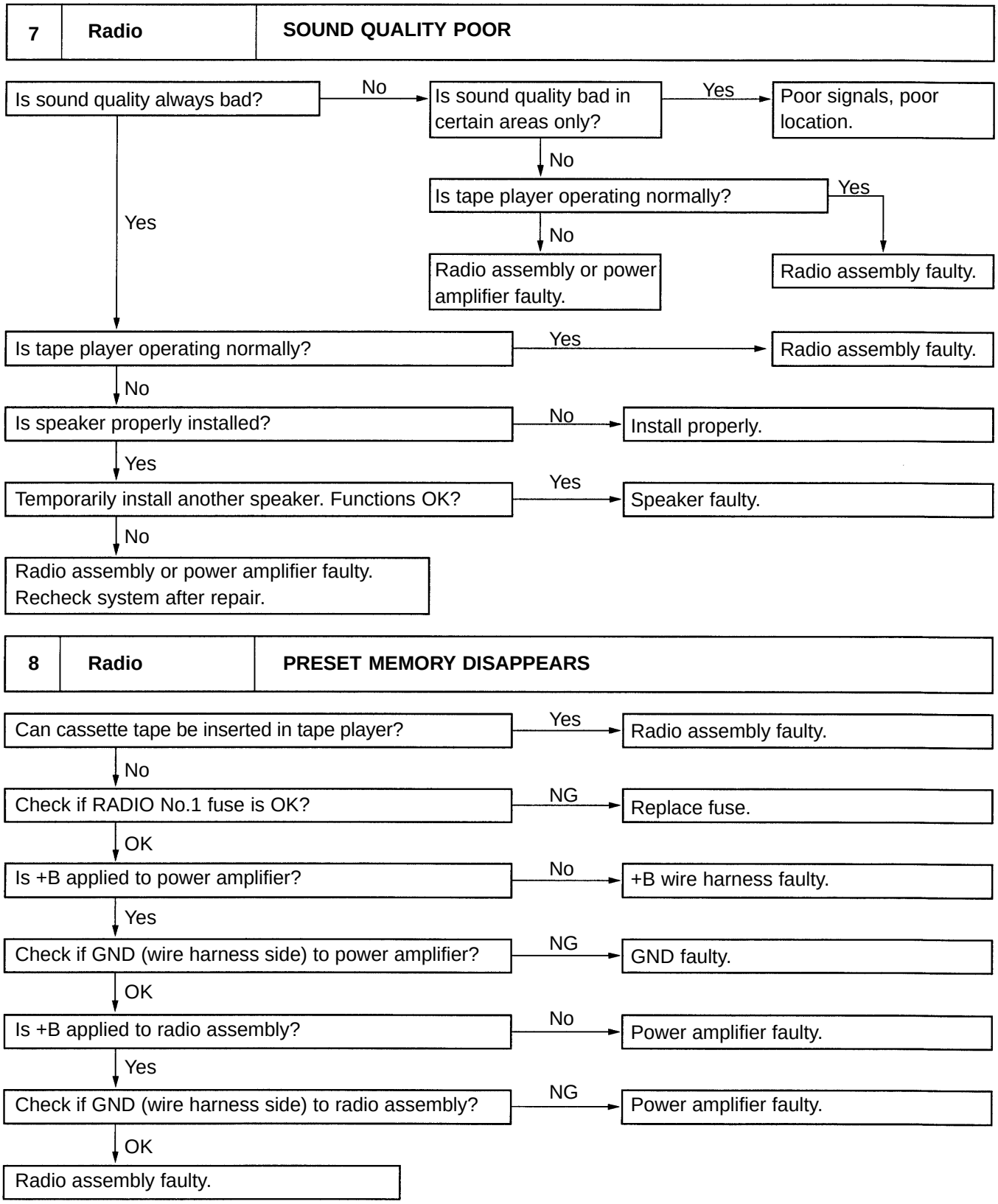
Radio assembly faulty. Recheck system after repair.

V08482

6	Radio	POOR RECEPTION

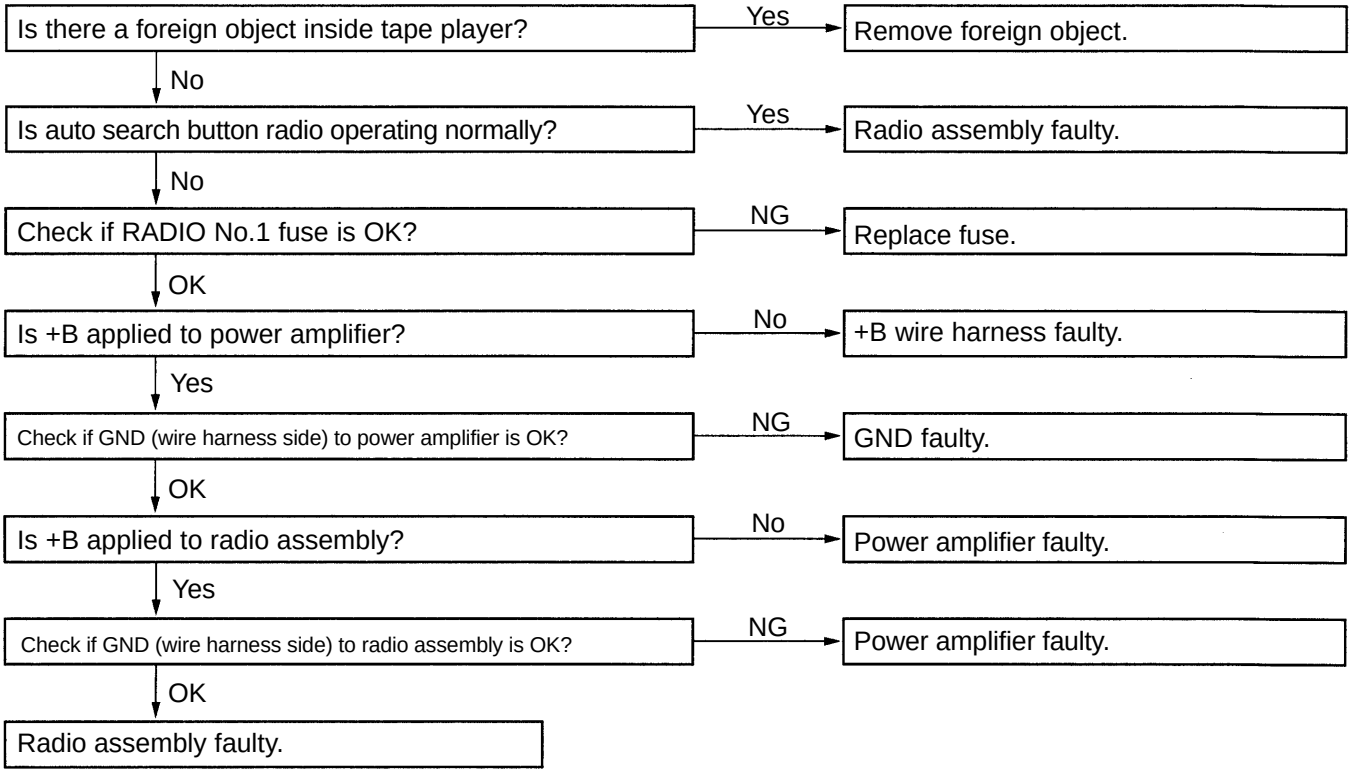


V08549

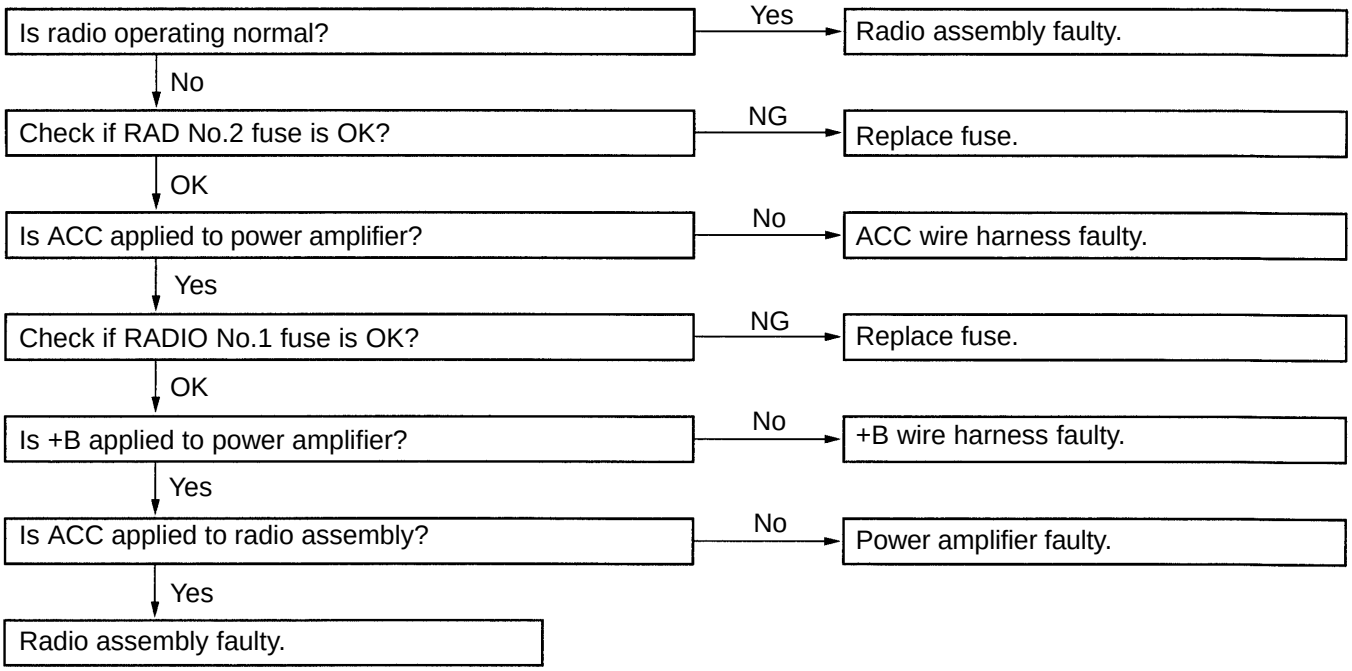

7
Radio
SOUND QUALITY POOR
Is sound quality always bad?
No
Is sound quality bad in certain areas only?
Yes
Poor signals, poor location.
No
Is tape player operating normally?
Yes
Radio assembly faulty.
No
Radio assembly or power amplifier faulty.
Yes
Is tape player operating normally?
Yes
Radio assembly faulty.
No
Is speaker properly installed?
No
Install properly.
Yes
Temporarily install another speaker. Functions OK?
Yes
Speaker faulty.
No
Radio assembly or power amplifier faulty.
Recheck system after repair.
8
Radio
PRESET MEMORY DISAPPEARS
Can cassette tape be inserted in tape player?
Yes
Radio assembly faulty.
No
Check if RADIO No.1 fuse is OK?
NG
Replace fuse.
OK
Is +B applied to power amplifier?
No
+B wire harness faulty.
Yes
Check if GND (wire harness side) to power amplifier?
NG
GND faulty.
OK
Is +B applied to radio assembly?
No
Power amplifier faulty.
Yes
Check if GND (wire harness side) to radio assembly?
NG
Power amplifier faulty.
OK
Radio assembly faulty.

V08483

9	Tape Player	CASSETTE TAPE CANNOT BE INSERTED

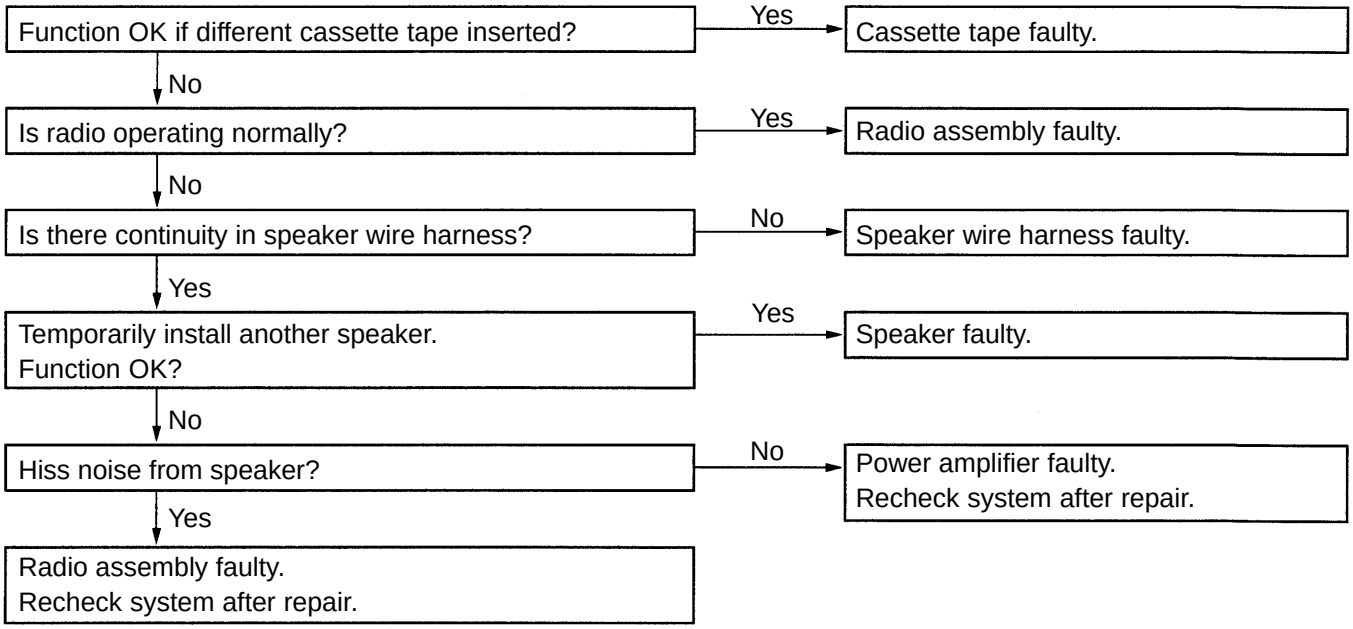


10	Tape Player	CASSETTE TAPE INSERTED, BUT NO POWER

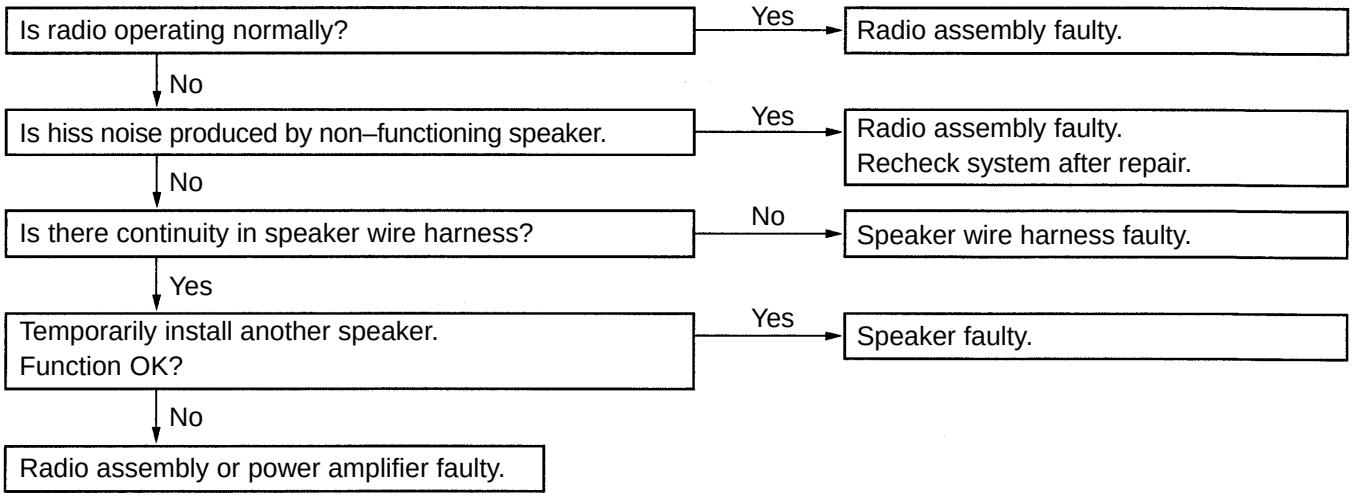


V08484

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



12	Tape Player	EITHER SPEAKER DOES NOT WORK



V08485

13	Tape Player	SOUND QUALITY POOR (VOLUME FAINT)

Function OK if different cassette tape inserted?
- Yes → Cassette tape faulty.
- No ↓

Operates normally after cleaning the heads?
- Yes → Head dirty.
- No ↓

Is radio operating normally?
- Yes → Radio assembly faulty.
- No ↓

Is speaker properly installed?
- No → Install properly.
- Yes ↓

Temporarily install another speaker. Function OK?
- Yes → Speaker faulty.
- No ↓

Radio assembly faulty.

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

Function 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?
- Yes → Head dirty.
- No ↓

Radio assembly faulty.

15	Tape Player	CASSETTE TAPE WILL NOT EJECTED

Is tape player operating normally?
- No → Cassette tape jammed.
- Yes ↓

Is auto search button of radio operating normally?
- Yes → Radio assembly faulty.
- No ↓

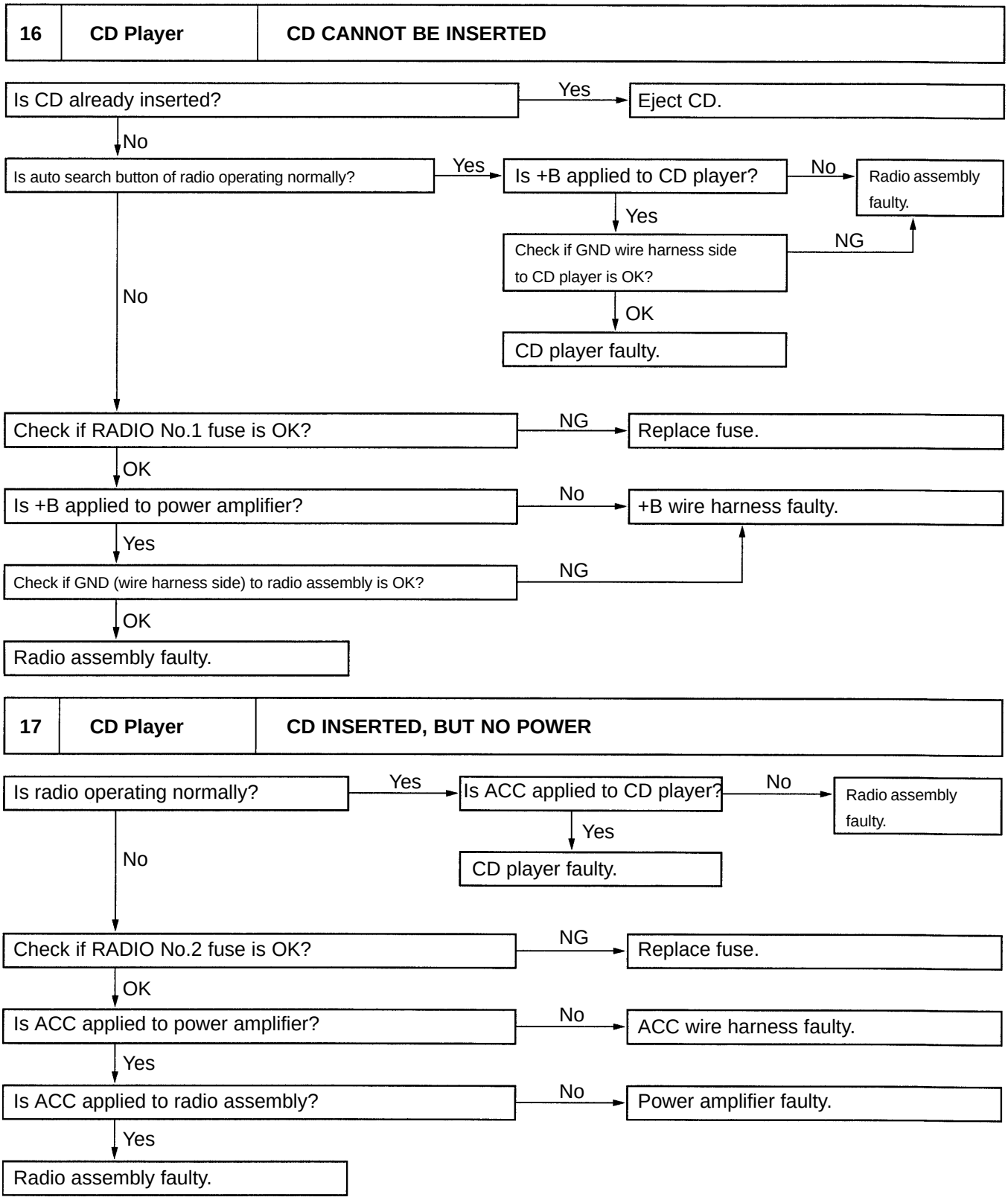
Check if RADIO No.1 fuse is OK?
- NG → Replace fuse.
- OK ↓

Is –B applied to power amplifier?
- No → +B wire harness faulty.
- Yes ↓

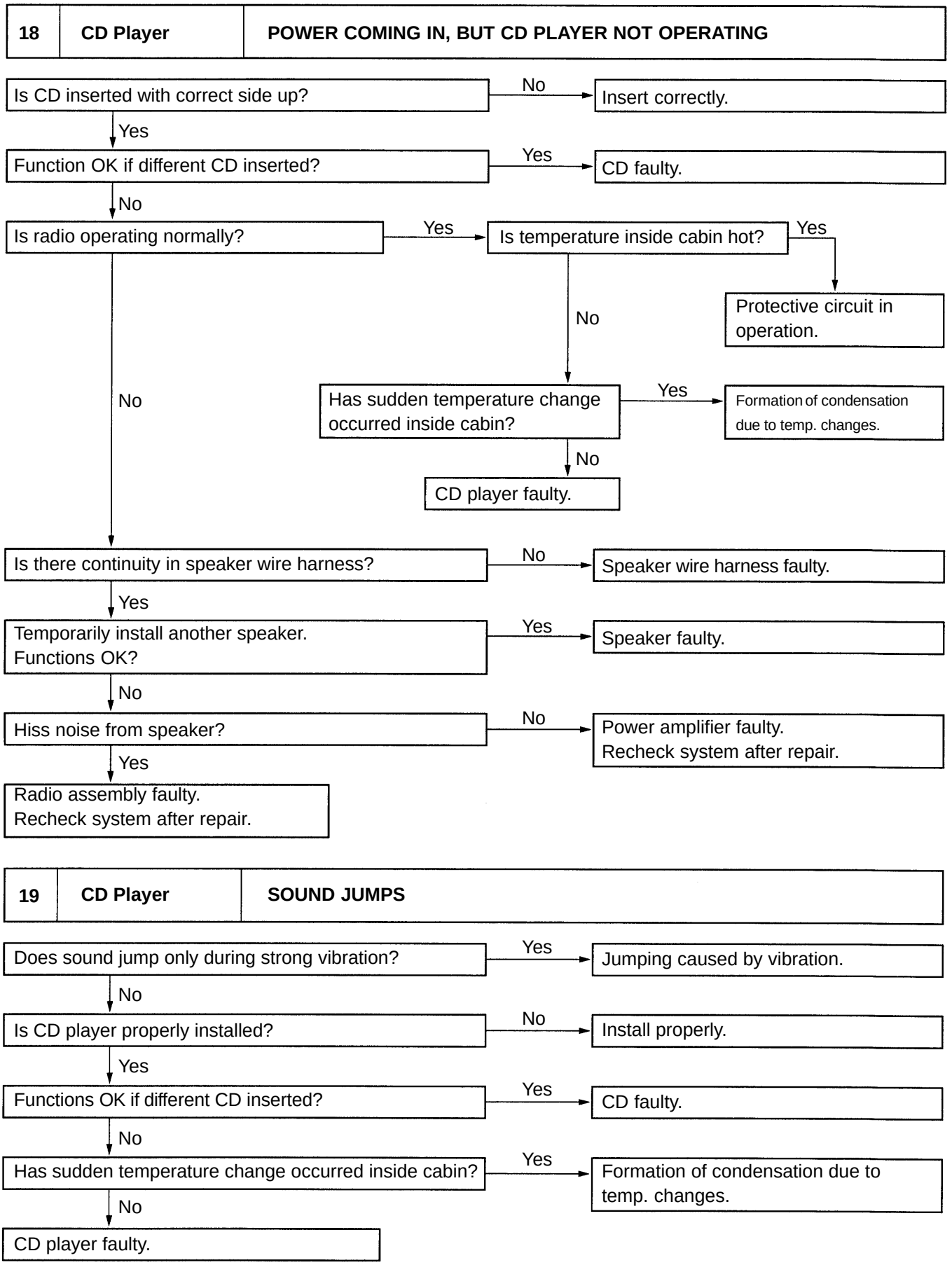
Is +B applied to radio assembly?
- No → Power amplifier faulty.
- Yes ↓

Radio assembly faulty.

V08486

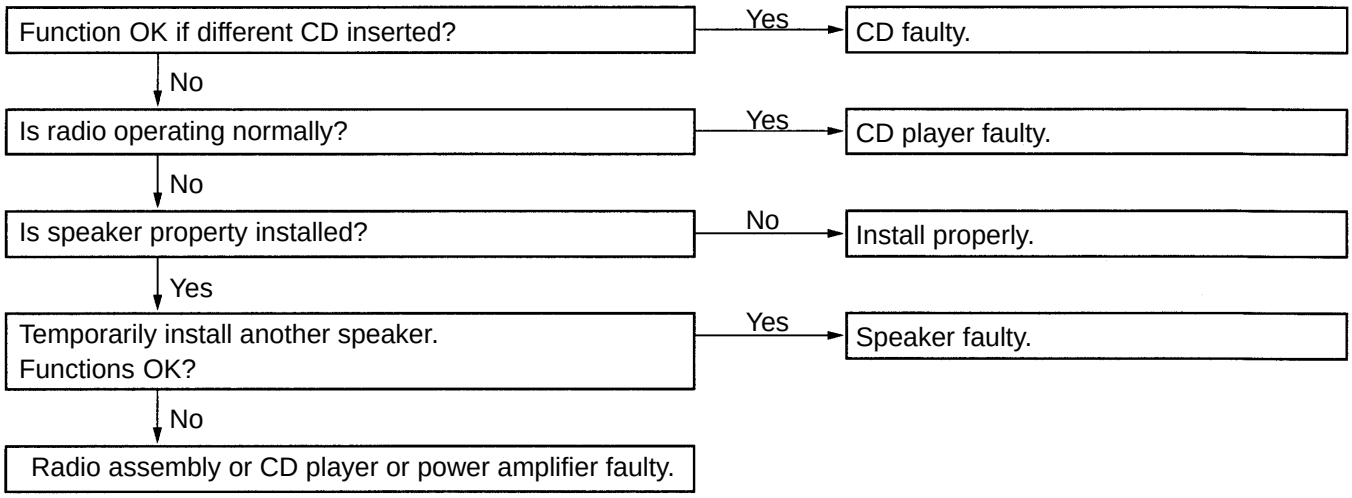

16
CD Player
CD CANNOT BE INSERTED
Is CD already inserted?
Yes
Eject CD.
No
Is auto search button of radio operating normally?
Yes
Is +B applied to CD player?
No
Radio assembly faulty.
Yes
Check if GND wire harness side to CD player is OK?
NG
OK
CD player faulty.
No
Check if RADIO No.1 fuse is OK?
NG
Replace fuse.
OK
Is +B applied to power amplifier?
No
+B wire harness faulty.
Yes
Check if GND (wire harness side) to radio assembly is OK?
NG
OK
Radio assembly faulty.
17
CD Player
CD INSERTED, BUT NO POWER
Is radio operating normally?
Yes
Is ACC applied to CD player?
No
Radio assembly faulty.
Yes
CD player faulty.
No
Check if RADIO No.2 fuse is OK?
NG
Replace fuse.
OK
Is ACC applied to power amplifier?
No
ACC wire harness faulty.
Yes
Is ACC applied to radio assembly?
No
Power amplifier faulty.
Yes
Radio assembly faulty.

V08487

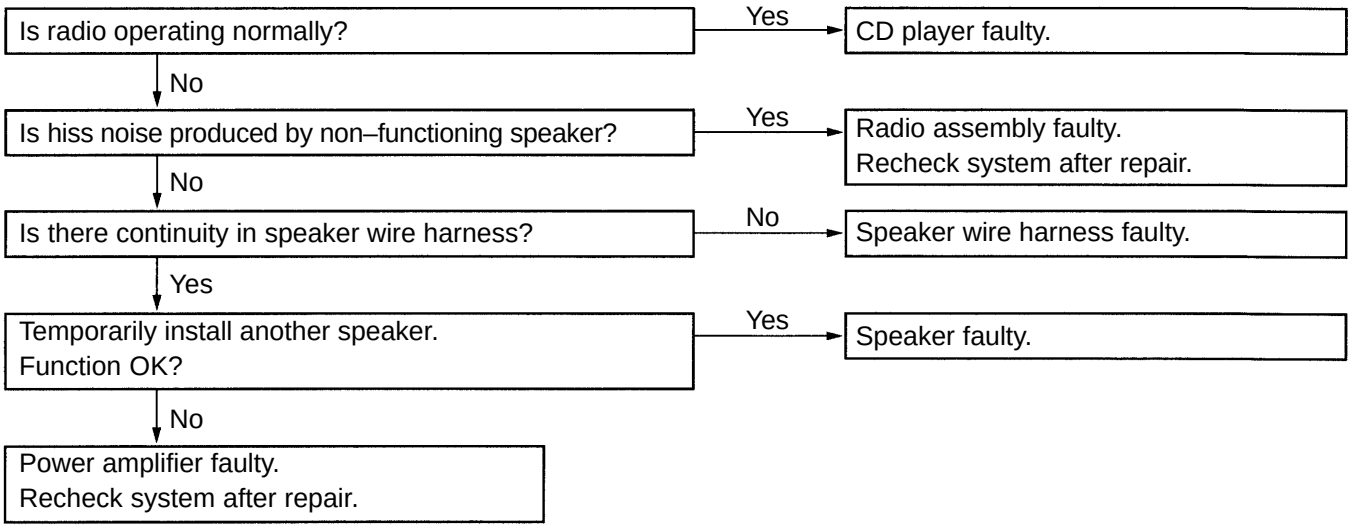

18
CD Player
POWER COMING IN, BUT CD PLAYER NOT OPERATING
Is CD inserted with correct side up?
No
Insert correctly.
Yes
Function OK if different CD inserted?
Yes
CD faulty.
No
Is radio operating normally?
Yes
Is temperature inside cabin hot?
Yes
Protective circuit in operation.
No
Has sudden temperature change occurred inside cabin?
Yes
Formation of condensation due to temp. changes.
No
CD player faulty.
No
Is there continuity in speaker wire harness?
No
Speaker wire harness faulty.
Yes
Temporarily install another speaker. Functions OK?
Yes
Speaker faulty.
No
Hiss noise from speaker?
No
Power amplifier faulty. Recheck system after repair.
Yes
Radio assembly faulty. Recheck system after repair.
19
CD Player
SOUND JUMPS
Does sound jump only during strong vibration?
Yes
Jumping caused by vibration.
No
Is CD player properly installed?
No
Install properly.
Yes
Functions OK if different CD inserted?
Yes
CD faulty.
No
Has sudden temperature change occurred inside cabin?
Yes
Formation of condensation due to temp. changes.
No
CD player faulty.

V08550

20	CD Player	SOUND QUALITY POOR (VOLUME FAINT)

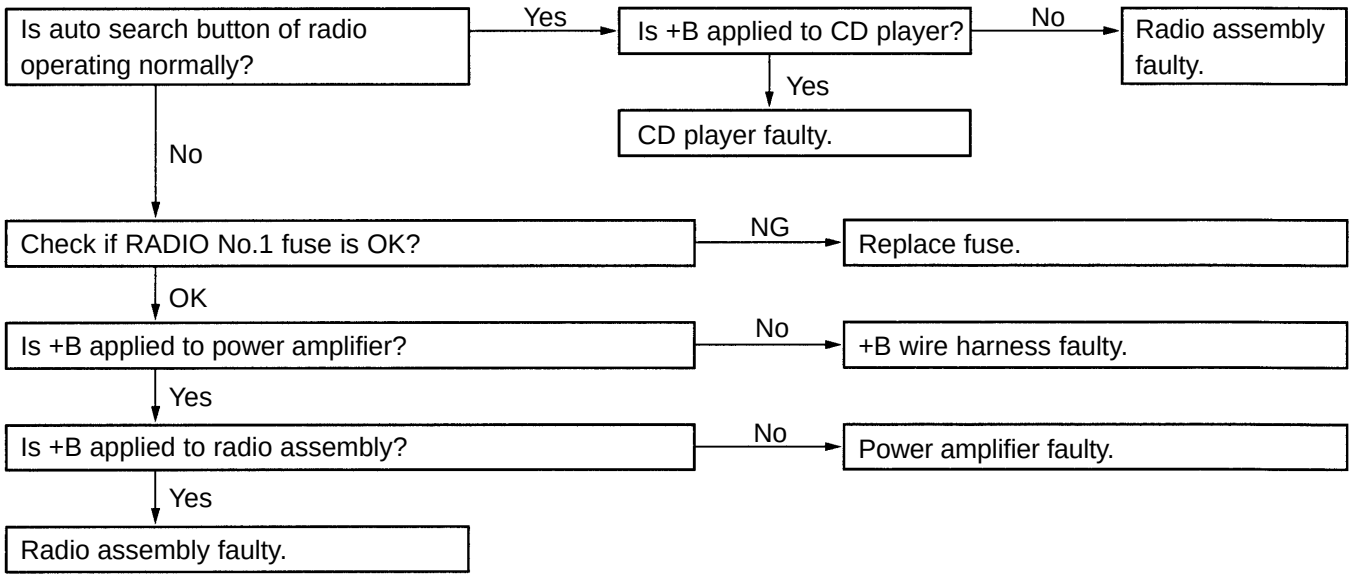


21	CD Player	EITHER SPEAKER DOES NOT WORK



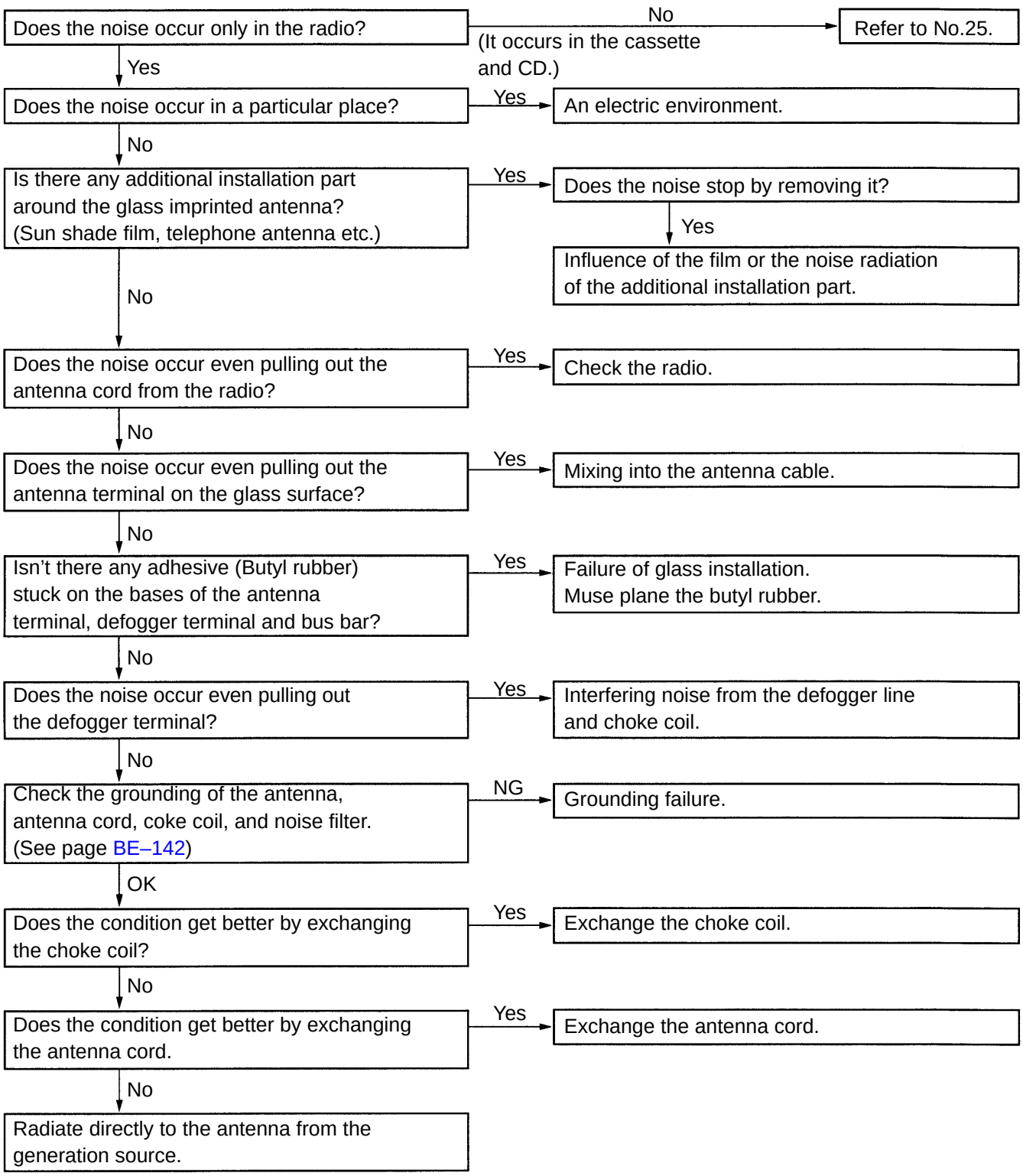
V08551

22	CD Player	CD WILL NOT BE EJECTED

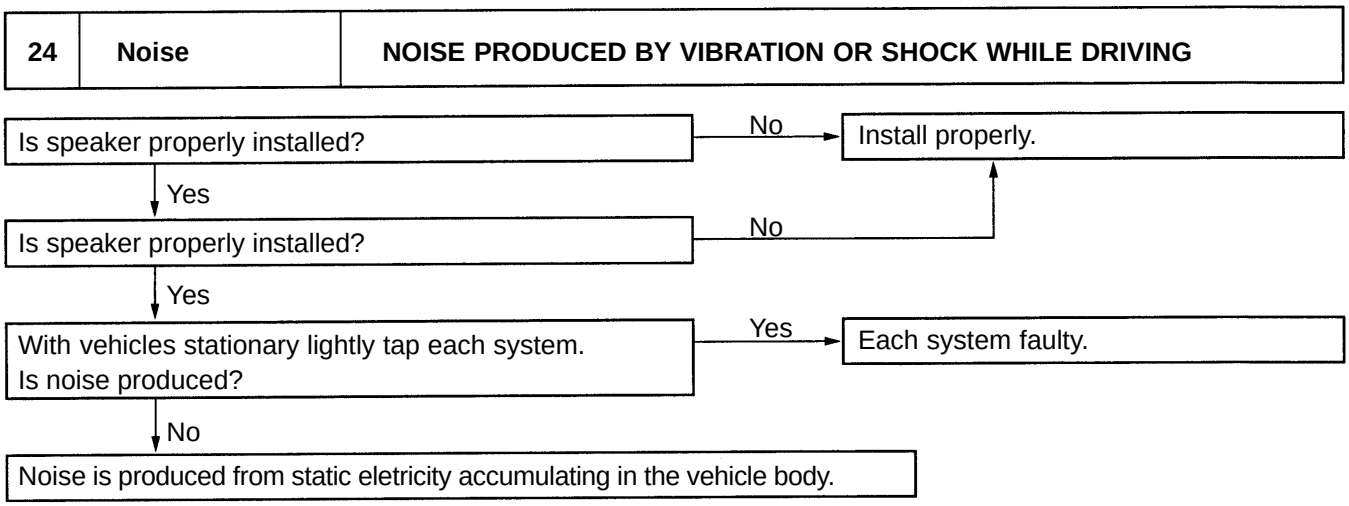


V08488

23	Noise	NOISE OCCURS

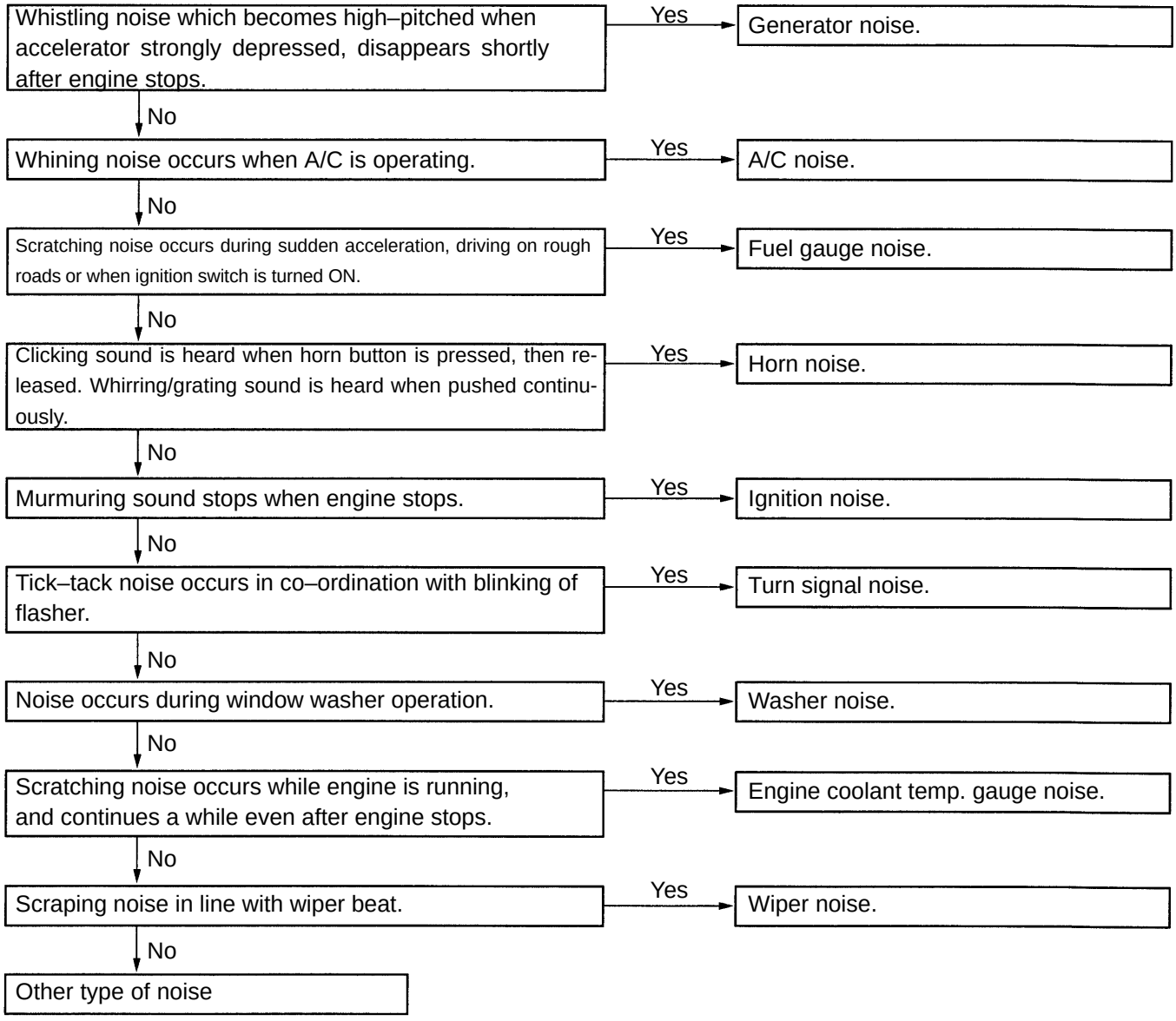


V08552


24
Noise
NOISE PRODUCED BY VIBRATION OR SHOCK WHILE DRIVING
Is speaker properly installed?
No
Install properly.
Yes
Is speaker properly installed?
No
Yes
With vehicles stationary lightly tap each system.
Is noise produced?
Yes
Each system faulty.
No
Noise is produced from static eletricity accumulating in the vehicle body.

V08553

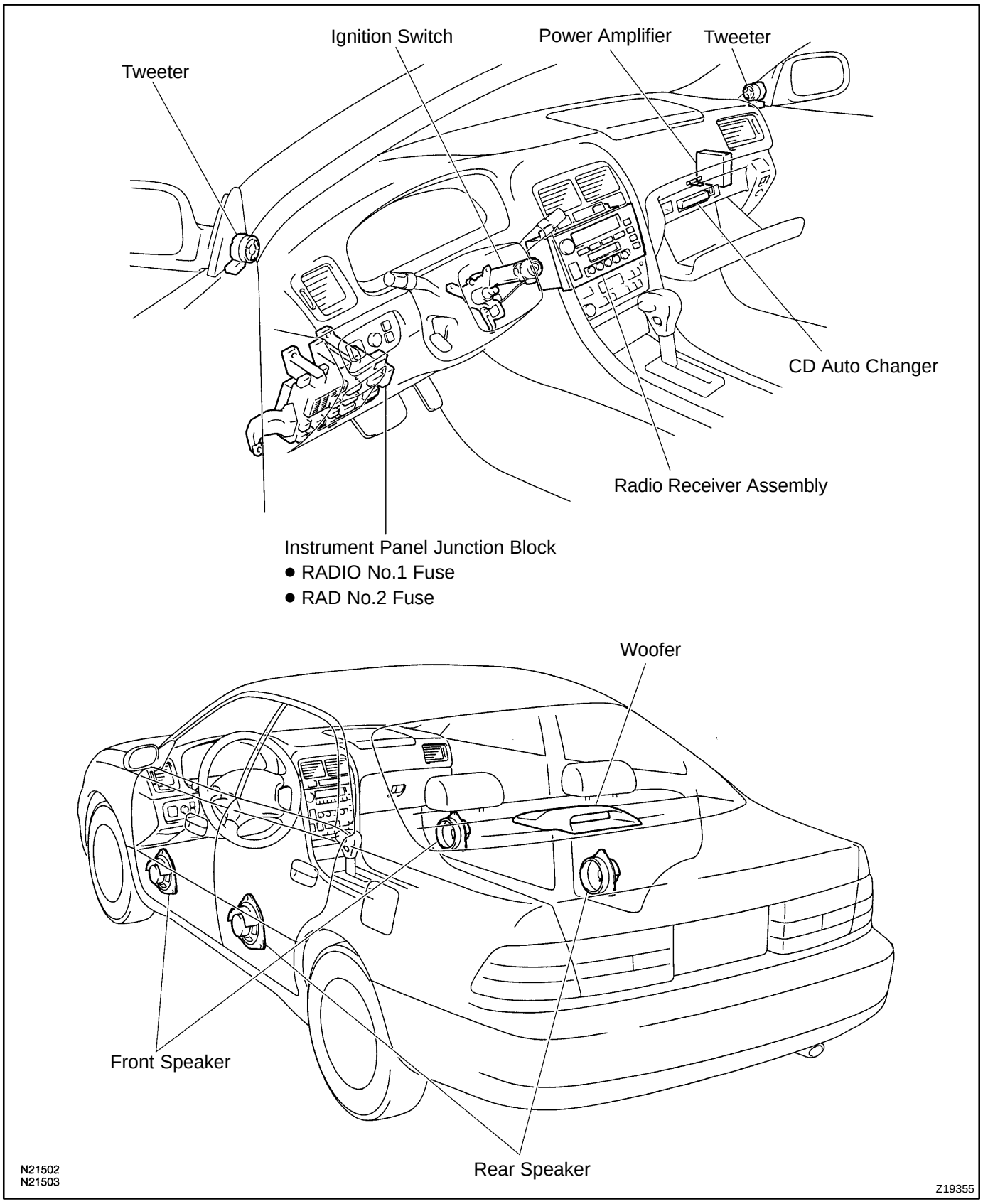
25	Noise	NOISE PRODUCED WHEN ENGINE STARTS



V08554

BE062–01

LOCATION

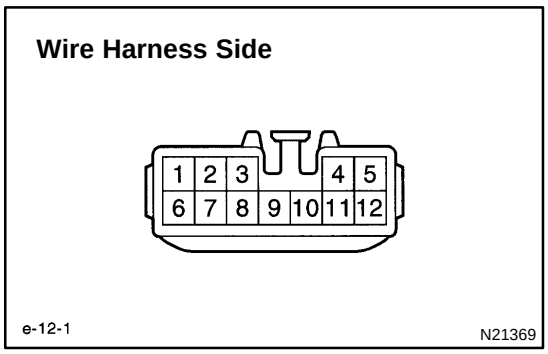


BE063–01

INSPECTION

1. INSPECT CD AUTO CHANGER CIRCUIT

Disconnect connectors from CD auto changer and inspect the connector on the wire harness side.



Tester connection	Condition	Specified condition
8 – Ground	Constant	Continuity
5 – Ground	Constant	Battery positive voltage
12 – Ground	Ignition switch LOCK	No voltage
12 – Ground	Ignition switch ACC or ON	Battery positive voltage

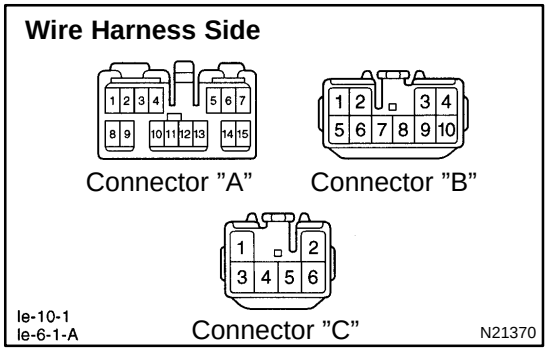
If the circuit is not as specified, inspect the circuits connected to other parts.

HINT:

- Check the wire harness between the radio receiver assembly and the CD auto changer.
- Since the signals to and from the MUTE, R^-, R^+, L^-, L^+, TX^- and TX^+ terminals are serial signals, they cannot ordinarily be measured with a tester.

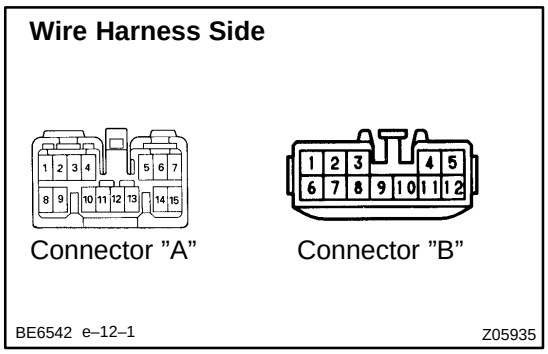
2. INSPECT POWER AMPLIFIER CIRCUIT

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



Tester connection	Condition	Specified condition
C7 – Ground	Constant	Continuity
C3 – Ground	Ignition switch LOCK	No voltage
C3 – Ground	Ignition switch ACC or ON	Battery positive voltage
C4 – Ground	Constant	Battery positive voltage

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



3. INSPECT RADIO RECEIVER ASSEMBLY CIRCUIT

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

Tester connection	Condition	Specified condition
A4 – Ground	Constant	Battery positive voltage
A3 – Ground	Ignition switch LOCK	No voltage
A3 – Ground	Ignition switch ACC or ON	Battery positive voltage

If the 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.

4. INSPECT GLASS IN PRINTED ANTENNA

(Use same procedure as for ”INSPECT DEFOGGER WIRES” on page BE–126.)

5. REPAIR GLASS PRINTED ANTENNA

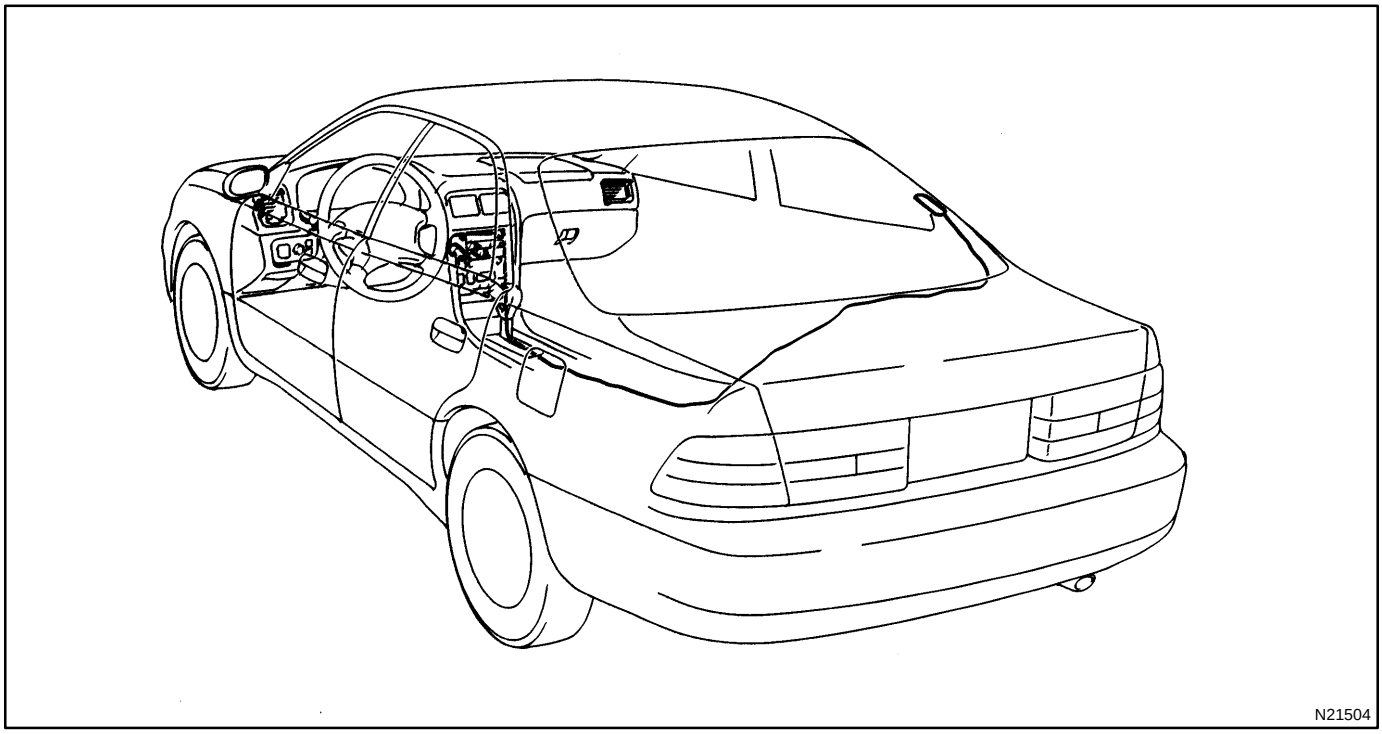
(Use same procedure as for ”REPAIR DEFOGGER WIRES” on page BE–127.)

ANTENNA CORD

BE064–01

REMOVAL

REMOVE ANTENNA CORD



(a) Remove the following parts:
- Instrument panel assembly
- Console box
- Rear seat
- Right rear poller garnish
- Package tray trim
- Room partition trim

HINT:
See BO section

(b) Remove antenna cord from glass printed antenna.
(c) Disconnect the connectors shown in the illustration.
(d) Remove the clips and antenna cord assembly.

BE065–01

INSTALLATION

Installation is in the reverse order of removal (See page BE–167).

CLOCK

TROUBLESHOOTING

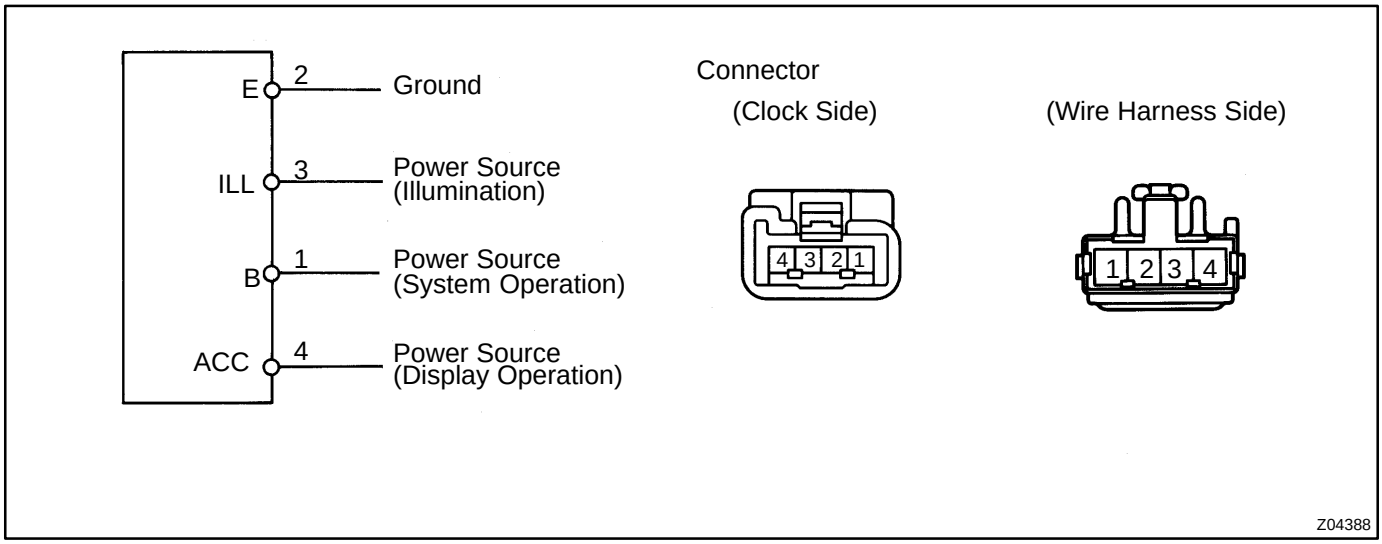
BE066–01

HINT:

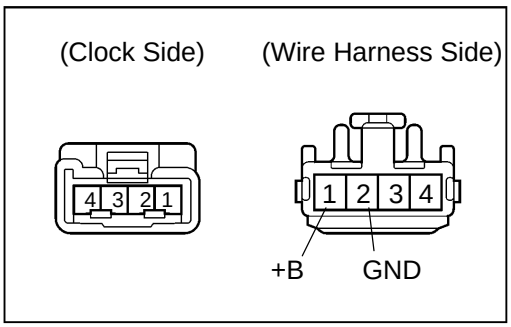
Troubleshoot the clock according to the table below.

Clock will not operate	1
Clock loses or gains time	2

± 1.5 seconds / day



1	CLOCK WILL NOT OPERATE



(a) Check that the battery positive voltage is 10 –14 V.
If voltage is not as specified, replace the battery.

(b) Check that the DOME fuse is not blown.
If the fuse is blown, replace the fuse and check for short circuit.

(c) Troubleshoot the clock as follows.
HINT:
Inspect the connector on the wire harness side.

Is there battery voltage between terminal +B and body ground?
- No → Open or short circuit in wire harness between terminal +B and DOME fuse.
- Yes ↓

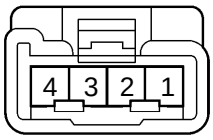
Does continuity exist between terminal GND and body ground?
- No → Open circuit in wire harness between terminal GND and body ground.
- Yes ↓

Replace clock.

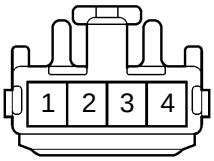
I01417

2	CLOCK LOSES OR GAINS TIME

(Clock Side)



(Wire Harness Side)



(a) Check that the battery positive voltage is 10–16 V.
If voltage is not as specified, replace the battery.

(b) Inspect the error of the clock.
Allowable error (per day): ± 1.5 sec.
If the error exceeds the allowable error, replace the clock.

(c) Check that the clock adjusting button is caught in position, and does not return.
If the button is not returned, repair or replace the clock.

(d) Troubleshoot the clock as follows.
HINT:
Inspect the connector on the wire harness side.

Is there 10 – 16 V between terminal +B and body ground?

Below 10V → Detect cause and repair, or recharge battery.

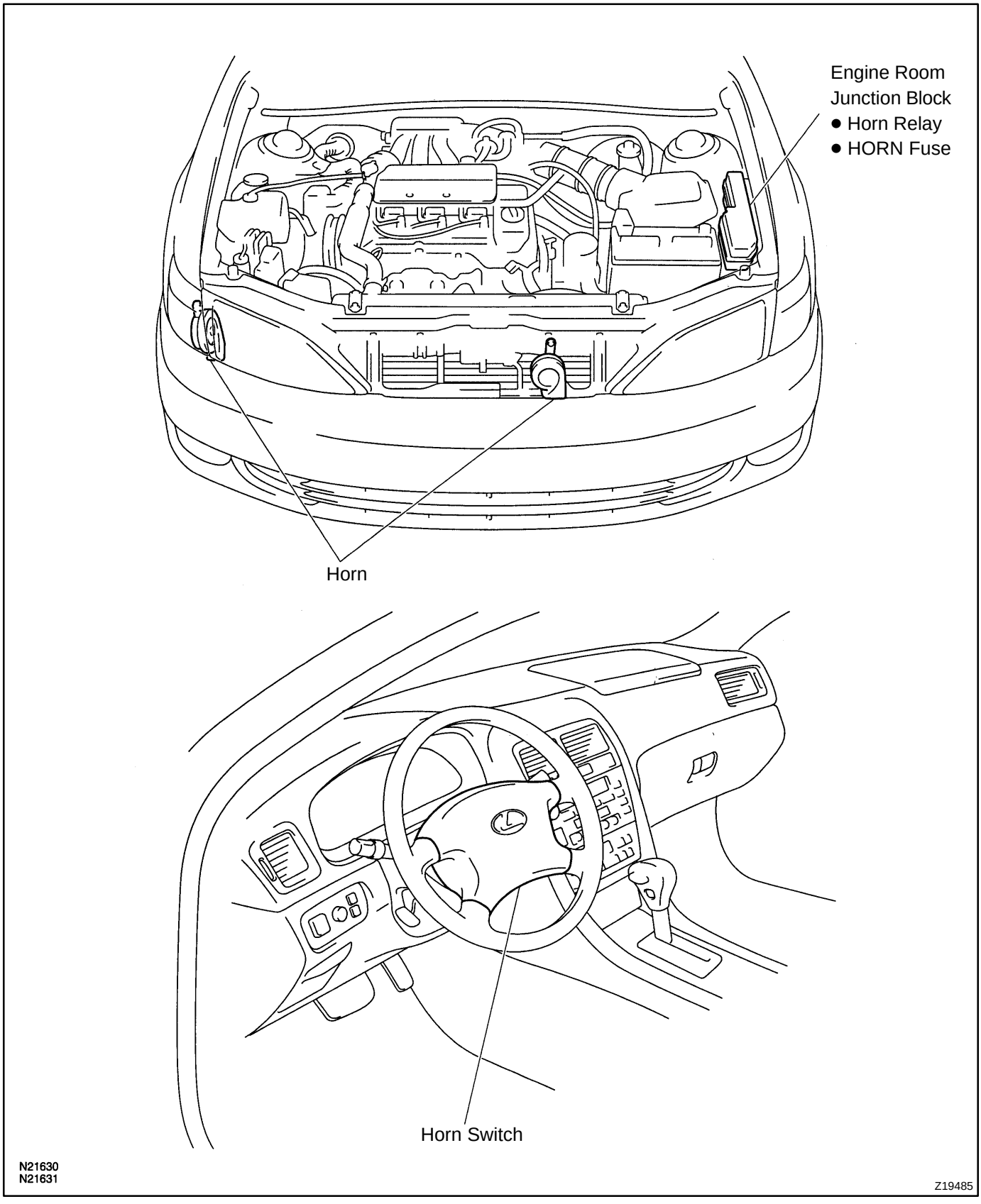
Yes ↓

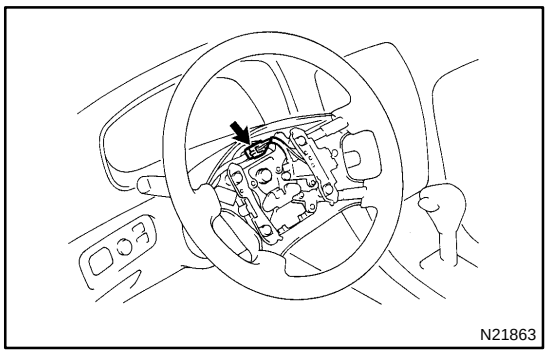
Adjust or replace clock.

I01418

HORN SYSTEM
LOCATION

BE067–01





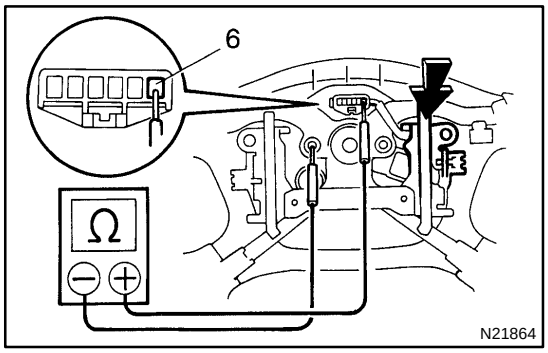
INSPECTION

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.

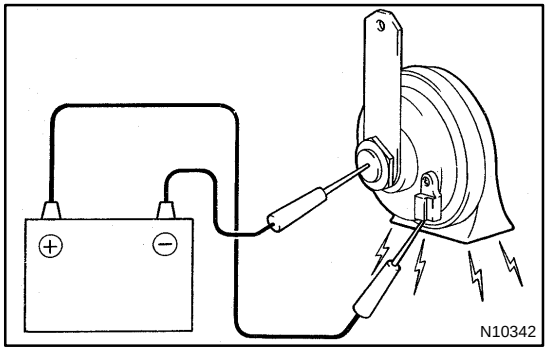
(e) Disconnect the connector from the slip ring. BE068–03



(f) Check that no continuity exists between terminal 6 of the connector and body ground.
(g) Check that continuity exists between terminal 6 of the connector and body ground when the horn contact plate is pressed against the steering spoke assembly.

If continuity is not as specified, repair or replace the steering wheel or wire harness as necessary.

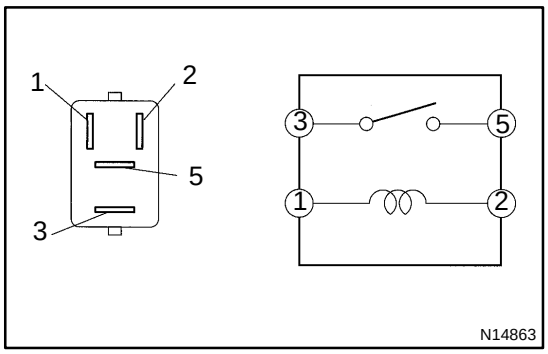
(h) Install the horn pad in place and using a torx socket wrench, torque the 2 bolts.
Torque: 7.1 N·m (72 kgf·cm, 62 in.·lbf)
(i) Install the left and right covers.
(j) Connect the negative (–) terminal to the battery.



2. INSPECT HORN OPERATION

Connect the positive (+) lead from the battery to the terminal and negative (–) lead to the horn body and check that the horn blows.

If operation is not as specified, replace the horn.



3. INSPECT HORN RELAY CONTINUITY

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

If continuity is not as specified, replace the relay.