
BODY ELECTRICAL

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BODY ELECTRICAL SYSTEM

BE00C-06

PRECAUTION

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

1. SUPPLEMENTAL RESTRAINT SYSTEM (SRS)

The LEXUS RX300 is equipped with an SRS (Supplemental Restraint System) such as the driver airbag and front passenger airbag. failure to carry out service operation in the correct sequence could cause the SRS to unexpectedly deployed during servicing, possibly leading to a serious accident. Before servicing (including removal or installation of parts, inspection or replacement), be sure to read the precautionary codices in the RS section.

2. COMBINATION METER SYSTEM

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

3. AUDIO SYSTEM

If the battery negative (–) terminal is disconnected, the preset AM, FM 1 and FM 2 stations stored in memory are erased, so be sure to not the stations and reset them after the battery terminal is reconnected.

4. MOBILE COMMUNICATION SYSTEM

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

TROUBLESHOOTING

PROBLEM SYMPTOMS TABLE

BE1AT-02

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

IGNITION SWITCH:

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

Symptom	Suspect Area	See page
Ignition switch is not set to each position.	5. Ignition switch	BE-26
	6. Power source circuit	BE-18

KEY UNLOCK WARNING SWITCH:

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

Symptom	Suspect Area	See page
Key unlock warning system does not operate. (The buzzer does not sound when the driver's door is opened with the ignition OFF and key inserted)	1. Key Unlock Warning Switch	BE-26
	2. Door Courtesy Switch	BE-48
	3. Driver Door ECU	DI-598
	4. Multiplex Communication Circuit	DI-676
	5. Body ECU	DI-564
	6. Wire Harness	–
Key unlock warning system does not operate. (The buzzer sounds when the ignition key is ACC or ON)	1. Ignition Switch	BE-26
	2. RADIO No.2 Fuse (Instrument Panel J/B)	–
	3. GAUGE Fuse (Instrument Panel J/B)	–
	4. Wire Harness	–

HEADLIGHT AND TAILLIGHT SYSTEM:

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

HINT:

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

Symptom	Suspect Area	See page
Only one headlight comes on.	1. H-LP L LWR Fuse (Engine Room J/B)	–
	2. H-LP R LWR Fuse (Engine Room J/B)	–
	3. Headlight Bulb	–
	4. Wire Harness	–
"LO-Beam" does not light (All).	1. Headlight Dimmer Switch 2. Wire Harness	BE-31 –
"LO-Beam" does not light (One side).	1. Headlight Bulb 2. Wire Harness	– –
"HI-Beam" does not light (All).	1. Headlight Dimmer Switch 2. Wire Harness	BE-31 –
"HI-Beam" does not light (One side).	1. Headlight Bulb 2. Wire Harness	– –
"Flash" does not light.	1. Headlight Dimmer Switch 2. Wire Harness	BE-31 –

BODY ELECTRICAL – TROUBLESHOOTING

Headlight does not come on.	1. Headlight Control Relay (Engine Room J/B) 2. Headlight Dimmer Switch 3. Light Control Switch 4. Body ECU 5. Wire Harness 6. Headlight Bulb	BE-31 BE-31 BE-31 DI-564 – –
Headlight does not come on with light control switch in HEAD.	1. Light Control Switch 2. Body ECU 3. Wire Harness	BE-31 DI-564 –
Headlight does not go out with light control switch in OFF.	1. Headlight Control Relay (Engine Room J/B) 2. Wire Harness	BE-31 –
Headlight is flicker.	1. Headlight Bulb 2. Wire Harness	– –
Headlight is dark.	1. Headlight Bulb 2. Wire Harness	– –
Taillight does not come on with light control switch in TAIL.	1. Taillight Control Relay (Instrument Panel J/B) 2. Light Control Switch 3. Wire Harness	BE-31 BE-31 –
Taillight does not go out with light control switch in OFF.	1. Taillight Control Relay (Instrument Panel J/B) 2. Light Control Switch 3. Wire Harness	BE-31 BE-31 –
Headlight do not come on with engine running and light control switch in OFF.	1. ECU-B Fuse (Engine Room J/B) 2. GAUGE Fuse (Instrument Panel J/B) 3. DRL Fuse (Engine Room R/B No.3) 4. Daytime Running Light Relay 5. Daytime Running Light No.3 and No.4 Relay 6. Body ECU 7. Generator L Terminal 8. Parking Brake Switch 9. Brake Fluid Level Warning Switch 10. Wire Harness	– – – BE-31 BE-31 DI-564 – BE-68 BE-68 –

AUTOMATIC LIGHT CONTROL SYSTEM:

Symptom	Suspect Area	See page
"Automatic light control system" does not operate.	1. ECU-IG Fuse (Instrument Panel J/B) 2. DOME Fuse (Engine Room J/B) 3. Automatic Light Control Sensor 4. Light Control Switch 5. Door Courtesy Switch 6. Body ECU 7. Driver Door ECU 8. Wire Harness	– – BE-31 BE-31 BE-48 DI-564 DI-598 –

AUTO TURN OFF SYSTEM:

Symptom	Suspect Area	See page
Auto turn-off system does not operate when the driver's door is opened.	1. Drivers Door Courtesy Switch 2. Driver Door ECU 3. Multiplex Communication Circuit 4. Body ECU	BE-48 DI-598 DI-676 DI-564
Headlight and taillight does not come on.	1. Body ECU 2. Wire Harness	DI-564 –
Headlight and taillight stays on.	1. Body ECU 2. Wire Harness	DI-564 –

FOG LIGHT SYSTEM

Symptom	Suspect Area	See page
Fog light does not light up with light control SW HEAD (Headlight is normal.)	1. FR FOG Fuse (Instrument Panel J/B) 2. Fog Light Relay (Instrument Panel J/B) 3. Fog Light Switch 4. Wire Harness	– BE-41 BE-31 –
Fog light does not light up with light control SW HEAD (Headlight does not light).	1. *1 Other Parts 2. Wire Harness	– –
Only one light does not light up.	1. Bulb 2. Wire Harness	– –
Rear fog light does not light with light control SW HEAD (Headlight is normal.)	1. Bulbs 2. FR FOG Fuse (Instrument Panel J/B) 3. Rear Fog Light Switch 4. Wire Harness	– – BE-41 –
Rear fog light does not light with light control SW HEAD (Headlight does not light.)	1. Inspect Headlight and Taillight System 2. Wire Harness	BE-31 –

*1: Inspect Headlight System

TURN SIGNAL AND HAZARD WARNING SYSTEM

Symptom	Suspect Area	See page
"Hazard" and "Turn" do not light up.	1. Hazard Warning Switch 2. Turn Signal Switch 3. Turn Signal Flasher 4. Wire Harness	BE-44 BE-31 BE-44 –
The flashing frequency is abnormal.	1. Bulb 2. Turn Signal Switch 3. Wire Harness	– BE-31 –
Hazard warning light does not light up. (Turn is normal)	1. HAZARD Fuse (Engine Room J/B) 2. Wire Harness	– –
Hazard warning light does not light up in one direction.	1. Hazard Warning Switch 2. Wire Harness	BE-44 –
*1 Turn signal does not light up.	1. Ignition Switch 2. GAUGE Fuse (Instrument Panel J/B) 3. Turn Signal Switch 4. Wire Harness	BE-26 – BE-31 –
*2 Turn signal does not light up.	1. GAUGE Fuse (Instrument Panel J/B) 2. Turn Signal Switch 3. Wire Harness	– BE-31 –
Turn signal does not light up in one direction.	1. Turn Signal Switch 2. Wire Harness	BE-31 –
Only one bulb does not light up.	1. Bulb 2. Wire Harness	– –

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

*2: Combination Meter, Wiper and Washer are normal.

ILLUMINATION LIGHT SYSTEM

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

Symptom	Suspect Area	See page
Illumination light do not light. (Taillight is normal)	1. PANEL Fuse (Instrument Panel J/B) 2. Rheostat Light Control 3. Wire Harness	– BE-68 –

Illumination light do not light. (Taillight does not light)	1. Taillight Control Relay (Instrument Panel J/B)	BE-31
	2. Taillight System	BE-31
	3. Rheostat Light Control	BE-68
	4. Wire Harness	–
	5. PANEL Fuse (Instrument Panel J/B)	–
Only one light does not light.	1. Bulb	–
	2. Wire Harness	–

INTERIOR LIGHT SYSTEM

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

Symptom	Suspect Area	See page
All the lights do not come ON.	1. DOME Fuse (Engine Room J/B) 2. Body ECU	– DI-564
The light does not come ON when the driver's door is opened.	1. Driver's Door Courtesy Switch 2. Driver Door ECU 3. Multiplex Communication Circuit 4. Body ECU 5. Wire Harness	BE-48 DI-598 DI-676 DI-564 –
The light does not come ON when the passenger's door is opened.	1. Passenger's Door Courtesy Switch 2. Front Passenger Door ECU 3. Multiplex Communication Circuit 4. Body ECU 5. Wire Harness	BE-48 DI-620 DI-676 DI-564 –
The light does not come on when the rear-right door is opened.	1. Rear-Right Door Courtesy Switch 2. Body ECU 3. Wire Harness	BE-48 DI-564 –
The light does not come on when the rear-left door is opened.	1. Rear-Left Door Courtesy Switch 2. Body ECU 3. Wire Harness	BE-48 DI-564 –
Only one of the bulbs comes ON.	1. Bulb	–
The illumination does not fade out when all the doors are closed.	1. Courtesy Switch 2. Driver Door ECU 3. Front Passenger Door ECU 4. Multiplex Communication Circuit 5. Body ECU 6. Wire Harness	BE-48 DI-598 DI-620 DI-676 DI-564 –
The illumination does not fade out immediately when the ignition switch is turned to ACC or ON within 15 seconds after all the doors are closed.	1. Ignition Switch 2. RADIO NO.2 Fuse (Instrument Panel J/B) 3. GAUGE Fuse (Instrument Panel J/B) 4. Body ECU 5. Wire Harness	BE-26 – – DI-564 –
The illumination does not fade out immediately when all the doors are locked within 15 seconds after they are closed.	1. Door Unlock Detection Switch 2. Driver Door ECU 3. Front Passenger Door ECU 4. Multiplex Communication Circuit 5. Body ECU 6. Wire Harness	BE-97 DI-598 DI-620 DI-676 DI-564 –
Interior light does not light up. (in front personal light)	1. Bulb 2. Front Personal Light 3. Wire Harness	– BE-48 –
Front personal light does not light up.	1. Bulb 2. Front Personal Light 3. Wire Harness	– BE-48 –

Rear personal light does not light up.	1. Bulb 2. Rear Personal Light 3. Wire Harness	– BE-48 –
Vanity light does not light up.	1. Bulb 2. Vanity Light 3. Wire Harness	– BE-48 –
Luggage compartment light does not light up.	1. Bulb 2. Luggage Compartment Door Courtesy Switch 3. Wire Harness	– BE-48 –
Courtesy light does not light up.	1. Bulb 2. Door Courtesy Switch 3. Wire Harness	– BE-48 –

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-53 BE-53 –
Stop light always lights up.	1. Stop Light Switch 2. Wire Harness	BE-53 –
Only one light always lights up.	1. Wire Harness	–
Only one light does not light up.	1. Bulb 2. Wire Harness	– –

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. Wiper Motor 4. Body ECU 5. Wire Harness	– BE-56 BE-56 DI-564 –
Wipers do not operate in LO, HI or MIST.	1. Wiper Switch 2. Wiper Motor 3. Wire Harness	BE-56 BE-56 –
Wipers do not operate in INT.	1. Wiper Switch 2. Wiper Motor 3. Body ECU 4. Wire Harness	BE-56 BE-56 DI-564 –
Washer motor does not operate.	1. Washer Switch 2. Washer Motor 3. Wire Harness	BE-56 BE-56 –
Wipers do not operate when washer switch in ON.	1. Washer Motor 2. Body ECU 3. Wire Harness	BE-56 DI-564 –
Washer fluid does not operate.	1. Washer Hose and Nozzle	–
- When wiper switch is at HI position, the wiper blade is in contact with the body. - When the wiper switch is OFF, the wiper blade does not retract or the retract position wrong.	1. Wiper Motor * 2. Wire harness * 3. Body ECU	BE-56 – DI-564

*: Inspect wiper arm and blade set position.

COMBINATION METER

Symptom	Suspect Area	See page
SRS warning light does not light up.	1. HEATER Fuse (Instrument Panel J/B) 2. Bulb 3. Meter Circuit Plate 4. Wire Harness 5. Airbag Sensor Assembly	– – BE-62 – DI-434
Hi-beam indicator light does not light up.	1. Bulb 2. Meter Circuit Plate 3. Wire Harness 4. Headlight System	– BE-62 – BE-29
Turn indicator light does not light up.	1. Bulb 2. Meter Circuit Plate 3. Wire Harness 4. Turn Signal and Hazard Warning System	– BE-62 – BE-43
ABS warning light does not light up.	1. GAUGE Fuse (Instrument Panel J/B) 2. Bulb 3. Meter Circuit Plate 4. Wire Harness 5. Skid Control ECU	– – BE-62 – DI-203
TRAC warning light does not light up.	1. GAUGE Fuse 2. Bulb 3. Meter Circuit Plate 4. Wire Harness 5. Skid Control ECU	– – BE-62 – DI-203
Malfunction indicator light does not light up.	1. Bulb 2. Meter Circuit Plate 3. Wire Harness 4. ECM	– BE-62 – –
Fuel level warning light does not light up.	1. Bulb 2. Fuel level warning switch 3. Meter Circuit Plate 4. Wire Harness	– BE-68 BE-62 –

DEFOGGER SYSTEM

Symptom	Suspect Area	See page
All defogger systems do not operate.	1. HEATER Fuse (Instrument Panel J/B) 2. Defogger Switch 3. Wire Harness 4. Body ECU	– BE-79 – –
Rear window defogger does not operate.	1. DR DEF Fuse 2. Defogger Wire 3. Wire Harness	– BE-79 –
Mirror defogger does not operate.	1. FR DEF Fuse (Instrument Panel J/B) 2. Mirror Defogger 3. Wire Harness	– BE-79 –

POWER WINDOW CONTROL SYSTEM

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

Symptom	Suspect Area	See page
All the power windows do not operate. (Power Door Lock System is normal.)	1. Power Window Master Switch 2. Wire Harness	BE-84 –
Only the driver's window does not operate.	1. Power Window Master Switch 2. Power Window Switch 3. Power Window Motor 4. Wire Harness	BE-84 BE-84 BE-84 –
"Window lock function" does not operate.	1. Power Window Master Switch	BE-84

POWER DOOR LOCK CONTROL SYSTEM

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

Symptom	Suspect Area	See page
All the doors cannot be locked or unlocked.	1. Door Lock Control Switch 2. Driver Door ECU 3. Front Passenger Door ECU 4. Multiplex Communication Circuit 5. Body ECU 6. Wire Harness	BE-97 DI-598 DI-620 DI-676 DI-564 –
Only driver's side door lock control does not operate.	1. Driver Door ECU 2. Driver's Door Lock Motor 3. Wire Harness	DI-598 BE-97 –
Other doors than the driver's side door do not operate.	1. Driver Door ECU 2. Multiplex Communication Circuit 3. Body ECU 4. Wire Harness 5. Door Lock Motor	DI-598 DI-676 DI-564 – BE-97
Door key related function does not operate.	1. Door Key Lock and Unlock Switch 2. Wire Harness	BE-97 –
Key confinement prevention function does not operate.	1. Key Unlock Warning Switch 2. Wire Harness 3. Body ECU	BE-26 – DI-564

DOUBLE LOCKING SYSTEM:

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

All the doors double lock system does not operate.	1. ECU-B Fuse 2. Wire Harness 3. Double Lock Control Relay 4. Body ECU	BE-97 – BE-105 –
Only one side double lock system does not operate (or abnormal).	1. Double Lock Motor 2. Double Lock Switch 3. Wire Harness 4. Double Lock Control Relay	BE-105 BE-105 – BE-105

THEFT DETERRENT SYSTEM

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

Symptom	Suspect Area	See page
The system cannot be set.	1. Indicator Light 2. Key Unlock Warning Switch 3. Door Unlock Detection Switch 4. Engine Hood Courtesy Switch 5. Back Door Courtesy Switch 6. Wire Harness 7. Body ECU 8. Driver Door ECU 9. Multiplex Communication Circuit 10. Transmitter	BE-109 BE-26 BE-97 BE-109 BE-48 – DI-564 DI-598 DI-676 –
The system cannot be canceled when the ignition switch is turned to ACC with key.	1. Key Unlock Warning Switch 2. Ignition Switch 3. Body ECU 4. RADIO NO.2 Fuse (Instrument panel J/B) 5. Wire Harness	BE-26 BE-26 DI-564 – –
The system cannot be canceled when the luggage compartment door is unlocked with key.	1. Back Door Courtesy Switch 2. Body ECU 3. Wire Harness	BE-48 DI-564 –
The system does not operate when the engine hood is opened.	1. Engine Hood Courtesy Switch 2. Body ECU 3. Wire Harness	BE-109 DI-564 –
The system does not operate when the door is opened or unlocked without using a key or transmitter.	1. Door Courtesy Switch 2. Driver Door ECU 3. Front Passenger Door ECU 4. Body ECU 5. Multiplex Communication Circuit 6. Door Unlock Detection Switch 7. Wire Harness 8. Transmitter	BE-48 DI-598 DI-620 DI-564 DI-676 BE-97 – –
The system does not operate when the ignition switch is turned to ACC without using a key or transmitter.	1. Ignition Switch 2. Key Unlock Warning Switch 3. Body ECU 4. Wire Harness 5. Transmitter	BE-26 BE-26 DI-564 – –
Some of the does not operate. (Headlight does not light up)	1. Headlight System 2. Wire Harness 3. Body ECU	BE-29 – DI-564
Some of the system does not operate. (Taillight does not light up)	1. Taillight System 2. Wire Harness 3. Body ECU	BE-29 – DI-564
Some of the system does not operate. (Theft deterrent horn or horn does not sound)	1. Theft Deterrent Horn 2. Horn 3. Horn Relay 4. HORN Fuse (Engine Room J/B) 5. Wire Harness 6. Body ECU	BE-109 BE-192 BE-192 – – DI-564

While the warning is given, the system cannot be canceled by unlocking the door with key or transmitter.	1. Door Key Lock and Unlock Switch 2. Body ECU 3. Wire Harness 4. Driver Door ECU 5. Front Passenger Door ECU 6. Multiplex Communication Circuit 7. Transmitter	BE-97 DI-564 – DI-598 DI-620 DI-676 –
While the warning is given, the system cannot be canceled by turning the ignition switch to ON with key.	1. Ignition Switch 2. Key Unlock Warning Switch 3. RADIO NO.2 Fuse (Instrument Panel J/B) 4. GAUGE Fuse (Instrument Panel J/B) 5. Body ECU 6. Wire Harness	BE-26 BE-26 – – DI-564 –
The system operates for more than 60 seconds.	1. Body ECU	BE-26

WIRELESS DOOR LOCK CONTROL SYSTEM

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

HINT:

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

Symptom	Suspect Area	See page
All functions of wireless door lock control system do not operate.	1. Wireless Door Lock Control Receiver 2. Wire Harness	BE-116 –
Wireless door lock operates, but the buzzer does not sound.	1. Wireless Door Lock Buzzer 2. Wireless Door Lock Control Receiver 3. Wire Harness	BE-116 BE-116 –

POWER SEAT CONTROL SYSTEM

Symptom	Suspect Area	See page
Power seat does not operate. (Door lock does not operate.)	1. Wire Harness 2. Power Seat Switch (D) 3. Power Seat Switch (P)	– BE-126 BE-126
Power seat does not operate. (Door lock is normal.)	1. Wire Harness 2. Power Seat Switch (D) 3. Power Seat Switch (P)	– BE-126 BE-126
Driver's seat does not operate.	1. Power Seat Switch (D) 2. Wire Harness	BE-126 –
Passenger's seat does not operate.	1. Power Seat Switch (P) 2. Wire Harness	BE-126 –
"Slide operation" does not operate.	1. Power Seat Switch (D) 2. Power Seat Switch (P) 3. Wire Harness 4. Slide Motor (D, P)	BE-126 BE-126 – BE-126
"Front Vertical Operation" does not operate.	1. Power Seat Switch (D) 2. Power Seat Switch (P) 3. Wire Harness 4. Front Vertical Motor (D, P)	BE-126 BE-126 – BE-126
"Rear Vertical Operation" does not operate.	1. Power Seat Switch (D) 2. Wire Harness 3. Rear Vertical Motor (D, P)	BE-126 – BE-126

"Reclining Operation" does not operate.	1. Power Seat Switch (D)	BE-126
	2. Power Seat Switch (P)	BE-126
	3. Wire Harness	–
	4. Reclining Motor (D, P)	BE-126
"Lumbar Support Operation" does not operate.	1. Power Seat Switch (D, P)	BE-126
	2. Wire Harness	–
	3. Lumbar Support Motor (D, P)	BE-126

(D): Driver's Seat

(P): Passenger's Seat

POWER MIRROR CONTROL SYSTEM

Symptom	Suspect Area	See page
Mirror does not operate.	1. RADIO NO.2 Fuse (Instrument Panel J/B)	–
	2. Mirror Switch	DI-598
	3. Mirror Motor	DI-598
	4. Wire Harness	–
Mirror operates abnormally.	1. Mirror Switch	DI-598
	2. Mirror Motor	DI-598
	3. Wire Harness	–

ELECTRO CHROMIC MIRROR SYSTEM

Symptom	Suspect Area	See page
Electro Chromic Inner Mirror does not operate.	1. ECU-IG Fuse (Instrument Panel J/B)	–
	2. Electro Chromic Inner Mirror	BE-137
	3. Wire Harness	–
Electro Chromic Outer Mirror does not operate.	1. ECU-IG Fuse (Instrument Panel J/B)	–
	2. Electro Chromic Outer Mirror	BE-137
	3. Electro Chromic Inner Mirror	BE-137
	4. Wire Harness	–

SEAT HEATER SYSTEM

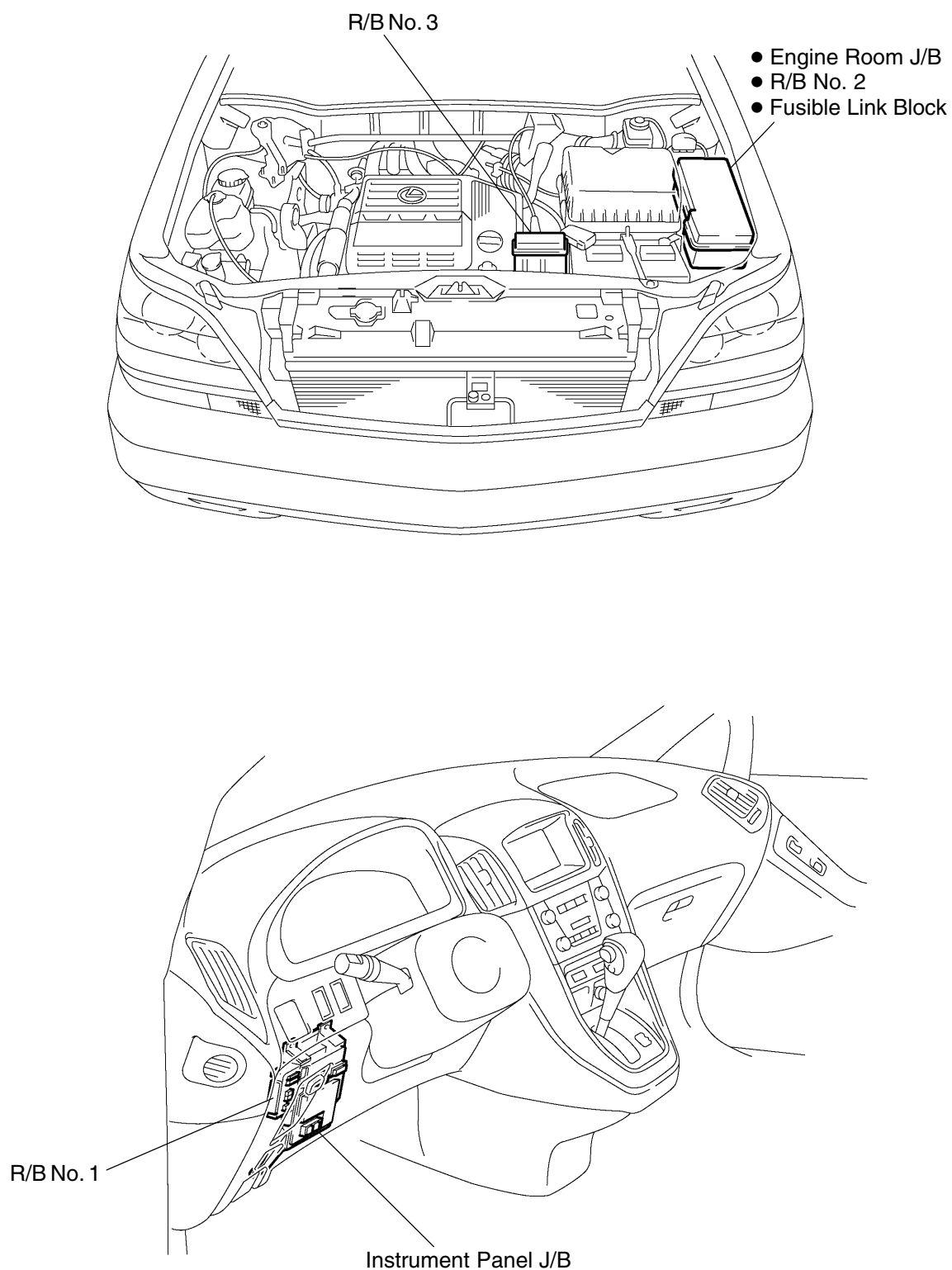
Symptom	Suspect Area	See page
Seat heaters do not operate. (Driver's and Passenger's)	1. SEAT HTR Fuse (Instrument Panel J/B)	–
	2. Engine Main Relay (R/B No.1)	BE-140
	3. Seat Heater Switch	BE-140
	4. Wire Harness	–
	5. Seat Heater	BE-140
Driver's seat heater does not operate.	1. Seat Heater Switch	BE-140
	2. Wire Harness	–
Passenger's seat heater does not operate.	1. Seat Heater Switch	BE-140
	2. Wire Harness	–
Seat heater temperature is too hot.	1. Seat Heater	BE-140

HORN SYSTEM

Symptom	Suspect Area	See page
Horn system does not operate.	1. HORN Fuse (Engine Room J/B) 2. Horn Relay (Engine Room J/B) 3. Horn Switch 4. Horn 5. Wire Harness	– BE-192 BE-192 BE-192 –
Horns blow all the time.	1. Horn Relay (Engine Room J/B) 2. Horn Switch 3. Wire Harness	BE-192 BE-192 –
One horn operates but other horn does not operate.	1. Horn 2. Wire Harness	BE-192 –
Horns operate abnormally.	1. Horn Relay (Engine Room J/B) 2. Horn 3. Wire Harness	BE-192 BE-192 –

POWER SOURCE LOCATION

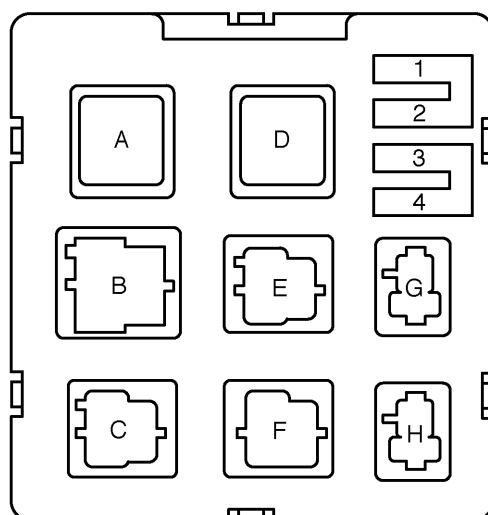
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CIRCUIT

• R/B No. 2 (Inside Engine Room Junction Block)



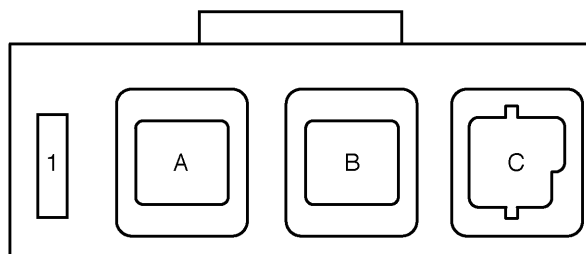
Fuse

- 1. H-LP R UPR Fuse
- 2. H-LP L UPR Fuse
- 3. A/F HTR Fuse

Relay

- A. –
- B. ABS SOL Relay
- C. FAN No. 3 Relay
- D. FAN No. 1 Relay
- E. ABS MOTOR Relay
- F. FAN No. 2 Relay
- G. A/F HEATER Relay

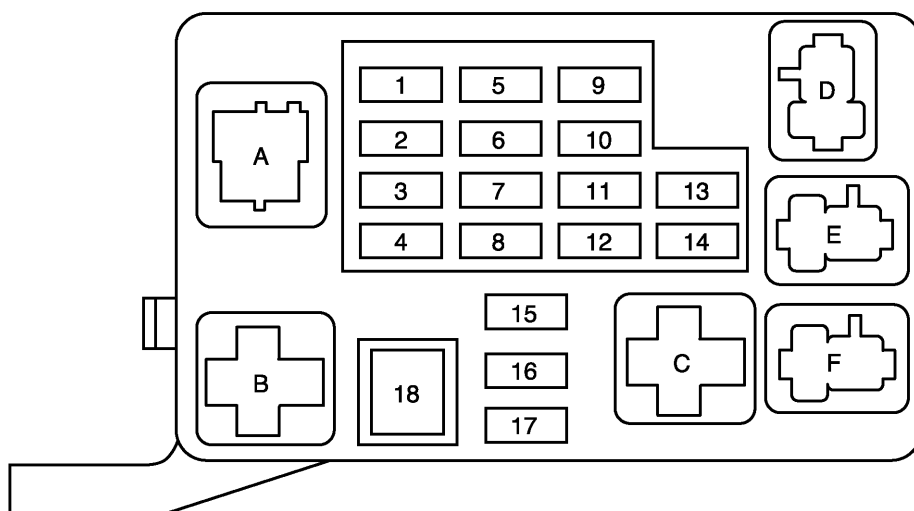
• R/B No. 3 (LHD)



Relay

- A. DRL No. 2 Relay

• Engine Room Junction Block



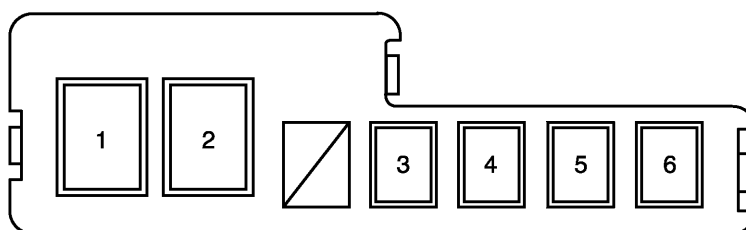
Fuse

- | | |
|--------------------|--------------------|
| 1. – | 10. HORN Fuse |
| 2. H-LP R LWR Fuse | 11. EFI Fuse |
| 3. H-LP L LWR Fuse | 12. DOME Fuse |
| 4. HAZARD Fuse | 13. ECU-B Fuse |
| 5. AM2 Fuse | 14. RAD No. 1 Fuse |
| 6. TEL Fuse | 15. – |
| 7. FL DOOR Fuse | 16. – |
| 8. SHORT PIN | 17. – |
| 9. ALT-S Fuse | 18. MAIN M-Fuse |

Relay

- | |
|----------------------------|
| A. Headlight Control Relay |
| B. Starter Relay |
| C. RR DEF Relay |
| D. MG CLT Relay |
| E. HORN Relay |
| F. EFI Relay |

• Fusible Link Block (Inside Engine Room Junction Block)



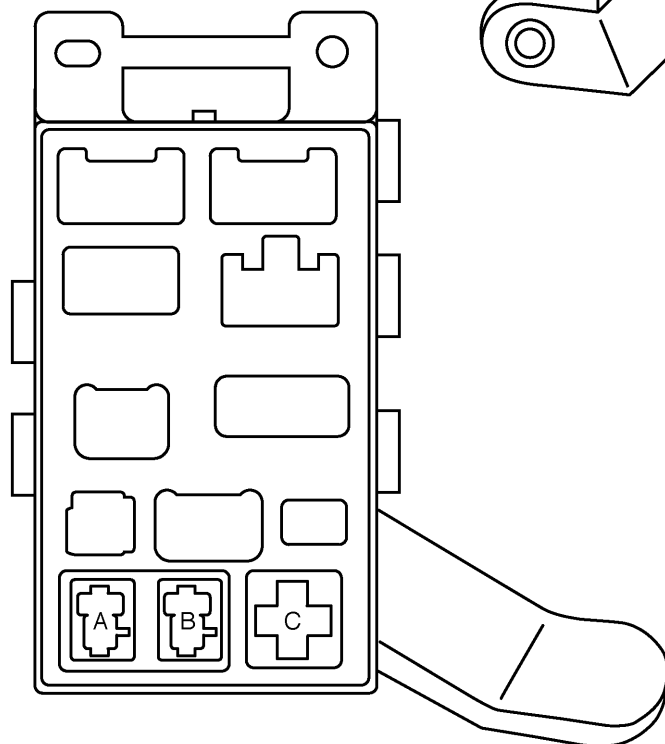
Fuse

- | |
|-------------------|
| 1. ABS H-Fuse |
| 2. ALT H-Fuse |
| 3. RDI FAN M-Fuse |
| 4. CDS FAN M-Fuse |
| 5. RR DEF M-Fuse |
| 6. HEATER M-Fuse |

• Instrument Panel Junction Block

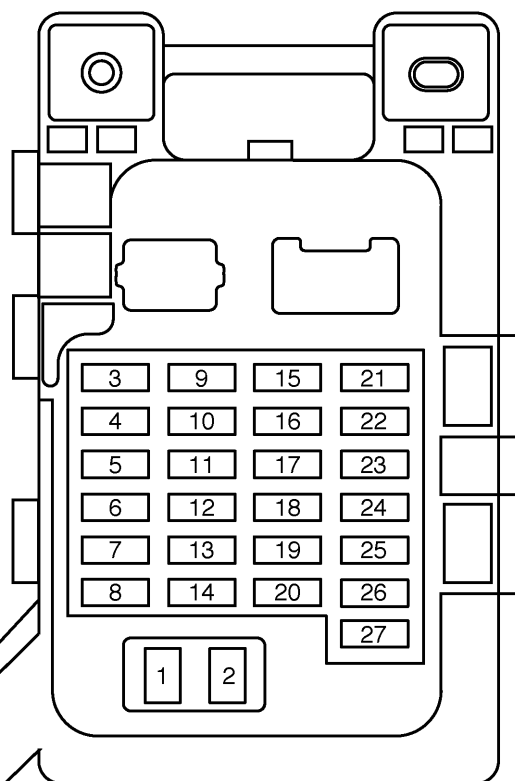
Fuse

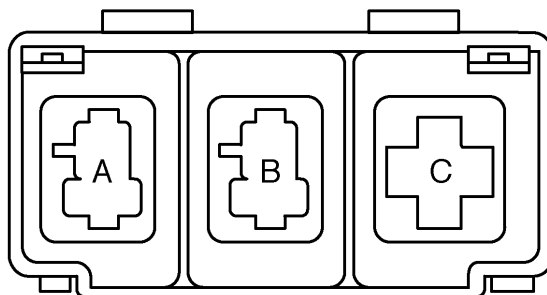
- | | |
|---------------------|-------------------|
| 1. AM1 M-Fuse | 17. RR WIP Fuse |
| 2. POWER M-Fuse | 18. STOP Fuse |
| 3. IGN Fuse | 19. ODB Fuse |
| 4. RADIO No. 2 Fuse | 20. SEAT HTR Fuse |
| 5. CIG Fuse | 21. STARTER Fuse |
| 6. D RR DOOR Fuse | 22. WASHER Fuse |
| 7. PWR OUTLET Fuse | 23. RR FOG Fuse |
| 8. FR FOG Fuse | 24. FR DEF Fuse |
| 9. SRS-IG Fuse | 25. SRS-B Fuse |
| 10. ECU IG Fuse | 26. TAIL Fuse |
| 11. WIPER Fuse | 27. PANEL Fuse |
| 12. P RR DOOR Fuse | |
| 13. P FR DOOR Fuse | |
| 14. S/ROOF Fuse | |
| 15. HEATER Fuse | |
| 16. GAUGE Fuse | |



Relay

- A. Taillight Control Relay
- B. Fog Light Relay
- C. ACC Relay



• Relay Block No. 1**Relay**

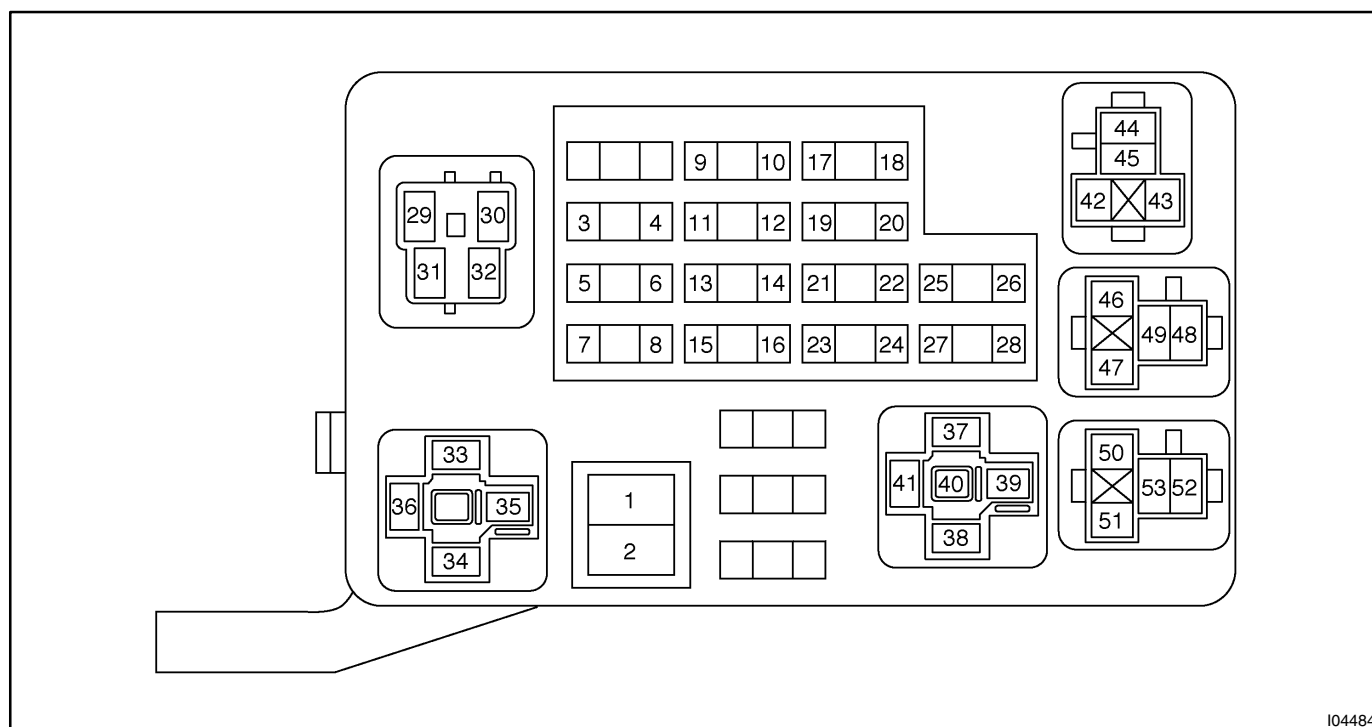
- A. Circuit Opening Relay
- B. Rear Fog Light Relay
- C. Mirror Heater Relay

I04483

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

INSPECTION

1. INSPECT ENGINE ROOM JUNCTION BLOCK CIRCUIT



I04484

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

Fuse	Tester connection	Condition	Specified condition
MAIN	2 – Ground	Constant	Battery voltage
H-LP R LWR	3 – Ground	Light control switch HEAD and headlight dimmer switch LOW beam	Battery voltage
H-LP L LWR	6 – Ground	Light control switch HEAD and headlight dimmer switch LOW beam	Battery voltage
HAZARD	8 – Ground	Constant	Battery voltage
AM2	9 – Ground	Constant	Battery voltage
TEL	12 – Ground	Constant	Battery voltage
FL DOOR	13 – Ground	Constant	Battery voltage
ALT-S	17 – Ground	Constant	Battery voltage
HORN	20 – Ground	Constant	Battery voltage
EFI	21 – Ground	Constant	Battery voltage
DOME	24 – Ground	Constant	Battery voltage
ECU-B	26 – Ground	Constant	Battery voltage
RAD No.1	27 – Ground	Constant	Battery voltage

If the circuit is as specified, inspect the circuits connected to other parts.

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

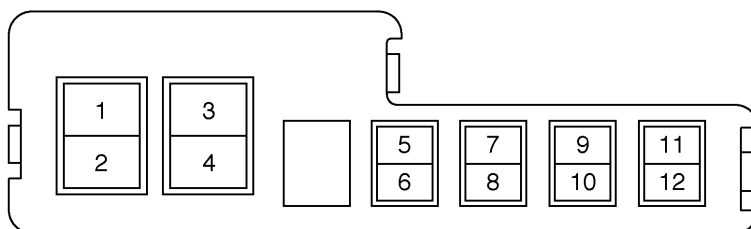
Relay	Tester connection	Condition	Specified condition
HEAD LAMP	29 – Ground	Constant	Battery voltage
	31 – Ground	Light control switch HEAD	Continuity
	32 – Ground	Constant	Battery voltage
Starter	33 – Ground	IG switch START and PNP switch P or N position	Battery voltage
	34 – Ground	Constant	Continuity
Starter	36 – Ground	Constant	Battery voltage

BODY ELECTRICAL – POWER SOURCE

RR DEF	37 – Ground	IG switch ON	Battery voltage
	39 – Ground	Constant	Continuity
	40 – Ground	Constant	Continuity
	41 – Ground	Constant	Battery voltage
MG CLT	42 – Ground	IG switch ON	Battery voltage
	45 – Ground	IG switch ON	Battery voltage
HORN	46 – Ground	Constant	Battery voltage
	47 – Ground	Horn switch ON	Continuity
	49 – Ground	Constant	Battery voltage
EFI	51 – Ground	Constant	Continuity
	53 – Ground	Constant	Battery voltage

If the circuit is as specified, inspect the circuits connected to other parts.

2. INSPECT FUSIBLE LINK BLOCK CIRCUIT



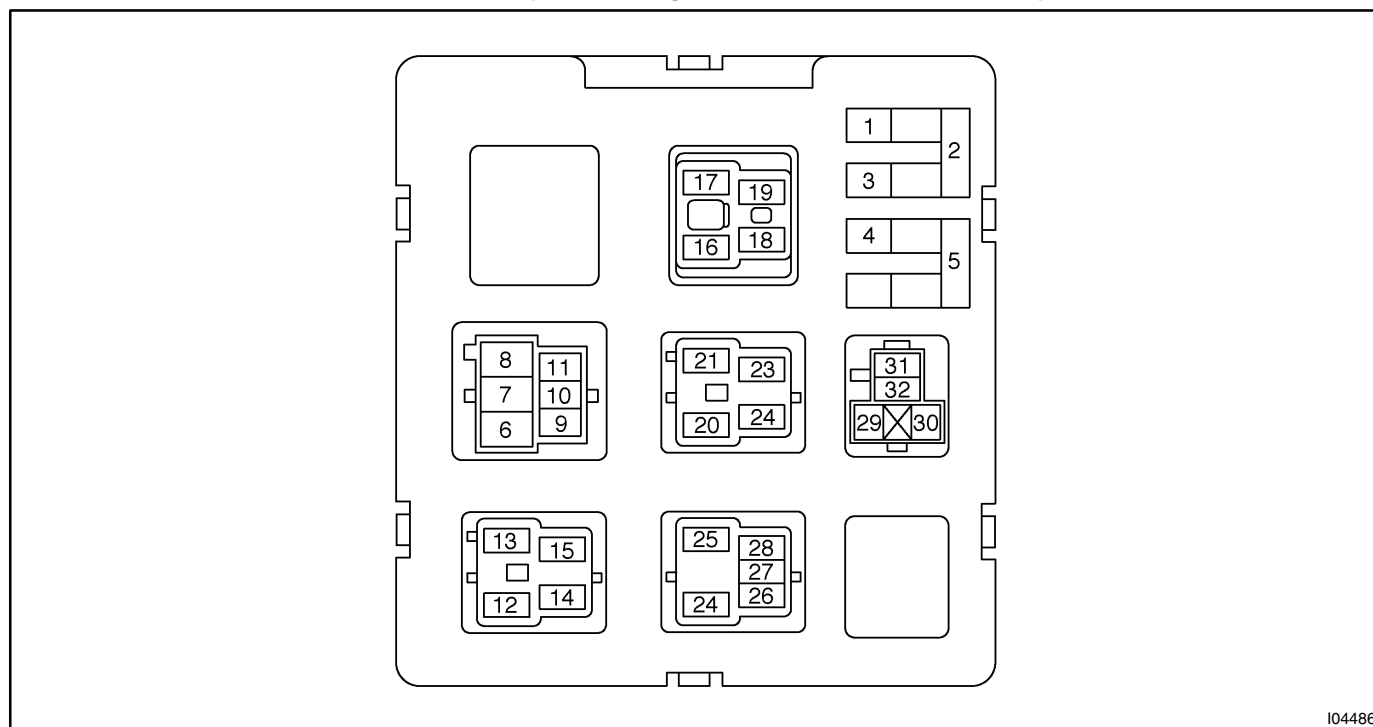
I04485

Remove the fuse from the fusible link and inspect the connector on the fusible link side.

Fuse	Tester connection	Condition	Specified condition
ABS	2 – Ground	Constant	Battery voltage
ALT	4 – Ground	Constant	Battery voltage
RDI	5 – Ground	Constant	Battery voltage
CDS	7 – Ground	Constant	Battery voltage
RR DEF	9 – Ground	Constant	Battery voltage
HEATER	11 – Ground	Constant	Battery voltage

If the circuit is as specified, inspect the circuits connected to other parts.

3. INSPECT RELAY BLOCK NO. 2 (Inside Engine Room Junction Block) CIRCUIT



I04486

(a) Remove the fuse from the relay block No. 2 and inspect the connector on the relay block side.

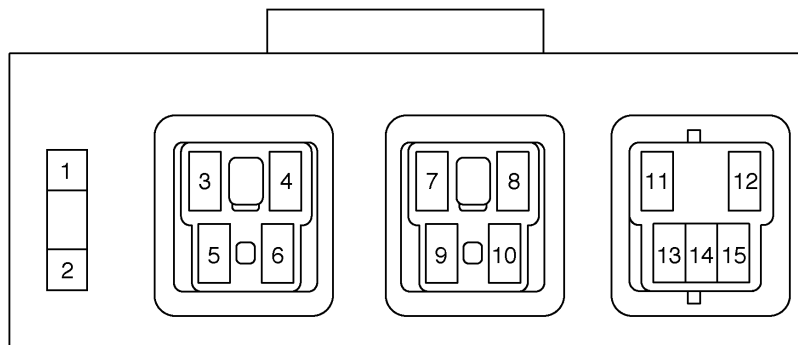
Fuse	Tester connection	Condition	Specified condition
H-LP R UPR H-LP L UPR	2 – Ground	Light control switch HEAD and headlight dimmer switch HIGH beam	Battery voltage
A/F HTR	5 – Ground	Constant	Battery voltage

If the circuit is as specified, inspect the circuit connected to other parts.

(b) Remove the relay from the relay block No. 2 and inspect the connector on the relay block side.

Relay	Tester connection	Condition	Specified condition
ABS SOL	6 – Ground	Constant	Battery voltage
	7 – Ground	Constant	Continuity
FAN No.3	12 – Ground	Constant	Battery voltage
	15 – Ground	IG switch ON	Battery voltage
FAN No.1	16 – Ground	Constant	Battery voltage
	19 – Ground	IG switch ON	Battery voltage
ABS MOTOR	20 – Ground	Constant	Battery voltage
FAN No.2	24 – Ground	Constant	Continuity
	28 – Ground	IG switch START	Battery voltage
A/F HEATER	30 – Ground	Constant	Continuity
	32 – Ground	Constant	Battery voltage

If the circuit is as specified, inspect the circuit connected to other parts.

4. INSPECT ENGINE ROOM RELAY BLOCK NO. 3 CIRCUIT (LHD)

I04487

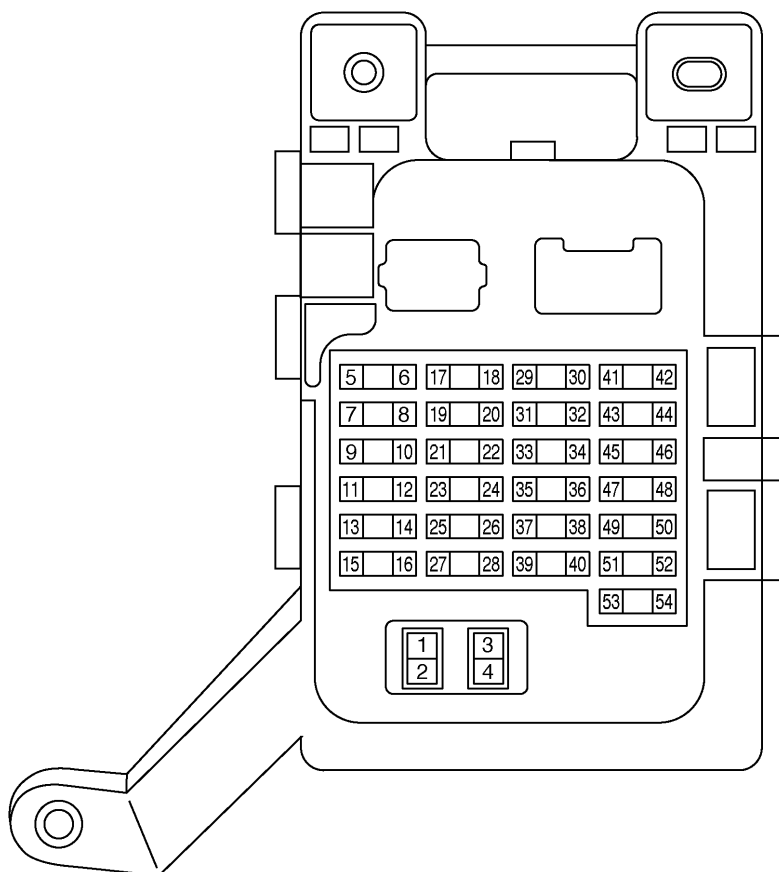
Remove the relay from the engine room relay block No. 3 and inspect the connector on the relay block side.

Relay	Tester connection	Condition	Specified condition
DRL No. 2	3 – Ground	Constant	Battery voltage
	5 – Ground	Constant	Battery voltage

If the circuit is as specified, inspect the circuit connected to other parts.

5. INSPECT INSTRUMENT PANEL JUNCTION BLOCK CIRCUIT

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



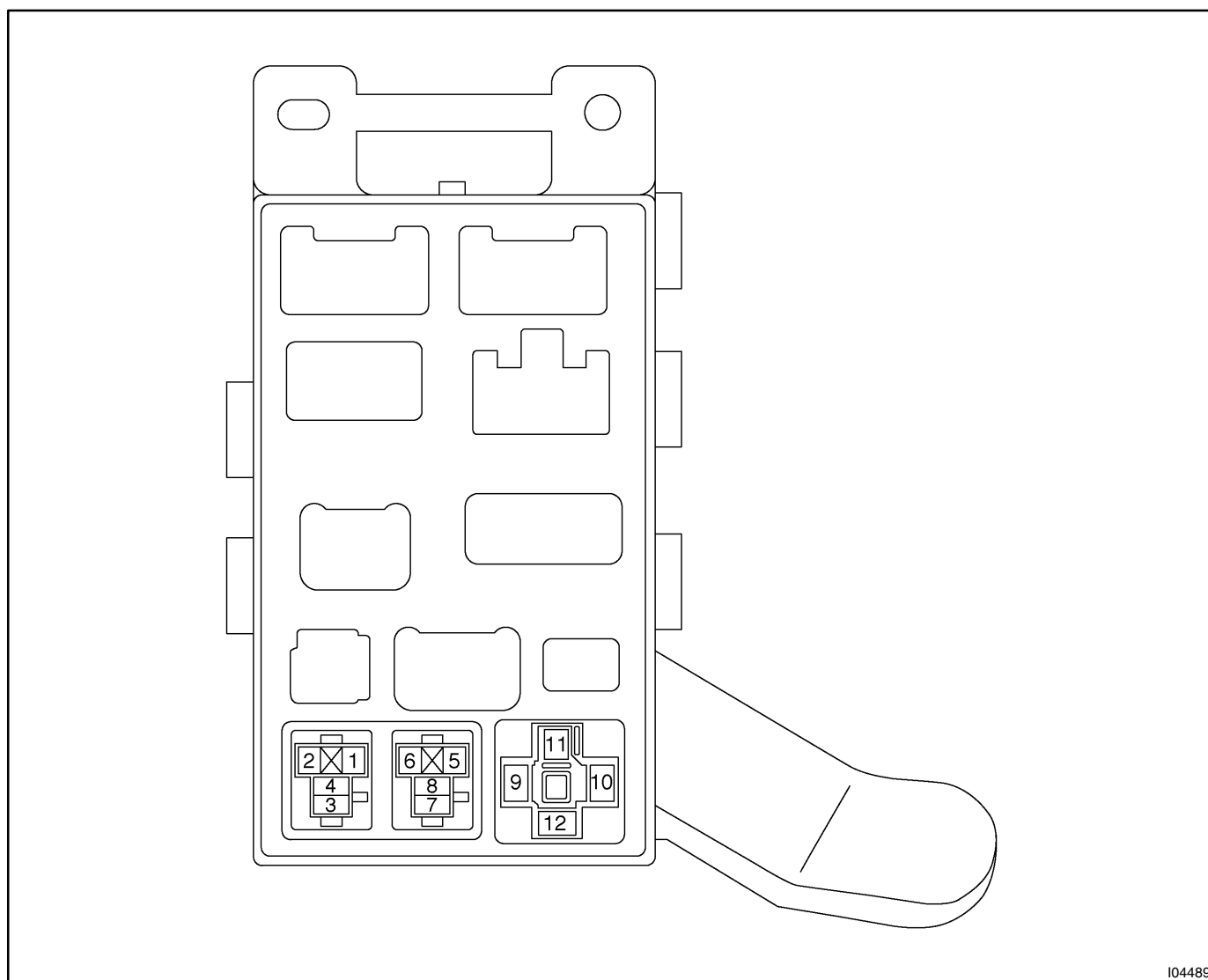
I04488

Fuse	Tester connection	Condition	Specified condition
AM1	1 – Ground	Constant	Battery voltage
POWER	3 – Ground	Constant	Battery voltage
IGN	5 – Ground	IG switch ON	Battery voltage
RADIO No. 2	8 – Ground	IG switch ON	Battery voltage
CIG	10 – Ground	IG switch ACC	Battery voltage
PWR OUTLET	14 – Ground	Constant	Battery voltage
FR FOG	15 – Ground	Constant	Battery voltage
SRS-ACC	17 – Ground	IG switch ACC	Battery voltage
ECU-IG	20 – Ground	IG switch ON	Battery voltage
WIPER	21 – Ground	IG switch ON	Battery voltage
P RR DOOR	24 – Ground	Constant	Battery voltage
P FR DOOR	25 – Ground	Constant	Battery voltage
S/ROOF	27 – Ground	Constant	Battery voltage
HEATER	29 – Ground	IG switch ON	Battery voltage

BODY ELECTRICAL – POWER SOURCE

GAUGE	32 – Ground	IG switch ON	Battery voltage
RR WIP	33 – Ground	IG switch ON	Battery voltage
STOP	36 – Ground	Constant	Battery voltage
DBD	37 – Ground	Constant	Battery voltage
SEAT HTR	39 – Ground	Constant	Battery voltage
STARTER	41 – Ground	IG switch START	Battery voltage
WASHER	43 – Ground	IG switch ON	Battery voltage
FR DEF	48 – Ground	Constant	Battery voltage
SRS-B	49 – Ground	Constant	Battery voltage
TAIL	52 – Ground	Light control switch TAIL or HEAD	Battery voltage
PANEL	54 – Ground	Light control switch TAIL or HEAD	Battery voltage

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



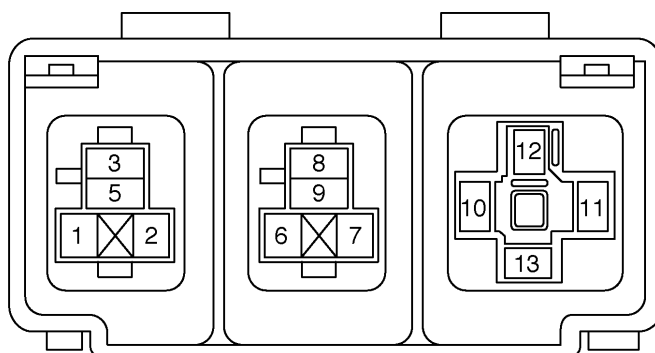
104489

Relay	Tester connection	Condition	Specified condition
TAILLIGHT	1 – Ground	Constant	Battery voltage
	2 – Ground	Light Control switch TAIL or HEAD	Continuity
	4 – Ground	Constant	Battery voltage

FOG	5 – Ground	Light control switch TAIL	Battery voltage
	7 – Ground	Constant	Battery voltage
ACC	9 – Ground	IG switch ACC or ON	Battery voltage
	10 – Ground	Constant	Continuity
	11 – Ground	Constant	Continuity
	12 – Ground	Constant	Battery voltage

If the circuit is as specified, inspect the circuit connected to other parts.

6. INSPECT RELAY BLOCK NO. 1 CIRCUIT



I04490

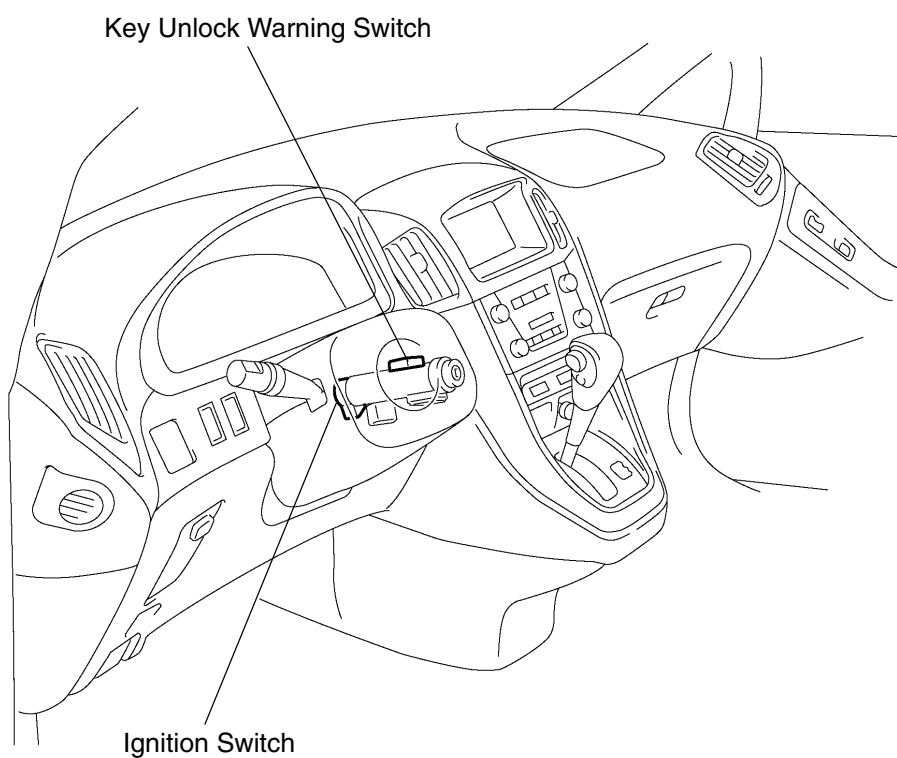
Remove the relay from the relay block No. 1 and inspect the connector on the relay block side.

Relay	Tester connection	Condition	Specified condition
CIRCUIT OPENING	1 – Ground	IG switch ON	Battery voltage
	5 – Ground	IG switch ON	Battery voltage
REAR FOG LIGHT	7 – Ground	Light control switch TAIL	Battery voltage
	9 – Ground	Light control switch TAIL	Battery voltage
MIRROR HEATER	10 – Ground	IG switch ON	Battery voltage
	12 – Ground	Constant	Battery voltage

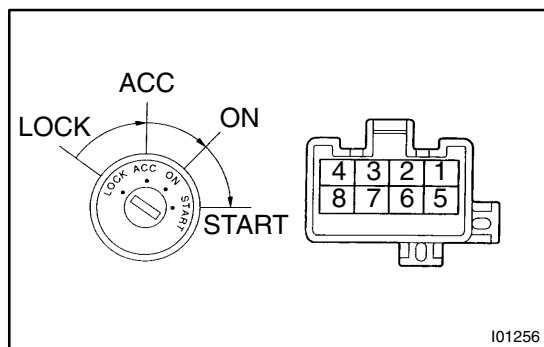
If the circuit is as specified, inspect the circuit connected to other parts.

IGNITION SWITCH AND KEY UNLOCK WARNING SWITCH LOCATION

BE01L-14



I07352

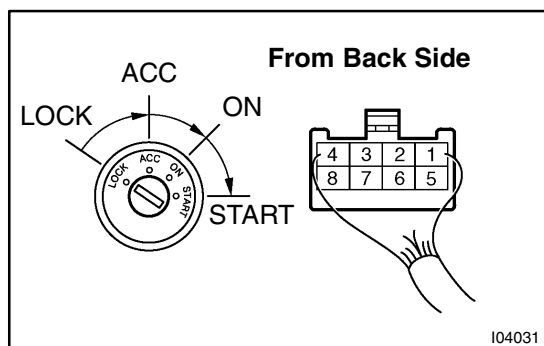


INSPECTION

1. INSPECT IGNITION SWITCH CONTINUITY

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

If continuity is not as specified, replace the switch.

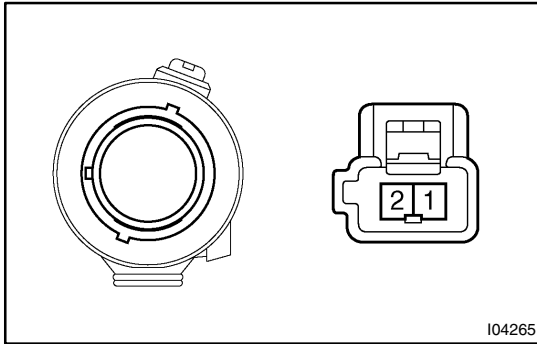


2. INSPECT IGNITION SWITCH CIRCUIT

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

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

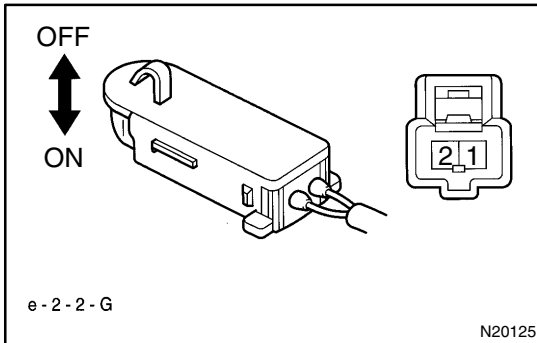
If circuit is not as specified, inspect the circuits connected to other parts.



3. INSPECT IGNITION KEY ILLUMINATION OPERATION
Connect the positive (+) lead from the battery to terminal 1 and the negative (–) lead to terminal 2, and check that the indicator light lights up.

If operation is not as specified, replace the switch.

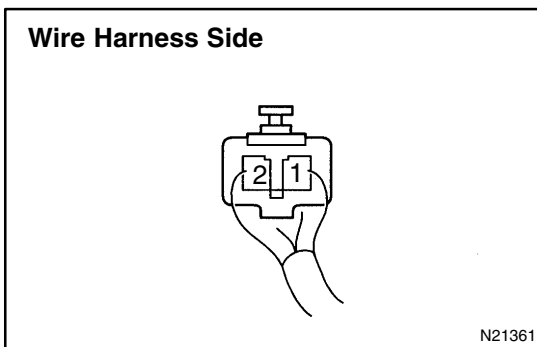
4. INSPECT IGNITION KEY ILLUMINATION CIRCUIT
(See page DI-588)



5. 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.



6. INSPECT KEY UNLOCK WARNING SWITCH CIRCUIT
(See page DI-590)

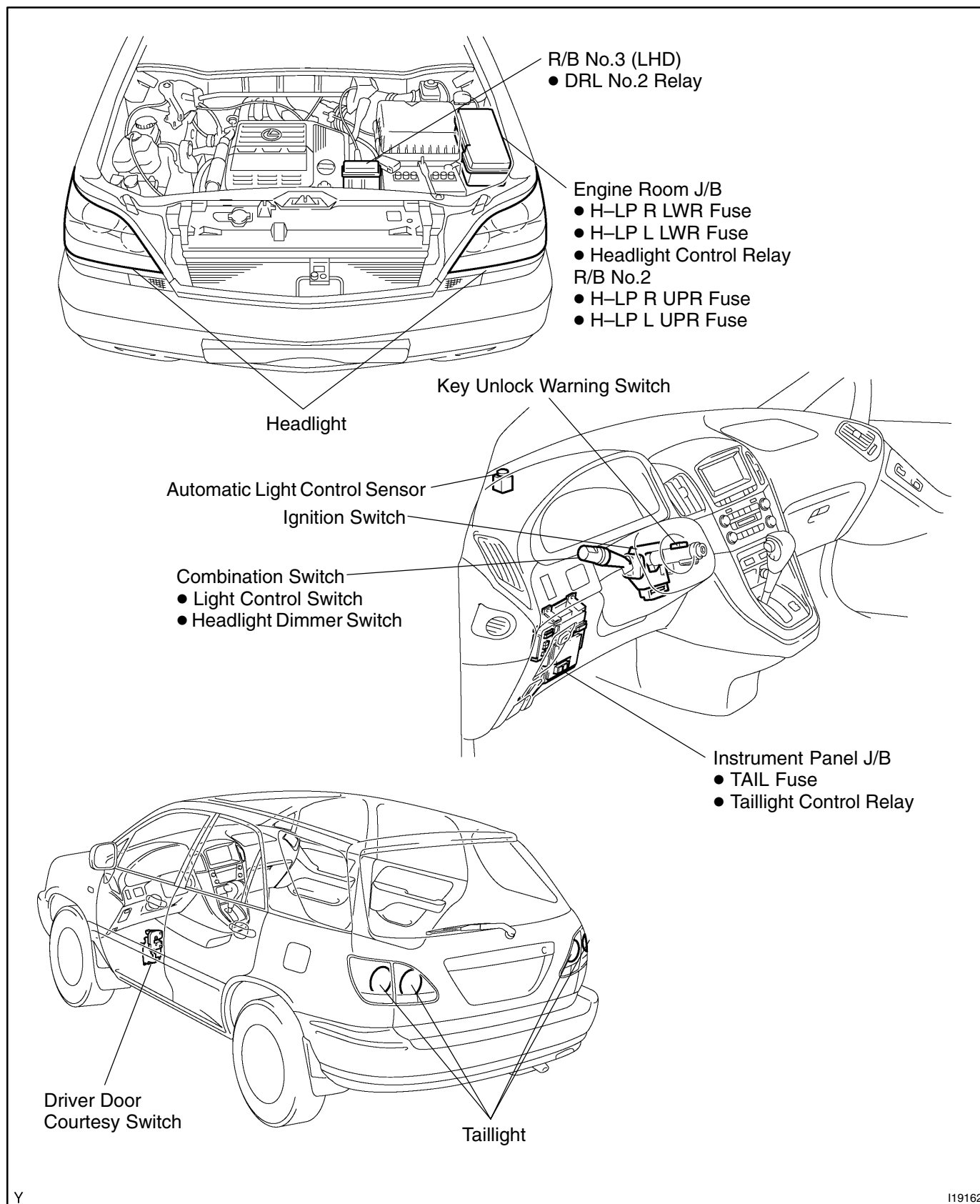
Connect the switch connector and inspect the connector on wire harness side from the back side, as shown.

Tester connection	Condition	Specified condition
1 – Ground	Constant	Continuity

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

HEADLIGHT AND TAILLIGHT SYSTEM LOCATION

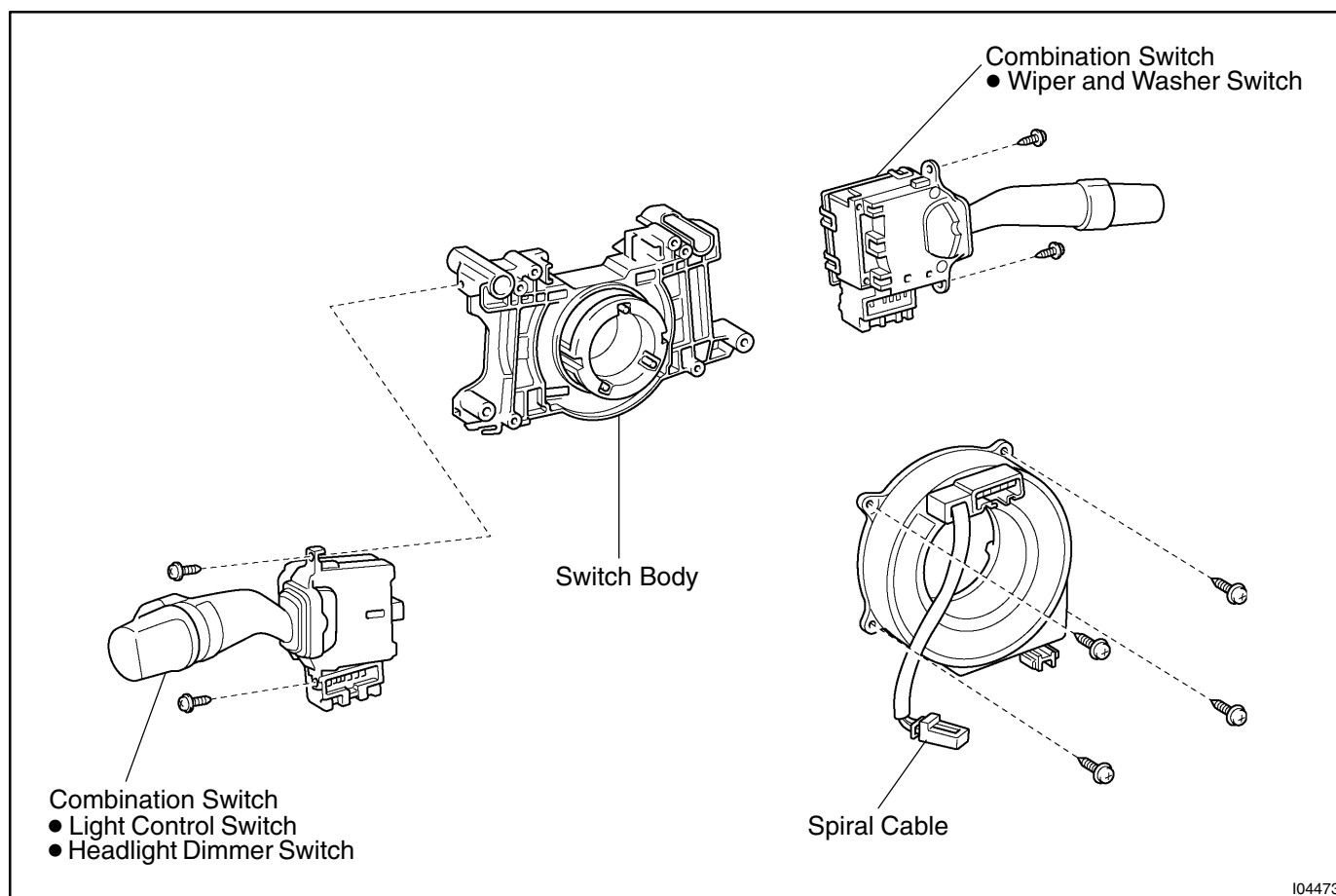
BE04W-07



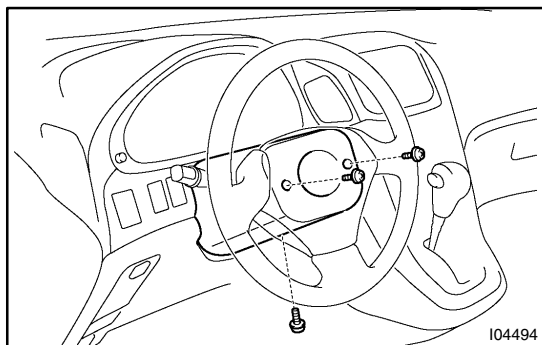
Y

I19162

COMPONENTS



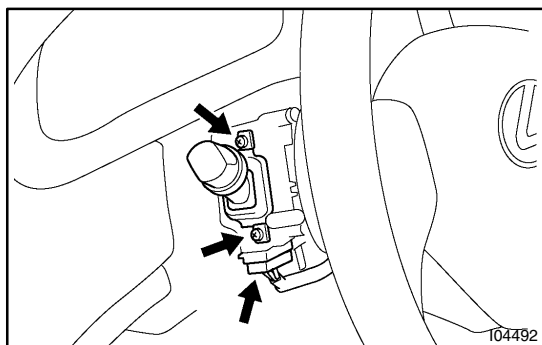
104473



REMOVAL

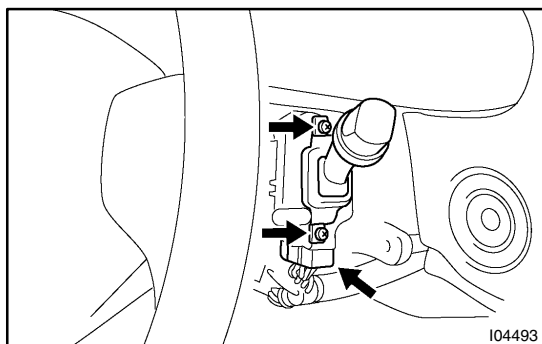
1. REMOVE COLUMN COVER

- (a) Remove the 3 screws.
- (b) Remove the column cover.



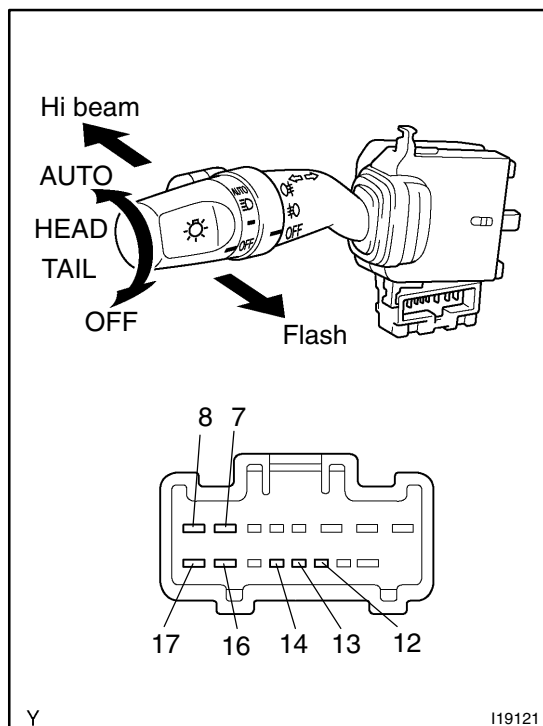
2. REMOVE LIGHT CONTROL SWITCH

- (a) Disconnect the light control switch connector.
- (b) Remove the 2 screws.
- (c) Remove the switch.



3. REMOVE WIPER AND WASHER SWITCH

- (a) Disconnect the wiper and washer switch connector.
- (b) Remove the 2 screws.
- (c) Remove the switch.



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

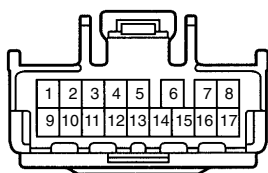
If continuity is not as specified, replace the switch.

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.

Wire Harness Side



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.

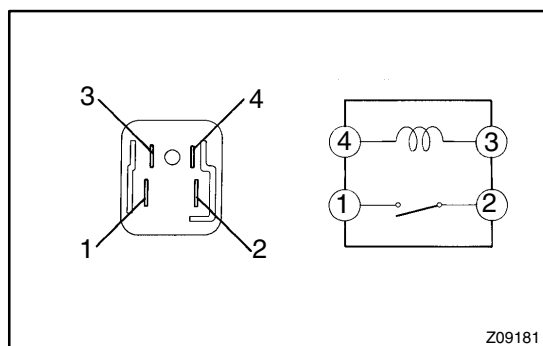
Light Control Switch:

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 voltage
13 – Ground	Light control switch OFF or TAIL	No voltage
13 – Ground	Light control switch HEAD	Battery voltage
14 – Ground	Light control switch OFF	No voltage
14 – Ground	Light control switch TAIL or HEAD	Battery voltage

Headlight Dimmer Switch:

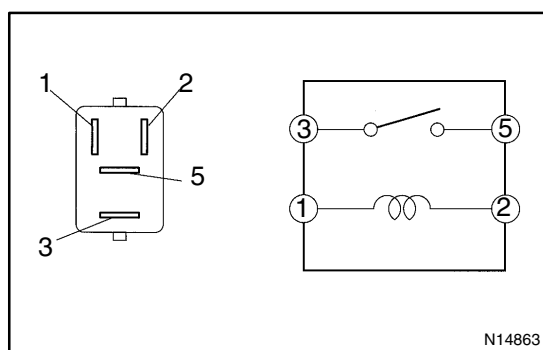
Tester connection	Condition	Specified condition
7 – Ground	Headlight dimmer switch Low Beam	No voltage
7 – Ground	Headlight dimmer switch High Beam or Flash	Battery voltage
8 – Ground	Headlight dimmer switch Low Beam or High Beam	No voltage
8 – Ground	Headlight dimmer switch Flash	Battery voltage
17–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

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

**4. INSPECT HEADLIGHT CONTROL RELAY CONTINUITY**

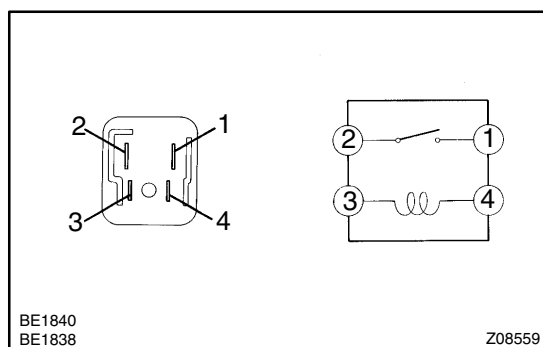
Condition	Tester connection	Specified condition
Constant	3 – 4	Continuity
Apply B+ between terminals 3 and 4.	1 – 2	Continuity

If continuity is not as specified, replace the relay.

5. INSPECT HEADLIGHT CONTROL RELAY CIRCUIT (See page BE-18)**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

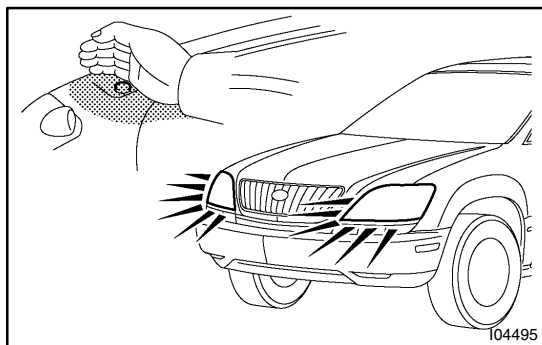
If continuity is not as specified, replace the relay.

7. INSPECT TAILLIGHT CONTROL RELAY CIRCUIT (See page BE-18)**8. INSPECT DRL NO.2 RELAY CONTINUITY**

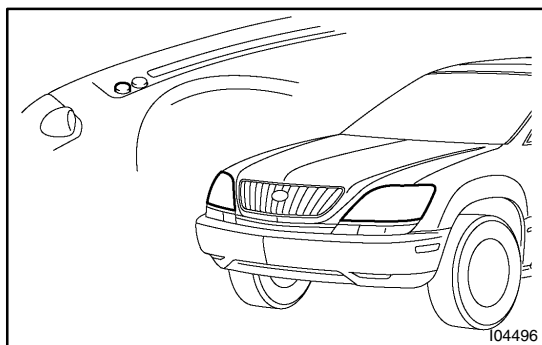
Condition	Tester connection	Specified condition
Constant	3 – 4	Continuity
Apply B+ between terminals 3 and 4.	1 – 2	Continuity

If continuity is not as specified, replace the relay.

9. INSPECT DRL NO.2 RELAY CIRCUIT (See page BE-18)

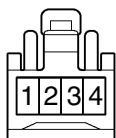


- 10. Auto ON:
INSPECT AUTOMATIC LIGHT CONTROL**
- Turn the ignition switch ON.
 - Turn the light control switch to AUTO.
 - Gradually cover the top of the sensor.
 - Verify that the accessory lights and the headlights turn ON.



- 11. Auto OFF:
INSPECT AUTOMATIC LIGHT CONTROL**
- Gradually expose the sensor.
 - Verify that the headlights and the accessory lights turn OFF.
- 12. INSPECT LIGHT-OFF CONDITION**
- Turn the ignition switch ON.
 - Gradually cover the top of the sensor.
- Lights auto ON:
- 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.
- 13. INSPECT LIGHTS-ON CONDITION**
- Open the driver's door while the ignition switch is OFF.
 - Turn the light control switch to AUTO the door open and cover the top of the sensor, and verify that the lights go on when the ignition switch is turned ON.

Wire Harness Side

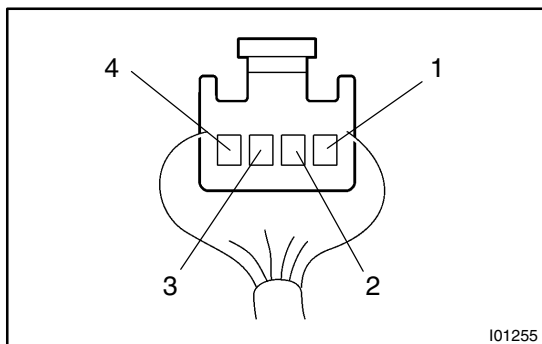


14. INSPECT AUTOMATIC LIGHT CONTROL SENSOR CIRCUIT

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

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.



15. INSPECT AUTOMATIC LIGHT CONTROL SENSOR CIRCUIT

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

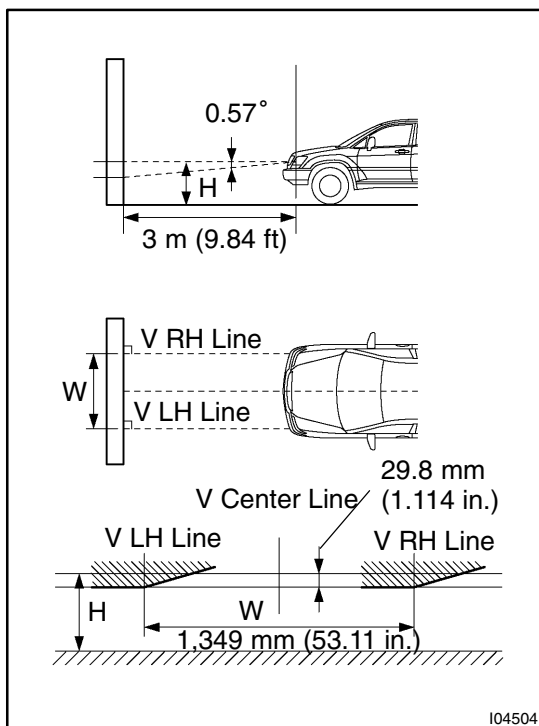
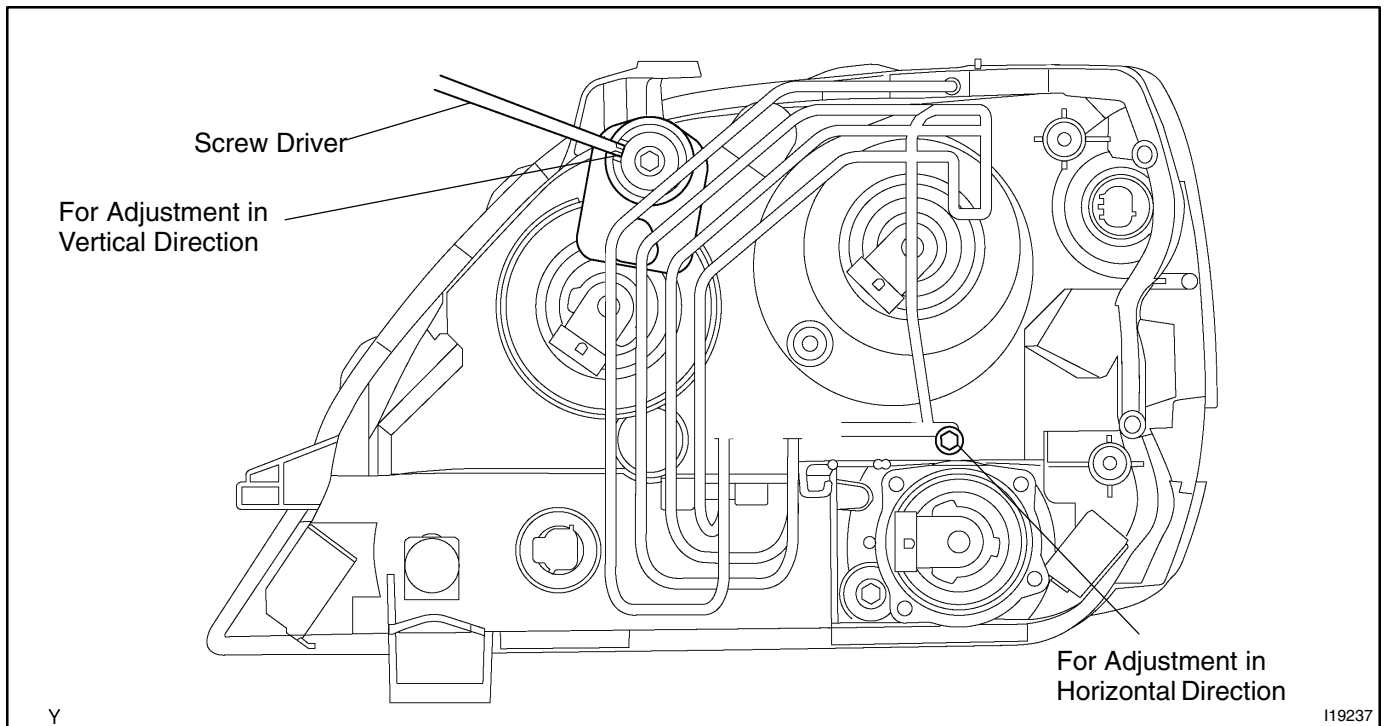
HINT:

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

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

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

ADJUSTMENT



ADJUST HEADLIGHT AIM

- Put the vehicle 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.
 - Tire inflation pressure is the specified value.
 - Set the headlight leveling switch "O" position.
- Prepare the thick white colored paper.
- Stand the paper perpendicularly and ensure the distance from it to the headlights is 3 m (93.84 ft).
- Ensure that the center line of vehicle and the paper are at a 90 degree angle as shown in the illustration.(H line)
- Star the engine.
- Draw a horizontal line on the paper where the headlights (low beam center mark) of the vehicle are to be.
- Draw a vertical line on the paper where the center line of the vehicle is to be. (V center line)

- (h) Draw the vertical lines on the paper where the headlights (low beam center marks) of the vehicle are to be. (V RH and LH lines)
- (i) Turn the headlights ON.
- (j) Check that the headlights light up the paper as shown in the illustration.

HINT:

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

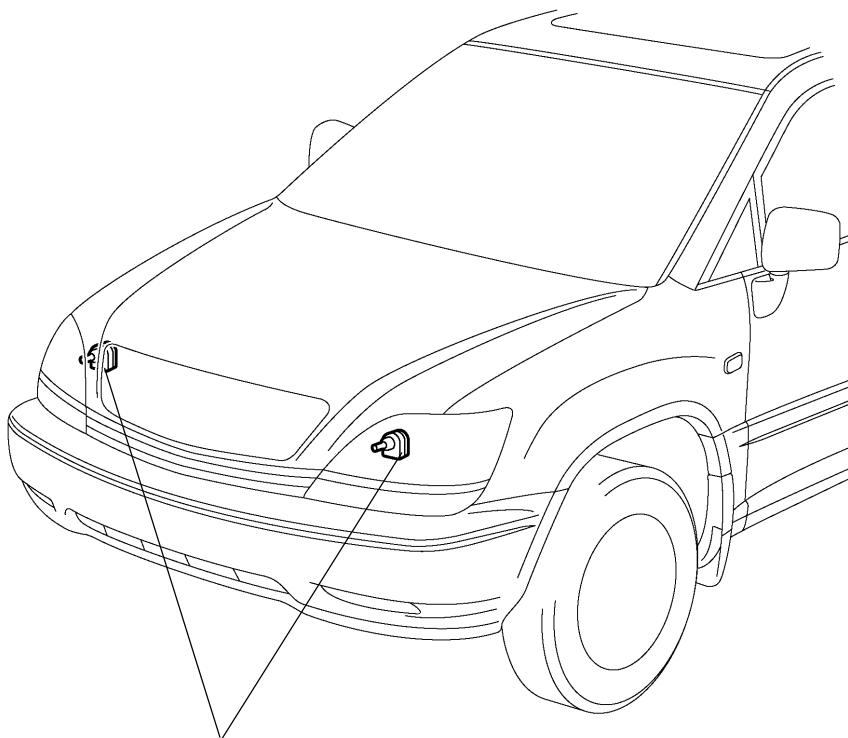
- (k) Adjust the headlight in vertical and horizontal direction.

INSTALLATION

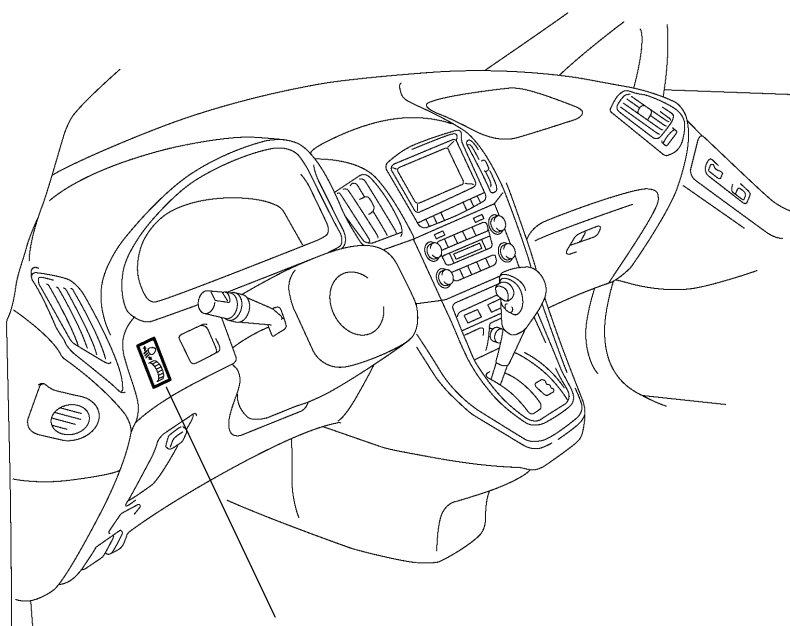
Installation is in the revers order of removal (See page BE-30).

HEADLIGHT BEAM LEVEL CONTROL SYSTEM LOCATION

BE01R-08



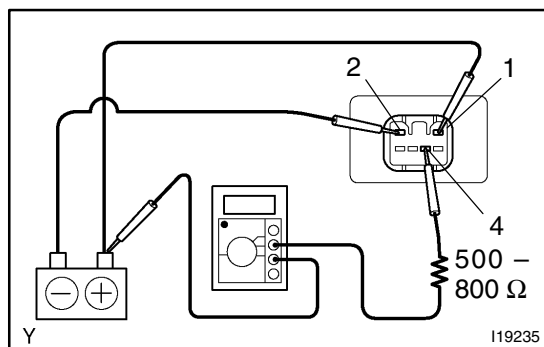
Headlight Leveling Actuator



Headlight Leveling Switch

Y

I19238



INSPECTION

INSPECT HEADLIGHT BEAM LEVEL CONTROL SWITCH

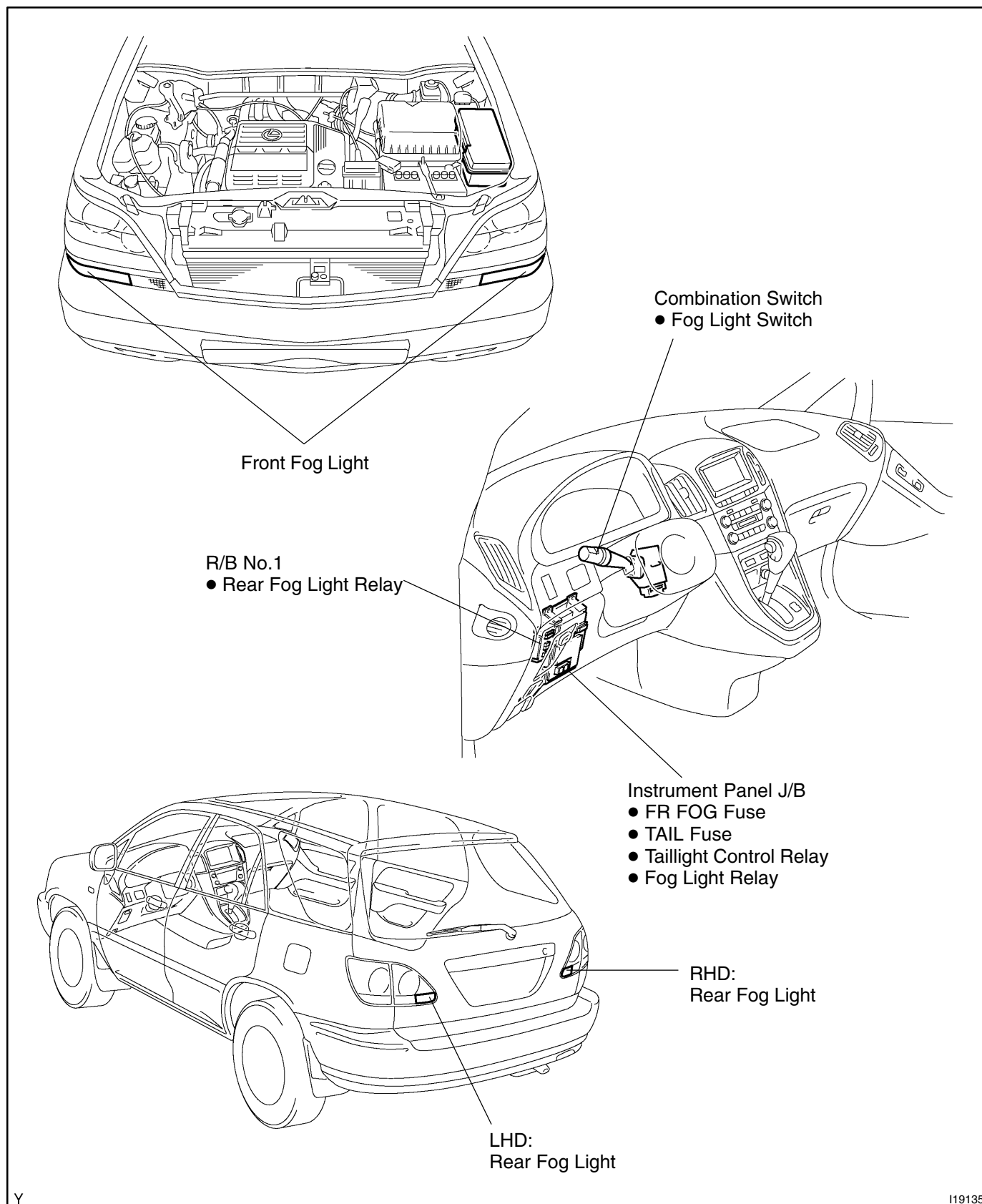
- Connect the positive (+) lead from the battery to terminal 1 and negative (-) lead to terminal 2.
- Connect the positive (+) lead from the ammeter to battery positive terminal and negative (-) lead to terminal 4.
- Measure the amppere terminal 4.

Switch position	Ampere (A)
0	0.89
1	2.31
2	3.73
3	5.16
4	6.58
5	8.0

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

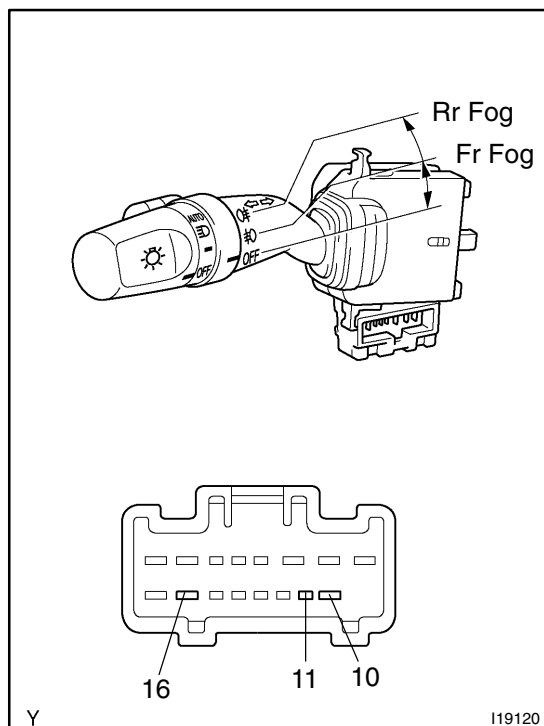
FOG LIGHT SYSTEM LOCATION

BE050-09



Y

I19135

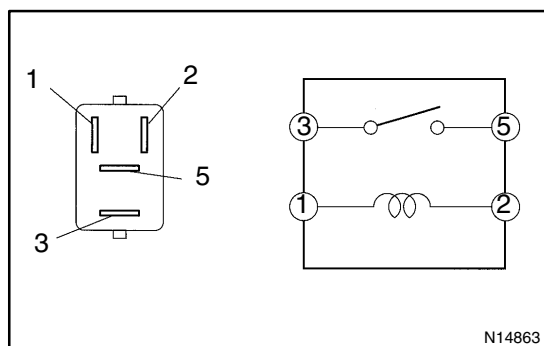


INSPECTION

1. INSPECT FOG LIGHT SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
OFF	—	No continuity
Front fog	11 – 16	Continuity
Rear fog	10 – 16	Continuity

If continuity is not as specified, replace the switch.



2. 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.

3. INSPECT FRONT AND REAR FOG LIGHT RELAY CIRCUIT

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

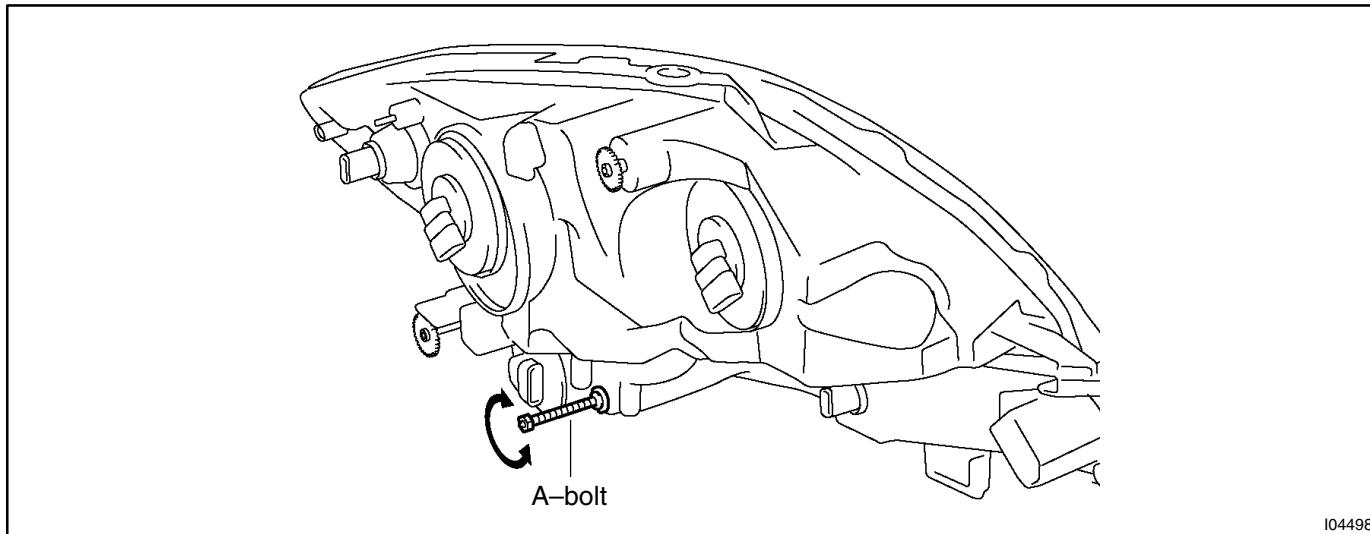
Tester connection	Condition	Specified condition
3 – Ground	Constant	Continuity
1 – Ground	Light control switch HEAD	Battery voltage
5 – Ground	Constant	Battery voltage

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

ADJUSTMENT

ADJUST FRONT FOG LIGHT AIM

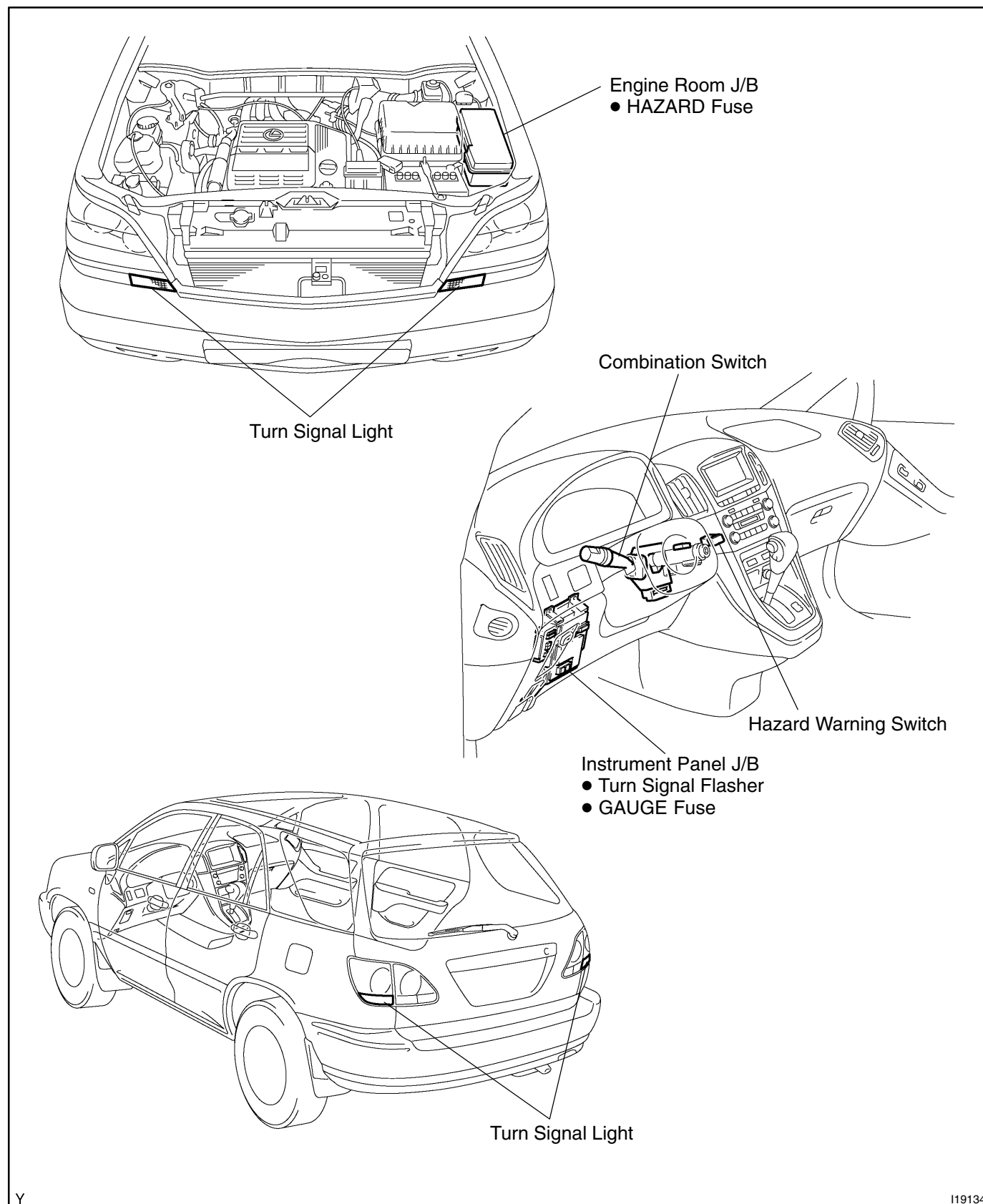
A-bolt: Vertical Direction



I04498

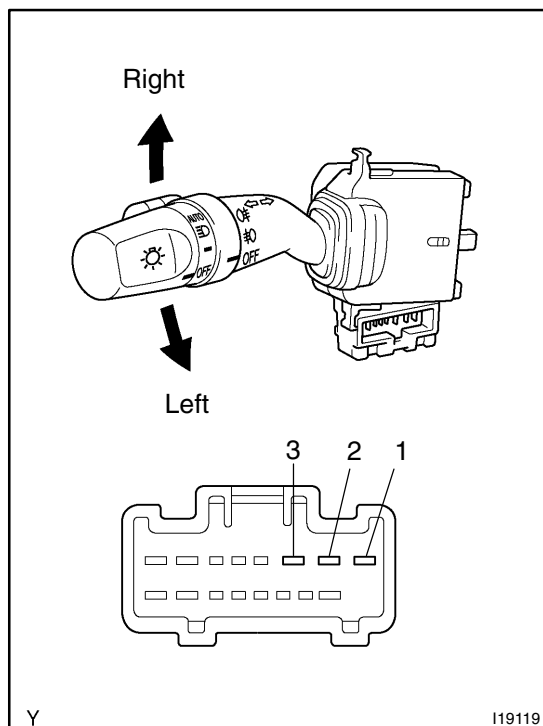
TURN SIGNAL AND HAZARD WARNING SYSTEM LOCATION

BE053-05



Y

I19134



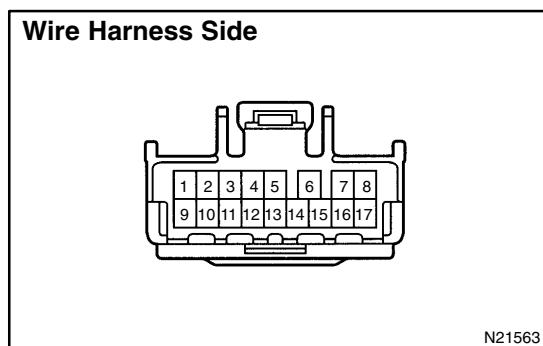
INSPECTION

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.

Wire Harness Side



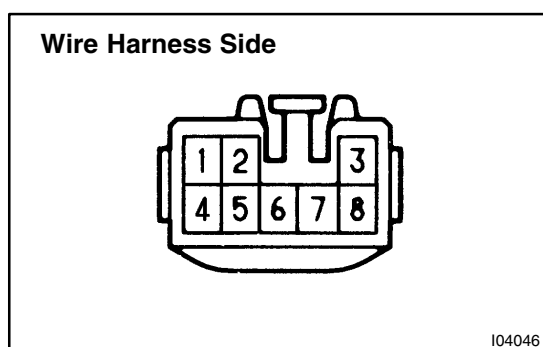
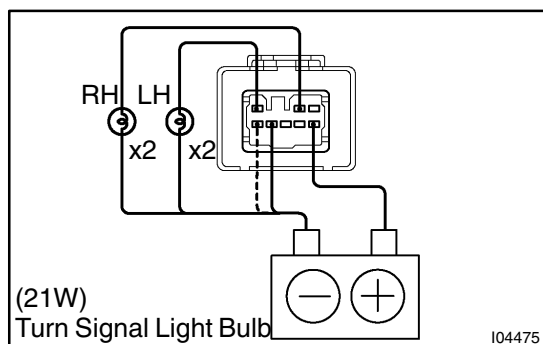
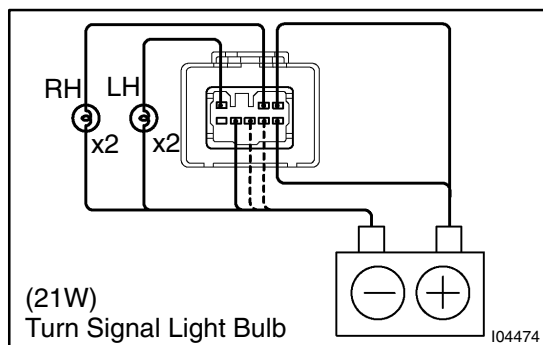
2. INSPECT COMBINATION SWITCH CIRCUIT

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 voltage
2 – Ground	Ignition switch ON and turn signal switch position Left or Right	Battery 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

- Connect the positive (+) lead from the battery to terminals 1 and 4, and the negative (-) lead to terminal 7.
- Connect 2 turn signal bulbs to terminal 2 and 3 each and connector the other side of them to negative (-) battery terminal.
- Check that the LH bulbs flashes when terminal 5 is connected to the negative (-) battery terminal.
- Check that the RH bulbs flashes when terminal 6 is connected to the negative (-) battery terminal.
- Disconnect the terminal 1 from the positive (+) battery terminal.
- Check that LH and RH bulbs flash when terminal 8 is connected to the negative (-) battery terminal.

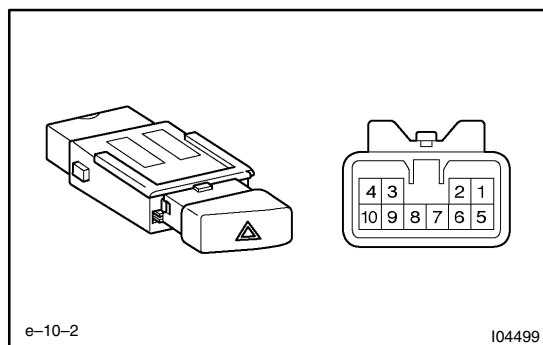
4. INSPECT TURN SIGNAL FLASHER CIRCUIT

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

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

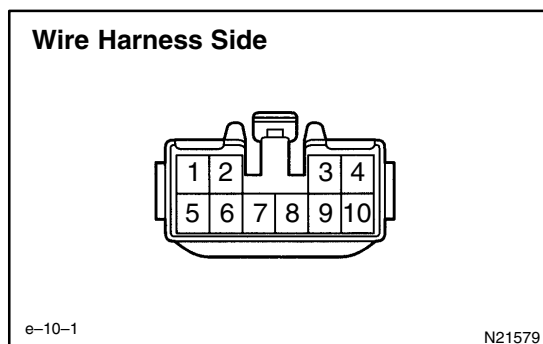
If circuit is as specified, replace the relay.

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

**5. INSPECT HAZARD WARNING SWITCH CONTINUITY**

Switch position	Tester connection	Specified condition
Switch OFF	5 – 6	No continuity
Switch ON	5 – 6	Continuity
Illumination circuit	8 – 9	Continuity

If continuity is not as specified, replace the switch.

**6. INSPECT HAZARD WARNING SWITCH CIRCUIT**

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

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

*1: Illumination

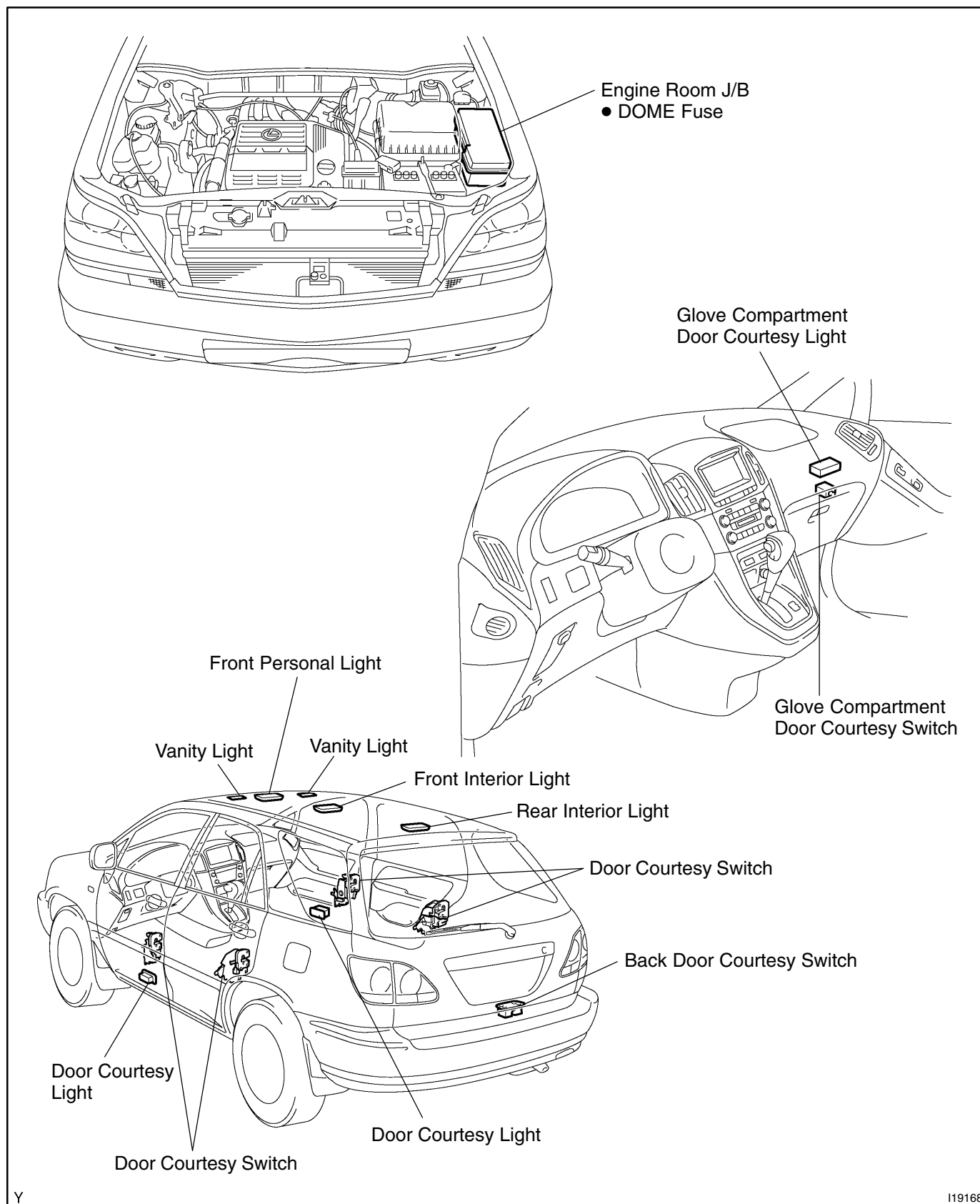
*2: There is resistance because this circuit is grounded through the bulb.

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

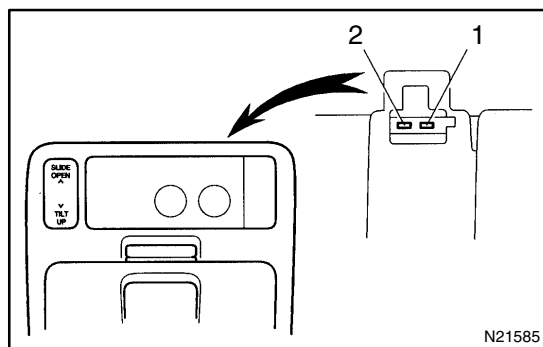
INTERIOR LIGHT SYSTEM

LOCATION

BE057-05



I19168

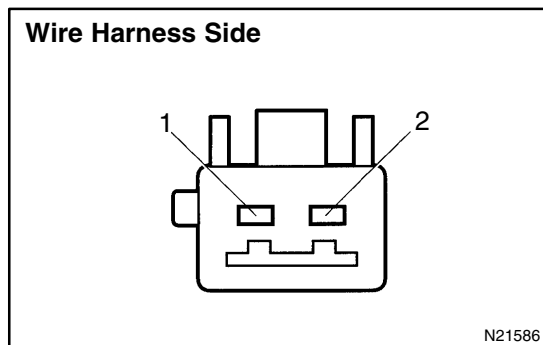


INSPECTION

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.

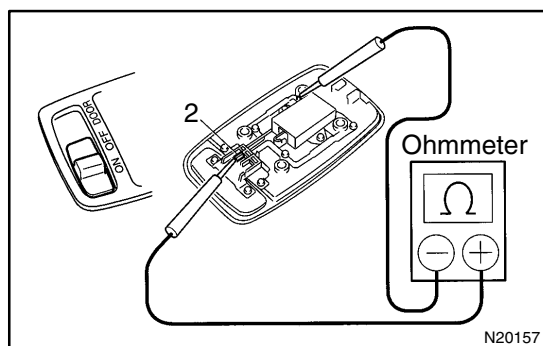


2. INSPECT PERSONAL LIGHT SWITCH CIRCUIT

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

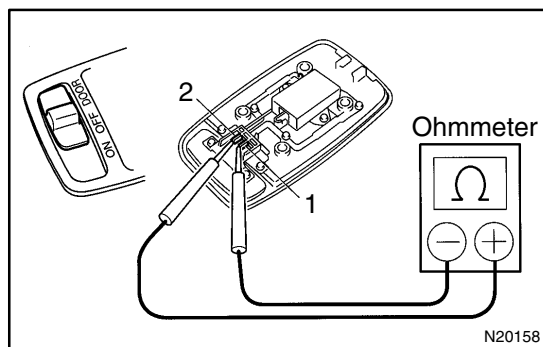
Tester connection	Condition	Specified condition
2 – Ground	Constant	Continuity
1 – Ground	Constant	Battery voltage

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



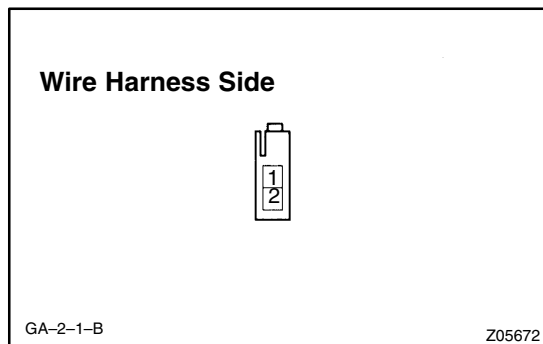
3. INSPECT INTERIOR LIGHT SWITCH

- Disconnect the connector from the dome lamp.
- Turn the dome lamp switch ON, check that continuity exists between terminal 2 and body ground.



- Turn the dome lamp switch DOOR, check that there is continuity exists between terminal 1 and 2.

If operation is not as specified, replace the switch.

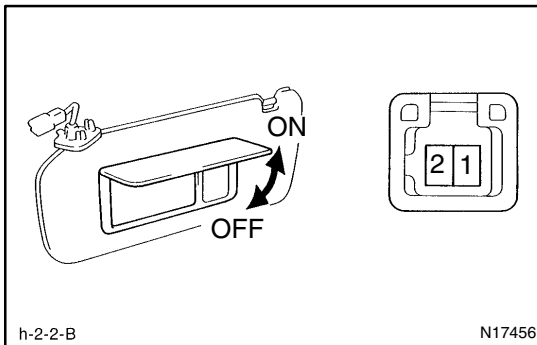


4. INSPECT INTERIOR LIGHT SWITCH CIRCUIT

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

Tester connection	Condition	Specified condition
2 – Ground	Constant	Battery voltage

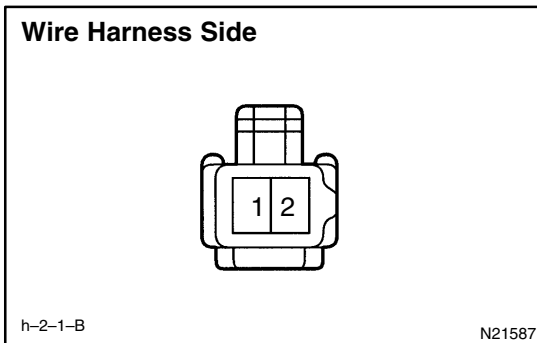
If the circuit is not as specified, inspect power source or wire harness.



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.

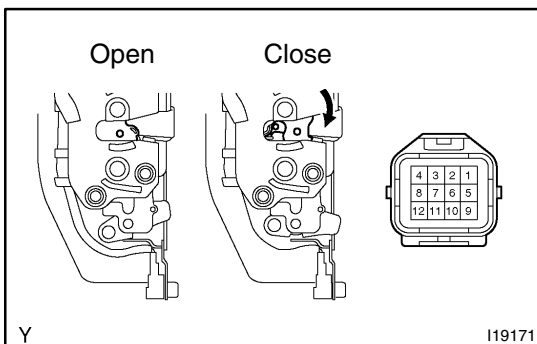


6. INSPECT VANITY LIGHT SWITCH CIRCUIT

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 voltage

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



7. INSPECT FRONT DOOR COURTESY SWITCH CONTINUITY

- Check that continuity exists between terminals 10 and 11 with the door lock open.
- Check that no continuity exists between terminals 10 and 11 with the door lock closed.

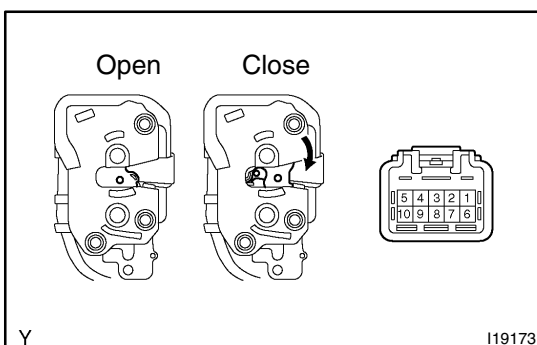
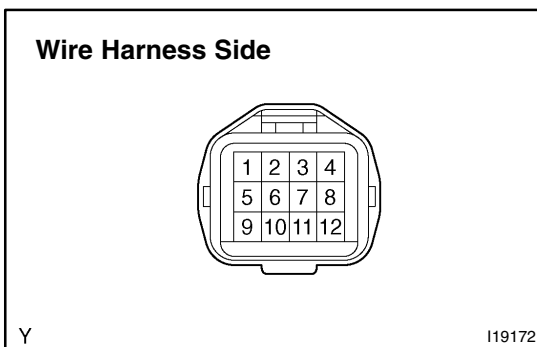
If operation is not as specified, replace the door lock.

8. INSPECT FRONT DOOR COURTESY SWITCH CIRCUIT

Disconnect the connector from the door lock assembly and inspect the connector on the wire harness side.

Tester connection	Condition	Specified condition
10 – 11	Constant	Battery voltage

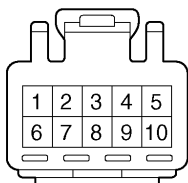
If the circuit is not as specified, inspect power source or wire harness.



9. INSPECT REAR DOOR COURTESY SWITCH CONTINUITY

- Check that continuity exists between terminals 1 and 5 with the door lock open.
- Check that no continuity exists between terminals 1 and 5 with the door lock closed.

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

Wire Harness Side

Y

I19174

10. INSPECT REAR DOOR COURTESY SWITCH CIRCUIT

Disconnect the connector from the door lock assembly and inspect the connector on the wire harness side.

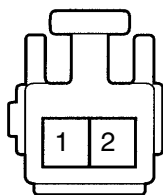
Tester connection	Condition	Specified condition
2 – 5	Constant	Battery voltage

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

11. INSPECT BACK 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.

Wire Harness Side

e-2-1

N21590

12. INSPECT BACK DOOR COURTESY SWITCH CIRCUIT

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

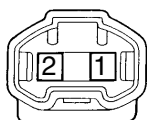
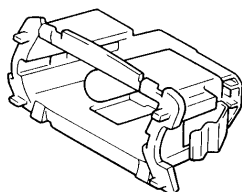
Tester connection	Condition	Specified condition
1 – Ground	Luggage compartment door opener switch OFF	No voltage
1 – Ground	Luggage compartment door opener switch ON	Battery voltage
2 – Ground	Constant	Battery voltage

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

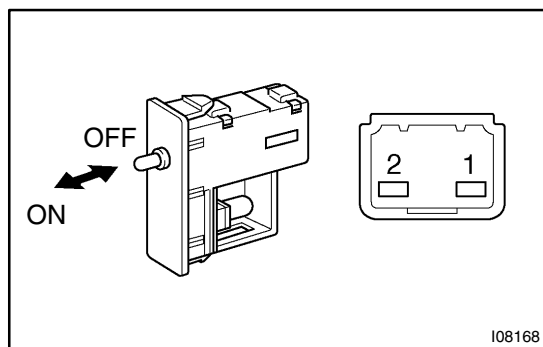
13. INSPECT DOOR COURTESY LIGHT CONTINUITY

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

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



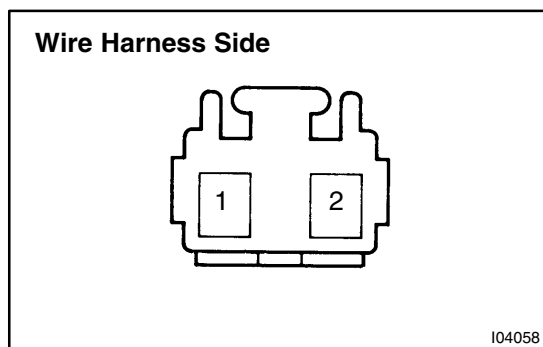
I04052



14. INSPECT GLOVE COMPARTMENT DOOR 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 switch.



15. INSPECT GLOVE COMPARTMENT DOOR LIGHT CIRCUIT

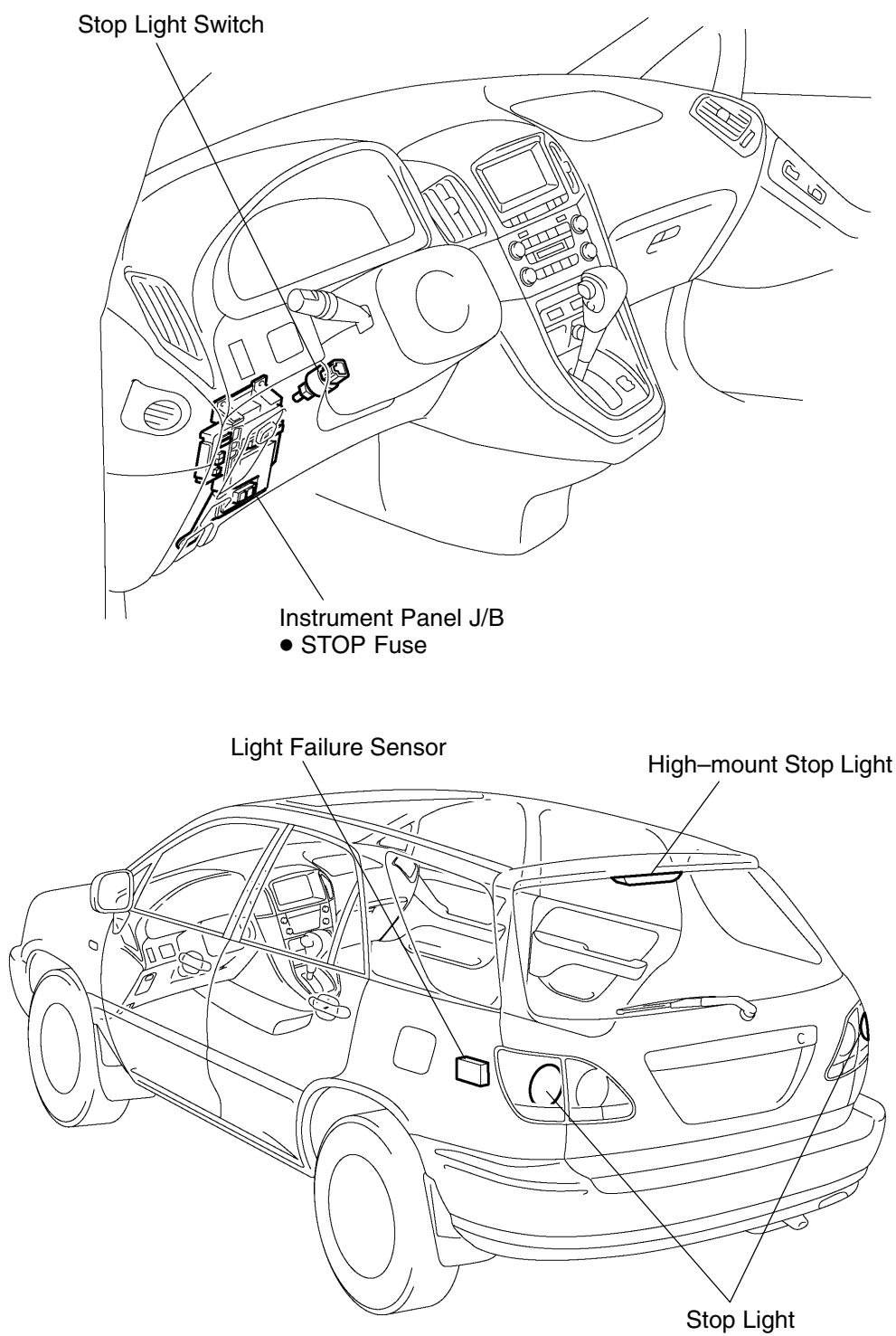
Disconnect the connector from the switch and inspect the connector on the wire harness side, as shown.

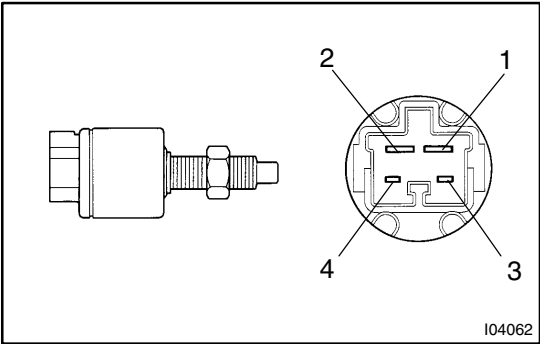
Tester connection	Condition	Specified condition
2 – Ground	Constant	Continuity
1 – Ground	Light control switch OFF	No voltage
1 – Ground	Light control switch TAIL or HEAD	Battery voltage

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

STOP LIGHT SYSTEM LOCATION

BE059-05





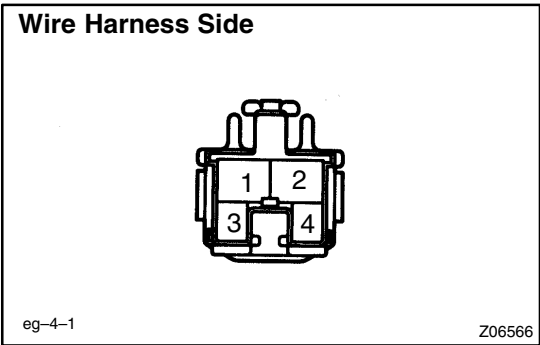
INSPECTION

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.

Wire Harness Side

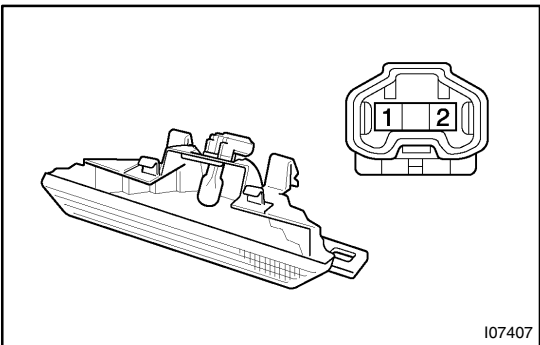


2. INSPECT STOP LIGHT SWITCH CIRCUIT

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

Tester connection	Condition	Specified condition
2 – Ground	Constant	Battery voltage

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

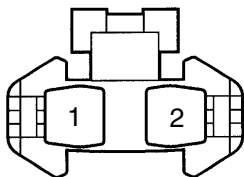


3. INSPECT HIGH-MOUNTED STOP LIGHT ASSEMBLY CONTINUITY

Using the ohmmeter, check that continuity exists between terminals.

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

Wire Harness Side



e-2-1-J

N21598

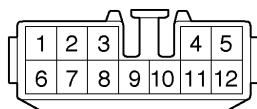
4. INSPECT HIGH-MOUNTED STOP LIGHT ASSEMBLY CIRCUIT

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

Tester connection	Condition	Specified condition
1 – Ground	Constant	Battery voltage

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

Wire Harness Side



I08151

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 voltage
4 – Ground	Ignition switch LOCK or ACC	No voltage
4 – Ground	Ignition switch ON	Battery voltage
7 – Ground	Stop light switch OFF	No voltage
7 – Ground	Stop light switch ON	Battery voltage
8 – Ground	Ignition switch LOCK or ACC	No voltage
8 – Ground	Ignition switch ON	Battery voltage

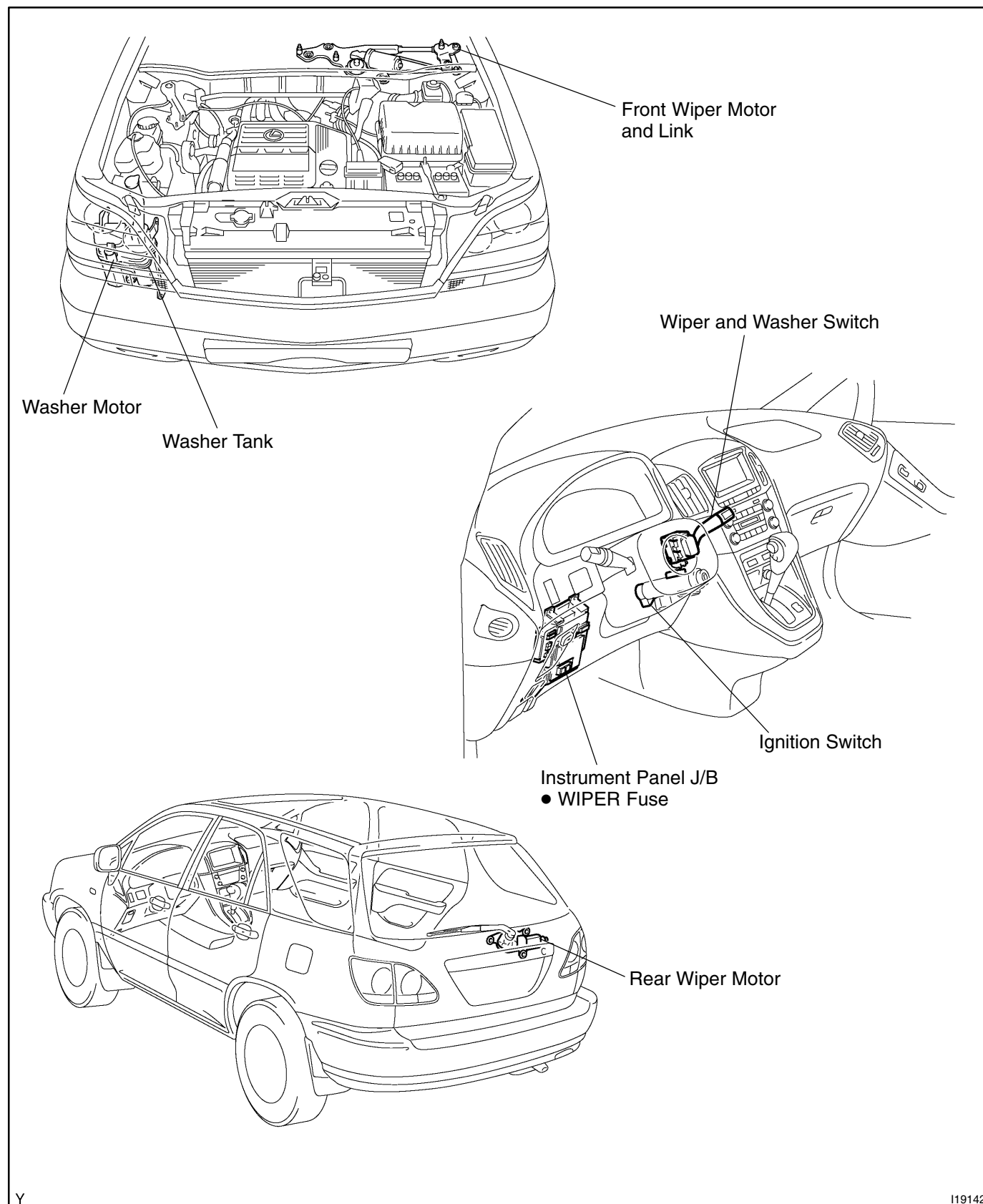
*: There is resistance because this circuit is grounded through the bulb.

If the circuit is as specified, replace the sensor.

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

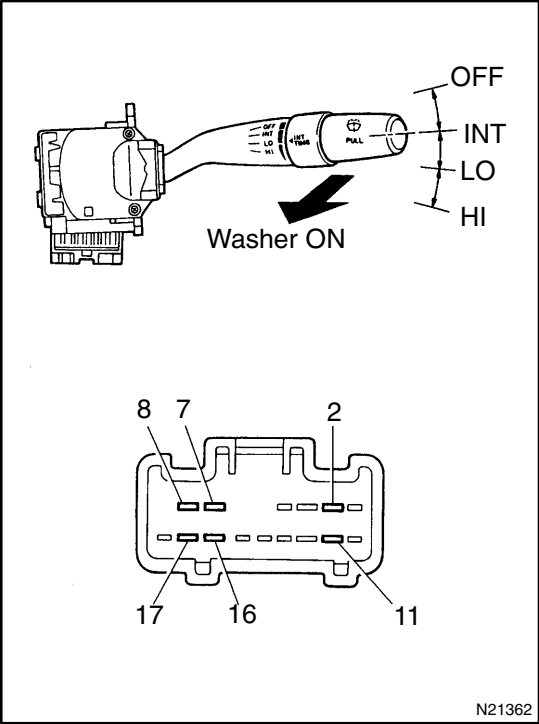
WIPER AND WASHER SYSTEM LOCATION

BE05B-05



Y

I19142

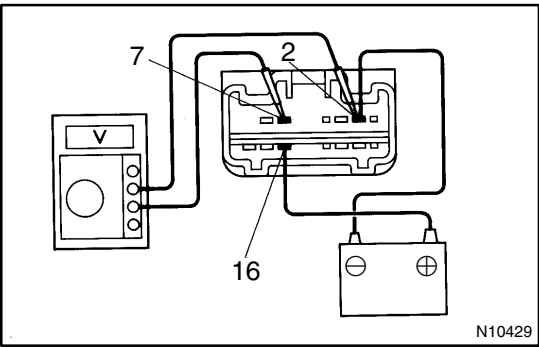


INSPECTION

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.



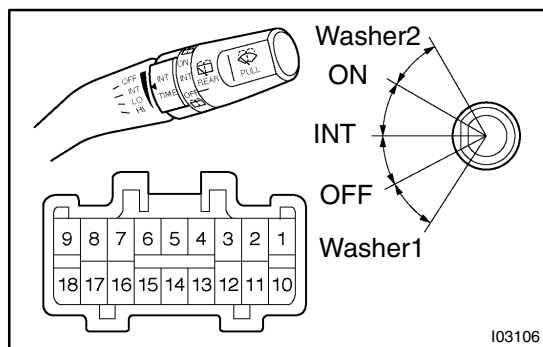
2. INSPECT INTERMITTENT OPERATION

- Turn the wiper switch to INT position.
- Turn the intermittent time control switch to FAST position.
- Connect the positive (+) lead from the battery to terminal 16 and the negative (–) lead to terminal 2.
- Connect the positive (+) lead from the voltmeter to terminal 7 and the negative (–) lead to terminal 2, check that the meter needle indicates battery voltage.

INT time control switch position	Voltage
FAST	Approx. 1–3 secs. Battery voltage 0 volt
SLOW	Approx. 10–15 secs. Battery voltage 0 volt

V03883

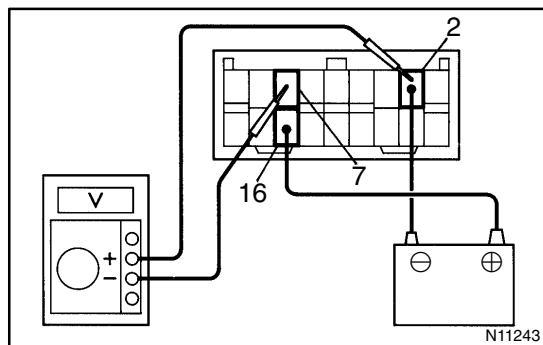
If operation is not as specified, replace the wiper and washer switch.



3. INSPECT REAR WIPER AND WASHER SWITCH CONTINUITY

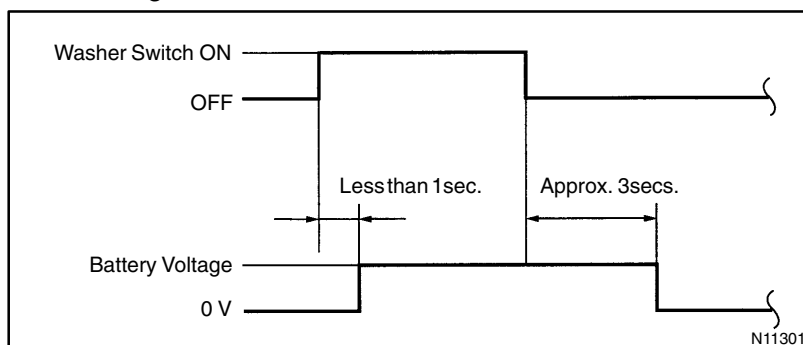
Switch position	Tester connection	Specified condition
Washer 1	2 - 12	Continuity
Wiper OFF	-	No continuity
Wiper INT	2 - 13	Continuity
Wiper ON	2 - 10	Continuity
Washer 2	2 - 10 - 12	Continuity

If continuity is not as specified, replace the switch.



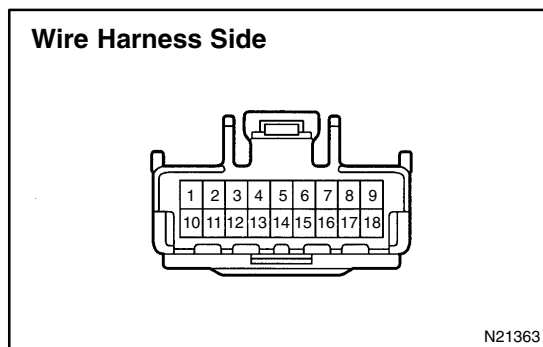
4. INSPECT WASHER LINKED OPERATION

- Connect the positive (+) lead from the battery to terminal 16 and the negative (-) lead to terminal 2.
- Connect the positive (+) lead from the voltmeter to terminal 7 and the negative (-) lead to terminal 2.
- Push in the washer switch, and check that the voltage changes as shown in the chart.



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

Wire Harness Side

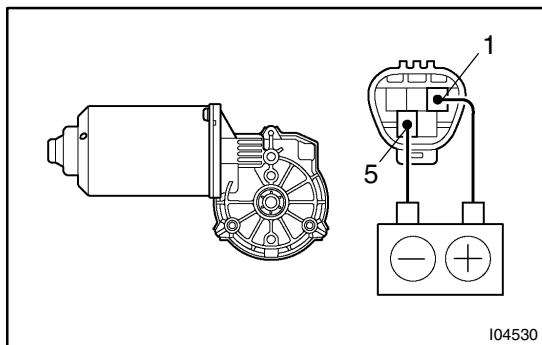


5. INSPECT WIPER SWITCH CIRCUIT

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

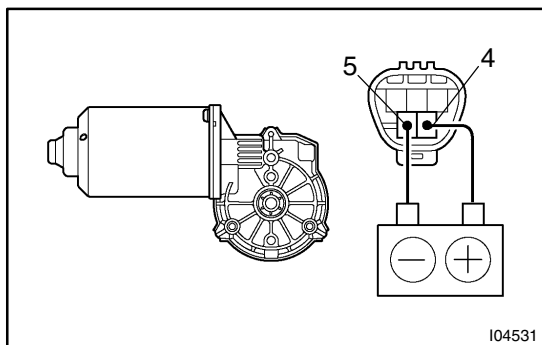
Tester connection	Condition	Specified condition
2 - Ground	Constant	Continuity
11 - Ground	Ignition switch LOCK or ACC	No voltage
11 - Ground	Ignition switch ON	Battery voltage

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

**6. Low Speed:****INSPECT FRONT WIPER MOTOR OPERATION**

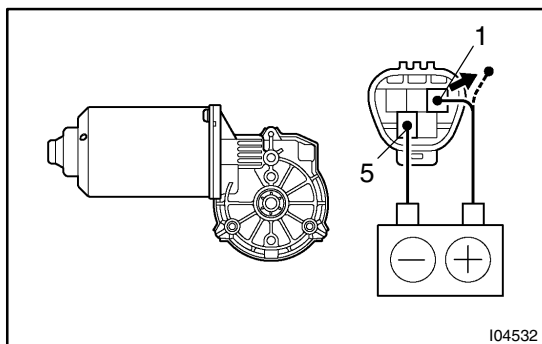
Connect the positive (+) lead from the battery to terminal 1 and the negative (-) lead to terminal 5, check that the motor operates at low speed.

If operation is not as specified, replace the motor.

**7. 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.

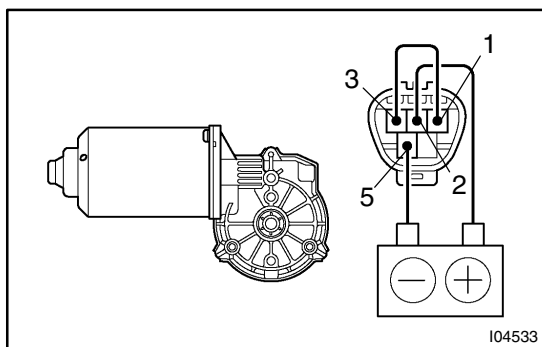
**8. Stopping at Stop Position:****INSPECT FRONT WIPER MOTOR OPERATION**

- (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.

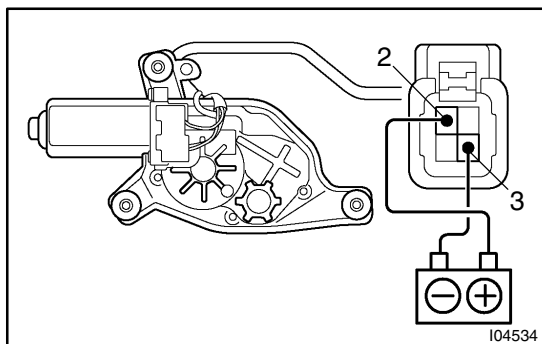
- (c) Connect the positive (+) lead from the battery to terminal 2 and negative (-) lead to terminal 5, check that the motor stops running at the stop position after the motor operates again.

If operation is not as specified, replace the motor.

**9. INSPECT REAR WIPER OPERATION**

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

If operation is not as specified, replace the motor.



Wire Harness Side



e-5-1-C

Z10066

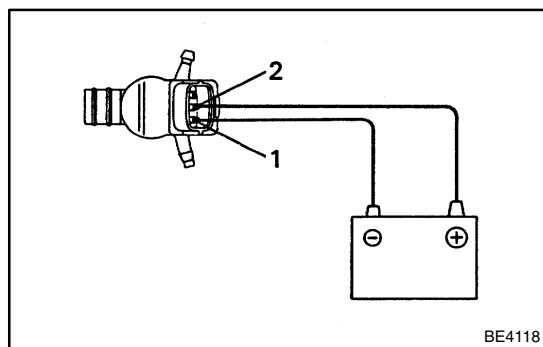
10. INSPECT WIPER MOTOR CIRCUIT

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 voltage
2 – Ground	Ignition switch LOCK or ACC	No voltage
2 – Ground	Ignition switch ON	Battery voltage
4 – Ground	* Wiper switch OFF or INT, LOW	No voltage
4 – Ground	* Wiper switch HIGH	Battery voltage

*: Turn ignition switch ON

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

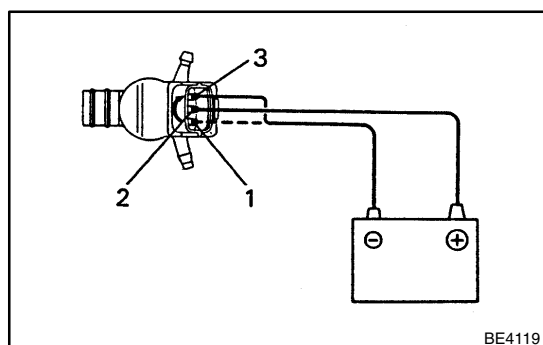
**11. Front Washer:****INSPECT WASHER MOTOR OPERATION**

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.

**12. Rear Washer:****INSPECT WASHER MOTOR OPERATION**

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

NOTICE:

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

If operation is not as specified, replace the motor.

Wire Harness Side

le-3-1-C

Z07418

13. INSPECT WASHER MOTOR CIRCUIT

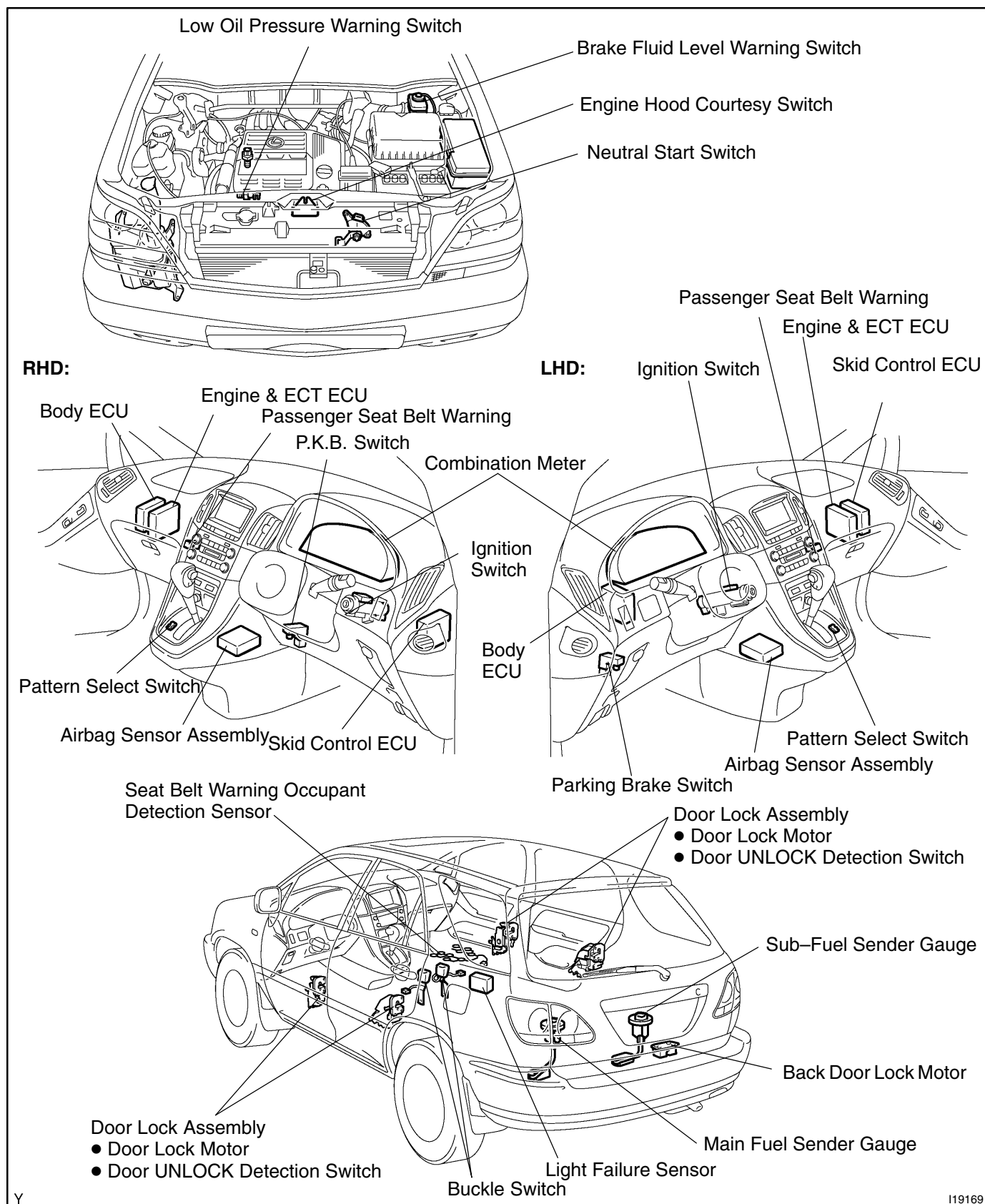
Disconnect the connector from the washer motor and inspect the connector on harness side.

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 voltage

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

COMBINATION METER LOCATION

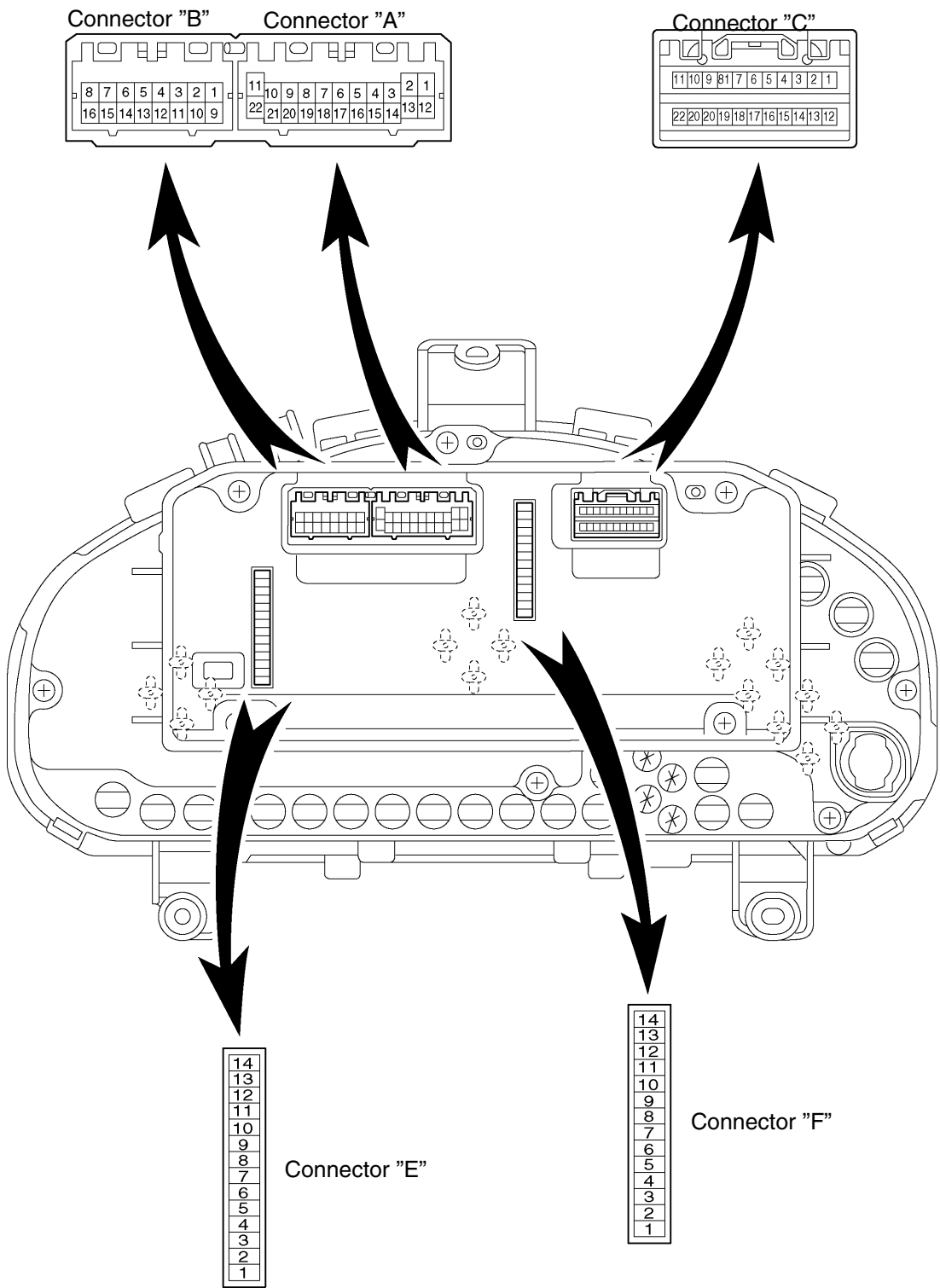
BE0BZ-04

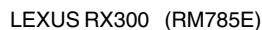


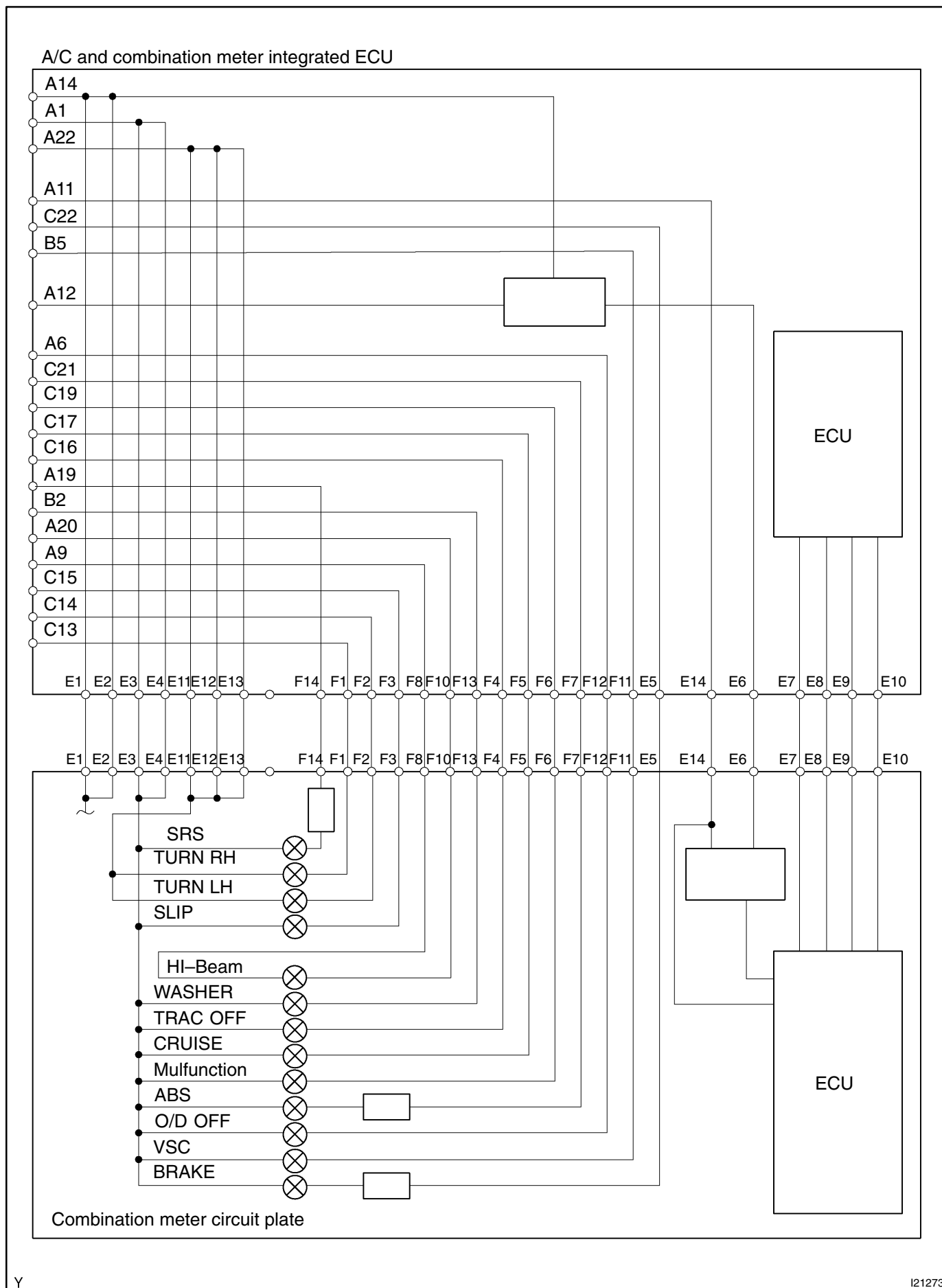
Y

I19169

CIRCUIT



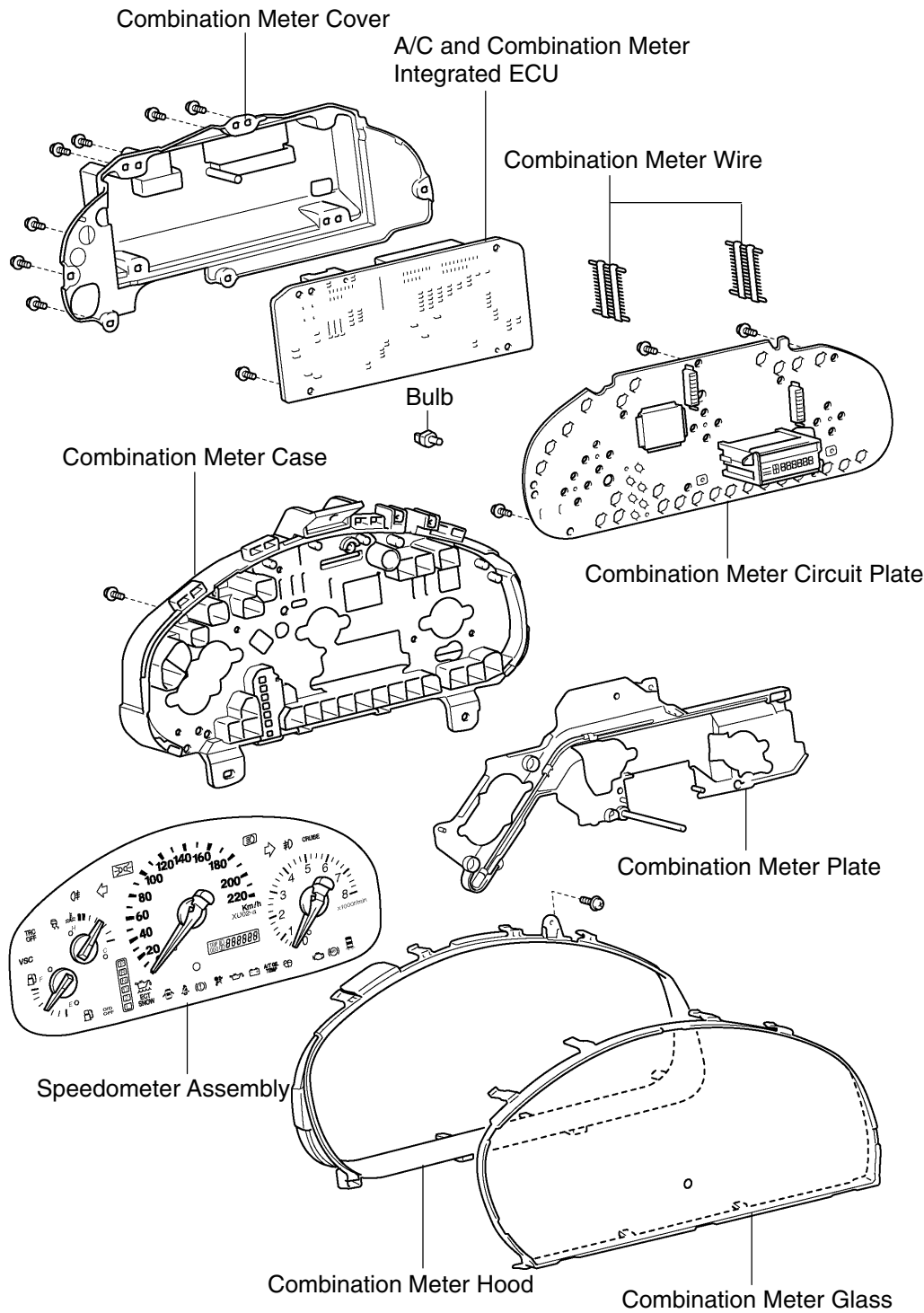


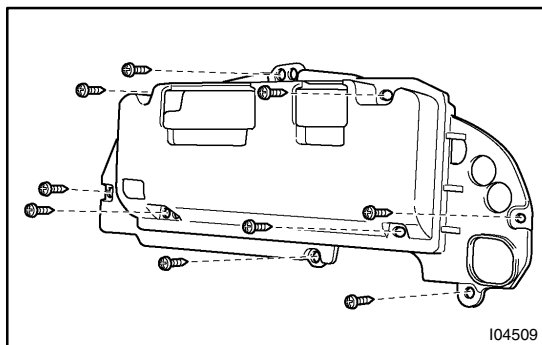


BODY ELECTRICAL – COMBINATION METER

No.	Wire Harness Side (Terminal name)	No.	Wire Harness Side (Terminal name)
A	1 HEATER Fuse	E	1 DOME +B Terminal
	3 ECU+B Fuse		2 DOME +B Terminal
	6 Engine & ECT ECU		3 IG + Terminal
	9 H-LP Fuse		4 IG + Terminal
	10 Speed Control Unit		5 BRAKE Warning Light
	11 Ground		6 Light Control Rheostat (RHOO)
	12 Interior Light		7 CS Terminal
	14 DOME Fuse		8 CLK Terminal
	15 Main Fuel Sender Gauge		9 DOUT Terminal
	17 Multiplex Communication Circuit (MPX-)		10 DIN Terminal
	18 Light Failure Sensor		11 Ground (P/GND)
	19 Airbag Sensor Assembly		12 Ground (P/GND)
	20 Headlight Dimmer Switch		13 Ground (P/GND)
	21 Multiplex Communication Circuit (MPX+)		14 Ground (S/GND)
	22 Ground	F	1 Right Turn Indicator Light
B	2 Washer Level Warning Switch		2 Left Turn Indicator Light
	5 Skid Control ECU		3 SLIP Indicator Light
	6 Light Control Rheostat (RHCL)		4 TRC OFF Indicator Light
	7 Light Control Rheostat (ILL+)		5 CRUISE MAIN Indicator Light
	10 Light Control Rheostat (ET)		6 Multifunction Indicator Light
	14 Light Control Rheostat (TC)		7 ABS Warning Light
C	12 Oil Level Sensor		8 HI-Beam Indicator Light (BEAM +)
	13 Turn Signal Switch (RH)		10 HI-Beam Indicator Light (BEAM -)
	14 Turn Signal Switch (LH)		11 VSC Indicator Light
	15 Skid Control ECU		12 O/D OFF Indicator Light
	16 Skid Control ECU		13 Window Washer Level Warning Light
	17 Cruise Control ECU		14 Airbag Warning Light
	18 Engine & ECT ECU		
	19 Engine & ECT ECU		
	20 Skid Control ECU		
	21 Skid Control ECU		
	22 Skid Control ECU		

COMPONENTS

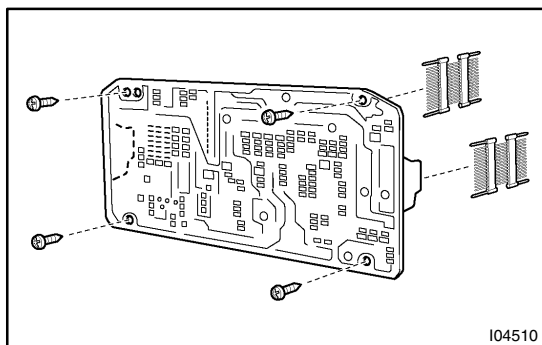




DISASSEMBLY

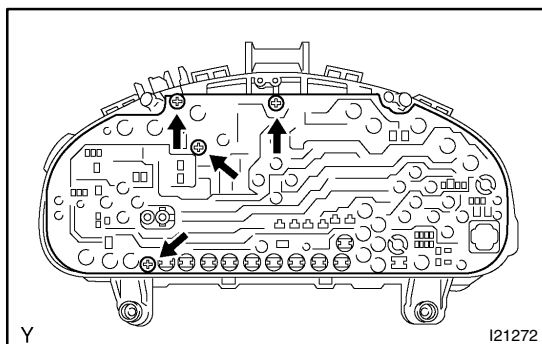
1. REMOVE COMBINATION METER COVER

- (a) Remove the 9 screws.
- (b) Remove the combination meter cover.



2. REMOVE A/C AND COMBINATION METER INTEGRATED ECU

- (a) Remove the 4 screws.
- (b) Remove the A/C and combination meter integrated ECU and 2 combination meter wire.



3. REMOVE COMBINATION METER CIRCUIT PLATE

- (a) Remove the 4 screws and 6 connectors.
- (b) Remove the combination meter circuit plate from the meter case.

4. REMOVE METER HOOD

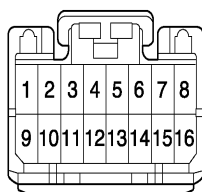
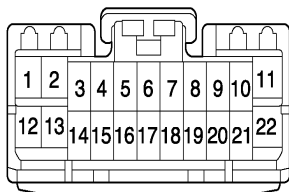
5. REMOVE COMBINATION METER GLASS

6. REMOVE COMBINATION METER PLATE

Remove the screw and meter plate.

7. REMOVE SPEEDOMETER ASSEMBLY

- (a) Remove the 2 screws and speedometer assembly.
- (b) Remove the No.4 combination meter plate.



I04512

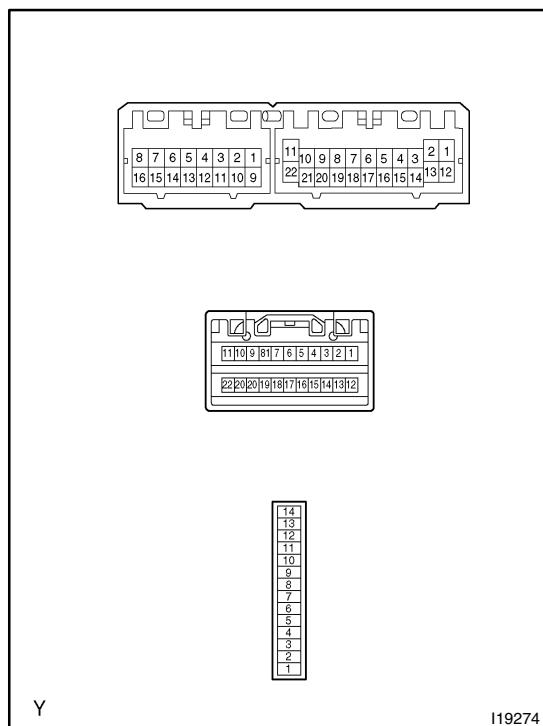
INSPECTION

1. INSPECT COMBINATION METER CIRCUIT

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

Tester connection	Condition	Specified condition
A1 – Ground	Ignition switch OFF or ACC	No voltage
	Ignition switch ON	Battery voltage
A3 – Ground	Constant	Battery voltage
A9 – Ground	Light control switch HI or FLASH	Battery voltage
A11 – Ground	Constant	Continuity
A12 – Ground	Light control switch TAIL or HEAD	Battery voltage
A14 – Ground	Constant	Battery voltage
A15 – Ground	Float position of fuel sender gauge Full	Resistance 4.0 Ω
	Float position of fuel sender gauge 2/1	Resistance Ω
	Float position of fuel sender gauge Empty	Resistance 110.0 Ω
A20 – Ground	Light control switch HI or FLASH	Continuity
A22 – Ground	Constant	Continuity
B2 – Ground	Window washer level warning switch ON	Continuity
B6 – B7	Rheostat nob fully right turn	Resistance 8 – 12 $\kappa\Omega$
	Light control rheostat nob fully left turn	Resistance 0 Ω
B10 – B7	Constant	Resistance 8 – 12 $\kappa\Omega$
B14 – B7	Light control rheostat nob fully left turn	No continuity

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



2. INSPECT INSTRUMENT PANEL INTEGRATION ECU CIRCUIT

- Remove the combination meter cover.
- Inspect the connectors on the ECU as follows.

Tester connection	Specified condition
E1 – A14	Continuity
E2 – A14	Continuity
E3 – A1	Continuity
E4 – A1	Continuity
E5 – C22	Continuity
E11 – A22	Continuity
E12 – A22	Continuity
E13 – A22	Continuity
E14 – A11	Continuity
F1 – C13	Continuity
F2 – C14	Continuity
F3 – C15	Continuity
F4 – C16	Continuity
F5 – C17	Continuity
F6 – C19	Continuity
F7 – C21	Continuity
F8 – A9	Continuity
F10 – A20	Continuity
F11 – B5	Continuity
F12 – A6	Continuity
F13 – B2	Continuity
F14 – A19	Continuity

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

3. INSPECT COMBINATION METER ECU CIRCUIT

- Remove the combination meter cover.
- Inspect the connectors on the instrument panel integration ECU as follows.

Tester connection	Check indicator light circuit	Specified condition
F1 – E11, E12, E13	Right turn signal indicator light	Continuity
F2 – E11, E12, E13	Left turn signal indicator light	Continuity
F3 – E3, E4	SLIP indicator light	Continuity
F4 – E3, E4	TRC OFF indicator light	Continuity
F5 – E3, E4	CRUISE MAIN indicator light	Continuity
F6 – E3, E4	Malfunction indicator light	Continuity
F8 – F10	HI-Beam indicator light	Continuity
F12 – E3, E4	O/D OFF indicator light	Continuity
F13 – E3, E4	Washer level warning light	Continuity
F11 – E3, E4	VSC Indicator Light	Continuity

If circuit is not as specified, replace bulb or combination meter ECU.

4. INSPECT SPEEDOMETER ON-VEHICLE

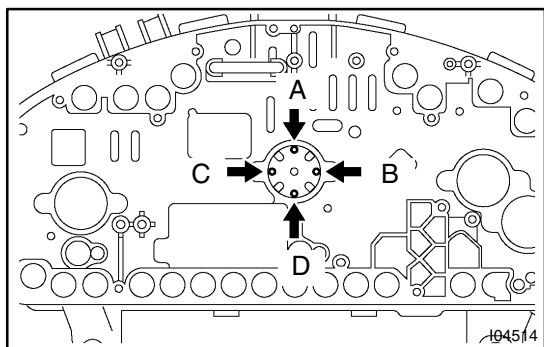
Using a speedometer tester, inspect the speedometer for allowable indication error and check the operation of the odometer.

HINT:

Tire wear and tire over or under inflation will increase the indication error.

(mph)		(km/h)	
Standard indication	Allowable range	Standard indication	Allowable range
20	20 – 23	20	18 – 23
40	40 – 44	40	40 – 44
60	60 – 64	60	60 – 65
80	80 – 85	80	80 – 85
100	100 – 105	100	100 – 105
120	120 – 126	120	120 – 125
		140	140 – 146
		160	160 – 167

If error is excessive, replace the speedometer.



5. INSPECT SPEEDOMETER RESISTANCE

- Remove the meter cover, A/C and combination meter integrated ECU and combination meter circuit plate.
- Measure the resistance between terminals with fixing pointer to the stopper.

Tester connection	Resistance (Ω)
A – B	140 – 185
C – D	130 – 175

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

6. INSPECT TACHOMETER ON-VEHICLE

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

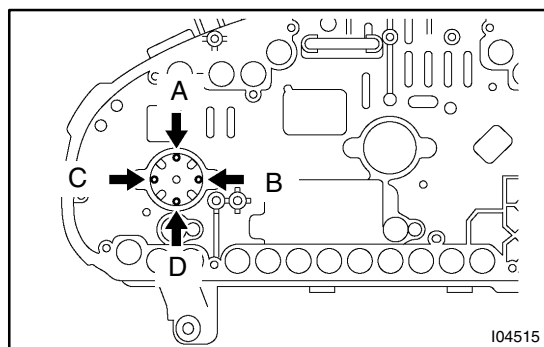
NOTICE:

- 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.

- Compare the tester and tachometer indications.

DC 13.5 V 25 °C at (77 °F)

Standard indication	Allowable range
700	630 – 770
1,000	900 – 1,100
2,000	1,850 – 2,150
3,000	2,800 – 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



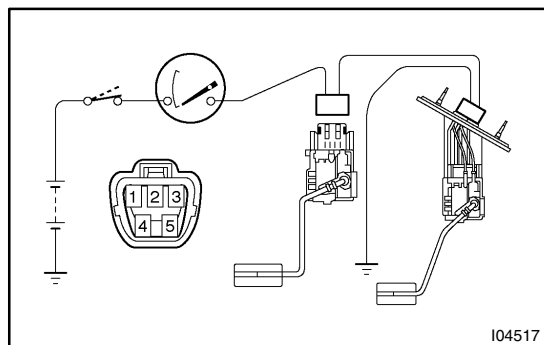
I04515

7. INSPECT TACHOMETER RESISTANCE

- Remove the meter cover, A/C and combination meter integrated ECU and combination meter circuit plate.
- Measure the resistance between terminals with fixing pointer to the stopper.

Tester connection	Resistance (Ω)
A – B	140 – 185
C – D	130 – 175

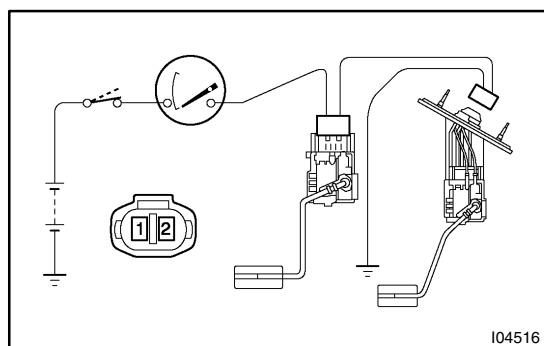
If resistance value is not as specified, replace the meter.



I04517

8. INSPECT FUEL RECEIVER GAUGE OPERATION (See page DI-544)

- Disconnect the connector from the main sender gauge.
- Disconnect the battery terminal once then after 30 secs., reconnect the terminal.
- Turn the ignition switch ON, check that the receiver gauge needle indicates EMPTY.
- Connect the main sender gauge.



I04516

- Disconnect the connector from the sub sender gauge.
- Disconnect the battery terminal once then after 30 secs., reconnect the terminal.
- Turn the ignition switch ON, check that the receiver gauge needle indicates EMPTY.

HINT:

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

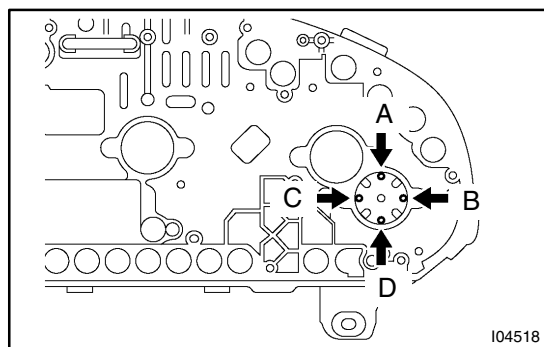
If operation is not as specified, inspect the receiver gauge resistance.

9. INSPECT FUEL RECEIVER GAUGE RESISTANCE

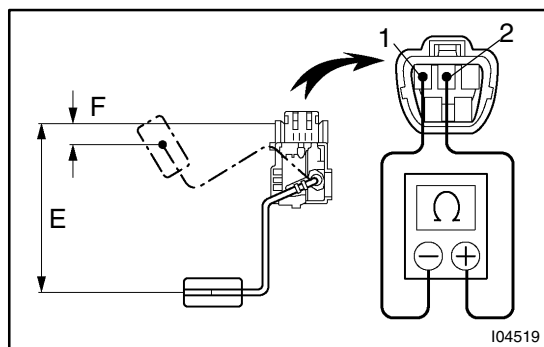
- Remove the meter cover, A/C and combination meter integrated ECU and combination meter circuit plate.
- Measure the resistance between terminals with fixing pointer to the stopper.

Tester connection	Resistance (Ω)
A – B	140 – 185
C – D	130 – 175

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



I04518

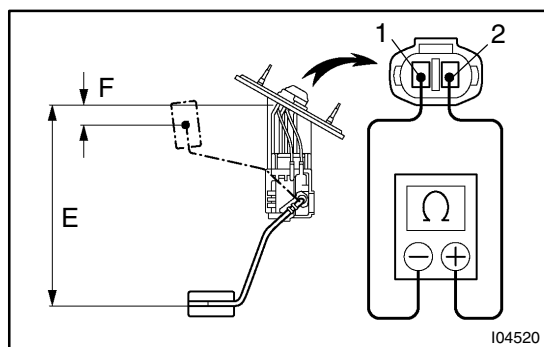


10. INSPECT FUEL MAIN SENDER GAUGE RESISTANCE

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

Float position mm (in.)	Resistance (Ω)
F: Approx. 26.6 (1.047) $\pm$ 3 (0.12)	Approx. 2.0 $\pm$ 1.0
E: Approx. 138.9 (5.468) $\pm$ 3 (0.12)	Approx. 38.7 $\pm$ 1.0

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

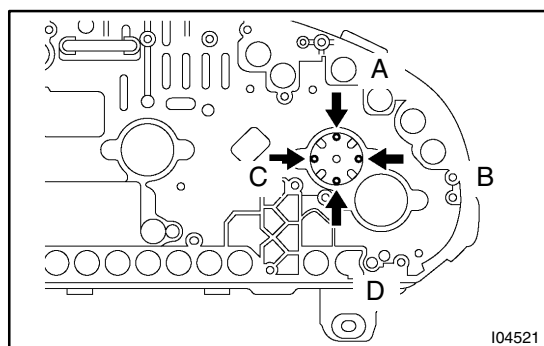


11. INSPECT FUEL SUB SENDER GAUGE RESISTANCE

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

Float position mm (in.)	Resistance (Ω)
F: Approx. 2.4 (0.094) $\pm$ 3 (0.12)	Approx. 2.0 $\pm$ 1.0
E: Approx. 177.2 (6.976) $\pm$ 3 (0.12)	Approx. 71.3 $\pm$ 1.0

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



12. INSPECT ENGINE COOLANT TEMPERATURE RECEIVER GAUGE RESISTANCE

- Remove the meter cover, A/C and combination meter integrated ECU and combination meter circuit plate.
- Measure the resistance between terminals with fixing pointer to the stopper.

Tester connection	Resistance (Ω)
A – B	140 – 185
C – D	130 – 175

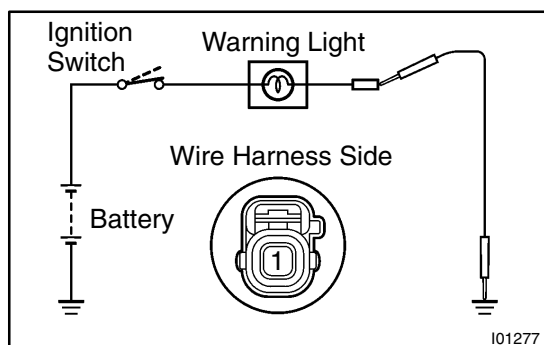
If resistance value is not as specified, replace the receiver gauge.

HINT:

This circuit includes the diode.

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

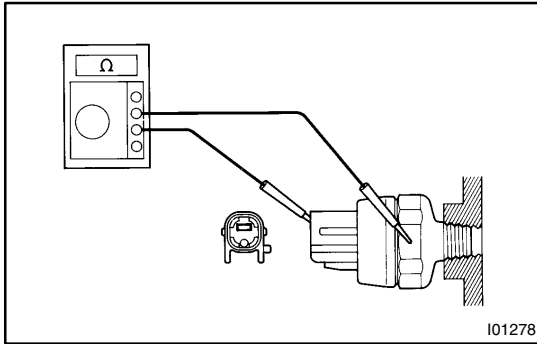
If resistance value is not as specified, replace the engine coolant temperature sender gauge.



13. INSPECT LOW OIL PRESSURE WARNING LIGHT

- Disconnect the connector from the warning switch and ground terminal on the wire harness side connector.
- Turn the ignition switch ON and check that the warning light lights up.

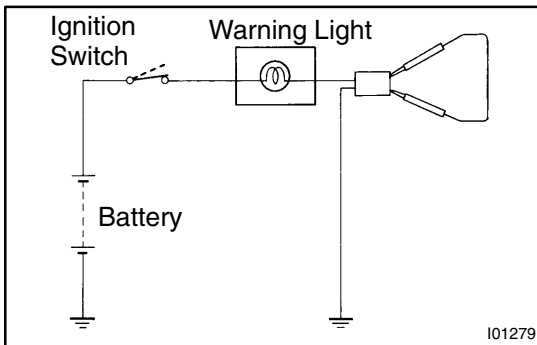
If the warning light does not light up, check the bulb circuit (See page DI-551).

**14. INSPECT LOW OIL PRESSURE SWITCH CONTINUITY**

- Disconnect the connector from the switch.
- Check that continuity exists between terminal and ground with the engine stopped.
- Check that no continuity exists between terminal and ground with the engine running.

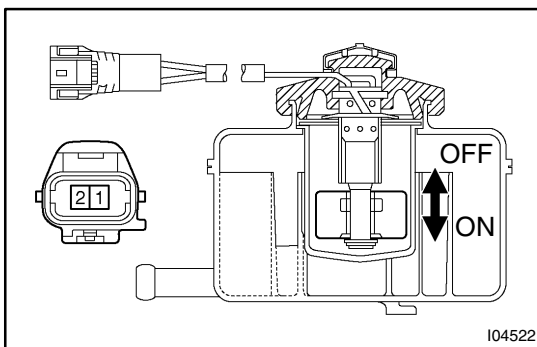
HINT:

Oil pressure should be over 24.5 kPa (0.25 kgf/cm², 3.55 psi).
If operation is not as specified, replace the switch.

**15. INSPECT BRAKE WARNING LIGHT**

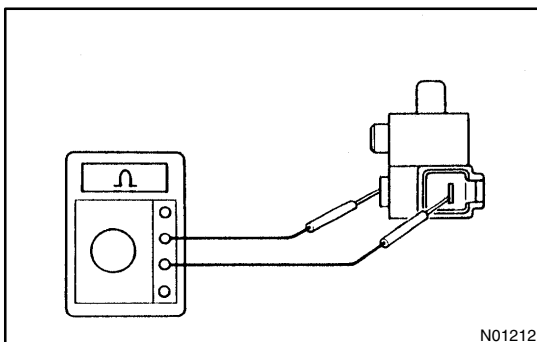
- Disconnect the connector from the brake fluid warning switch.
- Release the parking brake pedal.
- Connect the terminals on the wire harness side of the level warning switch connector.
- Start the engine, check that the warning light lights up.

If the warning light does not light up, check the bulb circuit (See page DI-551).

**16. INSPECT BRAKE FLUID LEVEL WARNING SWITCH CONTINUITY**

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

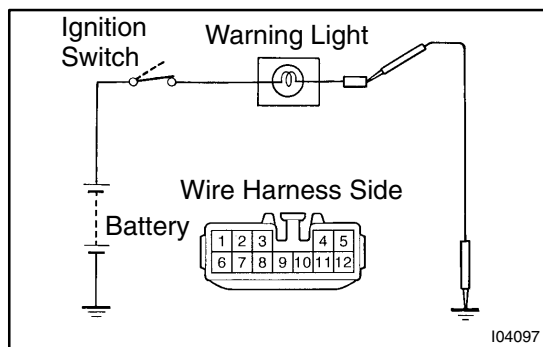
If operation is not as specified, replace the switch.

17. INSPECT BRAKE FLUID LEVEL WARNING SWITCH CIRCUIT**18. INSPECT PARKING BRAKE SWITCH CONTINUITY**

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

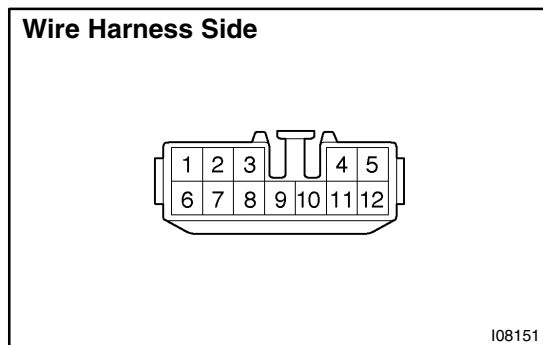
If operation is not as specified, replace the switch or inspect ground point.

19. INSPECT PARKING BRAKE SWITCH CIRCUIT (See page DI-596)



20. INSPECT REAR LIGHTS WARNING LIGHT

- Disconnect the connector from the light failure sensor and ground terminal 3 on the wire harness side connector.
- Start the engine, check that the warning light lights up. If the warning light does not light up, inspect the bulb or wire harness.



21. INSPECT LIGHT FAILURE RELAY CIRCUIT

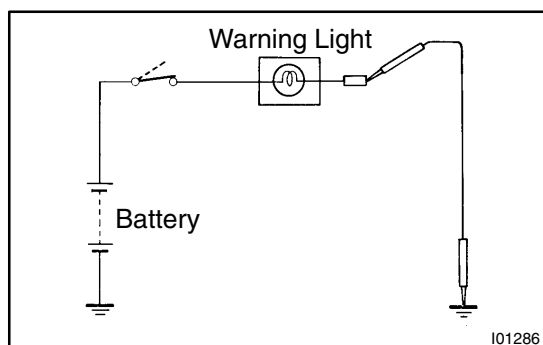
Disconnect the connector from the relay and inspect the connector on the wire harness side, as shown.

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 voltage
4 – Ground	Ignition switch LOCK or ACC	No voltage
4 – Ground	Ignition switch ON	Battery voltage
7 – Ground	Stop light switch OFF	No voltage
7 – Ground	Stop light switch ON	Battery voltage
8 – Ground	Ignition switch LOCK or ACC	No voltage
8 – Ground	Ignition switch ON	Battery voltage

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

If the circuit is as specified, replace the relay.

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

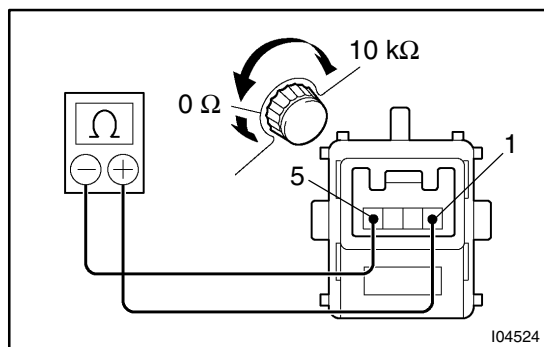


22. INSPECT OPEN DOOR WARNING LIGHT

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.

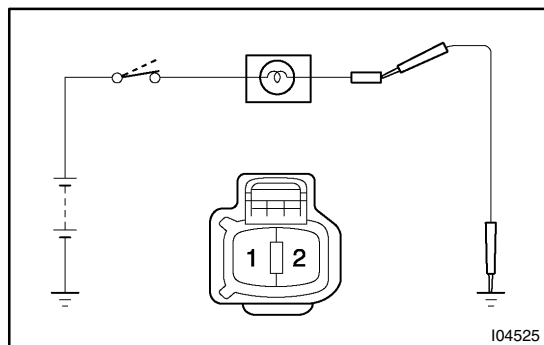
If the warning light does not light up, check the bulb circuit (See page DI-551).

23. INSPECT DOOR COURTESY SWITCH CONTINUITY AND CIRCUIT (See page BE-48)

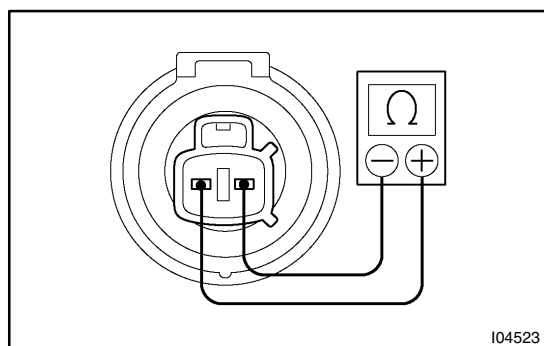
**24. LHD:****INSPECT LIGHT CONTROL RHEOSTAT OPERATION**

Gradually, turn the rheostat knob from the bright side to dark side and check that the resistance decreases from 10 kΩ to 0 Ω between terminal 4 and 5. (Rheostat knob turned to clockwise)

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

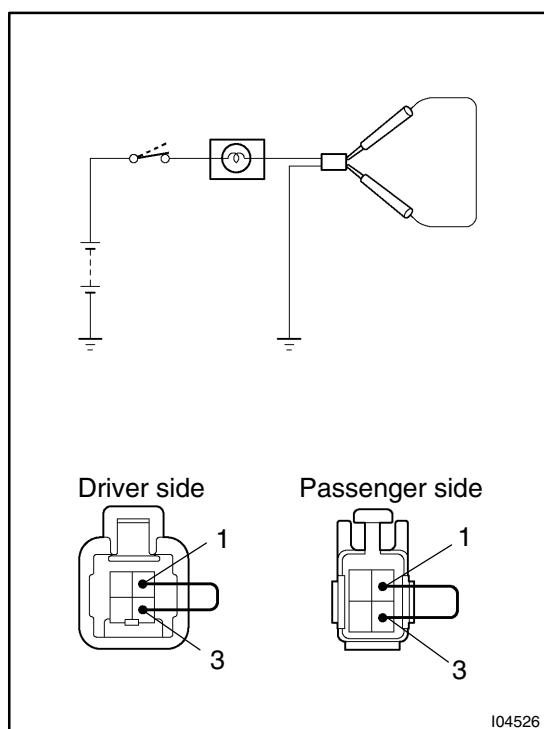
**25. INSPECT WINDOW WASHER LEVEL WARNING LIGHT**

- Disconnect the connector from the warning switch and ground terminal on the wire harness side connector.
- Engine running and check that the warning light lights up. If the warning light does not light up, inspect the bulb or wire harness.

**26. INSPECT WINDOW WASHER LEVEL WARNING SWITCH CONTINUITY**

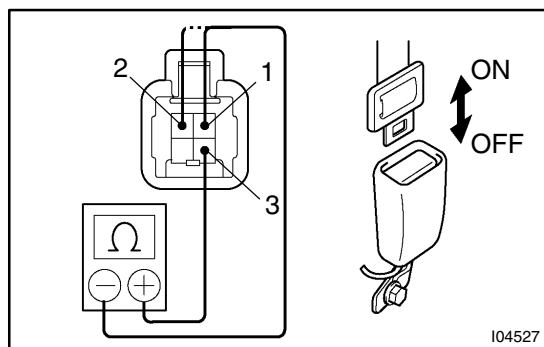
- Check that no continuity exists between the terminals with the switch OFF (float up).
- Check that continuity exists between the terminals with the switch ON (float down).

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

**27. INSPECT SEAT BELT WARNING LIGHT**

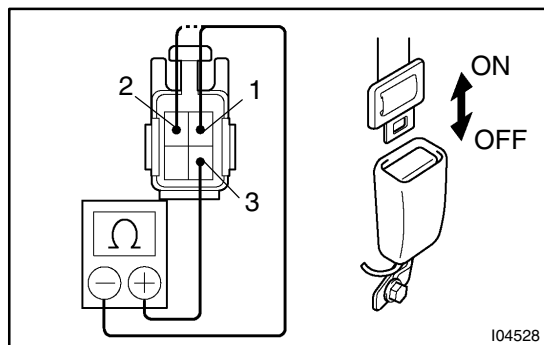
- Disconnect the connector from the buckle switch and ground terminal on the wire harness side connector as shown in the illustration.
- Turn the ignition switch ON and check that the warning light lights up.

If the warning light does not light up, check the bulb circuit (See page DI-551).

**28. Driver's Side:****INSPECT SEAT BELT BUCKLE SWITCH CONTINUITY**

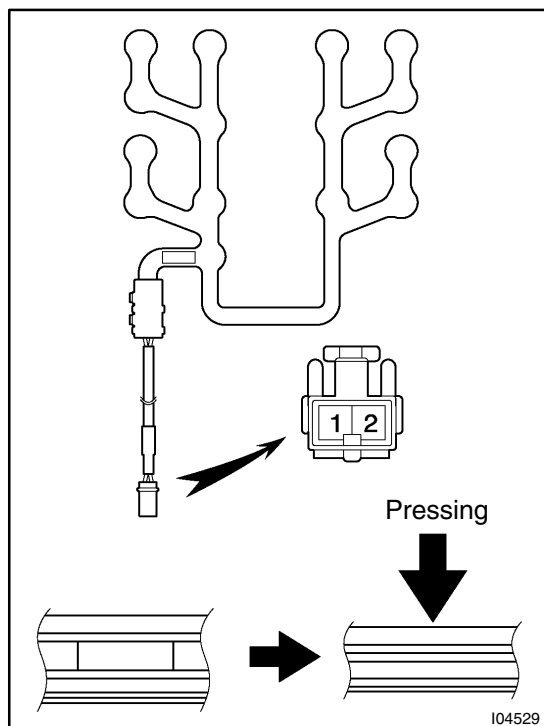
- (a) Check that continuity exists between the terminals 2 and 3 on the switch side connector with the switch ON (belt fastened).
- (b) Check that continuity exists between the terminals 1 and 3 on the switch side connector with the switch OFF (belt unfastened).

If operation is not as specified, replace the switch.

**29. Passenger's Side:****INSPECT SEAT BELT BUCKLE SWITCH CONTINUITY**

- (a) Check that continuity exists between the terminals 1 and 3 on the switch side connector with the switch ON (belt fastened).
- (b) Check that continuity exists between the terminals 2 and 3 on the switch side connector with the switch OFF (belt unfastened).

If operation is not as specified, replace the switch.

30. Driver side:**INSPECT SEAT BELT BUCKLE SWITCH CIRCUIT (See page DI-586)****31. Passenger seat only:****INSPECT SEAT BELT WARNING OCCUPANT DETECTION SENSOR CONTINUITY**

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

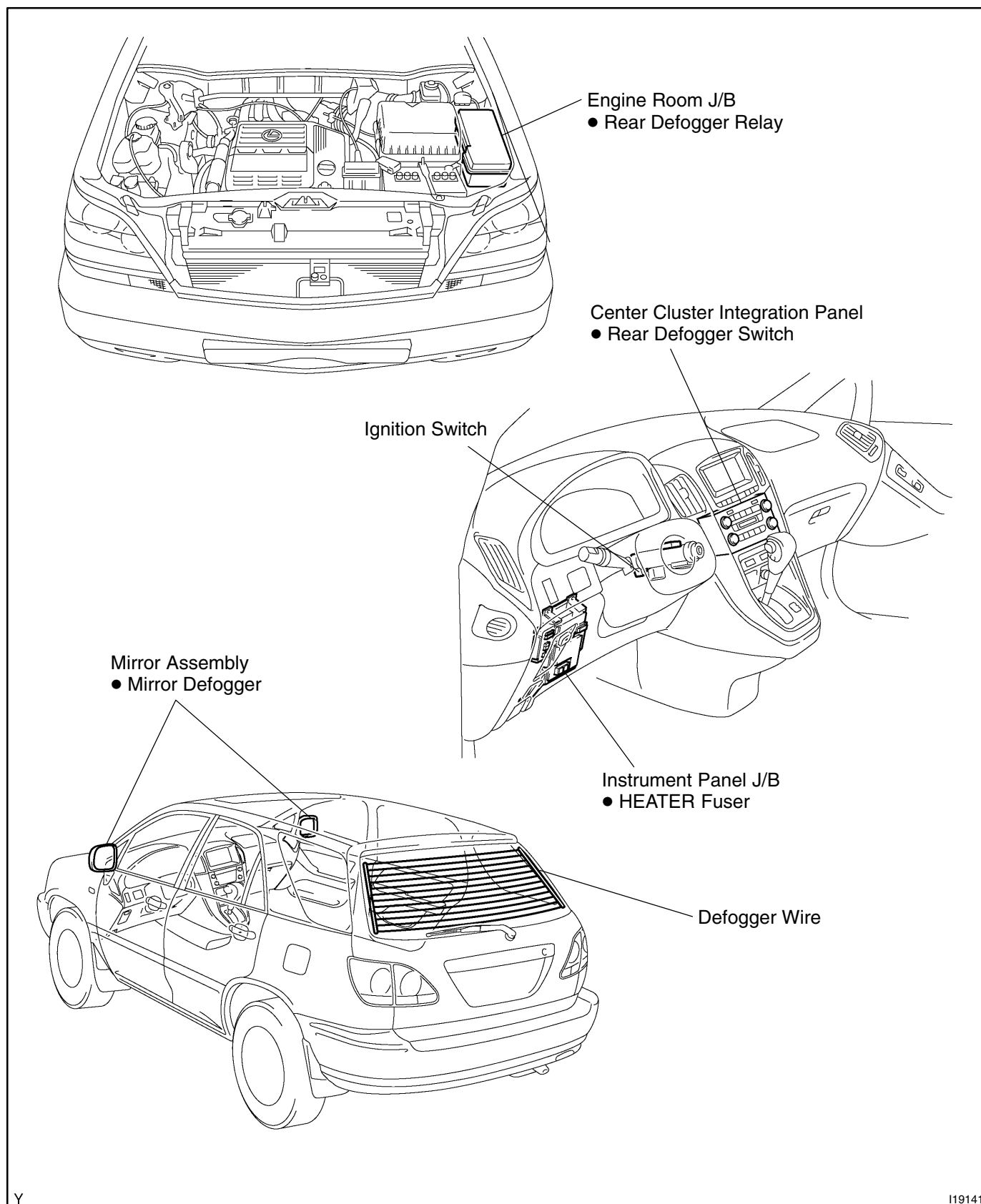
If operation is not as specified, replace the sensor.

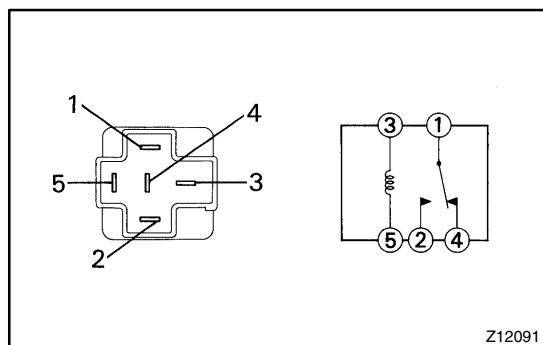
REASSEMBLY

Installation is in the reverse order of disassembly. (See page BE-67)

DEFOGGER SYSTEM LOCATION

BE0GS-13





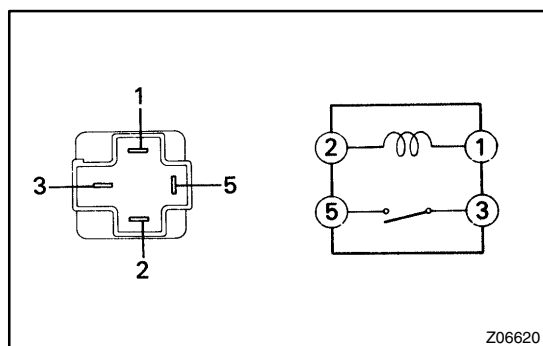
INSPECTION

1. INSPECT REAR DEFOGGER RELAY CONTINUITY

Condition	Tester connection	Specified condition
Constant	1 – 4 3 – 5	Continuity BE0UF-02
Apply B+ between terminals 3 and 5.	1 – 2	Continuity

If continuity is not as specified, replace the relay.

2. INSPECT REAR DEFOGGER RELAY CIRCUIT (See page BE-18)

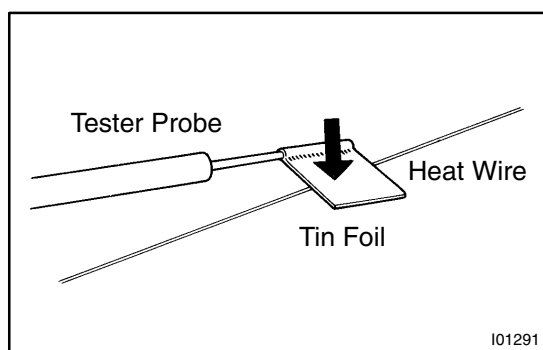


3. INSPECT MIRROR DEFOGGER RELAY CONTINUITY

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 MIRROR DEFOGGER RELAY CIRCUIT (See page BE-18)

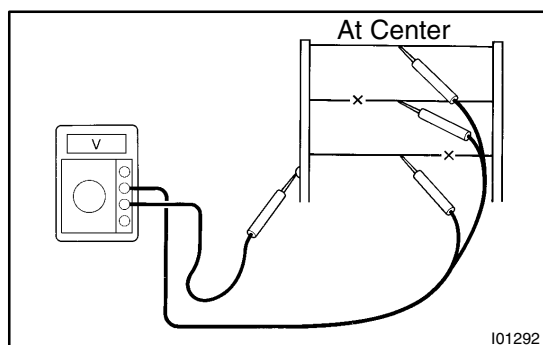


5. INSPECT DEFOGGER WIRE

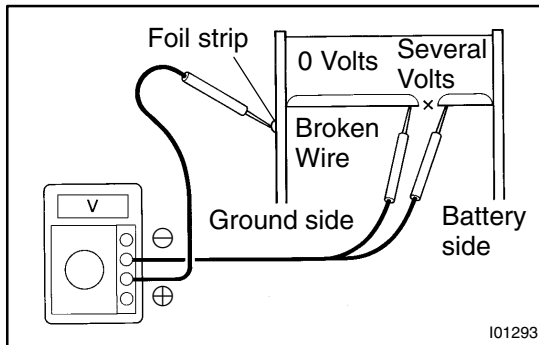
NOTICE:

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

- Turn the ignition switch ON.
- Turn the defogger switch ON.
- Inspect the voltage at the center of each heat wire, as shown.



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

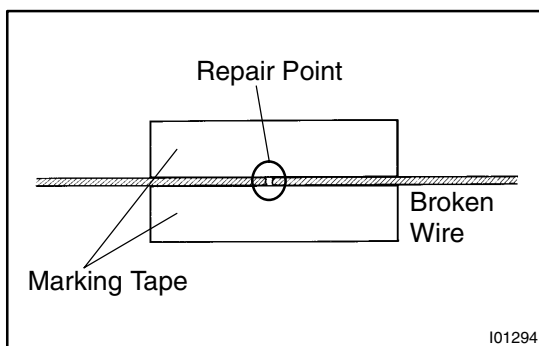
**HINT:**

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

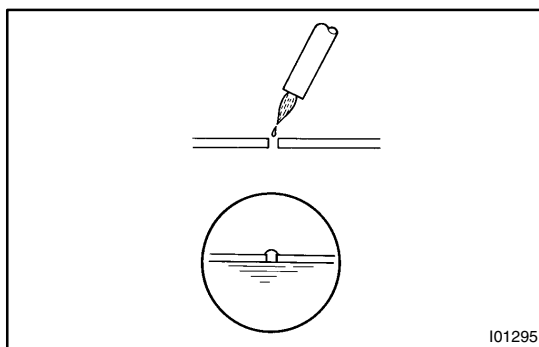
- (d) Place the voltmeter positive (+) lead against the defogger wire on the battery side.
- (e) Place the voltmeter negative (–) lead with the foil strip against the wire on the ground side.
- (f) Slide the positive (+) lead from battery to ground side.
- (g) The point where the voltmeter deflects from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

HINT:

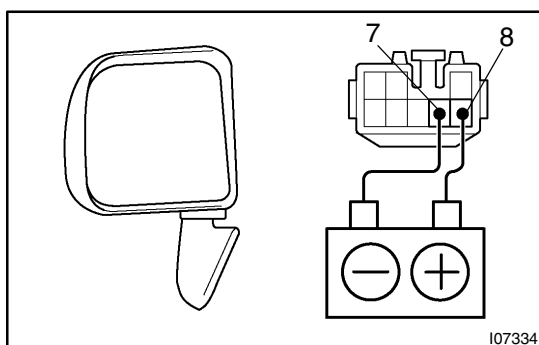
If the heat wire is not broken, the voltmeter indicates 0 V at the positive (+) end of the heat wire but gradually increases to about 12 V as the meter probe moves to the other end.

**6. IF NECESSARY, REPAIR DEFOGGER WIRE**

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



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

**7. INSPECT MIRROR DEFOGGER OPERATION**

- (a) Connect the positive (+) lead from the battery to terminal 7 and the negative (–) lead to terminal 8.
- (b) Check that the mirror becomes warm.

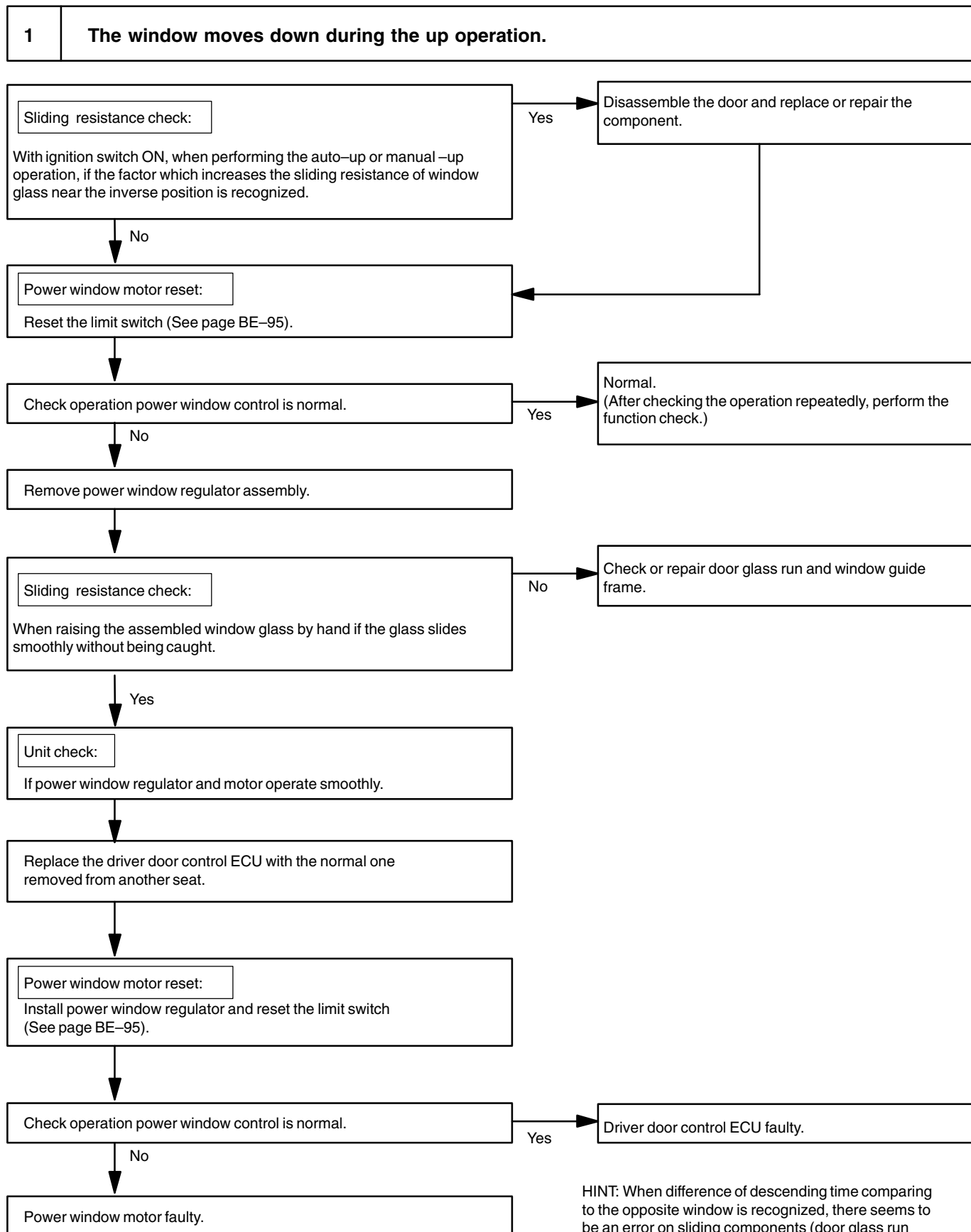
HINT:

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

POWER WINDOW CONTROL SYSTEM

TROUBLESHOOTING

BE02C-12



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

2 The DOWN function does not work though some other objects are caught in the power window glass.

Is the system in the jam protection function operating condition?
• The AUTO UP operation works with the ignition switch ON. (One-touch operation)

No

Normal (Perform function check)

Yes

Is the power window within the jam protection function operating area?

< Out of the operating area >
Area around the fully closed position

Yes

No

Reset the limit switch (See page BE-95).

Does the power window operate normally?

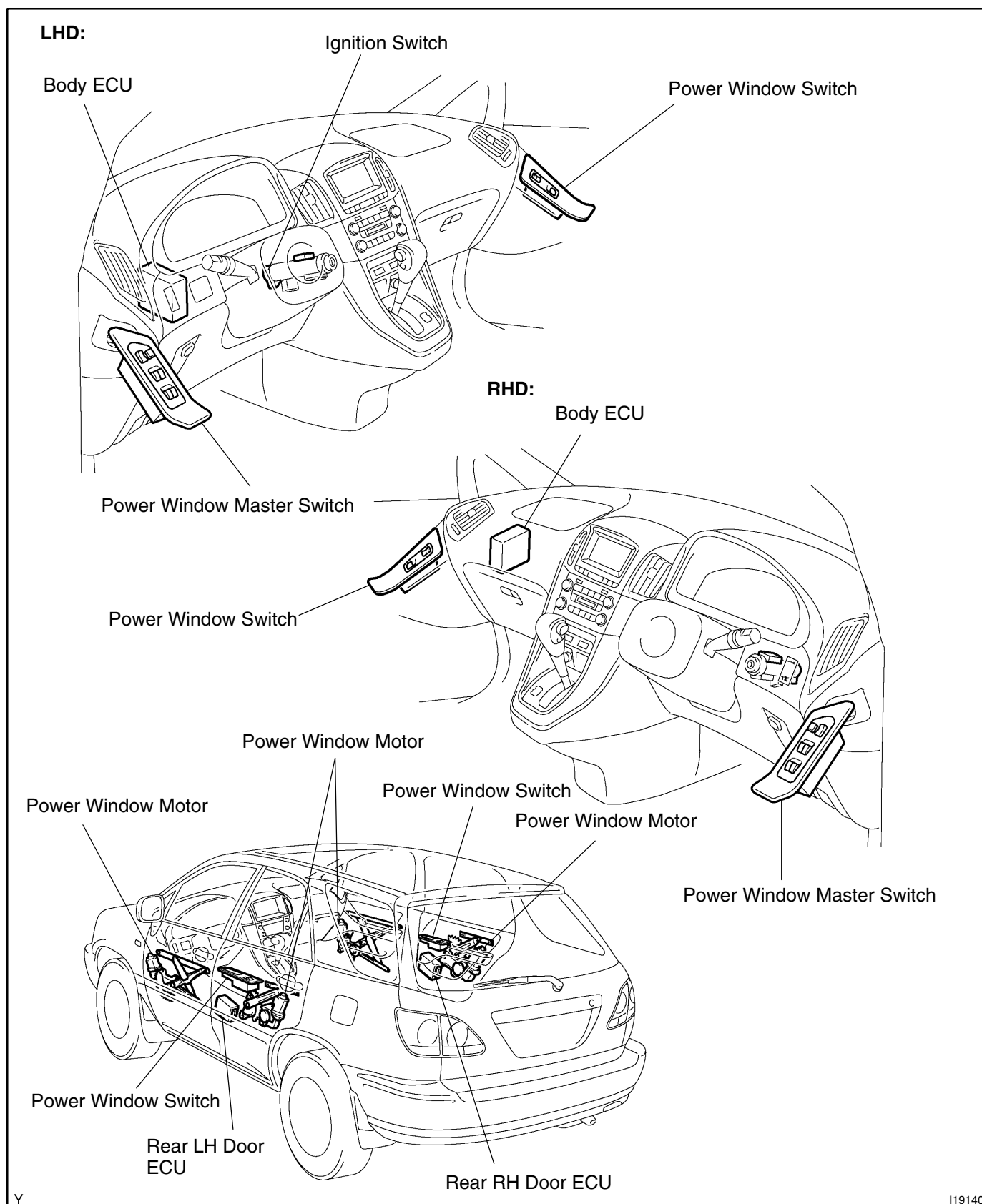
Yes

Normal
(After performing operation check repeatedly,
conduct the function check.)

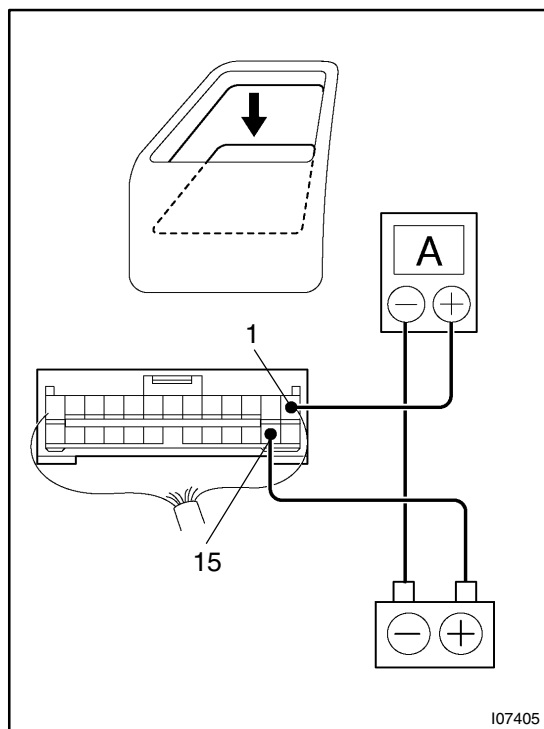
No

Master switch defective.

LOCATION



I19140



INSPECTION

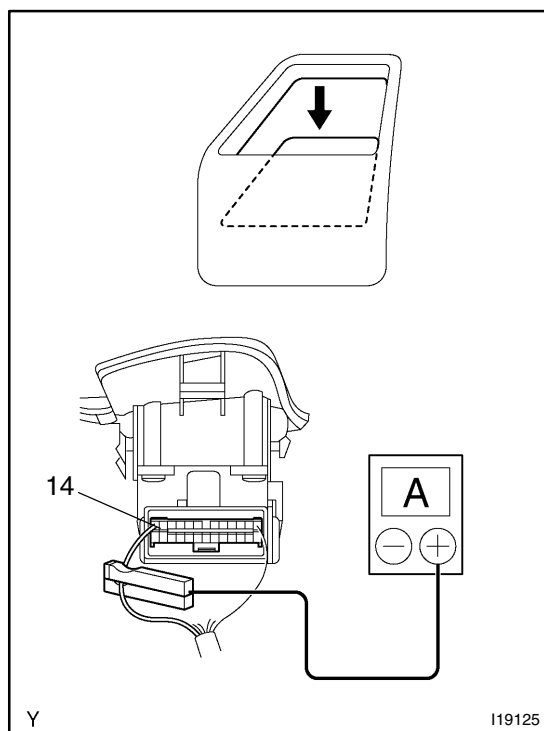
1. INSPECT ONE TOUCH POWER WINDOW SYSTEM/ CURRENT OF CIRCUIT (Using an ammeter)

- Disconnect the connector from the power window master switch.
- Connect the positive (+) lead from the ammeter to terminal 1 on the wire harness side connector and the negative (–) lead to negative (–) terminal of the battery.
- Connect the positive (+) lead from the battery to terminal 15 on the wire harness side connector.
- As the window goes down, check that the current flow is approximately 7 A.
- Check that the current increases up to approximately 14.5 A or more when the window stops going down.

HINT:

The PTC opens some 4 – 90 seconds after the window stops going down, so that check must be made before the PTC operates.

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



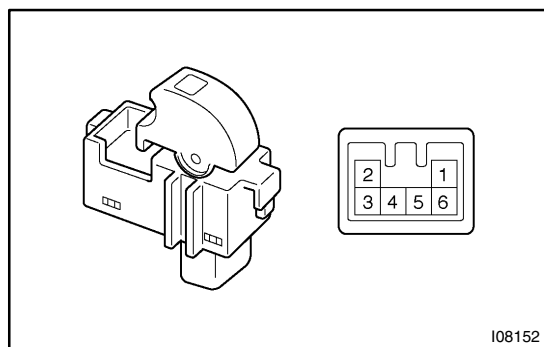
2. INSPECT ONE TOUCH POWER WINDOW SYSTEM/ CURRENT OF CIRCUIT (Using an ammeter with a current-measuring probe)

- Remove the power window master switch with connectors connected.
- Attach a current-measuring probe to terminal 14 of the wire harness.
- Turn the ignition switch ON and set the power window switch in the down position.
- As the window goes down, check that the current flow is approximately 7 A.
- Check that the current increases up to approximately 14.5 A or more when the window stops going down.

HINT:

The PTC opens some 4 – 90 seconds after the window stops going down, so that check must be made before the PTC operates.

If operation is as specified, replace the master switch.



3. INSPECT POWER WINDOW SWITCH CONTINUITY

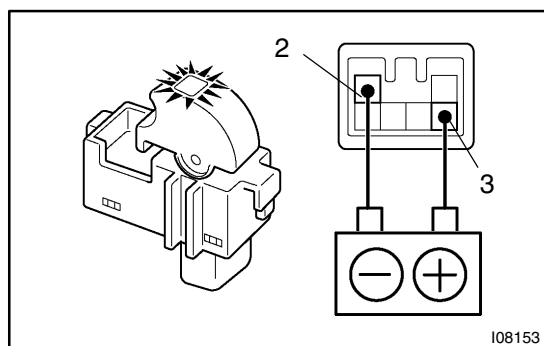
Switch position	Tester connection	Specified condition
UP AUTO	3 – 4, 3 – 6	Continuity
UP	3 – 6	Continuity
OFF	–	No continuity
DOWN	5 – 6	Continuity
DOWN AUTO	4 – 6, 5 – 6	Continuity

If continuity is not as specified, replace the switch.

4. INSPECT POWER WINDOW SWITCH CIRCUIT

Rear LH side: (See page DI-657)

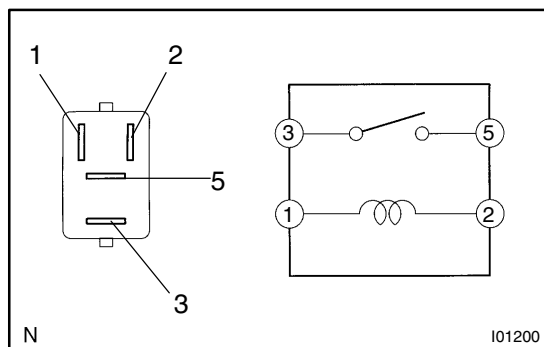
Rear RH side: (See page DI-674)



5. INSPECT POWER WINDOW SWITCH ILLUMINATION

Connect the positive (+) lead from the battery to terminal 3 and the negative (-) lead to terminal 2, and check that the indicator light lights up.

If operation is not as specified, replace the switch.

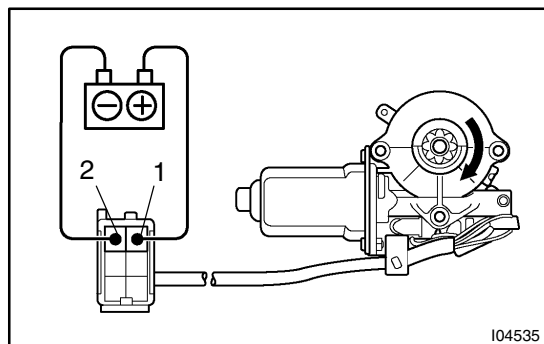


6. INSPECT POWER MAIN RELAY CONTINUITY

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

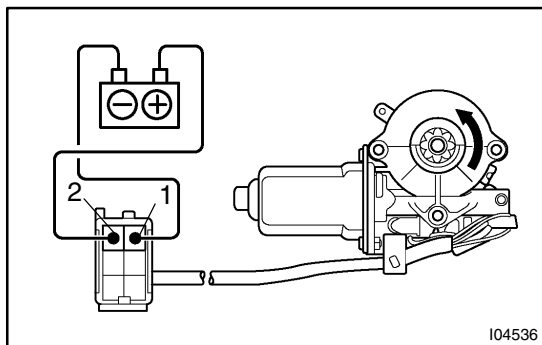
If continuity is not as specified, replace the relay.

7. INSPECT POWER MAIN RELAY CIRCUIT (See page BE-18)



8. INSPECT DRIVER'S (LHD)/PASSENGER'S (RHD) DOOR POWER WINDOW MOTOR OPERATION

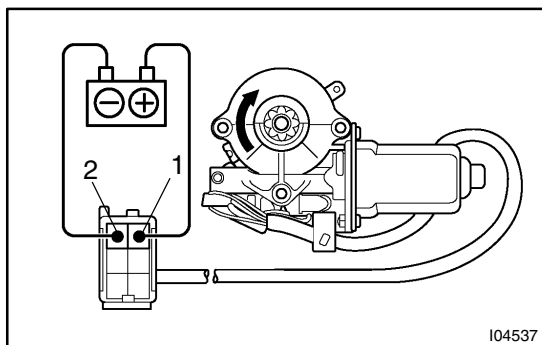
- (a) Connect the positive (+) lead from the battery to terminal 1 and the negative (-) lead to terminal 2, and check that the motor turns clockwise.



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

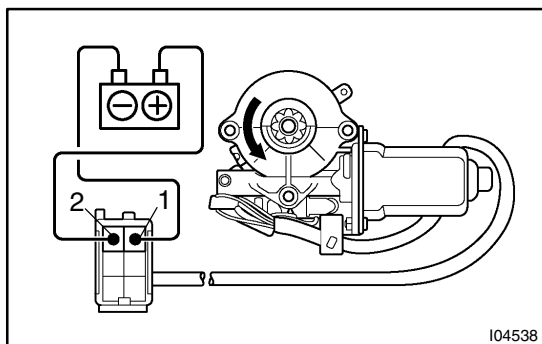
If operation is not as specified, replace the motor.

9. INSPECT DRIVER'S (LHD)/PASSENGER'S (RHD) DOOR POWER WINDOW MOTOR CIRCUIT
(See page DI-614)



10. INSPECT PASSENGER'S (LHD)/DRIVER'S (RHD) DOOR POWER WINDOW MOTOR OPERATION

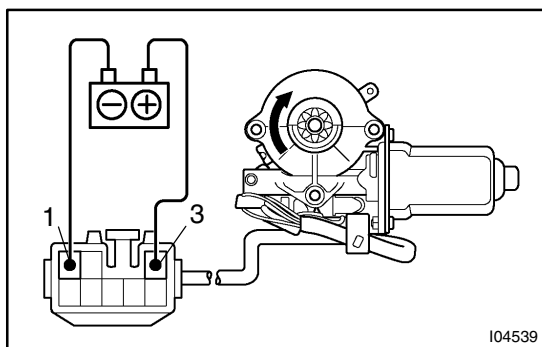
- (a) Connect the positive (+) lead from the battery to terminal 1 and the negative (-) lead to terminal 2, and check that the motor turns clockwise.



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

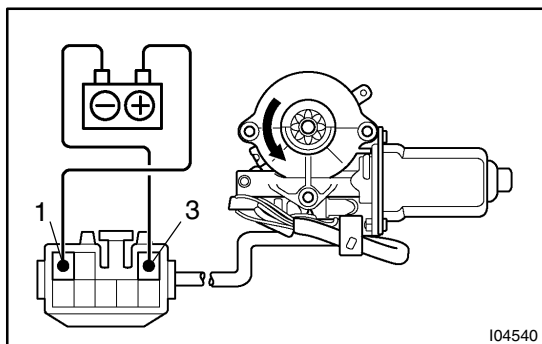
If operation is not as specified, replace the motor.

11. INSPECT PASSENGER'S (LHD)/DRIVER'S (RHD) DOOR POWER WINDOW MOTOR CIRCUIT
(See page DI-636)



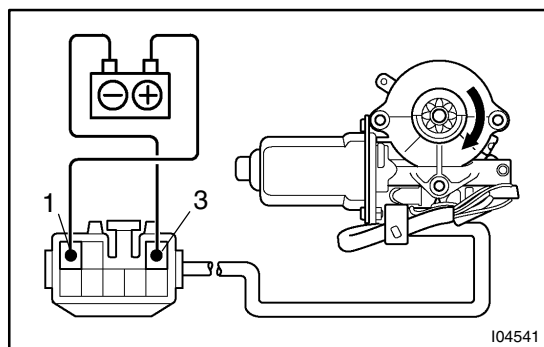
12. INSPECT REAR LH DOOR POWER WINDOW MOTOR OPERATION

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



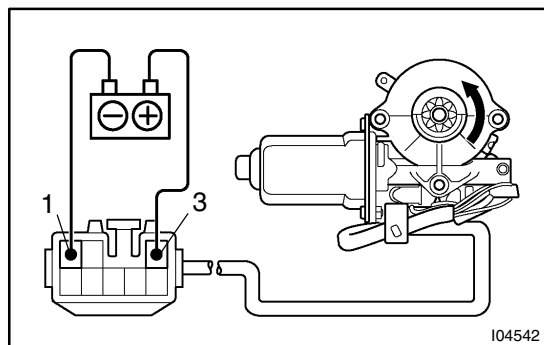
- (b) Reverse the polarity, check that the motor turns counter-clockwise.

If operation is not as specified, replace the motor.



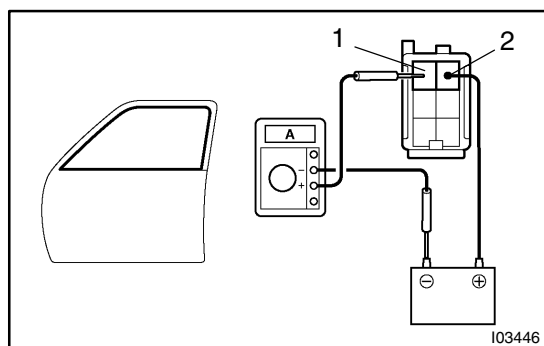
13. INSPECT REAR RH DOOR POWER WINDOW MOTOR OPERATION

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



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

If operation is not as specified, replace the motor.



14. INSPECT DRIVER'S (LHD)/PASSENGER'S (RHD) DOOR POWER WINDOW MOTOR PTC THERMISTOR OPERATION

- (a) Disconnect the connector from the power window motor.
 (b) Connect the positive (+) lead from the ammeter to terminal 1 on the wire harness side connector and the negative (–) lead to negative terminal of the battery.

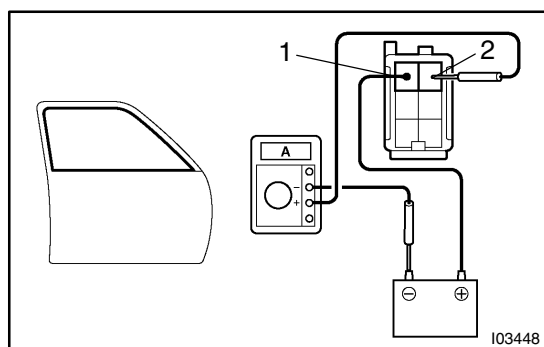
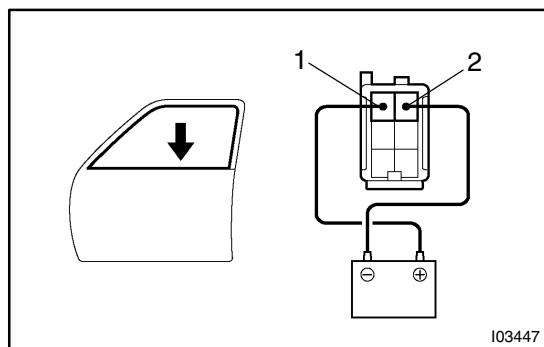
- (c) Connect the positive (+) lead from the battery to terminal 2 on the wire harness side connector, and raise the window to the fully position.

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

- (e) Disconnect the leads from terminals.

- (f) Approximately 60 seconds later, connect the positive (+) lead from the battery to terminal 1 and negative (–) lead to terminal 2, and check that the window begins to descended.

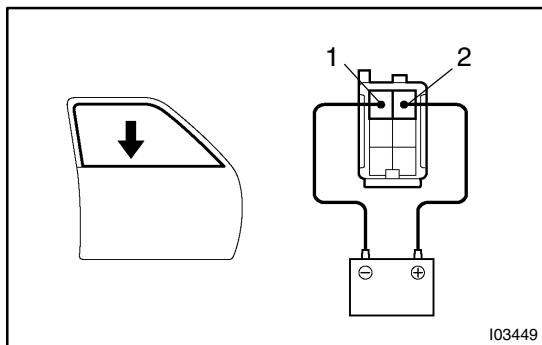
If operation is not as specified, replace the motor.



15. INSPECT PASSENGER'S (LHD)/DRIVER'S (RHD) DOOR POWER WINDOW MOTOR PTC THERMISTOR OPERATION

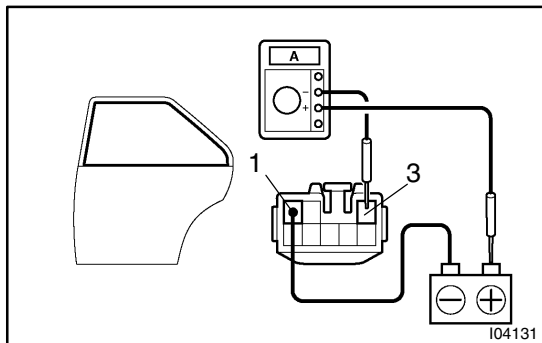
- (a) Disconnect the connector from the power window motor.
 (b) Connect the positive (+) lead from the ammeter to terminal 2 on the wire harness side connector and the negative (–) lead to negative terminal of the battery.

- (c) Connect the positive (+) lead from the battery to terminal 1 on the wire harness side connector, and raise the window to the fully position.



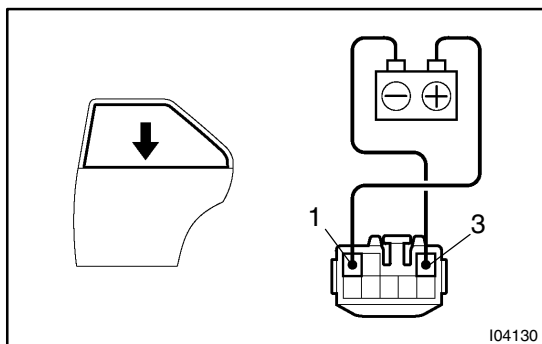
- (d) Continue to apply voltage and check that the current changes to less than 1 A within 4 to 90 seconds.
- (e) Disconnect the leads from the terminals.
- (f) Approximately 60 seconds later, connect the positive (+) lead from the battery to terminal 2 and the negative (–) lead to terminal 1, and check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

If operation is not as specified, replace the motor.



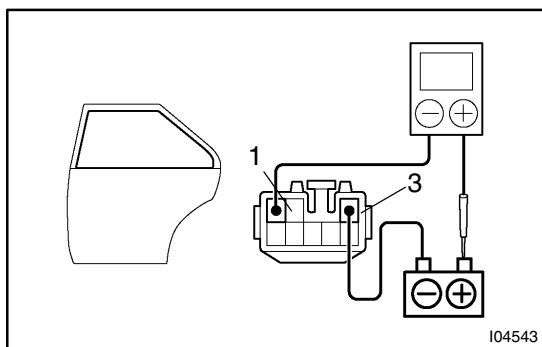
16. INSPECT REAR LH DOOR POWER WINDOW MOTOR PTC THERMISTOR OPERATION

- (a) Disconnect the connector from the power window motor.
- (b) Connect the negative (–) lead from the ammeter to terminal 3 on the wire harness side connector and the positive (+) lead to positive terminal of the battery.
- (c) Connect the negative (–) lead from the battery to terminal 1 on the wire harness side connector, and raise the window to the fully position.



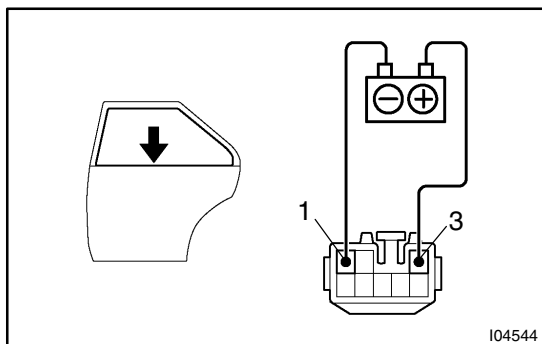
- (d) Continue to apply voltage and check that the current changes to less than 1 A within 4 to 90 seconds.
- (e) Disconnect the leads from the terminals.
- (f) Approximately 60 seconds later, connect the positive (+) lead from the battery to terminal 1 and the negative (–) lead to terminal 3, and check that the window begins to descend.

If operation is not as specified, replace the motor.



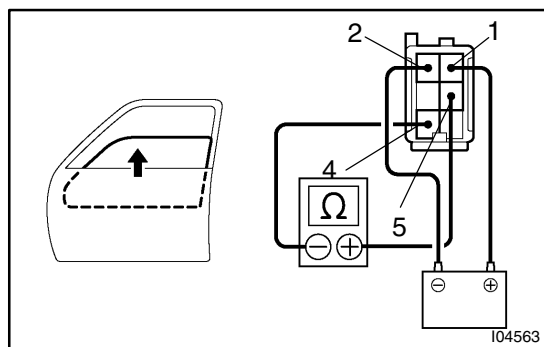
17. INSPECT REAR RH DOOR POWER WINDOW MOTOR PTC THERMISTOR OPERATION

- (a) Disconnect the connector from the power window motor.
- (b) Connect the negative (–) lead from the ammeter to terminal 1 on the wire harness side connector and the positive (+) lead to positive terminal of the battery.
- (c) Connect the negative (–) lead from the battery to terminal 3 on the wire harness side connector, and raise the window to the fully position.



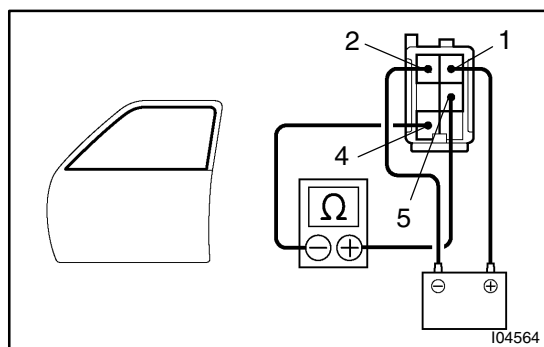
- (d) Continue to apply voltage and check that the current changes to less than 1 A within 4 to 90 seconds.
- (e) Disconnect the leads from the terminals.
- (f) Approximately 60 seconds later, connect the positive (+) lead from the battery to terminal 3 and the negative (–) lead to terminal 1, and check that the window begins to descend.

If operation is not as specified, replace the motor.



18. INSPECT DRIVER'S (LHD)/PASSENGER'S (RHD) DOOR JAM PROTECTION LIMIT SWITCH OPERATION (Window Up)

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

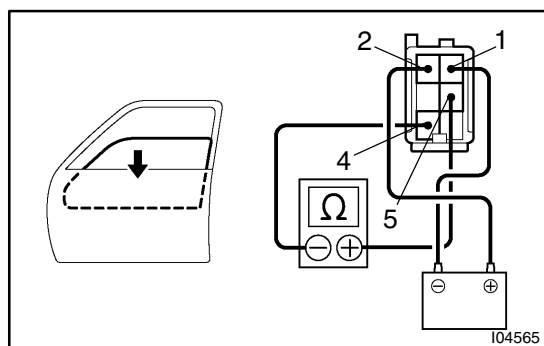


- Check that the no continuity exists when the window is in the fully closed position.

If operation is not as specified, replace the motor.

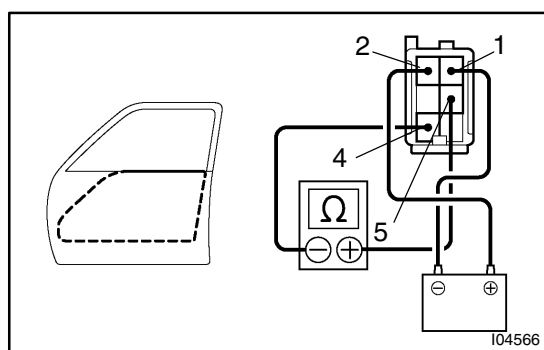
NOTICE:

If connecting the wire harness wrongly, the sensor might be damaged so caution is necessary.



19. INSPECT DRIVER'S (LHD)/PASSENGER'S (RHD) DOOR JAM PROTECTION LIMIT SWITCH OPERATION (Window Down)

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



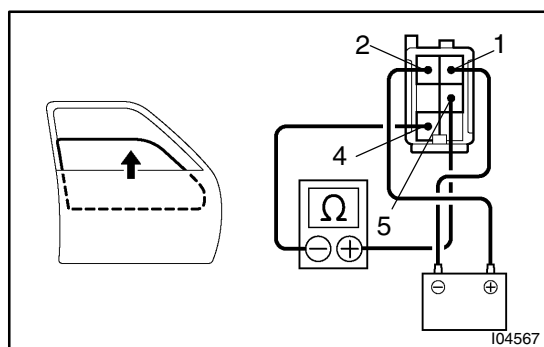
- Check that the no continuity exists when the window is in the fully opened position.

If operation is not as specified, replace the motor.

NOTICE:

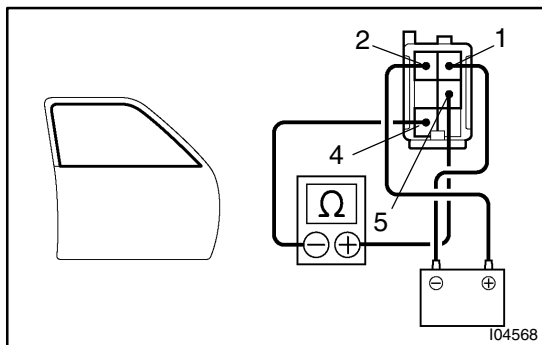
If connecting the wire harness wrongly, the sensor might be damaged so caution is necessary.

20. INSPECT DRIVER'S (LHD)/PASSENGER'S (RHD) DOOR JAM PROTECTION LIMIT SWITCH CIRCUIT (See page DI-616)



21. INSPECT PASSENGER'S (LHD)/DRIVER'S (RHD) DOOR JAM PROTECTION LIMIT SWITCH OPERATION (Window Up)

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

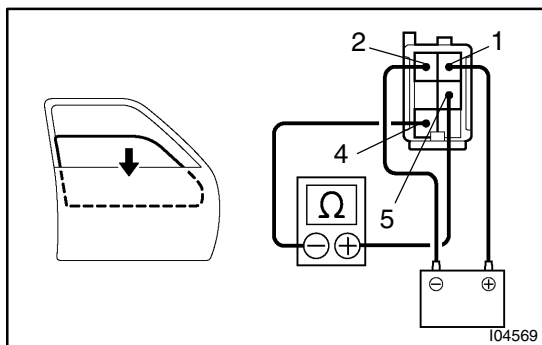


- (d) Check that the no continuity exists when the window is in the fully closed position.

If operation is not as specified, replace the motor.

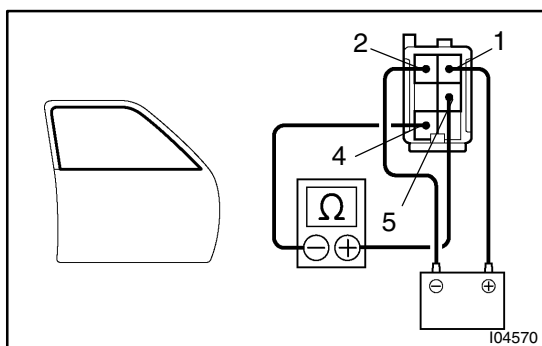
NOTICE:

If connecting the wire harness wrongly, the sensor might be damaged so caution is necessary.



22. INSPECT PASSENGER'S (LHD)/DRIVER'S (RHD) DOOR JAM PROTECTION LIMIT SWITCH OPERATION (Window Down)

- Connect the negative (-) lead from the ohmmeter to terminal 4 and the positive (+) lead to terminal 5.
- Connect the positive (+) lead from the battery to terminal 1 and the negative (-) lead to terminal 2.
- Check that the continuity exists when the window goes down.



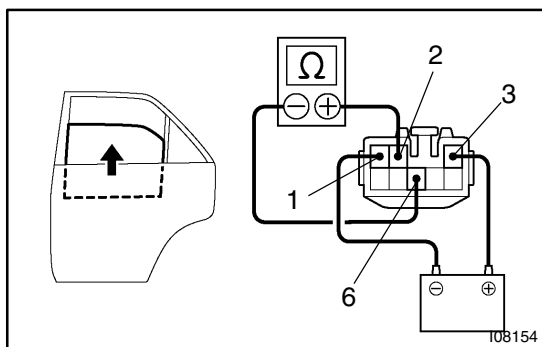
- (d) Check that the no continuity exists when the window is in the fully open position.

If operation is not as specified, replace the motor.

NOTICE:

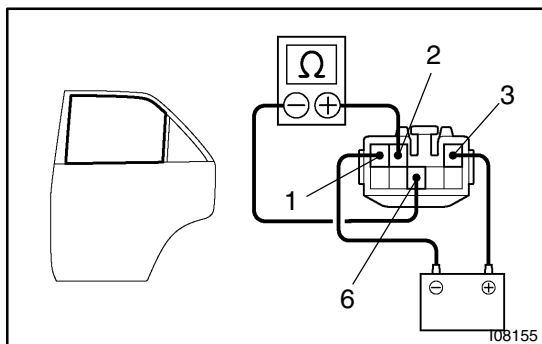
If connecting the wire harness wrongly, the sensor might be damaged so caution is necessary.

23. INSPECT PASSENGER'S (LHD)/DRIVER'S (RHD) DOOR JAM PROTECTION LIMIT SWITCH CIRCUIT (See page DI-638)



24. INSPECT REAR LH DOOR JAM PROTECTION LIMIT SWITCH OPERATION (Window Up)

- Connect the positive (+) lead from the ohmmeter to terminal 2 and the negative (-) lead to terminal 6.
- Connect the positive (+) lead from the battery to terminal 3 and the negative (-) lead to terminal 1.
- Check that the continuity exists when the window goes up.

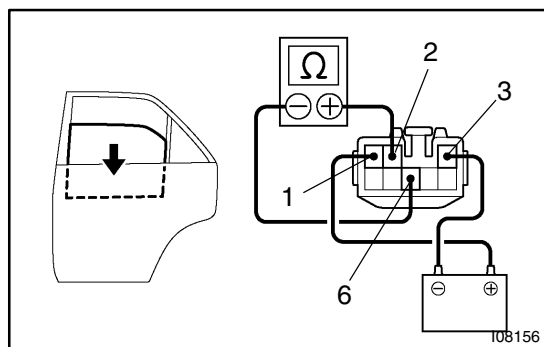


- (d) Check that the no continuity exists when the window is in the fully closed position.

If operation is not as specified, replace the motor.

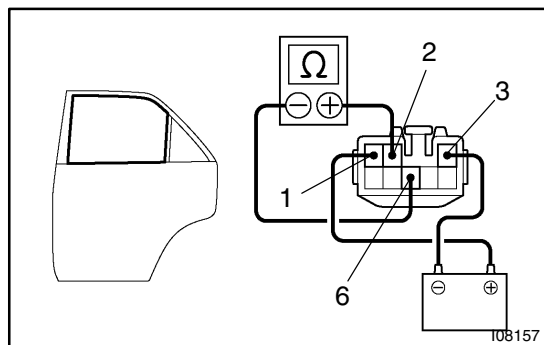
NOTICE:

If connecting the wire harness wrongly, the sensor might be damaged so caution is necessary.



25. INSPECT REAR LH DOOR JAM PROTECTION LIMIT SWITCH OPERATION (Window Down)

- Connect the positive (+) lead from the ohmmeter to terminal 2 and the negative (–) lead to terminal 6.
- Connect the positive (+) lead from the battery to terminal 1 and the negative (–) lead to terminal 3.
- Check that the continuity exists when the window goes down.

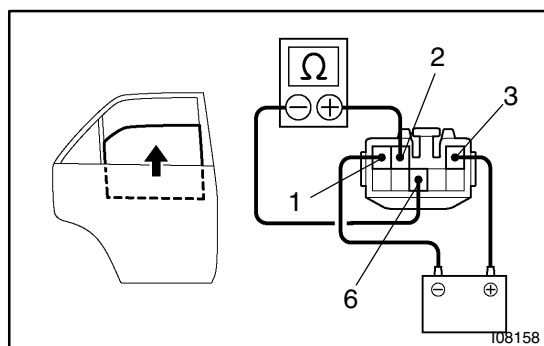


- Check that the no continuity exists when the window is in the fully opened position.

If operation is not as specified, replace the motor.

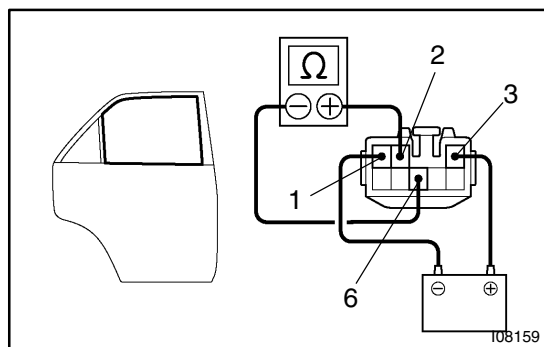
NOTICE:

If connecting the wire harness wrongly, the sensor might be damaged so caution is necessary.



26. INSPECT REAR RH DOOR JAM PROTECTION LIMIT SWITCH OPERATION (Window Up)

- Connect the positive (+) lead from the ohmmeter to terminal 2 and the negative (–) lead to terminal 6.
- Connect the positive (+) lead from the battery to terminal 3 and the negative (–) lead to terminal 1.
- Check that the continuity exists when the window goes up.

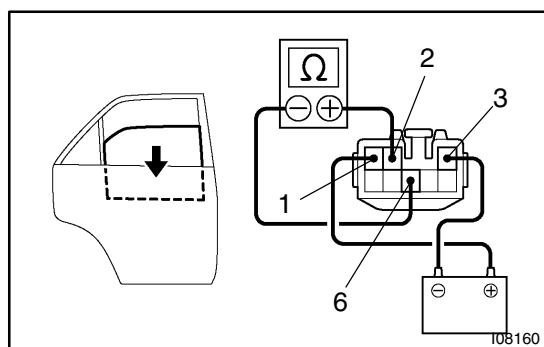


- Check that the no continuity exists when the window is in the fully closed position.

If operation is not as specified, replace the motor.

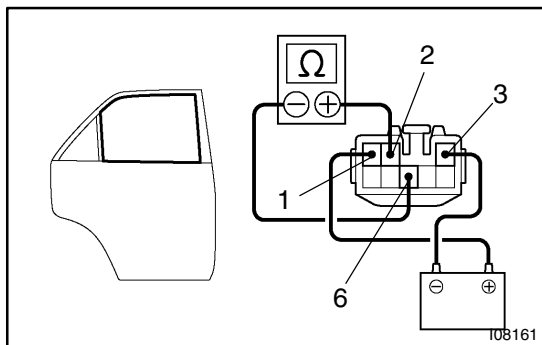
NOTICE:

If connecting the wire harness wrongly, the sensor might be damaged so caution is necessary.



27. INSPECT REAR RH DOOR JAM PROTECTION LIMIT SWITCH OPERATION (Window Down)

- Connect the positive (+) lead from the ohmmeter to terminal 2 and the negative (–) lead to terminal 6.
- Connect the positive (+) lead from the battery to terminal 1 and the negative (–) lead to terminal 3.
- Check that the continuity exists when the window goes down.

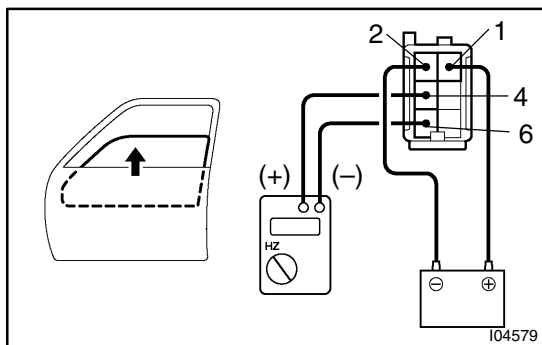


- (d) Check that no continuity exists when the window is in the fully opened position.

If operation is not as specified, replace the motor.

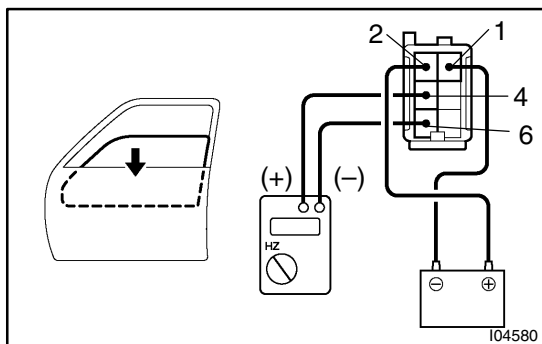
NOTICE:

If connecting the wire harness wrongly, the sensor might be damaged so caution is necessary.



28. INSPECT DRIVER'S (LHD)/PASSENGER'S (RHD) DOOR JAM PROTECTION PULSE SWITCH OPERATION

- Connect the positive (+) lead from the TOYOTA electrical tester to terminal 4 and the negative (–) lead to terminal 6.
- Connect the positive (+) lead from the battery to terminal 1 and the negative (–) lead to terminal 2.
- Check that pulse is generated during the motor running.

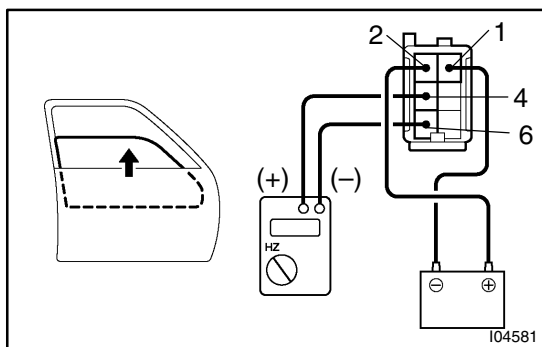


- (d) Reverse the polarity and check that pulse is generated. If operation is not as specified, replace the motor.

NOTICE:

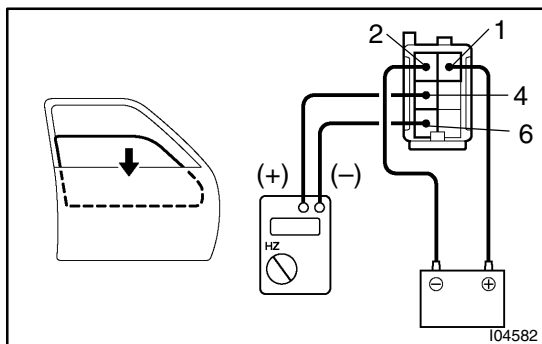
If connecting the wire harness wrongly, the sensor might be damaged so caution is necessary.

29. INSPECT DRIVER'S (LHD)/PASSENGER'S (RHD) DOOR JAM PROTECTION PULSE SWITCH CIRCUIT (See page DI-618)



30. INSPECT PASSENGER'S (LHD)/DRIVER'S (RHD) DOOR JAM PROTECTION PULSE SWITCH OPERATION

- Connect the positive (+) lead from the TOYOTA electrical tester to terminal 4 and the negative (–) lead to terminal 6.
- Connect the positive (+) lead from the battery to terminal 2 and the negative (–) lead to terminal 1.
- Check that pulse is generated during the motor running.

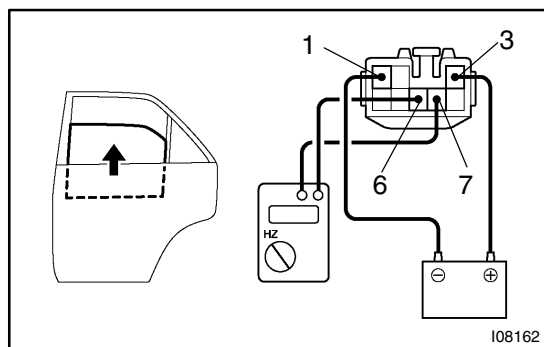


- (d) Reverse the polarity and check that pulse is generated. If operation is not as specified, replace the motor.

NOTICE:

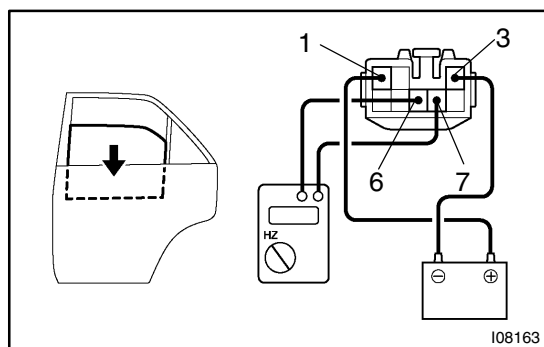
If connecting the wire harness wrongly, the sensor might be damaged so caution is necessary.

31. INSPECT PASSENGER'S (LHD)/DRIVER'S (RHD) DOOR JAM PROTECTION PULSE SWITCH CIRCUIT (See page DI-640)



32. INSPECT REAR LH DOOR JAM PROTECTION PULSE SWITCH

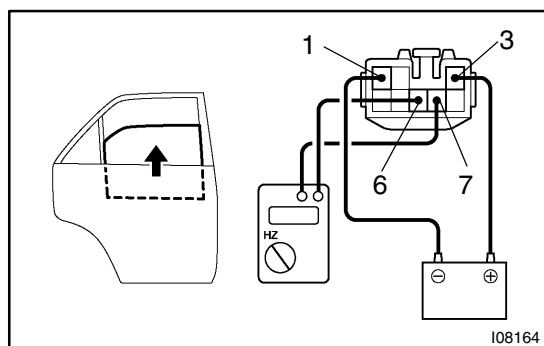
- Connect the positive (+) lead from the TOYOTA electrical tester to terminal 7 and the negative (–) lead to terminal 6.
- Connect the positive (+) lead from the battery to terminal 3 and the negative (–) lead to terminal 1.
- Check that pulse is generated during the motor running.



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

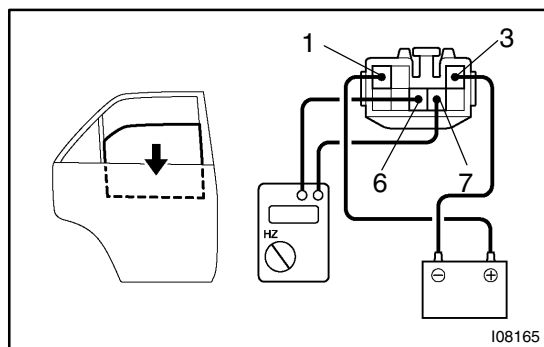
NOTICE:

If connecting the wire harness wrongly, the sensor might be damaged so caution is necessary.



33. INSPECT REAR RH DOOR JAM PROTECTION PULSE SWITCH

- Connect the positive (+) lead from the TOYOTA electrical tester to terminal 7 and the negative (–) lead to terminal 6.
- Connect the positive (+) lead from the battery to terminal 3 and the negative (–) lead to terminal 1.
- Check that pulse is generated during the motor running.



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

NOTICE:

If connecting the wire harness wrongly, the sensor might be damaged so caution is necessary.

34. CHECKING OF THE JAM PROTECTION FUNCTION

NOTICE:

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

HINT:

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

- Confirmation of AUTO up operation:
Confirm that the window will be fully close with AUTO up operation.
- Checking of the operation of the jam protection function:
 - Move up the window with AUTO up operation and check that the window will go down when it touches the handle of the hammer stteted.

- (2) Confirm that the window will then stop going down about 200 mm.

HINT:

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

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

ADJUSTMENT

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

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

HINT:

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

(a) Remove the power window motor. (See page BO-15, BO-24)

HINT:

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

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

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

(d) Assemble the power window motor and regulator.

HINT:

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

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

HINT:

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

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

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

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

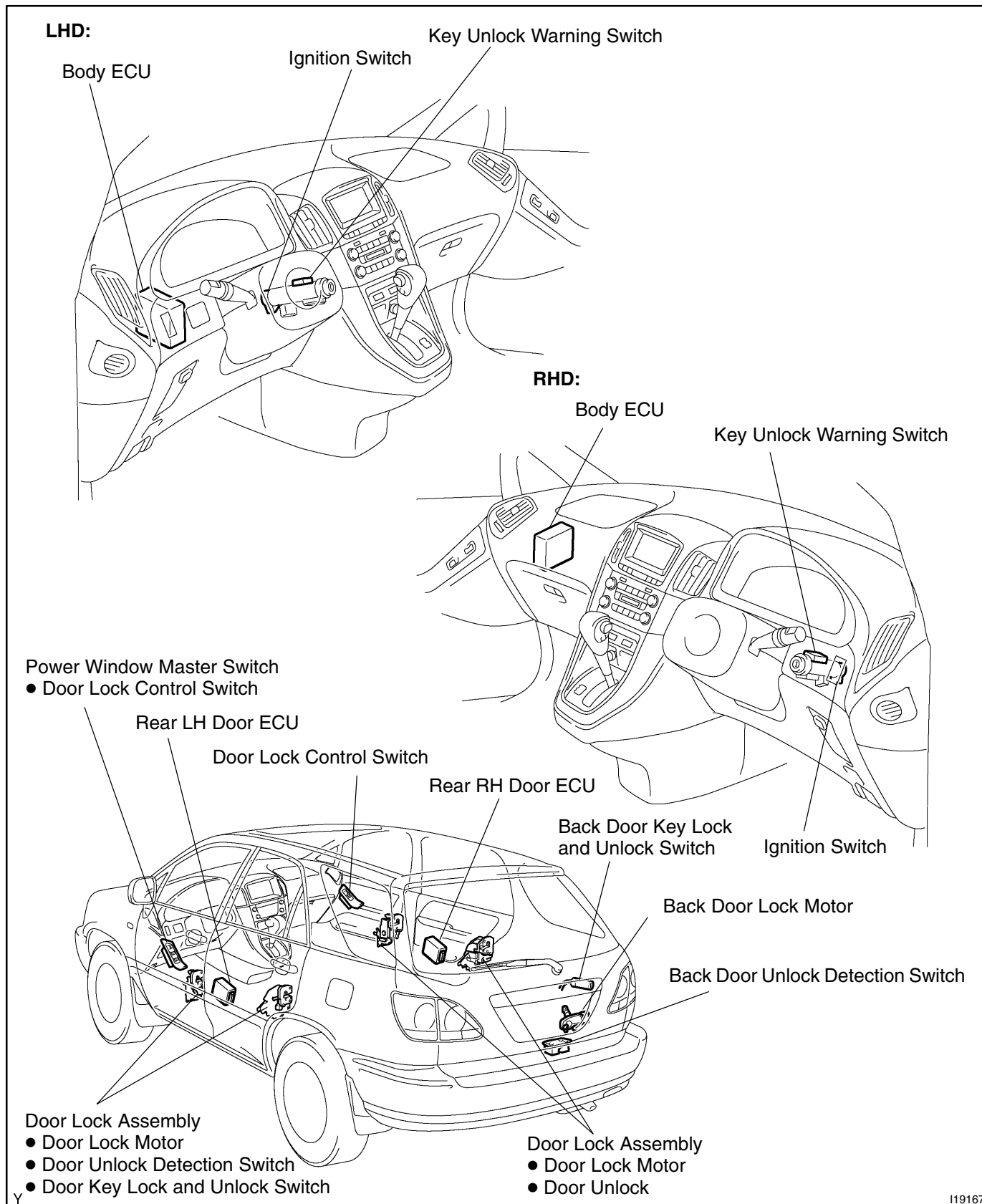
HINT:

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

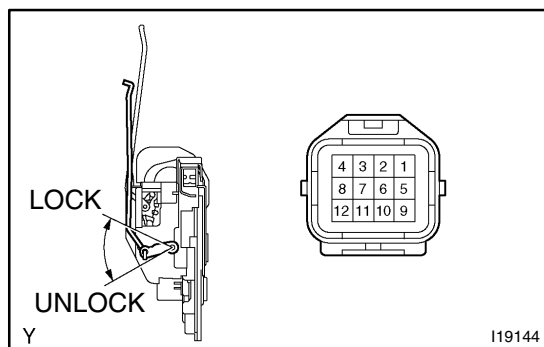
POWER DOOR LOCK CONTROL SYSTEM

LOCATION

BE0HQ-13



I19167



INSPECTION

1. INSPECT DRIVER'S DOOR KEY LOCK AND UNLOCK SWITCH CONTINUITY

LHD:

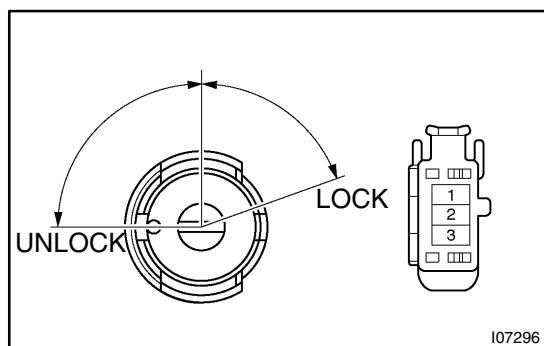
Switch position	Tester connection	Specified condition
LOCK	2 – 8	Continuity
OFF	–	No continuity
UNLOCK	1 – 8	Continuity

RHD:

Switch position	Tester connection	Specified condition
LOCK	3 – 6	Continuity
OFF	–	No continuity
UNLOCK	4 – 6	Continuity

If continuity is not as specified, replace the switch.

2. INSPECT DRIVER'S DOOR KEY LOCK AND UNLOCK SWITCH CIRCUIT (See page DI-610)



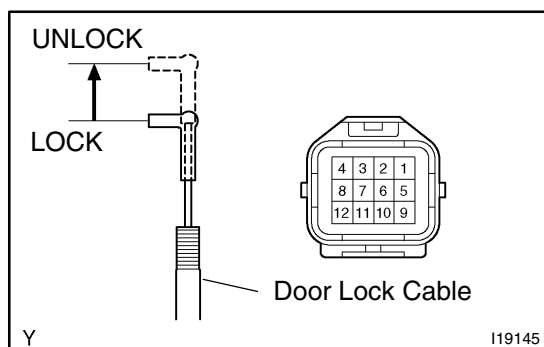
3. INSPECT BACK DOOR KEY LOCK AND UNLOCK SWITCH CONTINUITY

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.

If continuity is as specified, inspect the switch circuit.

4. INSPECT BACK DOOR KEY LOCK AND UNLOCK SWITCH CIRCUIT (See page DI-592)



5. INSPECT FRONT DOOR UNLOCK DETECTION SWITCH CONTINUITY

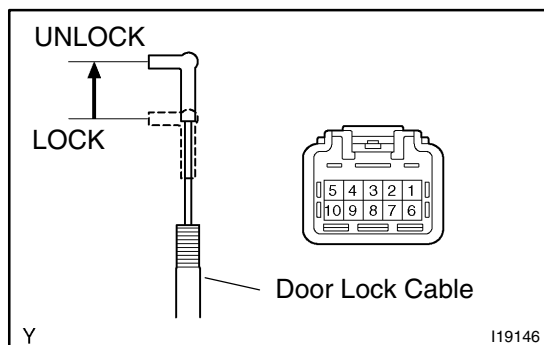
Driver's door (LHD)/Passenger's door (RHD):

Switch position	Tester connection	Specified condition
OFF (Door Lock set to LOCK)	–	No continuity
ON (Door Lock set to UNLOCK)	7 – 8	Continuity

Passenger's door (LHD)/Driver's door (LHD):

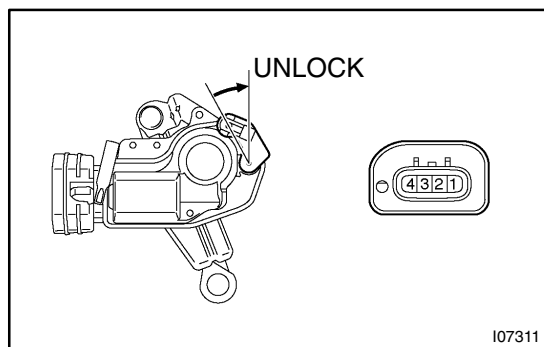
Switch position	Tester connection	Specified condition
OFF (Door Lock set to LOCK)	–	No continuity
ON (Door Lock set to UNLOCK)	6 – 7	Continuity

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

6. INSPECT FRONT DOOR UNLOCK DETECTION SWITCH CIRCUIT (See page DI-608)**7. INSPECT REAR DOOR UNLOCK DETECTION SWITCH CONTINUITY**

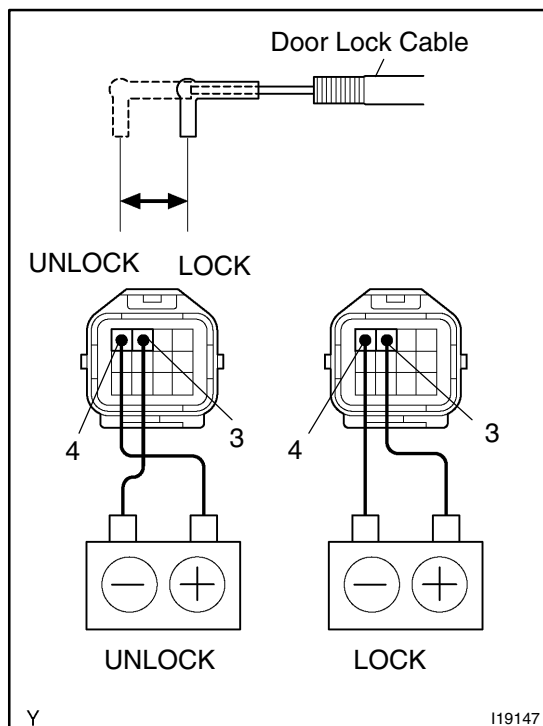
Switch position	Tester connection	Specified condition
OFF (Door Lock set to LOCK)	–	No continuity
ON (Door Lock set to UNLOCK)	3 – 4	Continuity

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

8. INSPECT REAR DOOR UNLOCK DETECTION SWITCH CIRCUIT (See page DI-653)**9. INSPECT BACK DOOR UNLOCK DETECTION SWITCH CONTINUITY**

Switch position	Tester connection	Specified condition
OFF (Door Lock set to LOCK)	–	No continuity
ON (Door Lock set to UNLOCK)	1 – 4	Continuity

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

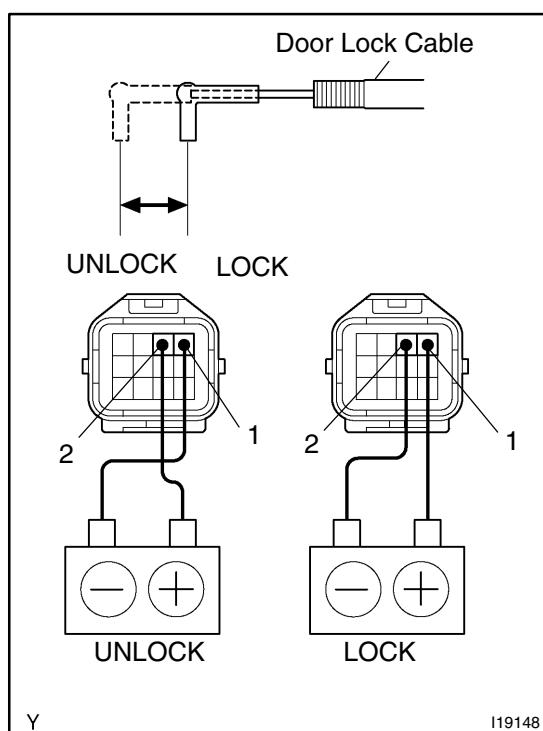


**10. Driver's Door (LHD)/Passenger's Door (RHD):
INSPECT DOOR LOCK MOTOR OPERATION**

- Connect the positive (+) lead from the battery to terminal 4 and the negative (-) lead to terminal 3, and check that the door lock cable moves to UNLOCK position.
- Reverse the polarity and check that the door lock cable moves to LOCK position.

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

**11. Driver's Door (LHD)/Passenger's Door (RHD):
INSPECT DOOR LOCK MOTOR CIRCUIT
(See page DI-606)**

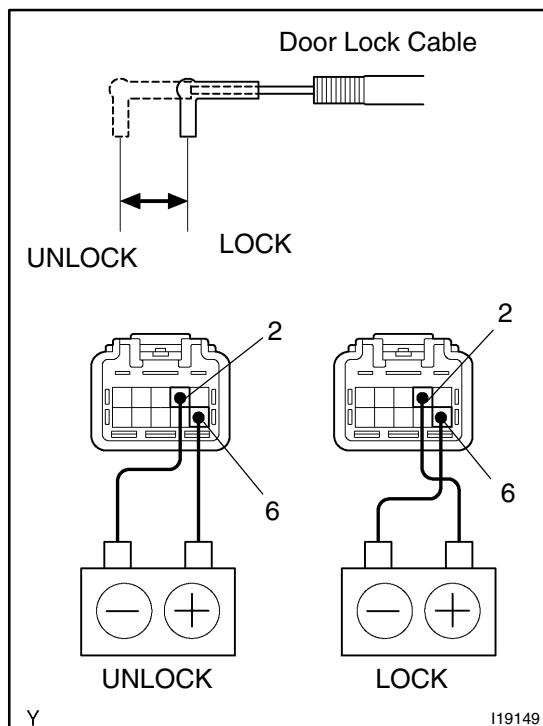


**12. Passenger's door (LHD)/Driver's Door (RHD):
INSPECT DOOR LOCK MOTOR OPERATION**

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

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

**13. Front right side door:
INSPECT DOOR LOCK MOTOR CIRCUIT
(See page DI-628)**

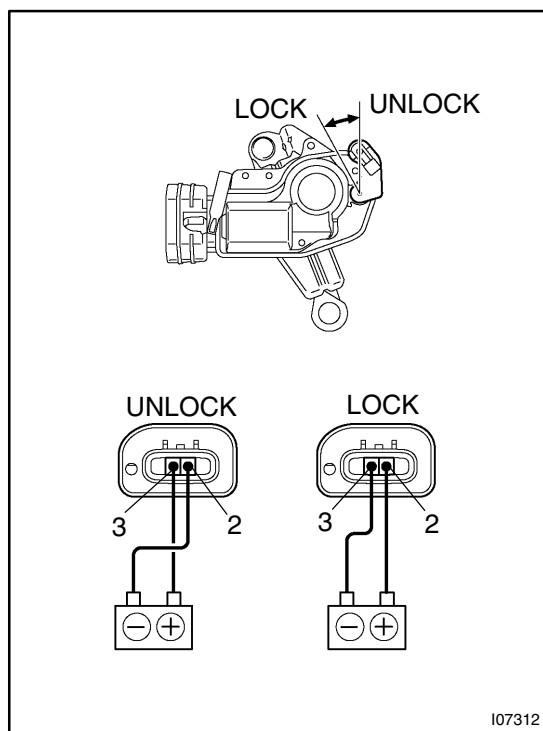
**14. INSPECT REAR DOOR LOCK MOTOR OPERATION**

- Connect the positive (+) lead from the battery to terminal 6 and the negative (-) lead to terminal 2, and check that the door lock cable moves to UNLOCK position.
- Reverse the polarity and check that the door lock cable moves to LOCK position.

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

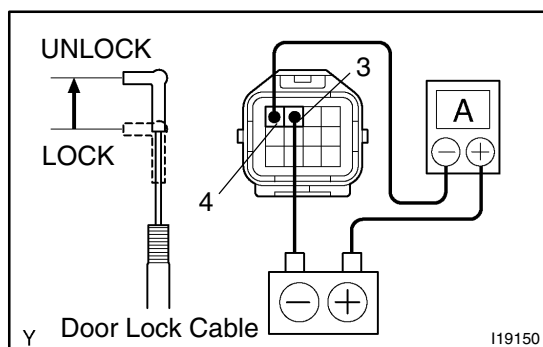
15. INSPECT REAR DOOR LOCK MOTOR CIRCUIT

(See page DI-651)

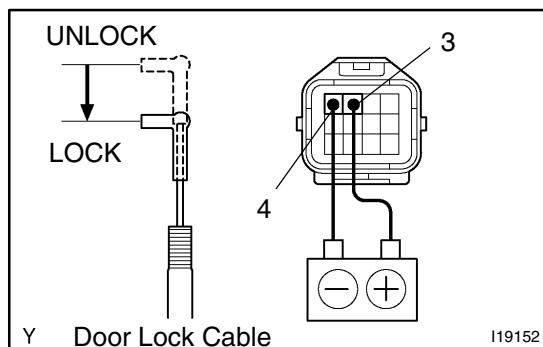
**16. INSPECT BACK DOOR LOCK MOTOR OPERATION**

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

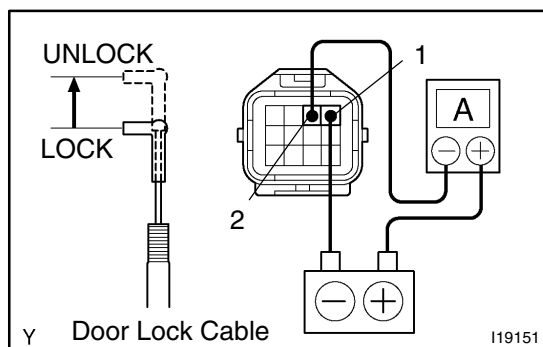
**17. Using an ammeter:****INSPECT DRIVER'S DOOR (LHD)/PASSENGER'S DOOR (RHD) PTC THERMISTOR OPERATION**

- Connect the positive (+) lead from the battery to terminal 3.
- Connect the negative (-) lead from the ammeter to terminal 4 and the positive (+) lead to battery positive (+) terminal, and check that the current changes from approximately 3.2 A to less than 0.5 A within 20 to 70 seconds.



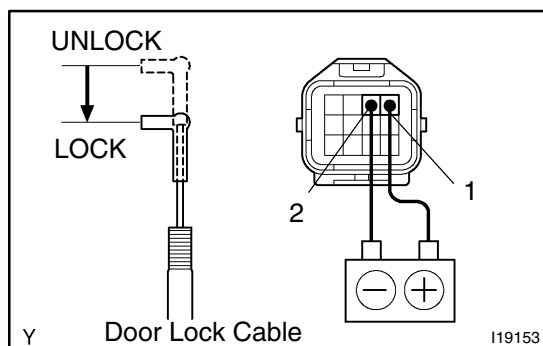
- (c) Disconnect the leads from terminals.
- (d) Approximately 60 seconds later, connect the positive (+) lead from the battery to terminal 3 and the negative (-) lead to terminal 4, and check that the door lock cable moves to the LOCK position.

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



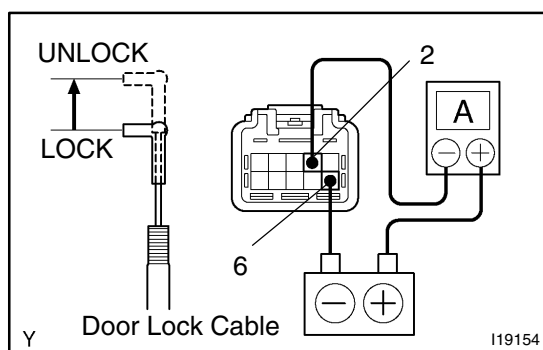
**18. Using an ammeter:
INSPECT PASSENGER'S DOOR (LHD)/DRIVER'S DOOR (RHD) PTC THERMISTOR OPERATION**

- (a) Connect the negative (-) lead from the battery to terminal 1.
- (b) Connect the negative (-) lead from the ammeter to terminal 2 and the positive (+) lead to battery positive (+) terminal, and check that the current changes from approximately 3.2 A to less than 0.5 A within 20 to 70 seconds.



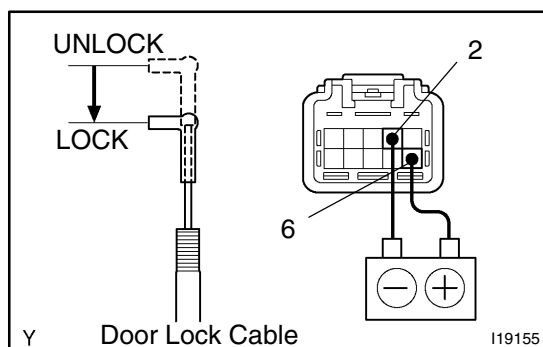
- (c) Disconnect the leads from terminals.
- (d) Approximately 60 seconds later, connect the positive (+) lead from the battery to terminal 1 and the negative (-) lead to terminal 2, and check that the door lock moves to the LOCK position.

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



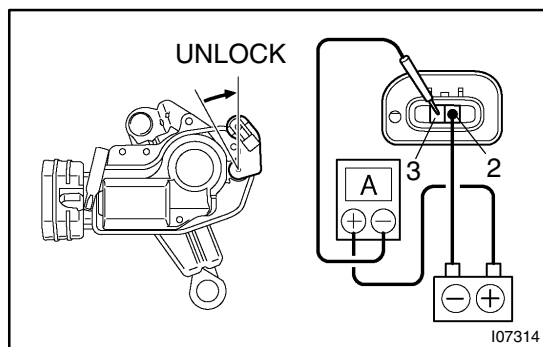
**19. Using an ammeter:
INSPECT REAR DOOR PTC THERMISTOR OPERATION**

- (a) Connect the negative (-) lead from the battery to terminal 6.
- (b) Connect the negative (-) lead from the ammeter to terminal 2 and the positive (+) lead to battery positive (+) terminal, and check that the current changes from approximately 3.2 A to less than 0.5 A within 20 to 70 seconds.



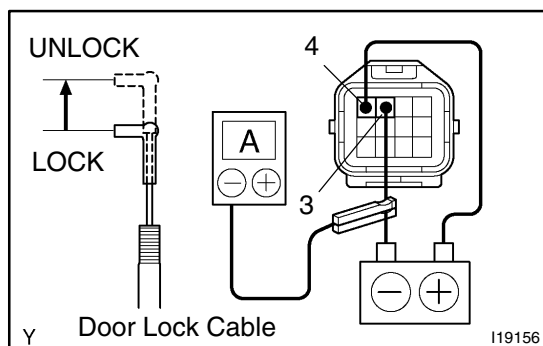
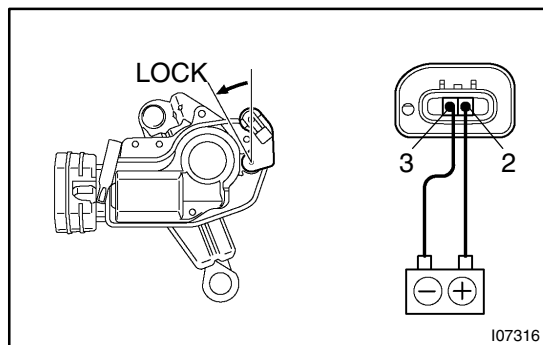
- (c) Disconnect the leads from terminals.
- (d) Approximately 60 seconds later, connect the positive (+) lead from the battery to terminal 6 and the negative (-) lead to terminal 2, and check that the door lock cable moves to the LOCK position.

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

**20. Using an ammeter:****INSPECT BACK DOOR PTC THERMISTOR OPERATION**

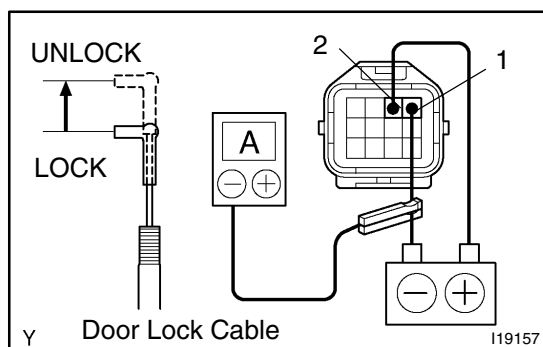
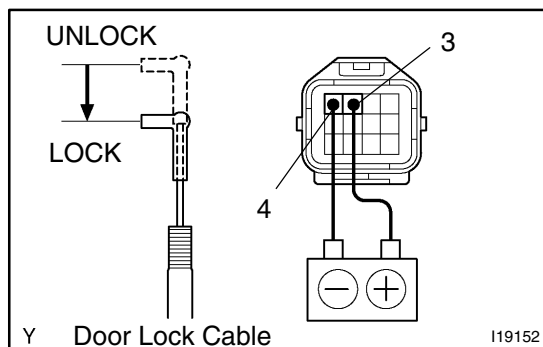
- (a) Connect the negative (–) lead from the battery to terminal 2.
- (b) Connect the negative (–) lead from the ammeter to terminal 3 and the positive (+) lead to battery positive (+) terminal, and check that the current changes from approximately 3.2 A to less than 0.5 A within 20 to 70 seconds.
- (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.

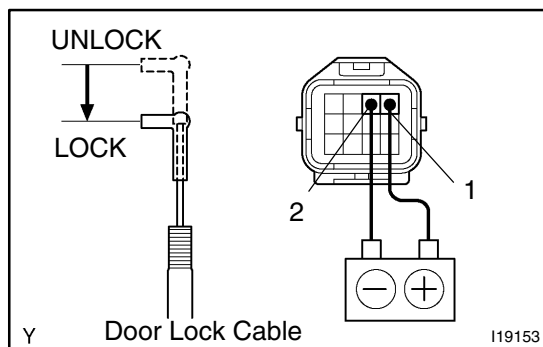
**21. Using an ammeter with a current-measuring probe:****INSPECT DRIVER'S DOOR (LHD)/PASSENGER'S DOOR (RHD) PTC THERMISTOR OPERATION**

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

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

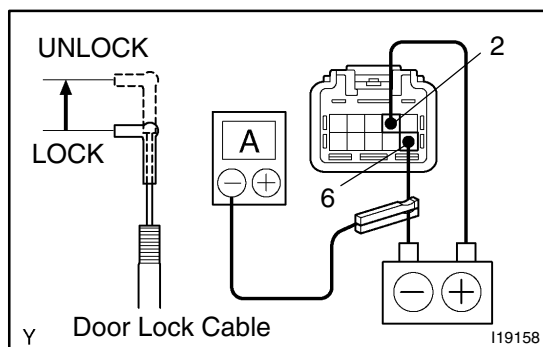
**22. Using an ammeter with a current-measuring probe:****INSPECT PASSENGER'S DOOR (LHD)/DRIVER'S DOOR (RHD) PTC THERMISTOR OPERATION**

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



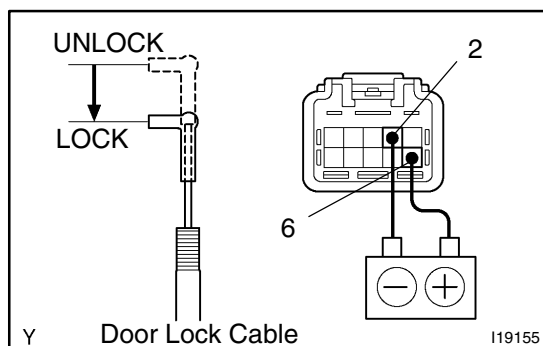
- (c) Disconnect the leads from terminals.
- (d) Approximately 60 seconds later, connect the positive (+) lead from the battery to terminal 1 and the negative (-) lead to terminal 2, and check that the door lock moves to the LOCK position.

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



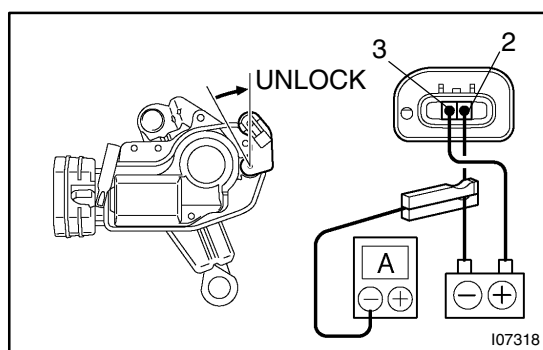
23. Using an ammeter with a current-measuring probe: INSPECT REAR DOOR PTC THERMISTOR OPERATION

- (a) Connect the positive (+) lead from the battery to terminal 2 and the negative (-) lead to terminal 6.
- (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.



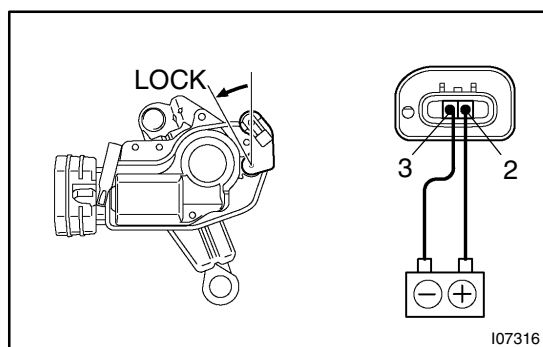
- (c) Disconnect the leads from terminals.
- (d) Approximately 60 seconds later, connect the positive (+) lead from the battery to terminal 6 and the negative (-) lead to terminal 2, and check that the door lock cable moves to the LOCK position.

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



24. Using an ammeter with a current-measuring probe: INSPECT BACK DOOR PTC THERMISTOR OPERATION

- (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.

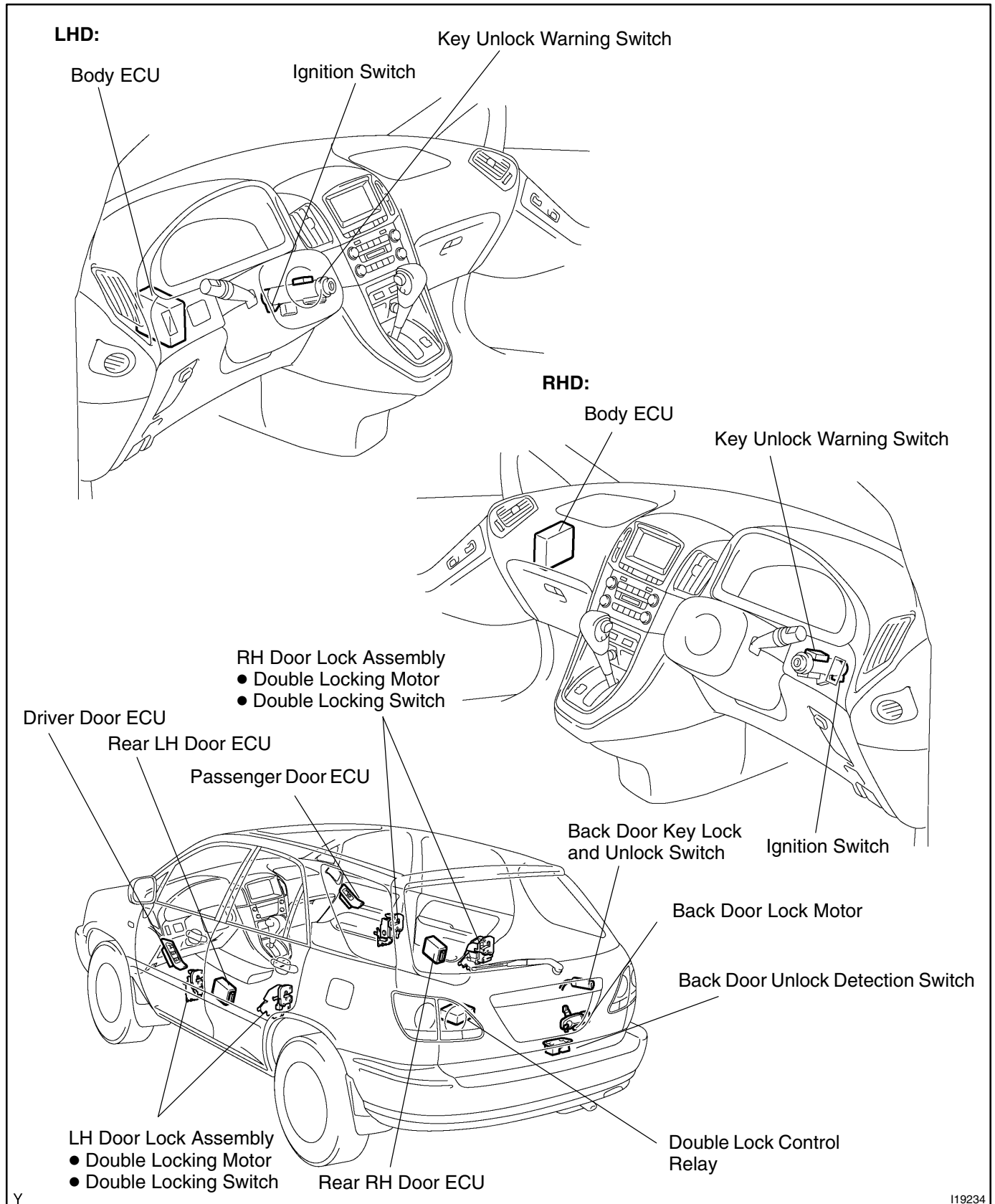


- (c) Disconnect the leads from terminals.
- (d) Approximately 60 seconds later, reverse the polarity, and check that the door lock moves to the LOCK position.

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

DOUBLE LOCKING SYSTEM LOCATION

BE16H-03



I19234

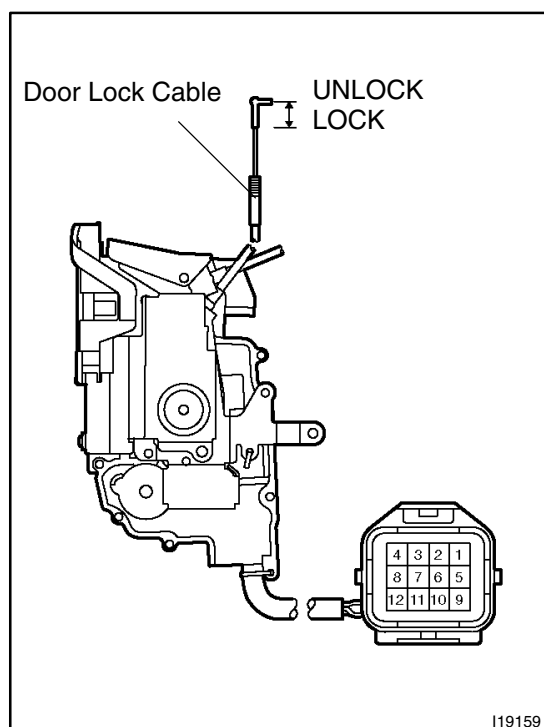
INSPECTION

1. INSPECT DOUBLE LOCK SYSTEM FUNCTION

HINT:

- In case of doing the following inspection, must open one of the windows of the doors.
 - To set the double lock, turn the ignition switch OFF, pull out the key, open the driver's door and then perform the lock operation on the wireless transmitter. Locking again within 5 sec, after the first locking sets the double lock.
- (a) Check that the double lock is set.
 - (1) With the glass window opened, set the double lock from the outside of a vehicle using a wireless transmitter.
 - (2) Check that the doors won't open from the inside of the vehicle even operating the door lock knob and inside door handle
 - (b) Check that the double lock is released (Case 1).
 - (1) Press the UNLOCK button on the wireless transmitter.
 - (2) Check that the doors will open from the inside of the vehicle by operating the door knob and inside door handle.
 - (c) Check that the double lock is released (Case 2).
 - (1) With the glass window opened, set the double lock from the outside of a vehicle using a wireless transmitter.
 - (2) Under this condition, insert the key into the ignition key cylinder, turn the ignition switch to ON and check that the doors will open.

If you find any abnormal symptom in the check items of (a),(b) and (c), troubleshoot according to the Problem Symptom Table.



2. INSPECT DRIVER'S DOOR (LHD)/PASSENGER'S DOOR (RHD) DOUBLE LOCK MOTOR OPERATION

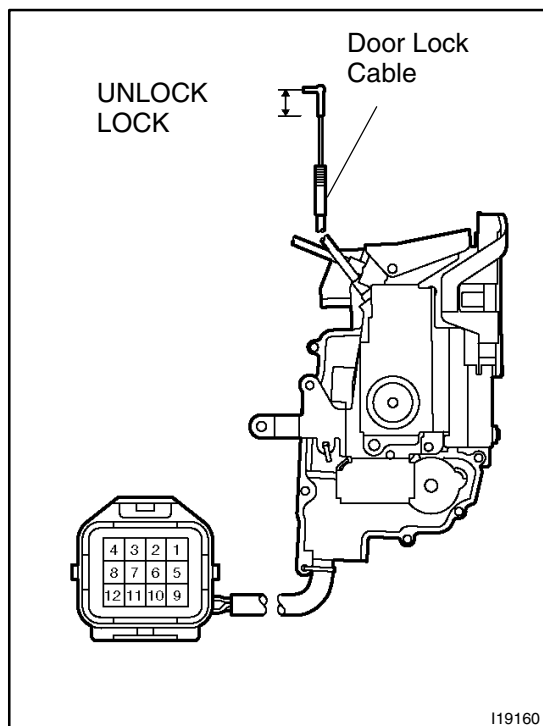
- (a) Set the Door Lock to LOCK position by the locking cable.
- (b) Connect the positive (+) lead from the battery to terminal 5 and negative (–) lead to terminal 12, and check that the Door Lock will not unlock by pulling the locking cable. (Locking cable must return to LOCK position by the force of spring when pulling the locking cable.)
- (c) Reverse the polarity and check that the Door Lock will unlock by pulling the locking cable.

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

3. INSPECT DRIVER'S DOOR (LHD)/PASSENGER'S DOOR (RHD) DOUBLE LOCK SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
OFF (Double lock is released)	–	No continuity
ON (Double lock is set)	6 – 7	Continuity

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



4. INSPECT PASSENGER'S DOOR (LHD)/DRIVER'S DOOR (RHD) DOUBLE LOCK MOTOR OPERATION

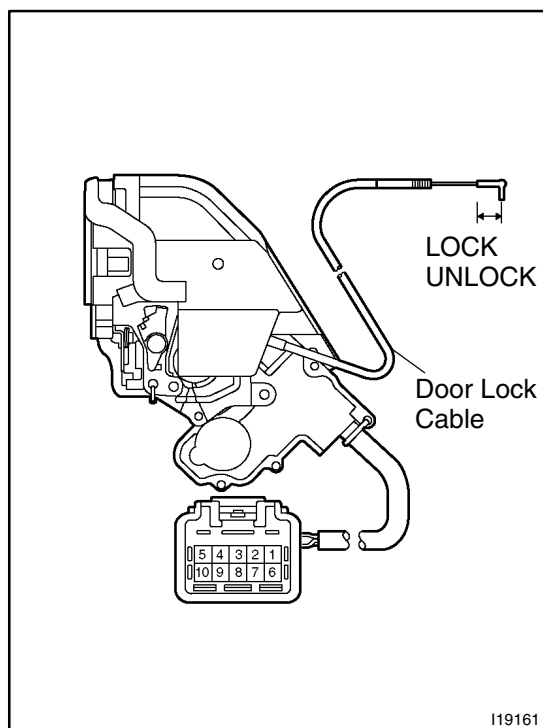
- Set the Door Lock to LOCK position by the locking cable.
- Connect the positive (+) lead from the battery to terminal 8 and negative (–) lead to terminal 9, and check that the Door Lock will not unlock by pulling the locking cable. (Locking cable must return to LOCK position by the force of spring when pulling the locking cable.)
- Reverse the polarity and check that the Door Lock will unlock by pulling the locking cable.

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

5. INSPECT DRIVER'S DOOR (LHD)/PASSENGER'S DOOR (RHD) DOUBLE LOCK SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
OFF (Double lock is released)	–	No continuity
ON (Double lock is set)	6 – 7	Continuity

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



6. INSPECT REAR DOOR DOUBLE LOCK SWITCH CONTINUITY

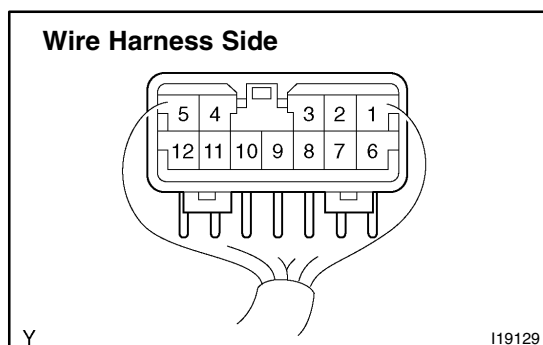
Switch position	Tester connection	Specified condition
OFF (Double lock is released)	–	No continuity
ON (Double lock is set)	3 – 9	Continuity

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

7. INSPECT REAR DOUBLE LOCK MOTOR OPERATION

- Set the Door Lock to LOCK position by the locking cable.
- Connect the positive (+) lead from the battery to terminal 7 and negative (–) lead to terminal 8, and check that the Door Lock will not unlock by pulling the locking cable. (Locking cable must return to LOCK position by the force of spring when pulling the locking cable.)
- Reverse the polarity and check that the Door Lock will unlock by pulling the locking cable.

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



8. INSPECT DOUBLE LOCK DOOR CONTROL RELAY CIRCUIT

BODY ELECTRICAL – DOUBLE LOCKING SYSTEM

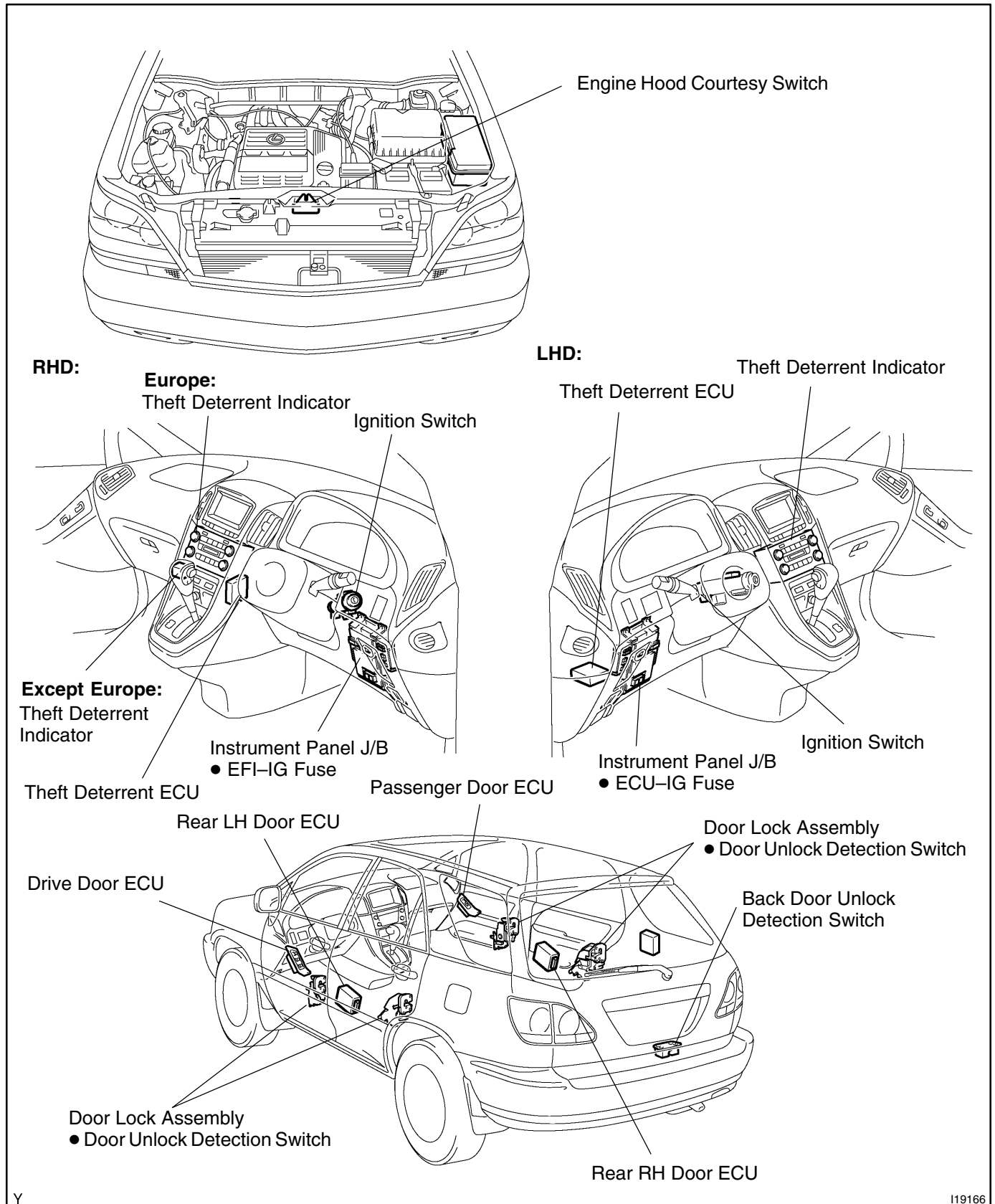
Tester connection	Condition	Specified condition
12 – Ground	Constant	Continuity
1 – Ground	Constant	Battery voltage
6 – Ground	Constant	Battery voltage
2 – Ground 5 – Ground 7 – Ground 11 – Ground	Double lock is set (Double lock switch ON)	Approx. 5 V
	Double lock is set (Double lock switch ON)	Below 1.0 V

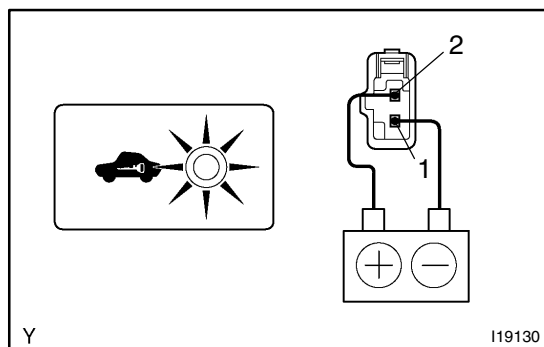
If circuit is as specified, replace the double lock door control relay.

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

THEFT DETERRENT SYSTEM LOCATION

BEOGQ-04

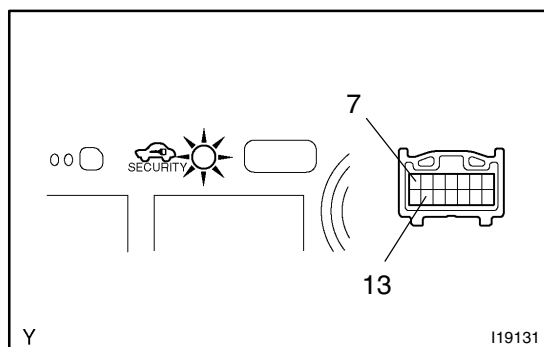




INSPECTION

1. INSPECT THEFT DETERRENT INDICATOR LIGHT OPERATION

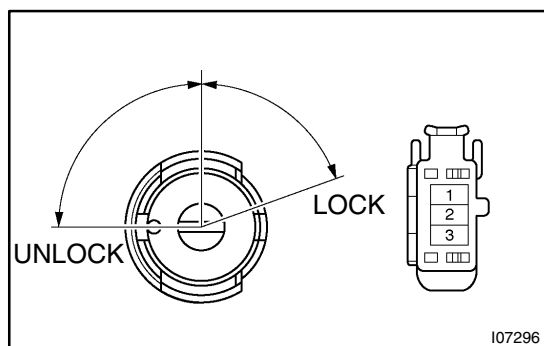
- (a) Except Europe:
Connect the positive (+) lead from the battery terminal 2 and negative (–) lead to terminal 1, and check that the warning light lights up.



- (b) Europe:
Connect the positive (+) lead from the battery terminal 13 and negative (–) lead to terminal 7, and check that the warning light lights up.

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

2. INSPECT THEFT DETERRENT INDICATOR LIGHT CIRCUIT (See page DI-453)

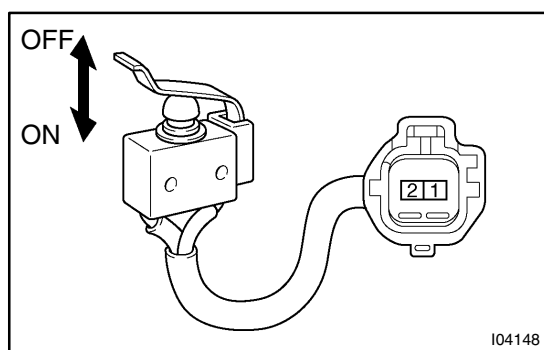


3. INSPECT BACK DOOR KEY LOCK AND UNLOCK SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
LOCK	1 – 2	Continuity
Not turned	–	No continuity
UNLOCK	1 – 3	Continuity

If continuity is not as specified, replace the switch.

4. INSPECT BACK DOOR KEY LOCK AND UNLOCK SWITCH CIRCUIT (See page DI-592)



5. INSPECT ENGINE HOOD COURTESY SWITCH CONTINUITY

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

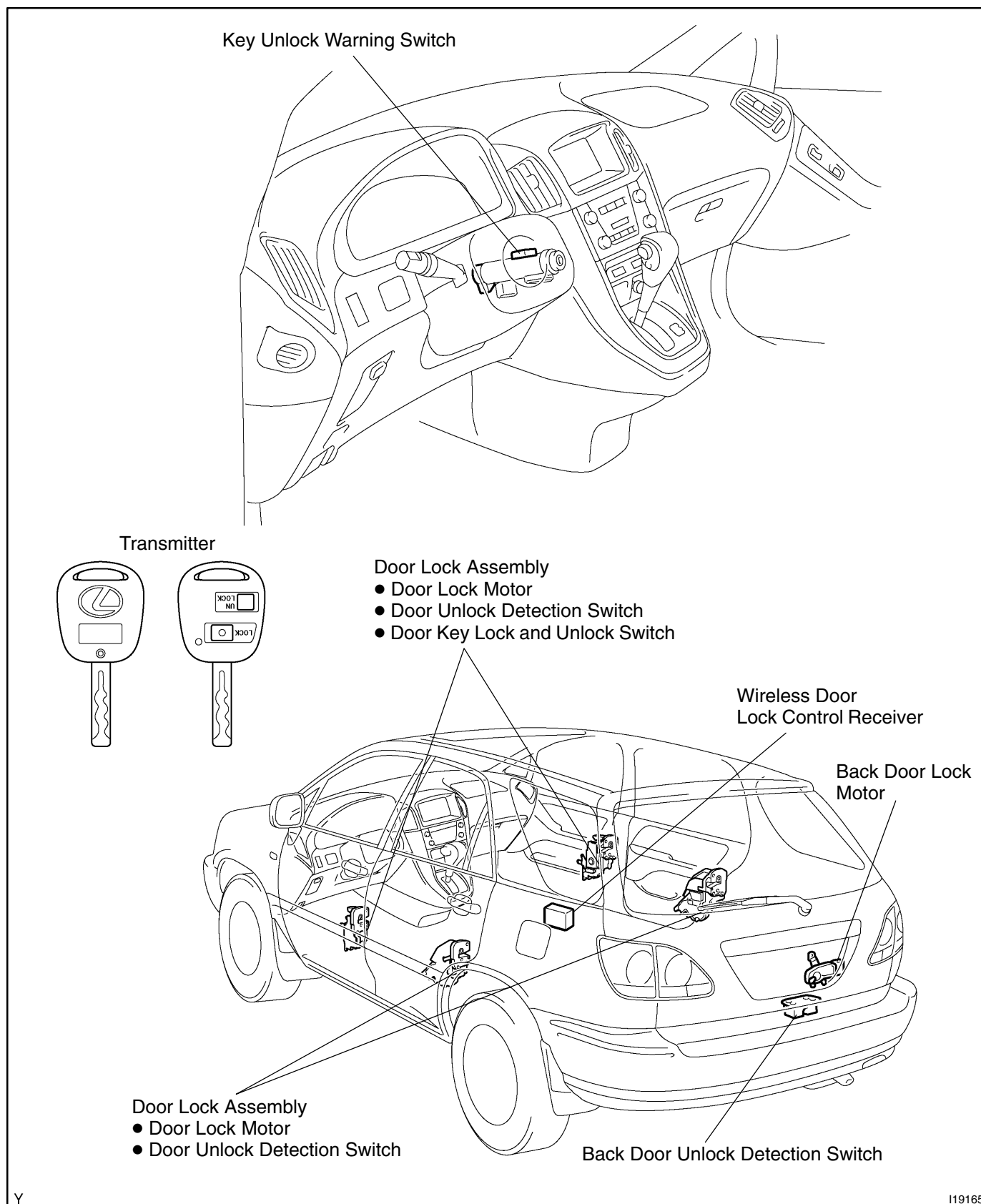
If continuity is not as specified, replace the switch.

6. INSPECT ENGINE HOOD COURTESY SWITCH CIRCUIT (See page DI-470)

WIRELESS DOOR LOCK CONTROL SYSTEM

LOCATION

BEOGM-10



PRE-CHECK

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

Make the vehicle in the initialized condition:

The initialized condition is the condition when the following conditions are satisfied.

- (1) Key plate has not been inserted in the ignition key cylinder.
- (2) All the doors are closed. (Door warning light is OFF.)
- (3) All the doors are locked.

Basic function check:

Under the standard operation, when repeating UNLOCK and LOCK switch 3 times or more alternately, check the UNLOCK-LOCK operation from 3rd time onward.

- Following procedures are standard operation.

- (1) Keep about 1 M away to the right direction from the outside handle of a driver's seat.
- (2) Face the transmitter toward the vehicle and press one of transmitter switches for about 1 sec.

<Reference>

- As of the security function, even the wireless function is normal, there may be the case that only UNLOCK operation will not work.
- As of the body customize function, if "operation twice" has been set using LEXUS hand-held tester, only driver's seat is unlocked by unlock operation performed once.

No

Yes

Transmitter LED inspection:

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

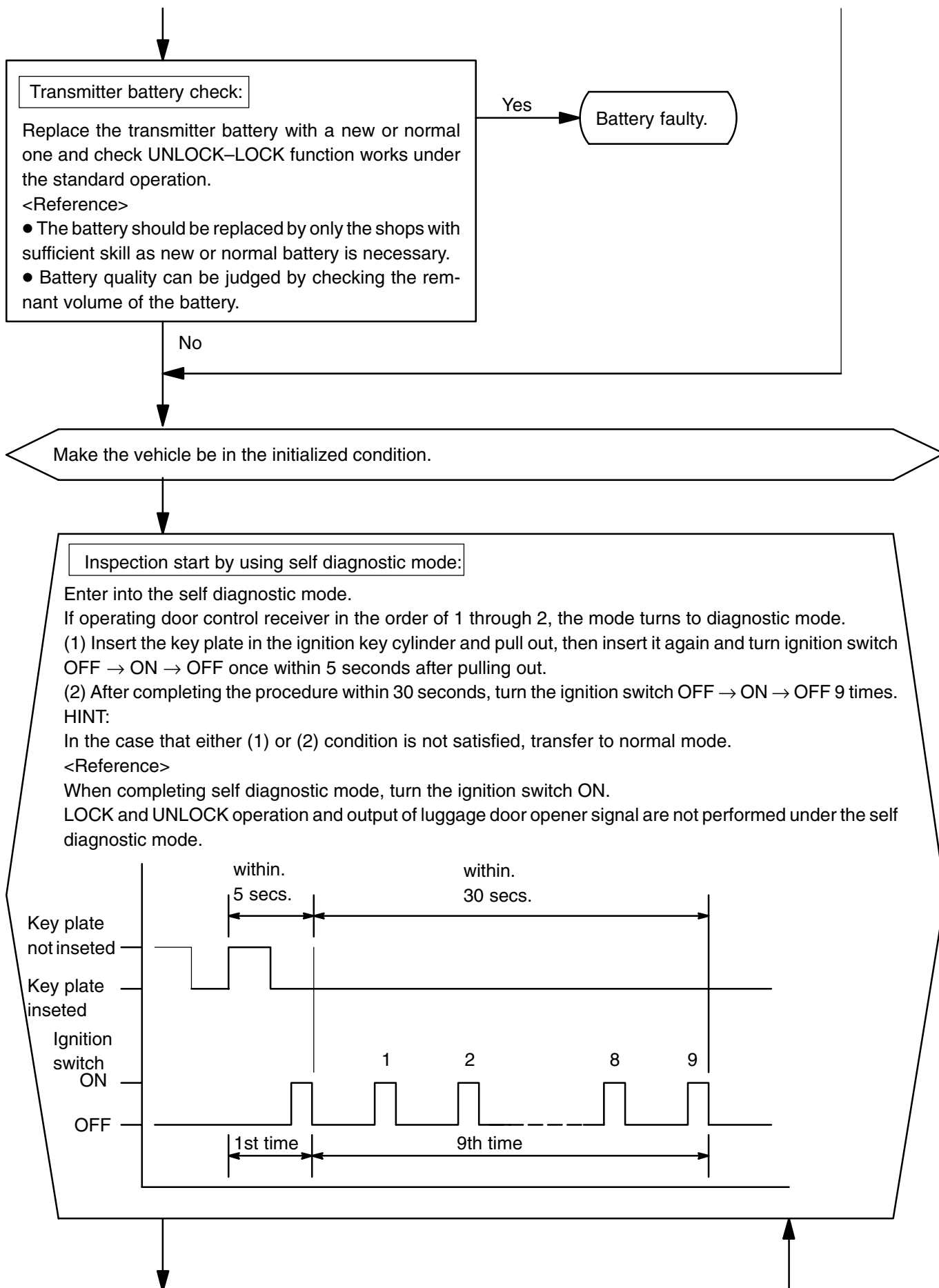
No

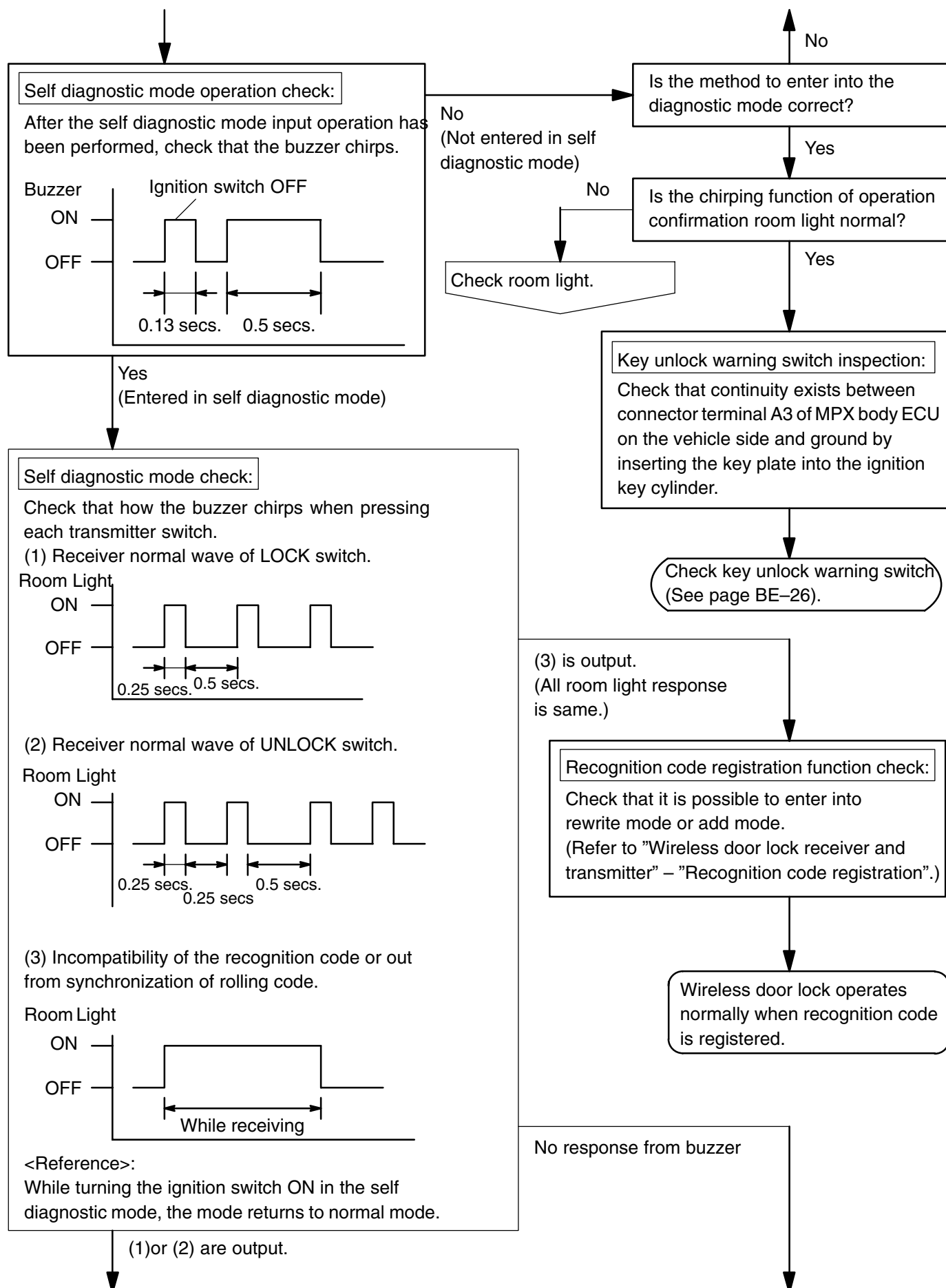
Yes

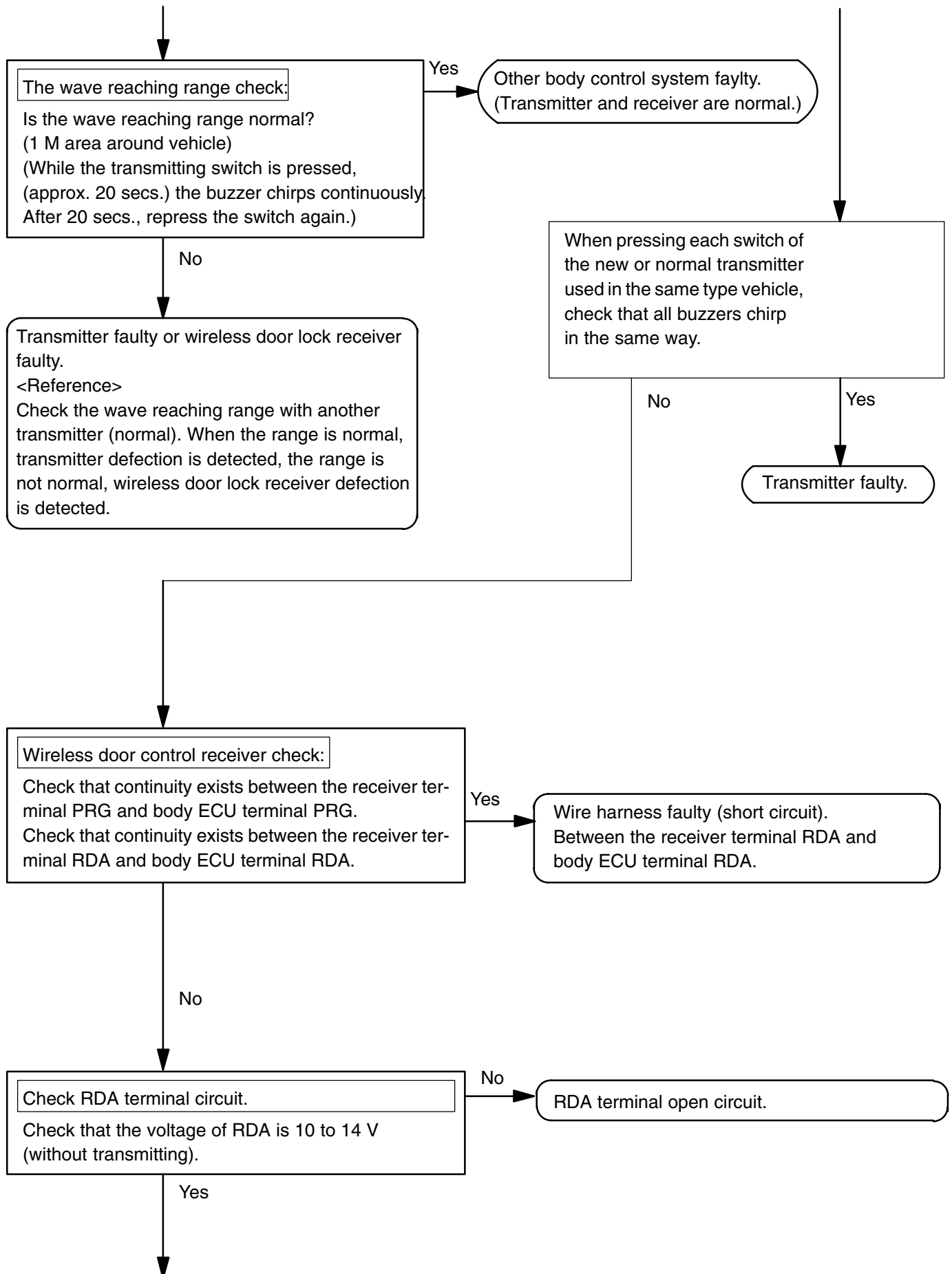
Normal

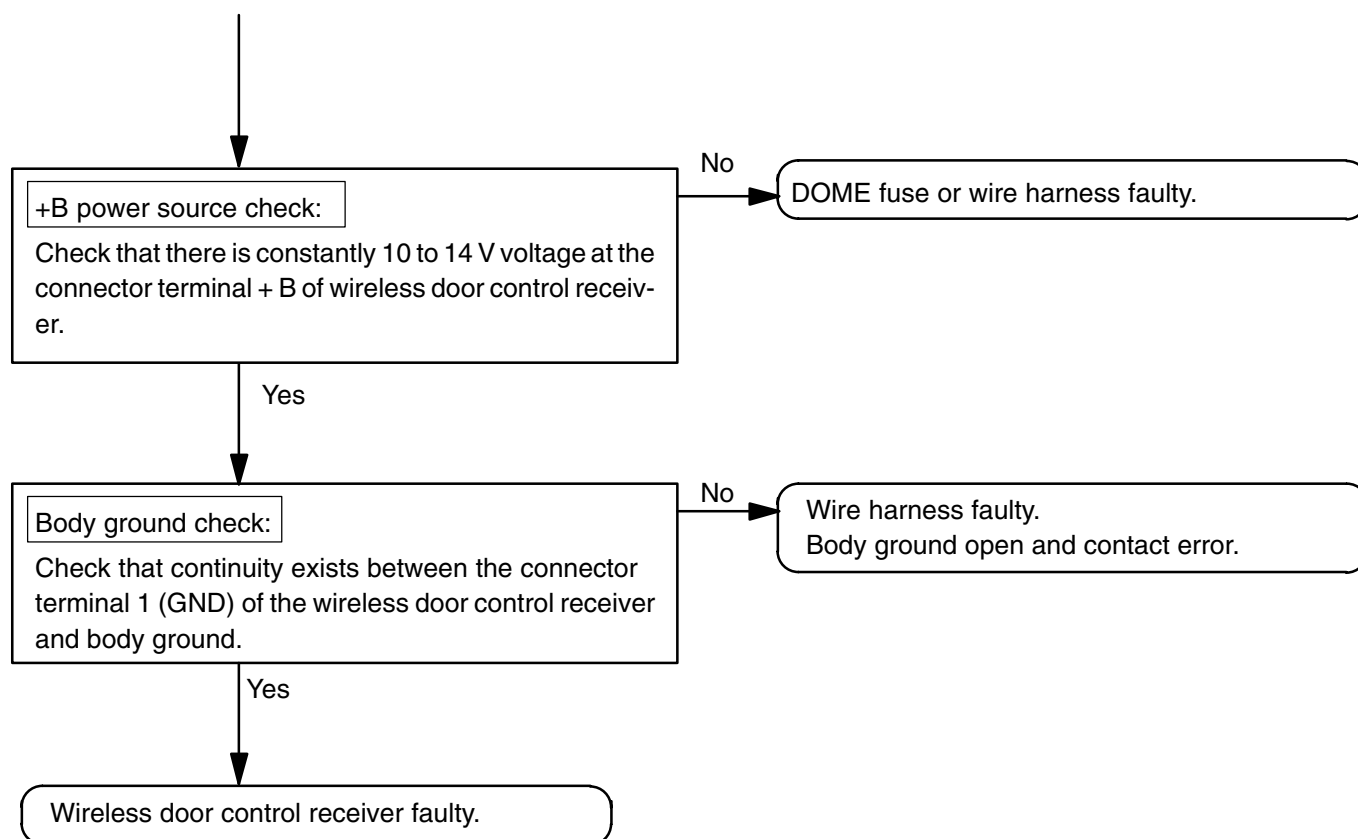
<Reference>

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









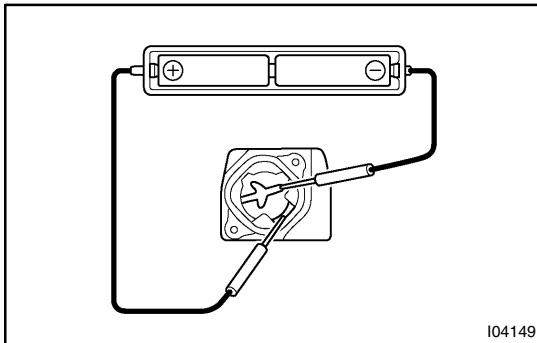
INSPECTION

1. INSPECT WIRELESS DOOR LOCK TRANSMITTER OPERATION

HINT:

Refer to "Wireless door lock control transmitter battery replacement" on page BE-120.

- (a) Using a screwdriver, remove the screws and cover.
- (b) Remove the battery (lithium battery).



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

HINT:

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

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

Standard:

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

HINT:

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

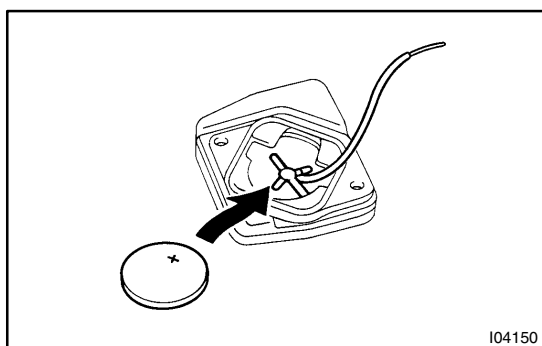
- (e) Install the battery (lithium battery).
- (f) Install a cover so that O-ring is not distorted or slipped off.
- (g) Using a screwdriver, tighten the screws.

2. CHECK BATTERY CAPACITY

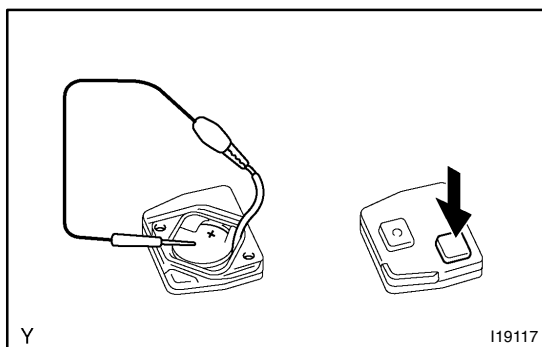
HINT:

- Make sure to use the TOYOTA electrical tester.
- With the battery unloaded, judge can not be made whether the battery is available or not on the test.
- When the transmitter is faulty, the energy amount left in the battery might not be checked correctly.
- On the lithium battery used for the transmitter, the voltage more than 2.5 V with the battery unloaded is shown on the tester until the energy is completely consumed.

Accordingly when inspecting the energy amount left in the battery, it is necessary to measure the voltage when the battery is loaded. (1.2 k Ω).



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

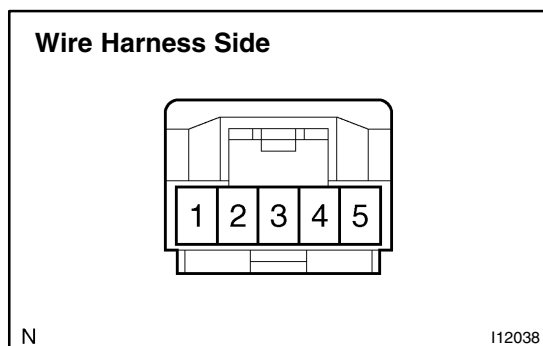


- Connect the (+) tester to the (+) battery (lithium battery), and (–) tester to the lead respectively.
- Press one of the transmitting switches on the transmitter for approx. 1 second.
- Press the transmitting switch on the transmitter again to check the voltage.

Standard: 2.1 V or more

HINT:

- When the temperature of the battery is low, the judge can not be made correctly.
When the outcome of the test is less than 2.1 V, conduct the test again after leaving the battery in the place at 18 °C for more than 30 minutes.
 - By auto power off function, the voltage becomes no load voltage (more than 2.5 V) condition 0.8 seconds after the switch was pressed.
Make sure to read the voltage before of it.
 - High voltage might be shown 1 to 2 times after leaving the battery, judge should be made with the voltage shown at the 3rd time or later.
- (g) Disconnect the lead.
- (h) Set the battery (lithium battery) in the transmitter.
- (i) Install the cover, so that the O-ring is not distorted or slipped off.
- (j) Using a screwdriver, tighten the screws.



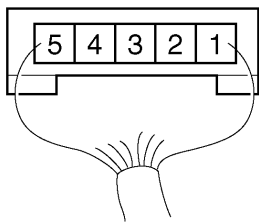
3. INSPECT WIRELESS DOOR LOCK CONTROL RECEIVER CIRCUIT (See page DI-584)

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

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

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

From Back Side



N

I12073

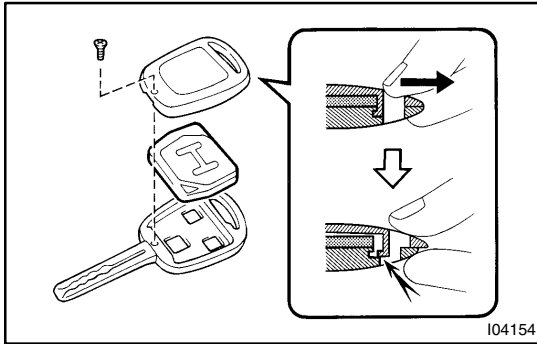
4. INSPECT WIRELESS DOOR LOCK CONTROL RECEIVER CIRCUIT

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

Tester connection	Condition	Specified condition
3 – Ground	Normal mode	10 – 14 V
2 – Ground	Ignition switch position OFF Key removed Transmitter ON	6 – 7 V

If circuit is as specified, replace the receiver.

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



REPLACEMENT

1. REPLACE TRANSMITTER (LITHIUM) BATTERY

NOTICE:

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

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

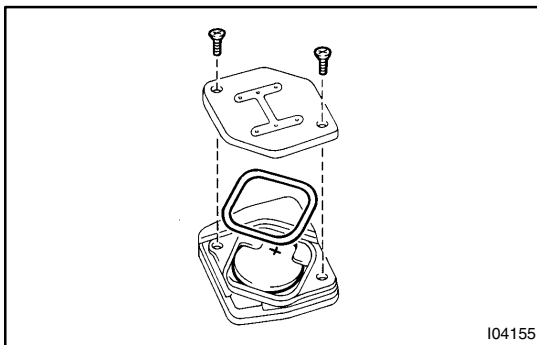
NOTICE:

Do not pry out the cover forcibly.

HINT:

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

(b) Remove the transmitter.

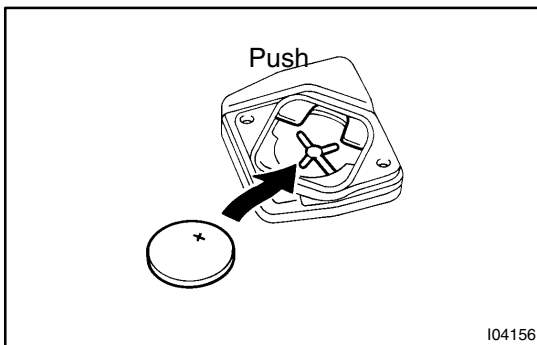


(c) Remove the 2 screws and cover.

(d) Remove the battery (lithium battery).

NOTICE:

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



(e) Install a battery (lithium battery).

NOTICE:

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

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

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

NOTICE:

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

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

(i) Using a screwdriver, tighten the screw.

2. REPLACE DOOR CONTROL RECEIVER AND TRANSMITTER

NOTICE:

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

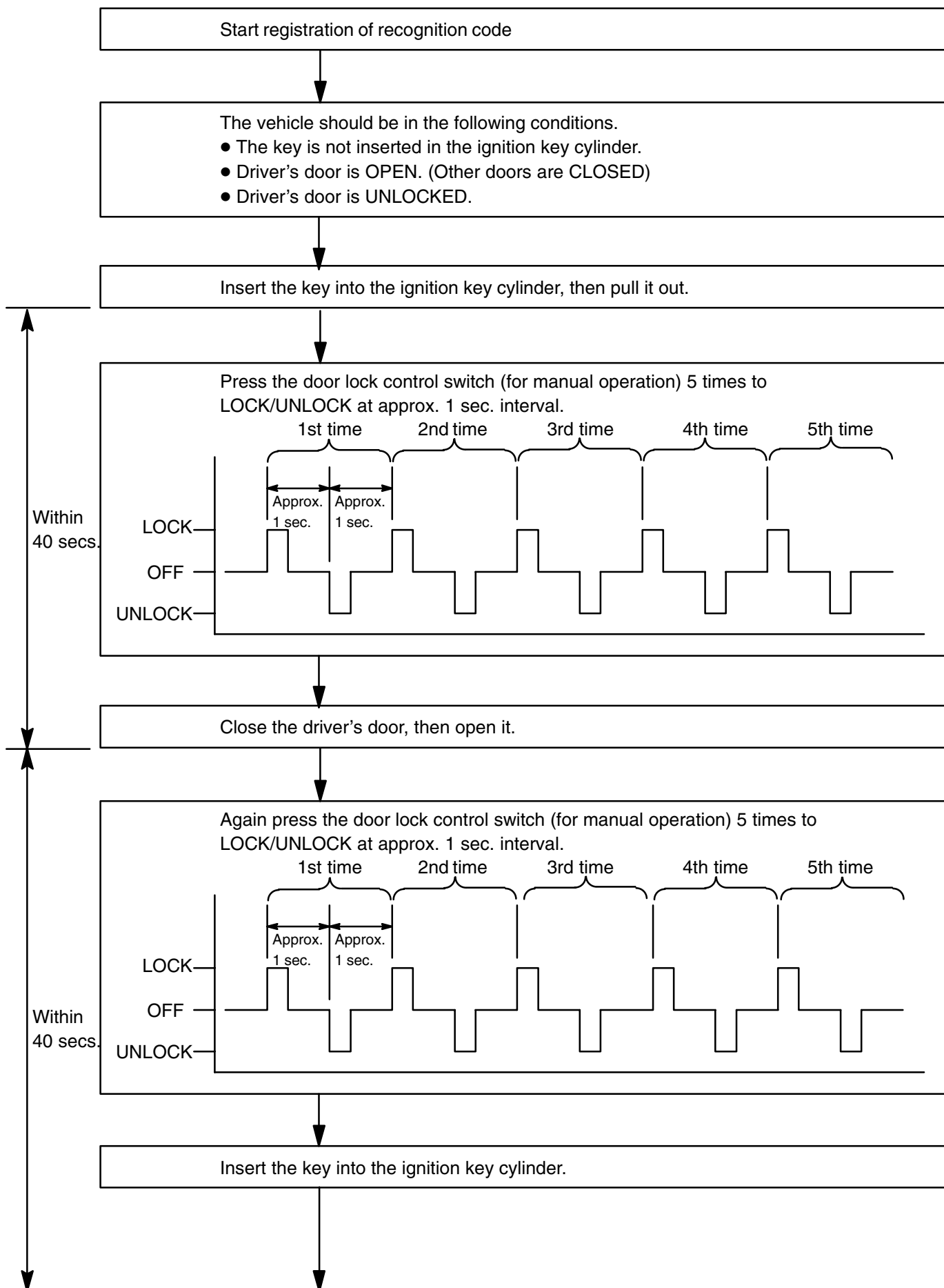
- (a) Select which operation mode should be performed from the following modes.
- Add mode
 - Rewrite mode
 - Prohibition mode
 - Confirmation mode

HINT:

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

HINT:

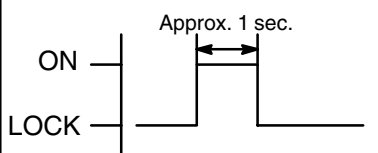
- When procedure is out of the specified, the operation returns to normal operation.
- Maximum 4 recognition codes can be registered.



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

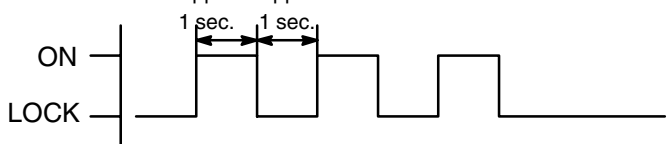
Add mode

ON – LOCK change occurs 1 time



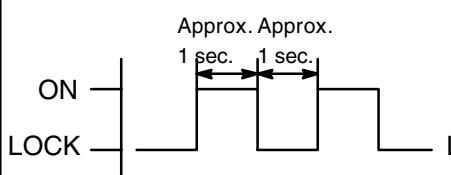
Confirmation mode

ON – LOCK change occurs 3 times
Approx. Approx.



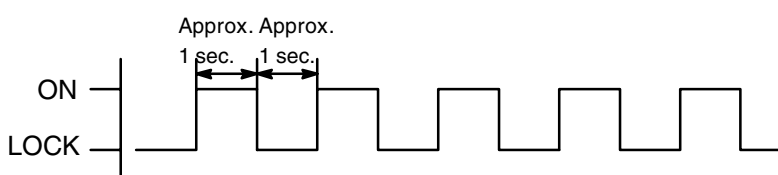
Rewrite mode

ON – LOCK change occurs 2 times



Prohibition mode

ON – LOCK change occurs 5 times



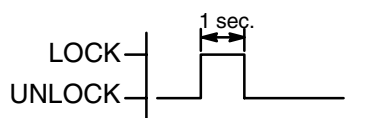
Pull out the key plate from the ignition key cylinder.

When add mode or rewrite mode is selected.

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

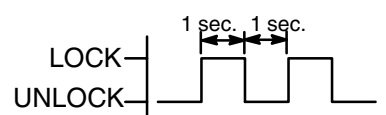
LOCK–UNLOCK occurs once

Indicates that add mode has been selected.



LOCK–UNLOCK occurs twice

Indicates that rewrite mode has been selected.



Within
3 secs.

When prohibition mode is selected.

When confirmation mode is selected.

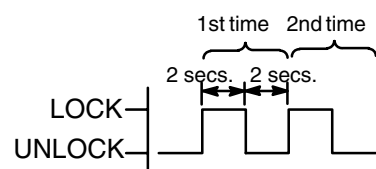
MPX body ECU automatically performs the LOCK–UNLOCK operation 1 to 4 times at 2 sec. interval to inform the operator of the number of the registered codes.

HINT:

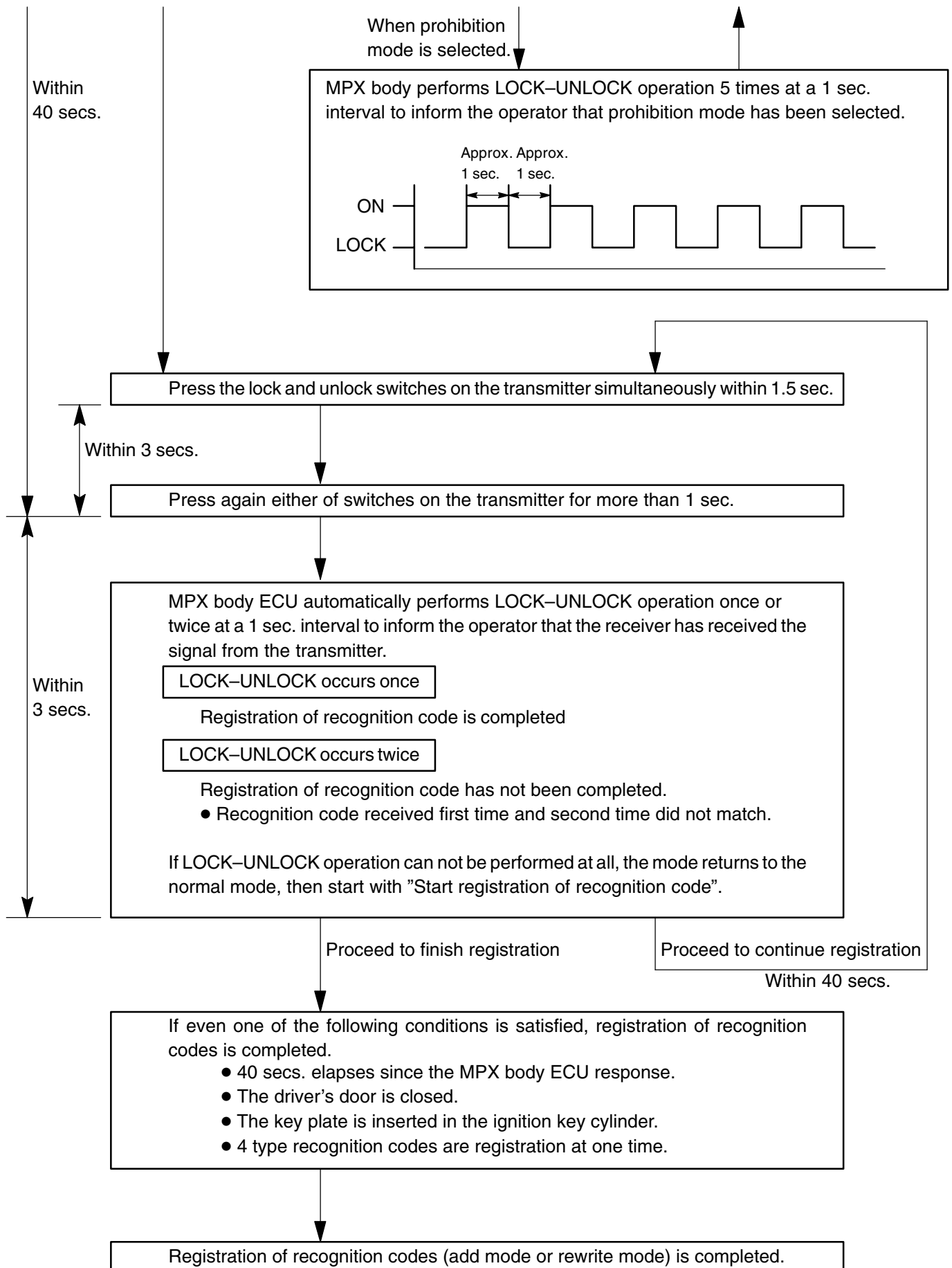
When the number of the registered code is 0, the operation is automatically performed 5 times.

Example:

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

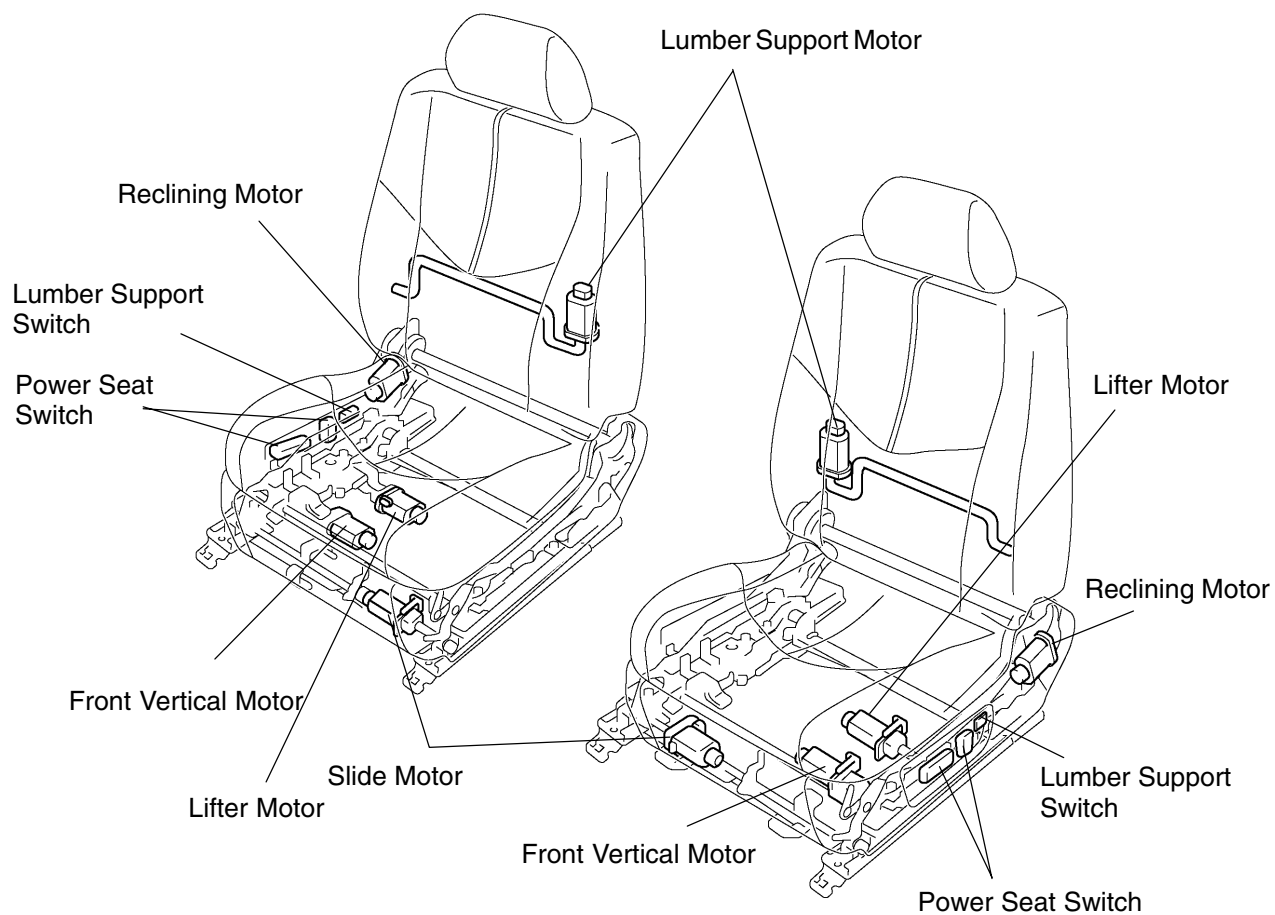
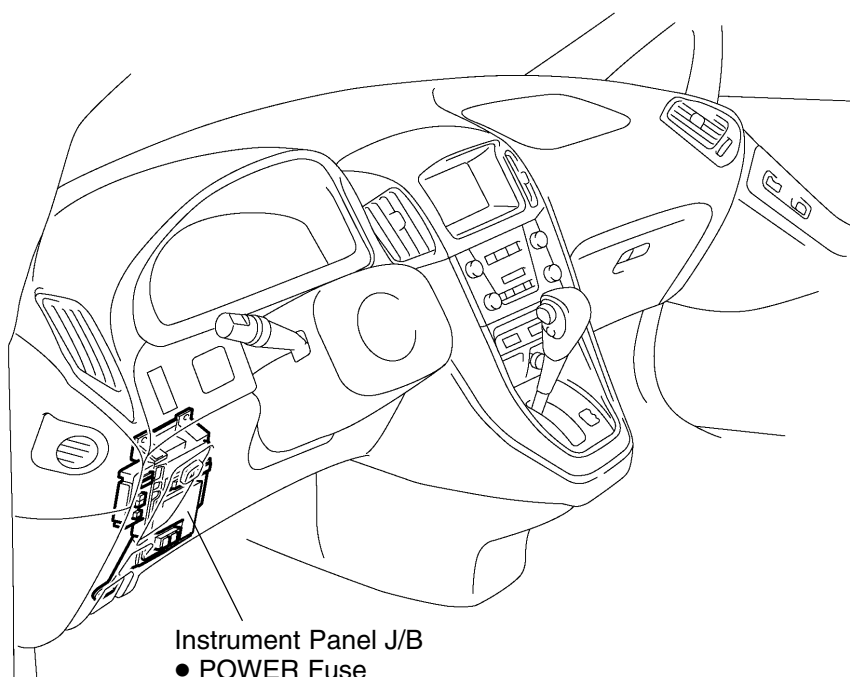


Registration of recognition code (Confirmation mode and prohibition mode) is completed.



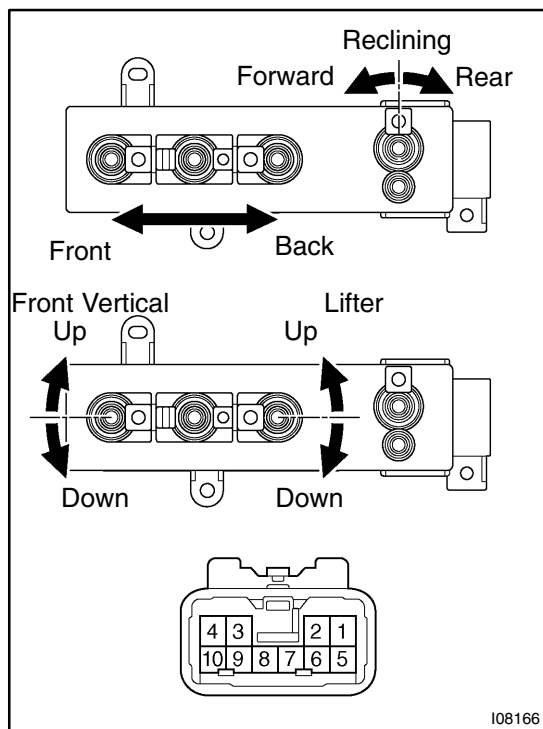
POWER SEAT CONTROL SYSTEM LOCATION

BEOGK-09



Y

I19118



INSPECTION

1. INSPECT DRIVER'S (LHD)/PASSENGER'S (RHD) POWER SEAT SWITCH CONTINUITY

Slide Switch:

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

Front vertical switch:

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

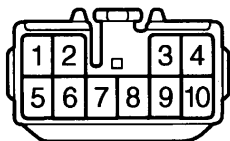
Lifter switch:

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

Reclining switch:

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

If continuity is not as specified, replace the switch.

Wire Harness Side

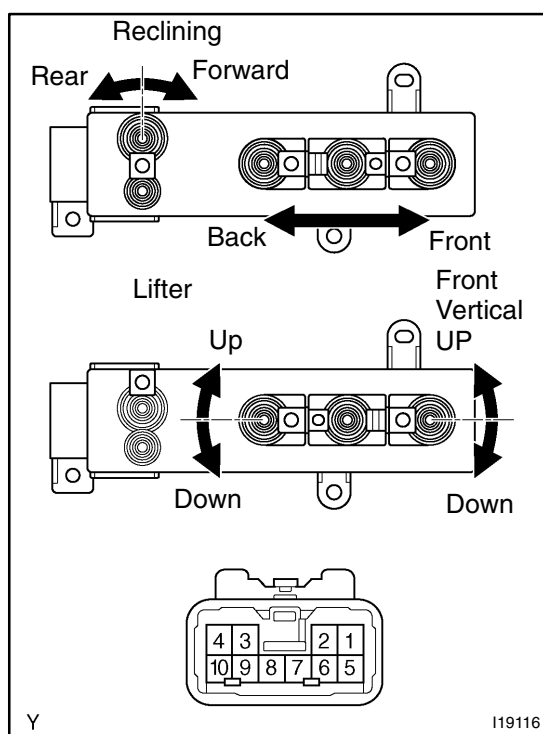
I05472

2. INSPECT DRIVER'S POWER SEAT SWITCH CIRCUIT

- (a) Disconnect the switch connector and connect the seat wire harness to the floor wire harness.
- (b) Inspect the connector on the wire harness side.

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

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



Y

I19116

3. INSPECT PASSENGER'S (LHD)/DRIVER'S (RHD) POWER SEAT SWITCH CONTINUITY**Slide switch:**

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

Front vertical switch:

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

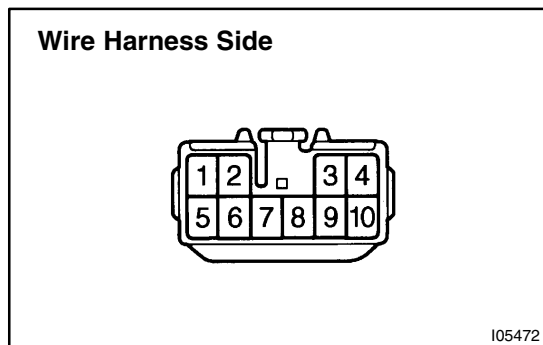
Lifter switch:

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

Reclining switch:

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

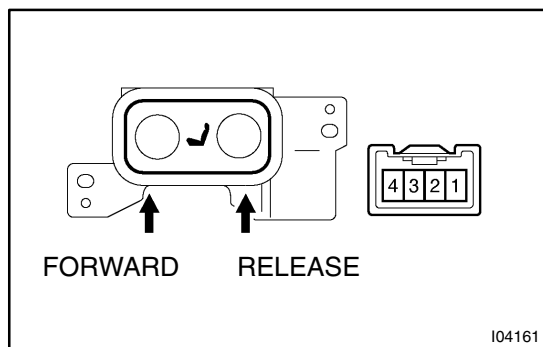
If continuity is not as specified, replace the switch.

**4. INSPECT PASSENGER'S POWER SEAT SWITCH CIRCUIT**

- Disconnect the switch connector and connect the seat wire harness to the floor wire harness.
- Inspect the connector on the wire harness side.

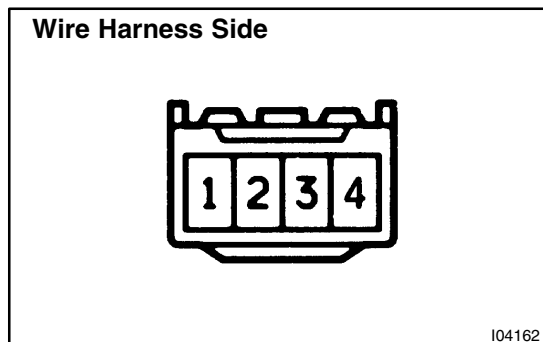
Tester connection	Condition	Specified condition
4 – Ground	Constant	Continuity
1 – Ground	Constant	Battery positive voltage

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

**5. INSPECT LUMBAR SUPPORT SWITCH CONTINUITY**

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

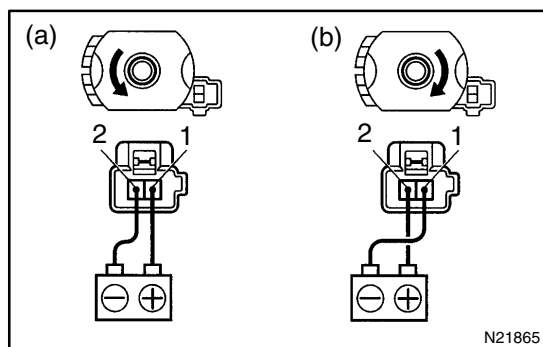
If continuity is not as specified, replace the switch.

**6. INSPECT LUMBAR SUPPORT SWITCH CIRCUIT**

- Disconnect the switch connector and connect the seat wire harness to the floor wire harness.
- Inspect the connector on the wire harness side.

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

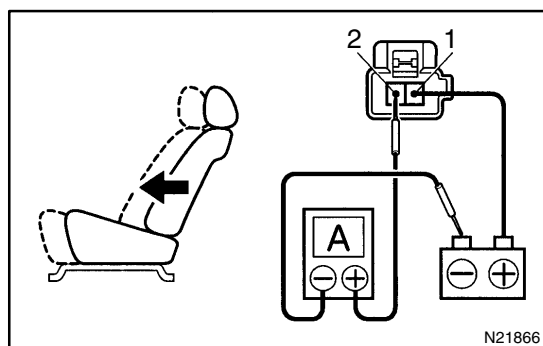
If circuit is not as specified, inspect the circuits connected to other parts.



7. INSPECT SLIDE MOTOR OPERATION

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

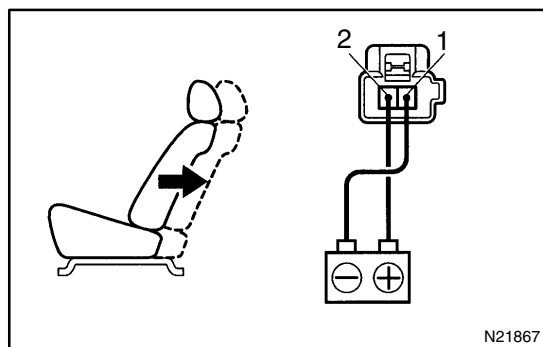
If operation is not as specified, replace the seat adjuster.



8. INSPECT SLIDE MOTOR PTC THERMISTOR OPERATION

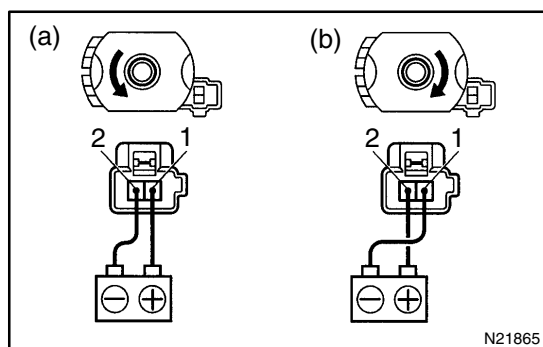
(): Passenger side

- Connect the positive (+) lead from the battery to terminal 1 (2), the positive (+) lead from the ammeter to terminal 2 (1) and the negative (-) lead to the battery negative (-) terminal, then move the seat cushion to the front position.
- Continue to apply voltage, check that current changes to less than 1 ampere within 4 to 90 seconds.



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

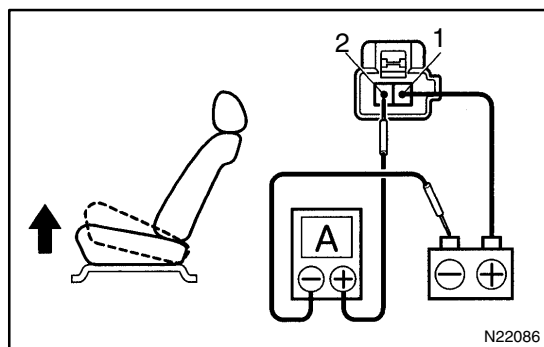
If operation is not as specified, replace the seat adjuster.



9. INSPECT FRONT VERTICAL MOTOR OPERATION

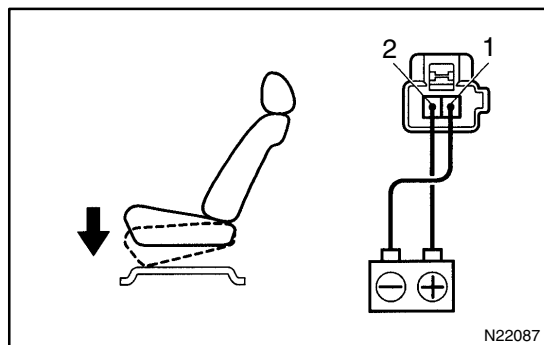
- Connect the positive (+) lead from the battery to terminal 1 and the negative (-) lead to terminal 2, check that the motor turns counterclockwise.
- Reverse the polarity, check that the motor turns clockwise.

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



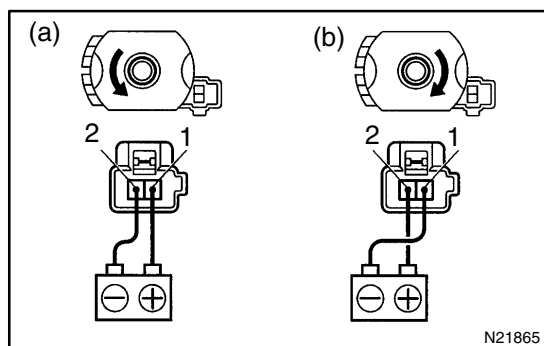
10. INSPECT FRONT VERTICAL MOTOR PTC THERMISTOR OPERATION

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



- Disconnect the leads from the terminals.
- 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.

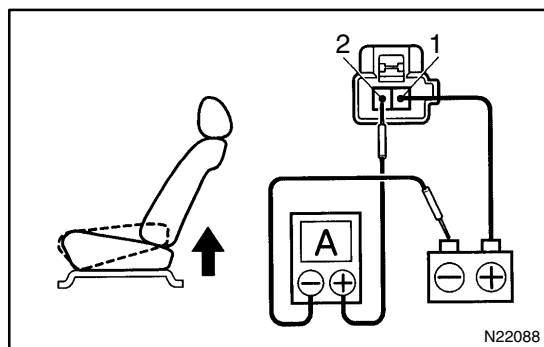
If operation is not as specified, replace the seat adjuster.



11. INSPECT LIFTER MOTOR OPERATION

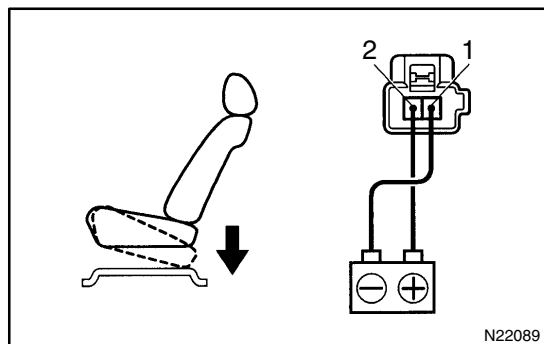
- Connect the positive (+) lead from the battery to terminal 1 and the negative (–) lead to terminal 2, check that the motor turns counterclockwise.
- Reverse the polarity, check that the motor turns clockwise.

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



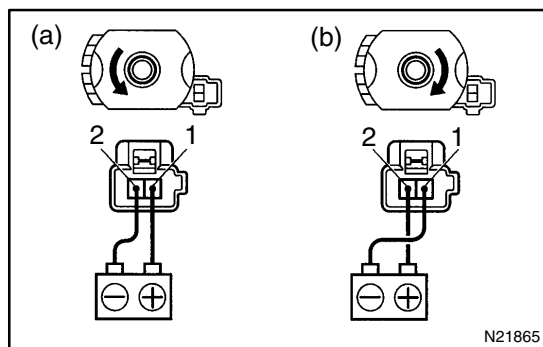
12. INSPECT LIFTER MOTOR PTC THERMISTOR OPERATION

- 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 move the seat cushion to the highest position.
- Continue to apply voltage, check that the current changes to less than 1 ampere within 4 to 90 seconds.



- Disconnect the leads from the terminals.
- 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 cushion begins to descend.

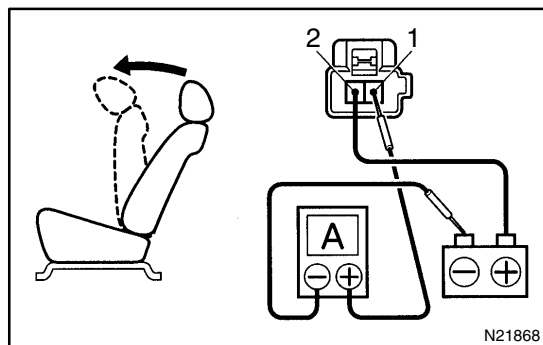
If operation is not as specified, replace the seat adjuster.



13. INSPECT RECLINING MOTOR OPERATION

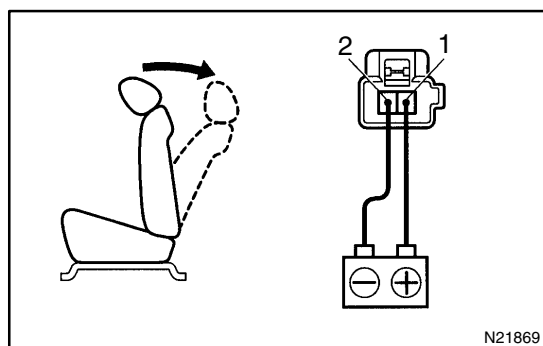
- Connect the positive (+) lead from the battery to terminal 1 and the negative (-) lead to terminal 2, check that the motor turns counterclockwise.
- Reverse the polarity, check that the motor turns clockwise.

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



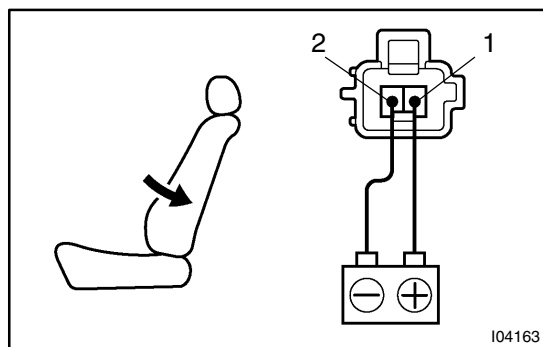
14. INSPECT RECLINING MOTOR PTC THERMISTOR OPERATION

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



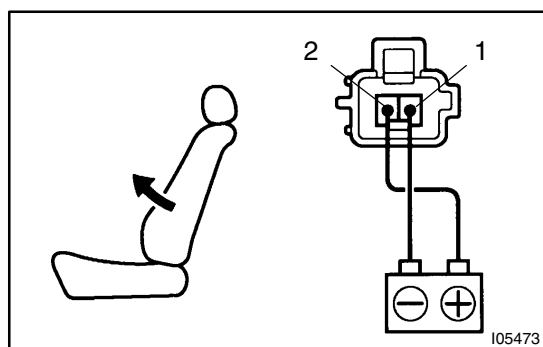
- Disconnect the leads from the terminals.
- Approximately 60 seconds later, connect the positive (+) lead from the battery to terminal 1 and the negative (-) lead to terminal 2, check that the seat back begins to fall backward.

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



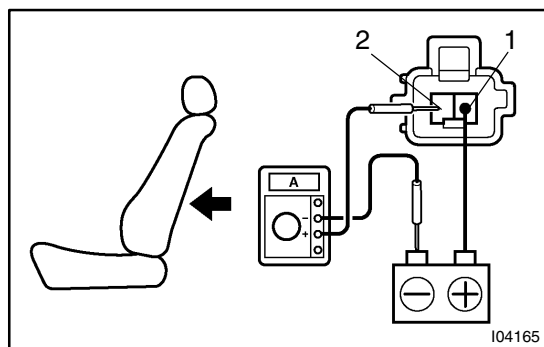
15. INSPECT LUMBAR SUPPORT MOTOR OPERATION

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



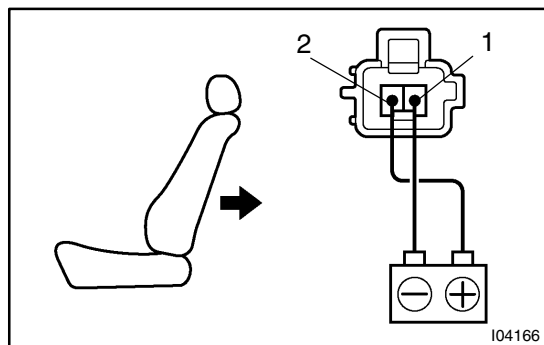
- Reverse the polarity, check that the lumbar support moves forward.

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



16. INSPECT LUMBAR SUPPORT MOTOR CIRCUIT BREAKER OPERATION

- (a) Connect the positive (+) lead from the battery to terminal 2 and the negative (–) lead to terminal 1 on the lumbar support motor connector and move the lumbar support to front end position.

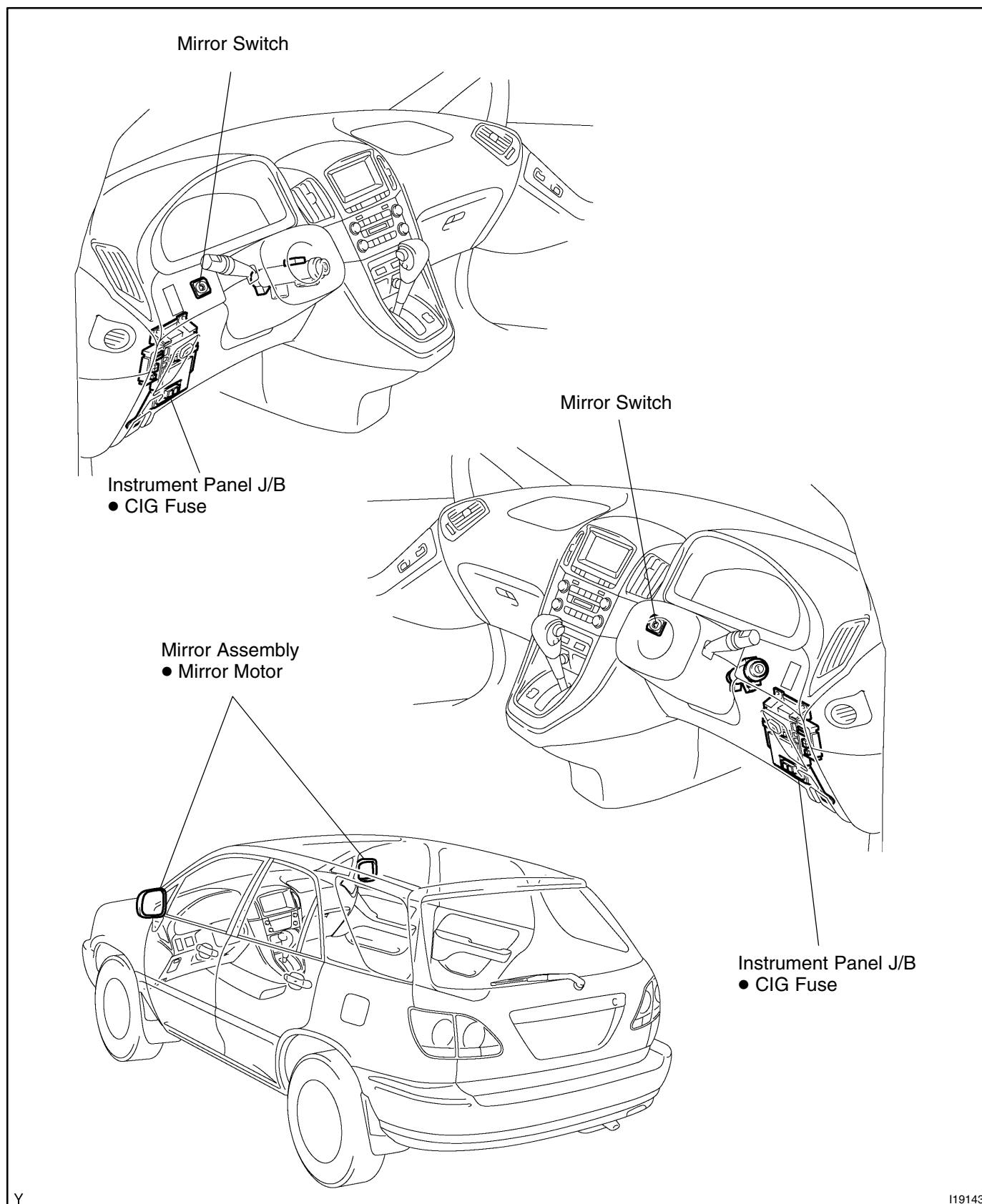


- (b) Continue to apply voltage, check that a circuit breaker operation noise can be heard within 4 to 60 seconds.
- (c) Reverse the polarity, check that the lumbar support begins to move release side with in approximately 60 seconds.

If operation is not as specified, replace the motor.

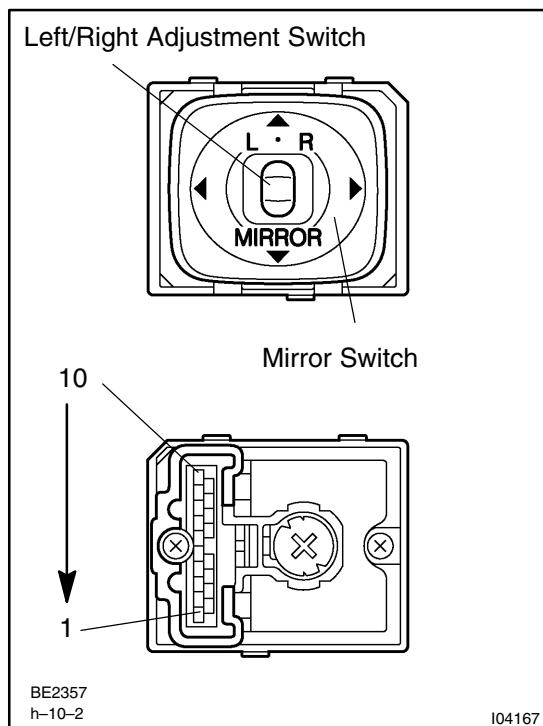
POWER MIRROR CONTROL SYSTEM LOCATION

BE0FP-03



Y

I19143



INSPECTION

1. INSPECT MIRROR CONTROL SWITCH CONTINUITY

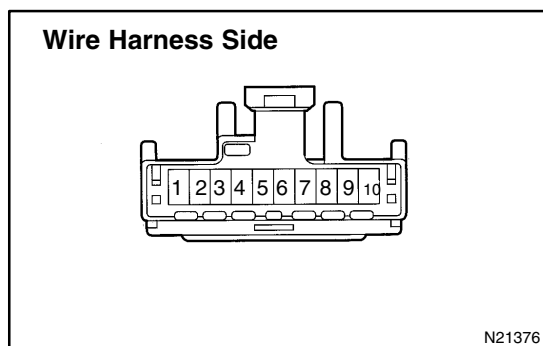
Left side:

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

Right side:

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

If continuity is not as specified, replace the switch.

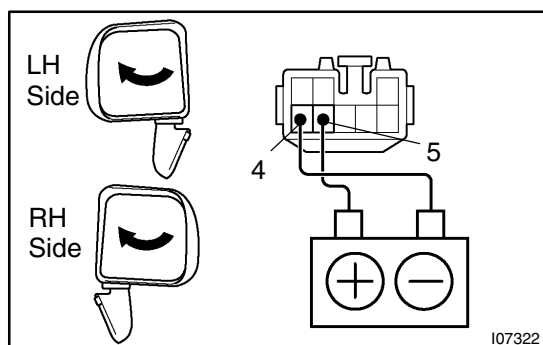


2. INSPECT MIRROR SWITCH CIRCUIT

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

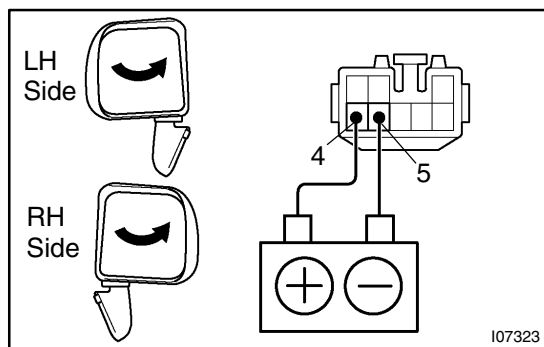
Tester connection	Condition	Specified condition
8 – Ground	Constant	Continuity
4 – Ground	Ignition switch position LOCK	No voltage
4 – Ground	Ignition switch position ACC or ON	Battery voltage

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

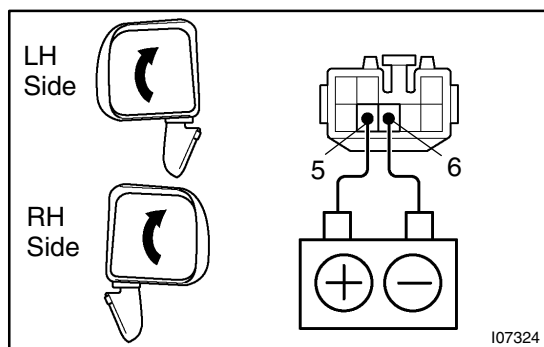


3. INSPECT MIRROR MOTOR OPERATION

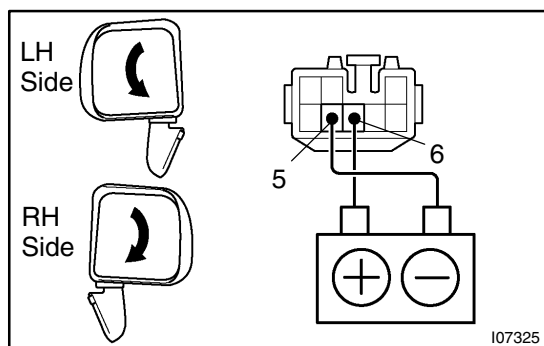
- (a) Connect the positive (+) lead from the battery to terminal 5 and negative (–) lead to terminal 4, check that the mirror turns to left side.



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



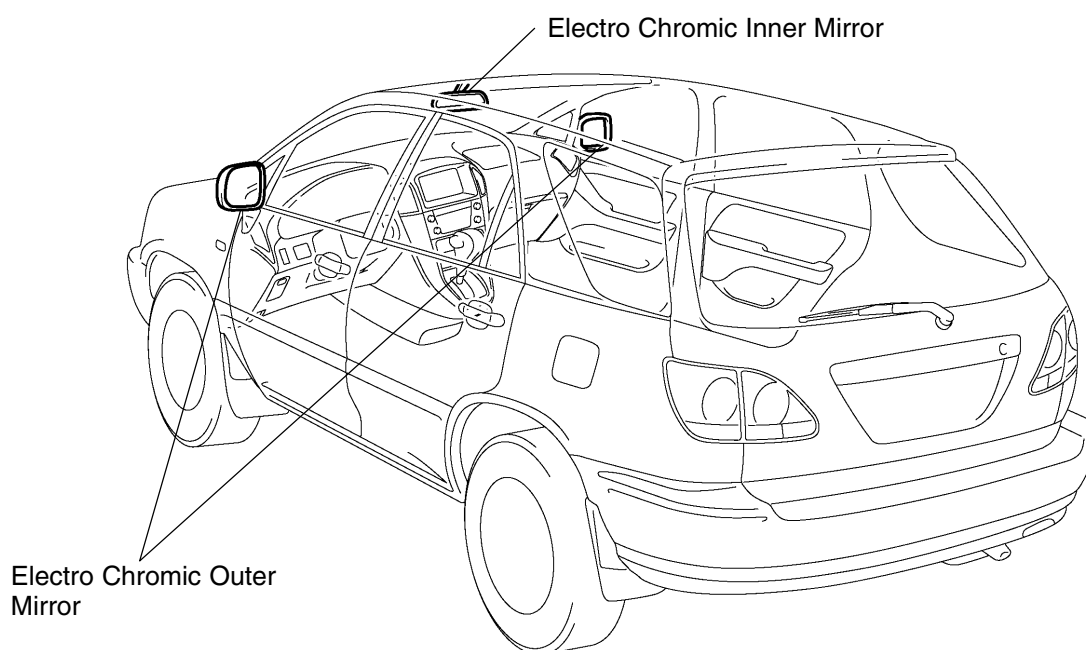
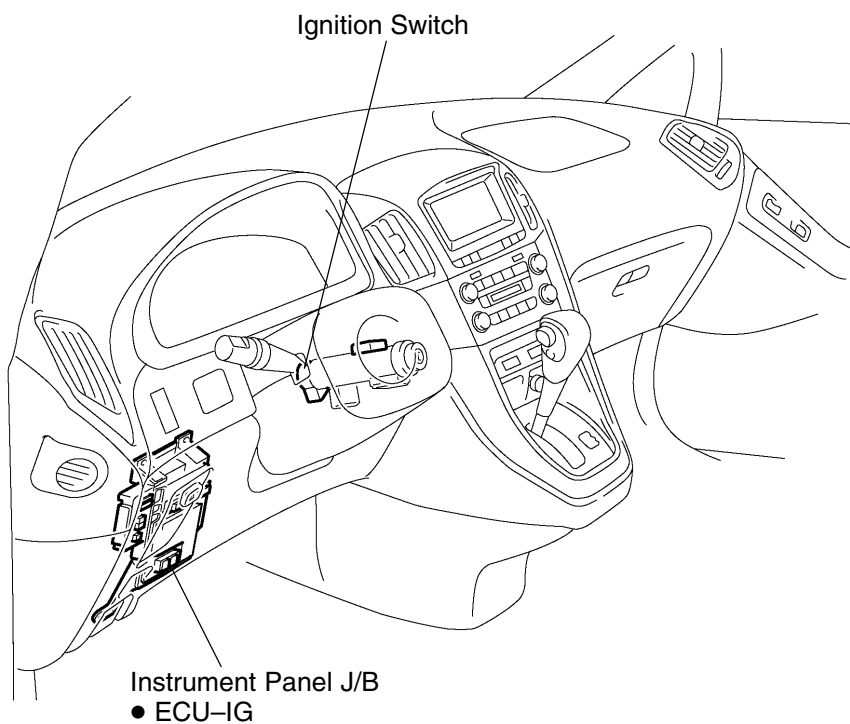
- (c) Connect the positive (+) lead from the battery to terminal 5 and the negative (-) lead to terminal 6, check that the mirror turns upward.



- (d) Reverse the polarity, check that the mirror turns downward.
If operation is not as specified, replace the mirror assembly.

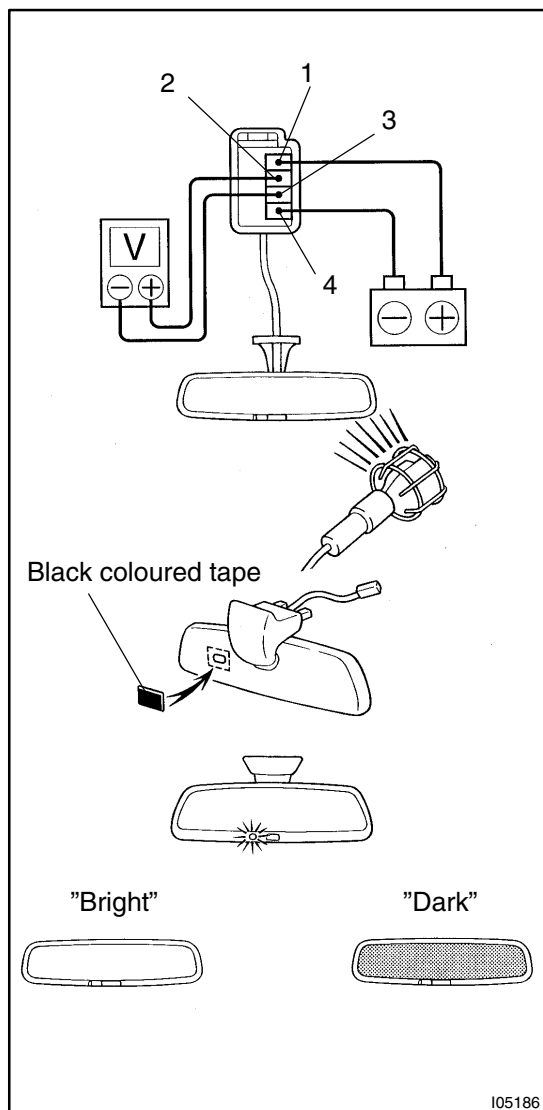
ELECTRO CHROMIC MIRROR SYSTEM LOCATION

BE0HC-08



Y

I19139

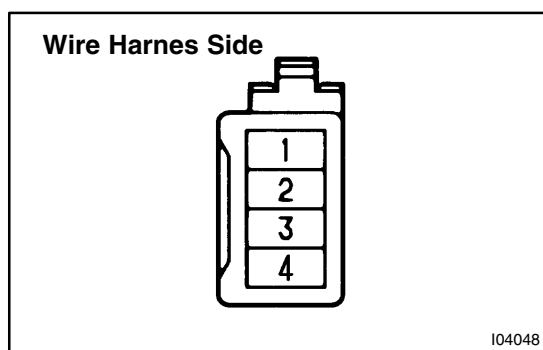


INSPECTION

1. INSPECT ELECTRO CHROMIC INNER MIRROR OPERATION

- Connect the positive (+) lead from the battery to terminal 1 and the negative (–) lead to terminal 4.
- Connect the positive (+) lead from the voltmeter to terminal 2 and the negative (–) lead to terminal 3.
- Attach a black coloured tape to forward sensor to prevent it from sensing.
- When the mode is turned to AUTO, check that indicator light lights up.
- Light up the mirror with an electric light, and check that there is battery positive voltage and mirror surface changes "bright" to "dark".

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

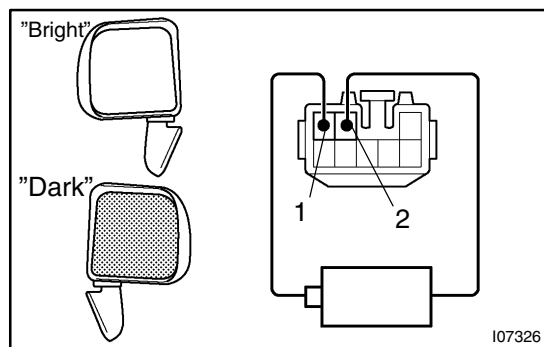


2. INSPECT ELECTRO CHROMIC INNER MIRROR CIRCUIT

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

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

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



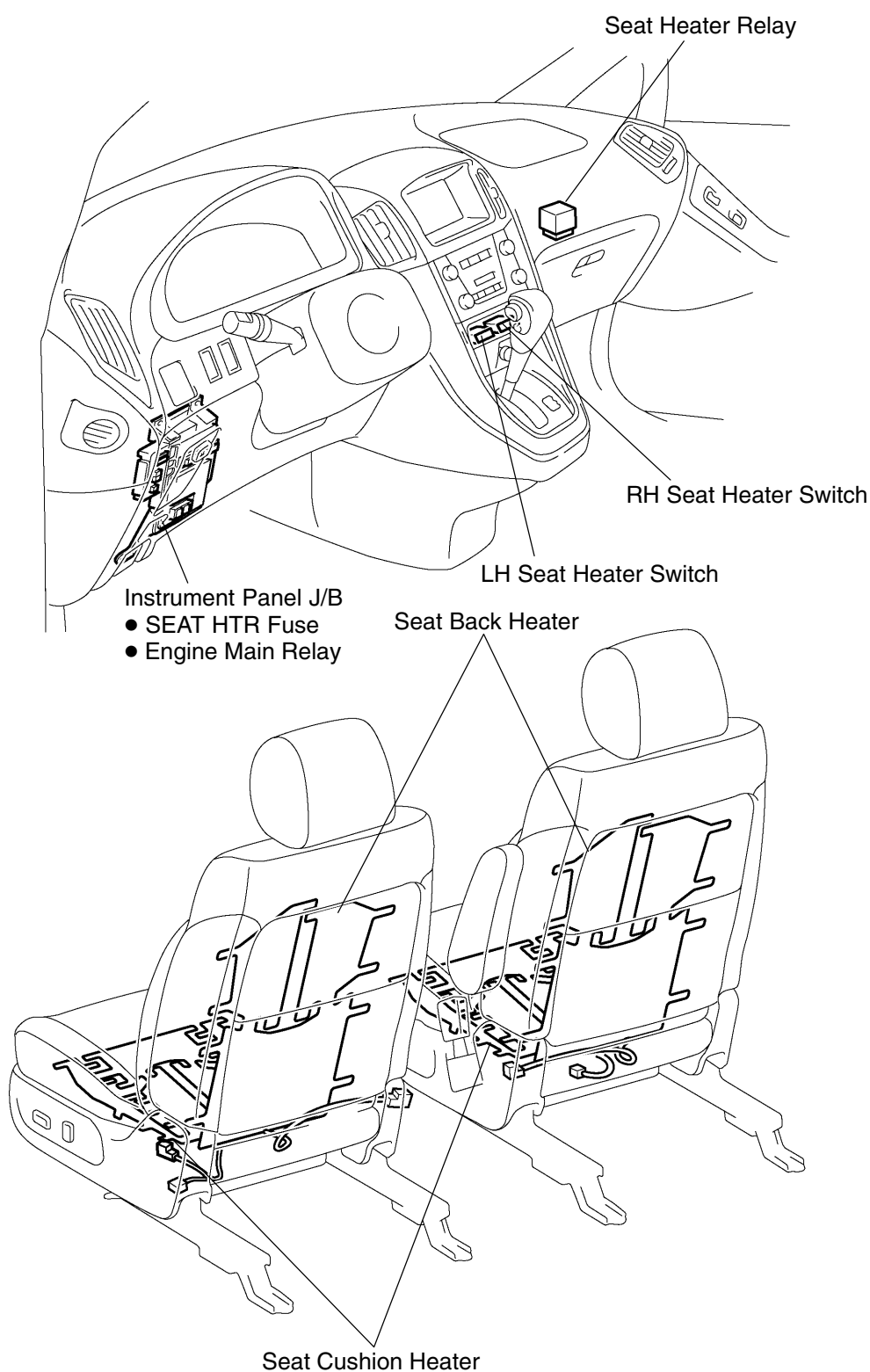
3. INSPECT ELECTRO CHROMIC OUTER MIRROR OPERATION

- Disconnect the outer mirror connector.
- Connect the positive (+) lead from the dry cell battery to terminal 2 and the negative (-) lead to terminal 1, then check that the mirror surface changes to "dark".
- Check the mirror turns to "bright" after disconnecting the battery.

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

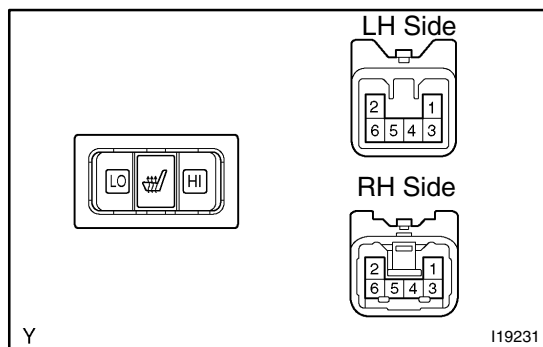
SEAT HEATER SYSTEM LOCATION

BEOGH-13



Y

I19126

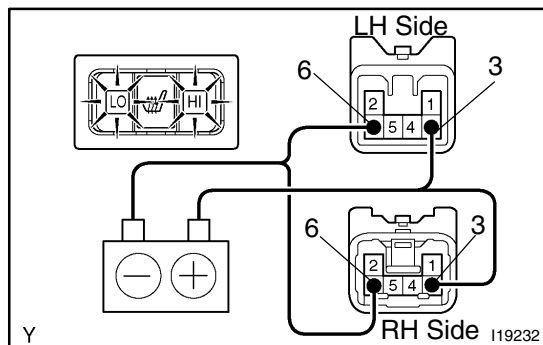


INSPECTION

1. INSPECT SEAT HEATER SWITCH CONTINUITY

Condition	Tester connection	Specified condition
OFF	–	No continuity
HI	2 – 4, 3 – 6	Continuity
LO	3 – 4	Continuity
Illumination circuit	1 – 5	Continuity

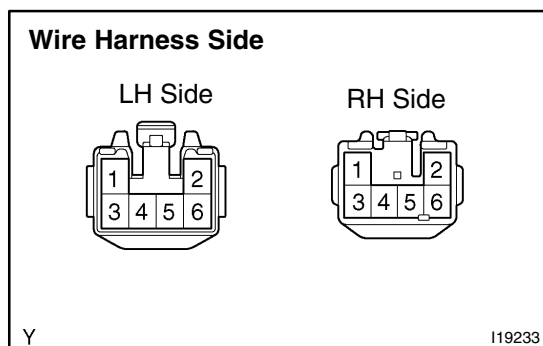
If continuity is not as specified, replace the switch or bulb.



2. INSPECT SEAT HEATER SWITCH INDICATOR

- Connect the positive (+) lead from the battery to terminal 3 and the negative (–) lead to terminal 6.
- Push the switches "HI" position, check that the indicator of "HI" position lights up.
- Push the switches "LO" position, check that the indicator of "LO" position lights up.

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

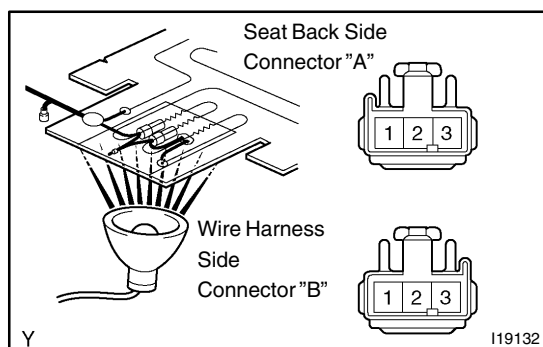


3. INSPECT SEAT HEATER SWITCH CIRCUIT

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

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

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



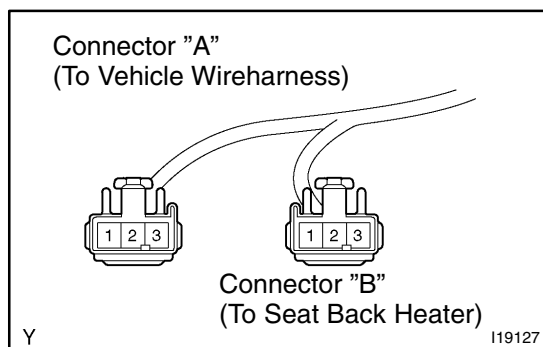
4. INSPECT SEAT HEATER CUSHION CONTINUITY

- Disconnect the seat back heater from the seat cushion heater.
- Heat the thermostat with a light.
- Inspect the seat cushion heater continuity between terminals, as shown.

BODY ELECTRICAL – SEAT HEATER SYSTEM

Tester connection	Condition	Specified condition
A1 – B3	Constant	Continuity
A2 – B4, A3 – B2	Seat heater temp. below 25 – 35 °C (77 – 95 °F)	Continuity
A3 – B2	Seat heater temp. 46 – 54 °C (115 – 129 °F) or more	No continuity
A2 – B1	Seat heater temp. 36 – 44 °C (97 – 111 °F) or more	No continuity

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

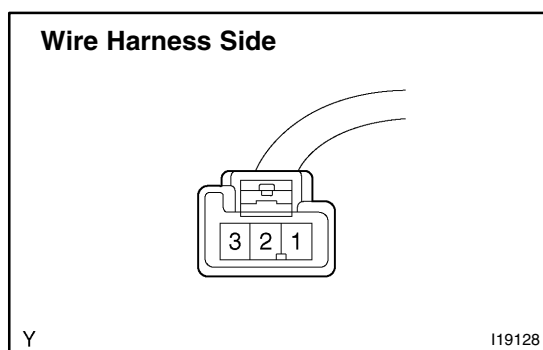


5. INSPECT SEAT HEATER CUSHION CONTINUITY

Inspect the seat heater inner cushion and front cushion continuity between terminals, as shown.

Tester connection	Condition	Specified condition
A1 – B3, A2 – B1	Seat heater temp. below 25 °C (77 °F)	Continuity

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



6. INSPECT SEAT BACK CONTINUITY

Inspect the seat back continuity between terminals, as shown.

Tester connection	Condition	Specified condition
1 – 3, 2 – 3	Seat heater temp. below 25 °C (77 °F)	Continuity

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

AUDIO SYSTEM (Europe)

DESCRIPTION

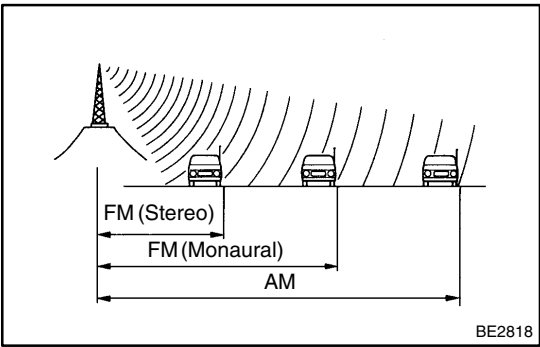
BE1VH-02

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

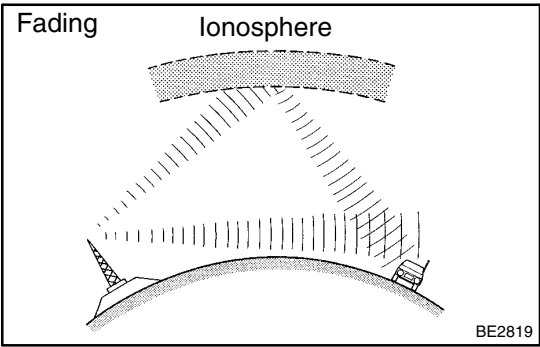


2. SERVICE AREA

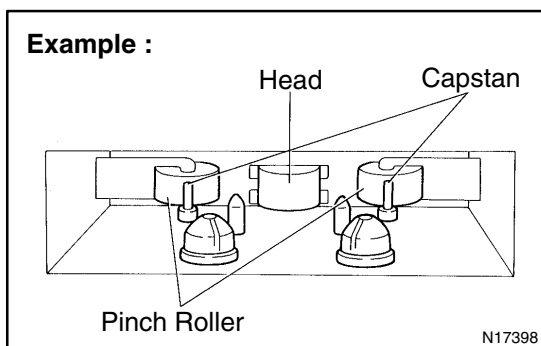
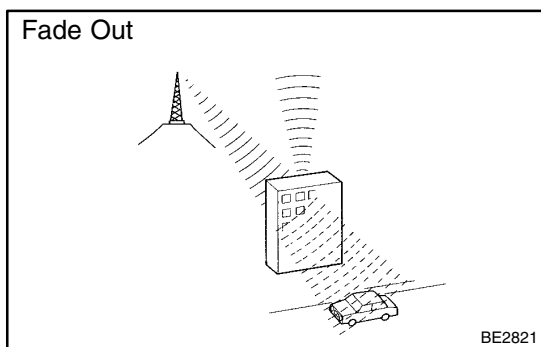
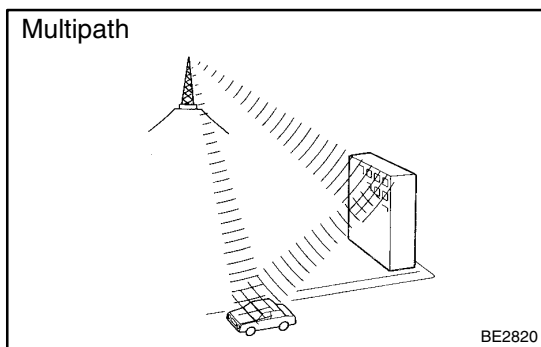
There are great differences in the size of the service area for AM and FM monaural. Sometimes FM stereo broadcasts cannot be received even though AM comes in very clearly. Not only does FM stereo have the smallest service area, but it also picks up static and other types of interference ("noise") easily.

3. RECEPTION PROBLEMS

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



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

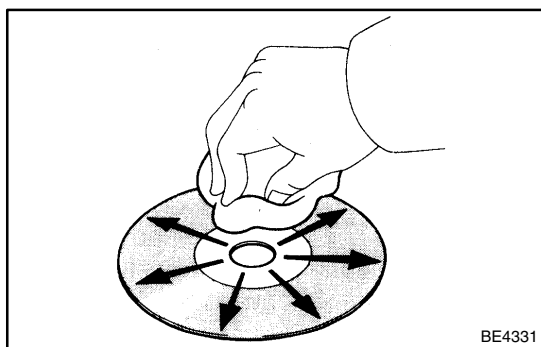


- **Multipath**
One type of interference caused by bouncing of radio waves off obstructions is called "multipath". Multipath occurs when a signal from the broadcast transmitter antenna bounces off buildings and mountains and interferes with the signal that is received directly.

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

4. **Tape Player/Head Cleaning:** **MAINTENANCE**

- (a) Raise the cassette door with your finger. Next, using a pencil or similar object, push in the guide.
- (b) Using a cleaning pen or cotton applicator soaked in cleaner, clean the head surface, pinch rollers and capstans.



5. **CD Player/Disc Cleaning:** **MAINTENANCE**

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

NOTICE:

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

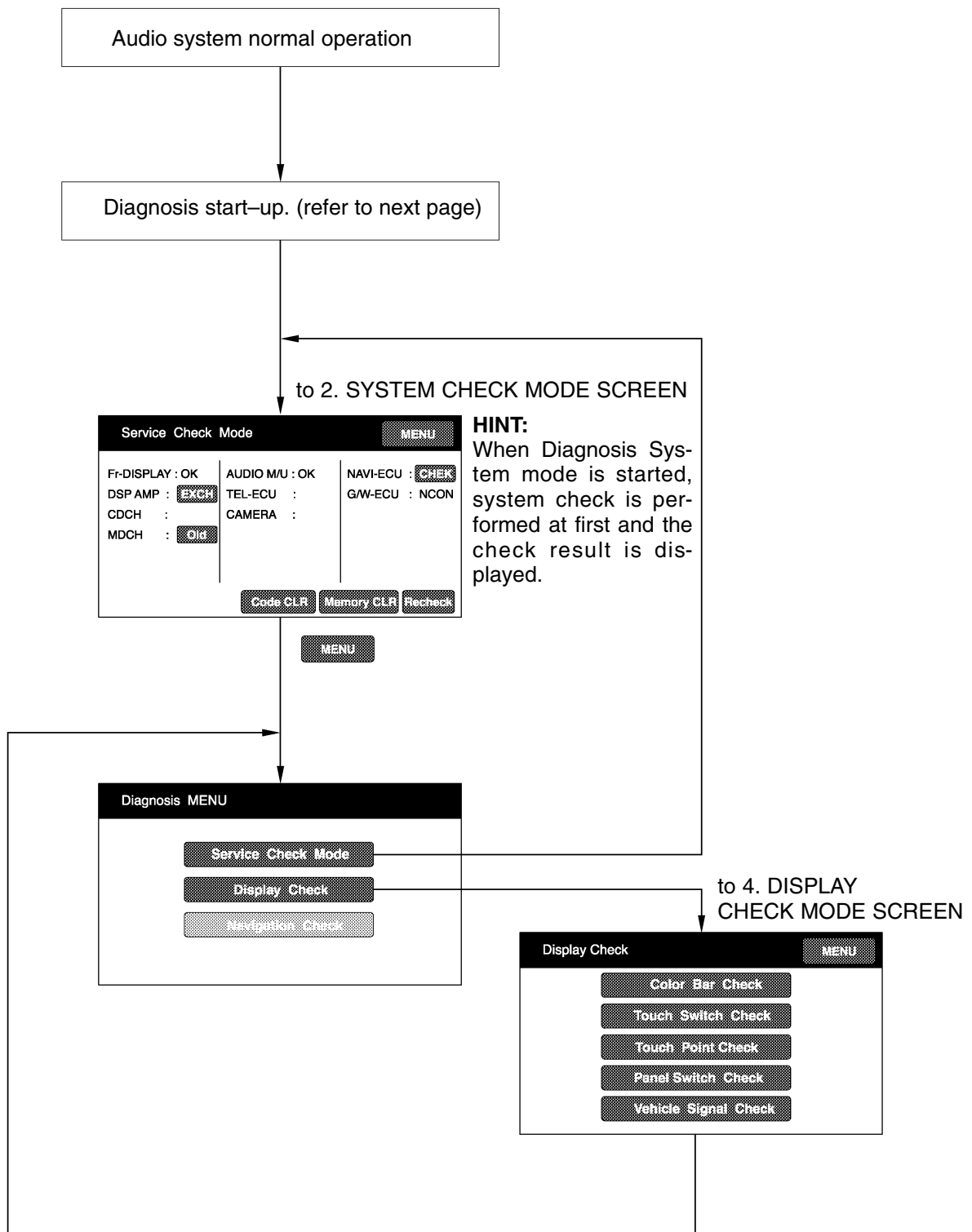
TROUBLESHOOTING

1. DIAGNOSIS SYSTEM MODE (w/o Navigation system)

HINT:

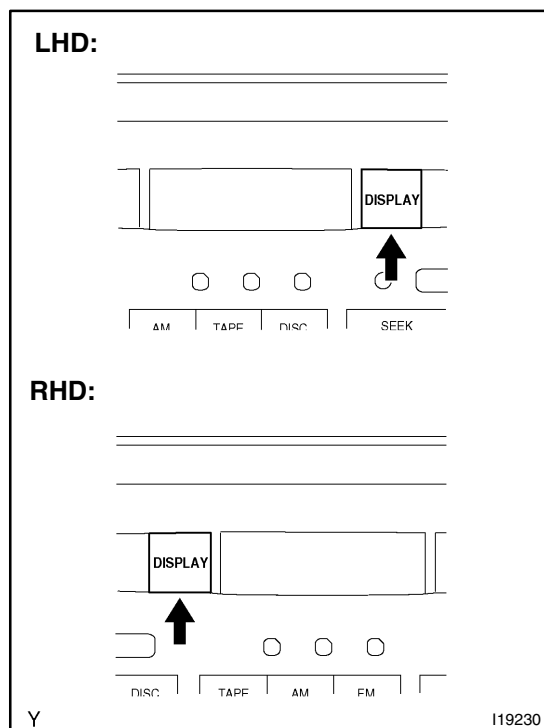
Diagnosis System Mode is operated as follows.

In case of a vehicle without navigation system, there is no navigation check mode. However, other modes except for this are same as a vehicle with navigation system.



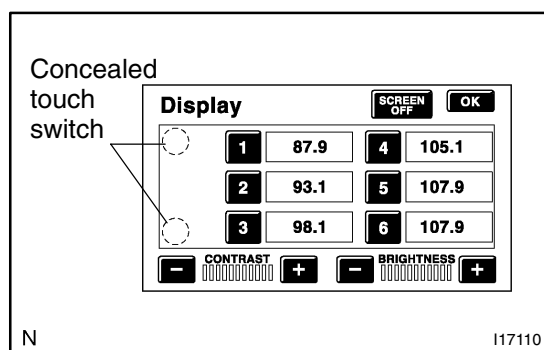
(a) DIAGNOSIS START-UP

To start the diagnosis menu, there are 2 ways: using a diagnosis check wire and using a switch.



(b) START-UP BY SWITCH OPERATION

- (1) Vehicle speed is 0 km/h (0 mph).
- (2) Parking brake switch is pressed.
- (3) Press the Display switch to display the Screen Adjustment screen.



- (4) Repeatedly touch the upper and lower bottom parts of the left end of the screen 3 times.

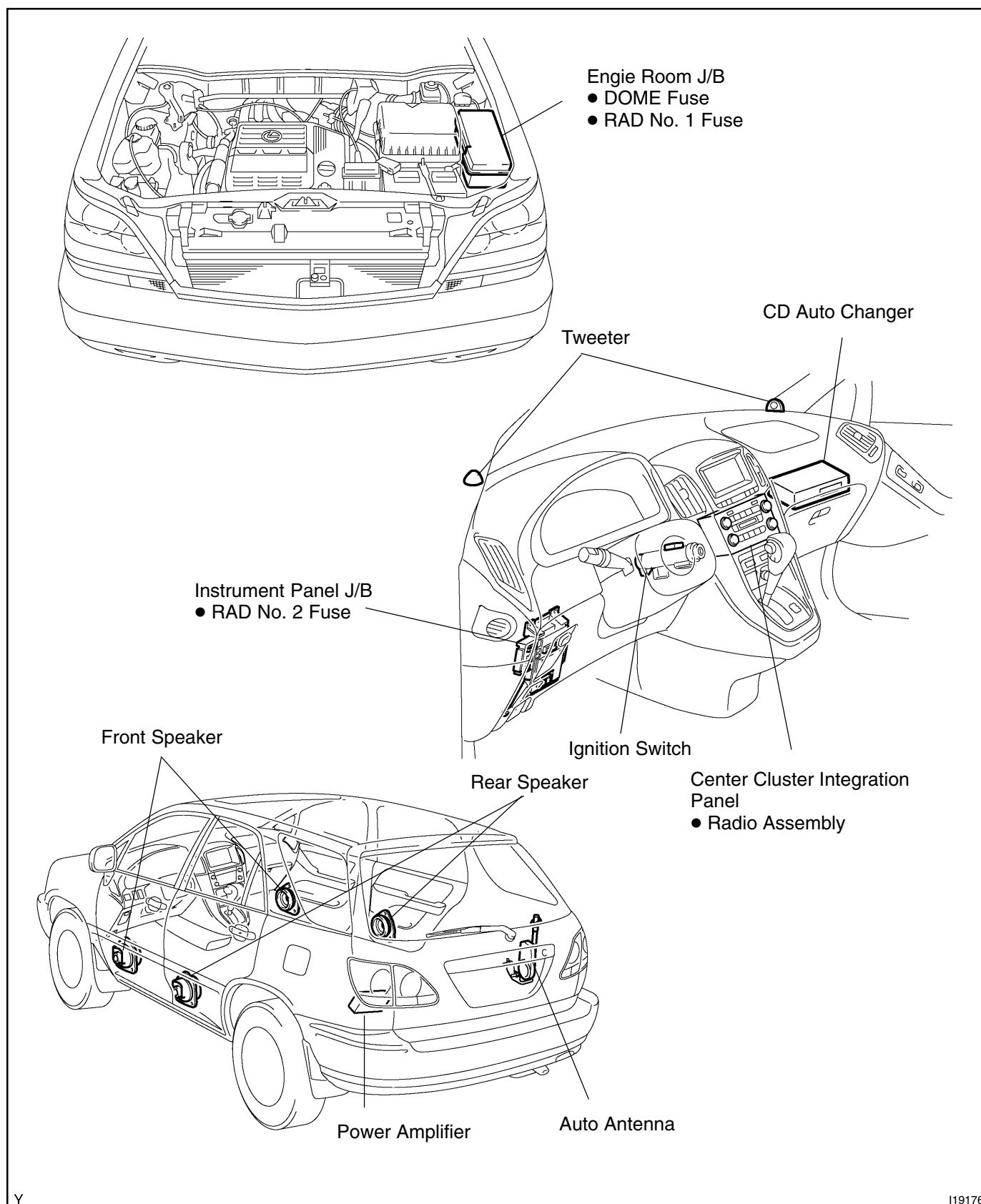
(c) FINISHING DIAGNOSIS SYSTEM MODE

Turn the ignition switch from ACC to OFF to finish the mode. If it is started by switch operation.

2. DIAGNOSIS SYSTEM MODE (w/ Navigation system)

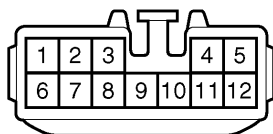
(See page DI-726)

LOCATION



Y

I19176

Wire Harness Side

I04188

INSPECTION**1. INSPECT CD AUTO CHANGER CIRCUIT**

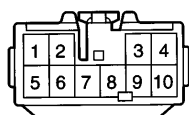
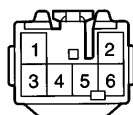
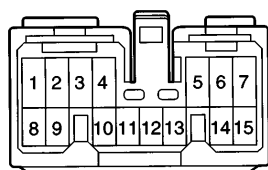
Disconnect connectors from CD auto changer and inspect the connector on the wire harness side.

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

Wire Harness Side**Connector "A"****Connector "B"****Connector "C"**

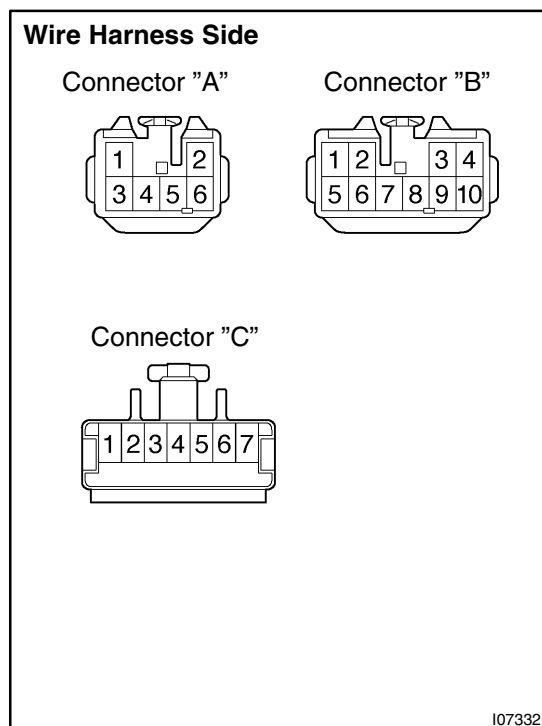
I08150

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
A6 – Ground	Constant	Continuity
A3 – Ground	Ignition switch LOCK and radio switch ON	No voltage
A3 – Ground	Ignition switch ACC or ON and radio switch ON	Battery positive voltage
A4 – 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
A2 – Ground	Constant	Continuity
A4 – Ground	Constant	Battery positive voltage
A1 – Ground	Ignition switch LOCK	No voltage
A1 – Ground	Ignition switch ACC or ON	Battery positive voltage

HINT:

Check the wire harness between radio receiver assembly and the CD auto changer, between radio receiver assembly and power amplifier.

AUDIO SYSTEM (Except Europe) DESCRIPTION

BE1Y0-01

1. RADIO WAVE BAND

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

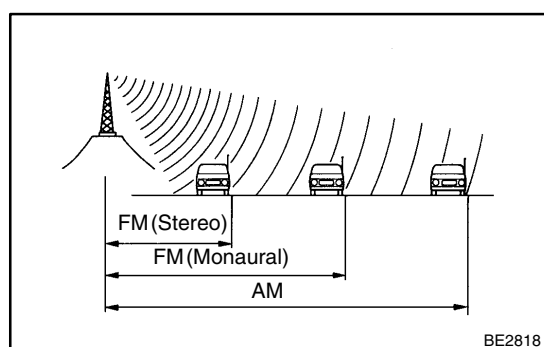
Frequency	30 kHz	300 kHz	3 MHz	30 MHz	300 MHz
Designation	LF	MF	HF	VHF	
Radio wave		AM		FM	
Modulation	Amplitude modulation			Frequency modulation	

LF: Low Frequency

MF: Medium Frequency

HF: High Frequency

VHF: Very High Frequency



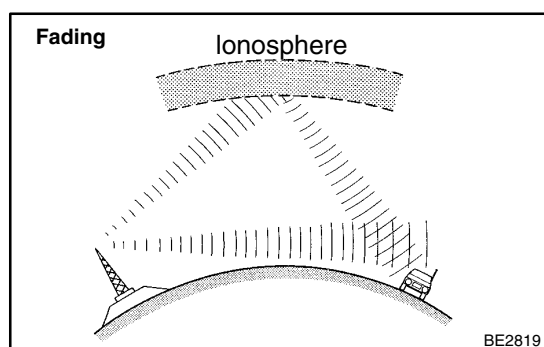
2. SERVICE AREA

There are great differences in the size of the service area for AM and FM monaural. Sometimes FM stereo broadcasts cannot be received even though AM can be received very clearly.

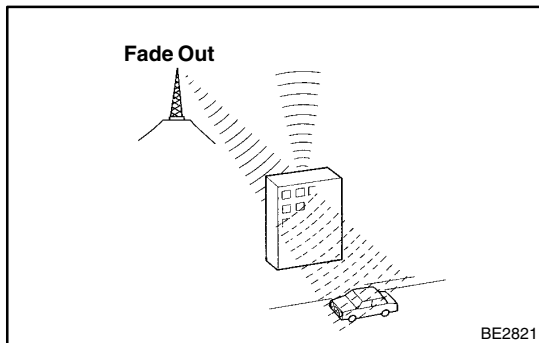
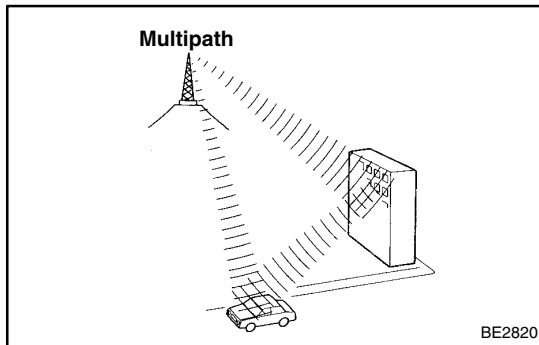
Not only does FM stereo have the smallest service area, but it also picks up static and other types of interference ("noise") easily.

3. RECEPTION PROBLEMS

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



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



- **Multipath**
One type of interference caused by the bounce of radio waves off of obstructions is called "multipath". Multipath occurs when a signal from the broadcast transmitter antenna bounces off buildings and mountains and interferes with the signal that is received directly.
- **Fade Out**
Because FM radio waves are of higher frequencies than AM radio waves, they bounce off buildings, mountains, and other obstructions. For this reason, FM signals often seem to gradually disappear or fade away as the vehicle goes behind a building or other obstruction. This is called "fade out".

4. NOISE PROBLEMS

(a) Questionnaire for noise:

It is very important for noise troubleshooting to have good understanding of the claims from the customers, so 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.

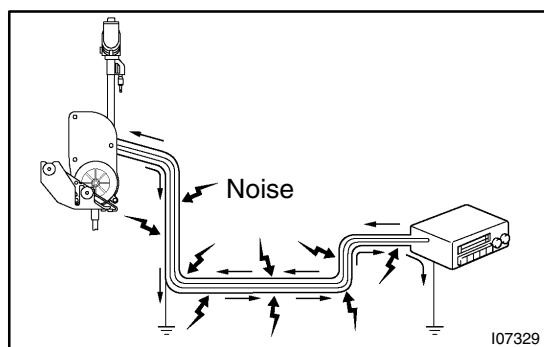
HINT:

In the case that the noise occurrence condition does not meet any of the above questionnaire, check based on the "Reception problems".

Refer to above descriptions for multipath and fading.

(b) Matters that require attention when checking:

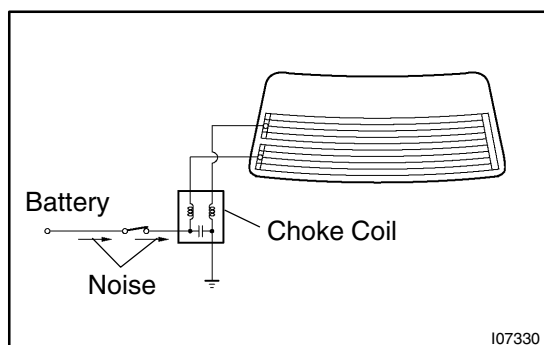
- Noise coming into the radio usually has no harm for practical use as the noise protection is taken and it is hardly thinkable for an extremely loud noise to come in. When extremely loud noise comes into the radio, check if the grounding is normal where the antenna is installed.
- Check if all the regular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

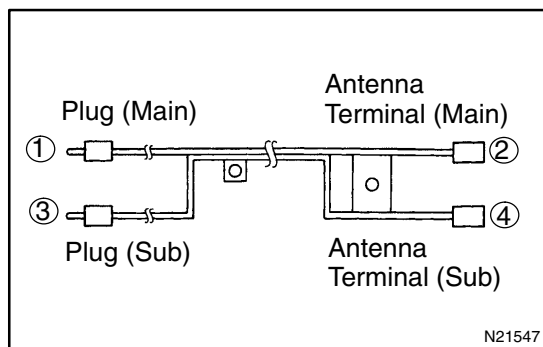
Electronic signal received by the antenna will reach to the radio transmitting through the core wire of the coaxial cable. Any noise wave other than radio wave is mixed into this core wire, that naturally causes noise in the radio and poor sound quality. In order to prevent these noises from mixing into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

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

5. COMPACT DISC PLAYER

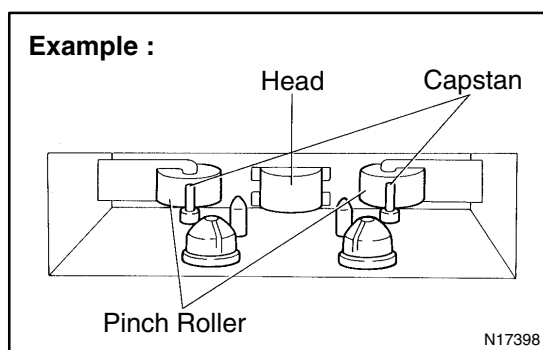
Compact Disc (hereafter called "CD") Players use a laser beam pick-up to read the digital signals recorded on the CD and reproduce analog signals of the music, etc. There are 4.7 in. (12 cm) and 3.2 in. (8 cm) discs in the CD player.

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.

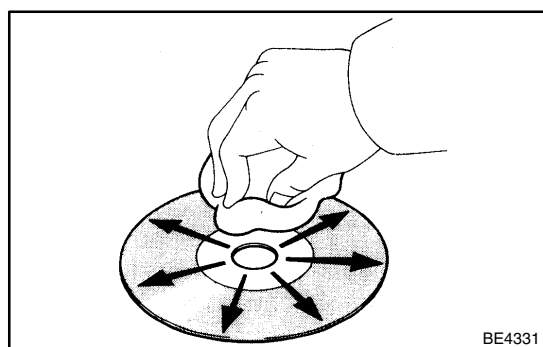
NOTICE:

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

- Raise the cassette door with your finger. Next, using a pencil or similar object, push in the guide.
- Using a cleaning pen or cotton applicator soaked in cleaner, clean the head surface, pinch rollers and capstans.



7. CD Player/Disc Cleaning: MAINTENANCE

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

NOTICE:

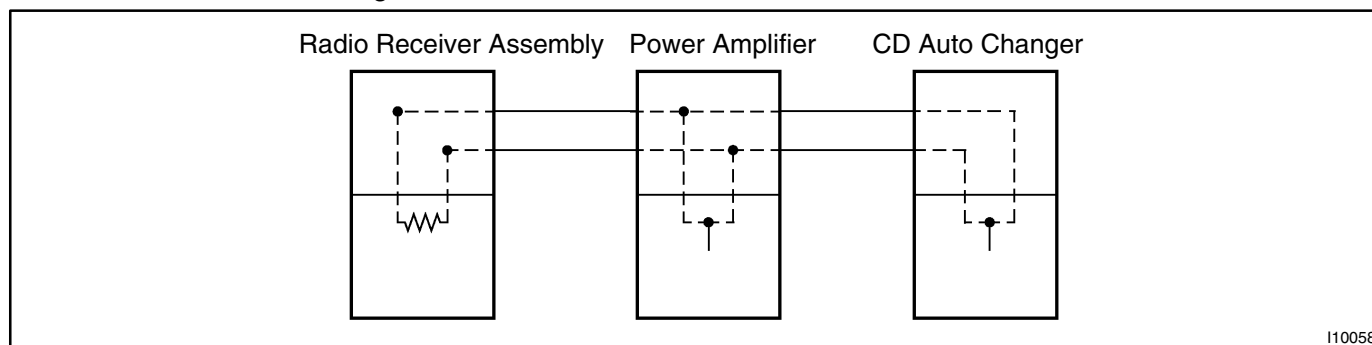
Do not use a conventional record cleaner or anti-static preservative.

8. OUTLINE OF AVC-LAN

(a) What is AVC-LAN?

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

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



(b) Objectives

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

The concrete objectives are explained below.

- (1) When products by different manufactures were combined together, there used to be a case that malfunction occurred such as sound did not come out. This problem has been resolved by standardization of signals.
- (2) Various types of after market products have been able to add or replace freely.
- (3) Because of the above (2), each manufacture has become able to concentrate on developing products in their strongest field. This has enabled many types of products provided inexpensively.
- (4) Conventionally, a new product developed by a manufacture could not be used due to a lack of compatibility with other manufactures products. Because of this new standard, users can enjoy compatible products provided for them timely.

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

HINT:

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

TROUBLESHOOTING

NOTICE:

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

HINT:

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

Always inspect the trouble taking the following items into consideration.

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

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

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

1. DIAGNOSIS FUNCTION

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

HINT:

Press the function switch instead of TRACK TUNE APS switch.

(a) Diagnosis start-up

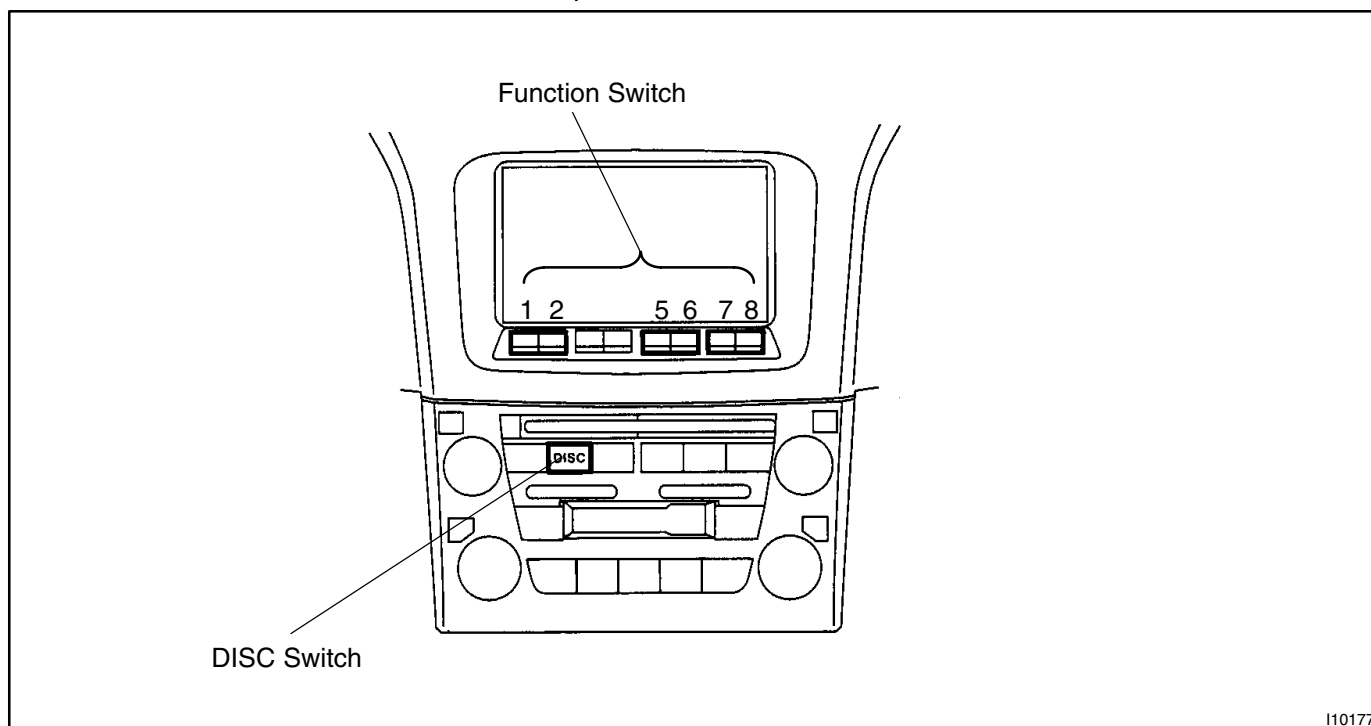
For shifting to diagnosis mode, push "DISC" switch 3 times with pressing "1", "6", "7" or "8" of function switch at the same time while the audio power is OFF and ACC is ON.

To exit from diagnosis mode, press "DISC" switch for 2 seconds or turn the ignition key OFF.

(When "1-190" is displayed, the mode is transferred to LAN check mode.)

(b) LAN check

When starting up the diagnosis mode, the mode turns to LAN check mode, the screen displays the code numbers (physical address) of tuner and connected equipment. Smaller codes are displayed in order, displayed code numbers are switched by operating TUNE "UP" or "DOWN" switch. In LAN check mode, by pressing "5" of function switch for more than 2 secs., diagnosis memory of each equipment can be deleted, when deletion is completed, the mode returns to LAN check mode.



I10177

Code No. (physical address) List

Code No. (physical address)	Equipmentname
190	Radio receiver assembly (Audio head unit)
1c4	Center Cluster Integration Switch
1d4	Multi Display
240	CD changer (in Luggage room)
360	CD changer(in center console and glove compartment box)
440	Poweramplifier

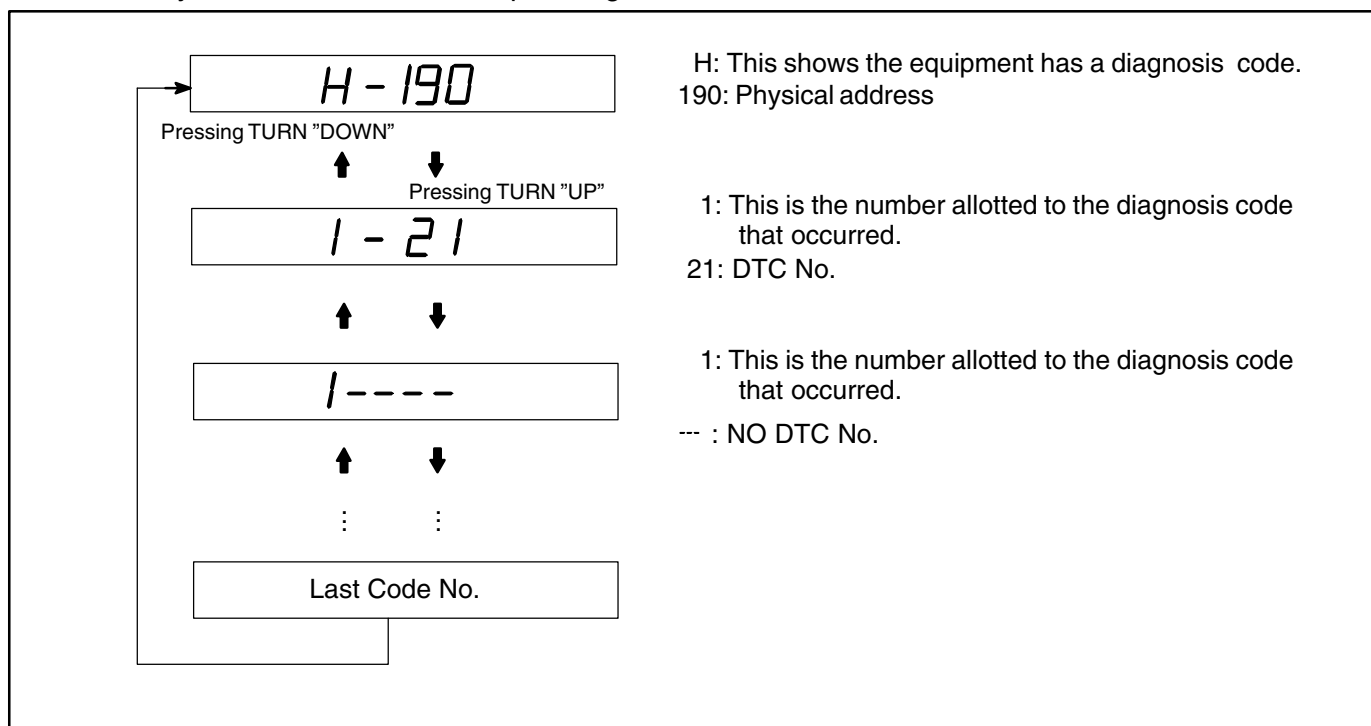
(c) System check

When pressing "1" of function switch in LAN check mode, the mode turns to the system check mode, the system performs self diagnosis of connected equipment and displays the results. ("SYS" (showing the system is under detection) is displayed.)

Perform the operation shown in the following illustration, then read the result of the inspection.

HINT:

- It sometimes takes approx. 40 secs. till the system inspection is completed.
- The chart below is an example of when diagnosis code "21" appears on the physical address (190) equipment. (ROM error occurs on the radio receiver.)
- The smaller code numbers (physical address) are displayed in order (code No., diagnosis code, support code of diagnosis code (object equipment)).
- When no error is detected in the system, "00" is displayed.
- When an error code is detected, up to 6 codes per one system are displayed. Pressing TUNE "UP" or "DOWN" switches the display.
- In the system check mode, when pressing "8" of function switch the mode returns to LAN check mode.



(d) Diagnosis memory

- (1) In LAN check mode, when pressing "2" of TRACK TUNE APS switch the mode turns to the diagnosis memory mode. ("CODE" is displayed.)

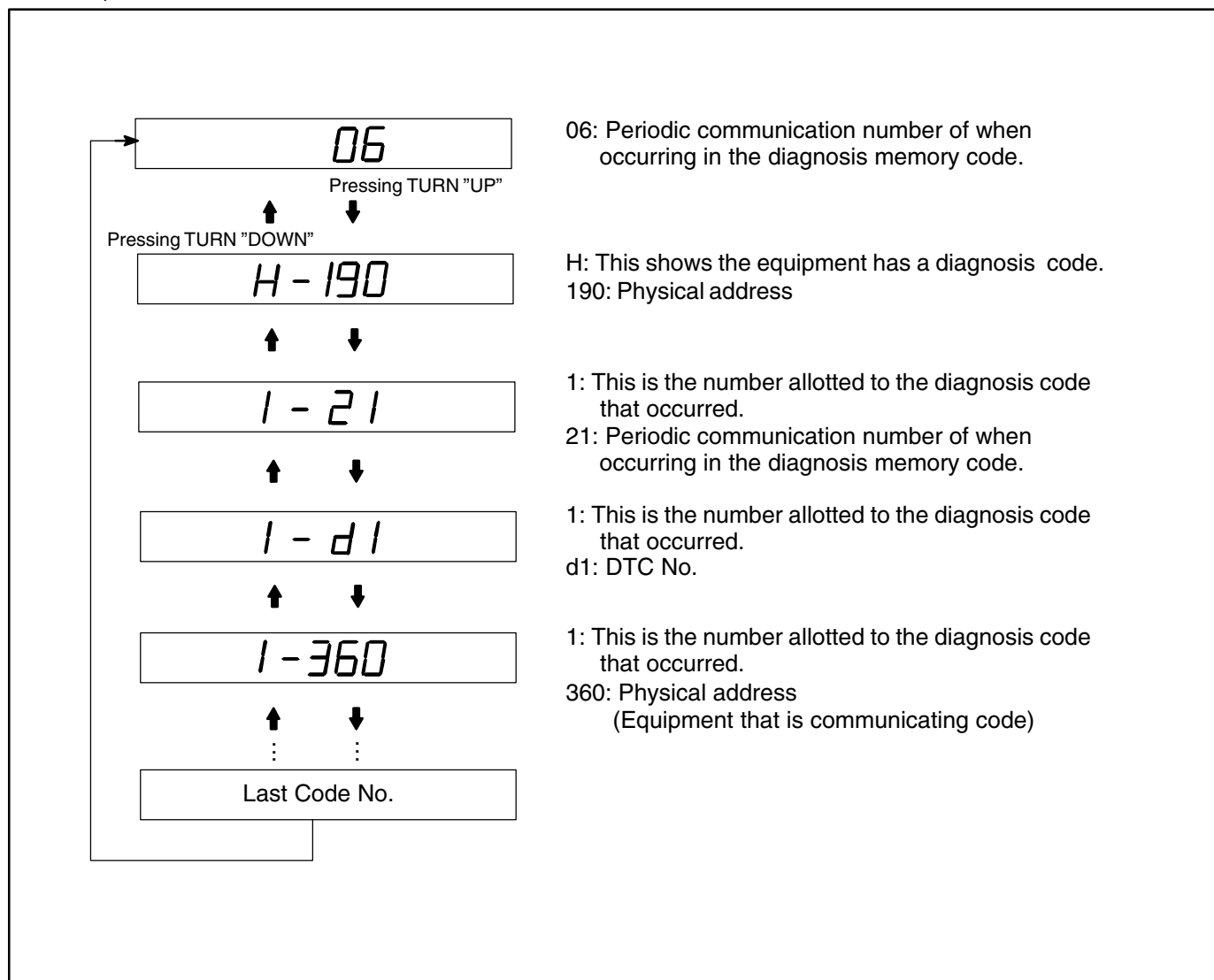
The results of self diagnosis performed over tuner and connected equipment are memorized and displayed.

- (2) Perform the operation shown in the following illustration, then read the result of the inspection.

HINT:

- The smaller code numbers (physical address) are displayed in order (code No. , periodic communication number when error occurs, diagnosis code, and support code of diagnosis code (object equipment)).
- When no error is detected in the system, "00" is displayed. When an error code is detected, up to 6 codes per one system are displayed. Pressing TUNE "UP" or "DOWN" switches the display. Each diagnosis code is same as code in the system check mode.
- When pressing "8" of function switch, the mode returns to LAN check mode.

- The following illustration below is an example of when diagnosis code "D1" appears on the code (190) and (240 or 360) equipment. (Communication error occurs between the radio receiver and CD changer.)



(e) Diagnosis memory clear

- After error is fixed, start up the diagnosis mode.
- Continue pressing TRACK TURN APS switch "5" for 2 secs. (CLr is displayed.)
- Press the TRACK TURN APS switch "2" and transfer to the diagnosis memory mode and check that the normal code (00) is output.

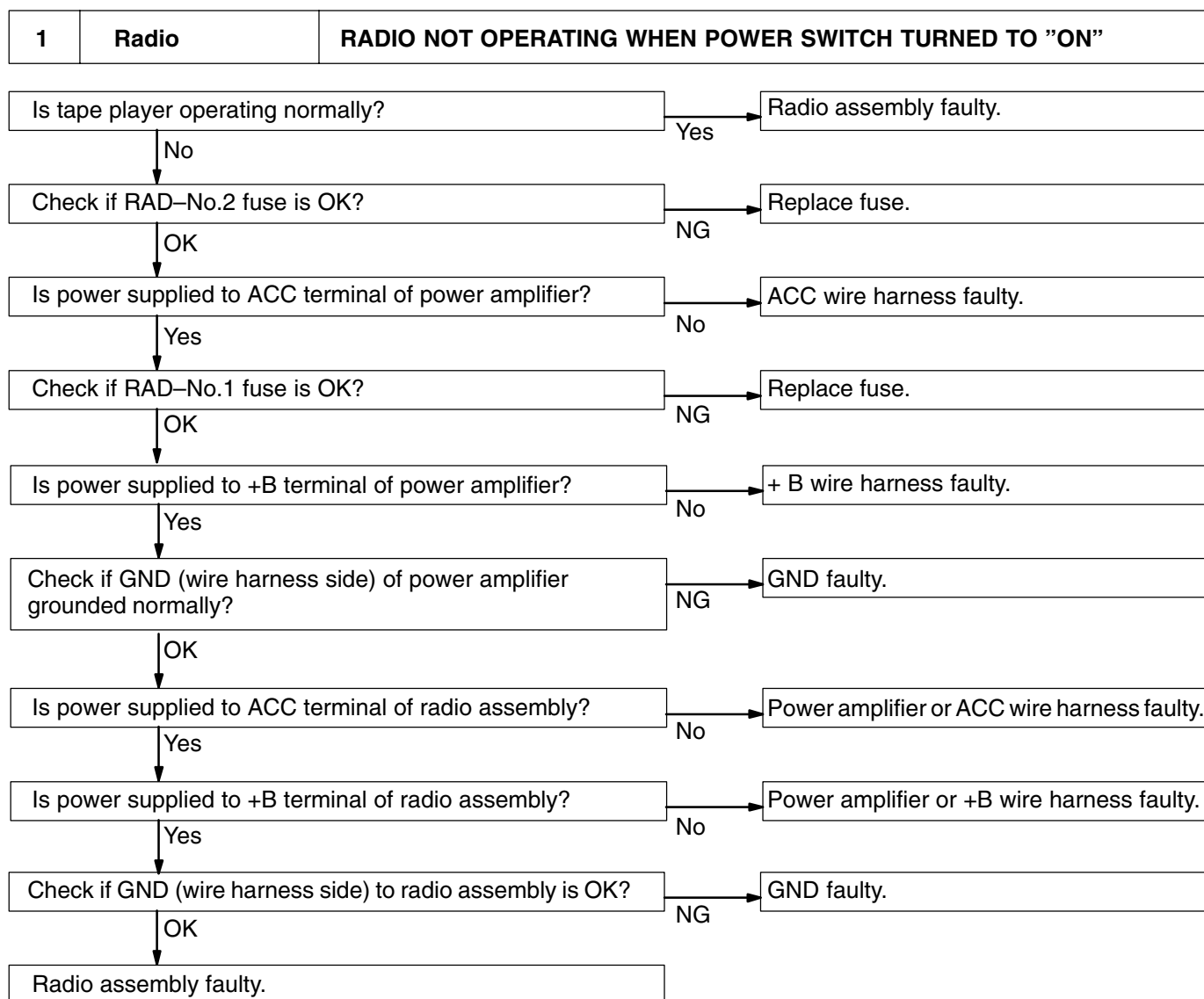
2. DIAGNOSIS CODE LIST

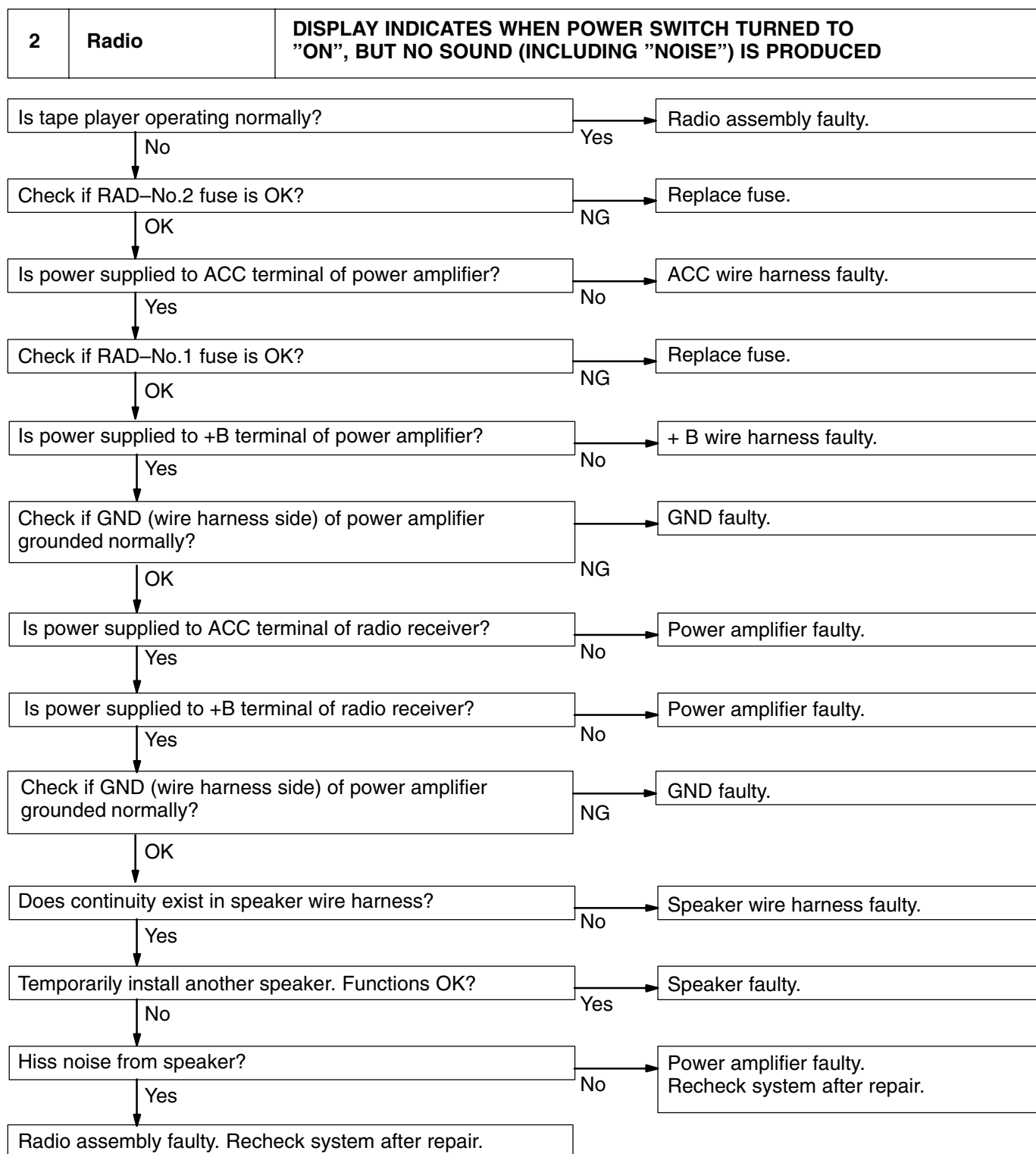
- If there is "O" in the column of system check, an error can be detected when the mode is switched to the system check mode.
- If there is "O" in the column of diagnosis mode, each unit is monitoring whether or not it has failure. In case of detecting failure, it memorizes DTC.

Parts Name	DTC	Diagnosis item	Diagnosis content	Countermeasure and inspected parts	System Check	Diagnosis memory
Head Unit (190)	21	ROM error	There is an error on internal ROM.	Radio receiver check.	○	X
	22	RAM error	There is an error on internal RAM.		○	X
	41	AM tuner error	There is an error in AM tuner.		X	○
	42	FM tuner error	There is an error in FM tuner.		X	○
	50	Cassette error	There is an error in cassette deck.		X	○
	51	Cassette eject error	Cassette can not be ejected from Head Unit.		X	○
	D1	Transmitter error	Communication with the equipment that is communicating has failed successively.	Radio receiver check. Wire harness and connector check.	○	○
	D2	Periodic communication no response	Error in periodic communication.	• Wire harness and connector	X	○
	D4	Periodic communication error	Connection confirmation has not come from the equipment that is communicating	• Radio receiver check. • Wire harness check.	X	○
	FF	Diagnosis no response	Result of diagnosis is not issued from start to finish.	Radio receiver check.	○	X
CD (240) (360)	21	ROM error	There is an error on internal ROM.	CD changer check.	○	X
	22	RAM error	There is an error on internal RAM.		○	X
	60	CD error	Error codes other than 61–69 are detected.		X	○
	61	EJECT error	CD is not ejected.	CD changer check. Magazine check.	X	○
	62	DISC inside out/flaw	CD is inserted inside out or it has a flaw.	CD check.	X	○
	63	Pickup temperature detection	High temperature of CD changer is detected.	CD changer check.	X	○
	64	Excessive current detection	Excessive current to CD changer is detected.		X	○
	67	Tray insertion/ discharging error	An error occurs in insertion and discharging operation of CD changer tray.	CD changer check. Magazine check.	X	○

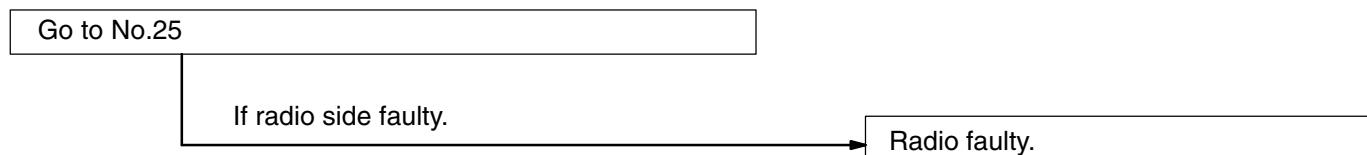
Parts Name	DTC	Diagnosis item	Diagnosis content	Countermeasure and inspected parts	System Check	Diagnosis memory
CD (240) (360)	68	Elevator error	An error occurs in elevator of CD changer elevator.	CD changer check.	X	○
	69	Clamp error	An error occurs in CD changer clamp.		X	○
	D1	Transmitter error	Communication with the equipment that is communicating has failed successively.		○	○
	D4	Periodic communication error	Connection confirmation has not come from the equipment that is communicating	• Radio receiver check. • Wire harness check.	X	○
	FF	Diagnosis no response	Result of diagnosis is not issued from start to finish.	CD changer check.	○	X
AMP (440)	D1	Transmitter error	Communication with the equipment that is communicating has failed successively.	Stereo component amplifier check.	○	○
	D4	Periodic communication error	Connection confirmation has not come from the equipment that is communicating	• Radio receiver check. • Wire harness check.	X	○
	FF	Diagnosis no response	Result of diagnosis is not issued from start to finish.	Stereo component amplifier check.	○	X
Center Cluster (1c4)	D1	Transmitter error	Communication with the equipment that is communicating has failed successively.	Center Cluster Check	○	○
	D4	Periodic communication error	Connection confirmation has not come from the equipment that is communicating	• Radio receiver check. • Wire harness check.	X	○
Multi Display (1d4)	D1	Transmitter error	Communication with the equipment that is communicating has failed successively.	Multi-Display Check	○	○
	D4	Periodic communication error	Connection confirmation has not come from the equipment that is communicating	• Radio receiver check. • Wire harness check.	X	○
	21	ROM error	There is an error on internal ROM.	Multi-Display Check	○	X
	22	RAM error	There is an error on internal RAM.		○	X

(): w/ Navigation system

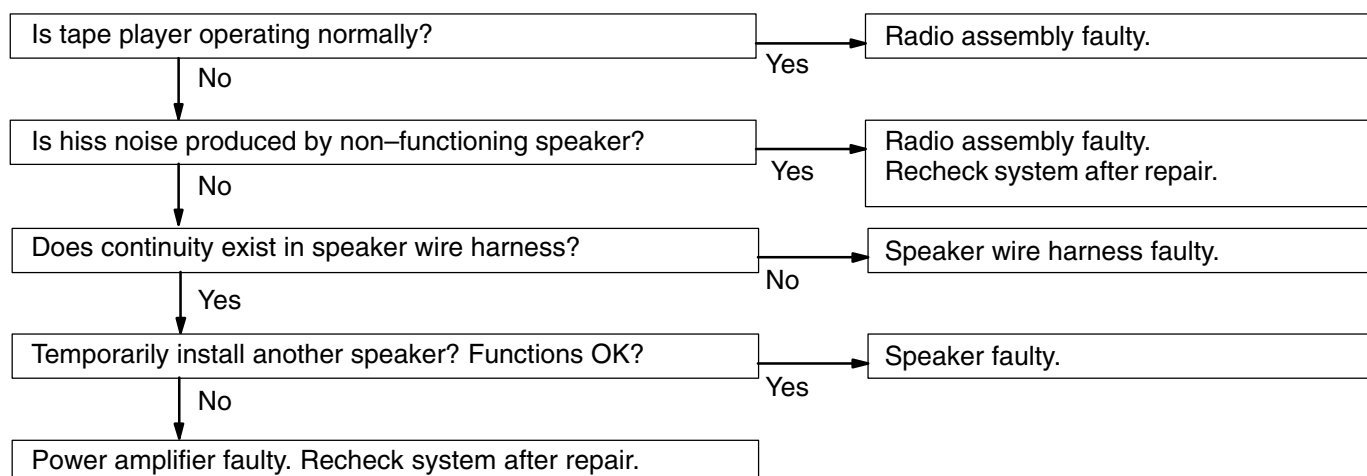


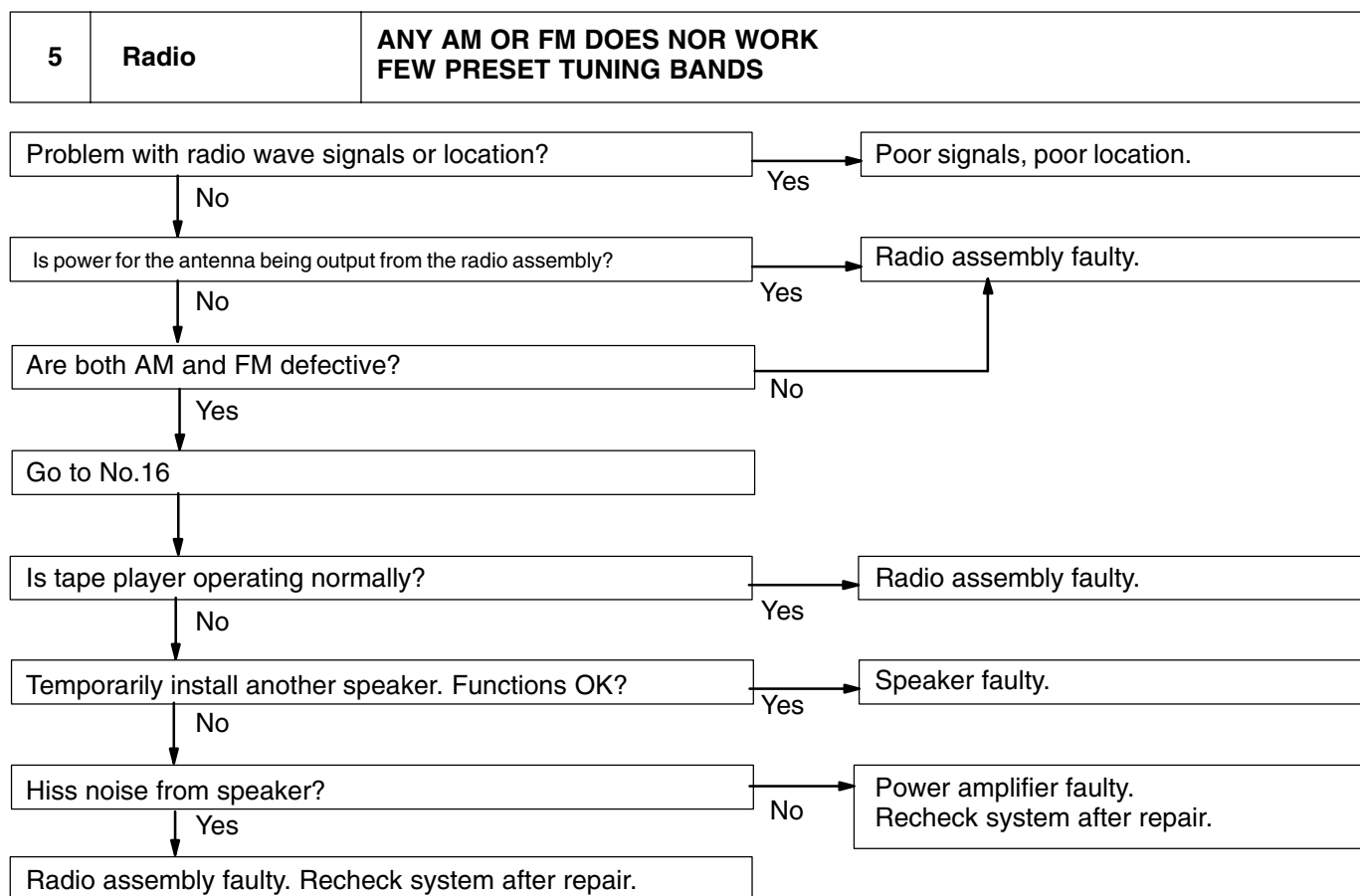


3	Radio	NOISE PRESENT, BUT AM-FM NOT OPERATING
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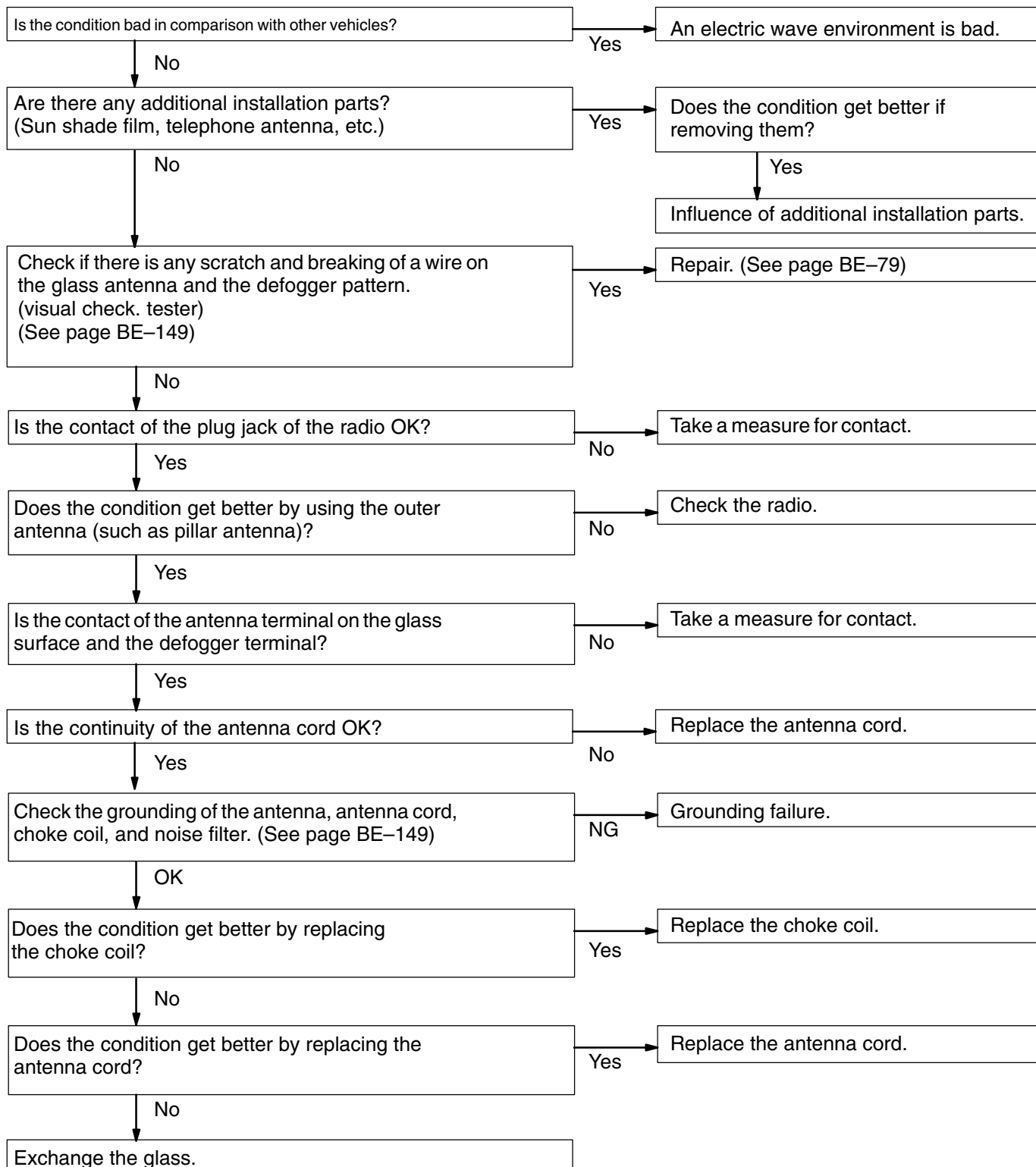


4	Radio	ANY SPEAKER DOSE NOT WORK
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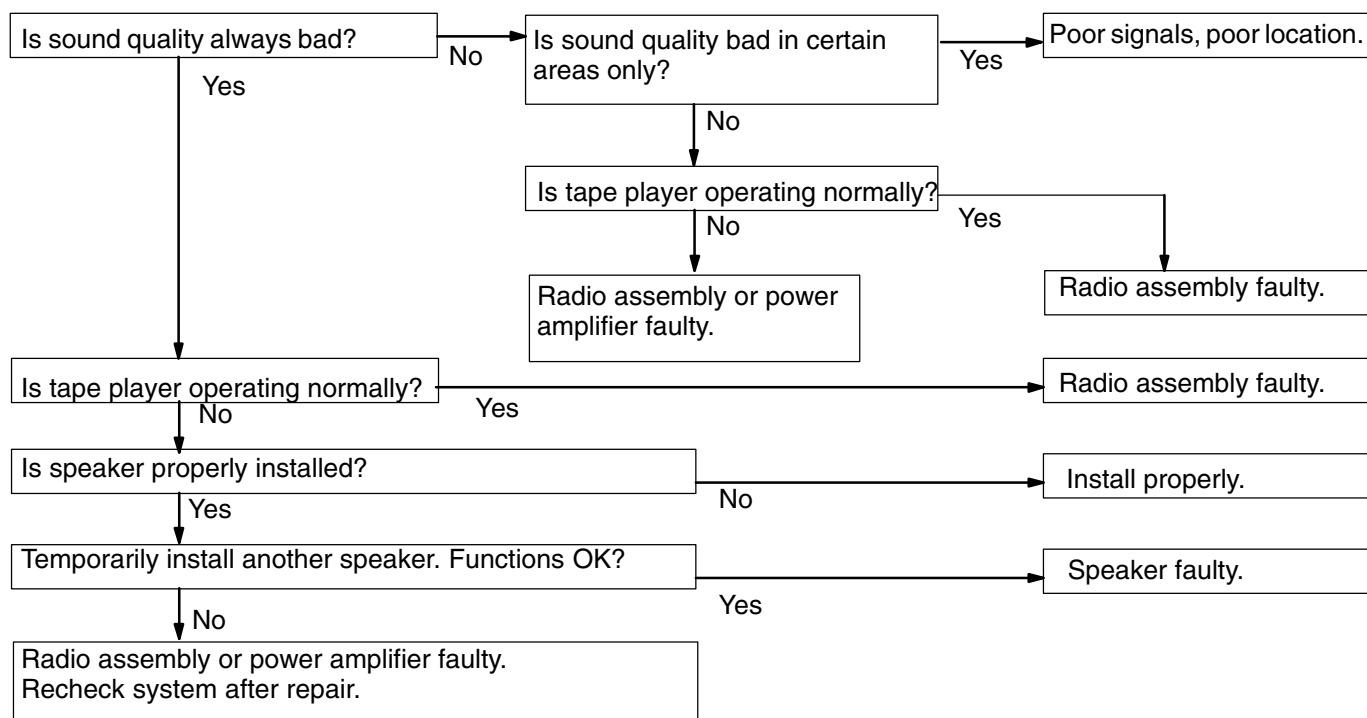




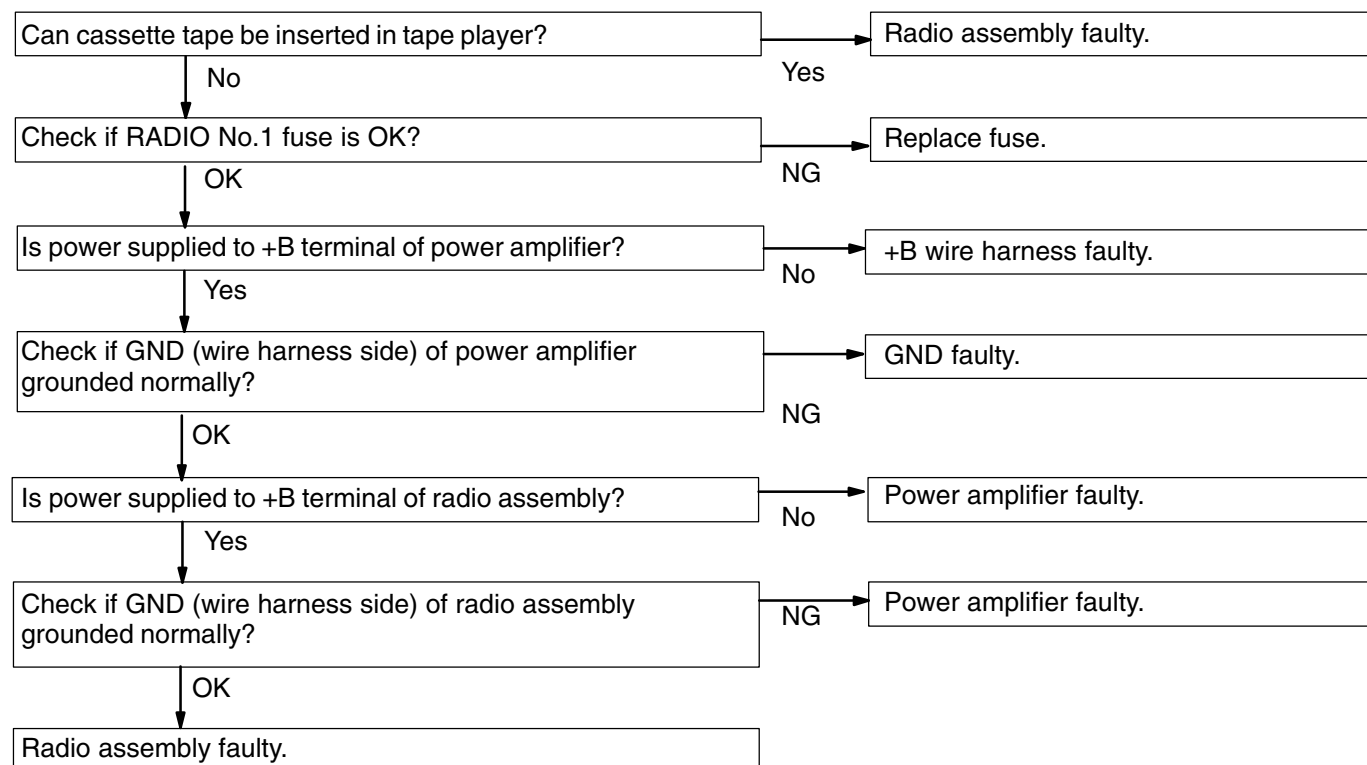
6	Radio	POOR RECEPTION
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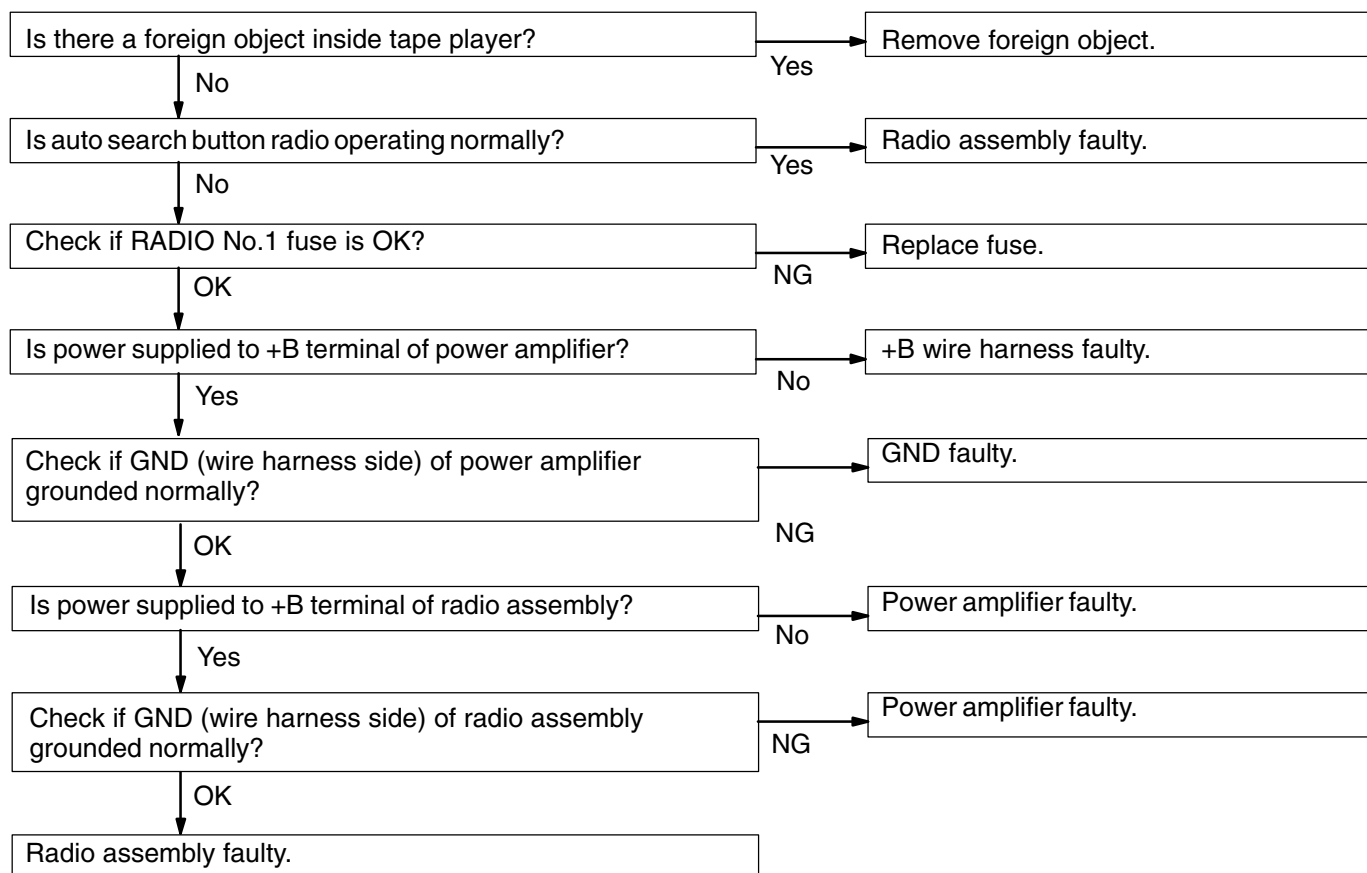
7	Radio	SOUND QUALITY POOR
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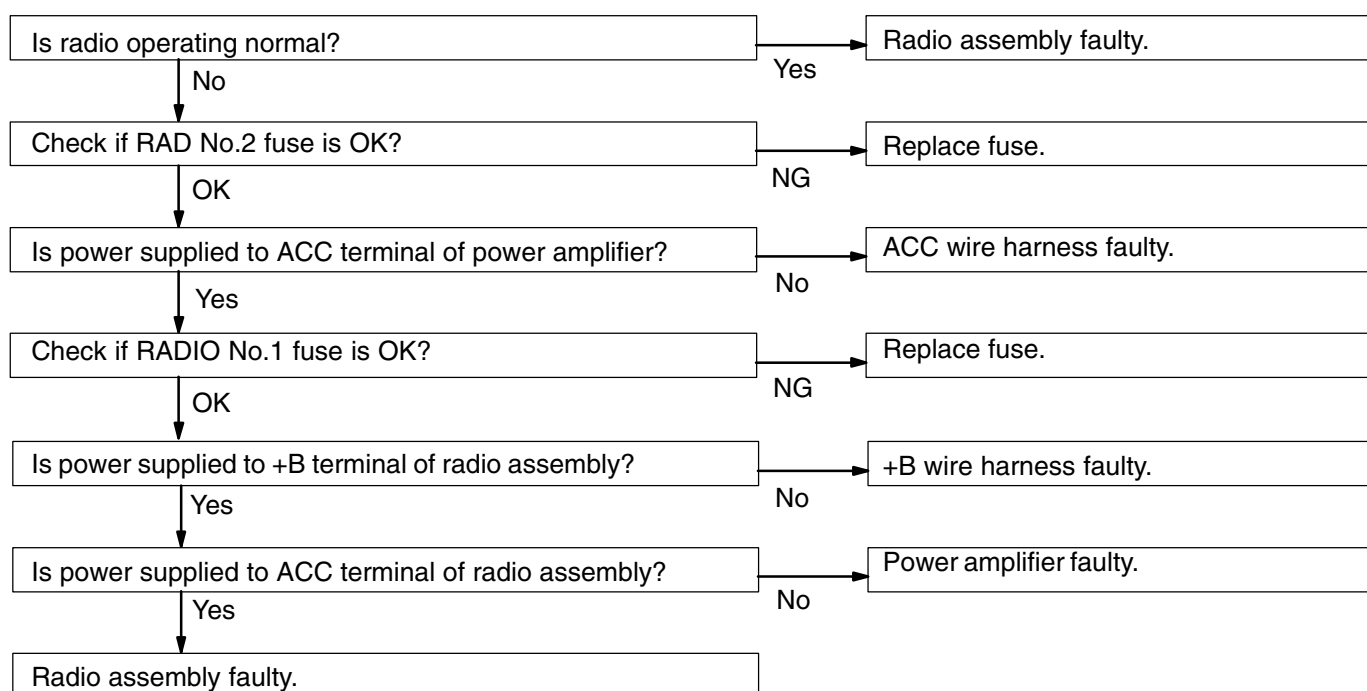
8	Radio	PRESET MEMORY DISAPPEARS
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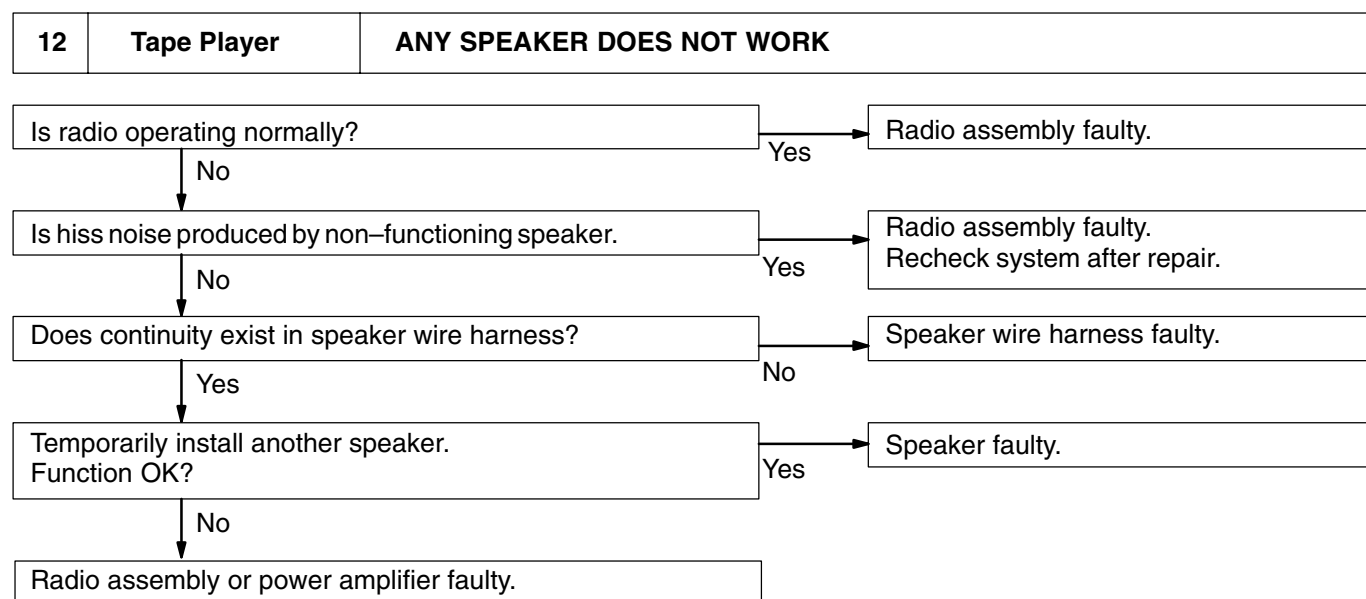
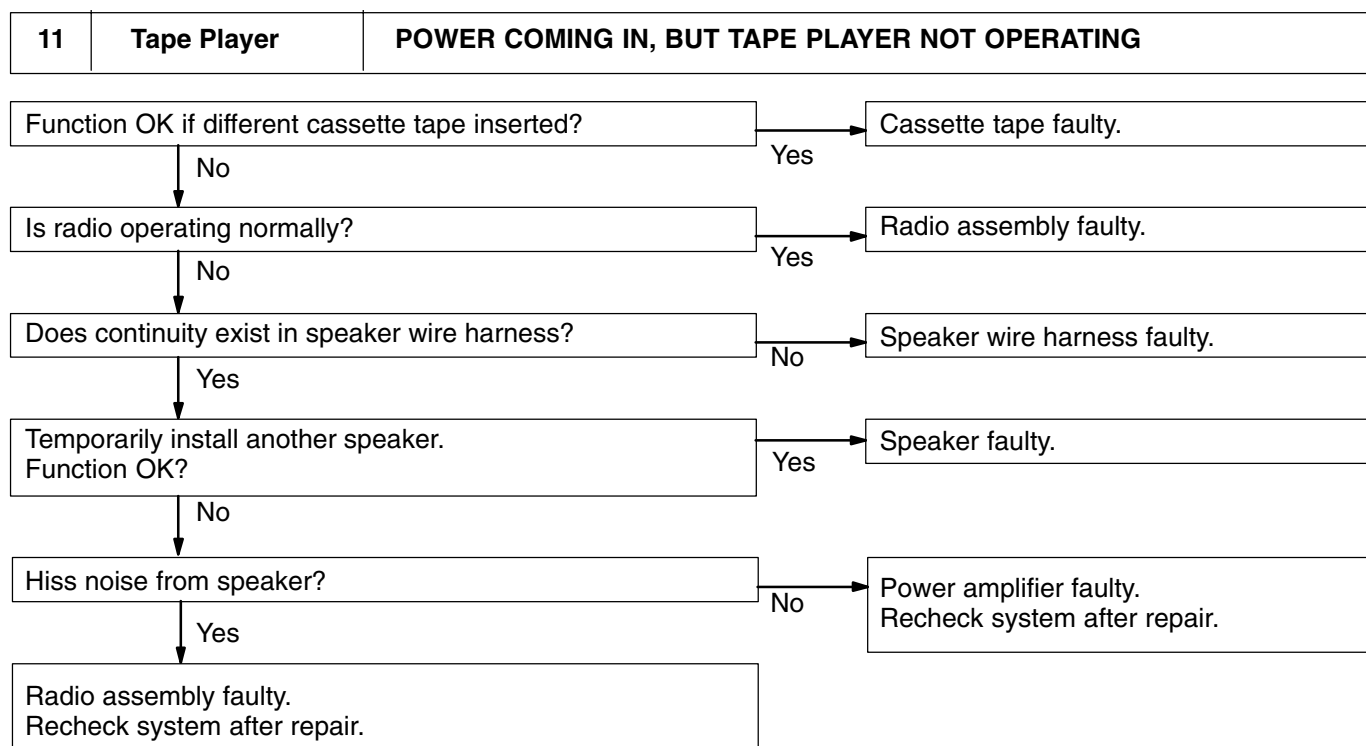


9	Tape Player	CASSETTE TAPE CANNOT BE INSERTED
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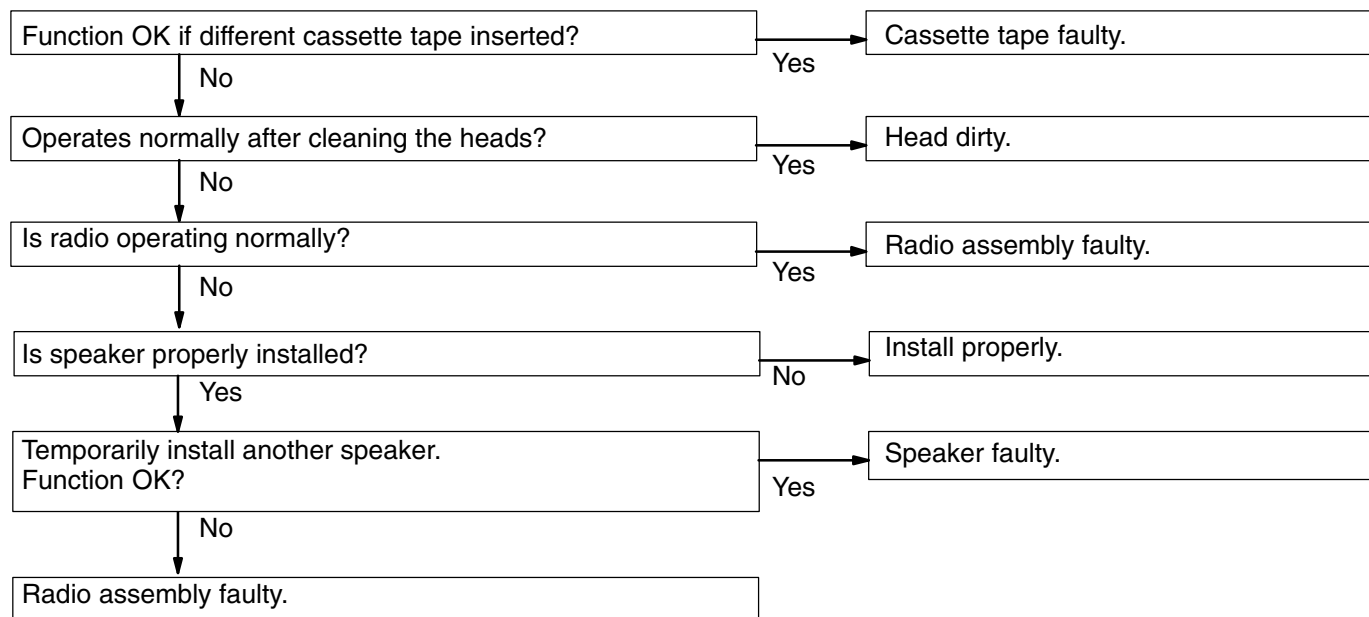


10	Tape Player	CASSETTE TAPE INSERTED, BUT NO POWER
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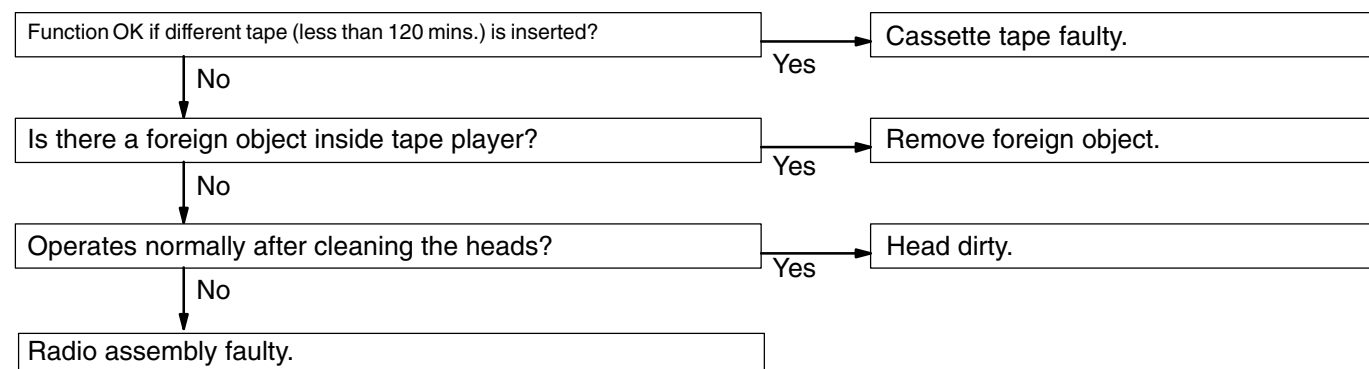




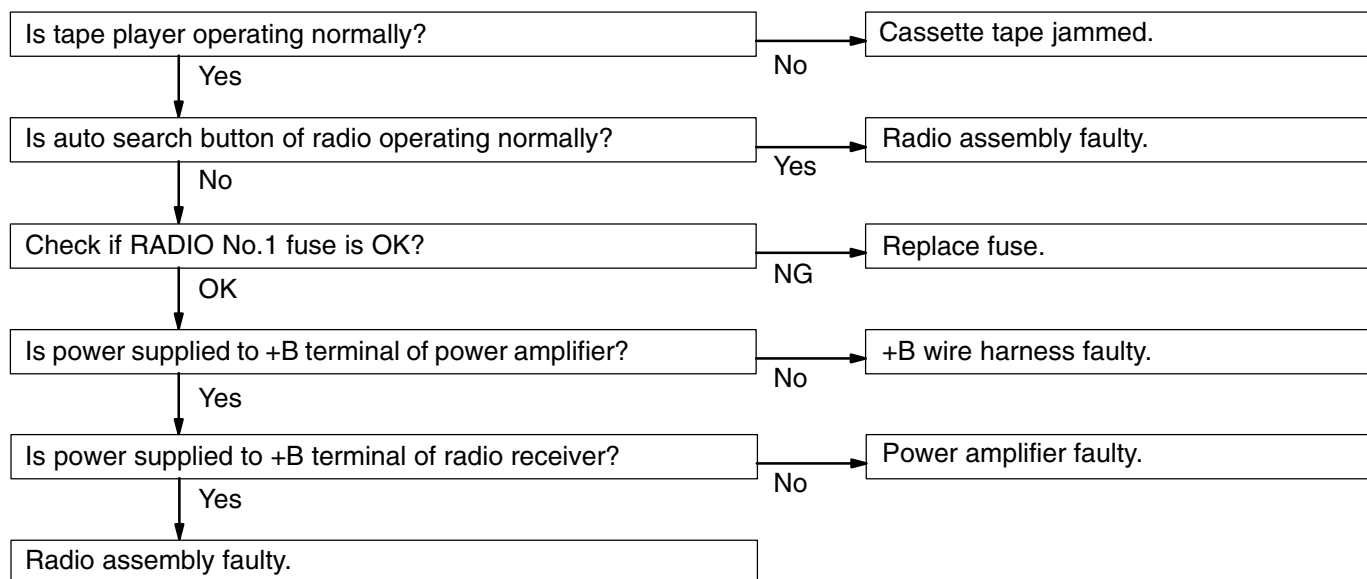
13	Tape Player	SOUND QUALITY POOR (VOLUME FAINT)
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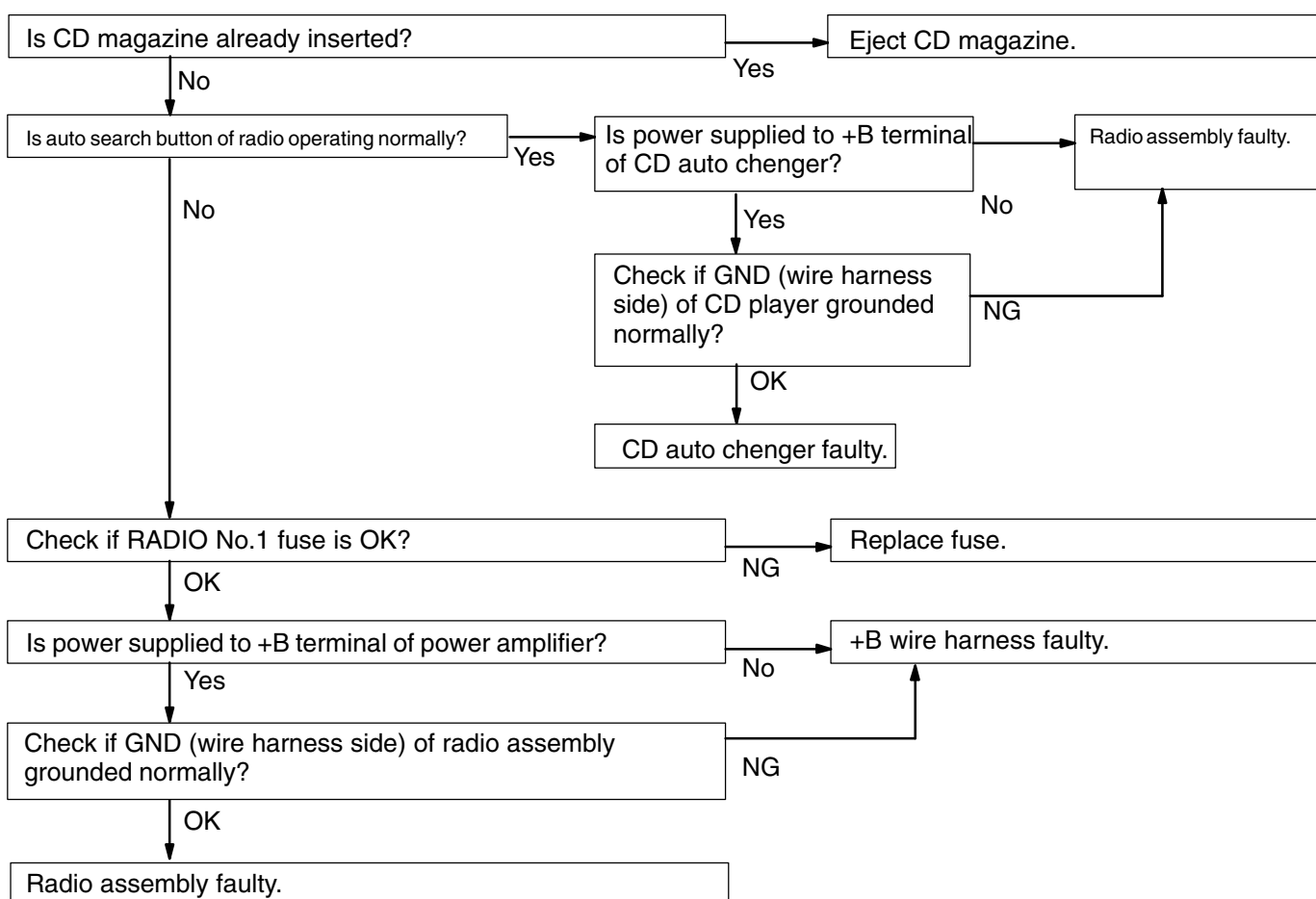
14	Tape Player	TAPE JAMMED MALFUNCTION WITH TAPE SPEED OR AUTO-REVERSE
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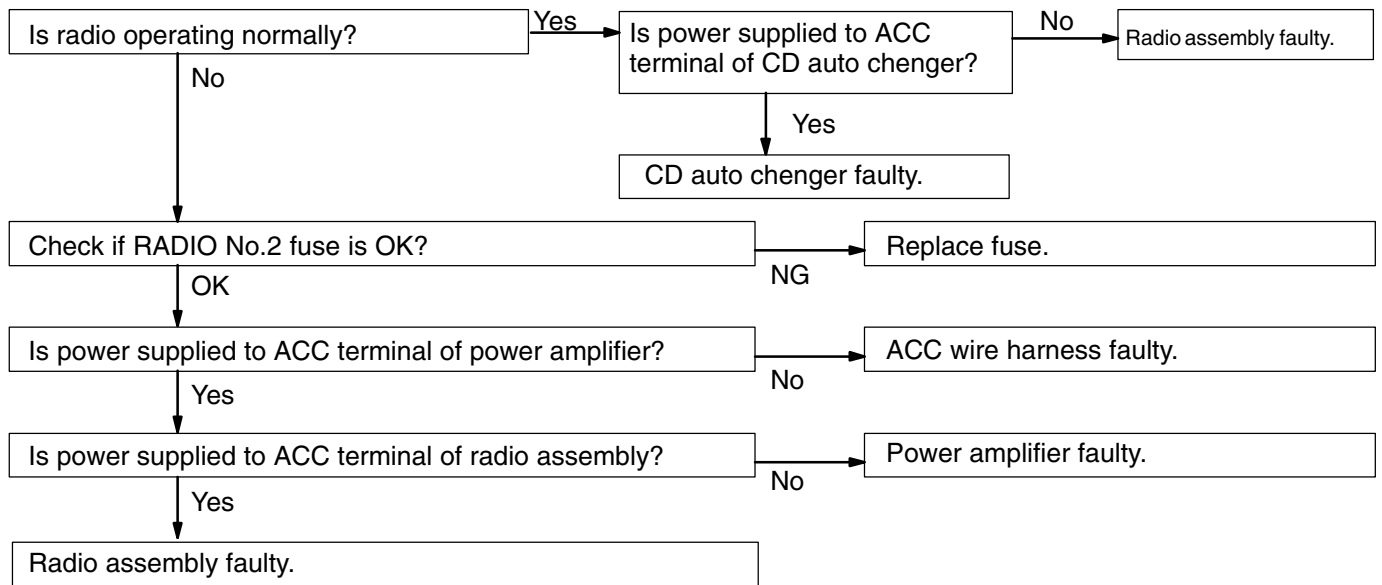
15	Tape Player	CASSETTE TAPE WILL NOT BE EJECTED
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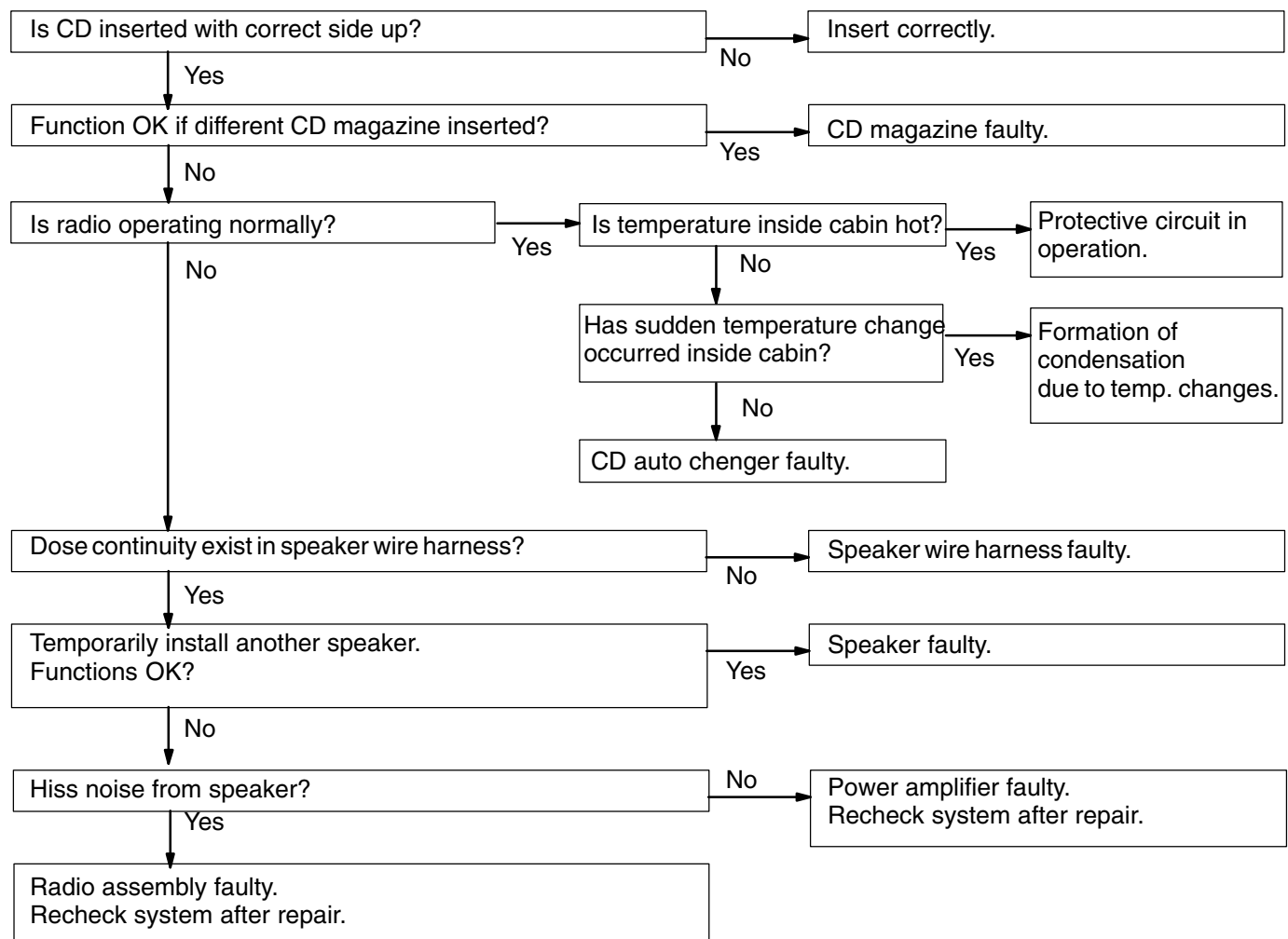
16	CD Auto Chenger	CD MAGAZINE CANNOT BE INSERTED
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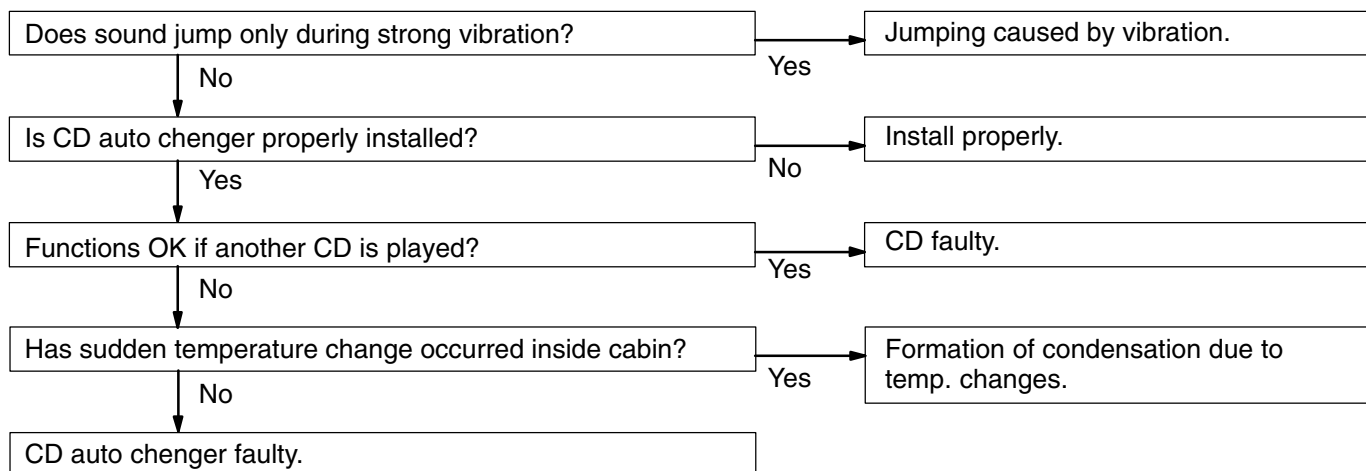
17	CD Auto Changer	CD MAGAZINE INSERTED, BUT NO POWER
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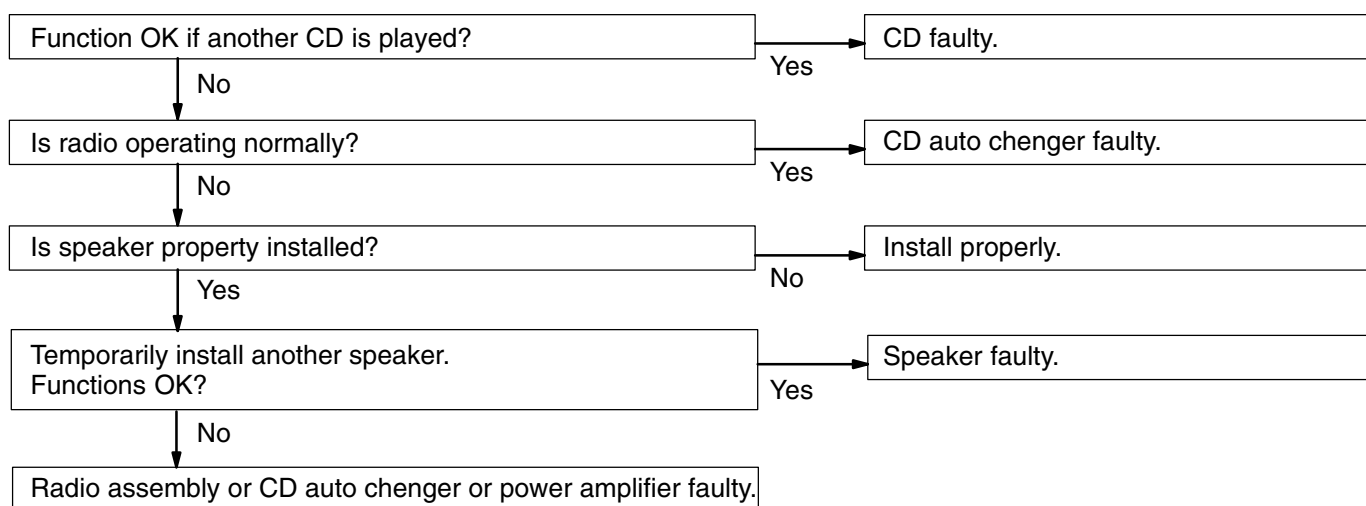
18	CD Auto Changer	POWER COMING IN, BUT CD AUTO CHANGER NOT OPERATING
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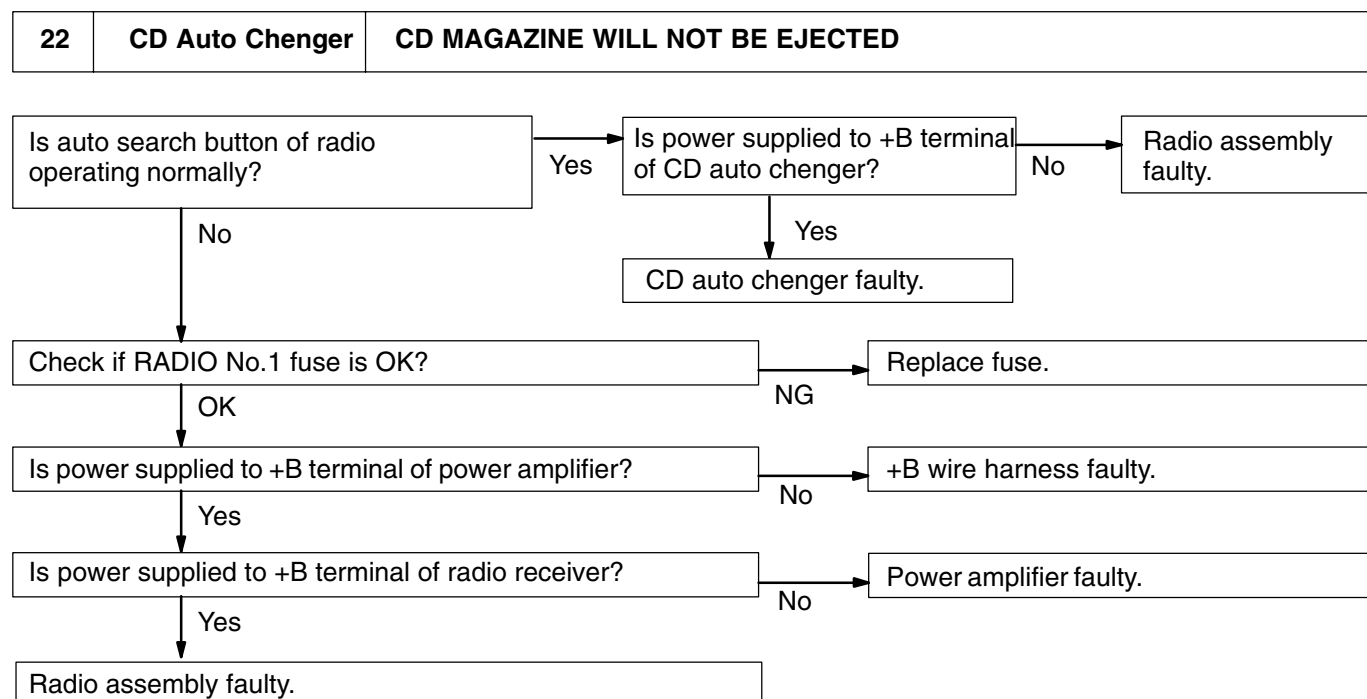
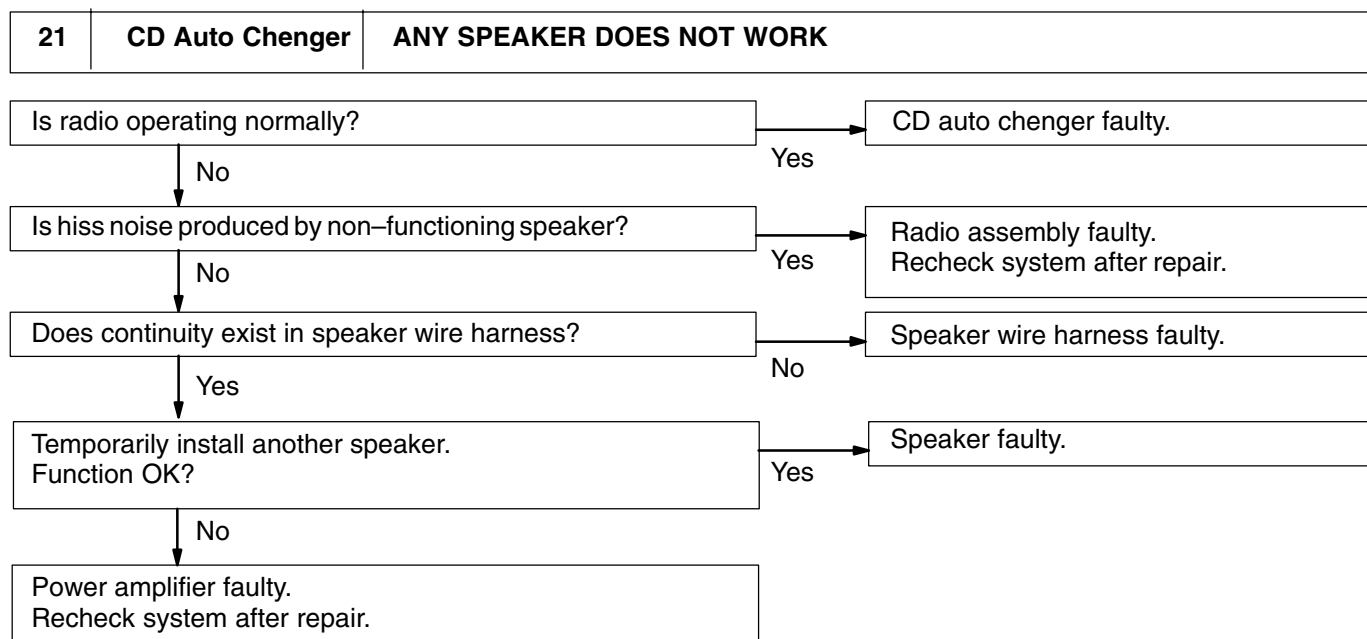


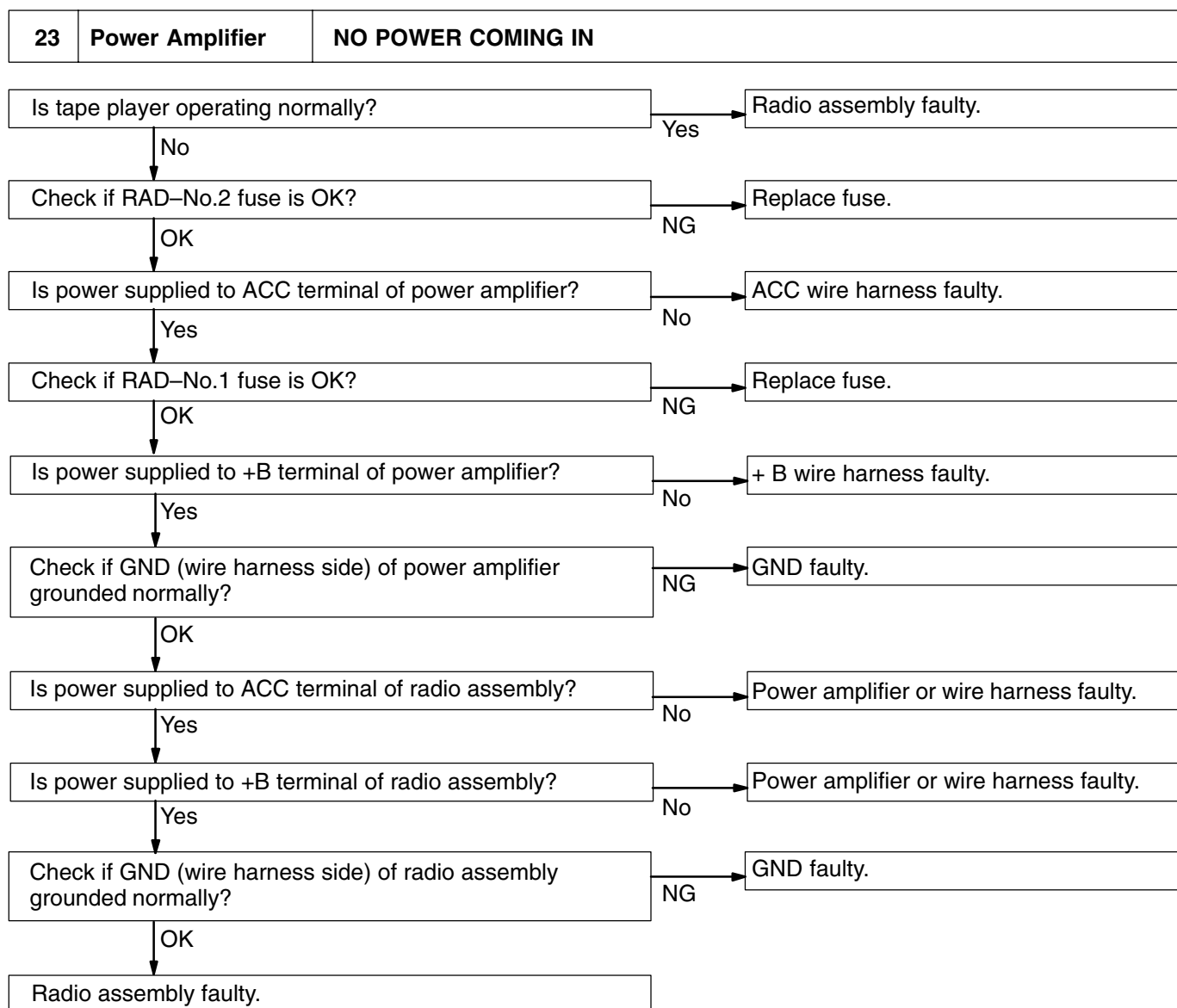
19	CD Auto Changer	SOUND JUMPS
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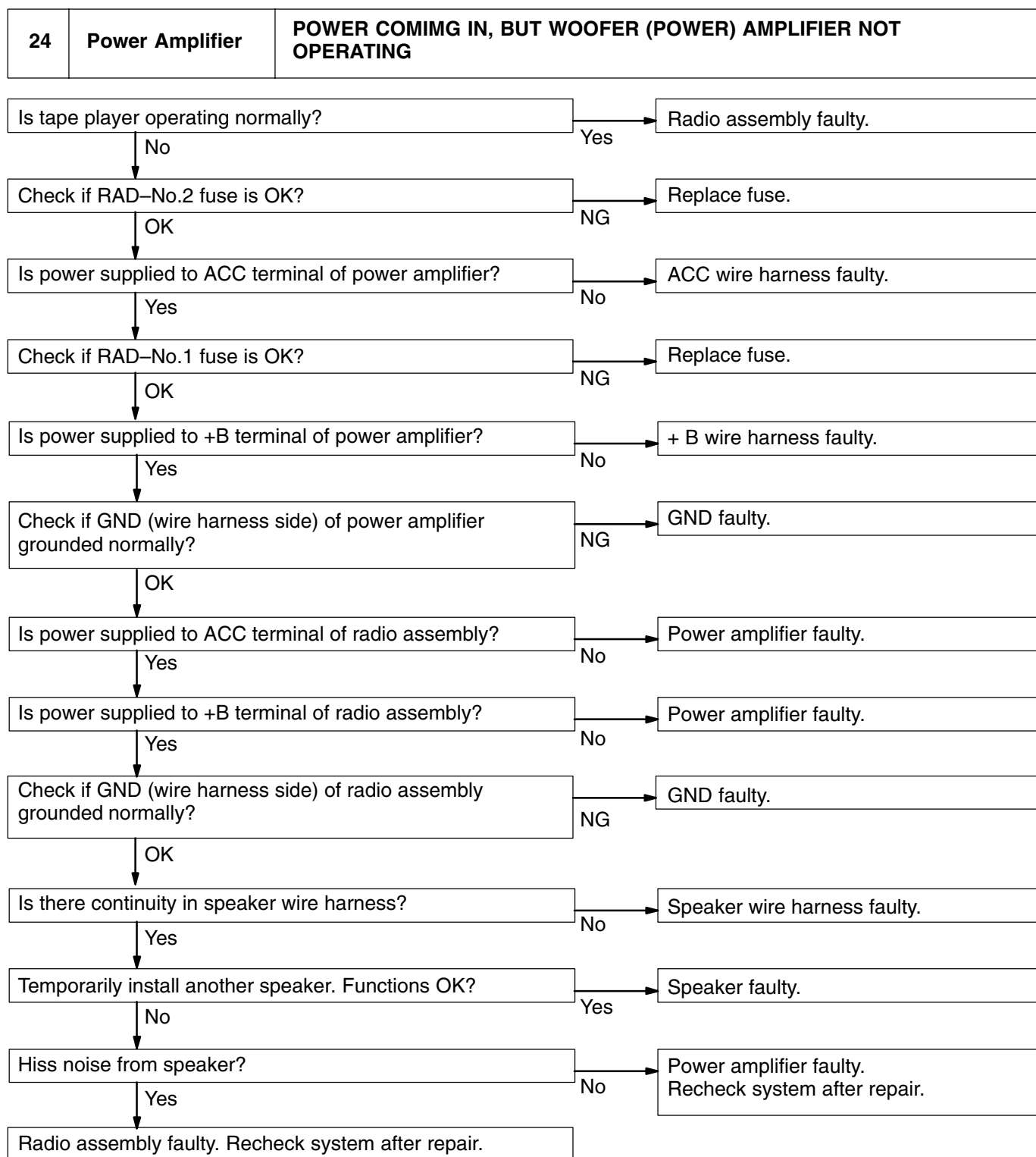


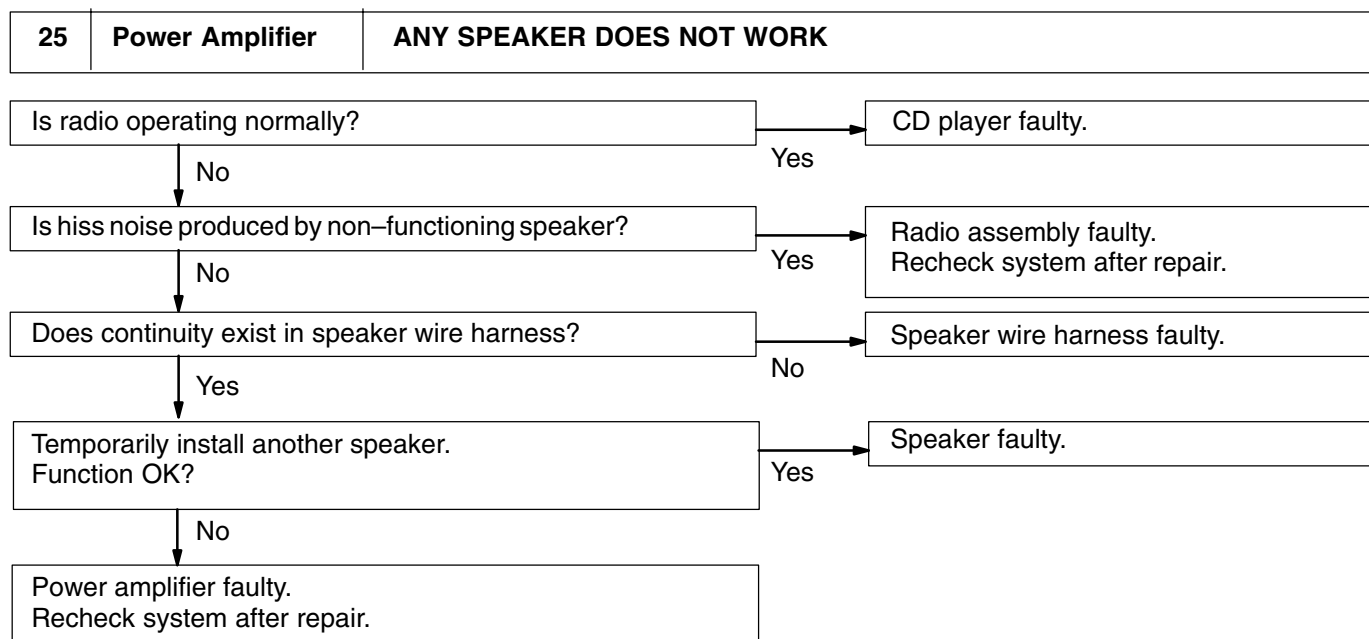
20	CD Auto Changer	SOUND QUALITY POOR (VOLUME FAINT)
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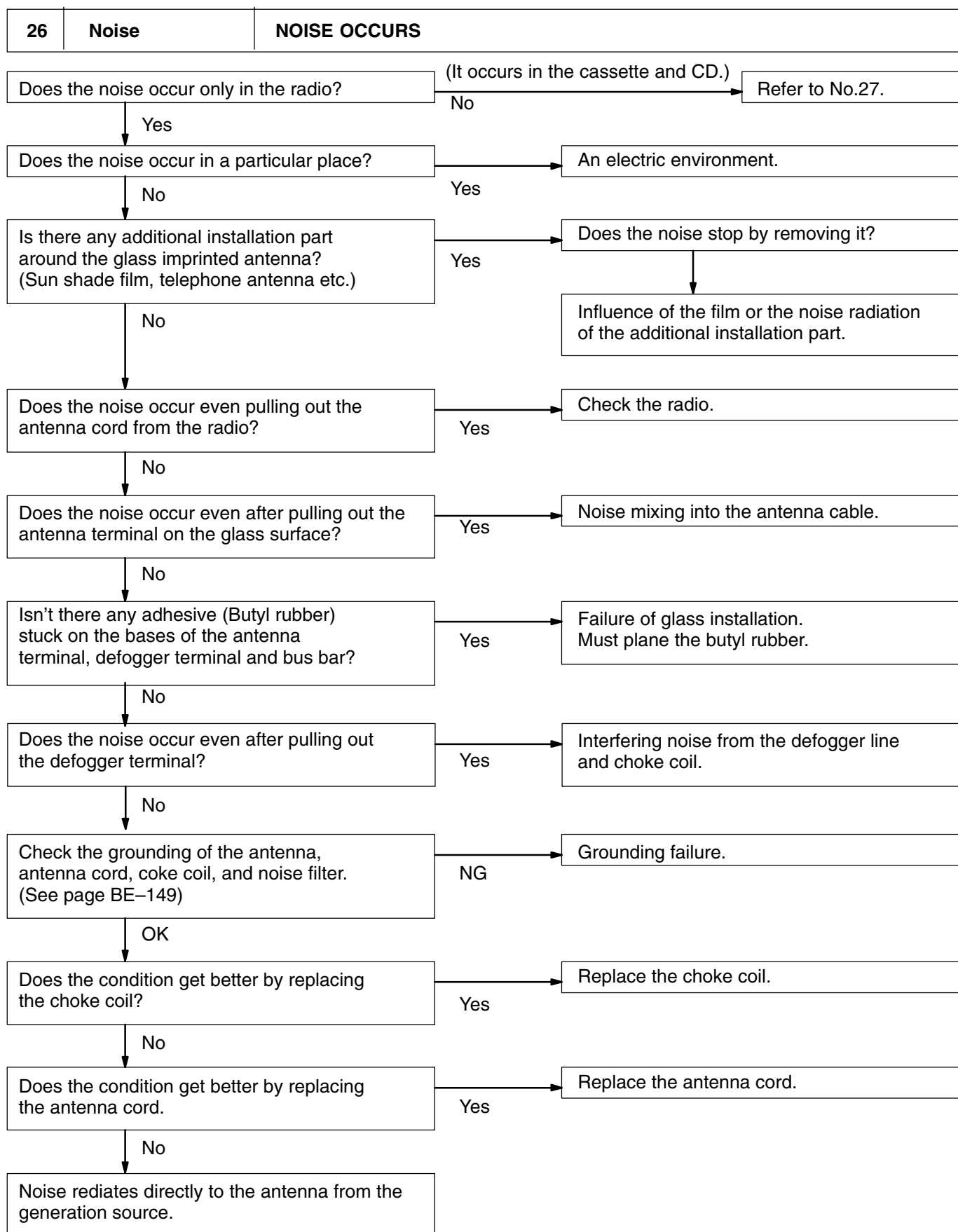




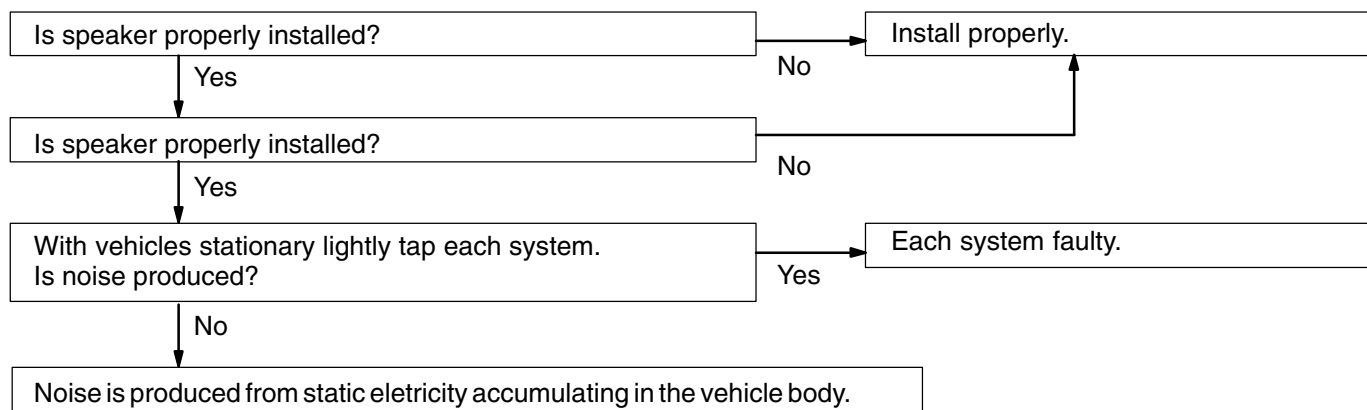




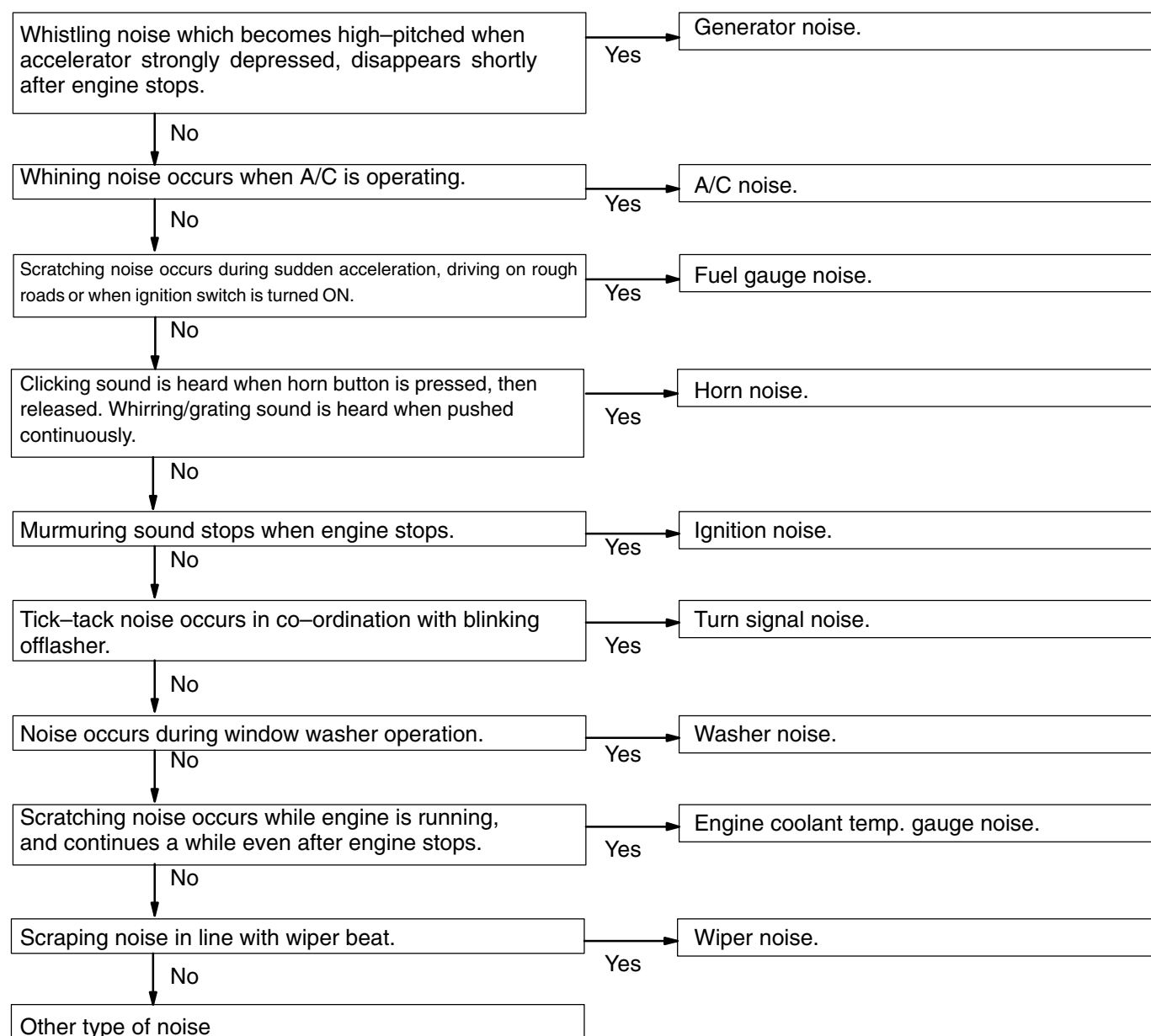




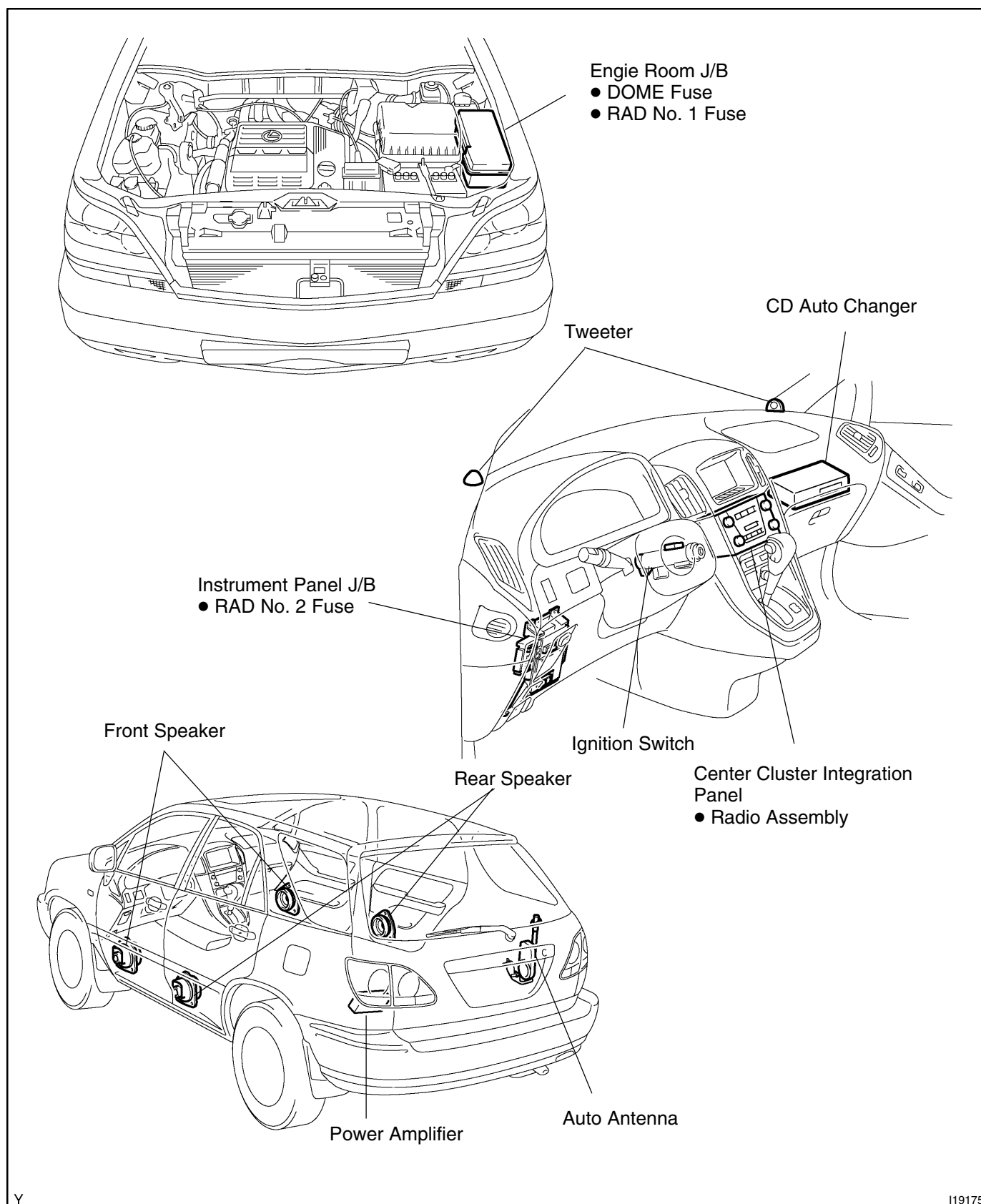
27	Noise	NOISE PRODUCED BY VIBRATION OR SHOCK WHILE DRIVING
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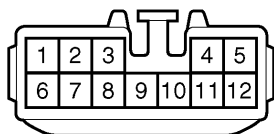


28	Noise	NOISE PRODUCED WHEN ENGINE STARTS
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LOCATION



Wire Harness Side

I04188

INSPECTION**1. INSPECT CD AUTO CHANGER CIRCUIT**

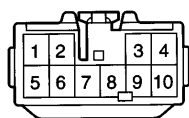
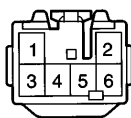
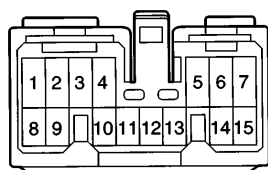
Disconnect connectors from CD auto changer and inspect the connector on the wire harness side.

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

Wire Harness Side**Connector "A"****Connector "B"****Connector "C"**

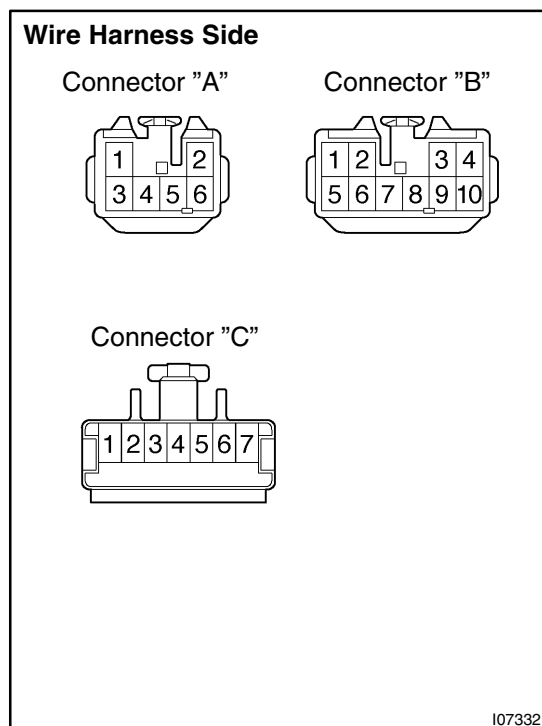
I08150

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
A6 – Ground	Constant	Continuity
A3 – Ground	Ignition switch LOCK and radio switch ON	No voltage
A3 – Ground	Ignition switch ACC or ON and radio switch ON	Battery positive voltage
A4 – Ground	Constant	Battery positive voltage

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



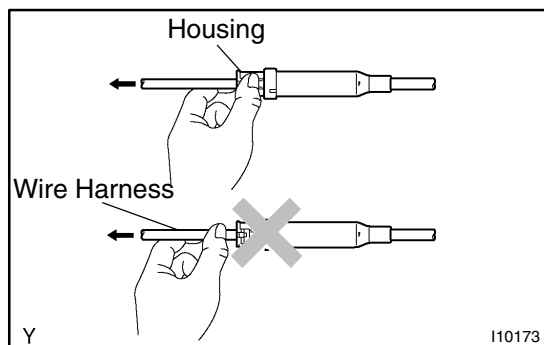
3. INSPECT RADIO RECEIVER ASSEMBLY CIRCUIT

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

Tester connection	Condition	Specified condition
A2 – Ground	Constant	Continuity
A4 – Ground	Constant	Battery positive voltage
A1 – Ground	Ignition switch LOCK	No voltage
A1 – Ground	Ignition switch ACC or ON	Battery positive voltage

HINT:

Check the wire harness between radio receiver assembly and the CD auto changer, between radio receiver assembly and power amplifier.



ANTENNA PRECAUTION

BE1AQ-02

1. DISCONNECT ANTENNA CABLE

Hold the connector housing and pull it out.

NOTICE:

Do not pull the wire harness itself.

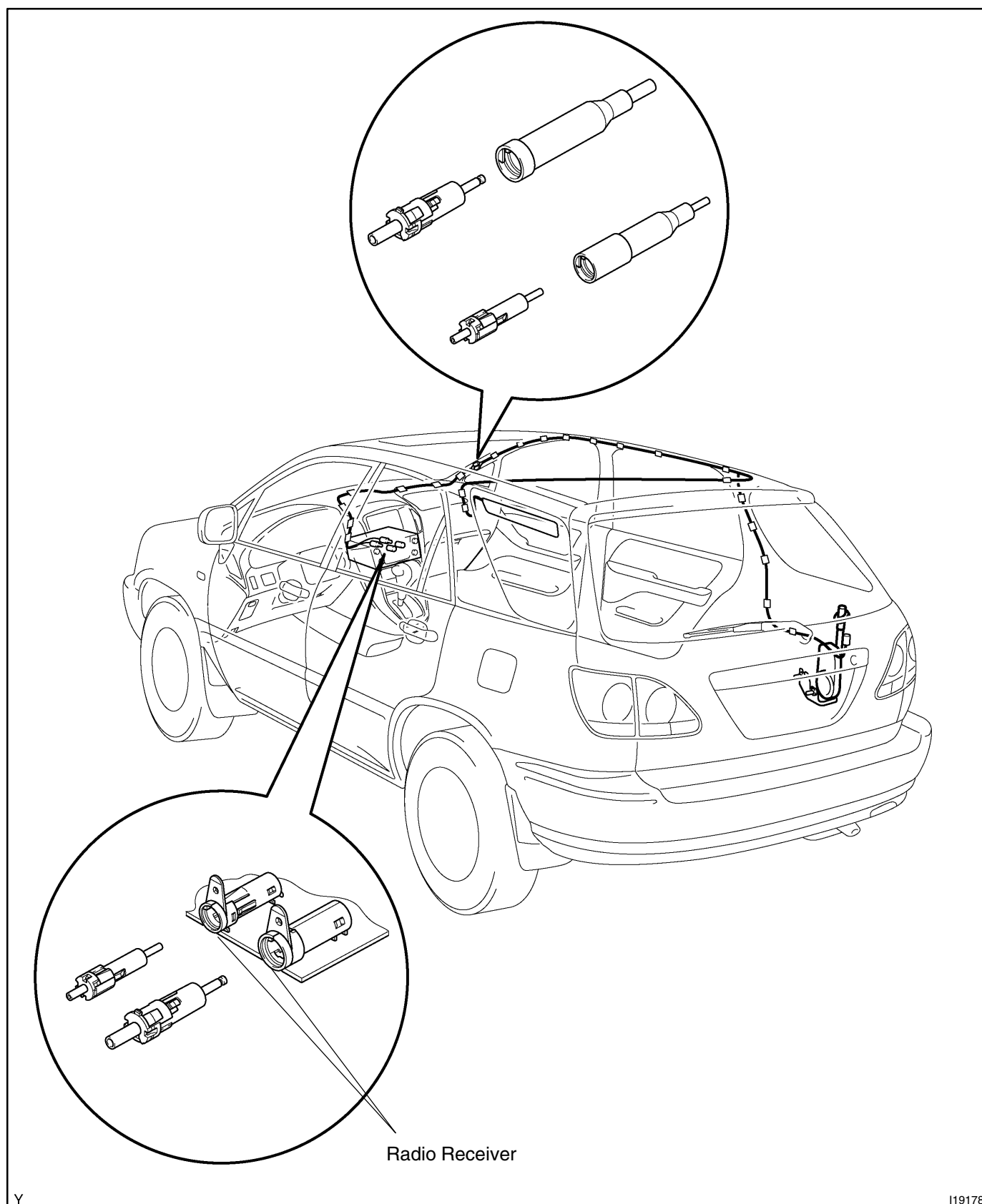
2. CONNECT ANTENNA CABLE

Hold the connector housing and fully insert the connector until it stops with a click.

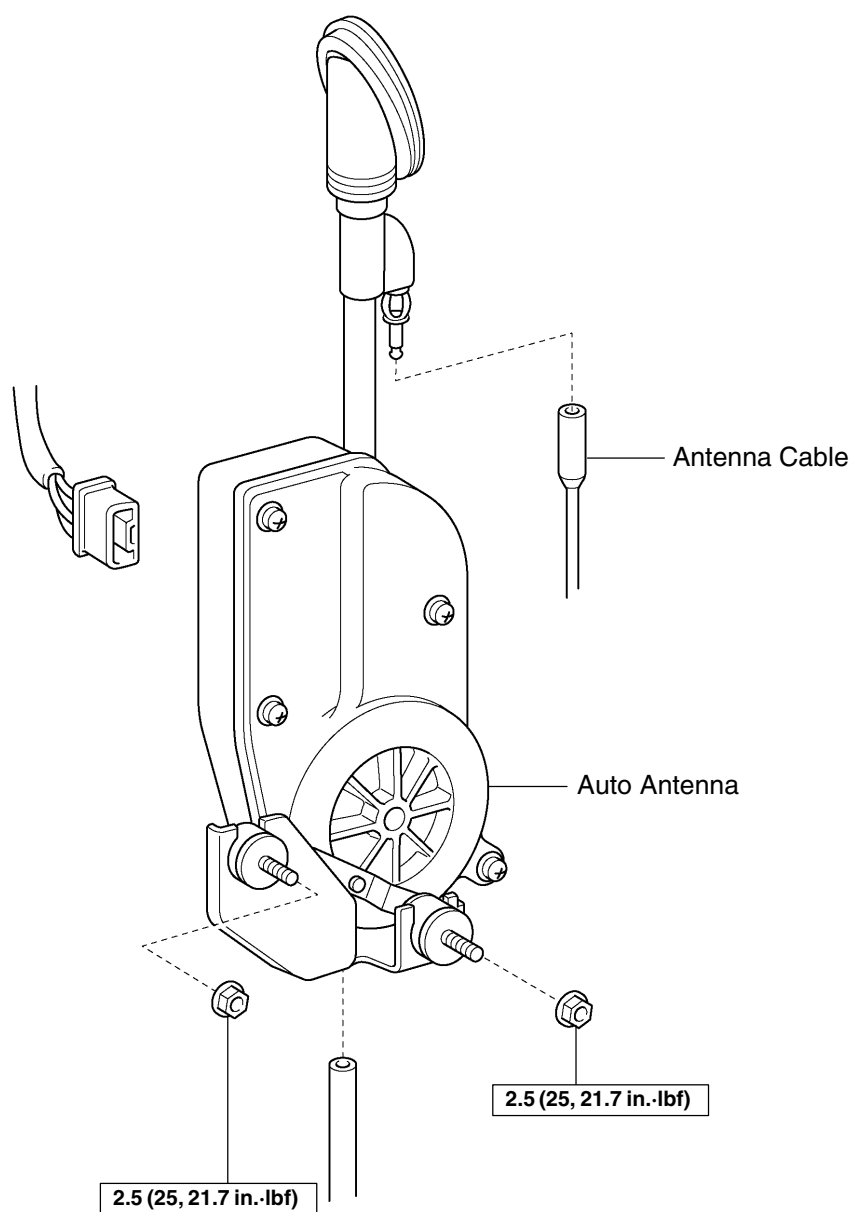
HINT:

After connection, slightly pull the wire harness to check that it is locked.

LOCATION

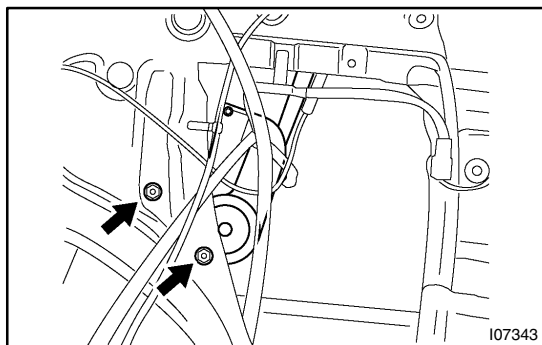


COMPONENTS



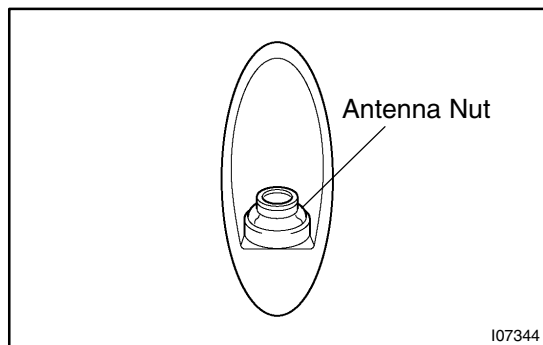
N·m (kgf·cm, ft·lbf) : Specified torque

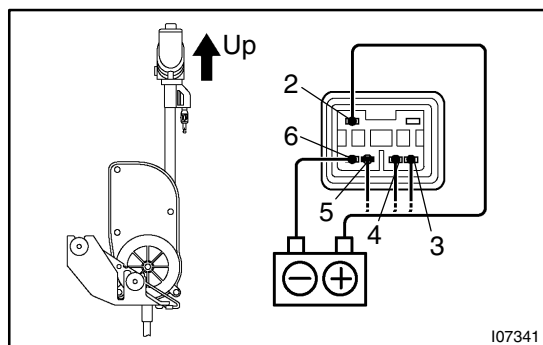
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REMOVAL

1. REMOVE SIDE WINDOW INNER GARNISH
(See page BO-145)
2. REMOVE 2 NUTS
3. REMOVE ANTENNA NUT AND ORNAMENT
4. DISCONNECT ANTENNA CODE AND WIRE HARNESS





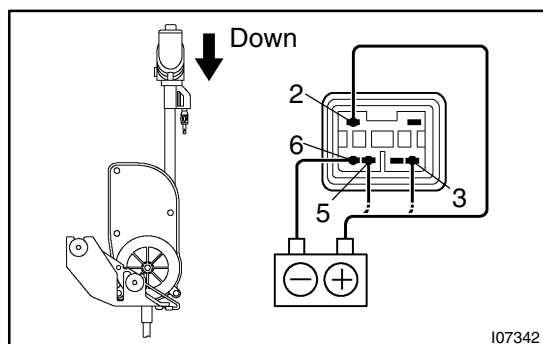
INSPECTION

1. INSPECT ANTENNA MOTOR

- Connect the positive (+) lead from the battery to terminal 2, 3, 4 and 5 and the negative (–) lead to terminal 6.
- Check that the motor turns (moves upward).

NOTICE:

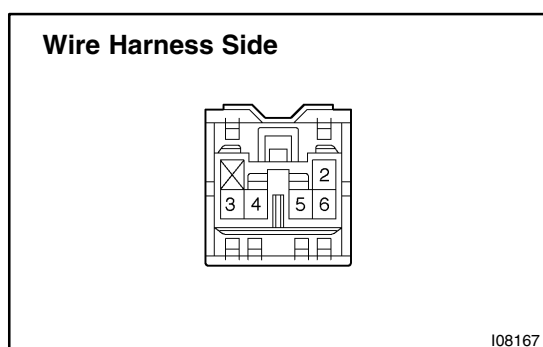
These tests must be done quickly (within 3 – 5 seconds) to prevent the coil from burning out.



- Disconnect the positive (+) lead from the battery from the terminal 4.

NOTICE:

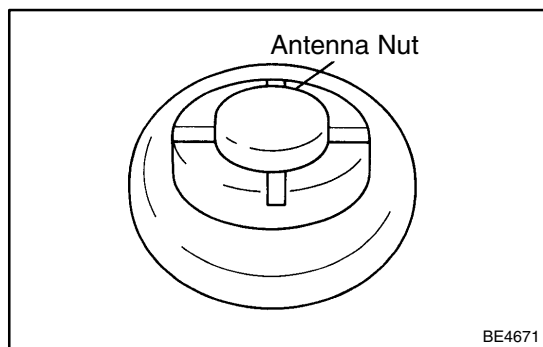
These tests must be done quickly (within 3 – 5 seconds) to prevent the coil from burning out.



2. INSPECT ANTENNA MOTOR CONTROL RELAY CIRCUIT

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

Tester connection	Condition	Specified condition
6 – Ground	Constant	Continuity
2 – Ground	Ignition switch OFF	No voltage
2 – Ground	Ignition switch ACC or ON	Battery voltage
3 – Ground	Constant	Battery voltage
4 – Ground	Ignition switch ACC or ON, and radio switch OFF	No voltage
4 – Ground	Ignition switch ACC or ON, and radio switch ON	Battery voltage
5 – Ground	Ignition switch LOCK or ACC	No voltage
5 – Ground	Ignition switch ON	Battery voltage



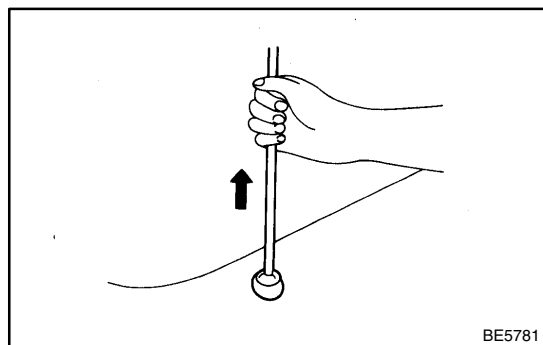
REPLACEMENT

1. Auto Antenna Models: REMOVE ANTENNA ROD

HINT:

Do this operation with the battery negative (–) cable connected to the battery terminal.

- (a) Turn the ignition switch to "LOCK" position.
- (b) Remove the antenna nut.



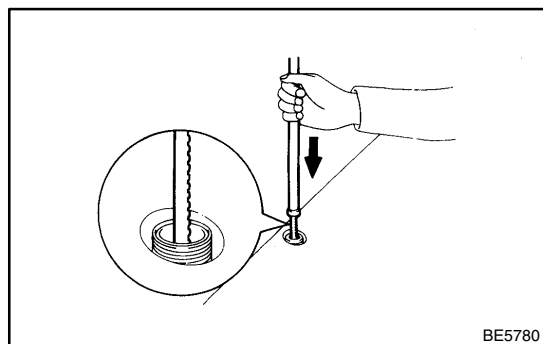
- (c) Press the "AM, FM" buttons on the radio receiver, and simultaneously turn the ignition switch to "ACC" position.

HINT:

- The rod will extend fully and be released from the motor antenna.
- After removing the antenna rod, leave the ignition switch as "ACC".

NOTICE:

To prevent body damage when the antenna rod is released, hold the rod while it comes out.



2. Auto Antenna Models: INSTALL ANTENNA ROD

- (a) Insert the cable of the rod until it reaches the bottom.

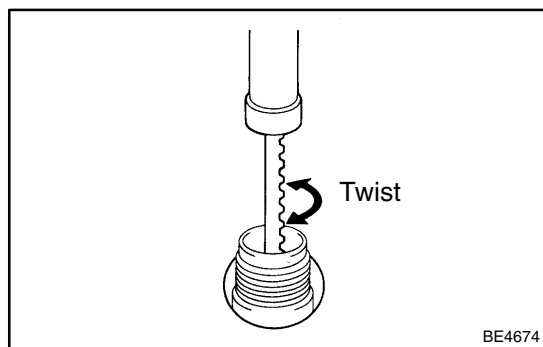
HINT:

- When inserting the cable, the teeth on the cable must face toward the rear of the vehicle.
- Insert the antenna approx. 300 mm (11.8 in.).

- (b) Wind the cable to retract the rod by turning the ignition switch to "LOCK" position.

HINT:

- If the ignition switch is already in "LOCK" position, do step 1 (c) first, then turn the ignition switch to "ACC" position.
- In case the cable is not wound, twist it, as shown in the illustration.
- Even if the rod has not retracted fully, install the antenna nut and inspect the antenna rod operation. It will finally retract fully.

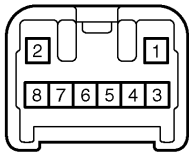


- (c) Inspect the antenna rod operation by pushing the radio wave band select buttons.

INSTALLATION

Installation is in the reverse order of removal. (See page BE-184)

Wire Harness Side:



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MULTI DISPLAY INSPECTION

BE1AS-02

INSPECT MULTI DISPLAY ASSEMBLY CIRCUIT

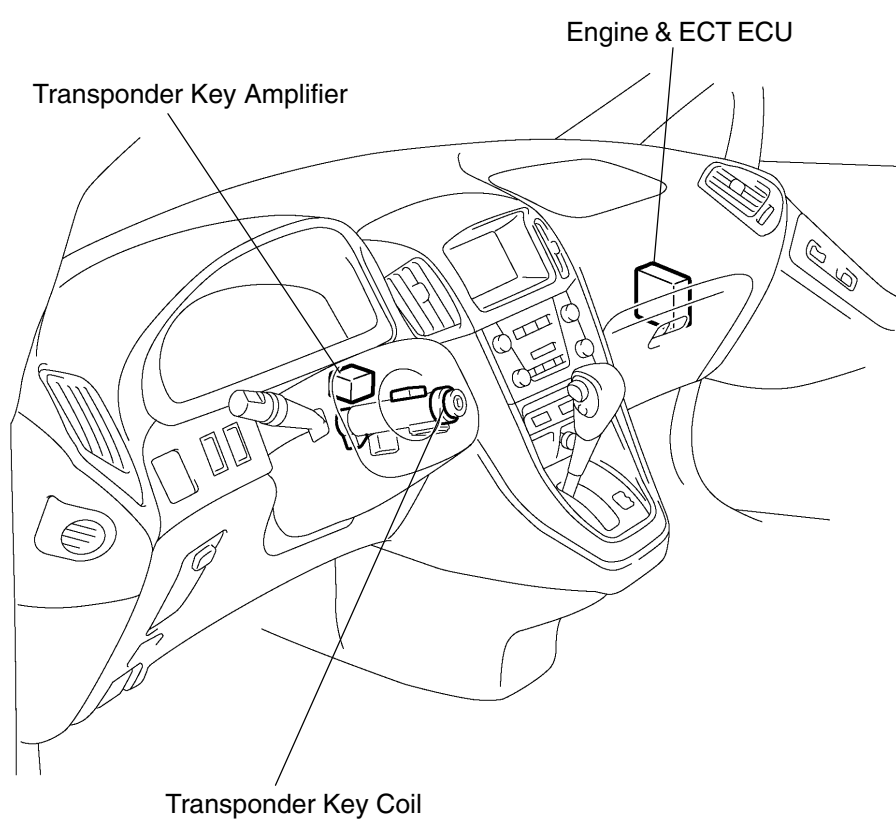
Disconnect the connector from the multi display assembly and inspect the connector on the wire harness side, as shown in the table.

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

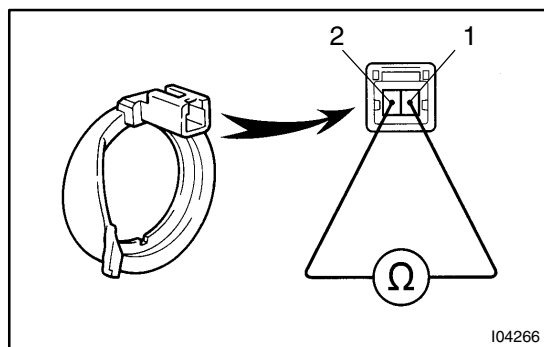
If the circuit is as specified, replace the multi display assembly.
If the circuit is not as specified, inspect the circuits connected to other parts.

ENGINE IMMOBILISER SYSTEM LOCATION

BE02Q-18



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INSPECTION

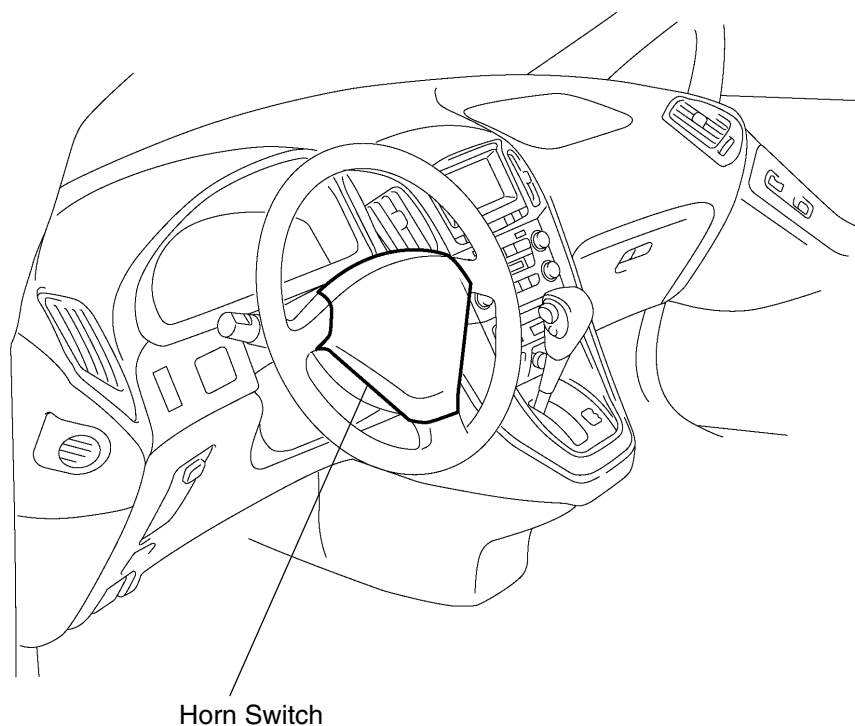
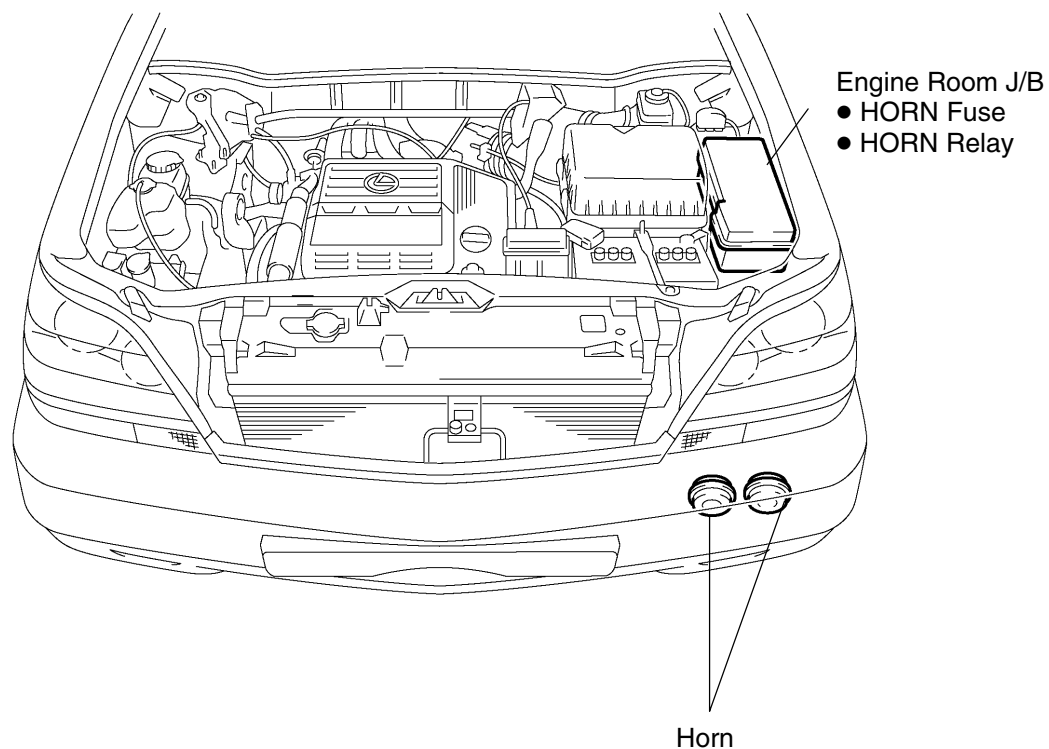
INSPECTION TRANSPONDER KEY COIL CONTINUITY

Check that continuity exists between terminals 1 and 2.

If continuity is not as specified, replace the coil.

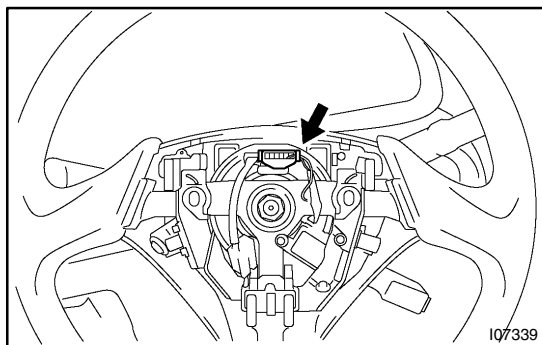
HORN SYSTEM LOCATION

BE0FY-20



Y

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INSPECTION

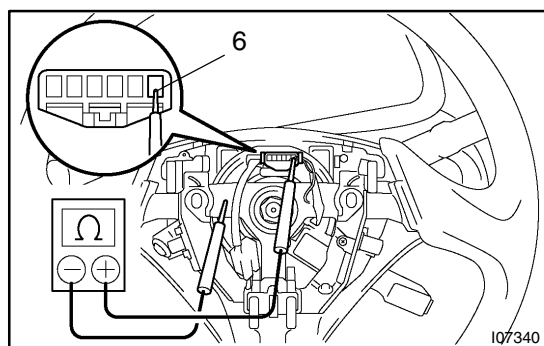
1. INSPECT HORN SWITCH

- Disconnect the negative (–) terminal from the battery.
- Remove the left and right covers from the steering wheel.
- Using a torx socket wrench, loosen the 2 bolts.
- Pull up the horn pad and place it on the steering column, as shown.

HINT:

Do not disconnect the connector from the horn pad.

- Disconnect the connector from the slip ring.



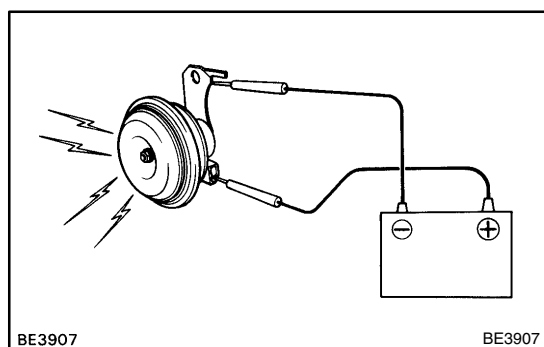
- Check that no continuity exists between terminal 6 of the connector and body ground.
- Check that continuity exists between terminal 6 of the connector and body ground when the horn contact plate is pressed against the steering spoke assembly.

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

- 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)

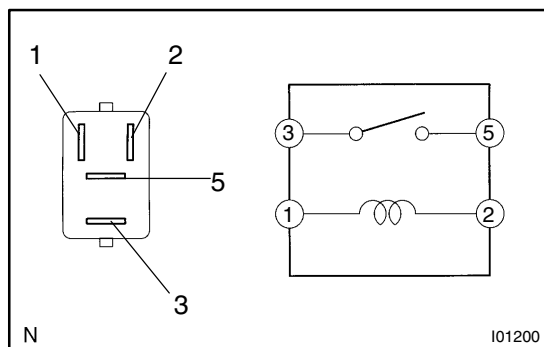
- Install the left and right covers.
- Connect the negative (–) terminal to the battery.



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.

4. INSPECT HORN RELAY CIRCUIT (See page BE-18)