BODY ELECTRICAL SYSTEM

BE06D-01

PRECAUTION

HINT:

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

1. HEADLIGHT SYSTEM

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

2. SRS (SUPPLEMENTAL RESTRAINT SYSTEM)

The 4 RUNNER is equipped with an SRS (Supplemental Restraint System) such as the driver airbag and front passenger airbag. Failure to carry out service operation in the correct sequence could cause the SRS to unexpectedly deploy during servicing, possibly leading to a serious accident. Before servicing (including removal or installation of parts, inspection or replacement), be sure to read the precautionary notices in the RS section.

3. AUDIO SYSTEM

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

4. MOBILE COMMUNICATION SYSTEM

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

TROUBLESHOOTING

PROBLEM SYMPTOMS TABLE

BE11G-04

HEADLIGHT AND TAILLIGHT SYSTEM (w/o Daytime Running Light):

Symptom	Suspect Area	See page
Only one side headlight does not light	5. HEAD RH or LH Fuse (Engine Room R/B) 6. Headlight Bulb 7. Wire Harness	BE-13 - -
"Lo-Beam" or "Hi-Beam" does not light	1. Headlight Dimmer Switch 2. Wire Harness	BE-15 -
"Flash" does not light	1. Headlight Dimmer Switch 2. Wire Harness	BE-15 -
Headlight does not light (Taillight is normal)	1. Headlight Control Relay (Engine Room R/B) 2. Light Control Switch 3. Headlight Dimmer Switch 4. HEAD RH and LH Fuse (Engine Room R/B) 5. Wire Harness	BE-15 BE-15 BE-13 BE-15 -
Headlight and taillight do not light	1. Light Control Switch 2. Wire Harness	BE-15 -
Only one side taillight does not light	1. Taillight Bulb 2. Wire Harness	- -
Taillight does not light (Headlight is normal)	1. TAIL Fuse (Engine Room R/B) 2. Taillight Control Relay (Engine Room R/B) 3. Light Control Switch) 4. Wire Harness 5. Taillight Bulb	BE-15 BE-15 BE-13 - -

HEADLIGHT AND TAILLIGHT SYSTEM (w/ Daytime Running Light):

Symptom	Suspect Area	See page
"Lo-Beam" does not light (All) (Daytime running light system is normal)	1. DRL Fuse (Engine Room R/B) 2. No. 4 Daytime Running Light Relay 3. Wire Harness	BE-15 BE-13 -
"Lo-Beam" does not light (All) (Daytime running light system is not normal)	1. Headlight Control Relay (Engine Room R/B) 2. Light Control Switch 3. Daytime Running Light Relay 4. HEAD (LO LH) and (LO RH) Fuse (Engine Room R/B) 5. Headlight Bulb 6. Wire Harness	BE-13 BE-13 BE-13 BE-13 - -
"Lo-Beam" does not light (One side)	1. HEAD (LO LH) or (LO RH) Fuse (Engine Room R/B) 2. Headlight Bulb 3. Wire Harness	BE-13 - -
"Hi-Beam" does not light (All)	1. Headlight Dimmer Relay (Engine Room R/B) 2. Headlight Dimmer Switch 3. Daytime Running Light Relay 4. HEAD LH and RH Fuse (Engine Room R/B) 5. Headlight Bulb 6. Wire Harness	BE-13 BE-13 BE-13 BE-13 - -
"Hi-Beam" does not light (One side)	1. HEAD LH or RH Fuse (Engine Room R/B) 2. Headlight Bulb 3. Wire Harness	BE-13 - -
"Flash" does not light	1. Headlight Dimmer Relay (Engine Room R/B) 2. Headlight Dimmer Switch 3. Daytime Running Light Relay 4. Wire Harness	BE-13 BE-13 BE-13 -

Headlight does not light (Taillight is normal)	1. Headlight Control Relay (Engine Room R/B) 2. Headlight Dimmer Relay (Engine Room R/B) 3. DRL Fuse (Engine Room R/B) 4. Light Control Switch 5. Daytime Running Light Relay 6. Daytime Running Light No.4 Relay 7. Wire Harness	BE-13 BE-13 BE-13 BE-13 BE-13 BE-13 -
Headlight and taillight do not light	1. Light Control Switch 2. Wire Harness	BE-13 -
Only one side taillight does not light	1. Taillight Bulb 2. Wire Harness	- -
Taillight does not light (Headlight is normal)	1. TAIL Fuse (Engine Room R/B) 2. Taillight Control Relay (Engine Room R/B) 3. Light Control Switch 4. Wire Harness 5. Taillight Bulb	BE-13 BE-13 BE-13 - -
Daytime running light system does not operate	1. DOME Fuse (Engine Room R/B) 2. GAUGE Fuse (Driver Side J/B) 3. IGN Fuse (Driver Side J/B) 4. Daytime Running Light Relay 5. Daytime Running Light Resistor 6. Parking Brake Switch 7. Wire Harness	BE-13 BE-13 BE-13 BE-13 BE-45 BE-13 -

TURN SIGNAL AND HAZARD WARNING SYSTEM:

Symptom	Suspect Area	See page
"Hazard" and "Turn" do not light	1. Hazard Warning Switch 2. Turn Signal Flasher (Driver Side J/B) 3. Wire Harness	BE-24 BE-24 -
The flashing frequency is abnormal	1. Bulb 2. Turn Signal Flasher (Driver Side J/B) 3. Wire Harness	- BE-24 -
Hazard warning light does not light (Turn signal is normal)	1. HORN Fuse (Engine Room R/B) 2. Wire Harness	BE-23 -
Turn signal does not light (Combination meter, wiper and washer do not operate)	1. Ignition Switch 2. TURN Fuse (Driver Side J/B) 3. Turn Signal Switch 4. Wire Harness	BE-23 BE-24 BE-12 -
Turn signal does not light (Combination meter, wiper and washer are normal)	1. Turn Fuse (Driver Side J/B) 2. Turn Signal Switch 3. Wire Harness	BE-24 BE-23 -
Turn signal does not light in one direction	1. Turn Signal Switch 2. Wire Harness	BE-24 -
Only one bulb does not light	1. Bulb 2. Wire Harness	- -

INTERIOR LIGHT SYSTEM:

Symptom	Suspect Area	See page
Interior light does not light	1. DOME Fuse (Engine Room R/B) 2. Wire Harness	BE-25 -
Front interior light does not light	1. Bulb 2. Door Courtesy Switch 3. Front Interior Light Switch 4. Wire Harness	- BE-26 BE-26 -

Rear interior light does not light	1. Bulb 2. Back Door Courtesy Switch 3. Rear Interior Light Switch 4. Wire Harness	- BE-26 BE-26 -
Front interior light remains on	1. Front Interior Light Switch 2. Door Courtesy Switch 3. Wire Harness	BE-26 BE-26 -
Rear interior light remains on	1. Rear Interior Light Switch 2. Back Door Courtesy Switch 3. Wire Harness	BE-26 BE-26 -
Personal light does not light	1. Bulb 2. Personal Light Switch 3. Wire Harness	- BE-26 -
Vanity light does not light	1. Bulb 2. Vanity Light 3. Wire Harness	- BE-26 -

BACK-UP LIGHT SYSTEM:

Symptom	Suspect Area	See page
Back-up light does not light	1. GAUGE Fuse (Driver Side J/B) 2. Park/Neutral Position Switch (A/T) 3. Back-up Light Switch (M/T) 4. Bulb 5. Wire Harness	- DI-203 BE-30 - -
Back-up light remains on	1. Park/Neutral Position Switch (A/T) 2. Back-up Light Switch (M/T) 3. Wire Harness	DI-203 BE-30 -
Only one light does not light	1. Bulb 2. Wire Harness	- -

STOP LIGHT SYSTEM:

Symptom	Suspect Area	See page
Stop light does not light	1. STOP Fuse (Engine Room R/B) 2. Stop Light Switch 3. Bulb 4. Wire Harness	BE-32 BE-31 - -
Stop light remains on	1. Stop Light Switch 2. Wire Harness	BE-32 -
Only one light does not light	1. Wire Harness 2. Bulb	- -

WIPER AND WASHER SYSTEM:

Symptom	Suspect Area	See page
Front wipers do not operate	1. WIPER Fuse (Driver Side J/B) 2. Wiper and Washer Switch 3. Front Wiper Motor 4. Wire Harness	BE-34 BE-34 BE-33 -
Front wipers do not operate in MIST, INT, LO or HI position	1. Wiper and Washer Switch 2. Front Wiper Motor 3. Wire Harness	BE-34 BE-34 -
Front washer motor does not operate	1. Wiper and Washer Switch 2. Front Wiper Motor 3. Wire Harness	BE-34 BE-34 -
Front wipers do not operate when washer switch on	1. Wiper and Washer Switch	BE-34

Rear wiper does not operate	1. WIPER Fuse (Driver Side J/B) 2. Rear Wiper Motor 3. Rear Wiper and Washer Switch 4. Window Limit Switch 5. Back Door Control Relay 6. Wire Harness	BE-34 BE-34 BE-73 BE-73 BE-33 -
Rear wiper does not operate in INT or ON position	1. Rear Wiper and Washer Switch 2. Back Door Control Relay 3. Wire Harness	BE-34 BE-73 -
Rear wiper does not return to off position	1. Rear Wiper Motor 2. Back Door Control Relay 3. Wire Harness	BE-34 BE-73 -
Rear washer motor does not operate	1. Rear Washer Motor 2. Rear Wiper and Washer Switch 3. Window Limit Switch 4. Back Door Control Relay 5. Wire Harness	BE-34 BE-73 BE-34 BE-73 -

COMBINATION METER:

Symptom	Suspect Area	See page
Tachometer, speedometer, engine coolant temperature gauge and fuel gauge do not operate	1. GAUGE Fuse (Driver Side J/B) 2. Meter Circuit 3. Wire Harness	BE-39 BE-40 -
Speedometer does not operate	1. Skid Control ECU 2. Meter Circuit 3. Wire Harness	DI-244 BE-40 -
Tachometer does not operate	1. ECM 2. Meter Circuit 3. Wire Harness	- BE-40 -
Fuel gauge does not operate or operates abnormally	1. Fuel Receiver Gauge 2. Fuel Sender Gauge 3. Meter Circuit 4. Wire Harness	BE-45 BE-45 BE-40 -
Engine coolant temperature gauge does not operate or operates abnormally	1. Engine Coolant Temperature Receiver Gauge 2. Engine Coolant Temperature Sender Gauge 3. Meter Circuit 4. Wire Harness	BE-45 BE-45 BE-40 -
All illumination lights do not light	1. TAIL Fuse (Engine Room R/B) 2. Taillight Control Relay 3. Light Control Rheostat 4. Wire Harness	BE-39 BE-15 BE-45 -
Only one illumination light does not light	1. Bulb 2. Meter Circuit	- BE-40
Warning lights do not light up (Except discharge, SRS and door open)	1. GAUGE Fuse (Driver Side J/B) 2. Meter Circuit 3. Wire Harness	BE-39 BE-40 -
Brake warning light does not light	1. Bulb 2. Brake Fluid Level Switch 3. Parking Brake Switch 4. Bulb Check Relay 5. Meter Circuit 6. Wire Harness	- BE-45 BE-45 BE-45 BE-40 -

ATF temperature warning light does not light	1. Bulb 2. ATF Temperature Sensor 3. ECM 4. Meter Circuit 5. Wire Harness	- DI-182 - BE-40 -
Door open warning light does not light	1. Bulb 2. Door Courtesy Switch 3. Back Door Courtesy Switch 4. DOME Fuse (Engine Room R/B) 5. Meter Circuit 6. Wire Harness	- BE-45 BE-26 BE-40 BE-26 -
SRS warning light does not light	1. Bulb 2. Airbag Sensor Assembly 3. ECU-B Fuse (Driver Side J/B) 4. Meter Circuit 5. Wire Harness	- - BE-45 BE-40 -
Discharge warning light does not light	1. Bulb 2. IGN Fuse (Driver Side J/B) 3. Generator 4. Meter Circuit 5. Wire Harness	- BE-45 - BE-40 -
Seat belt warning light does not light	1. Bulb 2. Buckle Switch 3. Meter Circuit 4. Wire Harness	- BE-45 BE-40 -
ABS warning light does not light	1. Bulb 2. Skid Control ECU 3. Meter Circuit 4. Wire Harness	- DI-244 BE-40 -
Low oil pressure warning light does not light	1. Bulb 2. Low Oil Pressure Warning Switch 3. Meter Circuit 4. Wire Harness	- BE-45 BE-40 -
Fuel level warning light does not light	1. Bulb 2. Meter Circuit 3. Wire Harness	- BE-40 -
Unengaged "Park" warning light does not light	1. Bulb 2. Park/Neutral Position Switch 3. Transfer Neutral Position Switch 4. Meter Circuit 5. Wire Harness	- DI-203 TR-11 BE-40 -
Turn indicator light does not light	1. Bulb 2. Turn Signal and Hazard Warning System 3. Meter Circuit 4. Wire Harness	- BE-24 BE-40 -
High beam indicator light does not light	1. Bulb 2. Headlight and Taillight System 3. Meter Circuit 4. Wire Harness	- BE-15 BE-40 -
A/T PWR indicator light does not light	1. Bulb 2. A/T Pattern Select Switch 3. Meter Circuit 4. Wire Harness	- DI-214 BE-40 -

4WD indicator light does not light	1. Bulb 2. A.D.D. Switch 3. Meter Circuit 4. Wire Harness	- SA-49 BE-40 -
Washer level indicator light does not light	1. Bulb 2. Window Washer Level Warning Switch 3. Meter Circuit 4. Wire Harness	- BE-45 BE-40 -
O/D OFF indicator light does not light	1. Bulb 2. O/D Main Switch 3. Meter Circuit 4. Wire Harness	- DI-218 BE-40 -
Malfunction indicator light does not light	1. Bulb 2. ECM 3. Wire Harness	- DI-3 -
Cruise control indicator light does not light	1. Bulb 2. ECM 3. Meter Circuit 4. Wire Harness	- DI-471 BE-40 -
Rear DIFF. lock indicator light does not light	1. Bulb 2. DIFF. Lock Indicator Switch 3. Meter Circuit 4. Wire Harness	- SA-118 BE-40 -

DEFOGGER SYSTEM:

Symptom	Suspect Area	See page
Defogger system does not operate	1. GAUGE Fuse (Driver Side J/B) 2. DEFOG Fuse (Engine Room R/B) 3. Defogger Switch 4. Defogger Relay 5. Wire Harness	BE-57 BE-57 BE-58 BE-58 -

POWER WINDOW CONTROL SYSTEM:

Symptom	Suspect Area	See page
Power window does not operate (All) (Power door lock does not operate)	1. POWER Fuse (Driver Side J/B) 2. Combination meter 3. Wire Harness	BE-64 BE-45 -
Power window does not operate (All) (Power door lock is normal)	1. Ignition Switch 2. Power Main Relay (Driver Side J/B) 3. Power Window Master Switch 4. Wire Harness	BE-12 BE-65 BE-65 -
"One Touch Power Window System" does not operate	1. Power Window Master Switch	BE-65
Only one window glass does not operate	1. Power Window Master Switch 2. Power Window Switch 3. Power Window Motor 4. Wire Harness	BE-65 BE-65 BE-65 -
"Window Lock System" does not operate	1. Power Window Master Switch	BE-65
"Window Lock Illumination" does not light	1. Power Window Master Switch	BE-65
"Key-Off Power Window" does not operate	1. Combination meter 2. Ignition Switch 3. Door Courtesy Switch 4. Wire Harness	BE-45 BE-12 BE-26 -

BACK DOOR POWER WINDOW SYSTEM:

Symptom	Suspect Area	See page
Back door power window does not operate	1. POWER Fuse (Driver Side J/B)	BE-72
	2. Window Limit Switch	BE-34
	3. Rear Wiper Motor	BE-73
	4. Back Door Power Window Switch	BE-72
	5. Back Door Control Switch	BE-72
	6. w/o Power Window: Back Door Window Lock Switch	BE-72
	7. w/ Power Window: Power Window Master Switch	BE-72
	8. Back Door Power Window Motor	BE-72
	9. Back Door Control Relay	BE-72
	10. Wire Harness	-

POWER DOOR LOCK CONTROL SYSTEM:

Symptom	Suspect Area	See page
Power door lock control system does not operate (All)	1. POWER Fuse (Driver Side J/B)	BE-75
	2. Power source circuit (Terminal PWR)	BE-75
	3. Body ECU	-
Power door lock control system can not be operated by door lock control switch or back door lock switch	1. w/ Power Window: Door Lock Control Switch	BE-76
	2. w/o Power Window: Back Door Lock Switch	BE-76
	3. Integration Relay (Driver Side J/B)	BE-76
	4. Wire Harness	-
Power door lock control system can not be operated by door key	1. Door Key Lock and Unlock Switch	BE-76
	2. Back Door Control Switch	BE-76
	3. Wire Harness	-
	4. Body ECU	BE-76
Only one door does not operate	1. Door Lock Motor	BE-76
	2. Door Lock Link Disconnected	-
	3. Wire Harness	-
Fault in key confine prevention operation	1. Key Unlock Warning Switch	BE-12
	2. Door Courtesy Switch	BE-26
	3. Wire Harness	-
	4. Body ECU	BE-75

SLIDING ROOF SYSTEM:

Symptom	Suspect Area	See page
Sliding roof system does not operate	1. POWER Fuse (Driver Side J/B)	BE-76
	2. Power MAIN Relay (Driver Side J/B)	BE-65
	3. Sliding Roof Control Switch with Relay	BE-104
	4. Sliding Roof Motor	BE-104
	5. Wire Harness	-
Sliding roof system operates abnormally	1. Limit Switch	BE-104
	2. Sliding Roof Control Switch with Relay	BE-104
Sliding roof system stops operation half way	1. Sliding Roof Control switch with Relay	BE-104
	2. Limit Switch	BE-104
	3. Sliding Roof Motor (Stones or foreign material trapped in motor assembly)	BE-104

POWER SEAT CONTROL SYSTEM:

Symptom	Suspect Area	See page
Power seat does not operate	1. POWER Fuse (Driver Side J/B) 2. Power Seat Switch 3. Wire Harness	BE-106 BE-107 -
"Sliding operation" does not operate	1. Slide Motor 2. Power Seat Switch 3. Wire Harness	BE-107 BE-107 -
"Reclining operation" does not operate	1. Reclining Motor 2. Power Seat Switch 3. Wire Harness	BE-107 BE-107 -
"Rear vertical operation" does not operate	1. Rear Vertical Motor 2. Power Seat Switch 3. Wire Harness	BE-107 BE-107 -
"Lumber support operation" does not operate	1. Lumber Support Motor 2. Lumber Support Switch 3. Wire Harness	BE-107 BE-107 -

POWER MIRROR SYSTEM:

Symptom	Suspect Area	See page
Power mirror system does not operate	1. ACC Fuse (Driver Side J/B) 2. Mirror Control Switch 3. Mirror Motor 4. Wire Harness	BE-113 BE-114 BE-114 -
Power mirror operates abnormally	1. Mirror Control Switch 2. Mirror Mortor 3. Wire Harness	BE-114 BE-114 -

SEAT HEATER SYSTEM

Symptom	Suspect Area	See page
Driver's seat heater does not operate	1. SEAT HTR Fuse 2. Seat Heater Switch (D, P) 3. Seat Heater 4. Wire Harness	BE-10 BE-117 BE-117 -
Passenger's seat heater does not operate	1. SEAT HTR Fuse 2. Seat Heater Switch (D, P) 3. Seat Heater 4. Wire Harness	BE-10 BE-117 BE-117 -
Seat heater temperature is too hot	1. Seat Heater	BE-117

GARAGE DOOR OPENER SYSTEM

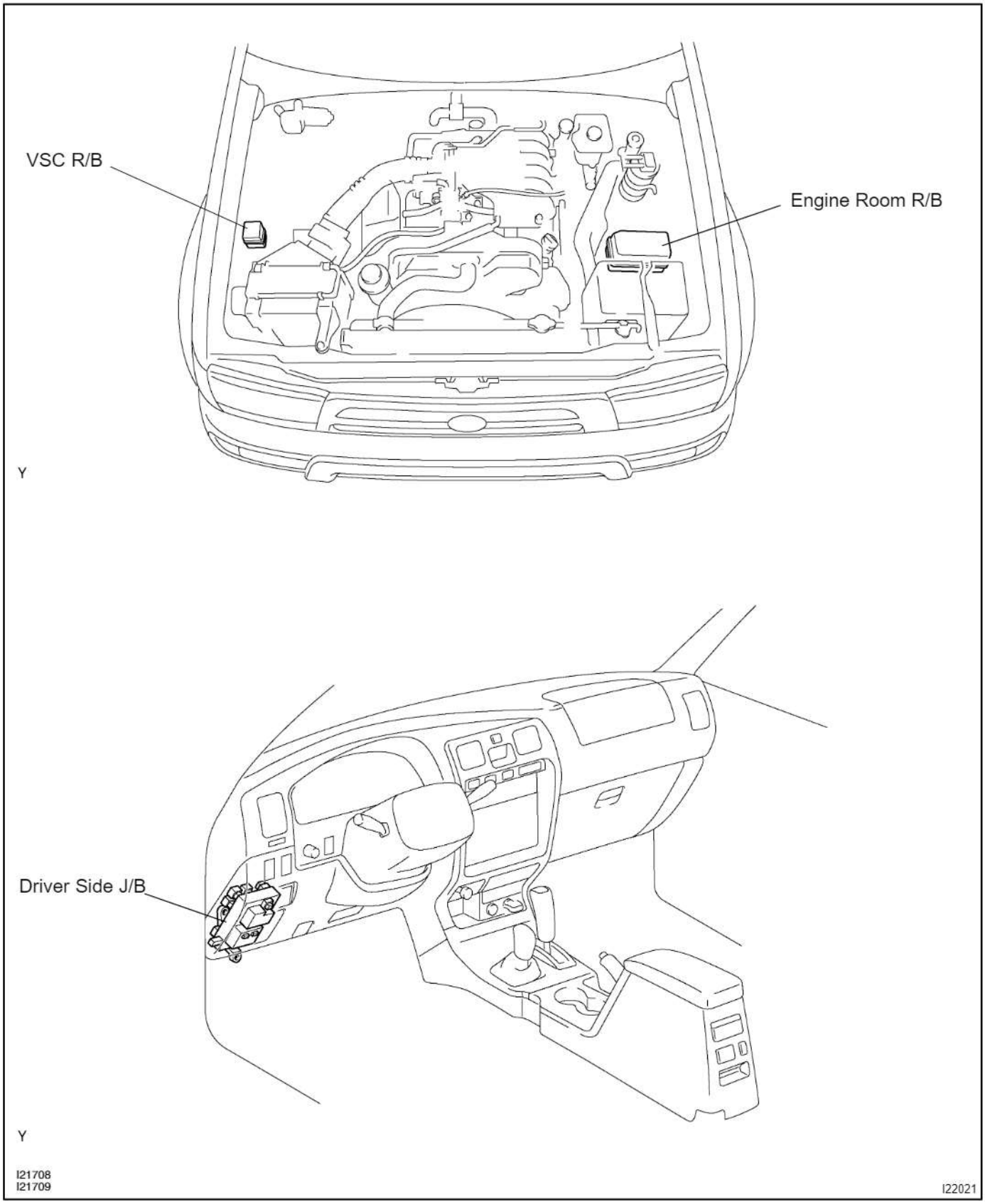
Symptom	Suspect Area	See page
Equipment of which code has been registered does not operate	1. Garage Door Opener 2. Wire Harness 3. *	BE-162 - -
LED does not light (Even though one switch is pressed)	1. Garage Door Opener 2. Wire Harness	BE-162 -
LED does not light (Only one switch is pressed)	1. Garage Door Opener	BE-162

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

POWER SOURCE

LOCATION

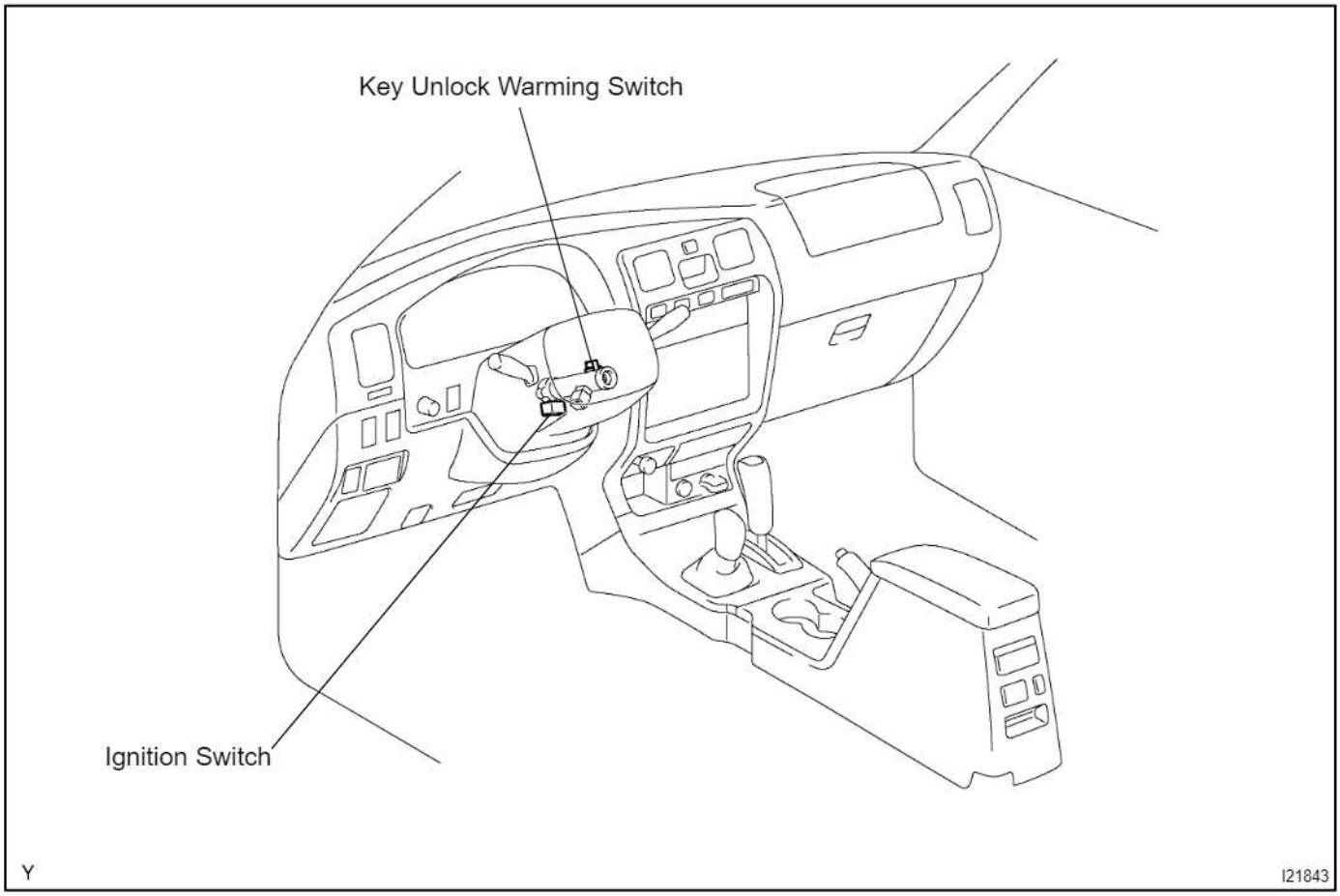
BE06F-03



IGNITION SWITCH AND KEY UNLOCK WARNING SWITCH

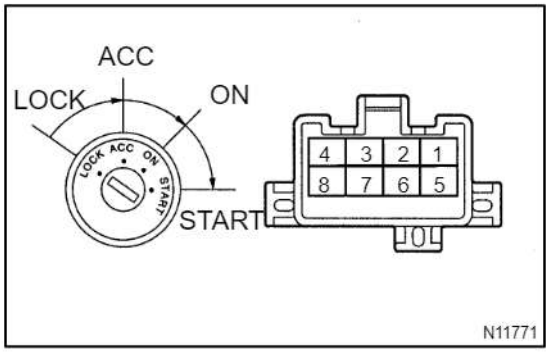
BE06G-03

LOCATION



BE11H-02

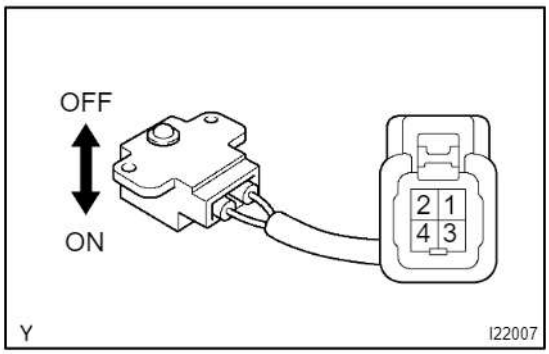
INSPECTION



1. INSPECT IGNITION SWITCH CONTINUITY

Tester connection	Switch position	Specified condition
-	LOCK	-
2 - 3	ACC	Continuity
2 - 3 - 4	ON	Continuity
6 - 7		
1 - 2 - 4	START	Continuity
6 - 7 - 8		

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



2. INSPECT KEY UNLOCK WARNING SWITCH CONTINUITY

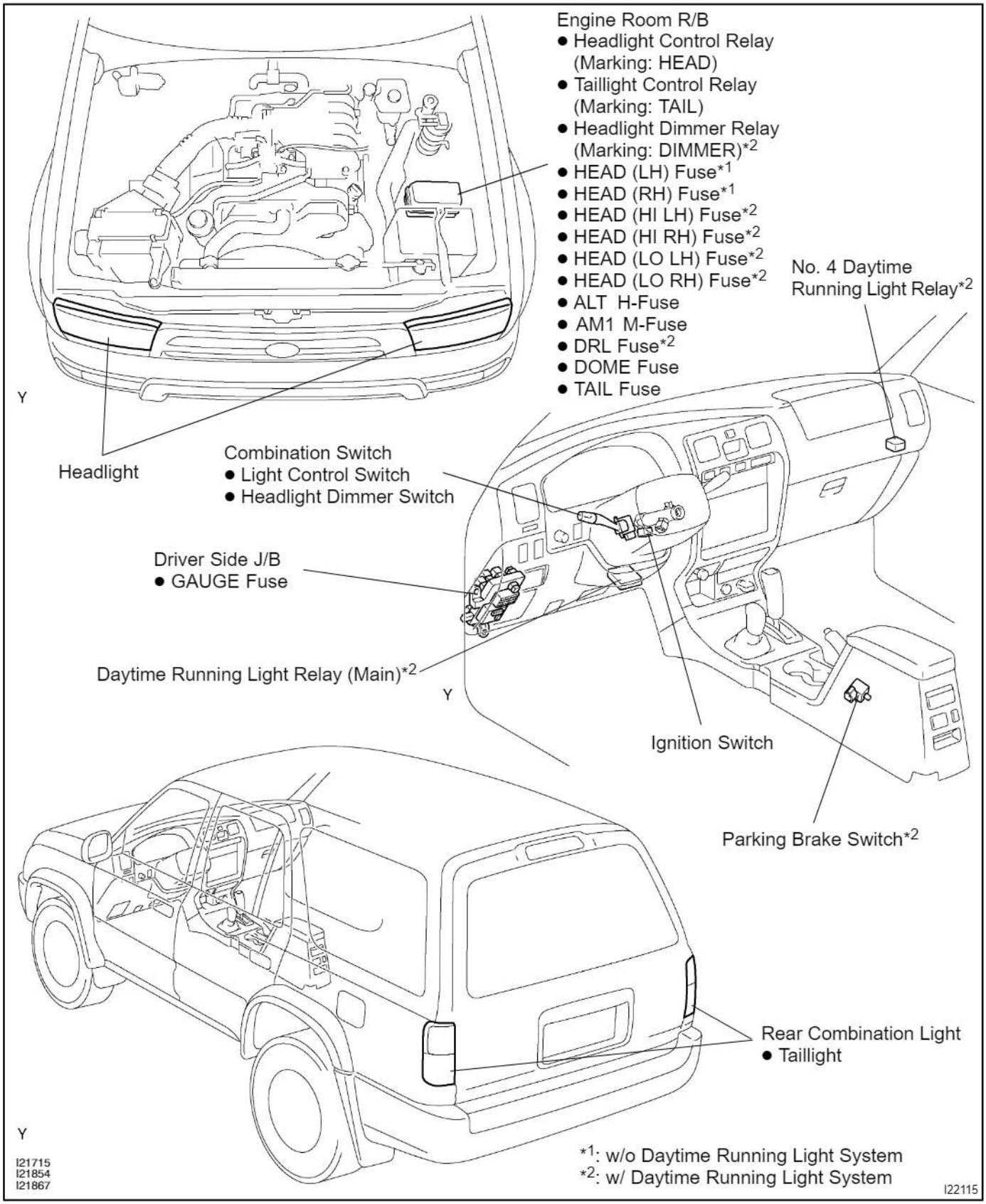
Tester connection	Switch position	Specified condition
1 - 2	OFF (Key removed)	No continuity
	ON (Key set)	Continuity

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

HEADLIGHT AND TAILLIGHT SYSTEM

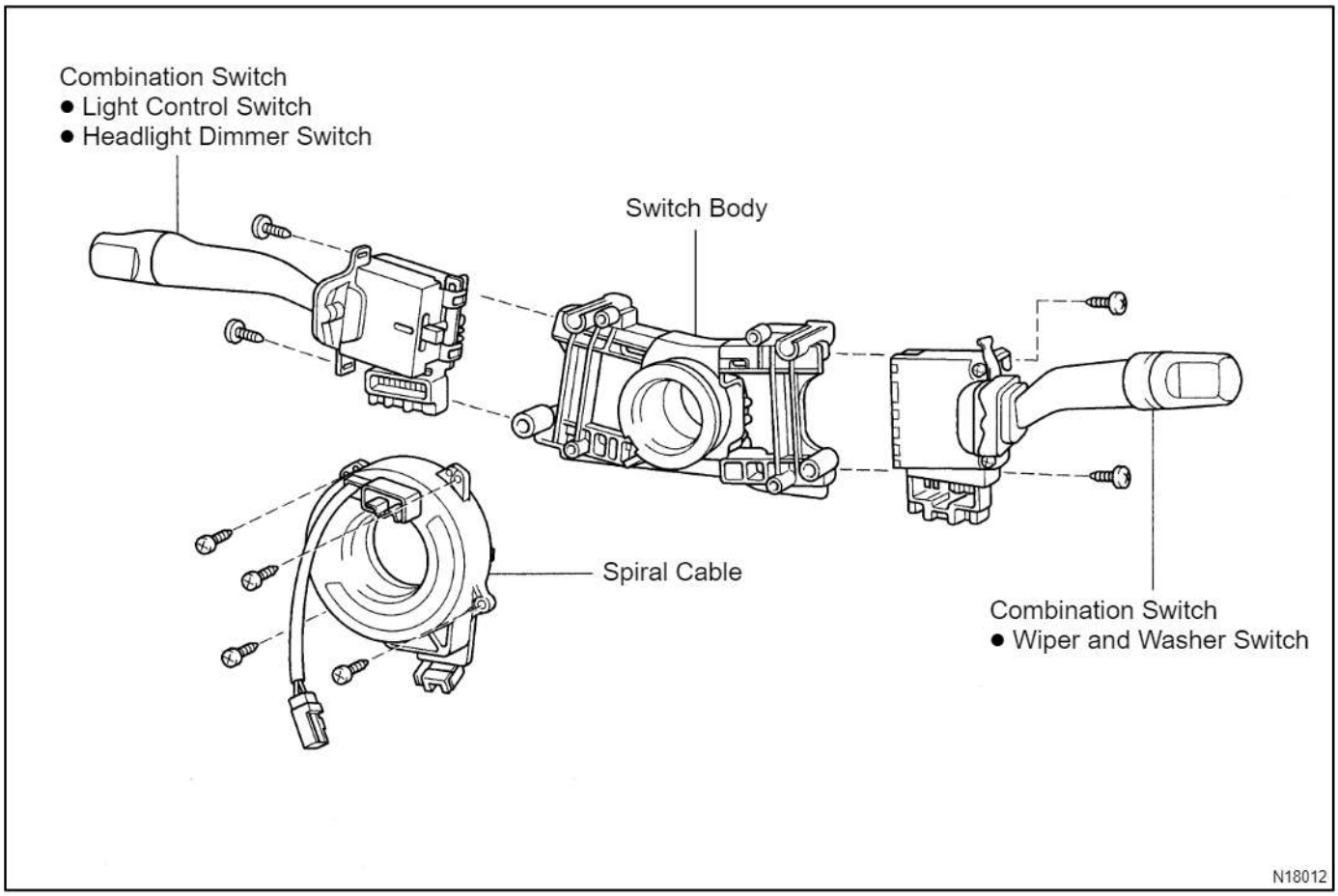
BE06I-03

LOCATION



BE06J-02

COMPONENTS



BE23V-01

INSPECTION

1. INSPECT LIGHT CONTROL SWITCH CONTINUITY

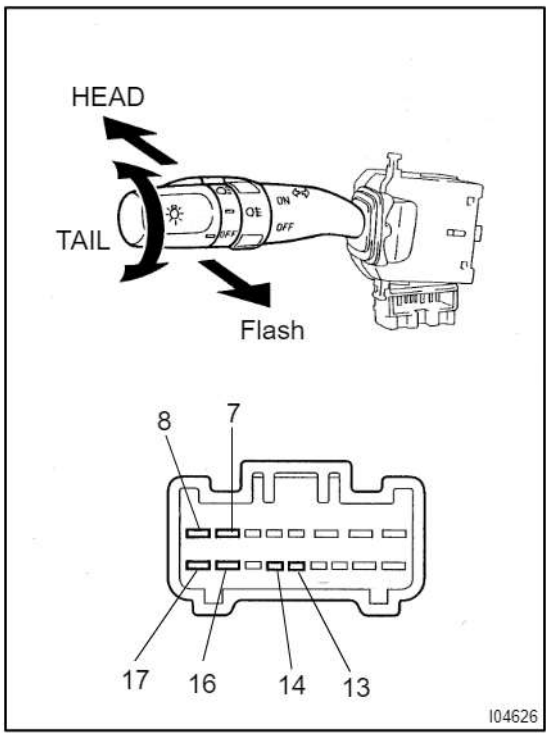
Tester connection	Switch position	Specified condition
-	OFF	No continuity
14 - 16	TAIL	Continuity
13 - 14 - 16	HEAD	Continuity

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

2. INSPECT HEADLIGHT DIMMER SWITCH CONTINUITY

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

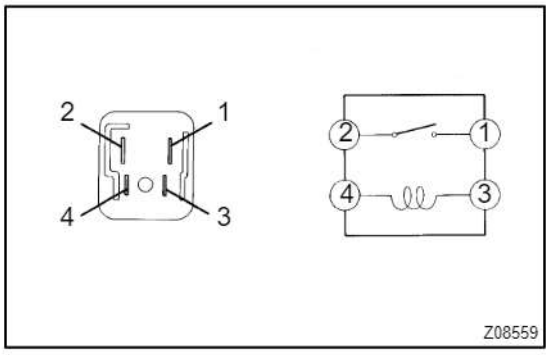
If the continuity is not as specified, replace the switch.



3. INSPECT HEADLIGHT CONTROL RELAY CONTINUITY

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

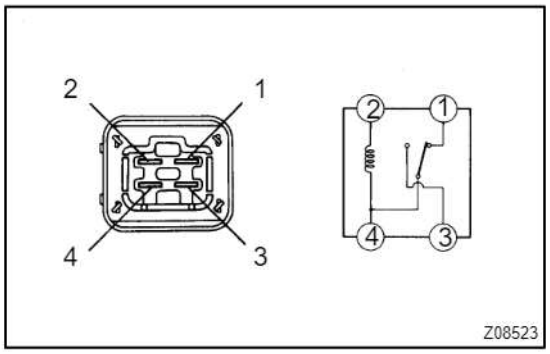
If the continuity is not as specified, replace the relay.

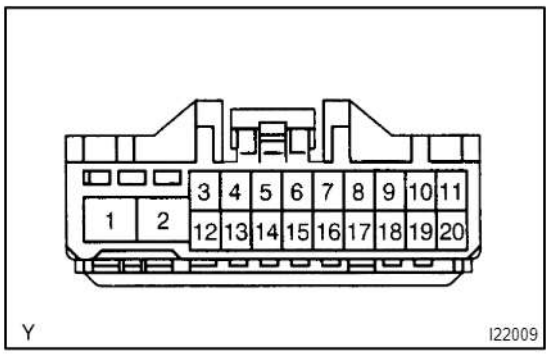


4. INSPECT HEADLIGHT DIMMER RELAY CONTINUITY

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

If the continuity is not as specified, replace the relay.



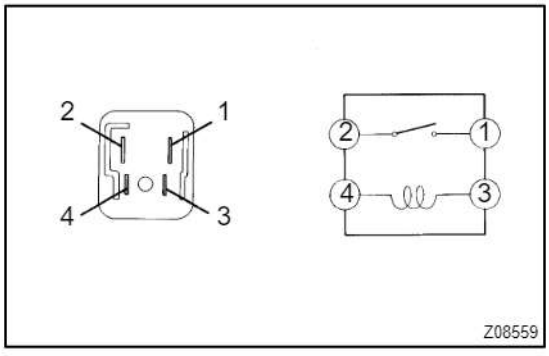


5. INSPECT DAYTIME RUNNING LIGHT RELAY (MAIN) CIRCUIT

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

Tester connection	Condition	Specified condition
1 - 4	Constant	Continuity
2 - Ground	Constant	Continuity
3 - Ground	Constant	Battery positive voltage
5 - Ground	Constant	Continuity
6 - Ground	Constant	Battery positive voltage
7 - Ground	Light control switch position OFF or TAIL	No continuity
	Light control switch position HEAD	Continuity
8 - Ground	Headlight dimmer switch position Low beam	No continuity
	Headlight dimmer switch position High beam or Flash	Continuity
9 - Ground	Engine stop	No voltage
	Engine running	Battery positive voltage
11 - Ground	Parking brake switch position OFF Parking brake lever released	No continuity
	Parking brake switch position ON Parking brake lever pulled up	Continuity
12 - Ground	Ignition switch position LOCK or ACC	No voltage
	Ignition switch position ON or START	Battery positive voltage

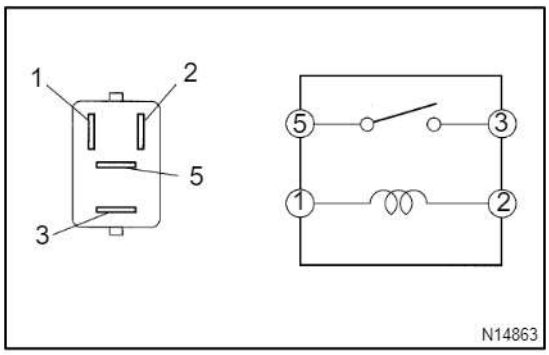
If the circuit is as specified, perform the following inspections.



6. INSPECT NO. 4 DAYTIME RUNNING LIGHT RELAY CONTINUITY

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

If the continuity is not as specified, replace the relay.



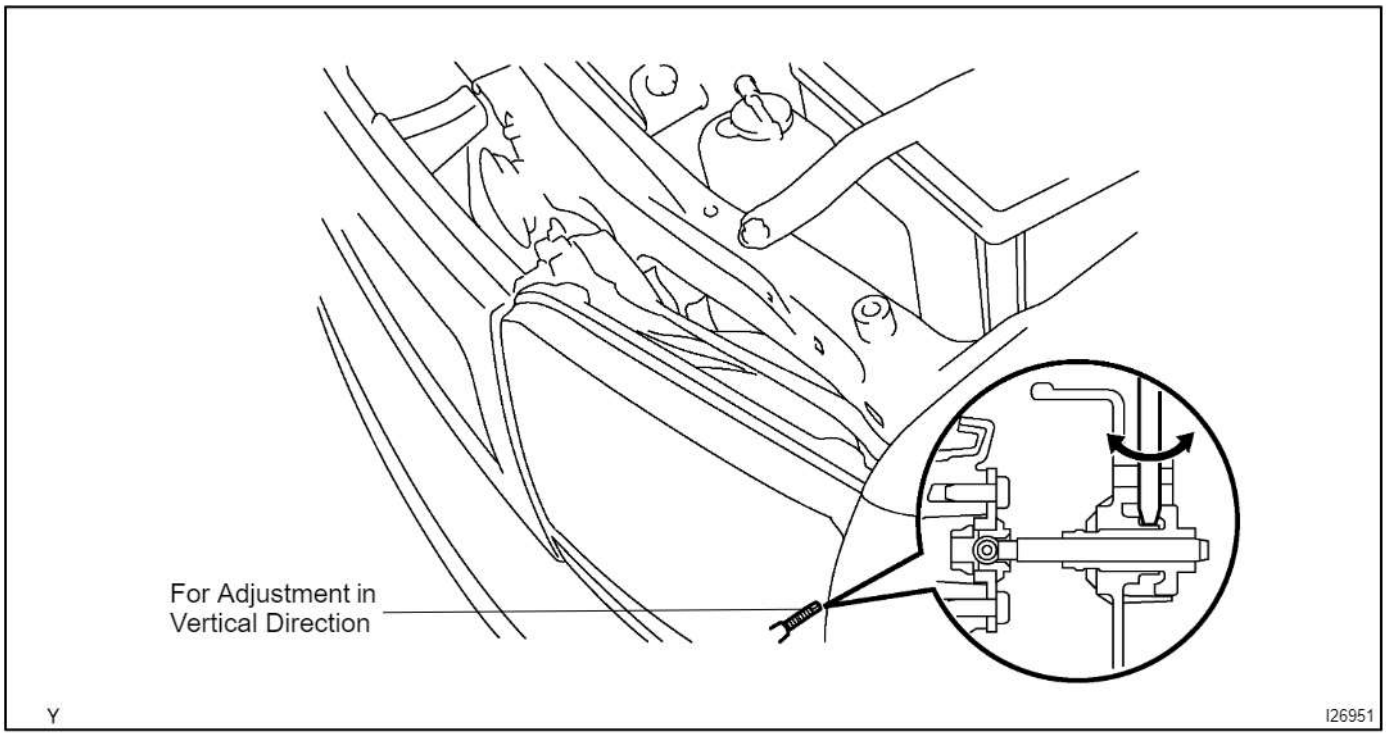
7. INSPECT TAILLIGHT CONTROL RELAY CONTINUITY

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

If the continuity is not as specified, replace the relay.

BE23W-01

ADJUSTMENT



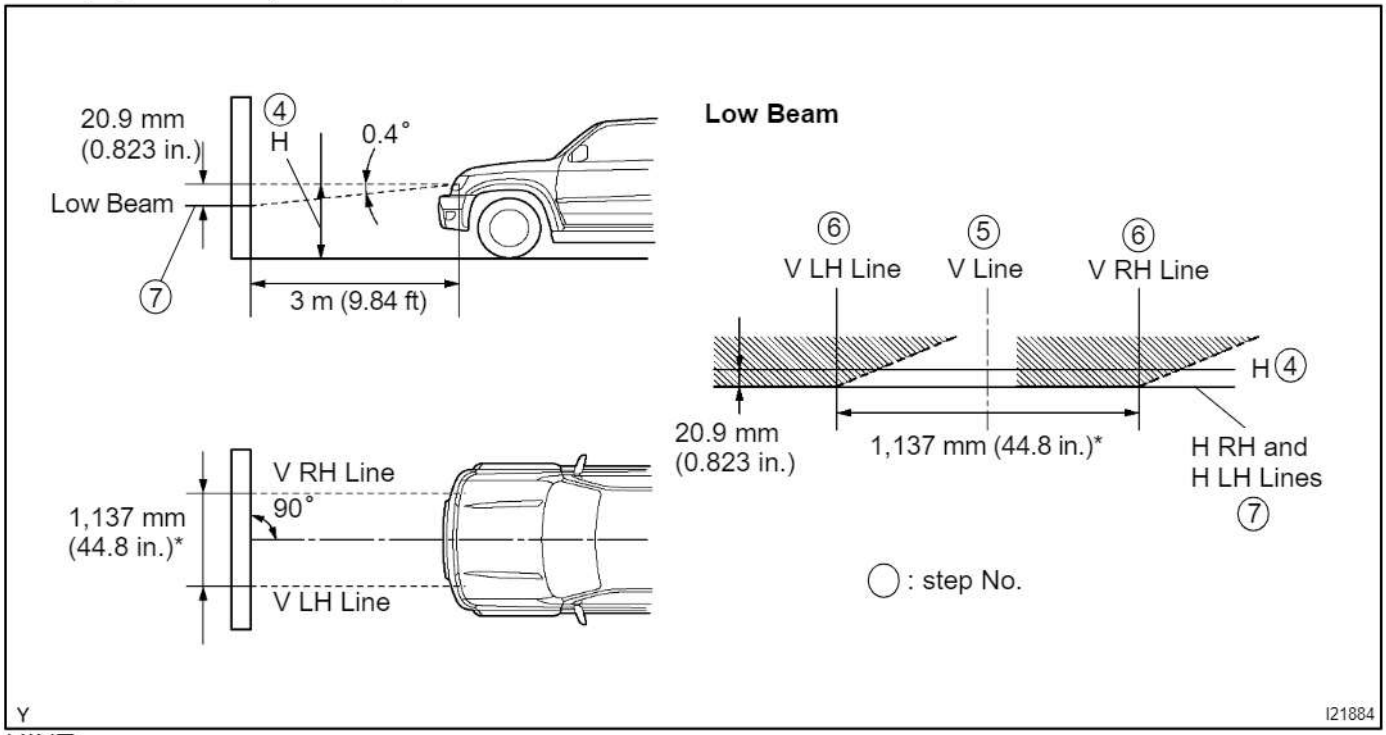
ADJUST HEADLIGHT AIM ONLY

(a) Place the vehicle in the following conditions.
- The area around the headlight is not deformed.
- The vehicle is parked on a level surface.
- Tire inflation pressure is the specified value.
- A driver is in the driver's seat and the vehicle is in a state ready for driving (with a tank full).
- The vehicle has been bounced several times.

(b) Check the headlight aiming.
(1) Prepare a thick white paper.
(2) Stand the paper perpendicular to the ground at the position 9.84 ft away from the headlights.
(3) Ensure that the center line of the vehicle and the paper face forms a 90-degree angle as shown in the illustration.
(4) Draw a horizontal line (H line) on the paper, showing where the headlights should strike.
(5) Draw a vertical line (V line) to where the center line of the vehicle is to be.
(6) Draw 2 vertical lines to where the the headlights should strike (V RH and V LH lines).
(7) Draw a horizontal line (by connecting the both low beam center marks) to where the headlights should strike (H RH and H LH lines).

HINT:
The H RH and H LH line is 0.4° below the horizontal line (H line) of the light axis.

(8) Start the engine.
(9) Turn the headlights ON.
(10) Check that the headlights properly strike the position shown in the illustration.
(11) If not, adjust the lights in the vertical direction.



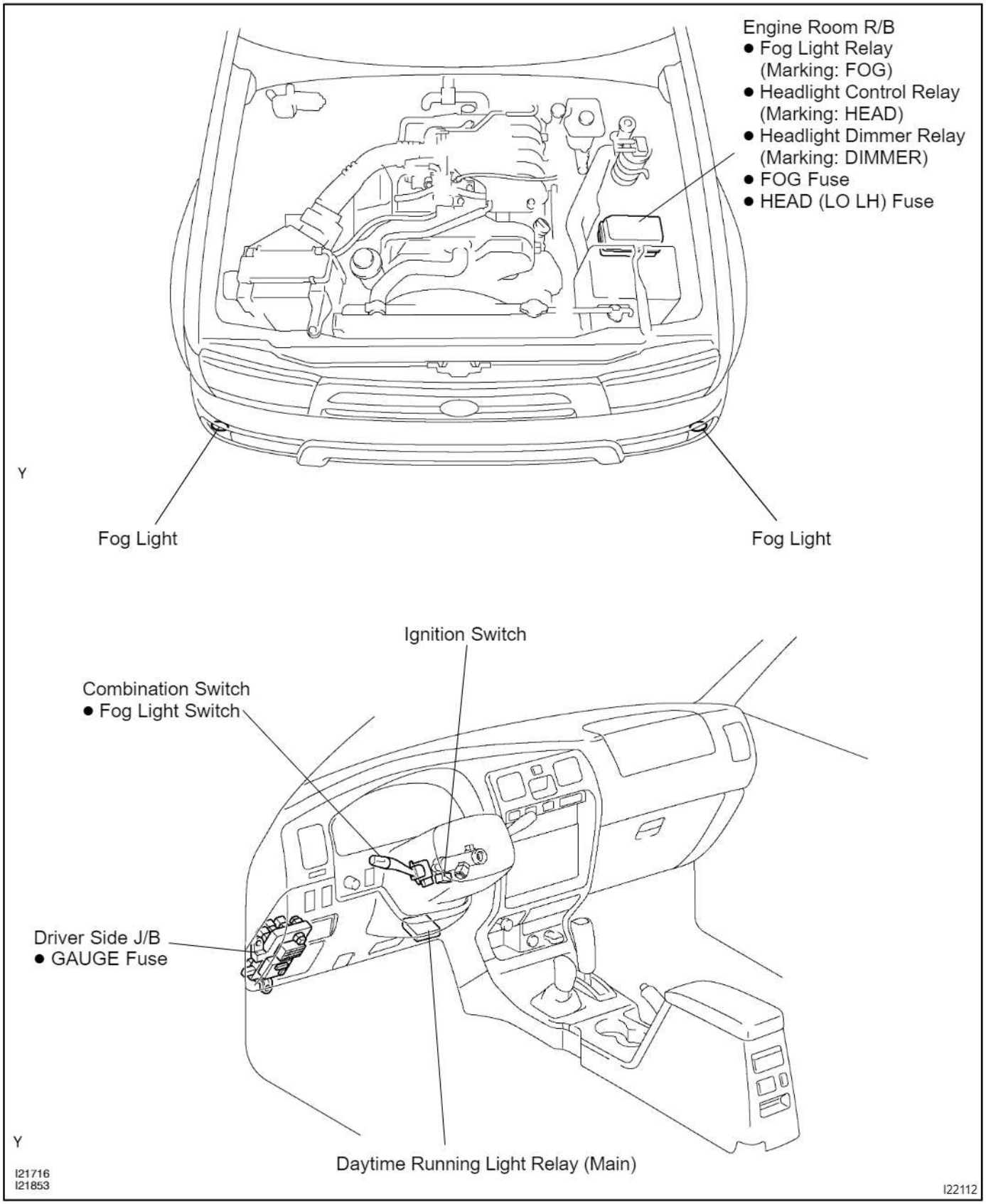
HINT:
- As shown in the illustration, adjust each aim of the RH and LH lights.
- The "*" marked values in the illustration are reference values.

(c) When adjusting it in the vertical direction:
Using adjusting bolt, adjust the headlight aim to within the specified range.

FOG LIGHT SYSTEM

LOCATION

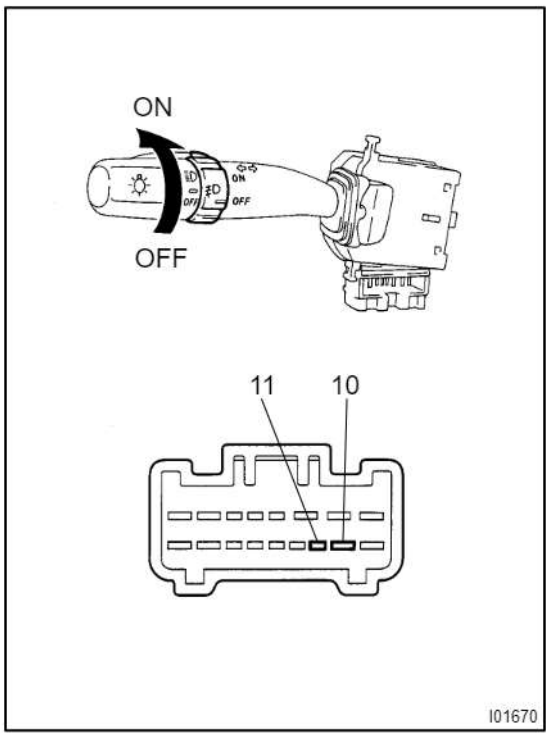
BE0DU-04



BE0DV-04

INSPECTION

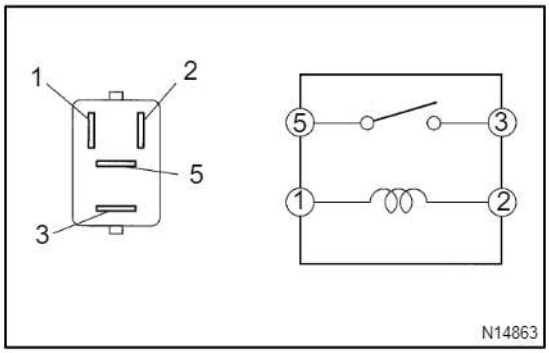
1. INSPECT FOG LIGHT SWITCH CONTINUITY



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

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

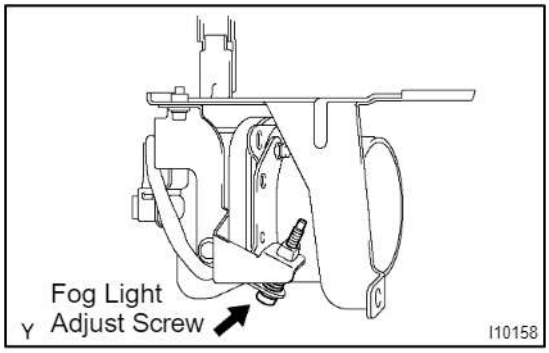
2. INSPECT FOG LIGHT RELAY CONTINUITY



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

If the continuity is not as specified, replace the relay.

BE0DW-02



ADJUSTMENT

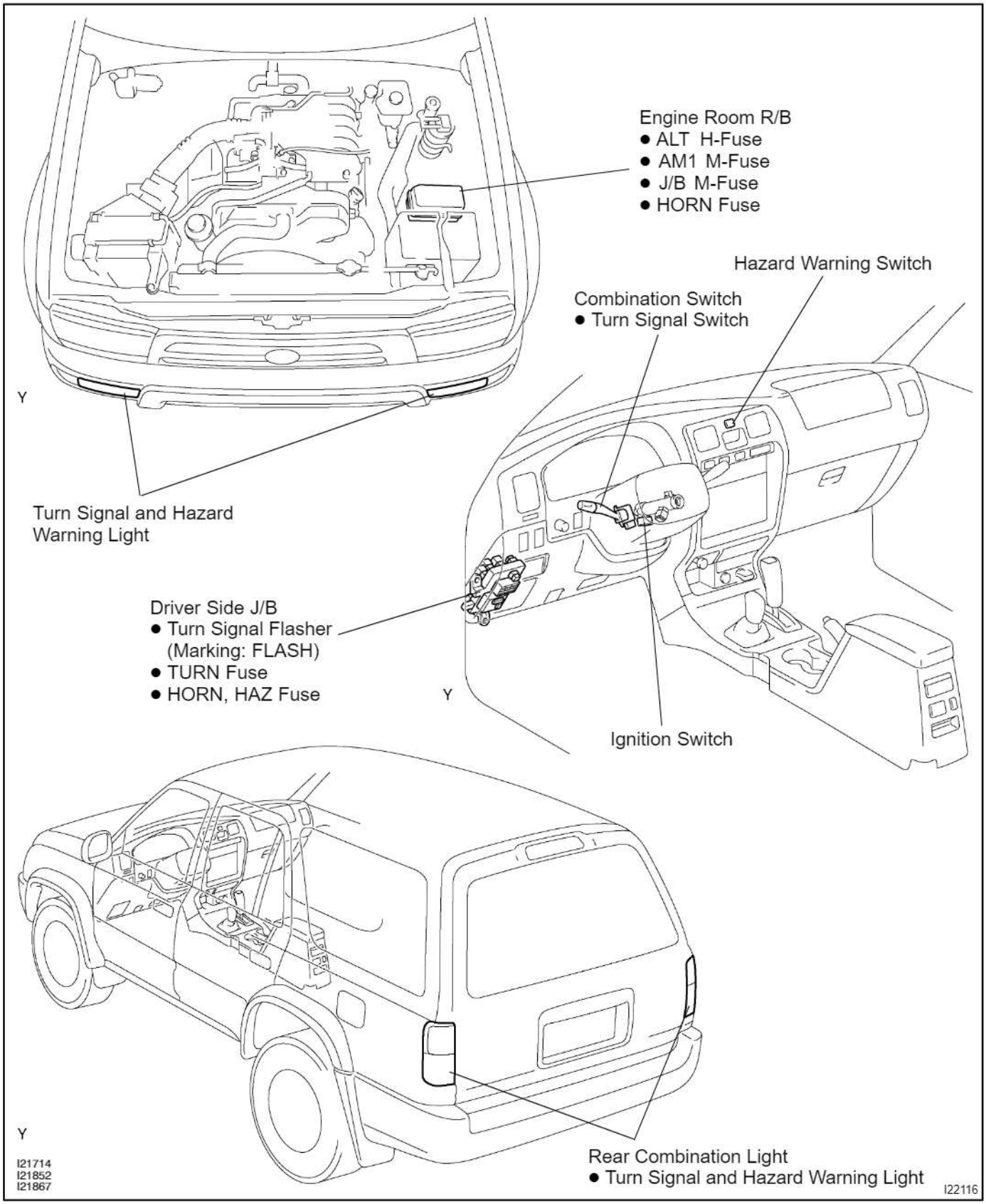
ADJUST FOG LIGHT AIM

Adjust screw: Vertical direction

TURN SIGNAL AND HAZARD WARNING SYSTEM

BE06M-03

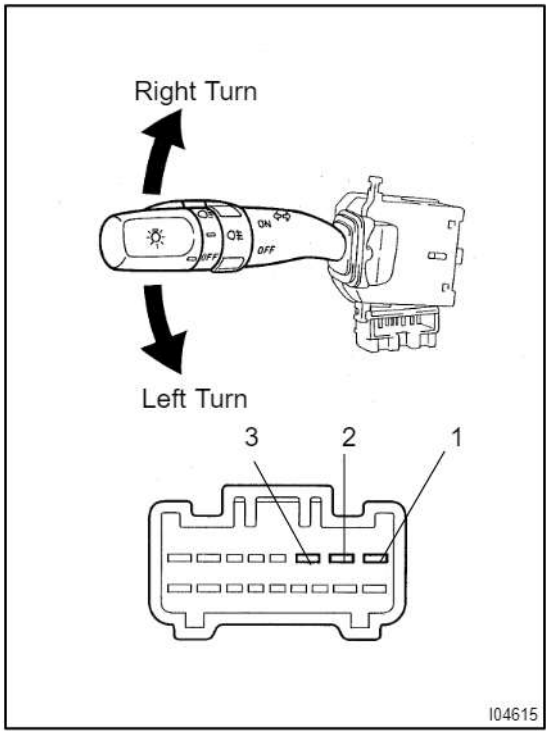
LOCATION



BE06N-03

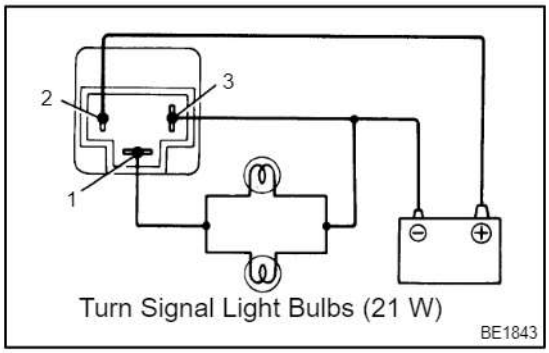
INSPECTION

1. INSPECT TURN SIGNAL SWITCH CONTINUITY



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

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



2. INSPECT TURN SIGNAL FLASHER OPERATION

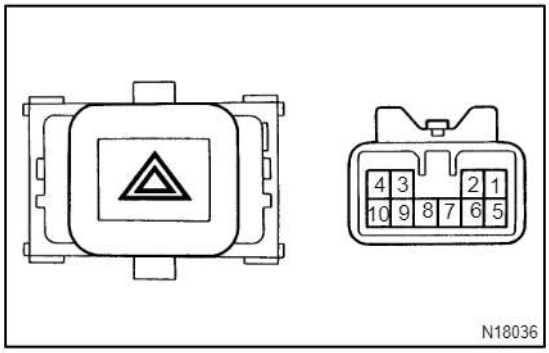
(a) Connect the positive (+) lead from the battery to terminal 2 and the negative (-) lead to terminal 3.

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

HINT:

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

If the operation is not as specified, replace the flasher.



3. INSPECT HAZARD WARNING SWITCH CONTINUITY

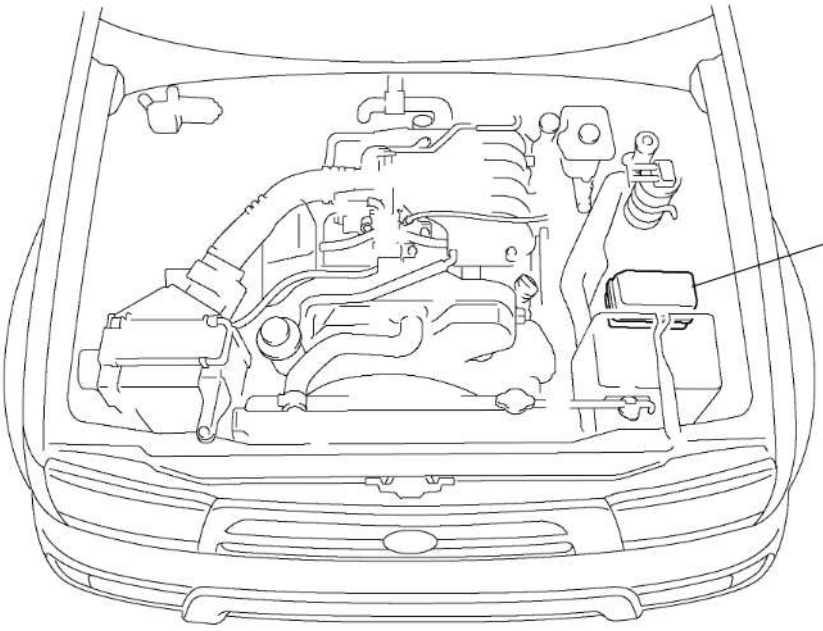
Tester connection	Switch position	Specified condition
5 - 7	Switch OFF	Continuity
1 - 2 - 4	Switch ON	Continuity
5 - 6		
8 - 9	Illumination circuit	Continuity

If continuity is not as specified, replace the switch.

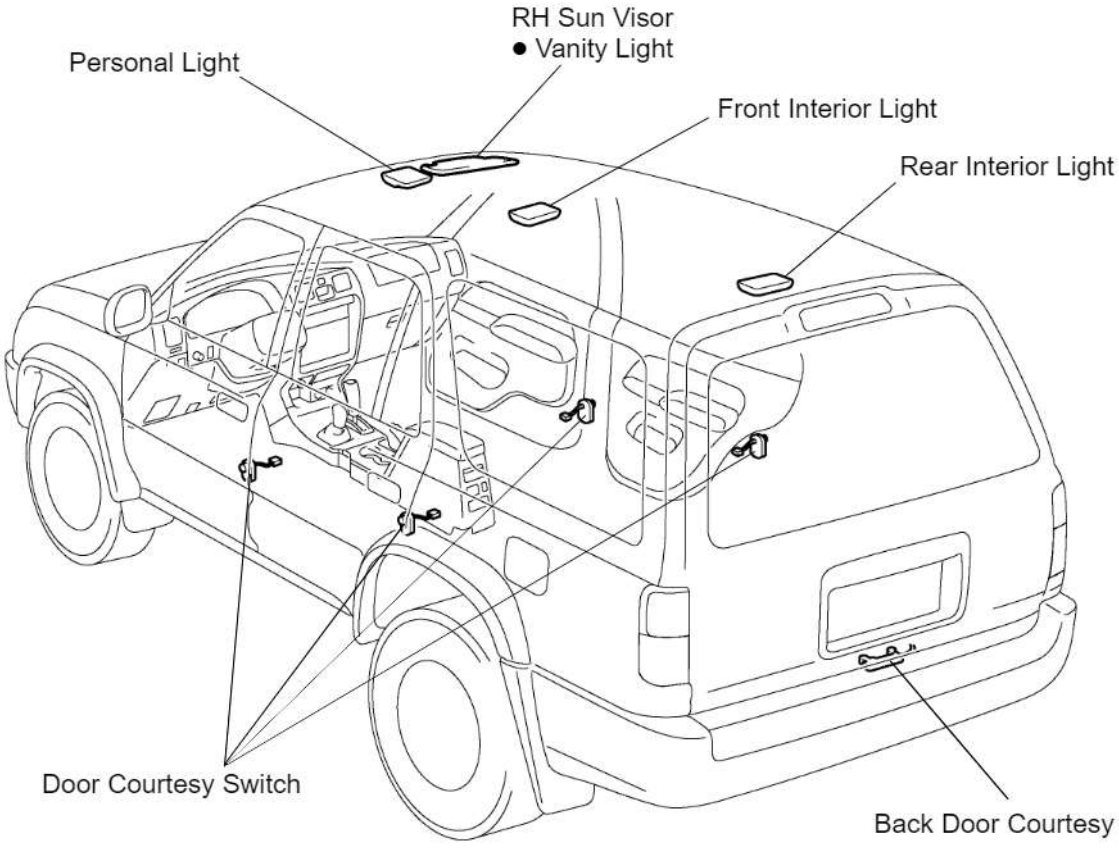
INTERIOR LIGHT SYSTEM

BE06O-03

LOCATION



Y



Y

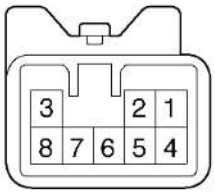
I21708
I21868

I22017

BE23X-01

INSPECTION

w/ Sliding Roof



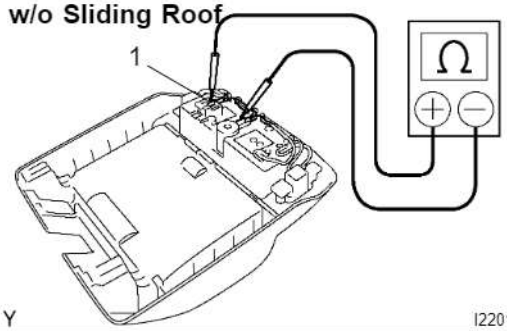
Y I22012

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

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

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

w/o Sliding Roof

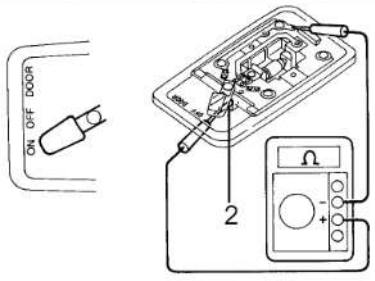


Y I22010

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

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

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

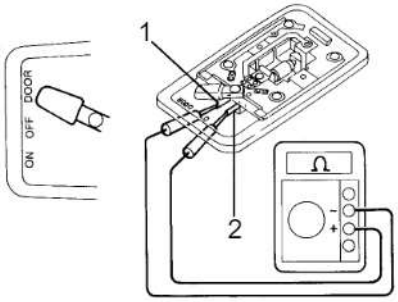


N08313

3. INSPECT FRONT INTERIOR LIGHT SWITCH

(a) Disconnect the connector from the interior light assembly.

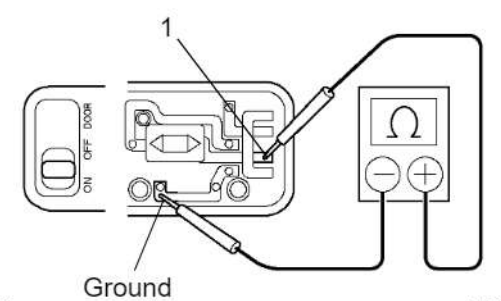
(b) Turn the interior light to switch ON, then check that continuity exists between terminal 2 and the body ground.



N08314

(c) Turn the interior light switch to DOOR, then check that continuity exists between terminal 1 and 2.

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

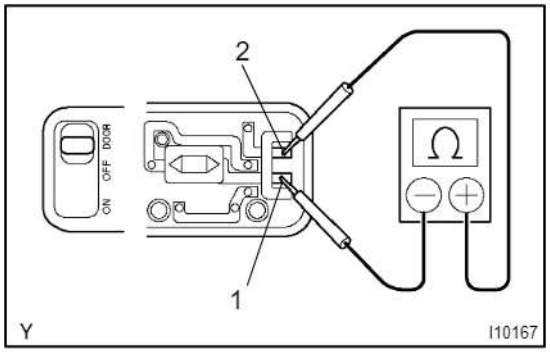


Y I10166

4. INSPECT REAR INTERIOR LIGHT SWITCH

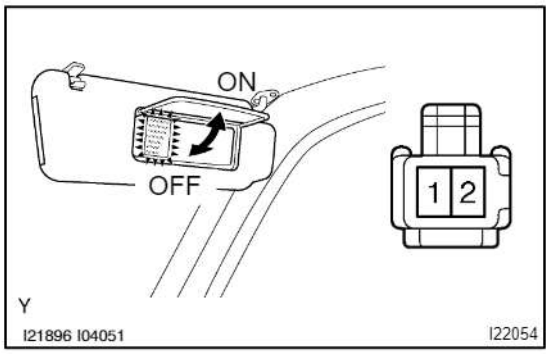
(a) Disconnect the connector from the interior light assembly.

(b) Turn the interior light switch to ON, then check that continuity exists between terminal 1 and the body ground.



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

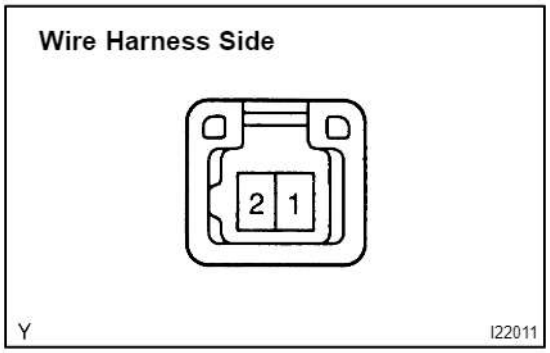
If the operation is not as specified, replace the switch.



5. INSPECT VANITY LIGHT CONTINUITY

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

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

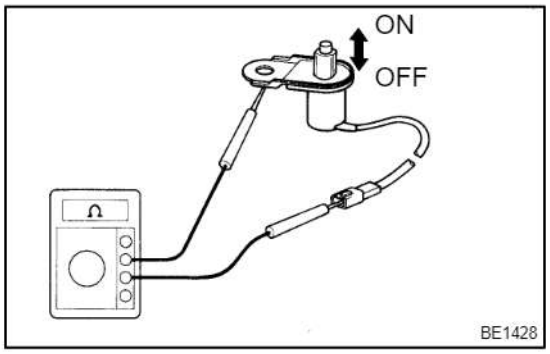


6. INSPECT VANITY LIGHT CIRCUIT

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

Tester connection	Switch position	Specified condition
1 - Ground	Constant	Continuity
2 - Ground	Constant	Battery Positive Voltage

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

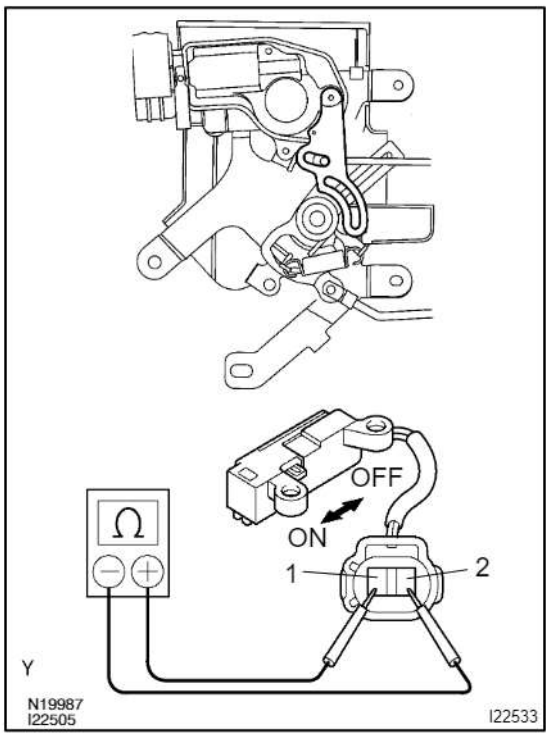


7. INSPECT DOOR COURTESY SWITCH CONTINUITY

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

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

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



8. INSPECT BACK DOOR COURTESY SWITCH CONTINUITY

(a) Check that continuity exists between terminal 1 and 2 with the switch ON (switch pin pushed in).

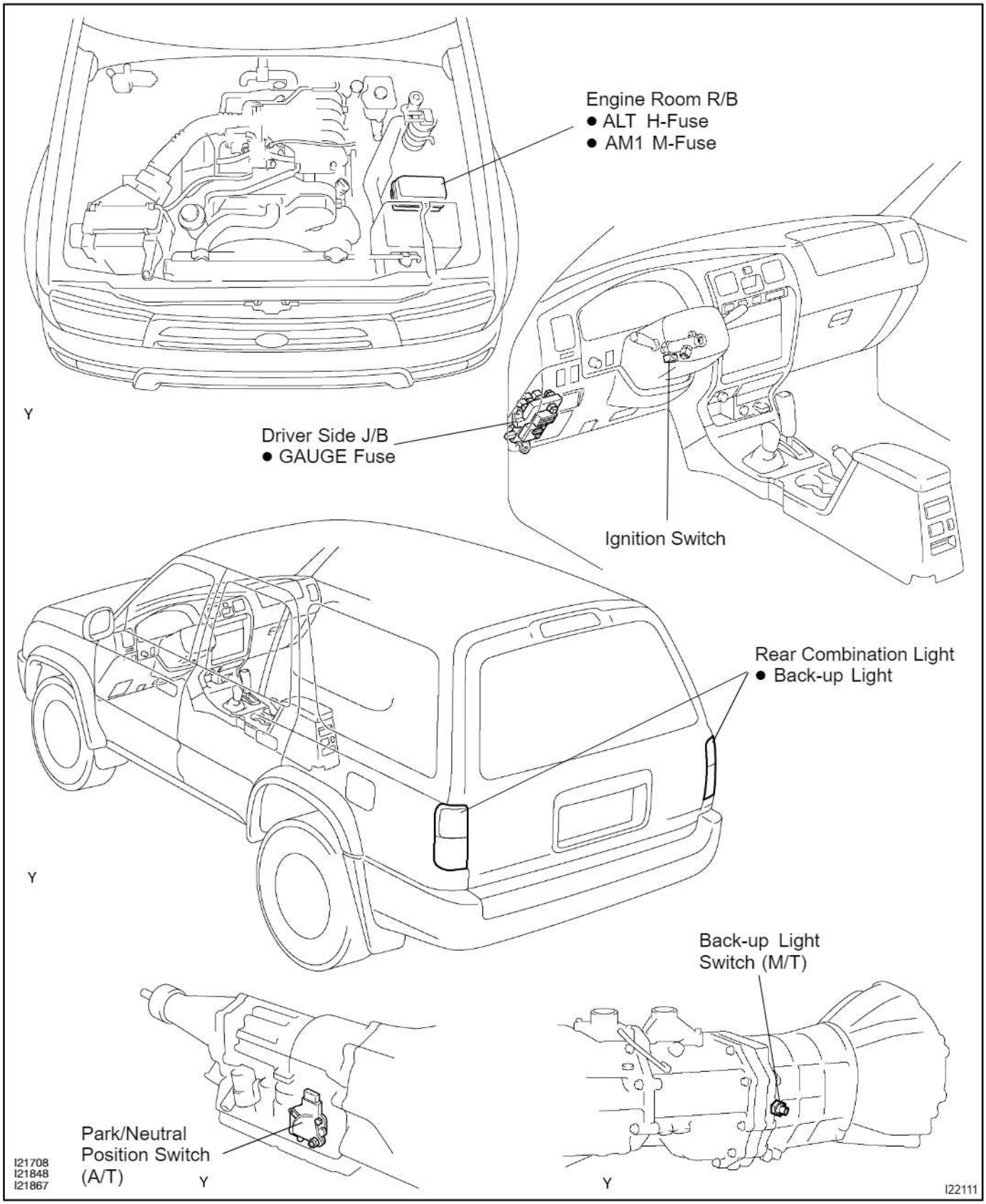
(b) Check that no continuity exists between terminal 1 and 2 with the switch OFF (switch pin pushed in).

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

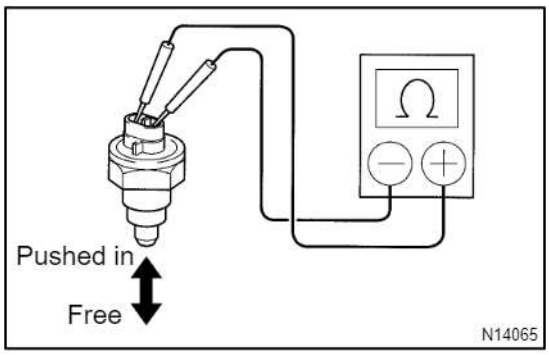
BACK-UP LIGHT SYSTEM

LOCATION

BE06Q-03



BE06R-03



INSPECTION

1. **M/T:**
   INSPECT BACK-UP LIGHT SWITCH CONTINUITY

Tester connection	Condition	Specified condition
1 - 2	Free	No continuity
	Pushed in	Continuity

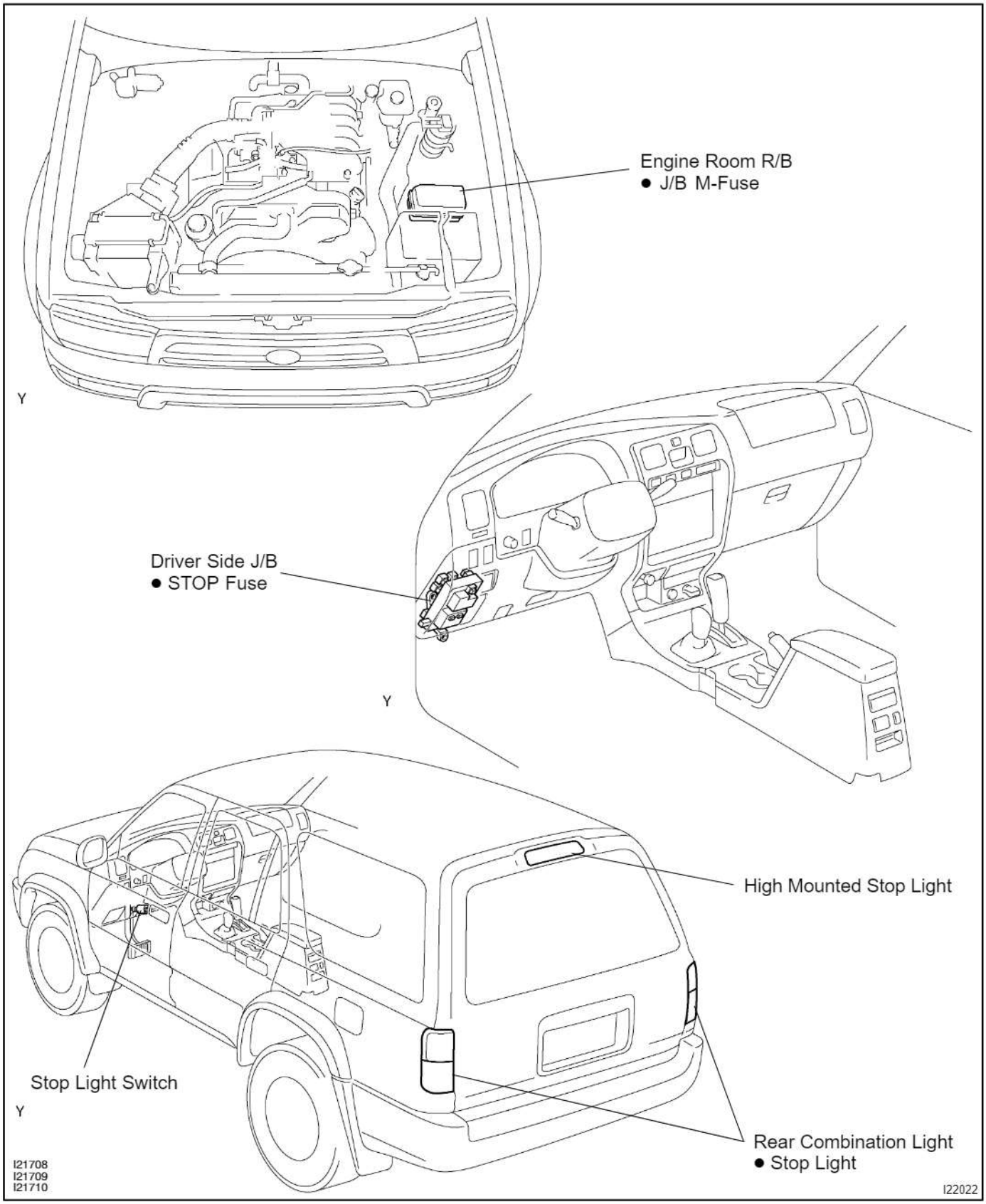
If the continuity is not as specified, replace the switch.

2. **A/T:**
   INSPECT PARK/NEUTRAL POSITION SWITCH (See page DI-203)

STOP LIGHT SYSTEM

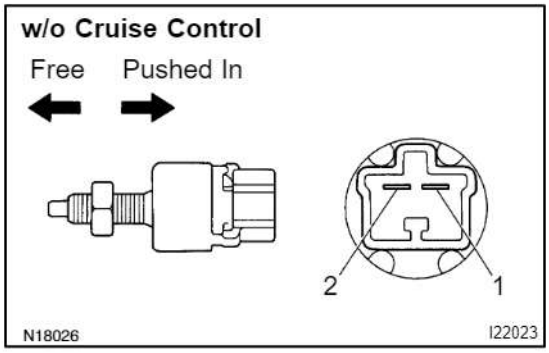
LOCATION

BE06S-03



BE23Y-01

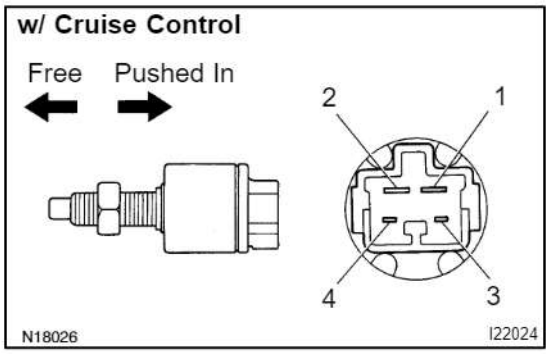
INSPECTION



1. w/o Cruise Control: INSPECT STOP LIGHT SWITCH CONTINUITY

Tester connection	Switch position	Specified condition
1 - 2	Switch pin free	Continuity
	Switch pin pushed in	No continuity

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



2. w/ Cruise Control: INSPECT STOP LIGHT SWITCH CONTINUITY

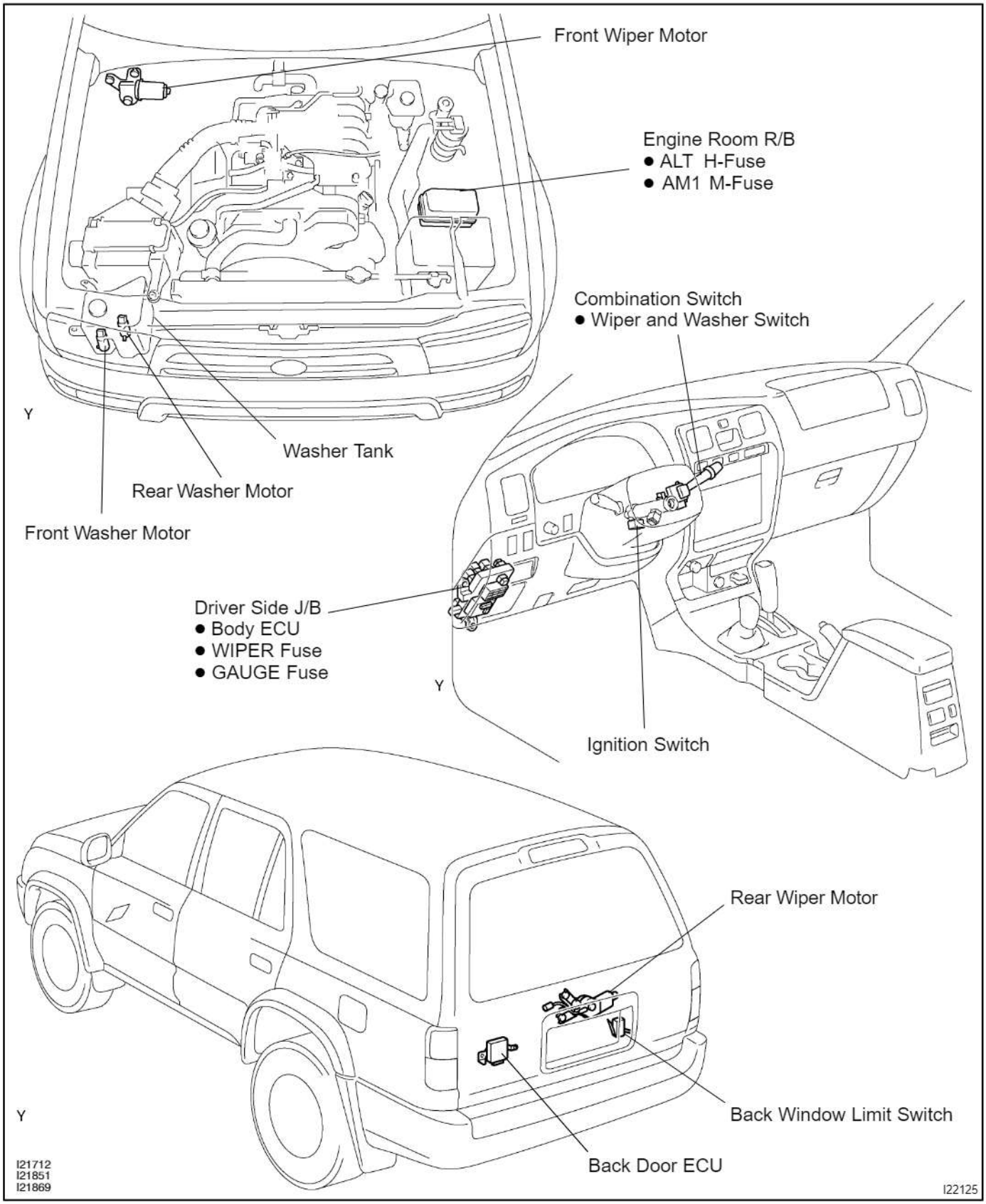
Tester connection	Switch position	Specified condition
1 - 2	Switch pin free	Continuity
	Switch pin pushed in	No continuity
3 - 4	Switch pin free	No continuity
	Switch pin pushed in	Continuity

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

WIPER AND WASHER SYSTEM

LOCATION

BE06U-03



BE23Z-01

INSPECTION

1. INSPECT FRONT WIPER AND WASHER SWITCH CONTINUITY

w/ Mist:

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

w/ Intermittent:

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

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

2. INSPECT INTERMITTENT OPERATION

(a) Turn the wiper switch to INT position.

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

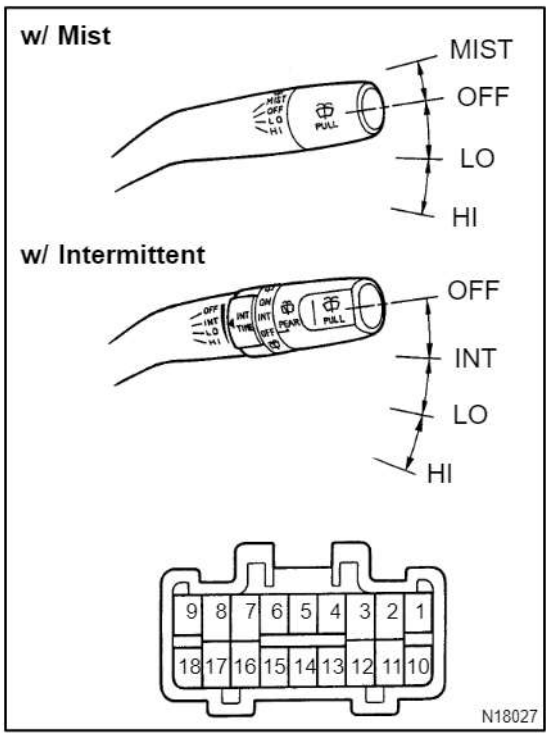
(c) Connect the positive (+) lead from the battery to terminal 16 and the negative (-) lead to terminal 2.

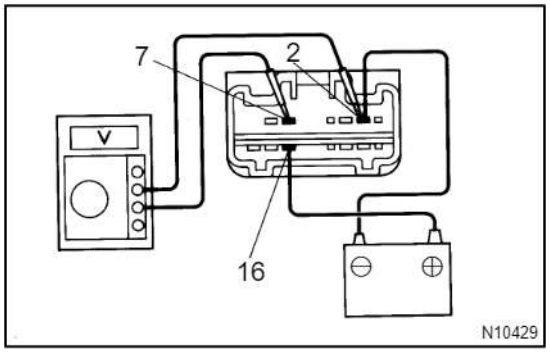
(d) Connect the positive (+) lead from the voltmeter to terminal 7 and the negative (-) lead to terminal 2, then check that the meter needle indicates battery positive voltage.

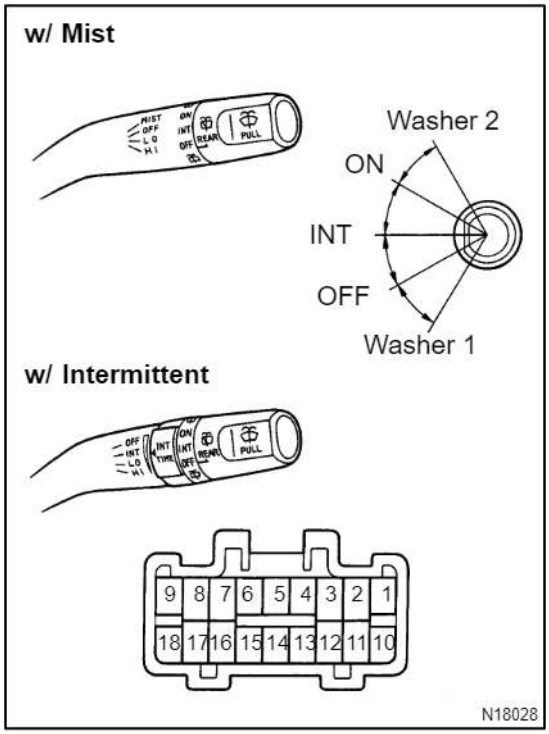
INT time control switch position	Voltage
FAST	Approx. 1 - 3 sec. Battery positive voltage 0 volt
SLOW	Approx. 10 - 15 sec. Battery positive voltage 0 volt

V03883

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



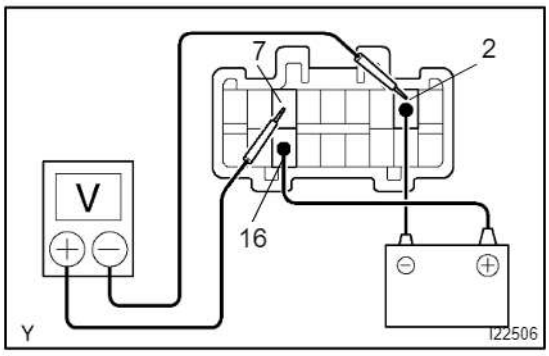




3. INSPECT REAR WIPER AND WASHER SWITCH CONTINUITY

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

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

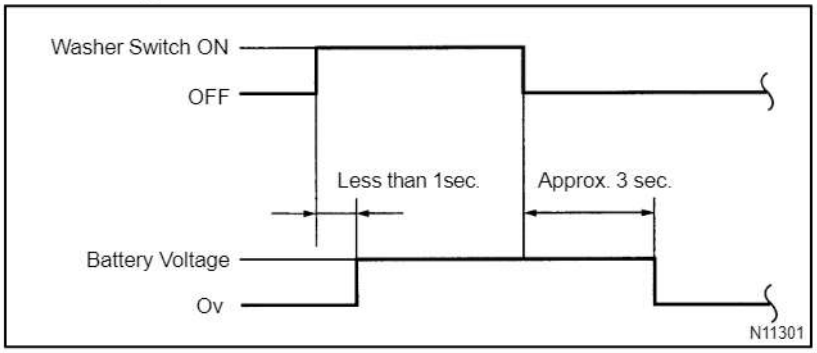


4. INSPECT WASHER LINKED OPERATION

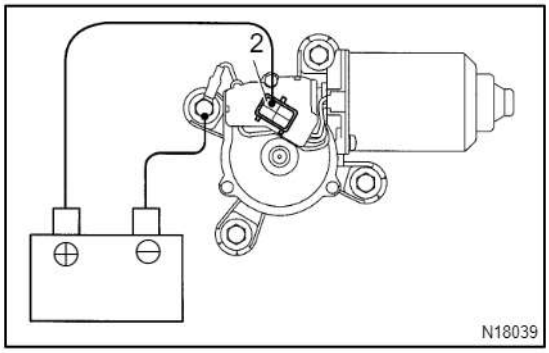
(a) Connect the positive (+) lead from the battery to terminal 16, and the negative (-) lead to terminal 2.

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

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



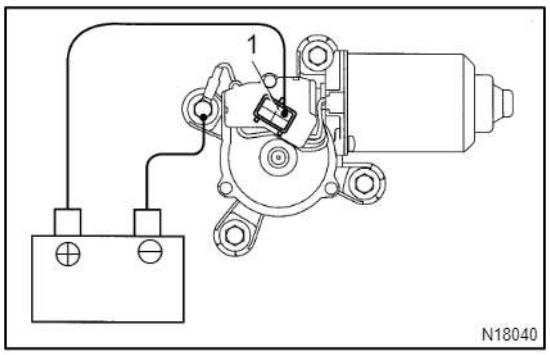
If the operation is not as specified, replace the wiper and washer switch.



5. Low Speed: INSPECT FRONT WIPER MOTOR OPERATION

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

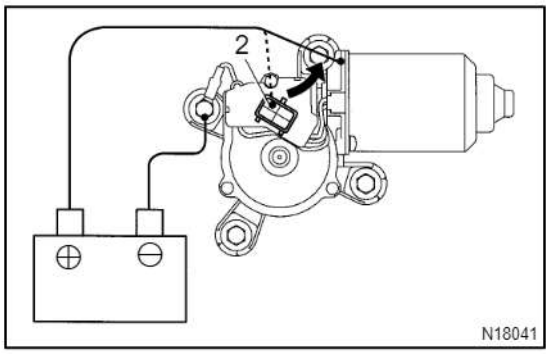
If the operation is not as specified, replace the motor.



6. High Speed:
INSPECT FRONT WIPER MOTOR OPERATION

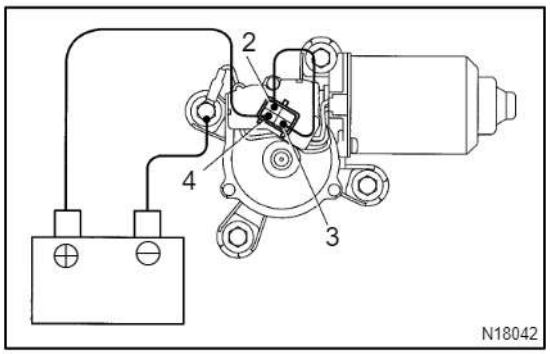
Connect the positive (+) lead from the battery to terminal 1 and the negative (-) lead from the battery to the motor body, and check that the motor operates at high speed.

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



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

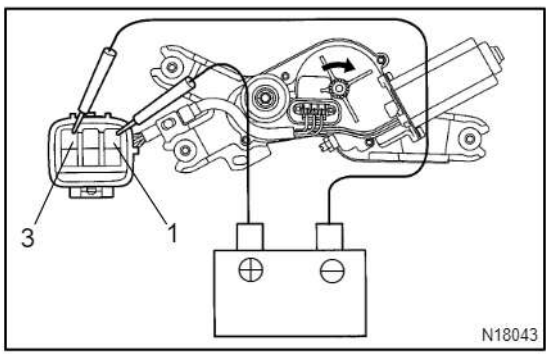
(a) Operate the motor at low speed and stop the motor operation anywhere except at the stop position by disconnecting the positive (+) lead from terminal 2.



(b) Connect terminals 2 and 3.

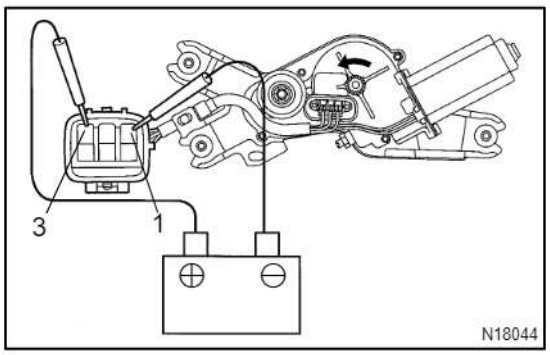
(c) Connect the positive (+) lead from the battery to terminal 4 and the negative (-) lead from the battery to the motor body, and check that the motor stops running at the stop position after the motor has operated again.

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



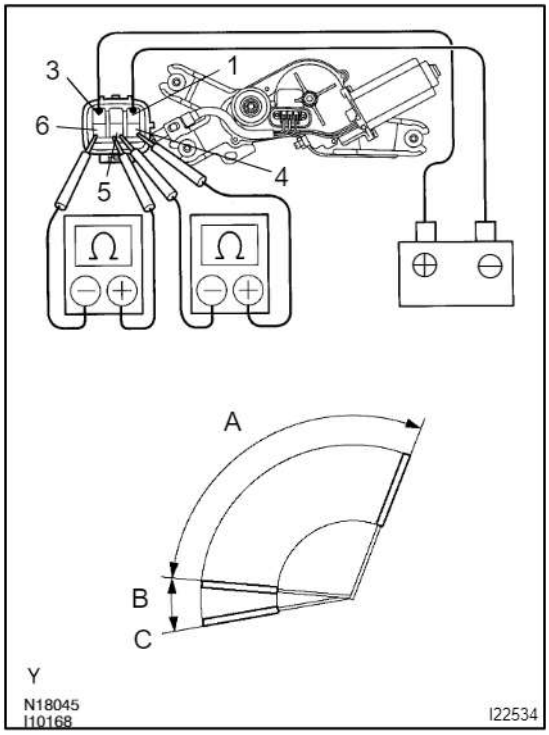
8. INSPECT REAR WIPER MOTOR OPERATION

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



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

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

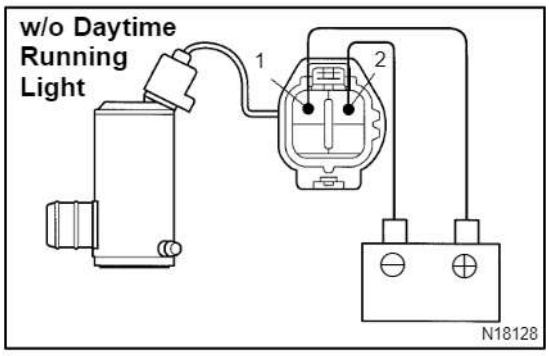


9. INSPECT REAR WIPER MOTOR CONTINUITY

Connect the positive (+) lead from the battery to terminal 3, and the negative (-) lead to terminal 1, then inspect the continuity between terminals.

Tester connection	Motor link position	Specified condition
4 - 5 - 6	A	Continuity
5 - 6	B	Continuity
-	C	No continuity

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

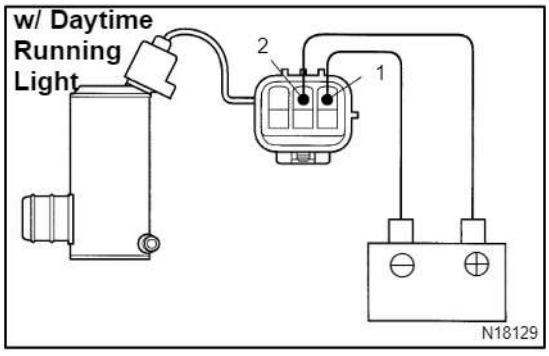


10. w/o Daytime Running Light: INSPECT FRONT WASHER MOTOR OPERATION

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

NOTICE:

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

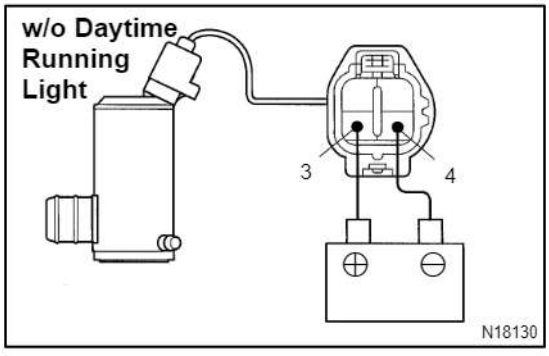


11. w/ Daytime Running Light: INSPECT FRONT WASHER MOTOR OPERATION

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

NOTICE:

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

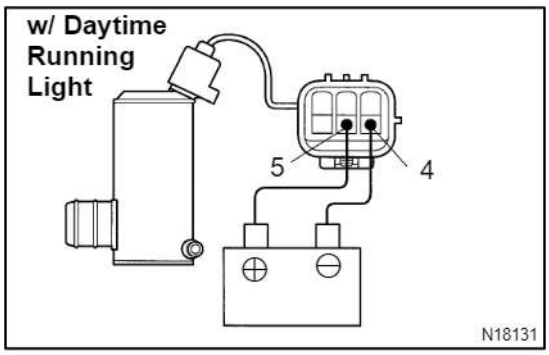


12. w/o Daytime Running Light: INSPECT REAR WASHER MOTOR OPERATION

Connect the positive (+) lead from the battery to terminal 3, and the negative (-) lead to terminal 4, then check that the motor operates.

NOTICE:

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



13. w/ Daytime Running Light:
INSPECT REAR WASHER MOTOR OPERATION

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

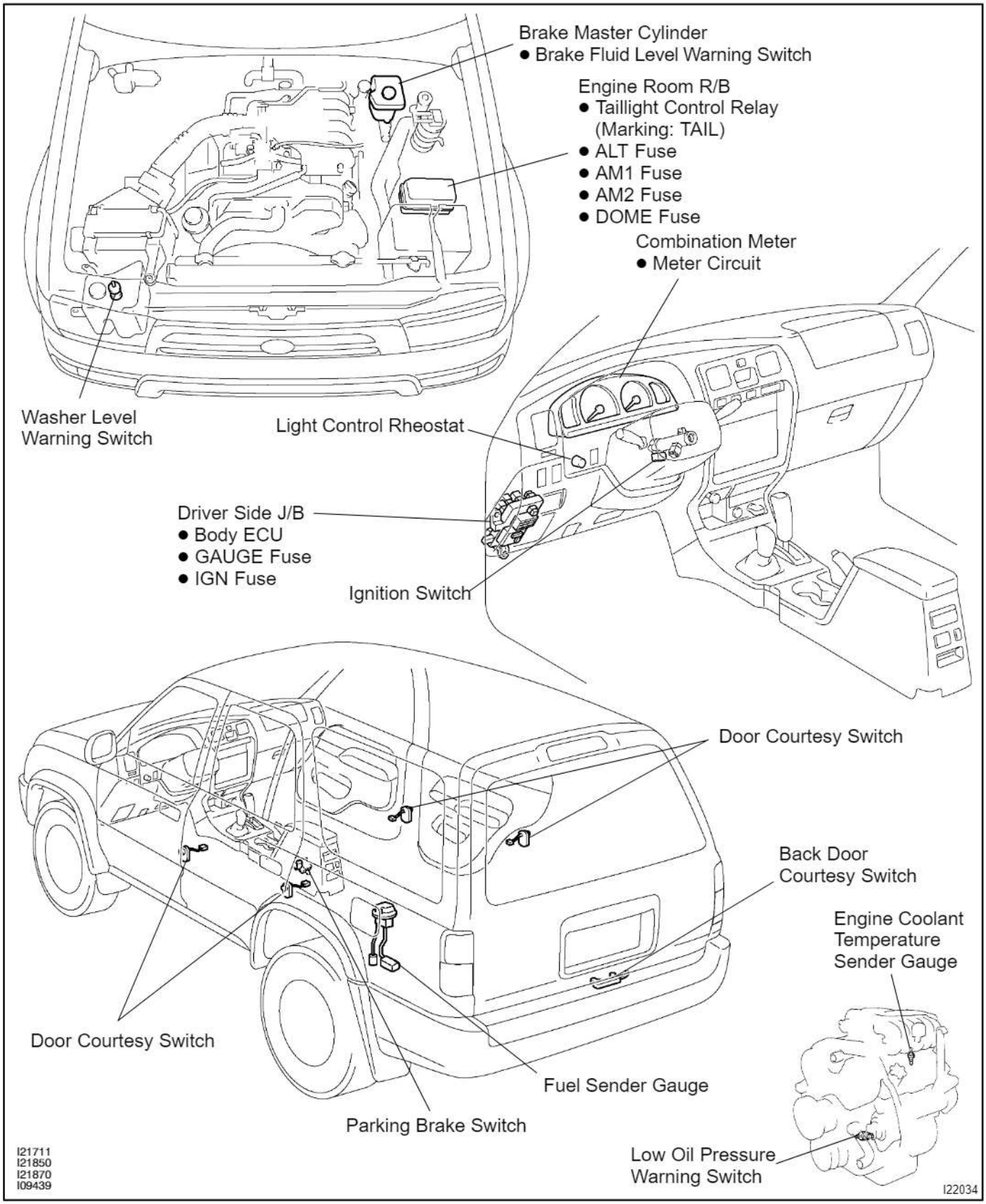
NOTICE:

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

COMBINATION METER

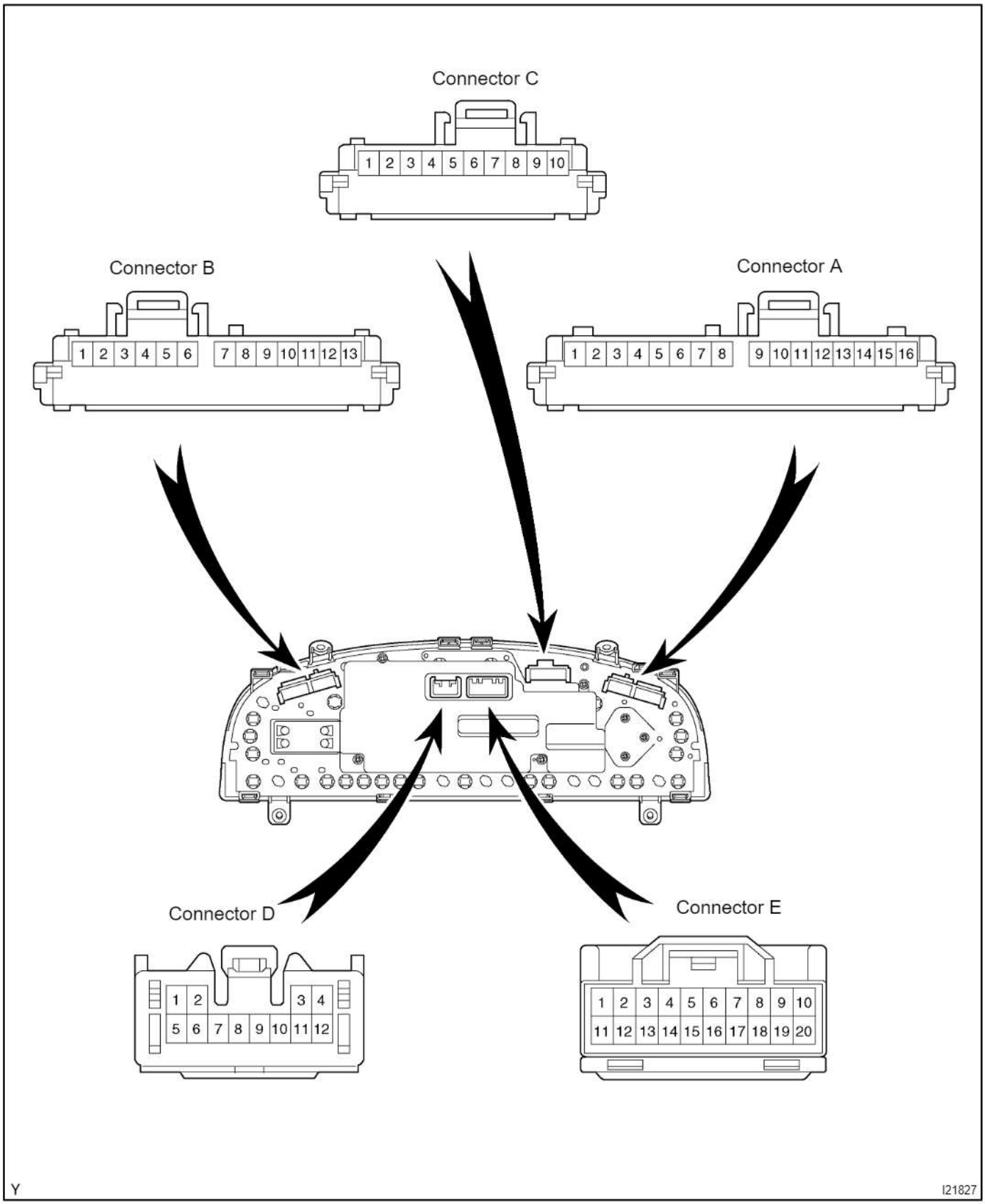
LOCATION

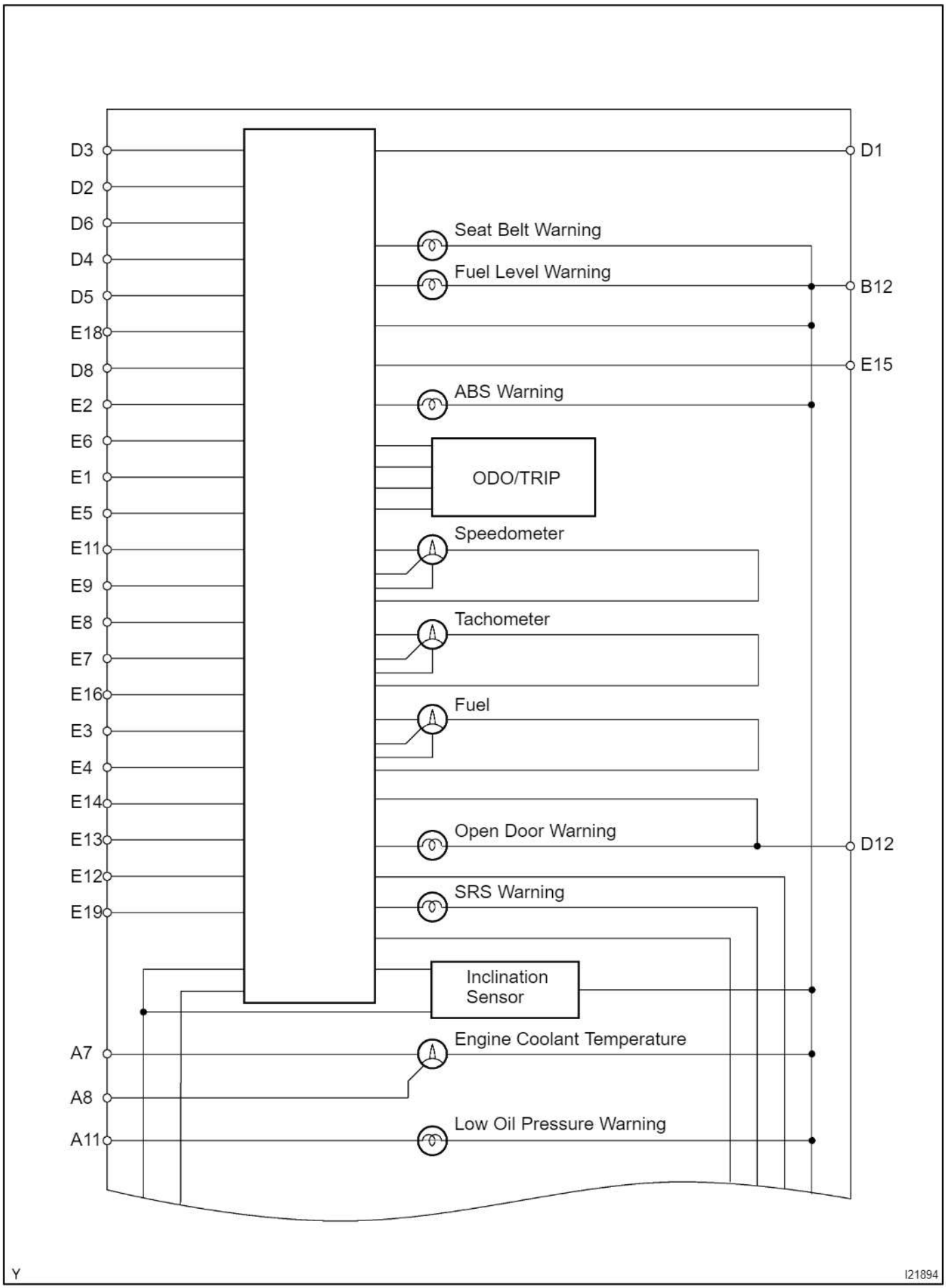
BE06W-03

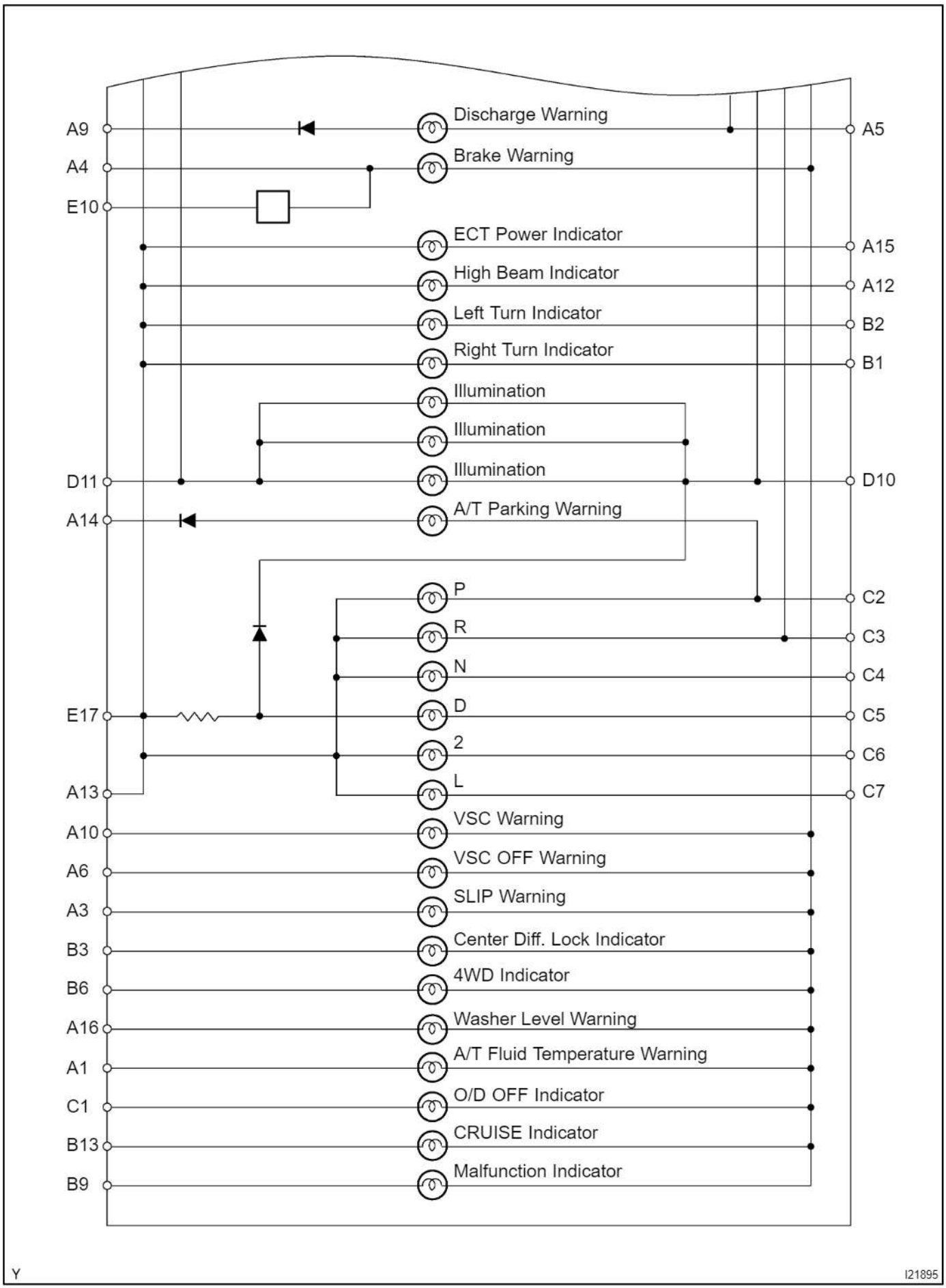


BE11J-02

CIRCUIT




D3
D2
D6
D4
D5
E18
D8
E2
E6
E1
E5
E11
E9
E8
E7
E16
E3
E4
E14
E13
E12
E19
A7
A8
A11
D1
B12
E15
D12
Seat Belt Warning
Fuel Level Warning
ABS Warning
ODO/TRIP
Speedometer
Tachometer
Fuel
Open Door Warning
SRS Warning
Inclination Sensor
Engine Coolant Temperature
Low Oil Pressure Warning
Y
I21894


A9
A4
E10
D11
A14
E17
A13
A10
A6
A3
B3
B6
A16
A1
C1
B13
B9
Discharge Warning
Brake Warning
ECT Power Indicator
High Beam Indicator
Left Turn Indicator
Right Turn Indicator
Illumination
Illumination
Illumination
A/T Parking Warning
P
R
N
D
2
L
VSC Warning
VSC OFF Warning
SLIP Warning
Center Diff. Lock Indicator
4WD Indicator
Washer Level Warning
A/T Fluid Temperature Warning
O/D OFF Indicator
CRUISE Indicator
Malfunction Indicator
A5
A15
A12
B2
B1
D10
C2
C3
C4
C5
C6
C7
Y
I21895

No.		Wire Hareness Side
A	1	ECM
	2	-
	3	VSC ECU
	4	Brake Fluid Level Warning Switch
	5	IGN Fuse
	6	VSC ECU
	7	Ground
	8	Engine Coolant Temperature Sender Gauge
	9	Generator
	10	VSC ECU
	11	Low Oil Pressure Switch
	12	Headlight Daytime Running Light Relay (Main)
	13	A/C Amplifier
	14	Park/Neutral Position Switch
	15	ECT Pattern Select Switch
	16	Washer Level Warning Switch
B	1	Turn Signal Switch Hazard Switch
	2	Turn Signal Switch Hazard Switch
	3	4WD ECU
	4	-
	5	-
	6	4WD ECU
	7	-
	8	-
	9	ECM
	10	-
	11	-
	12	GAUGE Fuse
	13	ECM
C	1	ECM
	2	Park/Neutral Position Switch
	3	Park/Neutral Position Switch
	4	Park/Neutral Position Switch
	5	Park/Neutral Position Switch
	6	Park/Neutral Position Switch
	7	Park/Neutral Position Switch
	8	-
	9	-
	10	-

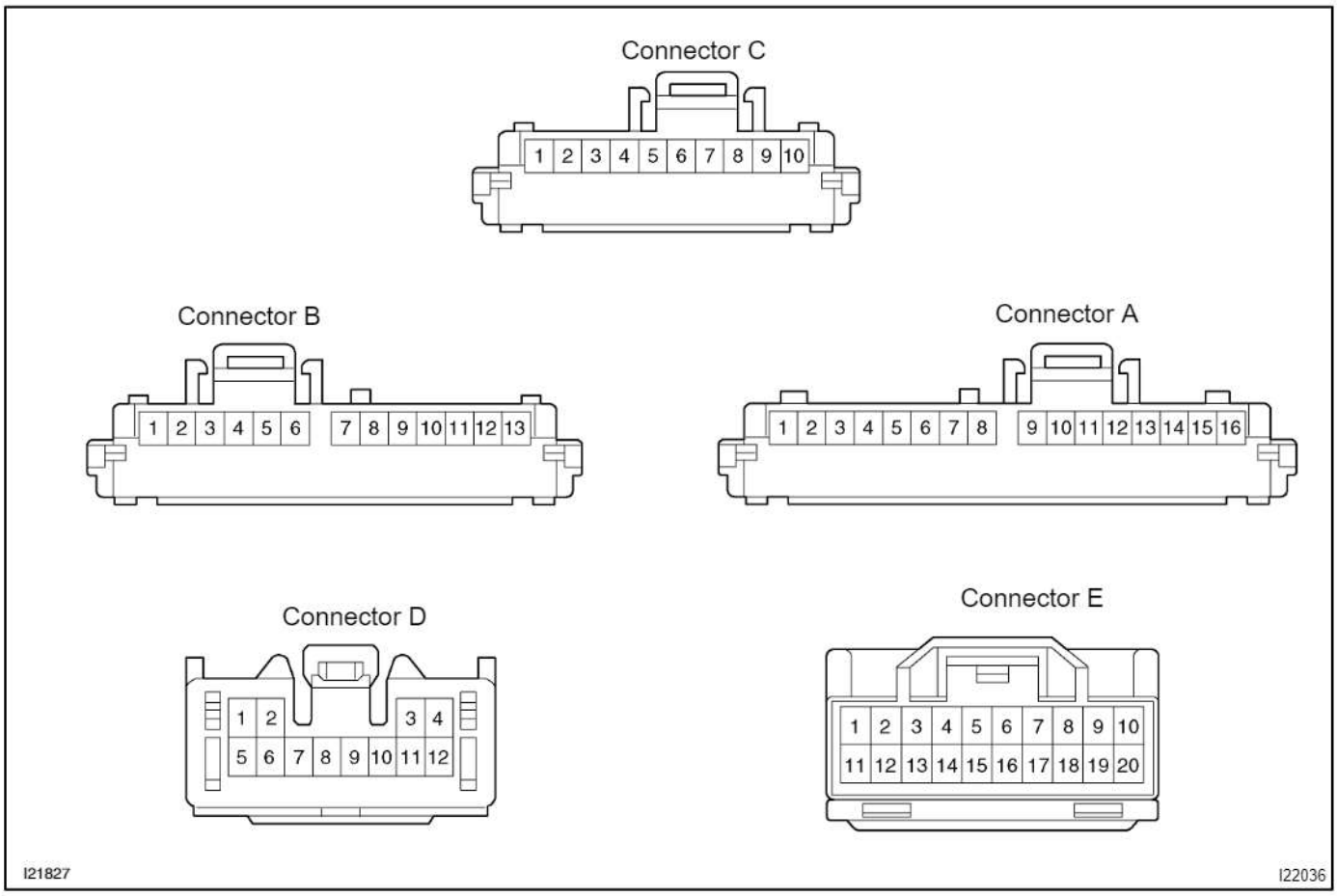
D	1	VSC ECU
	2	Igniter
	3	ECM A/C Amplifier 4WD ECU
	4	Fuel Sender Gauge
	5	Fuel Sender Gauge
	6	Fuel Sender Gauge
	7	-
	8	Airbag Sensor Assembly
	9	-
	10	TAIL Fuse
	11	Light Control Rheostat
	12	DOME Fuse
E	1	Light Control Switch
	2	Light Control Switch
	3	Driver's Seat Belt Buckle Switch
	4	Passenger's Seat Belt Buckle Switch
	5	HEAD Relay Diode (Daytime Running Light No. 1)
	6	TAIL Relay
	7	Rear Door Courtesy Switch
	8	Passenger's Door Courtesy Switch
	9	Driver's Door Courtesy Switch
	10	VSC ECU
	11	Body ECU
	12	Rear Interior light
	13	Front Interior light
	14	Passenger's Seat Belt Warning Light
	15	Ignition Key Illumination Light
	16	Key Unlock Warning Switch
	17	Ground
	18	VSC ECU
	19	Ground
	20	-

BE240-01

INSPECTION

1. INSPECT COMBINATION METER CIRCUIT

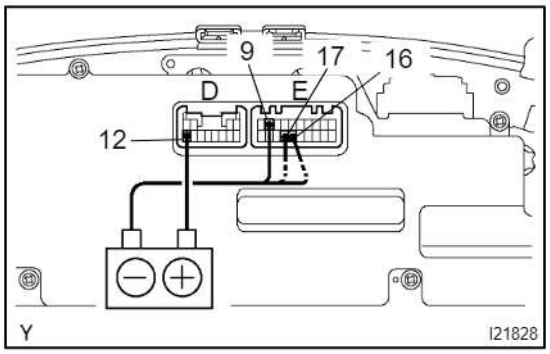
Disconnect the 5 connectors from the combination meter.



Tester connection	Condition	Specified
A4 - Body ground	Brake fluid level warning switch ON	Continuity
	Brake fluid level warning switch OFF	No continuity
A5 - Body ground	Ignition switch OFF or ACC	No voltage
	Ignition switch ON	Battery positive voltage
A7 - Body ground	Constant	Continuity
A8 - Body ground	When ignition switch ON and engine coolant temperature is 50°C (122°F)	234 - 314 Ω
A9 - Body ground	Ignition switch ON Engine is operation	No continuity
	Ignition switch ON Engine is stopped	Continuity
A10 - Body ground	For 3 sec., after ignition switch has been turned ON	Continuity
A11 - Body ground	Ignition switch ON Engine in operation	No continuity
	Ignition switch ON Engine stopped	Continuity
A12 - Body ground	Ignition switch ON Headlight dimmer switch low beam	No voltage
	Ignition switch ON Headlight dimmer switch High beam or flash	Battery positive voltage
A14 - Body ground	Transfer shift lever except N position	No continuity
	Transfer shift lever N position	Continuity

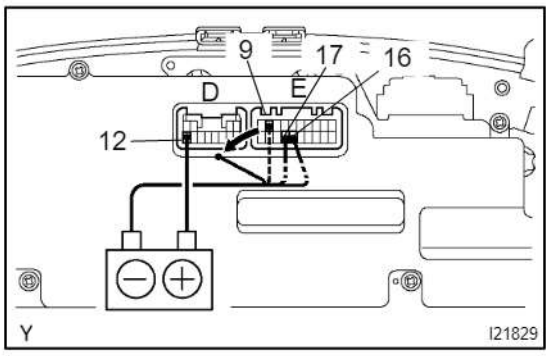
A15 - Body ground	Pattern select switch OFF	No voltage
	Pattern select switch ON	Battery positive voltage
A16 - Body ground	Washer fluid level warning switch OFF	No continuity
	Washer fluid level warning switch ON	Continuity
B1 - Body ground	Ignition switch ON Turn signal switch OFF or right	No voltage ↔ Battery positive voltage
	Ignition switch ON Turn signal switch left	No voltage
B2 - Body ground	Ignition switch ON Turn signal switch OFF or left	No voltage ↔ Battery positive voltage
	Ignition switch ON Turn signal switch right	No voltage
B3 - Body ground	Ignition switch ON Transfer shift position except L4L or H4L	No continuity
	Ignition switch ON Transfer shift position L4L or H4L	Continuity
B12 - Body ground	Ignition switch OFF or ACC	No voltage
	Ignition switch ON	Battery positive voltage
C1 - Body ground	O/D Main switch ON	No continuity
	O/D Main switch OFF	Continuity
C2 - Body ground	A/T shift lever except P position	No voltage
	A/T shift lever P position	Battery positive voltage
C3 - Body ground	A/T shift lever except R position	No voltage
	A/T shift lever R position	Battery positive voltage
C4 - Body ground	A/T shift lever except N position	No voltage
	A/T shift lever N position	Battery positive voltage
C5 - Body ground	A/T shift lever except D position	No voltage
	A/T shift lever D position	Battery positive voltage
C6 - Body ground	A/T shift lever except 2 position	No voltage
	A/T shift lever 2 position	Battery positive voltage
C7 - Body ground	A/T shift lever except L position	No voltage
	A/T shift lever L position	Battery positive voltage
D10 - Body ground	Headlight control switch OFF	No voltage
	Headlight control switch TAIL or HEAD	Battery positive voltage
D11 - Body ground	Constant	Continuity
D12 - Body ground	Constant	Battery positive voltage
E1 - Body ground	Headlight control switch OFF or TAIL	No continuity
	Headlight control switch HEAD	Continuity
E2 - Body ground	Headlight control switch OFF	No continuity
	Headlight control switch TAIL or HEAD	Continuity
E3 - Body ground	Driver's seat belt buckle switch OFF	No continuity
	Driver's seat belt buckle switch ON	Continuity
E4 - Body ground	Passenger's seat belt buckle switch OFF	No continuity
	Passenger's seat belt buckle switch ON Belt warning occupant detection sensor ON	Continuity
E7 - Body ground	Rear door courtesy switch OFF	No continuity
	Rear door courtesy switch ON	Continuity
E8 - Body ground	Passenger's door courtesy switch OFF	No continuity
	Passenger's door courtesy switch ON	Continuity

E9 - Body ground	Driver's door courtesy switch OFF	No continuity
	Driver's door courtesy switch ON	Continuity
E11 - Body ground	Back door courtesy switch OFF	No continuity
	Back door courtesy switch ON	Continuity
E16 - Body ground	Key unlock warning switch OFF	No continuity
	Key unlock warning switch ON	Continuity
E17 - Body ground	Constant	Continuity
E19 - Body ground	Constant	Continuity

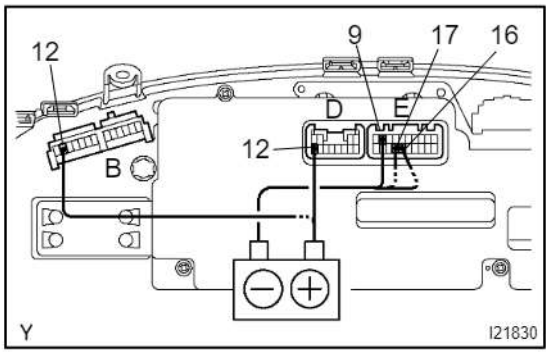


2. Key Unlock Warning System:
INSPECT COMBINATION METER OPERATION

(a) Connect the positive (+) lead from the battery to terminal 12 of connector D.
(b) Connect the negative (-) lead from the battery to terminals 9, 16 and 17 of connector E.
(c) Check the chime sounds.

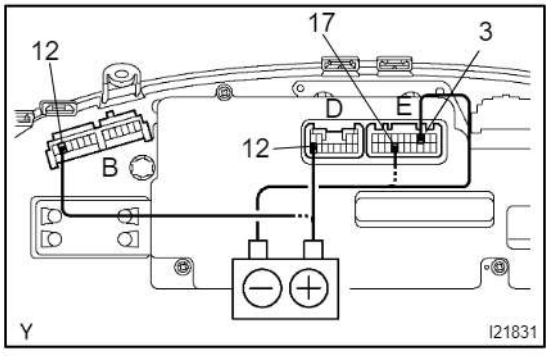


(d) Disconnect the negative (-) lead from the battery to terminal 9 of connector E.
(e) Check that the chime stops sounding.



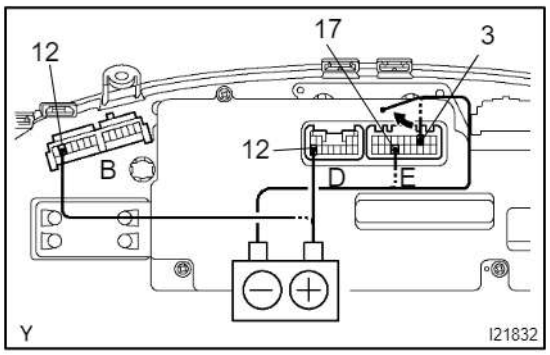
(f) Connect the negative (-) lead from the battery to terminal 9 of connector E.
(g) Connect the positive (+) lead from the battery to terminal 12 of connector B.
(h) Check that the chime stops sounding.

If the operation is not as specified, replace the combination meter.



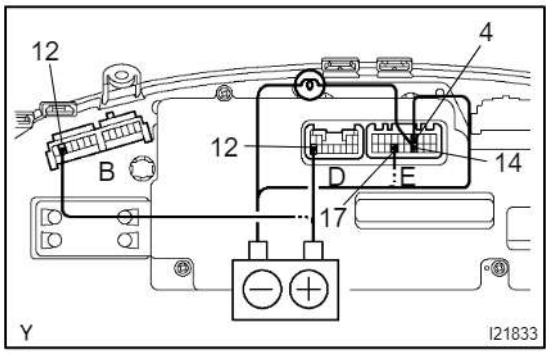
3. Driver's Seat Belt Waring System:
INSPECT COMBINATION METER OPERATION

(a) Connect the positive (+) lead from the battery to terminal 12 of connector D and terminal 12 of connector B, and negative (-) lead from the battery to terminals 17 and 3 of connector E.
(b) Check that the driver's seat belt warning light flushes and buzzer sounds for approx. 6 seconds.



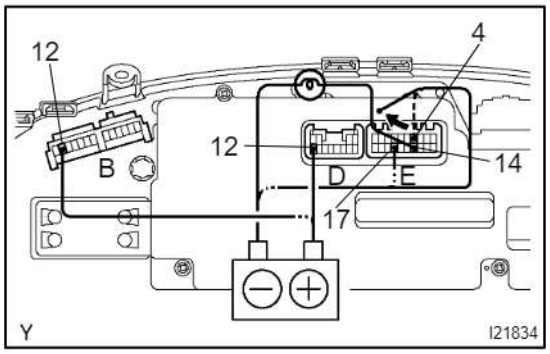
(c) Disconnect the negative (-) lead from the battery to terminal 3 of connector E and reconnect it again.
(d) Check that the buzzer sounds again.
(e) Check that the buzzer stops sounding when disconnecting the negative (-) lead from terminal 3 of connector E.

HINT:
Check the buzzer 6 seconds.
If the operation is not as specified, replace the combination meter.



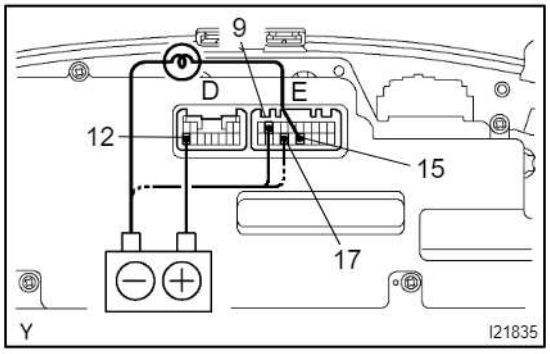
4. Passenger's Seat Belt Warning System: INSPECT COMBINATION METER OPERATION

(a) Connect the positive (+) lead from the battery to terminal 12 of connector D and terminal 12 of connector B, and negative (-) lead from the battery to terminal 17 of connector E.
(b) Connect terminal 14 of connector E to battery negative (-) terminal through a 3.4 W test bulb.
(c) Connect the negative (-) lead from battery to terminal 4 of connector E.
(d) Check that the bulb flashes.
(e) Disconnect the negative (-) lead from the battery to terminal 4 of connector E, and reconnect it again.
(f) Check that the bulb flashes again.



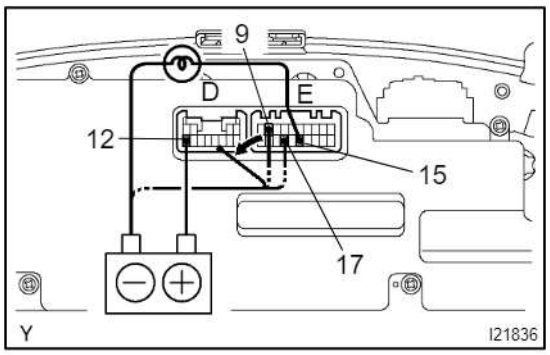
(g) Check that the bulb flashing when disconnecting terminal 4 of connector E from the negative (-) lead.

If operation is not as specified, replace the combination meter.



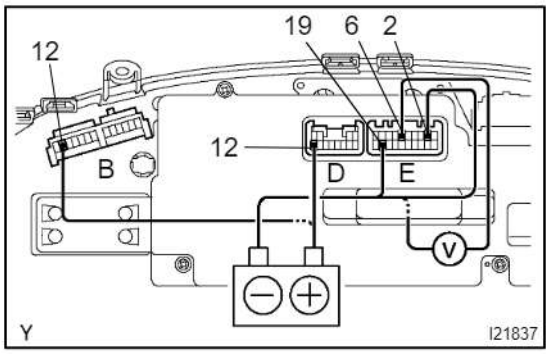
5. Key Illuminated Entry System: INSPECT COMBINATION METER OPERATION

(a) Connect the positive (+) lead from the battery to terminal 12 of connector D, and negative (-) lead from the battery to terminals 9 and 17 of connector E.
(b) Connect terminal 15 of connector E to battery negative (-) terminal through a 3.4 W test bulb.
(c) Check that the bulb lights up.



(d) Disconnect the negative (-) lead from the battery to terminal 9 of connector E.

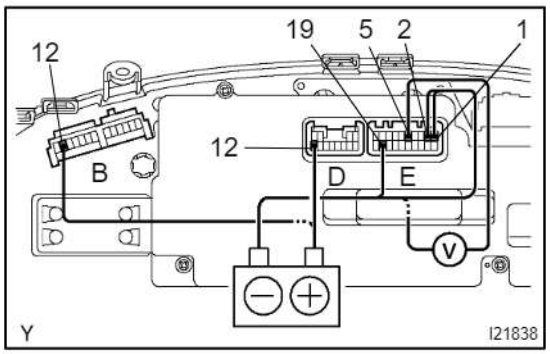
(e) After approx. 5 seconds, check that the bulb turns off.



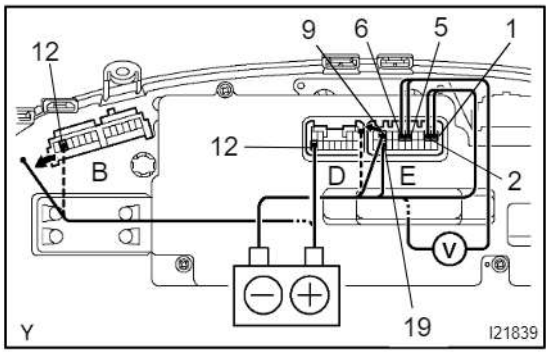
6. Light Auto Turn OFF System:
INSPECT COMBINATION METER OPERATION

(a) Connect the positive (+) lead from the battery to terminal 12 of connector B and terminal 12 of connector D, and negative (-) lead from the battery to terminal 19 of connector E.

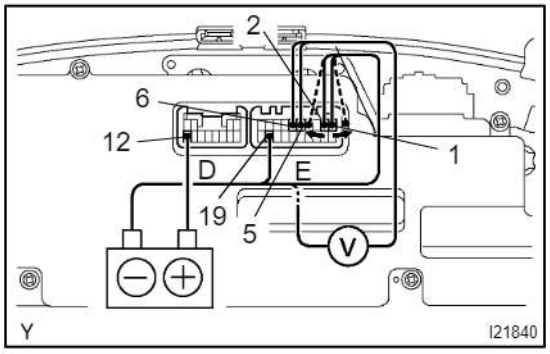
(b) Check that the voltage of terminal 6 of connector E is the battery positive voltage after the positive (+) lead from the battery has been connected to terminal 2 of connector E.



(c) Check that the voltage of terminal 5 of connector E is the battery positive voltage after the positive (+) lead from the battery has been connected to terminal 1 of connector E.



(d) Check that the voltage of terminals 5 and 6 of the connector E is 0 V after terminal 12 of connector B has been disconnected, and the positive (+) lead from the battery has been connected to terminal 9 of connector E.



(e) Check that the voltage of terminals 5 and 6 of the connector E is battery positive voltage after terminals 1 and 2 of connector E have been disconnected and reconnected.

7. INSPECT SPEEDOMETER ON-VEHICLE

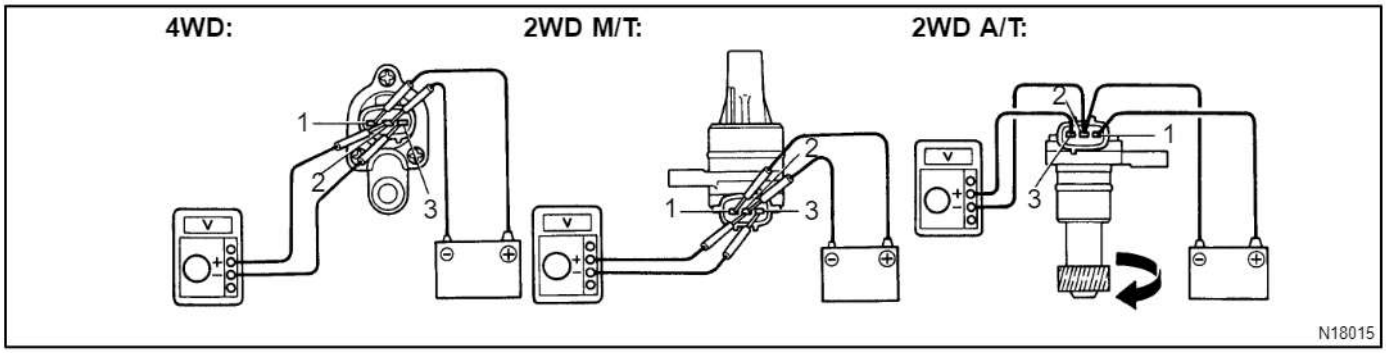
Using a speedometer tester, inspect the speedometer for allowable indication error and check the operation of the odometer.
HINT:
Tire wear and tire over or under inflation will increase the indication error.
If error is excessive, replace the speedometer.

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

8. INSPECT VEHICLE SPEED SENSOR OPERATION

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

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



9. INSPECT TACHOMETER ON-VEHICLE

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

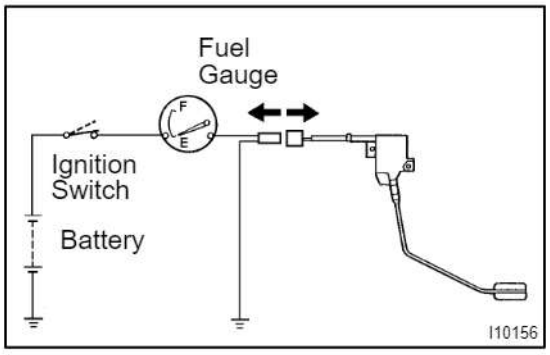
NOTICE:

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

(b) Compare the tester with tachometer indications.

DC 13.5 V 20˚C at (68˚F)

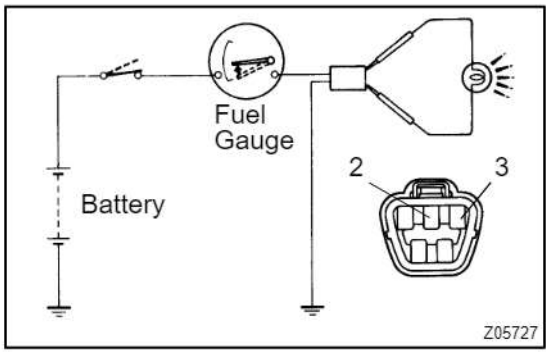
Standard indication	Allowable range
700	630 - 770
1,000	900 - 1,100
2,000	1,850 - 2,150
3,000	2,800 - 3,200
4,000	3,800 - 4,200
5,000	4,800 - 5,200
6,000	5,750 - 6,250



10. INSPECT FUEL RECEIVER GAUGE OPERATION

(a) Disconnect the connector from the sender gauge.

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



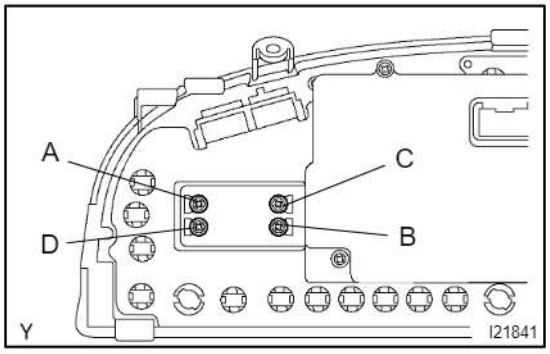
(c) Connect terminals 2 and 3 on the wire harness side connector through a 3.4 W test bulb.

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

HINT:

Because of silicon oil in the gauge, it takes a little time for the needle to stabilize.

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

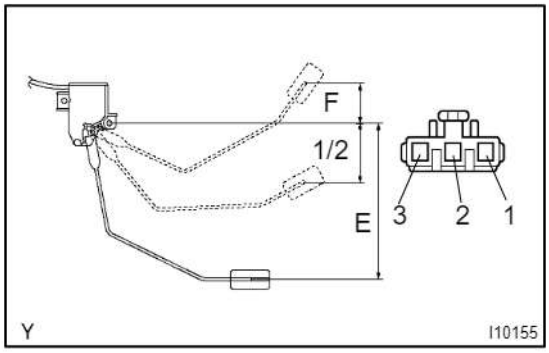


11. INSPECT FUEL RECEIVER GAUGE RESISTANCE

Measure the resistance between the terminals.

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

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

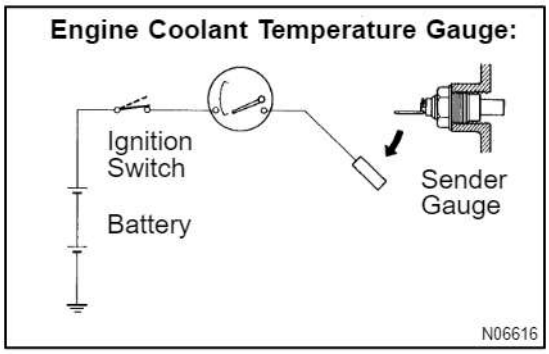


12. INSPECT FUEL SENDER GAUGE

Measure the resistance between terminals 1 and 3 in each float position.

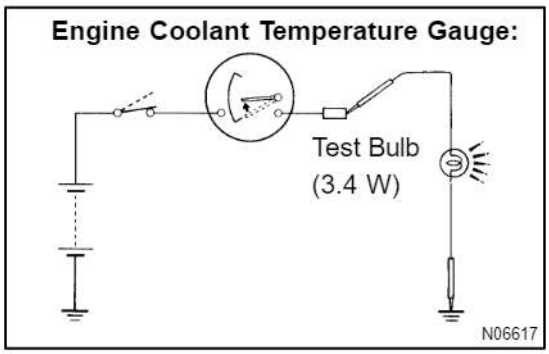
Float position: mm (in.)	Resistance (Ω)
F: Approx. 39.4 (1.551)	Approx. 184
1/2: Approx. 56.0 (2.205)	Approx. 97
E: Approx. 148.9 (5.862)	Approx. 12

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



13. INSPECT ENGINE COOLANT TEMPERATURE RECEIVER GAUGE OPERATION

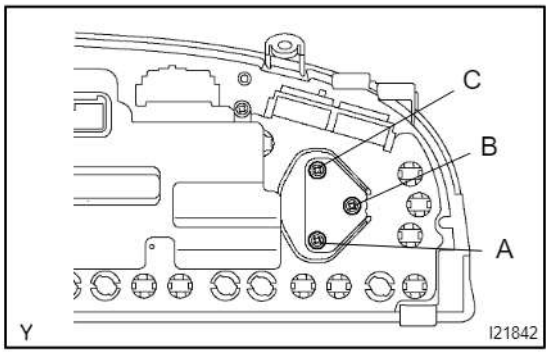
(a) Disconnect the connector from the sender gauge.
(b) Turn the ignition switch ON and check that the receiver gauge needle indicates COOL.



(c) Ground terminal on the wire harness side connector through a 3.4 W test bulb.
(d) Turn the ignition switch ON, and check that the bulb lights up and the receiver gauge needle moves to the hot side.

If the operation is as specified, replace the sender gauge. Then recheck the system.

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



14. INSPECT ENGINE COOLANT TEMPERATURE RECEIVER GAUGE RESISTANCE

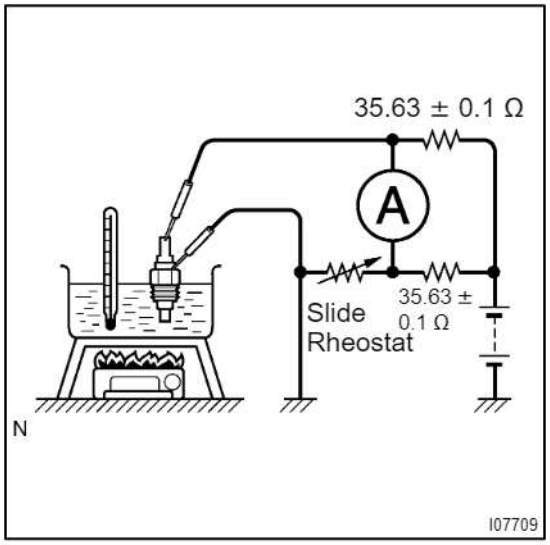
Measure the resistance between the terminals.

Tester connection	Resistance (Ω)
A - B	Approx. 90
A - C	Approx. 170
B - C	Approx. 230

HINT:

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

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

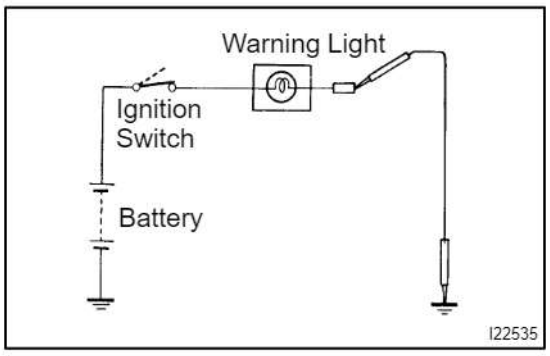


15. INSPECT ENGINE COOLANT TEMPERATURE SENDER GAUGE RESISTANCE

Connect the wire harness as shown in the illustration, and adjust the ammeter pointer so as to indicate "0" using the slide rheostat, then read the rheostat indication.

Temperature °C (°F)	Resistance (Ω)
50 (122.0)	234 - 314
120 (248.0)	24.0 - 30.5

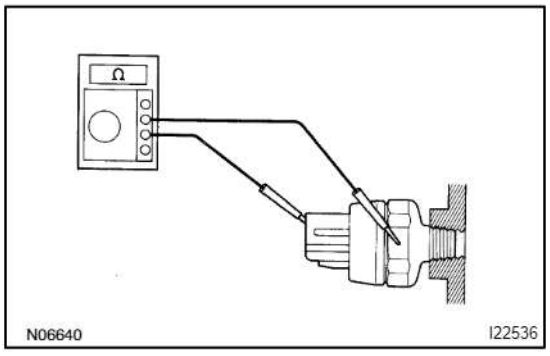
If the resistance value is not as specified, replace the engine coolant temperature sender gauge.



16. INSPECT LOW OIL PRESSURE WARNING LIGHT

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

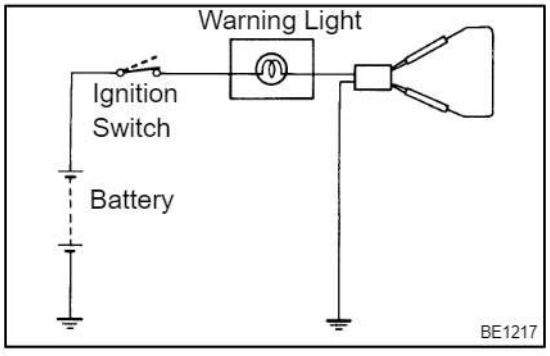
If the warning light does not light up, test the bulb.



17. INSPECT LOW OIL PRESSURE SWITCH

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

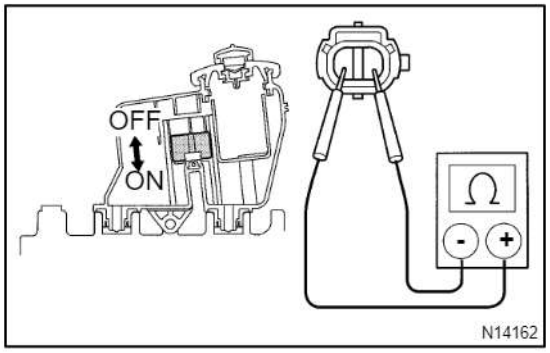
HINT:
Oil pressure should be over 24.5 kPa (0.25 kgf/cm^2, 3.55 psi).
If the operation is not as specified, replace the switch.



18. INSPECT BRAKE WARNING LIGHT

(a) Disconnect the connectors from the level warning switch and parking brake switch.
(b) Connect terminals on the wire harness side connector of the level warning switch connector.
(c) Turn the ignition switch ON and check that the warning light lights up.

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

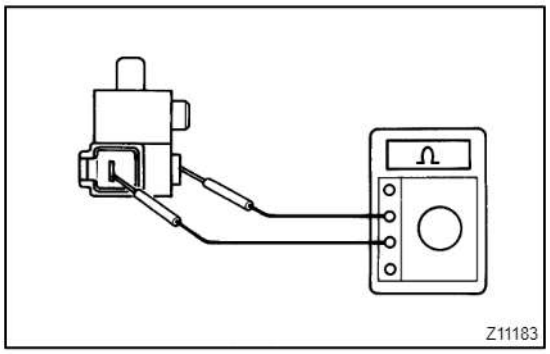


19. INSPECT BRAKE FLUID LEVEL WARNING SWITCH CONTINUITY

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

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

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

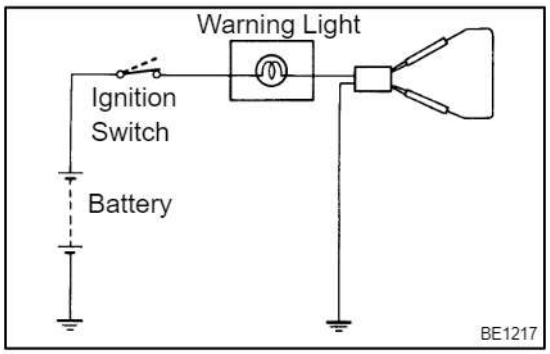


20. INSPECT PARKING BRAKE SWITCH CONTINUITY

(a) Check that continuity exists between the terminals with the switch ON (switch pin released).

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

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



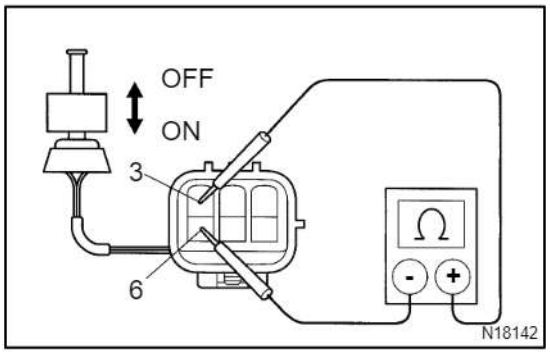
21. INSPECT WASHER LEVEL WARNING LIGHT

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

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

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

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

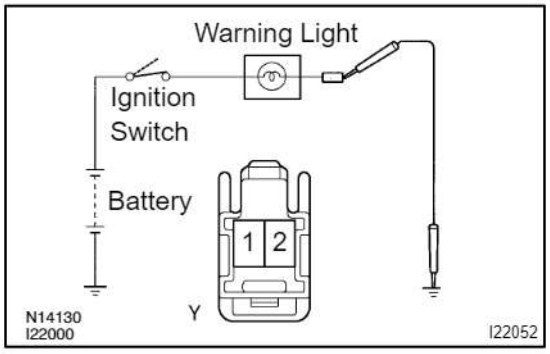


22. INSPECT WASHER LEVEL WARNING SWITCH

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

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

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

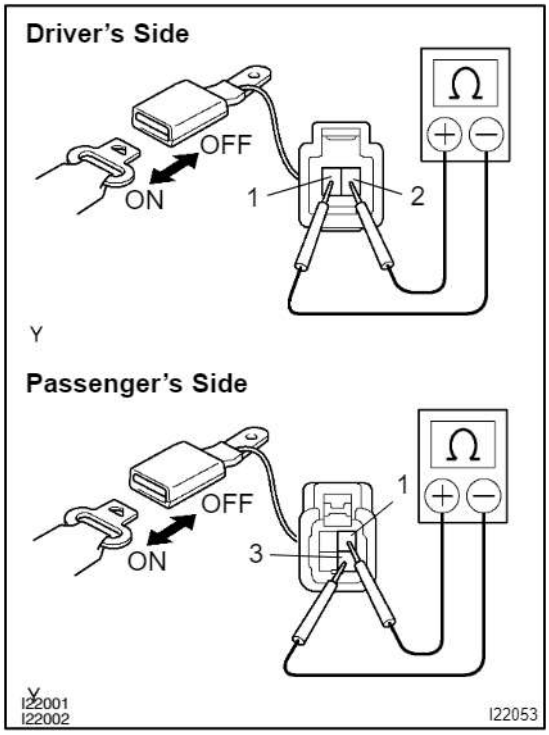


23. INSPECT DRIVER'S SEAT BELT WARNING LIGHT

(a) Disconnect the connector from the driver's buckle switch, and connect terminal 1 and the body ground.

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

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



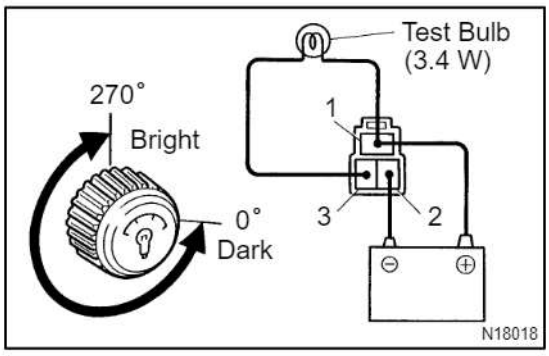
24. INSPECT BUCKLE SWITCH CONTINUITY

(a) Passenger's Seat only:
Press the sensing part of the belt warning occupant detection sensor (See step 29).

(b) Check that continuity exists between the terminals on the switch side connector with the switch ON (belt unfastened).

(c) Check that no continuity exists between the terminals on the switch side connector with the switch OFF (belt fastened).

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



25. INSPECT LIGHT CONTROL RHEOSTAT

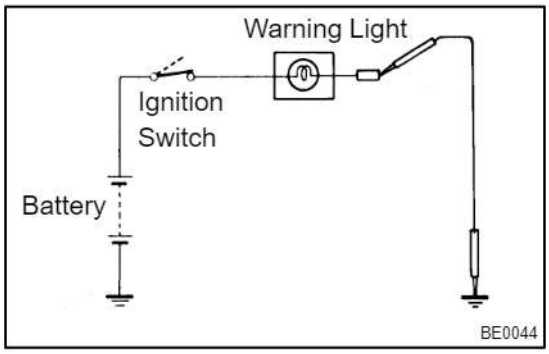
(a) Connect terminals 1 and 3 through a 3.4 W test bulb.

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

(c) Turn the rheostat knob fully counterclockwise, check that the test bulb goes off.

(d) Gradually turn the rheostat knob clockwise, check that the test bulb brightness changes from dark to bright.

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

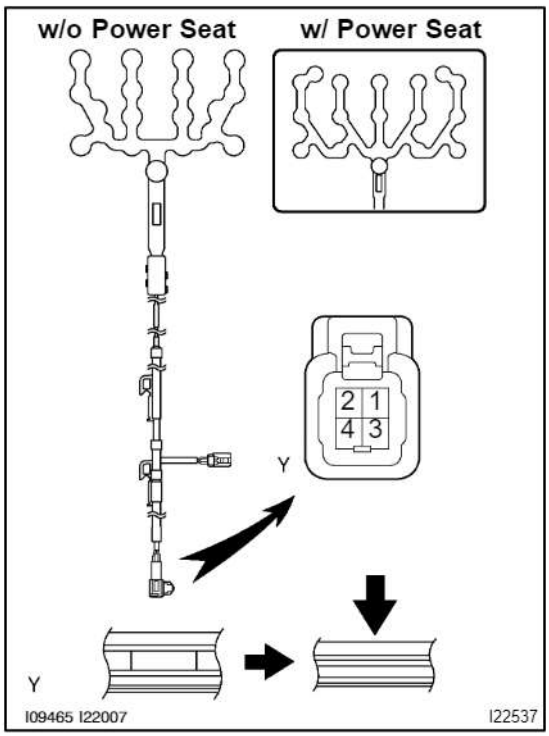


26. INSPECT OPEN DOOR WARNING LIGHT

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

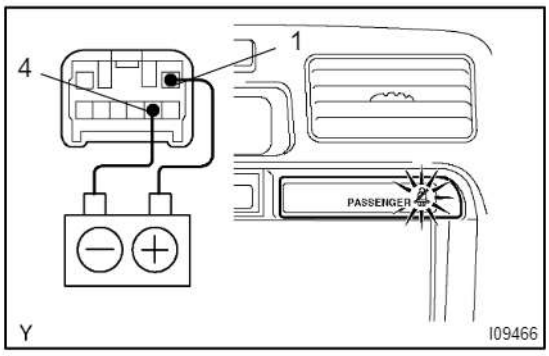
(b) Turn the ignition switch ON, check that the warning light lights up.

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



27. Passenger's Seat only:
INSPECT SEAT BELT WARNING OCCUPANT DETECTION SENSOR CONTINUITY

Check that continuity exists between terminals 1 and 3 when pressing the sensing part.
If the operation is not as specified, replace the sensor.



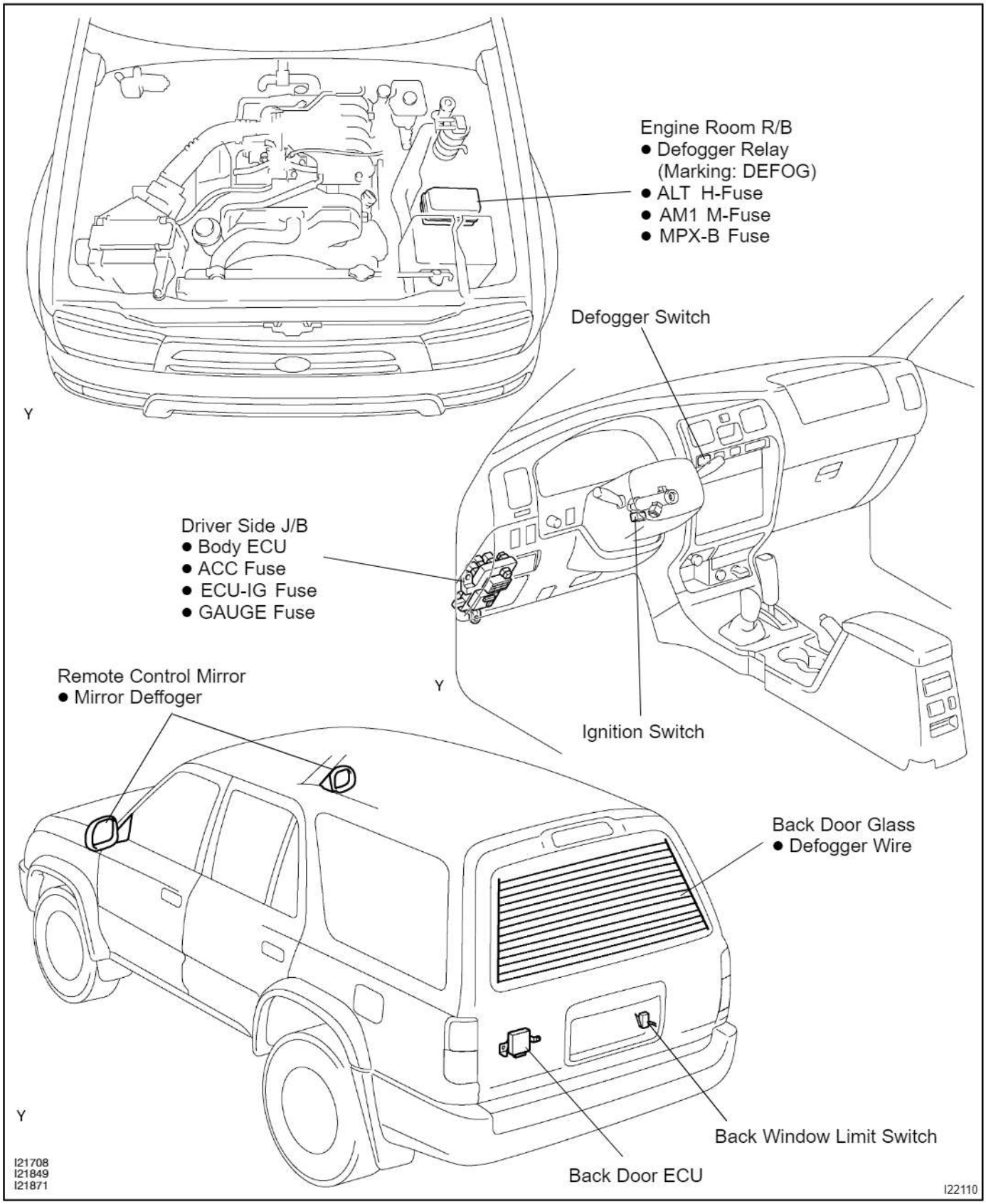
28. INSPECT PASSENGER SEAT BELT WARNING LIGHT

Connect the positive (+) lead from the battery to terminal 1, and negative (-) lead to terminal 4, then check that the warning light lights up.

DEFOGGER SYSTEM

LOCATION

BE06Z-03



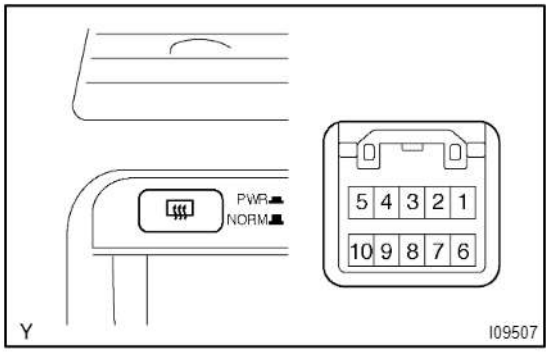
BE11L-02

INSPECTION

1. INSPECT DEFOGGER SWITCH CONTINUITY

Push the defogger switch and check that continuity exists between terminals 7 and 10.

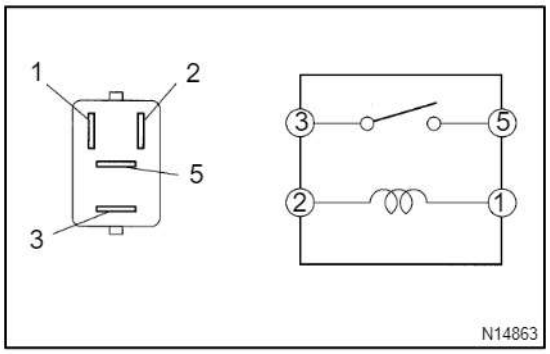
If the continuity is not as specified, replace the integration control panel.



2. INSPECT DEFOGGER RELAY CONTINUITY

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

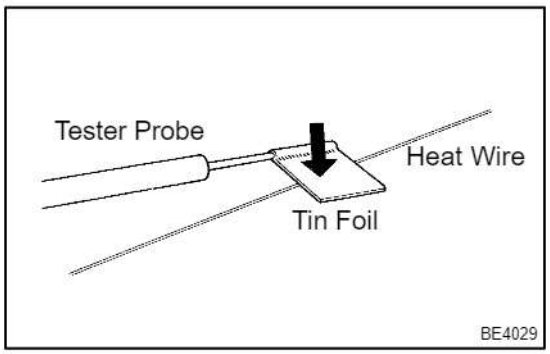
If the continuity is not as specified, replace the relay.



3. INSPECT DEFOGGER WIRE

NOTICE:

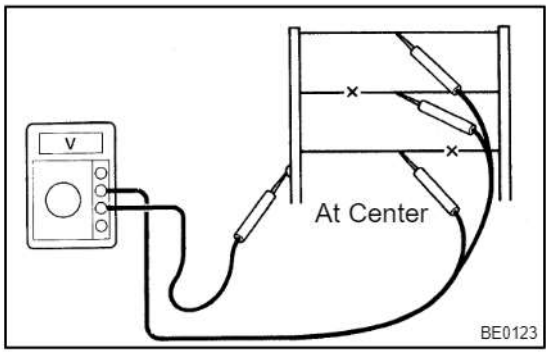
- **When cleaning the glass, use a soft and dry cloth, and wipe the glass in the moving direction of the wire. Take care not to damage the wires.**
- **Do not use detergents or glass cleaners with abrasive ingredients.**
- **When measuring voltage, wind a piece of tin foil around the top of the negative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



(a) Turn the ignition switch ON.

(b) Turn the defogger switch ON.

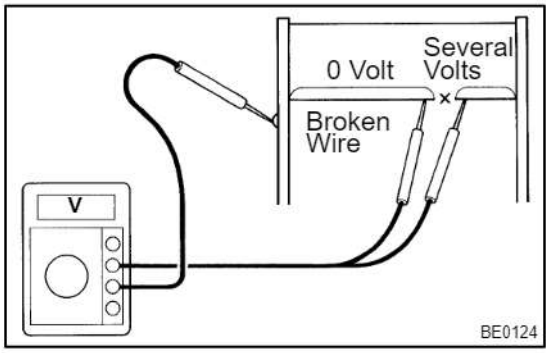
(c) Inspect the voltage at the center of each heat wire, as shown.



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

HINT:

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



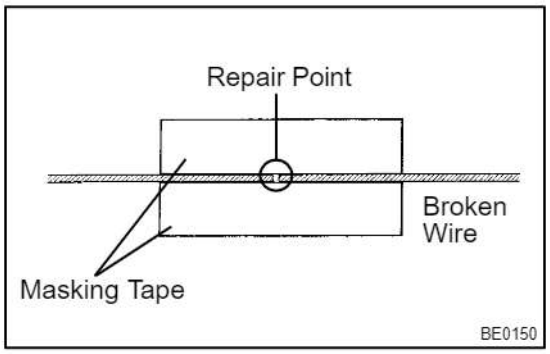
(d) Place the voltmeter positive (+) lead against the defogger positive (+) terminal.

(e) Place the voltmeter negative (-) lead with the foil strip against the heat wire at the positive (+) terminal end and slide it toward the negative (-) terminal end.

(f) The point where the voltmeter deflects between zero and several V is the place where the heat wire is broken.

HINT:

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

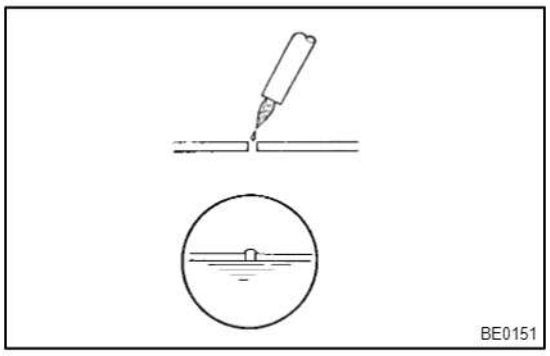


4. IF NECESSARY, REPAIR DEFOGGER WIRE

(a) Clean the broken wire tips with grease, wax and silicone remover.

(b) Place the masking tape along both sides of the wire to be repaired.

(c) Thoroughly mix the repair agent (Dupont paste No. 4817).

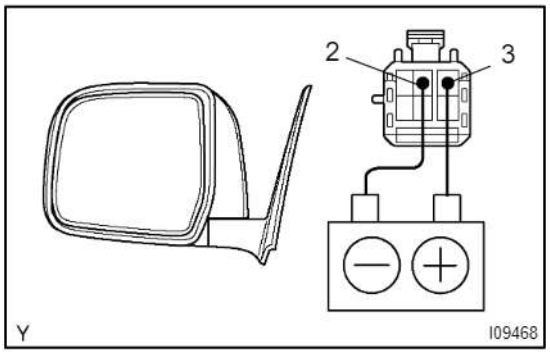


(d) Thoroughly mix the repair agent (Dupont paste No. 4817 or equivalent).

(e) Using a fine tip brush, apply a small amount of the agent to the wire.

(f) After a few minutes, remove the masking tape.

(g) Do not repair the defogger wire for at lease 24 hours.



5. INSPECT MIRROR DEFOGGER OPERATION

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

(b) Check that the mirror becomes warm.

HINT:

It takes a little time for the mirror to become warm.

POWER WINDOW CONTROL SYSTEM

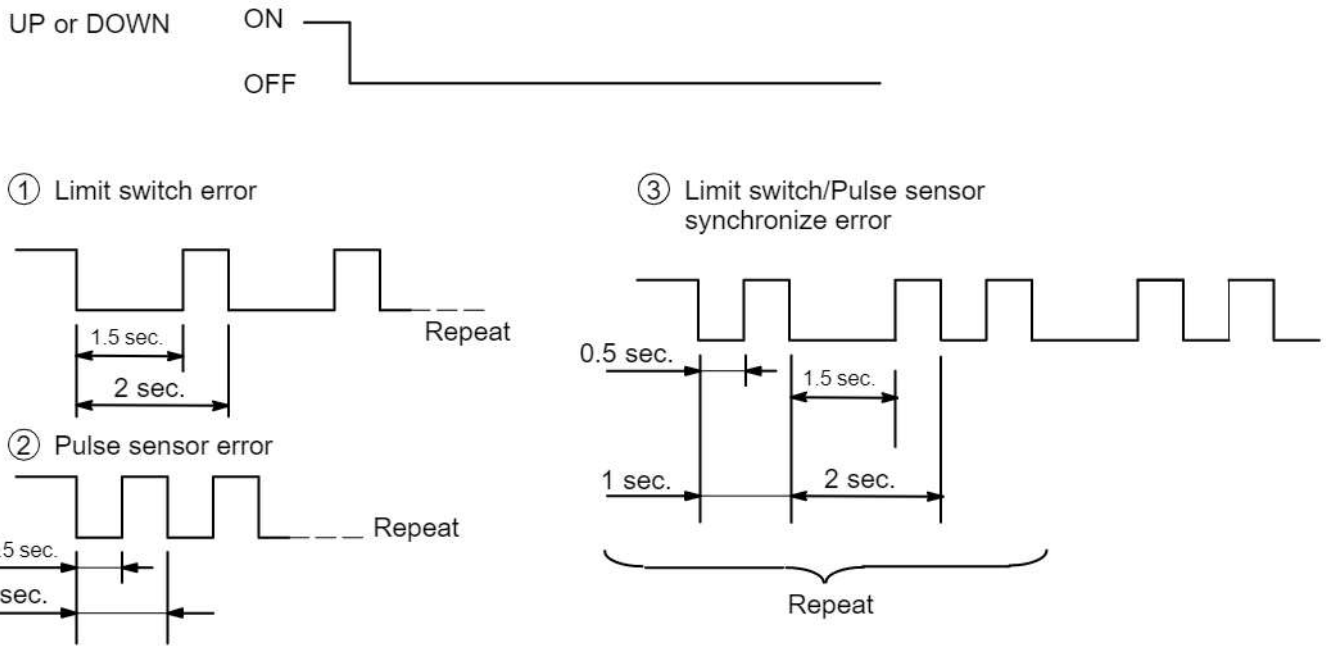
TROUBLESHOOTING

BE19H-02

1	One touch power window does not move up and down. (Prepare normal master and regulator switch.)

After turning the ignition switch ON and power window master switch on the driver side UP or DOWN and power window regulator switch on the passenger side UP or DOWN, check that the master and regulator switch AUTO light blinks.

• Error is classified into the following 3 types according to the way of blinking.



<Reference> • When 30 seconds have elapsed since blinking begins, blinking stops. (AUTO light remains ON)
• When turning the ignition key OFF, blinking stops.

blinks in the ① way

Remove the master(regulator) switch. (Connector connection condition)

When the fully closed driver's door is opened, does the voltage between terminal 19 (2) and terminal 20 (3) of master(regulator) switch change from 0 V to 10 - 14 V?

Yes

CONTINUED ON NEXT PAGE

blinks in the ② or ③ way

No

Master (regulator) switch defective

No

Disconnect the connecters of master (regulator) switch and driver's (passenger's) power window motor.

CONTINUED ON NEXT PAGE

CONTINUED FROM PREVIOUS PAGE

CONTINUED FROM PREVIOUS PAGE

Master(regulator) switch defective

Does continuity exist between connector terminals on the vehicle side?

Master(regulator) switch side ↔ Motor side
20 (3) terminal ↔ 4 terminal
21 (4) terminal ↔ 3 terminal
19 (2) terminal ↔ 5 terminal

No

Yes

Wire harness defective (open)

Does continuity exist between 20, 21, terminals and 19 on the master (regulator) switch side or terminals 4, 3, and 5 on the motor side and the body ground?

Yes

No

Wire harness defective (short)

Connect the connector of power window motor.

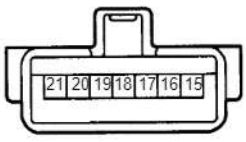
Yes

Connect the normal master (regulator) switch, do AUTO UP and AUTO DOWN operations work?

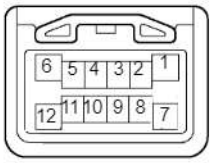
No

Power window motor defective.

Master Switch



Regulator Switch



I10181

2	During AUTO UP operation, the power window moves down.

When operating AUTO UP with the ignition switch ON, is there a cause of increasing friction resistance at the inverse position?

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

No

Remove the power window regulator assembly.

Does the window operate smoothly when moving the window up manually after assembed?

No → Check and replace door glass run.

Yes

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

When operating the power window regulator manually, does the regulator move smoothly?
Are gears not damaged?

No → Power window regulator defective.

Yes

Does window motor rotate smoothly?

No → Power window motor defective.

Yes

Reset the limit switch. (See page BE-71)

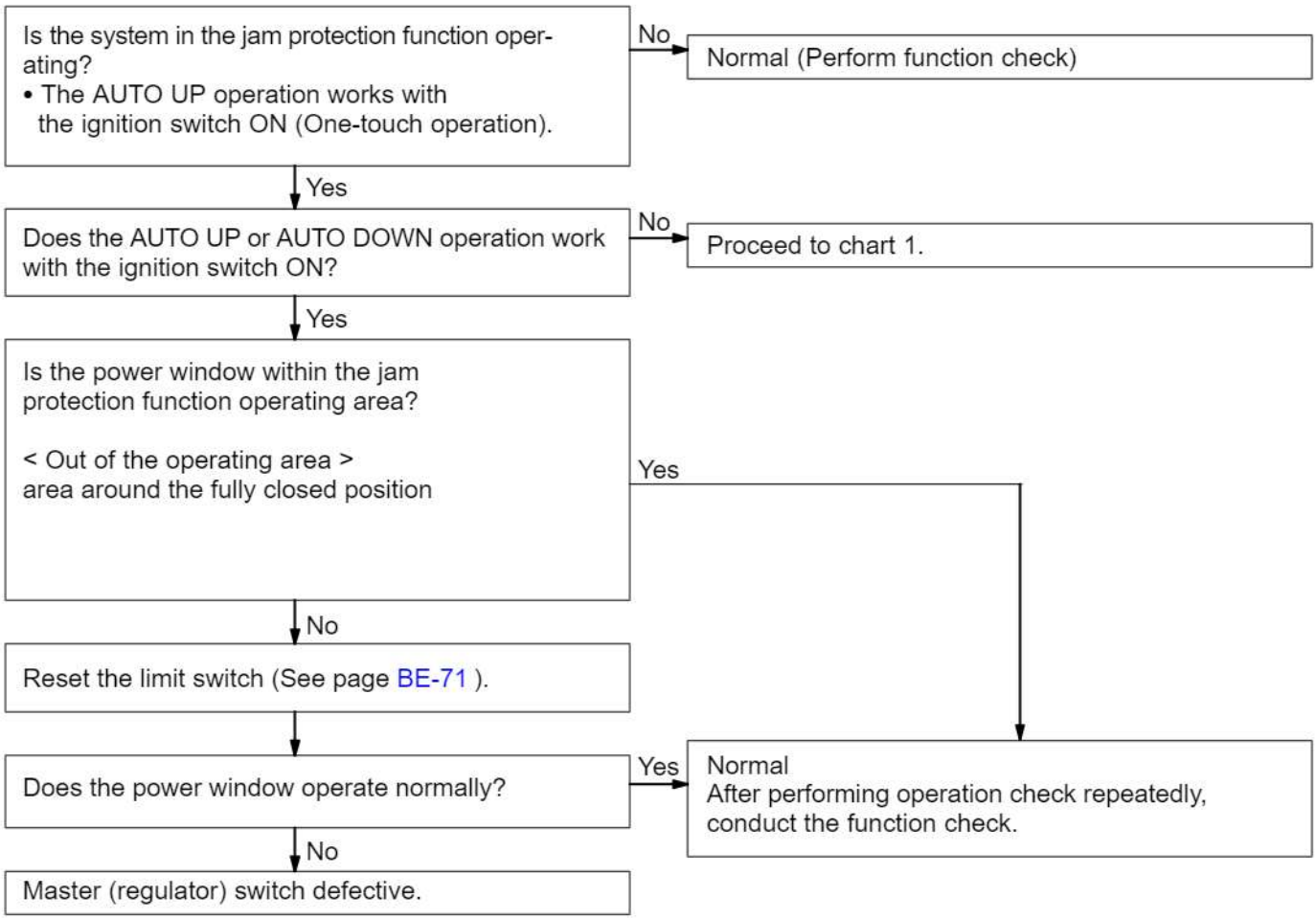
Does the window move normally?

Yes → Normal (Check the function.)

No

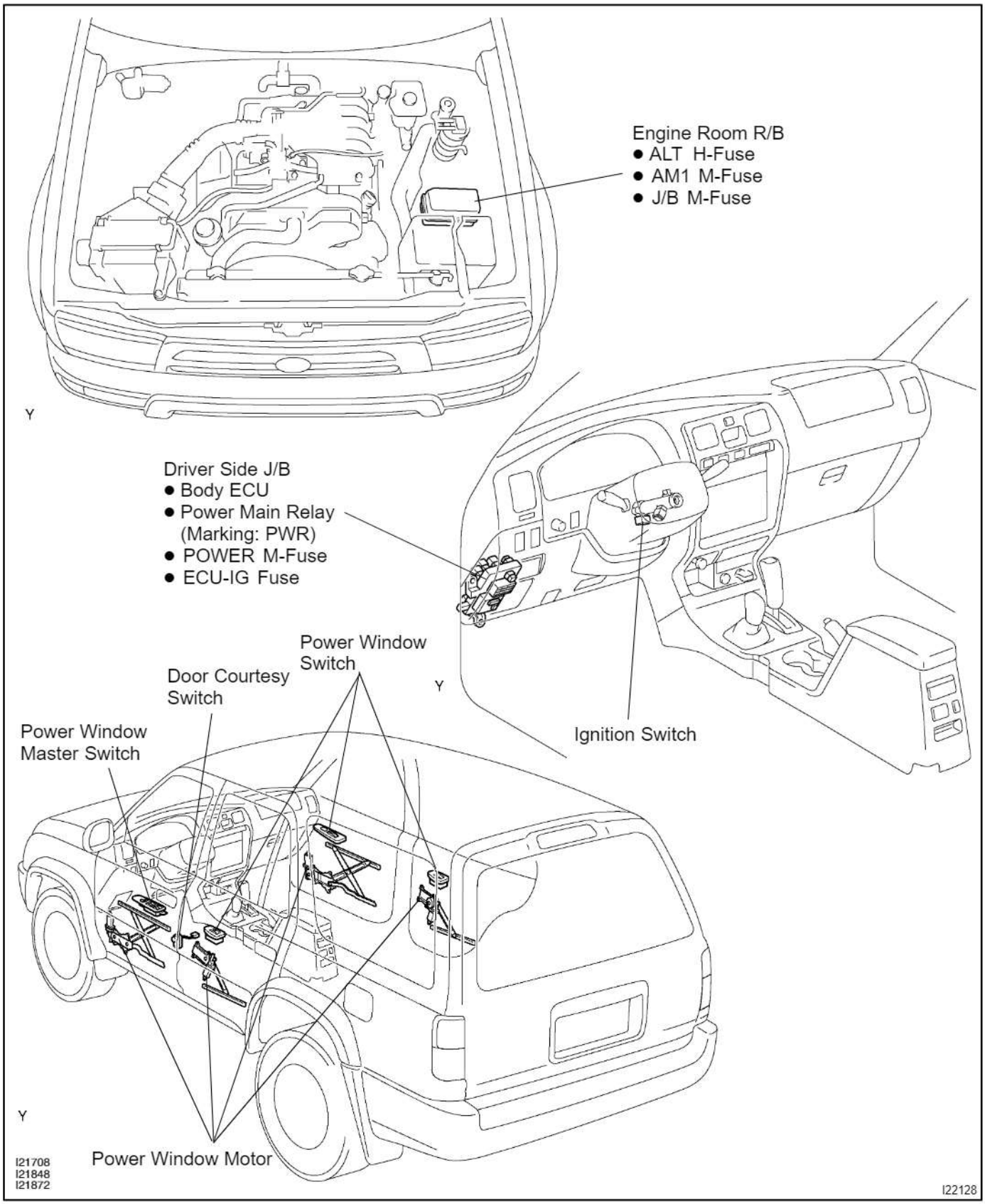
Master (regulator) switch defective.

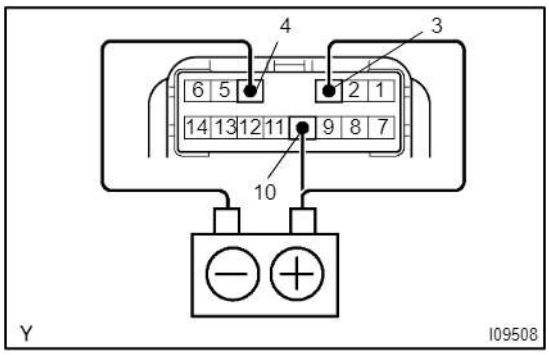
3	**The DOWN function does not work though foreign objects are caught in the power window glass.**



BE071-04

LOCATION





BE11M-03

INSPECTION

1. INSPECT POWER WINDOW MASTER SWITCH CONTINUITY

Connect the positive (+) lead from the battery to terminals 3 and 10, and the negative (-) lead to terminal 4.

Front driver's switch (Window lock and unlock):

Switch position	Tester connection	Specified condition
UP	1 - 3	Battery positive voltage
	2 - 4	Continuity
DOWN	2 - 3	Battery positive voltage
	1 - 4	Continuity

Front passenger's switch (Window lock and unlock):

Switch position	Tester connection	Specified condition
UP	7 - 10	Battery positive voltage
DOWN	8 - 10	Battery positive voltage

Rear left switch (Window unlock):

Switch position	Tester connection	Specified condition
UP	9 - 10	Battery positive voltage
	11 - 4	Continuity
DOWN	11 - 10	Battery positive voltage
	9 - 4	Continuity

Rear left switch (Window lock):

Switch position	Tester connection	Specified condition
UP	9 - 10	Battery positive voltage
	11 - 4	No continuity
DOWN	11 - 10	Battery positive voltage
	9 - 4	No continuity

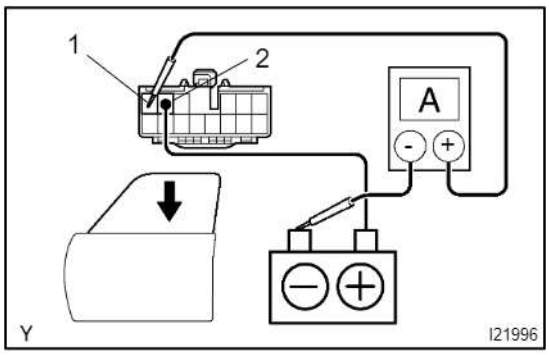
Rear right switch (Window unlock):

Switch position	Tester connection	Specified condition
UP	13 - 10	Battery positive voltage
	14 - 4	Continuity
DOWN	14 - 10	Battery positive voltage
	13 - 4	Continuity

Rear right switch (Window lock):

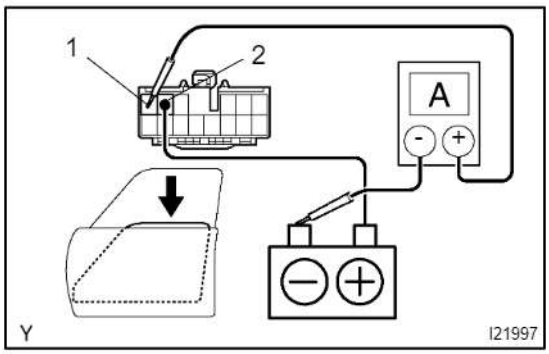
Switch position	Tester connection	Specified condition
UP	13 - 10	Battery positive voltage
	14 - 4	No continuity
DOWN	14 - 10	Battery positive voltage
	13 - 4	No continuity

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



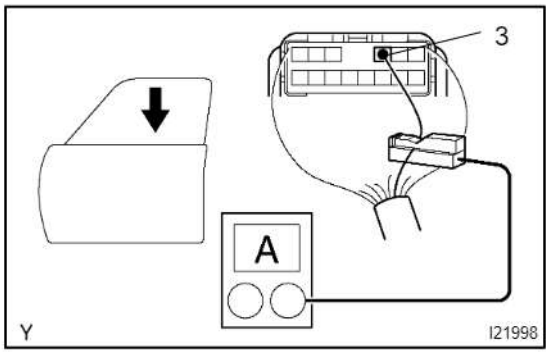
2. Using an ammeter:
INSPECT ONE TOUCH POWER WINDOW SYSTEM/ CURRENT OF CIRCUIT

(a) Disconnect the connector from the master switch.
(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.
(d) As the window goes down, check that the current flow is approximately 7 A.



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

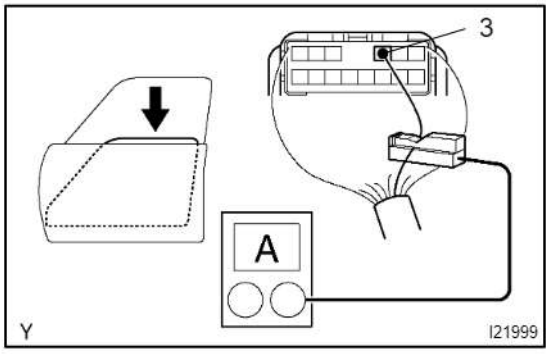
HINT:
The circuit breaker opens for 4 - 40 seconds after the window stops going down, so that check must be made before the circuit breaker operates.
If the operation is as specified, replace the master switch.

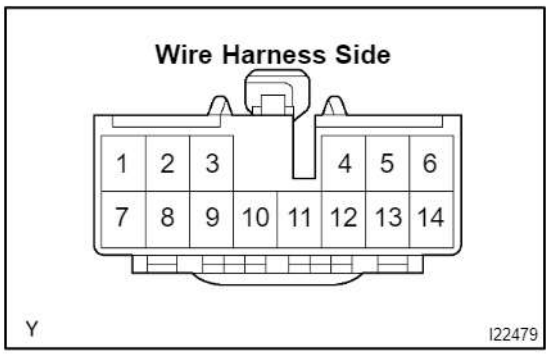


3. Using an ammeter with a current - measuring probe:
INSPECT ONE TOUCH POWER WINDOW SYSTEM/ CURRENT OF CIRCUIT

(a) Remove the master switch with the connector connected.
(b) Attach a current-measuring probe to terminal 3 of the wire harness.
(c) Turn the ignition switch ON and set the power window switch in the down position.
(d) As the window goes down, check that the current flow is approximately 7 A.
(e) Check that the current increases up to approximately 14.5 A or more when the window stops going down.

HINT:
The circuit breaker opens for 4 - 40 seconds after the window stops going down, so the check must be made before the circuit breaker operates.
If the operation is not as specified, replace the master switch.





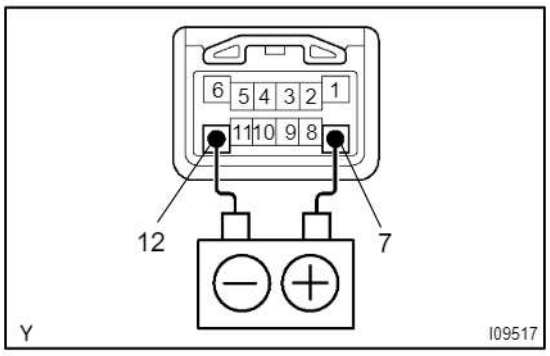
4. INSPECT POWER WINDOW MASTER SWITCH CIRCUIT

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

Tester connection	Switch position	Specified condition
3 - Ground	Constant	Battery positive voltage
4 - Ground	Constant	Continuity
10 - Ground	Ignition switch position LOCK or ACC	No voltage*
	Ignition switch position ON	Battery positive voltage

*Exceptions: During 43 seconds after the ignition switch ON → OFF (ACC) or until the driver or a passenger's door is opened after the ignition switch ON → OFF (ACC).

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

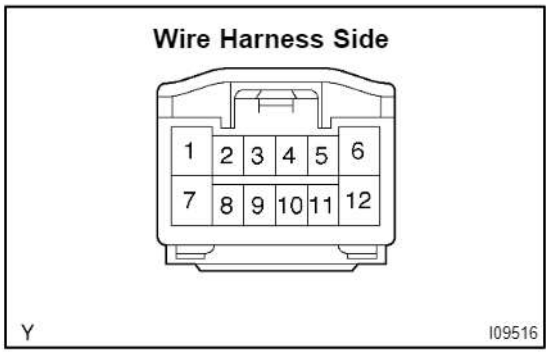


5. INSPECT POWER WINDOW SWITCH CONTINUITY

Connect the positive (+) lead from the battery to terminal 7 and negative (-) lead to terminal 12.

Switch position	Tester connection	Specified condition
UP	1 - 12	Battery positive voltage
	6 - 12	Continuity
DOWN	6 - 12	Battery positive voltage
	1 - 12	Continuity

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



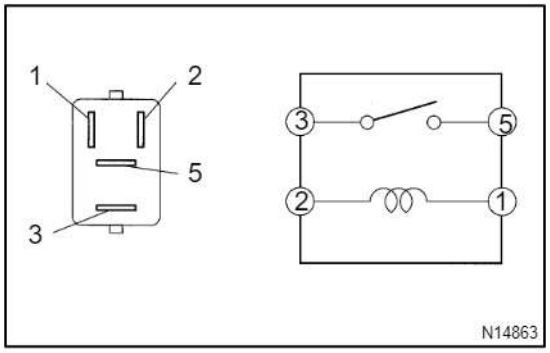
6. INSPECT POWER WINDOW SWITCH CIRCUIT

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

Tester connection	Switch position	Specified condition
7 - Ground	Ignition switch position LOCK or ACC	No voltage*
	Ignition switch position ON	Battery positive voltage
12 - Ground	Constant	Continuity

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

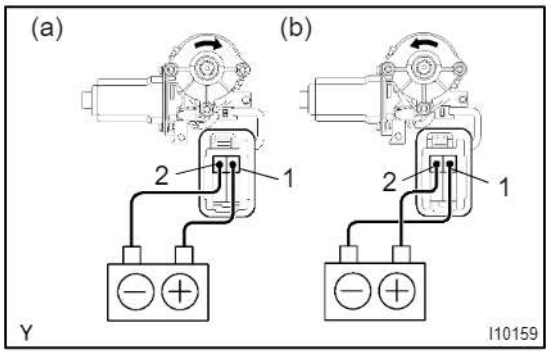
If the circuit is not as specified, inspect the circuits connected to other parts.



7. 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 the continuity is not as specified, replace the relay.

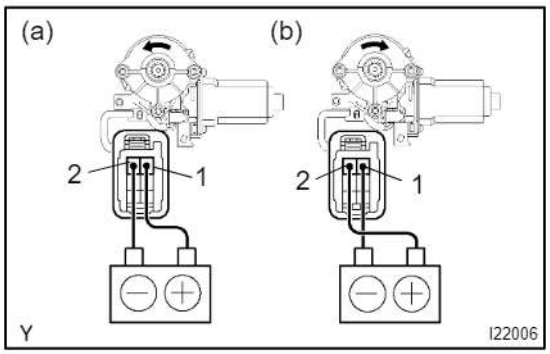


8. INSPECT DRIVER'S DOOR POWER WINDOW MOTOR OPERATION

(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 the operation is not as specified, replace the motor.

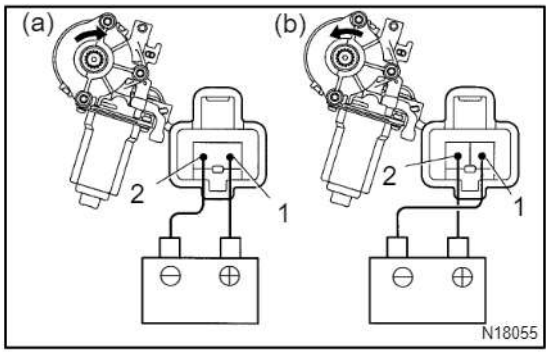


9. INSPECT FRONT PASSENGER'S DOOR POWER WINDOW MOTOR OPERATION

(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 the operation is not as specified, replace the motor.

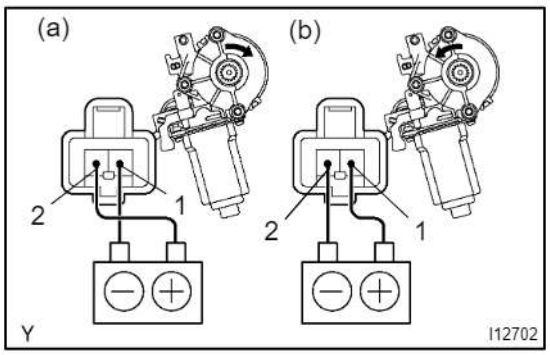


10. INSPECT REAR LEFT SIDE DOOR POWER WINDOW MOTOR OPERATION

(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 the operation is not as specified, replace the motor.

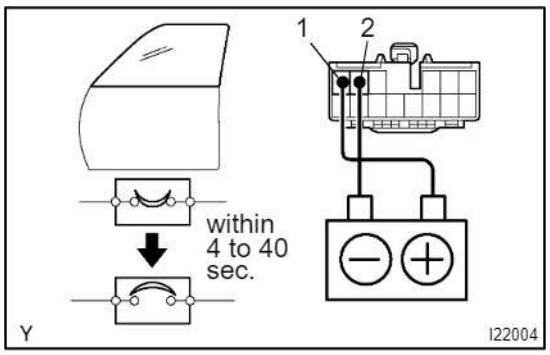


11. INSPECT REAR RIGHT SIDE DOOR POWER WINDOW MOTOR OPERATION

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

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

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



12. INSPECT DRIVER'S DOOR POWER WINDOW MOTOR CIRCUIT BREAKER OPERATION

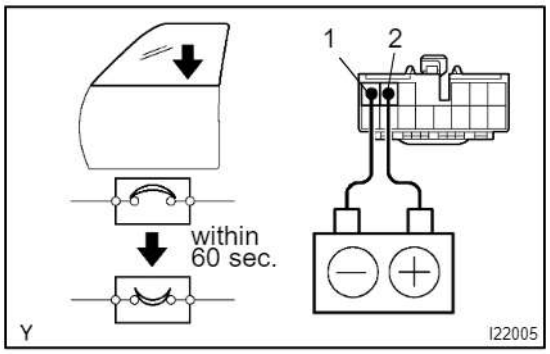
(a) Disconnect the connector from the master switch.

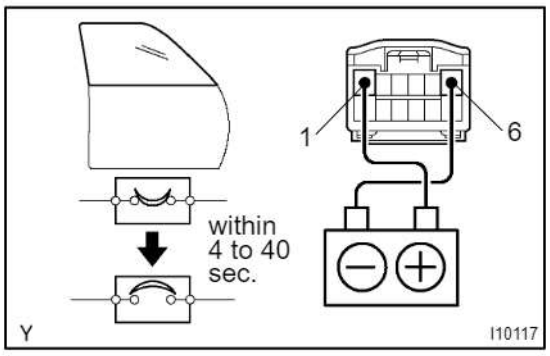
(b) Connect the positive (+) lead from the battery to terminal 1 and the negative (-) lead to terminal 2 on the wire harness side connecter, and raise the window to the fully closed position.

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

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

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





13. INSPECT FRONT PASSENGER'S DOOR POWER WINDOW MOTOR CIRCUIT BREAKER OPERATION

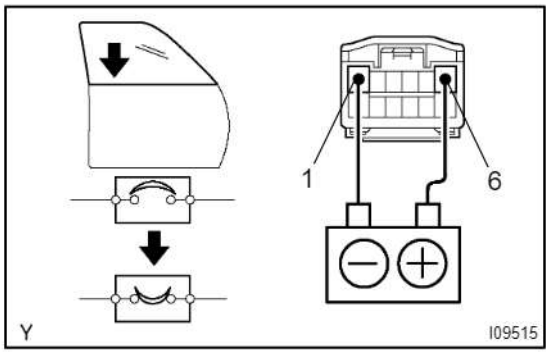
(a) Disconnect the connector from the power window switch.

(b) Connect the positive (+) lead from the battery to terminal 1 and the negative (-) lead to terminal 6 on the wire harness side connecter, and raise the window to the fully closed position.

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

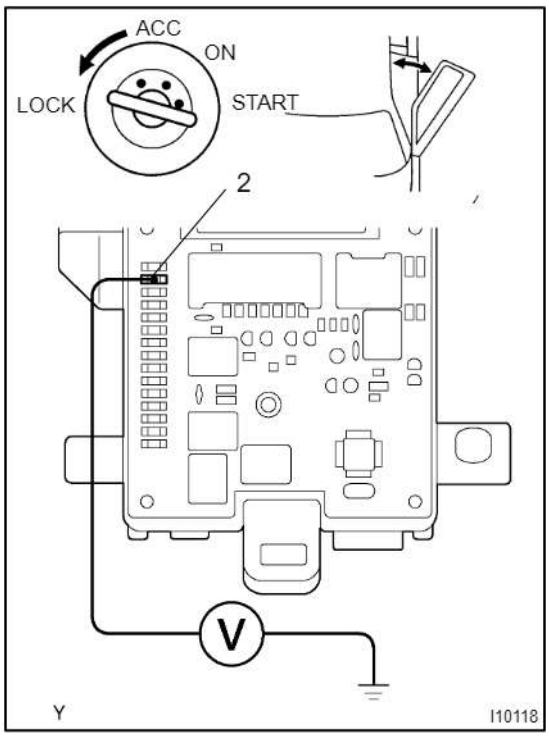
(d) Reverse the polarity, check that the window begins to descend within approximately 60 seconds.

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



14. INSPECT REAR LEFT SIDE DOOR POWER WINDOW MOTOR CIRCUIT BREAKER OPERATION (See step 13)

15. INSPECT REAR RIGHT SIDE POWER WINDOW MOTOR CIRCUIT BREAKER OPERATION (See step 13)



16. INSPECT KEY-OFF POWER WINDOW SIGNAL OPERATION OF INTEGRATION RELAY

HINT:

When the ECU circuit is as specified, inspect the key-off power window signal.

(a) Connect the positive (+) lead from the voltmeter to terminal 2 and the negative (-) lead to the body ground.

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

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

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

If the operation is not as specified, replace the driver side J/B.

BE241-02

ADJUSTMENT

HOW TO RESET POWER WINDOW MOTOR (LIMIT SWITCH)

NOTICE:

If the jam protection function is not functioning properly, perform the following procedures.

HINT:

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

(a) Remove the power window motor.

HINT:

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

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

(c) Turn the ignition switch ON.

(d) Press the power window UP switch until the motor completes 6 to 10 rotations (4 seconds of rotation or more).

(e) 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 installing the power window motor.

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

HINT:

Never rotate the motor downward until the completion of the window glass installation.

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

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

(i) Check AUTO UP → AUTO DOWN automatic operation is normal.

NOTICE:

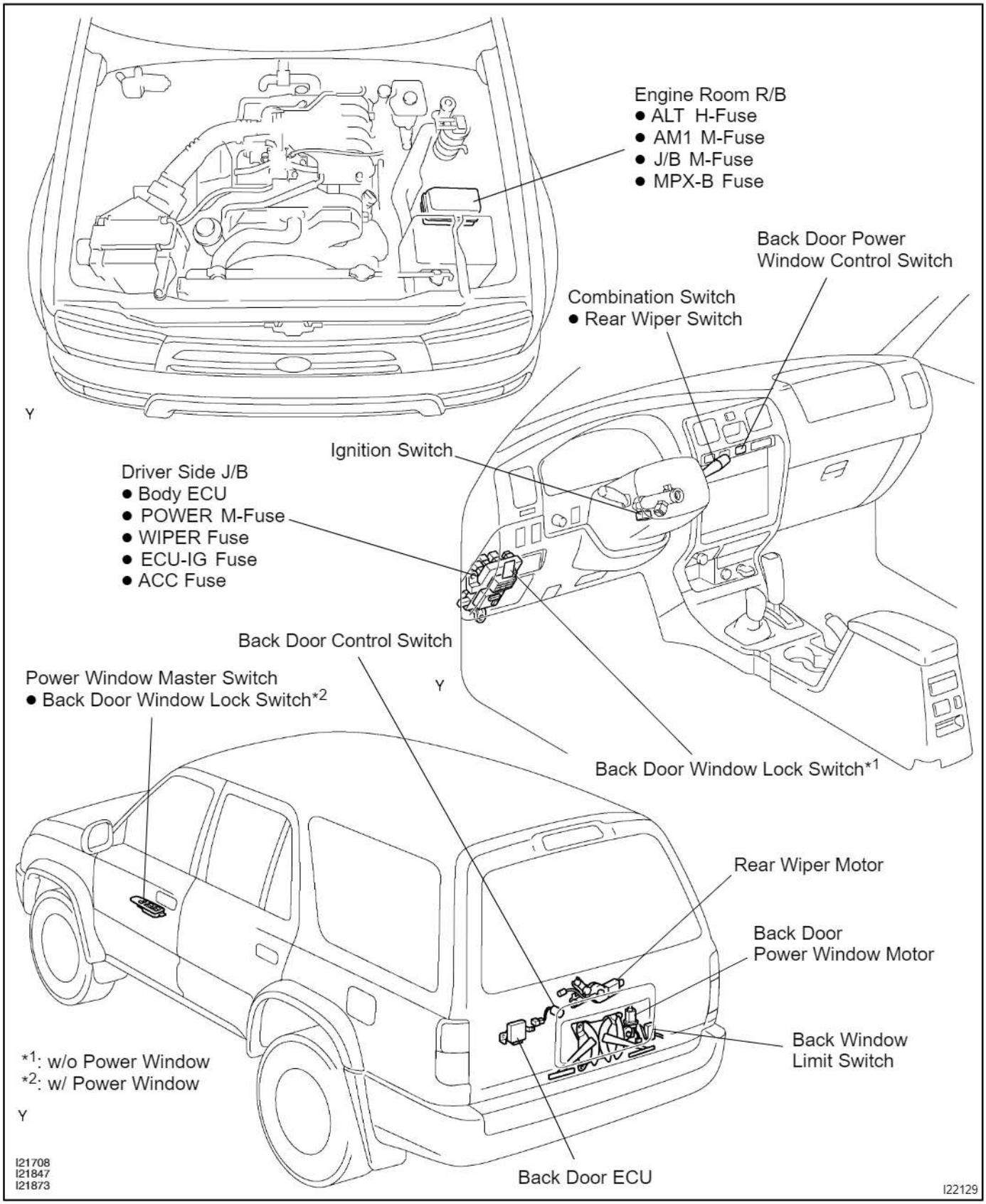
- **The jam protection function does not operate immediately after performing reset.**
- **If the jam protection function is triggered and the window lowers after the window has been fully closed by AUTO UP operation (step i), reset the power window motor again.**

(j) Check the power window function.

BACK DOOR POWER WINDOW CONTROL SYSTEM

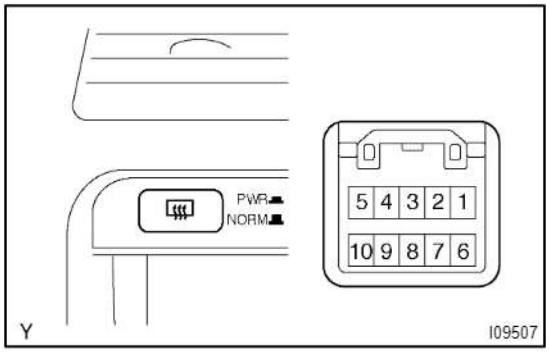
LOCATION

BE073-03



BE11N-02

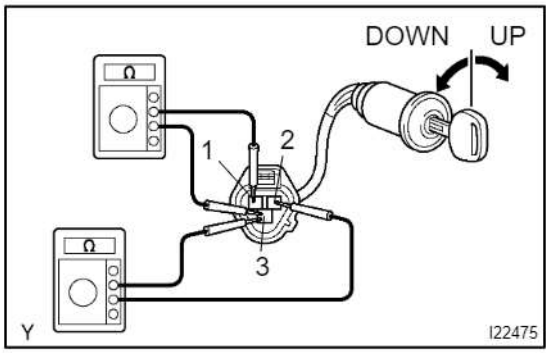
INSPECTION



1. INSPECT BACK DOOR POWER WINDOW SWITCH CONTINUITY

Tester connection	Switch position	Specified condition
2 - 6	UP	Continuity
-	OFF	-
1 - 6	DOWN	Continuity
5 - 8	Illumination circuit (UP, OFF, DOWN)	Continuity

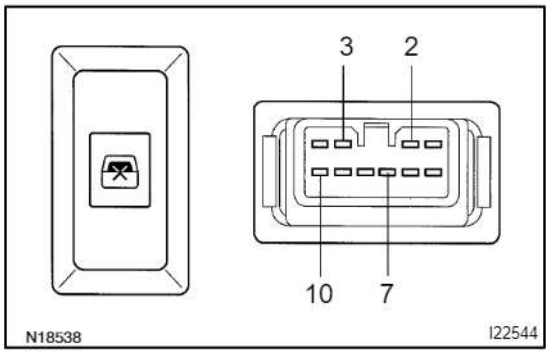
If the continuity is not as specified, replace the switch.



2. INSPECT BACK DOOR CONTROL SWITCH CONTINUITY

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

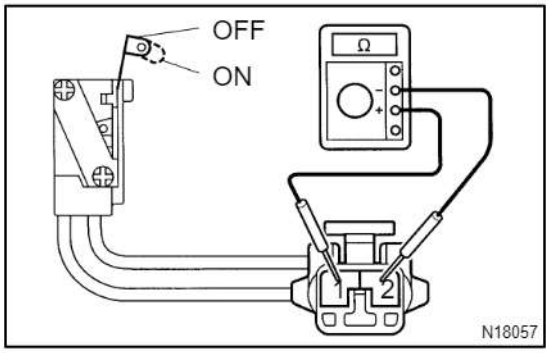
If the continuity is not as specified, replace the switch.



3. w/o Power Window: INSPECT BACK DOOR WINDOW LOCK SWITCH CONTINUITY

Tester connection	Switch position	Specified condition
7 - 10	FREE	Continuity
-	LOCK	No continuity
2 - 3	Illumination circuit (FREE, LOCK)	Continuity

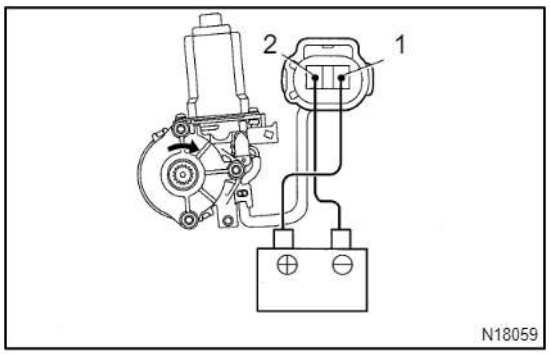
If the continuity is not as specified, replace the switch.



4. INSPECT WINDOW LIMIT SWITCH CONTINUITY

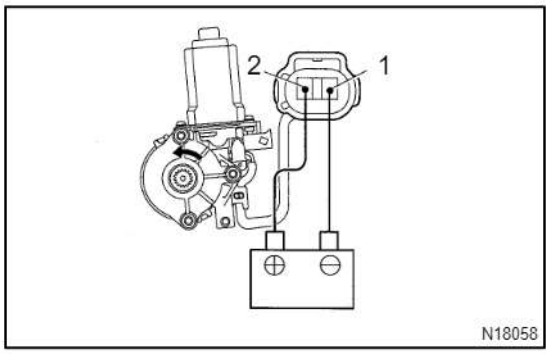
Tester connection	Switch position	Specified condition
1 - 2	Switch lever pushed (OFF position)	No continuity
	Switch lever released (ON position)	Continuity

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



5. INSPECT BACK 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.



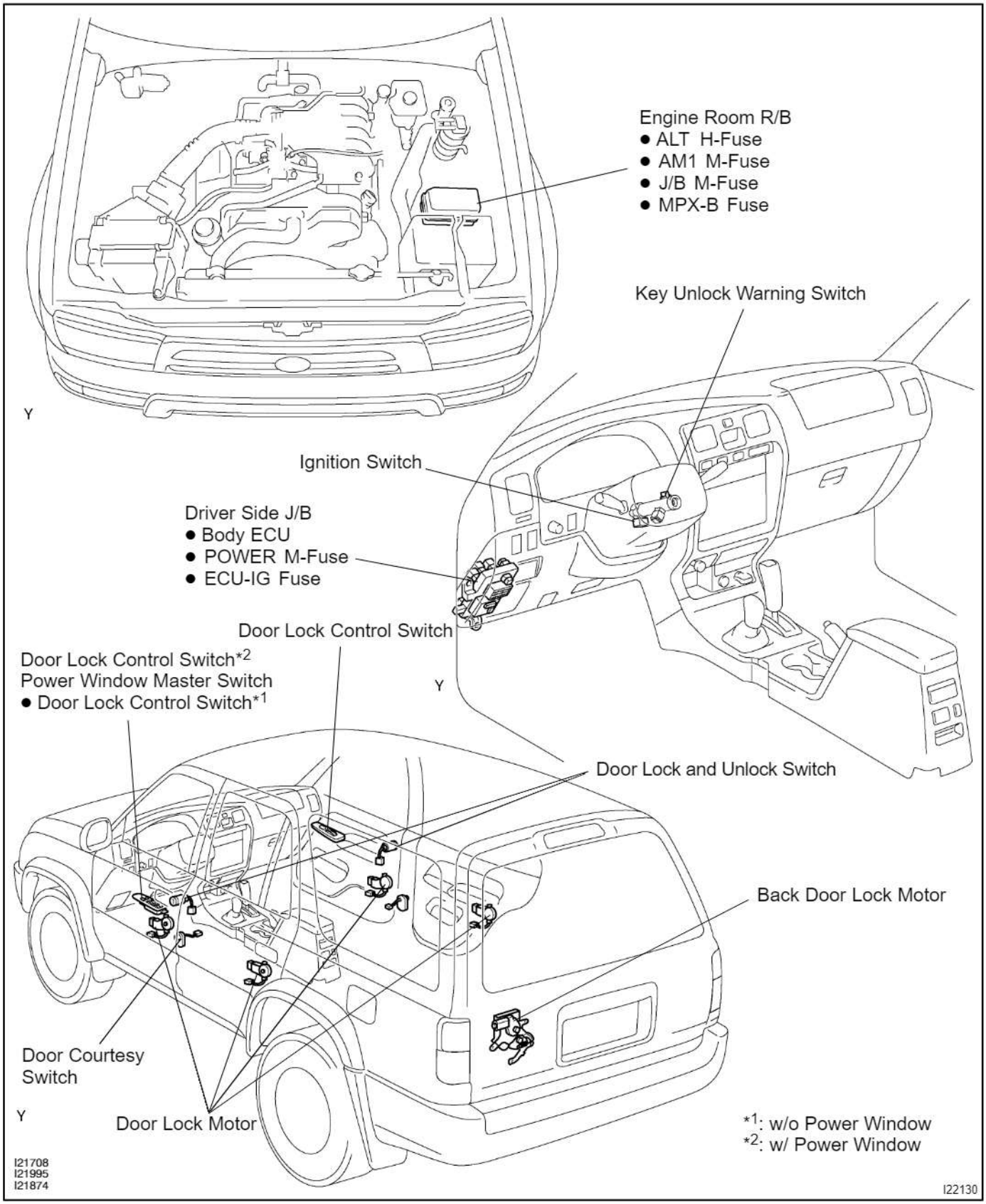
(b) Connect the positive (+) lead from the battery to terminal 2 and the negative (-) lead to terminal 1, and check that the motor turns counterclockwise.

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

POWER DOOR LOCK CONTROL SYSTEM

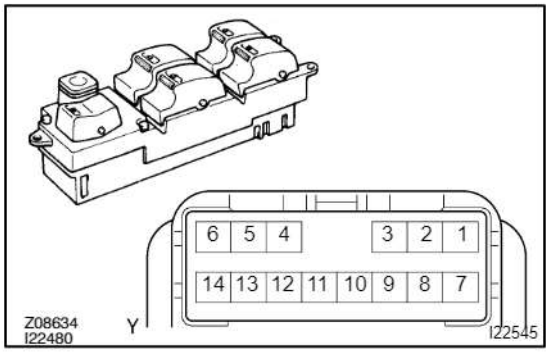
LOCATION

BE075-03



BE076-03

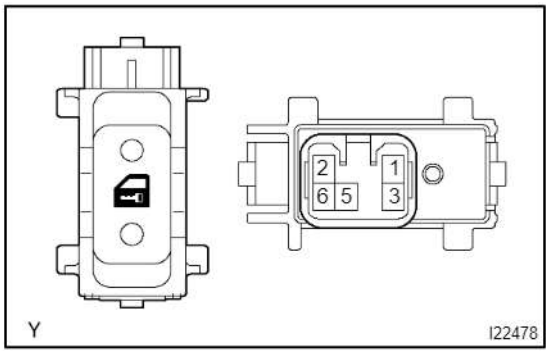
INSPECTION



1. w/ Power Window:
INSPECT DRIVER'S DOOR LOCK CONTROL SWITCH (MASTER SWITCH) CONTINUITY

Tester connection	Switch position	Specified condition
4 - 6	LOCK	Continuity
-	OFF	No continuity
4 - 12	UNLOCK	Continuity

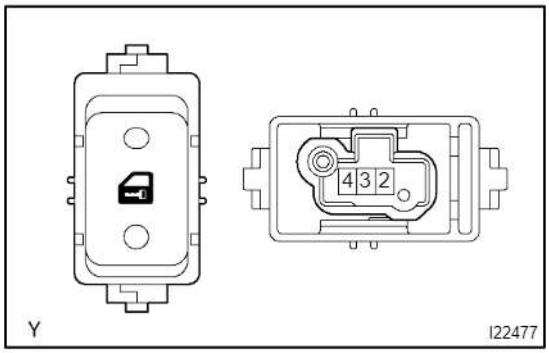
If the continuity is not as specified, replace the switch.



2. w/ Power Window:
INSPECT PASSENGER'S DOOR LOCK CONTROL SWITCH CONTINUITY

Tester connection	Switch position	Specified condition
3 - 6	LOCK	Continuity
-	OFF	No continuity
3 - 5	UNLOCK	Continuity

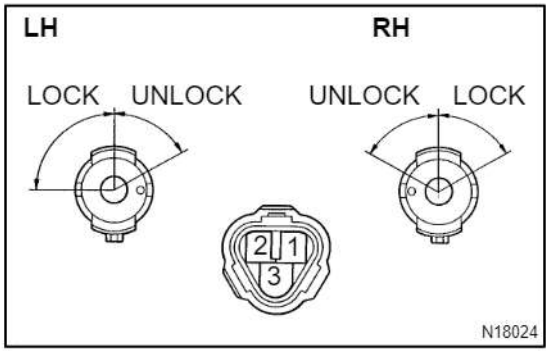
If the continuity is not as specified, replace the switch.



3. w/o Power Window:
INSPECT PASSENGER'S DOOR LOCK CONTROL SWITCH CONTINUITY

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

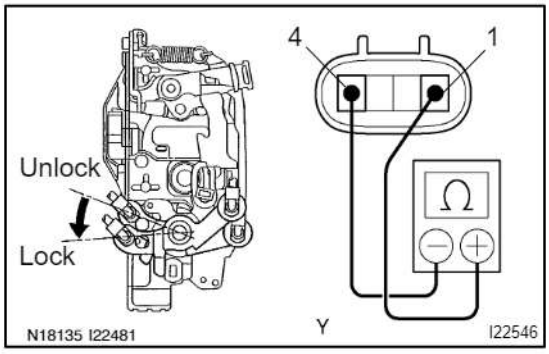
If the continuity is not as specified, replace the switch.



4. INSPECT DOOR KEY LOCK AND UNLOCK SWITCH CONTINUITY

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

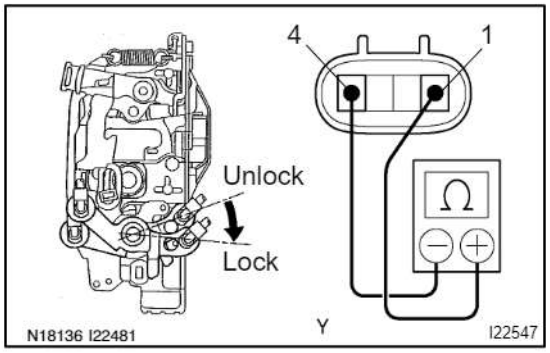
If the continuity is not as specified, replace the switch.



5. INSPECT DRIVER'S DOOR UNLOCK DETECTION SWITCH CONTINUITY

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

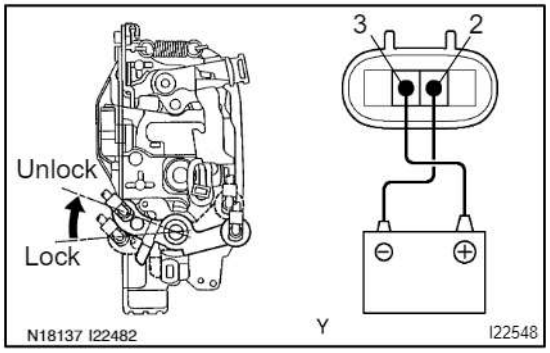
If the continuity is not as specified, replace the switch.



6. INSPECT PASSENGER'S DOOR UNLOCK DETECTION SWITCH CONTINUITY

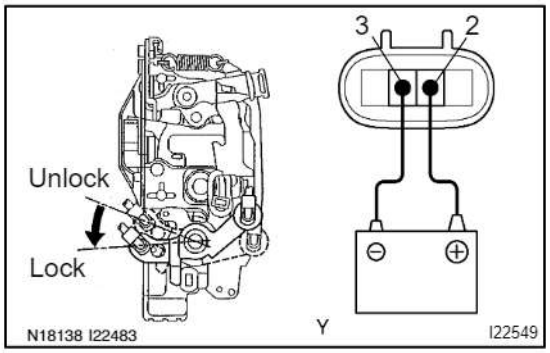
Tester connection	Switch position	Specified condition
1 - 4	OFF (Door Lock set to LOCK)	No continuity
	ON (Door Lock set to UNLOCK)	Continuity

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



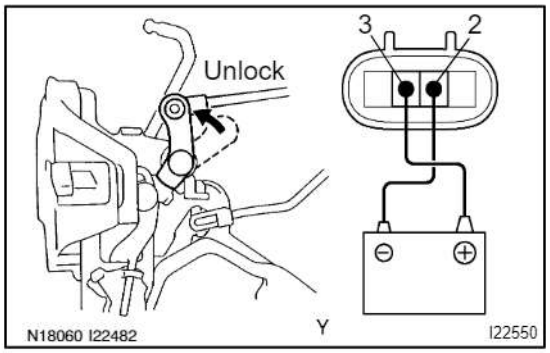
7. INSPECT FRONT DOOR LOCK MOTOR OPERATION

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



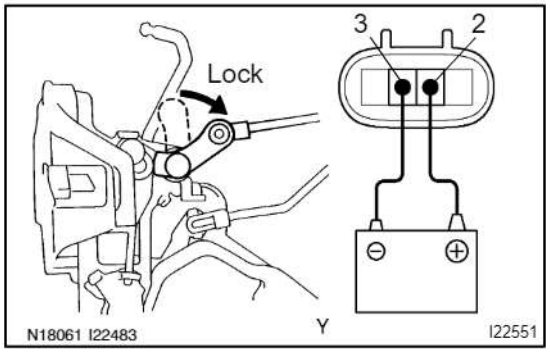
(b) Remove the polarity and check that the door lock link moves to LOCK position.

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



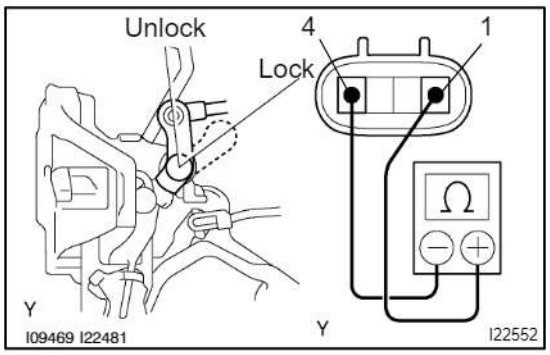
8. INSPECT REAR DOOR LOCK MOTOR OPERATION

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



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

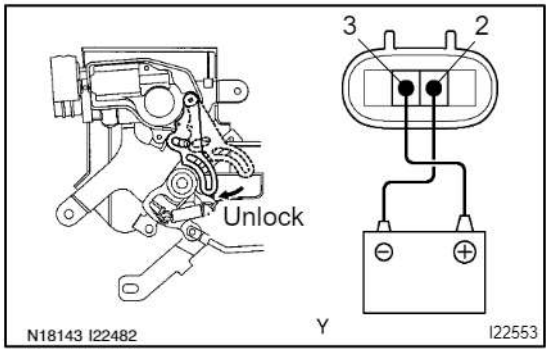
If the operation is not as specified, replace the door lock assembly.



9. INSPECT REAR DOOR UNLOCK DETECTION SWITCH CONTINUITY

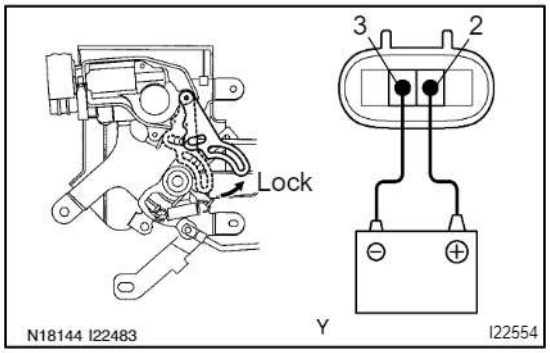
Tester connection	Switch position	Specified condition
1 - 4	OFF (Door Lock set to LOCK)	No continuity
	ON (Door Lock set to UNLOCK)	Continuity

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



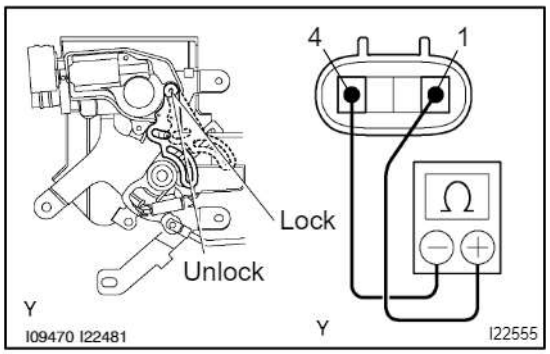
10. INSPECT BACK DOOR LOCK MOTOR OPERATION

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



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

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



11. INSPECT BACK DOOR UNLOCK DETECTION SWITCH CONTINUITY

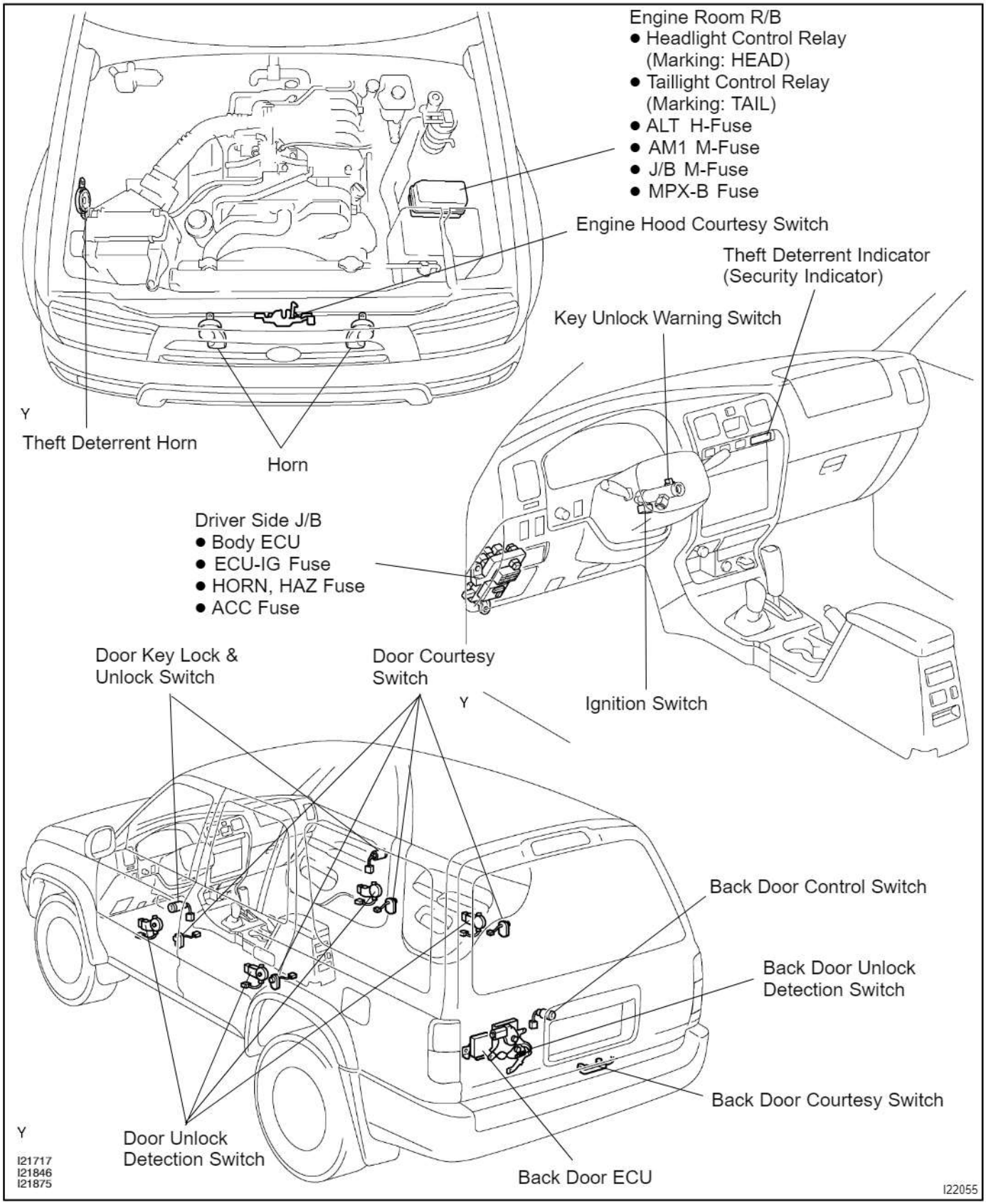
Tester connection	Switch position	Specified condition
1 - 4	OFF (Door Lock set to LOCK)	No continuity
	ON (Door Lock set to UNLOCK)	Continuity

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

THEFT DETERRENT SYSTEM

LOCATION

BE0CE-05



BE0CF-04

PRE-CHECK

1. ACTIVE ARMING MODE: SETTING THE THEFT DETERRENT MODE

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

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

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

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

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

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

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

HINT:

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

2. PASSIVE ARMING MODE: SETTING THE THEFT DETERRENT MODE

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

Setting Processes:

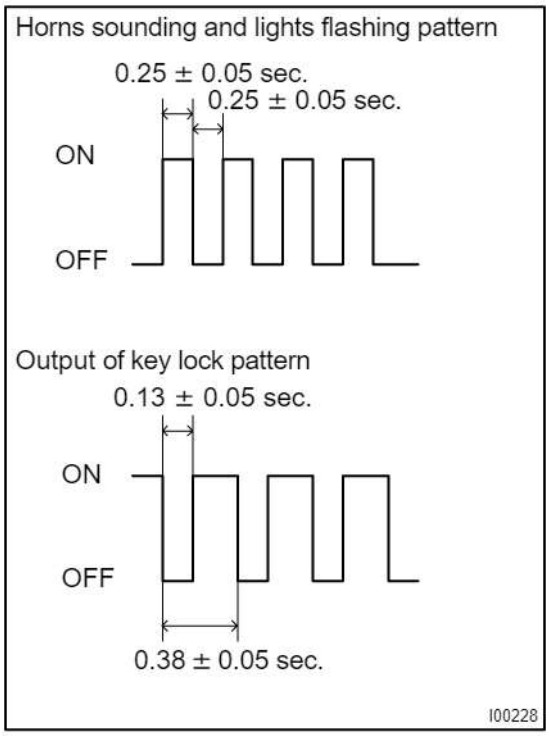
(1) Remove the ignition key from the key cylinder.

(2) Open and close driver door.

(3) Close any entry points (door, hood and back door).

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

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



3. THEFT DETERRENT OPERATION

When the system is set to the theft deterrent mode and any of the following conditions are met, the system sounds the horns and flashes the headlights and the taillights for approx. 1 minute. At the same time the system locks all doors (If all door are not locked at once, the system repeats door locking operation every 0.38 seconds during the one minute alarm time).

Condition

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

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

*1: Only active arming mode.

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

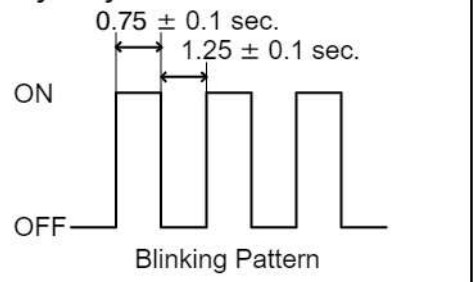
4. CANCELLATION OF THEFT DETERRENT OPERATION OR MODE

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

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

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

Security Only:



5. INDICATOR LIGHT (LED)

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

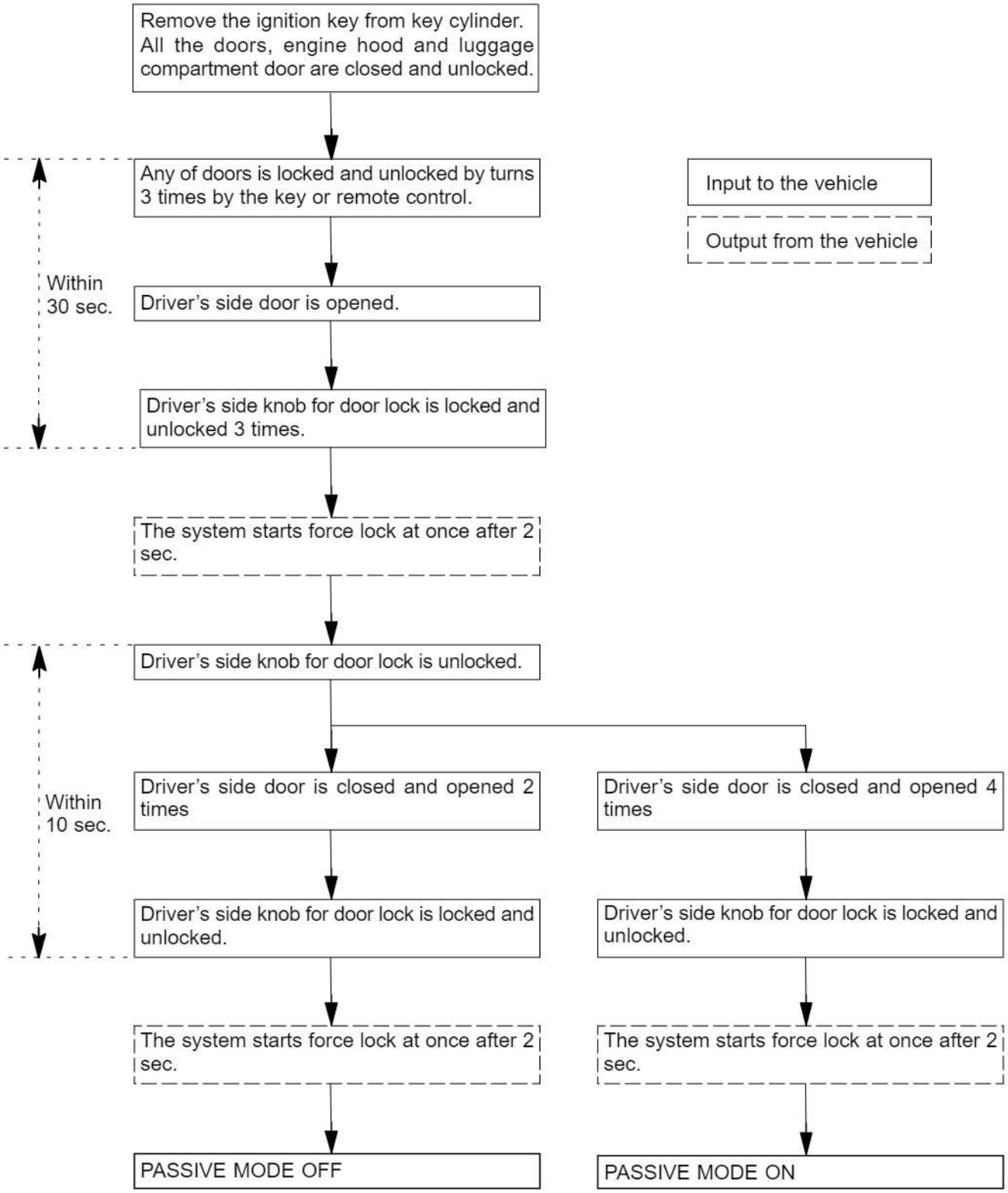
System Condition	Indicator Light
During set preparation time	ON
When the mode is set*	OFF
When alarm is activated	ON
When is the system temporally cancelled*	OFF

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

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

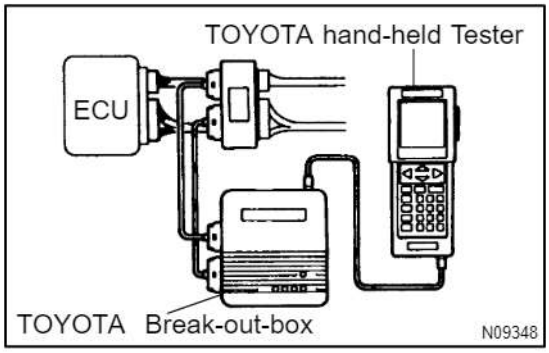
Even if the dome fuse blows open on the theft deterrent mode, the system will keep working on the theft deterrent mode.

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



HINT:

- Initial mode is PASSIVE MODE OFF.
- If there is a different signal in the middle of changing. It is invalied.



8. ECU TERMINAL VALUES MEASUREMENT BY USING TOYOTA BREAK-OUT-BOX AND TOYOTA HAND-HELD TESTER

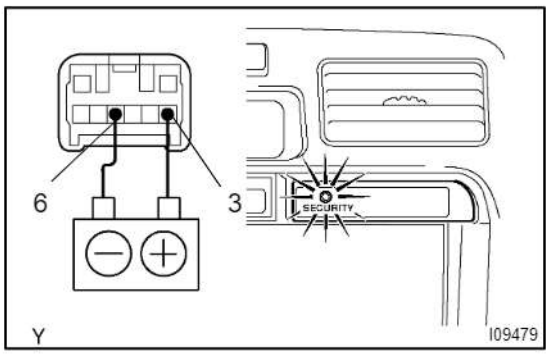
(a) Hook up the TOYOTA break- out- box and TOYOTA hand-held tester to the vehicle.

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

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

BE11O-02

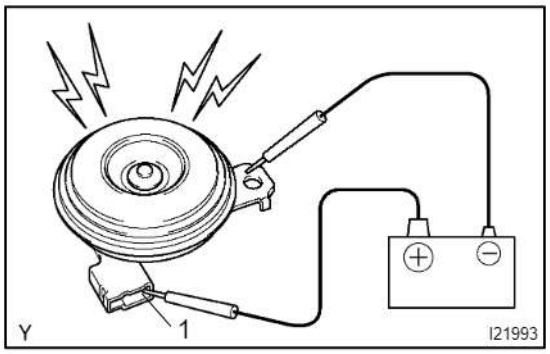
INSPECTION



1. INSPECT THEFT DETERRENT INDICATOR OPERATION

Connect the positive (+) lead from the battery to terminal 3 and negative (-) lead to terminal 6, and check that the indicator light lights up.

If the operation is not as specified, replace the integration control panel assembly.

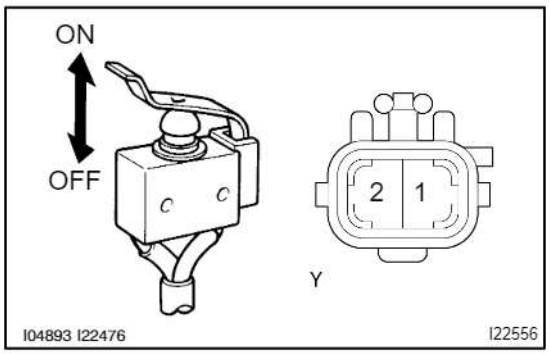


2. INSPECT HORN OPERATION

Connect the positive (+) lead from the battery to terminal 1 and negative (-) lead to the horn body, and check that the horn blows.

If the operation is not as specified, replace the horn.

3. INSPECT HORN CIRCUIT (See page DI-545)



4. INSPECT ENGINE HOOD COURTESY SWITCH CONTINUITY

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

If continuity is not as specified, replace the switch.

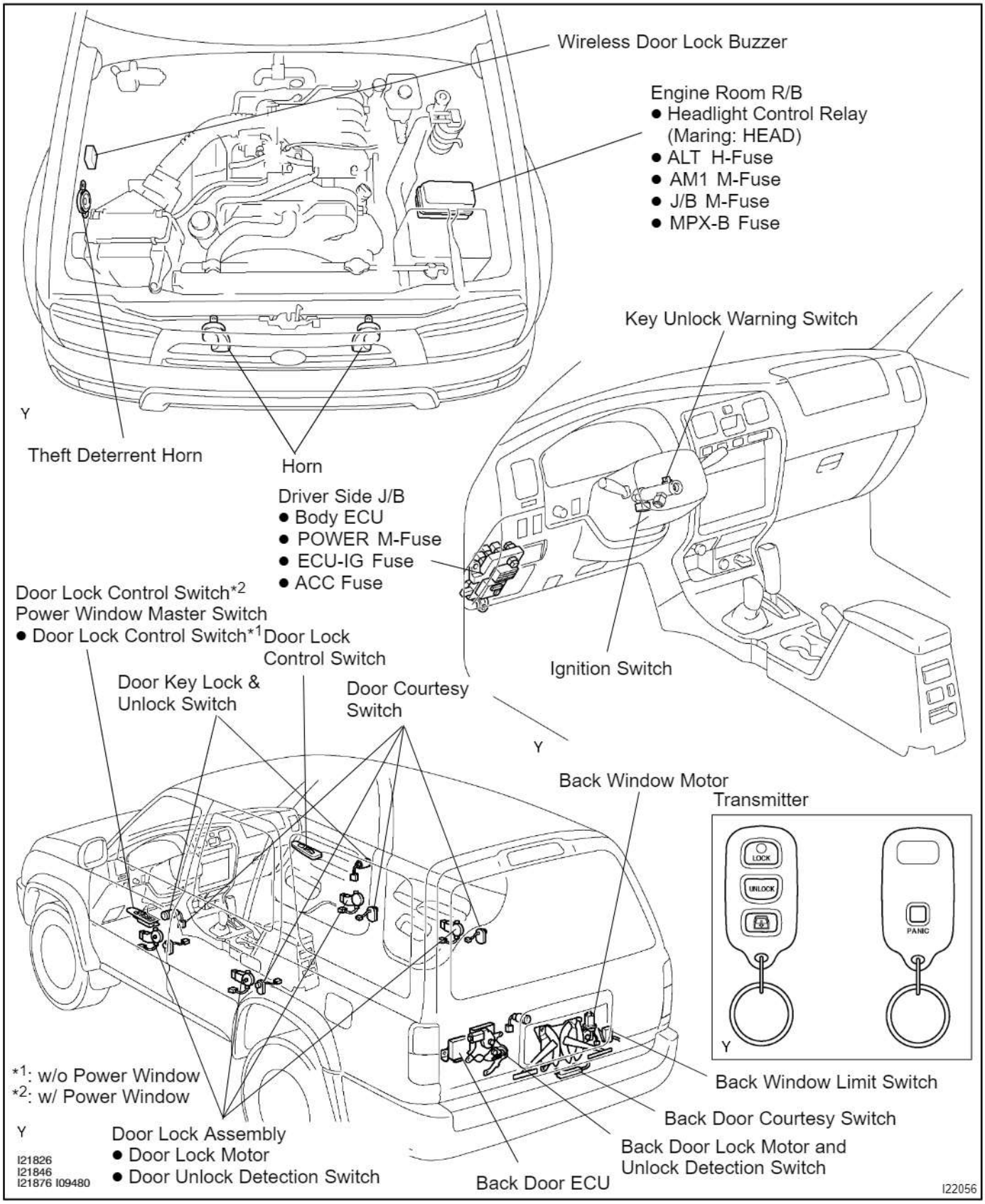
If continuity is as specified, inspect the switch circuit.

5. INSPECT ENGINE HOOD COURTESY SWITCH CIRCUIT (See page DI-541)

WIRELESS DOOR LOCK CONTROL SYSTEM

LOCATION

BE0CH-08



BE0CI-08

PRE-CHECK

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

Put the vehicle in the following conditions (Pre requisite).
(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 the operation of UNLOCK and LOCK switch 3 times or more alternately, check the UNLOCK-LOCK operation from 3rd time onward.
● Following procedures are standard operation.
(1) Keep about 1 M away in the right direction from the outside handle of a driver's seat.
(2) Face the transmitter to the vehicle and press one of transmitter switches for about 1 second

No

Yes

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

Transmitter battery check:

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

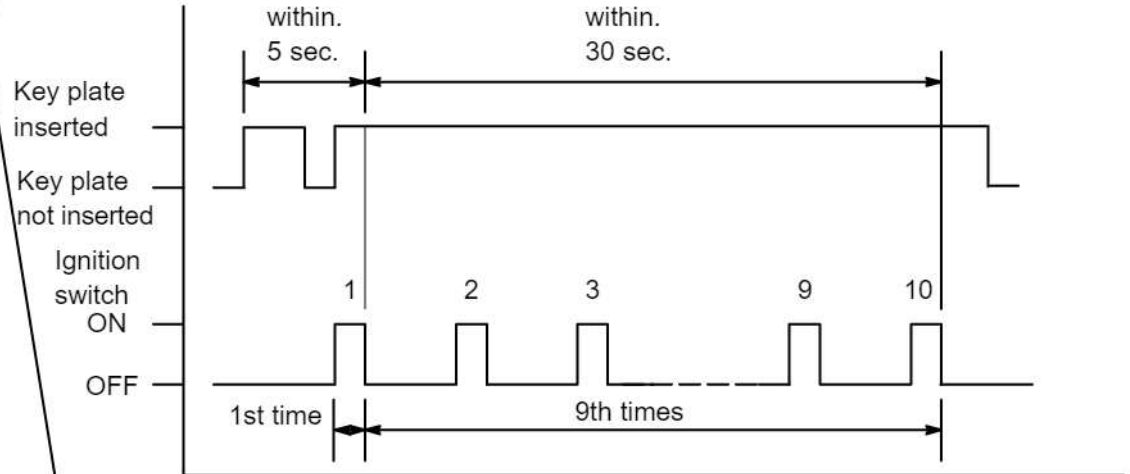
Yes → Battery faulty.

No

Put the vehicle in the same conditions as shown in the previous page. (Pre requisite)

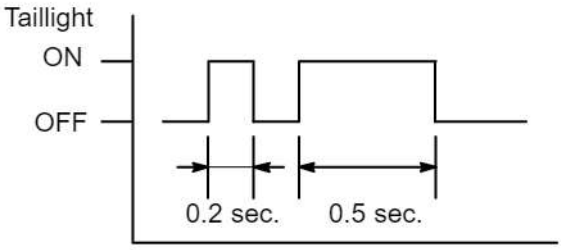
Inspection starts by using self diagnostic mode:

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



Self diagnostic mode operation check:

After the self diagnostic mode input operation has been performed, check the taillight.



No
(Not enter into self diagnostic mode)

Is the method to enter into the diagnostic mode correct?

No

Yes

Is the lighting function of the operation confirmation of the taillight blinking?

No

Check control taillight.

Yes

Yes
(Enter into self diagnostic mode)

Key unlock warning switch inspection:

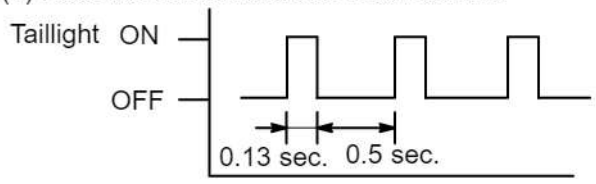
Check that continuity exists between connector terminal 5 of the integration relay on the vehicle side and the ground by inserting the key plate into the ignition key cylinder.

Check key unlock warning switch (See page BE-12).

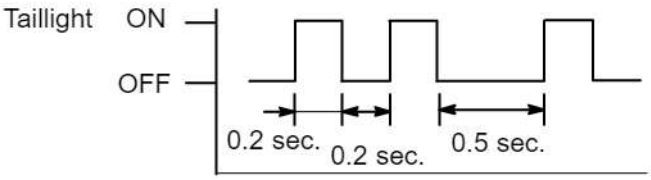
Self diagnostic mode check:

Check that how the taillight when pressing each transmitter switch.

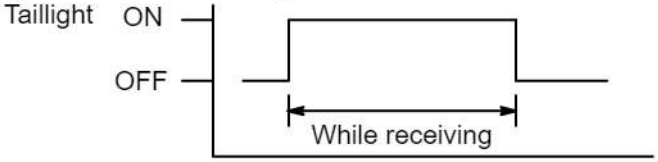
(1) Receiver normal wave of LOCK switch.



(2) Receiver normal wave of UNLOCK switch.



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



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

(3) is output.
(All taillight's response are same.)

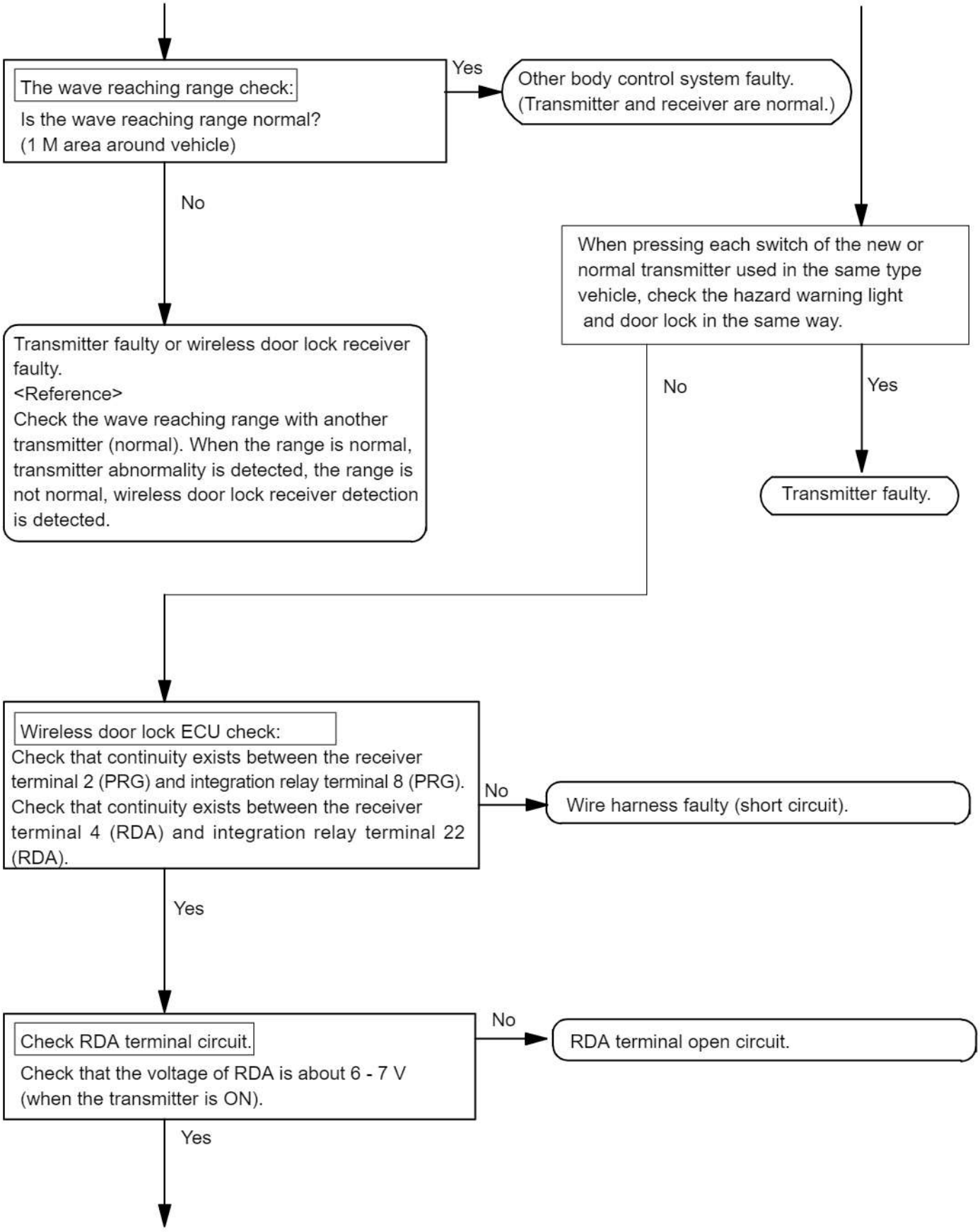
Recognition code registration function check:

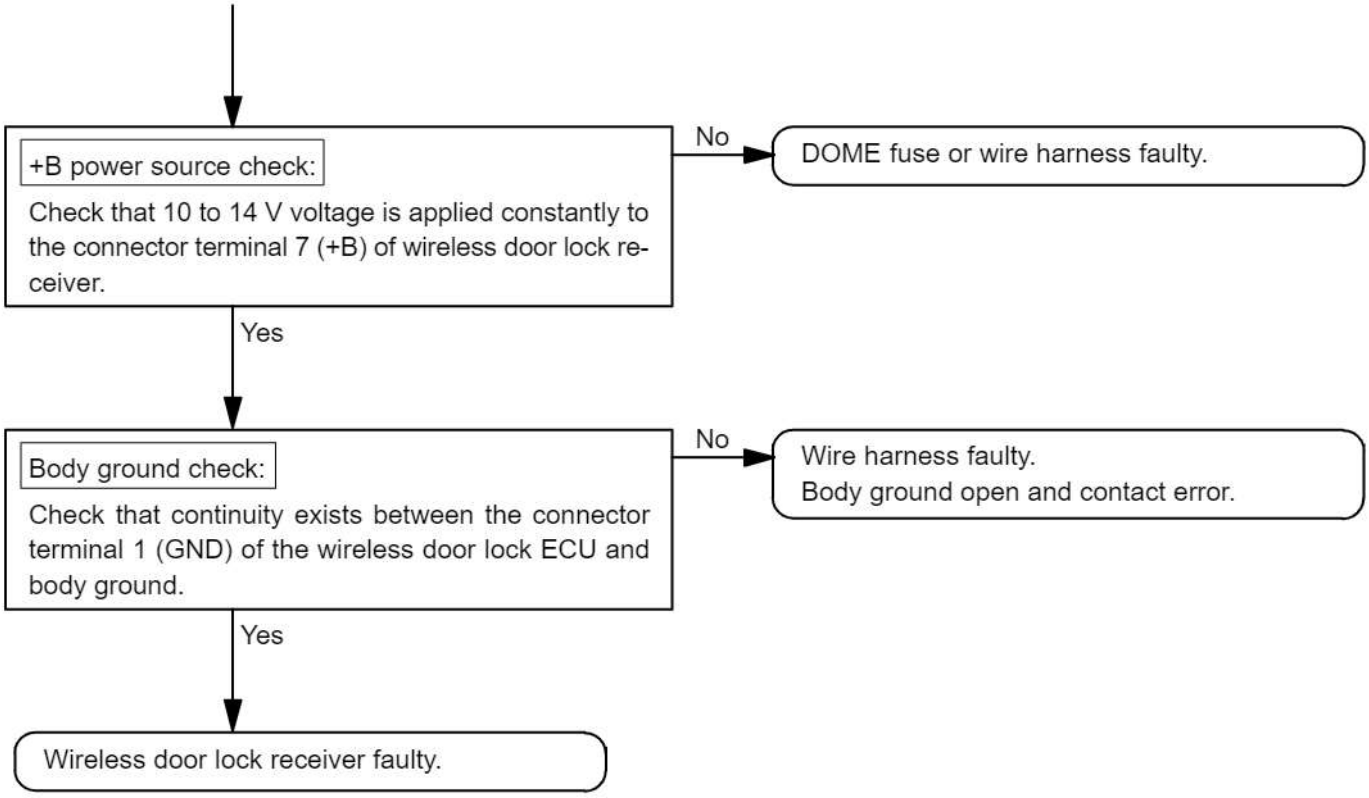
Check that it is possible to enter into rewrite mode or add mode.
(Refer to "Wireless door lock receiver and transmitter" - "Recognition code registration".)

Wireless door lock operate normally when recognition code is registered.

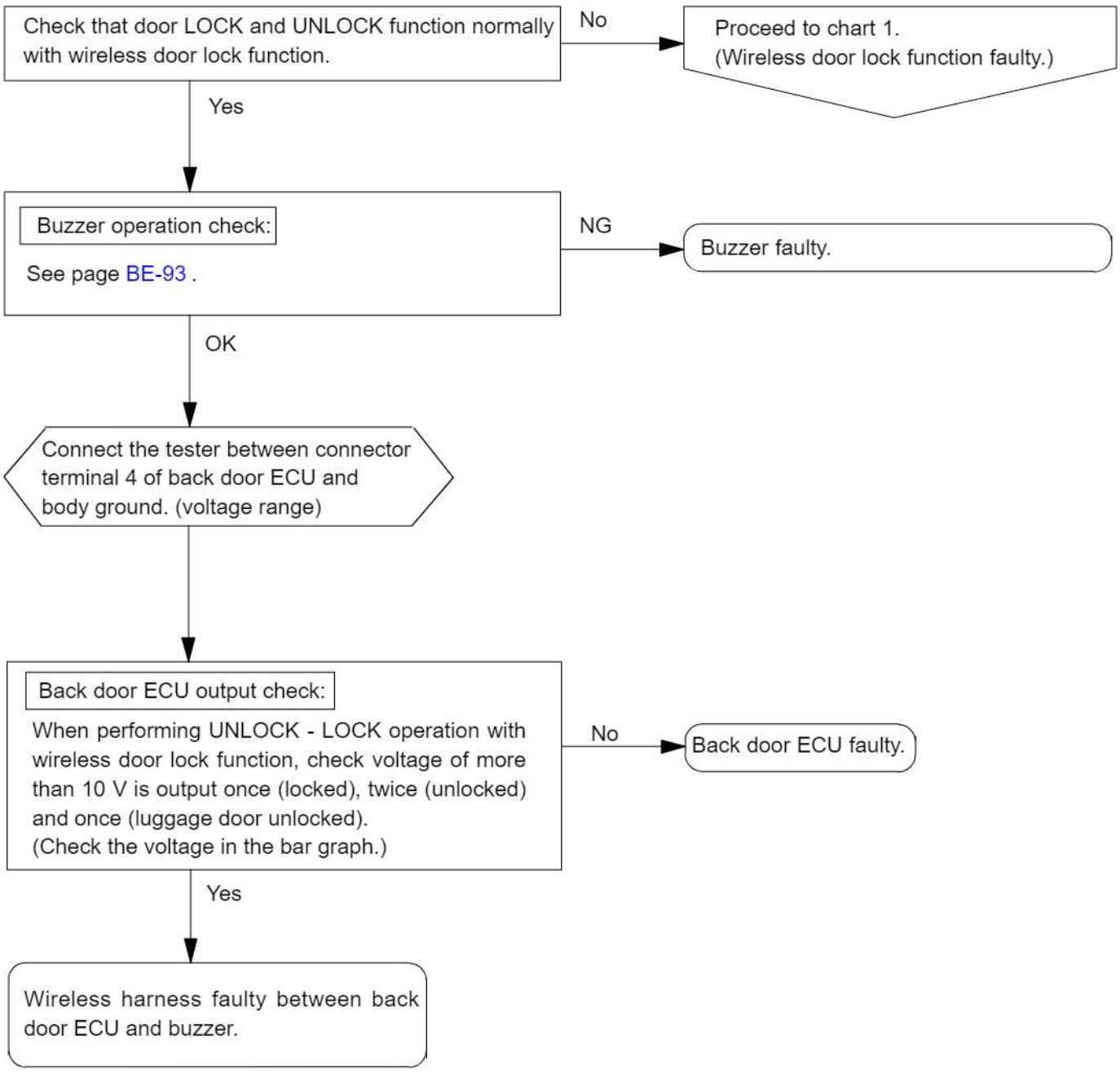
No response from taillight.

(1), (2) are output.


The wave reaching range check:
Is the wave reaching range normal?
(1 M area around vehicle)
Yes
Other body control system faulty.
(Transmitter and receiver are normal.)
No
When pressing each switch of the new or normal transmitter used in the same type vehicle, check the hazard warning light and door lock in the same way.
Transmitter faulty or wireless door lock receiver faulty.
<Reference>
Check the wave reaching range with another transmitter (normal). When the range is normal, transmitter abnormality is detected, the range is not normal, wireless door lock receiver detection is detected.
No
Yes
Transmitter faulty.
Wireless door lock ECU check:
Check that continuity exists between the receiver terminal 2 (PRG) and integration relay terminal 8 (PRG).
Check that continuity exists between the receiver terminal 4 (RDA) and integration relay terminal 22 (RDA).
No
Wire harness faulty (short circuit).
Yes
Check RDA terminal circuit.
Check that the voltage of RDA is about 6 - 7 V (when the transmitter is ON).
No
RDA terminal open circuit.
Yes


+B power source check:
Check that 10 to 14 V voltage is applied constantly to the connector terminal 7 (+B) of wireless door lock receiver.
No
DOME fuse or wire harness faulty.
Yes
Body ground check:
Check that continuity exists between the connector terminal 1 (GND) of the wireless door lock ECU and body ground.
No
Wire harness faulty.
Body ground open and contact error.
Yes
Wireless door lock receiver faulty.

2	**Wireless door lock buzzer does not chirp.**



BE11P-01

INSPECTION

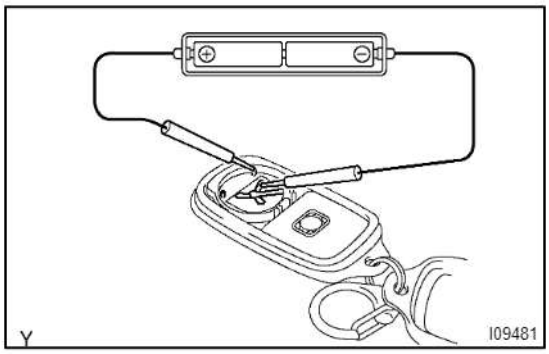
1. INSPECT WIRELESS DOOR LOCK TRANSMITTER OPERATION

HINT:

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

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

(b) Remove the battery (lithium battery).



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

HINT:

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

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

Standard:

Remote control of vehicle door lock can be operated.

HINT:

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

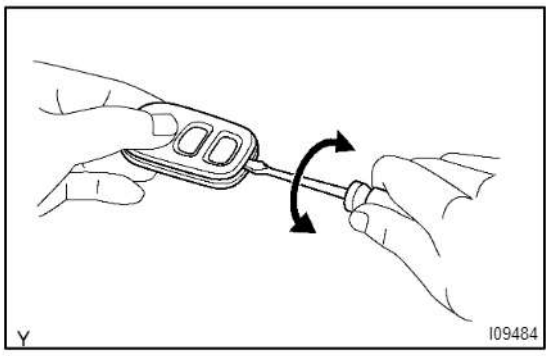
(e) Install the battery (lithium battery).

(f) Install a cover.

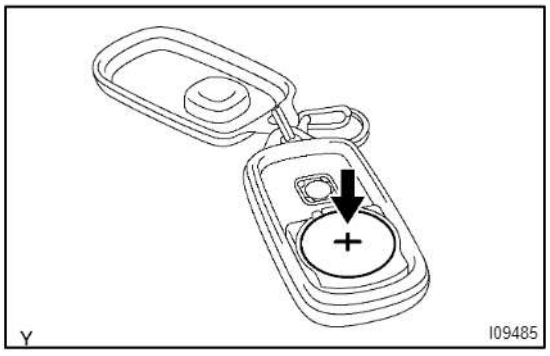
2. CHECK BATTERY CAPACITY

HINT:

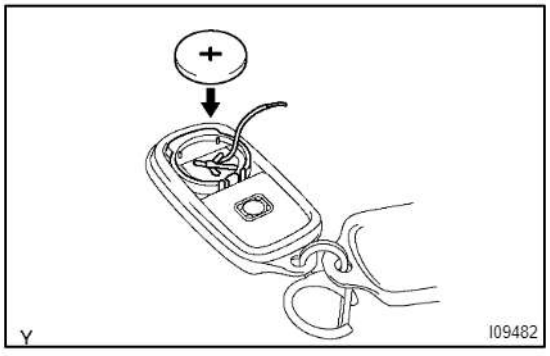
- Make sure to use the TOYOTA electrical tester.
- With the battery unloaded, judge can not be made whether the battery is available or not on the test.
- When the transmitter is faulty, the energy amount left in the battery might not be checked correctly.
- On the lithium battery used for the transmitter,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



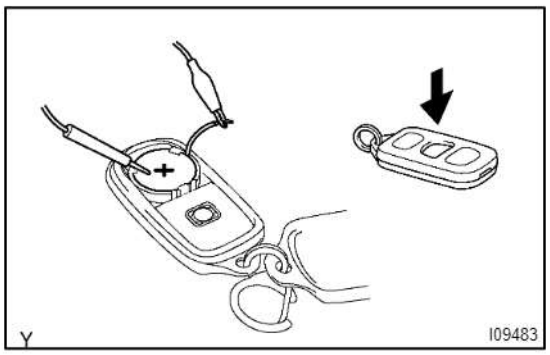
(a) Remove the cover using a (-) driver.



(b) Remove the battery (lithium battery) from the transmitter.



(c) Connect the lead to the (-) terminal of the transmitter and install the battery.

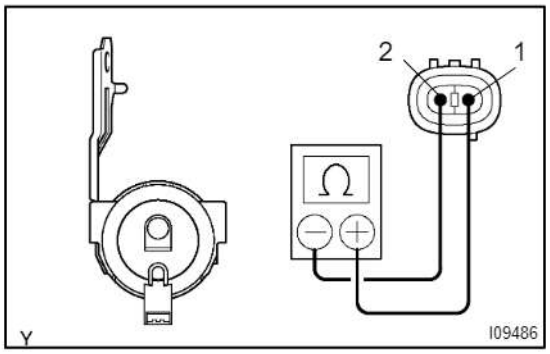


(d) Connect the (+) tester to the (+) battery (lithium battery), and (-) tester to the lead respectively.
(e) Press one of the transmitting switches on the transmitter for approx. 1 second.
(f) Press the transmitting switch on the transmitter again to check the voltage.
Standard: 2.1 V or more

HINT:

- When the temperature of the battery is low, the judge can not be made correctly.
  When the outcome of the test is less than 2.1 V, conduct the test again after leaving the battery in the place at 18 °C for more than 30 minutes.
- By auto power off function, the voltage becomes no load voltage (more than 2.5 V) condition after 20 seconds from the switch was pressed.
  Make sure to read the voltage before of it.
- High voltage might be shown 1 to 2 times after leaving the battery, judge should be made with the voltage shown at the 3rd time or later.

(g) Disconnect the lead.
(h) Set the battery (lithium battery) in the transmitter.
(i) Install the cover.



3. INSPECT WIRELESS DOOR LOCK BUZZER OPERATION

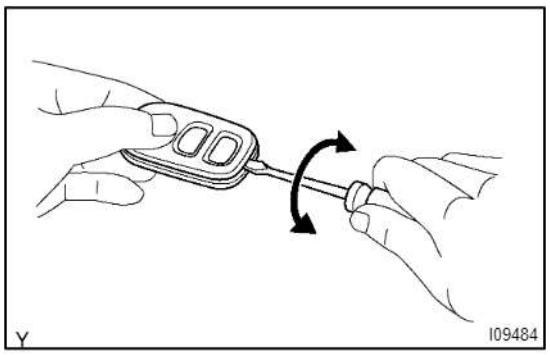
Connect the positive (+) lead from the ohmmeter to terminal 1 and the negative (-) lead to terminal 2, and measure resistance approx. 1 kΩ.

If resistance is not as specified, replace the buzzer.

4. INSPECT WIRELESS DOOR LOCK BUZZER CIRCUIT (See page DI-574)

BE11Q-01

REPLACEMENT

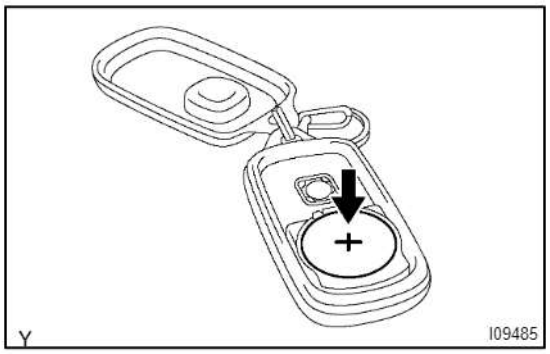


1. REPLACE TRANSMITTER (LITHIUM) BATTERY

(a) Using a screwdriver, remove the cover.

NOTICE:

Do not pry out the cover forcibly.



(b) Remove the battery (lithium battery) as shown in the illustration.

NOTICE:

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

(c) Install a battery (lithium battery).

NOTICE:

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

(d) Install the cover.

NOTICE:

It might cause faulty contact of battery (lithium battery) and terminals.

2. REPLACE BACK DOOR ECU AND TRANSMITTER

NOTICE:

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

(a) Select the operation mode to perform from the following operation modes.

- Add mode
- Rewrite mode
- Prohibition mode
- Confirmation mode

HINT:

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

(b) Follow the chart on the following page to register the transmitter recognition code at the back door ECU.

HINT:

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

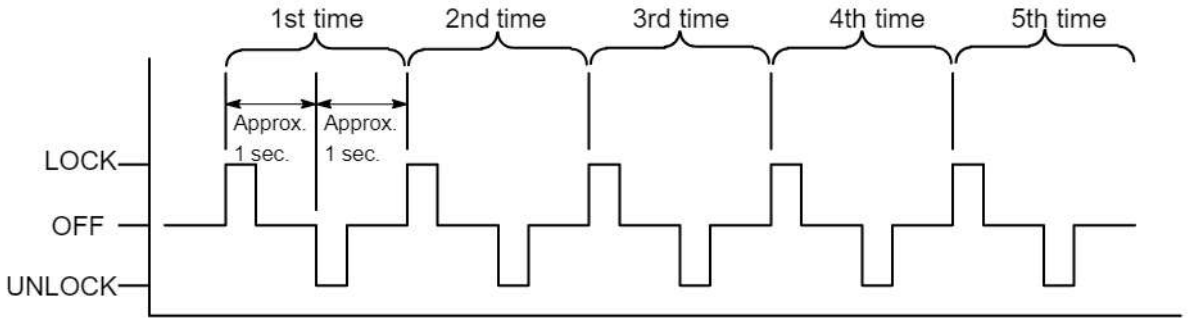
Start registration of recognition code

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

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

Within 40 sec.

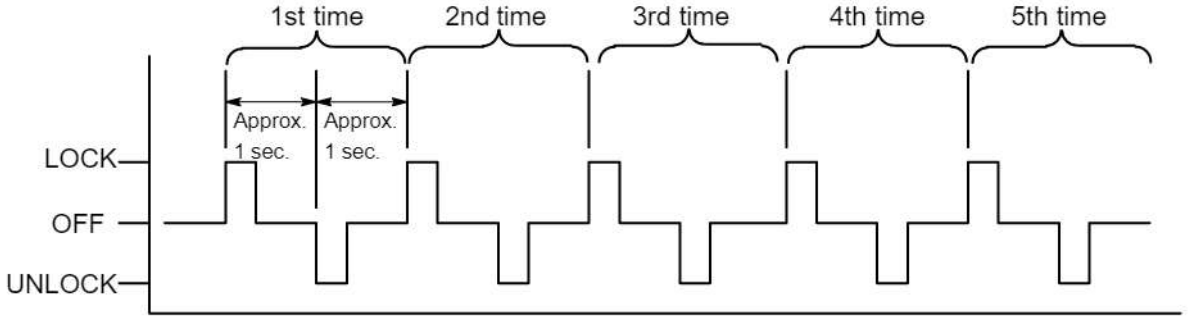
Press the door lock control switch (for manual operation) 5 times to LOCK/UNLOCK at approx. 1 sec. interval.



Close the driver's door, then open it.

Within 40 sec.

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

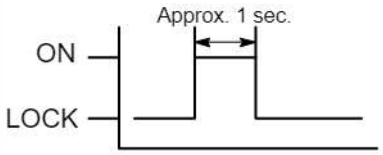


Insert the key into the ignition key cylinder.

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

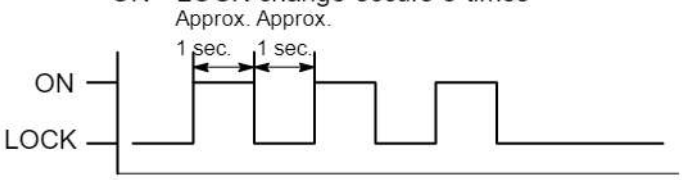
Add mode

ON - LOCK change occurs 1 time



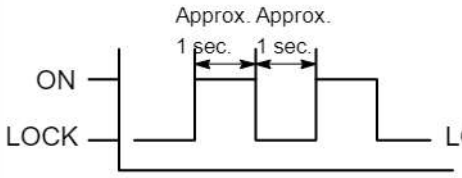
Confirmation mode

ON - LOCK change occurs 3 times



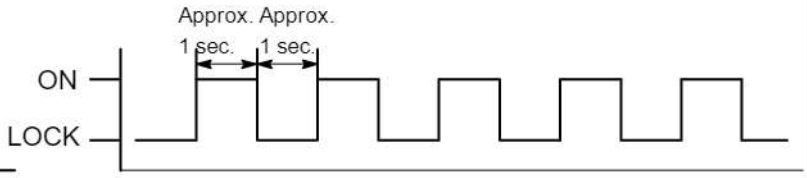
Rewrite mode

ON - LOCK change occurs 2 times



Prohibition mode

ON - LOCK change occurs 5 times



Pull out the key plate from the ignition key cylinder.

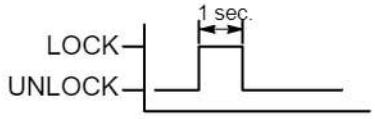
Within 3 sec.

When add mode or rewrite mode is selected.

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.

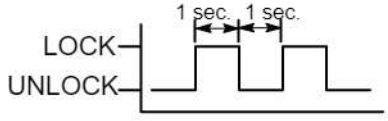
LOCK-UNLOCK occurs once

Indicates that add mode has been selected.



LOCK-UNLOCK occurs twice

Indicates that rewrite mode has been selected.

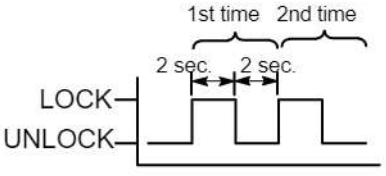


When prohibition mode is selected.

When confirmation mode is selected.

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

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

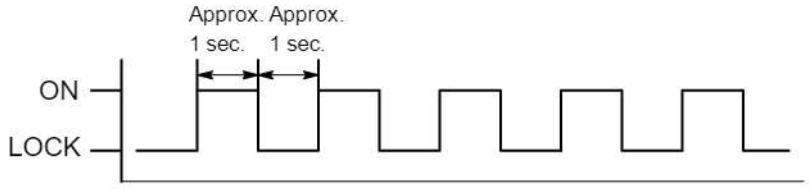


Registration of recognition code (Confirmation mode and probation mode) is completed.

When prohibition mode is selected.

Within 40 sec.

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



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

Within 3 secs.

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

Within 3 sec.

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

LOCK-UNLOCK occurs once

Registration of recognition code is completed

LOCK-UNLOCK occurs twice

Registration of recognition code has not been completed.

- Recognition code received first time and second time did not match.

If they are not performed, the mode returns to the normal mode, then start with "Start registration of recognition code".

Proceed to finish registration

Proceed to continue registration

Within 40 secs.

If even one of the following conditions is satisfied, registration of recognition codes in completed.

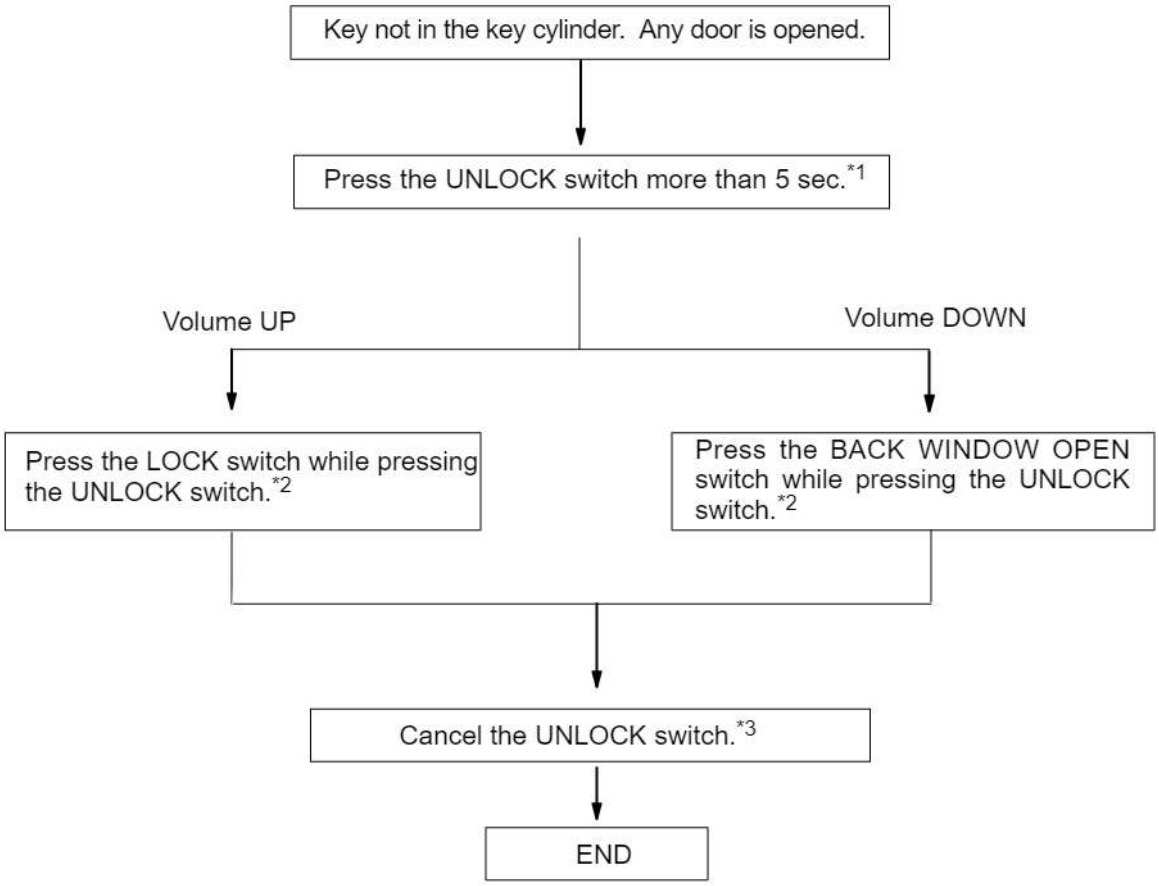
- 40 secs. elapses since the body ECU response.
- The driver's door is closed.
- The key plate is inserted in the ignition key cylinder.
- 4 types recognition codes are registration at one time.

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

BE19J-01

ADJUSTMENT

ADJUST WIRELESS DOOR LOCK BUZZER VOLUME

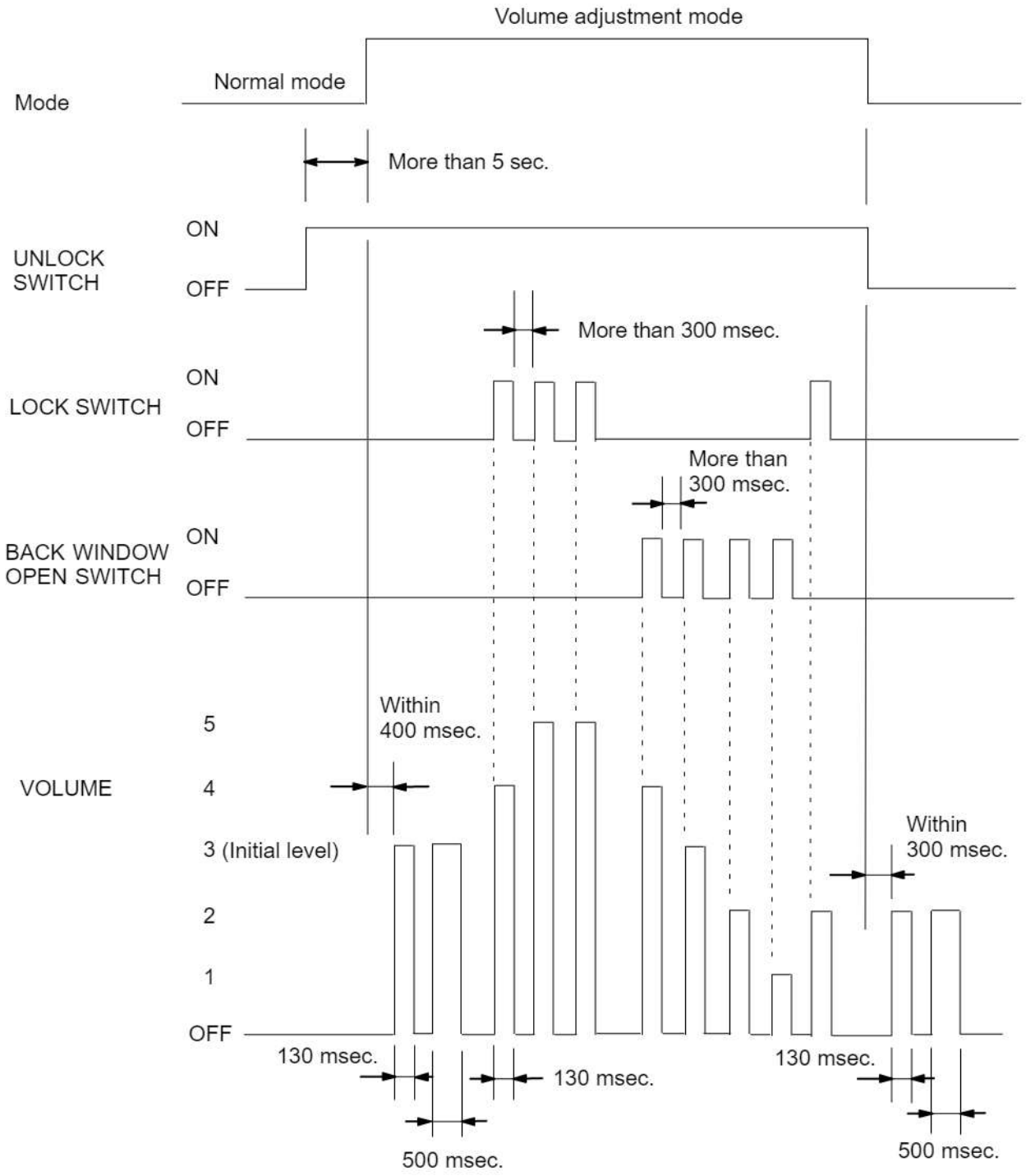


*1: When the mode is changed to the "Volume adjustment mode", the buzzer sounds 2 times.

*2: 5 volume level can be set. Initial volume is set to the intermediate level.

*3: When the mode is changed to the "Normal mode", the buzzer sounds 2 times.

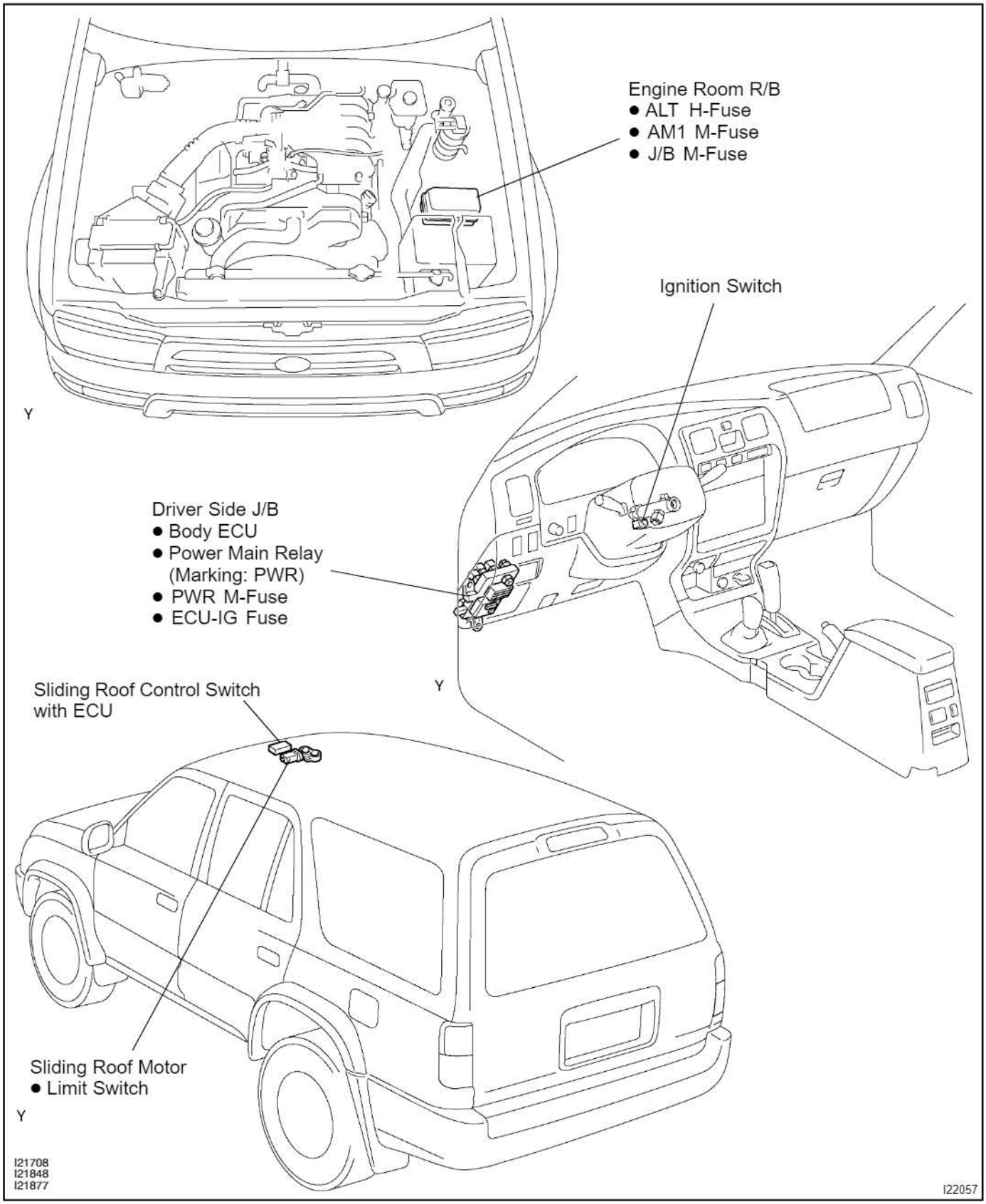
<REFERENCE>


Volume adjustment mode
Mode
Normal mode
More than 5 sec.
UNLOCK SWITCH
ON
OFF
More than 300 msec.
LOCK SWITCH
ON
OFF
More than 300 msec.
BACK WINDOW OPEN SWITCH
ON
OFF
Within 400 msec.
VOLUME
5
4
3 (Initial level)
2
1
OFF
Within 300 msec.
130 msec.
130 msec.
130 msec.
500 msec.
500 msec.

SLIDING ROOF SYSTEM

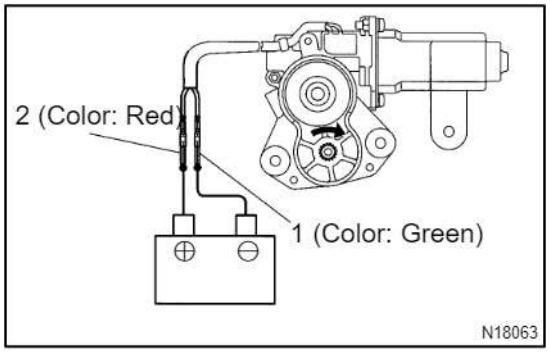
LOCATION

BE077-03



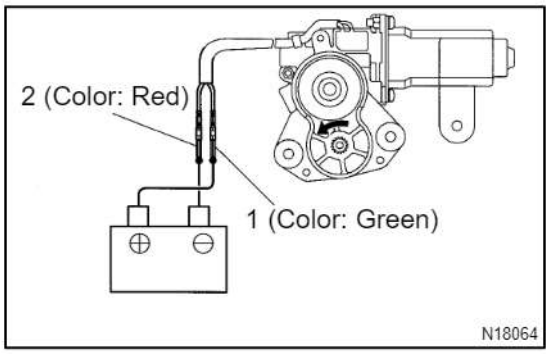
BE11R-02

INSPECTION



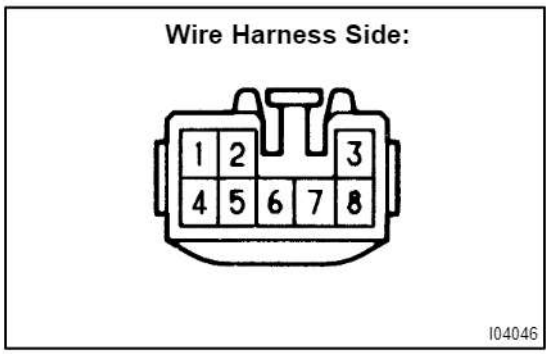
1. INSPECT SLIDING ROOF MOTOR CONTINUITY

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



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

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



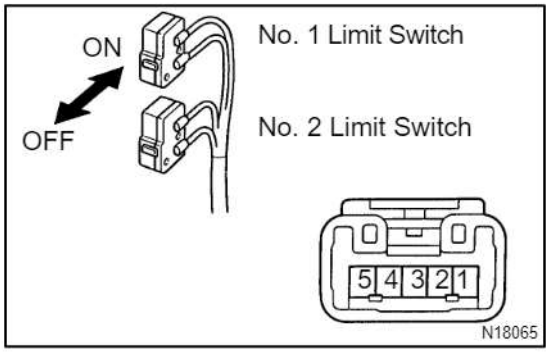
2. INSPECT SLIDING ROOF CONTROL RELAY CIRCUIT

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

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

HINT:

*Exceptions: During 43 seconds after the ignition switch is turned to ON → OFF.



3. INSPECT LIMIT SWITCH CONTINUITY

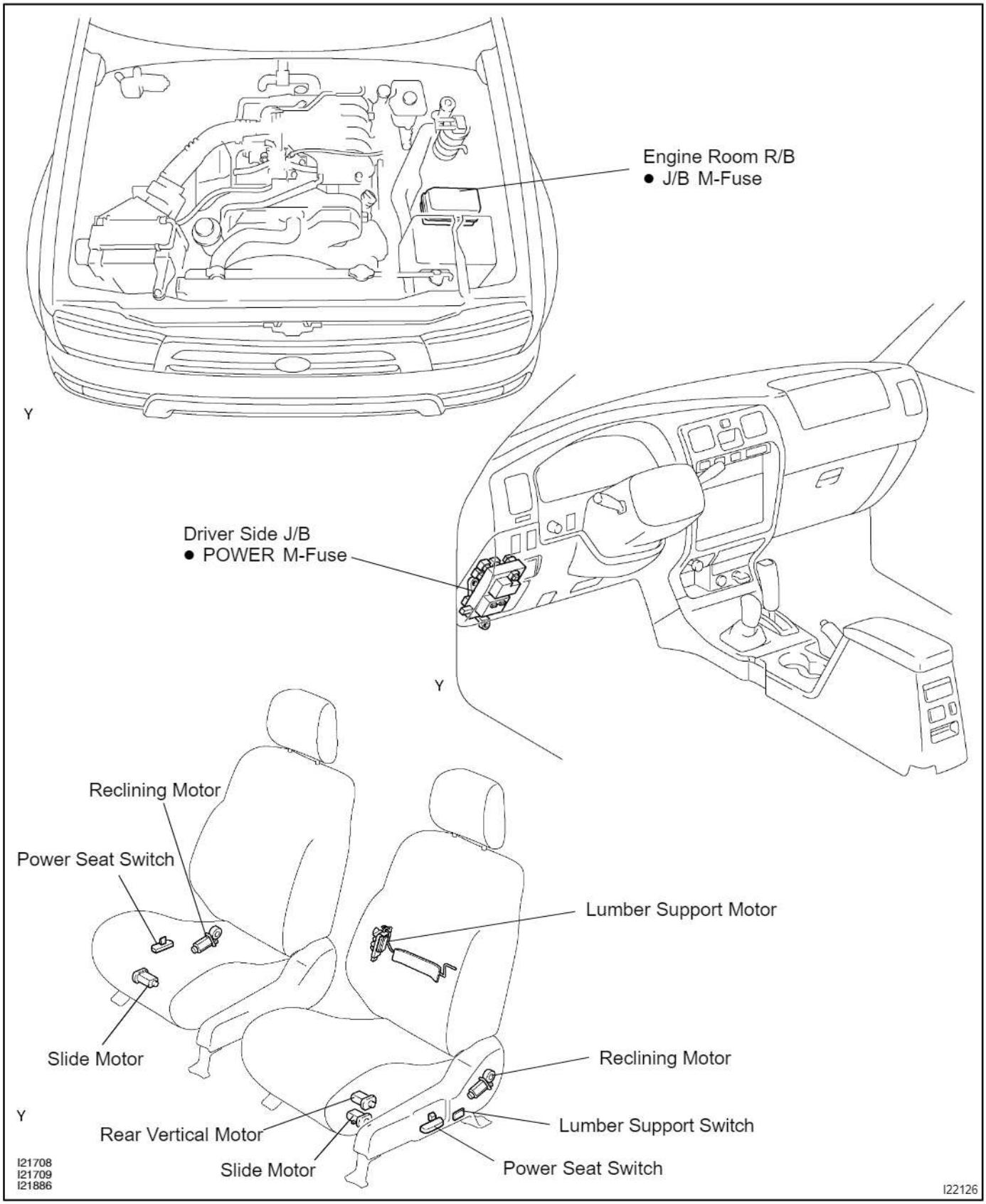
Tester connection	Switch position	Specified condition
3 - 5	No. 1 limit switch ON (Switch pin pushed in)	Continuity
3 - 4	No. 2 limit switch ON (Switch pin pushed in)	Continuity

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

POWER SEAT CONTROL SYSTEM

LOCATION

BE079-03



BE242-01

INSPECTION

1. INSPECT DRIVER'S SEAT SWITCH CONTINUITY

Slide switch:

Tester connection	Switch position	Specified condition
5 - 10	FRONT	Continuity
8 - 9		
5 - 9	OFF	Continuity
8 - 9		
5 - 9	BACK	Continuity
8 - 10		

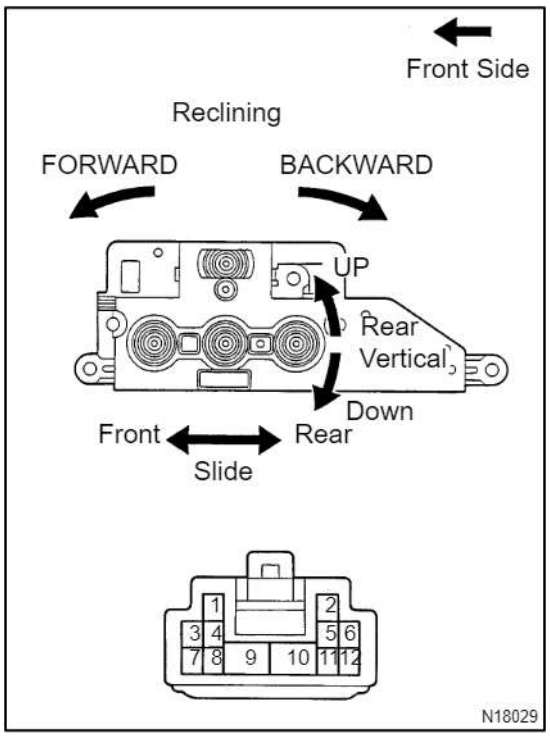
Rear vertical switch:

Tester connection	Switch position	Specified condition
2 - 10	UP	Continuity
6 - 7		
2 - 7	OFF	Continuity
6 - 7		
2 - 7	DOWN	Continuity
6 - 10		

Reclining switch:

Tester connection	Switch position	Specified condition
4 - 10	FORWARD	Continuity
7 - 9		
4 - 9	OFF	Continuity
7 - 9		
4 - 9	BACKWARD	Continuity
7 - 10		

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



2. INSPECT PASSENGER'S SEAT SWITCH CONTINUITY

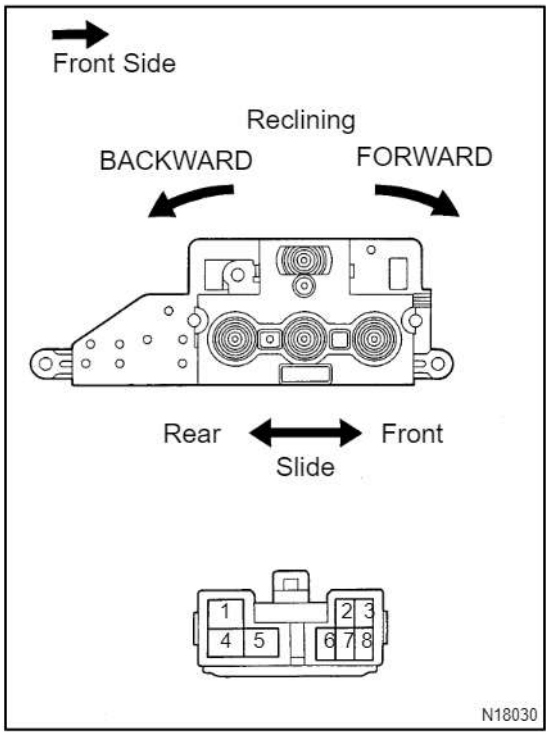
Slide switch:

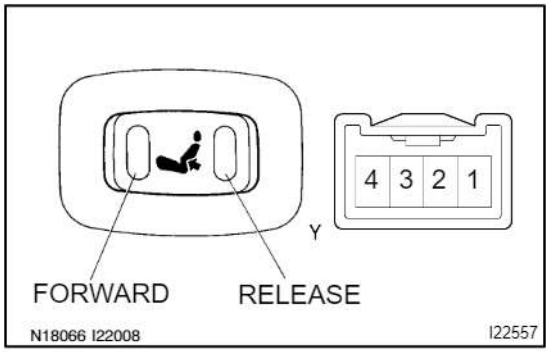
Tester connection	Switch position	Specified condition
4 - 8	FRONT	Continuity
5 - 7		
4 - 7	OFF	Continuity
4 - 8		
4 - 7	REAR	Continuity
8 - 8		

Reclining switch:

Tester connection	Switch position	Specified condition
2 - 5	FORWARD	Continuity
3 - 4		
2 - 4	OFF	Continuity
3 - 4		
2 - 4	BACKWARD	Continuity
3 - 5		

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

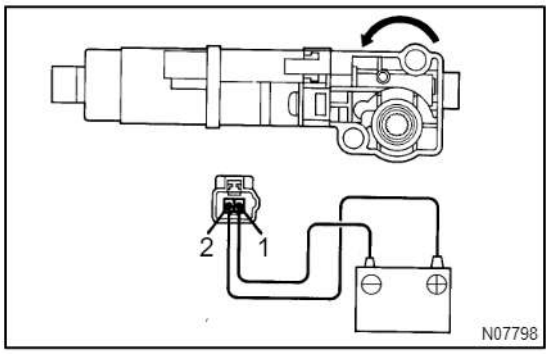




3. INSPECT LUMBAR SUPPORT SWITCH CONTINUITY

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

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

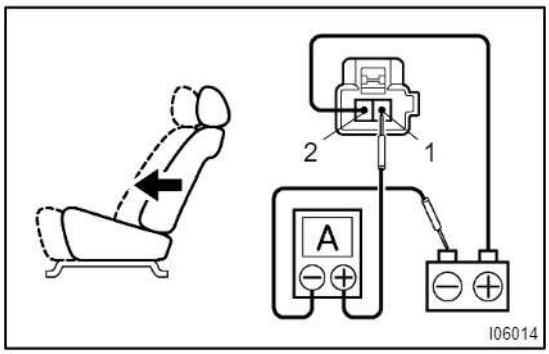


4. INSPECT SEAT SLIDE MOTOR OPERATION

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

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

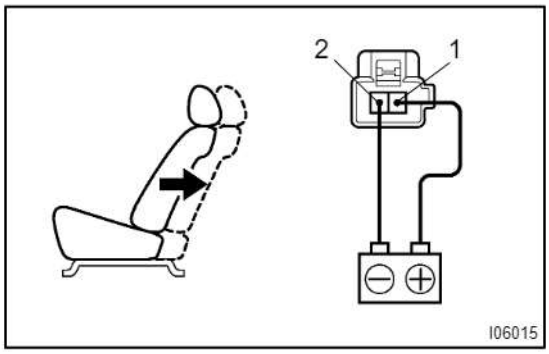
If the operation is not as specified, replace the motor.



5. INSPECT DRIVER'S SEAT SLIDE MOTOR PTC THERMISTOR OPERATION

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

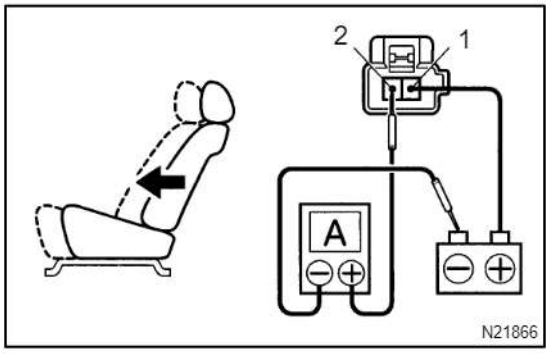
(b) Continue to apply voltage, check the current changes to less than 1 ampere within 4 to 90 seconds.



(c) Disconnect the lead from the terminals.

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

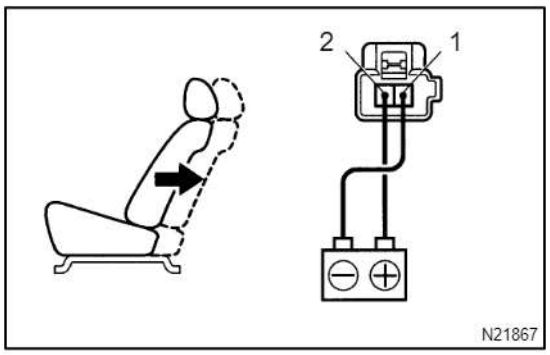
If operation is not as specified, replace the motor.



6. INSPECT PASSENGER'S SEAT SLIDE MOTOR PTC THERMISTOR OPERATION

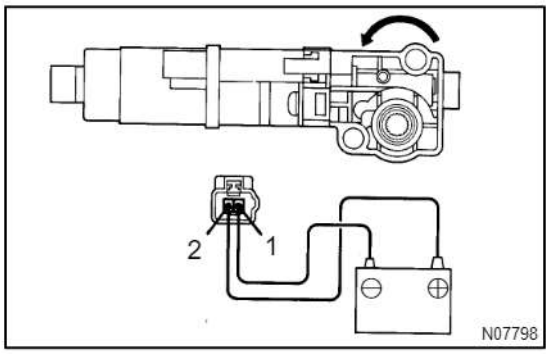
(a) Connect the positive (+) lead from the battery to terminal 1, the positive (+) lead from the ammeter to terminal 2, and the negative (-) lead to battery negative (-) terminal, and move the seat to the front end position.

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



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

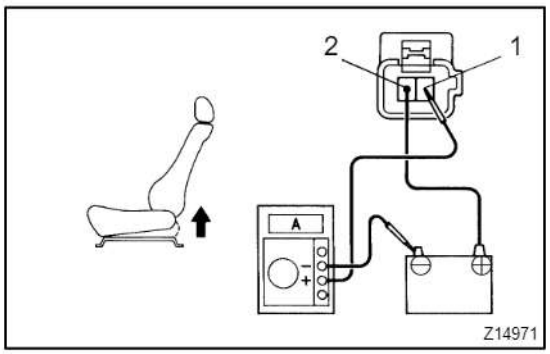
If the operation is not as specified, replace the motor.



7. INSPECT REAR VERTICAL MOTOR OPERATION

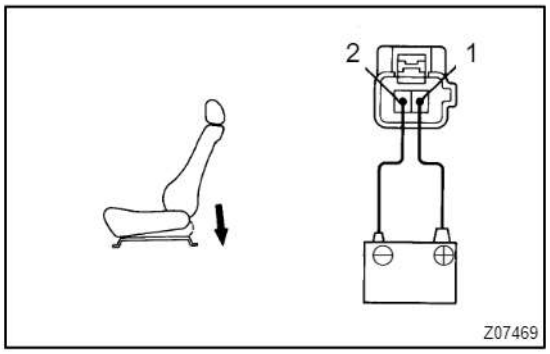
(a) Connect the positive (+) lead from the battery to terminal 2 and the negative (-) lead to terminal 1, then check that the motor turns clockwise.
(b) Reverse the polarity, then check that the motor turns counterclockwise.

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



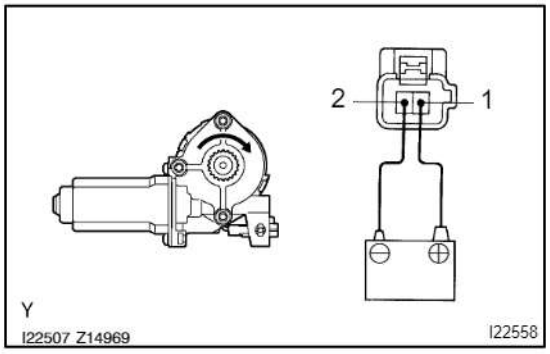
8. INSPECT REAR VERTICAL MOTOR PTC THERMISTOR OPERATION

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



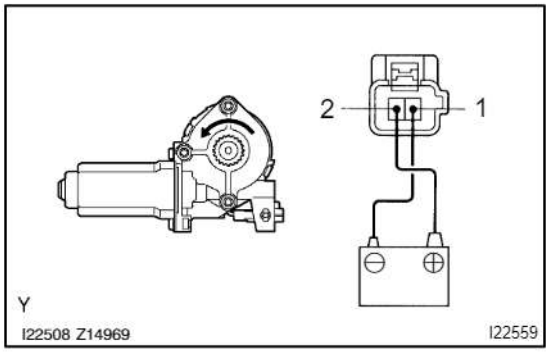
(c) Disconnect the leads from the terminals.
(d) Approximately 60 seconds later, connect the positive (+) lead from battery to terminal 1 and the negative (-) lead to terminal 2, then check that the seat cushion begins to descend.

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



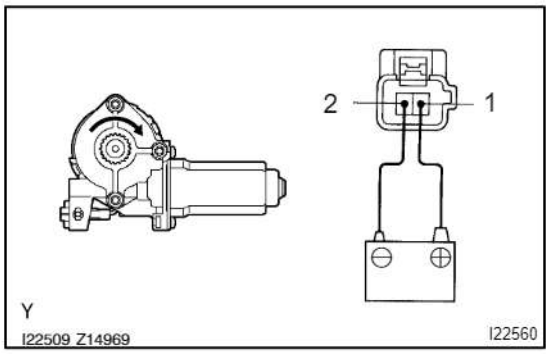
9. INSPECT DRIVER'S SEAT RECLINING MOTOR OPERATION

(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.



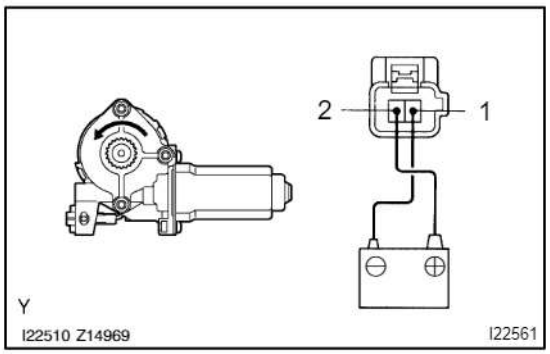
(b) Reverse the polarity, check that the motor turns counter-clockwise.

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



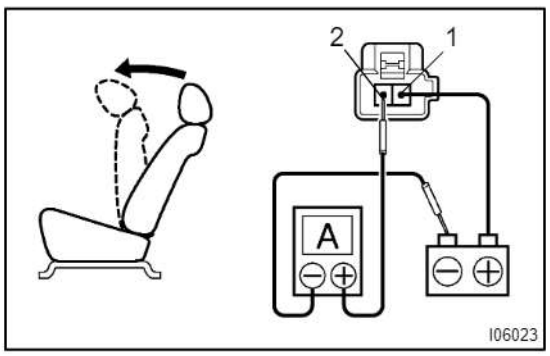
10. INSPECT PASSENGER'S RECLINING MOTOR OPERATION

(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 the operation is not as specified, replace the motor.

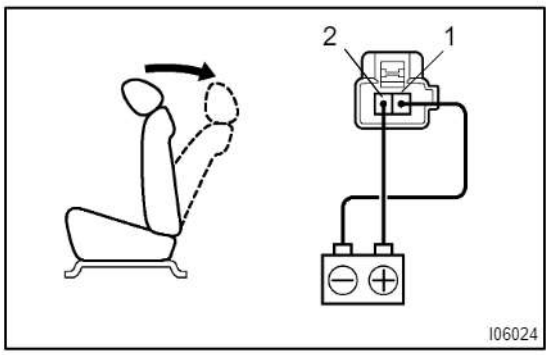


11. INSPECT DRIVER'S SEAT RECLINING MOTOR PTC THERMISTOR OPERATION

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

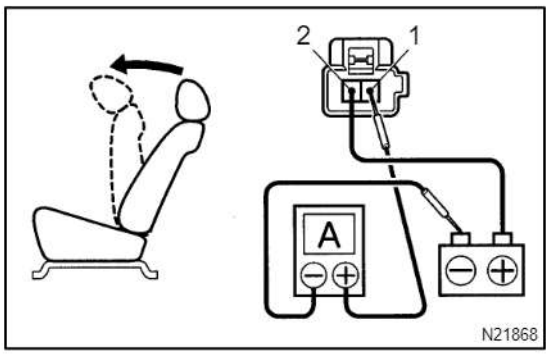
(b) Continue to apply voltage, check the current changes to less than 1 ampere within 4 to 90 seconds.

(c) Disconnect the lead from the terminals.



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

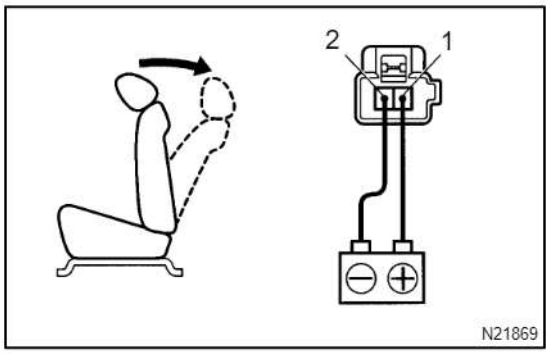
If the operation is not as specified, replace the motor.



12. INSPECT PASSENGER'S SEAT RECLINING MOTOR PTC THERMISTOR OPERATION

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

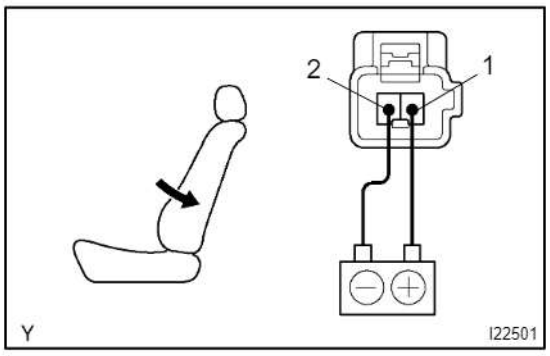
(b) Continue to apply voltage, check the current changes to less than 1 ampere within 4 to 90 seconds.



(c) Disconnect the lead from terminals.

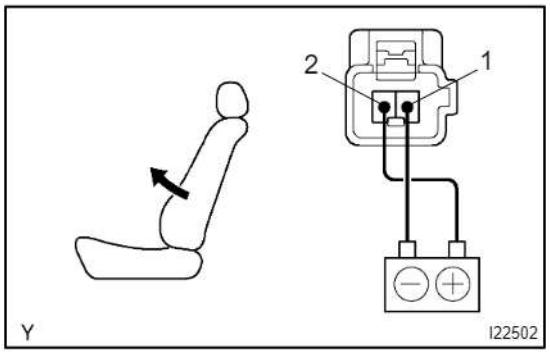
(d) Approximately 60 seconds later, connect the positive (+) lead from the battery to terminal 1 and the negative (-) lead to terminal 2, check that the seat back starts to fall backwards.

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



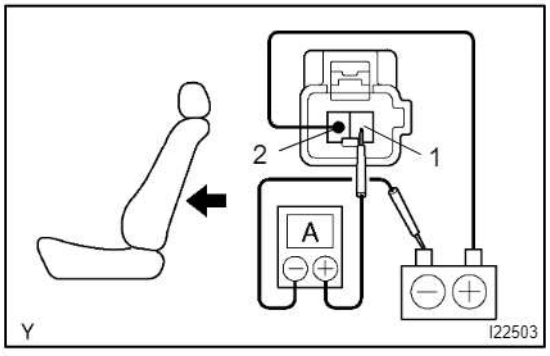
13. INSPECT LUMBAR SUPPORT MOTOR OPERATION

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



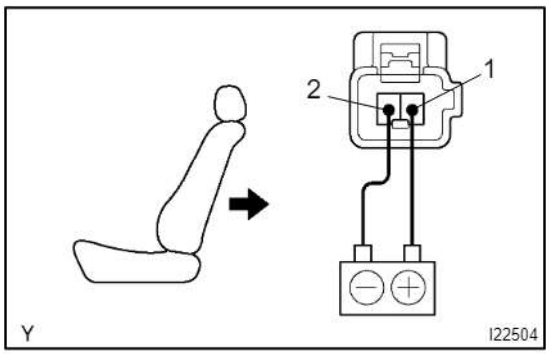
(b) Reverse the polarity, check that the lumbar support moves forward.

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



14. INSPECT LUMBER SUPPORT MOTOR CIRCUIT BREAKER OPERATION

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



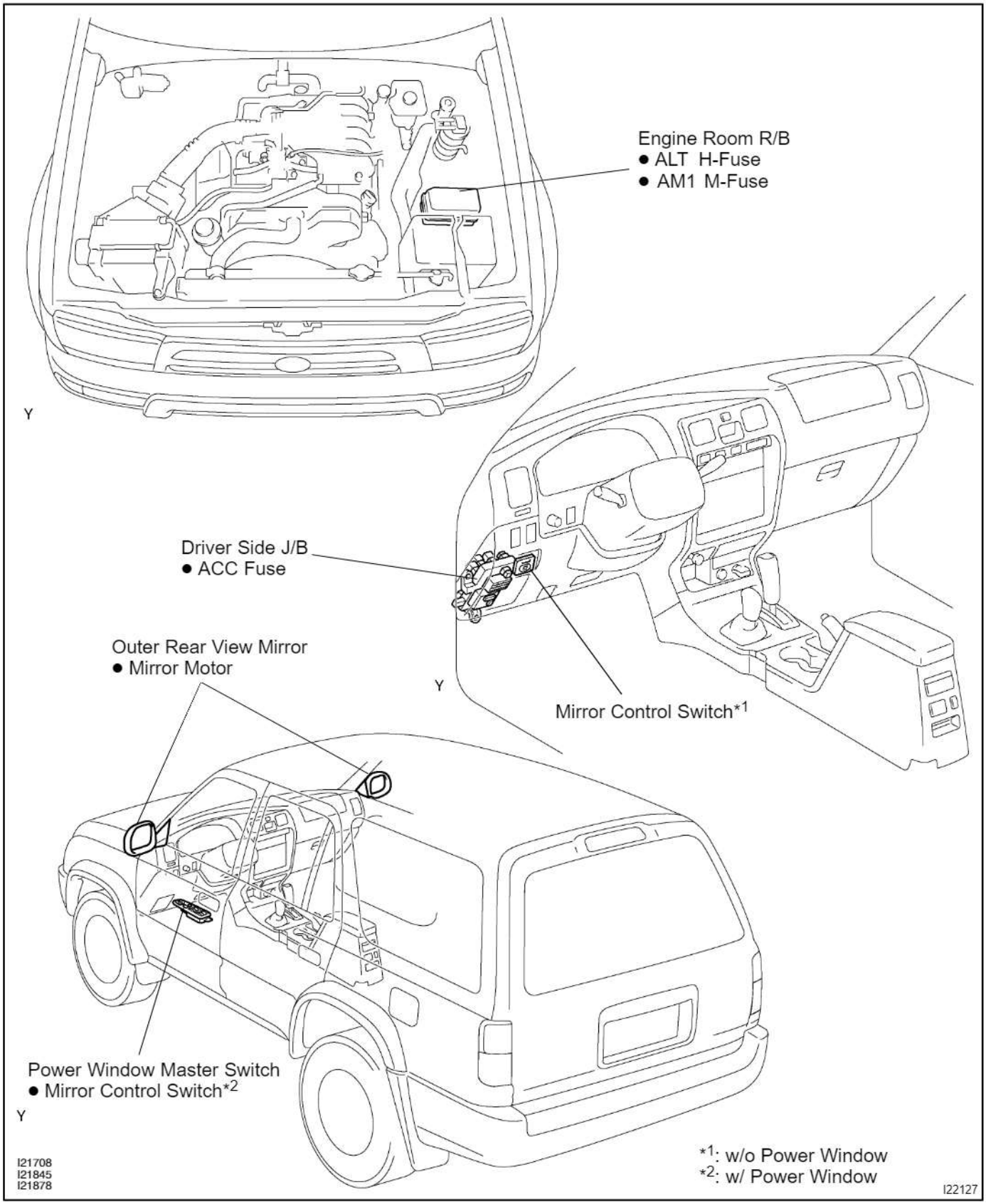
(b) Continue to apply voltage, check that there is a circuit breaker operation noise within 4 to 60 seconds.
(c) Reverse the polarity, check that the lumbar support begins to move to the release side within approximately 60 seconds.

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

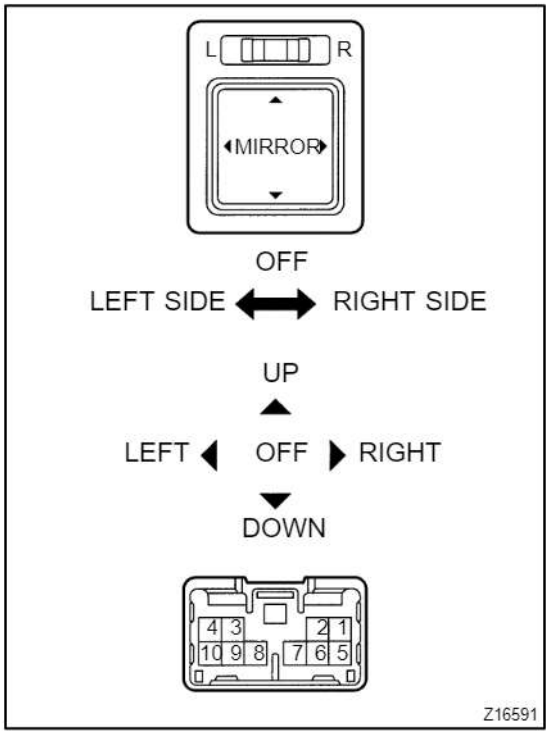
POWER MIRROR CONTROL SYSTEM

BE07B-03

LOCATION



BE07C-03



INSPECTION

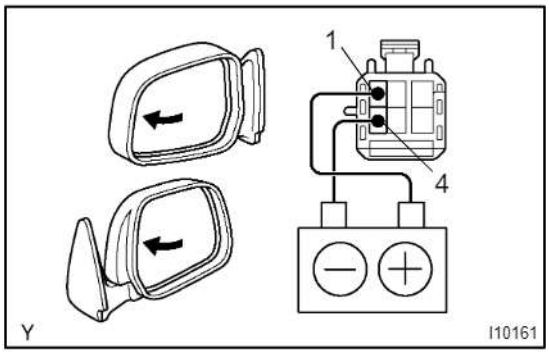
1. Left Side:
INSPECT MIRROR CONTROL SWITCH CONTINUITY

Tester connection	Switch position	Specified condition
-	OFF	No continuity
1 - 9	UP	Continuity
6 - 10		
1 - 10	DOWN	Continuity
6 - 9		
5 - 9	LEFT	Continuity
6 - 10		
5 - 10	RIGHT	Continuity
6 - 9		

2. Right Side:
INSPECT MIRROR CONTROL SWITCH CONTINUITY

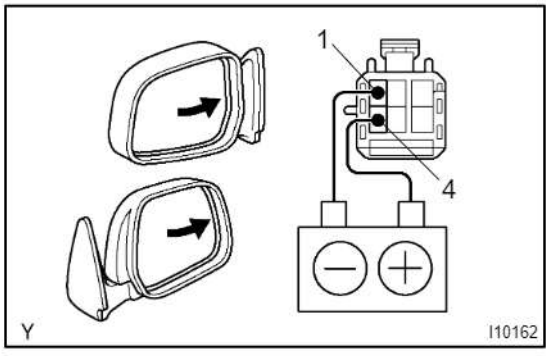
Tester connection	Switch position	Specified condition
-	OFF	No continuity
6 - 10	UP	Continuity
7 - 9		
6 - 9	DOWN	Continuity
7 - 10		
6 - 10	LEFT	Continuity
8 - 9		
6 - 9	RIGHT	Continuity
8 - 10		

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

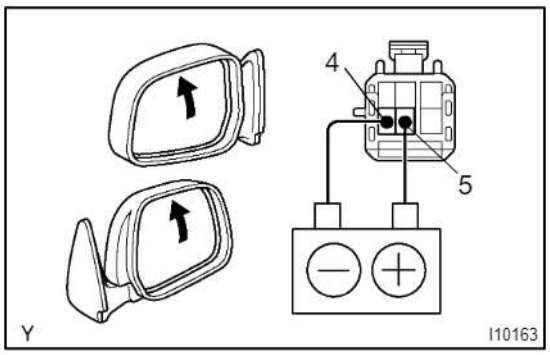


3. INSPECT MIRROR MOTOR

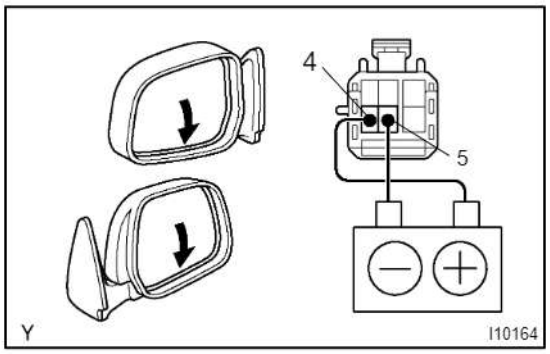
(a) Connect the positive (+) lead from the battery to terminal 1 and negative (-) lead to terminal 4, then check that the mirror turns left.



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



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



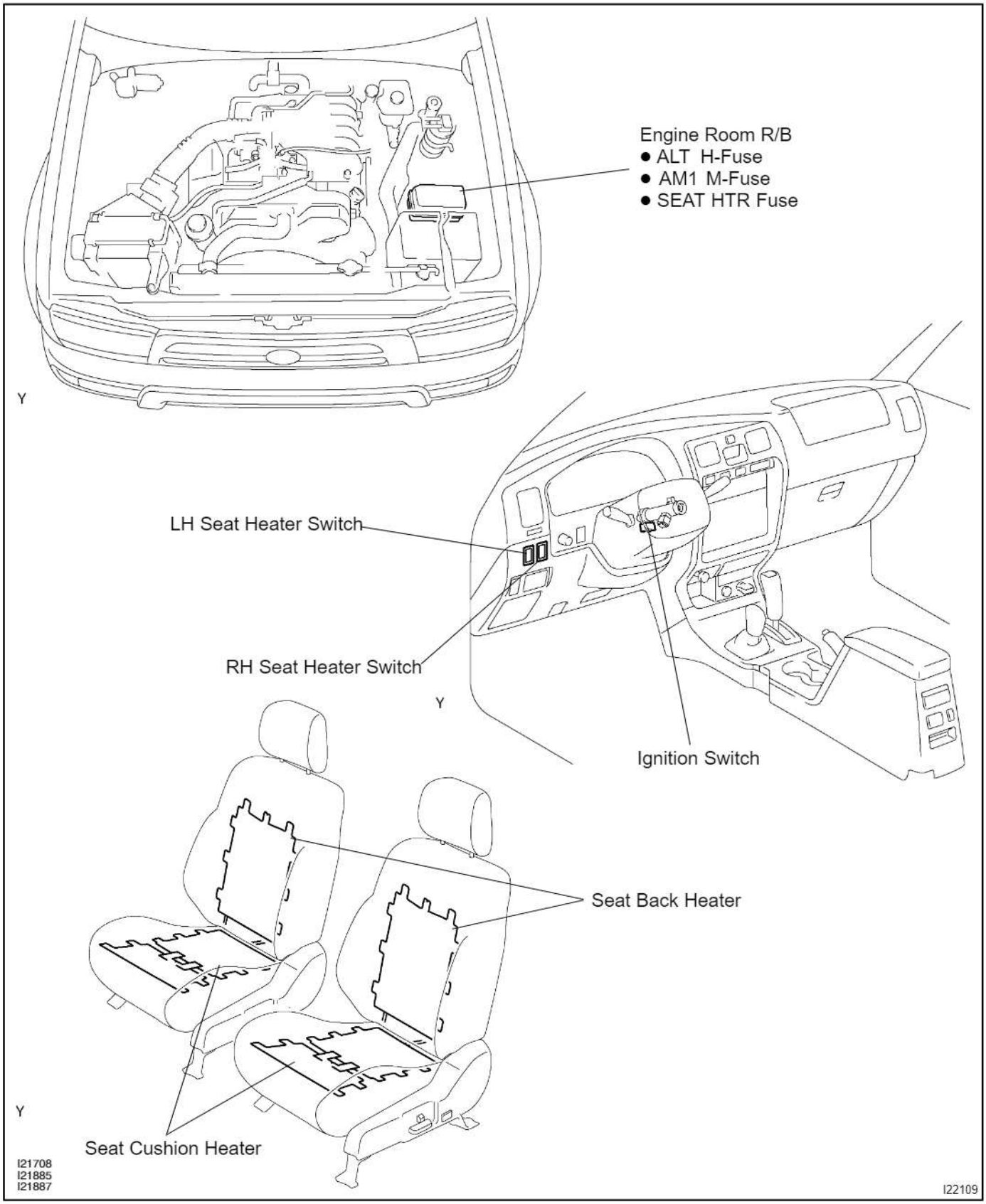
(d) Reverse the polarity, check that the mirror turns downward.

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

SEAT HEATER SYSTEM

LOCATION

BE0TQ-04



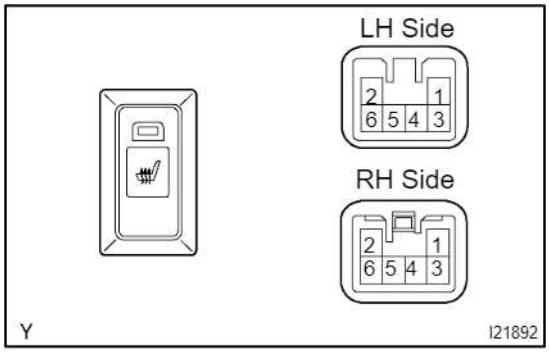
BE0TR-02

INSPECTION

1. INSPECT SEAT HEATER SWITCH CONTINUITY

Tester connection	Switch position	Specified condition
2 -3	ON	Continuity
3 - 6		Continuity
-	OFF	No continuity

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

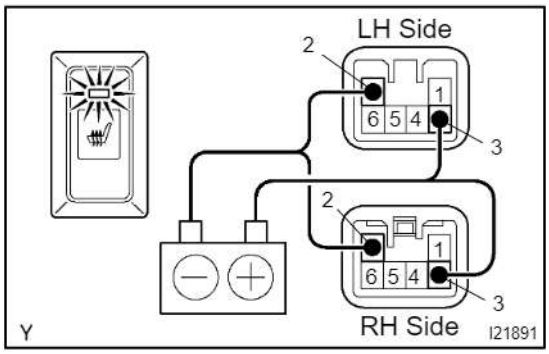


2. INSPECT SEAT HEATER INDICATOR LIGHT OPERATION

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

(b) Push the seat heater switch right or left side and check that the indicator light lights up.

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

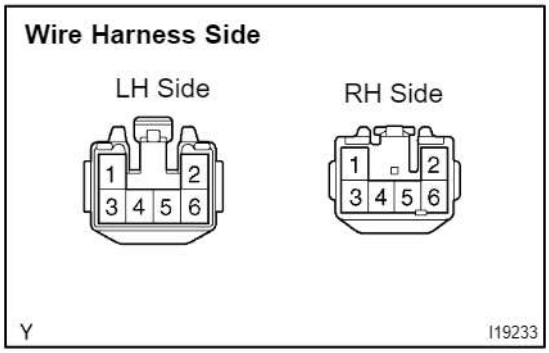


3. INSPECT SEAT HEATER SWITCH CIRCUIT

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

Tester connection	Condition	Specified condition
2 - Ground	Constant	Continuity
3 - Ground	Ignition switch ON	Battery positive voltage
6 - Ground	Constant	Continuity

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



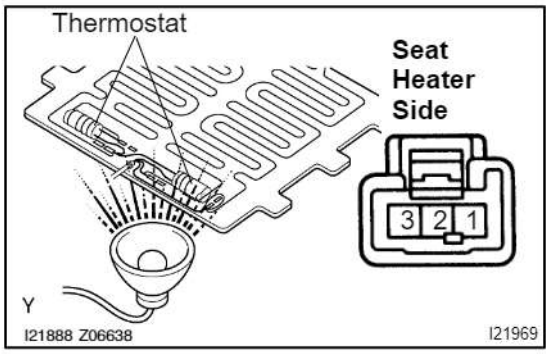
4. INSPECT SEAT CUSHION HEATER CONTINUITY

(a) Heat the thermostats with a light.

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

Tester connection	Thermostat temp.	Specified condition
1 - 2	Below 30°C (86°F)	Continuity
1 - 3		
1 - 2	Below 40°C (104°F)	No continuity
1 - 3	Above 50°C (122°F)	No continuity

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



Seat Heater Side



e-3-2 Z06638

5. INSPECT SEAT BACK HEATER CONTINUITY

Inspect the seat back heater continuity between the terminals.

Tester connection	Condition	Specified condition
1 - 2	Constant	Continuity
1 - 3	Constant	Continuity

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

AUDIO SYSTEM

DESCRIPTION

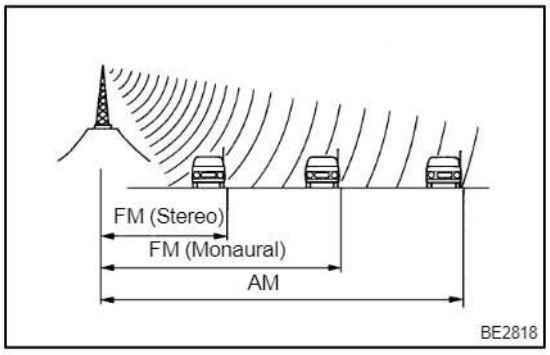
BE243-01

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

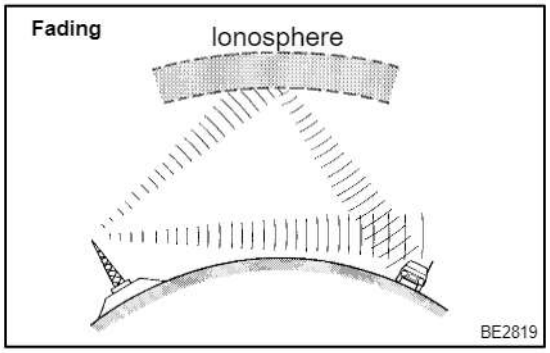


2. SERVICE AREA

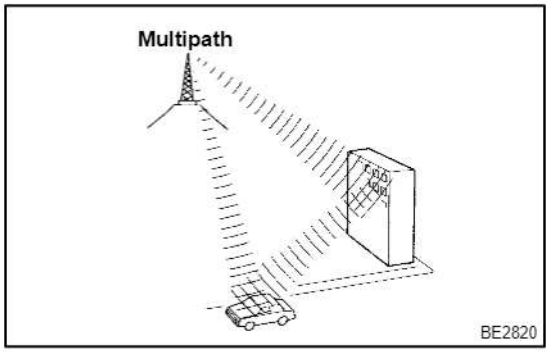
There are great differences in the size of the service area for AM and FM monaural. Sometimes FM stereo broadcasts cannot be received even through AM can be received in very clearly.
Not only does FM stereo have the smallest service area, but it also picks up static and other types of interference (”noise”)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

3. RECEPTION PROBLEMS

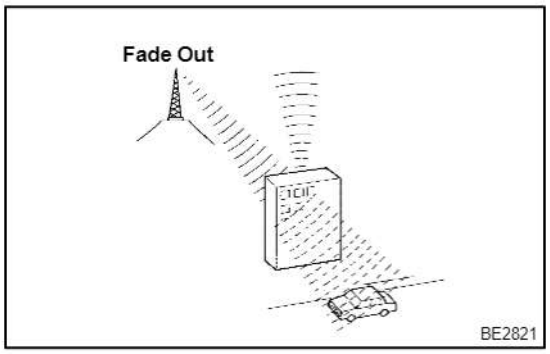
Besides the problem of static, there are also the problems called ”fading”, ”multipath” and ”fade out”. These problems are caused not by electrical noise but by the nature of the radio waves themselves.



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



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



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

4. COMPACT DISC PLAYER

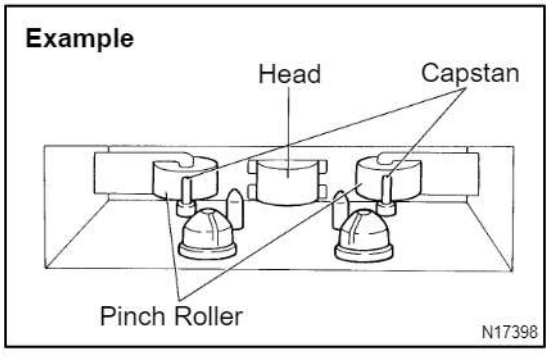
Compact Disc Players use a laser beam pick-up to read the digital signals recorded on the CD and reproduce analog signals of the music, etc.

HINT:

Never attempt to disassemble or oil any part of the player unit. Do not insert any object other than a disc into the magazine.

NOTICE:

CD players use an invisible laser beam which could cause hazardous radiation exposure. Be sure to operate the player correctly as instructed.

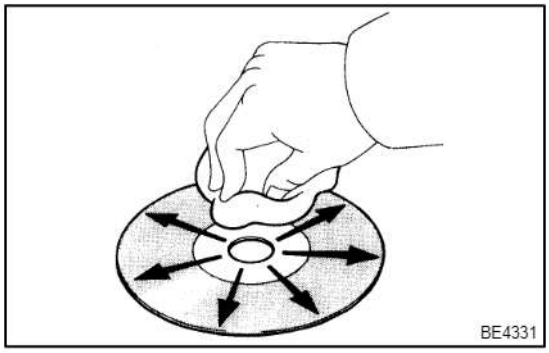


5. Tape player/head cleaning:

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.



6. 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.

7. 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.

(c) 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, radio receiver 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.

BE244-01

TROUBLESHOOTING

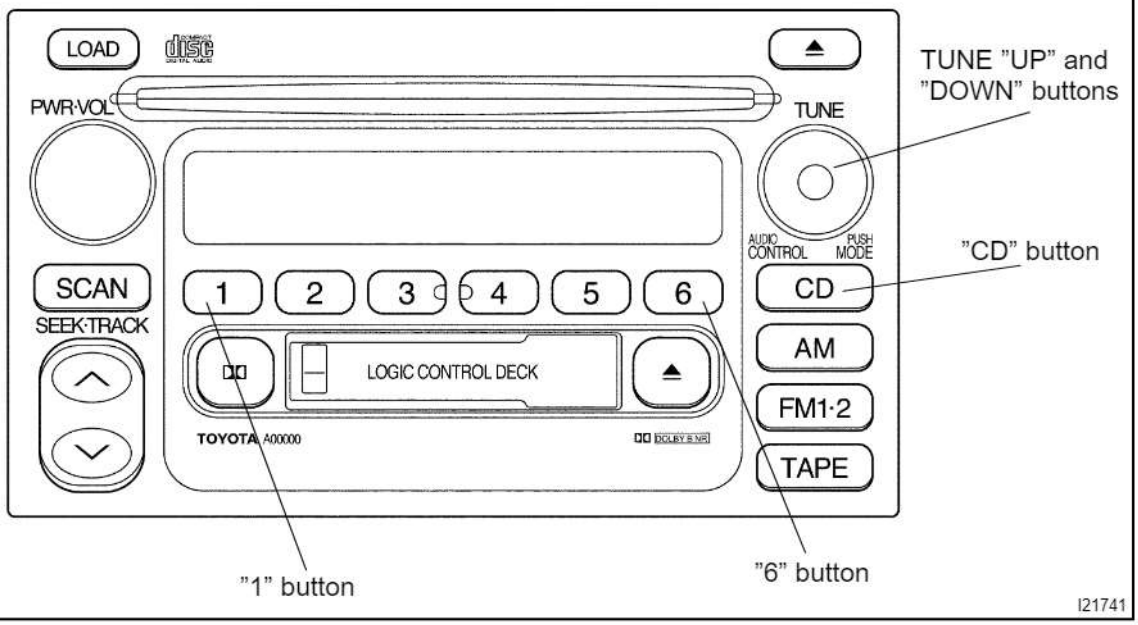
1. DIAGNOSIS FUNCTION

(a) Diagnosis start-up

For shifting to diagnosis mode, push "CD" button 3 times with pressing "1" and "6" of TRUCK TUNE APS button at the same time while the audio power is OFF and ACC is ON.

In diagnosis mode, by pressing "CD" button for 2 seconds or turning the ignition key OFF, the diagnosis mode is released.

<Example>



(b) Service check mode

(1) After the diagnosis start-up, the system enters service check mode when "TUNE UP" switch is pressed.

(2) Error codes over tuner and connected equipment are displayed on the screen of tuner.
Results for each check are displayed as follows:

- good:
  No DTC is detected for both "System Check Confirmation" and "Diagnosis Memory Response".
- nCon:
  The Component does not respond to the "Diagnosis On Instruction" command.
  Applicable to only the system where connected components are limited to be used.
- ECHn:
  Application of new version has been confirmed by the "Diagnosis On Check", and there is one or more DTC which indicates "Replacement" in the "System Check Result Response" or "Diagnosis Memory Response".
- CHEC:
  Application of new version has been confirmed by the "Diagnosis On Check", and there is no DTC which indicates "Replacement" in the "System Check Result Response" or "Diagnosis Memory Response", but one or more DTC which indicated "Check" is identified.
- Old:
  Application of old version is confirmed by the "Diagnosis On Check", and DTC is identified in the "System Check Result Response" or "Diagnosis Memory Response".

- nrES:
  No response is identified to the ”System Check Start Instruction” and ”Request for System Check Result” commands.

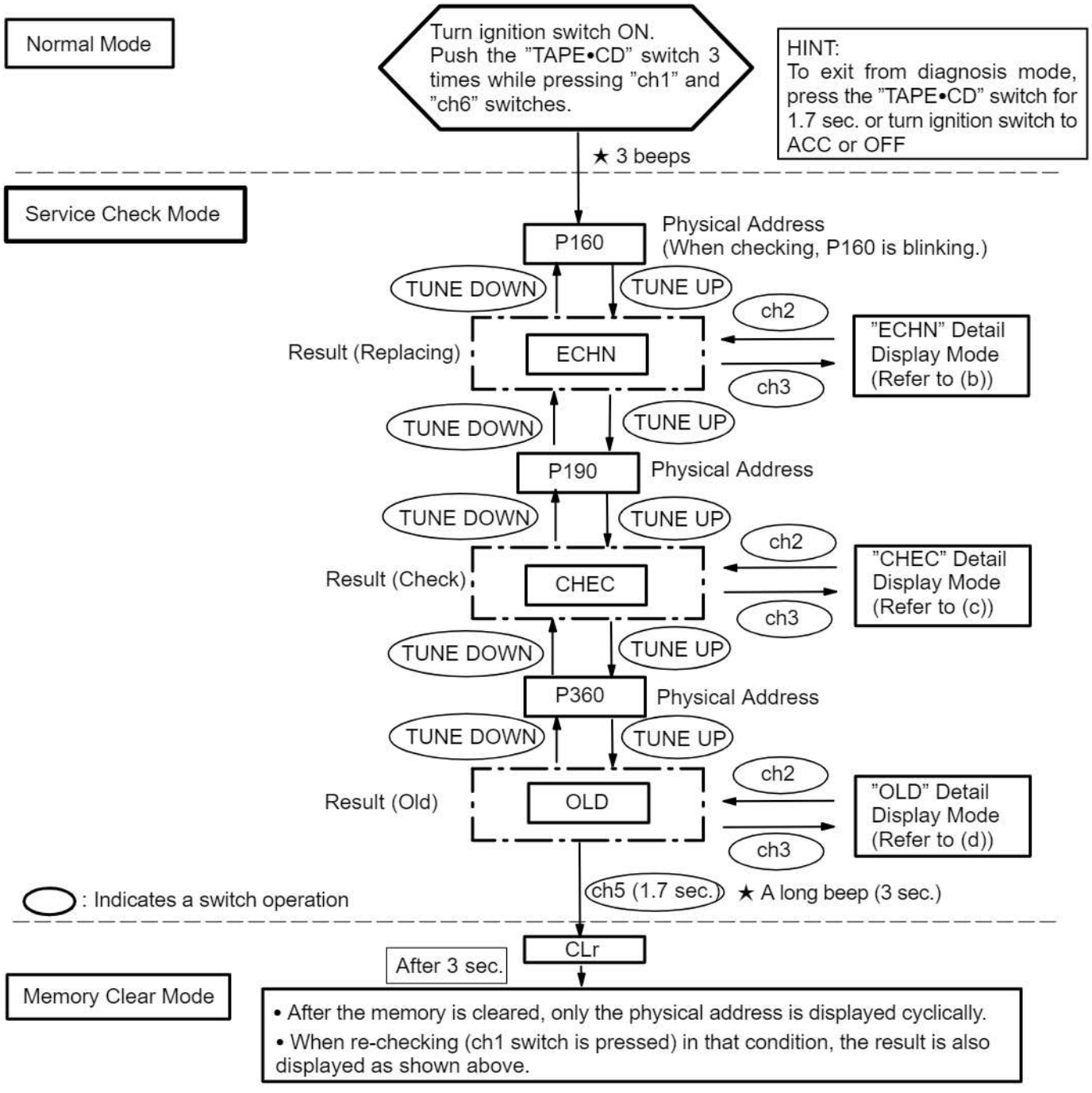
HINT:

- Check the present and past condition of components by performing the System Check and collecting stored DTC memories.
- Check results shall be displayed as one of six following indications: ”good”, ”ECHn”, ”CHEC”,”nCon”, ”Old” or ”nrES”.

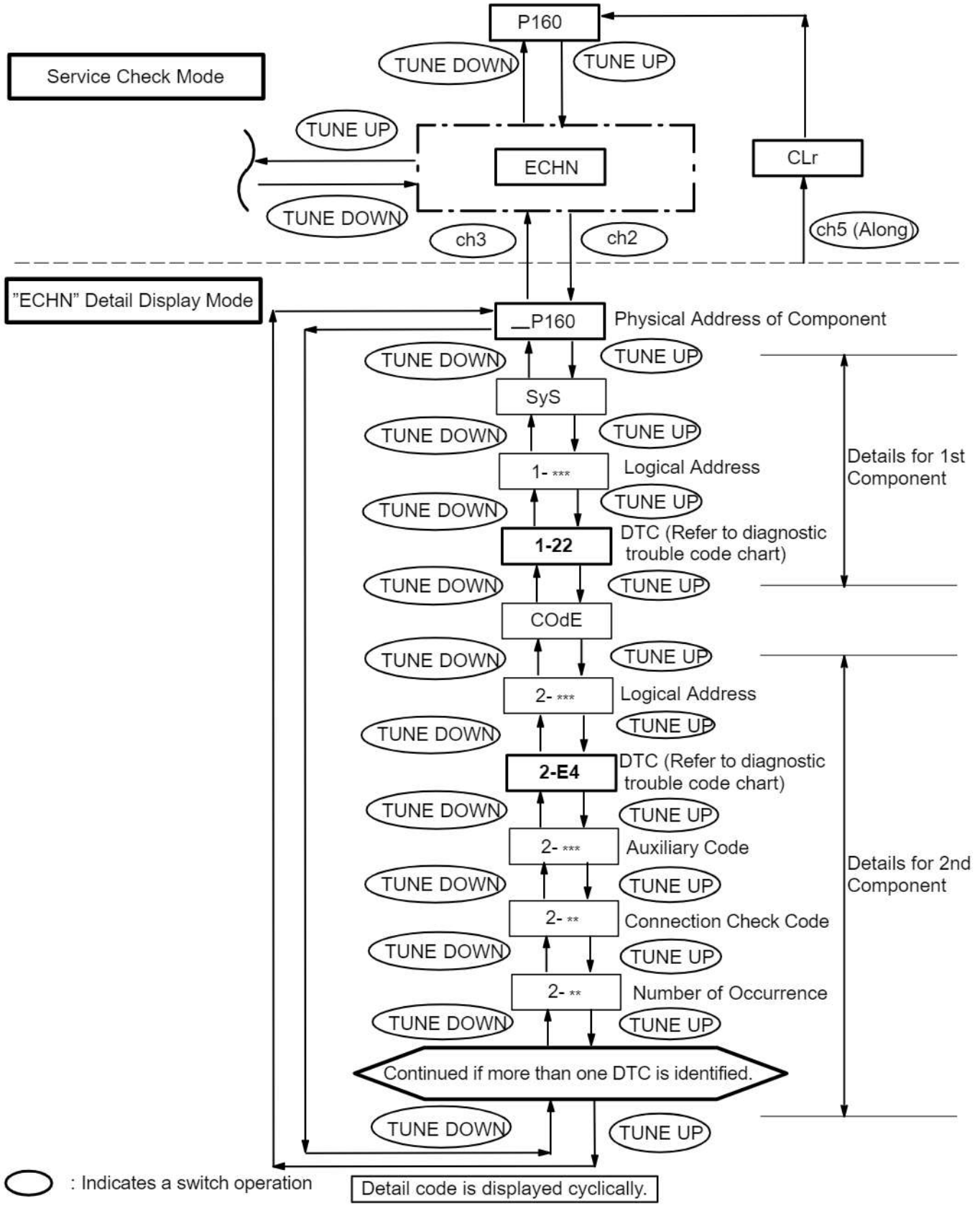
(c) Display Screen for Service Check.

Example:

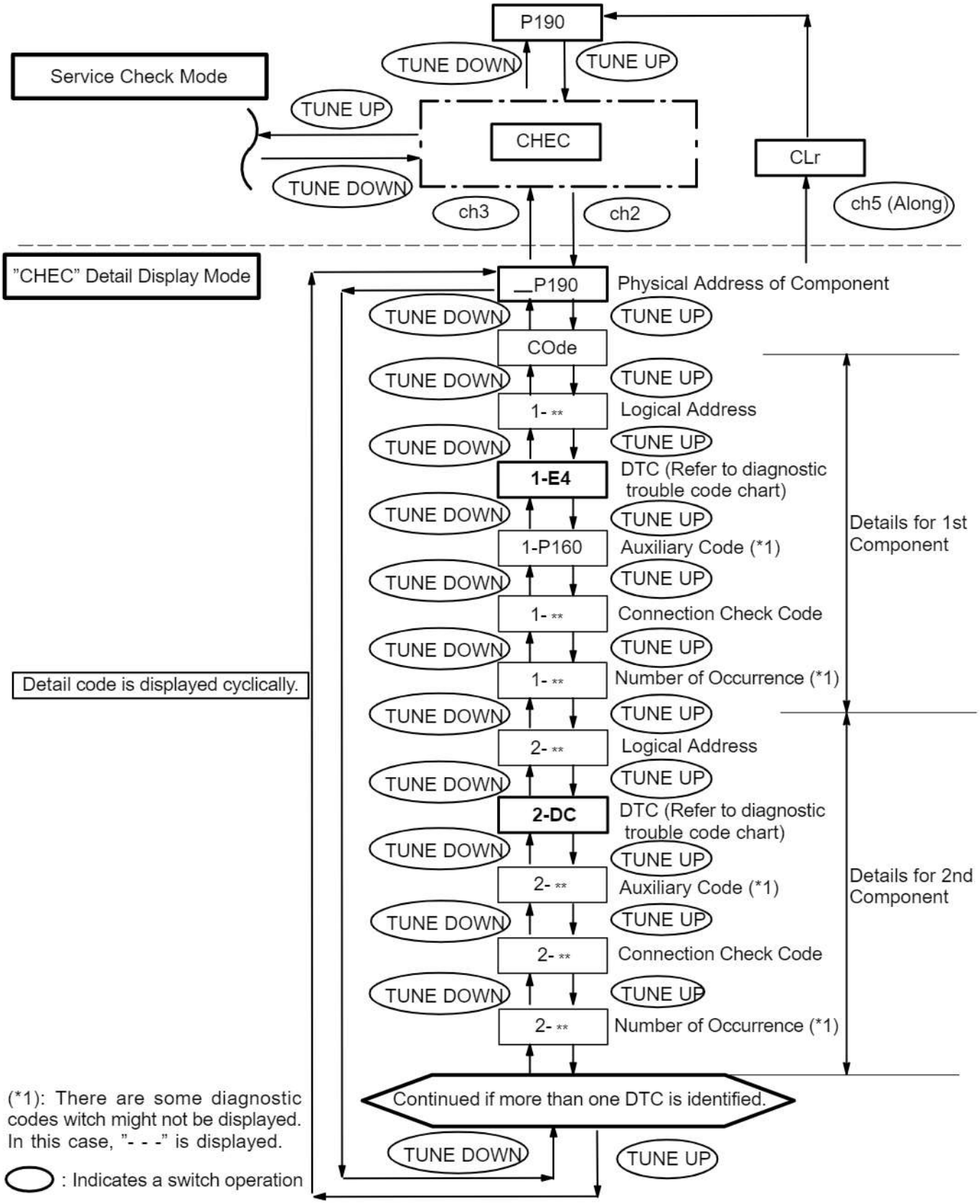
Connection parts (physical address): Multi Display (P160), Radio Receiver (P190), CD changer (P360)



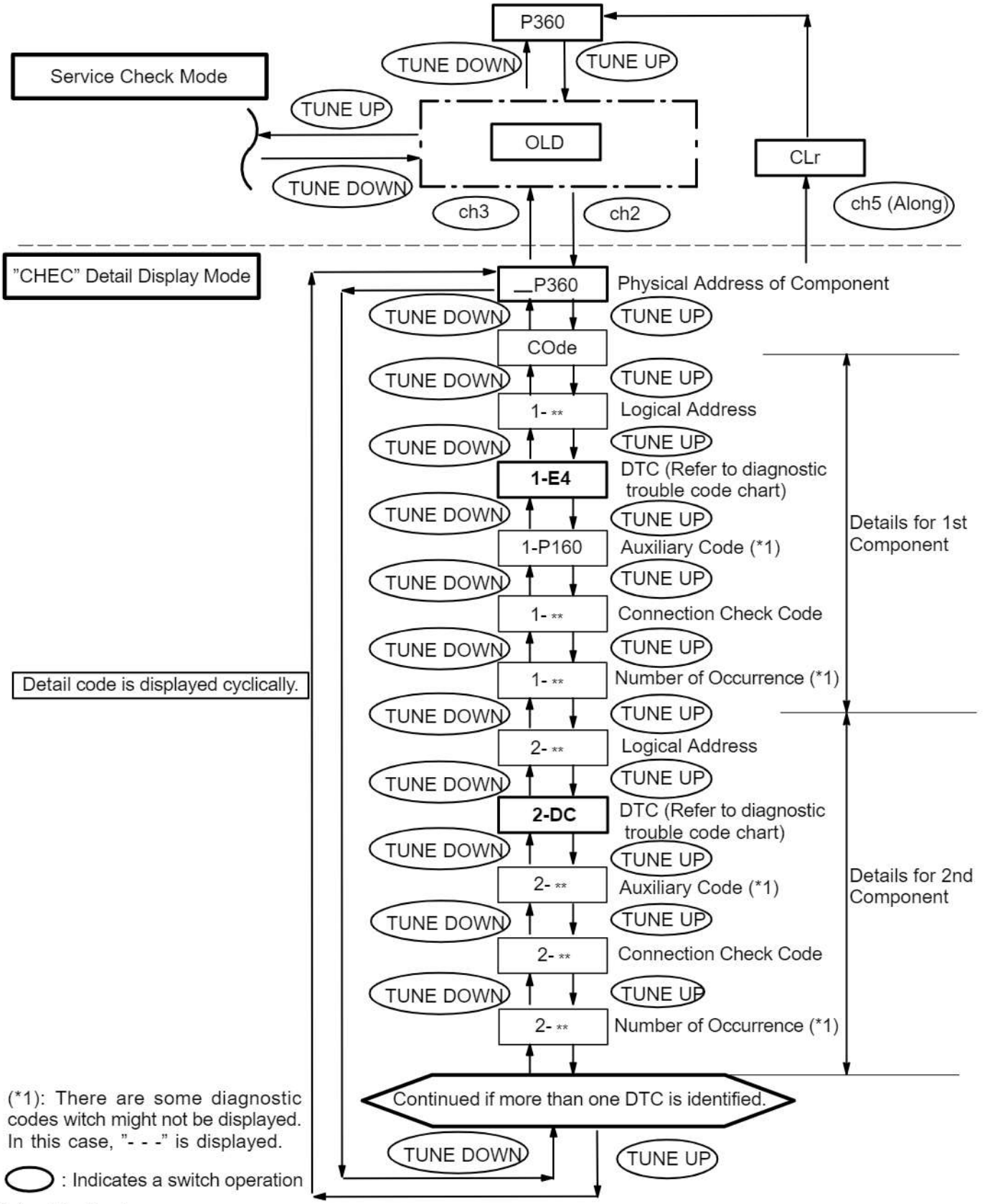
(d) "ECHN" Detail Display Mode Screen



(e) "CHEC" Detail Display Mode Screen



(f) "OLD" Detail Display Mode Screen



(g) Recheck

(1) Pressing the [ch1] key in Service Check Mode executes recheck.

(2) To display the recheck process, follow the sequence indicated Display Screen for Service Check.

2. DIAGNOSIS CODE LIST

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

(a) Physical address: 190 Radio receiver assembly

HINT:

- *1: Even if no failure is detected, it may be stored depending on the battery condition or voltage for starting an engine.
- *2: It is stored when 180 sec. has passed after the power supply connector is pulled out after engine start.
- *3: It may be stored when the engine key is turned 1 min. again after engine start.
- *4: It may be stored when the engine key is turned again after engine start.
- *5: When 210 sec. has passed after pulling out the power supply connector of the master component with the ignition switch in ACC or ON, this code is stored.

(1) Logical address: 01 (Communication control)

DTC	Diagnosis item	Diagnosis content	Countermeasure and inspected parts
D6 *1	Absence of Master	Component in which this code is recorded has been disconnected from system with ignition in ACC or ON. Or, when this code was recorded, multi-display assembly was disconnected.	• Check harness for power supply system of multi-display. • Check harness for communication system of multi-display. • Check harness for power supply system of radio and player. • Check harness for communication system of radio and player.
D8 *2	No Response to Connection Check	Component shown by auxiliary code is or had been disconnected from system after engine is start. D9	• Check harness for power supply system of component shown by auxiliary code. • Check harness for communication system of component shown by auxiliary code.
D9 *1	Last Mode Error	Component operated (sounds and/or images were provided) before engine stop is or has been disconnected with ignition switch in ACC or ON.	• Check harness for power supply system of component shown by auxiliary code. • Check harness for communication system of component shown by auxiliary code.
DA	No Response to ON/OFF Instruction	No response is identified when changing mode (audio and visual mode change). Detected when sound and picture does not change by button operation.	• Check harness for power supply system of component shown by auxiliary code. • Check harness for communication system of component shown by auxiliary code. • If error occurs again, replace component shown by auxiliary code.
DB *1	Mode Status Error	Dual alarm is detected.	• Check harness for power supply of component shown by auxiliary code. • Check harness for communication system of component shown by auxiliary code.
DC *3	Transmission Error	Transmission to component shown by auxiliary code has been failed. (Detecting this DTC does not necessarily mean actual failure.)	If same auxiliary code is recorded in order component, check harness for power supply and communication system of all components shown by code.

DD *4	Master Reset (Momentary Interruption)	After engine is started, multi-display assembly was disconnected from system.	• Check harness for power supply system of multi-display. • Check harness for communication system of multi-display. • Check harness for power supply system of radio and player. • Check harness for communication system of radio and player. • If this error occurs frequently, replace multi-display assembly.
DE *4	Slave Reset (Momentary Interruption)	After engine is started, slave component was disconnected from system.	• Check harness for power supply of component shown by auxiliary code. • Check harness for communication system of component shown by auxiliary code.
DF *5	Master Error	Due to defective condition of component with a display, master function is switched to audio equipment. Error occurs in communication between sub-master (audio) and master component.	• Check harness for power supply of multi-display assembly. • Check harness for communication system of multi-display assembly. • Check harness for communication system between multi-display assembly and sub-master component.
E0 *1	Registration Completion Instruction Error	"Registration Completion Instruction" command from master cannot be received.	Since this DTC is provided for engineering purpose, it may be detected when no actual failure exists.
E1 *1	Audio processor ON error	While source equipment is operating, AMP output is stopped.	• Check harness for power supply of multi-display assembly. • Check harness for communication system of multi-display assembly.
E2	ON/OFF Instruction Parameter Error	Error occurs in ON/OFF controlling command from multi-display assembly.	Replace multi-display assembly.
E3 *1	Registration Request Transmission	Registration Request command is output from slave component. Receiving Connection Check Instruction, Registration Request command is output from sub-master component.	Since this DTC is provided for engineering purpose, it may be detected when no actual failure exists.
E4 *1	Multiple Frame Abort	Multiple frame transmission is aborted.	Since this DTC is provided for engineering purpose, it may be detected when no actual failure exists.

(2) Logical address: 61 (Cassette switch)

DTC	Diagnosis item	Diagnosis content	Countermeasure and inspected parts
40	Mechanical of Media Error	Malfunction due to mechanical failure is identified. Or cassette tape is cut or entangled.	• Inspect cassette tape. • Replace radio and player.

(3) Logical address: 62 (CD player)/63 (CD Auto chager)

DTC	Diagnosis item	Diagnosis content	Countermeasure and inspected parts
42	No Disc Readout	Disc cannot be read	Inspect CD.
44	CD Error	Error is detected in CD player.	Replace radio receiver assembly.
51	Eject Error	CD cannot be ejected.	Replace radio receiver assembly.
46	Scratched/Reversed Disc	Scratches or dirt is found on CD surface or CD is set upside down.	Inspect CD.

(b) Physical address: 440 Stereo component amplifier

HINT:

- *1: Even if no failure is detected, it may be stored depending on the battery condition or voltage for starting an engine.
- *2: It may be stored when the engine key is turned 1 min. again after engine start.
- *3: It may be stored when the engine key is turned again after engine start.
- *4: When 210 sec. has passed after pulling out the power supply connector of the master component with the ignition switch in ACC or ON, this code is stored.
  Logical address: 01 (Communication control)

DTC	Diagnosis item	Diagnosis content	Countermeasure and inspected parts
D6 *1	Absence of Master	Component in which this code is recorded has been disconnected from system with ignition in ACC or ON. Or, when this code was recorded, multi-display assembly was disconnected.	• Check harness for power supply of radio and player. • Check harness for communication system of radio and player. • Check harness for power supply of stereo component amplifier. • Check harness for communication system of stereo component amplifier.
D7	Communication Check Error	Component in which this code is recorded is or was disconnected from system after engine start. Or, when recording this code, multi-display assembly was disconnected.	• Check harness for power supply of radio and player. • Check harness for communication system of radio and player. • Check harness for power supply of stereo component amplifier. • Check harness for communication system of stereo component amplifier.
DC *2	Transmission Error	Transmission to component shown by auxiliary code has been failed. (Detecting this DTC does not necessarily mean actual failure.)	If same auxiliary code is recorded in order component, check harness for power supply and communication system of all components shown by code.
DD *3	Master Reset (Momentary Interruption)	After engine is started, multi-display assembly was disconnected from system.	• Check harness for power supply of radio and player. • Check harness for communication system of radio and player. • Check harness for power supply of stereo component amplifier. • Check harness for communication system of stereo component amplifier. • If this error occurs frequently, replace multi-display assembly.
DF *4	Master Error	Due to defective condition of component with a display, master function is switched to audio equipment. Error occurs in communication between sub-master (audio) and master component.	• Check harness for power supply of multi-display assembly. • Check harness for communication system of multi-display assembly. • Check harness for communication system between multi-display assembly and sub-master component.
E0 *1	Registration Completion Instruction Error	"Registration Completion Instruction" command from master cannot be received.	Since this DTC is provided for engineering purpose, it may be detected when no actual failure exists.
E1 *1	Audio processor ON error	While source equipment is operating, AMP output is stopped.	• Check harness for power supply of multi-display assembly. • Check harness for communication system of multi-display assembly.

E2	ON/OFF Instruction Parameter Error	Error occurs in ON/OFF controlling command from multi-display assembly.	Replace multi-display assembly.
E3 *1	Registration Request Transmission	• Registration Request command is output from slave component. • Registration Connection Check Instruction, Registration Request command is output from sub-master component.	Since this DTC is provided for engineering purpose, it may be detected when no actual failure exists.

(c) Physical address: 360 CD Auto Changer

HINT:

- *1: Even if no failure is detected, it may be stored depending on the battery condition or voltage for starting an engine.
- *2: It may be stored when the engine key is turned 1 min. again after engine start.
- *3: It may be stored when the engine key is turned again after engine start.
- *4: It may be stored when the engine key is turned again after engine start.
- *5: When 210 sec. has passed after pulling out the power supply connector of the master component with the ignition switch in ACC or ON, this code is stored.

Logical address: 01 (Communication control)

DTC	Diagnosis item	diagnosis content	Countermeasure and inspected parts
21	ROM Error	Abnormal condition of ROM is detected.	Replace CD auto changer.
22	RAM Error	Abnormal condition of ROM is detected.	Replace CD auto changer.
D6 *2	Absence of Master	Component in which this code is recorded is or was disconnected from system after engine start. Or, when recording this code, multi-display assembly was disconnected.	• Check harness for power supply system of multi-display. • Check harness for communication system of multi-display. • Check harness for power supply system of CD auto changer • Check harness for communication system CD auto changer
D7 *5	Connection check Error	Component in which this code is recorded is or was disconnected from system after engine start. Or, when recording this code, multi-display assembly was disconnected.	• Check harness for power supply of multi-displaly. • Check harness for communication system of multi-display. • Check harness for power supply of CD auto changer. • Check harness for communication system of CD auto changer.
DC *2	Transmission Error	Transmission to component shown by auxiliary code has been failed. (Detecting this DTC does not necessarily mean actual failure.)	If same auxiliary code is recorded in order component, check harness for power supply and communication system of all components shown by code.

DD *3	Master Reset (Momentary Interruption)	After engine is started, multi-display assembly was disconnected from system.	• Check harness for power supply system of multi-display. • Check harness for communication system multi-display. • Check harness for power supply system of CD auto changer. • Check harness for communication system CD auto changer. • If this error occurs frequently, replace multi-display assembly.
DF *4	Master Error	Due to defective condition of component with a display, master function is switched to audio equipment. Error occurs in communication between sub-master (audio) and master component.	• Check harness for power supply of multi-display assembly. • Check harness for communication system of multi-display assembly. • Check harness for communication system between multi-display assembly and sub-master component.
E0 *1	Registration Completion Instruction Error	"Registration Completion Instruction" command from master cannot be received.	Since this DTC is provided for engineering, it may be detected when no actual failure exists.
E2	ON/OFF Instruction Parameter Error	Error occurs in ON/OFF controlling command from multi-display assembly.	Replace multi-display assembly.
E3 *1	Registration Request Transmission	• Registration Request command is output from slave component. • Receiving Connection Check Instruction, Registration Request command is output from sub-master component.	Since this DTC is provided for engineering purpose, it may be detected when no actual failure exists.
E4 *1	Multiple Frame Abort	Multiple frame transmission is aborted.	Since this DTC is provided for engineering purpose, it may be detected when no actual failure exists.

3. PROBLEM SYMPTOMS TABLE

NOTICE:

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

HINT:

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

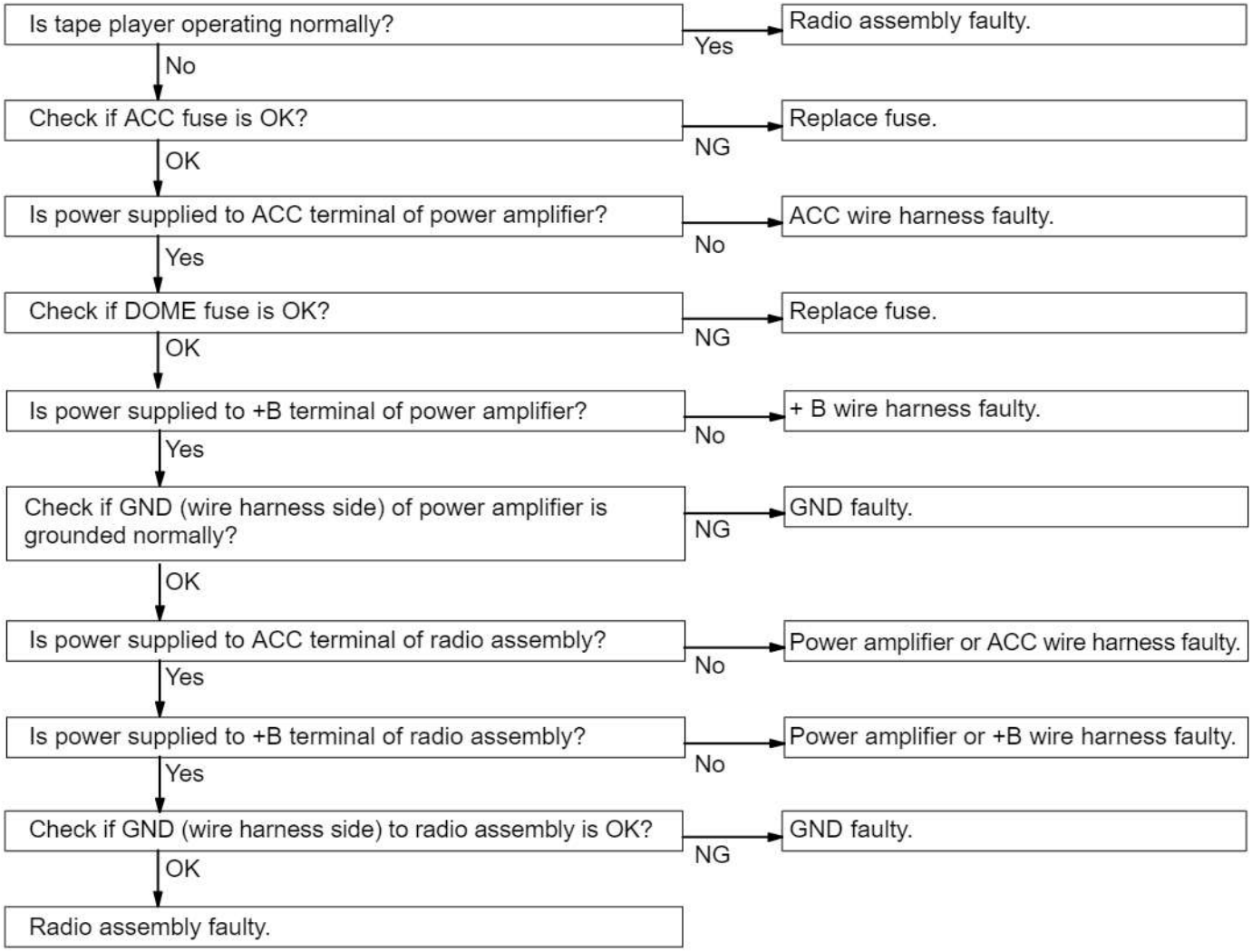
Always inspect the trouble taking the following items into consideration.

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

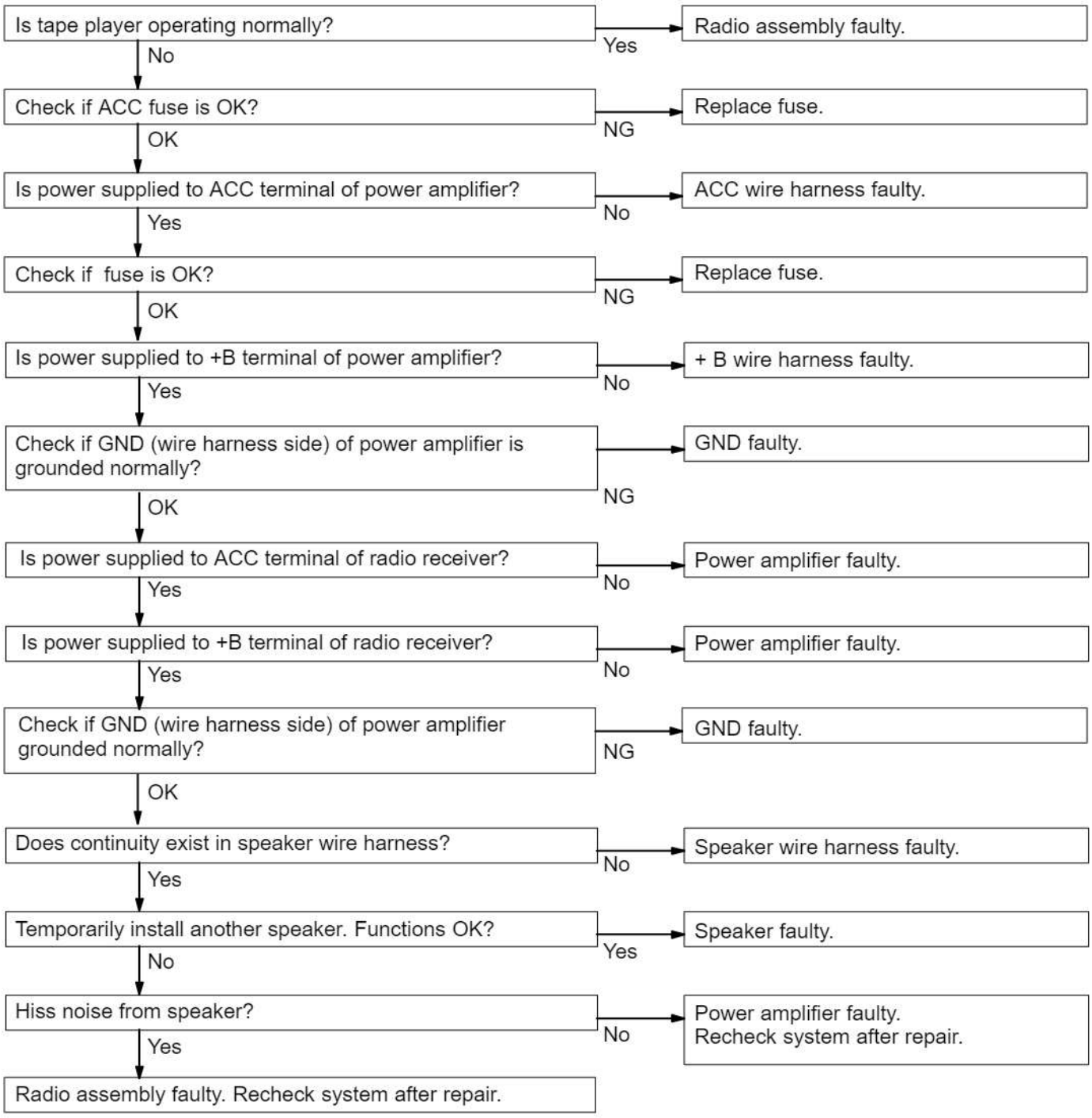
	Problem	No.
Radio	Radio not operating when power switch turned to 'ON'.	1
	Display indicates when power switch turned to 'ON', but no sound (including 'noise') is produced.	2
	Noise present, but AM - FM not operating.	3
	Any speaker does not work.	4
	Any AM or FM does not work.	5
	Few preset turning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

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

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



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

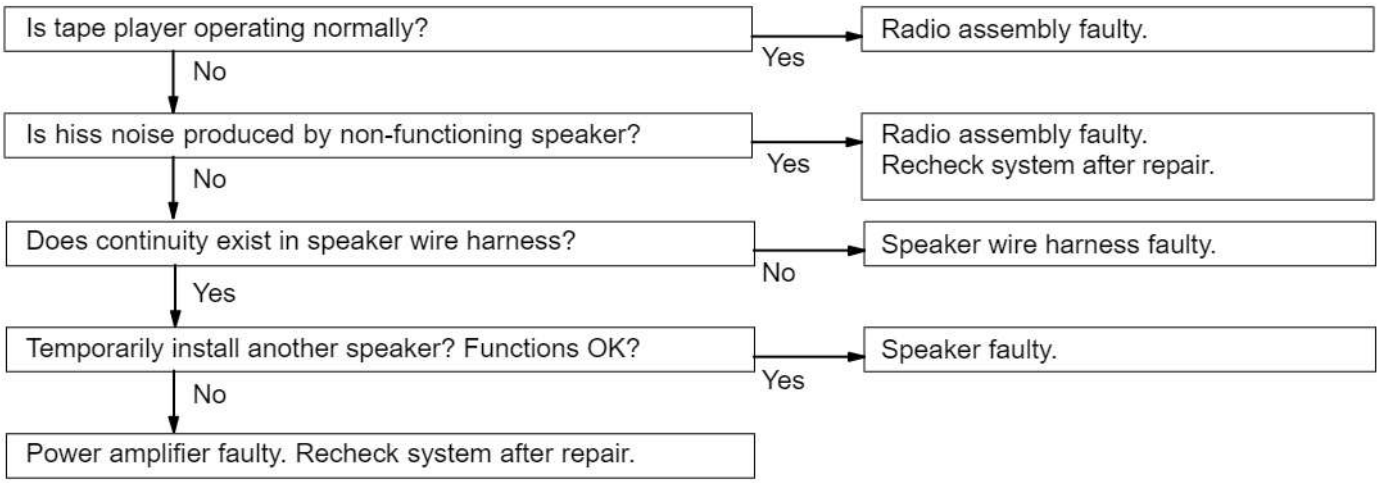


3	Radio	NOISE PRESENT, BUT AM-FM NOT OPERATING

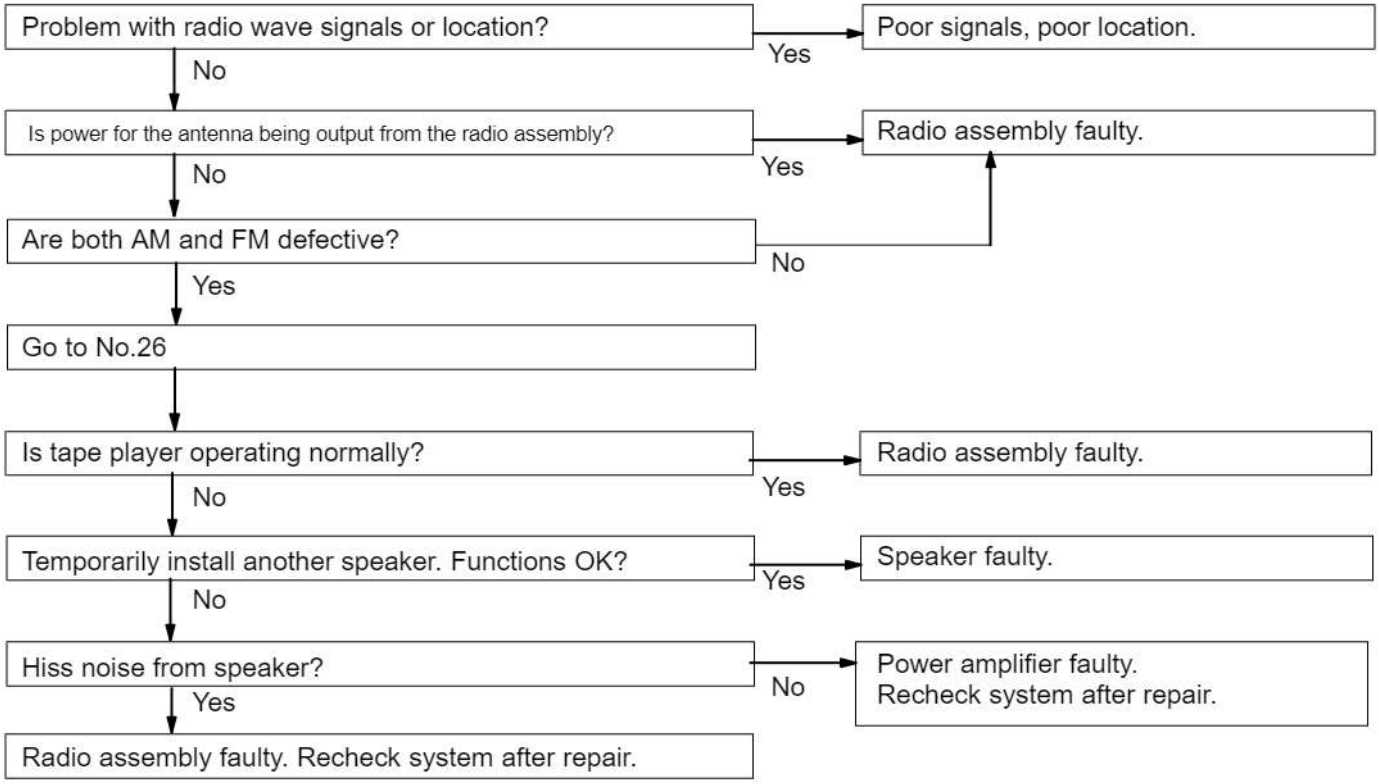
Go to No.25

If radio side faulty. → Radio faulty.

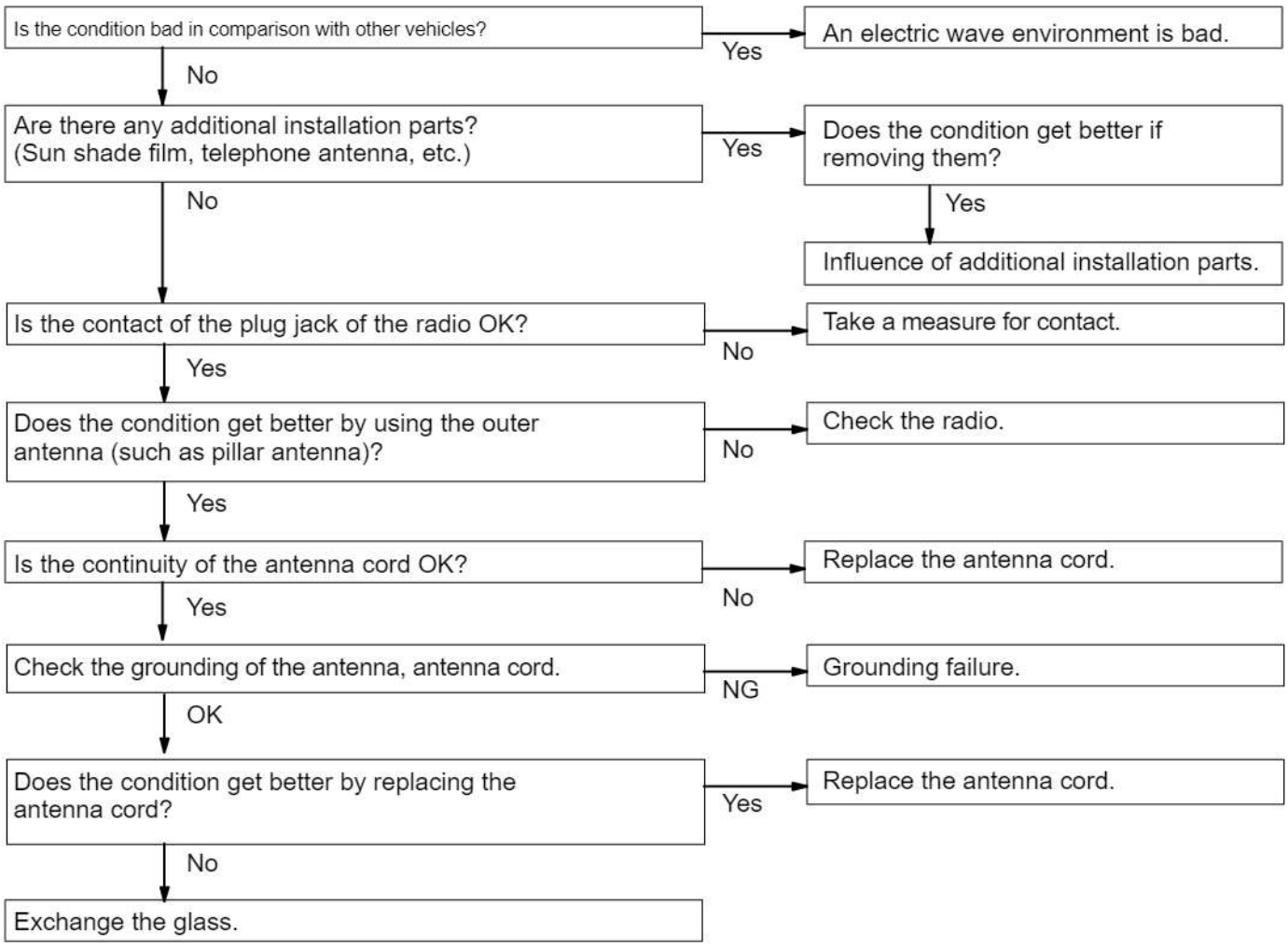
4	Radio	ANY SPEAKER DOSE NOT WORK



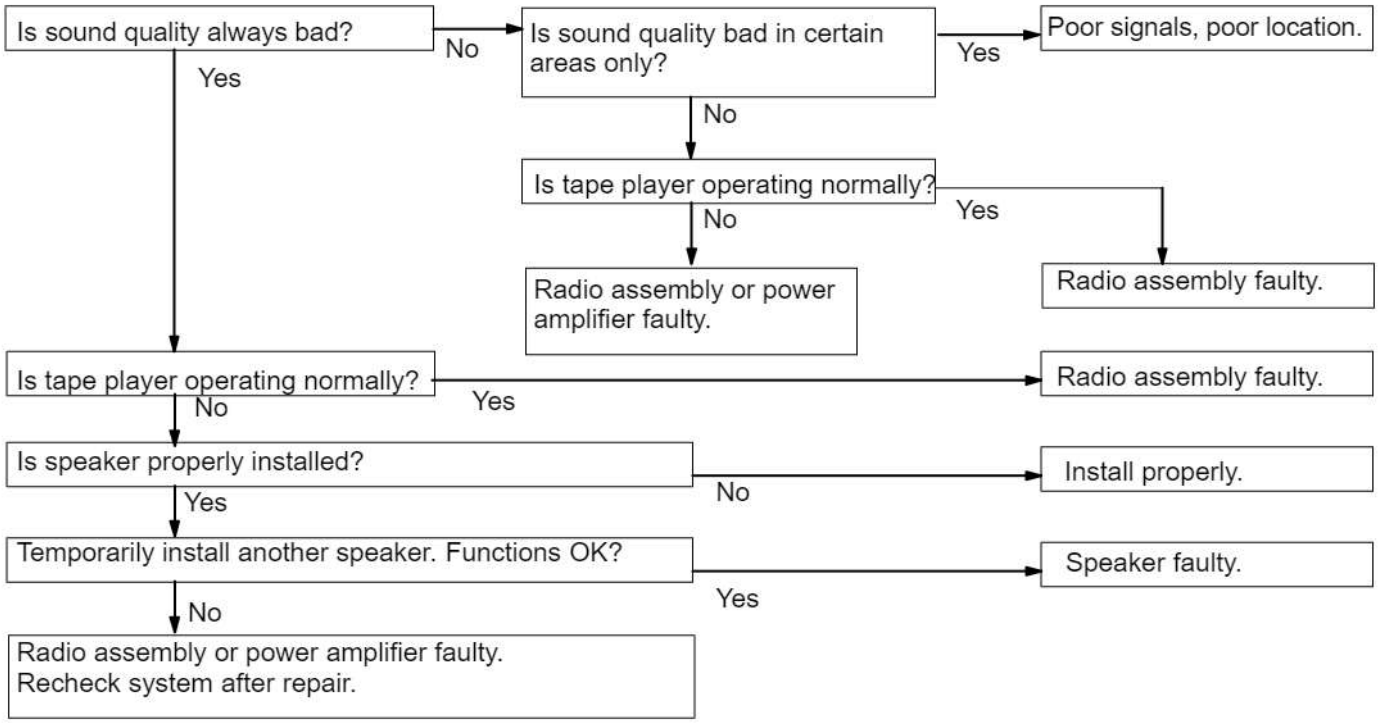
5	Radio	ANY AM OR FM DOES NOR WORK FEW PRESET TUNING BANDS



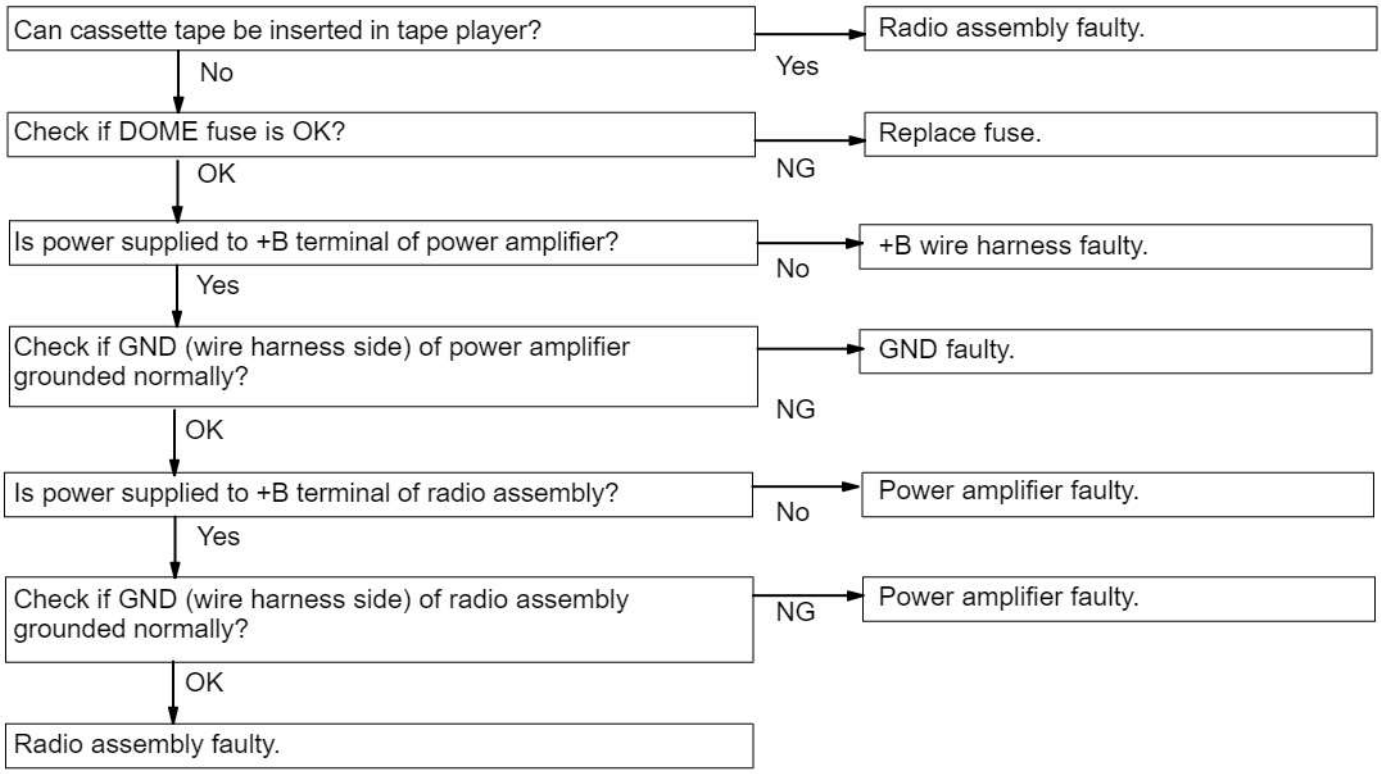
6	Radio	POOR RECEPTION



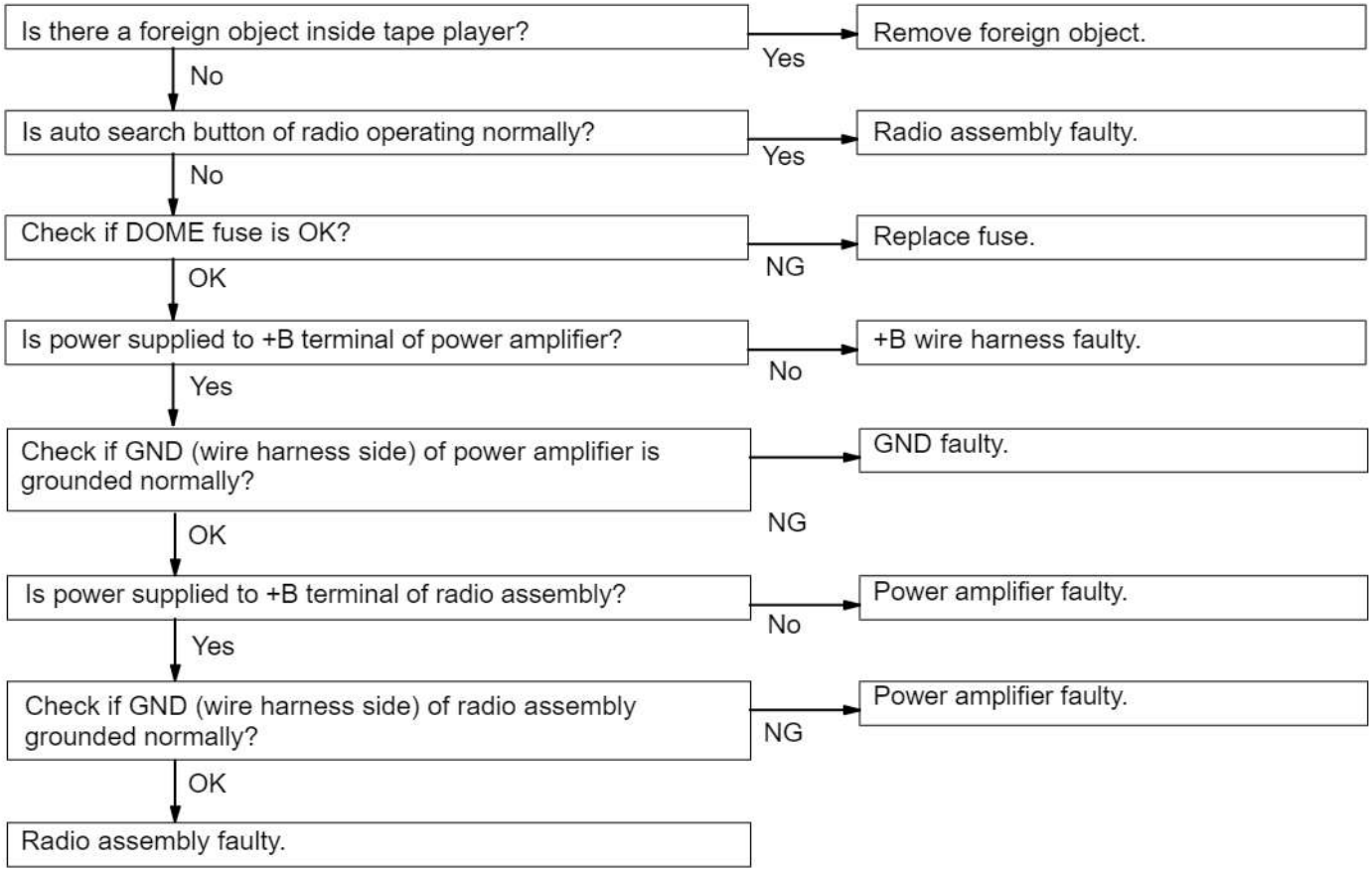
7	Radio	SOUND QUALITY POOR



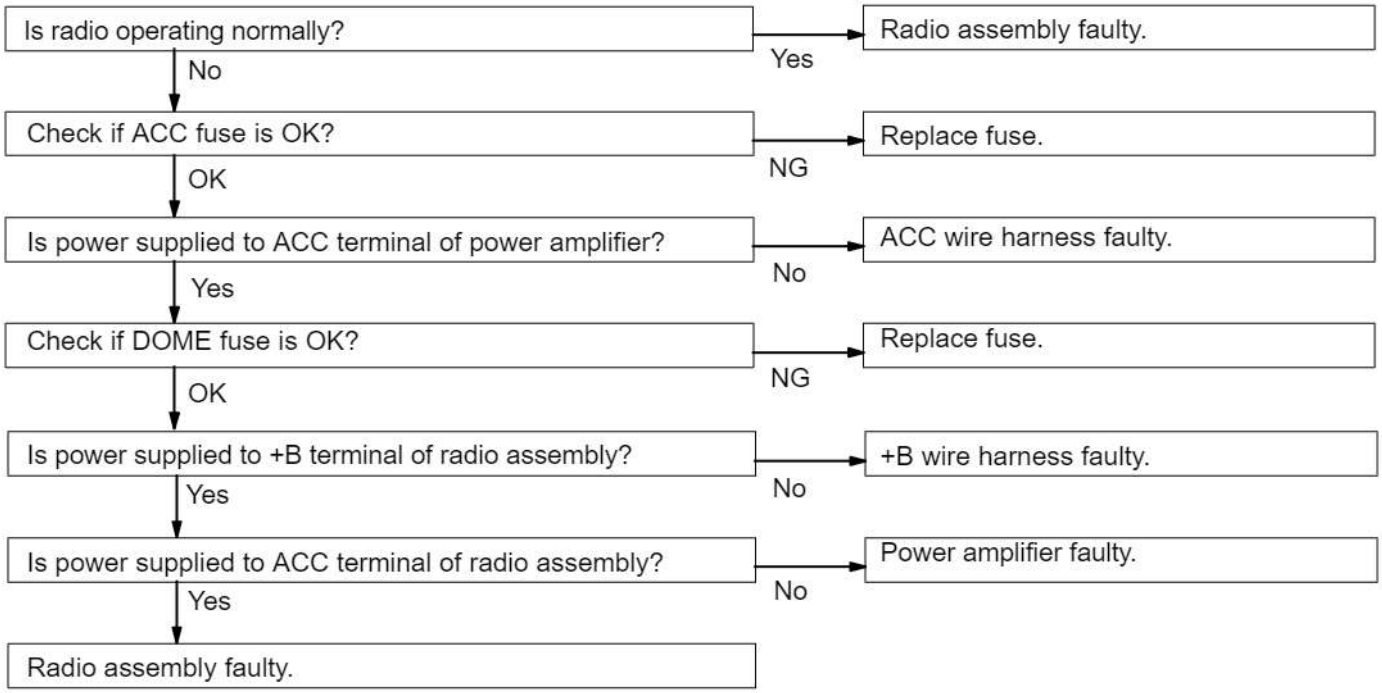
8	Radio	PRESET MEMORY DISAPPEARS



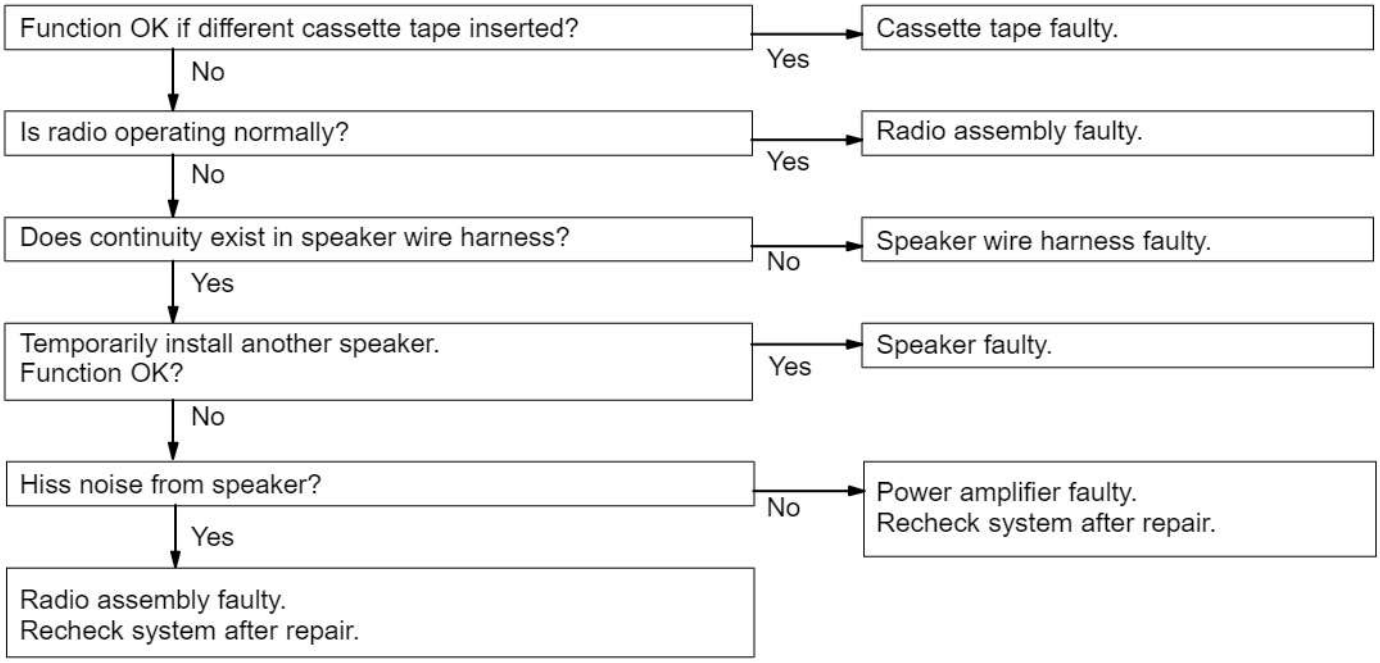
9	Tape Player	CASSETTE TAPE CANNOT BE INSERTED



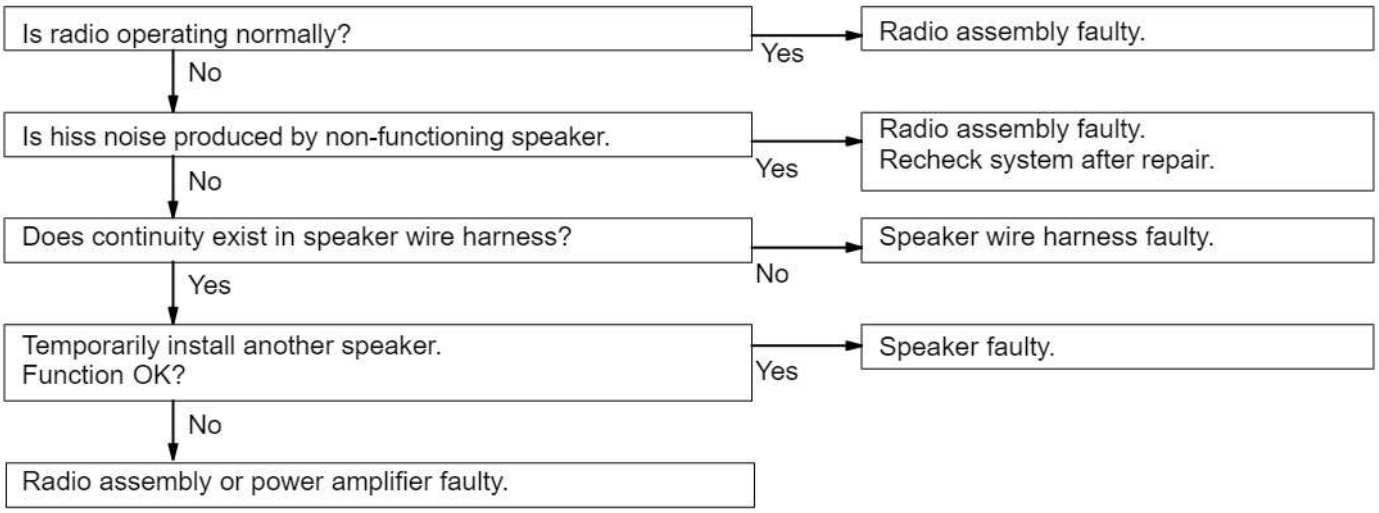
10	Tape Player	CASSETTE TAPE INSERTED, BUT NO POWER



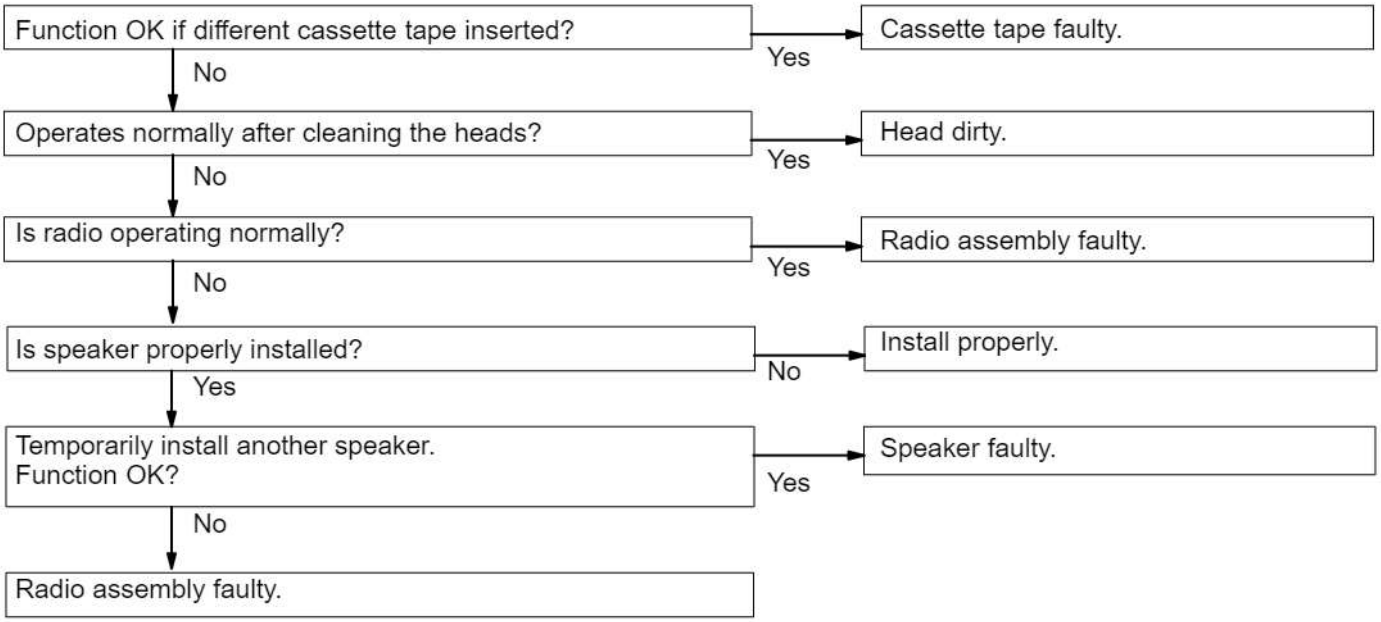
11	Tape Player	POWER COMING IN, BUT TAPE PLAYER NOT OPERATING



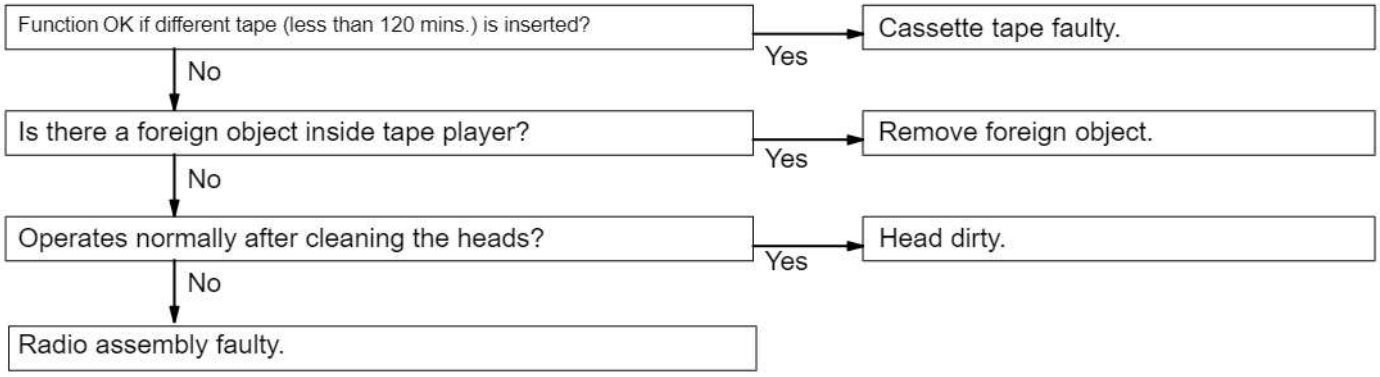
12	Tape Player	ANY SPEAKER DOES NOT WORK



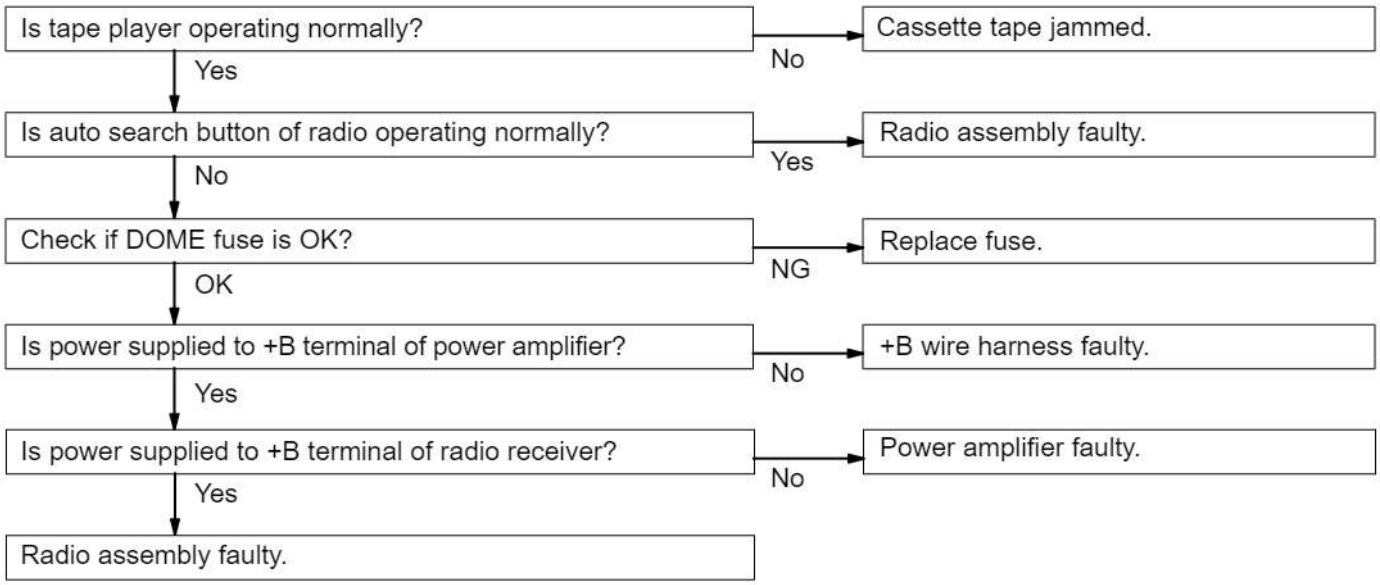
13	Tape Player	SOUND QUALITY POOR (VOLUME FAINT)



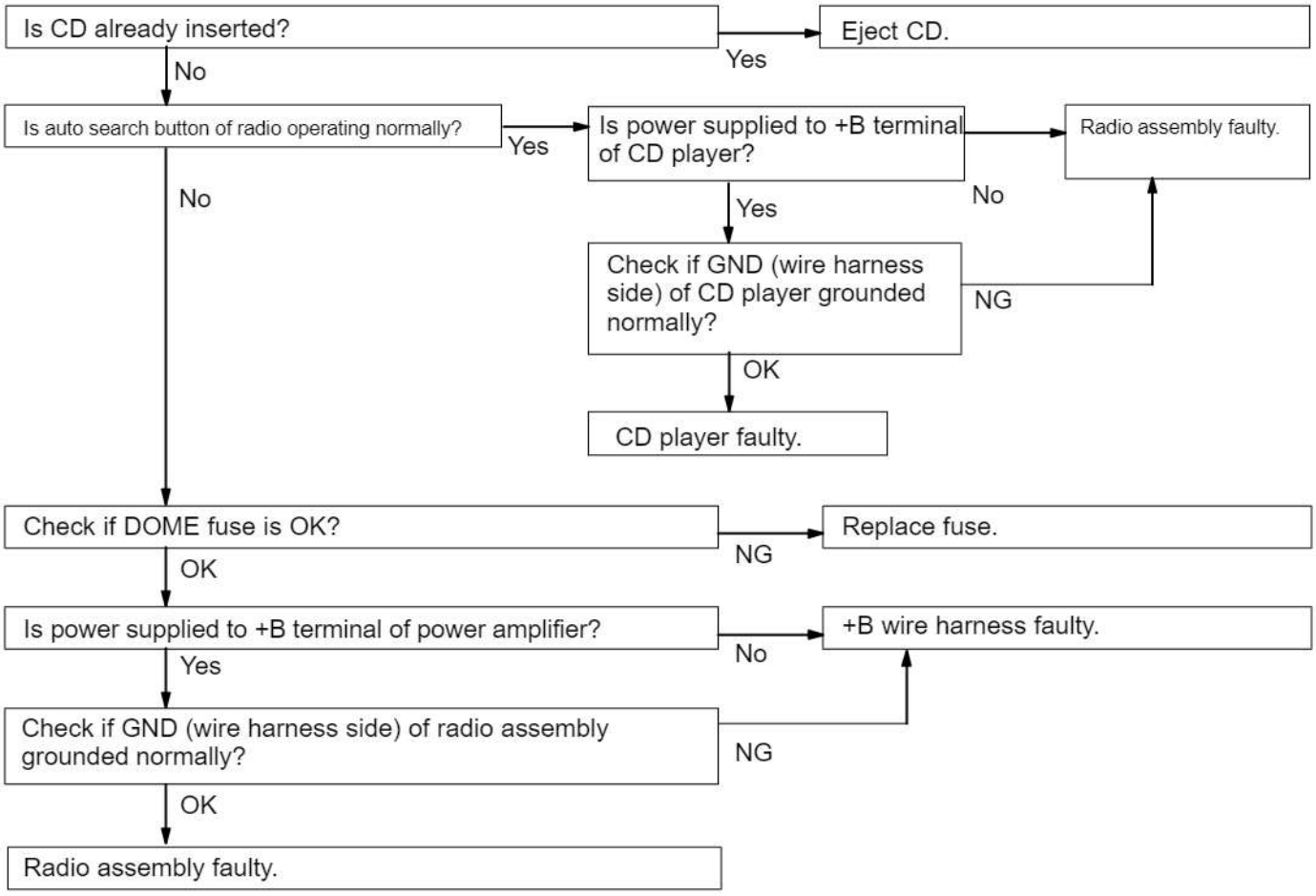
14	Tape Player	TAPE JAMMED,MALFUNCTION WITH TAPE SPEED OR AUTO-REVERSE



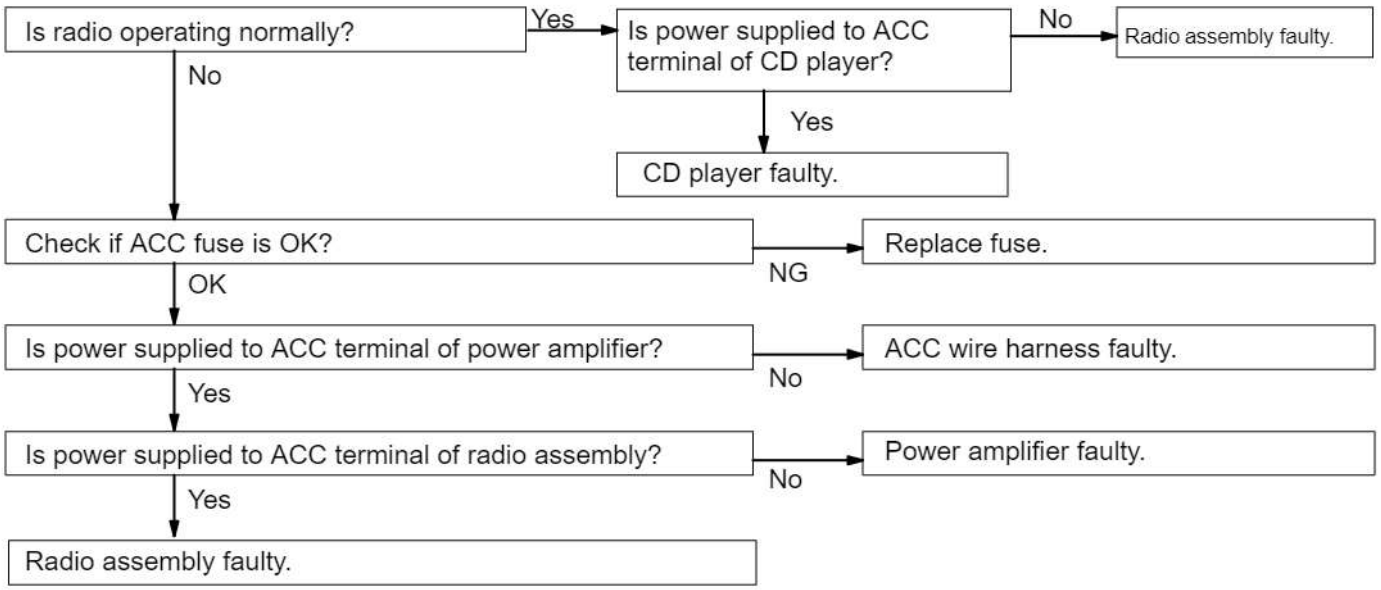
15	Tape Player	CASSETTE TAPE WILL NOT BE EJECTED



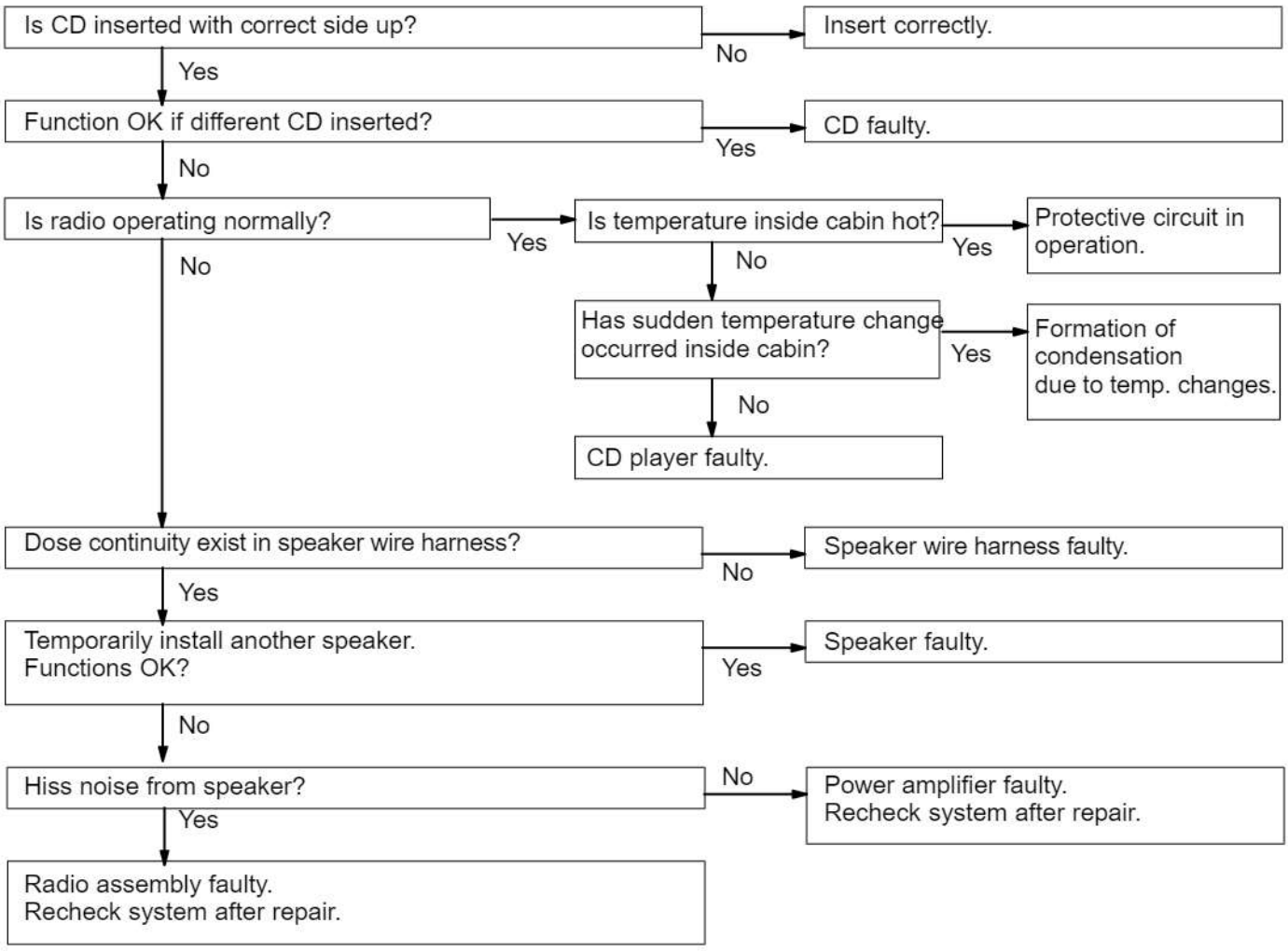
16	CD Player	CD CANNOT BE INSERTED



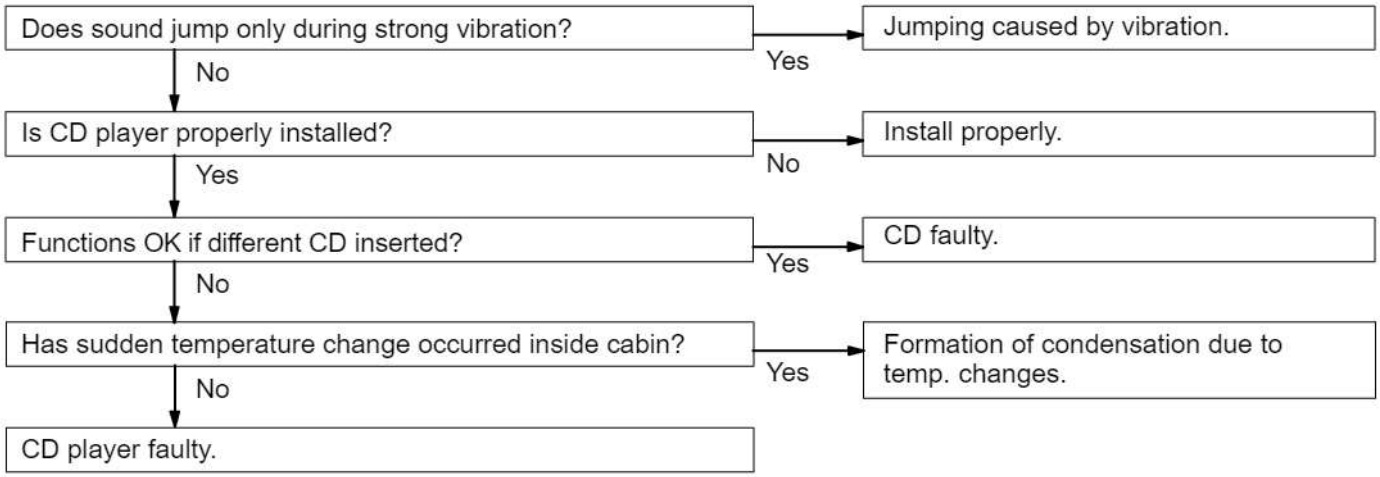
17	CD Player	CD INSERTED, BUT NO POWER



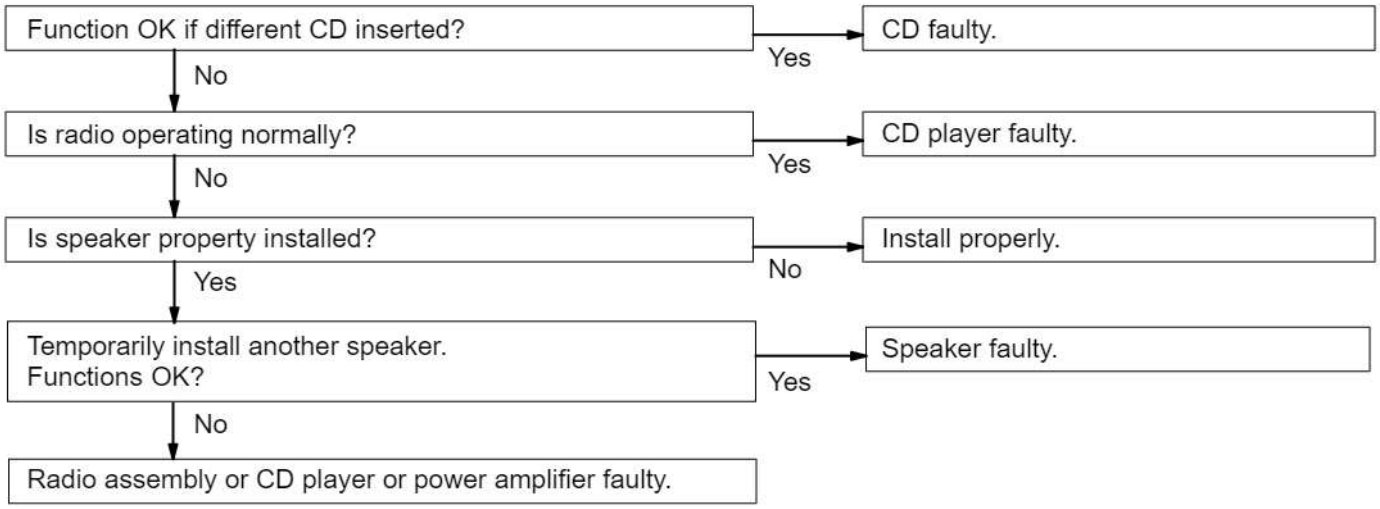
18	CD Player	POWER COMING IN, BUT CD PLAYER NOT OPERATING



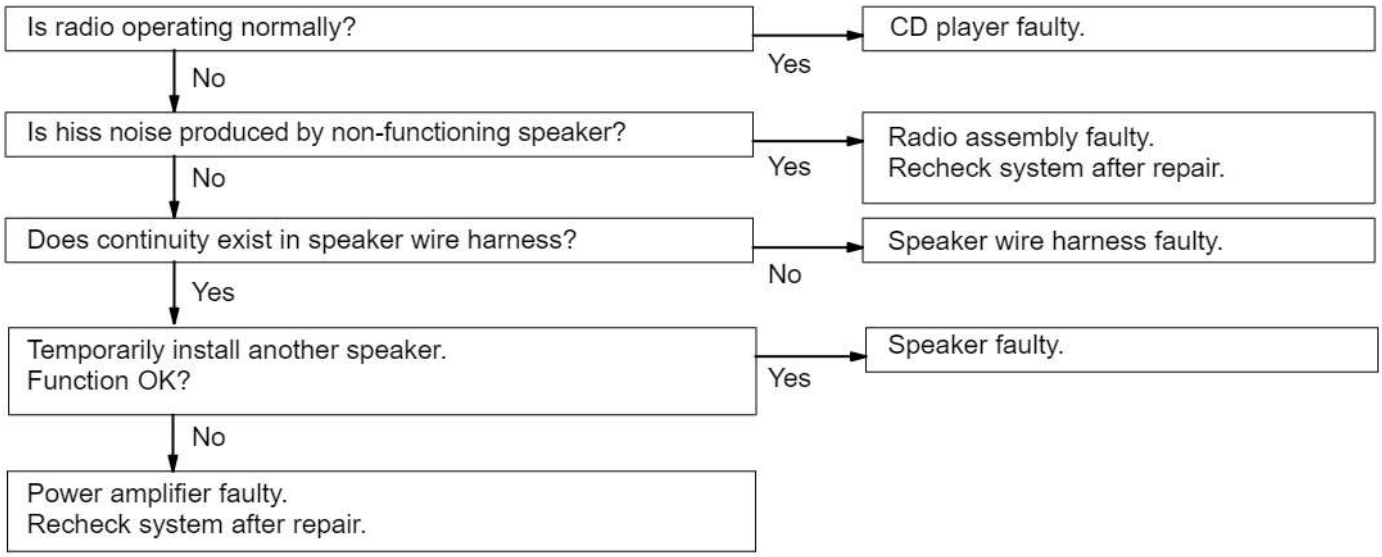
19	CD Player	SOUND JUMPS



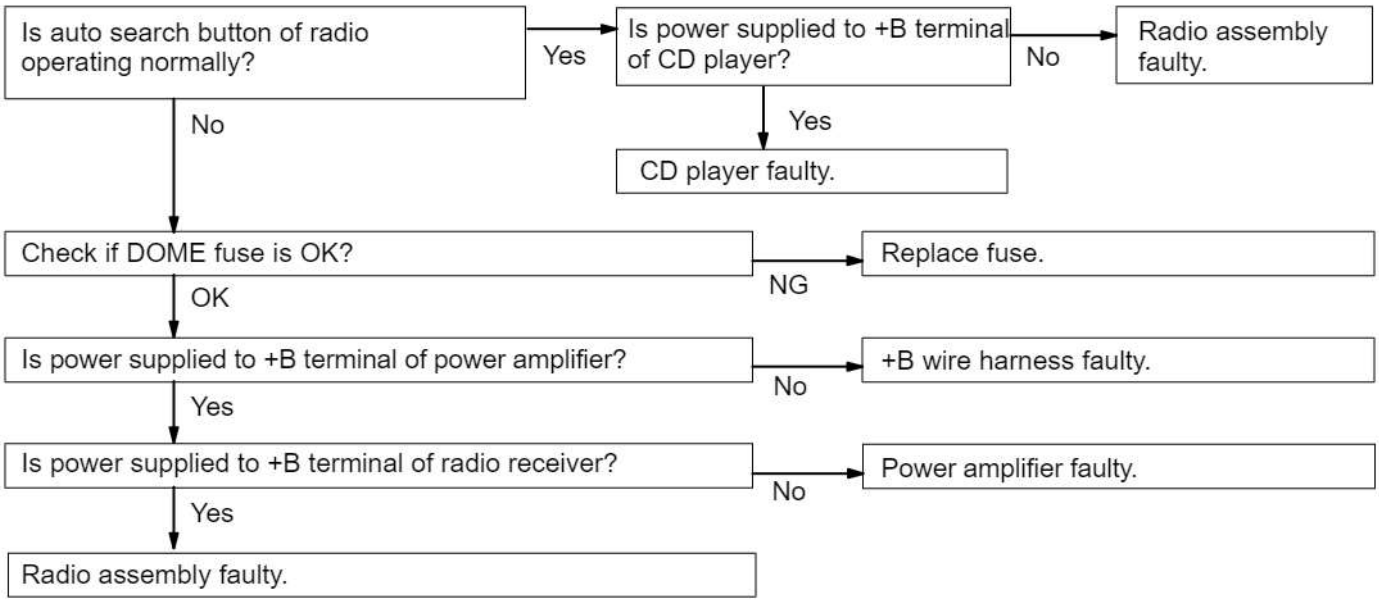
20	CD Player	SOUND QUALITY POOR (VOLUME FAINT)



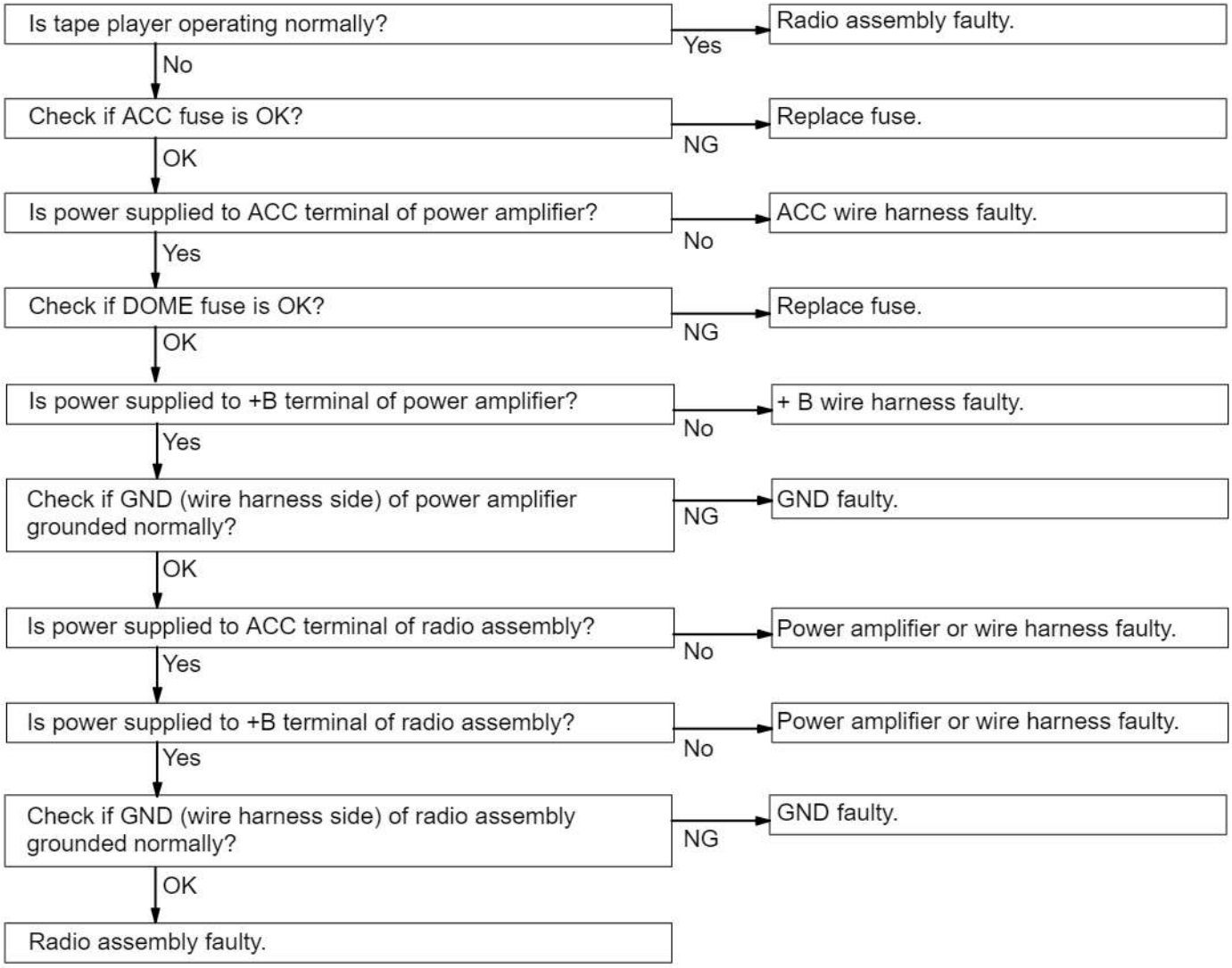
21	CD Player	ANY SPEAKER DOES NOT WORK



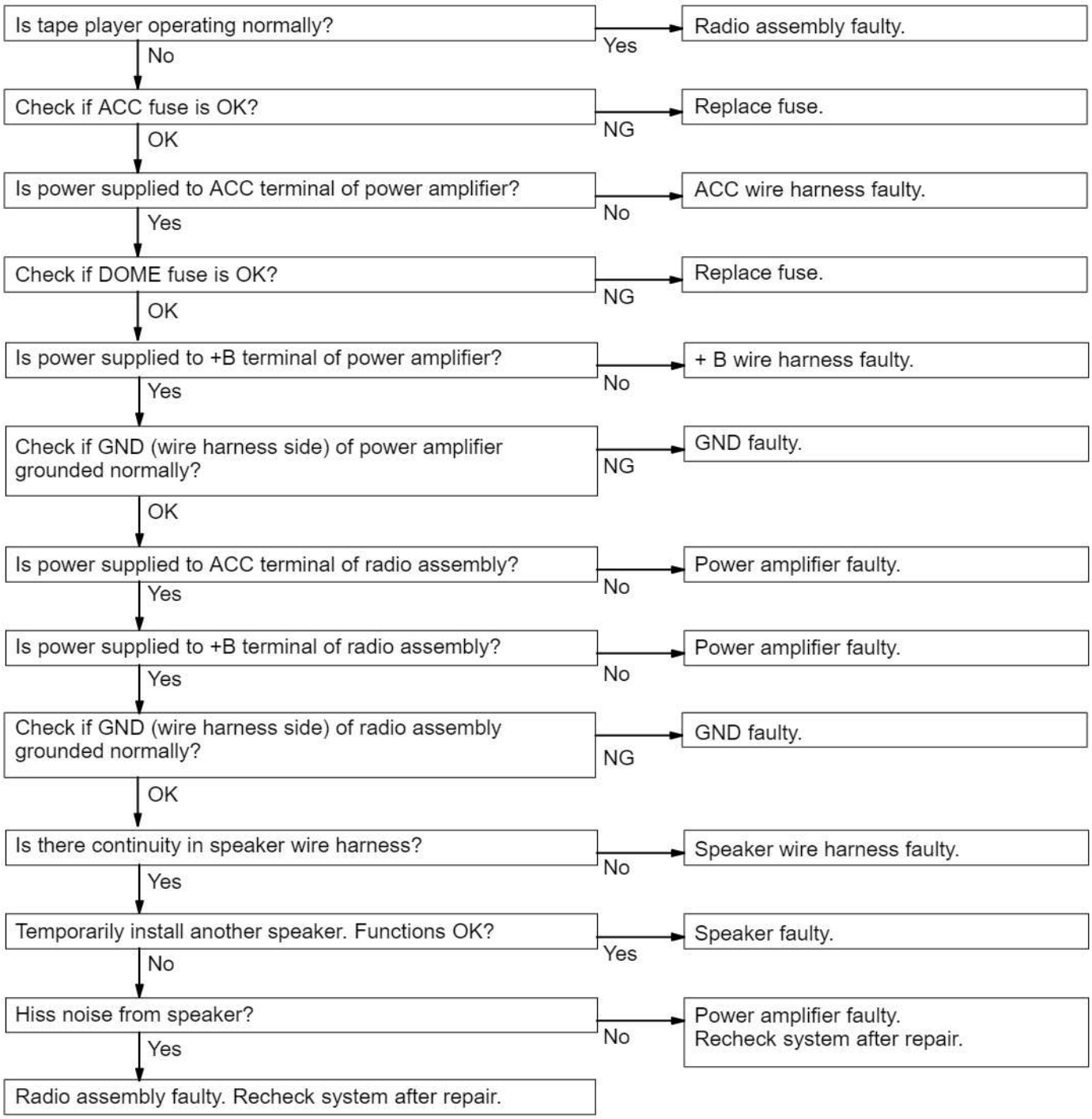
22	CD Player	CD WILL NOT BE EJECTED



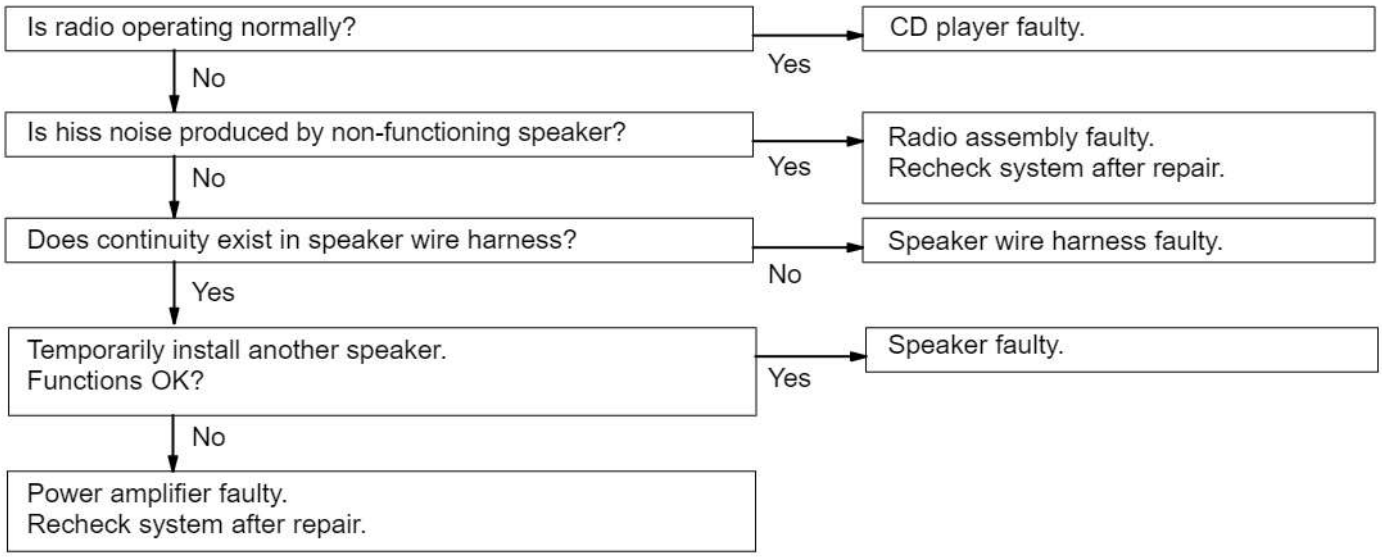
23	Power Amplifier	NO POWER COMING IN



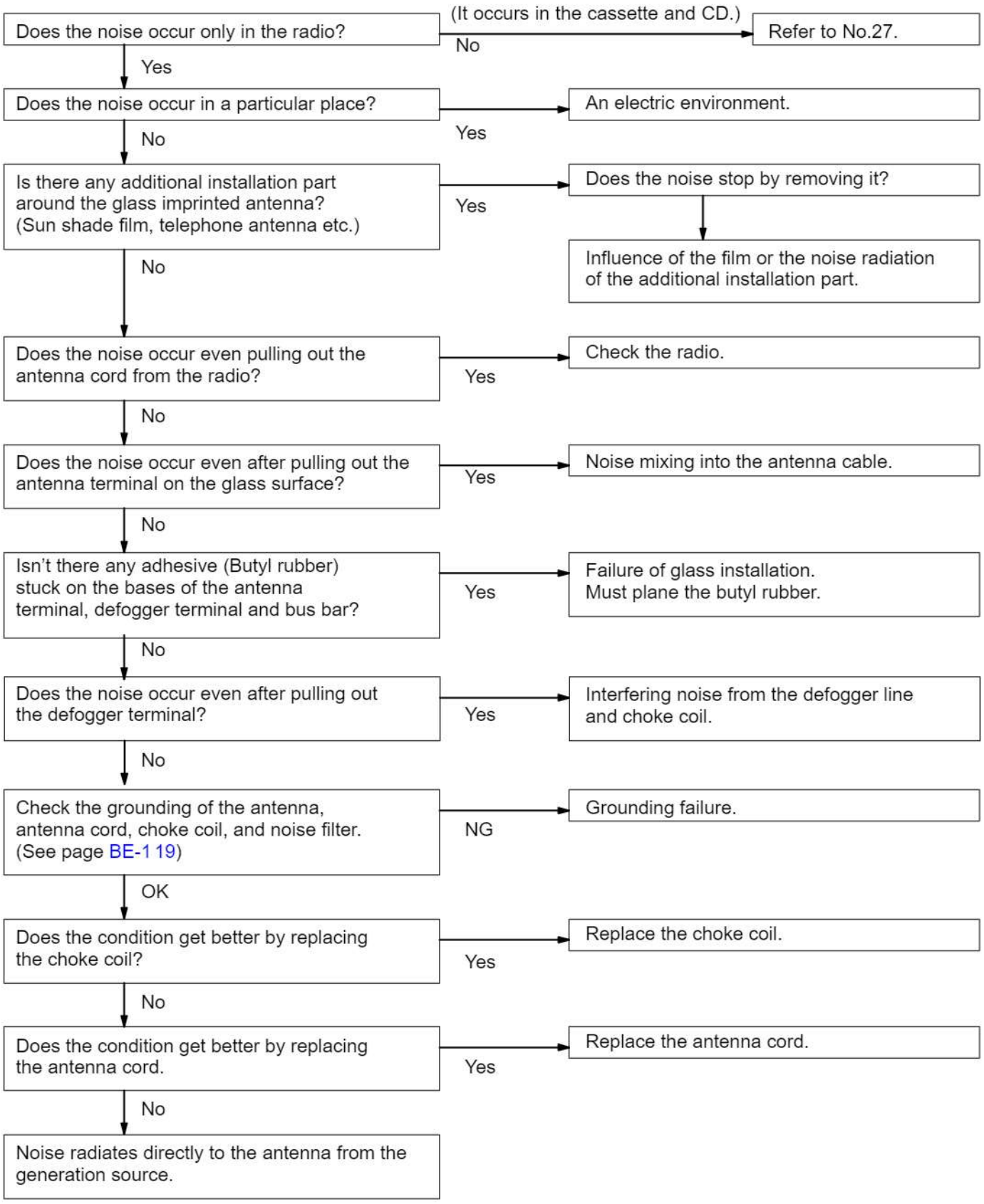
24	Power Amplifier	POWER COMING IN, BUT WOOFER (POWER) AMPLIFIER NOT OPERATING



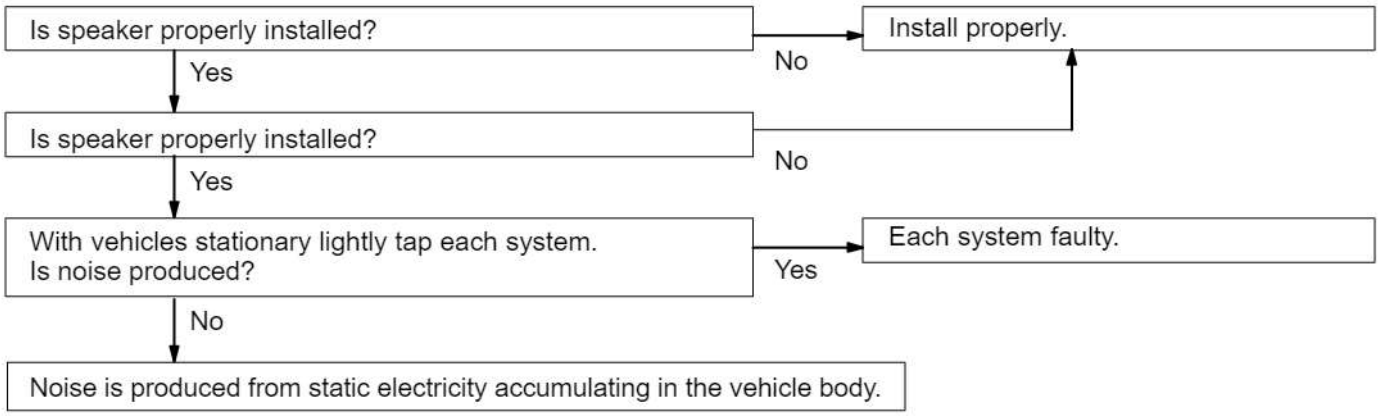
25	Power Amplifier	ANY SPEAKER DOES NOT WORK



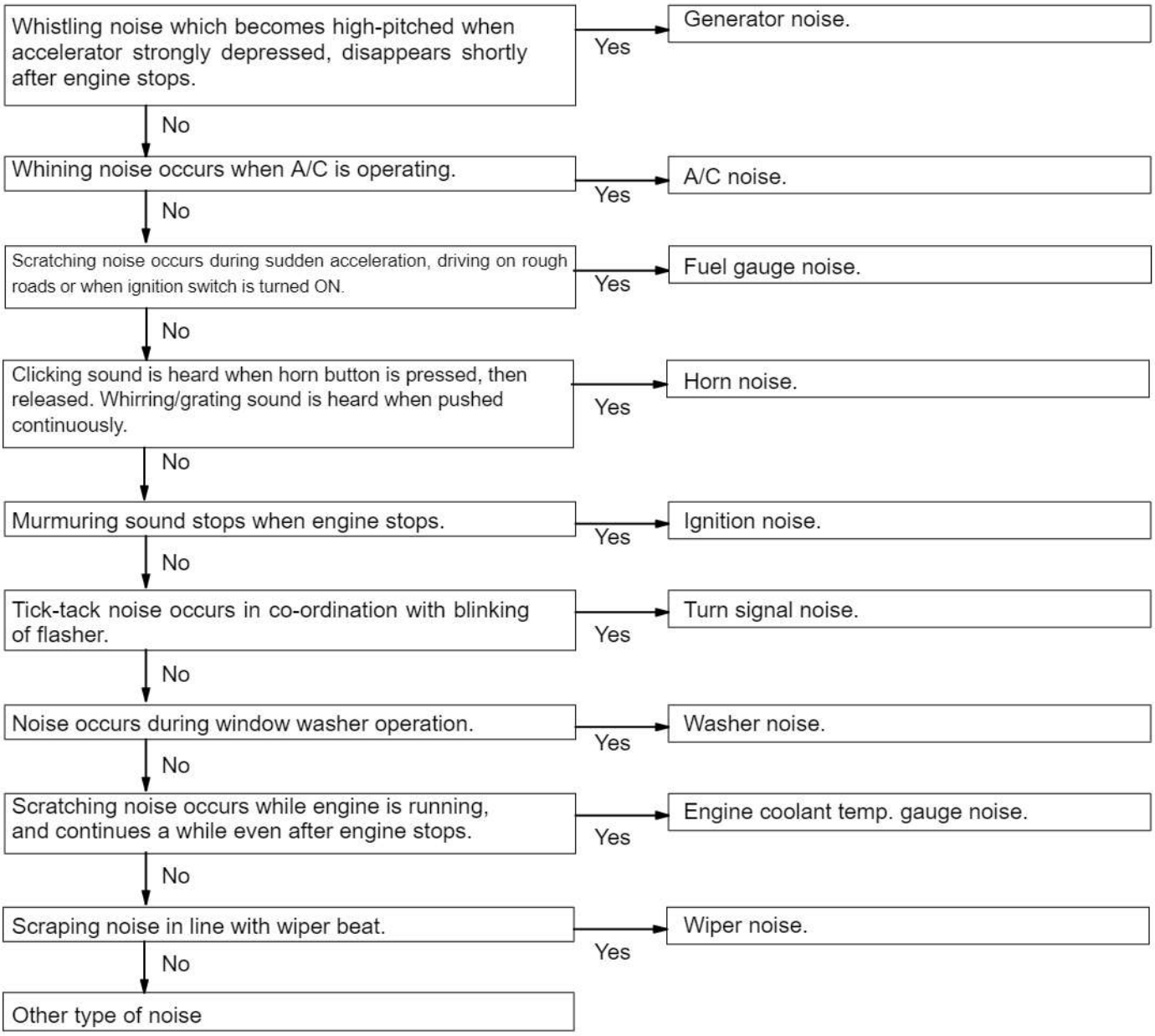
26	Noise	NOISE OCCURS



27	Noise	NOISE PRODUCED BY VIBRATION OR SHOCK WHILE DRIVING

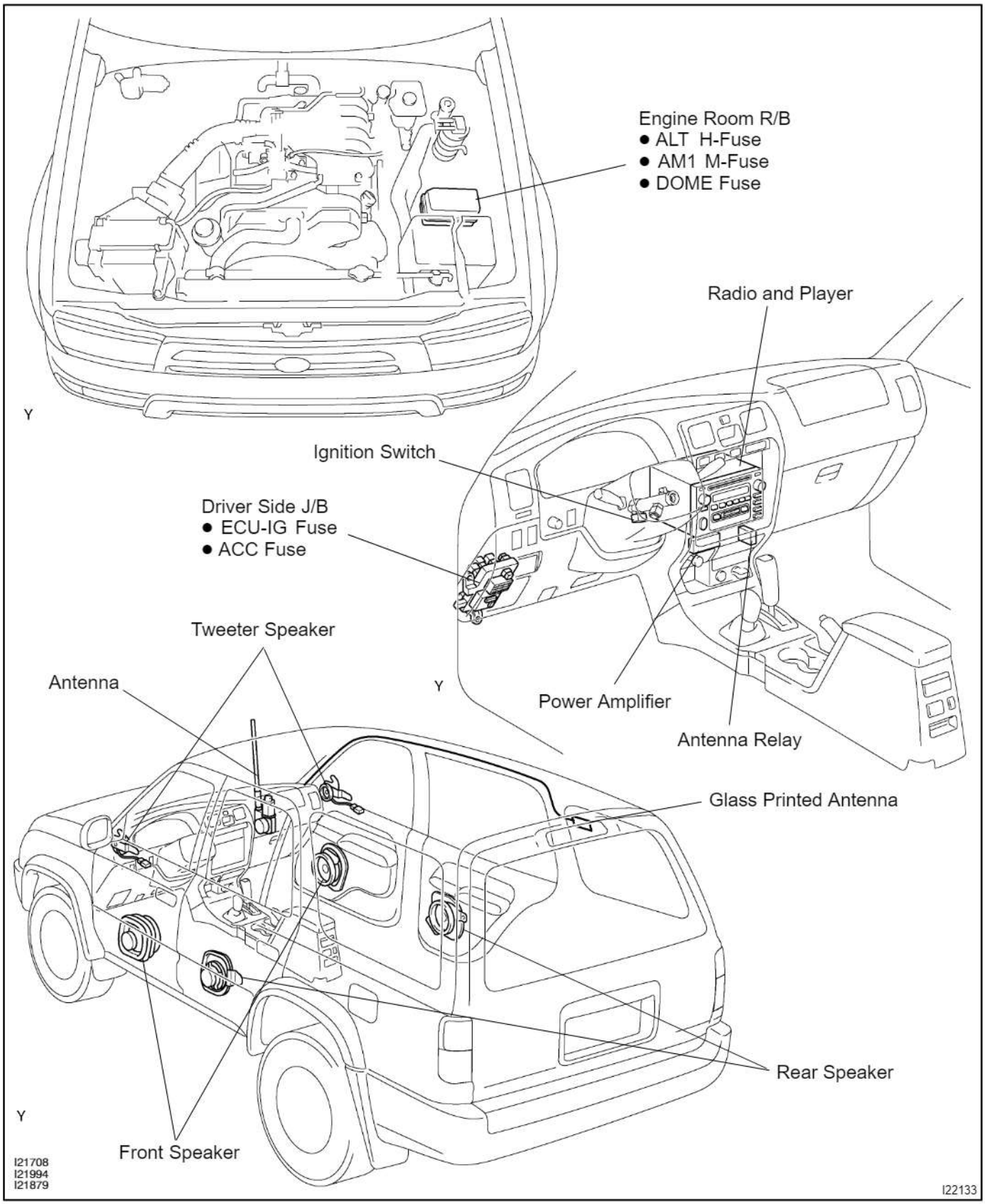


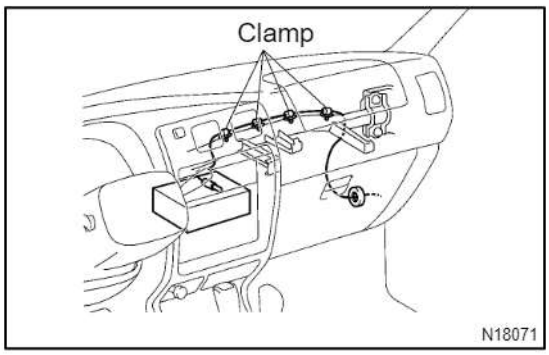
28	Noise	NOISE PRODUCED WHEN ENGINE STARTS



BE07E-03

LOCATION





ANTENNA

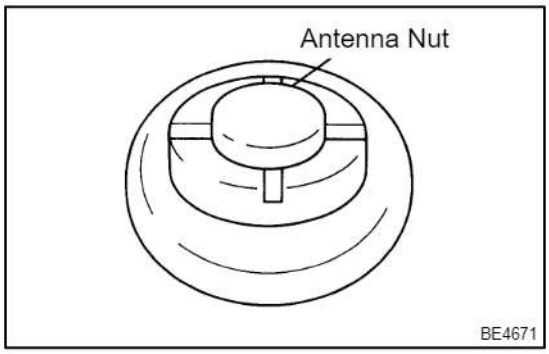
BE07F-02

REMOVAL

1. DISCONNECT ANTENNA CABLE

(a) Remove the radio and disconnect the antenna cable.

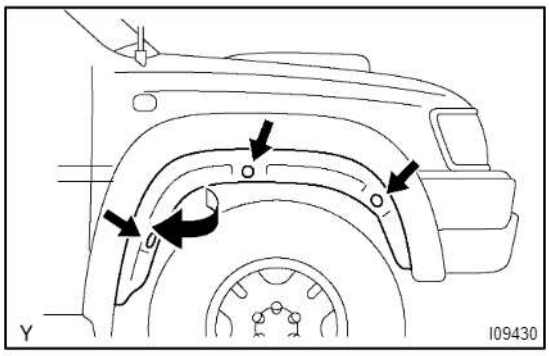
(b) Disconnect the antenna cable from the 4 clamps.



2. REMOVE ANTENNA NUT AND ORNAMENT

3. w/o Wheel Opening Extension: REMOVE FENDER LINER

Remove the clips and fender liner.



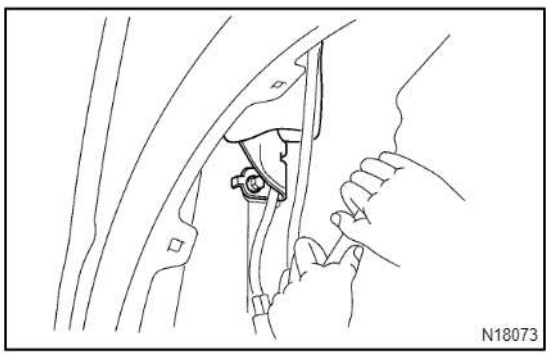
4. w/ Wheel Opening Extension: REMOVE FENDER LINER

(a) Remove the 3 clips.

(b) Pull the fender liner.

HINT:

The following operations should be done by 2 persons.



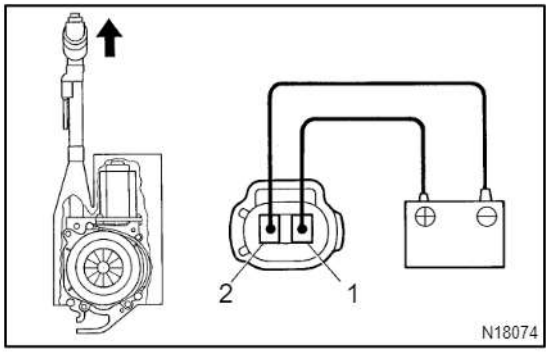
5. REMOVE ANTENNA ASSEMBLY

(a) Auto Antenna models:
Disconnect the connector.

(b) Remove the bolt and antenna assembly.

BE07G-03

INSPECTION



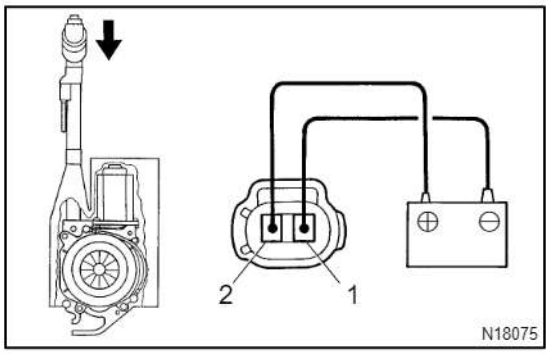
1. Auto Antenna Models:
INSPECT ANTENNA MOTOR

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

(b) Check that the motor turns (moves upward).

NOTICE:

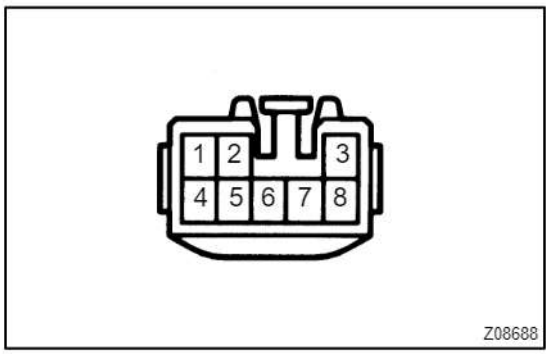
These tests must be done quickly (within 3 - 5 seconds) to prevent the coil from burning out.



(c) Reverse the polarity, then check that the motor turns the opposite way (moves downward).

NOTICE:

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



2. Auto Antenna Models:
INSPECT ANTENNA MOTOR CONTROL RELAY CIRCUIT

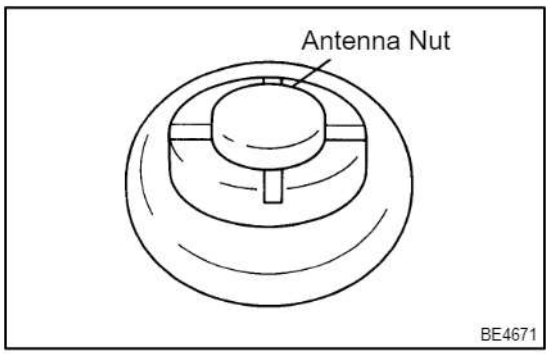
Disconnect the connector from the relay and inspect the connector on wire harness side, as shown in the chart below.

Tester connection	Condition	Specified condition
1 - Ground	Constant	Battery positive voltage
2 - 3	Constant	Continuity
4 - Ground	Ignition switch position LOCK or ACC	No voltage
	Ignition switch position ON	Battery positive voltage
5 - Ground	Ignition switch position LOCK	No voltage
	Ignition switch position ACC or ON	Battery positive voltage
6 - Ground	Constant	Continuity
7 - Ground	Radio switch and cassette OFF	No voltage
	Radio switch or cassette ON	Battery positive voltage
8 - Ground	Ignition switch position LOCK	No voltage
	Radio switch OFF or cassette ON	No voltage
	Radio switch ON and cassette OFF	Battery positive voltage

If the circuit is as specified, replace the relay.

BE07H-01

REPLACEMENT



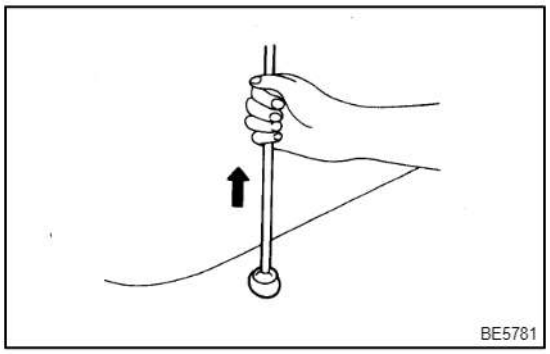
1. Auto Antenna Models:
REMOVE ANTENNA ROD

HINT:

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

(a) Turn the ignition switch to "LOCK" position.

(b) Remove the antenna nut.



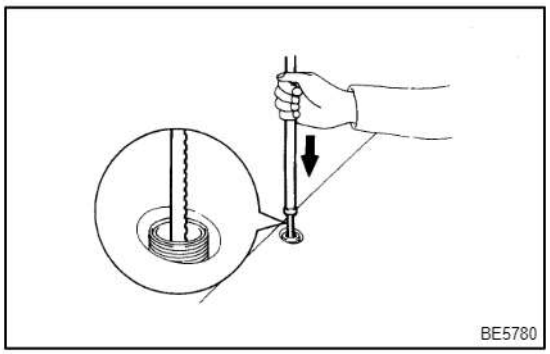
(c) Press the "AM, FM" buttons on the radio receiver, and simultaneously turn the ignition switch to "ACC" position.

HINT:

- The rod will be extended fully and be released form the motor antenna.
- After removing the antenna rod, leave the ignition switch "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.

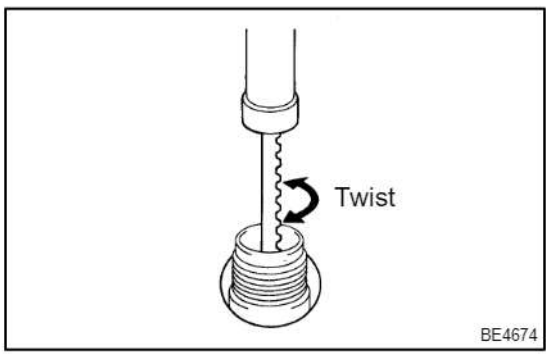
HINT:

- When inserting the cable, the teeth on the cable must face toward the rear of the vehicle.
- Insert the antenna by 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.

BE07I-01

INSTALLATION

Installation is in the reverse order of removal (See page BE-153).

CLOCK

TROUBLESHOOTING

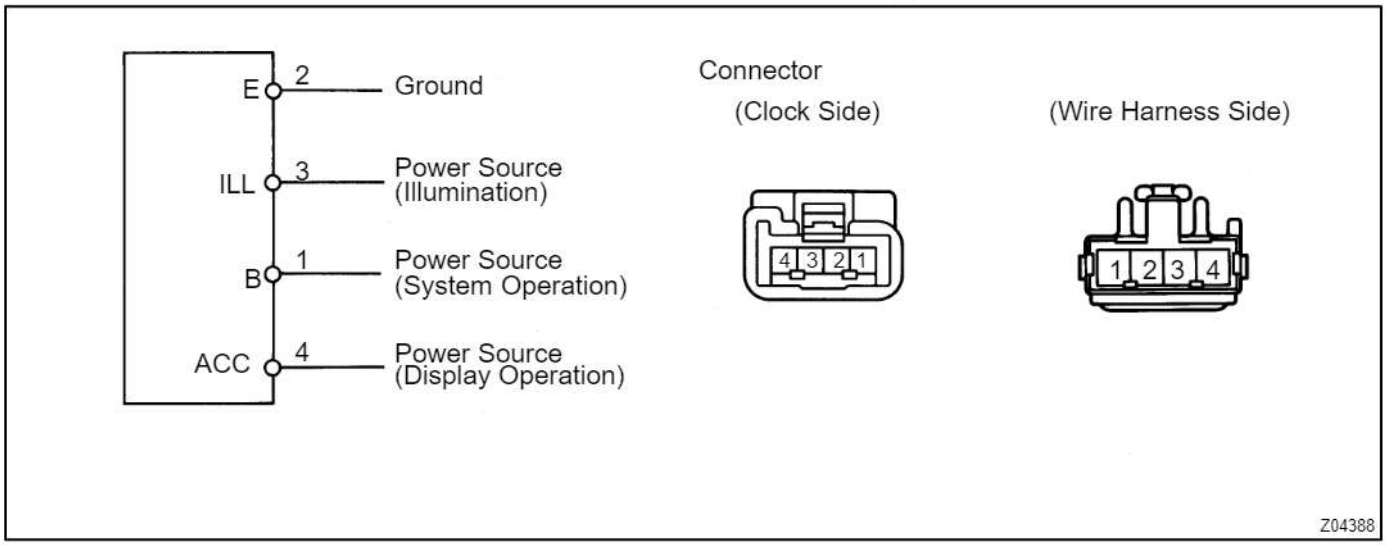
BE07J-01

HINT:

Troubleshoot the clock according to the table below.

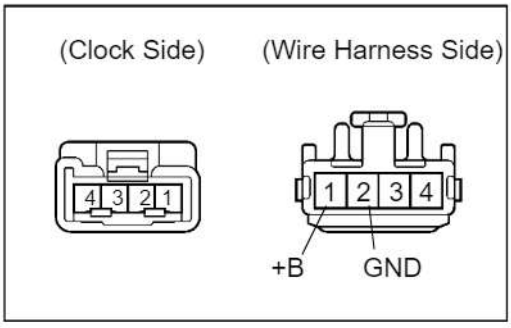
Clock will not operate	1
Clock loses or gains time	2

± 1.5 seconds/day



1. PROBLEM NO.1

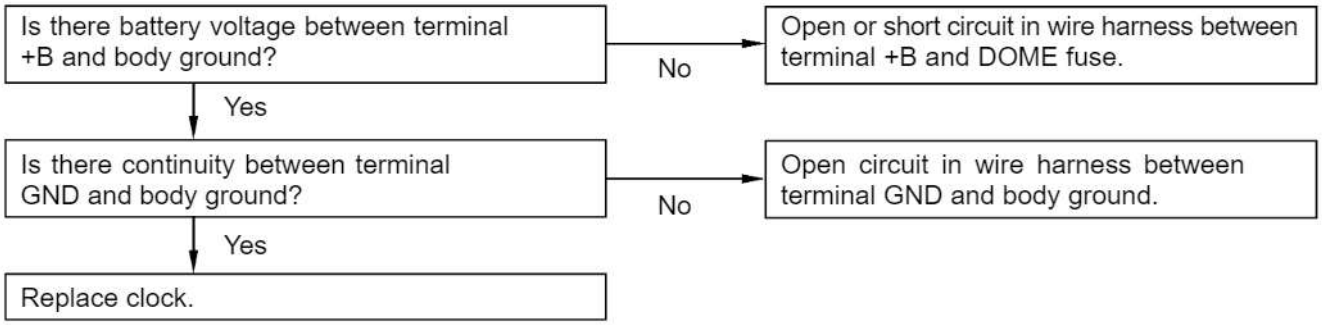
1	CLOCK WILL NOT OPERATE



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

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

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

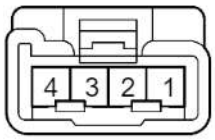


I01417

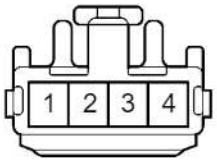
2. PROBLEM NO.2

2	CLOCK LOSES OR GAINS TIME

(Clock Side)



(Wire Harness Side)



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

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

(c) Check that the clock adjusting button is sticking in position and has failed to return.
If the button is not returned, repair or replace the clock.

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

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

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

Yes ↓

Adjust or replace clock.

I01418

GARAGE DOOR OPENER SYSTEM

BE0TY-03

REGISTRATION PROCEDURE

1. NEW CODE REGISTRATION

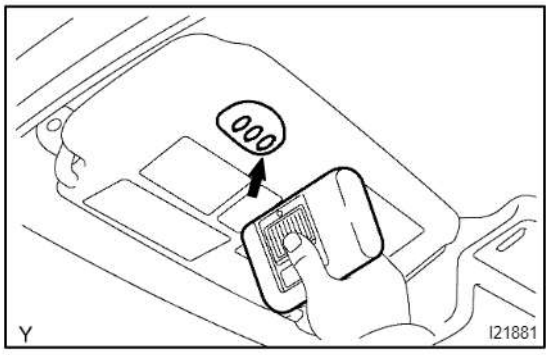
NOTICE:

- **If pressing the switch of the original transmitter to register the code, the system might operate.**
- **When registering the transmitter codes such as for garage or gate, check that there is nobody around those places then register.**

(a) Press the switch for the item to be registered for 20 seconds

HINT:

When transferring to registration mode, LED (red) blinks in 1 Hz cycle.

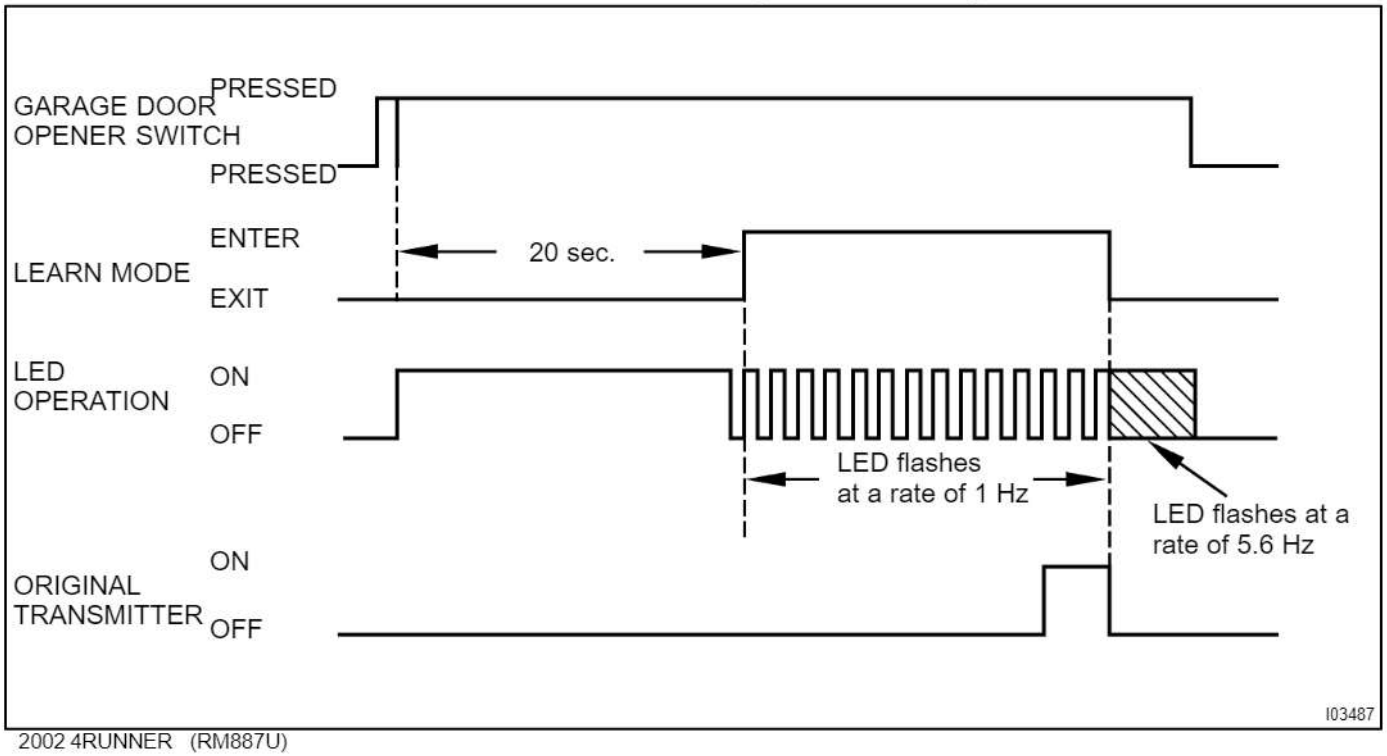


(b) In the condition of (a), bring the original transmitter to within 1-inch area around the garage door opener and press the switch (code transmitting).

HINT:

When code registration completes correctly, LED (red) blinks in 5.6 Hz cycle.

New code registration timing chart



2002 4RUNNER (RM887U)

If a code can not be registered, observe the following conditions.

HINT:

- If the battery of original transmitter is consumed.
- Press the switch of the transmitter repeatedly in registration mode, as some transmitters stop transmitting for 1 to 2 seconds.
- This system is not applicable to the garage door opener which had been made before 1982.

2. CODE DELETION

(a) Press the switches at both ends of garage door opener simultaneously for 20 seconds.

HINT:

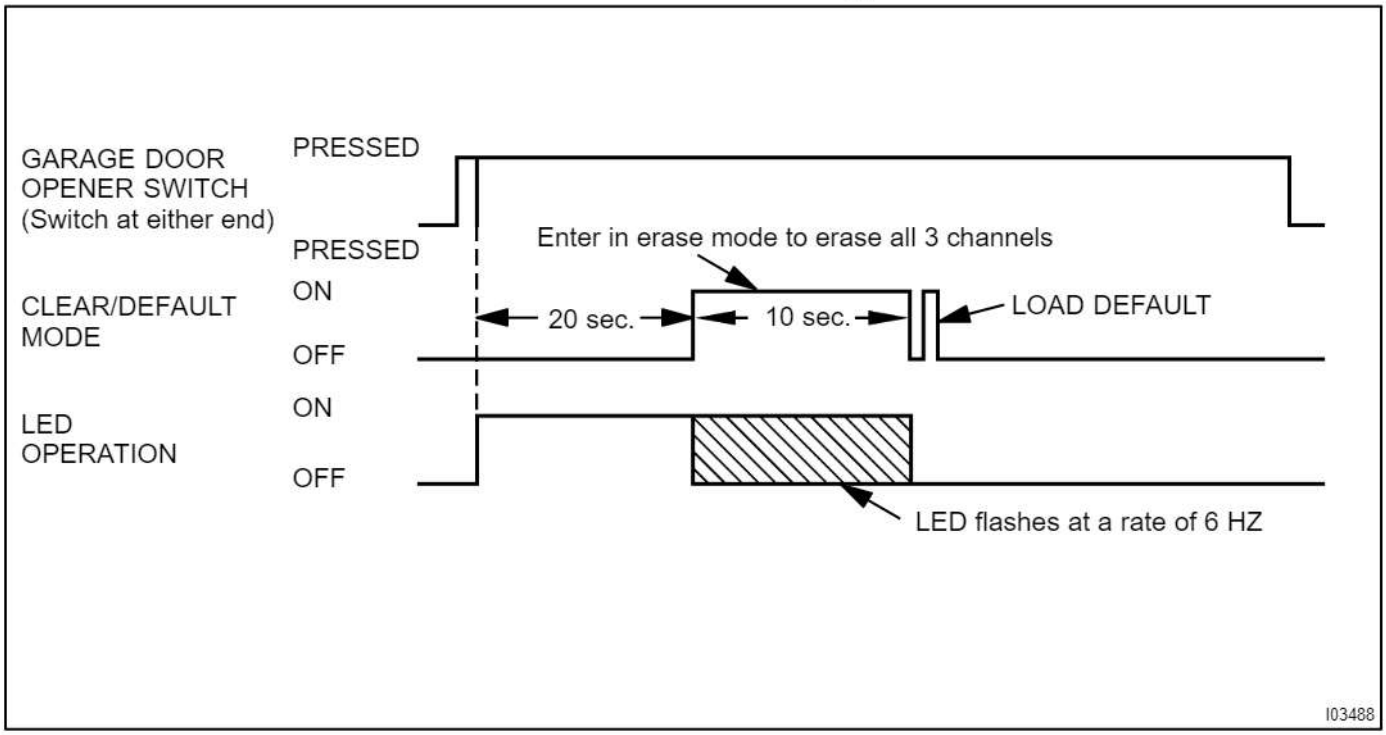
When transferring to deletion mode, LED (red) blinks in 6 Hz cycle.

(b) When releasing the switch within 10 seconds after transferring to deletion mode, all the registered codes will be erased.

HINT:

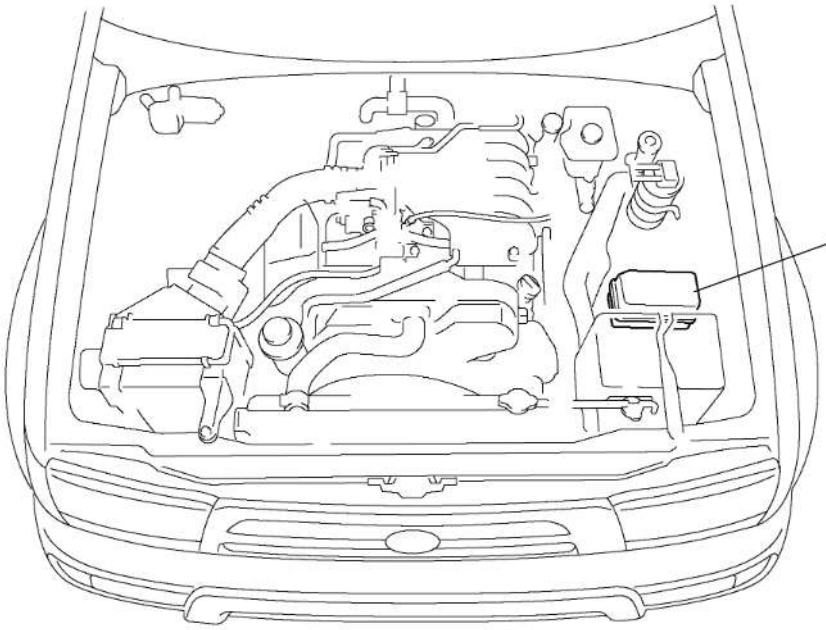
Press the switch until blinking in 6 Hz cycle stops, so that the default code for check is set.

Code deletion timing chart

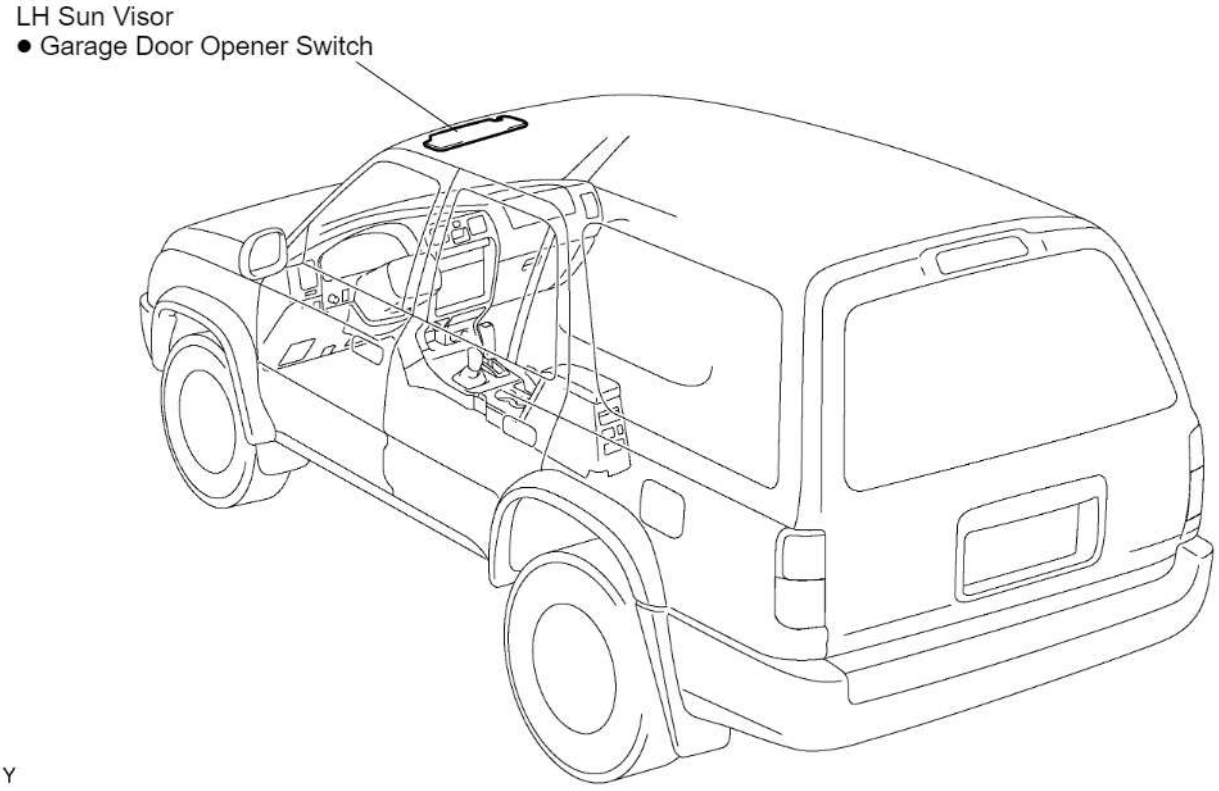


BE0TZ-05

LOCATION



Y



Y

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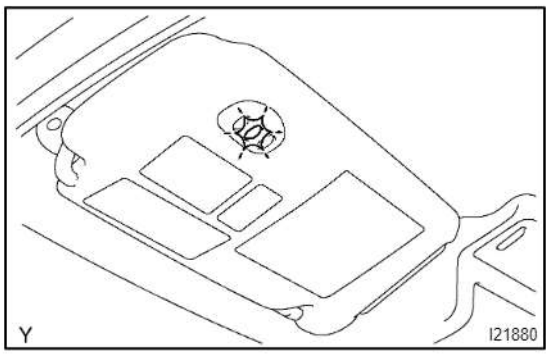
I22015

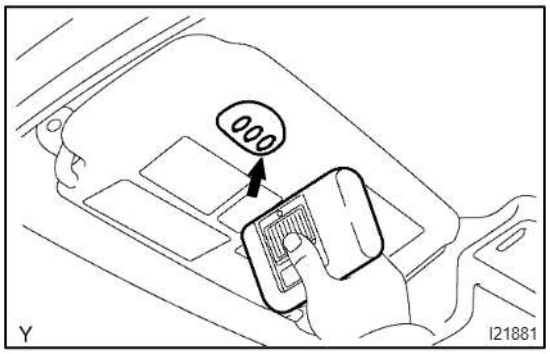
BE0U0-03

INSPECTION

1. INSPECT GARAGE DOOR OPENER SWITCH

Press the switch and check that each LED (red) lights up.
Even if only one switch is found not to light up, replace it.





2. INSPECT GARAGE DOOR OPENER REGISTRATION AND TRANSMITTING

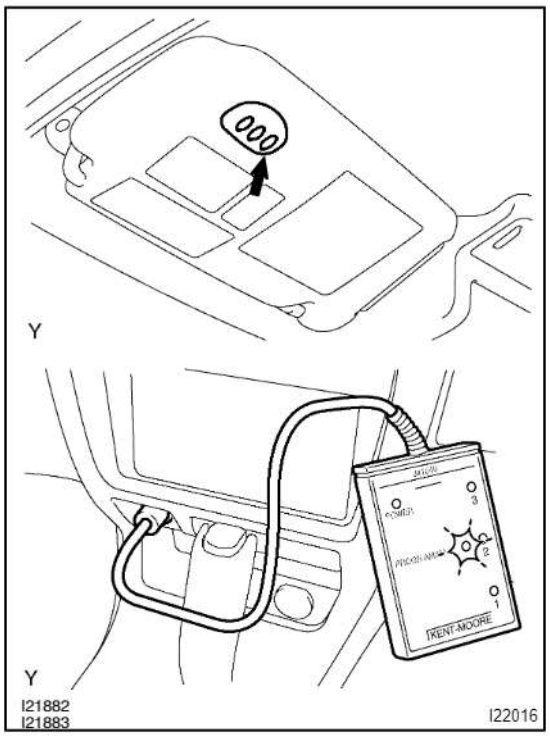
HINT:
Use the home link tester made by KENT MOORE for this test. As it is necessary to record the code of the hand held transmitter, customer's code will be erased. When the inspection completes, please register the customer's again.

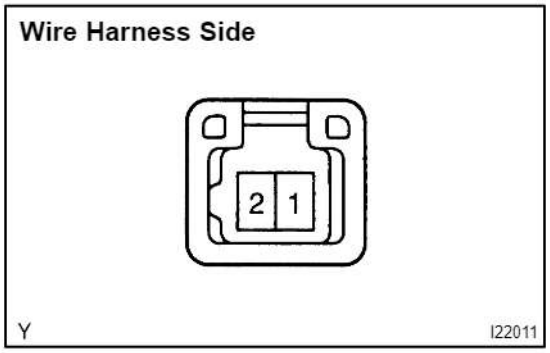
(a) Check that the code of hand held transmitter for inspection can be recorded (See page BE-159).

If the code can not be registered, replace garage door opener.

(b) Press the switch which an inspection code has been registered for and check that LED (green) of the home link tester lights up.

If the LED (green) does not light up, replace the garage door opener.





3. INSPECT GARAGE DOOR OPENER SWITCH CIRCUIT

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

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

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

ENGINE IMMOBILISER SYSTEM

BE11U-04

REGISTRATION PROCEDURE

HINT:

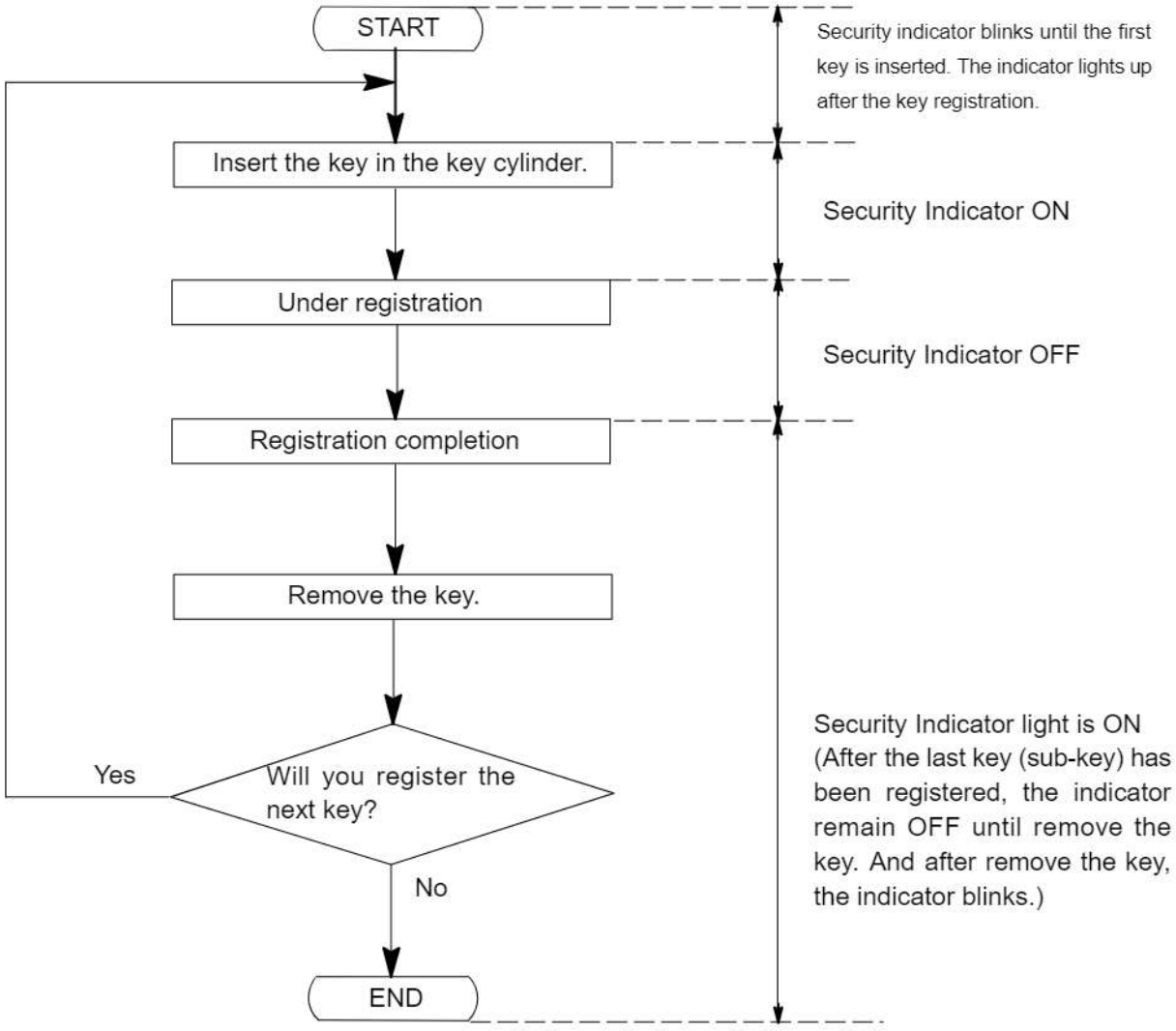
In case of having lost all the already registered master keys, you are not able to do additional registration or deletion. Change the ECM and then must register the new key codes according to the following registration procedure of the automatic registration mode.

1. KEY REGISTRATION IN AUTOMATIC REGISTRATION MODE

(a) Registration of a new transponder key.

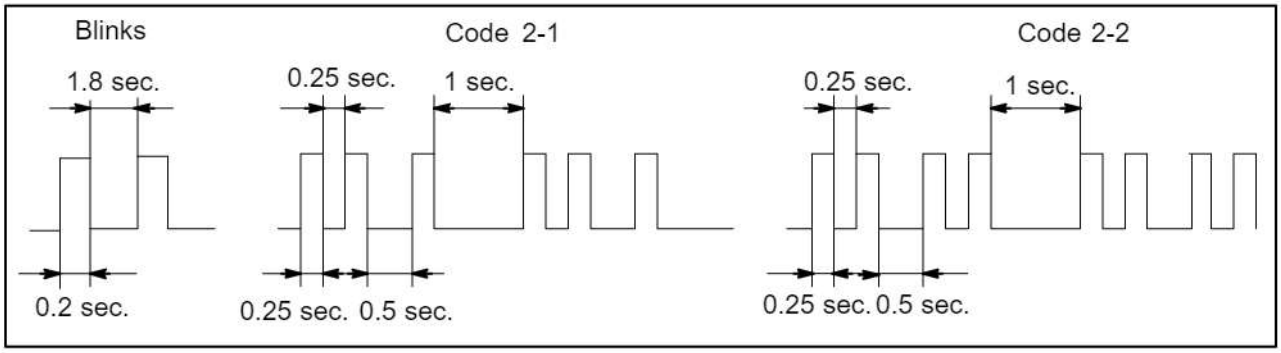
HINT:

- This must be done when you install a new ECM.
- The new ECM is on the automatic key code registration mode. The already fixed number of key codes for this ECM can be registered.
  On this type of vehicle, up to 3 key codes can be registered.
- In the automatic registration mode, the last key registered becomes sub-key.



HINT:

- When a key is not inserted in the key cylinder on the automatic registration mode, the security indicator always lights on.
- When the immobiliser system operates normally and the key is pull out, the security indicator blinks.
- When key code registration could not be performed on the automatic registration mode, code 2-1 is output from the security indicator and when inserting the already registered key, code 2-2 is output.



(b) Automatic registration mode completion

If completing the mode forcibly when more than 1 key code have been registered on the automatic registration mode, perform the following procedures.

After 1 more key code have been registered with master key, perform step (1) or (2) without pulling the key out or inserting the already registered key.

(1) Depress and release brake pedal 5 times or more within 15 sec.

(2) With the hand-held tester, require automatic registration mode completion.

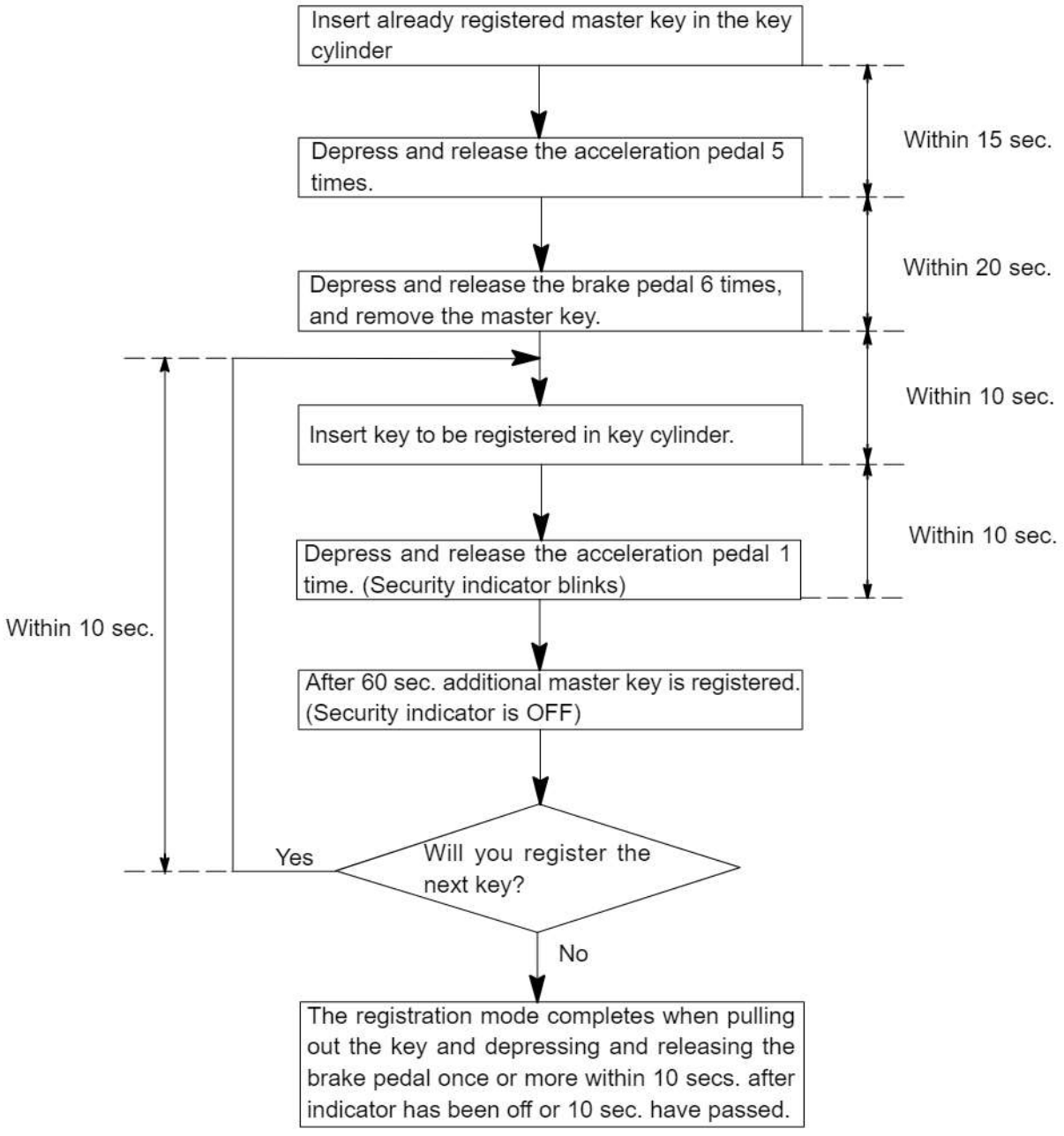
2. REGISTRATION OF ADDITIONAL MASTER KEY

There are 2 ways for registration of additional master key, one way is depressing brake pedal and acceleration pedal and the other way is using hand-held tester.

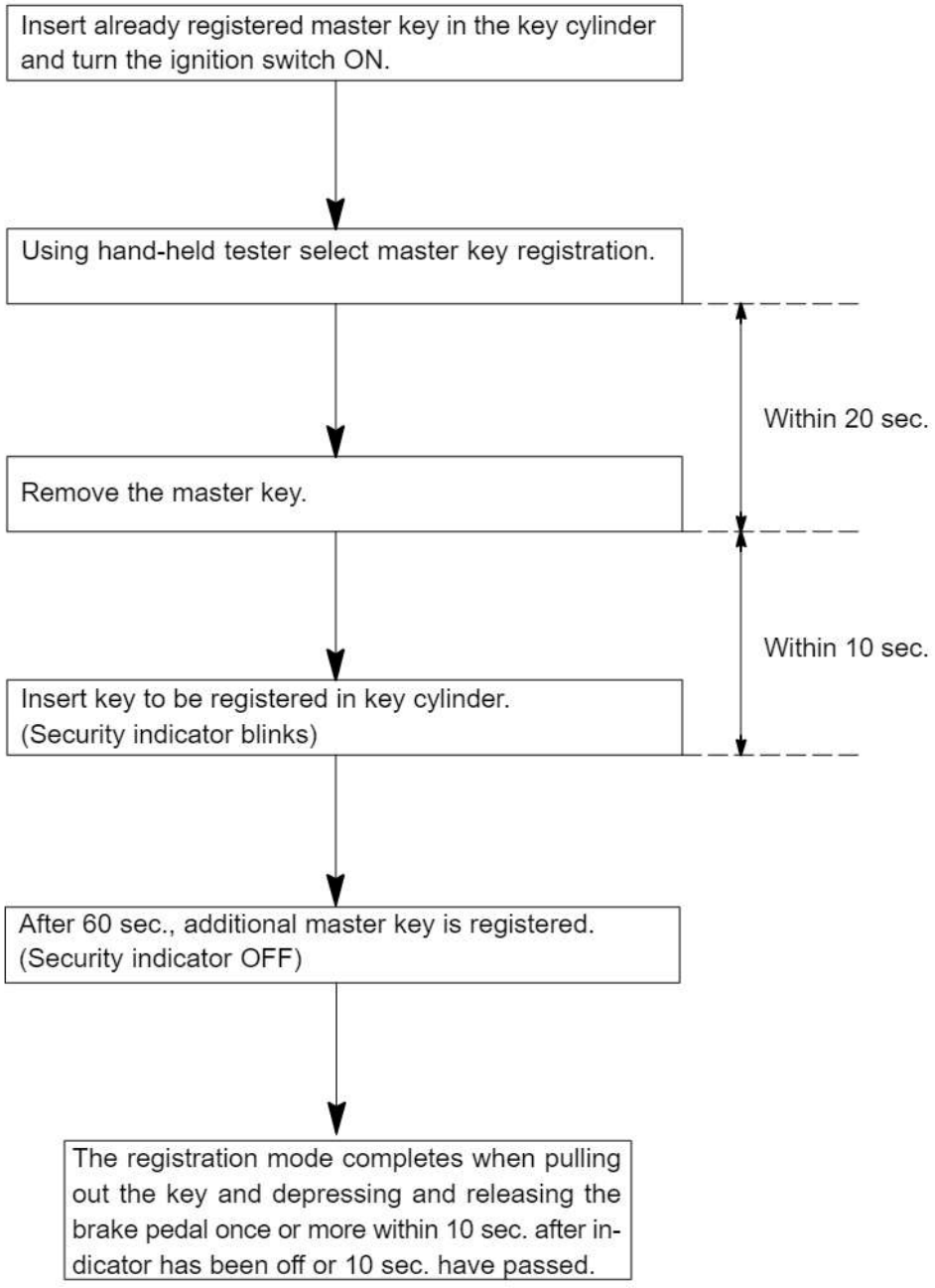
HINT:

- It is possible to register up to 7 master key codes including the already registered key code.
- When any operation time described below is over, registration mode completes.
- When the next procedure is performed while the timer is working, the timer completes counting time, then next timer starts.
- When replacing "Ignition Cylinder Key Set" or "Lock Cylinder Set" and register according to the following procedure using the original master key. However, after the registration of the additional master key, as the original master key and the original sub-key is not necessary any more, so erase registration of those key codes.

(1) Depressing brake pedal and acceleration pedal:



(2) Using hand-held tester:



HINT:
Please follow the screen of the hand-held tester for more detailed procedure.

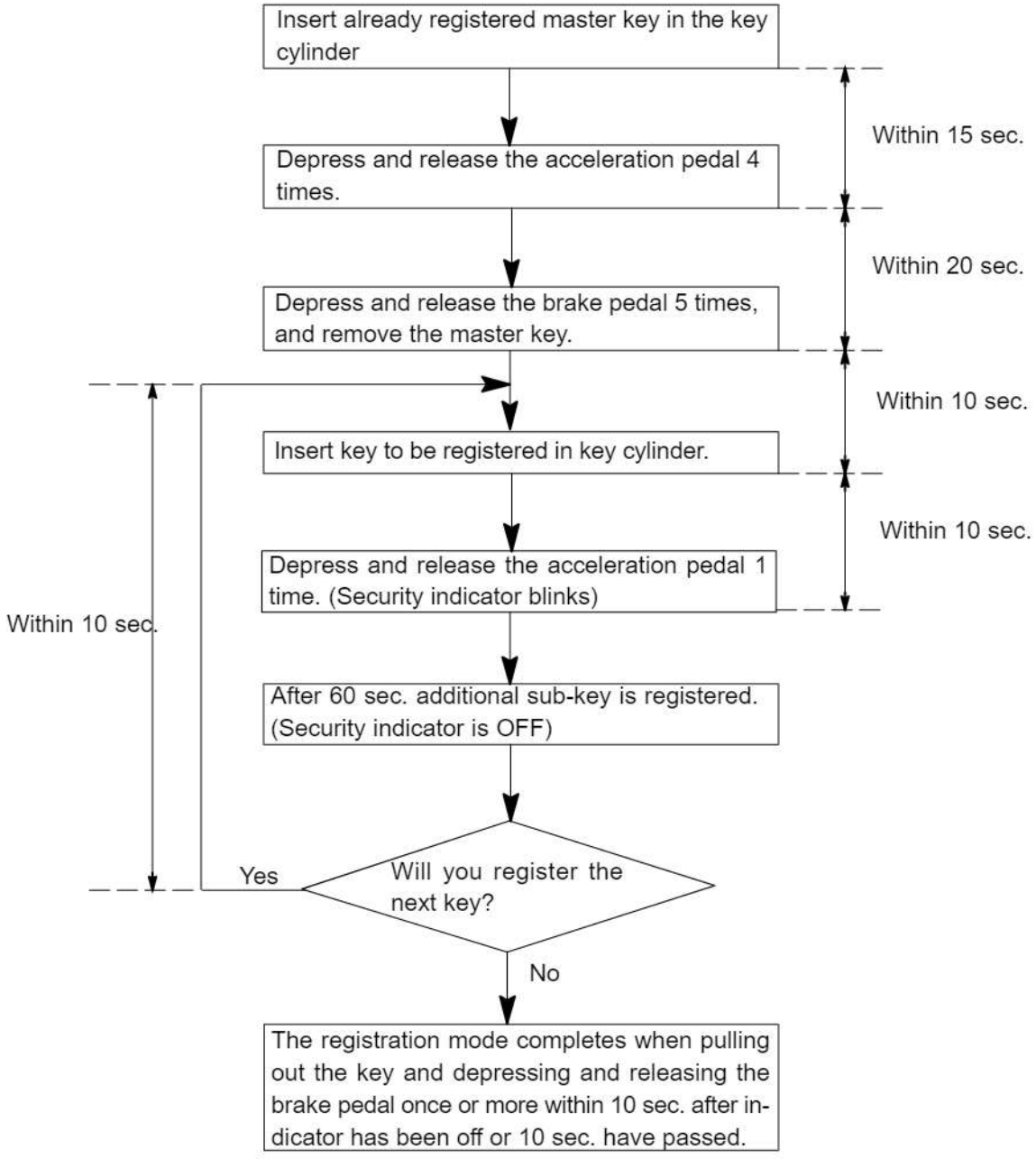
3. REGISTRATION OF ADDITIONAL SUB-KEY

There are 2 ways for registration of additional sub-key, one way is depressing brake pedal and acceleration pedal and the other way is using hand-held tester.

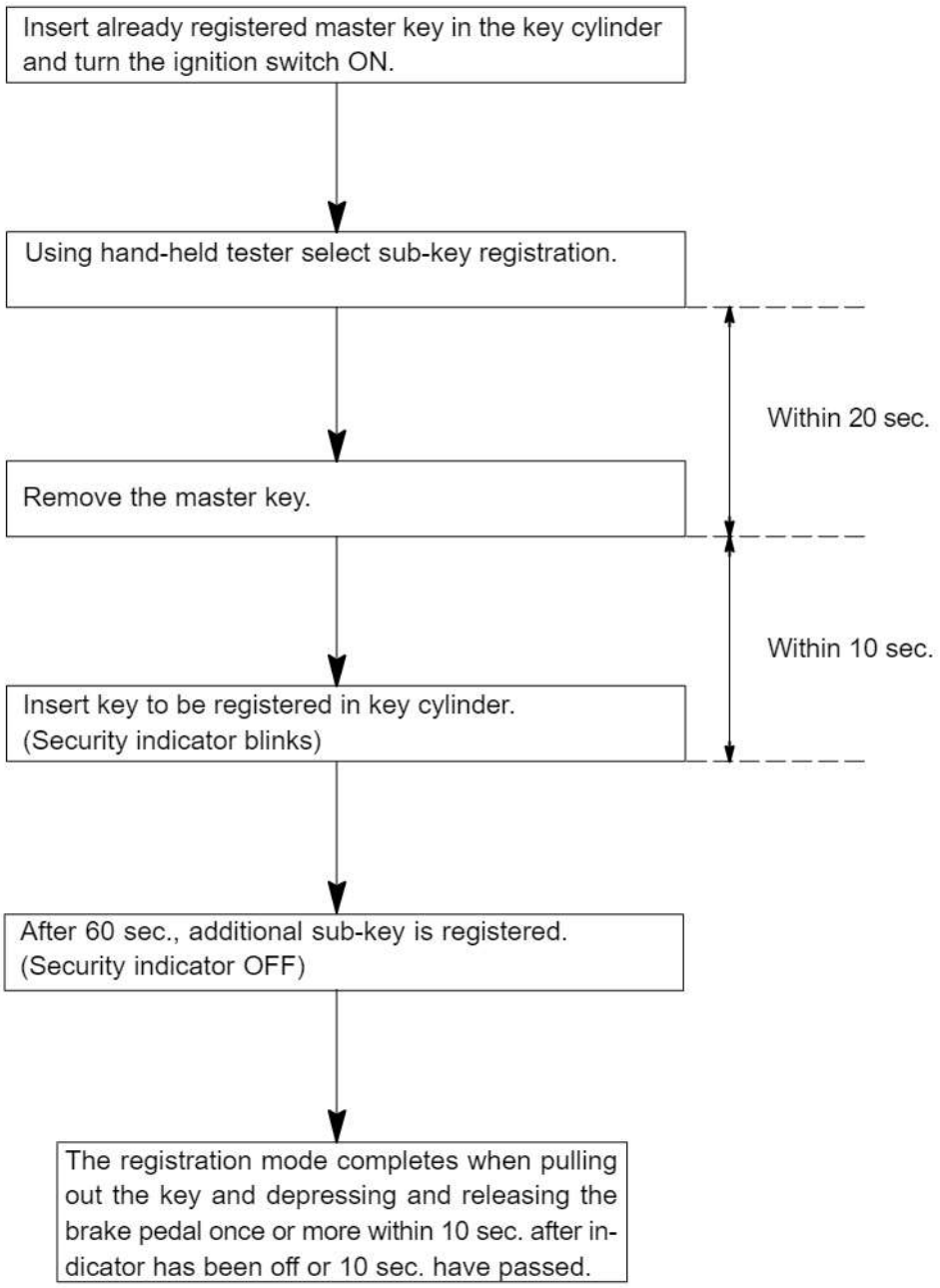
HINT:

- It is possible to register up to 3 sub-key codes including the already registered key code.
- When any operation time described below is over, registration mode completes.
- When the next procedure is performed while the timer is working, the timer completes counting time, then next timer starts.

(1) Depressing brake pedal and acceleration pedal:



(2) Using hand-held tester:



HINT:
Please follow the screen of the hand-held tester for more detailed procedure.

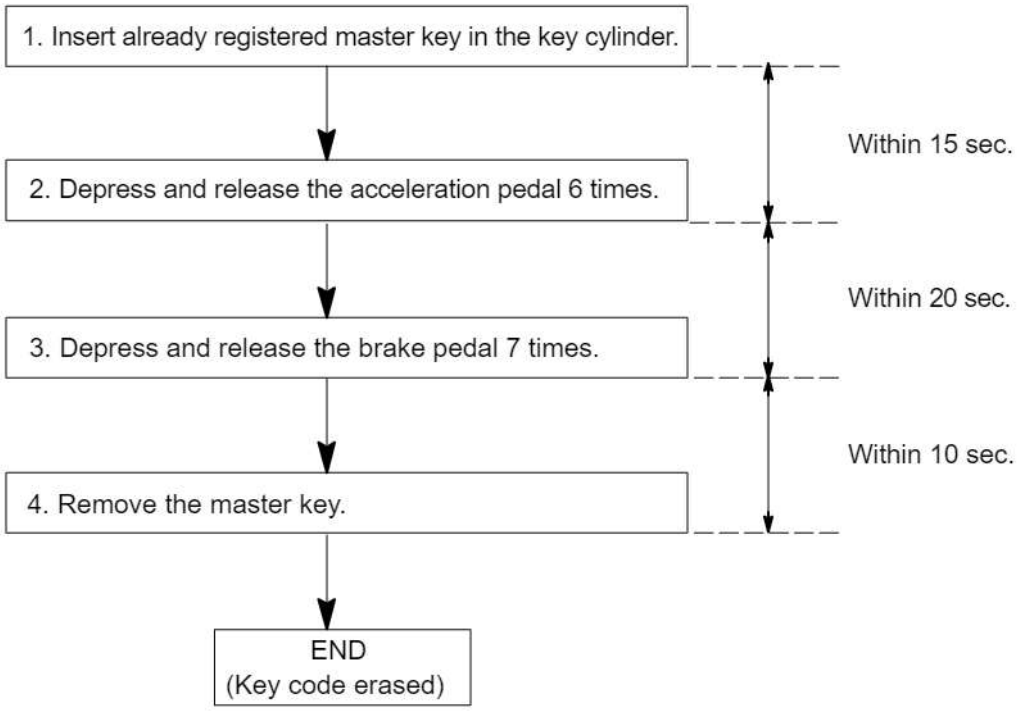
4. ERASURE OF TRANSPONDER KEY CODE

There are 2 ways for erasure of transponder key code, one way is depressing brake pedal and acceleration pedal and the other way is using hand-held tester.

HINT:

- Delete all other master and sub-key codes leaving the master key code to use the operation. When using the key which was used before deletion, it is necessary to register the code again.
- When any operation time described below is over, registration mode completes.
- When the next procedure is performed while the timer is working, the timer completes counting time, then next timer starts.

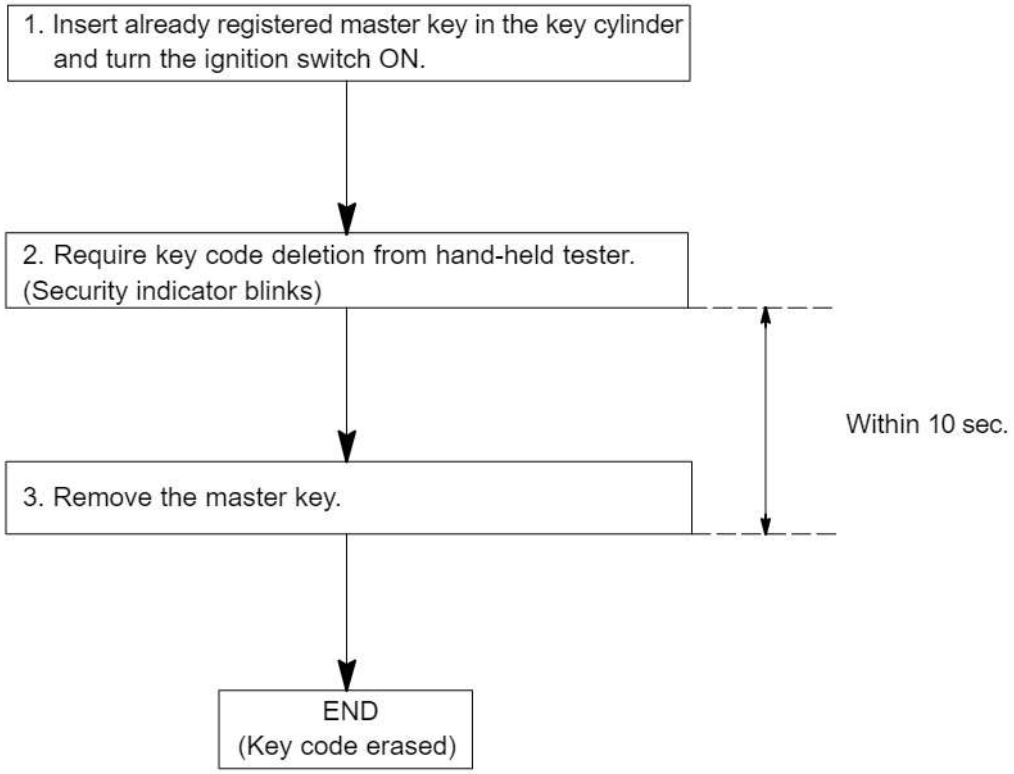
(1) Depressing brake pedal and acceleration pedal:



HINT:

When the key cannot be pulled out in the step 4, key code deletion is canceled.

(2) Using hand-held tester:

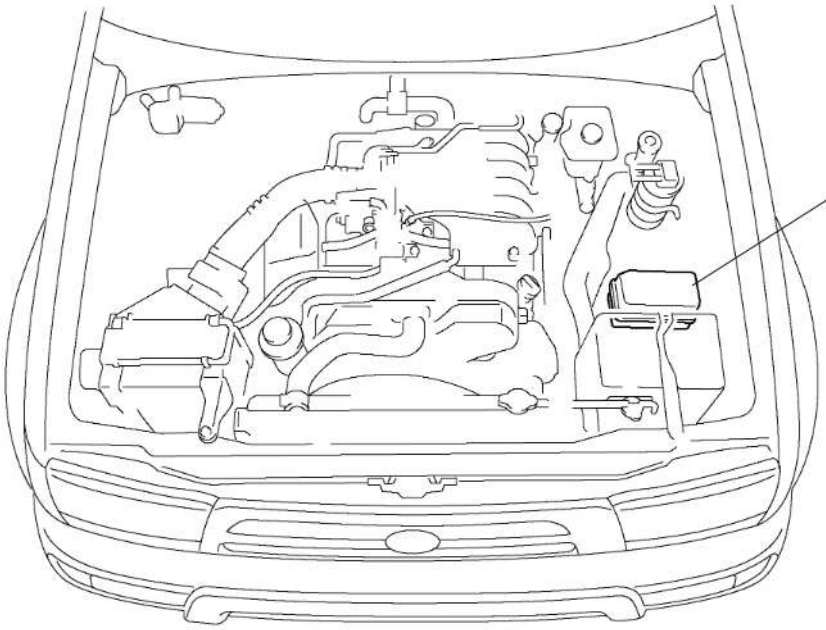


HINT:

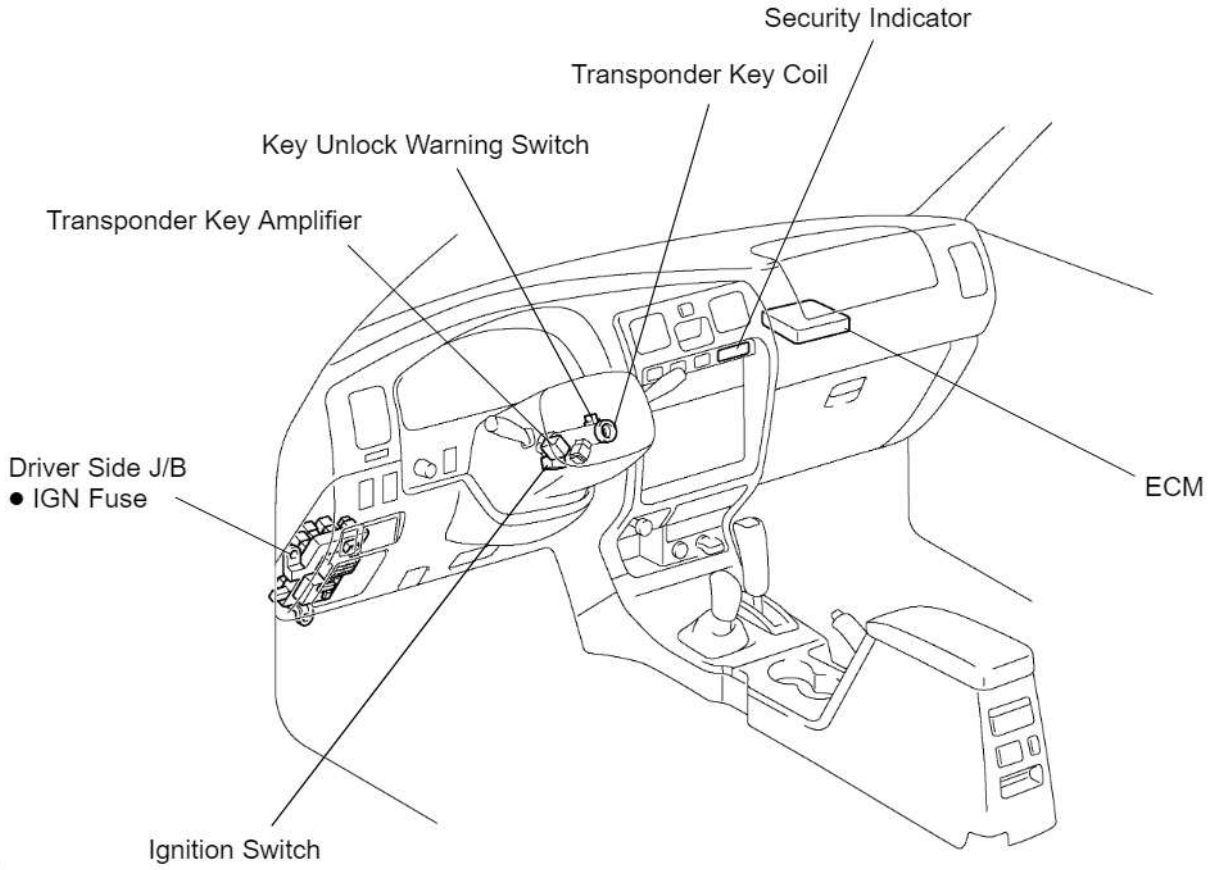
- When the key cannot be pulled out in step 3, key code deletion is canceled. (Security indicator is OFF.)
- Please follow the screen of the hand-held tester for more detailed procedure.

BE0D8-06

LOCATION



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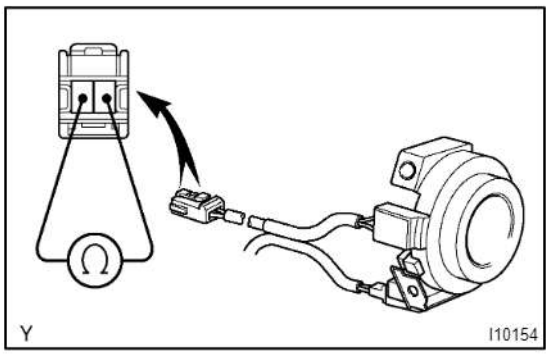


Y

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BE0D9-03



INSPECTION

INSPECTION TRANSPONDER KEY COIL CONTINUITY

Check that there is continuity between the terminals.
If the continuity is not as specified, replace the coil.