

INSPECTION

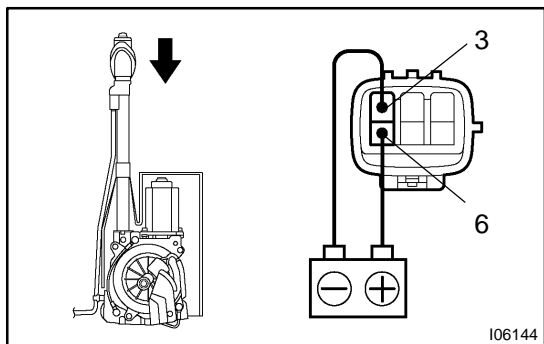
1. Auto Antenna Models:

INSPECT ANTENNA MOTOR

- (a) Connect the positive (+) lead from the battery to terminal 3 and the negative (-) lead to terminal 6.
- (b) Check that the motor turns (moves upward).

NOTICE:

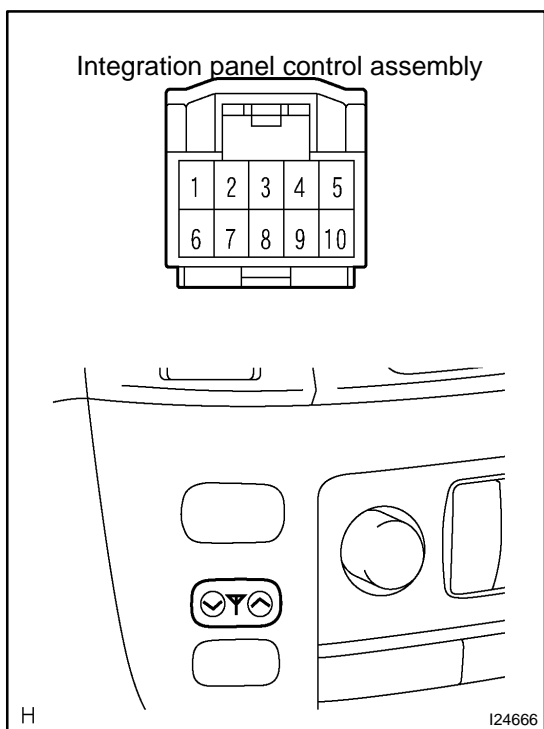
These tests must be done quickly (within 3 - 5 seconds) to prevent the coil from burning out.



- (c) Then, reverse the polarity, check that the motor turns the opposite way (moves downward).

NOTICE:

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

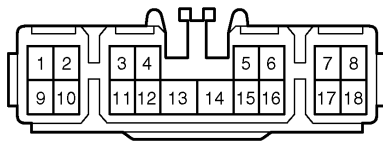


2. INSPECT ANTENNA SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
UP button FREE	4 - 5	No continuity
UP button Pushed in	4 - 5	Continuity
DOWN button FREE	9 - 5	No continuity
DOWN button Pushed in	9 - 5	Continuity

If continuity is not as specified, replace the switch.

Wire Harness Side



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

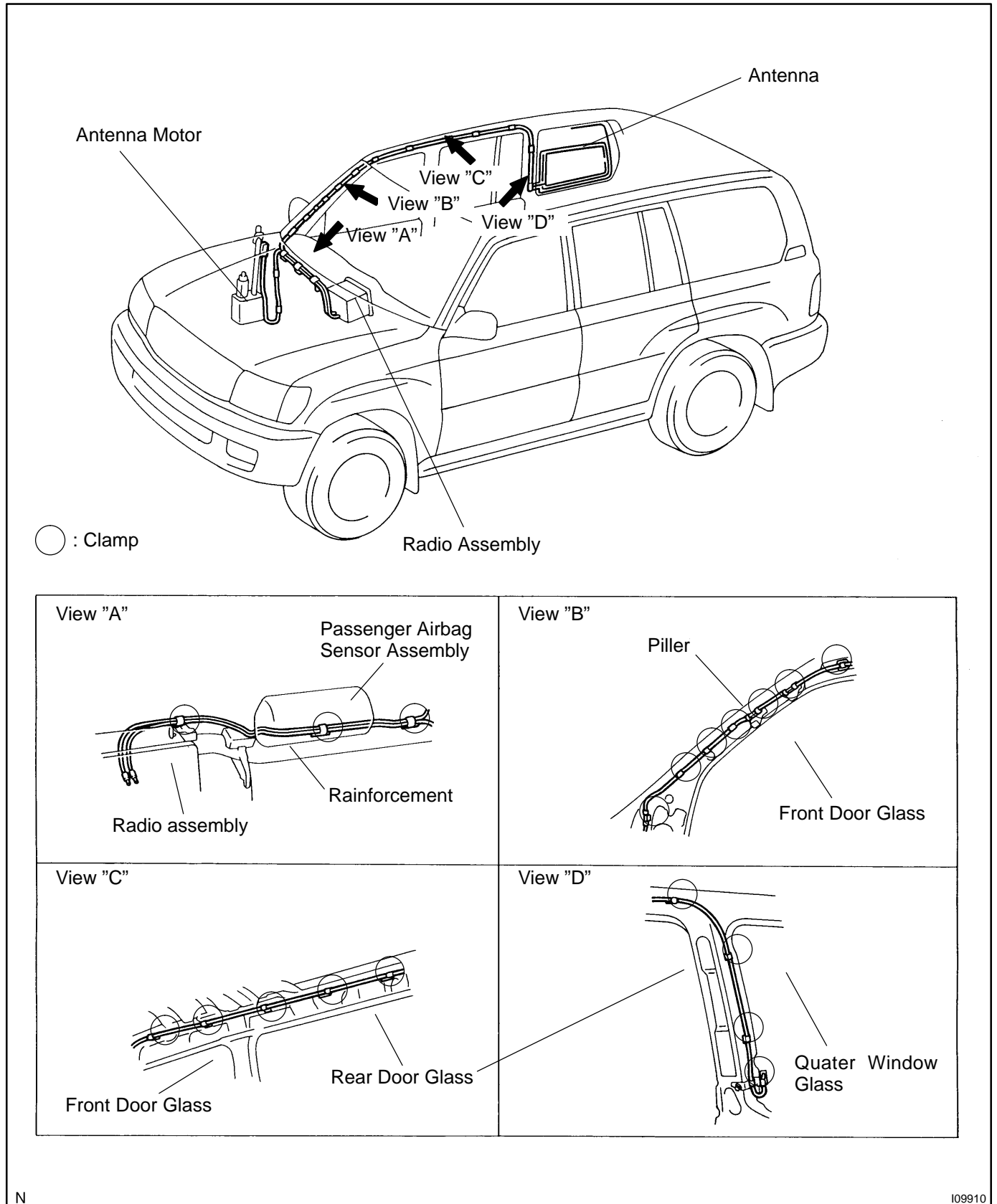
Disconnect the connector from the relay and inspect the connector on wire harness side, as shown in the chart on the next page.

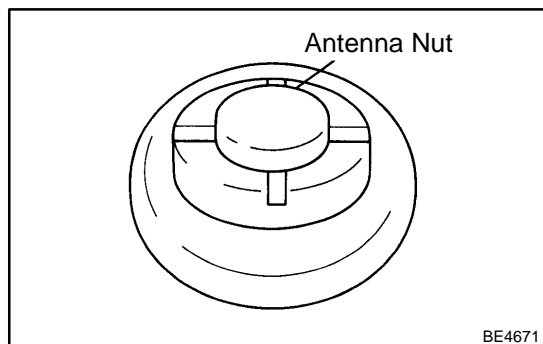
Tester connection	Condition	Specified condition
1 - Ground	Antenna "UP" switch OFF	No continuity
1 - Ground	Antenna "UP" switch ON	Continuity
5 - Ground	Constant	Continuity
9 - Ground	Antenna "DOWN" switch OFF	No continuity
9 - Ground	Antenna "DOWN" switch ON	Continuity
4 - Ground	Constant	Battery positive voltage
7 - Ground	Ignition switch ACC or LOCK	No voltage
7 - Ground	Ignition switch ON	Battery positive voltage
17 - Ground	Ignition switch LOCK	No voltage
17 - Ground	Ignition switch ACC or ON	Battery positive voltage

If circuit is as specified, replace the relay.

ANTENNA LOCATION

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REPLACEMENT

1. Auto antenna models: REMOVE ANTENNA ROD

HINT:

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

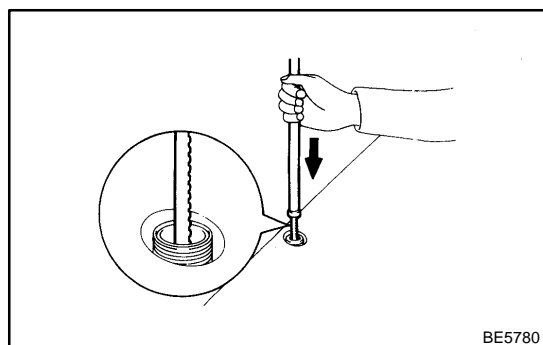
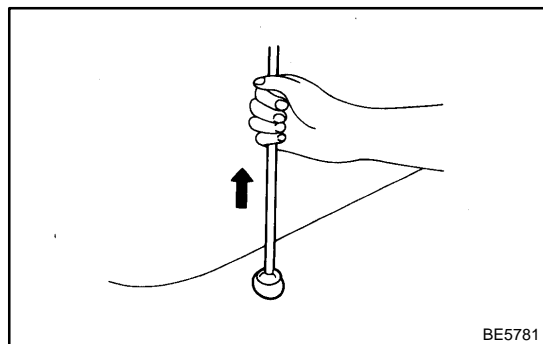
- (a) Remove the antenna nut.
- (b) Turn the radio switch "ON" position.
- (c) Turn the antenna switch to "UP".
- (d) Catch the antenna rod by hand and turn the radio switch "OFF".
- (e) Try again to turn the radio switch "ON" and antenna switch "UP".
- (f) Remove antenna rod.

HINT:

The rod will extend fully and be released from the motor antenna.

NOTICE:

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



2. Auto antenna models: INSTALL ANTENNA ROD

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

HINT:

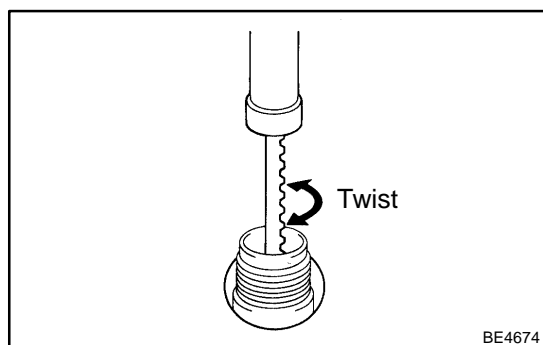
- When inserting the cable, the teeth on the cable must face toward the rear of the vehicle.
- Insert the antenna approx. 350 mm.

- (b) Turn the radio switch to "OFF".

HINT:

- 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.



AUDIO SYSTEM DESCRIPTION

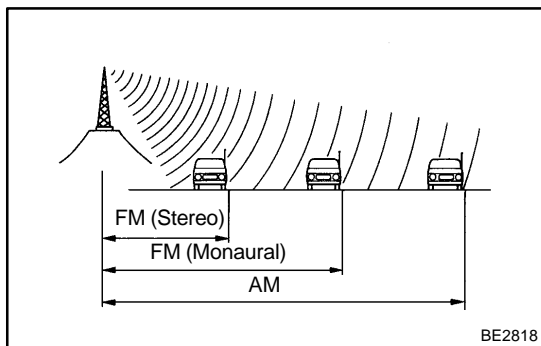
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1. RADIO WAVE BAND

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

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

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

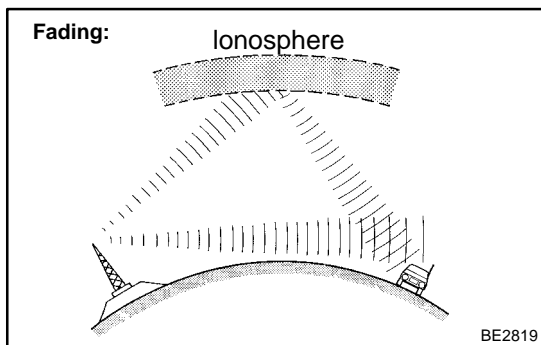


2. SERVICE AREA

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

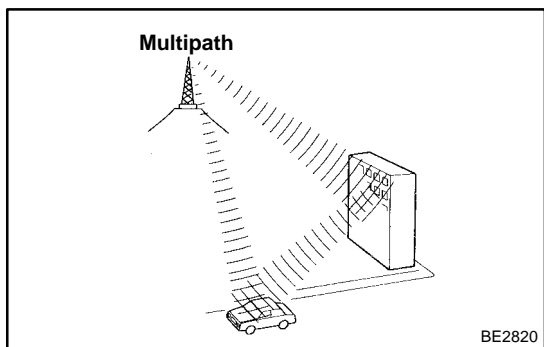
3. RECEPTION PROBLEMS

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

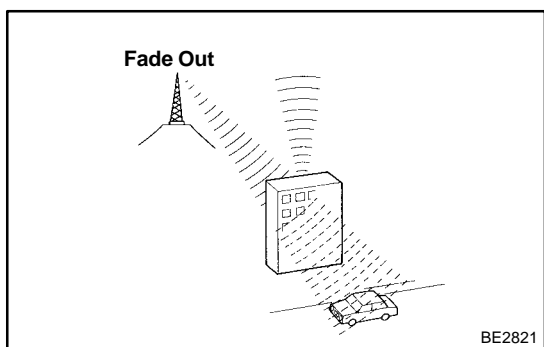


(1) Fading

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



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



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

4. NOISE PROBLEMS

- (a) **Questionnaire for noise:**
It is very important for noise trouble shooting to have good understanding of the claims from the customers. Refer to the following questionnaire to diagnose the problem accurately.

AM	Noise occurs at a specific place.	Strong possibility of foreign noise.
	Noise occurs when listening to faint broadcasting.	There is a possibility that the same program is broadcasted from different local stations, and that might be listening a program from other station.
	Noise occurs only at night.	Strong possibility of the beat from a distant broadcasting.
FM	Noise occurs while driving on a particular area..	Strong possibility of multipath noise and fading noise caused by the changes of FM waves.

HINT:
In the condition of noise occurrence does not meet any of the above questionnaire, check the problems to "Reception Problem" on the previous page.

- (b) Matters that require attention when checking:
- Noise coming into the radio usually has no harm for daily use as the noise protection is taken, and it is very rare for an extremely loud noise to come in. When extremely loud noise comes into the radio, check if the grounding is normal where the antenna is installed.
 - Check if all the regular noise prevention parts are properly installed, and if there is any installation of non-authorized parts and non-authorized wiring.
 - If you leave the radio out of tune (not turning), it is easy to diagnose the phenomenon as noise occurs frequently.
- (c) Antenna and noise:
Electronic signal received by the antenna will reach to the radio transmitting through the core wire of the coaxial cable. Any noise wave other than radio wave is mixed into this core wire, that naturally causes noise in the radio and poor sound quality. In order to prevent the noise from coming into radio, the core wire inside the coaxial cable is covered with a mesh wire called shield wire which transmits the noise to the ground.

5. COMPACT DISC PLAYER

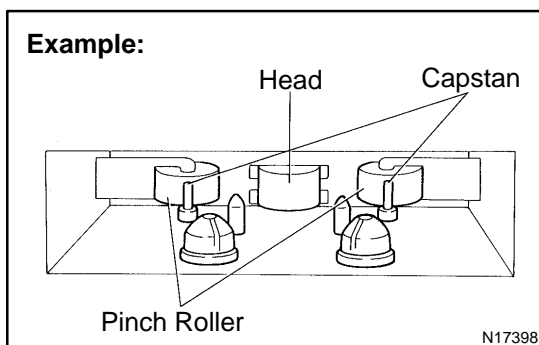
Compact Disc Players use a laser beam pick-up to read the digital signals recorded on the CD and reproduce analog signals of the music, etc.

HINT:

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

NOTICE:

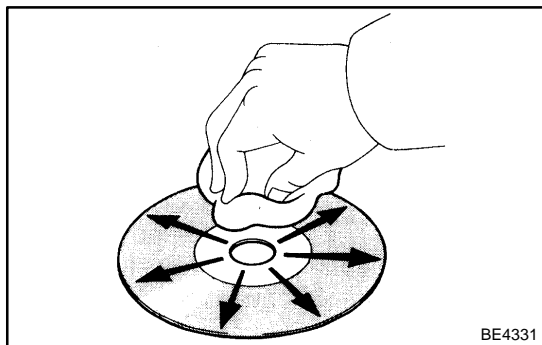
CD players use an invisible laser beam which could cause hazardous radiation exposure. Be sure to operate the player correctly as instructed.



6. Tape player/head cleaning:

MAINTENANCE

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



7. CD player/disc cleaning: MAINTENANCE

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

NOTICE:

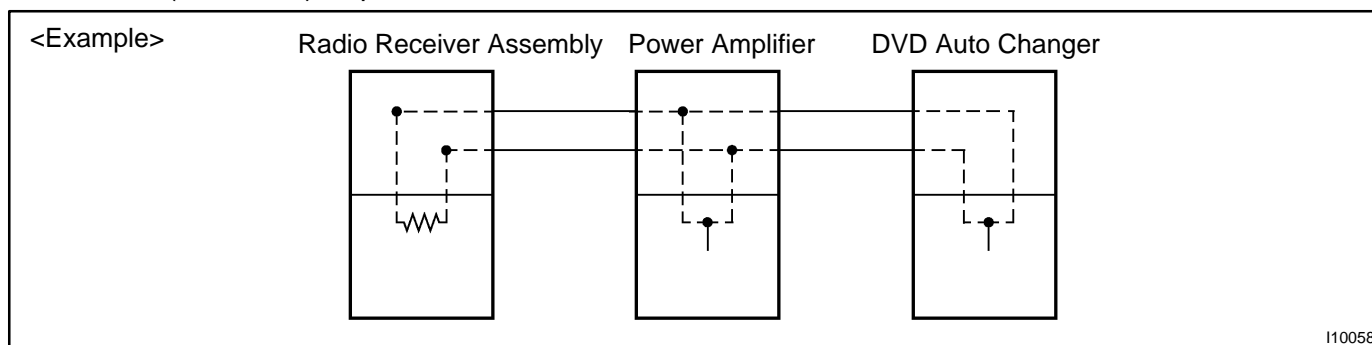
Do not use a conventional record cleaner or anti-static preservative.

8. OUTLINE OF AVC-LAN

(a) What is AVC-LAN?

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

The Unified standard covers signals, such as audio signal, visual signal, signal for switch indication and communication signal. Radio receiver assembly and RSA (Rear Seat Audio) panel have a resistance (60 - 80 Ω) required for communication.



(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.

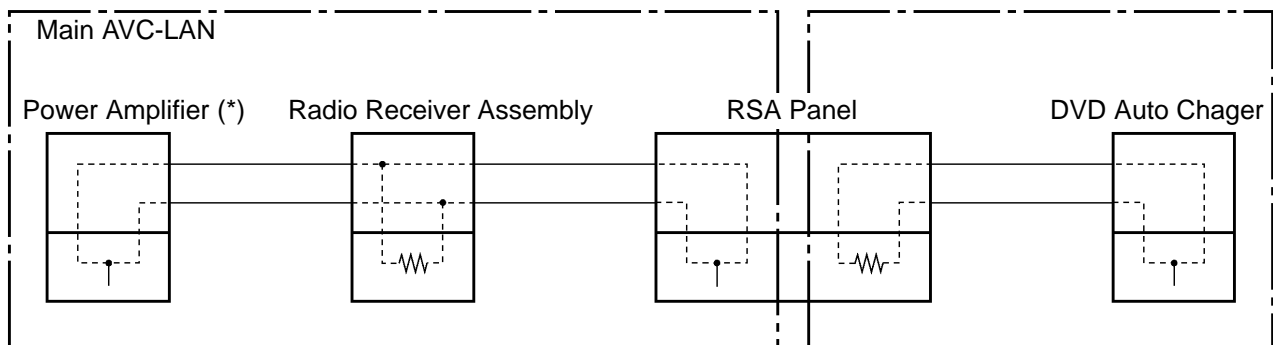
The concrete objectives are explained below.

- (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) In general, a new product developed by one particular manufacture could not be used due to a lack of compatibility with other manufactures products. Because of this new standard, users can enjoy many compatible products from different manufacture anytime they went.
- (c) The above descriptions are the objectives to introduce AVC-LAN. By this standardization, development of new products will no longer cause systematic errors.

HINT:

- When +B short or GND short is detected in AVC-LAN circuit, communication stops. And 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, multi-display is the master unit.
- This system has 2 kinds of AVC-LAN, Main AVC-LAN and Sub AVC-LAN.
- RSA panel works as a master unit in the Sub AVC-LAN, but not in the Main AVC-LAN.
- The car audio system using AVC-LAN circuit has a diagnosis function.
(w/ Navigation system (see page [DI-1263](#))
- 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.

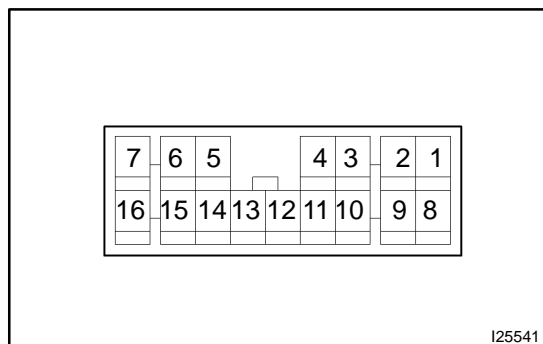
AVC-LAN:



*: Except JBL System

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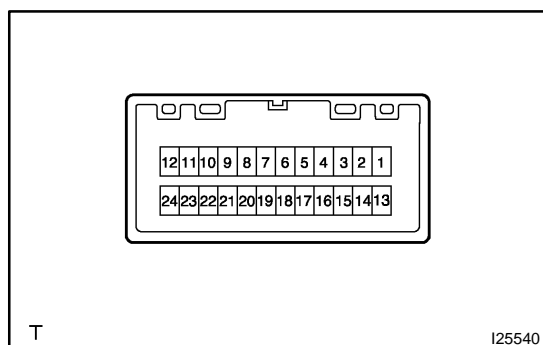
INSPECTION

1. INSPECT POWER AMPLIFIER CIRCUIT

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

Tester connection	Condition	Specified condition
12 - Ground	Constant	Continuity
13 - Ground	Constant	Continuity
7 - Ground	Constant	Battery voltage
16 - Ground	Constant	Battery voltage

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

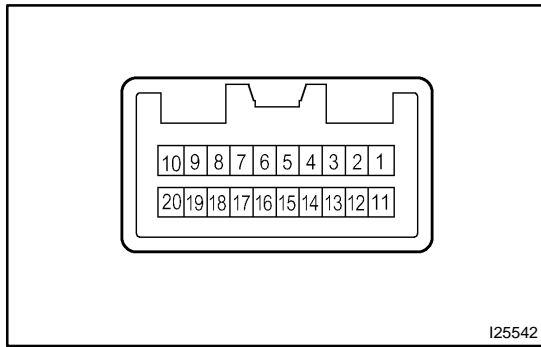


2. INSPECT REAR SEAT AUDIO CIRCUIT

Disconnect the connector from RSA controller and inspect the connector on the wire harness side.

Tester connection	Condition	Specified condition
17 - Ground	Constant	Continuity
24 - Ground	Ignition switch LOCK and radio switch ON	No voltage
24 - Ground	Ignition switch ACC or ON and radio switch ON	Battery voltage
12 - Ground	Constant	Battery voltage

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

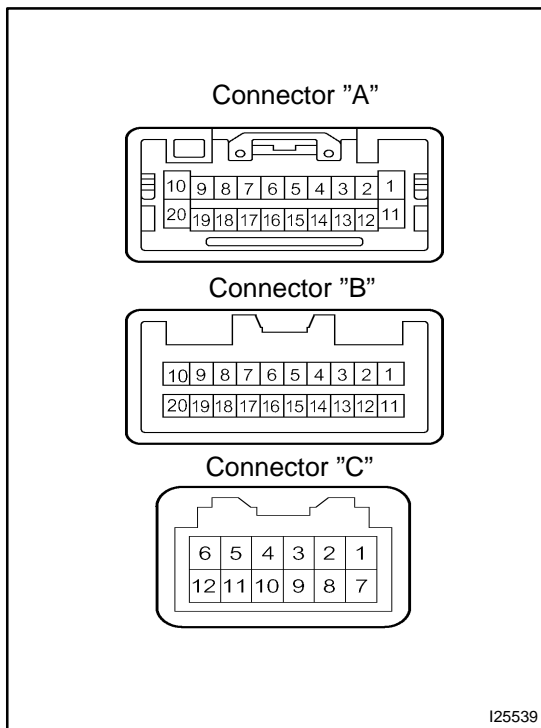


3. INSPECT DVD CHANGER CIRCUIT

Disconnect the connector from DVD changer and inspect the connector on the wire harness side.

Tester connection	Condition	Specified condition
20 - Ground	Constant	Continuity
1 - Ground	Ignition switch LOCK	No voltage
1 - Ground	Ignition switch ACC or ON	Battery voltage
10 - Ground	Constant	Battery voltage

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



4. INSPECT RADIO RECEIVER ASSEMBLY CIRCUIT

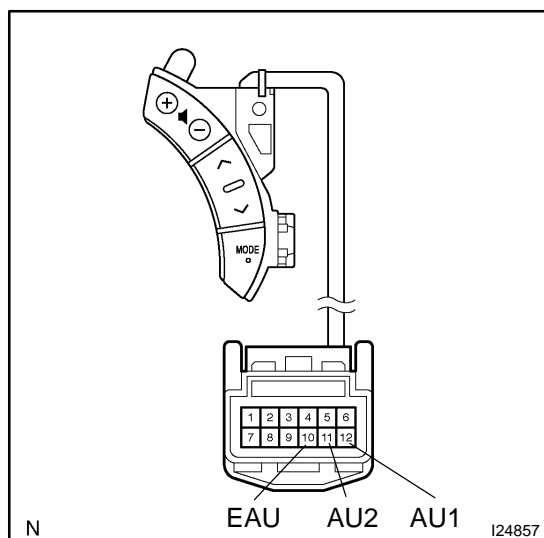
Disconnect the connectors from the radio receiver assembly, and inspect the connector on the wire harness side.

Tester connection	Condition	Specified condition
A20 - Ground	Constant	Continuity
A1 - Ground	Constant	Battery voltage
A11 - Ground	Ignition switch LOCK	No voltage
A11 - Ground	Ignition switch ACC or ON	Battery voltage

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

HINT:

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

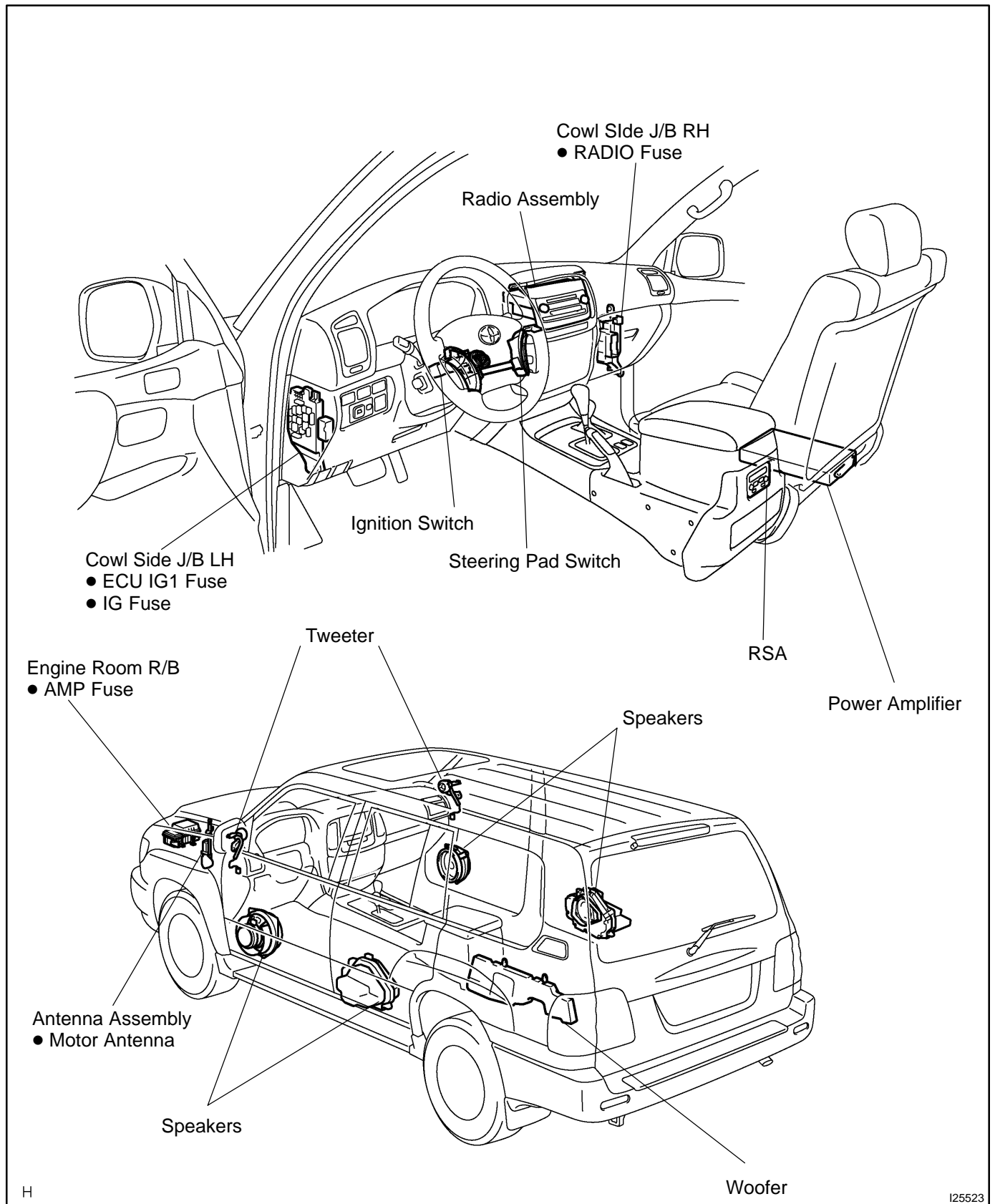
**5. INSPECT STEERING PAD SWITCH CIRCUIT**

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

Tester connection	Condition	Specified condition
AU1 - EAU	Do not switch position	Approx. 100 k Ω
AU1 - EAU	SEEK+ switch: push	0 Ω
AU1 - EAU	SEEK- switch: push	Approx. 0.3 Ω
AU1 - EAU	VOL+ switch: push	Approx. 1k Ω
AU1 - EAU	VOL- switch: push	Approx. 3.2 k Ω
AU2 - EAU	Do not switch position	Approx. 100 k Ω
AU2 - EAU	MODE switch: push	0 Ω

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

LOCATION



TROUBLESHOOTING

1. DIAGNOSIS FUNCTION (Main AVC-LAN)

(a) Diagnosis start-up

For shifting to diagnosis mode, turn the ignition switch ON and push the "DISC" switch 3 times while pressing "ch1" and "ch6" switches.

HINT:

To exit the diagnosis mode, push the "DISC" switch for 1.7 sec. or turn the ignition switch to ACC or OFF.

(b) Element check mode

After the diagnosis start-up, the system enters the element check mode. Check that the all elements light up.

HINT:

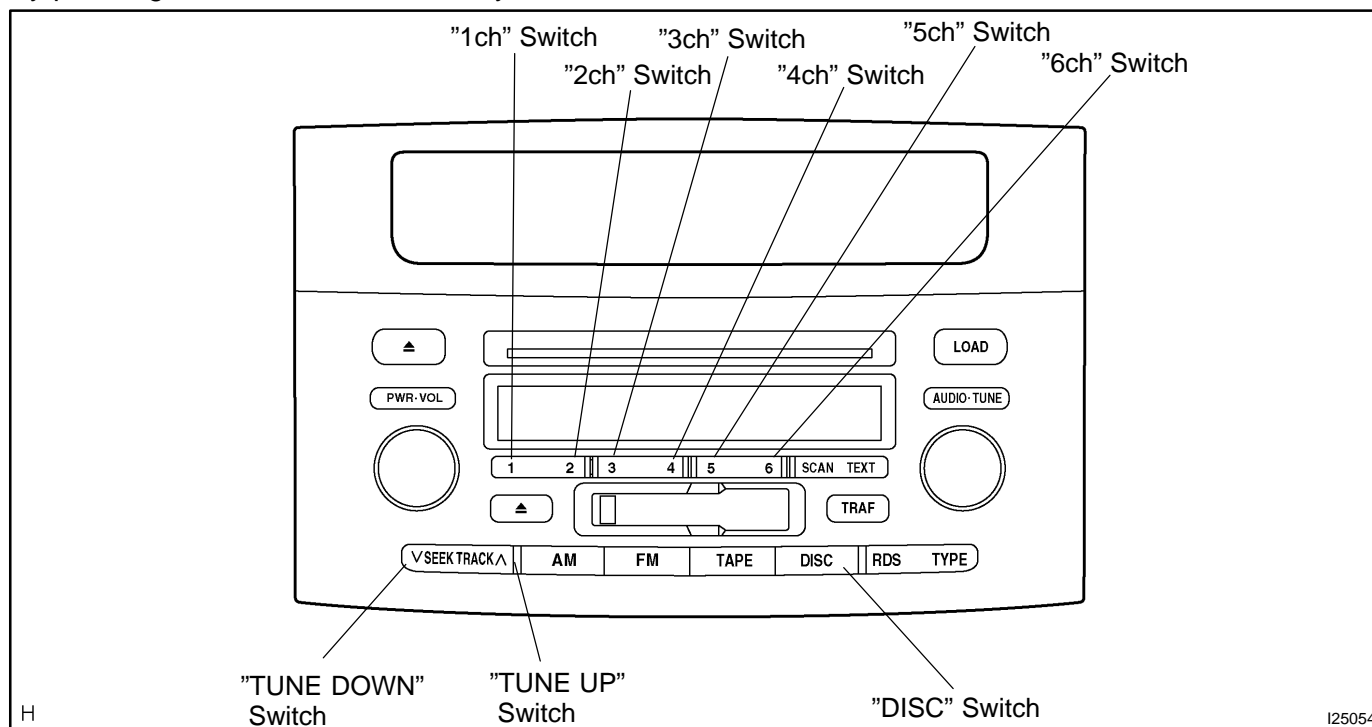
By pressing the "TUNE UP" switch, the system enters the "Service Check Mode".

(c) Switch check mode

- (1) Element check mode is started at the same time with the switch check mode.
- (2) Check that there is a beep sound when any switch is pressed.

HINT:

By pressing "TUNE UP" switch, the system enters the "Service Check Mode".



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(d) Service check mode

(1) After the element check and switch check is completed, the system enters service check mode when "TUNE UP" switch is pressed.

(2) Error codes over the tuner and connected equipments are displayed on the screen of the 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 indicates "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".

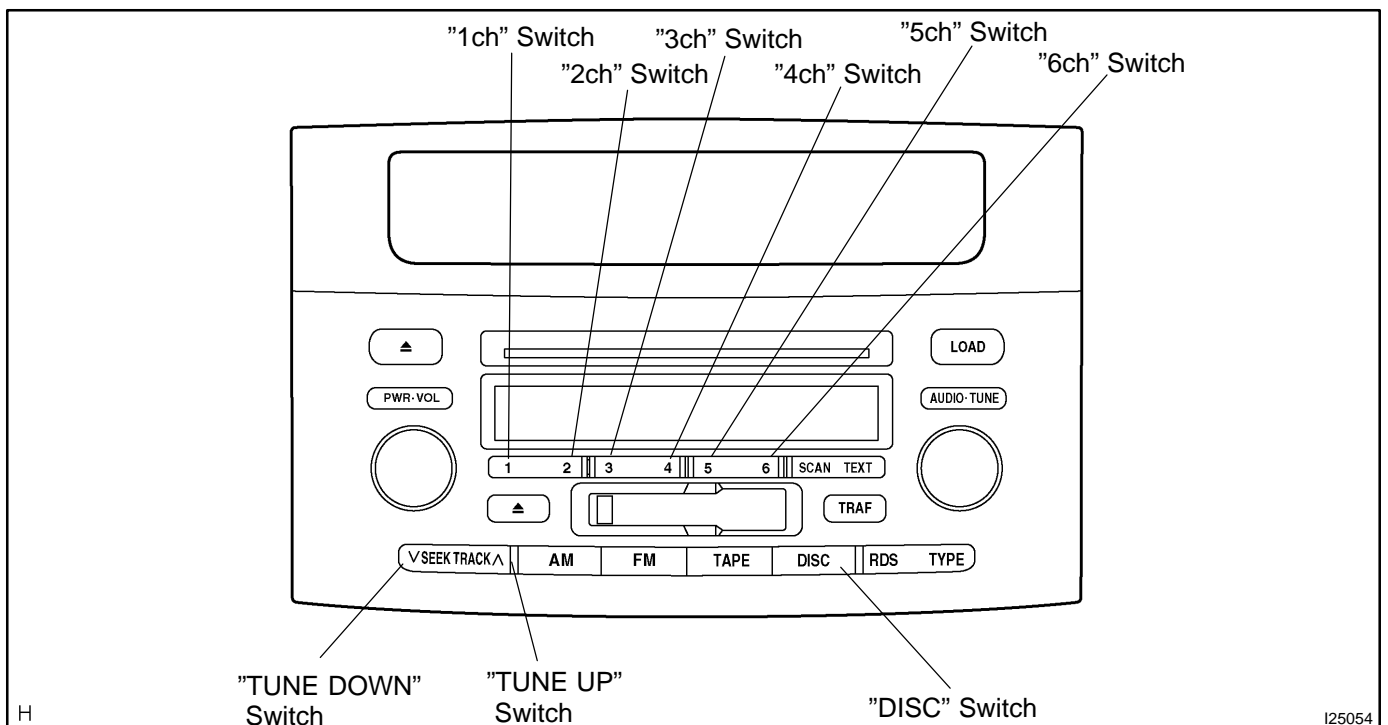
nrES:

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.

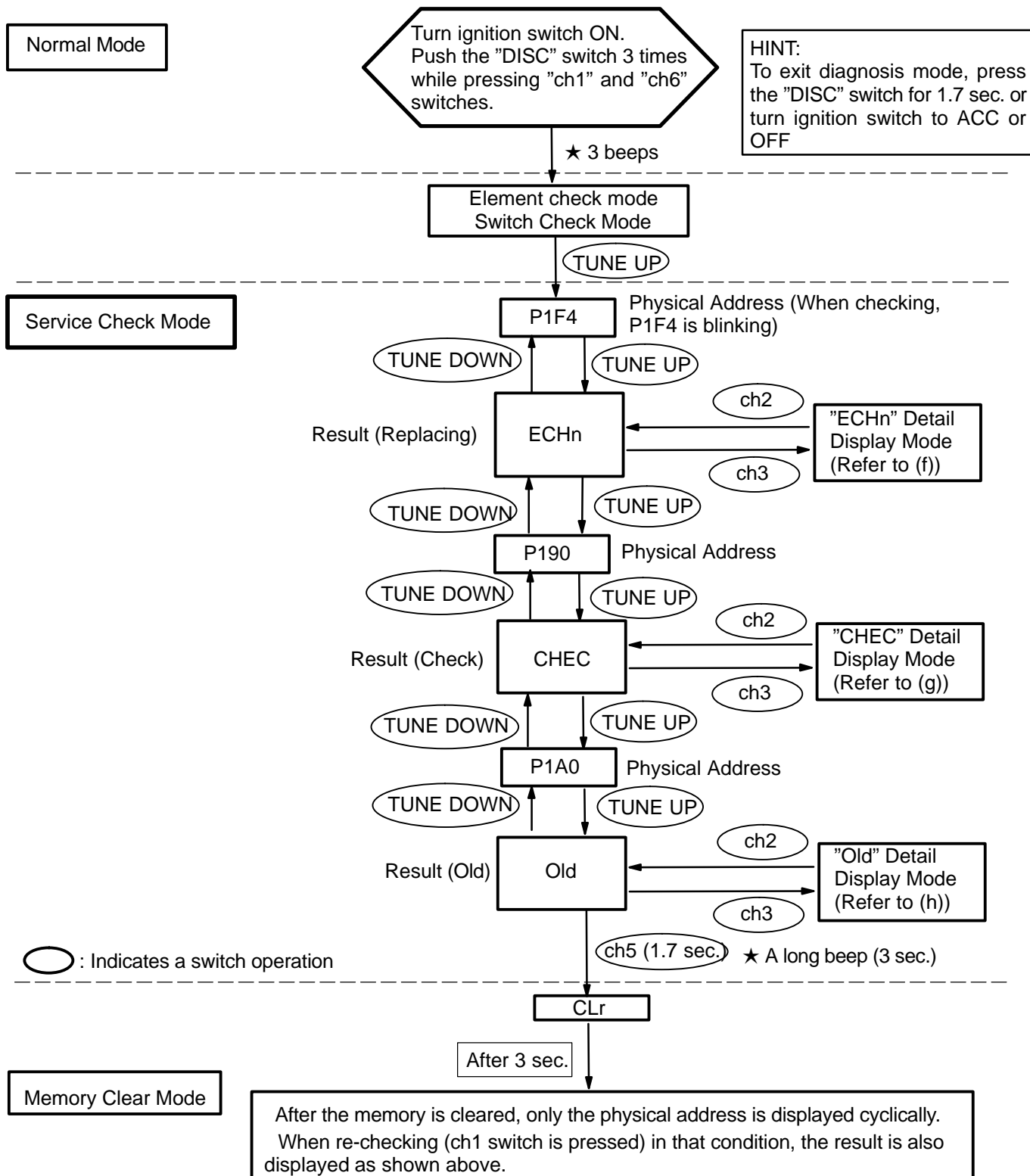
Check results are displayed as one of the following six indications: "good", "ECHn", "CHEC", "nCon", "Old" or "nrES".



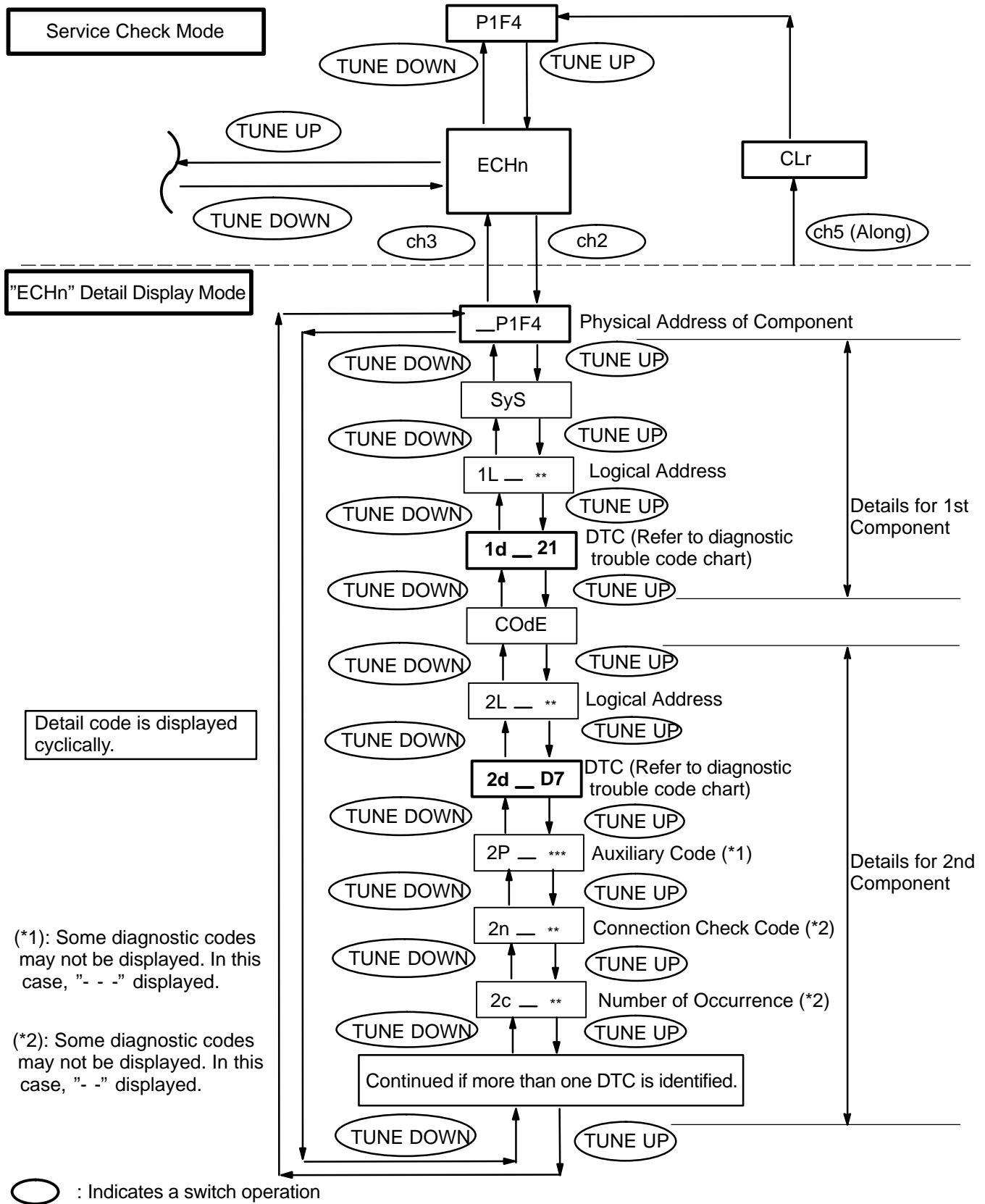
(e) Display Screen for Service Check.

Example:

Connection parts (physical address): Radio receiver (P190), RSA ECU (P1F4), DVD player (P1A0)



(f) "ECHn" Detail Display Mode Screen

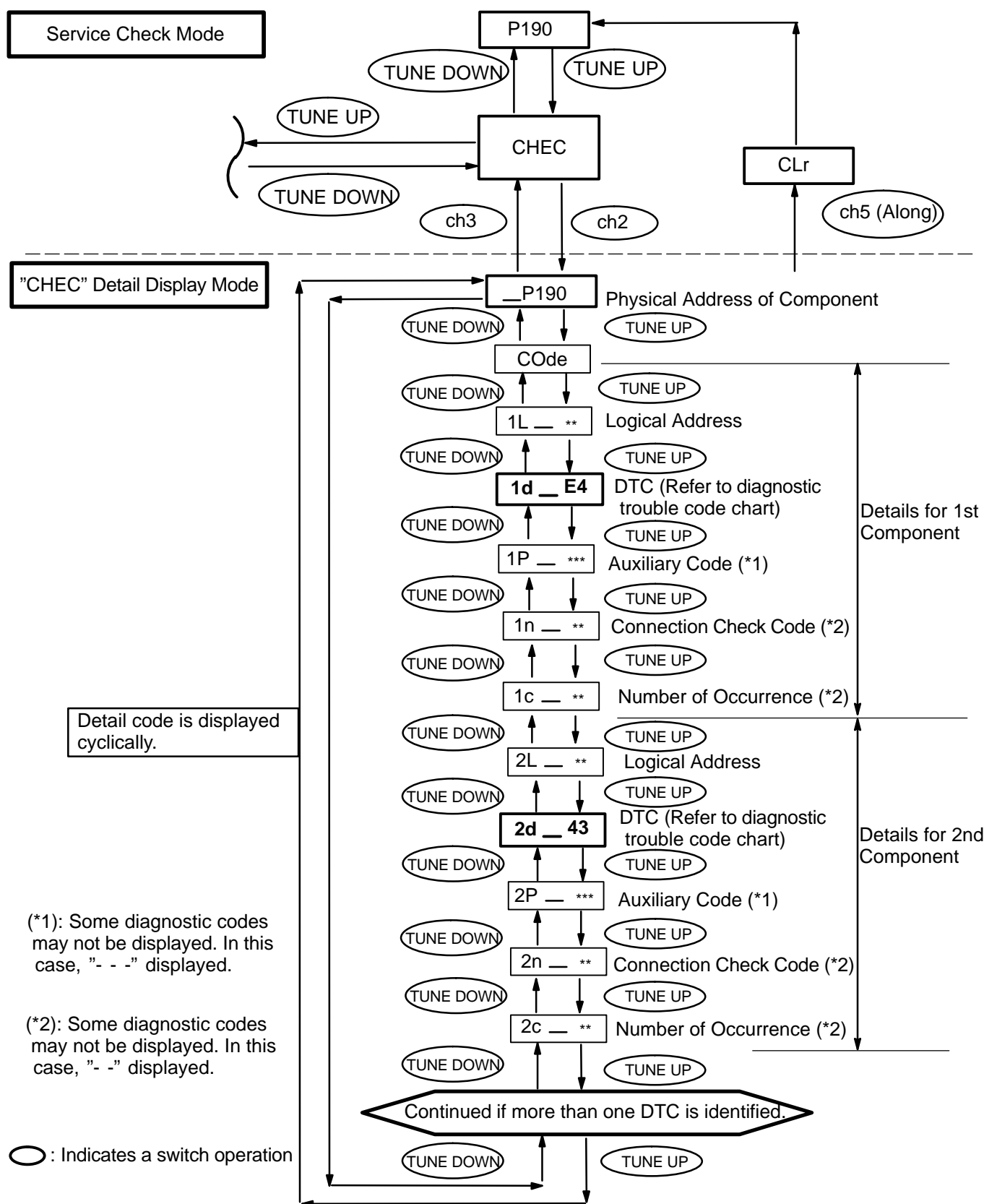


Detail code is displayed cyclically.

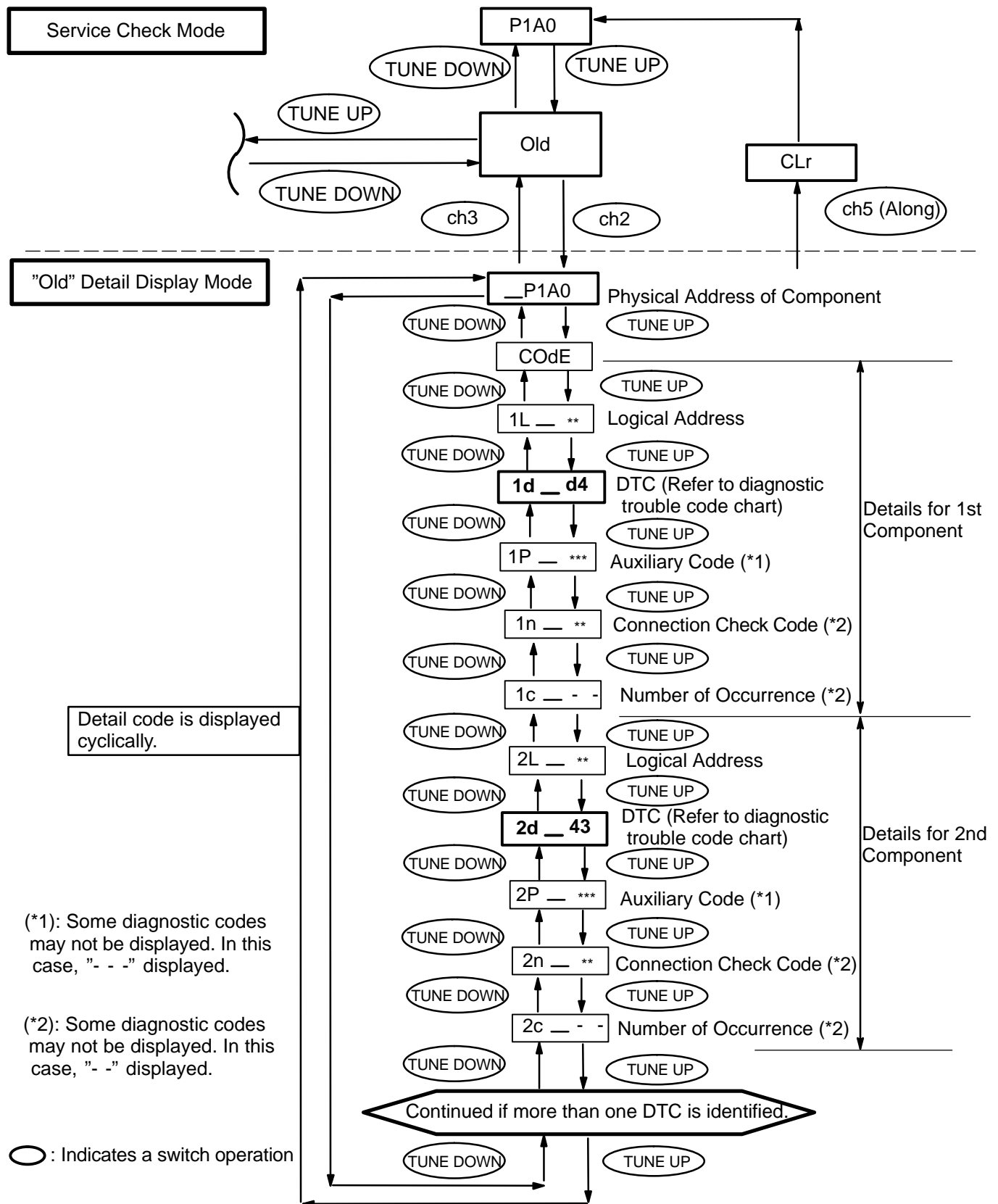
(*1): Some diagnostic codes may not be displayed. In this case, "- -" displayed.

(*2): Some diagnostic codes may not be displayed. In this case, "- -" displayed.

(g) "CHEC" Detail Display Mode Screen



(h) "Old" Detail Display Mode Screen



(*1): Some diagnostic codes may not be displayed. In this case, "- -" displayed.

(*2): Some diagnostic codes may not be displayed. In this case, "- -" displayed.

2. DIAGNOSIS FUNCTION (Sub AVC-LAN)

HINT:

As starting Main AVC-LAN to operate the diagnosis mode, Sub AVC-LAN is automatically to the mode. Perform the diagnosis mode operation on the RSA panel.

(a) Element check mode

After the diagnosis start-up, the system enters the element check mode. Check that the all elements light up.

HINT:

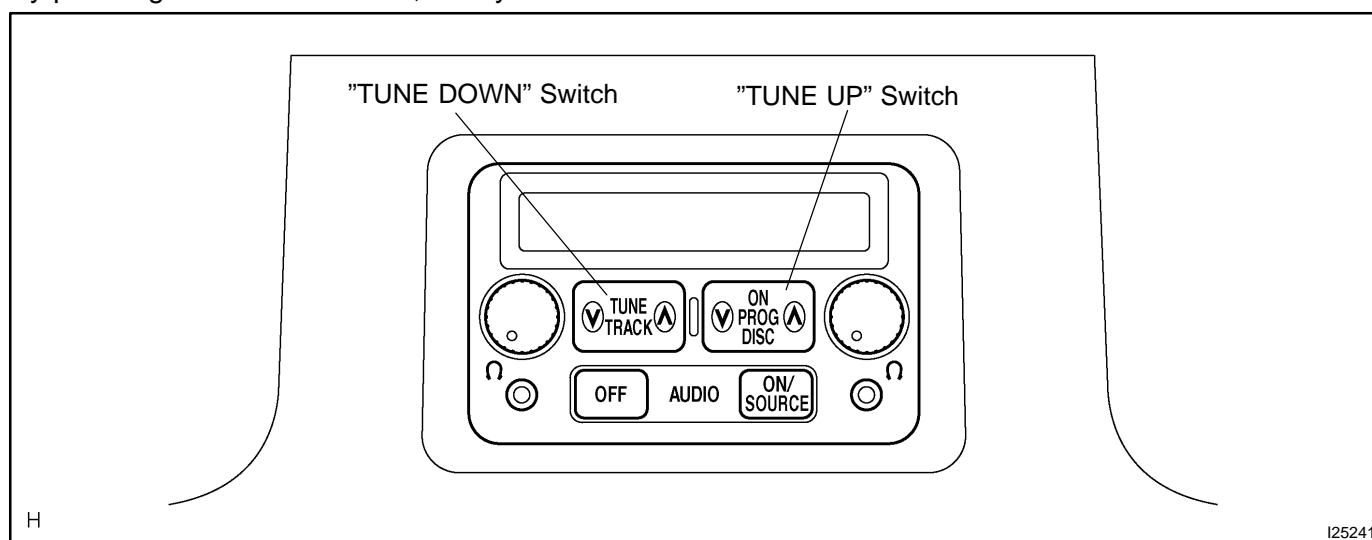
By pressing the "TUNE UP" switch, the system enters the "Service Check Mode".

(b) Switch check mode

- (1) Element check mode is started at the same time with the switch check mode.
- (2) Check that there is a beep sound when any switch is pressed.

HINT:

By pressing "TUNE UP" switch, the system enters the "Service Check Mode".



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(c) Service check mode

(1) After the element check and switch check is completed, the system enters service check mode when "TUNE UP" switch is pressed.

(2) Error codes over the tuner and connected equipments are displayed on the screen of the 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 indicates "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".

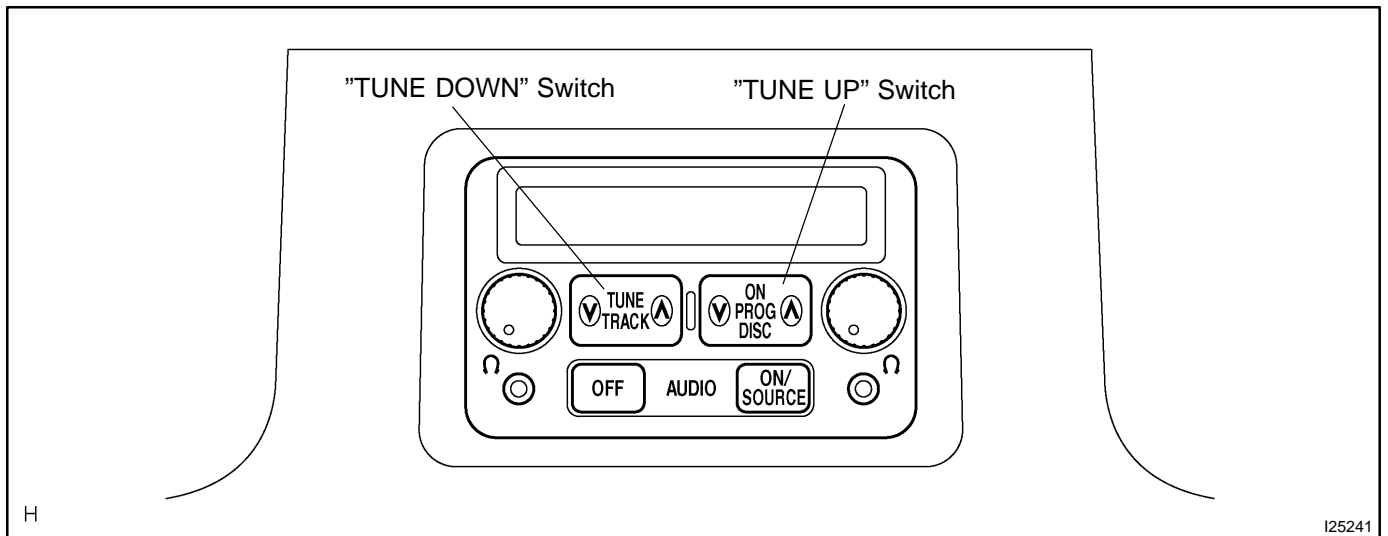
nrES:

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.

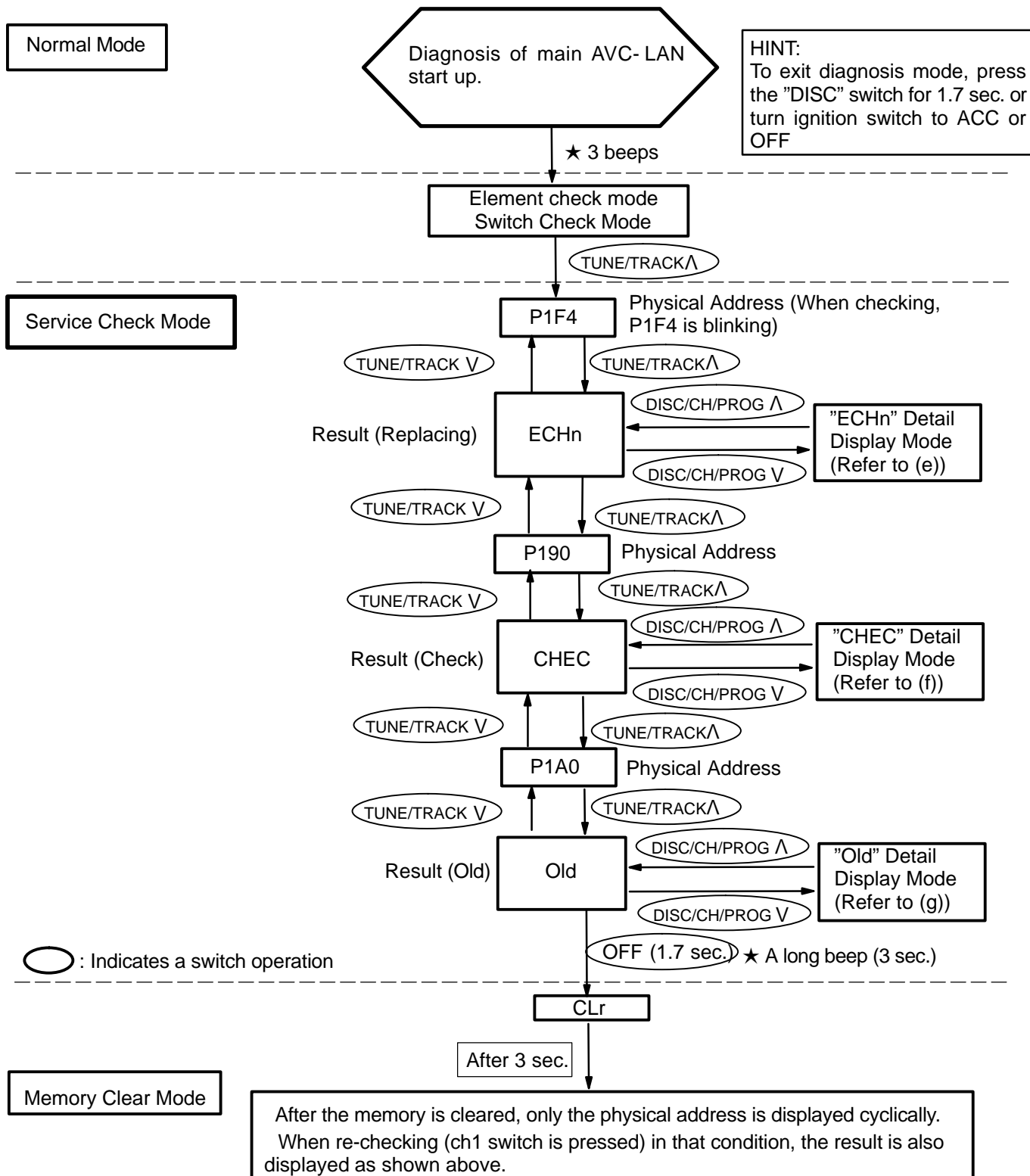
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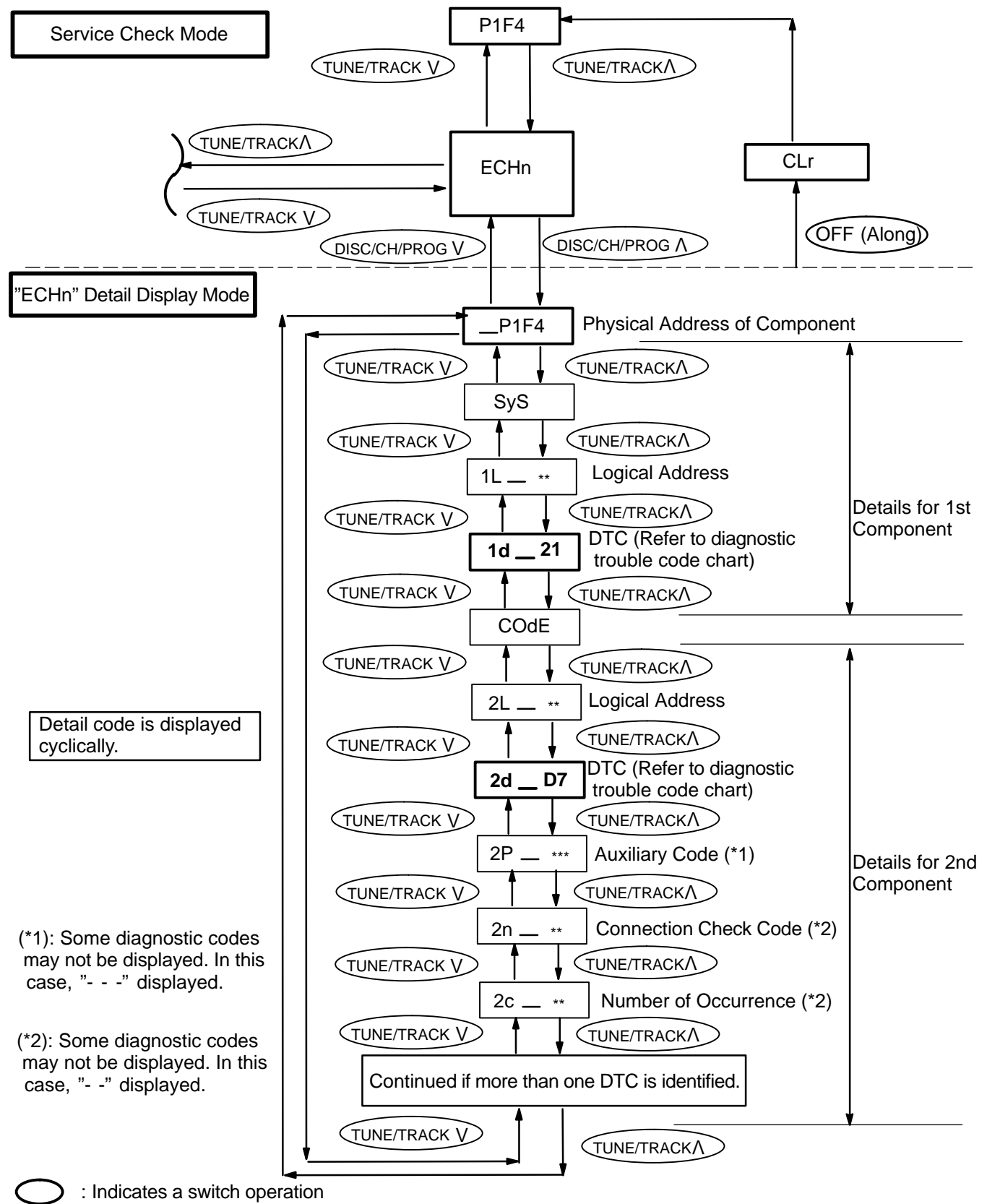
(d) Display Screen for Service Check.

Example:

Connection parts (physical address): Radio receiver (P190), RSA ECU (P1F4), DVD player (P1A0)



(e) "ECHn" Detail Display Mode Screen

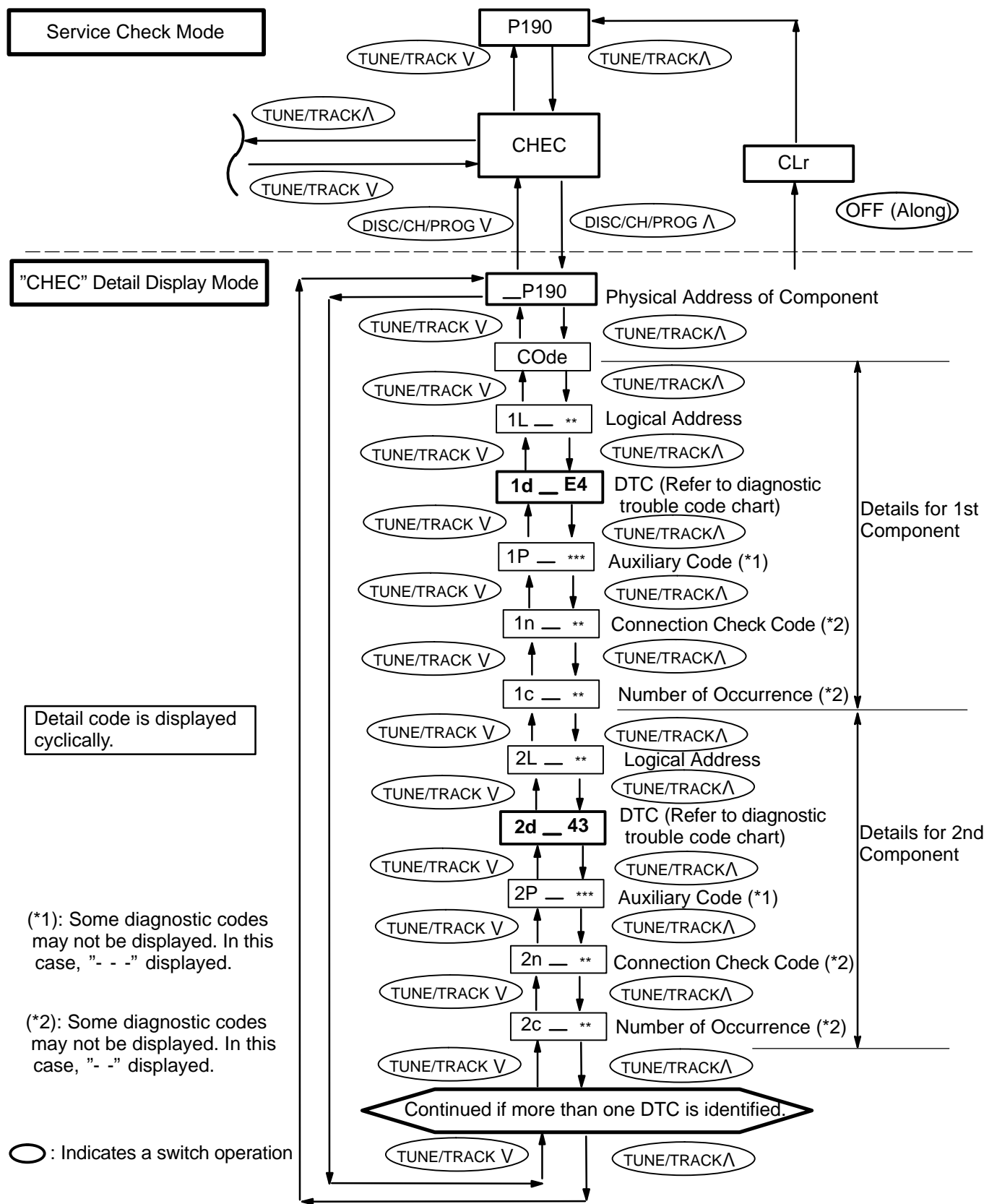


Detail code is displayed cyclically.

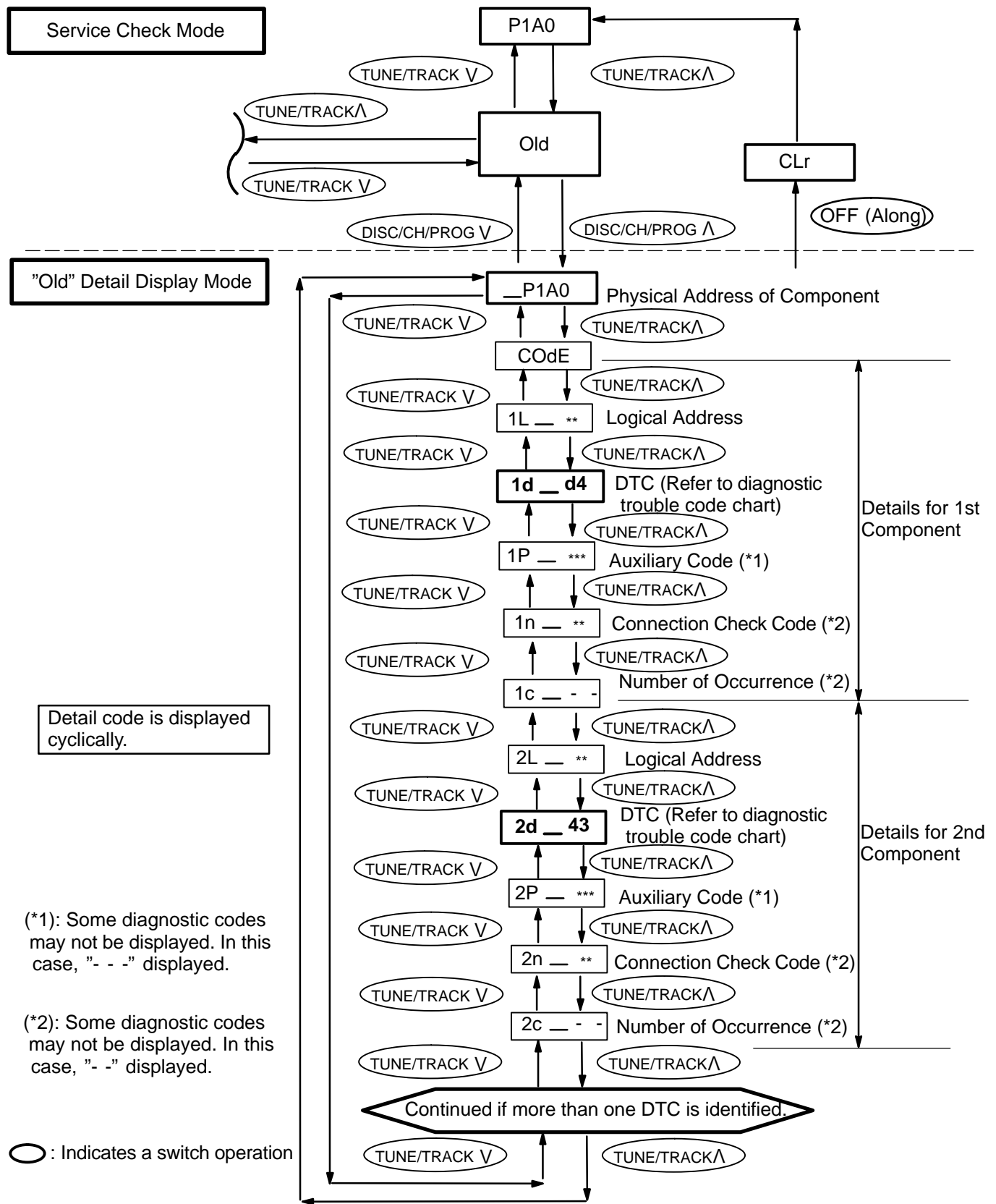
(*1): Some diagnostic codes may not be displayed. In this case, "- -" displayed.

(*2): Some diagnostic codes may not be displayed. In this case, "- -" displayed.

(f) "CHEC" Detail Display Mode Screen



(g) "Old" Detail Display Mode Screen



Detail code is displayed cyclically.

(*1): Some diagnostic codes may not be displayed. In this case, "- -" displayed.

(*2): Some diagnostic codes may not be displayed. In this case, "- -" displayed.

3. DIAGNOSIS CODE LIST

w/ Navigation system (See page)

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 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	DTC	Diagnosis item	Diagnosis content	Countermeasure and inspected parts
01 (Communication Control)	21	ROM Error	Error is detected in internal ROM.	Replace radio receiver assembly.
01 (Communication Control)	22	RAM Error	Error is detected in internal RAM.	Replace radio receiver assembly.
01 *2 (Communication Control)	D6	Absence of Master	Component in which this code is recorded has been disconnected from system with ignition in ACC or ON. Or, when this code was recorded, radio receiver assembly was disconnected.	<ul style="list-style-type: none"> ● Check harness for power supply system of radio receiver assembly. ● Check harness for communication system of radio receiver assembly.
01 *3 (Communication Control)	D8	No Response to Connection Check	Component shown by auxiliary code is or had been disconnected from system after engine start. D9	<ul style="list-style-type: none"> ● Check harness for power supply system of component shown by auxiliary code. ● Check harness for communication system of component shown by auxiliary code.
01 *2 (Communication Control)	D9	Last Mode Error	Component operated (sounds and/or images were provided) before engine stop is or has been disconnected with ignition switch in ACC or ON.	<ul style="list-style-type: none"> ● Check harness for power supply system of component shown by auxiliary code. ● Check harness for communication system of component shown by auxiliary code.
01 (Communication Control)	DA	No Response to ON/OFF Instruction	No response is identified when changing mode (audio and visual mode change). Detected when sound and picture does not change by button operation.	<ul style="list-style-type: none"> ● Check harness for power supply of component shown by auxiliary code. ● Check harness for communication system of component shown by auxiliary code. ● If error occurs again, replace component shown by auxiliary code.
01 *2 (Communication Control)	DB	Mode Status Error	Dual alarm is detected.	<ul style="list-style-type: none"> ● Check harness for power supply of component shown by auxiliary code. ● Check harness for communication system of component shown by auxiliary code.

01 *4 (Communication Control)	DC	Transmission Error	Transmission to component shown by auxiliary code has been failed. (Detecting this DTC does not necessarily mean actual failure.)	<ul style="list-style-type: none"> ● If same auxiliary code is recorded in other component, check harness for power supply and communication system of components shown sub code.
01 *3 (Communication Control)	DD	Master Reset (Momentary Interruption)	After engine is started, radio receiver assembly assembly was disconnected from system.	<ul style="list-style-type: none"> ● If this error occurs frequently, replace radio receiver assembly.
01 *3 (Communication Control)	DE	Slave Reset (Momentary Interruption)	After engine is started, slave component was disconnected from system.	<ul style="list-style-type: none"> ● Check harness for power supply of component shown by auxiliary code. ● Check harness for communication system of component shown by auxiliary code.
01 *4 (Communication Control)	DF	Master Error	Due to defective condition of radio receiver assembly, master function is switched to audio equipment. Error occurs in communication between sub-master (audio) and radio receiver assembly.	<ul style="list-style-type: none"> ● Check harness for power supply of radio receiver assembly. ● Check harness for communication system of radio receiver assembly . ● Check harness for communication system between radio receiver assembly and sub-master component.
01 (Communication Control)	E0	Registration Completion Instruction Error	"Registration Completion Instruction" command from radio receiver assembly cannot be received.	<ul style="list-style-type: none"> ● Since this DTC is provided for engineering purpose, it may be detected when no actual failure exists.
01 *2 (Communication Control)	E1	Audio processor ON error	While source equipment is operating, AMP output is stopped.	<ul style="list-style-type: none"> ● Check harness for power supply of radio receiver assembly. ● Check harness for communication system of radio receiver assembly.
01 (Communication Control)	E2	ON/OFF Instruction Parameter Error	Error occurs in ON/OFF controlling command from radio receiver assembly assembly.	<ul style="list-style-type: none"> ● Replace radio receiver assembly .
01 (Communication Control)	E3	Registration Request Transmission	Registration Request command is output from slave component. Receiving Connection Check Instruction, Registration Request command is output from sub-master component.	<ul style="list-style-type: none"> ● Since this DTC is provided for engineering purpose, it may be detected when no actual failure exists.
01 (Communication Control)	E4	Plural Frame Abort	Plural frame transmission is aborted.	<ul style="list-style-type: none"> ● Since this DTC is provided for engineering purpose, it may be detected when no actual failure exists.
60 (Radio receiver assembly)	43	AM Tuner Error	Abnormal condition is detected in AM tuner. Inspect radio receiver assembly.	Replace radio receiver assembly.
60 (Radio receiver assembly)	44	FM Tuner Error	Abnormal condition is detected in FM tuner.	Replace radio receiver assembly.

61 (Cassette switch)	40	Mechanical or Media Error	Malfunction due to mechanical failure is identified. Or, cassette tape is cut or entangled.	Inspect cassette tape.
61 (Cassette switch)	41	EJECT Malfunction	Malfunction due to mechanical failure.	Replace radio receiver assembly.
63 (In-dash CD auto changer)	42	No Disc Readout	Disc cannot be read.	Inspect CD.
63 (In-dash CD auto changer)	44	CD Error	Error is detected in CD auto changer.	Replace radio receiver assembly.
63 (In-dash CD auto Changer)	45	EJECT Error	CD cannot be ejected.	Replace radio receiver assembly.
63 (In-dash CD auto Changer)	47	CD High Temp.	High temperature is detected in CD auto changer.	Replace radio receiver assembly.
63 (In-dash CD auto Changer)	48	CD Excess Current	Excess current is applied to CD auto changer.	Replace radio receiver assembly.

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	DTC	Diagnosis item	Diagnosis content	Countermeasure and inspected parts
01 (Communication Control)	21	ROM Error	Abnormal condition of ROM is detected.	Replace stereo component amplifier.
01 (Communication Control)	22	RAM Error	Abnormal condition of RAM is detected.	Replace stereo component amplifier.
01 (Communication Control)	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, radio receiver assembly was disconnected.	<ul style="list-style-type: none"> ● Check harness for power supply of radio receiver assembly. ● Check harness for communication system of radio receiver assembly. ● Check harness for power supply of stereo component amplifier. ● Check harness for communication system of stereo component amplifier.

01*6 (Communication Control)	D7	Connection Check Error	Component in which this code is recorded has been disconnected from system after engine start. Or, when this code was recorded, radio receiver assembly was disconnected.	<ul style="list-style-type: none"> ● Check harness for power supply of radio receiver assembly. ● Check harness for communication system of radio receiver assembly. ● Check harness for power supply of stereo component amplifier. ● Check harness for communication system of stereo component amplifier.
01 (Communication Control)	DC*2	Transmission Error	Transmission to component shown by auxiliary code has been failed. (This code does not necessarily mean actual failure.)	If same auxiliary code is recorded in other component(s), check harness for power supply and communication system of components shown sub code.
01 (Communication Control)	DD*3	Master Reset (Momentary Interruption)	After engine is started, radio receiver assembly assembly was disconnected from system.	<ul style="list-style-type: none"> ● Check harness for power supply of radio receiver assembly. ● Check harness for communication system of radio receiver assembly. ● If error occurs frequently, replace radio receiver assembly.
01 (Communication Control)	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.	<ul style="list-style-type: none"> ● Check harness for power supply of radio receiver assembly. ● Check harness for communication system of radio receiver assembly. ● Check harness for communication system between radio receiver assembly and sub-master component.
01 (Communication Control)	E0*1	Registration Completion Instruction Error	"Registration Completion Instruction" command from radio receiver assembly cannot be received.	Since this DTC is provided for engineering, it may be detected when no actual failure exists.
01 (Communication Control)	E1*1	Audio processor ON error	While source equipment is operating, AMP output is stopped.	<ul style="list-style-type: none"> ● Check harness for power supply of radio receiver assembly ● Check harness for communication system of radio receiver assembly.
01 (Communication Control)	E2	ON/OFF Instruction Parameter Error	Error is detected in ON/OFF control command from radio receiver assembly.	Replace radio receiver assembly.
01 (Communication Control)	E3	Registration Request Transmission	<ul style="list-style-type: none"> ● Registration Request command is output from slave component. ● By reception of connection check instruction, Registration Request command is output from sub-master component. 	Since this DTC is provided for engineering, it may be detected when no actual failure exists.
01 (Communication Control)	E4	Plural Frame Abort	Plural frame transmission is aborted.	Since this DTC is provided for engineering purpose, it may be detected when no actual failure exists.

Physical address: 1F4 RSA Panel (Main AVC-LAN)

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	DTC	Diagnosis item	Diagnosis content	Countermeasure and inspected parts
01 (Communication Control)	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, radio receiver assembly was disconnected.	<ul style="list-style-type: none"> ● Check harness for power supply of radio receiver assembly. ● Check harness for communication system of radio receiver assembly. ● Check harness for power supply of RSA panel. ● Check harness for communication system of RSA panel.
01*6 (Communication Control)	D7	Connection Check Error	Component in which this code is recorded has been disconnected from system after engine start. Or, when this code was recorded, radio receiver assembly was disconnected.	<ul style="list-style-type: none"> ● Check harness for power supply of radio receiver assembly. ● Check harness for communication system of radio receiver assembly. ● Check harness for power supply of RSA panel. ● Check harness for communication system of RSA panel.
01 (Communication Control)	DC *2	Transmission Error	Transmission to component shown by auxiliary code has been failed. (This code does not necessarily mean actual failure.)	If same auxiliary code is recorded in other component(s), check harness for power supply and communication system of components shown sub code.
01 (Communication Control)	DD *3	Master Reset (Momentary Interruption)	After engine is started, radio receiver assembly was disconnected from system.	<ul style="list-style-type: none"> ● Check harness for power supply of radio receiver assembly. ● Check harness for communication system of radio receiver assembly. ● If error occurs frequently, replace radio receiver assembly.
01 (Communication Control)	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.	<ul style="list-style-type: none"> ● Check harness for power supply of radio receiver assembly. ● Check harness for communication system of radio receiver assembly. ● Check harness for communication system between radio receiver assembly and sub-master component.
01 (Communication Control)	E0 *1	Registration Completion Instruction Error	"Registration Completion Instruction" command from radio receiver assembly cannot be received.	Since this DTC is provided for engineering, it may be detected when no actual failure exists.
01 (Communication Control)	E3	Registration Request Transmission	<ul style="list-style-type: none"> ● Registration Request command is output from slave component. ● By reception of connection check instruction, Registration Request command is output from sub-master component. 	Since this DTC is provided for engineering, it may be detected when no actual failure exists.

01 (Communication Control)	E4	Plural Frame Abort	Plural frame transmission is aborted.	Since this DTC is provided for engineering purpose, it may be detected when no actual failure exists.
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Physical address: 16A, 16C RSA Panel (Sub AVC-LAN)

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	DTC	Diagnosis item	Diagnosis content	Countermeasure and inspected parts
01 *3 (Communication Control)	D8	No Response to Connection Check	Component shown by auxiliary code is or had been disconnected from system after engine start. D9	<ul style="list-style-type: none"> ● Check harness for power supply system of component shown by auxiliary code. ● Check harness for communication system of component shown by auxiliary code.
01 *2 (Communication Control)	D9	Last Mode Error	Component operated (sounds and/or images were provided) before engine stop is or has been disconnected with ignition switch in ACC or ON.	<ul style="list-style-type: none"> ● Check harness for power supply system of component shown by auxiliary code. ● Check harness for communication system of component shown by auxiliary code.
01 (Communication Control)	DA	No Response to ON/OFF Instruction	No response is identified when changing mode (audio and visual mode change). Detected when sound and picture does not change by button operation.	<ul style="list-style-type: none"> ● Check harness for power supply of component shown by auxiliary code. ● Check harness for communication system of component shown by auxiliary code. ● If error occurs again, replace component shown by auxiliary code.
01 *2 (Communication Control)	DB	Mode Status Error	Dual alarm is detected.	<ul style="list-style-type: none"> ● Check harness for power supply of component shown by auxiliary code. ● Check harness for communication system of component shown by auxiliary code.
01 *4 (Communication Control)	DC	Transmission Error	Transmission to component shown by auxiliary code has been failed. (Detecting this DTC does not necessarily mean actual failure.)	<ul style="list-style-type: none"> ● If same auxiliary code is recorded in other component, check harness for power supply and communication system of components shown sub code.
01 *3 (Communication Control)	DE	Slave Reset (Momentary Interruption)	After engine is started, slave component was disconnected from system.	<ul style="list-style-type: none"> ● Check harness for power supply of component shown by auxiliary code. ● Check harness for communication system of component shown by auxiliary code.
01 (Communication Control)	E4	Plural Frame Abort	Plural frame transmission is aborted.	Since this DTC is provided for engineering purpose, it may be detected when no actual failure exists.

Physical address: 1A0 DVD Auto Player

HINT:

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

*2: This code may be stored when the engine key is turned again 1 min. after engine start.

*3: This code 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	DTC	Diagnosis item	Diagnosis content	Countermeasure and inspected parts
01 (Communication Control)	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, RSA Panel was disconnected.	<ul style="list-style-type: none"> ● Check harness for power supply of RSA Panel. ● Check harness for communication system of RSA Panel. ● Check harness for power supply of DVD player. ● Check harness for communication system of DVD player.
01 (Communication Control)	D7	Communication Check Error	Component in which this code is recorded is was disconnected from system after engine start. Or, when recorded this code, RSA Panel was disconnected.	<ul style="list-style-type: none"> ● Check harness for power supply of RSA Panel. ● Check harness for communication system of RSA Panel. ● Check harness for power supply of DVD player. ● Check harness for communication system of DVD player.
01 *4 (Communication Control)	DC	Transmission Error	Transmission to component shown by sub-code has been failed. (Detecting this DTC does not necessary mean actual failure.)	<ul style="list-style-type: none"> ● If same sub-code is recorded in other component, check harness for power supply and communication system of components shown sub code.
01 (Communication Control)	DD *3	Master Reset (Momentary Interruption)	After engine is started, radio receiver assembly assembly was disconnected from system.	<ul style="list-style-type: none"> ● Check harness for power supply of RSA Panel. ● Check harness for communication system of RSA Panel. ● Check harness for power supply of DVD player. ● Check harness for communication system of DVD player.
01 (Communication Control)	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.	<ul style="list-style-type: none"> ● Check harness for power supply of RSA Panel. ● Check harness for communication system of RSA Panel. ● Check harness for communication system between RSA Panel.
01 (Communication Control)	E0 *1	Registration Completion Instruction Error	"Registration Completion Instruction" command from master cannot be received.	<p>Since this DTC is provided for engineering purpose, it may be detected when no actual failure exists.</p>

01 (Communication Control)	E2	ON/OFF Instruction Parameter Error	Error is detected in ON/OFF control command from DVD player.	Replace DVD player.
01 (Communication Control)	E3	Registration Request Transmission	<ul style="list-style-type: none"> ● 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, it may be detected when no actual failure exists.
01 (Communication Control)	E4	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.
01 (Communication Control)	22	RAM Error	Abnormal condition of RAM is detected.	Replace DVD player.

Physical address: 250 (DVD Auto Changer) (Sub AVC-LAN)

Logical address	DTC	Diagnosis item	Diagnosis content	Countermeasure and inspected parts
01 (Communication Control)	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, radio receiver assembly was disconnected.	<ul style="list-style-type: none"> ● Check harness for power supply of radio receiver assembly. ● Check harness for communication system of radio receiver assembly. ● Check harness for power supply of DVD auto changer. ● Check harness for communication system of DVD auto changer.
01*6 (Communication Control)	D7	Connection Check Error	Component in which this code is recorded has been disconnected from system after engine start. Or, when this code was recorded, radio receiver assembly was disconnected.	<ul style="list-style-type: none"> ● Check harness for power supply of radio receiver assembly. ● Check harness for communication system of radio receiver assembly. ● Check harness for power supply of DVD auto changer. ● Check harness for communication system of DVD auto changer.
01 (Communication Control)	DC *2	Transmission Error	Transmission to component shown by auxiliary code has been failed. (This code does not necessarily mean actual failure.)	If same auxiliary code is recorded in other component(s), check harness for power supply and communication system of components shown sub code.
01 (Communication Control)	DD *3	Master Reset (Momentary Interruption)	After engine is started, radio receiver assembly assembly was disconnected from system.	<ul style="list-style-type: none"> ● Check harness for power supply of radio receiver assembly. ● Check harness for communication system of radio receiver assembly. ● If error occurs frequently, replace radio receiver assembly.

BODY ELECTRICAL - AUDIO SYSTEM

01 (Communication Control)	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.	<ul style="list-style-type: none"> ● Check harness for power supply of radio receiver assembly. ● Check harness for communication system of radio receiver assembly. ● Check harness for communication system between radio receiver assembly and sub-master component.
01 (Communication Control)	E0 *1	Registration Completion Instruction Error	"Registration Completion Instruction" command from radio receiver assembly cannot be received.	Since this DTC is provided for engineering, it may be detected when no actual failure exists.
01 (Communication Control)	E2	ON/OFF Instruction Parameter Error	Error is detected in ON/OFF control command from radio receiver assembly.	Replace radio receiver assembly.
01 (Communication Control)	E3	Registration Request Transmission	<ul style="list-style-type: none"> ● Registration Request command is output from slave component. ● By reception of connection check instruction, Registration Request command is output from sub-master component. 	Since this DTC is provided for engineering, it may be detected when no actual failure exists.
45 (DVD)	42	No Disk Readout	Disk cannot be read.	Inspect disk.
45 (DVD)	44	DVD error	Error is detected in DVD player.	Replace radio and player.
45 (DVD)	45	EJECT error	Disk cannot be ejected.	Check whether foreign matters enter inspection.
45 (DVD)	46	Disk Crack	A crack and dirt are in a disk.	Inspect disk.
45 (DVD)	52	Player Error	Clamp unusually generating.	DVD player.
45 (DVD)	47	DVD High Temp	High temperature is detected in DVD auto changer.	Do not stop the operation for a period of time.
45 (DVD)	48	DVD Excess Current	Excess current is applied to DVD auto changer.	Replace DVD auto changer.
45 (DVD)	50	A Malfunction in insertion/ejection	Operation malfunction in insertion/ ejection.	Replace DVD auto changer.
45 (DVD)	51	A Malfunction in switching disk	Operation malfunction in switching disk.	Replace DVD auto changer.

4. 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.).

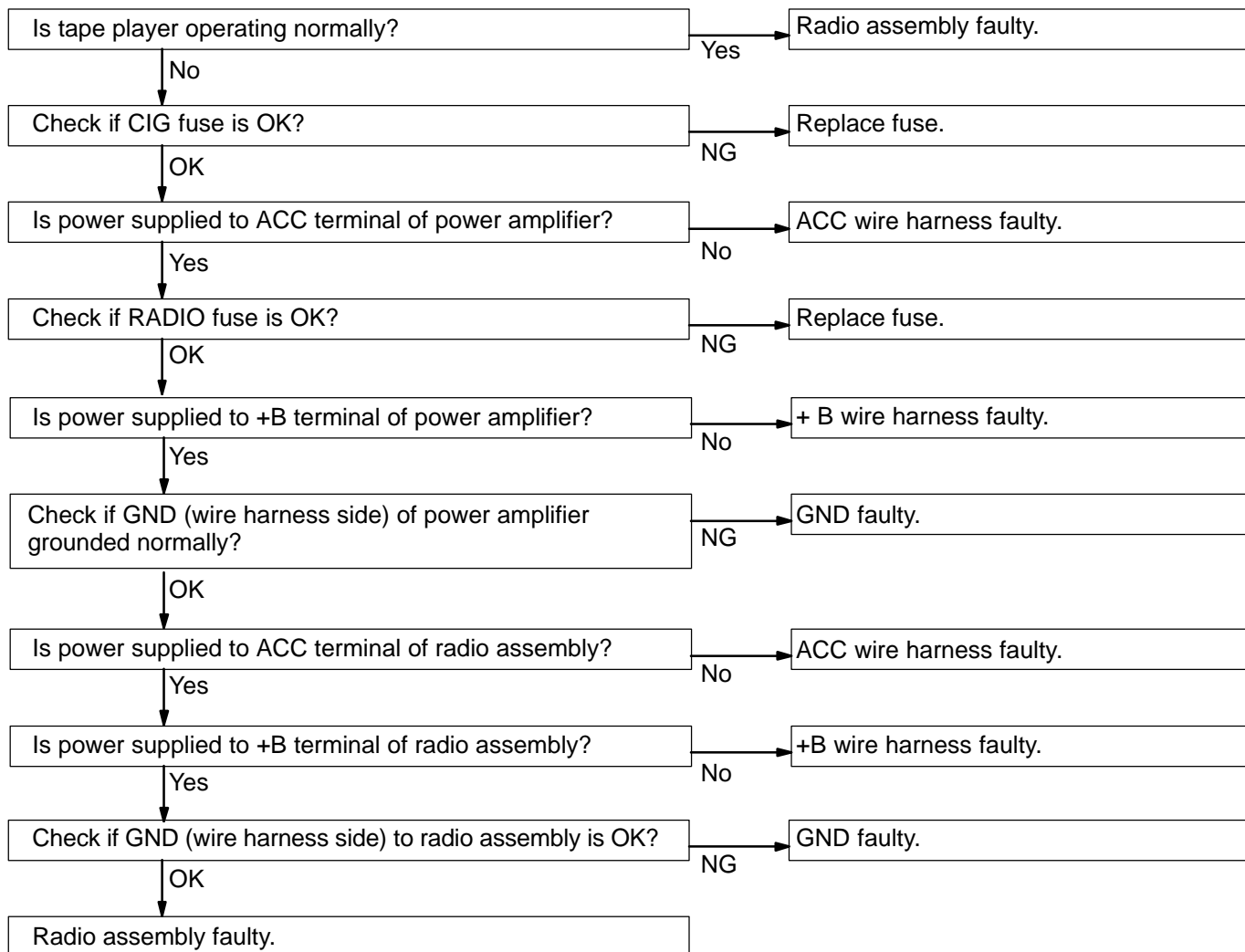
Always inspect the trouble taking the following items into consideration.

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

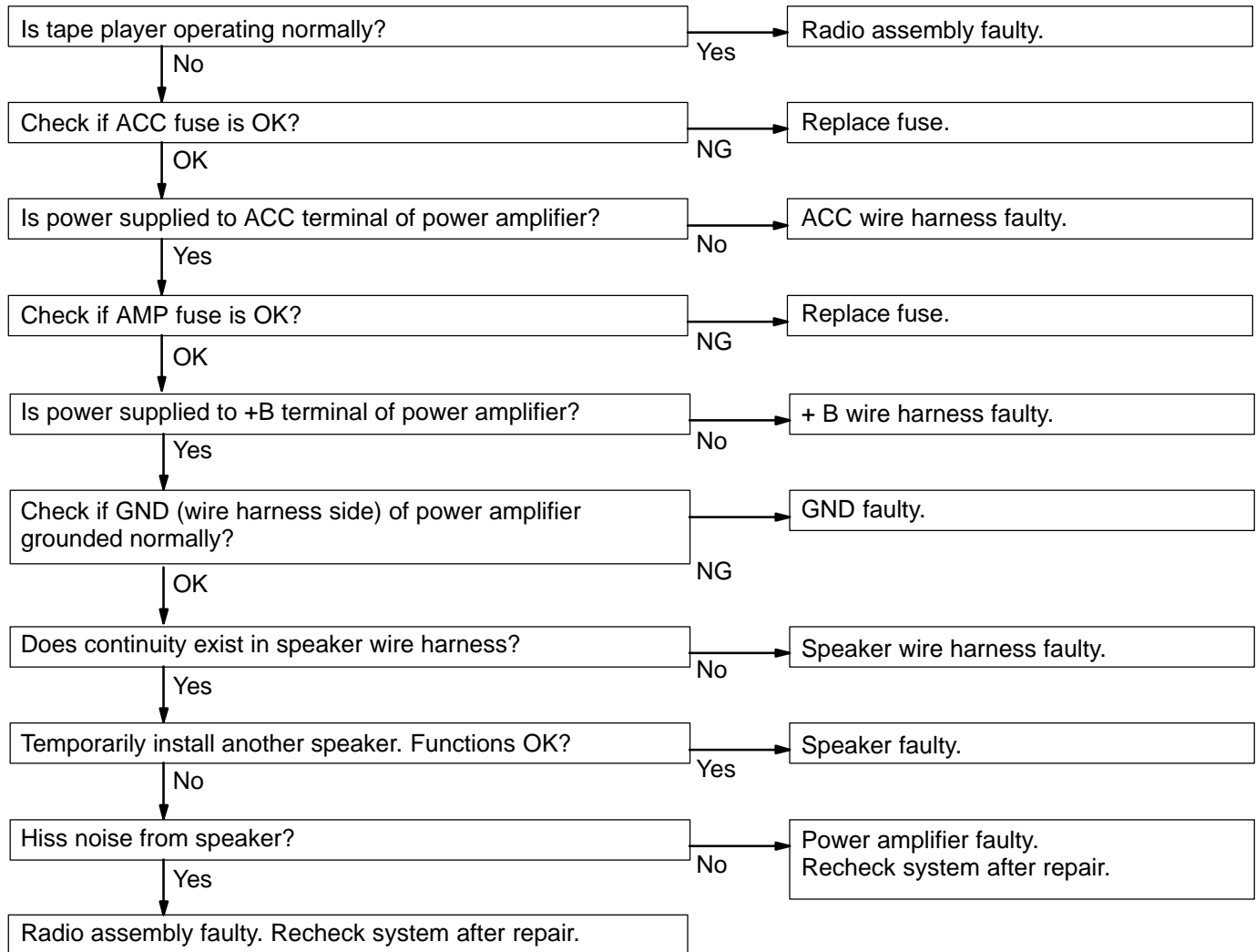
	Problem	Flow chart No.
Radio	Radio not operating when power switch turned to 'ON'.	1
	Display indicates when power switch turned to 'ON', but no sound (including 'noise') is produced.	2
	Noise present, but AM - FM not operating.	3
	Any speaker does not work.	4
	Any AM or FM does not work.	5
	Few preset turning bands.	5
	Reception poor.	6
	Sound quality poor.	7
	Preset memory disappears.	8
Tape Player	Cassette tape cannot be inserted.	9
	Cassette tape inserted, but no power.	10
	Power coming in, but tape player not operating.	11
	Any speaker does not work.	12
	Sound quality poor.	13
	Tape jammed, malfunction with tape speed or auto-reverse.	14
	Cassette tape will not eject.	15
CD Player	CD cannot be inserted.	16
	CD inserted but no power/	17
	Power coming in, but CD player not operating.	18
	Sound jumps.	19
	Sound quality poor (Volume faint)	20
	Any speaker does not work.	21
	CD will not be ejected.	22
Power Amplifier	No power coming in.	23
	Power coming in, but power amplifier not operating.	24
	Any speaker does not work.	25
Noise	Noise occurs	26
	Noise produced by vibration or shock while driving.	27
	Noise produced when engine starts.	28
Steering Pad Switch	A audio system cannot be operated with steering pad switch.	29
Rear Seat Audio	Quality of sound from headphone connected to headphone terminal is poor or no sound can be heard.	30

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

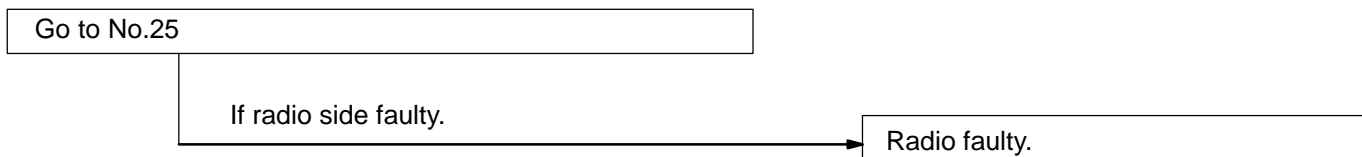
1	Radio	RADIO NOT OPERATING WHEN POWER SWITCH TURNED TO "ON"
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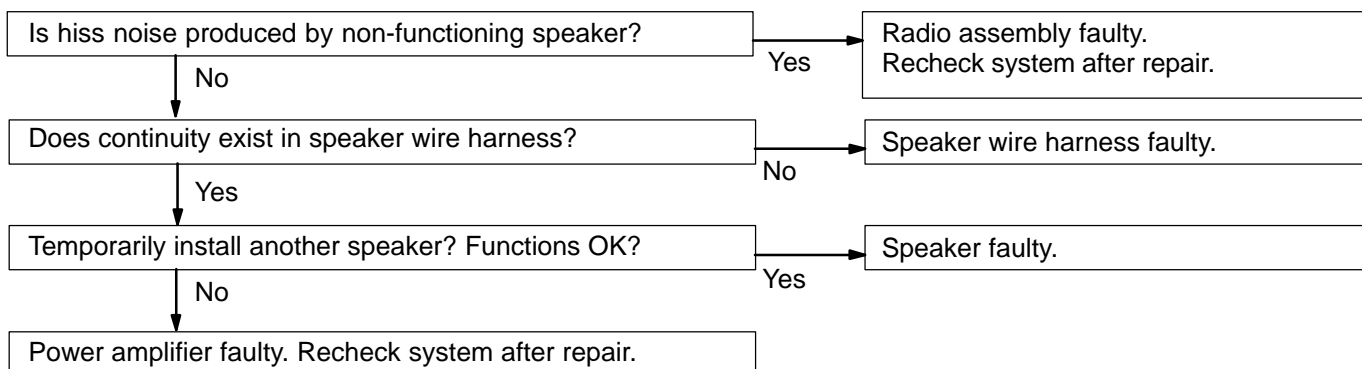
2	Radio	DISPLAY INDICATES WHEN POWER SWITCH TURNED TO "ON", BUT NO SOUND (INCLUDING "NOISE") IS PRODUCED
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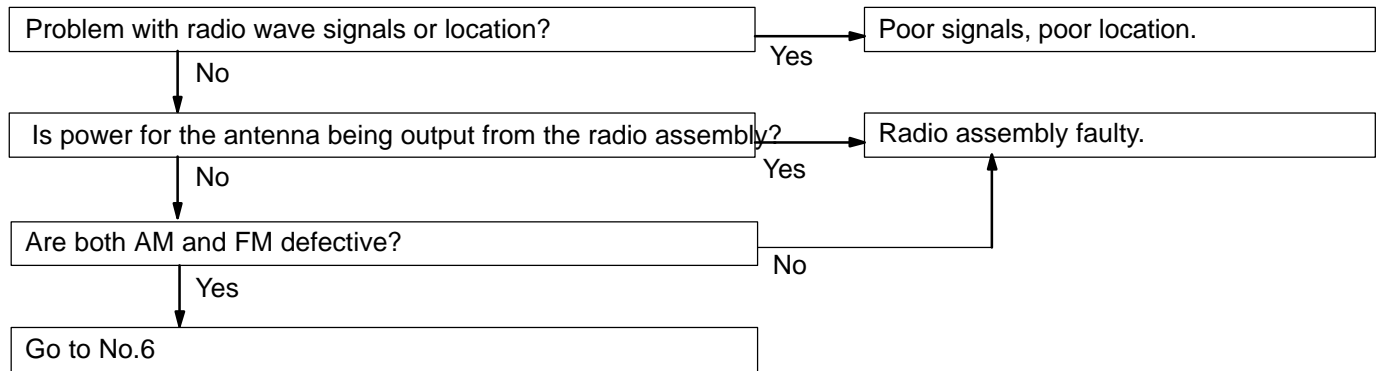
3	Radio	NOISE PRESENT, BUT AM-FM NOT OPERATING
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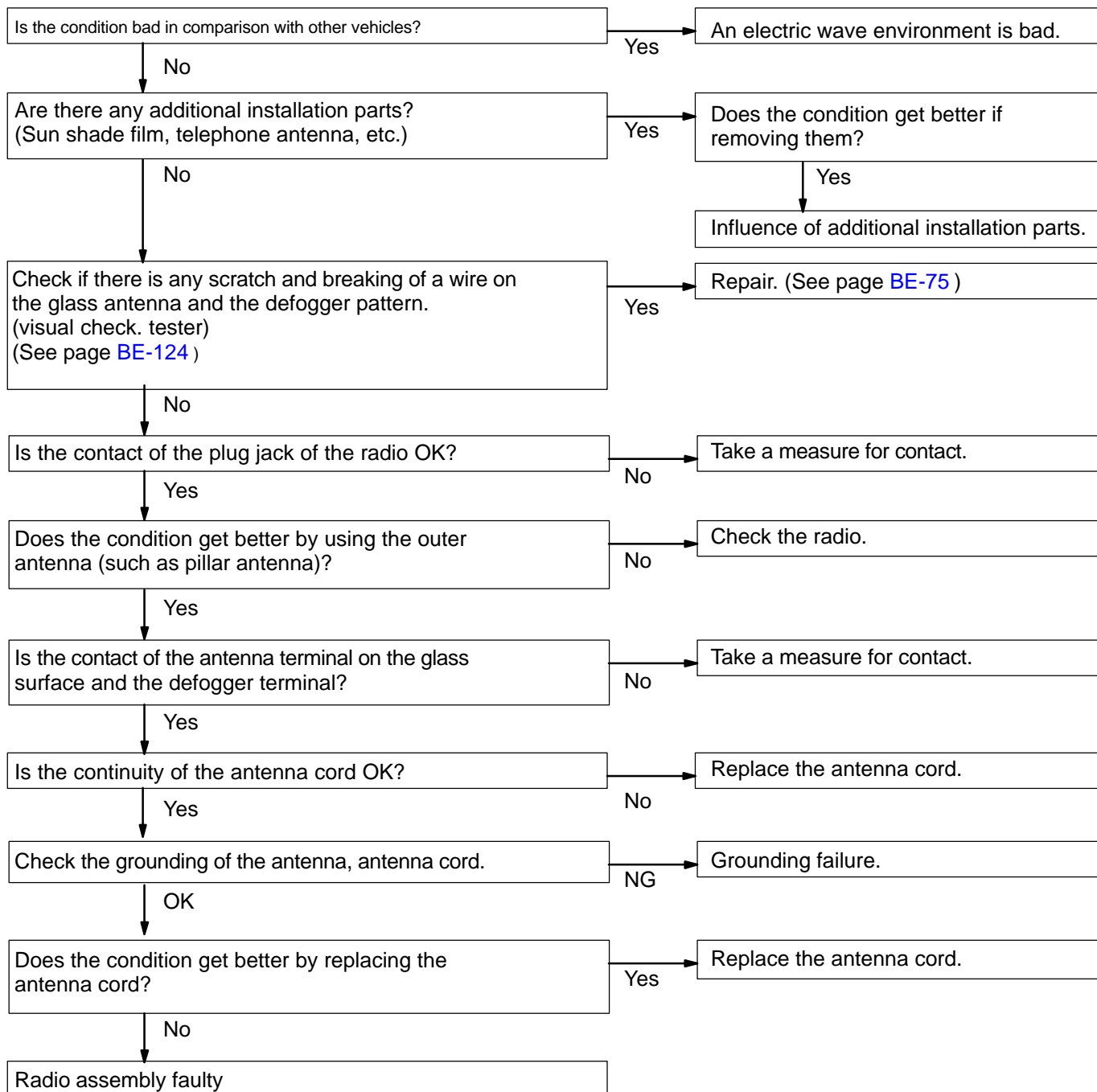
4	Radio	ANY SPEAKER DOSE NOT WORK
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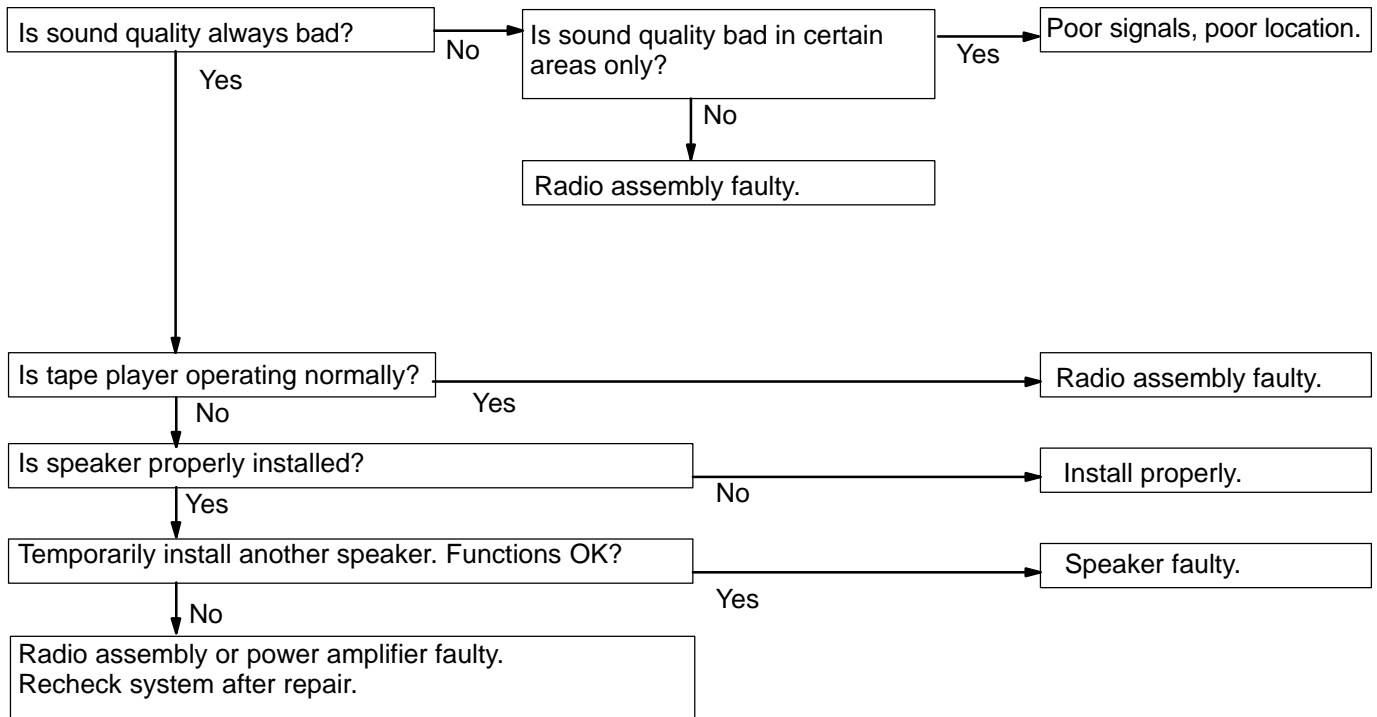
5	Radio	ANY AM OR FM DOES NOT WORK FEW PRESET TUNING BANDS
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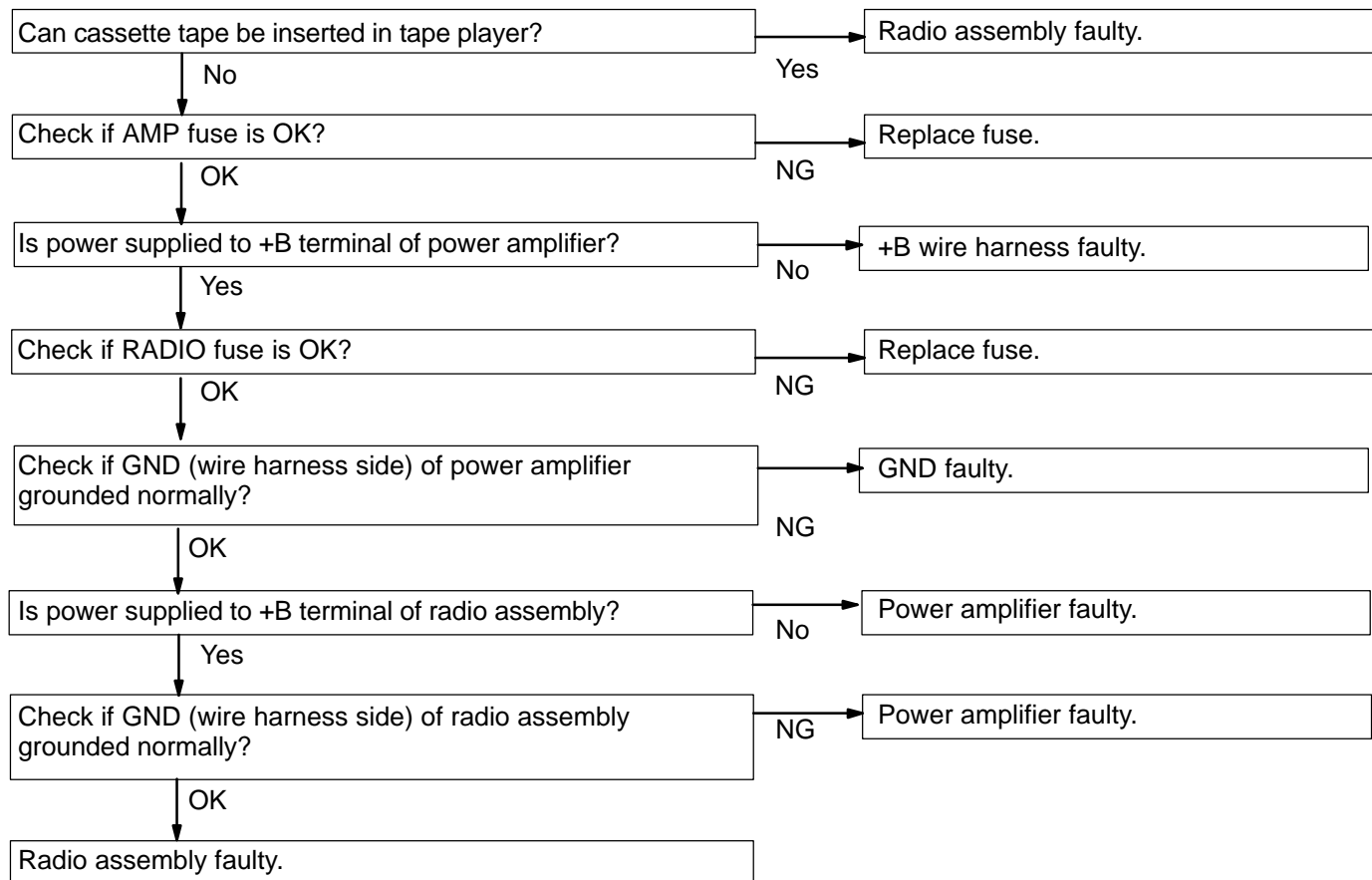
6	Radio	POOR RECEPTION
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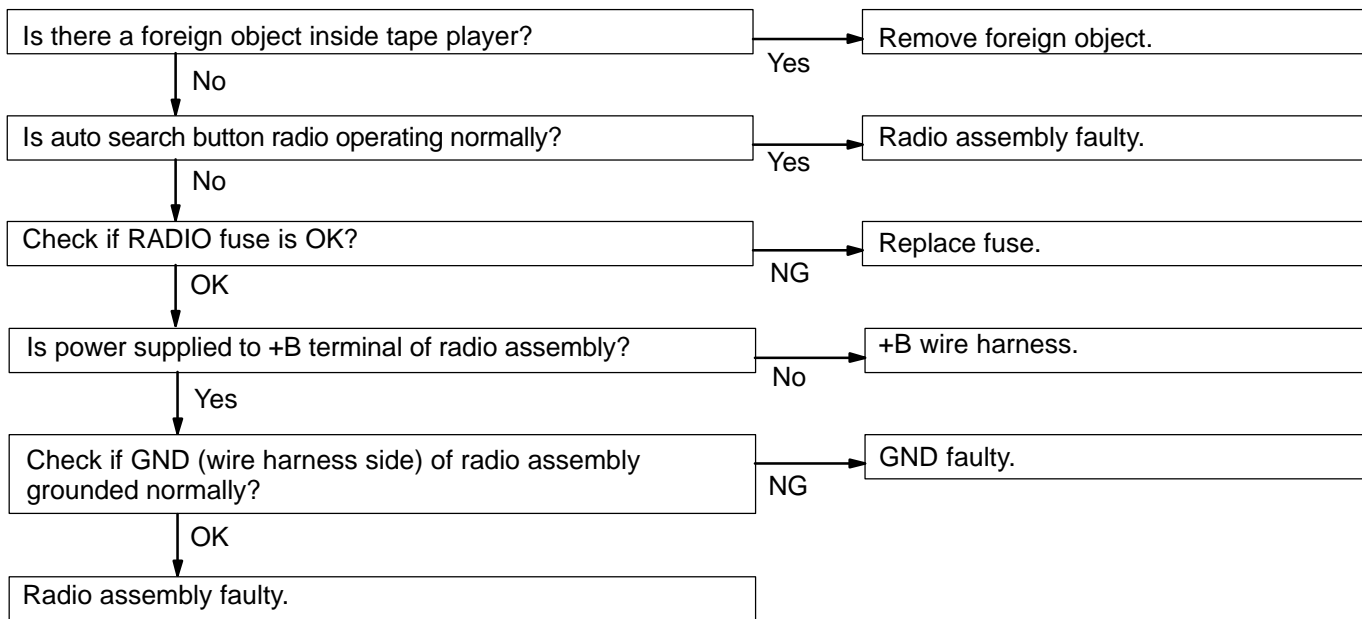
7	Radio	SOUND QUALITY POOR
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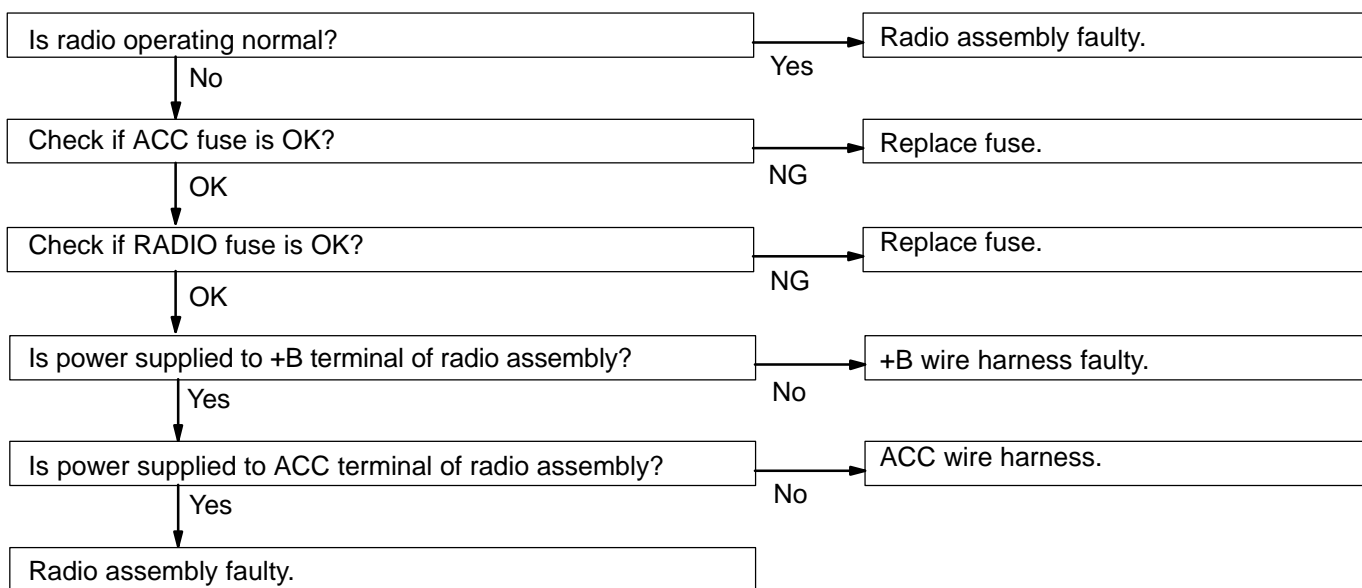
8	Radio	PRESET MEMORY DISAPPEARS
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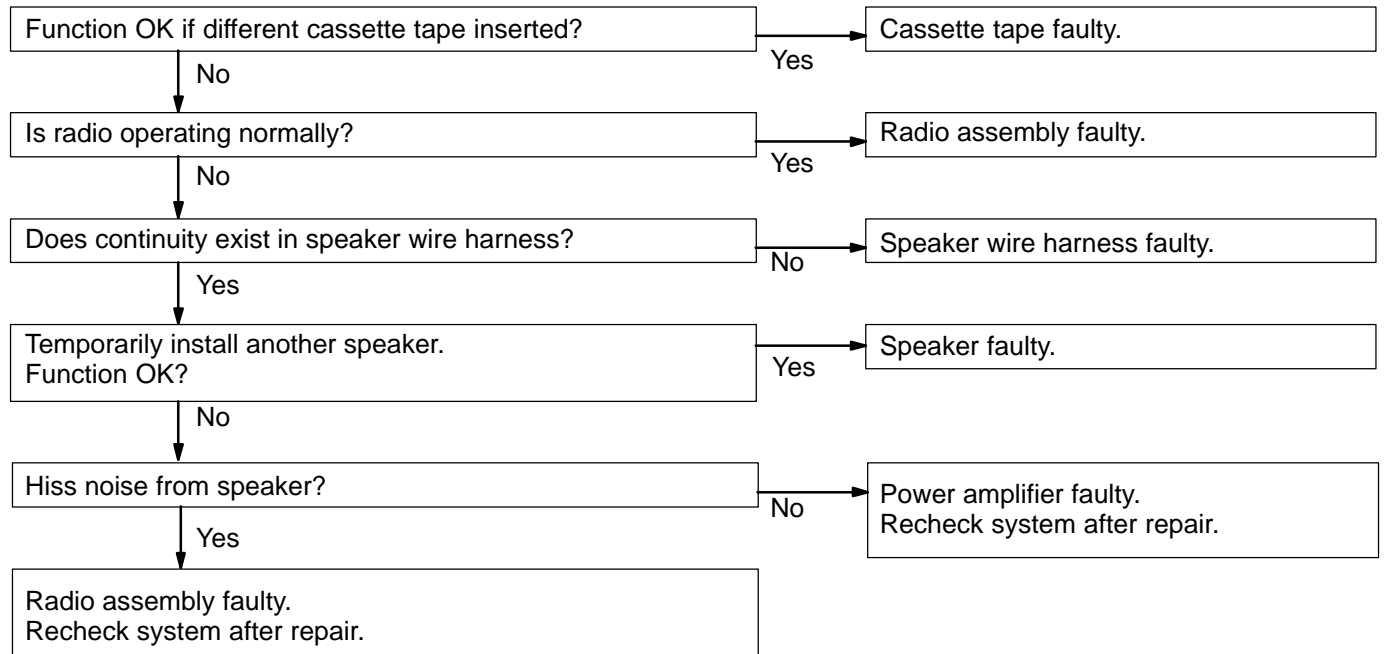
9	Tape Player	CASSETTE TAPE CANNOT BE INSERTED
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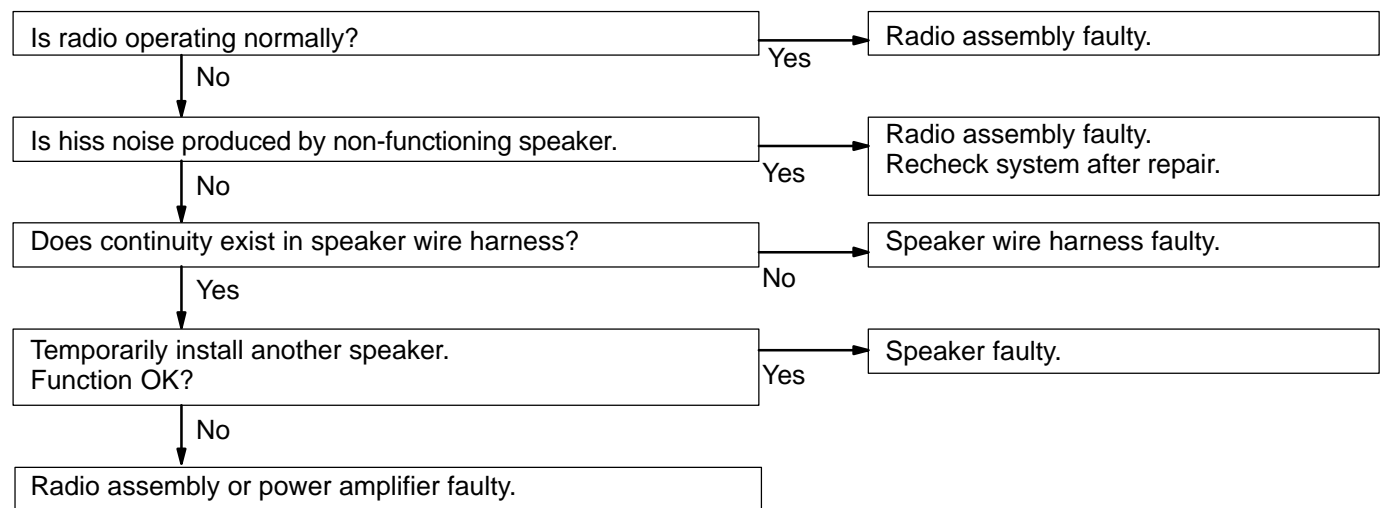
10	Tape Player	CASSETTE TAPE INSERTED, BUT NO POWER
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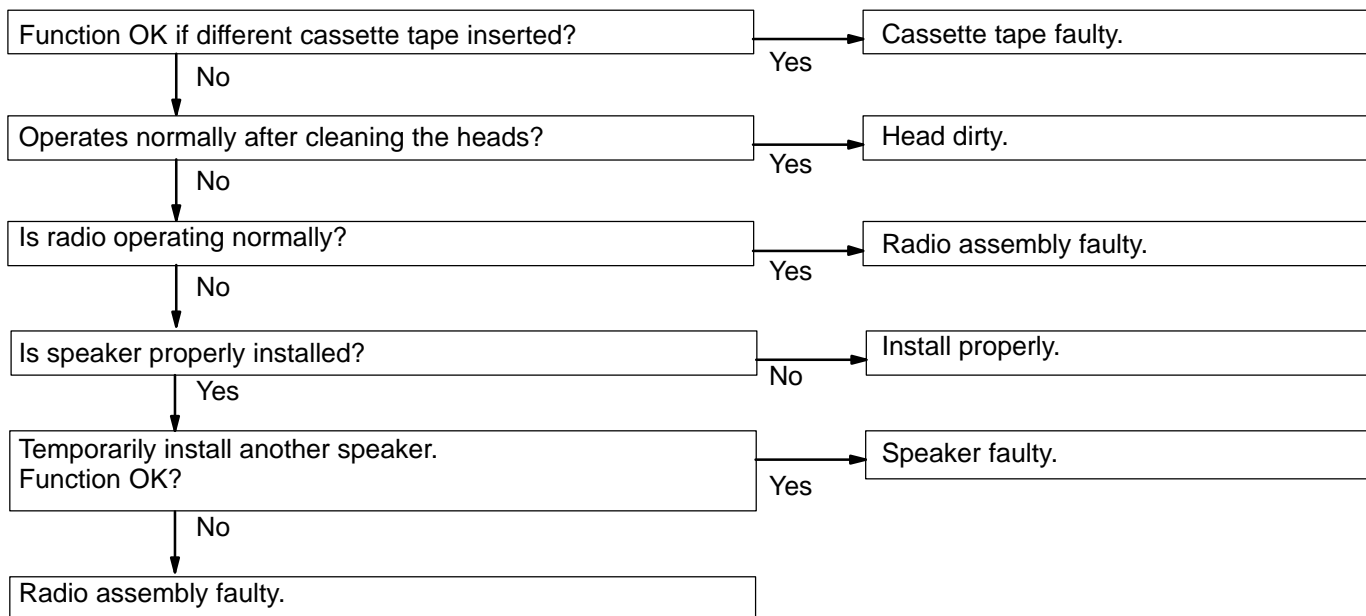
11	Tape Player	POWER COMING IN, BUT TAPE PLAYER NOT OPERATING
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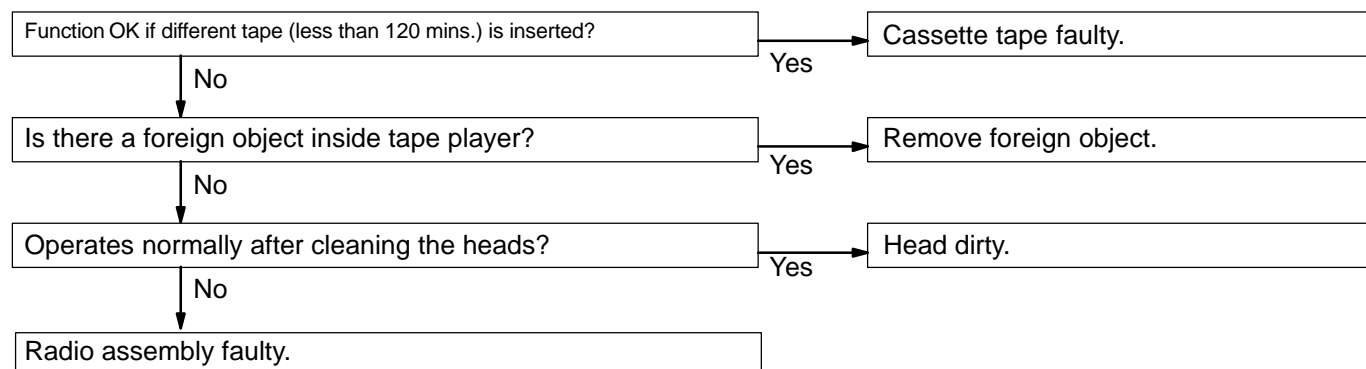
12	Tape Player	ANY SPEAKER DOES NOT WORK
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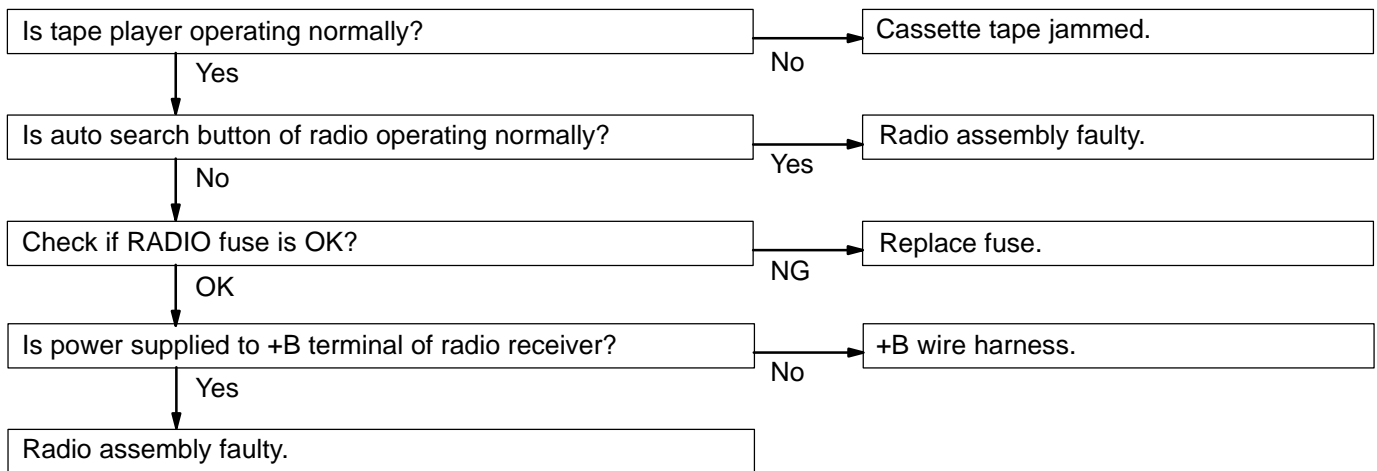
13	Tape Player	SOUND QUALITY POOR (VOLUME FAINT)
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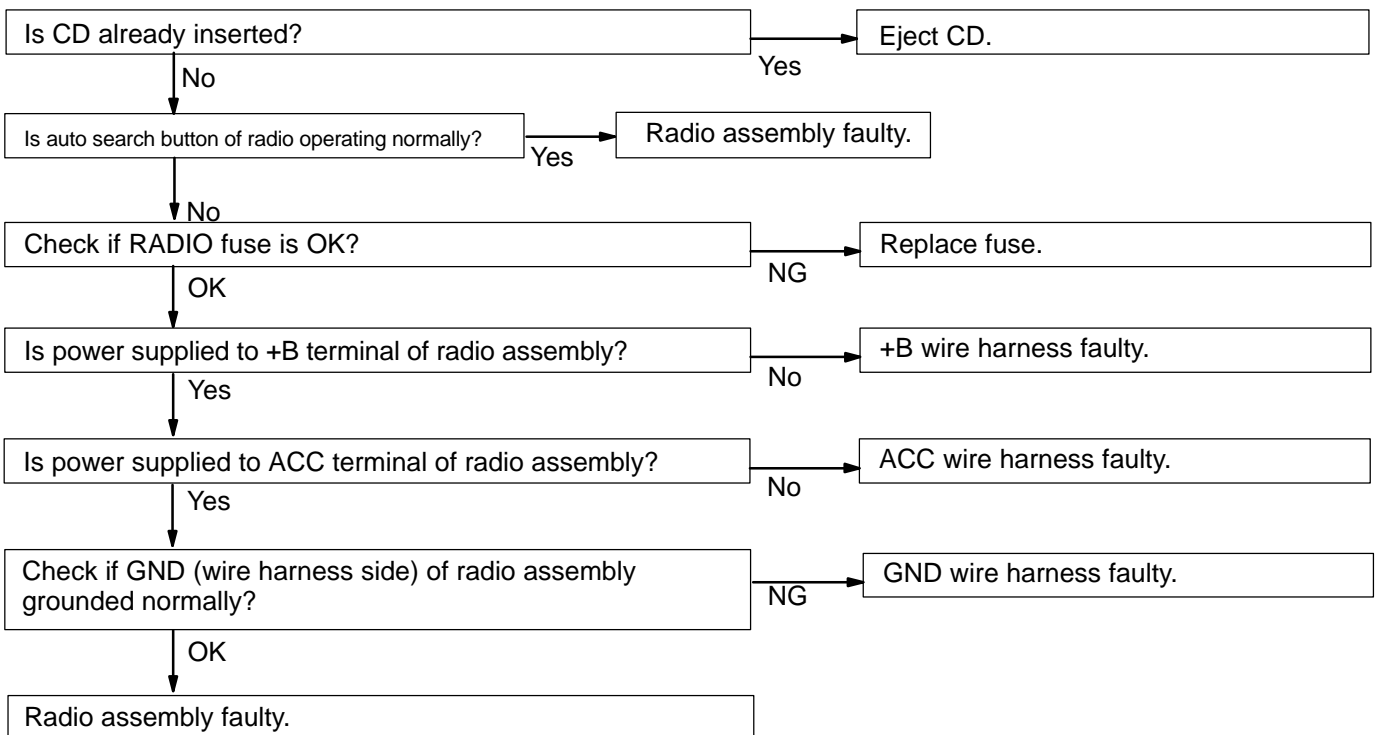
14	Tape Player	TAPE JAMMED MALFUNCTION WITH TAPE SPEED OR AUTO-REVERSE
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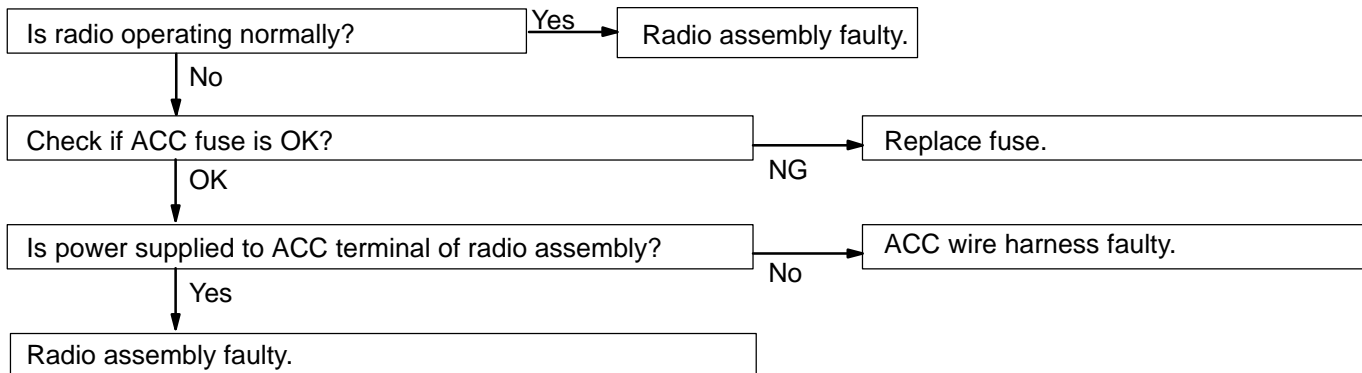
15	Tape Player	CASSETTE TAPE WILL NOT BE EJECTED
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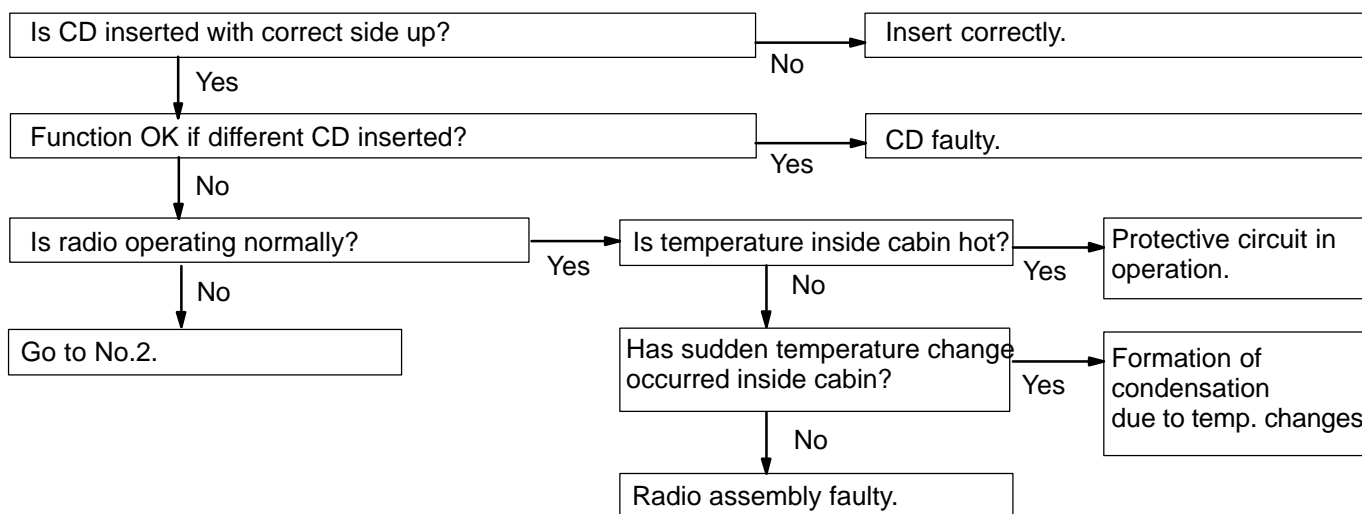
16	CD Player	CD CANNOT BE INSERTED
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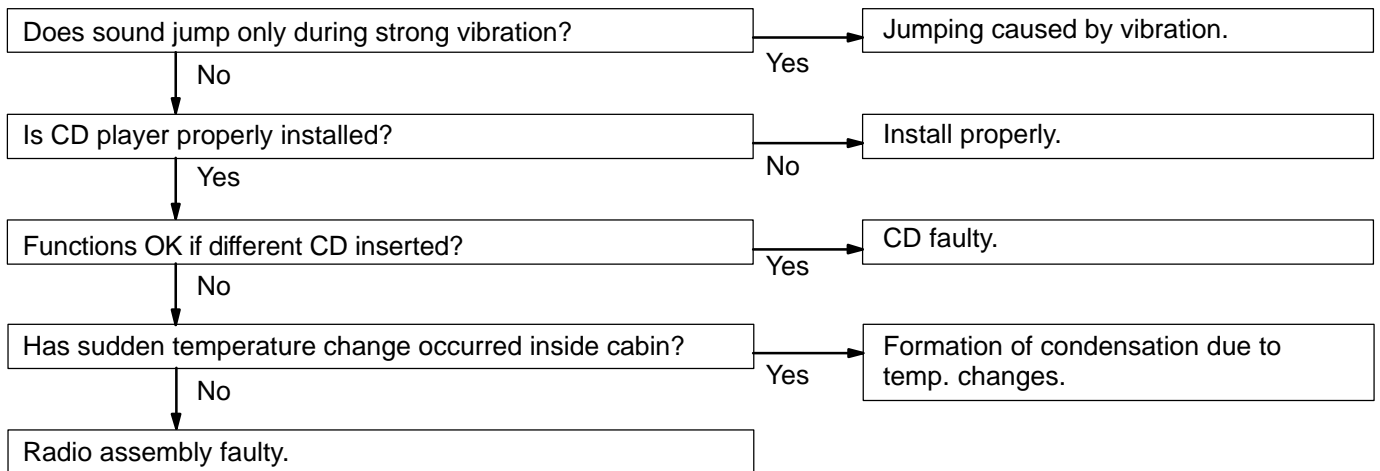
17	CD Player	CD INSERTED, BUT NO POWER
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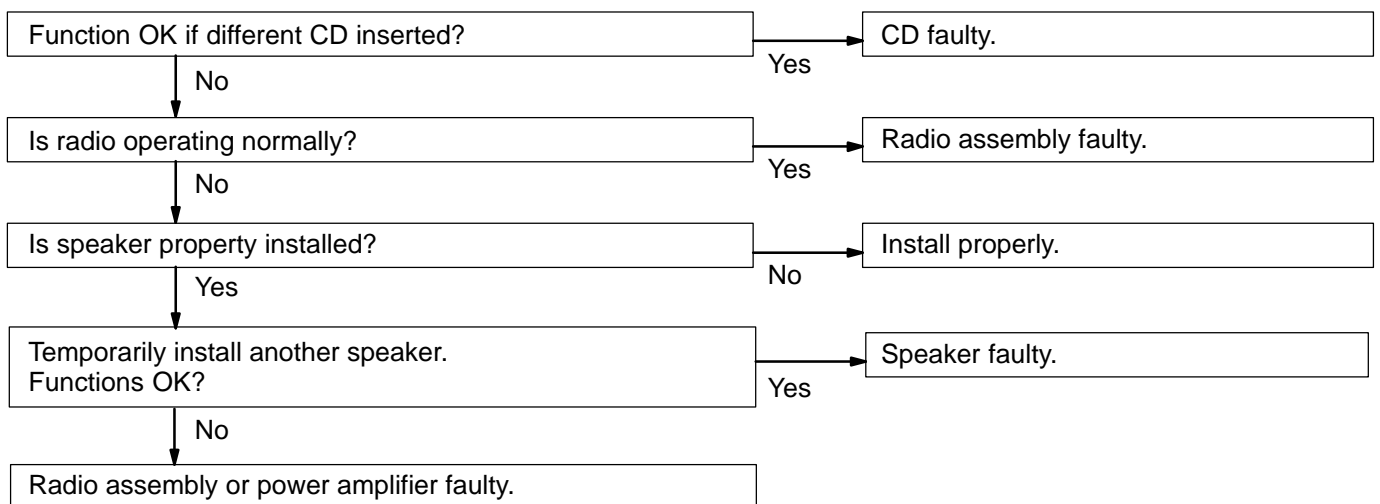
18	CD Player	POWER COMING IN, BUT CD PLAYER NOT OPERATING
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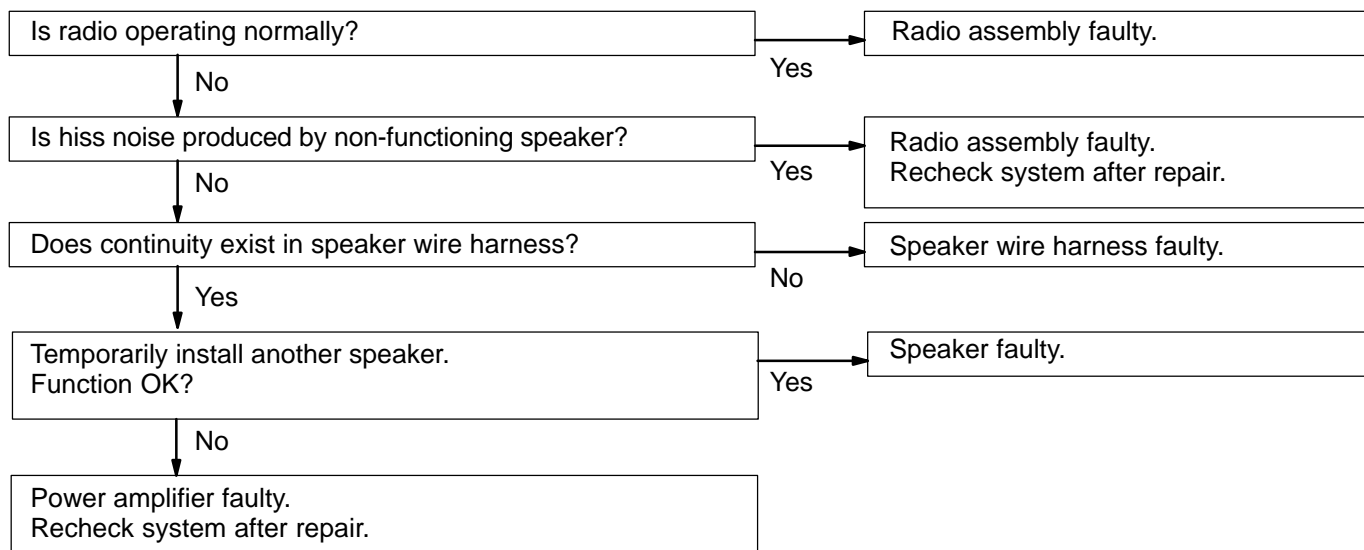
19	CD Player	SOUND JUMPS
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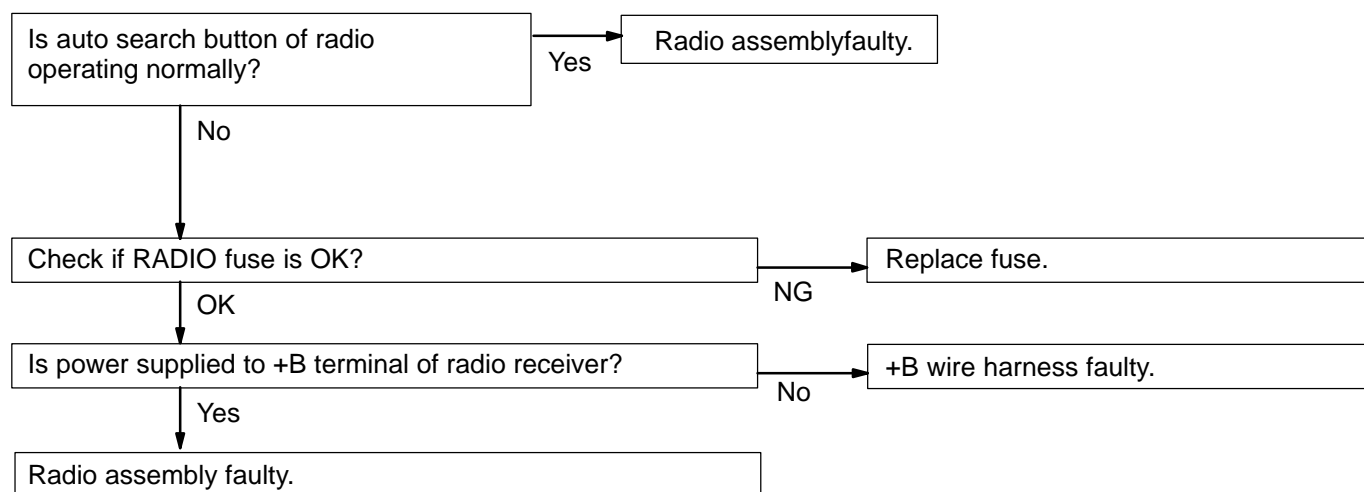
20	CD Player	SOUND QUALITY POOR (VOLUME FAINT)
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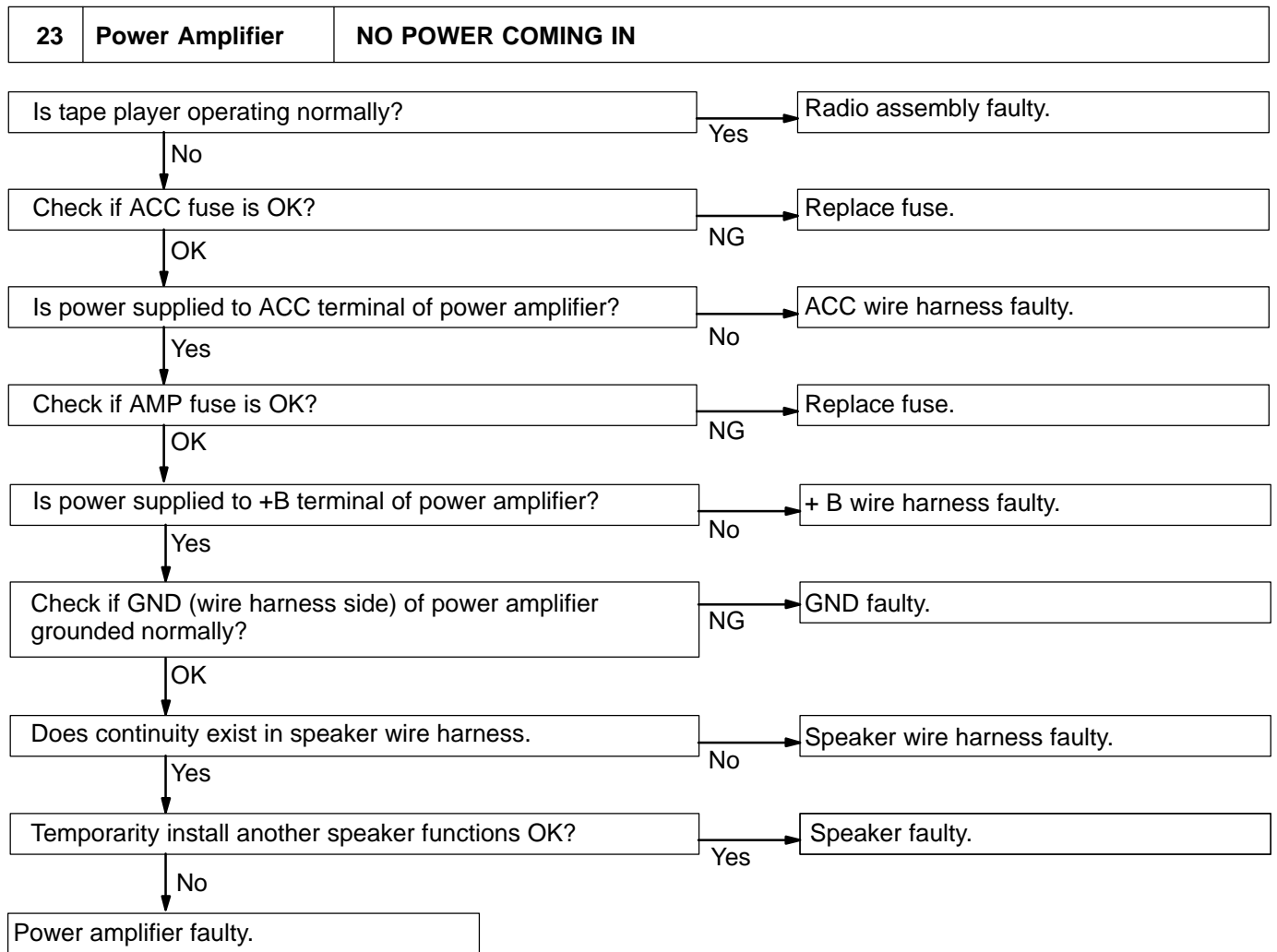


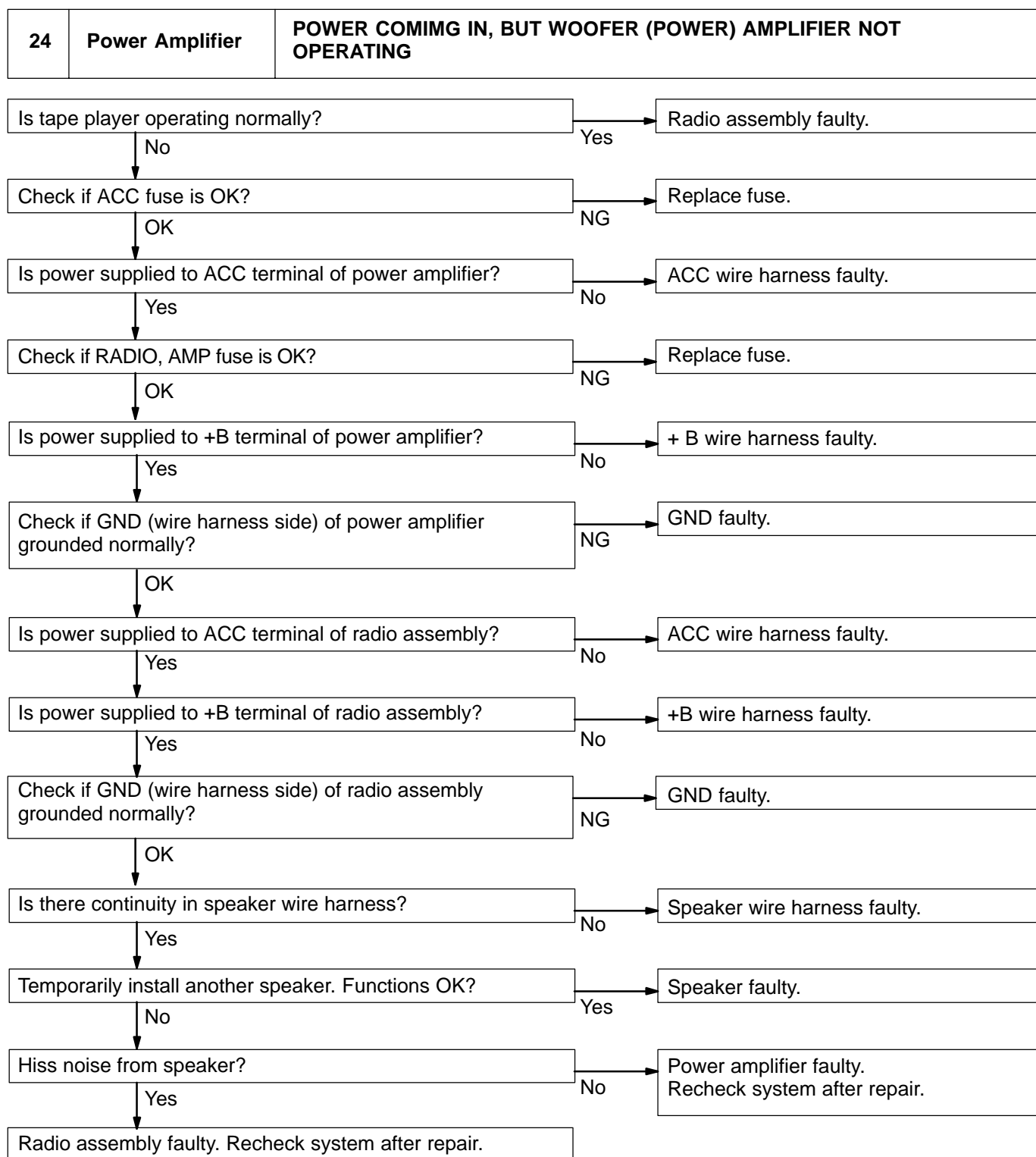
21	CD Player	ANY SPEAKER DOES NOT WORK
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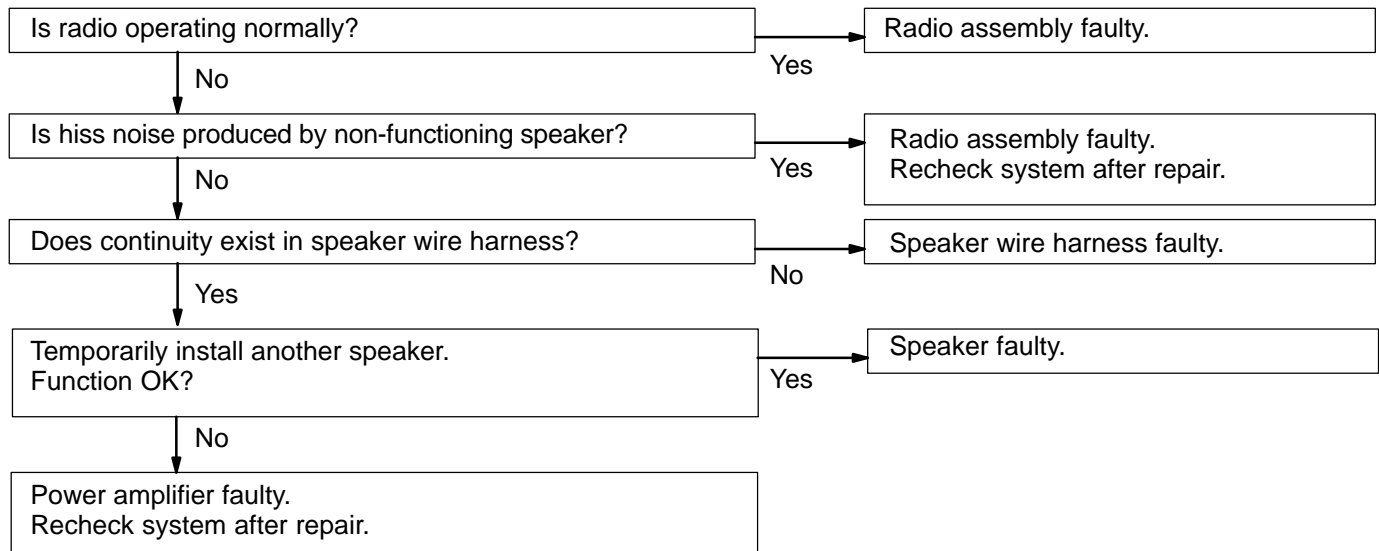
22	CD Player	CD WILL NOT BE EJECTED
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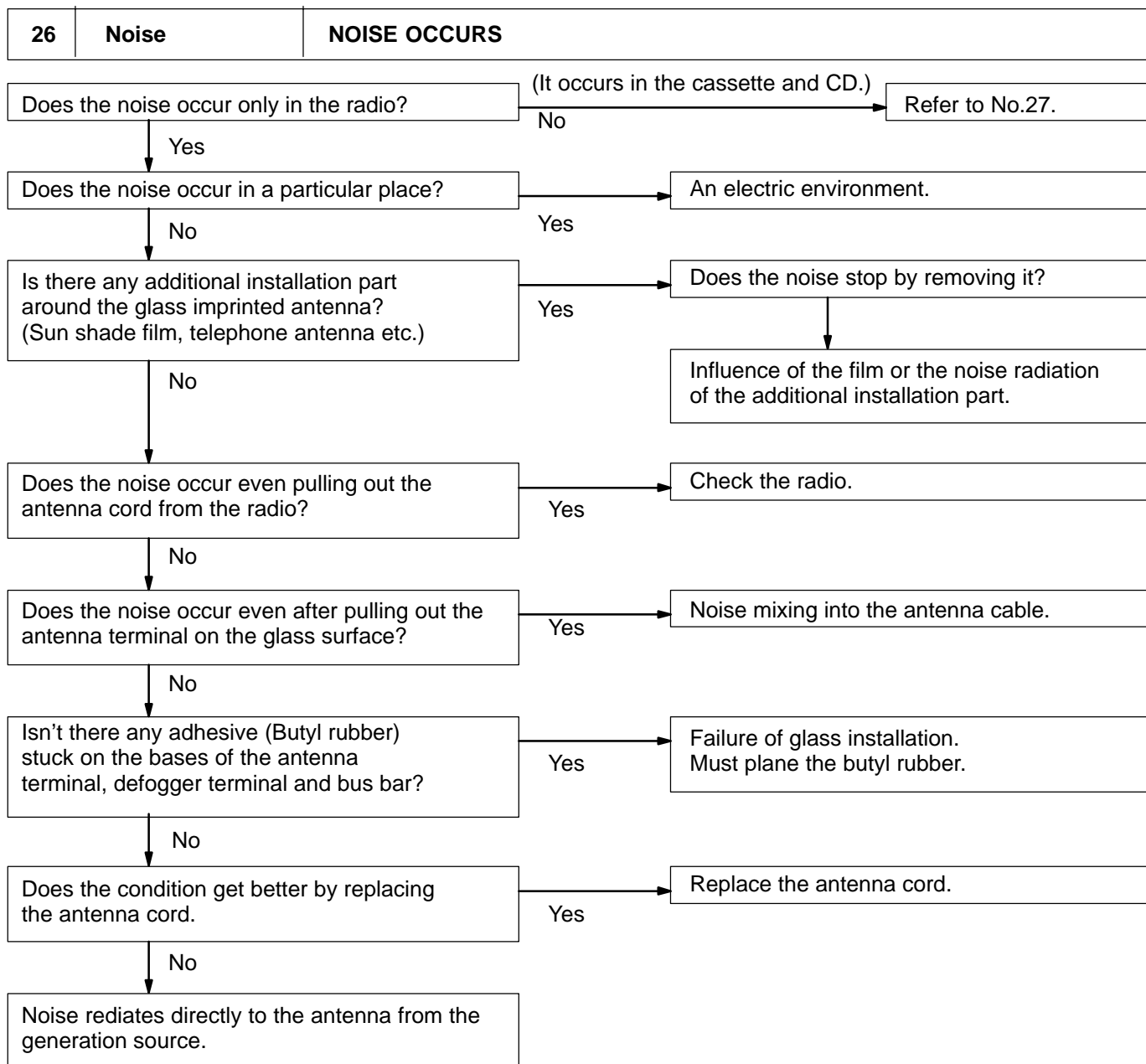




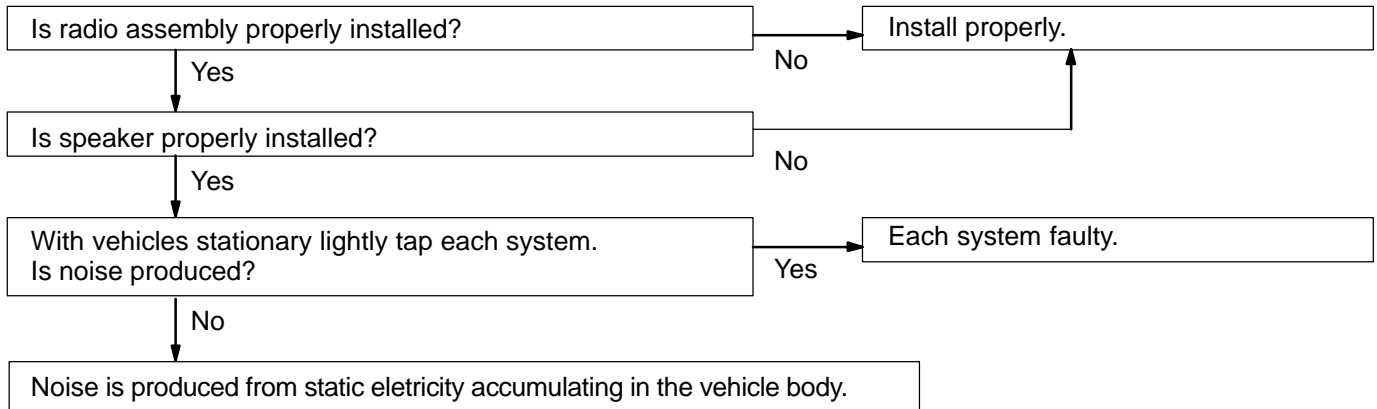


25	Power Amplifier	ANY SPEAKER DOES NOT WORK
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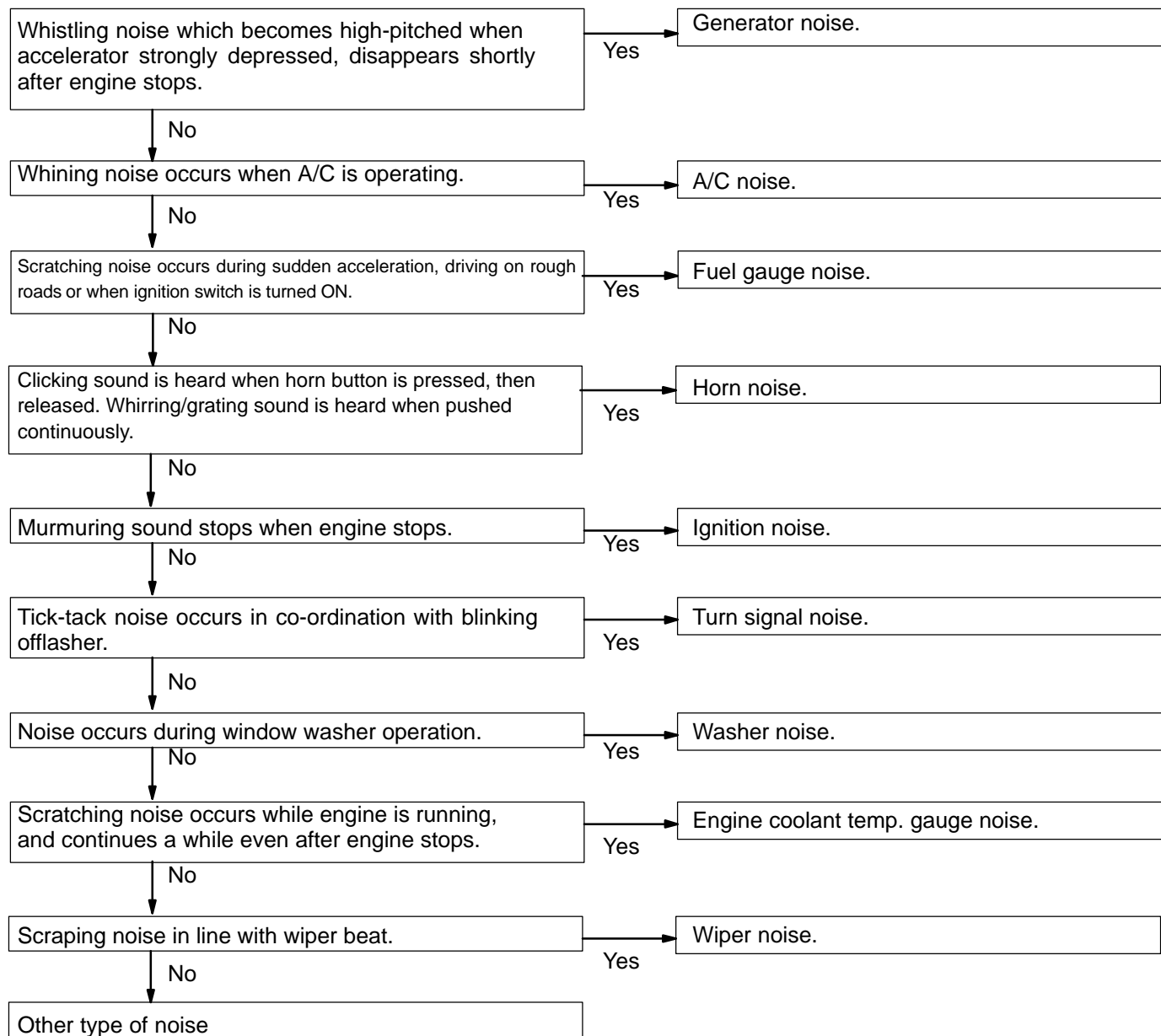




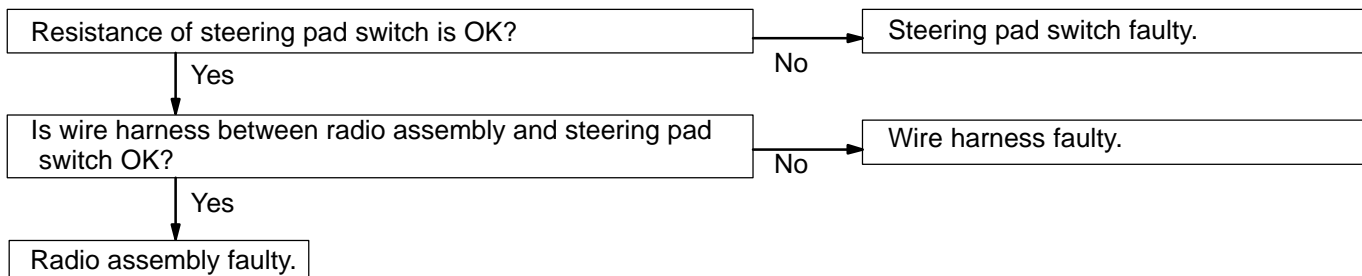
27	Noise	NOISE PRODUCED BY VIBRATION OR SHOCK WHILE DRIVING
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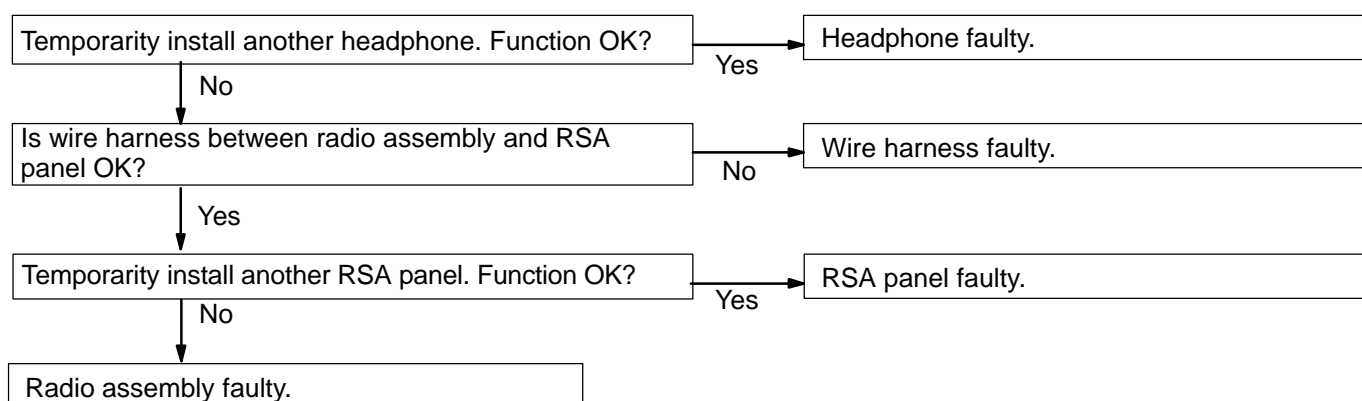
28	Noise	NOISE PRODUCED WHEN ENGINE STARTS
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29	Steering Pad Switch	A AUDIO SYSTEM CANNOT BE OPERATED WITH STEERING PAD SWITCH
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30	Rear Seat Audio	QUALITY OF SOUND FROM HEADPHONE TERMINAL IS POOR OR NO SOUND CAN BE HEARD
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BODY ELECTRICAL SYSTEM

PRECAUTION

BE01-05

HINT:

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

1. HEADLIGHT SYSTEM

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

2. SRS (SUPPLEMENTAL RESTRAINT SYSTEM)

The LAND CRUISER 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.
- If the negative (-) terminal cable is disconnected from the battery, the "ANTI-THEFT SYSTEM" will operate when the cable is reconnected, but the radio, tape player and CD player will not operate. Be sure to input the correct ID number so that the radio, tape player and CD player can be operated again.

4. MOBILE COMMUNICATION SYSTEM

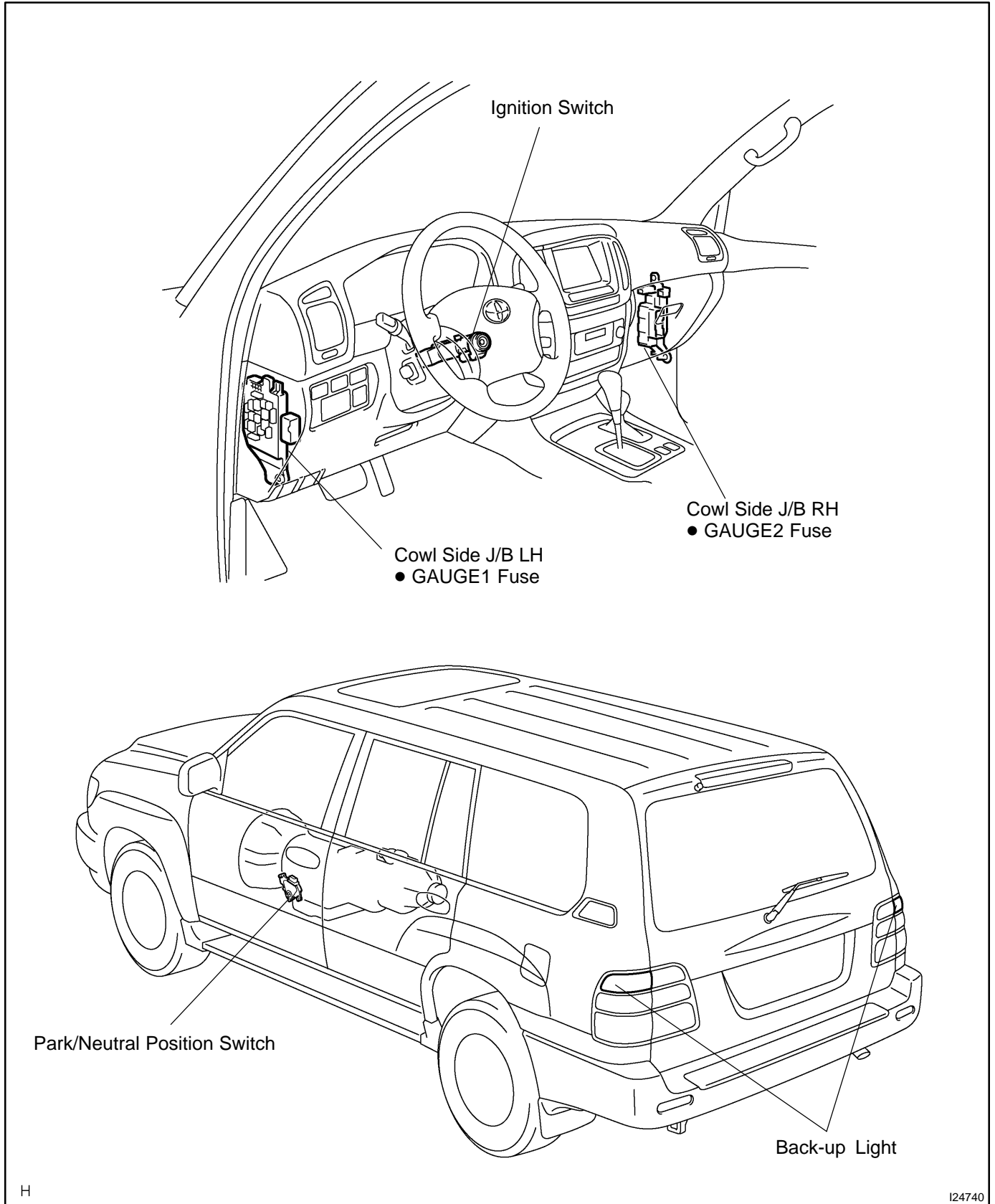
If the vehicle is equipped with a mobile communication system, refer to precautions in the IN section.

INSPECTION

INSPECT PARK/ NEUTRAL POSITION SWITCH CONTINUITY (See page [DI-402](#))

BACK-UP LIGHT SYSTEM LOCATION

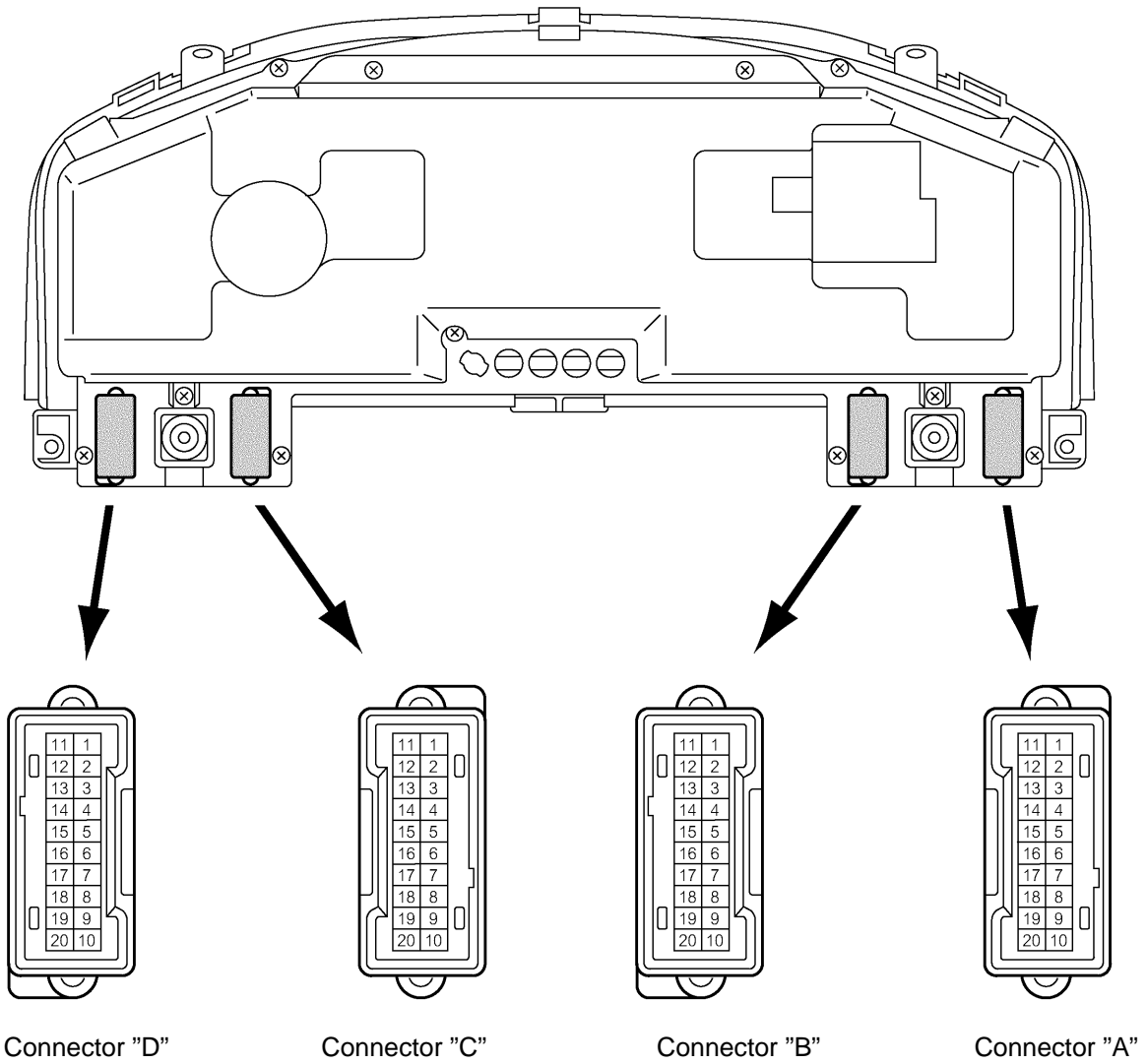
BEOGW-12



H

124740

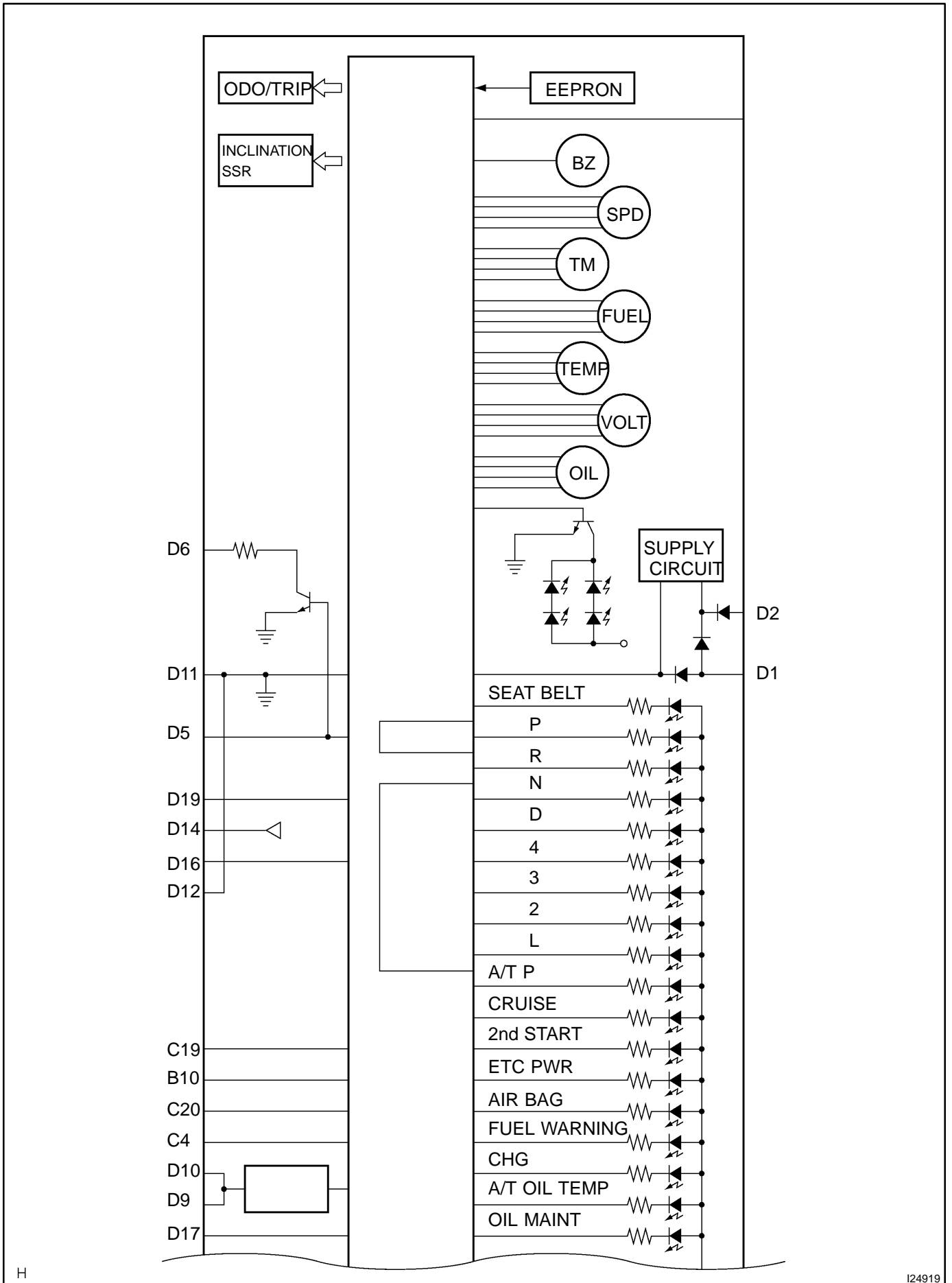
CIRCUIT



H

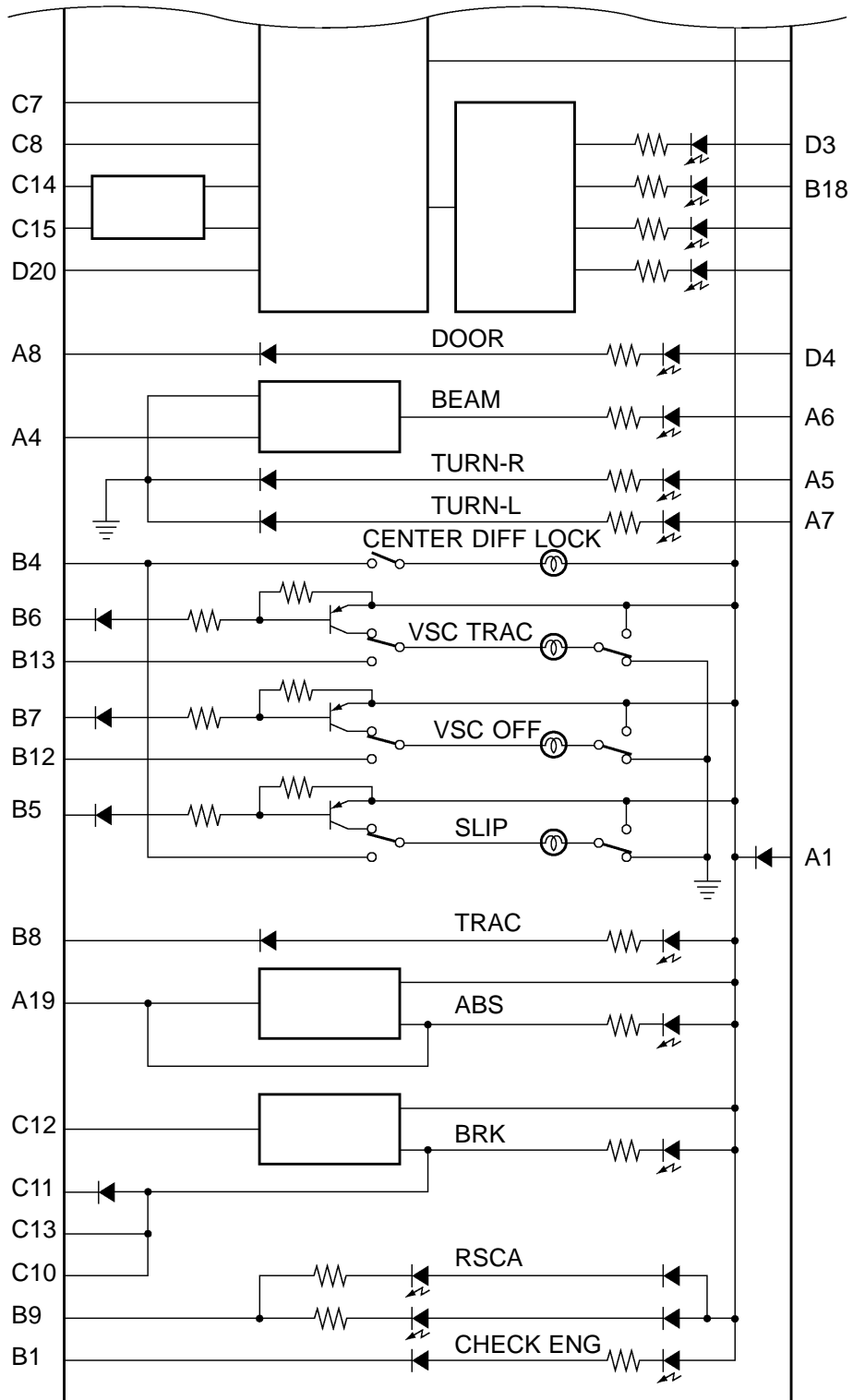
I25532

BODY ELECTRICAL - COMBINATION METER



H

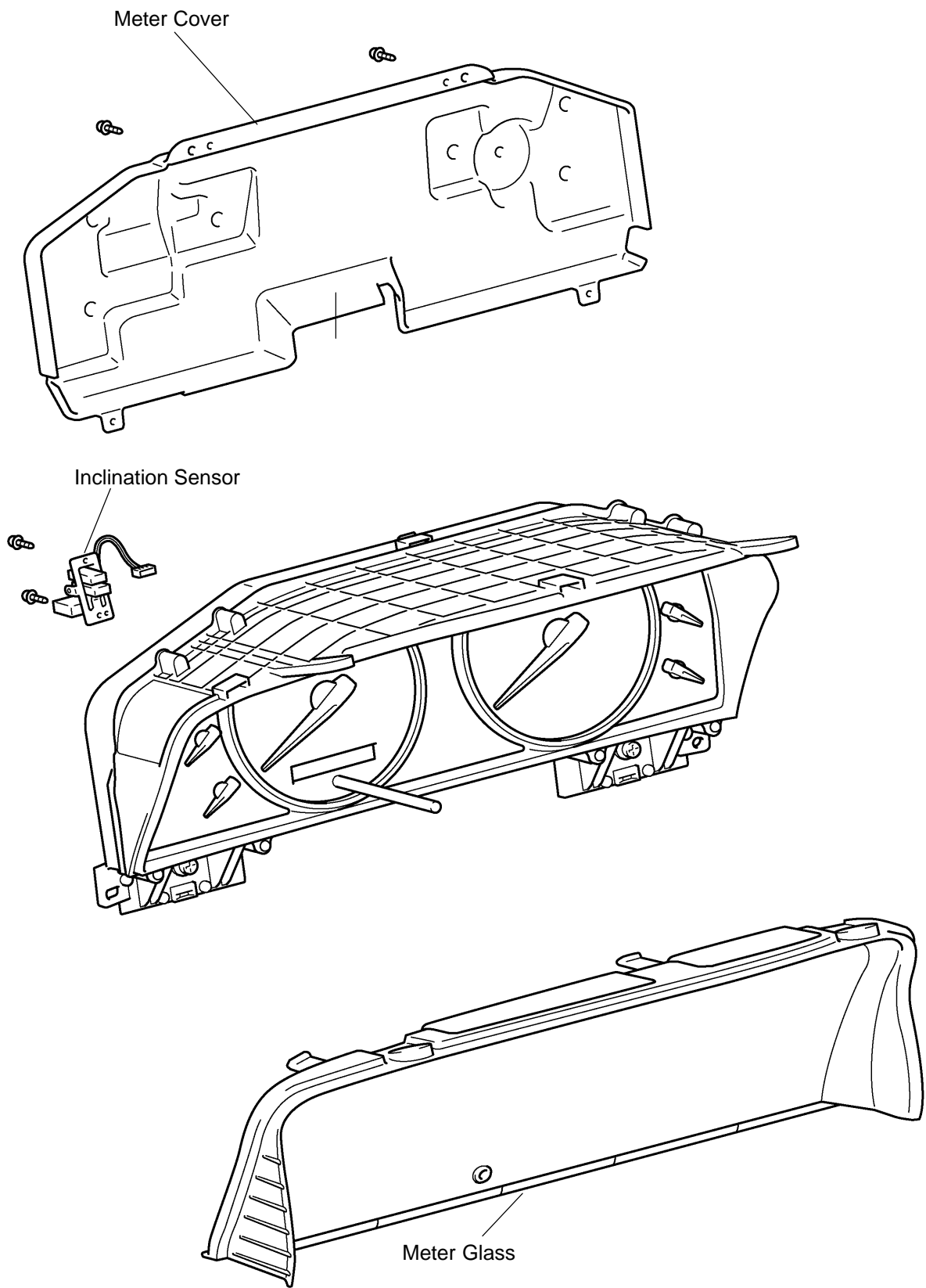
I24919



BODY ELECTRICAL - COMBINATION METER

No.		Wiring connector side
C12	3	Body ECU
	4	Flasher Relay
	5	H/L R-HI Fuse
	6	Flasher Relay
	7	Light Control Switch
	10	MET Fuse
	12	ABS, TRC, VSC ECU
C13	8	PANEL Fuse
	9	Body Ground
	11	ECM
	14	CTR DIFF Switch
	15	ABS, TRC, VSC ECU
	16	ABS, TRC, VSC ECU
	17	ABS, TRC, VSC ECU
	18	ABS, TRC, VSC ECU
19	Airbag ECU	
C14	1	Body ECU
	4	Airbag ECU
	7	Oil Pressure Sender Gauge
	10	ECM
	11	Driver Seat Belt Buckle Switch
	16	Drive Monitor
	17	Drive Monitor
	18	ABS, TRC, VSC ECU
	19	ABS, TRC, VSC ECU
20	ABS & BA & TRAC & VSC Actuator	
C15	1	Engine Ground
	2	Main Fuel Sender Gauge
	4	Main Fuel Sender Gauge
	6	Main Fuel Sender Gauge
	7	Light Control Rheostat
	9	Key Unlock Warning Switch
	10	Body (Door Courtesy Switch Signal)
	11	GAUGE1 Fuse
	12	ECU-B2 Fuse
	13	ACC Fuse
	14	DOME Fuse
	15	Speed Sensor
	16	Speed Control Unit
19	Gateway ECU	
20	ECM	

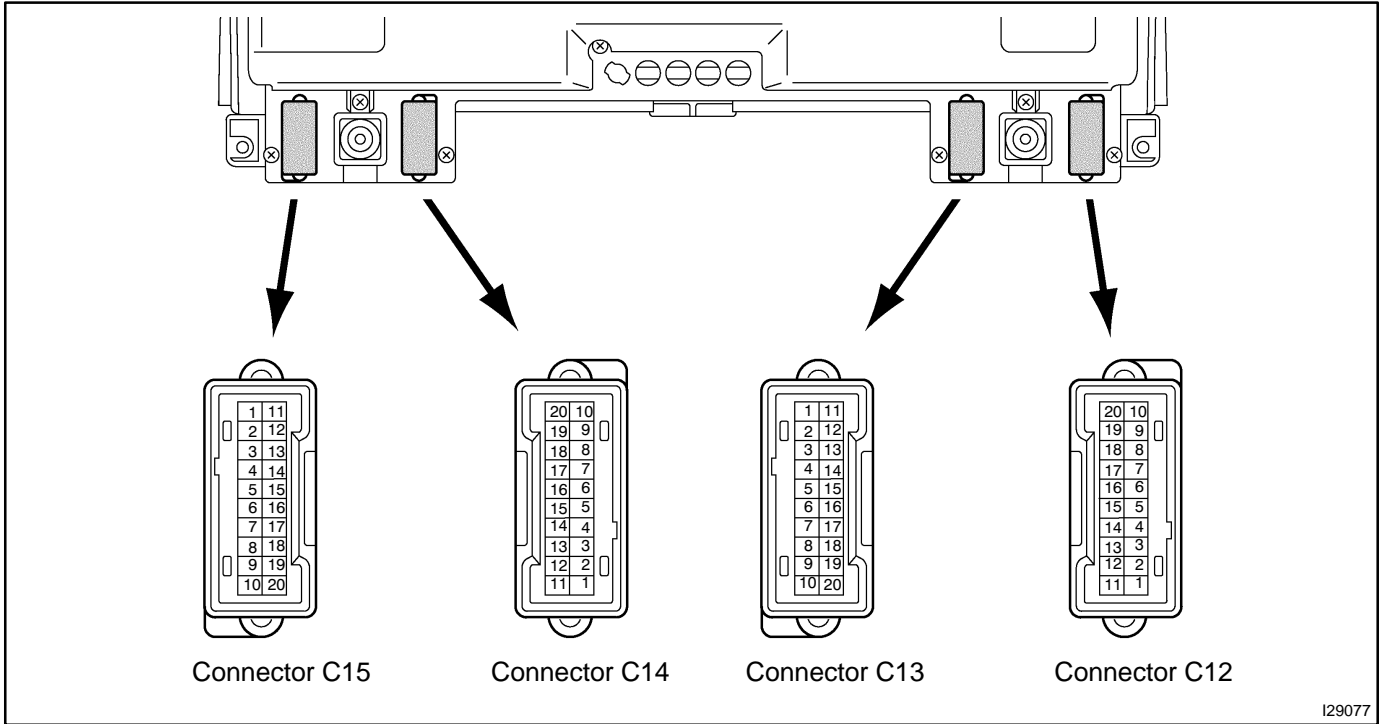
COMPONENTS



INSPECTION

1. INSPECT COMBINATION METER CIRCUIT

Connect the connector C12, C13, C14 and C15 to the combination meter and inspect the wire harness side connectors from the back side as shown in the table.



I29077

Tester connection	Condition	Specified condition
C12-3 (DOOR-) - Ground	Either door is opened	Below 1 V
	Either door is closed	10 - 14 V
C12-4 (TURN-L) - Ground	Ignition switch ON and turn signal switch OFF or RIGHT	Below 1 V
	Ignition switch ON and turn signal switch LEFT	Pulse signal is output 10 - 14 V ↔ Below 1 V
C12-5 (BEAM+) - Ground	IG switch ON, light control switch OFF	Below 1 V
	IG switch ON, light control switch ON	10 - 14 V
C12-6 (TURN-R) - Ground	Ignition switch ON and turn signal switch OFF or LEFT	Below 1 V
	Ignition switch ON and turn signal switch RIGHT	Pulse signal is output 10 - 14 V ↔ Below 1 V
C12-7 (BEAM-) - Ground	IG switch ON, light control switch ON	Below 1 V
C12-10 (CHG+) - Ground	Ignition switch OFF	Below 1 V
	Ignition switch ON	10 - 14 V
C12-12 (ABS) - Ground	Ignition switch ON and ABS warning light lights up	Below 1 V
	Ignition switch ON and ABS warning light does not light up	10 - 14 V
C13-8 (ILL+) - Ground	IG switch OFF	Below 1 V
	IG switch ON	10 - 14 V

C13-11 (CHECK E/G) - Ground	Ignition switch ON and engine is stopped	Below 1 V
	Ignition switch ON and engine is running	10 - 14 V
C13-14 (CTR DIFF/4WD) - Ground	Ignition switch ON and center diff. lock switch OFF	Below 1 V
C13-14 (CTR DIFF/4WD) - Ground	Ignition switch ON and center diff. lock switch ON	10 - 14 V
C13-15 (SLIP) - Ground	IG switch ON, SLIP warning light ON	Below 1.5 V
	IG switch ON, SLIP warning light OFF	10 - 14 V
C13-16 (VSC TRC) - Ground	IG switch ON, VSC TRC indicator light ON	Below 1.5 V
	IG switch ON, VSC TRC indicator light OFF	10 - 14 V
C13-17 (VSC OFF) - Ground	IG switch ON, VSC OFF indicator light ON	Below 1.5 V
	IG switch ON, VSC OFF indicator light OFF	10 - 14 V
C13-18 (ACTIVE TRC) - Ground	IG switch ON, TRC OFF indicator light ON	Below 1.5 V
	IG switch ON, TRC OFF indicator light OFF	10 - 14 V
C13-19 (RSCA OFF) - Ground	IG switch ON, RSCA warning light ON	Below 2.0 V
	IG switch ON, RSCA warning light OFF	10 - 14 V
C14-4 (AIR BAG-) - Ground	Ignition switch ON and SRS indicator light lights up	Below 1 V
C14-4 (AIR BAG-) - Ground	Ignition switch ON and SRS indicator does not light up	10 - 14 V
C14-7 (OIL PRS SDR) - Ground	Ignition switch ON and indicator ON	Below 1 V
	Ignition switch ON and indicator OFF	10 - 14 V
C14-10 (T/M PULSE) - Ground	Engine is Running	Pulse generation
C14-11 (D-BKL SW) - Ground	Ignition switch ON and seat belt is unfastened	10 - 14 V
	Ignition switch ON and seat belt is fastened	Below 1 V
C14-18 (PKB SW) - Ground	Ignition switch ON and parking brake lever is pulled	Below 1 V
	Ignition switch ON and parking brake lever is released	10 - 14 V
C14-20 (BRAKE) - Ground	Ignition switch ON and brake system indicator ON	Below 1 V
	Ignition switch ON and brake system indicator OFF	10 - 14 V
C15-1 (E/G EARTH) - Ground	Constant	Continuity
C15-2 (MAIN FE) - Ground	Constant	Continuity
C15-4 (MAIN FV) - Ground	Ignition switch ON	4.5 - 5.5 V
C15-6 (MAIN FR) - Ground	Ignition switch ON and fuel sender gauge float UP	Approx. 0.5 V
	Ignition switch ON and fuel sender gauge float DOWN	Approx. 5.5 V
C15-7 (ILL-) - Ground	Ignition switch ON and light control rheostat volume minimum	Below 1 V
	Ignition switch ON and light control rheostat volume maximum	10 - 14 V
C15-9 (KEY SW) - Ground	Key unlock warning switch ON (Key is inserted)	Below 1 V
	Key unlock warning switch OFF (Key is removed)	10 - 14 V

BODY ELECTRICAL - COMBINATION METER

C15-10 (D-CTY SW) - Ground	Ignition switch ON and driver door is opened	Below 1 V
	Ignition switch ON and driver door is closed	10 - 14 V
C15-11 (IGN+) - Ground	Ignition switch OFF	Below 1 V
	Ignition switch ON	10 - 14 V
C15-12 (ECU-B2) - Ground	Constant	10 - 14 V
C15-13 (ACC+) - Ground	Ignition switch OFF	Below 1 V
	Ignition switch ACC or ON	10 - 14 V
C15-14 (DOOR+) - Ground	Constant	10 - 14 V
C15-15 (SP IN) - Ground	Ignition switch ON and slowly move the wheel	Pulse signal is output below 1.5 V ↔ battery positive voltage
C15-16 (4P OUT) - Ground	Ignition switch ON and slowly move the wheel	Pulse signal is output below 1.5 V ↔ approx. 5 V or below 1.5 V ↔ battery positive voltage

If a circuit is not as specified, inspect the applicable circuit.

2. INSPECT SPEEDOMETER/ ON-VEHICLE

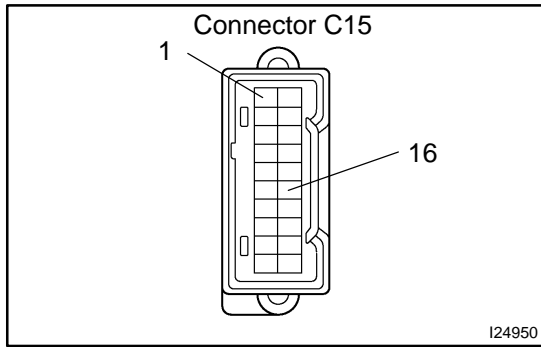
Using a speedometer tester, inspect the speedometer for allowable indication error and check the operation of the odometer.

HINT:

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

USA (mph)		CANADA (km/h)	
Standard indication	Allowable range	Standard indication	Allowable range
20	18 - 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

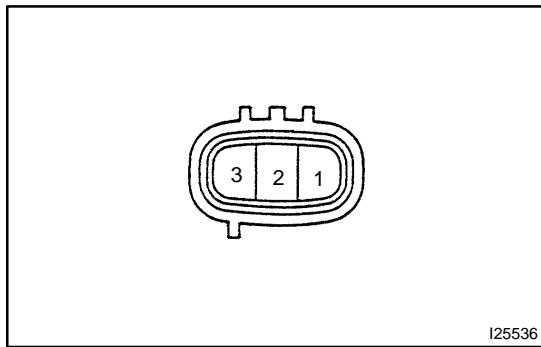
If error is excessive, replace the combination meter.



3. INSPECT SPEEDOMETER VOLTAGE

- (a) While driving the vehicle at the speed of 10 km/h, check the voltage between the terminals 16 and 1 of the combination meter assy.

STANDARD: Fluctuation between 10 to 14 V or less is repeated 7 times within 1 sec.



4. INSPECT VEHICLE SPEED SENSOR OPERATION

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

HINT:

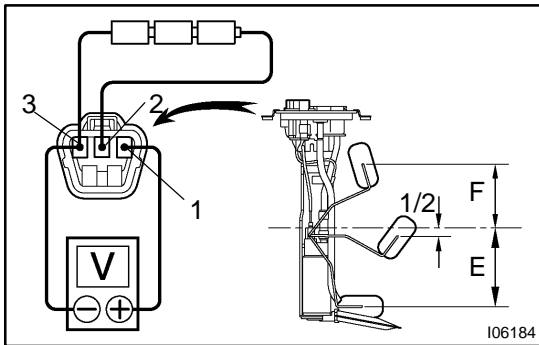
The voltage change should be performed 4 times for every revolution is not as specified, replace the sensor.

5. INSPECT TACHOMETER / ON-VEHICLE

- (a) Connect a tune-up test tachometer, and start the engine.
- (b) Compare the tester and tachometer indications.

DC 13.5 V 25 °C at (77 °F):

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



6. INSPECT FUEL SENDER GAUGE VOLTAGE

- Apply voltage (4.5 V - 5.0 V) between terminals 2 and 3.
- Measure voltage between terminals 1 and 2 for each float position.

Float position mm (in.)	Voltage (V)
F: Approx. 85.3 (3.36)	Approx. 4.60 ± 0.1
1/2: Approx. 1.7 (0.67)	Approx. 2.45 ± 0.1
E: Approx. 91.9 (3.62)	Approx. 0.30 ± 0.1

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

7. INSPECT LOW OIL PRESSURE WARNING LIGHT

- Disconnect the connector from the low oil pressure switch.
- Turn the ignition switch ON.
- Connect the terminal of wire harness side connector and ground, then check the warning light.

8. INSPECT PARKING BRAKE WARNING LIGHT

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

9. INSPECT BRAKE WARNING LIGHT

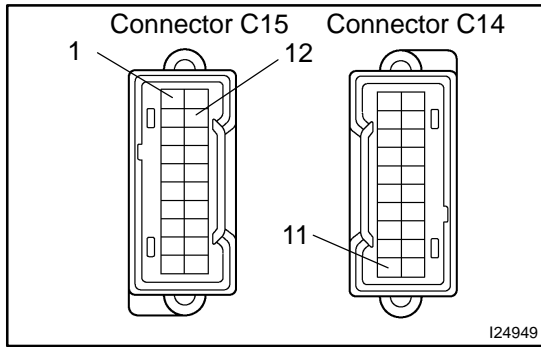
- Disconnect the connector from the brake fluid level warning switch and ground terminal on the wire harness side connector.
- Turn the ignition switch ON and check that the warning light lights up.

10. INSPECT BRAKE FLUID LEVEL WARNING SWITCH

- Remove the reservoir tank cap and retainer.
- Disconnect the connector.
- Check that the continuity exists between the terminal.
- Use syphon, etc., to take fluid out of the reservoir tank.
- Check that the continuity exists between terminals.
- Pour the fluid back in the reservoir tank.

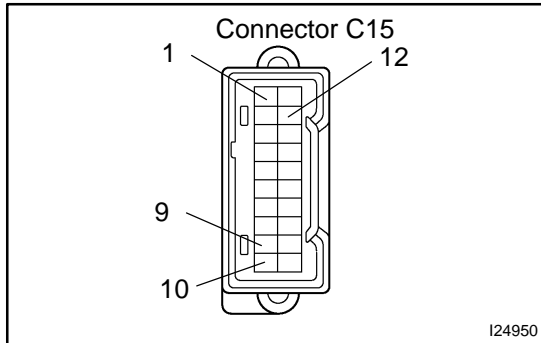
11. INSPECT OPEN DOOR WARNING LIGHT

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



12. INSPECT SEAT BELT WARNING BUZZER

- (a) Disconnect the connector from the combination meter.
- (b) Connect the positive (+) lead from the battery terminal 12 and negative (-) lead terminal 1.
- (c) Check that the buzzer stop after 4 to 8 seconds.
- (d) Check that the buzzer stops when connecting the terminal 11 to the GND.

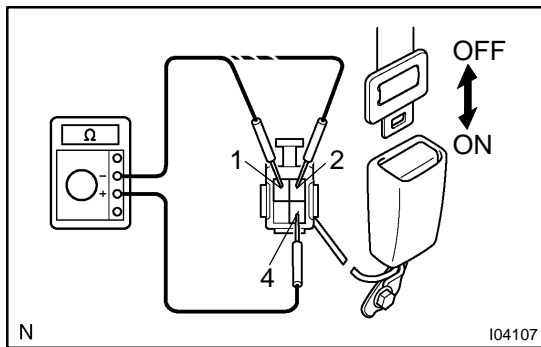


13. INSPECT KEY UNLOCK WARNING BUZZER

- (a) Disconnect the connector from the combination meter.
- (b) Connect the positive (+) lead from the battery terminal 12 and negative (-) lead terminal 1.
- (c) Connect the negative (-) lead from battery terminal 9 and 10, check that the buzzer sound.

14. INSPECT SEAT BELT WARNING LIGHT

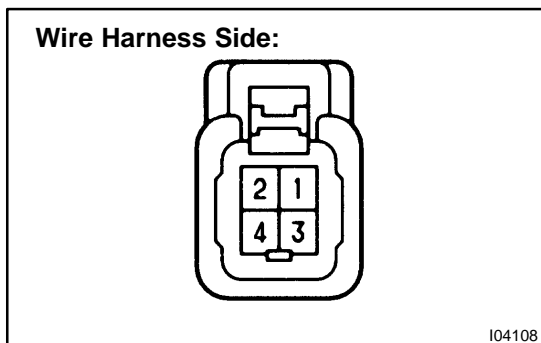
- (a) Disconnect the connector from the seat belt buckle switch and ground terminal on the wire harness side connector.
- (b) Turn the ignition switch ON and check that the warning light lights up.



15. INSPECT SEAT BELT BUCKLE SWITCH CONTINUITY

	Tester connection	Belt fastened (Belt unfastened)
Seat belt buckle SW (D)	1 - 4	ON (OFF)
Seat belt buckle SW (P)	2 - 4	OFF (ON)

If operation is not as specified, replace the switch.

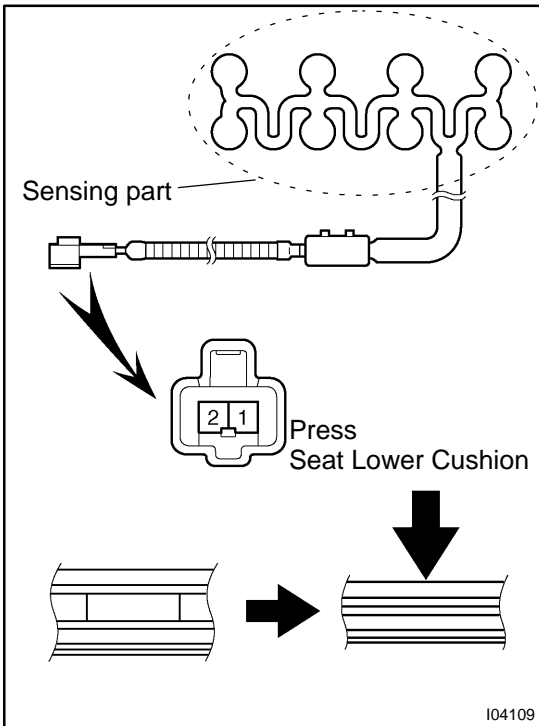


16. INSPECT SEAT BELT BUCKLE SWITCH CIRCUIT

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

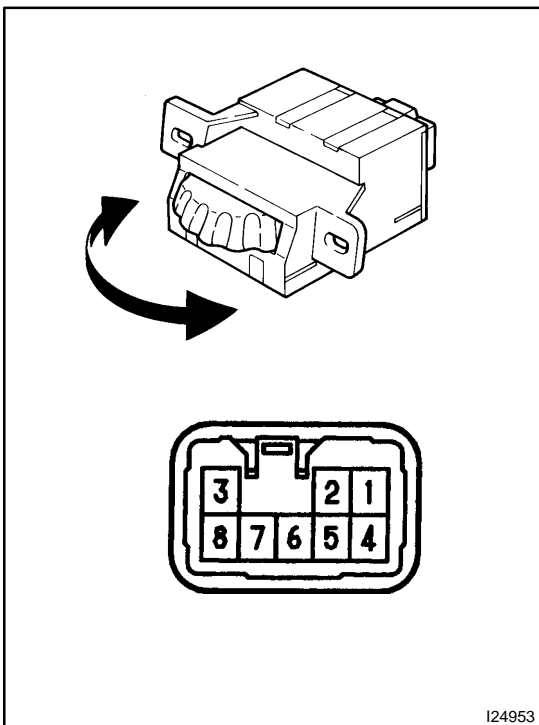
Tester connection	Condition	Specified condition
4 - Ground	Constant	Continuity

If continuity is not as specified, inspect the ground circuit.



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

Check that continuity exists between the terminals 1 and 2 when pressing the sensing part of the lower seat cushion. If operation is not as specified, replace the sensor.



18. INSPECT LIGHT CONTROL RHEOSTAT

- (a) Turn the rheostat knob OFF, and check that there is no continuity between terminal 5 and 4 (Rheostat knob turned to fully counterclockwise).
 - (b) Gradually, turn the rheostat knob from the dark side to bright side, and check that there is continuity between terminal 5 and 4 (Rheostat knob turned to clockwise).
- If operation is not as specified, replace the rheostat.

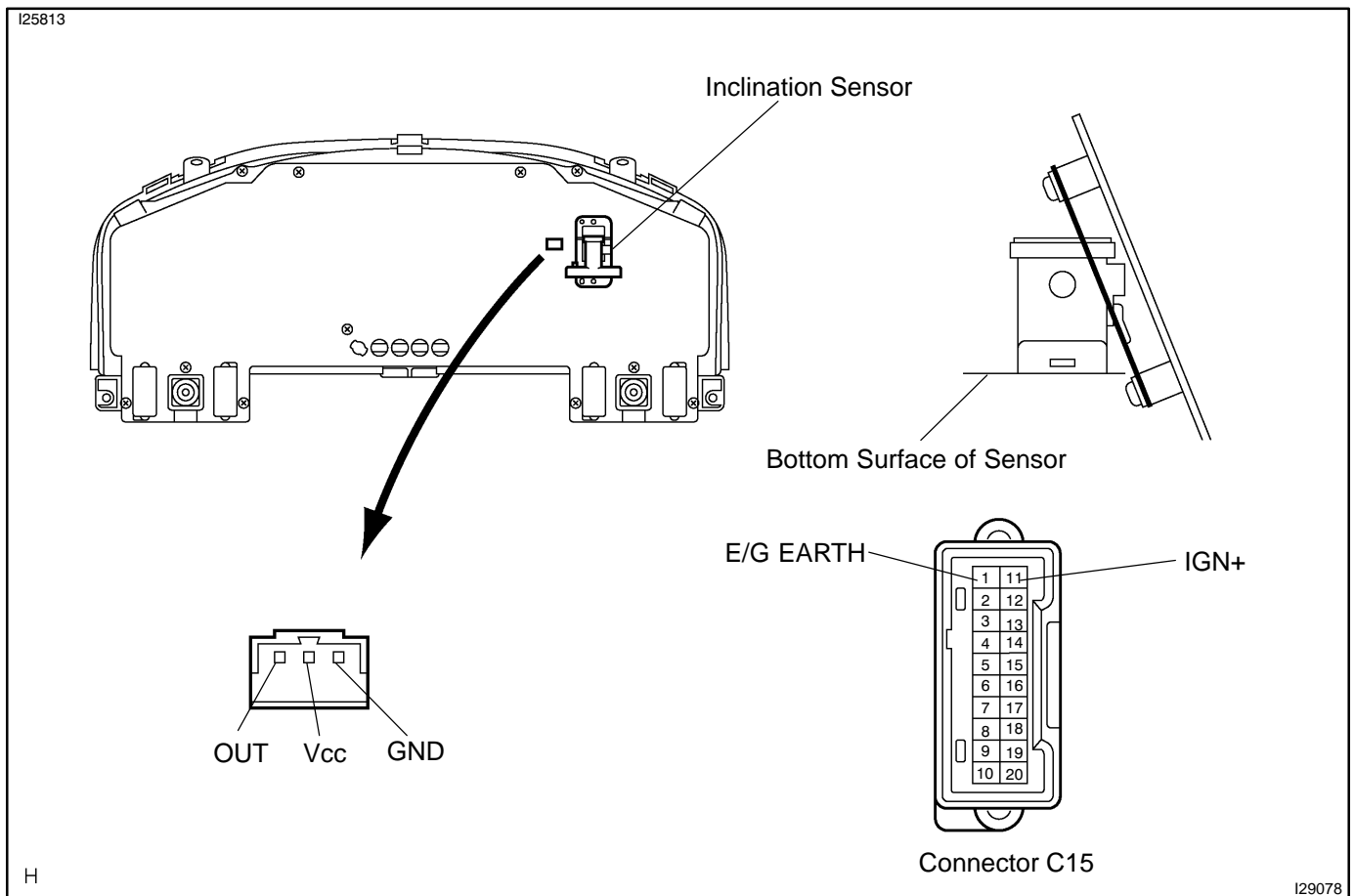
19. INSPECT INCLINATION SENSOR

- (a) The inclination sensor is installed in the combination meter. Inspect the inclination sensor by connecting a battery positive (+) lead to terminal 11 (IGN+) of the meter connector, and a battery negative (-) lead to terminal 1 (E/G EARTH).
- (b) Check if the voltage between terminal Vcc and GND of the inclination sensor connector is 5 V.
- (c) Check the voltage between terminal OUT and GND when the bottom surface of the inclination sensor is in a level position. Also check the voltage when it is inclined backward or forward.

Standard Value:

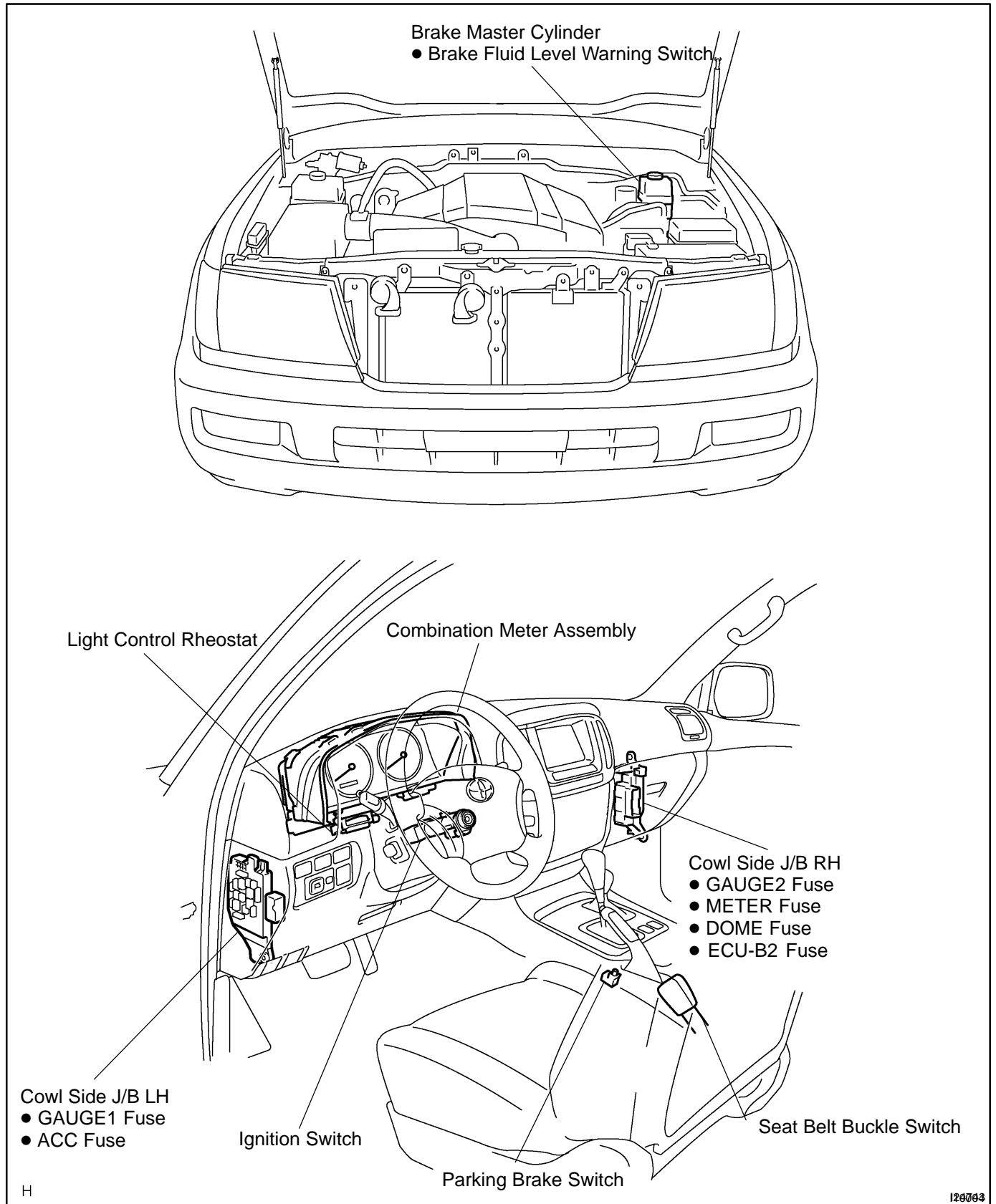
**Bottom surface of sensor is set in a level position:
about 4.5 V**

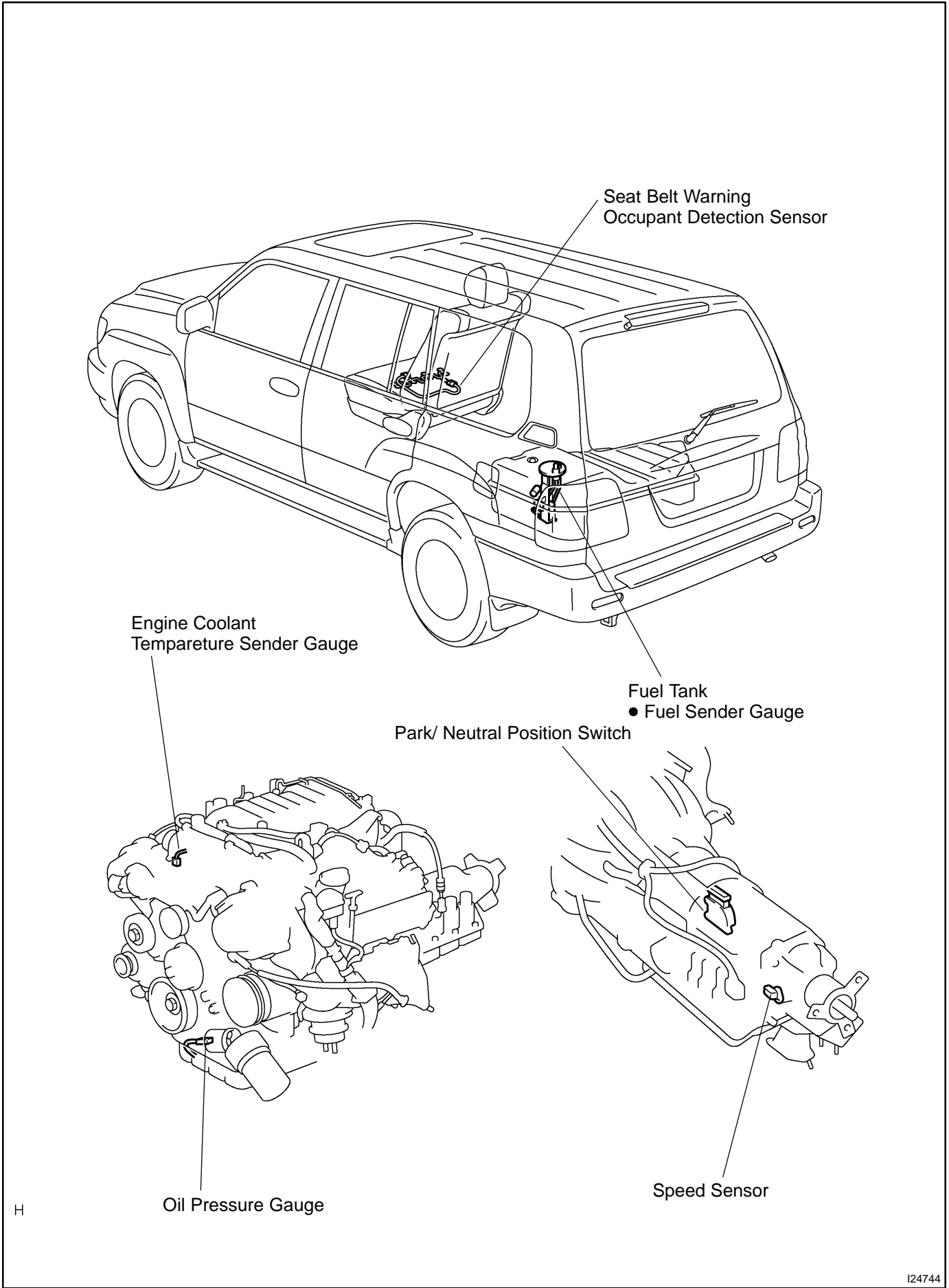
**Bottom surface of sensor is inclined:
about 0.5 V**



COMBINATION METER LOCATION

BE0HH-12





COMPASS

BE129-01

PRE-CHECK

1. SELECTING COMPASS DISPLAY MODE

The mode select switch allows you to select a Display or Non-display mode of the compass.

The mode select is operated by the automatic glare-proof / non-glare proof switch on the inner mirror.

2. SETTING ZONE

Deviation between the magnetic north and "actual north" differs depending on the terrestrial location, therefore, an adjustment in magnetism is required. Since the magnetic condition differs according to the area where the vehicle will be used, it is necessary for each user to set the zone. (Refer to "Compass Zone Map").

The zone setting can be changed using the mode select switch of the inner mirror.

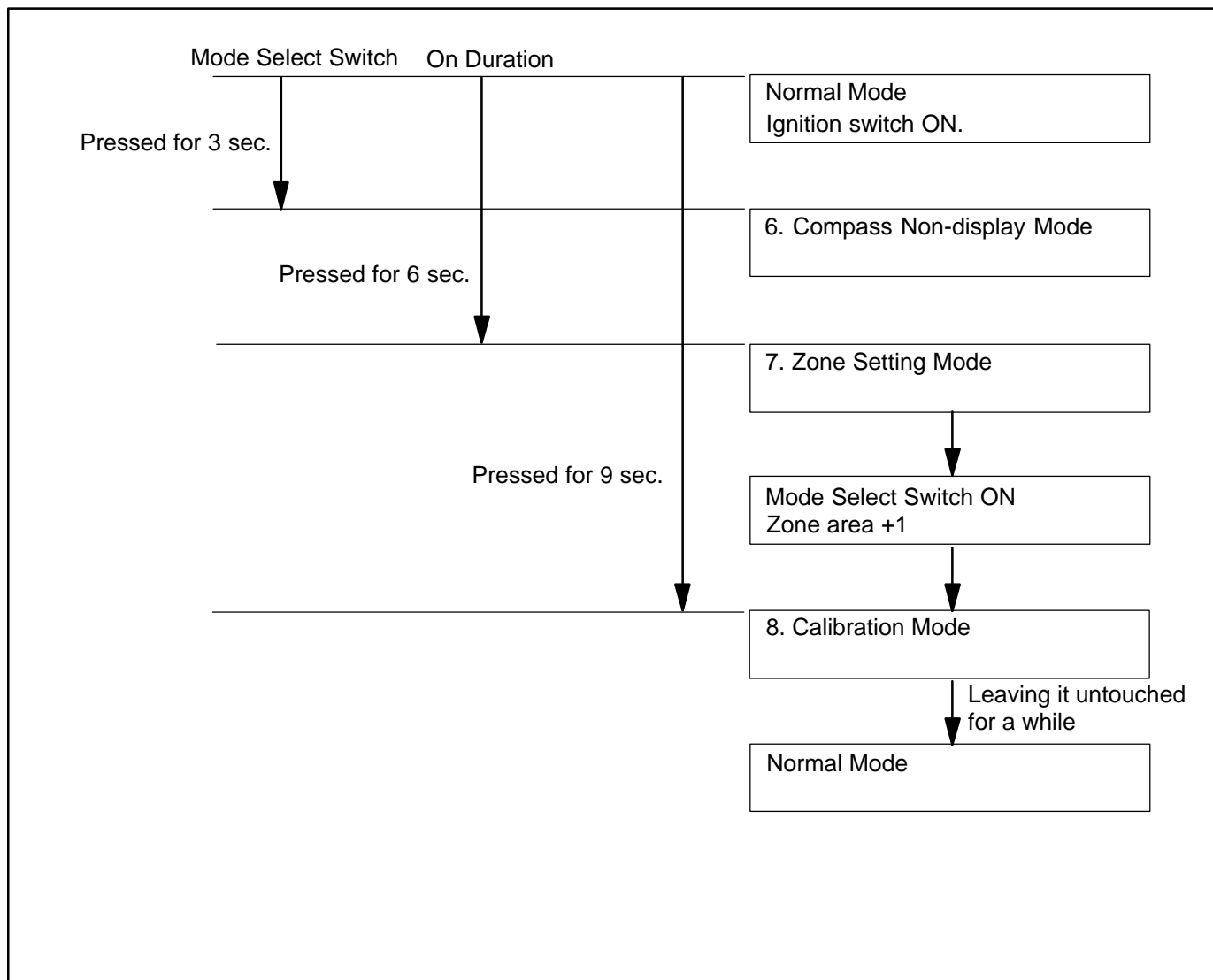
3. PERFORMING CALIBRATION

Because each vehicle has its own magnetic field, calibration should be performed for each vehicle. This compass function is used when storing the record of the vehicle's magnetic field.

4. WHEN COMPASS MAGNETIZED:

A compass could be magnetized during shipping by vessels or freight cars. Before delivery, therefore, make sure to perform calibration and ensure that calibration can be done. If it cannot be done (cannot complete in spite of driving round several times), it may be caused by magnetization. Demagnetize the vehicle using a demagnetizer and perform calibration again.

5. SETTING COMPASS

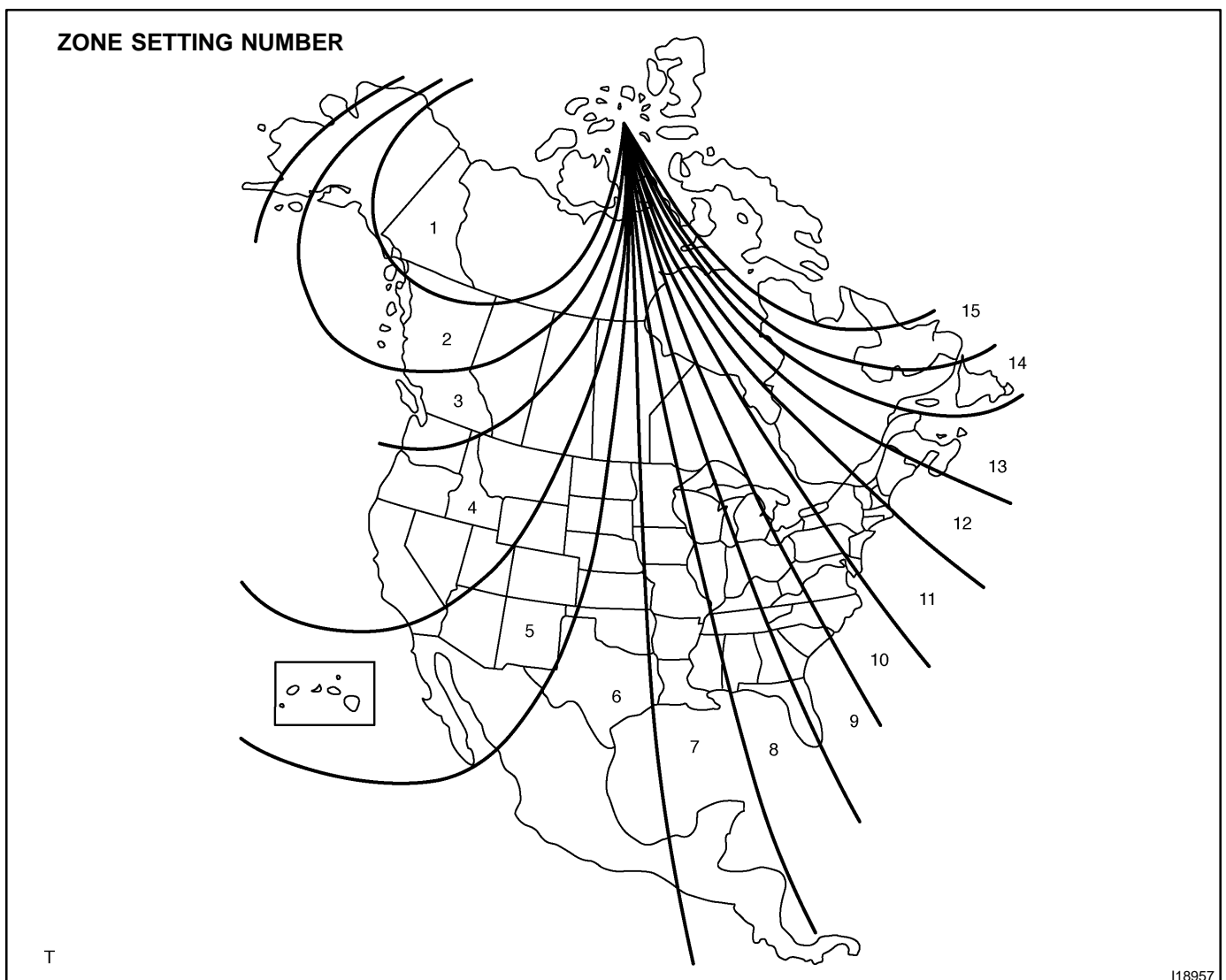


6. SELECTING DISPLAY MODE

- (a) Turn the ignition switch ON.
- (b) Check that the LED on the inner mirror is lit (green).
- (c) Check that the compass display indicates an azimuthal direction (N, NE, E, SE, S, SW, W, or NW) or "C".
- (d) Pressing the mode select switch on the inner mirror for 3 sec. or more erases the above mentioned display and activates the Non-display mode.

HINT:

- Immediately after pressing the mode select switch, the LED goes off activating the Non-glare-proof mode. However, when the switch remains pressed, the LED is lit again after 3 sec. and the system enters the automatic glare-proof mode.
- Keep pressing the mode select switch for 3 sec. after selection of the compass display mode will activate the zone setting mode, showing a number (1-15) on the compass display.

7. ZONE SETTING MODE

Pressing the mode select switch for 6 sec. from the normal mode will activate the zone setting mode, showing a number (1-15) on the compass display.

HINT:

In the initial status, "8" is displayed.

- (1) The displayed number increases +1 every time the mode select switch is pressed. Referring to the map, check the number for the area where the vehicle will be used and set the zone number.
- (2) Leave it untouched for several seconds after setting and check that the compass display shows an azimuthal direction (N, NE, E, SE, S, SW, W, or NW) or "C".

8. CALIBRATION SETTING MODE

- (a) After the set zone is displayed, if the switch remains pressed another 3 sec. will activate the calibration setting mode.
- (b) Pressing the switch for 9 sec. from the normal mode will also activate this mode.
- (c) Drive the vehicle at a slow speed of 8 km/h (5MPH) or less in the circular direction.
- (d) Driving round the circle 1 to 3 times will display the azimuthal direction on the display, completing the calibration.

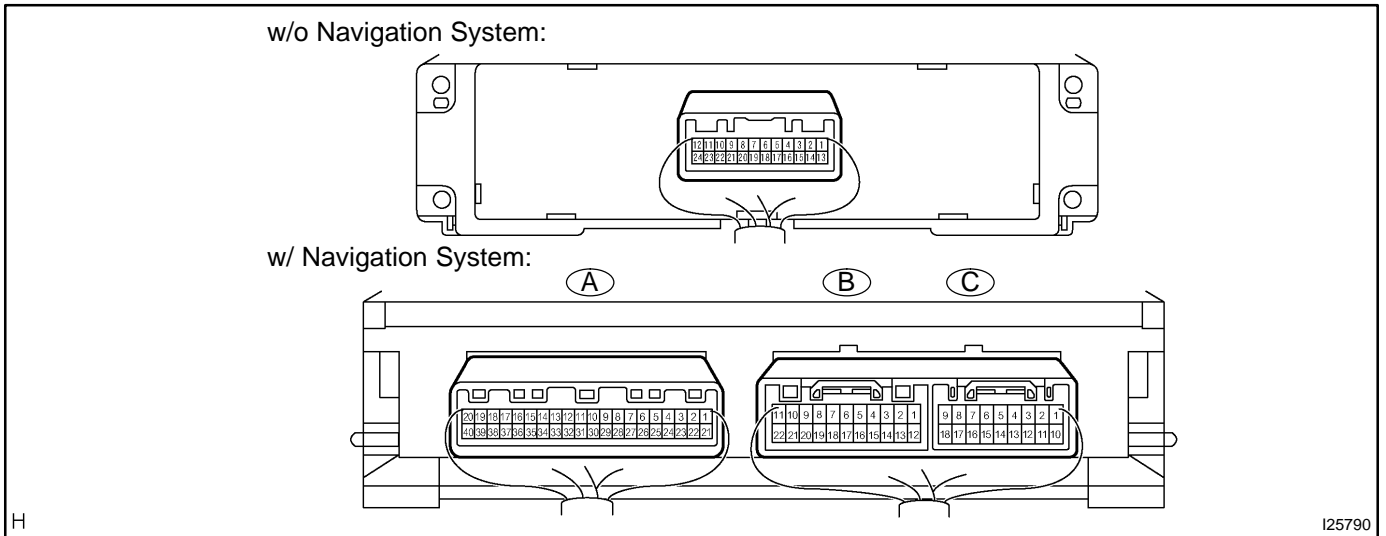
HINT:

Once calibration is completed, it is not necessary to perform the above procedures unless the magnetic field strength is drastically changed. If this happens, the azimuthal display will be changed to "C".

INSPECTION

1. INSPECT DEFOGGER SWITCH CIRCUIT

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



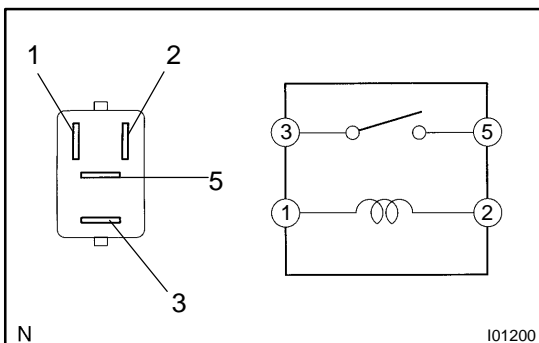
w/ Navigation:

Tester connection	Condition	Specified condition
B12 (GND) - Ground	Constant	Continuity
B11 (+B) - Ground	Constant	Battery positive voltage
B22 (IG) - Ground	Ignition switch LOCK or ACC	No voltage
B22 (IG) - Ground	Ignition switch ON	Battery positive voltage
A10 (RDFGR) - Ground	Constant	Battery positive voltage

w/o Navigation:

Tester connection	Condition	Specified condition
16 (GND) - Ground	Constant	Continuity
8 (IG) - Ground	Ignition switch LOCK or ACC	No voltage
8 (IG) - Ground	Ignition switch ON	Battery positive voltage
2 (DEFC) - Ground	Constant	Battery positive voltage

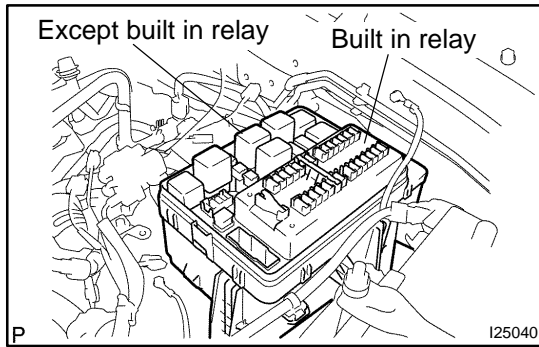
If the circuit is not as specified, replace the switch.



2. INSPECT DEFOGGER RELAY CONTINUITY

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

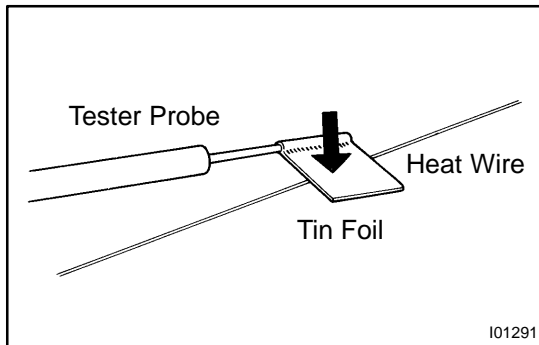
If continuity is not as specified, replace the relay.



3. INSPECT ENGINE ROOM R/B RELAY CIRCUIT (See Page BE-15)

HINT:

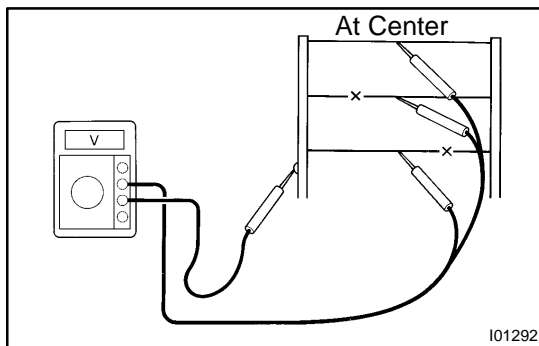
The mirror heater relay is built in engine room junction block. Also the relay is constructed with a relay block that is in the junction block as a unit. To disconnect the wire harness connecting with relay block is impossible. If the relay has a malfunction, replace it with junction block assembly wire harness together.



4. INSPECT DEFOGGER WIRE

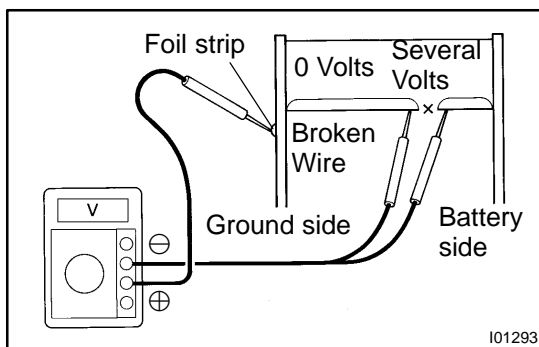
NOTICE:

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



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

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



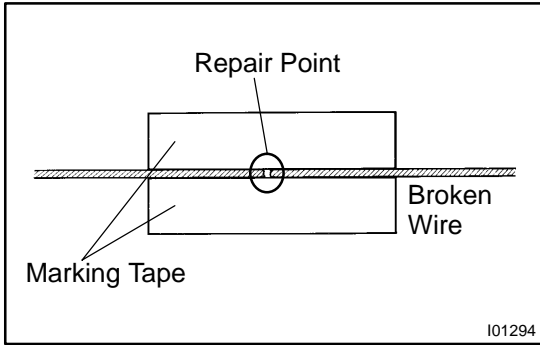
HINT:

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

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

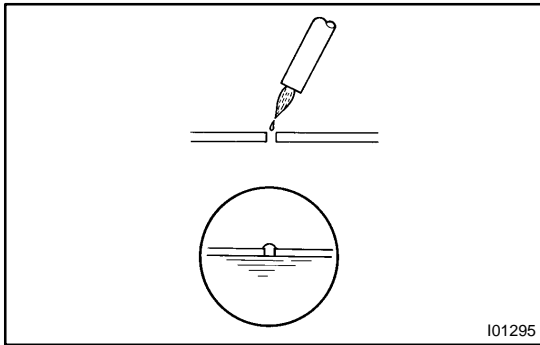
HINT:

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

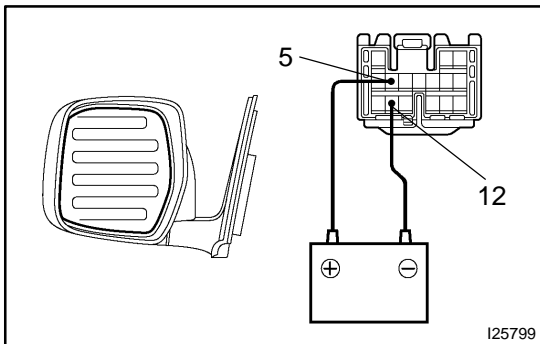


5. IF NECESSARY, REPAIR DEFOGGER WIRE

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



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



**6. w/ Mirror heater:
INSPECT MIRROR HEATER OPERATION**

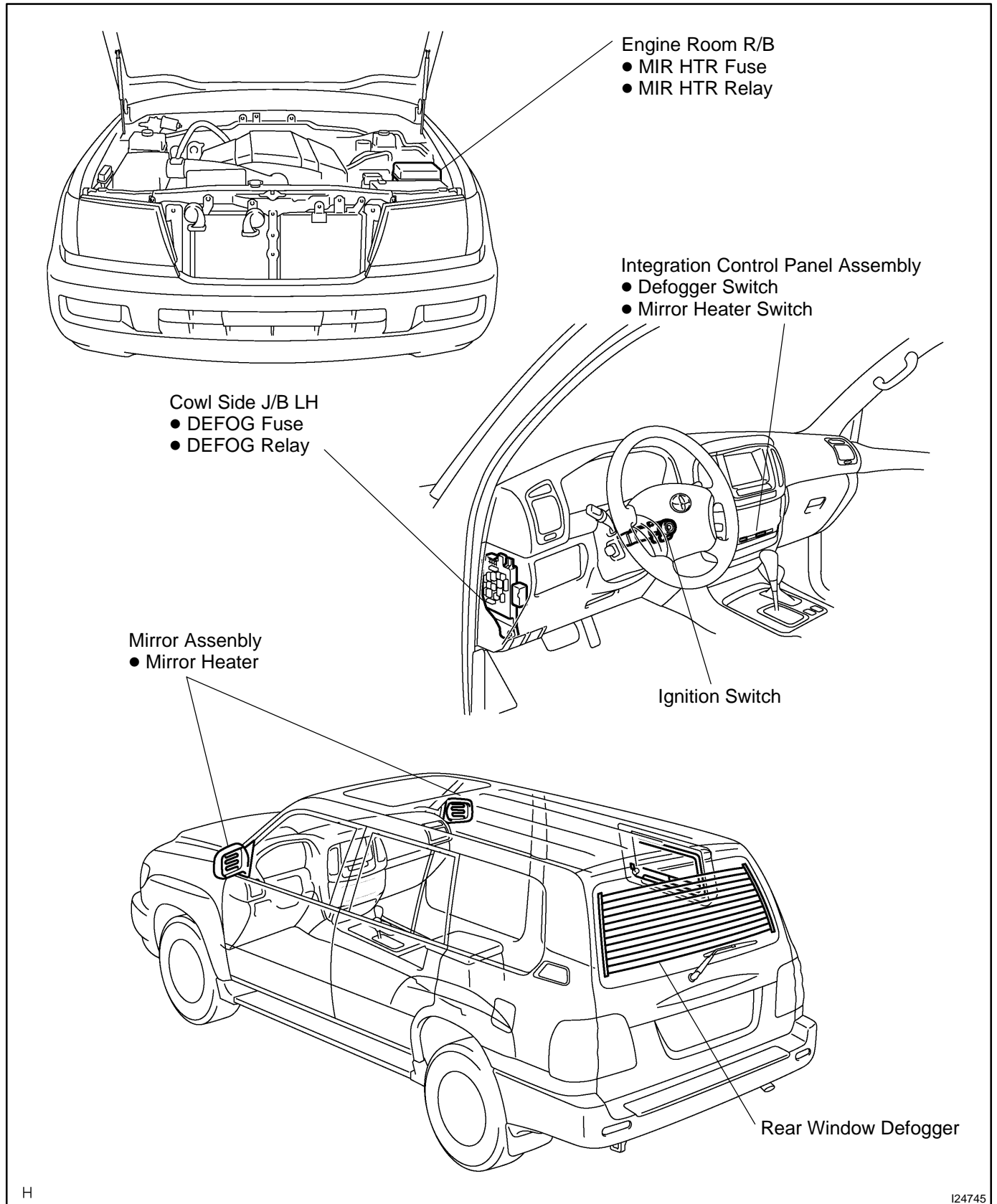
- (a) Connect the positive (+) lead from the battery to terminal 5 and the negative (-) lead to terminal 12.
- (b) Check that the mirror becomes warm.

HINT:

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

DEFOGGER SYSTEM LOCATION

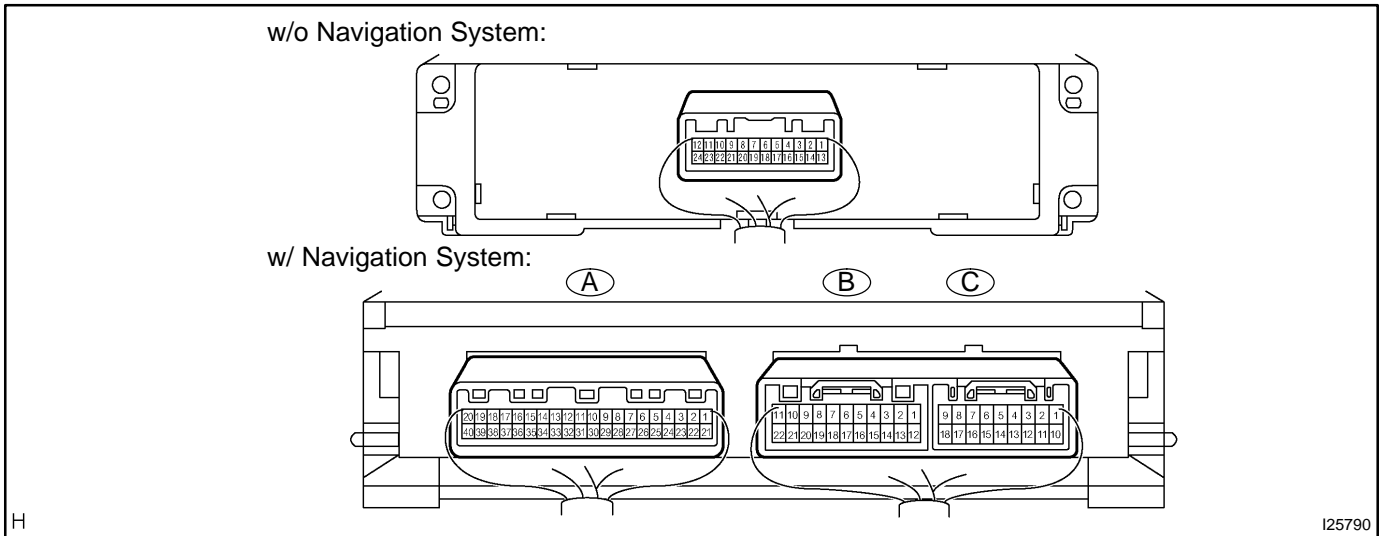
BE0GS-19



INSPECTION

1. INSPECT DEFOGGER SWITCH CIRCUIT

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



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I25790

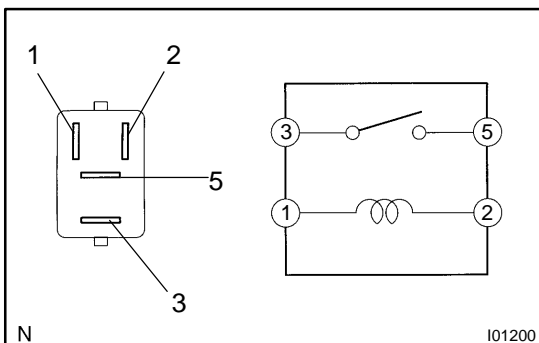
w/ Navigation:

Tester connection	Condition	Specified condition
B12 (GND) - Ground	Constant	Continuity
B11 (+B) - Ground	Constant	Battery positive voltage
B22 (IG) - Ground	Ignition switch LOCK or ACC	No voltage
B22 (IG) - Ground	Ignition switch ON	Battery positive voltage
A10 (RDFGR) - Ground	Constant	Battery positive voltage

w/o Navigation:

Tester connection	Condition	Specified condition
16 (GND) - Ground	Constant	Continuity
8 (IG) - Ground	Ignition switch LOCK or ACC	No voltage
8 (IG) - Ground	Ignition switch ON	Battery positive voltage
2 (DEFC) - Ground	Constant	Battery positive voltage

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



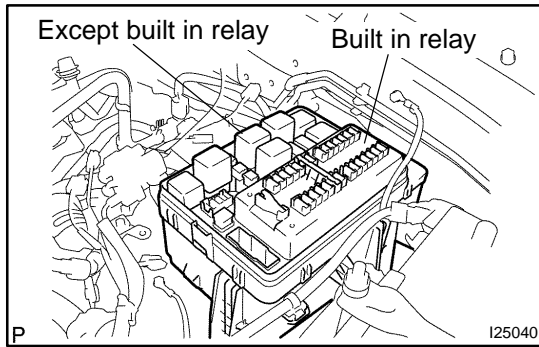
N

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2. INSPECT DEFOGGER RELAY CONTINUITY

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

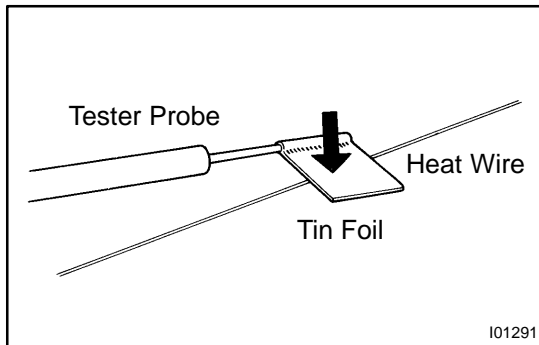
If continuity is not as specified, replace the relay.



3. INSPECT ENGINE ROOM R/B RELAY CIRCUIT (See Page BE-15)

HINT:

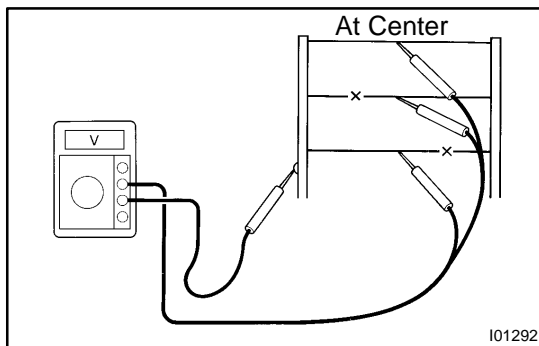
The mirror heater relay is built in engine room junction block. Also the relay is constructed with a relay block that is in the junction block as a unit. To disconnect the wire harness connecting with relay block is impossible. If the relay has a malfunction, replace it with junction block assembly wire harness together.



4. INSPECT DEFOGGER WIRE

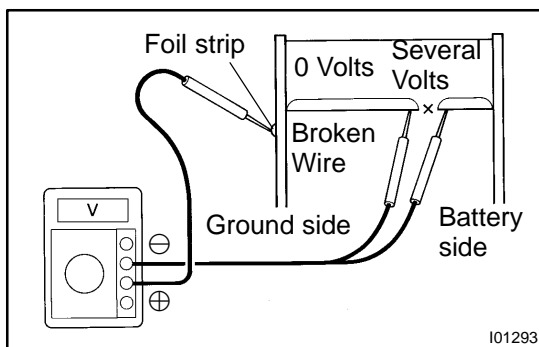
NOTICE:

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



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

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



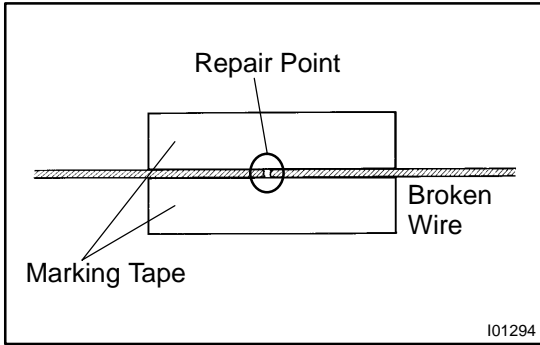
HINT:

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

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

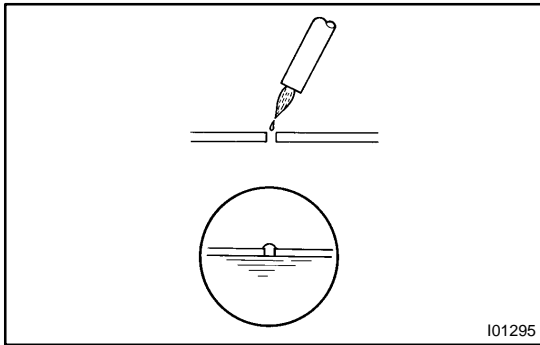
HINT:

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

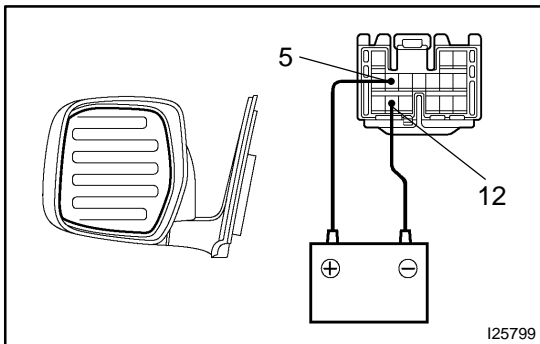


5. IF NECESSARY, REPAIR DEFOGGER WIRE

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



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



**6. w/ Mirror heater:
INSPECT MIRROR HEATER OPERATION**

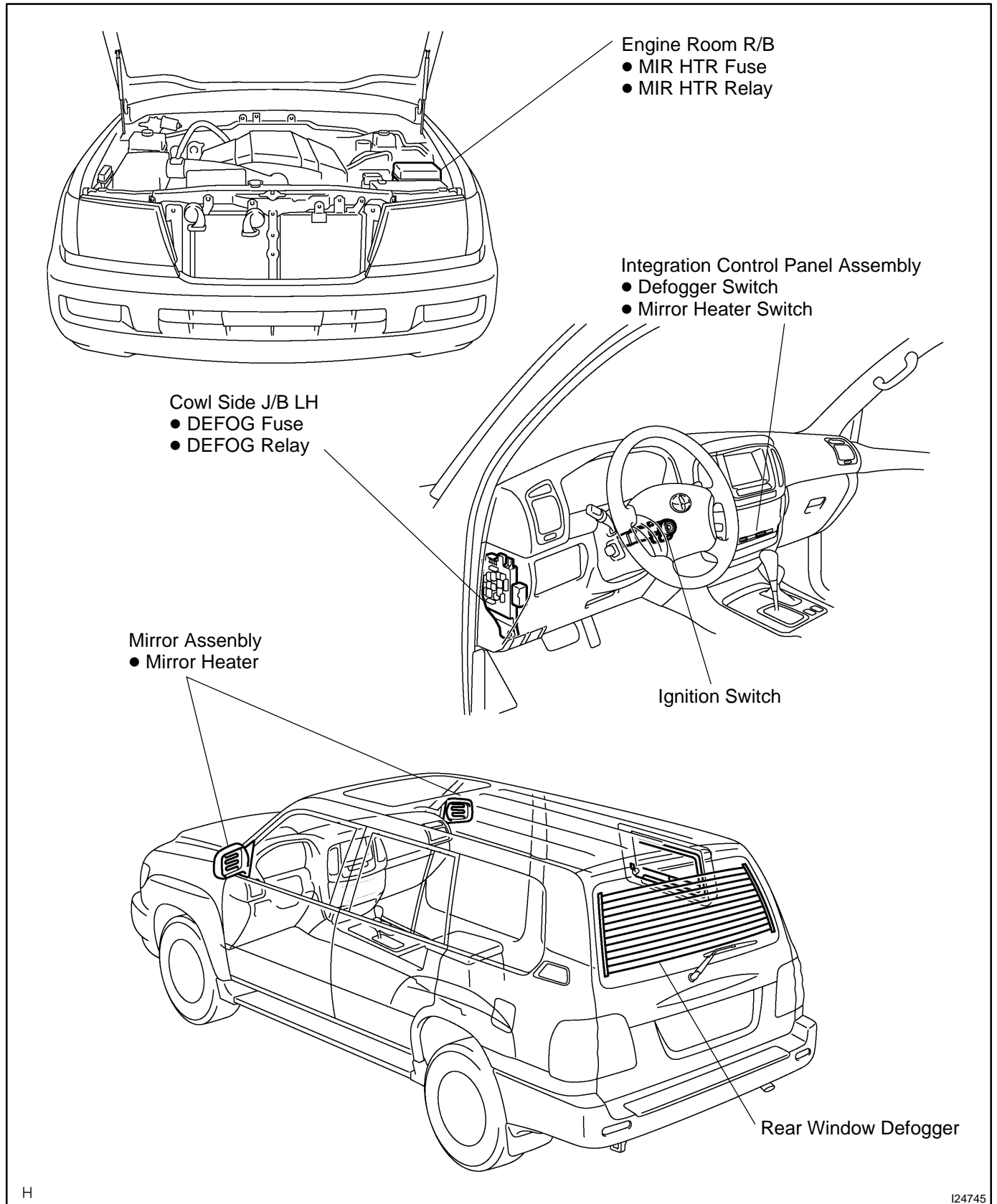
- (a) Connect the positive (+) lead from the battery to terminal 5 and the negative (-) lead to terminal 12.
- (b) Check that the mirror becomes warm.

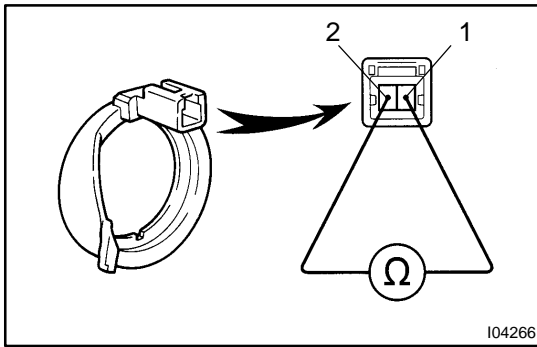
HINT:

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

DEFOGGER SYSTEM LOCATION

BE0GS-19





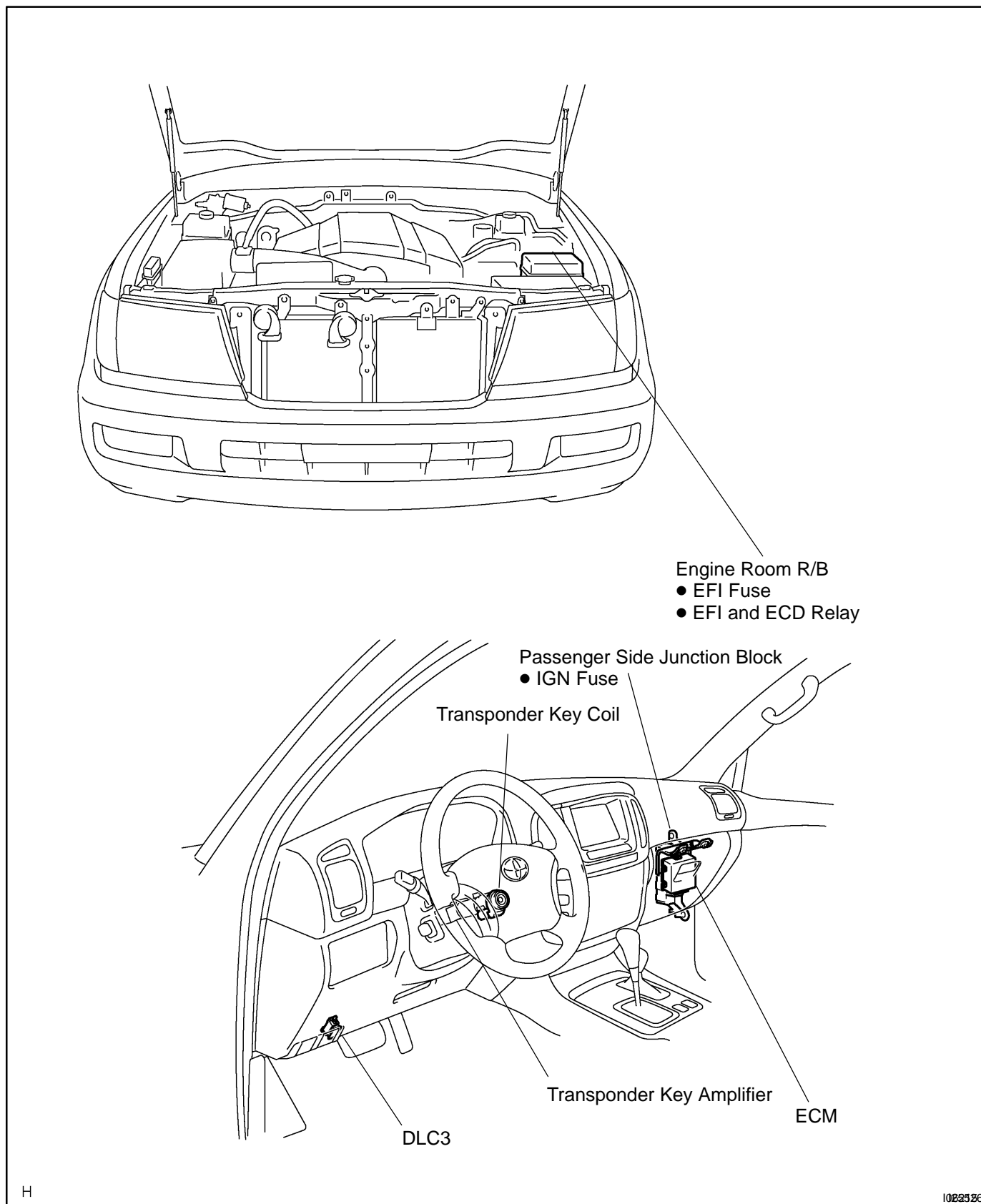
INSPECTION

INSPECTION TRANSPONDER KEY COIL CONTINUITY

Check that continuity exists between terminals 1 and 2.

If continuity is not as specified, replace the coil.

LOCATION



ENGINE IMMOBILISER SYSTEM

REGISTRATION PROCEDURE

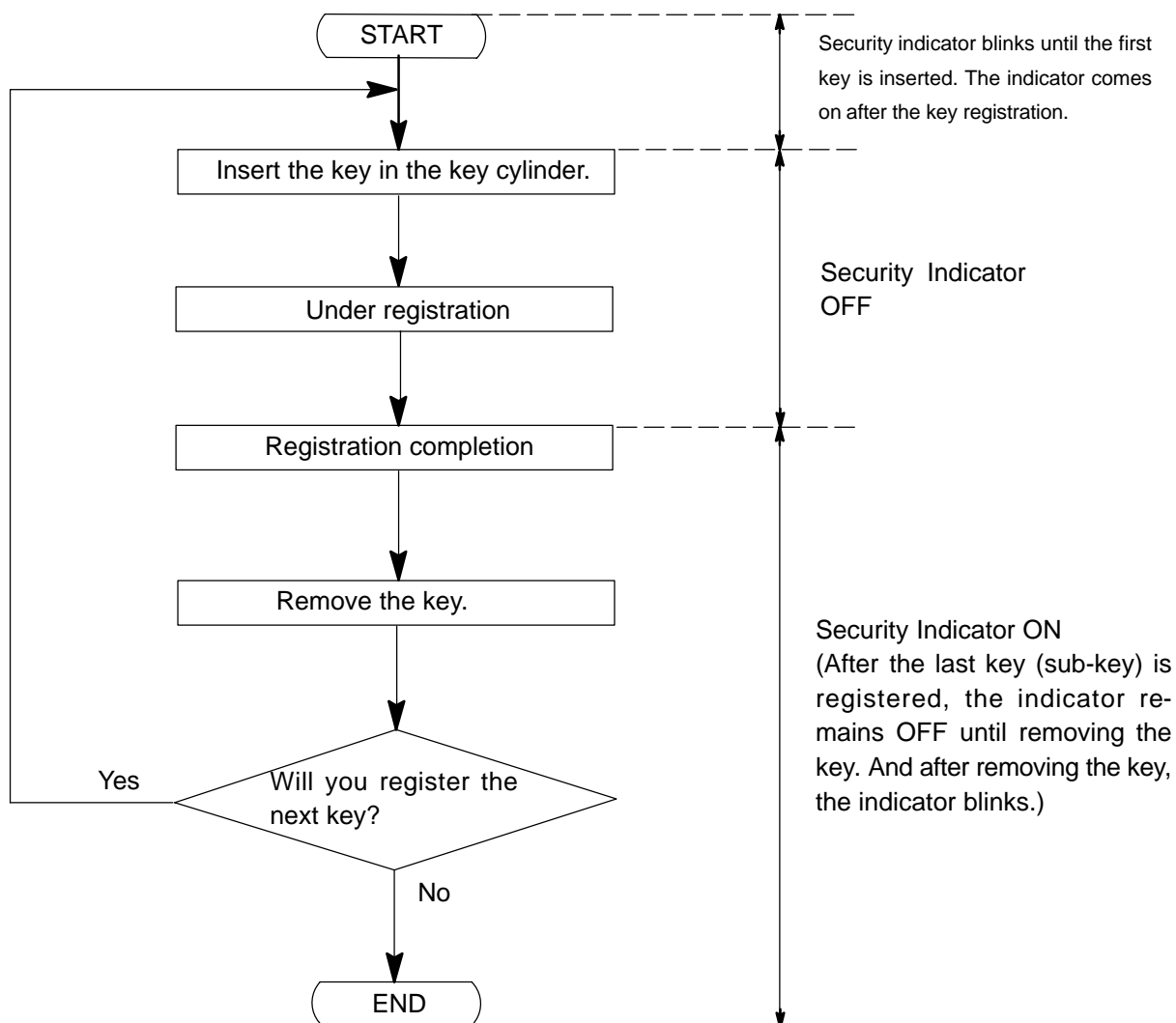
BE126-03

1. KEY REGISTRATION IN AUTOMATIC REGISTRATION MODE

(a) Registration of a new transponder key.

HINT:

- This must be done when you install a new Transponder key ECU.
- The new Transponder key ECU is on the automatic key code registration mode. The already fixed of key codes for this Transponder key ECU can be registered.
On this type of vehicle, up to 4 key codes can be registered.
- A master and sub key are registered automatically.



HINT:

- When a key is not inserted in the key cylinder on the automatic registration mode, the security indicator always comes.
 - When the immobiliser system operates normally and the key is pulled out, the security indicator blinks.
- (b) Automatic registration mode completion
If completing the mode forcibly when registering more than 1 key code on the automatic registration mode, perform the following procedures.

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

- (1) Turn the ignition switch LOCK → ON 5 times within 10 sec.
- (2) With the hand-held tester, require automatic registration mode completion.

2. REGISTRATION OF ADDITIONAL MASTER KEY AND SUB KEY

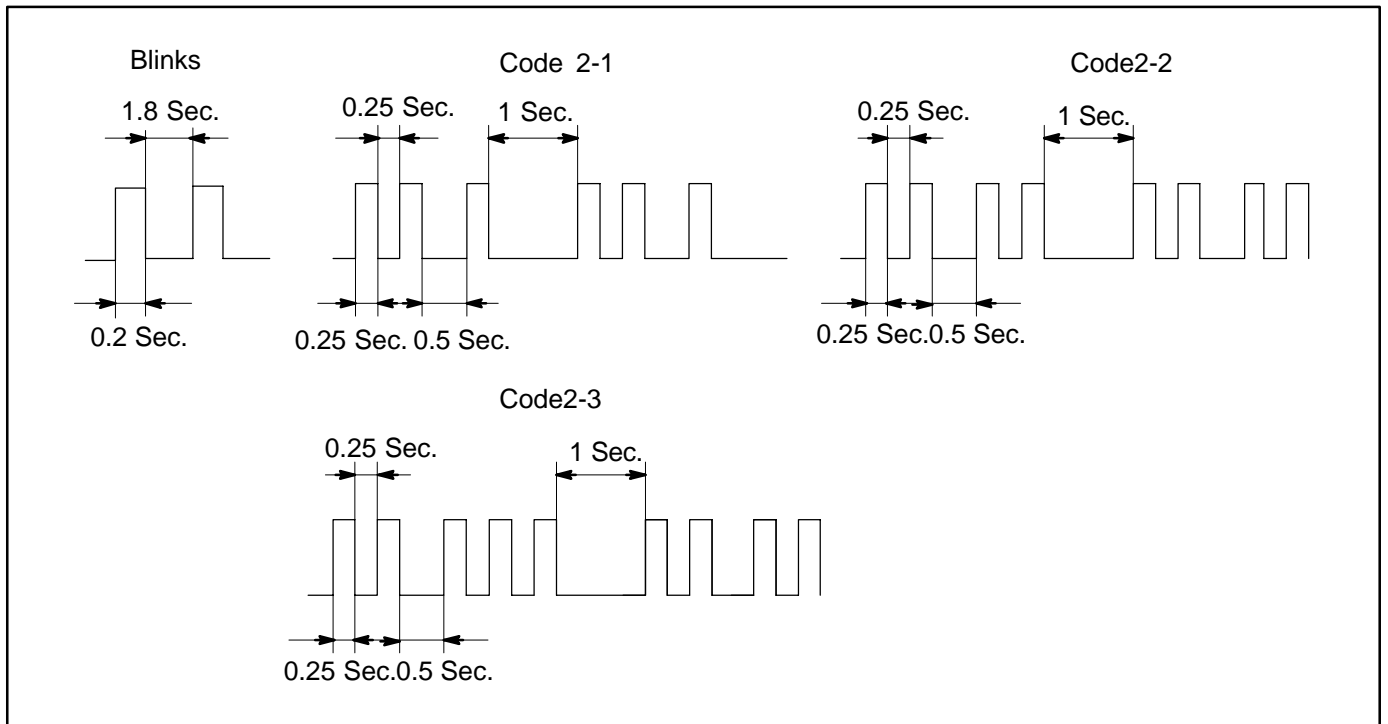
It is possible to carry out additional registration of the supply key.

HINT:

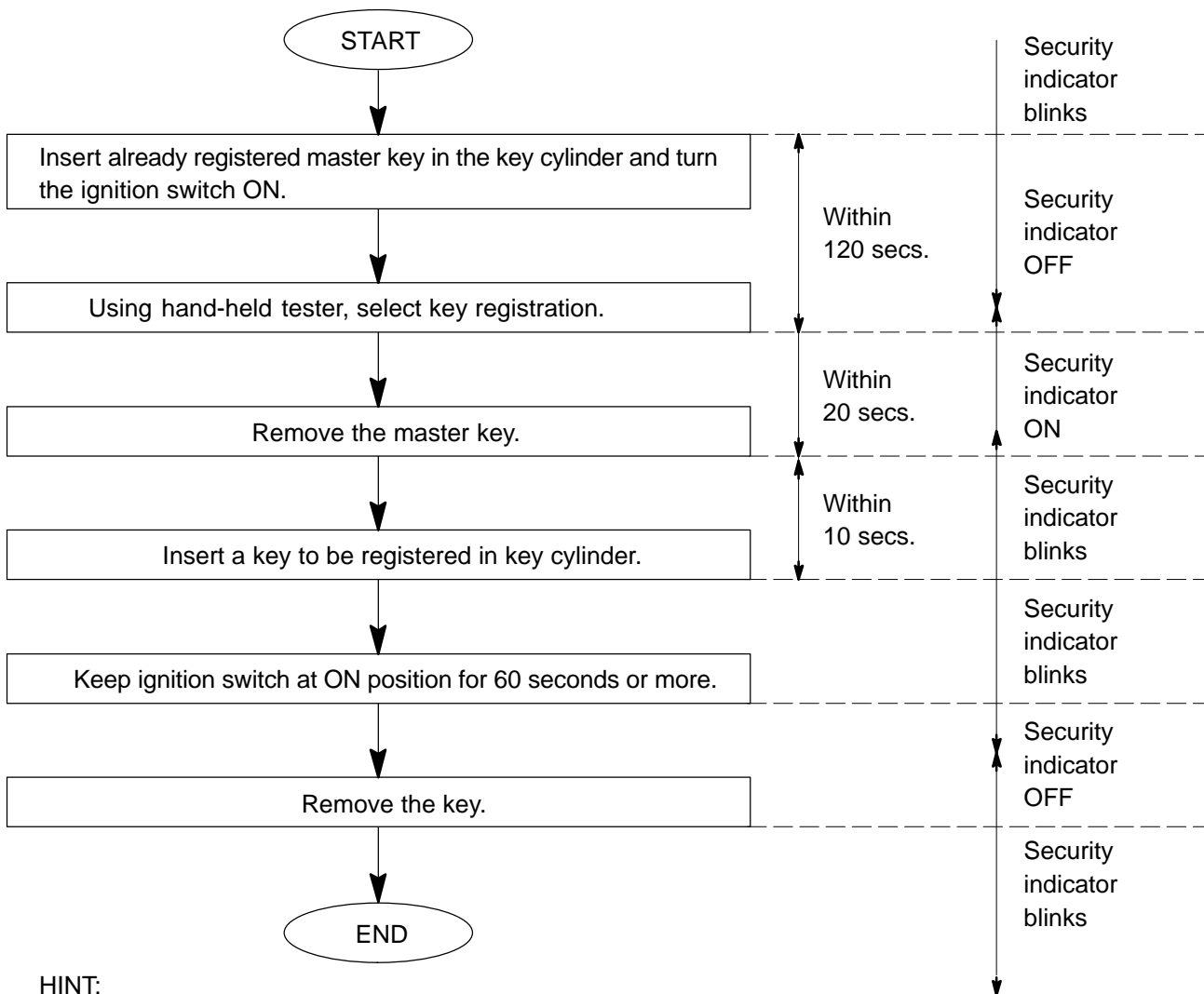
- It is possible to register up to 5 master key codes including the already registered key code.
- It is possible to register up to 3 sub key codes including the already registered key code.
- When any operation period described below is over, registration mode cannot be completed.
- When the next procedure is performed while the previous timer is working, the timer stops counting time, and then the next timer starts.
- When replacing "Ignition Cylinder Key Set" or "Lock Cylinder Set", perform registration following the 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, erase registration of those key codes.
- For the registration order, it is not necessary to distinguish between Main and Sub. (Main key and Sub key are automatically identified)

When a registration error in the transponder key ECU is detected, the security indicator indicates the following codes.

2 - 1	Communication error between the key to be registered and the transponder key ECU
2 - 2	When trying to register the key that is already registered
2 - 3	When exceeding the number of keys which can be registered (Master key: 5, Sub key: 3)



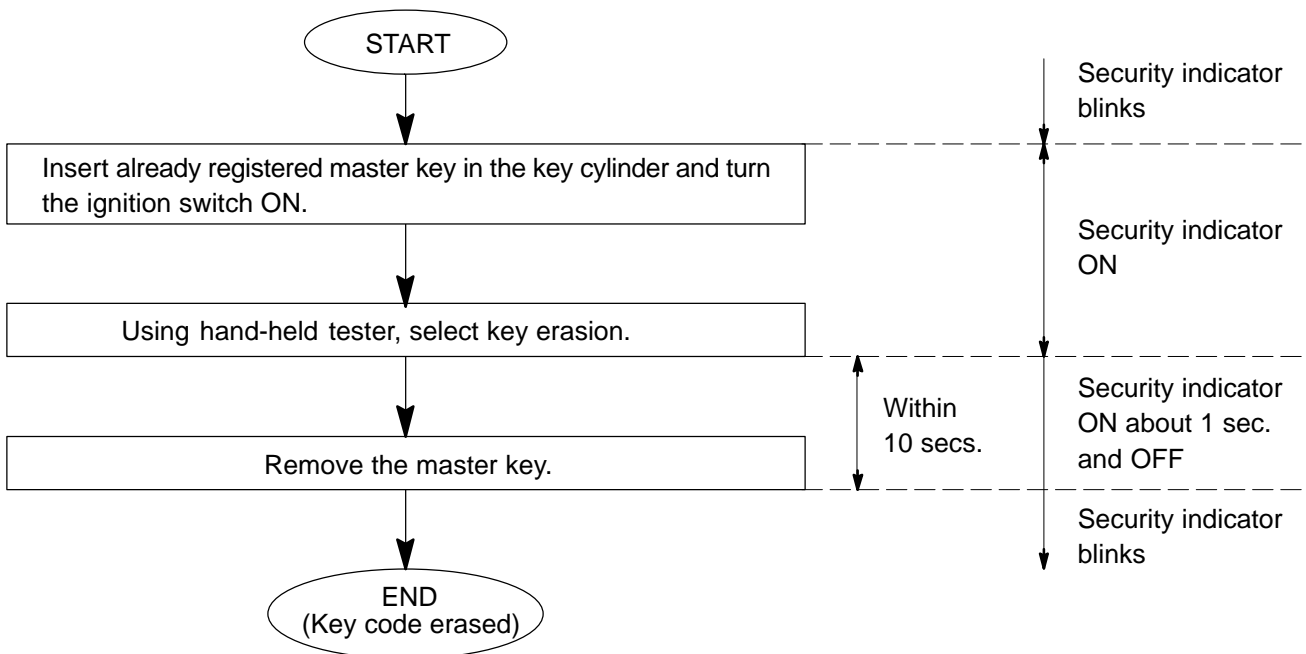
Using hand-held tester:



HINT:
Follow the screen of the hand-held tester for detailed procedure.

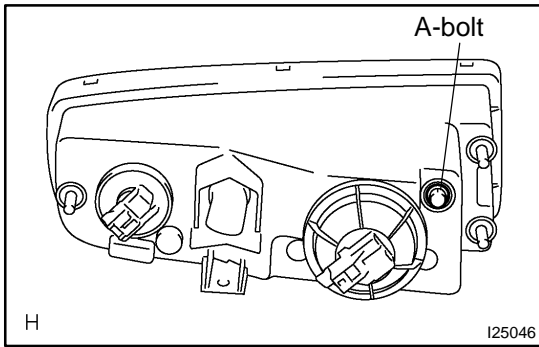
3. ERASURE OF TRANSPONDER KEY CODE

Using hand-held tester:



HINT:

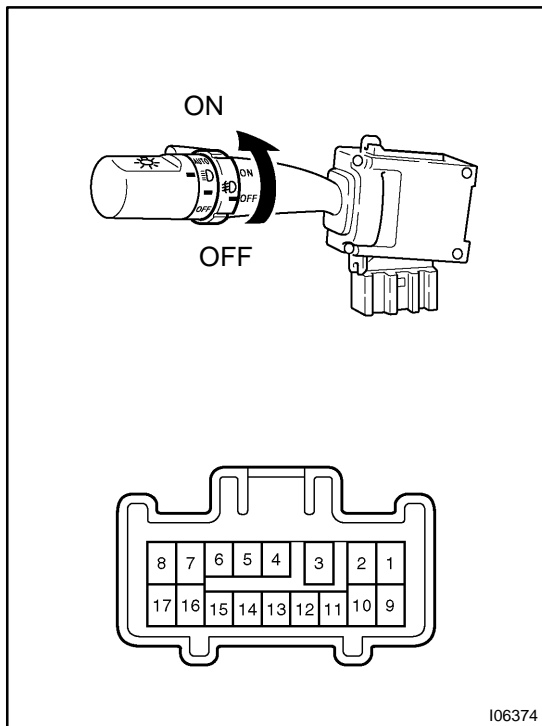
- Follow the screen of the hand-held tester for more detailed procedure.



ADJUSTMENT

ADJUST FOGLIGHT AIM

A-bolt : Vertical Direction

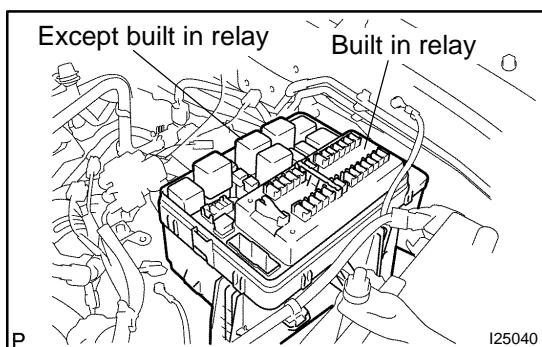


INSPECTION

1. INSPECT FOG LIGHT SWITCH CONTINUITY

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

If continuity is not as specified, replace the switch.



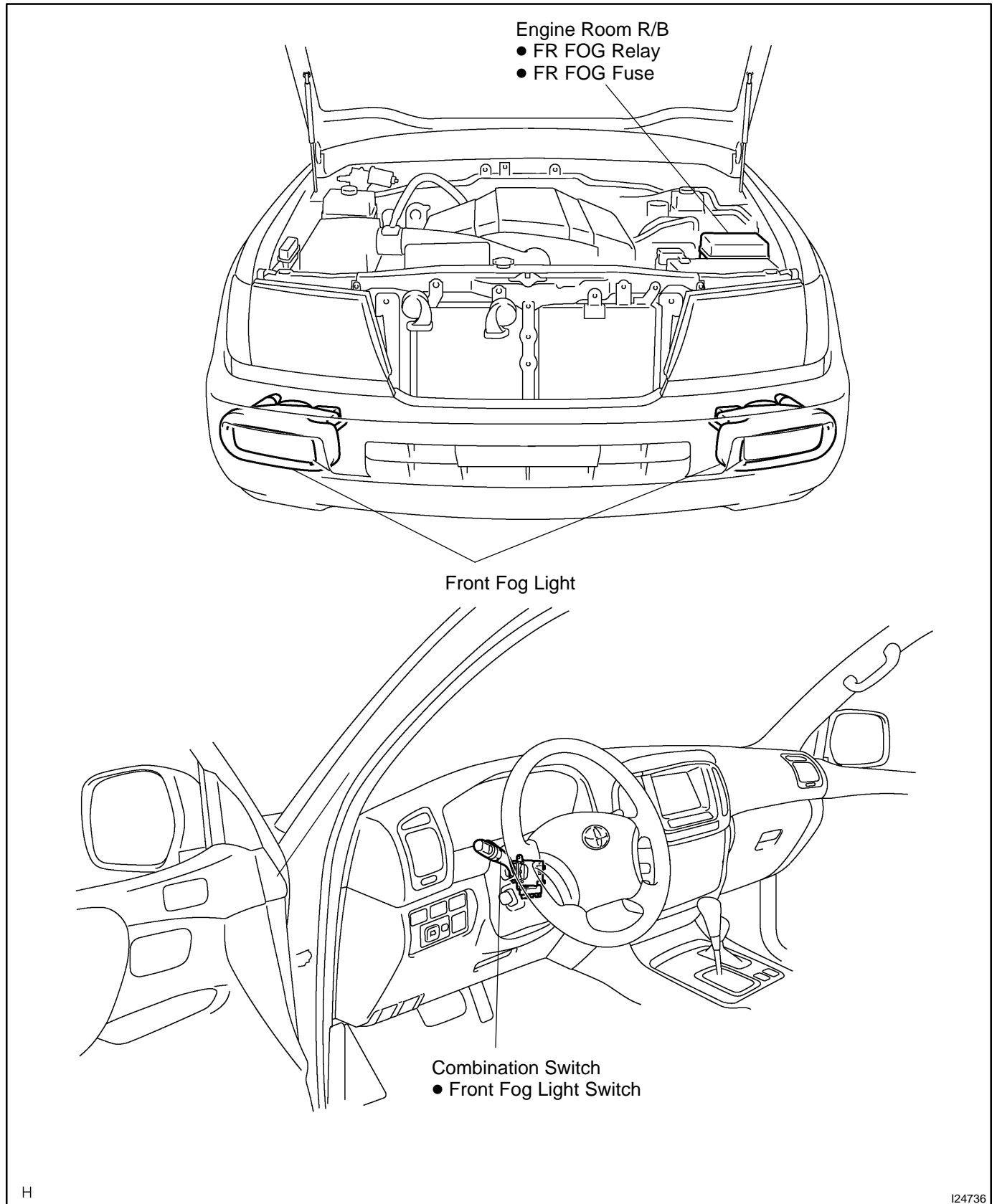
2. INSPECT ENGINE ROOM R/B RELAY CIRCUIT(See Page BE-15)

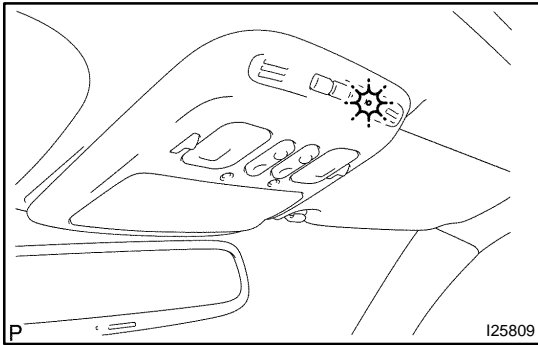
HINT:

The foglight relay is built in engine room junction block. Also the relay is constructed with a relay block that is in the junction block as a unit. To disconnect the wire harness connecting with relay block is impossible. If the relay has a malfunction, replace it with junction block assembly wire harness together.

FOG LIGHT SYSTEM LOCATION

BE0H2-16

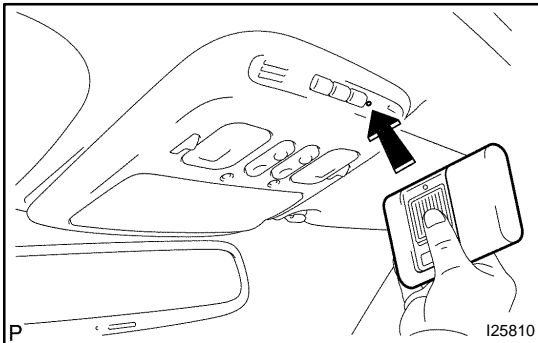




INSPECTION

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.



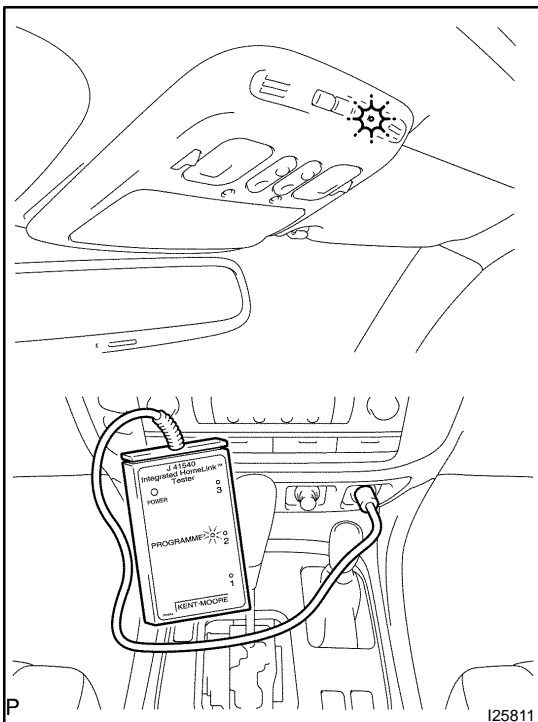
2. INSPECT GARAGE DOOR OPENER REGISTRATION AND TRANSMITTING

HINT:

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

(a) Check that the code of hand held transmitter for inspection can be recorded (See page [BE-186](#)).

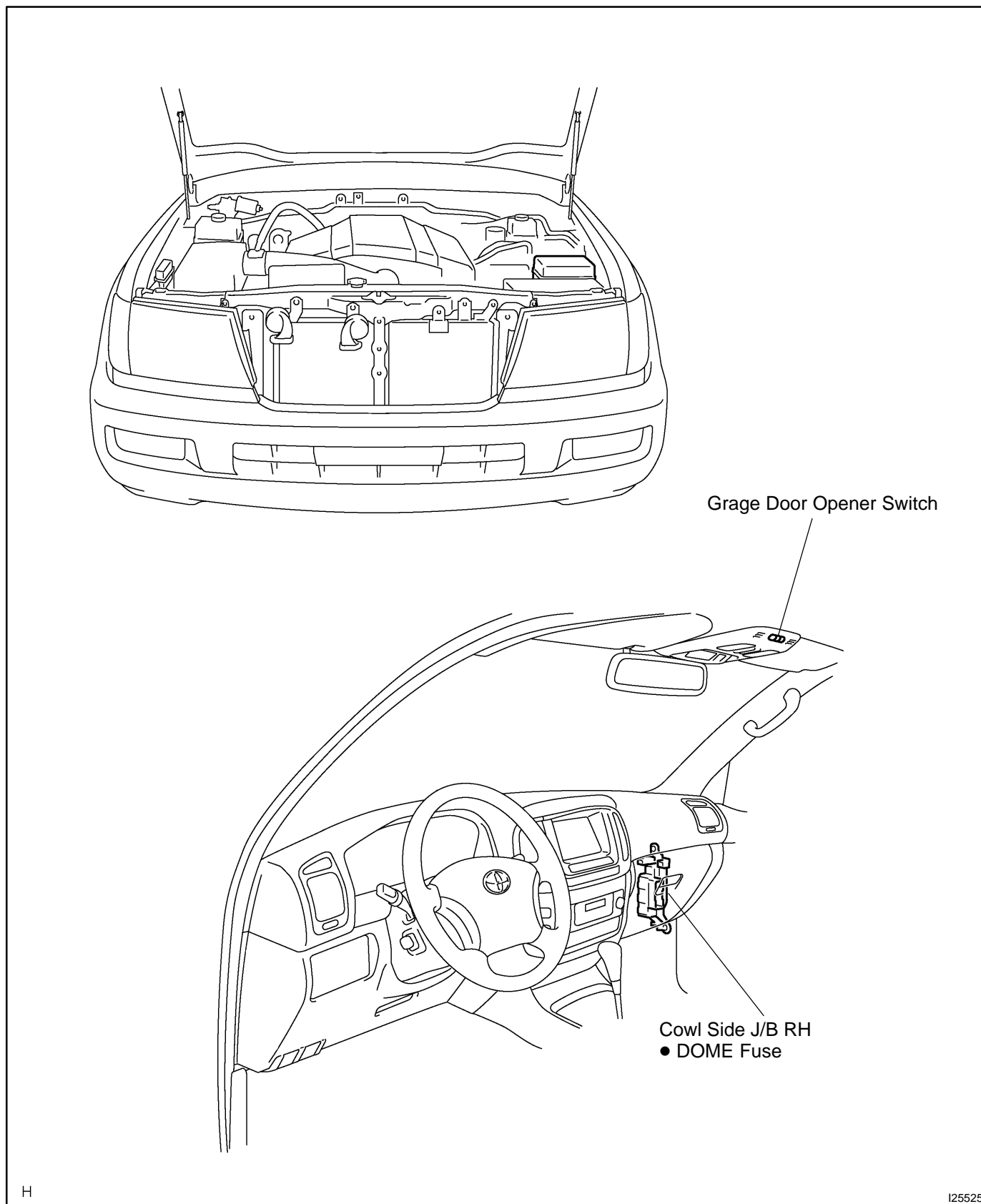
If the code can not be registered, replace garage door opener.



(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.

LOCATION



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GARAGE DOOR OPENER SYSTEM REGISTRATION PROCEDURE

BE0TY-04

1. NEW CODE REGISTRATION

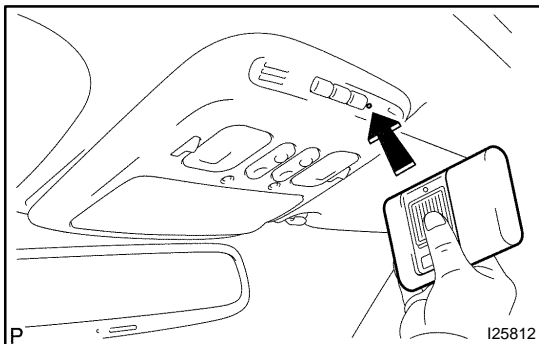
NOTICE:

- 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.

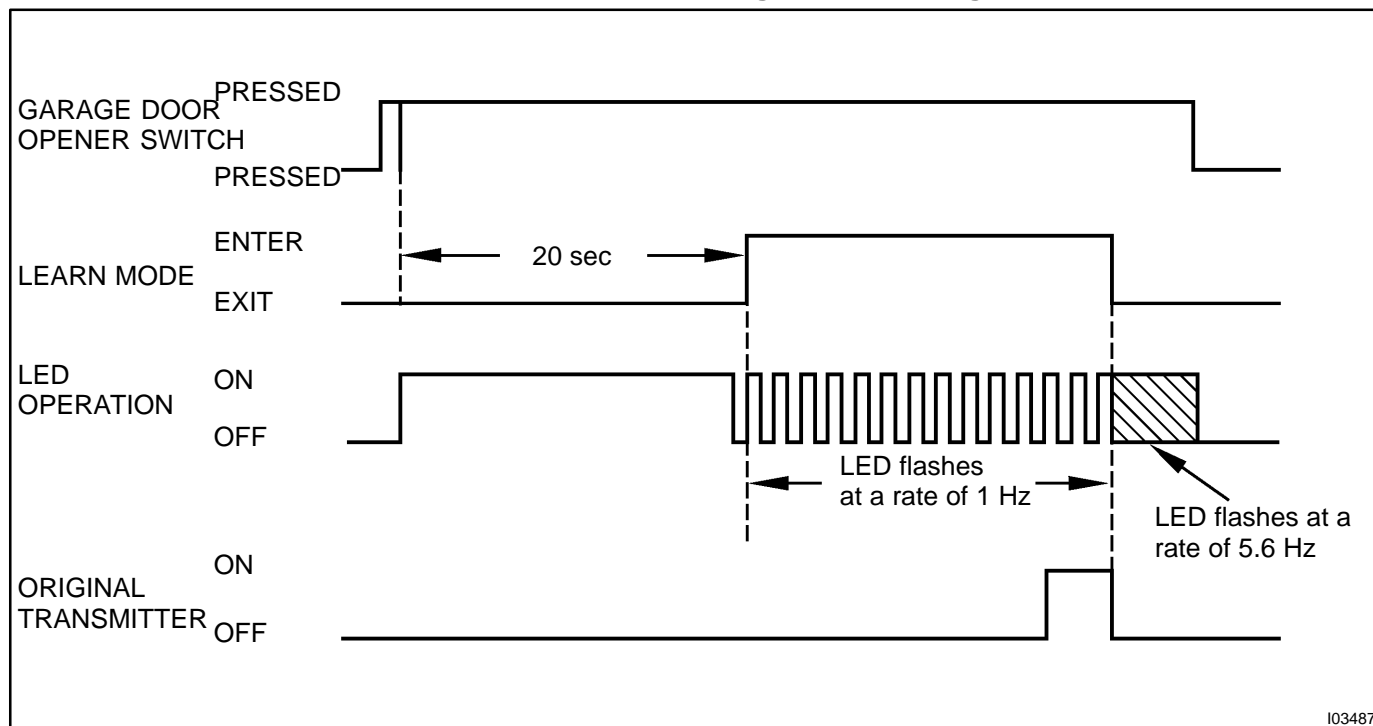


- (b) In the condition of (a), bring the original transmitter to within 1-inch area around the garage door opener and press the switch. (code transmitting).

HINT:

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

New code registration timing chart



I03487

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:

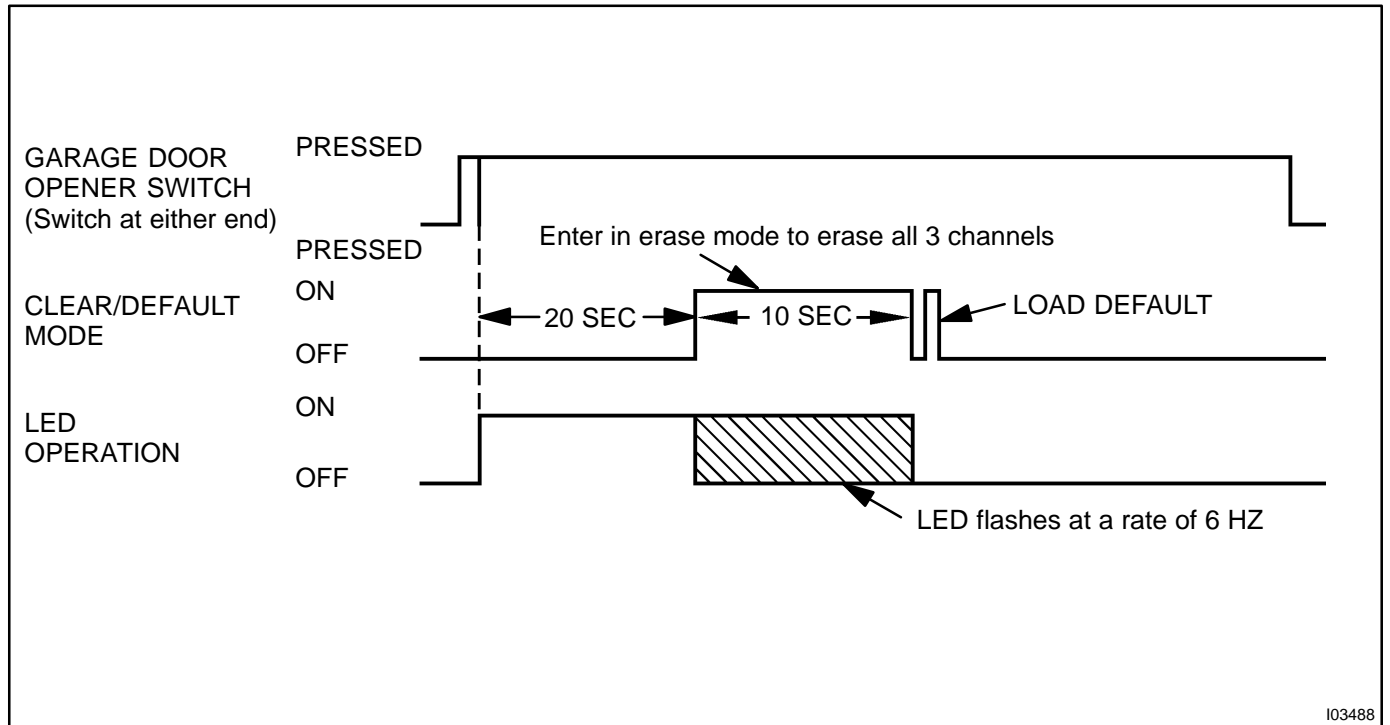
When transferring to deletion mode, LED (red) blinks in 6 Hz cycle.

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

HINT:

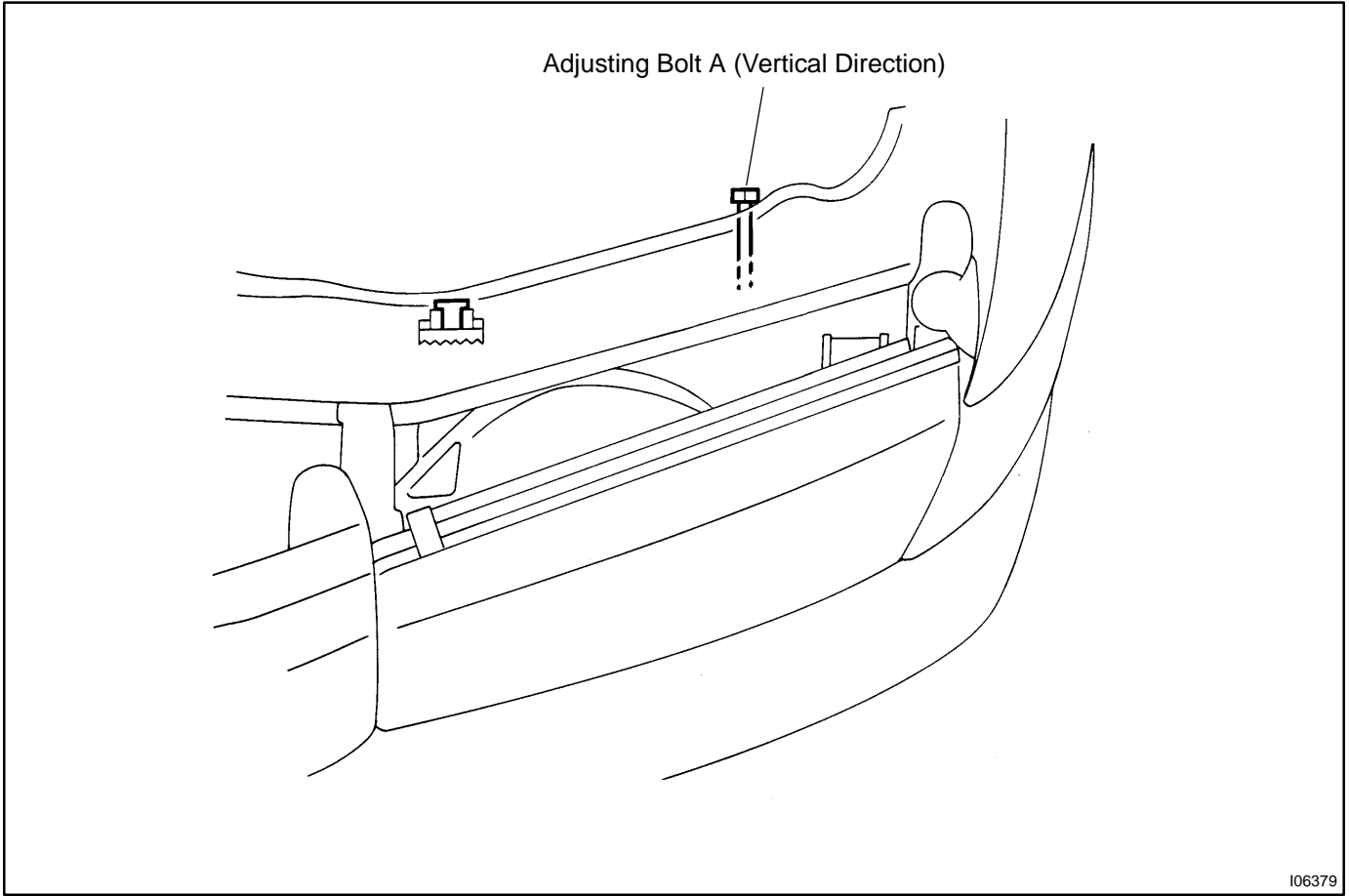
Press the switch until blinking in 6 Hz cycle stops, so that the default code for check is set.

Code deletion timing chart



I03488

ADJUSTMENT



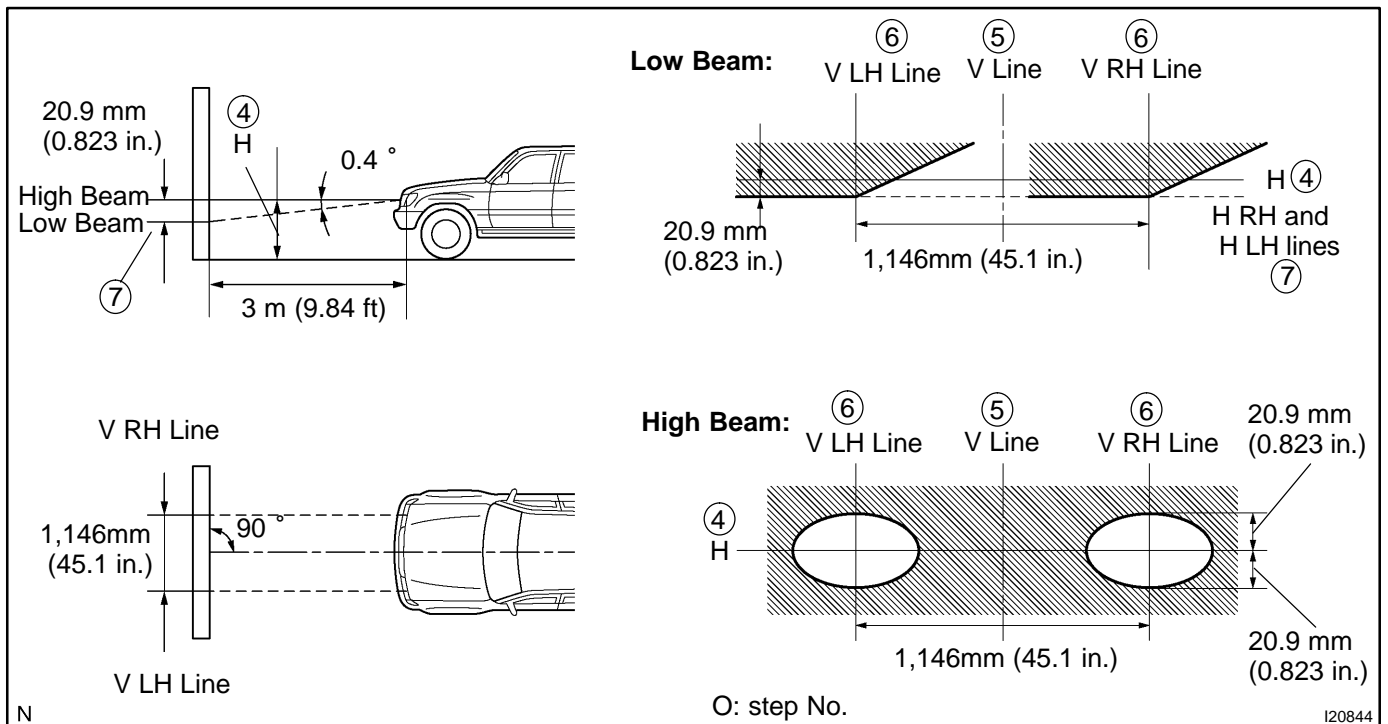
ADJUST HEADLIGHT AIM ONLY

- (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 (by connecting the low and high beam center marks) to where the both 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.

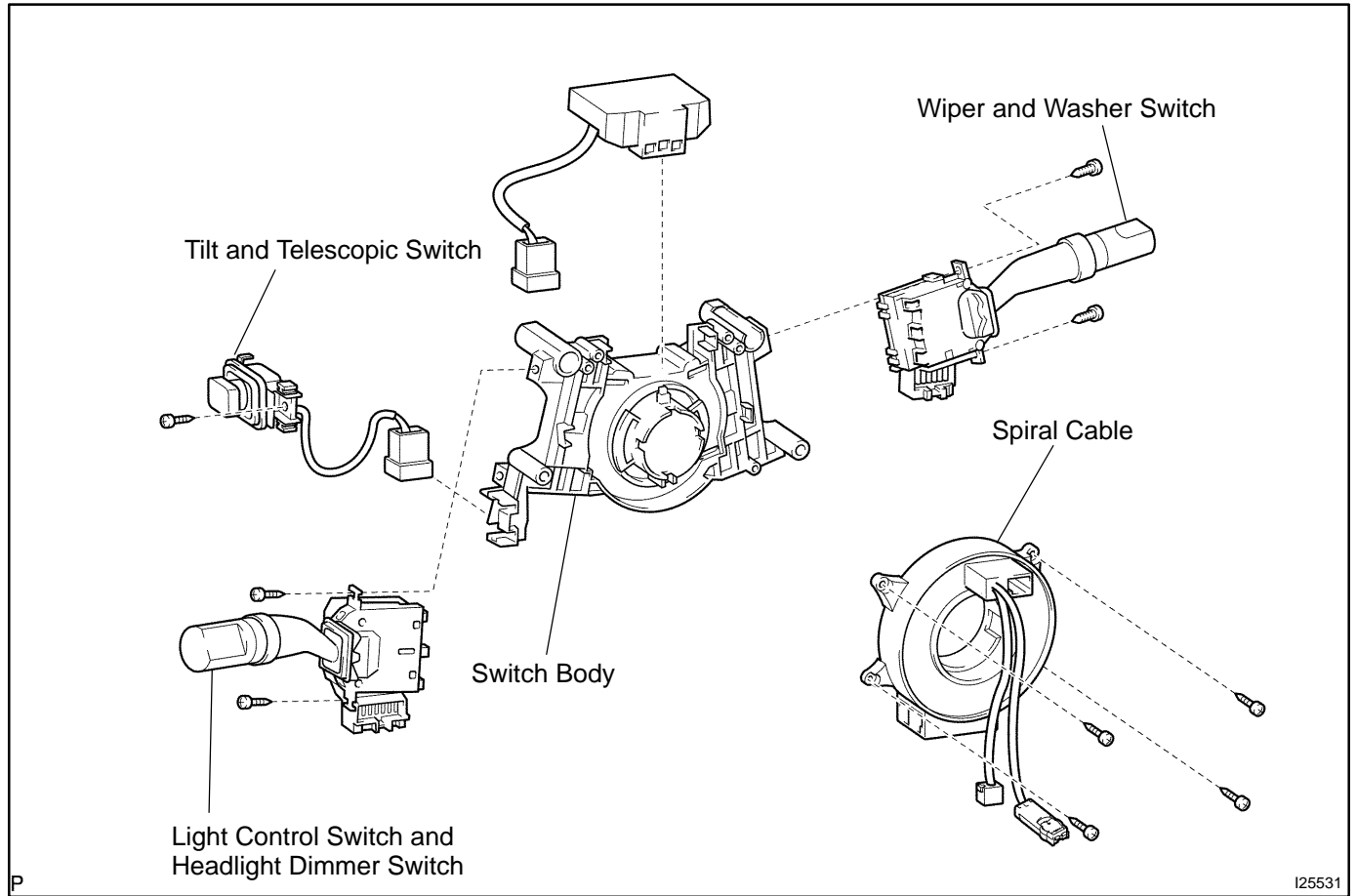


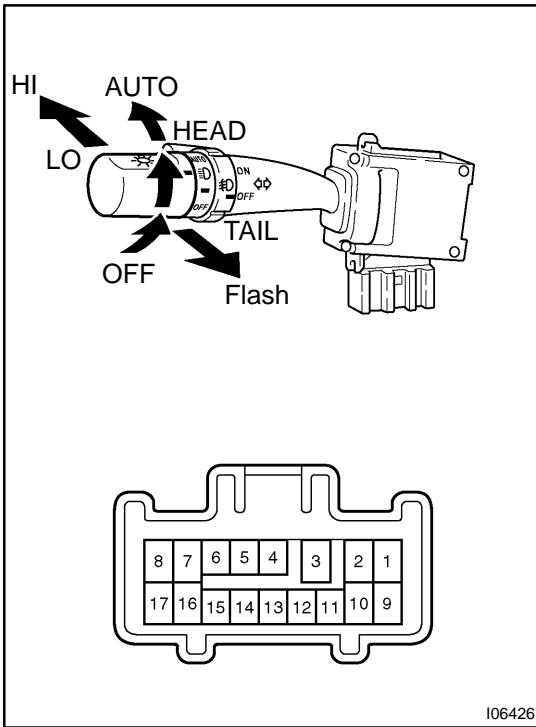
HINT:

As shown in the illustration, adjust each aim of the RH and LH lights.

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

COMPONENTS





INSPECTION

1. INSPECT LIGHT CONTROL SWITCH CONTINUITY

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

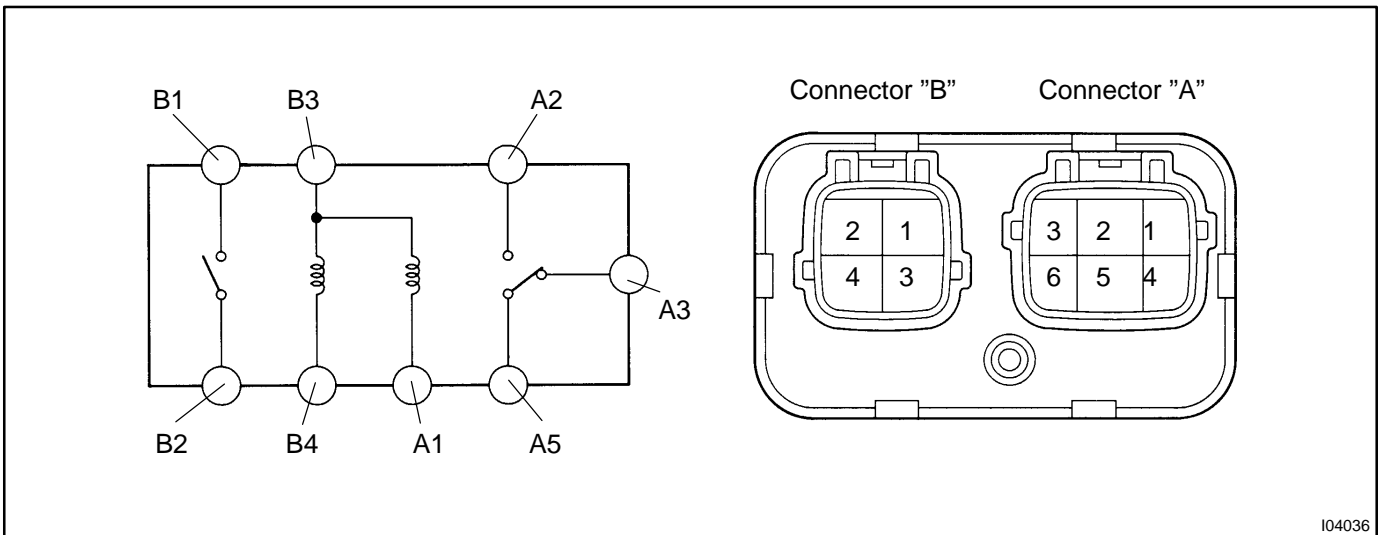
If continuity is not as specified, replace the switch.

2. INSPECT HEADLIGHT DIMMER SWITCH CONTINUITY

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

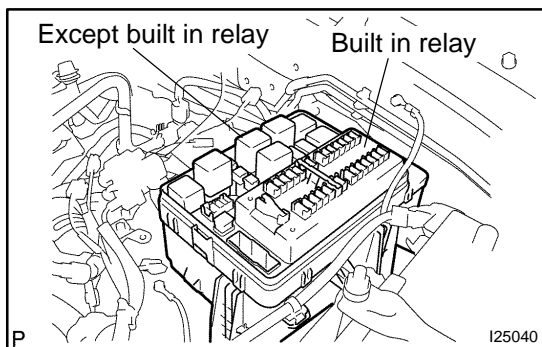
If continuity is not as specified, replace the switch.

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



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

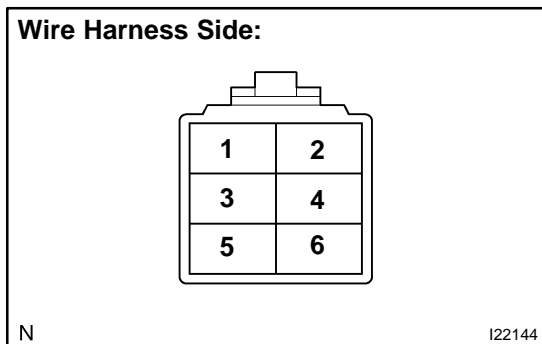
If continuity is not as specified, replace the relay.



4. INSPECT ENGINE ROOM R/B RELAY CIRCUIT (See Page BE-15)

HINT:

The (Headlight, DIM, Tail relay) is built in engine room junction block. Also the relay is constructed with a relay block that is in the junction block as a unit. To disconnect the wire harness connecting with relay block is impossible. If the relay has a malfunction, replace it with junction block assembly wire harness together.



5. Connector disconnected: INSPECT AUTOMATIC LIGHT CONTROL SENSOR CIRCUIT

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

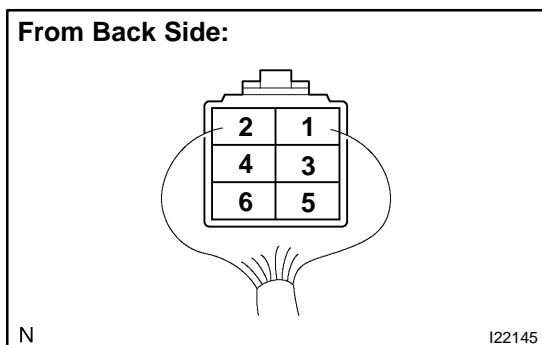
HINT:

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

Tester connection	Condition	Specified condition
6 - Ground	Constant	Continuity
3 - Ground	Close the driver's door again while the ignition switch OFF	No voltage
3 - Ground	Ignition switch position ON	5.2 - 9.0V

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

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



6. Connector disconnected: INSPECT AUTOMATIC LIGHT CONTROL SENSOR CIRCUIT

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

HINT:

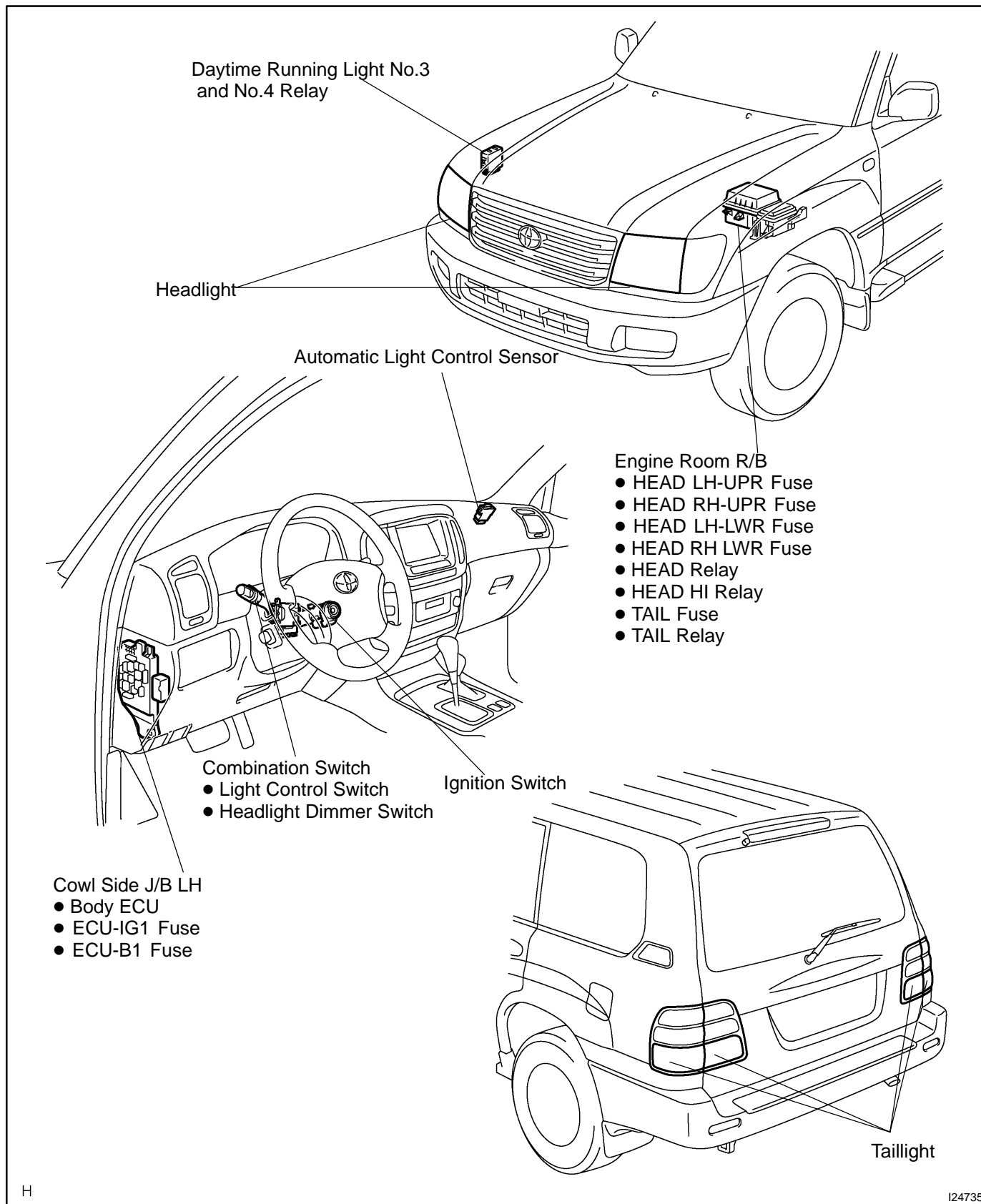
- Ignition switch is ON.
- Light control switch is in AUTO.
- Vehicle's surroundings are bright.

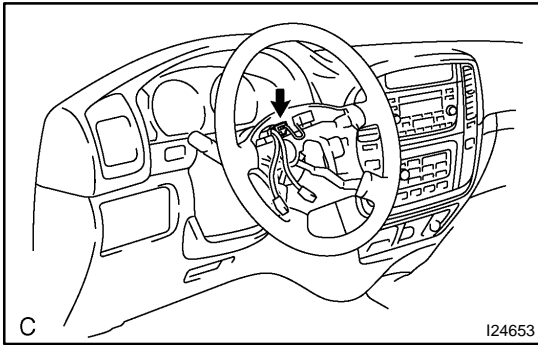
Tester connection	Condition	Specified condition
4 - Ground (CLTS - Body ground)	Constant	Pulse generation
3 - Ground (CLTB - Body ground)	Ignition switch ON	10 - 14V

If the circuits is not as specified, try replacing the sensor with a new one.

HEADLIGHT AND TAILLIGHT SYSTEM LOCATION

BE0H8-11





INSPECTION

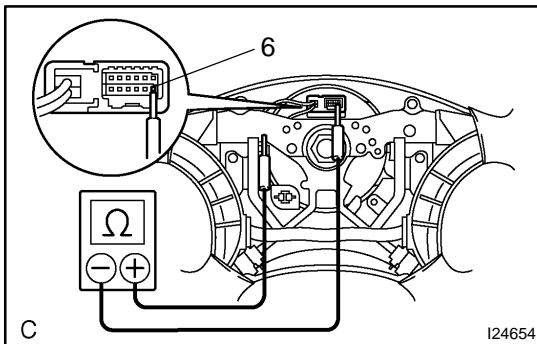
1. INSPECT HORN SWITCH

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

HINT:

Do not disconnect the connector from the horn pad.

- Disconnect the connector from the slip ring.



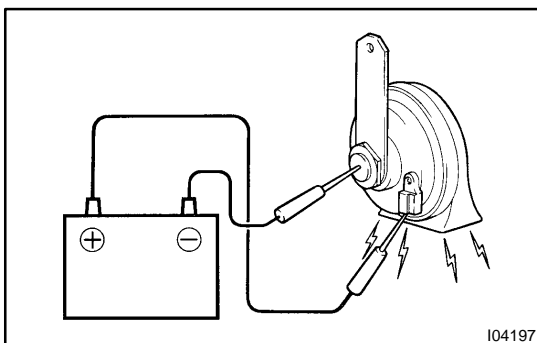
- Check that no continuity exists between terminal 6 of the connector and body ground.
- Check that continuity exists between terminal 6 of the connector and body ground when the horn contact plate is pressed against the steering spoke assembly.

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

- Install the horn pad in place and using a torx socket wrench, torque the 2 bolts.

Torque: 7.1 N·m (72 kgf·cm, 62 in.-lbf)

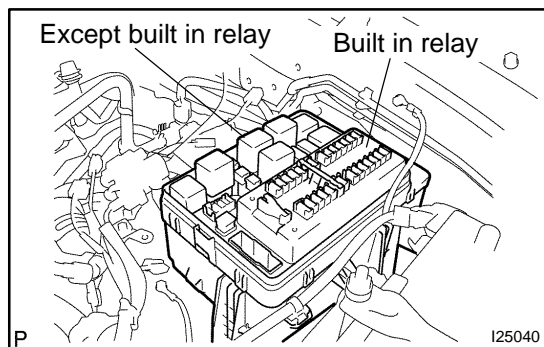
- Install the left and right covers.
- Connect the negative (-) terminal to the battery.



2. INSPECT HORN OPERATION

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

If operation is not as specified, replace the horn.



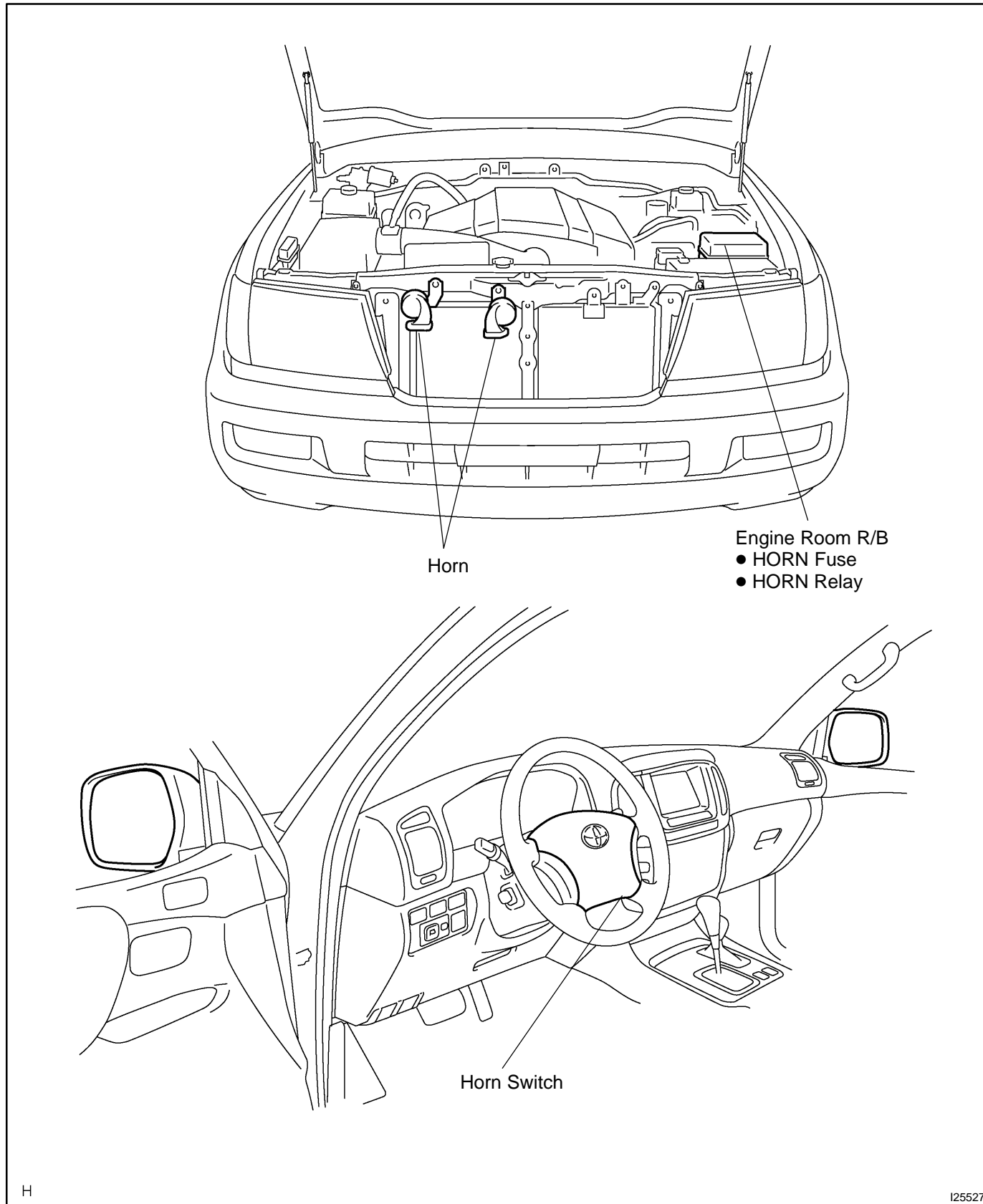
3. INSPECT ENGINE ROOM R/B RELAY CIRCUIT (See Page [BE-15](#))

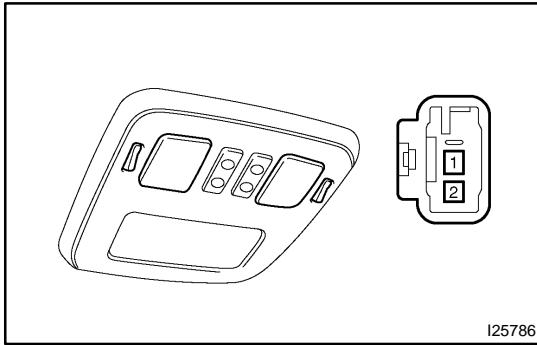
HINT:

The horn relay is built in engine room junction block. Also the relay is constructed with a relay block that is in the junction block as a unit. To disconnect the wire harness connecting with relay block is impossible. If the relay has a malfunction, replace it with junction block assembly wire harness together.

HORN SYSTEM LOCATION

BE0FY-27





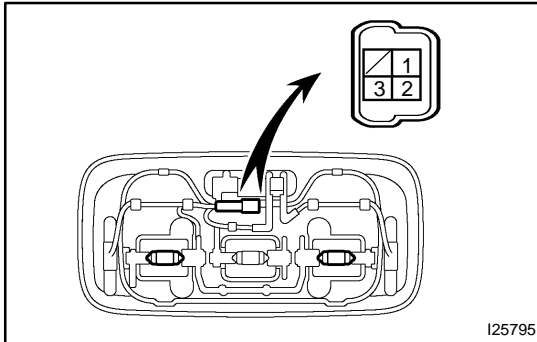
I25786

INSPECTION

1. INSPECT FRONT PERSONAL LIGHT SWITCH CONTINUITY

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

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

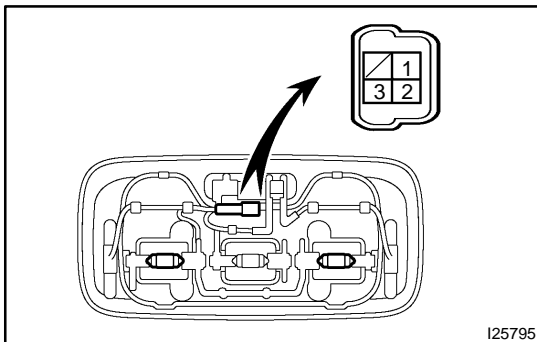


I25795

2. INSPECT REAR PERSONAL LIGHT SWITCH CONTINUITY

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

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

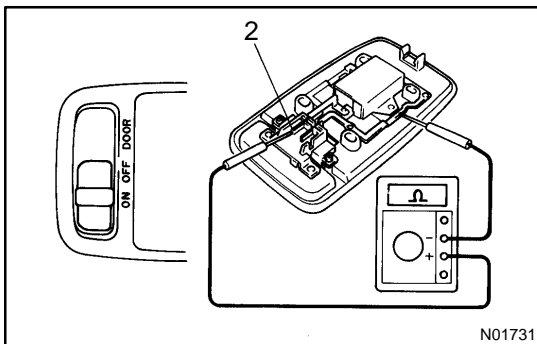


I25795

3. INSPECT ROOM LIGHT SWITCH CONTINUITY

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

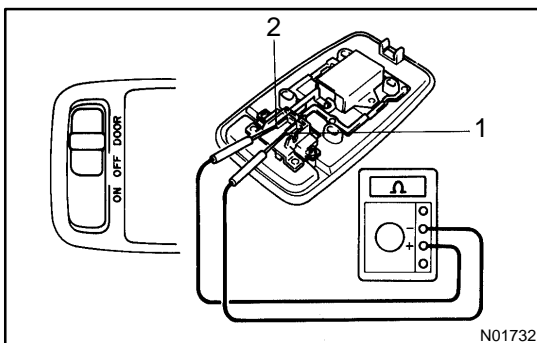
If continuity is not as specified, replace the light assembly or bulb.



N01731

4. INSPECT REAR ROOM LIGHT SWITCH CONTINUITY

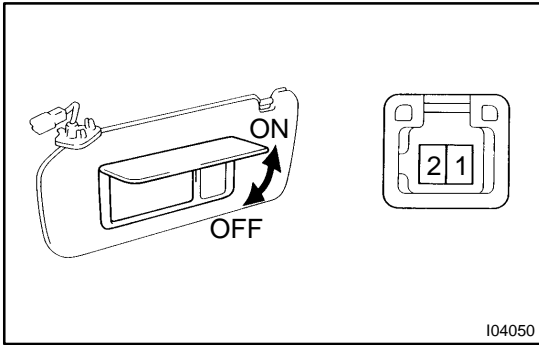
- (a) Disconnect the connector from room light assembly.
- (b) Turn the room light switch ON, check that continuity exists between terminal 2 and body ground.



N01732

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

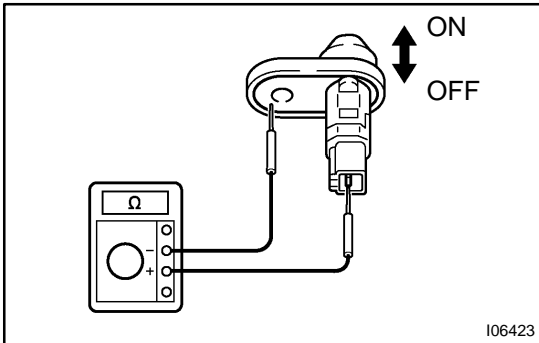
If operation is not as specified, replace the light assembly or bulb.



5. INSPECT VANITY LIGHT CONTINUITY

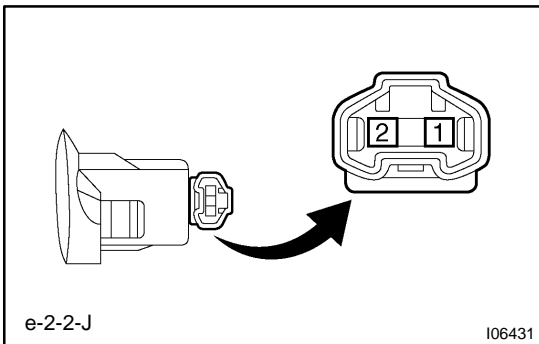
Switch position	Tester connection	Specified condition
OFF (closed)	-	No continuity
ON (opened)	1 - 2	Continuity

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



6. INSPECT DOOR COURTESY SWITCH CONTINUITY

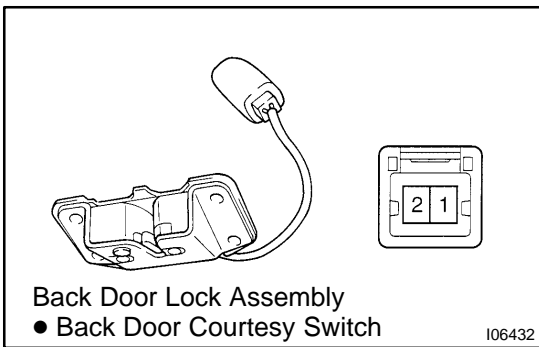
- (a) Check that continuity exists between terminal and switch body with the switch ON (switch pin released).
 - (b) Check that no continuity exists between terminal and switch body with the switch OFF (switch pin pushed).
- If continuity is not as specified, replace the switch.



7. INSPECT DOOR COURTESY LIGHT CONTINUITY

Using an ohmmeter, check that continuity exists between terminals.

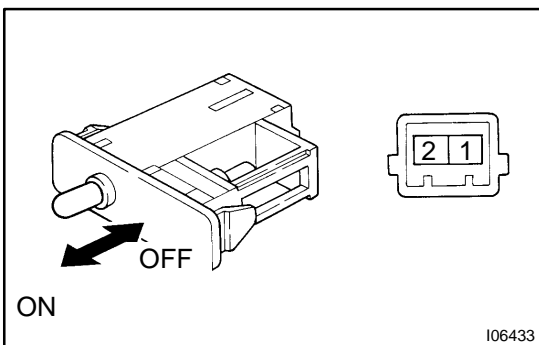
If continuity is not as specified, replace the light assembly or bulb.



8. INSPECT BACK DOOR COURTESY SWITCH CONTINUITY

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

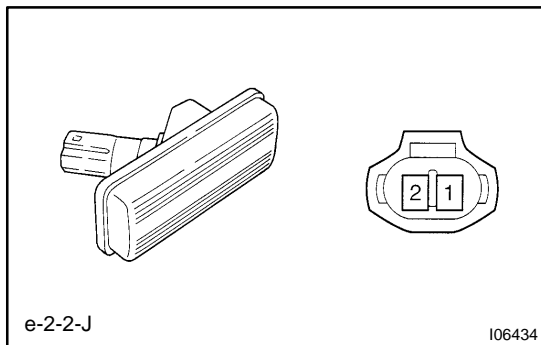
If continuity is not as specified, replace the back door lock assembly.



9. INSPECT GLOVE COMPARTMENT DOOR COURTESY SWITCH CONTINUITY

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

If continuity is not as specified, replace the switch.

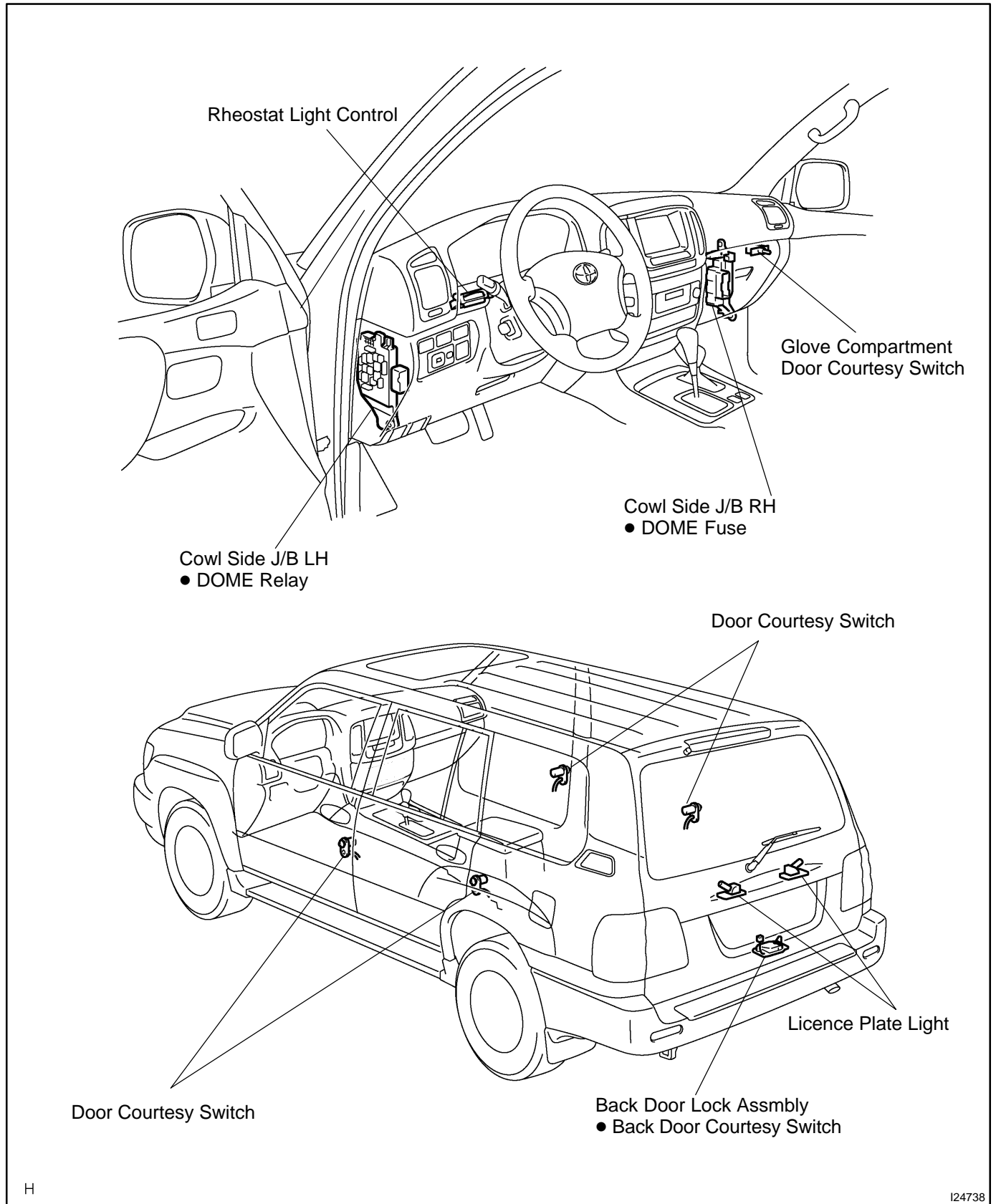
**10. INSPECT LICENCE PLATE LIGHT CONTINUITY**

Using an ohmmeter, check that continuity exists between terminals.

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

INTERIOR LIGHT SYSTEM LOCATION

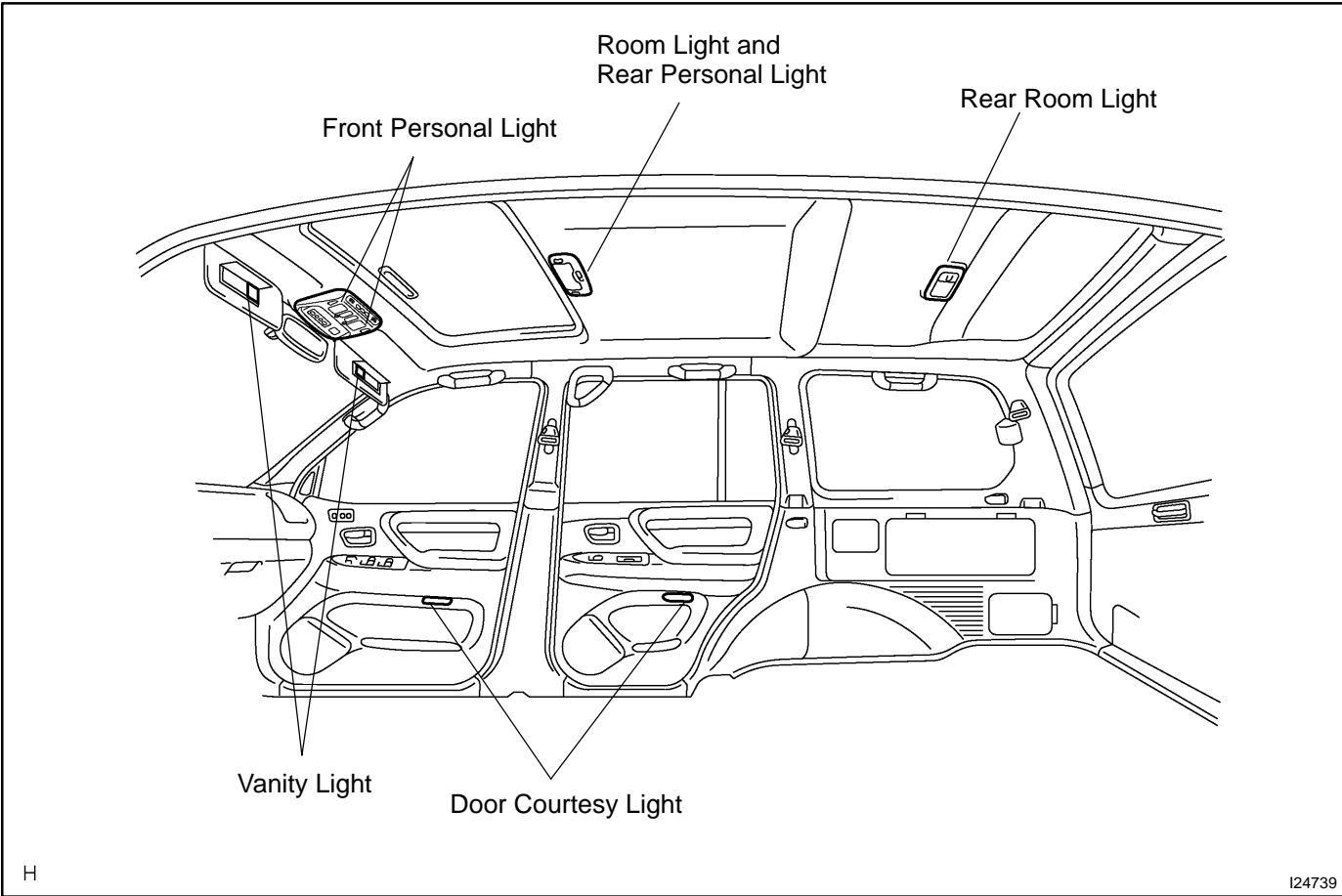
BEORW-03

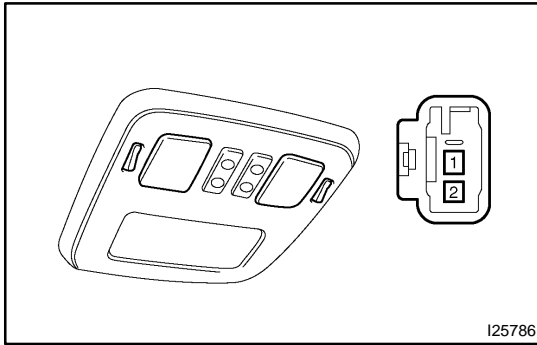


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124738

BODY ELECTRICAL - INTERIOR LIGHT SYSTEM





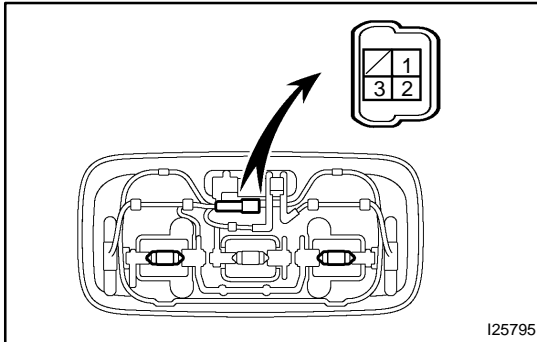
I25786

INSPECTION

1. INSPECT FRONT PERSONAL LIGHT SWITCH CONTINUITY

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

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

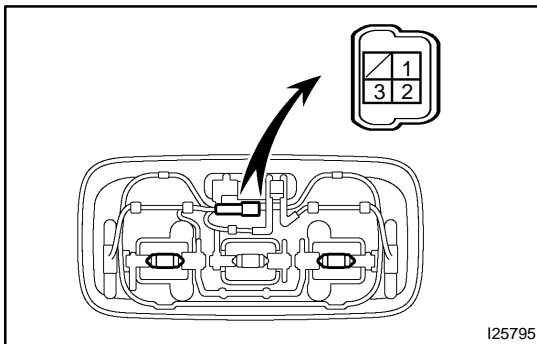


I25795

2. INSPECT REAR PERSONAL LIGHT SWITCH CONTINUITY

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

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

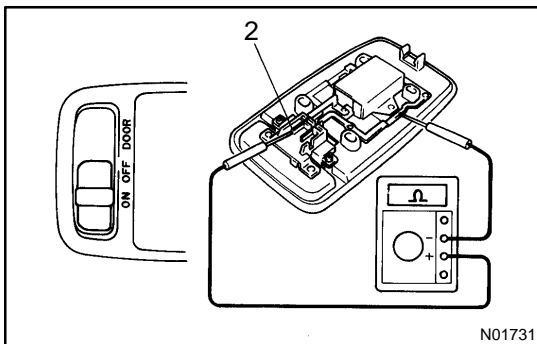


I25795

3. INSPECT ROOM LIGHT SWITCH CONTINUITY

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

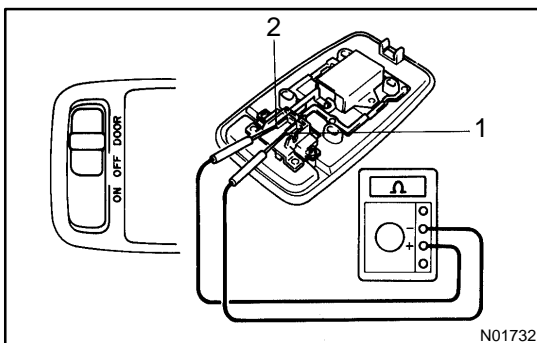
If continuity is not as specified, replace the light assembly or bulb.



N01731

4. INSPECT REAR ROOM LIGHT SWITCH CONTINUITY

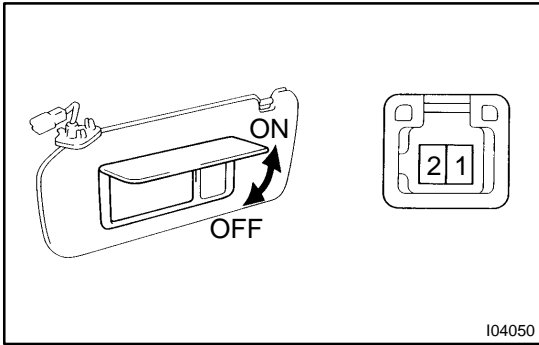
- (a) Disconnect the connector from room light assembly.
- (b) Turn the room light switch ON, check that continuity exists between terminal 2 and body ground.



N01732

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

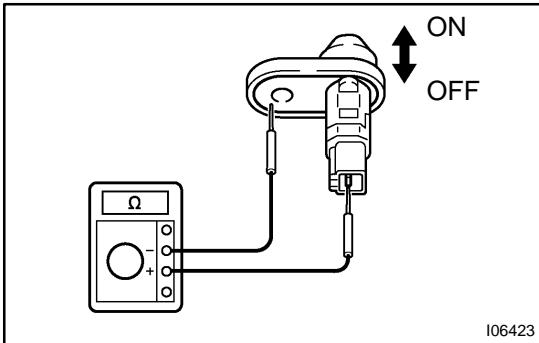
If operation is not as specified, replace the light assembly or bulb.



5. INSPECT VANITY LIGHT CONTINUITY

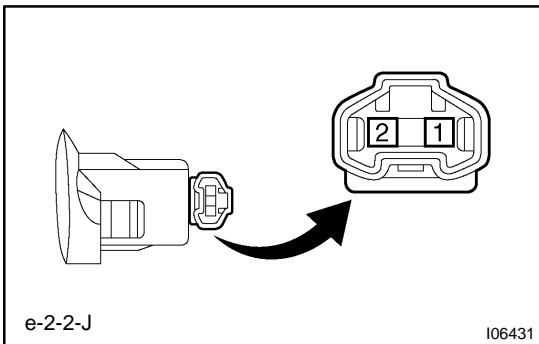
Switch position	Tester connection	Specified condition
OFF (closed)	-	No continuity
ON (opened)	1 - 2	Continuity

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



6. INSPECT DOOR COURTESY SWITCH CONTINUITY

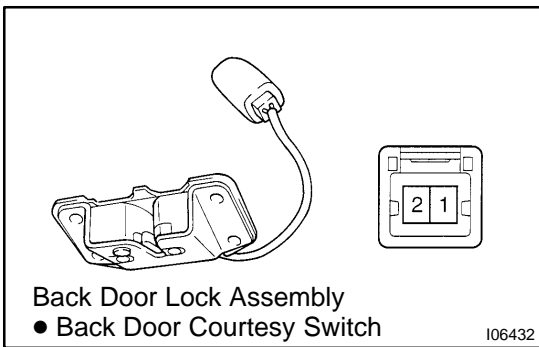
- (a) Check that continuity exists between terminal and switch body with the switch ON (switch pin released).
 - (b) Check that no continuity exists between terminal and switch body with the switch OFF (switch pin pushed).
- If continuity is not as specified, replace the switch.



7. INSPECT DOOR COURTESY LIGHT CONTINUITY

Using an ohmmeter, check that continuity exists between terminals.

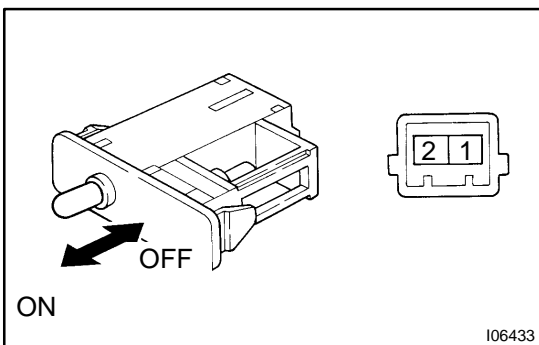
If continuity is not as specified, replace the light assembly or bulb.



8. INSPECT BACK DOOR COURTESY SWITCH CONTINUITY

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

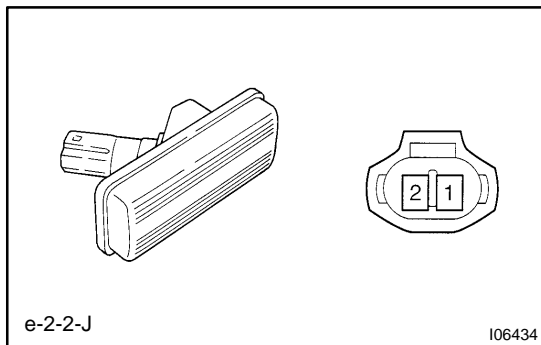
If continuity is not as specified, replace the back door lock assembly.



9. INSPECT GLOVE COMPARTMENT DOOR COURTESY SWITCH CONTINUITY

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

If continuity is not as specified, replace the switch.

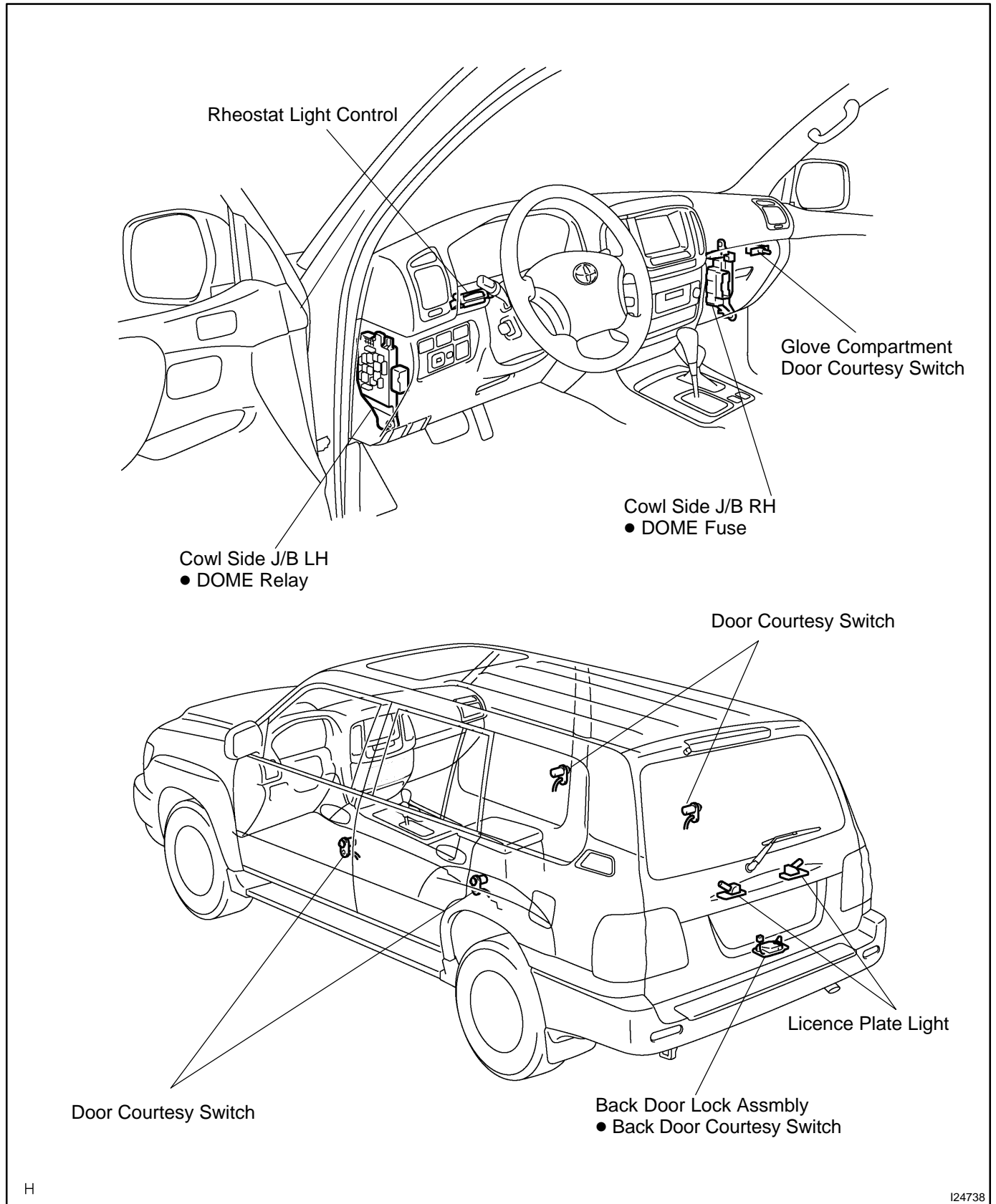
**10. INSPECT LICENCE PLATE LIGHT CONTINUITY**

Using an ohmmeter, check that continuity exists between terminals.

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

INTERIOR LIGHT SYSTEM LOCATION

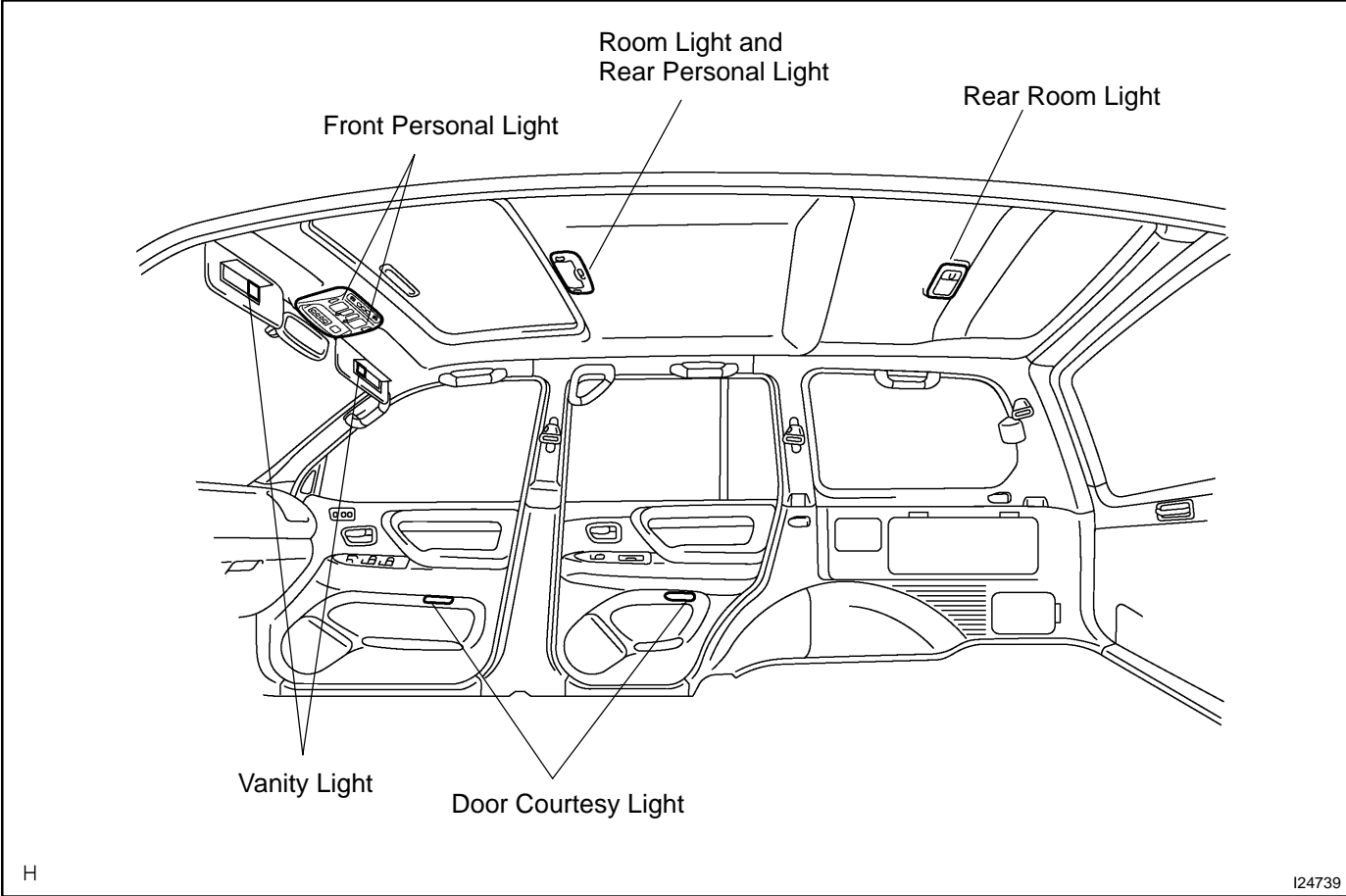
BEORW-03

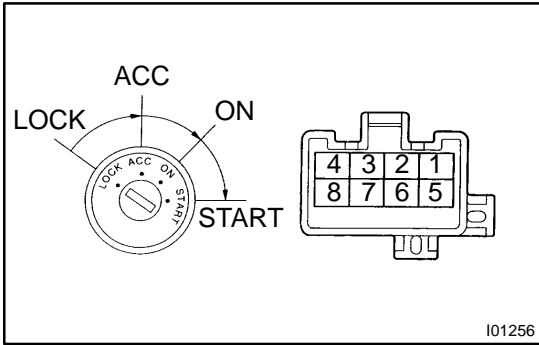


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124738

BODY ELECTRICAL - INTERIOR LIGHT SYSTEM



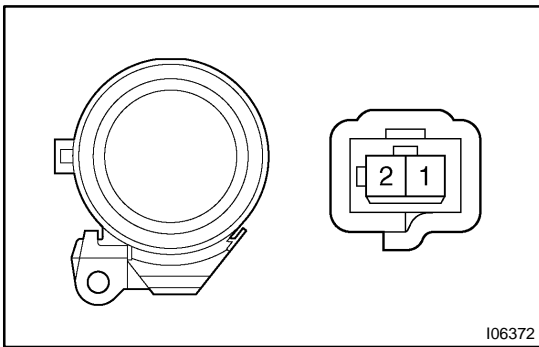


INSPECTION

1. INSPECT IGNITION SWITCH CONTINUITY

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

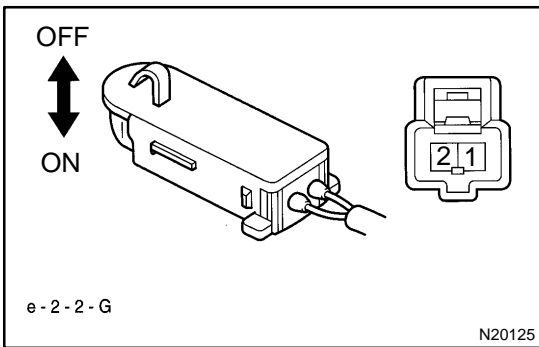
If continuity is not as specified, replace the switch.



2. INSPECT IGNITION KEY ILLUMINATION OPERATION

Connect the positive (+) lead from the battery to terminal 1 and the negative (-) lead to terminal 2, and check that the indicator light lights up.

If operation is not as specified, replace the switch.



3. INSPECT KEY UNLOCK WARNING SWITCH CONTINUITY

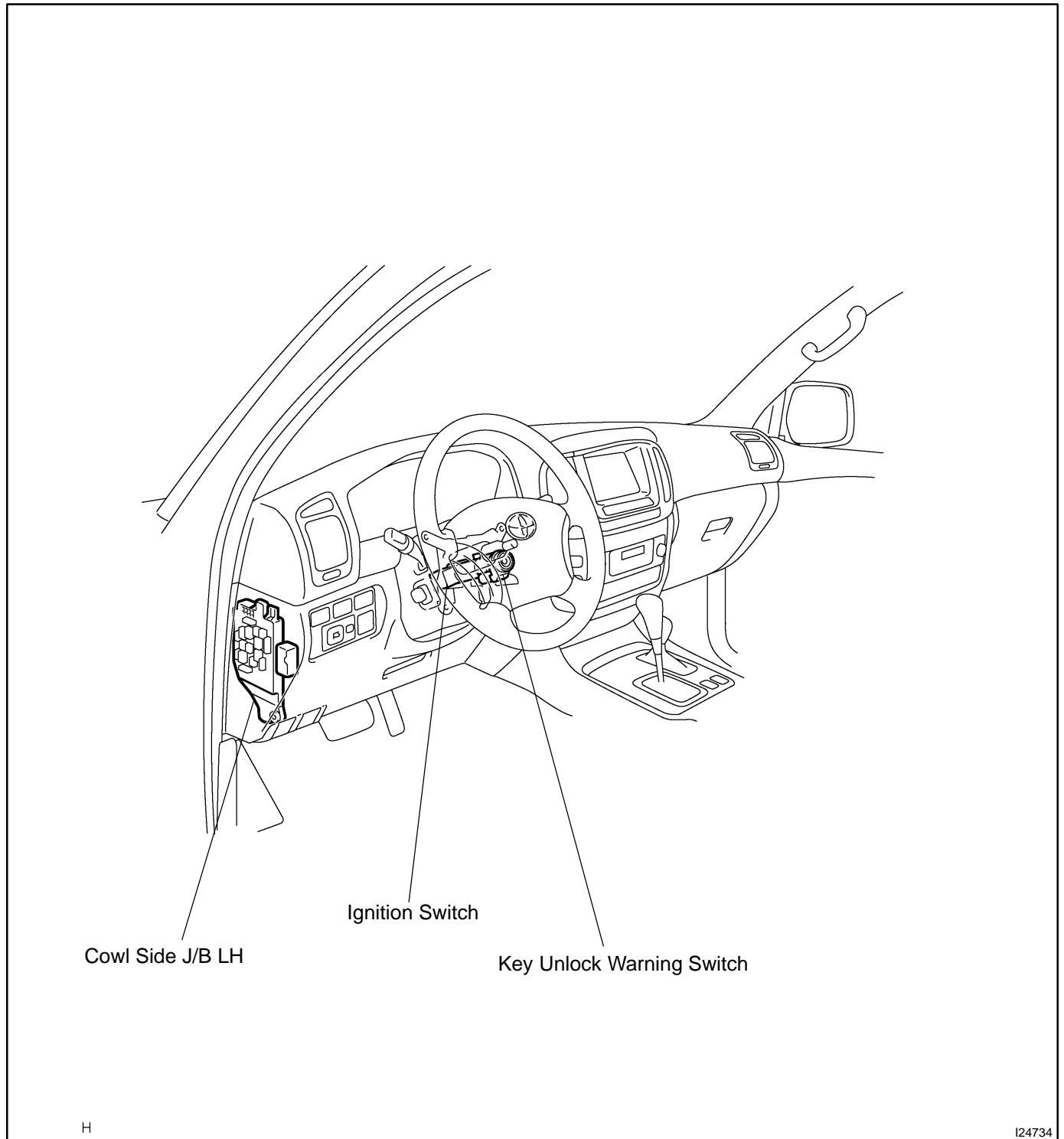
Switch position	Tester connection	Specified condition
OFF (Key removed)	-	No continuity
ON (Key set)	1 - 2	Continuity

If continuity is not as specified, replace the switch.

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

IGNITION SWITCH AND KEY UNLOCK WARNING SWITCH LOCATION

BE01L-17



MULTI DISPLAY TROUBLESHOOTING

BE2E1-01

HINT:

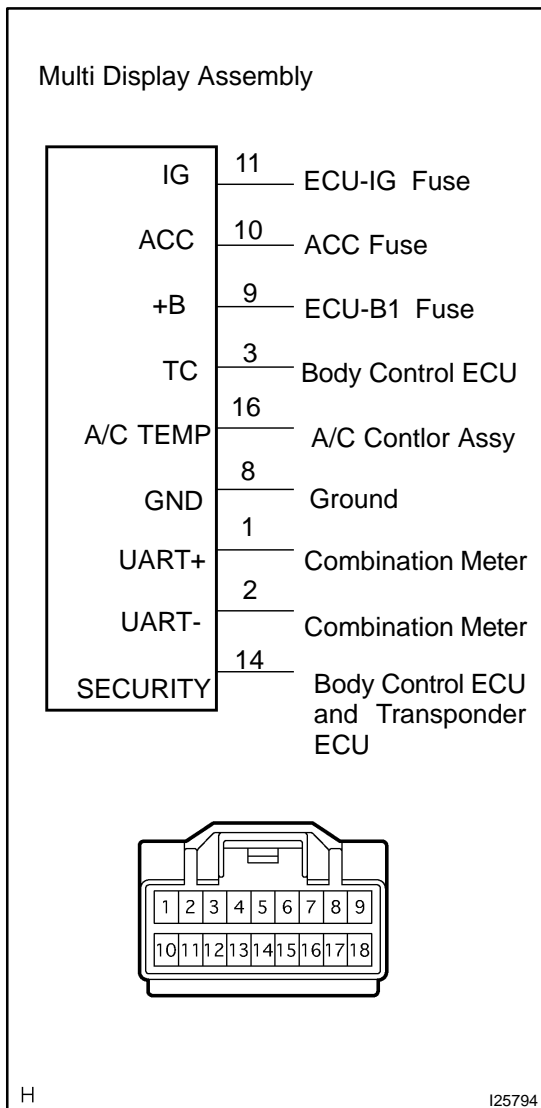
- Troubleshoot the Multi Display according to the table below.
- w/ Navigation System (See Page [DI-1 151](#))

Troubleshooting	No.
Multi display does not operate.	1
Clock loses or gains time.	2
Drive monitor function malfunction.	3
Outer temperature display malfunction.	4
Security indicator does not light up.	(See page DI-953)

± 1.5 seconds / day

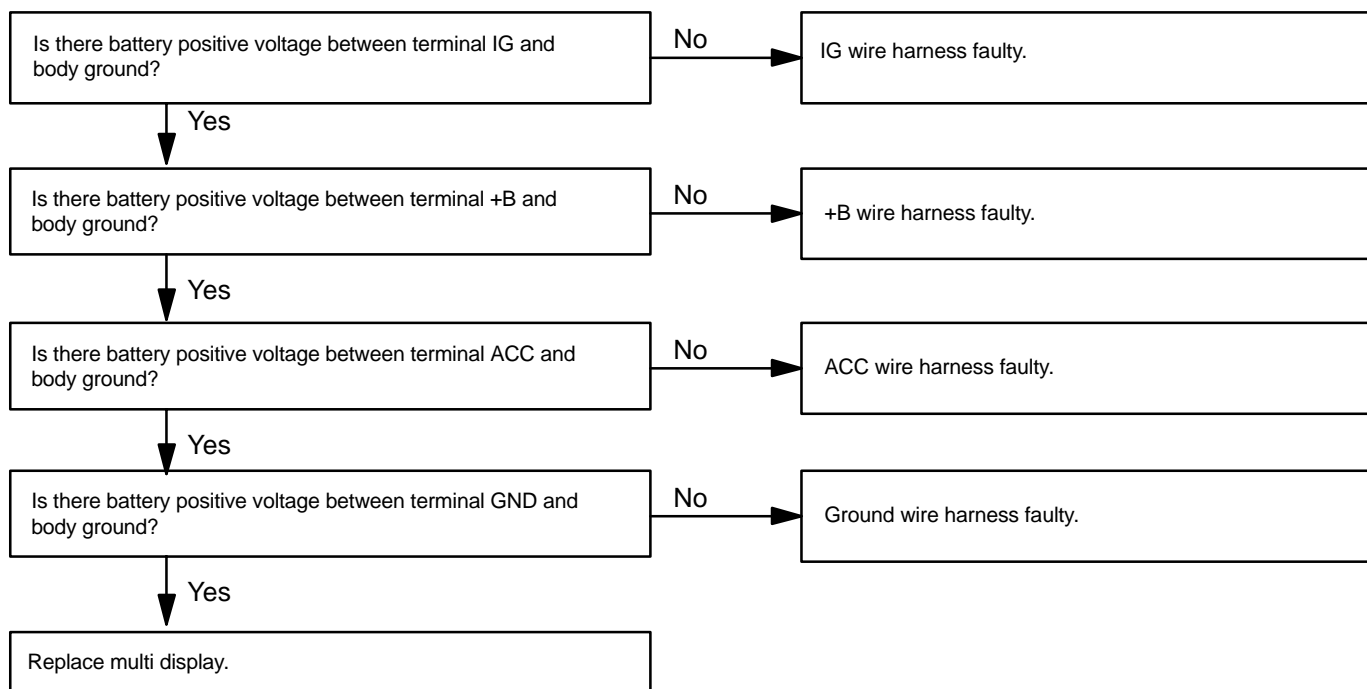
1. TROUBLESHOOTING NO.1

1	MULTI DISPLAY DOES NOT OPERATE
----------	---------------------------------------



- (a) Check that the battery positive voltage is 10 - 16 V. If voltage is not as specified, replace the battery.
- (b) Check that the ECU-IG, ECU-B and ACC fuses are not blown. If the fuse is blown, replace the fuse and check for short.
- (c) Troubleshoot the multi display as follows.
- HINT:**
Inspect the connector on the wire harness side.

BODY ELECTRICAL - MULTI DISPLAY



2. TROUBLESHOOTING NO.2

2	CLOCK LOSES OR GAINS TIME
---	----------------------------------

(a) Check that the battery positive voltage is 10 - 16 V.

If voltage is not as specified, replace the battery.

(b) Inspect the error of the clock.

Allowable error (per day): ± 1.5 seconds

If the error exceeds the allowable error, replace the multi display.

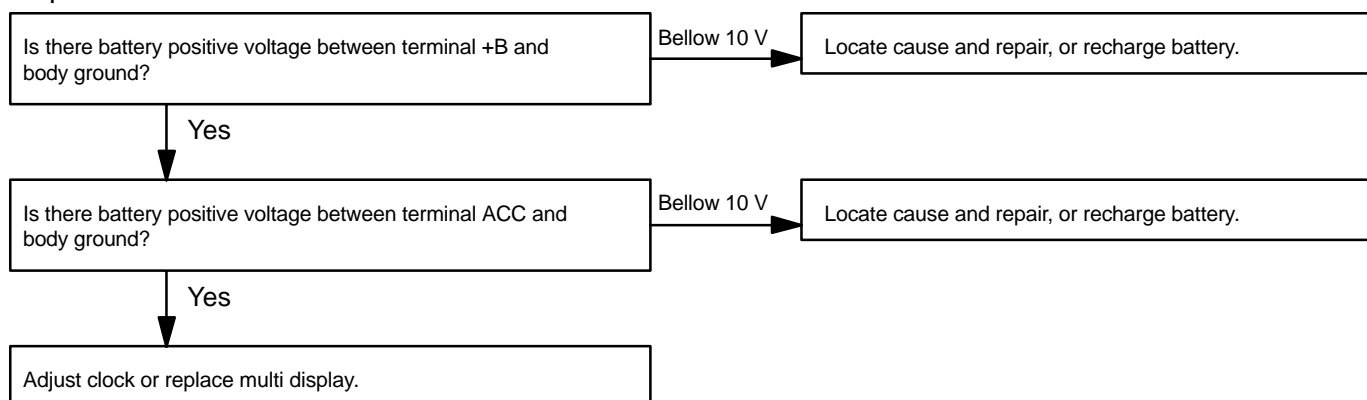
(c) Check that the clock adjusting button is sticking in position and has failed to return.

If the error exceeds the allowable error, replace the multi display.

(d) Troubleshoot the clock as follows.

HINT:

Inspect the connector on the wire harness side.



3. TROUBLESHOOTING NO.3

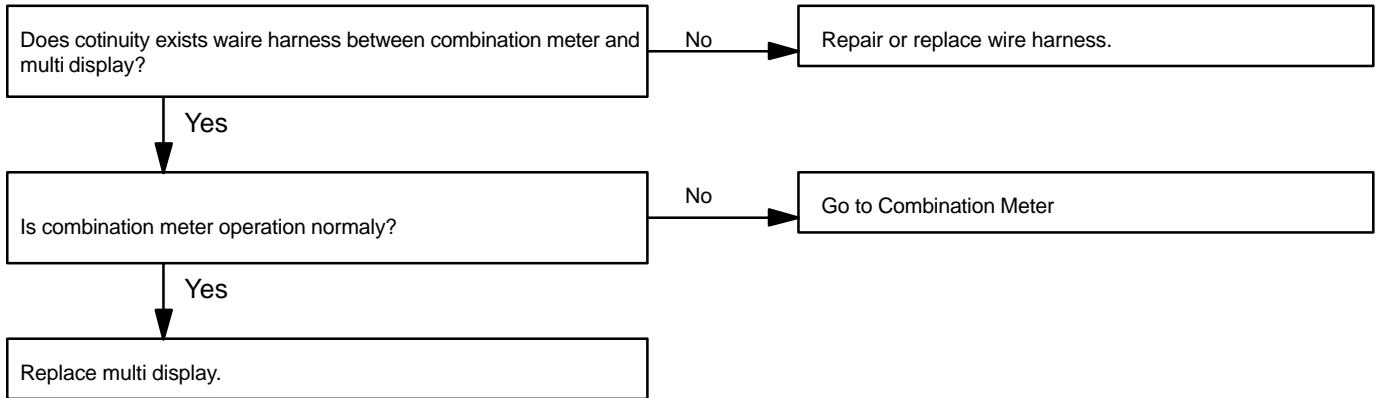
3	DRIVE MONITOR FUNCTION MALFUNCTION
----------	---

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

(b) Troubleshoot the drive monitor function as follows.

HINT:

Inspect the connector on the wire harness side.



4. TROUBLESHOOTING NO.4

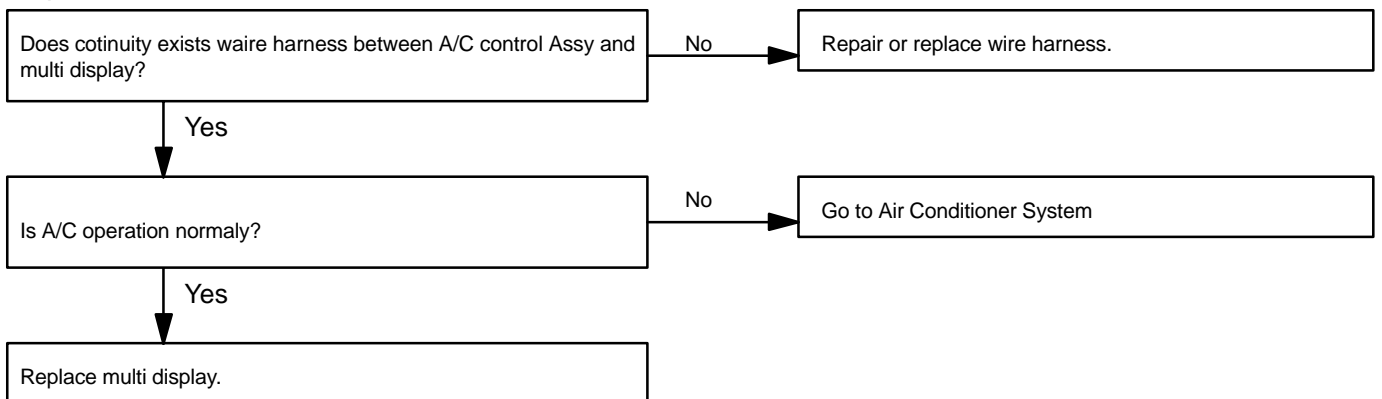
4	OUTER TEMPERATURE DISPLAY MALFUNCTION
----------	--

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

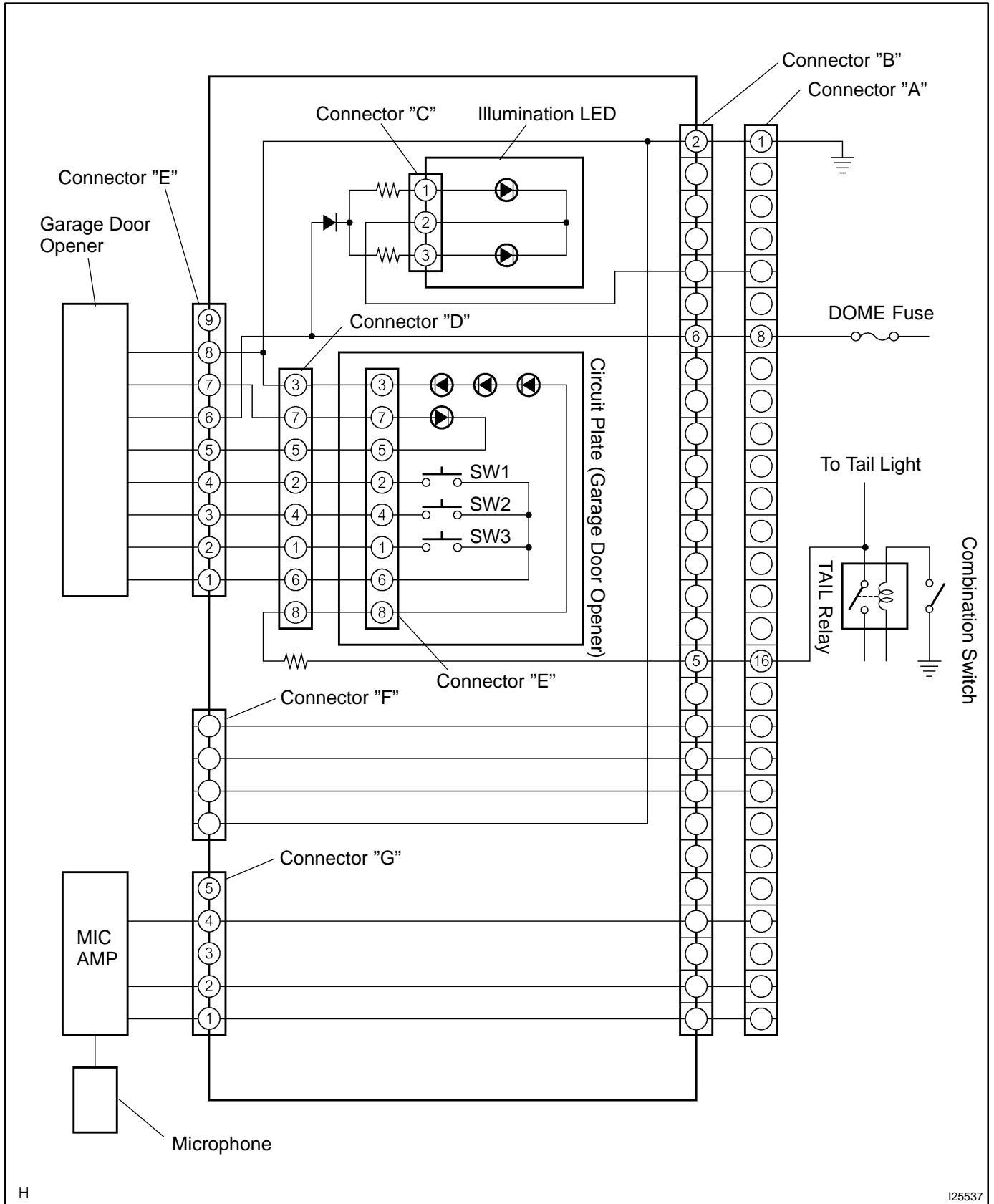
(b) Troubleshoot the outer temperature display as follows.

HINT:

Inspect the connector on the wire harness side.



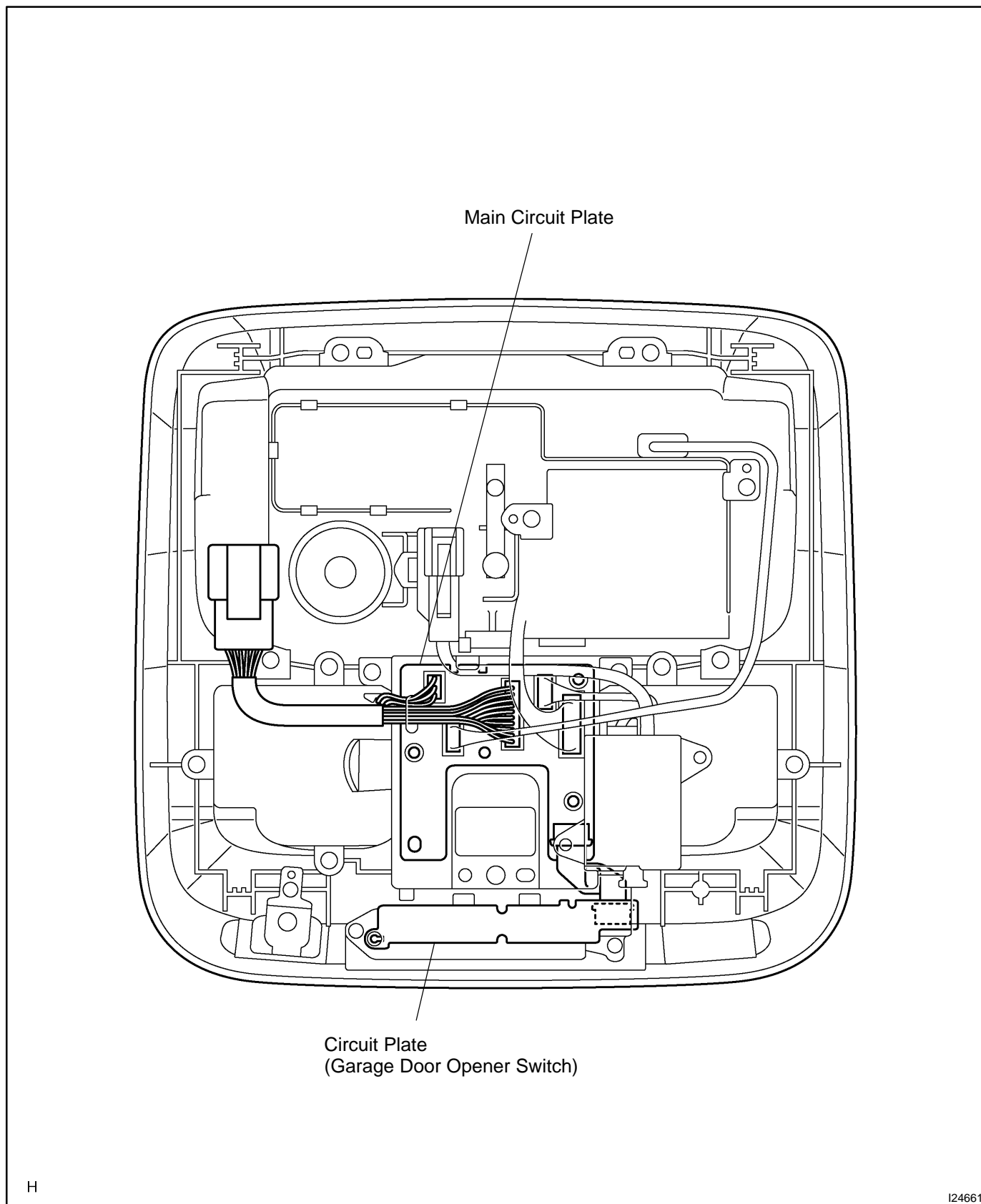
CIRCUIT

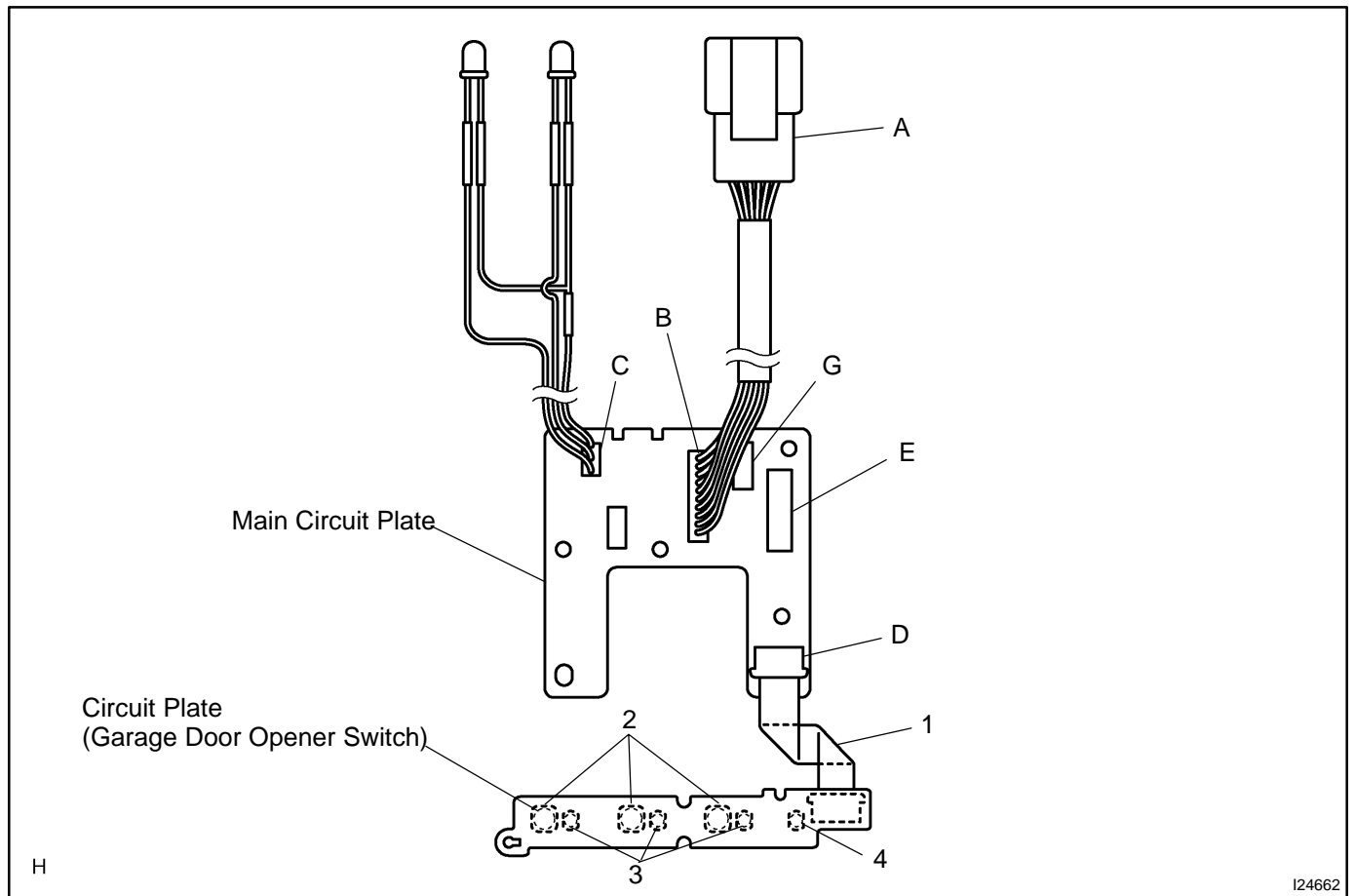


H

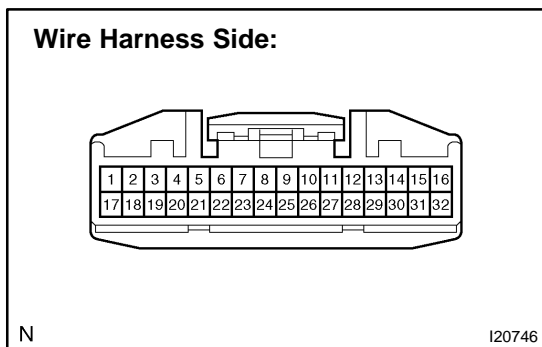
125537

COMPONENTS





Parts No.	Connector name	Related to systems
A, B	Vehicle wire harness connector	-
C	Overhead console illumination connector (Unbar)	Overhead junction block illumination
D	Garage door opener ECU connector	Garage door opener system
E	Garage door opener ECU connector	Garage door opener system
G	Voice recognition connector	Navigation system
1	Garage door opener substrate flat harness connector	Garage door opener system
2	Garage door opener switch	Garage door opener system
3	Garage door opener LED (Green)	Garage door opener system
4	Garage door opener operate indicator LED (Red)	Garage door opener system

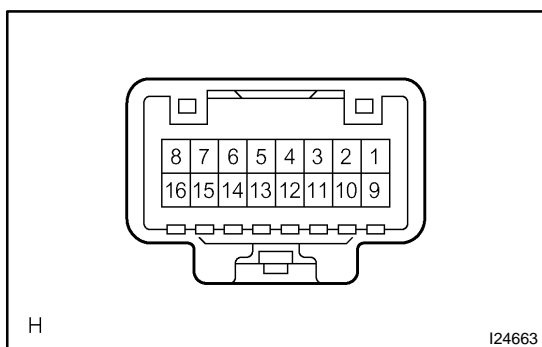


INSPECTION

- 1. INSPECT OVERHEAD JUNCTION BLOCK ASSEMBLY**
Disconnect the connector from the overhead J/B and inspect the connector on the wire harness side, as shown.

Tester connection	Condition	Specified condition
1 - Ground	Constant	Continuity
8 - Ground	Constant	Battery positive voltage
11 - Ground	Ignition switch OFF or ACC	No voltage
	Ignition switch ON	Battery positive voltage

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



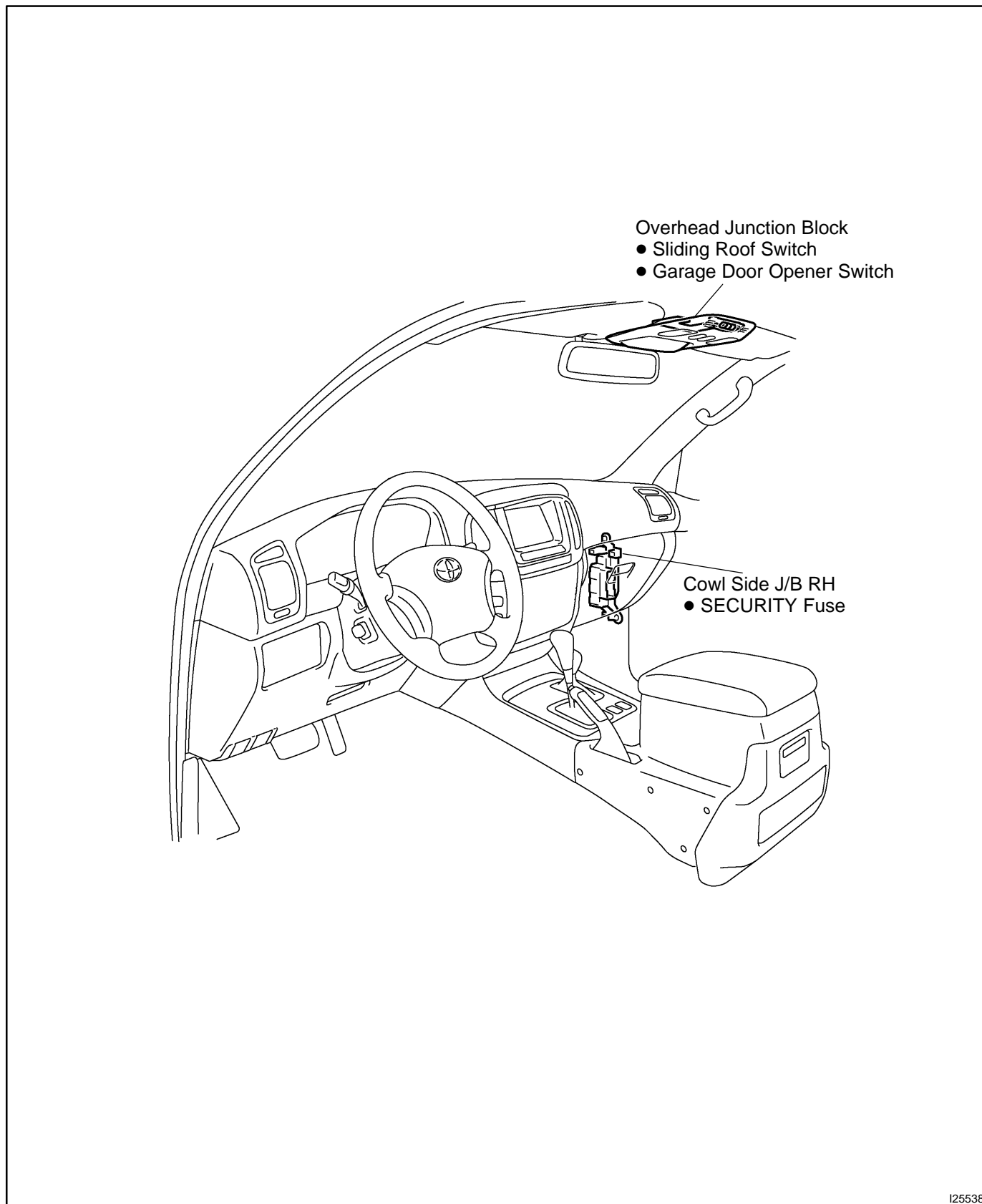
- 2. Overhead J/B side:**
INSPECT OVERHEAD JUNCTION BLOCK ASSEMBLY

Circuit name	Tester connection	Specified condition
Power source circuit	A8 - B6 - E6	Continuity
Ground circuit	A1 - B2 - E8 - D3	Continuity
Microphone circuit	B10 - G4	Continuity
Microphone circuit	B9 - G2	Continuity

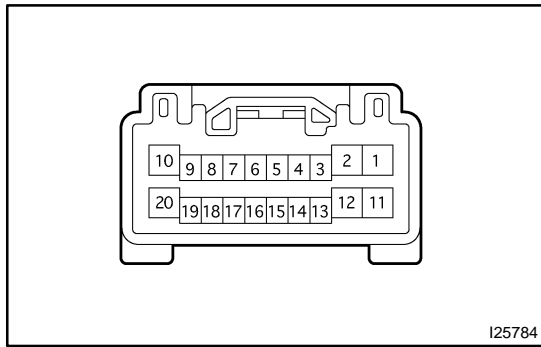
If continuity is not as specified, replace the overhead J/B assembly.

OVERHEAD JUNCTION BLOCK LOCATION

BE2E4-01



125538



I25784

INSPECTION

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

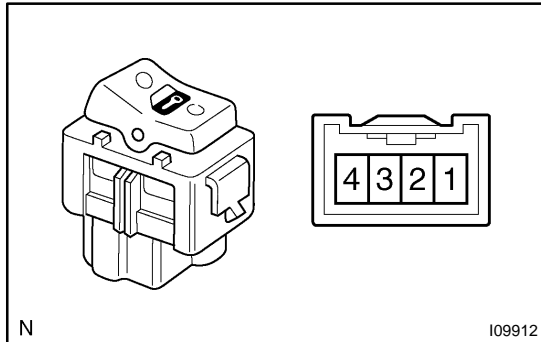
Switch position	Tester connection	Specified condition
LOCK	3 - 4	Continuity
OFF	-	No continuity
UNLOCK	3 - 14	Continuity

If continuity is not as specified, replace the switch.

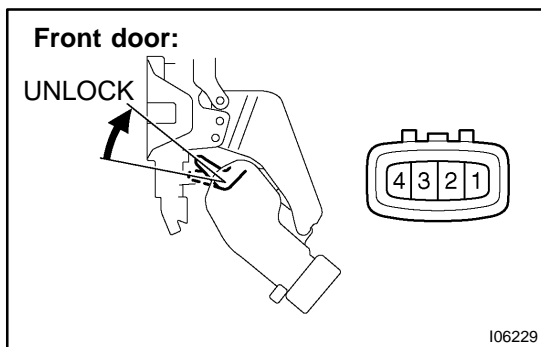
2. INSPECT PASSENGER'S DOOR LOCK CONTROL SWITCH CONTINUITY

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

If continuity is not as specified, replace the switch.



I09912

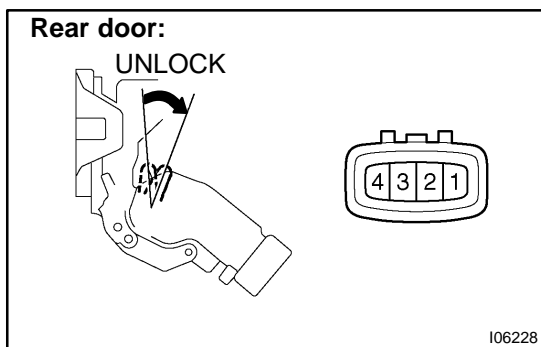


I06229

3. Front door: INSPECT DOOR UNLOCK DETECTION SWITCH CONTINUITY

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

If continuity is not as specified, replace the switch.

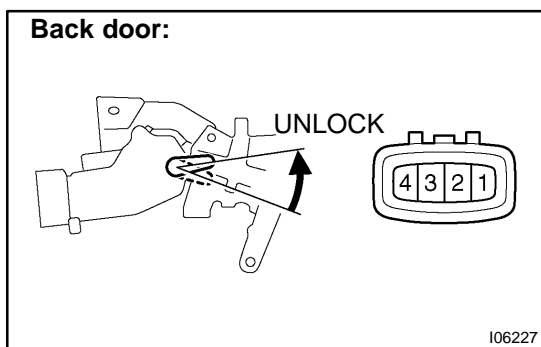


I06228

4. Rear door: INSPECT DOOR UNLOCK DETECTION SWITCH CONTINUITY

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

If continuity is not as specified, replace the switch.

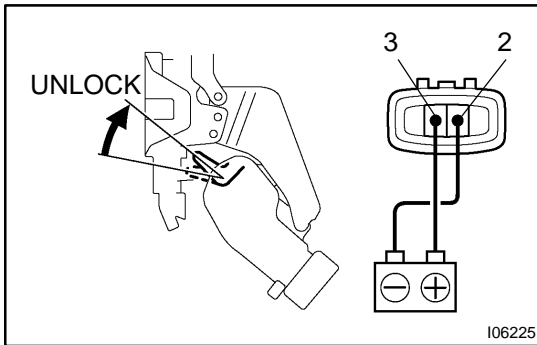


I06227

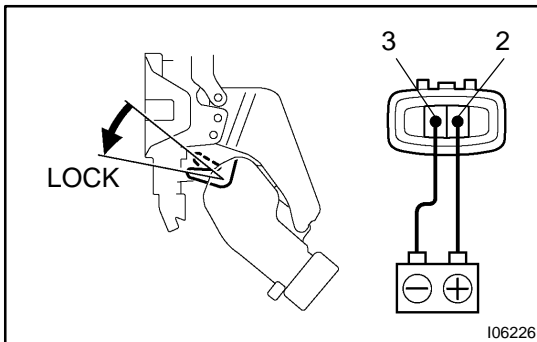
5. Back door: INSPECT DOOR UNLOCK DETECTION SWITCH CONTINUITY

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

If continuity is not as specified, replace the switch.

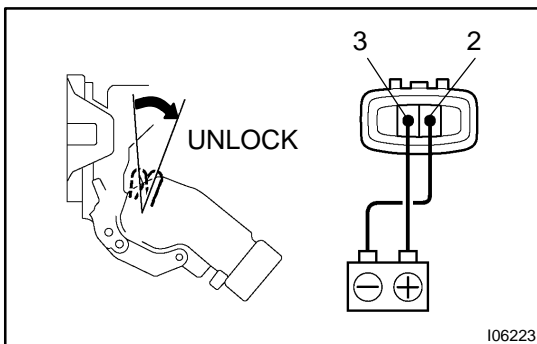
**6. Front door:****INSPECT DOOR LOCK MOTOR OPERATION**

- (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.

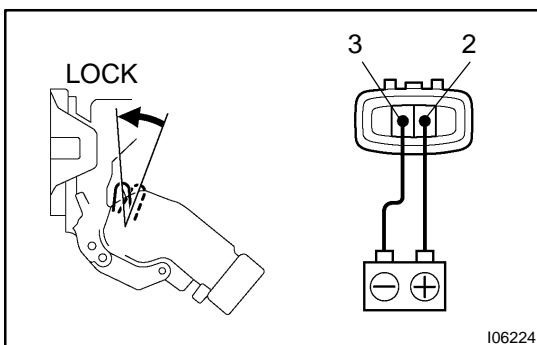


- (b) Reverse the polarity and check that the door lock link moves to LOCK position.

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

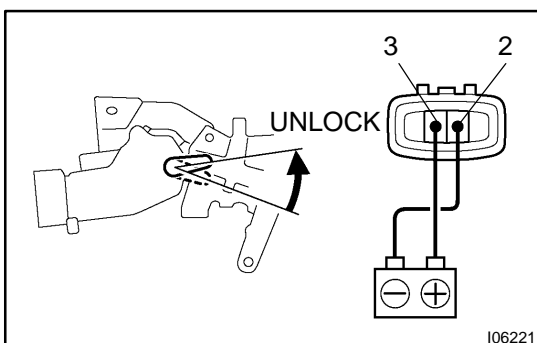
**7. Rear door:****INSPECT DOOR LOCK MOTOR OPERATION**

- (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.

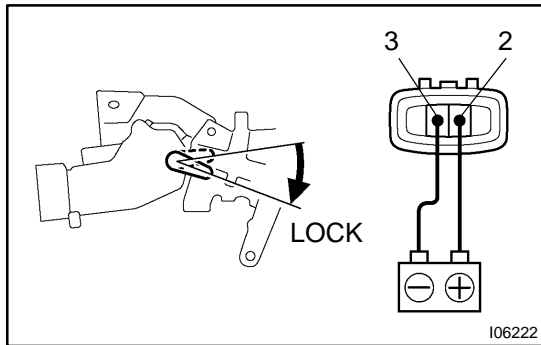


- (b) Reverse the polarity and check that the door lock link moves to LOCK position.

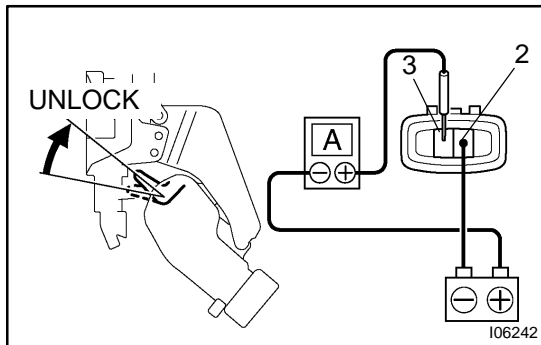
If operation is not as specified, replace the door lock assembly.

**8. Back door:****INSPECT 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.

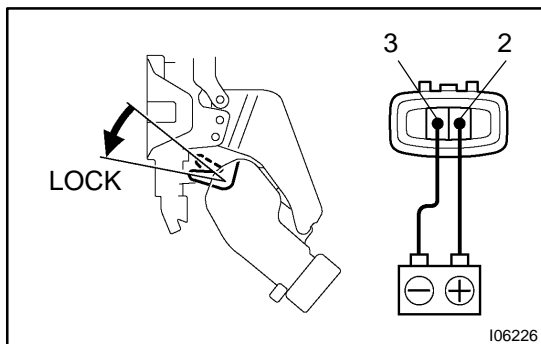


- (b) Reverse the polarity and check that the door lock link moves to LOCK position.
If operation is not as specified, replace the door lock assembly.



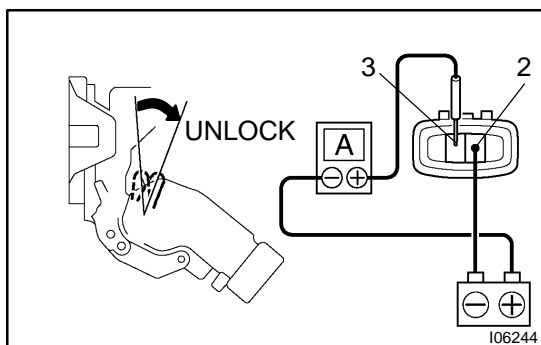
**9. Front door:
INSPECT PTC THERMISTOR OPERATION (Using an ammeter)**

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



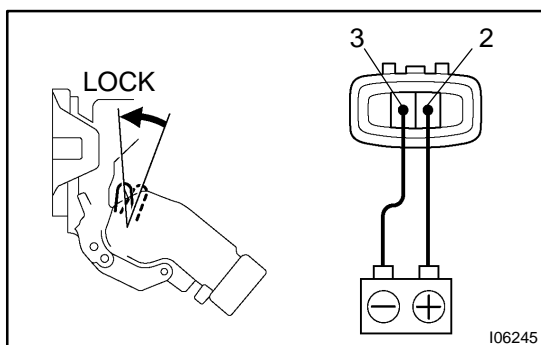
- (c) Disconnect the leads from terminals.
(d) Approximately 60 seconds later, connect the positive (+) lead from the battery to terminal 2 and the negative (-) lead to terminal 3, and check that the door lock moves to the LOCK position.

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



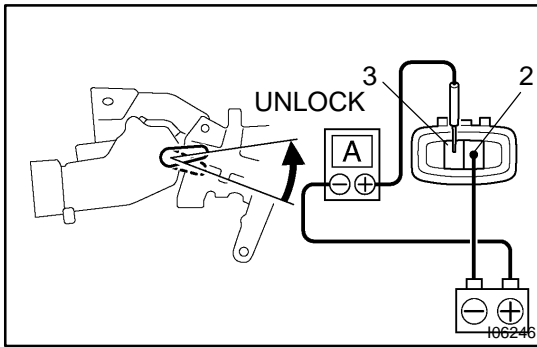
**10. Rear door:
INSPECT PTC THERMISTOR OPERATION (Using an ammeter)**

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



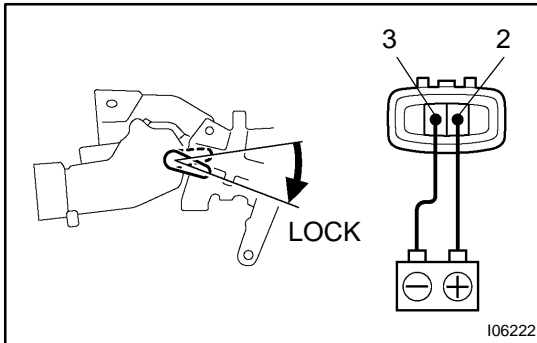
- (c) Disconnect the leads from terminals.
(d) Approximately 60 seconds later, connect the positive (+) lead from the battery to terminal 2 and the negative (-) lead to terminal 3, and check that the door lock moves to the LOCK position.

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



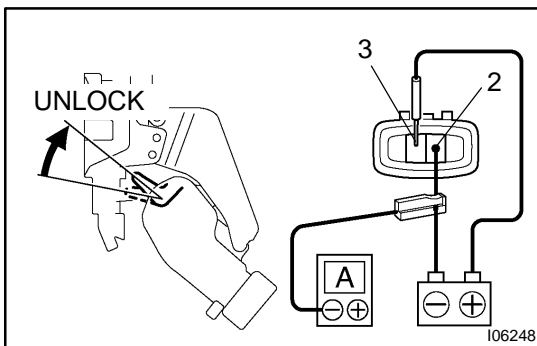
**11. Back door:
INSPECT PTC THERMISTOR OPERATION (Using an ammeter)**

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



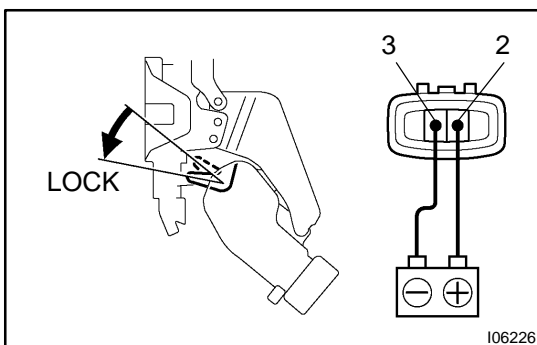
- Disconnect the leads from terminals.
- Approximately 60 seconds later, connect the positive (+) lead from the battery to terminal 2 and the negative (-) lead to terminal 3, and check that the door lock moves to the LOCK position.

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



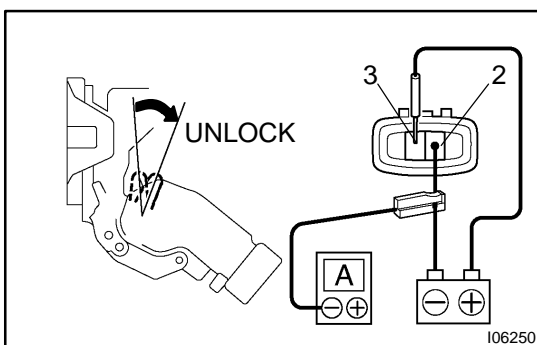
**12. Front door:
INSPECT PTC THERMISTOR OPERATION (Using an ammeter with a current-measuring probe)**

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



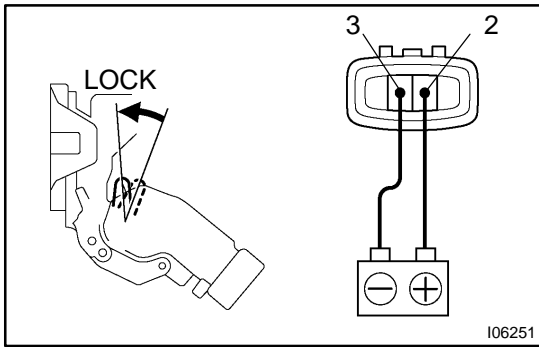
- Disconnect the leads from terminals.
- Approximately 60 seconds later, reverse the polarity, and check that the door lock moves to the LOCK position.

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

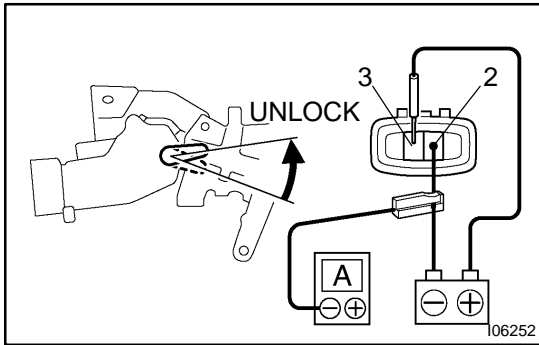


**13. Rear door:
INSPECT PTC THERMISTOR OPERATION (Using an ammeter with a current-measuring probe)**

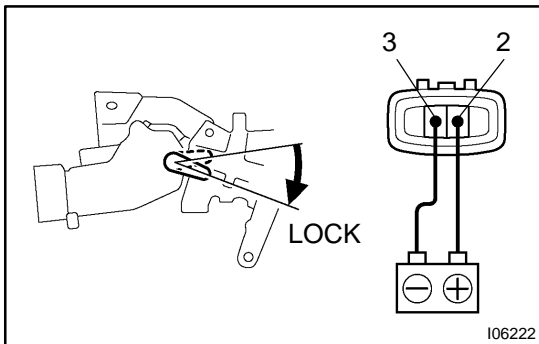
- Connect the positive (+) lead from the battery to terminal 3 and the negative (-) lead to terminal 2.
- Attach a current-measuring probe to either the positive (+) lead or the negative (-) lead, and check that the current changes from approximately 3.2 A to less than 0.5 A within 20 to 70 seconds.



- (c) Disconnect the leads from terminals.
 - (d) Approximately 60 seconds later, reverse the polarity, and check that the door lock moves to the LOCK position.
- If operation is not as specified, replace the door lock assembly.



- 14. Back door:**
INSPECT PTC THERMISTOR OPERATION (Using an ammeter with a current-measuring probe)
- (a) Connect the positive (+) lead from the battery to terminal 3 and the negative (-) lead to terminal 2.
 - (b) Attach a current-measuring probe to either the positive (+) lead or the negative (-) lead, and check that the current changes from approximately 3.2 A to less than 0.5 A within 20 to 70 seconds.

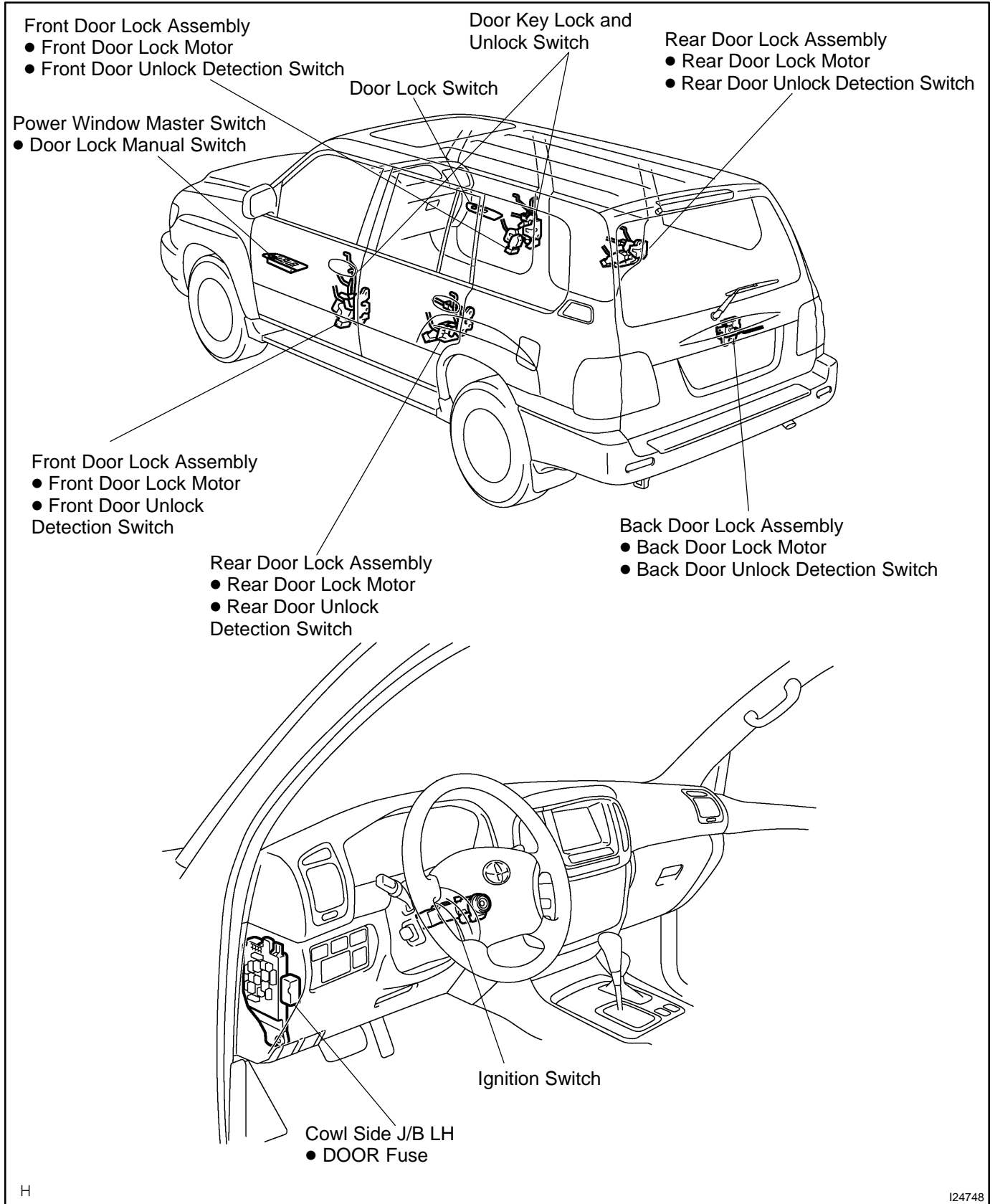


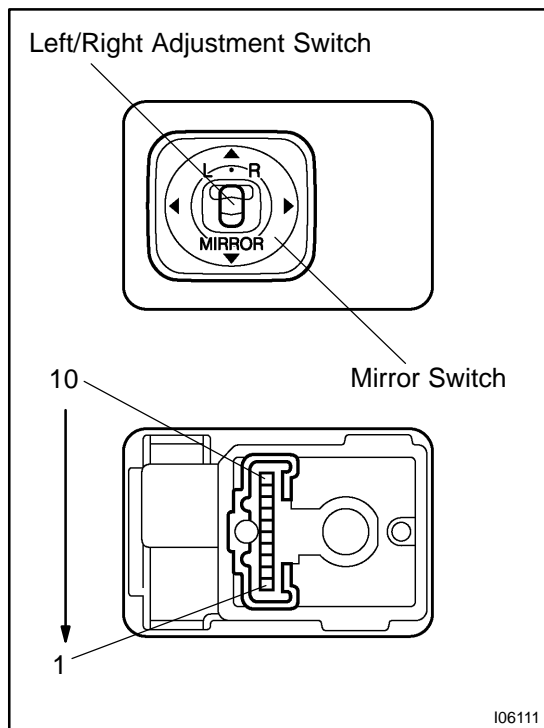
- (c) Disconnect the leads from terminals.
 - (d) Approximately 60 seconds later, reverse the polarity, and check that the door lock moves to the LOCK position.
- If operation is not as specified, replace the door lock assembly.

POWER DOOR LOCK CONTROL SYSTEM

BE0HQ-19

LOCATION





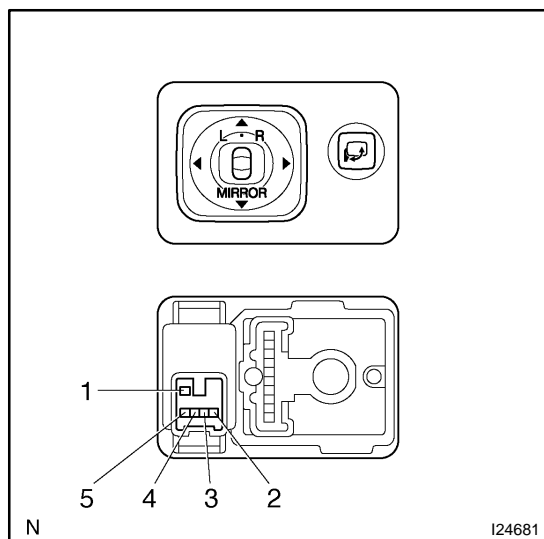
INSPECTION

1. INSPECT LEFT SIDE MIRROR SWITCH CONTINUITY

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

2. INSPECT RIGHT SIDE MIRROR SWITCH CONTINUITY

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

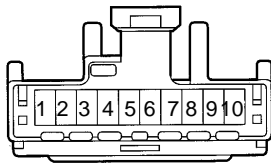


3. INSPECT RETRACT SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
RETURN	1 - 5 2 - 4	Continuity
RETRACT	1 - 2 4 - 5	Continuity

If continuity is not as specified, replace the switch.

Wire Harness Side:



h-10-1-c

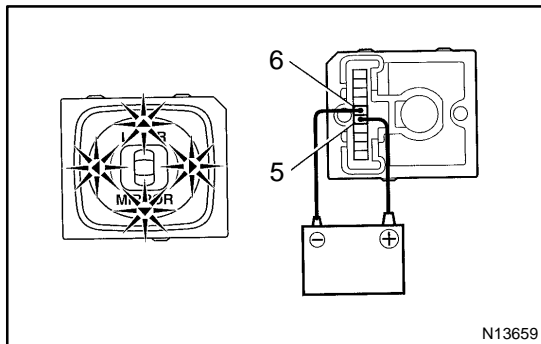
N21376

4. INSPECT MIRROR SWITCH CIRCUIT

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

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

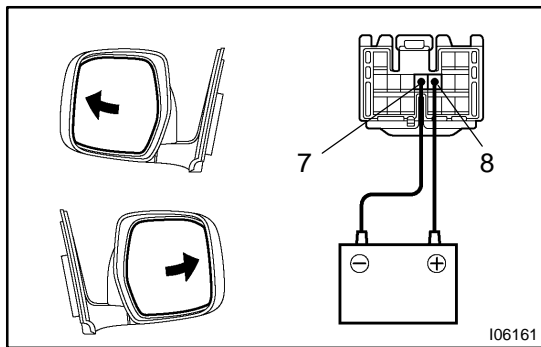
If the circuit is not as specified, inspect the circuits connected to other parts.



N13659

5. INSPECT INDICATOR LIGHT OPERATION

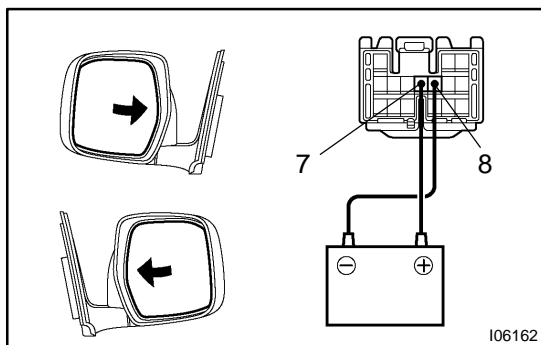
Connect the positive (+) lead from the battery to terminal 5 and the negative (-) lead to terminal 6, and check that the indicator light does not light up, replace the switch.



106161

6. INSPECT MIRROR MOTOR OPERATION

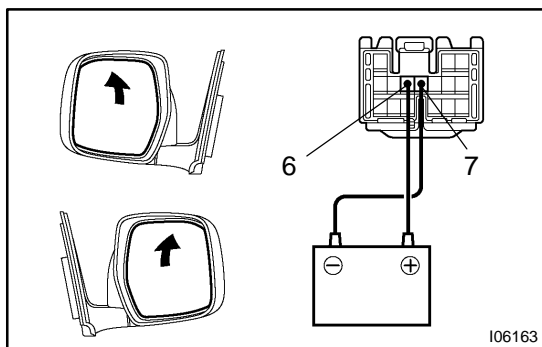
(a) Connect the positive (+) lead from the battery to terminal 8 and the negative (-) lead to terminal 7, and check that the mirror turns to the left side.



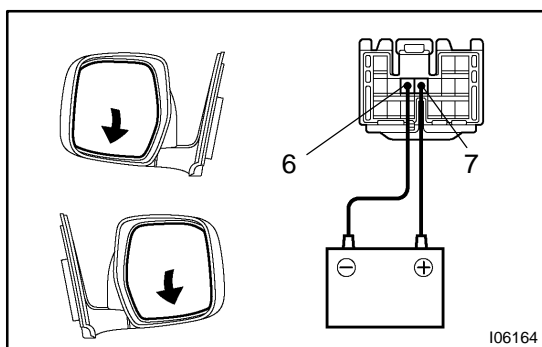
106162

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

BODY ELECTRICAL - POWER MIRROR CONTROL SYSTEM



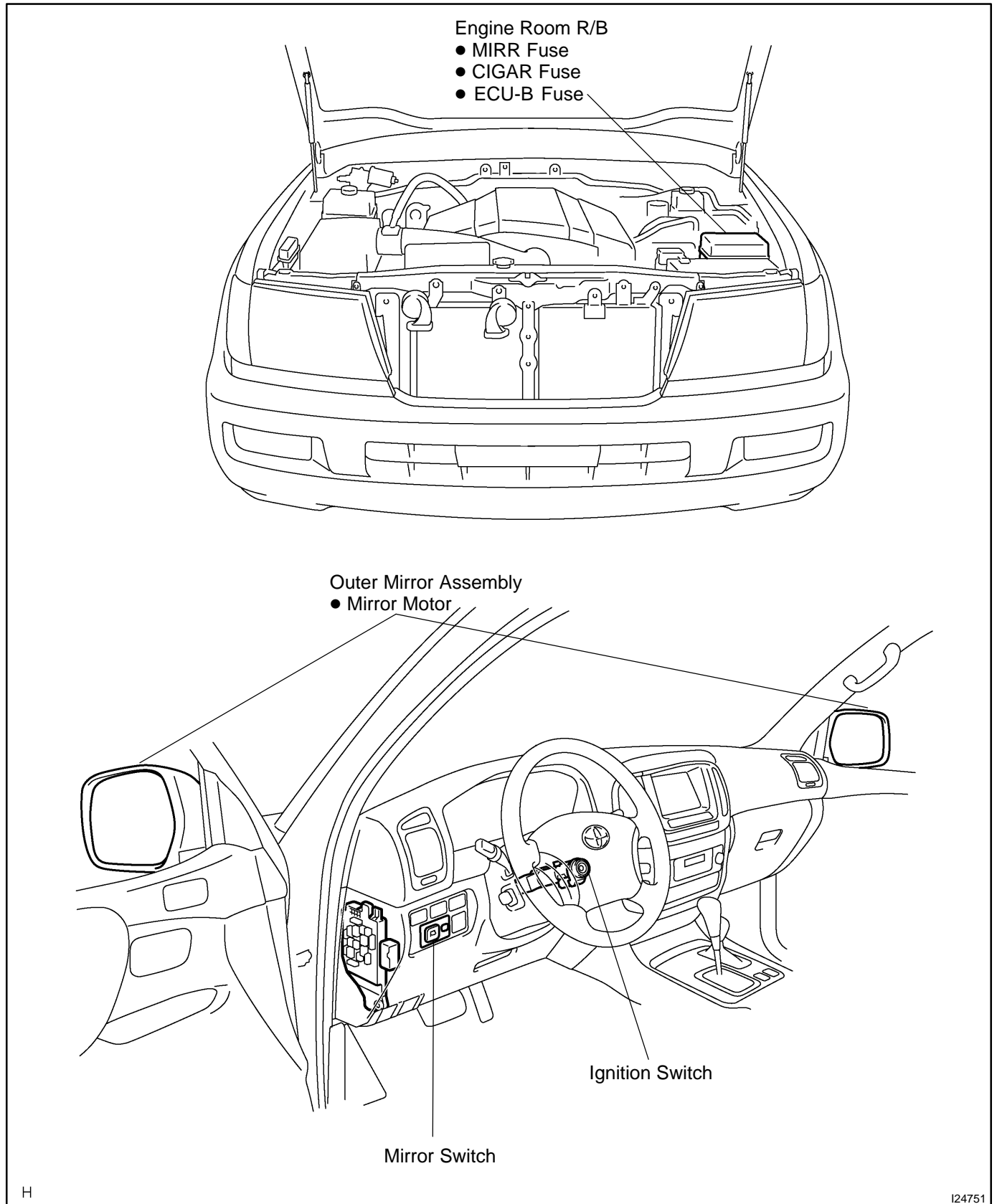
- (c) Connect the positive (+) lead from the battery to terminal 6 and the negative (-) lead to terminal 7, and check that the mirror turns upward.



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

POWER MIRROR CONTROL SYSTEM LOCATION

BE02J-16

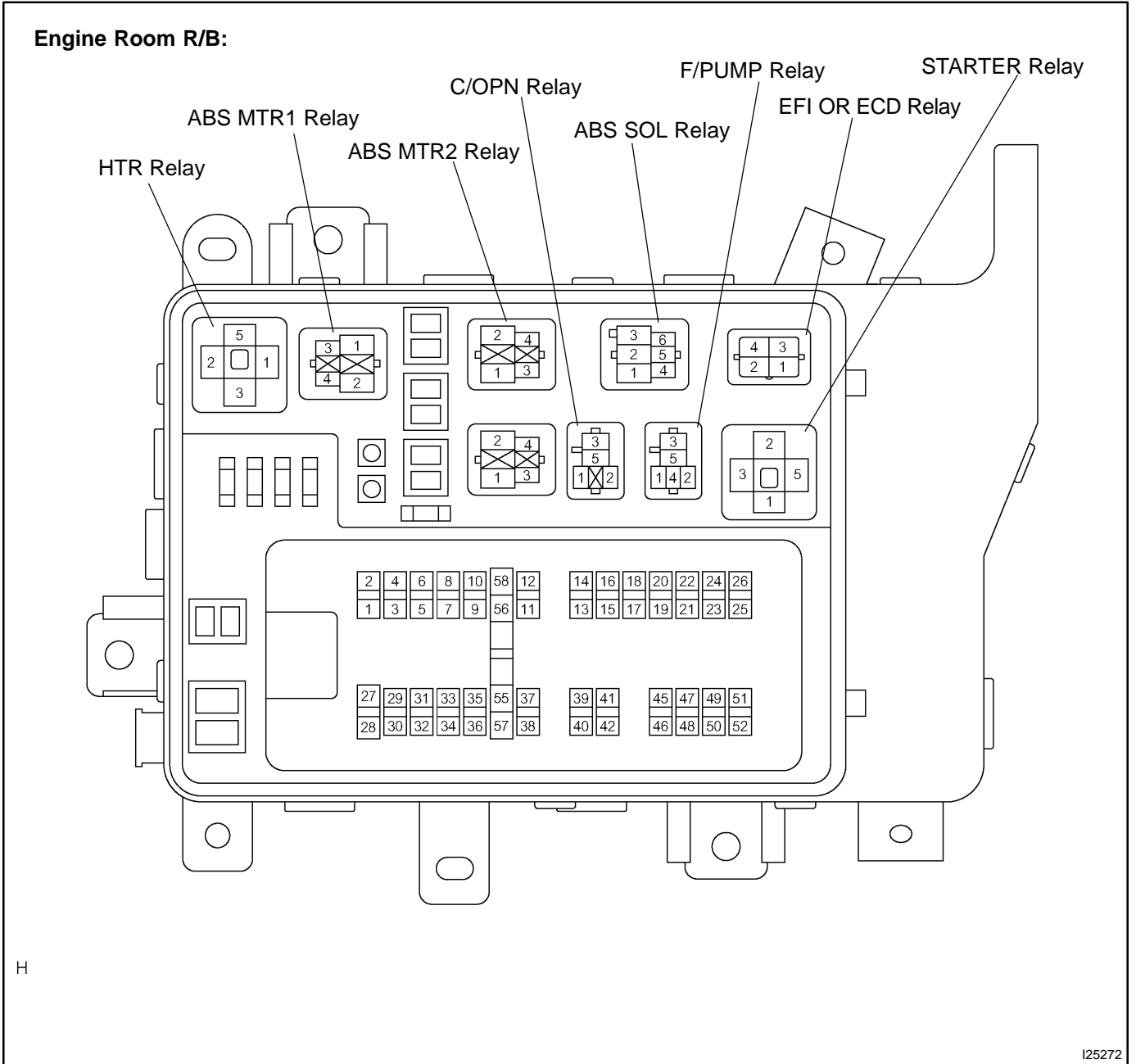


H

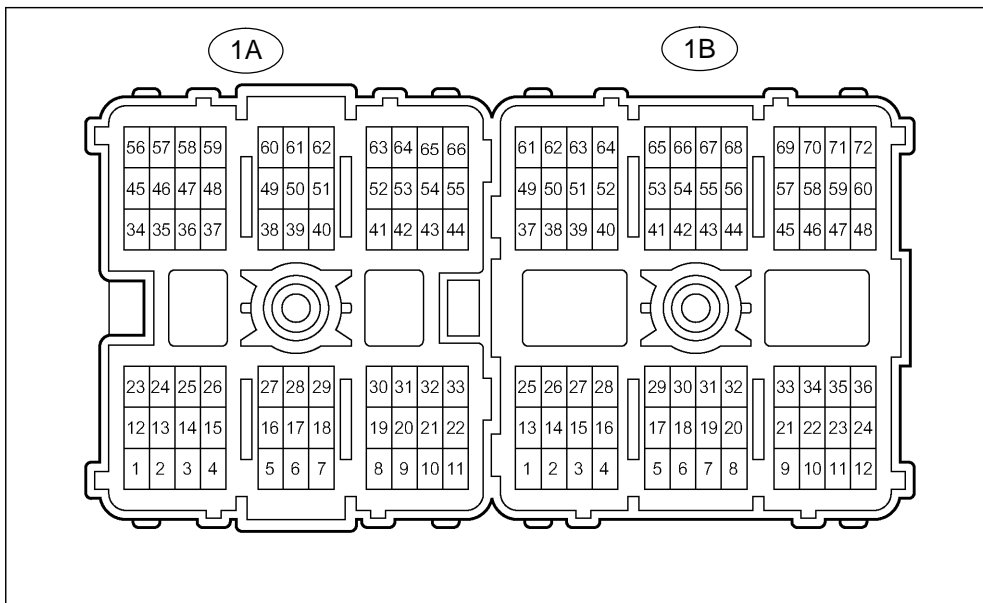
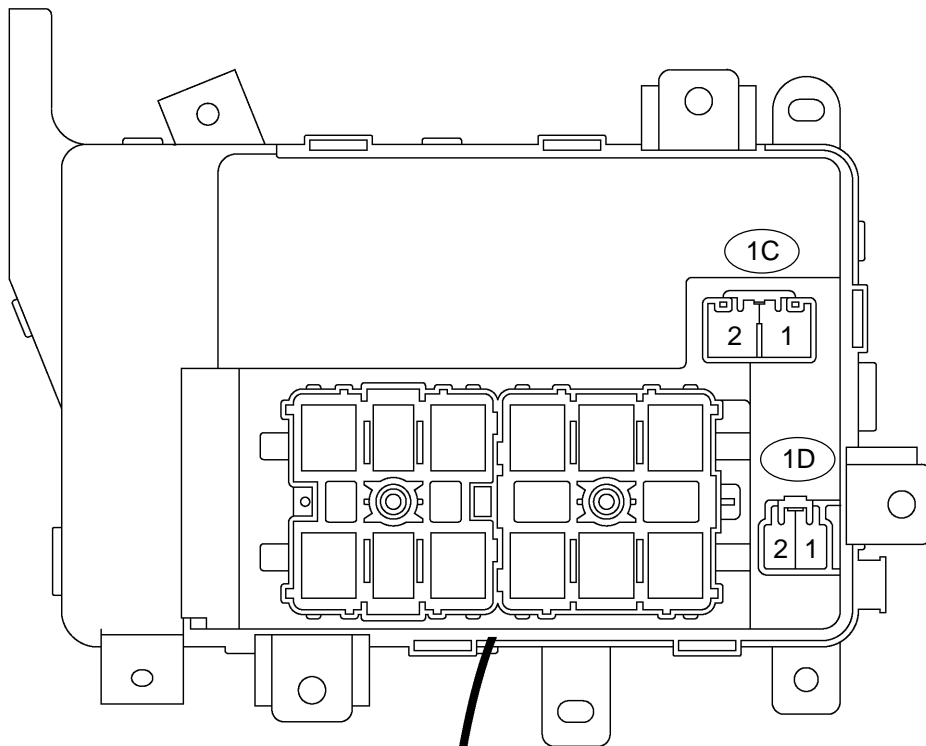
I24751

INSPECTION

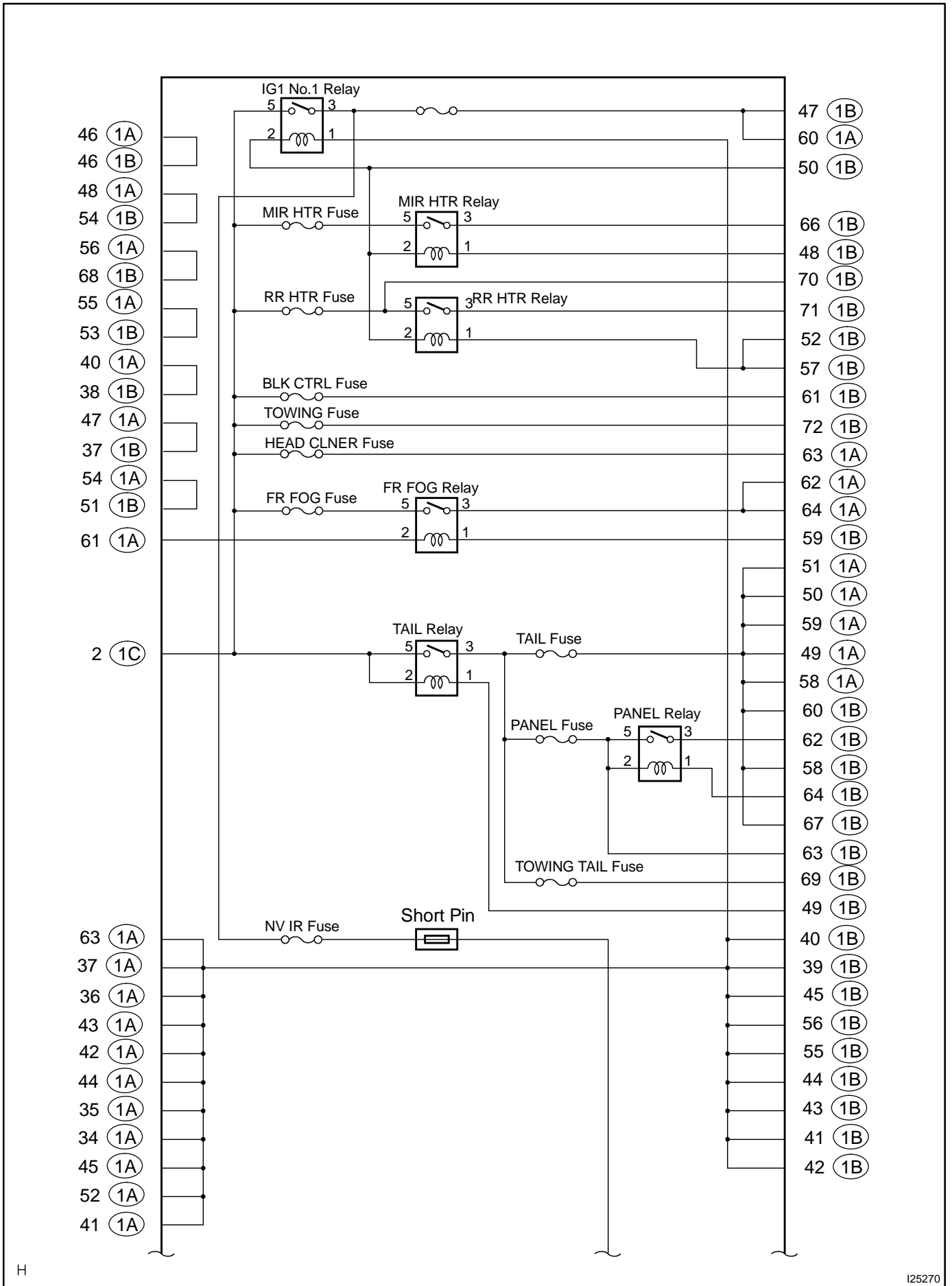
1. INSPECT ENGINE ROOM R/B CIRCUIT



Engine Room R/B (Back Side):

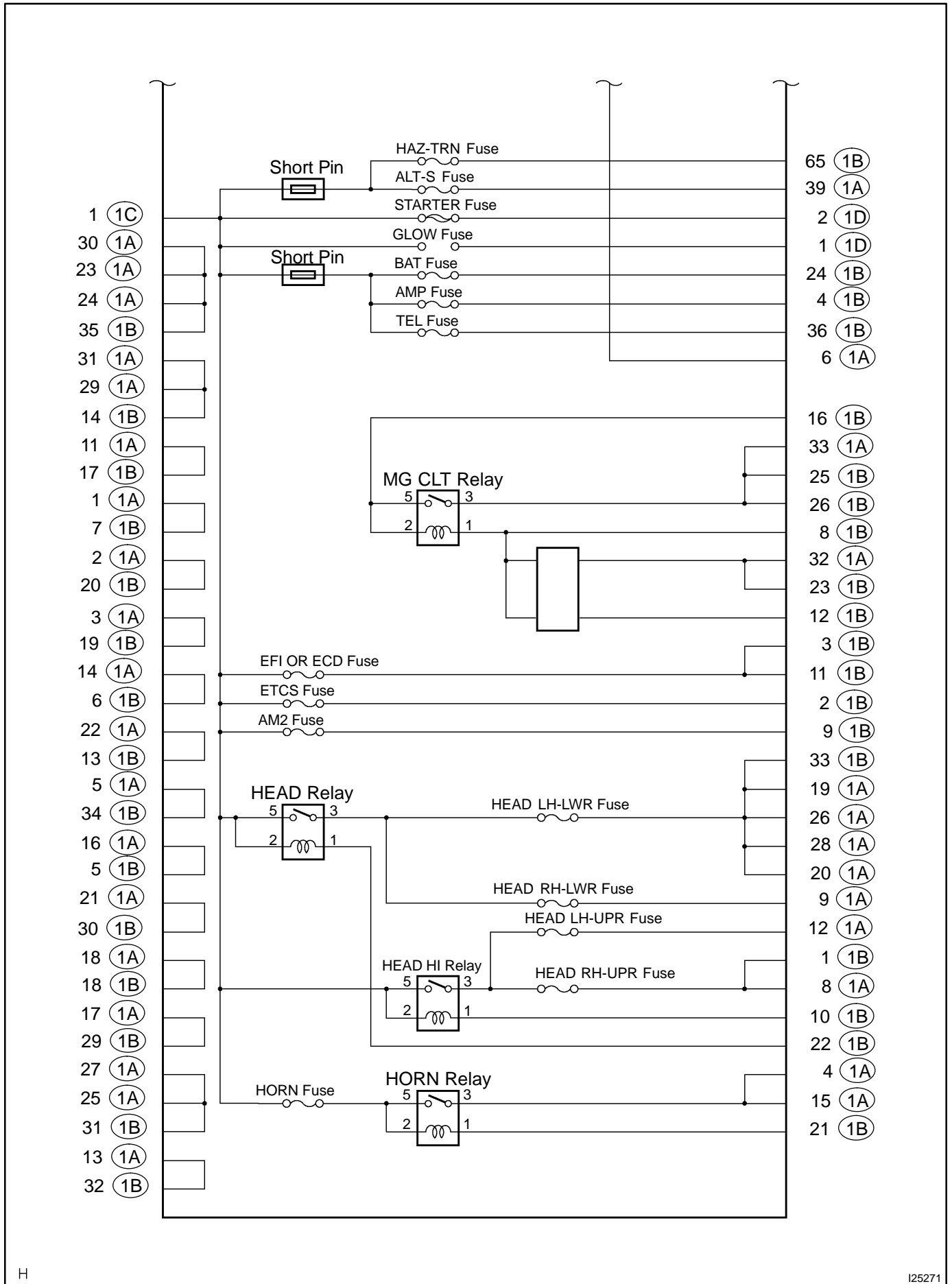


BODY ELECTRICAL - POWER SOURCE



H

I25270



BODY ELECTRICAL - POWER SOURCE

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

Fuse	Tester connection	Condition	Specified condition
TOWING	1 - Ground	Constant	Battery positive voltage
MIR HTR	3 - Ground	Constant	Battery positive voltage
RR HTR	5 - Ground	Constant	Battery positive voltage
HAZ-TRN	7 - Ground	Constant	Battery positive voltage
ALT-S	9 - Ground	Constant	Battery positive voltage
NV-IR	13 - Ground	Constant	Battery positive voltage
FR FOG	13 - Ground	Constant	Battery positive voltage
BRK CTRL	15 - Ground	Constant	Battery positive voltage
HEAD CLNER	17 - Ground	Ignition switch ON	Battery positive voltage
FR-IG	19 - Ground	Ignition switch ON	Battery positive voltage
PANEL	21 - Ground	Light control switch HEAD or TAIL	Battery positive voltage
TOWING TAIL	23 - Ground	Light control switch HEAD or TAIL	Battery positive voltage
TAIL	25 - Ground	Light control switch HEAD or TAIL	Battery positive voltage
BAT	29 - Ground	Constant	Battery positive voltage
TEL	31 - Ground	Constant	Battery positive voltage
AMP	33 - Ground	Constant	Battery positive voltage
EFI or ECD NO.1	35 - Ground	Constant	Battery positive voltage
AM2	37 - Ground	Constant	Battery positive voltage
ETCS	39 - Ground	Constant	Battery positive voltage
HORN	41 - Ground	Constant	Battery positive voltage
HEAD LH-UPR	51 - Ground	Light control switch HI or Flash	Battery positive voltage
HEAD RH-UPR	49 - Ground	Light control switch HI or Flash	Battery positive voltage
HEAD LH-LWR	47 - Ground	Light control switch HEAD	Battery positive voltage
HEAD RH-LWR	45 - Ground	Light control switch HEAD	Battery positive voltage
ST1	1 - Ground	Constant	Battery positive voltage
AHC	1 - Ground	Constant	Battery positive voltage
ABS NO.1	1 - Ground	Constant	Battery positive voltage
ABS NO.2	1 - Ground	Constant	Battery positive voltage
STARTER	1 - Ground	Constant	Battery positive voltage

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

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

Relay	Tester connection	Condition	Specified condition
AHC	1 - Ground	Ignition switch ON	Battery positive voltage
ABS SOL	1 - Ground	Ignition switch ON	Battery positive voltage
ABS MTR1	1 - Ground	Constant	Battery positive voltage
ABS MTR2	1 - Ground	Ignition switch ON	Battery positive voltage
STARTER	5 - Ground	Constant	Continuity
STARTER	2 - Ground	Ignition switch ON	Battery positive voltage
EFI or ECD	3 - Ground	Constant	Battery positive voltage
C/OPN SPIL VLV	5 - Ground	Constant	Battery positive voltage
C/OPN SPIL VLV	2 - Ground	Ignition switch ON	Continuity

F/P PUMP ST CUT VISC MG 2 - Ground	Ignition switch ON	Battery positive voltage
F/P PUMP ST CUT VISC MG 3 - Ground	Ignition switch ON	Continuity
HTR 5 - Ground	Constant	Battery positive voltage
HTR 1 - Ground	Ignition switch ON	Continuity

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

- (c) Inspect Engine Room Junction Block Inner Circuit:
Inspect the connector on junction block side.

HINT:

Remove the junction block from the vehicle.

Relay	Tester connection	Condition	Specified condition
IG1 NO.1	50 (1B) - 40 (1B)	Constant	Continuity
IG1 NO.1	50 (1B) - 39 (1B)	Constant	Continuity
IG1 NO.1	50 (1B) - 45 (1B)	Constant	Continuity
IG1 NO.1	50 (1B) - 56 (1B)	Constant	Continuity
IG1 NO.1	50 (1B) - 55 (1B)	Constant	Continuity
IG1 NO.1	50 (1B) - 44 (1B)	Constant	Continuity
IG1 NO.1	50 (1B) - 43 (1B)	Constant	Continuity
IG1 NO.1	50 (1B) - 41 (1B)	Constant	Continuity
IG1 NO.1	50 (1B) - 42 (1B)	Constant	Continuity
IG1 NO.1	2 (1C) - 47 (1B)	Apply B+ between terminals 50 (1B) and 40 (1B).	Continuity
IG1 NO.1	2 (1C) - 60 (1A)	Apply B+ between terminals 50 (1B) and 40 (1B).	Continuity
MIR HTR	50 (1B) - 48 (1B)	Constant	Continuity
MIR HTR	2 (1C) - 66 (1B)	Apply B+ between terminals 50 (1B) and 48 (1B).	Continuity
RR HTR	50 (1B) - 52 (1B)	Constant	Continuity
RR HTR	50 (1B) - 57 (1B)	Constant	Continuity
RR HTR	2 (1C) - 71 (1B)	Apply B+ between terminals 50 (1B) and 52 (1B).	Continuity
RR HTR	70 (1B) - 71 (1B)	Apply B+ between terminals 50 (1B) and 52 (1B).	Continuity
FR FOG	61 (1A) - 59 (1B)	Constant	Continuity
FR FOG	2 (1C) - 62 (1A)	Apply B+ between terminals 61 (1A) and 59 (1B).	Continuity
FR FOG	2 (1C) - 64 (1A)	Apply B+ between terminals 61 (1A) and 59 (1B).	Continuity
TAIL	2 (1C) - 49 (1B)	Constant	Continuity
TAIL	2 (1C) - 51 (1A)	Apply B+ between terminals 2 (1C) and 49 (1B).	Continuity
TAIL	2 (1C) - 50 (1A)	Apply B+ between terminals 2 (1C) and 49 (1B).	Continuity
TAIL	2 (1C) - 59 (1A)	Apply B+ between terminals 2 (1C) and 49 (1B).	Continuity
TAIL	2 (1C) - 49 (1A)	Apply B+ between terminals 2 (1C) and 49 (1B).	Continuity
TAIL	2 (1C) - 58 (1A)	Apply B+ between terminals 2 (1C) and 49 (1B).	Continuity
TAIL	2 (1C) - 60 (1B)	Apply B+ between terminals 2 (1C) and 49 (1B).	Continuity
TAIL	2 (1C) - 58 (1B)	Apply B+ between terminals 2 (1C) and 49 (1B).	Continuity
TAIL	2 (1C) - 67 (1B)	Apply B+ between terminals 2 (1C) and 49 (1B).	Continuity
TAIL	2 (1C) - 69 (1B)	Apply B+ between terminals 2 (1C) and 49 (1B).	Continuity
PANEL	2 (1C) - 64 (1B)	Apply B+ between terminals 2 (1C) and 49 (1B).	Continuity

BODY ELECTRICAL - POWER SOURCE

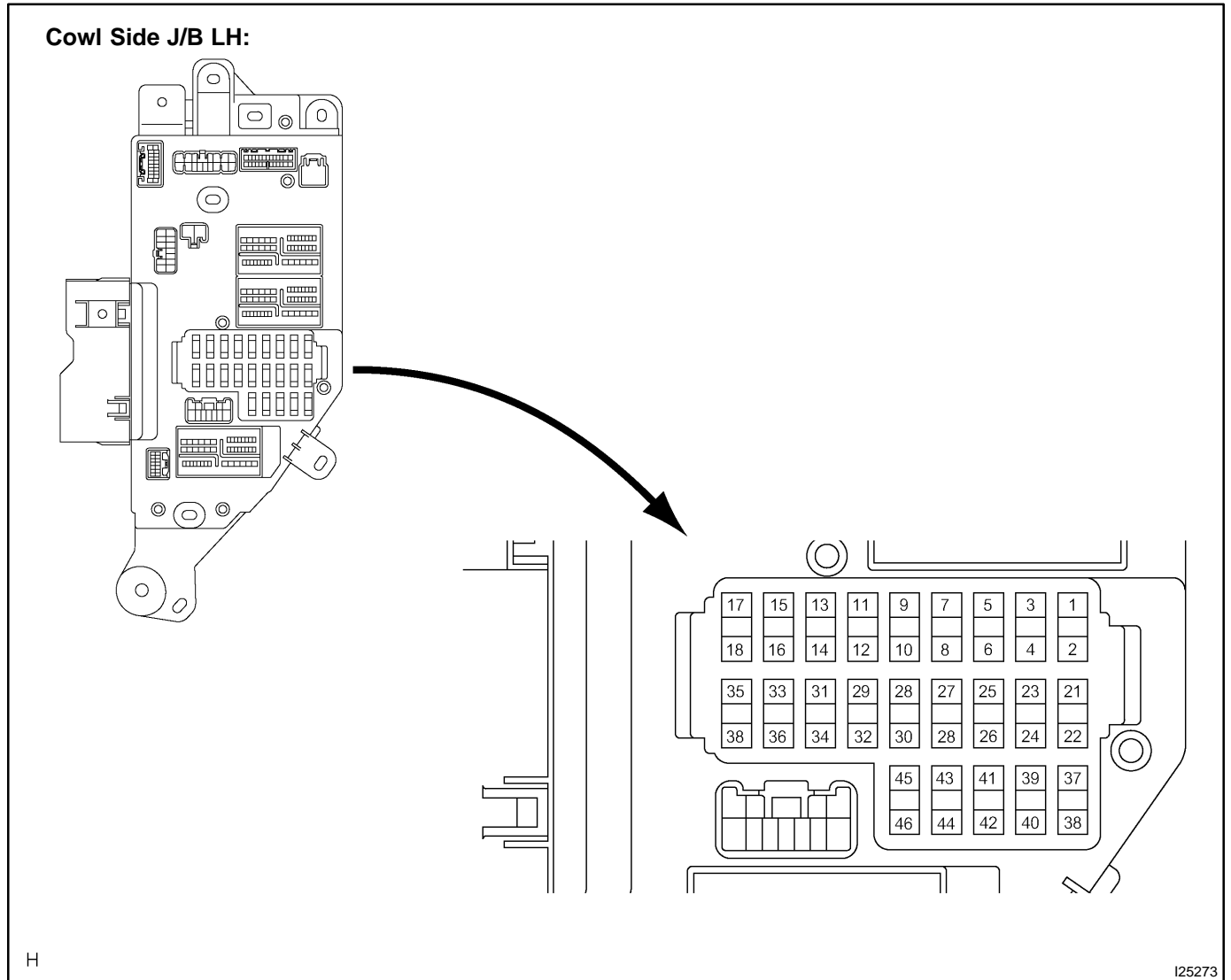
HEAD	1 (1C) - 22 (1B)	Constant	Continuity
HEAD	1 (1C) - 33 (1B)	Apply B+ between terminals 1 (1C) and 22 (1B).	Continuity
HEAD	1 (1C) - 19 (1A)	Apply B+ between terminals 1 (1C) and 22 (1B).	Continuity
HEAD	1 (1C) - 26 (1A)	Apply B+ between terminals 1 (1C) and 22 (1B).	Continuity
HEAD	1 (1C) - 28 (1A)	Apply B+ between terminals 1 (1C) and 22 (1B).	Continuity
HEAD	1 (1C) - 20 (1A)	Apply B+ between terminals 1 (1C) and 22 (1B).	Continuity
HEAD	1 (1C) - 9 (1A)	Apply B+ between terminals 1 (1C) and 22 (1B).	Continuity
HEAD HI	1 (1C) - 10 (1B)	Constant	Continuity
HEAD HI	1 (1C) - 12 (1A)	Apply B+ between terminals 1 (1C) and 10 (1B).	Continuity
HEAD HI	1 (1C) - 1 (1B)	Apply B+ between terminals 1 (1C) and 10 (1B).	Continuity
HEAD HI	1 (1C) - 8 (1A)	Apply B+ between terminals 1 (1C) and 10 (1B).	Continuity
HORN	1 (1C) - 21 (1B)	Constant	Continuity
HORN	1 (1C) - 4 (1A)	Apply B+ between terminals 1 (1C) and 21 (1B).	Continuity
HORN	1 (1C) - 15 (1A)	Apply B+ between terminals 1 (1C) and 21 (1B).	Continuity

If the circuit is not as specified, replace it with junction block assembly.

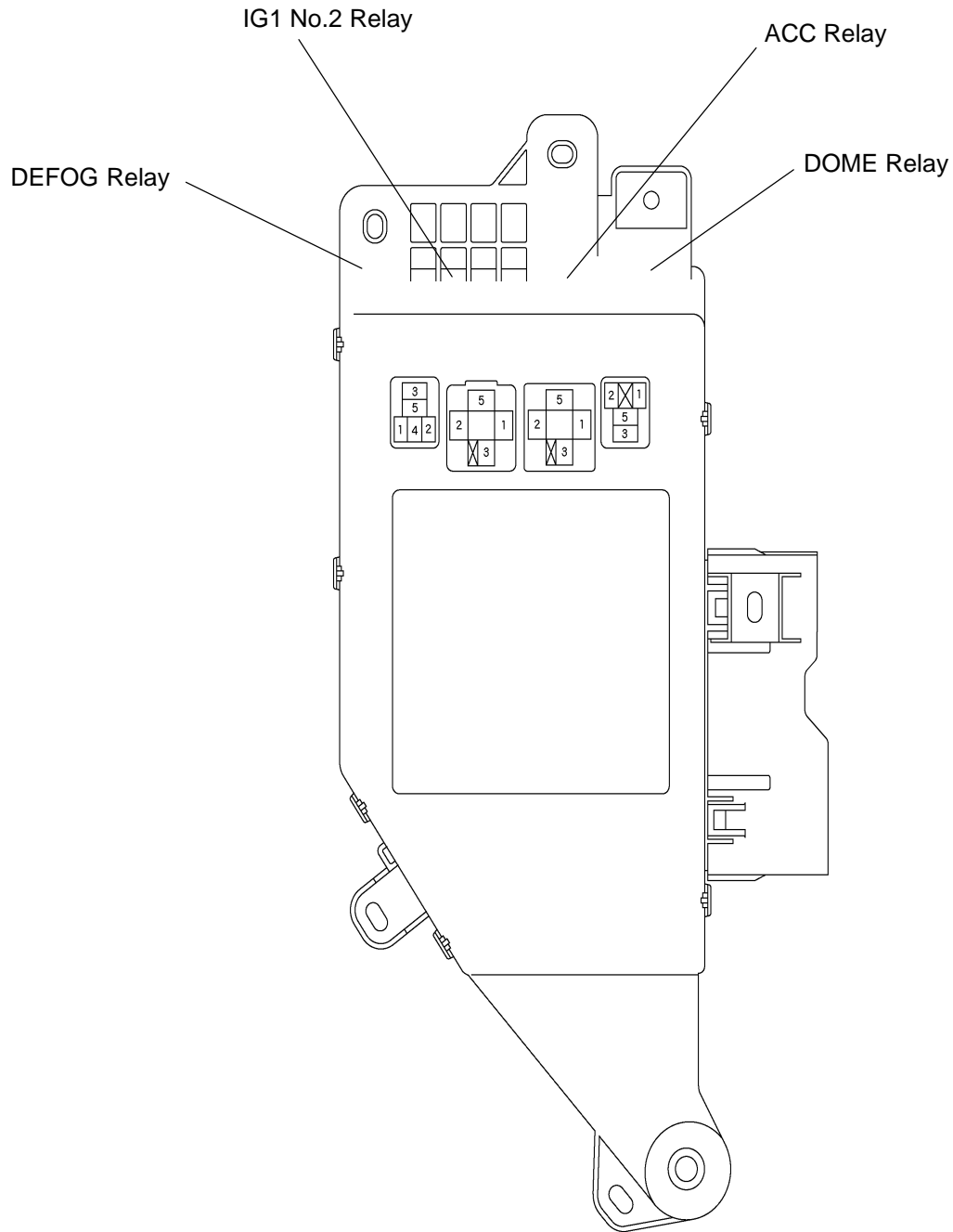
HINT:

The relay is built in engine room junction block. Also the relay is constructed with a relay block that is in the junction block as a unit. To disconnect the wire harness connecting with relay block is impossible. If the relay has a malfunction, replace it with junction block assembly wire harness together.

2. INSPECT COWL SIDE J/B LH CIRCUIT



Cowl Side J/B LH (Back Side):



I25274

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

Fuse	Tester connection	Condition	Specified condition
AHC-IG	2 - Ground	Ignition switch ON	Battery positive voltage
POWER HTR	4 - Ground	Ignition switch ON	Battery positive voltage
FUEL HTR	6 - Ground	Ignition switch ON	Battery positive voltage
AHC-B	8 - Ground	Constant	Battery positive voltage
DEFOG	10 - Ground	Constant	Battery positive voltage
AM1	12 - Ground	Constant	Battery positive voltage

ACC	13 - Ground	Ignition switch ACC	Battery positive voltage
CIG	15 - Ground	Ignition switch ACC	Battery positive voltage
PWR OUTLET	17 - Ground	Ignition switch ACC	Battery positive voltage
OBD-2	20 - Ground	Constant	Battery positive voltage
STOP	22 - Ground	Constant	Battery positive voltage
A/C	24 - Ground	Ignition switch ON	Battery positive voltage
BATT CHARGE	26 - Ground	Constant	Battery positive voltage
DBL LOCK	39 - Ground	Constant	Battery positive voltage
ECU-B1	29 - Ground	Constant	Battery positive voltage
ECU-IG1	32 - Ground	Ignition switch ON	Battery positive voltage
GAUGE1	34 - Ground	Ignition switch ON	Battery positive voltage
EFI or ECD NO.2	35 - Ground	Constant	Battery positive voltage
RR WIPER	37 - Ground	Ignition switch ON	Battery positive voltage
SUN ROOF	39 - Ground	Constant	Battery positive voltage
DOOR	41 - Ground	Constant	Battery positive voltage
LH SEAT	43 - Ground	Constant	Battery positive voltage
IDLE UP	46 - Ground	Rear defogger system ON	Battery positive voltage

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

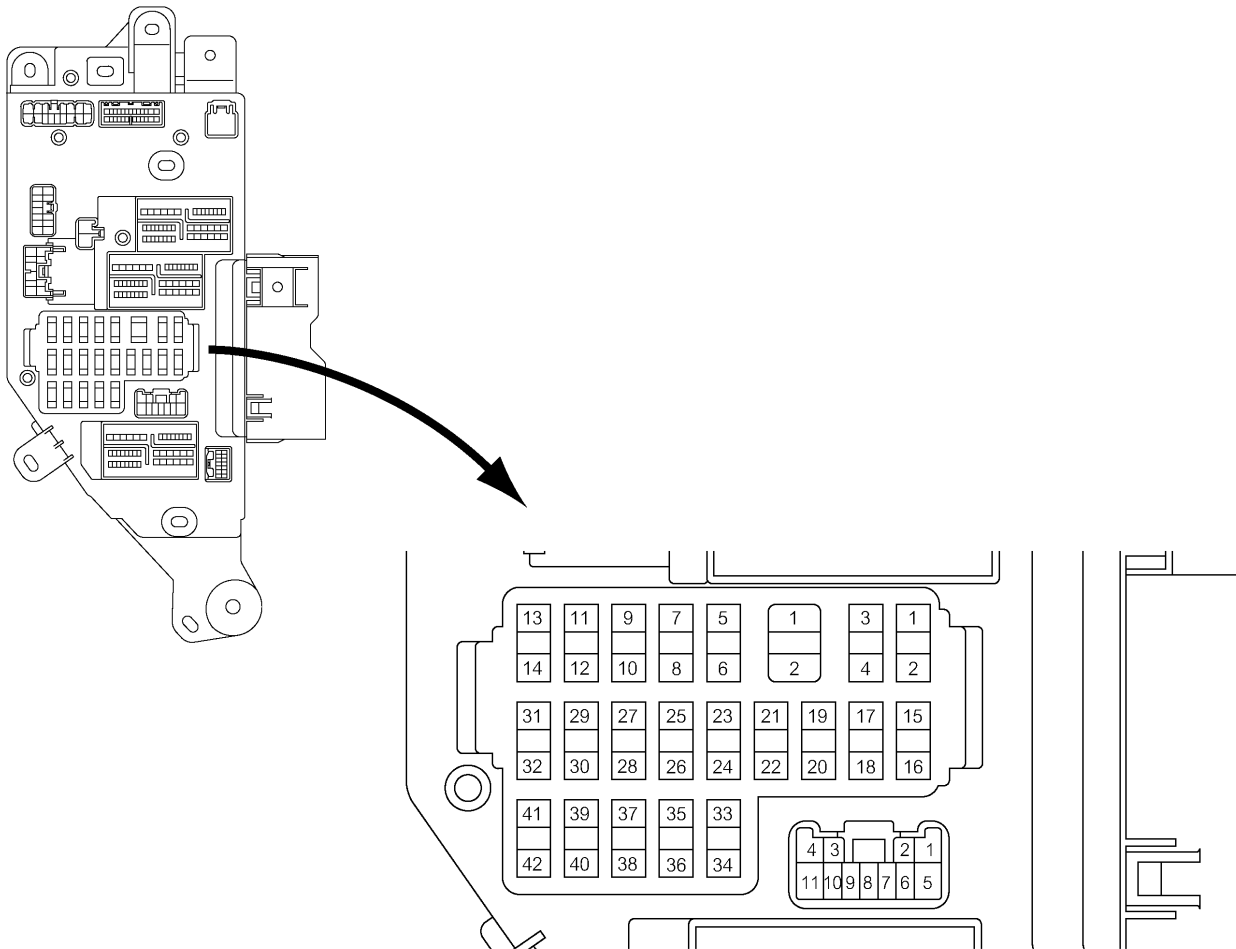
- (b) Remove the relay from the junction block and inspect the connector on junction block side.

Relay	Tester connection	Condition	Specified condition
DOME	1 - Ground	Constant	Battery positive voltage
DOME	5 - Ground	Constant	Battery positive voltage
ACC	5 - Ground	Constant	Battery positive voltage
ACC	2 - Ground	Ignition switch ON	Battery positive voltage
IG1 NO.2	5 - Ground	Constant	Battery positive voltage
IG1 NO.2	2 - Ground	Ignition switch ON	Battery positive voltage
DEFOG	5 - Ground	Constant	Battery positive voltage
DEFOG	1 - Ground	Ignition switch ON	Battery positive voltage

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

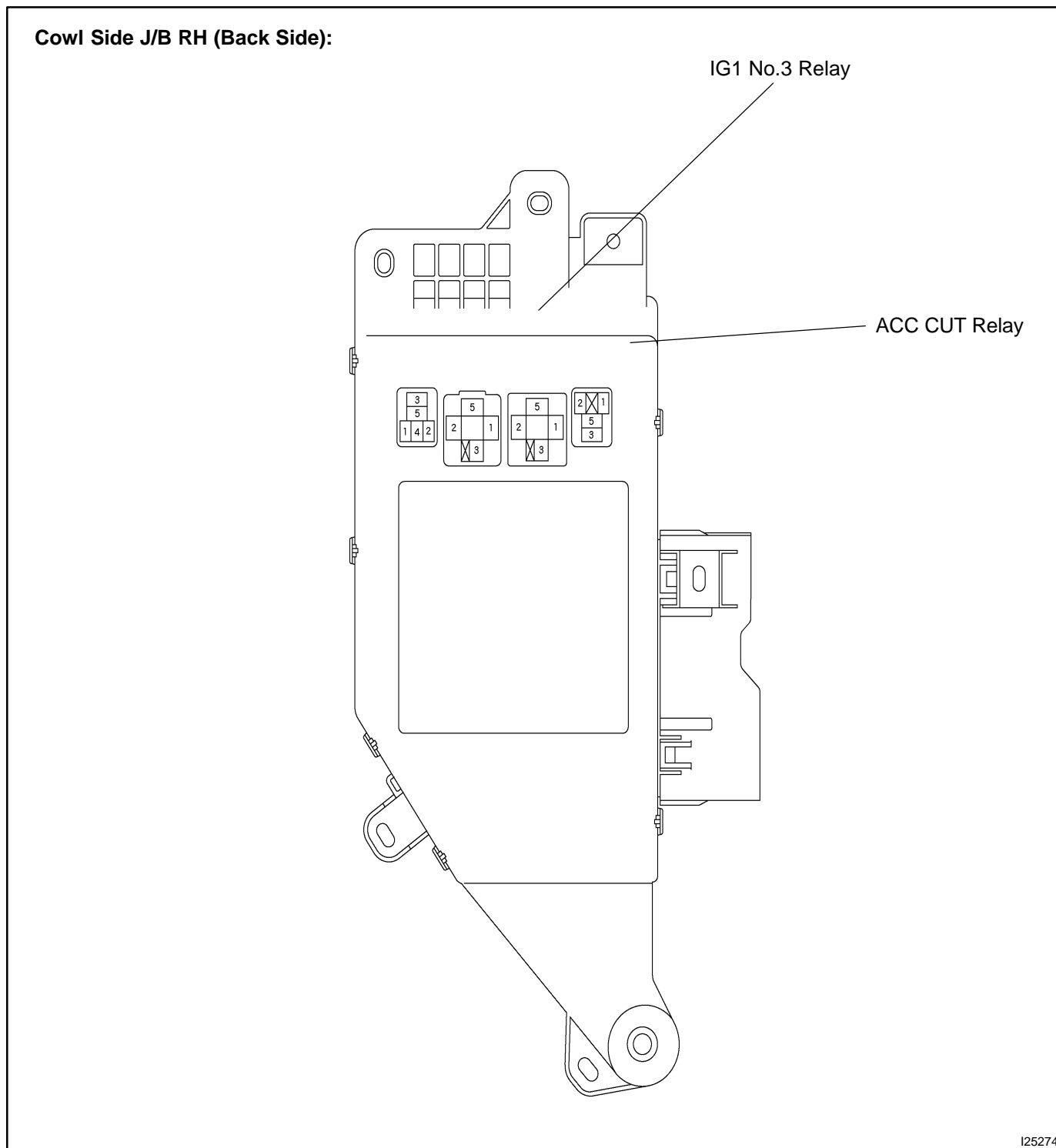
3. INSPECT COWL SIDE J/B RH CIRCUIT

Cowl Side J/B RH:



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

Fuse	Tester connection	Condition	Specified condition
P/W (RL)	2 - Ground	Constant	Battery positive voltage
P/W (FL)	4 - Ground	Constant	Battery positive voltage
VGRS	2 - Ground	Constant	Battery positive voltage
DOME	5 - Ground	Constant	Battery positive voltage
RADIO	7 - Ground	Constant	Battery positive voltage
WASHER	10 - Ground	Ignition switch ON	Battery positive voltage

BODY ELECTRICAL - POWER SOURCE

DIFF	12 - Ground	Ignition switch ON	Battery positive voltage
ECU-B2	13 - Ground	Constant	Battery positive voltage
P/W (FR)	15 - Ground	Constant	Battery positive voltage
P/W (RR)	17 - Ground	Constant	Battery positive voltage
SECURITY	20 - Ground	Constant	Battery positive voltage
IGN	21 - Ground	Ignition switch ON	Battery positive voltage
MET	23 - Ground	Ignition switch ON	Battery positive voltage
GAUGE2	25 - Ground	Ignition switch ON	Battery positive voltage
SEAT HTR	27 - Ground	Ignition switch ON	Battery positive voltage
ECU-IG2	29 - Ground	Ignition switch ON	Battery positive voltage
WIPER	31 - Ground	Ignition switch ON	Battery positive voltage
RH SEAT	33 - Ground	Constant	Battery positive voltage
RR A/C	35 - Ground	Constant	Battery positive voltage
TIL & TEL	37 - Ground	Constant	Battery positive voltage

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

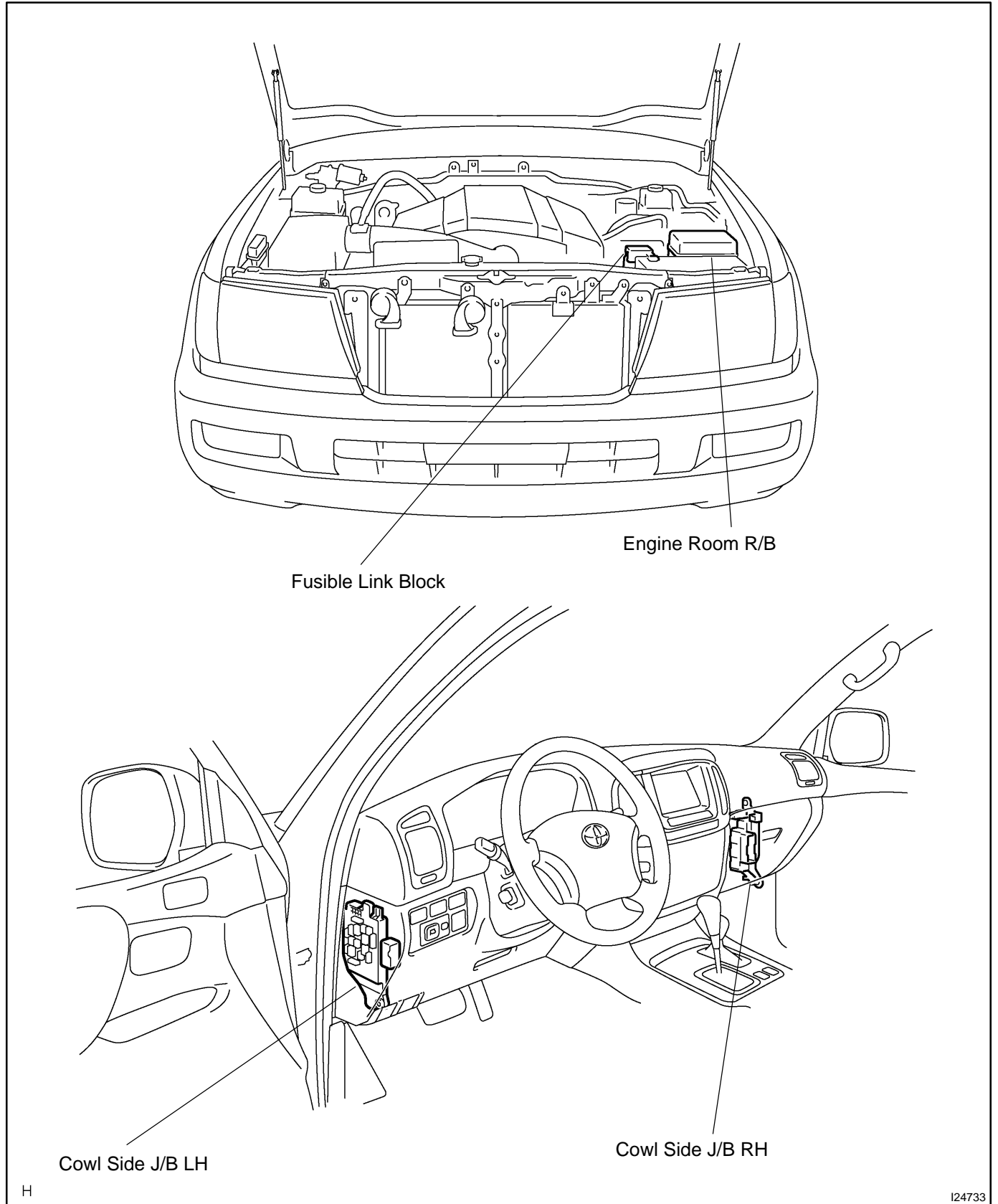
Remove the relay from the junction block and inspect the connector on junction block side.

Relay	Tester connection	Condition	Specified condition
ACC CUT	2 - Ground	Constant	Battery positive voltage
ACC CUT	4 - Ground	Ignition Switch ACC	Battery positive voltage
IG1 NO.3	5 - Ground	Constant	Battery positive voltage
IG1 NO.3	2 - Ground	Ignition Switch ON	Battery positive voltage

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

POWER SOURCE LOCATION

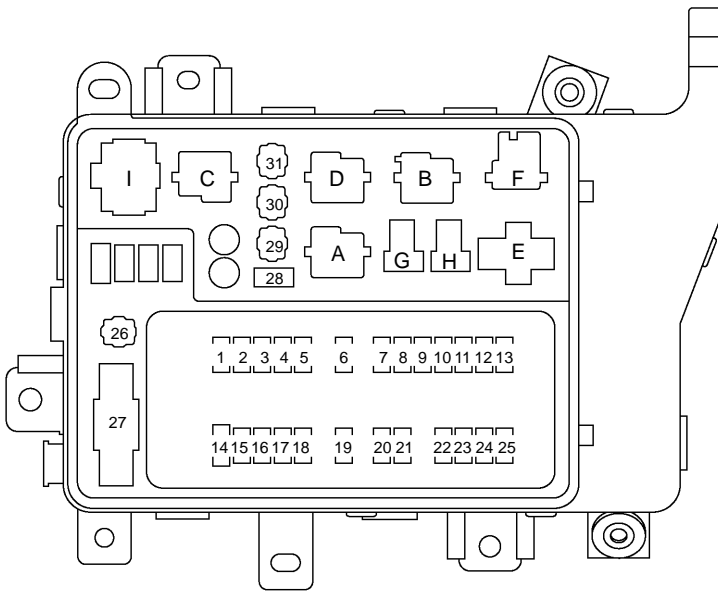
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Engine Room R/B

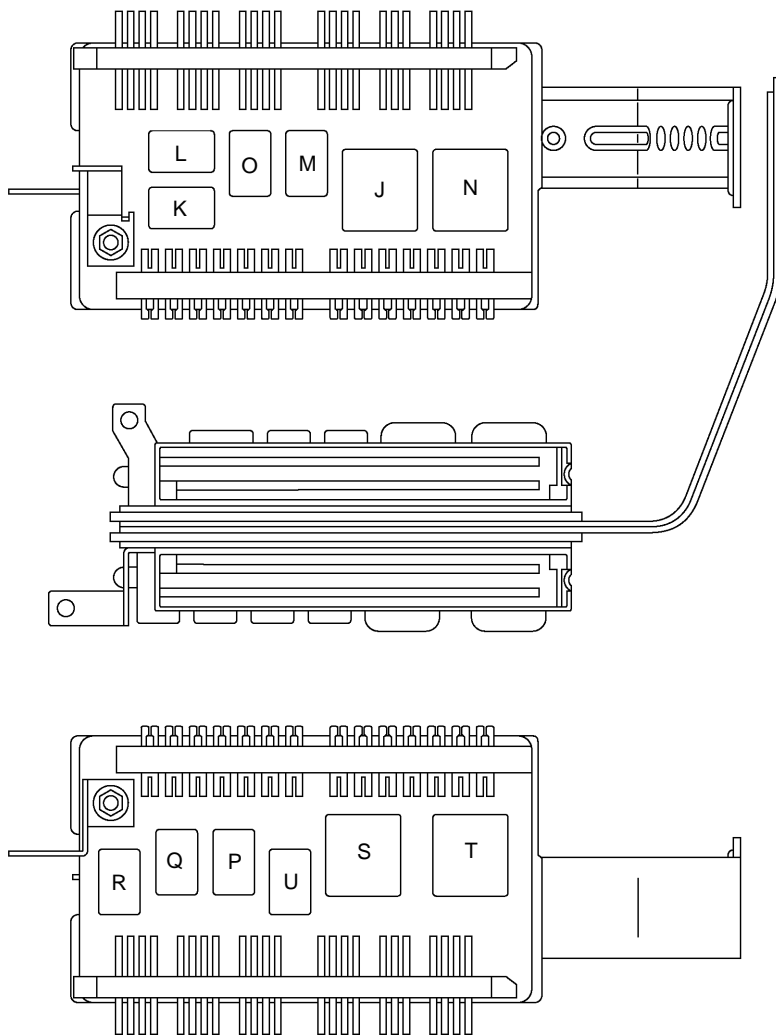


Fuses:

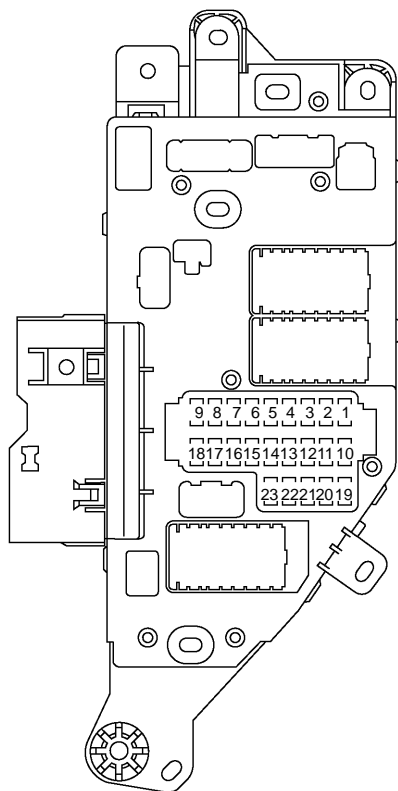
1. TOWING
2. MIR HTR
3. RR HTR
4. HAZ-TEN
5. ALT-S
6. NV-IR
7. FR FOG
8. TOWING BRK
9. HEAD CLNER
10. FR-IG
11. PANEL
12. TOWING TAIL
13. TAIL
14. -
15. BAT
16. TEL
17. AMP
18. EFI or ECD NO.1
19. AM2
20. ETCS
21. HORN
22. HEAD RH-LWR
23. HEAD LH-LWR
24. HEAD RH-UPR
25. HEAD LH-UPR
26. STARTER
27. GLOW
28. ST1
29. AHC
30. ABS NO.1
31. ABS NO.2

Relays:

- A. AHC
- B. ABS SOL
- C. ABS MTR1
- D. ABS MTR2
- E. STARTER
- F. EFI or ECD
- G. C/OPN
- H. F/PUMP
- I. HTR
- J. IG1 NO.1
- K. MIR HTR
- L. RR HTR
- M. FR FOG
- N. TAIL
- O. PANEL
- P. CDS FAN
- Q. MG CLT
- R. W/TEMP CUT
- S. HEAD
- T. HEAD HI
- U. HORN

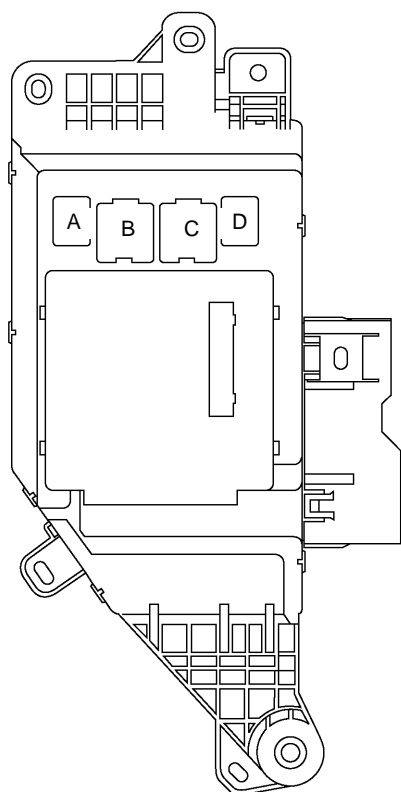


Cowl Side J/B LH



Fuses:

1. AHC-IG
2. POWER HTR
3. FUEL HTR
4. AHC-B
5. DEFOG
6. AM1
7. ACC
8. CIG
9. PWR OUTLET
10. OBD-2
11. STOP
12. A/C
13. BATT CHARGE
14. DBL LOCK
15. ECU-B1
16. ECU-IG1
17. GAUGE1
18. EFI or ECD NO.2
19. RR WIPER
20. SUN ROOF
21. DOOR
22. LH SEAT
23. IDLE UP



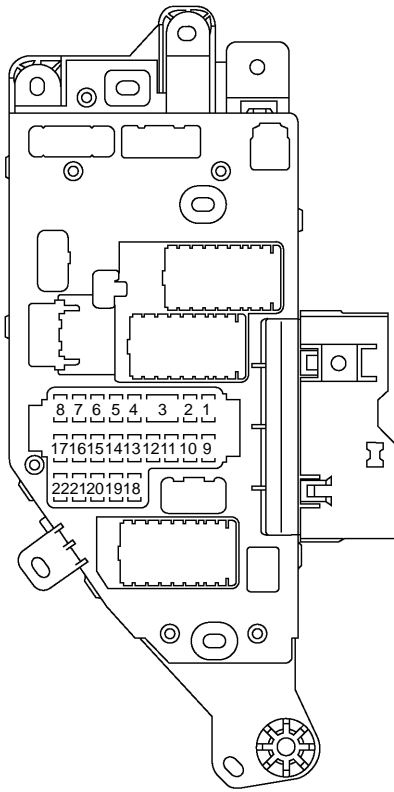
Relays:

- A. DEFOG
- B. IG1 No.2
- C. ACC
- D. DOME

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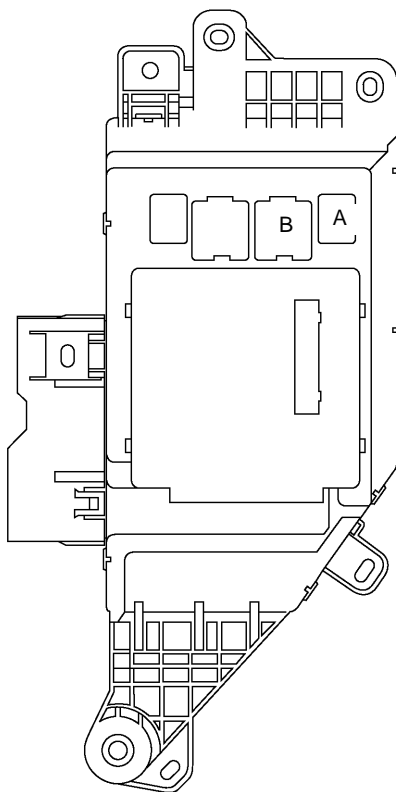
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Cowl Side J/B RH



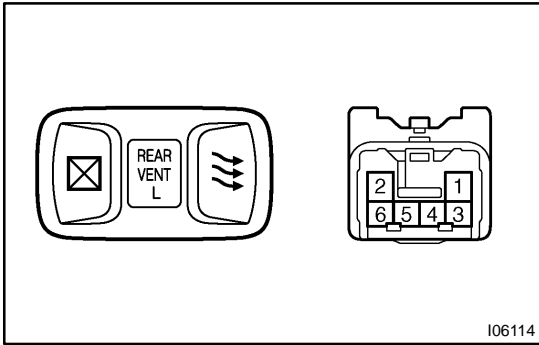
Fuses:

1. P/W (RL)
2. P/W (FL)
3. VGRS
4. DOME
5. RADIO
6. WASHER
7. DIFF
8. ECU-B2
9. P/W(FR)
10. P/W(RR)
11. SECURITY
12. IGN
13. MET
14. GAUGE 2
15. SEAT HTR
16. ECU-IG2
17. WIPER
18. RH SEAT
19. RR A/C
20. TIL&TEL



Relays:

- A. ACC CUT
- B. IG1 NO.3
- C. POWER MAIN

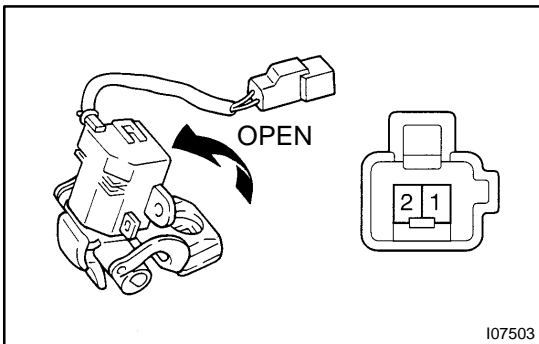


INSPECTION

1. INSPECT POWER QUARTER WINDOW SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
CLOSE	3 - 6 4 - 5	Continuity
OFF	-	Continuity
OPEN	3 - 4 5 - 6	Continuity
Illumination Circuit	1 - 2	Continuity

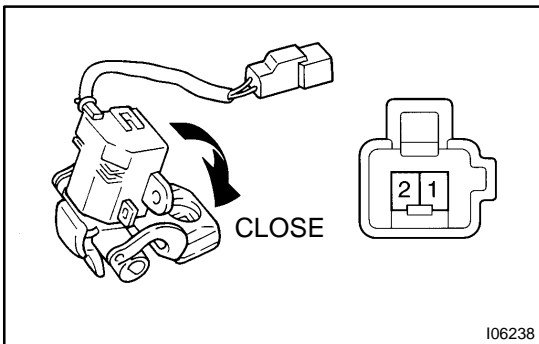
If continuity is not as specified, replace the switch.



2. Left side:

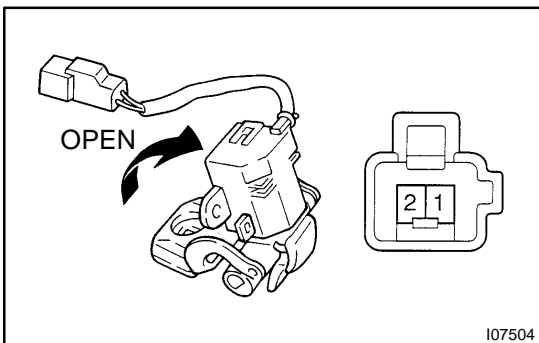
INSPECT POWER VENT WINDOW MOTOR OPERATION

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



- (b) Remove the polarity and check that the window link moves to CLOSE position.

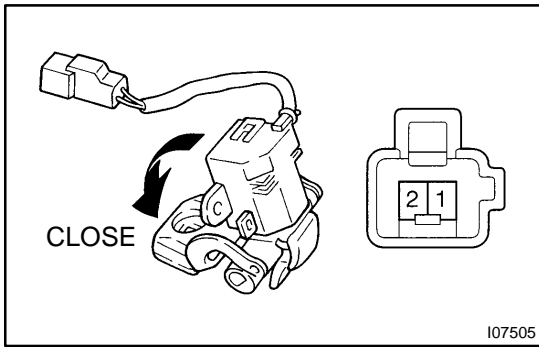
If operation is not as specified, replace the window motor.



3. Right side:

INSPECT POWER VENT WINDOW MOTOR OPERATION

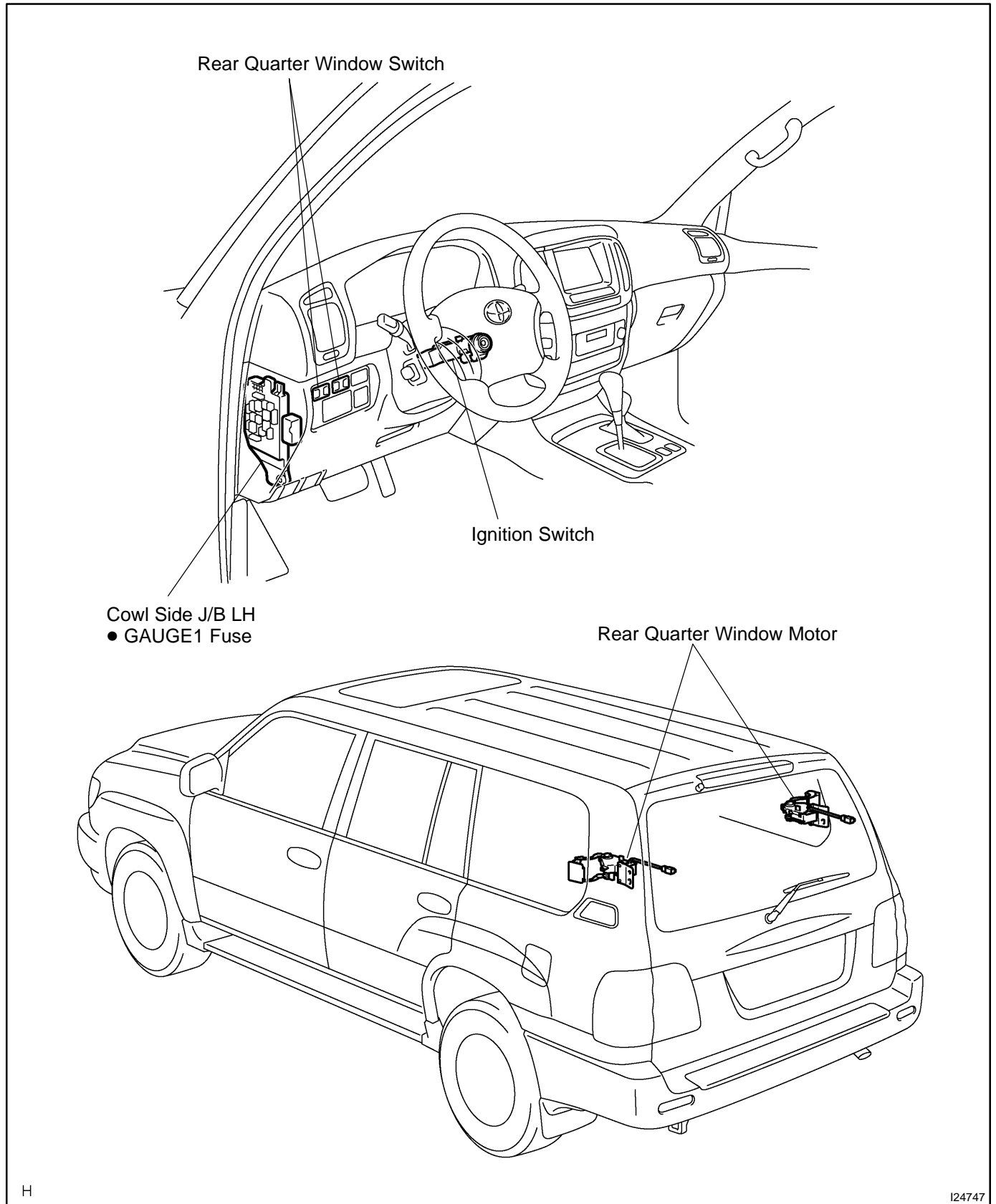
- (a) Connect the positive (+) lead from the battery to terminal 2 and the negative (-) lead to terminal 1, and check that the window link moves to OPEN position.



- (b) Remove the polarity and check that the window link moves to CLOSE position.

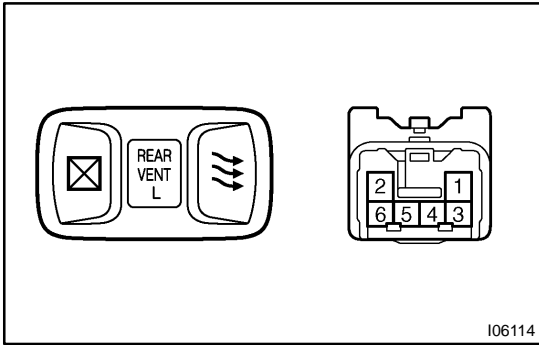
POWER REAR QUARTER WINDOW SYSTEM LOCATION

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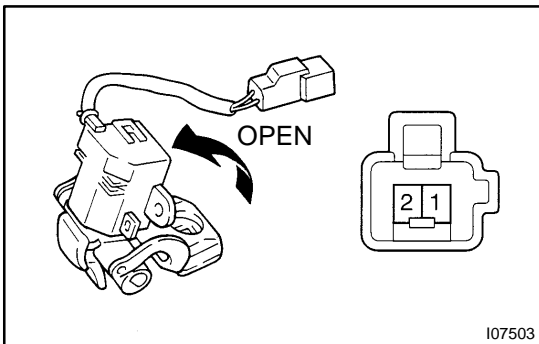


INSPECTION

1. INSPECT POWER QUARTER WINDOW SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
CLOSE	3 - 6	Continuity
	4 - 5	
OFF	-	Continuity
OPEN	3 - 4	Continuity
	5 - 6	
Illumination Circuit	1 - 2	Continuity

If continuity is not as specified, replace the switch.



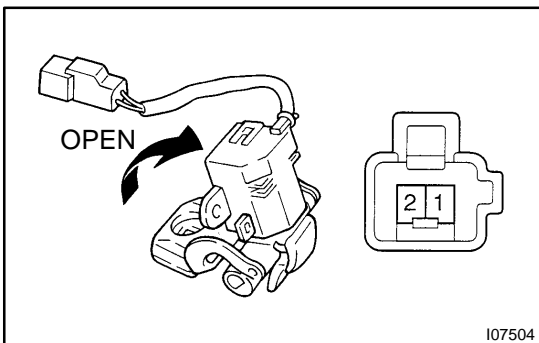
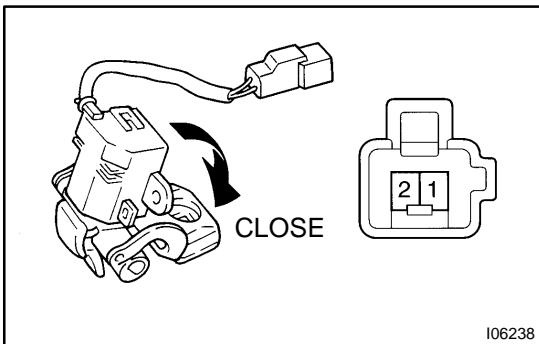
2. Left side:

INSPECT POWER VENT 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 window link moves to OPEN position.

- (b) Remove the polarity and check that the window link moves to CLOSE position.

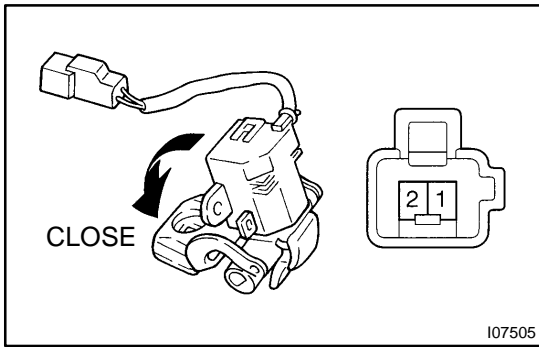
If operation is not as specified, replace the window motor.



3. Right side:

INSPECT POWER VENT WINDOW MOTOR OPERATION

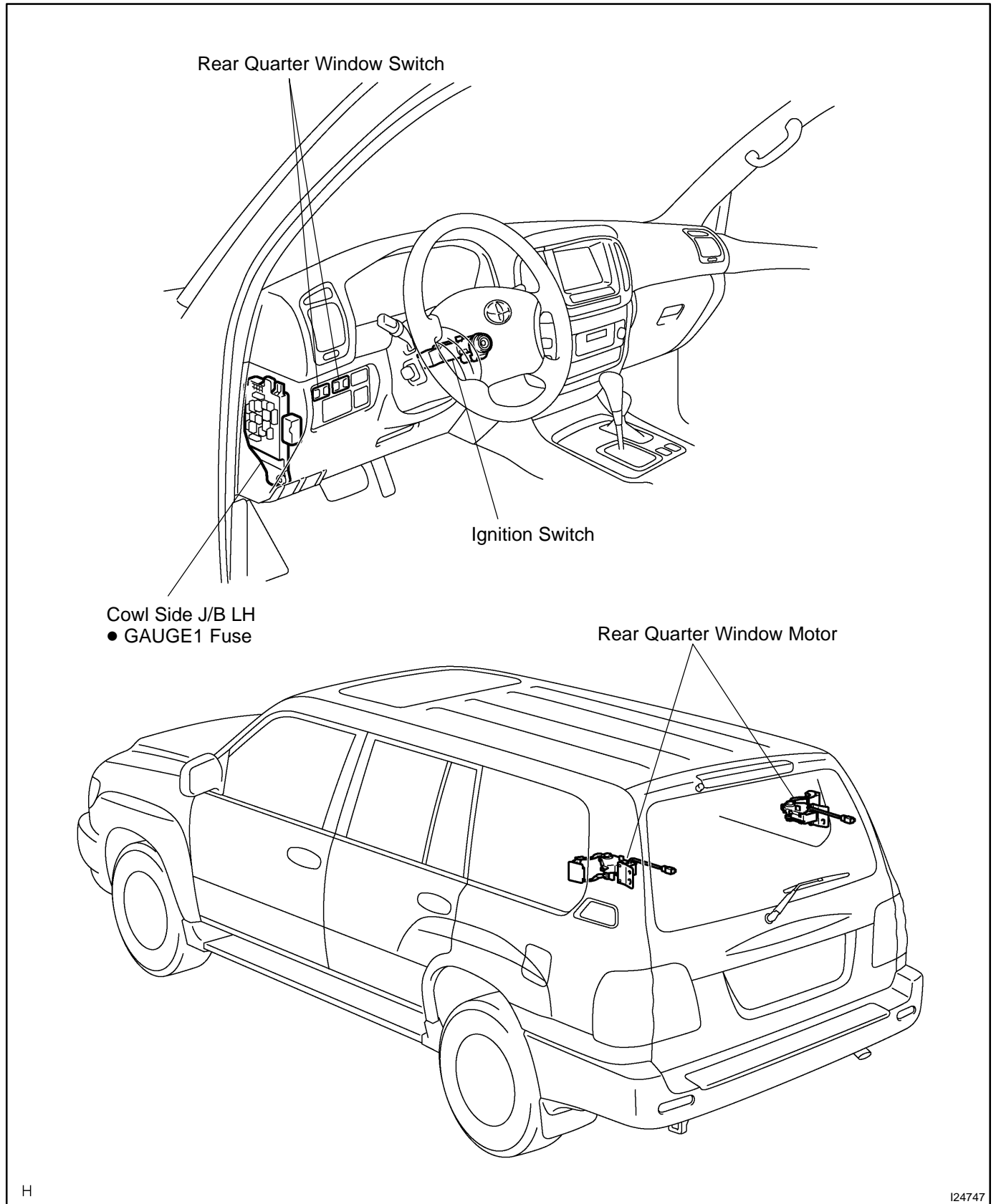
- (a) Connect the positive (+) lead from the battery to terminal 2 and the negative (-) lead to terminal 1, and check that the window link moves to OPEN position.



- (b) Remove the polarity and check that the window link moves to CLOSE position.

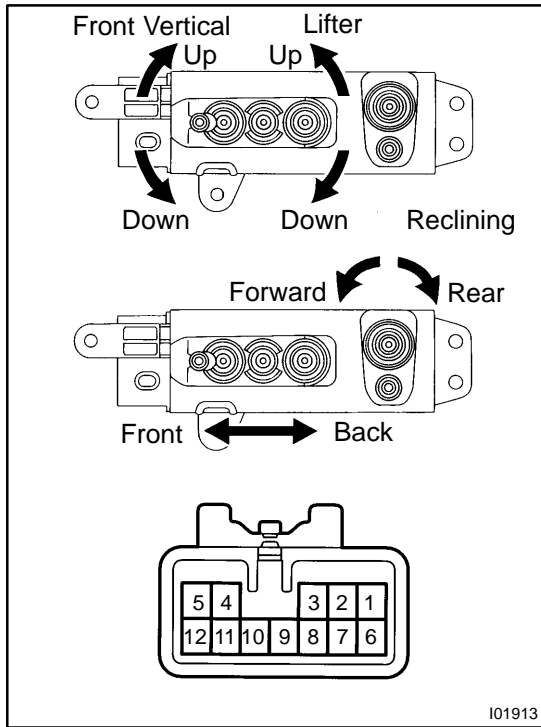
POWER REAR QUARTER WINDOW SYSTEM LOCATION

BE0S4-06



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INSPECTION

1. INSPECT DRIVER'S POWER SEAT SWITCH CONTINUITY

Slide Switch:

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

Front vertical switch:

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

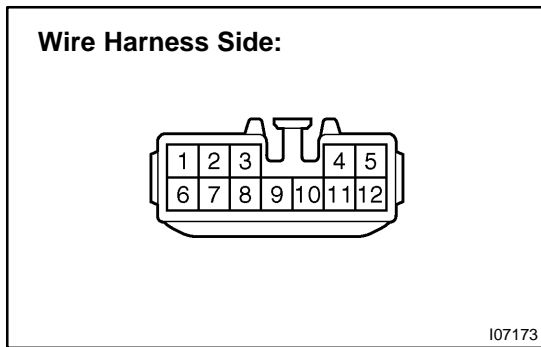
Lifter switch:

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

Reclining switch:

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

If continuity is not as specified, replace the switch.

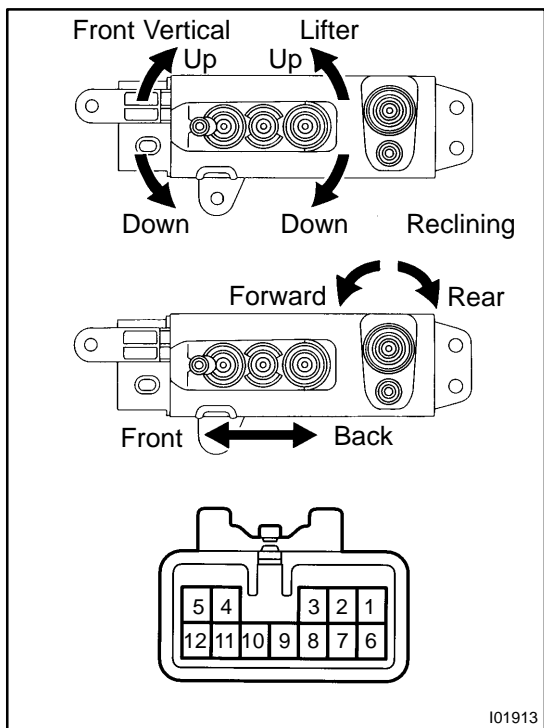


2. INSPECT DRIVER'S POWER SEAT SWITCH CIRCUIT

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

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

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



3. INSPECT PASSENGER'S POWER SEAT SWITCH CONTINUITY

Slide switch:

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

Front vertical switch:

Switch position	Tester connection	Specified condition
UP	7 - 10 9 - 11	Continuity
OFF	7 - 9 - 10	Continuity
DOWN	6 - 9 10- 11	Continuity

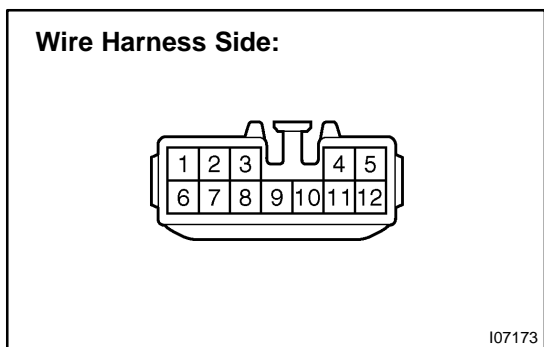
Lifter switch:

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

Reclining switch:

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

If continuity is not as specified, replace the switch.

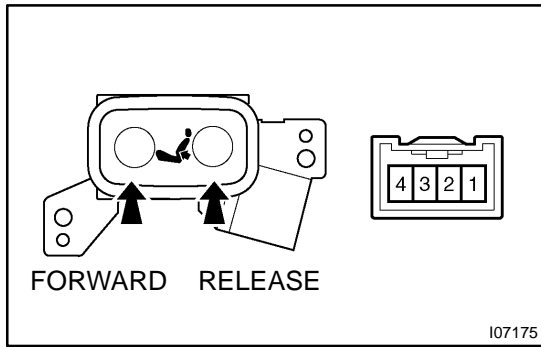


4. INSPECT PASSENGER'S POWER SEAT SWITCH CIRCUIT

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

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

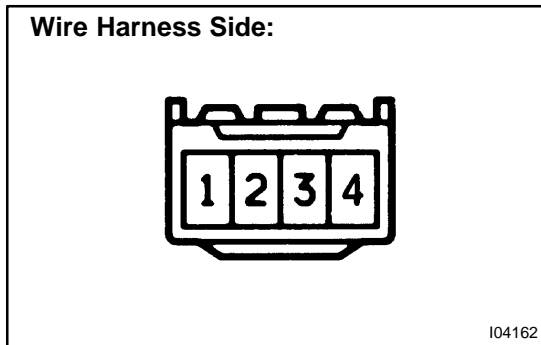
If circuit is not as specified, inspect the circuits connected to other parts.



5. INSPECT DRIVER'S LUMBAR SUPPORT SWITCH CONTINUITY

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

If continuity is not as specified, replace the switch.

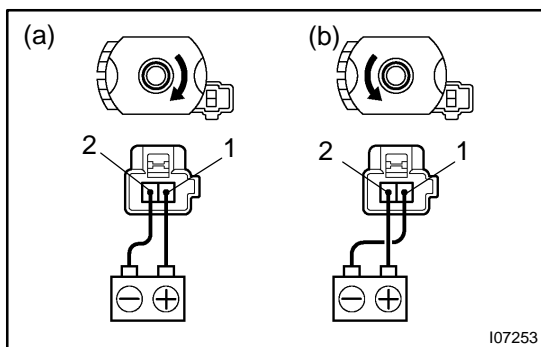


6. INSPECT DRIVER'S LUMBAR SUPPORT SWITCH CIRCUIT

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

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

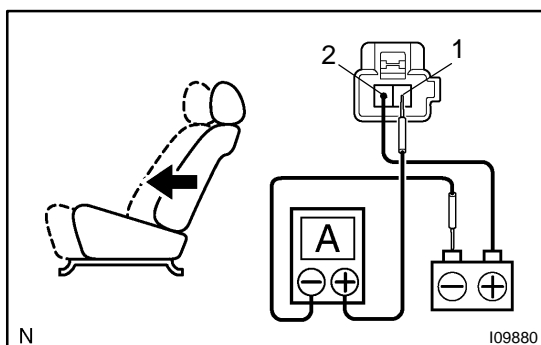
If circuit is not as specified, inspect the circuits connected to other parts.



7. INSPECT SLIDE MOTOR OPERATION

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

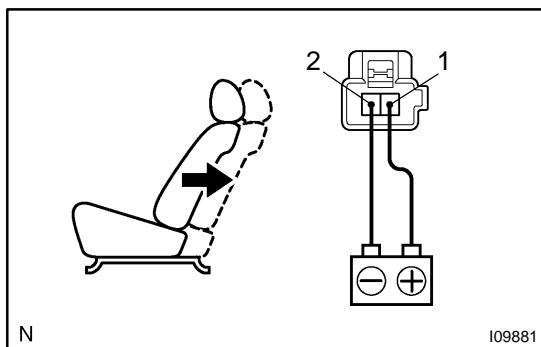
If operation is not as specified, replace the seat adjuster.



8. INSPECT SLIDE MOTOR PTC THERMISTOR OPERATION

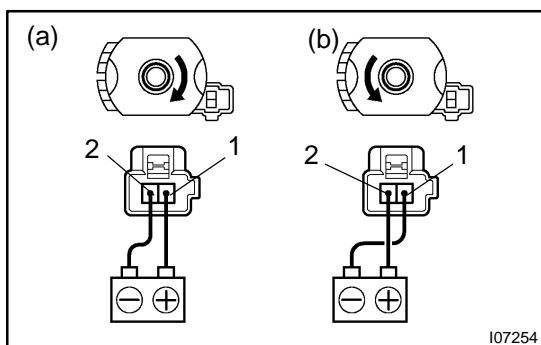
(): Passenger side

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



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

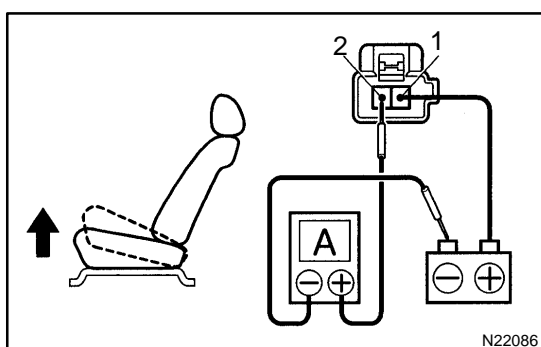
If operation is not as specified, replace the seat adjuster.



9. INSPECT FRONT VERTICAL MOTOR OPERATION

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

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

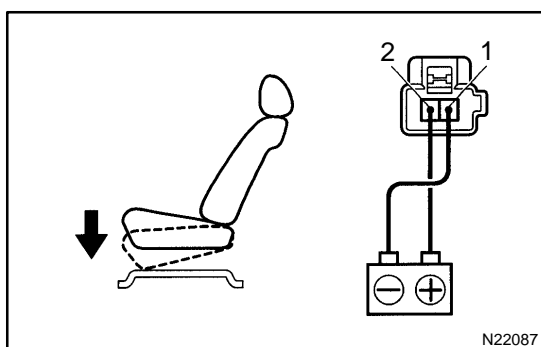


10. INSPECT FRONT VERTICAL MOTOR PTC THERMISTOR OPERATION

(): Passenger side

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

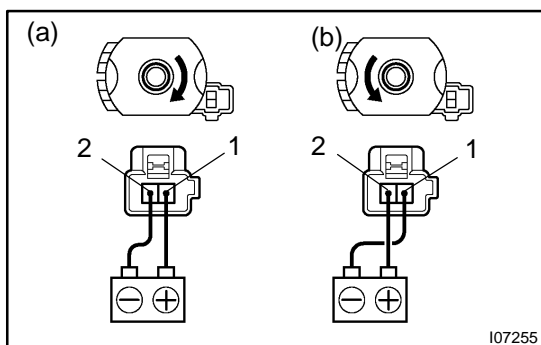
If operation is not as specified, replace the seat adjuster.

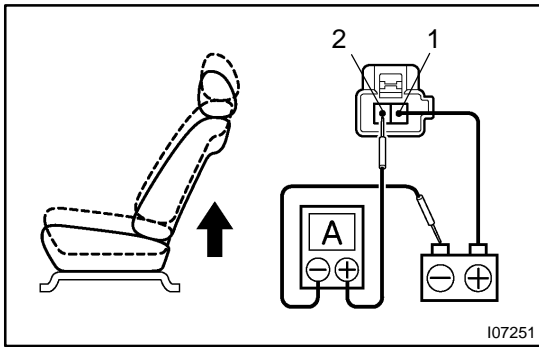


11. INSPECT LIFTER MOTOR OPERATION

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

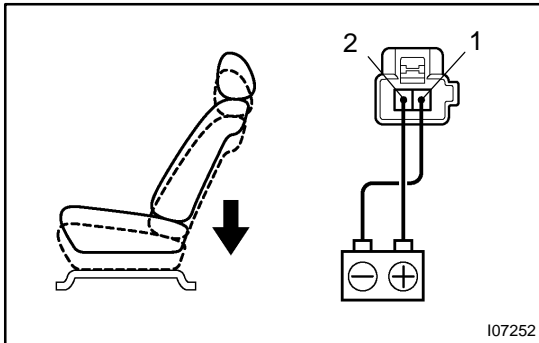
If operation is not as specified, replace the seat adjuster.





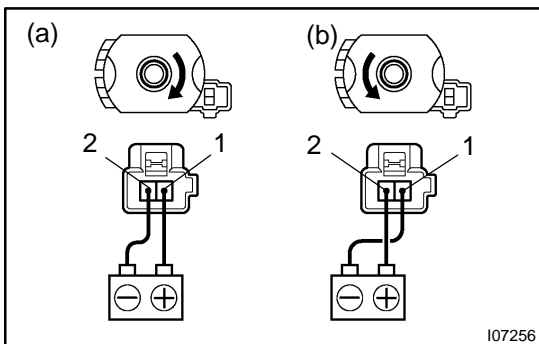
12. INSPECT LIFTER MOTOR PTC THERMISTOR OPERATION

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



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

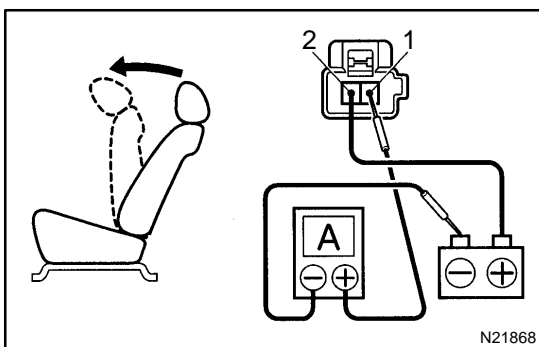
If operation is not as specified, replace the seat adjuster.



13. INSPECT RECLINING MOTOR OPERATION

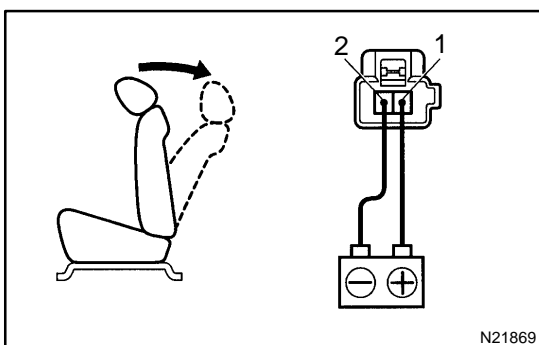
- Connect the positive (+) lead from the battery to terminal 1 and the negative (-) lead to terminal 2, check that the motor turns clockwise.
- Reverse the polarity, check that the motor turns counter-clockwise.

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



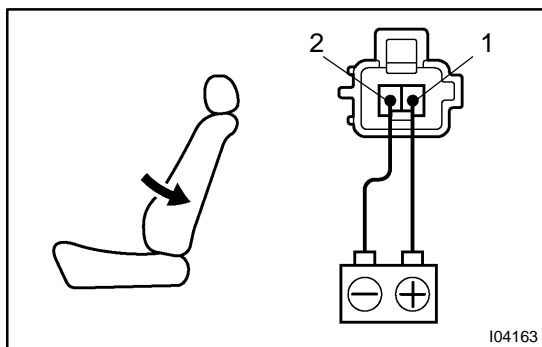
14. INSPECT RECLINING MOTOR PTC THERMISTOR OPERATION

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

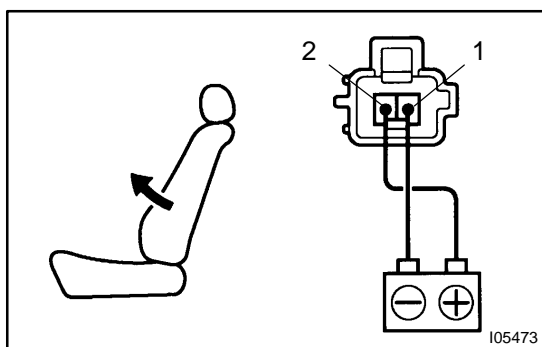


- Disconnect the leads from the terminals.
- Approximately 60 seconds later, connect the positive (+) lead from the battery to terminal 1 and the negative (-) lead to terminal 2, check that the seat back begins to fall backward.

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

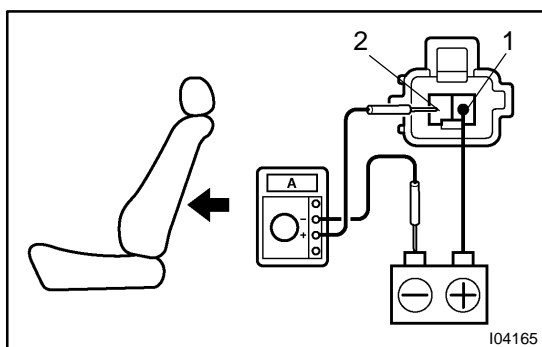
**15. INSPECT LUMBAR SUPPORT MOTOR OPERATION**

- (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.

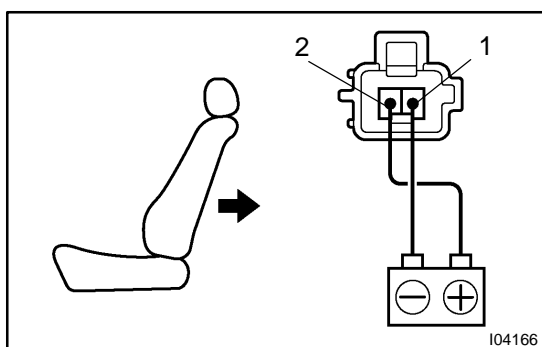


- (b) Reverse the polarity, check that the lumbar support moves forward.

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

**16. INSPECT LUMBAR SUPPORT MOTOR CIRCUIT BREAKER OPERATION**

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



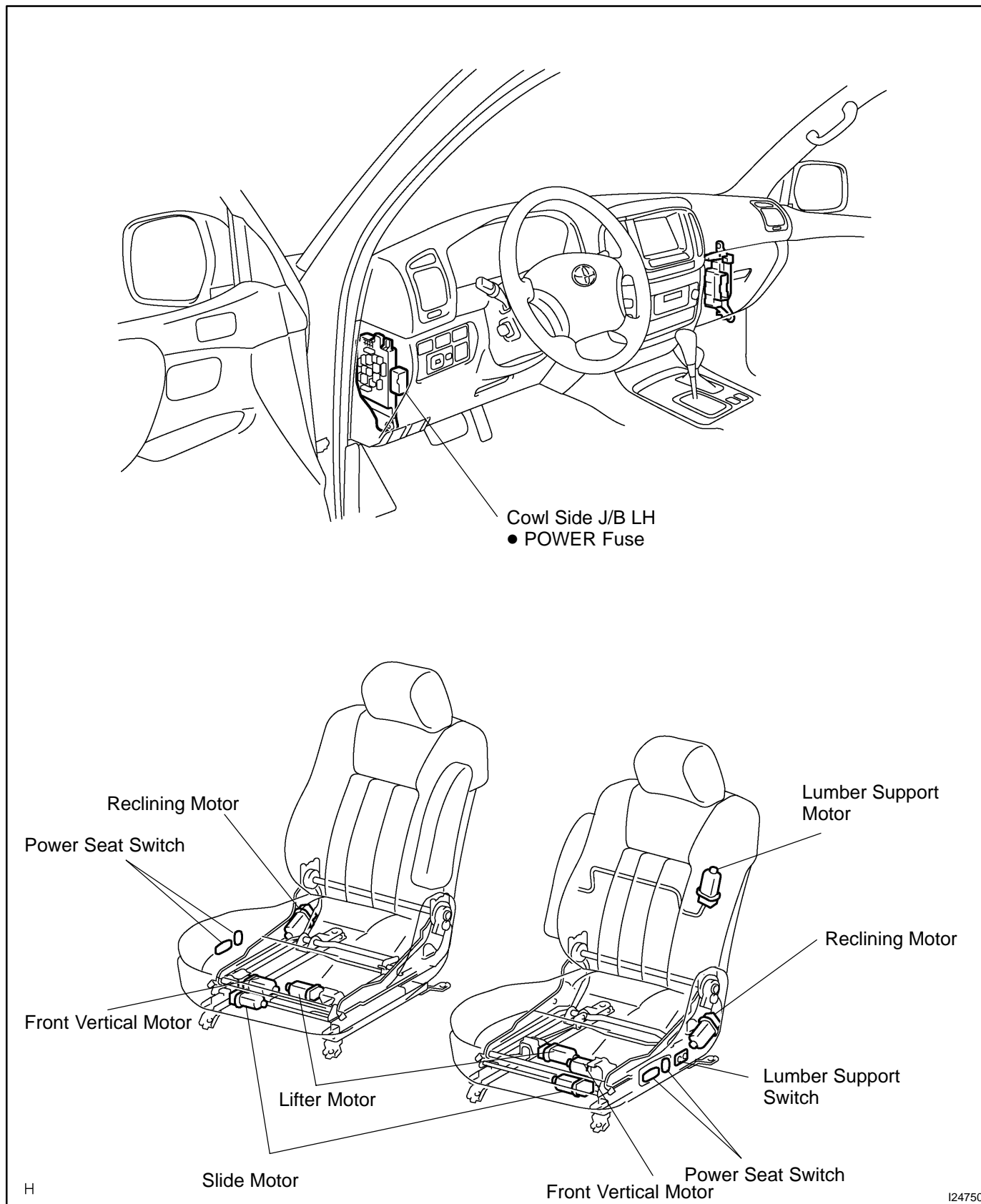
- (b) Continue to apply voltage, check that a circuit breaker operation noise can be heard within 4 to 60 seconds.

- (c) Reverse the polarity, check that the lumbar support begins to move to release side within approximately 60 seconds.

If operation is not as specified, replace the motor.

POWER SEAT CONTROL SYSTEM LOCATION

BE05S-08



ADJUSTMENT

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

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

HINT:

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

(a) Remove the power window motor.

HINT:

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

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

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

(d) Assemble the power window motor and regulator.

HINT:

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

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

HINT:

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

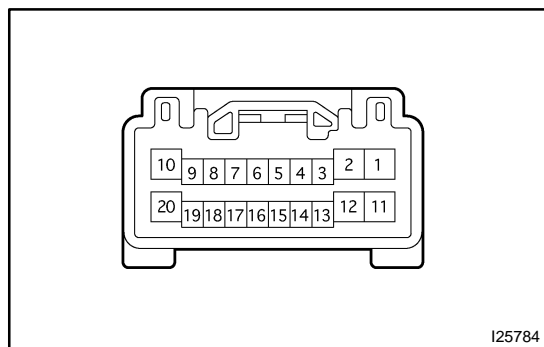
(f) Connect power window switch to wire harness and turn the ignition switch ON.

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

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

HINT:

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



I25784

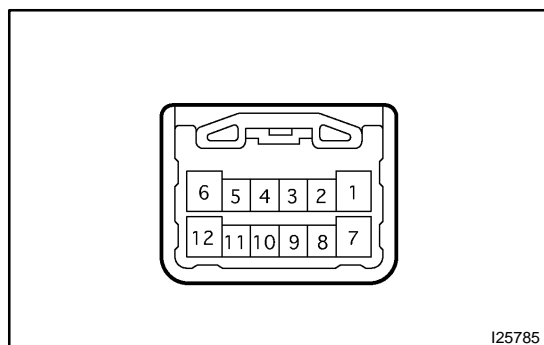
INSPECTION

1. INSPECT POWER WINDOW MASTER SWITCH CIRCUIT

Check the voltage and continuity of each terminal of the wire harness side connector.

Tester connection	Condition	Specified condition
2 (GND) - Body ground	Constant	Continuity
10 (BDR) - 2 (GND)	Constant	10 - 14V
9 (CPUB) - 2 (GND)	Constant	10 - 14V
20 (SIG) - 2 (GND)	Ignition switch OFF → ON	0V → 10 - 14V
1 (UP) - 11 (DN)	Constant	Continuity
5 (LMT) - 13 (SGND)	Driver door glass fully closed	No continuity
	Driver door glass opened by 4 mm (1.06in.)	Continuity

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



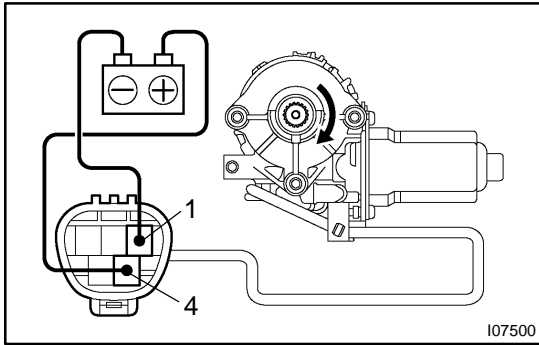
I25785

2. INSPECT POWER WINDOW SWITCH CIRCUIT

Check the voltage and continuity of each terminal of the wire harness side connector.

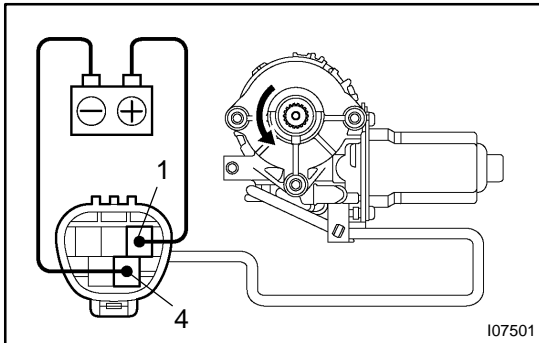
Tester connection	Condition	Specified condition
7 (GND) - Body ground	Constant	Continuity
12 (BDR) - 7 (GND)	Constant	10 - 14V
6 (UP) - 1 (DN)	Constant	Continuity
3 (LMT) - 5 (SGND)	Driver door glass fully closed	No continuity
	Driver door glass opened by 4 mm (1.06in.)	Continuity

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



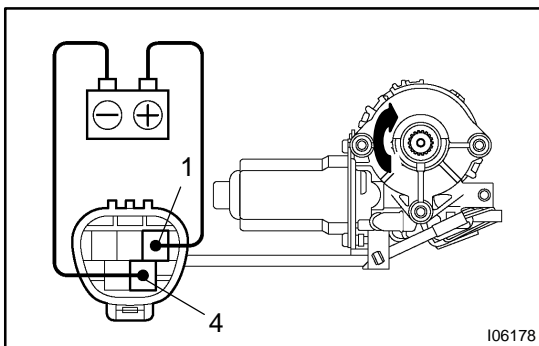
**3. Driver's door and rear right door:
INSPECT POWER WINDOW MOTOR OPERATION**

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



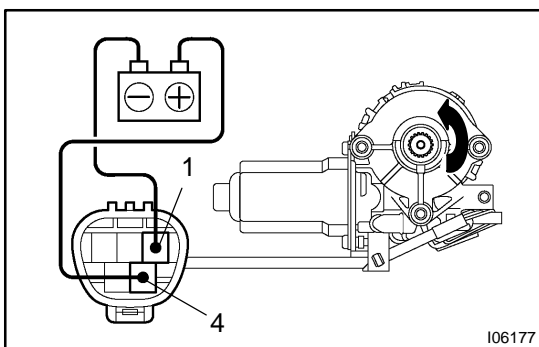
- (b) Reverse the polarity, check that the motor turns clockwise.

If operation is not as specified, replace the motor.



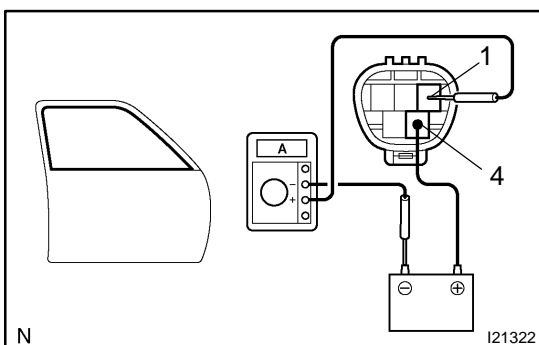
**4. Passenger's door and rear left door:
INSPECT POWER WINDOW MOTOR OPERATION**

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



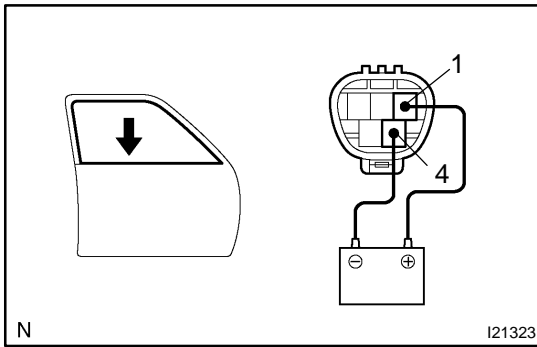
- (b) Reverse the polarity, check that the motor turns counterclockwise.

If operation is not as specified, replace the motor.



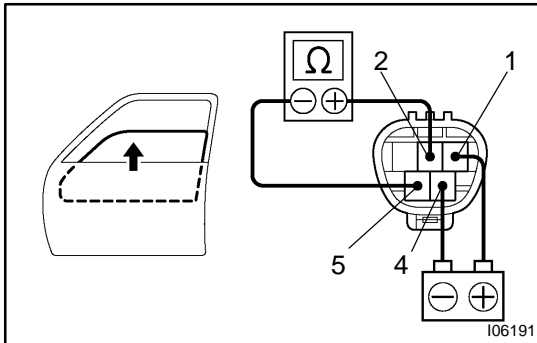
5. INSPECT POWER WINDOW MOTOR PTC THERMISTOR OPERATION

- (a) Disconnect the connector from the power window motor.
 (b) Connect the positive (+) lead from the ammeter to terminal 1 on the wire harness side connector and the negative (-) lead to negative terminal of the battery.
 (c) Connect the positive (+) lead from the battery to terminal 4 on the wire harness side connector, and raise the window to the fully position.



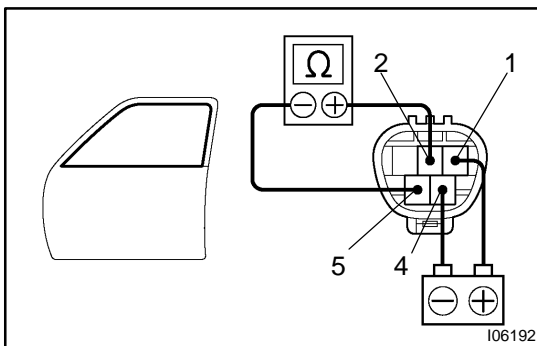
- (d) Continue to apply voltage and check that the current changes to less than 1 A within 4 to 90 seconds.
- (e) Disconnect the leads from the terminals.
- (f) Approximately 60 seconds later, connect the positive (+) lead from the battery to terminal 1 and the negative (-) lead to terminal 4, and check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

If operation is not as specified, replace the motor.



6. INSPECT JAM PROTECTION LIMIT SWITCH OPERATION

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

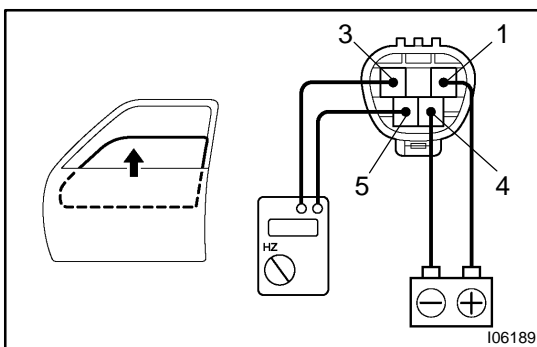


- (d) Check that no continuity exists when the window is in the fully closed position.

If operation is not as specified, replace the motor.

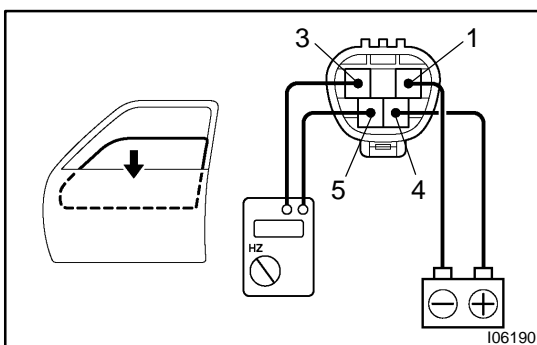
NOTICE:

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



7. INSPECT JAM PROTECTION PULSE SWITCH OPERATION

- (a) Connect the positive (+) lead from the TOYOTA electrical tester to terminal 3 and the negative (-) lead to terminal 5.
- (b) Connect the positive (+) lead from the battery to terminal 1 and the negative (-) lead to terminal 4.
- (c) Check that a pulse is generated during the motor running.



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

NOTICE:

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

8. INSPECT JAM PROTECTION FUNCTION**NOTICE:**

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

HINT:

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

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

HINT:

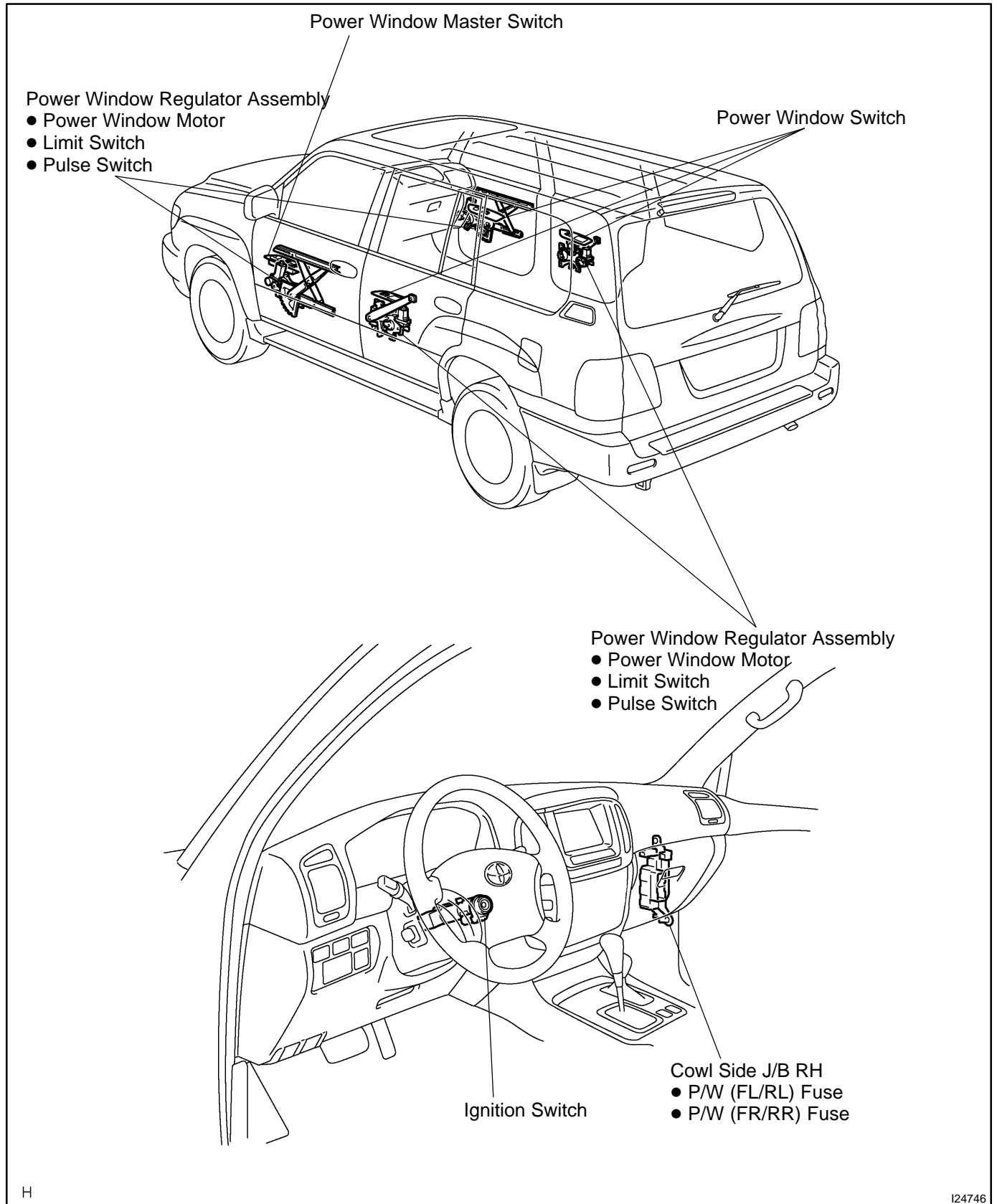
In case of removing the glass, glass guide, regulator and etc. be sure to perform checking of the jam protection function.

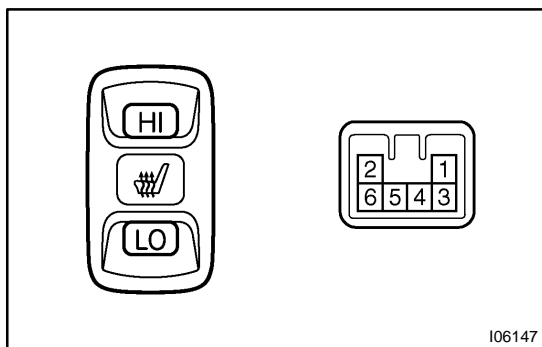
If the jam protection is not function properly, adjust power window motor reset switch and pulse switch.

POWER WINDOW CONTROL SYSTEM

LOCATION

BE0TF-05



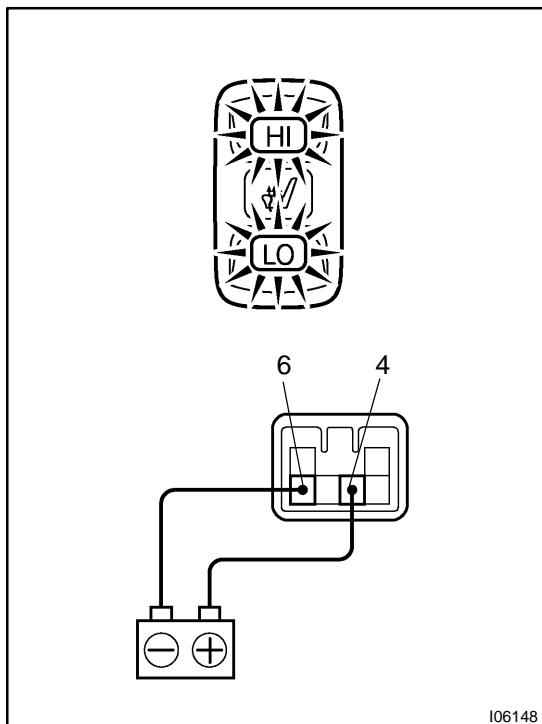


INSPECTION

1. INSPECT SEAT HEATER SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
HI	3 - 4 5 - 6	Continuity
OFF	-	No continuity
LO	4 - 5	Continuity
Illumination circuit	1 - 2	Continuity

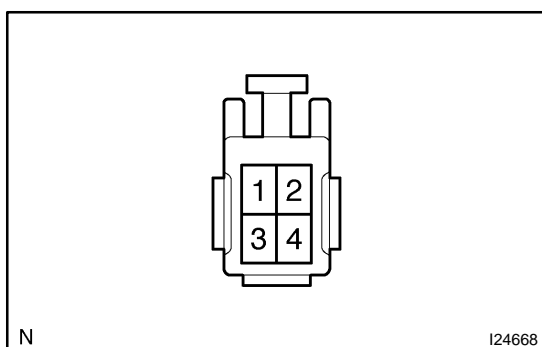
If continuity is not as specified, replace the switch.



2. INSPECT SEAT HEATER INDICATOR LIGHT OPERATION

- Connect the positive (+) lead from the battery to terminal 6 and the negative (-) lead to terminal 4.
- Push the seat heater switch Right or Left side and check that the indicator light lights up.

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

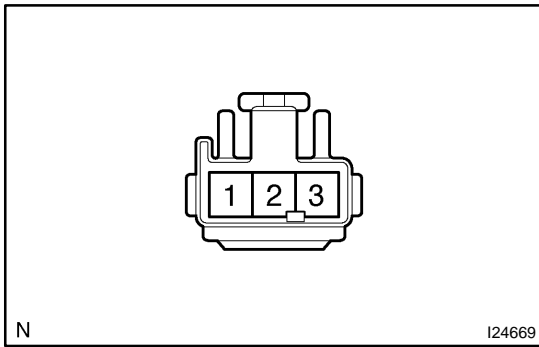


3. INSPECT SEAT HEATER ASSY (SEAT CUSHION) CONTINUITY

Inspect the seat heater assy between terminals, as shown.

Tester connection	Condition	Specified condition
1 - 4	Constant	Continuity
2 - 3	Constant	Continuity

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

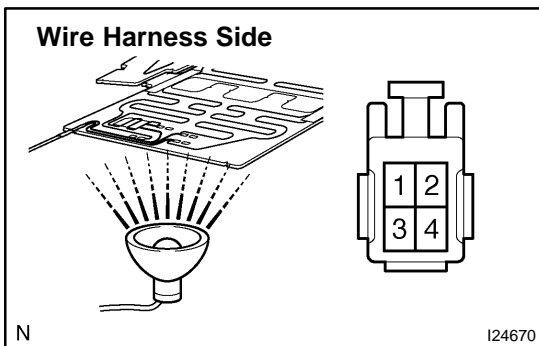


4. INSPECT SEAT HEATER ASSY (SEAT BACK) CONTINUITY

Inspect the seat heater assy between terminals, as shown.

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

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

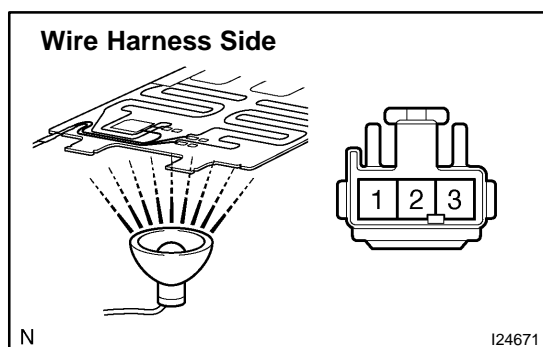


5. INSPECT SEAT HEATER ASSY (SEAT CUSHION) OPERATION

- (a) Heat the thermostat with a light.
- (b) Connect the seat cushion and seat back connector.
- (c) Inspect the seat heater assy continuity between terminals, as shown.

Tester connection	Condition	Specified condition
1 ↔ 4, 2 ↔ 3	25 - 35 °C	Continuity
1 ↔ 4	35 - 45 °C	Continuity
2 ↔ 3	35 - 45 °C	No continuity

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



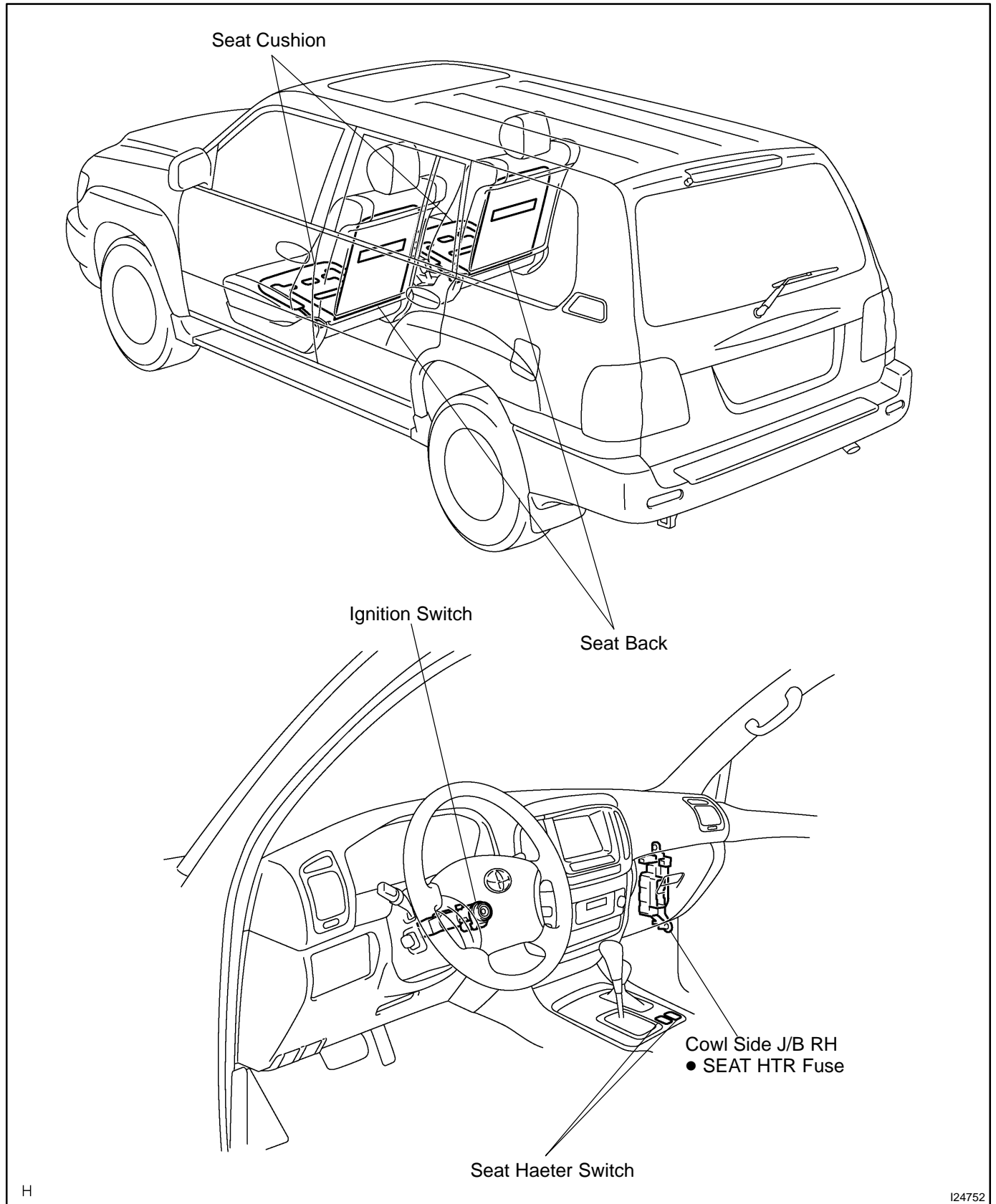
6. INSPECT SEAT HEATER ASSY (SEAT BACK) OPERATION

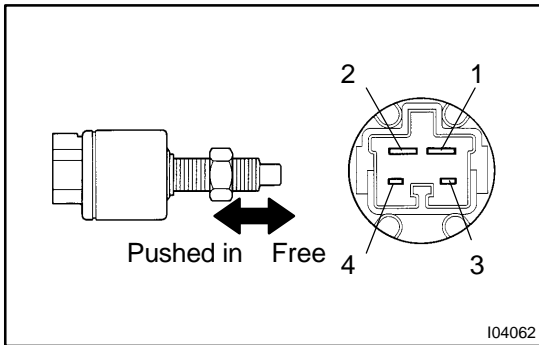
- (a) Heat the thermostat with a light.
- (b) Connect the seat cushion and seat back connector.
- (c) Inspect the seat heater assy continuity between terminals, as shown.

Tester connection	Condition	Specified condition
1 - 2 - 3	25 - 35 °C	Continuity
1 - 2	35 - 45 °C	Continuity
1 - 3, 2 - 3	35 - 45 °C	No continuity

SEAT HEATER SYSTEM LOCATION

BE0GH-20



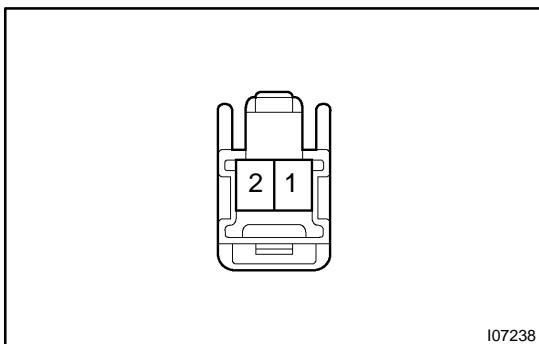


INSPECTION

1. INSPECT STOP LIGHT SWITCH CONTINUITY

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

If continuity is not as specified, replace the switch.



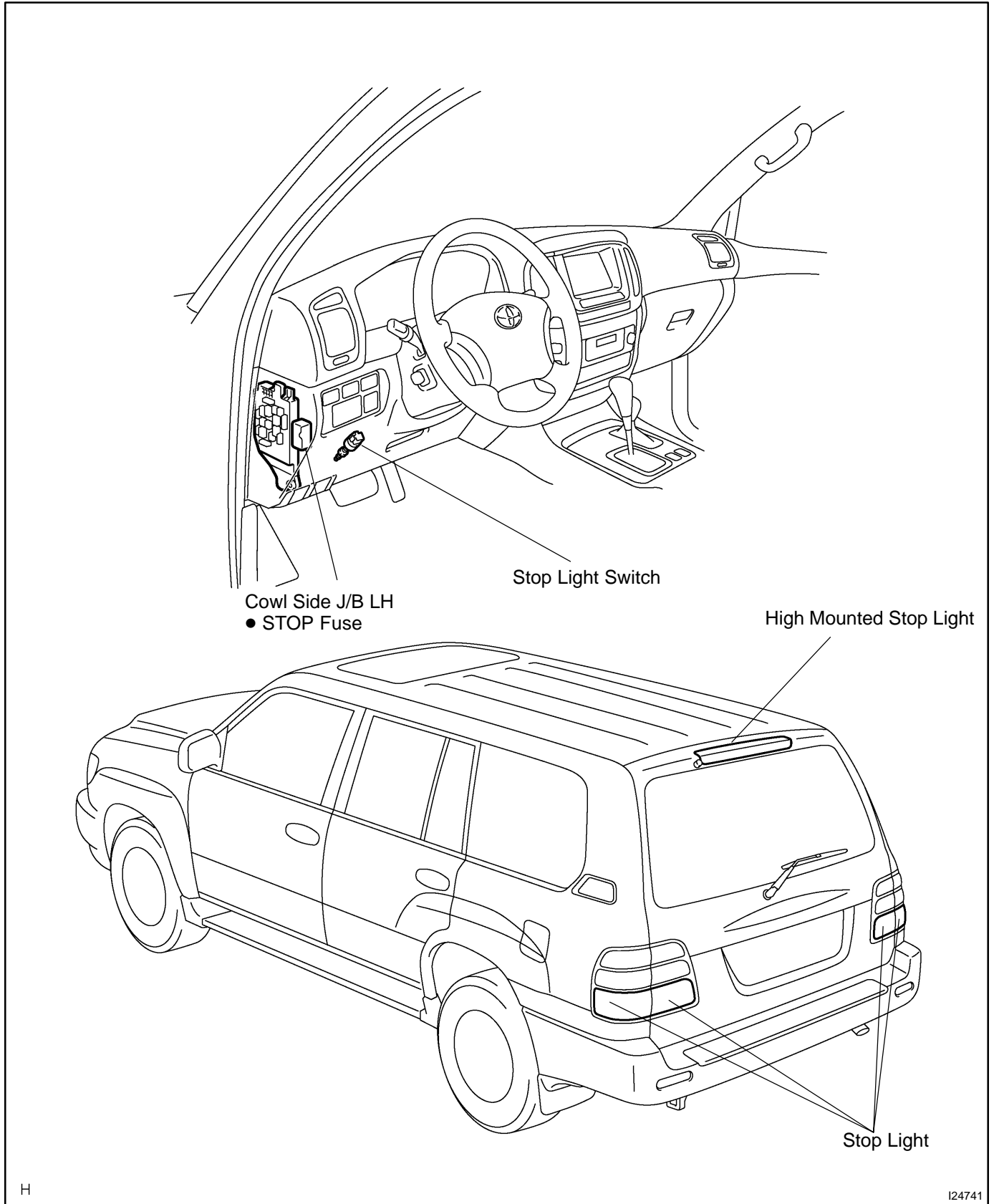
2. INSPECT HI-MOUNTED STOP LIGHT CONTINUITY

Using an ohmmeter, check that continuity exists between terminals.

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

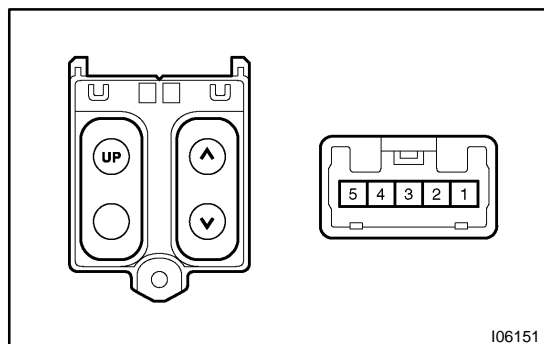
STOP LIGHT SYSTEM LOCATION

BE0H6-13



H

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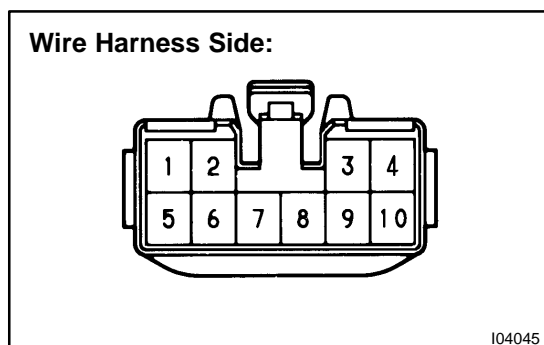


INSPECTION

1. INSPECT SLIDING ROOF SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
SLIDE OPEN	3 - 5	Continuity
SLIDE OFF	-	No continuity
SLIDE CLOSE	3 - 4	Continuity
TILT DOWN	2 - 3	Continuity
TILT OFF	-	No continuity
TILT UP	1 - 3	Continuity

If continuity is not as specified, replace the switch.



2. INSPECT SLIDING ROOF CONTROL ASSEMBLY CIRCUIT

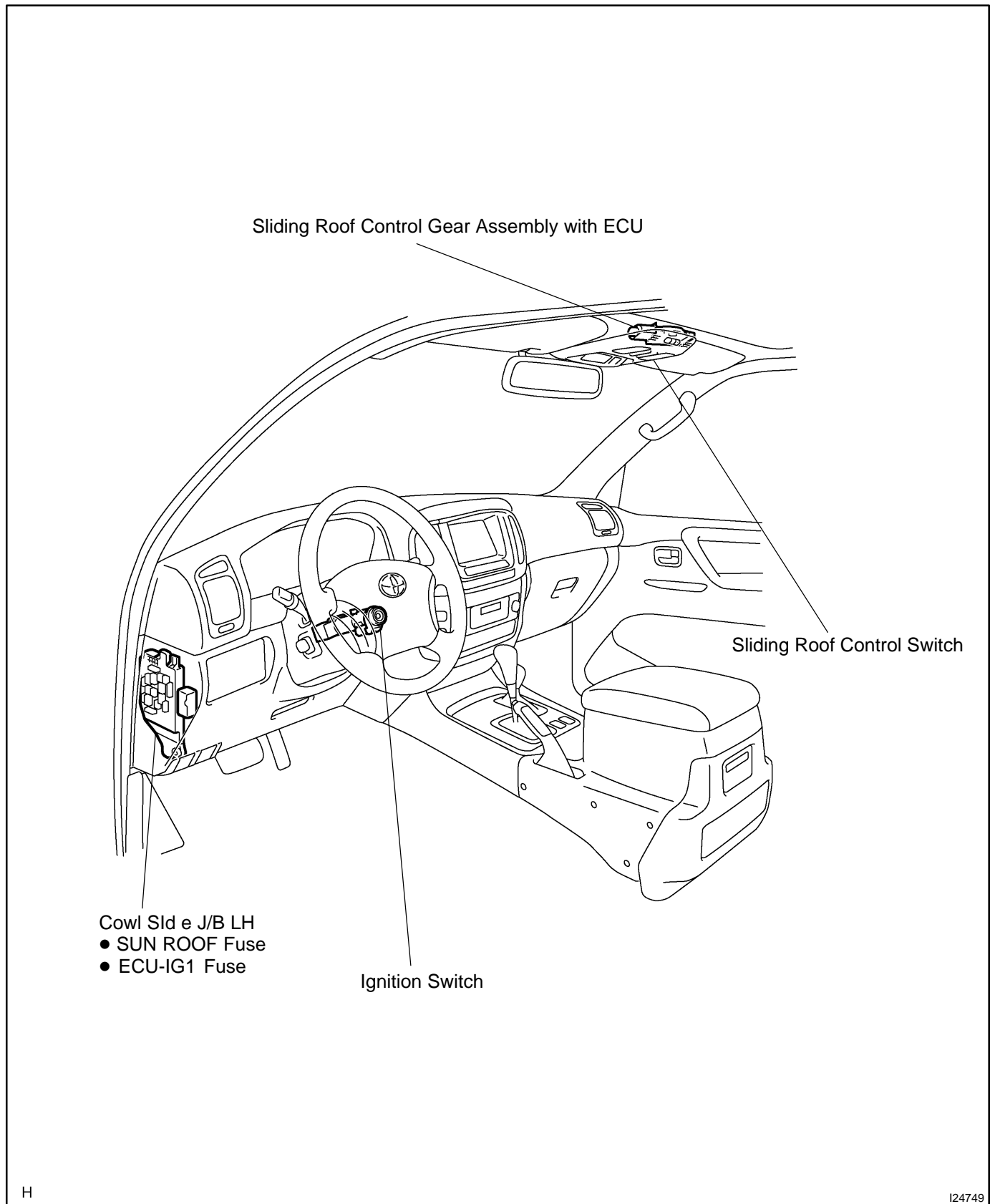
Disconnect the connector from the ECU and inspect the connector on the wire harness side, as shown in the chart.

Tester connection	Condition	Specified condition
1 - Ground	Constant	Continuity
4 - Ground	Sliding roof control switch (TILT) OFF or CLOSE	No continuity
4 - Ground	Sliding roof control switch (TILT) UP	Continuity
5 - Ground	Constant	Battery positive voltage
3 - Ground	Constant	Continuity
3 - Ground	Sliding roof control switch (TILT) OFF or UP	No continuity
7 - Ground	Sliding roof control switch (TILT) DOWN	Continuity
8 - Ground	Ignition switch LOCK or ACC	* No voltage
8 - Ground	Ignition switch ON	Battery positive voltage
9 - Ground	Sliding roof control switch (SLIDE) OFF or CLOSE	No continuity
9 - Ground	Sliding roof control switch (SLIDE) OPEN	Continuity
10 - Ground	Sliding roof control switch (SLIDE) OFF or OPEN	No continuity
10 - Ground	Sliding roof control switch (SLIDE) CLOSE	Continuity

*: Exceptions: During 45 second period after ignition switch ON→OFF (ACC) or until driver or passenger door is opened after ignition switch ON→OFF (ACC).

If circuit is as specified, replace the relay.

LOCATION

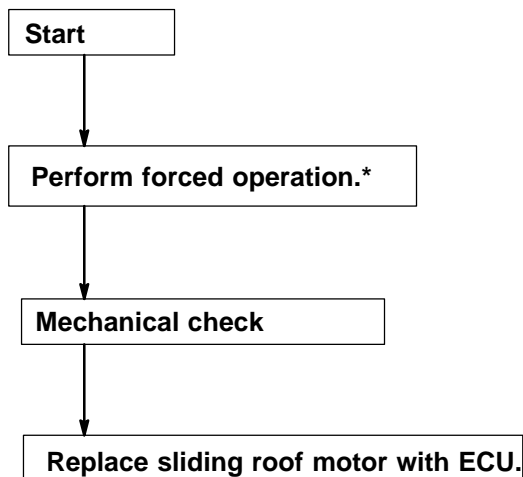


SLIDING ROOF SYSTEM

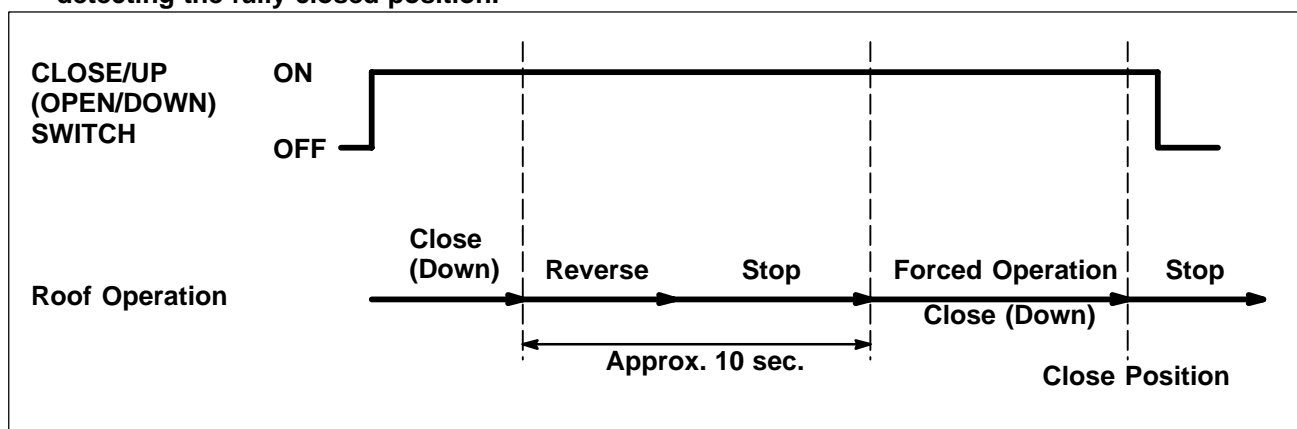
TROUBLESHOOTING

BE009-02

Sliding Roof reverses during close (down) operation.



*: Holding the CLOSE/UP (OPEN/DOWN) switch pressed inhibits the jam protection function at approx. 10 sec. after starting the reverse operation.
 If the switch remains pressed any longer, the sliding door starts close operation and it stops when detecting the fully closed position.

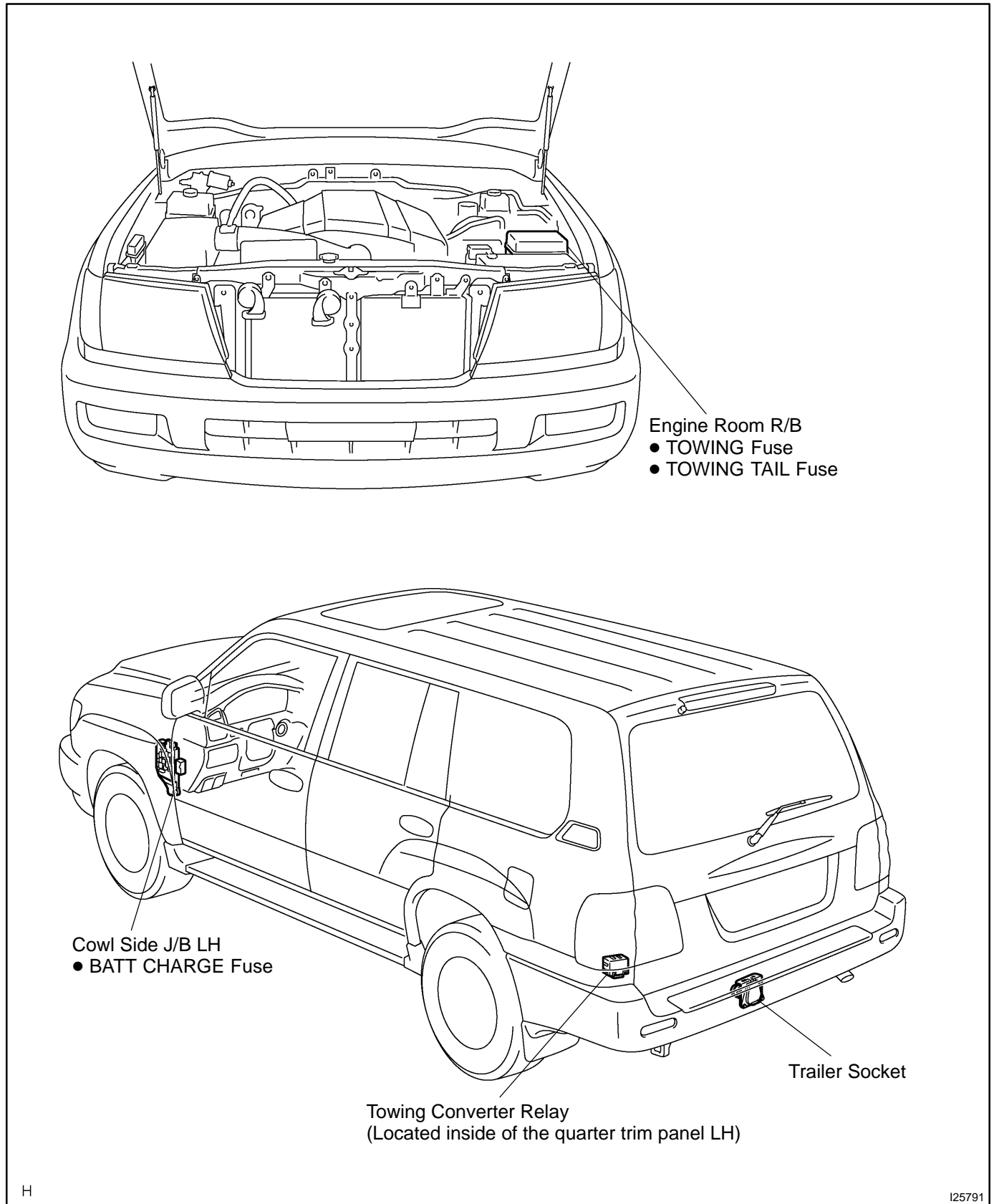


HINT:

At approx. 10 sec. after starting the reverse operation, it is switched to the forced close (down) operation.

TRAILER TOWING LOCATION

BE2E2-01



TROUBLESHOOTING

PROBLEM SYMPTOMS TABLE

IGNITION SWITCH AND KEY UNLOCK WARNING SWITCH:

This system uses the body control system, so check the body control system before you proceed with troubleshooting (See page [DI-1038](#)).

Symptom	Suspect Area	See page
Ignition switch is not set to each position.	4. Ignition switch 5. Power source circuit	BE-29 -
Ignition key illumination does not light up.	1. Bulb 2. Body ECU 3. Wire Hauness	- DI-1038 -
Key unlock warning system does not operate. (The buzzer does not sound when the driver's door is opened with the ignition OFF and key inserted)	1. Key Unlock Warning Switch 2. Door Courtesy Switch 3. Wire Harness	BE-29 BE-44 -
Key unlock warning system does not operate. (The buzzer sounds when the ignition key is in ACC or ON)	1. Ignition Switch 2. Wire Harness	BE-29 -

HEADLIGHT AND TAILLIGHT SYSTEM:

This system uses the body control system, so check the body control system before you proceed with troubleshooting (See page [DI-1038](#)).

Symptom	Suspect Area	See page
"Automatic light control system" does not operate.	1. Automatic Light Control Sensor 2. Light Control Switch 3. Door Courtesy Switch 4. Wire Harness	BE-32 BE-32 BE-44 -
Auto turn-off system does not operate when the driver's door is opened.	1. Drivers Door Courtesy Switch	BE-44
Auto turn-off system: Headlight and taillight do not come on.	1. Body ECU 2. Wire Harness	DI-1038 -
Auto turn-off system: Headlight and taillight stay on.	1. Body ECU 2. Wire Harness	DI-1038 -
Only one headlight comes on.	1. Daytime Running Light No.3, 4 Relays 2. Body ECU 3. Bulb 4. Wire Harness	BE-32 BE-32 - -
"LO-beam" does not light (All).	1. Engine Room J/B Relay Circuit 2. Wire Harness	BE-15 -
"LO-beam" does not light (One side).	1. Bulb 2. H-LP L-LWR Fuse 3. H-LP R-LWR Fuse 4. Wire Harness	- - - -
"HI-beam" does not light (All).	1. Headlight Dimmer Switch 2. Body ECU 3. Wire Harness	BE-32 BE-32 -
"HI-beam" does not light (One side).	1. Bulb 2. H-LP L-UPR Fuse 3. H-LP R-UPR Fuse 4. Daytime Running Light No.3, 4 Relays 5. Wire Harness	- - - BE-32 -
"Flash" does not light.	1. Headlight Dimmer Switch 2. Body ECU 3. Wire Harness	BE-32 BE-32 -

BODY ELECTRICAL - TROUBLESHOOTING

Headlight does not come on.	<ol style="list-style-type: none"> 1. Engine Room J/B Relay Circuit 2. Body ECU 3. Daytime Running Light No.3, 4 Relays 4. Headlight Dimmer Switch 5. Light Control Switch 6. Wire Harness 7. Bulb 	<p>BE-15 BE-32 BE-32 BE-32 BE-32 - -</p>
Headlight does not come on with light control switch in HEAD.	<ol style="list-style-type: none"> 1. Light Control Switch 2. Wire Harness 	<p>BE-32 -</p>
Headlight does not go out with light control switch in OFF.	<ol style="list-style-type: none"> 1. Engine Room J/B Relay Circuit 2. Wire Harness 	<p>BE-15 -</p>
Headlight flickers.	<ol style="list-style-type: none"> 1. Bulb 2. Wire Harness 	<p>- -</p>
Headlight is dark.	<ol style="list-style-type: none"> 1. Bulb 2. Wire Harness 	<p>- -</p>
Taillight does not come on with light control switch in TAIL.	<ol style="list-style-type: none"> 1. Engine Room J/B Relay Circuit 2. Light Control Switch 3. Wire Harness 	<p>BE-15 BE-32 -</p>
Taillight does not go out with light control switch in OFF.	<ol style="list-style-type: none"> 1. Engine Room J/B Relay Circuit 2. Light Control Switch 3. Wire Harness 	<p>BE-15 BE-32 -</p>
Headlight does not come on with engine running and light control switch in OFF.	<ol style="list-style-type: none"> 1. ECU-B1 Fuse 2. ECU-IG1 Fuse 3. Body ECU 4. Daytime Running Light No.3, 4 Relays 5. Generator L Terminal 6. Parking Brake Switch 7. Wire Harness 	<p>- - BE-32 BE-32 CH-10 BE-63 -</p>

FOG LIGHT SYSTEM:

Symptom	Suspect Area	See page
Fog light does not light up with light control SW HEAD (Headlight is normal.)	<ol style="list-style-type: none"> 1. FOG Fuse 2. Engine Room J/B Relay Circuit 3. Fog Light Switch 4. Wire Harness 	<p>- BE-15 BE-37 -</p>
Fog light does not light up with light control SW HEAD (Headlight does not light).	<ol style="list-style-type: none"> 1. *1 Other Parts 2. Wire Harness 	<p>- -</p>
Only one light does not light up.	<ol style="list-style-type: none"> 1. Bulb 2. Wire Harness 	<p>- -</p>

*1: Inspect Headlight System

TURN SIGNAL AND HAZARD WARNING SYSTEM:

Symptom	Suspect Area	See page
"Hazard" and "Turn" do not light up.	<ol style="list-style-type: none"> 1. ECU-IG2 Fuse 2. TURN HAZ Fuse 3. Ignitioin Switch 4. Turn Signal Flasher Relay 5. Wire Harness 	<p>- - BE-29 BE-40 -</p>
Hazard warning light does not light up. (Turn is normal)	<ol style="list-style-type: none"> 1. Hazard Warning Switch 2. Wire Harness 	<p>BE-40 -</p>
Turn signal does not light up. (Hazard is normal)	<ol style="list-style-type: none"> 1. Turn Signal Switch 2. Wire Harness 	<p>BE-40 -</p>

Turn signal does not light up in one direction.	1. Turn Signal Switch 2. Wire Harness	BE-40 -
Only one bulb does not light up.	1. Bulb 2. Wire Harness	- -

INTERIOR LIGHT SYSTEM:

This system uses the body control system, so check the body control system before you proceed with troubleshooting(See page [DI-1038](#)).

Symptom	Suspect Area	See page
All the lights do not come ON.	1. DOME Fuse 2. Body ECU 3. DOME Relay(Cowl Side J/B LH)	- DI-1038 -
The light does not come ON when the driver's door is opened.	1. Driver's Door Courtesy Switch 2. Wire Harness	BE-44 -
The light does not come ON when the passenger's door is opened.	1. Passenger's Door Courtesy Switch 2. Wire Harness	BE-44 -
The light does not come on when the rear-right door is opened.	1. Rear-Right Door Courtesy Switch 2. Wire Harness	BE-44 -
The light does not come on when the rear-left door is opened.	1. Rear-Left Door Courtesy Switch 2. Wire Harness	BE-44 -
Only one of the bulbs comes ON.	1. Bulb	-
The illumination does not fade out when all the doors are closed.	1. Courtesy Switch 2. Wire Harness 3. Body ECU	BE-44 - DI-1038
The illumination does not fade out immediately when the ignition switch is turned to ACC or ON within 15 seconds after all the doors are closed.	1. Ignition Switch 2. ACC Fuse 3. ECU-IG1 Fuse 4. Body ECU 5. Wire Harness	BE-29 - - DI-1038 -
The illumination does not fade out immediately when all the doors are locked within 15 seconds after they are closed.	1. Door Unlock Detection Switch 2. Wire Harness	BE-88 -
Room light does not light up.	1. Bulb 2. Room Light 3. Rear Personal Light 4. Wire Harness	- BE-44 BE-44 -
Front personal light does not light up.	1. Bulb 2. Front Personal Light 3. Room Light 4. Wire Harness	- BE-44 BE-44 -
Rear Room light does not light up.	1. Bulb 2. Rear Room Light 3. Wire Harness	- BE-44 -
Vanity light does not light up.	1. Bulb 2. Vanity Light 3. Wire Harness	- BE-44 -
Glove compartment light does not light up.	1. Bulb 2. Glove Compartment Courtesy Switch 3. Wire Harness	- BE-44 -
Courtesy light does not light up.	1. Bulb 2. Door Courtesy Switch 3. Wire Harness	- BE-44 -

BACK-UP LIGHT SYSTEM:

Symptom	Suspect Area	See page
Back-up Light does not light up.	1. GAUGE2 Fuse 2. Ignition Switch 3. Wire Harness 4. Bulb	- BE-29 - -
Back-up Light remains always on.	1. Park/ Neutral Position Switch 2. Wire Harness	DI-402 -
Only one light does not light up.	1. Bulb 2. Wire Harness	- -

STOP LIGHT SYSTEM:

Symptom	Suspect Area	See page
Stop light does not light up.	1. STOP Fuse 2. Stop Light Switch 3. Wire Harness	- BE-50 -
Stop light always lights up.	1. Stop Light Switch 2. Wire Harness	BE-50 -
Only one light always lights up.	1. Wire Harness	-
Only one light does not light up.	1. Bulb 2. Wire Harness	- -

WIPER AND WASHER SYSTEM:

Symptom	Suspect Area	See page
Front wiper and washer do not operate.	1. WIPER Fuse 2. Wiper Switch 3. Wiper Motor 4. Wire Harness	- BE-52 BE-52 -
Front wiper does not operate in LO or HI.	1. Wiper Switch 2. Wiper Motor 3. Wire Harness	BE-52 BE-52 -
Front wiper does not operate in INT.	1. Wiper Switch 2. Wiper Motor 3. Wire Harness	BE-52 BE-52 -
Front washer motor does not operate.	1. WASHER Fuse 2. Washer Switch 3. Washer Motor 4. Wire Harness	- BE-52 BE-52 -
Front wiper does not operate when washer switch is ON.	1. WASHER Fuse 2. Washer Switch 3. Wiper Motor 4. Wire Harness	- BE-52 BE-52 -
Rear wiper does not operate.	1. RR WIPER Fuse 2. Rear Wiper Motor 3. Rear Wiper Switch 4. Rear Wiper Relay 5. Wire Harness	- BE-52 BE-52 BE-52 -
Rear wiper does not operate in INT or ON position.	1. Rear Wiper Switch 2. Rear Wiper Relay 3. Wire Harness	BE-52 BE-52 -
Rear wiper does not return to OFF position.	1. Rear Wiper Motor 2. Wire Harness	BE-52 -

Rear washer motor does not operate.	1. Rear Washer Motor 2. Rear Washer Switch 3. Wire Harness	BE-52 BE-52 -
Washer fluid does not operate.	1. Washer Hose and Nozzle	-

*1: Inspect wiper arm and blade set positions.

COMBINATION METER (Meter Gauges and Illumination):

Symptom	Suspect Area	See page
Tachometer, fuel gauge and engine coolant temperature gauge do not operate.	1. GAUGE2 Fuse 2. Combination Meter 3. Wire Harness	- BE-58 -
Speedometer does not operate.	1. Speed Sensor 2. Combination Meter 3. Wire Harness	BE-63 BE-58 -
Tachometer does not operate.	1. Igniter 2. Combination Meter 3. Wire Harness	IG-1 BE-58 -
Fuel gauge does not operate or is in abnormal operation.	1. Fuel Receiver Gauge 2. Fuel Sender Gauge 3. Combination Meter 4. Wire Harness	BE-63 BE-63 BE-58 -
Oil pressure gauge does not operate.	1. Oil Pressure Receiver Gauge 2. Oil Pressure Sender Gauge 3. Combination Meter 4. Wire Harness	BE-63 BE-63 BE-58 -
Voltmeter does not operate.	1. Voltmeter 2. Combination Meter 3. Wire Harness	BE-63 BE-58 -
Engine coolant temperature gauge does not operate or is in abnormal operation	1. Engine Coolant Temperature Receiver Gauge 2. Engine Coolant Temperature Sender Gauge 3. Combination Meter 4. Wire Harness	BE-63 BE-63 BE-58 -
All illumination lights do not light up.	1. Light Control Rheostat 2. Wire Harness	BE-63 -
Brightness does not change even when rheostat is turned.	1. Bulb 2. Wire Harness	- -
Only one illumination light does not light up.	1. Bulb 2. Wire Harness	- -

COMBINATION METER (Warning Light):

Symptom	Suspect Area	See page
Warning lights do not light up. (Except discharge, open door and SRS)	1. GAUGE1 Fuse 2. Combination Meter 3. Wire Harness	- BE-58 -
Fuel level warning light does not light up.	1. LED 2. Combination Meter 3. Fuel Sender Gauge 4. Wire Harness	- BE-58 BE-63 -
ABS warning light does not light up.	1. LED 2. ABS ECU 3. Wire Harness	- DI-502 -

BODY ELECTRICAL - TROUBLESHOOTING

Seat belt warning light does not light up.	<ol style="list-style-type: none"> 1. LED 2. Seat Belt Buckle Switch 3. Wire Harness 4. Body ECU 	<p>-</p> <p>BE-63</p> <p>BE-63</p> <p>DI-1038</p>
Discharge warning light does not light up.	<ol style="list-style-type: none"> 1. METER Fuse 2. LED 3. Wire Harness 4. Generator 	<p>-</p> <p>-</p> <p>-</p> <p>CH-2</p>
Brake warning light does not light up.	<ol style="list-style-type: none"> 1. LED 2. Parking Brake Switch 3. Brake Fluid Level Warning Switch 4. LED Check Relay 5. Combination Meter 6. Wire Harness 	<p>-</p> <p>BE-63</p> <p>BE-63</p> <p>BE-63</p> <p>BE-58</p> <p>-</p>
SRS warning light does not light up.	<ol style="list-style-type: none"> 1. ECU-B2 Fuse 2. LED 3. Airbag Sensor Assembly 4. Combination Meter 5. Wire Harness 	<p>-</p> <p>-</p> <p>DI-690</p> <p>BE-58</p> <p>-</p>
Open door warning light does not light up.	<ol style="list-style-type: none"> 1. DOME Fuse 2. LED 3. Door Courtesy Switch 4. Combination Meter 5. Wire Harness 	<p>-</p> <p>-</p> <p>BE-44</p> <p>BE-58</p> <p>-</p>
A/T oil temperature warning light does not light up.	<ol style="list-style-type: none"> 1. LED 2. Combination Meter 3. Wire Harness 4. ECM 	<p>-</p> <p>BE-63</p> <p>BE-58</p> <p>DI-1</p>

COMBINATION METER (Indicator Light):

Symptom	Suspect Area	See page
Cruise control indicator light does not light up.	<ol style="list-style-type: none"> 1. LED 2. Combination Meter 3. Wire Harness 4. ECM 	<p>-</p> <p>BE-58</p> <p>-</p> <p>DI-1</p>
High-beam indicator light does not light up.	<ol style="list-style-type: none"> 1. LED 2. Combination Meter 3. Wire Harness 4. Headlight System 	<p>-</p> <p>BE-58</p> <p>-</p> <p>BE-30</p>
Turn indicator light does not light up.	<ol style="list-style-type: none"> 1. LED 2. Combination Meter 3. Wire Harness 4. Turn Signal and Hazard Warning System 	<p>-</p> <p>BE-58</p> <p>-</p> <p>BE-39</p>
Shift indicator lights do not light up.	<ol style="list-style-type: none"> 1. LED 2. Combination Meter 3. Park/Neutral Position Switch 4. Wire Harness 	<p>-</p> <p>BE-58</p> <p>-</p> <p>-</p>
Only one shift indicator does not light up.	<ol style="list-style-type: none"> 1. LED 2. Combination Meter 	<p>-</p> <p>BE-58</p>
Malfunction indicator light does not light up.	<ol style="list-style-type: none"> 1. LED 2. Combination Meter 3. Wire Harness 4. ECM 	<p>-</p> <p>BE-58</p> <p>-</p> <p>DI-1</p>

ECT PWR indicator light does not light up.	<ol style="list-style-type: none"> 1. LED 2. ECT Pattern Select Switch 3. Combination Meter 4. Wire Harness 5. ECT System 	<p>-</p> <p>-</p> <p>BE-58</p> <p>-</p> <p>DI-358</p>
2nd start ETCS indicator light does not light up.	<ol style="list-style-type: none"> 1. LED 2. Combination Meter 3. Wire Harness 4. ECM 	<p>-</p> <p>BE-58</p> <p>-</p> <p>DI-1</p>
Center Diff. lock indicator light does not light up.	<ol style="list-style-type: none"> 1. LED 2. Combination Meter 3. Transfer 4WD Position Detection Switch 4. Wire Harness 	<p>-</p> <p>BE-58</p> <p>TR-49</p> <p>-</p>
Indicator lights do not light up. (Except Turn, Hi-beam and security)	<ol style="list-style-type: none"> 1. GAUGE2 Fuse 2. Wire Harness 	<p>-</p> <p>-</p>

DEFOGGER SYSTEM:

Symptom	Suspect Area	See page
All defogger systems do not operate.	<ol style="list-style-type: none"> 1. DEFOG Fuse 2. DEFOG Relay 3. Defogger Switch (Integration Control Panel Assembly) 4. Wire Harness 	<p>-</p> <p>-</p> <p>BE-75</p> <p>-</p>
Rear window defogger does not operate.	<ol style="list-style-type: none"> 1. Defogger Wire 2. Choke Coil 3. Wire Harness 	<p>BE-75</p> <p>-</p> <p>-</p>
Mirror defogger does not operate.	<ol style="list-style-type: none"> 1. MIR HTR Fuse 2. Engine Room J/B Relay Circuit 3. Mirror Defogger 4. Wire Harness 	<p>-</p> <p>BE-15</p> <p>BE-75</p> <p>-</p>

POWER WINDOW CONTROL SYSTEM:

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

Symptom	Suspect Area	See page
All the power windows do not operate. (Power Door Lock System is normal.)	<ol style="list-style-type: none"> 1. P/W (FL, FR, RL, RR) Fuse 2. Power Window Master Switch 3. Wire Harness 	<p>-</p> <p>BE-79</p> <p>-</p>
Only the driver's window does not operate.	<ol style="list-style-type: none"> 1. Power Window Master Switch 2. Body ECU 3. Power Window Motor 4. Wire Harness 	<p>BE-79</p> <p>DI-1038</p> <p>BE-79</p> <p>-</p>
"Window lock function" does not operate.	<ol style="list-style-type: none"> 1. Power Window Master Switch 	<p>BE-79</p>

POWER DOOR LOCK CONTROL SYSTEM:

This system uses the body control system, so check diagnosis system of the body control system before you proceed with troubleshooting.

Symptom	Suspect Area	See page
All the doors cannot be locked or unlocked. (Power Window Control System is normal.)	<ol style="list-style-type: none"> 1. DOOR Fuse 2. Door Lock Control Switch 3. Wire Harness 4. Body ECU 	<p>-</p> <p>BE-88</p> <p>-</p> <p>DI-1038</p>
Only one side door lock control does not operate.	<ol style="list-style-type: none"> 1. Door Lock Motor 2. Wire Harness 	<p>BE-88</p> <p>-</p>

BODY ELECTRICAL - TROUBLESHOOTING

Door key related function does not operate.	1. Door Key Lock and Unlock Switch 2. Wire Harness 3. Body ECU	BE-88 - DI-1038
Key confinement prevention function does not operate.	1. Key Unlock Warning Switch 2. Door Courtesy Switch 3. Wire Harness	BE-29 BE-44 -

POWER SEAT CONTROL SYSTEM:

Symptom	Suspect Area	See page
Both driver and passenger power seats do not operate. (Door lock does not operate.)	1. ALTS Fuse 2. Wire Harness	- -
Driver's seat does not operate.	1. LH SEAT Fuse 2. Power Seat Switch (D) 3. Wire Harness	- BE-110 -
Passenger's seat does not operate.	1. RH SEAT Fuse 2. Power Seat Switch (P) 3. Wire Harness	- BE-110 -
"Slide operation" does not operate.	1. Power Seat Switch (D, P) 2. Wire Harness 3. Slide Motor (D, P)	BE-110 - BE-110
"Front vertical operation" does not operate.	1. Power Seat Switch (D, P) 2. Wire Harness 3. Front Vertical Motor (D, P)	BE-110 - BE-110
"Lifter operation" does not operate.	1. Power Seat Switch (D, P) 2. Wire Harness 3. Lifter Motor (D, P)	BE-110 - BE-110
"Reclining operation" does not operate.	1. Power Seat Switch (D, P) 2. Wire Harness 3. Reclining Motor (D, P)	BE-110 - BE-110
"Lumbar support operation" does not operate.	1. Power Seat Switch (D) 2. Wire Harness 3. Lumbar Support Motor (D)	BE-110 - BE-110

(D): Driver's Seat

(P): Passenger's Seat

POWER MIRROR CONTROL SYSTEM:

Symptom	Suspect Area	See page
Mirror does not operate.	1. ACC Fuse 2. Mirror Switch 3. Wire Harness	- BE-117 -
Mirror operates abnormally.	1. Mirror Switch 2. Mirror Motor 3. Wire Harness	BE-117 BE-117 -

SEAT HEATER SYSTEM:

Symptom	Suspect Area	See page
Seat heaters do not operate. (Driver's and Passenger's)	1. SEAT HTR Fuse 2. Seat Heater Switch (D, P) 3. Wire Harness 4. Seat Heater	- BE-121 - BE-121
Driver's seat heater does not operate.	1. Seat Heater Switch (D, P) 2. Wire Harness	BE-121 -

Passenger's seat heater does not operate.	1. Seat Heater Switch (D, P) 2. Wire Harness	BE-121 -
Seat heater temperature is too hot.	1. Seat Heater	BE-121

AUDIO SYSTEM:

Symptom	Suspect Area	See page
Audio system abnormal operation.	TROUBLESHOOTINGS	BE-129

MULTI DISPLAY:

Symptom	Suspect Area	See page
Clock will not operate.	TROUBLESHOOTING	BE-178
Clock loses or gains time.	TROUBLESHOOTING	BE-178

GARAGE DOOR OPENER SYSTEM:

Symptom	Suspect Area	See page
The equipment of which code has been registered does not operate.	1. Garage Door Opener Switch 2. Wire Harness 3. *	BE-190 - -
LED does not light up. (Even though either switch is pressed.)	1. Garage Door Opener Switch 2. Wire Harness	BE-190 -
LED does not light up. (Only one switch is pressed.)	Garage Door Opener Switch	BE-190

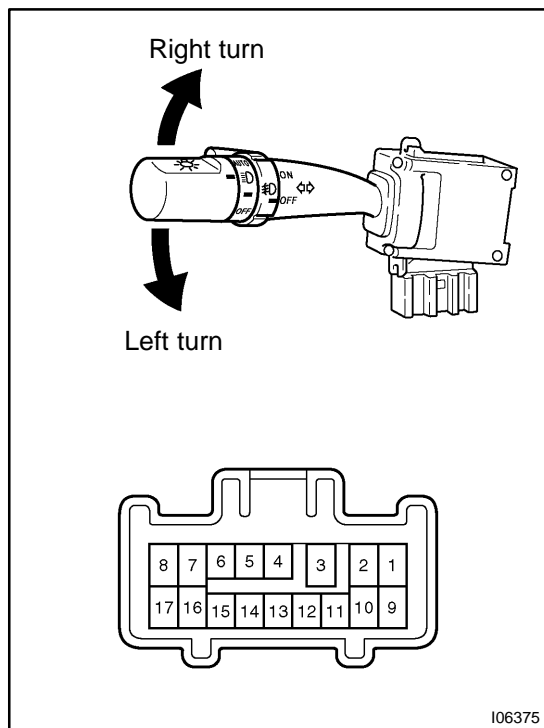
* As the GARAGE DOOR OPENER on the vehicle side seems to be normal, check the OPENER on the equipment side, of which code has been registered.

ENGINE IMMOBILIZER SYSTEM:

Symptom	Suspect Area	See page
Engine immobilizer system does not operate.	See DIAGNOSIS SYSTEM	DI-1002

HORN SYSTEM:

Symptom	Suspect Area	See page
Horn system does not operate.	1. HORN Fuse 2. Engine Room J/B Relay Circuit 3. Horn Switch 4. Horn 5. Wire Harness	- BE-15 BE-198 BE-198 -
Horns blow all the time.	1. Engine Room J/B Relay Circuit 2. Horn Switch 3. Wire Harness	BE-15 BE-198 -
One horn operates but the other horn does not operate.	1. Horn 2. Wire Harness	BE-198 -
Horns operate abnormally.	1. Engine Room J/B Relay Circuit 2. Horn 3. Wire Harness	BE-15 BE-198 -

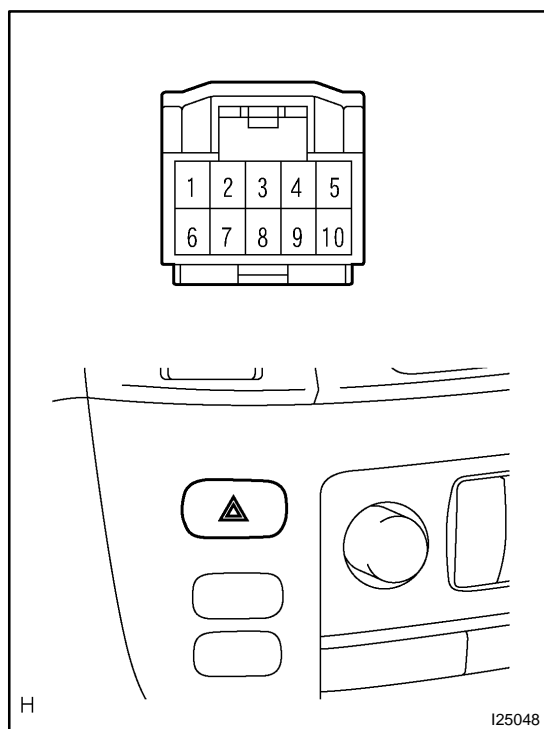


INSPECTION

1. INSPECT TURN SIGNAL SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
Left turn	7 - 8	Continuity
Neutral	-	No continuity
Right turn	6 - 7	Continuity

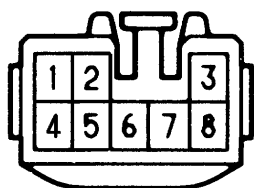
If continuity is not as specified, replace the switch.



2. INSPECT HAZARD WARNING SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
Hazard button FREE	3 - 5	No continuity
Hazard button Pushed in	3 - 5	Continuity

If continuity is not as specified, replace the switch.

Wire Harness Side:

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3. INSPECT TURN SIGNAL FLASHER CIRCUIT

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

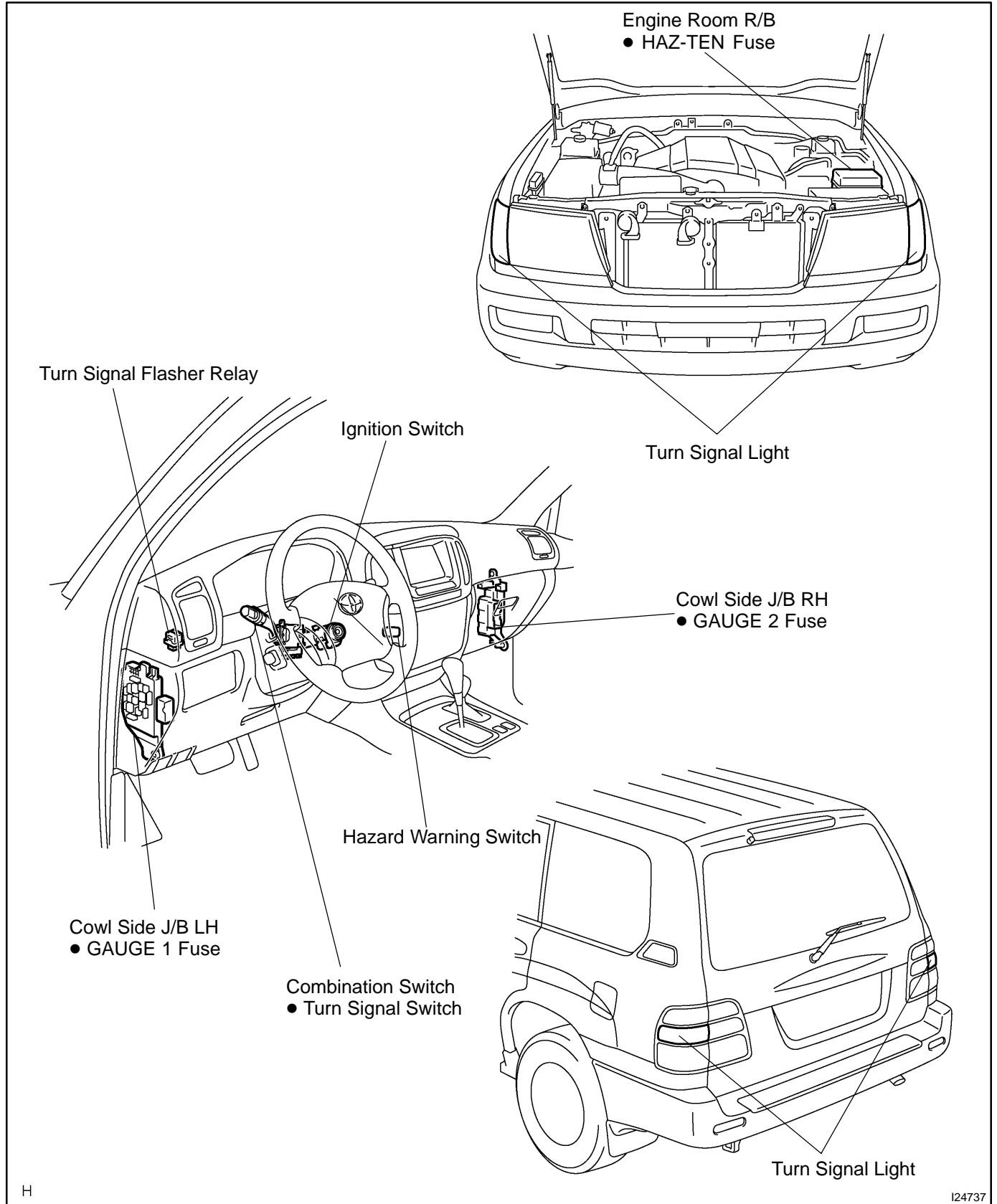
Tester connection	Condition	Specified condition
2 - Ground	Constant	Continuity
3 - Ground	Constant	Continuity
5 - Ground	Turn signal switch RIGHT or OFF	No continuity
5 - Ground	Turn signal switch LEFT	Continuity
6 - Ground	Turn signal switch LEFT or OFF	No continuity
6 - Ground	Turn signal switch RIGHT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

If circuit is as specified, replace the relay.

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

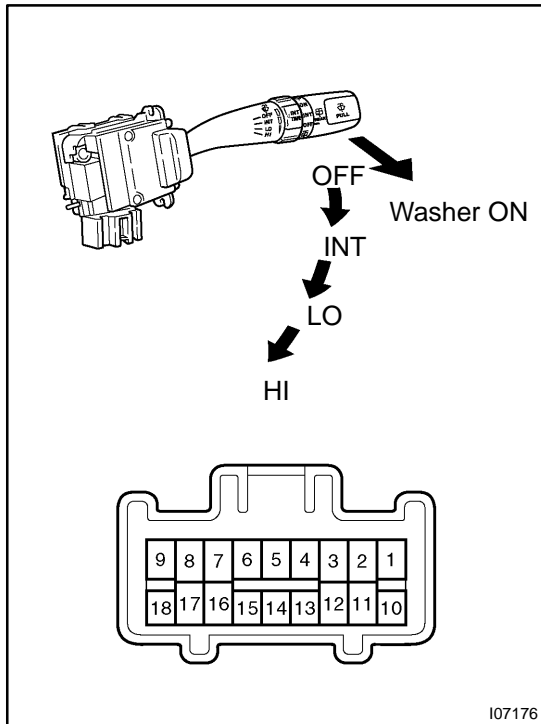
TURN SIGNAL AND HAZARD WARNING SYSTEM LOCATION

BE0H0-12



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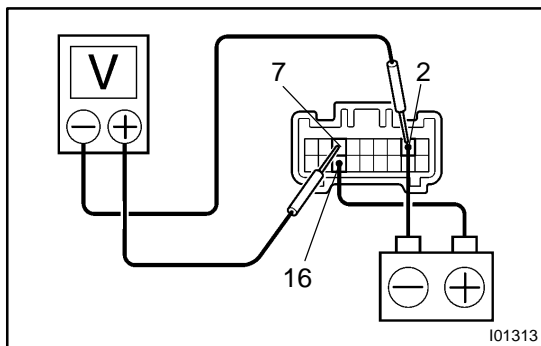


INSPECTION

1. INSPECT FRONT WIPER AND WASHER SWITCH CONTINUITY

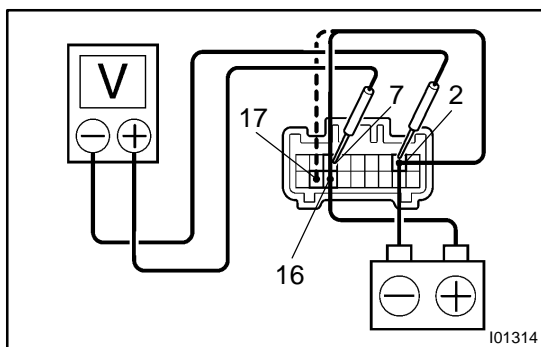
Switch position	Tester connection	Specified condition
OFF	7 - 16	Continuity
INT	7 - 16	Continuity
LO	7 - 17	Continuity
HI	8 - 17	Continuity
Washer OFF	-	No continuity
Washer ON	2 - 11	Continuity

If continuity is not as specified, replace the switch.



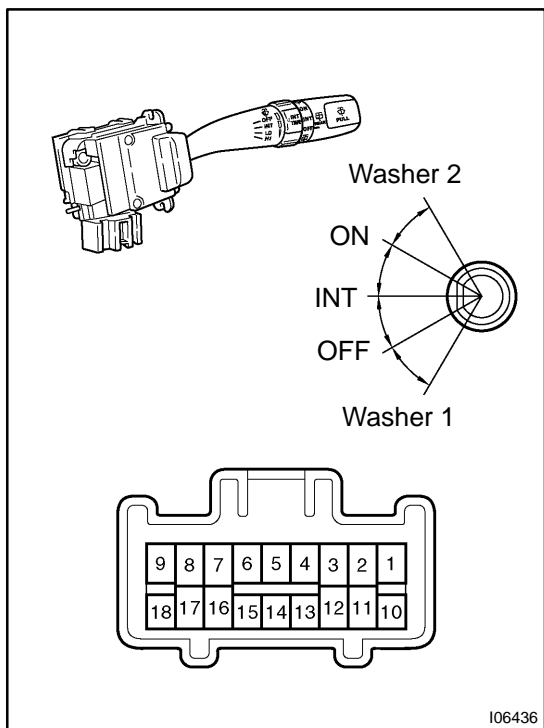
2. INSPECT FRONT WIPER INTERMITTENT OPERATION

- Turn the wiper switch to INT position.
- Turn the intermittent time control switch to FAST position.
- Connect the positive (+) lead from the battery to terminal 16 and the negative (-) lead to terminal 2.
- Connect the positive (+) lead from the voltmeter to terminal 7 and the negative (-) lead to terminal 2, check that the meter needle indicates battery voltage.
- After connecting terminal 16 to terminal 17, connect to terminal 2 to terminal 17, check the voltage rises from 0 volts to battery voltage within the times, as shown in the table.



INT time control switch position	Voltage
FAST	0.6 - 2.6 secs.
SLOW	5.7 - 15.7 secs.

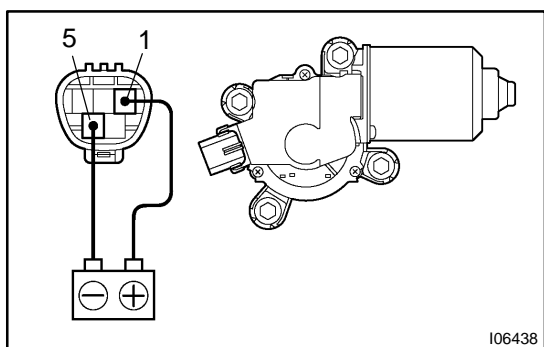
If operation is not as specified, replace the wiper and washer switch.



3. INSPECT REAR WIPER AND WASHER SWITCH CONTINUITY

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

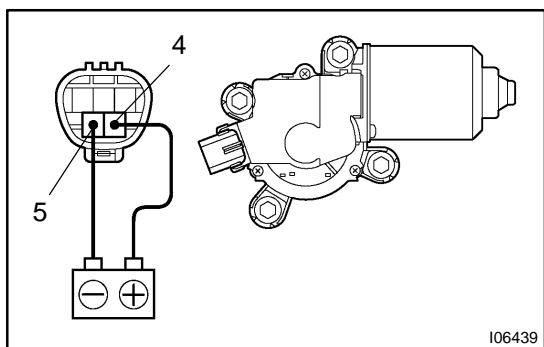
If continuity is not as specified, replace the switch.



4. Low speed: INSPECT FRONT WIPER MOTOR OPERATION

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

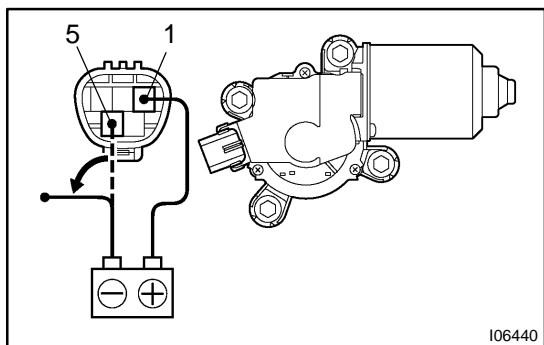
If operation is not as specified, replace the motor.



5. High speed: INSPECT FRONT WIPER MOTOR OPERATION

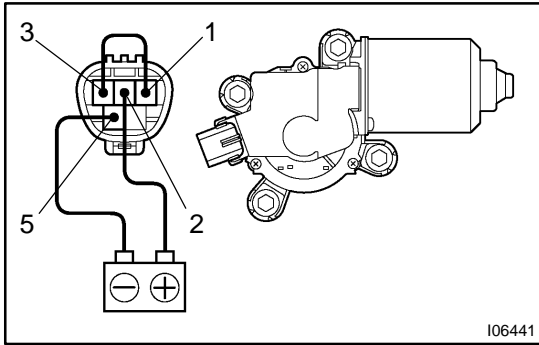
Connect the positive (+) lead from the battery to terminal 4 and the negative (-) lead to terminal 5, check that the motor operates at high speed.

If operation is not as specified, replace the motor.

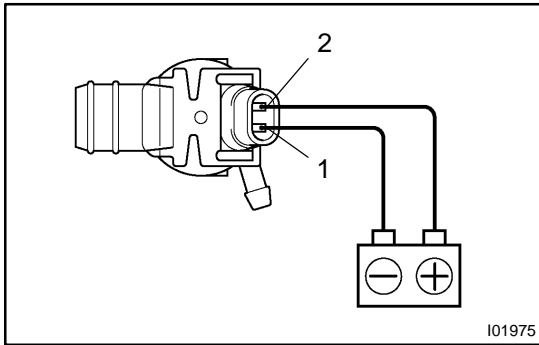


6. Stopping at stop position: INSPECT FRONT WIPER MOTOR OPERATION

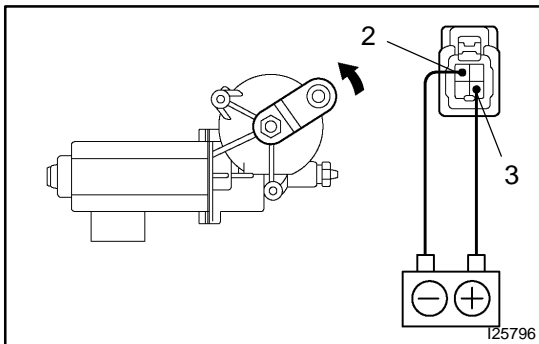
- (a) Operate the motor at low speed and stop the motor operation anywhere except at the stop position by disconnecting positive (+) lead from terminal 1.



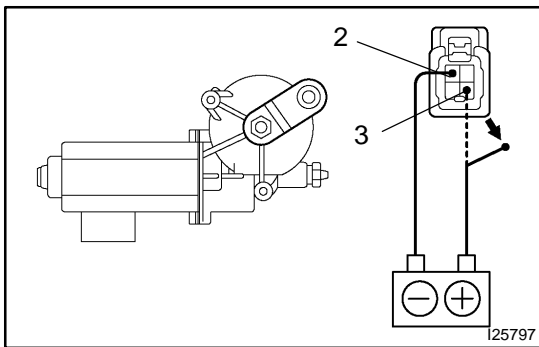
- (b) Connect terminals 1 and 3.
 - (c) Connect the positive (+) lead from the battery to terminal 2 and negative (-) lead to terminal 5, check that the motor stops running at the stop position after the motor operates again.
- If operation is not as specified, replace the motor.



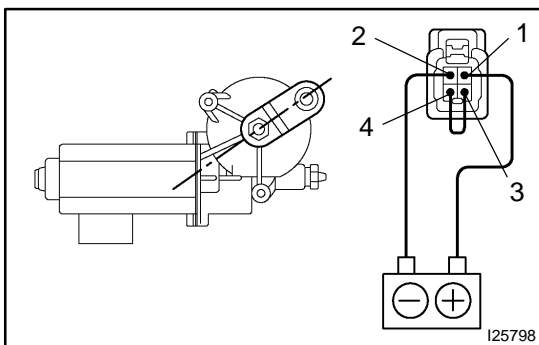
- 7. INSPECT FRONT WASHER MOTOR OPERATION**
 Connect the positive (+) lead from the battery to terminal 2 and the negative (-) lead to terminal 1, check that the motor operates.



- 8. Low speed:
 INSPECT REAR WIPER MOTOR OPERATION**
 Connect the positive (+) lead from the battery to terminal 3 and negative (-) lead to terminal 2, check that the motor operates at low speed.
 If operation is not as specified, replace the motor.

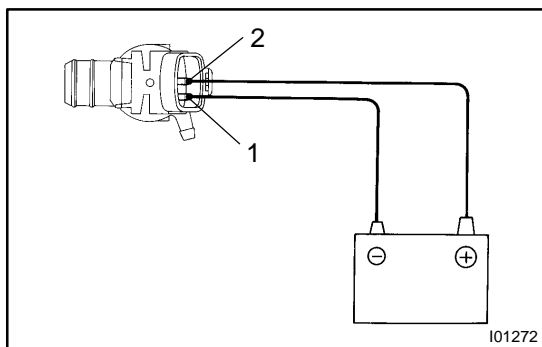


- 9. Stopping at stop position:
 INSPECT REAR WIPER MOTOR OPERATION**
 (a) Operate the motor at low speed and stop the motor operation anywhere except at the stop position by disconnecting positive (+) lead from terminal 3.



- (b) Connect terminals 3 and 4.
 - (c) Connect the positive (+) lead from the battery to terminal 1 and negative (-) lead to terminal 2, check that the motor stops running at the stop position after the motor operates again.
- If operation is not as specified, replace the motor.

NOTICE:
 These tests must be performed quickly (within 20 seconds) to prevent the coil from burning out.
 If operation is not as specified, replace the motor.

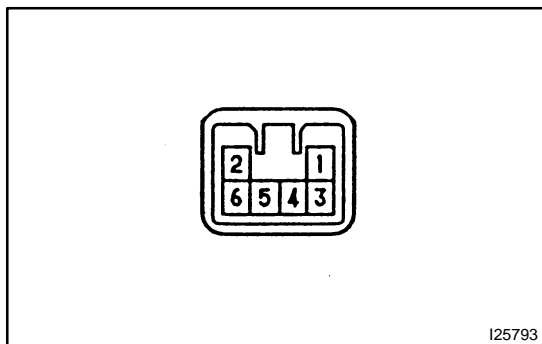
**10. INSPECT REAR WASHER MOTOR OPERATION**

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

NOTICE:

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

If operation is not as specified, replace the motor.

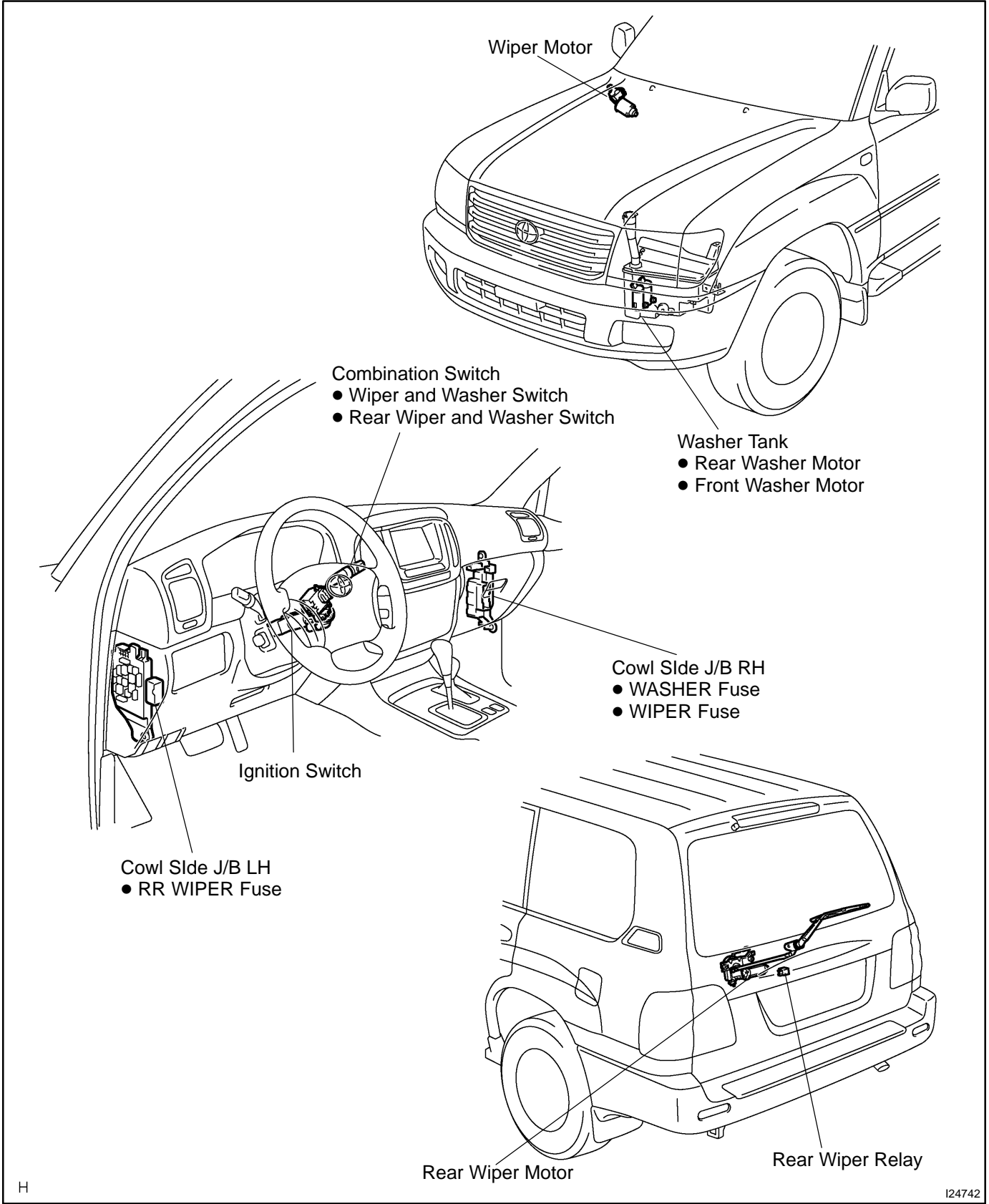
**11. INSPECT REAR WIPER RELAY CONTINUITY**

Switch position	Tester connection	Specified condition
OFF	-	-
INT	1 - 4 - 6	Continuity
LO	3 - 5 - 6	Continuity
Wash2	3 - 5 - 6	Continuity

If continuity is not as specified, replace the relay.

WIPER AND WASHER SYSTEM LOCATION

BE0HN-11



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124742

INSPECTION

1. CHARACTERS OF WIRELESS DOOR LOCK

- (a) The operation distance changes according to how customers hold the transmitter or where it is used.
- (b) Because of using the very weak radio wave, if there is a strong wave or noise on the frequency being used, the operation distance may become shorter.

2. WIRELESS DOOR LOCK BASIC FUNCTION

- (a) Stand on the driver's side. Stay 1 m away from the vehicle.
- (b) Turn the transmitter toward the vehicle and press any one of the transmission switched for 1 sec.

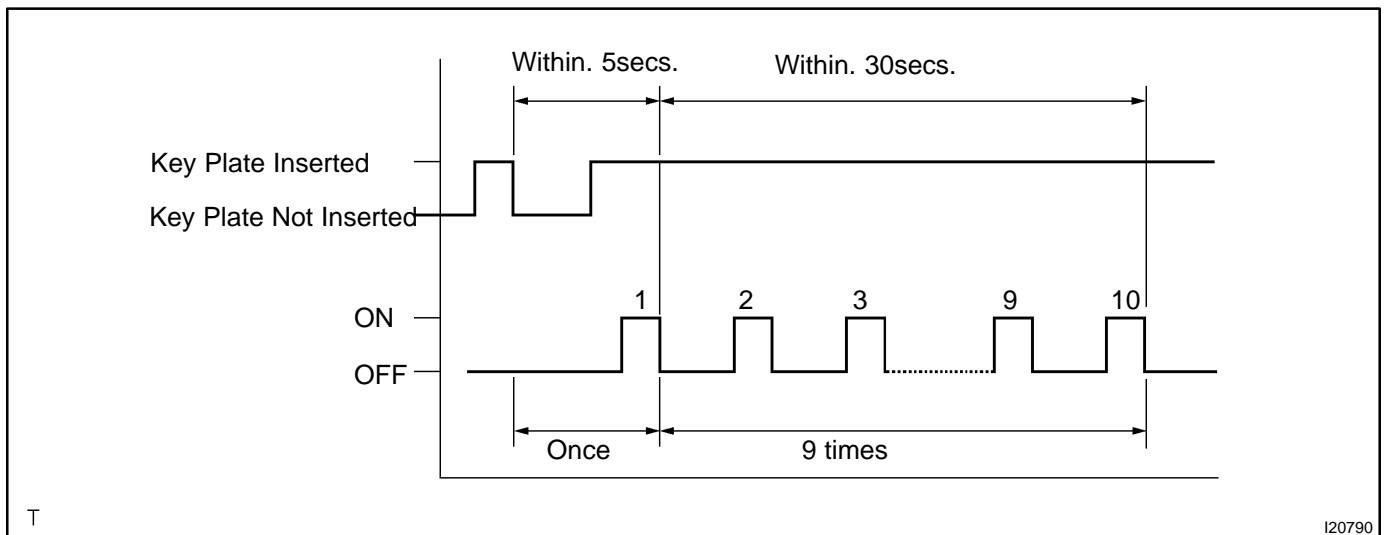
3. INSPECT WIRELESS DOOR LOCK DIAGNOSIS MODE

- (a) Start up diagnosis mode.

HINT:

Follow the method below.

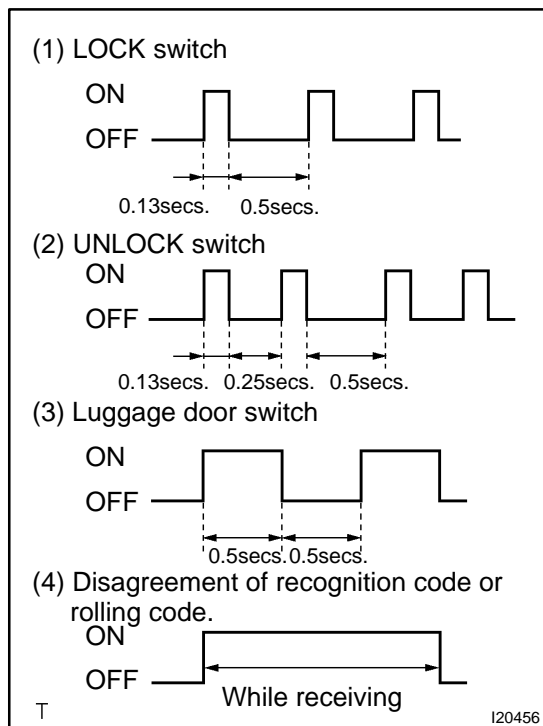
- (1) Insert the ignition key into the ignition key cylinder.
- (2) Remove the ignition key from the ignition key cylinder.
- (3) Insert the key into the ignition switch.
- (4) Turn the ignition switch ON once within 5 sec.
- (5) Repeat turning the ignition switch OFF → ON 9 times within 30 sec.
- (6) Enter the diagnosis mode, and make sure that the taillight lights up.



- (b) Finishing the Diagnosis Mode.

During the Diagnosis mode, turn the ignition switch OFF → ON to go back to the normal mode.

At this time make sure that the taillight lights up.



(c) Diagnosis Mode Check.

HINT:

Check how the taillight lights up when pressing each transmitter switch.

- (1) LOCK switch
- (2) UNLOCK switch
- (3) Luggage door switch
- (4) Disagreement of recognition code or rolling code.

HINT:

If (4) is detected in the Diagnosis Check, conduct the recognition code registration.

- (5) No response from the taillight.

HINT:

Conduct the following checks.

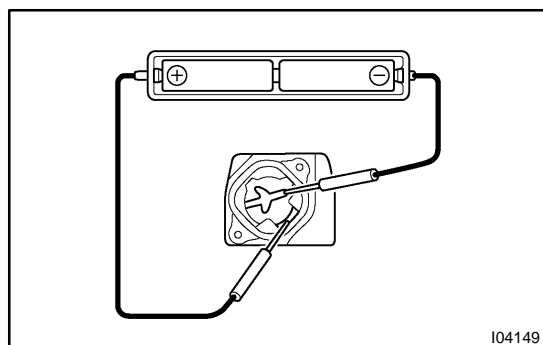
- Wireless door lock transmitter.
- Wireless door lock receiver.

4. 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.
- (e) Install the battery (lithium battery).
- (f) Install a cover so that O-ring is not distorted or slipped off.
- (g) Using a screwdriver, tighten the screw.

Standard:

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

HINT:

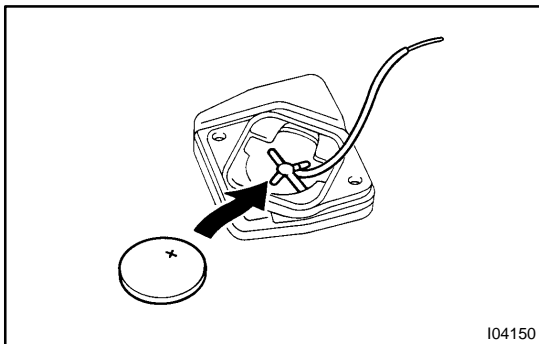
- The minimum operation distance differs according to operator, the way of holding, and location.

- As weak wave is used, operation distance might be shortened when noise is detected in strong wave or used frequency.

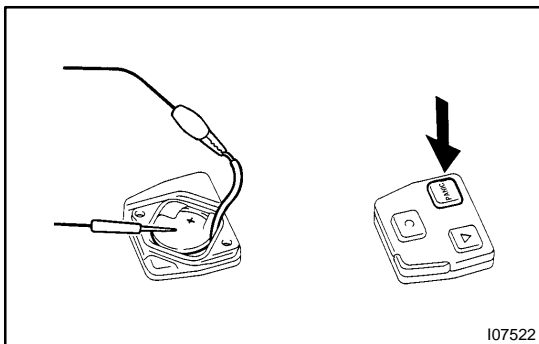
5. CHECK BATTERY CAPACITY

HINT:

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



- Remove the 2 screws and cover using a (-) driver.
- Remove the battery (lithium battery) from the transmitter.
- Connect the lead to the (-) terminal of the transmitter and install the battery.



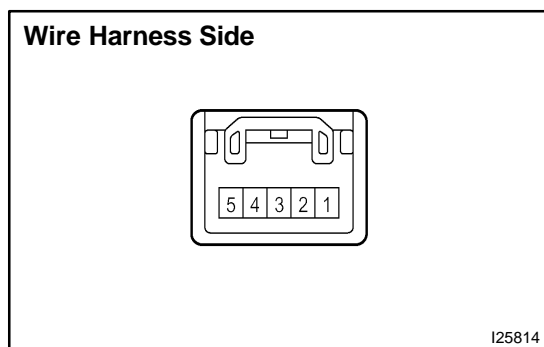
- Connect the (+) tester to the (+) battery (lithium battery), and (-) tester to the lead respectively.
- Press one of the transmitting switches on the transmitter for approx. 1 second.
- Press the transmitting switch on the transmitter again to check the voltage.

Standard: 2.1 V or more

HINT:

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

- High voltage might be shown 1 to 2 times after leaving the battery, judge should be made with the voltage shown at the 3rd time or later.
- (g) Disconnect the lead.
- (h) Set the battery (lithium battery) in the transmitter.
- (i) Install the cover, so that the O-ring is not distorted or slipped off.
- (j) Using a screwdriver, tighten the 2 screws.



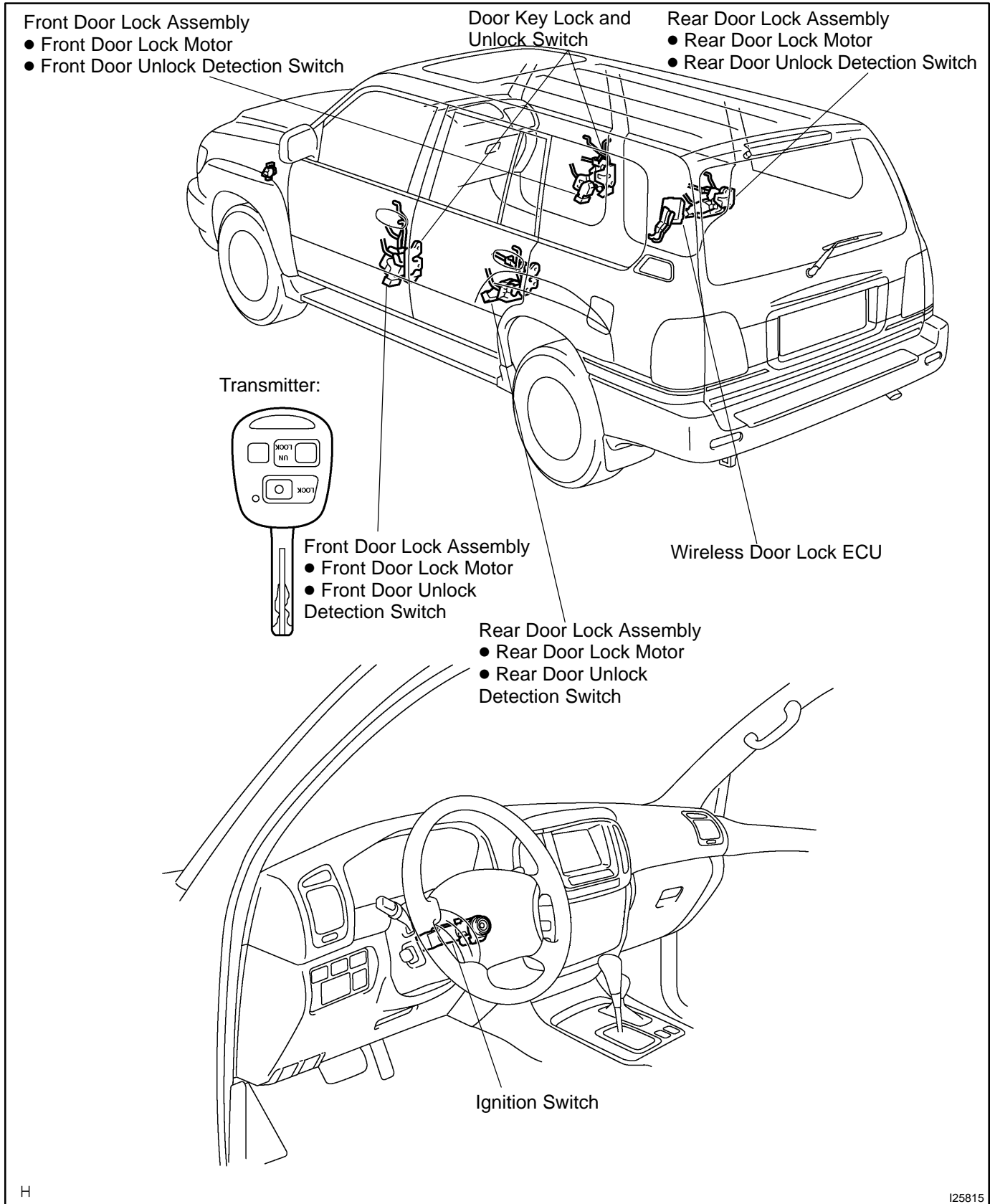
6. INSPECT WIRELESS DOOR LOCK CONTROL TUNER CIRCUIT

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

Tester connection	Condition	Specified condition
1 (E) - Ground	Constant	Continuity
2 (RDA) - Ground	Ignition switch OFF, without key, all doors closed,, and transmitter switch OFF → ON	Below 1 V ↔ 6 V
5 (+B) - Ground	-	Repeatedly chage 0 - 5V

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

LOCATION



PRE-CHECK

1. CHARACTERS OF WIRELESS DOOR LOCK

- (a) The operation distance changes according to how customers hold the transmitter or where it is used.
- (b) Because of using the very weak radio wave, if there is a strong wave or noise on the frequency being used, the operation distance may become shorter.

2. WIRELESS DOOR LOCK BASIC FUNCTION

- (a) Stand on the driver's side. Stay 1 m away from the vehicle.
- (b) Turn the transmitter toward the vehicle and press any one of the transmission switched for 1 sec.

WIRELESS DOOR LOCK CONTROL SYSTEM

REGISTRATION PROCEDURE

BE226-04

HOW TO CODE REGISTRATION

NOTICE:

When replacing the theft deterrent ECU or 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

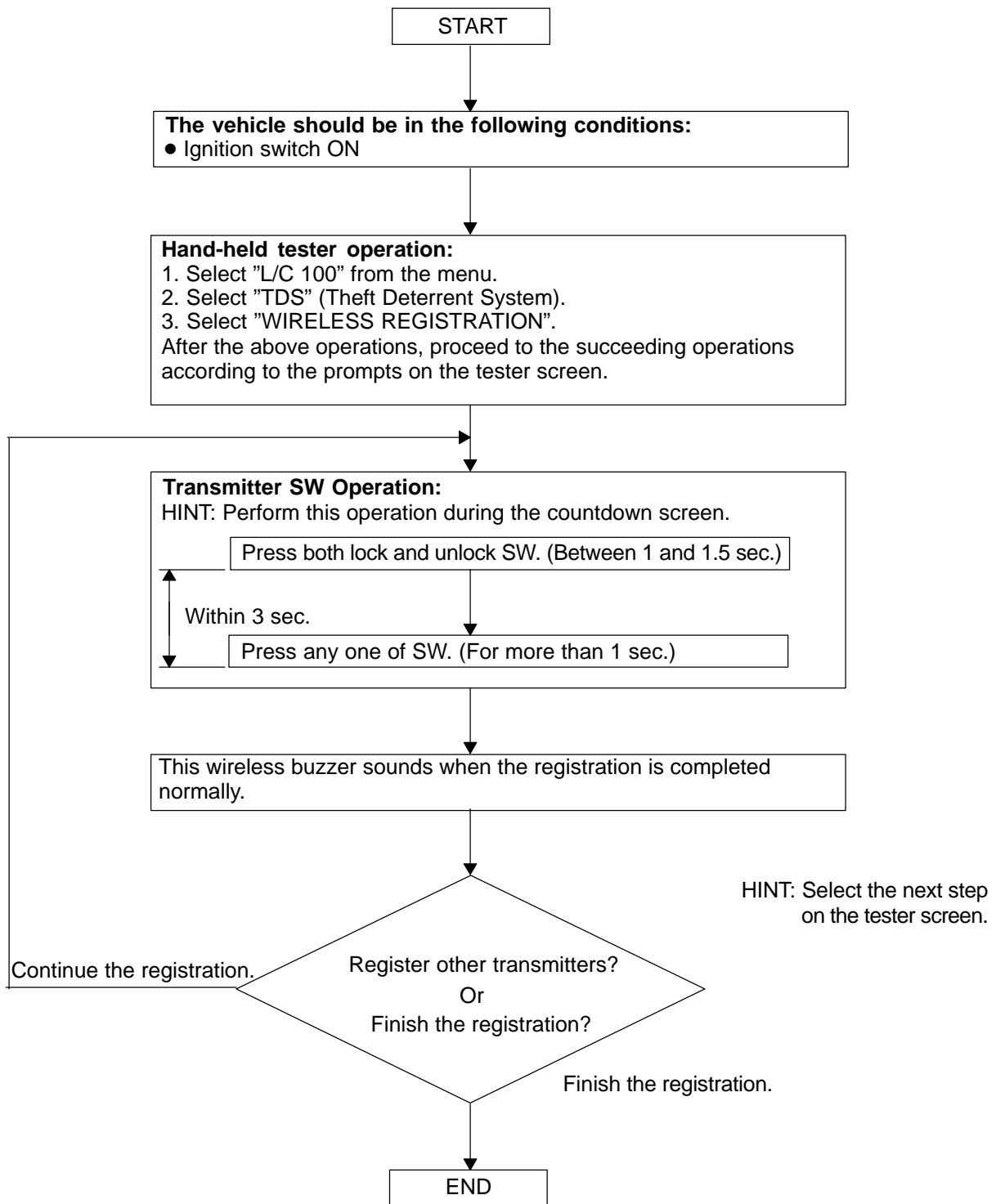
HINT:

- ★ The "Add mode" is for adding the newly recognized codes for registration while the already registered codes are retained. This mode is used when the transmitter is added. When the number of the registered codes exceeds 4 codes, the previously registered codes will be erased in order, starting from the first registered code.
 - ★ The "Rewrite mode" is for erasing all the registered codes and registering newly recognized codes only. This mode is used when the transmitter or the door control receiver is replaced.
 - ★ The "Prohibition mode" is for erasing all the registered codes to prohibit the wireless door lock operation. This mode is used when the transmitter is lost.
 - ★ The "Confirmation mode" is for confirming the number of recognition codes that are registered. This mode is used to check the number of registered codes when new codes are added to the registration, etc.
- (b) Follow the chart on the following page to register the transmitter recognition code to the theft deterrent ECU.

HINT:

- ★ When procedure is out of the specified, the registration operation is cancelled.
- ★ Maximum 4 recognition codes can be registered.

(c) By TOYOTA Hand-Held Tester



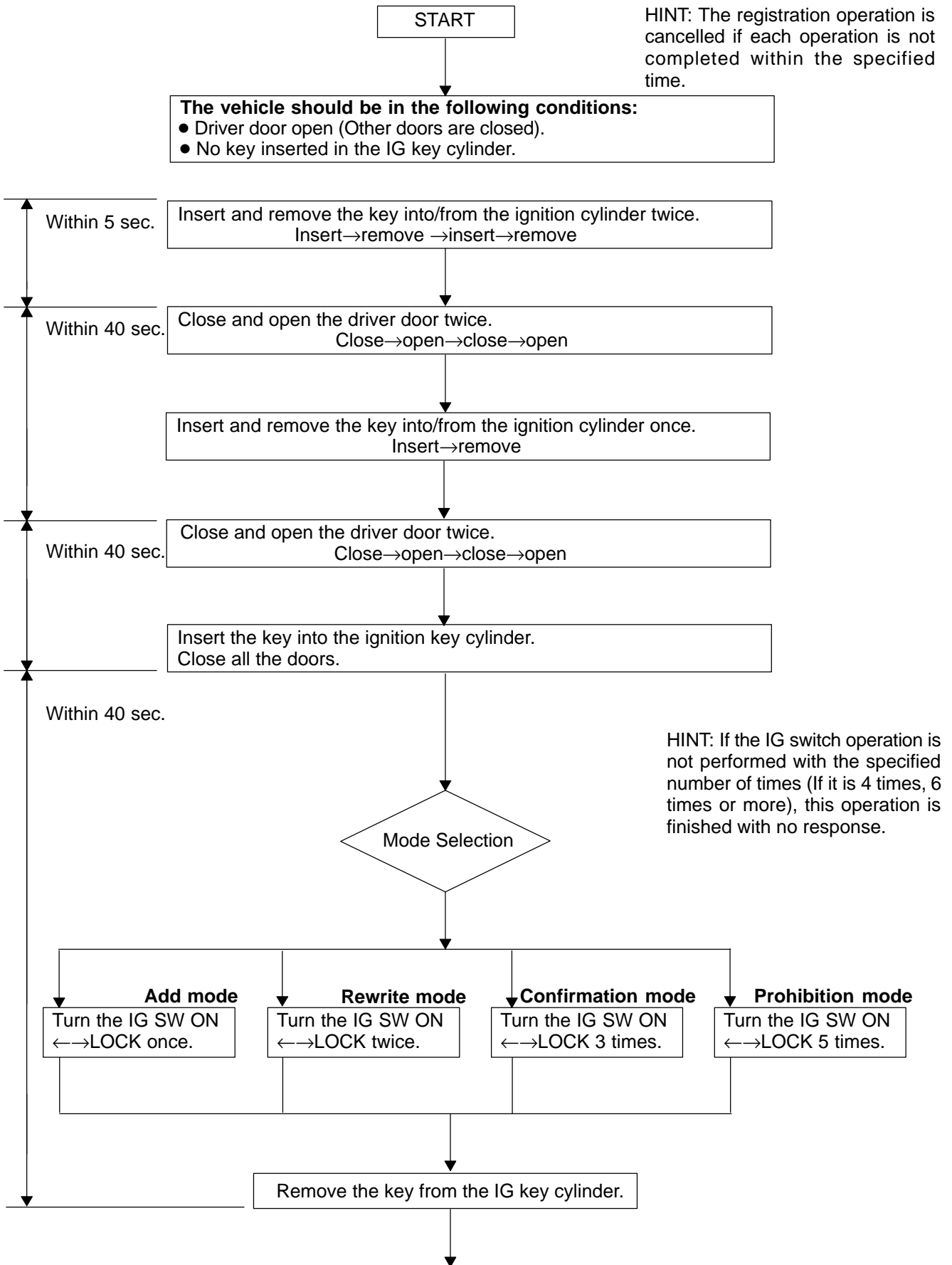
HINT:

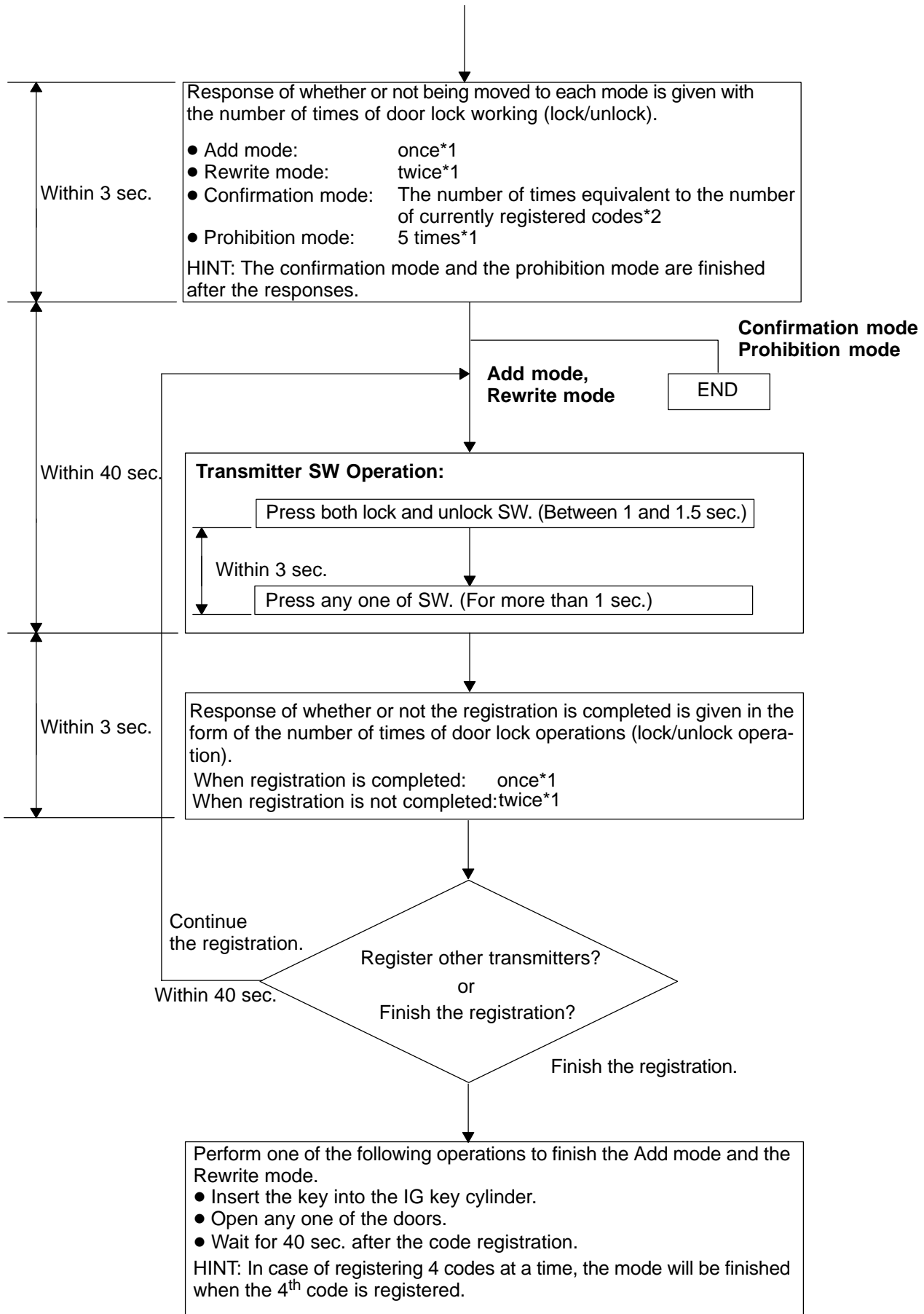
This page is to show briefly the registration procedure using the hand-held tester.

For detailed procedures, please refer to the prompts on the tester screen.

The number of currently registered codes can be checked out on the first screen of the WIRELESS REGISTRATION.

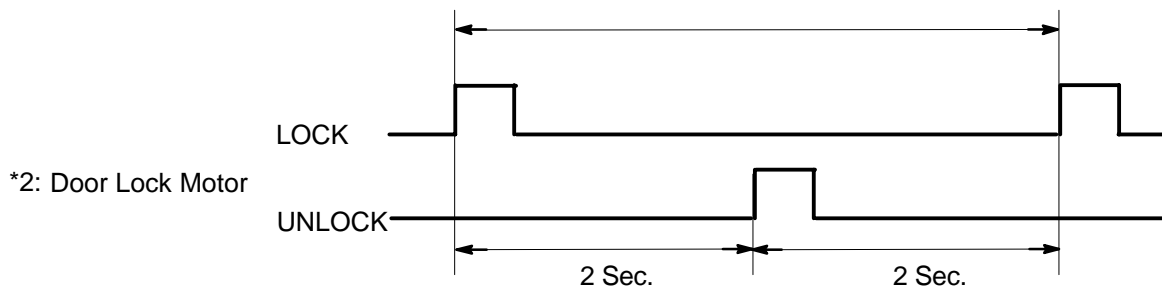
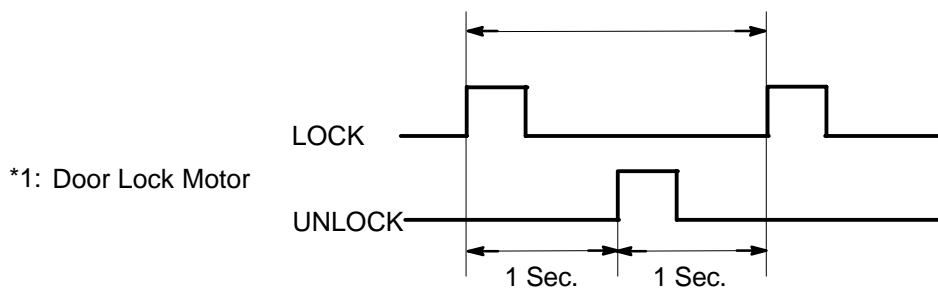
(d) By Switch Operation:

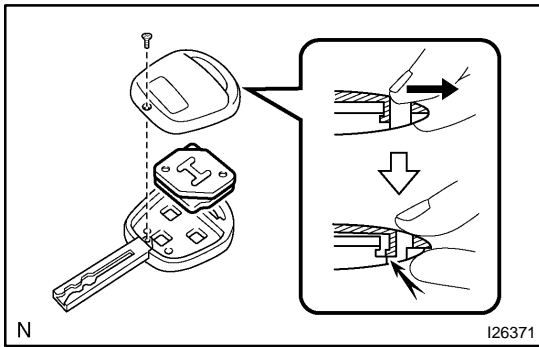




HINT:

Operation cycle of the door lock (lock/unlock operation)





REPLACEMENT

REPLACE TRANSMITTER (LITHIUM) BATTERY

NOTICE:

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

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

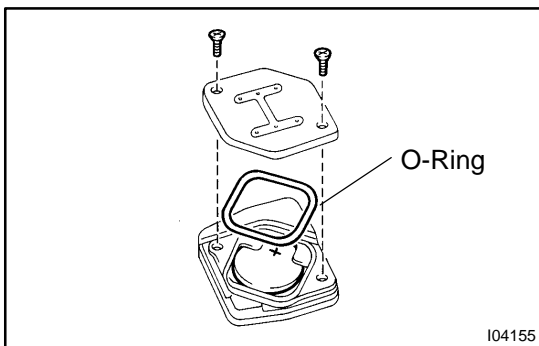
NOTICE:

Do not pry out the cover forcibly.

HINT:

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

(b) Remove the transmitter.

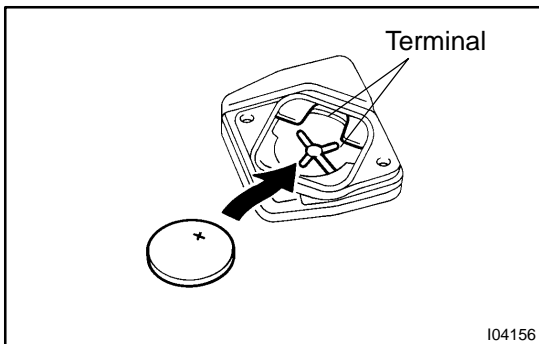


(c) Using a screwdriver, remove the 2 screws and cover.

(d) Remove the battery (lithium battery).

NOTICE:

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



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

NOTICE:

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

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

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

NOTICE:

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

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

(i) Using a screwdriver, tighten the screw.