AUDIO SYSTEM

BE214-01

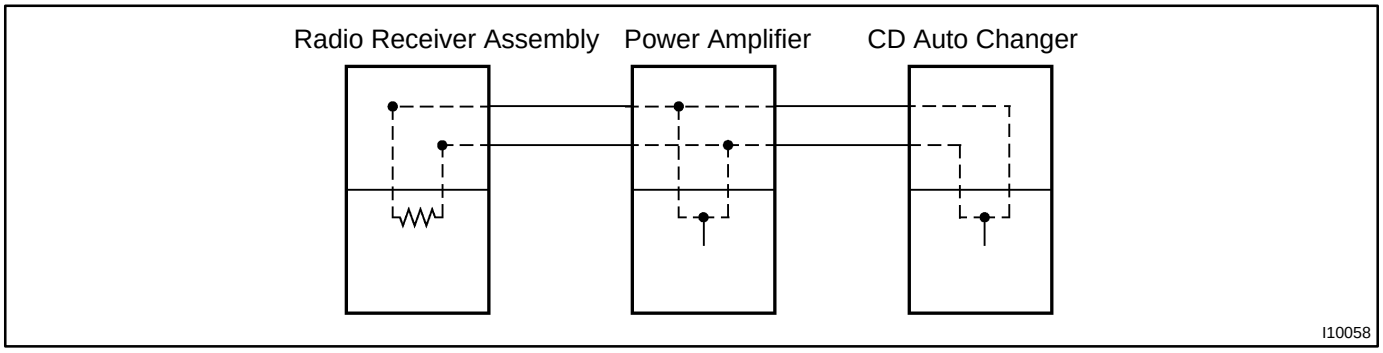
DESCRIPTION

OUTLINE OF AVC-LAN

(a) What is AVC-LAN?

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

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



(b) Objectives

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

The concrete objectives are explained below.

(1) When products by different manufactures were combined together, there used to be a case that malfunction occurred such as sound did not come out. This problem has been resolved by standardization of signals.

(2) Various types of after market products have been able to add or replace freely.

(3) Because of the above (2), each manufacture has become able to concentrate on developing products in their strongest field. This has enabled many types of products provided inexpensively.

(4) Conventionally, a new product developed by a manufacture could not be used due to a lack of compatibility with other manufactures products. Because of this new standard, users can enjoy compatible products provided for them timely.

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

HINT:

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

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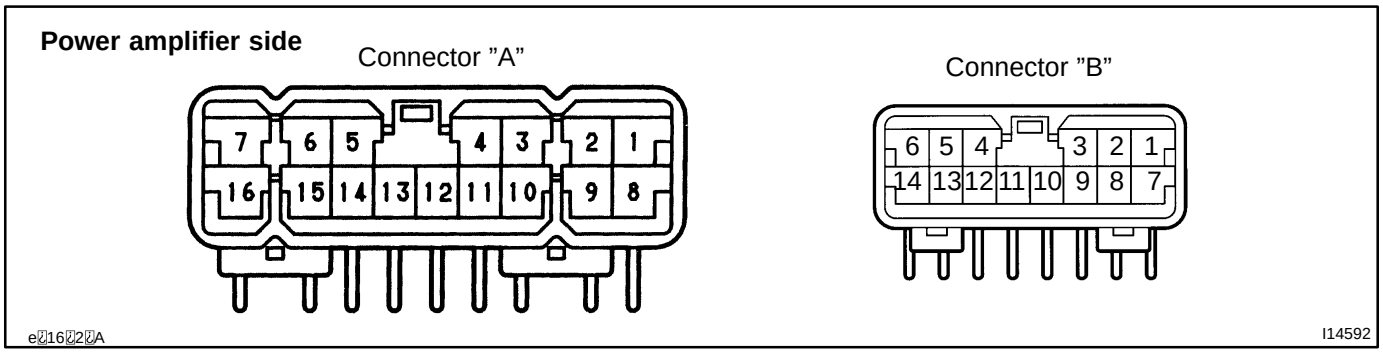
INSPECTION

1. INSPECT POWER AMPLIFIER CIRCUIT

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



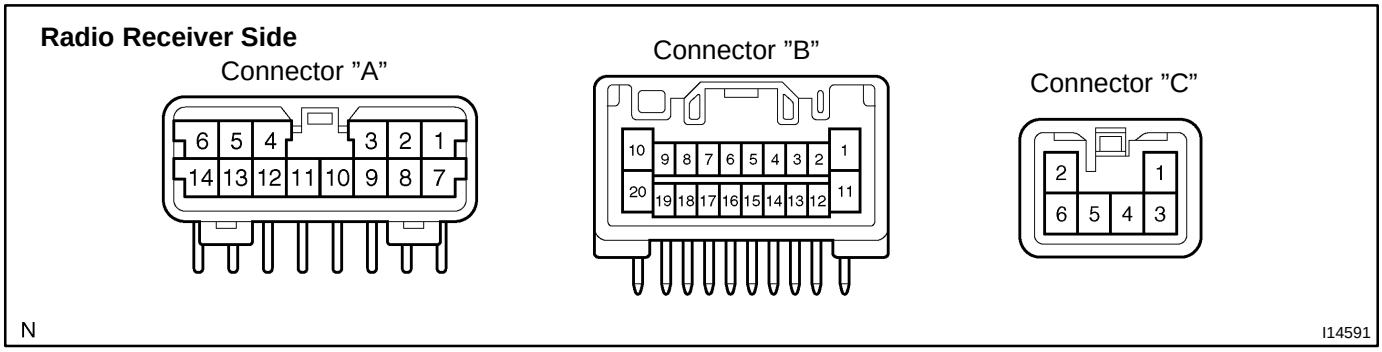
Tester connection	Condition	Specified condition
A1 - Ground (FR+)	Audio sounding	5 - 7 V
A2 - Ground (FL+)	Audio sounding	5 - 7 V
A3 - Ground (RR+)	Audio sounding	5 - 7 V
A4 - Ground (Rl+)	Audio sounding	5 - 7 V
A5 - Ground (WFl+)	Audio sounding	5 - 7 V
A7 - Ground (+B)	Constant	Battery positive voltage
A8 - Ground (FR-)	Audio sounding	5 - 7 V
A9 - Ground (FL-)	Audio sounding	5 - 7 V
A10 - Ground (RR-)	Audio sounding	5 - 7 V
A11 - Ground (RL-)	Audio sounding	5 - 7 V
A13 - Ground (GND)	Constant	Continuity
A14 - Ground (WFL-)	Audio sounding	5 - 7 V
B1 - Ground (AMP+)	Radio power switch ON	Battery positive voltage
B2 - Ground (ACC)	Ignition switch ON	Battery positive voltage
B4 - Ground (BEEP)	Audio sounding	-
B5 - Ground (FLIN)	Audio sounding	5 - 7 V
B6 - Ground (FRIN)	Audio sounding	5 - 7 V

B11 - Ground (SGND)	Constant	Continuity
B12 - Ground (MUTE)	Audio sounding	1 V or below
B13 - Ground (RLIN)	Audio sounding	5 - 7 V
B14 - Ground (RRIN)	Audio sounding	5 - 7 V

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

2. INSPECT RADIO RECEIVER ASSEMBLY CIRCUIT

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



Tester connection	Condition	Specified condition
A1 - Ground (FR+)	Audio sounding	5 - 7 V
A2 - Ground (FL+)	Audio sounding	5 - 7 V
A3 - Ground (ACC, +B)	Ignition switch ACC	Battery positive voltage
A4 - Ground (BU +B)	Constant	Battery positive voltage
A5 - Ground (FR-)	Audio sounding	5 - 7 V
A6 - Ground (FL-)	Audio sounding	5 - 7 V
A7 - Ground (GND)	Constant	Continuity
A8 - Ground (ANT +B)	Radio power switch ON	Battery positive voltage
A10 - Ground (ILL+)	Headlight dimmer switch ON	Battery positive voltage
B1 - Ground (RR+)	Audio sounding	5 - 7 V
B2 - Ground (RL+)	Audio sounding	5 - 7 V
B3 - Ground (RR-)	Audio sounding	5 - 7 V
B4 - Ground (RL-)	Audio sounding	5 - 7 V
C1 - Ground (+B)	Constant	Battery positive voltage
C2 - Ground (ILL+)	Hesdlight dimmer switch ON	Battery positive voltage
C3 - Ground (AMP+)	Rasio switch ON	Battery positive voltage
C7 - Ground (MUTE)	Audio sounding	1V or below

C8 - Ground (FR+)	Audio sounding	5 - 7 V
C9 - Ground (FL+)	Audio sounding	5 - 7 V
C10 - Ground (SLD)	Constant	Continuity
C11 - Ground (ACC)	Ignition switch ON	Battery positive voltage
C13 - Ground (ANT+B)	Radio power switch ON	10 - 14V
C16 - Ground (S-GND)	Constant	Continuity
C17 - Ground (BEEP)	Audio sounding	-
C18 - Ground (RR)	Audio sounding	5 - 7 V
C19 - Ground (RL)	Audio sounding	5 - 7 V
C20 - Ground (GND)	Constant	Continuity

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

3. INSPECT GLASS IMPRINTED ANTENNA

Use same procedure as for ”INSPECT DEFOGGER WIRES” on page BE-67 .

4. REPAIR GLASS IMPRINTED ANTENNA

Use same procedure as for ”REPAIR DEFOGGER WIRES” on page BE-67 .

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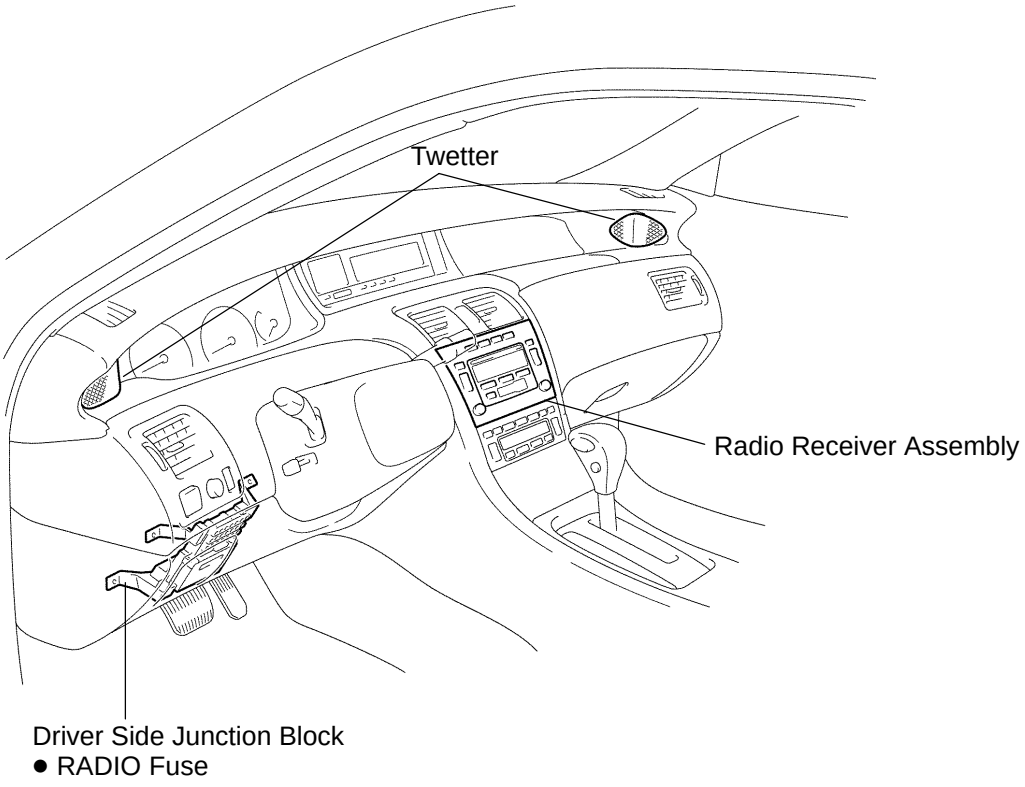
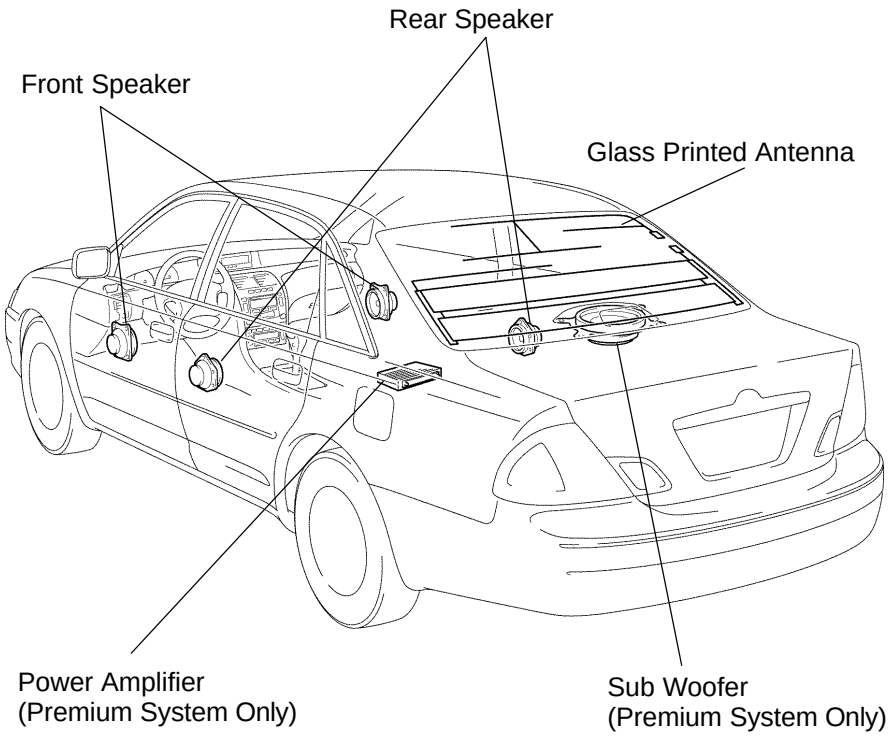
LOCATION





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BE215-01

TROUBLESHOOTING

1. Europe models:

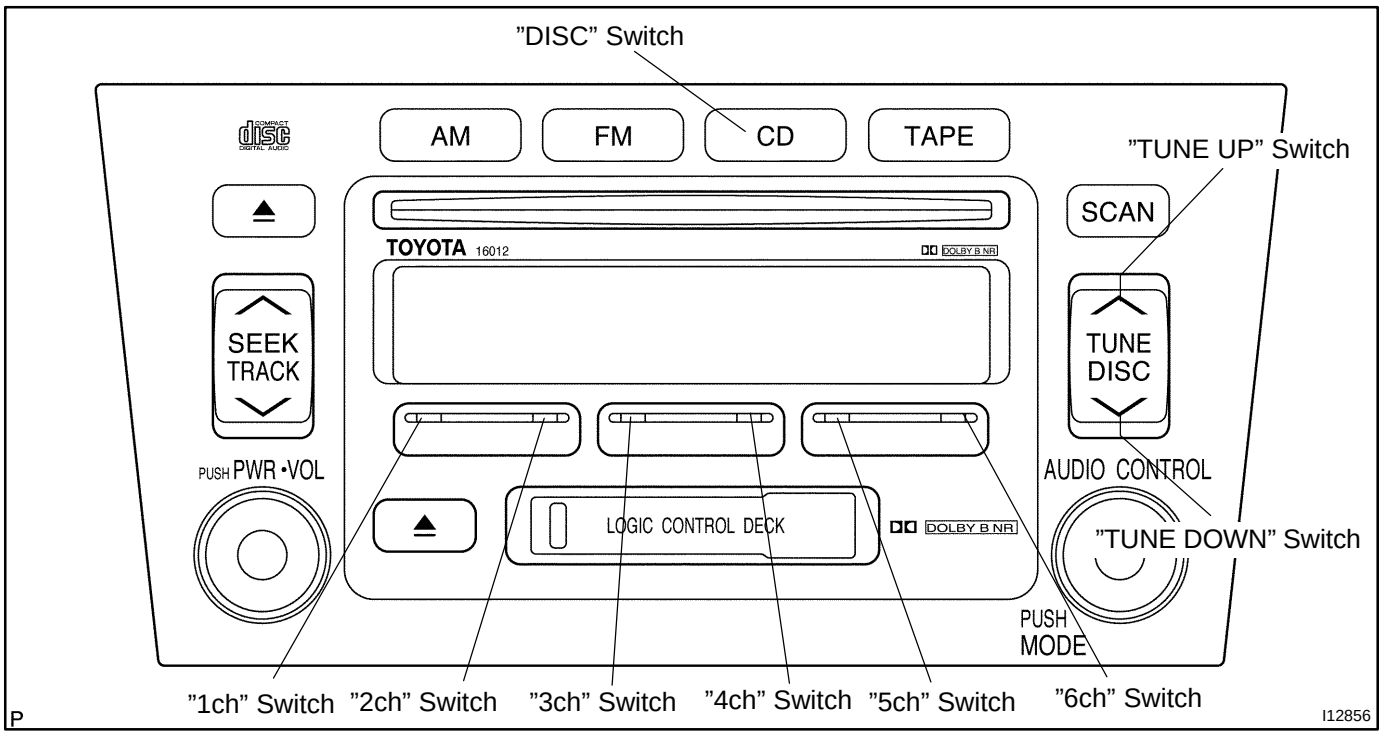
DIAGNOSIS FUNCTION

(a) Diagnosis start-up

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

HINT:

To exist from the diagnosis mode, push the ”DISC” switch for 1.7 sec. or turn ignition switch to ACC or OFF.



(b) Service check mode

(1) After the diagnosis start-up, the system enters service check mode.

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

Results for each check are displayed as follows:

good:

No DTC is detected for both ”System Check Confirmation” and ”Diagnosis Memory Response”.

nCon:

The Component does not respond to the ”Diagnosis On Instruction” command.

Applicable to only the system where connected components are limited to be used.

ECHn:

Application of new version has been confirmed by the ”Diagnosis On Check”, and there is one or more DTC which indicates ”Replacement” in the ”System Check Result Response” or ”Diagnosis Memory Response”.

CHEC:

Application of new version has been confirmed by the ”Diagnosis On Check”, and there is no DTC which indicates ”Replacement” in the ”System Check Result Response” or ”Diagnosis Memory Response”, but one or more DTC which indicated ”Check” is identified.

Old:
Application of old version is confirmed by the ”Diagnosis On Check”, and DTC is identified in the ”System Check Result Response” or ”Diagnosis Memory Response”.
nrES:
No response is identified to the ”System Check Start Instruction” and ”Request for System Check Result” commands.

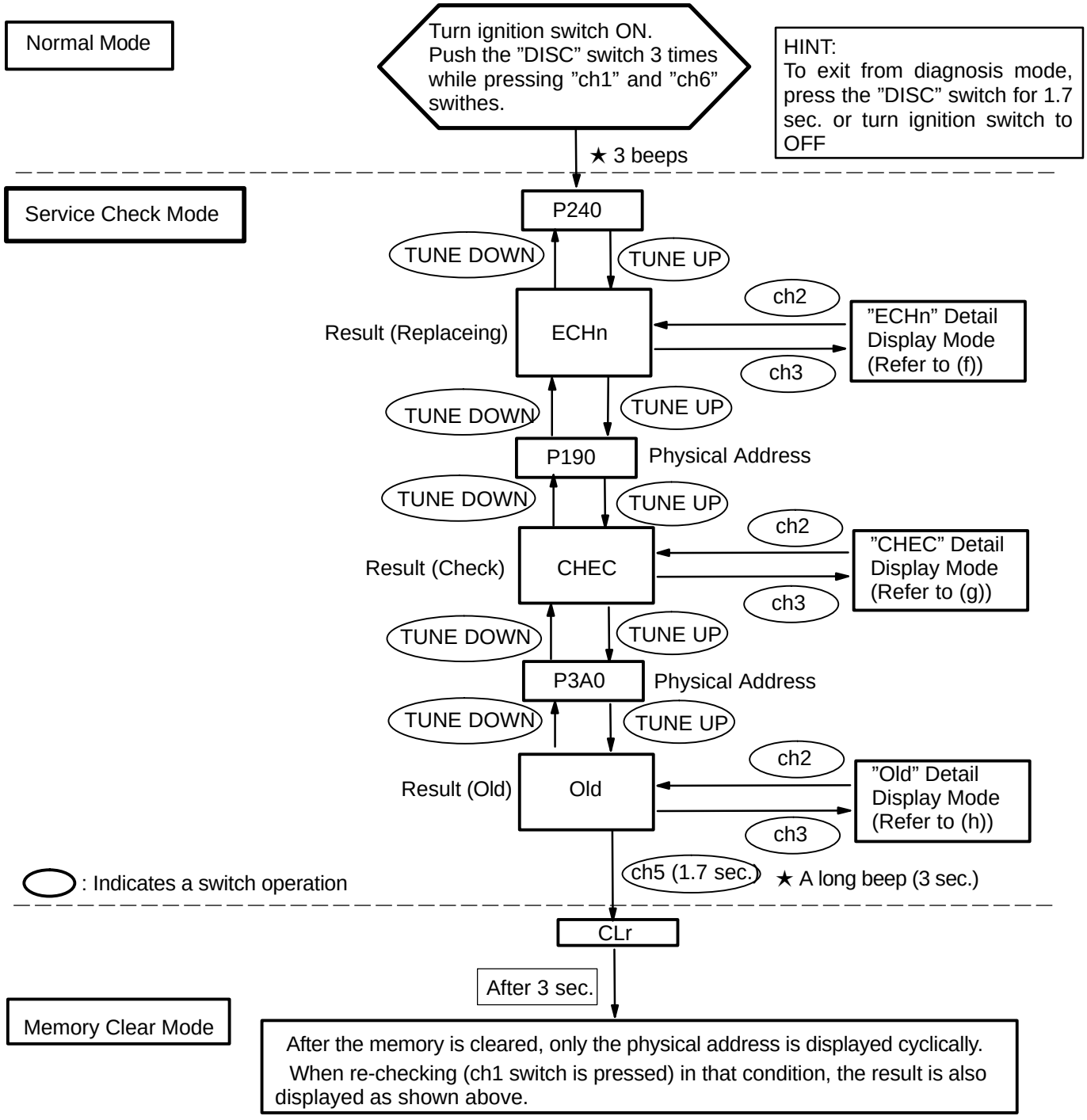
HINT:

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

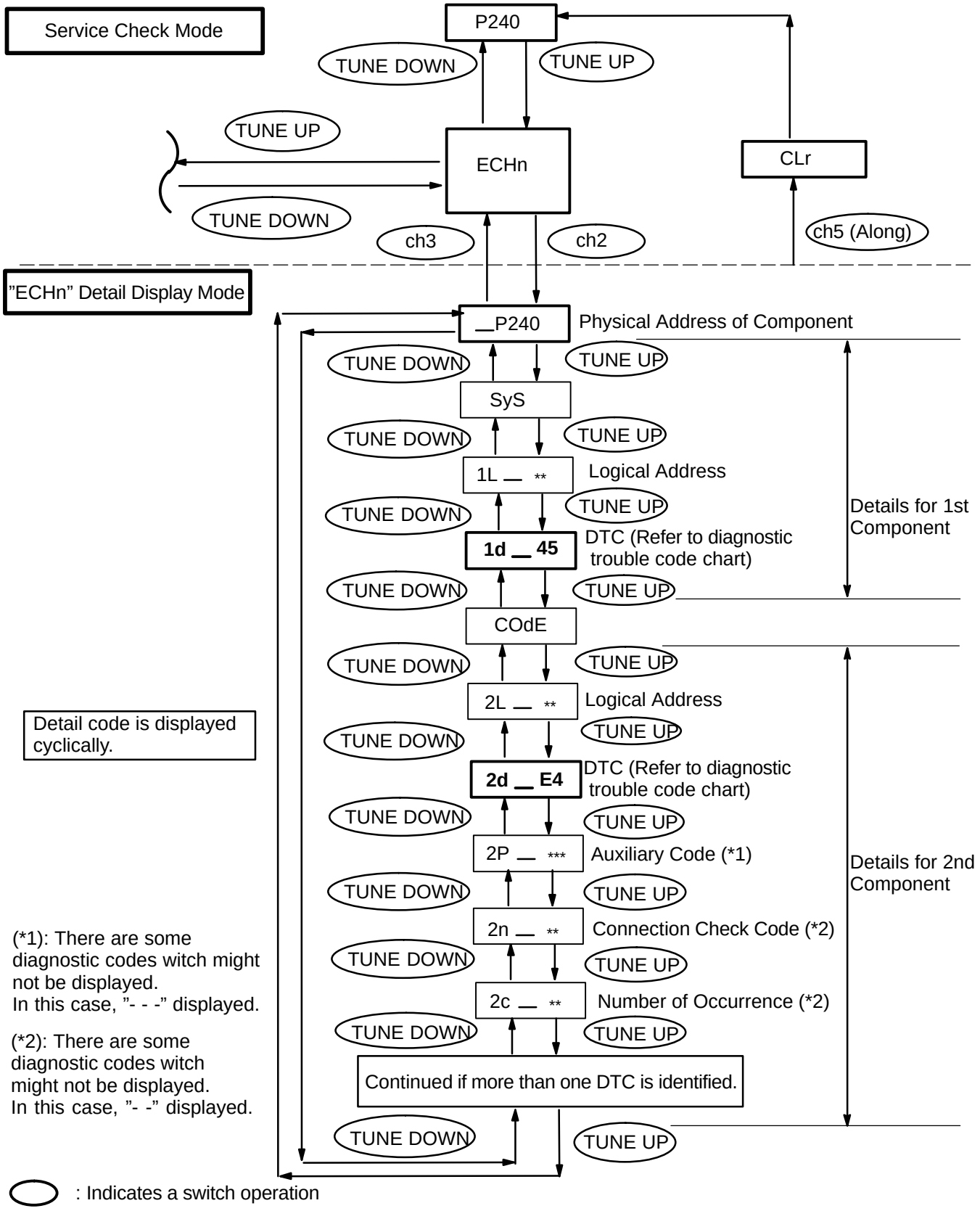
(c) Display Screen for Service Check.

Example:

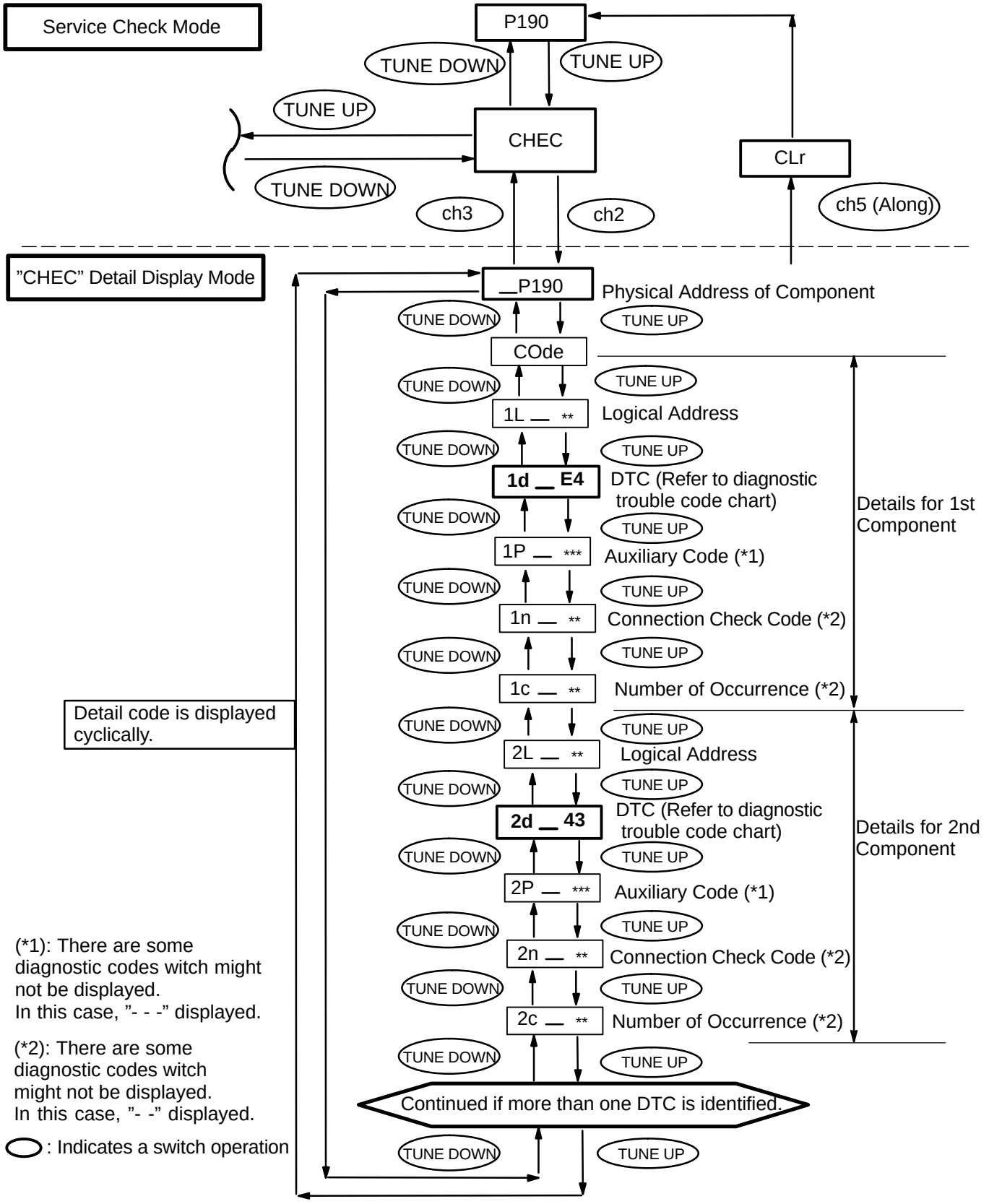
Connection parts (physical address): Radio receiver (P190), CD Auto Changer (P240), MD chnger (P3A0)



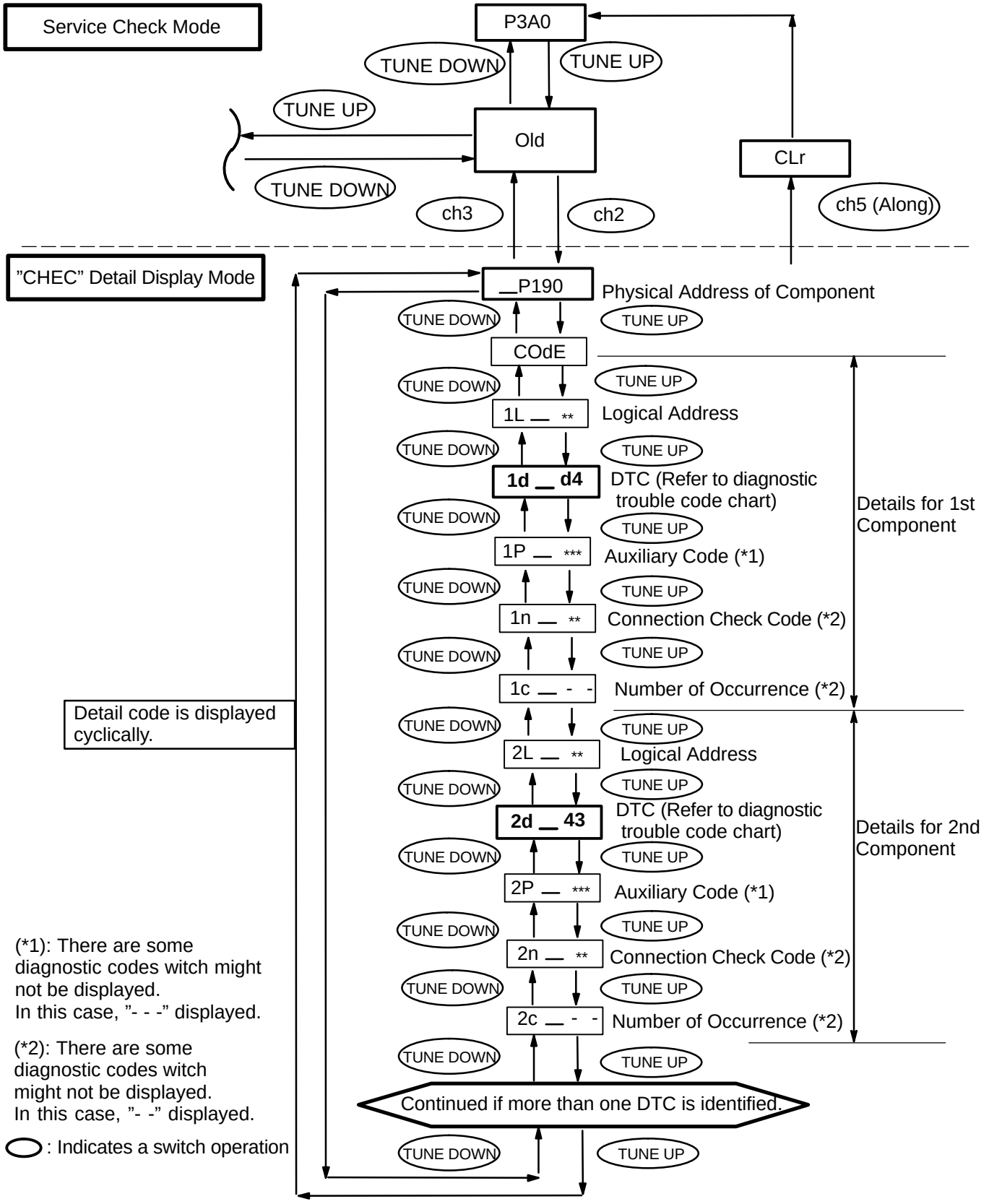
(d) ”ECHn” Detail Display Mode Screen



(e) ”CHEC” Detail Display Mode Screen



(f) ”Old” Detail Display Mode Screen



2. Except Europe models:
DIAGNOSIS FUNCTION

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

(a) Diagnosis start-up

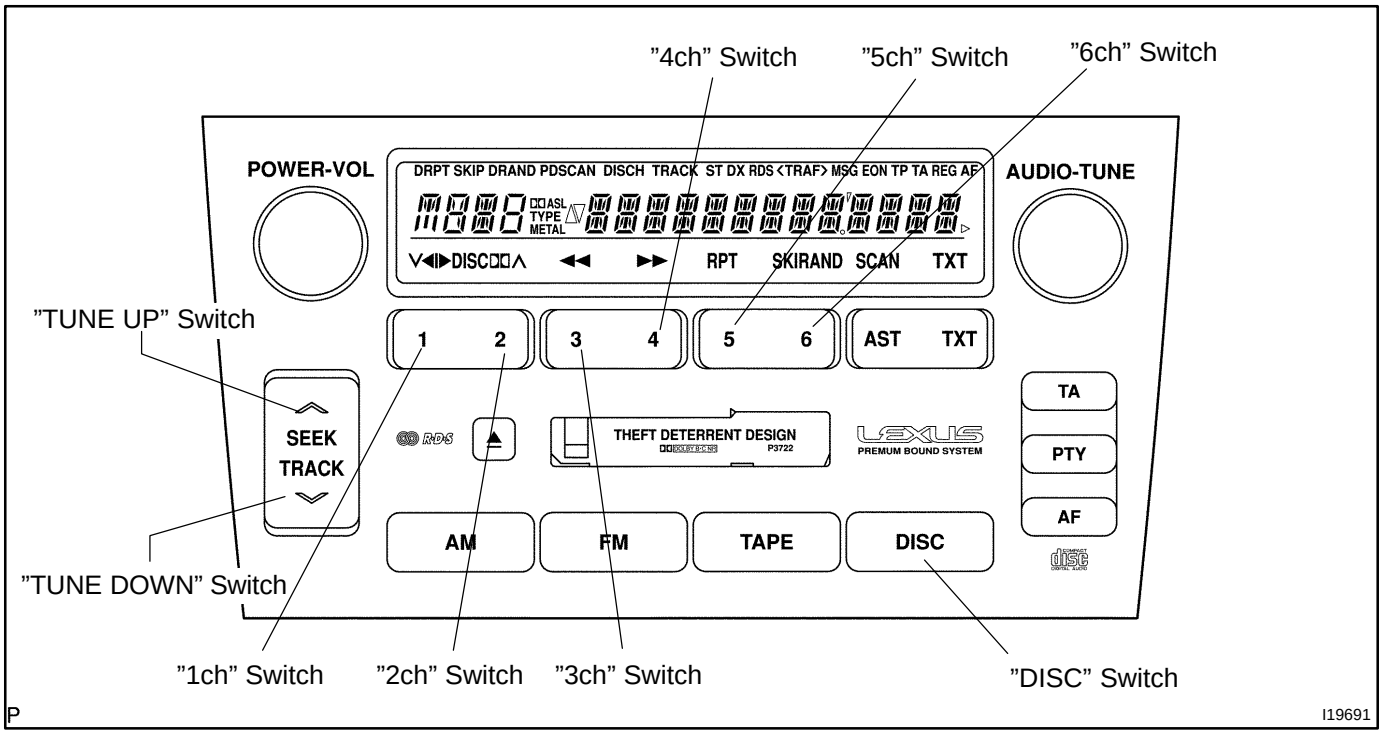
For shifting to diagnosis mode, push ”DISC” switch 3 times with pressing ”1” and ”6” of PRESET switch at the same time while the audio power is OFF and ACC is ON.

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

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

(b) LAN check

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



Code No. (physical address) List

Code No. (physical address)	Equipment name
190	Radio receiver assembly (Audio head unit)
240	CD changer (in Luggage room)
360	CD changer (in center console and glove compartment box)
440	Power amplifier

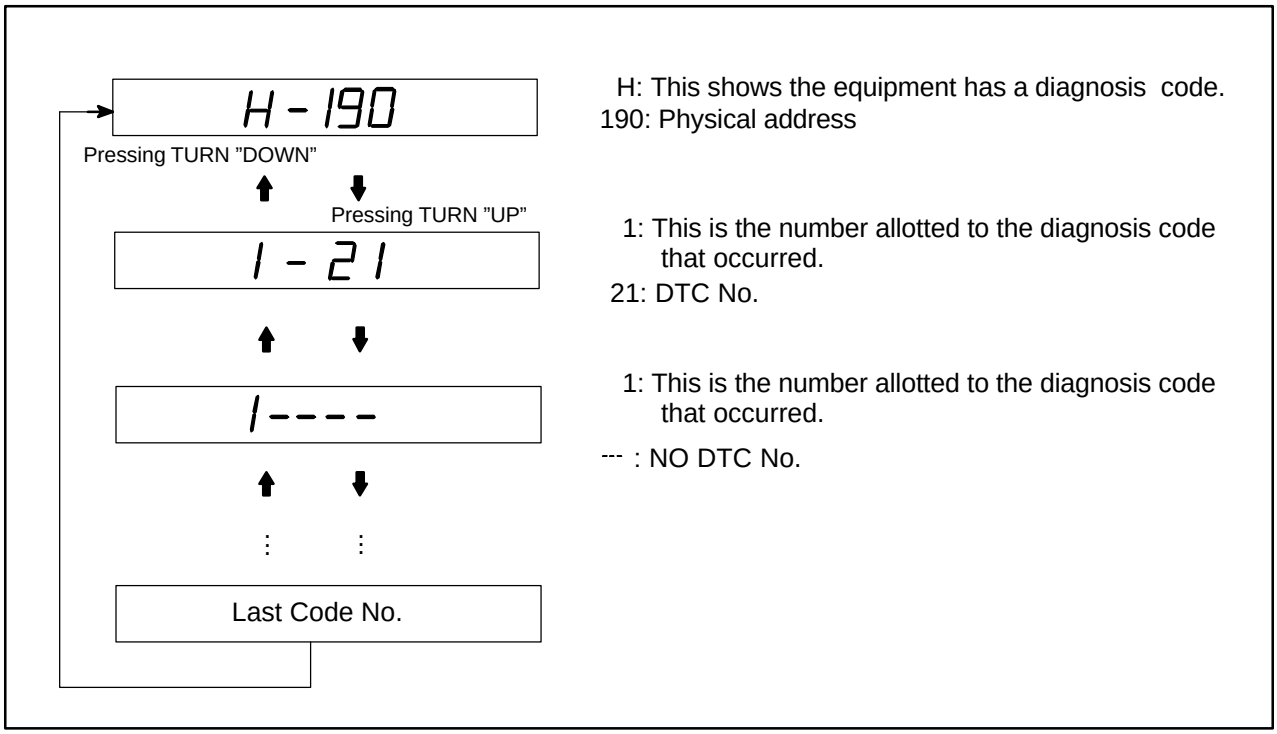
(c) System check

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

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

HINT:

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



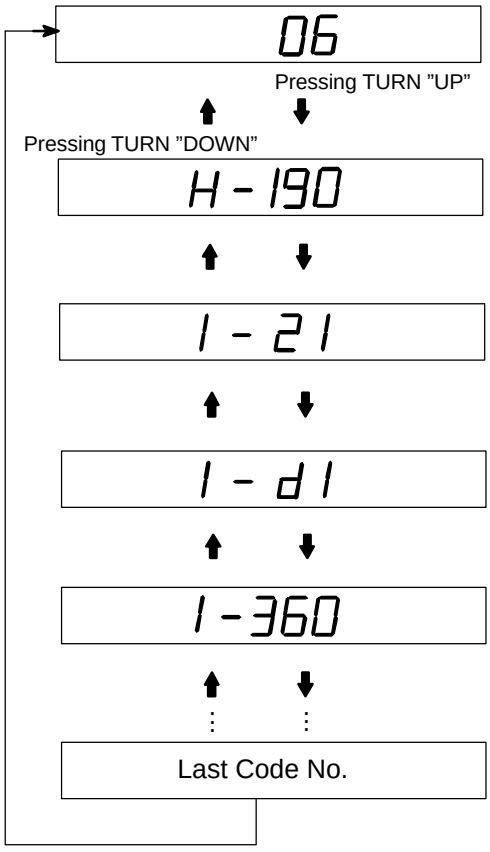
(d) Diagnosis memory

(1) In LAN check mode, when pressing ”2” of PRESET switch the mode turns to the diagnosis memory mode. (”CODE” is displayed.)
The results of self diagnosis performed over tuner and connected equipment are memorized and displayed.

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

HINT:

The smaller code numbers (physical address) are displayed in order (code No. , periodic communication number when error occurs, diagnosis code, and support code of diagnosis code (object equipment)).
When no error is detected in the system, ”00” is displayed. When an error code is detected, up to 6 codes per one system are displayed. Pressing TUNE ”UP” or ”DOWN” switches the display. Each diagnosis code is same as code in the system check mode.
When pressing ”6” of PRESET switch, the mode returns to LAN check mode.
The following illustration below is an example of when diagnosis code ”D1” appears on the code (190) and (240 or 360) equipment. (Communication error occurs between the radio receiver and CD changer.)



06: Periodic communication number of when occurring in the diagnosis memory code.

H: This shows the equipment has a diagnosis code.
190: Physical address

1: This is the number allotted to the diagnosis code that occurred.
21: Periodic communication number of when occurring in the diagnosis memory code.

1: This is the number allotted to the diagnosis code that occurred.
d1: DTC No.

1: This is the number allotted to the diagnosis code that occurred.
360: Physical address
(Equipment that is communicating code)

(e) Diagnosis memory clear
(1) After error is fixed, start up the diagnosis mode.
(2) Continue pressing preset switch "5" for 2 secs. (CLr is displayed.)
(3) Press the preset switch "2" and transfer to the diagnosis memory mode and check that the normal code (00) is output.

3. Europe models: DIAGNOSIS CODE LIST

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

(a) Physical address 190: Radio receiver assembly

HINT:

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

*2: It is stored when 180 sec. has passed after the power supply connector is pulled out after engine start.

*3: It may be stored when the engine key is turned 1 min. again after engine start.

*4: It may be stored when the engine key is turned again after engine start.

*5: When 210 sec. has passed after pulling out the power supply connector of the master component with the ignition switch in ACC or ON, this code is stored.

(1) Logical address: 01 (Communication control)

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

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

(2) Logical address: 61 (Cassette switch)

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

(b) Physical address: 440 Stereo component amplifier

HINT:

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

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

*3: It may be stored when the engine key is turned again after engine start.

*4: When 210 sec. has passed after pulling out the power supply connector of the master component with the ignition switch in ACC or ON, this code is stored.

Logical address: 01 (Communication control)

DTC	Diagnosis item	Diagnosis content	Countermeasure and inspected parts
D6 *1	Absence of Master	Component in which this code is recorded has been disconnected from system with ignition in ACC or ON. Or, when this code was recorded, multi-display assembly was disconnected.	Check harness for power supply of radio and player. Check harness for communication system of radio and player. Check harness for power supply of stereo component amplifier. Check harness for communication system of stereo component amplifier.
D4	Communication Check Error	Component in which this code is recorded is or was disconnected from system after engine start. Or, when recording this code, multi-display assembly was disconnected.	Check harness for power supply of radio and player. Check harness for communication system of radio and player. Check harness for power supply of stereo component amplifier. Check harness for communication system of stereo component amplifier.
D1 *2	Transmission Error	Transmission to component shown by auxiliary code has been failed. (Detecting this DTC does not necessarily mean actual failure.)	If same auxiliary code is recorded in order component, check harness for power supply and communication system of all components shown by code.

(c) Physical address: 240 CD Auto Changer

HINT:

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

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

*3: It may be stored when the engine key is turned again after engine start.

*4: It may be stored when the engine key is turned again after engine start.

*5: When 210 sec. has passed after pulling out the power supply connector of the master component with the ignition switch in ACC or ON, this code is stored.

(1) Logical address: 01 (Communication control)

DTC	Diagnosis item	Diagnosis content	Countermeasure and inspected parts
DI	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.
D4 *5	Connection check Error	Component in which this code is recorded is or was disconnected from system after engine start. Or, when recording this code, multi-display assembly was disconnected.	Check harness for power supply of multi-display. Check harness for communication system of multi-display. Check harness for power supply of CD auto changer. Check harness for communication system of CD auto changer.

(2) Logical address: 63 (CD Auto Changer)

DTC	Diagnosis item	Diagnosis content	Countermeasure and inspected parts
60	CD Error	Error is detected in CD auto changer.	Replace CD auto changer
61	EJECT Error	Magazine cannot be ejected.	Replace CD auto changer
62	No Disc Readout	Disc cannot be read.	Inspect CD

63	CD Auto Changer Temp. Too High	Readout cannot be done because temperature around player's pick-up (reading part) is too high.	With IG switch OFF, leave vehicle in cool shaded place for a while and re-check. After deleting the DTC memory, if same code detected, replace CD auto changer.
64	CD Changer Excess Current	Excess current is applied CD auto changer.	Replace CD auto changer

4. Except Europe models:

DIAGNOSIS CODE LIST

If there is "O" in the column of system check, an error can be detected when the mode is switched to the system check mode.

If there is "O" in the column of diagnosis mode, each unit is monitoring whether or not it has failure. In case of detectng failure, it memorizes DTC.

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

Parts Name	DTC	Diagnosis item	Diagnosis content	Countermeasure and inspected parts	System Check	Diagnosis memory
AMP (440)	D1	Transmitter error	Communication with the equipment that is communicating has failed successively.	Stereo component amplifier check.	○	○
	D4	Periodic communication error	Connection confirmation has not come from the equipment that is communicating	Radio receiver check. Wire harness check.	X	○

5. PROBLEM SYSMPTOMS 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.

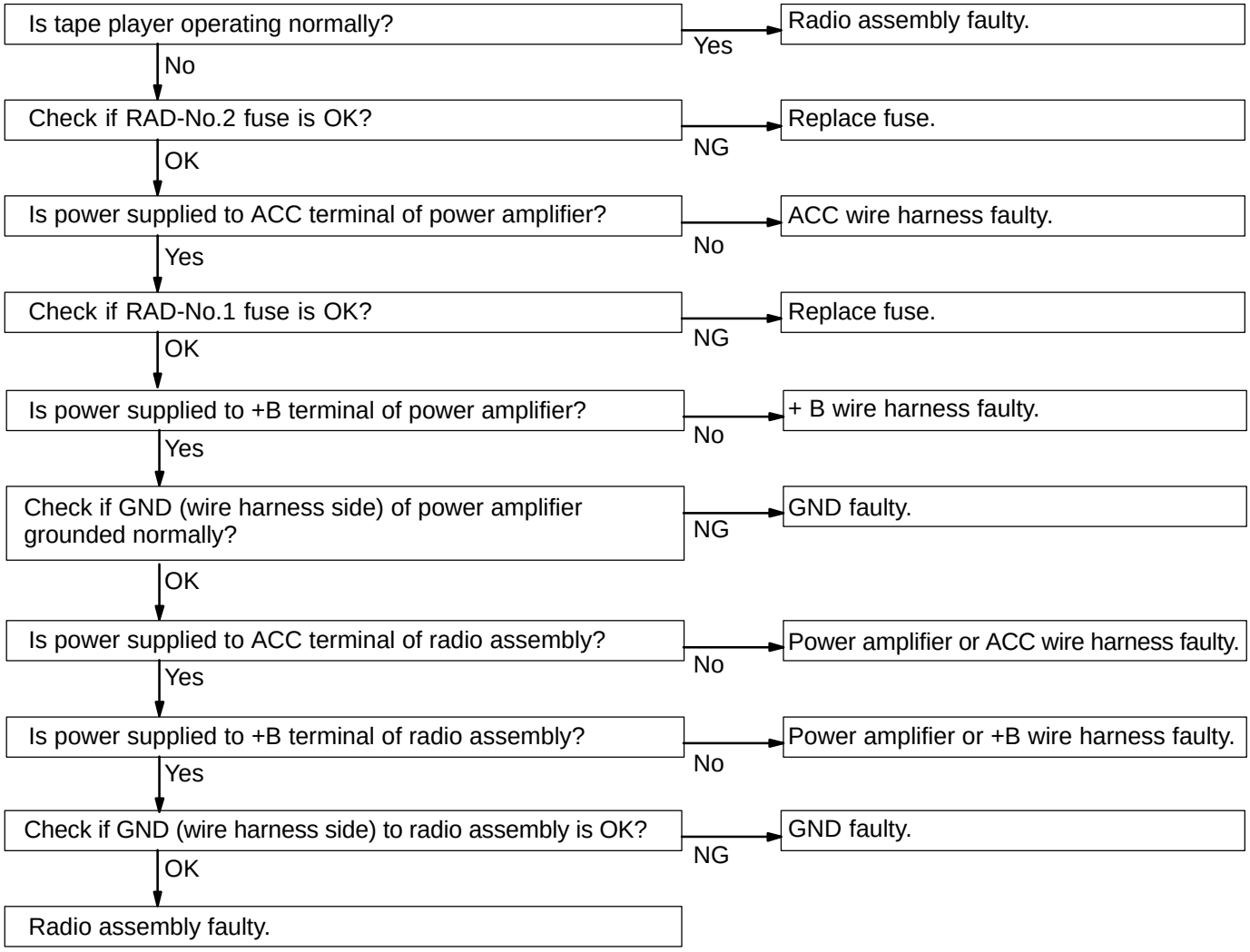
Open or short circuit of the wire harness

Connector or terminal connection fault

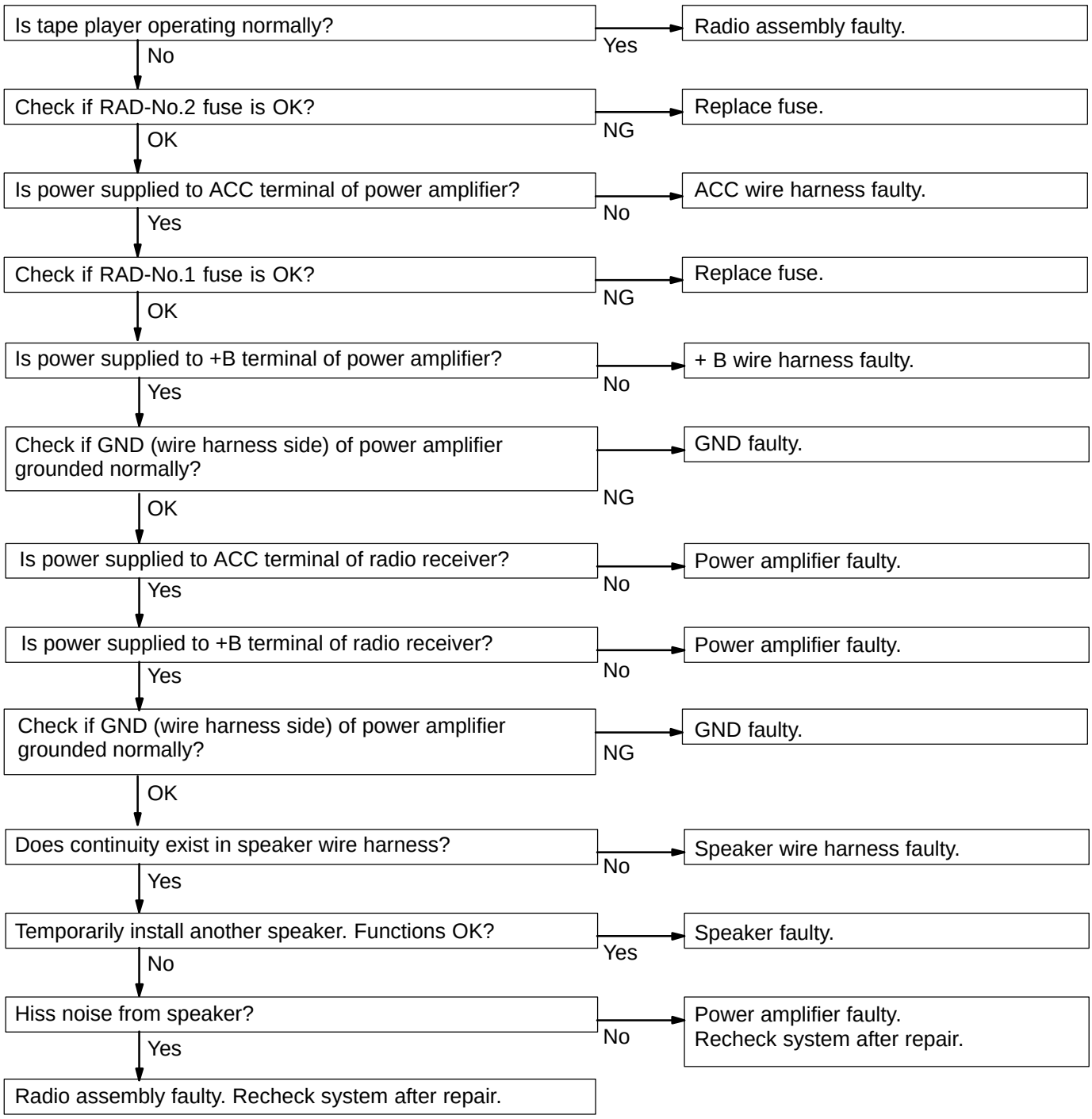
	Problem	Flow chart No.
Radio	Radio not operating when power switch turned to 'ON'.	1
	Display indicates when power switch turned to 'ON', but no sound (including 'noise') is produced.	2
	Noise present, but AM - FM not operating.	3
	Any speaker does not work.	4
	Any AM or FM does not work.	5
	Few preset 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 Auto Chenger	CD magazine cannot be inserted.	16
	CD magazine inserted, but no power.	17
	Power coming in, but CD player not operating.	18
	Sound jumps.	19
	Sound quality poor (Volume faint).	20
	Any speaker does not work.	21
	CD magazine will not be ejected.	22
Power Amplifier	No power coming in.	23
	Power coming in, but power amplifier not operating.	24
	Any speaker does not work.	25
Noise	Noise occurs	26
	Noise produced by vibration or shock while driving.	27
	Noise produced when engine starts.	28

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

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



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

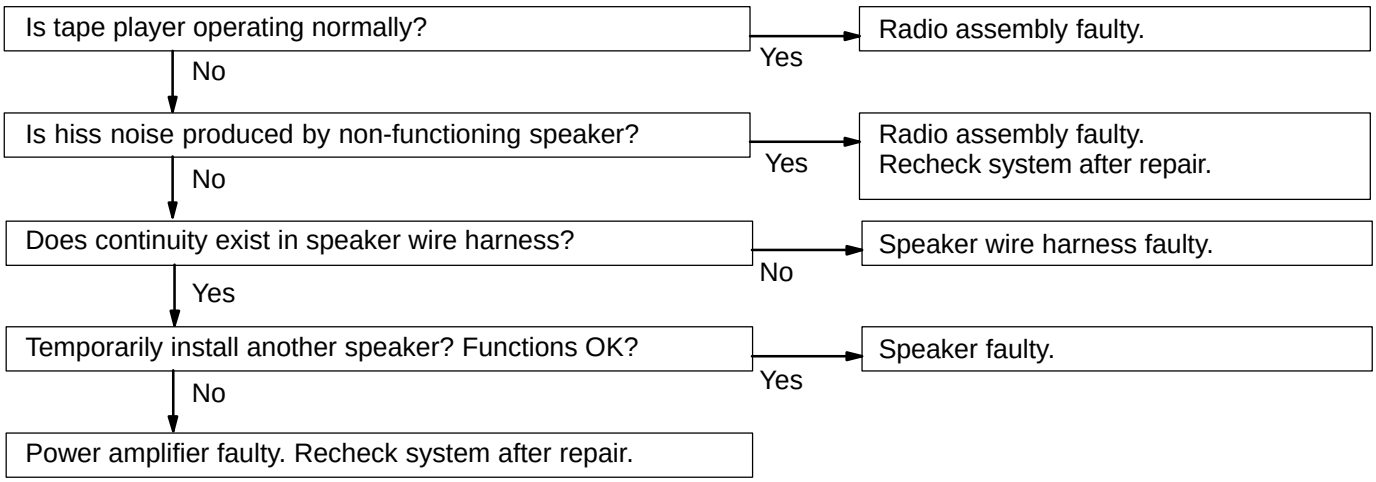


3	Radio	NOISE PRESENT, BUT AM-FM NOT OPERATING

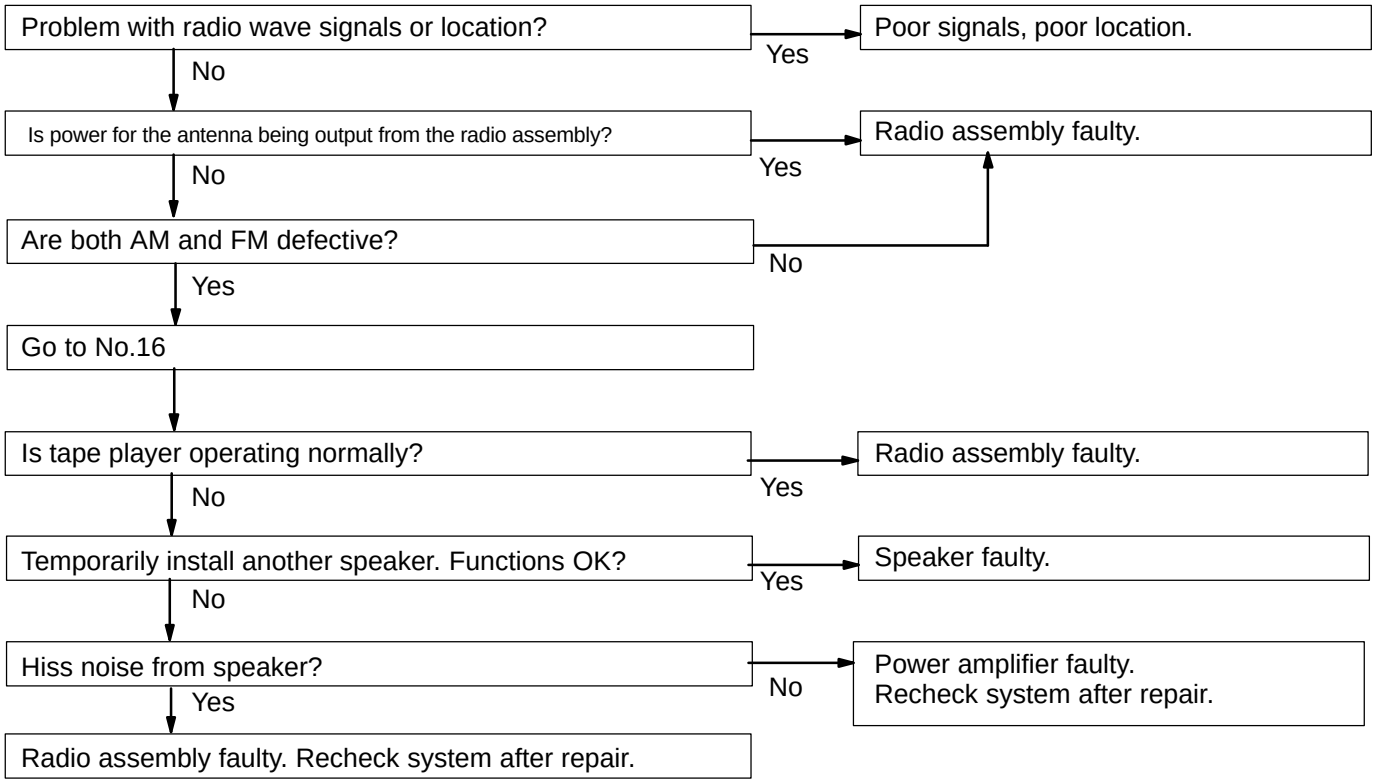
Go to No.25

If radio side faulty. → Radio faulty.

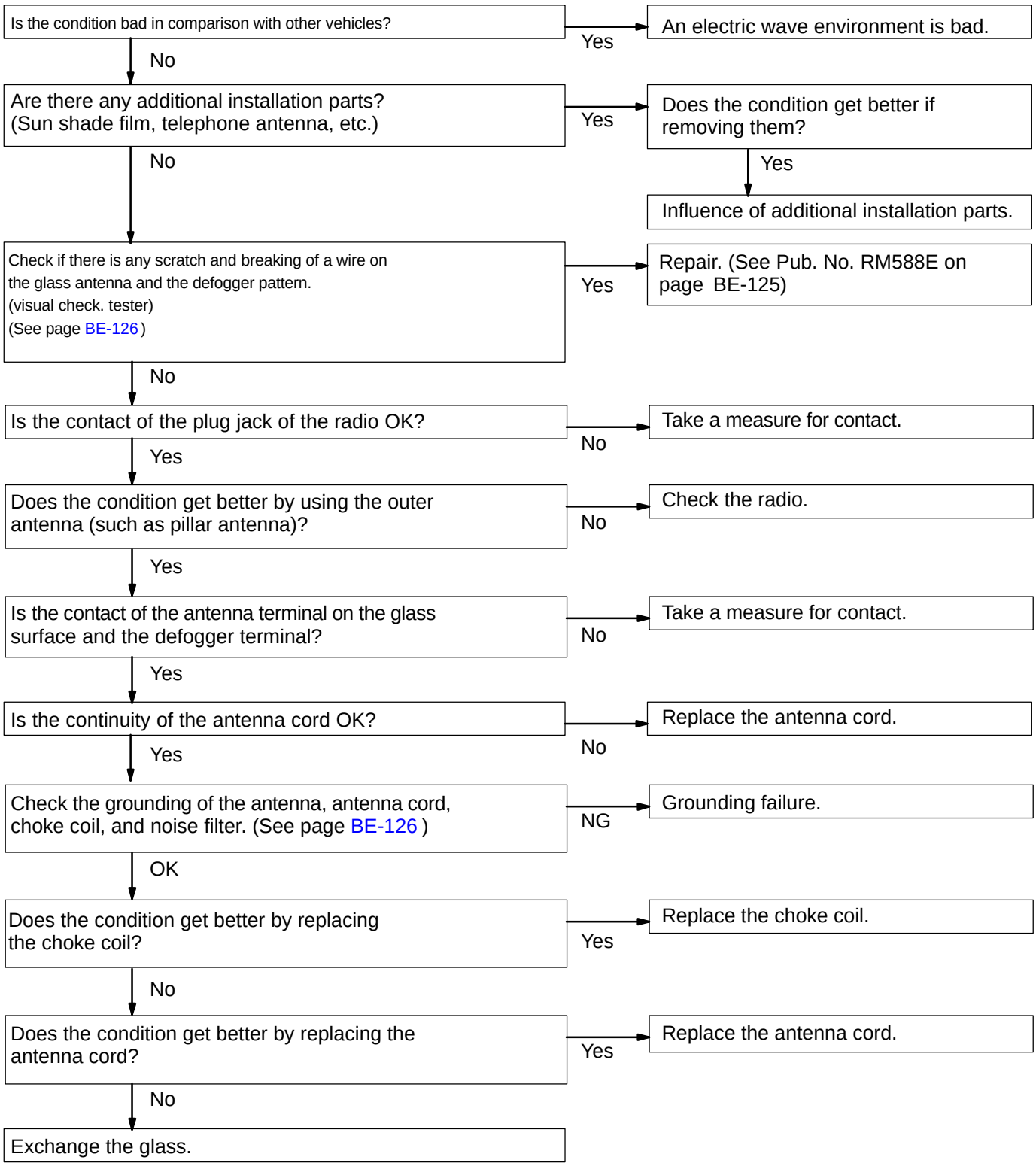
4	Radio	ANY SPEAKER DOSE NOT WORK



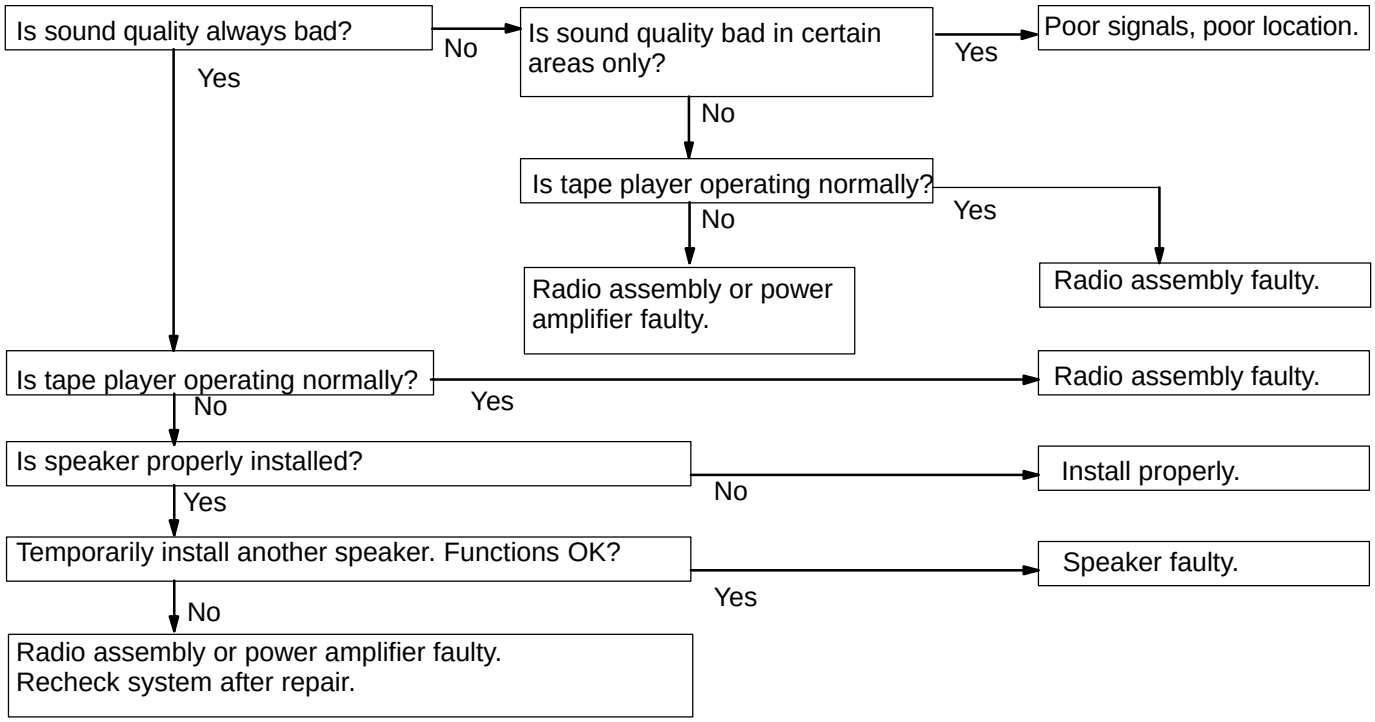
5	Radio	ANY AM OR FM DOES NOR WORK FEW PRESET TUNING BANDS



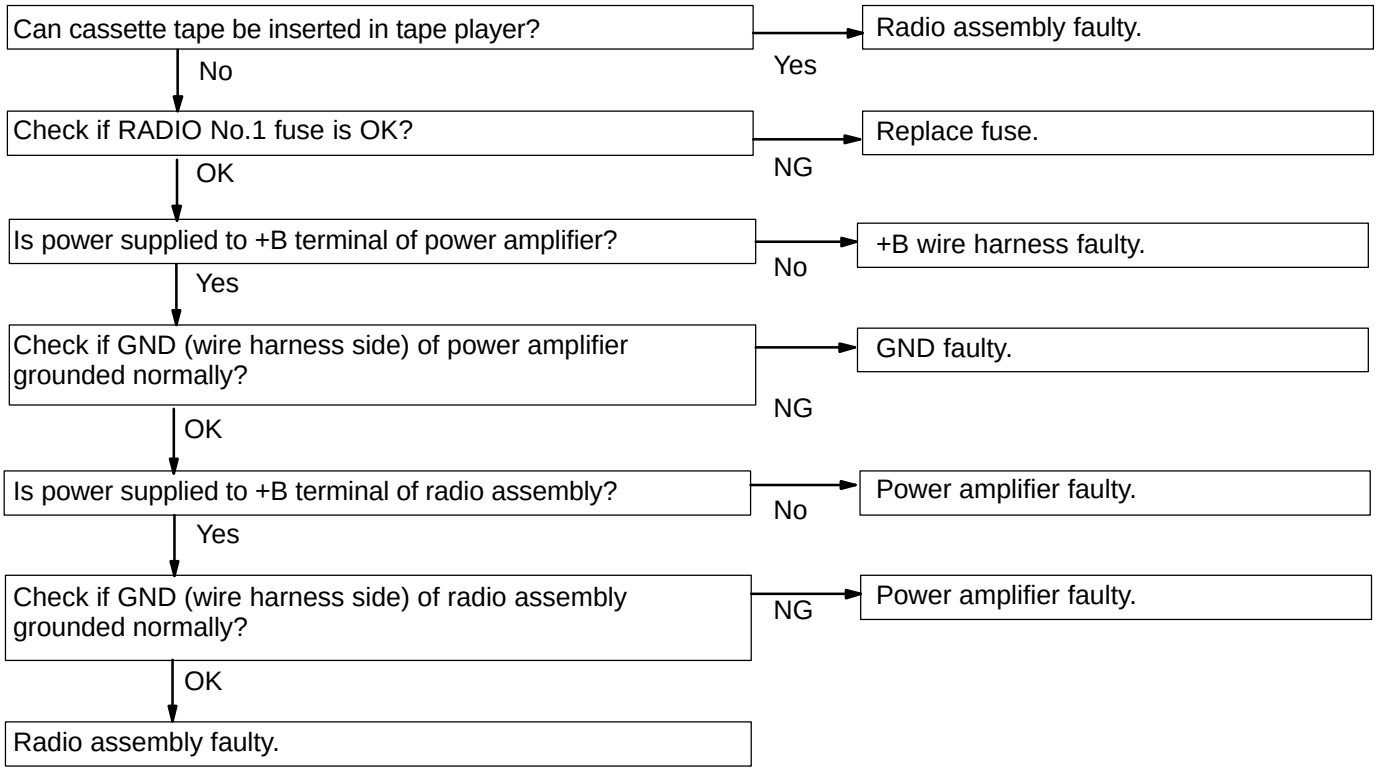
6	Radio	POOR RECEPTION



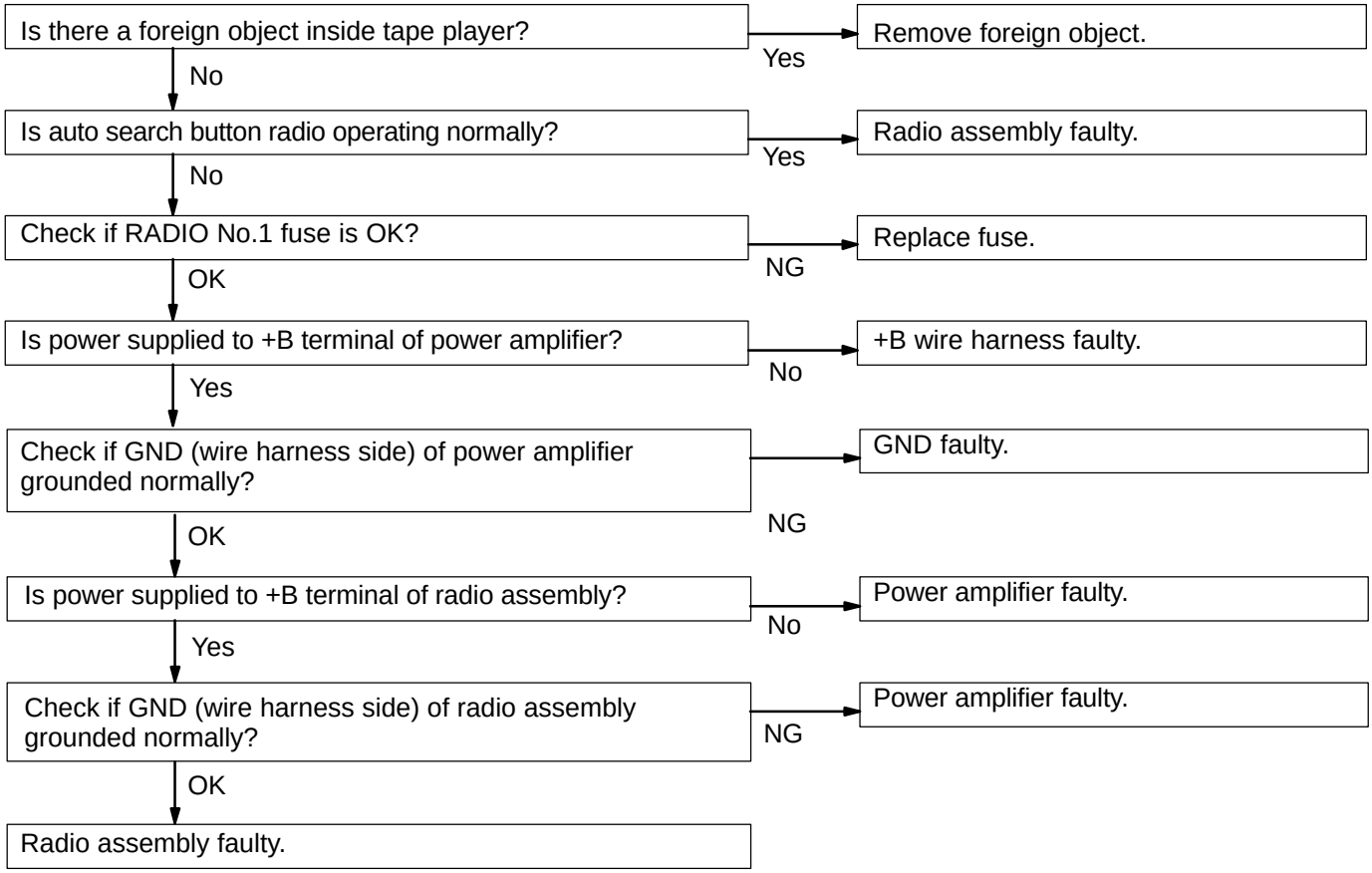
7	Radio	SOUND QUALITY POOR



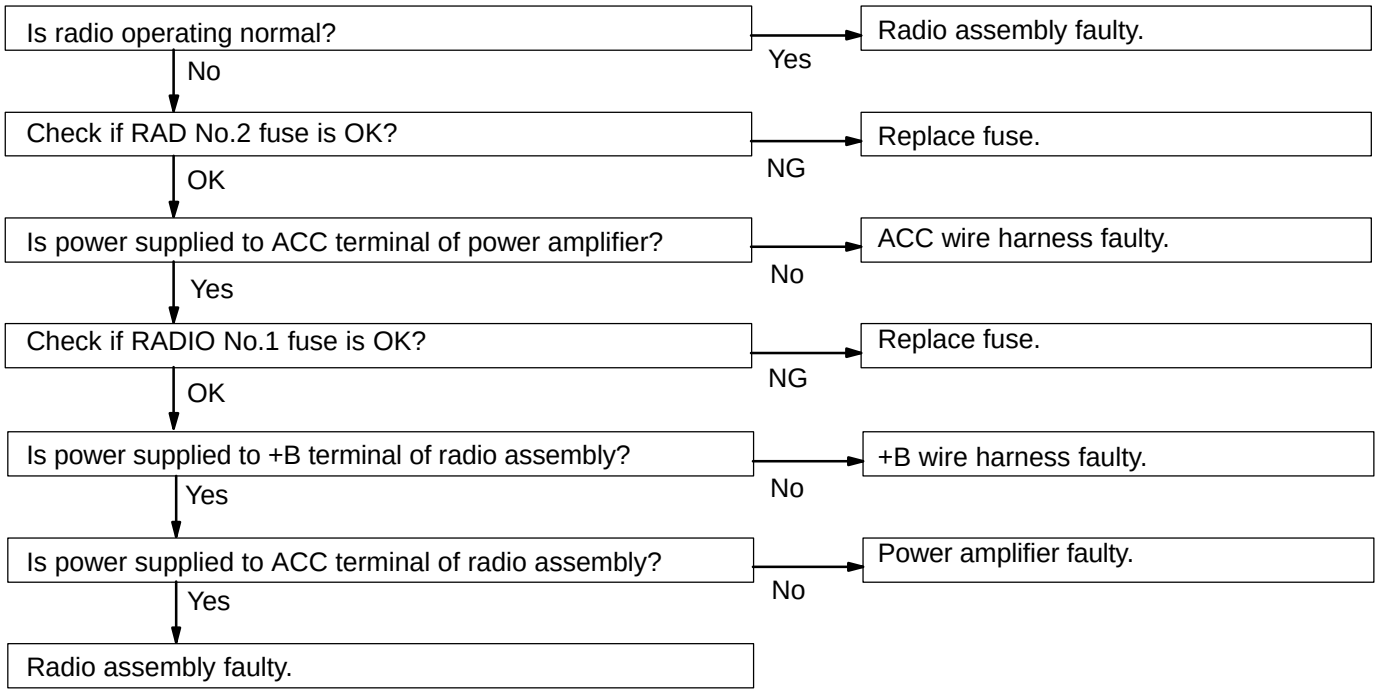
8	Radio	PRESET MEMORY DISAPPEARS



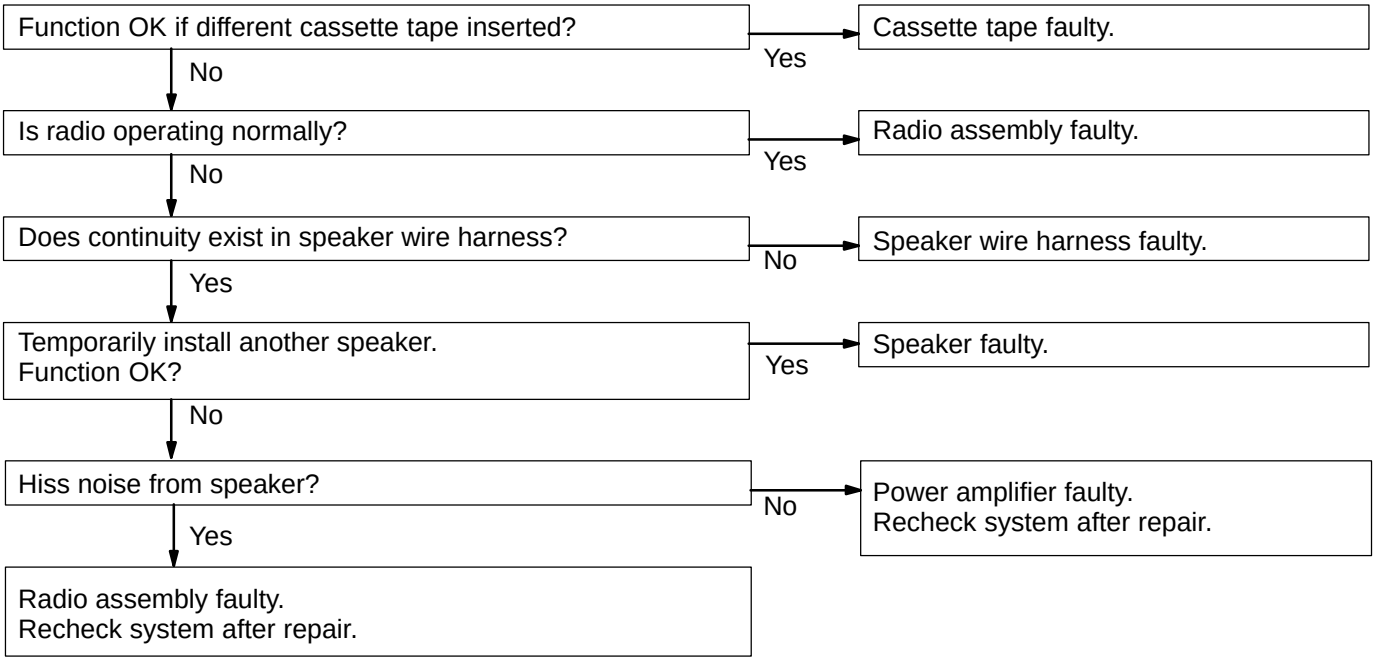
9	Tape Player	CASSETTE TAPE CANNOT BE INSERTED



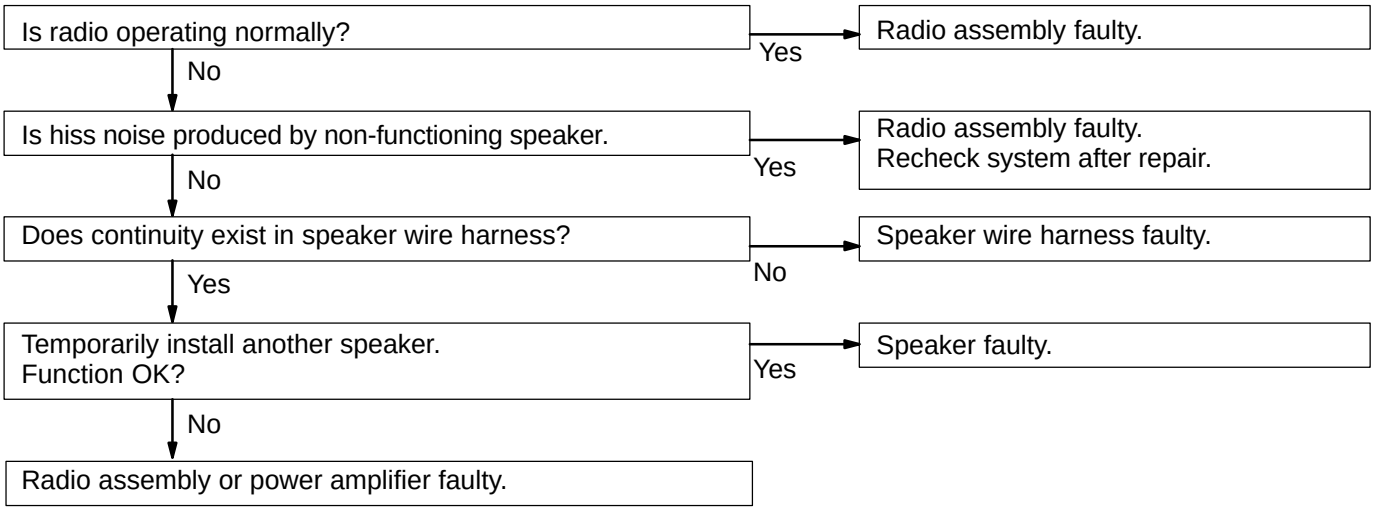
10	Tape Player	CASSETTE TAPE INSERTED, BUT NO POWER



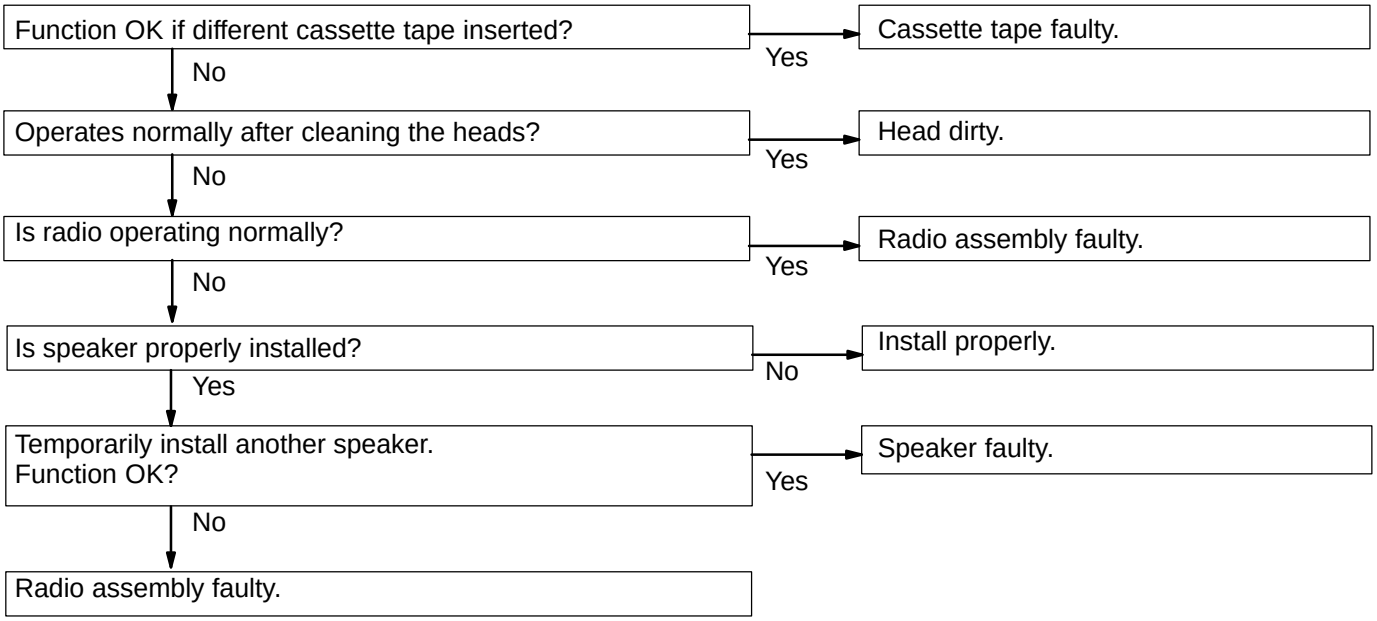
11	Tape Player	POWER COMING IN, BUT TAPE PLAYER NOT OPERATING



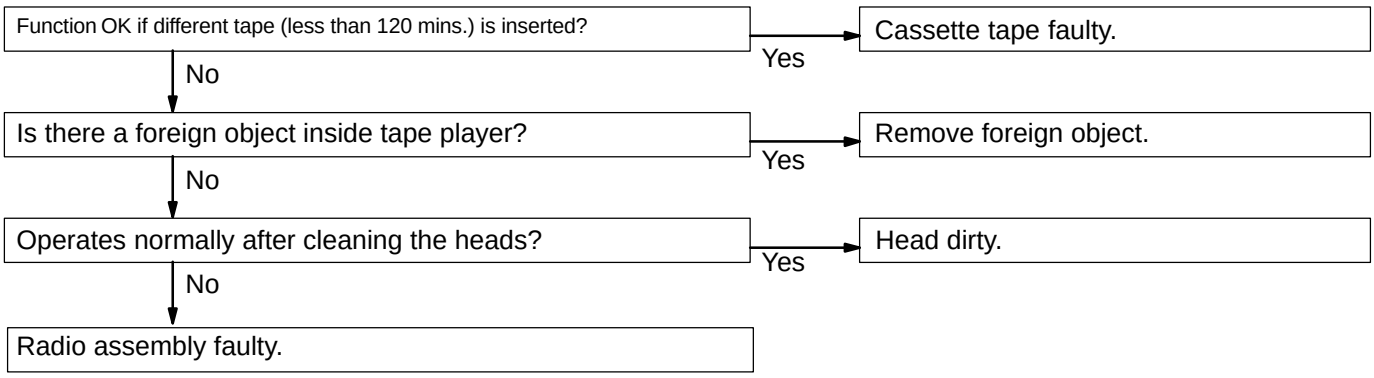
12	Tape Player	ANY SPEAKER DOES NOT WORK



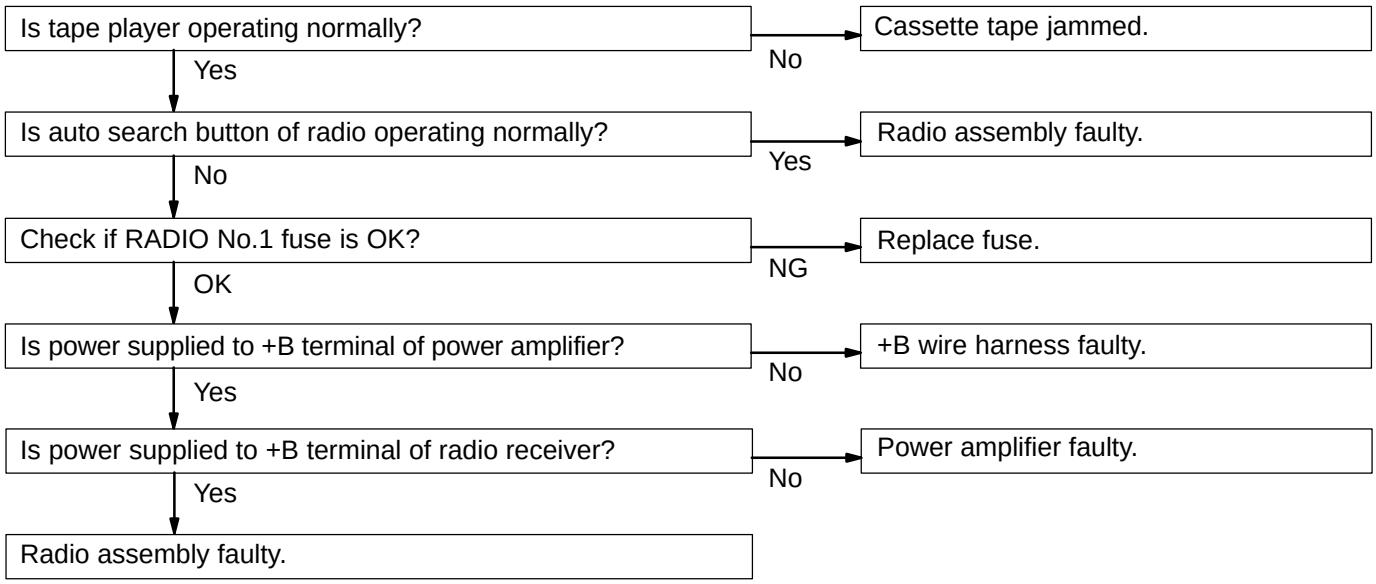
13	Tape Player	SOUND QUALITY POOR (VOLUME FAINT)



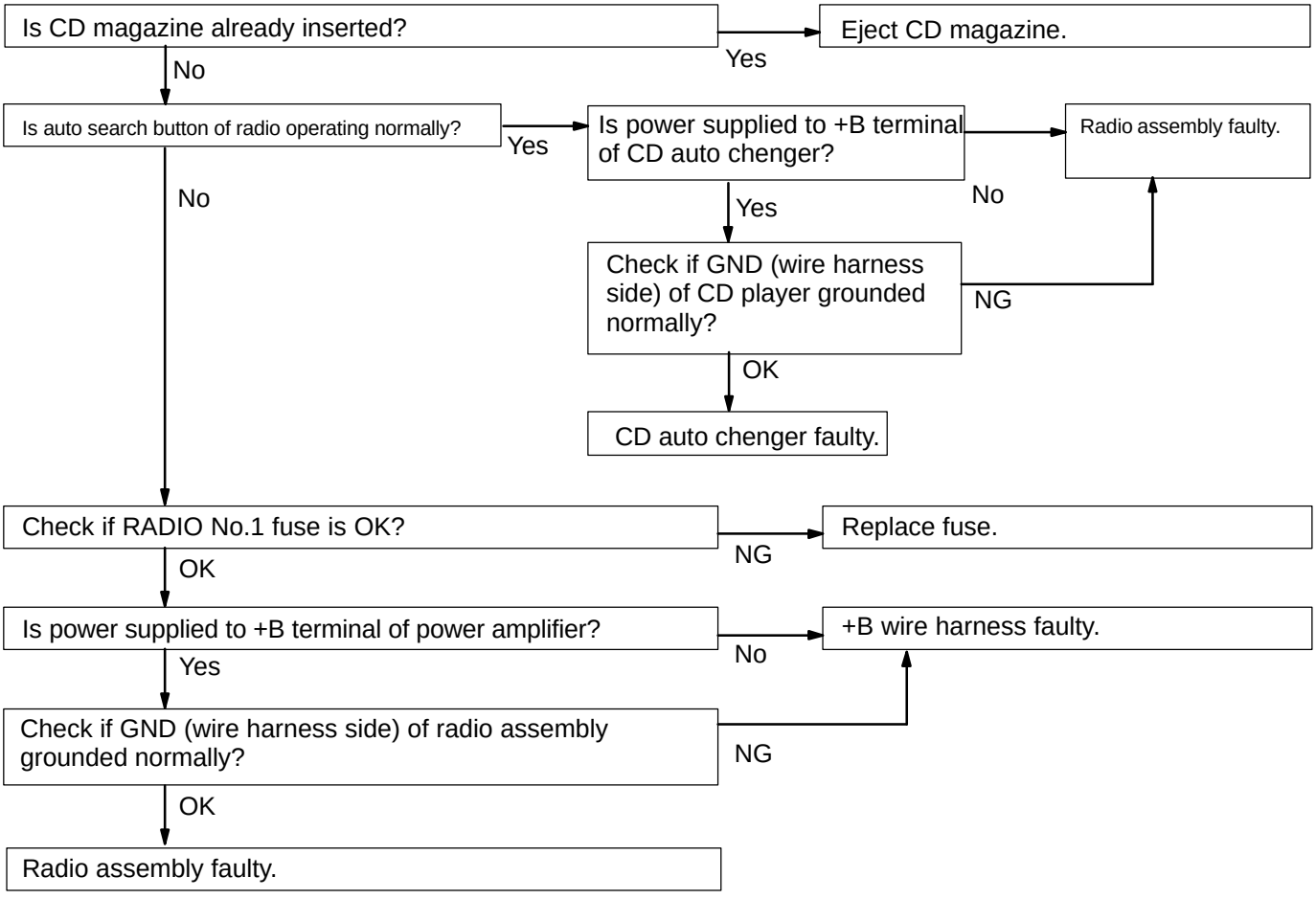
14	Tape Player	TAPE JAMMED MALFUNCTION WITH TAPE SPEED OR AUTO-REVERSE



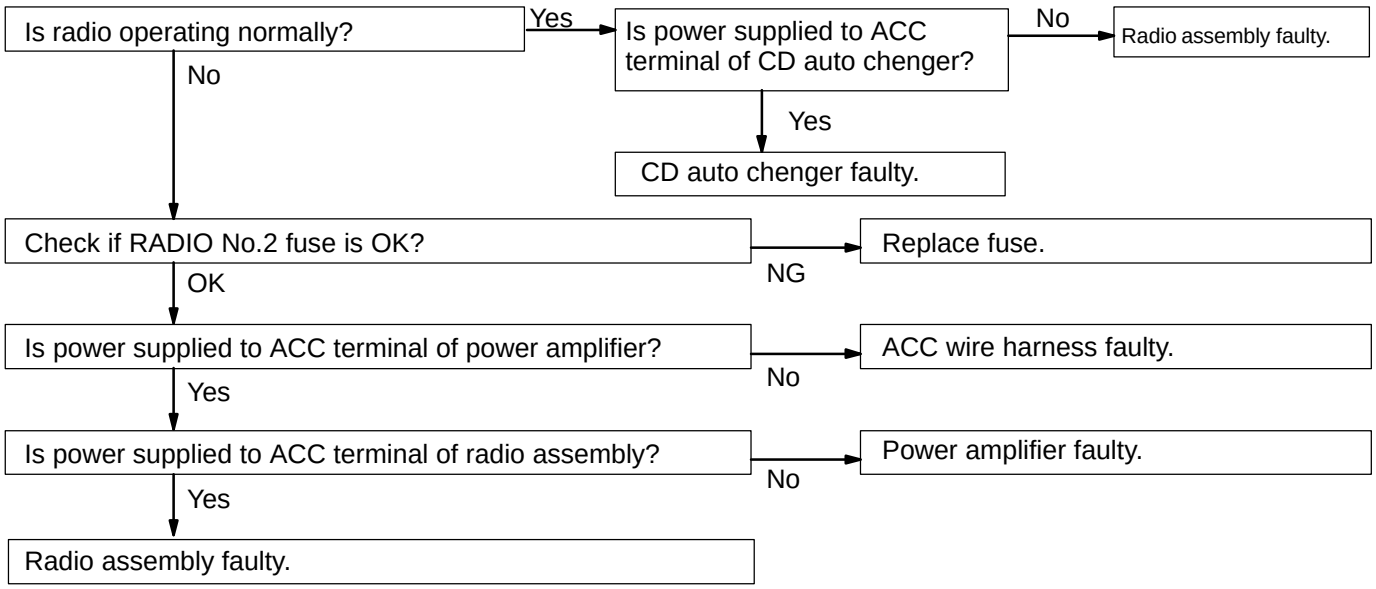
15	Tape Player	CASSETTE TAPE WILL NOT BE EJECTED



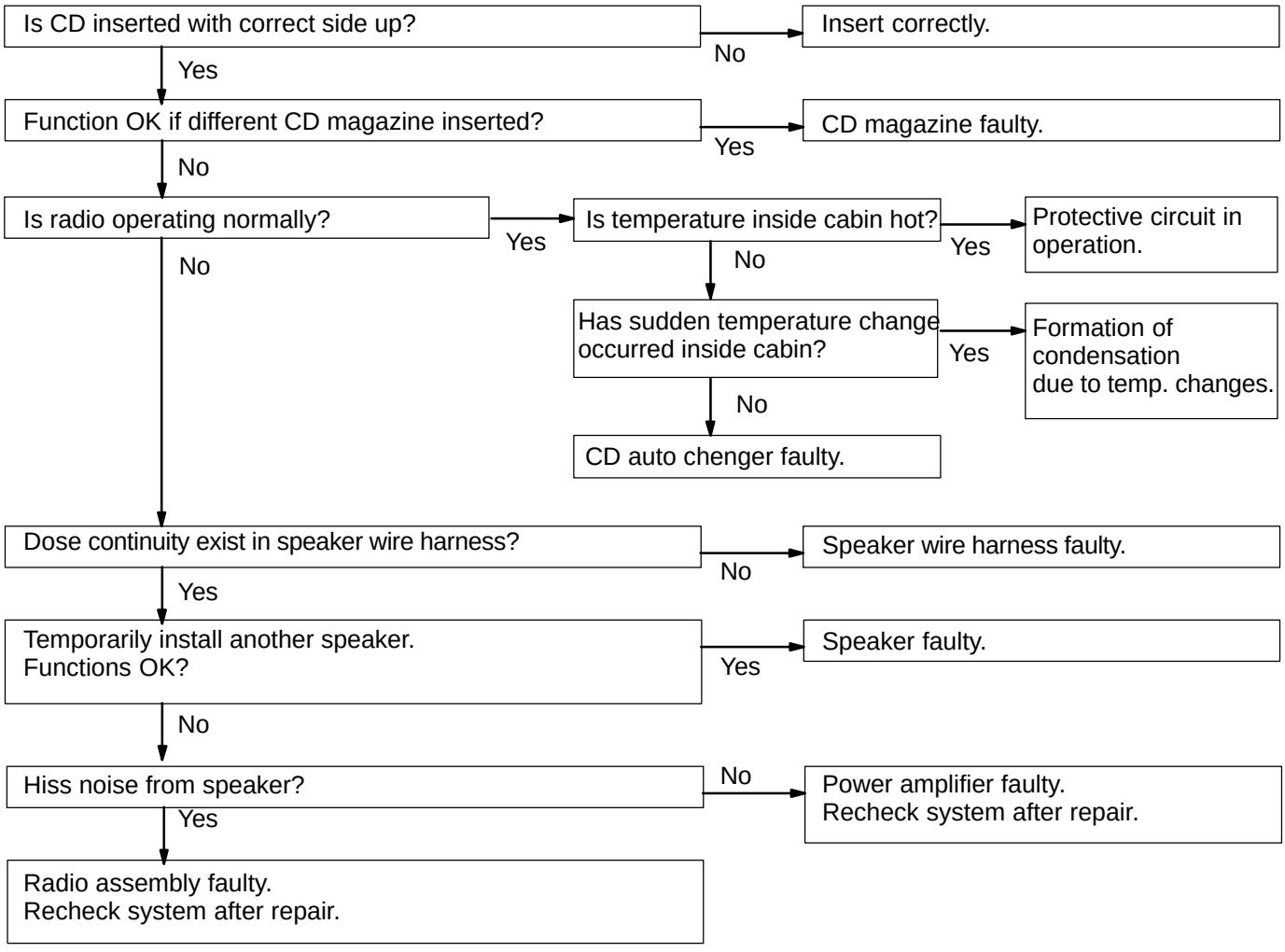
16	CD Auto Chenger	CD MAGAZINE CANNOT BE INSERTED



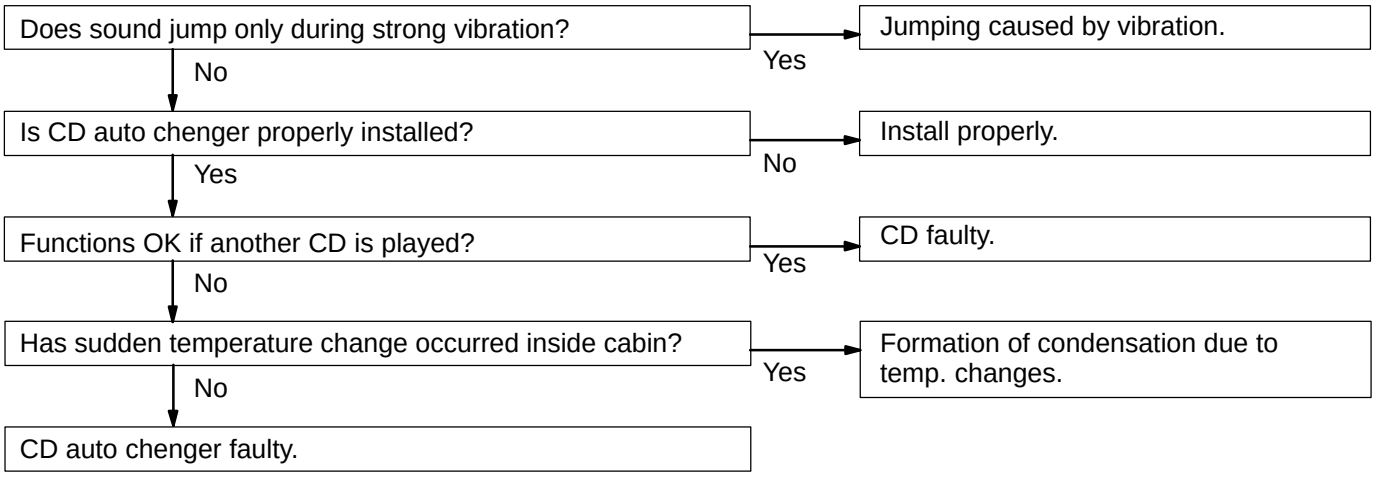
17	CD Auto Chenger	CD MAGAZINE INSERTED, BUT NO POWER



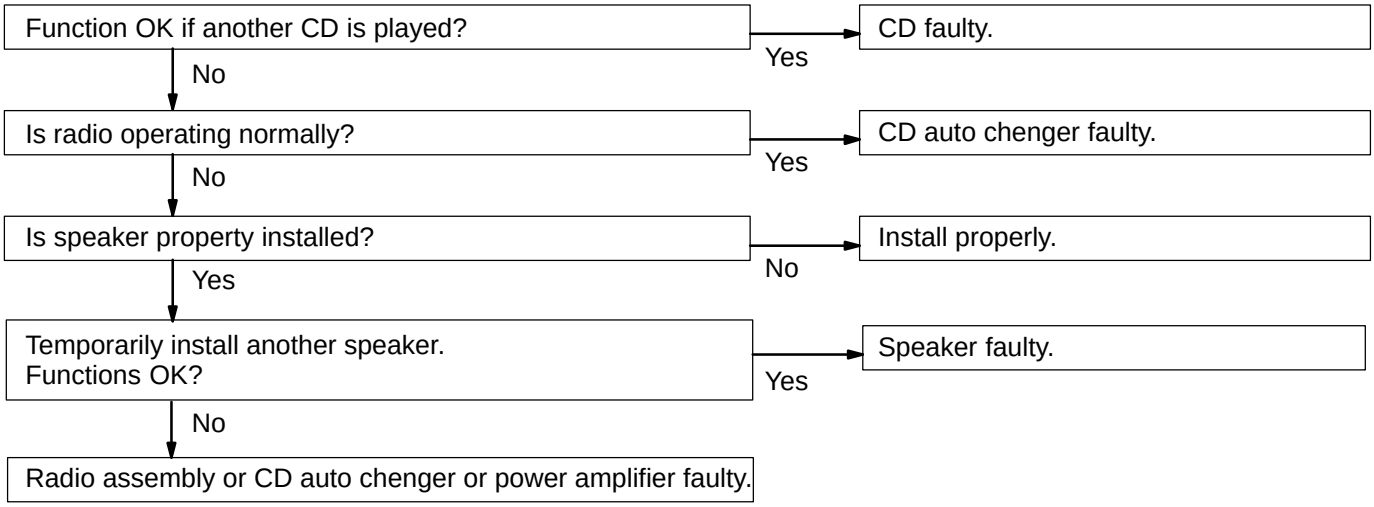
18	CD Auto Chenger	POWER COMING IN, BUT CD AUTO CHENGER NOT OPERATING



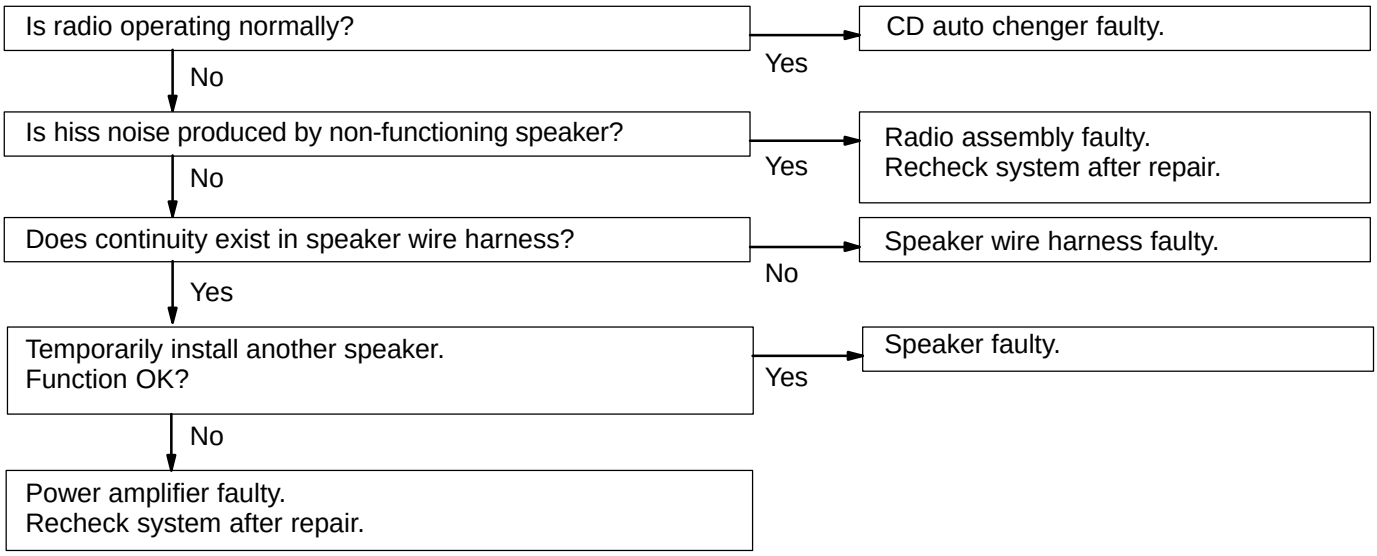
19	CD Auto Chenger	SOUND JUMPS



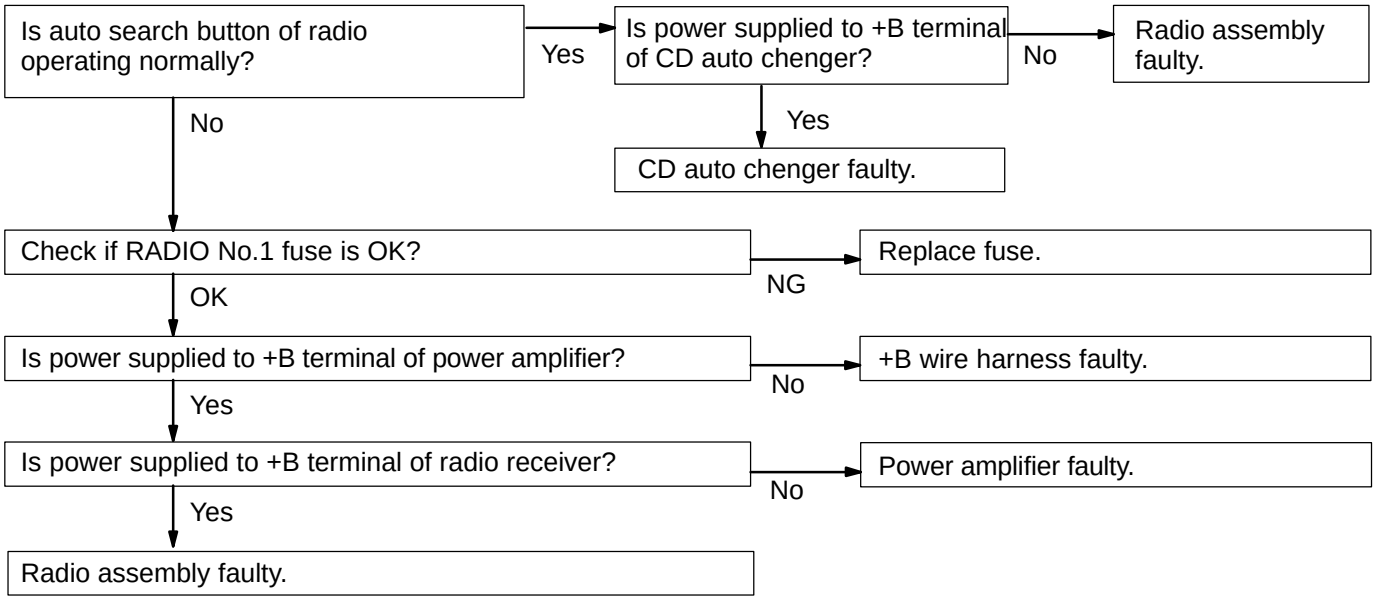
20	CD Auto Chenger	SOUND QUALITY POOR (VOLUME FAINT)



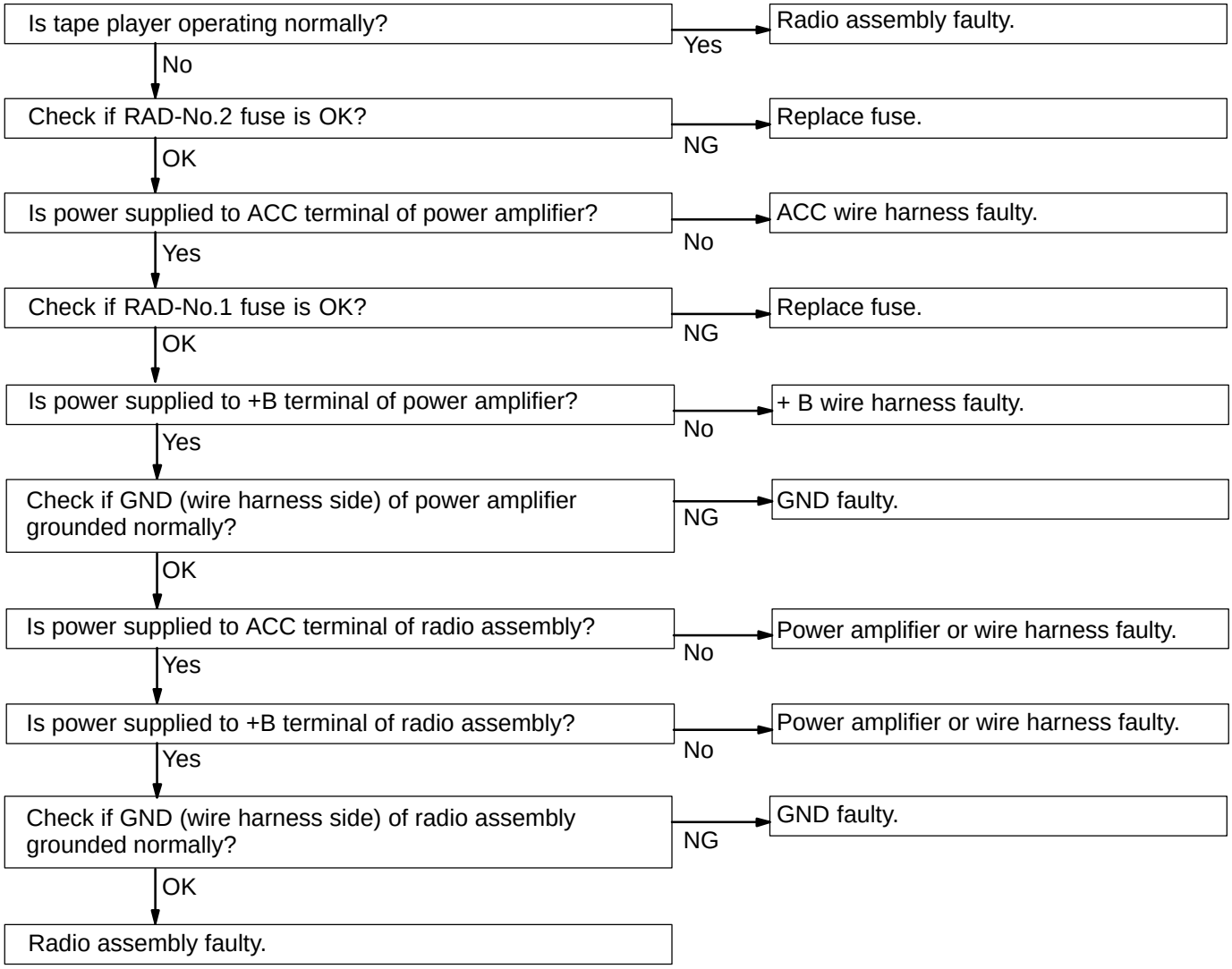
21	CD Auto Chenger	ANY SPEAKER DOES NOT WORK



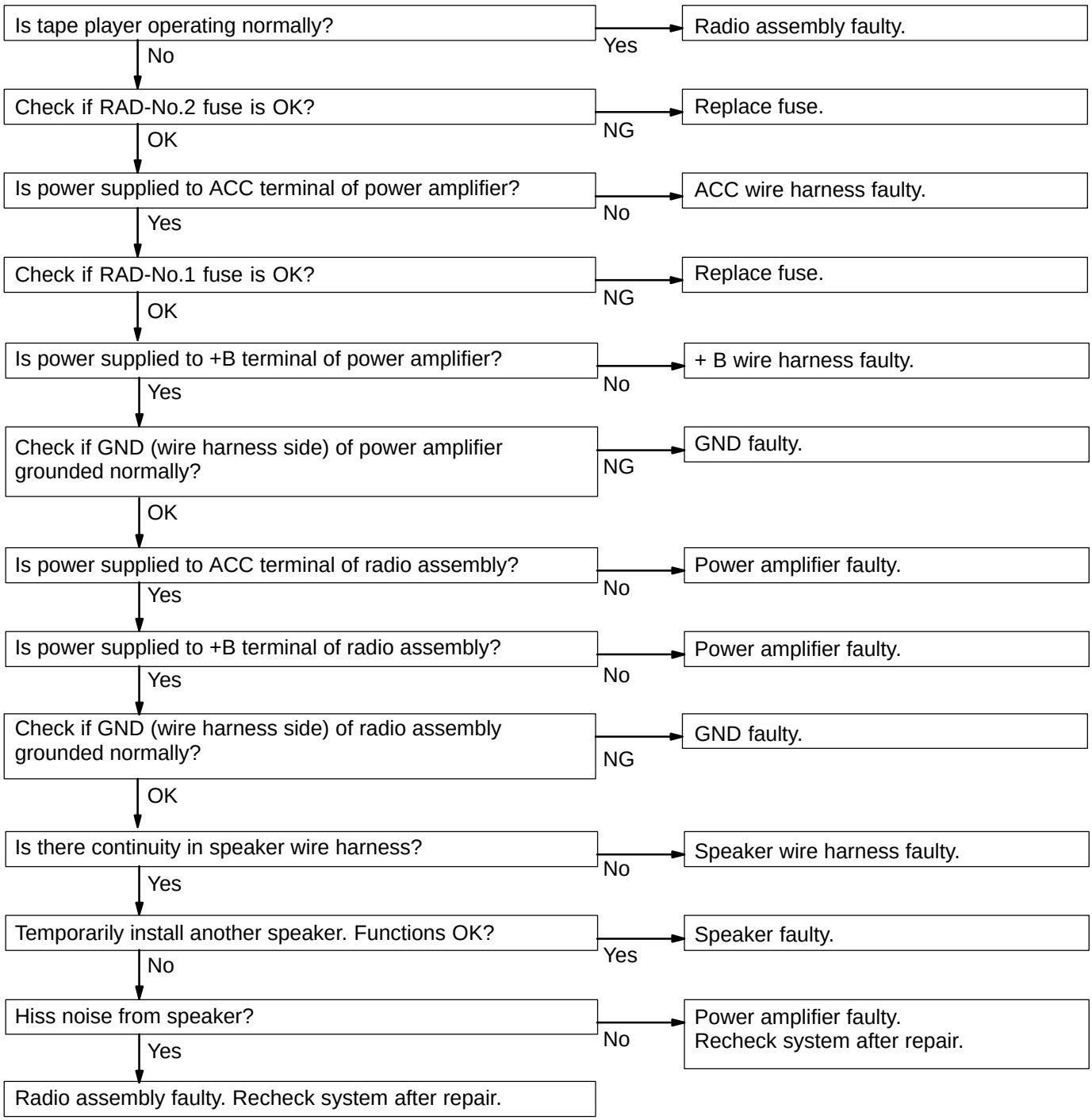
22	CD Auto Chenger	CD MAGAZINE WILL NOT BE EJECTED



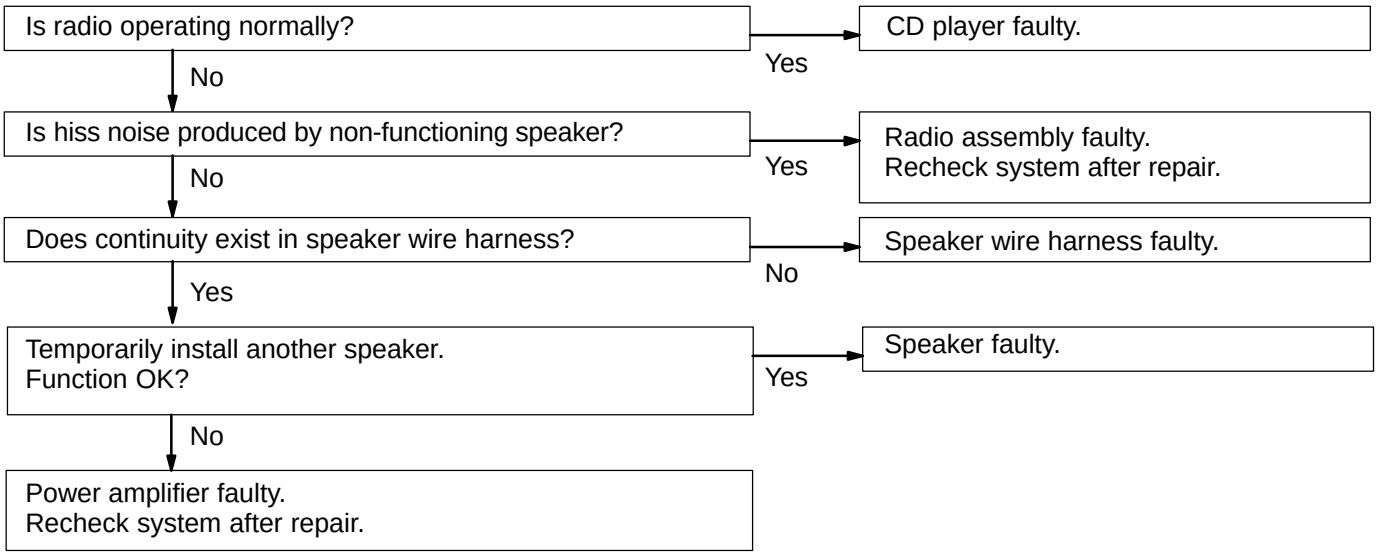
23	Power Amplifier	NO POWER COMING IN



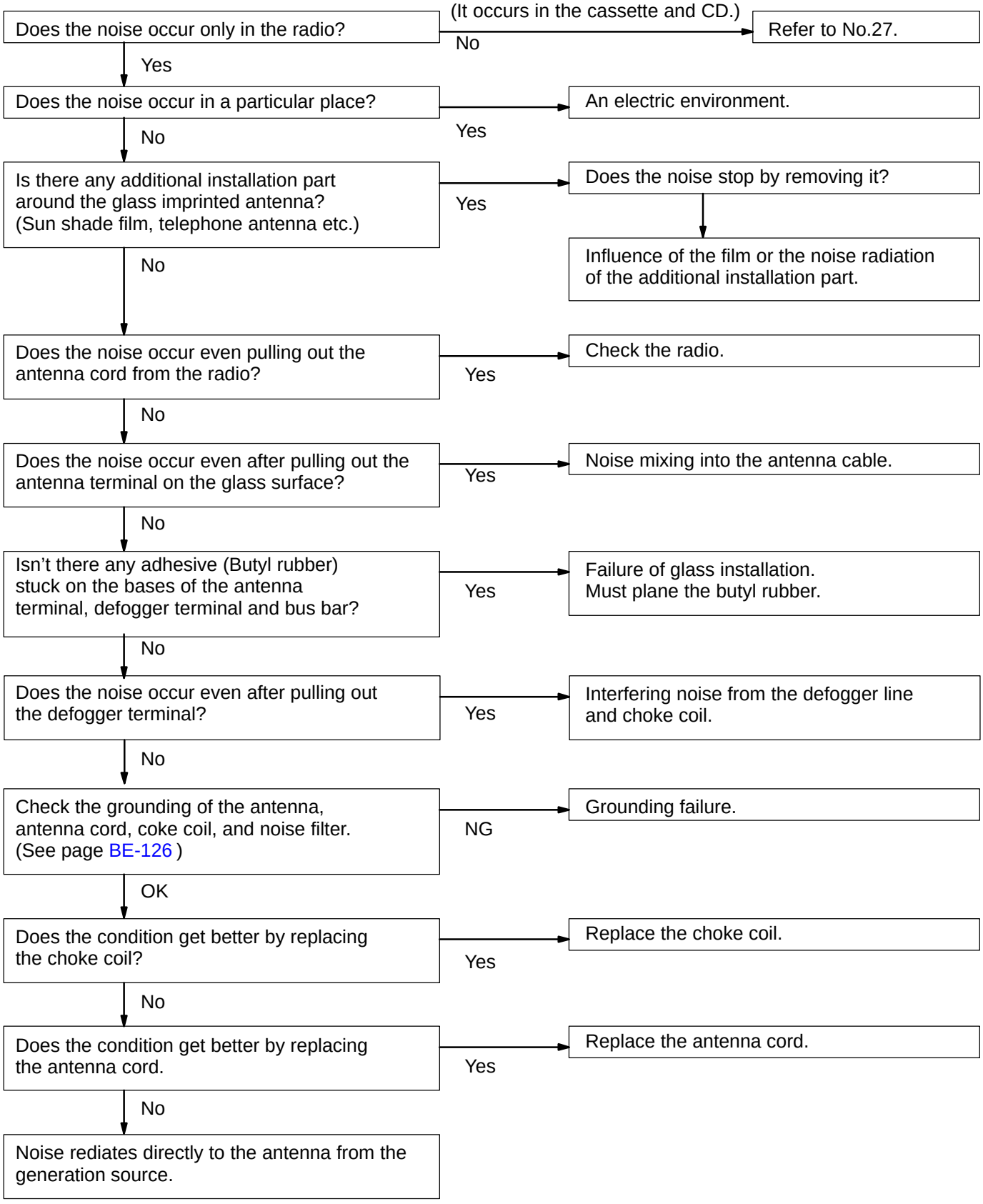
24	Power Amplifier	POWER COMIMG IN, BUT WOOFER (POWER) AMPLIFIER NOT OPERATING



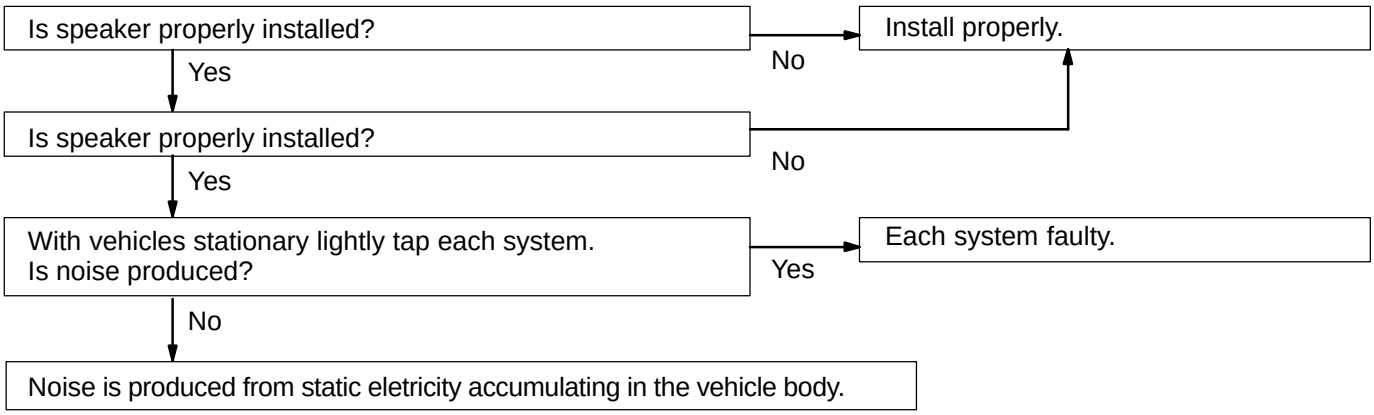
25	Power Amplifier	ANY SPEAKER DOES NOT WORK



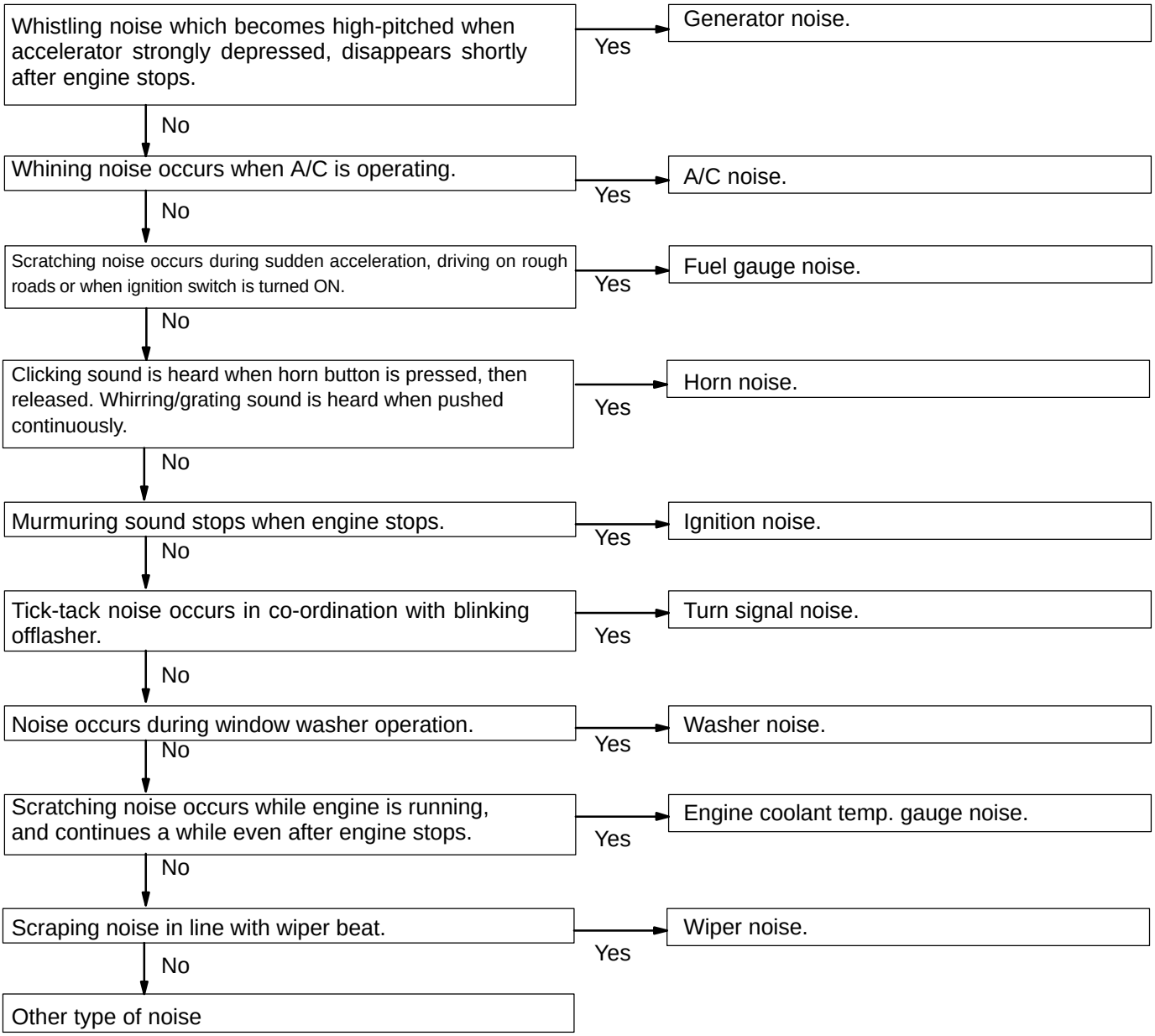
26	Noise	NOISE OCCURS



27	Noise	NOISE PRODUCED BY VIBRATION OR SHOCK WHILE DRIVING



28	Noise	NOISE PRODUCED WHEN ENGINE STARTS



BODY ELECTRICAL SYSTEM

BE04P-05

PRECAUTION

HINT:

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

1. HEADLIGHT SYSTEM

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

2. SRS (SUPPLEMENTAL RESTRAINT SYSTEM)

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

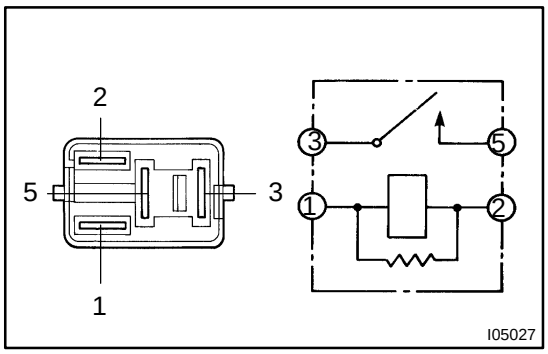
3. AUDIO SYSTEM

- If the negative (-) terminal cable is disconnected from the battery, the preset AM, FM 1 and FM 2 stations stored in memory are erased, so make sure to note the stations and reset them after the negative (-) terminal cable is reconnected to the battery.
- If the negative (-) terminal cable is disconnected from the battery, the radio, tape player and CD player will not operate as well as audio anti - theft system. 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.

BE0I5-03



INSPECTION

INSPECT BACK-UP LIGHT RELAY CONTINUITY

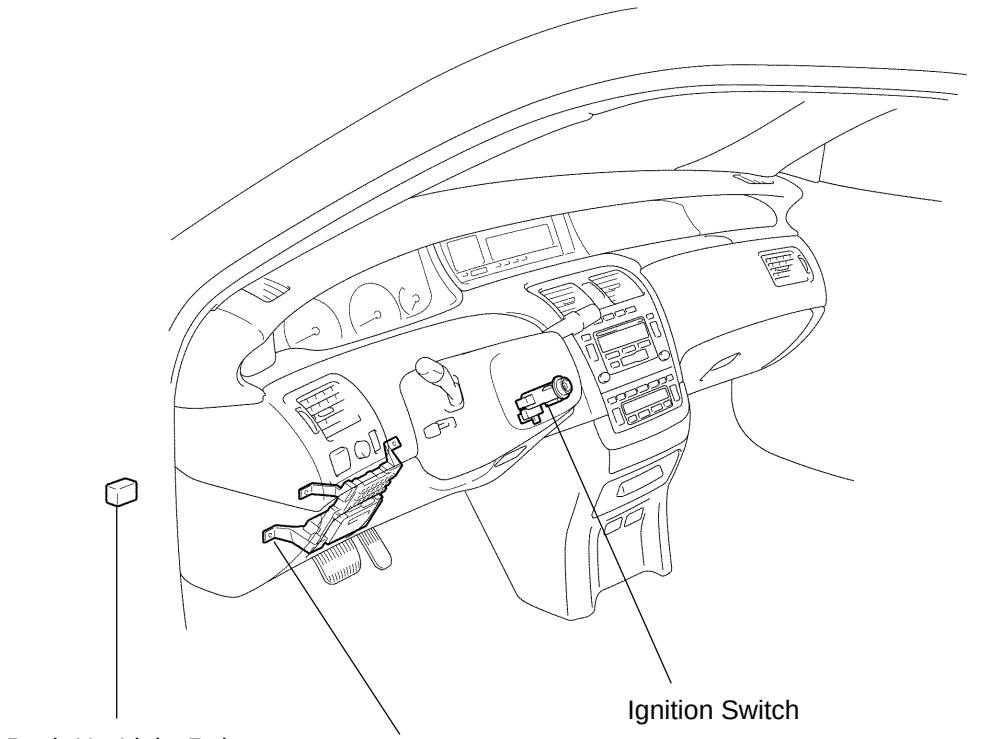
Condition	Tester connection	Specified condition
Constant	1 - 2	Continuity
Apply B+ between terminals 1 and 2.	3 - 5	Continuity

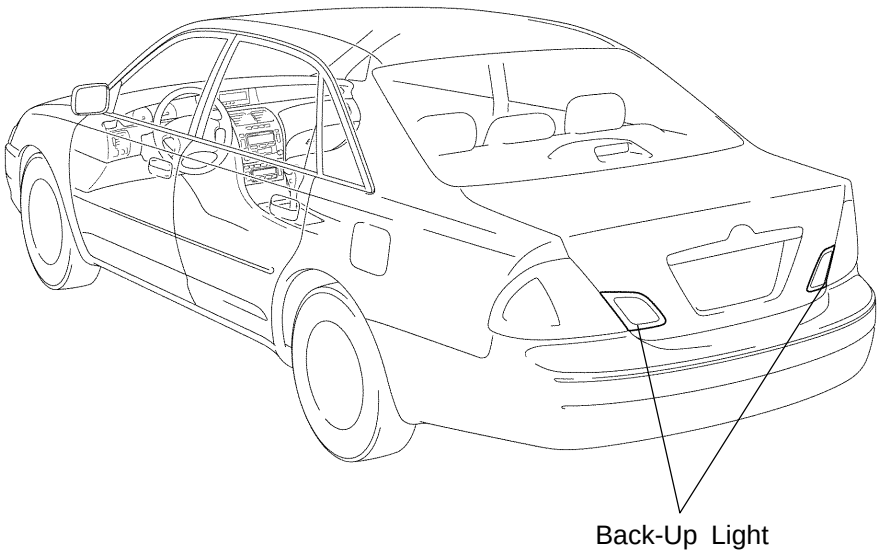
If continuity is not as specified, replace the relay.

BACK-UP LIGHT SYSTEM

LOCATION

BE0I4-04





P

I12528

CLOCK

TROUBLESHOOTING

BE1EJ-01

HINT:

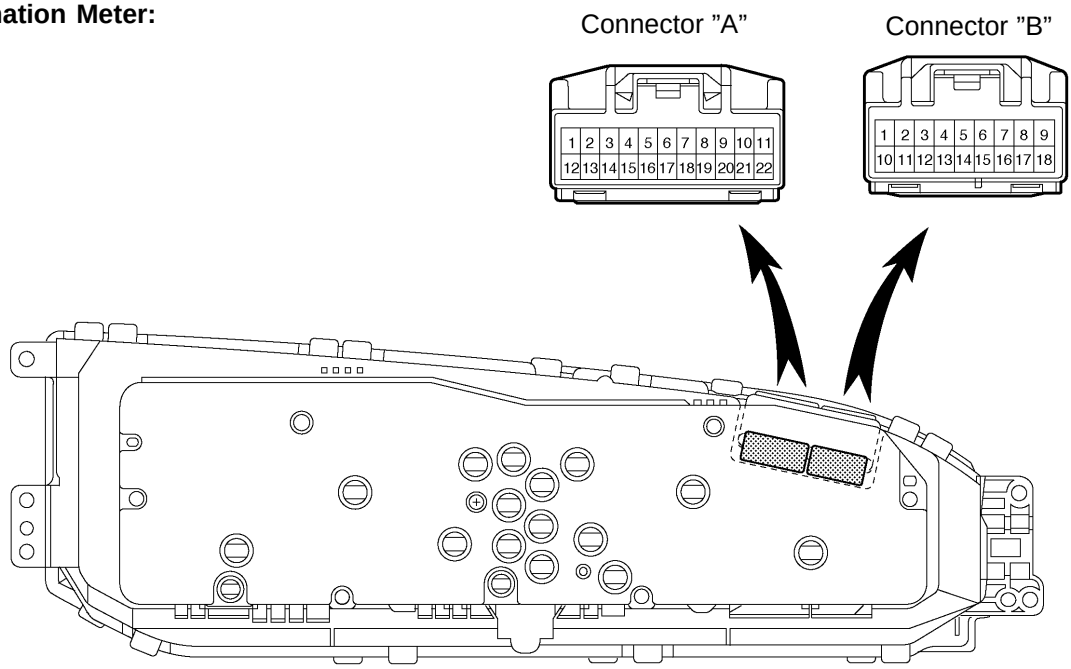
Troubleshoot the clock according to the table below.

Problem	No.
Clock will not operate	BE-53
Clock loses or gains time	BE-53

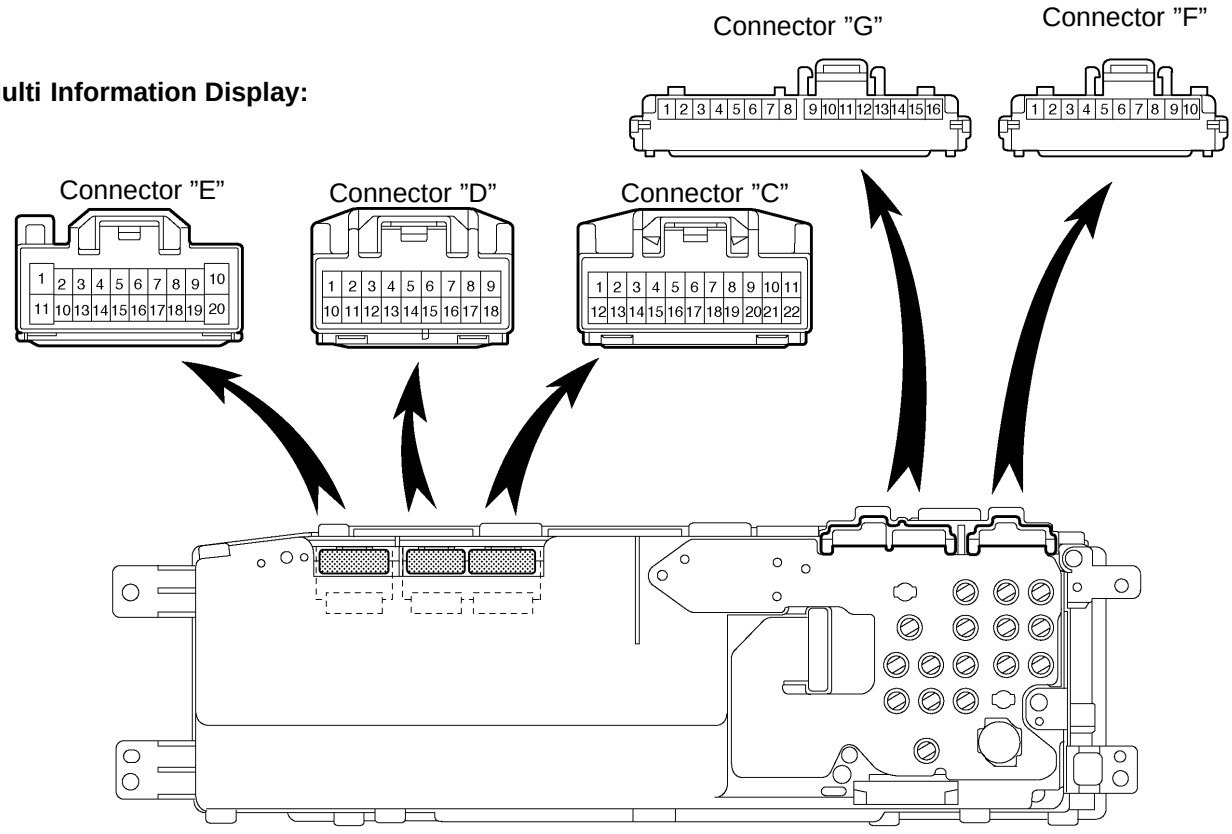
BE1DO-01

CIRCUIT

Combination Meter:



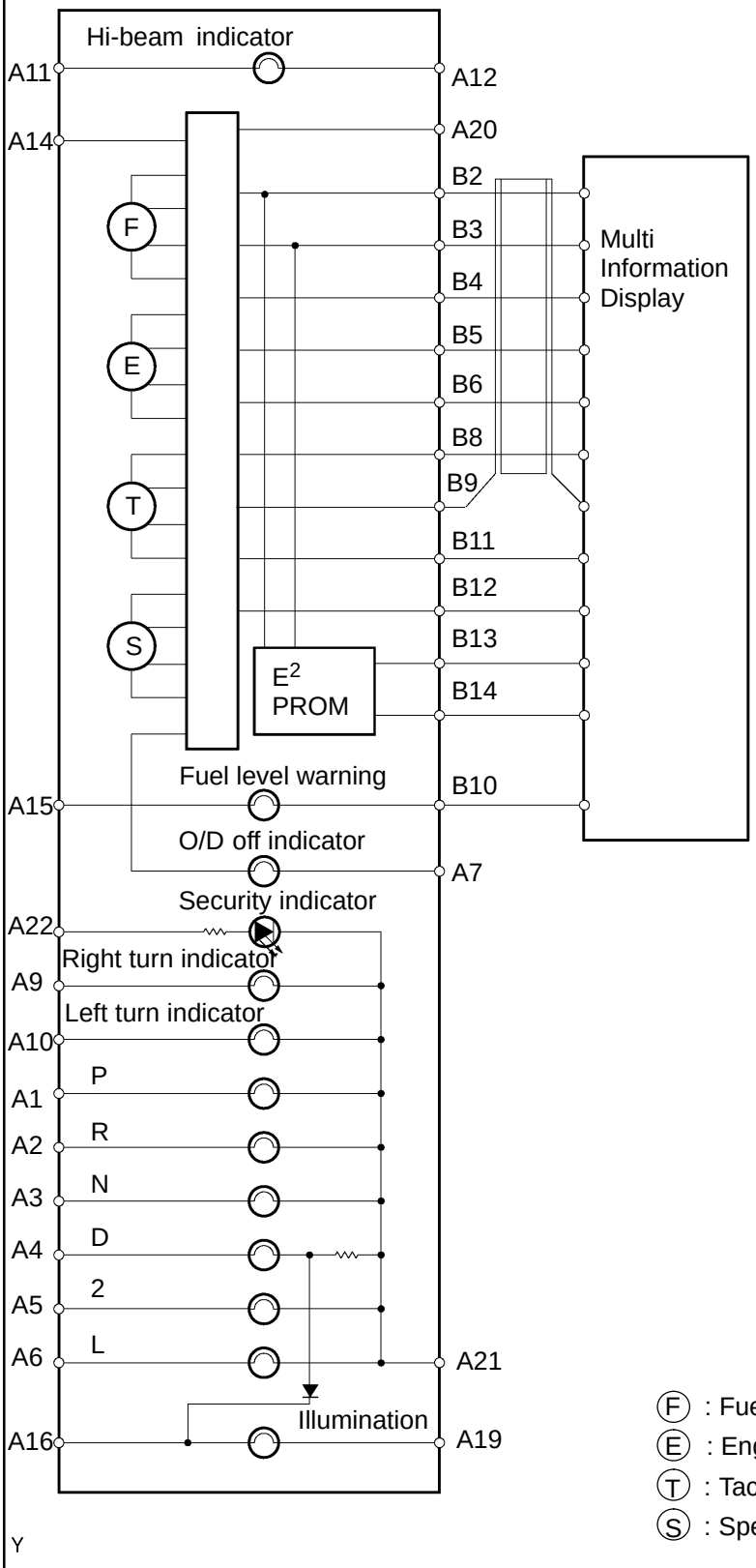
Multi Information Display:



Y

I12772

Combination meter:

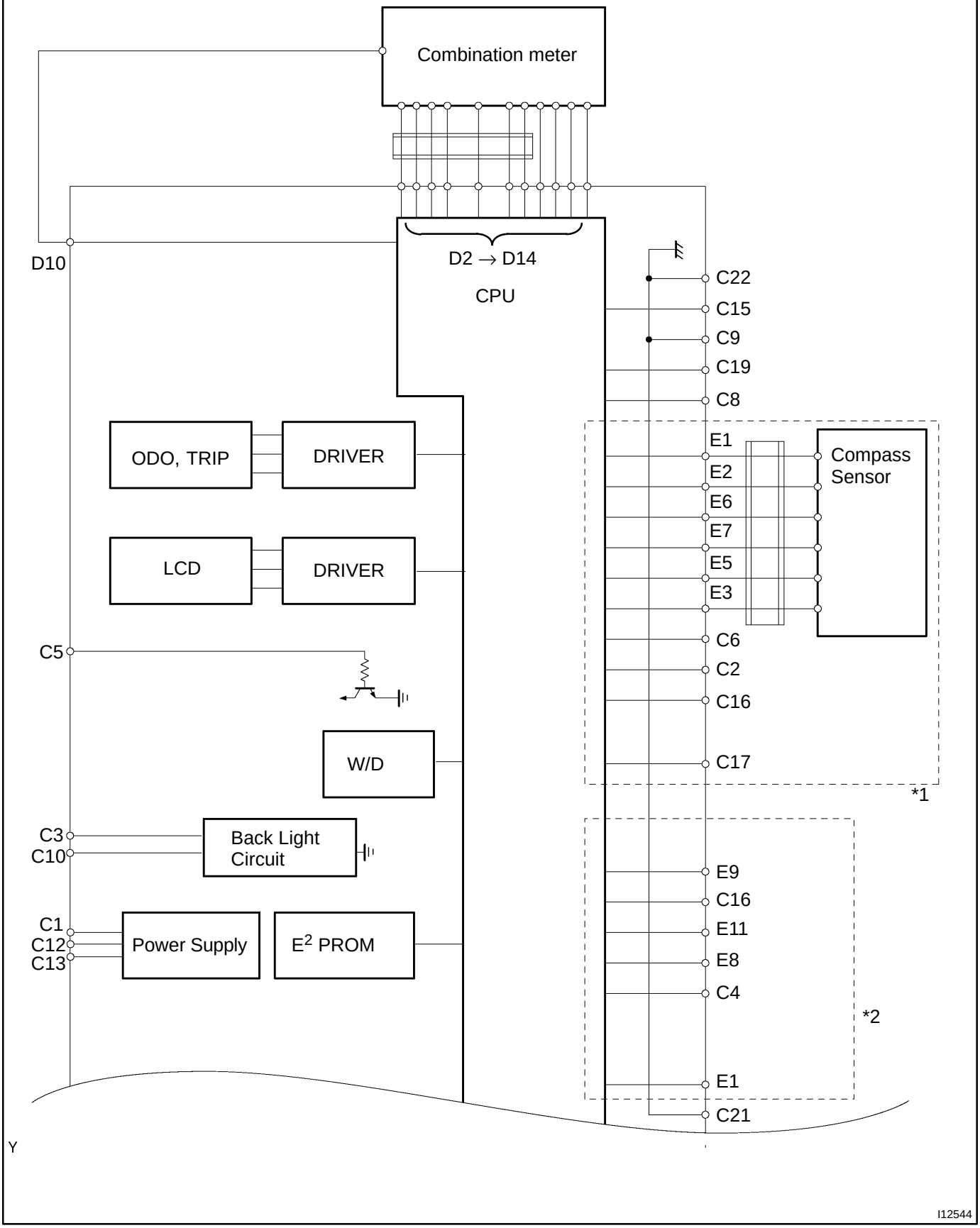


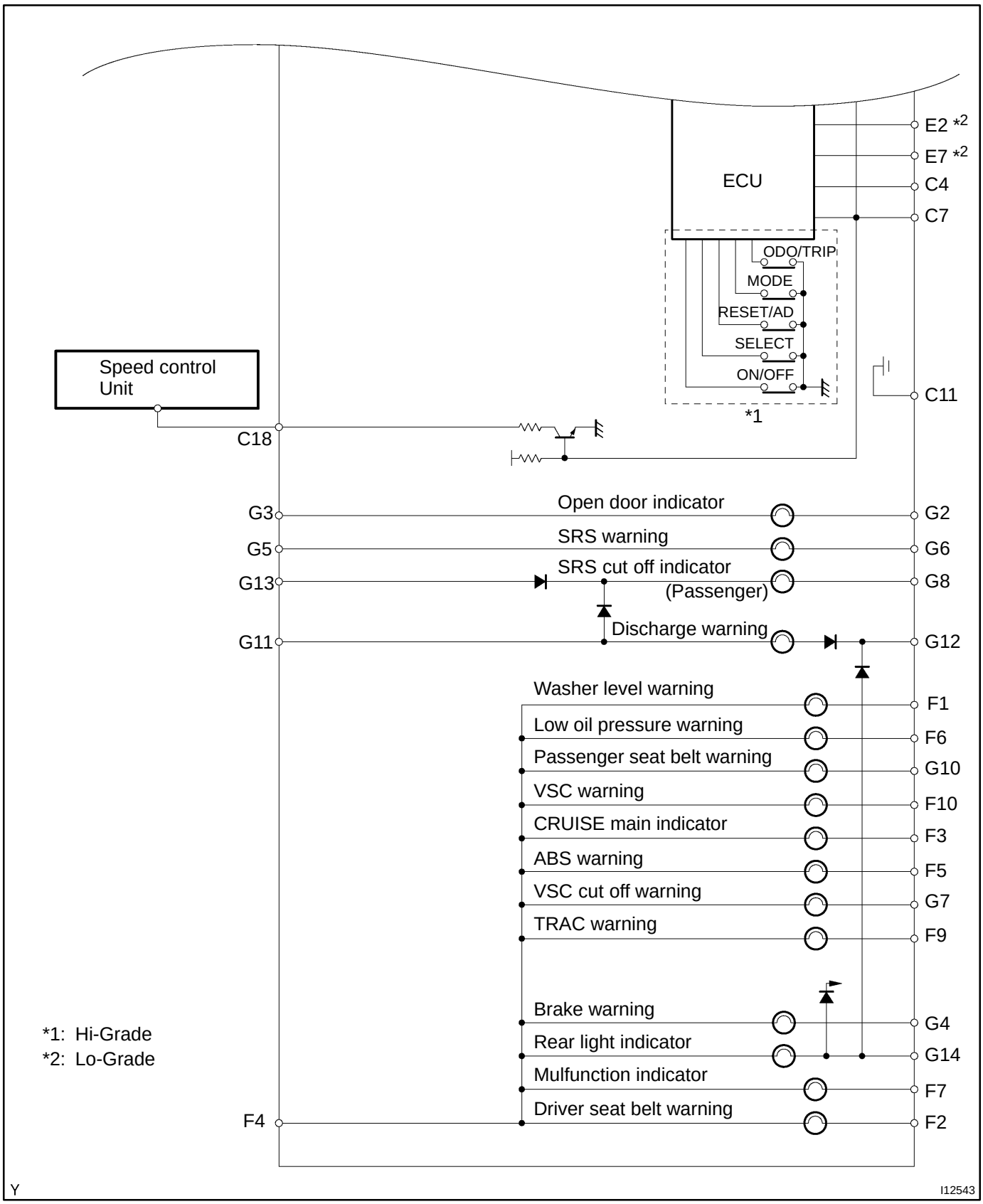
No.		Wire Connector Side
A	1	Park/Neutral position switch (P position)
	2	Park/Neutral position switch (R position)
	3	Park/Neutral position switch (N position)
	4	Park/Neutral position switch (D position)
	5	Park/Neutral position switch (2 position)
	6	Park/Neutral position switch (L position)
	7	O/D main switch
	8	-
	9	Turn signal switch (Right)
	10	Turn signal switch (Left)
	11	HEAD-LP Fuse
	12	Headlight dimmer switch
	13	-
	14	ECU-B Fuse
	15	ECU-IG Fuse
	16	F (PANEL) Fuse
	17	-
	18	-
	19	Rheostat Light Control Volume
	20	Ground
	21	Ground
	22	Theft Deterrent ECU
B	1	-
	2	Multi-information display meter
	3	Multi-information display meter
	4	Multi-information display meter
	5	Multi-information display meter
	6	Multi-information display meter
	7	-
	8	Multi-information display meter
	9	Multi-information display meter
	10	Multi-information display meter
	11	Multi-information display meter
	12	Multi-information display meter
	13	Multi-information display meter
	14	Multi-information display meter
	15	-
	16	-
	17	-
	18	-

Ⓕ : Fuel receiver gauge
Ⓔ : Engine coolant temperature gauge
Ⓣ : Tachometer
Ⓢ : Speedometer

I12781

Multi information display:




ECU
E2 *2
E7 *2
C4
C7
ODO/TRIP
MODE
RESET/AD
SELECT
ON/OFF
*1
C11
Speed control Unit
C18
G3
Open door indicator
G2
G5
SRS warning
G6
G13
SRS cut off indicator (Passenger)
G8
G11
Discharge warning
G12
Washer level warning
F1
Low oil pressure warning
F6
Passenger seat belt warning
G10
VSC warning
F10
CRUISE main indicator
F3
ABS warning
F5
VSC cut off warning
G7
TRAC warning
F9
Brake warning
G4
Rear light indicator
G14
Mulfunction indicator
F7
Driver seat belt warning
F2
F4
*1: Hi-Grade
*2: Lo-Grade
Y
I12543

No.		Wire Connector Side
C	1	ECU-IG No. 2 Fuse
	2	Injector *1
	3	F (Panel) Fuse
	4	Outside temperature sensor
	5	Starter Relay
	6	ECM *1
	7	ABS ECU
	8	Fuel sender gauge
	9	Fuel sender gauge
	10	Light control volume
	11	Ground
	12	RAD No. 1 Fuse
	13	ECU-ACC Fuse
	14	-
	15	Engine coolant temperature sendoer gauge
	16	EFI
	17	Heater control ECU *1
	18	Speed control unit
	19	Fuel sender gauge
	20	-
	21	Sender ground
	22	Ground
D	1	-
	2	Combination meter
	3	Combination meter
	4	Combination meter
	5	Combination meter
	6	Combination meter
	7	-
	8	Combination meter
	9	Combination meter
	10	Combination meter
	11	Combination meter
	12	Combination meter
	13	Combination meter
	14	Combination meter
	15	-
	16	-
	17	-
	18	-

No.		Wire Connector Side
E	1	Compass sensor *1
	1	Low oil pressure warning switch *2
	2	Compass sensor *1
	2	Compressor lock sensor *2
	3	-
	4	A/C magnet switch
	5	Compass sensor *1
	6	Compass sensor *1
	7	Evaporator temperature sensor *2
	7	Compass sensor *1
	8	A/C switch *2
	9	A/C indicator *2
	10	-
	11	ECM
	12	-
	13	-
	14	-
	15	-
	16	-
	17	-
	18	-
	19	-
	20	-

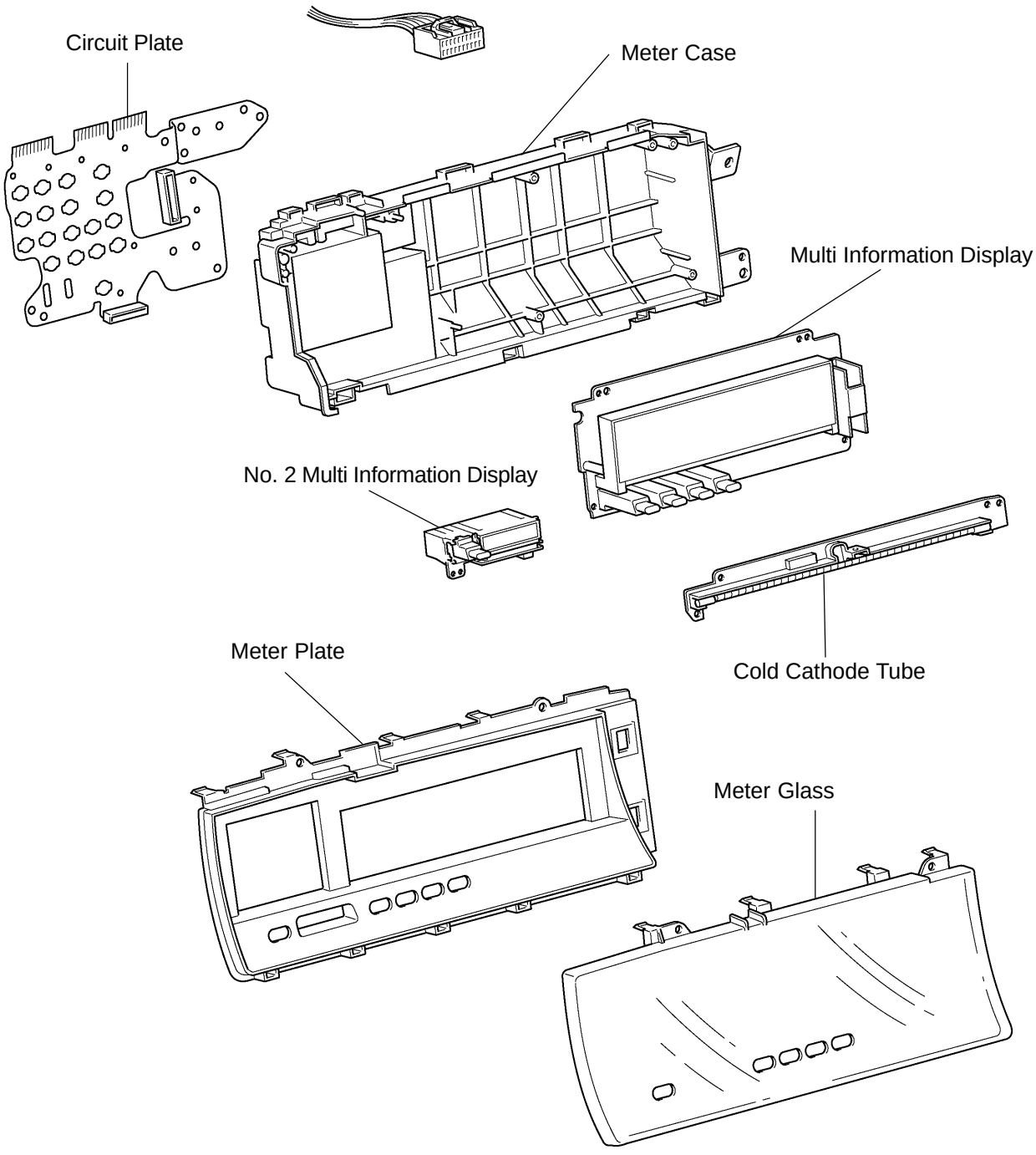
*1: Hi Grade
*2: Lo Grade

No.		Wire Connector Side
F	1	Washer fluid level warning switch
	2	Body ECU
	3	Brake fluid level warning switch
	4	GAUGE Fuse
	5	ABS ECU
	6	Lo oil pressure warning switch
	7	ECM
	8	-
	9	TRAC
	10	VSC ECU
G	1	-
	2	Driver's door courtesy switch
	3	DOME Fuse
	4	Cruise ECU
	5	AIR BAG WRN Fuse
	6	Airbag ECU
	7	ABS&BA&DRAC&VSC ECU
	8	-
	9	-
	10	Body ECU
	11	Ignition switch
	12	Generator L terminal
	13	-
	14	Light failure Sensor
	15	-
	16	-

BE1DQ-01

COMPONENTS

Multi Information Display:



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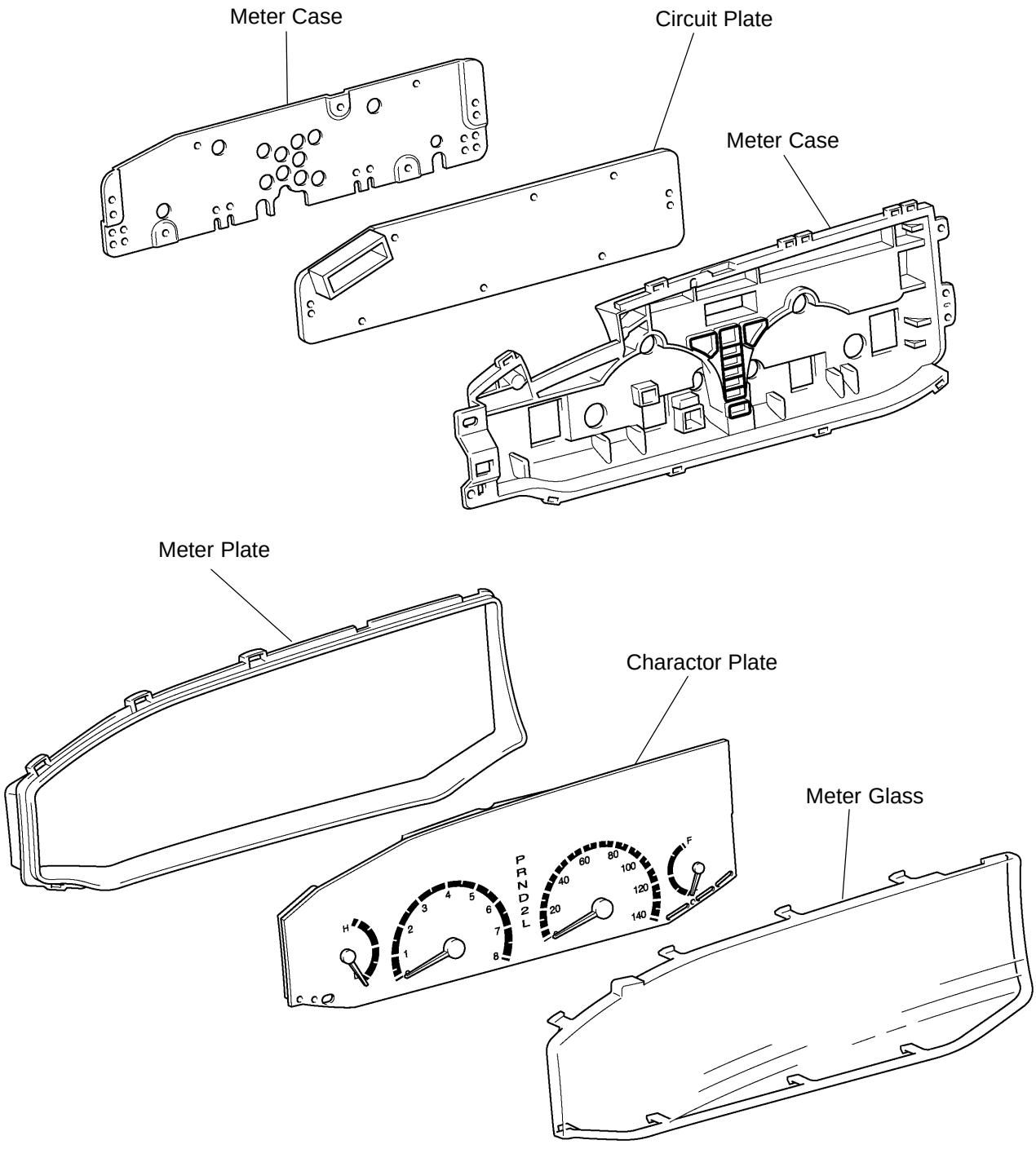
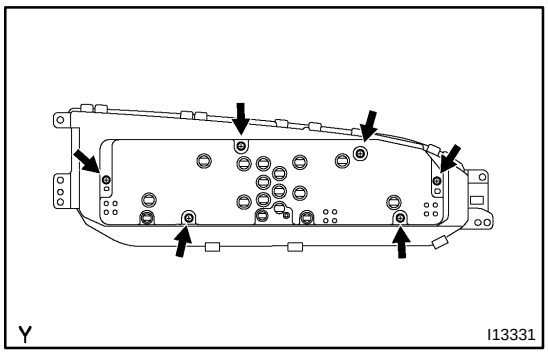
I12773

Combination Meter:



BE1DR-01

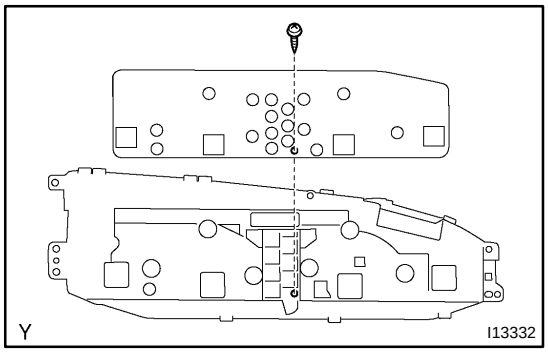
DISASSEMBLY



1. COMBINATION METER COVER:

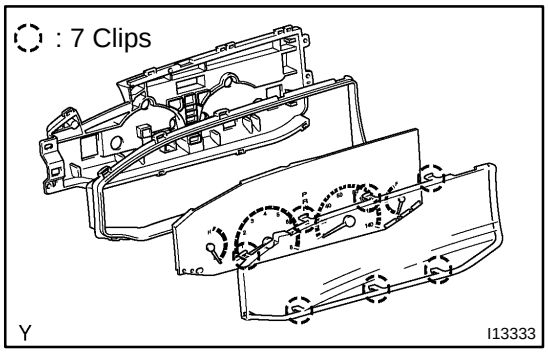
(a) Remove the 6 screws.

(b) Remove the combination meter cover.

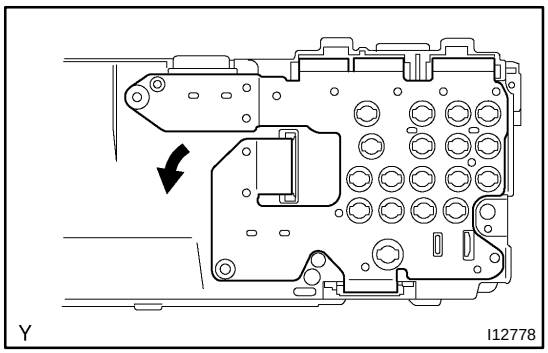


(c) Remove the screw.

(d) Remove the combination meter circuit plate.



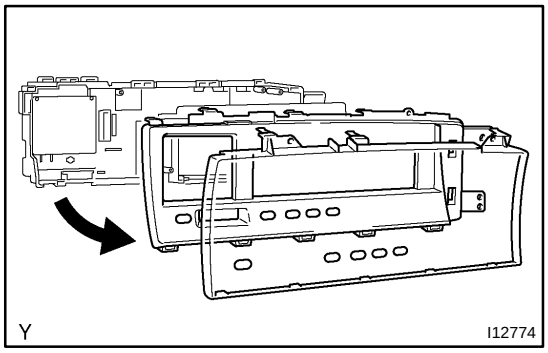
(e) Remove combination meter glass and hood.



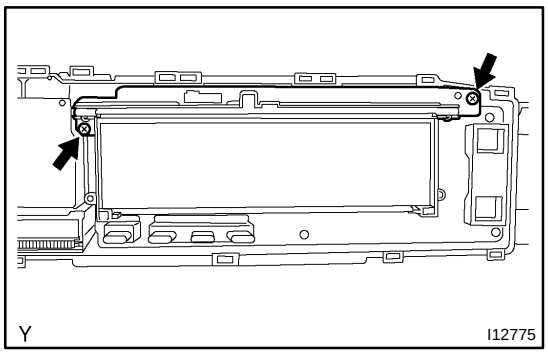
2. MULTI INFORMATION DISPLAY:

(a) Remove the circuit plate.

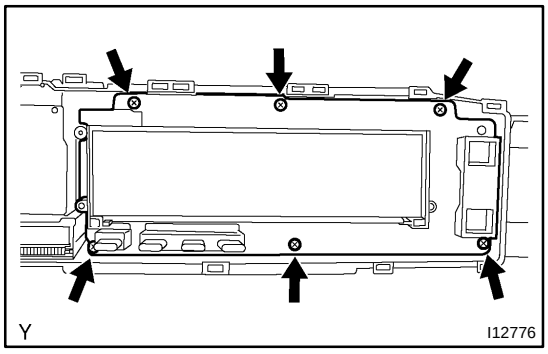
(b) Disconnect the connector.



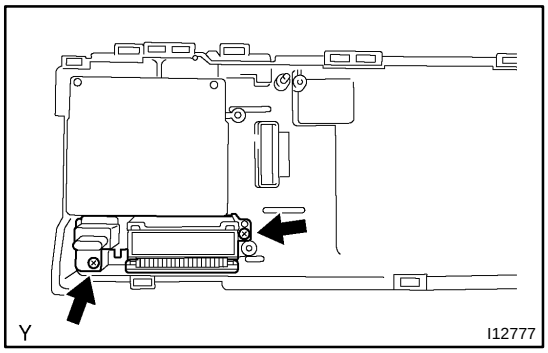
(c) Remove the multi information display glass and plate.



(d) Remove the 2 screws.
(e) Disconnect the cold cathode tube with plate.

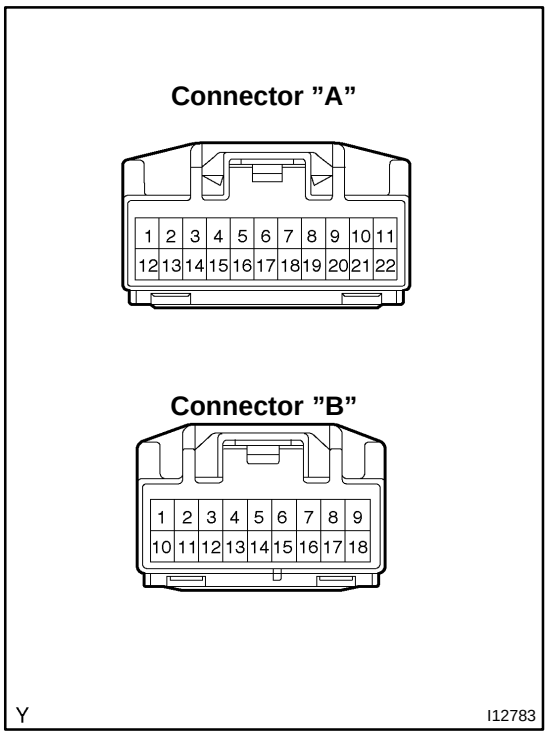


(f) Remove the 6 screws.
(g) Remove the multi information display.



(h) Remove the 2 screws.
(i) Remove the No. 2 multi information display.

BE1DS-01



INSPECTION

1. INSPECT COMBINATION METER CIRCUIT

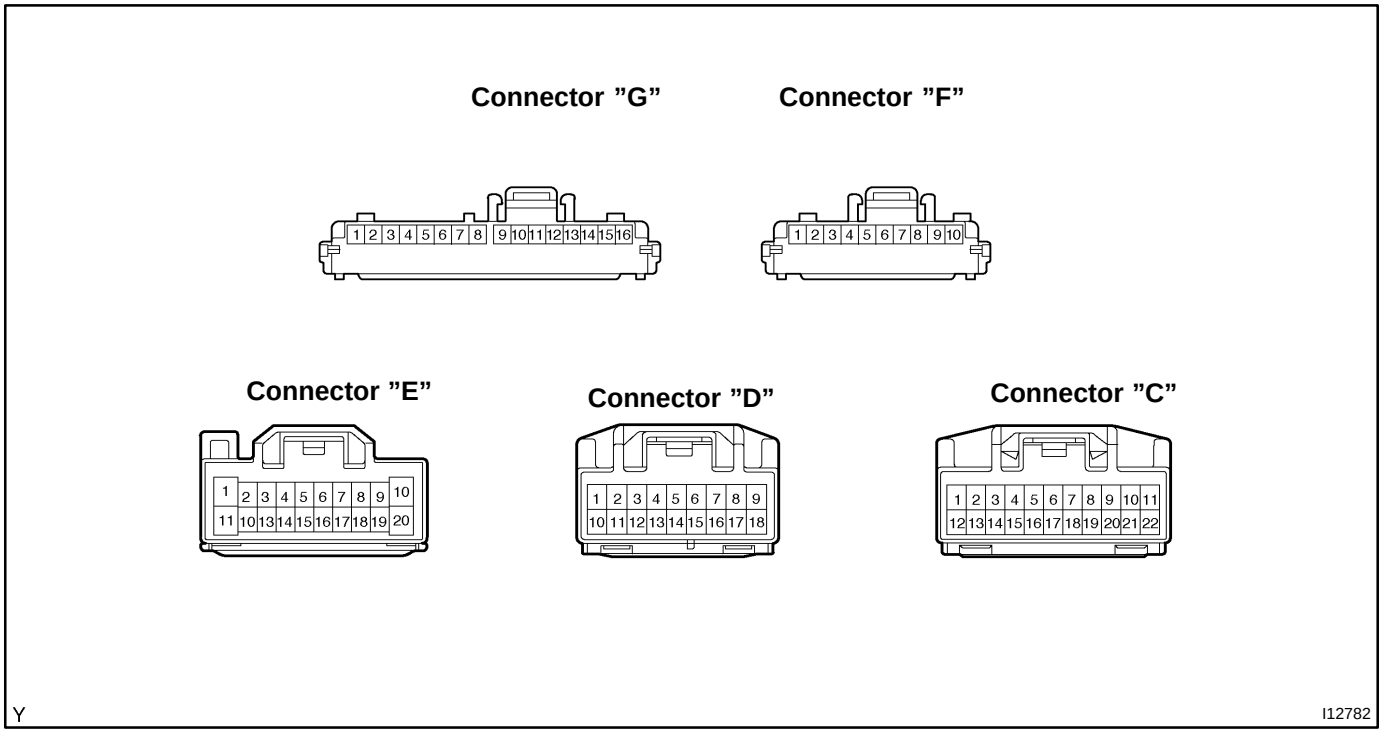
Disconnect connector "A" and "B" from the combination meter and inspect the connectors on the wire harness side as shown in the table.

Tester connection	Condition	Specified condition
A11 - Ground	Headlight Dimmer switch HI	Battery positive voltage
A14 - Ground	Constant	Battery positive voltage
A15 - Ground	Ignition switch ON	Battery positive voltage
A16 - Ground	Light control switch TAIL or HEAD	Battery positive voltage
A7 - Ground	O/D main switch ON	Continuity
	O/D main switch OFF	No continuity
A19 - Ground	Ignition switch ON and rheostat light control volume OFF	4.5 5.5 V
	Ignition switch ON and rheostat light control volume ON	No voltage
A20 - Ground	Constant	Continuity
A21 - Ground	Constant	Continuity

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

2. INSPECT MULTI INFORMATION DISPLAY CIRCUIT

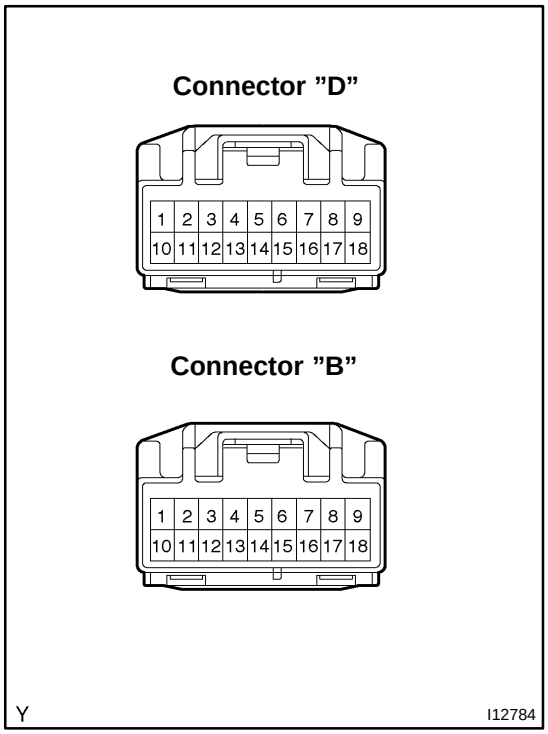
Disconnect connector "C", "D", "E", "F", "G" from the multi information display and inspect the connectors on the wire harness side as shown in the table.



Tester connection	Condition	Specified condition
C1 - Ground	Ignition switch OFF or ACC	No voltage
	Ignition switch ON	Battery positive voltage
C3 - Ground	Light control switch TAIL or HEAD	Battery positive voltage
C4 - C21	Outside temperature a + 25 ˚C (77 ˚F)	Resistance 1.6 - 1.8 kΩ
C5 - Ground	Engine running	Battery positive voltage
	Engine stopped	No voltage
C8 - C9	Ignition switch ON and fuel sender gauge flat UP	0.3 - 0.6 V
	Ignition switch ON and fuel sender gauge float DOWN	4.9 - 6.9 V
C9 - C19	Constant	Continuity
C10 - Ground	Ignition switch ON and rheostat ON	No voltage
C10 - Ground	Ignition switch ON and rheostat OFF	4.5 - 5.5 V
C11 - Ground	Constant	Continuity
C12 - Ground	Constant	Battery positive voltage
C13 - Ground	Ignition switch ACC or ON	Battery positive voltage
	Ignition switch OFF	No voltage
F1 - Ground	Window washer level warning switch ON	Continuity
F4 - Ground	Ignition switch OFF or ACC	No voltage
F4 - Ground	Ignition switch ON	Battery positive voltage
G2 - Ground	Door courtesy switch ON	Continuity
G3 - Ground	Constant	Battery positive voltage
G5 - Ground	Constant	Battery positive voltage

G11 - Ground	Ignition switch ON	Battery positive voltage
	Ignition switch OFF or ACC	No voltage
G12 - Ground	Engine running	Battery positive voltage

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



3. INSPECT BETWEEN COMBINATION METER AND MULTI INFORMATION DISPLAY CIRCUIT

Disconnect connector ”B”, ”D” from the multi information display and combination meter inspect the connectors on the wire harness side as shown in the table.

Tester connection	Specified condition
B2 - D2	Continuity
B3 - D3	Continuity
B4 - D4	Continuity
B5 - D5	Continuity
B6 - D6	Continuity
B8 - D8	Continuity
B9 - D9	Continuity
B10 - D10	Continuity
B11 - D11	Continuity
B12 - D12	Continuity
B13 - D13	Continuity
B14 - D14	Continuity

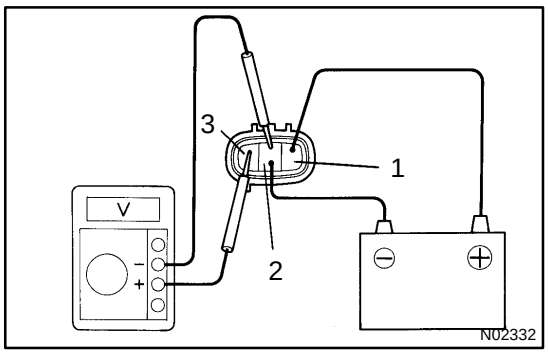
If circuit is not as specified, wiring diagram and inspect the circuits connected to other parts.

4. INSPECT SPEEDOMETER ON-VEHICLE

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

USA (mph)		CANADA TAIWAN (km/h)	
Standard indication	Allowable range	Standard indication	Allowable range
20	18 - 24	20	17 - 24
40	38 - 44	40	38 - 46
60	58 - 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

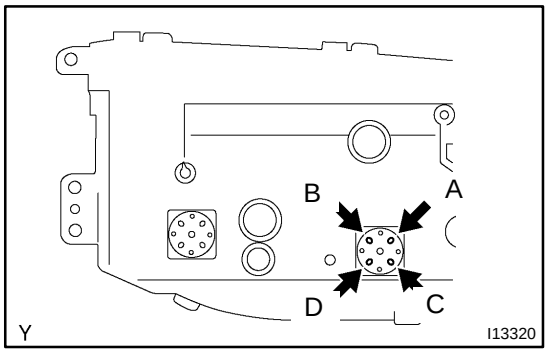
If error is excessive, replace the speedometer.



5. INSPECT VEHICLE SPEED SENSOR OPERATION

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

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



6. INSPECT SPEEDOMETER RESISTANCE

Measure the resistance between terminals with fixing pointer to the stopper.

Tester connection	Resistance (Ω)
A - B	250
C - D	250

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

7. INSPECT TACHOMETER/ON-VEHICLE

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

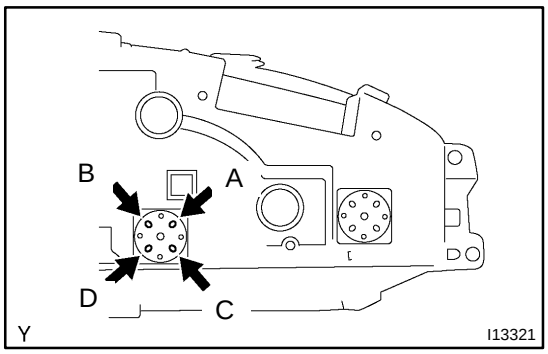
NOTICE:

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

(b) Compare the tester and tachometer indications.

DC 13.5 V 25 ˚C at (77˚F)

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

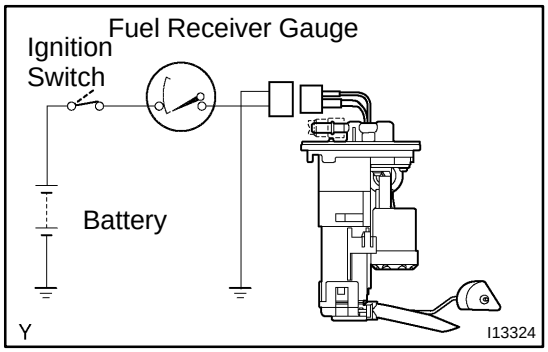


8. INSPECT TACHOMETER RESISTANCE

Measure the resistance between terminals with fixing pointer to the stopper.

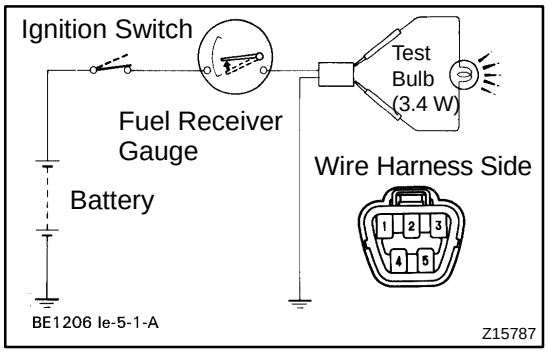
Tester connection	Resistance (Ω)
A - B	250
C - D	250

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



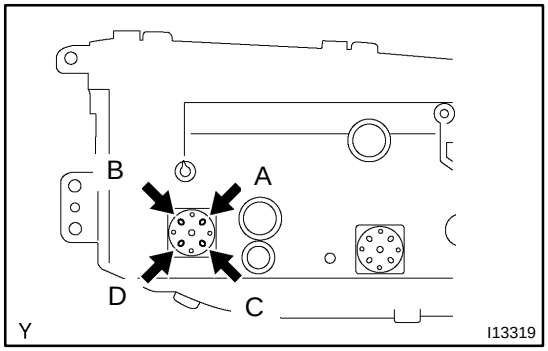
9. INSPECT FUEL RECEIVER GAUGE OPERATION

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



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

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

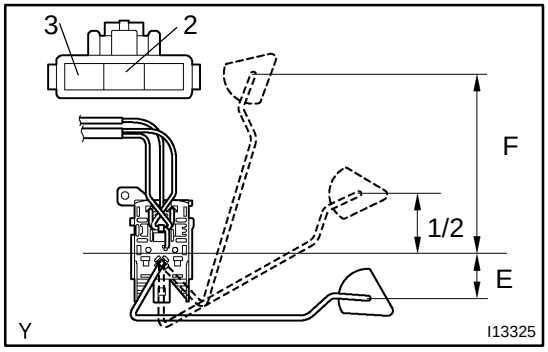


10. INSPECT FUEL RECEIVER GAUGE RESISTANCE

Measure the resistance between terminals with fixing pointer to the stopper.

Tester connection	Resistance (Ω)
A - B	250
C - D	250

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

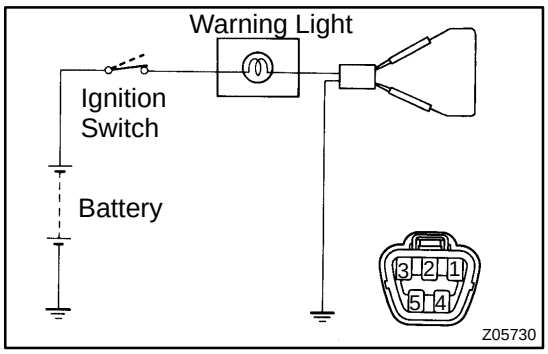


11. INSPECT FUEL SENDER GAUGE RESISTANCE

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

Float position mm (in.)	Resistance (Ω)
F: Approx. 91.1 (1.36) ± 3 (0.12)	Approx. 2.0 ± 1.0
1/2: Approx. 34.2 (2.06) ± 3 (0.12)	Approx. 26.1 ± 3.0
E: Approx. 30.8 (5.31) ± 3 (0.12)	Approx. 48.7 ± 1.0

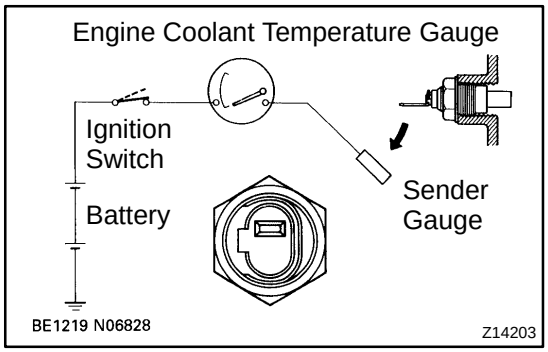
If resistance value is not as specified, replace the sender gauge.



12. INSPECT FUEL LEVEL WARNING LIGHT

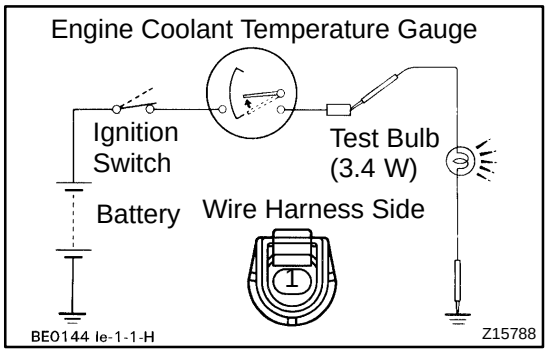
(a) Disconnect the connector from the sender gauge.
(b) Connect terminals 1 and 3 on the wire harness side connector.
(c) Turn the ignition switch ON, check that the warning light lights up.

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



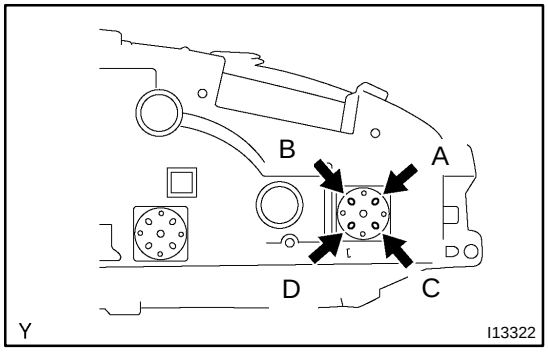
13. INSPECT ENGINE COOLANT TEMPERATURE RECEIVER GAUGE OPERATION

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



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

If operation is as specified, replace the sender gauge.
Then recheck the system.
If operation is not as specified, measure the receiver gauge resistance.

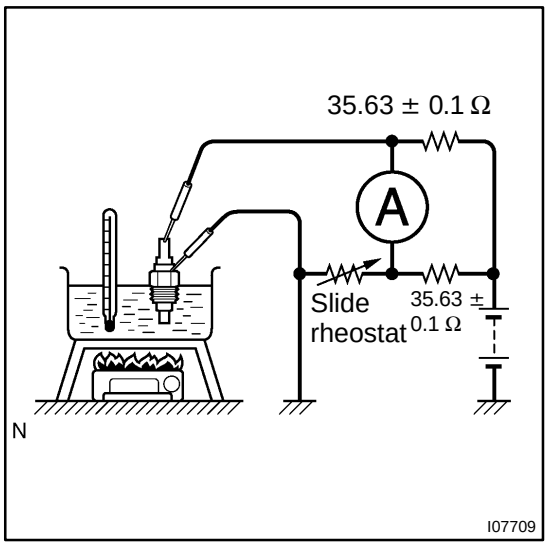


14. INSPECT ENGINE COOLANT TEMPERATURE RECEIVER GAUGE RESISTANCE

Measure the resistance between terminals with fixing pointer to the stopper.

Tester connection	Resistance (Ω)
A - B	250
C - D	250

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

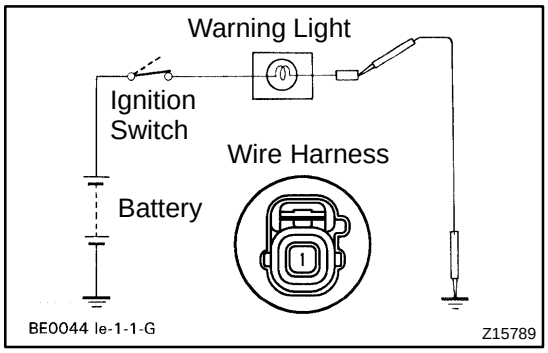


15. INSPECT ENGINE COOLANT TEMPERATURE SENDER GAUGE RESISTANCE

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

Temperature ˚C (˚F)	Resistance (Ω)
50 (122.0)	160 - 240
120 (248.0)	17.1 - 21.2

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

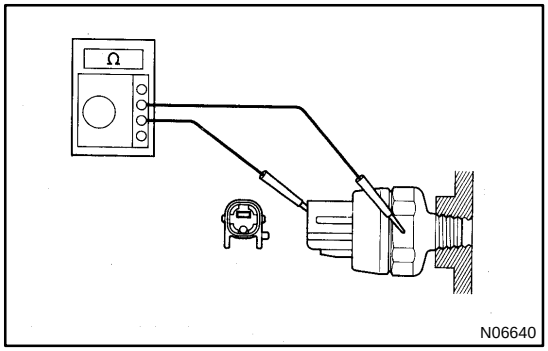


16. INSPECT LOW OIL PRESSURE WARNING LIGHT

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

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

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



17. INSPECT LOW OIL PRESSURE WARNING SWITCH OPERATION

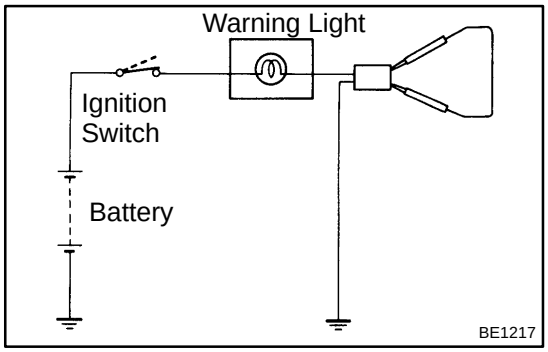
(a) Check that continuity exists between the terminal and ground with the engine stopped.

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

HINT:

Oil pressure should be over 29 kPa (0.35 kgf/cm^2, 4.3 psi)

If operation is not as specified, replace the switch.



18. INSPECT BRAKE WARNING LIGHT

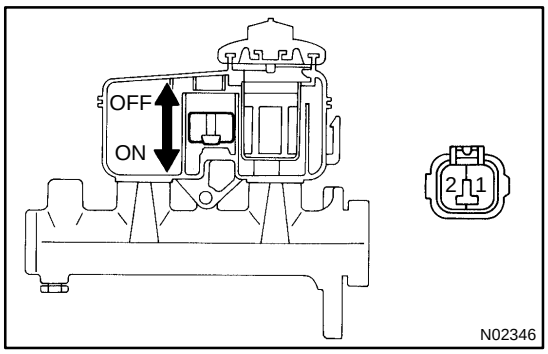
(a) Disconnect the connector from the brake fluid warning switch.

(b) Release the parking brake pedal.

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

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

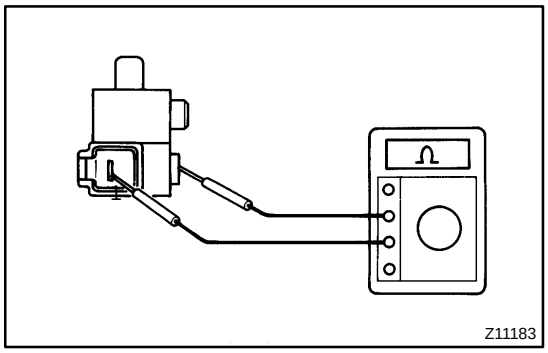
If the warning light does not light up, test the bulb or wire harness.



19. INSPECT BRAKE FLUID LEVEL WARNING SWITCH OPERATION

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

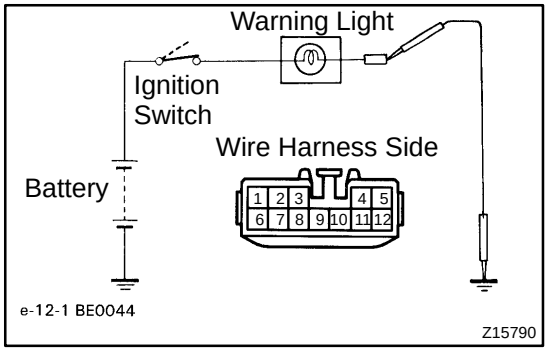
If operation is not as specified, replace the switch.



20. INSPECT PARKING BRAKE WARNING 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 in).

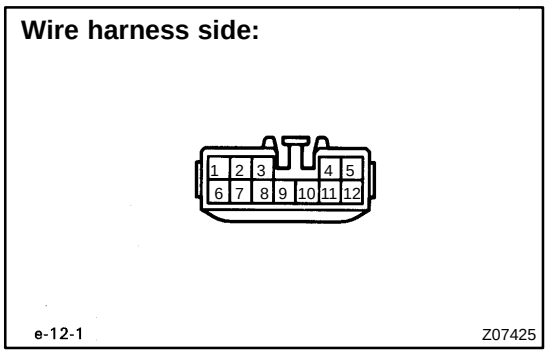
If operation is not as specified, replace the switch or inspect ground point.



21. INSPECT REAR LIGHTS WARNING LIGHT

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

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



22. INSPECT LIGHT FAILURE SENSOR CIRCUIT

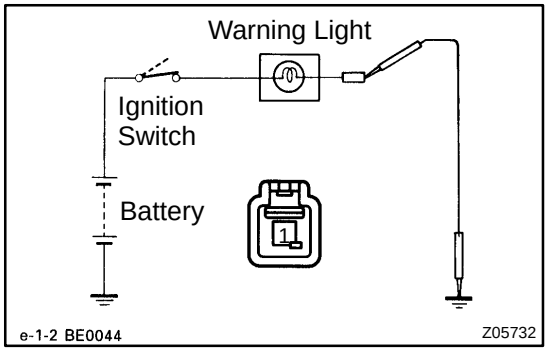
Disconnect the connector from the sensor and inspect the connector on the wire harness side, as shown.

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

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

If the circuit is as specified, replace the sensor.

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



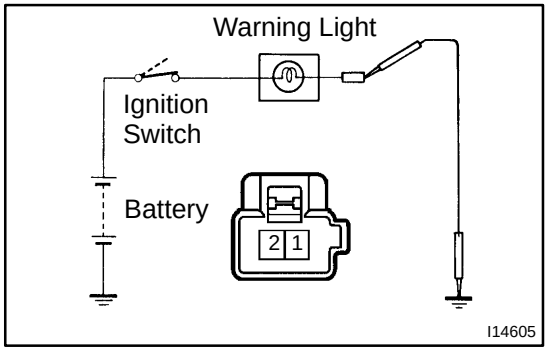
23. INSPECT OPEN DOOR WARNING LIGHT

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

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

24. INSPECT DOOR COURTESY SWITCH

(See page BE-31)

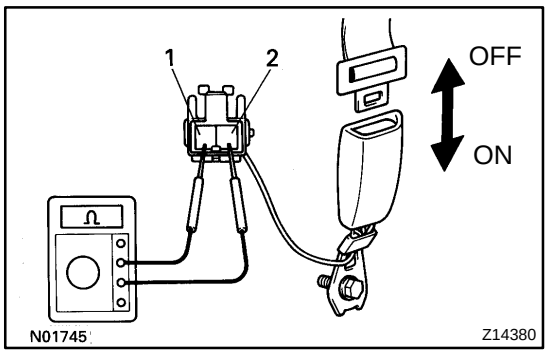


25. INSPECT SEAT BELT WARNING LIGHT

(a) Disconnect the connector from the terminals buckle switch and ground terminal on the wire harness side connector as shown in the illustration.

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

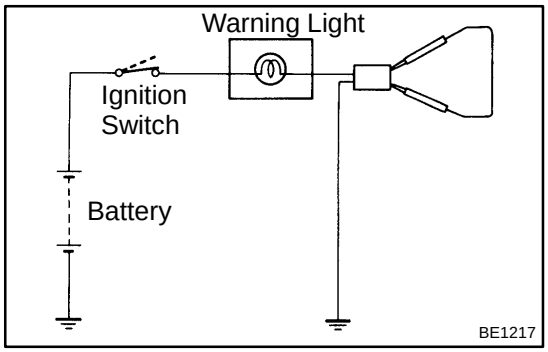
If the warning light does not light up, check the bulb circuit.



26. INSPECT BUCKLE SWITCH CONTINUITY

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

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



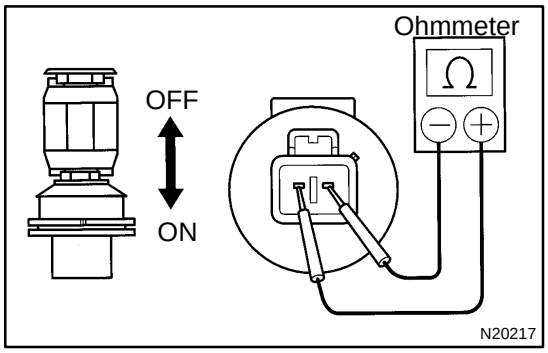
27. INSPECT WASHER LEVEL WARNING LIGHT

(a) Disconnect the connectors from the level warning switch.

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

(c) Turn the ignition switch ON, check that the warning light come on.

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

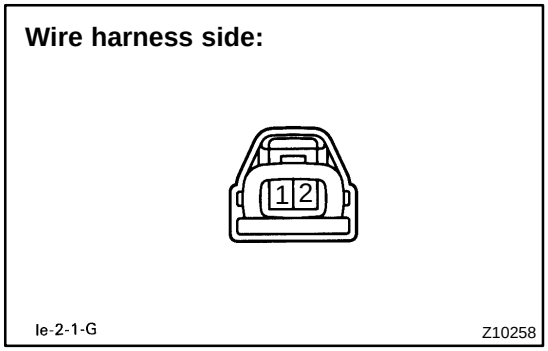


28. INSPECT WASHER LEVEL WARING SWITCH

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

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

If operation is not as specified, replace the switch.

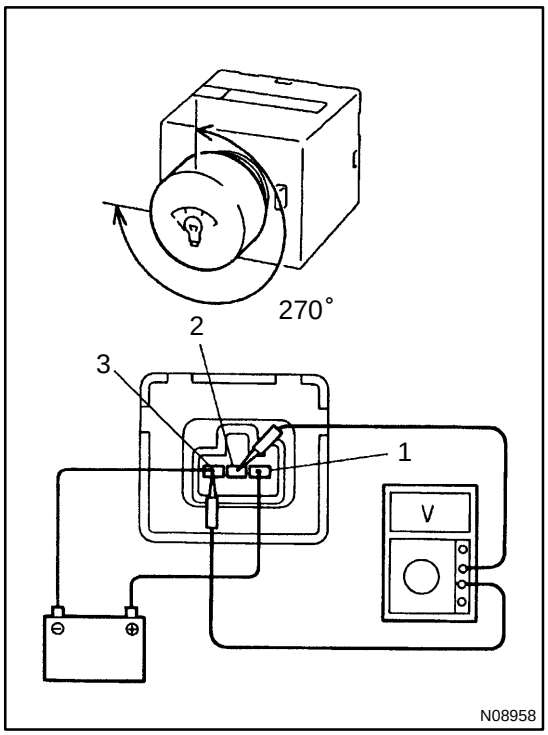


29. INSPECT WASHER FLUID LEVEL WARNING SWITCH CIRCUIT

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

Tester connection	Condition	Specified condition
2 - Ground	Constant	Continuity

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



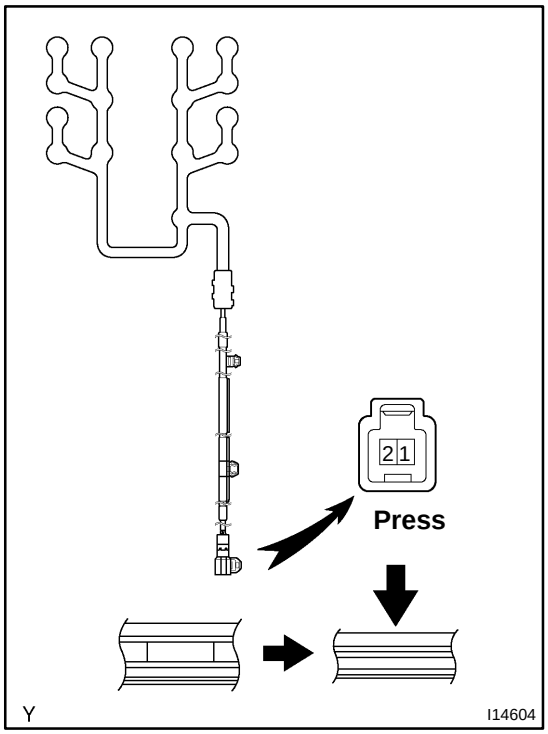
30. INSPECT LIGHT CONTROL RHEOSTAT OPERATION

(a) Connect the positive (+) lead from the battery to terminal 1 and the negative lead (-) to terminal 3.

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

(c) Turn the rheostat knob and check that the voltage changes.

If operation is not as specified, replace switch.



31. Passenger's seat only:
INSPECT SEAT BELT WARNING OCCUPANT DETECTION SENSOR CONTINUITY

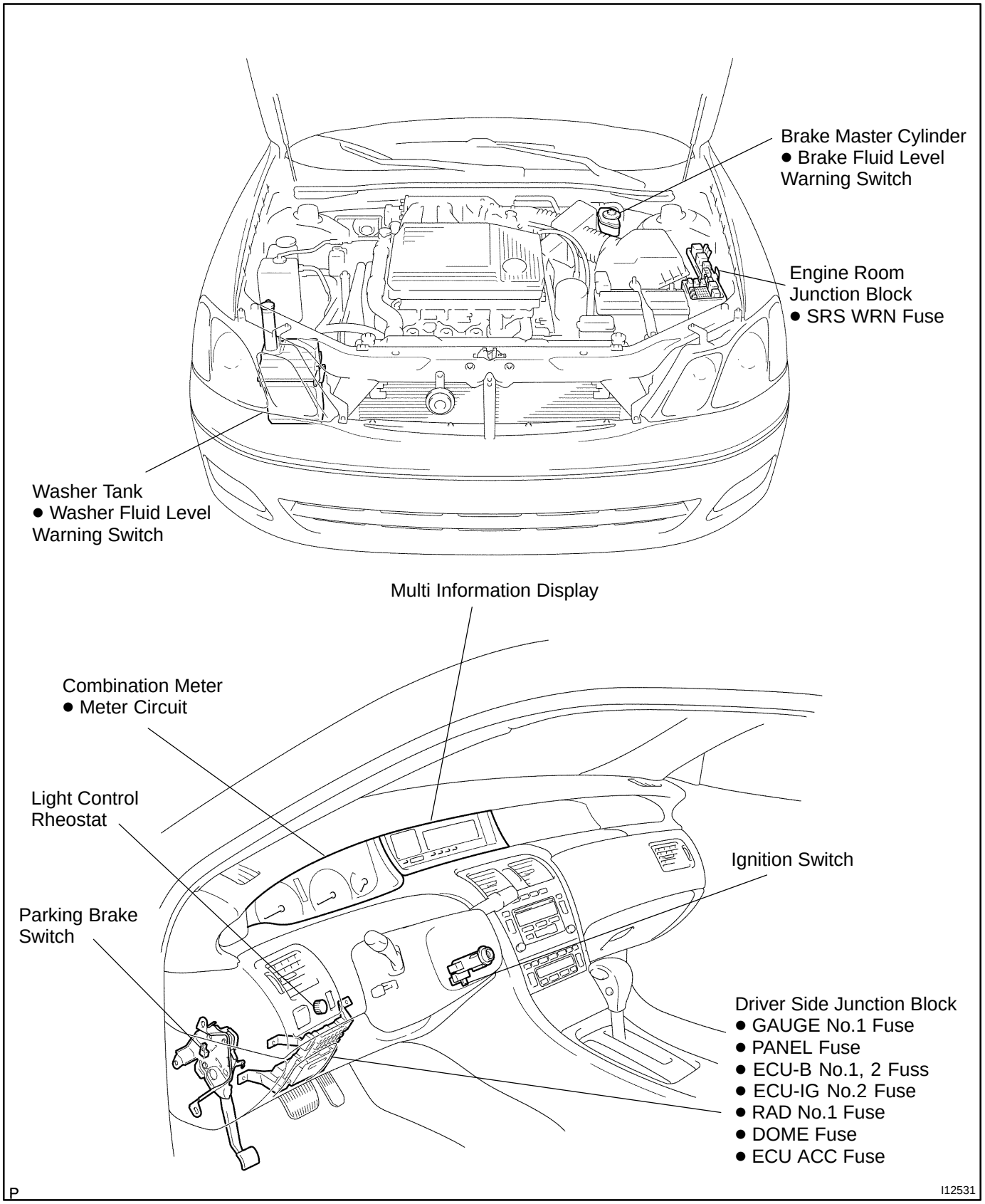
Check that continuity exists between the terminals 1 and 2 when pressing the sensing part (electric resistance <100Ω).

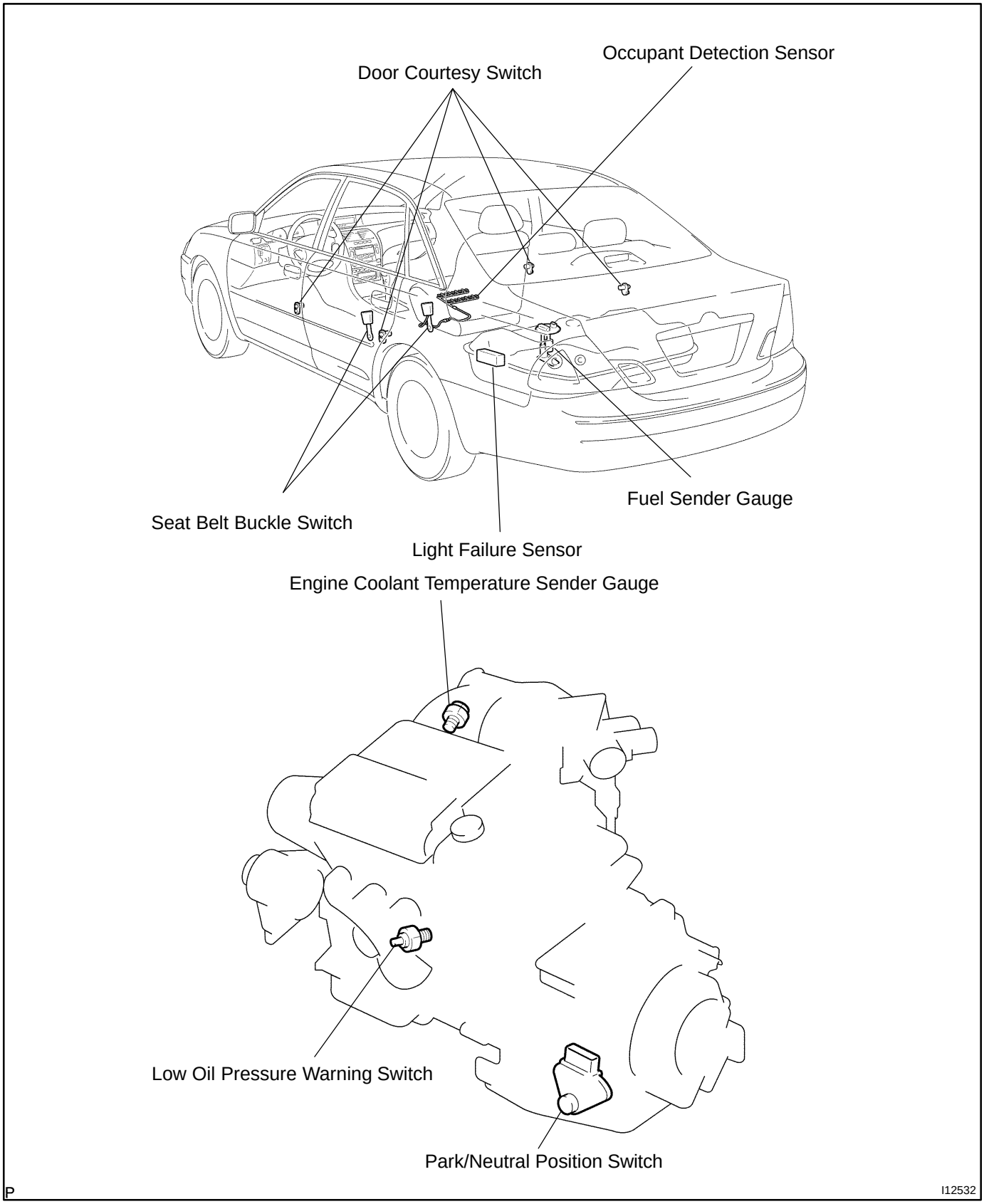
If continuity is not as specified, replace the sensor.

COMBINATION METER

LOCATION

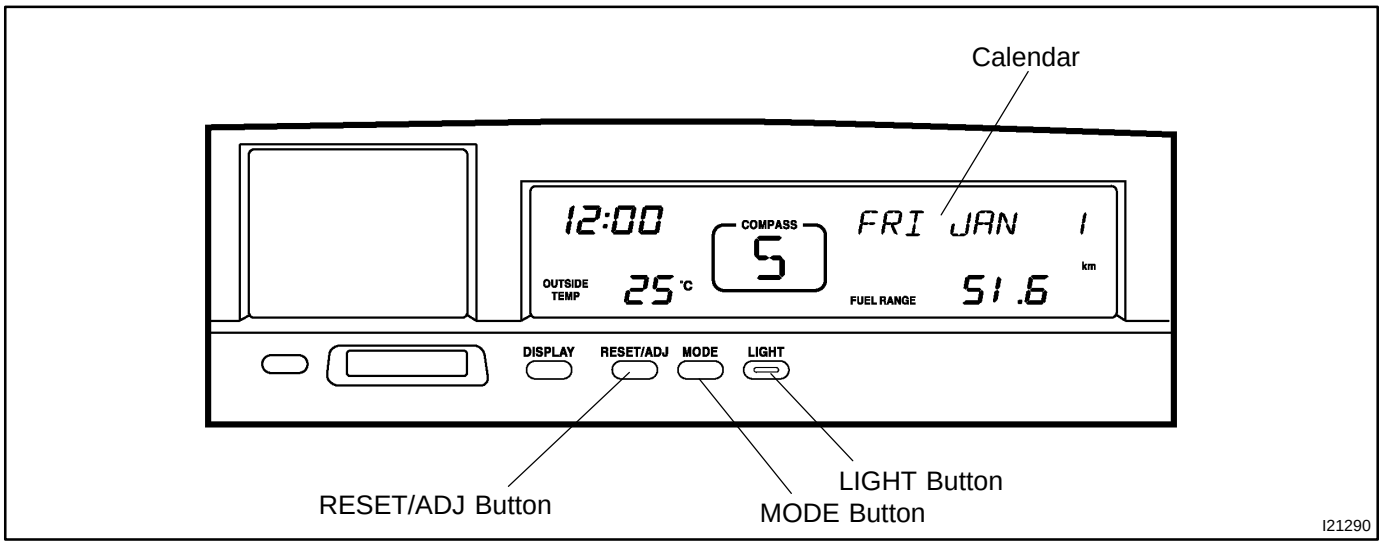
BE0IE-03

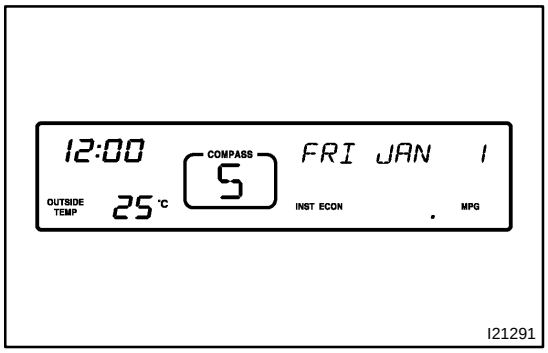



Occupant Detection Sensor
Door Courtesy Switch
Fuel Sender Gauge
Seat Belt Buckle Switch
Light Failure Sensor
Engine Coolant Temperature Sender Gauge
Low Oil Pressure Warning Switch
Park/Neutral Position Switch
P
I12532

COMPASS
ADJUSTMENT

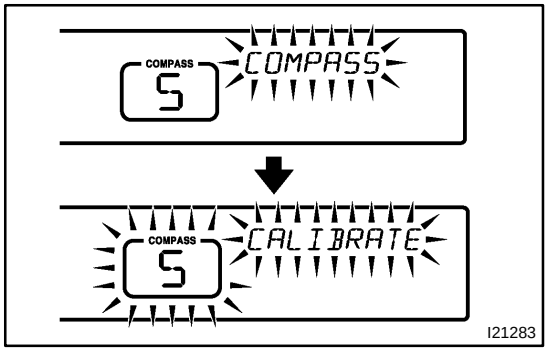
BE216-01





1. MULTI INFORMATION DISPLAY ILLUMINATION

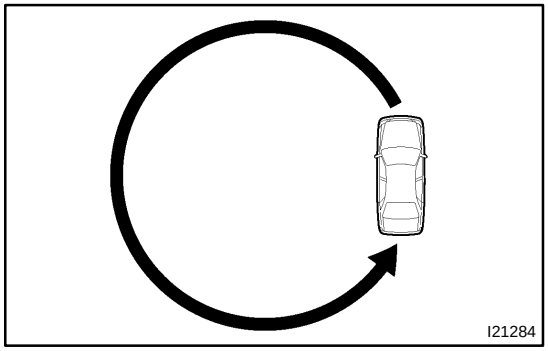
Turn the ignition switch to the ON position and illuminate the all parts of the display by pushing the ”LIGHT” button.



2. PERFORM CIRCLING CALIBRATION

(a) Push the ”MODE” button several times until ”COMPASS”appears and blinks on the calendar display.

(b) Then push the ”RESET/ADJ” button. ”CALIBRATE” appears and blinks together with the compass display.



(c) Drive the vehicle in a circle until the blinking stops.

(d) If there is not enough space to drive in a circle, drive around the block until the blinking stops.

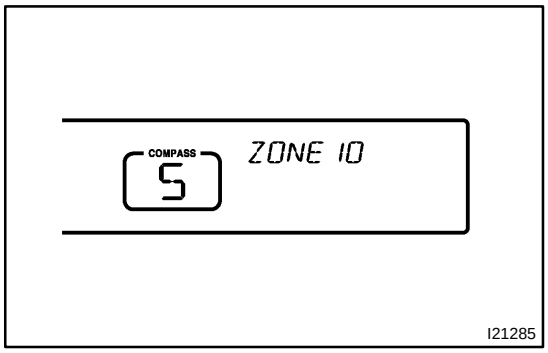
(e) When the compass and the calendar display return to normal mode, calibration is complete

NOTICE:

- **Do not perform circling calibration of the compass in a place where the earth's magnetic field is subject to interference by artificial magnetic fields (underground parking, under a steel tower, between buildings, roof parking, near a crossing, near a large vehicle, etc.).**
- **During calibration, do not operate electric systems (moonroof, power windows, etc.) as they may interfere with the calibration.**
- **If you want to cancel the calibration before it is complete, push the "MODE" button again.**

HINT:

A compass could be magnetized during by vessels of freight cars. Before delivery, therefore, make sure to perform calibration and ensure that calibration can be done. If 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 preform calibration again.

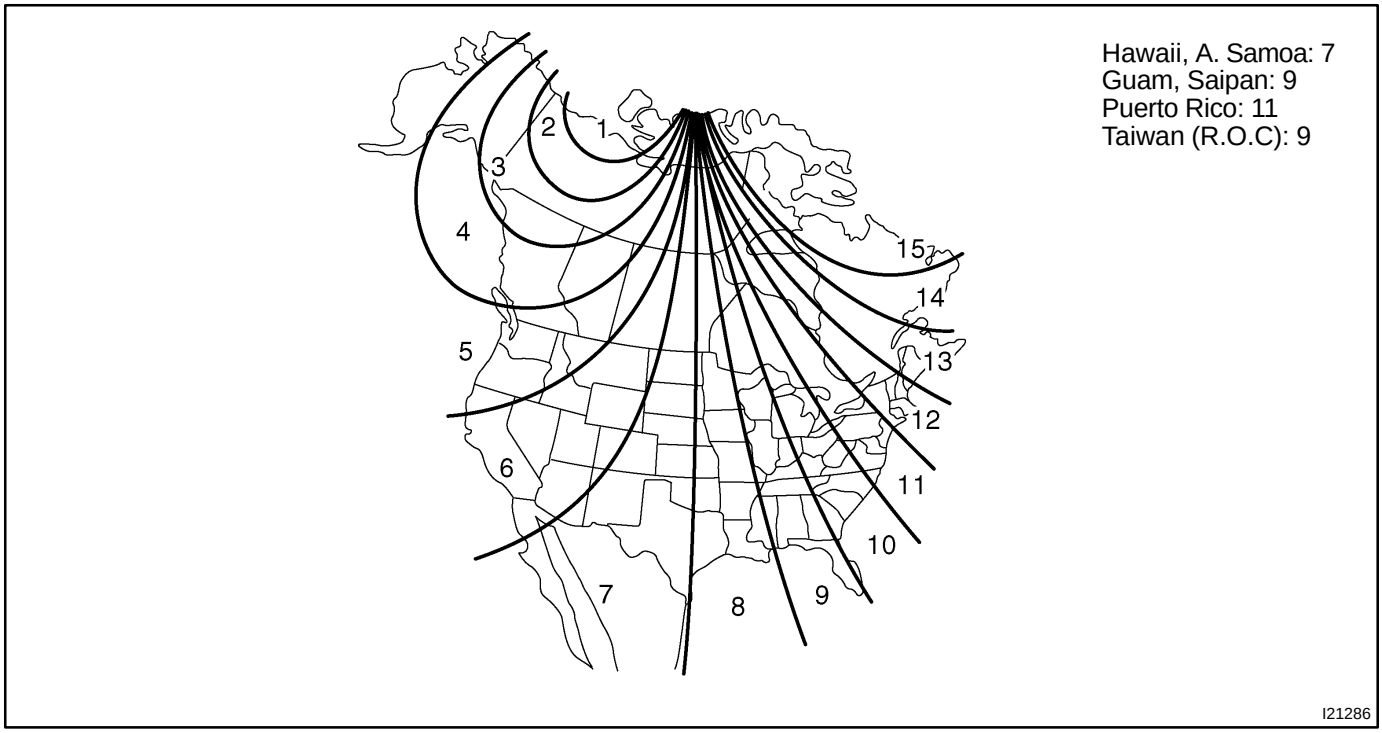


3. PERFORM DEVIATION CALIBRATION

(a) Stop the vehicle and push the "MODE" button several times until "ZONE XX" appears on the calender display.

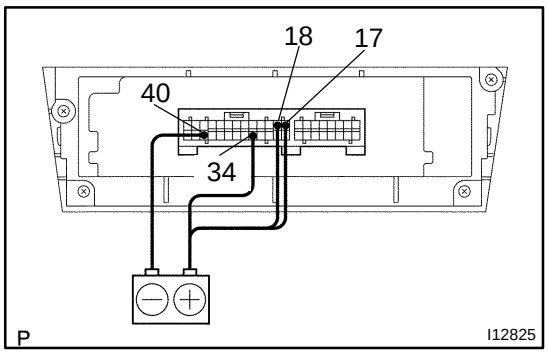
(b) Then push the "RESET/ADJ" button, referring to the following map to select the number of the zone where the vehicle is.

(c) After calibration, push the "MODE" button several times until the calendar display returns to the normal mode.



BE0IG-03

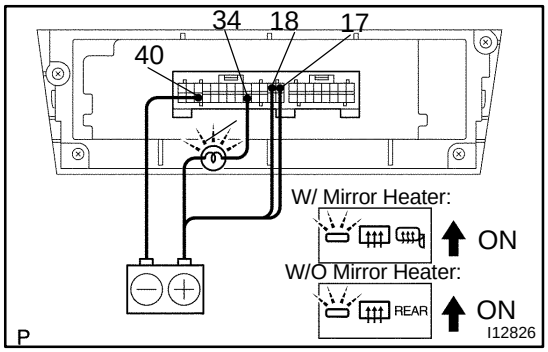
INSPECTION



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

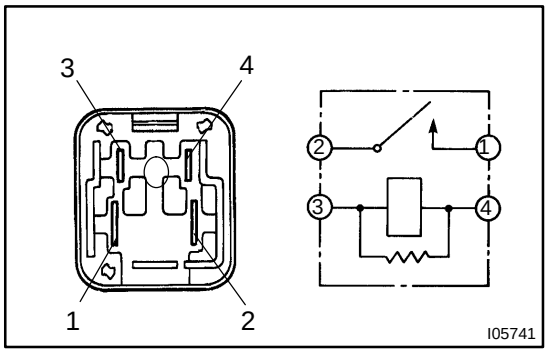
(a) Connect the positive (+) lead from the battery to terminal 17, 18 and negative (-) lead to terminal 40.

(b) Connect the positive (+) lead from the battery to terminal 24 through a 1.4 W test bulb.



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

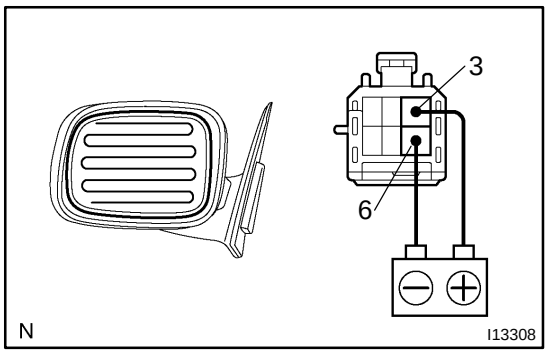
If operation is not as specified, proceed to the next inspection.



2. INSPECT DEFOGGER RELAY CONTINUITY

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

If continuity is not as specified, replace the relay.



3. W/ Mirror defogger:
INSPECT MIRROR DEFOGGER OPERATION

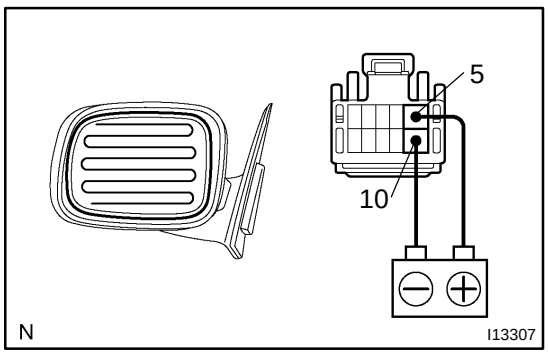
(a) Connect the positive (+) lead from the battery to terminal 3 and the negative (-) lead to terminal 6.

(b) Check that the mirror becomes warm.

HINT:

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

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



4. W/ Mirror defogger and driving position memory:
INSPECT MIRROR DEFOGGER OPERATION

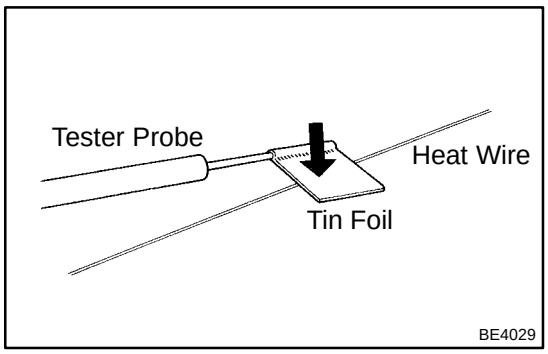
(a) Connect the positive (+) lead from the battery to terminal 5 and the negative (-) lead to terminal 10.

(b) Check that the mirror becomes warm.

HINT:

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

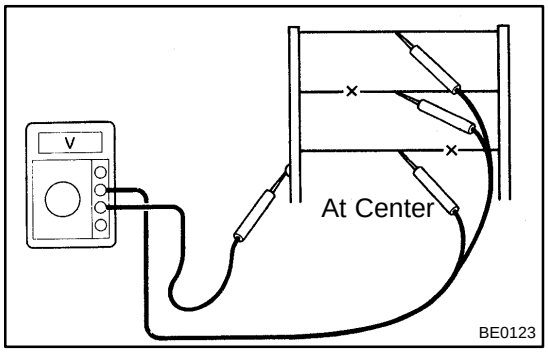
If the mirror does not become warm, replace the mirror assembly.



5. INSPECT DEFOGGER WIRE

NOTICE:

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

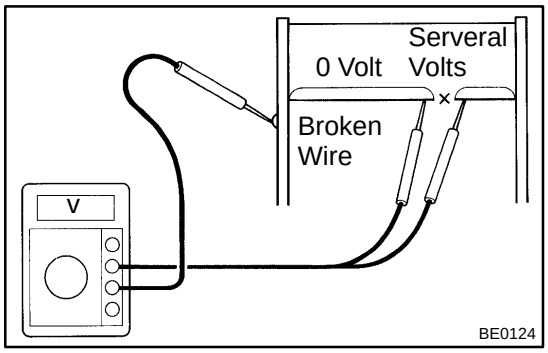


(a) Turn the ignition switch ON.
(b) Turn the defogger switch ON.
(c) Inspect the voltage at the center of each heat wire, as shown.

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

HINT:

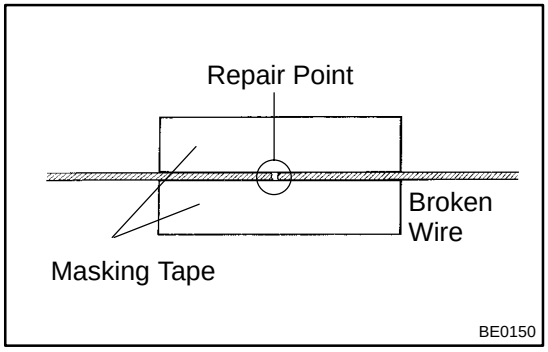
If there is approximately 10 V, the wire is broken between the center of the wire and the positive (+) end. If there is no voltage, the wire is broken between the center of the wire and ground.



(d) Place the voltmeter positive (+) lead against the defogger positive (+) terminal.
(e) Place the voltmeter negative (-) lead with the foil strip against the heat wire at the positive (+) terminal end and slide it toward the negative (-) terminal end.
(f) The point where the voltmeter deflects from zero to several V is the place where the heat wire is broken.

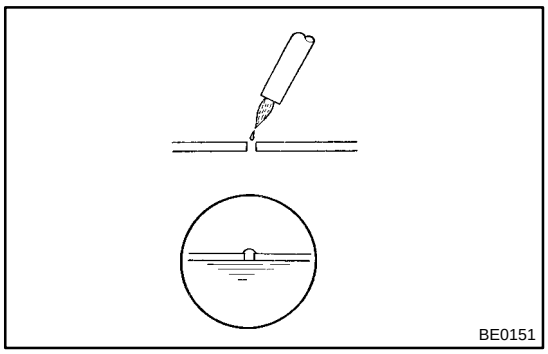
HINT:

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



6. IF NECESSARY, REPAIR DEFOGGER WIRE

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

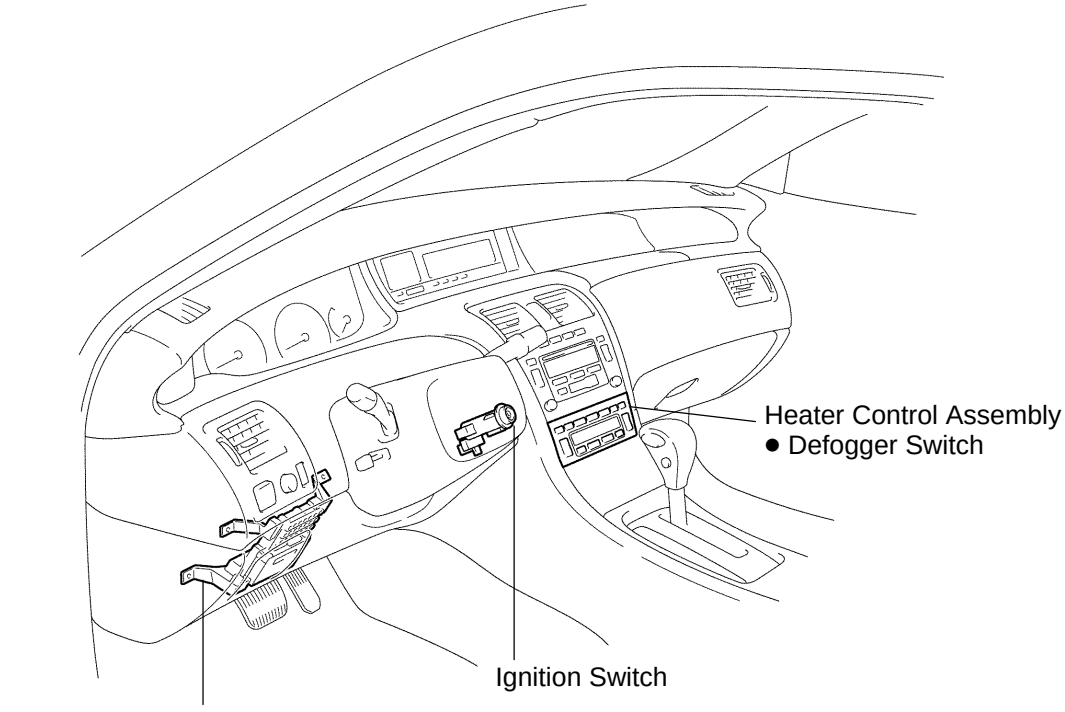


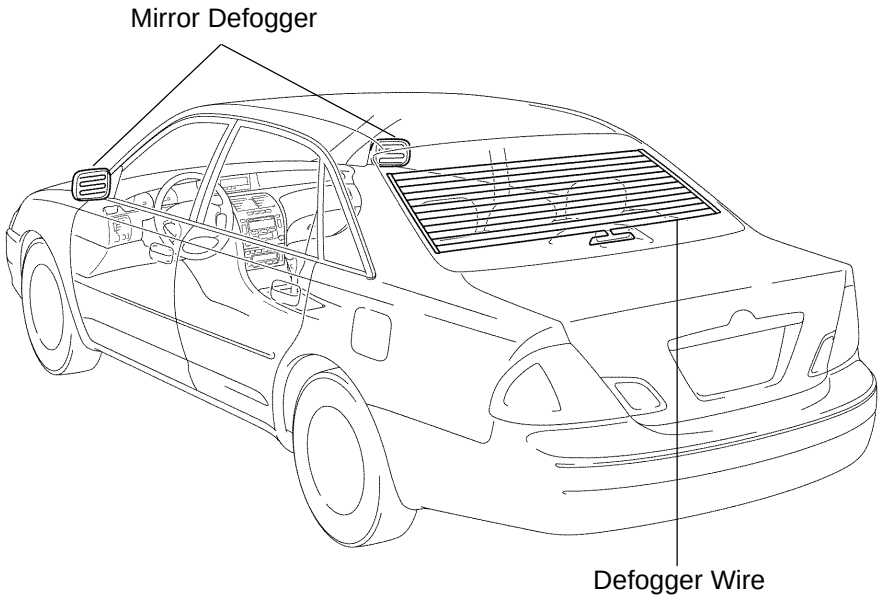
(d) Using a fine tip brush, apply a small amount to the wire.
(e) After a few minutes, remove the masking tape.
(f) Do not repair the defogger wire for at least 24 hours.

DEFOGGER SYSTEM

BE0IF-03

LOCATION





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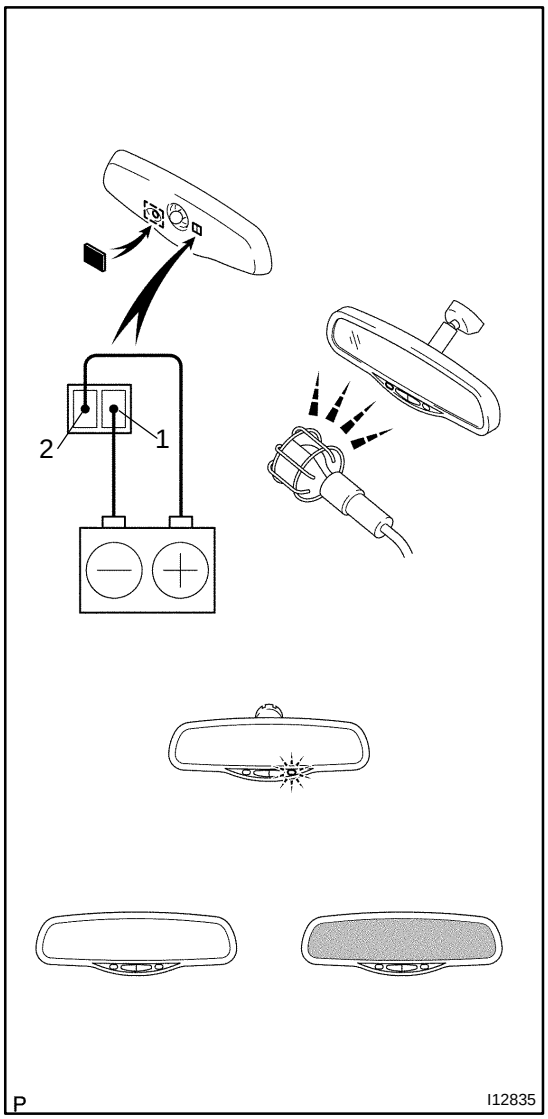
BE1ED-01



INSPECTION

INSPECT ELECTRO CHROMIC INNER MIRROR OPERATION

(a) Connect the positive (+) lead the battery to terminal 1 and the negative (-) lead to terminal2.

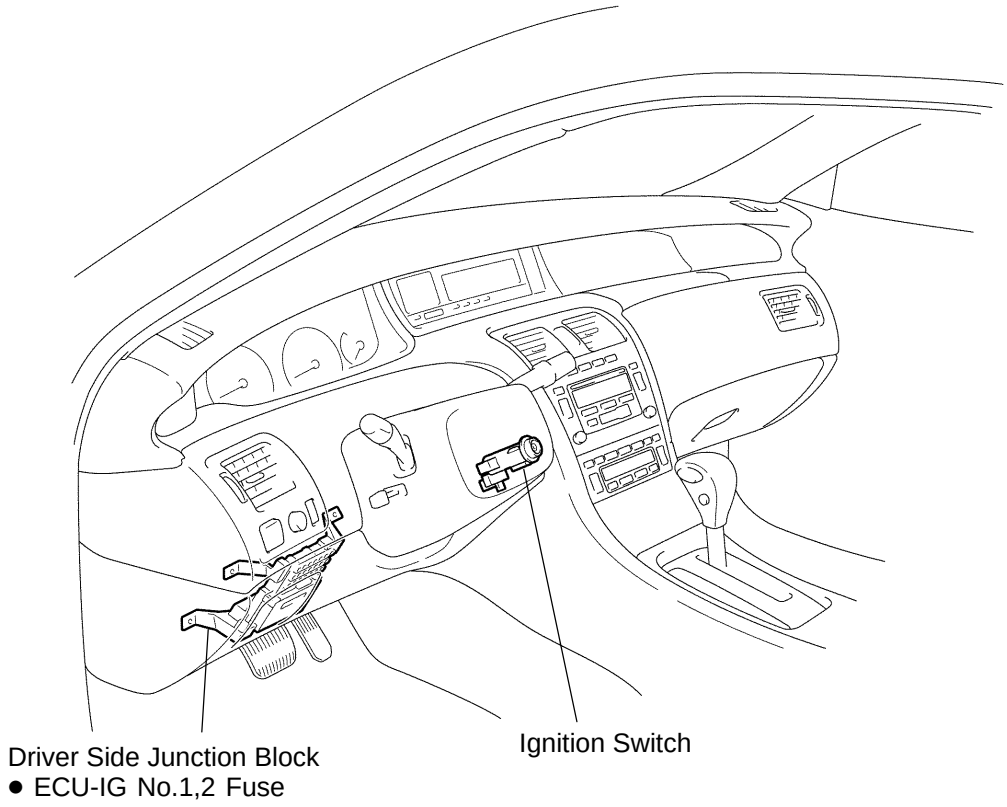
(b) Shine an electric light on the mirror, and check that there is battery positive voltage and mirror surface becomes ”bright” to ”dark”.

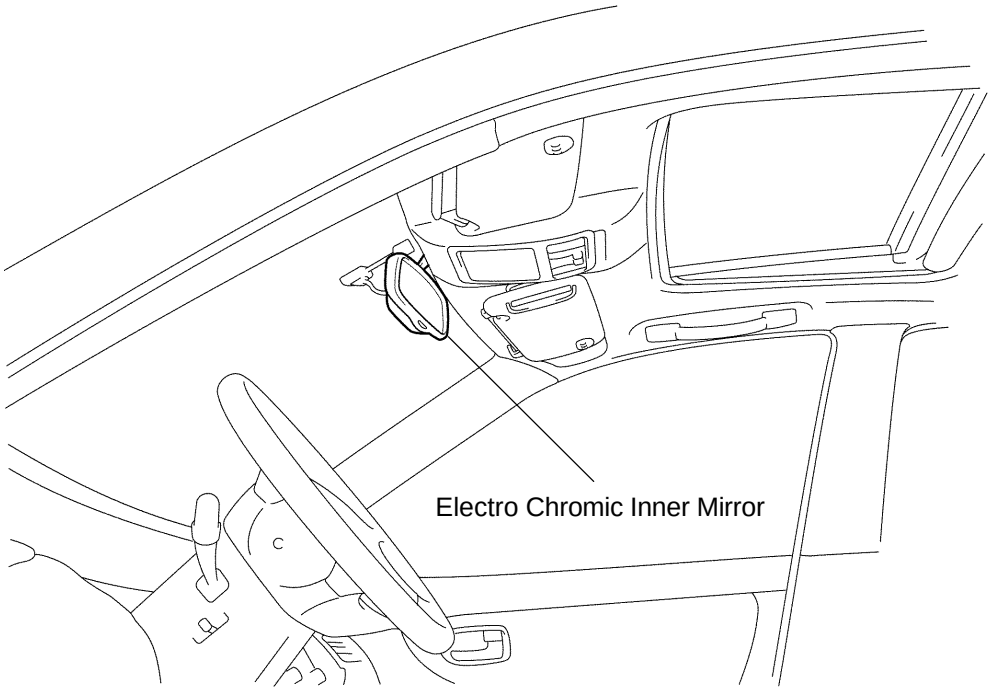
If operation is not as specified, replace the inner mirror.

BE1EE-01

ELECTRO CHROMIC MIRROR SYSTEM

LOCATION





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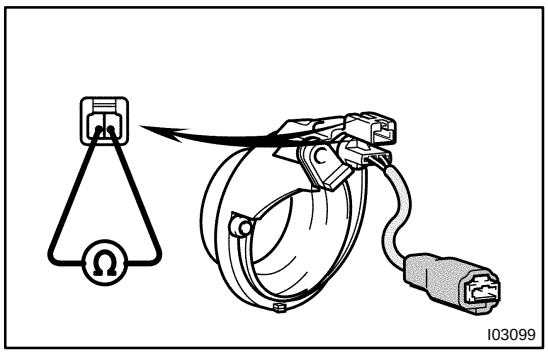
BE0B4-04



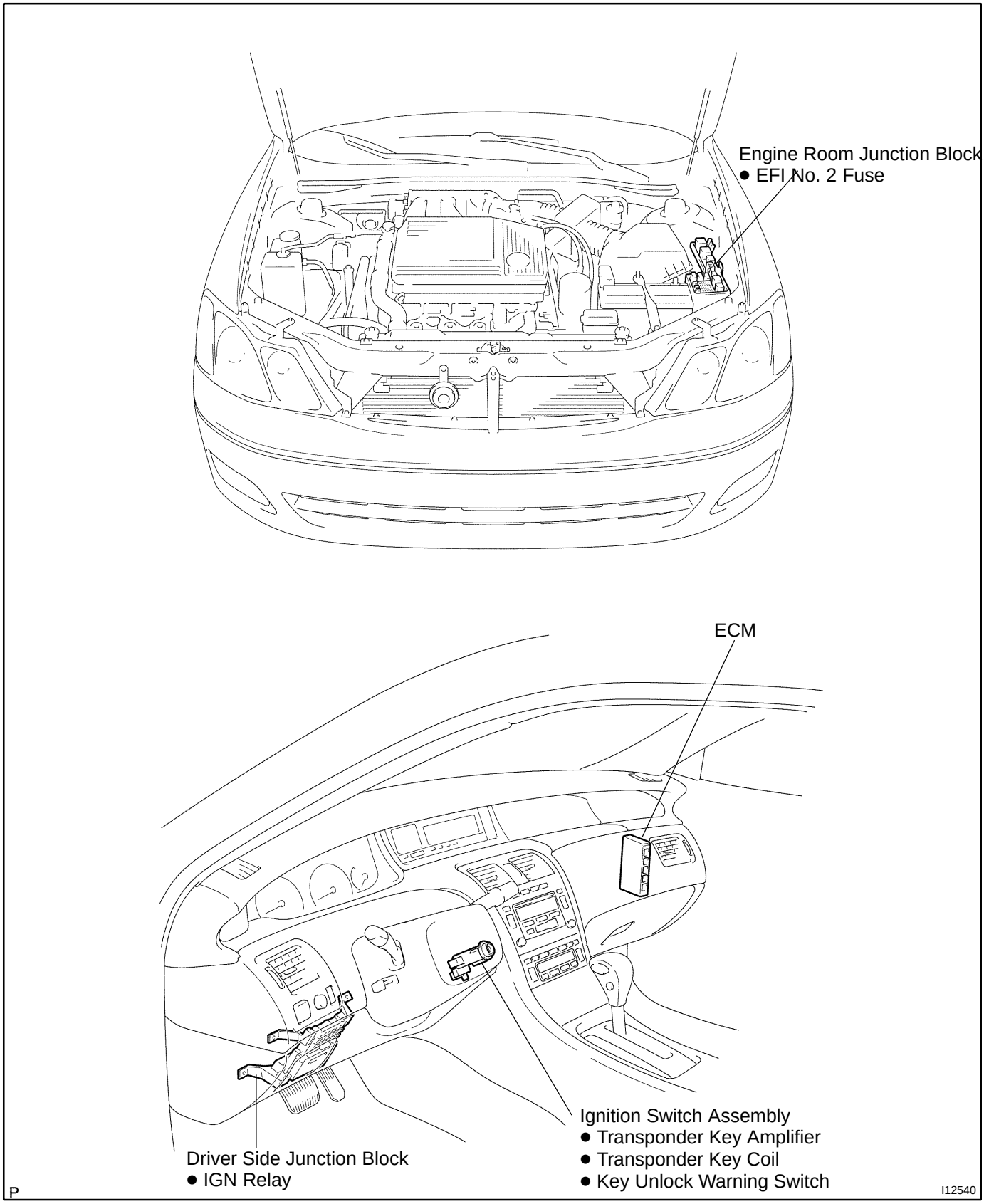
INSPECTION

INSPECTION TRANSPONDER KEY COIL CONTINUITY

Check that continuity exists between terminal 1 and 2.
If continuity is not as specified, replace the coil.

BE0B3-11

LOCATION



ENGINE IMMOBILISER SYSTEM

BE0B2-14

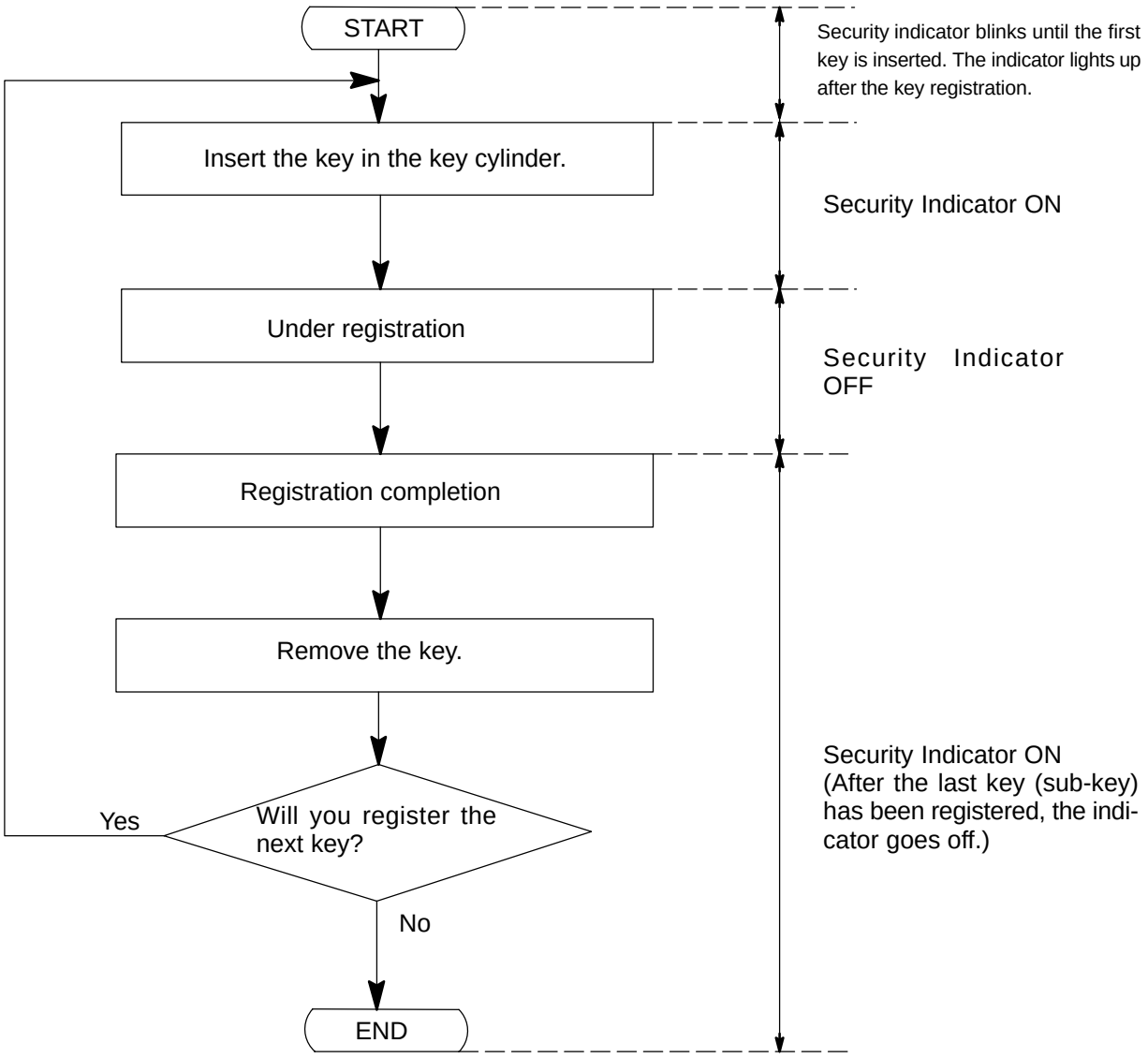
REGISTRATION PROCEDURE

1. KEY REGISTRATION IN AUTOMATIC REGISTRATION MODE

(a) Registration of a new transponder key.

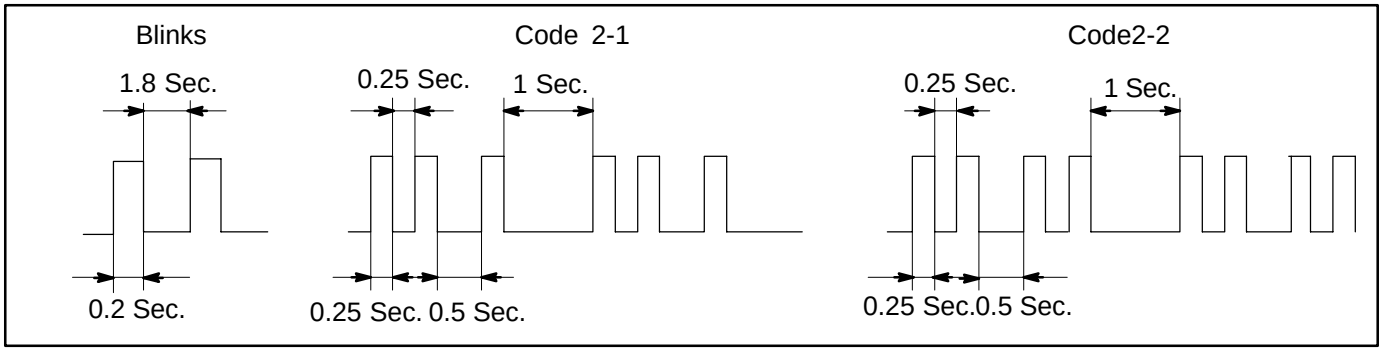
HINT:

- This must be done when you have installed a new ECM.
- The new ECM is in the automatic key code registration mode. The already fixed number of key codes for this ECM can be registered.
  On this type of vehicle, up to 4 key codes can be registered.
- In the automatic registration mode, the last key registered becomes sub-key.



HINT:

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



(b) Automatic registration mode completion

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

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

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

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

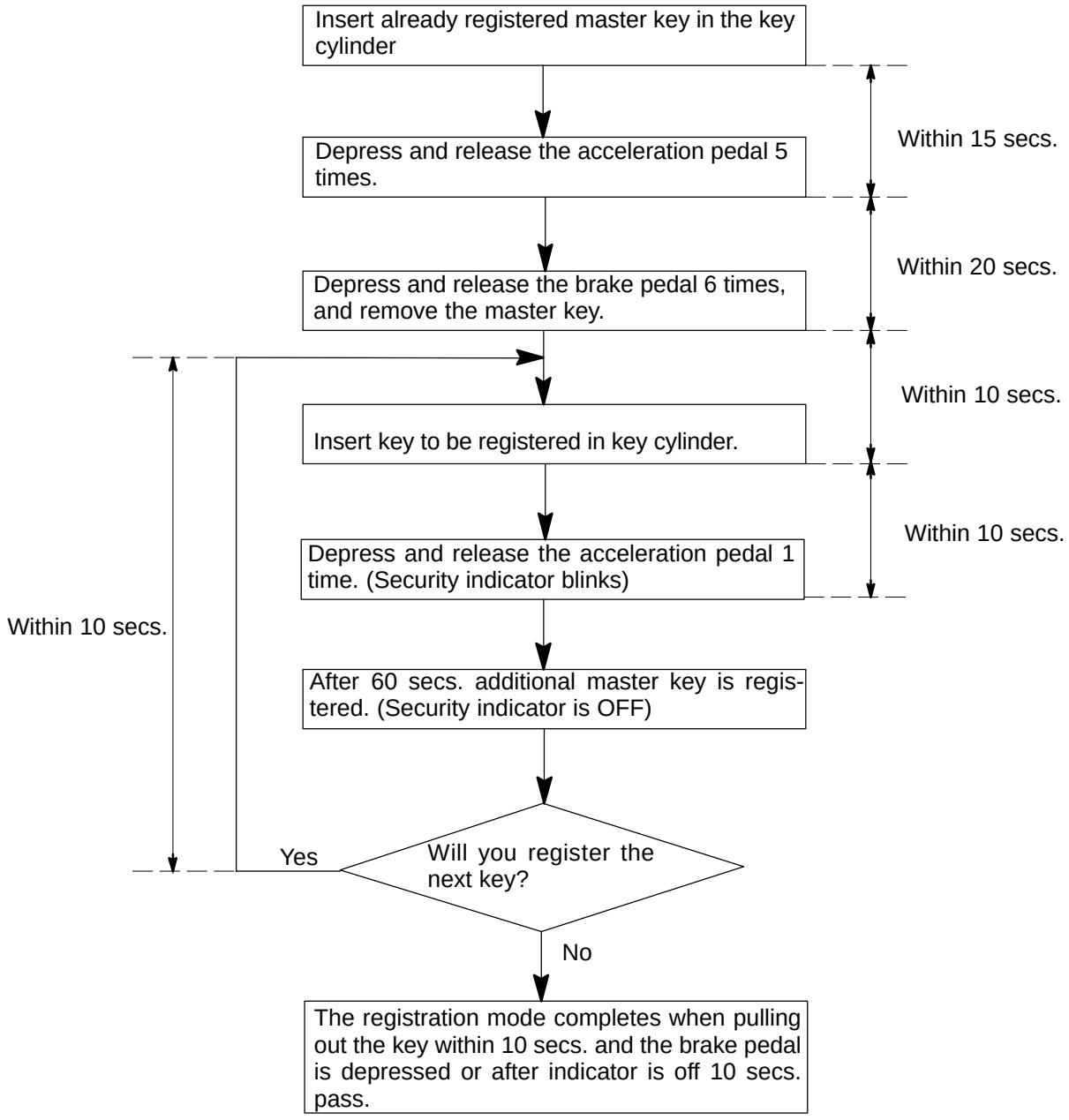
2. REGISTRATION OF ADDITIONAL MASTER KEY

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

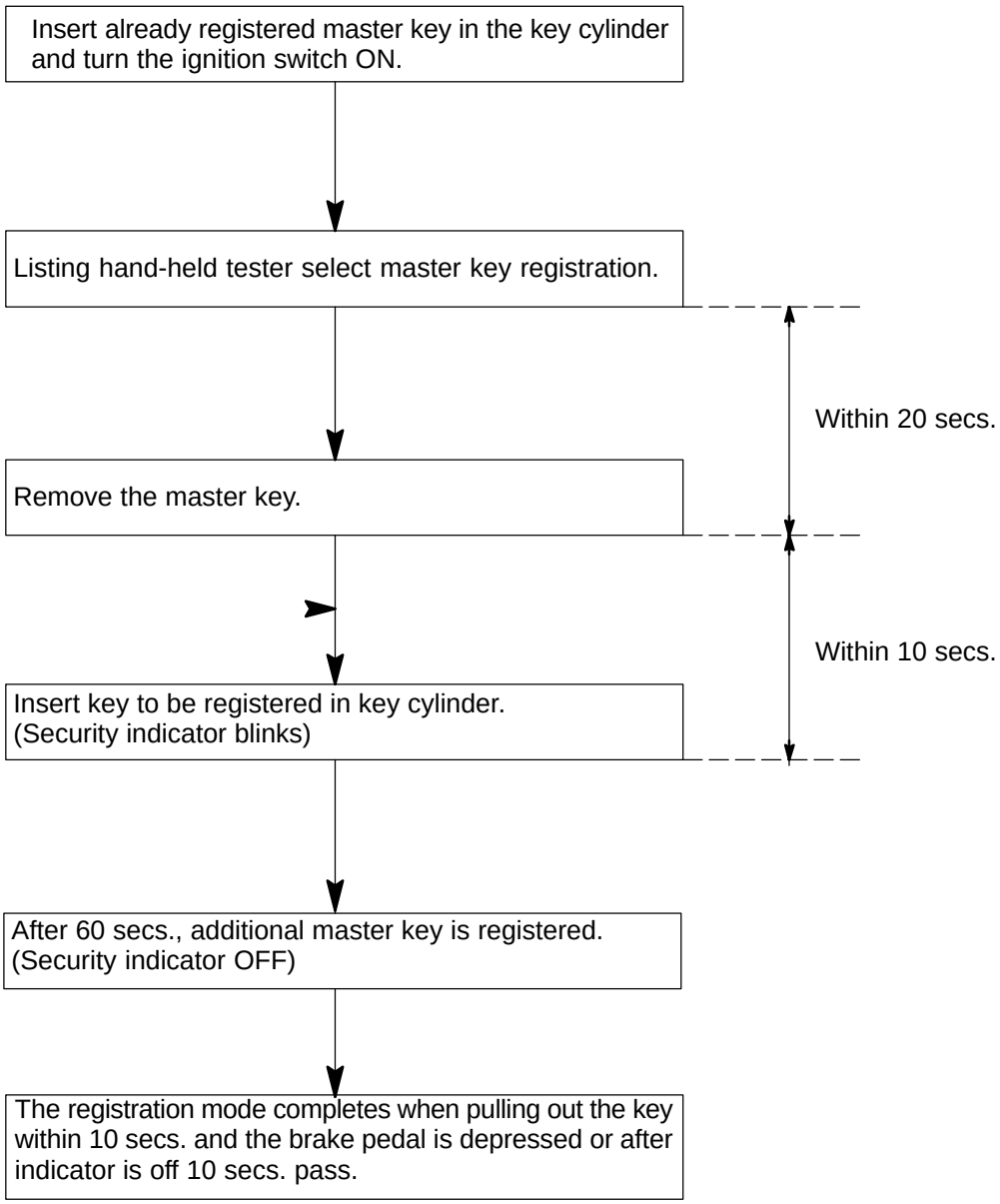
HINT:

- It is possible to register up to 7 master key codes including the already registered key code.
- When any operation time described below is over, registration mode completes.
- When the next procedure is performed while the timer is working, the timer completes counting time, then next timer starts.

(1) Depressing brake pedal and acceleration pedal:



(2) Using hand-held tester:



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

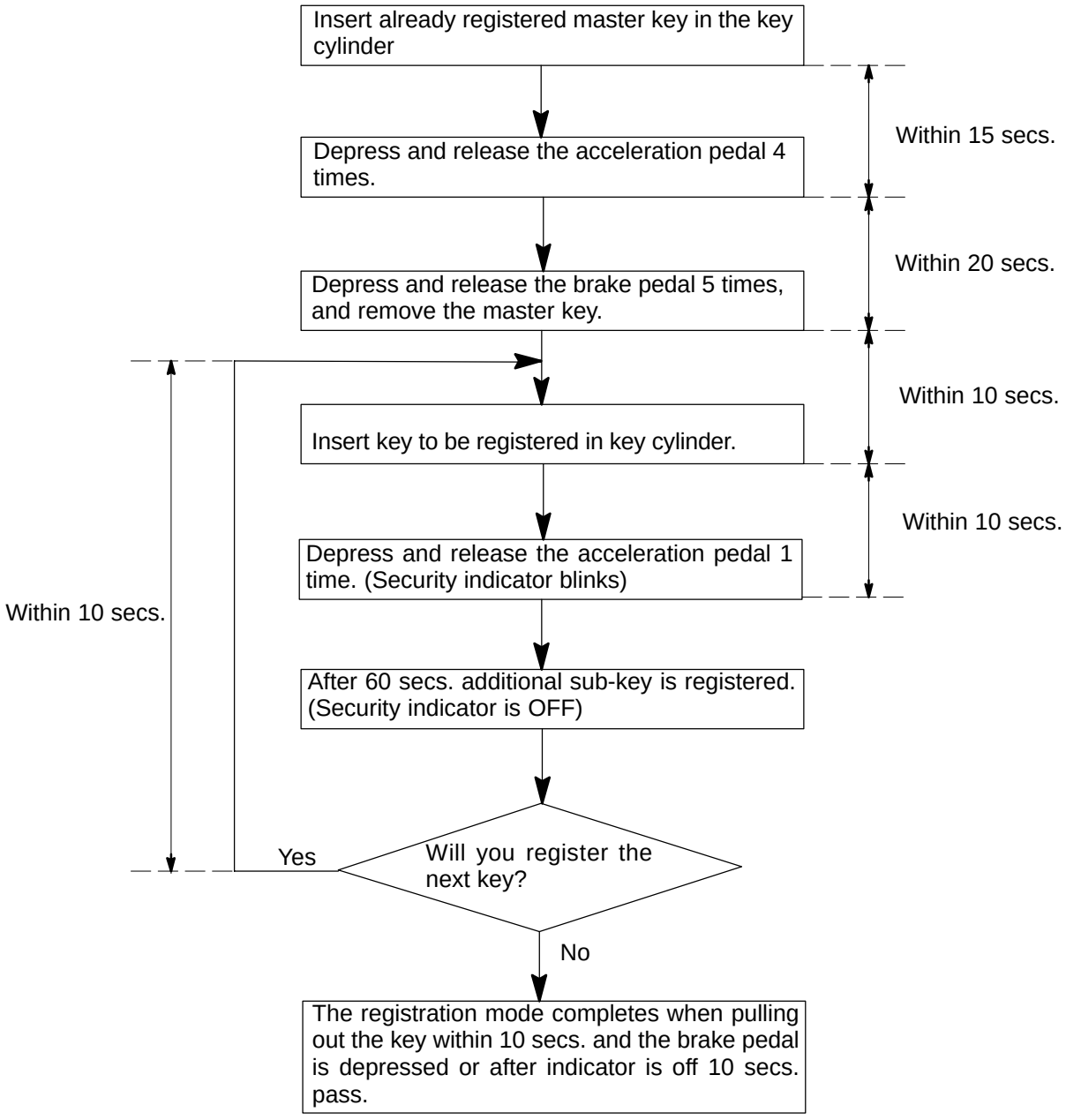
3. REGISTRATION OF ADDITIONAL SUB-KEY

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

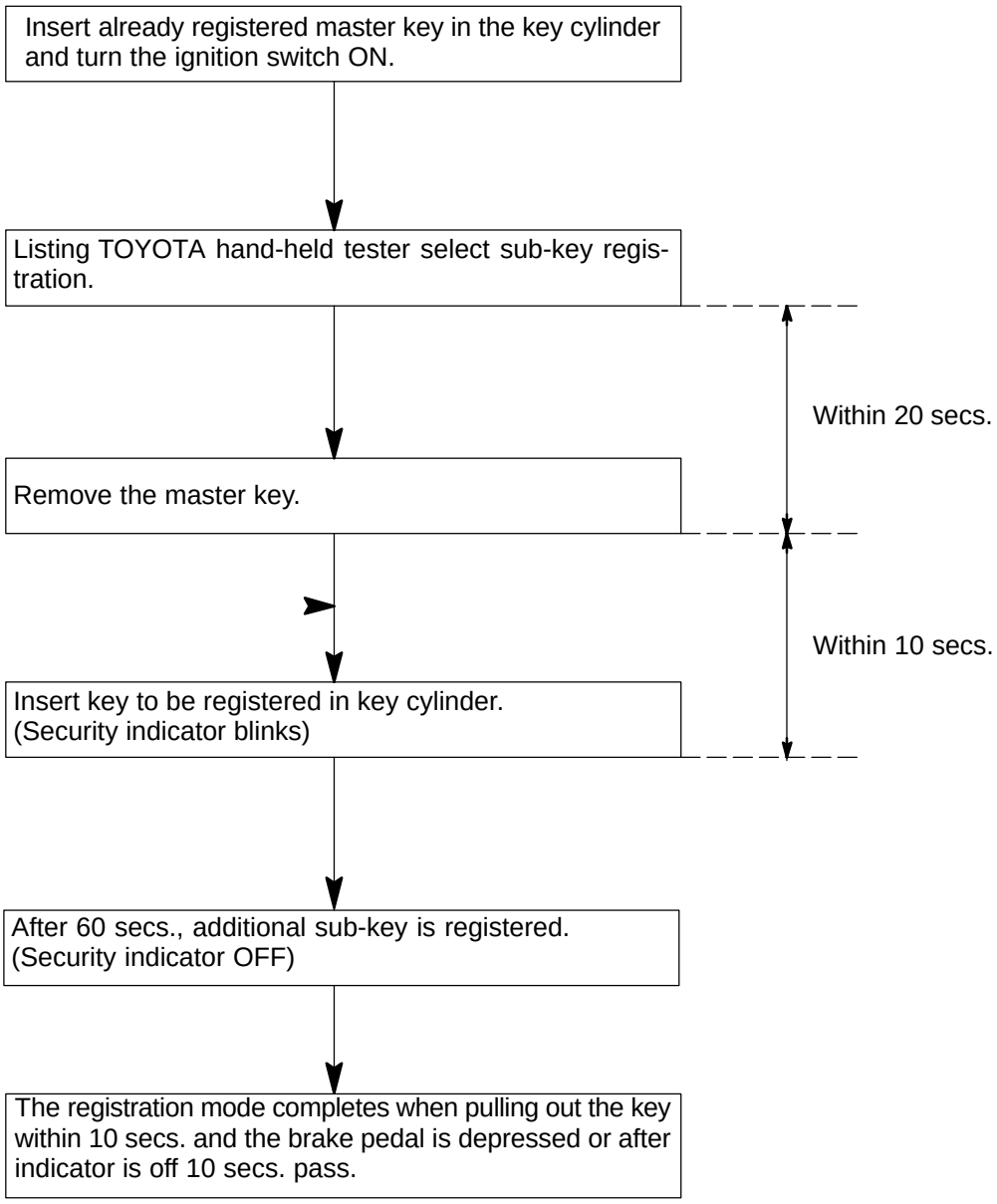
HINT:

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

(1) Depressing brake pedal and acceleration pedal:



(2) Using hand-held tester:



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

4. ERASURE OF TRANSPONDER KEY CODE

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

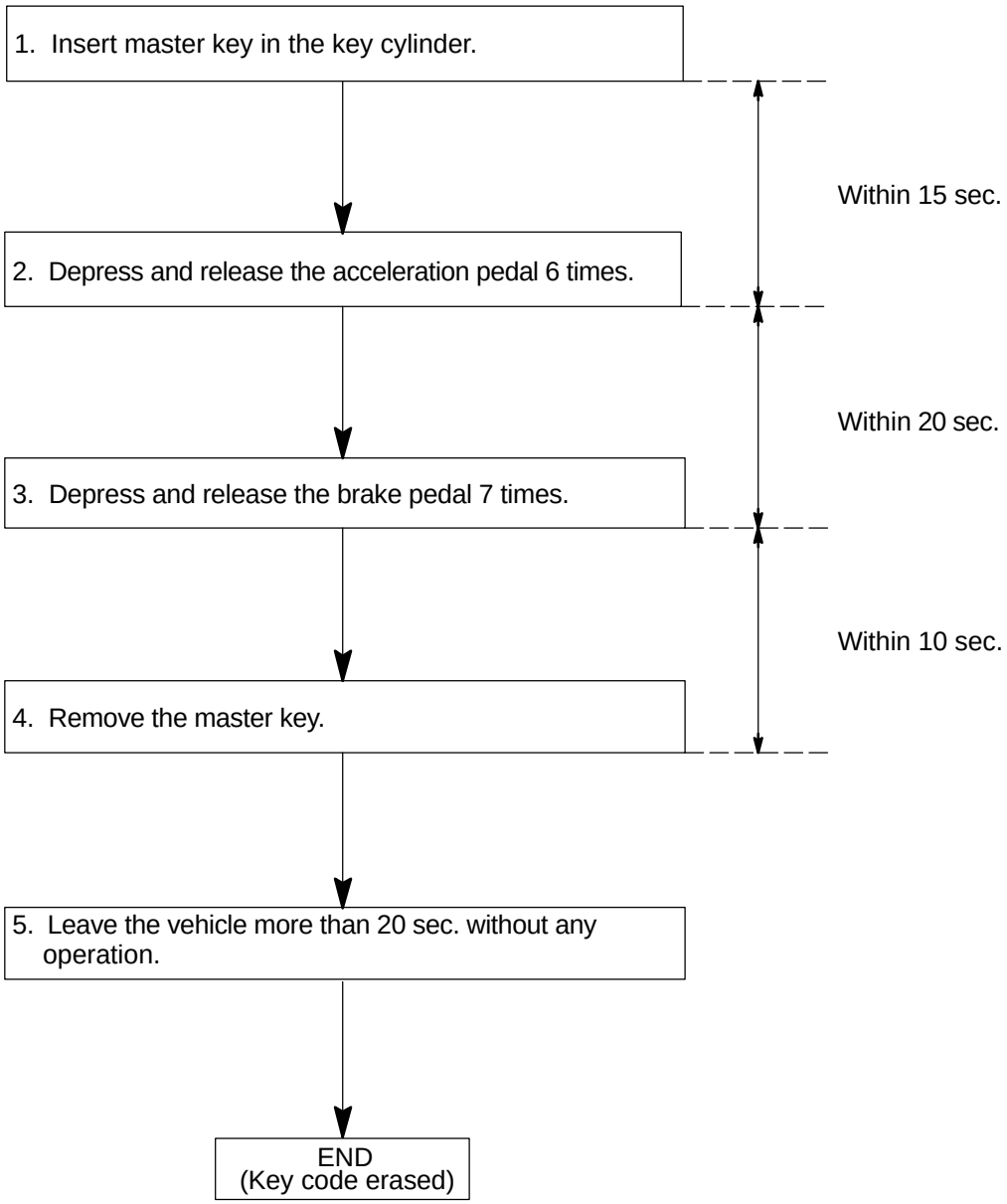
NOTICE:

All other master and sub-key codes are deleted leaving the master key code to use the operation. When using the key which was used before deleting, it is necessary to register the code again.

HINT:

- When any operation time described below is over, registration mode completes.
- When the next procedure is performed while the timer is working, the timer completes counting time, then next timer starts.

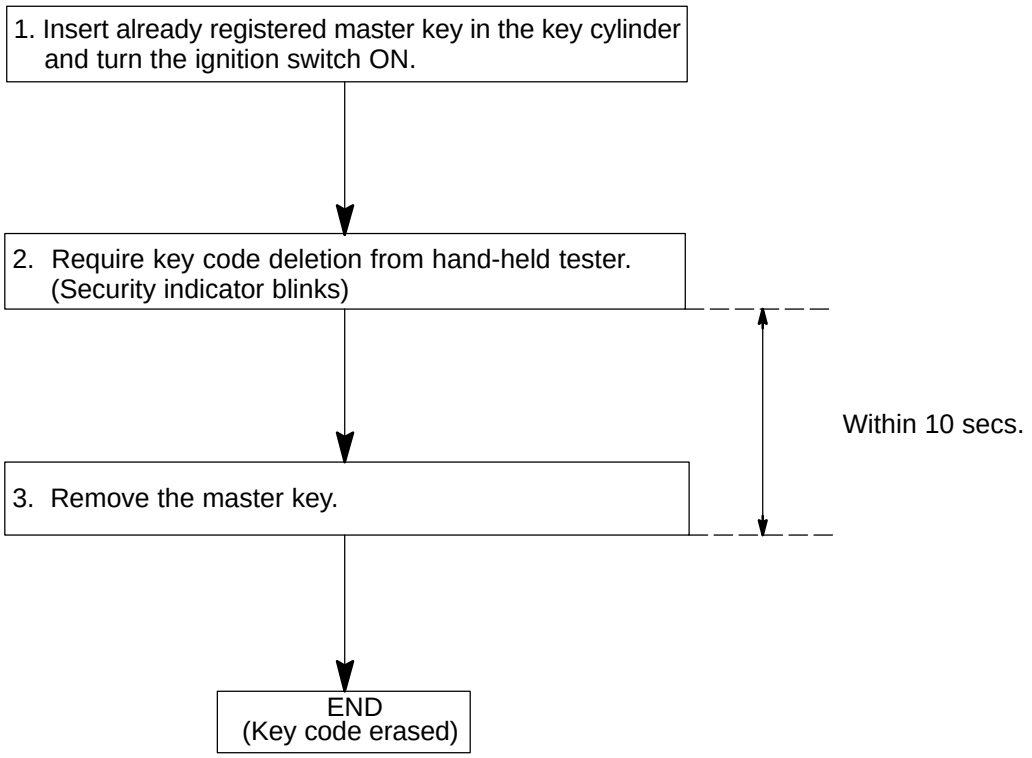
(1) Depressing brake pedal and acceleration pedal:



HINT:

If the key cannot be pulled out within 30 sec. from the first brake depression in the step 3, the key code deletion is canceled.

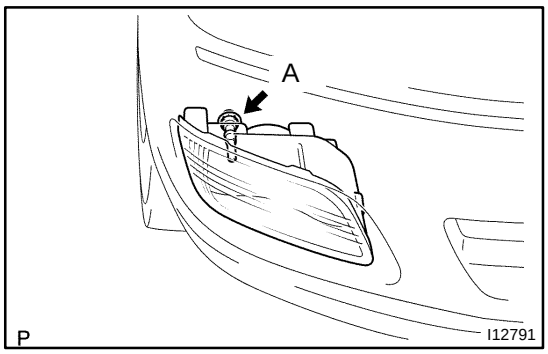
(2) Using hand-held tester:



HINT:

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

BE052-07



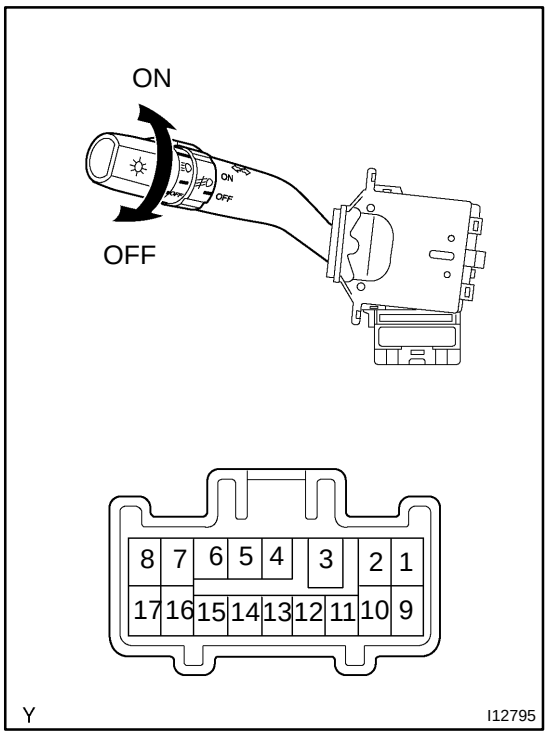
ADJUSTMENT

ADJUST FOG LIGHT AIM

A-bolt: Vertical Direction

BE0HZ-04

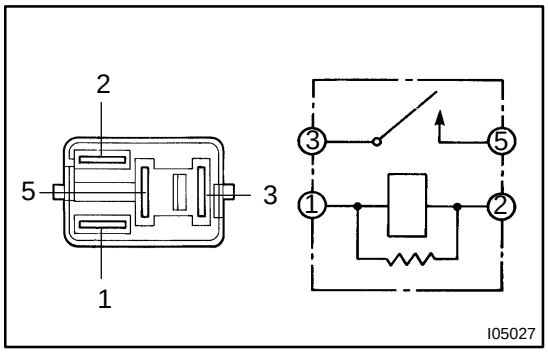
INSPECTION



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 FOG LIGHT RELAY CONTINUITY

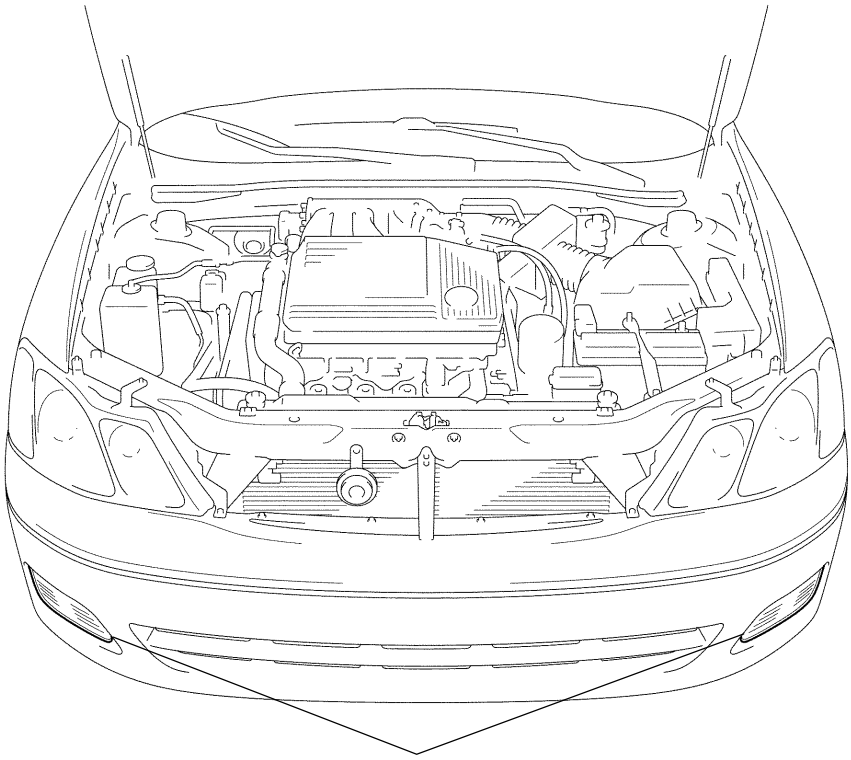
Condition	Tester connection	Specified condition
Constant	1 - 2	Continuity
Apply B+ between terminals 1 and 2.	3 - 5	No continuity

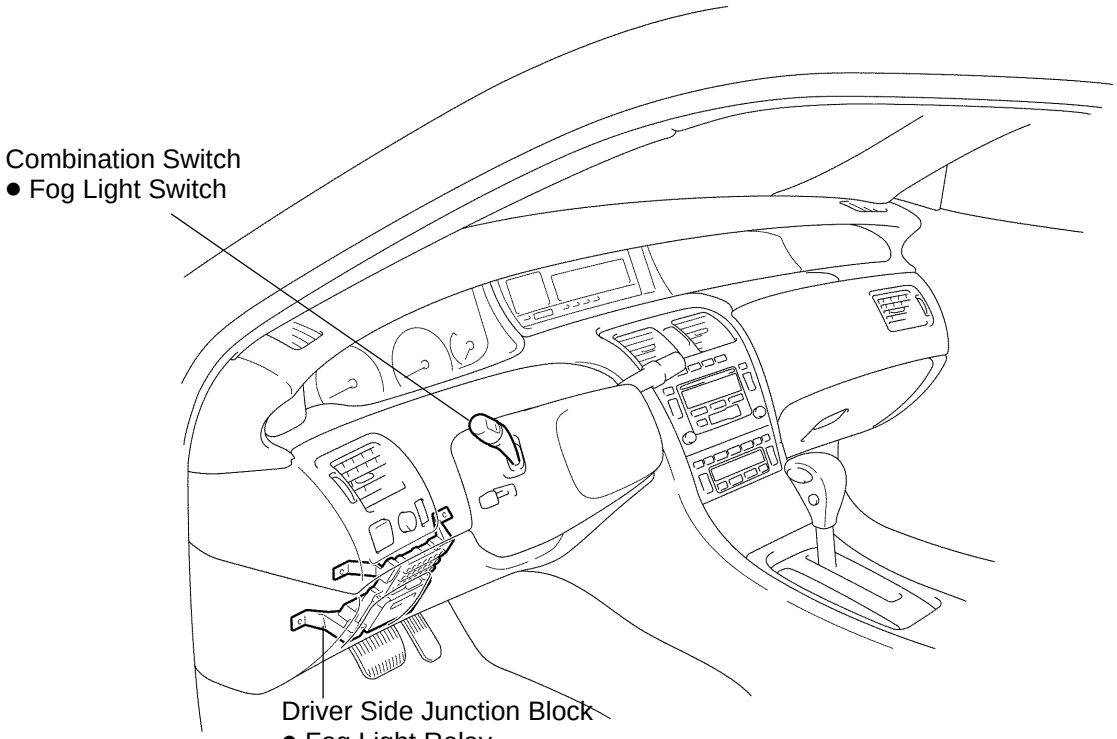
If continuity is not as specified, replace the relay.

FOG LIGHT SYSTEM

LOCATION

BE050-07





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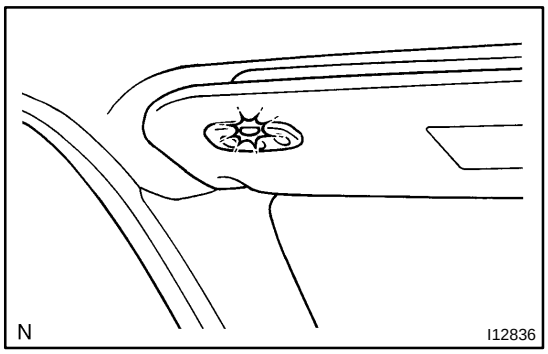
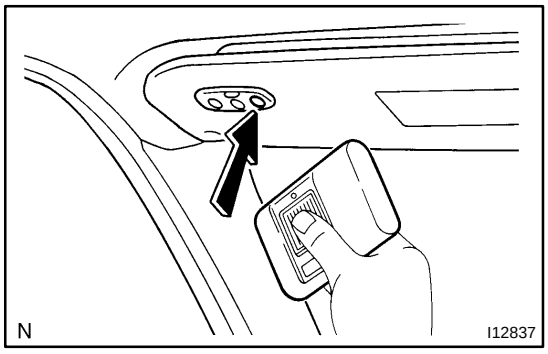
INSPECTION



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.

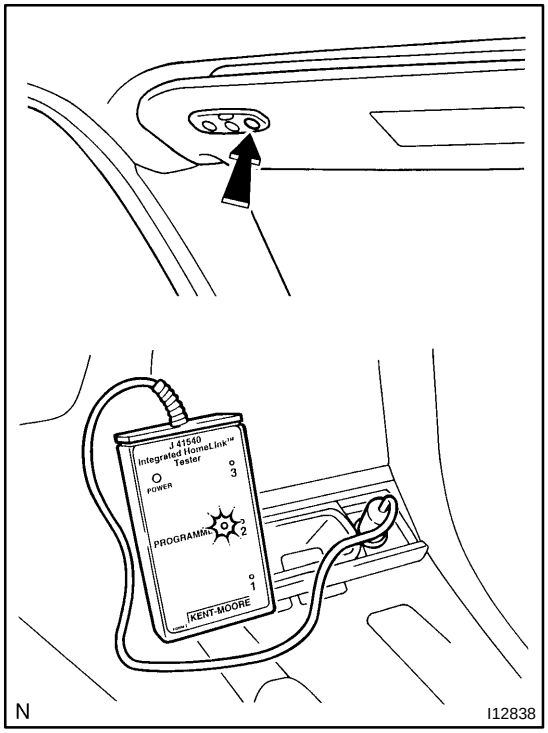


2. INSPECT GARAGE DOOR OPENER REGISTRATION AND TRANSMITTING

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

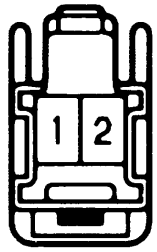
If the code can not be registered, replace garage door opener.



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

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

Wire Harness Side



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3. INSPECT GARAGE DOOR OPENER SWITCH CIRCUIT

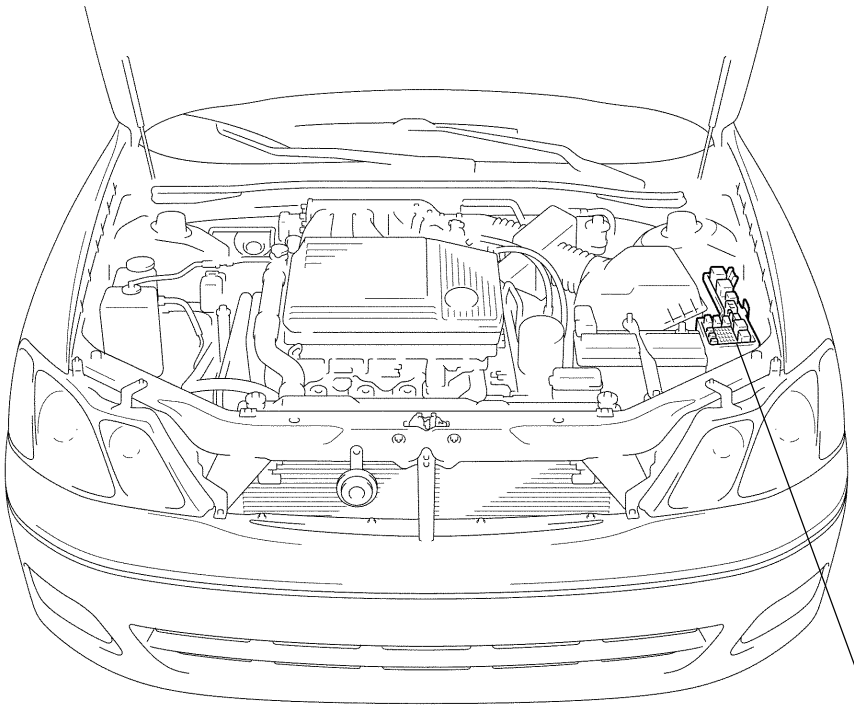
Disconnect the connector from the switch and inspect the connector on the wire harness side, as shown.

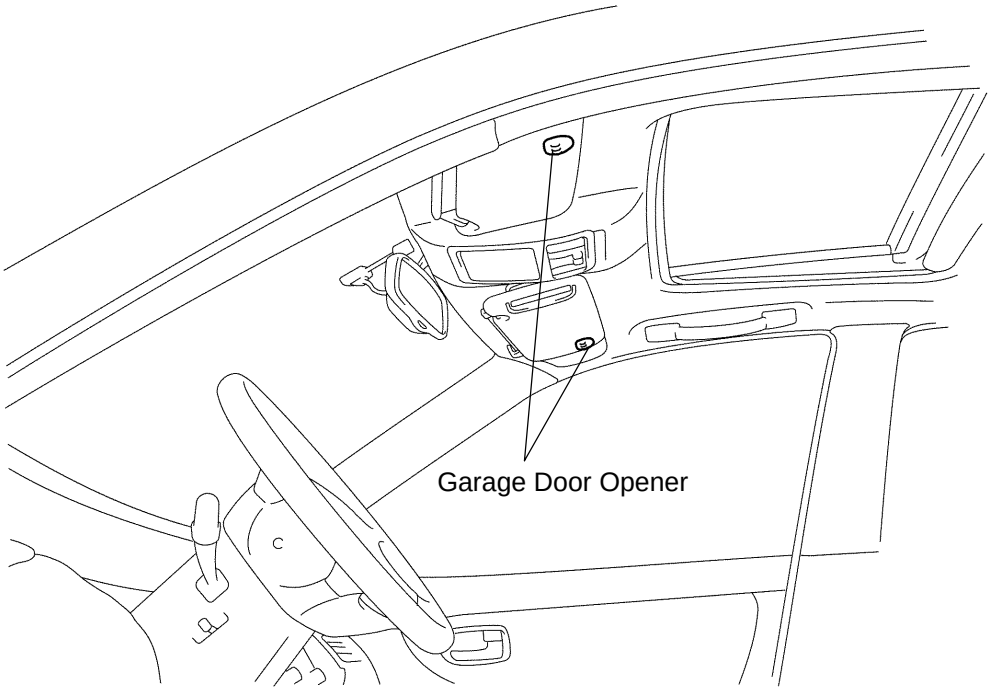
Tester connection	Condition	Specified condition
1 - Ground	Constant	Continuity
2 - Ground	Constant	Battery positive voltage

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

BE0D3-03

LOCATION





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GARAGE DOOR OPENER SYSTEM

BE0D2-03

REGISTRATION PROCEDURE

1. NEW CODE REGISTRATION

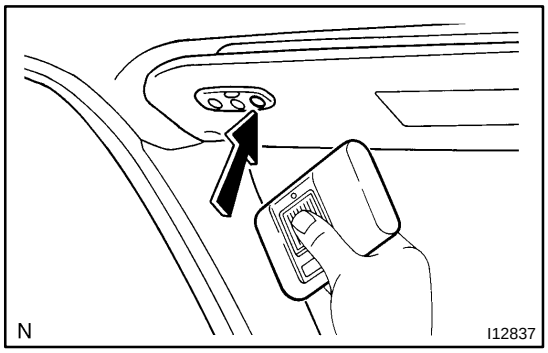
NOTICE:

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

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

HINT:

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

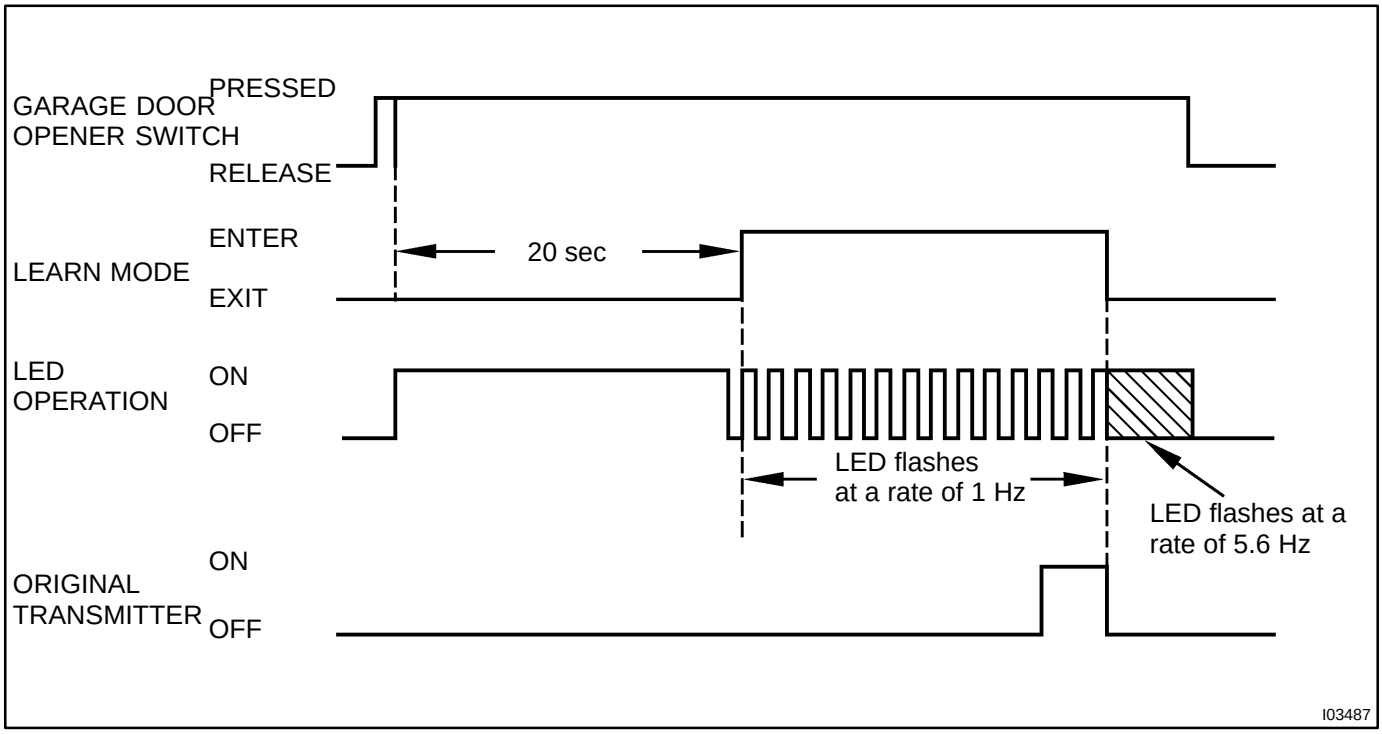


(b) In the condition of (a), bring the original transmitter to within 1-inch area around the garage door opener and press the switch. (code transmitting).

HINT:

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

New code registration timing chart.



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.
- If any signal from the transmitter is not received, the registration mode continues for 75 sec.

2. CODE DELETION

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

HINT:

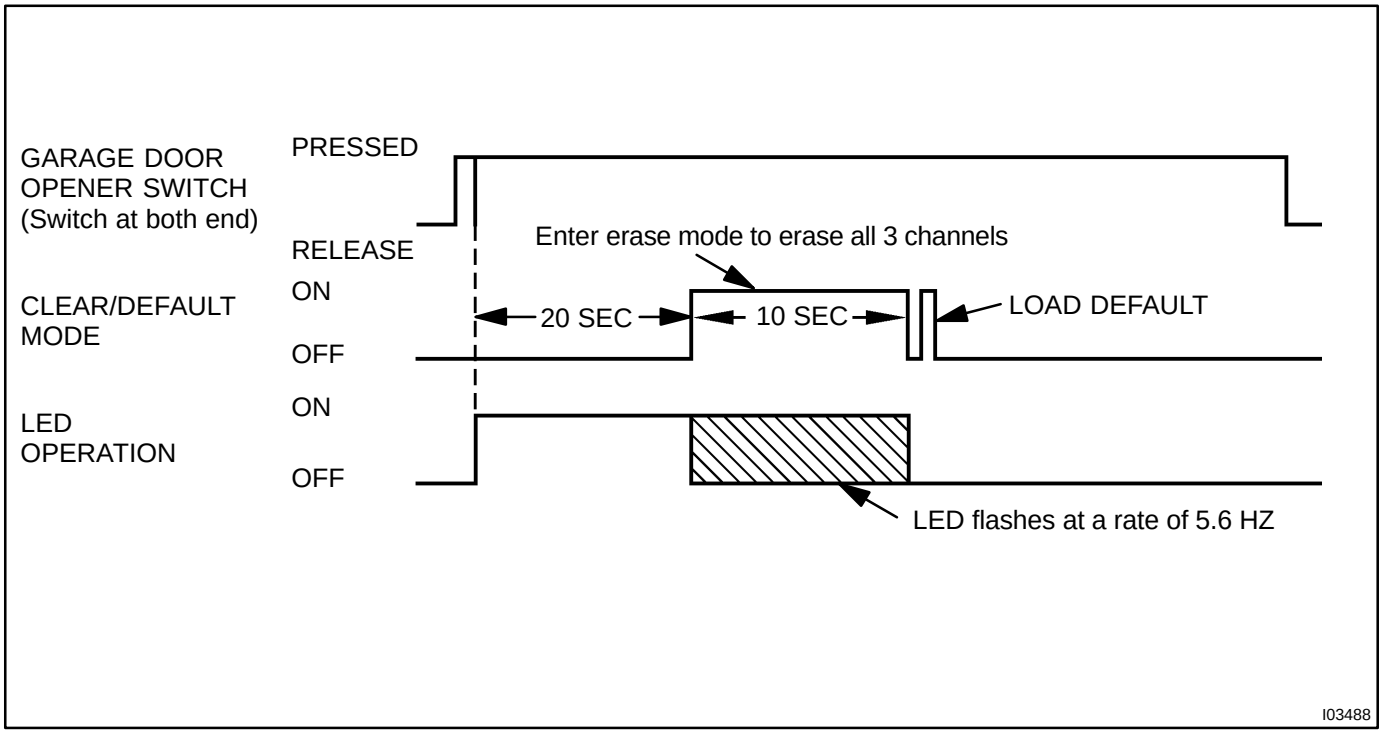
When transferring to deletion mode, LED (red) blinks in 6 Hz cycle.

(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 5.6 Hz cycle stops, so that the default code for check is set.

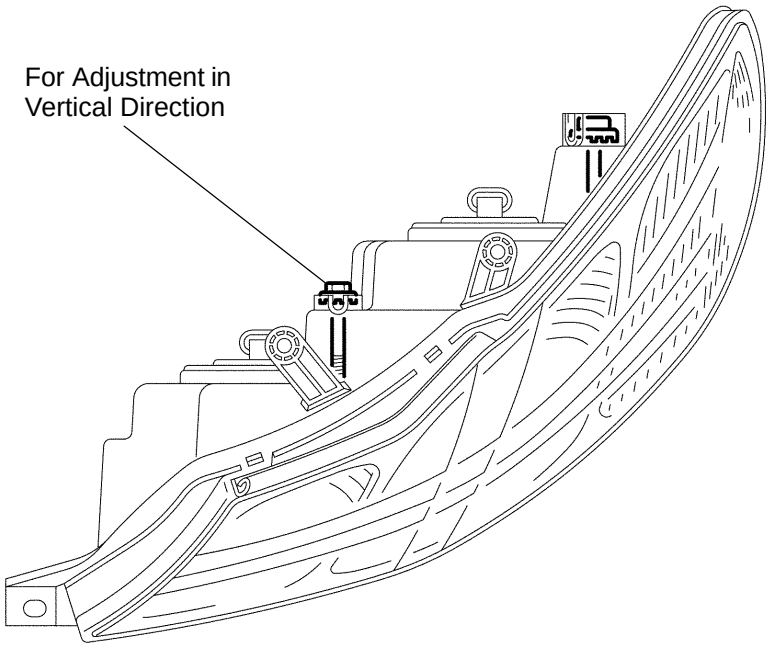
Code deletion timing chart

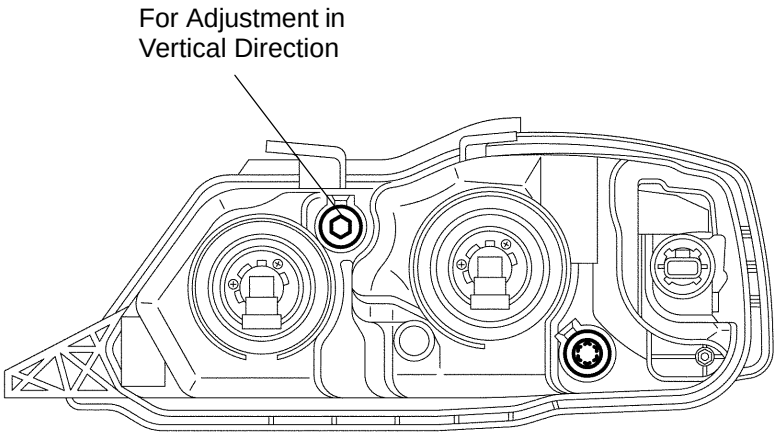


BE1DK-07

ADJUSTMENT

1. ADJUST HEADLIGHT AIMING





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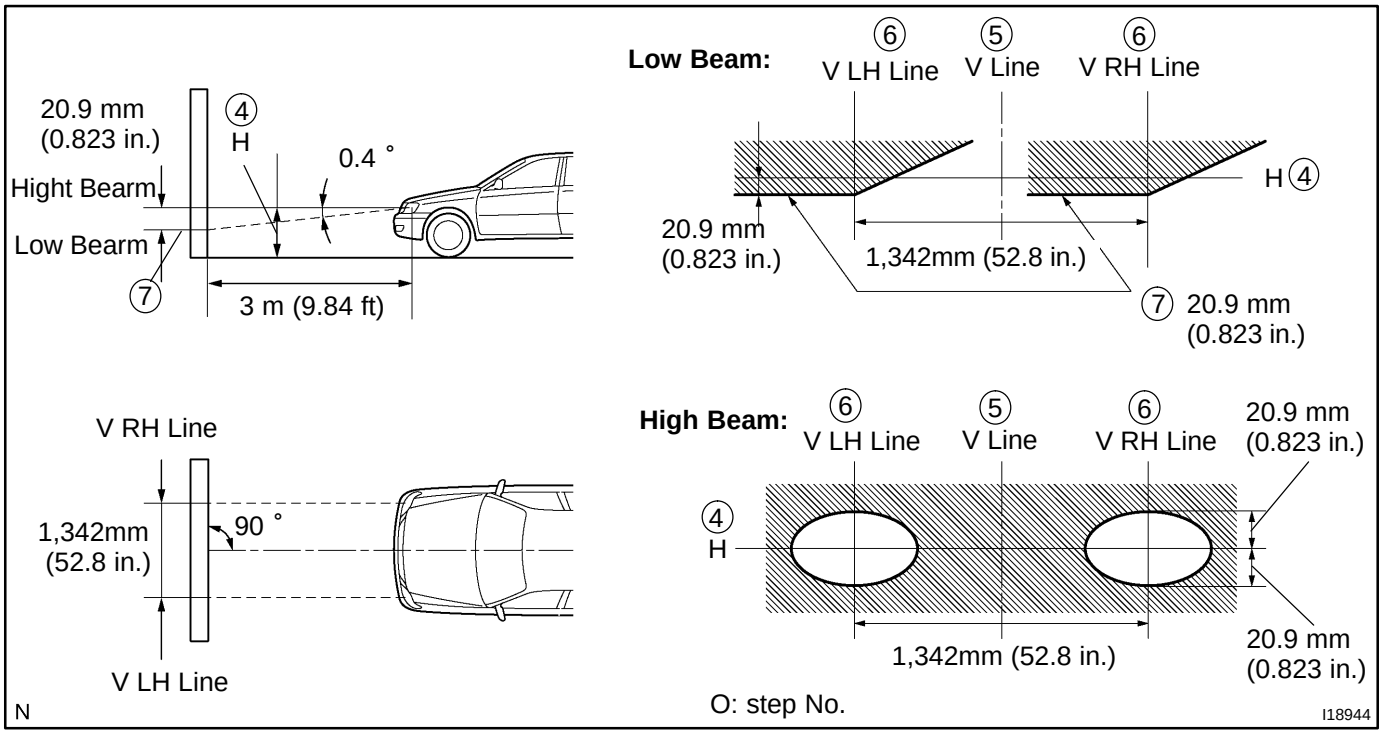
2. ADJUST HEADLIGHT AIM ONLY

(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.

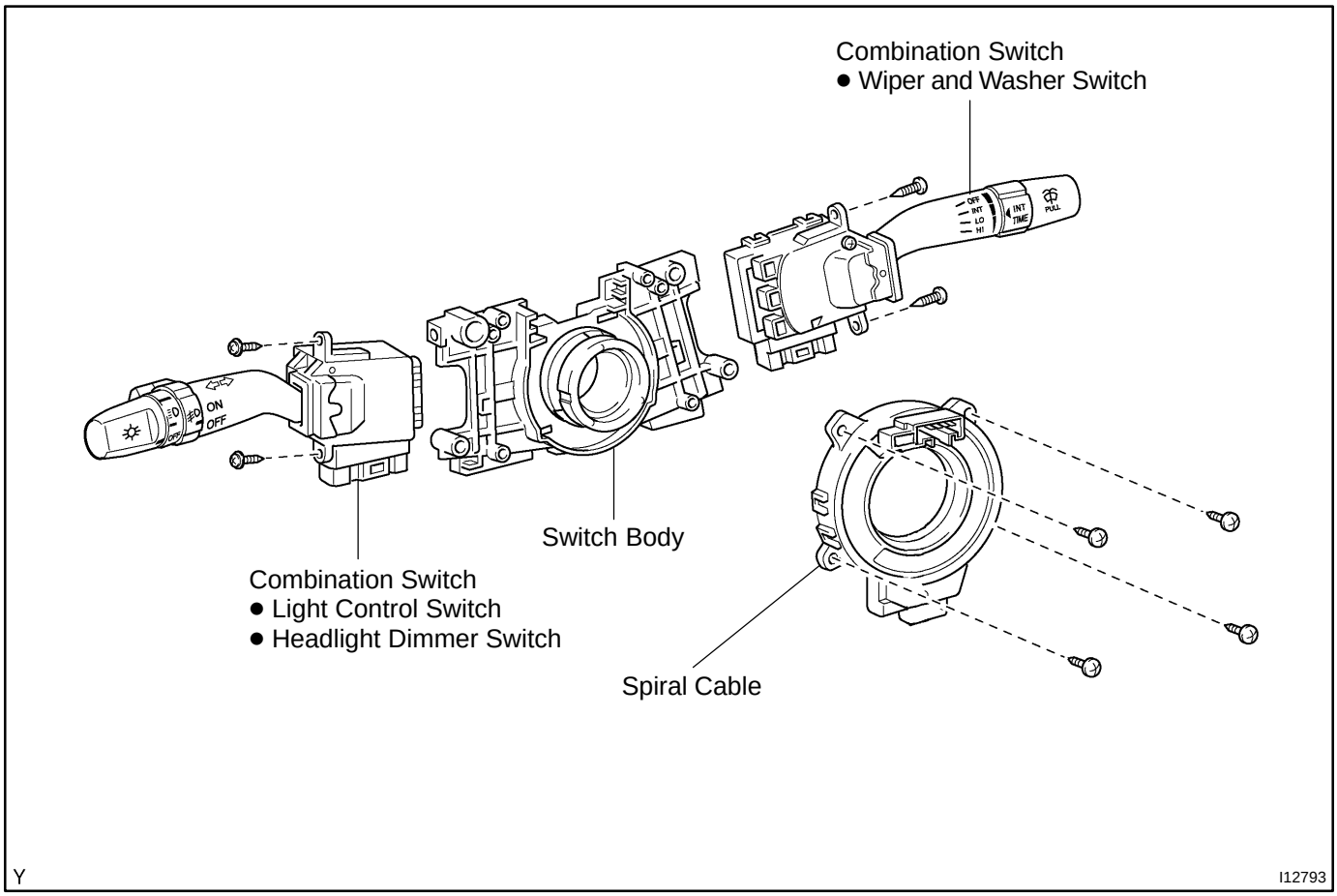


HINT:
As shown in the illustration, adjust each aim of the RH and LH lights.

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

BE0HW-03

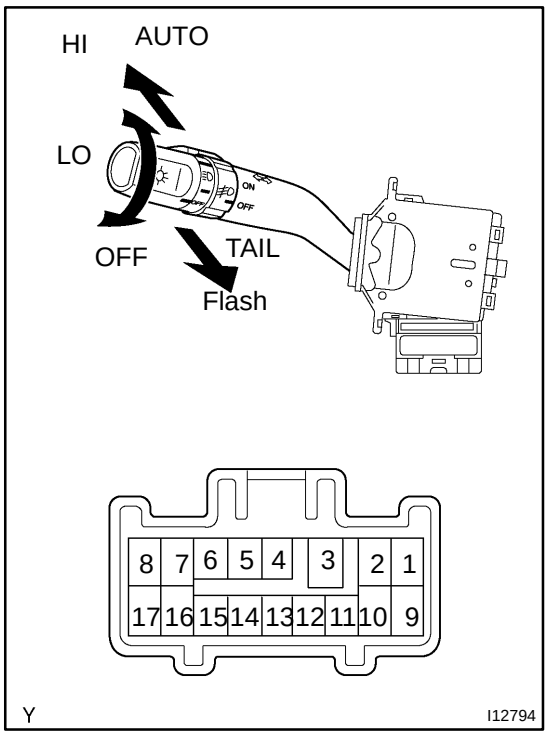
COMPONENTS



BE1DJ-01

INSPECTION

1. INSPECT LIGHT CONTROL SWITCH CONTINUITY



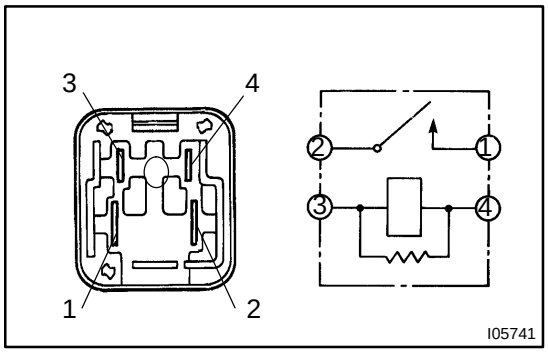
Switch position	Tester connection	Specified condition
OFF	-	No continuity
TAIL	14 - 16	Continuity
HEAD	13 - 14 - 16	Continuity
AUTO	12 - 13 - 14 - 16	Continuity

If continuity is not as specified, replace the switch.

2. INSPECT HEADLIGHT DIMMER SWITCH CONTINUITY

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

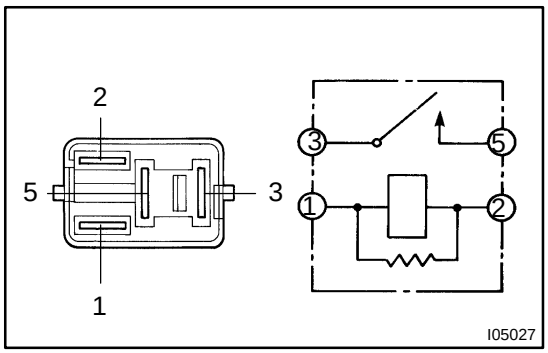
If continuity is not as specified, replace the switch.



3. INSPECT HEADLIGHT CONTROL RELAY CONTINUITY

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

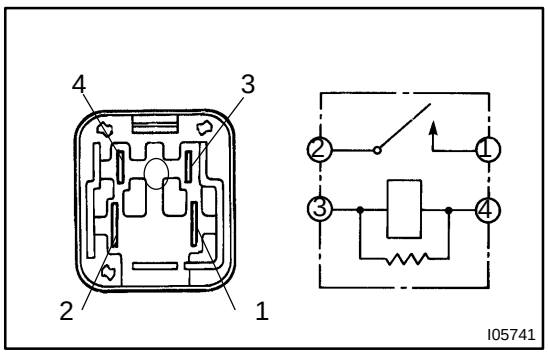
If continuity is not as specified, replace the relay.



4. INSPECT TAILLIGHT CONTROL RELAY CONTINUITY

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

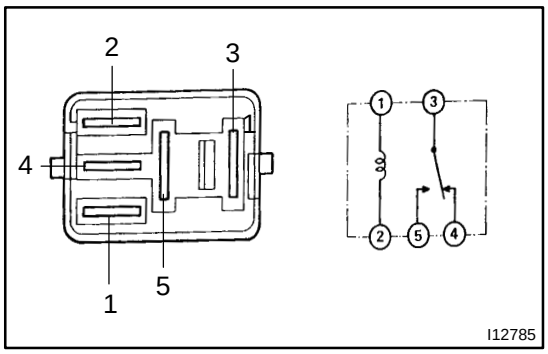
If continuity is not as specified, replace the relay.



5. INSPECT D.R.L. NO.2 RELAY CIRCUIT

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

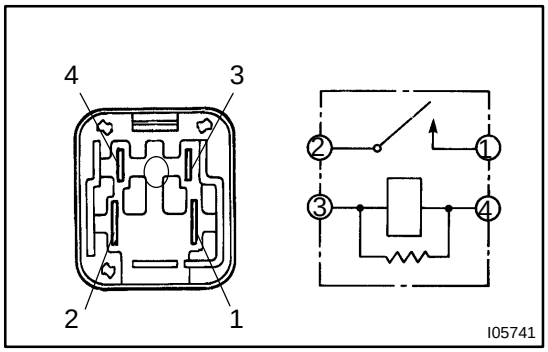
If continuity is not as specified, replace the relay.



6. INSPECT D.R.L. NO.3 RELAY CIRCUIT

Condition	Tester connection	Specified condition
Constant	1 - 2, 3 - 4	Continuity
Apply B+ between terminals 1 and 2.	3 - 5	No continuity

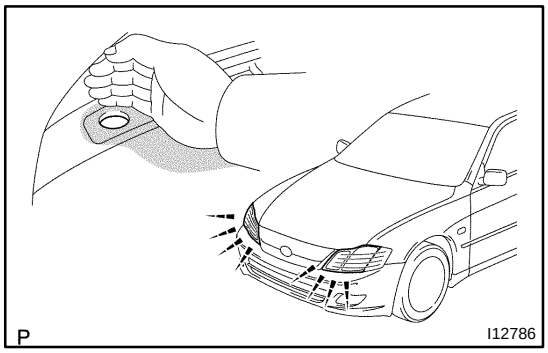
If continuity is not as specified, replace the relay.



7. INSPECT D.R.L. NO.4 RELAY CIRCUIT

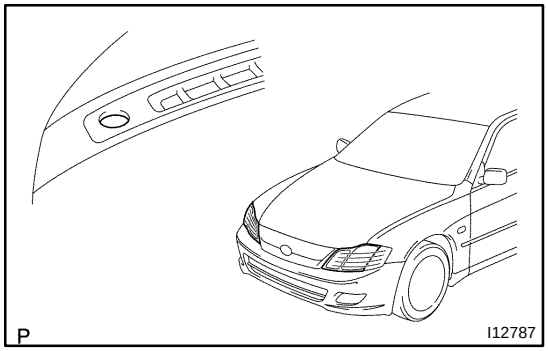
Condition	Tester connection	Specified condition
Constant	3 - 4	Continuity
Apply B+ between terminals 3 and 4.	1 - 2	Continuity

If continuity is not as specified, replace the relay.



8. AUTO ON:
INSPECT AUTOMATIC LIGHT CONTROL

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



9. AUTO OFF:
INSPECT AUTOMATIC LIGHT CONTROL

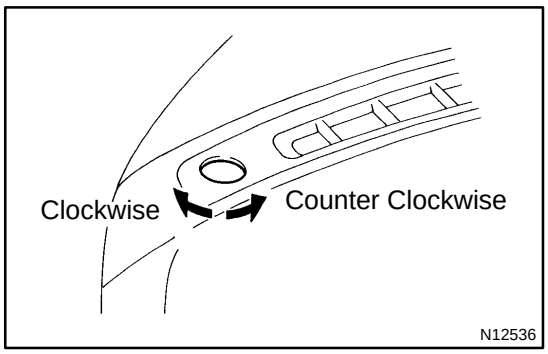
(a) Gradually expose the sensor.
(b) Check the headlights and the accessory lights should turn OFF.

10. INSPECT LIGHTS-OFF CONDITION

(a) Turn the ignition switch ON.
(b) Lights auto ON:
Gradually cover the top of the sensor.
(c) Check that the lights go off under the following conditions.
(1) Light control switch is OFF.
(2) The area surrounding the sensor gets bright.
(3) The driver's door is opened with the ignition switch OFF.

11. INSPECT LIGHTS-ON CONDITION

(a) Open the driver's door while the ignition switch is OFF.
(b) Turn the light control switch to AUTO leaving the door open and cover the top of the sensor, make sure that the lights go on when the ignition switch is turned ON.

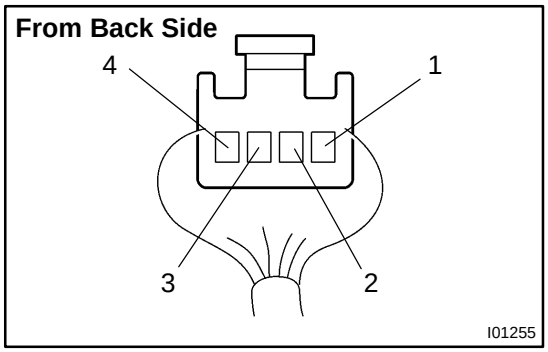


12. ADJUST AUTOMATIC LIGHT CONTROL SENSOR

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

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

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



13. Connector connected:
INSPECT AUTOMATIC LIGHT CONTROL SENSOR CIRCUIT

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

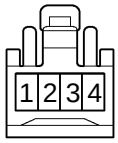
HINT:

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

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

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

Wire Harness Side



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14. 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 table.

Tester connection	Condition	Specified condition
3 - Ground	Constant	Continuity
1 - Ground	Ignition switch LOCK or ACC	No voltage
1 - Ground	Ignition switch ON	Battery positive voltage
4 - Ground	Ignition switch LOCK or ACC	No voltage
4 - Ground	Ignition switch ON	5.2 - 9.0 V

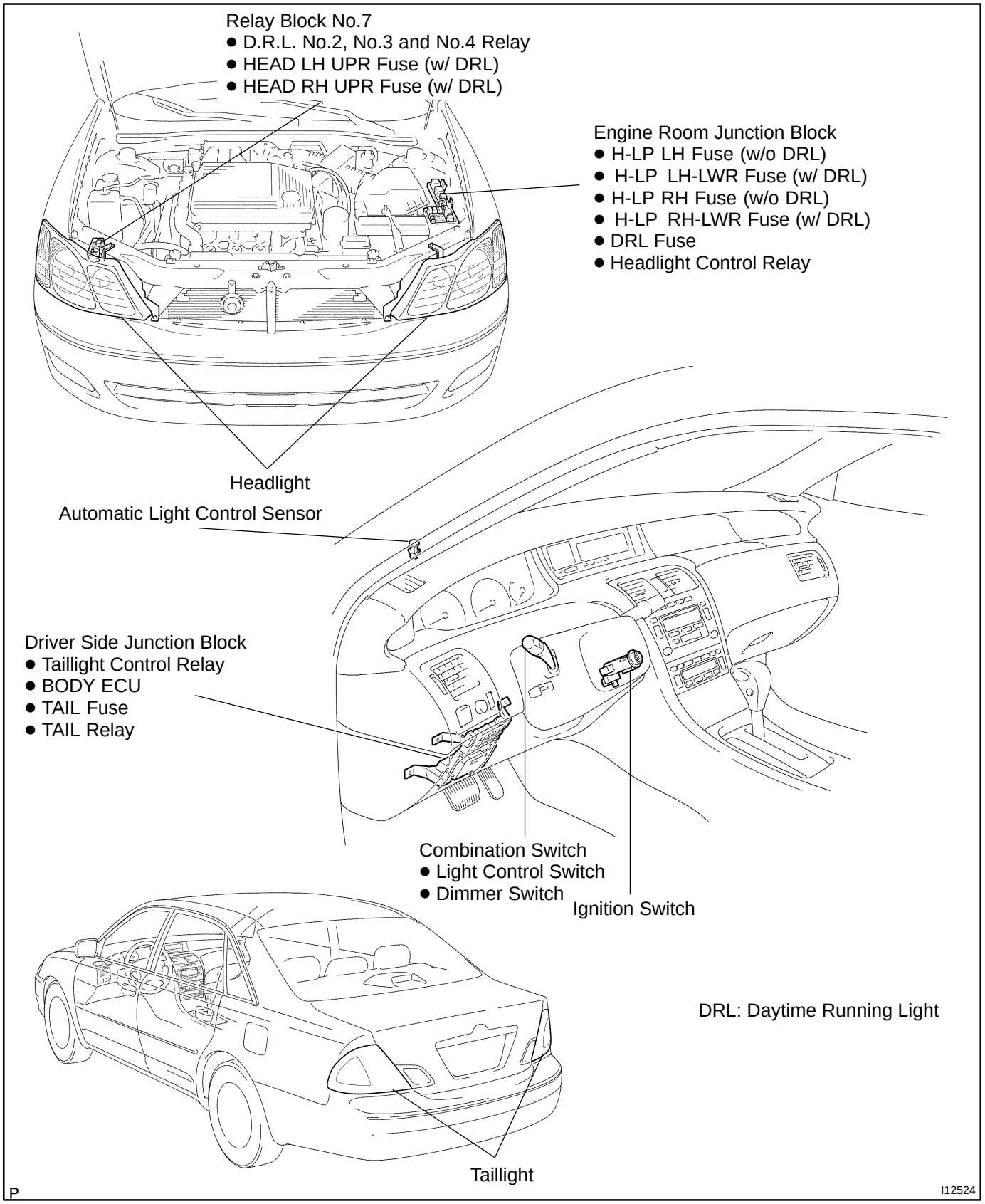
If circuit is as specified, perform the inspection on the following page.

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

HEADLIGHT AND TAILLIGHT SYSTEM

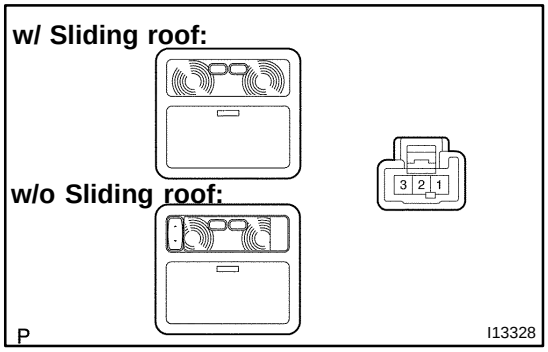
BE0HV-04

LOCATION



BE1DL-01

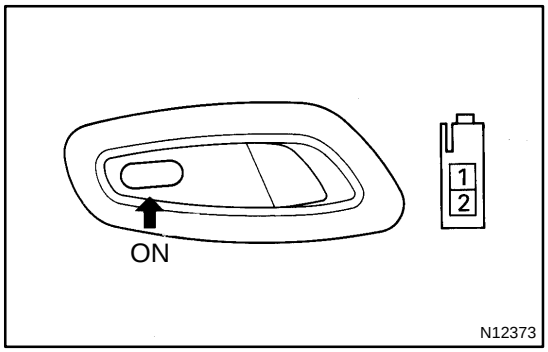
INSPECTION



1. INSPECT FRONT PERSONAL LIGHT CONTINUITY

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

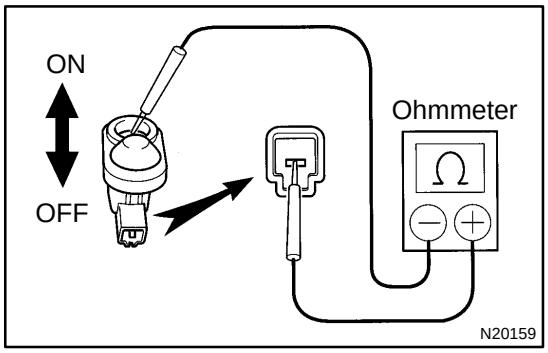
If continuity is not as specified, replace the light assembly or bulb.



2. INSPECT REAR INTERIOR LIGHT CONTINUITY

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

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

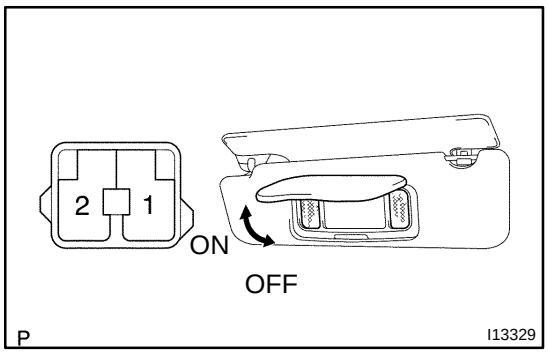


3. INSPECT DOOR COURTESY SWITCH CONTINUITY

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

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

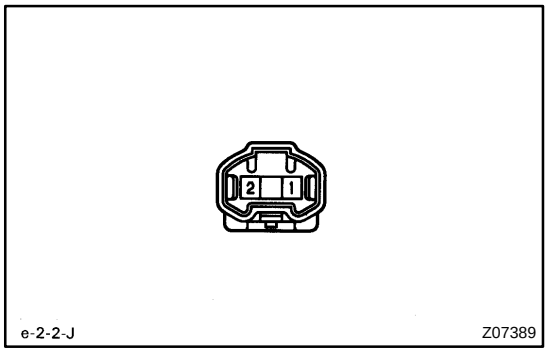
If operation is not as specified, replace the switch.



4. INSPECT VANITY LIGHT CONTINUITY

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

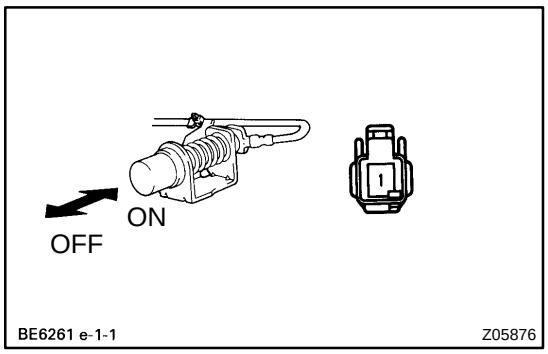
If continuity is not as specified, replace bulb or vanity light.



5. INSPECT LUGGAGE COMPARTMENT LIGHT CONTINUITY

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

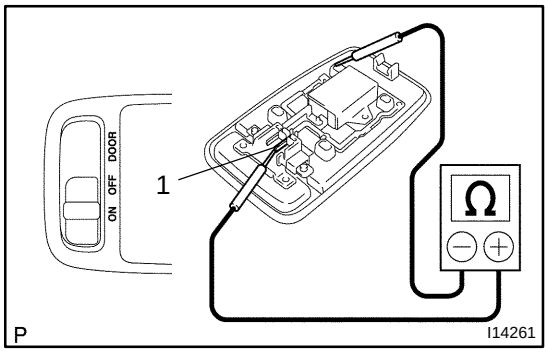
If continuity is not as specified, replace the light.



6. INSPECT LUGGAGE COMPARTMENT DOOR COURTESY SWITCH CONTINUITY

Condition	Tester connection	Specified condition
OFF	-	No continuity
ON	1 - Switch body	Continuity

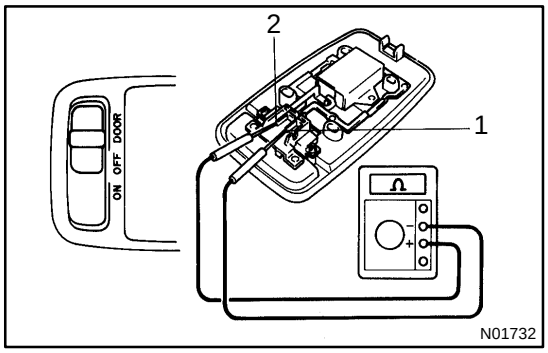
If operation is not as specified, replace the switch.



7. INSPECT INTERIOR LIGHT ASSEMBLY CONTINUITY

(a) Disconnect the connector from room light assembly.

(b) Turn the room light switch ON, check that there is continuity between terminal 1 and body ground.



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

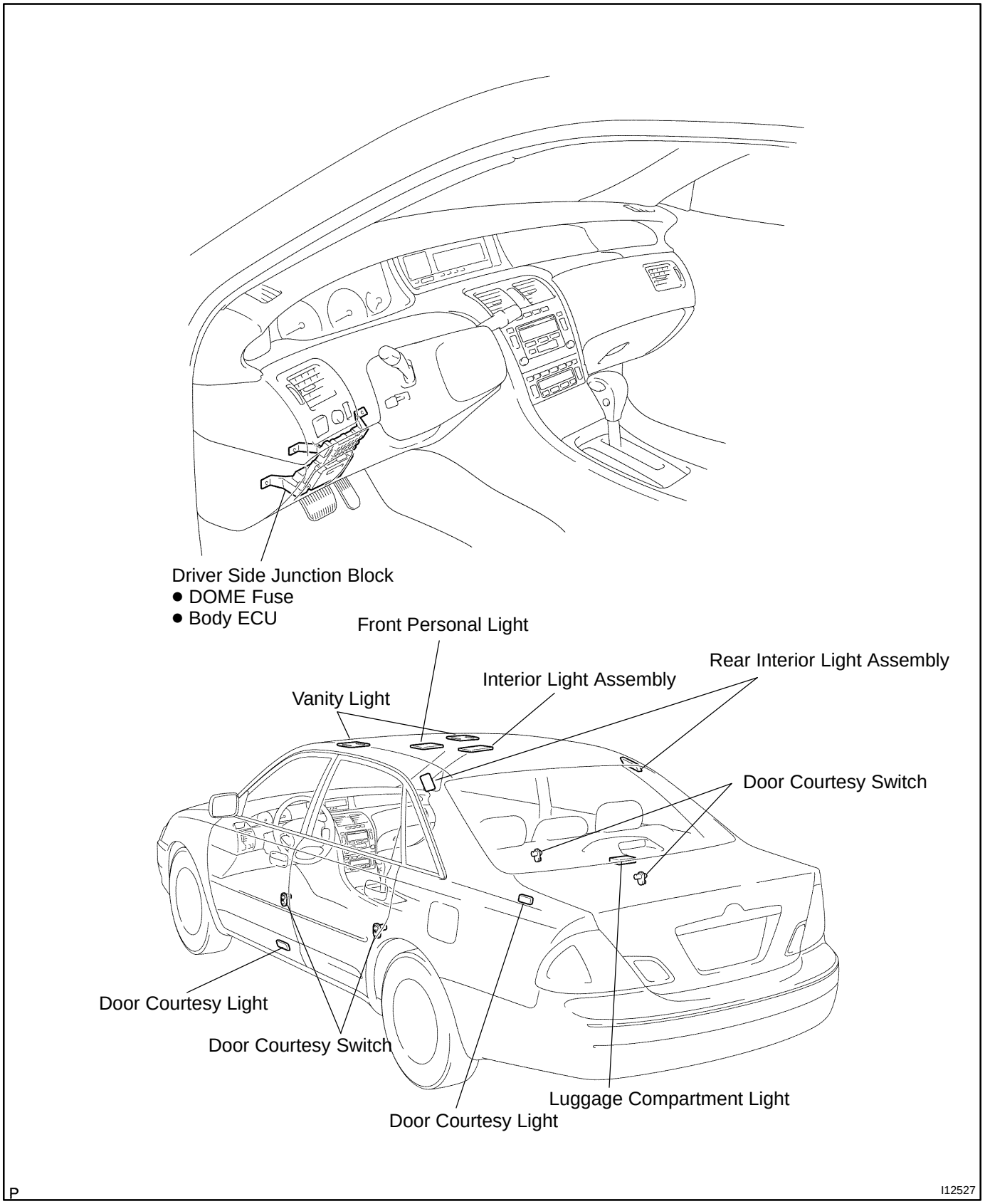
If operation is not as specified, replace the switch.

8. INSPECT ILLMINATION ENTRY SYSTEM
(See Page BE-2)

INTERIOR LIGHT SYSTEM

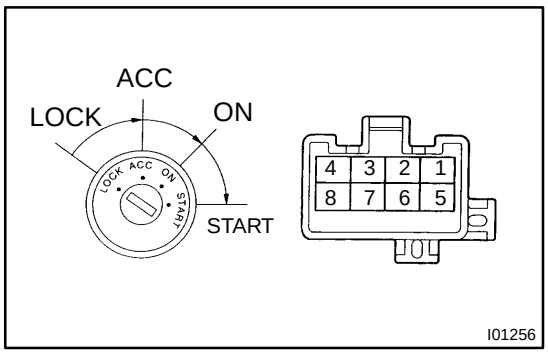
LOCATION

BE0I2-03



BE1DI-01

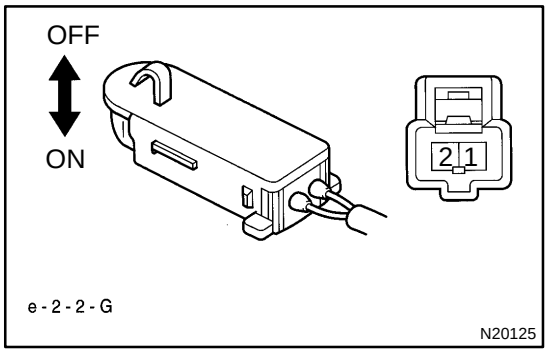
INSPECTION



1. INSPECT IGNITION SWITCH CONTINUITY

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

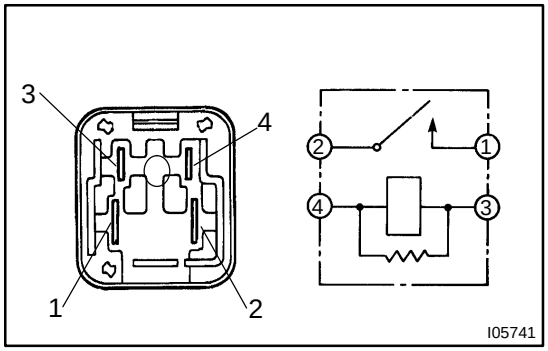
If continuity is not as specified, replace the switch.



2. INSPECT KEY UNLOCK WARNING SWITCH CONTINUITY

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

If continuity is not as specified, replace the switch.



3. INSPECT IG1 RELAY CONTINUITY

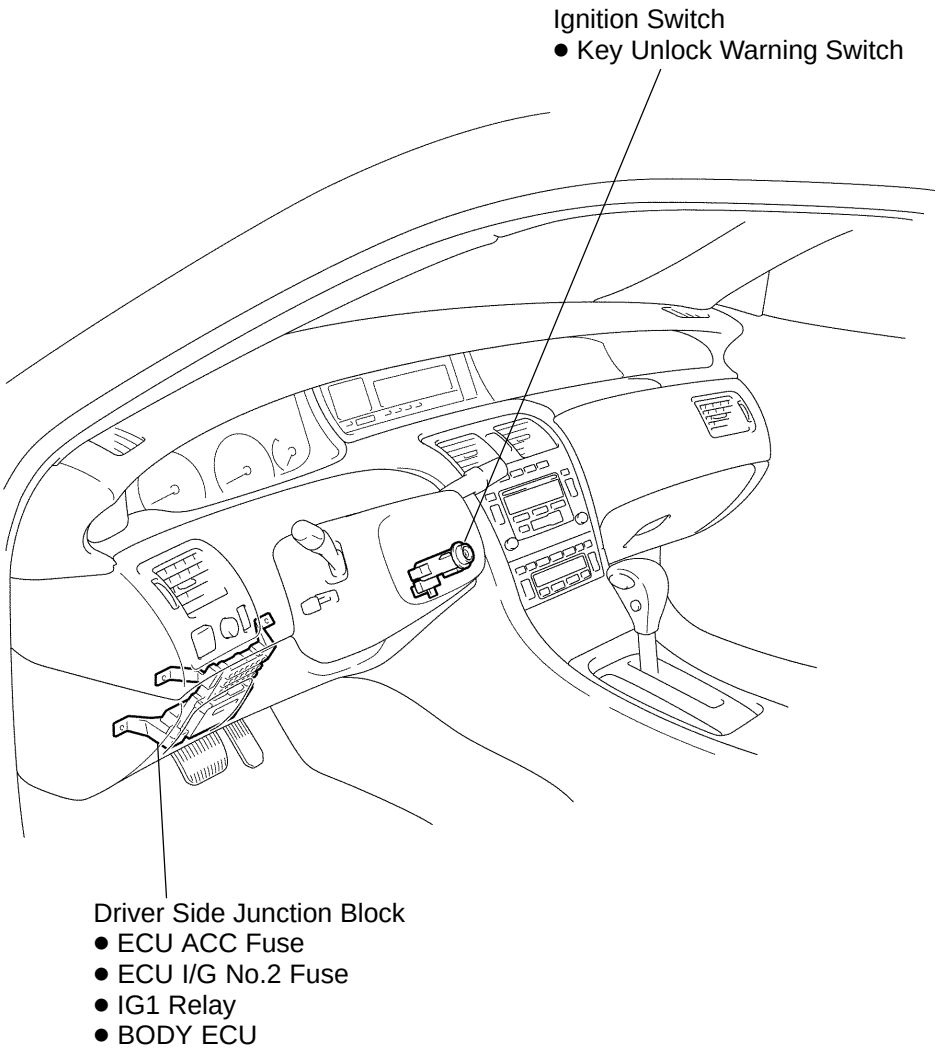
Condition	Tester connection	Specified condition
Constant	3 - 4	Continuity
Apply B+ between terminal 3 and 4	1 - 2	Continuity

If continuity is not as specified, replace the switch.

IGNITION SWITCH AND KEY UNLOCK WARNING SWITCH

BE0HT-04

LOCATION



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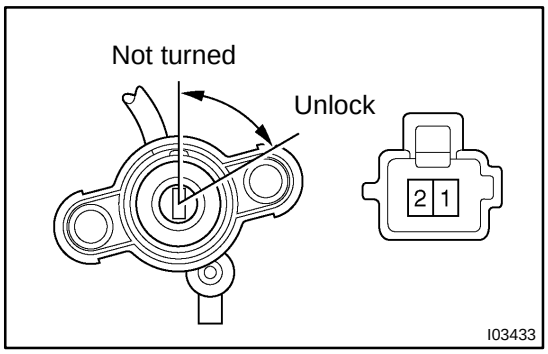
BE1EH-01

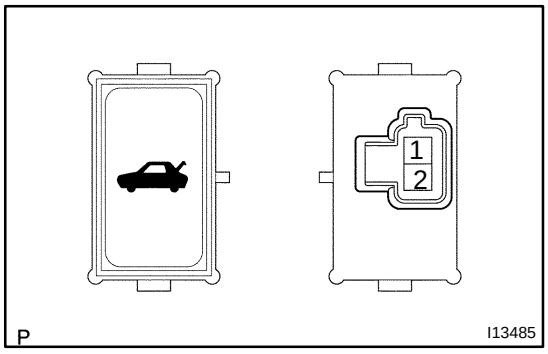
INSPECTION



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

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

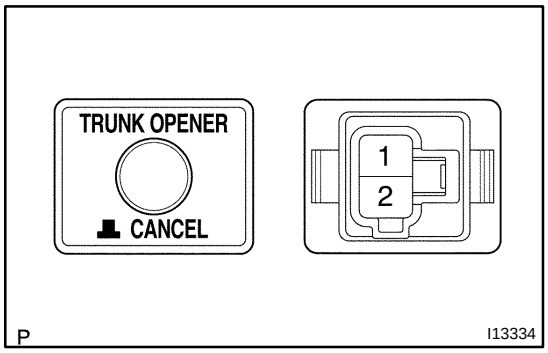
If continuity is not as specified, replace the switch.



2. INSPECT LUGGAGE COMPARTMENT DOOR OPENER MAIN SWITCH CONTINUITY

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

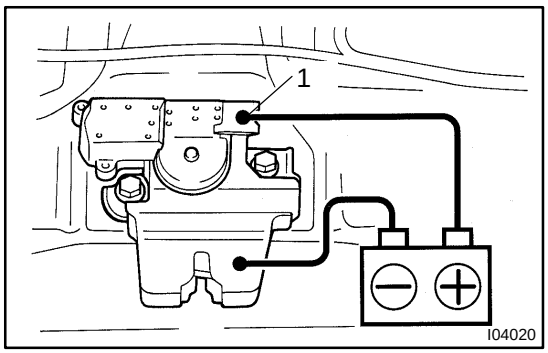
If continuity is not as specified, replace the switch.



3. INSPECT LUGGAGE COMPARTMENT DOOR OPENER CANCEL SWITCH CONTINUITY

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

If continuity is not as specified, replace the switch.



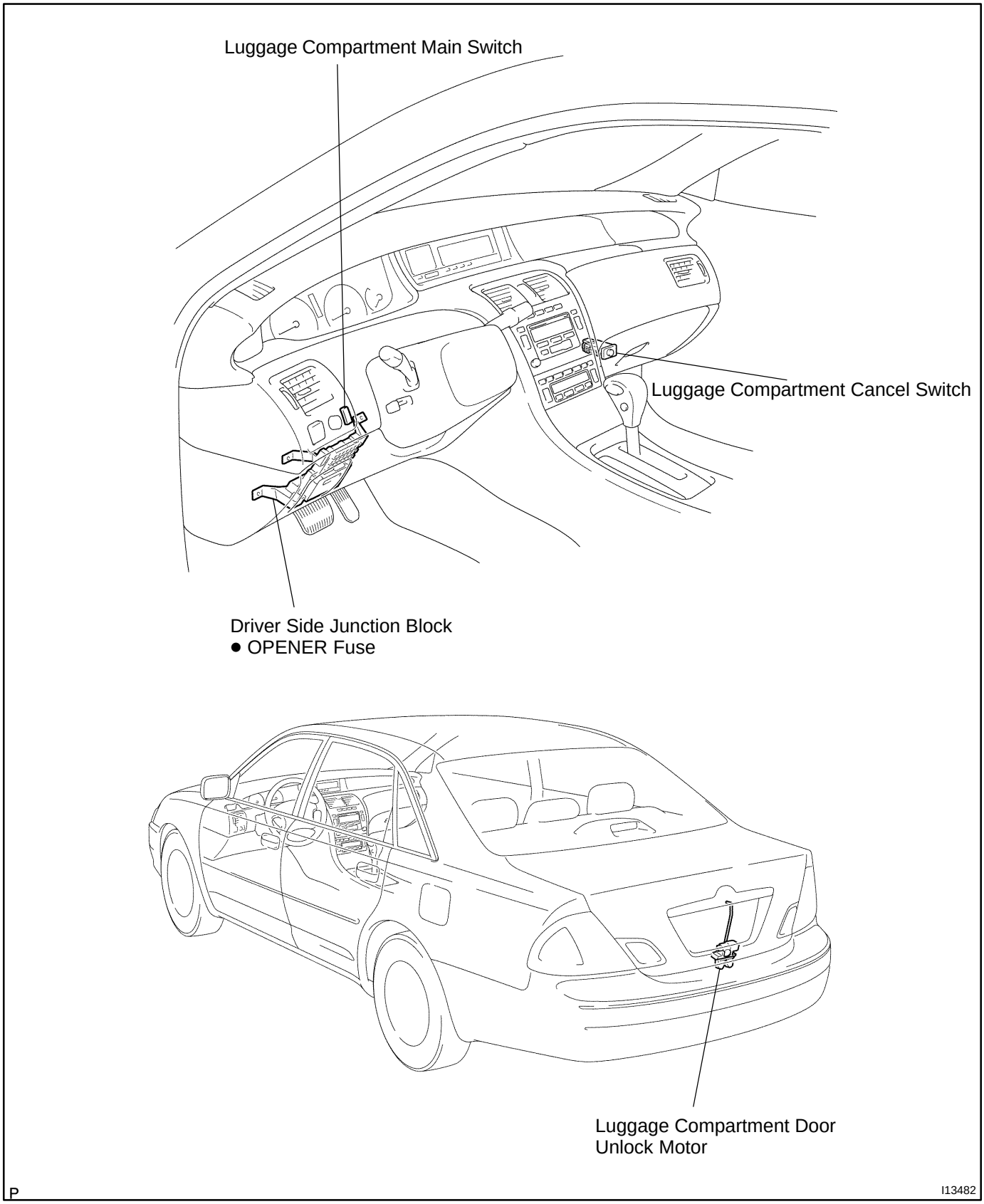
4. INSPECT LUGGAGE COMPARTMENT DOOR OPENER MOTOR OPERATION

Connect positive (+) lead to the terminal 1 and negative (-) lead to the opener motor body, and check that the motor operateds. If operation is not as specified, replace the lock.

BE1EG-01

LUGGAGE COMPARTMENT DOOR OPENER SYSTEM

LOCATION



BE212-01

ADJUSTMENT

ENABLING/DISABLING AUTO DOOR LOCK FUNCTION

(a) To disable auto door lock:

(1) Enter the vehicle and shut all doors.

(2) Insert the key into the ignition cylinder and turn it to the ON position (not ACC).

(3) Open the driver's door and keep it open.

(4) Turn the key to the LOCK position and remove it from the ignition cylinder.

(5) Insert the key into the ignition cylinder and remove it. Repeat this operation three more times. (End this step with the key out of the ignition cylinder.)

(6) Push the "UNLOCK" button on the driver's door master switch 5 times within 10 seconds. Wait at least 10 seconds and shut the driver's door.

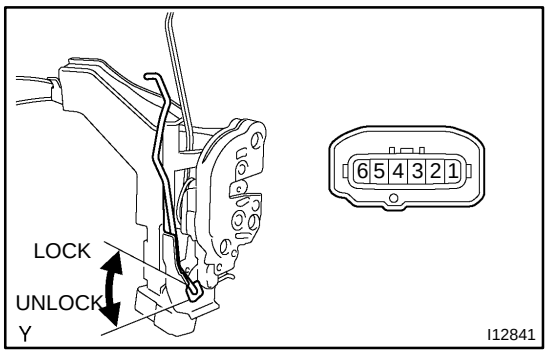
(7) Verify auto lock operation has been disabled by starting the engine, putting the vehicle into a gear and releasing the brake pedal.

(b) To enable auto door lock:

Follow the same sequence as above, except step 6. In step 6, push the "LOCK" button on the driver's door master switch 5 times within 10 seconds. Wait at least 10 seconds and shut the driver's door.

BE1DY-02

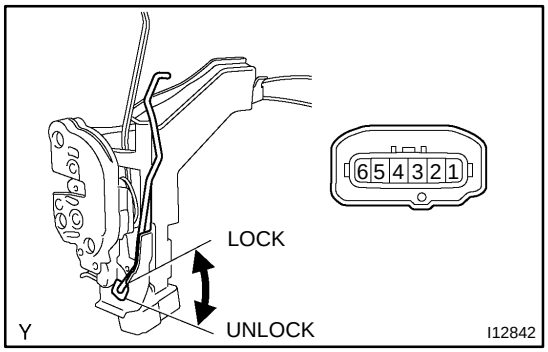
INSPECTION



1. Driver's door:
INSPECT DOOR KEY LOCK AND UNLOCK SWITCH CONTINUITY

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

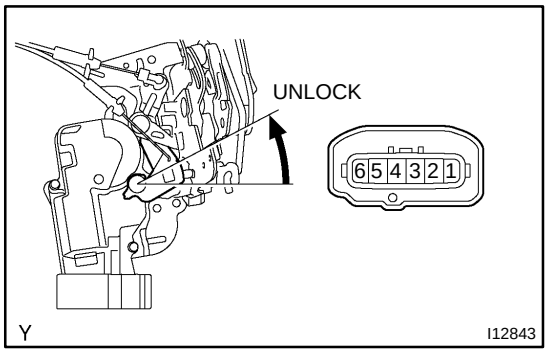
If continuity is not as specified, replace the switch.



2. Passenger's Door:
INSPECT DOOR KEY LOCK AND UNLOCK SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
LOCK	2 - 4	Continuity
OFF	-	No continuity
UNLOCK	1 - 4	Continuity

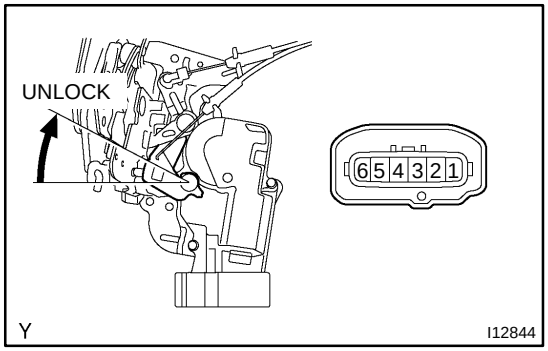
If continuity is not as specified, replace the switch.



3. Driver's 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)	3 - 4	Continuity

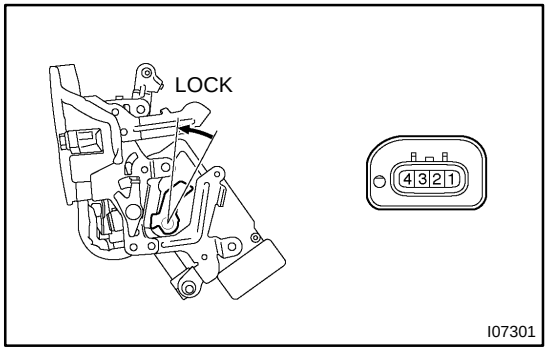
If continuity is not as specified, replace the switch.



4. Passenger's 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)	3 - 4	Continuity

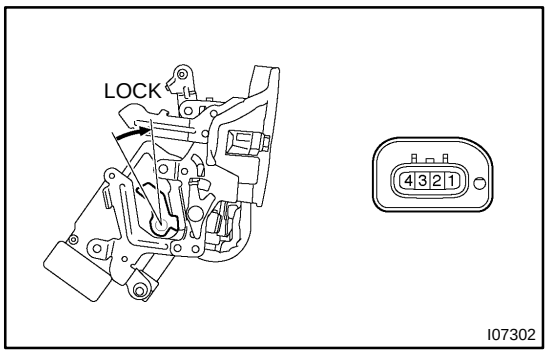
If continuity is not as specified, replace the switch.



5. Rear LH 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 - 2	Continuity

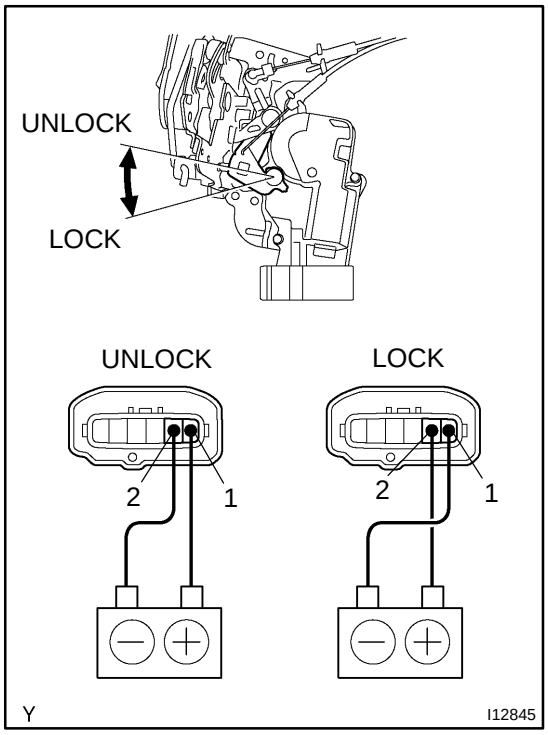
If continuity is not as specified, replace the switch.



6. Rear RH 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)	3 - 4	Continuity

If continuity is not as specified, replace the switch.

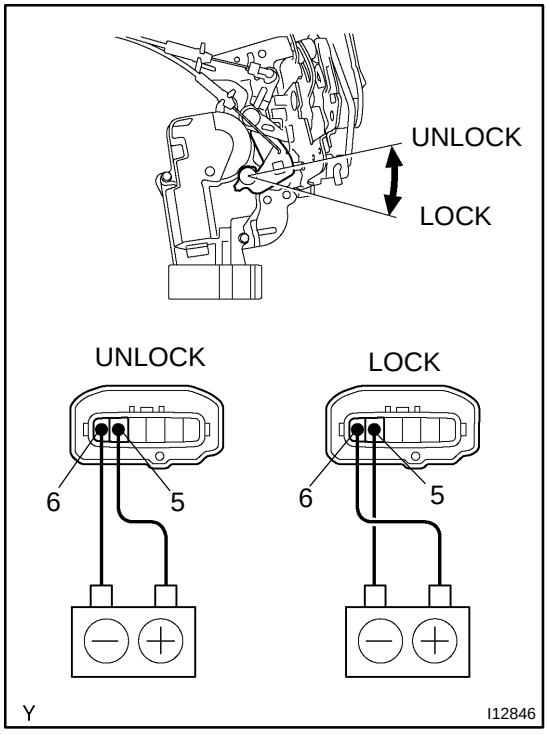


7. Driver's Door:
INSPECT DOOR LOCK MOTOR OPERATION

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

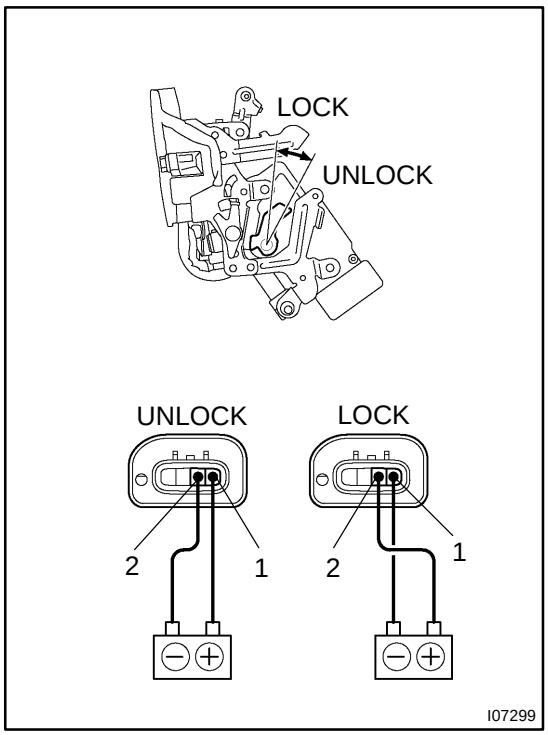


8. Passenger's door:
INSPECT DOOR LOCK MOTOR OPERATION

(a) Connect the positive (+) lead from the battery to terminal 5 and the negative (-) lead to terminal 6, 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.

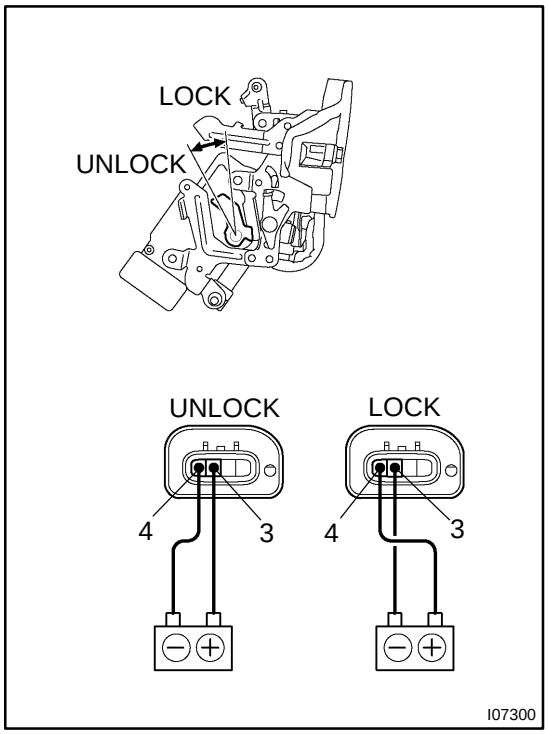


9. Rear LH Door:
INSPECT DOOR LOCK MOTOR OPERATION

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

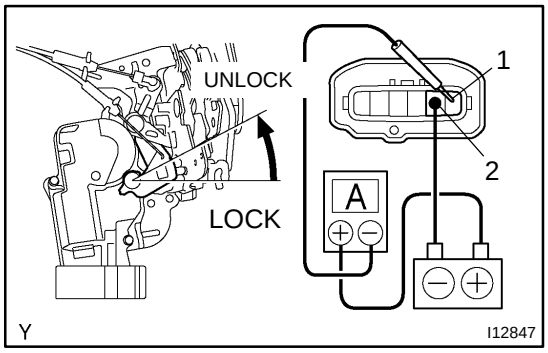


10. Rear RH door:
INSPECT DOOR LOCK MOTOR OPERATION

(a) Connect the positive (+) lead from the battery to terminal 4 and the negative (-) lead to terminal 5, and check that the door lock link moves to UNLOCK position.

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

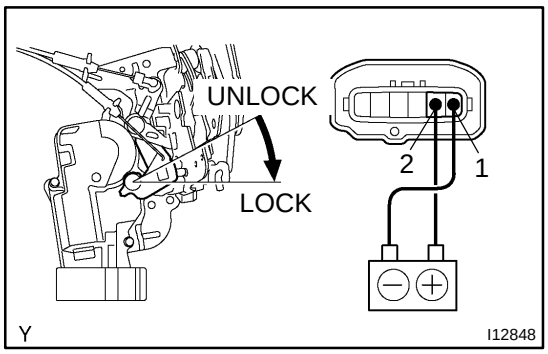
If operation is not as specified, replace the door lock assembly.



11. Using an ammeter:
INSPECT DRIVER'S DOOR PTC THERMISTOR OPERATION

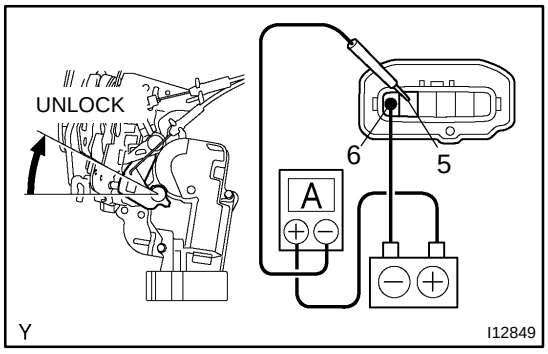
(a) Connect the negative (-) lead from the battery to terminal 2.

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



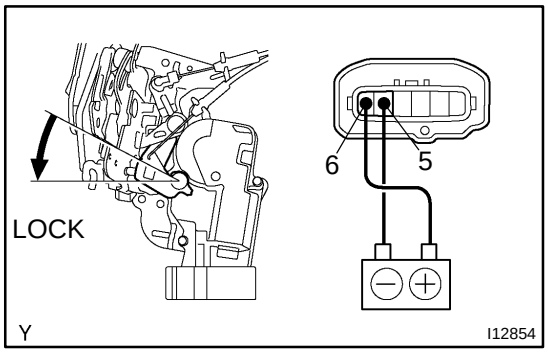
(c) Disconnect the leads from terminals.
(d) Approximately 60 seconds later, connect the positive (+) lead from the battery to terminal 2 and the negative (-) lead to terminal 1, and check that the door lock moves to the LOCK position.

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



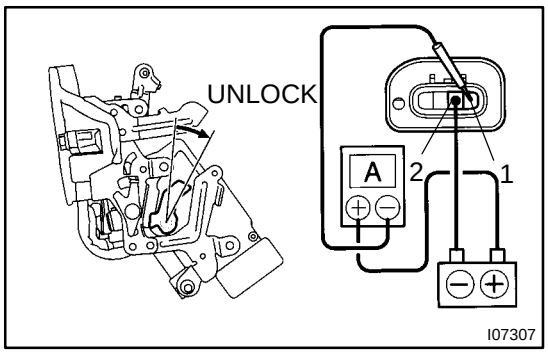
12. Using an ammeter:
INSPECT PASSENGER'S DOOR PTC THERMISTOR OPERATION

(a) Connect the negative (-) lead from the battery to terminal 6.
(b) Connect the negative (-) lead from the ammeter to terminal 5 and the positive (+) lead to battery positive (+) terminal, and check that the current changes from approximately 3.2 A to less than 0.5 A within 20 to 70 seconds.



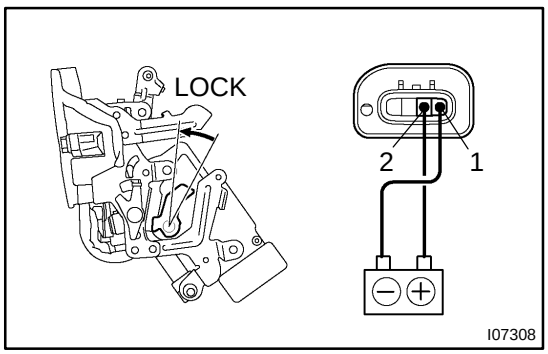
(c) Disconnect the leads from terminals.
(d) Approximately 60 seconds later, connect the positive (+) lead from the battery to terminal 6 and the negative (-) lead to terminal 5, and check that the door lock moves to the LOCK position.

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



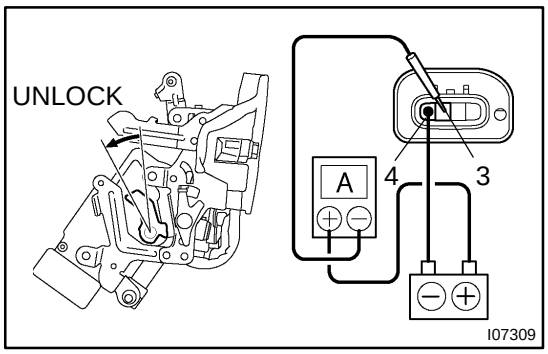
13. Using an ammeter:
INSPECT REAR LH DOOR PTC THERMISTOR OPERATION

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



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

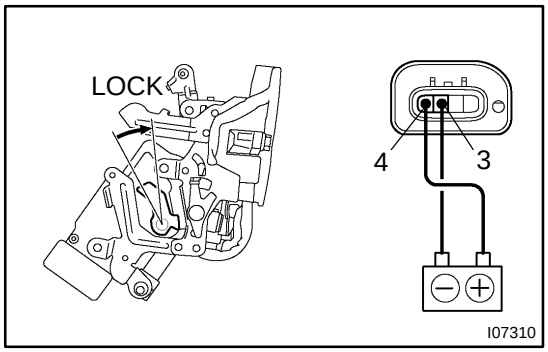
If operation is not as specified, replace the door lock assembly.



14. Using an ammeter:
INSPECT REAR RH PTC THERMISTOR OPERATION

(a) Connect the negative (-) lead from the battery to terminal 4.

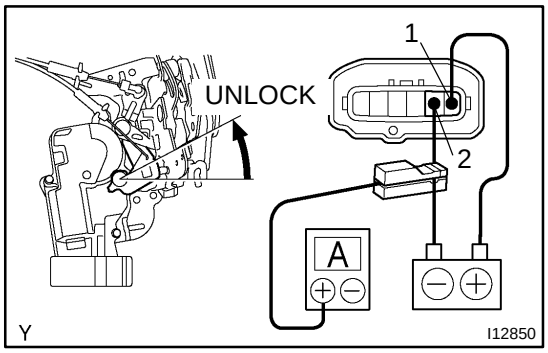
(b) Connect the negative (-) lead from the ammeter to terminal 3 and the positive (+) lead to battery positive (+) terminal, and check that the current changes from approximately 3.2 A to less than 0.5 A within 20 to 70 seconds.



(c) Disconnect the leads from terminals.

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

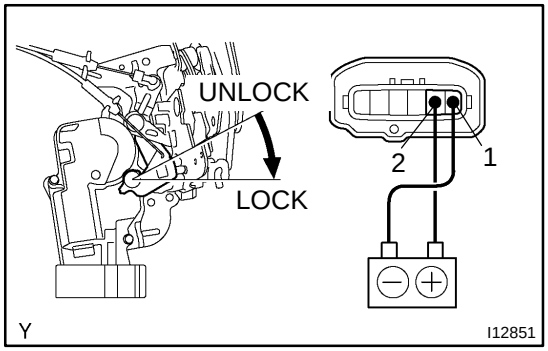
If operation is not as specified, replace the door lock assembly.



15. Using an ammeter with a current-measuring probe:
INSPECT DRIVER'S DOOR PTC THERMISTOR OPERATION

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

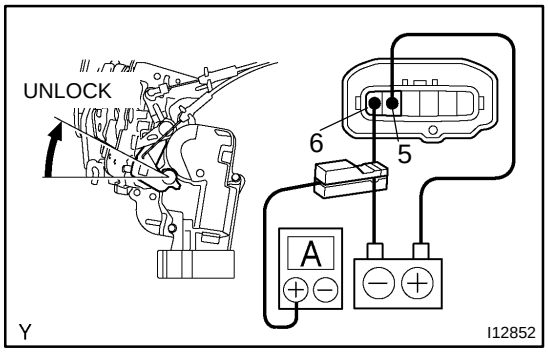
(b) Attach a current-measuring probe to either the positive (+) lead or the negative (-) lead, and check that the current changes from approximately 3.2 A to less than 0.5 A within 20 to 70 seconds.



(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.

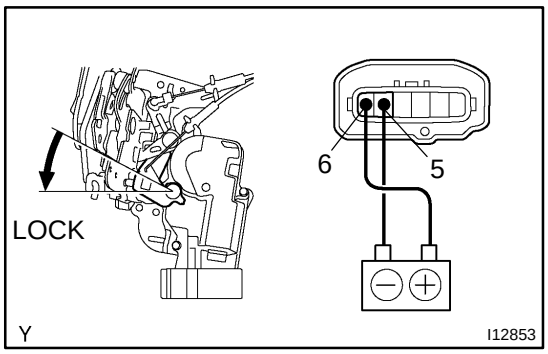
If operation is not as specified, replace the door lock assembly.



16. Using an ammeter with a current-measuring probe:
INSPECT PASSENGER'S DOOR PTC THERMISTOR OPERATION

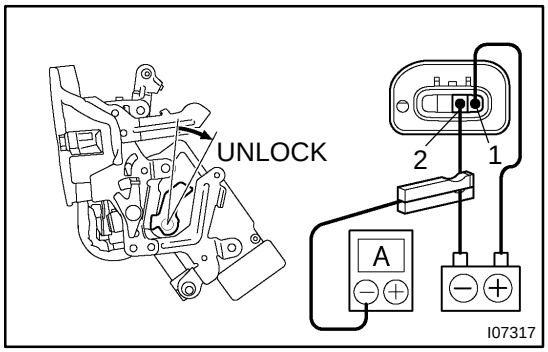
(a) Connect the positive (+) lead from the battery to terminal 5 and the negative (-) lead to terminal 6.

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



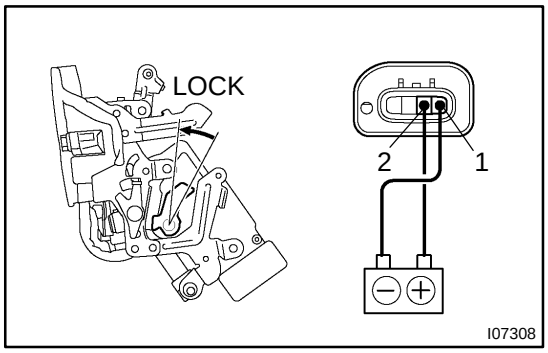
(c) Disconnect the leads from terminals.
(d) Approximately 60 seconds later, reverse the polarity, and check that the door lock moves to the LOCK position.

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



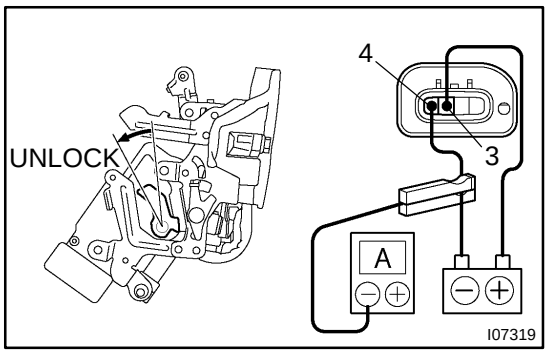
17. Using an ammeter with a current-measuring probe: INSPECT REAR LH DOOR PTC THERMISTOR OPERATION

(a) Connect the positive (+) lead from the battery to terminal 1 and the negative (-) lead to terminal 2.
(b) Attach a current-measuring probe to 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.



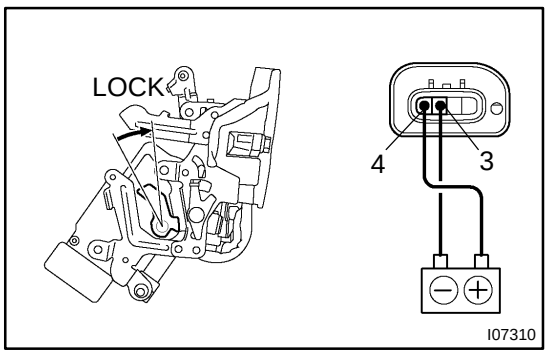
(c) Disconnect the leads from terminals.
(d) Approximately 60 seconds later, reverse the polarity, and check that the door lock moves to the LOCK position.

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



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

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



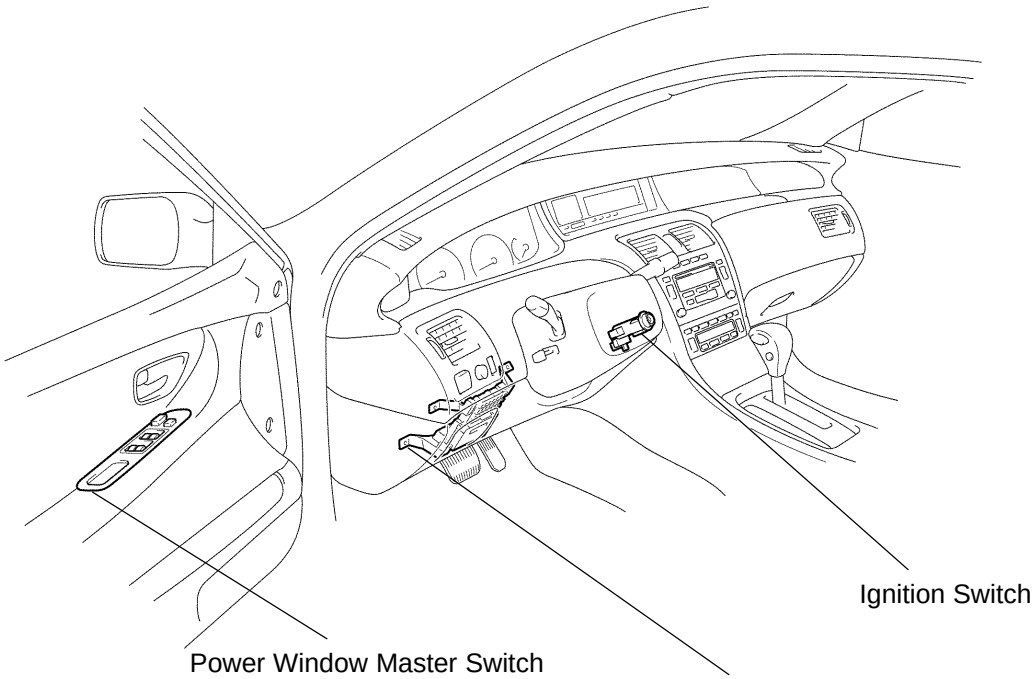
(c) Disconnect the leads from terminals.
(d) Approximately 60 seconds later, reverse the polarity, and check that the door lock moves to the LOCK position.

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

POWER DOOR LOCK CONTROL SYSTEM

LOCATION

BE0IJ-03



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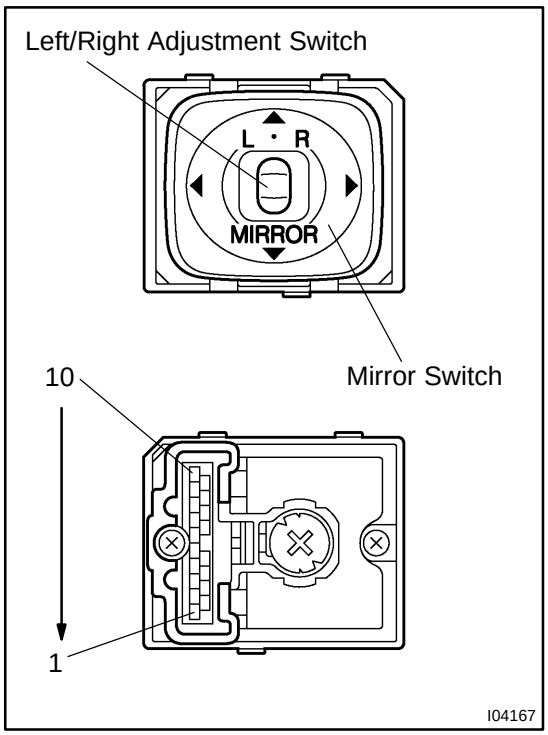


BE1E8-01

INSPECTION

1. W/O Memory:

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, 7 - 8	Continuity
DOWN	2 - 8, 4 - 7	Continuity
LEFT	4 - 10, 7 - 8	Continuity
RIGHT	4 - 7, 8 - 10	Continuity

If continuity is not as specified, replace the switch.

If continuity is as specified. inspect the switch circuit.

3. W/ Memory:

INSPECT LEFT SIDE MIRROR SWITCH CONTINUITY

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

If continuity as specified, replace the switch.

4. w/ Memory:

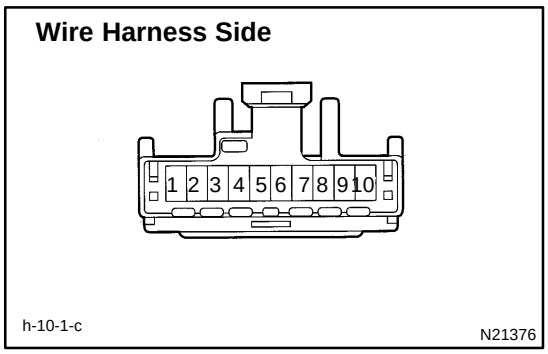
INSPECT MIRROR SWITCH RESISTANCE

HINT:

- Set the Left/Right abjustment switch to either position on the left or right.
- Measure resistance between terminals 7 and 9 at each switch position, as shown in the chart.

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

If resistance as specified, replace the switch.

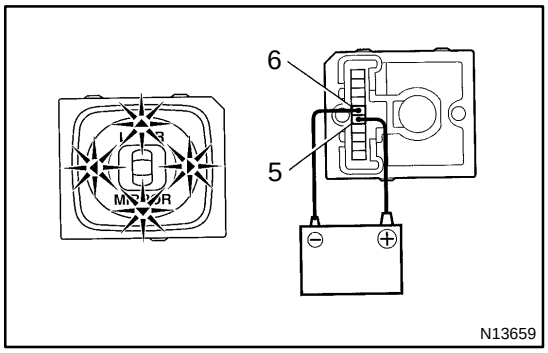


5. INSPECT MIRROR SWITCH CIRCUIT

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

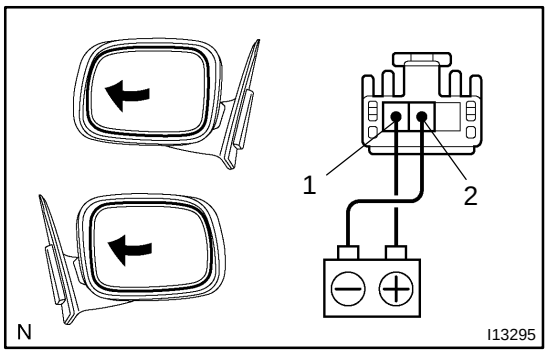
Tester connection	Condition	Specified condition
8 - Ground	Constant	Continuity
4 - Ground	Ignition switch position LOCK	No voltage
4 - Ground	Ignition switch position ACC or ON	Battery voltage

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



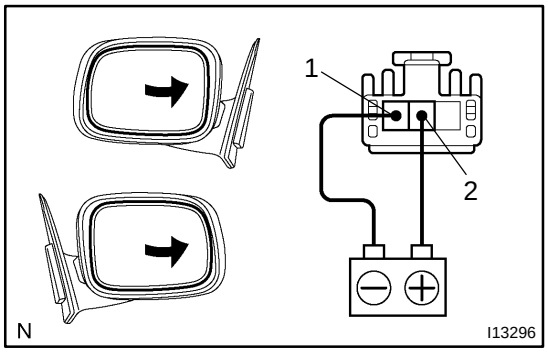
6. INSPECT MIRROR SWITCH INDICATOR LIGHT OPERATION

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

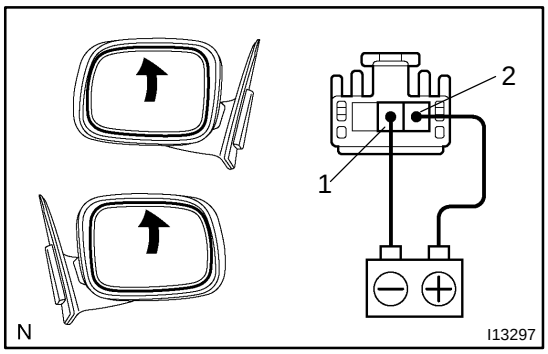


7. w/o Mirror defogger and driving position memory: INSPECT MIRROR MOTOR OPERATION

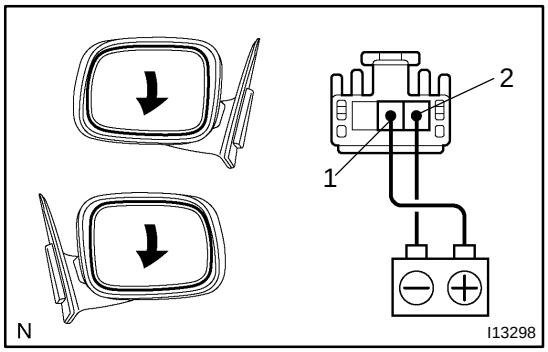
(a) Connect the positive (+) lead from the battery to terminal 1 and the negative (-) lead to terminal 2, and check that the mirror turns to the left side.



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

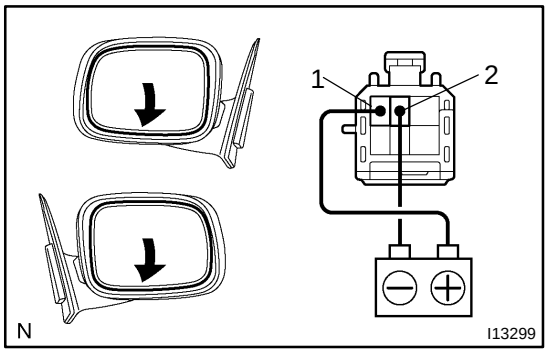


(c) Connect the positive (+) lead from the battery to terminal 2 and the negative (-) lead to terminal 1, and check that the mirror turns upward.



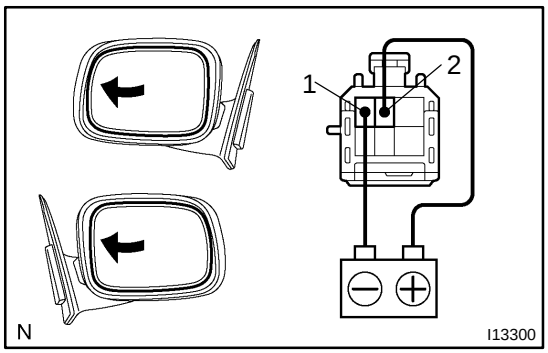
(d) Reverse the polarity, and check that the mirror turns downward.

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



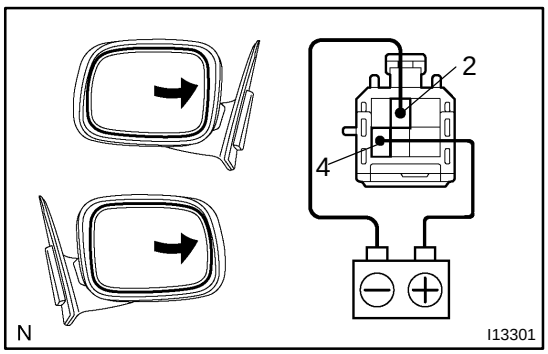
8. w/ Mirror Defogger:
INSPECT MIRROR MOTOR OPERATION

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

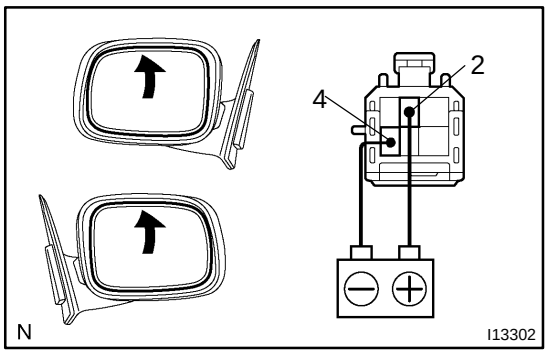


(b) Reverse the polarity, and check that the mirror turns downward.

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

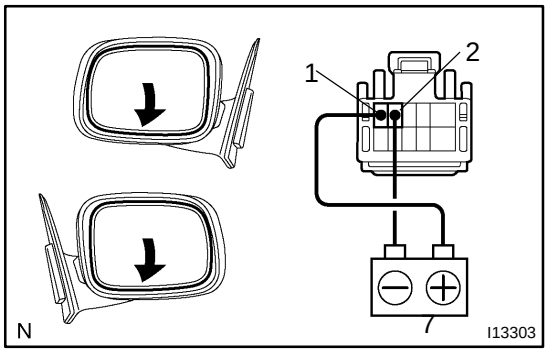


(c) Connect the positive (+) lead from the battery to terminal 4 and the negative (-) lead to terminal 2, and check that the mirror turns upward.



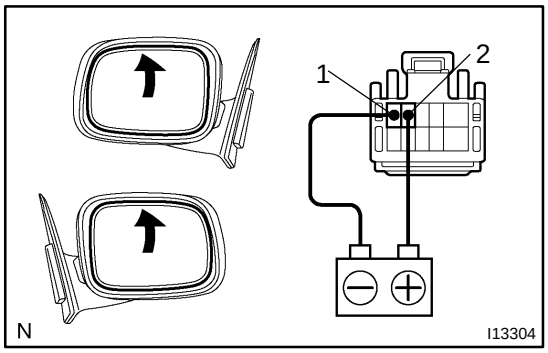
(d) Reverse the polarity, and check that the mirror turns downward.

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



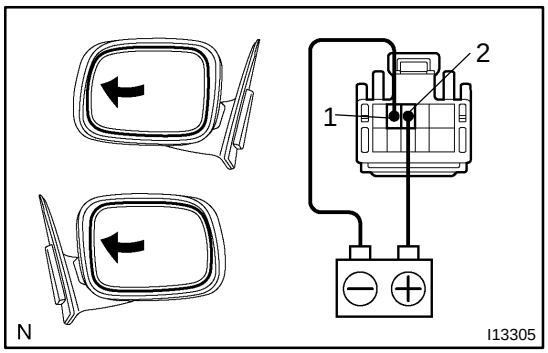
9. w/ Driving position memory:
INSPECT MIRROR POSITION MOTOR OPERATION

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

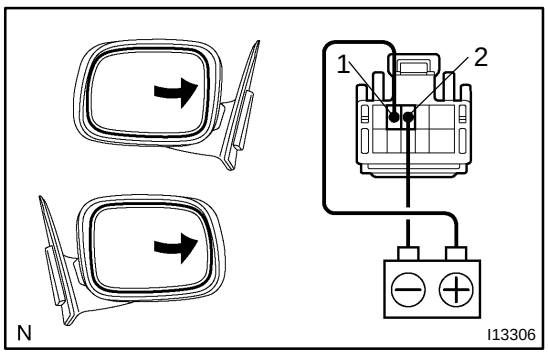


(b) Reverse the polarity, and check that the mirror turns downward.

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

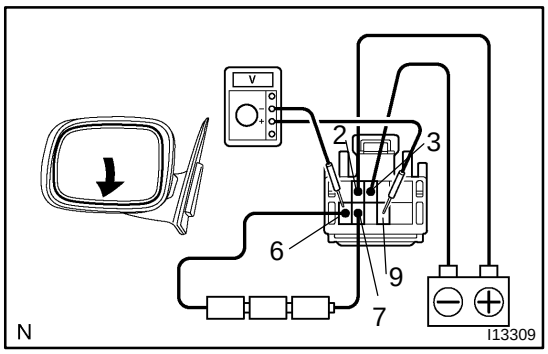


(c) Connect the positive (+) lead from the battery to terminal 2 and the negative (-) lead to terminal 1, and check that the mirror turns upward.



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

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



10. w/ Driving position memory:
INSPECT MIRROR POSITION SENSORS OPERATION

HINT:

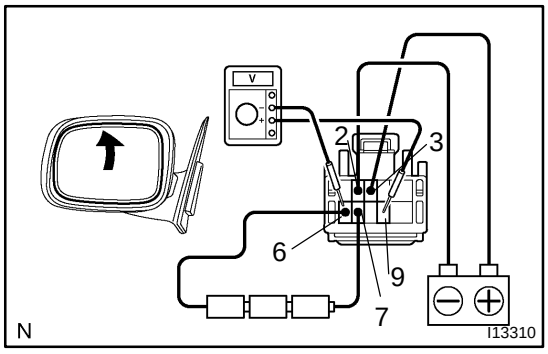
Strip off the vinyl tape of the connector and remove terminals 2, 3, 6, 7 and 9 from the connector housing.

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

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

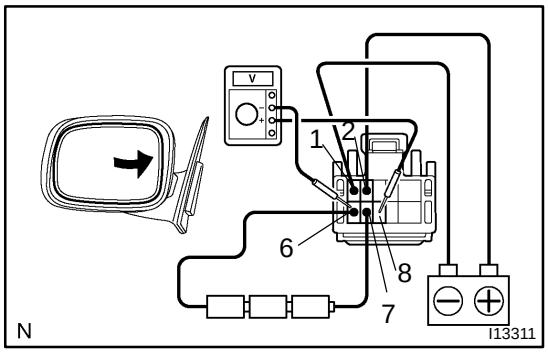
(c) Connect the positive (+) lead from the voltmeter to terminal 9 and the negative (-) lead to terminal 6.

(d) Apply Battery voltage to terminals 2 and 3, then check that the voltage gradually changes according to the table below while the mirror moves between the uppermost position and lowermost position.



Mirror position	Lowermost	Mirror position	Uppermost
Voltage	2.8 - 5.0	Changes gradually	0 - 1.8

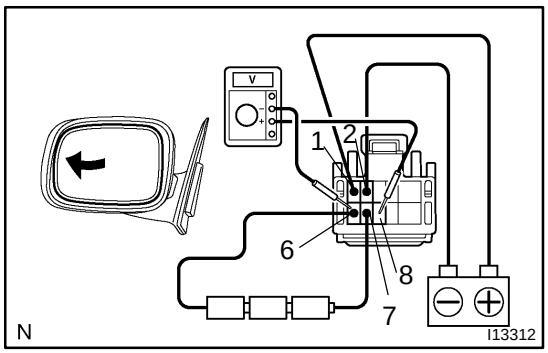
If voltage value is not as specified, replace the motor assembly.



(e) Disconnect the 4 leads of the battery and voltmeter.

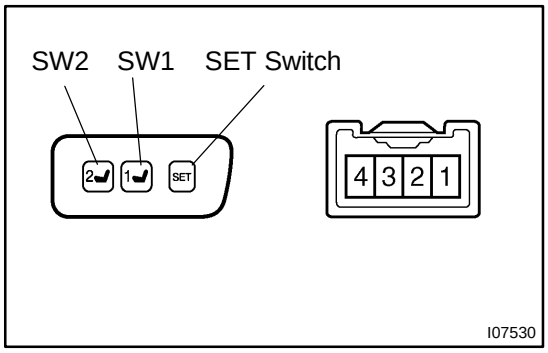
(f) Connect the positive (+) lead from the voltmeter to terminal 8 and negative (-) lead to terminal 6.

(g) Apply Battery voltage to terminals 2 and 1, then inspect that the voltage gradually changes according to the table below while the mirror moves between the left-most position and right-most position.



Mirror position	Left-most	Mirror position	Right-most
Voltage LEFT	2.8 - 5.0	Changes gradually	0 - 1.8
Voltage RIGHT	0 - 1.8	Changes gradually	2.8 -5.0

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



11. INSPECT DRIVING POSITION MEMORY AND RETURN SWITCH CONTINUITY

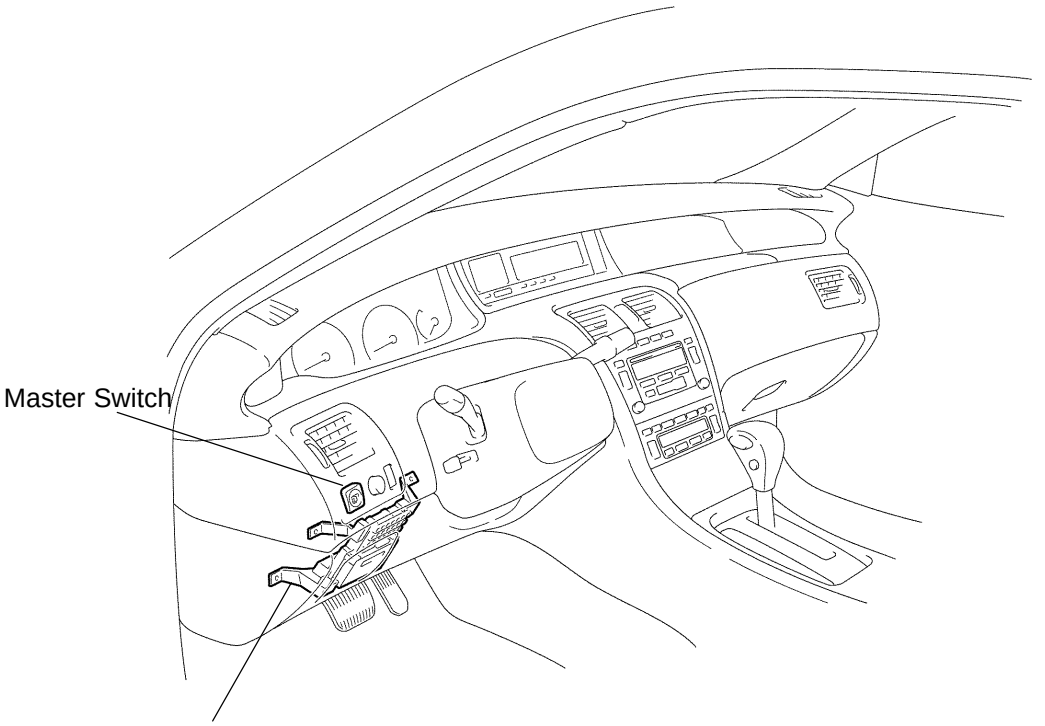
Switch position	Tester connection	Specified condition
SET switch ON	3 - 4	Continuity
Return SW1 ON	2 - 3	Continuity
Return SW2 ON	1 - 3	Continuity

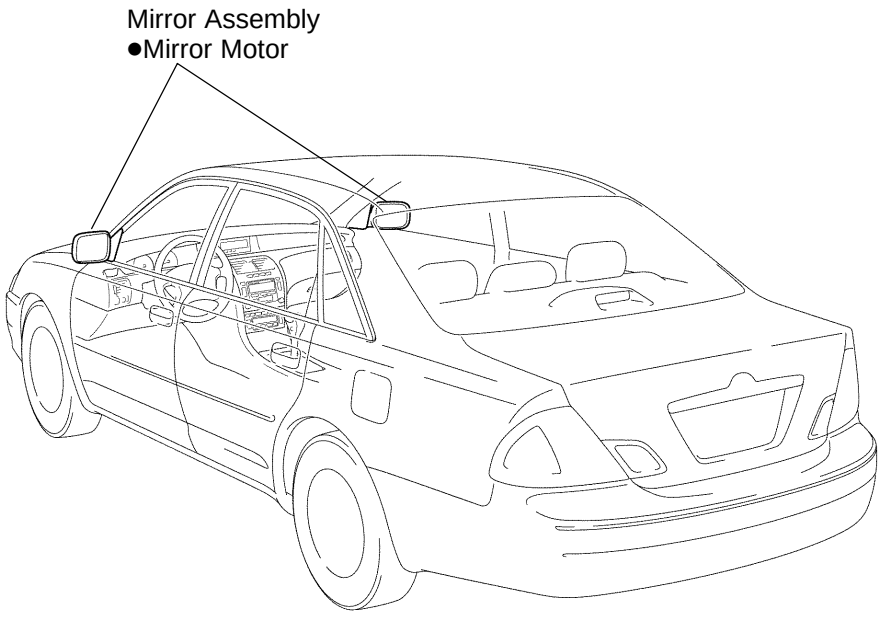
If continuity is not as specified, replace the switch.

BE1E5-01

POWER MIRROR CONTROL SYSTEM

LOCATION





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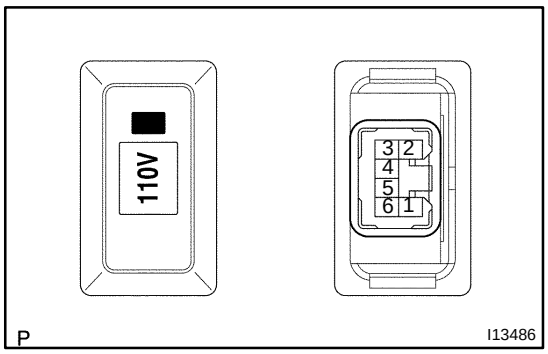
BE1DH-01



INSPECTION

INSPECT POWER OUTLET MAIN SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
ON	2 - 3 - 6	continuity
OFF	-	No Continuity
illmination	1 - 5	Continuity

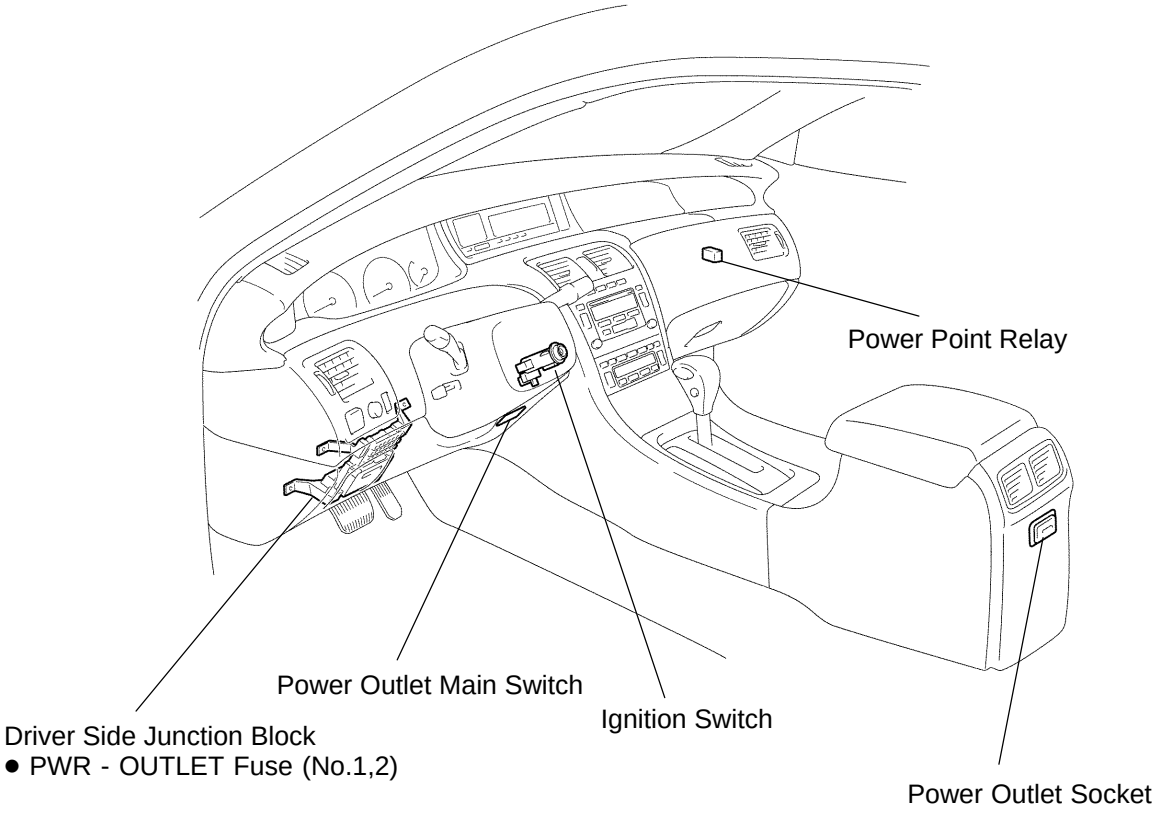
If continuity is not as specified, replace the switch.

BE1DG-01

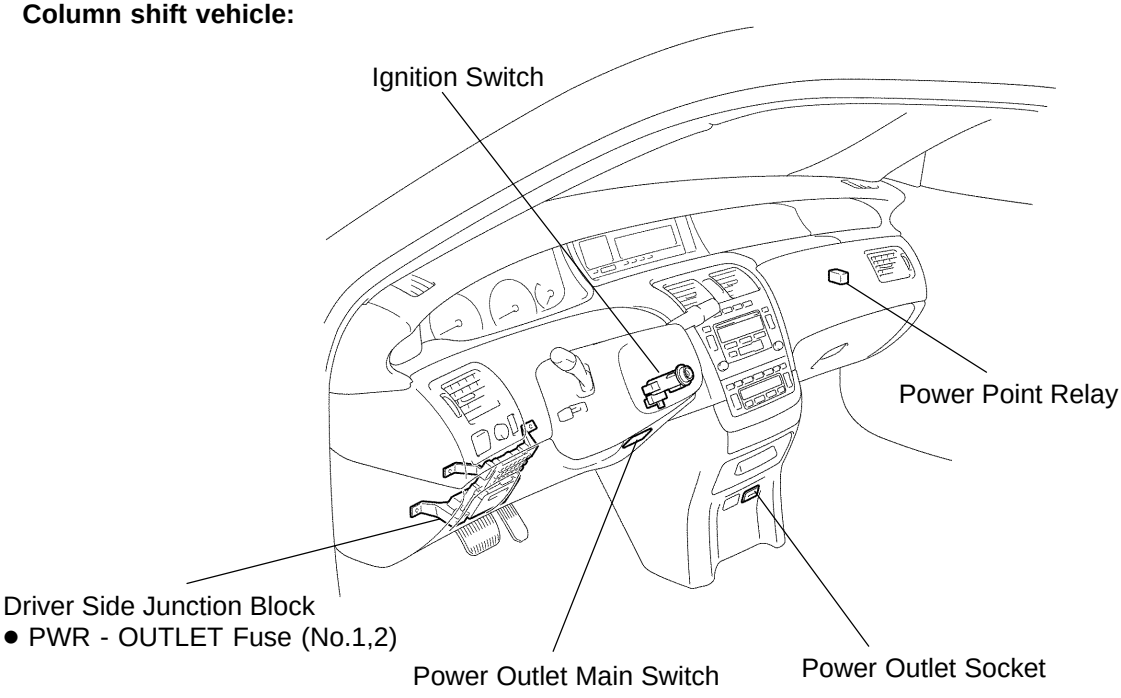
POWER OUTLET

LOCATION

Floor shift vehicle:



Column shift vehicle:



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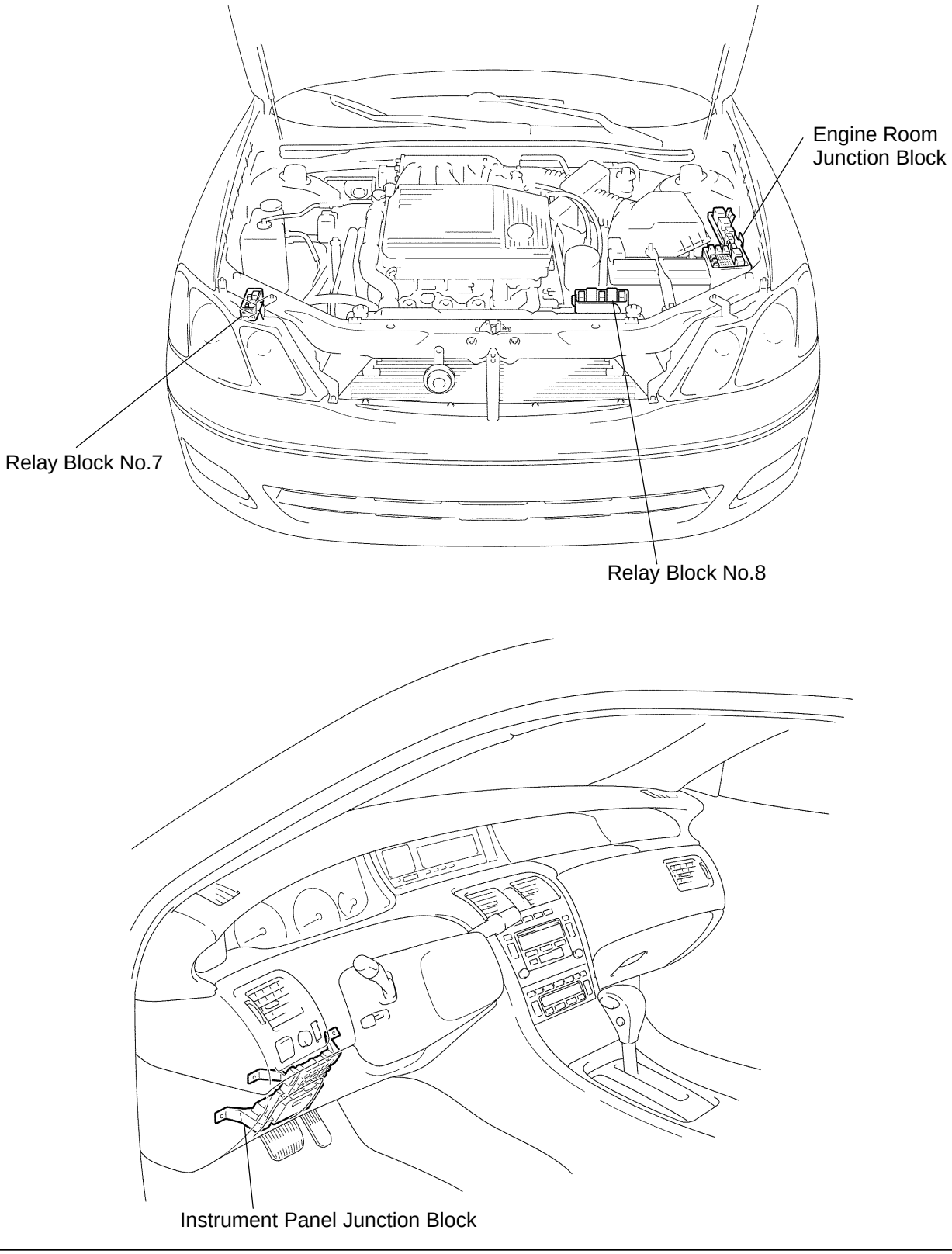
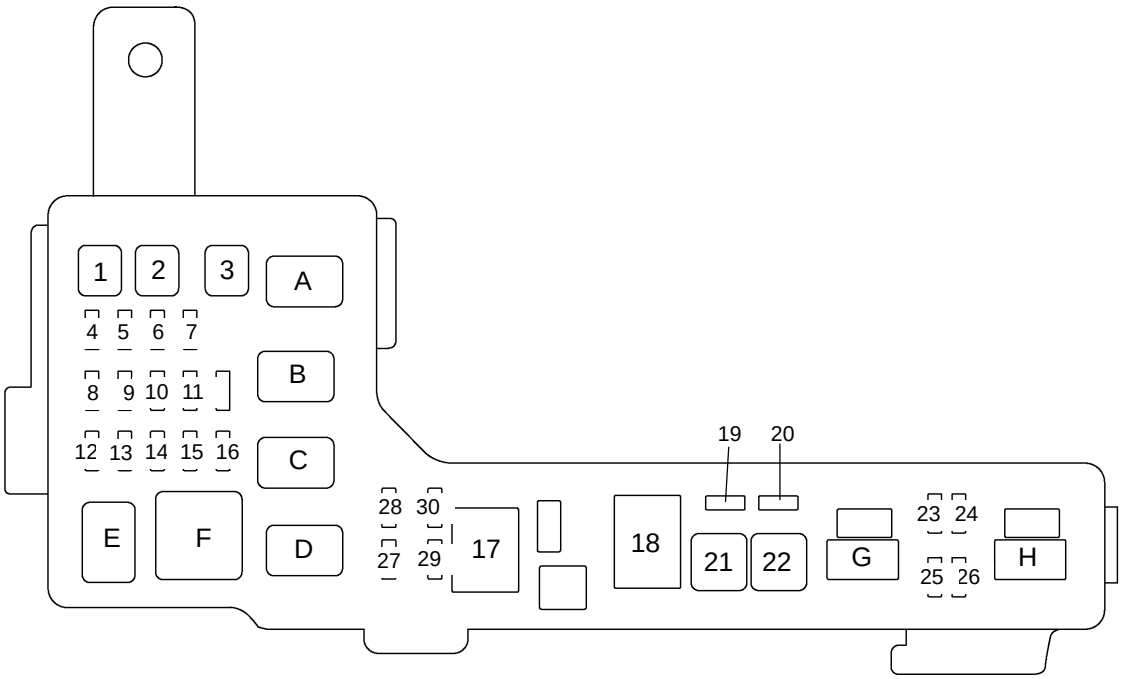
POWER SOURCE

LOCATION

BE1DF-01



Engine Room Junction Block:



Fuses:

1. MAIN Fuse - 40 A
2. RDI Fuse - 30 A
3. CDS Fuse - 30 A
4. HAZ Fuse - 15 A
5. SRS WRN Fuse - 5 A
6. DCC 1 Fuse - 30 A
7. ALT-S Fuse - 5 A
8. AM2 Fuse - 10 A
9. HORN Fuse - 10 A
10. DOOR NO. 2 Fuse - 15 A
11. A/F Fuse - 25 A
12. IG2 Fuse - 15 A
13. EFI NO. 1 Fuse - 15 A
14. ABS NO. 2 Fuse - 25 A
15. ABS NO. 3 Fuse - 25 A
16. EFI NO. 2 Fuse - 7.5 A
17. ALT Fuse - 120 A
18. ABS Fuse - 60 A
19. DRL Fuse - 7.5 A
20. ABS NO. 4 Fuse - 5 A
21. HTR Fuse - 50 A
22. AM1 Fuse - 40 A
23. H-LP LH Fuse - 15 A *2
24. H-LP RH Fuse - 15 A *2
25. H-LP LH LWR Fuse - 15 A *1
26. H-LP RH LWR Fuse - 15 A *1
27. SPARE Fuse - 10 A
28. SPARE Fuse - 15 A
29. SPARE Fuse - 25 A
30. SPARE Fuse - 30 A

Relays:

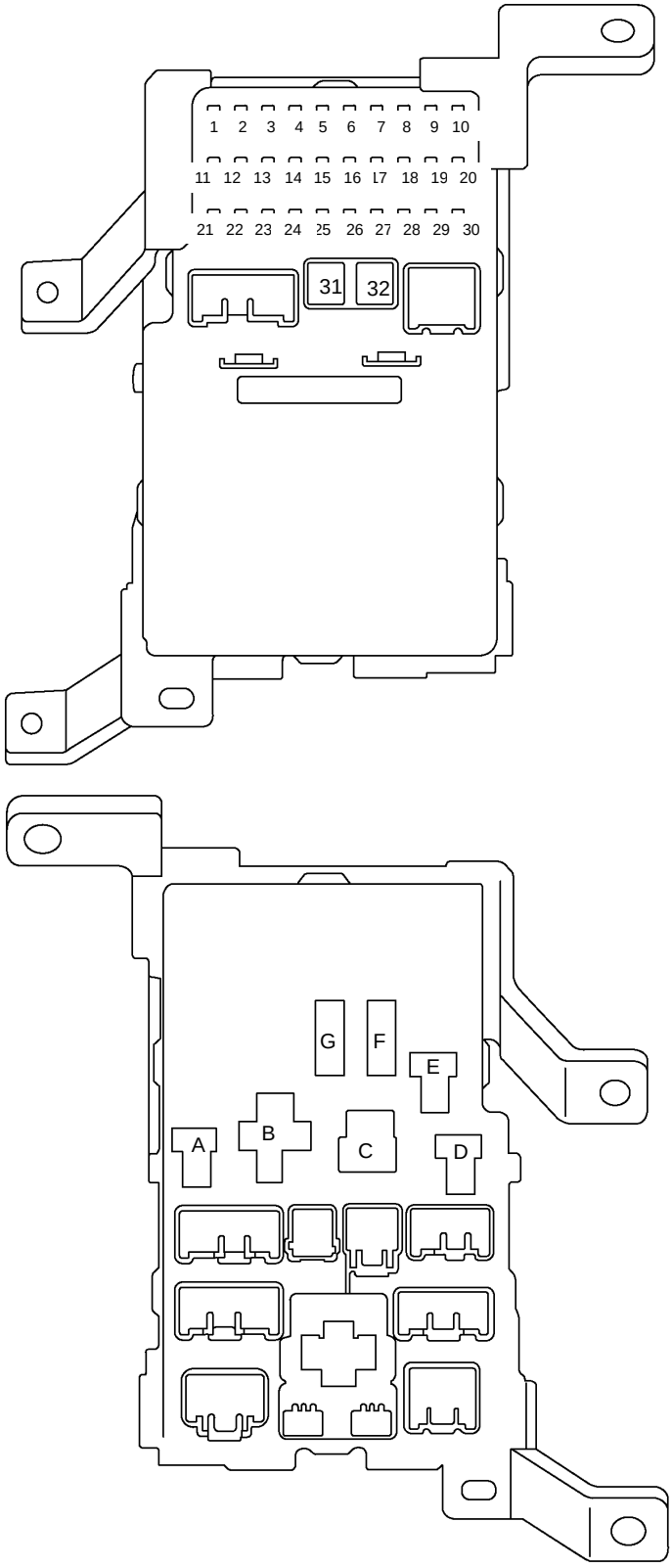
A. MG/CLT Relay
B. A/F Relay
C. HORN Relay
D. EFI Relay
E. IG2 Relay
F. ST Relay
G. HEAD Relay
H. HTR Relay

*1: w/ Daytime Running Light
*2: w/o Daytime Running Light

Y

I12519

Driver Side Junction Block:



Fuses:

1. ECU-IG NO. 1 Fuse - 5 A
2. ECU-B NO. 2 Fuse - 7.5 A
3.TAIL Fuse - 10 A
4. SEAT HTR Fuse - 20 A
5. FR P/W Fuse - 20 A
6.GAUGE NO. 1 Fuse - 10 A
7. HTR Fuse - 10 A
8. FOG Fuse - 15 A
9. TURN Fuse - 7.5 A
10. A/C Fuse - 10 A
11. RADIO Fuse - 15 A
12. PANEL Fuse - 5 A
13.FL P/W Fuse - 25 A
14.PWR OUTLET NO. 1 Fuse - 15 A
15. ECU-ACC Fuse - 5 A
16. SRS ACC Fuse - 10 A
17. MIR HTR Fuse - 10 A
18. PWR OUTLET NO. 2 Fuse - 15 A
19. GAUGE NO. 2 Fuse - 10 A
20. OBDII Fuse - 7.5 A
21.STOP Fuse - 15 A
22.DOME Fuse - 7.5 A
23. OPNER Fuse - 5 A
24.RL P/W Fuse - 20 A
25.RR P/W Fuse - 20 A
26. WIP Fuse - 25 A
27.ECU-IG NO. 2 Fuse - 10 A
28.CIG Fuse - 15 A
29.DOOR NO. 1 Fuse - 25 A
30. SUN ROOF Fuse - 30 A
31. DEF Fuse - 40 A
32.PWR SEAT Fuse - 30 A

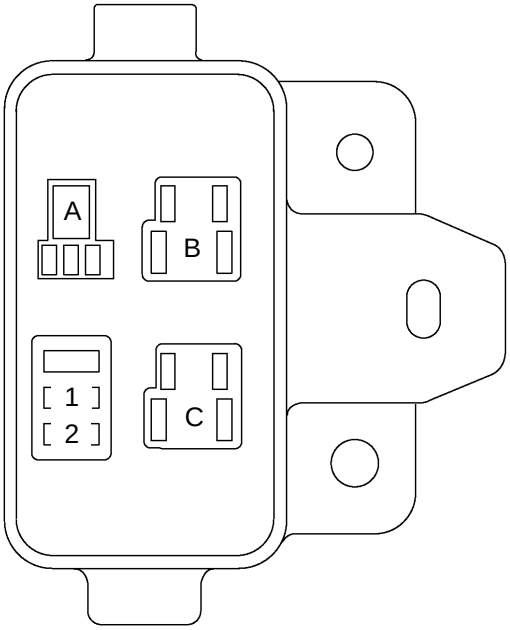
Relays:

A. FOG Relay
B. DEF Relay
C. IG1 Relay
D. TAIL Relay
E. PWR Relay

F. N/F-1
G.N/F-2

I12518

Relay Block No. 7: (w/ Day time running light)

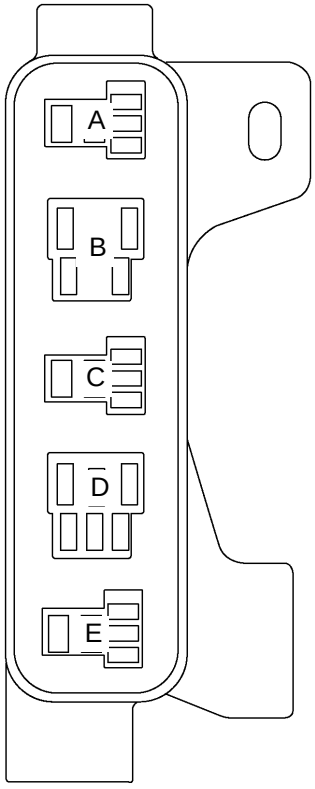


Fuses:

1.HEAD LH UPR Fuse - 10 A *1
2. HEAD RH UPR Fuse - 10 A *1

Relays:
A. DRL NO. 3 Relay *1
B. DRL NO. 4 Relay *1
C. DRL NO. 2 Relay *1

Relay Block No. 8:



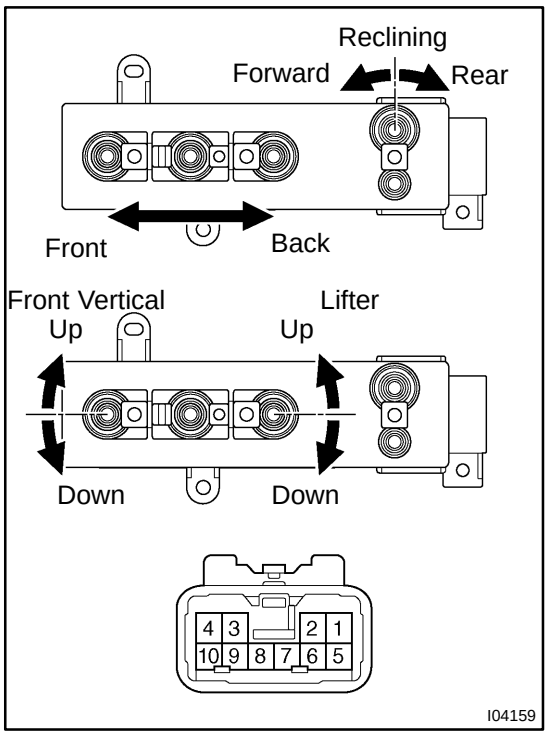
Relays:
A. FAN NO. 3 Relay
B. ABS-MTR Relay
C. FAN NO. 2 Relay
D. ABS-SOL Relay
E. FAN NO. 1 Relay

*1: w/ Daytime Running Light System

Y

I12520

BE0GL-04



INSPECTION

1. INSPECT DRIVER'S POWER SEAT SWITCH CONTINUITY

Slide switch:

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

Front vertical switch:

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

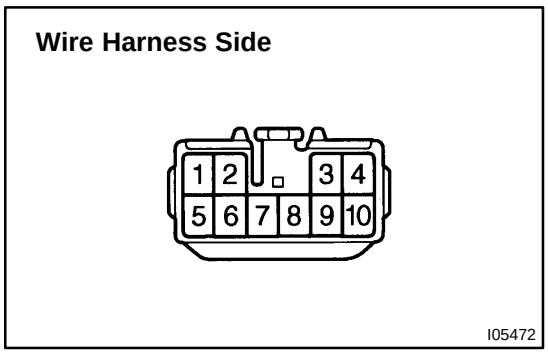
Lifter switch:

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

Reclining switch:

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

If continuity is not as specified, replace the switch.



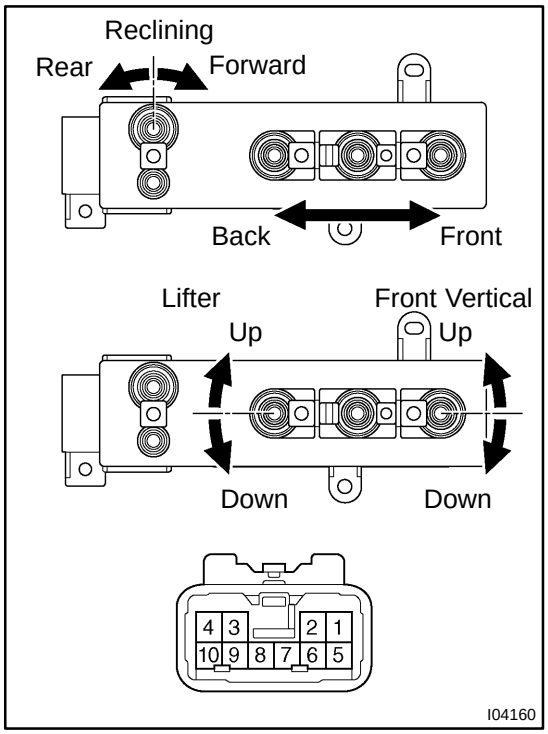
2. INSPECT DRIVER'S POWER SEAT SWITCH CIRCUIT

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

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

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

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



3. INSPECT PASSENGER'S POWER SEAT SWITCH CONTINUITY

Slide switch:

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

Front vertical switch:

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

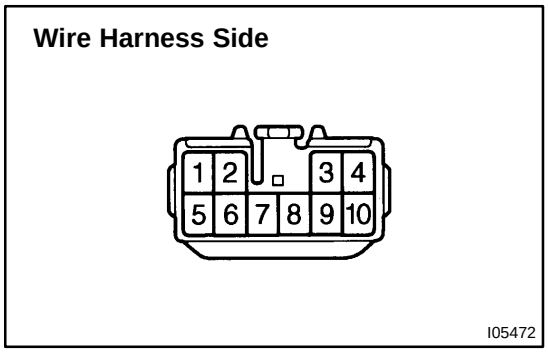
Lifter switch:

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

Reclining switch:

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

If continuity is not as specified, replace the switch.



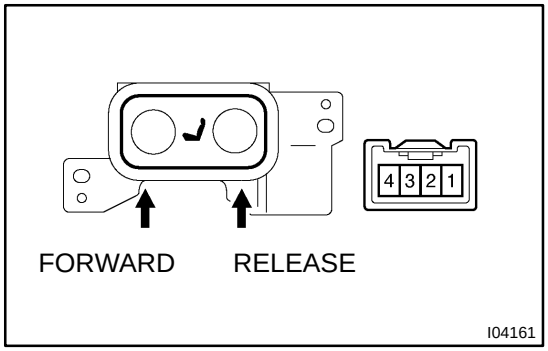
4. INSPECT PASSENGER'S POWER SEAT SWITCH CIRCUIT

(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
4 - Ground	Constant	Continuity
1 - Ground	Constant	Battery positive voltage

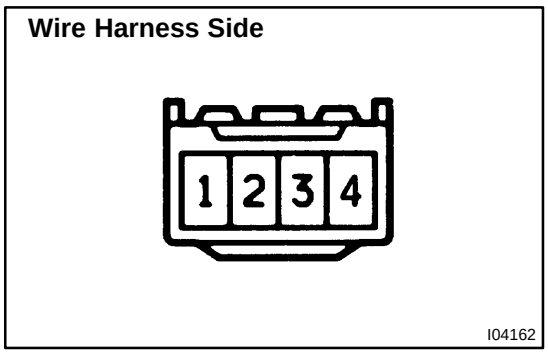
If circuit is not as specified, inspect the circuits connected to other parts.



5. INSPECT DRIVER'S LUMBAR SUPPORT SWITCH CONTINUITY

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

If continuity is not as specified, replace the switch.



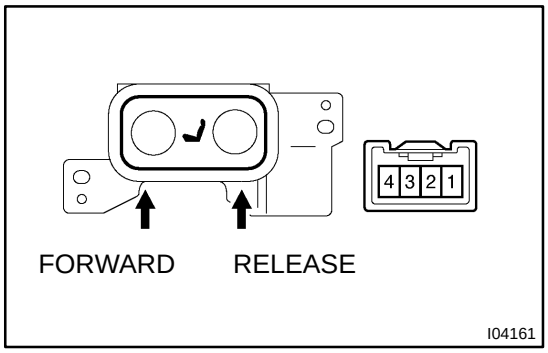
6. INSPECT DRIVER'S LUMBAR SUPPORT SWITCH CIRCUIT

(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

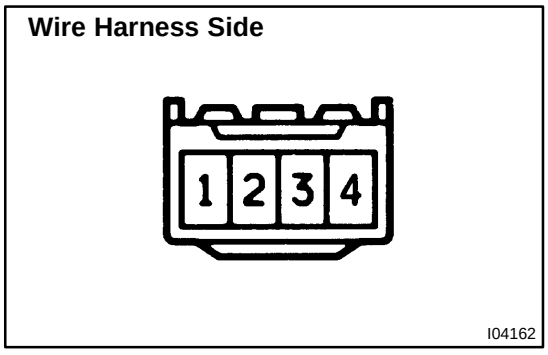
If circuit is not as specified, inspect the circuits connected to other parts.



7. INSPECT PASSENGER'S LUMBAR SUPPORT SWITCH CONTINUITY

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

If continuity is not as specified, replace the switch.



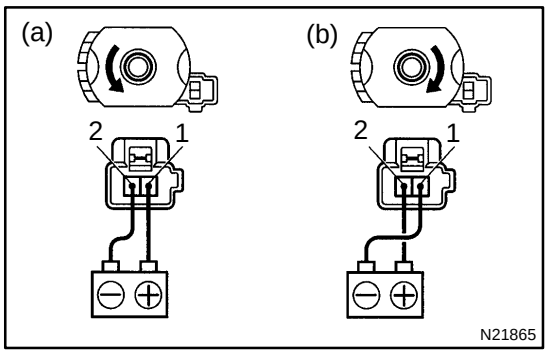
8. INSPECT PASSENGER'S LUMBAR SUPPORT SWITCH CIRCUIT

(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
2 - Ground	Constant	Continuity
1 - Ground	Constant	Battery positive voltage

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

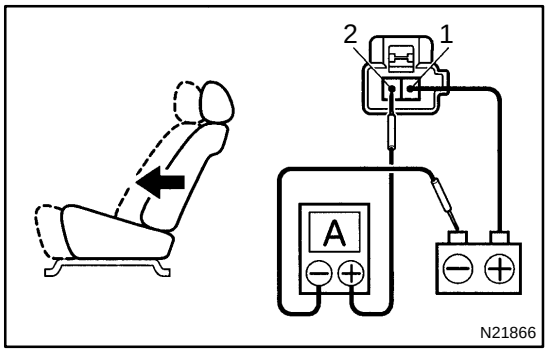


9. INSPECT SLIDE MOTOR OPERATION

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

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

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

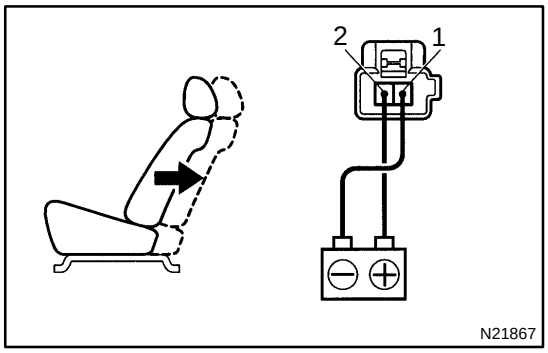


10. INSPECT SLIDE MOTOR PTC THERMISTOR OPERATION

( ): 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 front position.

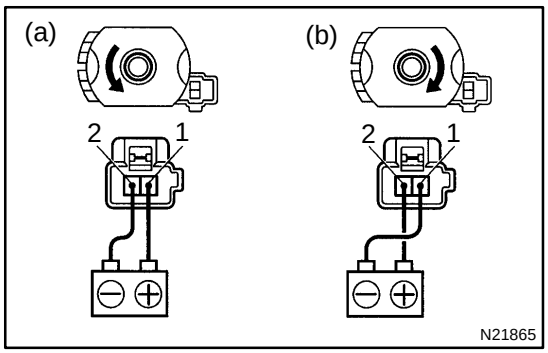
(b) Continue to apply voltage, check that current changes to less than 1 ampere within 4 to 90 seconds.



(c) Disconnect the leads from terminals.

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

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

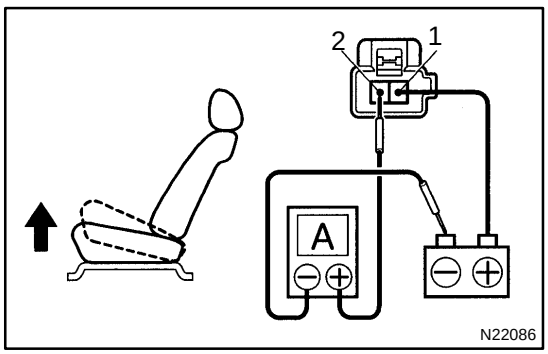


11. INSPECT FRONT VERTICAL MOTOR OPERATION

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

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

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

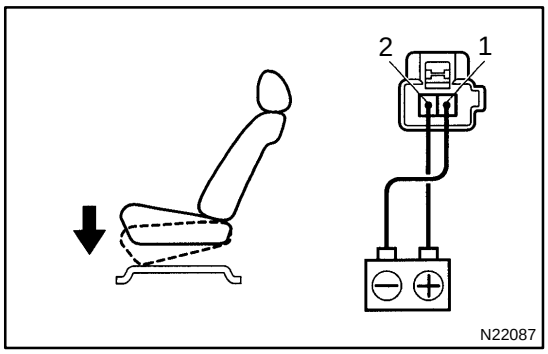


12. INSPECT FRONT VERTICAL MOTOR PTC THERMISTOR OPERATION

( ): Passenger side

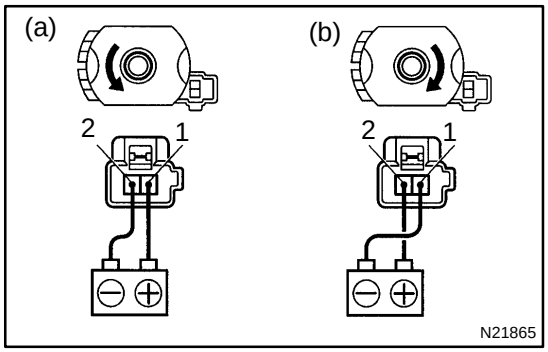
(a) Connect the positive (+) lead from the battery to terminal 1 (2), the positive (+) lead from the ammeter to terminal 2 (1) and the negative (-) lead to the battery negative (-) terminal, then move the seat cushion to the highest position.

(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.

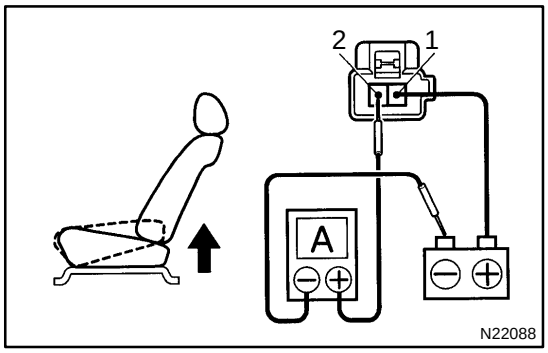
If operation is not as specified, replace the seat adjuster.



13. INSPECT REAR VERTICAL MOTOR OPERATION

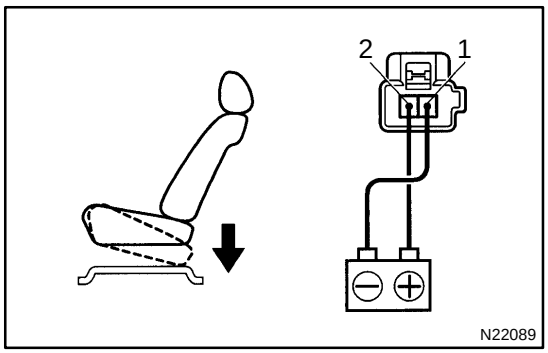
(a) Connect the positive (+) lead from the battery to terminal 1 and the negative (-) lead to terminal 2, check that the motor turns counterclockwise.
(b) Reverse the polarity, check that the motor turns clockwise.

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



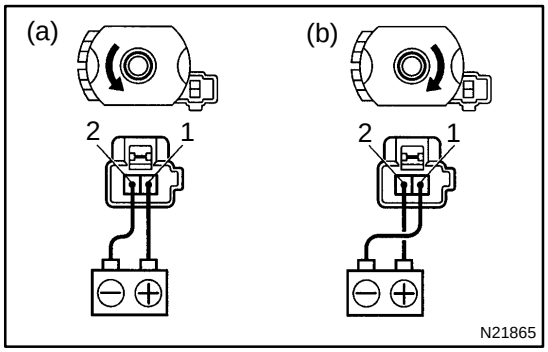
14. INSPECT REAR VERTICAL MOTOR PTC THERMISTOR OPERATION

(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 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 1 (2) and the negative (-) lead to terminal 2 (1), check that the seat cushion begins to descend.

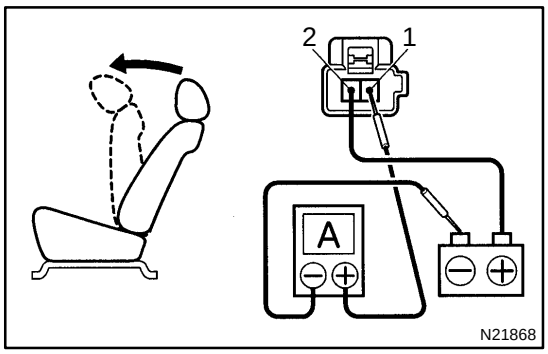
If operation is not as specified, replace the seat adjuster.



15. INSPECT RECLINING MOTOR OPERATION

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

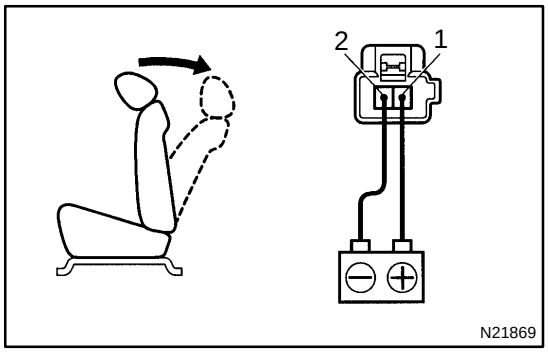
If operation is not as specified, replace the seat adjuster.



16. INSPECT RECLINING MOTOR PTC THERMISTOR OPERATION

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

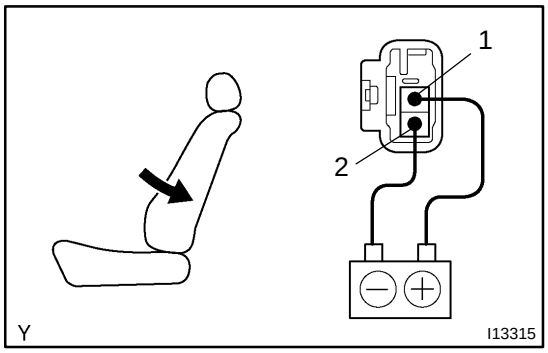
(b) Continue to apply voltage, check that the current changes to less than 1 ampere within 4 to 90 seconds.



(c) Disconnect the leads from the terminals.

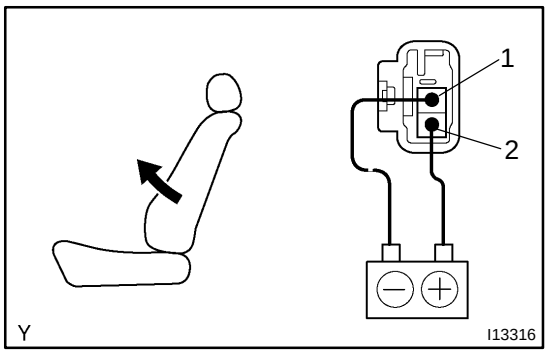
(d) Approximately 60 seconds later, connect the positive (+) lead from the battery to terminal 1 and the negative (-) lead to terminal 2, check that the seat back begins to fall backward.

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



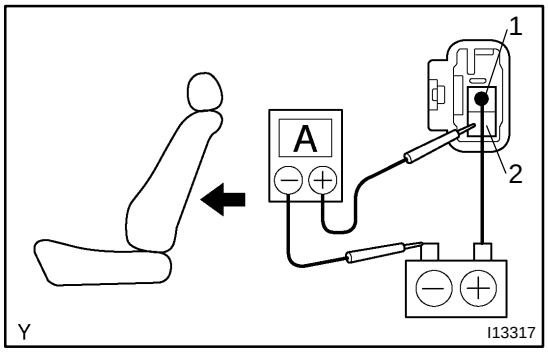
17. INSPECT LUMBAR SUPPORT MOTOR OPERATION

(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.



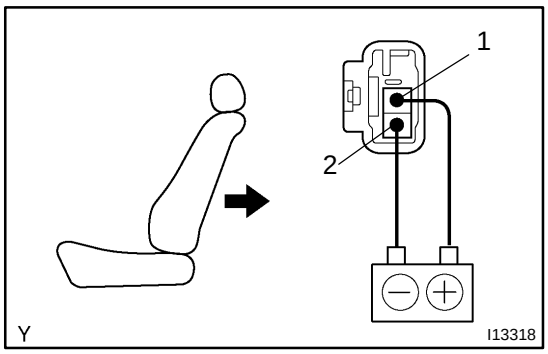
(b) Reverse the polarity, check that the lumbar support moves forward.

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



18. INSPECT LUMBAR SUPPORT MOTOR CIRCUIT BREAKER OPERATION

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



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

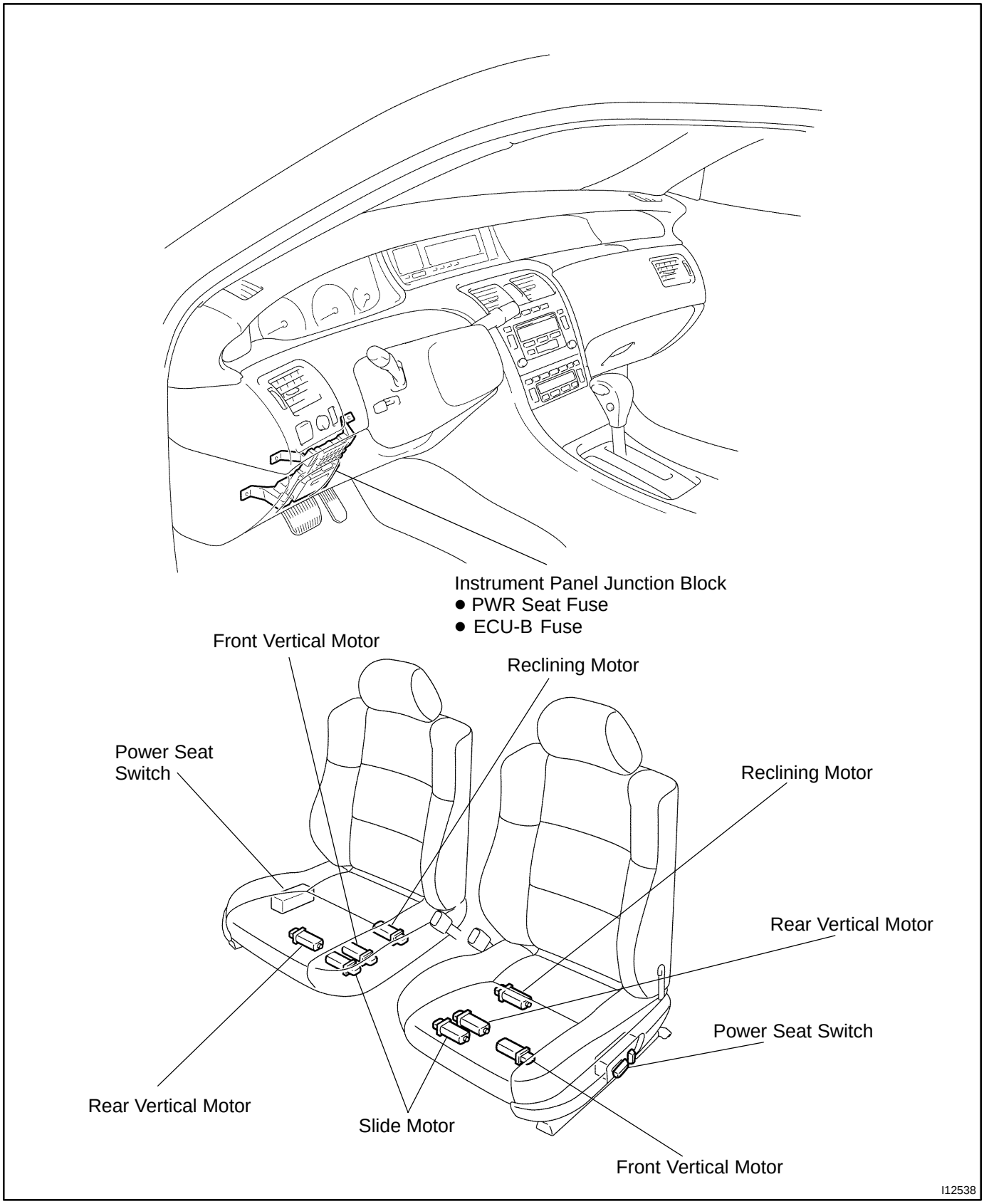
(c) Reverse the polarity, check that the lumbar support begins to move release side with in spproximately 60 seconds.

If operation is not as specified, replace the motor.

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

LOCATION

BE0IR-03



BE0HG-33

ADJUSTMENT

HOW TO RESET POWER WINDOW MOTOR (LIMIT SWITCH)

NOTICE:

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

HINT:

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

(a) Remove the power window motor.

HINT:

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

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

(c) Turn the ignition switch ON.

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

(e) Assemble the power window motor and regulator.

HINT:

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

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

HINT:

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

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

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

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

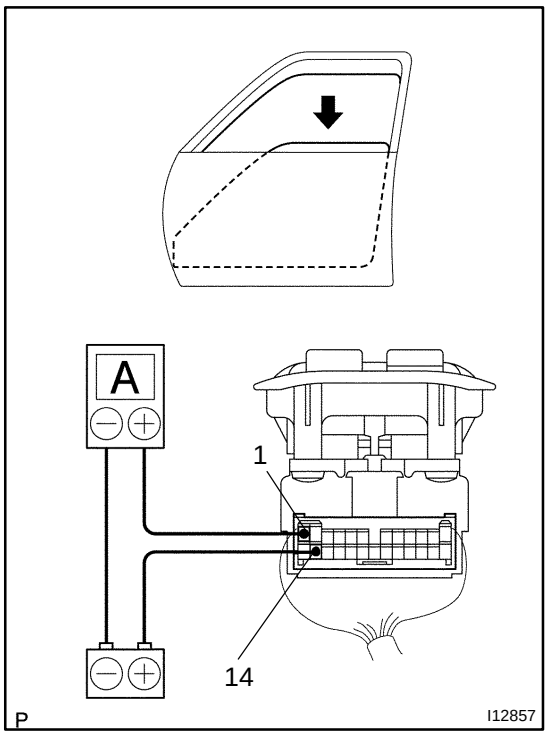
NOTICE:

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

(j) Check the power window function.

BE1DW-01

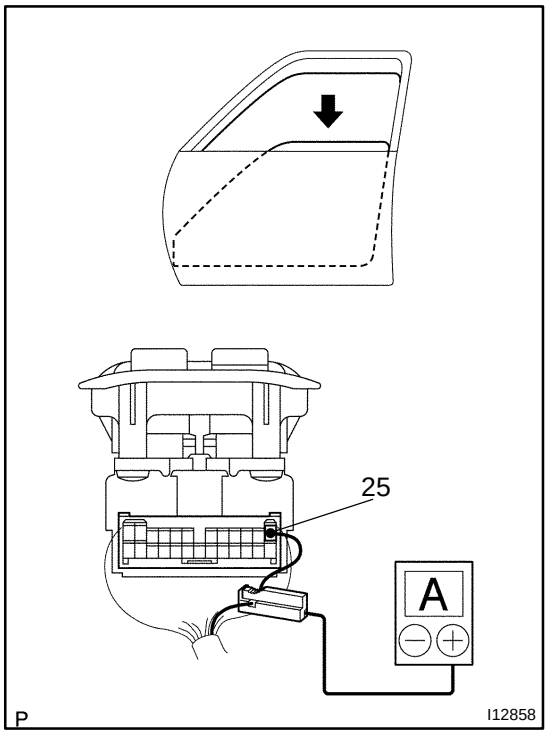
INSPECTION



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

(a) Disconnect the connector from the master switch.
(b) Connect the positive (+) lead from the ammeter to terminal 1 on the wire harness side connector and the negative (-) lead to negative (-) terminal of the battery.
(c) Connect the positive (+) lead from the battery to terminal 14 on the wire harness side connector.
(d) As the window goes down, check that the current flow is approximately 7 A.
(e) Check that the current increases up to approximately 14.5 A or more when the window stops going down.

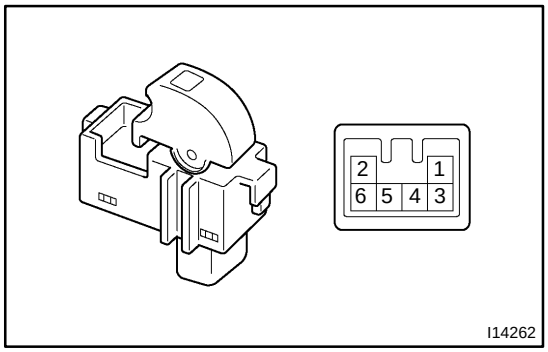
HINT:
The PTC opens some 4 - 90 seconds after the window stops going down, so that check must be made before the PTC operates.
If the operation is as specified, replace the driver door ECU.



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

(a) Remove the driver door ECU with connectors connected.
(b) Attach a current-measuring probe to terminal 25 of the wire harness.
(c) Turn the ignition switch ON and set the power window switch in the down position.
(d) As the window goes down, check that the current flow is approximately 7 A.
(e) Check that the current increases up to approximately 14.5 A or more when the window stops going down.

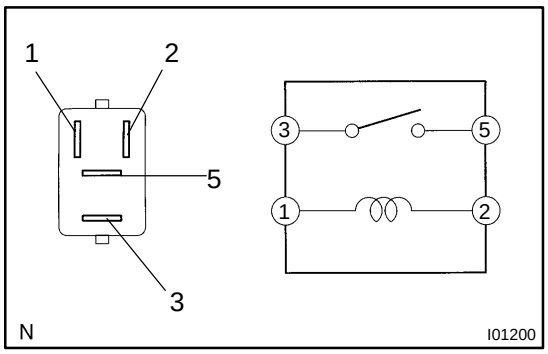
HINT:
The PTC opens some 4 - 90 seconds after the window stops going down, so that check must be made before the PTC operates.
If operation is as specified, replace the driver door ECU.



3. INSPECT REAR POWER WINDOW SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
UP	5 - 4, 2 - 6	Continuity
OFF	4 - 6, 2 - 6	No continuity
DOWN	2 - 5, 4 - 6	Continuity

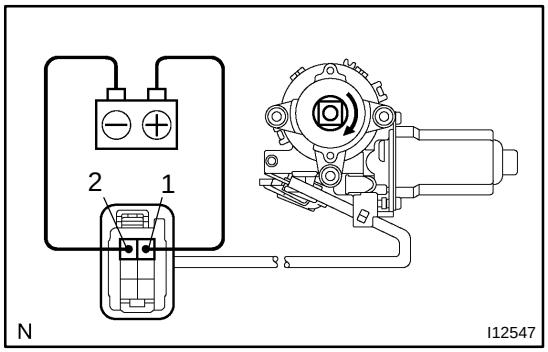
If continuity is not as specified, replace the switch.



4. INSPECT POWER MAIN RELAY CONTINUITY

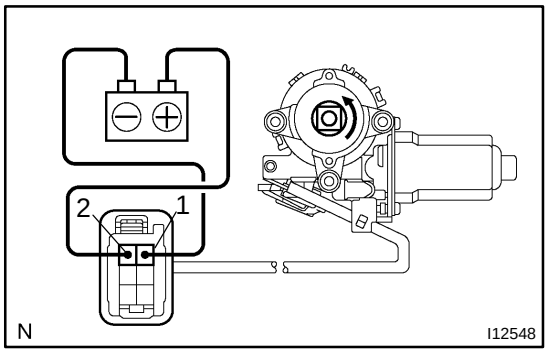
Condition	Tester connection	Specified condition
Constant	1 - 2	Continuity
Apply B+ between terminals 1 and 2.	3 - 5	Continuity

If continuity is not as specified, replace the relay.



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

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

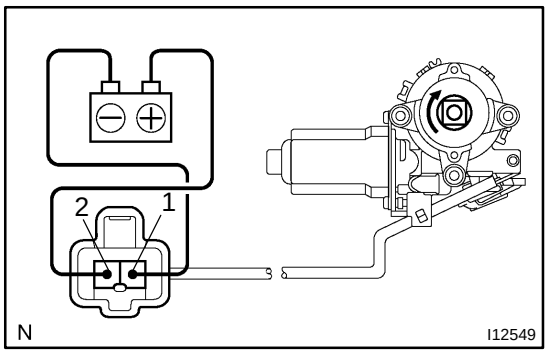


(b) Reverse the polarity, check that the motor turns counter-clockwise.

If operation is not as specified, replace the motor.

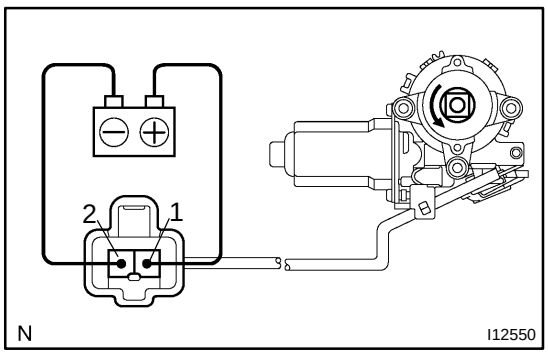
NOTICE:

Since the jam protection may not work properly be sure to conduct procedures described in "HOW TO RESET POWER MOTOR (RESET AND PULSE SWITCH)" after this inspection.



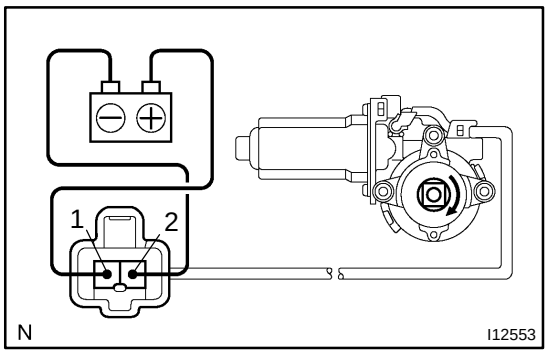
6. Front Passenger's Door: INSPECT POWER WINDOW MOTOR OPERATION

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



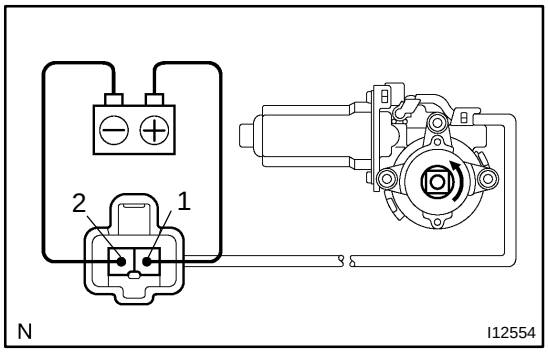
(b) Reverse the polarity, check that the motor turns counter-clockwise.

If operation is not as specified, replace the motor.



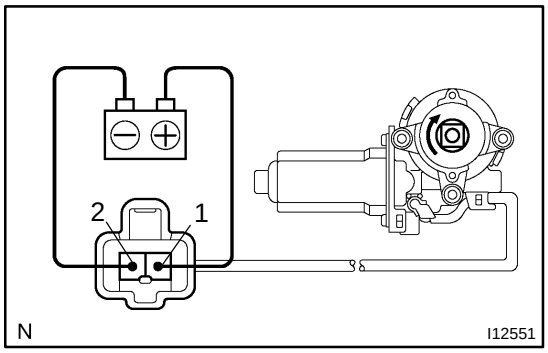
7. Rear Left Side Door:
INSPECT POWER WINDOW MOTOR OPERATION

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



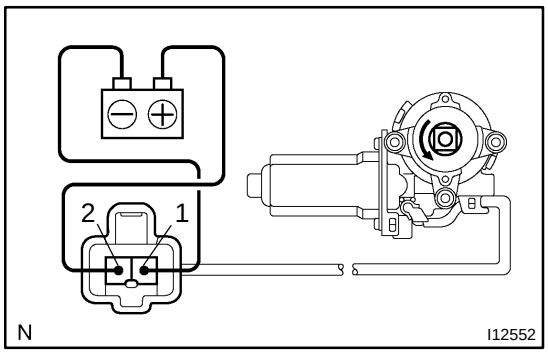
(b) Reverse the polarity, check that the motor turns counter-clockwise.

If operation is not as specified, replace the motor.



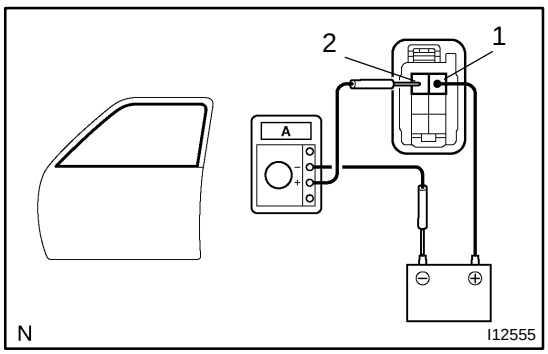
8. Rear Right Side Door:
INSPECT POWER WINDOW MOTOR OPERATION

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



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

If operation is not as specified, replace the motor.



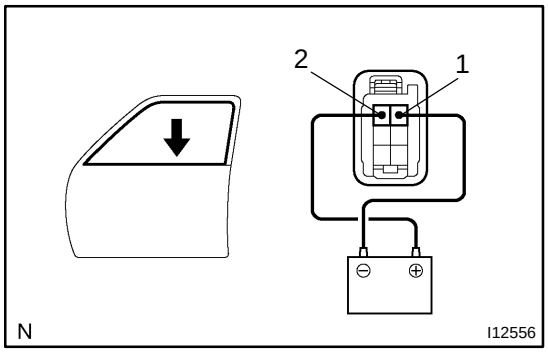
9. Driver's door:
INSPECT POWER WINDOW MOTOR PTC THERMISTOR OPERATION

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

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

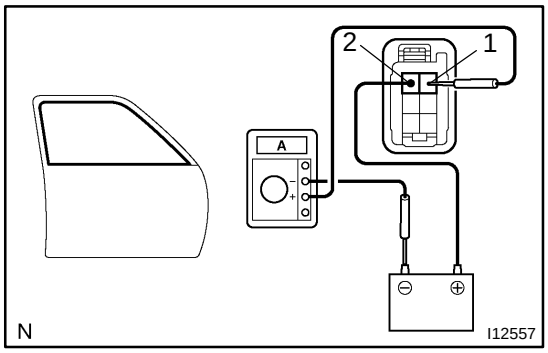
(c) Connect the positive (+) lead from the battery to terminal 1 on the wire harness side connector, and raise the window to the fully position.

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



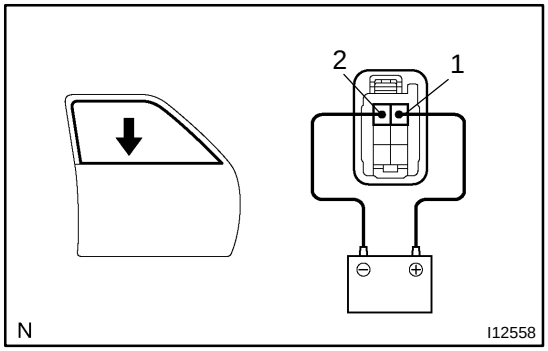
(e) Disconnect the leads from terminals.
(f) Approximately 60 seconds later, connect the positive (+) lead from the battery to terminal 2 and negative (-) lead to terminal 1, and check that the window begins to descended.

If operation is not as specified, replace the motor.



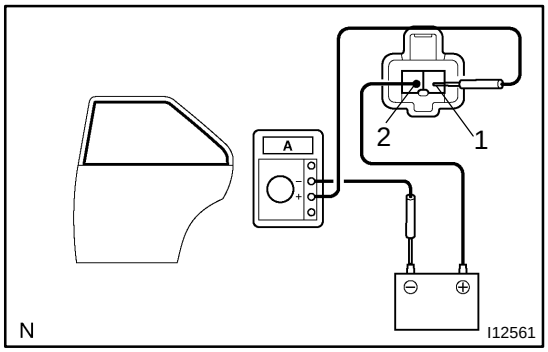
10. Front Passenger's door:
INSPECT POWER WINDOW MOTOR PTC THERMISTOR OPERATION

(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 2 on the wire harness side connector, and raise the window to the fully position.



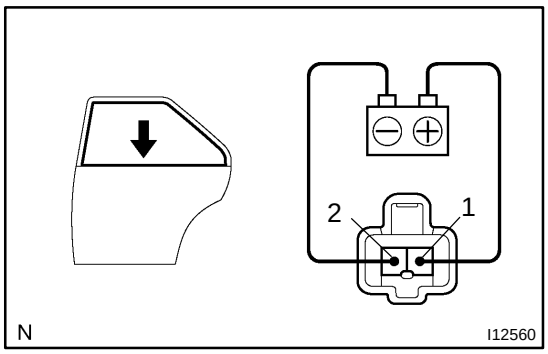
(d) Continue to apply voltage and check that the current changes to less than 1 A within 4 to 90 seconds.
(e) Disconnect the leads from the terminals.
(f) Approximately 60 seconds later, connect the positive (+) lead from the battery to terminal 1 and the negative (-) lead to terminal 2, and check that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

If operation is not as specified, replace the motor.



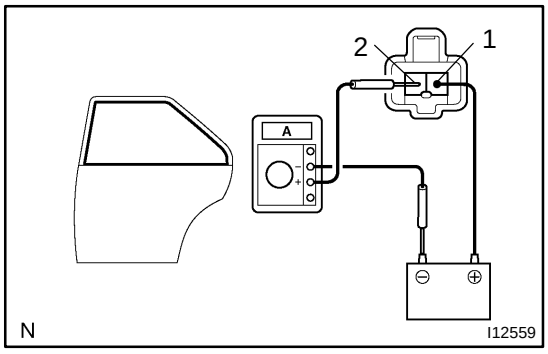
11. Rear LH door:
INSPECT POWER WINDOW MOTOR PTC THERMISTOR OPERATION

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



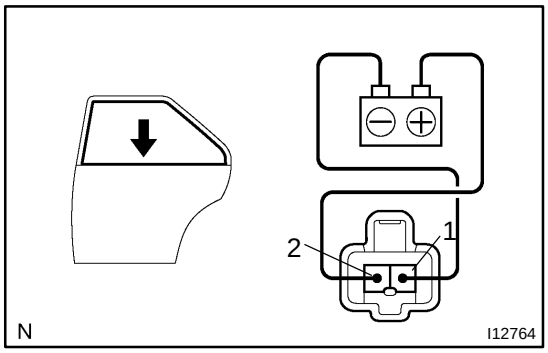
(d) Continue to apply voltage and check that the current changes to less than 1 A within 4 to 90 seconds.
(e) Disconnect the leads from the terminals.
(f) Approximately 60 seconds later, connect the positive (+) lead from the battery to terminal 1 and the negative (-) lead to terminal 2, and check that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

If operation is not as specified, replace the motor.



12. Rear RH Door:
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 2 on the wire harness side connector and the negative (-) lead to negative terminal of the battery.
(c) Connect the positive (+) lead from the battery to terminal 1 on the wire harness side connector, and raise the window to the fully position.



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

If operation is not as specified, replace the motor.

13. INSPECT JAM PROTECTION FUNCTION

NOTICE:

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

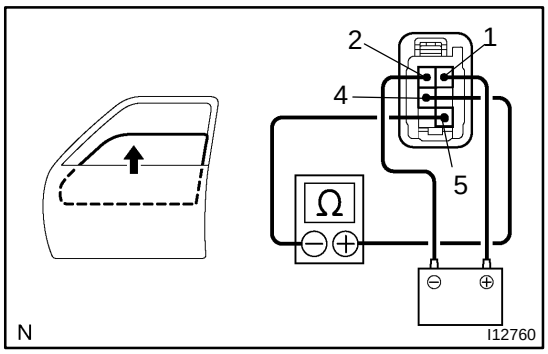
HINT:

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

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

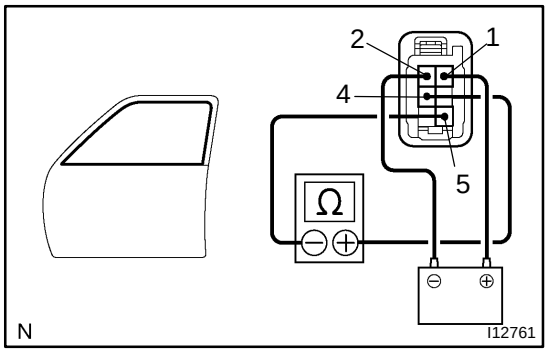
HINT:

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



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

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

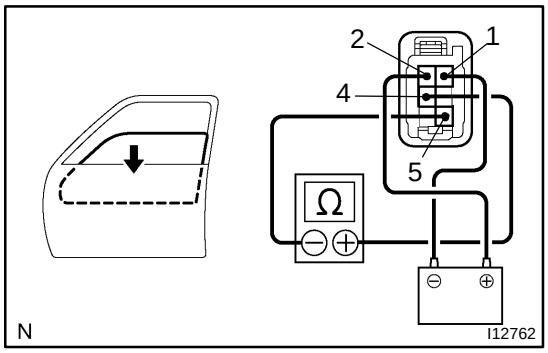


(d) Check that the no continuity exists when the window is in the fully closed position.

If operation is not as specified, replace the motor.

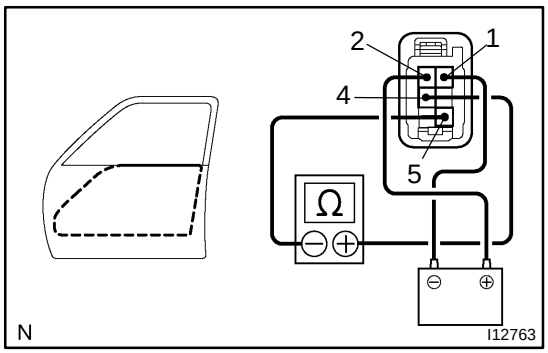
NOTICE:

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



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

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

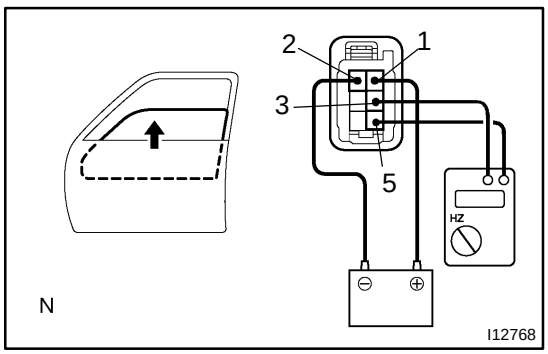


(d) Check that the no continuity exists when the window is in the fully opened position.

If operation is not as specified, replace the motor.

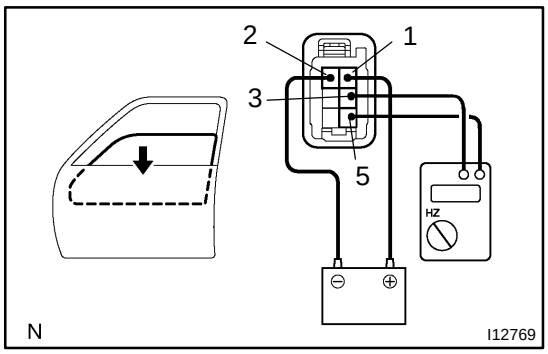
NOTICE:

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



16. Driver's Door:
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 2.
(c) Check that pulse is generated during the motor running.



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

NOTICE:

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

17. INSPECT JAM PROTECTION FUNCTION

NOTICE:

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

HINT:

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

(a) Confirmation of AUTO up operation:
Confirm that the window will be fully close with AUTO up operation.

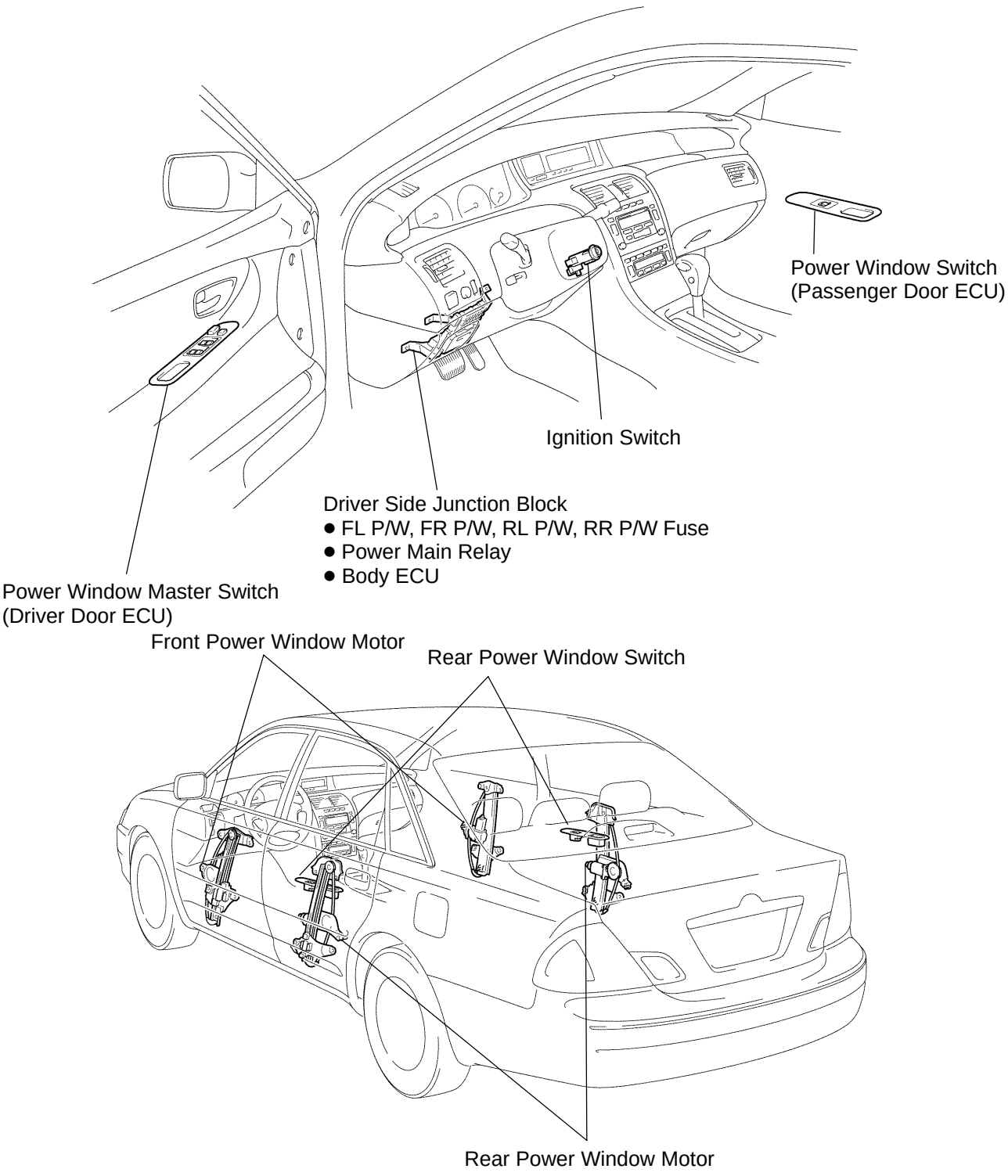
(b) Checking of the operation of the jam protection function:
(1) Move up the window with AUTO up operation and check that the window will go down when it touches the handle of the hammer stetted.
(2) Confirm that the window will then stop going down about 200 mm.

HINT:

In case of removing the glass, glass guide, regulator and etc. be sure to perform checking of the jam protection function.
If the jam protection is not function properly, adjust power window motor reset switch and pulse switch.

BE0IH-03

LOCATION



P

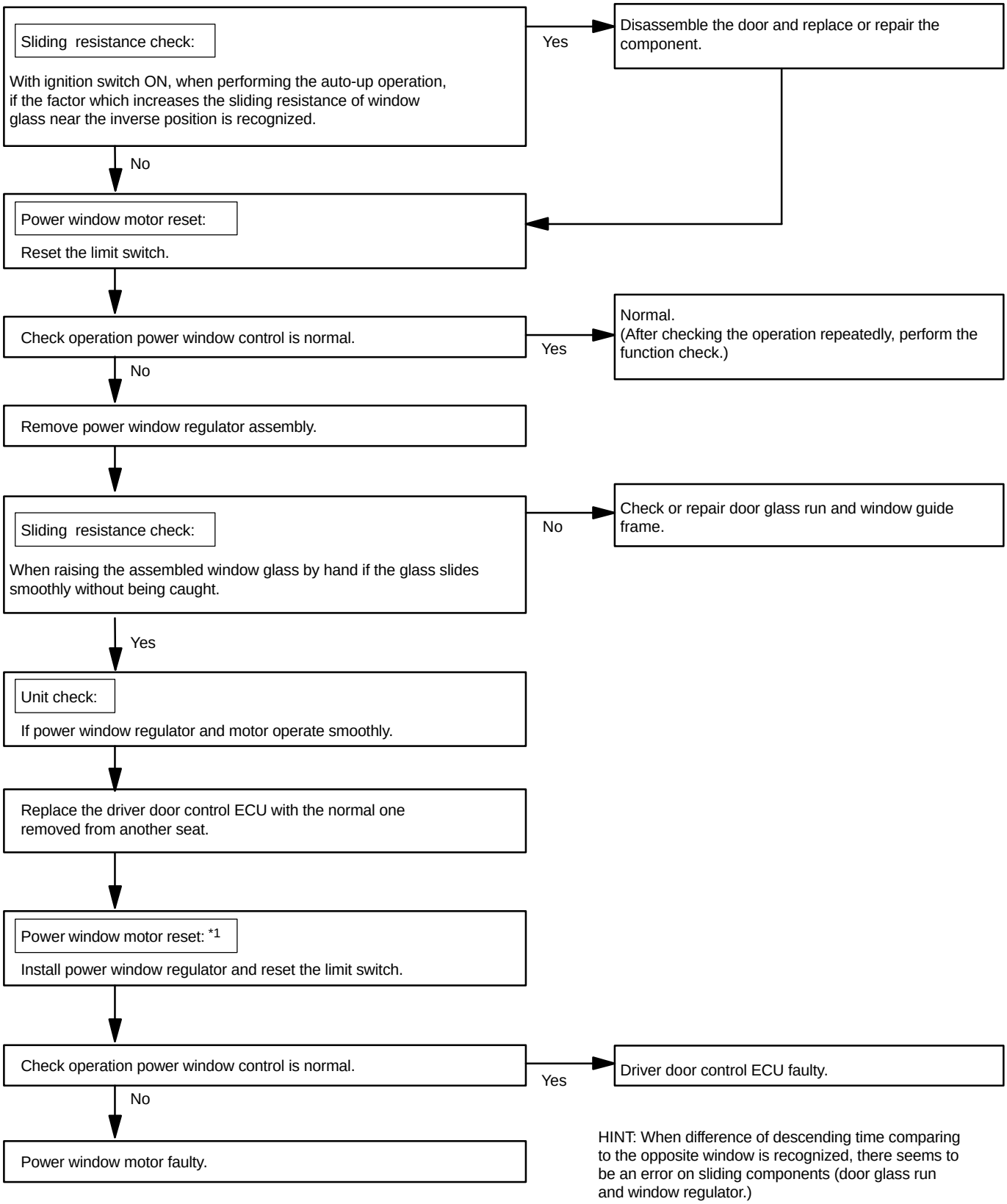
I12534

POWER WINDOW CONTROL SYSTEM

TROUBLESHOOTING

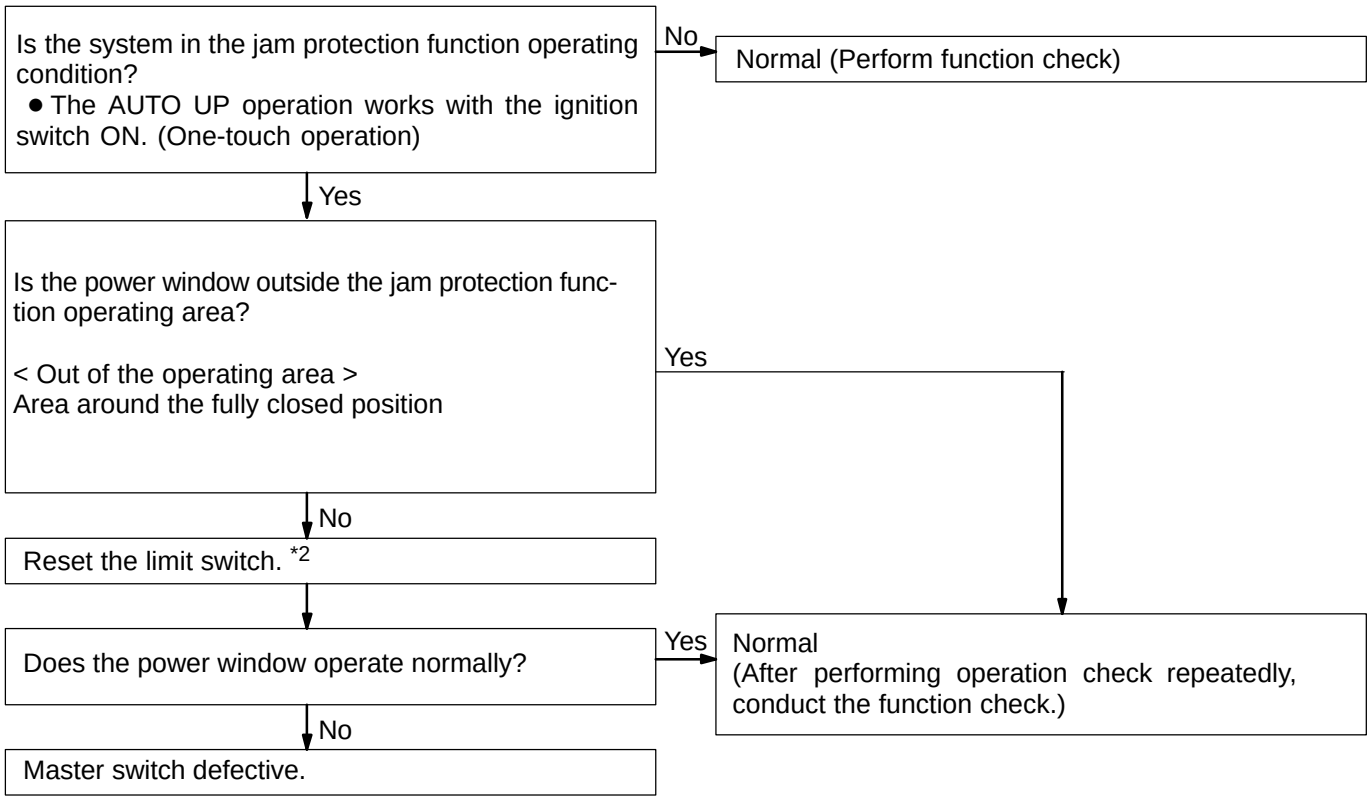
BE02C-11

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



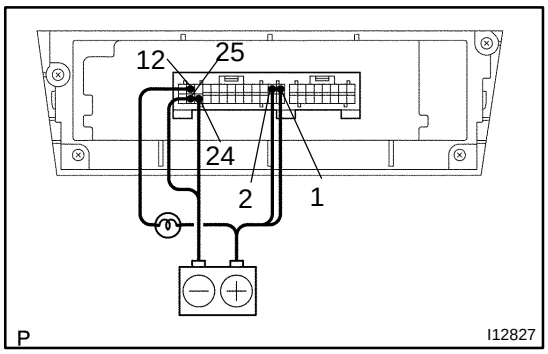
HINT: When difference of descending time comparing to the opposite window is recognized, there seems to be an error on sliding components (door glass run and window regulator.)

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



BE1EF-02

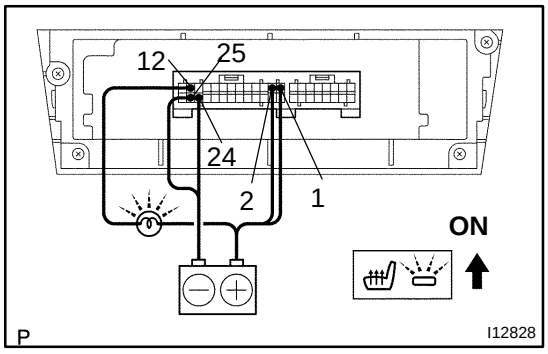
INSPECTION



1. A/C control panel assembly:
INSPECT DRIVERS SEAT HEATER SWITCH OPERATION

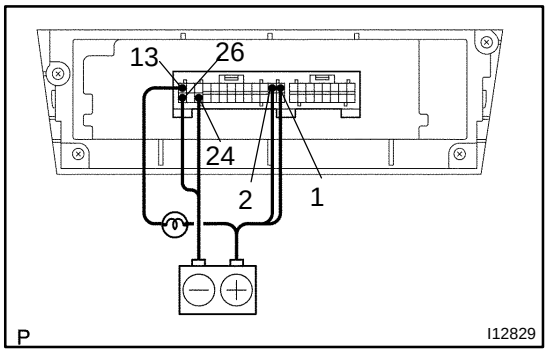
(a) Connect the positive (+) lead from the battery to terminal 1, 2 and negative (-) lead to terminal 24, 25.

(b) Connect the positive (+) lead from the battery to terminal 12 through a 1.4 W test bulb.



(c) Turn the drivers seat heater switch ON and check that the test bulb and indicator light turn ON.

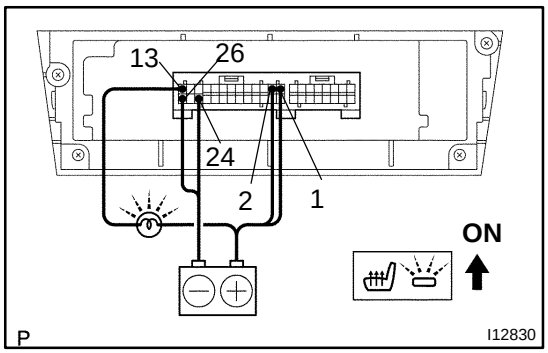
If operation is not as specified, proceed to the next inspection.



2. A/C control panel assembly:
INSPECT PASSENGER SEAT HEATER SWITCH OPERATION

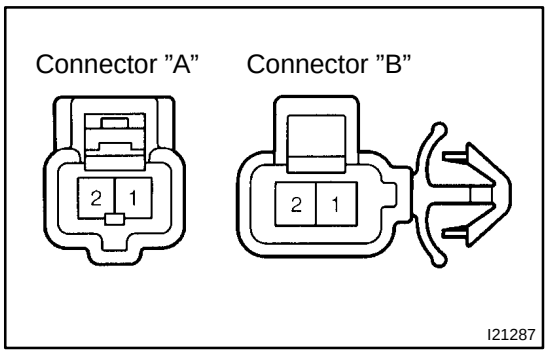
(a) Connect the positive (+) lead from the battery to terminal 1, 2 and negative (-) lead to terminal 24, 26.

(b) Connect the positive (+) lead from the battery to terminal 13 through a 1.4 W test bulb.



(c) Turn the passenger seat heater switch ON and check that the test bulb and indicator light turn ON.

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



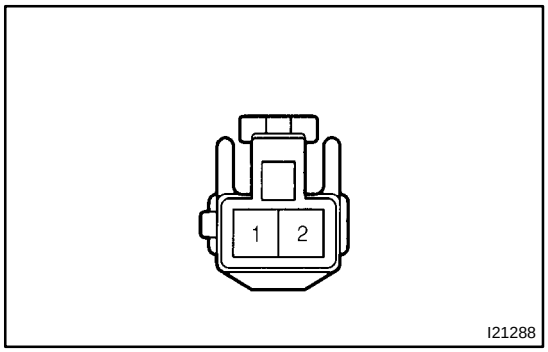
3. INSPECT SEAT CUSHION HEATER CONTINUITY

(a) Disconnect the seat back heater from the seat cushion heater.

(b) Heat the 2 thermostats with a light and check that there is no continuity above 50 ˚C (122 ˚F) between terminals A1 and B2, A2 and B1.

(c) Cool the 2 thermostats below 40 ˚C (104 ˚F) between terminals A1 and B2, A2 and B1.

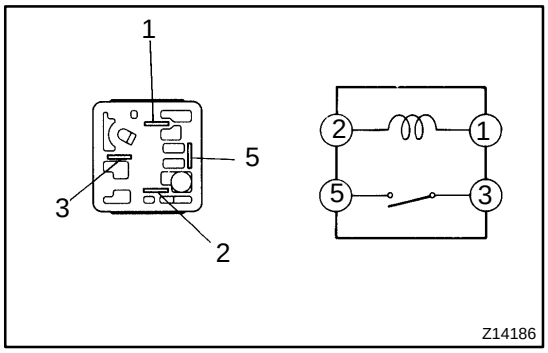
If continuity is not as specified, replace the seat heater.



4. INSPECT SEAT BACK CONTINUITY

Check that there is continuity between terminals 1 and 2.

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



5. INSPECT IGNITION MAIN RELAY CONTINUITY

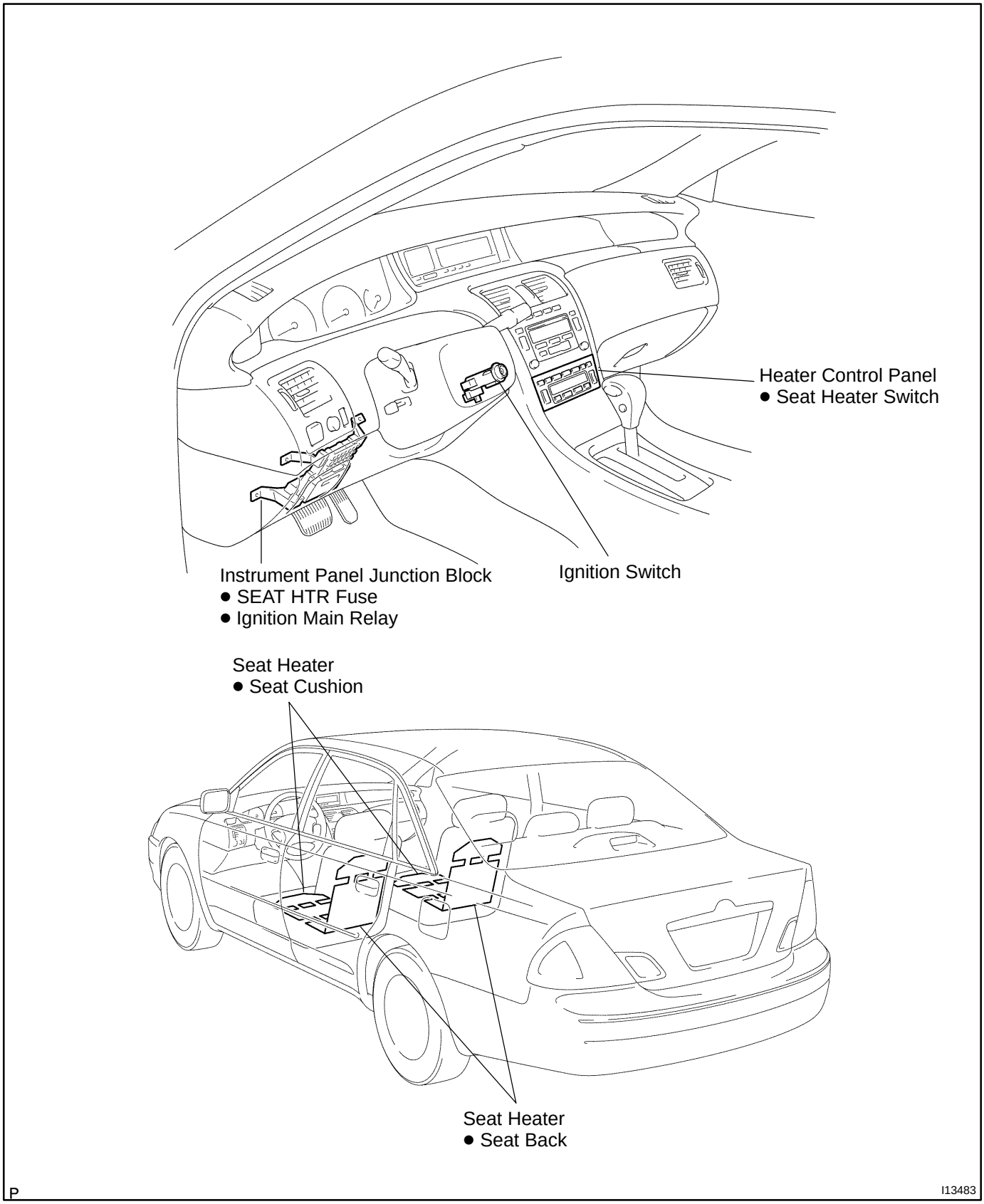
Condition	Tester connection	Specified condition
Constant	1 - 2	Continuity
Apply B+ between terminals 1 and 2.	3 - 5	Continuity

If continuity is not as specified, replace the relay.

SEAT HEATER SYSTEM

BE0IV-05

LOCATION



BE1DM-01

INSPECTION

1. w/o Cruise Control:

INSPECT STOP LIGHT SWITCH CONTINUITY

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

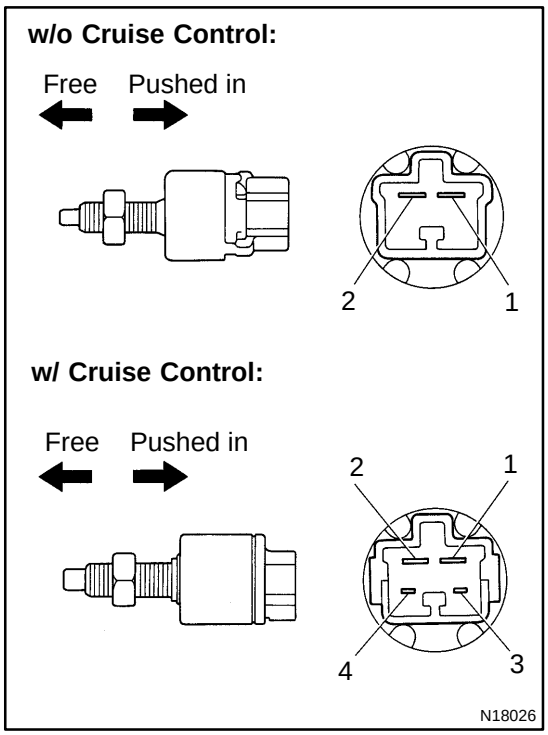
If continuity is not as specified, replace the switch.

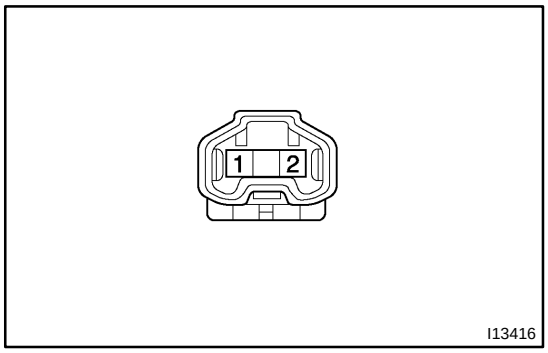
2. w/ Cruise Control:

INSPECT STOP LIGHT SWITCH CONTINUITY

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

If continuity is not as specified, replace the switch.





3. INSPECT HI- MOUNTED STOP LIGHT ASSEMBLY CONTINUITY

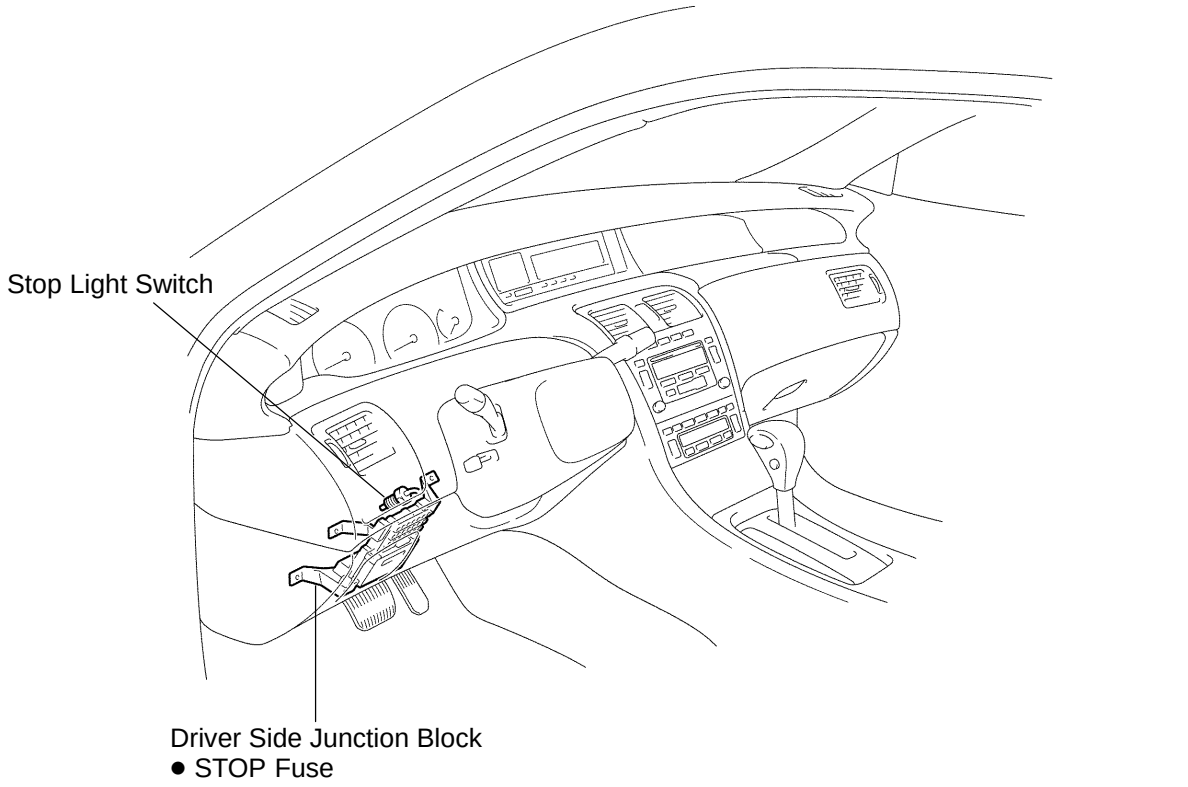
Using the ohmmeter,check that continuity exists between terminal 1 and terminal 2.

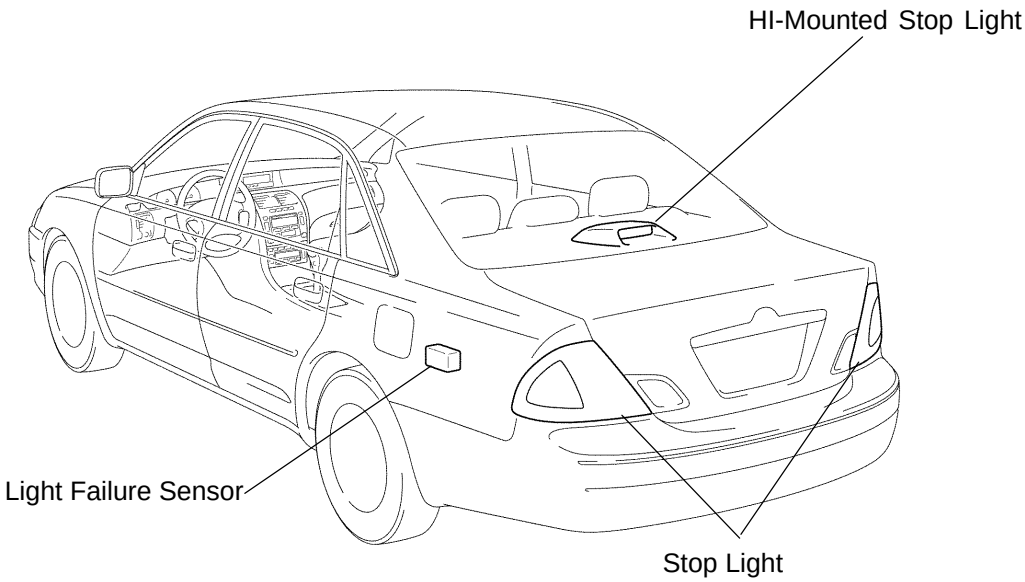
If continuity is not as specified,replace the light assembly or bulb.

STOP LIGHT SYSTEM

LOCATION

BE0I6-05





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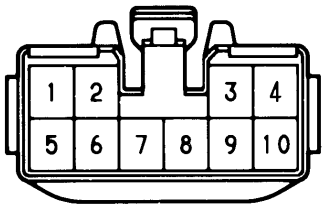
I12529

BE1E2-01

INSPECTION

Wire Harness Side:



I04045

1. INSPECT SLIDING ROOF CONTROL SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
Slide Open	2 - 3	Continuity
Tilt Up	1 - 2	Continuity

If continuity is not as specified, replace the switch.

2. INSPECT SLIDING ROOF CONTROL ASSEMBLY CIRCUIT

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

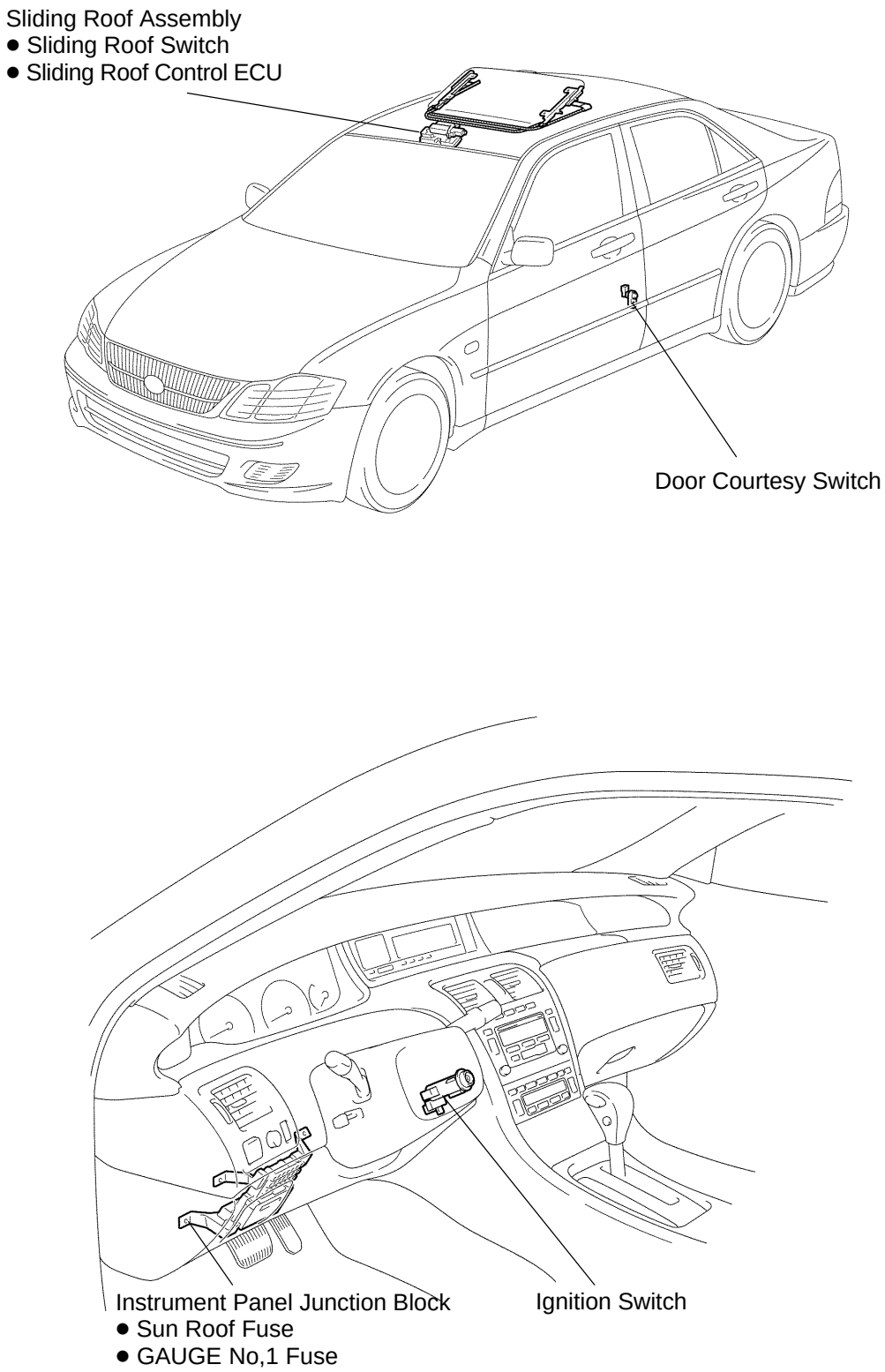
Tester connection	Condition	Specified condition
3 - Ground (DCTY)	Driver's door courtesy switch "ON" (Door opened)	Continuity
	Driver's door courtesy switch "OFF" (Door closed)	No continuity
4 - Ground (PCTY)	Passenger's door courtesy switch "ON" (Door opened)	Continuity
	Passenger's door courtesy switch "OFF" (Door closed)	No continuity
5 - Ground (+B)	Constant	Battery positive voltage
7 - Ground (E)	Constant	Continuity
8 - Ground (IG)	Ignition switch LOCK or ACC	No voltage
	Ignition switch ON	Battery positive voltage
9 - Ground (DOWN)	Sliding roof control switch OPEN / DOWN	Continuity
9 - Ground (DOWN)	Sliding roof control switch CLOSE / UP	No continuity
10 - Ground (UP)	Sliding roof control switch CLOSE / UP	Continuity
	Sliding roof control switch OPEN / DOWN	No continuity

*: Exceptions: During 60 second period after ignition switch ON → OFF (ACC) or until driver of passenger door in opened after ignition switch ON → OFF (ACC).

If circuit is as specified, replace the assembly.

BE0IP-06

LOCATION



P

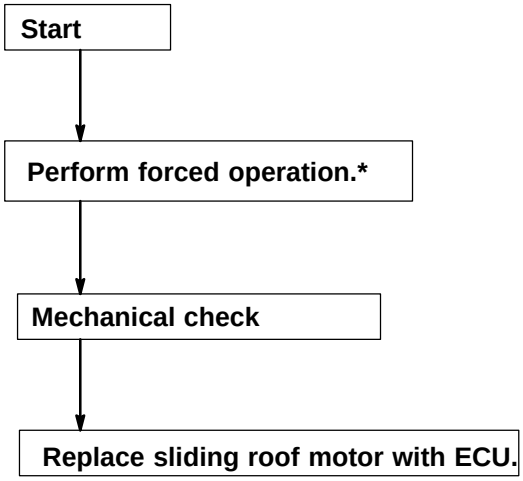
I12542

SLIDING ROOF SYSTEM

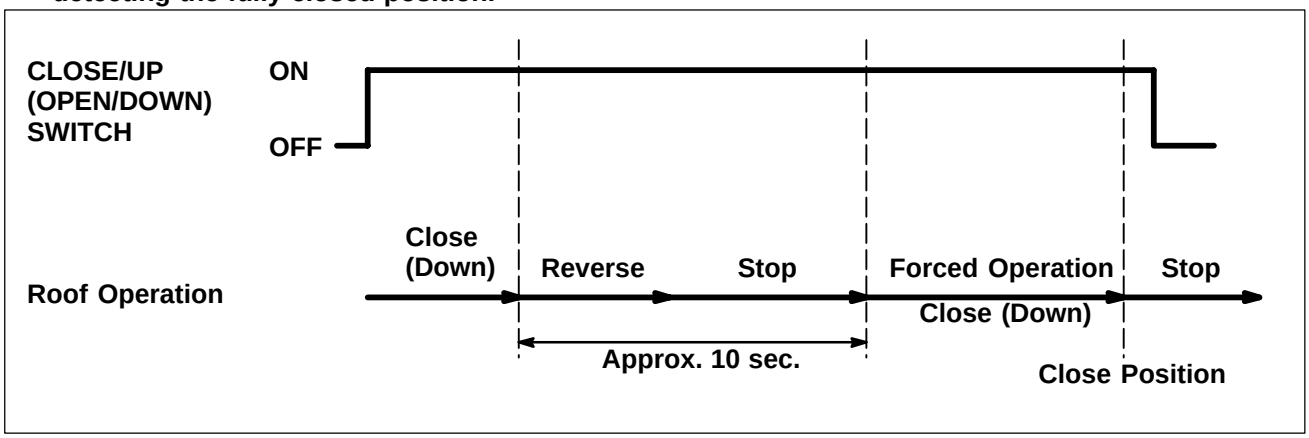
TROUBLESHOOTING

BE0O9-02

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.

BE04Q-06

TROUBLESHOOTING

PROBLEM SYMPTOMS TABLE

POWER OUTLET

Symptom	Suspect Area	See page
Electric power source cannot be taken out of the power outlet	11. PWR OUTLET No. 1, 2 Fuse 12. Wire Harness	- -

IGNITION SWITCH AND KEY UNLOCK WARNING SWITCH:

This system uses the multiplex communication system, so check diagnosis system of the multiplex communication system before checking the body control system.

HEADLIGHT AND TAILLIGHT SYSTEM:

This system uses the multiplex communication system, so check diagnosis system of the multiplex communication system before checking the body control system.

FOG LIGHT SYSTEM:

Symptom	Suspect Area	See page
Fog light does not light with light control SW HEAD. (Headlight is normal)	1. FOG Fuse 2. Fog Light Relay 3. Fog Light Switch 4. Wire Harness	- BE-26 BE-26 -
Fog light does not light with light control SW HEAD. (Headlight does not light)	1. Other Parts*1 2. Wire Harness	- -
Only one light does not light.	1. Bulb 2. Wire Harness	- -

*1: Inspect Headlight System.

TURN SIGNAL AND HAZARD WARNING SYSTEM:

Symptom	Suspect Area	See page
”Hazard” and ”Turn” do not light up.	1. Hazard Warning Switch 2. Turn Signal Flasher 3. Wire Harness	BE-29 BE-29 -
The flashing frequency is abnormal.	1. Bulb 2. Turn Signal Switch 3. Wire Harness	- BE-29 -
Hazard warning light does not light up. (Turn is normal.)	1. HAZ Fuse 2. Wire Harness	- -
Hazard warning light does not light up in one direction.	1. Hazard Warning Switch 2. Wire Harness	BE-29 -
*1Turn signal does not light up.	1. Ignition Switch 2. TURN Fuse 3. Turn Signal Switch 4. Wire Harness	BE-16 - BE-29 -
*2Turn signal does not light up.	1. TURN Fuse 2. Turn Signal Switch 3. Wire Harness	- BE-29 -
Turn signal does not light up in one direction.	1. Turn Signal Switch 2. Wire Harness	BE-29 -
Only one bulb does not light up.	1. Bulb 2. Wire Harness	- -

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

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

INTERIOR LIGHT SYSTEM:

This system uses the multiplex communication system, so check diagnosis system of the multiplex communication system before checking the body control system.

BACK-UP LIGHT SYSTEM:

Symptom	Suspect Area	See page
Back-Up Light does not light up.	1. GAUGE Fuse 2. Ignition Switch 3. Park/Neutral Position Switch 4. Back-up Light Relay (Column Shift) 5. Bulb 6. Wire Harness	- BE-16 DI-199 BE-34 - -
Back-Up Light remains always ON.	1. Park/Neutral Position Switch 2. Back-up Light Relay (Column Shift) 3. Wire Harness	DI-199 BE-34 -
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. GAUGE Fuse 3. Stop Light Switch 4. Light Failure Sensor 5. Wire Harness	- - BE-36 BE-53 -
Only one light always lights up.	1. Wire Harness	-
Only one light does not light.	1. Bulb 2. Wire Harness	- -

WIPER AND WASHER SYSTEM:

Symptom	Suspect Area	See page
Wiper and washers do not operate.	1. IG 1 Relay 2. WIPER Fuse 3. Wiper Switch 4. Wiper Motor 5. Wire Harness	- - BE-38 BE-38 -
Wipers do not operate in LO or HI.	1. Wiper Switch 2. Wiper Motor 3. Wire Harness	BE-38 BE-38 -
Wipers do not operate in INT.	1. Wiper Fuse 2. Wiper Switch 3. Wiper Motor 4. Wire Harness	- BE-38 BE-38 -
Washer motor does not operate.	1. Washer Switch 2. Washer Motor 3. Wire Harness	BE-38 BE-38 -
Wipers do not operate when washer switch in ON.	1. Washer Motor 2. Wire Harness	BE-38 -
Washer fluid does not operate.	1. Washer Hose and Nozzle	-
● In wiper switch HI position, the wiper blade is in contact with the body. ● When the wiper switch is OFF, the wiper blade does not retract or the retract position is wrong.	1. *1Wiper Switch 2. Wire Harness	BE-38 -

*1: Inspect wiper arm and blade set position

COMBINATION METER (Meter, Gauges and Illumination):

Symptom	Suspect Area	See page
Tachometer, Fuel Gauge and Engine Coolant Temperature Gauge do not operate.	1. ECU-B Fuse 2. ECU-IG No. 2 Fuse 3. Meter Circuit Plate 4. Wire Harness 5. Multi Display	- - BE-43 - -
Speedometer does not operate.	1. Vehicle Speed Sensor (ABS - ECU) 2. Meter Circuit Plate 3. Wire Harness 4. Multi Display	BE-53 BE-43 - -
Tachometer does not operate.	1. EFI - ECU 2. Meter Circuit Plate 3. Wire Harness 4. Multi Display	- BE-43 - -
Fuel Gauge does not operate or abnormal operation.	1. Fuel Receiver Gauge 2. Fuel Sender Gauge 3. Meter Circuit Plate 4. Wire Harness	BE-53 BE-53 BE-43 -
Engine Coolant Temperature Gauge does not operate or abnormal operation.	1. Engine Coolant Temperature Receiver Gauge 2. Engine Coolant Temperature Sender Gauge 3. Meter Circuit Plate 4. Wire Harness	BE-53 BE-53 BE-43 -
All illumination lights do not light up.	1. Bulb 2. PANEL Fuse 3. Light Control Rheostat 4. Wire Harness	- - BE-53 -
Brightness does not change even when rheostat turned.	1. Bulb 2. Rheostat 3. Wire Harness	- - -
Only one illumination light does not light up.	1. Bulb 2. Wire Harness	- -

COMBINATION METER (Warning Lights):

Symptom	Suspect Area	See page
Warning lights do not light up. (Except Discharge, Open Door and SRS)	1. Bulb 2. GAUGE No. 1 Fuse 3. Meter Circuit Plate 4. Wire Harness	- - BE-53 -
Low Oil Pressure warning light does not light up.	1. Multi Display 2. Bulb 3. Low Oil Pressure Warning Switch 4. Meter Circuit Plate 5. Wire Harness	- - BE-53 BE-43 -
Fuel Level warning light does not light up.	1. Multi Display 2. Bulb 3. Fuel Sender Gause 4. Meter Circuit Plate 5. Wire Harness	- - BE-53 BE-43 -
ABS warning light does not light up.	1. Bulb 2. ABS ECU 3. Wire Harness	- DI-210 -

Seat Belt warning light does not light up.	1. Bulb 2. Body Control System 3. Meter Circuit Plate 4. Wire Harness	- DI-615 BE-53 -
Discharge warning light does not light up.	1. AM2 - Fuse 2. Bulb 3. Meter Circuit Plate 4. Wire Harness 5. Generator	- - BE-53 - CH-9
Light Failure warning light does not light up.	1. Bulb 2. Light Failure Sensor 3. Bulb Check Relay 4. Wire Harness 5. Taillight System	- BE-53 BE-53 - BE-2
Brake warning light does not light up.	1. Bulb 2. Parking Brake Switch 3. Brake Fluid Level Warning Switch 4. Bulb Check Relay 5. Meter Circuit Plate 6. Wire Harness	- BE-53 BE-53 BE-53 BE-43 -
SRS Warning light does not light up.	1. AM2 - Fuse 2. Bulb 3. Airbag Sensor Assembly 4. Meter Circuit Plate 5. Wire Harness	- - RS-62 RS-67 BE-43
Open Door warning light does not light up.	1. DOME Fuse 2. Bulb 3. Door Courtesy Switch 4. Body Control System 5. Meter Circuit Plate 6. Wire Harness	- - BE-31 DI-615 BE-43 -
Washer Level warning light does not light up.	1. Bulb 2. Washer Fluid Level Warning Switch 3. Meter Circuit Plate 4. Wire Harness	- BE-53 BE-43 -

COMBINATION METER (Indicator Lights):

Symptom	Suspect Area	See page
O/D OFF indicator light does not light up.	1. Bulb 2. O/D OFF Switch 3. ECM 4. Meter Circuit Plate 5. Wire Harness	- DI-203 DI-1 BE-43 -
Cruise Control indicator light does not light up.	1. Bulb 2. Cruise Control ECU 3. Meter Circuit Plate 4. Wire Harness	- DI-549 BE-43 -
High beam indicator light does not light up.	1. Bulb and Taillight 2. Headlight System 3. Meter Circuit Plate 4. Wire Harness	- BE-2 BE-43 -
Turn indicator light does not light up.	1. Bulb 2. Turn Signal and Hazard Warning System 3. Meter Circuit Plate 4. Wire Harness	- BE-2 BE-43 -

Shift indicator lights do not light up.	1. Bulb 2. Park/Neutral Position Switch 3. Meter Circuit Plate 4. Wire Harness	- DI-199 BE-43 -
Only one shift indicator does not light up.	1. Bulb 2. Meter Circuit Plate	- BE-43
Malfunction indicator light does not light up.	1. Bulb 2. ECM 3. Meter Circuit Plate 4. Wire Harness	- DI-1 BE-43 -
SLIP indicator light does not light up.	1. Bulb 2. ABS & TRAC ECU 3. Meter Circuit Plate 4. Wire Harness	- DI-250 BE-43 -
TRAC OFF indicator light does not light up.	1. Bulb 2. ABS & TRAC ECU 3. Meter Circuit Plate 4. Wire Harness	- DI-250 BE-43 -
Security indicator light does not light up.	1. LED 2. Theft Deterrent ECU 3. Meter Circuit Plate 4. Wire Harness	- DI-517 BE-43 -
Indicator lights do not light up. (Except Turn, Hi-beam and security)	1. GAUGE Fuse 2. Wire Harness	- -

DEFOGGER SYSTEM:

Symptom	Suspect Area	See page
All defogger systems do not operate.	1. SEAT HEATER Fuse 2. DEF Fuse 3. Defogger Relay 4. Defogger Switch 5. Wire Harness	- - BE-67 DI-1 -
Rear window defogger does not operate.	1. Defogger Wire 2. Choke Coil 3. Wire Harness	BE-67 - -
Mirror defogger does not operate.	1. MIR/HTR Fuse 2. Mirror Defogger 3. Wire Harness	- BE-67 -

POWER WINDOW CONTROL SYSTEM:

This system uses the multiplex communication system, so check diagnosis system of the multiplex communication system before checking the body control system.

POWER DOOR LOCK CONTROL SYSTEM:

This system uses the multiplex communication system, so check diagnosis system of the multiplex communication system before checking the body control system.

WIRELESS DOOR LOCK CONTROL SYSTEM

This system uses the multiplex communication system, so check diagnosis system of the multiplex communication system before checking the body control system.

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

HINT:

Troubleshooting of the wireless door lock control system is based on the premise that the door lock control system is operating normally. Accordingly, before troubleshooting the wireless door lock control system, first make certain that the door lock control system is operating normally.

If the trouble still reappears even though there are no abnormalities in any of the other circuits, then check and replace the Wireless Door Lock Control Receiver as the last step.

SLIDING ROOF SYSTEM:

Symptom	Suspect Area	See page
Sliding roof system does not operate. (Door Lock does not operate)	1. SUN ROOF Fuse 2. GAUGE Fuse 3. Wire Harness	- - -
Sliding roof system does not operate. (Door Lock is normal)	1. Sliding Roof Control Switch 2. Sliding Roof Motor and Limit Switch 3. Sliding Roof Control Relay 4. Wire Harness	BE-103 BE-103 BE-103 -
Sliding roof system operates abnormally.	1. Sliding Roof Control Switch 2. Sliding Roof Motor and Limit Switch 3. Sliding Roof Control Relay 4. Wire Harness	BE-103 BE-103 BE-103 -
Sliding roof system stops operation half way. (Stones of foreign material trapped in motor assembly)	1. Sliding Roof Control Relay and Switch 2. Sliding Roof Motor and Limit Switch 3. Wire Harness	BE-103 BE-103 -
”Key-off Sliding Roof” operation does not operate.	1. DOOR Fuse 2. GAUGE Fuse 3. Ignition Switch 4. Body ECU 5. Wire Harness	- - BE-16 BE-16 -

POWER SEAT CONTROL SYSTEM (w/o Driving position memory driver’s seat):

Symptom	Suspect Area	See page
Power seat does not operate. (Door lock system does not operate)	1. DOOR Fuse 2. Wire Harness	- -
Power seat does not operate. (Door lock system is normal)	1. Power Seat Swtich (D,P) 2. Wire Harness	BE-105 -
”Slide operation” does not operate.	1. Power Seat Switch (D, P) 2. Slide Motor (D, P) 3. Wire Harness	BE-16 BE-105 -
”Front vertical Operation” does not operate.	1. Power Seat Switch (D, P) 2. Front Vertical Motor (D, P) 3. Wire Harness	BE-105 BE-105 -
”Rear vertical” does not operate.	1. Power Seat Switch 2. Rear Vertical Motor 3. Wire Harness	BE-105 BE-105 -
”Reclining Operation” does not operate.	1. Power Seat Switch (D, P) 2. Reclining Motor (D, P) 3. Wire Harness	BE-105 BE-105 -

(D): Driver’s Seat

(P): Passenger’s Seat

POWER MIRROR CONTROL SYSTEM:

This system uses the multiplex communication system, so check diagnosis system of the multiplex communication system before checking the body control system.

ELECTRO CHROMIC MIRROR SYSTEM

Symptom	Suspect Area	See page
Electro Chromic Inner Mirror does not operate.	1. ECU-IG Fuse 2. Elector Chromic Inner Mirror 3. Wire Harness	BE-120

SEAT HEATER SYSTEM:

Symptom	Suspect Area	See page
Seat heaters do not operate. (Driver's and Passenger's)	1. SEAT HEATER Fuse 2. Ignition Main Relay 3. Wire Harness	- BE-122 -
Driver's seat heater does not operate.	1. Seat Heater Switch (Driver's) 2. Seat Heater 3. Wire Harness	BE-122 BE-122 -
Passenger's seat heater does not operate.	1. Seat Heater Switch (Passenger's) 2. Seat Heater 3. Wire Harness	BE-122 BE-122 -
Seat Heater temperature is too hot.	1. Seat Heater	BE-122

GARAGE DOOR OPENER SYSTEM

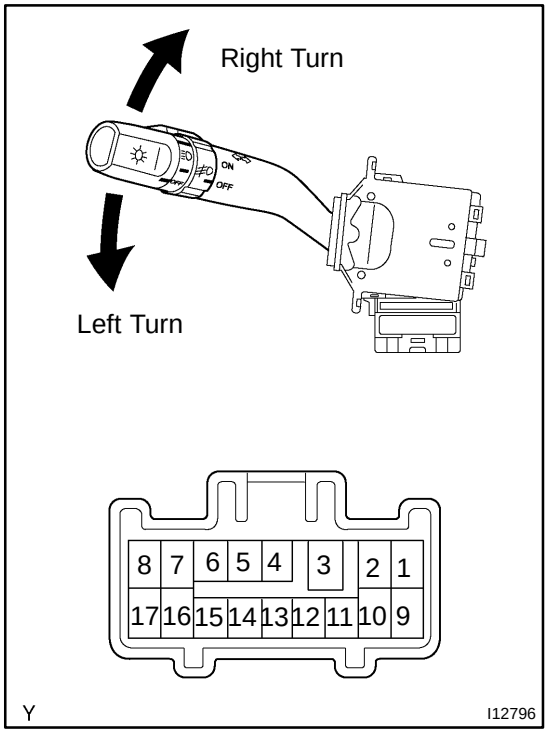
Symptom	Suspect Area	See page
The equipment of which code has been registered does not operate.	1. Garage Door Opener 2. Wire Harness 3. *	BE-170
LED does not light up. (Even though either switch is pressed.)	1. Garage Door Opener 2. Wire Harness	BE-170
LED does not light up. (Only one switch is pressed.)	1. Garage Door Opener	BE-170

* 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.

BE0I1-04

INSPECTION

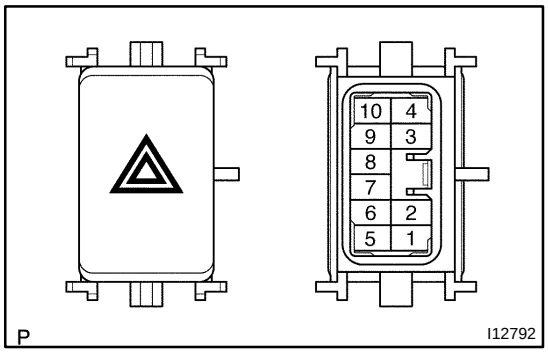
1. INSPECT TURN SIGNAL SWITCH CONTINUITY



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

If continuity is not as specified, replace the switch.

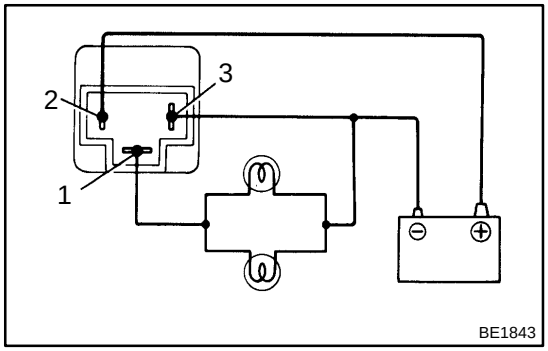
2. INSPECT HAZARD WARNING SWITCH CONTINUITY



Condition	Tester connection	Specified condition
OFF	5 - 7	Continuity
ON	5 - 6, 1 - 2 - 3 - 4	Continuity
Illumination circuit	8 - 9	Continuity

If continuity is not as specified, replace the switch.

3. INSPECT TURN SIGNAL FLASHER OPERATION



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

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

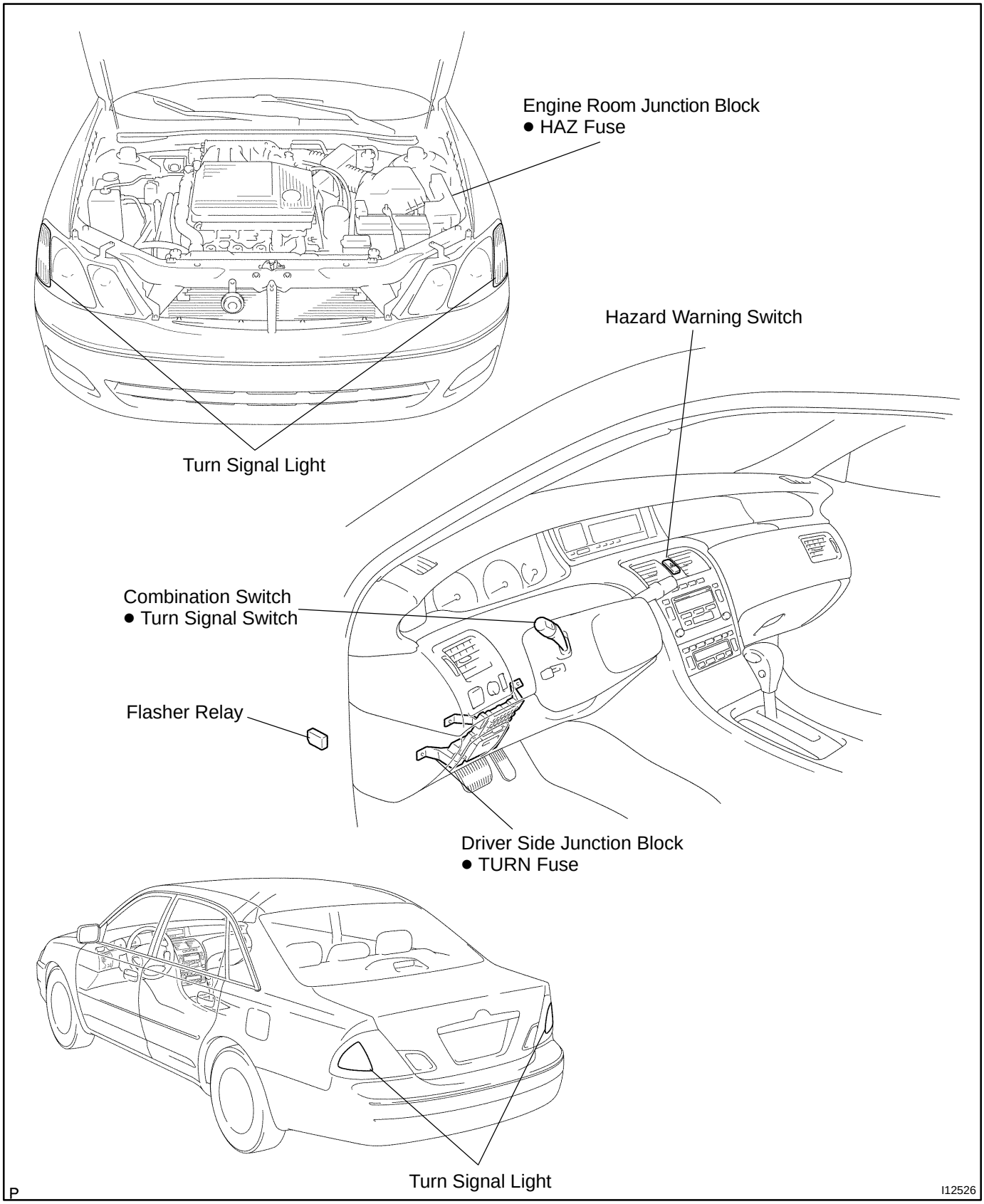
HINT:

- The turn signal lights should flash 60 or 120 times per minute.
- If one of the front or rear turn signal lights has an open circuit, the number of flashers will be more than 140 per minute.
- If operation is not as specified, replace the flasher.

TURN SIGNAL AND HAZARD WARNING SYSTEM

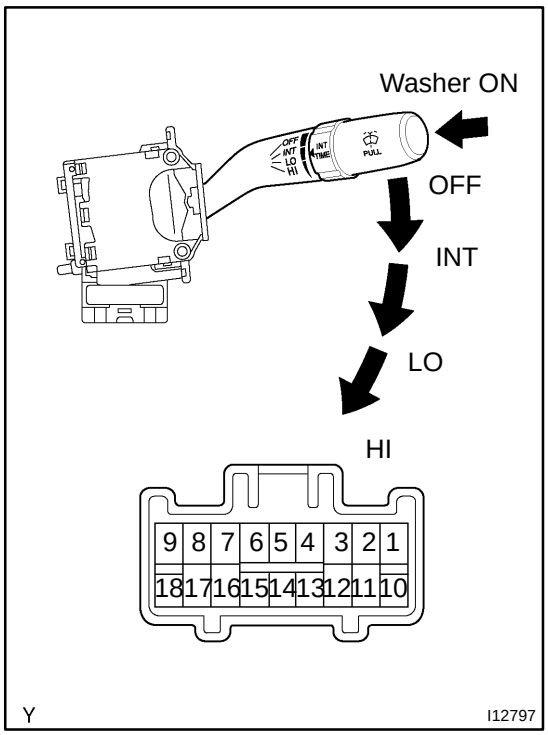
BE0I0-04

LOCATION



BE1DN-01

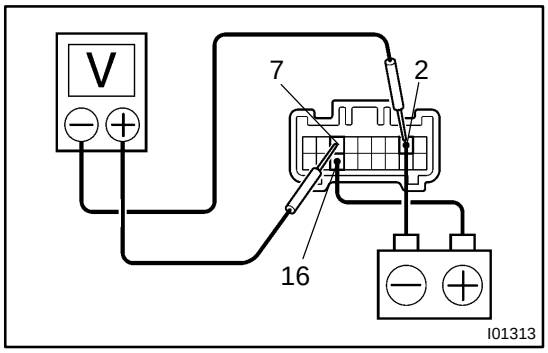
INSPECTION



1. INSPECT WIPER AND WASHER SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
OFF	7 - 16	Continuity
MIST (w/ Mist wiper)	3 - 11	Continuity
INT (w/ Intermittent wiper)	7 - 16	Continuity
LO	7 - 17	Continuity
HI	8 - 17	Continuity
Washer ON	2 - 11	Continuity

If continuity is not as specified, replace the switch.



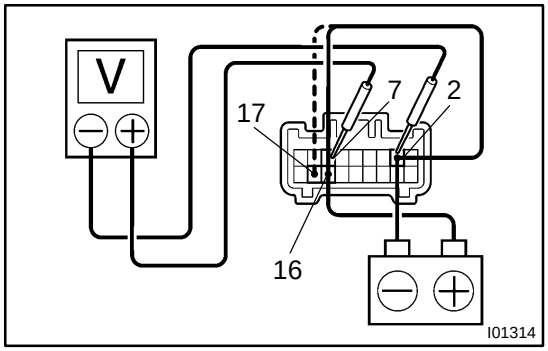
2. INSPECT WIPER INTERMITTENT OPERATION

(a) Turn the wiper switch to INT position.

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

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

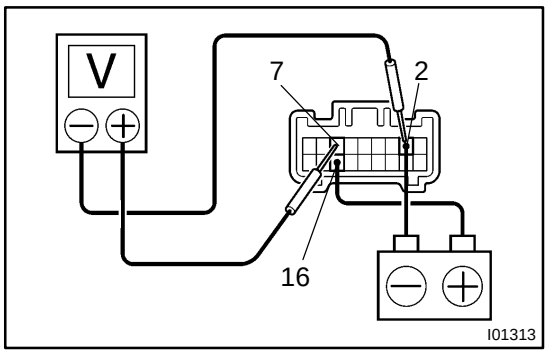
(d) Connect the positive (+) lead from the voltmeter to terminal 7 and the negative (-) lead to terminal 2, check that the meter needle indicates battery positive voltage.



(e) After connecting terminal 16 to terminal 17, connect to terminal 2 to terminal 17, check the voltage rises from 0 volts to battery positive voltage with in the times, as shown in the table.

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

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

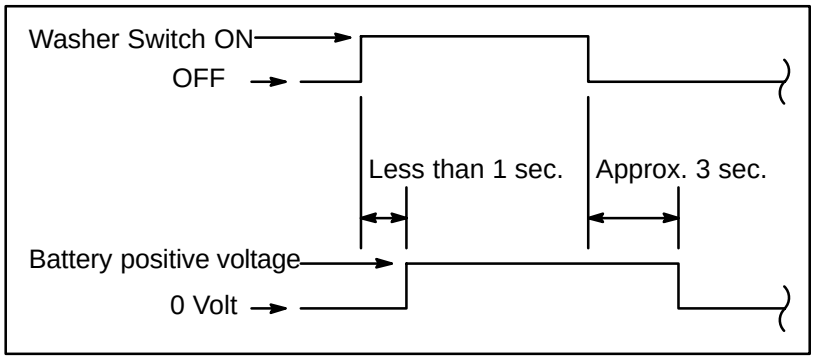


3. INSPECT WASHER LINKED OPERATION

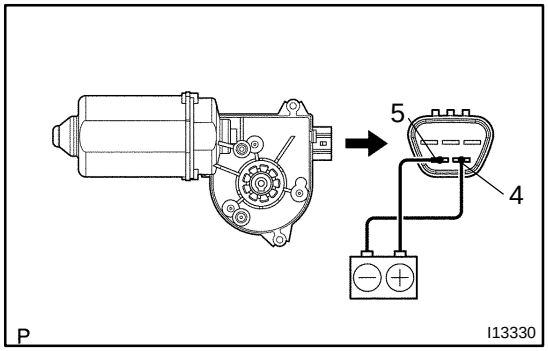
(a) Connect the positive (+) lead from the battery to terminal 16 and the negative (-) lead to terminal 2.

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

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

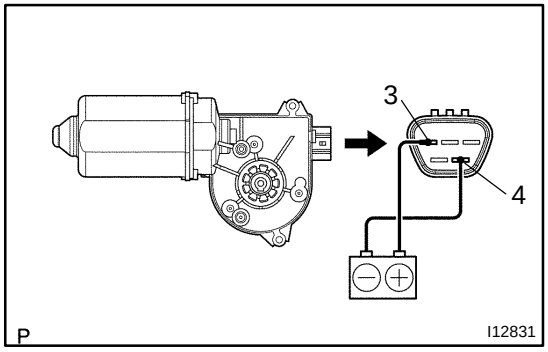


If operation is not as specified, replace the wiper and washer switch.



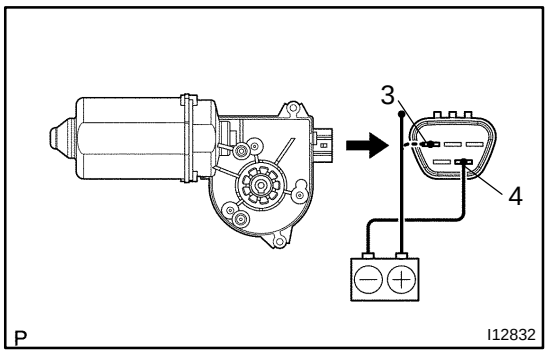
4. Low speed:
INSPECT WIPER MOTOR OPERATION

Connect the positive (+) lead from the battery to terminal 5 and the negative (-) lead from the battery to the motor body or terminal 4, and check that the motor operates at low speed.
If operation is not as specified, replace the motor.



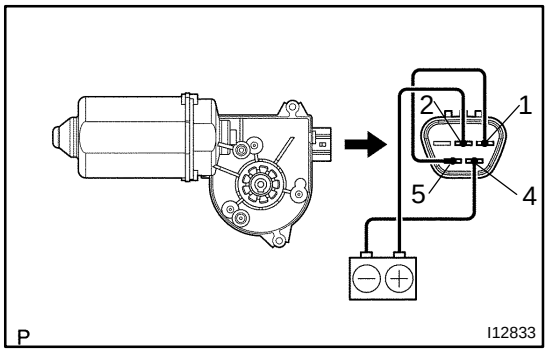
5. High speed:
INSPECT WIPER MOTOR OPERATION

Connect the positive (+) lead from the battery to terminal 3 and the negative (-) lead from the battery to the motor body or terminal 4, and check that the motor operates at high speed.
If operation is not as specified, replace the motor.



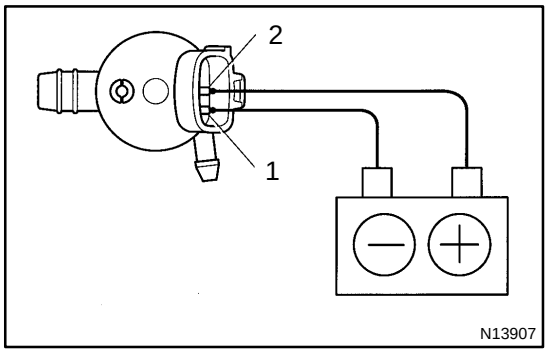
6. Stopping at stop position:
INSPECT WIPER MOTOR OPERATION

(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 1 and 5.
(c) Connect the positive (+) lead from the battery to terminal 2 and the negative (-) lead from the battery to the motor body or terminal 4, and check that the motor stops running at the stop position after the motor operates again.

If operation is not as specified, replace the motor.



7. INSPECT WASHER MOTOR OPERATION

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

NOTICE:

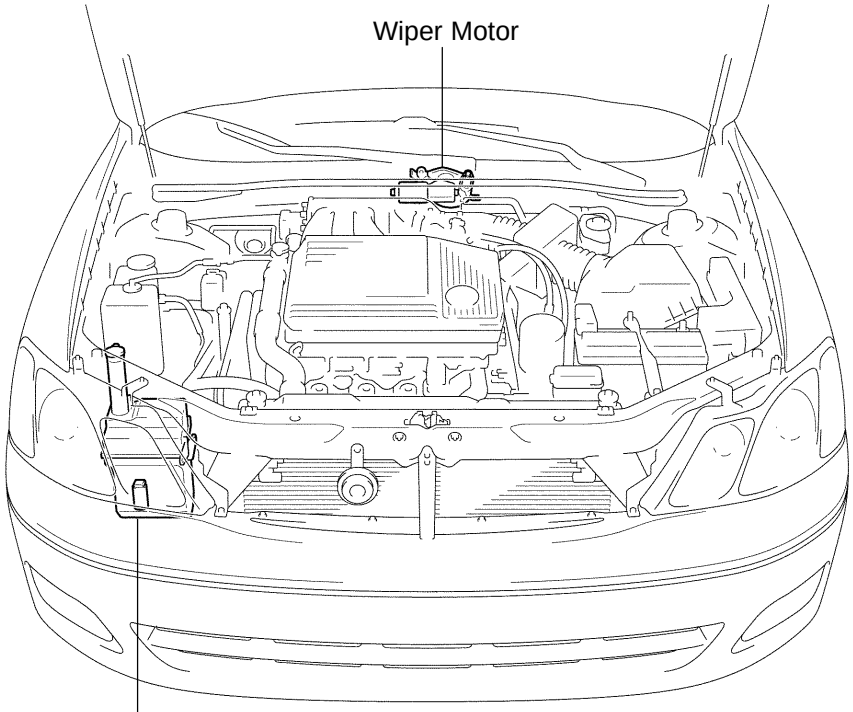
These tests must be performed quickly (within 20 seconds) to prevent the coil from burning out.

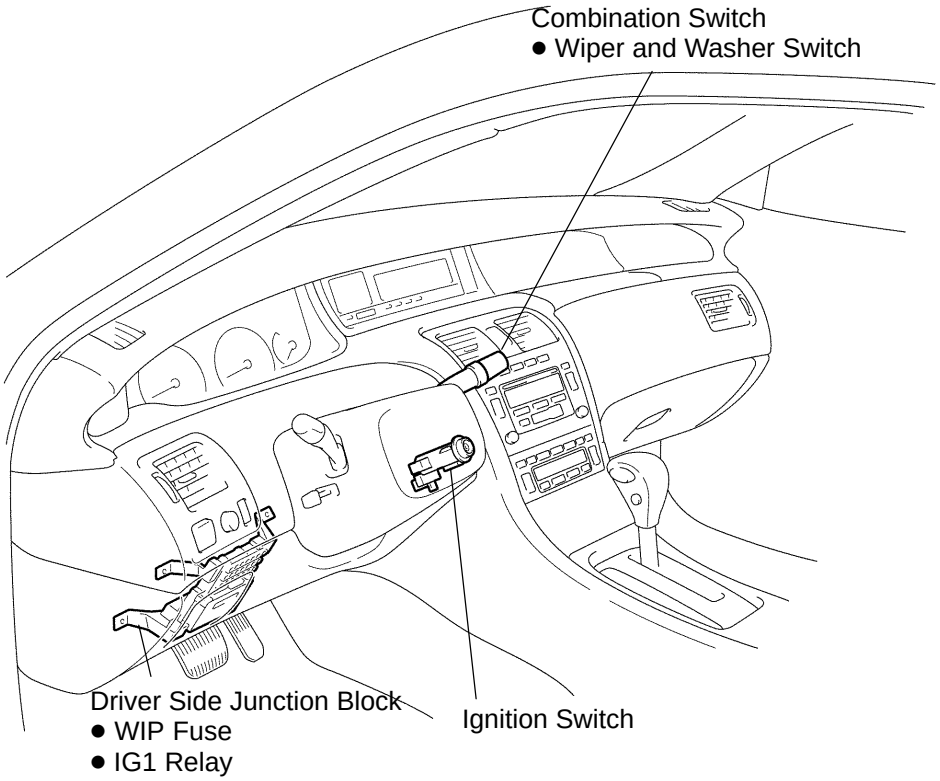
If operation is not as specified, replace the motor.

WIPER AND WASHER SYSTEM

BE0IA-03

LOCATION





P

I12530

BE2MA-01

INSPECTION

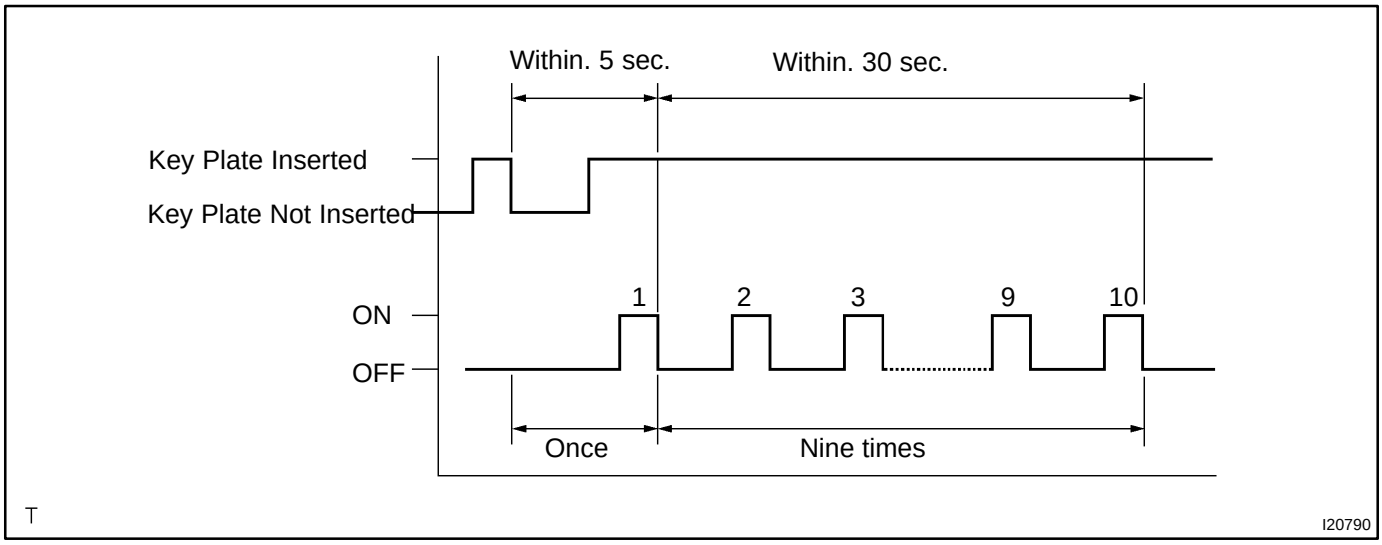
1. INSPECT WIRELESS DOOR LOCK DIAGNOSIS MODE

(a) Start up diagnosis mode.

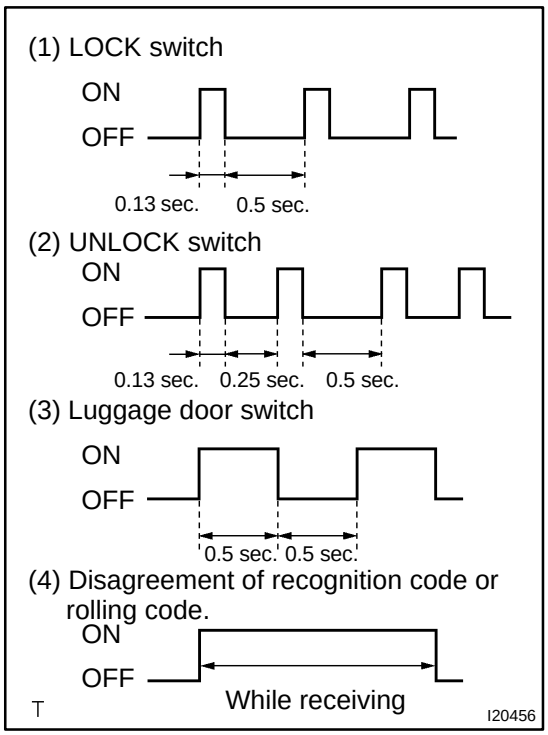
HINT:

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 buzzer sounds.



(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 buzzer sounds.



(c) Diagnosis Mode Check.

HINT:

Check how the buzzer sounds 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 buzzer.

HINT:

Conduct the following checks.

- Check the wireless door lock transmitter.
- Check the wireless door lock receiver.

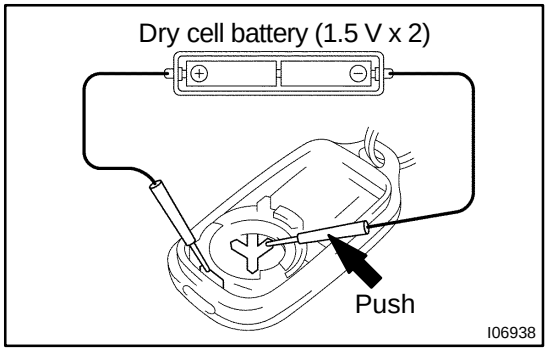
2. INSPECT WIRELESS DOOR LOCK TRANSMITTER OPERATION

HINT:

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

(a) Using a screwdriver, remove the cover.

(b) Remove the battery (lithium battery).



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

HINT:

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

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

Standard:

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

HINT:

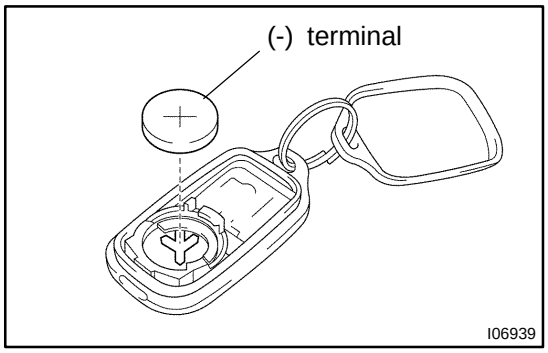
- The minimum operation distance differs according to operator, the way of holding, and location.
- As weak wave is used, operation distance might be shortened when noise is detected in strong wave or used frequency.

(e) Install the battery (lithium battery).

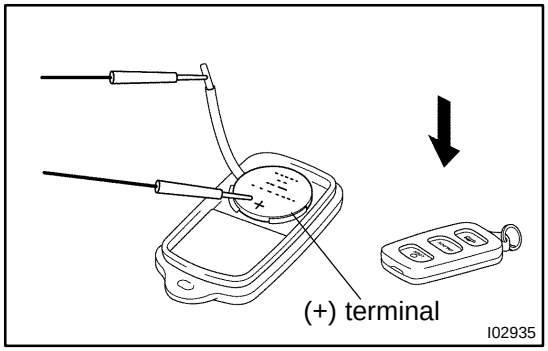
3. CHECK BATTERY CAPACITY

HINT:

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



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



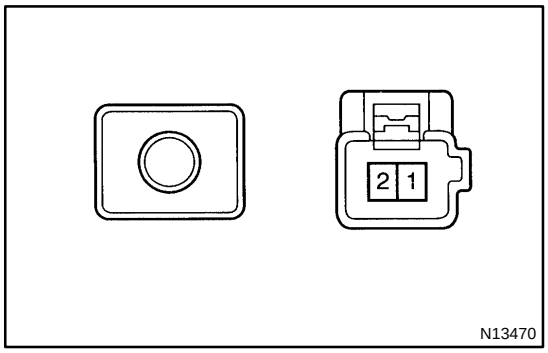
(d) Connect the (+) tester to the (+) battery (lithium battery), and (-) tester to the lead respectively.
(e) Press one of the transmitting switches on the transmitter for approx. 1 second.
(f) Press the transmitting switch on the transmitter again to check the voltage.
Standard: 2.1 V or more

HINT:

- When the temperature of the battery is low, the judge can not be made correctly.
  When the outcome of the test is less than 2.1 V, conduct the test again after leaving the battery in the place at 18 ˚C for more than 30 minutes.
- By auto power off function, the voltage becomes no load voltage (more than 2.5 V) condition 0.8 seconds after the switch was pressed.
  Make sure to read the voltage before of it.
- High voltage might be shown 1 to 2 times after leaving the battery, judge should be made with the voltage shown at the 3rd time or later.

(g) Disconnect the lead.

(h) Set the battery (lithium battery) in the transmitter.



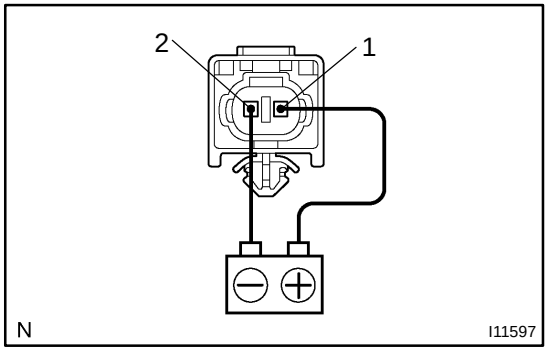
4. INSPECT WIRELESS DOOR LOCK CONTROL CANCEL SWITCH

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

If continuity is not as specified, replace the switch.

If continuity is as specified, inspect the switch circuit.

5. INSPECT WIRELESS DOOR LOCK CONTROL CANCEL SWITCH CIRCUIT (See page DI-653)



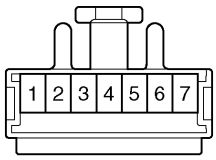
6. INSPECT WIRELESS DOOR LOCK BUZZER OPERATION

Connect the positive (+) lead from the ohmmeter to terminal 1 and the negative (-) lead to terminal 2, and buzzer sounds.

If operation is not as specified, replace the buzzer.

7. INSPECT WIRELESS DOOR LOCK BUZZER CIRCUIT (See page DI-653)

Wire Harness Side



I04152

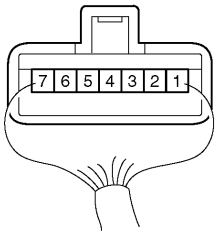
8. Connector disconnected:
INSPECT WIRELESS DOOR LOCK CONTROL RECEIVER CIRCUIT

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

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

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

From Back Side



I04153

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

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

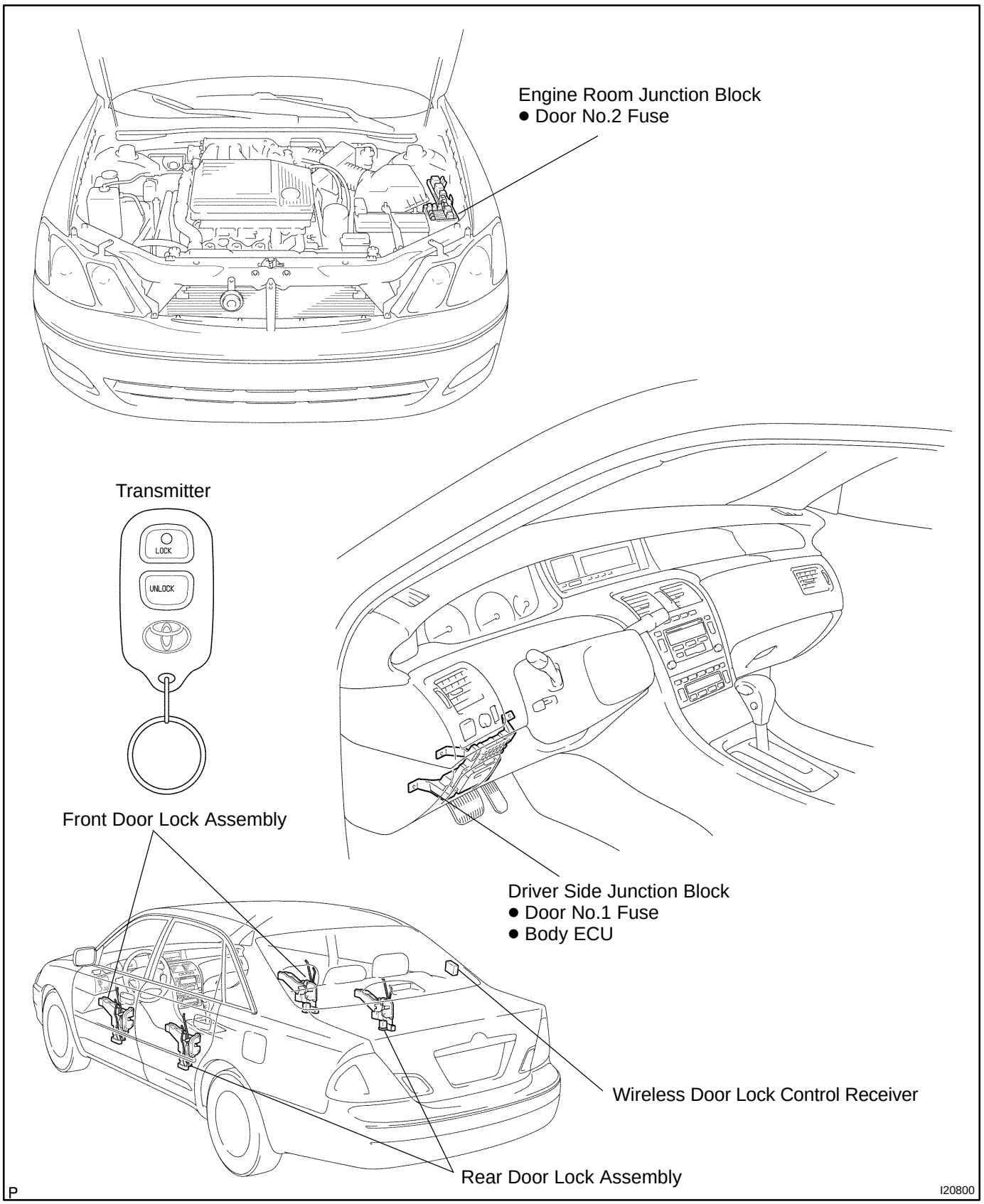
Tester connection	Condition	Specified condition
3 - Ground	Ignition switch position OFF Key removed Transmitter OFF → ON	4.5 - 5.5 V → below 1 V
4 - Ground	Ignition switch position OFF Key removed Transmitter OFF	10 - 14 V

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

BE1DZ-02

WIRELESS DOOR LOCK CONTROL SYSTEM

LOCATION



BE217-01

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.

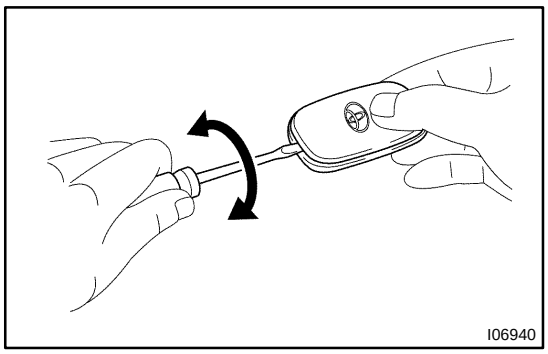
2. WIRELESS DOOR LOCK BASIC FUNCTION

(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.

BE2M9-01

REPLACEMENT



1. REPLACE TRANSMITTER (LITHIUM) BATTERY

NOTICE:

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

(a) Using a screwdriver, remove the cover.

NOTICE:

Do not pry out the cover forcibly.

HINT:

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

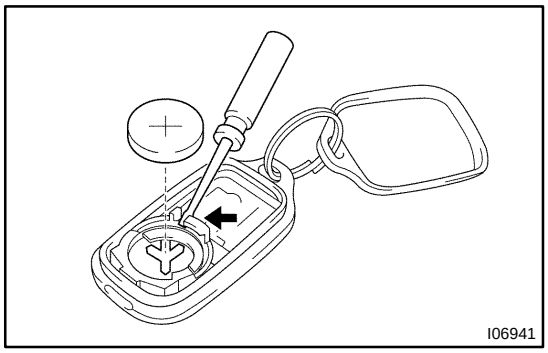
(b) Remove the transmitter.

(c) Remove the 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.



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

NOTICE:

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

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

2. REPLACE DOOR CONTROL RECEIVER AND TRANSMITTER

NOTICE:

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

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

Add mode
Rewrite mode
Prohibition mode
Confirmation mode

HINT:

The add mode is used to retain codes already registered while you register new recognition codes. This mode is used when adding a transmitter. However, if the number of registered codes exceeds 4 codes, previously registered codes are correspondingly erased in order, starting from the first registered code.

The rewrite mode is used to erase all previously registered codes and register only new recognition codes.

The prohibition mode is used to erase all registered codes and cancels the wireless door lock function. Use this mode when the transmitter is lost.

The confirmation mode is for confirming few many recognition codes ar already registered before you register additional recognition codes.

(b) Follow the chart on the following page to register the transmitter recognition code at the wireless door lock control receiver.

HINT:

When procedure is out of the specified, the operation returns to normal operation.

Maximum 4 recognition codes can be registered.

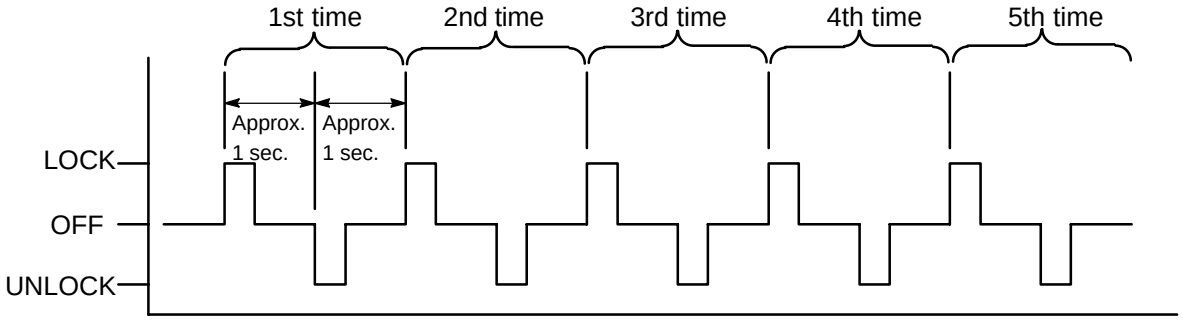
Start registration of recognition code

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

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

Within 40 secs.

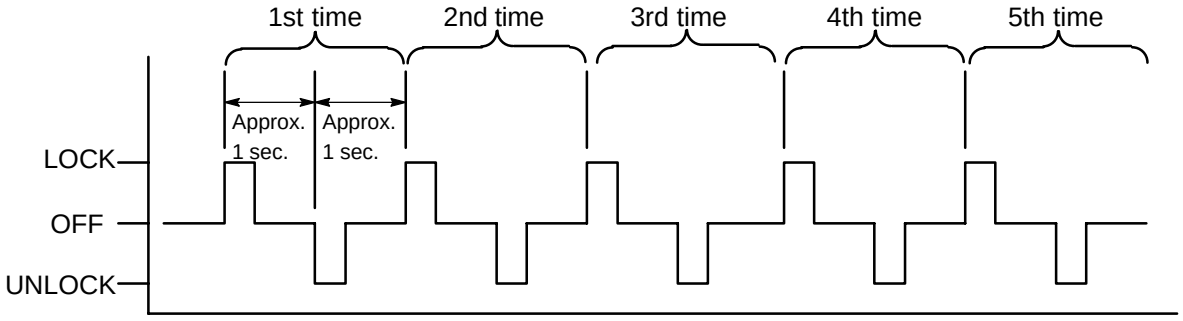
Press the door lock control switch (for manual operation) 5 times to LOCK/UNLOCK at approx. 1 sec. interval.



Close the driver's door, then open it.

Within 40 secs.

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

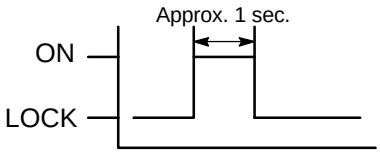


Insert the key into the ignition key cylinder.

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

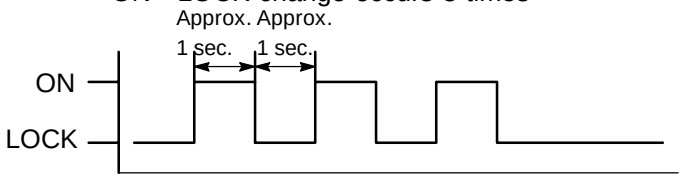
Add mode

ON - LOCK change occurs 1 time



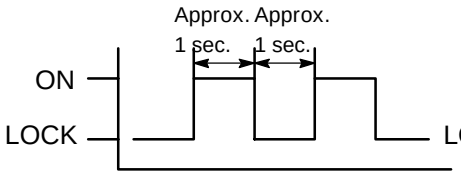
Confirmation mode

ON - LOCK change occurs 3 times



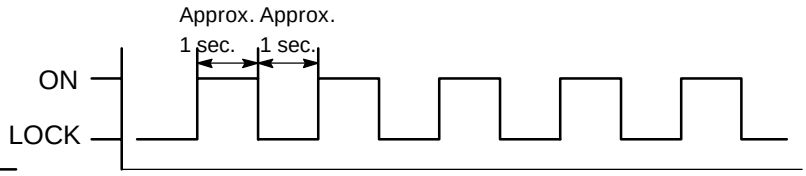
Rewrite mode

ON - LOCK change occurs 2 times



Prohibition mode

ON - LOCK change occurs 5 times



Pull out the key plate from the ignition key cylinder.

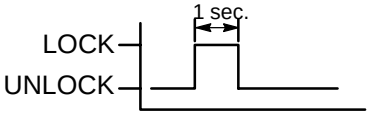
When add mode or rewrite mode is selected.

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

Within 3 secs.

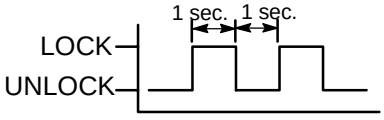
LOCK-UNLOCK occurs once

Indicates that add mode has been selected.



LOCK-UNLOCK occurs twice

Indicates that rewrite mode has been selected.

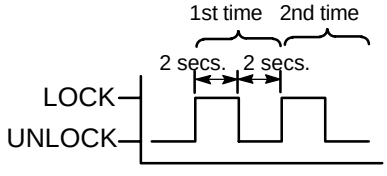


When prohibition mode is selected.

When confirmation mode is selected.

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

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

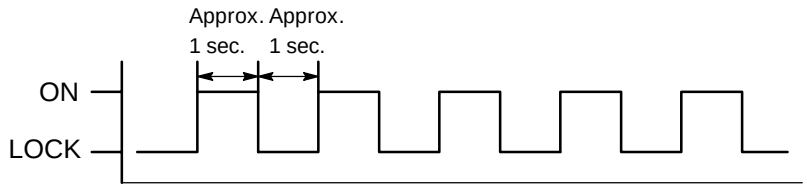


Registration of recognition code (Confirmation mode and probation mode) is completed.

When prohibition mode is selected.

Within 40 secs.

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



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

Within 3 secs.

Press again either of switches on the transmitter.

Within 3 secs.

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

LOCK-UNLOCK occurs once

Registration of recognition code is completed

LOCK-UNLOCK occurs twice

Registration of recognition code has not been completed.

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

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

Proceed to finish registration

Proceed to continue registration

Within 40 secs.

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

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

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