

ADJUSTMENT

For Adjustment
in Vertical Direction



I02698

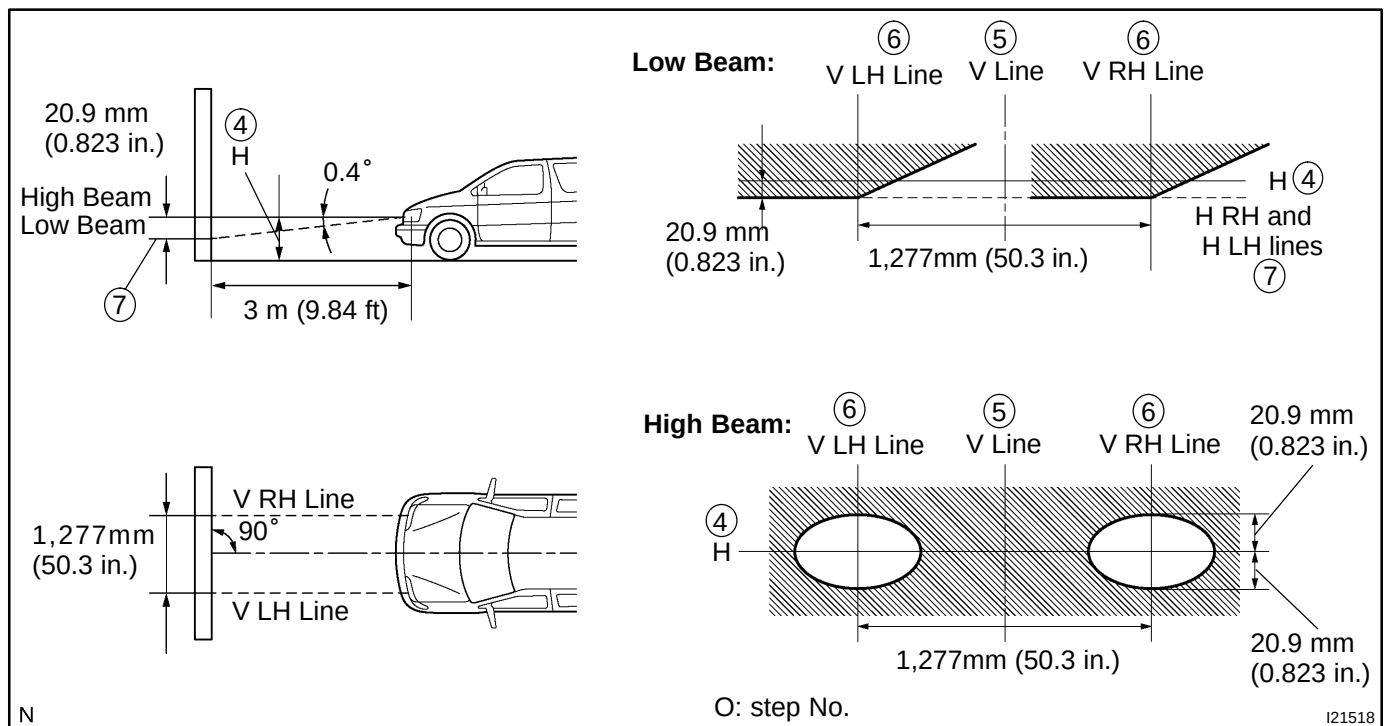
1. ADJUST HEADLIGHT AIM ONLY

- (a) Place the vehicle in the following conditions.
- The area around the headlight is not deformed.
 - The vehicle is parked on a level surface.
 - Tire inflation pressure is the specified value.
 - A driver is in the driver's seat and the vehicle is in a state ready for driving (with a tank full).
 - The vehicle has been bounced several times.
- (b) Check the headlight aiming.
- (1) Prepare a thick white paper.
 - (2) Stand the paper perpendicular to the ground at the position 9.84 ft away from the headlights.
 - (3) Ensure that the center line of the vehicle and the paper face forms a 90-degree angle as shown in the illustration.
 - (4) Draw a horizontal line (H line) on the paper, showing where the headlights should strike.
 - (5) Draw a vertical line (V line) to where the center line of the vehicle is to be.
 - (6) Draw 2 vertical lines to where the 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:

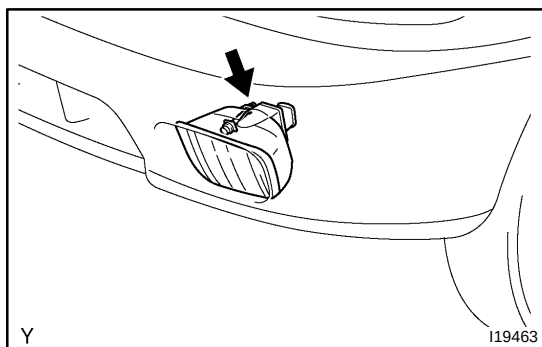
The H RH and H LH line is 0.4° below the horizontal line (H line) of the light axis.

- (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.



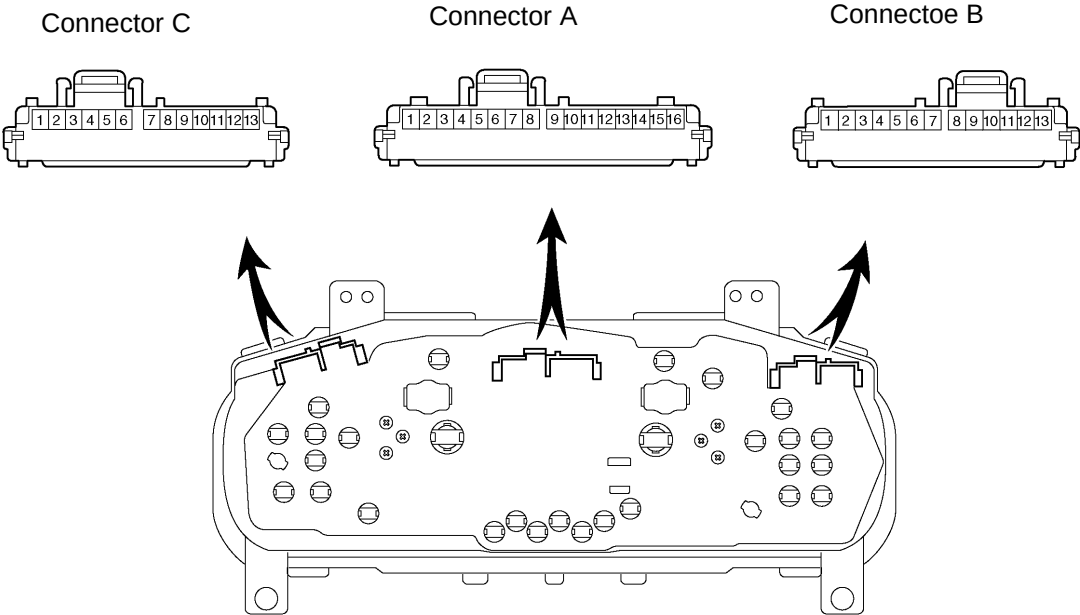
ADJUSTMENT

ADJUST FOG LIGHT AIM

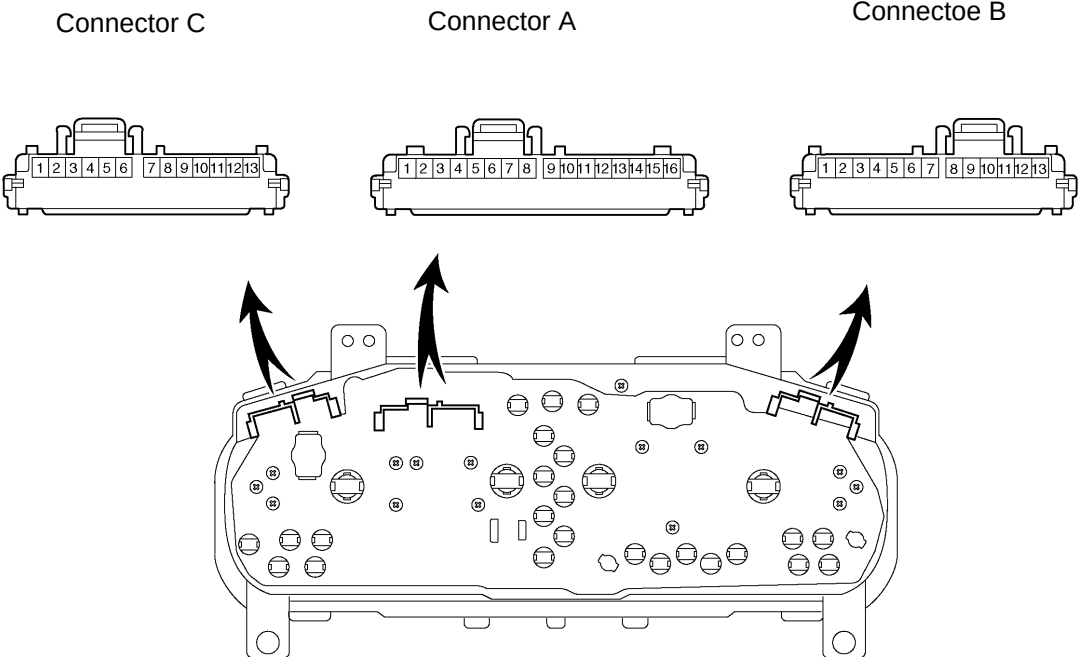
A-bolt: Vertical Direction

CIRCUIT

w/o Tachometer:



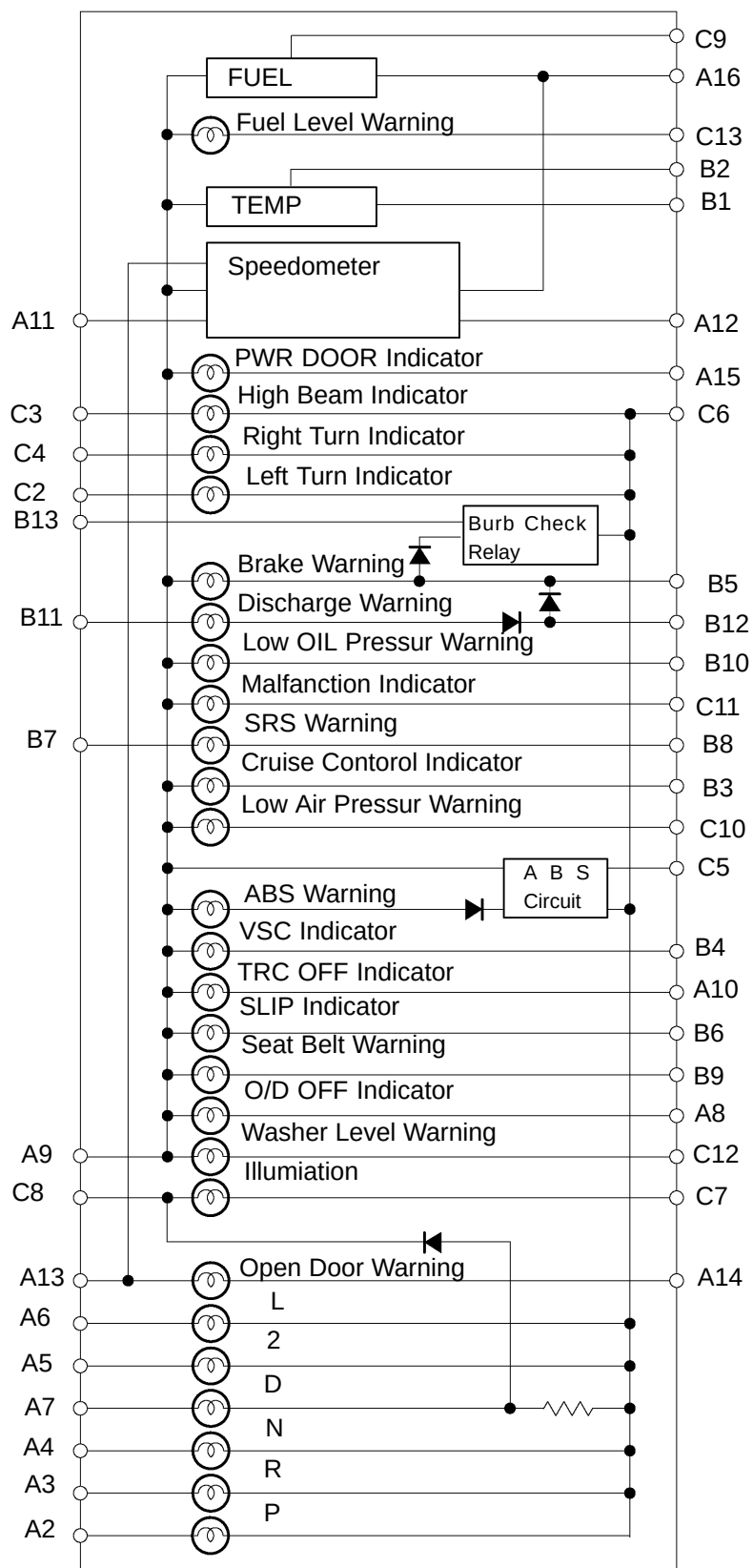
w/ Tachometer:



Y

I17265

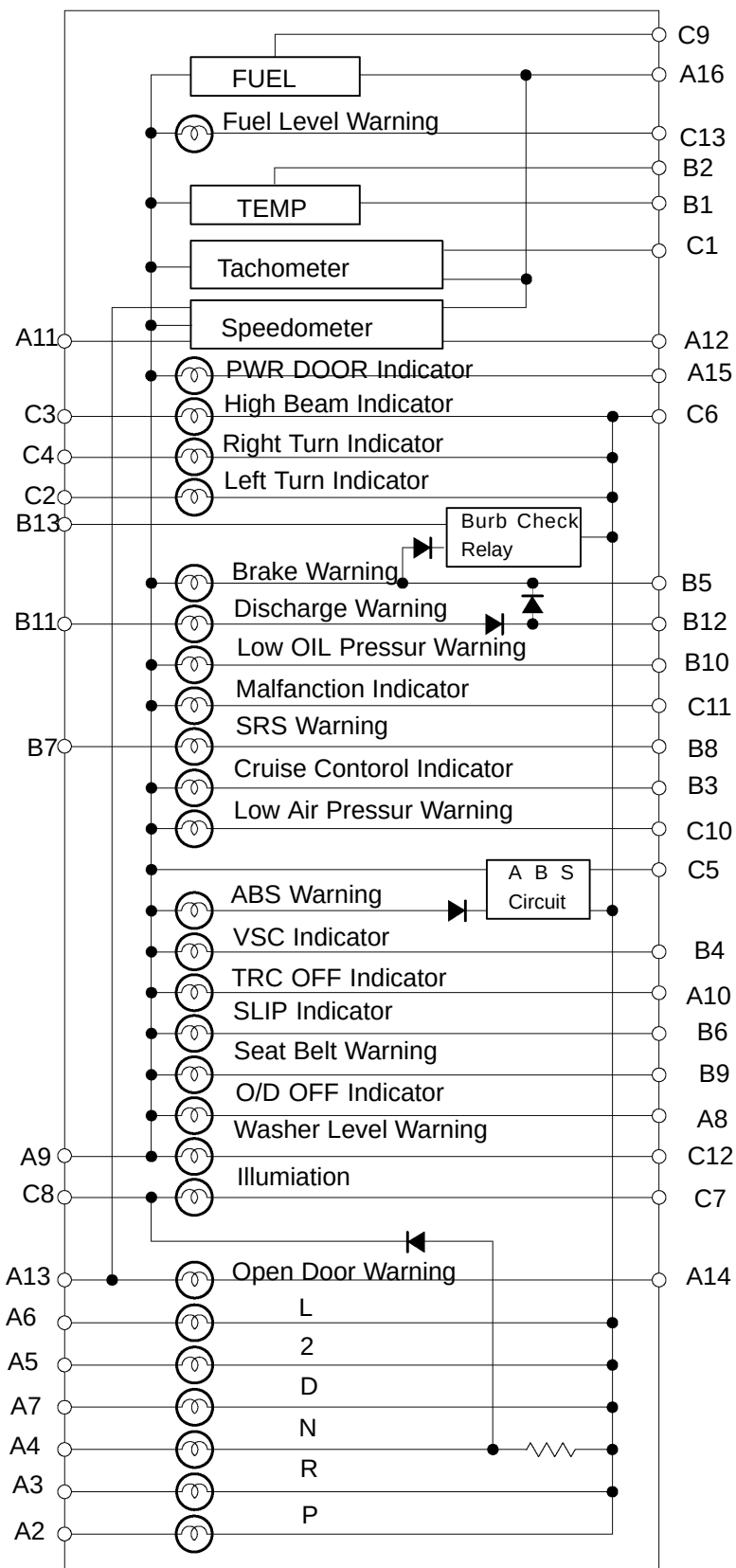
w/o Tachometer



w/o Tachometer

No.		Wiring connector side
A	2	PNP Switch (P)
	3	PNP Switch (R)
	4	PNP Switch (N)
	5	PNP Switch (2)
	6	PNP Switch (L)
	7	PNP Switch (D)
	8	O/D OFF Switch
	9	GAUGE Fuse
	11	Speed Control Unit
	12	ABS Speed Sensor
	13	DOME Fuse
	14	Door Control Switch
	15	Power Slide Door Control ECU
	16	Ground
B	1	Engine Coolant Temperature Sender Gauge
	2	Ground
	3	Cruise Control ECU
	5	Brake Fluid Level Warning Switch and P.K.B. Switch
	7	ECU-B Fuse
	8	Airbag Sensor Assembly
	9	Retractor Switch
	10	Low Oil Pressure Warning Switch
	11	IGN Fuse
	12	Generator L Terminal
	13	ST Fuse
C	2	Turn Signal Switch (Left)
	3	Headlight Dimmer Switch
	4	Turn Signal Switch (Right)
	5	ABS ECU
	6	Ground
	7	Light Control Rheostat
	8	TAIL Fuse
	9	Fuel Sender Gauge
	10	ABS ECU
	11	ECM
	12	Washer Level Warning Switch
	13	Fuse Level Warning Switch

w/ Tachometer



Y

A3

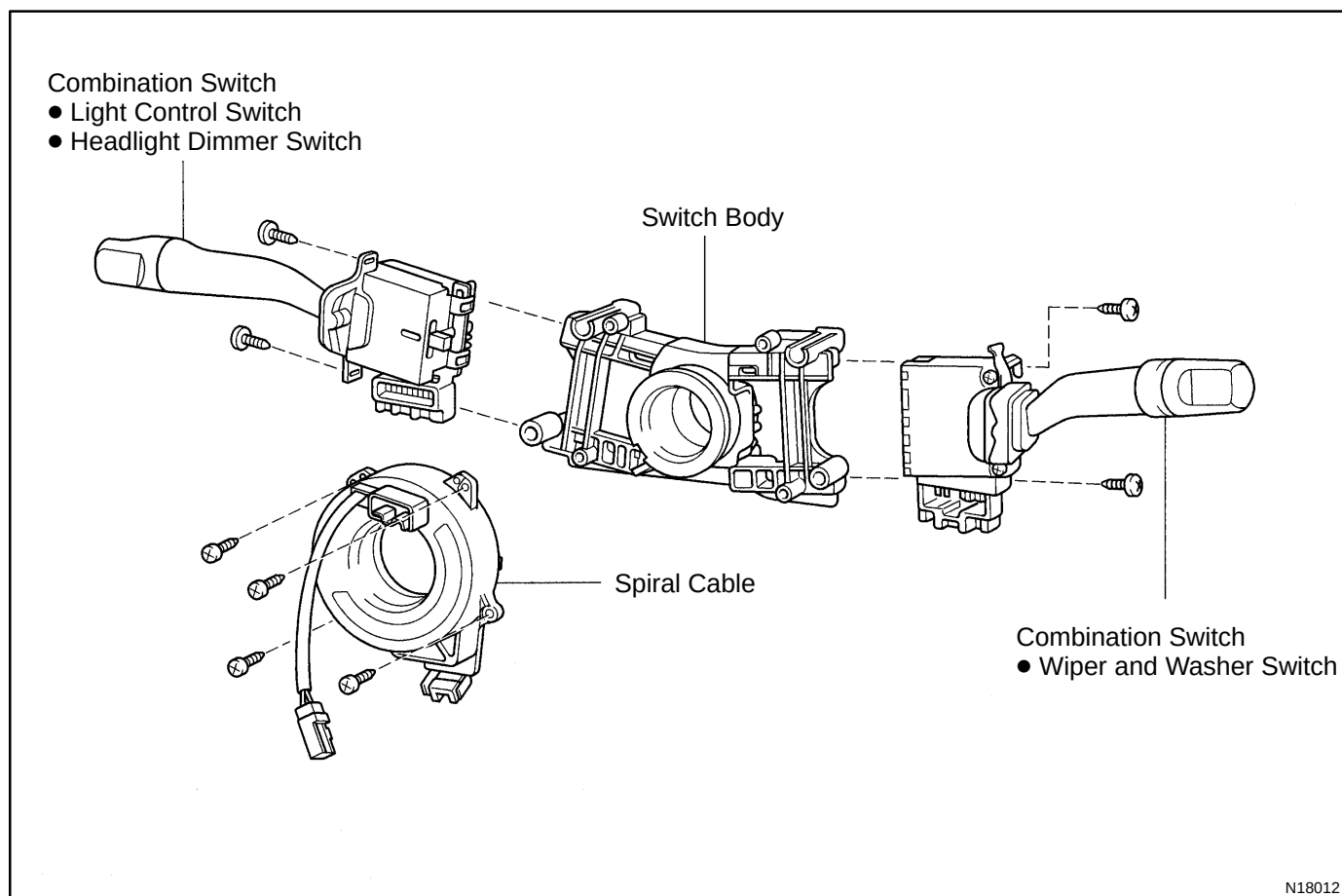
R

I17264

w/ Tachometer

No.		Wiring connector side
A	2	PNP Switch (P)
	3	PNP Switch (R)
	4	PNP Switch (N)
	5	PNP Switch (2)
	6	PNP Switch (L)
	7	PNP Switch (D)
	8	O/D OFF Switch
	9	GAUGE Fuse
	11	Speed Control Unit
	12	ABS Speed Sensor
	13	DOME Fuse
	14	Door Control Switch
	15	Power Slide Door Control ECU
	16	Ground
B	1	Engine Coolant Temperature Sender Gauge
	2	Ground
	3	Cruise Control ECU
	5	Brake Fluid Level Warning Switch and P.K.B. Switch
	7	ECU-B Fuse
	8	Airbag Sensor Assembly
	9	Retractor Switch
	10	Low Oil Pressure Warning Switch
	11	IGN Fuse
	12	Generator L Terminal
	13	ST Fuse
C	2	Turn Signal Switch (Left)
	3	Headlight Dimmer Switch
	4	Turn Signal Switch (Right)
	5	ABS ECU
	6	Ground
	7	Light Control Rheostat
	8	TAIL Fuse
	9	Fuel Sender Gauge
	10	ABS ECU
	11	ECM
	12	Washer Level Warning Switch
	13	Fuse Level Warning Switch

COMPONENTS



N18012

AUDIO SYSTEM DESCRIPTION

BE12S-01

1. RADIO WAVE BAND

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

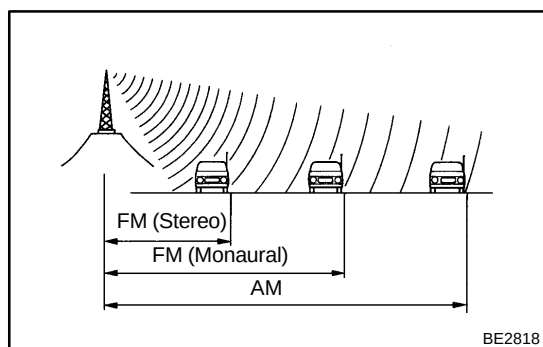
Frequency	30 kHz	300 kHz	3 MHz	30 MHz	300 MHz
Designation	LF	MF	HF	VHF	
Radio wave		AM		FM	
Modulation	Amplitude modulation			Frequency modulation	

LF: Low Frequency

MF: Medium Frequency

HF: High Frequency

VHF: Very High Frequency

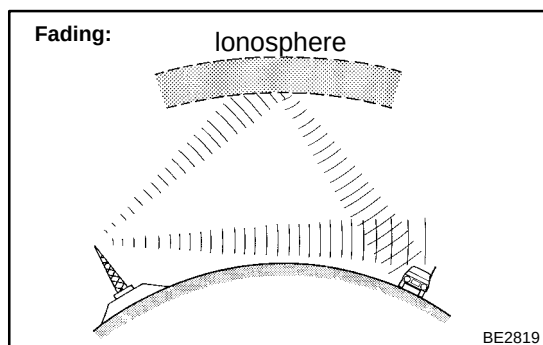


2. SERVICE AREA

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

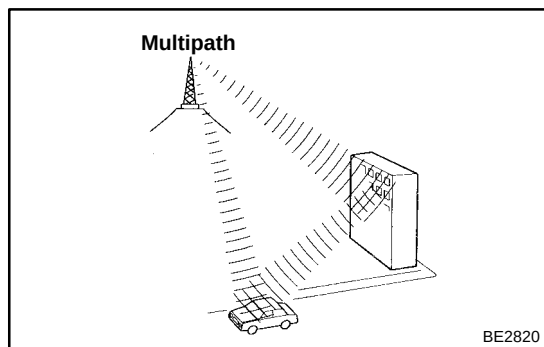
3. RECEPTION PROBLEMS

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

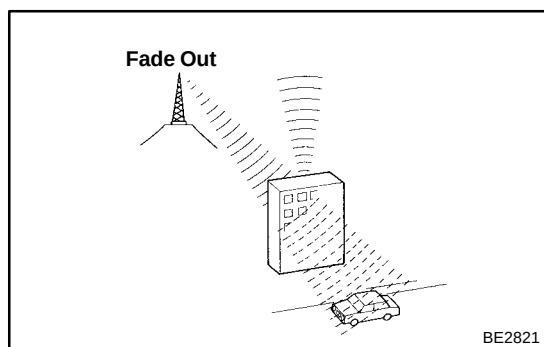


(1) Fading:

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



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



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

4. COMPACT DISC PLAYER

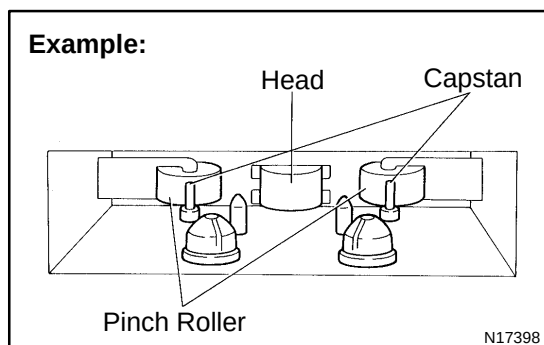
Compact Disc Players use a laser beam pick-up to read the digital signals recorded on the CD and reproduce analog signals of the music, etc.

HINT:

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

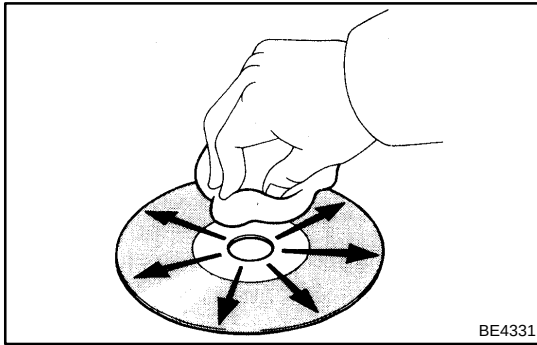
NOTICE:

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



5. Tape player/head cleaning: MAINTENANCE

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



6. CD player/disc cleaning: MAINTENANCE

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

NOTICE:

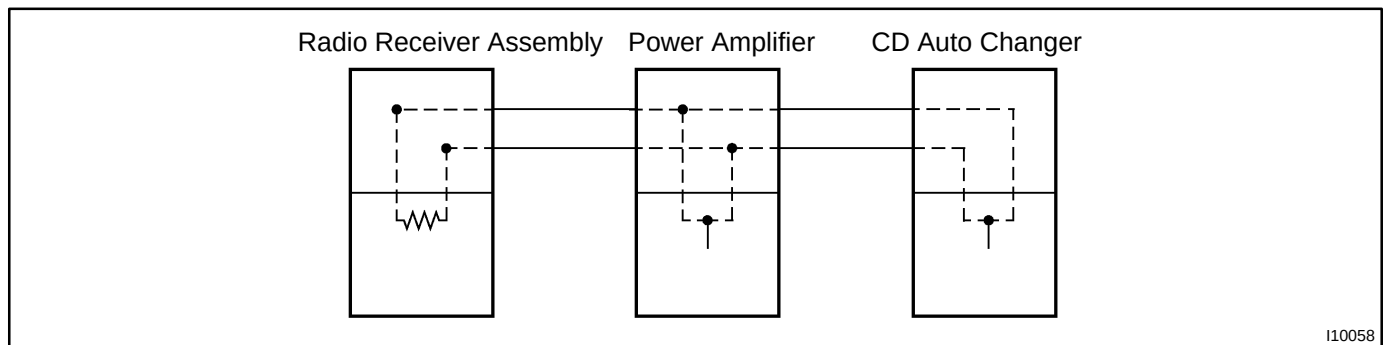
Do not use a conventional record cleaner or anti-static preservative.

7. OUTLINE OF AVC-LAN

(a) What is AVC-LAN?

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

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



(b) Objectives

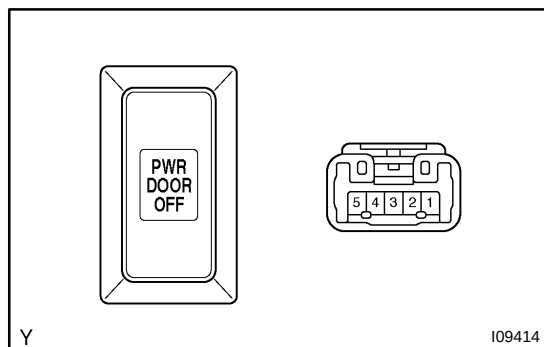
Recently the car audio system has been rapidly developed and functions have been changed drastically. The conventional system has been switched to the multi-media type such as a navigation system. At the same time the level of customers needs to audio system has been upgraded. This lies behind this standardization.

The concrete objectives are explained below.

- (1) When products by different manufactures were combined together, there used to be a case that malfunction occurred such as sound did not come out. This problem has been resolved by standardization of signals.
 - (2) Various types of after market products have been able to add or replace freely.
 - (3) Because of the above (2), each manufacture has become able to concentrate on developing products in their strongest field. This has enabled many types of products provided inexpensively.
 - (4) Conventionally, a new product developed by a manufacture could not be used due to a lack of compatibility with other manufactures products. Because of this new standard, users can enjoy compatible products provided for them timely.
- (c) The above descriptions are the objectives to introduce AVC-LAN. By this standardization, development of new products will no longer cause systematic errors. Thus, this is very effective standard for a product in the future.

HINT:

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

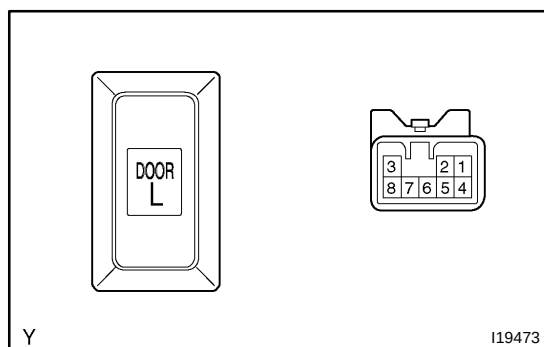


INSPECTION

1. INSPECT POWER SLIDE DOOR MAIN SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
Switch ON	1 - 3	Continuity
Switch OFF	1 - 3	No Continuity
Illumination circuit	4 - 5	Continuity

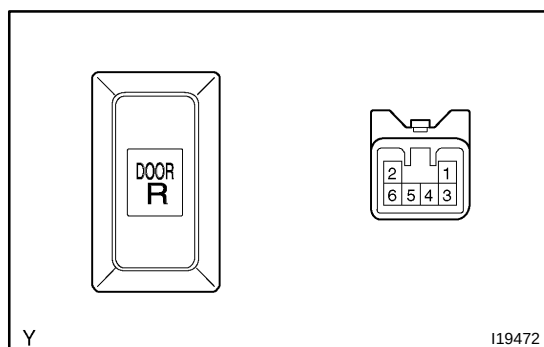
If continuity is not as specified, replace the switch.



2. INSPECT POWER SLIDE DOOR RH SIDE CONTROL FRONT SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
Switch ON	5 - 8	Continuity
Switch OFF	5 - 8	No continuity
Illumination circuit	2 - 6	Continuity

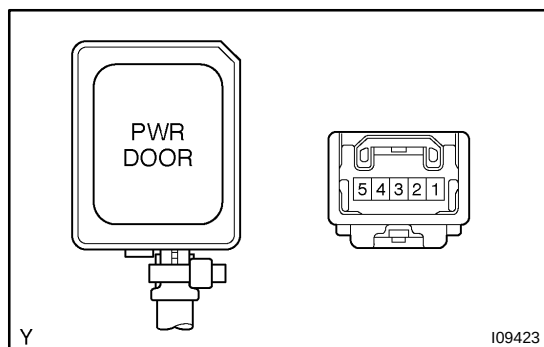
If continuity is not as specified, replace the switch.



3. INSPECT POWER SLIDE DOOR LH SIDE CONTROL FRONT SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
Switch ON	3 - 6	Continuity
Switch OFF	3 - 6	No continuity
Illumination circuit	1 - 4	Continuity

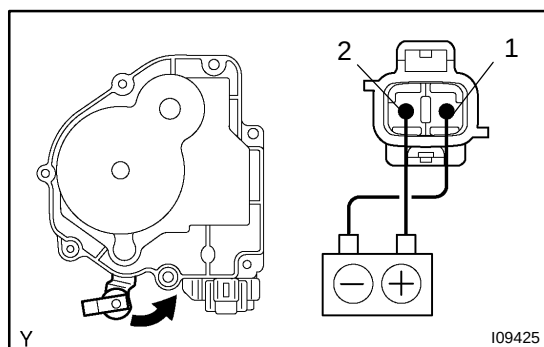
If continuity is not as specified, replace the switch.



4. INSPECT POWER SLIDE DOOR CONTROL SWITCH CONTINUITY

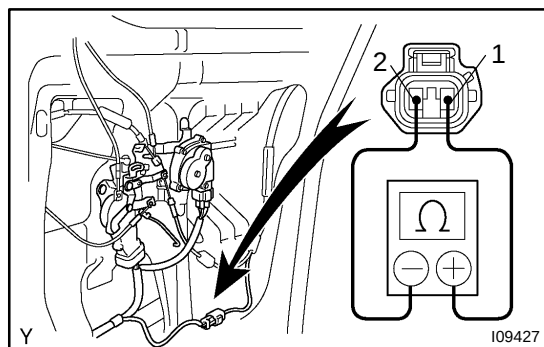
Switch position	Tester connection	Specified condition
Switch ON	1 - 5	Continuity
Switch OFF	1 - 5	No continuity
Illumination circuit	2 - 4	Continuity

If continuity is not as specified, replace the switch.



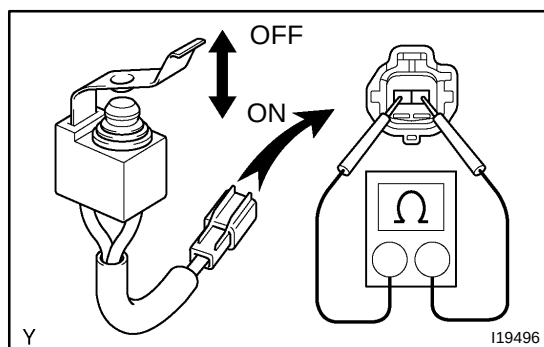
5. INSPECT SLIDE DOOR LOCK RELEASE ACTUATOR OPERATION

Connect the positive (+) lead from the battery to terminal 2 and the negative (-) lead to terminal 1, and check the door lock release link moves to release position.

**6. INSPECT LATCH SWITCH CONTINUITY**

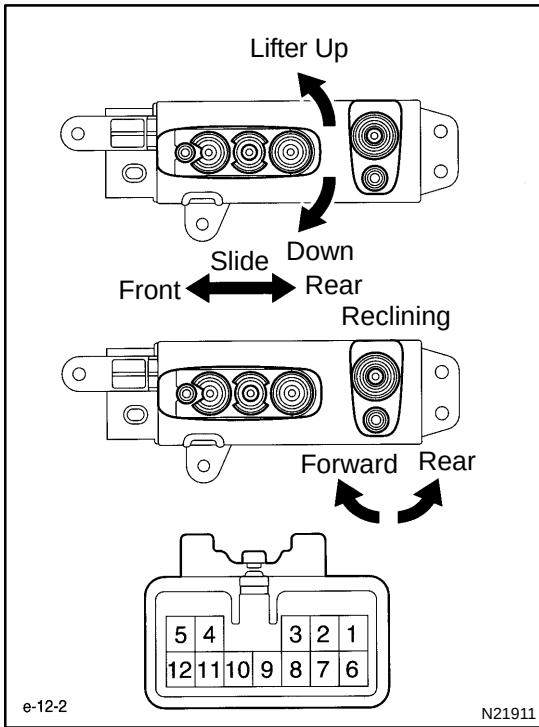
Slide door position	Tester connection	Specified condition
Open	1 - 2	No continuity
Closed	1 - 2	Continuity

If continuity is not as specified, replace the switch.

**7. INSPECT FUEL LID COURTESY SWITCH CONTINUITY**

- Check that continuity exists between terminal 1 and terminal 2 with the switch ON (switch pin pushed).
- Check that no continuity exists between terminal 1 and terminal 2 with the switch OFF (switch pin retracted).

If continuity is not as specified, replace the switch.



INSPECTION

1. INSPECT DRIVER'S SEAT SWITCH CONTINUITY

Slide switch:

Switch position	Tester connection	Specified condition
FRONT	2 - 11, 4 - 7	Continuity
OFF	4 - 11, 4 - 7	Continuity
BACK	2 - 7, 4 - 11	Continuity

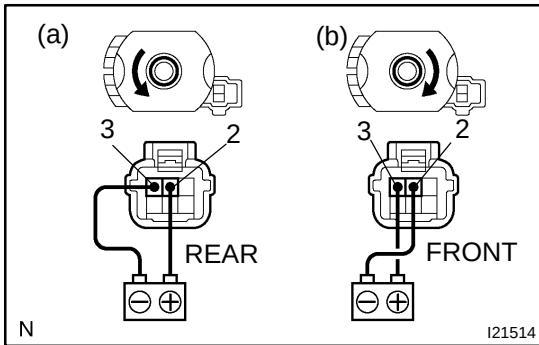
Left switch:

Switch position	Tester connection	Specified condition
UP	2 - 5, 4 - 8	Continuity
OFF	4 - 5, 4 - 8	Continuity
DOWN	2 - 8, 4 - 5	Continuity

Reclining switch:

Switch position	Tester connection	Specified condition
FORWARD	2 - 12, 4 - 6	Continuity
OFF	4 - 12, 4 - 6	Continuity
REAR	2 - 6, 4 - 12	Continuity

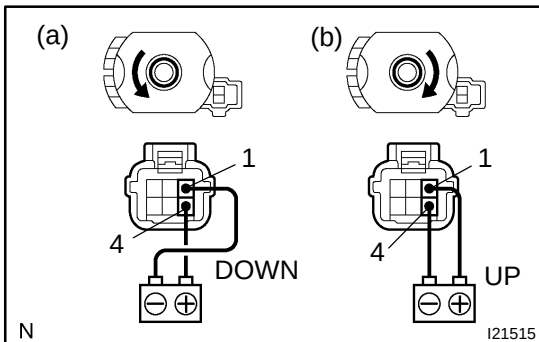
If continuity is not as specified, replace the switch.



2. INSPECT SLIDE MOTOR OPERATION

- Connect the positive (+) lead from the battery to terminal 3 and the negative (-) lead to terminal 2, check that the motor turns counterclockwise.
- Reverse the polarity, check that the motor turns clockwise.

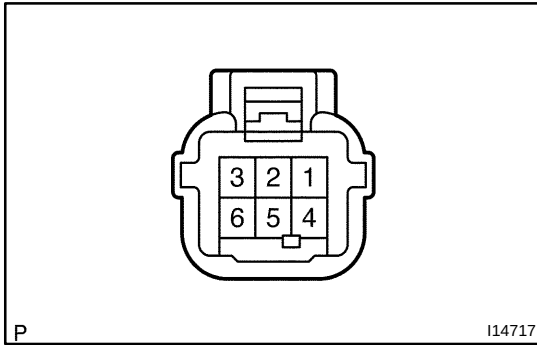
If operation is not as specified, replace the seat adjuster.



3. INSPECT LIFTER MOTOR OPERATION

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

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



4. OPERATION CHECK FOR PTC IN POWER SEAT MOTOR

NOTICE:

Check should be conducted with the power seat motor attached to the adjuster.

- (a) Slide the seat as much as to the front or the back, and to the top bottom with the power seat switch.

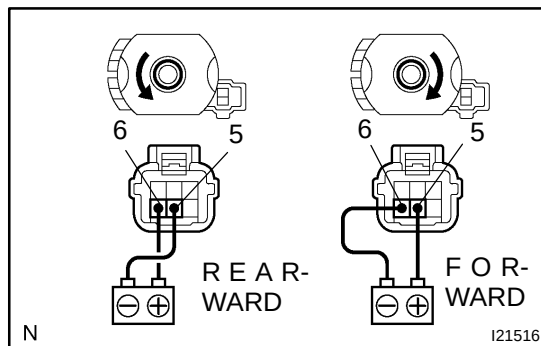
Wait for about 60 seconds.

- (b) Operate the power seat switch to the same directions and check the time it takes to shut-off the electric current (Motor operation sound stops.).

Standard time to shut-off; about 4-40 seconds.

- (c) Wait for about 60 seconds after finishing the shut-off check, then operate the power seat switch to the opposite directions and make sure that the power seat motor functions.

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

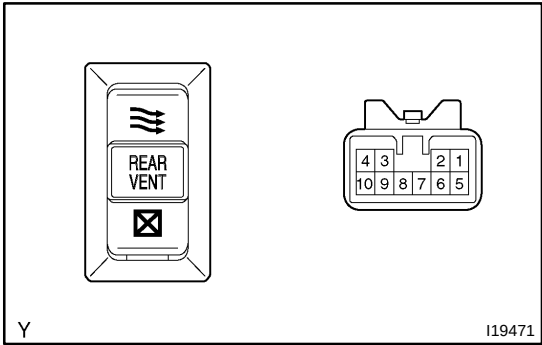


5. INSPECT RECLINING MOTOR PTC THERMISTOR OPERATION

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



INSPECTION

1. INSPECT POWER QUARTER WINDOW SWITCH CONTINUITY

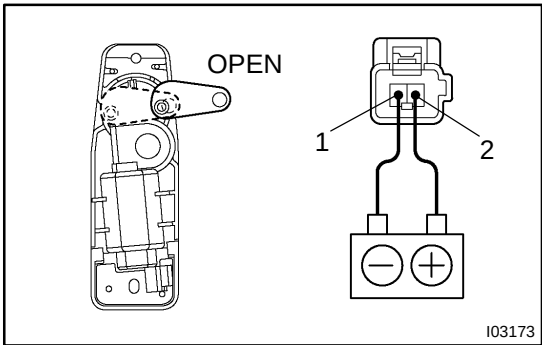
Switch position	Tester connection	Specified condition
CLOSE	3 - 7, 8 - 9	Continuity
OFF	6 - 7, 8 - 9	Continuity
OPEN	3 - 8, 6 - 7	Continuity
Illumination Circuit	1 - 5	Continuity

If continuity is not as specified, replace the switch.

2. Left side:

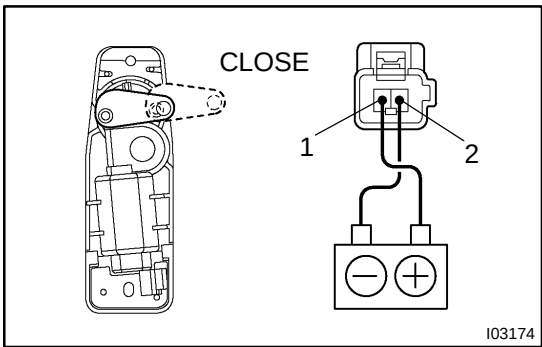
INSPECT POWER VENT WINDOW MOTOR OPERATION

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



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

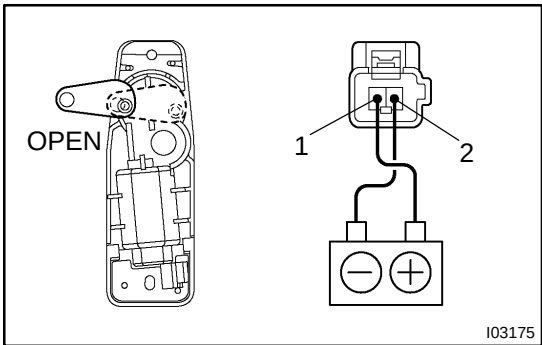
If operation is not as specified, replace the window motor.



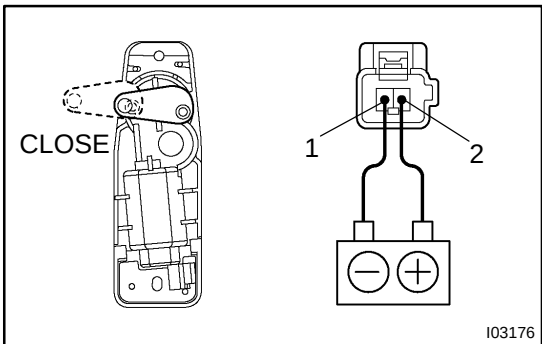
3. Right side:

INSPECT POWER VENT WINDOW MOTOR OPERATION

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



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



INSPECTION

1. INSPECT SPEEDOMETER ON-VEHICLE

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

HINT:

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

If error is excessive, replace the speedometer.

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

2. w/ Tachometer:

INSPECT TACHOMETER ON-VEHICLE

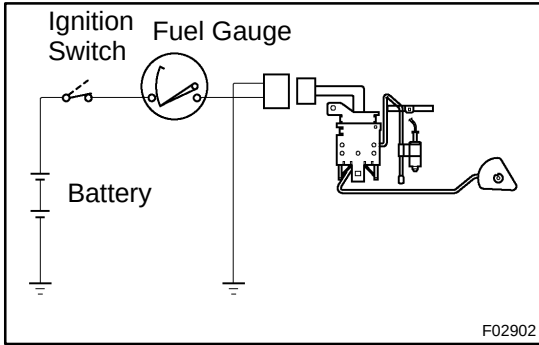
(a) Connect a tune-up test tachometer, and start the engine.

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.**

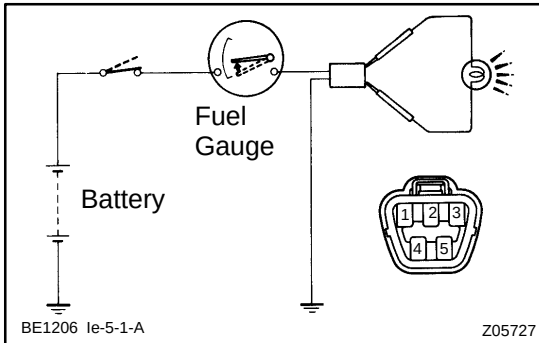
(b) Compare the tester and tachometer indications.

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



3. INSPECT FUEL RECEIVER GAUGE OPERATION

- Disconnect the connector from the sender gauge.
- Turn the ignition switch ON, check that the receiver gauge needle indicates EMPTY.



- Connect terminals 1 and 2 on the wire harness side connector through a 3.4-W test bulb.
- Turn the ignition switch ON, check that the bulb lights up and the receiver gauge needle moves towards the full side.

HINT:

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

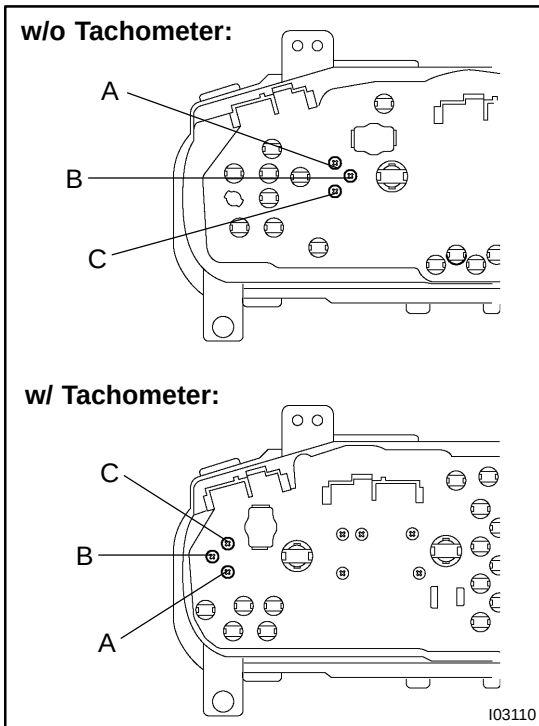
If operation is not as specified, inspect the receiver gauge resistance.

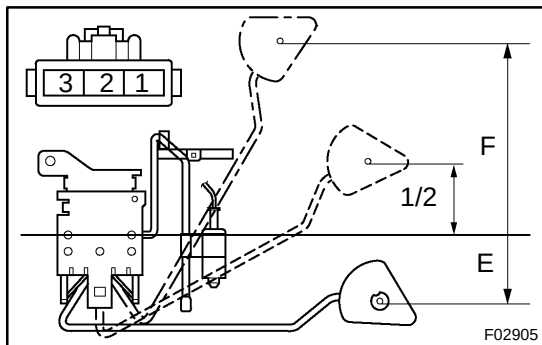
4. INSPECT FUEL RECEIVER GAUGE RESISTANCE

Measure the resistance between terminals.

Tester connection	Resistance (Ω)
A - B	Approx. 261.5
A - C	Approx. 107.2
B - C	Approx. 154.3

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



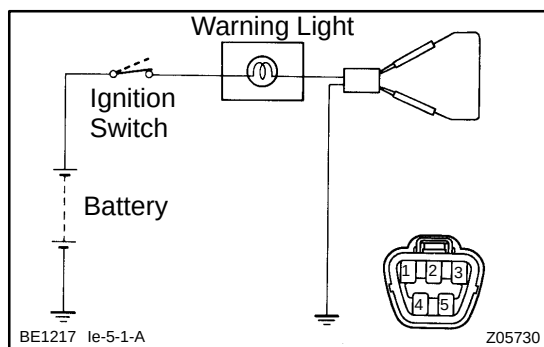


5. INSPECT FUEL SENDER GAUGE RESISTANCE

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

Float position mm (in.)	Resistance (Ω)
F: Approx. 80.3 (3.161)	Approx. 3.0
1/2: Approx. 23.0 (0.906)	Approx. 31.5
E: Approx. 36.0 (1.417)	Approx. 110.0

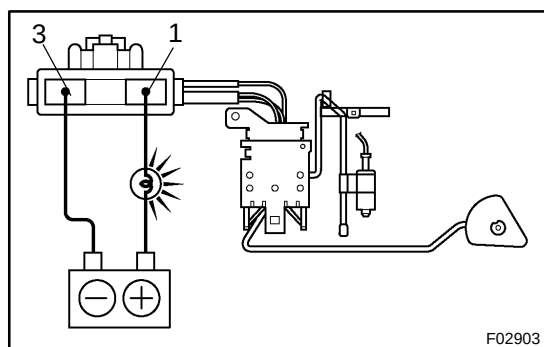
If resistance value is not as specified, replace the sender gauge.



6. INSPECT FUEL LEVEL WARNING LIGHT

- Disconnect the connector from the sender gauge.
- Connect terminals 1 and 3 on the wire harness side connector.
- 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.

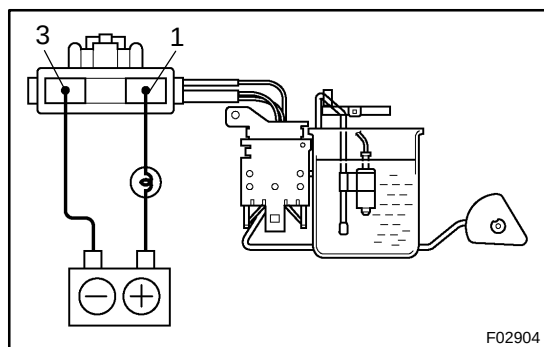


7. INSPECT FUEL LEVEL WARNING SWITCH

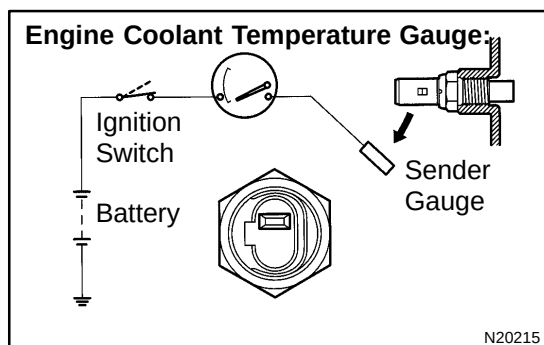
- Apply battery positive voltage between terminals 1 and 3 through a 3.4-W test bulb, check that the bulb lights up.

HINT:

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

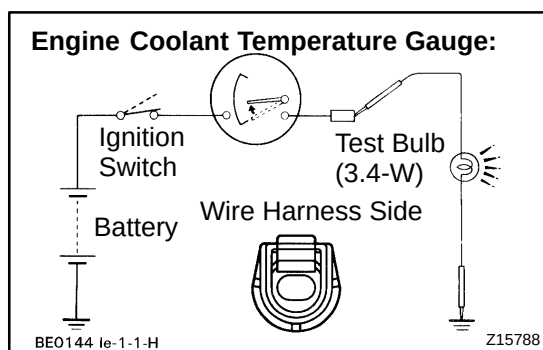


- Submerge the switch in fuel, check that the bulb goes out. If operation is not as specified, replace the sender gauge.

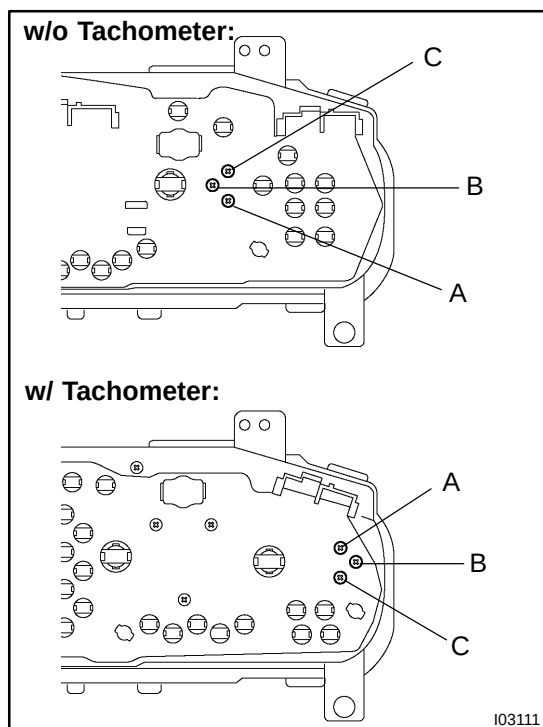


8. INSPECT ENGINE COOLANT TEMPERATURE RECEIVER GAUGE OPERATION

- Disconnect the connector from the sender gauge.
- Turn the ignition switch ON and check that the receiver gauge needle indicates COOL.



- (c) Ground terminal on the wire harness side connector through a 3.4-W test bulb.
- (d) Turn the ignition switch ON, and check that the bulb lights up and the receiver gauge needle moves to the hot side. If operation is as specified, replace the sender gauge. Then recheck the system. If operation is not as specified, measure the receiver gauge resistance.



9. INSPECT ENGINE COOLANT TEMPERATURE RECEIVER GAUGE RESISTANCE

Measure the resistance between terminals.

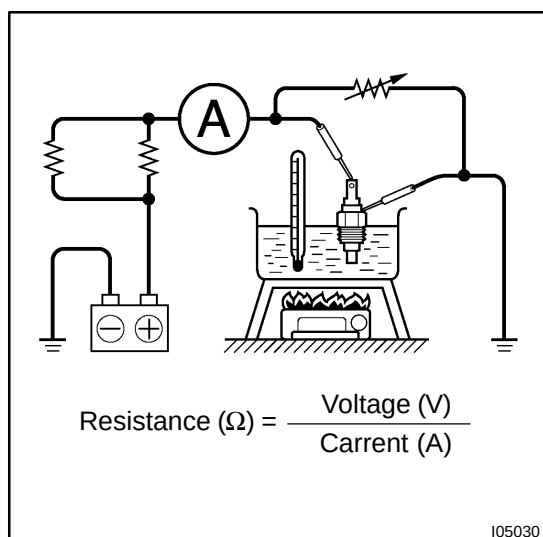
Tester connection	Resistance (Ω)
A - B	Approx. 175.7
A - C	Approx. 54.0
B - C	Approx. 229.7

HINT:

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

This circuit includes the diode.

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

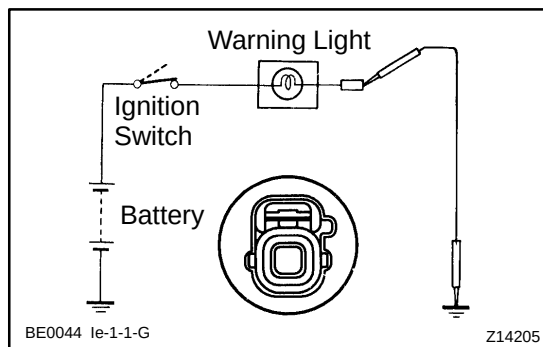


10. INSPECT ENGINE COOLANT TEMPERATURE SENDER GAUGE RESISTANCE

Connect the wire harness as shown in the illustration, and enter the value in the left formula. Check the resistance conforms to the values in the table below.

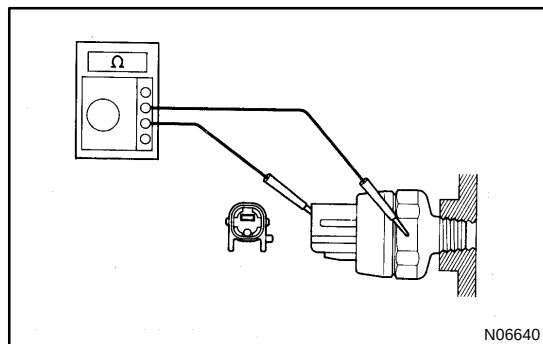
Temperature $^{\circ}\text{C}$ ($^{\circ}\text{F}$)	Resistance (Ω)
50 (122.0)	160 - 240
120 (248.0)	17.1 - 21.2

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

**11. INSPECT LOW OIL PRESSURE WARNING LIGHT**

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

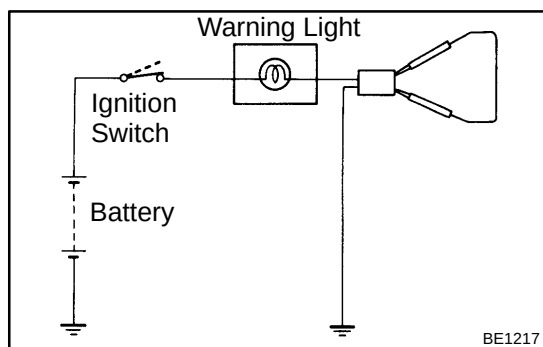
If the warning light does not light up, test the bulb.

**12. INSPECT LOW OIL PRESSURE SWITCH**

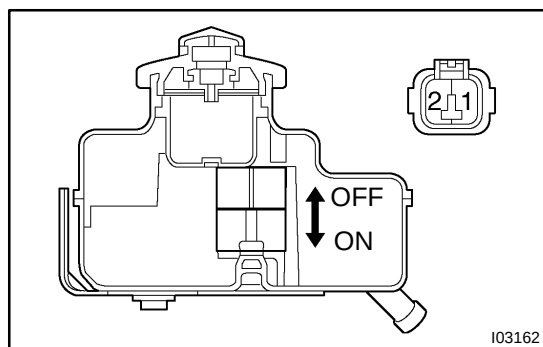
- Disconnect the connector from the switch.
- Check that continuity exists between terminal and ground with the engine stopped.
- Check that no continuity exists between terminal and ground with the engine running.

HINT:

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

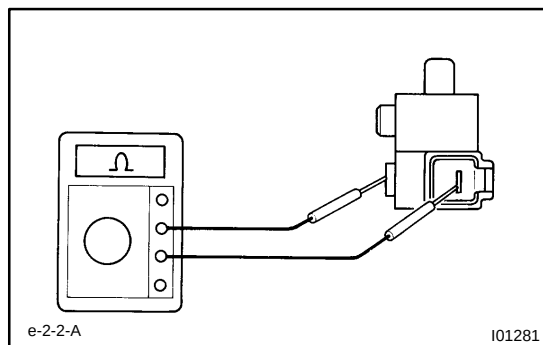
**13. INSPECT BRAKE SYSTEM WARNING LIGHT**

- Disconnect the connector from the brake fluid warning switch.
 - Release the parking brake pedal.
 - Connect the terminals on the wire harness side of the level warning switch connector.
 - Start the engine, check that the warning light lights up.
- If the warning light does not light up, test the bulb or wire harness.

**14. INSPECT BRAKE FLUID LEVEL WARNING SWITCH**

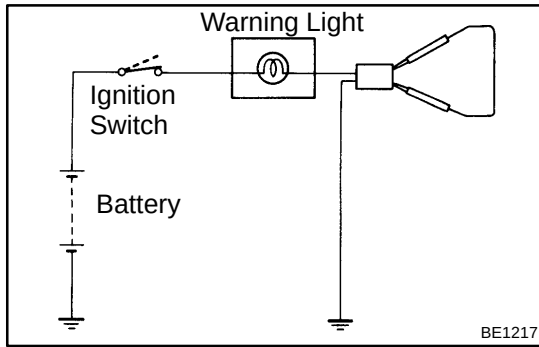
- Remove the reservoir tank cap and strainer.
- Disconnect the connector.
- Check that no continuity exists between the terminals with the switch OFF (float up).
- Use syphon, etc. to take fluid out of the reservoir tank.
- Check that continuity exists between the terminals with the switch ON (float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

If operation is not as specified, replace the switch.

**15. INSPECT PARKING BRAKE SWITCH CONTINUITY**

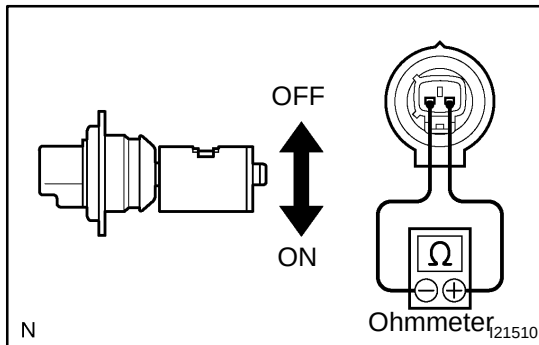
- Check that continuity exists between terminals with the switch ON (switch pin released).
- Check that no continuity exists between terminals with the switch OFF (switch pin pushed in).

If operation is not as specified, replace the switch.



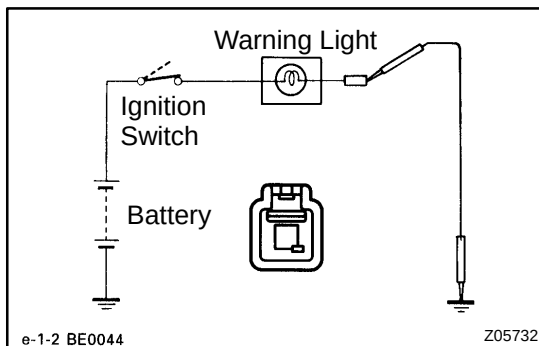
16. INSPECT WASHER LEVEL WARNING LIGHT

- Disconnect the connectors from the level warning switch and parking brake switch.
 - Connect terminals on the wire harness side connector of the level warning switch connector.
 - Remove the GAUGE fuse and turn the ignition switch ON, and check that the warning light comes on.
- If the warning light does not light up, test the bulb.



17. INSPECT WASHER LEVEL WARNING SWITCH

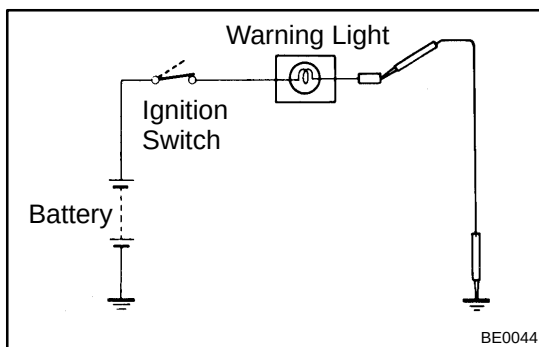
- Check that no continuity exists between terminals with the switch OFF (float up).
 - Check that continuity exists between terminals with the switch ON (float down).
- If operation is not as specified, replace the switch.



18. INSPECT OPEN DOOR WARNING LIGHT

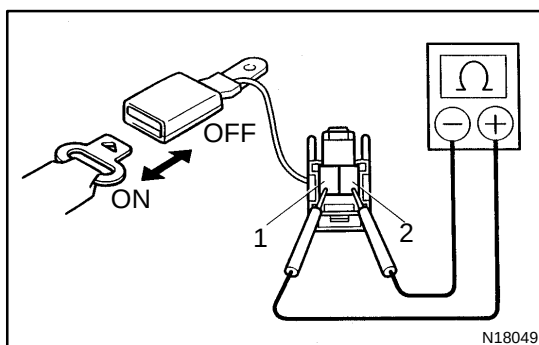
Disconnect the connector from the door courtesy switch and ground terminal 1 on the wire harness side, and check that the warning light lights up.

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



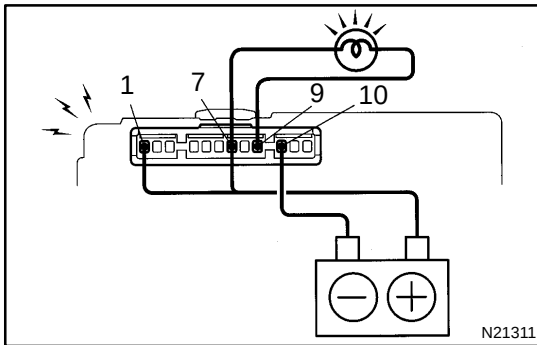
19. INSPECT SEAT BELT WARNING LIGHT

- Remove the integration relay from the instrument panel junction block.
 - Ground terminal 2 on the integration relay with the connectors still connected.
 - Turn the ignition switch ON and check that the warning light lights up.
- If the warning light does not light up, inspect the bulb or wire harness.



20. INSPECT BUCKLE SWITCH CONTINUITY

- Check that continuity exists between terminals on the switch side connector with the switch ON (belt unfastened).
 - Check that no continuity exists between terminals on the switch side connector with the switch OFF (belt fastened).
- If operation is not as specified, replace the seat belt inner.



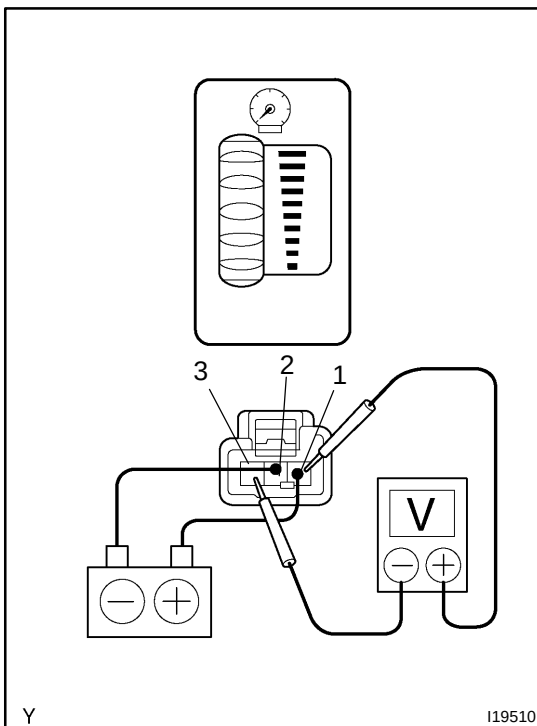
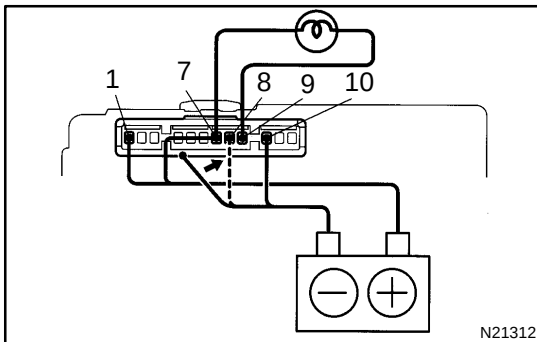
21. INSECT INTEGRATION RELAY SEAT BELT WARNING SYSTEM OPERATION

- Connect the positive (+) lead from the battery to terminals 1 and 7.
- Connect the terminal 7 to terminal 9 through the 3.4-W test bulb.
- Connect the negative (-) lead from the battery to terminal 10.
- Check that the bulb flashes and the buzzer sounds for 4 - 8 seconds.
- Return to step (a) and operate the buzzer again.
- Connect the negative (-) lead from the battery to terminal 8.
- Check that the buzzer stops sounding.

HINT:

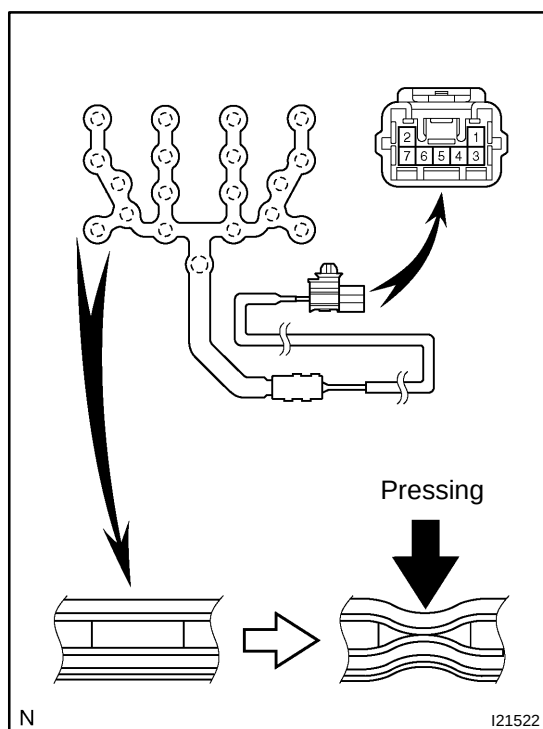
Check the buzzer within a period of 4 to 8 seconds.

If operation is not as specified, replace the relay.



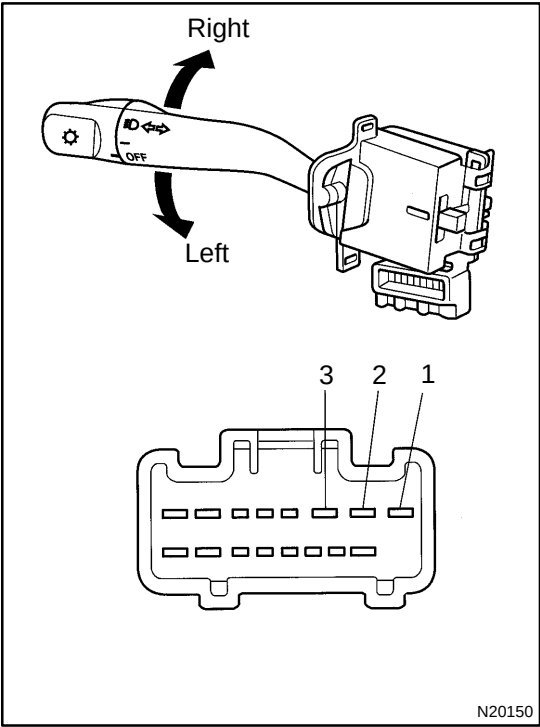
22. INSPECT LIGHT CONTROL RHEOSTAT

- Connect the positive (+) lead from the battery to terminal 1 and negative lead (-) to terminal 2.
- Connect the positive (+) lead from the voltmeter to terminal 1 and negative lead to terminal 3.
- Turn the rheostat knob and check that the voltage changes.

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

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

If operation is not as specified, replace the sensor.

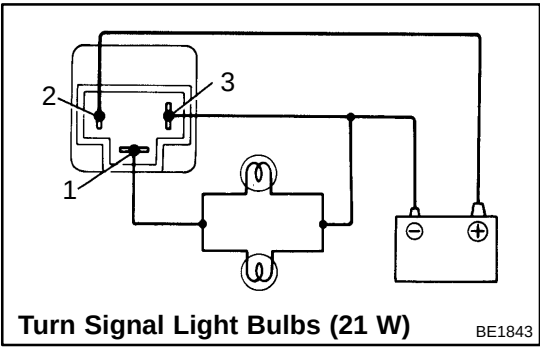


INSPECTION

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 TURN SIGNAL FLASHER OPERATION

- Connect the positive (+) lead from the battery to terminal 2 and the negative (-) lead to terminal 3.
- Connect the 2 turn signal light bulbs in parallel to each other to terminals 1 and 3, check that the bulbs flash.

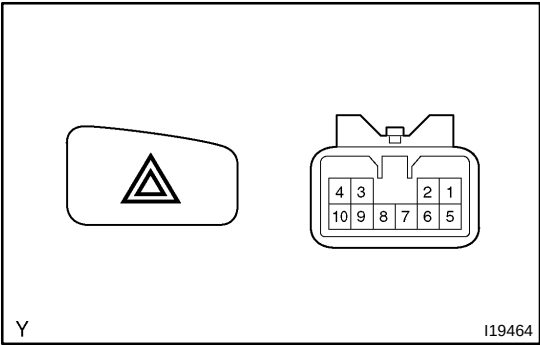
HINT:

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

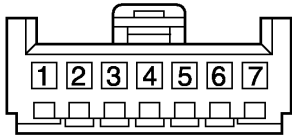
3. INSPECT HAZARD WARNING SWITCH CONTINUITY

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

If continuity is not as specified, replace the switch.



Wire harness side



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INSPECTION

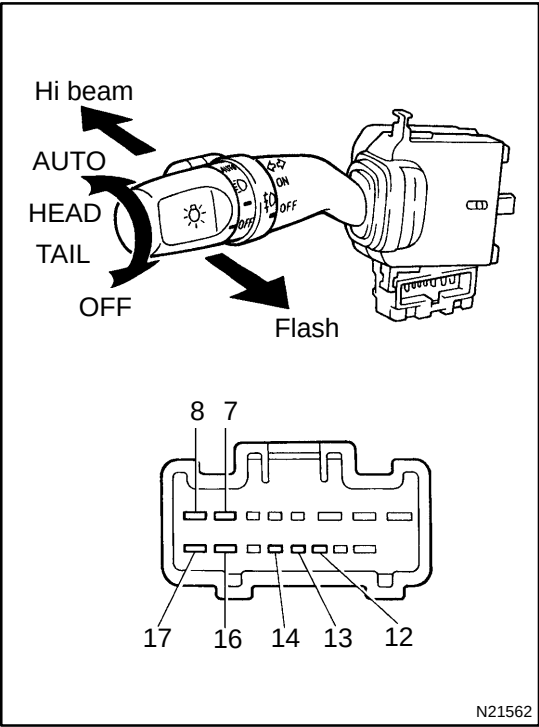
Disconnect connector:

INSPECT INNER MIRROR ASSEMBLY

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

Tester connection	Condition	Specified condition
6 - Ground	Constant	Continuity
7 - Ground	Ignition switch OFF or ACC	No voltage
7 - Ground	Ignition switch ON	Battery positive voltage

If continuity is not as specified, replace the inner mirror assembly.



INSPECTION

1. w/o Automatic light control system:
INSPECT LIGHT CONTROL SWITCH CONTINUITY

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

If continuity is not as specified, replace the switch.

2. w/ Automatic light control system:
INSPECT LIGHT CONTROL SWITCH CONTINUITY

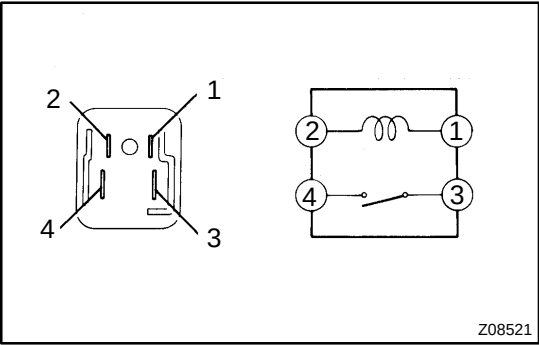
Switch position	Tester connection	Specified condition
OFF	-	No continuity
TAIL	14 - 16	Continuity
HEAD	13 - 14 - 16	Continuity
AUTO	12 - 16	Continuity

If continuity is not as specified, replace the switch.

3. INSPECT HEADLIGHT DIMMER SWITCH CONTINUITY

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

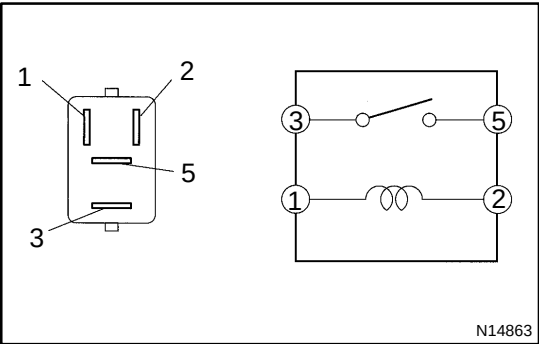
If continuity is not as specified, replace the switch.



4. INSPECT HEADLIGHT CONTROL RELAY CONTINUITY

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

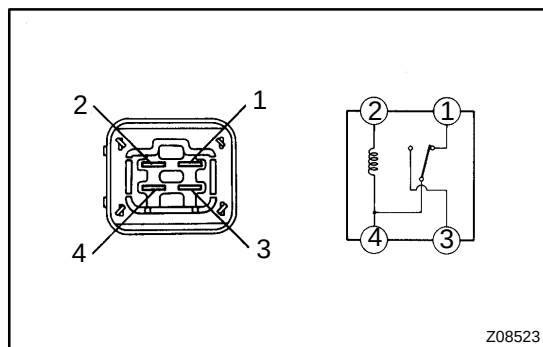
If continuity is not as specified, replace the relay.



5. 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.

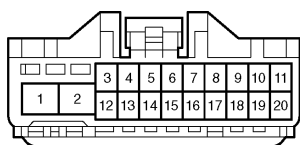


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6. INSPECT HEADLIGHT DIMMER RELAY CONTINUITY

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

If continuity is not as specified, replace the relay.

Wire Harness Side:

N

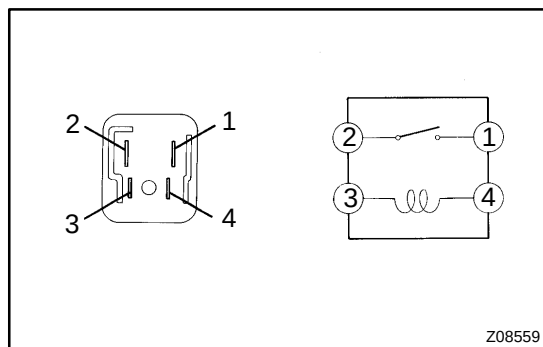
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**7. w/ Daytime running light system:
INSPECT DAYTIME RUNNING LIGHT RELAY (MAIN)
CIRCUIT**

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

Tester connection	Condition	Specified condition
7 - Ground	Light control switch position OFF or TAIL	No continuity
	Light control switch position HEAD (Light auto turn off not in operation)	Continuity
11 - Ground	Parking brake switch position OFF (Parking brake lever released)	No continuity
	Parking brake switch position ON (Parking brake lever pulled up)	Continuity
2 - Ground	Constant	Continuity
8 - Ground	Headlight dimmer switch position Low beam	No continuity
	Headlight dimmer switch position High beam or Flash	Continuity
10 - Ground	Brake fluid level warning position OFF	No continuity
	Brake fluid level warning position ON	Continuity
12 - Ground	Ignition switch position LOCK or ACC	No voltage
	Ignition switch position ON or START	Battery positive voltage
3 - Ground	Constant	Battery positive voltage
9 - Ground	Engine Stop	No voltage
	Engine Running	Battery positive voltage

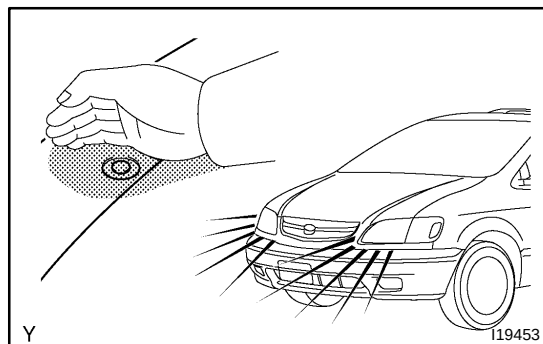
If circuit is as specified, try replacing the relay with a new one. If circuit is not as specified, inspect the circuits connected to other parts.



**8. w/ Daytime running light system:
INSPECT DAYTIME RUNNING LIGHT NO.4 RELAY
CONTINUITY**

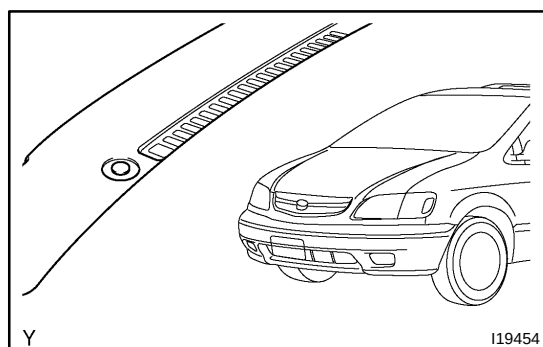
Condition	Tester connection	Specified condition
Constant	3 - 4	Continuity
Apply B+ between terminals 3 and 4.	1 - 2	Continuity

If continuity is not as specified, replace the relay.



**9. Auto ON:
INSPECT AUTOMATIC LIGHT CONTROL**

- Turn the ignition switch ON.
- Turn the light control switch to AUTO.
- Gradually cover the top of the sensor.
- Verify that the accessory lights up and the headlights turn ON.



**10. Auto OFF:
INSPECT AUTOMATIC LIGHT CONTROL**

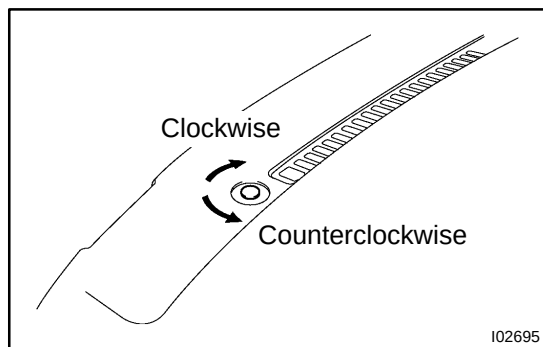
- Gradually expose the sensor.
- Verify that the headlights and the accessory lights come OFF.

11. INSPECT LIGHT-OFF CONDITION

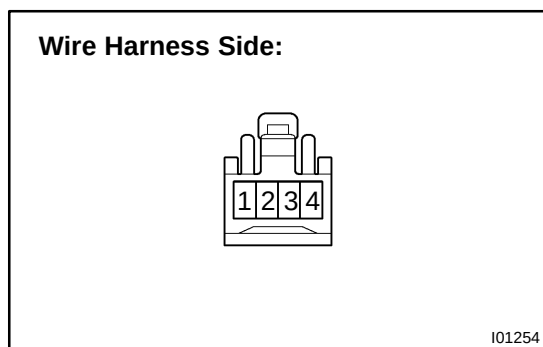
- Turn the ignition switch ON.
- Gradually cover the top of the sensor.
Lights auto ON:
- Verify that the lights will go out when light control switch position is OFF or the area surrounding the sensor gets bright or opening the except back door while the ignition switch is OFF.

12. INSPECT LIGHTS-ON CONDITION

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

**13. ADJUST AUTOMATIC LIGHT CONTROL SENSOR**

- (a) Adjustment of the light control is performed by turning the sensitivity knob on the sensor.
- (b) This will determine at what light condition the automatic control will take place.
- If response is too quick, turn the knob counterclockwise.
 - If response is too slow, turn the knob clockwise.

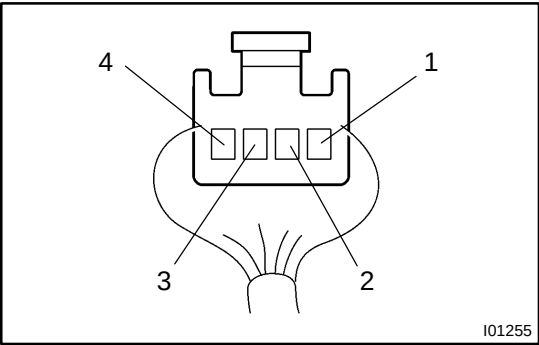
**14. w/ Automatic light control system:
INSPECT SENSOR CIRCUIT**

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

Tester connection	Condition	Specified condition
3 - Ground	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.

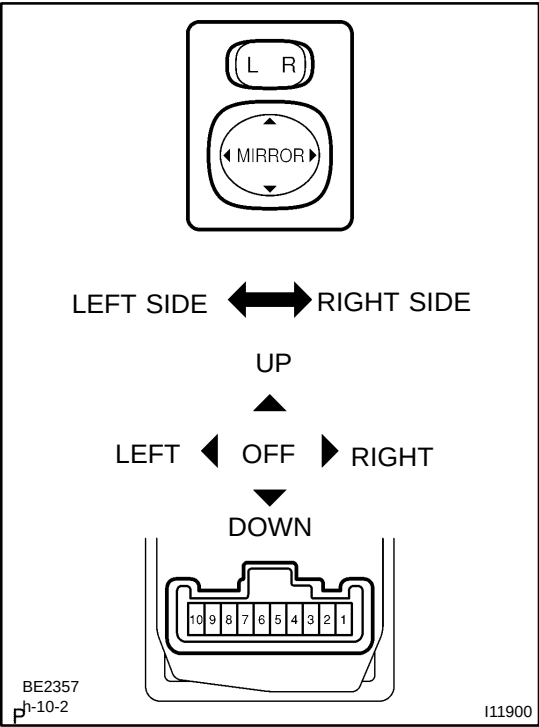
If the circuit is not as specified, inspect the circuit connected to other parts.



- (b) Connect the wire harness side connector to the sensor and inspect wire harness side connector from the back side.
- HINT:
- Ignition switch ON.
 - Light control switch OFF.
 - Vehicle's surroundings are bright.

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

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



INSPECTION

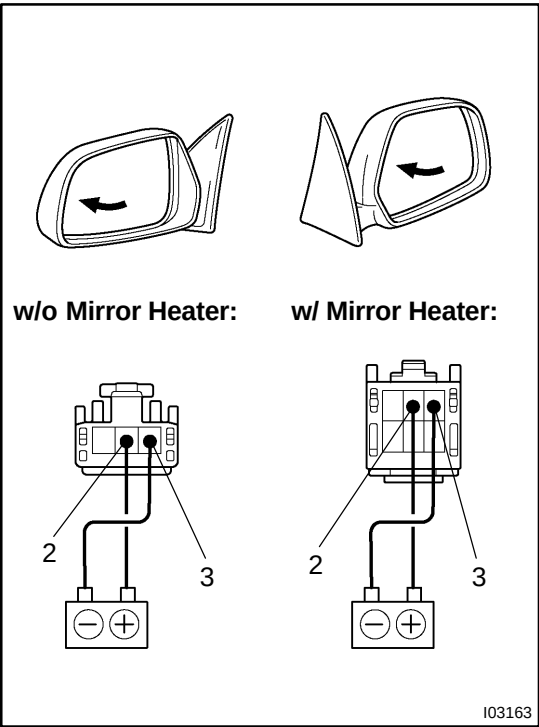
1. INSPECT MIRROR CONTROL SWITCH CONTINUITY
Left side:

Switch position	Tester connection	Specified condition
OFF	-	No continuity
UP	4 - 8, 6 - 7	Continuity
DOWN	4 - 7, 6 - 8	Continuity
LEFT	5 - 8, 6 - 7	Continuity
RIGHT	5 - 7, 6 - 8	Continuity

Right side:

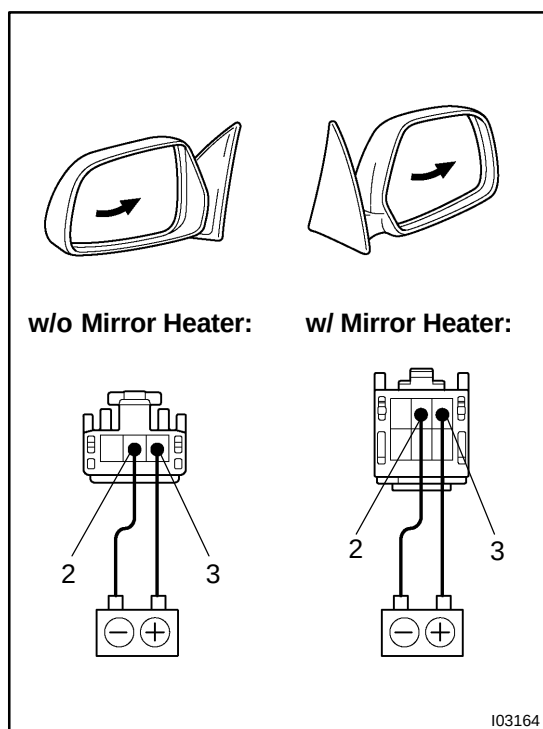
Switch position	Tester connection	Specified condition
OFF	-	No continuity
UP	3 - 8, 6 - 7	Continuity
DOWN	3 - 7, 6 - 8	Continuity
LEFT	5 - 8, 6 - 7	Continuity
RIGHT	5 - 7, 6 - 8	Continuity

If continuity is not as specified, replace the switch.

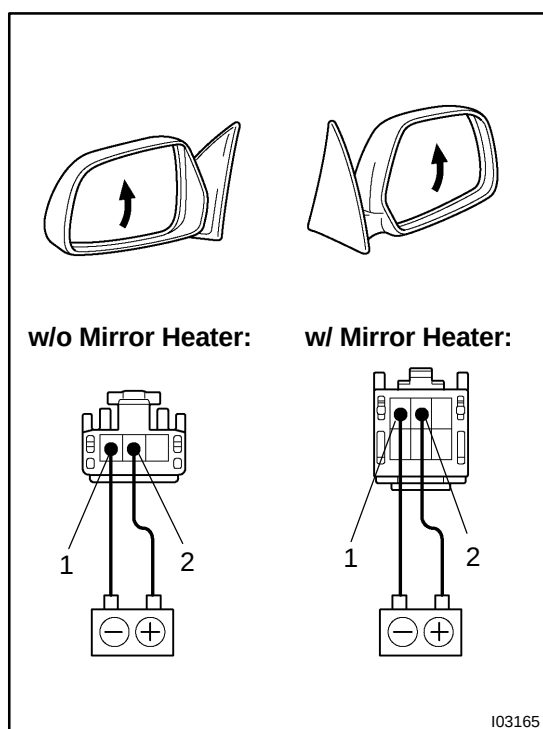


2. INSPECT MIRROR MOTOR OPERATION

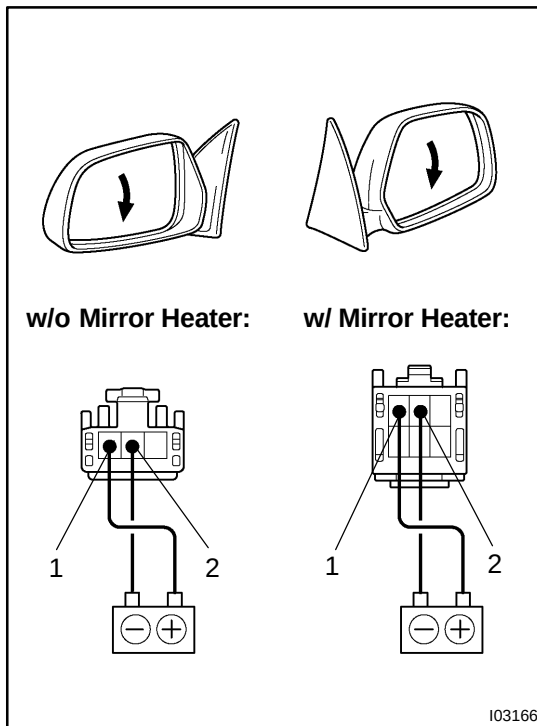
- (a) Connect the positive (+) lead from the battery to terminal 2 and negative (-) lead to terminal 3, check that the mirror turns to left side.



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

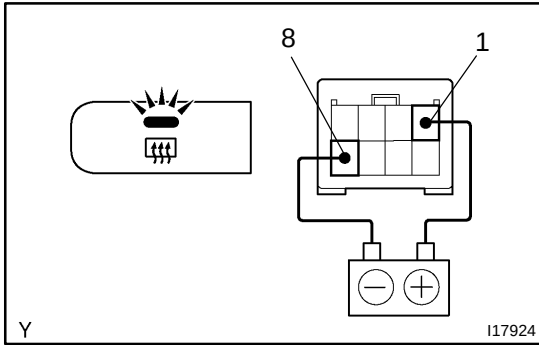


- (c) Connect the positive (+) lead from the battery to terminal 2 and the negative (-) lead to terminal 1, check that the mirror turns upward.



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

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



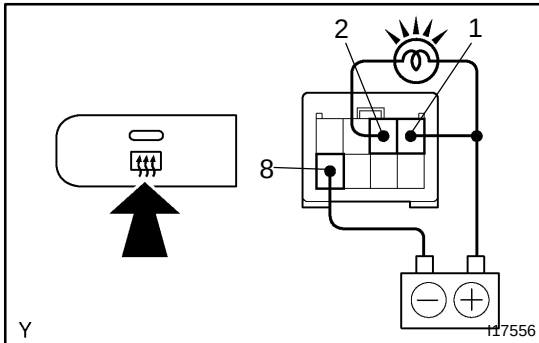
INSPECTION

1. Manual Air Conditioning:

INSPECT DEFOGGER SWITCH CONTINUITY

Connect the positive (+) lead from the battery to terminal 1 and negative (-) lead to terminal 8, check that the indicator light light up.

If operation is not as specified, replace the switch.



2. Manual Air Conditioning:

INSPECT DEFOGGER TIMER OPERATION

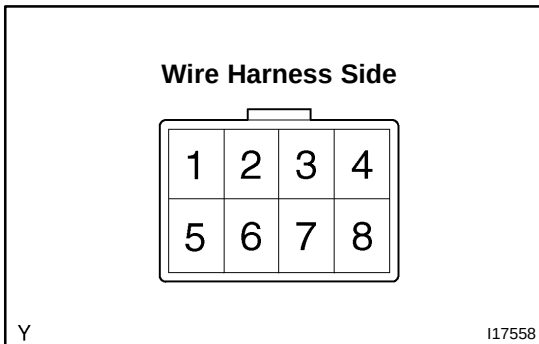
- Connect the positive (+) lead from the battery to terminal 1 and negative (-) lead to terminal 8.
- Connect the positive (+) lead from the battery to terminal 2 through a 1.4 W test bulb.
- Push the defogger switch ON and check that the indicator light in switch and test bulb light up for 12 for 18 minutes, then the indicator light and test bulb lights go out.

If operation is not as specified, replace the switch.

3. Manual Air Conditioning:

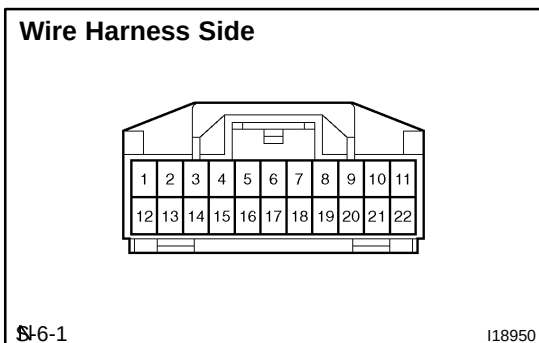
INSPECT DEFOGGER SWITCH CIRCUIT

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



Tester connection	Condition	Specified condition
8 - Ground	Constant	Continuity
1 - Ground	Ignition switch LOCK or ACC	No voltage
1 - Ground	Ignition switch ON	Battery positive voltage
2 - Ground	Ignition switch LOCK or ACC	No voltage
2 - Ground	Ignition switch ON	Battery positive voltage
-	Connect terminals 2 and 8.	Defogger system operation is normal.

If the circuit is as specified, replace the switch.



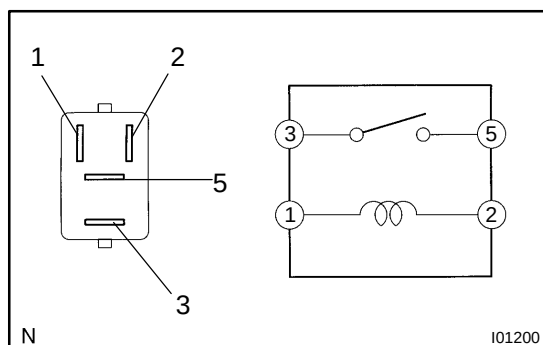
4. Automatic Air Conditioning:

INSPECT DEFOGGER SWITCH CIRCUIT

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

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

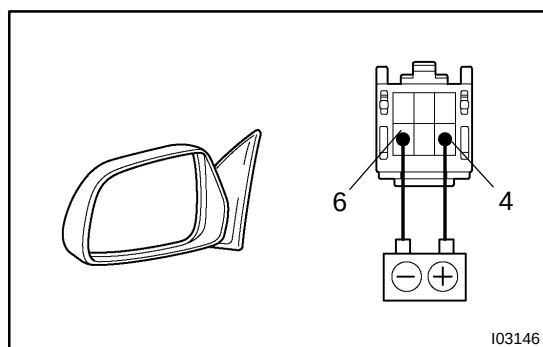
If the circuit is not as specified, replace the switch.



5. INSPECT DEFOGGER RELAY CONTINUITY

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

If continuity is not as specified, replace the relay.



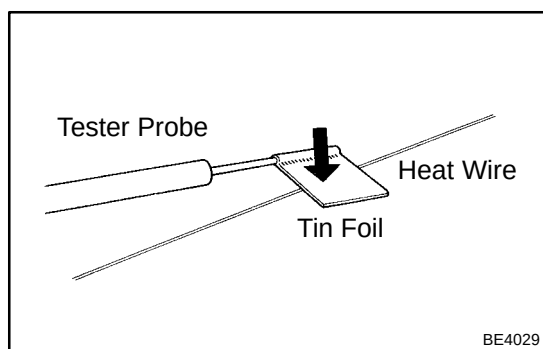
6. w/ Mirror Heater:

INSPECT MIRROR DEFOGGER CIRCUIT

- Connect the positive (+) lead from the battery to terminal 4 and the negative (-) lead to terminal 6.
- Check that the mirror becomes warm.

HINT:

It takes short time for the mirror to become warm.



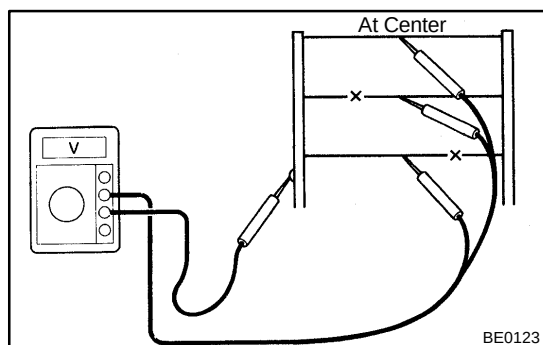
7. INSPECT DEFOGGER WIRE

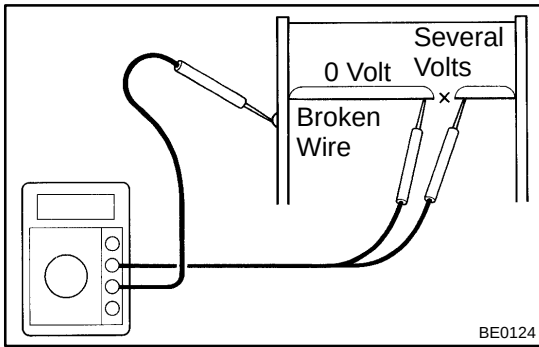
NOTICE:

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

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

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



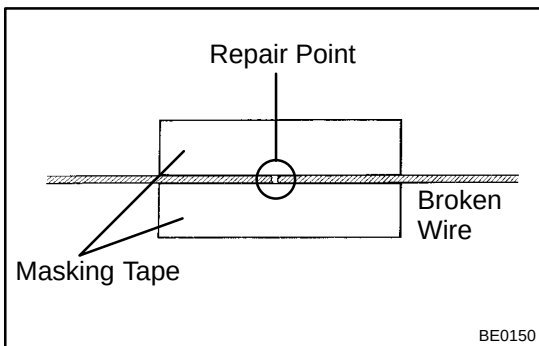
**HINT:**

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

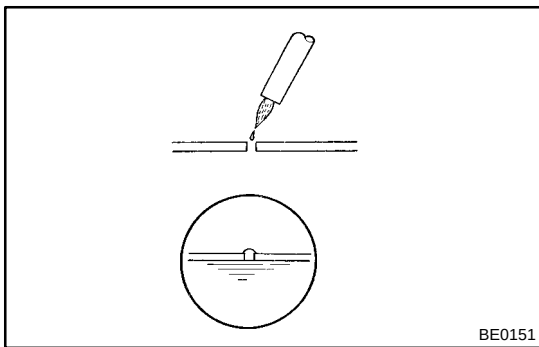
- (d) Place the voltmeter positive (+) lead against the defogger positive (+) terminal.
- (e) Place the voltmeter negative (-) lead with the foil strip against the heat wire at the positive (+) terminal end and slide it toward the negative (-) terminal end.
- (f) The point where the voltmeter deflects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

HINT:

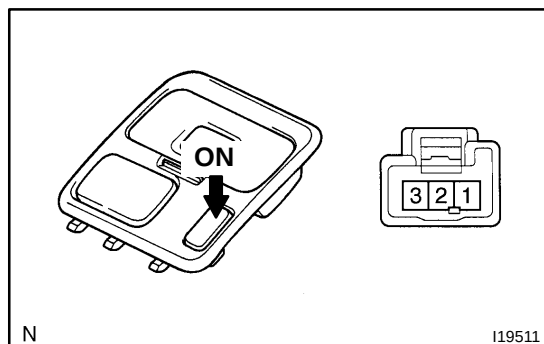
If the heat wire is not broken, the voltmeter indicates 0 V at the positive (+) end of the heat wire but gradually increases to about 12 V as the meter probe is moved to the other end.

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

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



- (d) Thoroughly mix the repair agent (Dupont paste No. 4817 or equivalent).
- (e) Using a fine tip brush, apply a small amount to the wire.
- (f) After a few minutes, remove the masking tape.
- (g) Do not repair the defogger wire for at least 24 hours.



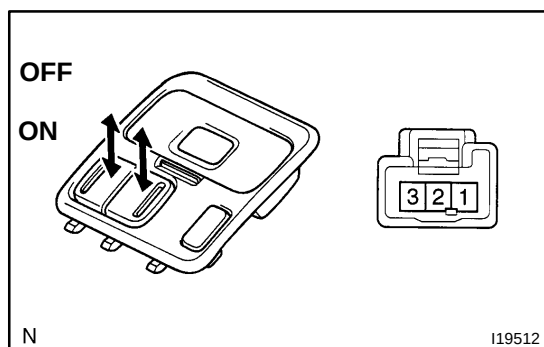
INSPECTION

1. w/o Vanity

INSPECT FRONT PERSONAL LIGHT SWITCH CONTINUITY

- Disconnect the connector from the personal light.
- Turn the dome lamp switch ON, check that continuity exists between terminal 1 and 3.
- Turn the interior light switch to DOOR, check that continuity exists between terminal 2 and 3.

If operation is not as specified, replace the switch.

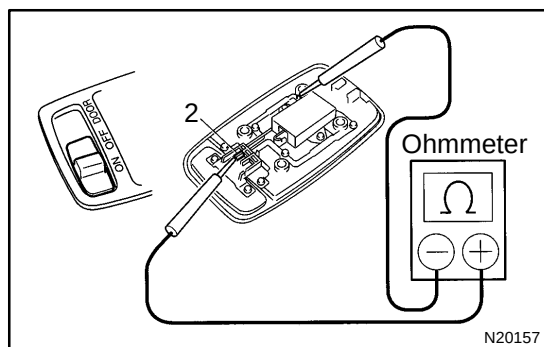


2. w/ Vanity:

INSPECT FRONT PERSONAL LIGHT SWITCH CONTINUITY

- Disconnect the connector from the personal light.
- Push the personal light switch ON, check that continuity exists between terminal 1 and 3.
- Turn the interior light switch to DOOR, check that continuity exists between terminal 2 and 3.

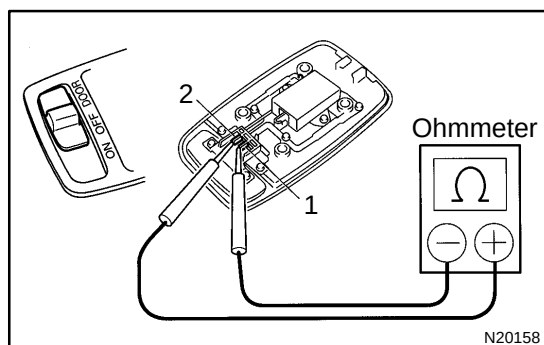
If operation is not as specified, replace the switch.



3. CE grade:

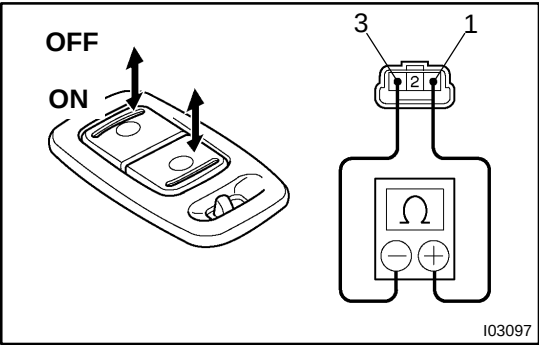
INSPECT REAR NO.1 INTERIOR LIGHT SWITCH CONTINUITY

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



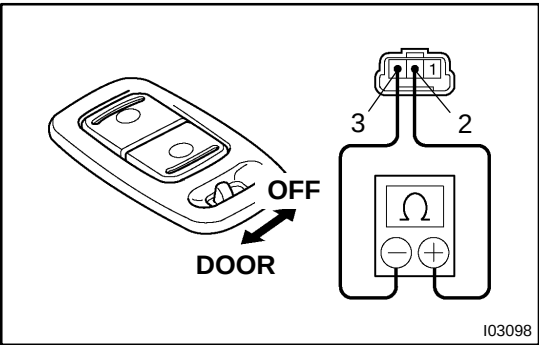
- Turn the interior light switch to DOOR, check that continuity exists between terminal 1 and 2.

If operation is not as specified, replace the switch.

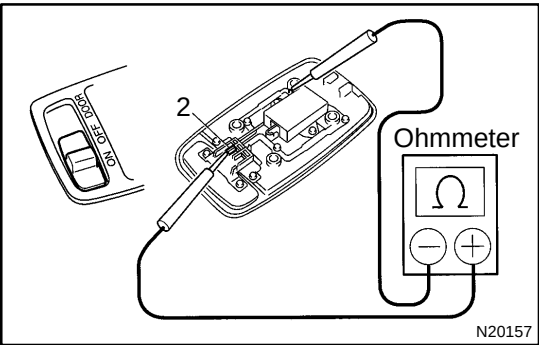


4. **LE grade:**
INSPECT REAR NO.1 INTERIOR LIGHT SWITCH CONTINUITY

- (a) Disconnect the connector from the personal light.
- (b) Push the personal light switch ON, check that continuity exists between terminal 1 and 3.

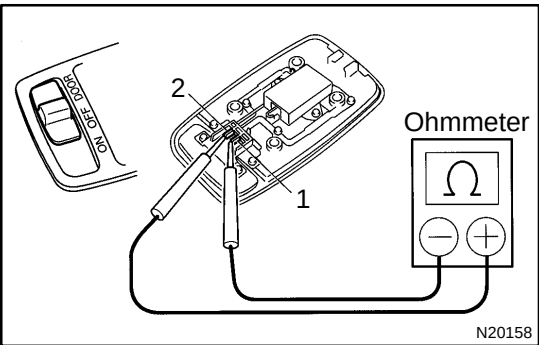


- (c) Turn the interior light switch to DOOR, check that continuity exists between terminal 2 and 3.
- If operation is not as specified, replace the switch.

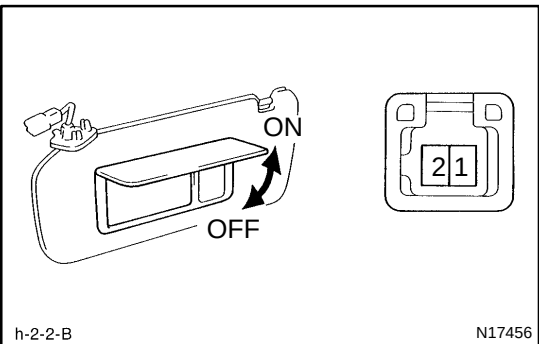


5. **INSPECT REAR NO.2 INTERIOR LIGHT SWITCH CONTINUITY**

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



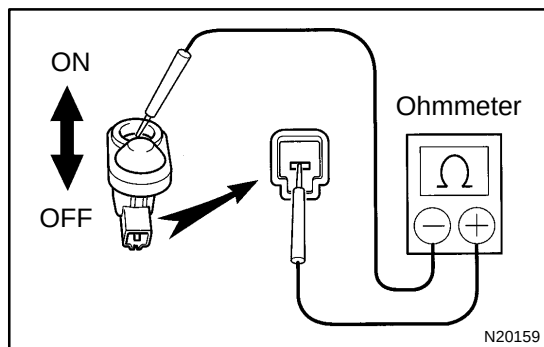
- (c) Turn the interior light switch DOOR, check that continuity exists between terminal 1 and 2.
- If operation is not as specified, replace the switch.



6. **INSPECT VANITY LIGHT CONTINUITY**

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

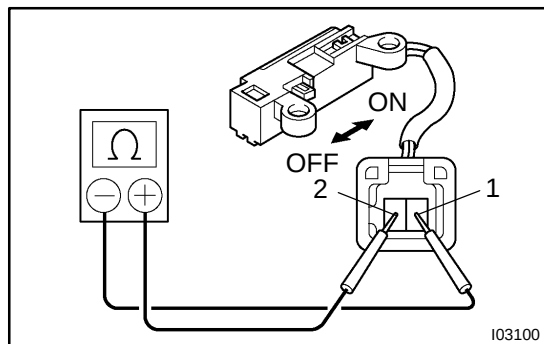
If continuity is not as specified, replace the bulb or vanity light.



7. INSPECT FRONT AND SLIDE DOOR COURTESY SWITCH CONTINUITY

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

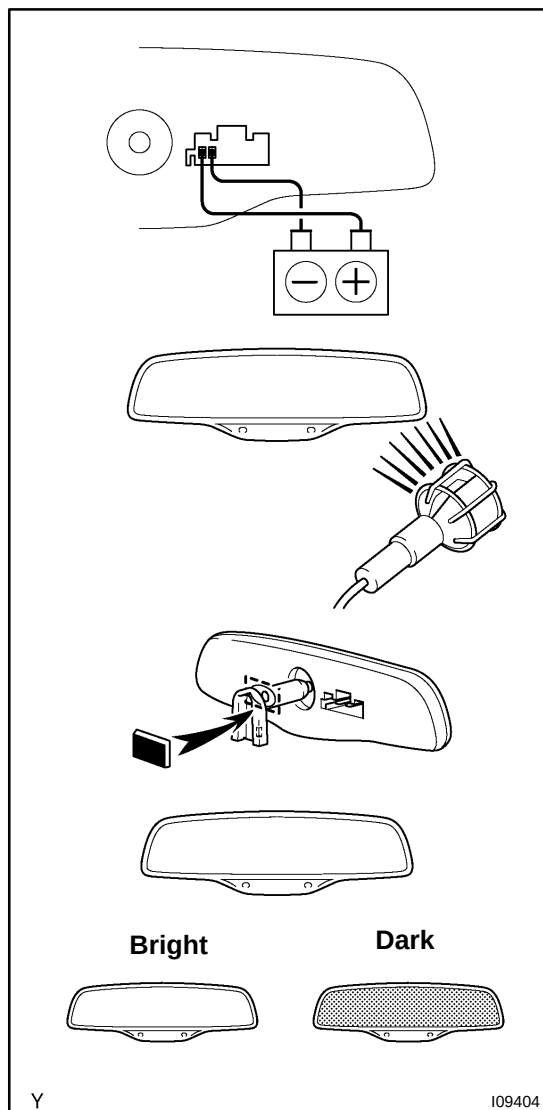
If operation is not as specified, replace the switch.



8. INSPECT BACK DOOR COURTESY SWITCH CONTINUITY

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

If operation is not as specified, replace the switch.

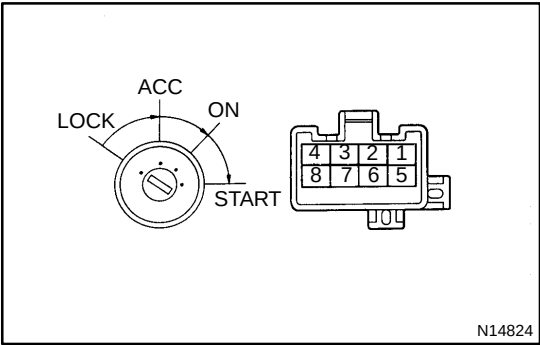


INSPECTION

INSPECT ELECTRO CHROMIC INNER MIRROR OPERATION

- Connect the positive (+) lead from the battery to terminal 1 and the negative (-) lead to terminal 2.
- Attach a black colored tape to forward sensor to prevent it from sensing.
- Light up the mirror with an electric light, and check that mirror surface changes "bright" to "dark".

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

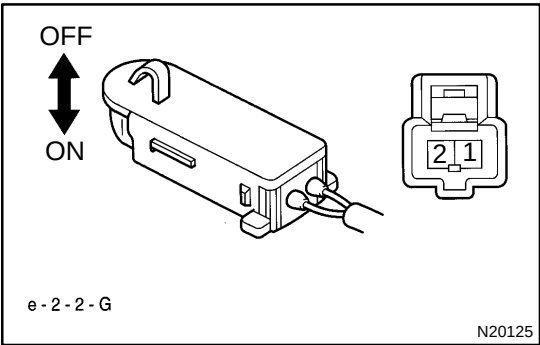


INSPECTION

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

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

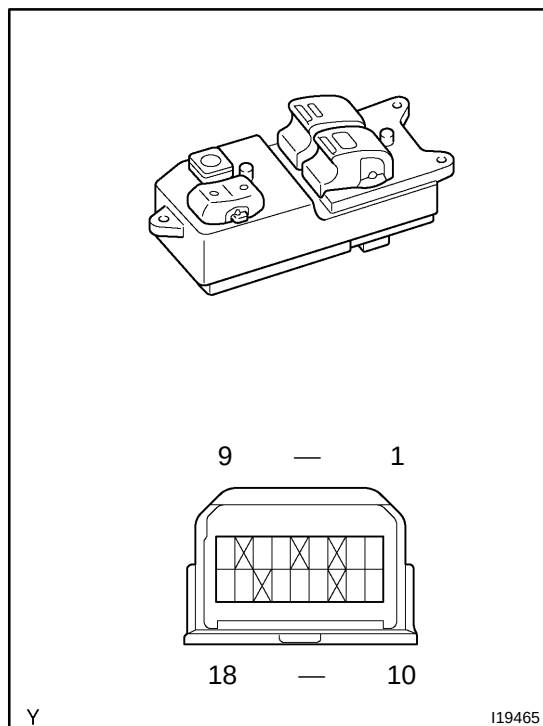
If continuity is not as specified, replace the switch.



INSPECTION

INSPECTION TRANSPONDER KEY COIL CONTINUITY

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

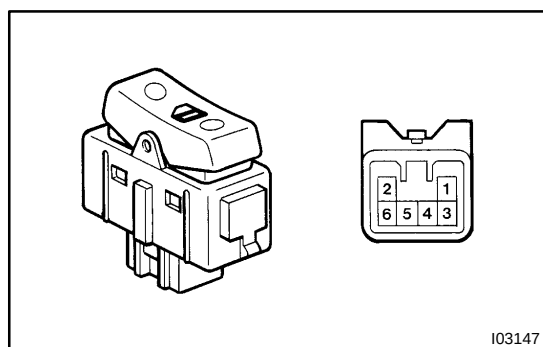


INSPECTION

1. INSPECT DRIVER'S DOOR LOCK CONTROL SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
LOCK	1 - 10	Continuity
OFF	-	No continuity
UNLOCK	1 - 18	Continuity

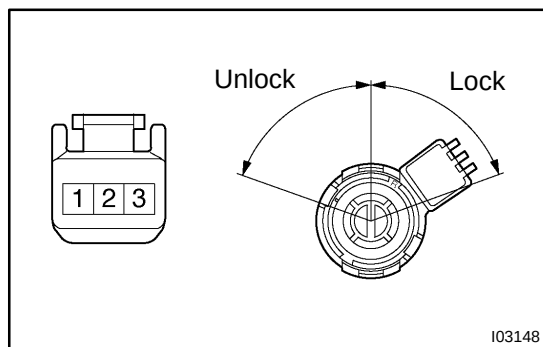
If continuity is not as specified, replace the switch.



2. INSPECT PASSENGER'S DOOR LOCK CONTROL SWITCH CONTINUITY

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

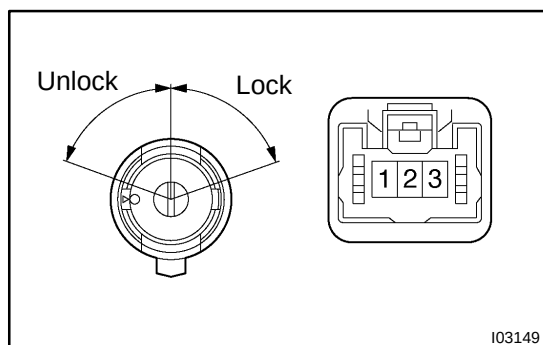
If continuity is not as specified, replace the switch.



3. INSPECT FRONT DOOR KEY LOCK AND UNLOCK SWITCH CONTINUITY

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

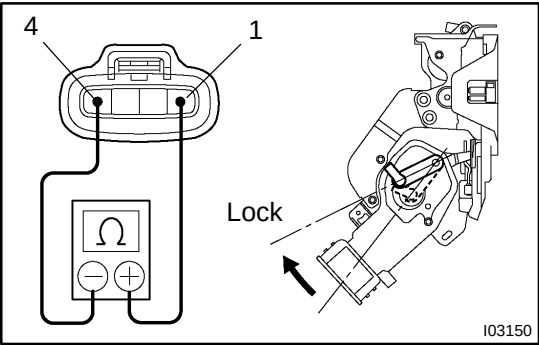
If continuity is not as specified, replace the switch.



4. INSPECT BACK DOOR KEY LOCK AND UNLOCK SWITCH CONTINUITY

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

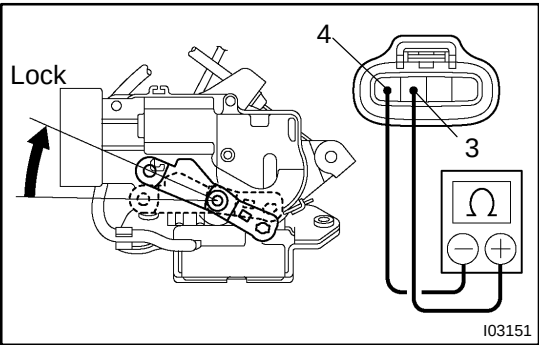
If continuity is not as specified, replace the switch.



5. INSPECT FRONT DOOR UNLOCK DETECTION SWITCH CONTINUITY

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

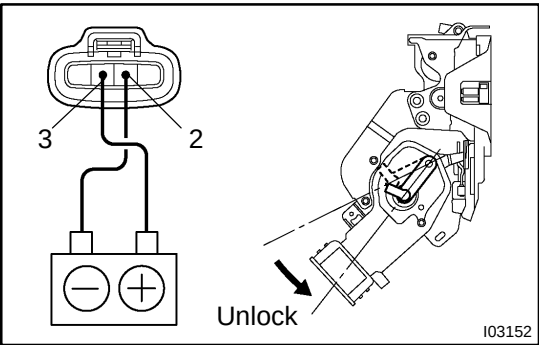
If continuity is not as specified, replace the switch.



6. w/ Theft Deterrent System: INSPECT BACK DOOR UNLOCK DETECTION SWITCH CONTINUITY

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

If continuity is not as specified, replace the switch.

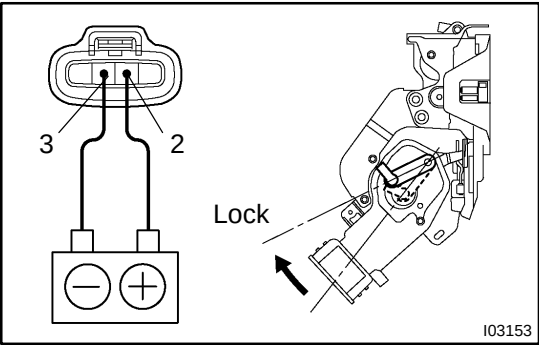


7. INSPECT FRONT DOOR LOCK MOTOR OPERATION

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

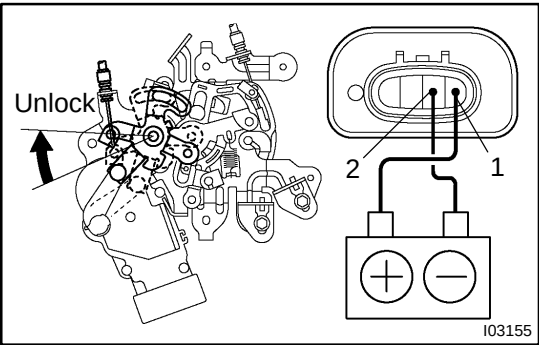
- (b) Reverse the polarity and check that the door lock link moves to LOCK position.

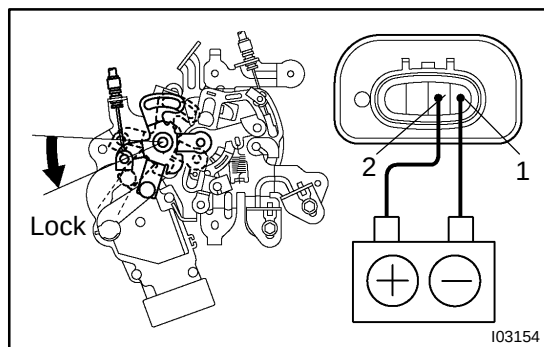
If operation is not as specified, replace the door lock assembly.



8. w/ Theft Deterrent System and LH Side Door: INSPECT SLID DOOR LOCK MOTOR OPERATION

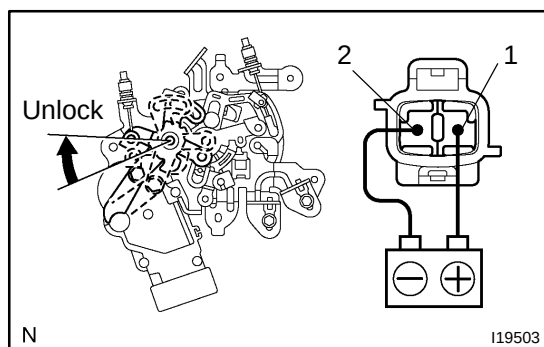
- (a) Connect the positive (+) lead from the battery to terminal 1 and the negative (-) lead to terminal 2, and check that the door lock link moves to UNLOCK position.





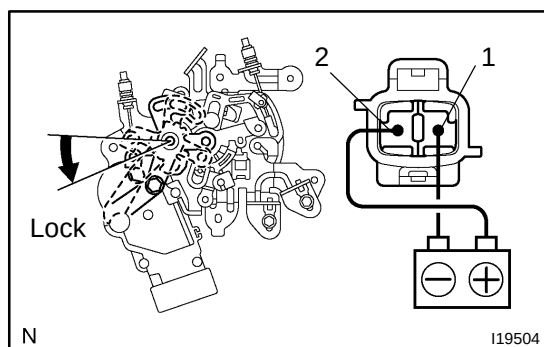
- (b) Reverse the polarity and check that the door lock link moves to LOCK position.

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



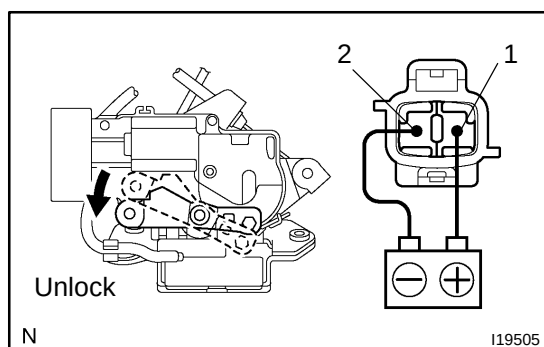
**9. w/o Theft Deterrent System and RH Side Door:
INSPECT SLID DOOR LOCK MOTOR OPERATION**

- (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.



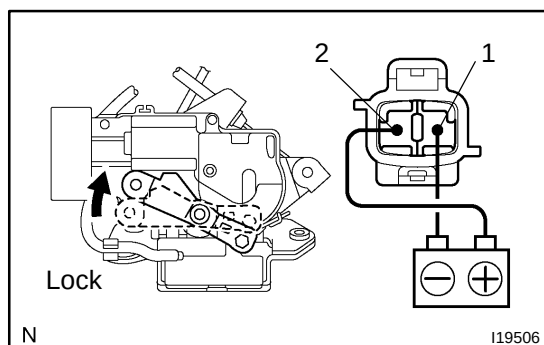
- (b) Reverse the polarity and check that the door lock link moves to LOCK position.

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



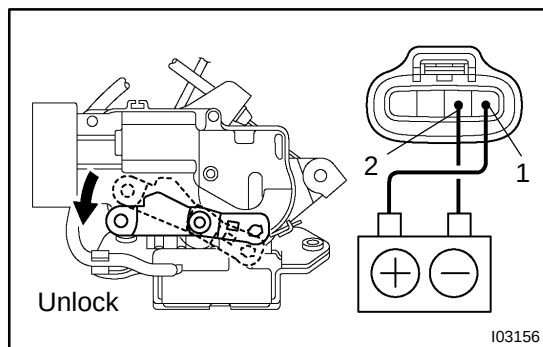
**10. w/o Theft Deterrent System:
INSPECT BACK DOOR LOCK MOTOR OPERATION**

- (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.

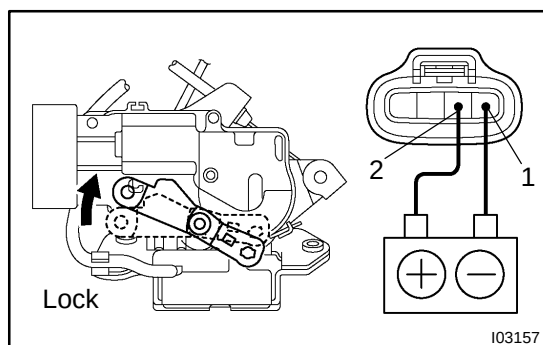


- (b) Reverse the polarity and check that the door lock link moves to LOCK position.

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

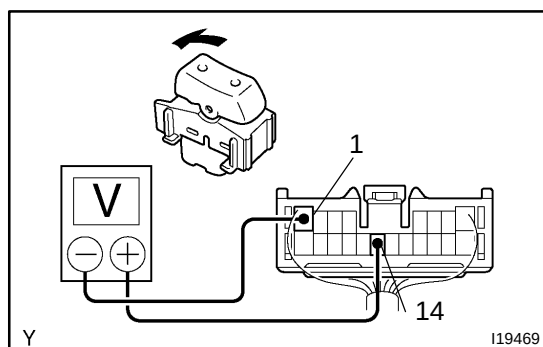
**11. w/ Theft Deterrent System:****INSPECT BACK DOOR LOCK MOTOR OPERATION**

- (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.



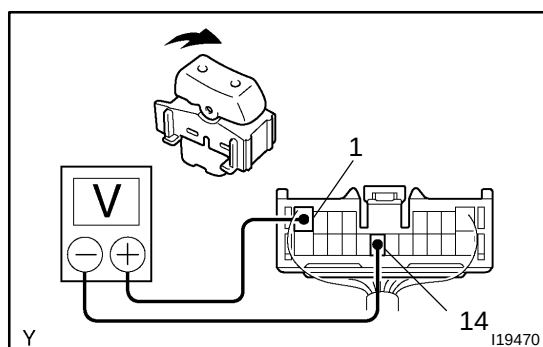
- (b) Reverse the polarity and check that the door lock link moves to LOCK position.

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

**12. INSPECT INTEGRATION RELAY OPERATION****HINT:**

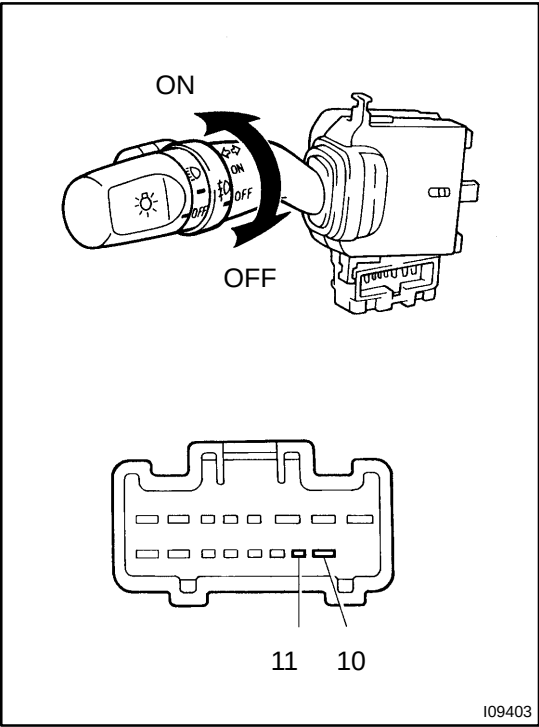
When the relay circuit is as specified, inspect the door lock signal.

- (a) Connect the positive (+) lead from the voltmeter to terminal 1 and the negative (-) lead to terminal 9.
- (b) Set the door lock control switch to UNLOCK and check that the voltage rises from 0 V to battery positive voltage for approximately 0.2 seconds.



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

If operation is not as specified, replace the relay.

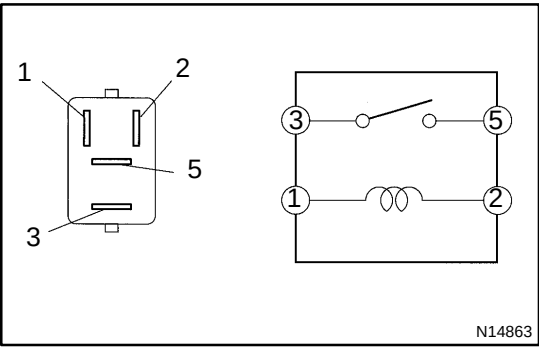


INSPECTION

1. INSPECT FOG LIGHT SWITCH CONTINUITY

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

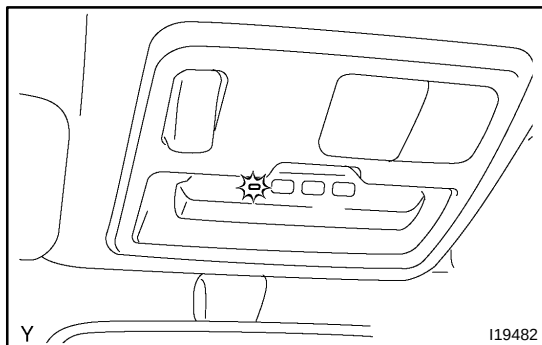
If continuity is not as specified, replace the switch.



2. INSPECT FOG LIGHT RELAY CONTINUITY

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

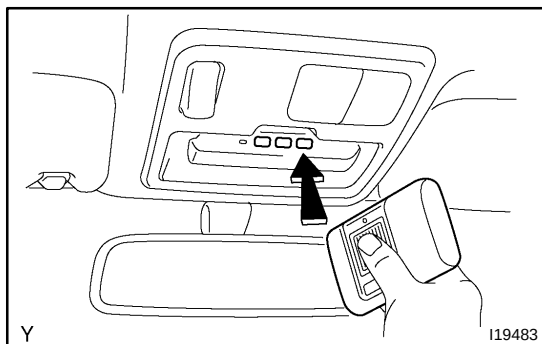
If continuity is not as specified, replace the relay.



INSPECTION

1. INSPECT GARAGE DOOR OPENER SWITCH

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



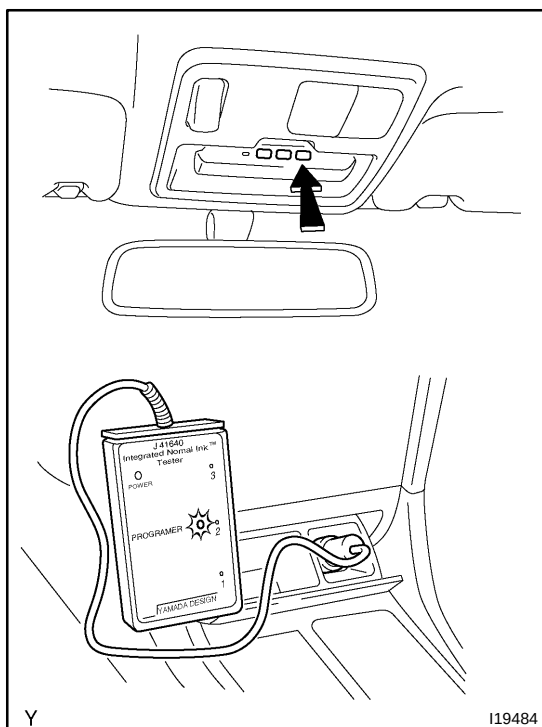
2. INSPECT GARAGE DOOR OPENER REGISTRATION AND TRANSMITTING

HINT:

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

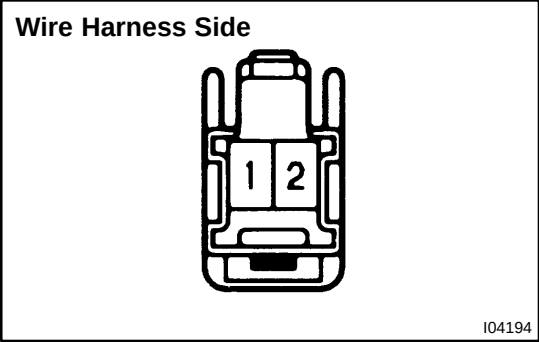
- (a) Check that the code of hand held transmitter for inspection can be recorded (See page [BE-142](#)).

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



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

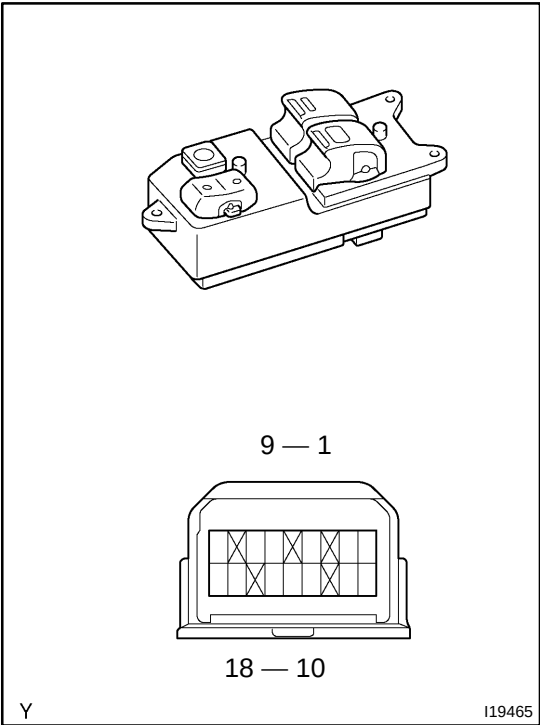
If the LED (green) does not light up, replace the garage door opener.



3. INSPECT GARAGE DOOR OPENER SWITCH CIRCUIT
Disconnect the connector from the switch and inspect the connector on the wire harness side, 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.



INSPECTION

1. INSPECT POWER WINDOW MASTER SWITCH CONTINUITY

Front Driver's Switch (Window unlock):

Switch position	Tester connection	Specified condition
AUTO UP	1 - 9, 4 - 7	Continuity
UP	1 - 9, 4 - 7	Continuity
OFF	1 - 4 - 9	Continuity
DOWN	1 - 4, 7 - 9	Continuity
AUTO DOWN	1 - 4, 7 - 9	Continuity

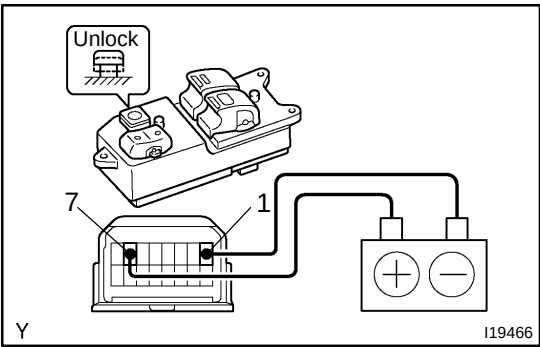
Front Passenger's Switch (Window unlock):

Switch position	Tester connection	Specified condition
UP	1 - 15, 6 - 13	Continuity
OFF	1 - 13 - 15	Continuity
DOWN	1 - 13, 6 - 15	Continuity

Front Passenger's Switch (Window lock):

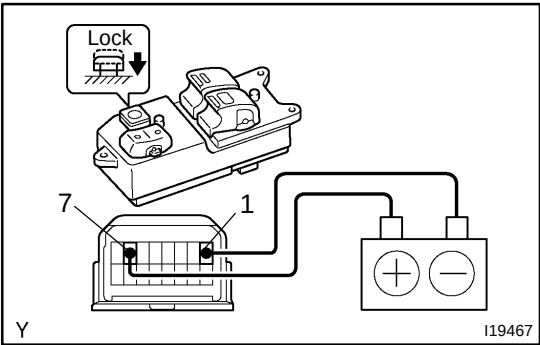
Switch position	Tester connection	Specified condition
UP	6 - 13	Continuity
OFF	13 - 15	Continuity
DOWN	6 - 15	Continuity

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



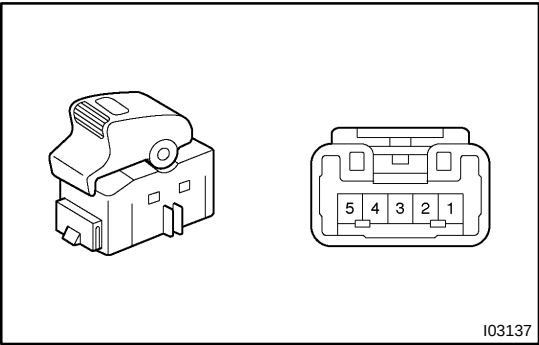
2. INSPECT POWER WINDOW MASTER SWITCH ILLUMINATION

- Set the window lock switch to the unlock position.
- Connect the positive (+) lead from the battery to terminal 7 and the negative (-) lead to terminal 1, and check that all the illuminations light up.



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

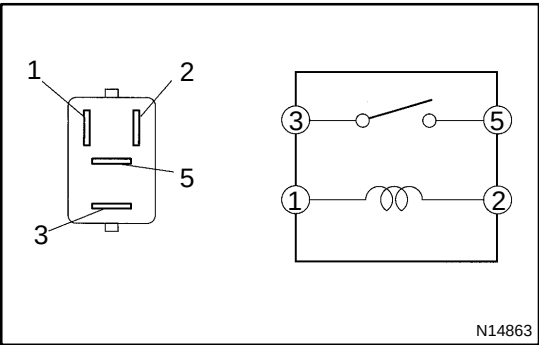
If operation is not as specified, replace the master switch.



3. INSPECT PASSENGER'S DOOR POWER WINDOW SWITCH CONTINUITY

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

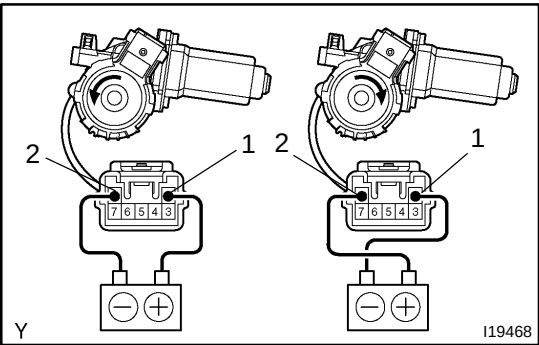
If continuity is not as specified, replace the switch.



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

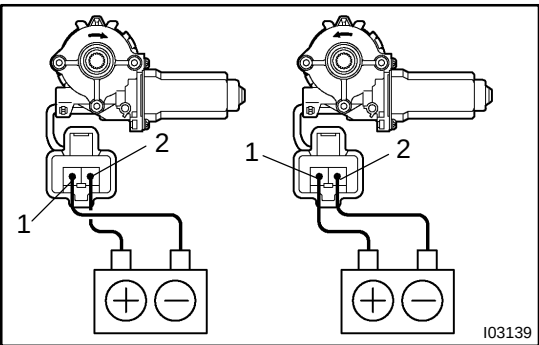
If continuity is not as specified, replace the switch.



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

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

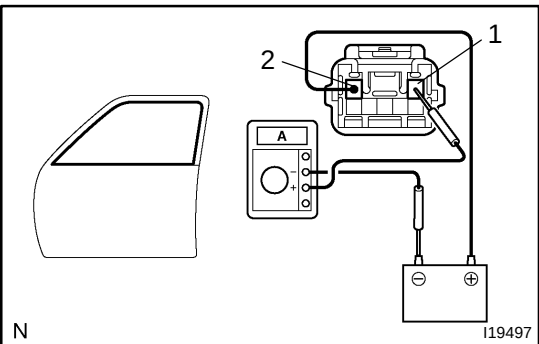
If operation is not as specified, replace the motor.



6. 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-clock wise.

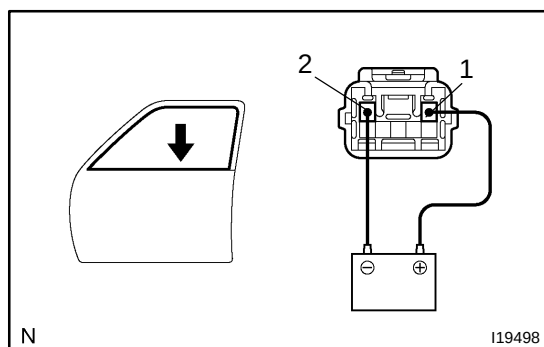
If operation is not as specified, replace the motor.



7. Driver's door: INSPECT POWER WINDOW MOTOR PTC THERM-ISTOR OPERATION

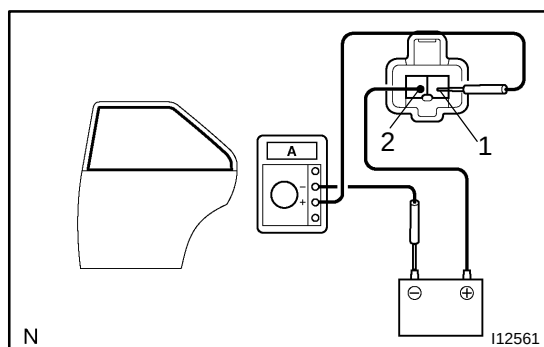
- (a) Disconnect the connector from the power window motor.
- (b) Connect the positive (+) lead from the ammeter to terminal 1 on the wire harness side connector and the negative (-) lead to negative terminal of the battery.
- (c) Connect the positive (+) lead from the battery to terminal 2 on the wire harness side connector, and raise the window to the fully position.

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



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

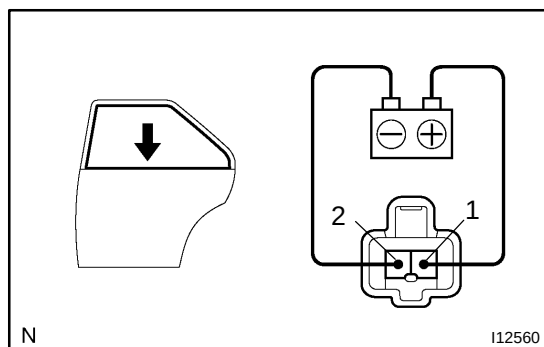
If operation is not as specified, replace the motor.



8. 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 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.



9. INSPECT JAM PROTECTION FUNCTION

NOTICE:

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

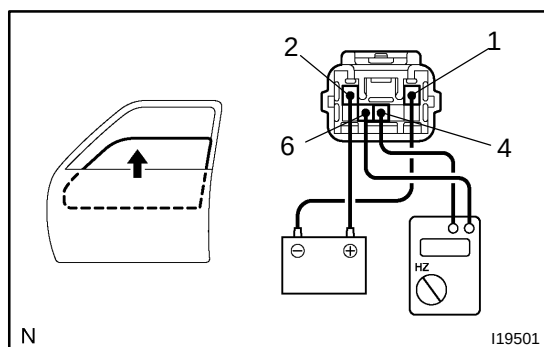
HINT:

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

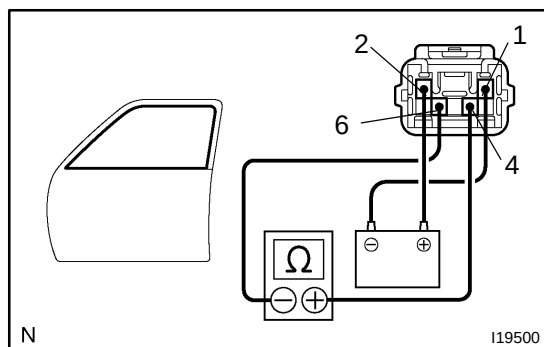
HINT:

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



**10. Driver's Door :
INSPECT JAM PROTECTION LIMIT SWITCH OPERATION**

- (a) Connect the negative (-) lead from the ohmmeter to terminal 6 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 up.

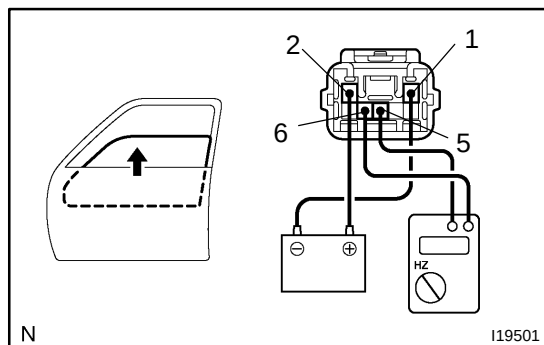


- (d) Check that the no continuity exists when the window is in the fully closed position.

If operation is not as specified, replace the motor.

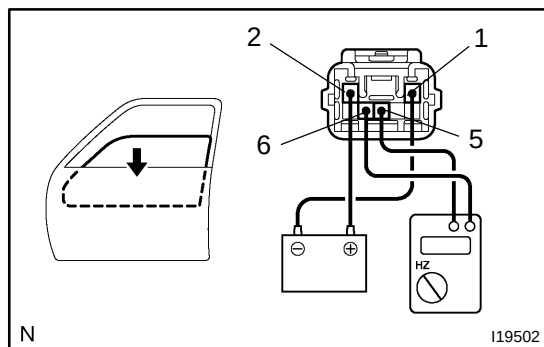
NOTICE:

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



**11. Driver's Door:
INSPECT JAM PROTECTION PULSE SWITCH OPERATION**

- (a) Connect the positive (+) lead from the TOYOTA electrical tester to terminal 5 and the negative (-) lead to terminal 6.
- (b) Connect the positive (+) lead from the battery to terminal 2 and the negative (-) lead to terminal 1.
- (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.

12. INSPECT JAM PROTECTION FUNCTION

NOTICE:

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

HINT:

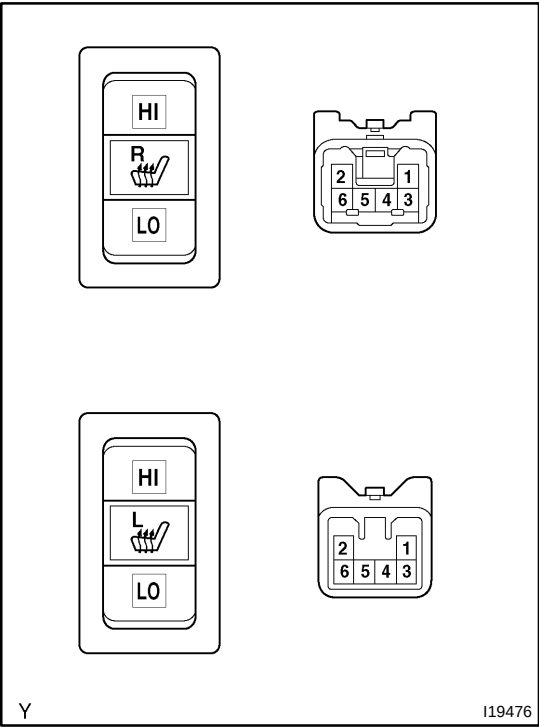
In case of performing resetting of the limit switch, do checking after repeating up and down of the glass with automatic operation.

- (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 studded.
 - (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.

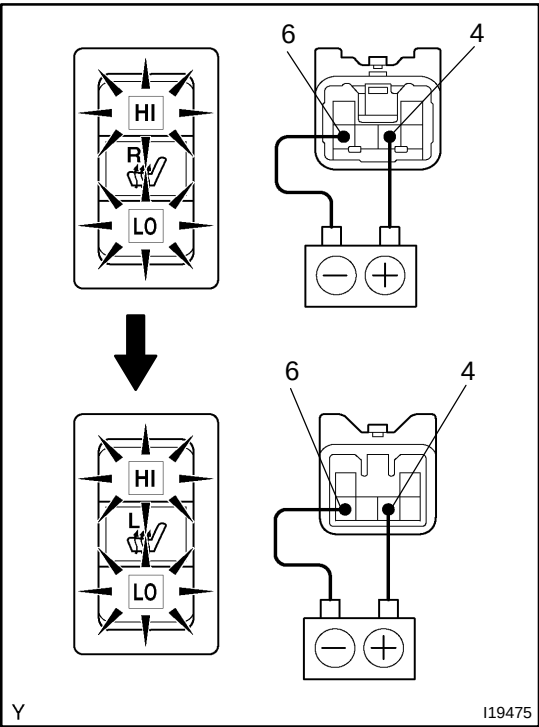


INSPECTION

1. INSPECT SEAT HEATER SWITCH CONTINUITY

Switch position	Tester connection	Specified condition
Lo side	3 - 4	Continuity
OFF	-	No continuity
Hi side	2 - 4	Continuity
Illumination circuit	1 - 5	Continuity

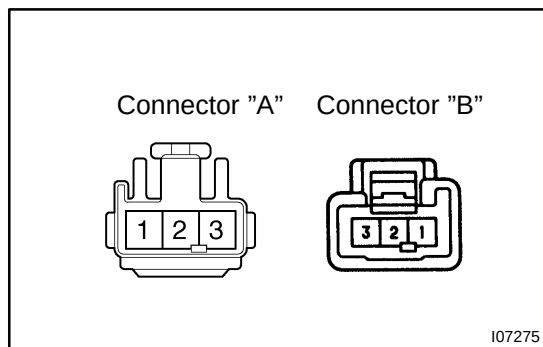
If continuity is not as specified, replace the switch.



2. INSPECT SEAT HEATER INDICATOR LIGHT OPERATION

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

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

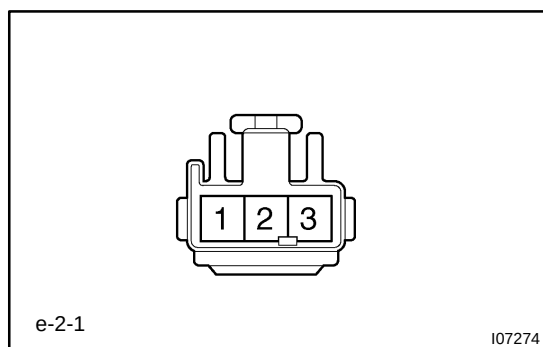


3. INSPECT SEAT HEATER CUSHION CONTINUITY

Inspect the seat cushion between terminals, as shown.

Tester connection	Condition	Specified condition
A1 - B2	25 °C (77 °F) - 45 °C (113 °F)	Continuity
A2 - B3	25 °C (77 °F) - 55 °C (131 °F)	Continuity
A3 - B1	Constant	Continuity

If continuity is not as specifies, replace the seat cushion pad.

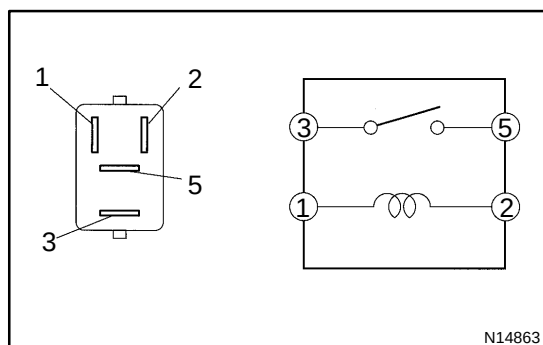


4. INSPECT SEAT BACK CONTINUITY

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

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

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



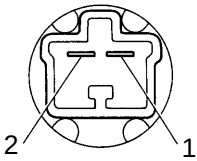
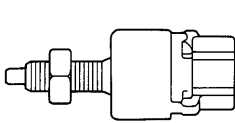
5. INSPECT SEAT HEATER RELAY CONTINUITY

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 switch.

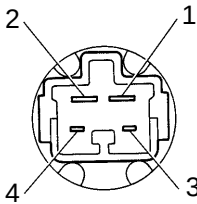
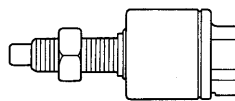
w/o Cruise Control:

Free Pushed in
← →



w/ Cruise Control:

Free Pushed in
← →



N18026

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.

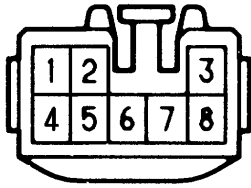
2. w/ Cruise Control:

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.

Wire Harness Side



s-8-1

I04046

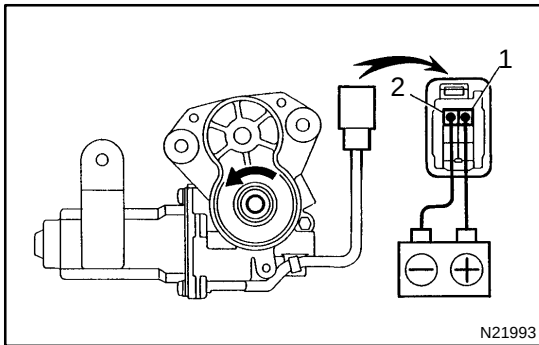
INSPECTION

1. INSPECT SLIDING ROOF CONTROL RELAY AND SWITCH CIRCUIT

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

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

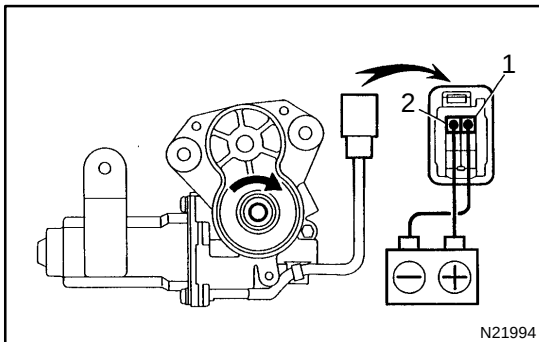
*Exceptions: For 60 seconds after the ignition switch is turned ON to OFF (ACC) or until driver or passenger door is opened after the ignition switch is turned ON to OFF (ACC).
If the circuit is as specified, replace the relay and switch.



N21993

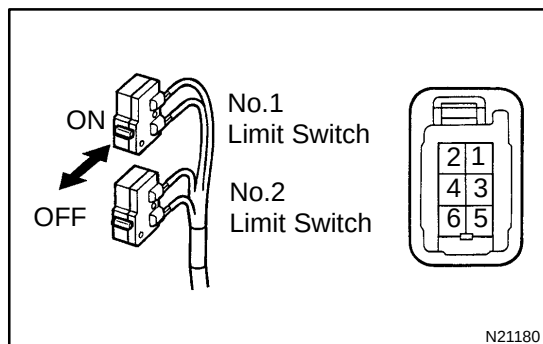
2. INSPECT SLIDING ROOF MOTOR OPERATION

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



N21994

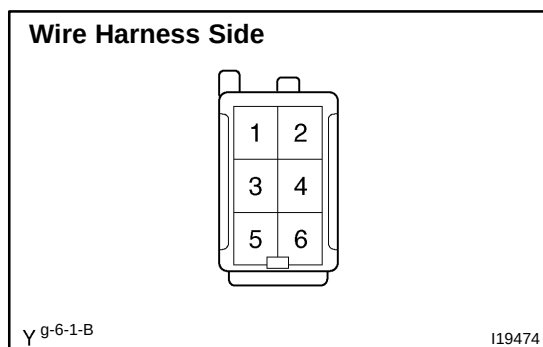
(b) Reverse the polarity, check that the motor turns clockwise. (for opening and lowering operations).
If operation is not as specified, replace the motor.



3. INSPECT SLIDING ROOF LIMIT SWITCH CONTINUITY

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

If continuity is not as specified, replace the switch.

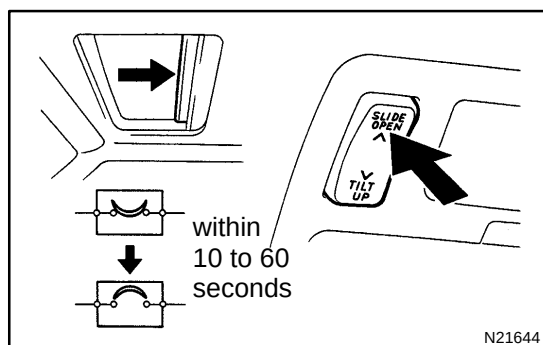


4. INSPECT SLIDING ROOF MOTOR AND LIMIT SWITCH CIRCUIT

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

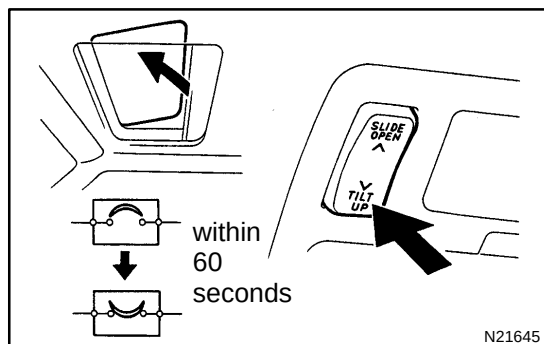
Tester connection	Condition	Specified condition
3 - Ground	Constant	Continuity
4 - Ground	Constant	Continuity

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



5. INSPECT CIRCUIT BREAKER OPERATION

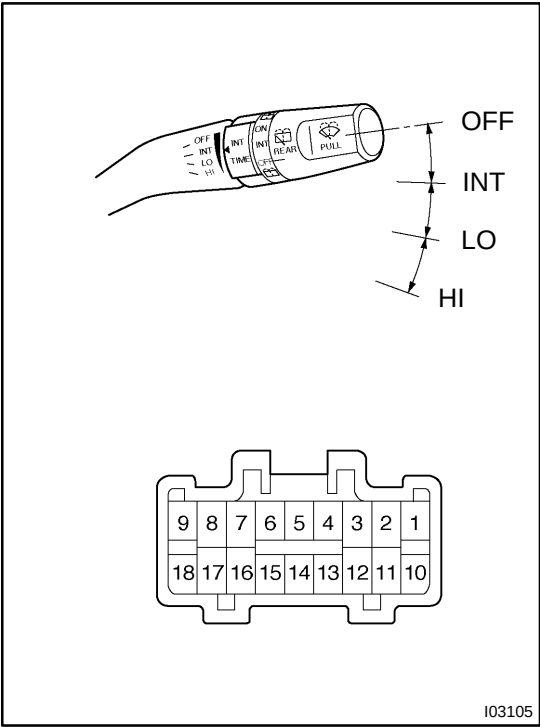
- (a) With the sliding roof in the fully opened position, hold the sliding roof switch in "OPEN" position and check that there is a circuit breaker operation noise within 10 to 60 seconds.



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

If operation is not as specified, replace the motor.

6. INSPECT KEY-OFF SLIDING ROOF OPERATION
(See integration relay circuit on page [DI-628](#))

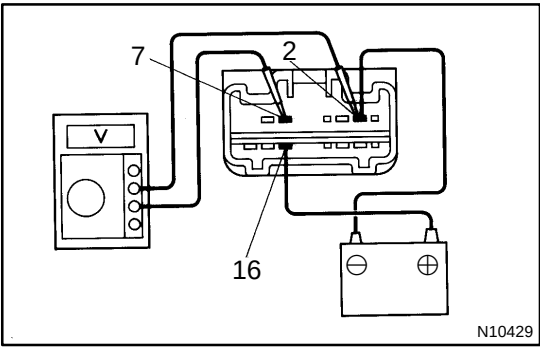


INSPECTION

1. INSPECT FRONT WIPER AND WASHER SWITCH CONTINUITY

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

If continuity is not as specified, replace the switch.

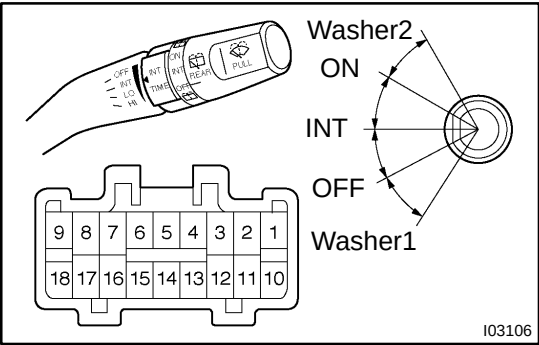


2. INSPECT INTERMITTENT OPERATION

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

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

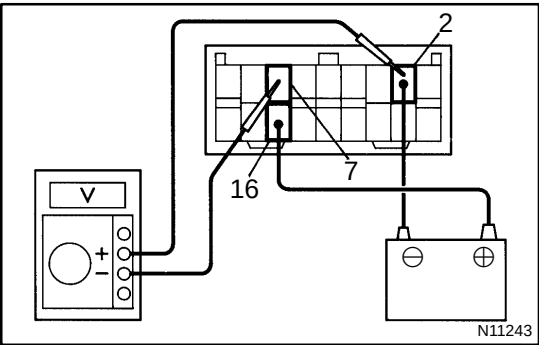
If operation is not as specified, replace the wiper and washer switch.



3. INSPECT REAR WIPER AND WASHER SWITCH CONTINUITY

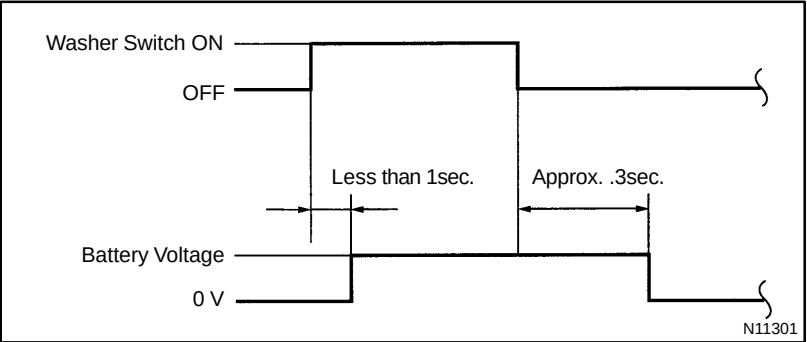
Switch position	Tester connection	Specified condition
Washer 1	2 - 12	Continuity
Wiper OFF	-	No continuity
Wiper INT	2 - 13	Continuity
Wiper ON	2 - 10	Continuity
Washer 2	2 - 10 - 12	Continuity

If continuity is not as specified, replace the switch.

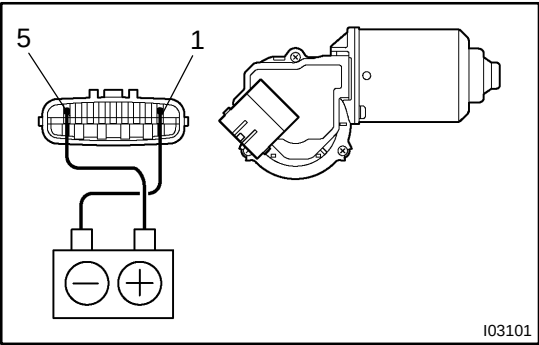


4. INSPECT WASHER LINKED OPERATION

- (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 chart.



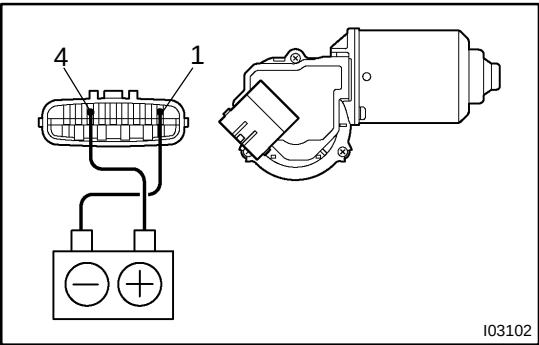
If operation is not as specified, replace the wiper and washer switch.



5. Low Speed:

INSPECT FRONT WIPER MOTOR OPERATION

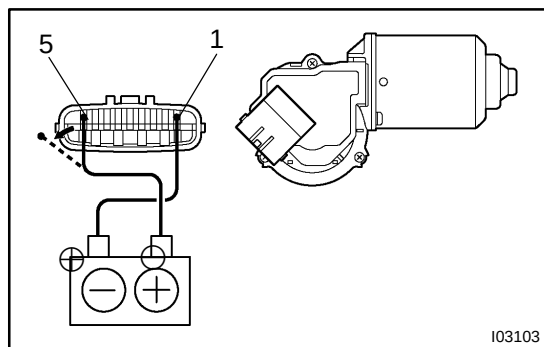
Connect the positive (+) lead from the battery to terminal 5 and the negative (-) lead from the battery to the terminal 1, and check that the motor operates at low speed.
If operation is not as specified, replace the motor.



6. High Speed:

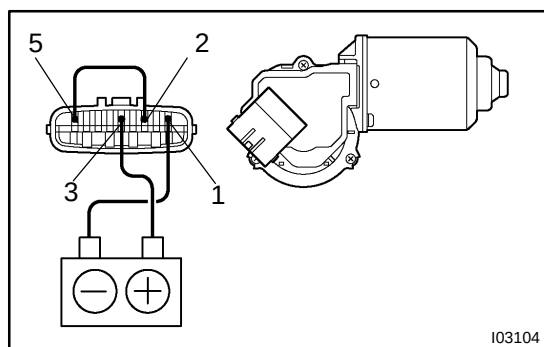
INSPECT FRONT WIPER MOTOR OPERATION

Connect the positive (+) lead from the battery to terminal 4 and the negative (-) lead from the battery to the terminal 1, and check that the motor operates at high speed.
If operation is not as specified, replace the motor.



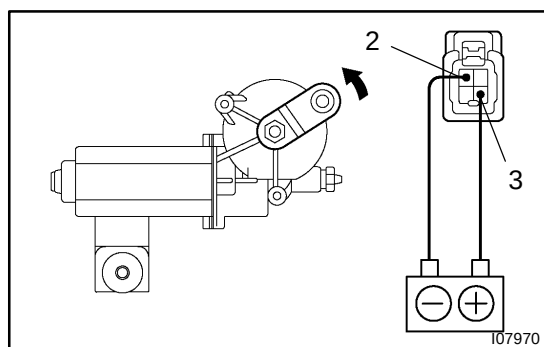
**7. Stopping at Stop Position:
INSPECT FRONT WIPER MOTOR OPERATION**

- (a) Operate the motor at low speed and stop the motor operation anywhere except at the stop position by disconnecting positive (+) lead from terminal 5.



- (b) Connect terminals 2 and 5.
(c) Connect the positive (+) lead from the battery to terminal 3 and the negative (-) lead from the battery to the terminal 1, and check that the motor stops running at the stop position after the motor has operated again.

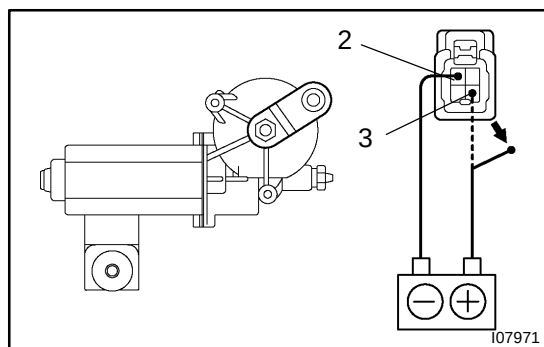
If operation is not as specified, replace the motor.



**8. Low speed:
INSPECT REAR WIPER MOTOR OPERATION**

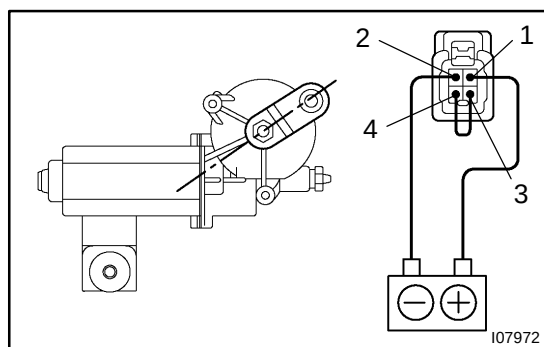
Connect the positive (+) lead from the battery to terminal 3 and negative (-) lead to terminal 2, check that the motor operates at low speed.

If operation is not as specified, replace the motor.



**9. Stopping at stop position:
INSPECT REAR WIPER MOTOR OPERATION**

- (a) Operate the motor at low speed and stop the motor operation anywhere except at the stop position by disconnecting positive (+) lead from terminal 3.



- (b) Connect terminals 3 and 4.
(c) Connect the positive (+) lead from the battery to terminal 1 and negative (-) lead to terminal 2, check that the motor stops running at the stop position after the motor operates again.

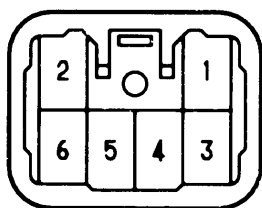
If operation is not as specified, replace the motor.

NOTICE:

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

If operation is not as specified, replace the motor.

Relay Side



e-6-2-G

I01702

10. INSPECT REAR WIPER RELAY CONTINUITY

Terminal	Specified condition
3 - 4	No continuity
4 - 5	Continuity

If continuity is not as specified, replace the relay.

11. INSPECT REAR WIPER RELAY OPERATION

- Connect the positive (+) lead from the battery to terminal 3 and the negative (-) lead to terminal 4.
- Check continuity between terminals.

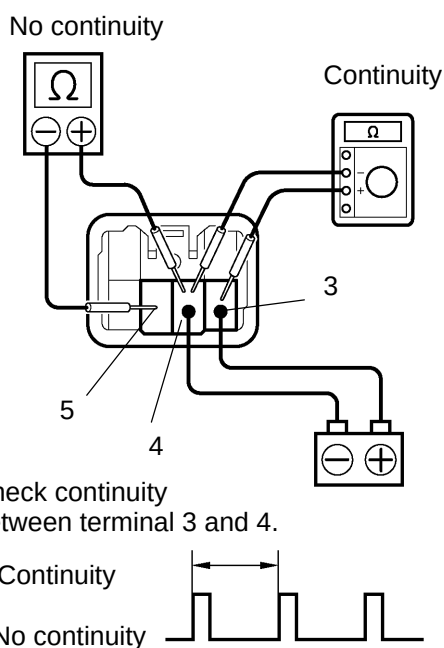
Terminal	Specified condition
3 - 4	Continuity
4 - 5	No continuity

If continuity is not as specified, replace the relay.

12. INSPECT REAR WIPER RELAY INTERMITTENT OPERATION

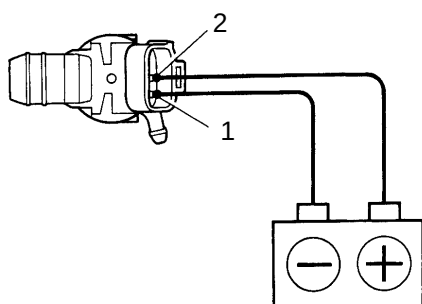
- Connect the positive (+) lead from the battery to terminal 3 and the negative (-) lead to terminal 2.
- Check continuity between terminal 3 and 4 is as illustrated.

If continuity is not as specified, replace the relay.



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N21368

13. 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.

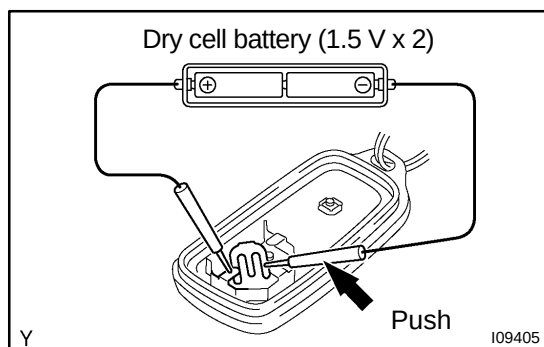
INSPECTION

1. INSPECT WIRELESS DOOR LOCK TRANSMITTER OPERATION

HINT:

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

- (a) Using a screwdriver, remove the 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 check the transmitter operation when pressing transmission switch on the side of the transmitter body.

Standard:

Remote control of vehicle door lock can be operated.

HINT:

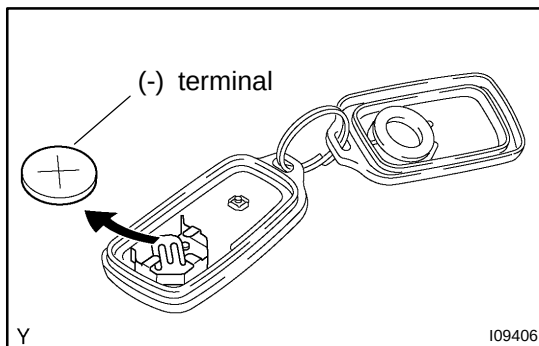
- The minimum operation distance differs according to operator, the way of holding, and location.
 - As weak wave is used, operation distance might be shortened when noise is detected in strong wave or used frequency.
- (e) Install the battery (lithium battery).
 - (f) Install a cover so that O-ring is not distorted or slipped off.

2. CHECK BATTERY CAPACITY

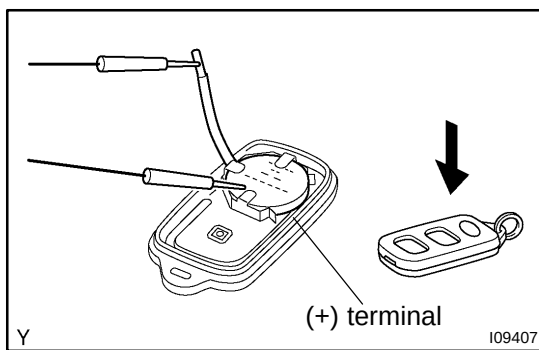
HINT:

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

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



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

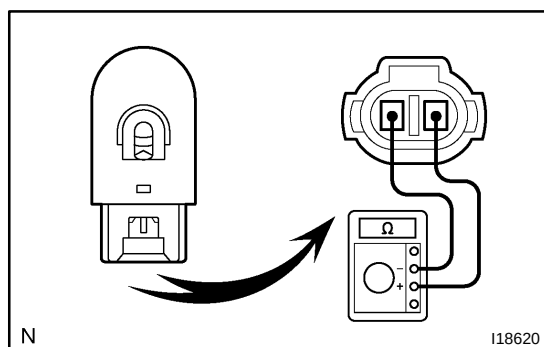


- Connect the (+) tester to the (+) battery (lithium battery), and (-) tester to the lead respectively.
- Press one of the transmitting switches on the transmitter for approx. 1 second.
- Press the transmitting switch on the transmitter again to check the voltage.

Standard: 2.1 V or more

HINT:

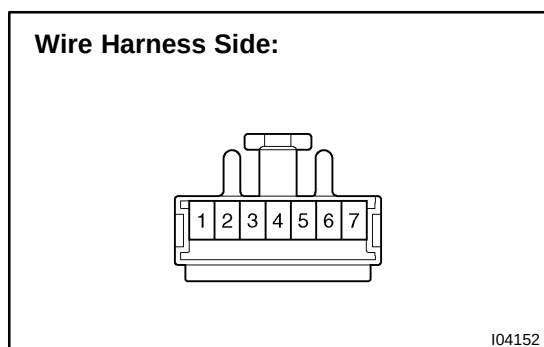
- When the temperature of the battery is low, the judge can not be made correctly.
When the outcome of the test is less than 2.1 V, conduct the test again after leaving the battery in the place at 18 °C for more than 30 minutes.
 - By auto power off function, the voltage becomes in no load voltage (more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



3. INSPECT WIRELESS DOOR LOCK BUZZER OPERATION

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

If resistance is not as specified, replace the buzzer.



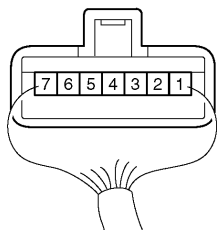
4. Connector disconnected: INSPECT WIRELESS DOOR LOCK CONTROL RECEIVER CIRCUIT(See page [DI-679](#))

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 voltage

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

From Back Side:



I04153

**5. Connector connected:
INSPECT WIRELESS DOOR LOCK CONTROL RE-
CEIVER 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
2 - Ground	Normal mode	10 - 14 V
2 - Ground	Code registration mode	Below 1 V
4 - Ground	Ignition switch position OFF Key removed Transmitter ON	About 6 - 7 V

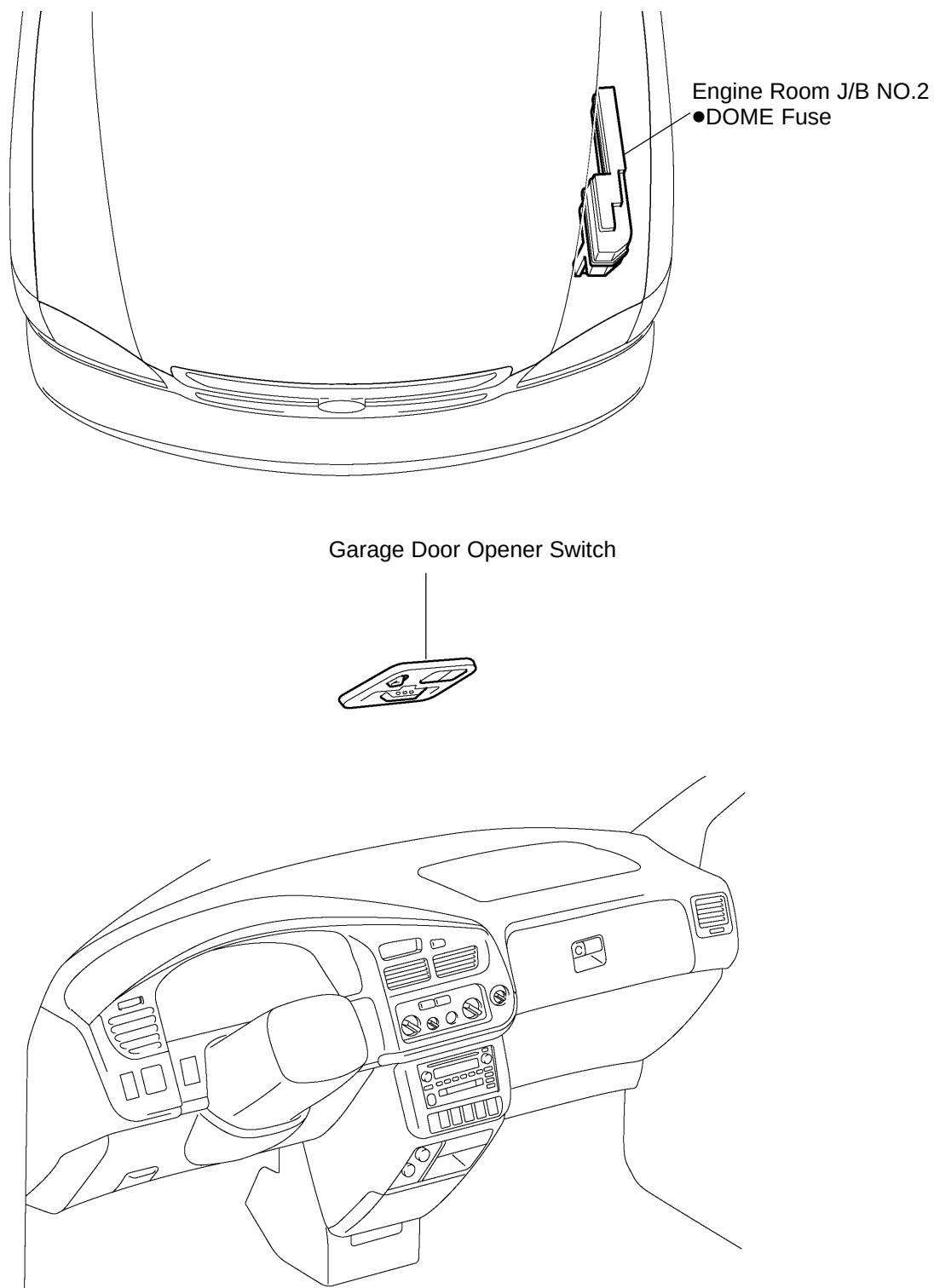
If circuit is as specified, replace the receiver.

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

INSTALLATION

1. **INSTALL GARAGE DOOR OPENER**
2. **INSTALL FRONT PERSONAL LIGHT**
 - (a) Connect the 2 connectors.
 - (b) Install the 3 screws.
3. **INSTALL FRONT PERSONAL LIGHT LENS**

LOCATION



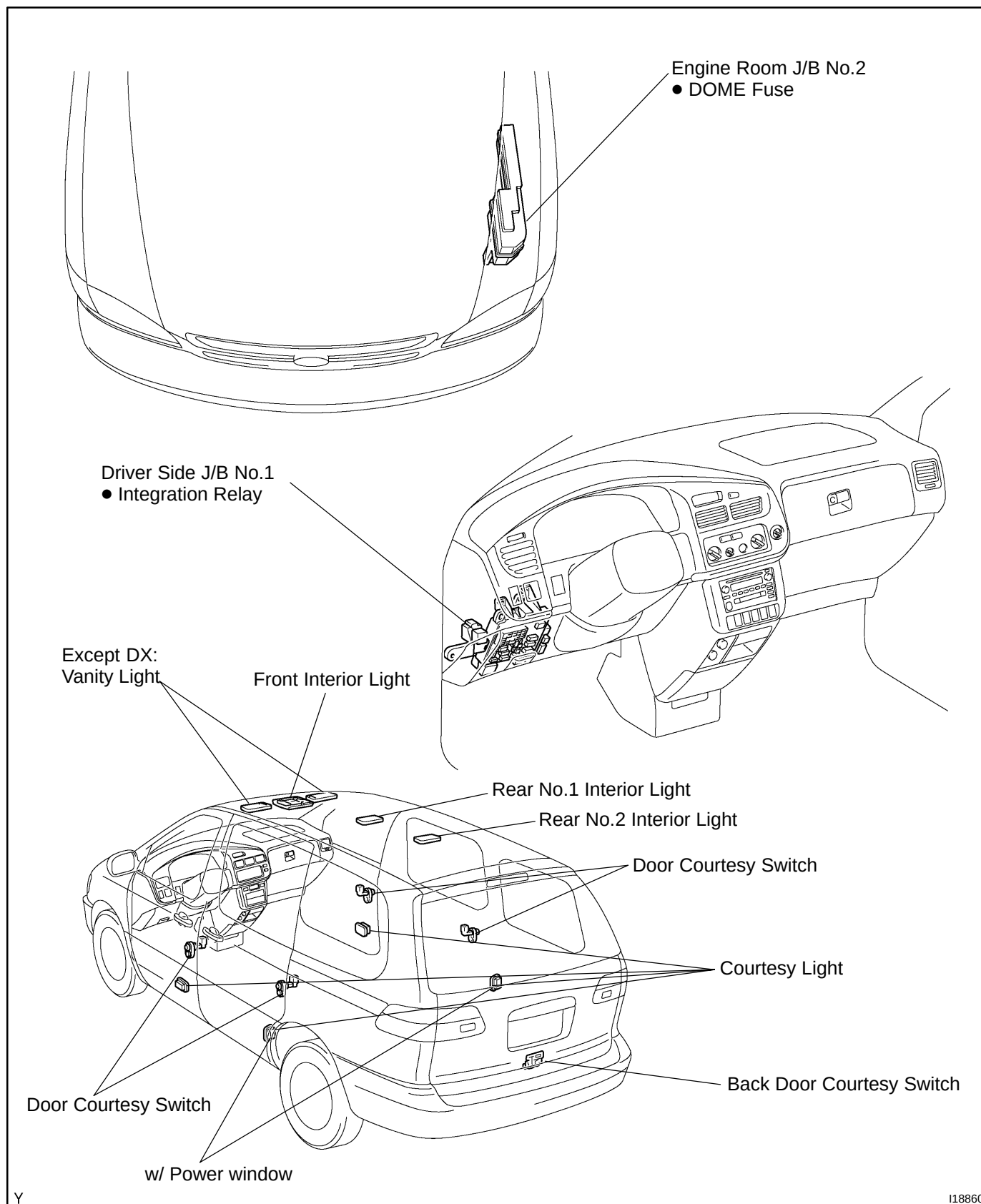
Y

I19478

INTERIOR LIGHT SYSTEM

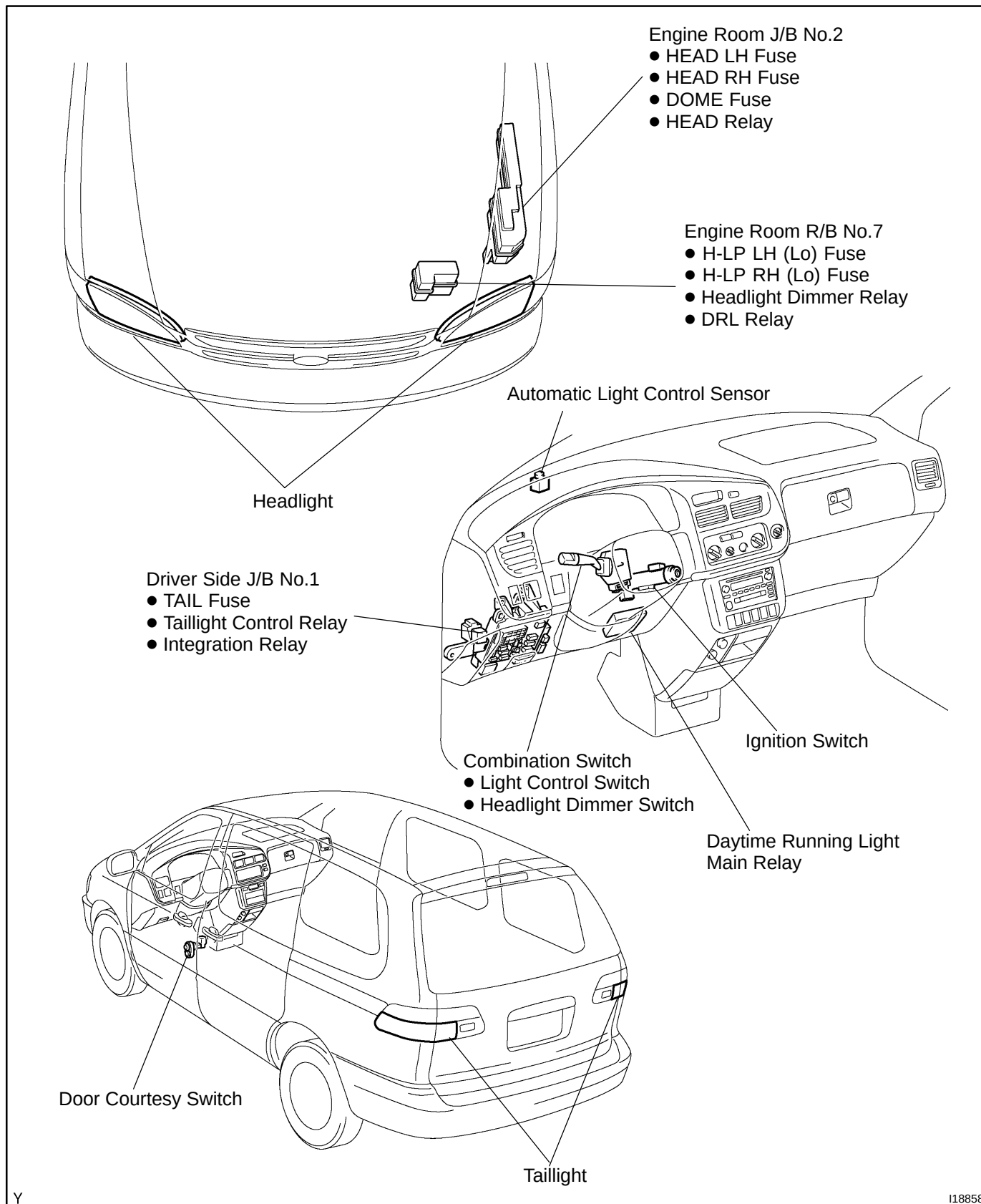
LOCATION

BE0F6-03



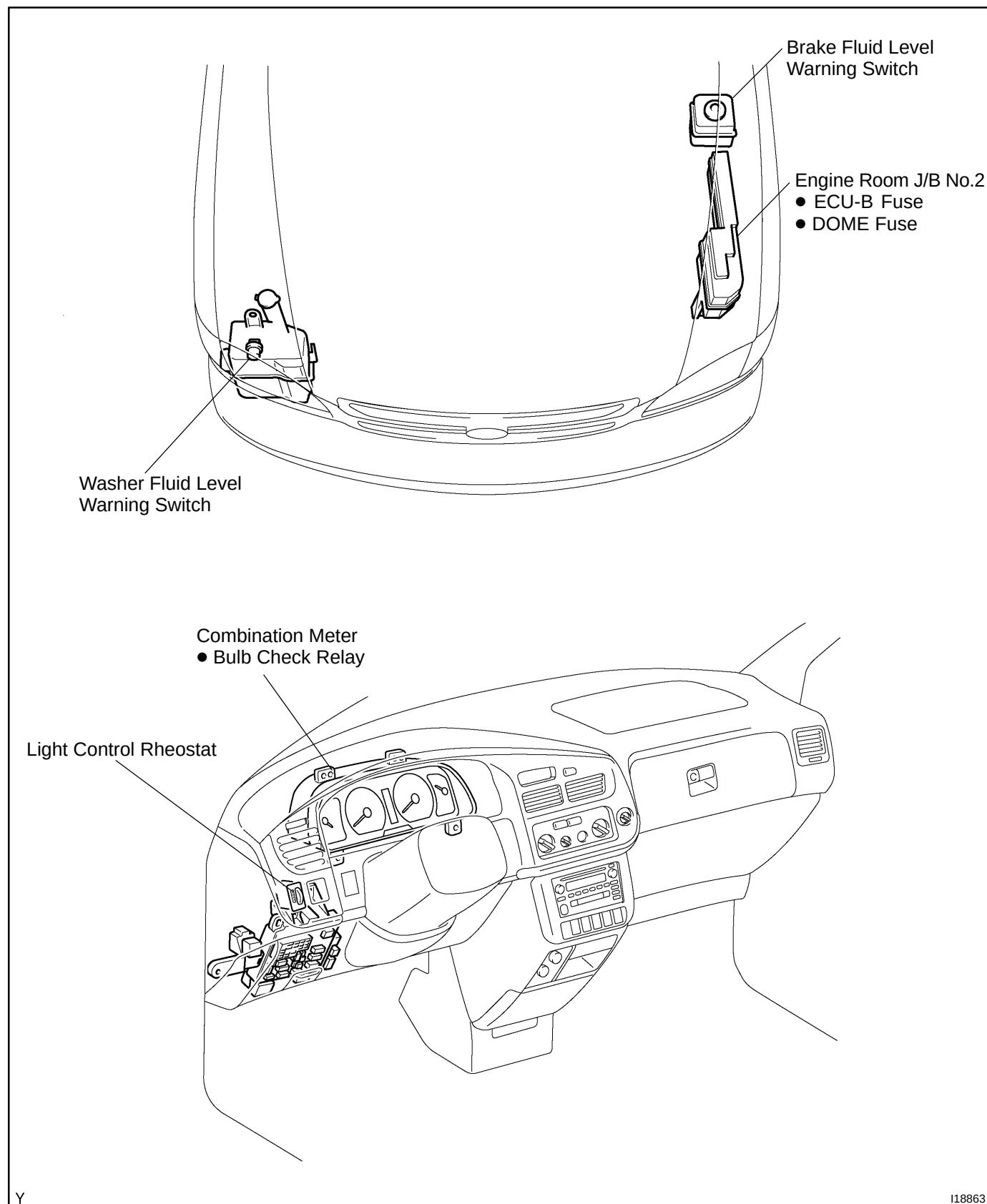
HEADLIGHT AND TAILLIGHT SYSTEM LOCATION

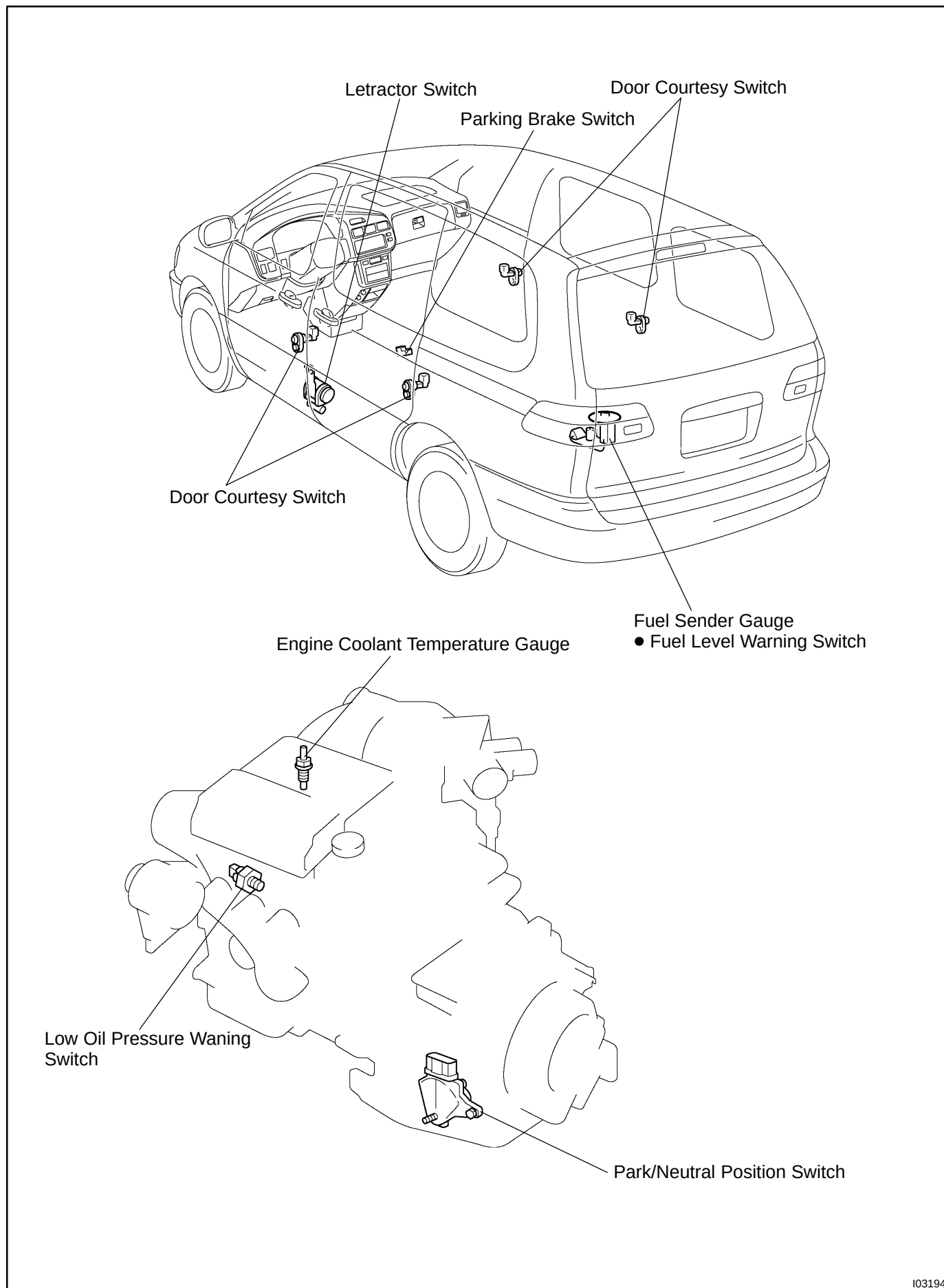
BE0F0-04



COMBINATION METER LOCATION

BE0FC-02

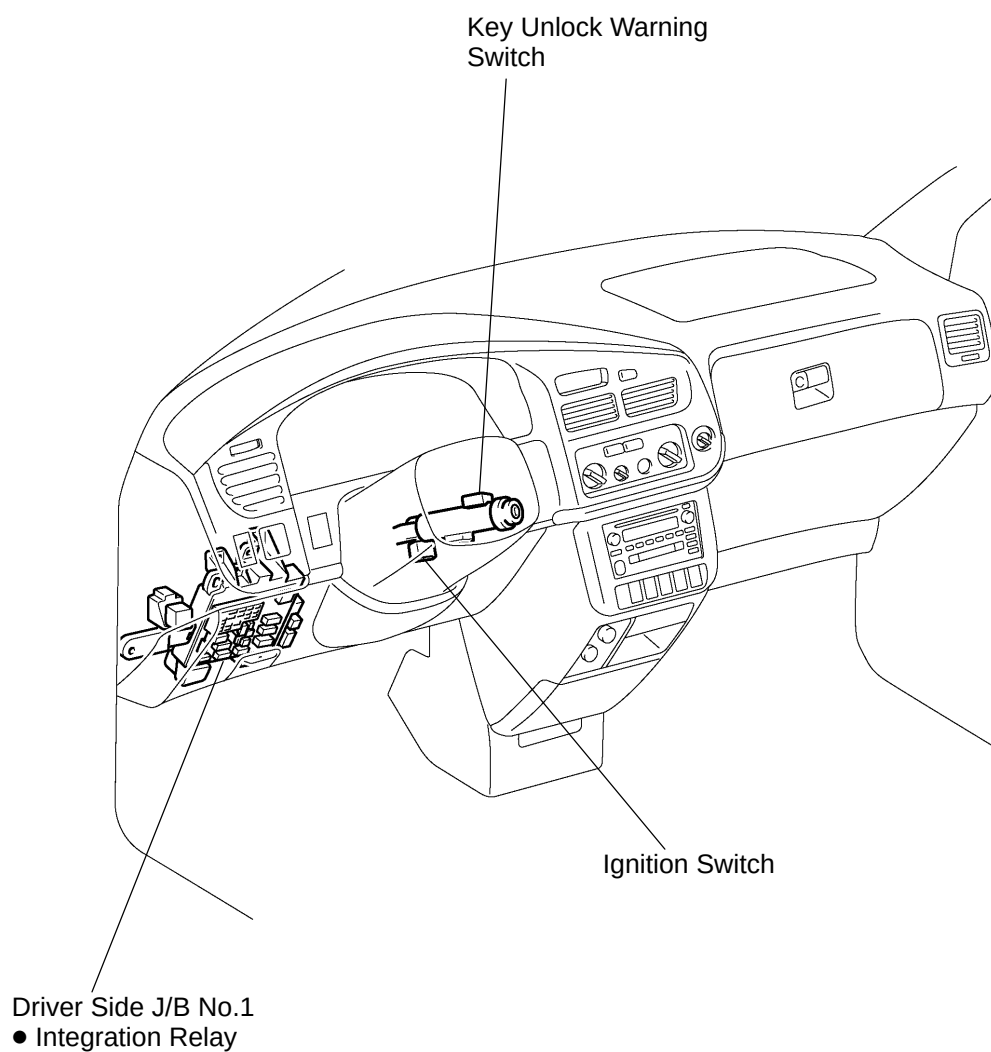




I03194

IGNITION SWITCH AND KEY UNLOCK WARNING SWITCH LOCATION

BE0EY-03



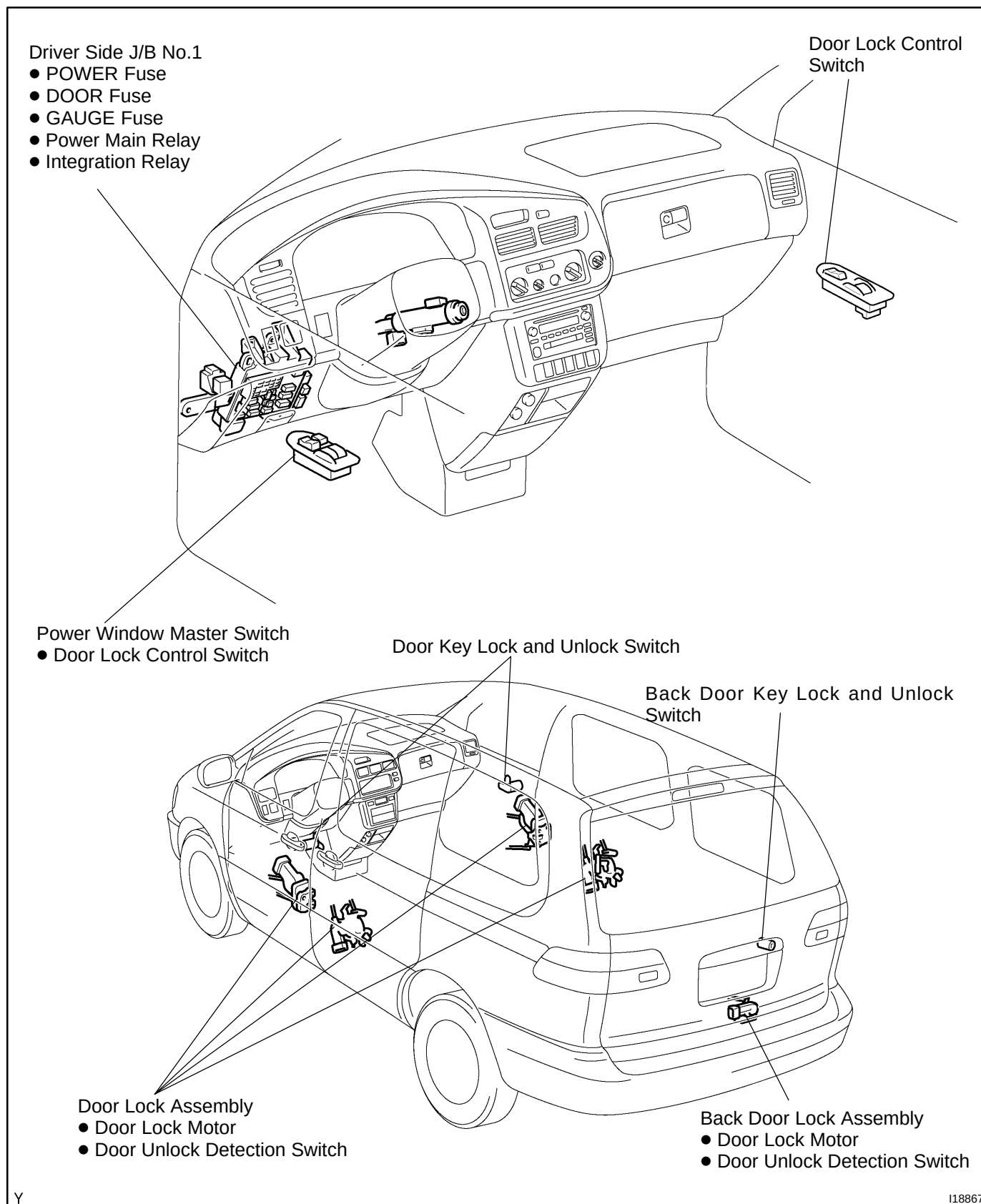
Y

I18857

POWER DOOR LOCK CONTROL SYSTEM

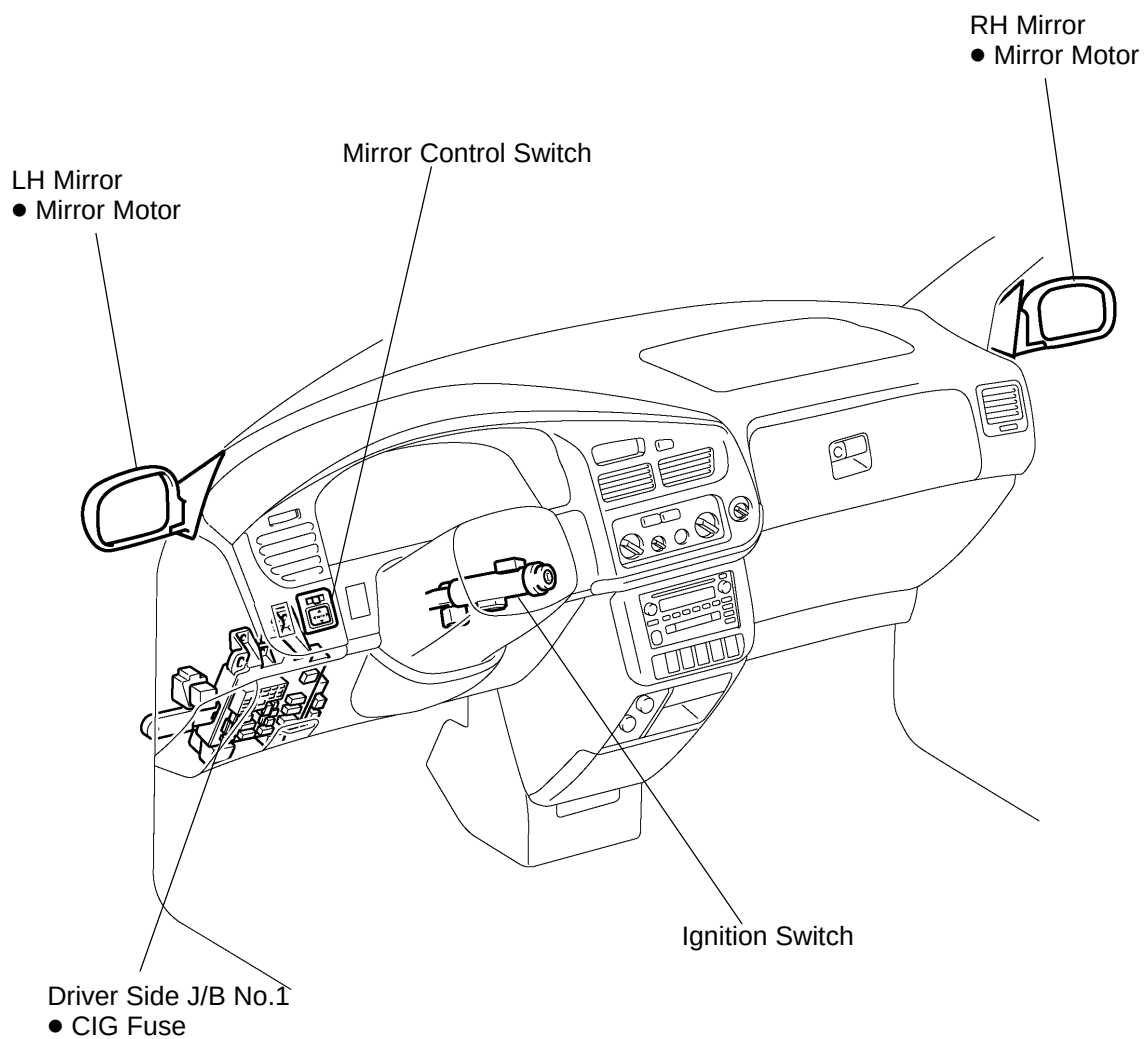
LOCATION

BE0FL-02



POWER MIRROR CONTROL SYSTEM LOCATION

BE0FP-04

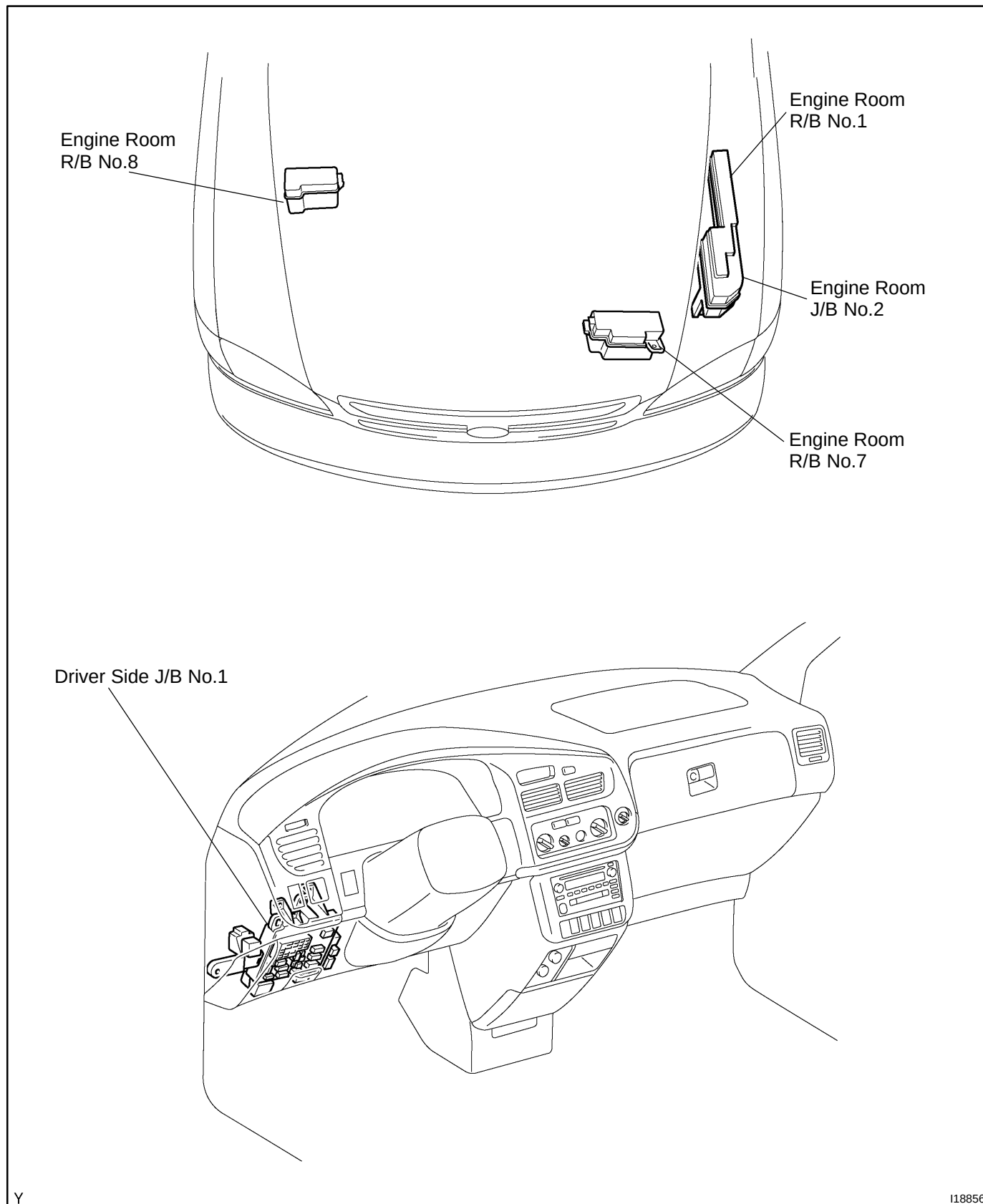


Y

I18870

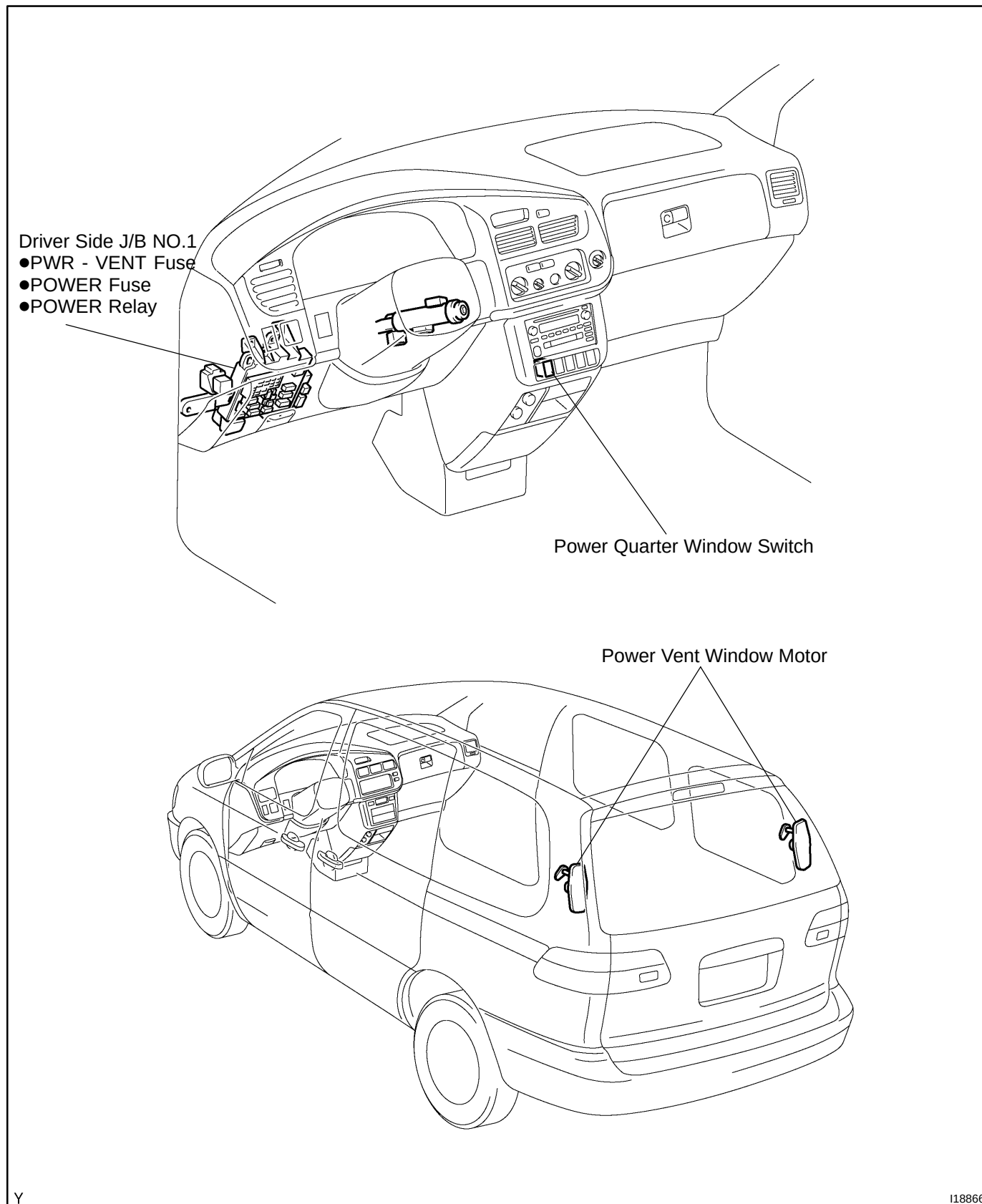
POWER SOURCE LOCATION

BE0EW-04



POWER REAR QUARTER WINDOW SYSTEM LOCATION

BE0FJ-02

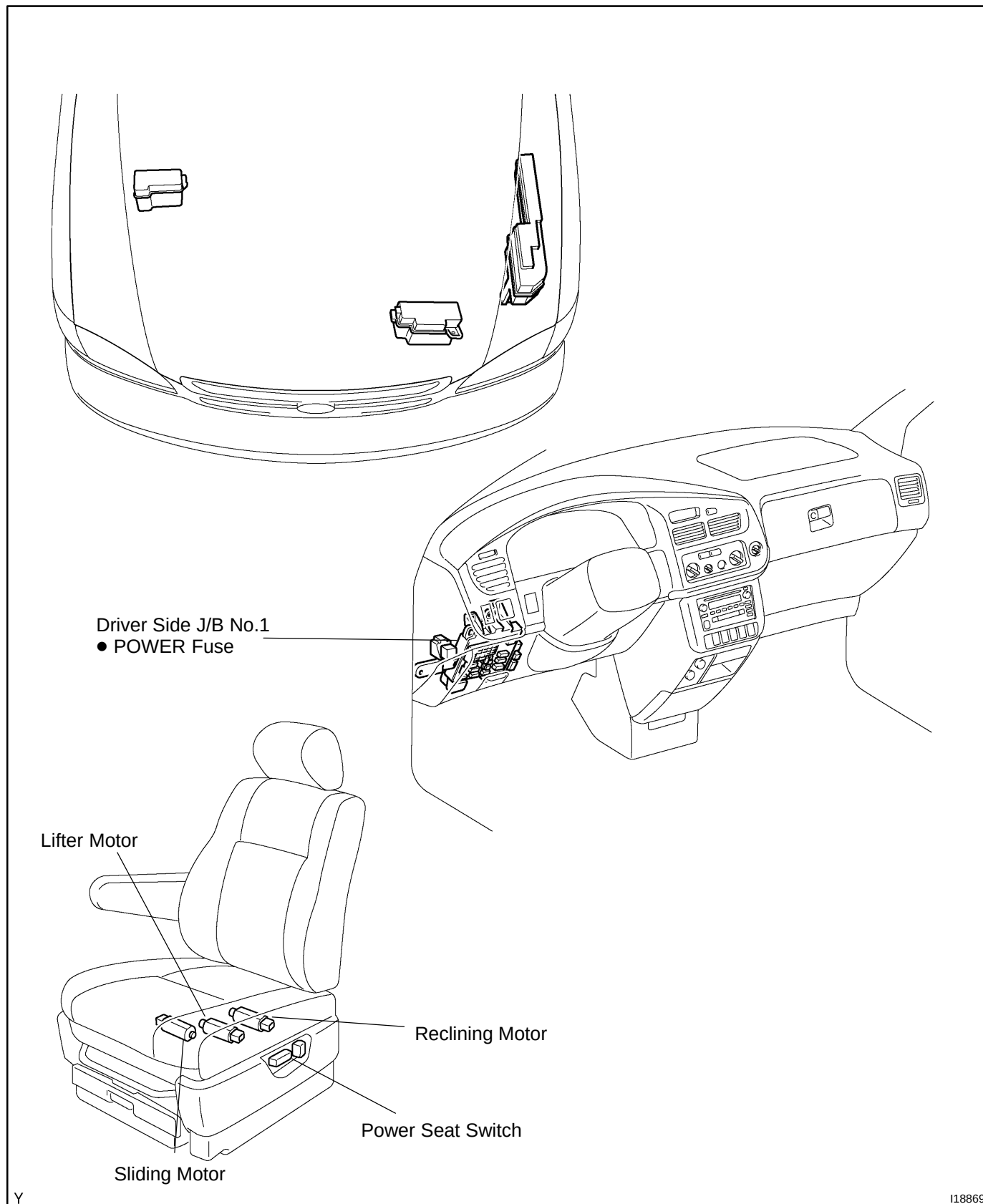


Y

I18866

POWER SEAT CONTROL SYSTEM LOCATION

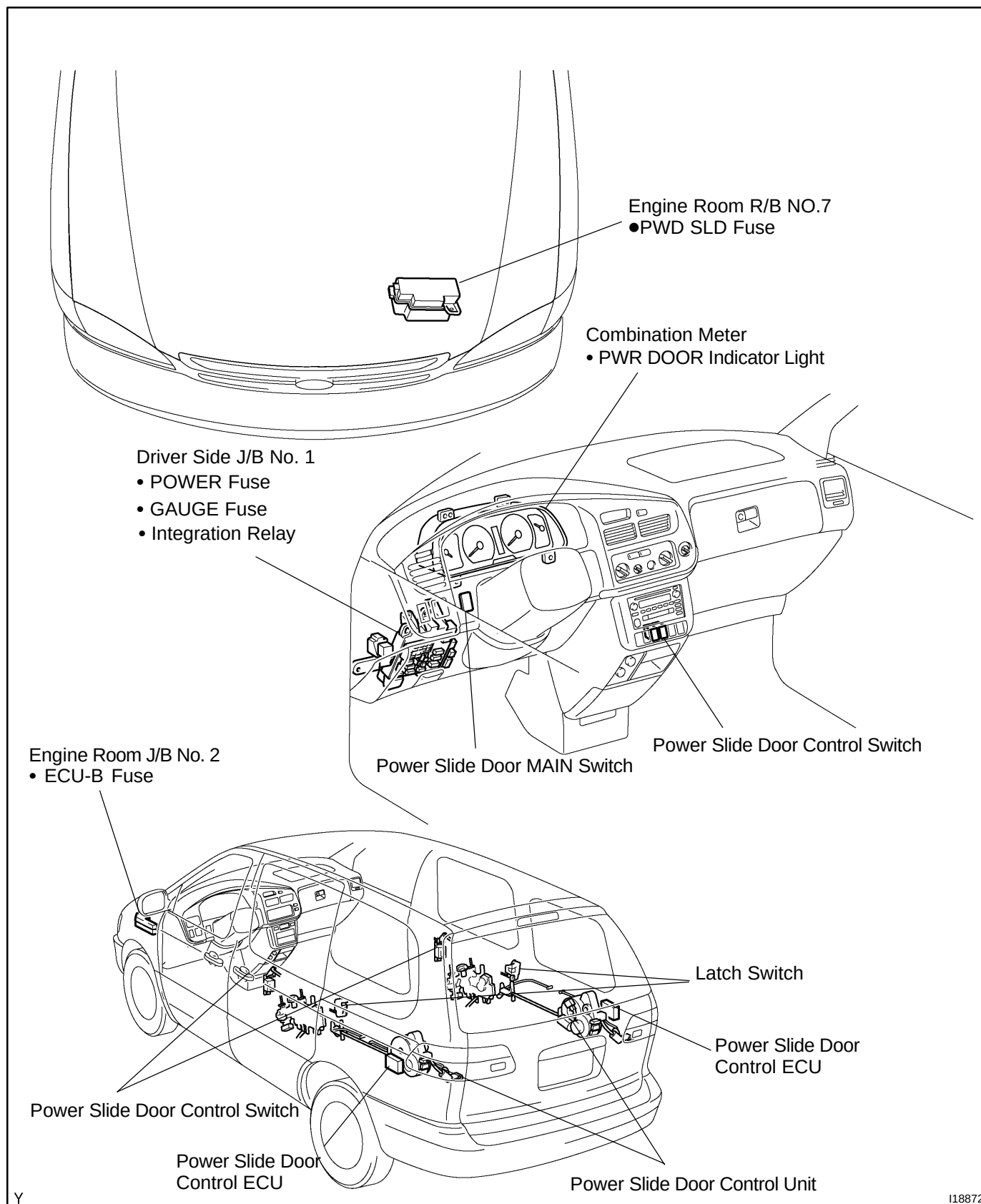
BE0FR-02



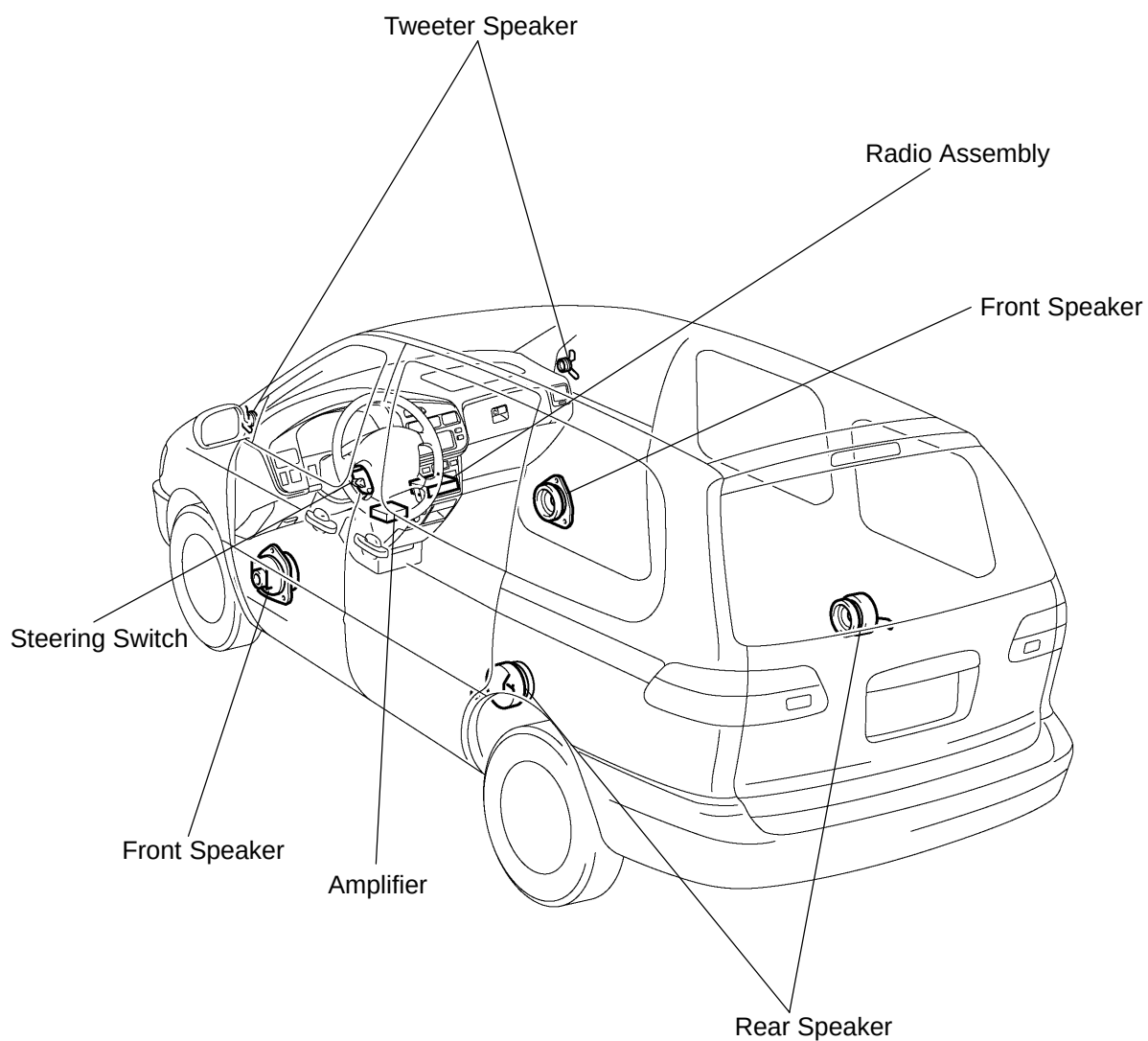
POWER SLIDE DOOR CONTROL SYSTEM

LOCATION

BE105-02



LOCATION

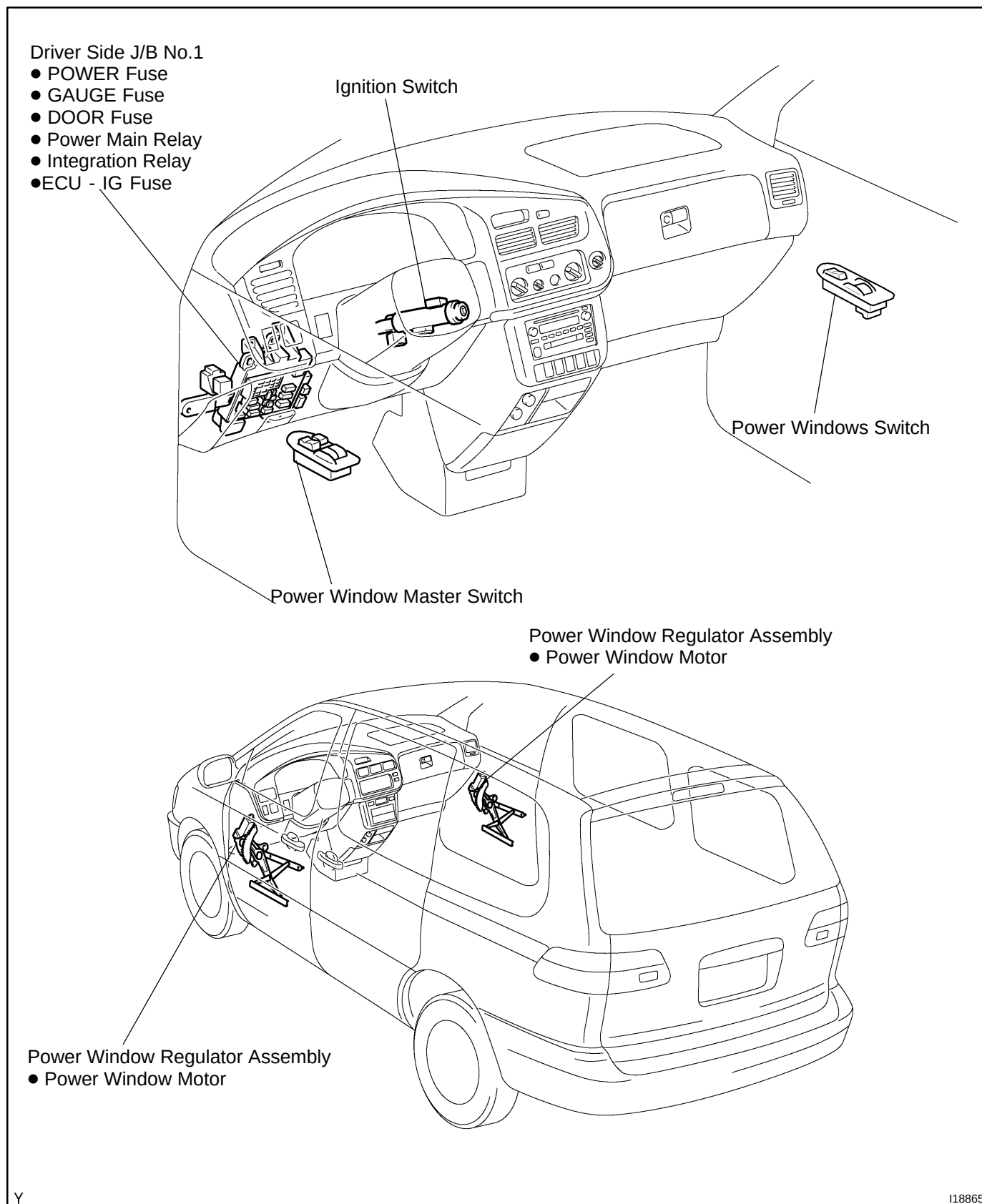


Y

POWER WINDOW CONTROL SYSTEM

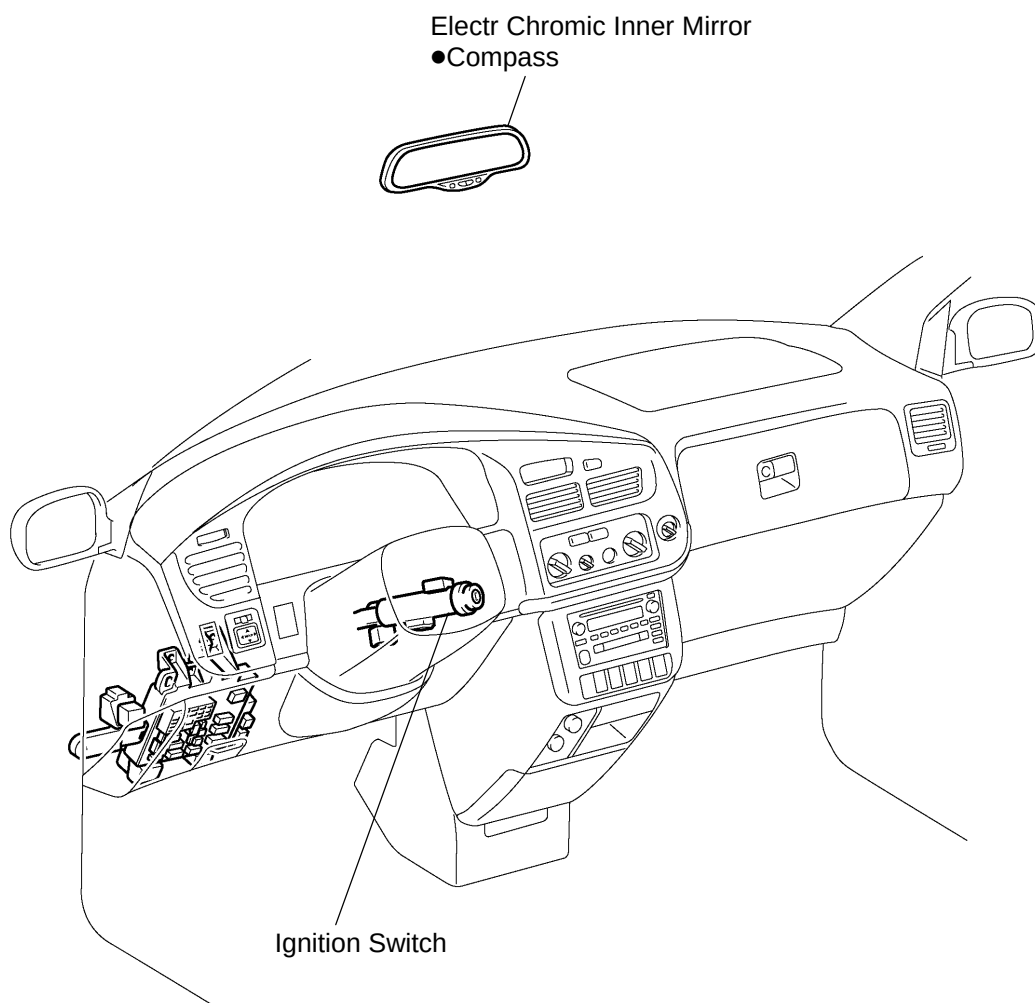
LOCATION

BEOFH-02



COMPASS LOCATION

BE12P-01

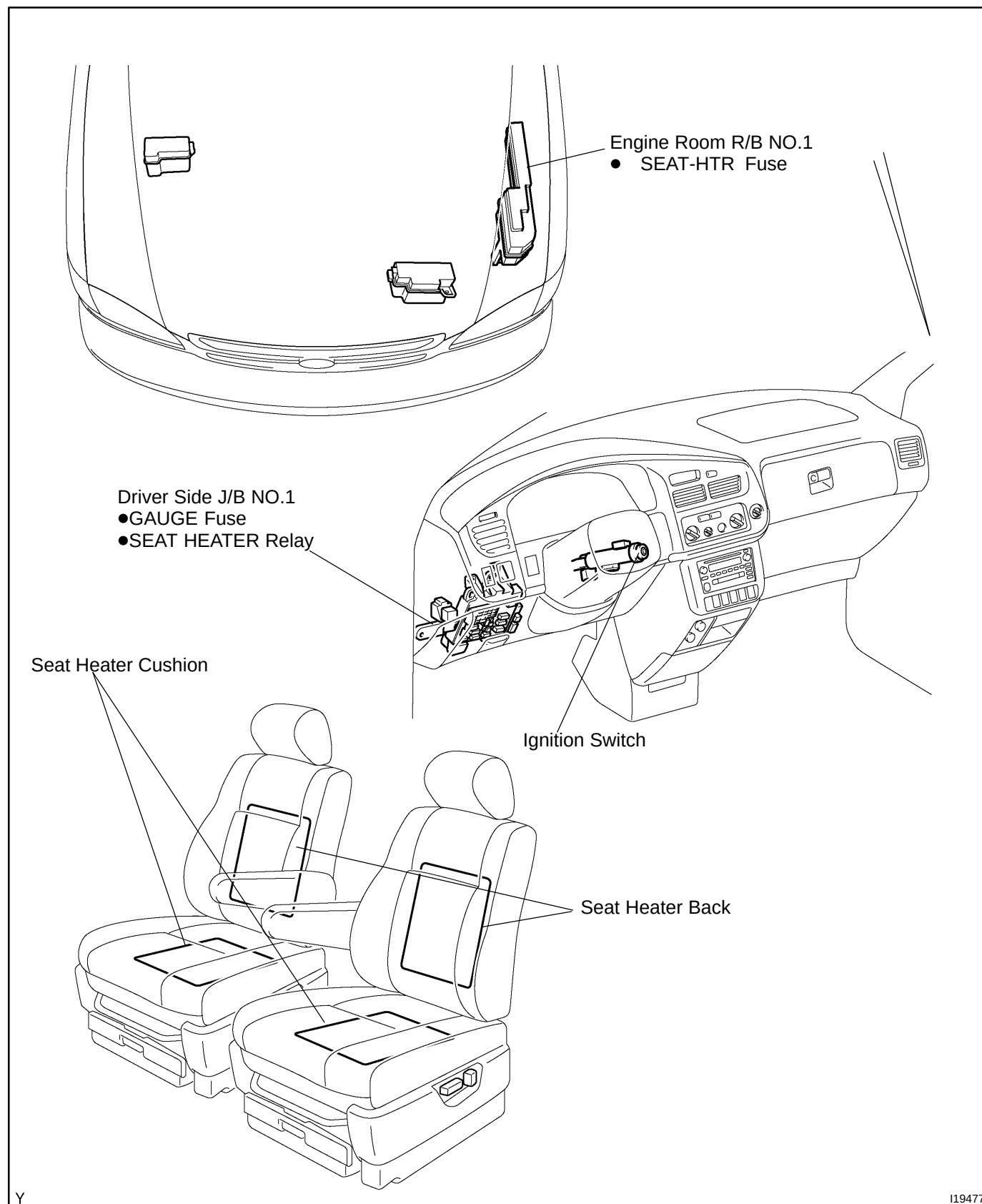


Y

I19479

SEAT HEATER SYSTEM LOCATION

BE0GH-14

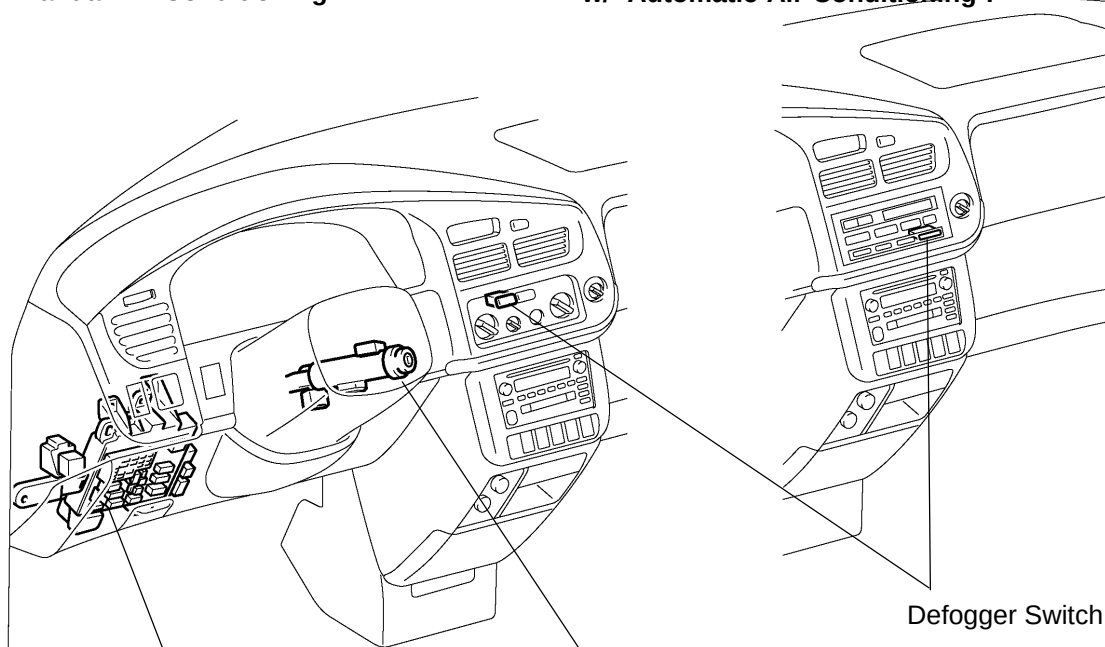


DEFOGGER SYSTEM LOCATION

BE0FF-02

w/ Manual Air Conditioning :

w/ Automatic Air Conditioning :

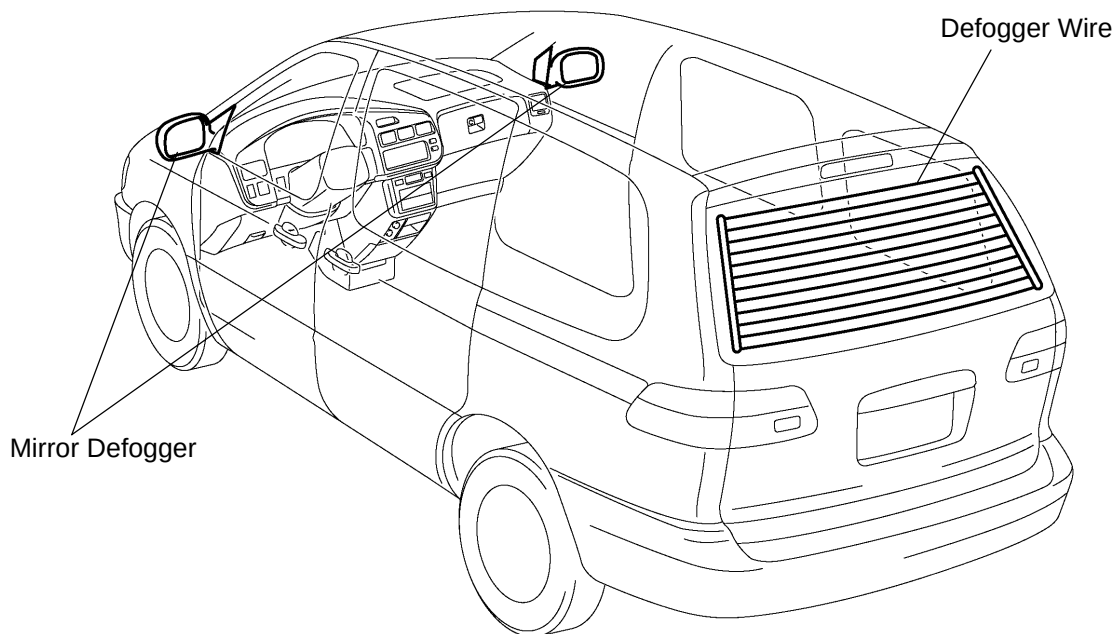


Driver Side J/B No.1

- DEF Fuse
- HEATER Fuse
- MIRROR-HEATER Fuse
- Defogger Relay

Ignition Switch

Defogger Switch



Mirror Defogger

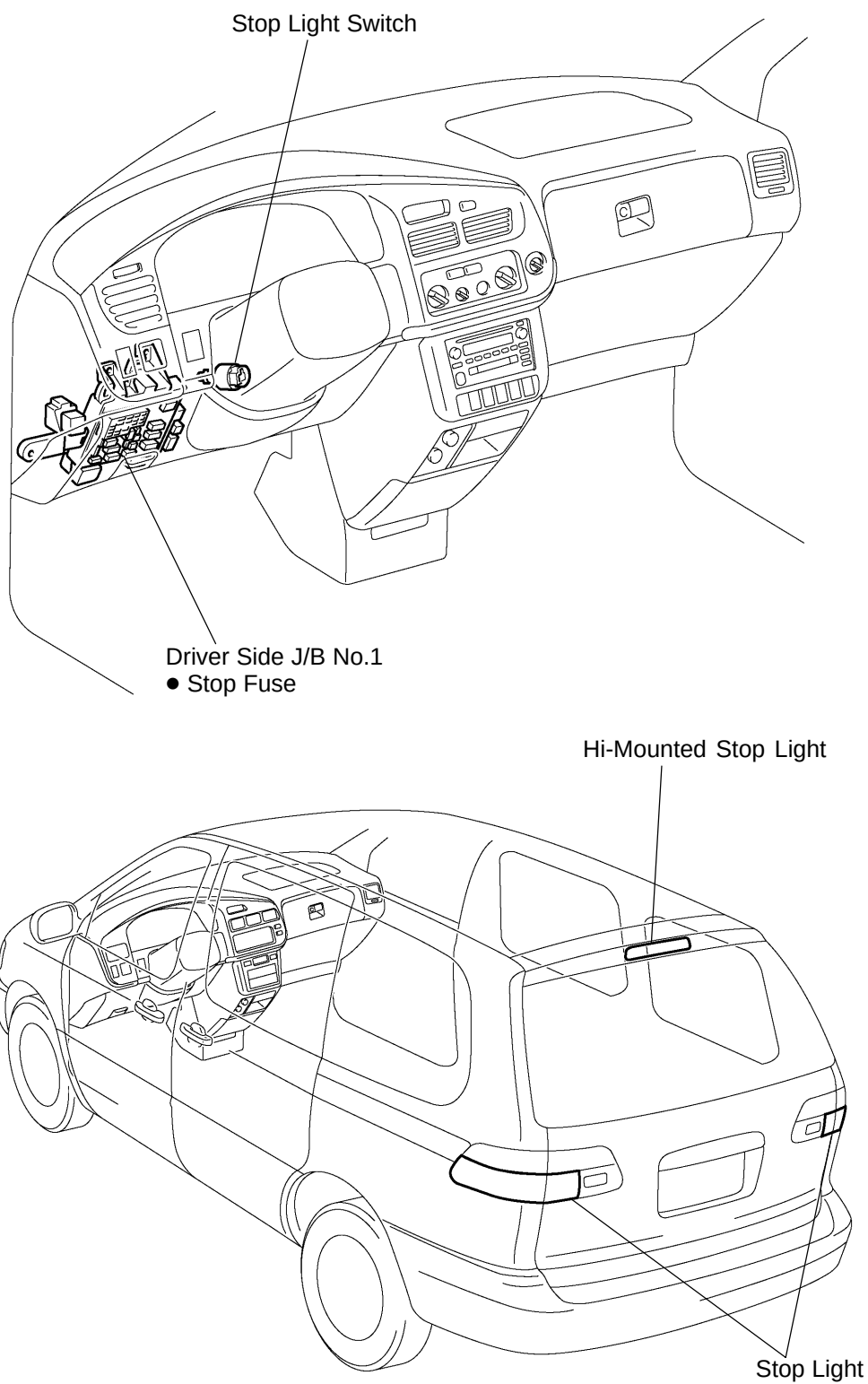
Defogger Wire

Y

I18864

STOP LIGHT SYSTEM LOCATION

BE0F8-03



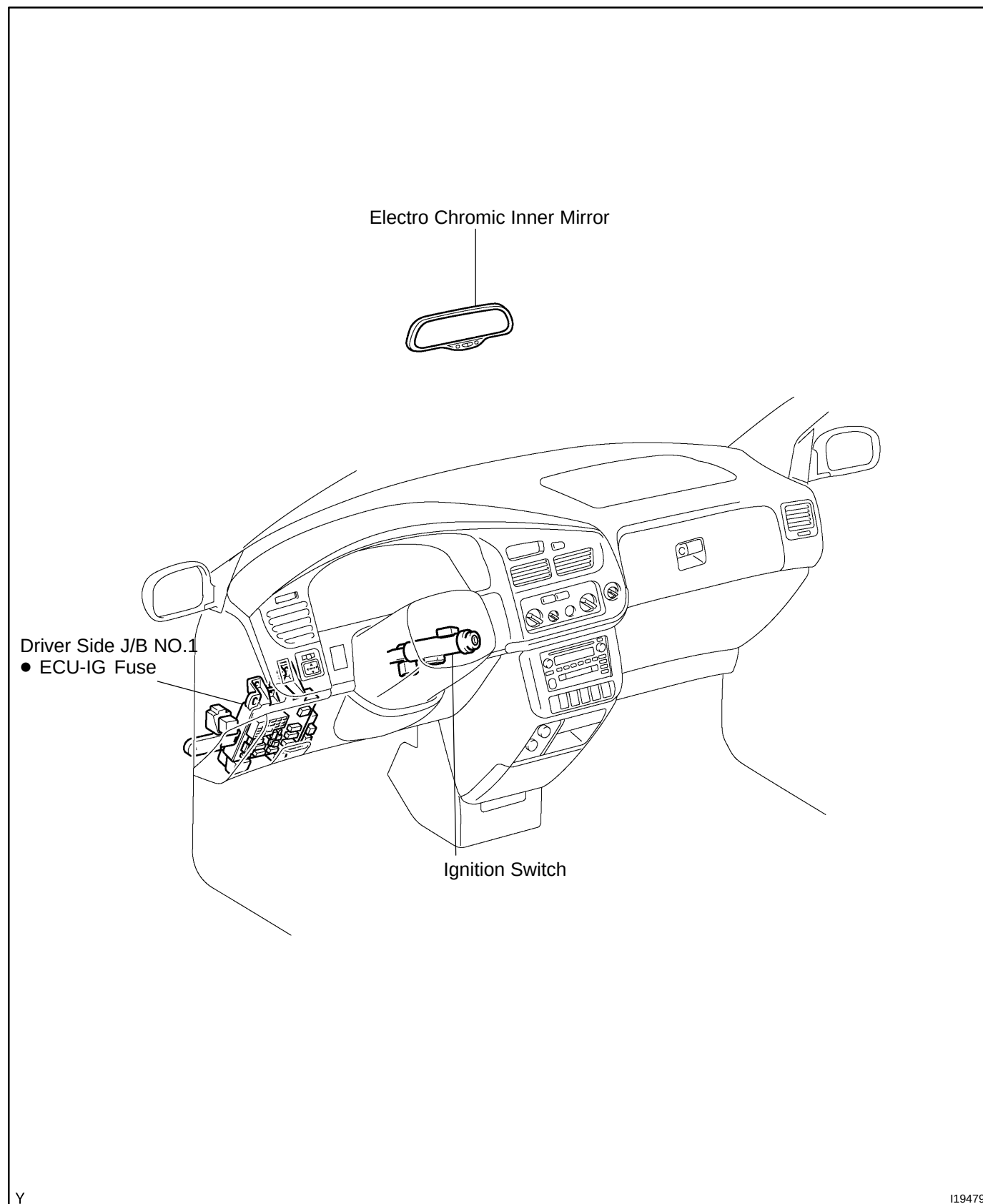
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I18861

ELECTRO CHROMIC MIRROR SYSTEM

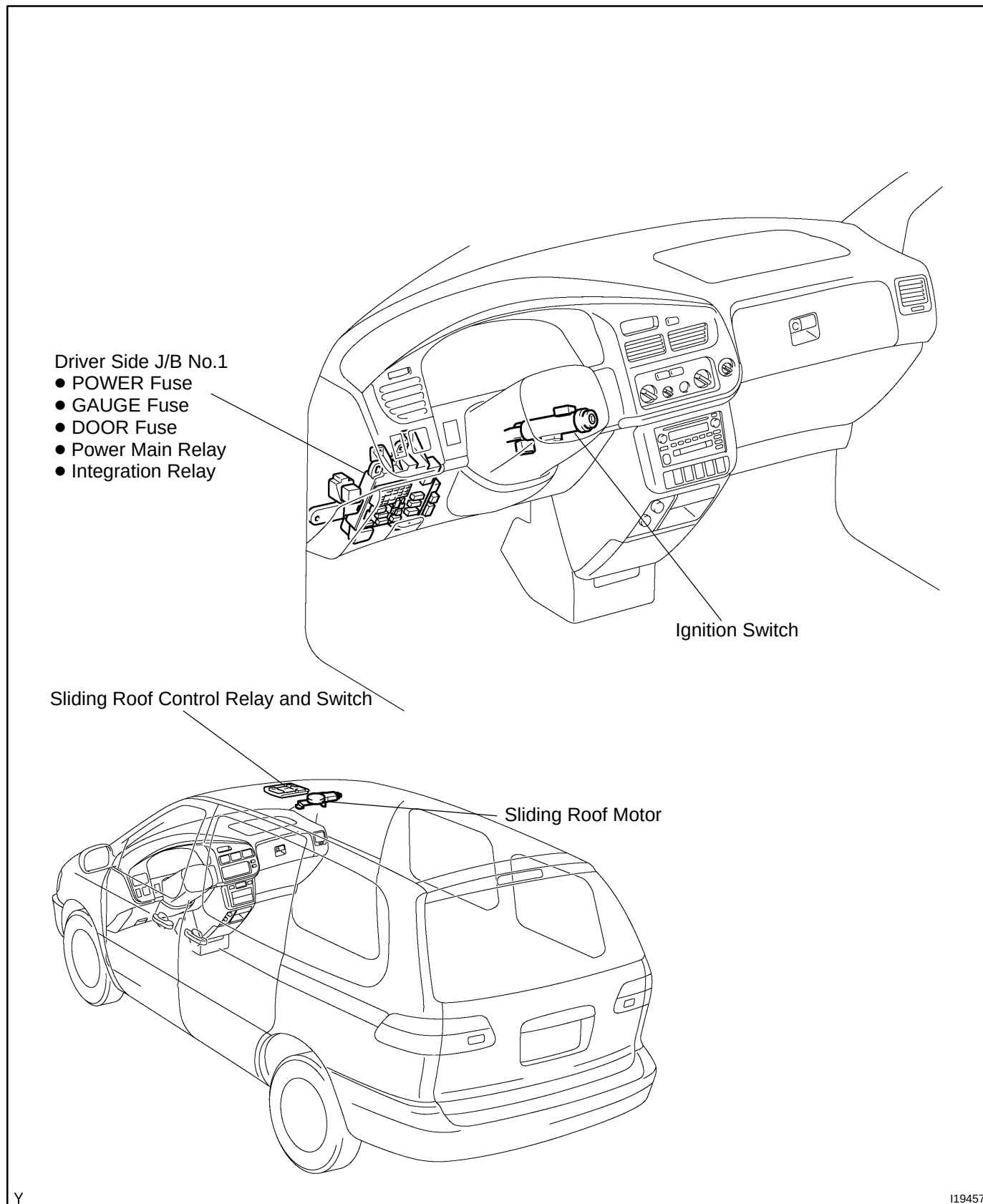
LOCATION

BE0CR-05



SLIDING ROOF SYSTEM LOCATION

BEOFN-02

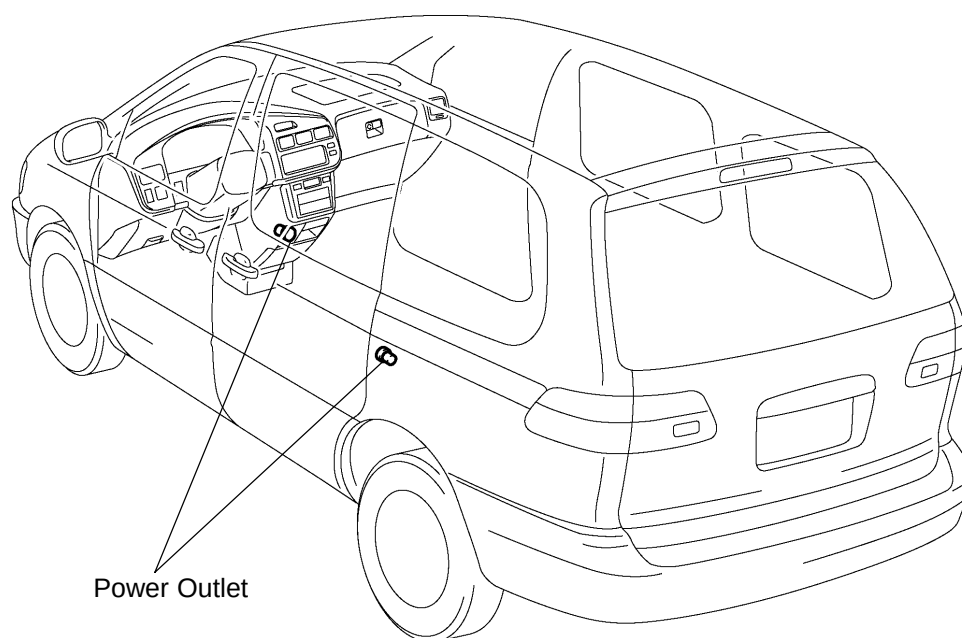


Y

I19457

POWER OUTLET LOCATION

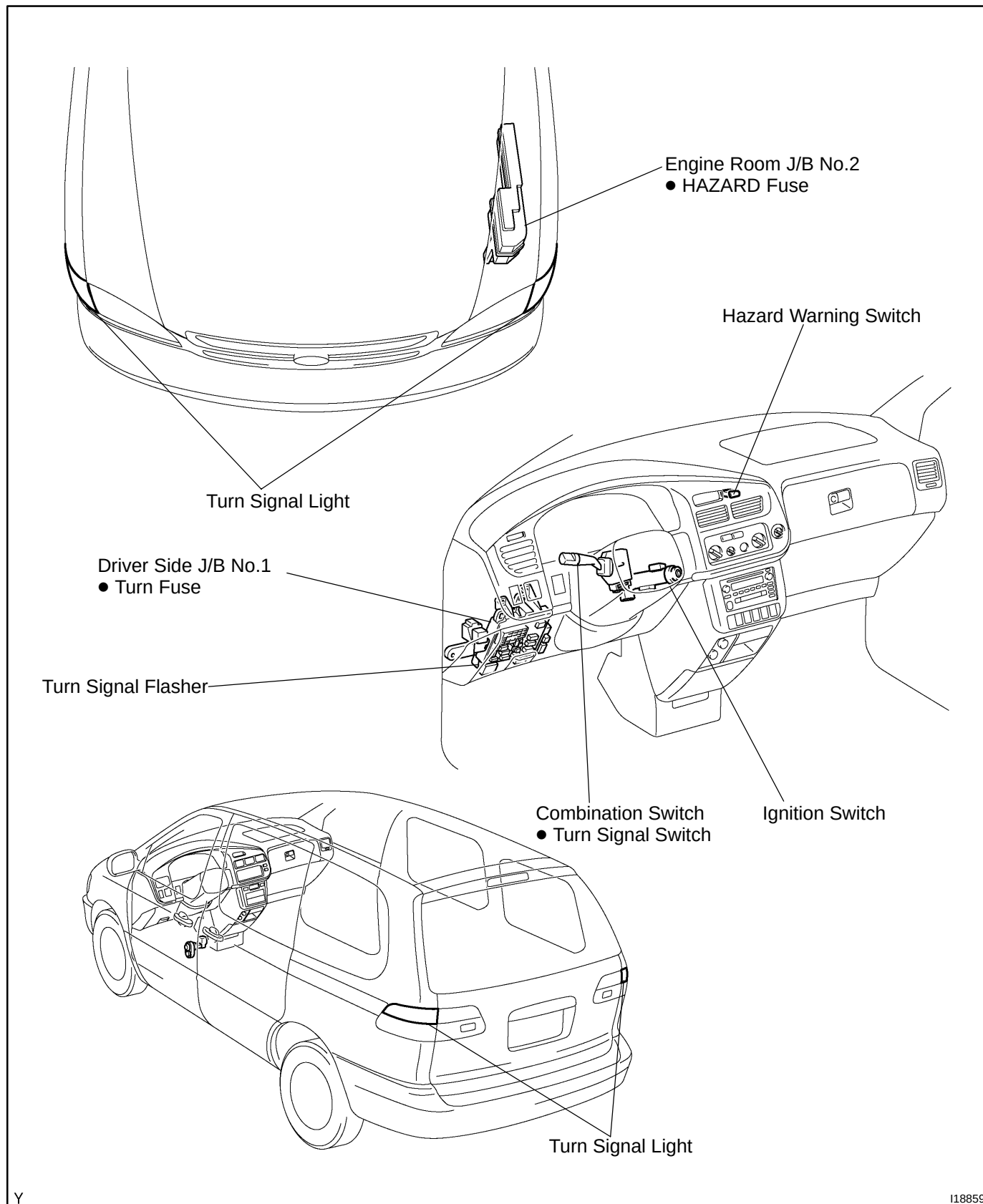
BE0EX-03



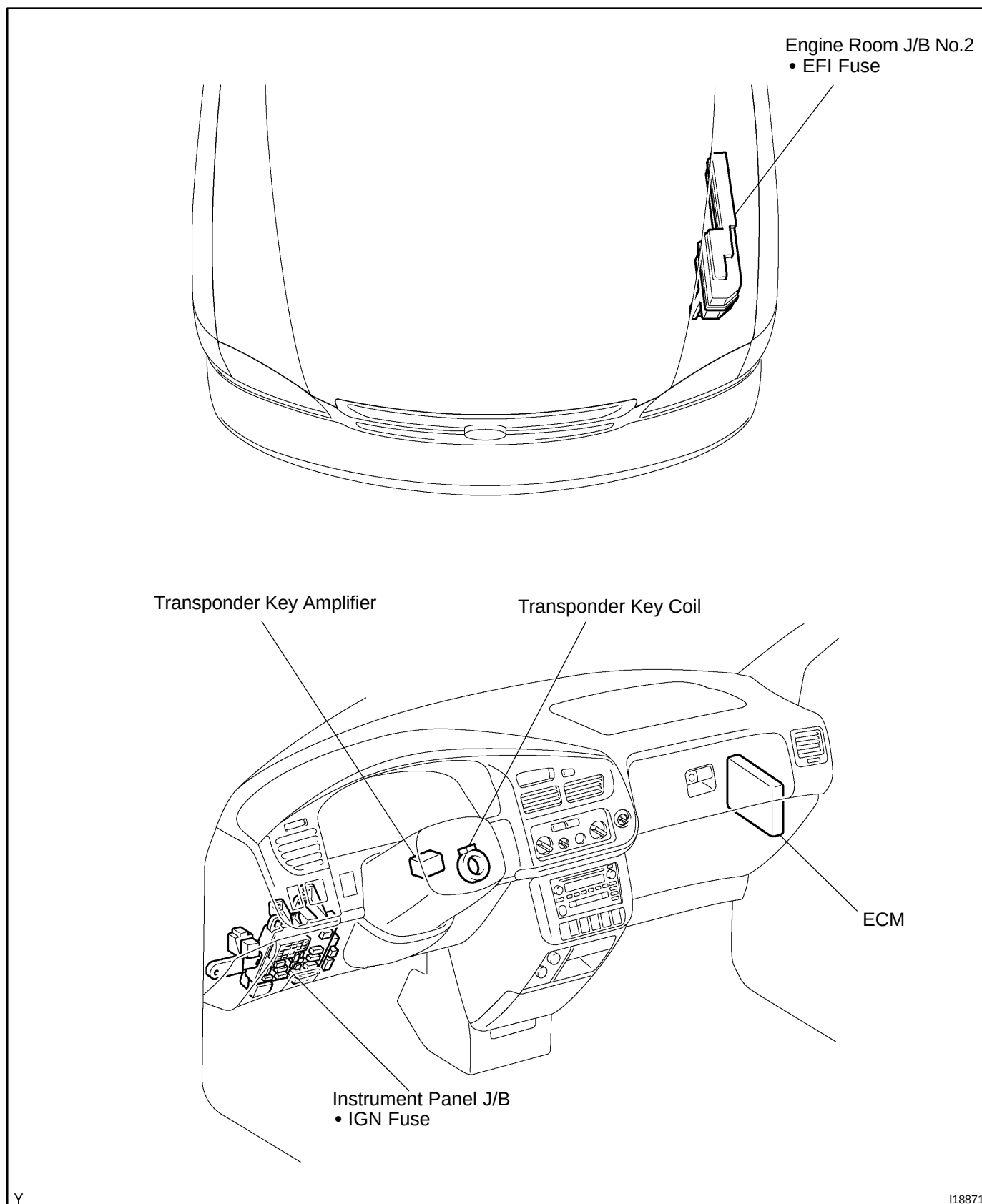
I03187

TURN SIGNAL AND HAZARD WARNING SYSTEM LOCATION

BE0F4-03

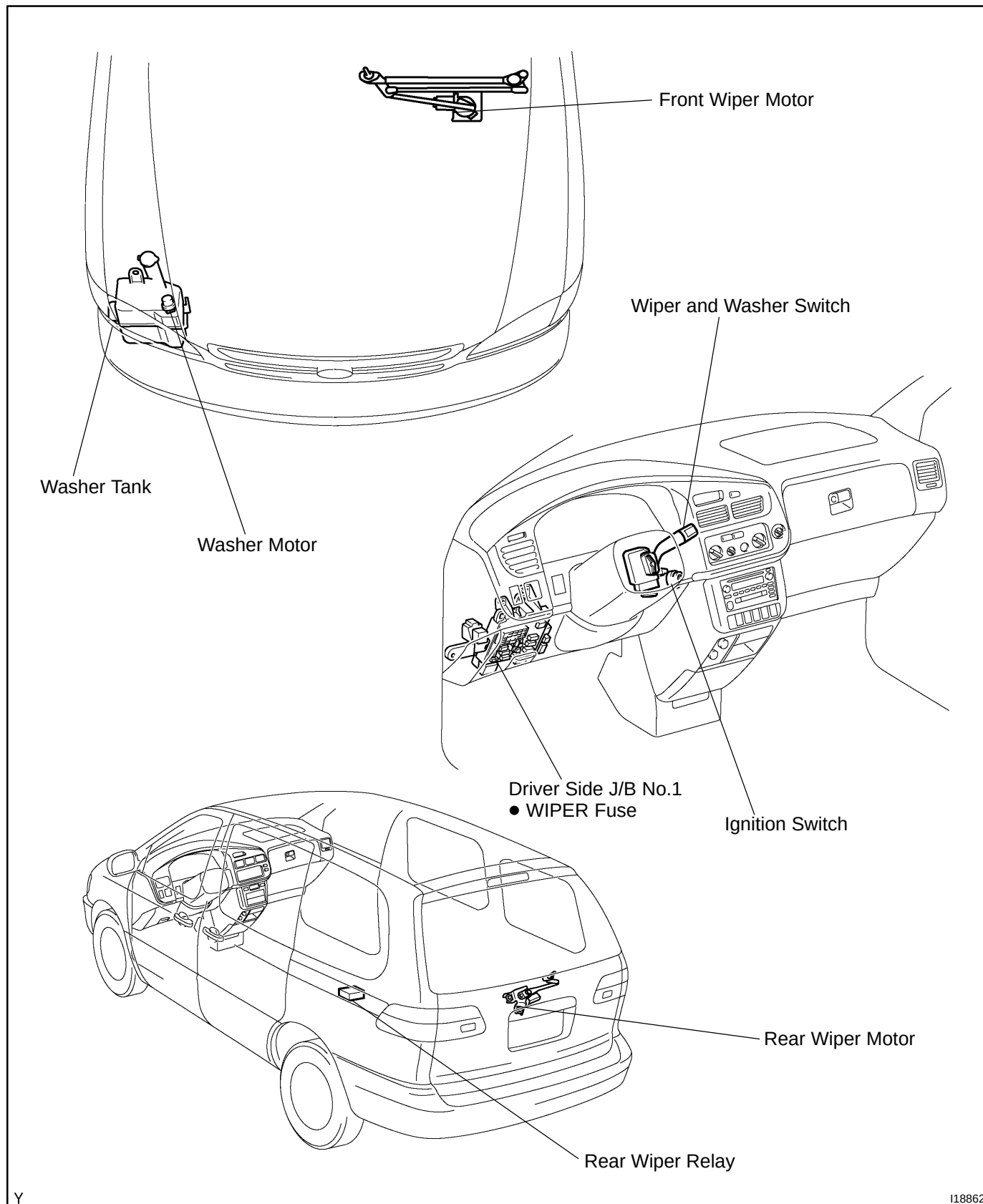


LOCATION



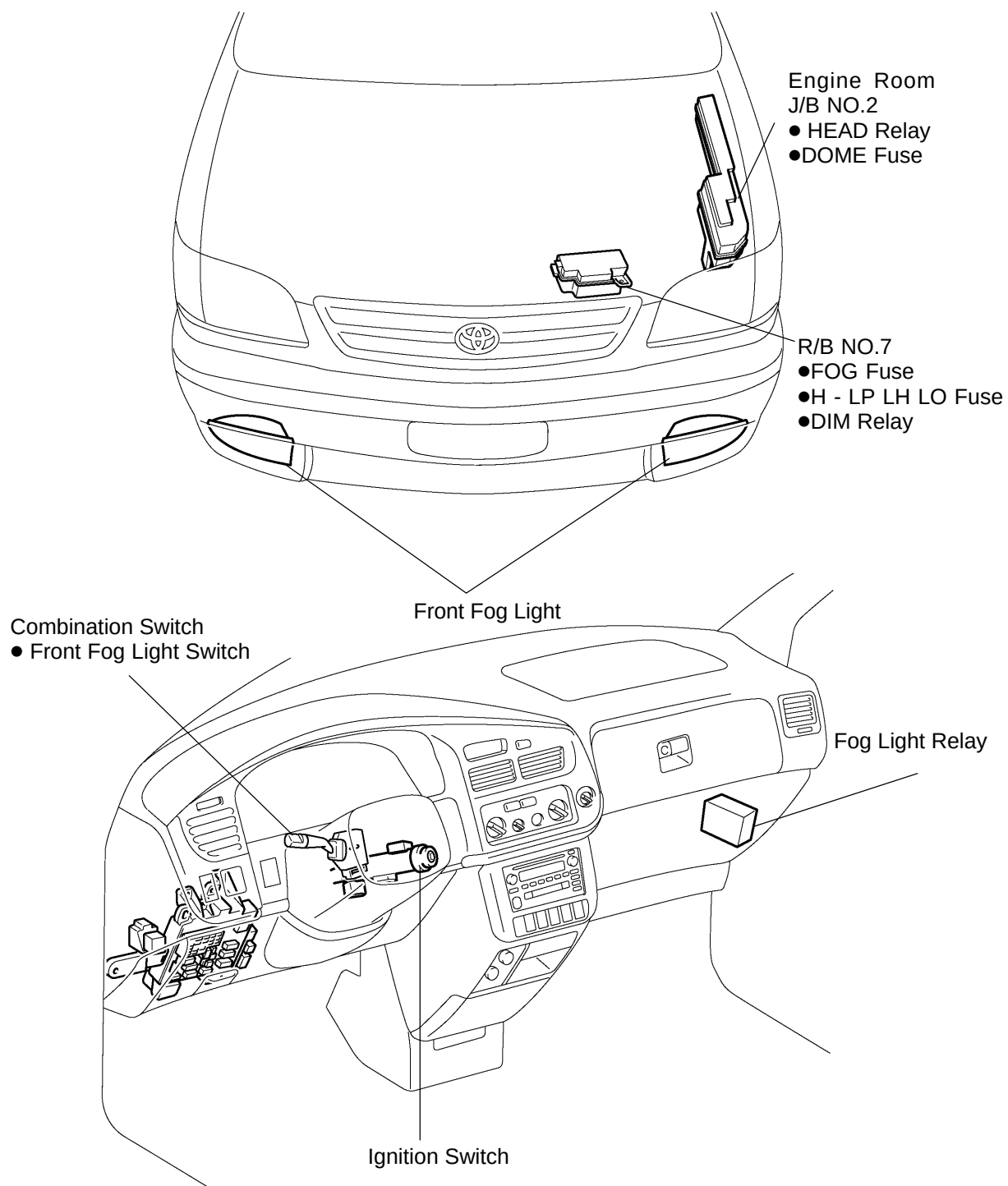
WIPER AND WASHER SYSTEM LOCATION

BE0FA-03



FOG LIGHT SYSTEM LOCATION

BE050-10



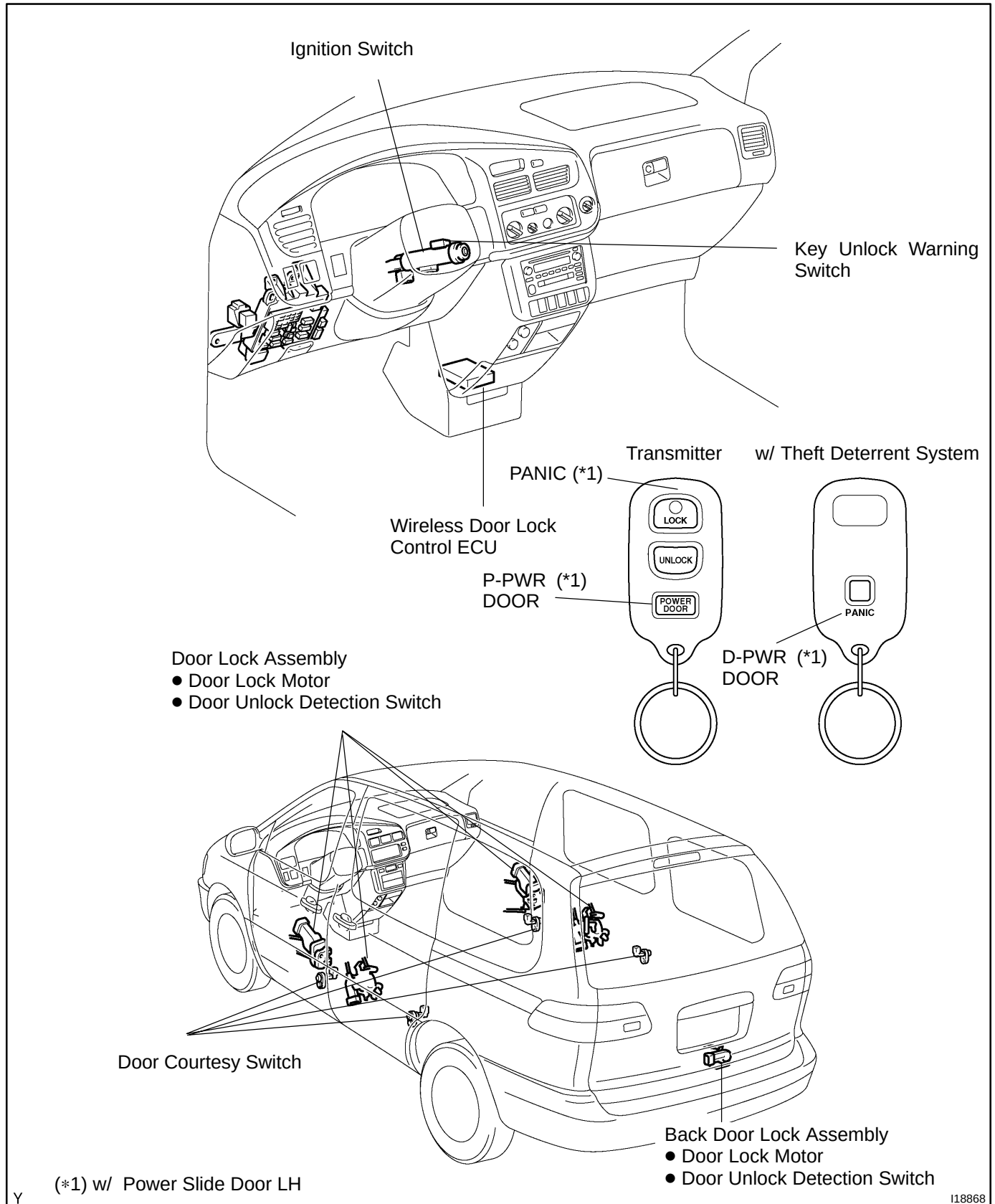
Y

I19458

WIRELESS DOOR LOCK CONTROL SYSTEM

LOCATION

BE0IL-11



BODY ELECTRICAL SYSTEM

BE0EU-01

PRECAUTION

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

3. AUDIO SYSTEM

- If the negative (-) terminal cable is disconnected from the battery, the preset AM, FM 1 and FM 2 stations stored in memory are erased, so make sure to note the stations and reset them after the negative (-) terminal cable is reconnected to the battery.
- If the negative (-) terminal cable is disconnected from the battery, the "ANTI-THEFT SYSTEM" will operate when the cable is reconnected, but the radio, tape player and CD player will not operate. Be sure to input the correct ID number so that the radio, tape player and CD player can be operated again.

4. MOBILE COMMUNICATION SYSTEM

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

PRE-CHECK

1. SELECTING COMPASS DISPLAY MODE

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

2. SETTING ZONE

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

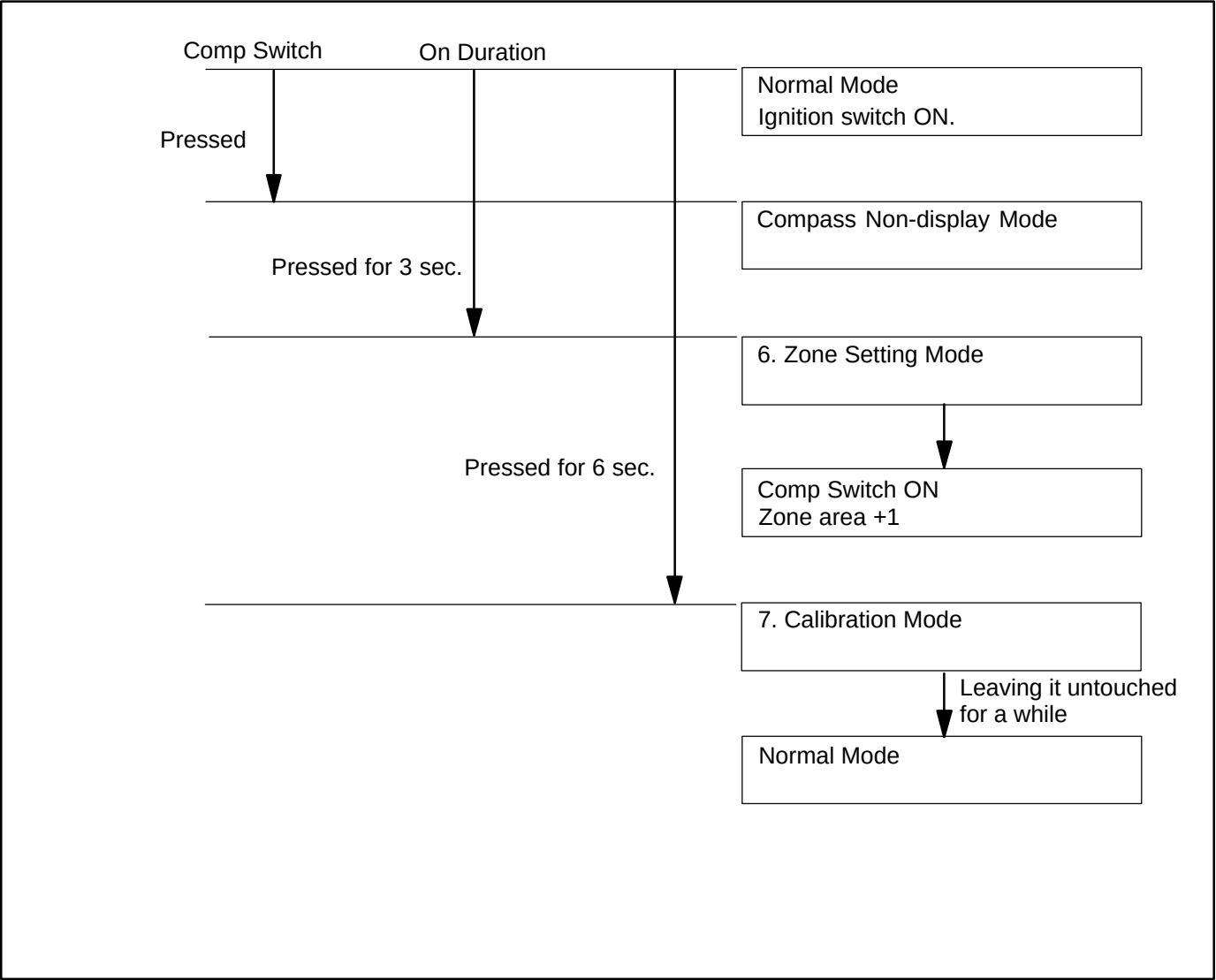
3. PERFORMING CALIBRATION

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

4. WHEN COMPASS MAGNETIZED:

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

5. SETTING COMPASS



6. ZONE SETTING MODE

- (a) Pressing the comp switch for 3 sec. from the normal mode will activate the zone setting mode. Showing a number (1-15) on the compass display.

HINT:

In the initial status, "8" is displayed.

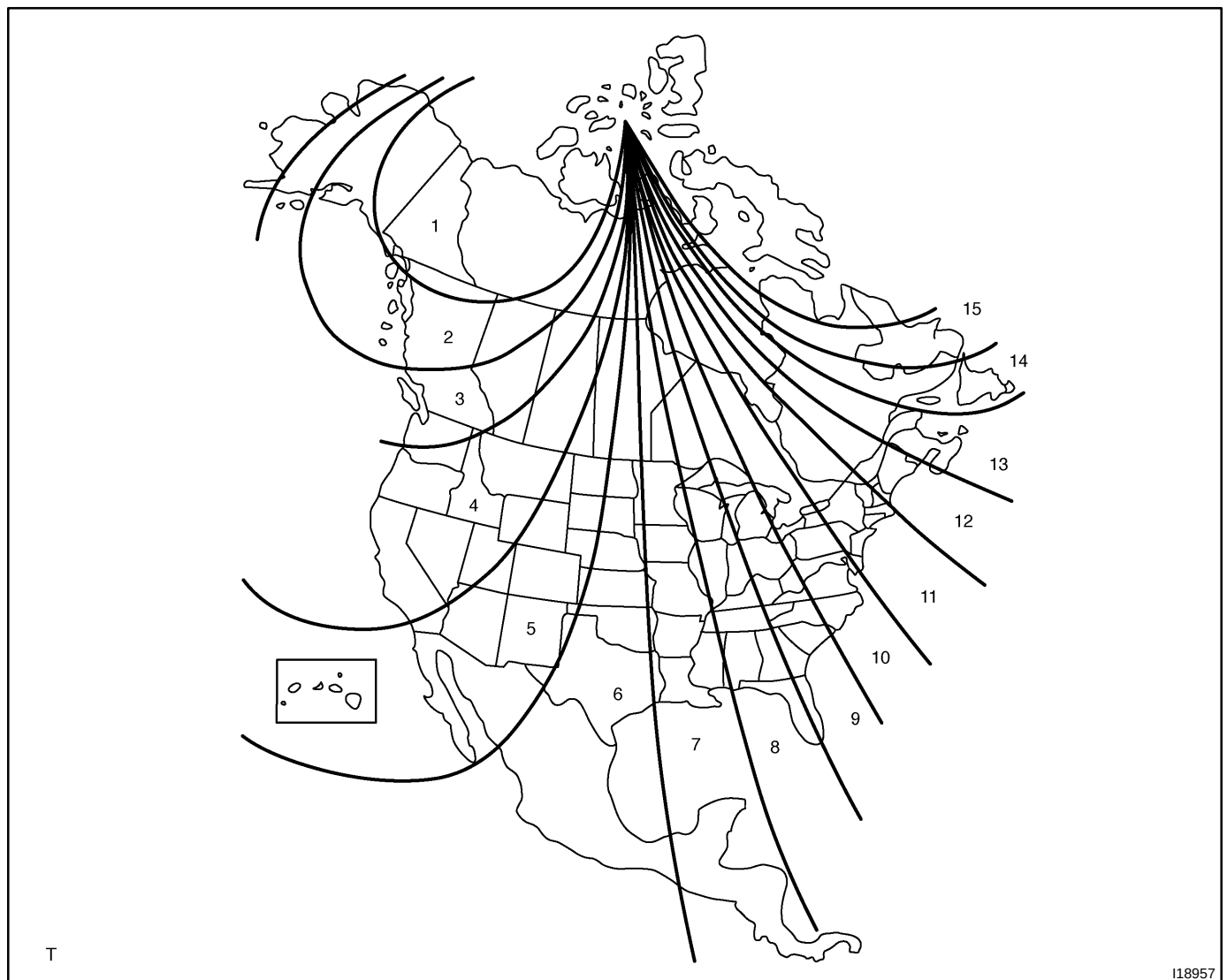
- (b) The displayed number increases +1 every time the comp switch is pressed. Referring to the map, check the number for the area where the vehicle will be used and set the zone number.
- (c) Leave it untouched for several seconds after setting and check that the compass display shows an azimuthal direction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

7. CALIBRATION SETTING MODE

- (a) Pressing the comp switch for 6 sec. from the normal mode will also activate this mode.
- (b) Drive the vehicle at a slow speed of 8 km/h (5 MPH) or less in the circular direction.
- (c) Driving round the circle 1 to 3 times will display the azimuthal direction on the display, completing the calibration.

HINT:

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



PRE-CHECK

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

Make the vehicle in the initialized condition:
The initialized condition is the condition when the following conditions are satisfied.
(1) Key plate has not been inserted in the ignition key cylinder.
(2) All the doors are closed. (Door warning light is off.)
(3) All the doors are locked.

Basic function check:

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

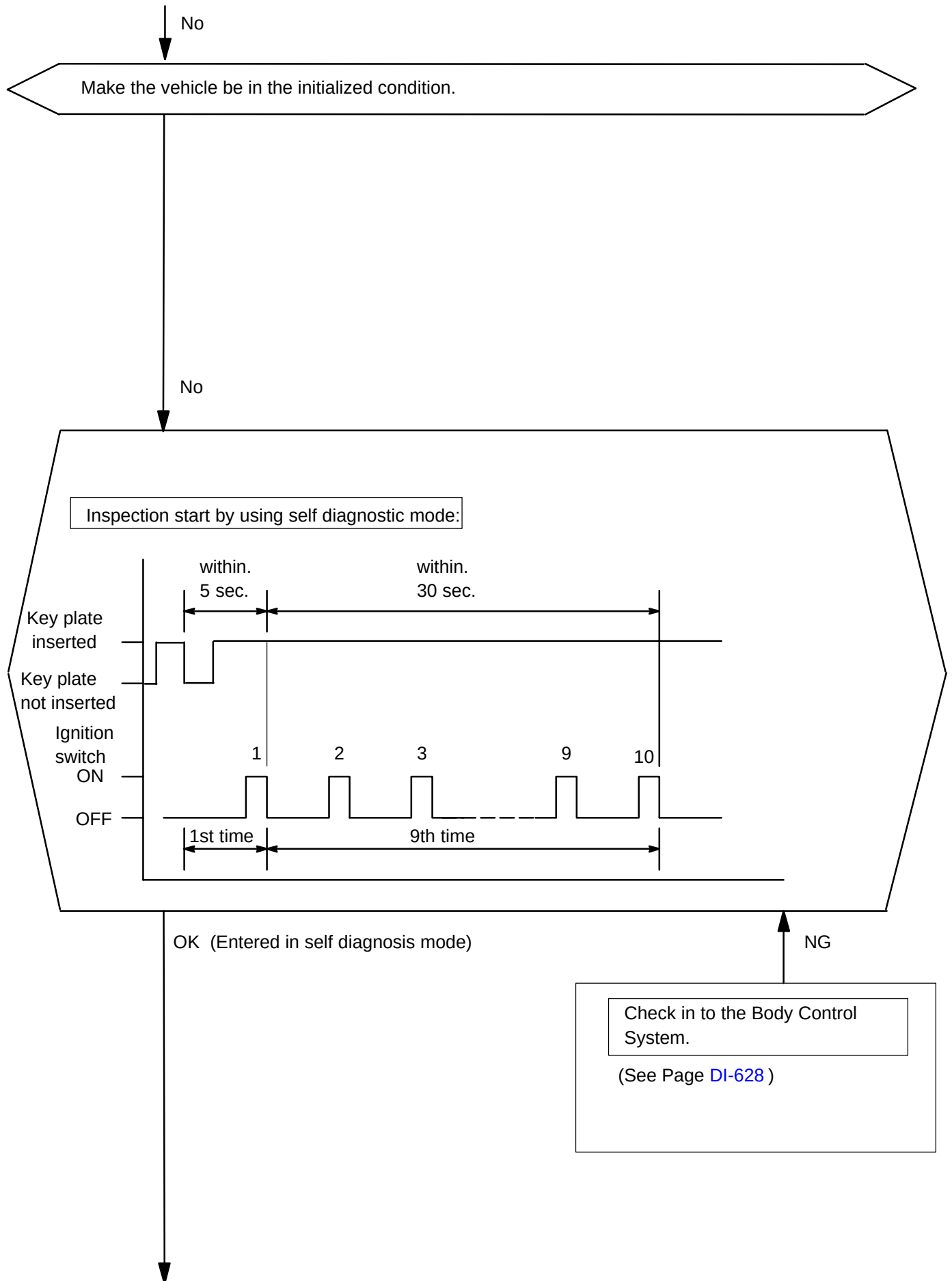
- Following procedures are standard operation.
(1) Keep about 1 M away to the right direction from the outside handle of a driver's seat.
(2) Face the transmitter toward the vehicle and press one of transmitter switches for about 1 sec.
<Reference>
- As of the security function, even the wireless function is normal, there may be the case that only UNLOCK operation will not work.

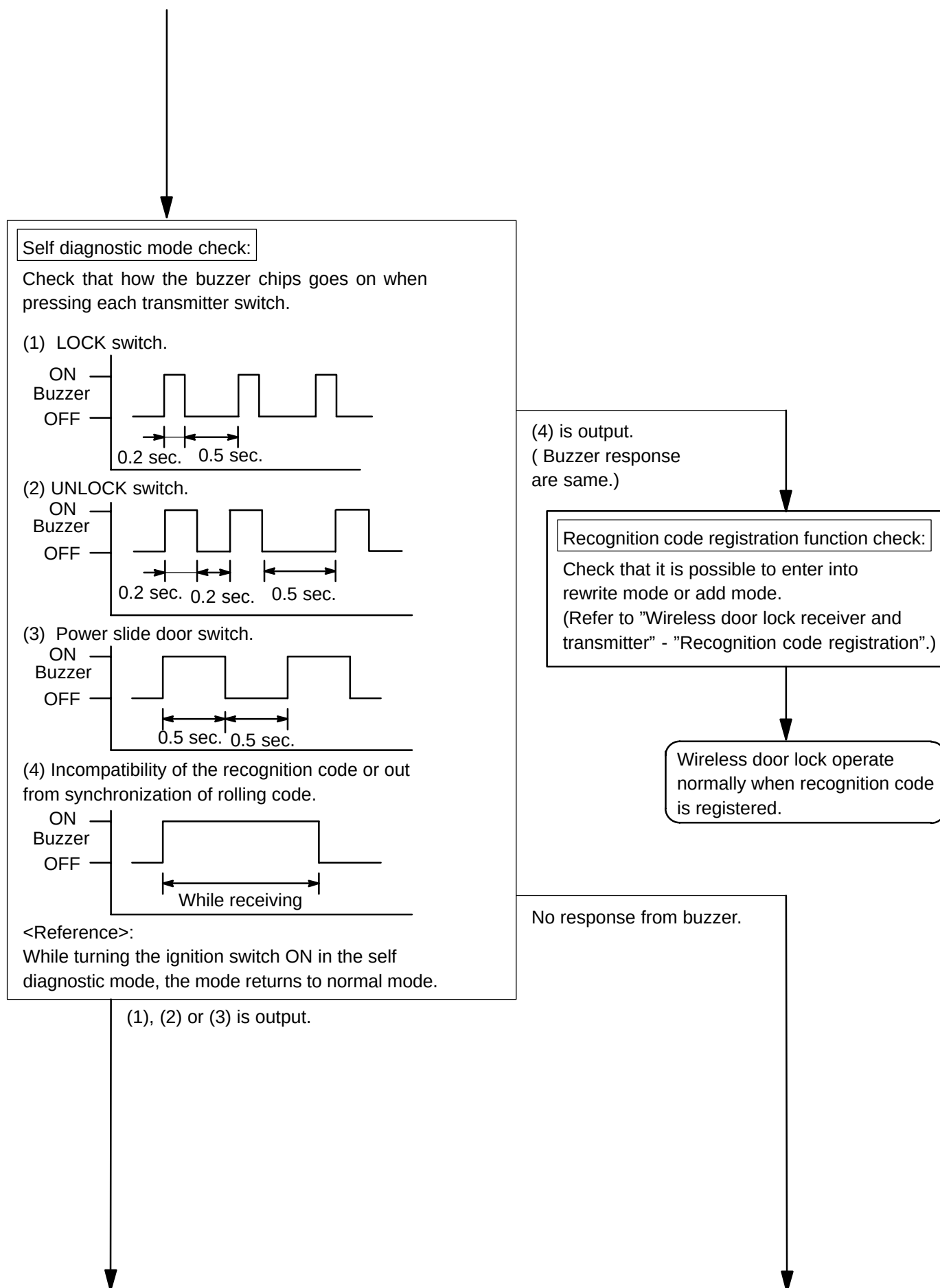
No

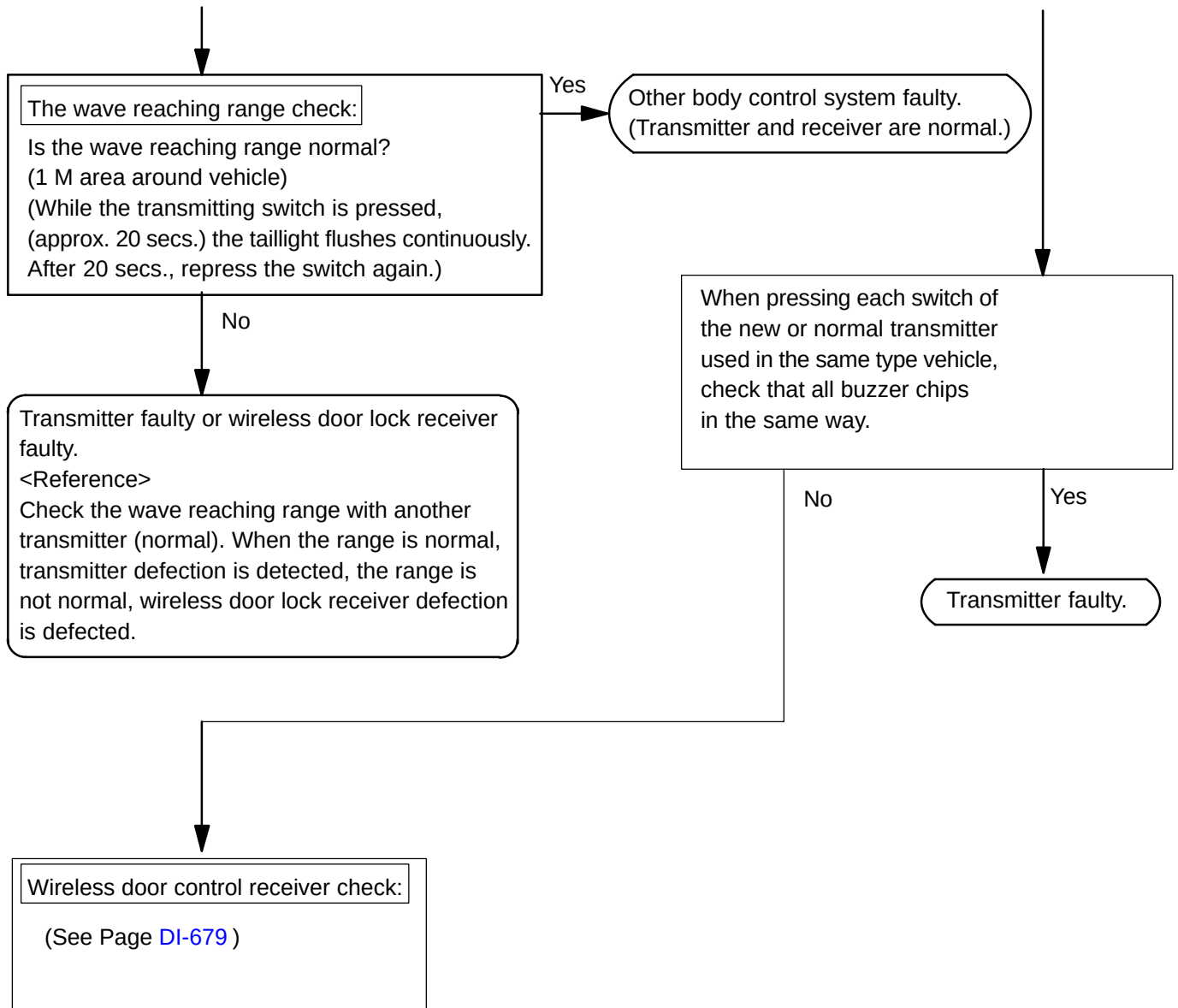
Yes

Normal
<Reference>

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







TROUBLESHOOTING

PROBLEM SYMPTOMS TABLE

BE0EV-05

POWER OUTLET:

Symptom	Suspect Area	See page
Electric power source cannot be taken out of the power outlet	1. Battery	-
	2. POWER OUTLET Fuse (I/P J/B No.1)	-
	3. Wire Harness	-

HEADLIGHT AND TAILLIGHT SYSTEM:

Symptom	Suspect Area	See page
Headlight does not light up (Taillight is normal)	1. Head Relay	BE-18
	2. DIM Relay	BE-18
	3. DRL Relay	BE-18
	4. Wire Harness	-
Headlight and taillight does not light up	1. Body ECU (Integration relay)	DI-628
	2. Light control Switch	BE-18
	3. Wire Harness	-
Only one side headlight does not light up	1. Headlight Bulb	-
	2. HEAD LO (LH, RH) Fuse (E/G Room R/B No.7)	-
	3. Wire Harness	-
"Lo-Beam" does not light up	1. Headlight Bulb	-
	2. HEAD LO (LH, RH) Fuse (E/G Room R/B No.7)	-
	3. Headlight Control Relay (E/G Room J/B No.2)	BE-18
	4. Body ECU (Integration Relay)	DI-628
	5. Light Control Switch	BE-18
	6. Wire Harness	-
"Hi-Beam" does not light up	1. Headlight Bulb	-
	2. ECU-B Fuse (E/G Room J/B No.2)	-
	3. HEAD HI (LH, RH) Fuse (E/G Room J/B No.2)	-
	4. DRL Relay (R/B No.7)	BE-18
	5. DIM Relay (R/B No.7)	BE-18
	6. Daytime Running Light Relay (Main)	BE-18
	7. Headlight Dimmer Switch	BE-18
	8. Wire Harness	-
"Flash" does not light up	1. Headlight Bulb	-
	2. ECU-B Fuse (E/G Room J/B No.2)	-
	3. HEAD HI (LH, RH) Fuse (E/G Room J/B No.2)	-
	4. DRL Relay (R/B No.7)	BE-18
	5. DIM Relay (R/B No.7)	BE-18
	6. Daytime Running Light Relay No.3 (E/G Room R/B No.2)	BE-18
	7. Headlight Dimmer Switch	BE-18
	8. Wire Harness	-
"Auto Turn-off System" does not operate.	1. GAUGE Fuse (Driver Side J/B No.1)	-
	2. DOME Fuse (E/G Room J/B No.2)	-
	3. Body ECU (Integration Relay)	DI-628
	4. Door Courtesy Switch (Driver's)	BE-31
	5. Ignition Switch	BE-15
	6. Wire Harness	-

BODY ELECTRICAL - TROUBLESHOOTING

Headlight does not light up with engine running and light control SW in OFF.	1. Headlight Bulb 2. ECU-B Fuse (E/G Room J/B No.2) 3. GAUGE Fuse (Driver Side J/B No.1) 4. HEAD HI (LH, RH) Fuse (E/G Room J/B No.2) 5. Daytime Running Light Relay (Main) 6. Wire Harness 7. Other Parts*	- - - - BE-18 - -
Taillight does not light up (Headlight is normal)	1. TAIL Fuse (Driver Side J/B No.1) 2. Taillight Control Relay (Driver Side J/B No.1) 3. Body ECU (Integration Relay) 4. Light Control Switch 5. Wire Harness	- BE-18 BE-15 BE-18 -
Only one side light does not light up	1. Bulb 2. Wire Harness	- -
Rear combination light does not light up	1. Bulb 2. Wire Harness	- -

*Terminal L of Generator and Parking Brake Switch

FOG LIGHT SYSTEM

Symptom	Suspect Area	See page
Fog light does not light up with light control SW HEAD (Headlight is normal.)	1. FOG Fuse (R/B NO.7) 2. H-LP LH LO Fuse (R/B NO.7) 3. Fog Light Relay 4. Head Relay (Engine Room J/B NO.2) 5. Fog Light Switch 6. Wire Harness	- - BE-26 BE-18 BE-26 -
Fog light does not light up with light control SW HEAD (Headlight does not light).	1. *1 Other Parts 2. Wire Harness	- -
Only one light does not light up.	1. Bulb 2. Wire Harness	- -

*1: Inspect Headlight System

TURN SIGNAL AND HAZARD WARNING SYSTEM:

Symptom	Suspect Area	See page
"Hazard" and "Turn" do not light up.	1. Hazard Fuse (Engine Room J/B NO.2) 2. Hazard Warning Switch 3. Turn Signal Flasher 4. Wire Harness	- BE-29 BE-29 -
The flashing frequency is abnormal.	1. Bulb 2. Turn Signal Flasher 3. Turn Signal Switch 4. Wire Harness	- BE-29 BE-29 -
Hazard warning light does not light up. (Turn is normal.)	1. Hazard Fuse (E/G Room J/B No.2) 2. Hazard Warning Switch 3. Wire Harness	- BE-29 -
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 (Driver Side J/B No.1) 3. Turn Signal Switch 4. Wire Harness	BE-15 - BE-29 -
*2Turn signal does not light up.	1. TURN Fuse (Driver Side J/B No.1) 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:

Symptom	Suspect Area	See page
"Illuminated Entry System" does not operate.	1. Door Courtesy Switch 2. Body ECU (Integration Relay) 3. Wire Harness	BE-31 DI-628 -
Only one interior light does not light up.	1. Bulb 2. Wire Harness	- -
Interior light does not light up (All).	1. DOME Fuse (E/G Room J/B No.2) 2. Wire Harness	- -
Dome light does not light up.	1. Bulb 2. Dome Light 3. Wire Harness	- BE-31 -
Map light does not light up.	1. Bulb 2. Front Interior Light 3. Wire Harness	- BE-31 -

BACK-UP LIGHT SYSTEM:

Symptom	Suspect Area	See page
Back-up Light does not light up.	1. Bulb 2. GAUGE Fuse (Driver Side J/B No.1) 3. Ignition Switch 4. Wire Harness	- - BE-15 -
Back-up Light remains always ON.	1. Park/Neutral Position Switch (A/T) 2. Wire Harness	DI-197 -
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 (Driver Side J/B No.1) 2. Stop Light Switch 3. Wire Harness	- BE-35 -
Only one light always lights up.	1. Wire Harness	-
Only one light does not light up	1. Bulb 2. Wire Harness	- -

WIPER AND WASHER SYSTEM:

Symptom	Suspect Area	See page
Wiper and washers does not operate.	1. WIPER Fuse (Driver Side J/B No.1) 2. Wiper Switch 3. Wiper Motor 4. Wire Harness	- BE-37 BE-37 -
Wipers do not operate in LO or HI.	1. Wiper Switch 2. Wiper Motor 3. Wire Harness	BE-37 BE-37 -

BODY ELECTRICAL - TROUBLESHOOTING

Wipers do not operate in INT.	1. Wiper Switch 2. Wiper Motor 3. Wire Harness	BE-37 BE-37 -
Washer motor does not operate.	1. Washer Switch 2. Washer Motor 3. Wire Harness	BE-37 BE-37 -
Wipers do not operate when washer switch is in ON.	1. Washer Motor 2. Wire Harness	BE-37 -
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-37 -
Rear wiper and washer does not operate.	1. Wiper Fuse (Driver Side J/B NO.1) 2. Rear Wiper Relay 3. Rear Wiper and washer Switch 4. Rear Wiper Motor 5. Wire Harness	- BE-37 BE-37 BE-37 -

*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. GAUGE Fuse (Driver Side J/B No.1) 2. Meter Circuit Plate 3. Wire Harness	- BE-43 -
Speedometer does not operate.	1. ABS ECU 2. Meter Circuit Plate 3. Wire Harness	IN-31 BE-43 -
Tachometer does not operate.	1. Igniter 2. Meter Circuit Plate 3. Wire Harness	IG-1 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-48 BE-48 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-48 BE-48 BE-43 -
All illumination lights do not light up.	1. PANEL Fuse (Driver Side J/B No.1) 2. Light Control Rheostat 3. Wire Harness	- BE-48 -
Brightness does not change even when rheostat is turned.	1. Bulb 2. Wire Harness	- -
Only one illumination light does not light up.	1. Bulb 2. Wire Harness	- -

COMBINATION METER (Warning Light):

Symptom	Suspect Area	See page
Warning lights do not light up. (Except Discharge, Open Door and SRS)	1. GAUGE Fuse (Driver Side J/B No.1) 2. Meter Circuit Plate 3. Wire Harness	- BE-43 -

Low oil pressure warning light does not light up.	1. Bulb 2. Low Oil Pressure Warning Switch 3. Meter Circuit Plate 4. Wire Harness	- BE-48 BE-43 -
Fuel level warning light does not light up.	1. Bulb 2. Fuel Level Warning Switch 3. Meter Circuit Plate 4. Wire Harness	- BE-48 BE-43 -
ABS warning light does not light up.	1. Bulb 2. ABS ECU 3. Wire Harness	- DI-250 -
Seat belt warning light does not light up.	1. Bulb 2. Retractor switch 3. Body ECU (Integration Relay) 4. Wire Harness	- BE-48 DI-628 -
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-48 BE-48 BE-48 BE-43 -
SRS warning light does not light up.	1. ECU-B Fuse (E/G Room J/B No.2) 2. Bulb 3. Airbag Sensor Assembly 4. Meter Circuit Plate 5. Wire Harness	- - DI-490 BE-43 -
Open door warning light does not light up.	1. DOME Fuse (E/G Room J/B No.2) 2. Bulb 3. Door Courtesy Switch 4. Meter Circuit Plate 5. Wire Harness	- - BE-31 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-48 BE-43 -

COMBINATION METER (Indicator Light):

Symptom	Suspect Area	See page
O/D OFF indicator light does not light up.	1. Bulb 2. O/D OFF Switch 3. Meter Circuit Plate 4. Wire Harness	- DI-204 BE-43 -
Cruise control indicator light does not light up.	1. Bulb 2. Cruise Control ECU 3. Meter Circuit Plate 4. Wire Harness	- DI-601 BE-43 -
High beam indicator light does not light up.	1. Bulb 2. Meter Circuit Plate 3. Wire Harness 4. Headlight System	- BE-43 - BE-18
Turn indicator light does not light up.	1. Bulb 2. Meter Circuit Plate 3. Wire Harness 4. Turn Signal and Hazard Warning System	- BE-43 - BE-29

BODY ELECTRICAL - TROUBLESHOOTING

Shift indicator lights do not light up.	1. Bulb 2. Meter Circuit Plate 3. Park/Neutral Position Switch 4. Wire Harness	- BE-43 DI-197 -
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	- - BE-43 -
Indicator lights do not light up. (Except Turn, Hi-beam and security)	1. GAUGE Fuse (Driver Side J/B No.1) 2. Wire Harness	- -

DEFOGGER SYSTEM:

Symptom	Suspect Area	See page
All defogger systems do not operate.	1. DEF Fuse (Driver Side J/B No.1) 2. HTR Fuse (Driver Side J/B No.1) 3. Defogger Relay (Driver Side J/B No.1) 4. Defogger Switch 5. Wire Harness	- - BE-61 BE-61 -
Rear window defogger does not operate.	1. Defogger Wire 2. Choke Coil 3. Wire Harness	BE-61 - -
Mirror defogger does not operate.	1. MIR/HTR Fuse (Driver Side J/B No.1) 2. Mirror Defogger 3. Wire Harness	- BE-61 -

POWER WINDOW CONTROL SYSTEM:

Symptom	Suspect Area	See page
Power window does not operate (ALL). (Power Door Lock does not operate)	1. POWER Fuse (Driver Side J/B No.1) 2. Power Relay (Driver Side J/B No.1) 3. Wire Harness	- BE-65 -
Power window does not operate (ALL). (Power Door Lock is normal)	1. Ignition Switch 2. Power Window Master Switch 3. Wire Harness	BE-15 BE-65 -
"One Touch Power Window System" does not operate.	1. Power Window Master Switch	BE-65
Only one window glass does not move.	1. Power Window Master Switch 2. Power Window Switch 3. Power Window Motor 4. Wire Harness	BE-65 BE-65 BE-65 -
"Window Lock System" does not operate.	1. Power Window Master Switch	BE-65
"Window Lock Illumination" does not light up.	1. Power Window Master Switch	BE-65
Key-off power window does not operate.	1. GAUGE Fuse (Driver Side J/B No.1) 2. Body ECU (Integration Relay) 3. Ignition Switch 4. Door Courtesy Switch 5. Wire Harness	- DI-628 BE-15 BE-31 -

POWER DOOR LOCK CONTROL SYSTEM:

Symptom	Suspect Area	See page
"Door lock system" does not operate at all.	1. POWER Fuse (Driver Side J/B No.1) 2. GAUGE Fuse (Driver Side J/B No.1) 3. DOOR Fuse (Driver Side J/B No.1) 4. Body ECU (Integration Relay) 5. Wire Harness	- - - DI-628 -

Door lock system does not operate by manual switch.	1. Power Window Master Switch 2. Door Lock Manual Switch 3. Body ECU (Integration Relay) 4. Wire Harness	BE-73 BE-73 DI-628 -
Door lock system does not operate by door key.	1. Door Key Lock and Unlock Switch 2. Body ECU (Integration Relay) 3. Wire Harness 4. Door Lock Link Disconnected	BE-73 DI-628 - -
Fault in 2-Operation unlock function of Driver's side door key lock and unlock switch.	1. Door Key Lock and Unlock Switch 2. Body ECU (Integration Relay) 3. Wire Harness	BE-73 DI-628 -
Fault in key confine prevention operate.	1. Body ECU (Integration Relay) 2. Key Unlock Warning Switch 3. Door Courtesy Switch 4. Wire Harness	DI-628 BE-15 BE-31 -
Only one door lock does not operate.	1. Door Lock Motor 2. Wire Harness	BE-73 -

WIRELESS DOOR LOCK CONTROL SYSTEM:**HINT:**

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

Symptom	Suspect Area	See page
All functions of wireless door lock control system do not operate.	1. Door Courtesy Switch 2. Door Key Lock and Unlock Switch 3. Key Unlock Warning Switch 4. Body ECU (Integration Relay) 5. Wire Harness 6. Wireless Door Lock Receiver	BE-31 BE-73 BE-15 DI-628 - BE-85
Only door unlock operation is not possible (Lock operation is possible).	1. Door key Lock and Unlock Switch 2. Door Unlock Detection Switch 3. Body ECU (Integration Relay) 4. Wire Harness 5. Wireless Door Lock Receiver	BE-73 BE-73 DI-628 - BE-85
Only door lock operation is not possible (Unlock operation is possible).	1. Door key Lock and Unlock Switch 2. Body ECU (Integration Relay) 3. Wire Harness 4. Wireless Door Lock Receiver	BE-73 DI-628 - BE-85
Only key confinement prevention function is not possible.	1. Key Unlock Warning Switch 2. Body ECU (Integration Relay) 3. Wire Harness 4. Wireless Door Lock Receiver	BE-15 DI-628 - BE-85
Only power side door of wireless door lock control system does not operate.	1. Slide Door ECU Communication circuit 2. Body ECU (Integration Relay) 3. Wire Harness 4. Wireless Door Lock Receiver 5. Power Slide Door Control ECU	IN-21 DI-628 - BE-85 DI-501

BODY ELECTRICAL - TROUBLESHOOTING

Wireless door lock function operates even when each door is opened. Automatic lock function operates even if any door is opened within 30 seconds after all doors are unlocked by wireless door lock control system.	1. Door Courtesy Switch 2. Body ECU (Integration Relay) 3. Wire Harness 4. Wireless Door Lock Receiver	BE-31 DI-628 - BE-85
Wireless door lock functions incorrectly. (Although one door is unlocked, when the transmitter switch is pressed, all doors are unlocked.)	1. Door Unlock Detection Switch 2. Body ECU (Integration Relay) 3. Wire Harness 4. Wireless Door Lock Receiver	BE-73 DI-628 - BE-85
Warning operation will not be performed even if the panic button is pressed.	1. Body ECU (Integration Relay) 2. Wire Harness 3. Wireless Door Lock Receiver 4. Theft Deterrent ECU Communication Circuit	DI-628 - BE-85 -

SLIDING ROOF SYSTEM:

Symptom	Suspect Area	See page
Sliding roof system does not operate. (Door Lock does not operate)	1. POWER Fuse (Driver Side J/B No.1) 2. Power Relay (Driver Side J/B No.1) 3. Wire Harness	- BE-65 -
Sliding roof system does not operate. (Door Lock is normal)	1. Ignition Switch 2. Sliding Roof Control Relay and Switch 3. Sliding Roof Motor and Limit Switch 4. Wire Harness	BE-15 BE-95 BE-95 -
Sliding roof system operates abnormally.	1. Sliding Roof Control Relay and Switch 2. Sliding Roof Motor and Limit Switch 3. Wire Harness	BE-95 BE-95 -
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-95 BE-95 -
"Key-off Sliding Roof" operation does not operate.	1. DOME Fuse (E/G Room J/B No.2) 2. GAUGE Fuse (J/B No.1) 3. Ignition Switch 4. Body ECU (Integration Relay) 5. Wire Harness	- - BE-15 DI-628 -

POWER SEAT CONTROL SYSTEM:

Symptom	Suspect Area	See page
Power seat does not operate. (Door lock system does not operate)	1. POWER Fuse (Driver Side J/B No.1) 2. Power Seat Switch 3. Power Seat Motor 4. Wire Harness	- BE-99 BE-99 -
Power seat does not operate. (Door lock system is normal)	1. Power Seat Switch 2. Wire Harness	BE-99 -
"Slide operation" does not operate.	1. Power Seat Switch 2. Wire Harness 3. Slide Motor	BE-99 - BE-99
"Lifter operation" does not operate.	1. Power Seat Switch 2. Wire Harness 3. Lifter Motor	BE-99 - BE-99
"Reclining operation" does not operate.	1. Power Seat Switch 2. Wire Harness 3. Reclining Motor	BE-99 - BE-99

POWER MIRROR CONTROL SYSTEM:

Symptom	Suspect Area	See page
Mirror does not operate.	1. CIG Fuse (Driver Side J/B No.1) 2. Mirror Switch 3. Mirror Motor 4. Wire Harness	- BE-102 BE-102 -
Mirror operates abnormally.	1. Mirror Switch 2. Mirror Motor 3. Wire Harness	BE-102 BE-102 -

ELECTRO CHROMIC MIRROR SYSTEM

Symptom	Suspect Area	See page
Electro Chromic Inner Mirror does not operate.	1. GAUGE Fuse (Driver Side J/B NO.1) 2. Electro Chromic Inner Mirror 3. Wire Harness	- BE-106 -
Electro Chromic Outer Mirror does not operate.	1. GAUGE Fuse (Driver Side J/B NO.1) 2. Electro Chromic Outer Mirror 3. Electro Chromic Inner Mirror 4. Wire Harness	- BE-106 BE-106 -

SEAT HEATER SYSTEM

Symptom	Suspect Area	See page
Seat heaters do not operate. (Driver's and Passenger's)	1. GAUGE Fuse (Driver Side J/B NO.1) 2. SEAT HTR Relay 3. Seat Heater Switch (D, P) 4. Wire Harness 5. Seat Heater	- BE-108 BE-108 - BE-108
Driver's seat heater does not operate.	1. Seat Heater Switch (D, P) 2. Wire Harness	BE-108 -
Passenger's seat heater does not operate.	1. Seat Heater Switch (D, P) 2. Wire Harness	BE-108 -
Seat heater temperature is too hot.	Seat Heater	BE-108

AUDIO SYSTEM

Symptom	Suspect Area	See page
Audio system abnormal operation.	TROUBLESHOOTINGS	BE-114

CLOCK SYSTEM

Symptom	Suspect Area	See page
Passenger seat belt warning system does not light up.	TROUBLESHOOTING NO.1	BE-140
Clock will not operate.	TROUBLESHOOTING NO.1	BE-140
Clock loses or gains time.	TROUBLESHOOTING NO.2	BE-140

GARAGE DOOR OPENER SYSTEM

Symptom	Suspect Area	See page
The equipment of which code has been registered does not operate.	1. Garage Door Opener Switch 2. Wire Harness 3. *	BE-147 - -
LED does not light up. (Even though either switch is pressed.)	1. Garage Door Opener Switch 2. Wire Harness	BE-147 -
LED does not light up. (Only one switch is pressed.)	Garage Door Opener Switch	BE-147

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

ENGINE IMMOBILIZER SYSTEM

Symptom	Suspect Area	See page
Engine immobilizer system does not operate.	See DIAGNOSIS SYSTEM	DI-606

ENGINE IMMOBILISER SYSTEM

REGISTRATION PROCEDURE

HINT:

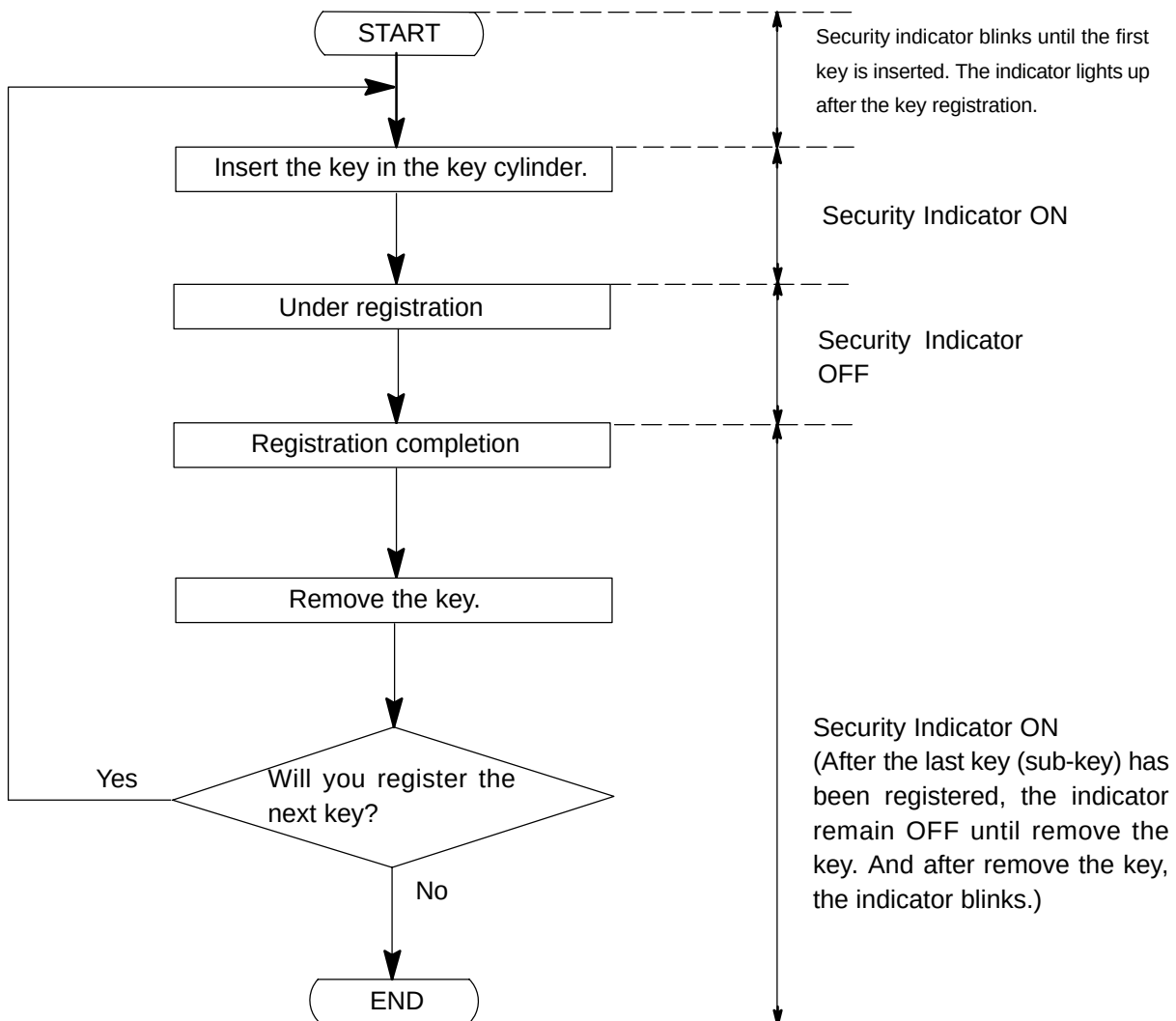
In case of having lost all the already registered master keys, you are not able to do additional registration or deletion. Change the engine and ECT ECU and then must register the new key codes according to the following registration procedure of the automatic registration mode.

1. KEY REGISTRATION IN AUTOMATIC REGISTRATION MODE

(a) Registration of a new transponder key.

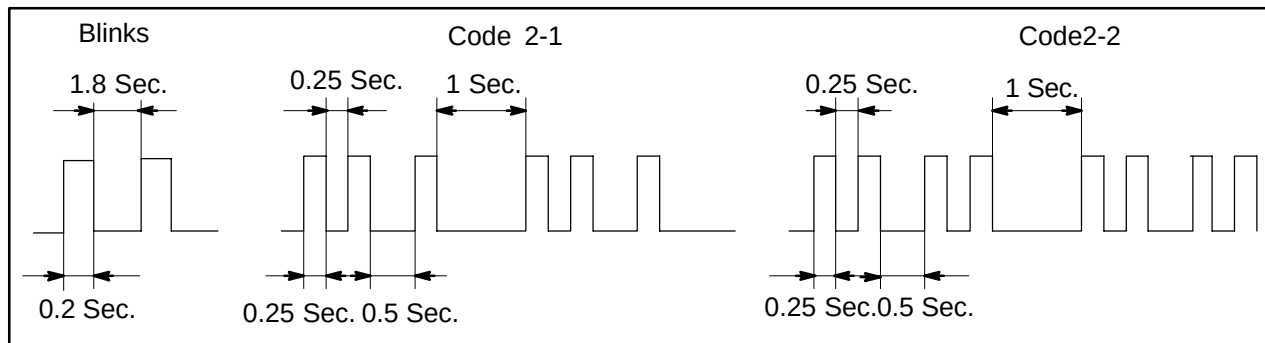
HINT:

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



HINT:

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

**(b) Automatic registration mode completion**

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

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

- (1) Depress and release brake pedal 5 times or more within 15 sec.
- (2) With the hand-held tester, require automatic registration mode completion.

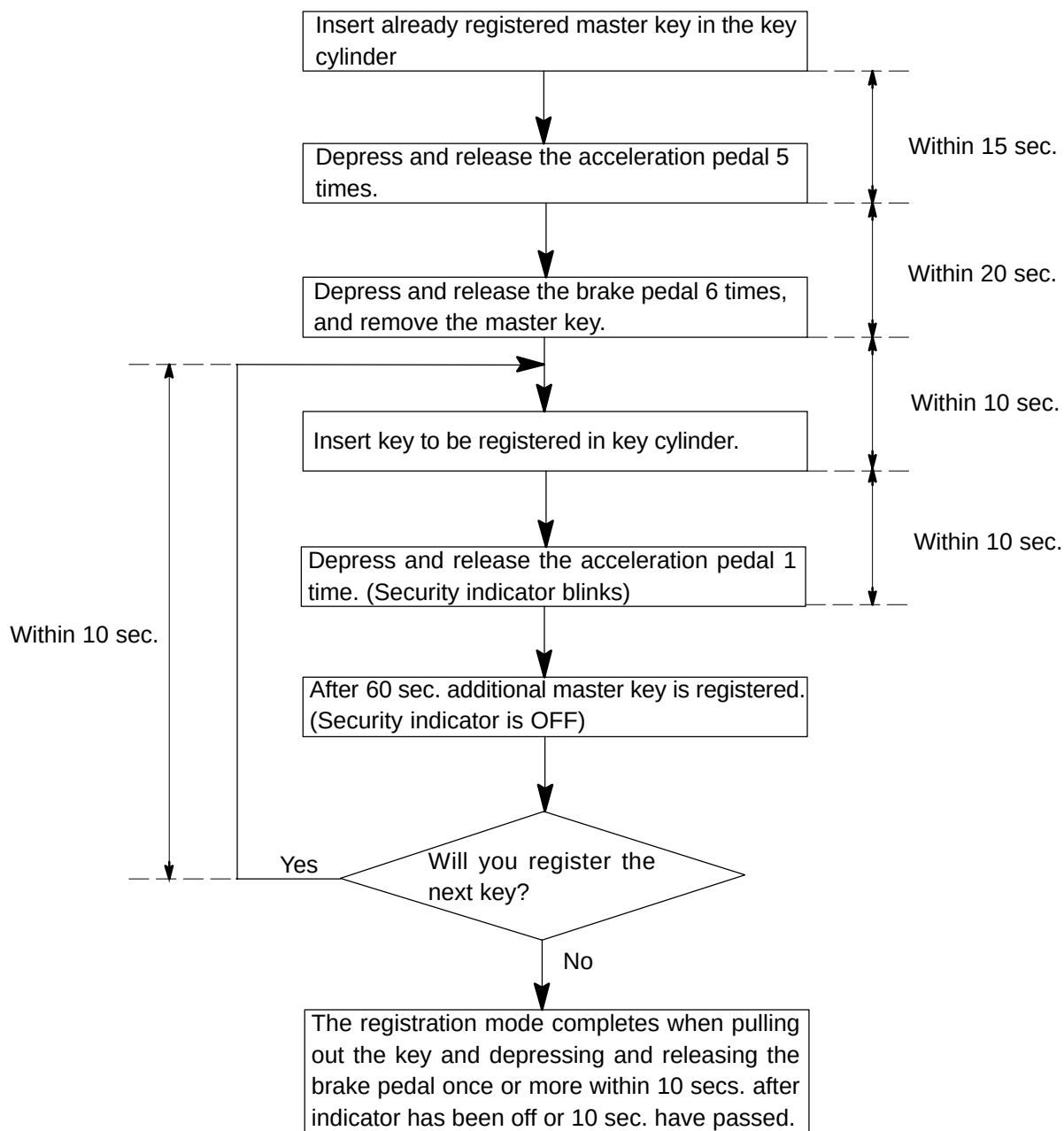
2. REGISTRATION OF ADDITIONAL MASTER KEY

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

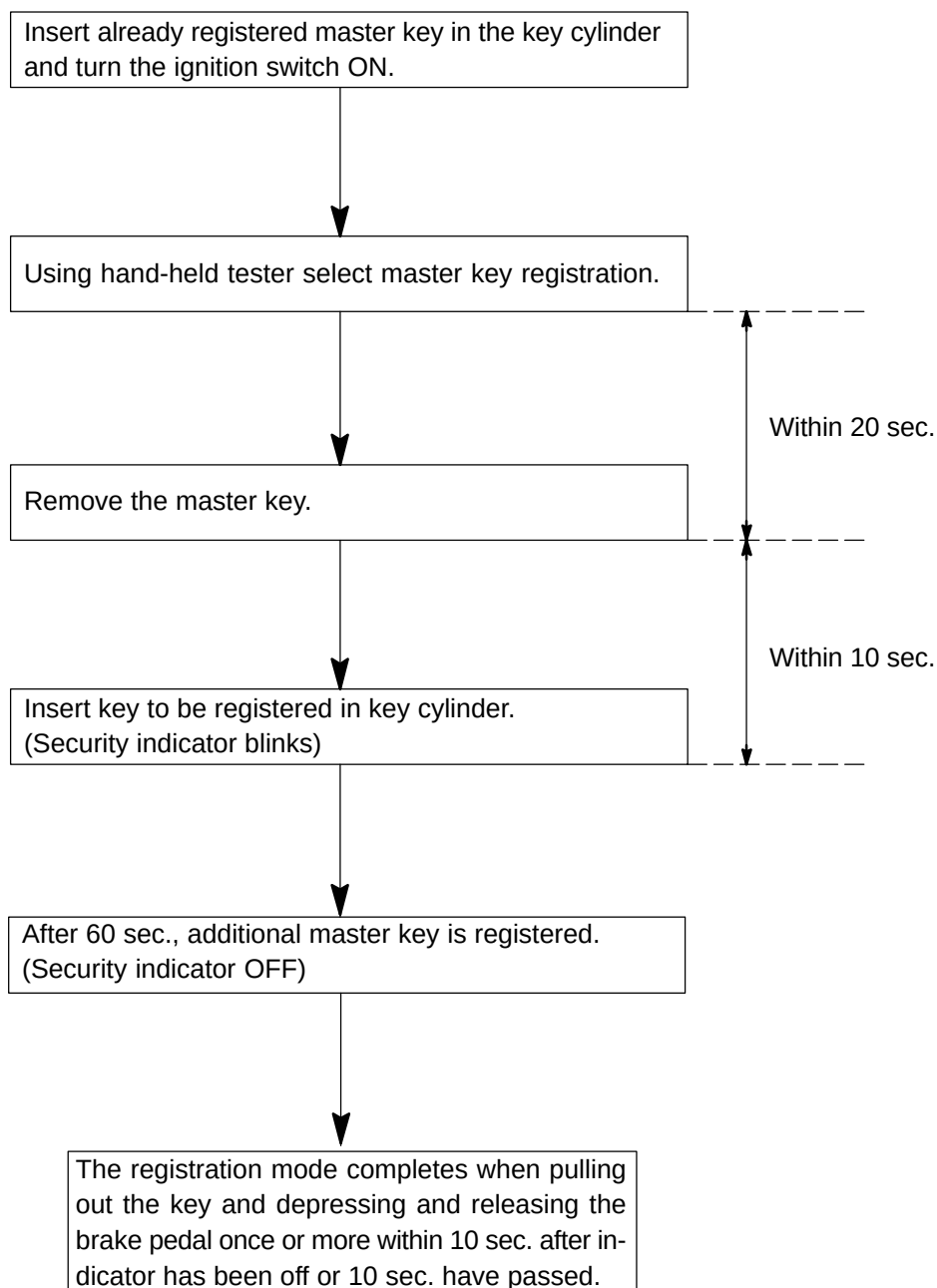
HINT:

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

(1) Depressing brake pedal and acceleration pedal:



(2) Using hand-held tester:



HINT:

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

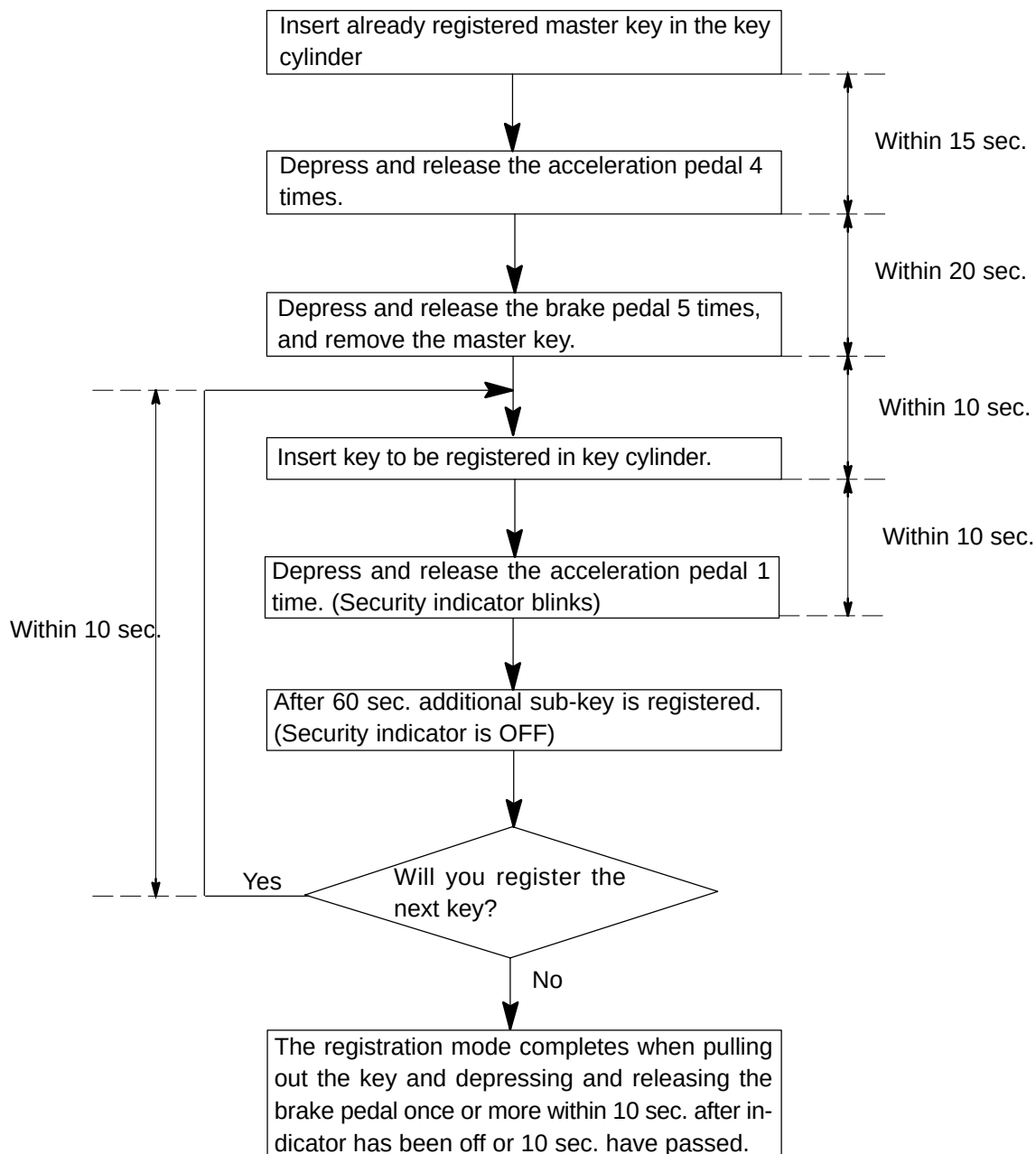
3. REGISTRATION OF ADDITIONAL SUB-KEY

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

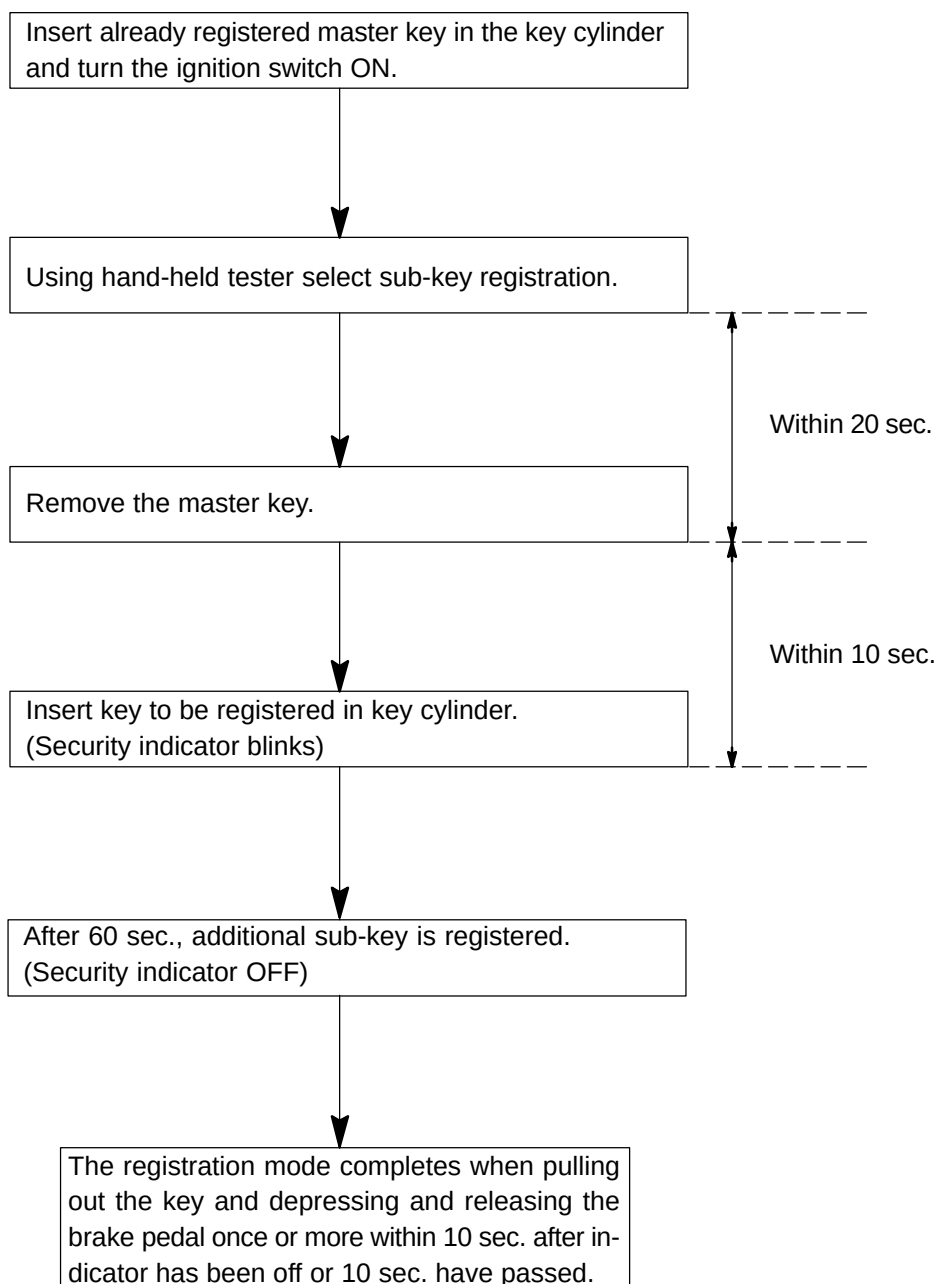
HINT:

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

(1) Depressing brake pedal and acceleration pedal:



(2) Using hand-held tester:



HINT:

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

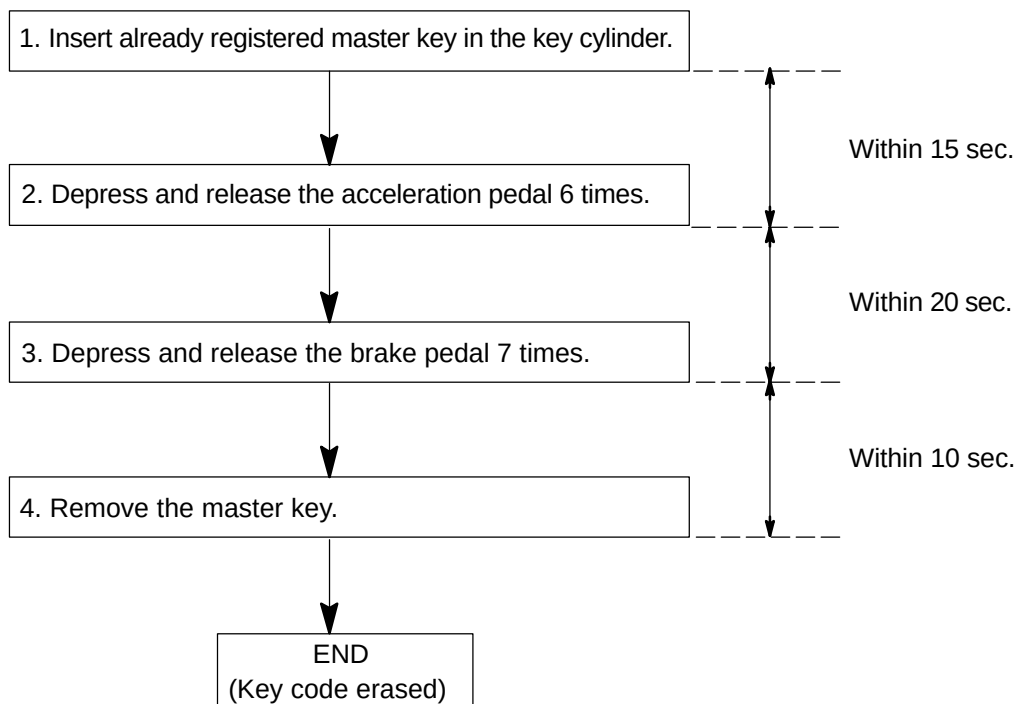
4. ERASURE OF TRANSPONDER KEY CODE

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

HINT:

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

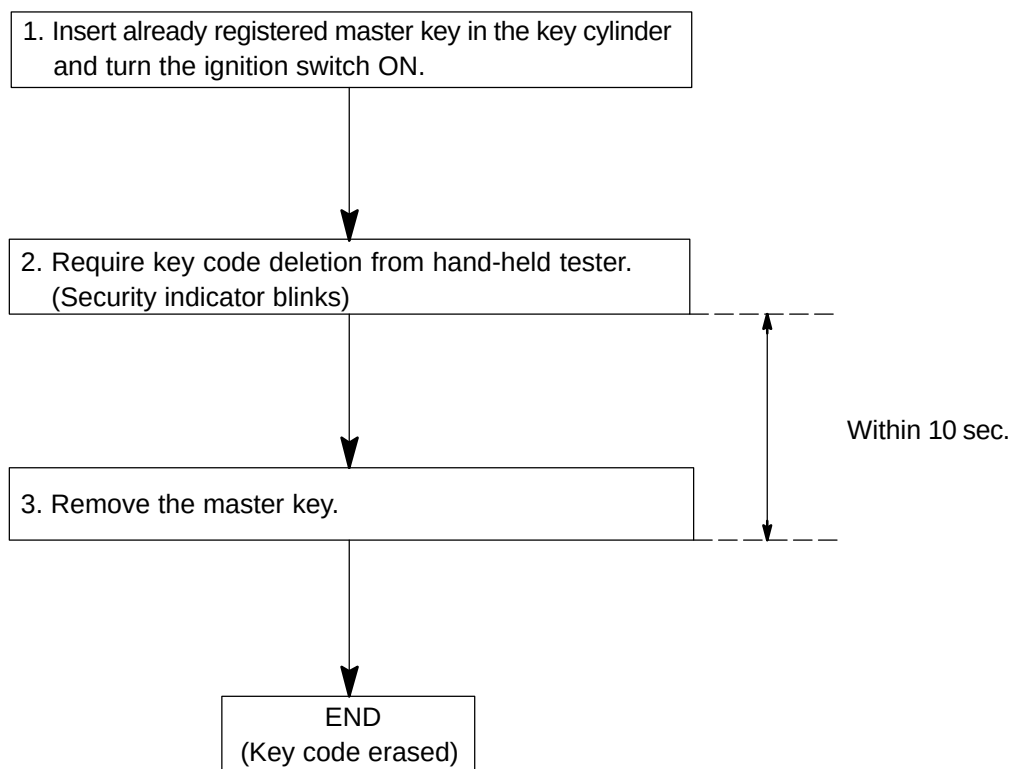
(1) Depressing brake pedal and acceleration pedal:



HINT:

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

(2) Using hand-held tester:



HINT:

- When the key cannot be pulled out in 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.

GARAGE DOOR OPENER SYSTEM REGISTRATION PROCEDURE

BEOG2-04

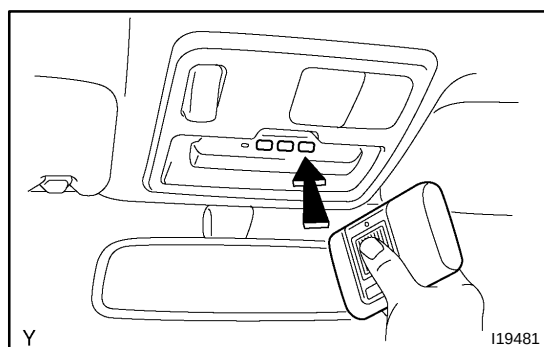
1. NEW CODE REGISTRATION

NOTICE:

- If pressing the switch of the original transmitter to register the code, the system might operate.
 - When registering the transmitter codes such as for garage or gate, check that there is nobody around those places then register.
- (a) Press the switch for the item to be registered for 20 seconds

HINT:

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

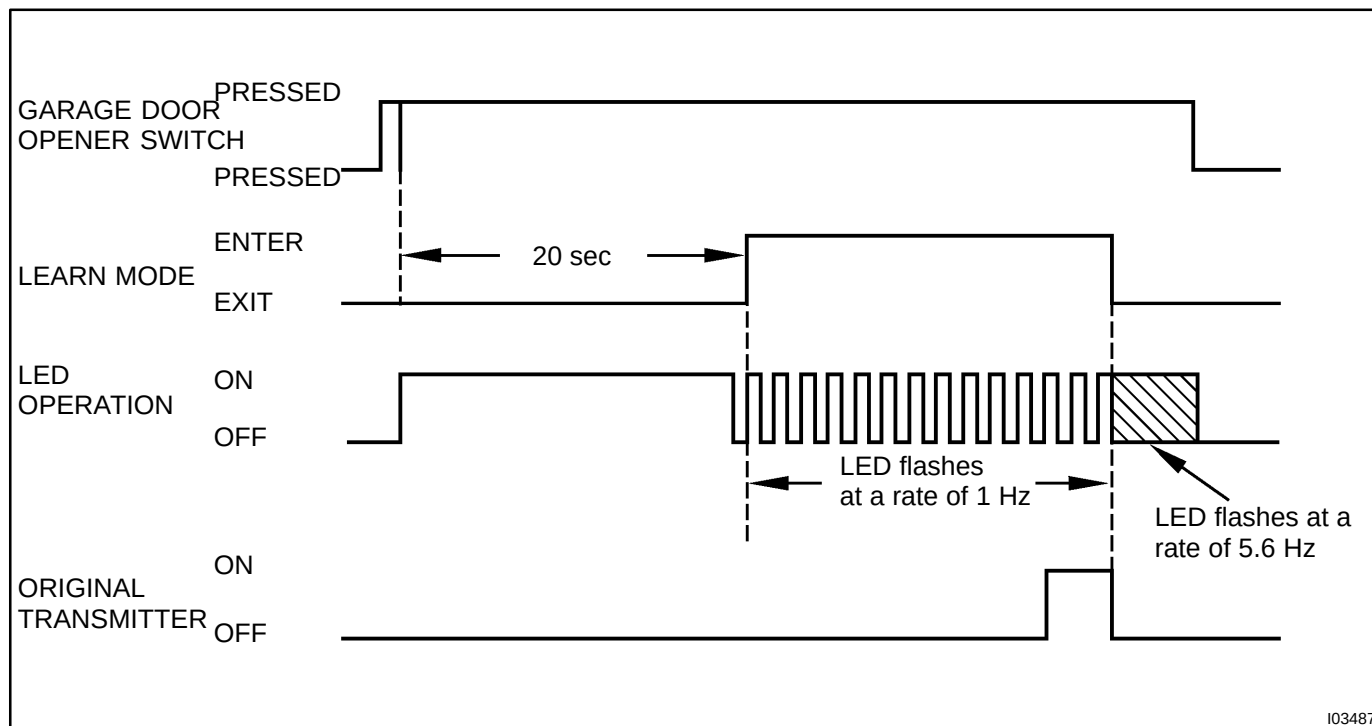


- (b) In the condition of (a), bring the original transmitter to within 1-inch area around the garage door opener and press the switch. (code transmitting).

HINT:

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

New code registration timing chart



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

HINT:

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

2. CODE DELETION

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

HINT:

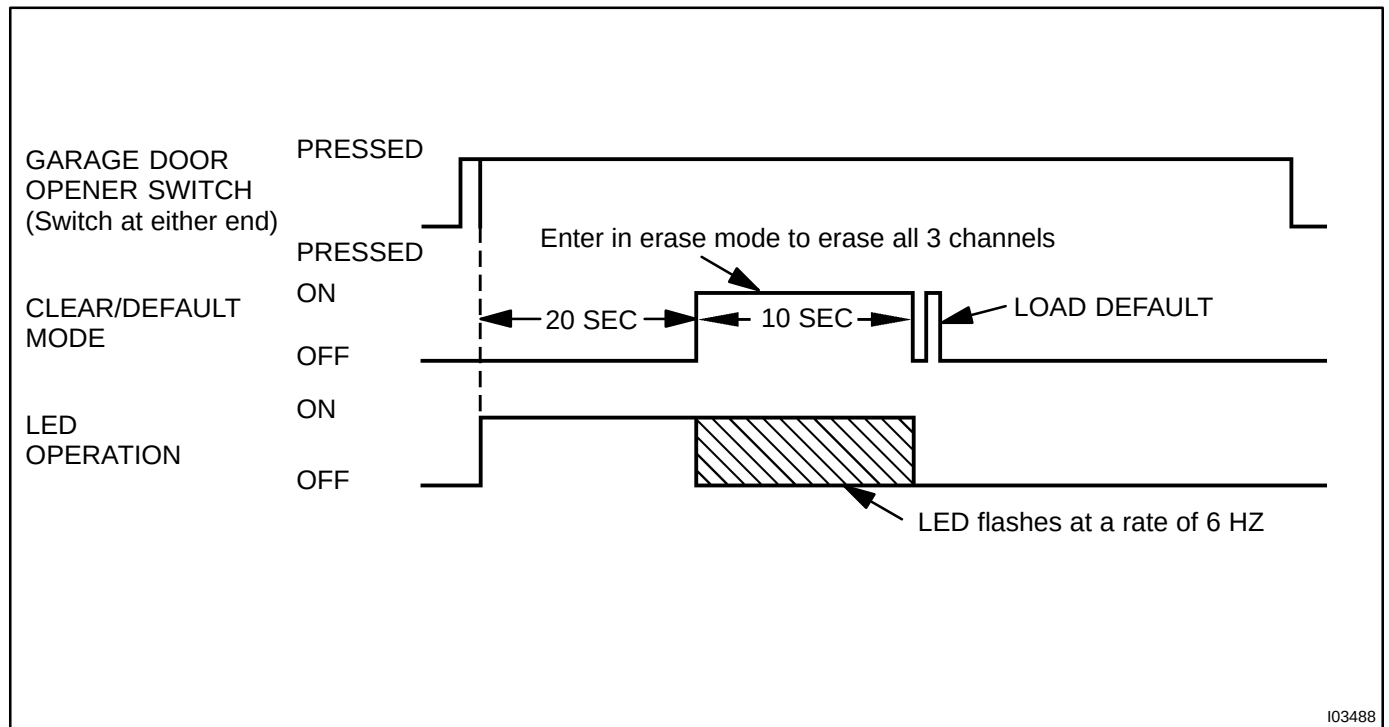
When transferring to deletion mode, LED (red) blinks in 6 Hz cycle.

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

HINT:

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

Code deletion timing chart



REMOVAL

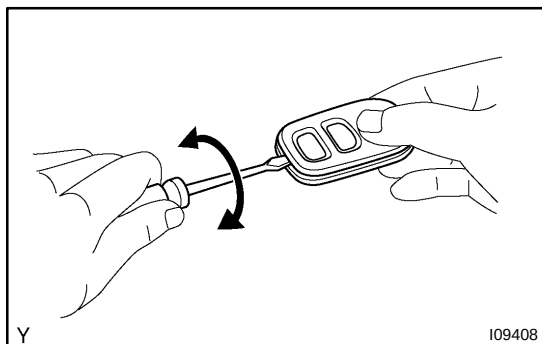
1. **REMOVE FRONT PERSONAL LIGHT LENS**
2. **REMOVE FRONT PERSONAL LIGHT**
 - (a) Remove the 3 screws.
 - (b) Disconnect the 2 connectors.
3. **REMOVE GARAGE DOOR OPENER SWITCH**

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:

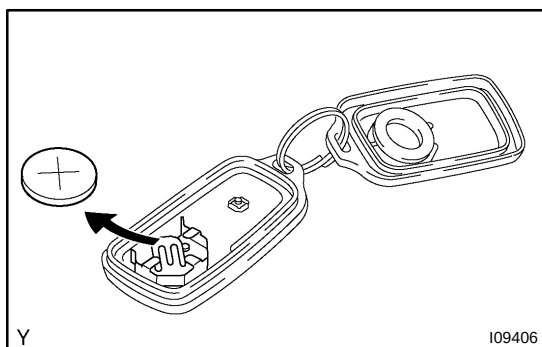
Push the cover with a finger as shown in the illustration, so that there becomes clearance, then pry out the cover from that clearance.

(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

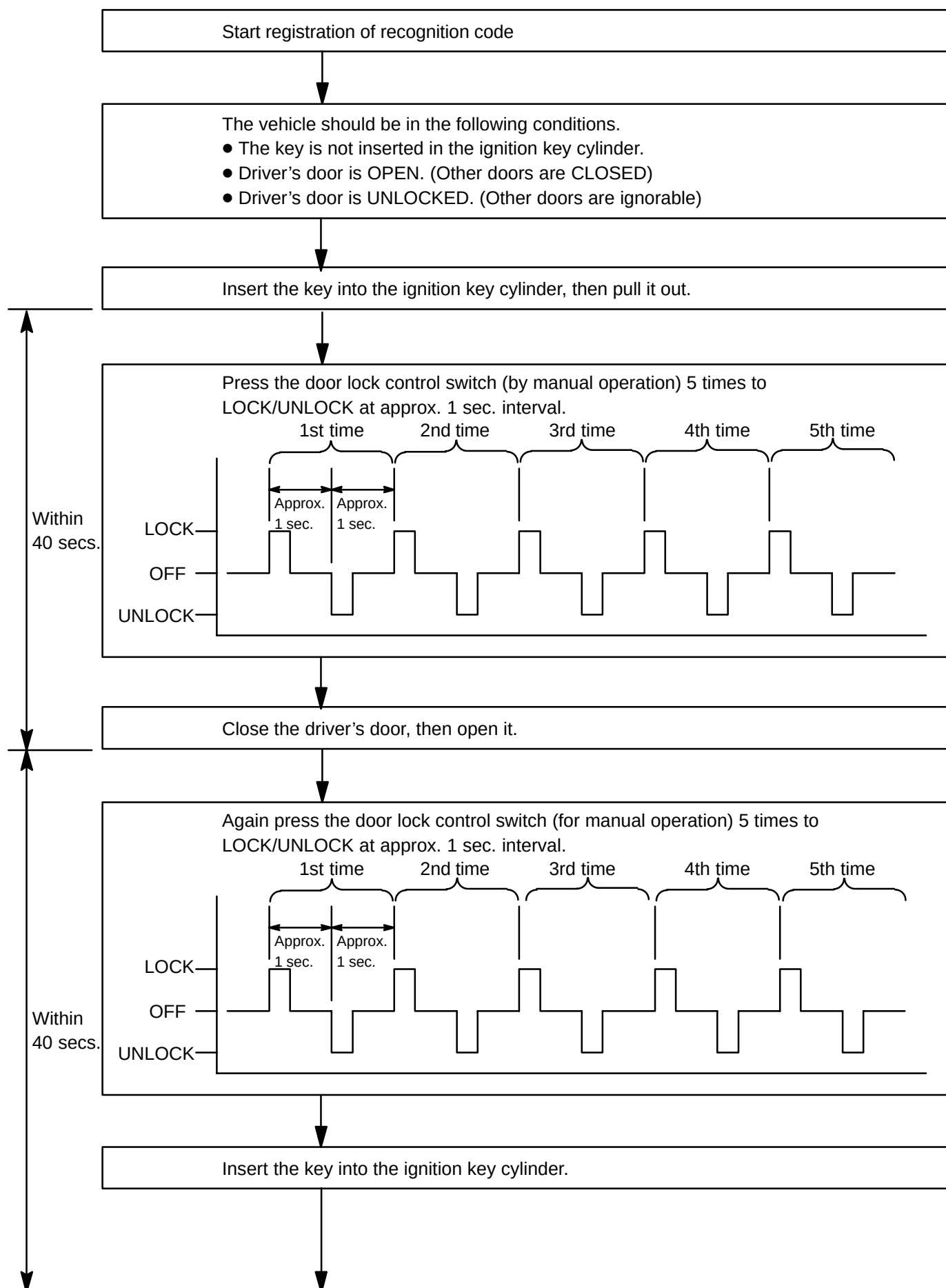
- (a) Select the operation mode to perform from the following operation modes.
- Rewrite mode
 - Confirmation mode

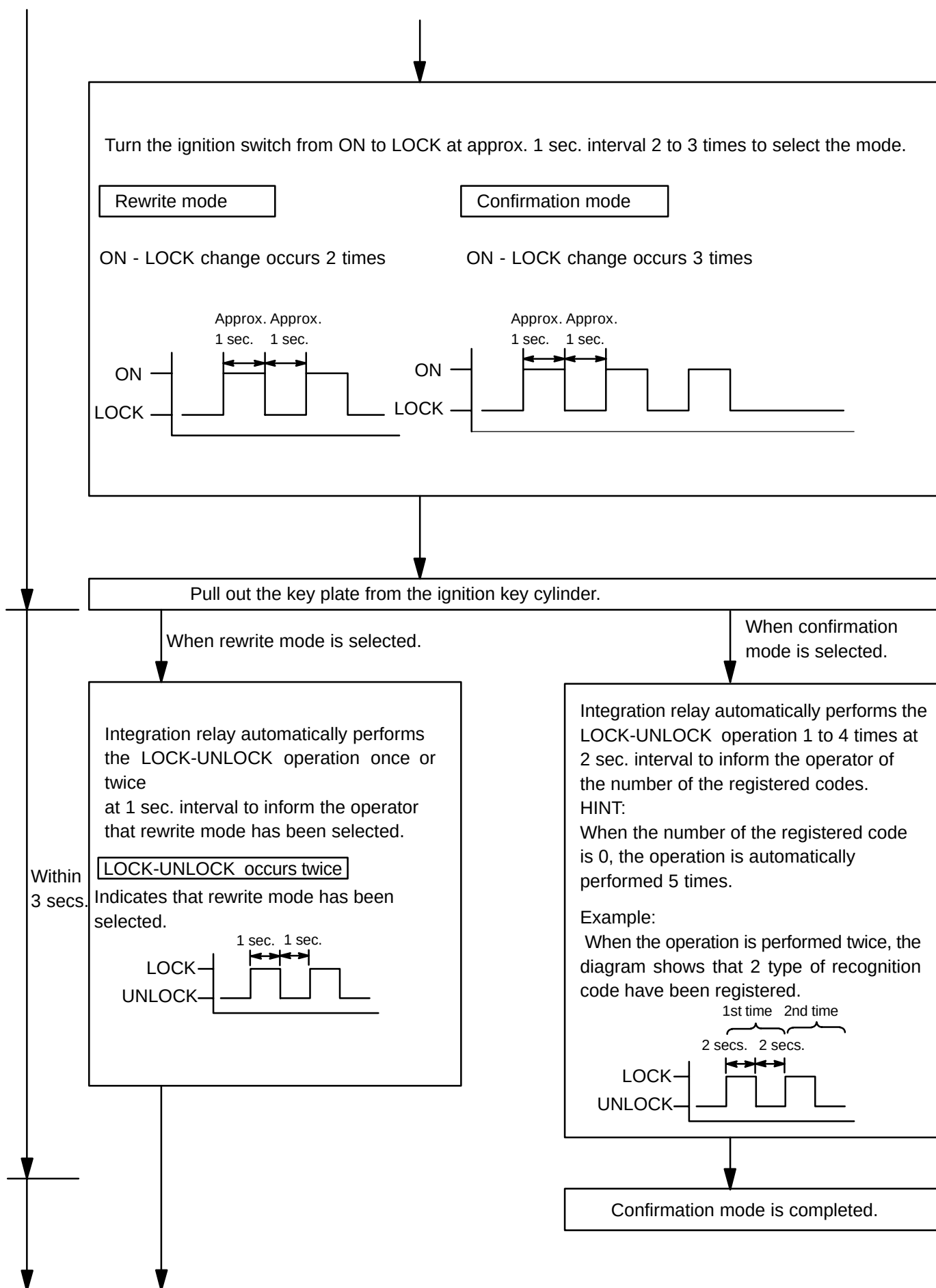
HINT:

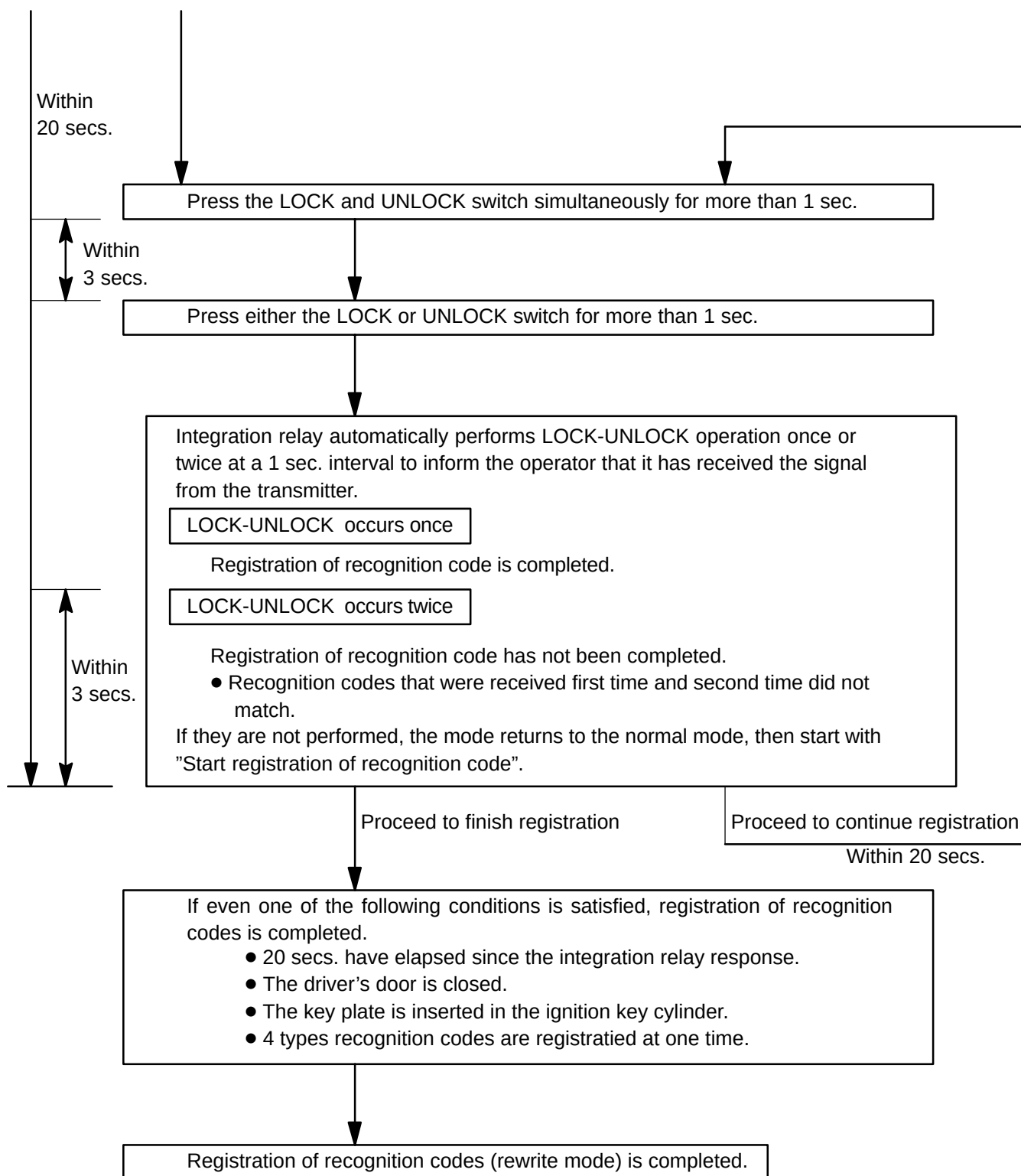
- The rewrite mode is used to erase all previously registered codes and register only new recognition codes.
 - The confirmation mode is for confirming how many recognition codes are already registered before you rewrite recognition codes.
- (b) Follow the chart on the following page to register the 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.







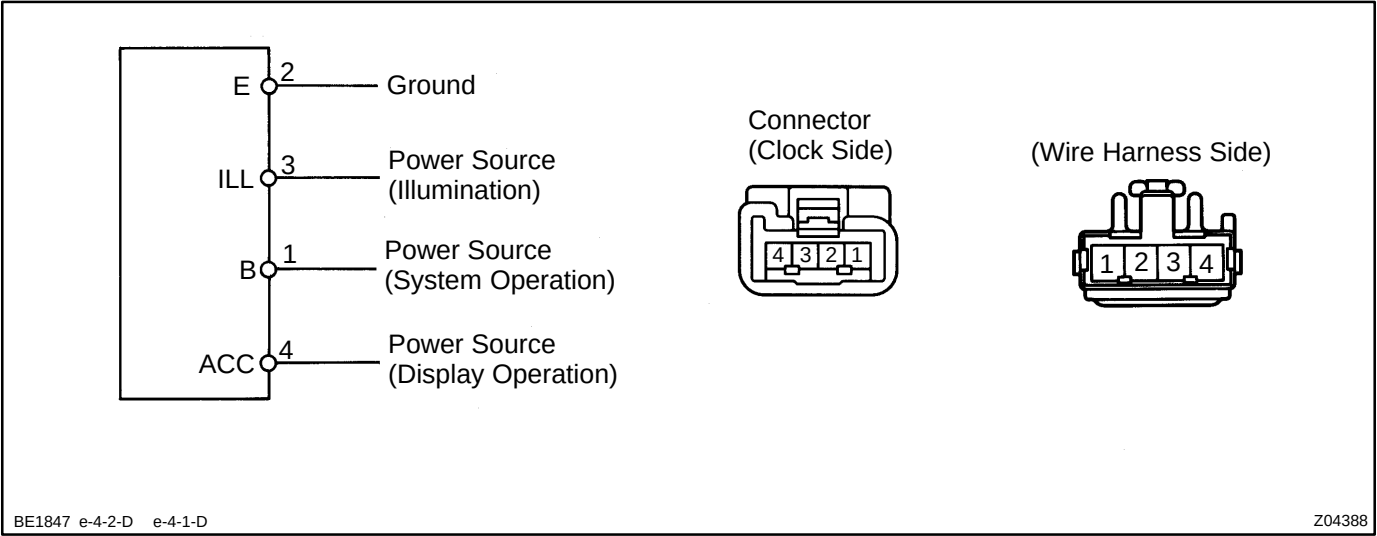
CLOCK TROUBLESHOOTING

BE0FW-03

HINT:
Troubleshoot the clock according to the table below.

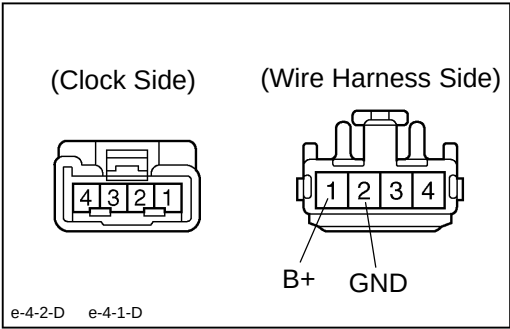
Clock will not operate	1
Clock loses or gains time	2

± 1.5 seconds / day (AT DC 13 V, 20 °C)

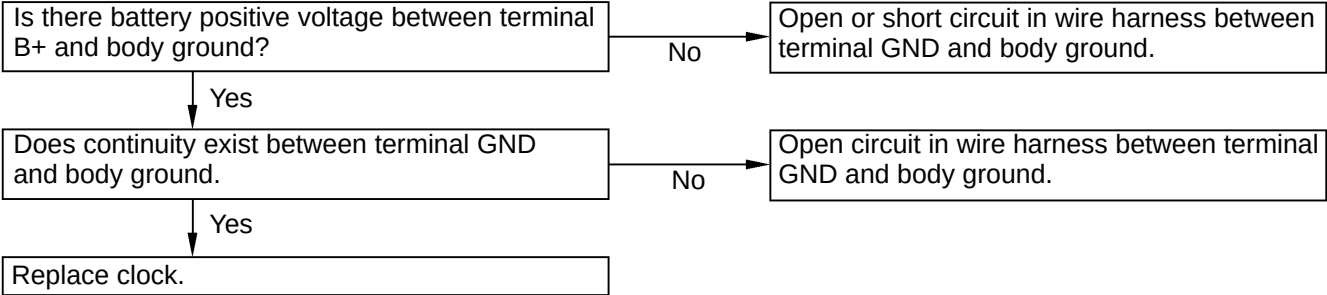


1

CLOCK WILL NOT OPERATE

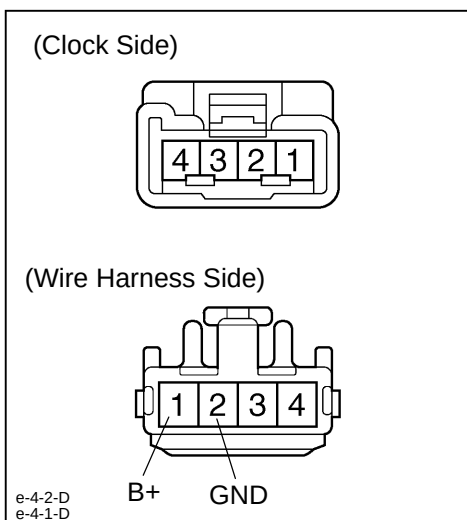


- (a) Check that the battery positive voltage is 10 - 16 V.
If voltage is not as specified, replace the battery.
- (b) Check that the DOME fuse is not blown.
If the fuse is blown, replace the fuse and check for short circuit.
- (c) Troubleshoot the clock as follows.
HINT: Inspect the connector on the wire harness side.



V04421

2 CLOCK LOSES OR GAINS TIME



- (a) Check that the battery positive voltage is 10 - 16 V.
If voltage is not as specified, replace the battery.
- (b) Inspect the error of the clock.
Allowable error (per day): ± 1.5 seconds (AT DC 13 V, 20 °C)
 ± 4 seconds
(AT DC 10 to 16 V, -20 to 80 °C)

If the error exceeds the allowable error, replace the clock.
- (c) Check that the clock adjusting button is caught in position, and does not return.

If the button is not returned, repair or replace the clock.
- (d) Troubleshoot the clock as follows.
HINT: Inspect the connector on the wire harness side.

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

Below 10 V

Locate cause and repair, or recharge battery.

Yes

Adjust or replace clock.

V04422

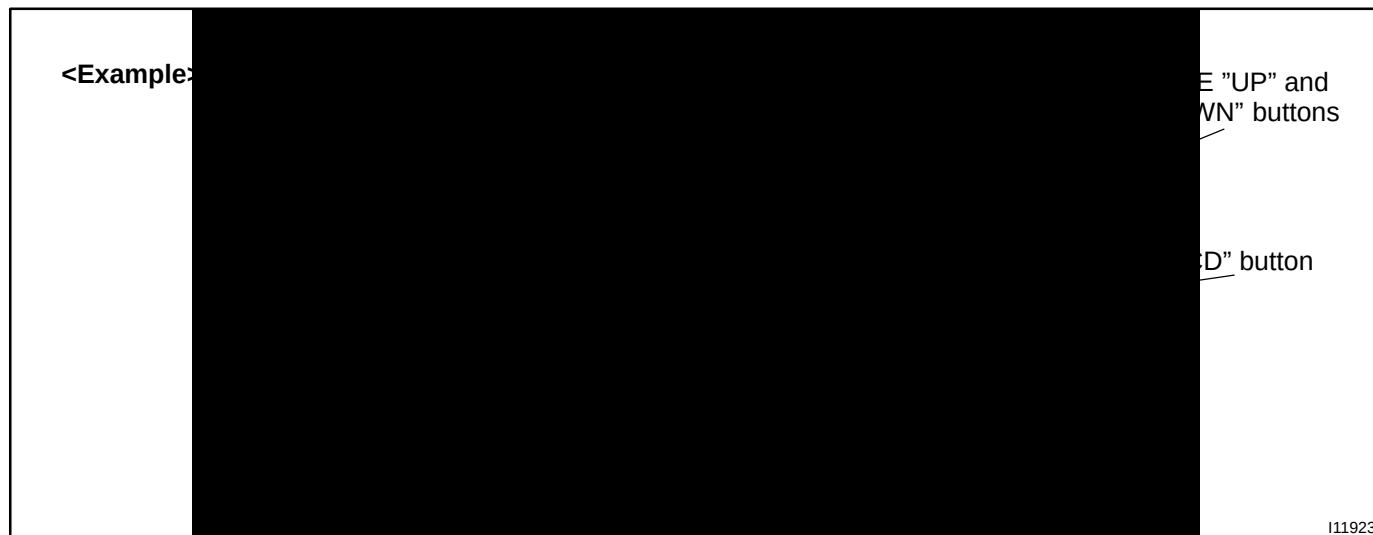
TROUBLESHOOTING

1. DIAGNOSIS FUNCTION

(a) Diagnosis start-up

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

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



(b) Service check mode

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

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

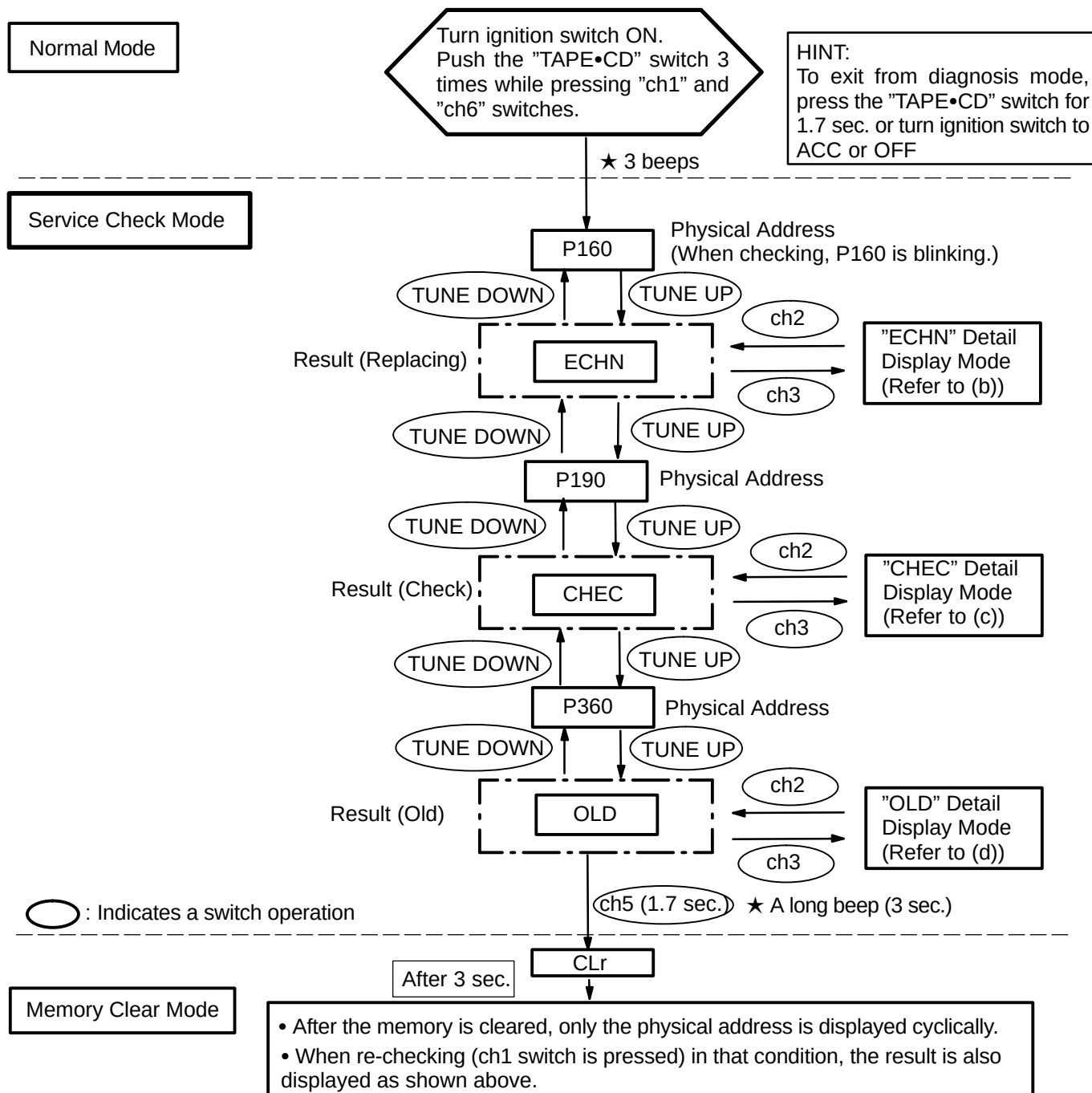
Results for each check are displayed as follows:

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

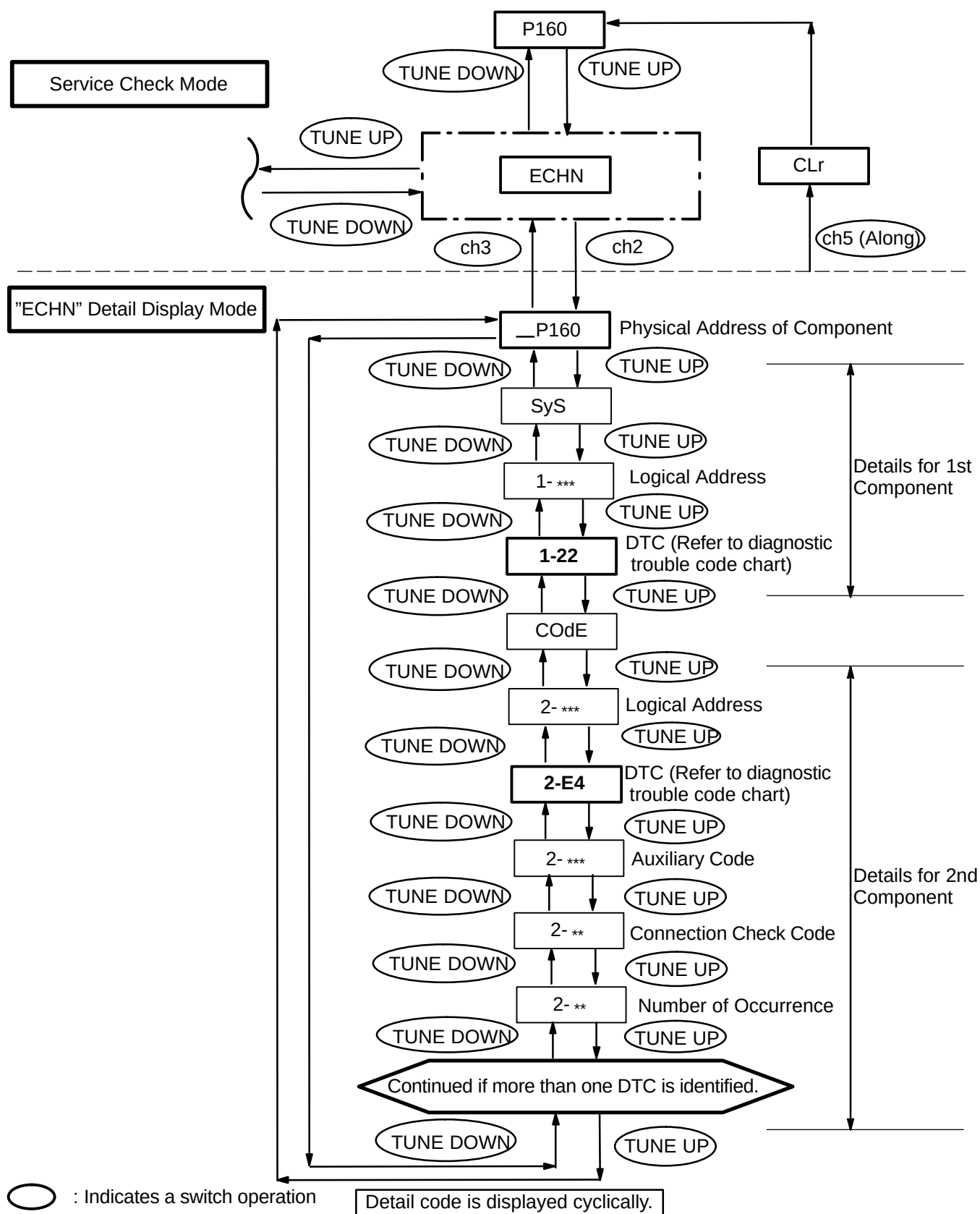
(c) Display Screen for Service Check.

Example:

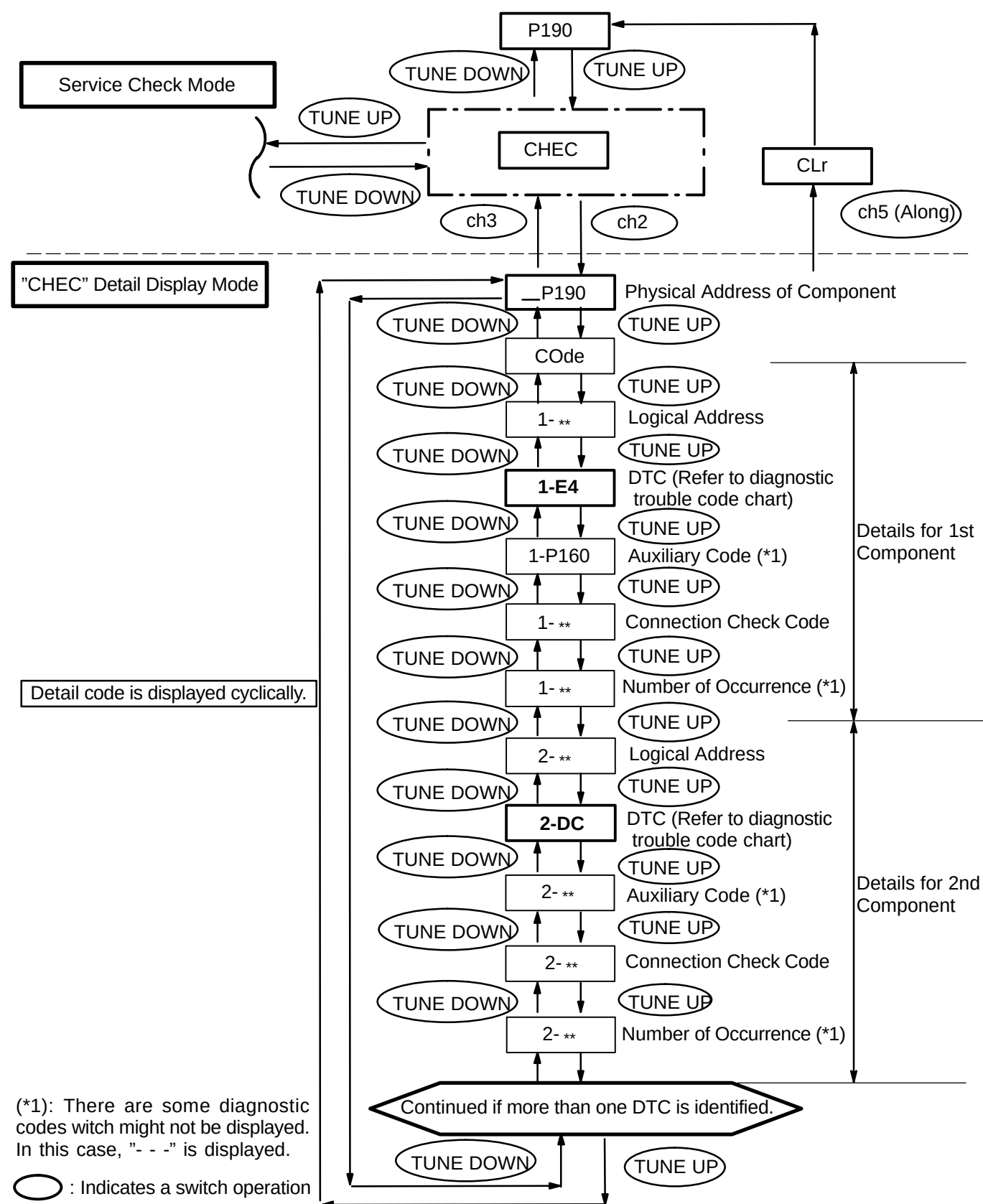
Connection parts (physical address): Multi Display (P160), Radio Receiver (P190), CD changer (P360)



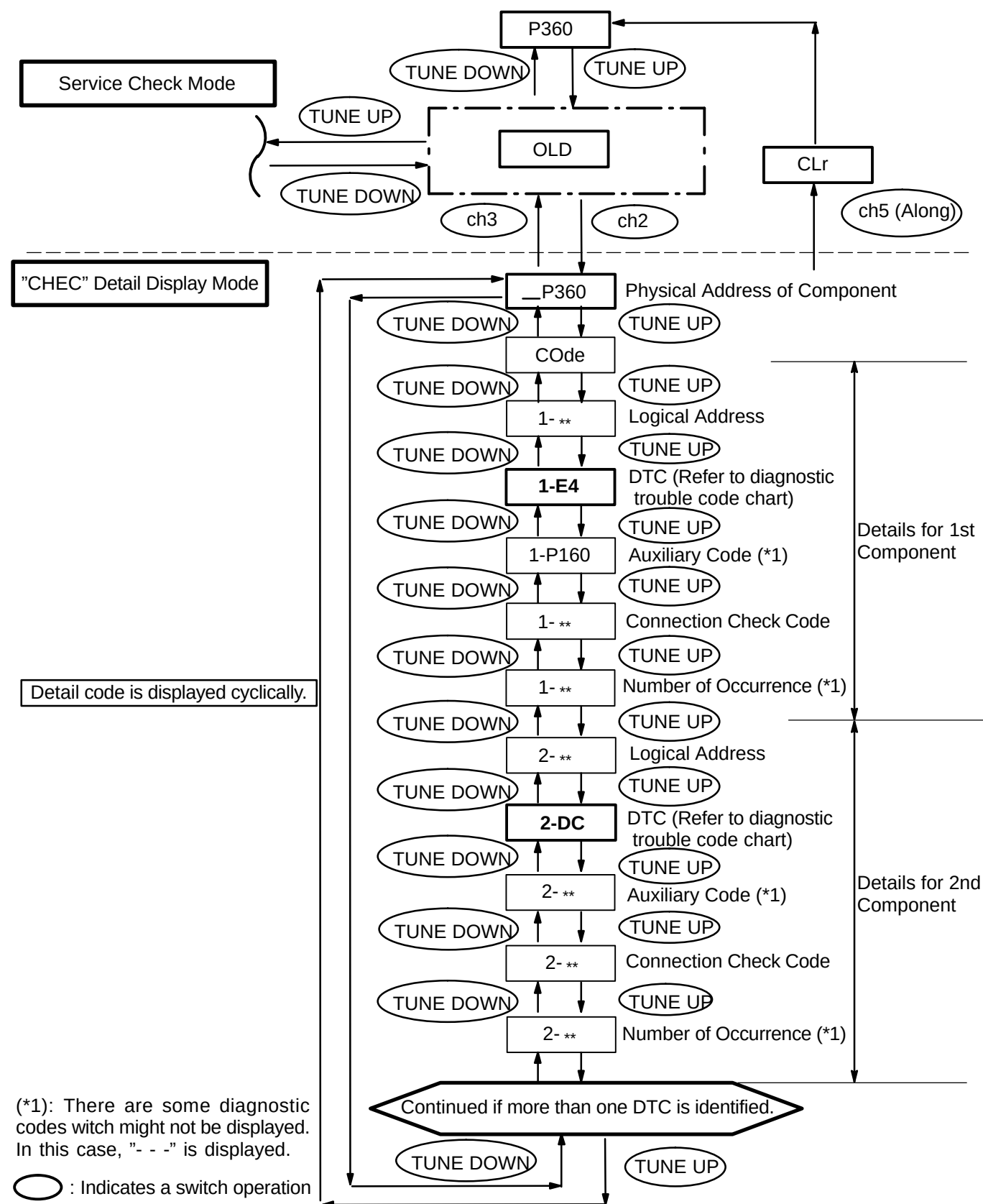
(d) "ECHN" Detail Display Mode Screen



(e) "CHEC" Detail Display Mode Screen



(f) "OLD" Detail Display Mode Screen



(g) Recheck

- (1) Pressing the [ch1] key in Service Check Mode executes recheck.
- (2) To display the recheck process, follow the sequence indicated Display Screen for Service Check.

2. DIAGNOSIS CODE LIST

Physical address: 190 Radio receiver assembly

Logical address	DTC	Diagnosis item	Diagnosis content	Countermeasure and inspected parts
01 (Communication Control)	21	ROM Error	Error is detected in internal ROM.	Replace radio receiver assembly.
01 (Communication Control)	22	RAM Error	Error is detected in internal RAM.	Replace radio receiver assembly.
01 *2 (Communication Control)	D6	Absence of Master	Component in which this code is recorded has been disconnected from system with ignition in ACC or ON. Or, when this code was recorded, radio receiver assembly assembly was disconnected.	● Check harness for power supply system of radio receiver assembly. ● Check harness for communication system of radio receiver assembly. ● Check harness for power supply system of radio receiver assembly. ● Check harness for communication system of radio receiver assembly.
01 *3 (Communication Control)	D8	No Response to Connection Check	Component shown by auxiliary code is or had been disconnected from system after engine start. D9	● Check harness for power supply system of component shown by auxiliary code. ● Check harness for communication system of component shown by auxiliary code.
01 *2 (Communication Control)	D9	Last Mode Error	Component operated (sounds and/or images were provided) before engine stop is or has been disconnected with ignition switch in ACC or ON.	● Check harness for power supply system of component shown by auxiliary code. ● Check harness for communication system of component shown by auxiliary code.
01 (Communication Control)	DA	No Response to ON/OFF Instruction	No response is identified when changing mode (audio and visual mode change). Detected when sound and picture does not change by button operation.	● Check harness for power supply of component shown by auxiliary code. ● Check harness for communication system of component shown by auxiliary code. ● If error occurs again, replace component shown by auxiliary code.
01 *2 (Communication Control)	DB	Mode Status Error	Dual alarm is detected.	● Check harness for power supply of component shown by auxiliary code. ● Check harness for communication system of component shown by auxiliary code.
01 *4 (Communication Control)	DC	Transmission Error	Transmission to component shown by auxiliary code has been failed. (Detecting this DTC does not necessarily mean actual failure.)	● If same auxiliary code is recorded in other component, check harness for power supply and communication system of components shown sub code.
01 *5 (Communication Control)	DD	Master Reset (Momentary Interruption)	After engine is started, radio receiver assembly assembly was disconnected from system.	● If this error occurs frequently, replace radio receiver assembly assembly.

01 *5 (Communication Control)	DE	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.
01 *6 (Communication Control)	DF	Master Error	Due to defective condition of radio receiver assembly, master function is switched to audio equipment. Error occurs in communication between sub-master (audio) and radio receiver assembly.	● Check harness for power supply of radio receiver assembly assembly. ● Check harness for communication system of radio receiver assembly . ● Check harness for communication system between radio receiver assembly and sub-master component.
01 (Communication Control)	E0	Registration Completion Instruction Error	"Registration Completion Instruction" command from radio receiver assembly cannot be received.	● Since this DTC is provided for engineering purpose, it may be detected when no actual failure exists.
01 *2 (Communication Control)	E1	Audio processor ON error	While source equipment is operating, AMP output is stopped.	● Check harness for power supply of radio receiver assembly assembly. ● Check harness for communication system of radio receiver assembly.
01 (Communication Control)	E2	ON/OFF Instruction Parameter Error	Error occurs in ON/OFF controlling command from radio receiver assembly assembly.	● Replace radio receiver assembly .
01 (Communication Control)	E3	Registration Request Transmission	Registration Request command is output from slave component. Receiving Connection Check Instruction, Registration Request command is output from sub-master component.	● Since this DTC is provided for engineering purpose, it may be detected when no actual failure exists.
01 (Communication Control)	E4	Plural Frame Abort	Plural frame transmission is aborted.	● Since this DTC is provided for engineering purpose, it may be detected when no actual failure exists.
60 (Radio receiver assembly)	43 44	AM Tuner Error FM Tuner Error	Abnormal condition is detected in AM tuner. Inspect radio receiver assembly.	Replace radio receiver assembly.
60 (Radio receiver assembly)			Abnormal condition is detected in FM tuner.	Replace radio receiver assembly.
61 (Cassette switch)	40	Mechanical or Media Error	Malfunction due to mechanical failure is identified. Or, cassette tape is cut or entangled.	Inspect cassette tape.
61 (Cassette switch)	41	EJECT Malfunction	Malfunction due to mechanical failure.	Replace radio receiver assembly.

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.

Logimal address	DTC	Diagnosis item	Diagnosis content	Countermeasure and inspeced parts
01 (Communication Control)	21	ROM Error	Abnormal condition of ROM is detected.	Replace stereo component amplifier
01 (Communication Control)	22	RAM Error	Abnormal condition of RAM is detected.	Replace stereo component amplifier
01 (Communication Control)	D6 *1	Absence of Master	Component in which this code is recorded has been disconnected from system with ignition in ACC or ON. Or, when this code was recorded, multi-didplay assembly was disconnected.	● Check harness for power supply system of radio receiver assembly. ● Check harness for communication system of radio receiver assembly. ● Check harness for power supply system of stereo component amplifier ● Check harness for communication system of stereo component amplifier.
01*6 (Communication Control)	D7	Connection Check Error	Component in which this code is recorded has been disconnected from system after engine start. Or, when this code was recorded, radio receiver assembly assembly was disconnected. D6	● Check harness for power supply system of radio receiver assembly. ● Check harness for communication system of radio receiver assembly. ● Check harness for power supply system of stereo component amplifier ● Check harness for communication system of stereo component amplifier.

01 (Communication Control)	DC *2	Transmission Error	Transmission to component shown by auxiliary code has been failed. (This code does not necessarily mean actual failure.)	If same auxiliary code is recorded in other component(s), check harness for power supply and communication system of components shown sub code.
01 (Communication Control)	DD *3	Master Reset (Momentary Interruption)	After engine is started, radio receiver assembly assembly was disconnected from system.	● Check harness for power supply system of radio receiver assembly assembly. ● Check harness for communication system of radio receiver assembly assembly. ● If error occurs frequently, replace radio receiver assembly.
01 (Communication Control)	DF *4	Master Error	Due to defective condition of component with a display, master function is switched to audio equipment. Error occurs in communication between sub-master (audio) and master component.	● Check harness for power supply of radio receiver assembly assembly. ● Check harness for communication system of radio receiver assembly assembly. ● Check harness for communication system between radio receiver assembly and sub-master component.
01 (Communication Control)	E0 *1	Registration Completion Instruction Error	"Registration Completion Instruction" command from radio receiver assembly cannot be received.	Since this DTC is provided for engineering, it may be detected when no actual failure exists.
01 (Communication Control)	E1 *1	Audio processor ON error	While source equipment is operating, AMP output is stopped.	● Check harness for power supply system of radio receiver assembly ● Check harness for communication system of radio receiver assembly.
01 (Communication Control)	E2	ON/OFF Instruction Parameter	Error is detected in ON/OFF control command from radio receiver assembly assembly.	Replace radio receiver assembly.
01 (Communication Control)	E3	Error Registration Request Transmission	● Registration Request command is output from slave component. ● By reception of connection check Instruction, Registration Request command is output from sub-master component.	Since this DTC is provided for engineering, it may be detected when no actual failure exists.

3. PROBLEM SYMPTOMS TABLE

NOTICE:

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

HINT:

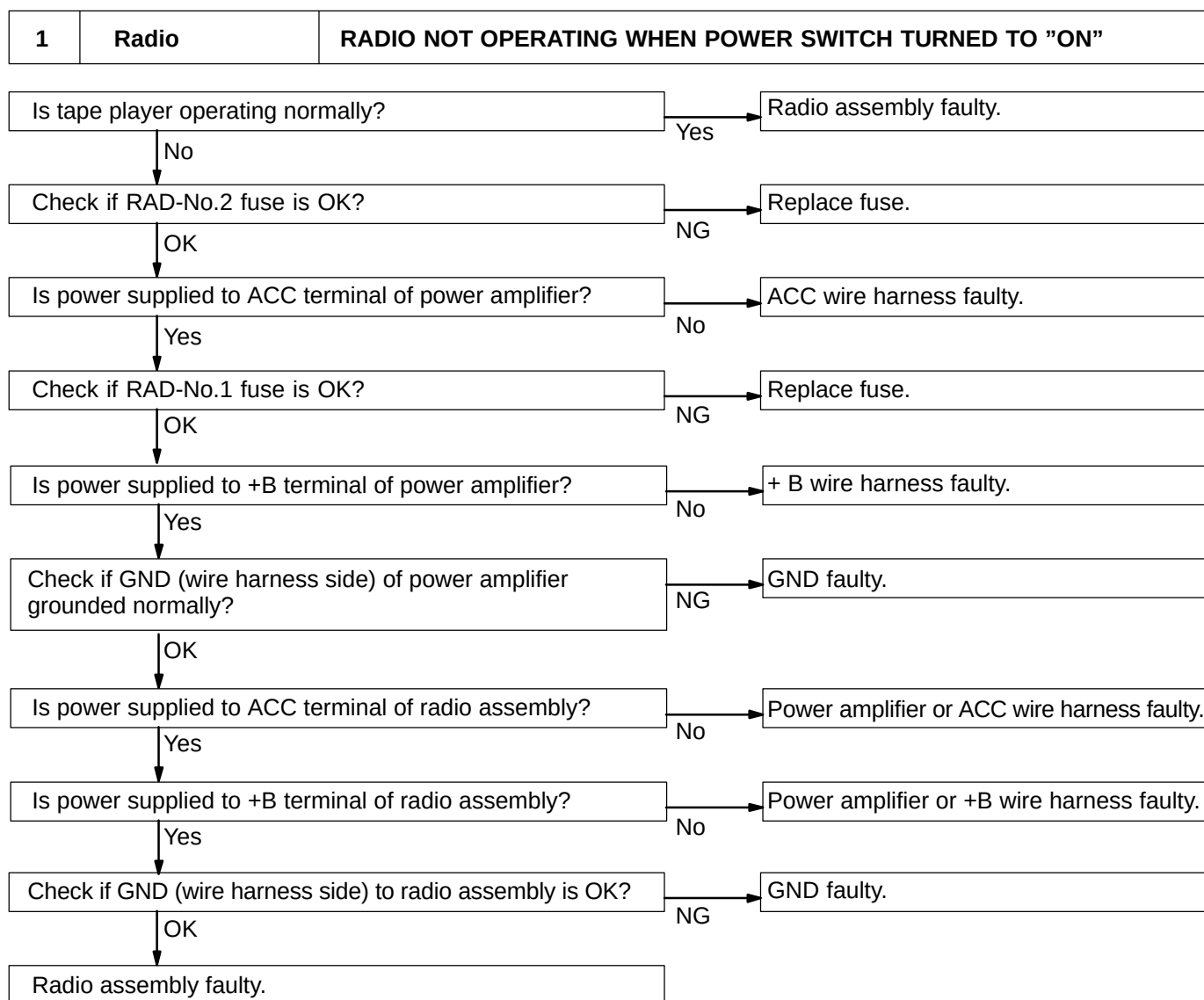
This inspection procedure is a simple troubleshooting which should be carried out on the vehicle during system operation and was prepared on the assumption of system component troubles (except for the wires and connectors, etc.).

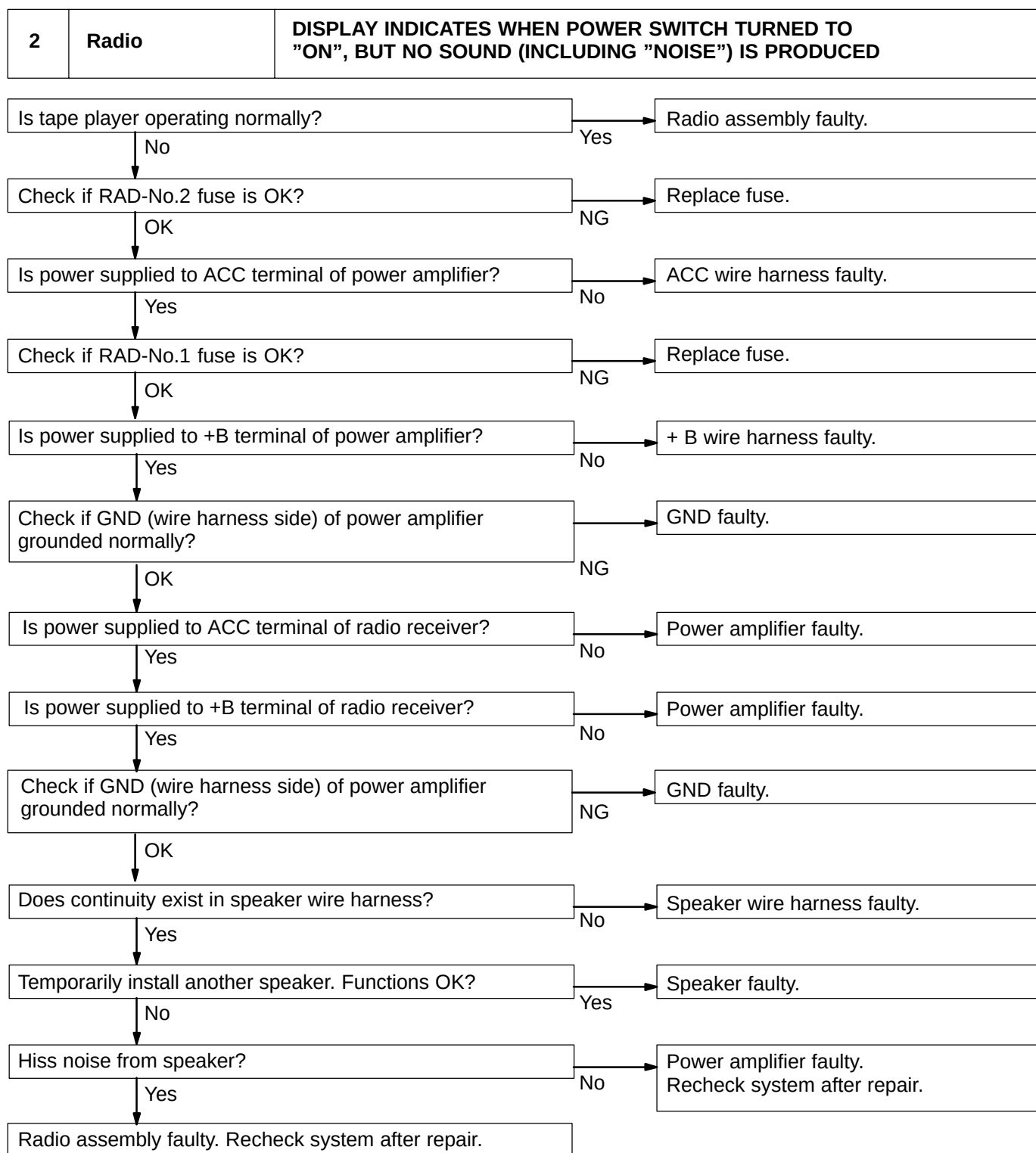
Always inspect the trouble taking the following items into consideration.

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

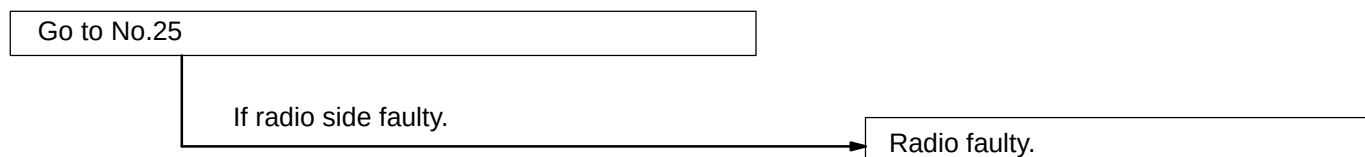
	Problem	Flow chart No.
Radio	Radio not operating when power switch turned to 'ON'.	1
	Display indicates when power switch turned to 'ON', but no sound (including 'noise') is produced.	2
	Noise present, but AM - FM not operating.	3
	Any speaker does not work.	4
	Any AM or FM does not work.	5
	Few preset tuning 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
Power Amplifier	No power coming in.	16
	Power coming in, but power amplifier not operating.	17
	Any speaker does not work.	18
Noise	Noise occurs	19
	Noise produced by vibration or shock while driving.	20
	Noise produced when engine starts.	21

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

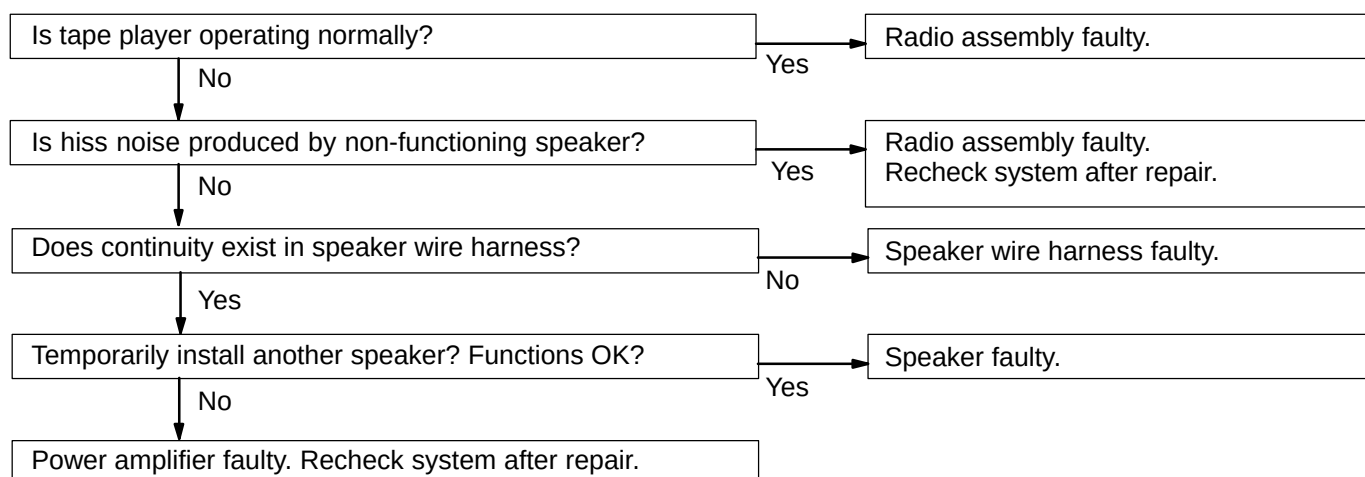


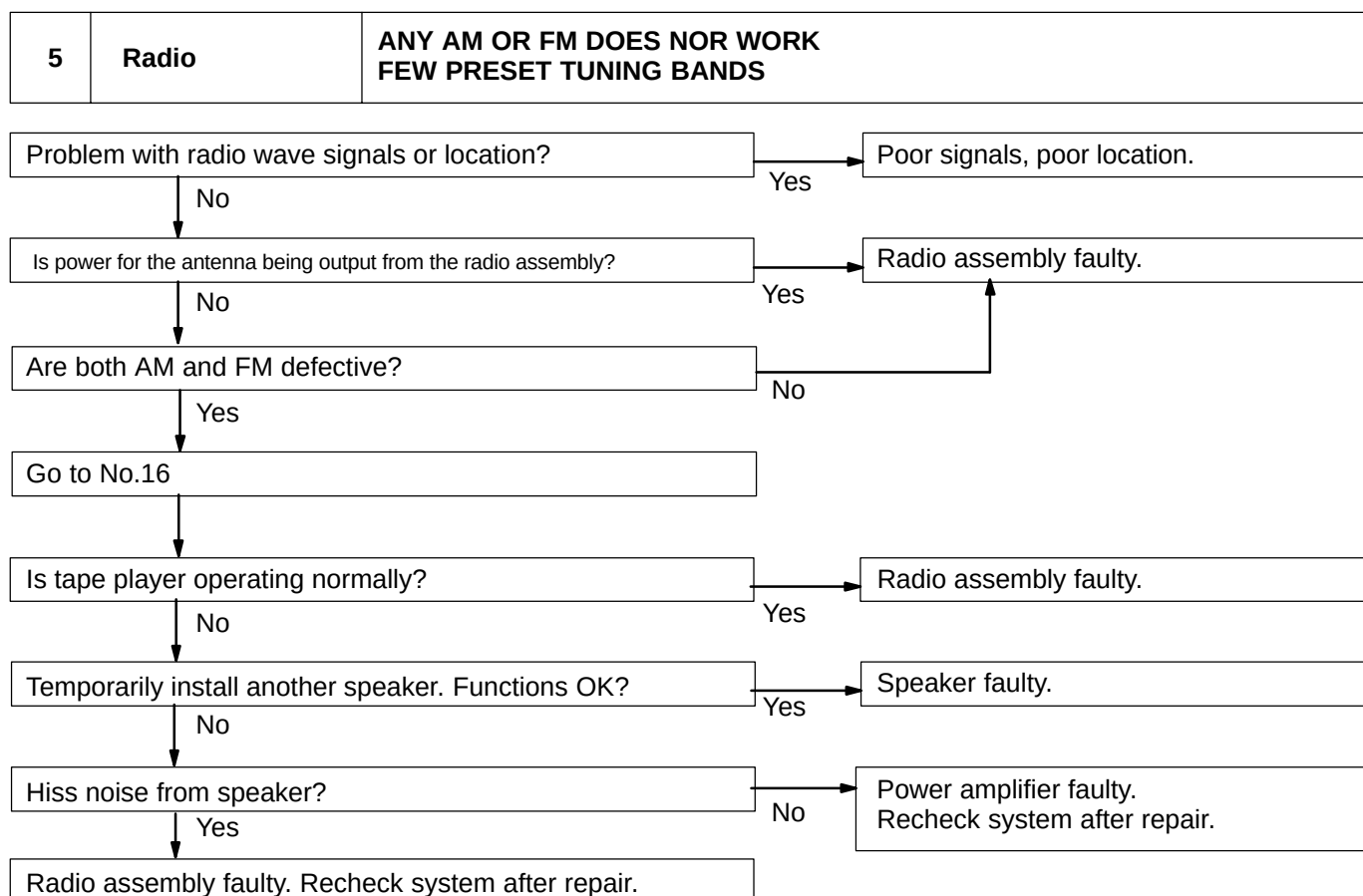


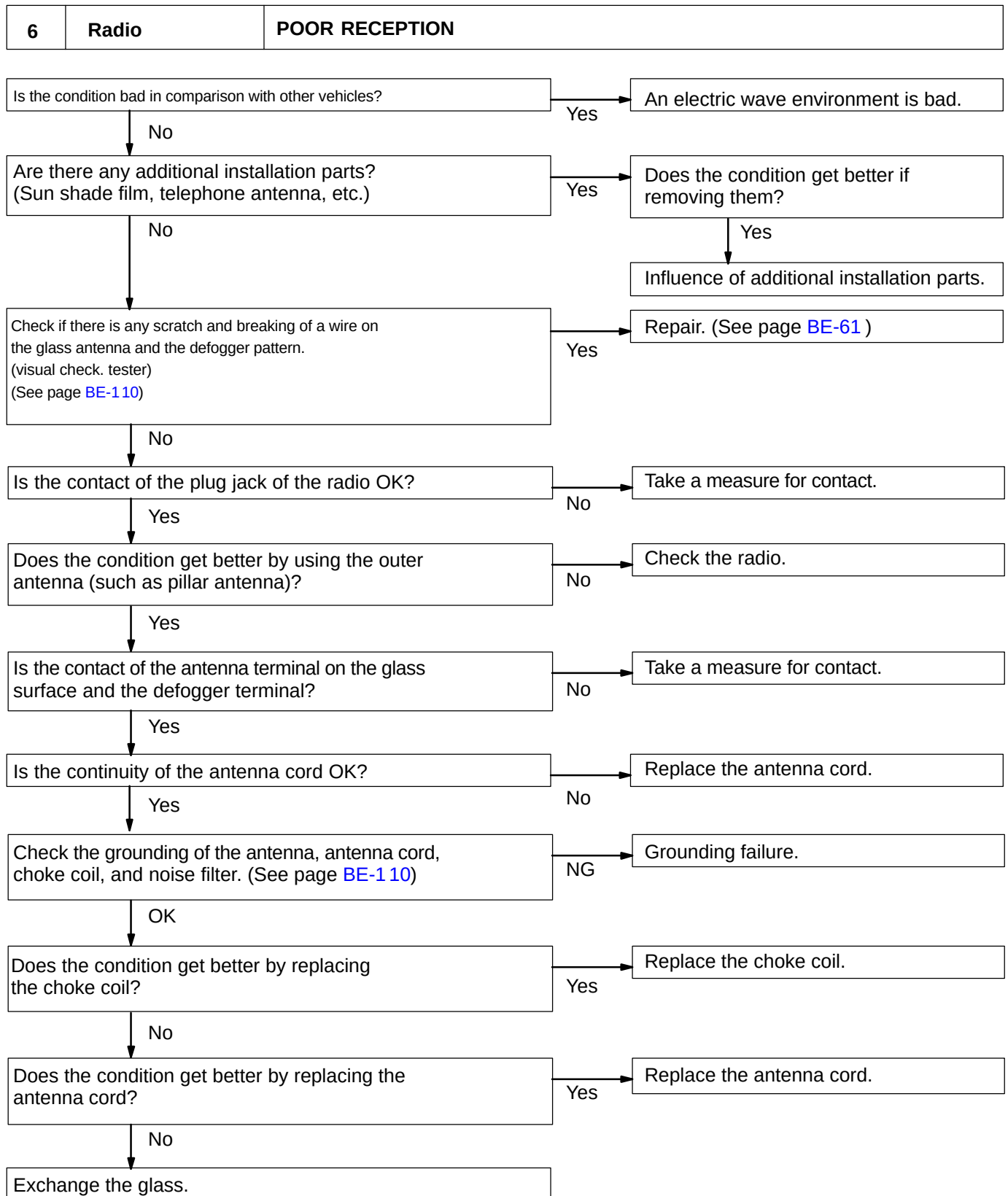
3	Radio	NOISE PRESENT, BUT AM-FM NOT OPERATING
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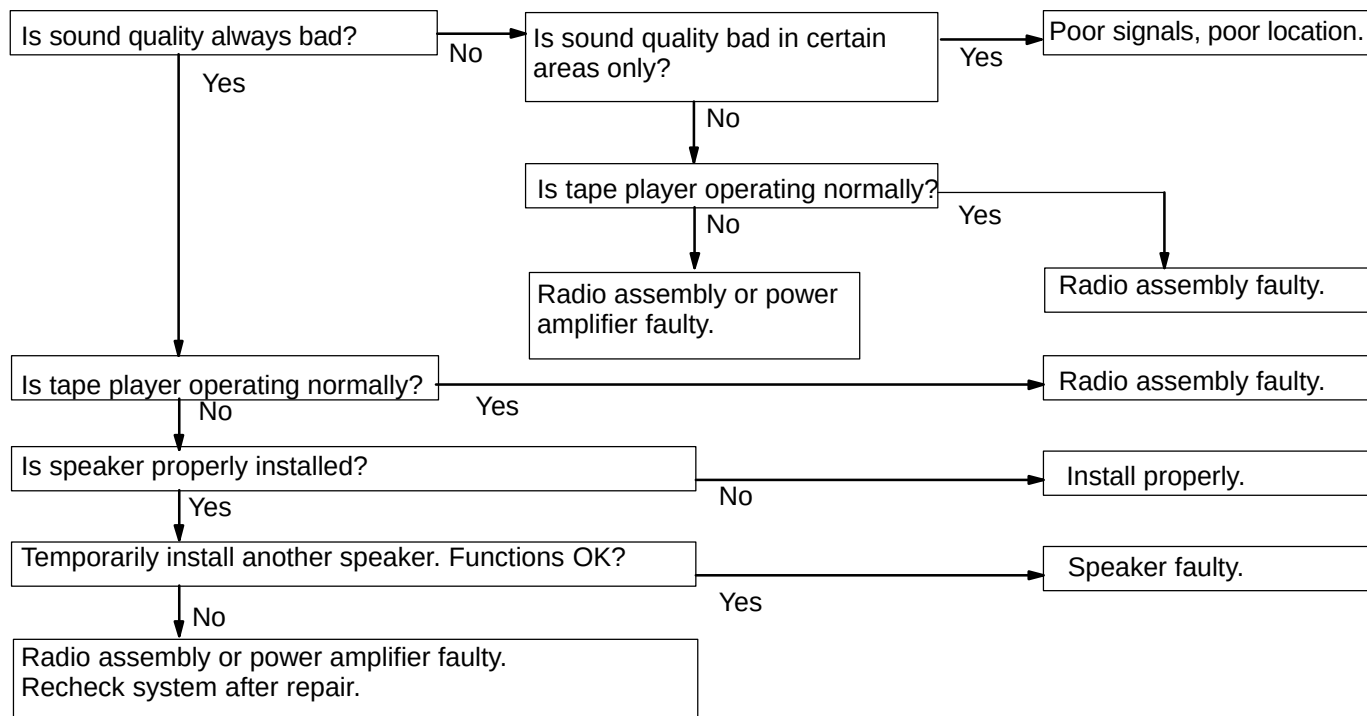
4	Radio	ANY SPEAKER DOSE NOT WORK
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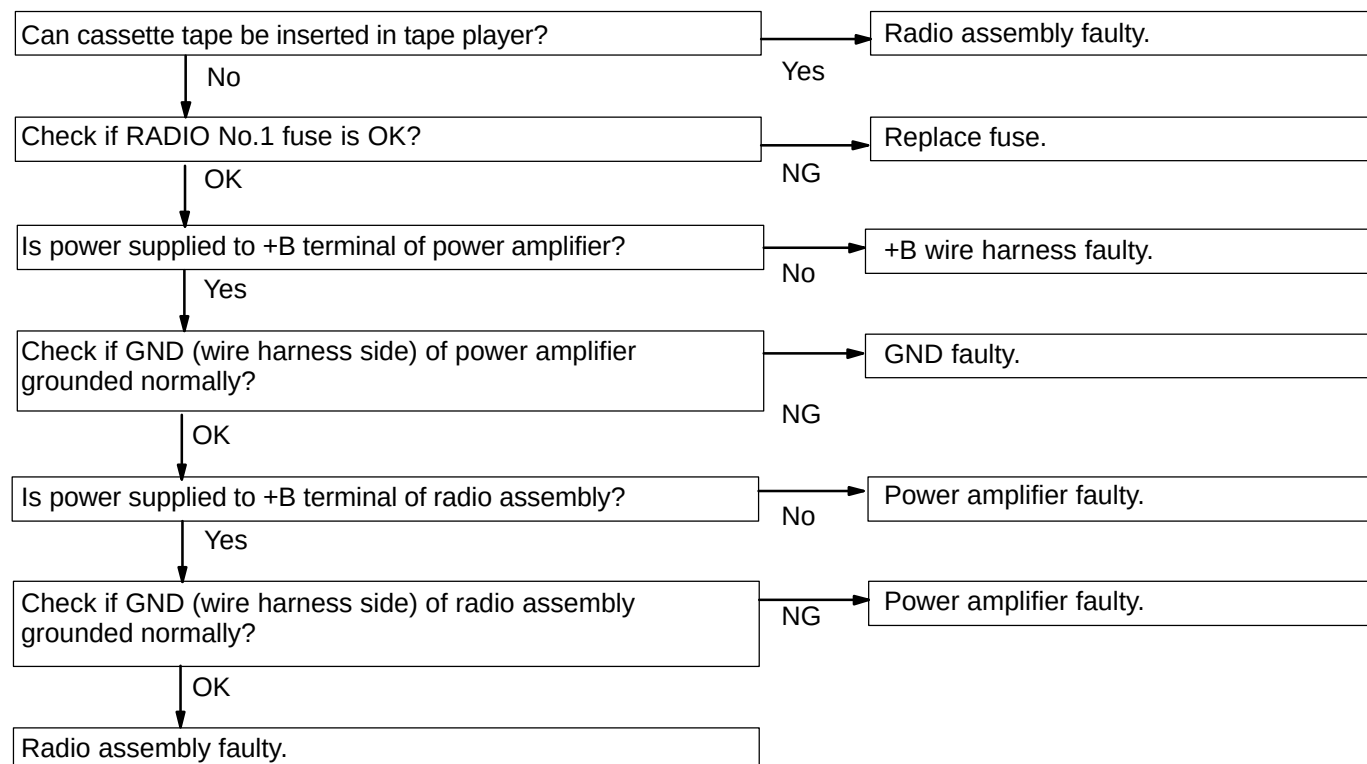




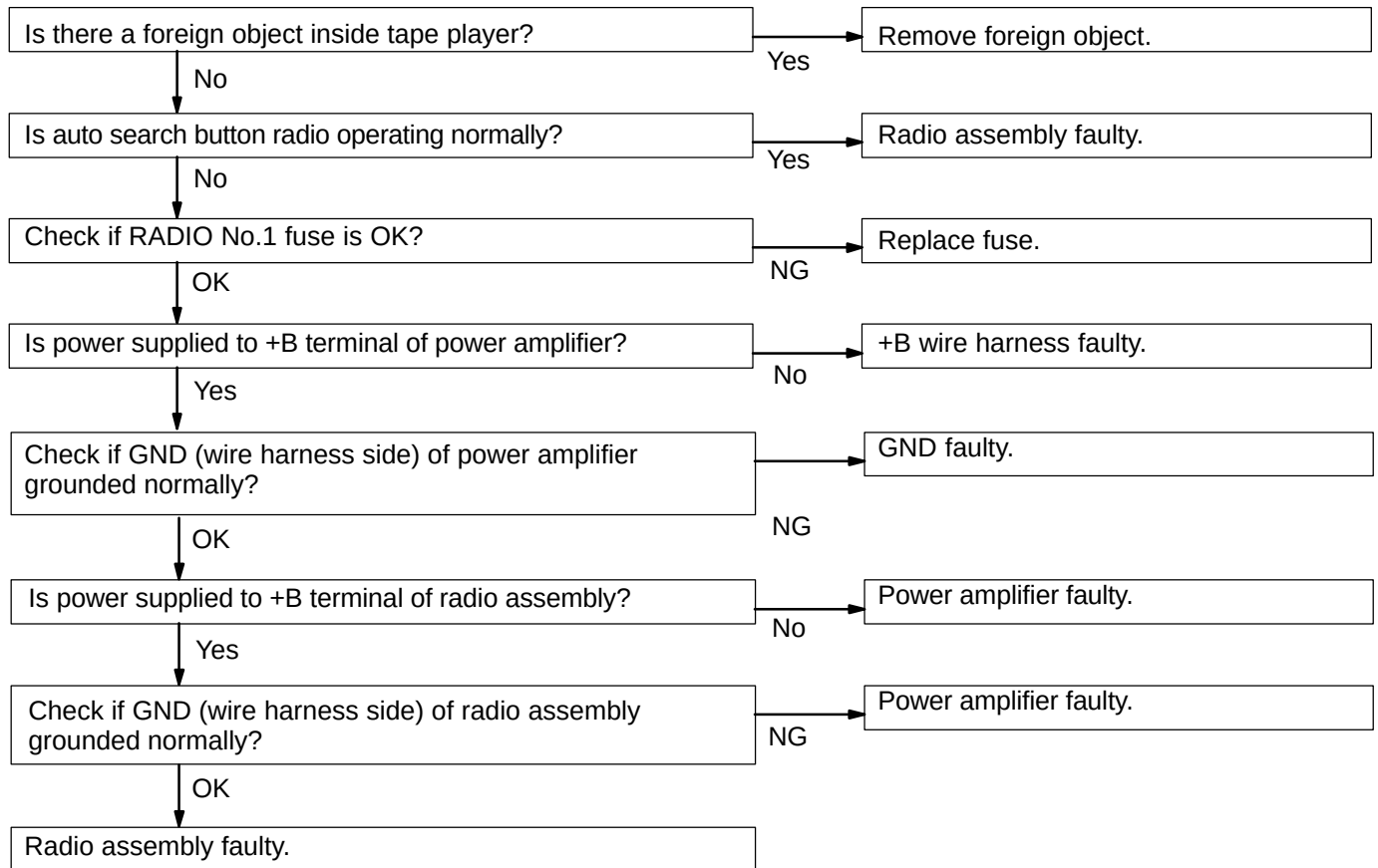
7	Radio	SOUND QUALITY POOR
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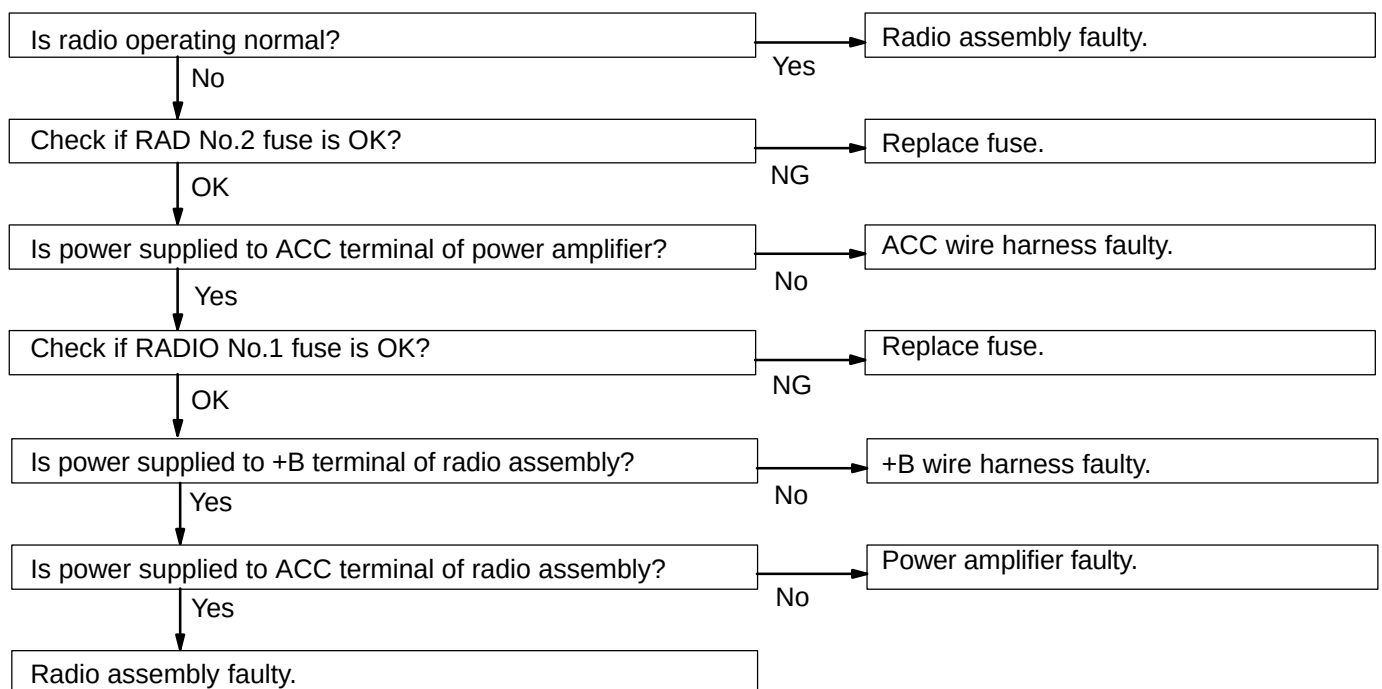
8	Radio	PRESET MEMORY DISAPPEARS
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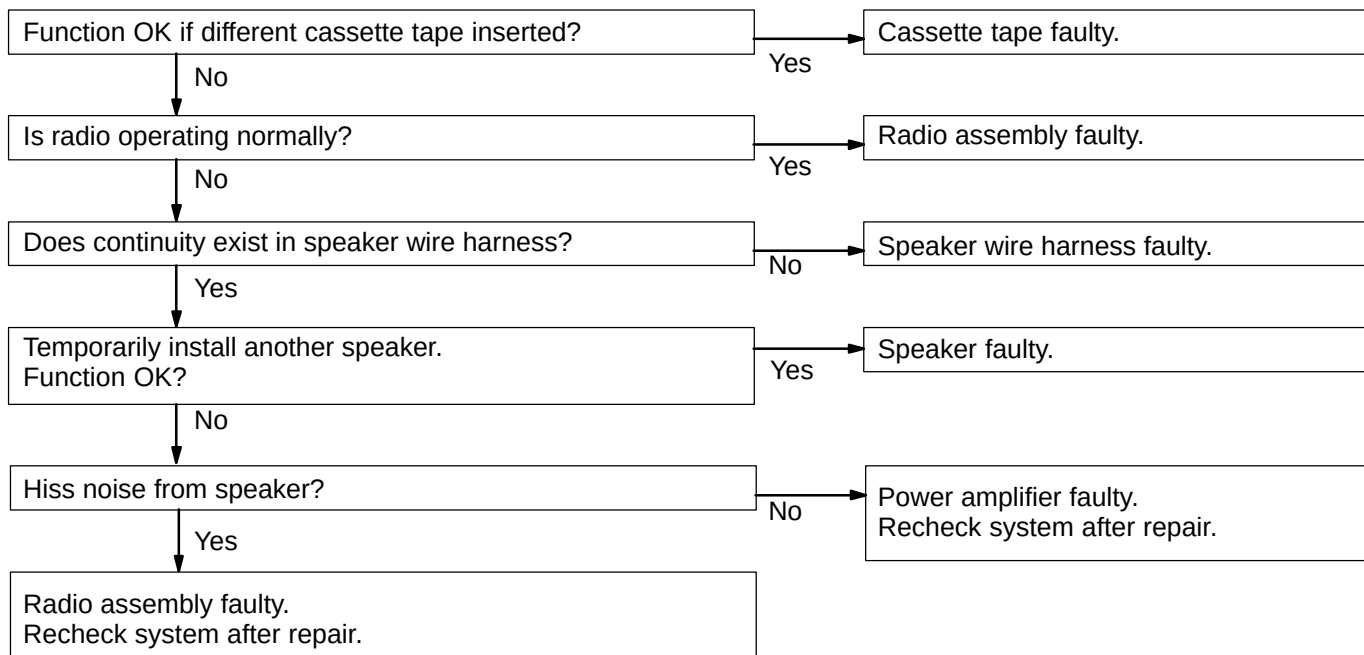
9	Tape Player	CASSETTE TAPE CANNOT BE INSERTED
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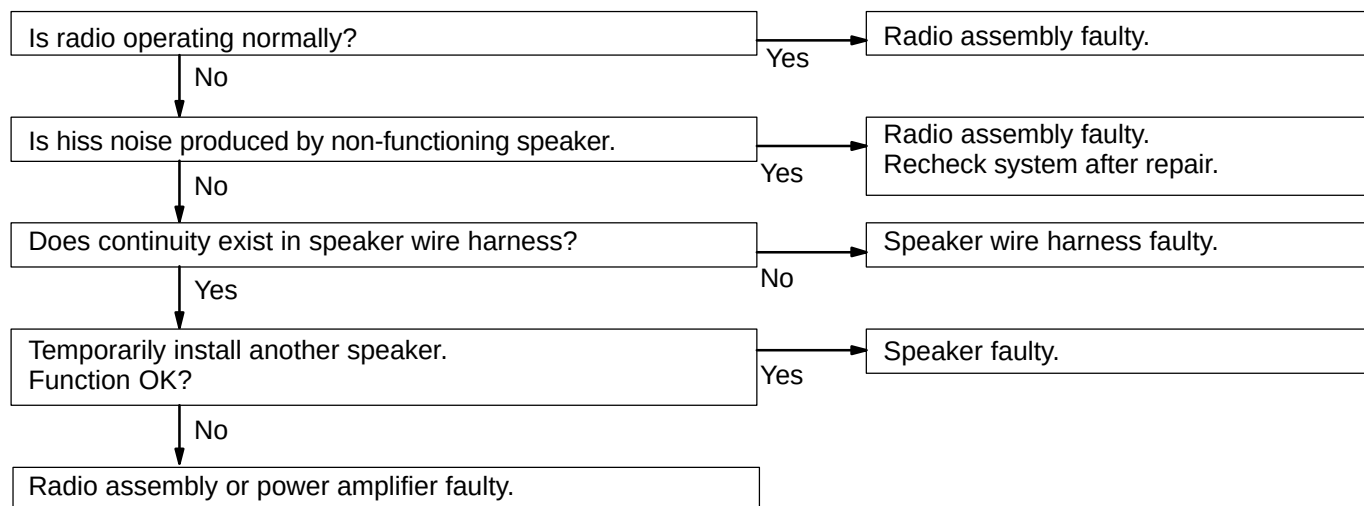
10	Tape Player	CASSETTE TAPE INSERTED, BUT NO POWER
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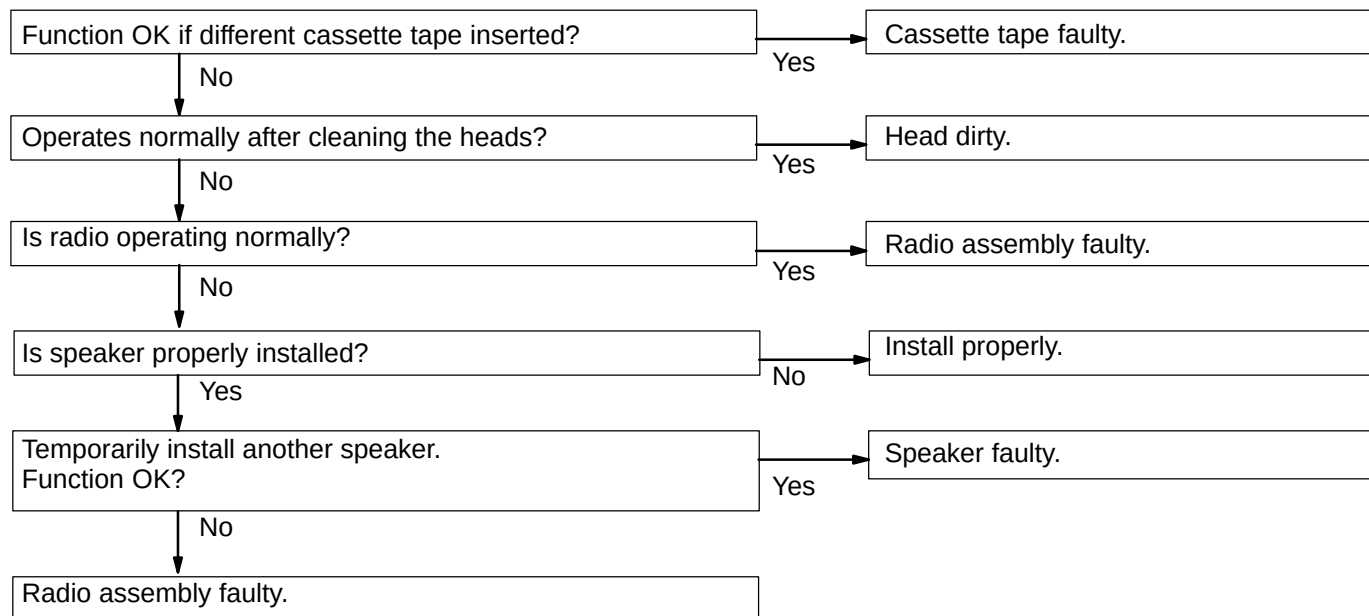
11	Tape Player	POWER COMING IN, BUT TAPE PLAYER NOT OPERATING
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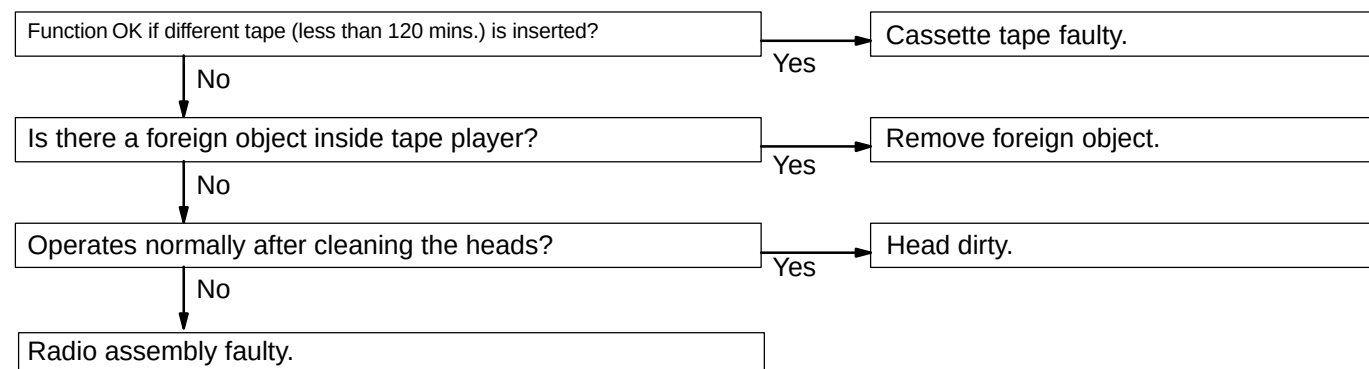
12	Tape Player	ANY SPEAKER DOES NOT WORK
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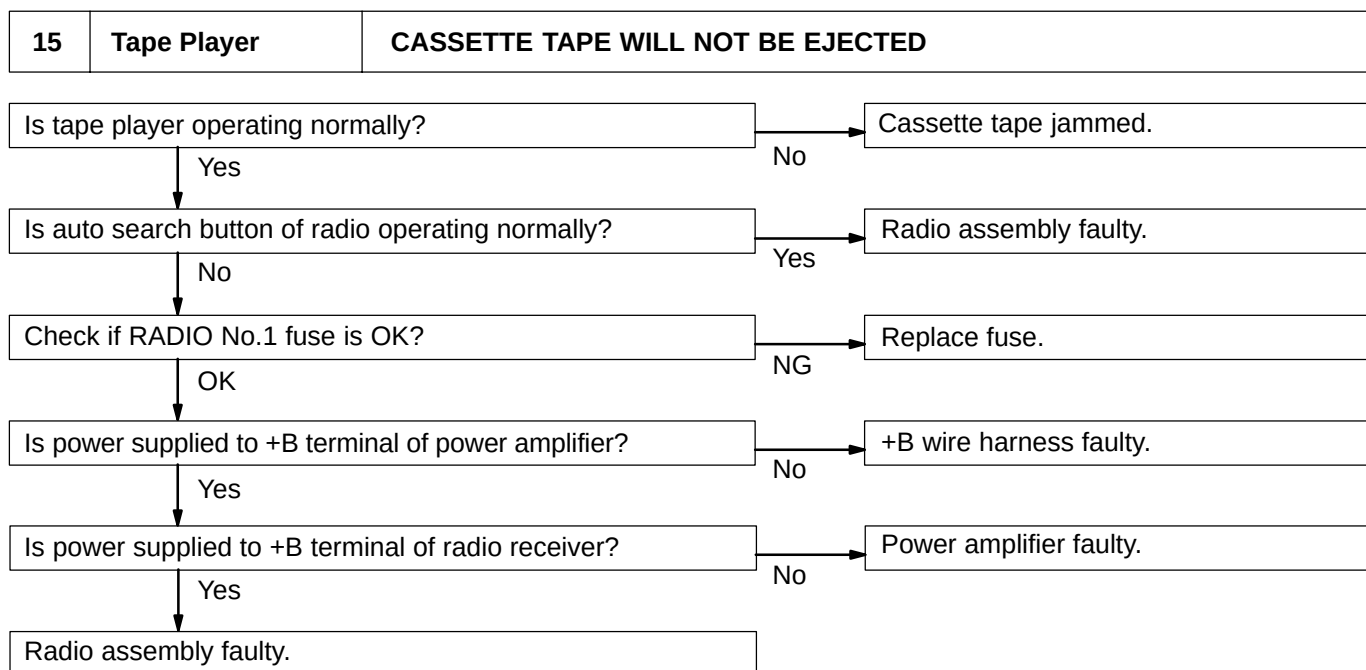


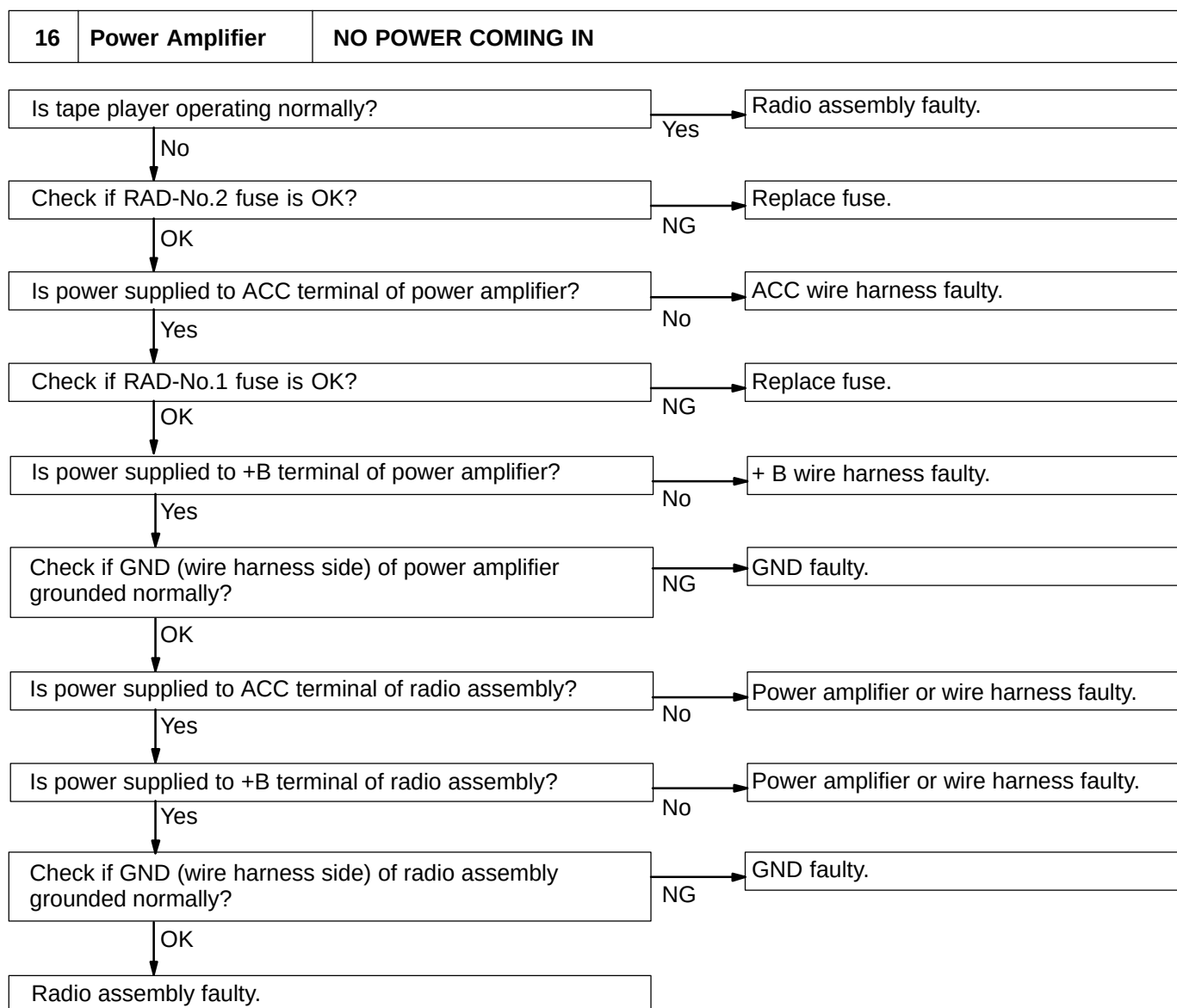
13	Tape Player	SOUND QUALITY POOR (VOLUME FAINT)
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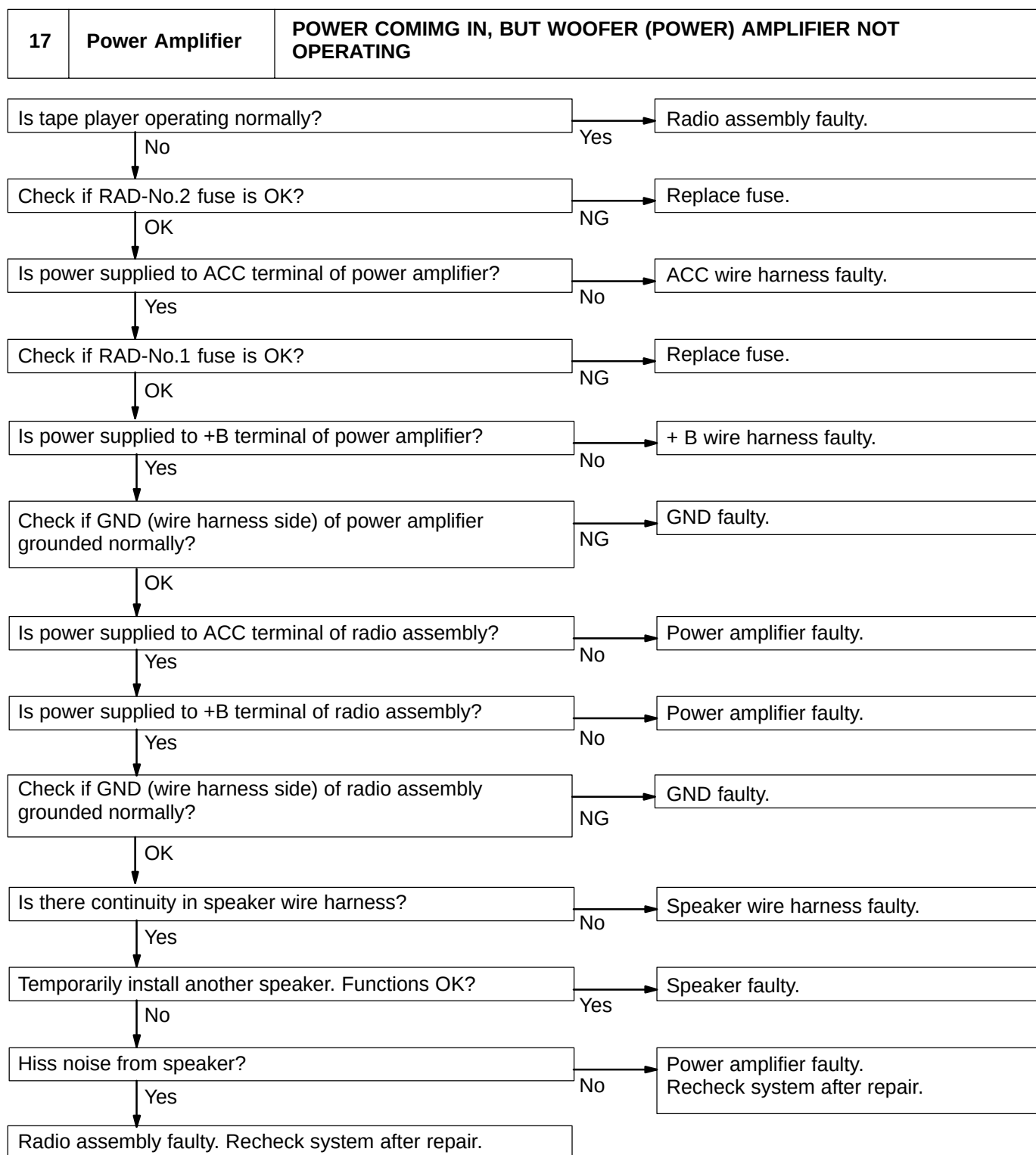


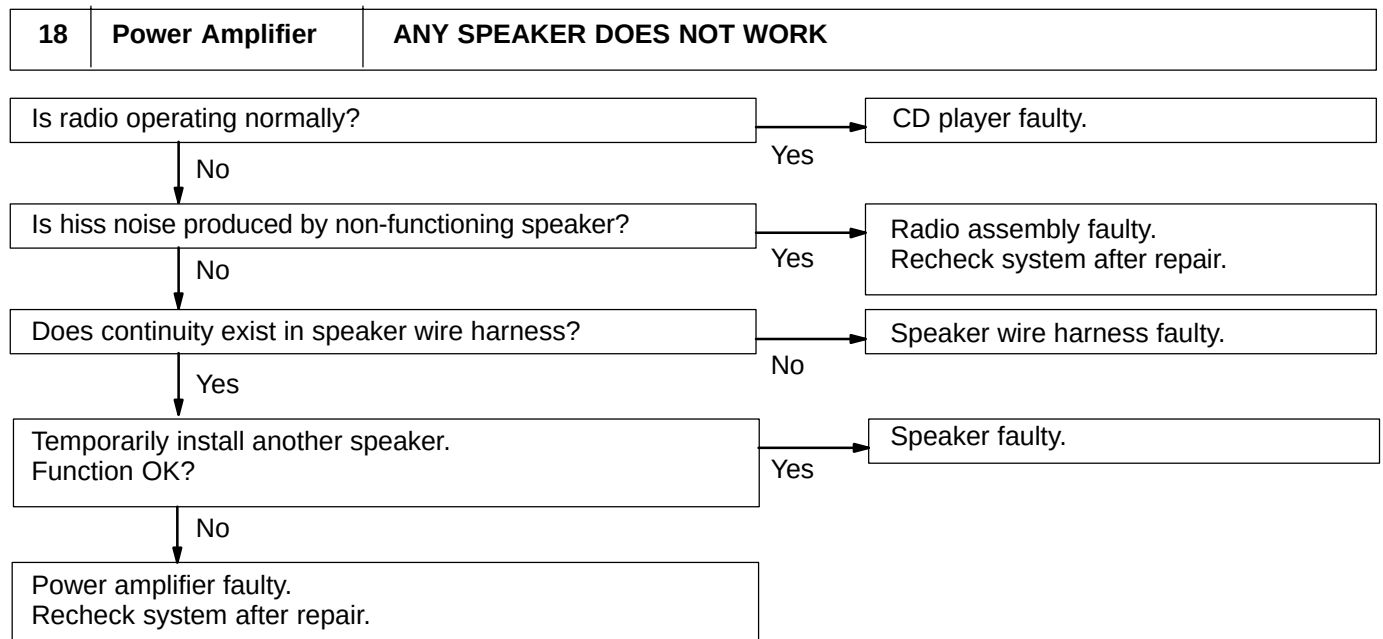
14	Tape Player	TAPE JAMMED MALFUNCTION WITH TAPE SPEED OR AUTO-REVERSE
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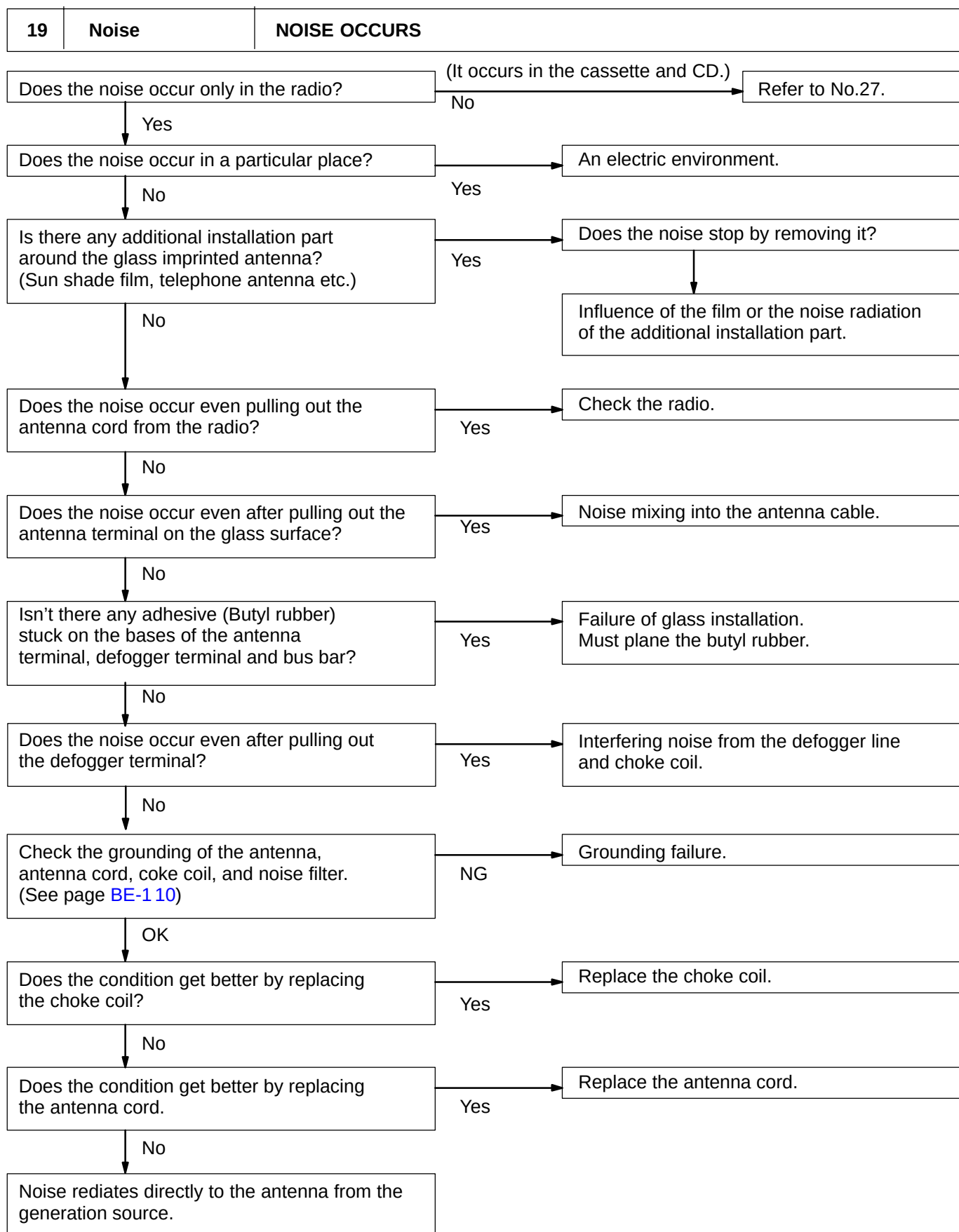




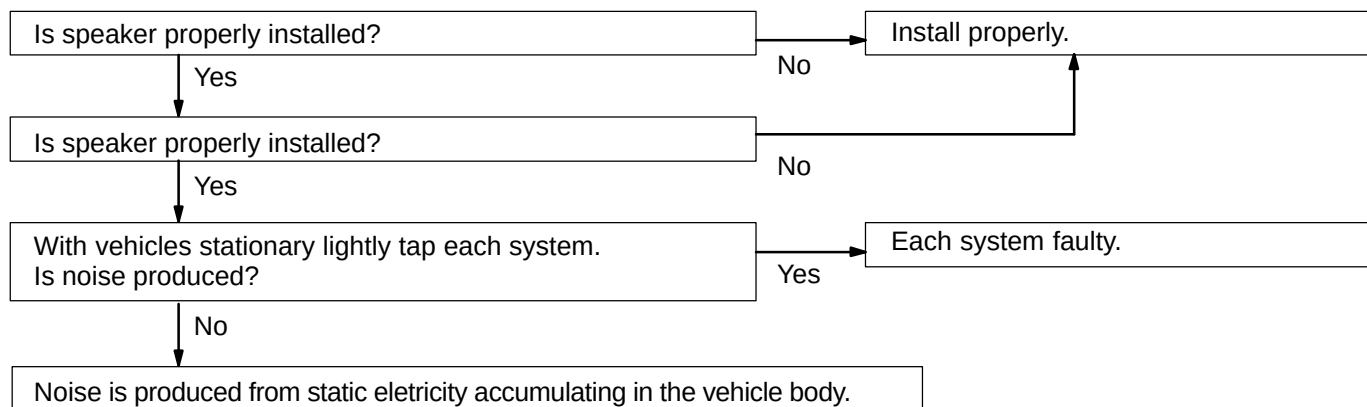








20	Noise	NOISE PRODUCED BY VIBRATION OR SHOCK WHILE DRIVING
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21	Noise	NOISE PRODUCED WHEN ENGINE STARTS
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