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BODY ELECTRICAL SYSTEM

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GENERAL DESCRIPTION

HANDLING PRECAUTION

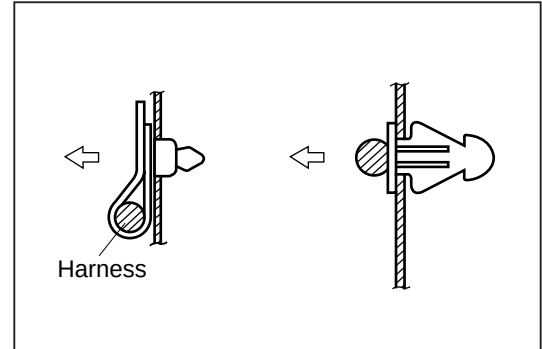
GENERAL INSTRUCTIONS

1. Never pull the connectors or step on them during the wire harness transport or assembly.
(Prevention of pulling-out of terminals, connector cracks, deformation and so forth.)
2. Care must be exercised to ensure that no scratch is made to the wire harness by burrs or edges during the wire harness transport or assembly
(Prevention of scratches to the outer trim, electrical insulators and so forth.)
3. Clamping method. In the case of resin clamps, ensure that the clamp section is fitted in the body hole.

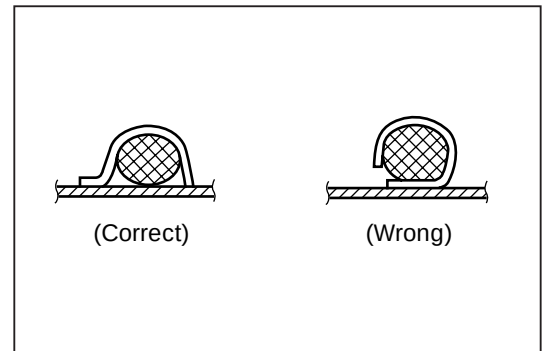
NOTE:

- Ensure that the clamp will not be detached when it is pulled lightly in the arrow-headed direction.
(Prevention of interference due to the detachment of the clamp)
- In the case of metal sheet welded clamps, be sure to assemble the harness in such a way that the harness will not come in contact with the welded surface.
(Prevention of wire harness damage due to welding burrs)
- In case that the locating guide of the clamp position or the clamp mark is clamped, make sure that the clamp is located within the guide. As for the clamp at the clamp mark section, ensure that the clamping is made at a point within ± 10 mm.
(Prevention of slackness or interference)

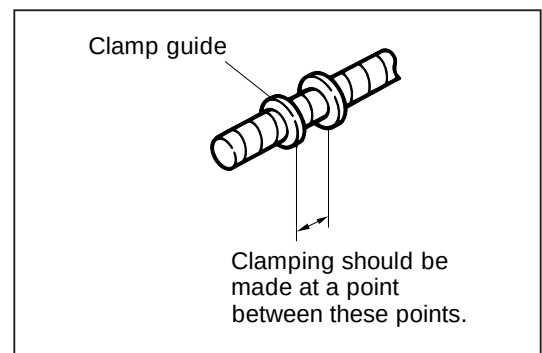
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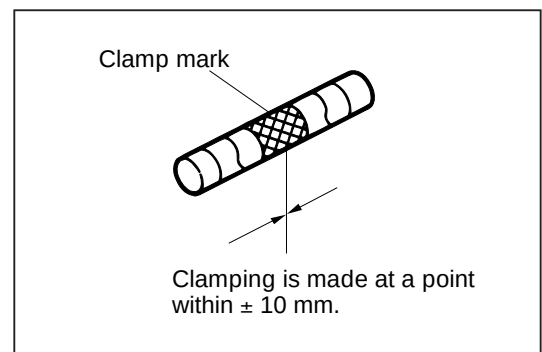
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MBE00004-00002



MBE00005-00003



MBE00000-00004

4. Terminals and connectors

Perform the connection of connectors positively.

Connector with lock:

Ensure that the connector is locked completely.

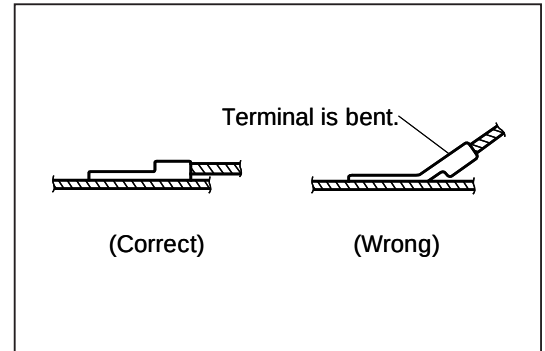
Connector without lock:

Connect the connector positively until it stops.

MBE00006-00000

Retention by screws

- When the tightening torque is specified, be sure to observe the specification strictly.
(The tightening torque is posted in the table separately.)
- Ensure that the staked section may not come on the assembling surface.
- After completion of the tightening operation, lightly pull out the terminal. Ensure that there is no slackness.
- When performing other operations, care must be exercised to ensure that no connected connector is detached by pulling out the wire harness forcibly.

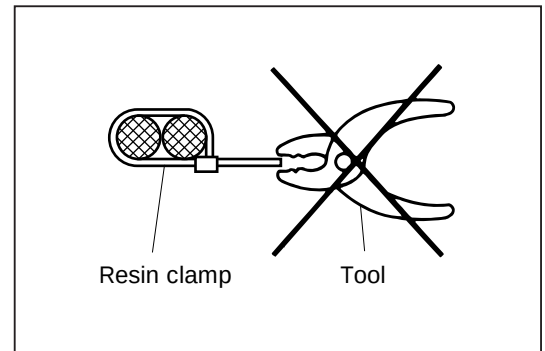


MBE00007-00005

5. Work procedure for tightening-up type resin clamps. When the tightening-up type resin clamps are employed, do not use any pliers, cutting pliers or the like.

<Reason>

Prevention of clamps being cut or scratched



MBE00008-00006

OPERATION OF LOCK TYPE CONNECTOR

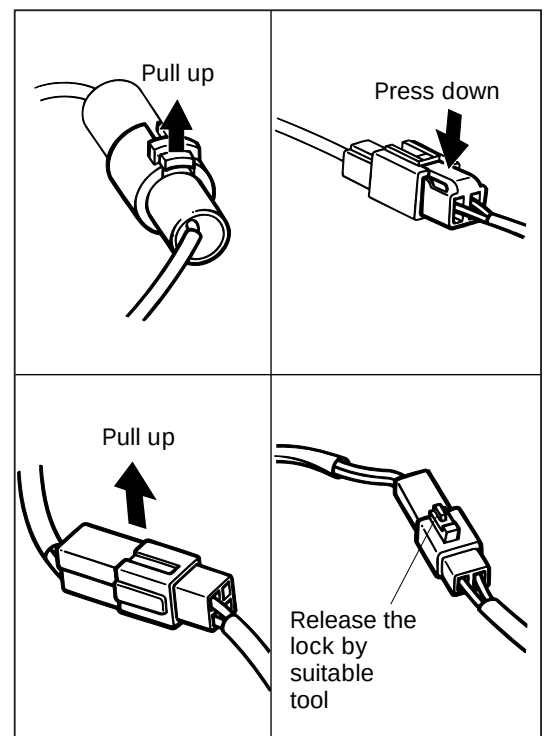
<Conventional type>

The lock type of the connector comes in a push release type, a pull release type, a spring lock type, an one-way lock type and so on.

After confirming the shape of the lock, unlock the lock. Disconnect the connector while holding the connector by hand.

NOTE:

- Never pull the harness during the disconnection.
- Be sure to pull out the connector straight so as not to damage the terminal.



MBE00009-00007

BE-4

<Double lock type>

The double lock type connector has been adopted for air bag system to prevent unexpected troubles such as poor connecting.

NOTE:

- Disconnection and connection of each connector should be kept at a minimum level. If unnecessary disconnection or connection is repeated, it may cause unexpected troubles such as poor continuity and chattering.

TERMINAL REMOVAL & INSTALLATION

Removal of terminal

<Housing lance type>

Insert a miniature screwdriver through the opening section of the connector into between the locking lug and the terminal. While prying up the locking lug with the screwdriver, pull the terminal backward.

<Metal lance type>

While pushing the lance with the screwdriver, pull the terminal backward.

Installation of terminal

<Housing lock type>

Push the terminal into the protruding section of the connector, until the lock is engaged completely. Lightly pull the harness to assure that the locking has been made completely.

<Metal lance type>

Insert the terminal into the connector, until lance is locked completely. Lightly pull the harness to assure that the locking has been made completely.

INSPECTION

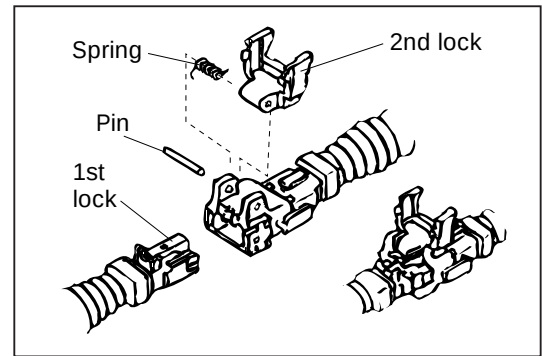
<Tester (Volt/Ohmmeter)>

For the inspection, use a tester having an internal resistance of more than 10 k Ω /V.

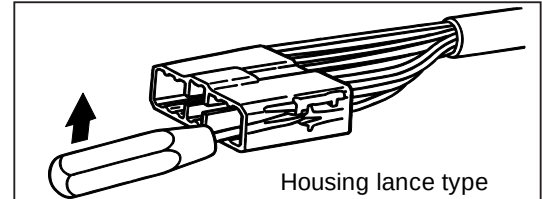
Use of a tester with a low internal resistance may cause wrong measurement or secondary troubles.

<Conventional type connector>

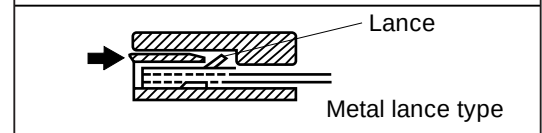
When resistance and/or voltage measurement is conducted at the connector section, insert the measuring probe from the back of the connector, being very careful not to damage the harness-to-terminal connections.



MBE00010-00008

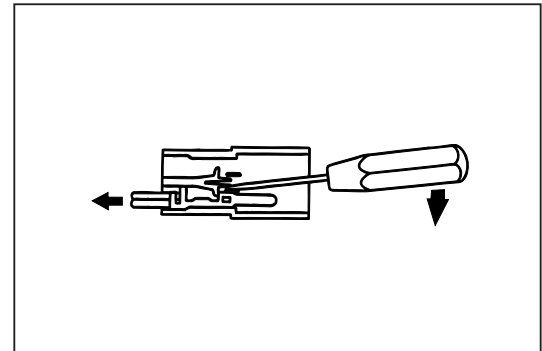


Housing lance type

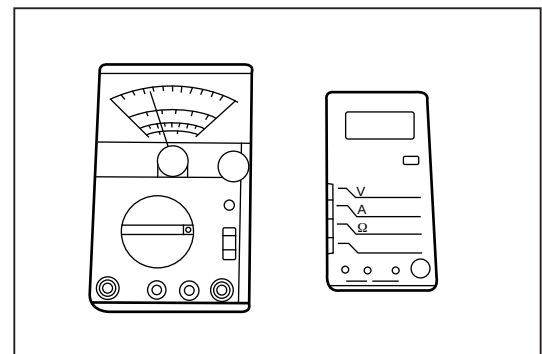


Metal lance type

MBE00011-00009



MBE00012-00010



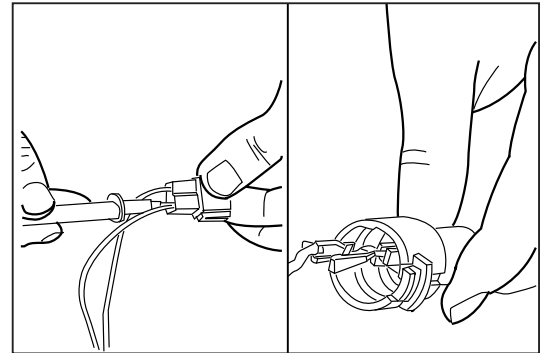
MBE00013-00011

<Water-proof type connector>

When resistance measurement and/or voltage measurement is conducted at the connector section, bring the measuring probe into contact with the terminal at the connection side of the connector.

Be very careful not to apply excessive force to the terminal at the connector side. Failure to observe this caution may deform the terminal, causing poor continuity. As an alternative method, insert a male or female terminal into the connector terminal or connect an adequate attachment.

Then, connect the measuring probe.



MBE00014-00012

WIRE SIZE & COLOR CODE

For identification purpose, each wire has its own color. Each color bears a code as described in the right table. These codes are used in the wiring diagram and will be helpful during trouble shooting.

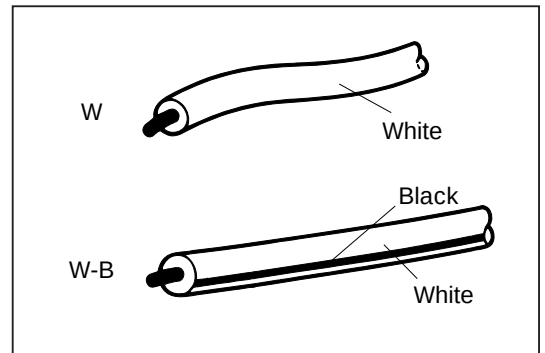
Code	Gr	Br	B
Color	Gray	Brown	Black
Code	W	R	G
Color	White	Red	Green
Code	Y	L	O
Color	Yellow	Blue	Orange
Code	P	Lg	V
Color	Pink	Light green	Violet

MBE00015-00000

The wire color comes in two kinds: single color and composite color. In the case of single color, the whole outer coat of the harness is of a single color.

In the case of composite color, a fine line of the second color is drawn on the harness basic color.

In the case, the code is composed of the basic color code which comes first and the second color code which comes after a hyphen.

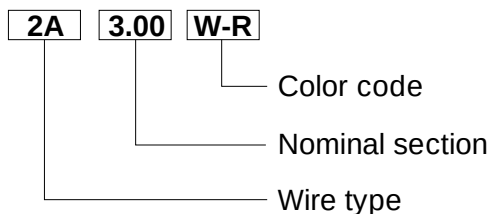


MBE00016-00013

WARNING:

- The wire diameter and capacity of each harness have been determined to assure the normal operation of the electrical system.
- Hence, do not take power for accessories carelessly through the original wiring harness. Failure to observe this caution may cause system malfunction or fire.

MBE00017-00000



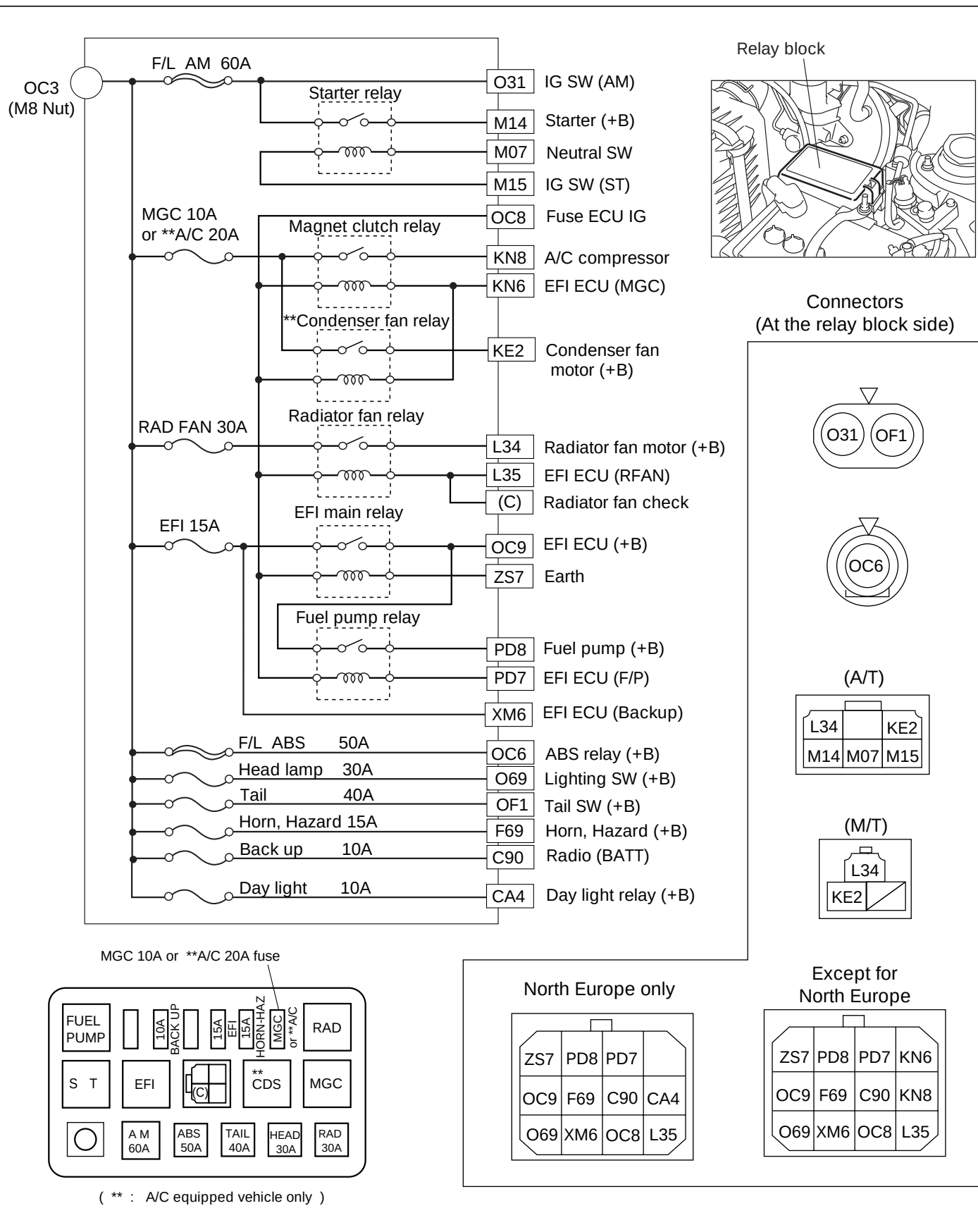
Nominal section	Section area (mm)	Diameter (mm)	Permissible current (A)
0.5	0.56	1.0	9
0.85	0.88	1.2	12
1.25	1.28	1.5	15
2.00	2.09	1.9	20
3.00	3.29	2.4	27

MBE00018-00000

POWER SUPPLY

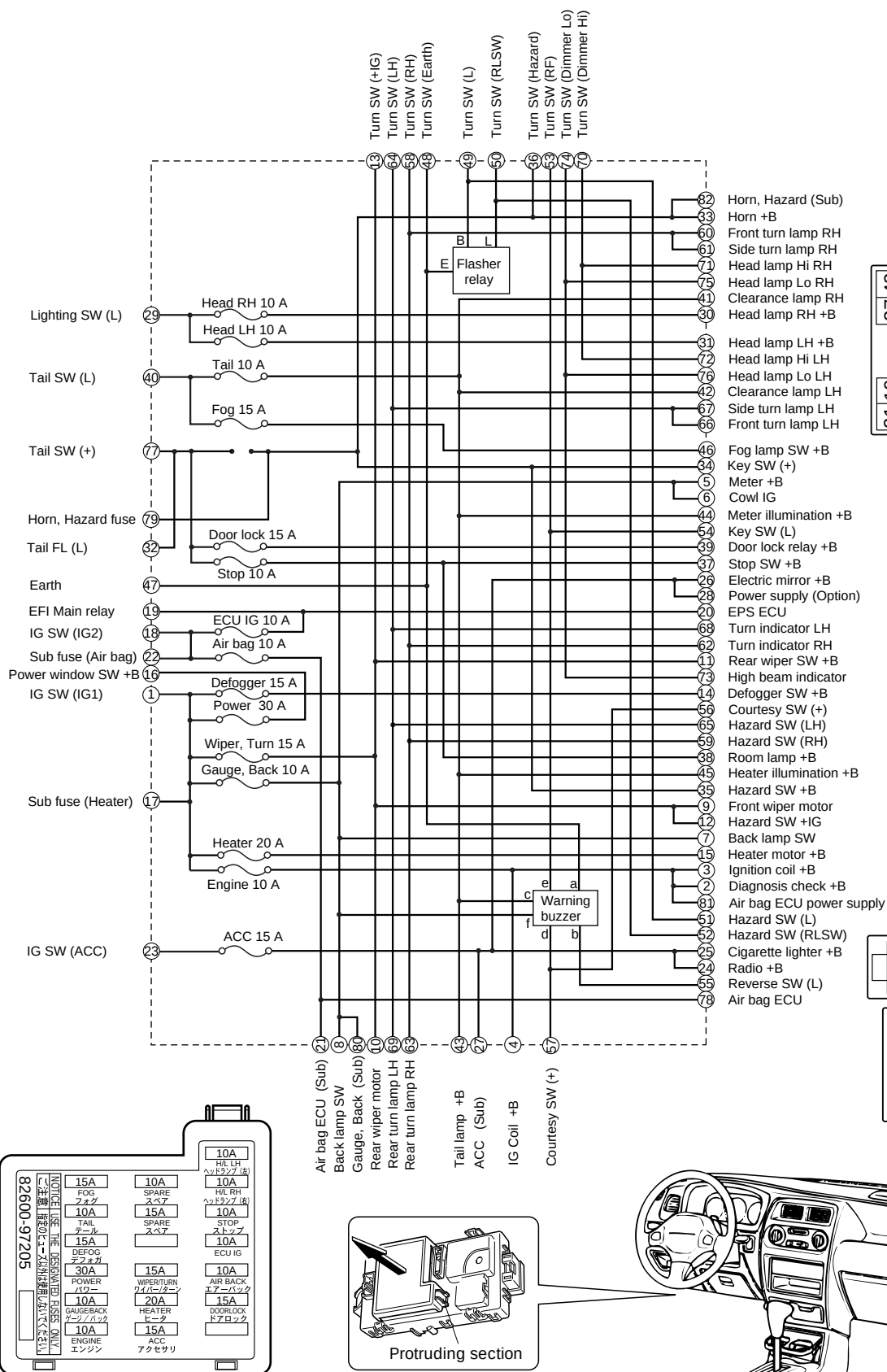
RELAY BLOCK

The relay block is located near the battery in the engine compartment.

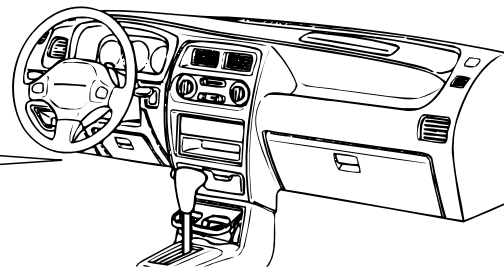
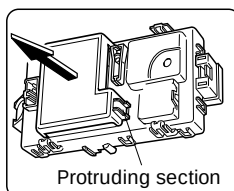
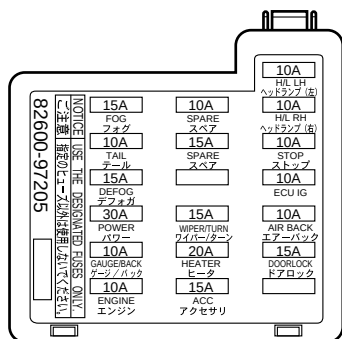
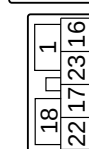
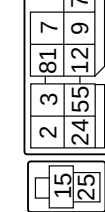
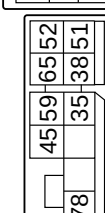
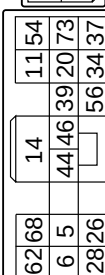
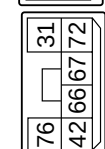
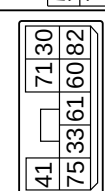
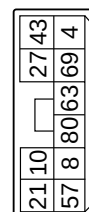
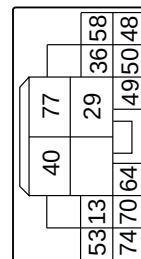


JUNCTION BLOCK

The junction block assembly is located underneath the steering column at the driver's seat side.

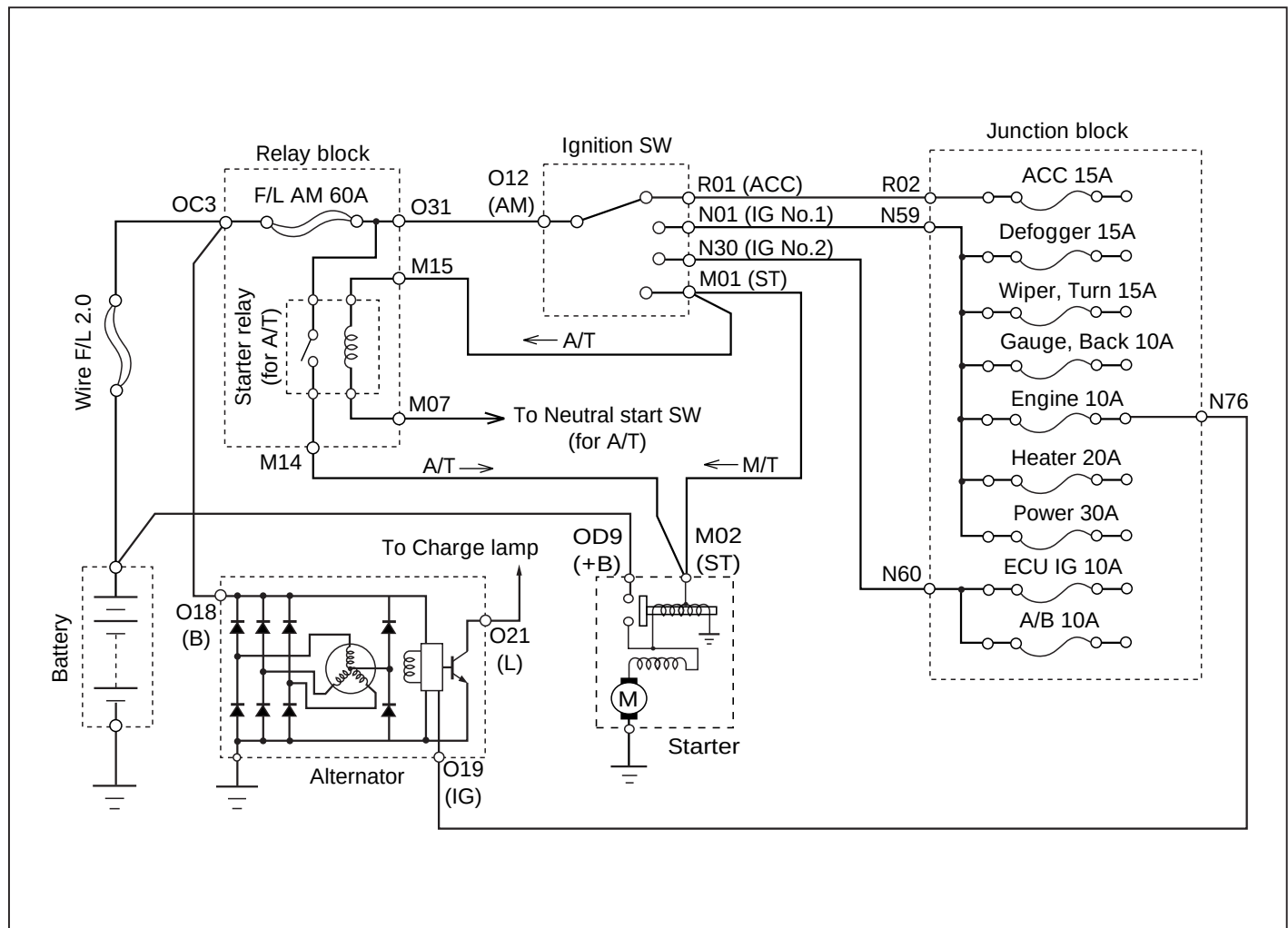


At junction block side



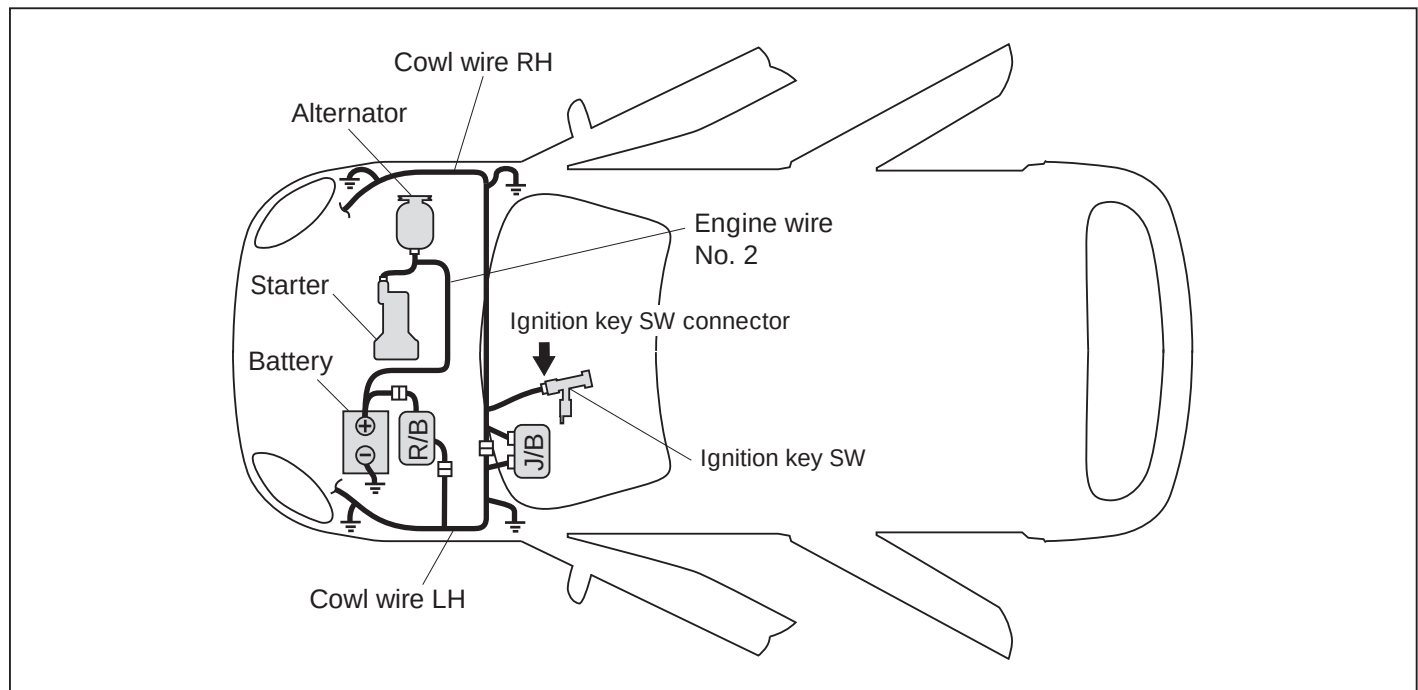
IGNITION KEY SWITCH

CIRCUIT DIAGRAM



MBE00022-00016

CIRCUIT LAYOUT



MBE00023-00017

REMOVAL

1. Turn off the ignition key switch.
2. Disconnect the battery ground cable from the negative (-) terminal.

NOTE:

- In case of air bag equipped vehicle, then, wait for at least 90 seconds.

CAUTION:

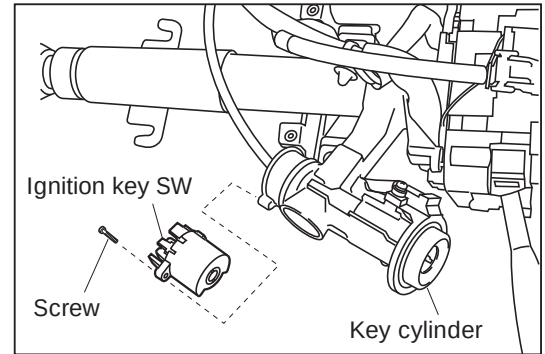
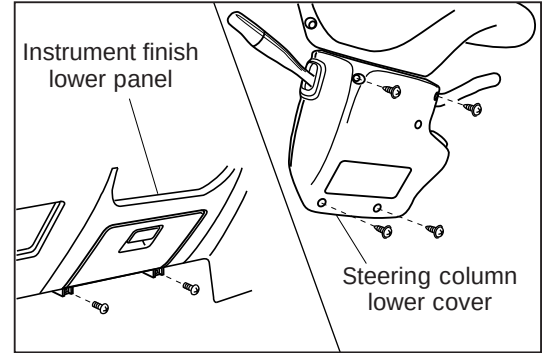
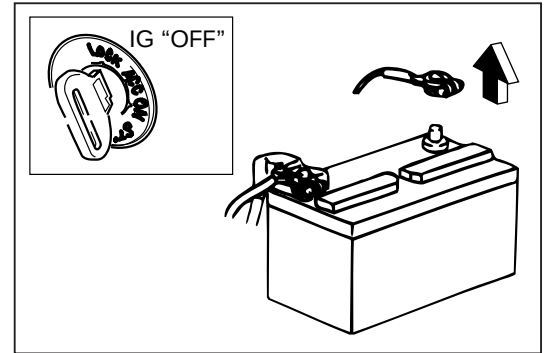
- It should be noted that, when the negative (-) terminal of the battery is detached, the memory of the ECU control for each system will be erased at the same time.

2. Detach the instrument finish lower panel and steering column lower cover.
3. Disconnect the connector from the ignition key switch.

5. Remove the ignition key switch by loosening the attaching screw.

NOTE:

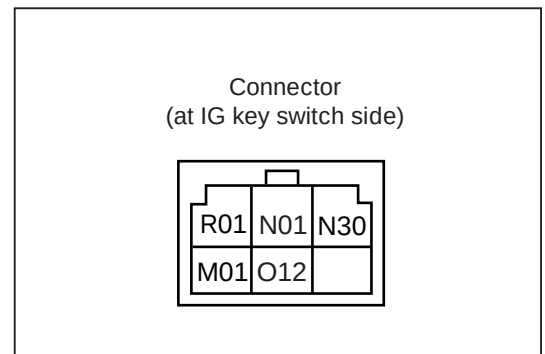
- As regards the removal and installation procedures for the steering column related parts, refer to SR section of the service manual.



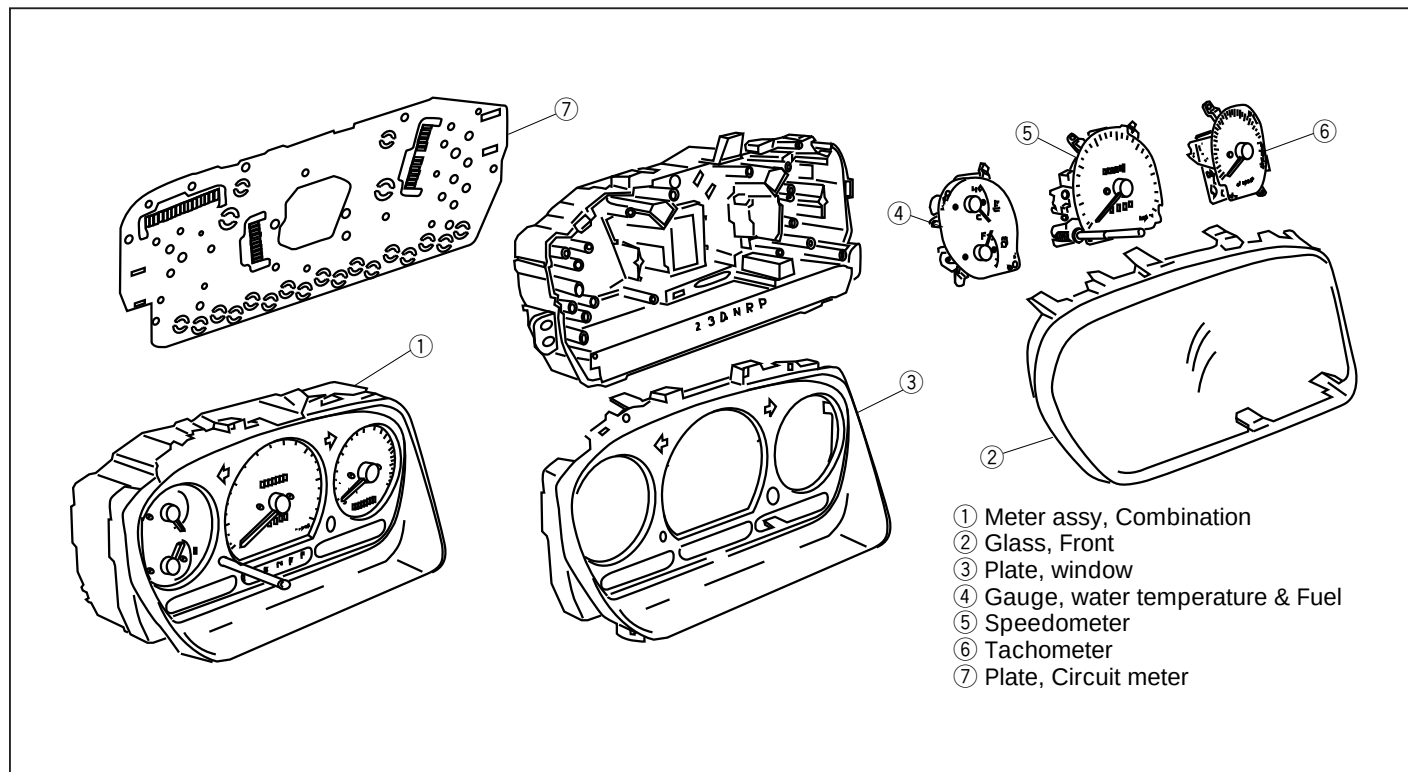
INSPECTION OF IGNITION KEY SWITCH

Ensure that continuity exists between the respective terminals as indicated in the continuity table.

	O12 (AM)	R01 (ACC)	N01 (IG1)	N30 (IG2)	M01 (ST)
LOCK					
ACC	○	○			
ON	○	○	○	○	
START	○		○	○	○

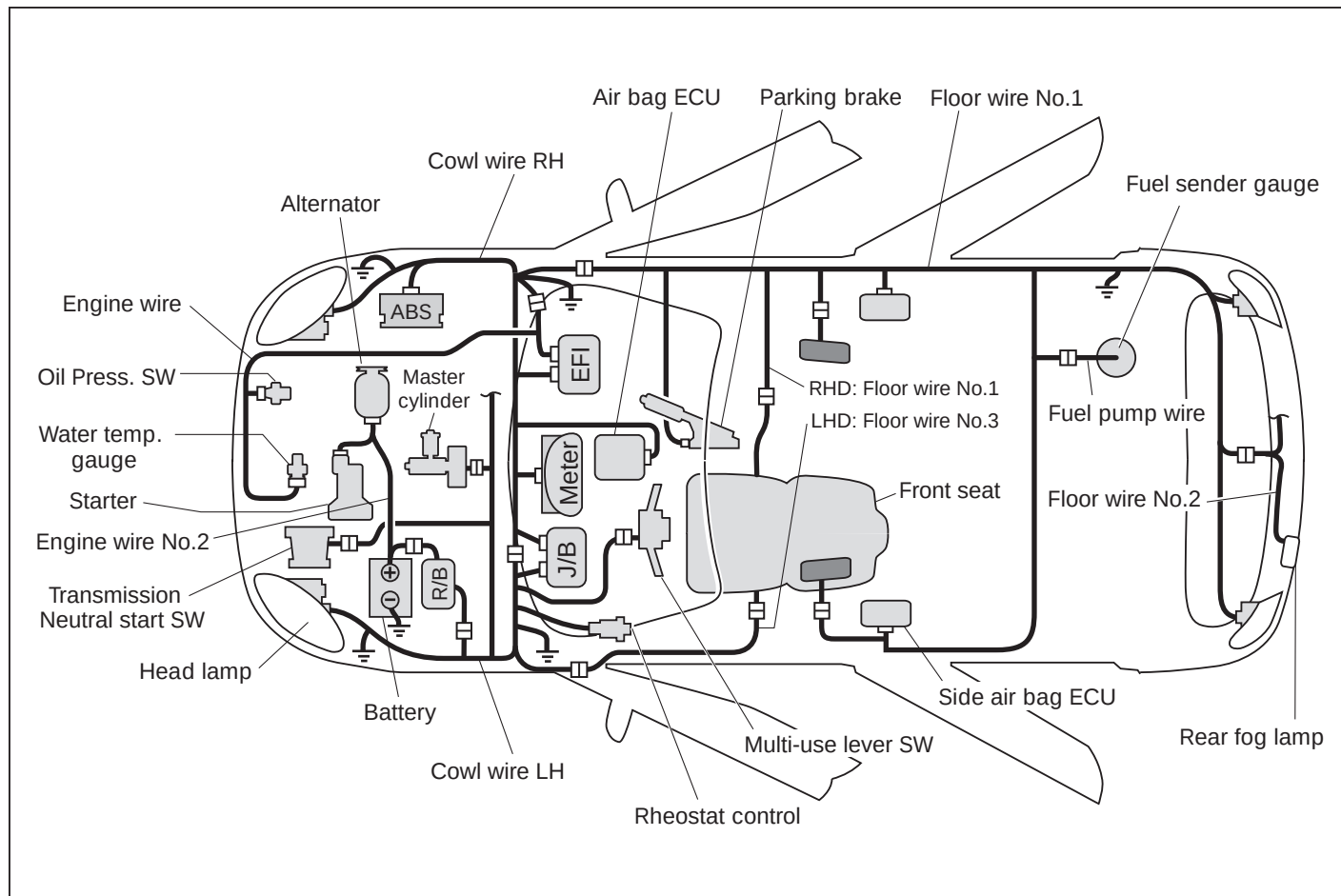


COMBINATION METER CONSTRUCTION



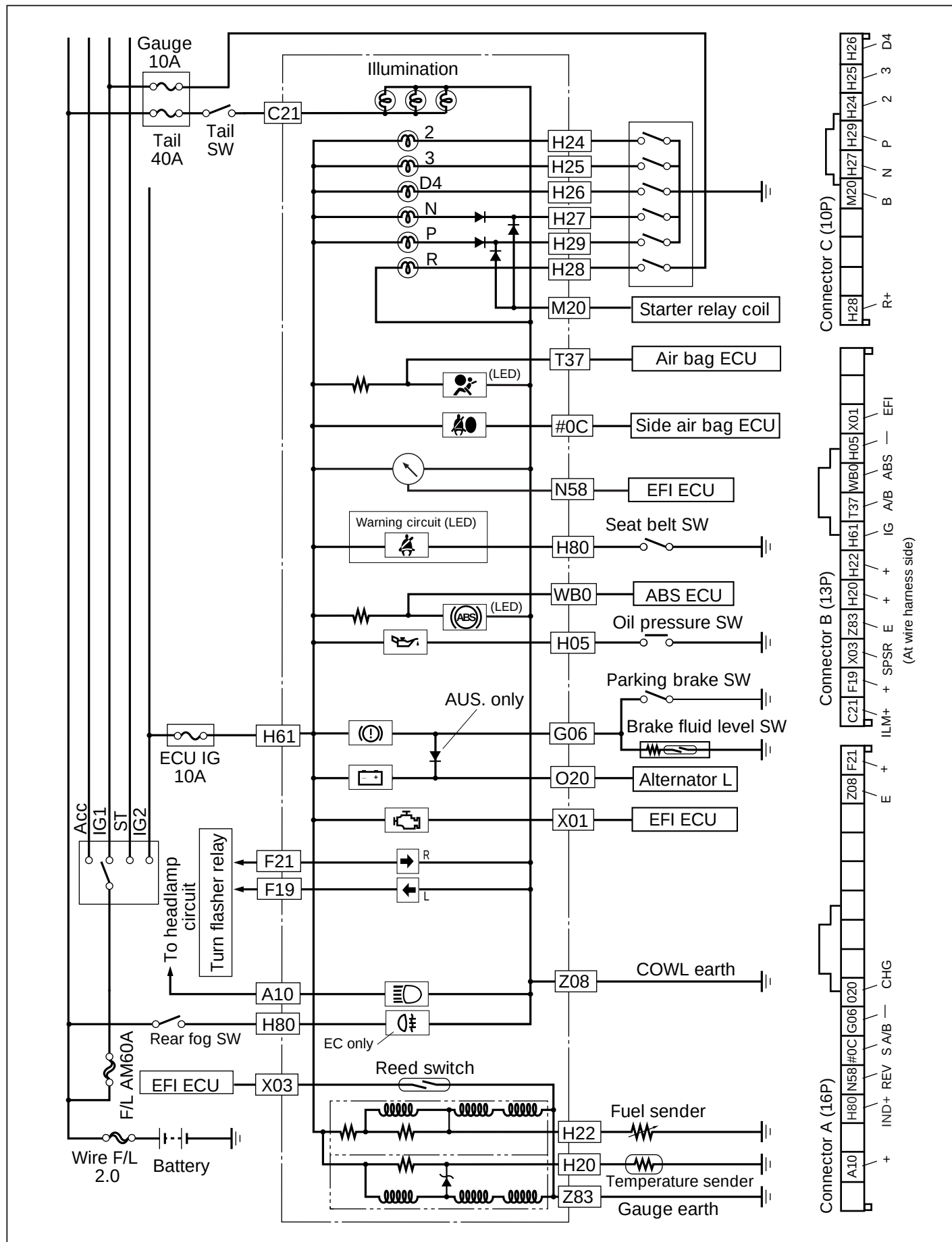
MBE00028-00022

CIRCUIT LAYOUT



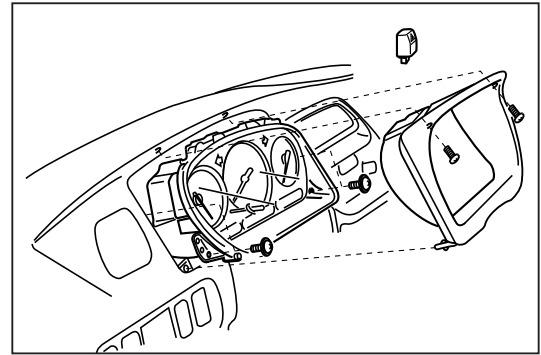
MBE00029-00023

CIRCUIT DIAGRAM



REMOVAL OF COMBINATION METER

1. Pull off the hazard warning switch knob on the steering column.
2. Remove the instrument cluster finish panel from the instrument panel by loosening the screws.
3. Remove the attaching screws of the combination meter assembly.
4. Disconnect the speedometer cable and wire harness connectors at the backside of the combination meter assembly.
5. Remove the combination meter assembly.



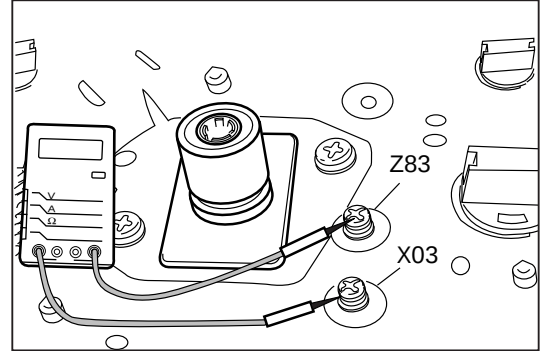
MBE00031-00025

INSPECTION OF SPEED SENSOR

1. Connect an ohmmeter between the terminal X03 and Z83,
2. Turn the speedometer drive shaft.
3. Check to see if continuity exists.

NOTE:

- The continuity should be 4 times per each revolution of the speedometer drive shaft.



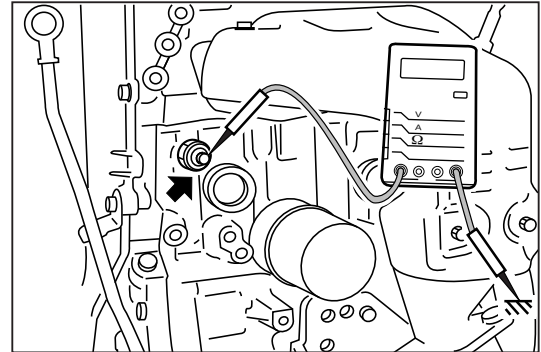
MBE00032-00026

INSPECTION OF LOW OIL PRESSURE WARNING

1. Disconnect the connector from the low oil pressure warning switch.
2. Connect an ohmmeter. Ensure that continuity exists between the oil pressure switch terminal and the ground while the engine is stopped, whereas no continuity exists while the engine is running.

NOTE:

- If not, replace the oil pressure switch.
- As regards the removal and installation procedures for this switch, refer to the LU section.



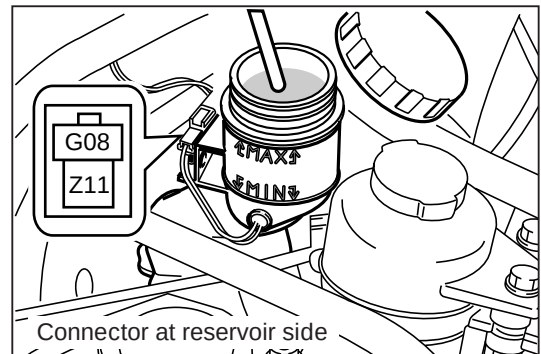
MBE00033-00027

INSPECTION OF BRAKE FLUID LEVEL WARNING

1. Disconnect the connector of the brake fluid level warning switch at the brake reservoir tank.
2. Connect an ohmmeter between the terminal G08 and Z11.
3. Remove the reservoir tank cap. Press down the float with a clean rod. Ensure that continuity exists.

NOTE:

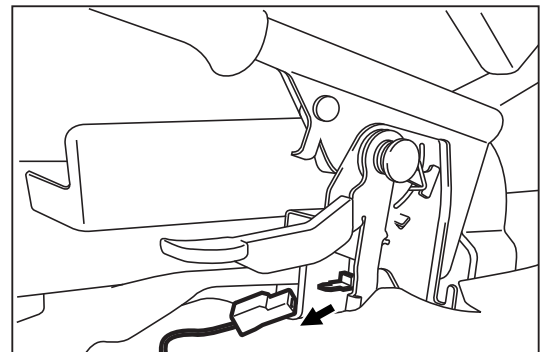
- As for a rod to be used for pressing down the float, be sure to thoroughly clean it. Special care must be exercised to ensure that no dust nor water gets into the reservoir.



MBE00034-00028

INSPECTION OF PARKING BRAKE WARNING

1. Remove the rear console box.
2. Disconnect the connector from the parking brake switch.
3. Ensure that the brake warning lamp goes on when ground the terminal at the wire harness side.
4. Ensure that continuity exists between the switch terminal and the body earth when the parking brake lever is pulled upward.



MBE00035-00029

INSPECTION OF FUEL GAUGE

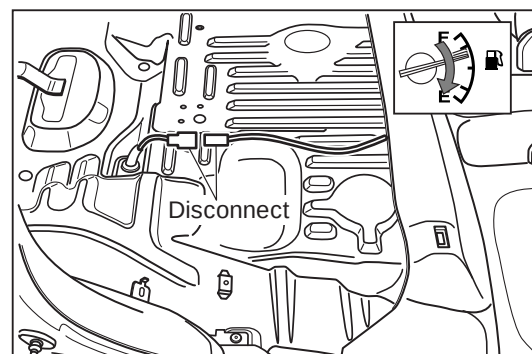
<FUEL RECEIVER GAUGE (POINTER)>

In-Vehicle inspection

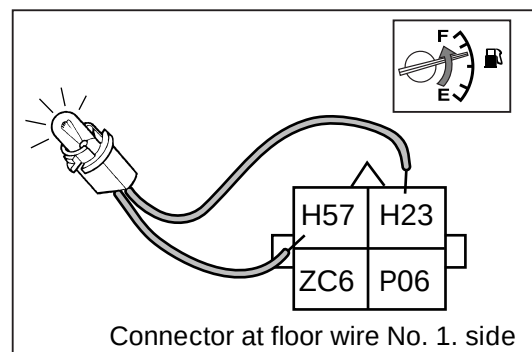
1. Remove the rear seat.
2. Disconnect the connector from the fuel sender gauge/fuel pump assembly.
3. Under this condition, turn on the ignition switch.
4. Ensure that the pointer of the receiver gauge returns to the position "E".
5. Turn off the ignition switch.
6. Connect the connector between the terminal H23 and H57 through a test lamp (12V - 3.4W)
7. Under this condition, turn on the ignition switch.
8. Ensure that the pointer of the receiver gauge rises gradually and registers the position "F".
9. Turn off the ignition switch.
10. Ensure that the pointer of the receiver gauge remains stationary and registers the position "F".

NOTE:

- If not, check or replace the wire harness and the fuel receiver gauge.



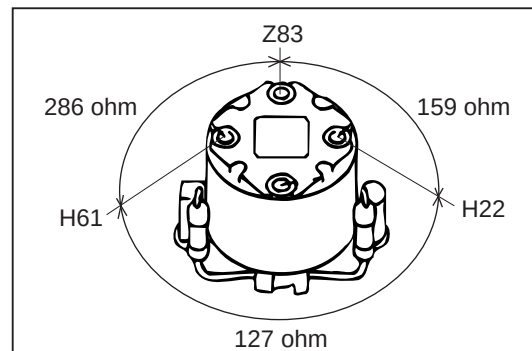
MBE00036-00030



MBE00037-00031

Unit inspection

1. Remove the combination meter assembly.
2. Remove the fuel receiver gauge unit from the combination meter.
3. Measure the resistance between the terminals.
Specified Resistance: Z83 - H61 approx. 286 Ω
Z83 - H22 approx. 159 Ω
H61 - H22 approx. 127 Ω



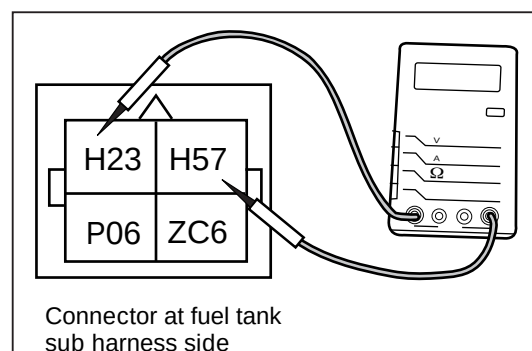
MBE00038-00032

<FUEL SENDER GAUGE>

In-Vehicle inspection

1. Remove the rear seat.
2. Disconnect the connector of the wire harness from the sender gauge/fuel pump assembly.
3. Connect a Circuit tester between the terminal H23 and H57.
4. Ensure that the resistance conforms to the standard value for float position specified in the table.

Float position	Resistance (Ω)
F	3 ± 2
E	120 ± 7



MBE00039-00033

Removal of fuel sender gauge/fuel pump assembly

1. Remove the fuel tank.

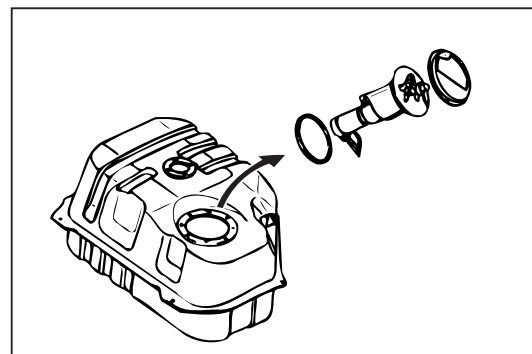
WARNING:

- Never allow any fire to be brought near the working site.

NOTE:

- As regards the removal procedures, see BO section.

2. Remove the fuel sender gauge by loosening the screws.



MBE00040-00034

BE-14

Installation of fuel sender gauge/fuel pump assembly

1. Place a new gasket on the fuel tank.

WARNING:

- Be sure to replace the fuel sender gauge gasket with new one. Failure to observe this caution may cause fire.

2. Install the fuel sender gauge to the fuel tank.
Tightening Torque: 1.5 - 2.5 N·m

3. Install the fuel tank to the body.

NOTE:

- As regards the installation procedures, see BO section.

INSPECTION OF WATER TEMPERATURE GAUGE

<WATER TEMPERATURE RECEIVER GAUGE (POINTER)>

In-Vehicle inspection

1. Disconnect the connector from the water temperature sender gauge.
2. Ground the terminal at the wire harness side through a test lamp (12 V - 3.4 W).
3. Turn on the ignition switch. Ensure that the test lamp goes on and the pointer of the receiver gauge starts to rise gradually.

Unit inspection

1. Remove the combination meter.
2. Remove the water temperature receiver gauge unit from the combination meter.
3. Measure the resistance between the terminals.

Resistance:

Z83 - H61 : approx. 177 Ω

Z83 - H20 : approx. 231 Ω

H61 - H20 : approx. 54 Ω

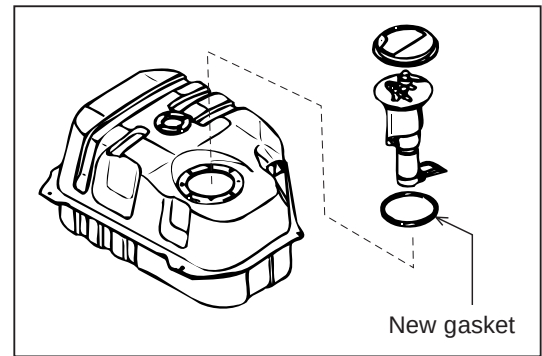
<WATER TEMPERATURE SENDER GAUGE>

In-Vehicle inspection

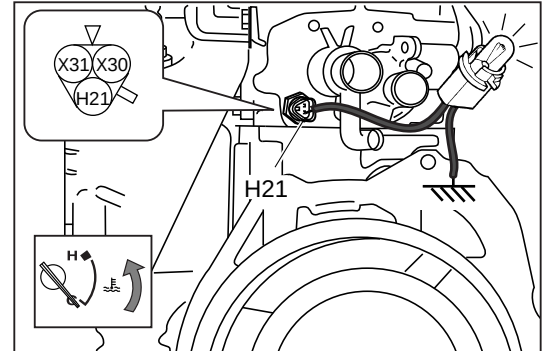
1. Disconnect the connector from the water temperature sender gauge.
2. Under this condition, turn on the ignition switch. Ensure that the pointer of the receiver gauge indicates lowest position.
3. Turn off the ignition switch, Ground the terminal H21 at the water temperature sender gauge side through a circuit tester.
4. Ensure that the resistance conforms to the standard value in the table.

NOTE:

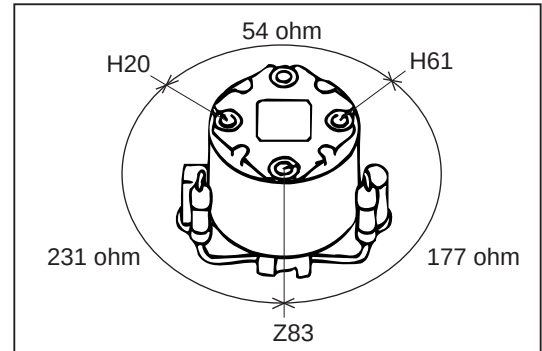
- If not, check the wire harness and the water temperature sender gauge.



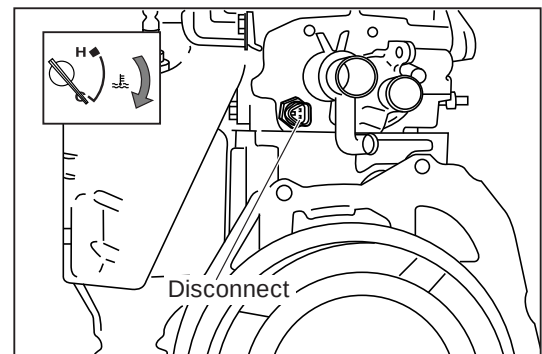
MBE00041-00035



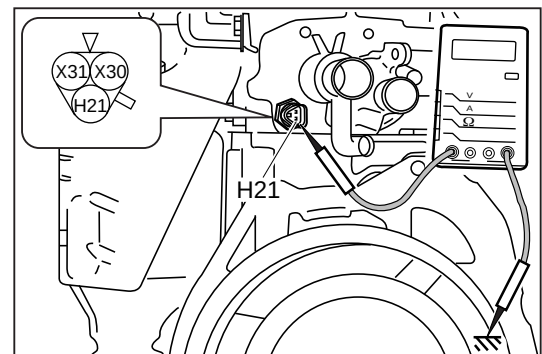
MBE00042-00036



MBE00043-00037



MBE00044-00038



MBE00045-00039

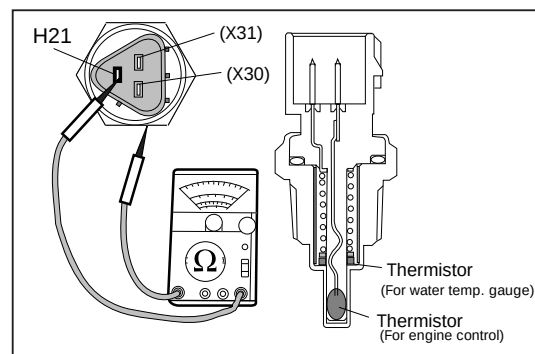
Temperature (°C)	Resistance (Ω)
50	190 - 260
115	24 - 28

Unit inspection

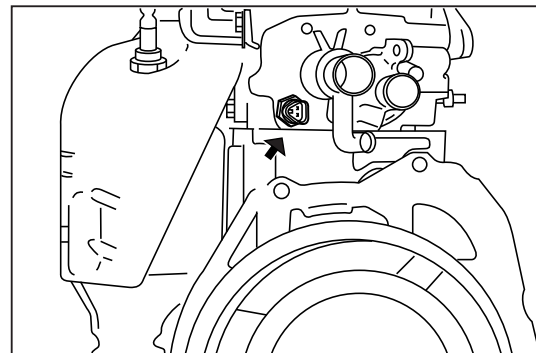
1. Drain the engine coolant from the radiator.
2. Remove the water temperature sender gauge.
3. Measure the resistance between the terminals as in the illustration.

Temperature (°C)	Resistance (Ω)
50	190 - 260
115	24 - 28

4. Clean the threaded portion of new water temperature sender gauge. Wind seal tape around the threaded portion.
5. Install the sender gauge.
Tightening Torque: 24.5 - 34.3 N·m
6. Fill the engine coolant.



MBE00046-00040

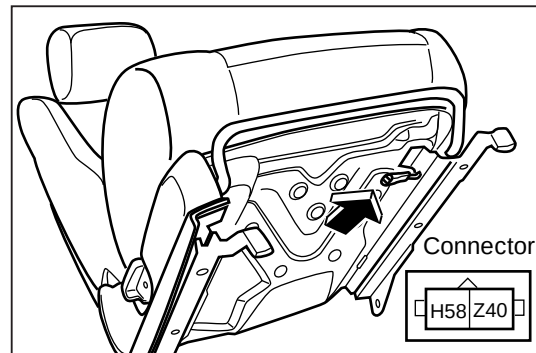


MBE00047-00041

INSPECTION OF SEAT BELT WARNING

Unit inspection

1. Disconnect the connector of the seat belt buckle switch. The connector is clamped underside of the driver's seat cushion.
2. Ensure that the seat belt warning glows when short the terminal H58 at the floor harness side and the body earth.
3. Ensure that continuity exists between the terminals of the buckle switch.
4. Ensure that no continuity exists when insert the tongue plate into the buckle until it clicks.

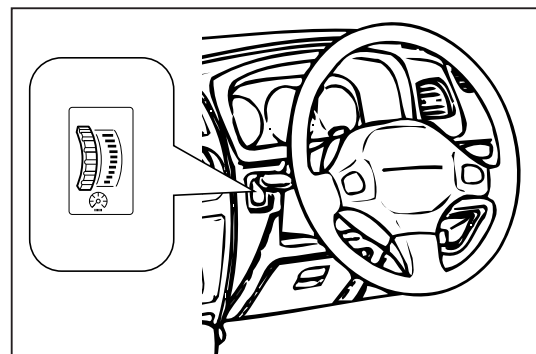


MBE00048-00042

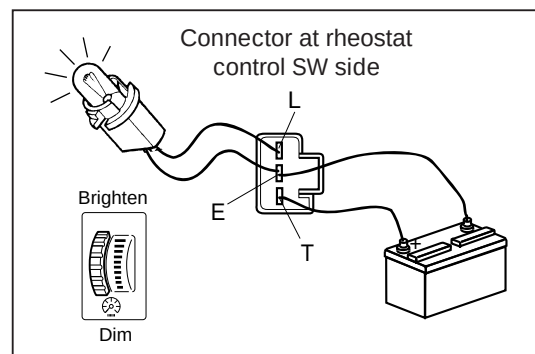
INSPECTION OF RHEOSTAT CONTROL

Unit inspection

1. Remove the instrument finish lower panel.
2. Remove the rheostat control switch by pushing it with your fingers at the back side of the instrument panel.
3. Disconnect the connector of the wire harness.
4. Remove the switch from the instrument panel.
5. Connect the respective terminals each other as illustration.
6. Ensure that the luminous intensity of the test lamp varies when the rheostat control dial is turned slowly. If not, replace the rheostat control.

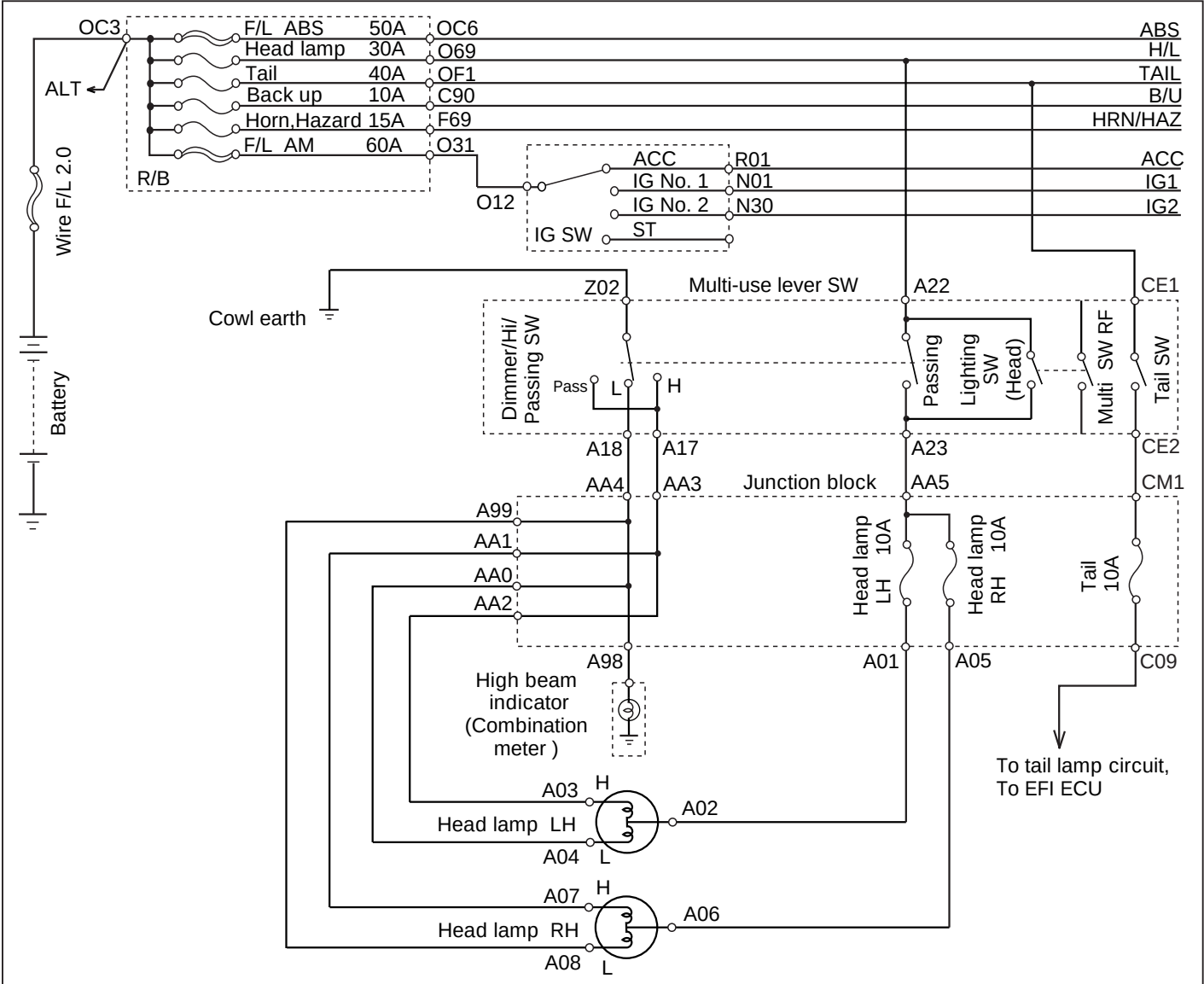


MBE00049-00043



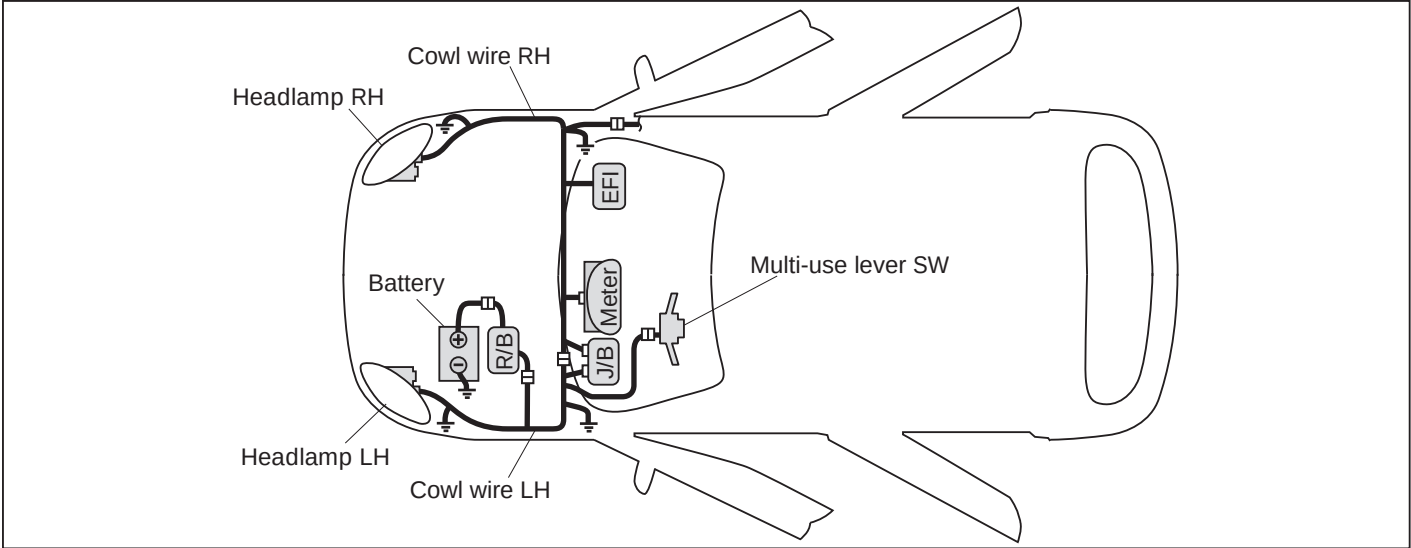
MBE00050-00044

HEADLAMP
CIRCUIT DIAGRAM



MBE00051-00045

CIRCUIT LAYOUT



MBE00052-00046

TROUBLE SHOOTING HINTS

Malfunction phenomena				Possible malfunctioning parts			
Headlamp does not go on.	Both sides	High beam	Passing signal functions properly.	①	⑧		
			Passing signal also does not function.	①	②	⑧	
		Low beam		①	⑧		
		High beam and Low beam (Including passing signal)		①	②	③	⑤
	Any one		④	⑥	⑧		
High beam indicator lamp does not go on.				⑥	⑦	⑧	

①	Multi-use lever (Dimmer/High switch)
②	Multi-use lever (Passing switch)
③	Multi-use lever (Lighting switch)
④	Fuse at the junction block. (Head lamp RH/LH 10A)
⑤	Fuse at the relay block. (Head lamp 30A)
⑥	Headlamp bulb
⑦	Indicator bulb
⑧	Poor contact of connector

MBE00053-00000

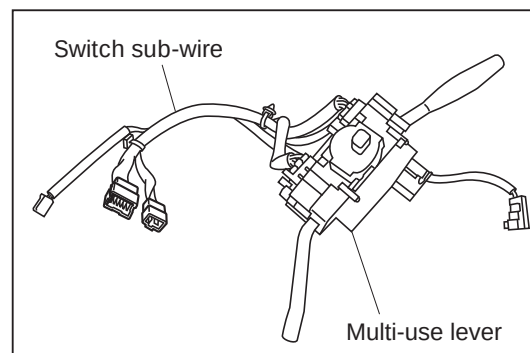
REMOVAL OF MULTI-USE LEVER SWITCH

1. Turn off the ignition switch.
2. Disconnect the battery ground cable from the negative (-) terminal.

NOTE:

- In case of air bag equipped vehicle, wait for at least 90 seconds.

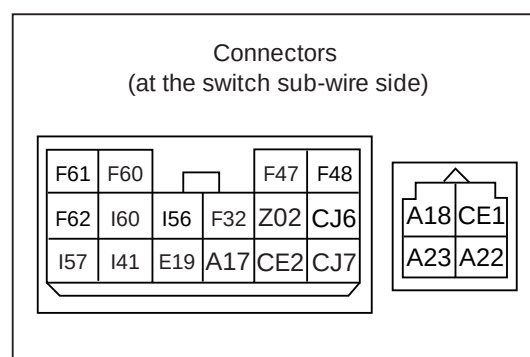
3. Remove the steering horn pad and the steering wheel.
4. Remove the instrument finish lower panel and the steering column cover.
5. Disconnect the connectors between the cowl wire harness and the multi-use lever switch sub-wire.
6. Remove the multi-use lever switch by loosening the attaching screws.



MBE00054-00047

HEADLAMP SWITCH OF MULTI-USE LEVER

Ensure that continuity exists between the respective terminals in accordance with the following continuity table.



MBE00055-00048

With rear fog lamp, headlamp cleaner

		A17	A18	Z02	CE1	CE2	CJ6	CJ7	A22	A23
		HM	HS	E	TB	TS	DM	RF	D1	D2
OFF	HF	○		○					○	○
	HL									
	HU									
I	HF	○	○	○	○	○			○	○
	HL				○	○				
	HU				○	○				
II	HF	○	○	○	○	○	○	○	○	○
	HL		○	○	○	○	○	○	○	○
	HU	○		○	○	○	○	○	○	○

Without rear fog lamp, headlamp cleaner

		A17	A18	Z02	CE1	CE2	A22	A23
		HM	HS	E	TB	TS	D1	D2
OFF	HF	○		○			○	○
	HL		○	○				
	HU	○		○				
I	HF	○	○	○	○	○	○	○
	HL		○	○	○	○		
	HU	○		○	○	○		
II	HF	○	○	○	○	○	○	○
	HL		○	○	○	○	○	○
	HU	○		○	○	○	○	○

MBE00056-00000

AIMING ADJUSTMENT

Perform the following operation in advance.

- Weight
 - Seat one person at the Driver's seat. (Weighing 75 kg.)
 - A spare tire, tools, a jack are mounted at the specified points.
 - Ensure that the engine oil, transmission oil, window washer fluid, etc. are filled to the specified levels.
 - Fill up the fuel.
- Set the tire inflation pressure to the specified values.

- Rock the vehicle in up-&-down and right-&-left directions so that the suspensions may support the load evenly and the vehicle may assume the proper vehicle posture.

NOTE:

- In case of a vehicle which has the headlamp leveling system, perform this aiming adjustment with the leveling control switch set to the "0" position.

- Setting of reference points on screen

- Measure the center height "H" of the head lamps. (At 3 m from lens surface)
Draw a low beam cut-off line on the screen at; 36 mm below the center height "H".

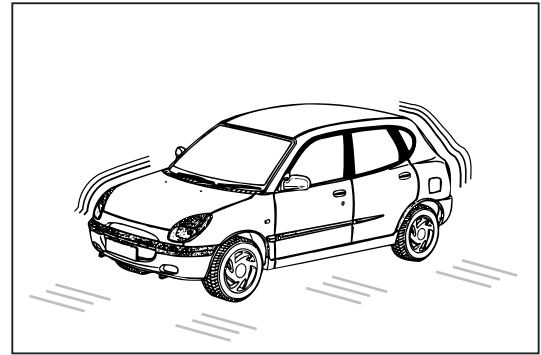
NOTE:

- Keep the engine speed at 1500 rpm or more during the aiming adjustment.

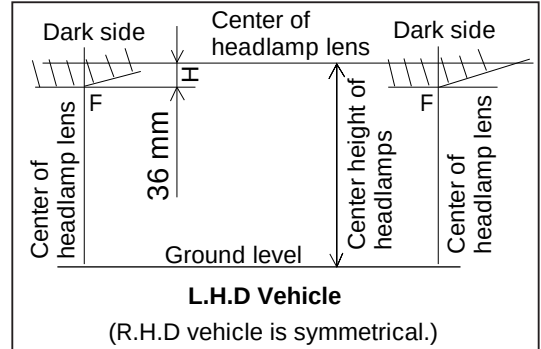
- Draw a vertical straight line on the screen at each center of the head lamps on both right and left sides.
Thus, establish each intersection "F" made by the vertical center line and the low beam cut-off line.

NOTE:

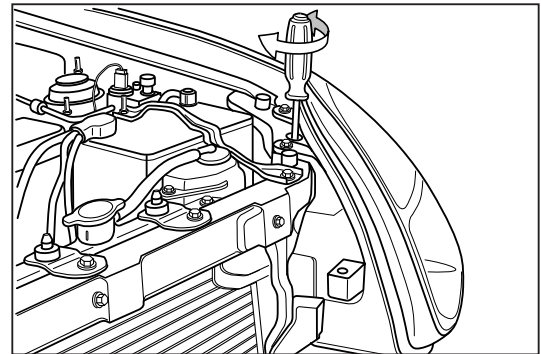
- In the case of the headlamp assembly replacement, it is necessary to remove the front bumper and the radiator grille in advance.
- As regards the removal and installation procedures for bumper and grille, refer to BO section of the service manual.



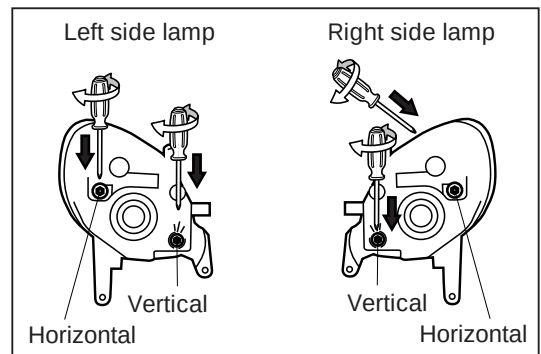
MBE00057-00049



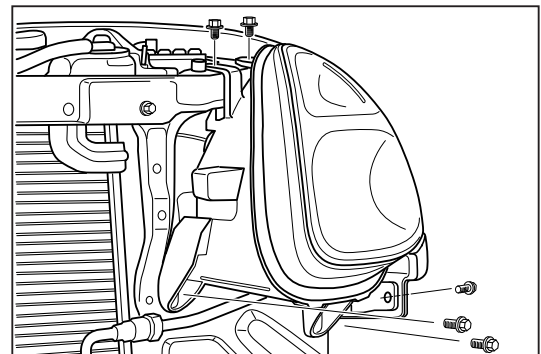
MBE00058-00050



MBE00059-00051

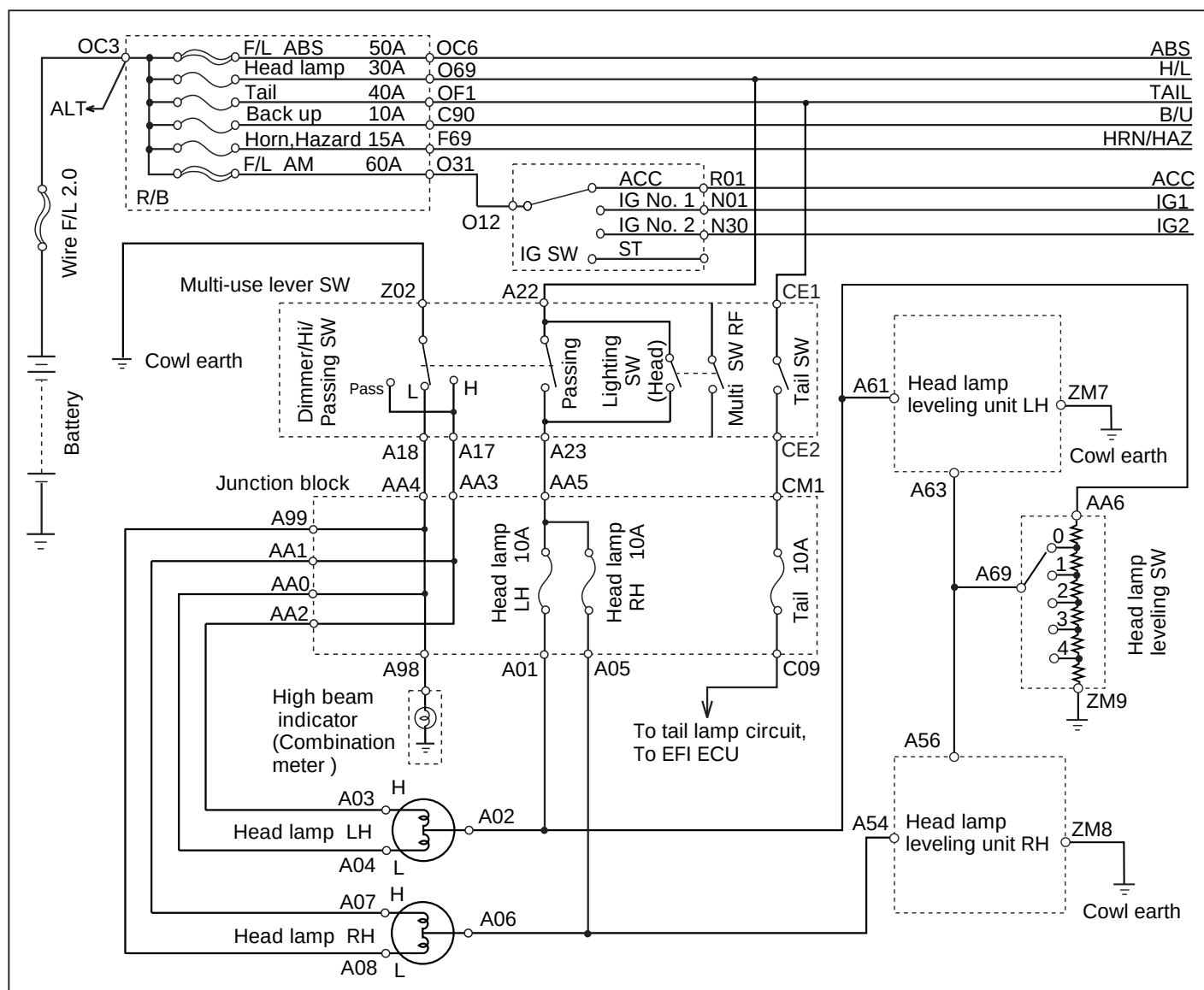


MBE00000-00052



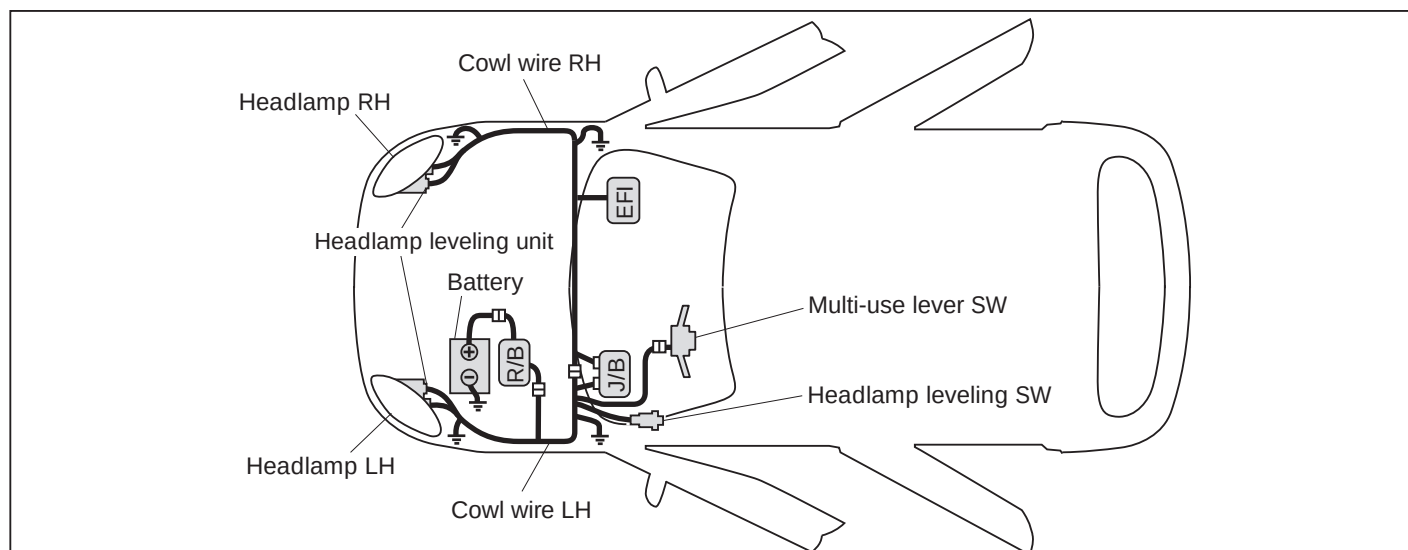
MBE00060-00053

HEADLAMP LEVELING CIRCUIT DIAGRAM



MBE00061-00054

CIRCUIT LAYOUT



MBE00062-00055

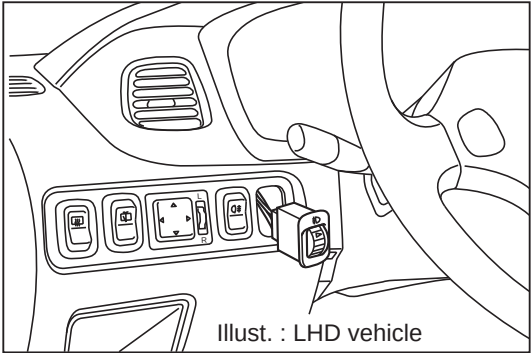
TROUBLE SHOOTING HINTS

Malfunction phenomena		Possible malfunctioning parts	
Headlamp leveling does not function properly.	Both side	① ② ④ ⑥	① Headlamp leveling switch ② Fuse at relay block (Headlamp 30A) ③ Fuse at junction block (Headlamp RH / LH 10A) ④ Multi-use lever (Lighting switch) ⑤ Headlamp leveling actuator ⑥ Poor contact of connector
	Any one	③ ⑤ ⑥	

MBE00063-00000

REMOVAL OF HEADLAMP LEVELING SWITCH

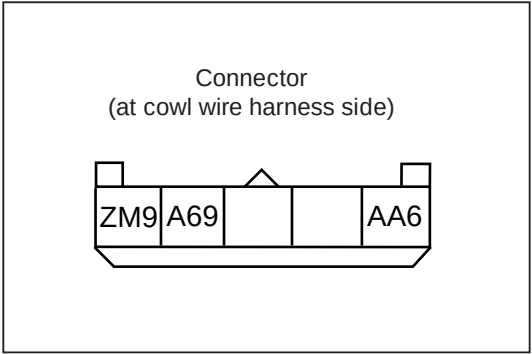
1. Remove the instrument finish lower panel.
2. Remove the headlamp leveling switch by pushing it with your fingers at the back side of the instrument panel.
3. Disconnect the connector of the wire harness.
4. Remove the switch from the instrument panel.



Illust. : LHD vehicle

INSPECTION OF HEADLAMP LEVELING SWITCH

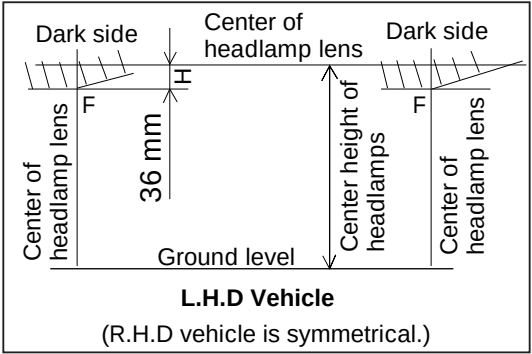
1. Ensure that resistance between the respective terminals as conforms to following specifications.
 - Between A69 and ZM9 (Position 0): Approx. 2.1 kΩ
 - Between A69 and ZM9 (Position 1): Approx. 1.9 kΩ
 - Between A69 and ZM9 (Position 2): Approx. 1.4 kΩ
 - Between A69 and ZM9 (Position 3): Approx. 1.1 kΩ
 - Between A69 and ZM9 (Position 4): Approx. 0.7 kΩ
 - Between A69 and ZM9 (Each position): Approx. 2.4 kΩ



MBE00065-00057

HEADLAMP AIMING ADJUSTMENT

1. As regards the adjustment procedure for the headlamp aiming, refer to "AIMING ADJUSTMENT" of this manual. (Page BE-18)
NOTE:
 - Perform this aiming adjustment procedure with the leveling control switch set to the "0" position.

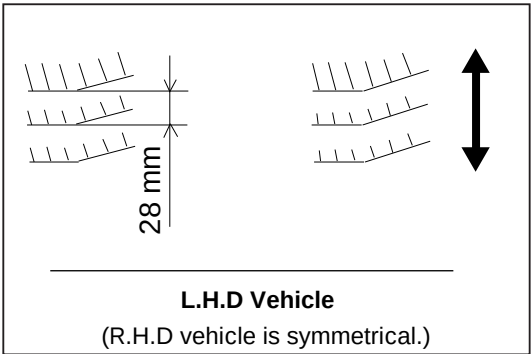
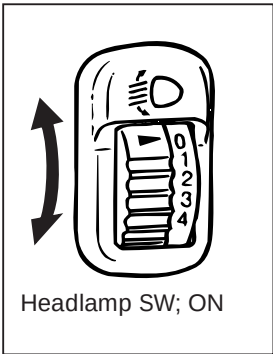


MBE00066-00058

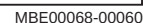
2. Ensure that the optical axis moves downward when the headlamp leveling switch is turned 0-1-2-3-4.
NOTE:

- The headlamp leveling system functions only when the headlamp switch is turned on.

Position	Stroke
0 - 1	28 mm
1 - 2	28 mm
2 - 3	28 mm
3 - 4	28 mm



MBE00067-00059

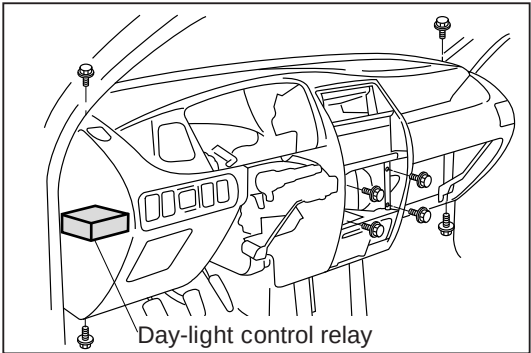


CIRCUIT LAYOUT

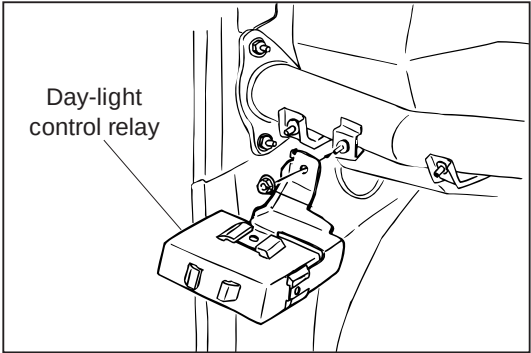


REMOVAL OF DAY-LIGHT CONTROL RELAY

1. Turn off the ignition key switch.
2. Remove the instrument panel assembly.
- NOTE:
 - As regards the removal procedure for the instrument panel, refer to BO section of the service manual.



3. Disconnect the connector of the day-light control relay.
- NOTE:
 - The installation position of the day-light control relay is at the left side of the instrument panel reinforcement.
4. Remove the control relay by loosening the hexagon nut.



CHECK OF DAY-LIGHT CONTROL RELAY

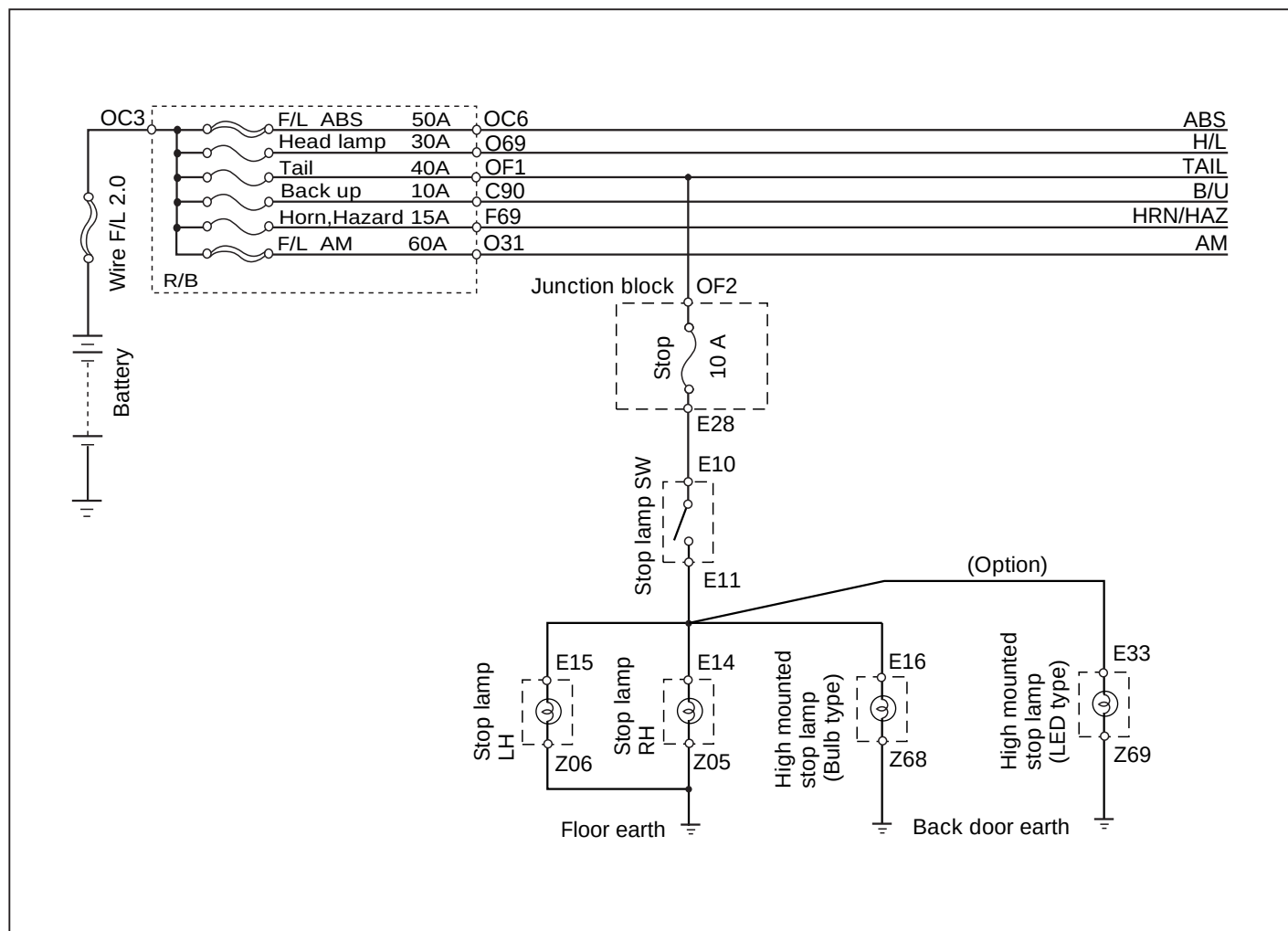
Ensure that the day-light goes on under the condition given below.

- NOTE:
- If any abnormality exists due to the operation, replace the control relay.

Engine	Switch position			Glowing mode		
	Lighting SW (Tail lamp)	Lighting SW (Headlamp)	Dimmer / High / passing SW	Tail & license lamp	Head lamp	
					Lo	High
STOP	Normal glowing mode					
RUN	OFF	OFF	Low position	○	○	×
			High position	○	○	×
			Passing	○	×	○
	ON	OFF	Low position	○	×	×
			High position	○	×	×
			Passing	○	×	○
	ON	ON	Low position	○	○	×
			High position	○	×	○
			Passing	○	×	○

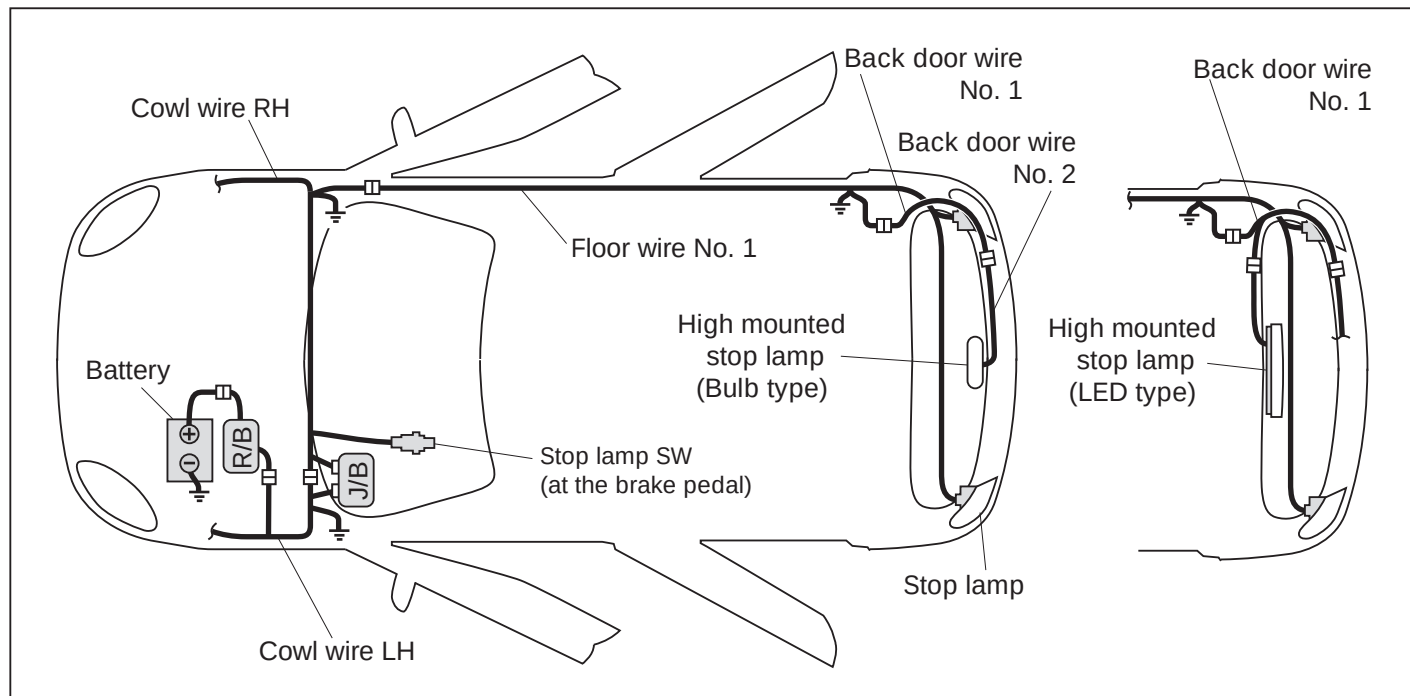
STOP LAMP

CIRCUIT DIAGRAM



MBE00073-00064

CIRCUIT LAYOUT



MBE00074-00065

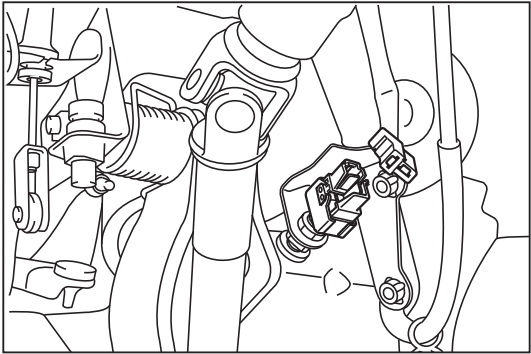
TROUBLE SHOOTING HINTS

Malfunction phenomena		Possible malfunctioning parts	
Only stop lamp does not operate.	Both sides	⑥ ⑧	① Stop lamp switch ② Fuse at relay block (Tail 40A) ③ Fuse at junction block (Stop 10A) ④ Stop lamp bulb ⑤ High-mounted stop lamp bulb or LED ⑥ Floor wire No. 1 ⑦ Back door wire No. 1 and / or No. 2 ⑧ Poor contact of connector
	Any one	④ ⑥ ⑧	
Only high-mounted stop lamp does not operate.		⑤ ⑥	
		⑦ ⑧	
Both stop lamp and high-mounted stop lamp do not operate.		① ② ③	
		⑥ ⑧	

MBE00075-00000

REMOVAL OF STOP LAMP SWITCH

As regards the removal procedure of the stop lamp switch, refer to the BR section of the service manual.

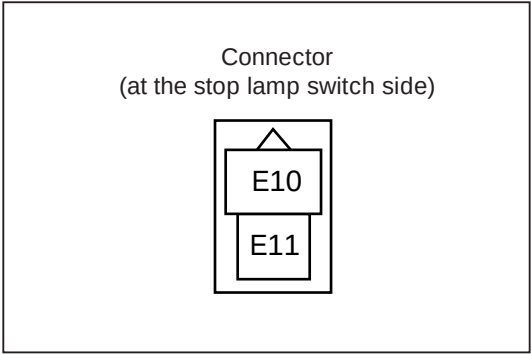


MBE00076-00066

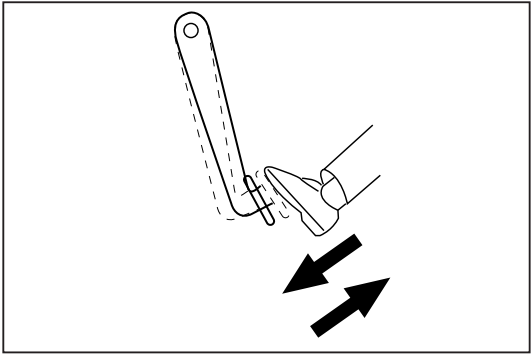
INSPECTION OF STOP LAMP SWITCH

1. Disconnect the connector of the stop lamp switch. (At the brake pedal)
2. Ensure that continuity exists between the terminal E10 and E11 when the brake pedal is depressed.

3. Ensure that no continuity exists between the terminals when the brake pedal is not depressed.



MBE00077-00067



MBE00078-00068

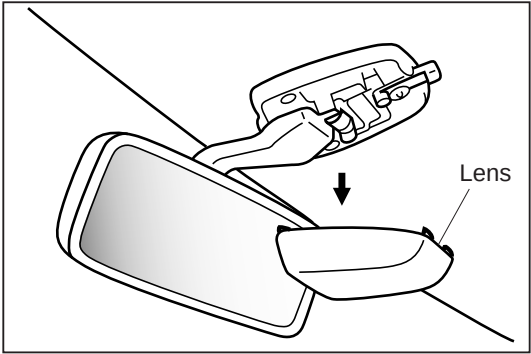
TROUBLE SHOOTING HINTS

Malfunction phenomena		Possible malfunctioning parts	
Interior lamp does not operate.	Interior lamp switch is ON position.	① ② ③ ⑤ ⑦	① Interior lamp switch (Built in the interior lamp) ② Door courtesy switch ③ Fuse at relay block (Tail 40A) ④ Fuse at junction block (Stop 10A) ⑤ Interior lamp bulb ⑥ ITC ECU (Refer to page BE-54) ⑦ Poor contact of connector
	Any door is opened with the interior lamp switch DOOR position.	① ② ③ ④ ⑤ ⑦	
Interior lamp flashes.		⑥	

MBE00081-00000

REMOVAL OF INTERIOR LAMP LENS

Lightly pry the lens to detach it and pull out the bulb straight.

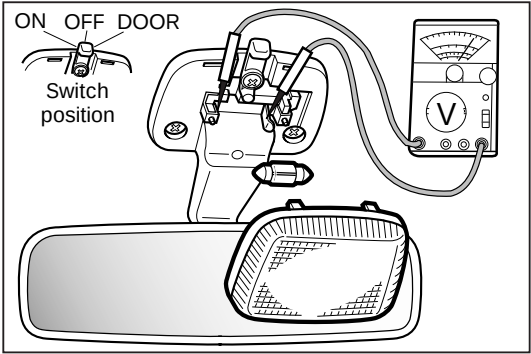


MBE00082-00071

INSPECTION OF INTERIOR LAMP

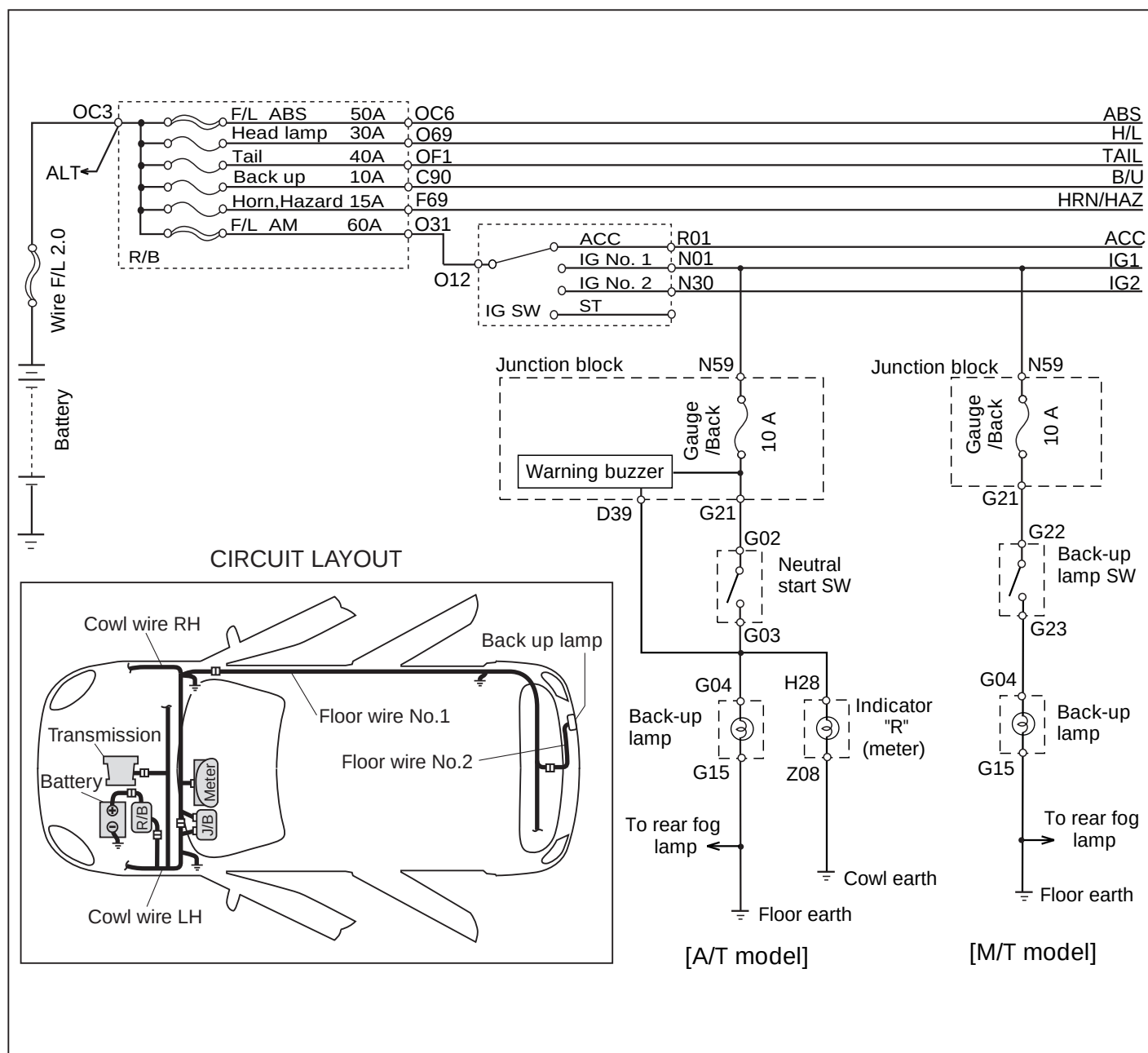
Ensure if the voltage exists between the bulb terminals, when the switch of dome lamp is located to the respective position.

	Interior lamp switch position		
	ON	OFF	DOOR
Front door open	Battery voltage	—	Battery voltage
Front door close	Battery voltage	—	—



MBE00083-00072

BACK UP LAMP CIRCUIT DIAGRAM



MBE00084-00073

TROUBLE SHOOTING HINTS

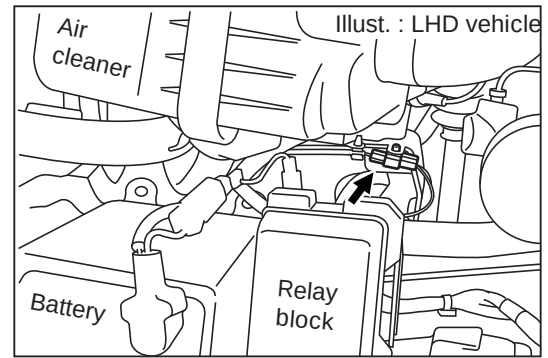
Malfunction phenomena	Possible malfunctioning parts
Back up lamp does not operate.	Back up lamp switch. (Manual transmission) Neutral start switch. (Automatic transmission) Fusible link at relay block (AM 60A) Fuse at the junction block. (Gauge / back 10A) Back up lamp bulb. Poor contact of the connector at the back up lamp switch.
Warning buzzer does not operate. (Automatic transmission)	Buzzer at the junction block. Poor contact of the connector at the back up lamp switch.

MBE00085-00000

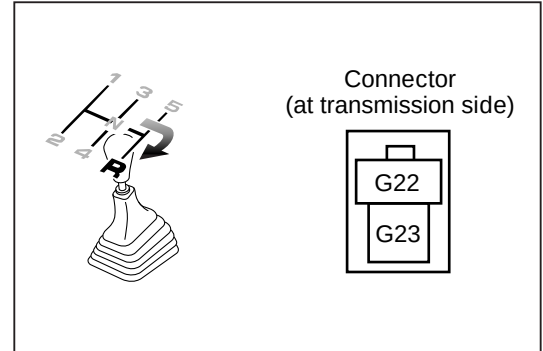
INSPECTION OF BACK UP LAMP SWITCH

<Manual transmission>

1. Disconnect the connector of the back up lamp switch.
(on the manual transmission case)
2. Ensure that continuity exists between the terminal G22 and G23 when shift lever of the manual transmission is shifted to the reverse position.



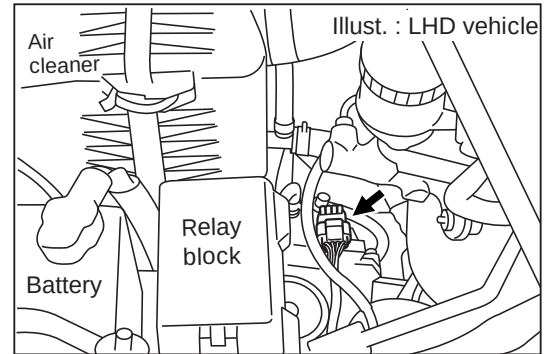
MBE00086-00074



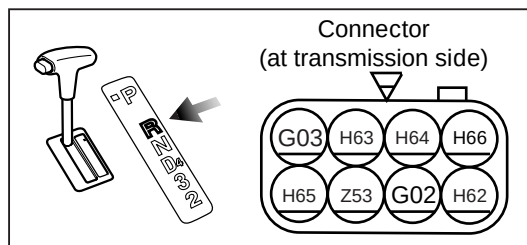
MBE00087-00075

<Automatic transmission>

1. Disconnect the connector of the neutral start switch.
(on the automatic transmission case)
2. Ensure that continuity exists between the terminal G02 and G03 when shift lever of the automatic transmission is shifted to the reverse position.



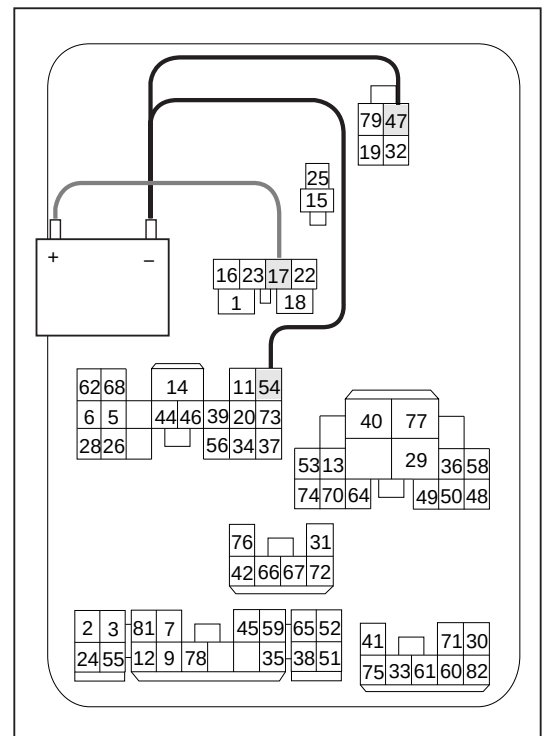
MBE00088-00076



CHECK OF REVERSE WARNING BUZZER

Unit inspection

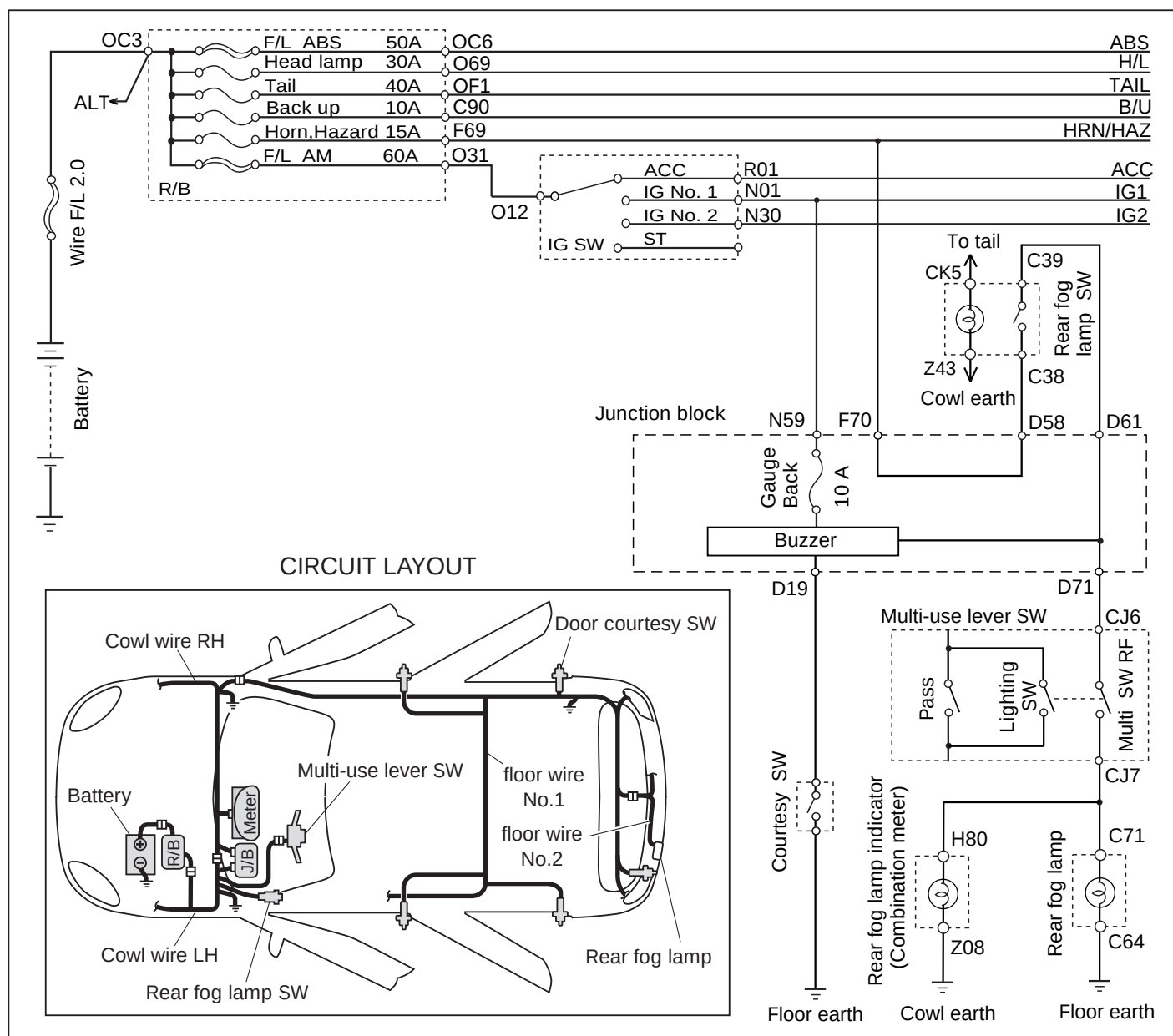
1. Disconnect the connectors from the junction block.
2. Remove the junction block by removing attaching bolt.
3. Apply a battery voltage to the terminal 17 (+) and the terminal 47 (-).
4. Check that the warning buzzer will sound when the battery (+) (or the terminal 47) is connected to the terminal 54 with a jump wire.



MBE00090-00078

REAR FOG LAMP

CIRCUIT DIAGRAM



MBE00091-00079

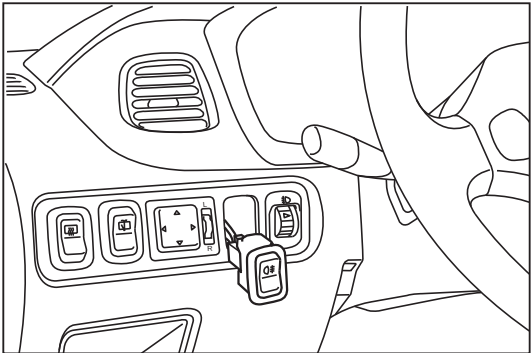
TROUBLE SHOOTING HINTS

Malfunction phenomena		Possible malfunctioning parts	
Rear fog lamp does not operate.	Headlamp operates properly.	① ③ ④ ⑥	① ② ③ ④ ⑤ ⑥ Rear fog lamp switch Multi-use lever switch Fuse at relay block (Horn, Hazard 15A) Rear fog lamp bulb Buzzer at junction block Poor contact of connector
	Headlamp also does not operate.	② ⑥	
Rear fog light-on-warning buzzer does not operate.		⑤ ⑥	

MBE00092-00000

REMOVAL OF REAR FOG LAMP SWITCH

- 1. Remove the instrument finish lower panel.
- 2. Remove the rear fog lamp switch by pushing it with your fingers at the back side of the instrument panel.
- 3. Disconnect the connector of the wire harness.
- 4. Remove the switch from the instrument panel.

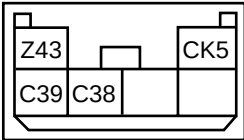


MBE00093-00080

INSPECTION OF REAR FOG LAMP SWITCH

- 1. Ensure that the continuity exists between the terminal C38 and C39 of the switch, while the switch is turned on.
- 2. Ensure that the battery voltage is applied to the harness side connector when the lighting switch and rear fog lamp switch are turned on.

Connector
(at rear fog lamp switch side)



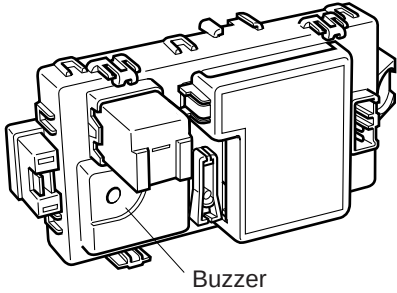
MBE00094-00081

INSPECTION OF REAR FOG LIGHT-ON-WARNING BUZZER

In-Vehicle inspection

- 1. Ensure if the warning buzzer will sound under the conditions given following table.

Ignition SW	Front door	Rear fog lamp SW	Buzzer
OFF / Acc	Open	On	Sound
		Off	—
	Close	On	—
		Off	—
ON	Open	On	—
		Off	—
	Close	On	—
		Off	—

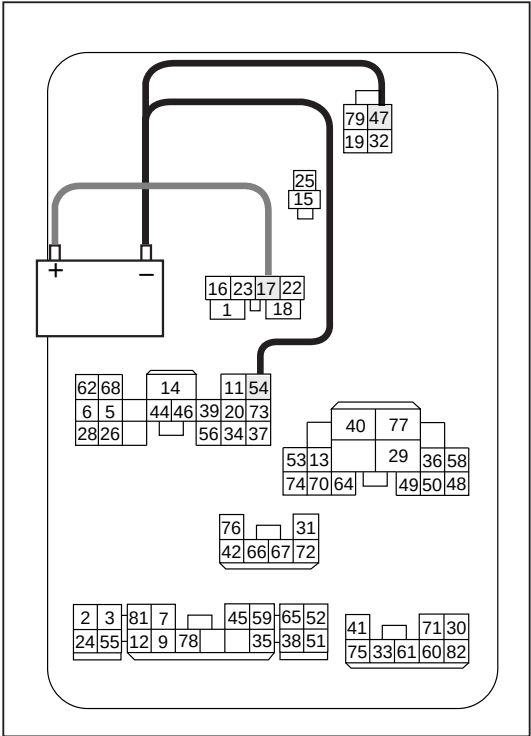


MBE00095-00082

- 2. If not, check the wiring harness and warning buzzer.

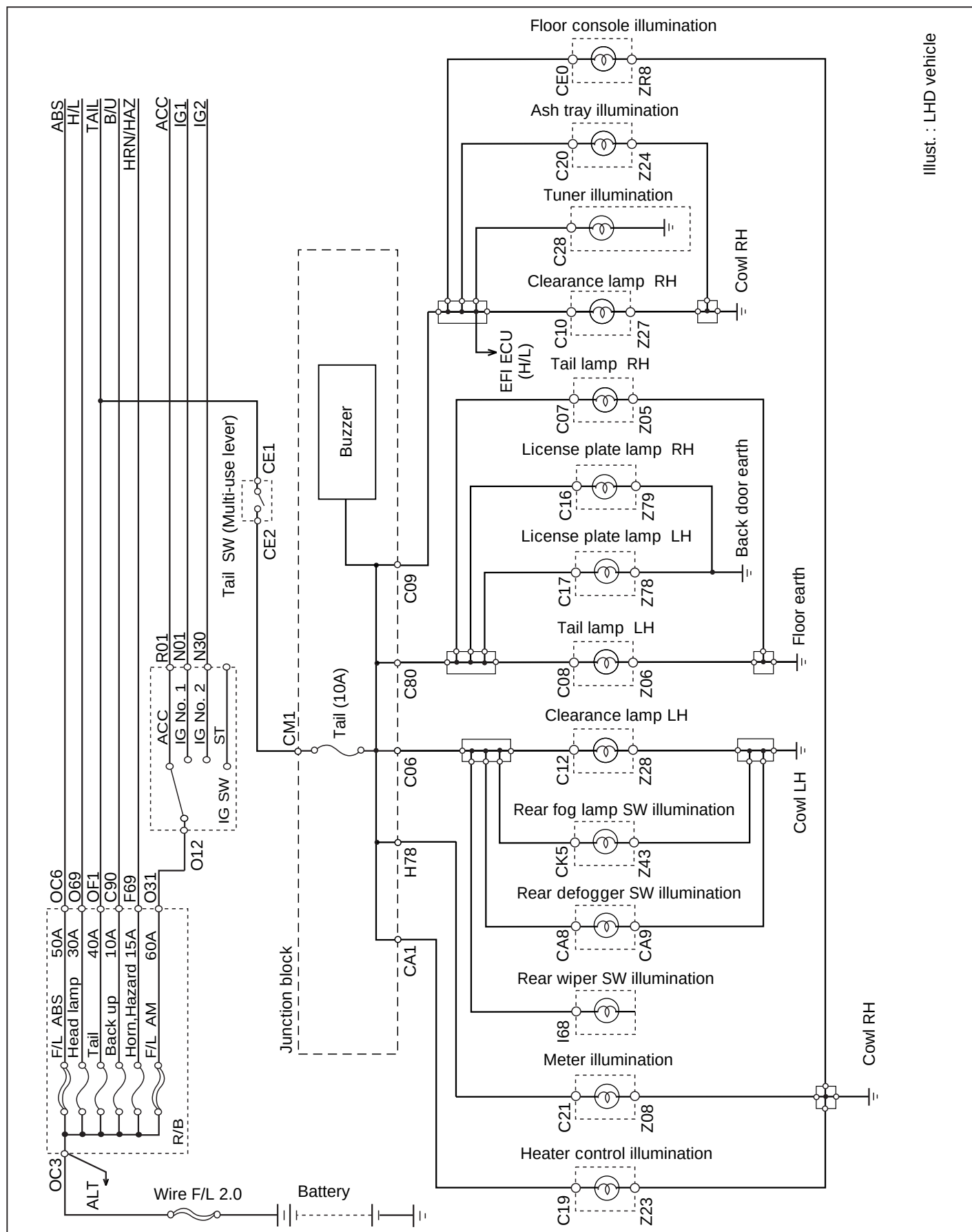
Unit inspection

- 1. Disconnect the connectors from the junction block.
- 2. Remove the junction block by removing attaching bolt.
- 3. Apply a battery voltage to the terminal 17 (+) and the terminal 47 (-).
- 4. Check that the warning buzzer will sound when the battery (+) (or the terminal 47) is connected to the terminal 54 with a jump wire.



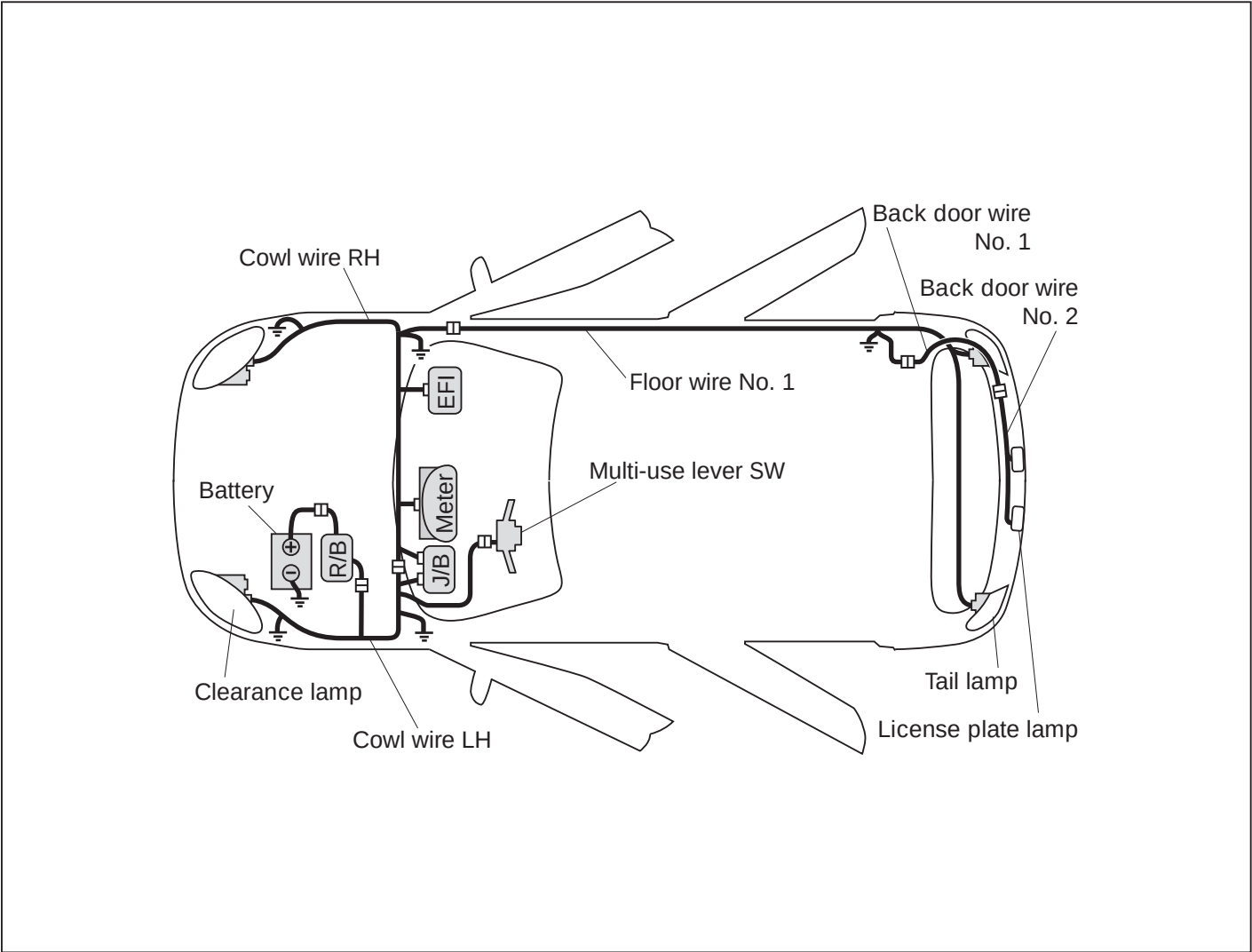
MBE00096-00083

TAIL LAMP & LICENSE PLATE LAMP CIRCUIT DIAGRAM



Illust. : LHD vehicle

CIRCUIT LAYOUT



MBE00098-00085

TROUBLE SHOOTING HINTS

Malfunction phenomena		Possible malfunctioning parts
Tail lamp does not go on.	Any one	Tail lamp bulb (burnt out) Poor contact at the connector of the tail lamp.
	Both side	Open wire at the harness wire. (Floor wire No. 1)
License plate lamp does not go on.	Any one	License plate lamp bulb (burnt out) Poor contact at the connector of the rear fog lamp.
	Both side	Open wire at the harness wire. (Back door wire No. 1 / No. 2)
No lamp goes on.		Open wire at the harness wire. (Floor wire No. 1) Tail fuse at the junction block. (blown) Multi-use lever switch (Lighting switch)

MBE00099-00000

REMOVAL OF MULTI USE LEVER SWITCH

1. Turn off the ignition switch.
2. Disconnect the battery ground cable from the negative (-) terminal.

NOTE:

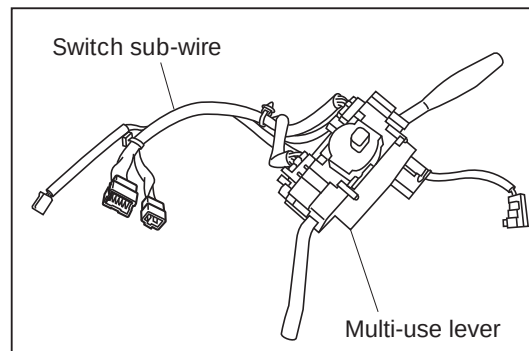
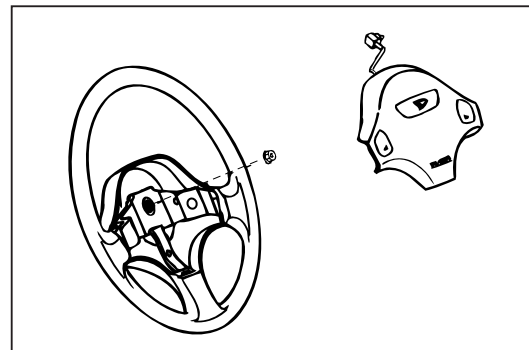
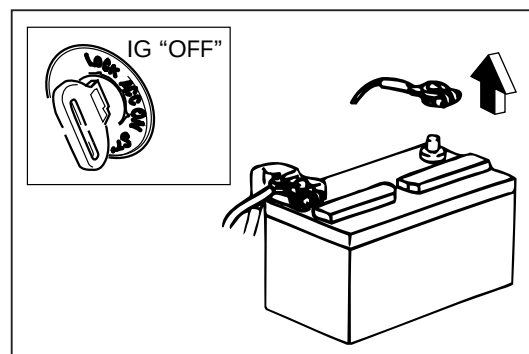
- In case of air bag equipped vehicle, wait for at least 90 seconds.

CAUTION:

- When the negative (-) terminal of the battery is detached, the memory of the ECU control for each system will be erased at the same time.

3. Remove the steering horn pad and the steering wheel.
4. Remove the instrument finish lower panel and the steering column cover.

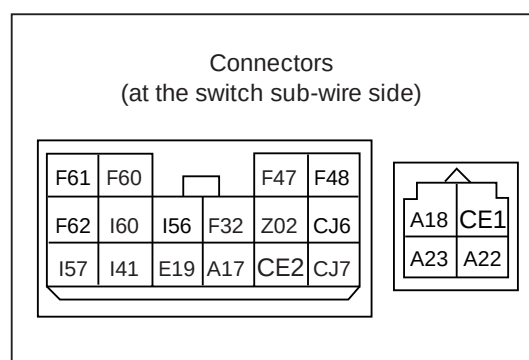
5. Disconnect the connectors between the cowl wire harness and the multi-use lever switch sub-wire.
6. Remove the multi-use lever switch by loosening the attaching screws.



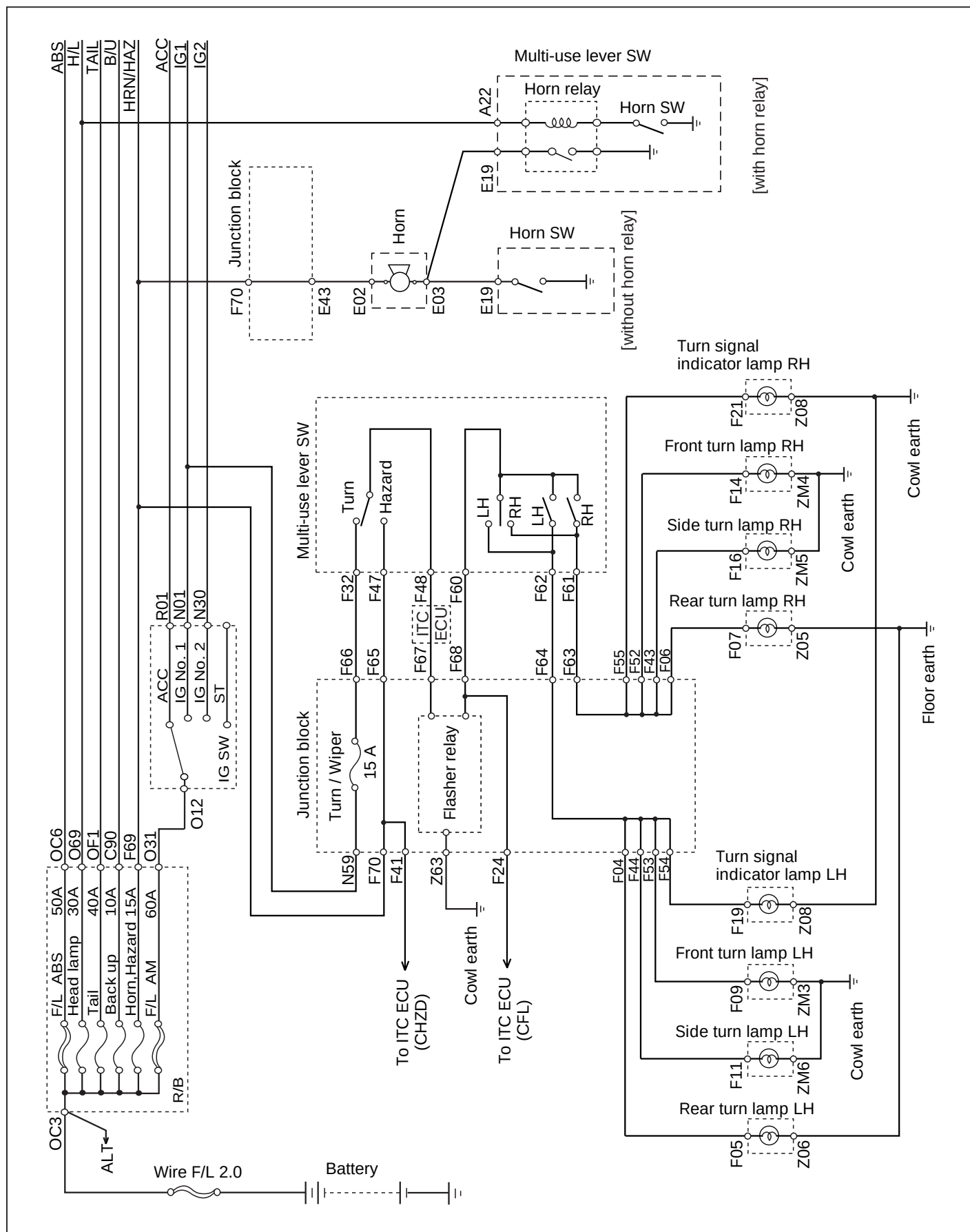
TAIL LAMP SWITCH OF MULTI-USE LEVER

Ensure that continuity exists between the respective terminals in accordance with the following continuity table.

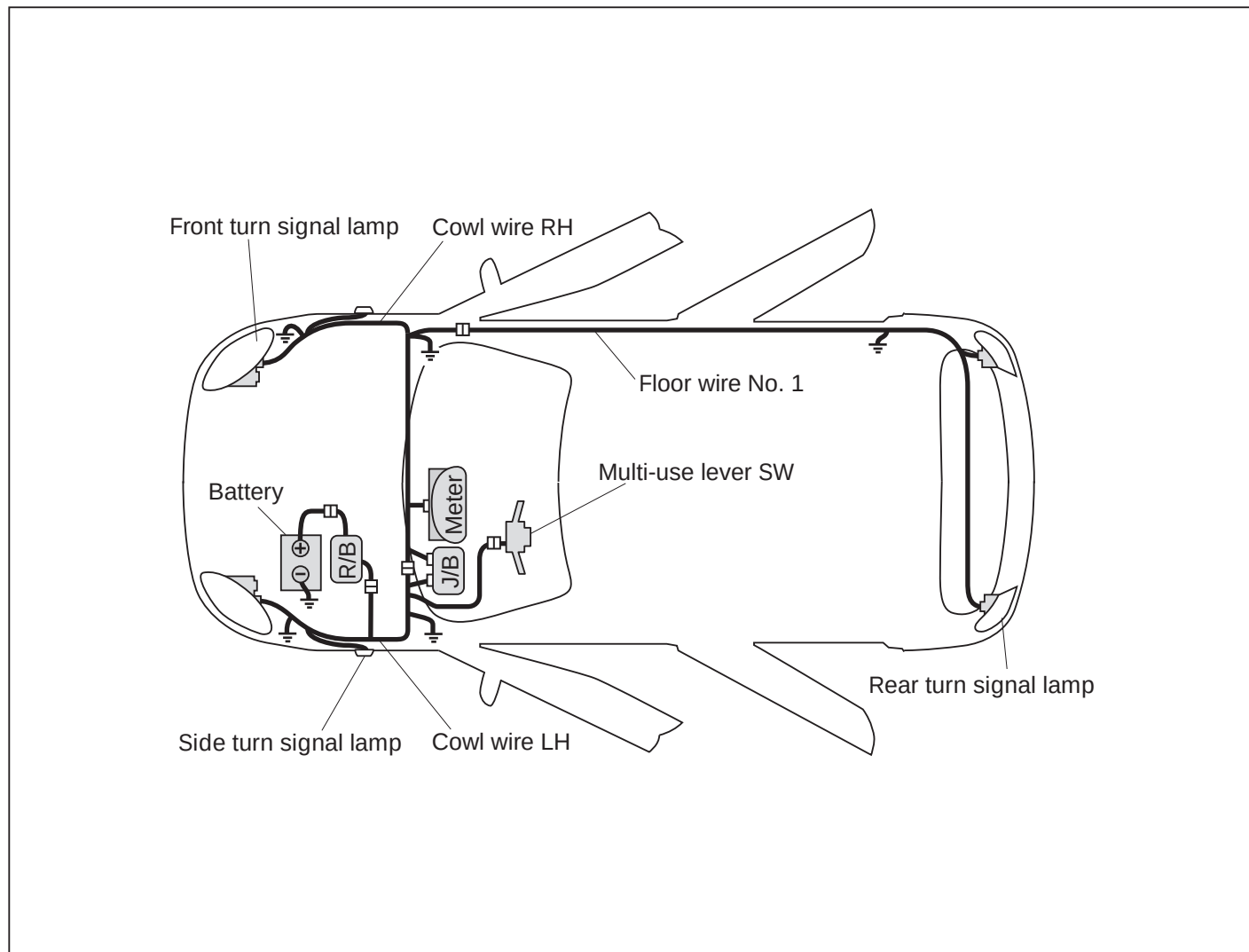
		TB (CE1)	S (CE2)
OFF	HF		
	HL		
	HU		
I	HF	○	○
	HL	○	○
	HU	○	○
II	HF	○	○
	HL	○	○
	HU	○	○



HAZARD WARNING & TURN SIGNAL LAMP CIRCUIT DIAGRAM



CIRCUIT LAYOUT



MBE00105-00091

TROUBLE SHOOTING HINTS

Malfunction phenomena	Possible malfunctioning parts	
Neither turn signal lamp nor hazard warning lamp operates.	③	⑨
Turn signal lamp does not operate. (Hazard warning lamp operates properly.)	①	④
Hazard warning lamp does not operate. (Turn signal lamp operates properly.)	⑥	⑨
Flashing cycle is shorter than normal state.	②	⑤ ⑨
The lamp does not flash.	③	⑤ ⑨
Turn signal indicator does not operate.	④	⑨
	⑧	⑨

}

①	Multi-use lever (Turn signal switch)
②	Multi-use lever (Hazard switch)
③	Flasher relay
④	Fusible link at relay block (AM 60A)
⑤	Fuse at relay block. (Horn, Hazard 15A)
⑥	Fuse at junction block. (Turn, Wiper 15A)
⑦	Turn signal lamp bulb
⑧	Turn signal indicator bulb
⑨	Poor contact of connector

MBE00106-00000

REMOVAL OF MULTI-USE LEVER SWITCH

1. Turn off the ignition switch.
2. Disconnect the battery ground cable from the negative (-) terminal.

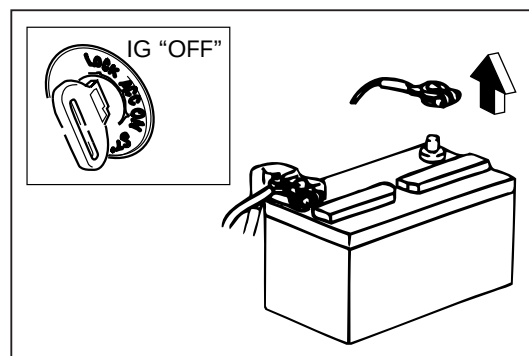
NOTE:

- In case of air bag equipped vehicle, wait for at least 90 seconds.

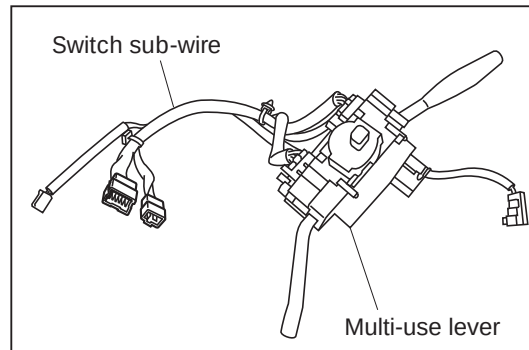
CAUTION:

- When the negative (-) terminal of the battery is detached, the memory of the ECU control for each system will be erased at the same time.

3. Remove the steering horn pad and the steering wheel.
4. Remove the instrument finish lower panel and the steering column cover.
5. Disconnect the connectors between the cowl wire harness and the multi-use lever switch sub-wire.
6. Remove the multi-use lever switch by loosening the attaching screws.



MBE00107-00092



MBE00108-00093

HAZARD WARNING/TURN SIGNAL SWITCH OF MULTI-USE LEVER

Ensure that continuity exists between the respective terminals in accordance with the following continuity table.

Hazard	Turn	F60 (F-)	F62 (L)	F61 (R)	F32 (BT)	F47 (BH)	F48 (F+)
OFF	L	○	○		○		○
	N				○		○
	R	○		○	○		○
ON		○	○	○		○	○

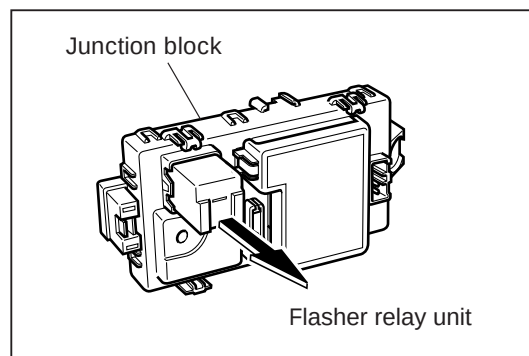
Connector
(at switch sub-wire side)

F61	F60			F47	F48
F62	I60	I56	F32	Z02	CJ6
I57	I41	E19	A17	CE2	CJ7

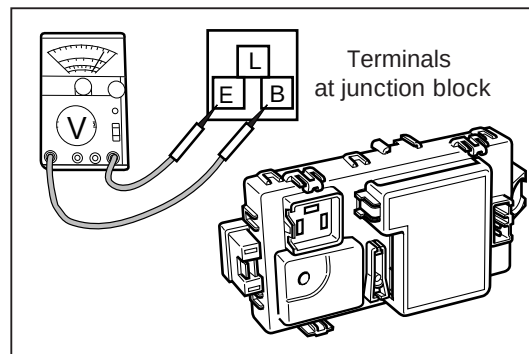
MBE00109-00094

TURN SIGNAL FLASHER RELAY

1. Pull out the flasher unit from the junction block.
2. Ensure if the battery voltage is applied to the respective terminals at junction block connector when the ignition switch and turn signal switch are turned on.
3. Ensure if the battery voltage is applied to the terminals when hazard switch is turned on.
4. Connect the flasher unit to the junction block connector. Under the condition, if the flasher unit will not work, then the unit is failure.

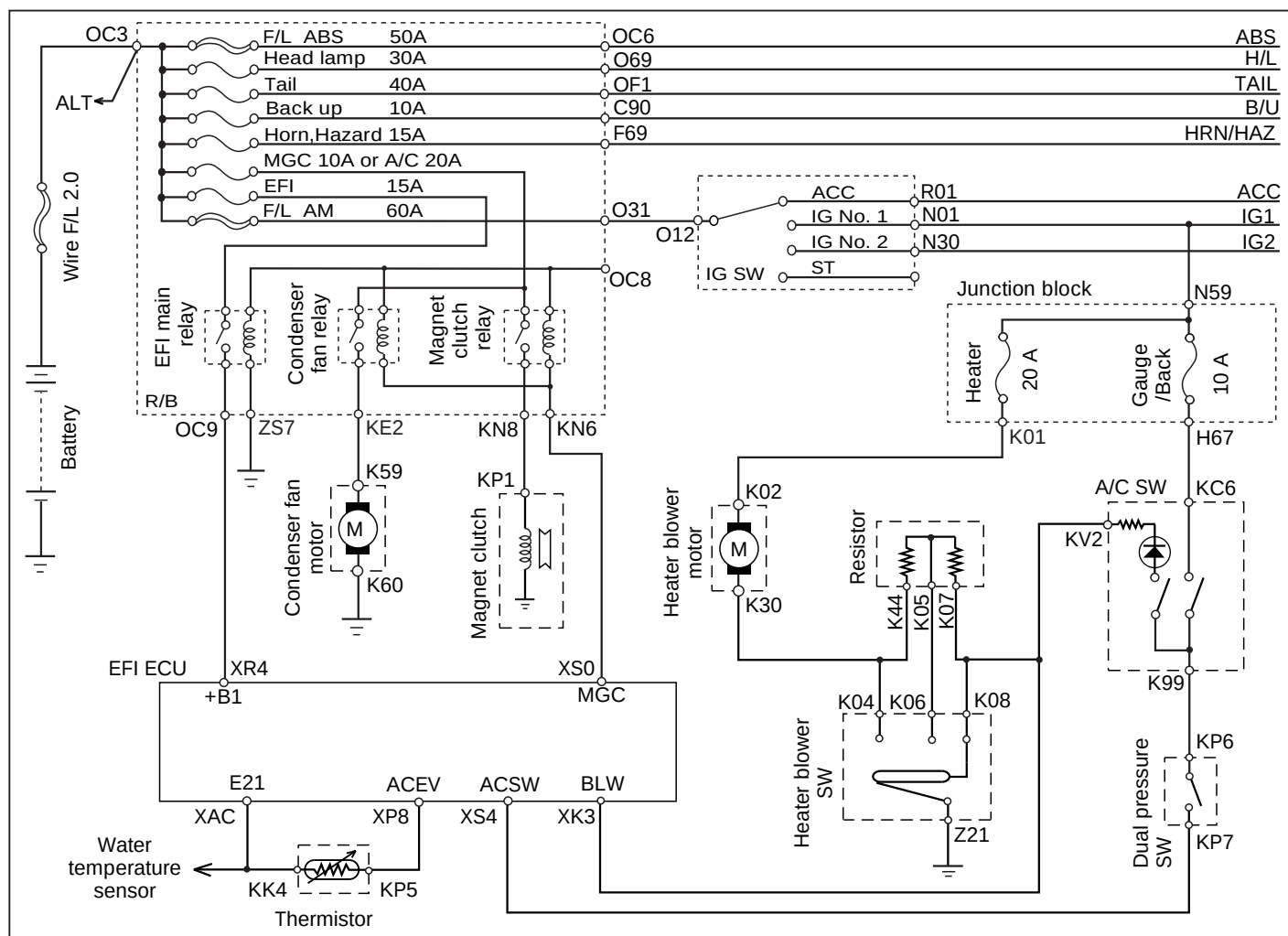


MBE00110-00095



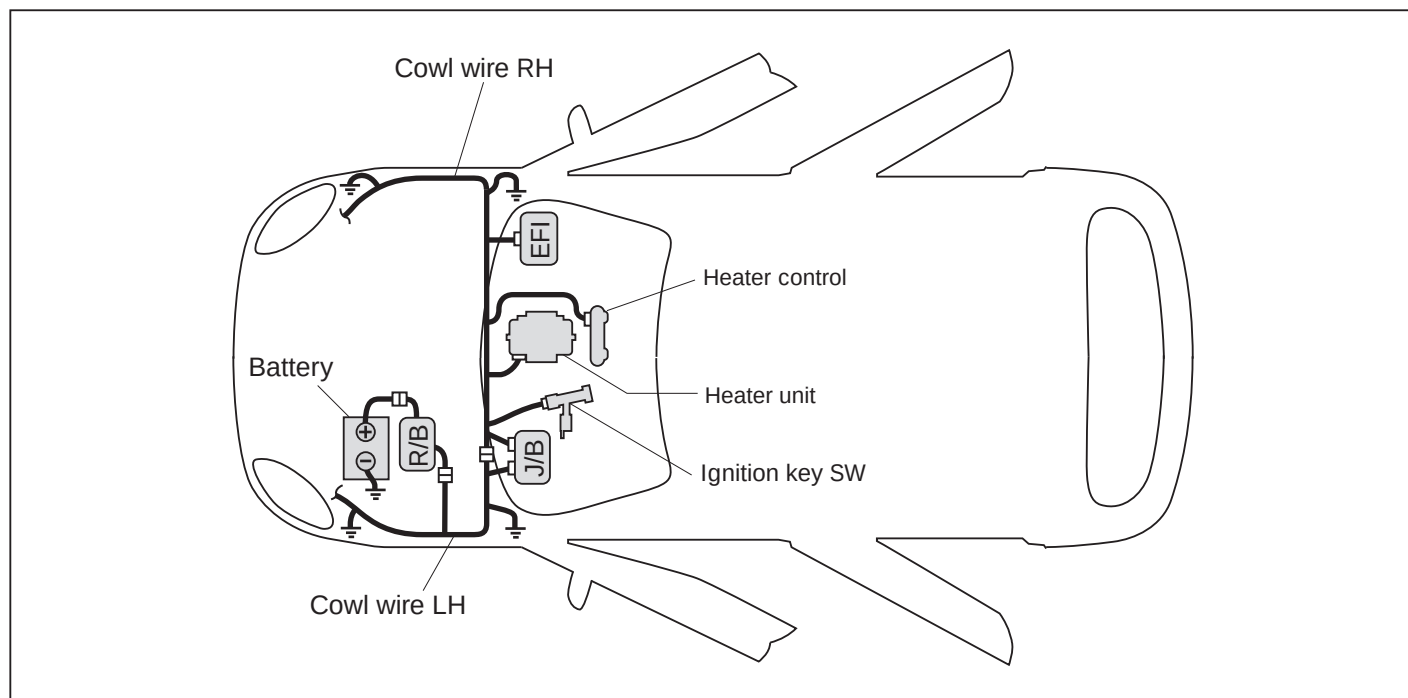
MBE00111-00096

HEATER & VENTILATION CIRCUIT DIAGRAM



MBE00112-00097

CIRCUIT LAYOUT



MBE00113-00098

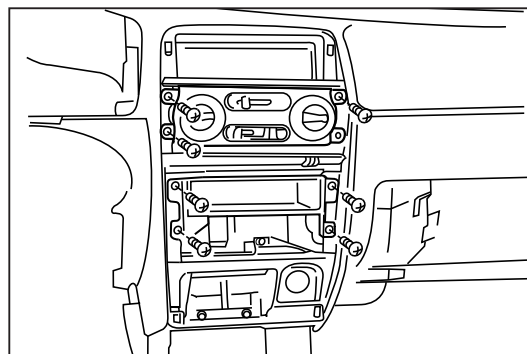
REMOVAL

1. Turn off the ignition key switch.
2. Remove the instrument panel assembly.

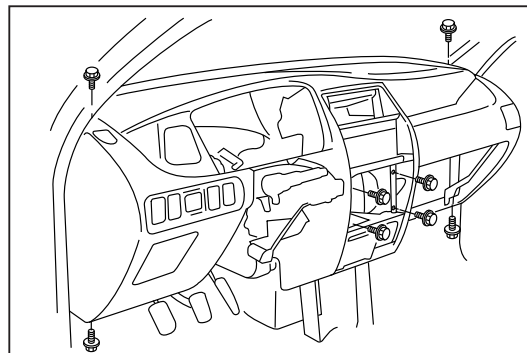
NOTE:

- As regards the removal procedure for the instrument panel, refer to BO section of the service manual.

3. Disconnect the connector of blower switch.
4. Disconnect the connector of the air conditioner switch, if equipped.
5. Disconnect the control cables from the heater unit.



MBE00114-00099



MBE00115-00100

INSPECTION OF HEATER CONTROL

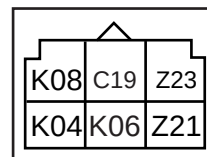
BLOWER SWITCH

Unit inspection

When the blower switch is set to each stage, ensure that continuity exists between the respective terminals as indicated in the table below.

	Z21	K08	K06	K04
OFF				
L	○	○		
M	○	○	○	
H	○	○		○

Connector
(at blower switch side)



MBE00116-00101

BLOWER RESISTER

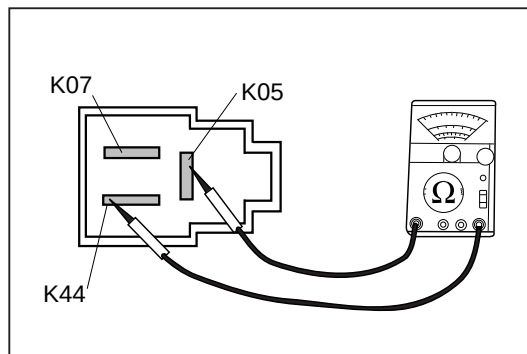
Unit inspection

1. Disconnect the connector of the blower resistance.
2. Ensure that resistance between the respective terminals conforms to the following specifications.

Between terminal K05 and K07 : 0.54 Ω

Between terminal K05 and K44 : 0.83 Ω

Between terminal K07 and K44 : 1.53 Ω



MBE00117-00102

CONTROL DIAL/LEVER ADJUSTMENT

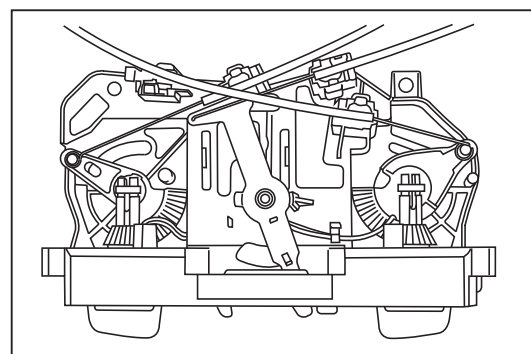
Ensure that each of the air outlet control dial, air intake control lever and temperature control dial is functioning smoothly with a positive dent feeling.

NOTE:

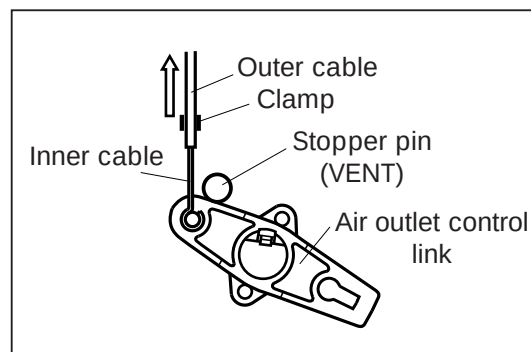
- If not, apply rubber grease to the points or replace the control panel assembly.

(1) OUTLET CONTROL DIAL

1. Set the air outlet control dial to the VENT mode.
2. Clamp the outer cable while pulling the outer cable toward VENT side.



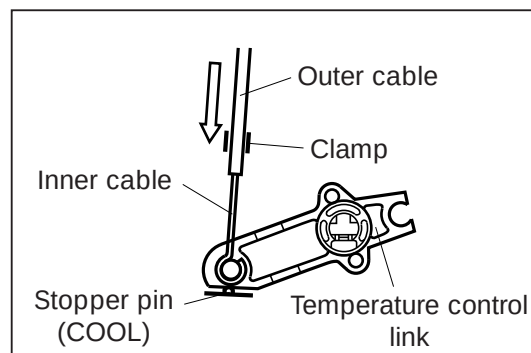
MBE00118-00103



MBE00119-00104

(2) TEMPERATURE CONTROL DIAL

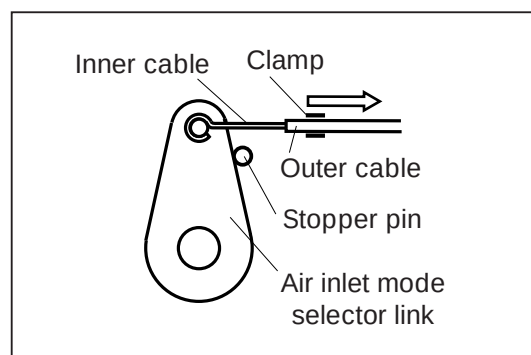
1. Set the temperature control dial to the COOL maximum.
2. Clamp the outer cable while pushing the outer cable toward COOL side.



MBE00120-00105

(3) INTAKE CONTROL LEVER

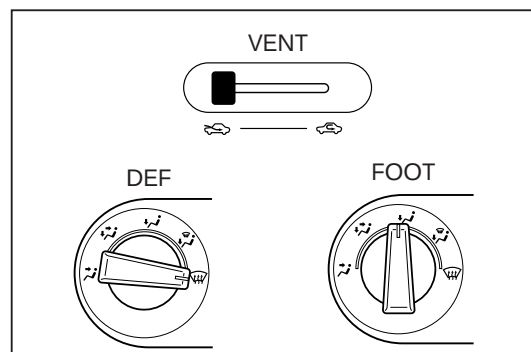
1. Set the air inlet mode selector lever to the RECIRC mode.
2. Clamp the outer cable while pulling the outer cable toward RECIRC side.



MBE00121-00106

After completion of the adjustments in the steps (1) through (3), set the blower switch to the highest position. Check the following items.

- When the VENT mode is selected, ensure that no air leaks from the foot side outlet and defroster.
- When the DEF mode is selected, ensure that no air leaks from the foot side outlet and register.
- When the FOOT mode is selected, ensure that no air leaks from the register. If not, readjust the control lever.



MBE00122-00107

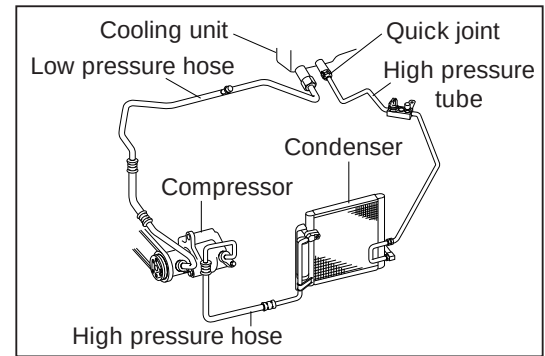
QUICK JOINT FOR AIR CONDITIONER PIPING

OUTLINE

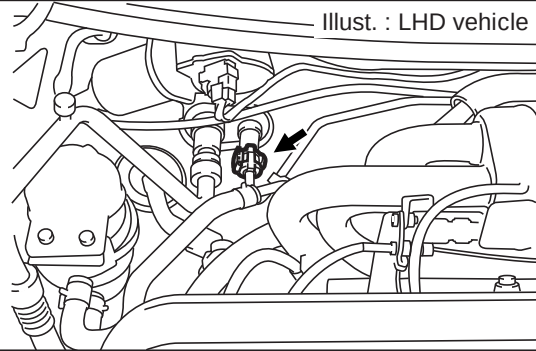
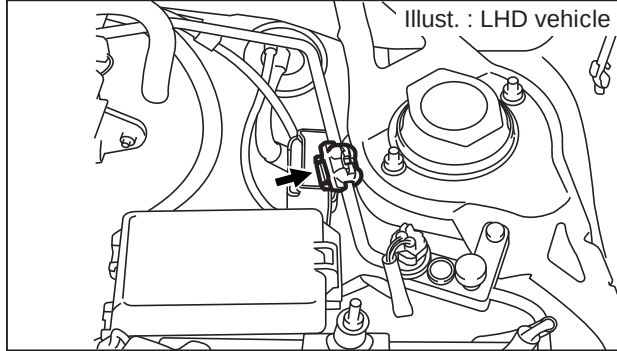
For the air conditioner piping, newly designed “quick joint” is adopted at the cooling unit section. It enables to connect the tube without the union nut.

WARNING

- Do not remove the quick joint before discharging the refrigerant completely.



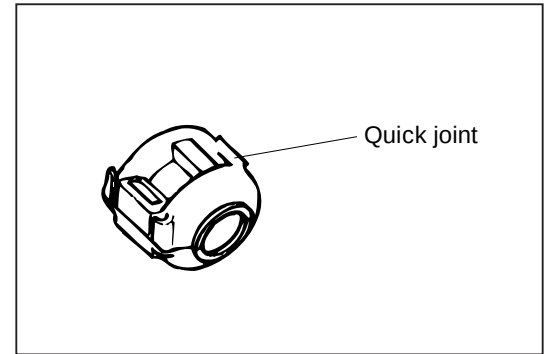
MBE00123-00108



MBE00000-00109

REMOVAL

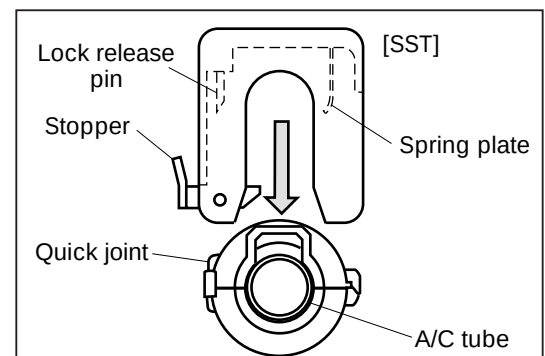
- Discharge the refrigerant from the air conditioning system.
NOTE:
 - As for the procedure to discharge the refrigerant, refer to the service manual of car air conditioning.
- Check the direction of the SST and apply it to the quick joint.



MBE00124-00111

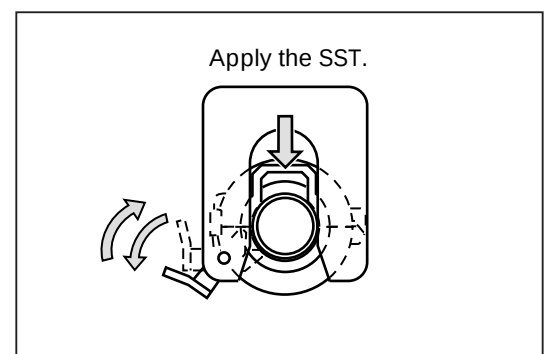
NOTE:

- To remove the quick joint, use the following SSTs.
Joint for High Pressure Side: 09870-00025-000
- There are two pins inside the SST. To release the joint lock, these pins should be inserted to the service holes of the quick joint.



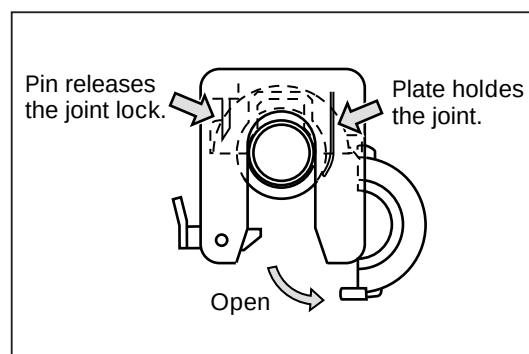
MBE00125-00112

- Push the SST straight to the quick joint.



MBE00126-00113

4. After the SST has been attached completely, Check to see that the lock of quick joint is released.

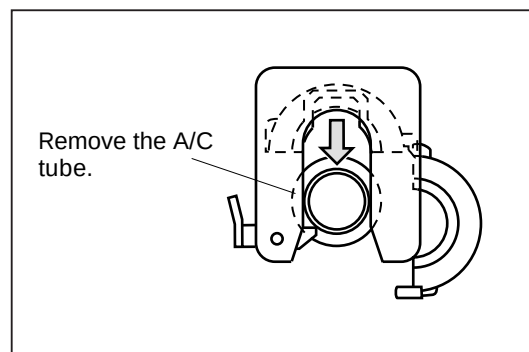


MBE00127-00114

5. Detach the air conditioner tube from the quick joint.

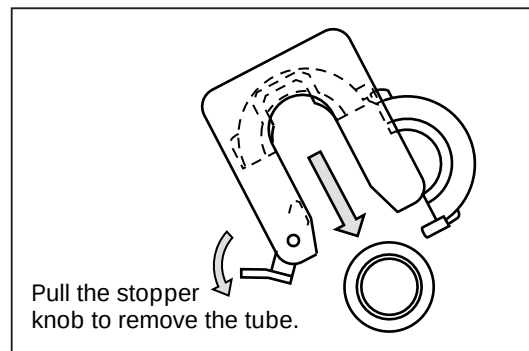
NOTE

- At this time, the joint is still held by the plate spring of the SST.



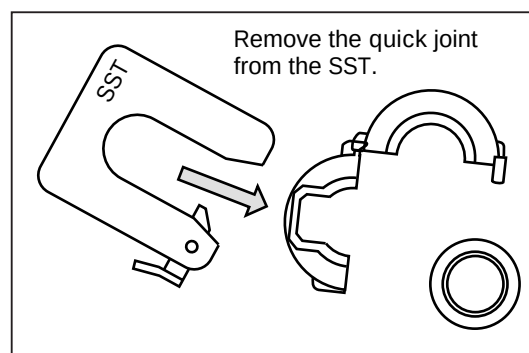
MBE00128-00115

6. Pull the stopper of the SST to remove the air conditioner tube.



MBE00129-00116

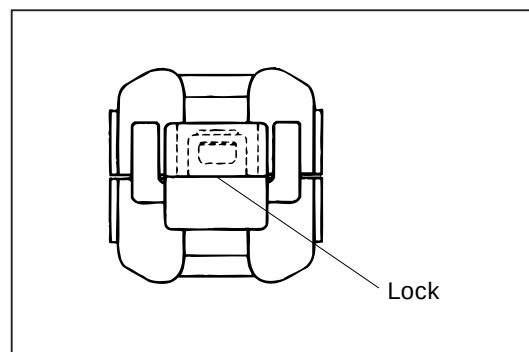
7. Pull off the quick joint from the SST.



MBE00130-00117

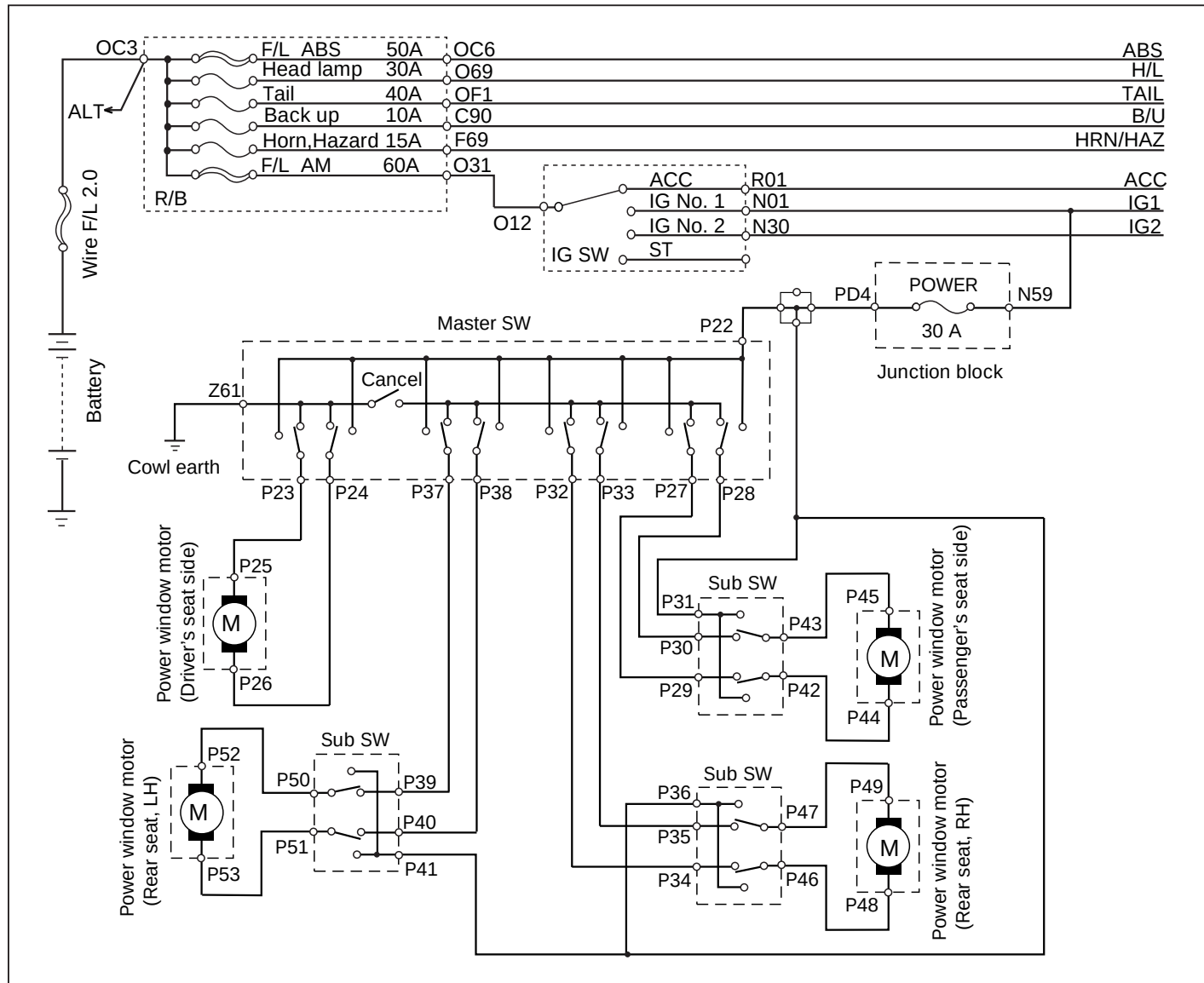
CHECK POINT OF INSTALLATION

Ensure that the quick joint is locked completely.



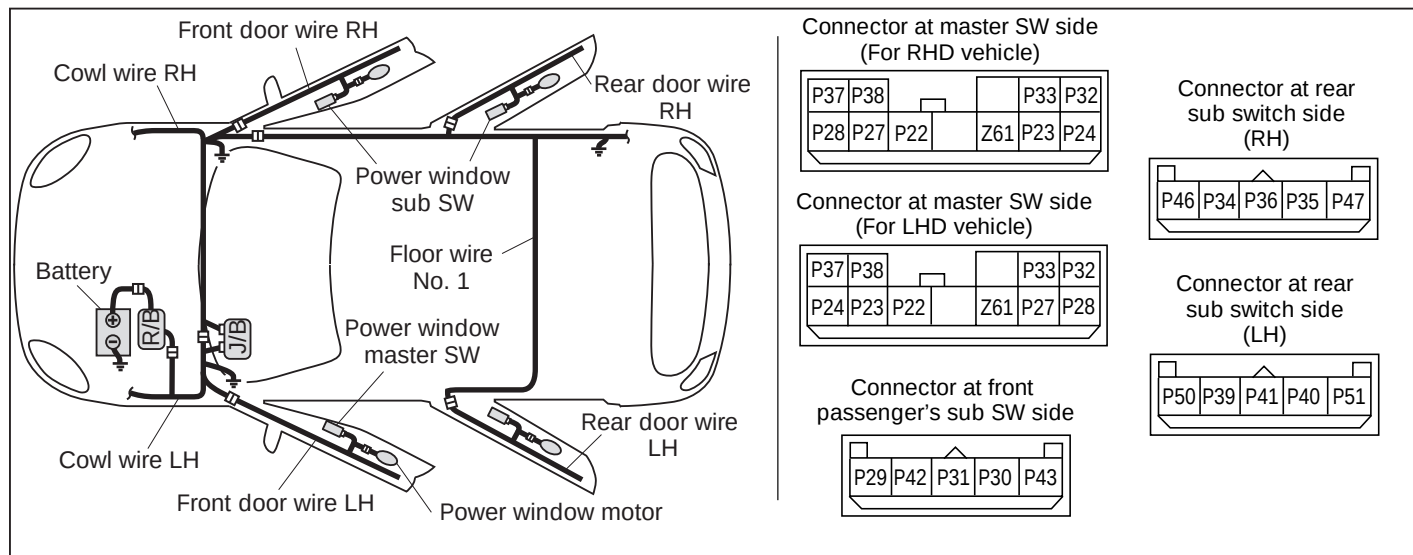
MBE00131-00118

POWER WINDOW CIRCUIT DIAGRAM



MBE00132-00119

CIRCUIT LAYOUT



MBE00133-00120

INSPECTION OF POWER WINDOW SWITCH

MASTER SWITCH (Driver's SIDE)

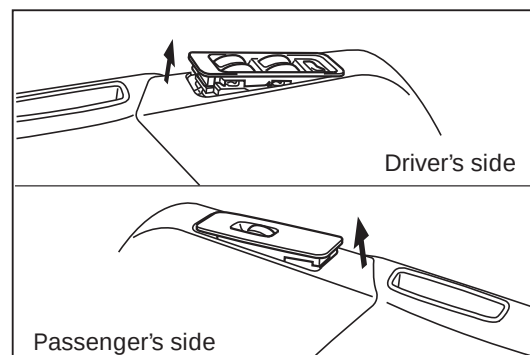
1. Remove the switch from the door trim.
2. When the switch is operated, ensure that continuity between the terminals conforms to the requirements as indicated in the table below.

Window lock switch		Driver's seat side				Front passenger's seat side				Rear right				Rear left			
		P22	P23	P24	Z61	P22	P27	P28	Z61	P22	P32	P33	Z61	P22	P37	P38	Z61
ON	UP	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	OFF		○		○		○		○		○		○		○		○
	DOWN	○		○		○		○		○		○		○		○	
OFF	UP	○	○	○	○	○	○			○	○			○	○		
	OFF		○		○		○	○			○	○			○	○	
	DOWN	○		○		○		○		○		○		○		○	

MBE00134-00000

POWER WINDOW SWITCH (PASSENGER'S SIDE)

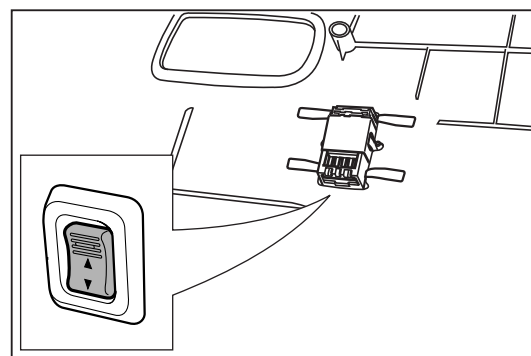
	P42	P29	P31	P43	P30
UP	○		○	○	○
OFF	○	○		○	○
DOWN	○	○	○	○	



MBE00135-00121

POWER WINDOW SWITCH (REAR DOOR SIDE)

	Rear RH	P46	P34	P36	P47	P35
	Rear LH	P50	P39	P41	P51	P40
UP	○			○	○	○
OFF	○	○			○	○
DOWN	○	○	○	○		

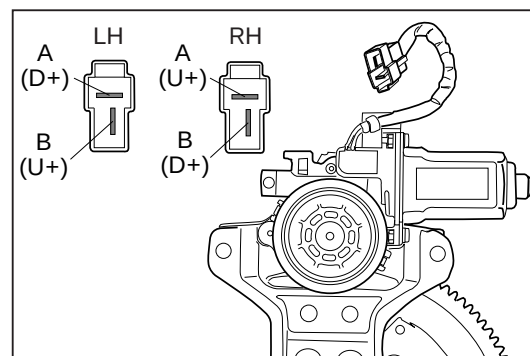


MBE00136-00122

INSPECTION OF POWER WINDOW MOTOR

1. Remove the door trim, service hole cover and the door window regulator.
2. Apply a battery voltage (12V) between the following two terminals.
3. Ensure that the power window motor operates in accordance with the table below.

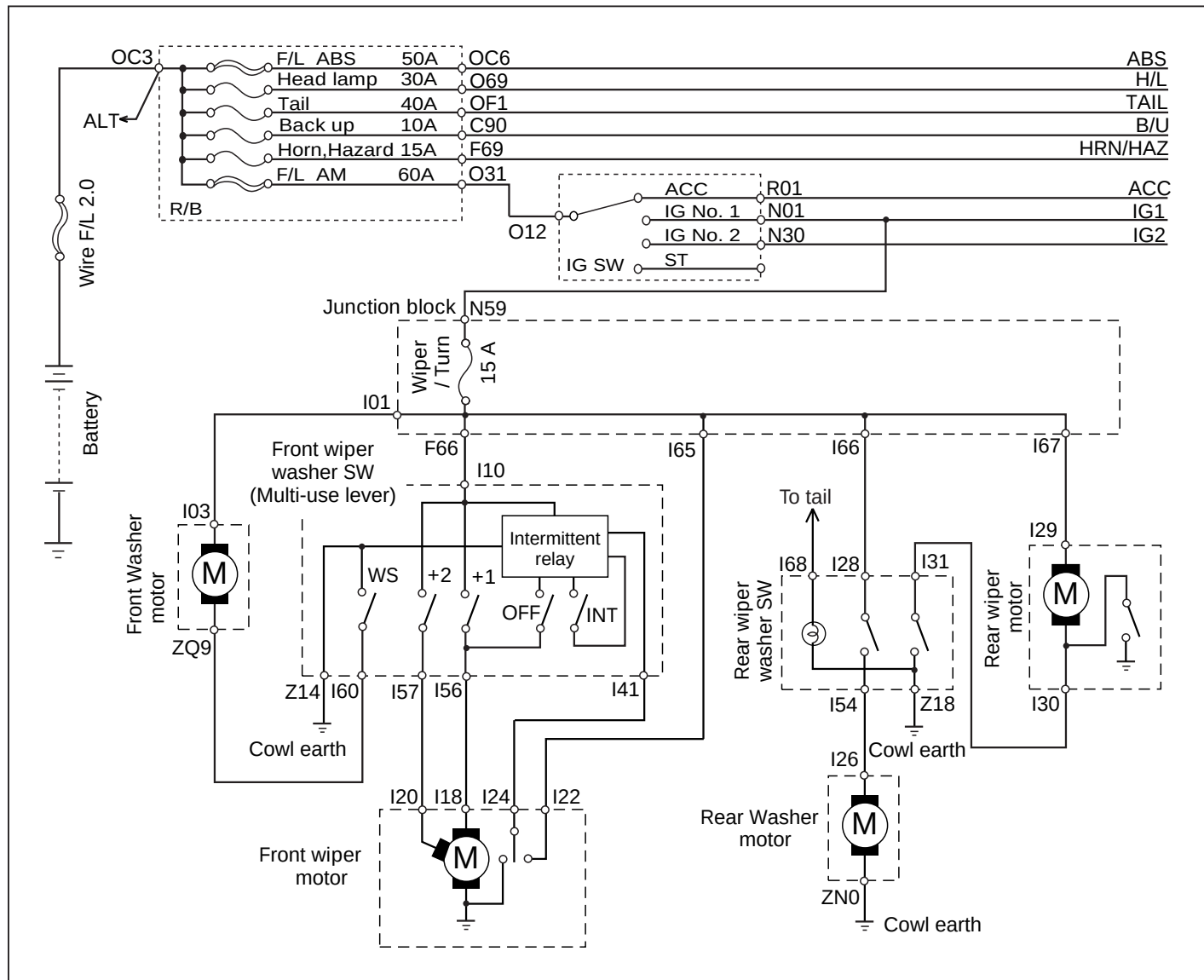
	A	B
Clockwise	⊖	⊕
Counterclockwise	⊕	⊖



MBE00137-00123

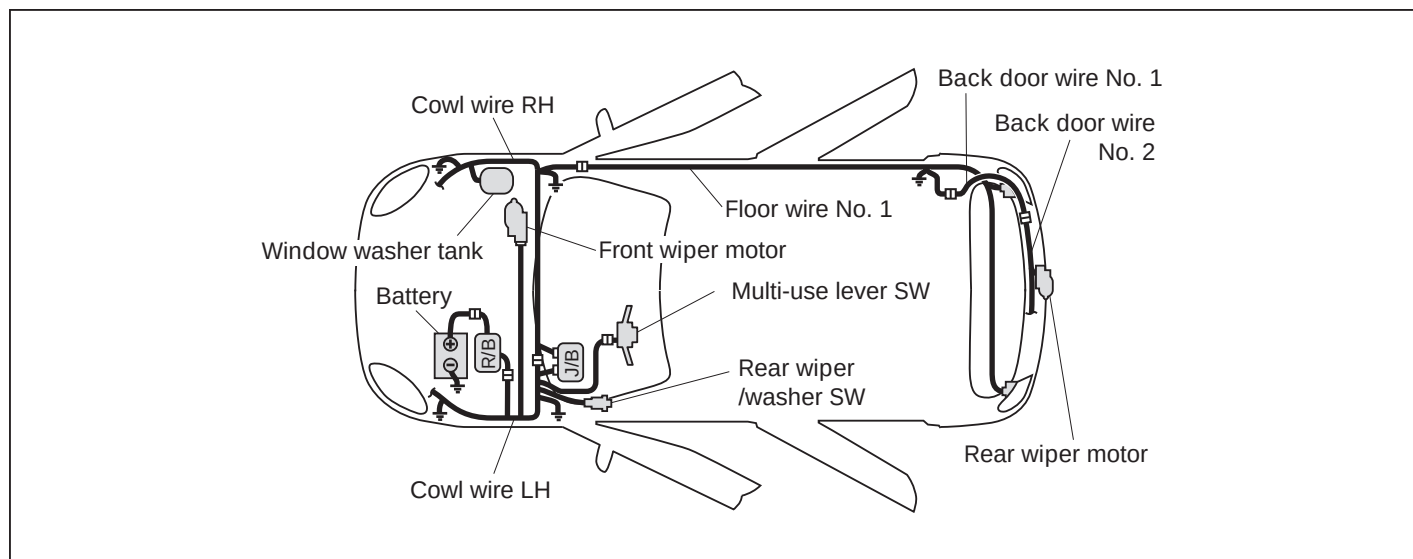
WIPER & WASHER

CIRCUIT DIAGRAM



MBE00138-00124

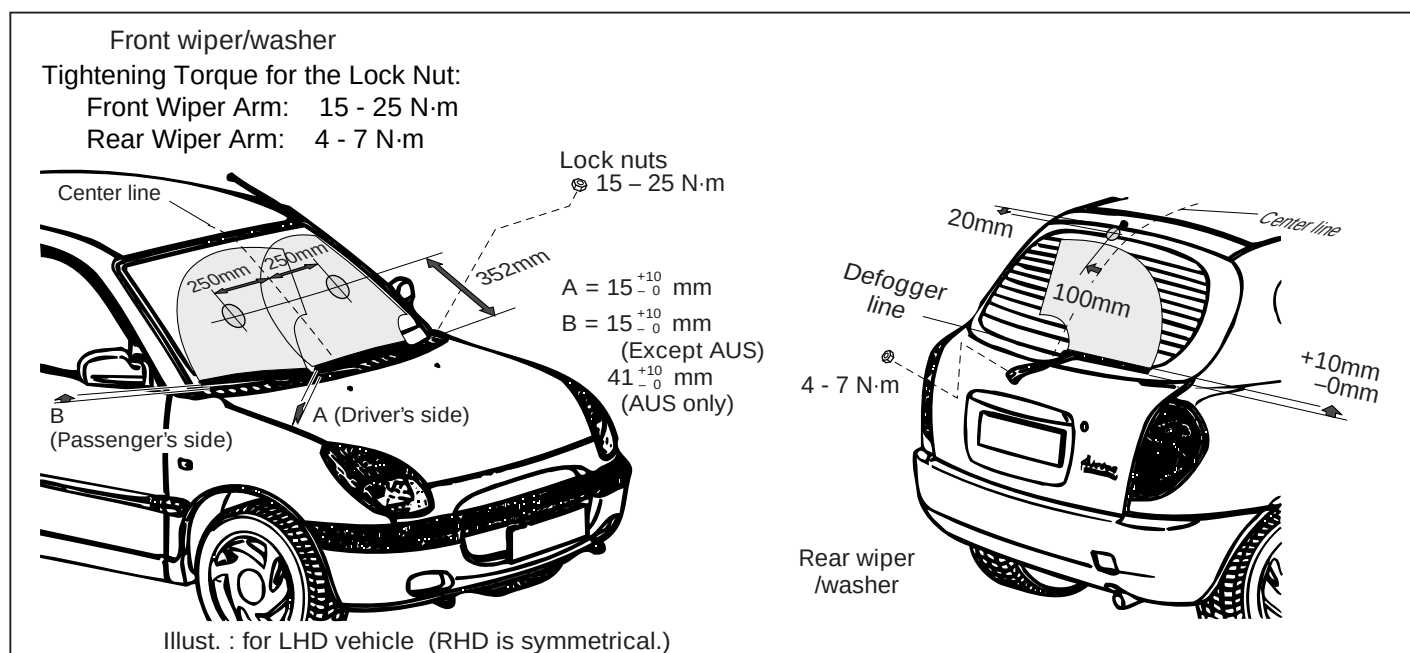
CIRCUIT LAYOUT



MBE00139-00125

ADJUSTMENT OF WIPER ARM AND WASHER NOZZLE

Inspect the wiping area and stationary position of the wiper blade.

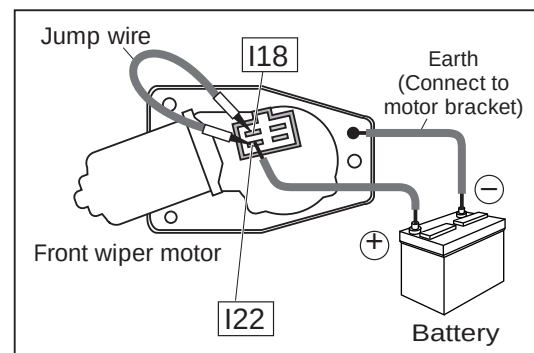


MBE00140-00126

INSPECTION OF FRONT WIPER MOTOR

Low speed operation check

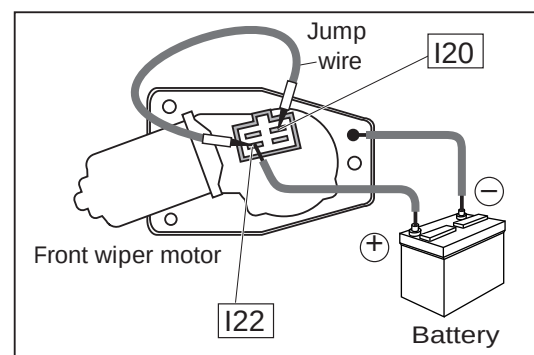
1. Apply a battery voltage (12V) to the terminal I22 (WB) and the wiper motor bracket.
2. Ensure that the wiper operates at the low speed when the terminal I22 (WB) and I18 (+1) are connected with a jump wire.



MBE00141-00128

High speed operation check

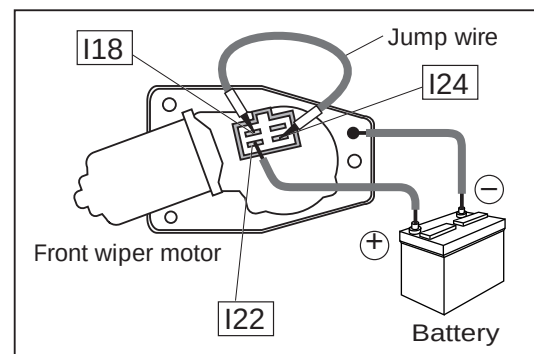
1. Apply a battery voltage (12V) to the terminal I22 (WB) and the wiper motor bracket.
2. Ensure that the wiper operates at the high speed when the terminal I22 (WB) and I20 (+2) are connected with a jump wire.



MBE00142-00129

OFF (Auto-stop) operation check

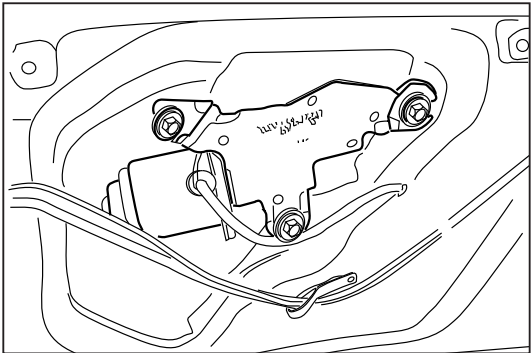
1. Apply a battery voltage (12V) to the terminal I22 (WB) and the wiper motor bracket.
2. Perform the low speed or high speed check procedure, and after that, disconnect the jump wire.
3. Ensure that the wiper operates to some extent and then stops at the proper position, when the terminal I18 (+1) and I24 (WS) are connected with a jump wire.



MBE00143-00130

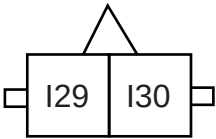
INSPECTION OF REAR WIPER MOTOR

- 1. Remove the back door service hole cover.
NOTE:
 - See BO section of service manual.
- 2. Connect the battery negative terminal (-) to the wiper motor body. Also connect the battery negative terminal to the motor connector (-) and battery positive terminal (+) to the motor connector (+), as indicated in the right figure. Ensure that the wiper motor functions.
- 3. Ensure that the wiper motor stops at the automatic stopping position when the battery negative (-) terminal is disconnected from the wiper motor negative (-) connector.



MBE00144-00131

Connector
(at rear wiper motor side)



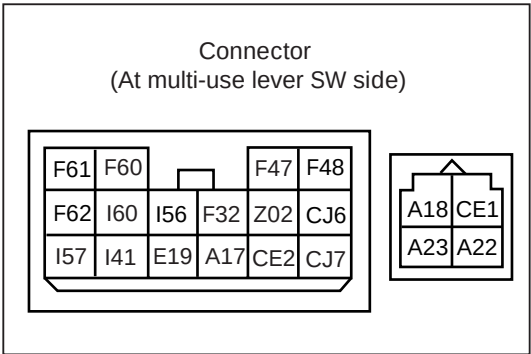
MBE00145-00132

FRONT WIPER/WASHER SWITCH OF MULTI-USE LEVER

- 1. Disconnect the connectors of the switch sub-wire for the multi-use lever.
- 2. Ensure that continuity exists between the respective terminals in accordance with the following continuity table.

Wiper switch				
	WB	+2	+1	WS
	F32	I57	I56	I41
OFF			○	○
LO	○		○	
HI	○	○		

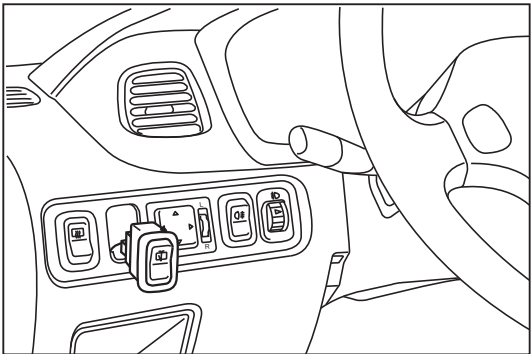
Washer switch		
	W	E
	I60	Z02
OFF		
ON	○	○



MBE00146-00133

INSPECTION OF REAR WIPER/WASHER SWITCH

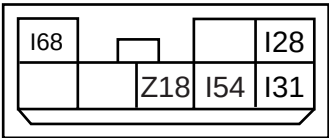
- 1. Push the switch from backside while releasing the lock of the switch, remove the switch toward your side.
- 2. Disconnect the connector.
- 3. Ensure that continuity exists between the respective terminals, as indicated in the table below.



MBE00147-00134

	Z18	I31	I28	I54
OFF				
Wiper ON	○	○		
Washer 1			○	○
Washer 2	○	○	○	○

Connector
(at rear wiper/washer SW side)

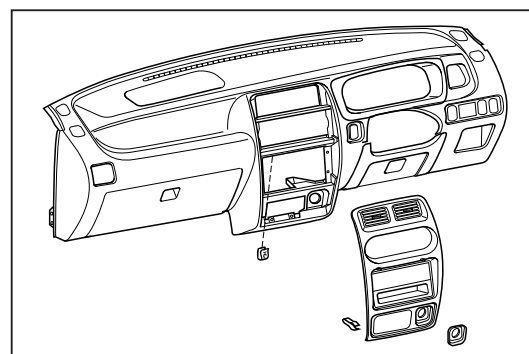


MBE00148-00135

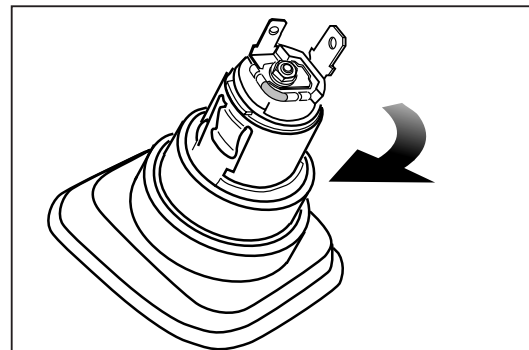
CIGARETTE LIGHTER

REMOVAL

1. Remove the instrument cluster finish panel.
2. Disconnect the connector from the cigarette lighter assembly.
3. Turn about 2° and pull out 10 mm the cigarette lighter assembly. Then turn back about 2° (align the embossed at the connector side) and pull out the cigarette lighter assembly from the cigarette lighter bezel.
4. Remove the cigarette lighter.



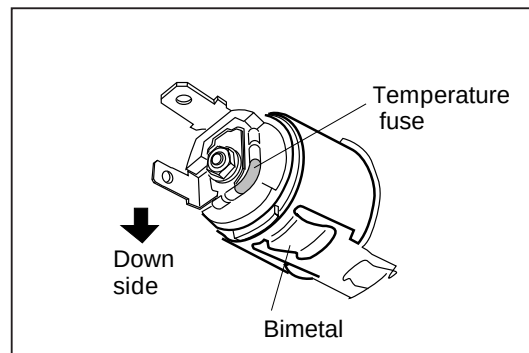
MBE00149-00136



MBE00150-00215

WARNING:

- The cigarette lighter has such construction that the heater is energized when the lighter section is pushed-in, resulting in a red-heated heater. When the heater becomes red-heated, the bimetal that is retaining the lighter section will open because of the heat, thereby pushing out the heater unit. As a result, the energizing of the heater ceases.



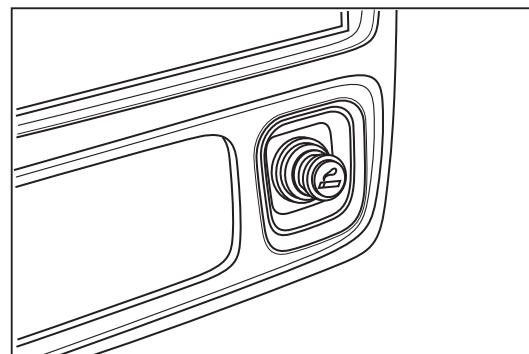
MBE00151-00137

- A temperature fuse is attached to the terminal of the electric fuse so as to prevent over-heating of the fuse in the event that the lighter can not pop out due to some reasons. Make sure to install this temperature fuse at the underside of the terminal so that the circuit may be cut off when the temperature fuse is melt down.

MBE00152-00000

INSPECTION

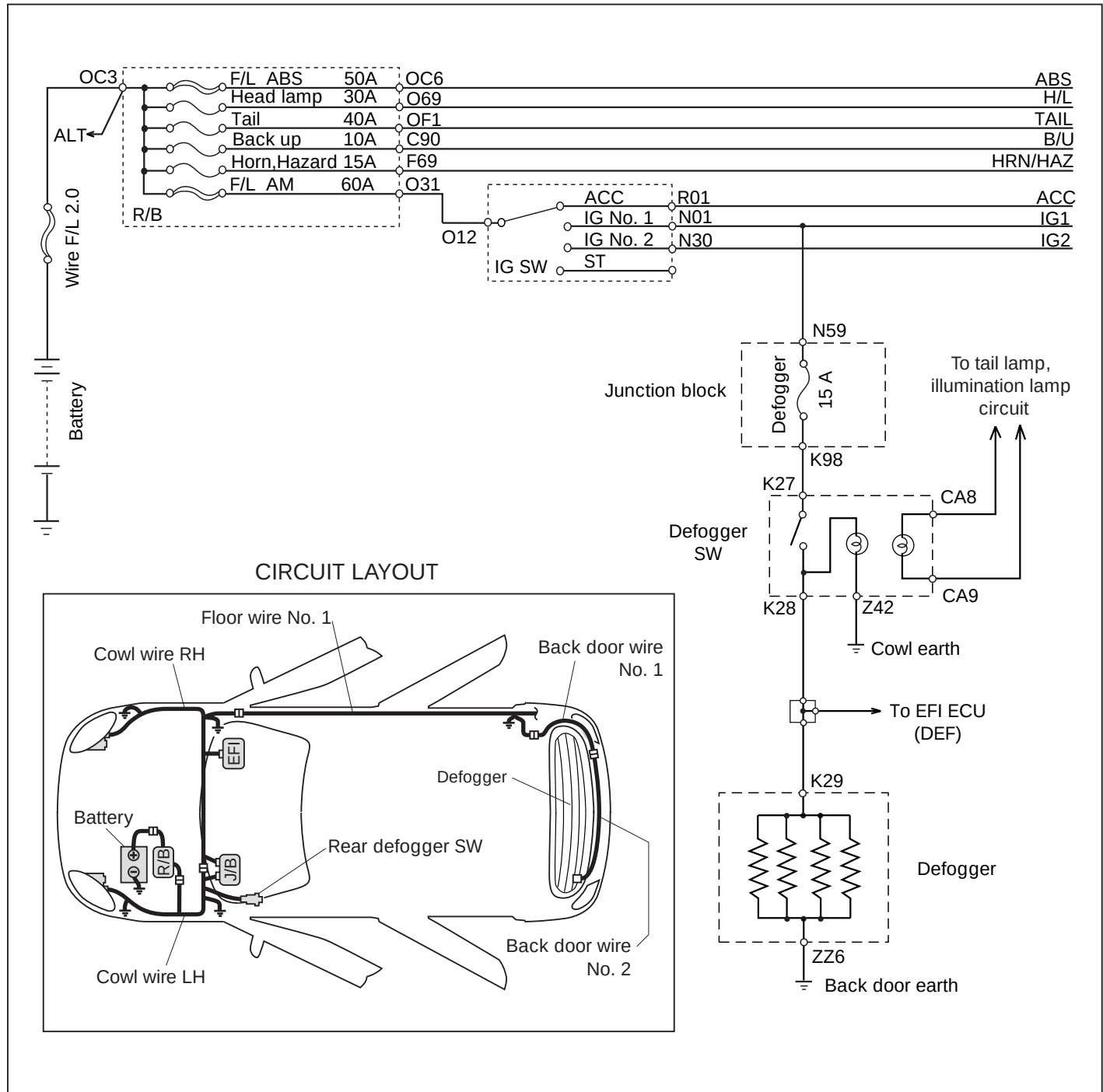
1. Push the cigarette lighter. Ensure that the heater section is heated and glows red.
2. Ensure that the heater section returns to the original position about 18 seconds.
3. If not, replace the cigarette lighter.



MBE153-00138

DEFOGGER

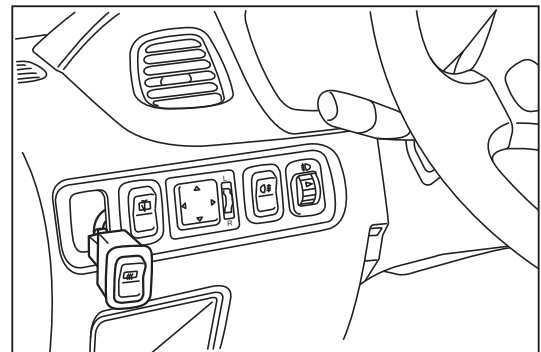
CIRCUIT DIAGRAM



MBE00154-00139

REMOVAL OF DEFOGGER SWITCH

1. Remove the instrument finish lower panel.
2. Remove the defogger switch by pushing it with your fingers at the back side of the instrument panel.
3. Disconnect the connector of the wire harness.
4. Remove the switch from the instrument panel.



MBE00155-00140

INSPECTION OF DEFOGGER SWITCH

1. Remove the defogger switch from the instrument panel.
2. Ensure that continuity exists between the terminal K27 and the terminal Z42 when the switch is turned on.
3. Check to see if the illumination bulb is burnt out.

INSPECTION OF DEFOGGER WIRE

Open wire check

1. Turn on the ignition key switch.
2. Turn on the defogger switch so as to energize defogger wire.
3. Check the voltage at the center section of each heat wire.

Voltage	Judgment criteria
Approx. 5 V	Good (No open wire)
Approx. 10 V or 0 V	Open wire

NOTE:

- (1) When wiping the glass surface, use a soft, dry cloth. Move the cloth along the printed wire. Be careful not to damage the wire.
- (2) Never use washing agent or glass cleaner, which contains abrasive compound.
- (3) Wrap the tip end of the tester probe with foil strip so that the tester probe causes no damage on the heat wire during the voltage measurement.
- (4) Check the voltage by pushing the foil strip against the heat wire with your finger, as indicated in the figure.

REFERENCE:

- If the voltage is 10V, it means that open wire exists between the center of the wire and the end open wire exists between the center of the wire and end of the earth side.

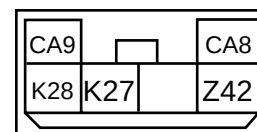
Locating point of open wire

1. Connect the positive (+) terminal of the voltmeter to the positive (+) side of the defogger wire.
2. Slide the voltmeter's negative (-) terminal wrapped with foil strip on the defogger wire from its positive (+) side to its negative (-) side.
3. The voltmeter reading changes from 0V to several volts at the point where open wire exists.

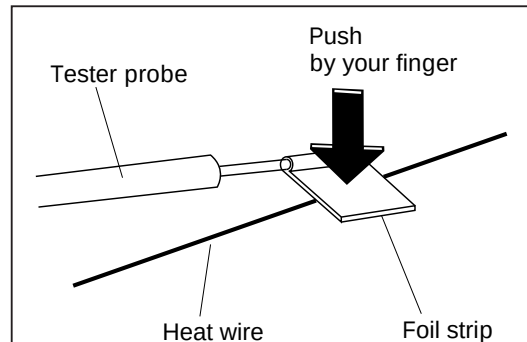
Repairing point of open wire

1. Clean the point of open wire with white gasoline.
2. Affix masking tapes to both upper and lower portions of the point to be repaired.
3. Stir repair agent (Du Pont Paste No. 4817) thoroughly. Apply a small amount of the repair agent to the repairing point, using a fine brush.
4. Two to three minutes later, peel off the masking tapes.
5. Do not energize the defogger wire within 24 hours after the repair.

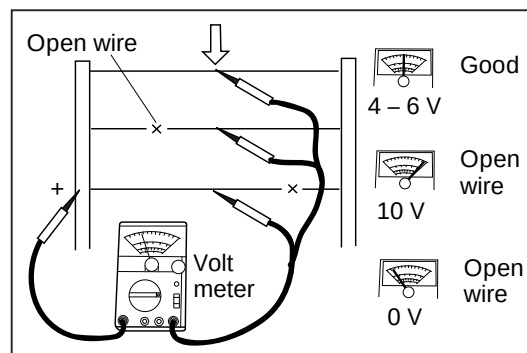
Connector
(at defogger switch side)



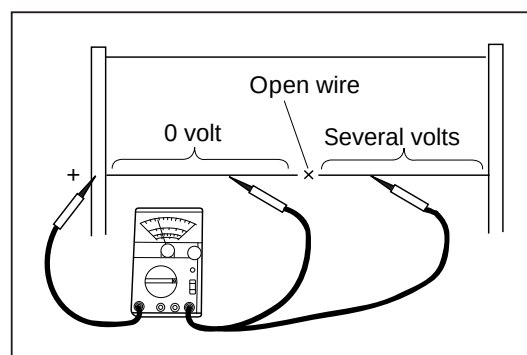
MBE00156-00141



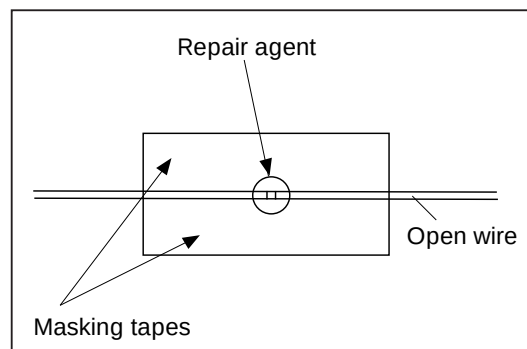
MBE00157-00142



MBE00158-00143

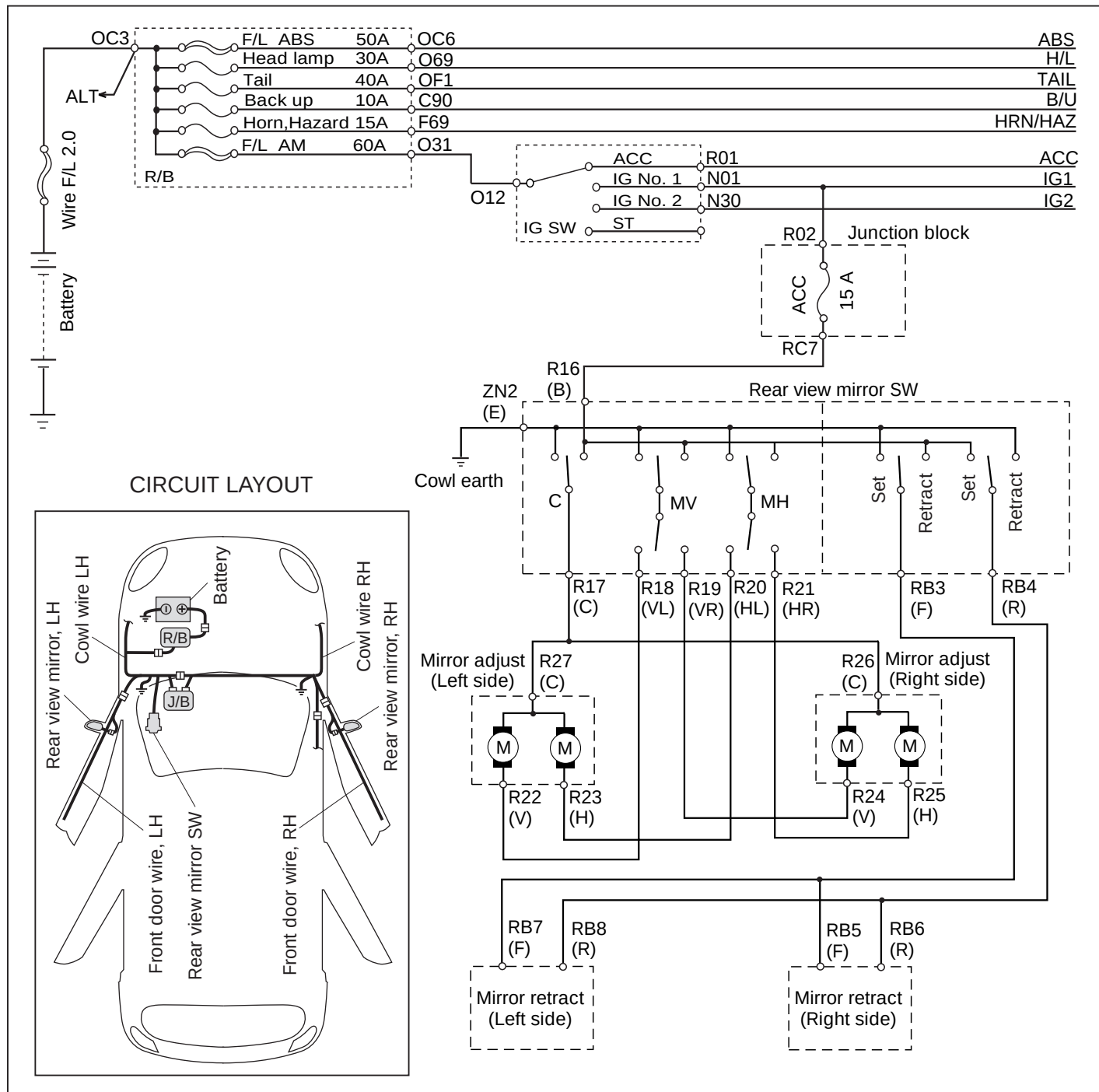


MBE00159-00144



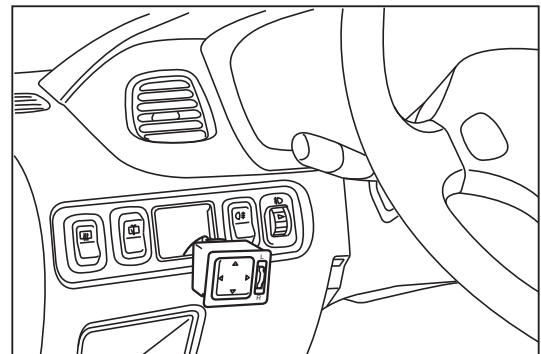
MBE00160-00145

REAR VIEW MIRROR CIRCUIT DIAGRAM



REMOVAL OF REAR VIEW MIRROR SWITCH

1. Remove the instrument finish lower panel.
2. Remove the rearview mirror switch by pushing it with your fingers at the back side of the instrument panel.
3. Disconnect the connector of the wire harness.
4. Remove the switch from the instrument panel.



INSPECTION OF REARVIEW MIRROR SWITCH

Ensure that the continuity exists between the respective terminals in accordance with the following continuity table.

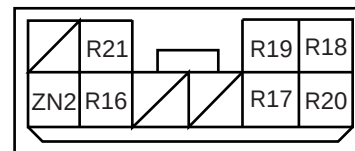
MIRROR ADJUST

Mirror Switch position	Left					Right				
	R16	ZN2	R18	R17	R20	R16	ZN2	R19	R17	R21
UP	○		○			○		○		
DOWN	○			○			○	○		
LEFT	○				○	○				○
RIGHT	○				○		○			○

MIRROR RETRACT

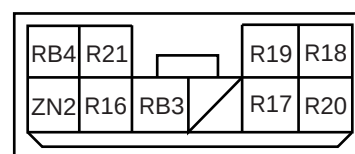
Terminal Switch position	R16	ZN2	RB3	RB4
	○			○
Set		○	○	
Retract	○		○	○

Connector
(at rear view mirror SW side)



MBE00163-00148

Connector
(at rear view mirror SW side)
– Retractable type –



MBE00164-00149

INSPECTION OF REAR VIEW MIRROR UNIT

1. Remove the front door trim assembly.
2. Disconnect the connector of the door mirror.
3. Apply a voltage of 12 V between the following two terminals.
4. Ensure that the mirror operates in accordance with the table below.

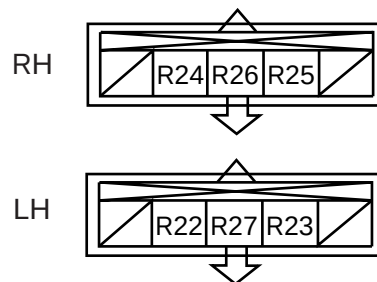
MIRROR ADJUST

Terminal	Right door mirror	R26	R24	R25	Operation direction
	Left door mirror	R27	R22	R23	
Connection		⊖	⊕		Up
		⊕	⊖		Down
		⊖		⊕	Left
		⊕		⊖	Right

MIRROR RETRACT

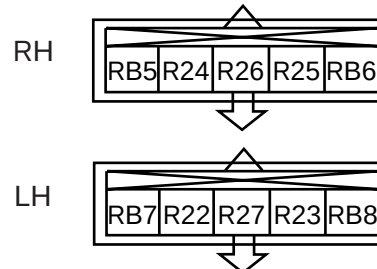
Terminal	Right door mirror	RB5	RB6	Operation direction
	Left door mirror	RB7	RB8	
Connection		⊖	⊕	Set
		⊖	⊕	Retract

Connector (at rear view mirror side)

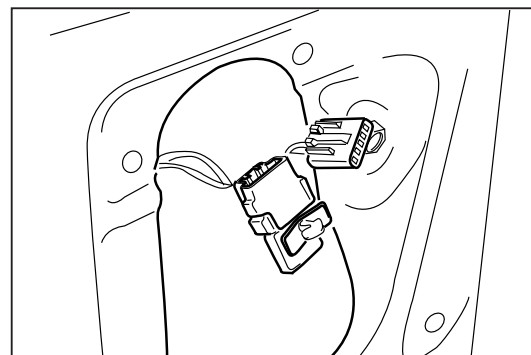


MBE00166-00151

Connector (at rear view mirror side)
– Retractable type –



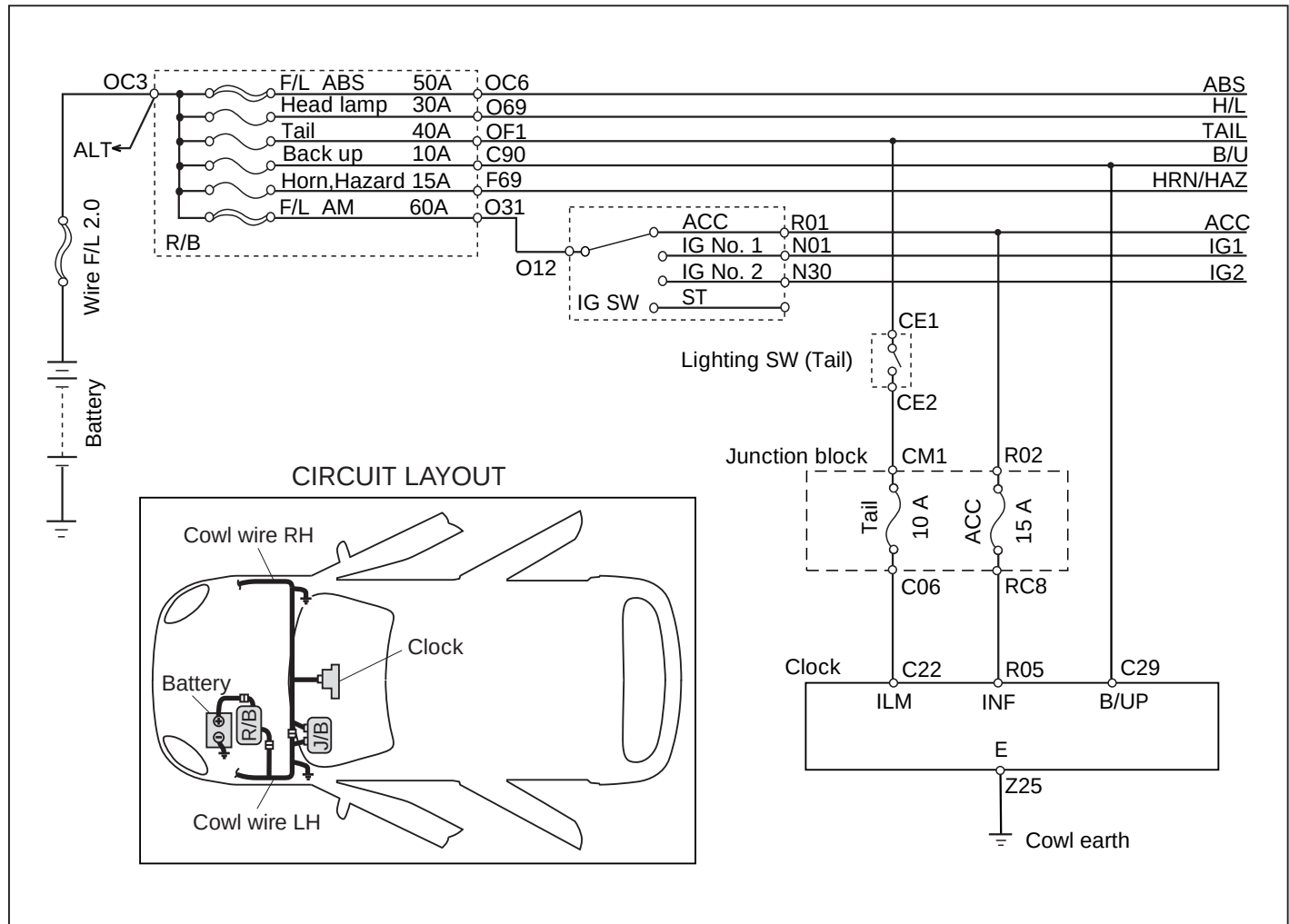
MBE00167-00152



MBE00165-00150

CLOCK

CIRCUIT DIAGRAM



MBE00168-00153

REMOVAL

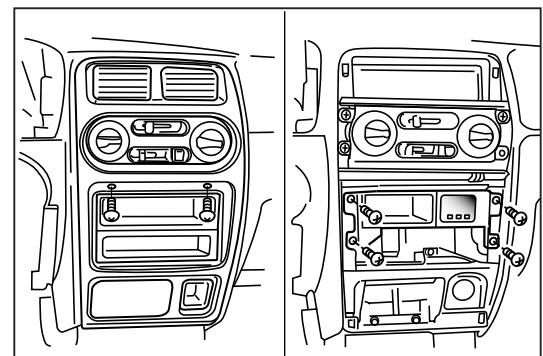
1. Remove the instrument cluster finish panel.
2. Remove the clock assembly by loosening the attaching screws.
3. Disconnect the connector from the clock.

CAUTION:

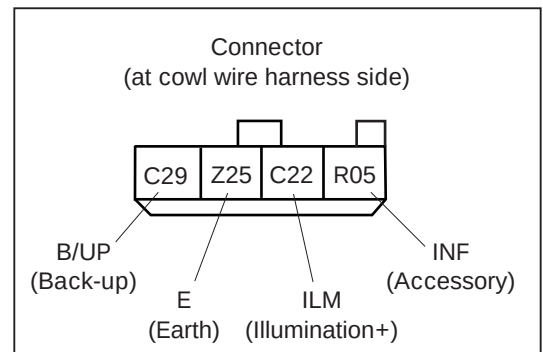
- When the connector is detached, the memory of the clock will be erased at the same time.

INSPECTION

1. Turn off the ignition key switch.
2. Ensure that battery voltage exists between the terminal C29 and Z25 at the vehicle harness (cowl wire) side.
3. Turn the ignition key switch to ACC position.
4. Ensure that battery voltage exists between the terminal R06 and Z25 at the vehicle harness (cowl wire) side.
5. Connect the connector to the clock assembly. Check that the clock indicates "1:00".
6. Ensure that the display will dim when the lighting switch is turned on.
7. Perform the time adjusting procedure.

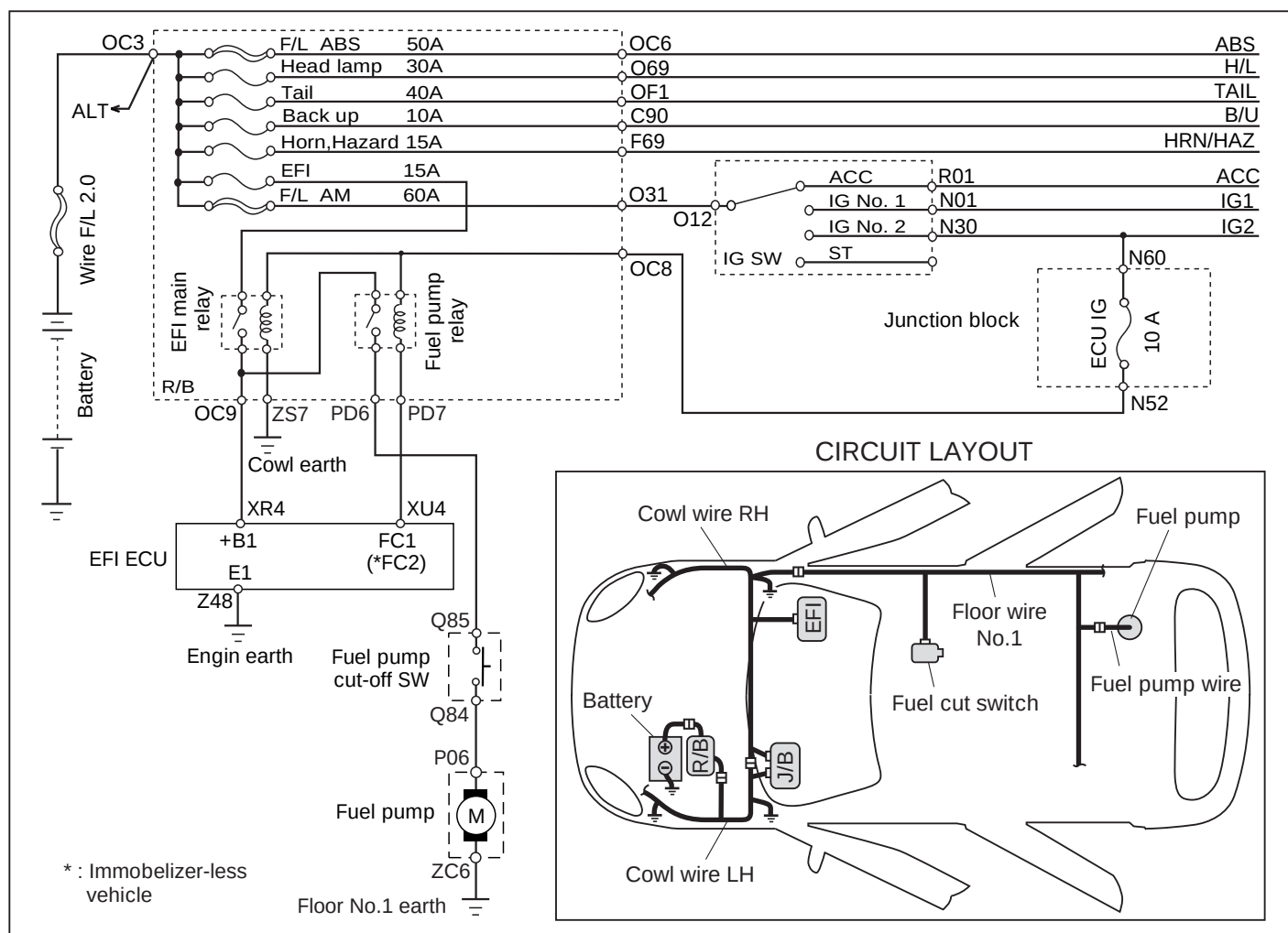


MBE00169-00154



MBE00170-00155

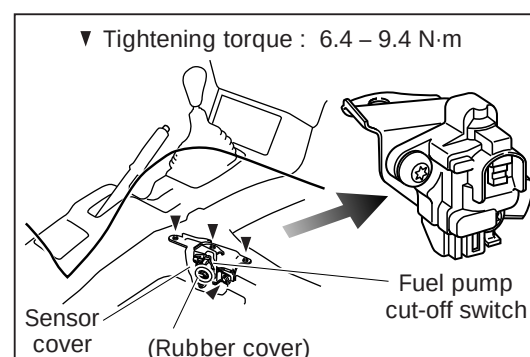
FUEL PUMP CUT-OFF SWITCH CIRCUIT DIAGRAM



MBE00171-00156

REMOVAL

1. Disconnect the battery ground cable from the negative (-) terminal.
2. Remove the front seats and floor carpet.
3. Remove the sensor cover.
4. Remove the fuel pump cut-off switch assembly and disconnect the connector.



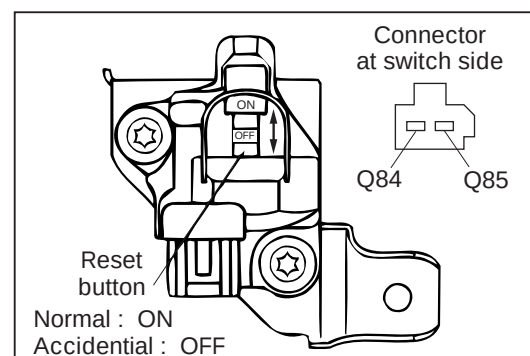
MBE00172-00157

INSPECTION

1. Ensure that the reset button of the fuel pump cut-off switch is to be normal state. (ON position)
2. Ensure that the continuity exists between the terminal Q84 and Q85.

NOTE:

- If the reset button is OFF position, no continuity exists between Q84 and Q85.
- After performing the removal, check and installation of the cut off switch, be sure to push up the reset button in ON direction for about one second.



MBE00173-00158

ITC SYSTEM

OUTLINE

For enhanced safety of the motor vehicle, the ITC system (Integrated Timer Control system) has the following functions.

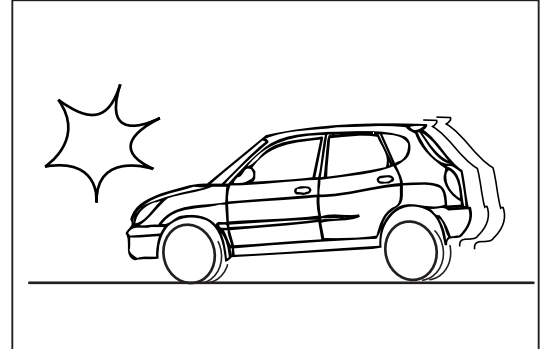
1. Impact-detecting door unlocking system
2. All-door lock, interlocked with door lock button at driver's seat side
3. Room lamp timer

MBE00174-00000

<Impact-detecting door unlocking system>

In the event that an impact beyond the specified value is applied to the vehicle, all of the doors are unlocked three seconds after the impact detection. Furthermore, when the vehicle speed drops to 0 km/h within 10 seconds after the impact detection, the hazard lamp starts to flash. When the switch of the room is set to positions in which the illumination of those lamps is interlocked with the door, the lamp will go on simultaneously as the hazard lamp goes on.

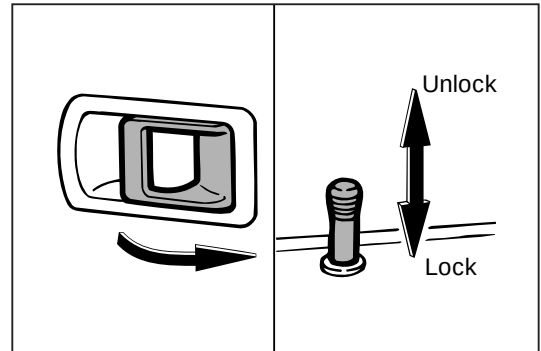
Moreover, the impact is detected in all around horizontal directions.



MBE00175-00159

<All-door lock, interlocked with door lock button>

All of the side doors can be locked and unlocked, interlocked with the door lock button switch at the driver's seat side.



MBE00176-00160

<Room lamp timer>

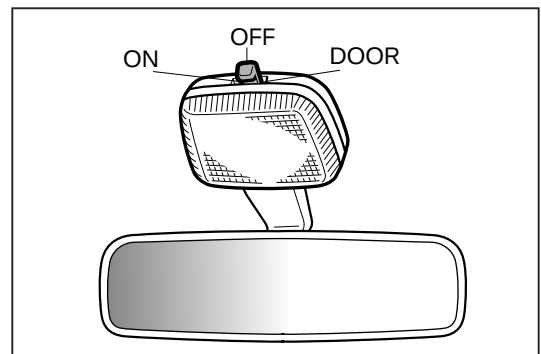
When any door is opened with the ignition switch turned off, the room lamp goes on. When all of the doors are closed, the lamp gradually dims, until it is finally extinguished. Namely, the lamps keep approximately 75 % of the original brightness for three seconds after the door is closed. For the next two seconds, the lamp is illuminated with an approximately 50 % of brightness. The lamp goes out five seconds after the door is closed.

When the ignition switch is turned on while the lamp is dimming, the extinguishing lag of the lamp is suspended.

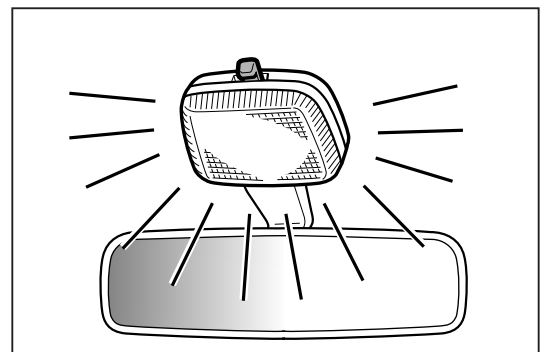
Furthermore, when the door lock button at the driver's seat side is locked while the lamp is dimming, the extinguishing lag of the lamp is suspended.

However, the room lamp operates only when the switch is set to position in interlocking with the door. Moreover, when the ignition switch is set to the ON position, this function will not operate.

In order to prevent the battery from being discharged, if the door remains opened for 10 minutes with the ignition switch turned off, the lamp will go out. Afterwards, when the door is closed and again opened, the lamp goes on, and the same function operates.



MBE00177-00161



MBE00178-00162

COLLISION SENSOR

The collision sensor is mounted at the back of the air bag ECU.

The sensor consists of a weight for impact detection and electric contact points. Moreover, the electric circuit is made up of a switch and a resistor which are connected in parallel. A voltage of five volts is always applied to both ends of the circuit from the ECU.

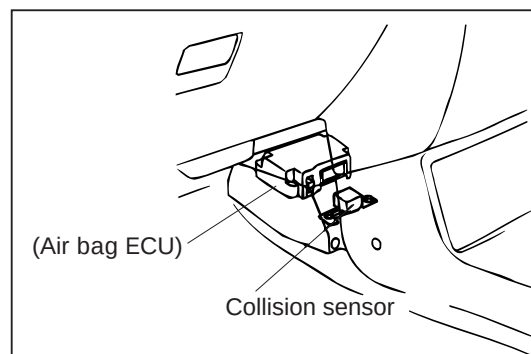
Therefore, in cases where the wire harness between the sensor and the ECU exhibits an open wire, an electric current flowing into the resistor will be shut off. As a result, the sensor judges that the circuit including the wire harness exhibits open wire, then setting off the buzzer.

In cases where the sensor circuit is shorted, no distinction can be made between the case where the circuit is shorted and the case where the switch is turned on due to the function of the collision sensor. In the case of the short circuit, however, the ON condition of the switch lasts longer. Consequently, the ECU judges that it is an abnormality.

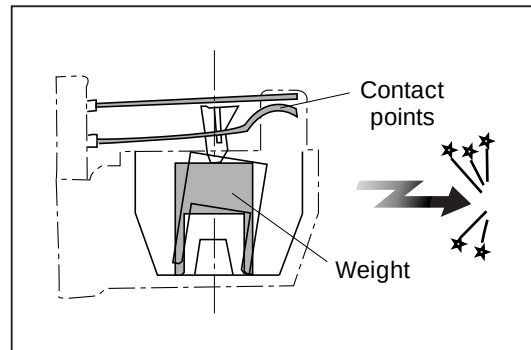
Utmost care must be exercised when a sensor is installed. If the sensor is dropped, the sensor cannot be used even if its external appearance exhibits no abnormality.

ITC ECU

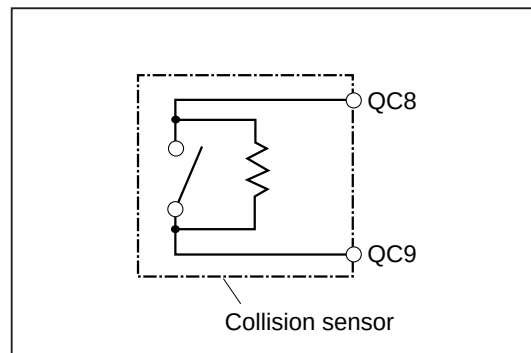
The ITC ECU is mounted on the bracket of the instrument cluster finish panel.



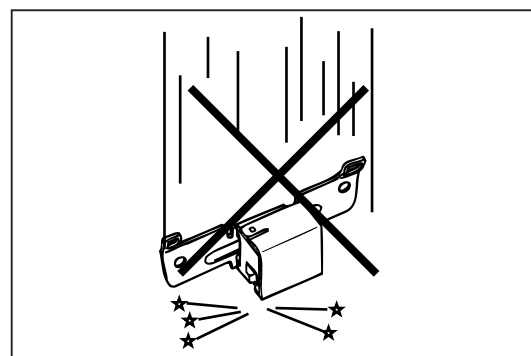
MBE00179-00163



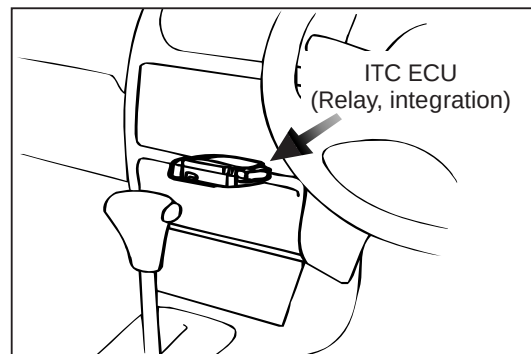
MBE00180-00164



MBE00181-00165

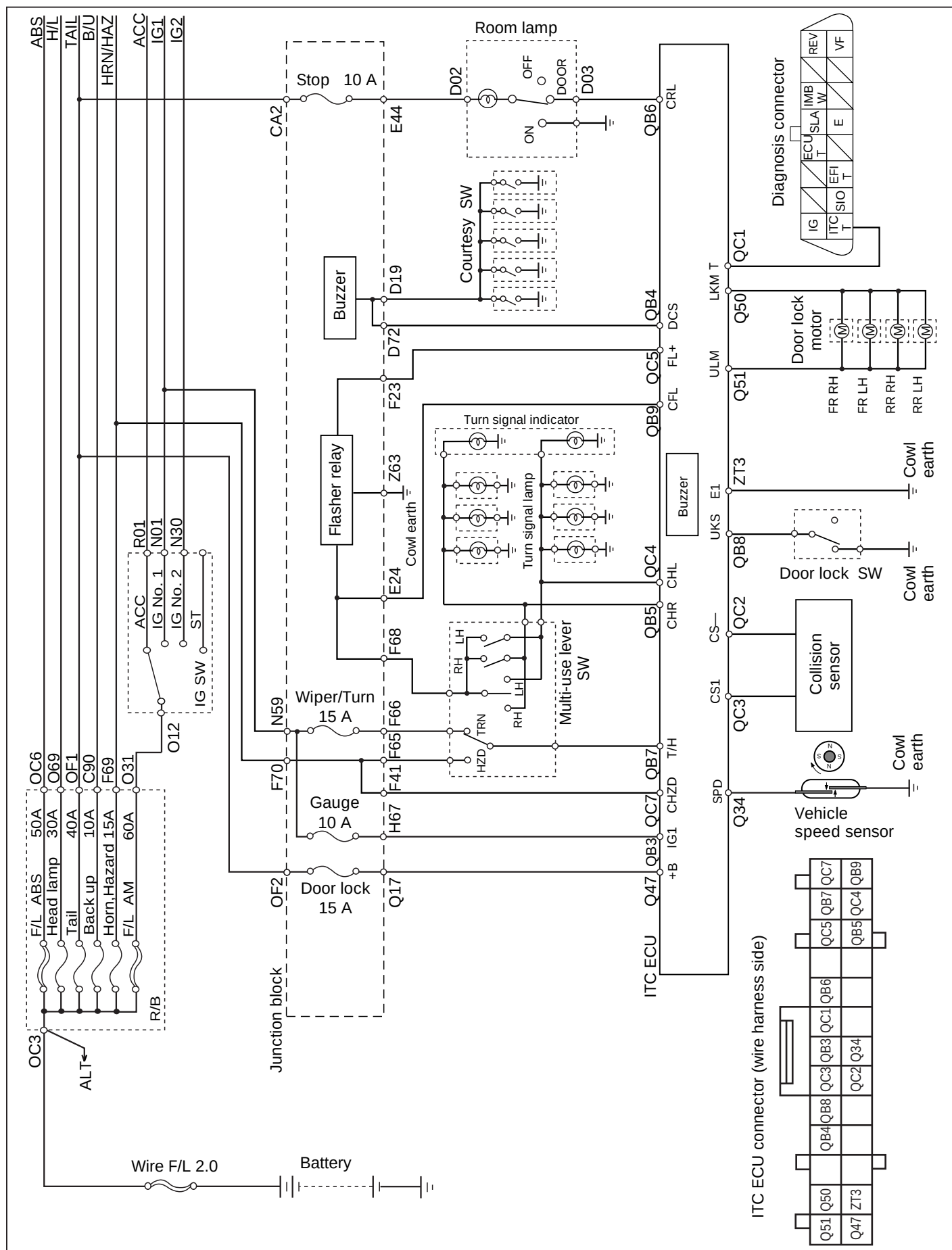


MBE00182-00166



MBE00183-00167

CIRCUIT DIAGRAM

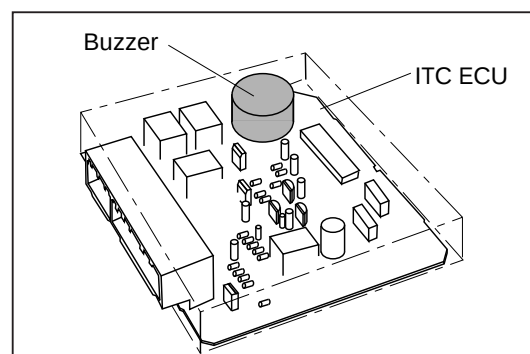


TROUBLE-SHOOTING

When there is an open wire or a short in the collision sensor of the impact-detecting system, a warning buzzer in the ECU will sound for five seconds.

NOTE:

- In the case of an open wire with the ignition switch turned on, if the open wire state continues for 200 ms or more, the buzzer will sound. The impact-detecting function alone will not function, until the open wire state is eliminated.
- In the case of short circuit with the ignition switch turned on, if the short continues for 2 seconds or more, the buzzer will sound. The impact-detecting function alone will not function, until the short circuit state is eliminated.

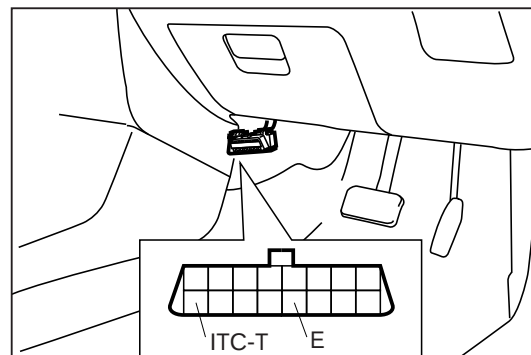


MBE00185-00169

Operation checking method by shorting ITC-test terminal

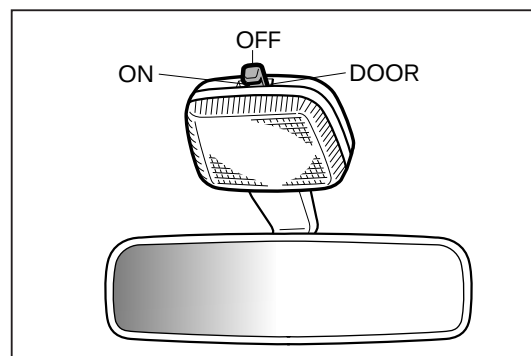
The operations of the following systems can be checked by connecting the test terminal (ITC-T) to the earth terminal (E) with a jump wire.

- Vehicle speed sensor
- Room lamp system
- Hazard lamp system



MBE00186-00170

- (1) Set the interior lamp switch to the door interlocking position.
- (2) Pull off the diagnosis connector from the bracket.
The SST (extension-sub-wire) enables much easier to do the following procedure.
SST: 09991-87404-000
09991-87403-000

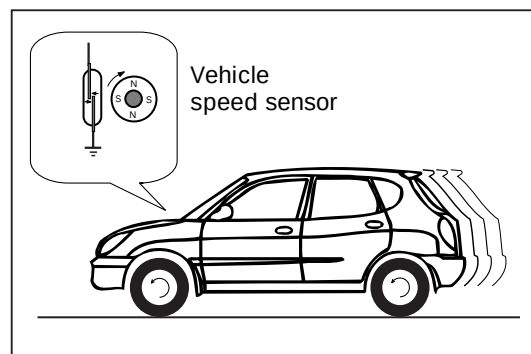


MBE00187-00171

- (3) Drive the vehicle at a speed of 15 km or more.
- (4) Stop the vehicle.

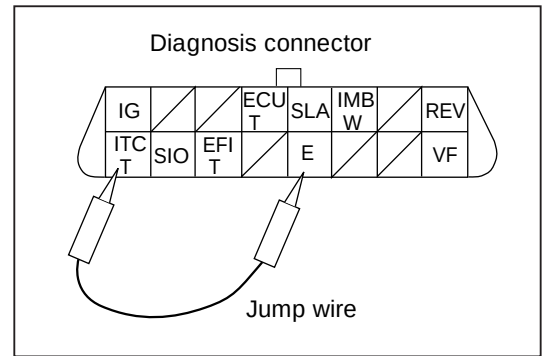
NOTE:

- After the vehicle has stopped, do not turn off the ignition switch. Keep the engine idling.
- Apply the parking brake. In the case of automatic transmission-equipped vehicles, change shift lever into P range.



MBE00188-00172

- (5) Connect the test terminal (ITC-T) to the earth terminal (E) with the jump wire, as shown in the figure.

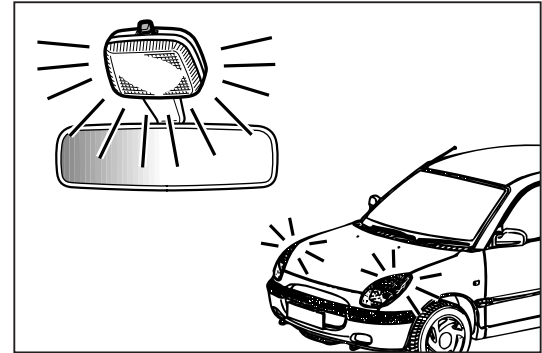


MBE00189-00173

- (6) The hazard lamp flashes. At the same time, the room lamp goes on.

NOTE:

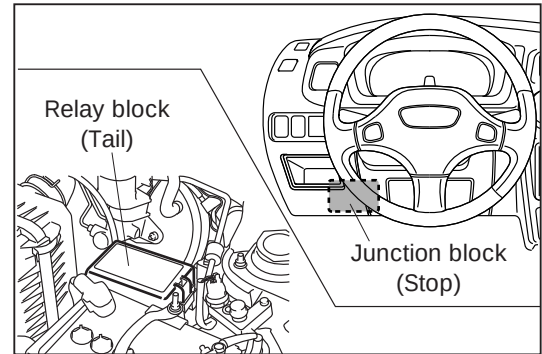
- If the lamps will not go on, check the wire harness and unit itself. If it is satisfactory, disconnect the jump wire and SST. This completes the check.



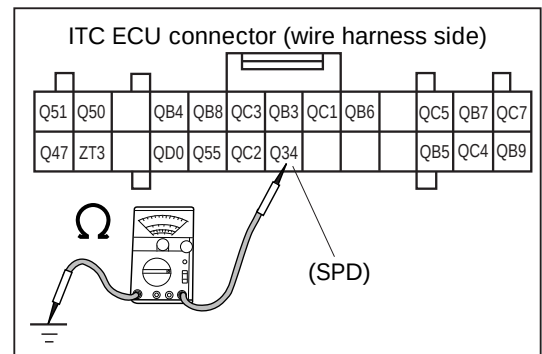
MBE00190-00174

Malfunctions observed during operation check through shorting ITC-test terminal

- When the room lamp will not go on:
 - Check to see if the interior lamp switch is set to the door interlocking position.
 - Check that the stop lamp fuse at junction block has not melted, and also, the tail lamp fuse at relay block has not melted.
 - Check to see if the lamp bulb is burnt out.
- Check that the interior lamp goes on properly in accordance with switching.
- Turn off the ignition switch. Disconnect the connector for ITC ECU from the wire harness connector.
- Connect the ohmmeter to between the terminal Q34 (SPD) of the connector at the vehicle wire harness side and the body earth.



MBE00191-00175



MBE00192-00176

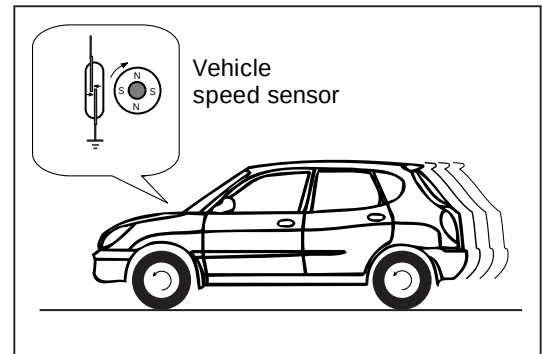
- (7) Move the vehicle 1-meter by pushing it. During this moving, check that the pointer of the ohmmeter moves.

WARNING:

- Be sure to turn off the ignition switch.

NOTE:

- If no abnormality is found in the check (1) through (7), the ITC ECU is regarded as faulty. Replace the ITC ECU.



MBE00193-00177

2. When hazard lamp will not flash:
 - (1) Turn off the ignition switch and turn on the hazard switch. Check that the hazard lamp flashes properly.
 - (2) If the hazard lamp will not flash, check the hazard lamp circuit and switch.
 - (3) Check to see if there is open wire in the horn/hazard lamp fuse at the relay block.
 - (4) Check to see if the multi-use lever switch connectors are fit properly.
 - (5) Check to see if the flasher relay is functioning properly.

NOTE:

- When the buzzer sounds even if the ignition switch has been turned off, there is the possibility that the door is open and that the following switches given below are turned on. Check these switches.
 - (1) Fog lamp switch
 - (2) Lighting switch

Check to be performed when buzzer will sound with ignition switch turned on

- (1) Turn off ignition switch.
- (2) Disconnect the connector of the collision sensor. Measure the resistance between the terminals of the collision sensor, using a ohmmeter.
Specified Value: 2.2 k Ω

NOTE:

- If there is not open wire or short, connect the connector of the sensor and the vehicle wire harness to their original positions.

- (3) Disconnect the ITC ECU connector from the connector at the vehicle wire harness side.
- (4) Measure the resistance across the terminal QC3 (CS1) and QC2 (CS-) of the connector at the vehicle wire harness side, using a circuit tester.

NOTE:

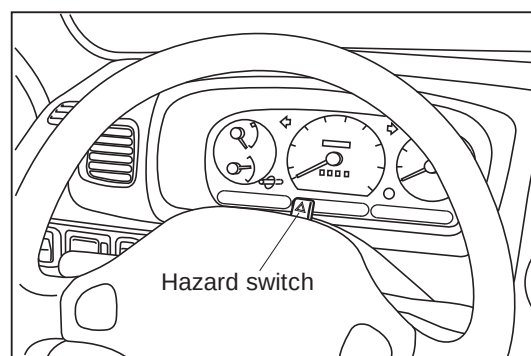
- If there is no open wire nor short, then, ITC ECU is regarded as faulty. Replace the ITC ECU.

Malfunction of power door lock

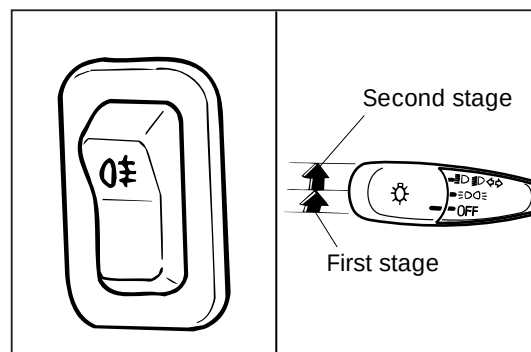
NOTE:

- When each door can not be locked in interlocking with the door lock button at driver's seat side, proceed to the following checks.

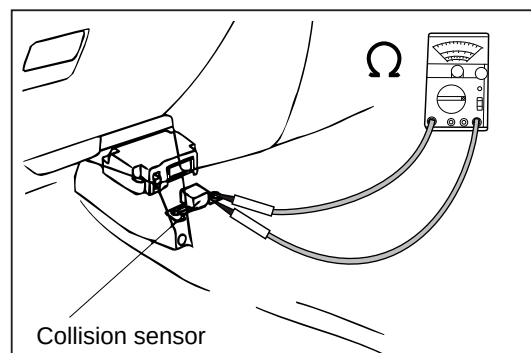
- (1) Check that tail lamp fuse at the relay block or door lock fuse at the junction block has not melted.



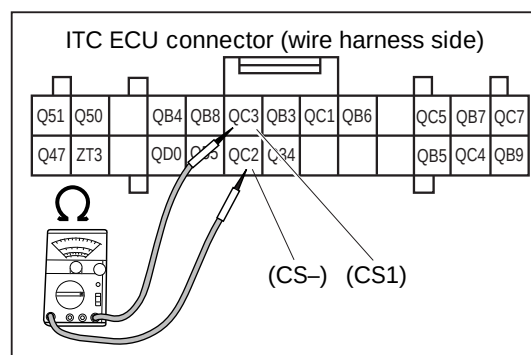
MBE00194-00178



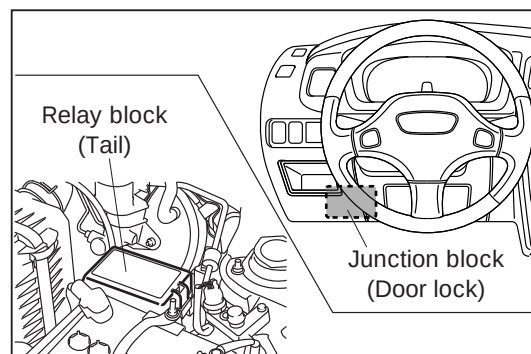
MBE00195-00179



MBE00196-00180



MBE00197-00181



MBE00198-00182

- (2) Turn off the ignition switch. Disconnect the ITC ECU connectors from the connector at the vehicle wire harness side.
- (3) Connect the voltmeter between the terminal Q47 (+B) of the connector at the vehicle wire harness side and the body earth, as shown in the figure. Check to see if the battery voltage is applied.

NOTE:

- The battery voltage is applied to this terminal at all times regardless of the ON/OFF state of the ignition switch.

- (4) Connect the ohmmeter between the terminal QB8 (UKS) of the connector at the vehicle wire harness side and the body earth, as shown in the figure. Check to see if continuity exists.

NOTE:

- This terminal has no continuity when the door lock button at driver's seat side is locked. Conversely, it has continuity when the door lock button at the driver's seat is not locked.
- If this check reveals abnormality, check the door lock control switch and wire harness.

- (5) Connect the ITC ECU connector with the connector at the vehicle wire harness side. (Connect the connectors that were disconnected at Step (2) into the original positions.)
- (6) Disconnect the door lock motor connector at the door side whose locking is inoperative from the connector at the vehicle wire harness side. Connect a circuit tester in its voltmeter mode, as shown in the figure.

- (7) Turn on the ignition switch and lock or unlock the door lock button at the driver's seat. Check to see if the voltmeter registers the battery voltage. If there is abnormality, check the wire harness.

NOTE:

- The current during the locking state flows in the reverse direction, as opposed to the current during the unlocking state.

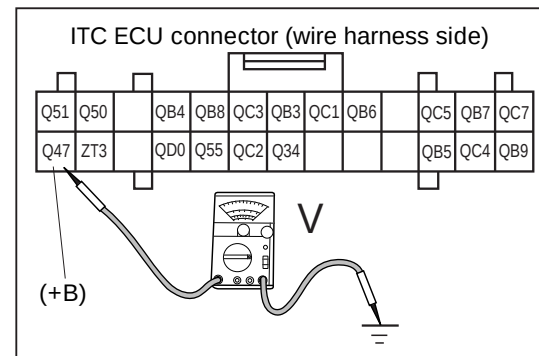
- (8) If there is no abnormality in the check at Step (7), apply the battery voltage directly to the door lock motor terminal to see if the door lock functions.

CAUTION:

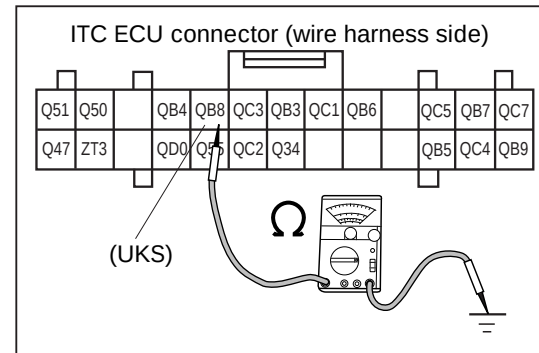
- Never let the current flow for ten seconds or more continuously.

NOTE:

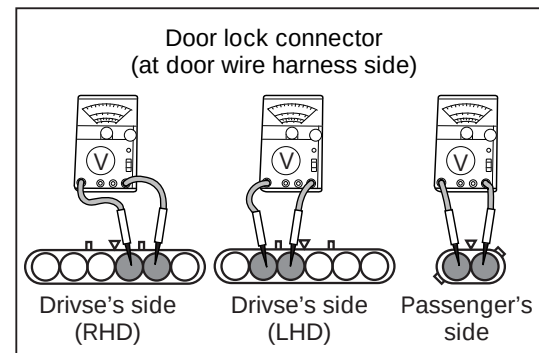
- If the lock motor has no abnormality, the ITC ECU is regarded as faulty. Replace the ITC ECU.



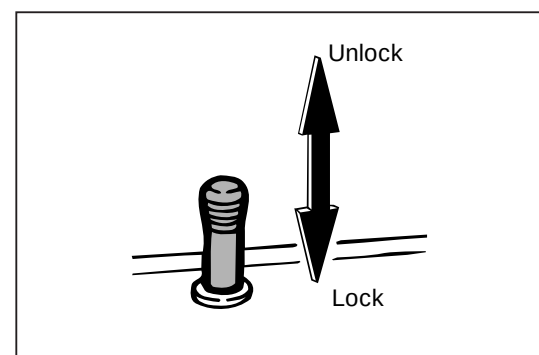
MBE00199-00183



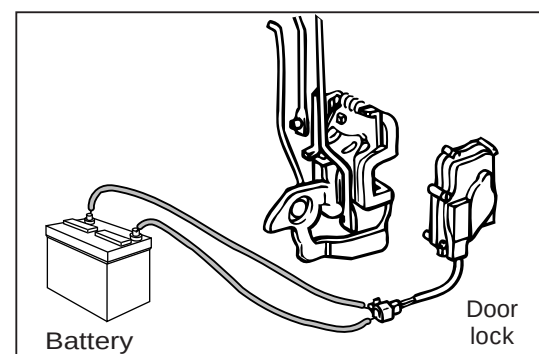
MBE00200-00184



MBE00201-00185



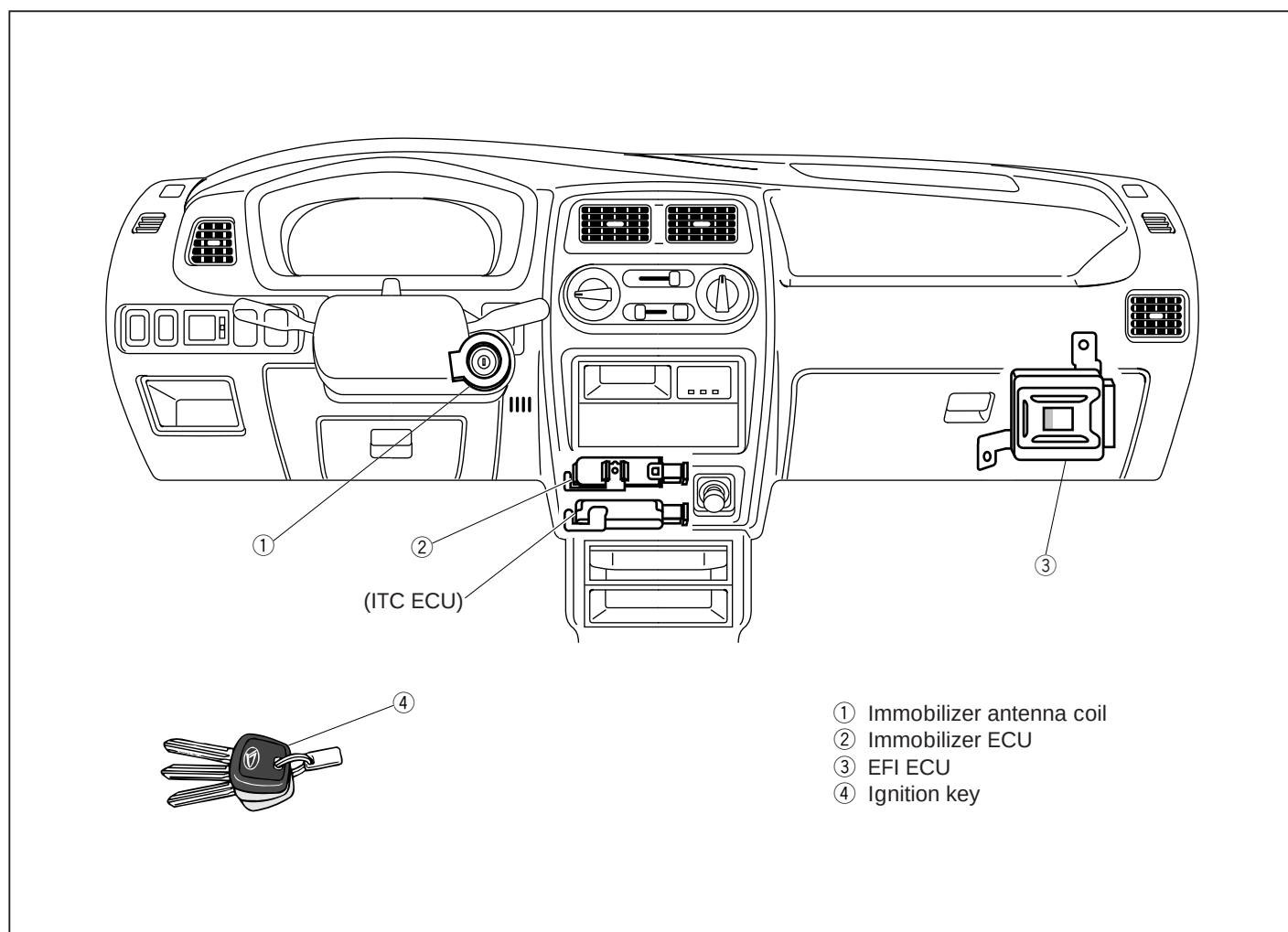
MBE00202-00186



MBE00203-00187

IMMOBILIZER SYSTEM

COMPONENTS LAYOUT



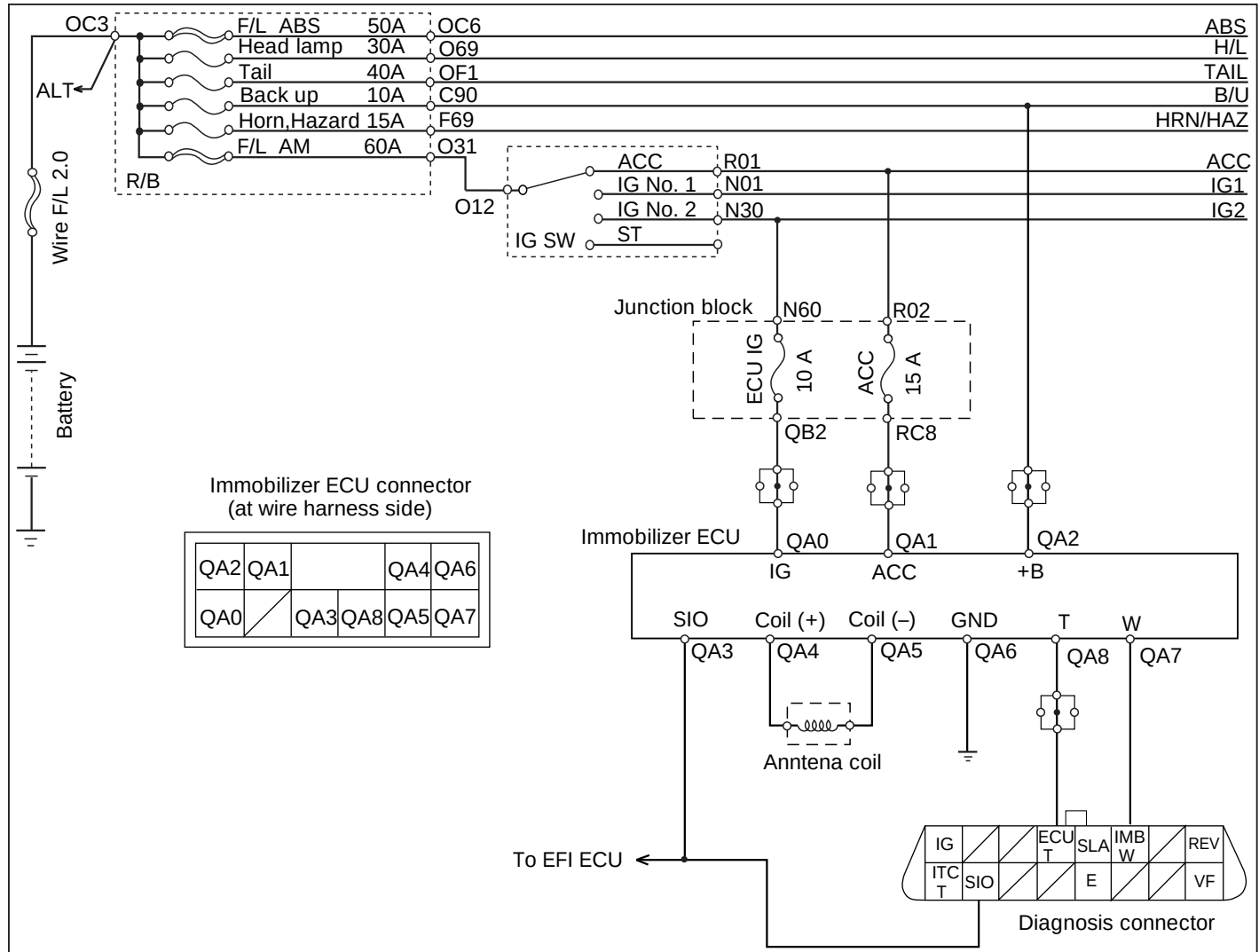
MBE00204-00188

OUTLINE

This system consists of a transponder-built-in key, an antenna coil, an immobilizer ECU and EFI ECU. In this immobilizer system, if the key ID code can not be collated or the rolling code is not matched with each other, the EFI ECU stops the ignition and fuel injection, thereby stopping the engine operation. The key ID code is a transponder intrinsic code, whereas the rolling code takes a different value every time the engine is started. This code is renewed and memorized in the EFI ECU and immobilizer ECU as the rolling code for the next starting.

MBE000205-00000

WIRING DIAGRAM



MBE00206-00189

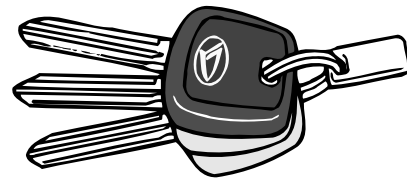
COMPONENTS

<Ignition key>

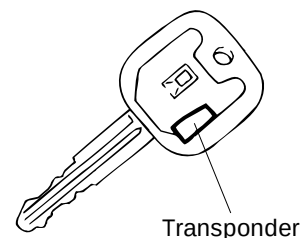
The vehicle is provided with three ignition keys.

1. A black-covered master key
2. Two gray-covered sub keys

The transponder is built in the cover of each of the three keys. Each key has a different recorded ID code. In this system, the operation/releasing of the system can be performed by comparing and collating the ID code with the data memorized in the immobilizer ECU. Although two sub keys are provided for the vehicle, up to three keys can be registered, as required, by means of the sub key registration function of the master key.



MBE00207-00190



MBE00208-00191

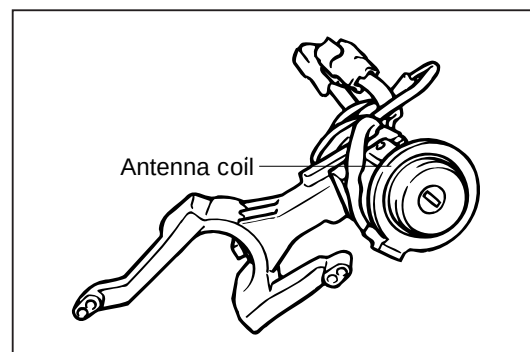
CAUTION:

- The master key has the following functions. Utmost care must be paid as to its handling.
 - a. Using the master key (black cover), it is possible to perform the new registration and renewal of the sub keys.
 - b. The black covered key is memorized as the master key at the time of factory shipment. However, if the immobilizer ECU memory has been cleared at time of repairs, etc., the key used first to start the engine will be registered as the master key in the immobilizer ECU. This point should be kept in mind.

MBE00209-00000

<Antenna coil>

The antenna coil is provided at the ignition key cylinder. The antenna coil energizes the transponder built in the ignition key. Also, the antenna coil receives the ID code that is sent from the transponder and will send it to the immobilizer ECU. If any metal shielding, such as a key holder ring, exists between the ignition key and the antenna coil, or if there is open wire in the antenna coil or its circuit, it becomes impossible to read the ID code of the ignition key, thus being unable to start the engine.



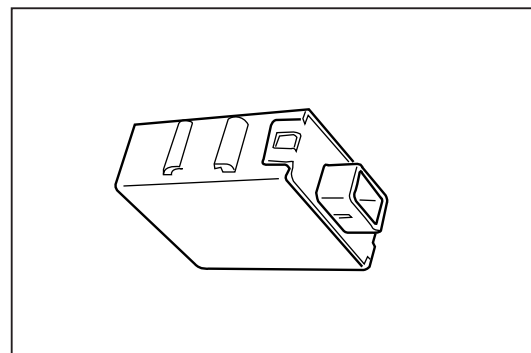
MBE00210-00192

<Immobilizer ECU>

The immobilizer ECU collates the ID code sent from the key transponder with the ID code recorded in the immobilizer ECU. Only when the ID codes are matched with each other, the immobilizer ECU sends the signal of continuation of engine operation to the EFI ECU.

In order to memorize the ID code, the immobilizer ECU employs a non-volatile ROM that retains the memorized data even when the battery or backup fuse is disconnected.

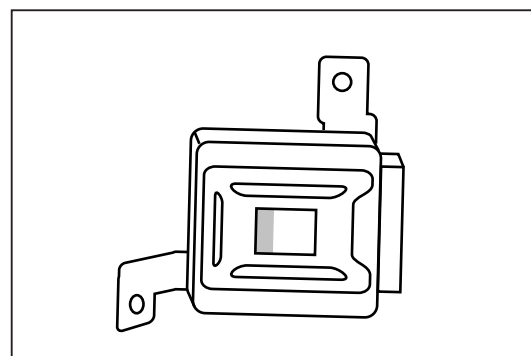
Therefore, when you erase the ECU memory and register the master key ID code newly, you have to erase the memory, using the diagnosis system (DS-21).



MBE00211-00193

<EFI ECU>

In addition to the hitherto-employed functions as the conventional engine control unit, the EFI ECU has the functions as the immobilizer function whereby the ignition and fuel injection are stopped if the ID codes can not be collated in the immobilizer ECU or in instances where the rolling codes can not be collated between the immobilizer ECU and the EFI ECU.



MBE00212-00194

TROUBLE-SHOOTING

TROUBLE-SHOOTING HINTS

Before checking the immobilizer system, check the diagnosis code of the EFI system to determine whether the malfunction is caused by the immobilizer system or by the EFI system.

CAUTION:

- In the immobilizer system, the system is composed with the same rolling code shared in common among the ignition key, immobilizer ECU and EFI ECU. Hence, if the immobilizer ECU and/or EFI ECU are replaced with that of another vehicle during the checking of the immobilizer ECU or EFI system, the immobilizer system will be regarded as malfunctioning. Therefore, do not replace the immobilizer ECU and/or EFI ECU with that of another vehicle unnecessarily.
- If you have to replace the immobilizer ECU and/or EFI ECU, erase the rolling codes memorized in the immobilizer ECU and EFI ECU. Then, register the ID code of the ignition key to the immobilizer ECU.
- Refer to service manual, Ref.. No. 9031.

DESCRIPTION

- A self-diagnosis system is built in the ECU. If any abnormality should occur in the immobilizer system, the self-diagnosis system memorizes the malfunction phenomenon in the ECU in the form of malfunction code number.
- When the test terminal of the check connector is connected with the ground terminal, the malfunction code number that has been memorized in the ECU will be indicated in a form of blinking of the check lamp in the SST.
- This memorized malfunction code number is erased when the battery ground cable is disconnected from the negative (–) terminal of the battery or when the backup fuse in the relay block assembly is disconnected with the ignition key switch turned off.

MBE00213-00000

READ OUT OF DIAGNOSIS CODE

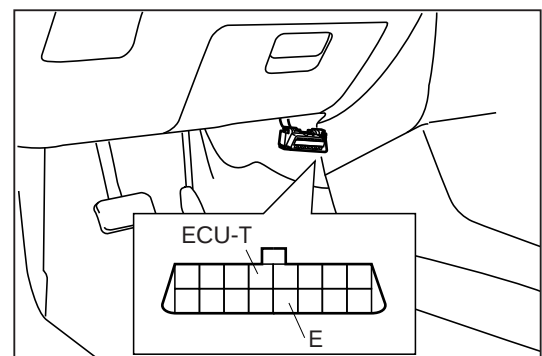
1. Connect the test terminal of the diagnosis connector with the ground terminal, using a jump wire.
2. Connect a check lamp between the terminals as illustration.

NOTE:

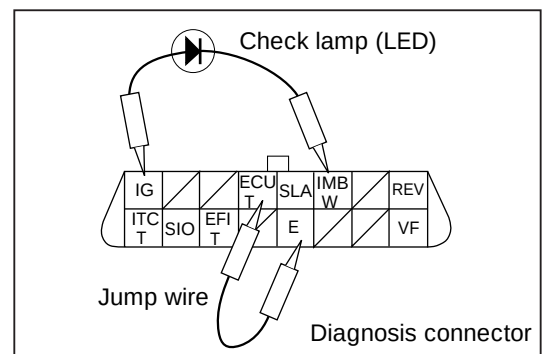
- Prepare the following SST.
SST: 09991-87211-000

CAUTION:

- As for the check lamp, make sure to use a LED (light emitting diode) type. Bulb type check lamp is not suitable for this system.
3. Set the ignition switch to the ON position.
 4. Read the diagnosis code by observing the number of blinking of the indicator lamp.



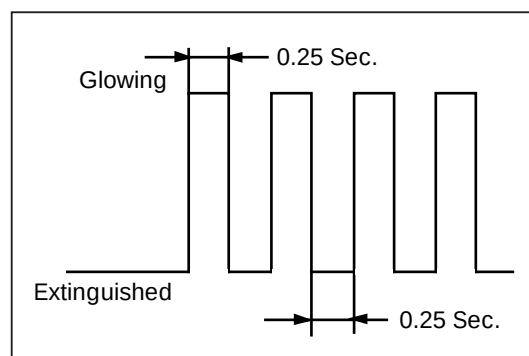
MBE00214-00195



MBE00215-00196

EXPLANATION OF DIAGNOSIS CODE**1. Indication of normal code**

The check lamp glows for 0.25 second, 0.25 second later after the ignition switch has been turned ON. After a lapse of 0.25 second, the check lamp again glows for 0.25 second. Then, this pattern will be repeated.



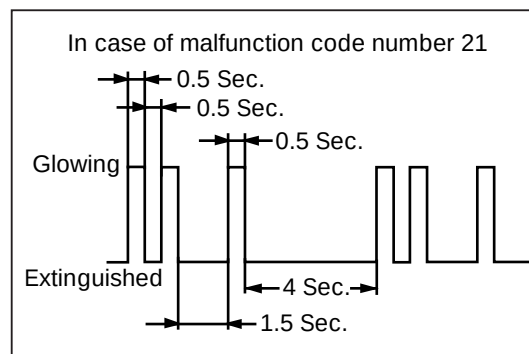
MBE00216-00197

2. Indication of malfunction code

- When a single malfunction code is indicated:

The diagnosis malfunction code is composed of two digits. Those two numbers are indicated by blinking of the check lamp. Four seconds later after the ignition switch has been turned on, the check lamp indicates first the number of the tens digit of the diagnosis code by blowing the same times as the number. The lamp glows for 0.5 second each time and then it is extinguished for 0.5 second. After a pause of 1.5 seconds, the check lamp indicates the number of the units digit of the diagnosis code by glowing the same times as the number.

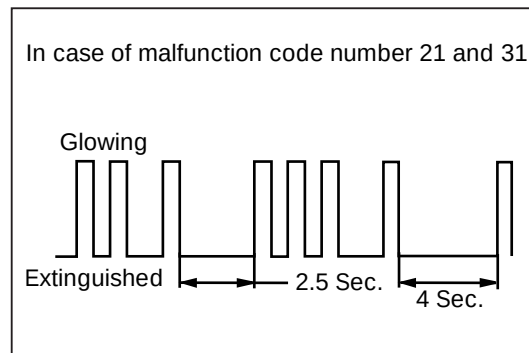
The lamp glows for 0.5 second each time and then it is extinguished for 0.5 second. Then, this pattern will be repeated after a pause of 4.0 seconds.



MBE00217-00198

- When plural malfunction codes are indicated:

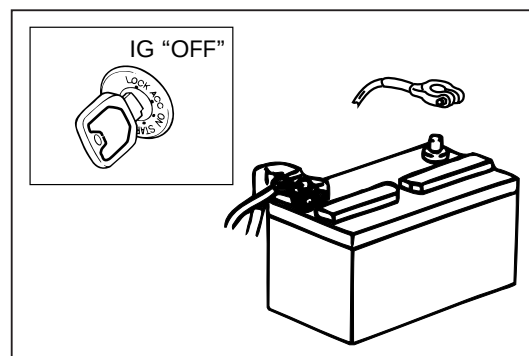
In cases where plural malfunction codes have been detected, the two-digit diagnosis codes are indicated in the sequence of the code number, starting from a smaller number. Each diagnosis code is indicated in above described pattern. A pause of 2.5 seconds occurs between the outputs of respective diagnosis codes, thus separating one from the others. After all of the plural diagnosis codes that have been detected are indicated, the check lamp is extinguished for four seconds. Then, the detected plural diagnosis codes will be indicated again.



MBE00218-00199

3. Canceling of diagnosis code

To erase the diagnosis codes memorized in the ECU after malfunctions have been repaired, disconnect the battery ground cable from the negative (-) terminal of the battery for at least 10 seconds with the ignition switch turned off.



MBE00219-00200

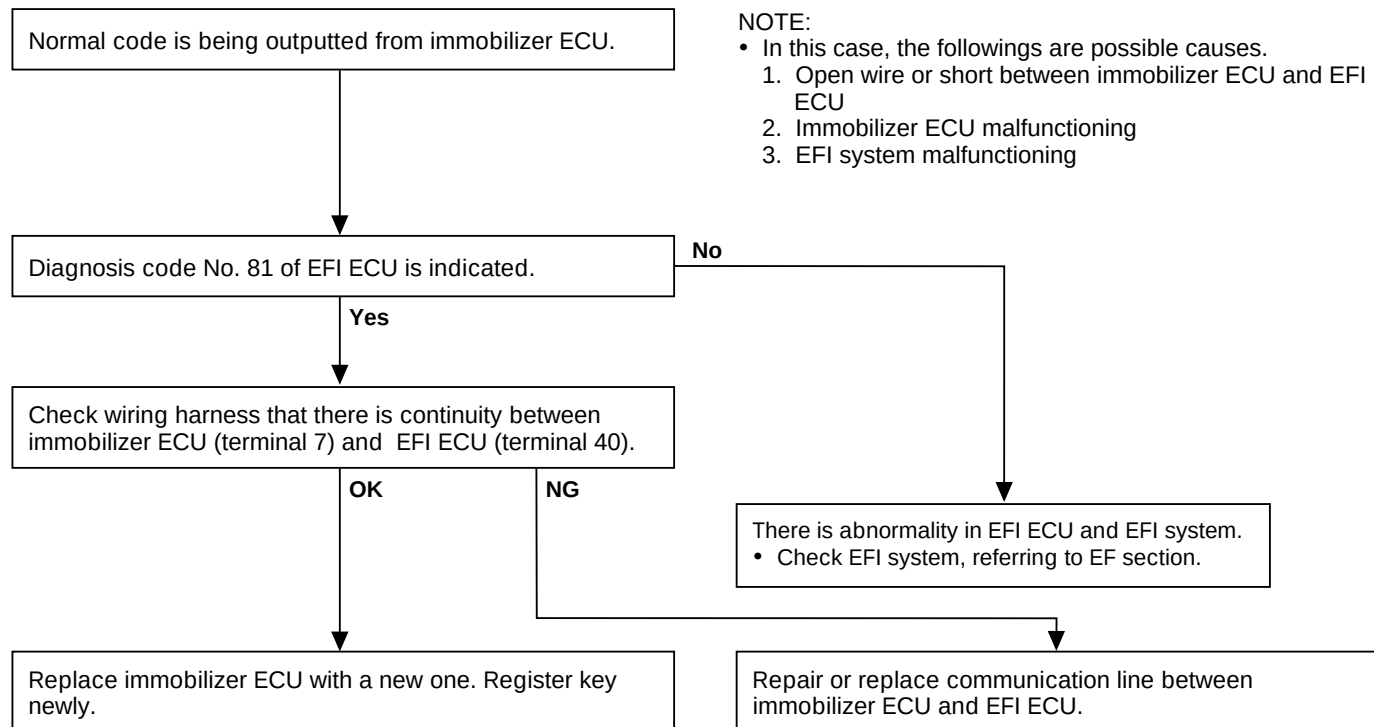
TABLE OF DIAGNOSIS CODES

Code No.	Number of glowing of check lamp	Diagnosis item	Diagnosis contents
12		Malfunction of transponder	When there is no reply from key transponder after the coil has energized key transponder. (This diagnosis code is cleared if ID code can be read normally next time.)
21		Unmatching of ID codes	When immobilizer ECU determines that an attempt was made to start engine, using an unregistered key:
23		Unregistered ID codes	When transponder code to immobilizer ECU is unregistered: (Code to backup RAM is not memorized.)
31		Abnormality of registration mode	At time of registration of sub key, terminal T is not connected to ground, or an attempt is made to make registration, using a sub key. (Code to backup RAM is not memorized.)
41		Faulty communication between immobilizer ECU and EFI ECU • Non-matching of codes	When a signal of non-matching of code is received at time of communication with EFI ECU:
42		Faulty communication between immobilizer ECU and EFI ECU • When there is no reply of code:	When reply of code has not been received within specified time from EFI ECU at time of communication with EFI ECU:

MBE00220-00000

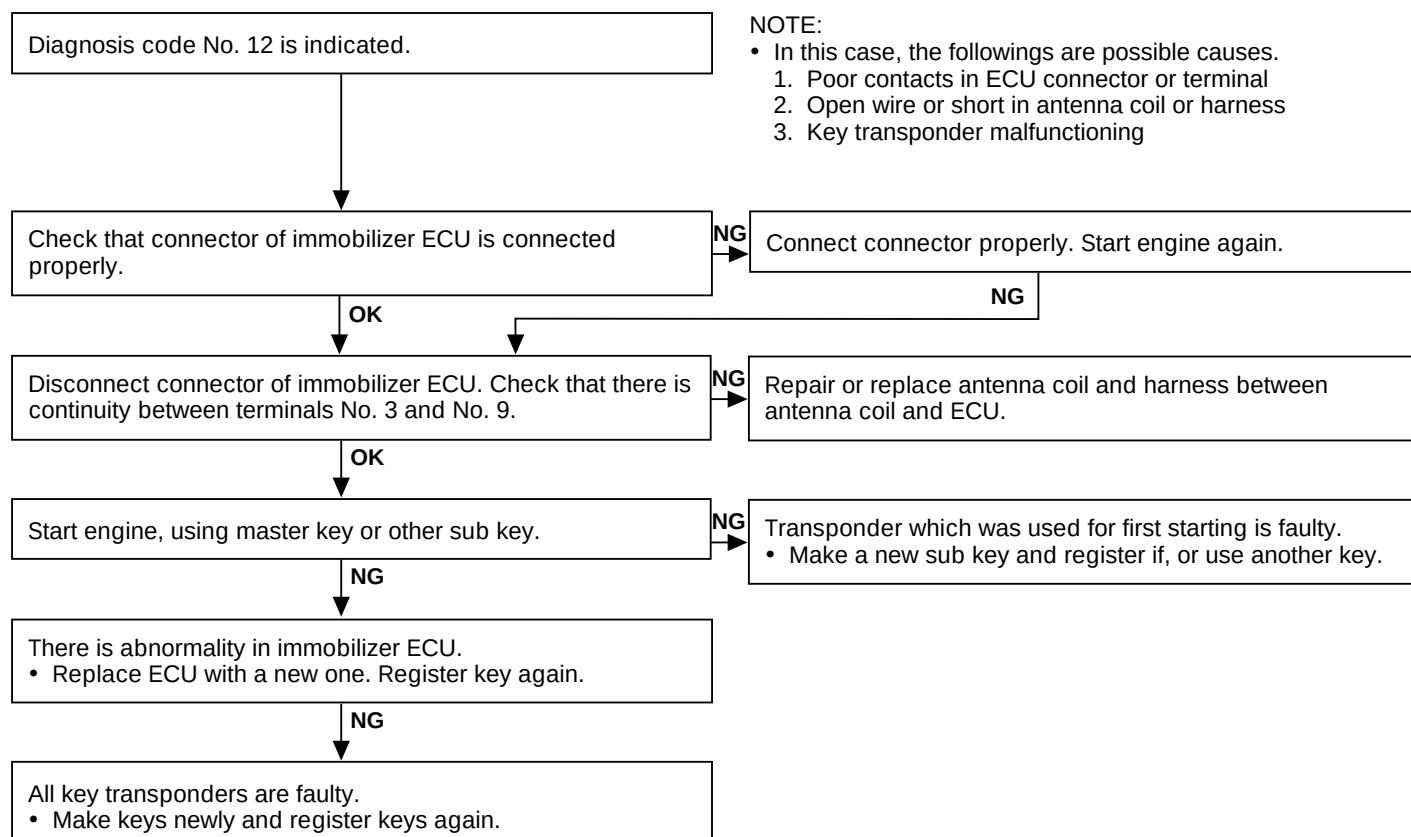
TROUBLE SHOOTING ACCORDING TO DIAGNOSIS CODE

1. Normal code is outputted.



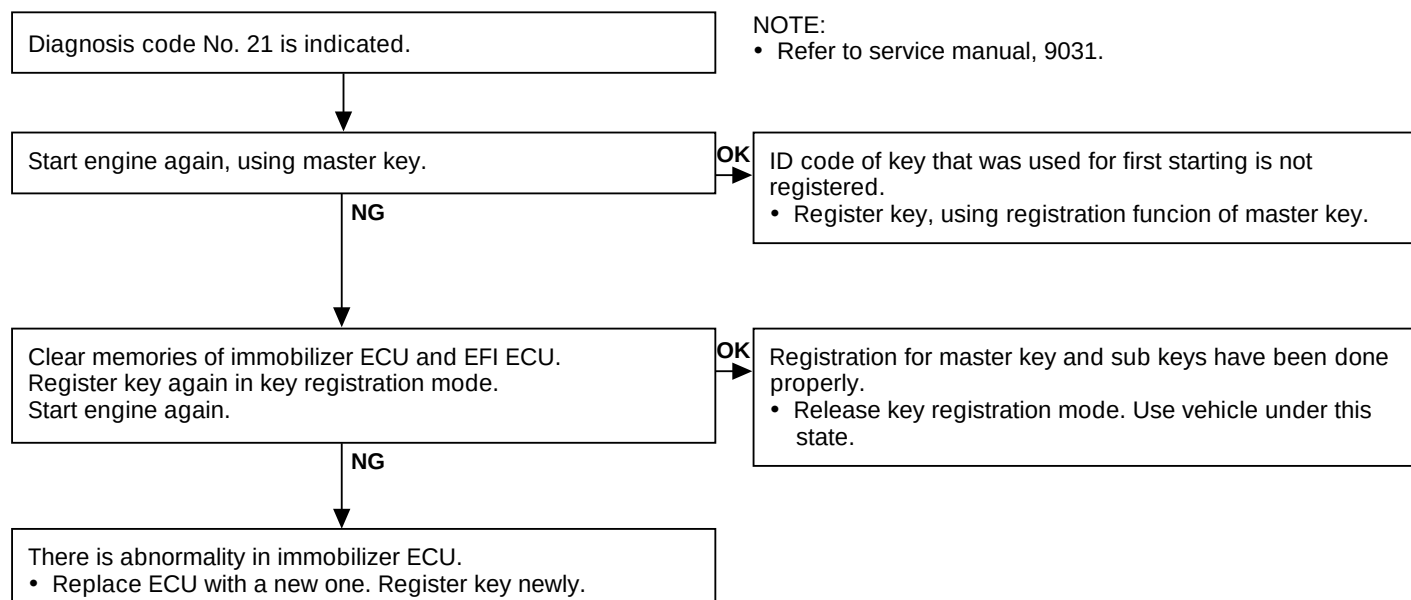
MBE00221-00000

2. Diagnosis code No. 12 is indicated.



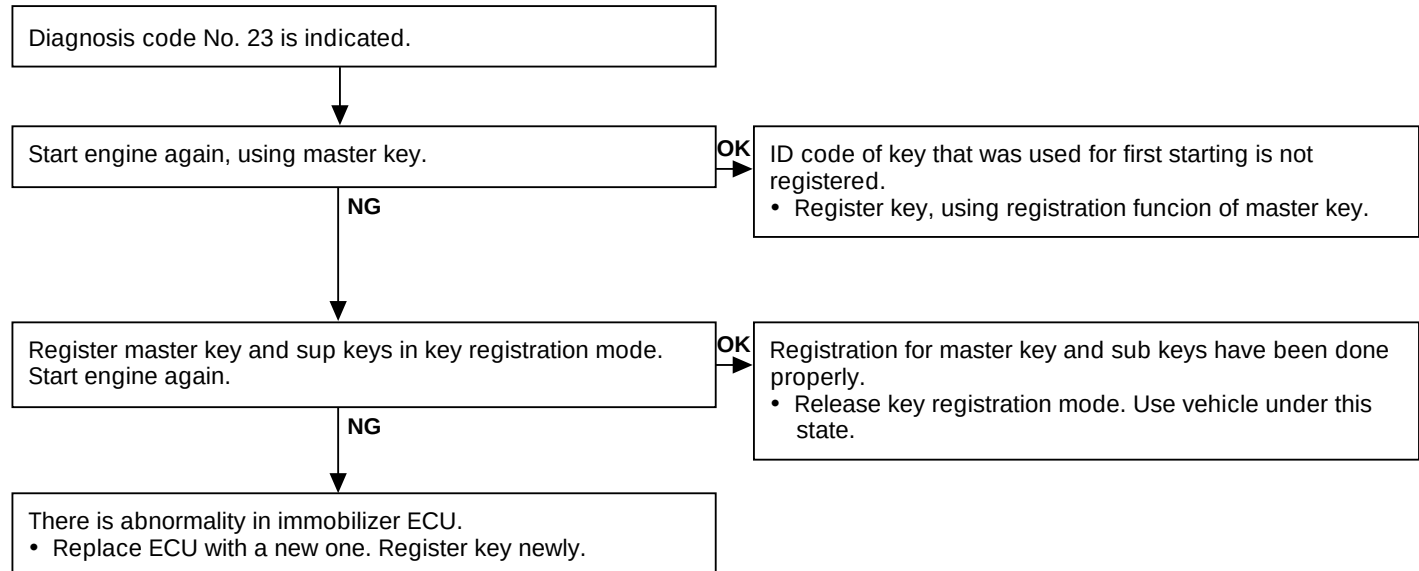
MBE00222-00000

3. Diagnosis code No. 21 is indicated



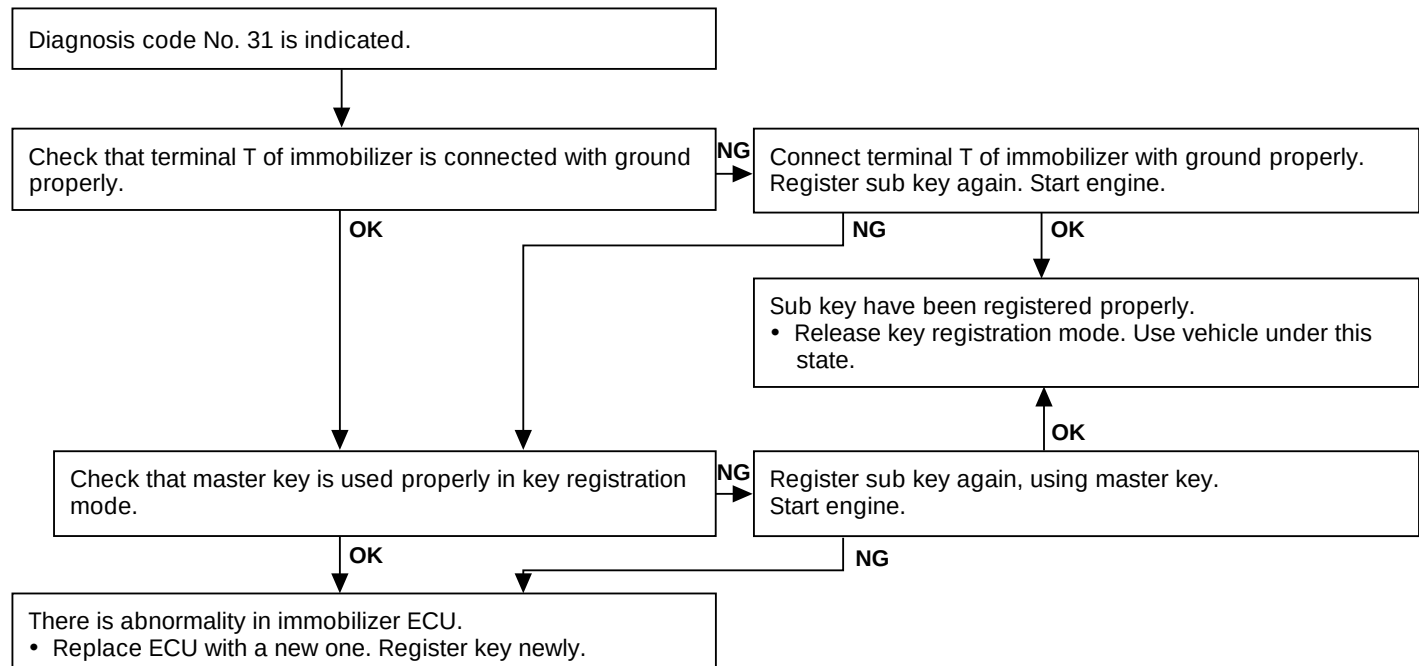
MBE00223-00000

4. Diagnosis code No. 23 is indicated.



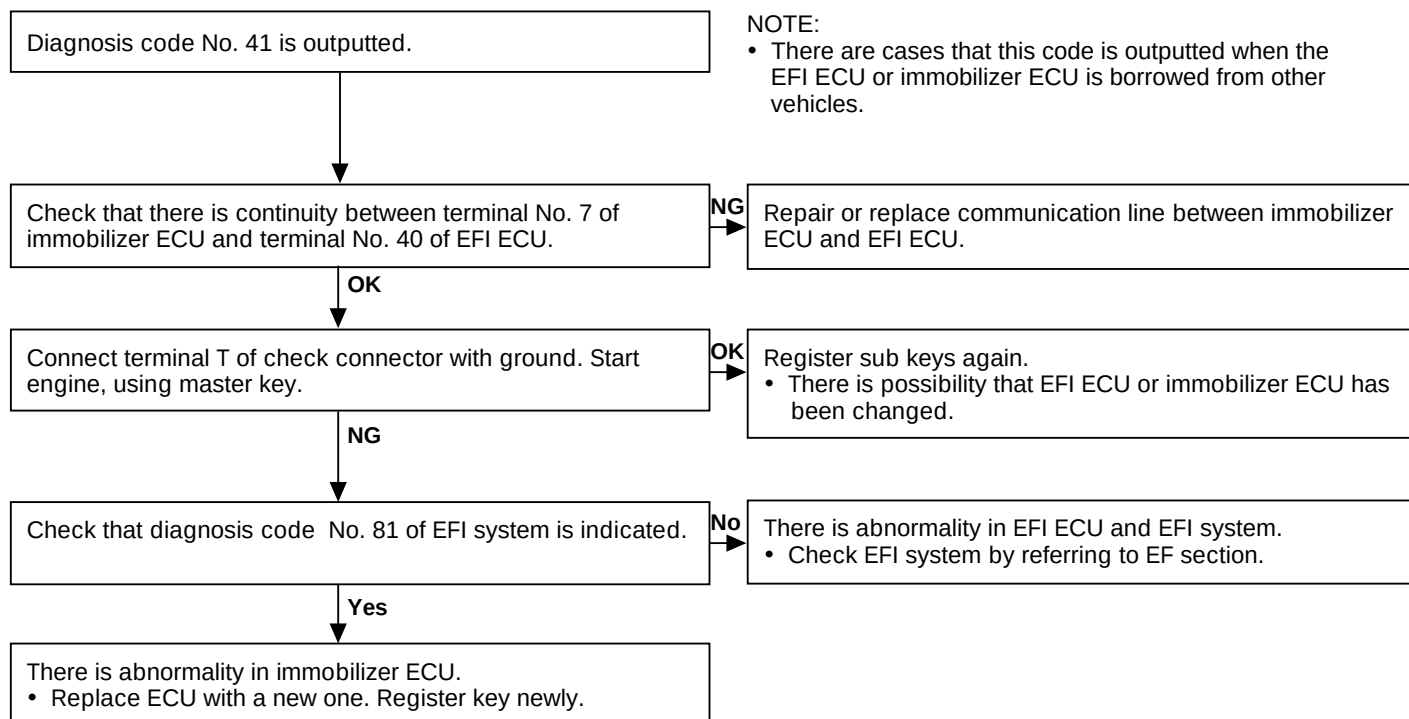
MBE00224-00000

5. Diagnosis code No. 31 is indicated.

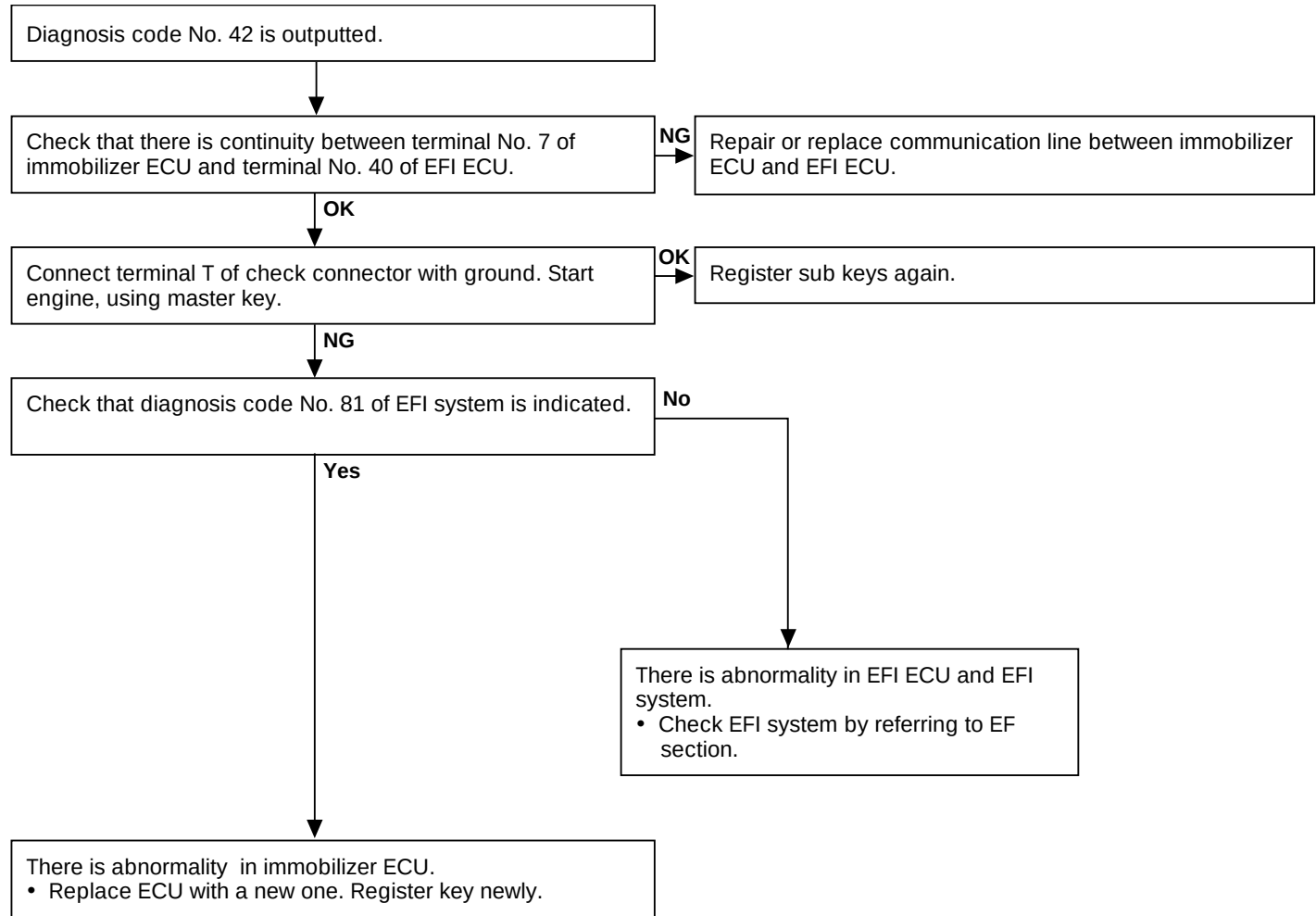


MBE00225-00000

6. Diagnosis code No. 41 is outputted.



7. Diagnosis code No. 42 is outputted.



FUNCTION CHECK OF IMMOBILIZER SYSTEM

The function check of the immobilizer system can be performed by doing the following two checks.

1. Ensure that the engine starts by using the master key and sub key.
2. Ensure that the engine will not start with a key without the transponder.

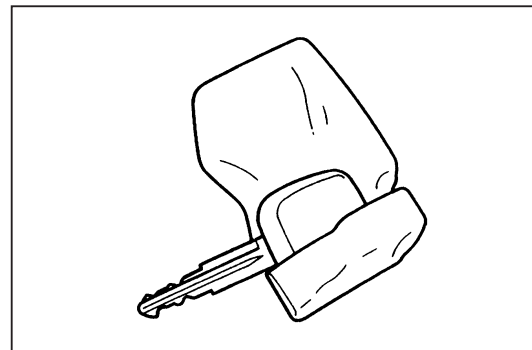
In the check 1, the system can be checked easily by using the master key and sub key.

Now we explain that the check can be made in the following method as one of the check method of 2.

MBE00228-00000

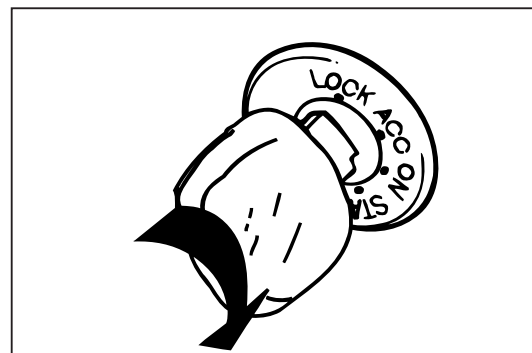
Checking procedure

1. Wind a piece of aluminum foil or the like at around the resin section of the key of the vehicle concerned.
(The aluminum foil shuts off the magnetic field, thus preventing the transponder from being energized.)



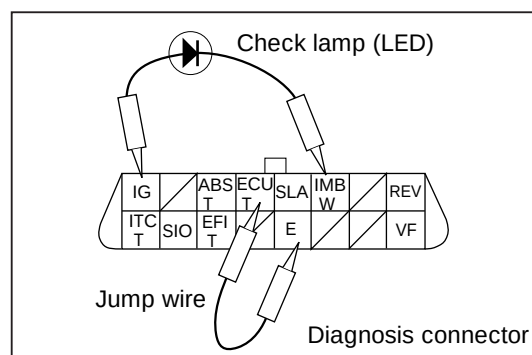
MBE00229-00201

2. Start the engine with the key wound up with the aluminum foil. Check that the engine will not start.



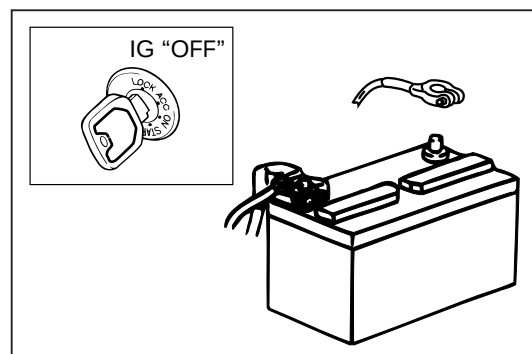
MBE00230-00202

3. Install the check lamp to the diagnosis connector.
Connect the jump wire between Test terminal and earth terminal. Ensure that the diagnosis code No. 12 is outputted by the indicator lamp.



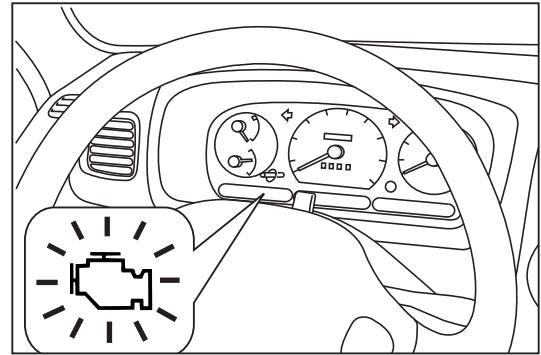
MBE00231-00203

4. After confirming the diagnosis code of immobilizer system and EFI system, erase the diagnosis code No. 81 memorized in the EFI ECU by removing the terminal (–) of the battery



MBE00232-00204

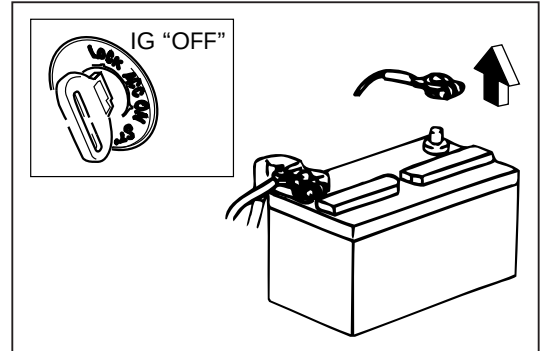
5. Ensure that the diagnosis code No. 81 has been erased and that the normal code is being outputted. Remove the check lamp and jump wire from the diagnosis connector.



MBE00233-00205

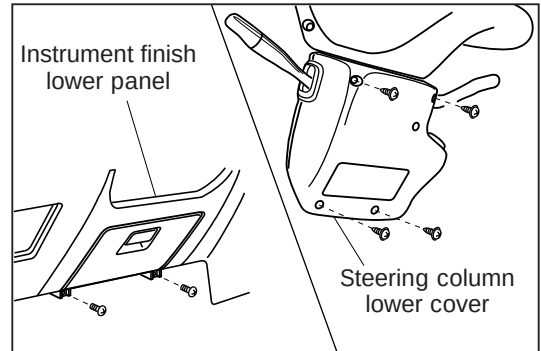
REPLACEMENT AND INSTALLATION OF ANTENNA COIL

1. Disconnect the battery ground cable from the negative (-) terminal of the battery.



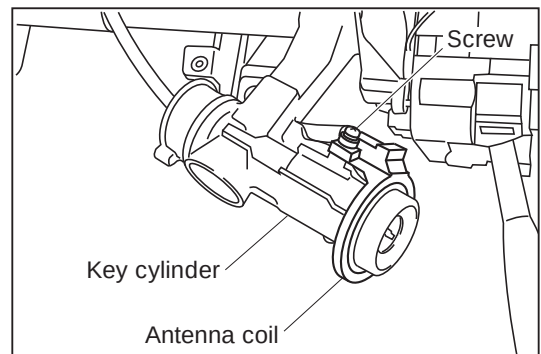
MBE00234-00206

2. Remove the instrument lower finish panel and steering column lower cover by loosening the attaching screws.
3. Loosen the steering column attaching bolts.
4. Remove the steering column upper cover.
5. Disconnect the connector of the antenna coil and remove the wire band.
6. Removal of antenna coil.
 - (1) Loosen the antenna coil attaching screw.
 - (2) Remove the antenna coil from the ignition key cylinder.



MBE00235-00207

7. Attach a new antenna coil to the ignition key cylinder and tighten the attaching screw.
8. Attach a new wire band.
9. Connect the connector of the antenna coil.
10. Install the steering column upper cover.



MBE00236-00208

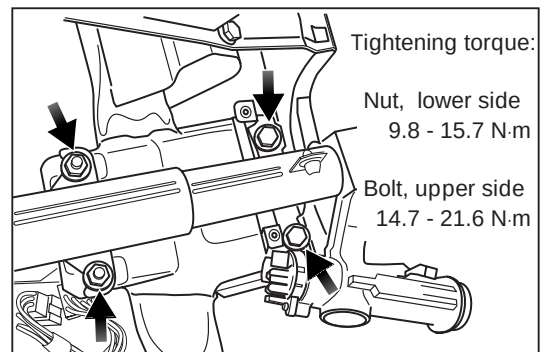
11. Tighten the steering column attaching bolts and nuts.

Tightening Torque:

Nut, Lower Side: 9.8 - 15.7 N·m

Bolt, Upper Side: 14.7 - 21.6 N·m

12. Install the steering column lower cover and instrument lower finish panel with attaching screws.
13. Connect the battery ground cable to the negative (-) terminal of the battery.



Tightening torque:

Nut, lower side
9.8 - 15.7 N·m

Bolt, upper side
14.7 - 21.6 N·m

MBE00237-00209

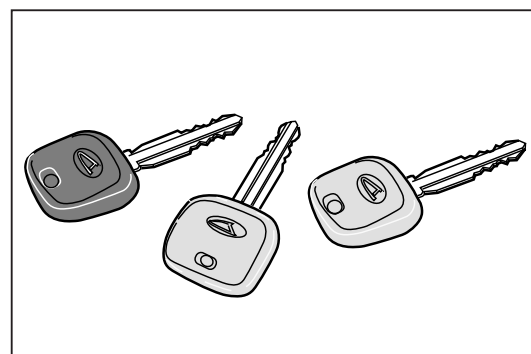
REGISTRATION OF SUB KEYS

The vehicle is provided with one master key and two sub keys. However, up to three sub keys can be memorized in the immobilizer ECU by using the sub key registration function of the master key.

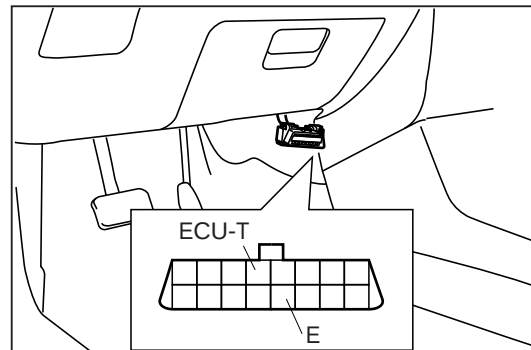
CAUTION:

- The master key (black) has the sub key registration function. Hence, be very careful not to lose or damage the master key.
- If the master key is lost or damaged, it is imperative to erase the memory of the immobilizer ECU and to re-register the master key and sub keys, using the diagnosis system (DS-21).

- (1) Connect the jump wire between test terminal and earth terminal.

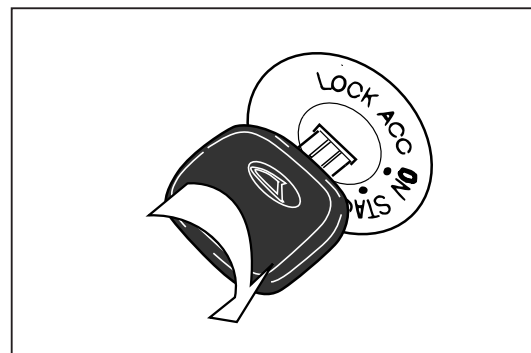


MBE00238-00210



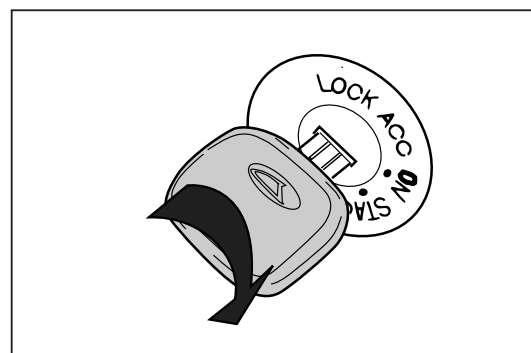
MBE00239-00211

- (2) Start the engine, using the master key.
When the engine starts, the key registration mode is assumed.



MBE00240-00212

- (3) Stop the engine. Within ten seconds after the engine stopped, start the engine with the sub key.
When the engine starts, this sub key is memorized in the immobilizer ECU.



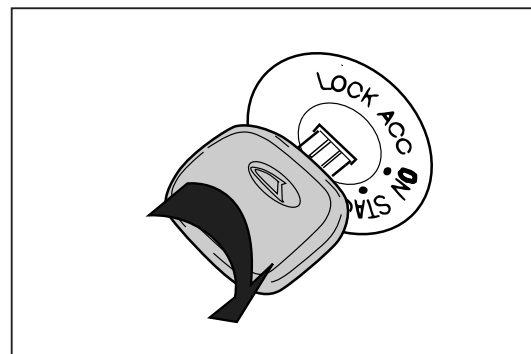
MBE00241-00213

- (4) To register the next sub key, repeat the steps (1) through (3).

CAUTION:

- In the key registration mode, the memories of all sub keys are erased. It is, therefore, imperative to register the all sub keys when a new key is added.

- (5) After all sub keys have been registered, remove the jump wire from the diagnosis connector.
- (6) Ensure that the engine starts with all keys.



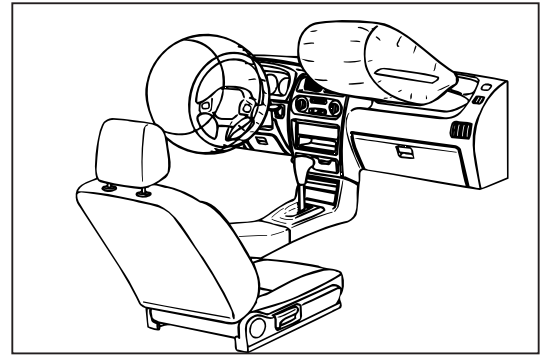
MBE00242-00214

SRS AIR BAG SYSTEM

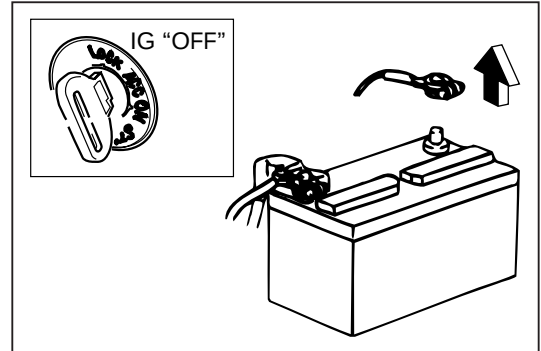
IMPORTANT SAFETY NOTICE

WARNING:

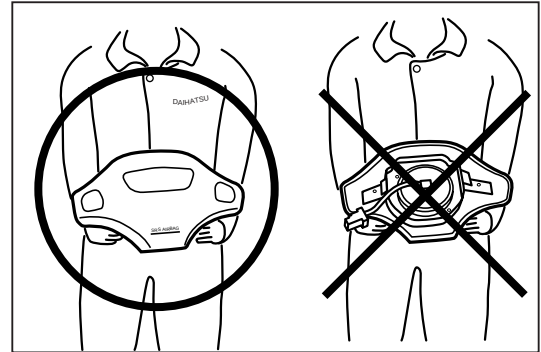
- Make certain to perform operations of the air bag system according to the correct procedure and method. Failure to observe this notice may cause the air bag system to operate unexpectedly during the service operation, resulting in serious accidents. Furthermore, if wrong repairs should be performed, there are the possibilities that the air bag system fail to operate when required.
- Before servicing the air bag components or the seat belt pretensioner device, perform the following procedures:
 - (1) Check the status of air bag warning lamp.
 - (2) Read the diagnosis codes and put it on record.
 - (3) Turn OFF the ignition switch and detach the negative (–) terminal of the battery cable. Then, wait for at least 90 seconds to prevent the air bag from the deployment.
- It should be noted that, when the negative (–) terminal of the battery is detached, the memory of the ECU control of the other system will be erased at the same time.
- Never bring your face, arms and body to the front of the air bag unit during the removal.
- Be sure to place the removed air bag pad assembly with the pad surface facing upward. The assembly with the pad surface facing downward is potentially hazard. Failure to observe this warning may cause unexpected deployment of the air bag, resulting in scattered pad assembly.
- Furthermore, store the pad assembly and seat belt pretensioner device at a low place close to the ground level where no heat source (85°C or more) exists in close proximity, and store at a place where is not exposed to direct sun rays.
- If the air bag components or seat belt pretensioner device are dropped, be sure to dispose of the unit according to the disposal procedure. Be sure to mount a new unit to the vehicle.



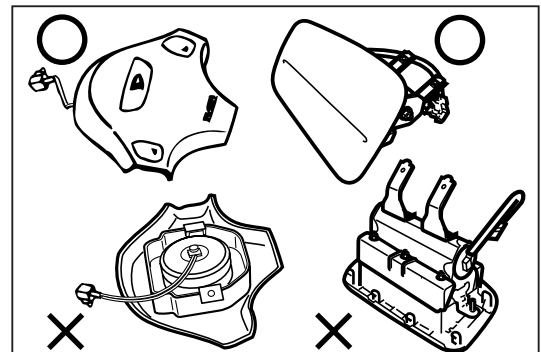
MBE00243-00215



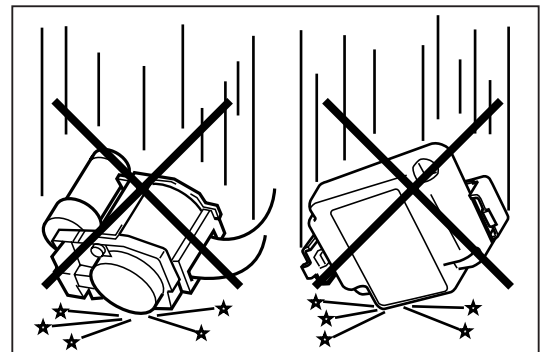
MBE00245-00216



MBE00246-00217

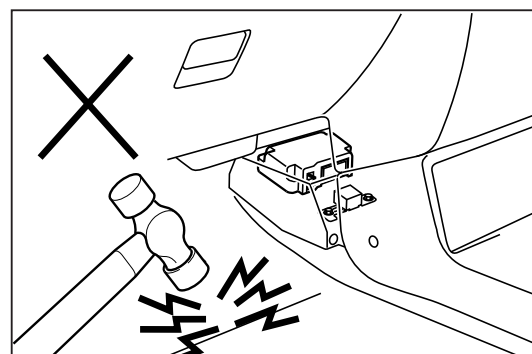


MBE00247-00218



MBE00248-00219

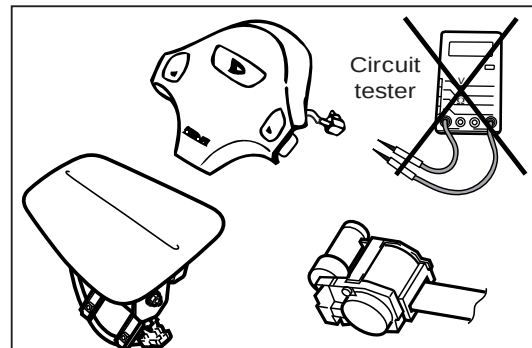
- During installation or replacement, do not bump the area near the air bag ECU, using an impact wrench, a hammer or the like. It may cause the sensor in the ECU to operate.



MBE00249-00220

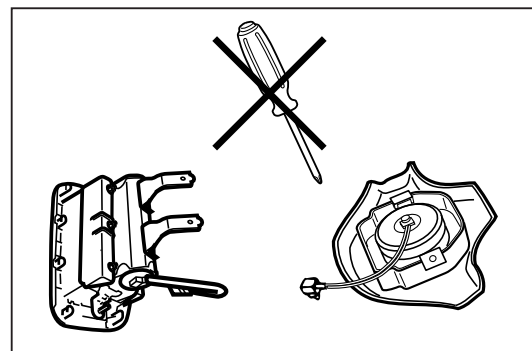
- To prevent the air bag or the pretensioner from deploying, do not measure the resistance of the inflator squib easily.

The squib of the air bag or seat belt pretensioner consists of a filament of about 2 ohms. Therefore, there is the possibility that a current which is big enough to cause deployment flows when ohmmeter is connected.



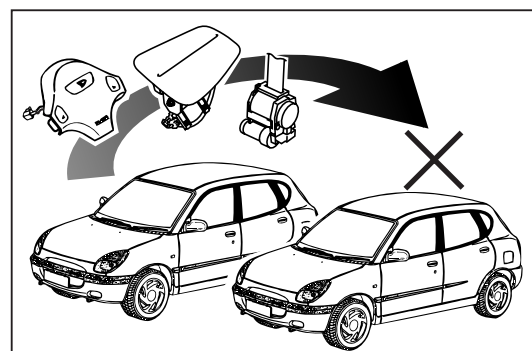
MBE00250-00221

- Do not overhaul the air bag components and the seat belt pretensioner device. It has no serviceable parts.



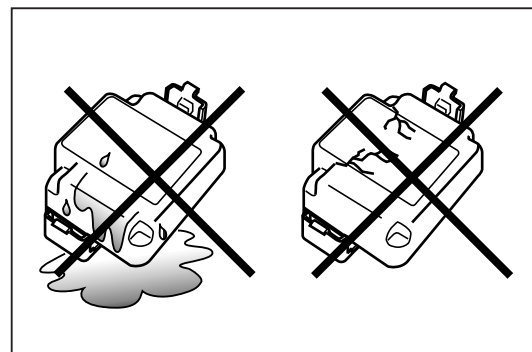
MBE00251-00222

- Do not install used air bag components and seat belt pretensioner device from another car. When repairing, use only new components.
- Do not replace the original steering wheel with a steering wheel of any other design, since it will make impossible proper installation of the air bag.



MBE00252-00223

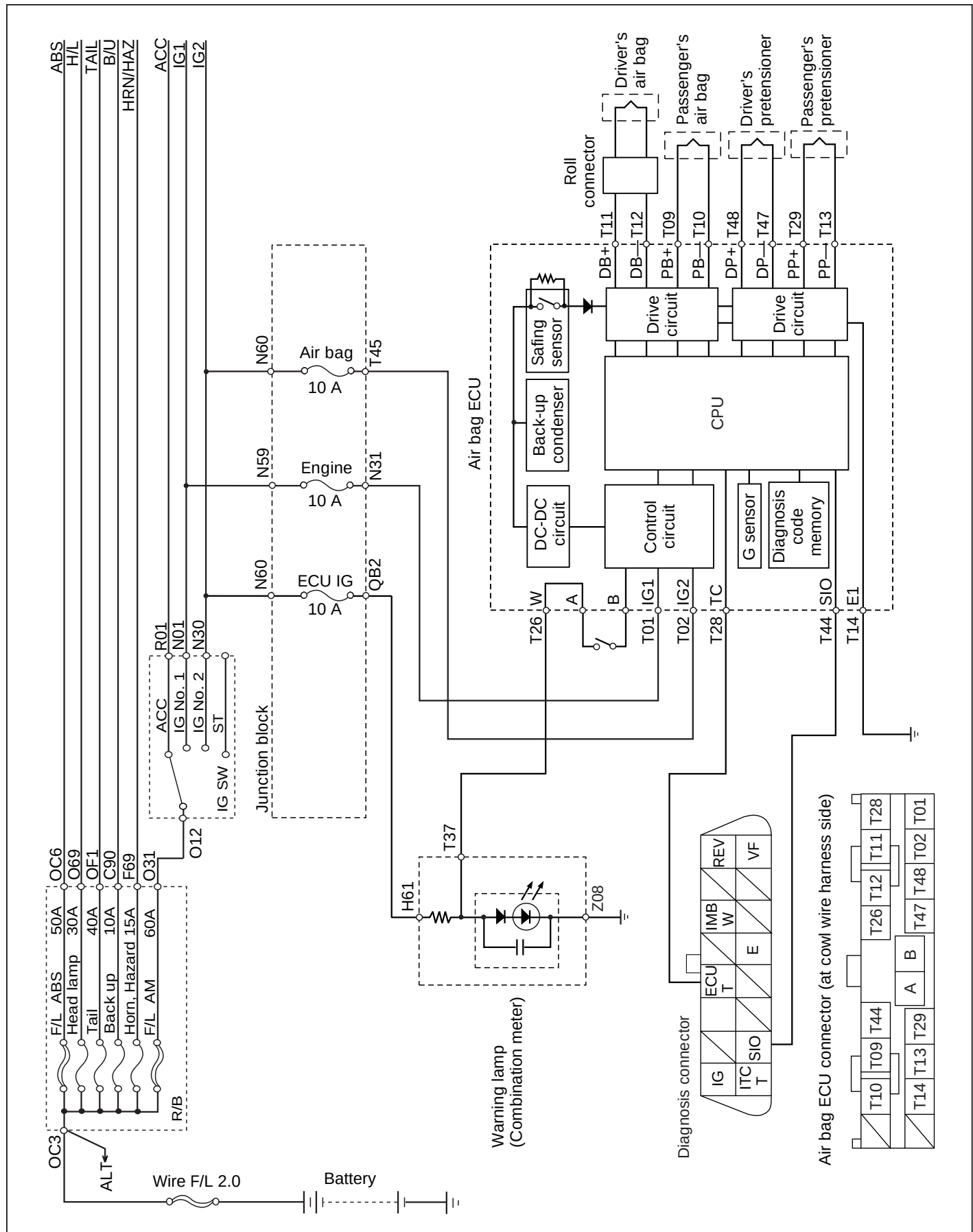
- Also do not use any air bag assembly, seat belt pretensioner device or air bag ECU, which was subjected to water damage or shows signs of being improperly handled, such as dents, cracks and deformation.
- Before scrapping any air bag, seat belt pretensioner device or the vehicle which contains them, they have to be deployed.



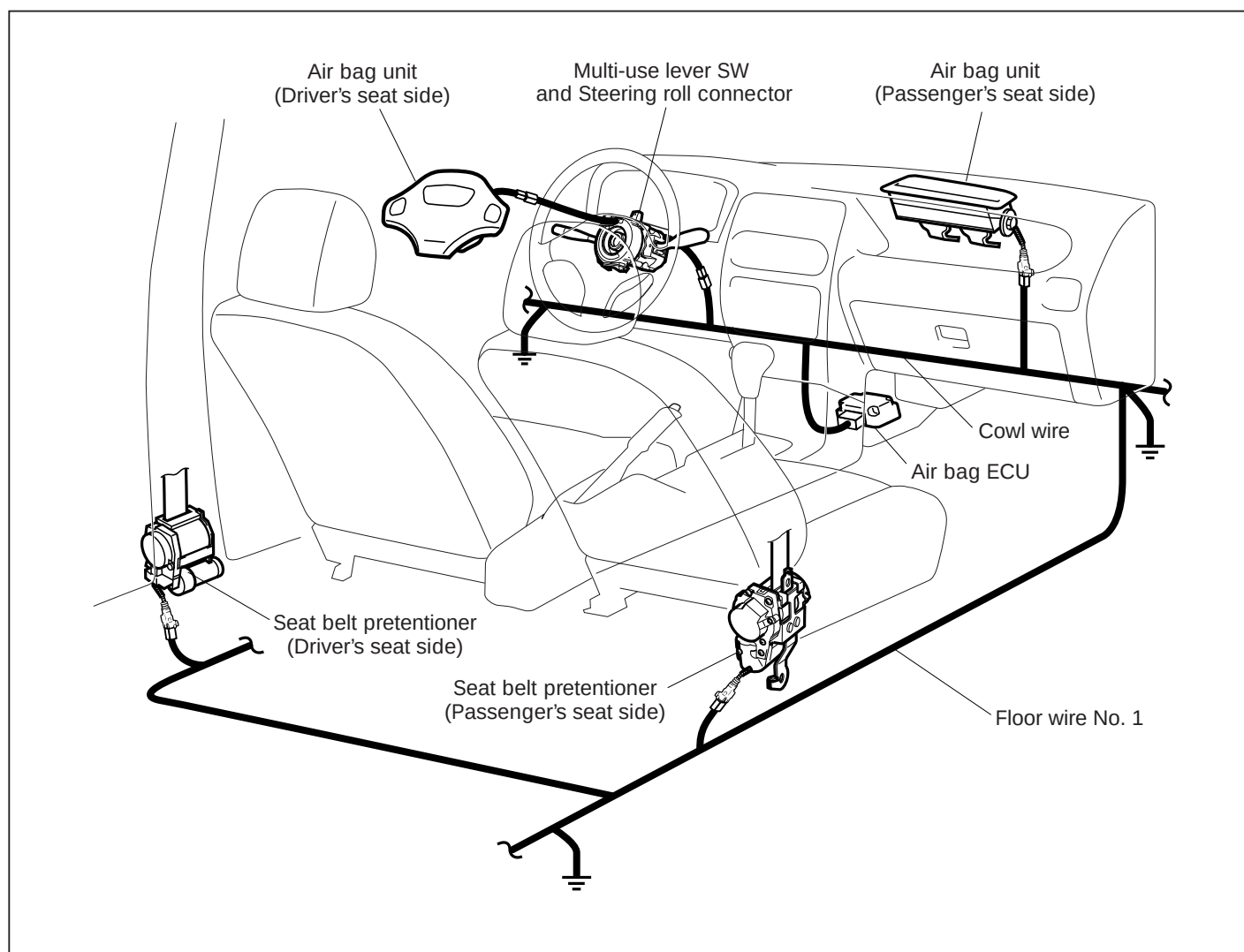
MBE00253-00224

SYSTEM DESCRIPTION

CIRCUIT DIAGRAM



COMPONENTS LAYOUT



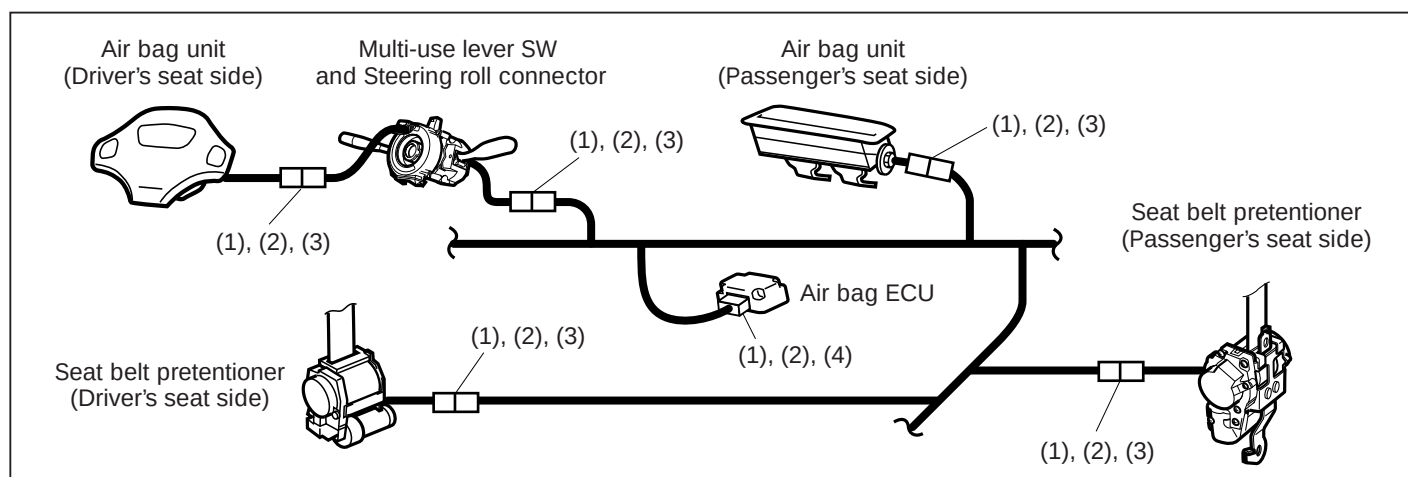
MBE00255-00226

WIRING HARNESS CONNECTOR OF AIR BAG SYSTEM

All wire harnesses and connectors related to the air bag system are colored yellow uniformly. The following sections have connectors with special functions.

- (1) Terminal double locking mechanism
- (2) Terminal short mechanism
- (3) Connector double locking mechanism
- (4) Incomplete fitting detecting mechanism

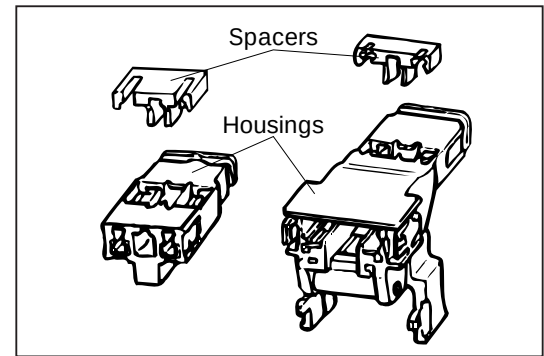
MBE00256-00000



MBE00257-00227

(1) Terminal double locking mechanism

This mechanism is provided with all connectors of this system. The connector is of a two-piece construction consisting of a terminal housing and a spacer. The terminal holding is double-locked by the lance in the housing (primary one) and the spacer (secondary one).

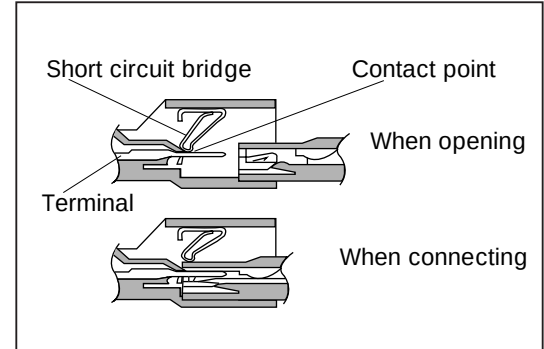


MBE00258-00228

(2) Terminal short mechanism

This mechanism is provided at the connector between the ECU and the inflator squib.

A short spring is provided inside the connector. When the connector is disconnected, the terminals in the squib side connector are shorted automatically, thereby preventing generation of a potential difference between both terminals.

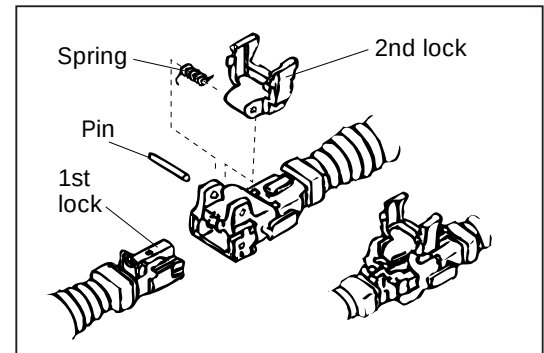


MBE00259-00229

(3) Connector double locking mechanism

This mechanism is provided at the steering roll connector and connectors to each squib.

For improved reliability of connection, connectors (male and female) are double locked with each other. It is so constructed that, when the primary lock is not made, the secondary lock can not be made because a protrusion hinders the locking.

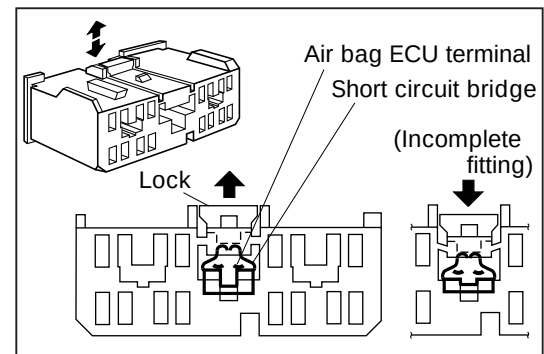


MBE00260-00230

(4) Incomplete fitting detecting mechanism

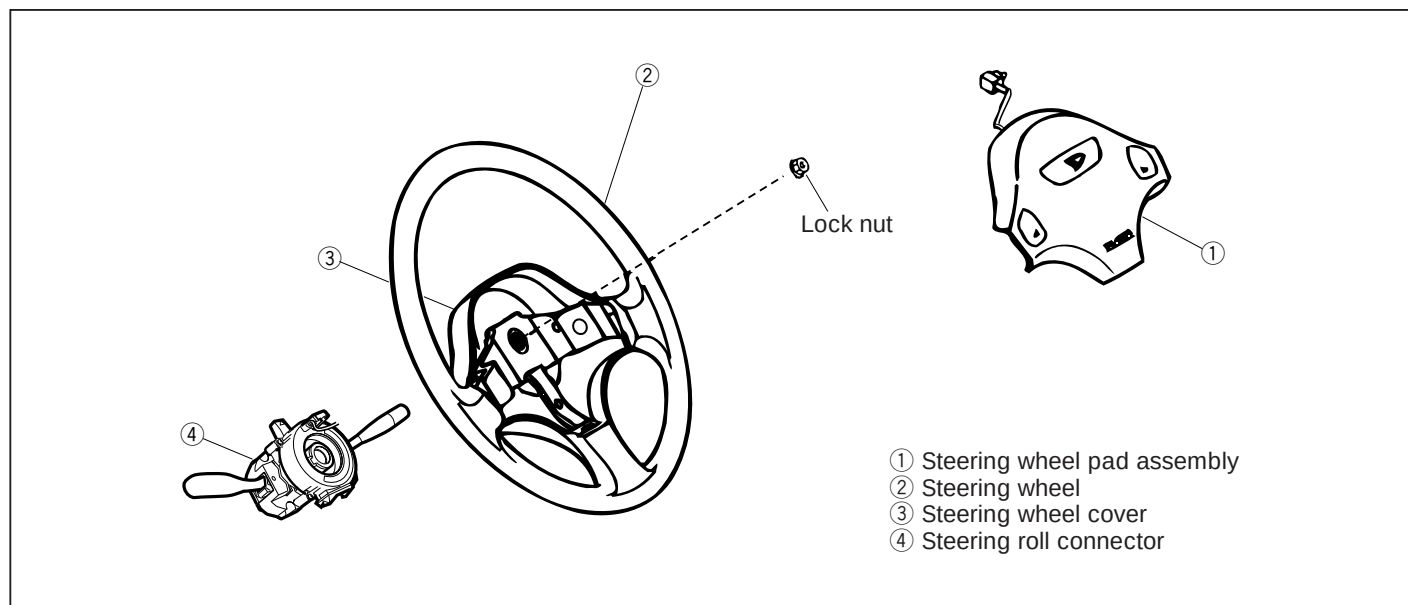
This mechanism is provided at the connector for air bag ECU. This mechanism detects electrically if the connector is connected completely. When the connector is fit completely, the detecting terminals at the ECU side and detecting pins at harness connector side are connected, allowing a small amount of current to flow to the ECU and warning lamp circuit. In this way, the fitting condition is monitored.

If the connector is connected incompletely, the detecting pins and terminals don't contact.



MBE00261-00231

STEERING WHEEL PAD(AIR BAG UNIT FOR THE DRIVER) & STEERING ROLL CONNECTOR COMPONENTS



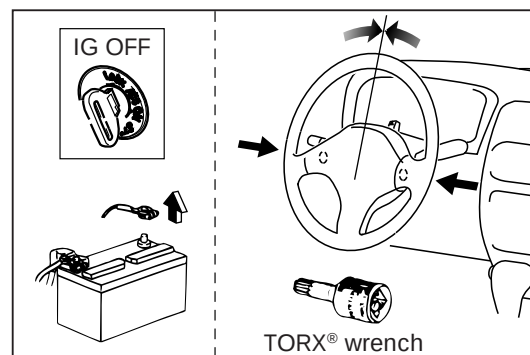
MBE00262-00232

REMOVAL

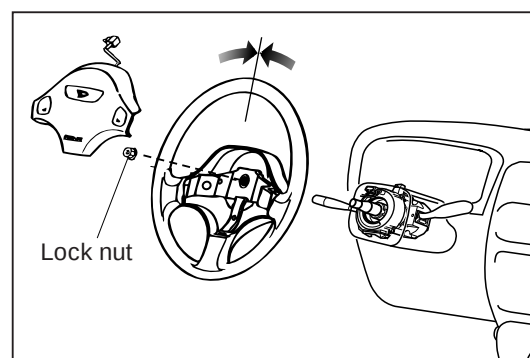
WARNING:

- Be sure to read "IMPORTANT SAFETY NOTICE", page BE-74 - 75, before handling the air bag components and observe every notice during work.

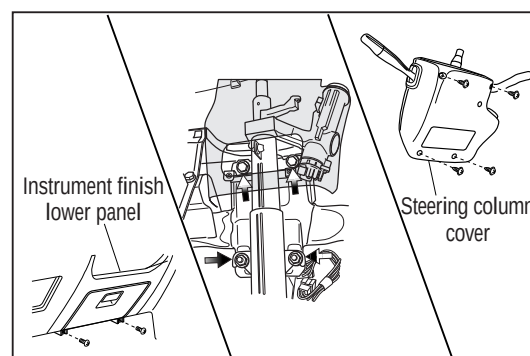
1. Turn OFF the ignition switch and detach the negative (-) terminal of the battery cable. Then wait for at least 90 seconds.
2. Set the steering wheel to a straight-ahead position.
3. Remove the attaching bolts (TORX®) at the right and left sides of the steering wheel cover side.
4. Separate the pad assembly and steering wheel.
5. Disconnect the connector for the air bag and connector for the horn provided at the reverse side of the pad assembly.
6. After each connector is disconnected, remove the pad assembly from the steering wheel.
7. Check the steering wheel to a straight-ahead position.
8. Remove the lock nut of the steering wheel.
9. Remove the steering wheel.
10. Remove the instrument finish lower panel and lower the steering column by temporarily loosening the attaching bolts and nuts.
11. Remove the steering column cover by the removing attaching screws.



MBE00263-00233



MBE00264-00234



MBE00265-00235

12. Disconnect the connectors and detach the wiring harness from the clamp.
13. Remove the multi-use lever switch by removing the attaching screws.

INSTALLATION

PRECAUTION:

- It should be noted wrong installation of the steering roll connector may pose potential hazard, for it may break the wire and also, prevent proper turning of the steering wheel.

1. Turn OFF the ignition switch and detach the negative (-) terminal of the battery cable. Then wait for at least 90 seconds.
2. Ensure that the front wheels are set to the straight-ahead position.
3. Install the multi-use lever switch to the steering column with the screws. Then, connect the connectors.
4. Set the steering column cover to the steering column.

5. Secure the steering column by tightening the attaching bolts and nuts.

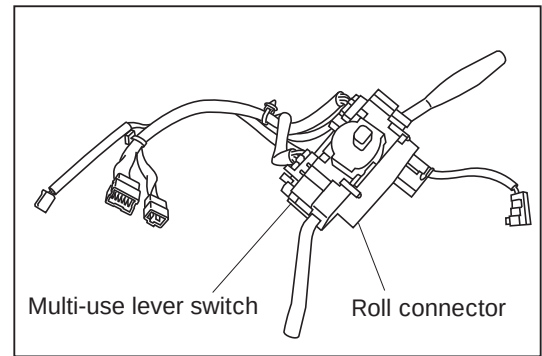
Specified Torque: Nut, lower side 9.8 - 15.7 N·m
Bolt, upper side 14.7 - 21.6 N·m

6. Install the instrument finish lower panel.

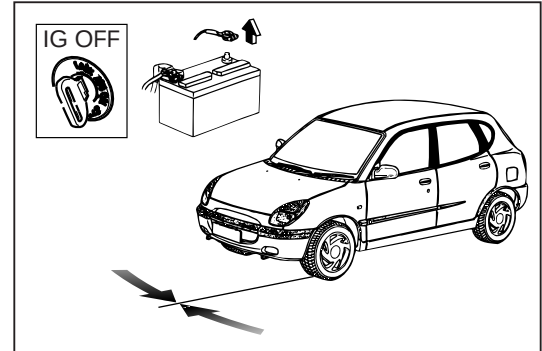
7. Turn the steering roll connector clockwise, until it is locked.
8. Back off the steering roll connector about 2.5 turns counterclockwise from the locked position. Align the center mark. Temporarily secure the steering roll connector, using a tape, so that it may not move.

CAUTION:

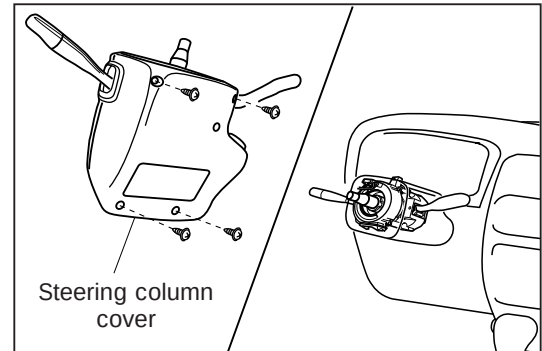
- The steering roll connector makes five turns at the maximum. Hence, when the steering roll connector is connected to the steering wheel, be sure to set the steering roll connector to the midpoint of the rotation.



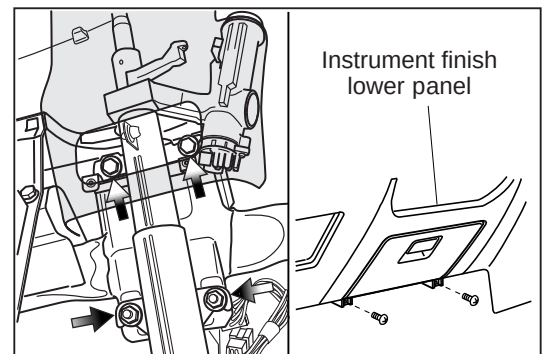
MBE00266-00236



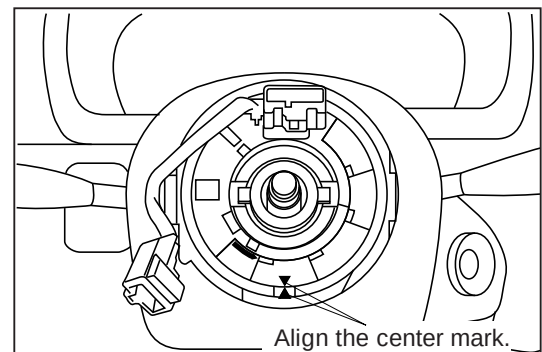
MBE00267-00237



MBE00268-00238

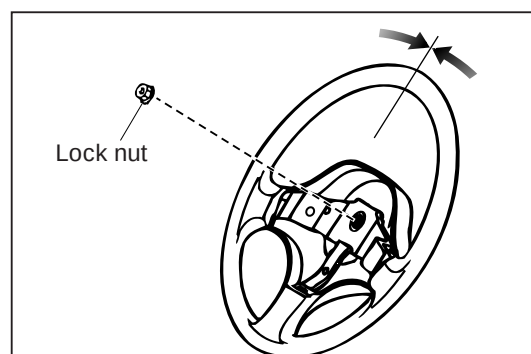


MBE00269-00239



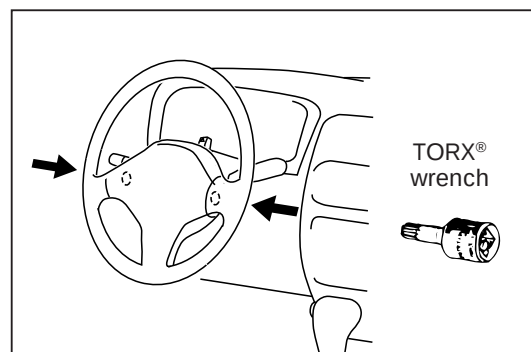
MBE00270-00240

9. Install the steering wheel assembly to the steering shaft and tighten the lock nut.
Specified Torque: 34.3 - 53.9 N·m



MBE00271-00241

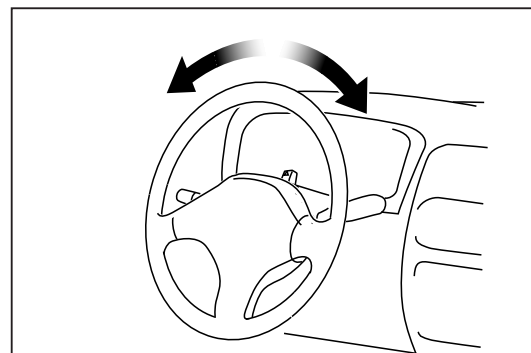
10. Install the pad assembly
 - (1) Connect the connector for the air bag and connector for the horn.
 - (2) Secure the pad assembly to the steering wheel assembly with the TORX® bolt.
Specified Torque: 5.2 - 9.6 N·m



MBE00272-00242

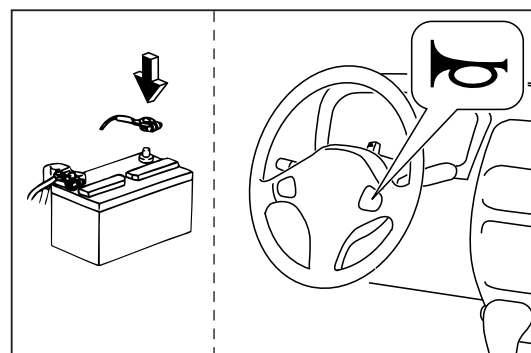
CHECK AFTER INSTALLATION

1. Turn the steering wheel to the right and left sides respectively, as far as it will go. Ensure that no malfunction exists.



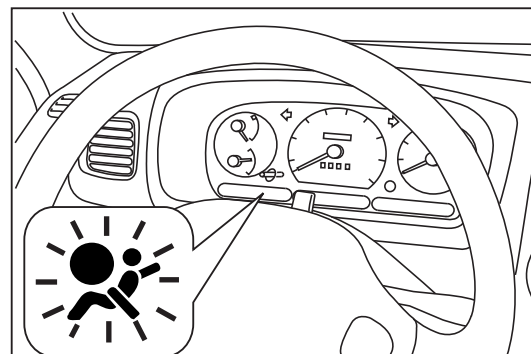
MBE00273-00243

2. Connect the negative (-) terminal of the battery cable to the battery terminal.
3. Ensure that the horn will sound by pushing the horn button.



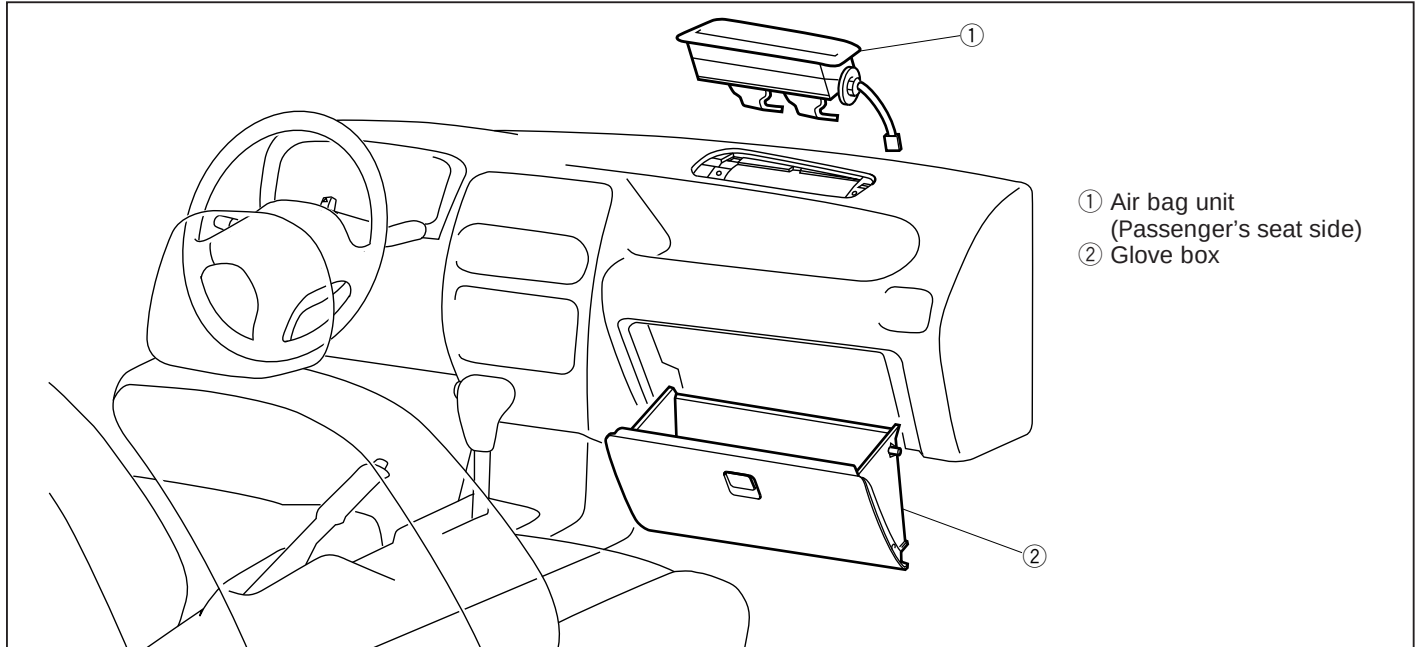
MBE00274-00244

4. Turn ON the ignition switch. Ensure that the air bag warning lamp illuminates for six seconds.



MBE00275-00245

AIR BAG UNIT (FRONT PASSENGER'S SEAT SIDE) COMPONENTS



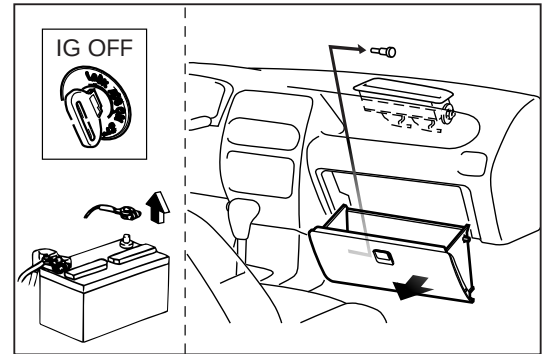
MBE00276-00246

REMOVAL

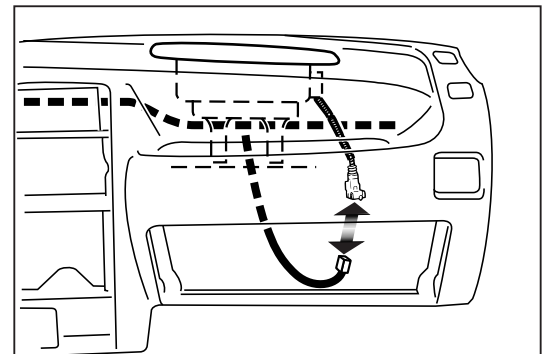
WARNING:

- Be sure to read "IMPORTANT SAFETY NOTICE", page BE-74 - 75, before handling the air bag components and observe every notice during work.

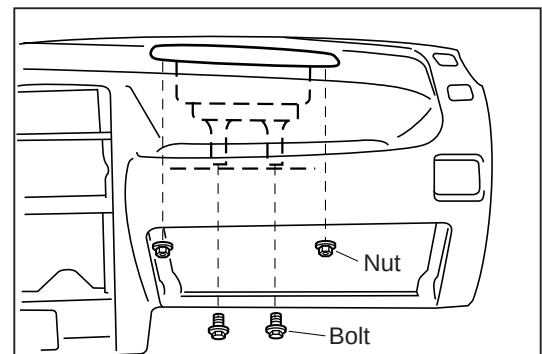
1. Turn OFF the ignition switch and detach the negative (-) terminal of the battery cable. Then wait for at least 90 seconds.
2. Remove the glove box by removing attaching clip.
3. Disconnect the connector which connects the wire harness of the air bag unit and the cowl wire.
4. Remove the air bag unit assembly from the instrument panel by removing attaching bolts and nuts.



MBE00277-00247



MBE00278-00248



MBE00279-00249

INSTALLATION

WARNING:

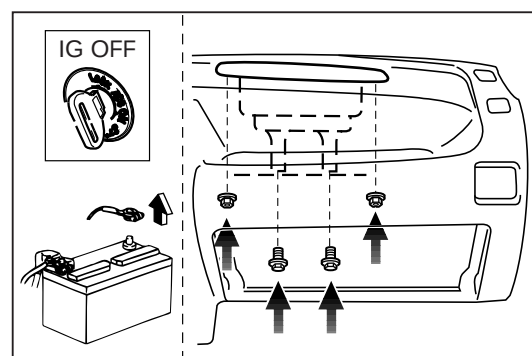
- Be sure to read "IMPORTANT SAFETY NOTICE", page BE-74 - 75, before handling the air bag components and observe every notice during work.

1. Turn OFF the ignition switch and detach the negative (-) terminal of the battery cable. Then wait for at least 90 seconds.
2. Install the air bag unit to the instrument panel and tighten the bolts and nuts.
 Specified Torque for the Bolt: 6.7 - 9.5 N·m
 Specified Torque for the Nut: 6.7 - 9.5 N·m
3. Connect the connector.

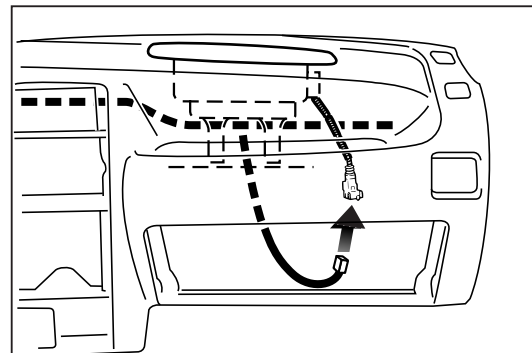
4. Install the glove box.

CHECK AFTER INSTALLATION

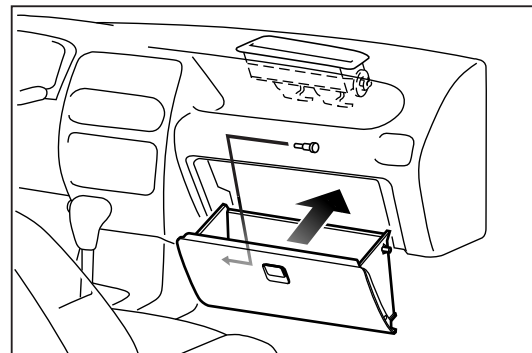
1. Ensure that the pad of the air bag unit fits properly to the instrument panel.
2. Connect the negative (-) terminal of the battery cable to the battery terminal.
3. Turn ON the ignition switch. Ensure that the air bag warning lamp illuminates for six seconds.



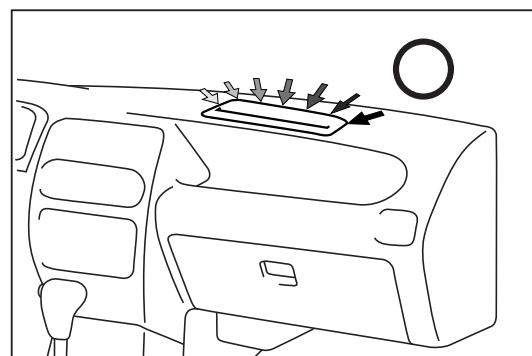
MBE00280-00250



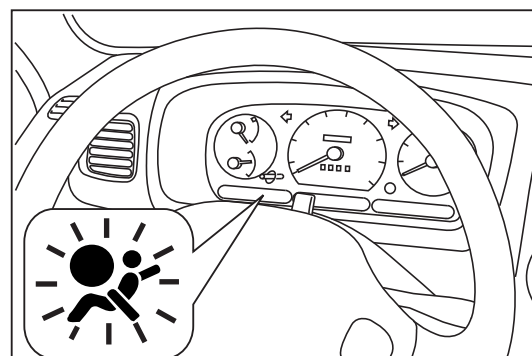
MBE00281-00251



MBE00282-00252

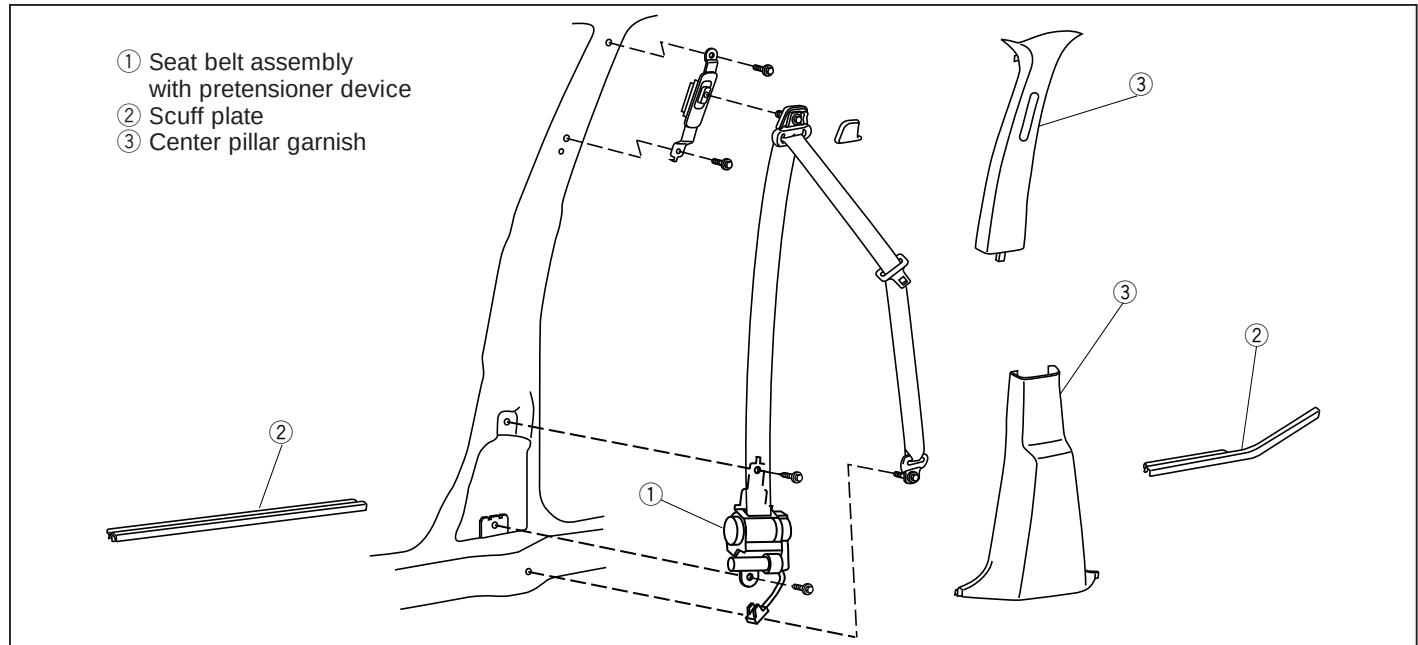


MBE00283-00253



MBE00284-00254

SEAT BELT PRETENSIONER DEVICE COMPONENTS



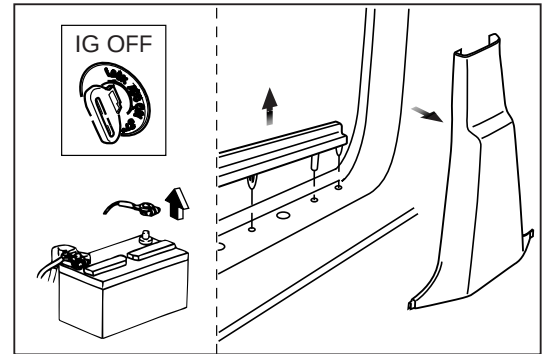
MBE00285-00255

REMOVAL

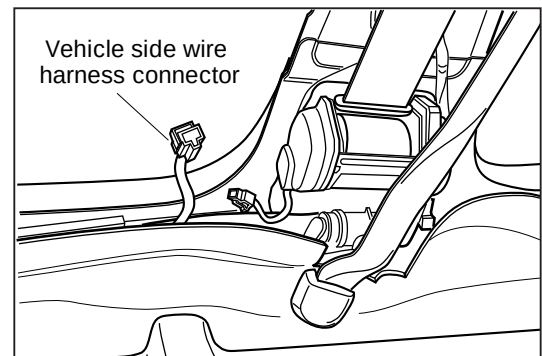
WARNING:

- Be sure to read "IMPORTANT SAFETY NOTICE", page BE-74 - 75, before handling the air bag components and observe every notice during work.

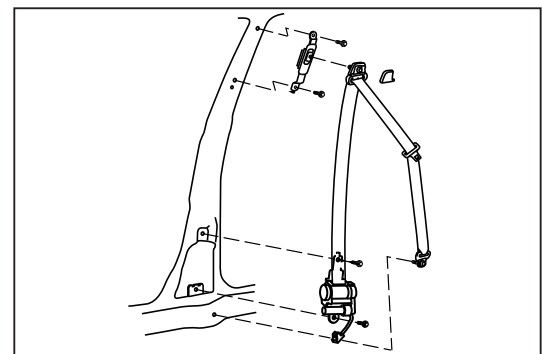
1. Turn OFF the ignition switch and detach the negative (-) terminal of the battery cable. Then wait for at least 90 seconds.
2. Remove the scuff plate and the center pillar garnish.
3. Disconnect the connector which connects the wire harness of the seat belt pretensioner device and the floor wire No. 1.
4. Remove the seat belt pretensioner by removing attaching bolts.



MBE00286-00256



MBE00287-00257



INSTALLATION

WARNING:

- Be sure to read "IMPORTANT SAFETY NOTICE", page BE-74 - 75, before handling the air bag components and observe every notice during work.

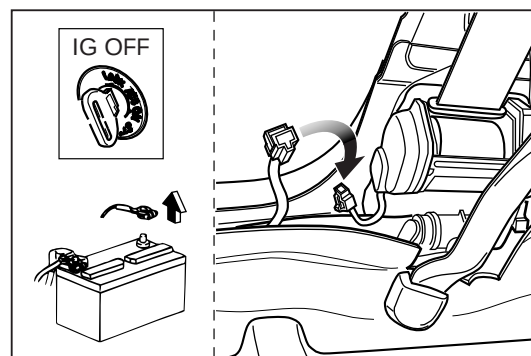
1. Turn OFF the ignition switch and detach the negative (-) terminal of the battery cable. Then wait for at least 90 seconds.
2. Install the seat belt pretensioner.
3. Connect the connector.
4. Install the center pillar garnish and the scuff plate.

NOTE:

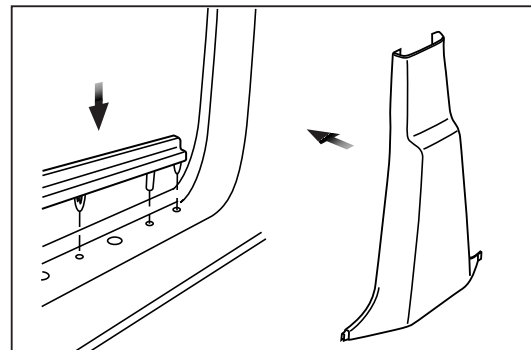
- As regards the installation procedures of garnish and scuff plate, refer to BO section of the service manual.

CHECK AFTER INSTALLATION

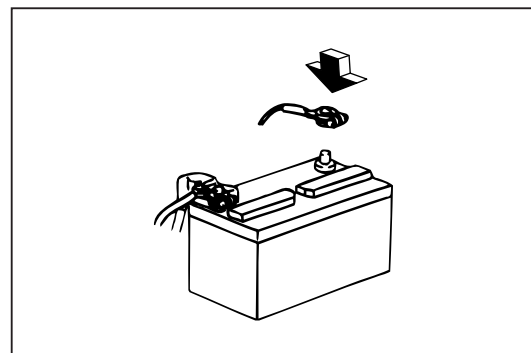
1. Connect the negative (-) terminal of the battery cable to the battery terminal.
2. Turn ON the ignition switch. Ensure that the air bag warning lamp illuminates for six seconds.



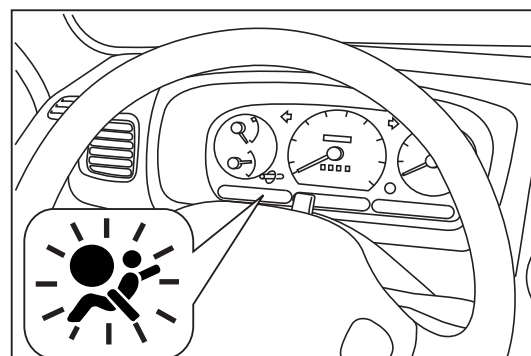
MBE00289-00259



MBE00290-00260

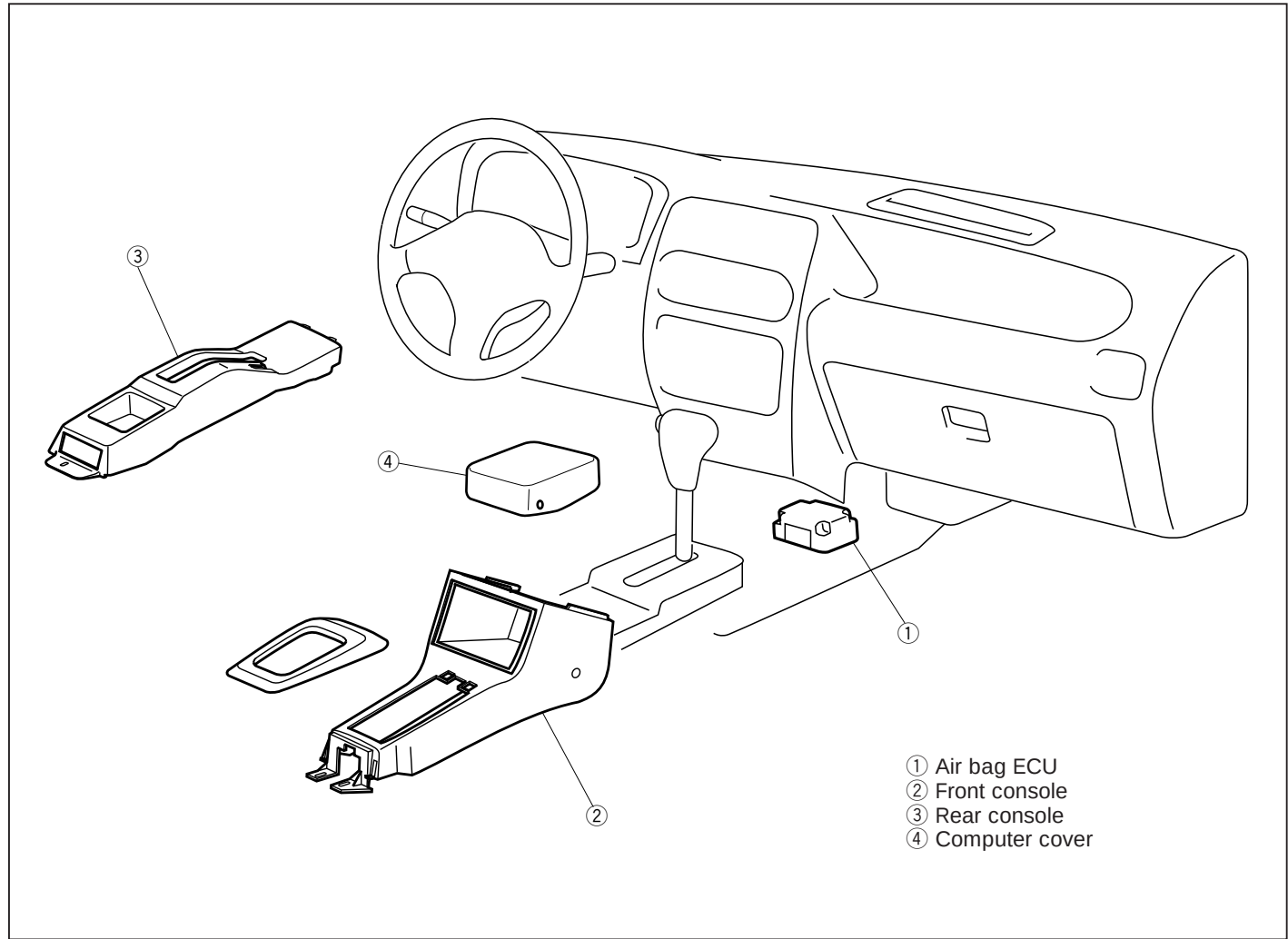


MBE00291-00261



MBE00292-00262

AIR BAG ECU COMPONENTS



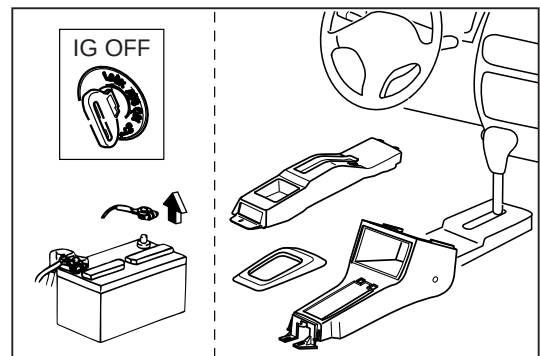
MBE00293-00263

REMOVAL

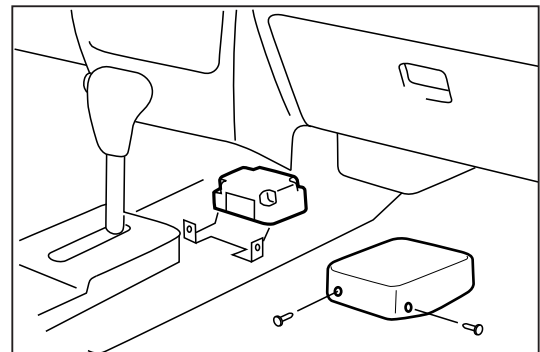
WARNING:

- Be sure to read "IMPORTANT SAFETY NOTICE", page BE-74 - 75, before handling the air bag components and observe every notice during work.

1. Turn OFF the ignition switch and detach the negative (-) terminal of the battery cable. Then wait for at least 90 seconds.
2. Remove the front and rear console box by removing attaching screws.
3. Remove the computer cover.



MBE00294-00264



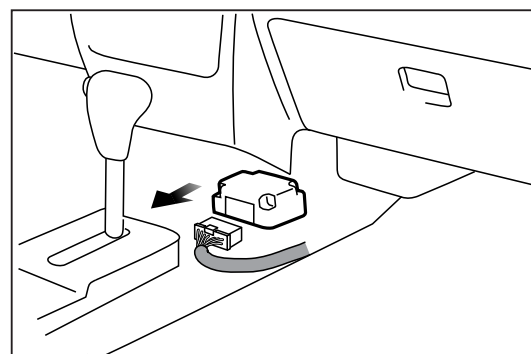
MBE00295-00265

4. Disconnect the connector from the air bag ECU.
 5. Remove the air bag ECU by removing attaching bolts.
- NOTE:**
- Before removing the ECU, ensure that the connector is disconnected in advance.

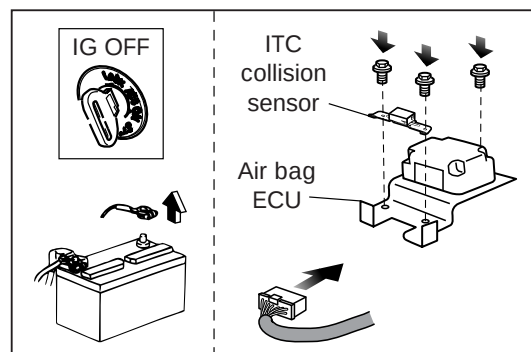
INSTALLATION

WARNING:

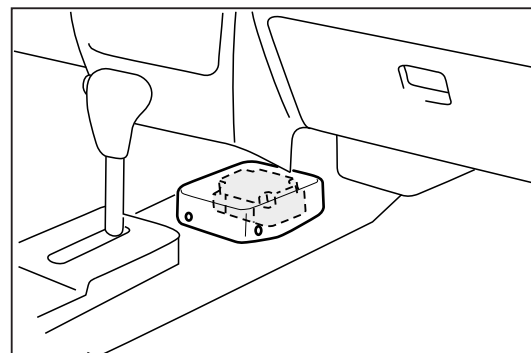
- Be sure to read "IMPORTANT SAFETY NOTICE", page BE-74 - 75, before handling the air bag components and observe every notice during work.
1. Turn OFF the ignition switch and detach the negative (-) terminal of the battery cable. Then wait for at least 90 seconds.
 2. Install the ITC collision sensor and the air bag ECU.
 3. Connect the connector.
 4. Install the computer cover.



MBE00296-00266

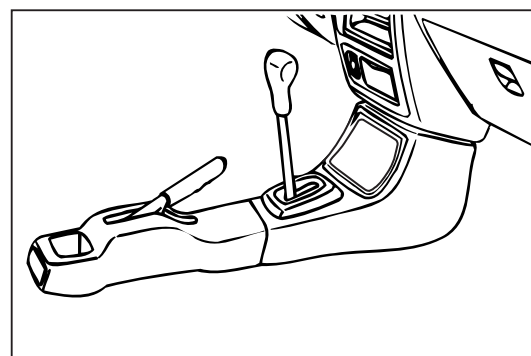


MBE00297-00267



MBE00298-00268

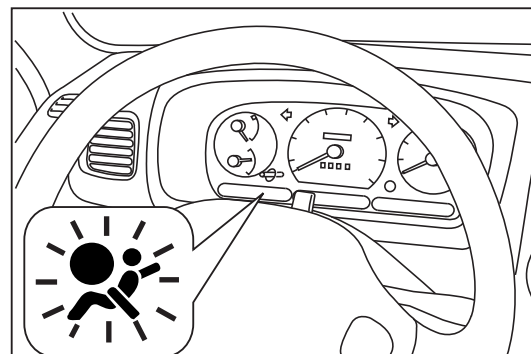
5. Install the console panel.



MBE00299-00269

CHECK AFTER INSTALLATION

1. Connect the negative (-) terminal of the battery cable to the battery terminal.
2. Turn ON the ignition switch. Ensure that the air bag warning lamp illuminates for six seconds.



MBE00300-00270

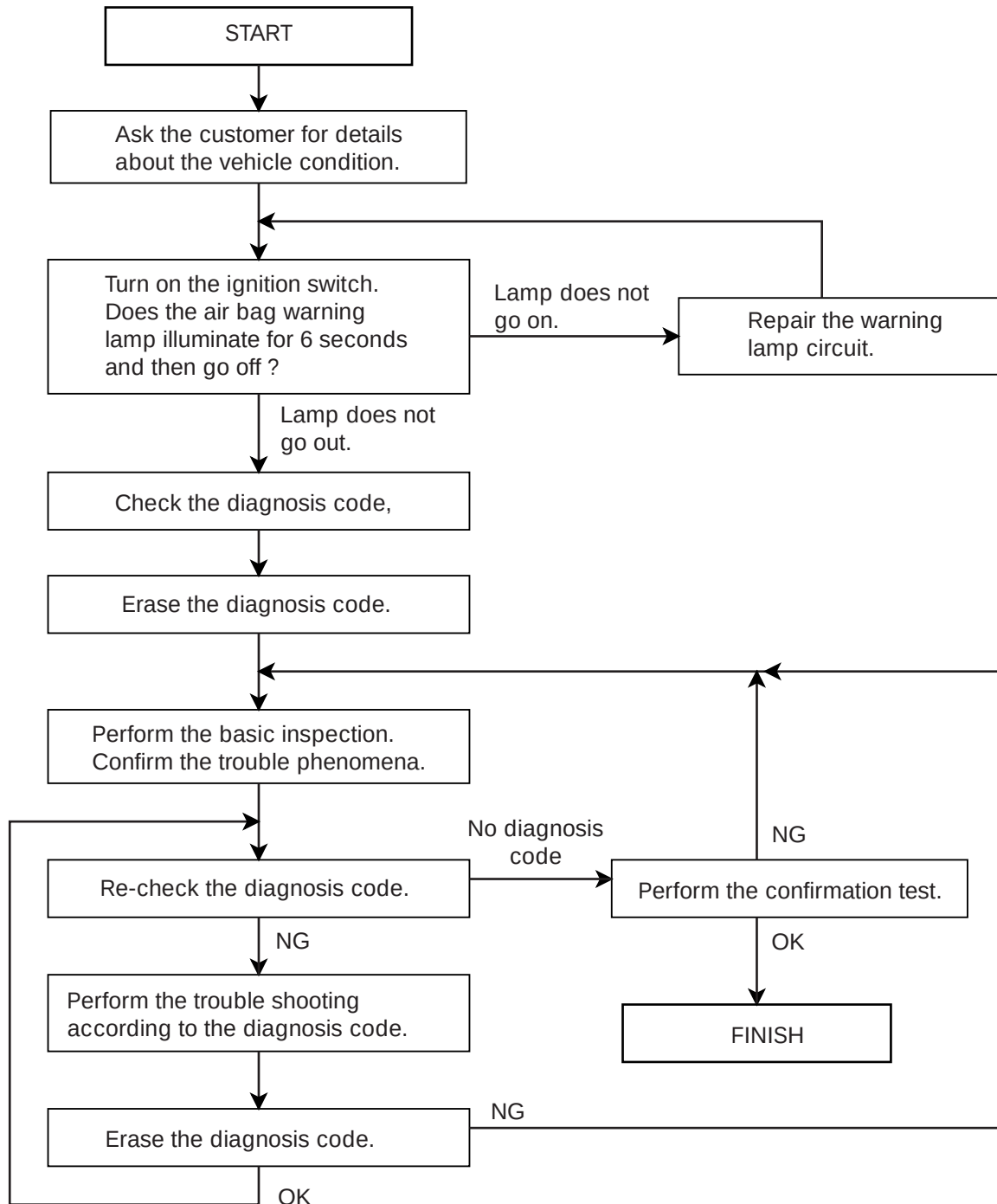
TROUBLE SHOOTING

When proceeding with operations for a malfunctioning vehicle, it is imperative to confirm the malfunction phenomena actually before pinpointing the causes. In order to reproduce the malfunction phenomena, collecting information from the customer is of great importance.

WARNING:

- The aforesaid describes general notes. In the air bag system, there are some cases where the malfunction phenomena can not be reproduced due to the characteristics of the system. Therefore, any wrong operations during checks and repairs may cause the air bag to function accidentally and deploy. Please observe the notes and perform the operations according to the instructions given in the manual.

MBE00301-00000



MBE00302-00000

ABNORMAL ILLUMINATION OF WARNING LAMP

<When warning lamp will not go on: >

If the warning lamp will not go on when the ignition switch is turned on, check the following items.

- (1) Battery for defects or insufficient charge
- (2) Battery cable for poor connection
- (3) ECU IG fuse for open wire (at junction block)
- (4) Warning lamp LED for being burnt out
- (5) Wire harness between air bag warning lamp and air bag ECU for abnormality

NOTE:

- When the gauge fuse has blown, other warning lamps will not go on.
- If the cowl harness has open wire between the gauge fuse and the combination meter, other warning lamps also will not go on.

Check of wire harness

1. Turn OFF the ignition switch and detach the negative (-) terminal of the battery cable. Then wait for at least 90 seconds.
2. Remove the front and rear console box.
3. Remove the computer cover.
4. Disconnect the connector from the air bag ECU.
5. Connect the battery negative (-) cable.
6. Turn ON the ignition switch. Check to see if the warning lamp goes on.

NOTE:

- When there is open wire between the warning lamp circuit inside the combination meter and the air bag ECU, the warning lamp goes on.

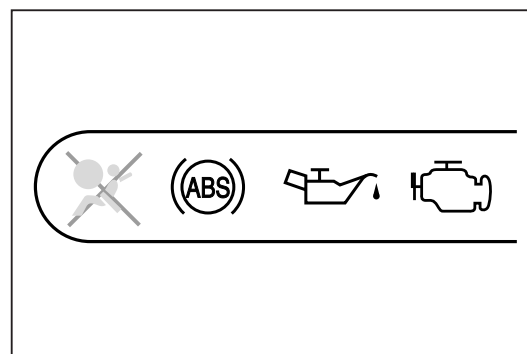
7. If the warning lamp will not go on in the condition 6, perform the following procedures.

- (1) Remove the combination meter and disconnect the 13-pin connector.
- (2) Connect a voltmeter. Ensure that the battery voltage exists between the terminal H61 at the cowl wire harness connector side and the body earth. If not, check and replace the cowl wire.

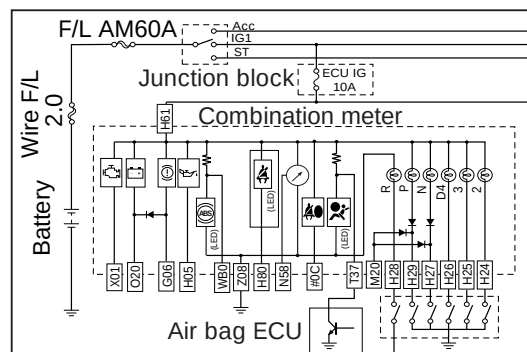
- (3) Disconnect the 16-pin connector.

- (4) Connect an ohmmeter. Ensure that continuity exists between the terminal Z08 at the cowl wire harness connector side and body earth. If no continuity exists, check and replace the cowl wire.

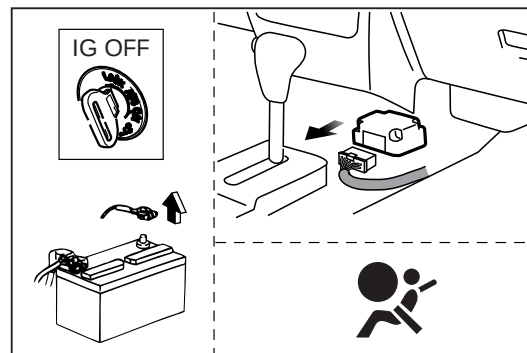
8. Turn OFF the ignition switch and detach the negative (-) terminal of the battery cable.



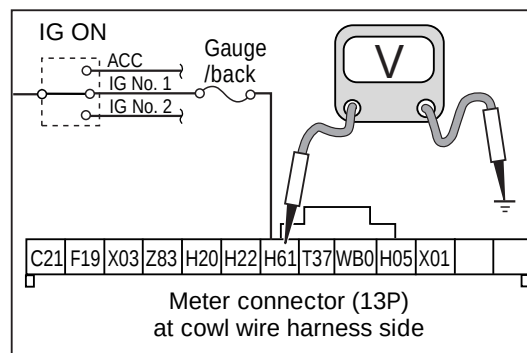
MBE00303-00271



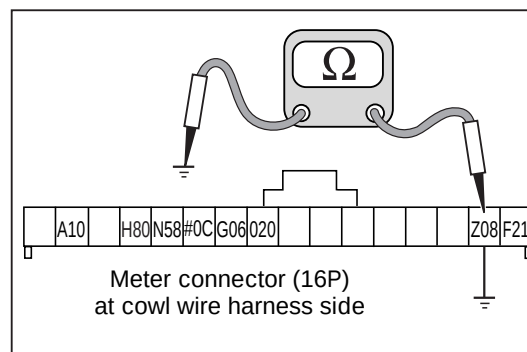
MBE00304-00272



MBE00305-00273



MBE00306-00274



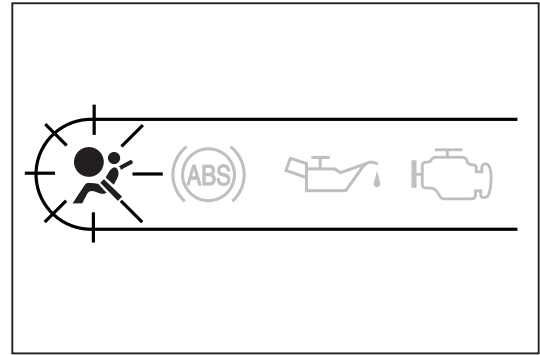
MBE00307-00275

<When warning lamp will not go out: >

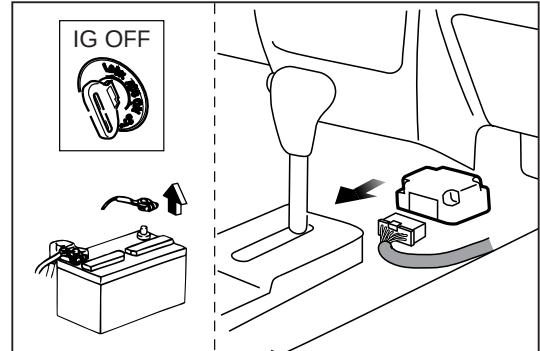
If the warning lamp will not go out even if about six seconds have elapsed after the ignition switch was turned on, malfunction is most likely taking place in the system. However, as for the following items given below, the malfunction codes can not be read by the reading procedure for the malfunction code already described before, and the warning lamp will remain illuminated. At this time, proceed to the following inspection.

Check of wire harness

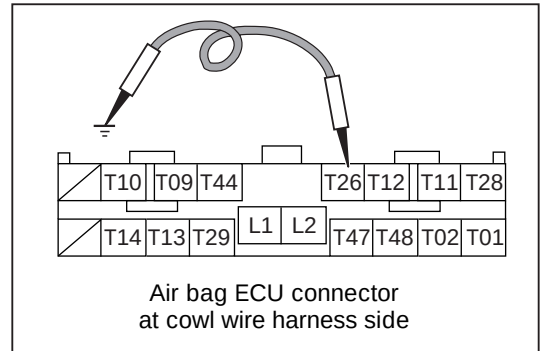
1. Turn OFF the ignition switch and detach the negative (-) terminal of the battery cable. Then wait for at least 90 seconds.
2. Remove the front and rear console box by removing attaching screws.
3. Remove the computer cover.
4. Disconnect the connector from the air bag ECU.
5. Connect the connector terminal T26 at the cowl wire side and body earth with the jump wire to short them.
6. Connect the battery negative (-) cable.
7. Turn ON the ignition switch. Check to see if the warning lamp extinguishes.
8. If it does not extinguish in the condition 7, perform the following procedures.
 - (1) Turn OFF the ignition switch.
 - (2) Remove the combination meter and disconnect the 13-pin connector.
 - (3) Connect an ohmmeter. Ensure that the continuity exists at the cowl wire harness between the terminal T26 and the terminal T37. If not, check and replace the cowl wire.
9. Detach the negative (-) terminal of the battery cable.



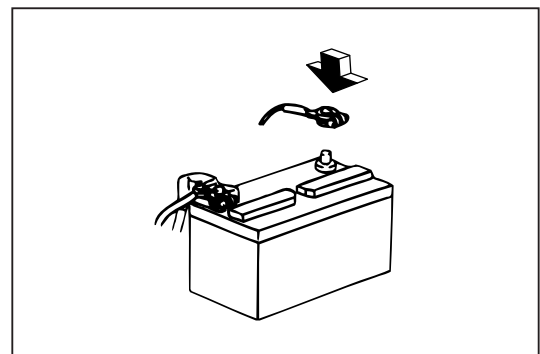
MBE00308-00276



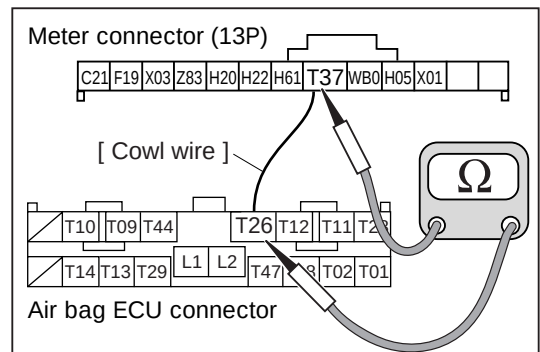
MBE00309-00277



MBE00310-00278



MBE00311-00279



MBE00312-00280

DIAGNOSIS CHECK

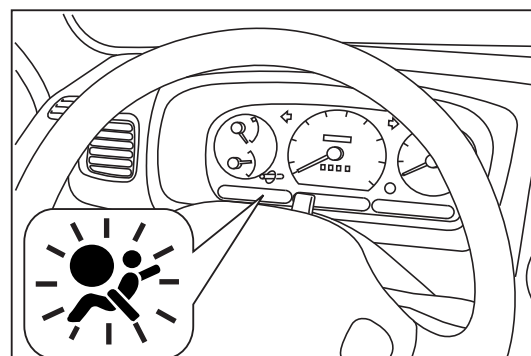
<Confirmation procedure for diagnosis codes>

1. Turn ON the ignition switch.
2. If the air bag warning lamp goes on for six seconds and goes out afterward, the system is functioning properly.

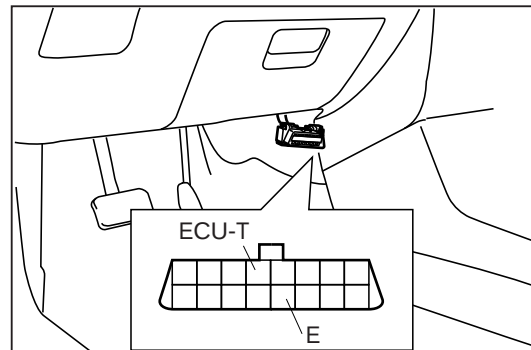
NOTE:

- If the lamp will not go on at this time, refer to page BE-89.

3. If the warning lamp keeps illuminated for more than six seconds, it means a certain system malfunctioning is being detected. Proceed to the following operations.
4. Connect the test terminal (ECU-T) and the earth terminal (E) with a jump wire.
5. Confirm the diagnosis code by reading the number of flashing of the combination lamp.



MBE00313-00281



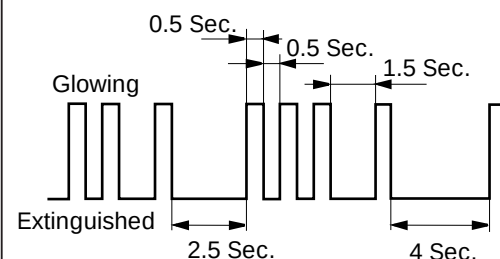
MBE00314-00282

<Reading of diagnosis codes>

When two or more malfunction codes are outputted, the codes are indicated in the sequence of the code numbers, starting from a smaller number, with a four-second distinguished period interposed between codes.

After a lapse of four seconds, the malfunction codes are indicated by the repetition of a 0.5-second glowing period and a 0.5-second extinguished period. If the code is a two-digit number, the 1.5-second extinguished period is interposed between the units digit and the tens digit.

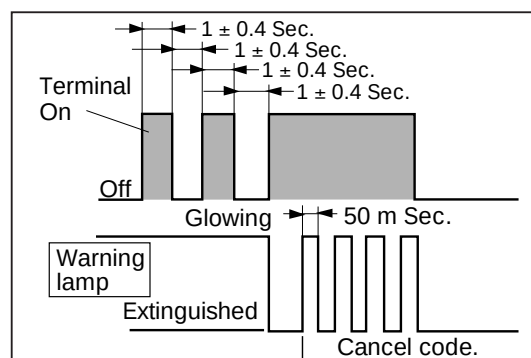
In case of malfunction codes number 21 and 31



MBE00315-00283

<Canceling procedure for records of diagnosis codes>

1. The diagnosis codes can be canceled by connecting repeatedly the test terminal (ECU-T) with the earth terminal (E) at the intervals shown in the figure.

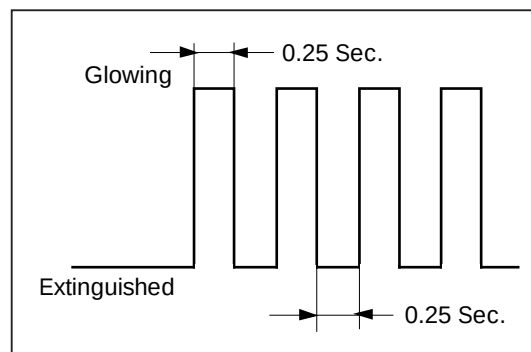


MBE00316-00284

2. When the malfunction has been remedied and the system has resumed, the normal code shown in the figure is indicated.

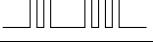
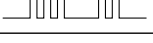
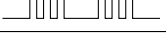
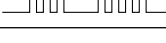
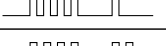
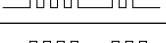
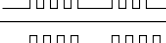
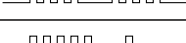
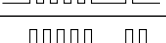
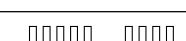
NOTE:

- The cancellation procedure for the malfunction record can not be applied to the cancellation of the record of the malfunction for the ECU internal circuit. (Diagnosis code numbers 61 and 62)



MBE00317-00285

LIST OF MALFUNCTION CODES

Code No.	Warning lamp output	Diagnosis malfunction contents		Refer to page
—		Normal code		
11		Abnormal power supply		BE-93
14		IG1 power supply has open wire.		BE-93
15		IG2 power supply has open wire.		BE-93
16		Abnormal warning lamp illumination circuit		BE-94
21		Squib has open wire.	At the driver's seat side air bag unit	BE-95
22		Power supply voltage is applied to upstream circuit.		BE-96
23		Upstream circuit is grounded to earth.		BE-97
24		Squib is shorted.		BE-98
31		Squib has open wire.	At the passenger's seat side air bag unit.	BE-99
32		Power supply voltage is applied to upstream circuit.		BE-100
33		Upstream circuit is grounded to earth.		BE-101
34		Squib is shorted.		BE-102
41		Squib has open wire.	At the driver's seat belt pretensioner unit.	BE-103
42		Power supply voltage is applied to upstream circuit.		BE-104
43		Upstream circuit is grounded to earth.		BE-105
44		Squib is shorted.		BE-106
51		Squib has open wire.	At the passenger's seat belt pretensioner unit	BE-107
52		Power supply voltage is applied to upstream circuit.		BE-108
53		Upstream circuit is grounded to earth.		BE-109
54		Squib is shorted.		BE-110
61		Squib has open wire. (Air bag was deployed.)		BE-111
62		Air bag ECU malfunctioning		BE-111

MBE00318-00000

CAUTION:

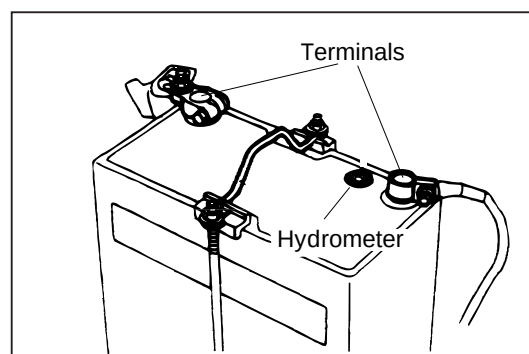
- After carrying out the trouble shooting according to diagnosis codes, cancel the diagnosis codes by following the code canceling method described at page BE-91.
- Even though the malfunction has been remedied, the code is not canceled automatically.

MBE00319-00000

<DIAGNOSIS CODE 11, 14 or 15>

Inspection

1. Check of power supply circuit
 - (1) Battery for defects or insufficient charge
 - (2) Battery cable for poor connection
 - (3) Alternator for defects or insufficient charge



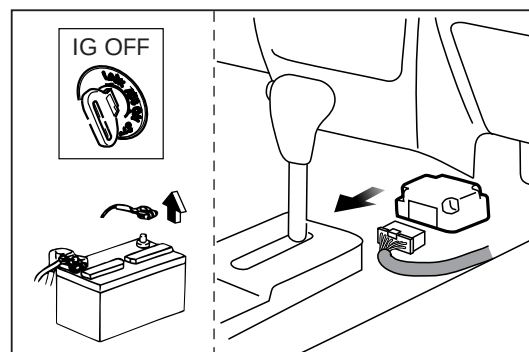
MBE00320-00286

2. Check of wire harness and fuse

WARNING:

- Be sure to read "IMPORTANT SAFETY NOTICE", page BE-74 - 75, before handling the air bag components and observe every notice during work.

- (1) Turn OFF the ignition switch and detach the negative (-) terminal of the battery cable. Then wait for at least 90 seconds.
- (2) Remove the front and rear console box.
- (3) Remove the computer cover.
- (4) Disconnect the connector from the air bag ECU.

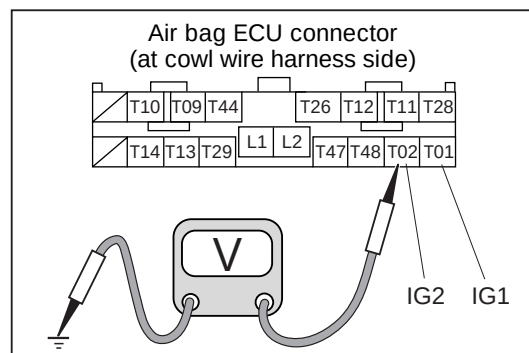


MBE00321-00287

- (5) Connect the battery negative (-) cable.
- (6) Turn ON the ignition switch.
- (7) Connect the voltmeter between the connector terminal at the vehicle wire harness side and body earth.

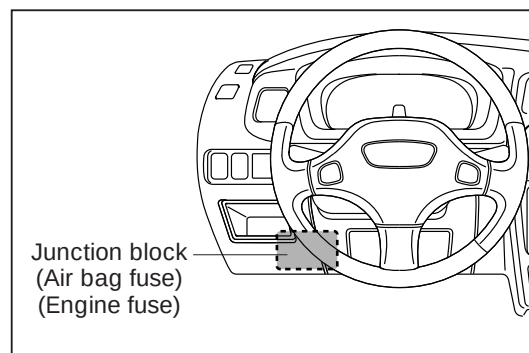
Between Terminal T01 (IG1) and Body Earth:
Battery voltage

Between Terminal T02 (IG2) and Body Earth:
Battery voltage



MBE00322-00288

- (8) If the battery voltage is not applied to each terminal, pull off and check the air bag fuse and engine fuse.

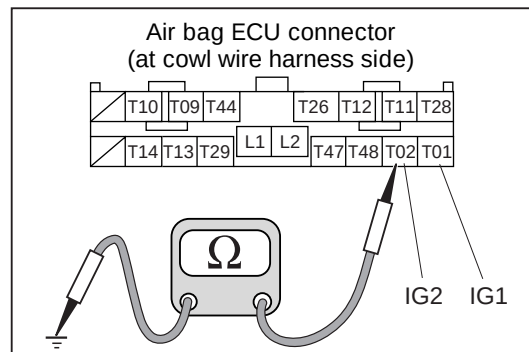


MBE00323-00289

- (9) If the fuse has blown, connect the ohmmeter between the connector terminal at the vehicle wire harness side and body earth.

Between Terminal T01 (IG1) and Body Earth:
No continuity exists.

Between Terminal T02 (IG2) and Body Earth:
No continuity exists.



MBE00324-00290

If it might be shorted, replace the harness. If not, recheck after replacing the fuse.

- (10) If the fuse has not blown, connect the ohmmeter between the connector terminal at the vehicle wire harness side and the fuse terminal.

Between Terminal T01 (IG1)
and Engine Fuse Terminal (at Junction Block):

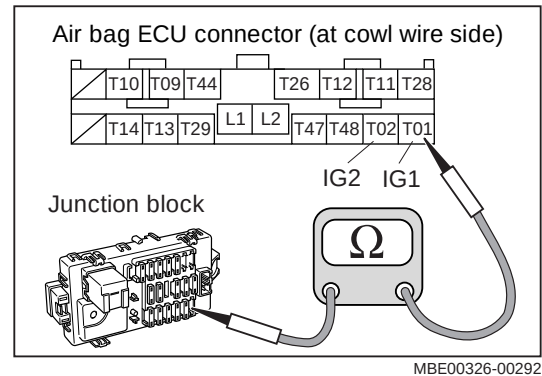
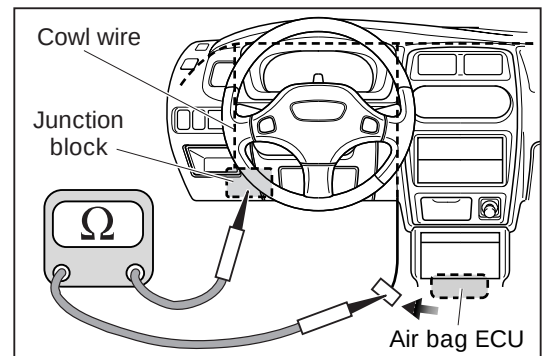
Continuity exists.

Between Terminal T02 (IG2)

and Air Bag Fuse Terminal (at Junction Block):

Continuity exists.

- (11) If it might have open wire, replace the harness. If not, recheck the battery and power supply circuit.



<DIAGNOSIS CODE 16>

Possible cause for malfunction: Abnormality in warning lamp illuminating circuit

NOTE:

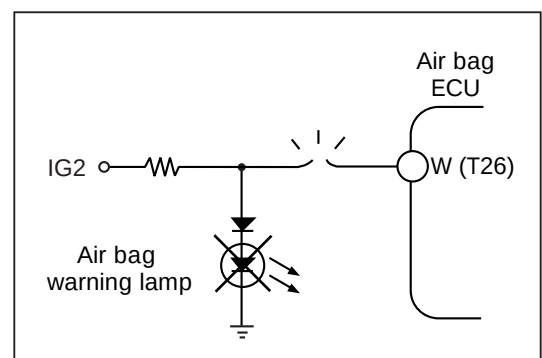
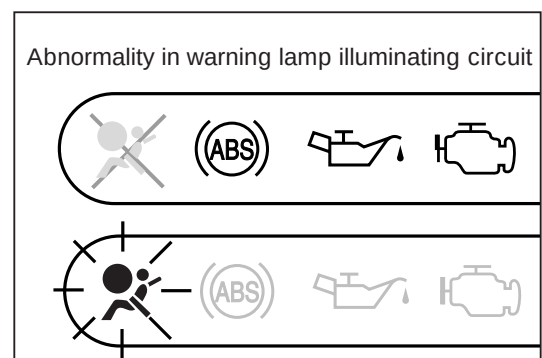
- When this code is memorized, it indicates that open wire has taken place in the warning lamp circuit even though it occurred temporarily. However, if this code is now indicated, it means the circuit (wire harnesses, connectors, etc.) has been remedied to the normal condition.

Inspection

As regards the inspection procedures for the warning lamp illuminating circuit, refer to page BE-89 and 90 of this service manual.

WARNING:

- Be sure to read "IMPORTANT SAFETY NOTICE", page BE-74 - 75, before handling the air bag components and observe every notice during work.



<DIAGNOSIS CODE 21>

WARNING:

- Be sure to read "IMPORTANT SAFETY NOTICE", page BE-74 - 75, before handling the air bag components and observe every notice during work.

NOTE:

- As regards the removal and installation procedures for the air bag related parts, refer to page BE-79 - 87 of this service manual.

Inspection

- Turn OFF the ignition switch and detach the negative (-) terminal of the battery cable. Then wait for at least 90 seconds.
- Disconnect the connector from the air bag ECU.

NOTE:

- When the connector is disconnected from the air bag ECU, the connector terminals T11 (DB+) and T12 (DB-) at the cowl wire harness side are shorted automatically by the short circuit bridge.

- Remove the steering pad assembly (air bag unit) from the steering wheel.
- Disconnect the pad assembly connector from the roll connector.
- Ensure that the continuity exists between the respective terminals.

Between Terminal F2 (+) and G2 (-):

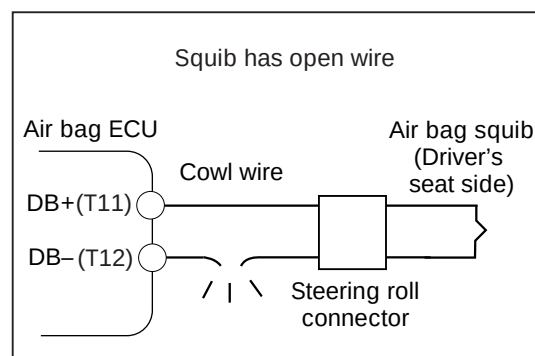
Continuity exists.

- If there is no continuity, it is necessary to know whether the faulty point is attributable to the inside of the roll connector. To this end, disconnect the coupling connector of the roll connector and the cowl wire. Then, check the continuity of each parts. If an open wire is found, replace the faulty part with a new one.
- If there is no open wire, connect both ends of the roll connector terminals with a jump wire to short them.
- Connect the connector at the cowl wire harness side and the air bag ECU connector that were disconnected at Step 2.
- Connect the battery negative (-) cable.
- Turn ON the ignition switch and take a reading of the diagnosis code.

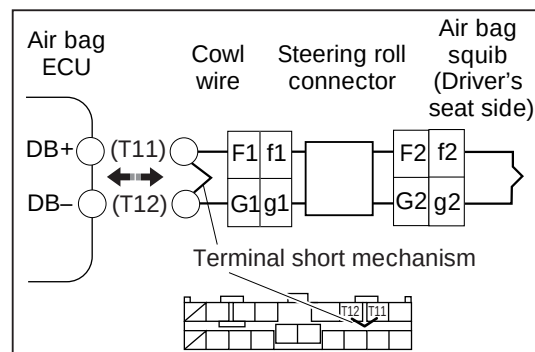
CAUTION:

- If the code 24 (short circuit of squib circuit) is indicated, it proves indirectly that there is open wire in the squib of the steering pad assembly (air bag unit). Therefore, replace the steering pad assembly.

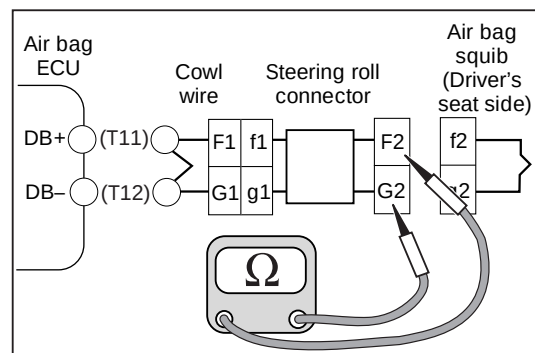
- After the inspection and installation, cancel the diagnosis code and confirm that the code 21 and 24 are not outputted any more.



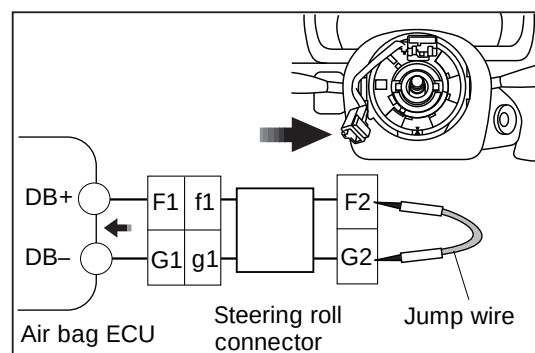
MBE00329-00295



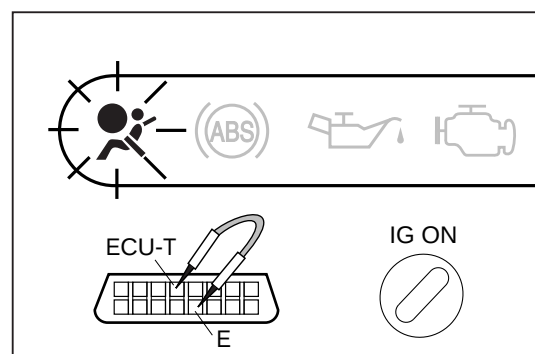
MBE00330-00296



MBE00331-00297



MBE00332-00298



MBE00333-00299

<DIAGNOSIS CODE 22>

WARNING:

- Be sure to read "IMPORTANT SAFETY NOTICE", page BE-74 - 75, before handling the air bag components and observe every notice during work.
- When this code is indicated, the air bag system may operate as soon as the safing sensor at the ECU is turned on. Hence, if this code is indicated, immediately turn off the ignition key switch and proceed to the following steps.

Explosion-preventive measure

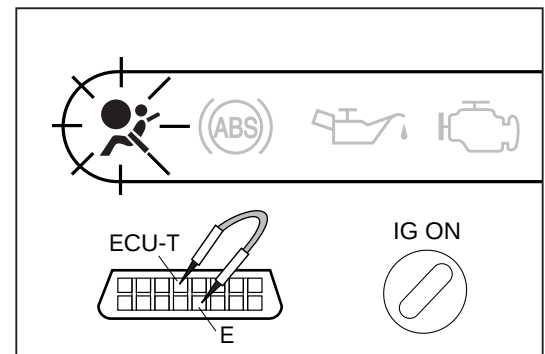
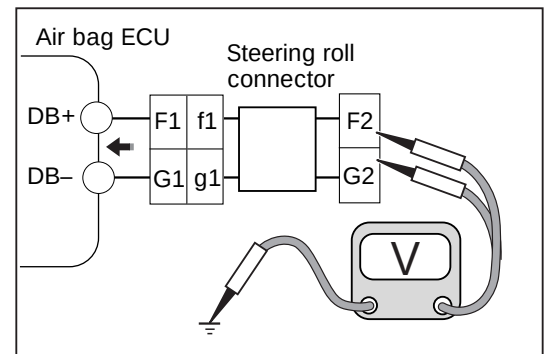
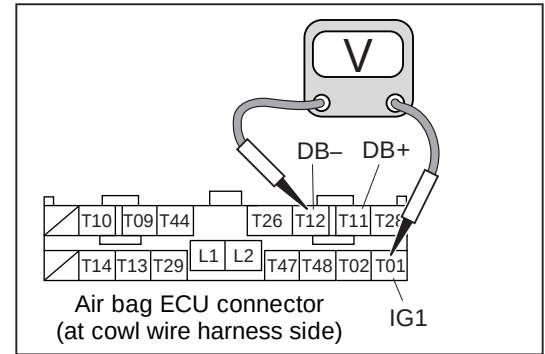
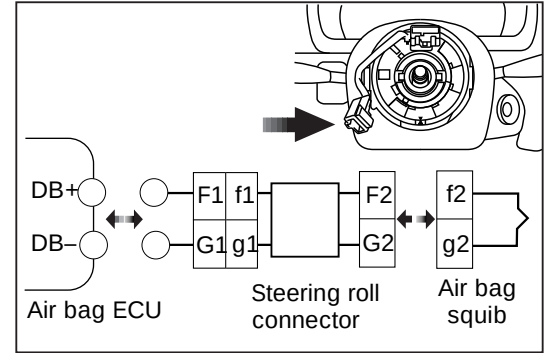
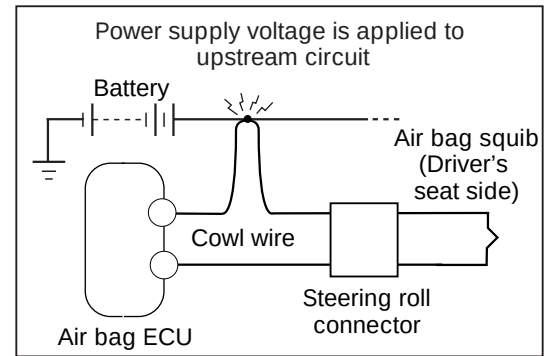
1. Turn OFF the ignition switch and detach the negative (-) terminal of the battery cable. Then wait for at least 90 seconds.
2. Disconnect the connector from the air bag ECU.
3. Remove the steering pad assembly (air bag unit) from the steering wheel.
4. Disconnect the pad assembly connector from the roll connector.

Inspection

1. Connect the battery negative (-) cable.
2. Connect the voltmeter to the vehicle wire harness side terminals. Then, turn on the ignition switch.
 - Between Terminal T11 (DB+) and T01 (IG1):
No voltage exists.
 - Between Terminal T12 (DB-) and T01 (IG1):
No voltage exists.

3. Turn OFF the ignition switch.
4. Connect the connector at the vehicle wire harness side and the air bag ECU connector.
5. Connect the voltmeter between the roll connector terminal and body earth.
6. Turn ON the ignition switch. Ensure that no voltage exists between the terminal and body earth.
 - Between Terminal F2 and Body Earth:
No voltage exists.
 - Between Terminal G2 and Body Earth:
No voltage exists.

7. After the inspection and installation, cancel the diagnosis code and confirm that the code 22 is not outputted any more.



<DIAGNOSIS CODE 23>

WARNING:

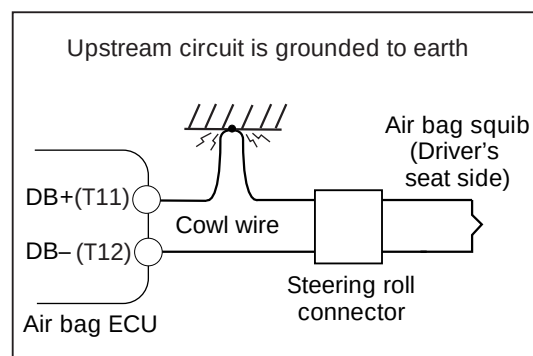
- Be sure to read "IMPORTANT SAFETY NOTICE", page BE-74 - 75, before handling the air bag components and observe every notice during work.

NOTE:

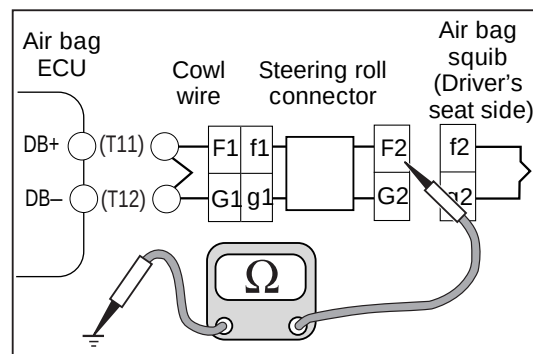
- As regards the removal and installation procedures for the air bag related parts, refer to page BE-79 - 87 of this service manual.

Inspection

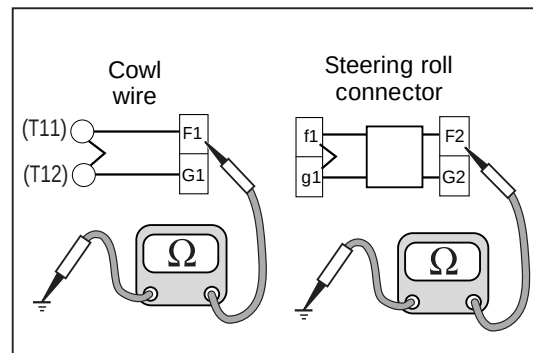
- Turn OFF the ignition switch and detach the negative (-) terminal of the battery cable. Then wait for at least 90 seconds.
- Disconnect the connector from the air bag ECU.
- Remove the steering pad assembly (air bag unit) from the steering wheel.
- Disconnect the pad assembly connector from the roll connector.
- Ensure that the no continuity exists between the roll connector terminal and the body earth.
 - Between Terminal F2 and Body Earth:
No continuity exists.
 - Between Terminal G2 and Body Earth:
No continuity exists.
- If the terminal is shorted with the body earth, it is necessary to know whether the faulty point is attributable to the inside of the roll connector. To this end, disconnect the coupling connector of the roll connector and the wire cowl. Then, perform check with a circuit tester. If a short circuit is found, replace the faulty part with a new one.
- Connect the connector at the vehicle wire harness side and the air bag ECU connector.
- Connect the battery negative (-) cable.
- Turn ON the ignition switch and take a reading of the diagnosis code.
- After the inspection and installation, cancel the diagnosis code and confirm that the code 23 is not outputted any more.



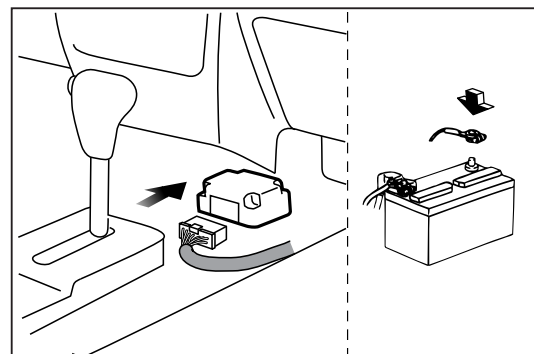
MBE00339-00305



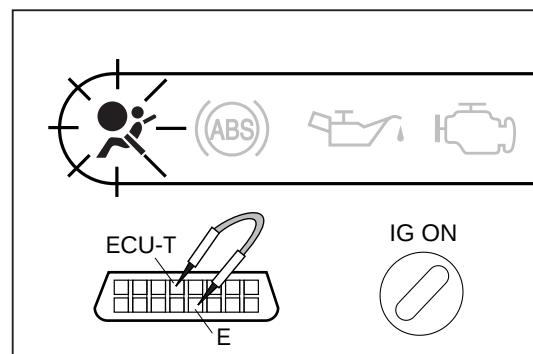
MBE00340-00306



MBE00341-00307



MBE00342-00308



MBE00343-00309

<DIAGNOSIS CODE 24>

WARNING:

- Be sure to read "IMPORTANT SAFETY NOTICE", page BE-74 - 75, before handling the air bag components and observe every notice during work.

NOTE:

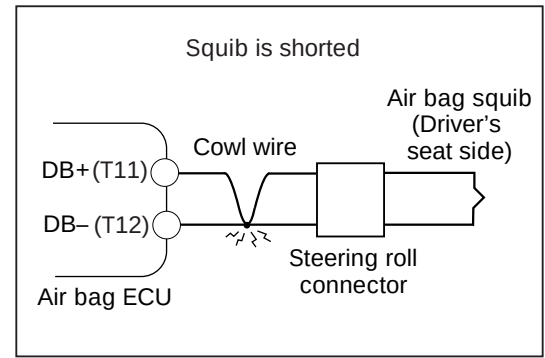
- As regards the removal and installation procedures for the air bag related parts, refer to page BE-79 - 87 of this service manual.

Inspection

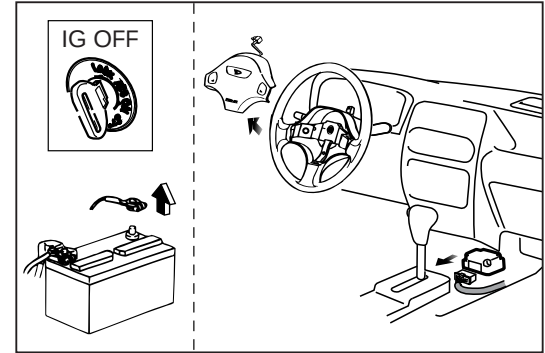
- Turn OFF the ignition switch and detach the negative (-) terminal of the battery cable. Then wait for at least 90 seconds.
- Remove the steering pad assembly (air bag unit) from the steering wheel.
- Disconnect the pad assembly connector from the roll connector.
- Remove the computer cover. Disconnect the connector at the vehicle wire harness side from the air bag ECU.
- Using a wooden or plastic piece, raise the short circuit bridge at the sections T11 (DB+) and T12 (DB-) of the connector at the vehicle wire harness side which was removed from the ECU. In this way, disconnect the shorted contact points.
- Connect the ohmmeter to the roll connector terminal. Check to see if any short circuit exists from the air bag ECU to the roll connector via the wire harness.
Between Terminal F2 and G2: No continuity exists.
- If the wiring harness is shorted, it is necessary to know whether the faulty point is attributable to the inside of the roll connector. To this end, disconnect the coupling connector of the roll connector and the wire cowl. Then, perform check with the ohmmeter. If a short circuit is found, replace the faulty part with a new one.

NOTE:

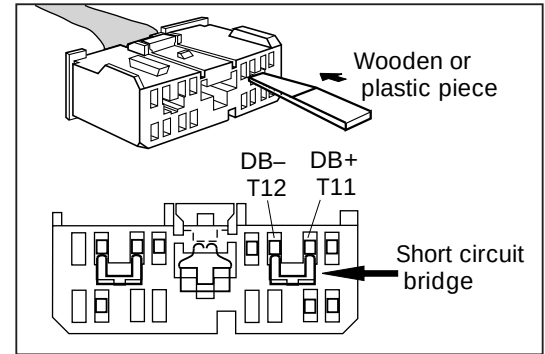
- At this time, turn the steering wheel in a right-and-left direction and ensure that there is no change in the indication of the circuit tester.
- After the inspection and installation, cancel the diagnosis code and confirm that the code 24 is not outputted any more.



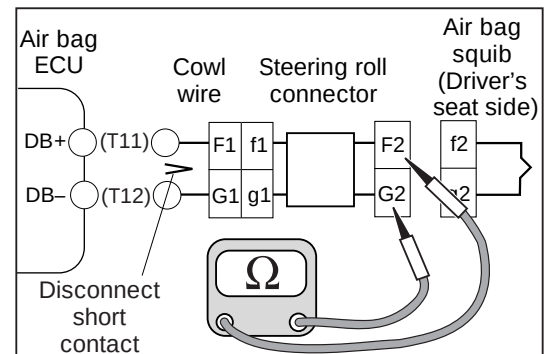
MBE00344-00310



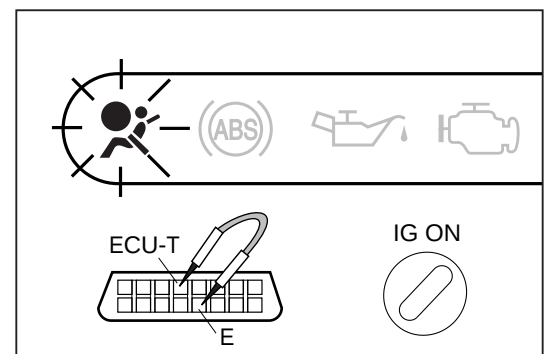
MBE00345-00311



MBE00346-00312



MBE00347-00313



MBE00348-00314

<DIAGNOSIS CODE 31>

WARNING:

- Be sure to read "IMPORTANT SAFETY NOTICE", page BE-74 - 75, before handling the air bag components and observe every notice during work.

NOTE:

- As regards the removal and installation procedures for the air bag related parts, refer to page BE-79 - 87 of this service manual.

Inspection

- Turn OFF the ignition switch and detach the negative (-) terminal of the battery cable. Then wait for at least 90 seconds.
- Disconnect the connector from the air bag ECU.

NOTE:

- When the connector is disconnected from the air bag ECU, the connector terminals PB+ (T09) and PB- (T10) at the cowl wire harness side are shorted automatically by the short circuit bridge.

- Disconnect the connector which connects the wire harness of the passenger's side air bag unit and the cowl wire.
- Ensure that the continuity exists between the respective terminals.
Between Terminal H (+) and J (-): Continuity exists.

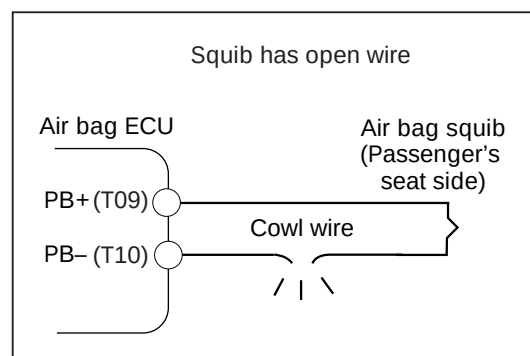
- If there is no open wire, connect both ends of the air bag terminals at the cowl wire harness side with a jump wire to short them.
- Connect the connector at the cowl wire harness side and the air bag ECU connector that were disconnected at Step 2.
- Connect the battery negative (-) cable.

- Turn ON the ignition switch and take a reading of the diagnosis code.

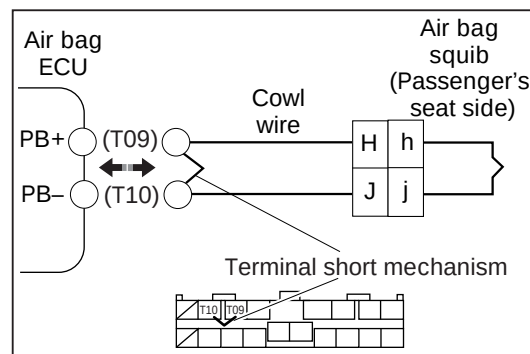
CAUTION:

- If the code 34 (short circuit of squib circuit) is indicated, it proves indirectly that there is open wire in the squib of the air bag unit. Therefore, replace the air bag assembly.

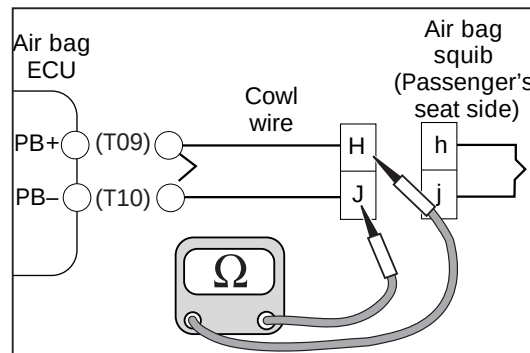
- After the inspection and installation, cancel the diagnosis code and confirm that the code 31 and 34 are not outputted any more.



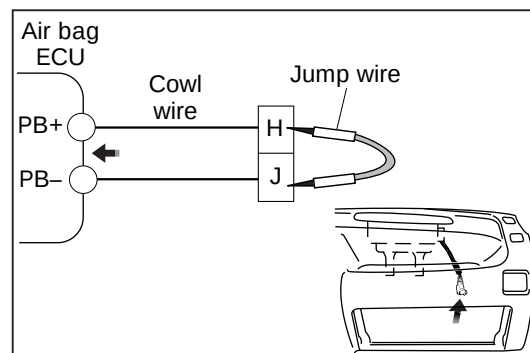
MBE00349-00315



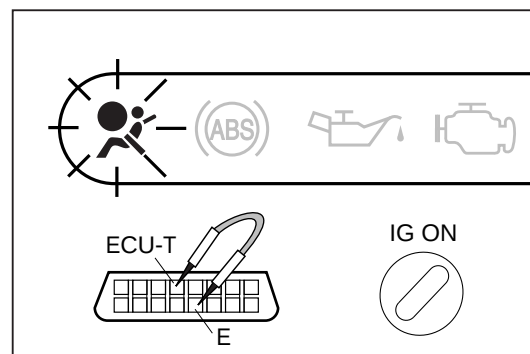
MBE00350-00316



MBE00351-00317



MBE00352-00318



MBE00353-00319

<DIAGNOSIS CODE 32>

WARNING:

- Be sure to read "IMPORTANT SAFETY NOTICE", page BE-74 - 75, before handling the air bag components and observe every notice during work.
- When this code is indicated, the air bag system may operate as soon as the safing sensor at the ECU is turned on. Hence, if this code is indicated, immediately turn off the ignition key switch and proceed to the following steps.

Explosion-preventive measure

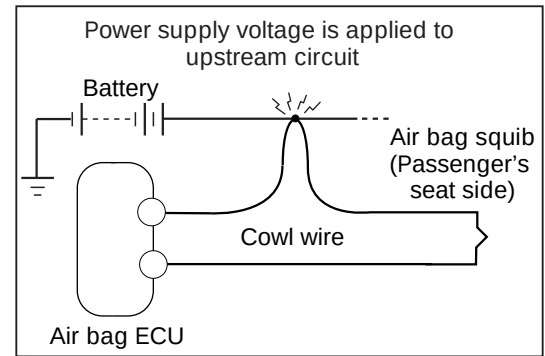
1. Turn OFF the ignition switch and detach the negative (-) terminal of the battery cable. Then wait for at least 90 seconds.
2. Disconnect the connector from the air bag ECU.
3. Disconnect the connector which connects the wire harness of the passenger's side air bag unit and the cowl wire.

Inspection

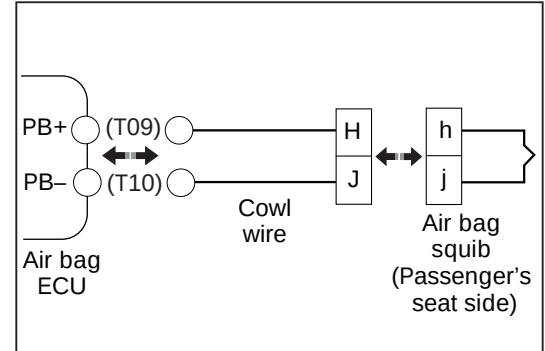
1. Connect the battery negative (-) cable.
2. Connect the voltmeter to the vehicle wire harness side terminals. Then, turn on the ignition switch.
 - Between Terminal T09 (PB+) and T01 (IG1):
No voltage exists.
 - Between Terminal T10 (PB-) and T01 (IG1):
No voltage exists.

3. Turn OFF the ignition switch.
4. Connect the connector at the vehicle wire harness side and the air bag ECU connector.
5. Connect the voltmeter between the cowl wire terminal and body earth.
6. Turn ON the ignition switch. Ensure that no voltage exists between the terminal and body earth.
 - Between Terminal H and Body Earth:
No voltage exists.
 - Between Terminal J and Body Earth:
No voltage exists.

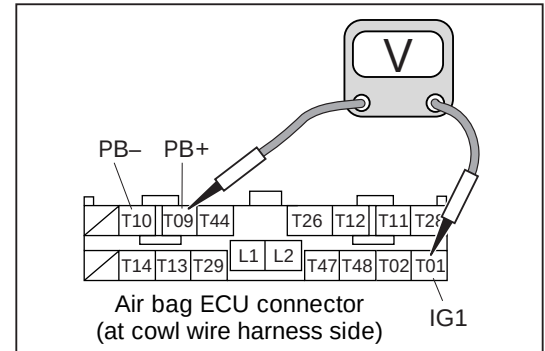
7. After the inspection and installation, cancel the diagnosis code and confirm that the code 32 is not outputted any more.



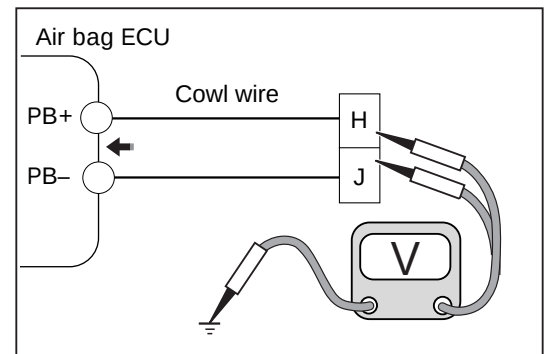
MBE00354-00320



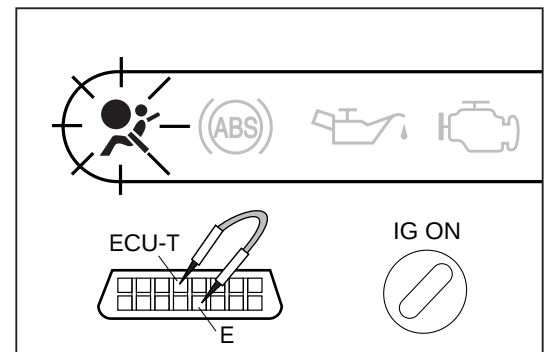
MBE00355-00321



MBE00356-00322



MBE00357-00323



MBE00358-00324

<DIAGNOSIS CODE 33>

WARNING:

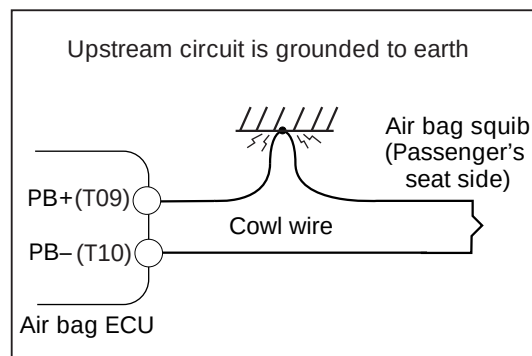
- Be sure to read "IMPORTANT SAFETY NOTICE", page BE-74 - 75, before handling the air bag components and observe every notice during work.

NOTE:

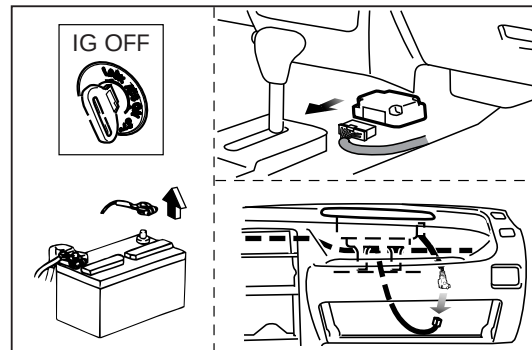
- As regards the removal and installation procedures for the air bag related parts, refer to page BE-79 - 87 of this service manual.

Inspection

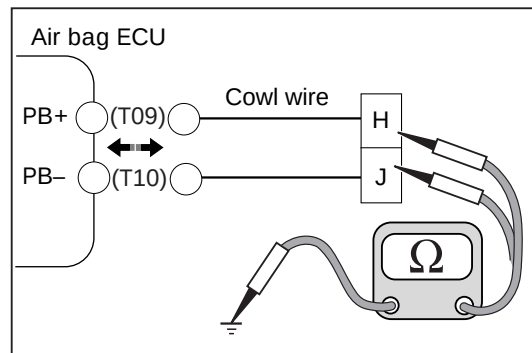
- Turn OFF the ignition switch and detach the negative (-) terminal of the battery cable. Then wait for at least 90 seconds.
- Disconnect the connector from the air bag ECU.
- Disconnect the connector which connects the wire harness of the passenger's side air bag unit and the cowl wire.
- Ensure that there is no continuity exists between the cowl wire terminal and the body earth.
 - Between Terminal H and Body Earth:
No continuity exists.
 - Between Terminal J and Body Earth:
No continuity exists.
- Connect the connector at the vehicle wire harness side and the air bag ECU connector.
- Connect the battery negative (-) cable.
- Turn ON the ignition switch and take a reading of the diagnosis code.
- After the inspection and installation, cancel the diagnosis code and confirm that the code 33 is not outputted any more.



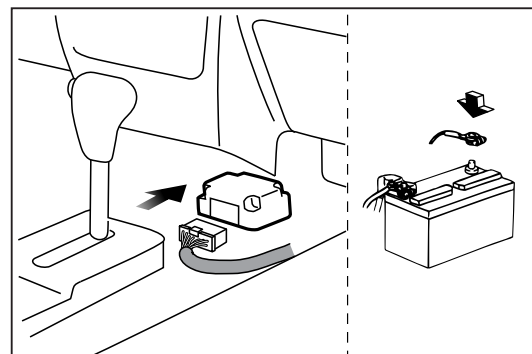
MBE00359-00325



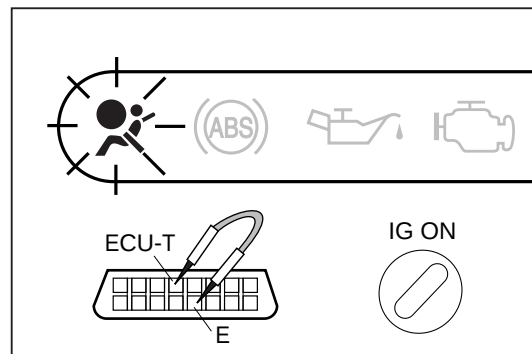
MBE00360-00326



MBE00361-00327



MBE00362-00328



MBE00363-00329

<DIAGNOSIS CODE 34>

WARNING:

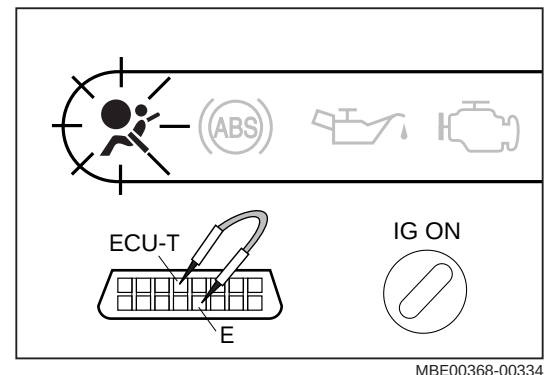
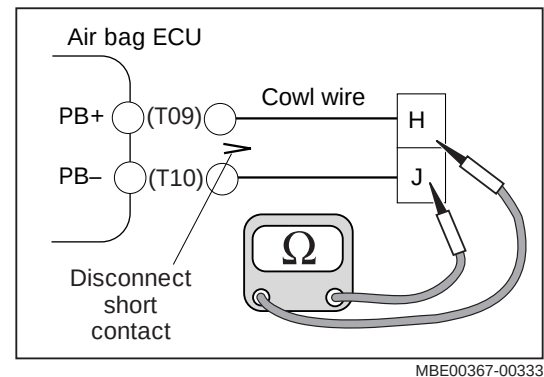
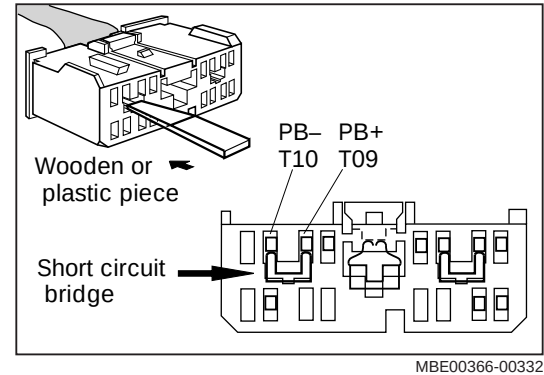
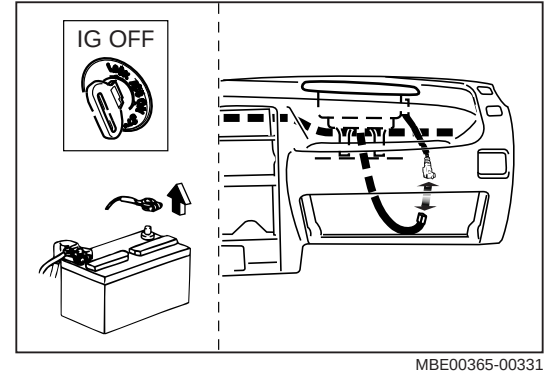
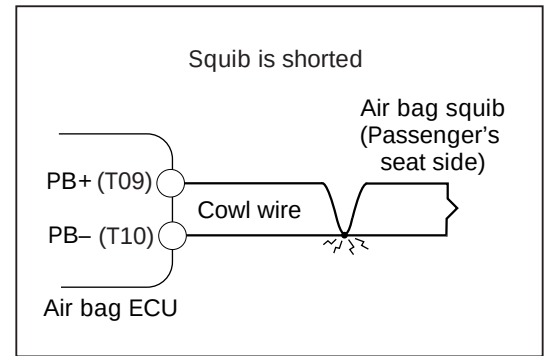
- Be sure to read "IMPORTANT SAFETY NOTICE", page BE-74 - 75, before handling the air bag components and observe every notice during work.

NOTE:

- As regards the removal and installation procedures for the air bag related parts, refer to page BE-79 - 87 of this service manual.

Inspection

- Turn OFF the ignition switch and detach the negative (-) terminal of the battery cable. Then wait for at least 90 seconds.
- Disconnect the connector which connects the wire harness of the passenger's side air bag unit and the cowl wire.
- Remove the computer cover. Disconnect the connector at the vehicle wire harness side from the air bag ECU.
- Using a wooden or plastic piece, raise the short circuit bridge at the sections T09 (PB+) and T10 (PB-) of the connector at the vehicle wire harness side which was removed from the ECU. In this way, disconnect the shorted contact points.
- Connect the ohmmeter to the cowl wire terminal. Check to see if any short circuit exists from the air bag ECU to the passenger's side air bag unit via the wire harness.
Between Terminal H and J: No continuity exists.
- After the inspection and installation, cancel the diagnosis code and confirm that the code 34 is not outputted any more.



<DIAGNOSIS CODE 41>

WARNING:

- Be sure to read "IMPORTANT SAFETY NOTICE", page BE-74 - 75, before handling the air bag components and observe every notice during work.

NOTE:

- As regards the removal and installation procedures for the air bag related parts, refer to page BE-79 - 87 of this service manual.

Inspection

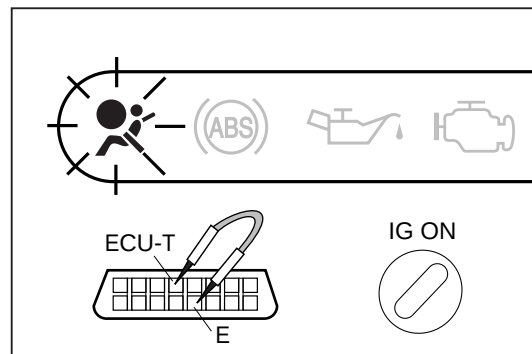
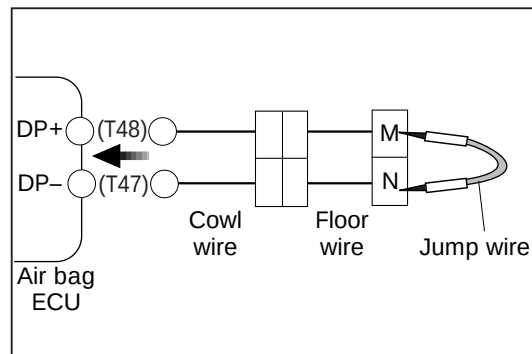
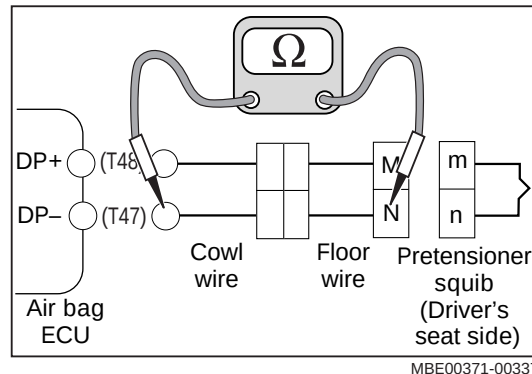
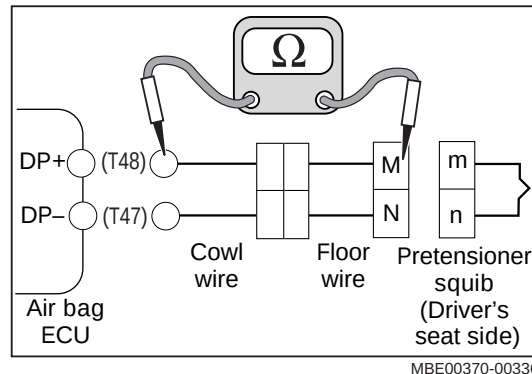
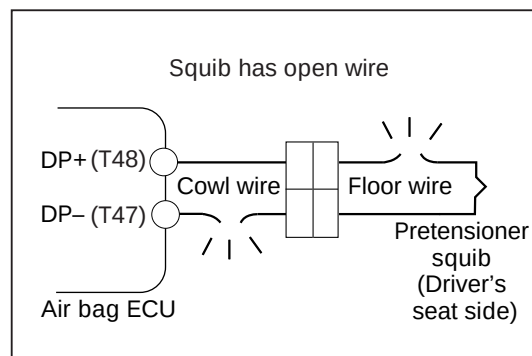
- Turn OFF the ignition switch and detach the negative (-) terminal of the battery cable. Then wait for at least 90 seconds.
- Disconnect the connector from the air bag ECU.
- Disconnect the connector which connects the wire harness of the driver's side seat belt pretensioner and the floor wire No. 1.
- Ensure that the continuity exists between the respective terminals.
 - Between Terminal T48 (DP+) and M (+): Continuity exists.
 - Between Terminal T47 (DP-) and N (-): Continuity exists.
- If there is no open wire, connect both ends of the pretensioner terminals at the floor wire side with a jump wire to short them.
- Connect the connector at the cowl wire harness side and the air bag ECU connector that were disconnected at Step 2.
- Connect the battery negative (-) cable.

- Turn ON the ignition switch and take a reading of the diagnosis code.

CAUTION:

- If the code 44 (short circuit of squib circuit) is indicated, it proves indirectly that there is open wire in the squib of the seat belt pretensioner. Therefore, replace the seat belt assembly.

- After the inspection and installation, cancel the diagnosis code and confirm that the code 41 and 44 are not outputted any more.



<DIAGNOSIS CODE 42>

WARNING:

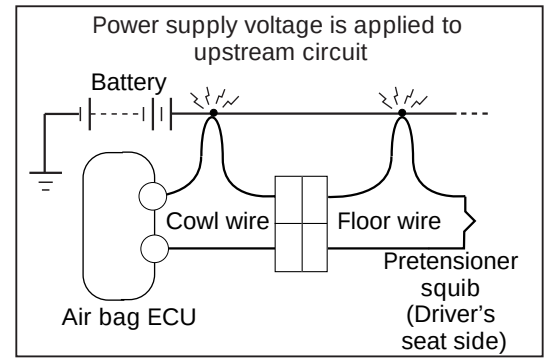
- Be sure to read "IMPORTANT SAFETY NOTICE", page BE-74 - 75, before handling the air bag components and observe every notice during work.
- When this code is indicated, the seat belt pretensioner may operate as soon as the safing sensor at the ECU is turned on. Hence, if this code is indicated, immediately turn off the ignition key switch and proceed to the following steps.

Explosion-preventive measure

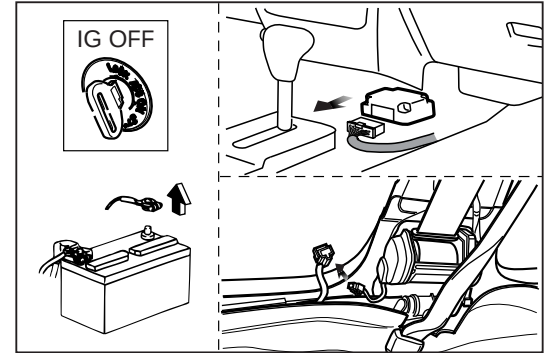
1. Turn OFF the ignition switch and detach the negative (-) terminal of the battery cable. Then wait for at least 90 seconds.
2. Disconnect the connector from the air bag ECU.
3. Disconnect the connector which connects the wire harness of the driver's side seat belt pretensioner and the floor wire No. 1.

Inspection

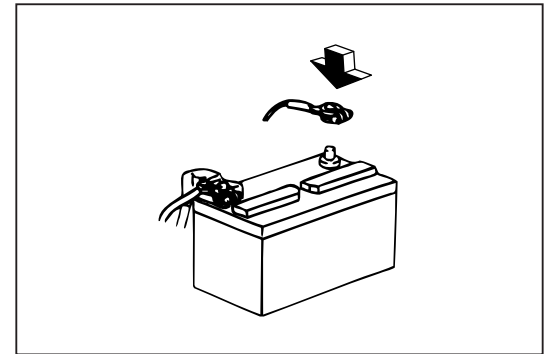
1. Connect the battery negative (-) cable.
2. Turn ON the ignition switch. Ensure that no voltage exists between the terminal and body earth.
 - Between Terminal M and Body Earth:
No voltage exists.
 - Between Terminal N and Body Earth:
No voltage exists.
3. After the inspection and installation, cancel the diagnosis code and confirm that the code 42 is not outputted any more.



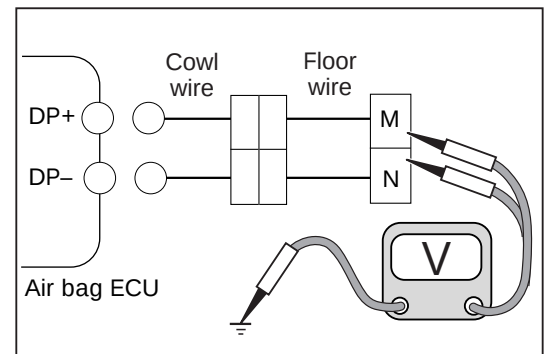
MBE00374-00340



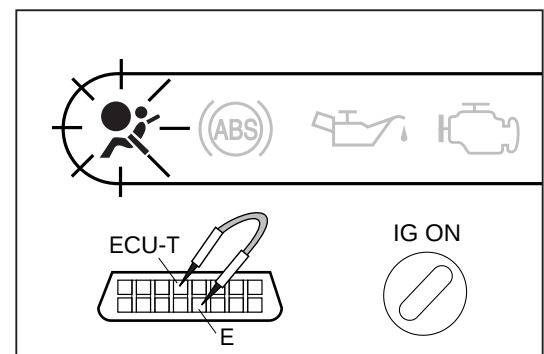
MBE00375-00341



MBE00376-00342



MBE00377-00343



MBE00378-00344

<DIAGNOSIS CODE 43>

WARNING:

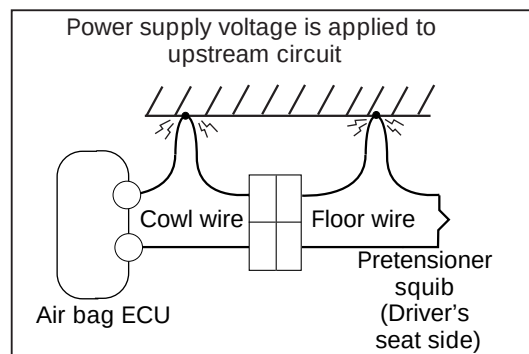
- Be sure to read "IMPORTANT SAFETY NOTICE", page BE-74 - 75, before handling the air bag components and observe every notice during work.

NOTE:

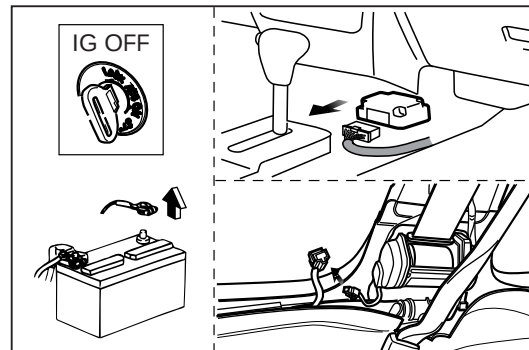
- As regards the removal and installation procedures for the air bag related parts, refer to page BE-79 - 87 of this service manual.

Inspection

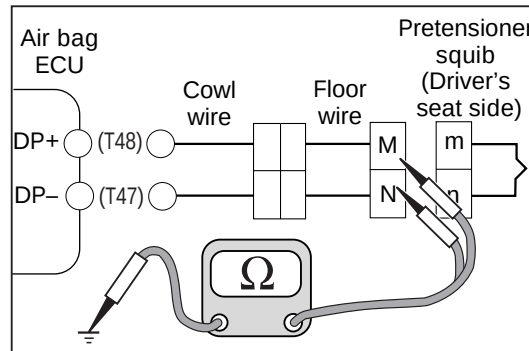
- Turn OFF the ignition switch and detach the negative (-) terminal of the battery cable. Then wait for at least 90 seconds.
- Disconnect the connector from the air bag ECU.
- Disconnect the connector which connects the wire harness of the driver's side seat belt pretensioner and the floor wire No. 1.
- Ensure that the no continuity exists between the floor wire terminal and the body earth.
 - Between Terminal M and Body Earth:
No continuity exists.
 - Between Terminal N and Body Earth:
No continuity exists.
- Connect the connector at the vehicle wire harness side and the air bag ECU connector.
- Connect the battery negative (-) cable.
- Turn ON the ignition switch and take a reading of the diagnosis code.
- After the inspection and installation, cancel the diagnosis code and confirm that the code 43 is not outputted any more.



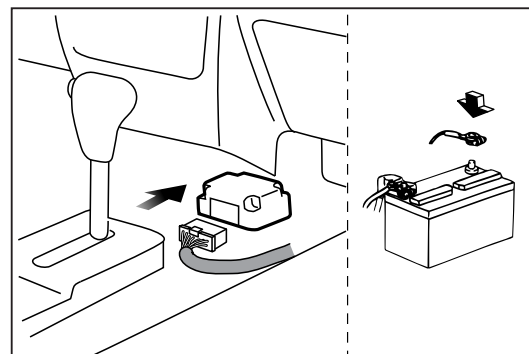
MBE00379-00345



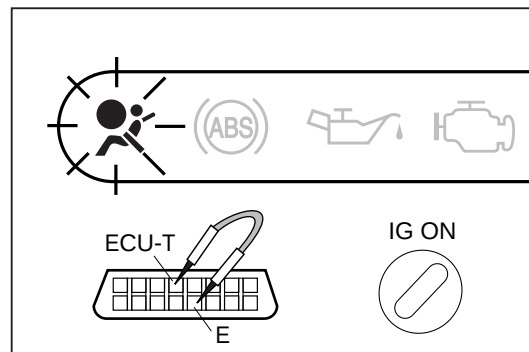
MBE00380-00346



MBE00381-00347



MBE00382-00348



MBE00383-00349

<DIAGNOSIS CODE 44>

WARNING:

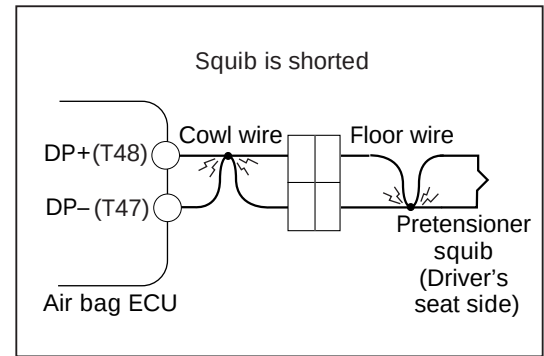
- Be sure to read "IMPORTANT SAFETY NOTICE", page BE-74 - 75, before handling the air bag components and observe every notice during work.

NOTE:

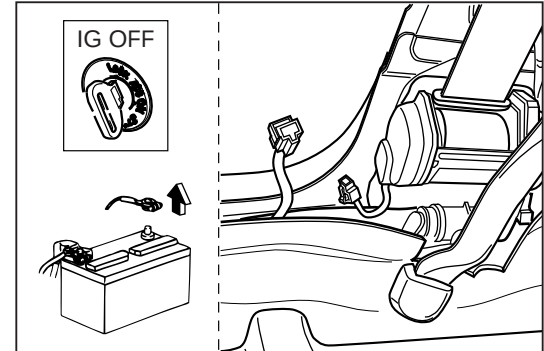
- As regards the removal and installation procedures for the air bag related parts, refer to page BE-79 - 87 of this service manual.

Inspection

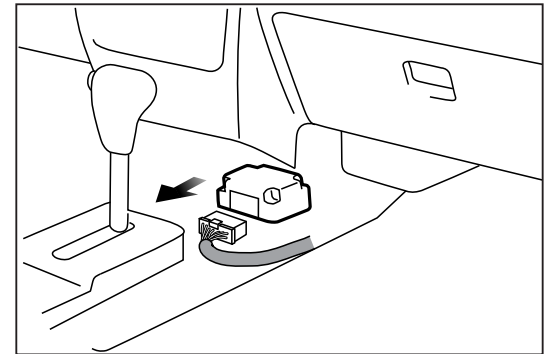
- Turn OFF the ignition switch and detach the negative (-) terminal of the battery cable. Then wait for at least 90 seconds.
- Disconnect the connector which connects the wire harness of the driver's side seat belt pretensioner and the floor wire No. 1.
- Remove the computer cover. Disconnect the connector at the vehicle wire harness side from the air bag ECU.
- Connect the ohmmeter to the floor wire terminal. Check to see if any short circuit exists from the air bag ECU to the seat belt pretensioner via the wire harness.
Between Terminal M and N: No continuity exists.
- After the inspection and installation, cancel the diagnosis code and confirm that the code 44 is not outputted any more.



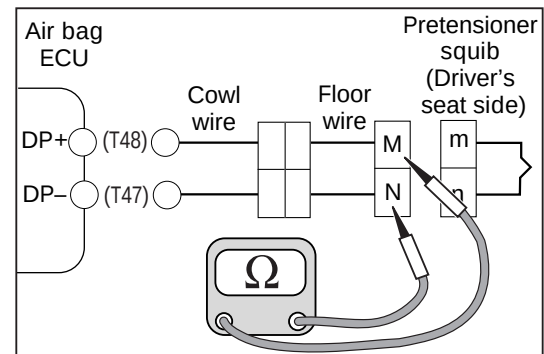
MBE00384-00350



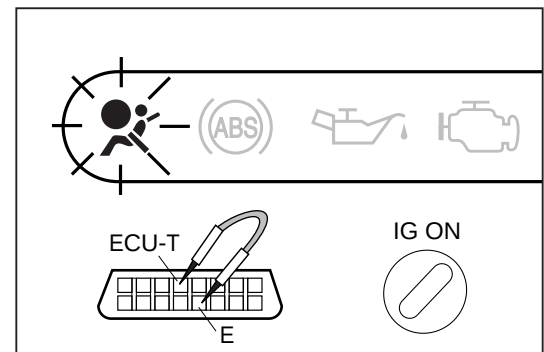
MBE00385-00351



MBE00386-00352



MBE00387-00353



MBE00388-00354

<DIAGNOSIS CODE 51>

WARNING:

- Be sure to read "IMPORTANT SAFETY NOTICE", page BE-74 - 75, before handling the air bag components and observe every notice during work.

NOTE:

- As regards the removal and installation procedures for the air bag related parts, refer to page BE-79 - 87 of this service manual.

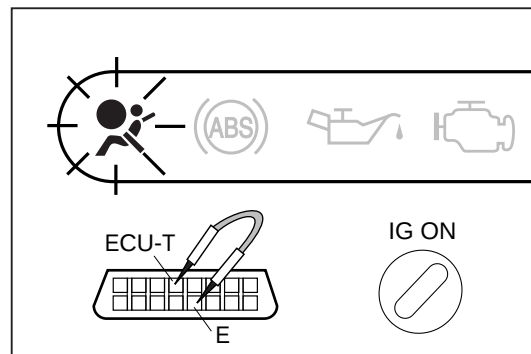
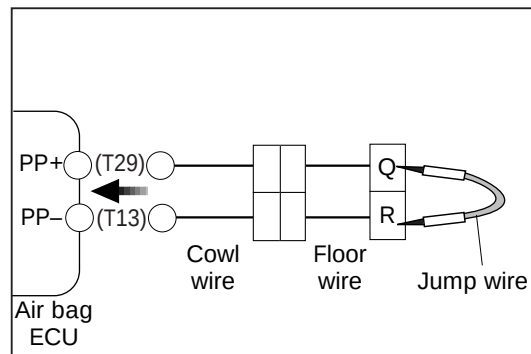
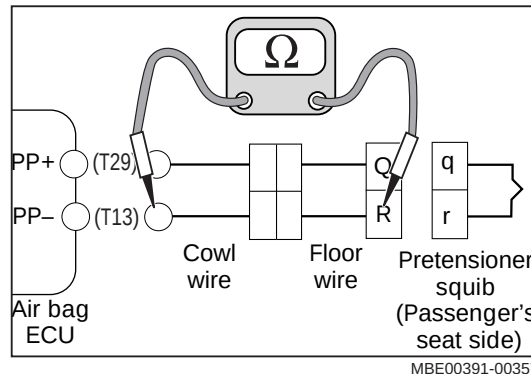
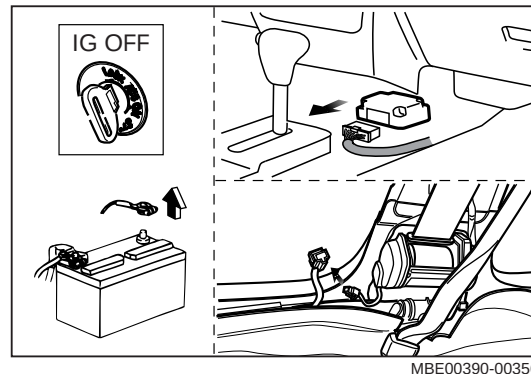
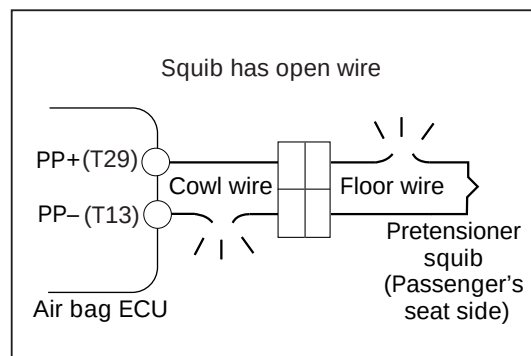
Inspection

- Turn OFF the ignition switch and detach the negative (-) terminal of the battery cable. Then wait for at least 90 seconds.
- Disconnect the connector from the air bag ECU.
- Disconnect the connector which connects the wire harness of the passenger's side seat belt pretensioner and the floor wire No. 1.
- Ensure that the continuity exists between the respective terminals.
 - Between Terminal T29 (PP+) and Q (+): Continuity exists.
 - Between Terminal T13 (PP-) and R (-): Continuity exists.
- If there is no open wire, connect both ends of the pretensioner terminals at the floor wire side with a jump wire to short them.
- Connect the connector at the cowl wire harness side and the air bag ECU connector that were disconnected at Step 2.
- Connect the battery negative (-) cable.

- Turn ON the ignition switch and take a reading of the diagnosis code.

CAUTION:

- If the code 54 (short circuit of squib circuit) is indicated, it proves indirectly that there is open wire in the squib of the seat belt pretensioner. Therefore, replace the seat belt assembly.
- After the inspection and installation, cancel the diagnosis code and confirm that the code 51 and 54 are not outputted any more.



<DIAGNOSIS CODE 52>

WARNING:

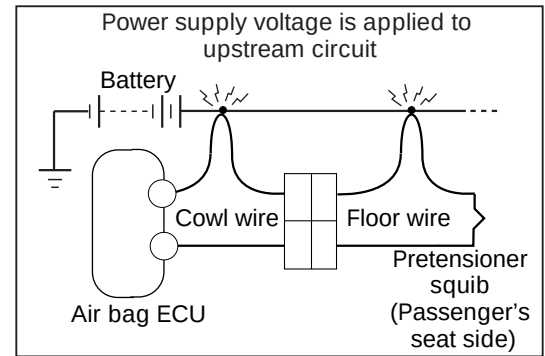
- Be sure to read "IMPORTANT SAFETY NOTICE", page BE-74 - 75, before handling the air bag components and observe every notice during work.
- When this code is indicated, the seat belt pretensioner may operate as soon as the safing sensor at the ECU is turned on. Hence, if this code is indicated, immediately turn off the ignition key switch and proceed to the following steps.

Explosion-preventive measure

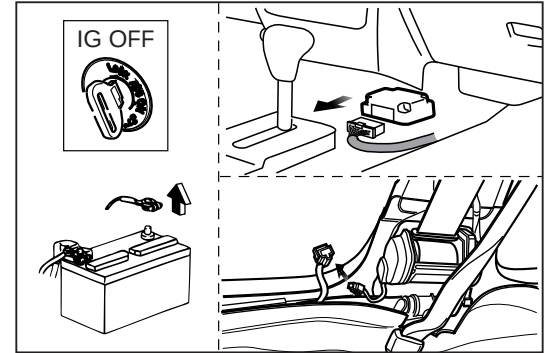
1. Turn OFF the ignition switch and detach the negative (-) terminal of the battery cable. Then wait for at least 90 seconds.
2. Disconnect the connector from the air bag ECU.
3. Disconnect the connector which connects the wire harness of the passenger's side seat belt pretensioner and the floor wire No. 1.

Inspection

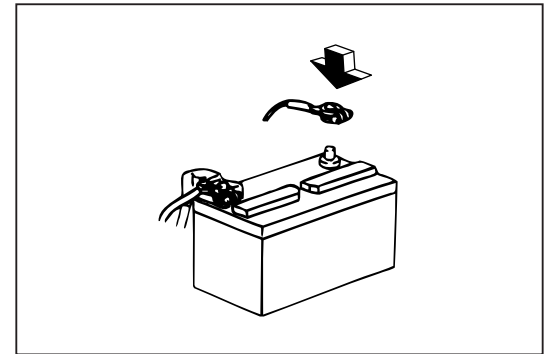
1. Connect the battery negative (-) cable.
2. Turn ON the ignition switch. Ensure that no voltage exists between the terminal and body earth.
 - Between Terminal Q and Body Earth:
No voltage exists.
 - Between Terminal R and Body Earth:
No voltage exists.
3. After the inspection and installation, cancel the diagnosis code and confirm that the code 52 is not outputted any more.



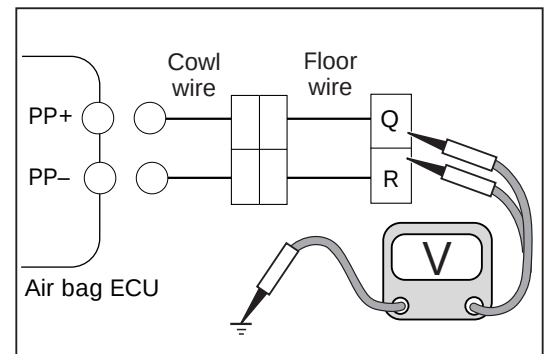
MBE00394-00360



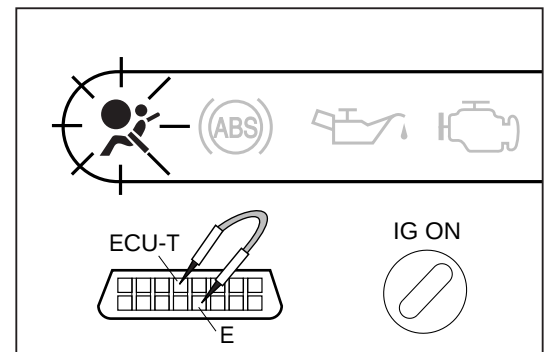
MBE00395-00361



MBE00396-00362



MBE00397-00363



MBE00398-00364

<DIAGNOSIS CODE 53>

WARNING:

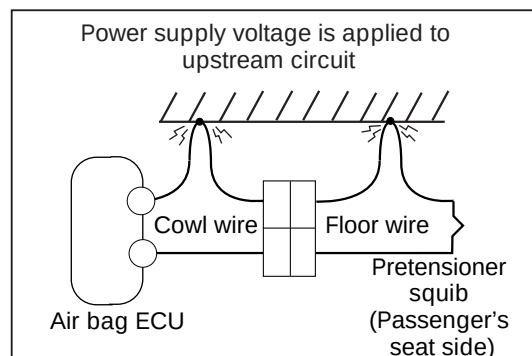
- Be sure to read "IMPORTANT SAFETY NOTICE", page BE-74 - 75, before handling the air bag components and observe every notice during work.

NOTE:

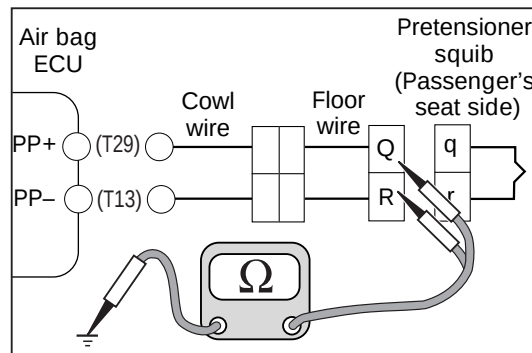
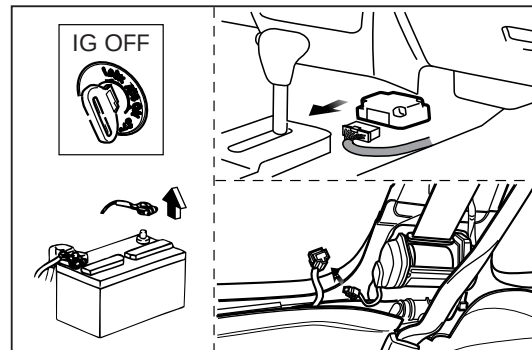
- As regards the removal and installation procedures for the air bag related parts, refer to page BE-79 - 87 of this service manual.

Inspection

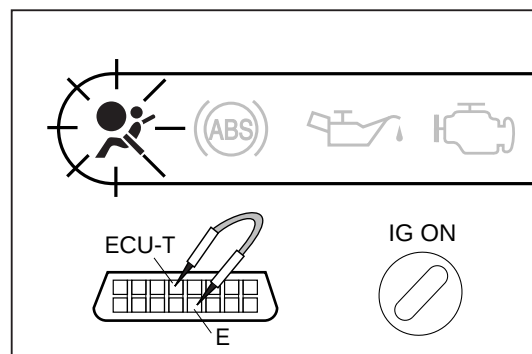
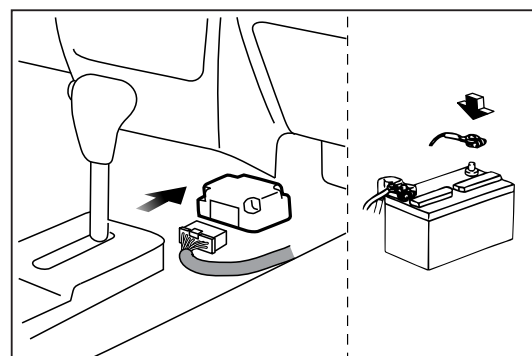
- Turn OFF the ignition switch and detach the negative (-) terminal of the battery cable. Then wait for at least 90 seconds.
- Disconnect the connector from the air bag ECU.
- Disconnect the connector which connects the wire harness of the passenger's side seat belt pretensioner and the floor wire No. 1.
- Ensure that the no continuity exists between the floor wire terminal and the body earth.
Between Terminal Q and Body Earth:
No continuity exists.
Between Terminal R and Body Earth:
No continuity exists.
- Connect the connector at the vehicle wire harness side and the air bag ECU connector.
- Connect the battery negative (-) cable.
- Turn ON the ignition switch and take a reading of the diagnosis code.
- After the inspection and installation, cancel the diagnosis code and confirm that the code 53 is not outputted any more.



MBE00399-00365



MBE00401-00367



MBE00403-00369

<DIAGNOSIS CODE 54>

WARNING:

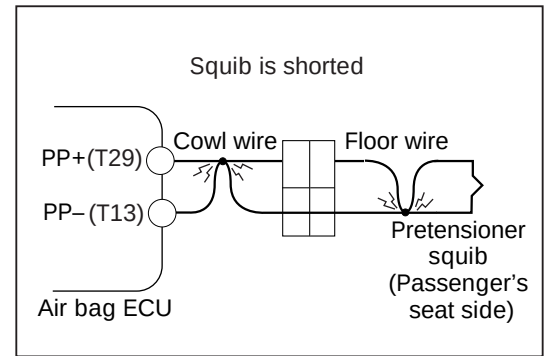
- Be sure to read "IMPORTANT SAFETY NOTICE", page BE-74 - 75, before handling the air bag components and observe every notice during work.

NOTE:

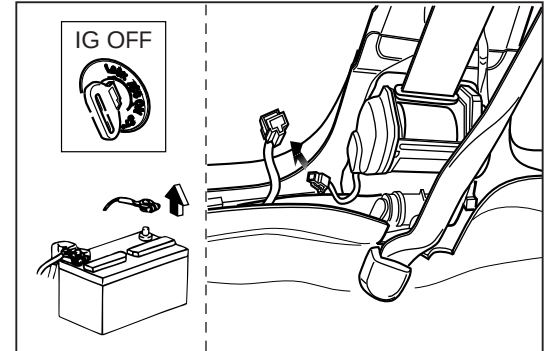
- As regards the removal and installation procedures for the air bag related parts, refer to page BE-79 -87 of this service manual.

Inspection

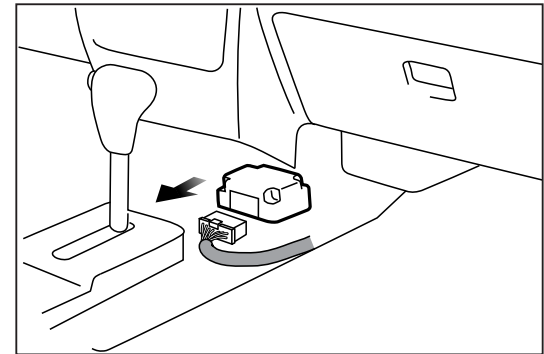
- Turn OFF the ignition switch and detach the negative (-) terminal of the battery cable. Then wait for at least 90 seconds.
- Disconnect the connector which connects the wire harness of the passenger's side seat belt pretensioner and the floor wire No. 1.
- Remove the computer cover. Disconnect the connector at the vehicle wire harness side from the air bag ECU.
- Connect the ohmmeter to the floor wire terminal. Check to see if any short circuit exists from the air bag ECU to the seat belt pretensioner via the wire harness.
Between Terminal Q and R: No continuity exists.
- After the inspection and installation, cancel the diagnosis code and confirm that the code 54 is not outputted any more.



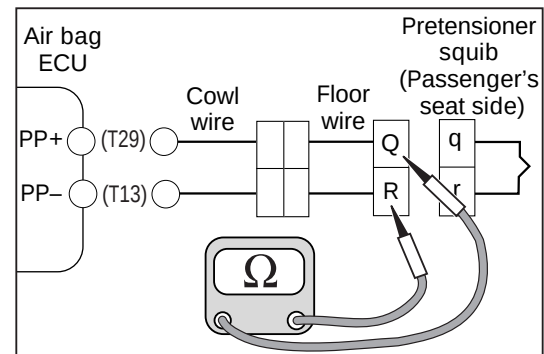
MBE00404-00370



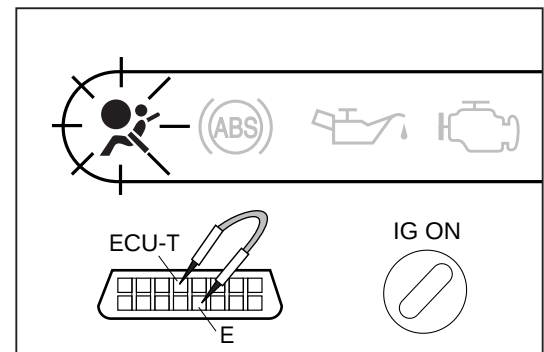
MBE00405-00371



MBE00406-00372



MBE00407-00373

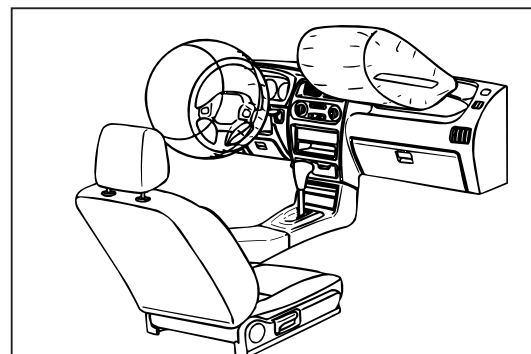


MBE00408-00374

<DIAGNOSIS CODE 61>

NOTE:

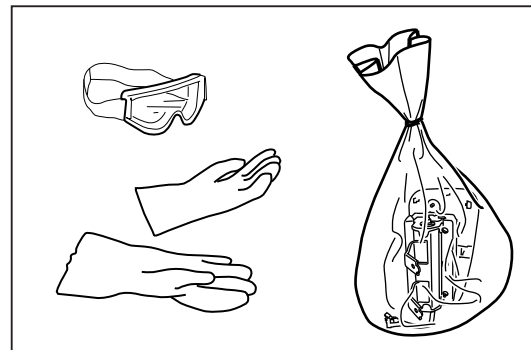
- This code is outputted when the air bag system and pretensioner system were operated. This diagnosis code can not be canceled and the air bag, pretensioner and air bag ECU can not be used again. It is necessary to replace them.



MBE00409-00375

WARNING:

- Be sure to read "IMPORTANT SAFETY NOTICE", page BE-74 - 75, before handling the air bag components and observe every notice during work.
- Refer to the disposal procedure for the air bag and pretensioner at page BE-112.



MBE00410-00376

<DIAGNOSIS CODE 62>

Possible cause for malfunction: Malfunction of ECU

NOTE:

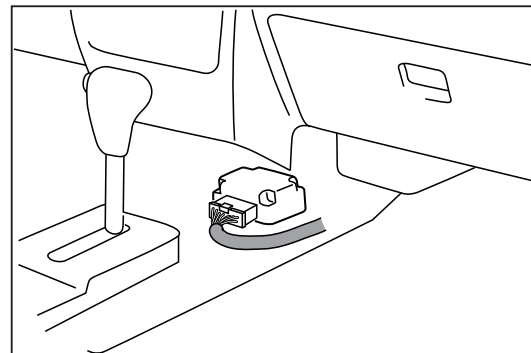
- This code indicates that the ECU is malfunctioning. This diagnosis code can not be canceled. Therefore, the air bag ECU can not be used again. It is necessary to replace the air bag ECU.

WARNING:

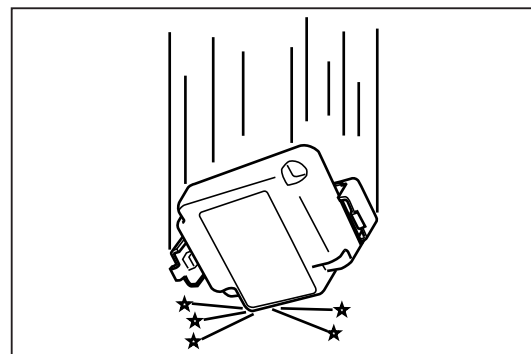
- Be sure to read "IMPORTANT SAFETY NOTICE", page BE-74 - 75, before handling the air bag components and observe every notice during work.

CAUTION:

- The G sensor is built in the air bag ECU. If the ECU is dropped once, the reliability of CPU and G sensor can not be assured. Therefore, the air bag ECU can not be used again. Extreme care must be exercised as to its handling.



MBE00411-00377



MBE00412-00378

DISPOSAL PROCEDURE FOR AIR BAG AND PRETENSIONER

DISPOSAL OF VEHICLES WITH AIR BAG SYSTEM

WARNING:

- When disposing the vehicles with the air bag system, deploy the air bag while it is mounted on the vehicle. As for the pretensioner, also operate the squib before disposing the vehicle.

<Disposal procedure for air bag in driver's seat>

- Turn OFF the ignition switch and detach the negative (-) terminal of the battery cable. Then wait for at least 90 seconds.
- Prepare a 12-V battery for automotive use.
- Remove the computer cover. Disconnect the connector at the vehicle wire harness side from the air bag ECU connector.
- Raise or remove the short circuit bridge at the terminals T11 (DB+) and T12 (DB-) of the disconnected connector, by using an appropriate tool.
- Prepare two wires for automotive use, each of which measures more than six meters long.

WARNING:

- Connect the end of one wire with the end of the other wire so that they may be shorted.
- Connect the wires prepared in Step (5) above to the connector terminals T11 (DB+) and T12 (DB-).

WARNING:

- This connecting operation to the connector should be performed by one person, not by a joint work of plural operators, so as to avoid mistakes.
- During this operation, there is the possibility that the air bag may be deployed accidentally. Therefore, be sure to give a warning to other persons so that they may get out of the vehicle or may be kept away from the area five meters from the vehicle.

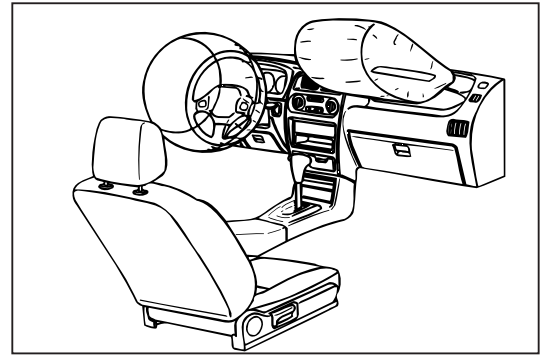
- The shorted section of the wires should be kept five meters or more away from the vehicle, as shown in the figure.

CAUTION:

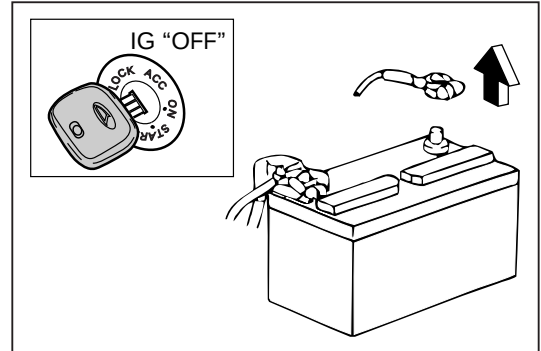
- Be sure to give a warning to other persons about a big noise that will be emitted at the time of the air bag deployment.
- The window glass should be closed in advance.

NOTE:

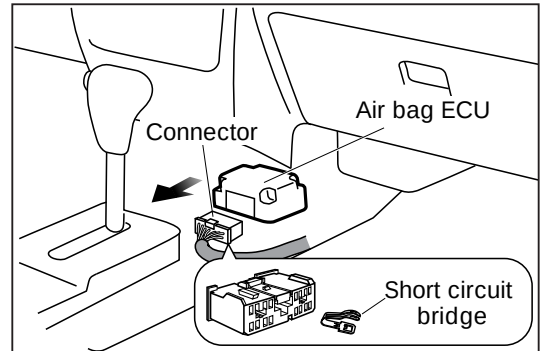
- Concerning the description of open wire of the squib page BE-95, 99, 103 or 107, be sure to temporarily measure a resistance wires as right figure.



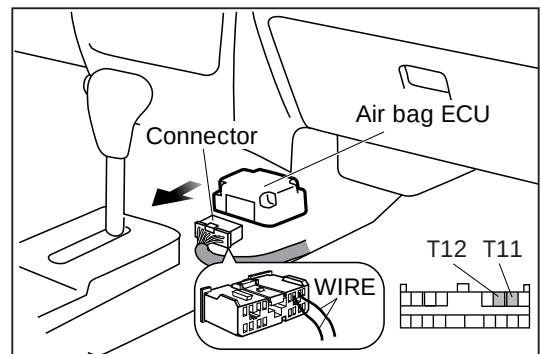
MBE00413-00379



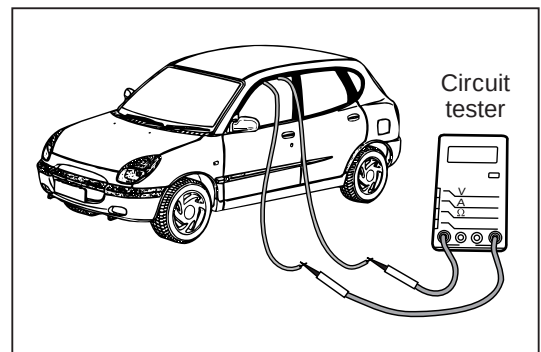
MBE00414-00380



MBE00415-00381



MBE00416-00382



MBE00417-00383

8. Disconnect the wires that have been shorted. Connect one wire to the positive terminal of the battery; the other wire to the negative terminal of the battery, thereby deploying the air bag.

NOTE:

- There is no need for identifying the polarity of the battery.

WARNING:

- Immediately after the deployment of the air bag, the vehicle interior is filled with gas. Therefore, start the operation after gas is diffused.
- Since the metal section of the gas generator is extremely hot, leave it at least for thirty minutes to allow it to cool naturally.

9. After the deployed air bag cools down completely, it shall be sealed in a bag to be disposed.

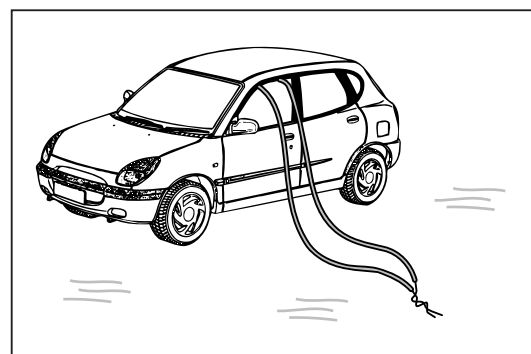
WARNING:

- Be sure to wear protective goggles and gloves during this operation. After completion of the operation, gargle and wash your hands. If you feel any abnormality in your respiratory organs, follow the instruction of a doctor.

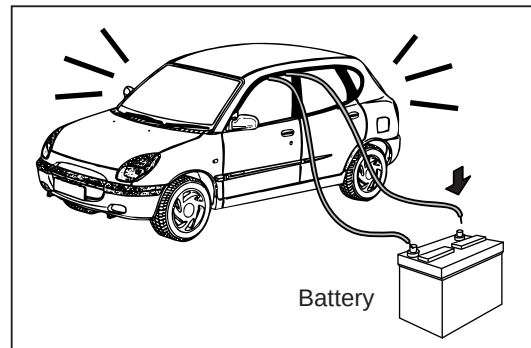
<Disposal procedure of air bag at front passenger seat>

1. Turn OFF the ignition switch and detach the negative (-) terminal of the battery cable. Then wait for at least 90 seconds.
2. Prepare a 12-V battery for automotive use.

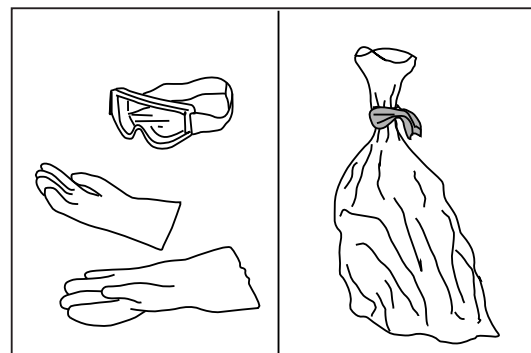
3. Remove the computer cover. Disconnect the connector at the vehicle wire harness side from the air bag ECU connector.
4. Raise or remove the short circuit bridge at the terminals T09 (PB+) and T10 (PB-) of the disconnected connector, by using an appropriate tool.
5. Prepare two wires for automotive use, each of which measures more than six meters long. Connect the end of one wire with the end of the other wire so that they may be shorted.



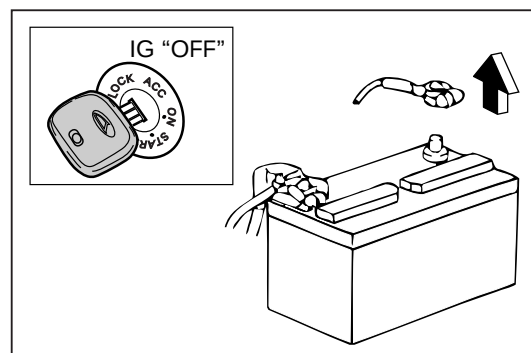
MBE00418-00384



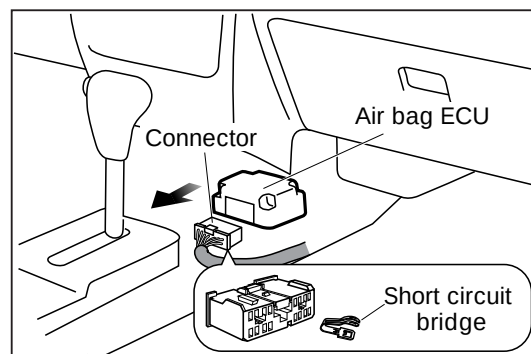
MBE00419-00385



MBE00420-00386



MBE00421-00387

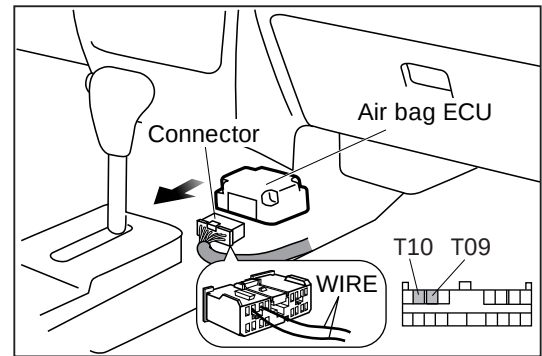


MBE00422-00388

6. Connect the wires prepared in Step (5) above to the connector terminals T09 (PB+) and T10 (PB-).

WARNING:

- This connecting operation to the connector should be performed by one person, not by a joint work of plural operators, so as to avoid mistakes.
- During this operation, there is the possibility that the air bag may be deployed accidentally. Therefore, be sure to give a warning to other persons so that they may get out of the vehicle or may be kept away from the area five meters from the vehicle.

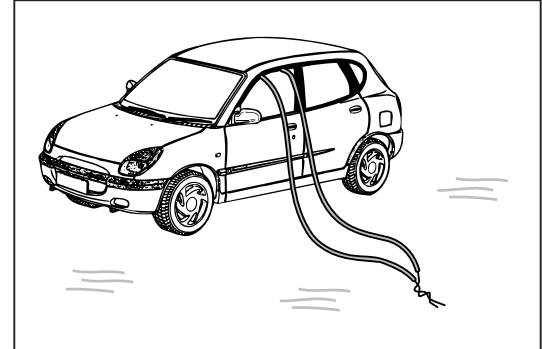


MBE00423-00389

7. The shorted section of the wires should be kept five meters or more away from the vehicle, as shown in the figure.

CAUTION:

- Be sure to give a warning to other persons about a big noise that will be emitted at the time of the air bag deployment.
- The window glass should be closed in advance.

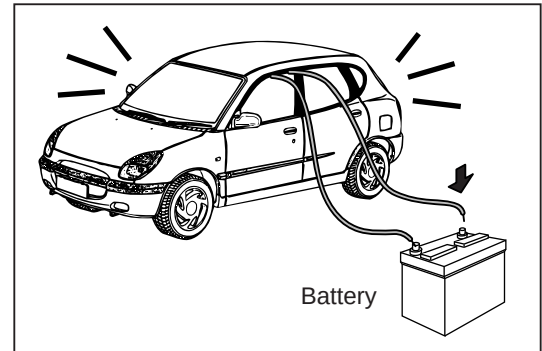


MBE00424-00390

8. Disconnect the wires that have been shorted. Connect one wire to the positive terminal of the battery; the other wire to the negative terminal of the battery, thereby deploying the air bag.

NOTE:

- There is no need for identifying the polarity of the battery.



MBE00425-00391

WARNING:

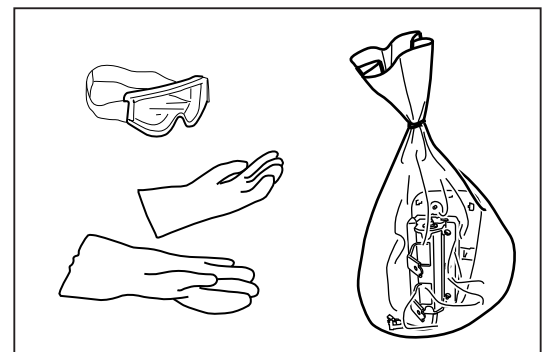
- Immediately after the deployment of the air bag, the vehicle interior is filled with gas. Therefore, start the operation after gas is diffused.
- Since the metal section of the gas generator is extremely hot, leave it at least for thirty minutes to allow it to cool naturally.

MBE00426-00000

9. After the deployed air bag cools down completely, it shall be sealed in a bag to be disposed.

WARNING:

- Be sure to wear protective goggles and gloves during this operation. After completion of the operation, gargle and wash your hands. If you feel any abnormality in your respiratory organs, follow the instruction of a doctor.



MBE00427-00392

<Disposal procedure of seat belt pretensioner>

1. Turn OFF the ignition switch and detach the negative (-) terminal of the battery cable. Then wait for at least 90 seconds.
2. Prepare a 12-V battery for automotive use.
3. As for the seat belt in the driver's seat, fasten it by inserting the tongue plate into the buckle in the same way as the seat belt is fastened normally.
4. Remove the computer cover. Disconnect the connector at the vehicle wire harness side from the air bag ECU connector.
5. Prepare two wires for automotive use, each of which measures more than six meters long. Connect the end of one wire with the end of the other wire so that they may be shorted.
6. Connect the wires prepared in Step (5) above to the connector terminals.
 Driver's Seat Side: T48 (DP+) and T47 (DP-)
 Passenger's Seat Side: T29 (PP+) and T13 (PP-)

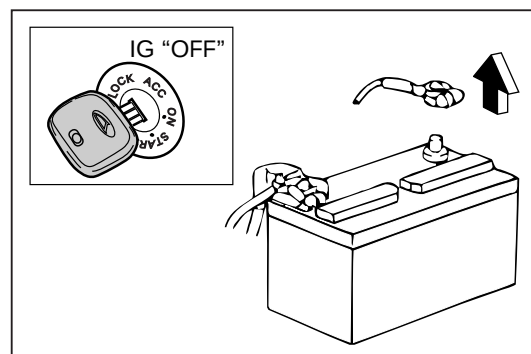
WARNING:

- This connecting operation to the connector should be performed by one person, not by a joint work of plural operators, so as to avoid mistakes.
- During this operation, there is the possibility that the air bag may be deployed accidentally. Therefore, be sure to give a warning to other persons so that they may get out of the vehicle or may be kept away from the area five meters from the vehicle.

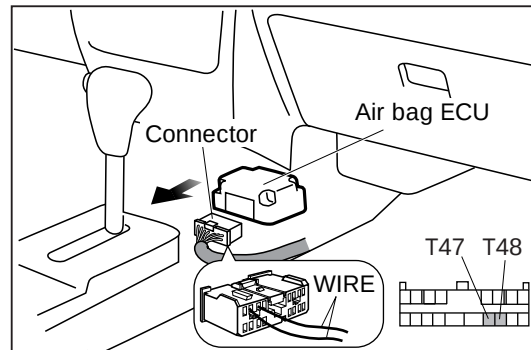
7. The shorted section of the wires should be kept five meters or more away from the vehicle, as shown in the figure.

CAUTION:

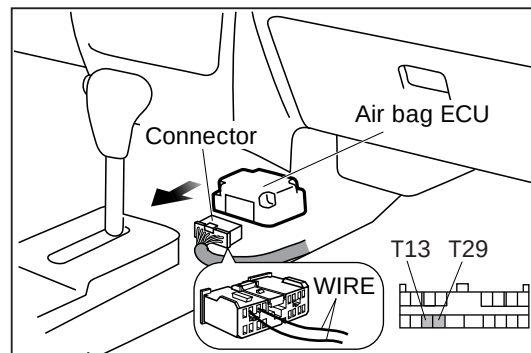
- Be sure to give a warning to other persons about a big noise that will be emitted at the time of the air bag deployment.
- The window glass should be closed in advance.



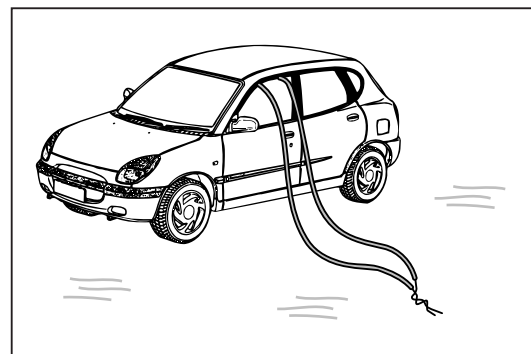
MBE00428-00393



MBE00429-00394



MBE00430-00395



MBE00431-00396

MBE00432-00000

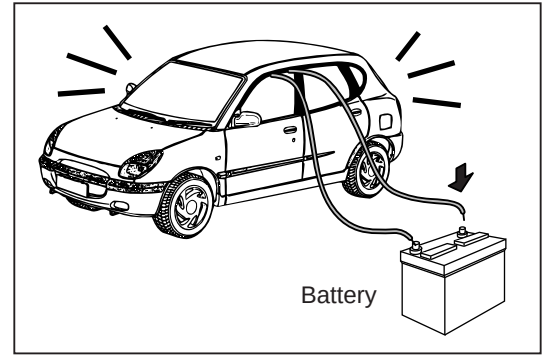
8. Disconnect the wires that have been shorted. Connect one wire to the positive terminal of the battery; the other wire to the negative terminal of the battery, thereby deploying the air bag.

NOTE:

- There is no need for identifying the polarity of the battery.

WARNING:

- Immediately after the deployment of the air bag, the vehicle interior is filled with gas. Therefore, start the operation after gas is diffused.
- Since the metal section of the gas generator is extremely hot, leave it at least for thirty minutes to allow it to cool naturally.

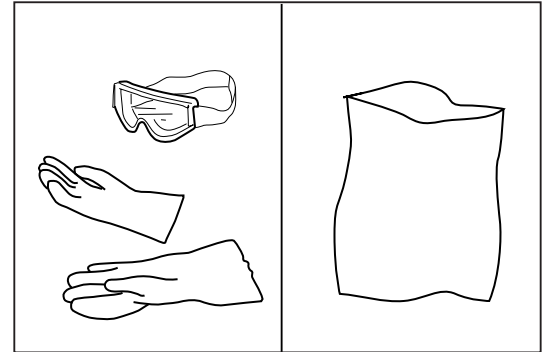


MBE00433-00397

9. After the operated seat belt pretensioner cools down completely, it shall be sealed in a bag to be disposed.

WARNING:

- Be sure to wear protective goggles and gloves during this operation. After completion of the operation, gargle and wash your hands. If you feel any abnormality in your respiratory organs, follow the instruction of a doctor.



MBE00435-00398

DISPOSAL OF AIR BAG AND SEAT BELT PRETENSIONER

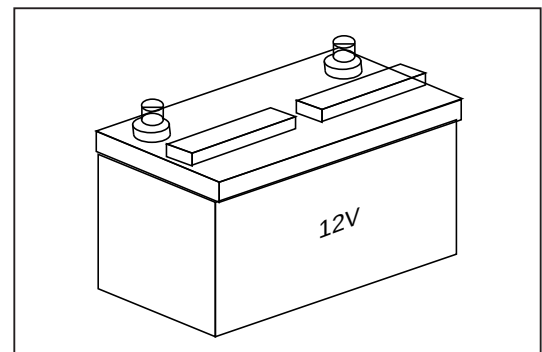
CAUTION:

- It is the best to dispose the air bag and seat belt pretensioner when they are installed in the vehicle. However, if it is unavoidable to perform the pre-treatment for disposal for the unit itself, follow the procedure given below.

NOTE:

- Items to be prepared.

1. 12-V battery for automotive use



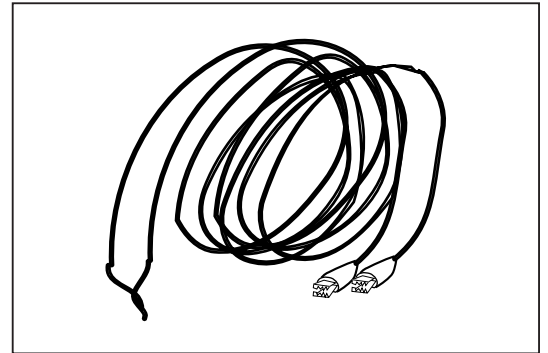
MBE00436-00399

- Two wires for automotive use, each measuring at least 10 meters long.

An alligator clip is connected to each end of these wires.

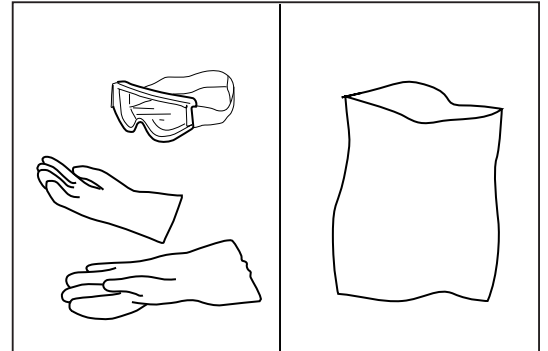
WARNING:

- Connect the end of one wire with the end of the other wire so that they may be shorted.
- No switch shall be installed to these wires so as to prevent accidents.



MBE00437-00400

- Protective goggles and gloves
- A bag for disposal

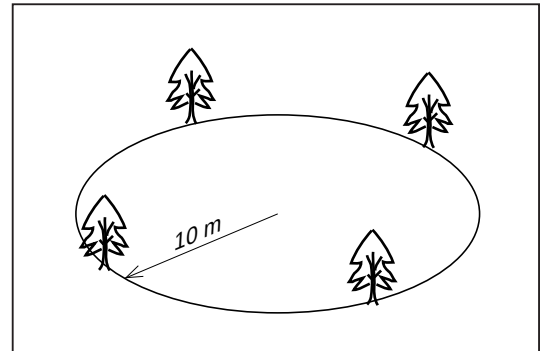


MBE00438-00401

- A spacious place whose radius is at least 10 meters

CAUTION:

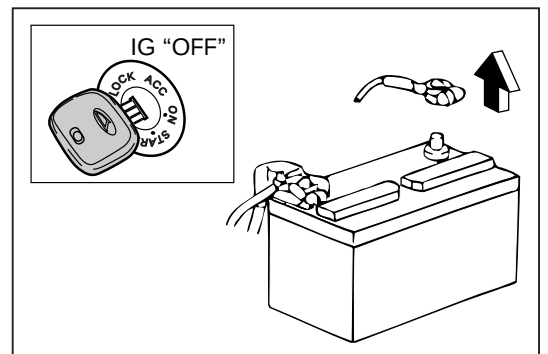
- Do not perform the pre-treatment for disposal for the air bag and seat belt pretensioner on a windy or rainy day.



MBE00439-00402

<Disposal procedure for air bag in driver's seat (steering wheel pad)>

- Turn OFF the ignition switch. Disconnect the negative terminal of the battery from the vehicle cable terminal.

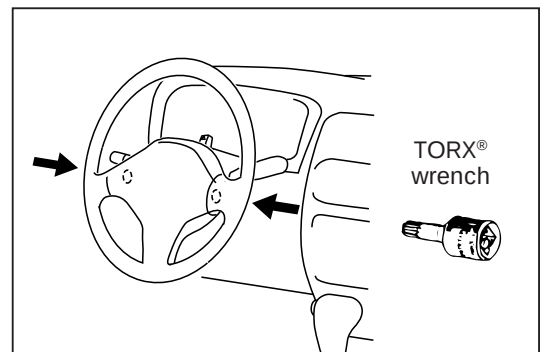


MBE00440-00403

- Turn OFF the ignition switch and wait for at least 90 seconds. Remove the steering wheel pad assembly from the steering wheel.

NOTE:

- The steering wheel pad assembly is installed to the steering wheel by means of TORX® bolts.



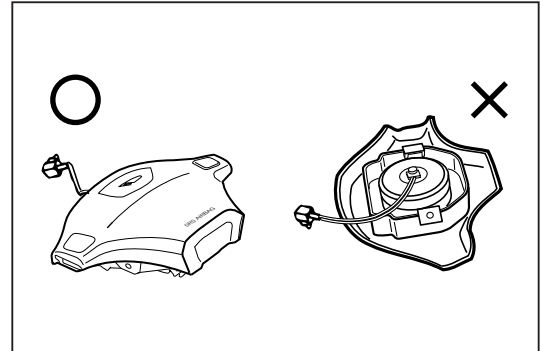
MBE00441-00404

3. Disconnect the connector of the steering wheel pad assembly from the roll connector. Disconnect the connector for horn.

MBE00442-00000

WARNING:

- When storing the steering pad assembly temporarily, be sure to place it with the pad surface facing upward on a flat place which is not exposed to direct sun rays. Also the storing place shall be away from water and rain.

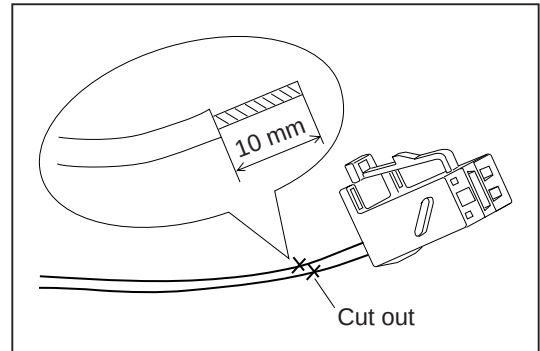


MBE00443-00405

4. Cut the wires at the squib connector of the steering pad assembly. Remove the covering of each end of the two cut wires about 10 mm.

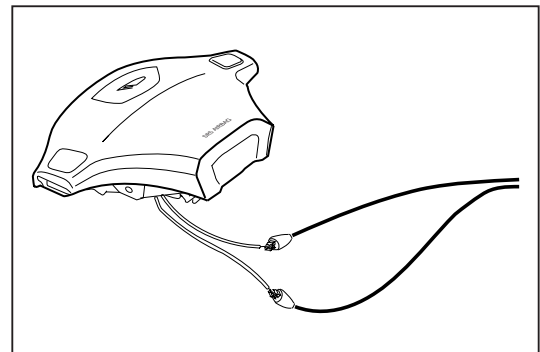
WARNING:

- Connect the sections each other whose wire coverings have been removed so that they may be shorted.



MBE00444-00406

5. Place the steering pad assembly at the center of the prepared place. At this time, the pad surface should face upward.
6. Disconnect the shorted squib wires of the steering pad assembly. Connect the alligator clip attached to the end of the prepared 10 m-long wire to each squib wire.

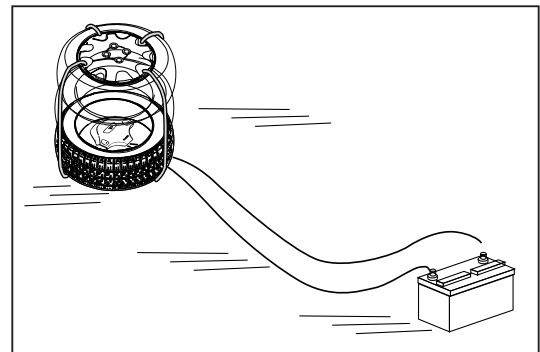


MBE00445-00407

7. Place the prepared 12-V battery for automotive use at a corner of the place. Bring nearby the shorted ends of the wires which are extended from the steering pad assembly.

WARNING:

- Be sure to give a warning to other persons about a big noise that will be emitted at the time of the air bag deployment.



MBE00446-00408

8. Disconnect the wire ends that have been shorted. Connect one wire to the positive terminal of the battery; the other wire to the negative terminal of the battery, thereby deploying the air bag.

NOTE:

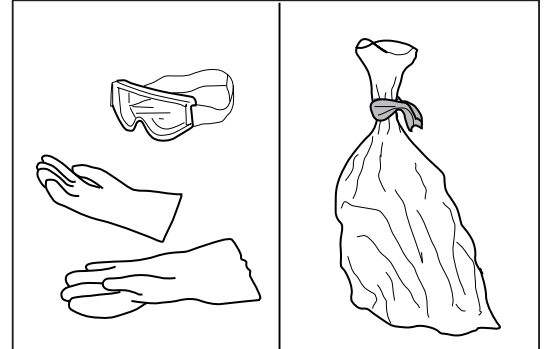
- There is no need for identifying the polarity of the battery.

MBE00447-00000

9. Since the metal section of the gas generator is extremely hot, leave it at least for thirty minutes to allow it to cool naturally. After the deployed air bag cools down completely, it shall be sealed in a bag to be disposed.

WARNING:

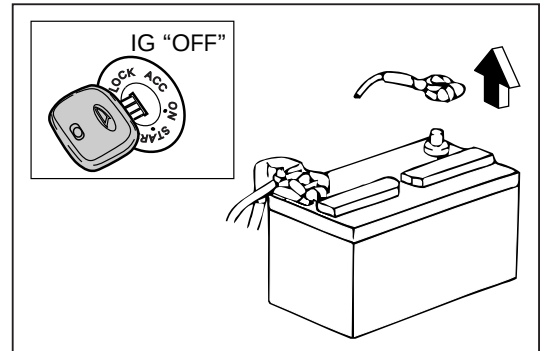
- Be sure to wear protective goggles and gloves during this operation. After completion of the operation, gargle and wash your hands. If you feel any abnormality in your respiratory organs, follow the instruction of a doctor.



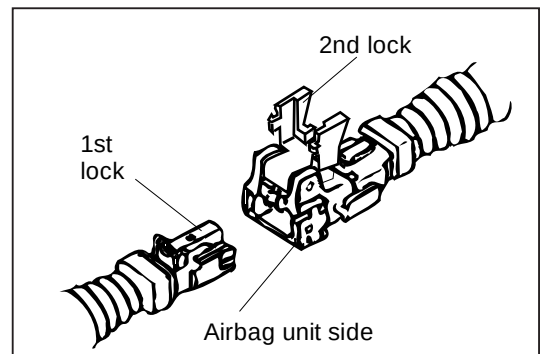
MBE00448-00409

<Disposal procedure of air bag in front passenger seat>

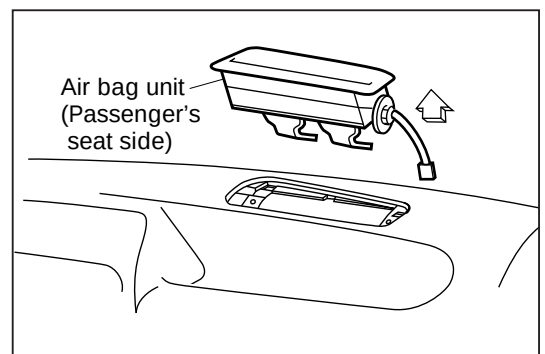
1. Turn OFF the ignition switch. Disconnect the vehicle battery cable terminal from the negative terminal of the battery.
2. Turn OFF the ignition switch and wait for 90 seconds. Disconnect the connector which connects the wire harness of the air bag unit and the wire cowl.
3. Remove the air bag unit assembly in the front passenger seat.



MBE00449-00410



MBE00450-00411

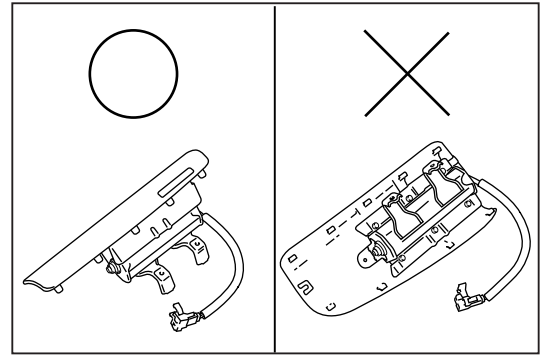


MBE00451-00412

BE-120

WARNING:

- When storing the air bag unit assembly in the front passenger seat temporarily, be sure to place it with the pad surface facing upward on a flat place which is not exposed to direct sun rays. Also the storing place shall be away from water and rain.

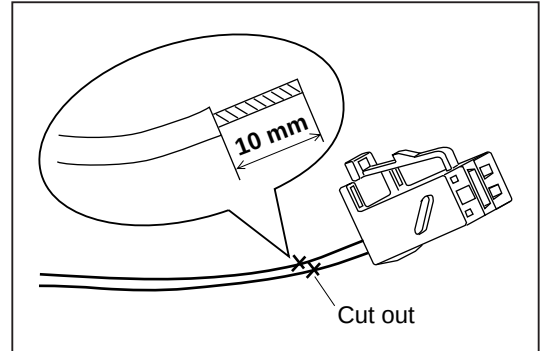


MBE00452-00413

- Cut the wires at the squib connector of the air bag unit assembly. Remove the covering of the ends of the two cut wires about 10 mm.

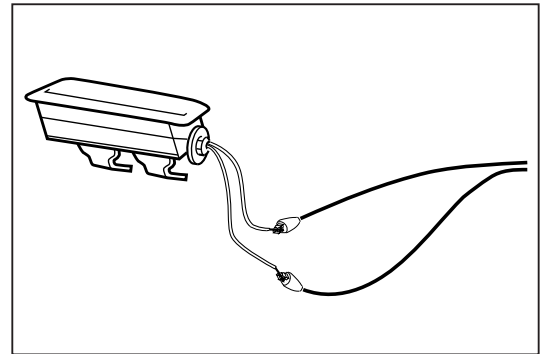
WARNING:

- Connect the sections each other whose wire coverings have been removed so that they may be shorted.



MBE00453-00414

- Place the air bag unit assembly at the center of the prepared place. At this time, the pad surface should face upward.
- Disconnect the shorted squib wires of the air bag unit assembly. Connect the alligator clip attached to the end of the prepared 10 m-long wire to each squib wire.

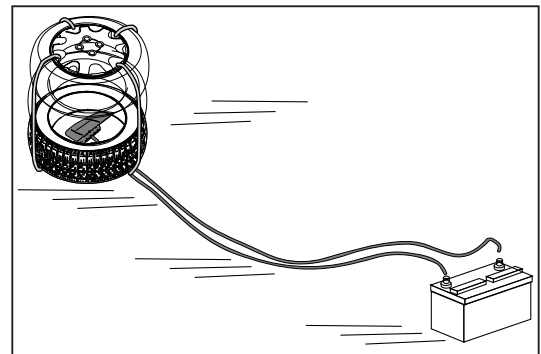


MBE00454-00415

- Place the prepared 12-V battery for automotive use at a corner of the place. Bring nearby the shorted ends of the wires which are extended from the air bag unit assembly.

WARNING:

- The pad assembly should be secured by piled up tires, as shown in the figure.
- Be sure to give a warning to other persons about a big noise that will be emitted at the time of the air bag deployment.



MBE00455-00416

- Disconnect the wire ends that have been shorted. Connect one wire to the positive terminal of the battery; the other wire to the negative terminal of the battery, thereby deploying the air bag.

NOTE:

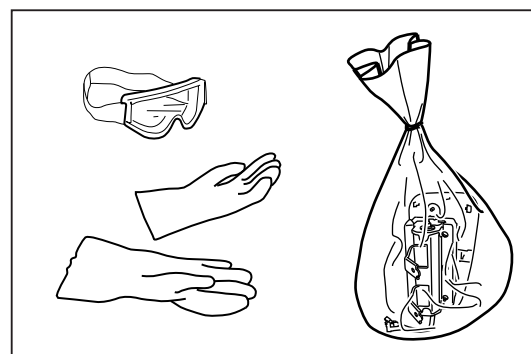
- There is no need for identifying the polarity of the battery.

MBE00456-00000

9. Since the metal section of the gas generator is extremely hot, leave it at least for thirty minutes to allow it to cool naturally. After the deployed air bag cools down completely, it shall be sealed in a bag to be disposed.

WARNING:

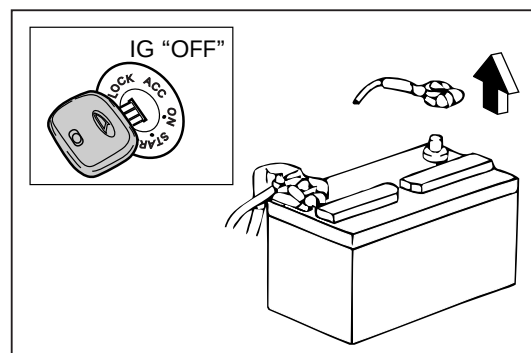
- Be sure to wear protective goggles and gloves during this operation. After completion of the operation, gargle and wash your hands. If you feel any abnormality in your respiratory organs, follow the instruction of a doctor.



MBE00457-00417

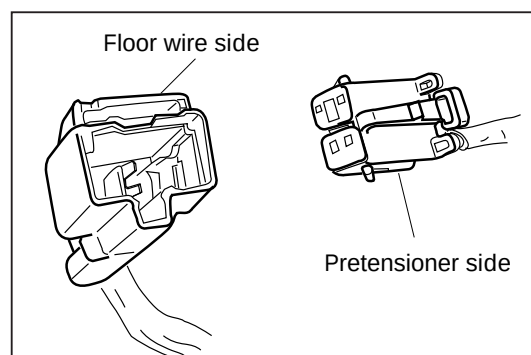
<Disposal procedure for seat belt pretensioner>

1. Turn OFF the ignition switch. Disconnect the negative terminal of the battery from the vehicle cable terminal.



MBE00458-00418

2. Turn OFF the ignition switch and wait at least for 90 seconds. Remove the center pillar lower cover. Disconnect the connector which connects the wire harness of the seat belt pretensioner and the wire cowl.

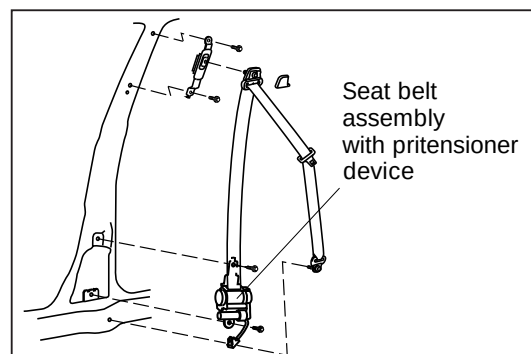


MBE00459-00419

3. Remove the seat belt pretensioner assembly.

WARNING:

- When storing the seat belt pretensioner assembly, be sure to place it on a flat place which is not exposed to direct sun rays. Also the storing place shall be away from water and rain.



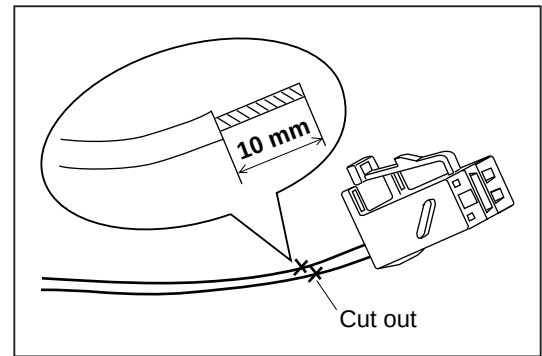
MBE00460-00420

BE-122

4. Cut the wires at the squib connector of the seat belt pretensioner assembly. Remove the covering of the ends of the two cut wires about 10 mm.

WARNING:

- Connect the sections each other whose wire coverings have been removed so that they may be shorted.

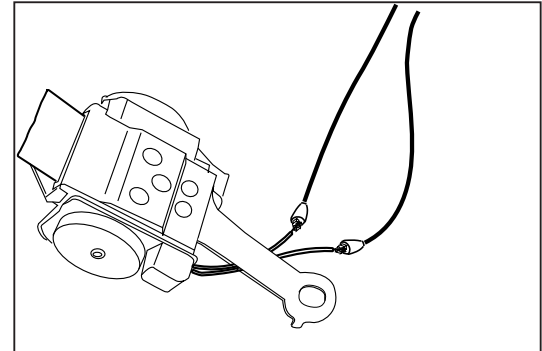


MBE00461-00421

5. Place the seat belt pretensioner assembly at the center of the prepared place.

WARNING:

- The seat belt should be retracted in advance. The portion that has not been retracted should be cut by scissors.



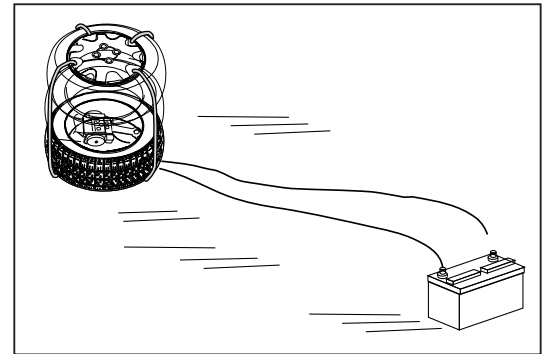
MBE00462-00422

6. Disconnect the shorted squib wires of the seat belt pretensioner assembly. Connect the alligator clip attached to the end of the prepared 10 m-long wire to each squib wire.

7. Place the prepared 12-V battery for automotive use at a corner of the place. Bring nearby the shorted ends of the wires which is extended from the seat belt pretensioner assembly.

WARNING:

- The seat belt pretensioner assembly should be secured by piled up tires, as shown in the figure.
- Be sure to give a warning to other persons about a big noise that will be emitted at the time of the air bag deployment.



MBE00463-00423

8. Disconnect the wire ends that have been shorted. Connect one wire to the positive terminal of the battery; the other wire to the negative terminal of the battery, thereby operating the seat belt pretensioner assembly.

NOTE:

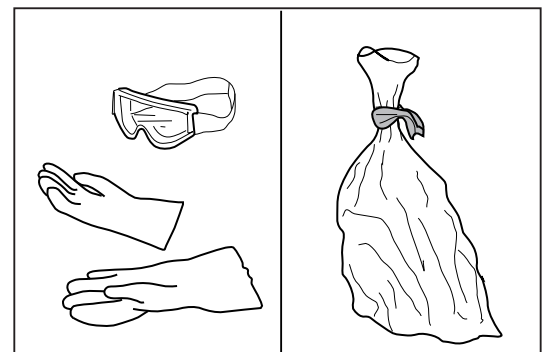
- There is no need for identifying the polarity of the battery.

MBE00464-00000

9. After the operation of the seat belt pretensioner, the metal section of the gas generator is extremely hot. Therefore, leave it at least for thirty minutes to allow it to cool naturally. After it cools down completely, it shall be sealed in a bag to be disposed.

WARNING:

- Be sure to wear protective goggles and gloves during this operation. After completion of the operation, gargle and wash your hands. If you feel any abnormality in your respiratory organs, follow the instruction of a doctor.



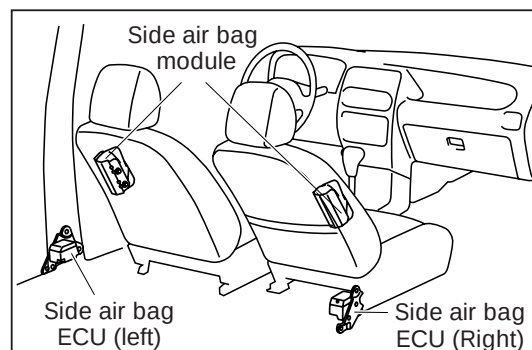
MBE00465-00424

SRS SIDE AIR BAG SYSTEM

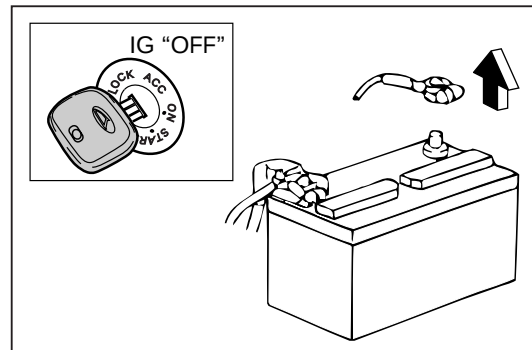
IMPORTANT SAFETY NOTICE

WARNING:

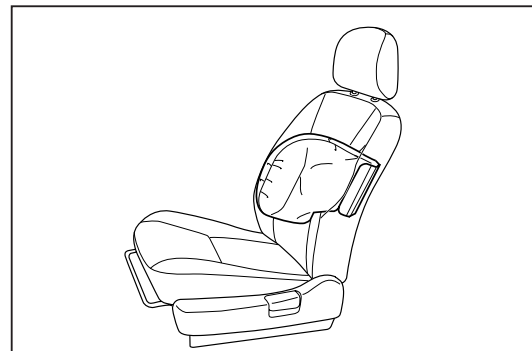
- Make certain to perform operations of the side air bag according to the correct procedure and method. Failure to observe this caution may cause the side air bag to operate unexpectedly during the operation, resulting in serious accidents. Furthermore, if wrong repairs should be performed, there are the possibilities that the side air bag fail to operate when required.
- Before servicing the air bag components or the seat belt pretensioner device, perform the following procedures:
 - (1) Check the status of air bag warning lamp.
 - (2) Read the diagnosis codes and put it on record.
 - (3) Turn OFF the ignition switch and detach the negative (–) terminal of the battery cable. Then, wait for at least 90 seconds to prevent the air bag from the deployment.
- It should be noted that, when the negative (–) terminal of the battery is detached, the memory of the ECU control of the other system will be erased at the same time.
- Never bring your face, arms and body to the front of the side air bag unit during the removal.
- Store the air bag components at a low place close to the ground level where no heat source (85°C or more) exists in close proximity, and store at a place where is not exposed to direct sun rays.
- If the side air bag components are dropped, be sure to dispose of the unit according to the disposal procedure. Be sure to mount a new unit to the vehicle.



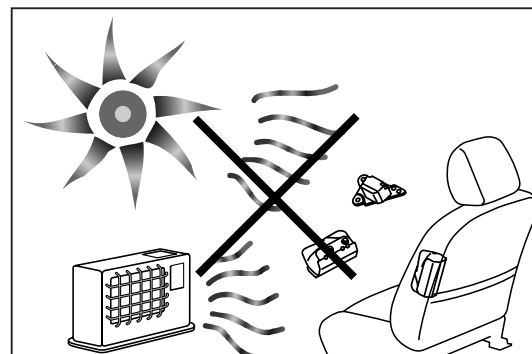
MBE00466-00425



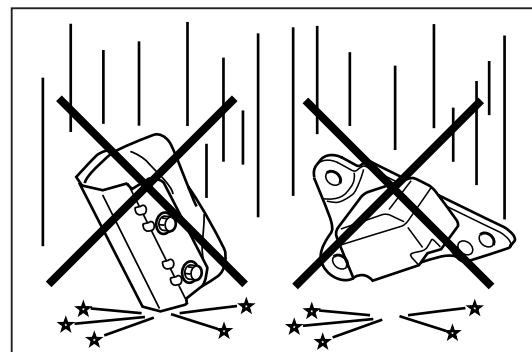
MBE00467-00426



MBE00468-00427

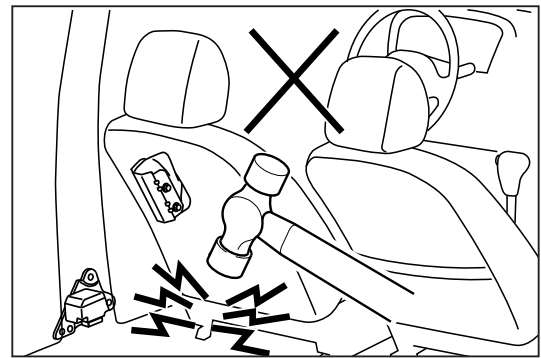


MBE00469-00428

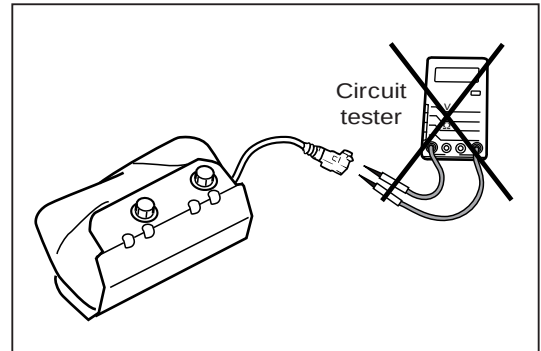


MBE00470-00429

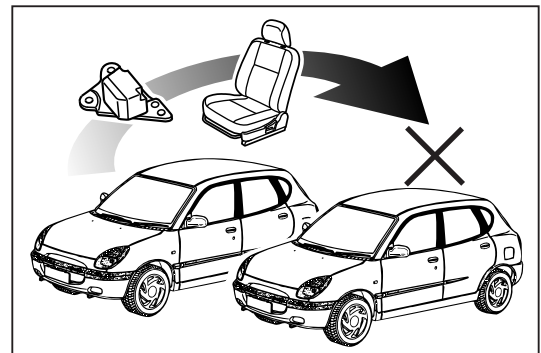
- During installation or replacement, do not bump the area near the side air bag ECU, using an impact wrench, a hammer or the like. It may cause the sensor in the ECU to operate.
- Whenever the ignition switch is on, or has been turned off for only less than 90 seconds, be carefully not to bump the side air bag ECU, for the side air bag could accidentally deploy and cause damage or injuries.
- To prevent the side air bag from deploying, do not measure the resistance of the inflator squib easily.
- Never disassemble the side air bag unit and side air bag ECU.
- A label, which states caution tips, has been affixed around the side air bag unit and side air bag ECU. Be sure to follow these caution tips. Furthermore, replace any smeared or damaged label with a new one.
- Do not install used side air bag components from another car. When repairing, use only new components.
- Do not use any side air bag assembly, or side air bag ECU, which was subjected to water damage or shows signs of being improperly handled, such as dents, cracks and deformation.
- In cases where the SRS side air bag has deployed to accidents, etc., be sure to replace the following parts with new ones.
 - Side air bag unit (at deployed side)
 - Seat pad (at deployed side)
 - Seat cover (at deployed side)
 - Side air bag ECU (at deployed side)
- In cases where the SRS side air bag has deployed due to accidents, etc., be sure to check the following parts. If any abnormality is found, perform repairs or replacement.
 - Seat frame (at deployed side)
 - Side air bag ECU (at undeployed side)
 - Body related parts in general
- Before scrapping any side air bag or the vehicle which contains them, they have to be deployed.



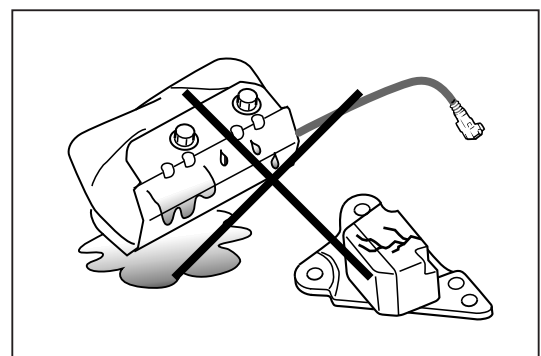
MBE00471-00430



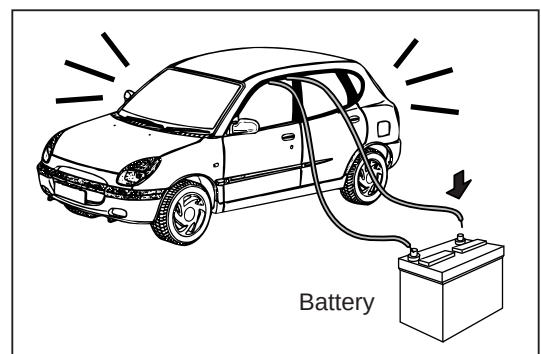
MBE00472-00431



MBE00473-00432



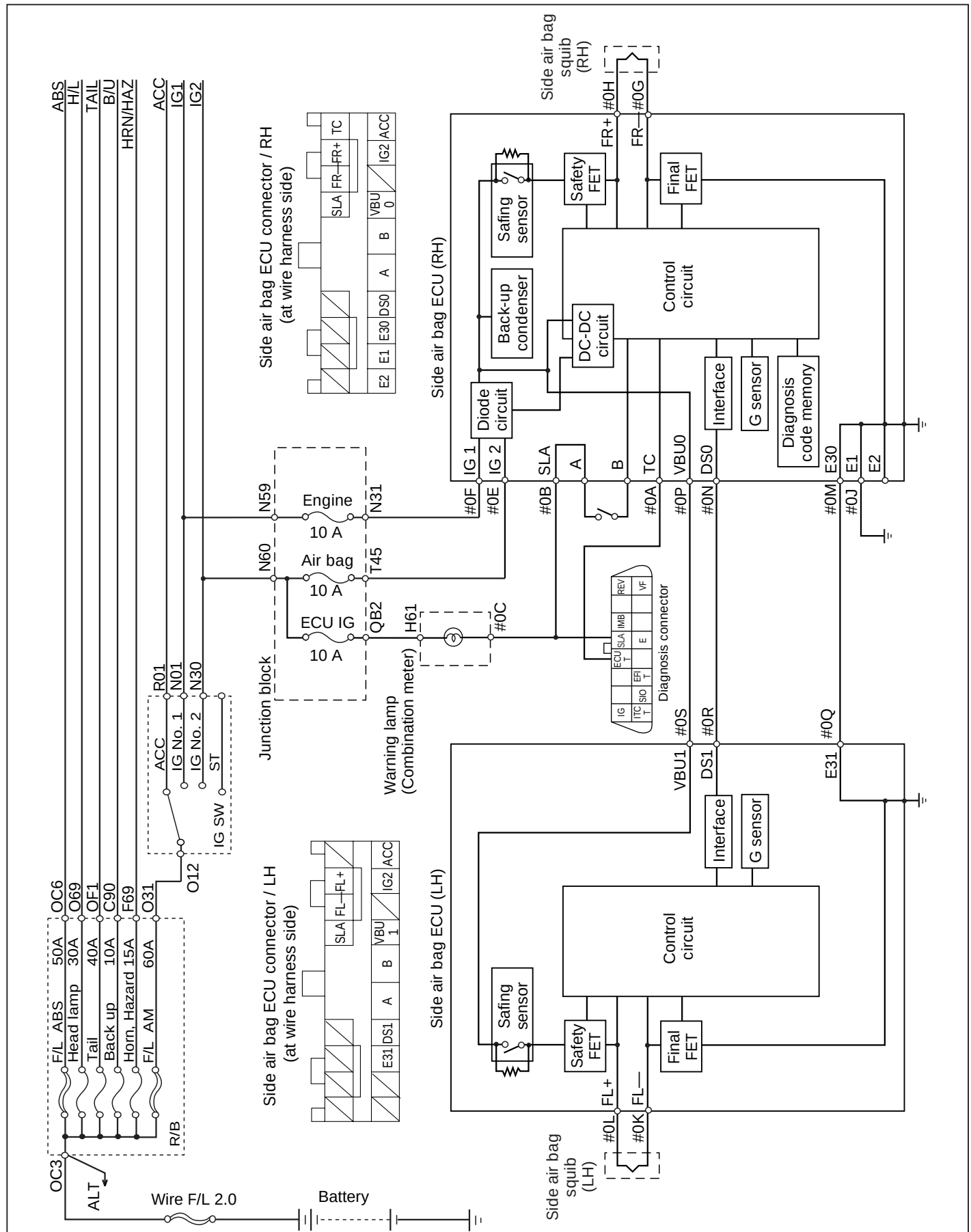
MBE00474-00433



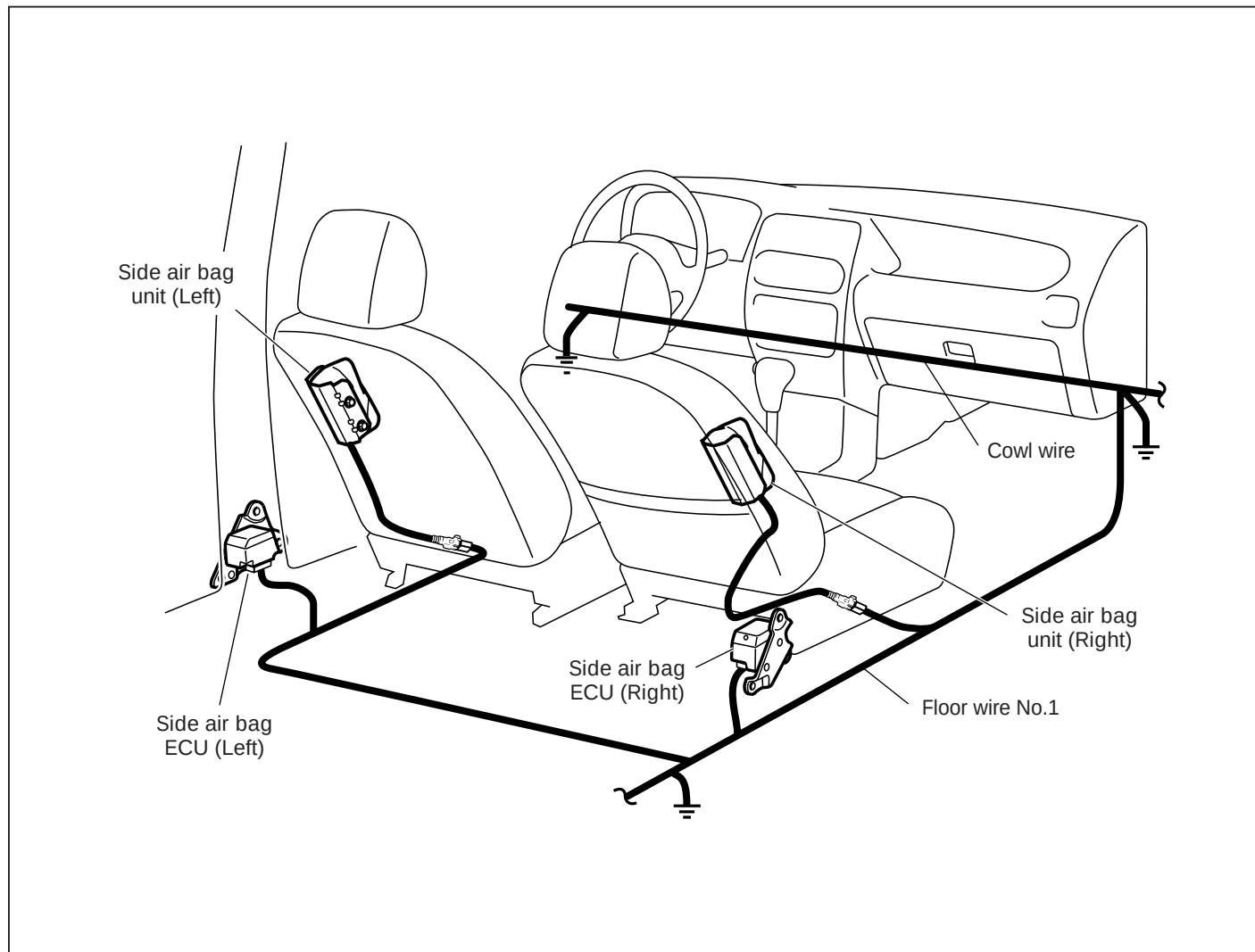
MBE00475-00434

SYSTEM DESCRIPTION

CIRCUIT DIAGRAM



COMPONENTS LAYOUT

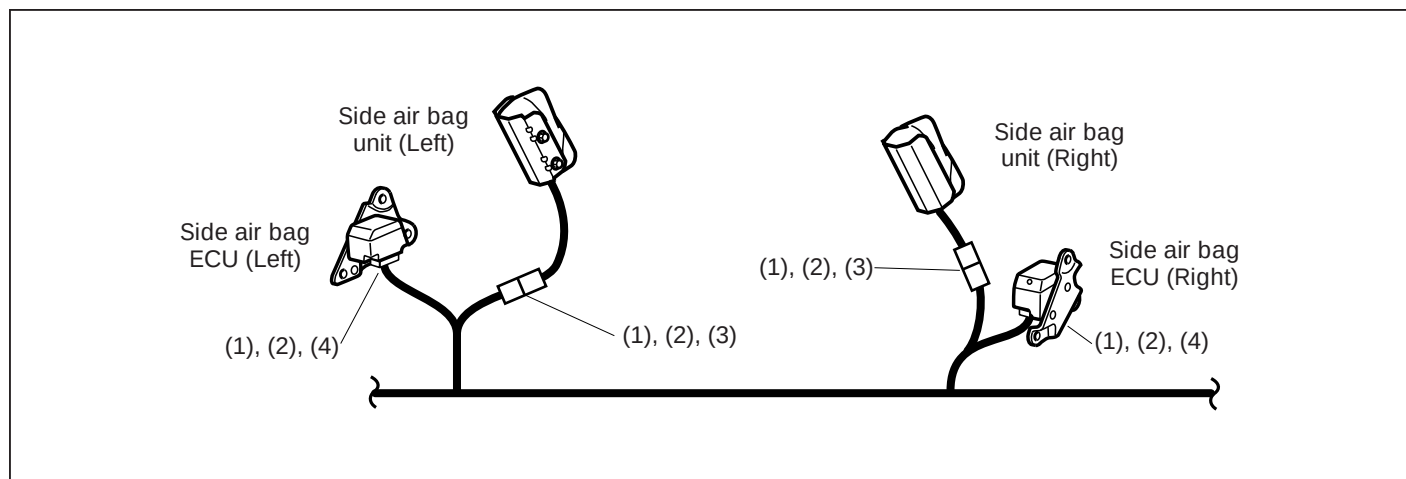


MBE00477-00436

WIRING HARNESS CONNECTOR OF AIR BAG SYSTEM

All wire harnesses and connectors related to the side air bag system are colored yellow uniformly. The following sections have connectors with special functions.

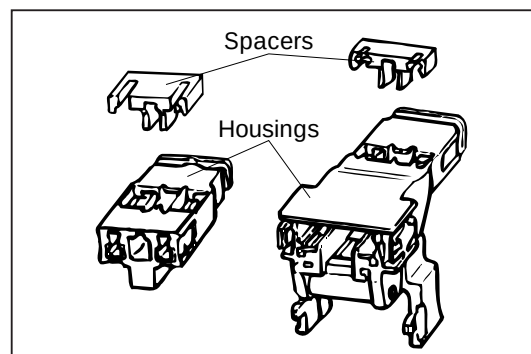
- (1) Terminal double locking mechanism
- (2) Terminal short mechanism
- (3) Connector double locking mechanism
- (4) Incomplete fitting detecting mechanism



MBE00478-00437

(1) Terminal double locking mechanism

This mechanism is provided with all connectors of this system. The connector is of a two-piece construction consisting of a terminal housing and a spacer. The terminal holding is double-locked by the lance in the housing (primary one) and the spacer (secondary one).

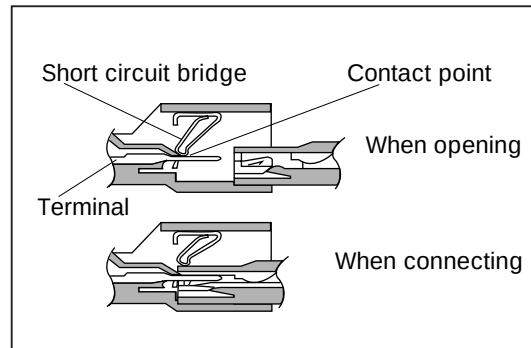


MBE00479-00438

(2) Terminal short mechanism

This mechanism is provided at the connector between the ECU and the inflator squib.

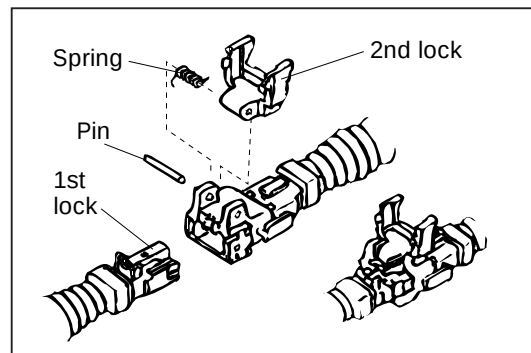
A short spring is provided inside the connector. When the connector is disconnected, the terminals in the squib side connector are shorted automatically, thereby preventing generation of a potential difference between both terminals.



MBE00480-00439

(3) Connector double locking mechanism

This mechanism is provided at the connectors to each squib. For improved reliability of connection, connectors (male and female) are double locked with each other. It is so constructed that, When the primary lock is not made, the secondary lock can not be made because a protrusion hinders the locking.

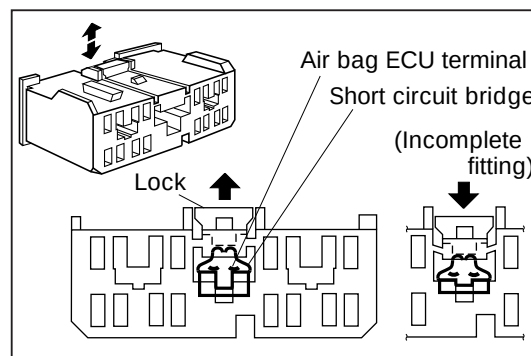


MBE00481-00440

(4) Incomplete fitting detecting mechanism

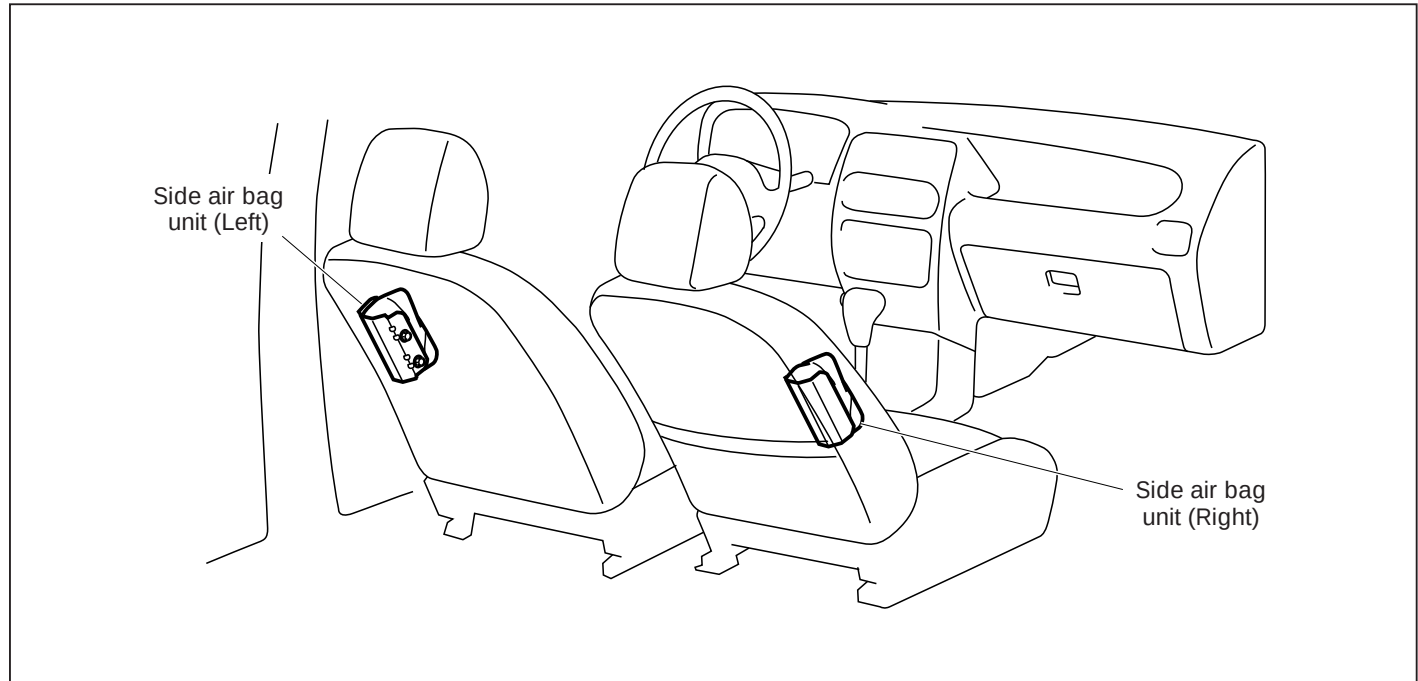
This mechanism is provided at the connector for side air bag ECU. This mechanism detects electrically if the connector is connected completely. When the connector is fit completely, the detecting terminals at the ECU side and detecting pins at harness connector side are connected, allowing a small amount of current to flow to the ECU and warning lamp circuit. In this way, the fitting condition is monitored.

If the connector is connected incompletely, the detecting pins and terminals don't contact.



MBE00482-00441

SIDE AIR BAG UNIT



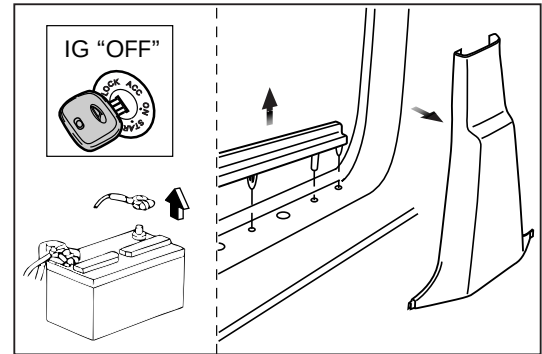
MBE00483-00442

REMOVAL

WARNING:

- Be sure to read "IMPORTANT SAFETY NOTICE", page BE-123 - 124, before handling the side air bag components and observe every notice during work.

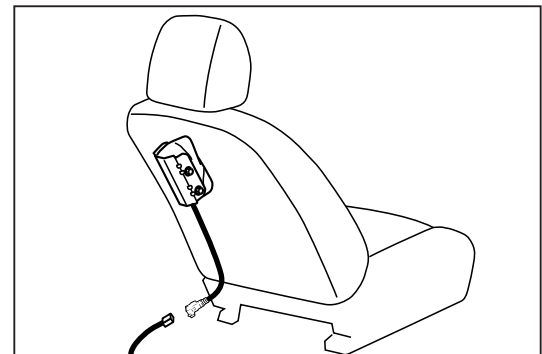
1. Turn OFF the ignition switch and detach the negative (-) terminal of the battery cable. Then wait for at least 90 seconds.
2. Remove the scuff plate and the center pillar garnish.



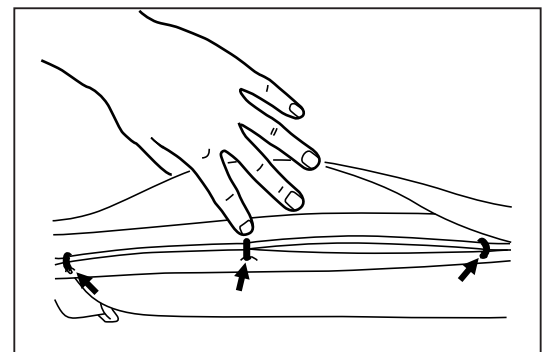
3. Disconnect the connector which connects the wire harness of the front seat side air bag and the floor wire No. 1.
4. Remove the front seat by removing attaching bolts.

NOTE:

- As regards the removal and installation procedures of front seat assembly, refer to BO section of this service manual.



5. Turn over the seat cover, until the side air bag unit can be seen, by removing the hug rings (three points) at the lower part of the seat back.
6. Remove the side air bag unit by loosening the attaching nuts.

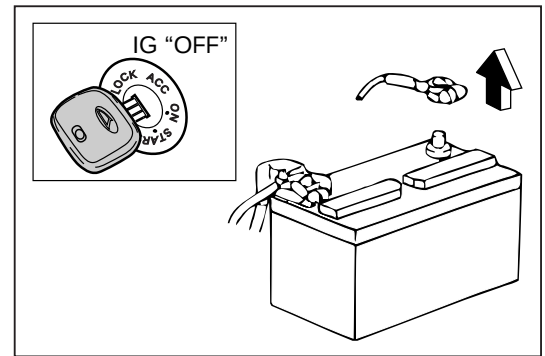


INSTALLATION

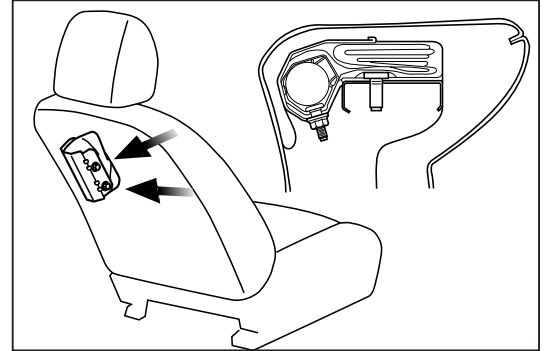
WARNING:

- Be sure to read "IMPORTANT SAFETY NOTICE", page BE-123 - 124, before handling the side air bag components and observe every notice during work.

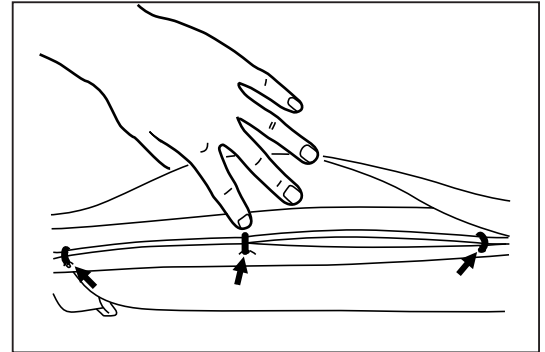
- Turn OFF the ignition switch and detach the negative (-) terminal of the battery cable. Then wait for at least 90 seconds.
- Secure the side air bag unit by tightening the attaching nuts.
Specified Torque: 16.8 - 31.2 N·m
- Connect the connector.
- Put the hug rings (three points) on the seat back.
- Install the front seat.
- Connect the connectors which connect the wire harness of the side air bag unit and the floor wire No. 1.



MBE00487-00446



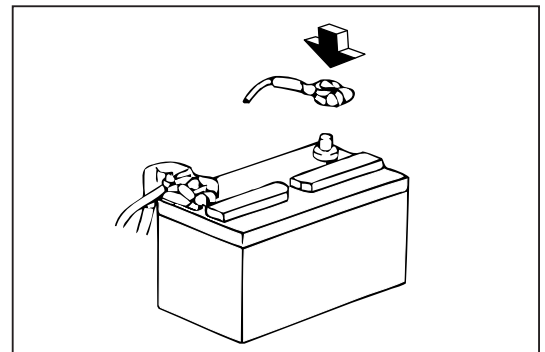
MBE00488-00447



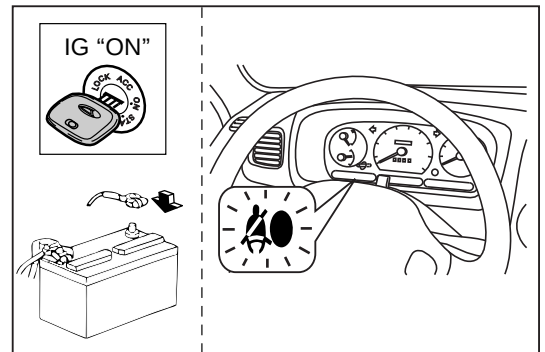
MBE00489-00448

CHECK AFTER INSTALLATION

- Connect the negative (-) terminal of the battery cable to the battery terminal.
- Turn ON the ignition switch. Ensure that the side air bag warning lamp illuminates for six seconds.

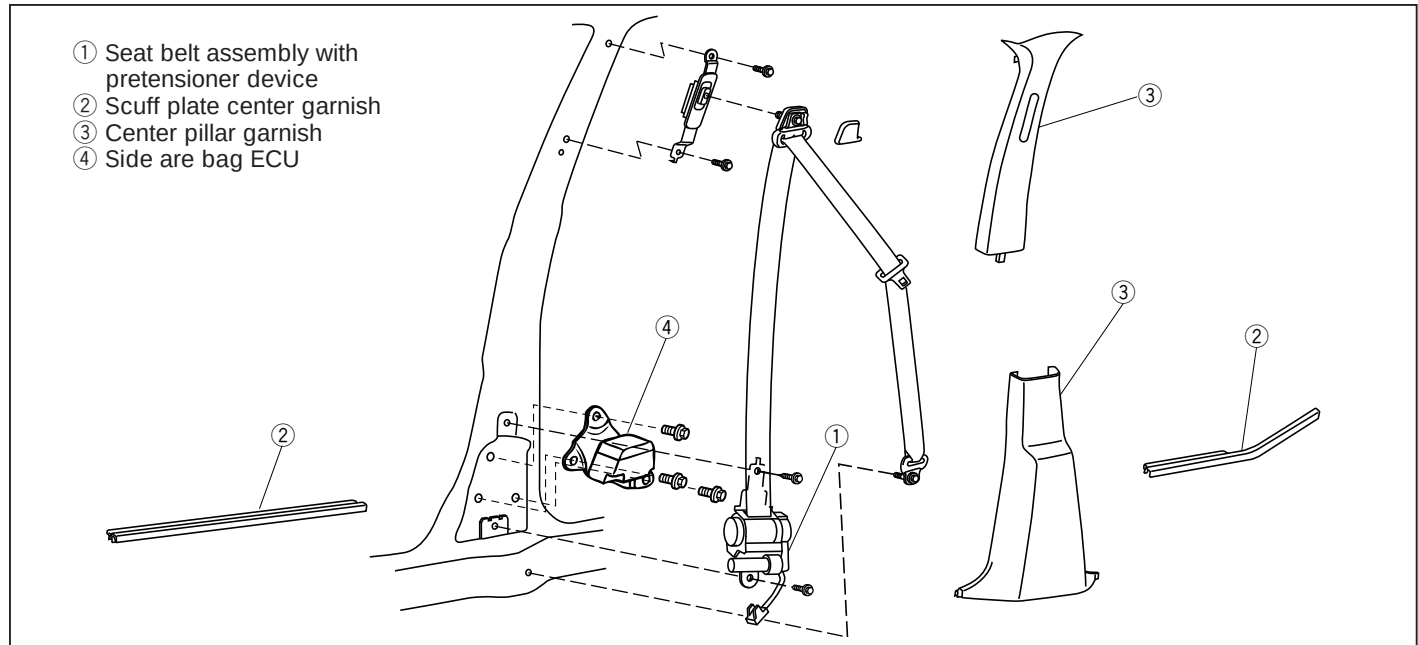


MBE00490-00449



MBE00491-00450

SIDE AIR BAG ECU COMPONENTS



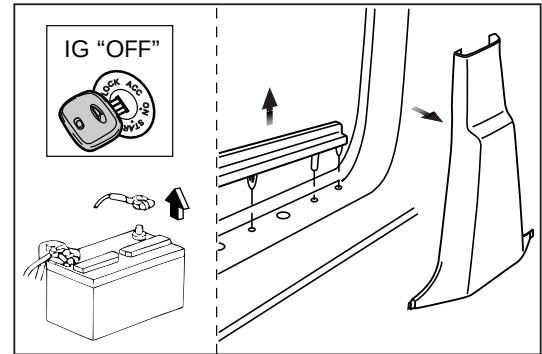
MBE00492-00451

REMOVAL

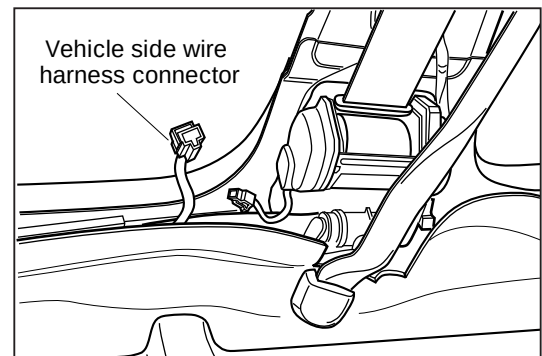
WARNING:

- Be sure to read "IMPORTANT SAFETY NOTICE", page BE-123 - 124, before handling the side air bag components and observe every notice during work.

1. Turn OFF the ignition switch and detach the negative (-) terminal of the battery cable. Then wait for at least 90 seconds.
2. Remove the scuff plate and the center pillar garnish.
3. Disconnect the connector which connects the wire harness of the seat belt pretensioner device and the floor wire No. 1.

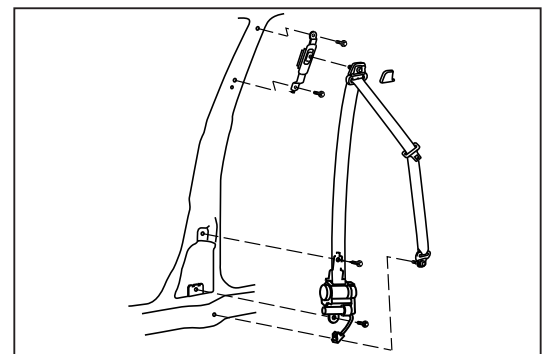


MBE00493-00452



MBE00494-00453

4. Remove the seat belt outer by removing attaching bolts.



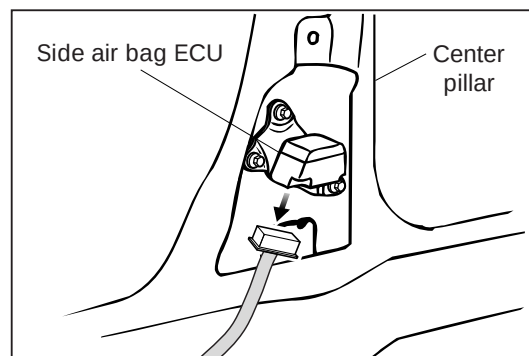
MBE00495-00454

5. Disconnect the connector which connects the wire harness of the side air bag ECU device and the floor wire No. 1.

WARNING:

- The connection and disconnection of connectors of the side air bag ECU should be carried out with the ECU mounted on the vehicle.

6. Remove the side air bag ECU by loosening the attaching bolts



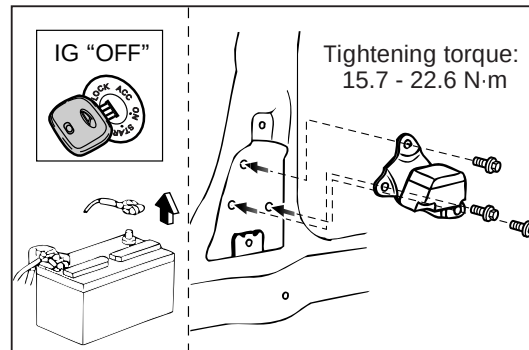
MBE00496-00455

INSTALLATION

1. Turn OFF the ignition switch and detach the negative (A) terminal of the battery cable. Then wait for at least 90 seconds.
2. Install the side air bag ECU by tightening the attaching bolts.

Specified Torque: 15.8 - 22.6 N·m

3. Connect the connector to the ECU.



MBE00497-00456

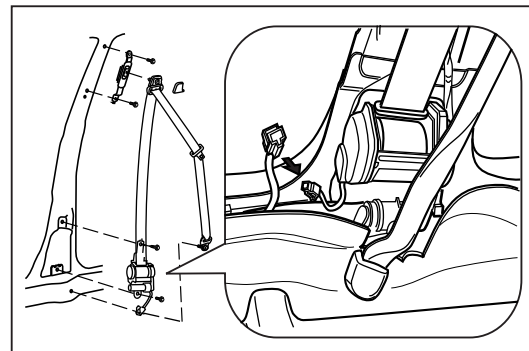
4. Install the seat belt pretensioner by tightening the attaching bolts and screw.

Specified Torque:

Bolt: 28.0 - 53.0 N·m

Screw: 1.5 - 3.5 N·m

5. Connect the connectors which connect the wire harness of the seat belt pretensioner device and the floor wire No. 1.

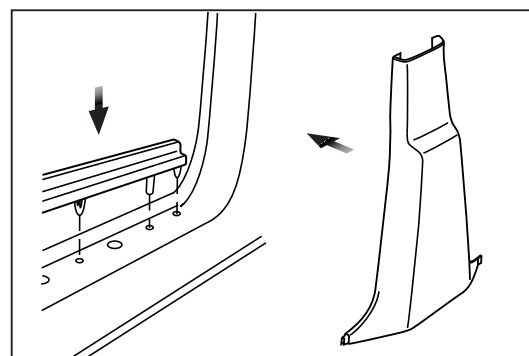


MBE00498-00457

6. Install the center pillar garnish and the scuff plate.

NOTE:

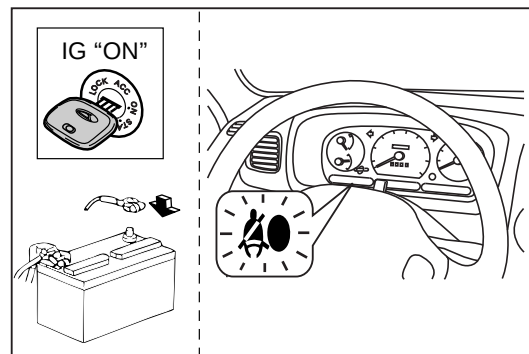
- As regards the installation procedures of center pillar garnish and scuff plate, refer to BO section of this service manual.



MBE00499-00458

CHECK AFTER INSTALLATION

1. Connect the negative (-) terminal of the battery cable to the battery terminal.
2. Turn ON the ignition switch. Ensure that the side air bag warning lamp illuminates for six seconds.



MBE00500-00459

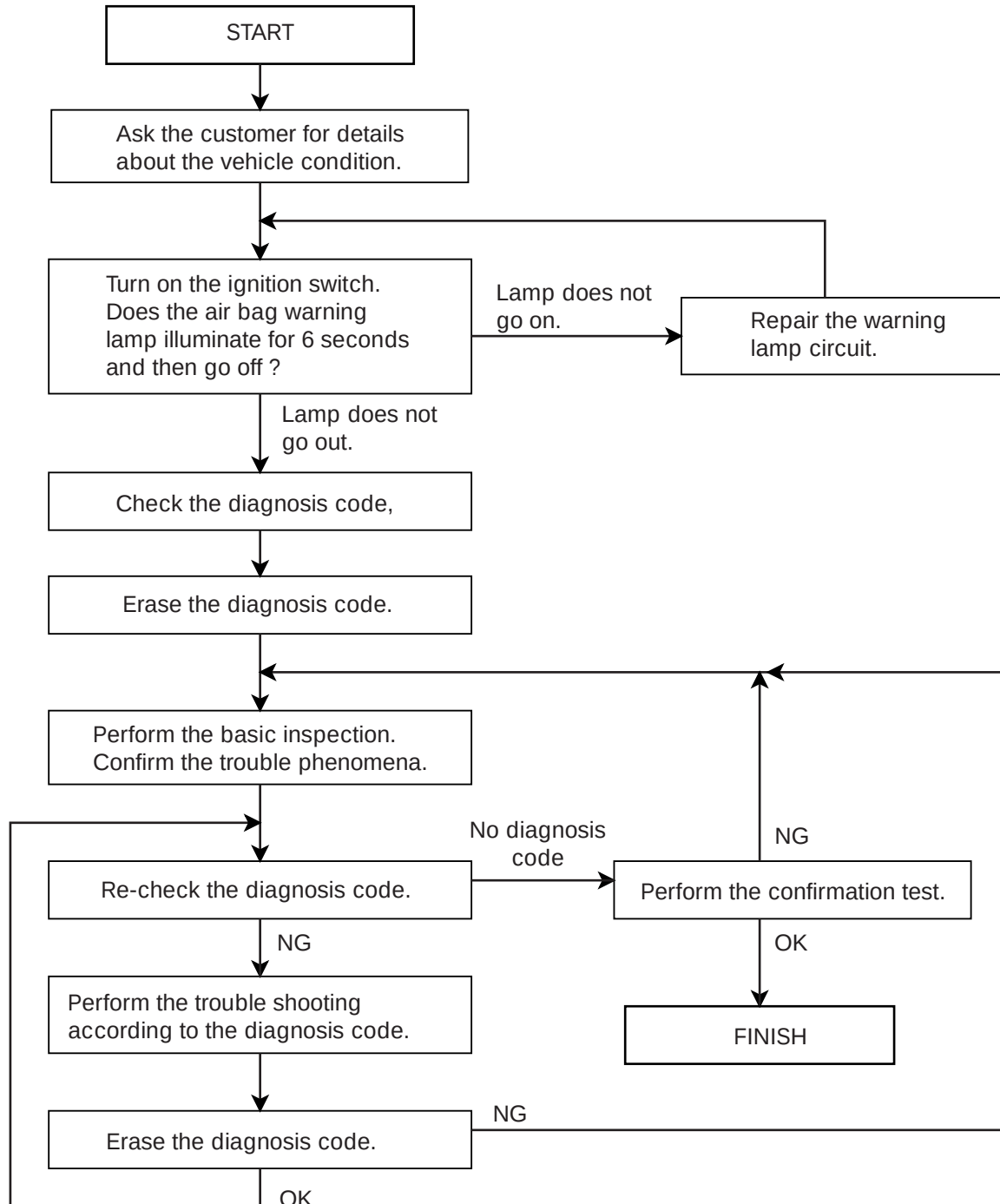
TROUBLE SHOOTING

When proceeding with operations for a malfunctioning vehicle, it is imperative to confirm the malfunction phenomena actually before pinpointing the causes. In order to reproduce the malfunction phenomena, collecting information from the customer is of great importance.

WARNING:

- The aforesaid describes general notes. In the side air bag system, there are some cases where the malfunction phenomena can not be reproduced due to the characteristics of the system. Therefore, any wrong operations during checks and repairs may cause the side air bag to function accidentally and deploy. Please observe the notes and perform the operations according to the instructions given in the manual.

MBE00501-00000



MBE00502-00000

ABNORMAL ILLUMINATION OF WARNING LAMP

<When warning lamp will not go on.>

If the warning lamp will not go on when the ignition switch is turned on, check the following items.

- (1) Battery for defects or insufficient charge
- (2) Battery cable for poor connection
- (3) ECU IG fuse for open wire
- (4) Wire harness between the side air bag warning lamp and right seat side air bag ECU for abnormality
- (5) Warning lamp bulb for being burnt out

NOTE:

- When the gauge fuse has blown, other warning lamps will not go on.
- If the cowl harness has open wire between the gauge fuse and the combination meter, other warning lamps also will not go on.

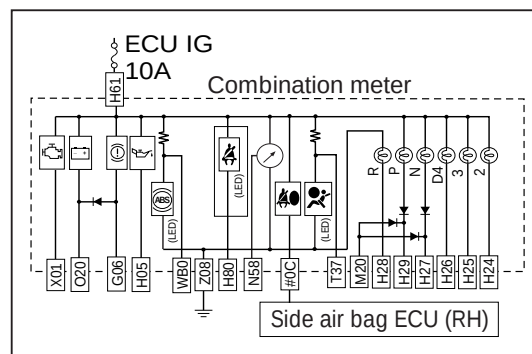
1. Turn OFF the ignition switch and detach the negative (-) terminal of the battery cable. Then wait for at least 90 seconds.
2. Remove the scuff plate and the center pillar garnish.
3. Disconnect the connector which connects the wire harness of the seat belt pretensioner device and the floor wire No. 1.

4. Remove the seat belt pretensioner by removing attaching bolts.

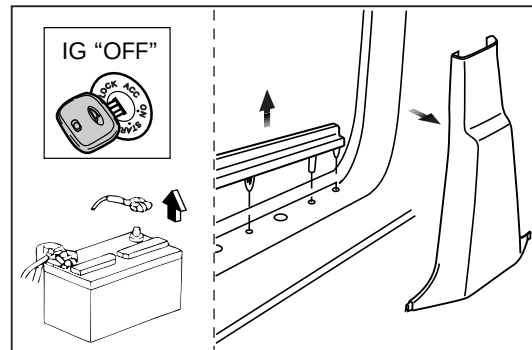
5. Disconnect the connector which connects the wire harness of the side air bag ECU device at right seat side and the floor wire No. 1.

WARNING:

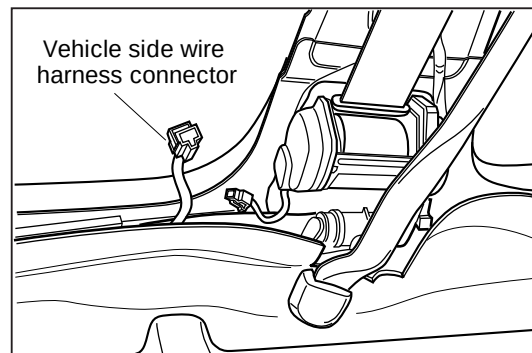
- The connection and disconnection of connectors of the side air bag ECU should be carried out with the ECU mounted on the vehicle.



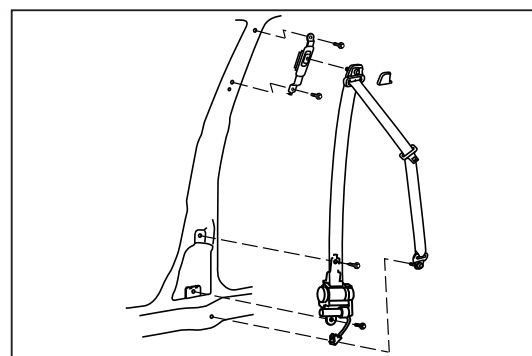
MBE00503-00460



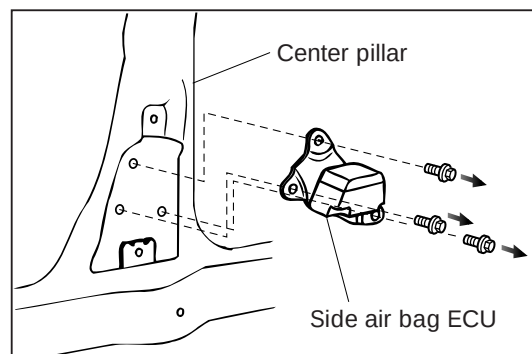
MBE00504-00461



MBE00505-00462

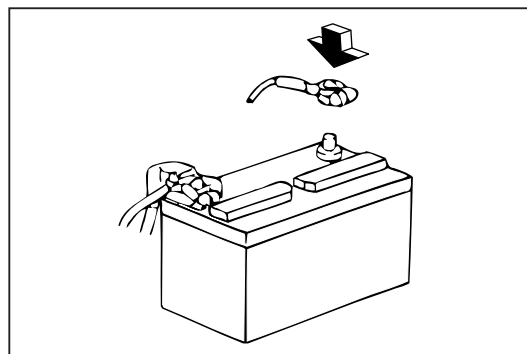


MBE00506-00463



MBE00507-00464

6. Connect the negative (-) terminal of the battery cable to the battery terminal.
7. Turn ON the ignition switch.

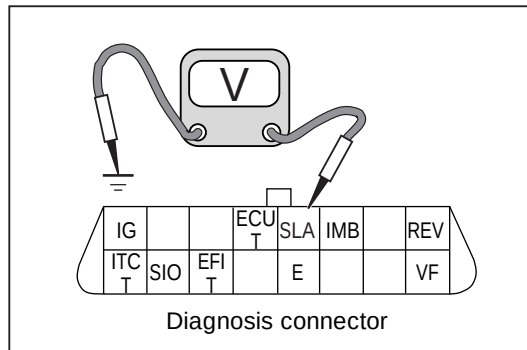


MBE00508-00465

8. Connect a voltmeter between the diagnosis connector and body earth.

Between Terminal SLA and Body Earth:
Battery voltage exists.

If not, check and replace the wire harness between the side air bag ECU at right seat side and the diagnosis connector.

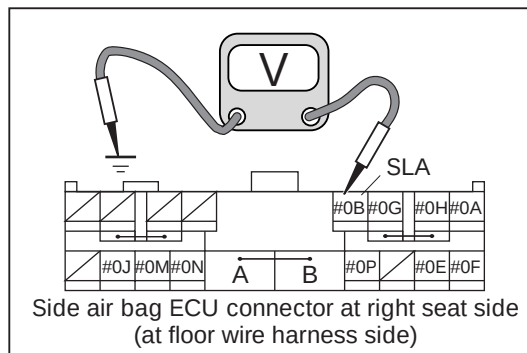


MBE00509-00466

9. Connect a voltmeter between the side air bag ECU connector at right seat side and body earth.

Between Terminal SLA and Body Earth:
Battery voltage exists.

If not, check and replace the wire harness between the side air bag ECU at the right seat side and the warning lamp.



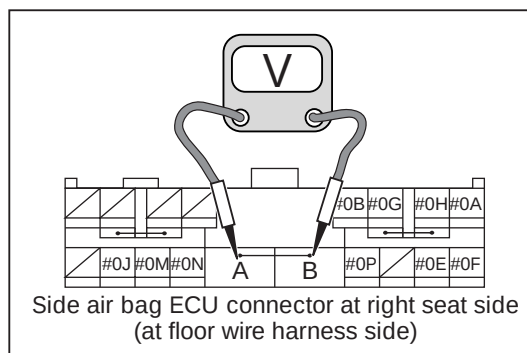
MBE00510-00467

10. Turn OFF the ignition switch and detach the negative (-) terminal of the battery cable. Then wait for at least 90 seconds.

11. Connect a ohmmeter to the vehicle wire harness side terminals.

Between Terminal A and B: Continuity exists.

If not, check and replace the connector at the side air bag ECU.

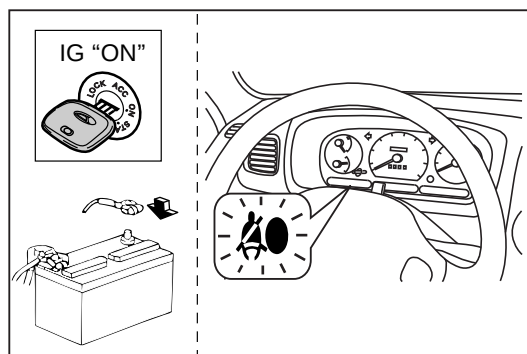


MBE00511-00468

12. Connect the connector at the vehicle wire harness side and the air bag ECU connector.

13. Connect the negative (-) terminal of the battery cable to the battery terminal.

14. Turn ON the ignition switch. Check to see if the warning lamp goes on. If not, check and replace the side air bag ECU.

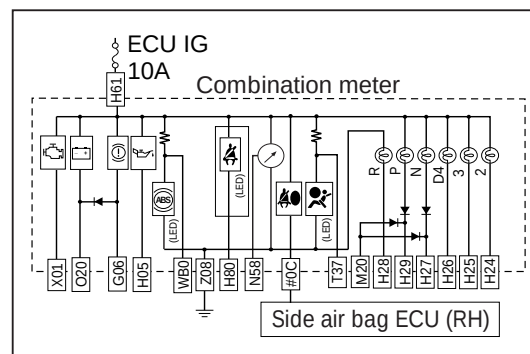


MBE00512-00469

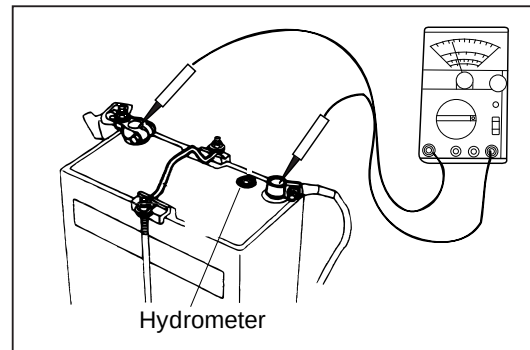
<When warning lamp will not go out.>

If the warning lamp will not go out even if about six seconds have elapsed after the ignition switch was turned on, malfunction is most likely taking place in the system. However, as for the following items given below, the malfunction codes can not be read by the reading procedure for the malfunction code already described before, and the warning lamp will remain illuminated. At this time, proceed to the following inspection.

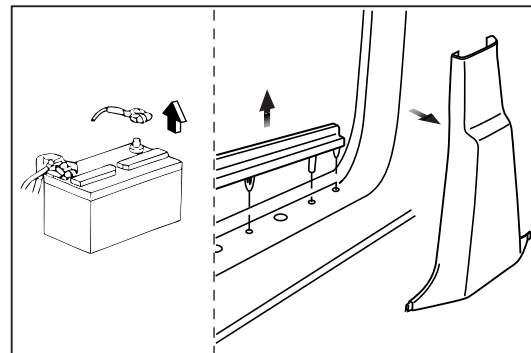
1. Turn OFF the ignition switch. Measure the voltage across the battery terminals and ensure that the voltage is 12-V or more. If not, check and replace the battery
2. Detach the negative (-) terminal of the battery cable. Then wait for at least 90 seconds.
3. Remove the scuff plate and the center pillar garnish.
4. Disconnect the connector which connects the wire harness of the seat belt pretensioner device and the floor wire No. 1.
5. Remove the seat belt pretensioner by removing attaching bolts.



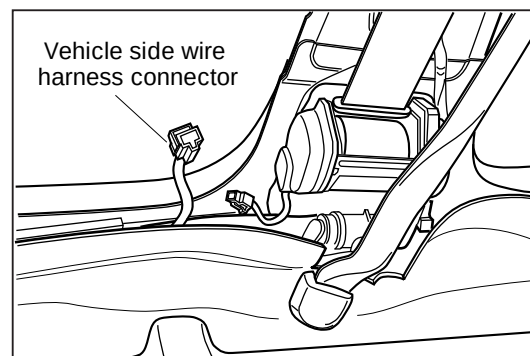
MBE00513-00470



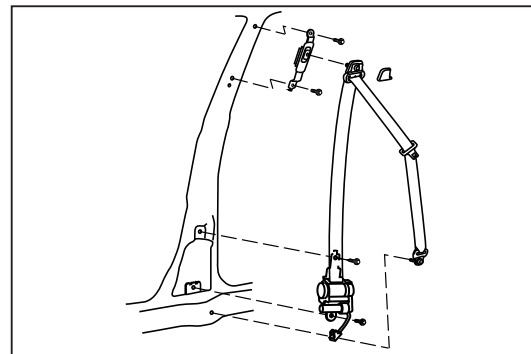
MBE00514-00471



MBE00515-00472



MBE00516-00473

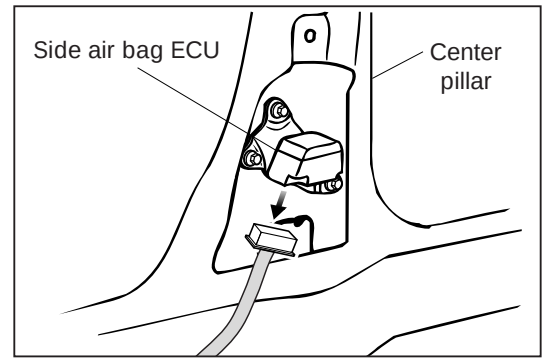


MBE00517-00474

6. Disconnect the connector which connects the wire harness of the side air bag ECU device at right side and the floor wire No. 1.

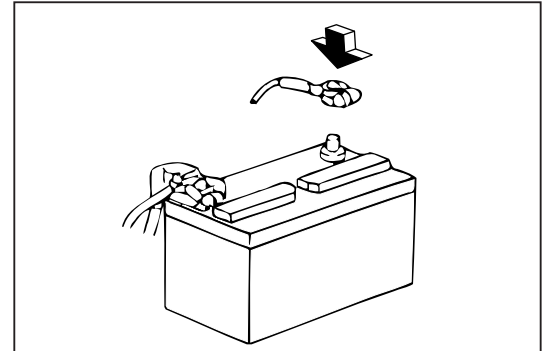
WARNING:

- The connection and disconnection of connectors of the side air bag ECU should be carried out with the ECU mounted on the vehicle.



MBE00518-00475

7. Connect the negative (-) terminal of the battery cable to the battery terminal.
8. Turn ON the ignition switch.



MBE00519-00476

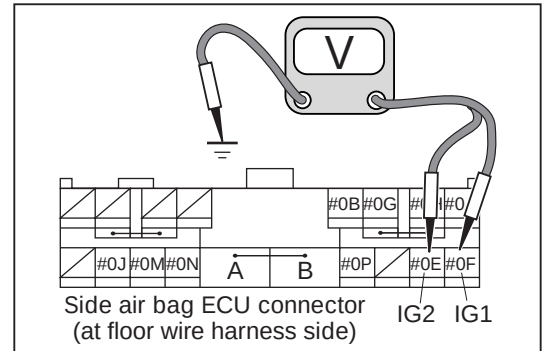
9. Connect a voltmeter between the side air bag ECU connector at right seat side and body earth.

Between Terminal #0F (IG1) and Body Earth:

Battery voltage exists.

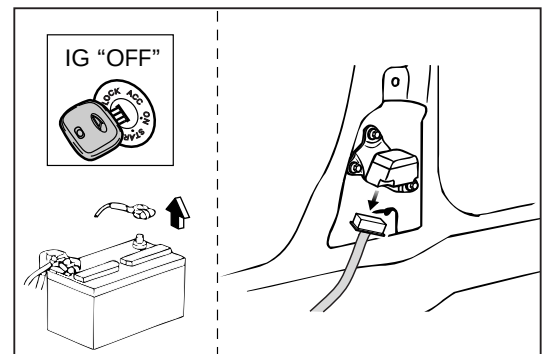
Between Terminal #0E (IG2) and Body Earth:

Battery voltage exists.



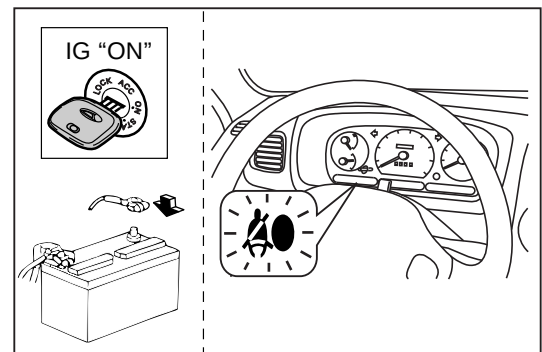
MBE00520-00477

10. Turn OFF the ignition switch and detach the negative (-) terminal of the battery cable. Then wait for at least 90 seconds.
11. Connect the connector at the vehicle wire harness side and the air bag ECU connector.



MBE00521-00478

12. Connect the negative (-) terminal of the battery cable to the battery terminal.
13. Turn ON the ignition switch. Check to see if the warning lamp goes on. If not, check and replace the side air bag ECU at right seat side.



MBE00522-00479

DIAGNOSIS CHECK

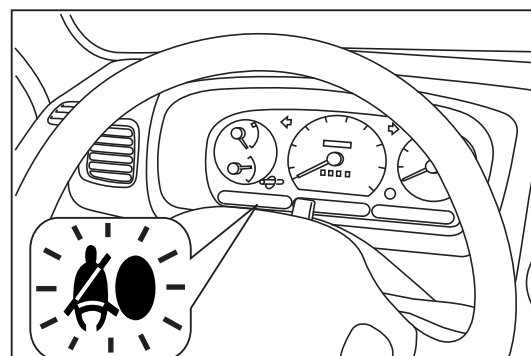
<Confirmation procedures for diagnosis codes>

1. Turn ON the ignition switch.
2. If the side air bag warning lamp goes on for six seconds and goes out afterward, the system is functioning properly.

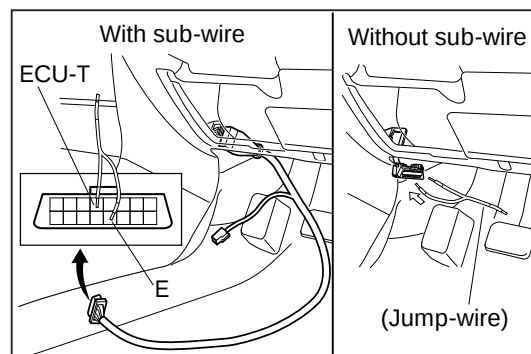
NOTE:

- If the lamp will not go on at this time, refer to page BE-135.

3. If the warning lamp keeps illuminated for more than six seconds, it means a certain system malfunctioning is being detected. Proceed to the following operations 4.
4. Connect the test terminal (ECU-T) and the earth terminal (E) with a jump wire.
5. Confirm the diagnosis code by reading the number of flashing of the combination lamp.



MBE0523-00480

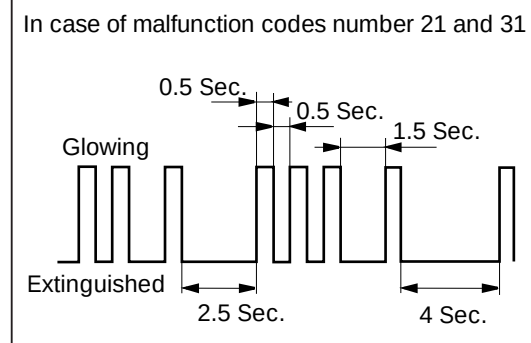


MBE00524-00481

<Reading of malfunction codes (diagnosis codes)>

When two or more malfunction codes are outputted, the codes are indicated in the sequence of the code numbers, starting from a smaller number, with a four-second distinguishing period interposed between codes.

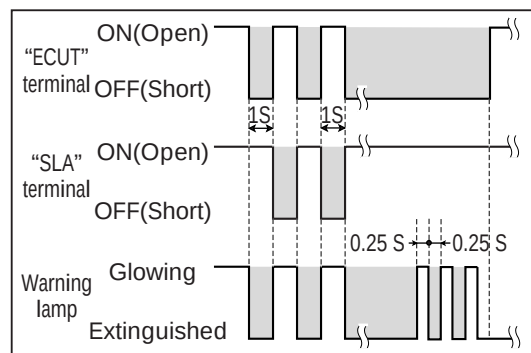
After a lapse of four seconds, the malfunction codes are indicated by the repetition of a 0.5-second glowing period and a 0.5-second extinguished period. If the code is a two-digit number, the 1.5-second extinguished period is interposed between the units digit and the tens digit.



MBE00525-00482

<Canceling procedure for records of diagnosis codes>

1. Short the terminal ECU-T and terminal E. After a lapse of one second, short the terminal SLA and terminal E. After a lapse of one second, short the terminal ECU-T and terminal E again. Repeat this operation several times. Finally, when the terminal ECU-T is shorted with the terminal E, the diagnosis code can be erased. If the diagnosis code has been erased successfully, the warning lamp flashes quickly. If the warning lamp will not flash, repeat the operation again from the beginning.

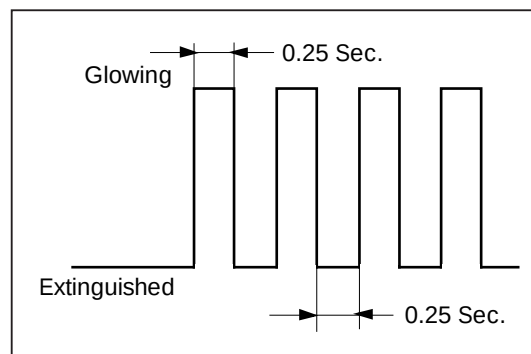


MBE00526-00483

2. When the malfunction has been remedied and the system has resumed, the normal code shown in the figure is indicated.

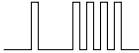
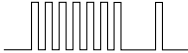
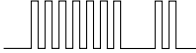
NOTE:

- The cancellation procedure for the malfunction record can not be applied to the cancellation of the record of the malfunction for the ECU internal circuit. (Diagnosis code numbers 31 and 32)



MBE00527-00484

LIST OF MALFUNCTION CODE

Code No.	Warning lamp output	Diagnosis malfunction contents		Refer to page
—		Normal code		
11		Squib circuit is grounded to earth.	At the right seat side	BE-139
12		Power supply voltage is applied to squib circuit.		BE-140
13		Squib circuit is shorted.		BE-141
14		Squib circuit has open wire.		BE-142
31		Side air bag ECU malfunctioning		BE-143
32		Side air bag ECU malfunctioning	At the left seat side	BE-144
71		Squib circuit is grounded to earth.		BE-145
72		Power supply voltage is applied to squib circuit.		BE-146
73		Squib circuit is shorted.		BE-147
74		Squib circuit has open wire.		BE-148

<DIAGNOSIS CODE 11>

Cases where the squib circuit between the side air bag unit and the side air bag ECU is shorted with the ground.

WARNING:

- Be sure to read "IMPORTANT SAFETY NOTICE", page BE-123 - 124, before handling the side air bag components and observe every notice during work.

1. Check of wire harness

- Turn OFF the ignition switch and detach the negative (-) terminal of the battery cable. Then wait for at least 90 seconds.
- Disconnect the connector from the side air bag ECU.
- Disconnect the connector from the side air bag unit.

- Connect a ohmmeter between the connector terminal at the vehicle wire harness side and body earth.
Between Terminal #0T (+) and Body Earth:
No continuity exists.

If it might be shorted, replace the wire harness.

2. Check of side air bag ECU

- Connect the connector of the side air bag ECU.
- Connect the battery negative (-) cable.
- Turn ON the ignition switch.
- Perform the diagnosis canceling procedure.
- Then, confirm the diagnosis code 11 will not be outputted.

NOTE:

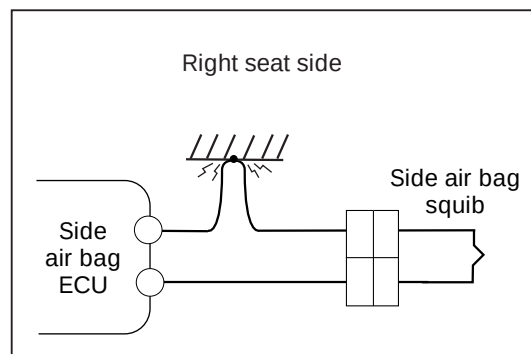
- It is permissible that other codes are outputted.

If diagnosis code 11 is outputted, replace the side air bag ECU.

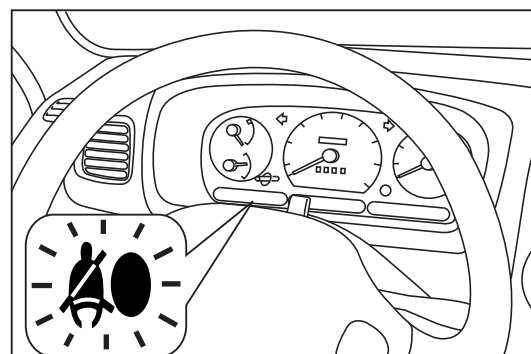
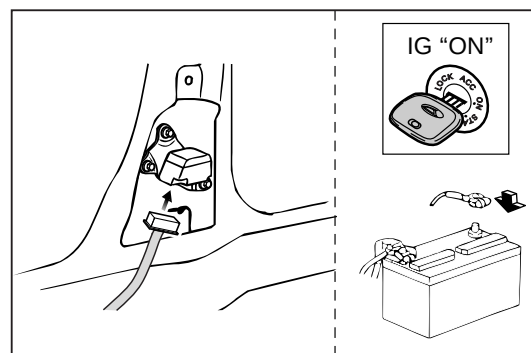
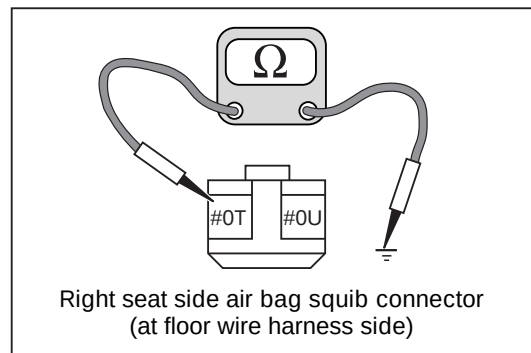
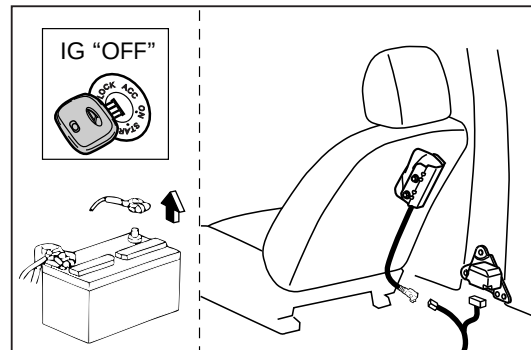
3. Check of side air bag unit

- Turn OFF the ignition switch and detach the negative (-) terminal of the battery cable. Then wait for at least 90 seconds.
- Connect the connector between the side air bag unit and the floor wire No. 1.
- Connect the battery negative (-) cable.
- Turn ON the ignition switch.
- Confirm the diagnosis code after the diagnosis code has been canceled.

If diagnosis code 11 is outputted, replace the side air bag unit.



MBE00529-00485



<DIAGNOSIS CODE 12>

Cases where the harness between the side air bag unit and the side air bag ECU is shorted with the power supply.

WARNING:

- Be sure to read "IMPORTANT SAFETY NOTICE", page BE-123 - 124, before handling the side air bag components and observe every notice during work.

1. Check of wire harness

- Turn OFF the ignition switch and detach the negative (-) terminal of the battery cable. Then wait for at least 90 seconds.
- Disconnect the connector from the side air bag ECU.
- Disconnect the connector from the side air bag unit.
- Connect the battery negative (-) cable.
- Connect a voltmeter between the connector terminal at the vehicle wire harness side and body earth. Then, Turn ON the ignition switch.

Between Terminal #0T (+) and Body Earth:

No voltage exists.

If it might be shorted, replace the harness.

2. Check of side air bag ECU

- Turn OFF the ignition switch
- Connect the connector of the side air bag ECU.
- Connect the battery negative (-) cable.
- Turn ON the ignition switch.
- Perform the diagnosis canceling procedure.
- Then, confirm the diagnosis code 12 will not be outputted.

NOTE:

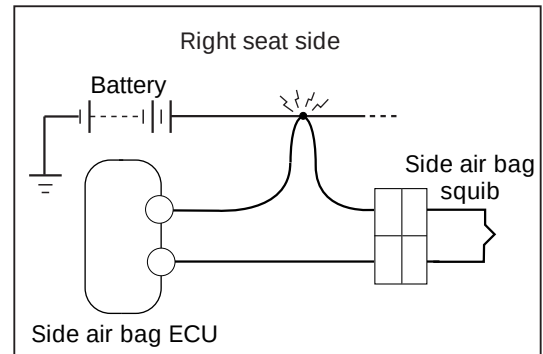
- It is permissible that other codes are outputted.

If diagnosis code 12 is outputted, replace the side air bag ECU.

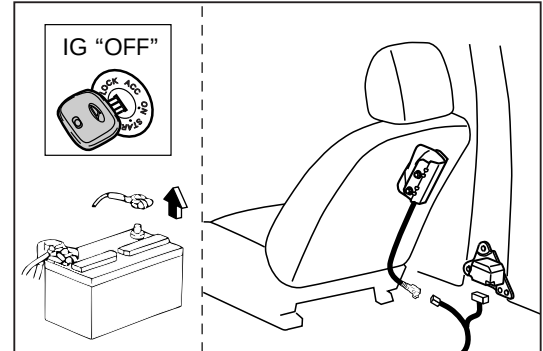
3. Check of side air bag unit

- Turn OFF the ignition switch and detach the negative (-) terminal of the battery cable. Then wait for at least 90 seconds.
- Connect the connector between the side air bag unit and the floor wire No. 1.
- Connect the battery negative (-) cable.
- Turn ON the ignition switch.
- Confirm the diagnosis code after the diagnosis code has been canceled.

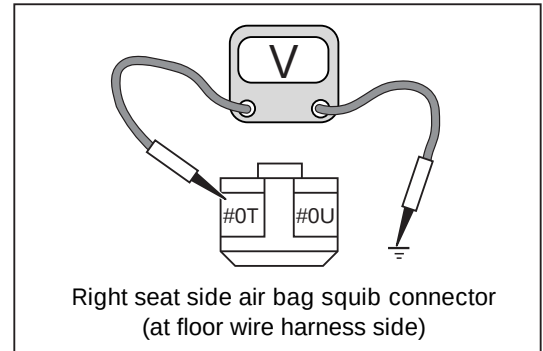
If diagnosis code 12 is outputted, replace the side air bag unit.



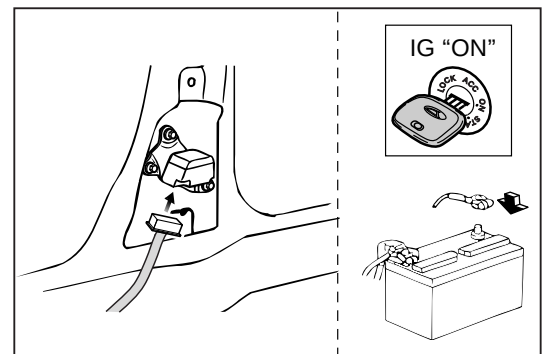
MBE00534-00490



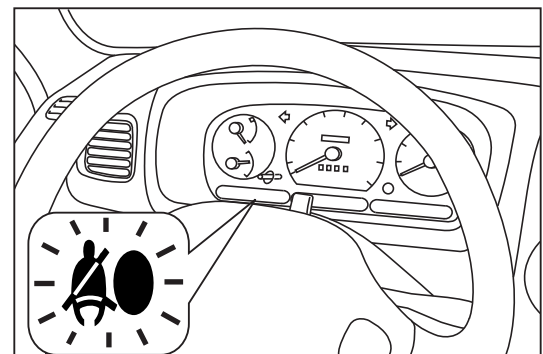
MBE00535-00491



MBE00536-00492



MBE00537-00493



MBE00538-00494

<DIAGNOSIS CODE 13>

Cases where the harness of the side air bag squib are shorted with each other.

1. Check of side air bag ECU

- (1) Turn OFF the ignition switch and detach the negative (-) terminal of the battery cable. Then wait for at least 90 seconds.
- (2) Disconnect the connector from the side air bag unit.
- (3) Connect a jump wire between the connector terminals at the floor wire No. 1 side.
- (4) Connect the battery negative (-) cable.
- (5) Turn ON the ignition switch.
- (6) Perform the diagnosis canceling procedure.
- (7) Then, confirm the diagnosis code 13 will be outputted. If diagnosis code 13 will not be outputted, replace the side air bag ECU.

2. Check of wire harness

- (1) With the ignition switch turned off, disconnect the jump wire.
- (2) Perform the diagnosis canceling procedure.
- (3) Then, confirm the diagnosis code 13 will **not** be outputted.

NOTE:

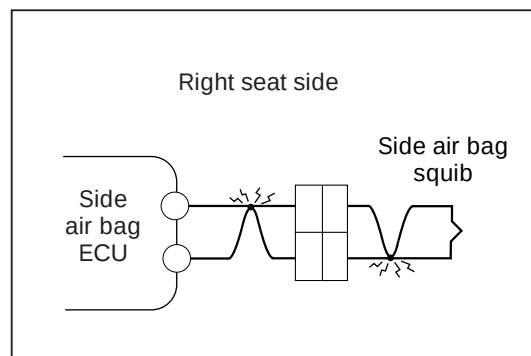
- It is permissible that other codes are outputted.

- (4) If diagnosis code 13 is outputted at Step 2. (3), perform the following procedures.
- (5) With the ignition switch turned off, disconnect the side air bag ECU connector.
- (6) Raise the short circuit bridge of the connector at the floor wire No. 1 side.
- (7) connect a ohmmeter between the connector terminal at the vehicle wire harness side.
Between Terminal #0T (+) and #0U (-):
No continuity exists.

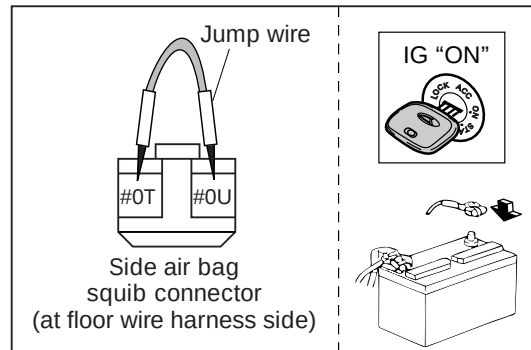
If it might be shorted, replace the harness.

3. Check of side air bag unit

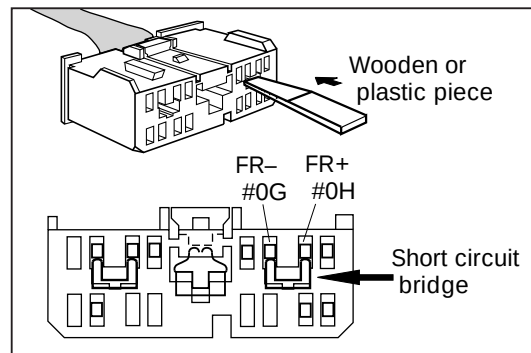
- (1) If the diagnosis code is **not** outputted at Step 2. (3), perform the following procedures.
 - (2) Turn OFF the ignition switch and detach the negative (-) terminal of the battery cable. Then wait for at least 90 seconds.
 - (3) Connect the connector of the side air bag unit.
 - (4) Connect the battery negative (-) cable.
 - (5) Turn ON the ignition switch. Confirm the diagnosis code after the diagnosis code has been erased.
- If diagnosis code 13 is outputted, replace the side air bag unit.



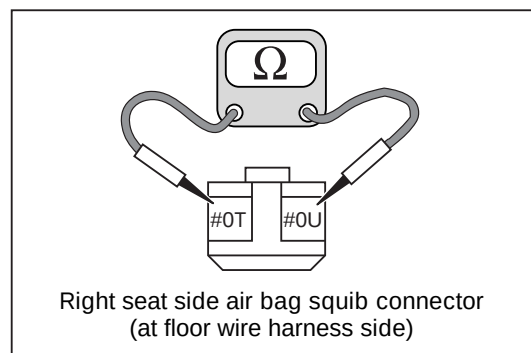
MBE00539-00495



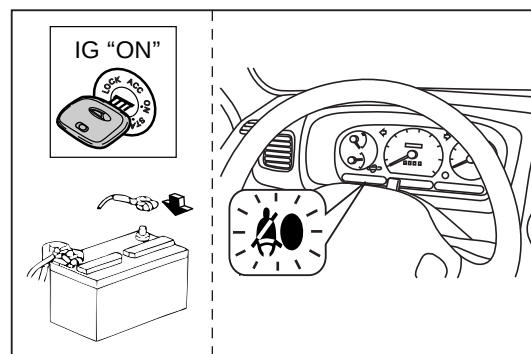
MBE00540-00496



MBE00541-00497



MBE00542-00498



MBE00543-00499

<DIAGNOSIS CODE 14>

Cases where open wire is present at the harness between the side air bag unit and the side air bag ECU.

WARNING:

- Be sure to read "IMPORTANT SAFETY NOTICE", page BE-123 - 124, before handling the side air bag components and observe every notice during work.

1. Check of wire harness

- Turn OFF the ignition switch and detach the negative (-) terminal of the battery cable. Then wait for at least 90 seconds.
- Disconnect the connector from the side air bag ECU and the side air bag unit.

- Connect a ohmmeter between the connector terminal at the vehicle wire harness side.
Between Terminal #0T (+) and #0U (-):
Continuity exists.

If it might have open wire, replace the wire harness.

2. Check of side air bag ECU

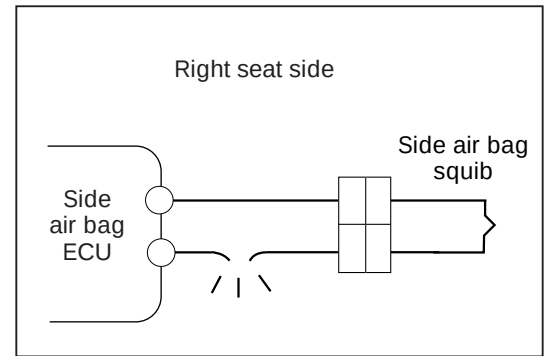
- Connect a jump wire between the connector terminals at the floor wire No. 1 side.
- Connect the connector of the side air bag ECU.
- Connect the battery negative (-) cable.
- Turn ON the ignition switch.
- Perform the diagnosis canceling procedure.
- Then, confirm the diagnosis code 14 will **not** be outputted.

If diagnosis code 14 is outputted, replace the side air bag ECU.

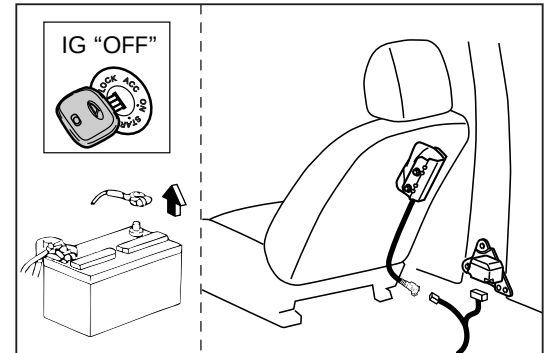
3. Check of side air bag unit

- Turn OFF the ignition switch and detach the negative (-) terminal of the battery cable. Then wait for at least 90 seconds.
- Disconnect the jump wire which is applied at Step 2. (1).
- Connect the connector of the side air bag unit.
- Connect the battery negative (-) cable.
- Turn ON the ignition switch. Confirm the diagnosis code after the diagnosis code has been erased.

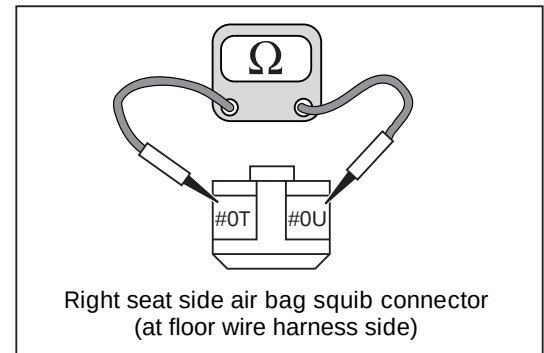
If diagnosis code is 14 outputted, replace the side air bag unit.



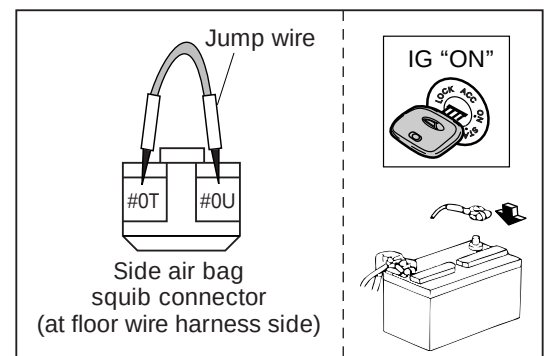
MBE00544-00500



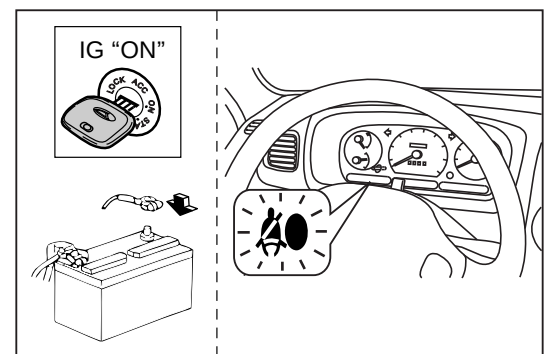
MBE00545-00501



MBE00546-00502



MBE00547-00503



MBE00548-00504

<DIAGNOSIS CODE 31>

Cases where the harness between the right-hand side air bag ECU and the left-hand side air bag ECU is shorted with the ground.

WARNING:

- Be sure to read "IMPORTANT SAFETY NOTICE", page BE-123 - 124, before handling the side air bag components and observe every notice during work.

1. Check of wire harness

- Turn OFF the ignition switch.
- Disconnect the negative (-) terminal cable of the battery from the battery terminal. Wait for at least 90 seconds.
- Connect the battery negative (-) cable.
- Turn ON the ignition switch.
- Perform the diagnosis canceling procedure.
- Then, confirm the diagnosis code 31 will not be outputted.

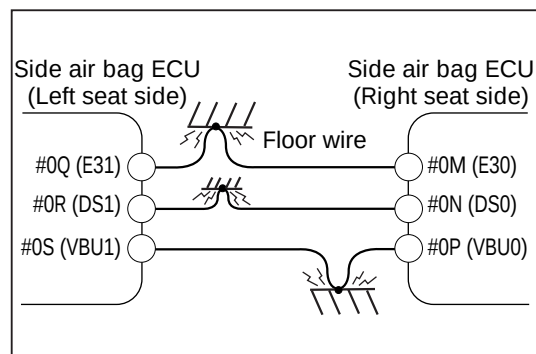
If diagnosis code is not outputted, at present the system returns to a normal state. Then, observe the condition for a while.

- If diagnosis code 31 is outputted at Step 1. (6), perform the following procedures.
- Turn OFF the ignition switch.
- Disconnect the negative (-) terminal cable of the battery from the battery terminal. Wait for at least 90 seconds.
- Disconnect the connectors from the side air bag ECU at the right seat side and the left seat side.
- Turn ON the ignition switch.
- Connect a voltmeter between the connector terminal at the vehicle wire harness side and body earth.
Between Terminal #0P (VBU0) and Body Earth:
No voltage exists.
Between Terminal #0S (VBU1) and Body Earth:
No voltage exists.

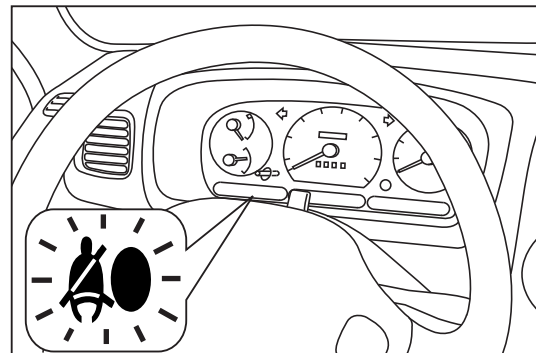
If it might be shorted, replace the wire harness.

2. Check of side air bag ECU

- Turn OFF the ignition switch.
- Connect the connector from the side air bag ECU at right seat side.
- Turn ON the ignition switch.
- Connect a voltmeter between the connector terminal at the floor wire harness side and body earth.
Between Terminal #0S (VBU1) and Body Earth:
Battery voltage exists.

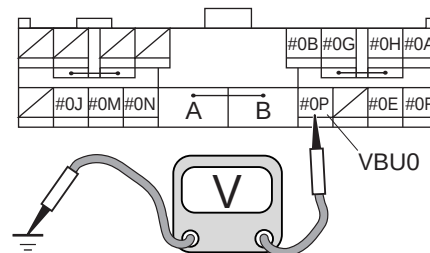


MBE00549-00505



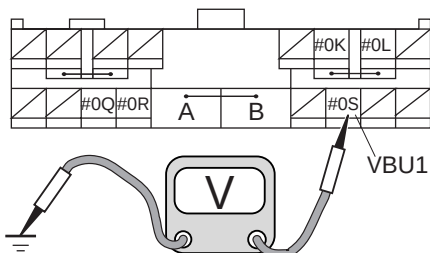
MBE00550-00506

Side air bag ECU connector at right seat side (at floor wire harness side)

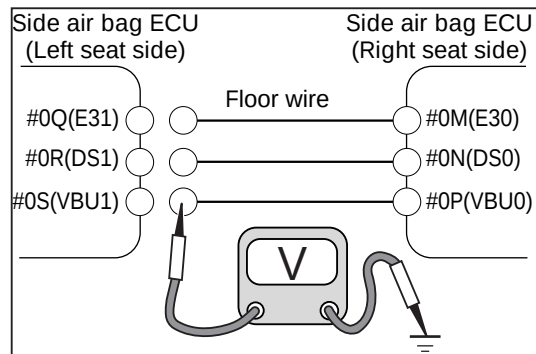


MBE00551-00507

Side air bag ECU connector at left seat side (at floor wire harness side)



MBE00552-00508



MBE00553-00509

If the battery voltage dose not exists, replace the side air bag ECU at right seat side.

If the battery voltage exists, replace the side air bag ECU at left seat side.

<DIAGNOSIS CODE 32>

Cases where open wire or short is present at the harness between the right-hand side air bag ECU and the left-hand side air bag ECU.

The connector of the side air bag ECU at the left seat side is not fit completely.

WARNING:

- Be sure to read "IMPORTANT SAFETY NOTICE", page BE-123 - 124, before handling the side air bag components and observe every notice during work.

1. Check of wire harness

- (1) Turn OFF the ignition switch.
- (2) Disconnect the negative (–) terminal cable of the battery from the battery terminal. Wait for at least 90 seconds.
- (3) Disconnect the connectors from the side air bag ECU at the right seat side and the side air bag ECU at the left seat side.
- (4) Connect a ohmmeter between the connector terminal at the vehicle wire harness side.
 - Between Terminal #0M (E30) and #0Q (E31): Continuity exists.
 - Between Terminal #0N (DS0) and #0R (DS1): Continuity exists.
 - Between Terminal #0P (VBU0) and #0S (VBU1): Continuity exists.

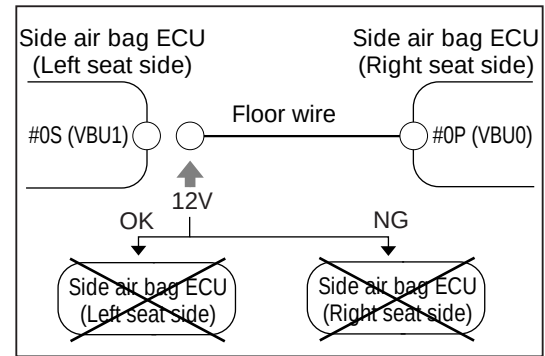
If it might have open wire, replace the harness.

2. Check of side air bag ECU.

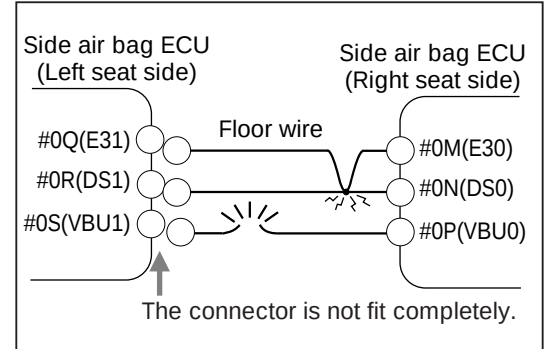
- (1) Connect the connector from the side air bag ECU at right seat side.
- (2) Connect the negative (–) terminal of the battery cable to the battery terminal.
- (3) Turn ON the ignition switch.
- (4) Connect a voltmeter between the connector terminal at the vehicle wire harness side and body earth.
 - Between Terminal #0S (VBU1) and Body Earth: Battery voltage exists.

If the battery voltage dose not exists, replace the side air bag ECU at right seat side.

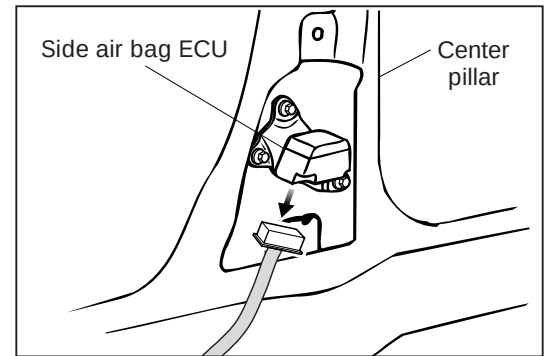
If the battery voltage exists, replace the side air bag ECU at left seat side.



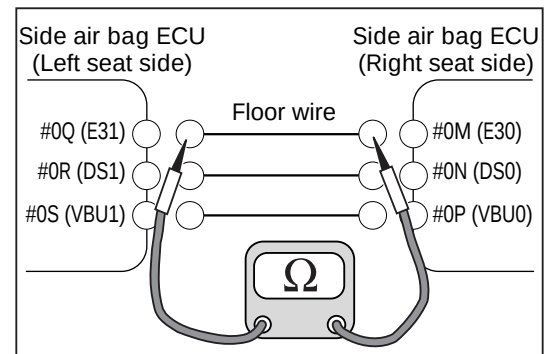
MBE00554-00510



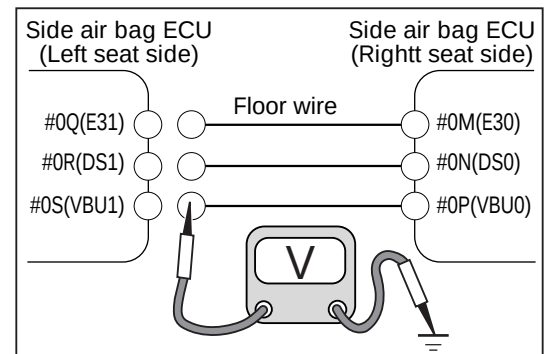
MBE00555-00511



MBE00556-00512



MBE00557-00513



MBE00558-00514

<DIAGNOSIS CODE 71>

Cases where the squib circuit between the side air bag unit and the side air bag ECU is shorted with the ground.

WARNING:

- Be sure to read "IMPORTANT SAFETY NOTICE", page BE-123 - 124, before handling the side air bag components and observe every notice during work.

1. Check of wire harness

- (1) Turn OFF the ignition switch and detach the negative (-) terminal of the battery cable. Then wait for at least 90 seconds.
- (2) Disconnect the connector from the side air bag ECU.
- (3) Disconnect the connector from the side air bag unit.

- (4) Connect a ohmmeter between the connector terminal at the vehicle wire harness side and body earth.
Between Terminal #0V (+) and Body Earth:
No continuity exists.

If it might be shorted, replace the wire harness.

2. Check of side air bag ECU

- (1) Connect the connector of the side air bag ECU.
- (2) Connect the battery negative (-) cable.
- (3) Turn ON the ignition switch.
- (4) Perform the diagnosis canceling procedure.
- (5) Then, confirm the diagnosis code 71 will not be outputted.

NOTE:

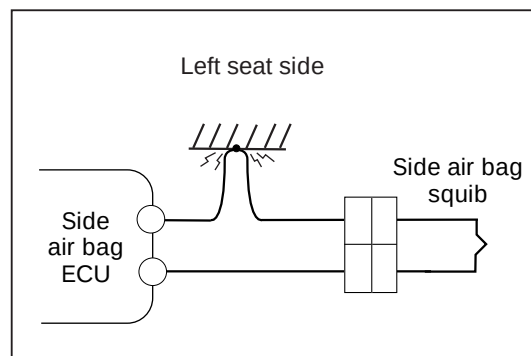
- It is permissible that other codes are outputted.

If diagnosis code 71 is outputted, replace the side air bag ECU.

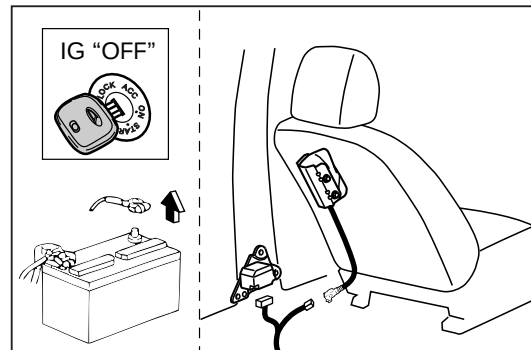
3. Check of side air bag unit

- (1) Turn OFF the ignition switch and detach the negative (-) terminal of the battery cable. Then wait for at least 90 seconds.
- (2) Connect the connector between the side air bag unit and the floor wire No. 1.
- (3) Connect the battery negative (-) cable.
- (4) Turn ON the ignition switch.
- (5) Confirm the diagnosis code after the diagnosis code has been canceled.

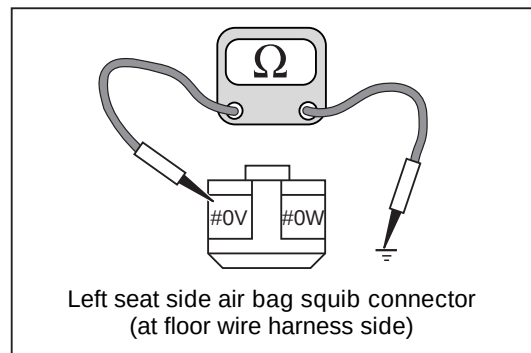
If diagnosis code 71 is outputted, replace the side air bag unit.



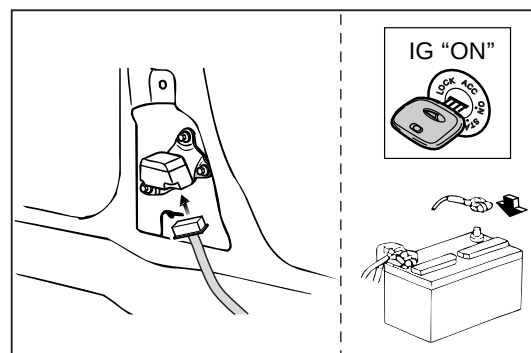
MBE00559-00515



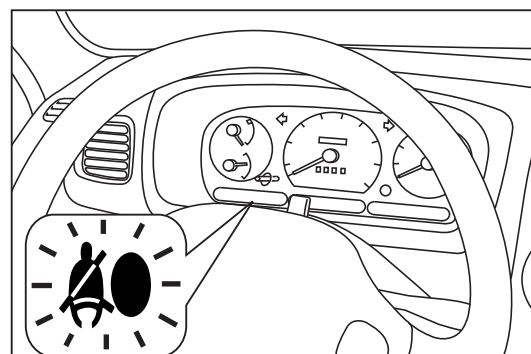
MBE00560-00516



MBE00561-00517



MBE00562-00518



MBE00563-00519

<DIAGNOSIS CODE 72>

Cases where the harness between the side air bag unit and the side air bag ECU is shorted with the power supply.

WARNING:

- Be sure to read "IMPORTANT SAFETY NOTICE", page BE-123 - 124, before handling the side air bag components and observe every notice during work.

1. Check of wire harness

- Turn OFF the ignition switch and detach the negative (-) terminal of the battery cable. Then wait for at least 90 seconds.
- Disconnect the connector from the side air bag ECU.
- Disconnect the connector from the side air bag unit.

- Connect the battery negative (-) cable.
- Connect a voltmeter between the connector terminal at the vehicle wire harness side and body earth. Then, Turn ON the ignition switch.
Between Terminal #0V (+) and Body Earth:
No voltage exists.

If it might be shorted, replace the harness.

2. Check of side air bag ECU

- Turn OFF the ignition switch
- Connect the connector of the side air bag ECU.
- Connect the battery negative (-) cable.
- Turn ON the ignition switch.
- Perform the diagnosis canceling procedure.
- Then, confirm the diagnosis code 72 will not be outputted.

NOTE:

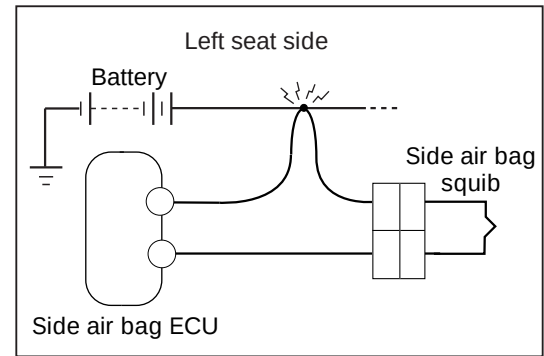
- It is permissible that other codes are outputted.

If diagnosis code 72 is outputted, replace the side air bag ECU.

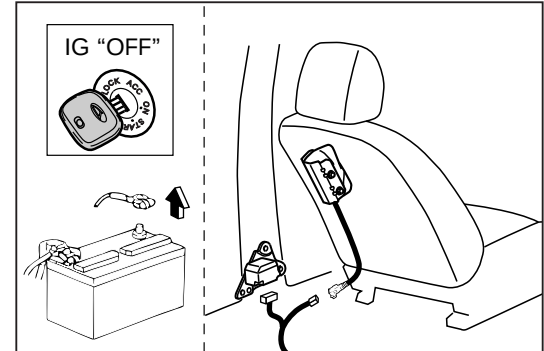
3. Check of side air bag unit

- Turn OFF the ignition switch and detach the negative (-) terminal of the battery cable. Then wait for at least 90 seconds.
- Connect the connector between the side air bag unit and the floor wire No. 1.
- Connect the battery negative (-) cable.
- Turn ON the ignition switch.
- Confirm the diagnosis code after the diagnosis code has been canceled.

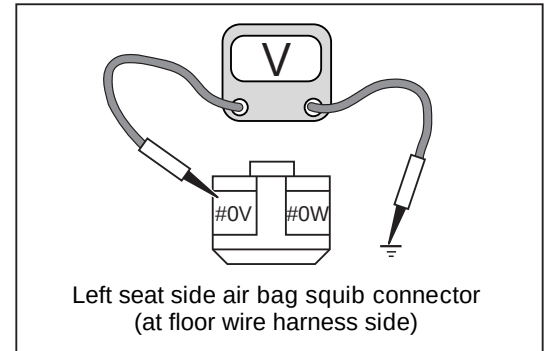
If diagnosis code 72 is outputted, replace the side air bag unit.



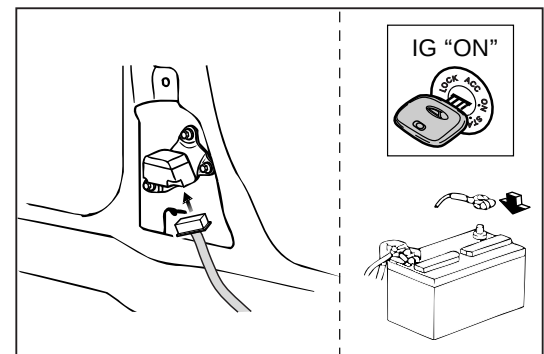
MBE00564-000520



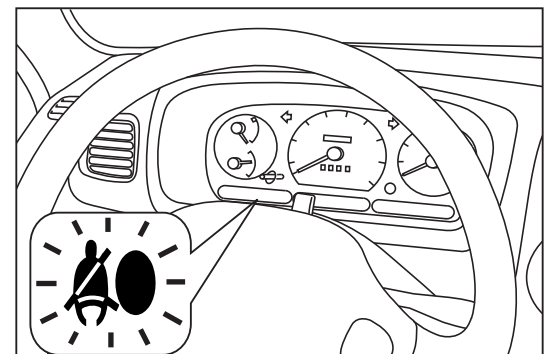
MBE00565-00521



MBE00566-00522



MBE00567-00523



MBE00568-00524

<DIAGNOSIS CODE 73>

Cases where the harness of the side air bag squib are shorted with each other.

1. Check of side air bag ECU

- (1) Turn OFF the ignition switch and detach the negative (-) terminal of the battery cable. Then wait for at least 90 seconds.
- (2) Disconnect the connector from the side air bag unit.
- (3) Connect a jump wire between the connector terminals at the floor wire No. 1 side.
- (4) Connect the battery negative (-) cable.
- (5) Turn ON the ignition switch.
- (6) Perform the diagnosis canceling procedure.
- (7) Then, confirm the diagnosis code 73 will be outputted. If diagnosis code 73 will not be outputted, replace the side air bag ECU.

2. Check of wire harness

- (1) With the ignition switch turned off, disconnect the jump wire.
- (2) Perform the diagnosis canceling procedure.
- (3) Then, confirm the diagnosis code 73 will **not** be outputted.

NOTE:

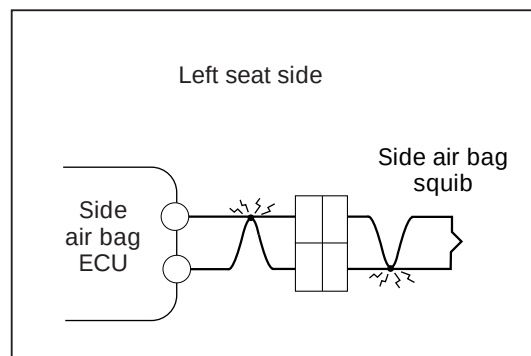
- It is permissible that other codes are outputted.

- (4) If diagnosis code 73 is outputted at Step 2. (3), perform the following procedures.
- (5) With the ignition switch turned off, disconnect the side air bag ECU connector.
- (6) Raise the short circuit bridge of the connector at the floor wire No. 1 side.
- (7) connect a ohmmeter between the connector terminal at the vehicle wire harness side.
Between Terminal #0V (+) and #0W (-):
No continuity exists.

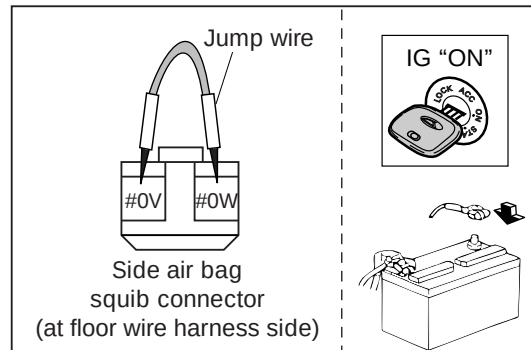
If it might be shorted, replace the harness.

3. Check of side air bag unit

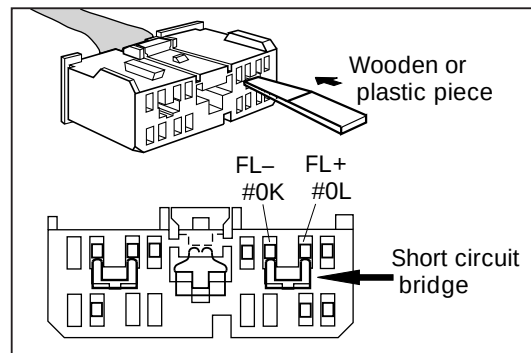
- (1) If the diagnosis code is **not** outputted at Step 2. (3), perform the following procedures.
 - (2) Turn OFF the ignition switch and detach the negative (-) terminal of the battery cable. Then wait for at least 90 seconds.
 - (3) Connect the connector of the side air bag unit.
 - (4) Connect the battery negative (-) cable.
 - (5) Turn ON the ignition switch. Confirm the diagnosis code after the diagnosis code has been erased.
- If diagnosis code 13 is outputted, replace the side air bag unit.



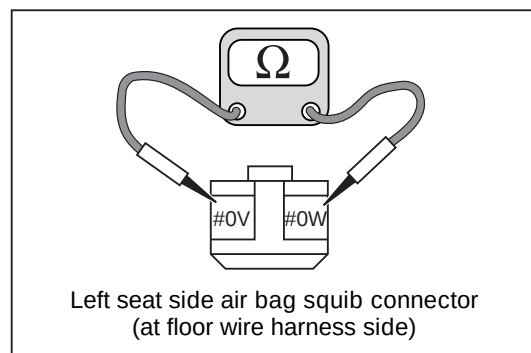
MBE00569-00525



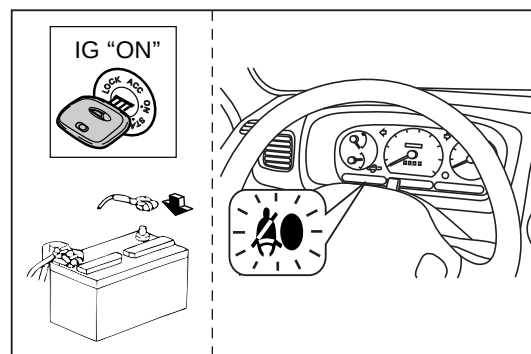
MBE00570-00526



MBE00571-00527



MBE00572-00528



MBE00573-00529

<DIAGNOSIS CODE 74>

Cases where open wire is present at the harness between the side air bag unit and the side air bag ECU.

WARNING:

- Be sure to read "IMPORTANT SAFETY NOTICE", page BE-123 - 124, before handling the side air bag components and observe every notice during work.

1. Check of wire harness

- Turn OFF the ignition switch and detach the negative (-) terminal of the battery cable. Then wait for at least 90 seconds.
- Disconnect the connector from the side air bag ECU and the side air bag unit.

- Connect a ohmmeter between the connector terminal at the vehicle wire harness side.
Between Terminal #0V (+) and #0W (-):
Continuity exists.

If it might have open wire, replace the wire harness.

2. Check of side air bag ECU

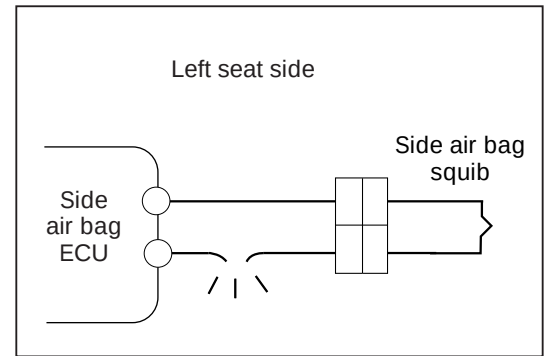
- Connect a jump wire between the connector terminals at the floor wire No. 1 side.
- Connect the connector of the side air bag ECU.
- Connect the battery negative (-) cable.
- Turn ON the ignition switch.
- Perform the diagnosis canceling procedure.
- Then, confirm the diagnosis code 74 will **not** be outputted.

If diagnosis code 74 is outputted, replace the side air bag ECU.

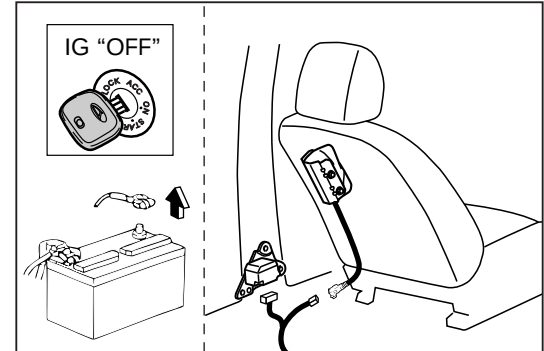
3. Check of side air bag unit

- Turn OFF the ignition switch and detach the negative (-) terminal of the battery cable. Then wait for at least 90 seconds.
- Disconnect the jump wire which is applied at Step 2. (1).
- Connect the connector of the side air bag unit.
- Connect the battery negative (-) cable.
- Turn ON the ignition switch. Confirm the diagnosis code after the diagnosis code has been erased.

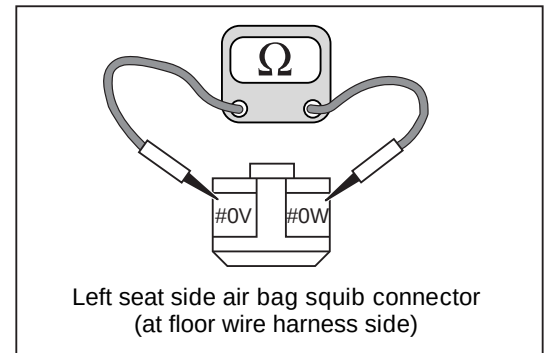
If diagnosis code is 74 outputted, replace the side air bag unit.



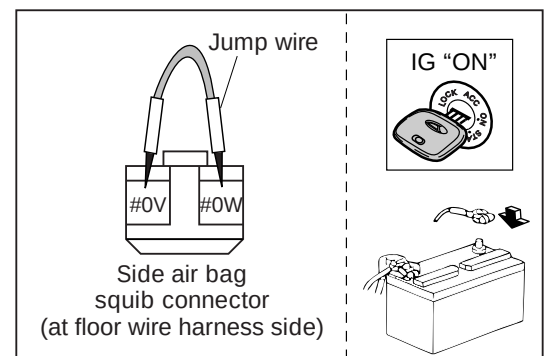
MBE00574-00530



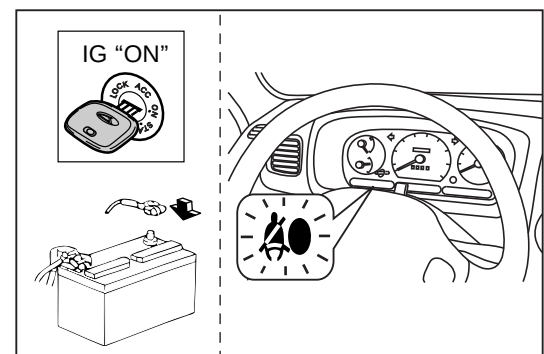
MBE00575-00531



MBE00576-00532



MBE00577-00533



MBE00578-00534

DISPOSAL PROCEDURE FOR SIDE AIR BAG DISPOSAL OF VEHICLES WITH SIDE AIR BAG SYSTEM

WARNING:

- When disposing the vehicles with the side air bag system, deploy the side air bag while it is mounted on the vehicle. As for the pretensioner, operate the squib before disposing the vehicle.

<DISPOSAL PROCEDURE FOR SIDE AIR BAG>

- Turn OFF the ignition switch and detach the negative (-) terminal of the battery cable. Then wait for at least 90 seconds.
- Prepare a 12-V battery for automotive use.

- Remove the scuff plate, center pillar garnish and front seat. Disconnect the connector at the vehicle wire harness side from the side air bag ECU connector.
- Raise or remove the short circuit bridge at the terminals #0H (FR+) and #0G (FR-) or #0L (FL+) and #0K (FL-) of the disconnected connector, by using an appropriate tool.
- Prepare two wires for automotive use, each of which measures more than six meters long.

WARNING:

- Connect the end of one wire with the end of the other wire so that they may be shorted.

- Connect the wires prepared in Step 5 above to the connector terminals #0H (FR+) and #0G (FR-) or #0L (FL+) and #0K (FL-).

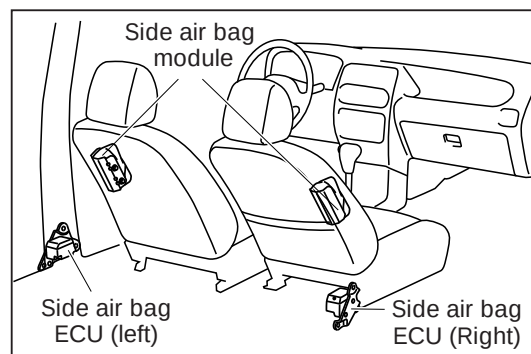
WARNING:

- This connecting operation to the connector should be performed by one person, not by a joint work of plural operators, so as to avoid mistakes.
- During this operation, there is the possibility that the side air bag may be deployed accidentally. Therefore, be sure to give a warning to other persons so that they may get out of the vehicle or may be kept away from the area five meters from the vehicle.

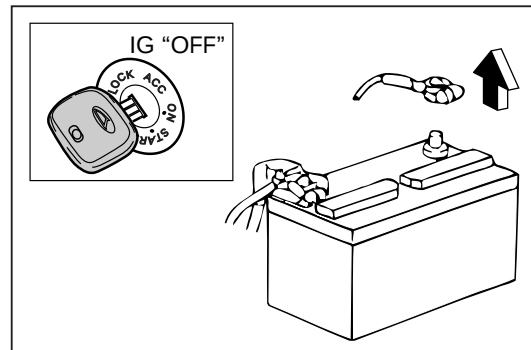
- Install the front seat.
- The shorted section of the wires should be kept five meters or more away from the vehicle, as shown in the figure.

CAUTION:

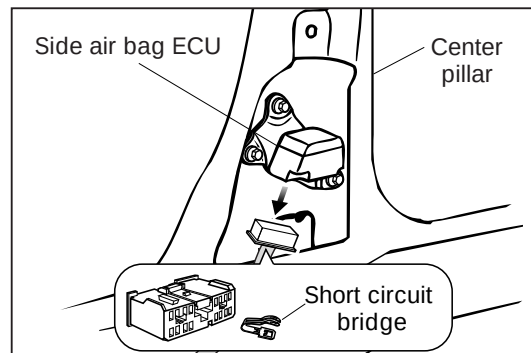
- Be sure to give a warning to other persons about a big noise that will be emitted at the time of the side air bag deployment.
- The window glass should be closed in advance.



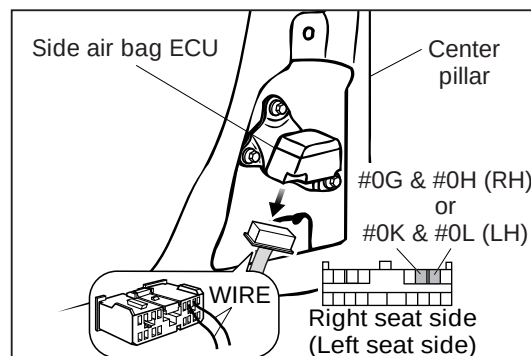
MBE00579-00535



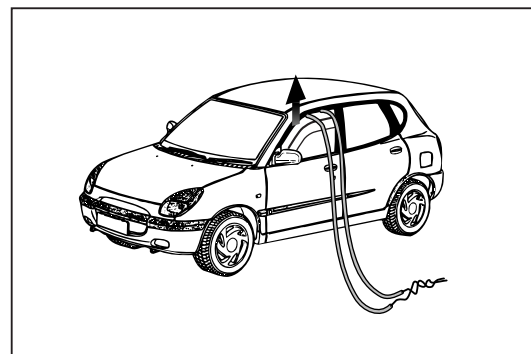
MBE00580-00536



MBE00581-00537



MBE00582-00538



MBE00583-00539

9. Disconnect the wires that have been shorted. Connect one wire to the positive terminal of the battery; the other wire to the negative terminal of the battery, thereby deploying the side air bag.

NOTE:

- There is no need for identifying the polarity of the battery.

WARNING:

- Immediately after the deployment of the side air bag, the vehicle interior is filled with gas. Therefore, start the operation after gas is diffused.
- Since the metal section of the gas generator is extremely hot, leave it at least for thirty minutes to allow it to cool naturally.

10. After the deployed side air bag cools down completely, it shall be sealed in a bag to be disposed.

WARNING:

- Be sure to wear protective goggles and gloves during this operation. After completion of the operation, gargle and wash your hands. If you feel any abnormality in your respiratory organs, follow the instruction of a doctor.

DISPOSAL OF SIDE AIR BAG UNIT

CAUTION:

- It is the best to dispose the side air bag and seat belt pretensioner when they are installed in the vehicle. However, if it is unavoidable to perform the pre-treatment for disposal for the unit itself, follow the procedure given below.

NOTE:

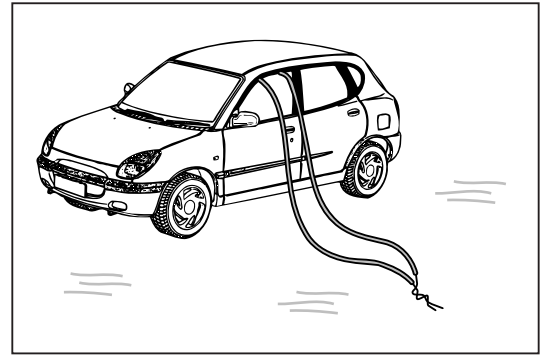
- Items to be prepared.

1. 12-V battery for automotive use
2. Two wires for automotive use, each measuring at least 10 meters long.

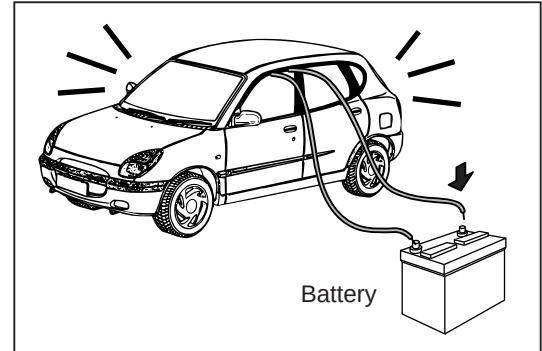
An alligator clip is connected to each end of these wires.

WARNING:

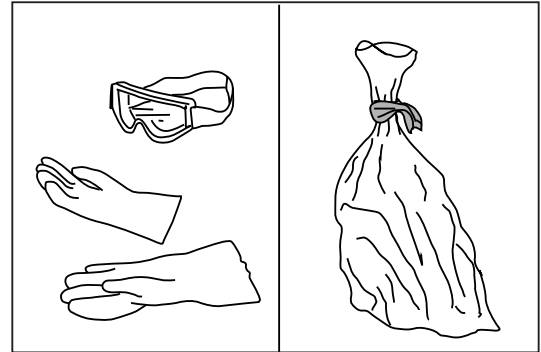
- Connect the end of one wire with the end of the other wire so that they may be shorted.
- No switch shall be installed to these wires so as to prevent accidents.



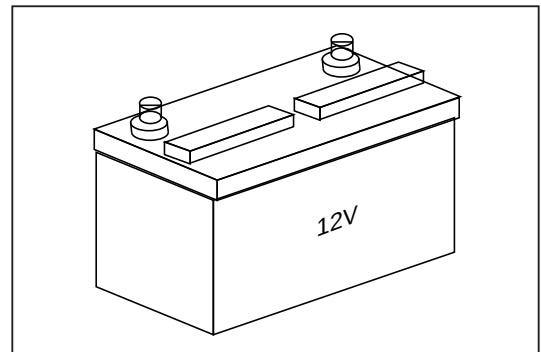
MBE00584-00540



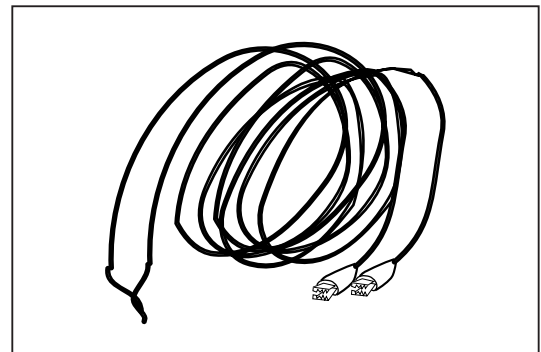
MBE00585-00541



MBE00586-00542

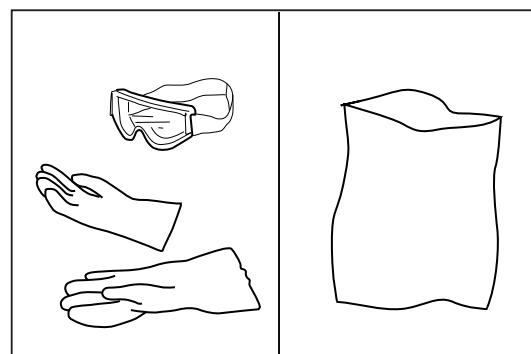


MBE00587-00543



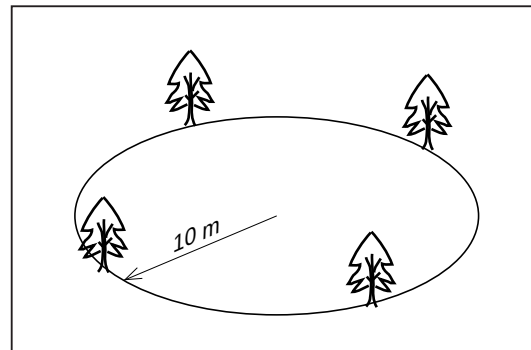
MBE00588-00544

3. Protective goggles and gloves
4. A bag for disposal



MBE00589-00545

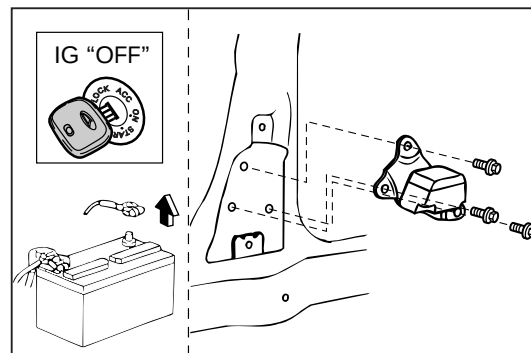
5. A spacious place whose radius is at least 10 meters
- CAUTION:**
- Do not perform the pre-treatment for disposal for the side air bag and seat belt pretensioner on a windy or rainy day.



MBE00590-00546

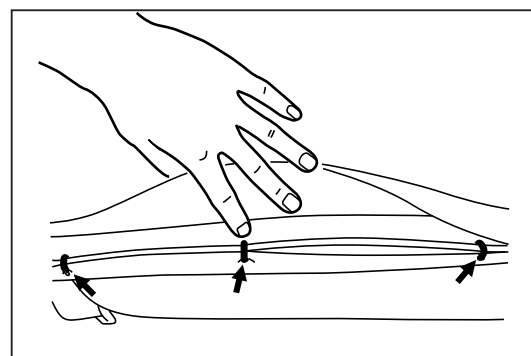
<Disposal procedure for side air bag>

1. Turn OFF the ignition switch and detach the negative (-) terminal of the battery cable. Then wait for at least 90 seconds.
2. Disconnect the connector which connects the wire harness of the front seat side air bag and the floor wire No. 1.
3. Remove the front seat by removing attaching bolts.



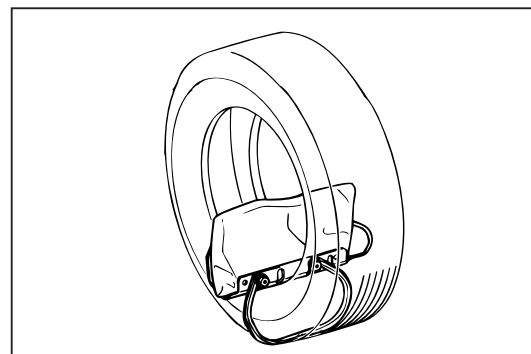
MBE00591-00547

4. Turn over the seat cover, until the side air bag unit can be seen, by removing the hug rings (three points) at the lower part of the seat back.
5. Remove the side air bag unit by loosening the attaching nuts.



MBE00592-00548

6. Attach two nuts for wire harness installation to the side air bag unit.
7. Secure the unit to the tire, using wire harnesses for automobile (sectional area of core wire : 1.25 mm² or more).

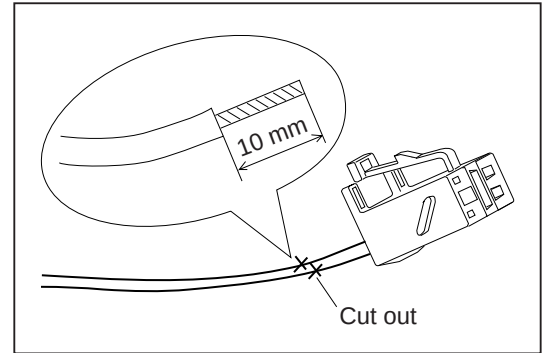


MBE00593-00549

8. Cut the wires at the squib connector of the side air bag unit. Remove the covering of each end of the two cut wires about 10 mm.

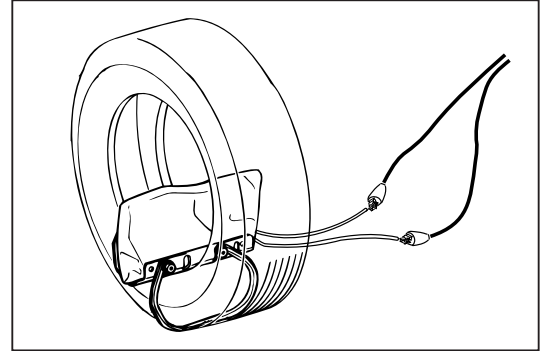
WARNING:

- Connect the sections each other whose wire coverings have been removed so that they may be shorted.



MBE00594-00550

9. Place the side air bag unit at the center of the prepared place.
10. Disconnect the shorted squib wires of the side air bag unit. Connect the alligator clip attached to the end of the prepared 10 m-long wire to each squib wire.

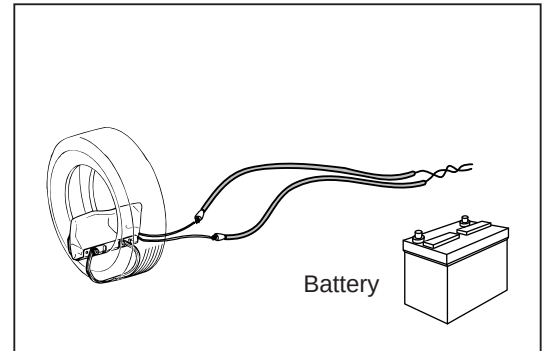


MBE00595-00551

11. Place the prepared 12-V battery for automotive use at a corner of the place. Bring nearby the shorted ends of the wires which are extended from the side air bag unit.

WARNING:

- Be sure to give a warning to other persons about a big noise that will be emitted at the time of the air bag deployment.

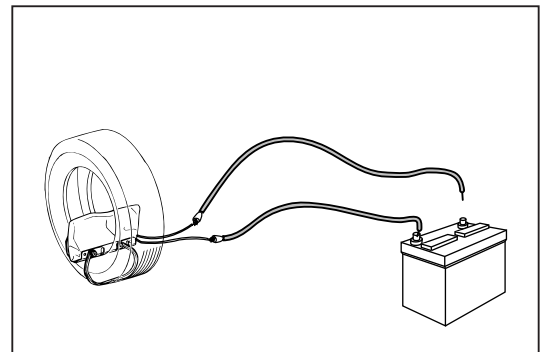


MBE00596-00552

12. Disconnect the wire ends that have been shorted. Connect one wire to the positive terminal of the battery; the other wire to the negative terminal of the battery, thereby deploying the air bag.

NOTE:

- There is no need for identifying the polarity of the battery.

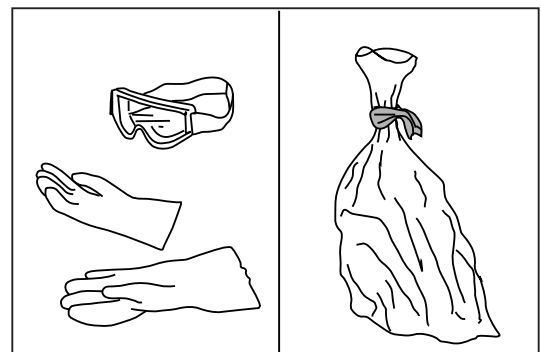


MBE00597-00553

13. Since the metal section of the gas generator is extremely hot, leave it at least for thirty minutes to allow it to cool naturally. After the deployed air bag cools down completely, it shall be sealed in a bag to be disposed.

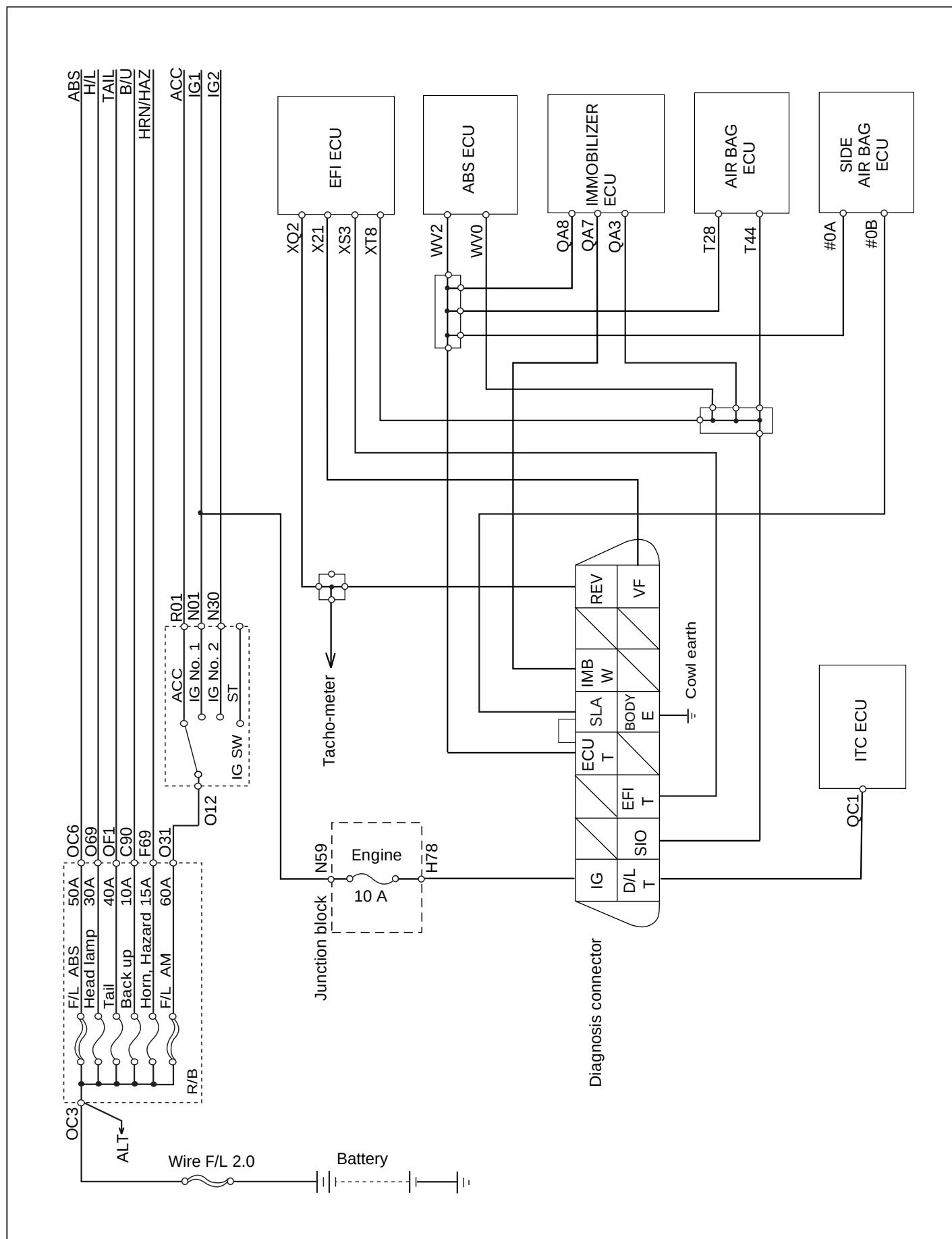
WARNING:

- Be sure to wear protective goggles and gloves during this operation. After completion of the operation, gargle and wash your hands. If you feel any abnormality in your respiratory organs, follow the instruction of a doctor.

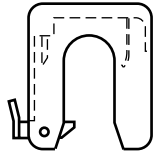
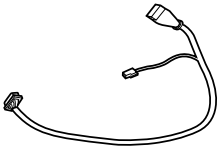
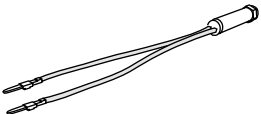


MBE00598-00554

DIAGNOSIS CIRCUIT



SSTs (Special service tool)

Shape	Part No.	Part name	Use	Remarks
	09870-00025-000	Quick joint remover	To remove the quick joint for air conditioner piping (High pressure side)	BE-40
	09991-87403-000	Diagnosis check wire	To short the terminal T	BE-57
	09991-87404-000	Engine control system inspection wire	Additional use for reading the diagnosis code	BE-57
	09991-87211-000	Diagnosis check wire	To read the diagnosis codes for checking ECU input/output signals (LED type)	BE-64

MBE00600-00556

TIGHTENING TORQUE

Tightening component	Tightening torque		Remarks
	N·m	kgf-m	
Water temp. sender gauge × Cylinder block	24.5 - 34.3	2.5 - 3.5	
Rear wiper arm × Body	4 - 7	0.41 - 0.71	
Steering column × Support bracket (Lower side)	9.8 - 15.7	1 - 1.6	Nut
Steering column × Support bracket (Upper side)	14.7 - 21.6	1.5 - 2.2	Bolt
Steering wheel × Steering shaft	34.3 - 53.9	3.5 - 5.5	
Steering wheel × Steering wheel pad assembly	5.2 - 9.6	0.53 - 0.98	TORX® bolt
Passenger's side air bag × Instrument panel	6.7 - 9.5	0.68 - 0.97	Bolt
Passenger's side air bag × Instrument panel	6.7 - 9.5	0.68 - 0.97	Nut
Fuel tank × Fuel sender gauge	1.5 - 2.5	0.15 - 0.23	
Front wiper arm × Body	15 - 25	1.5 - 2.3	
Side air bag × Front seat	16.8 - 31.2	1.7 - 3.2	Nut
Side air bag ECU × Center pillar	15.8 - 22.6	1.6 - 2.3	Bolt
Seatbelt pretensioner × Center pillar	18 - 53	1.8 - 5.4	Bolt
Seatbelt pretensioner × Center pillar	1.5 - 3.5	0.15 - 0.36	Screw

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