

LIGHTING SYSTEM

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دیجیتال خودرو

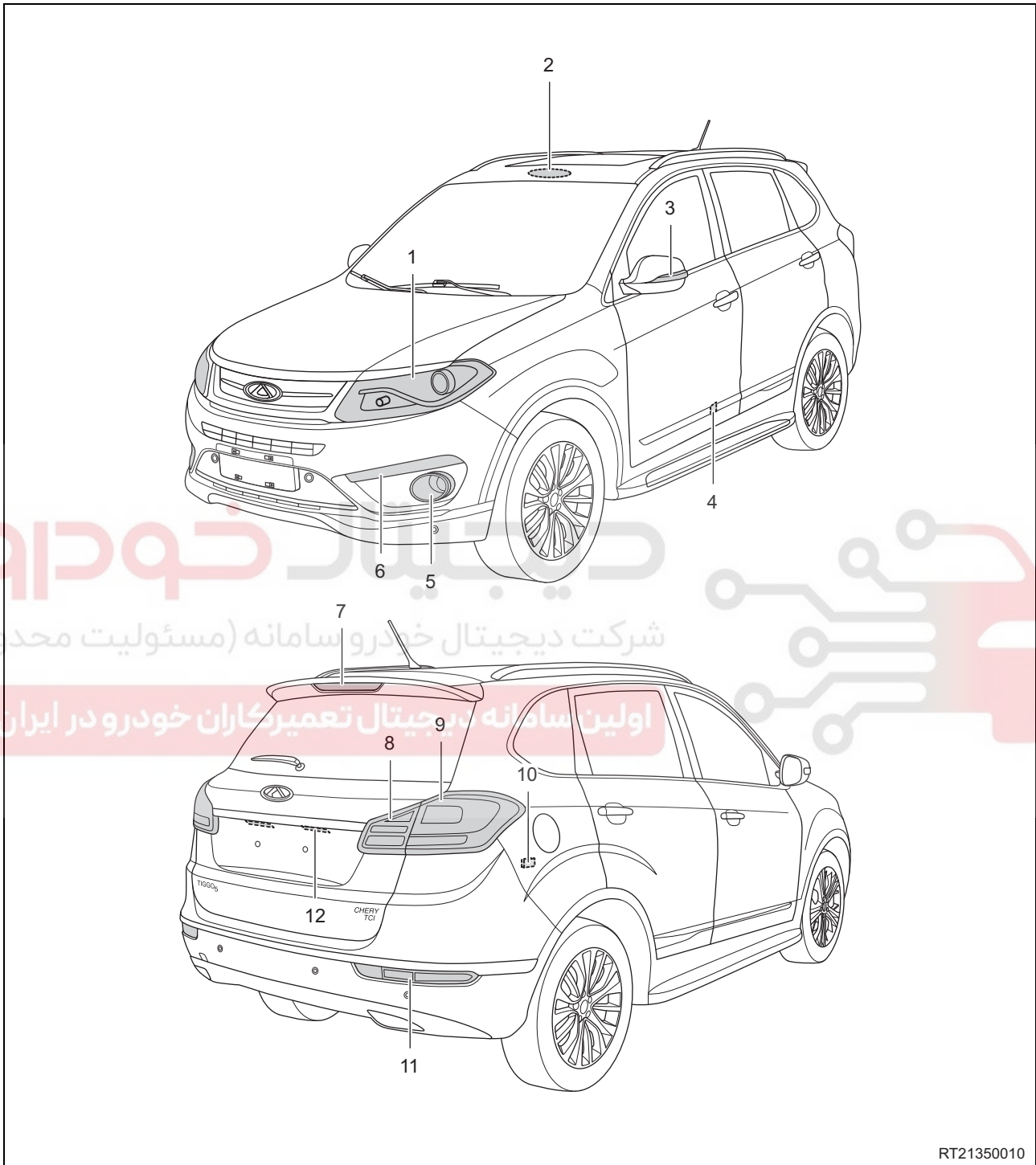
شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



GENERAL INFORMATION

Light Position Diagram



48 - LIGHTING SYSTEM

1 - Headlight Assembly (Low Beam Light, High Beam Light, Position Light, Turn Signal Light)	2 - Interior Front Dome Light
3 - Side Turn Signal Light	4 - Front Door Courtesy Light
5 - Front Fog Light	6 - High Mounted Stop Light
7 - Luggage Compartment Light	8 - Rear Combination Light (Fixed Part) (Turn Signal Light, Position Light, Brake Light)
9 - Rear Combination Light (Movable Part) (Back-up Light)	10 - Rear Fog Light
11 - License Plate Light	

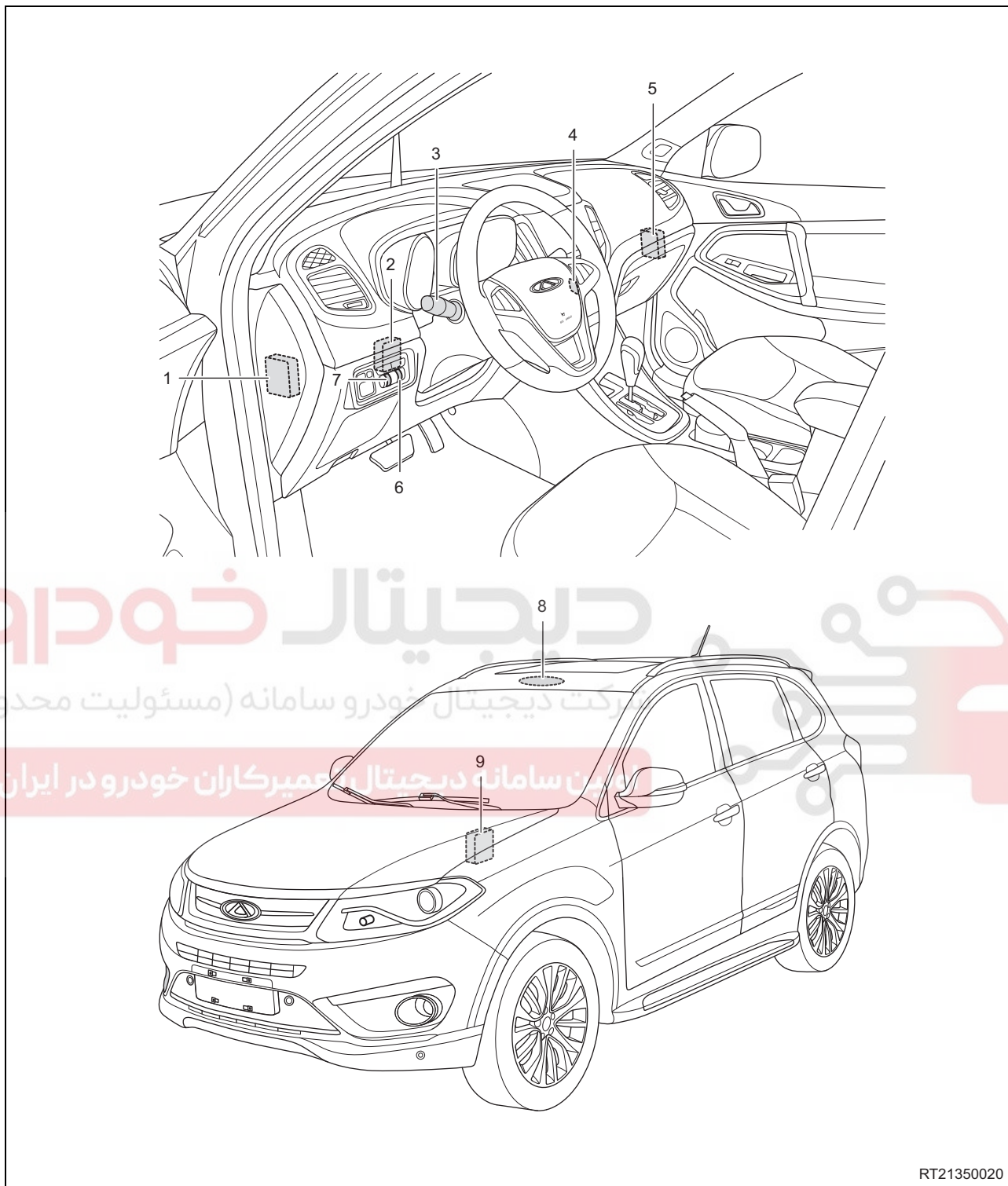
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System Assembly Diagram



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RT21350020

1 - Instrument Panel Fuse and Relay Box A	2 - Body Control Module (BCM)
3 - Headlight Adjustment Switch Assembly	4 - Hazard Warning Light Switch
5 - Instrument Panel Fuse and Relay Box B	6 - Headlight Leveling Switch
7 - Backlight Adjustment Switch	8 - Interior Front Dome Light Switch
9 - Engine Compartment Fuse and Relay Box	

Description

Lighting system on this model consists of vehicle lighting device and light signal device, which are used for normal operation of vehicle to ensure safety when driving at night or in fog.

Lighting system consists of headlight assembly (including low beam light, high beam light, position light and turn signal light), front fog light, side turn signal light, front dome light, front door courtesy light, instrument panel backlight, rear combination light (including turn signal light, position light, brake light and back-up light), rear fog light (rear fog light and reflector), license plate light, high mounted stop light, and luggage compartment light. The headlight assembly and rear combination light use semi-closed structure for easy inspection and repair.

Specifications

Bulb Specifications

Bulb Name	Nominal Light Source (Model/Type)
Headlight (High Beam/Low Beam)	HB3
Front Position Light	LED
Front Turn Signal Light	PY21W
Brake Light	LED
Front Fog Light	H7
Rear Fog Light	P21W
License Plate Light	C5W
High Mounted Stop Light	LED
Rear Position Light	LED
Rear Turn Signal Light	PY21W
Back-up Light	W16W
Side Turn Signal Light	LED
Front Dome Light	LED
Luggage Compartment Light	C5W
Front Door Courtesy Light	3W

Torque Specifications

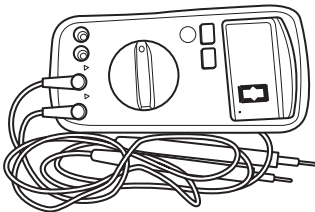
Description	Torque (N·m)
Headlight Assembly Fixing Bolt	3.5 ± 0.5
Front Fog Assembly Fixing Screw	1.5 ± 0.5
Rear Combination Light Assembly Fixing Nut	4.5 ± 1
Rear Combination Light Assembly Fixing Screw	1.5 ± 0.5
Front Dome Light Assembly Fixing Screw	1.5 ± 0.5
Rear Dome Light Assembly Fixing Screw	1.5 ± 0.5
Rear Fog Light & Reflector Assembly Fixing Screw	1.5 ± 0.5
High Mounted Stop Light Fixing Nut	3.5 ± 0.5
Back-up Light Switch	20 ± 2

Tools

Special Tool

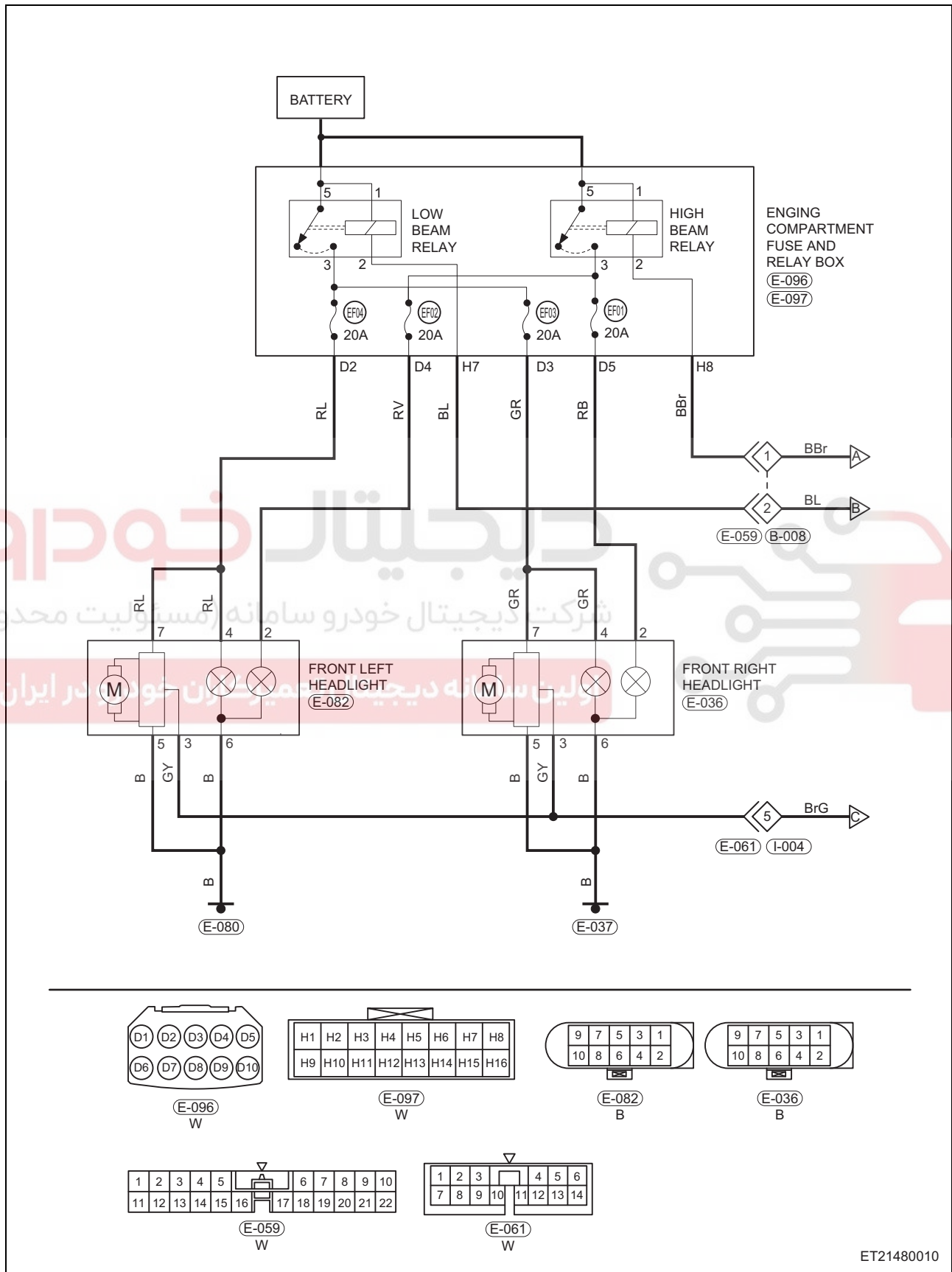
<p>X-431 3G Diagnostic Tester</p>	 <p>RCH0000001</p>
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General Tool

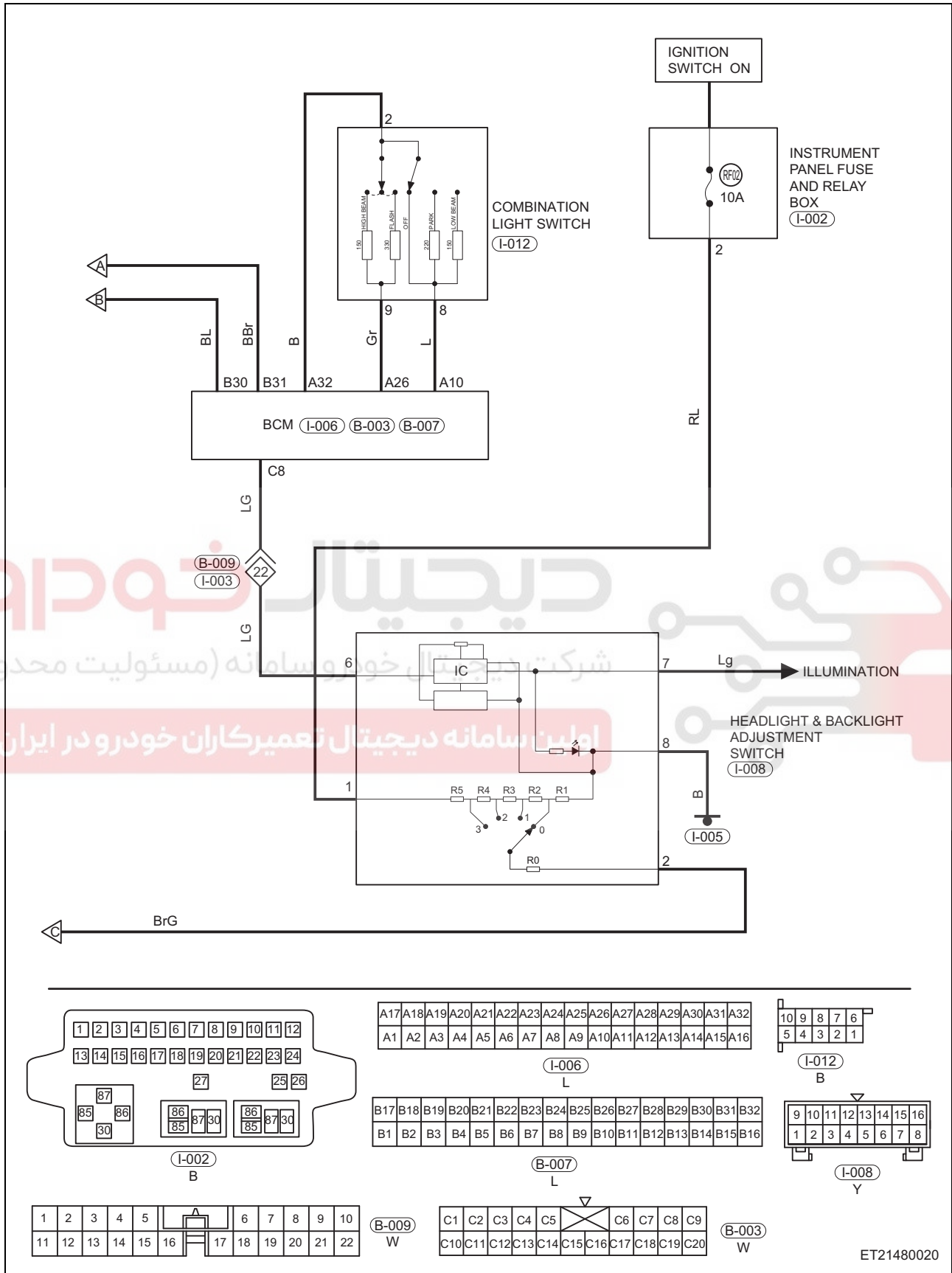
<p>Digital Multimeter</p>	 <p>RCH0000002</p>
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Circuit Diagram

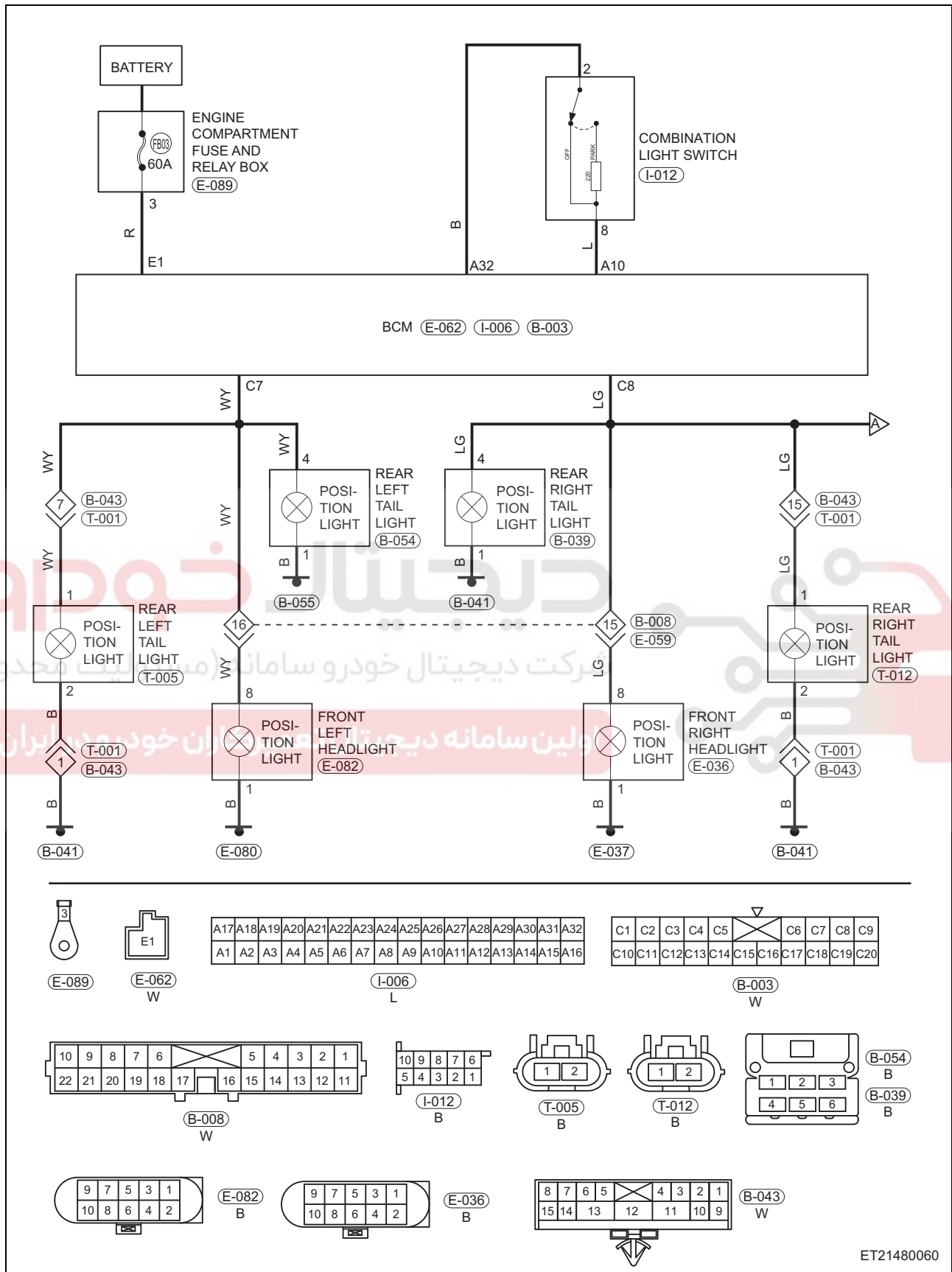
High/Low Beam Light (Page 1 of 2)

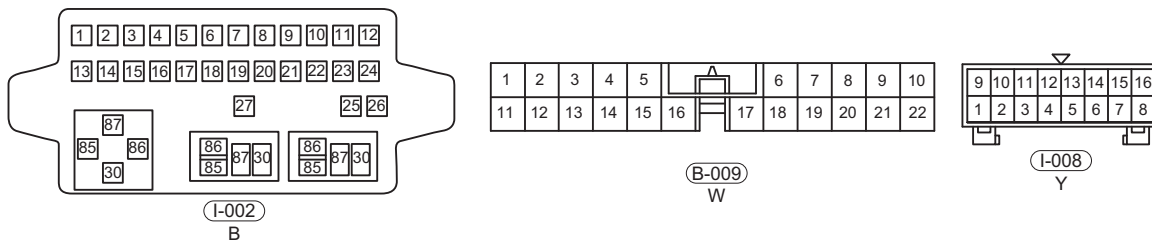
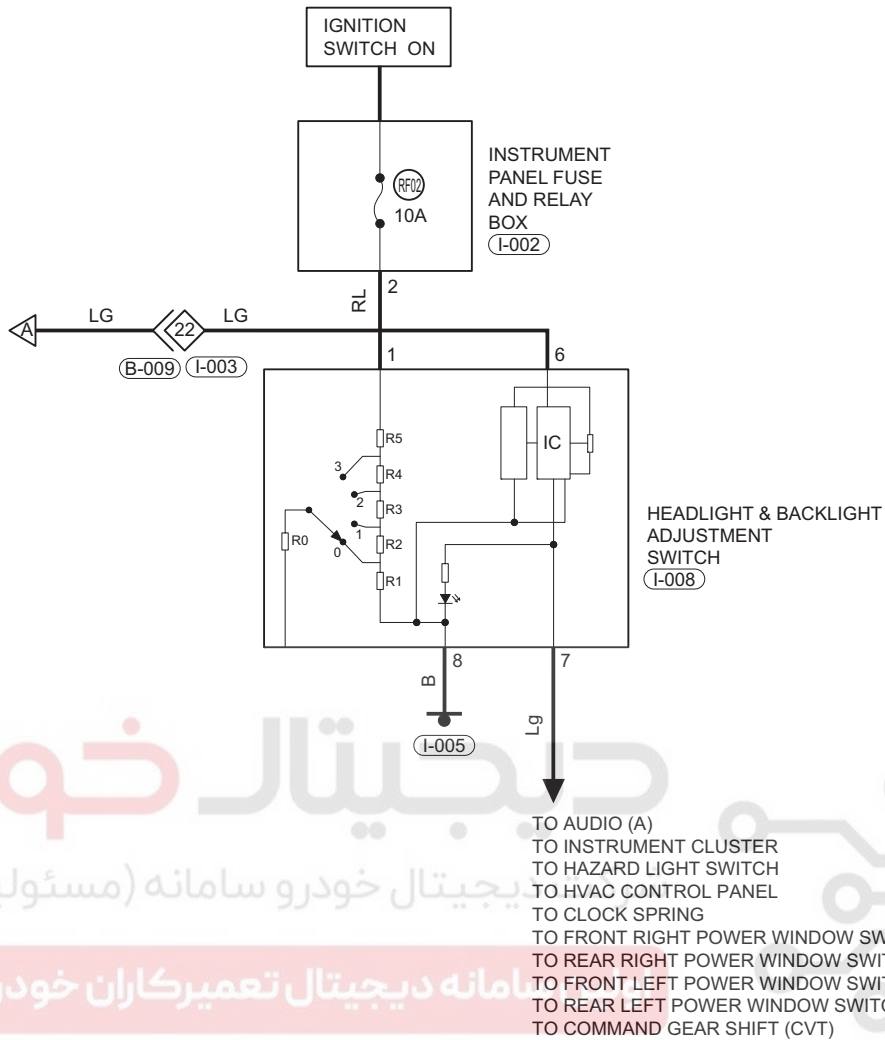


High/Low Beam Light (Page 2 of 2)

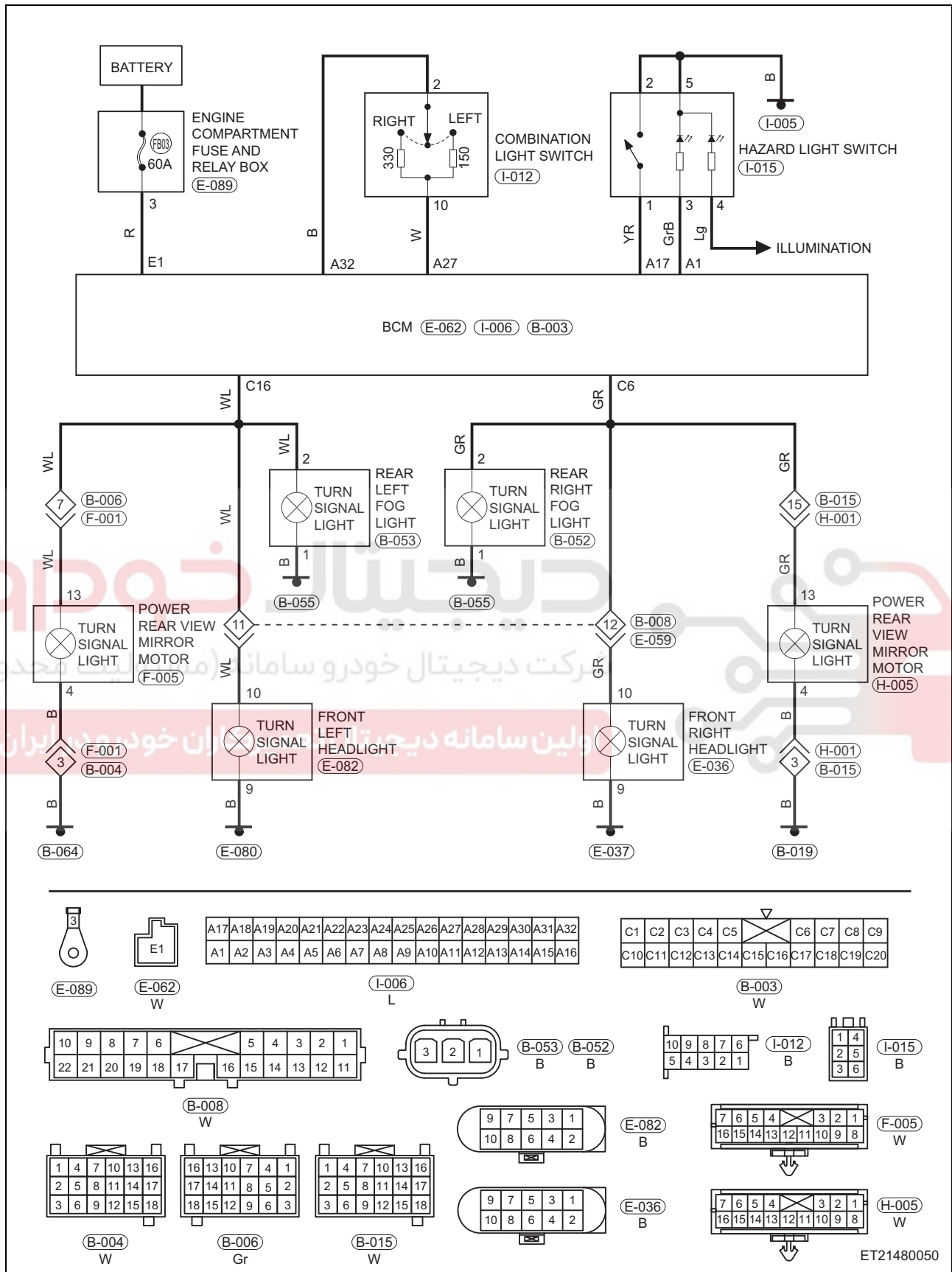


Position Light

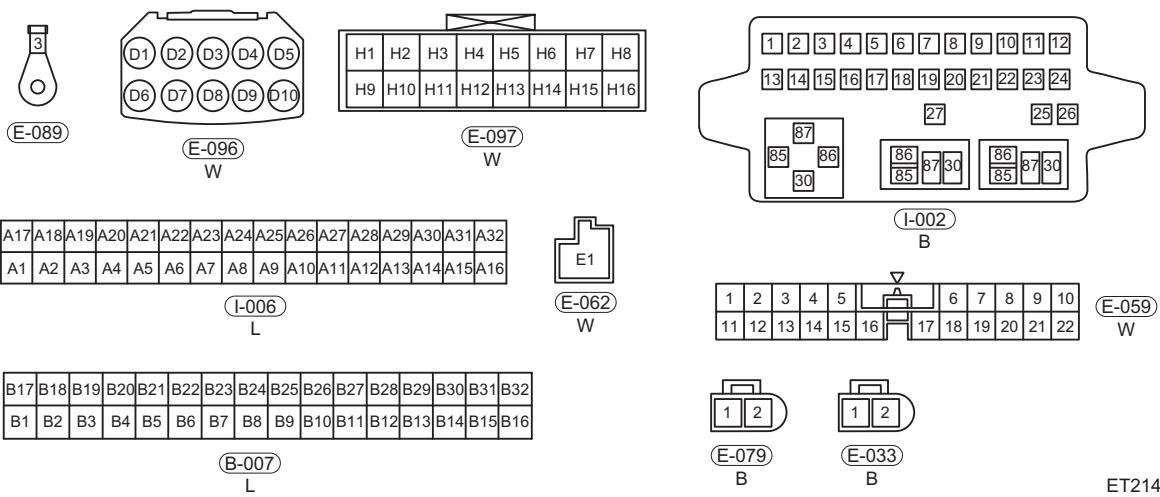
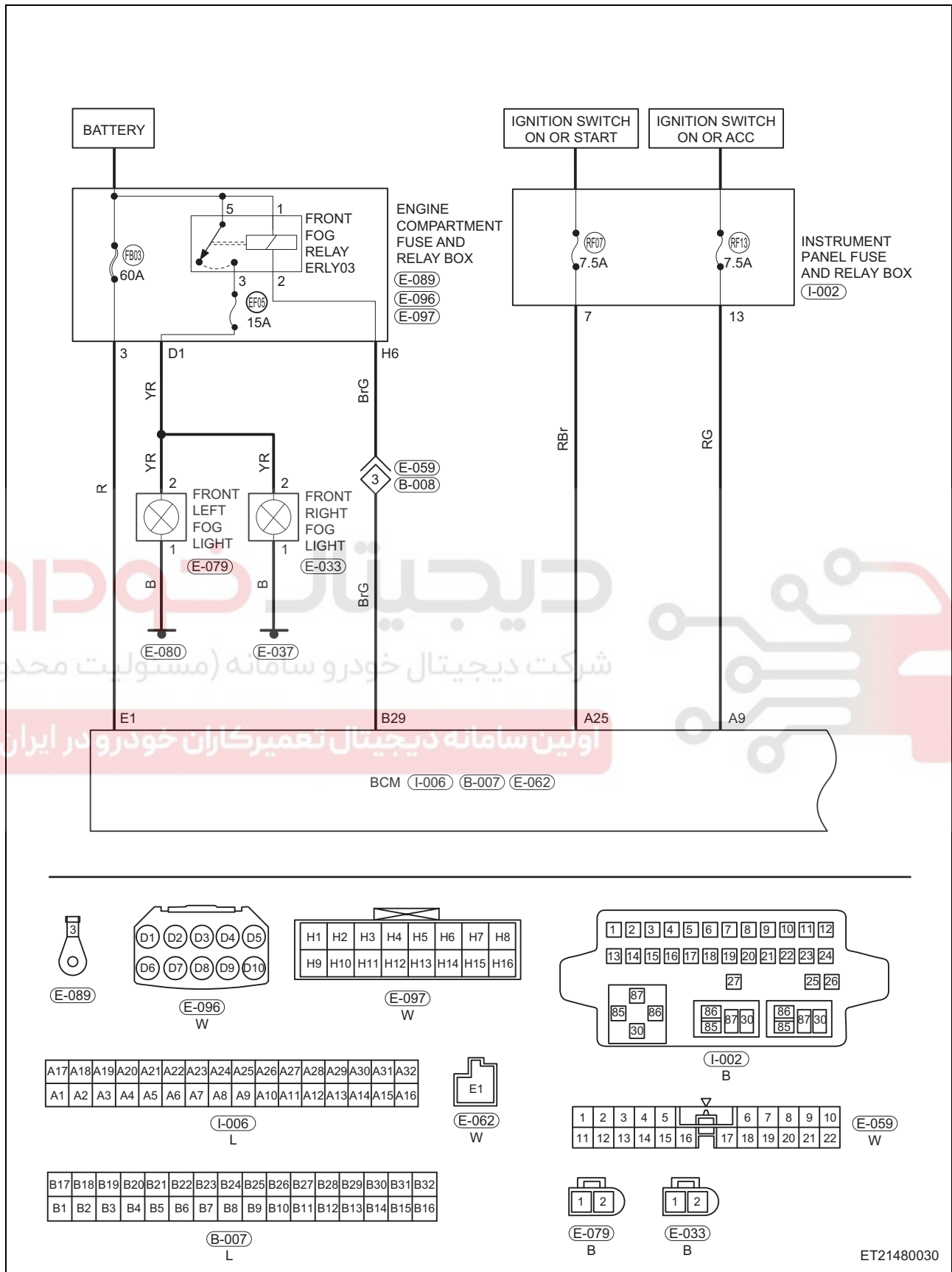




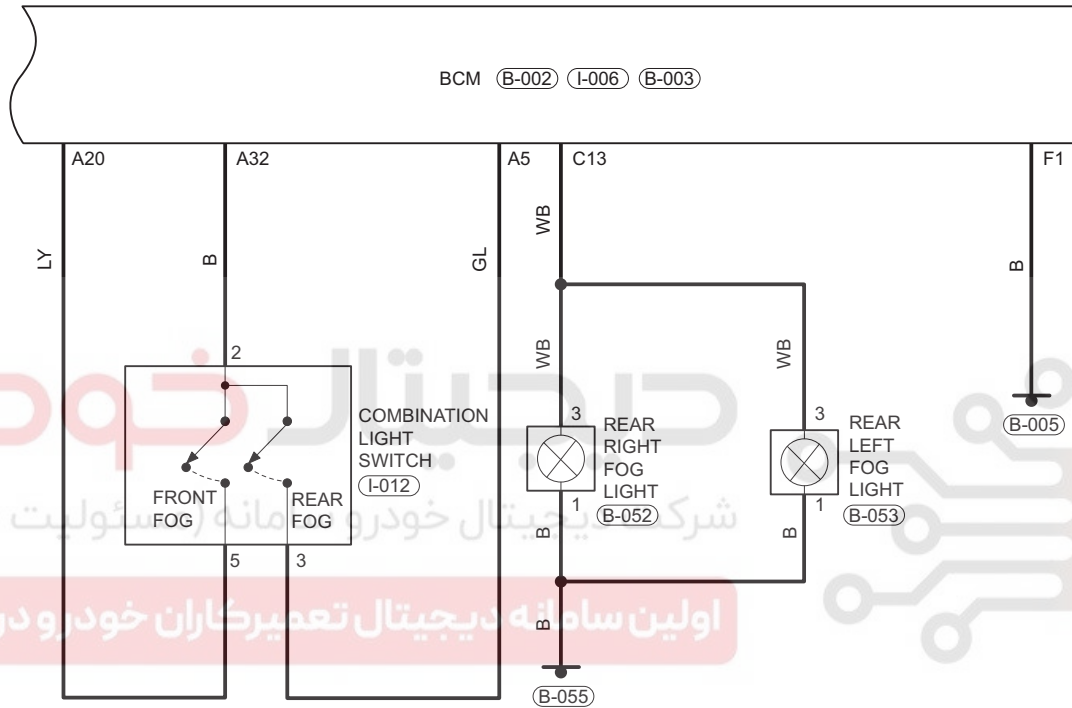
Turn Signal Light



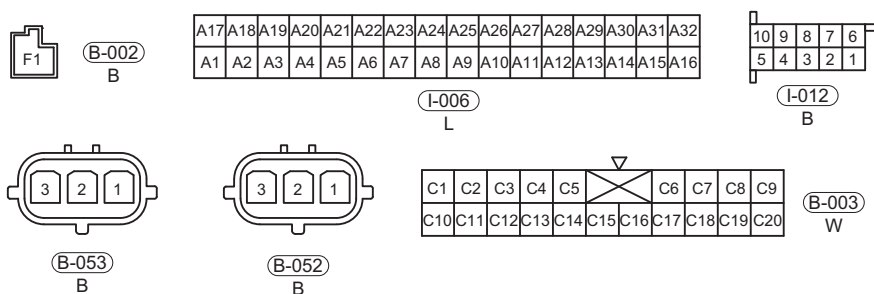
Fog Light (Page 1 of 2)



Fog Light (Page 2 of 2)

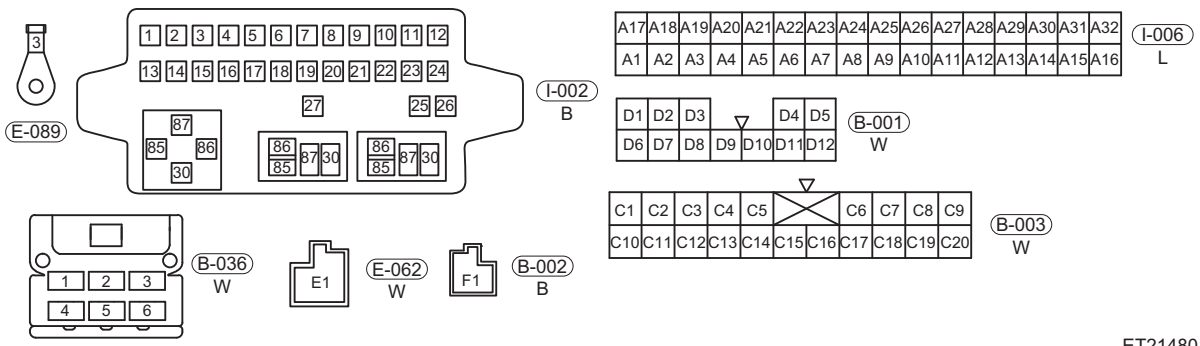
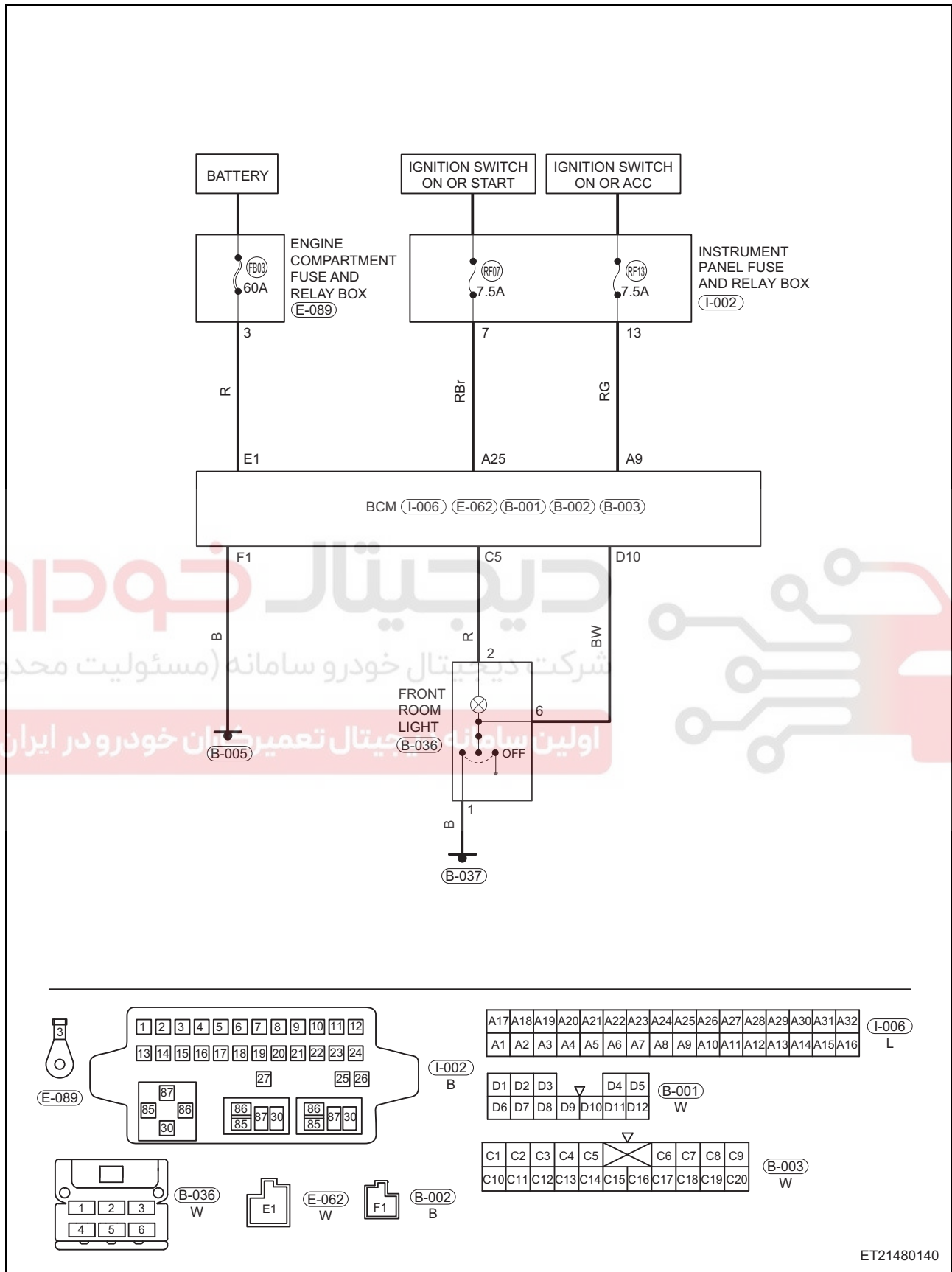


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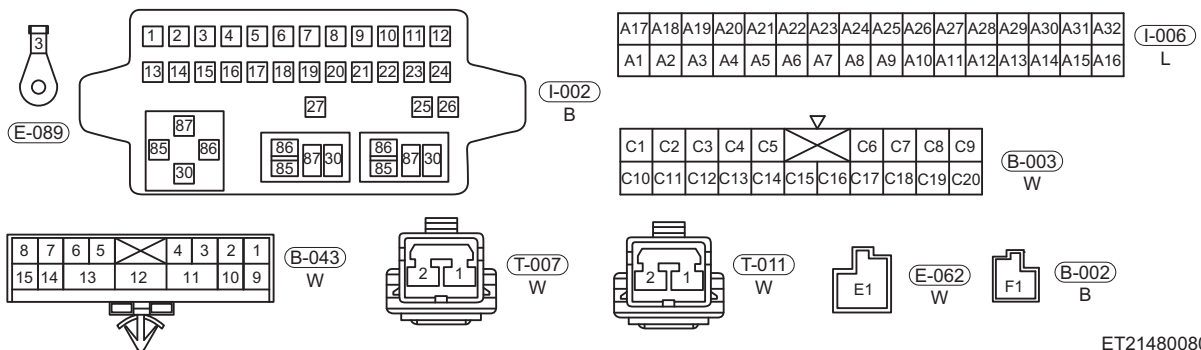
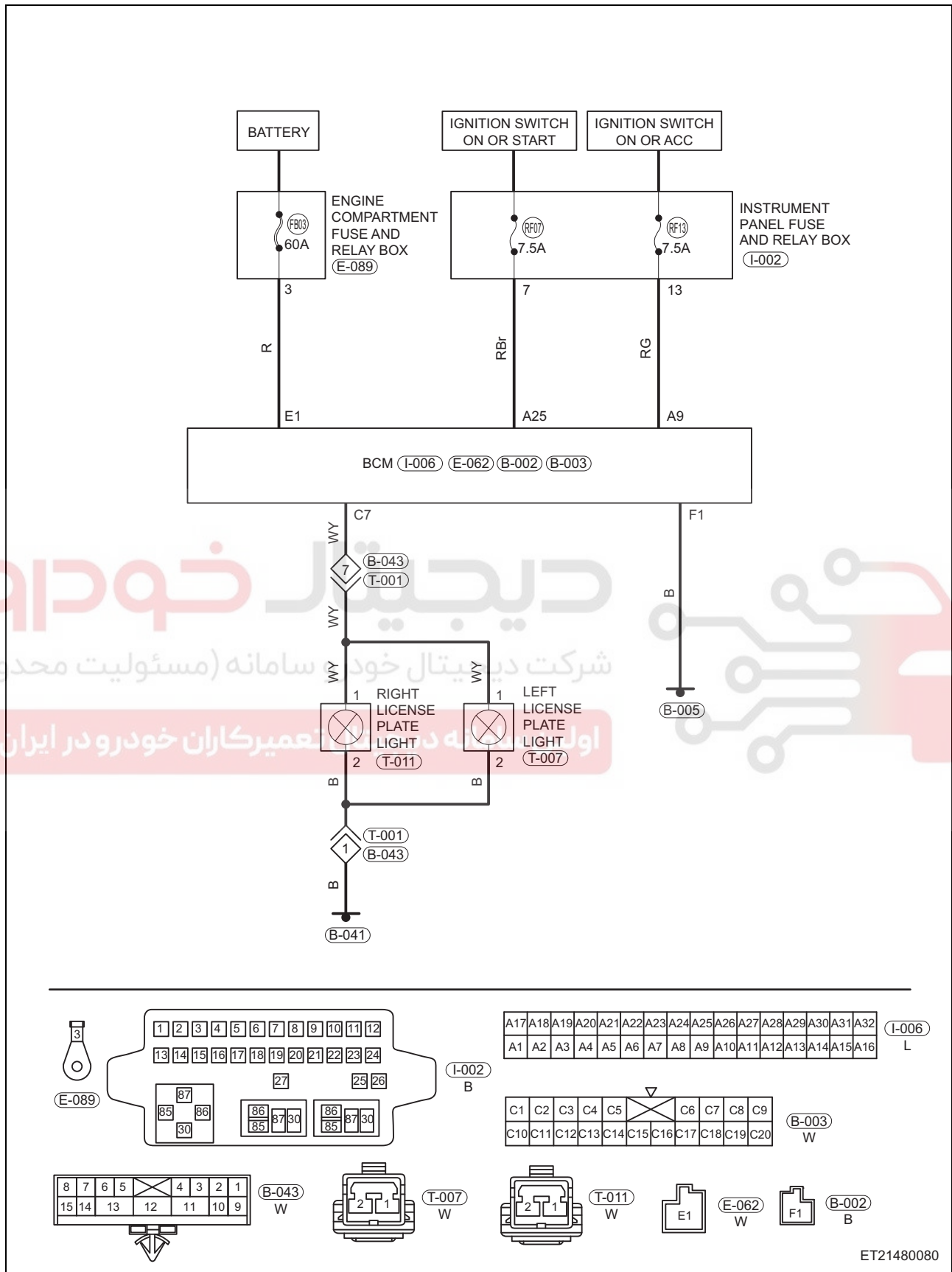


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Dome Light



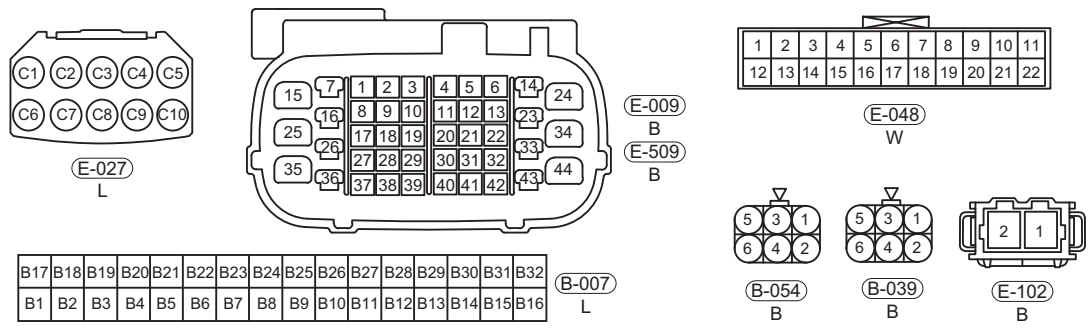
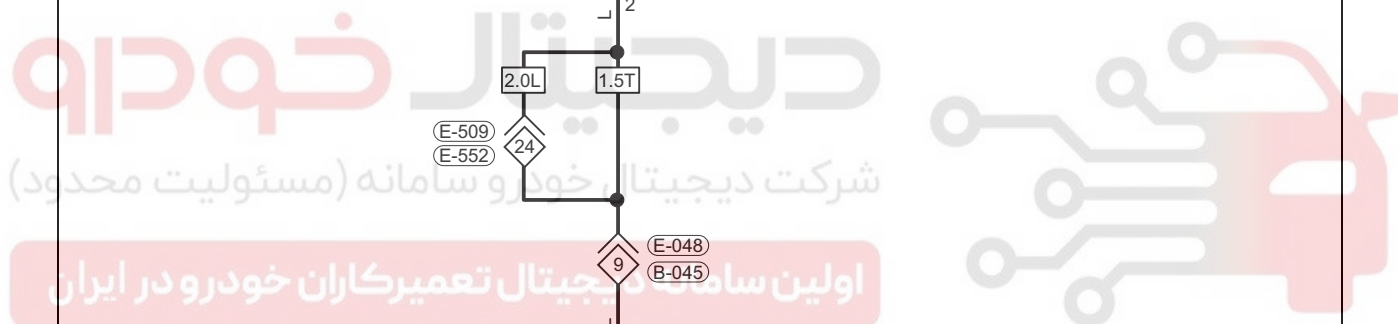
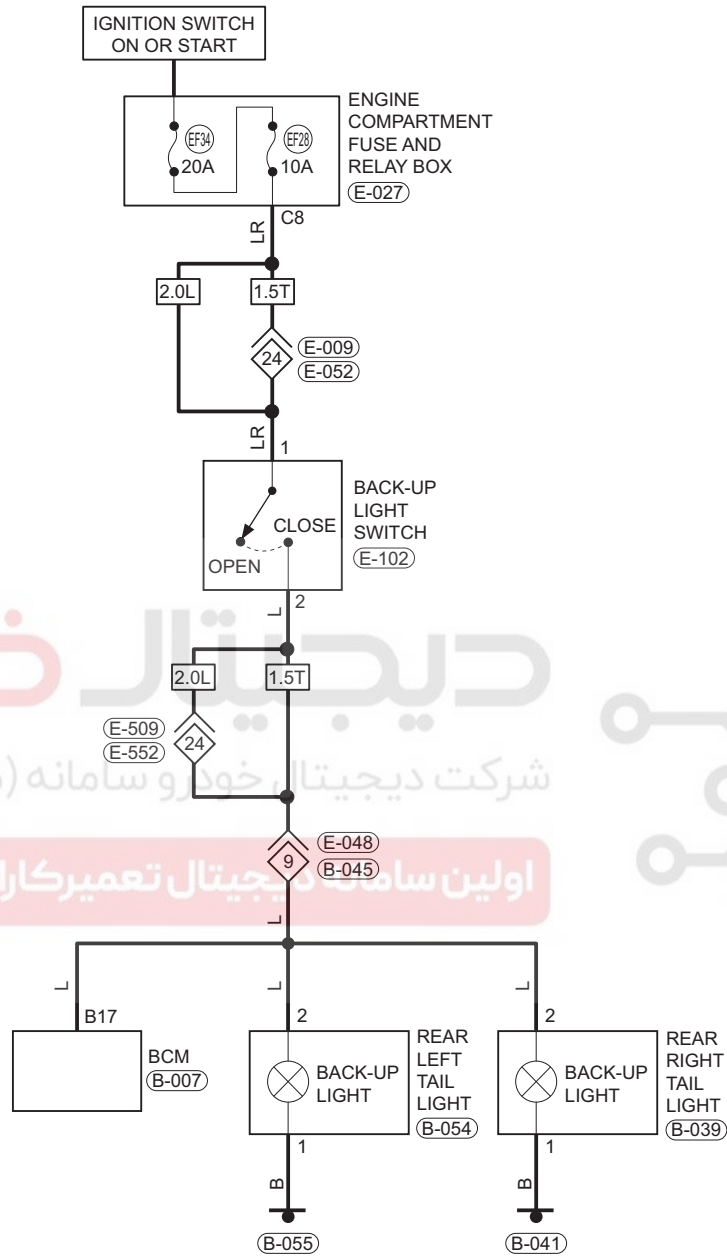
License Plate Light



Ignition Switch Illumination

Back-up Light (Page 1 of 2)

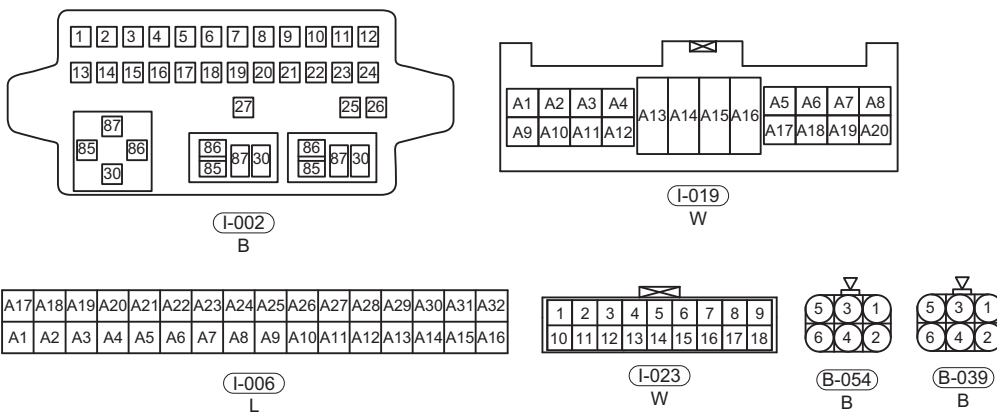
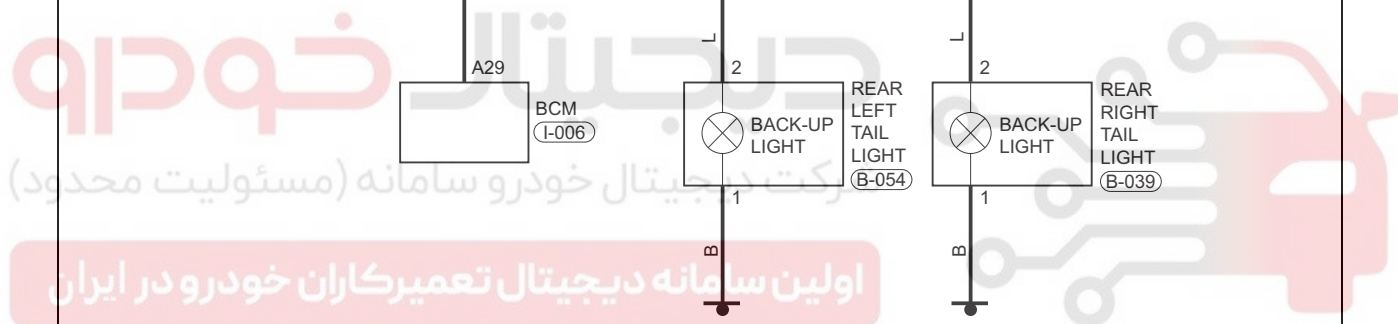
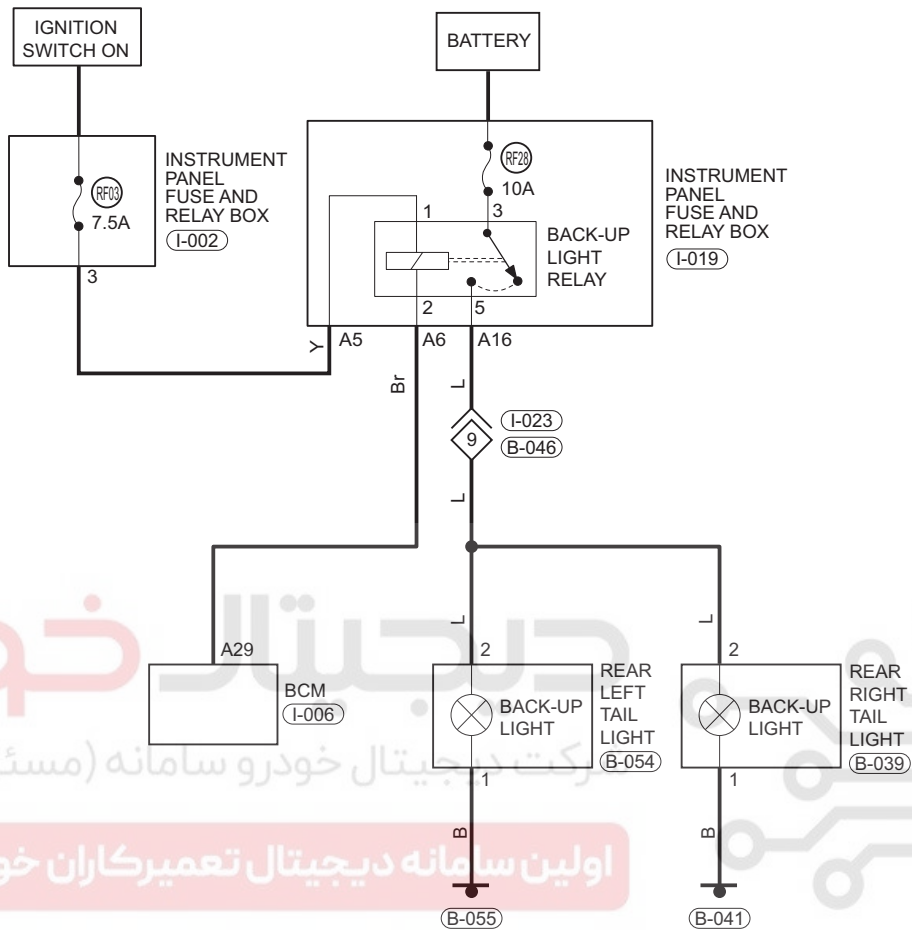
FOR 1.5T&2.0L MT MODEL



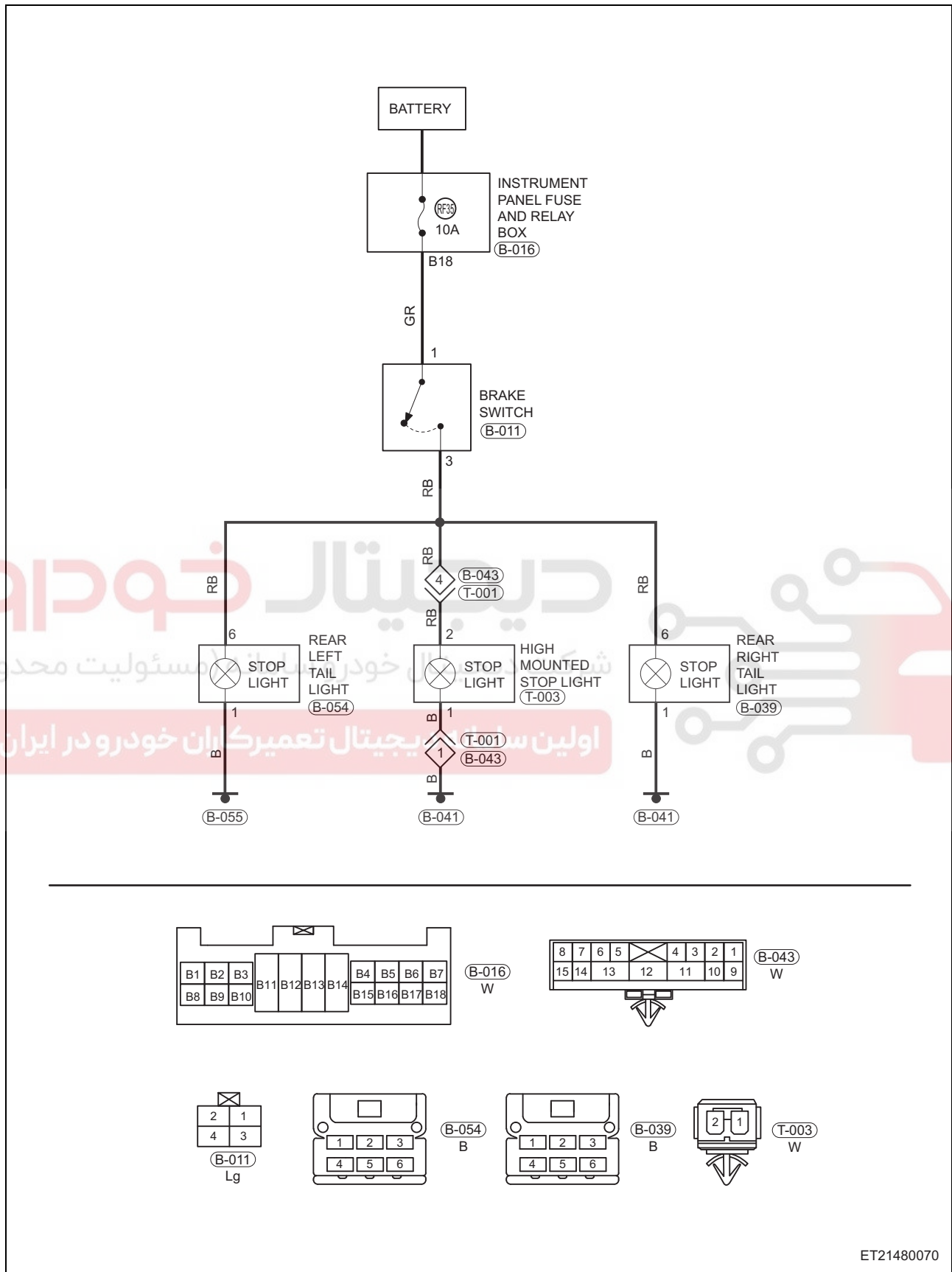
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Back-up Light (Page 1 of 2)

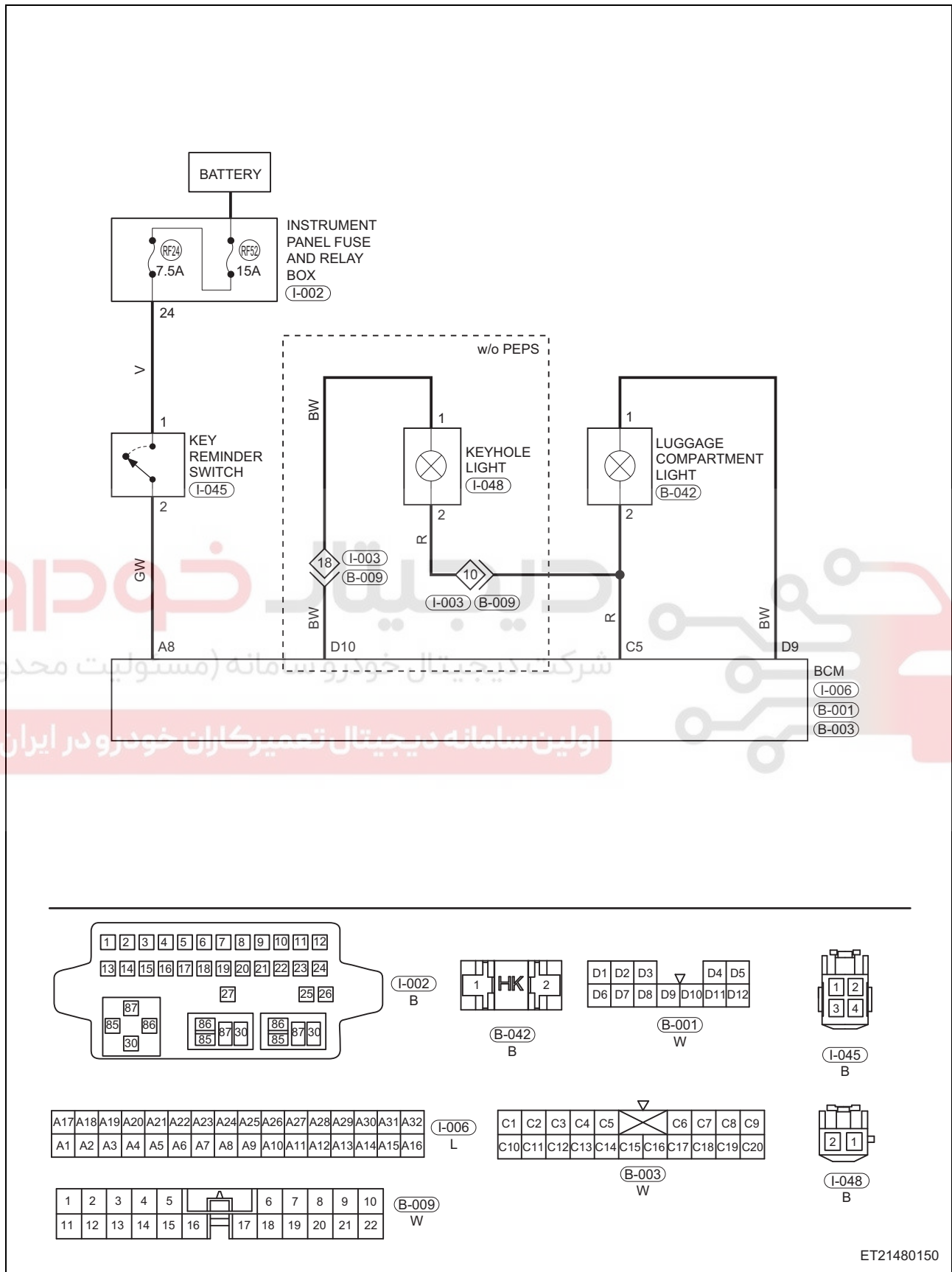
FOR 1.5T CVT MODEL



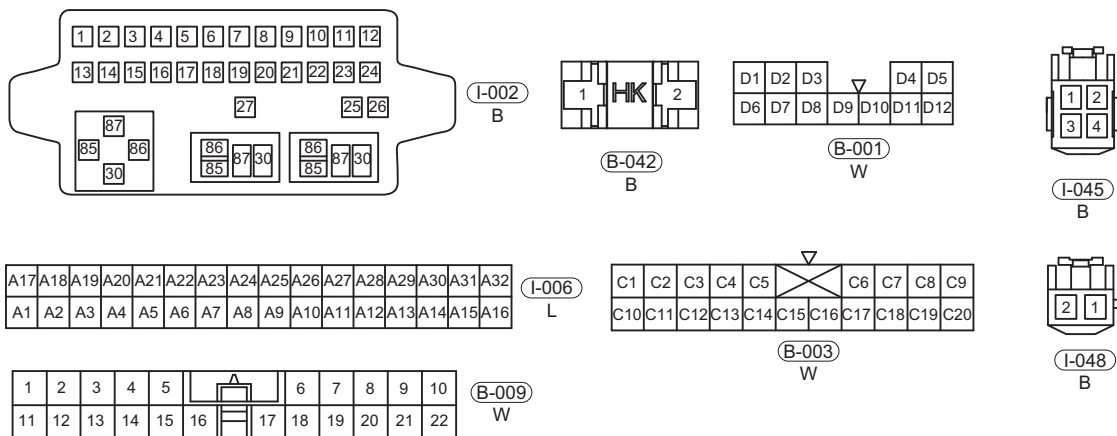
Brake Light



Luggage Compartment Light

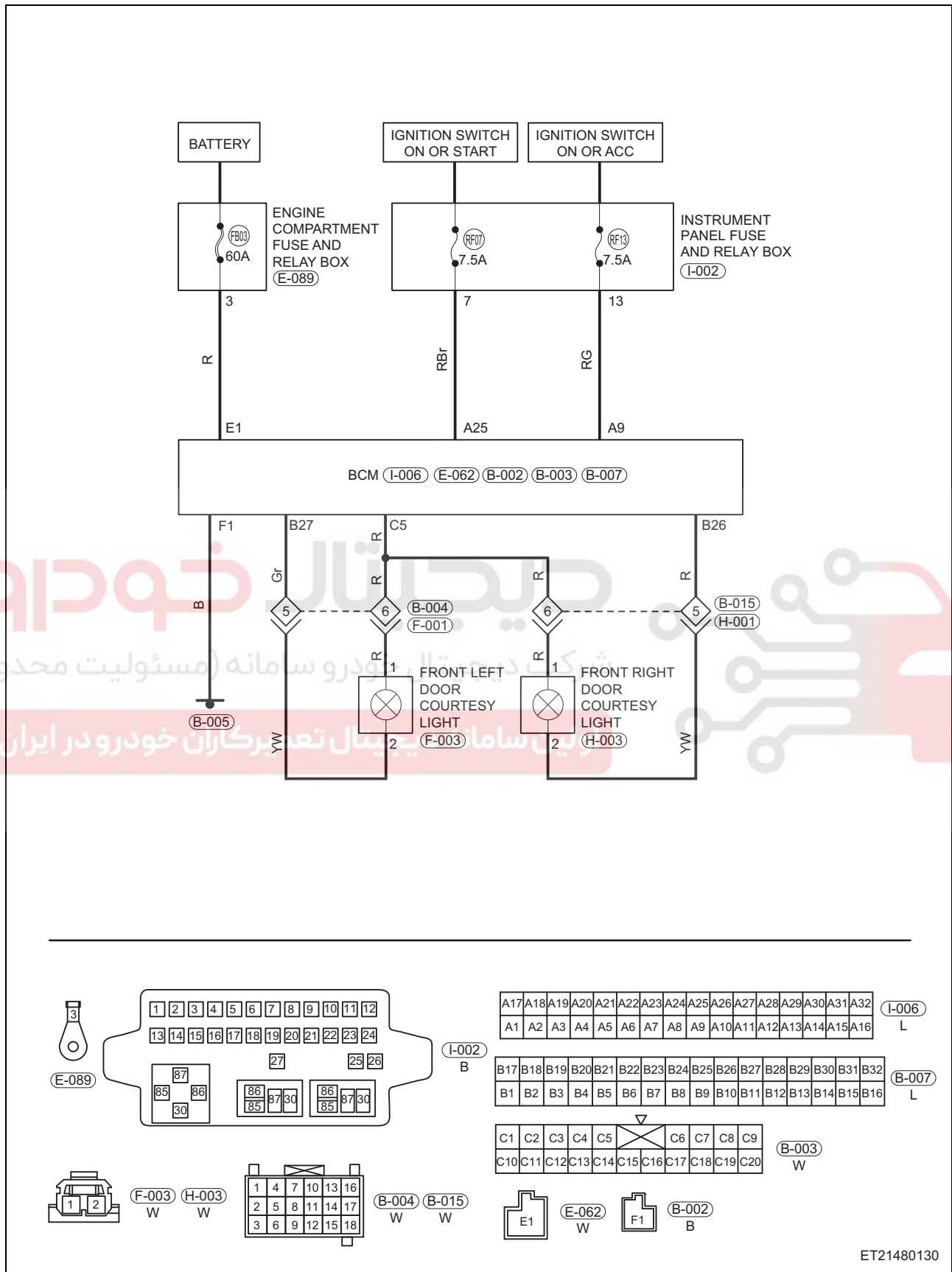


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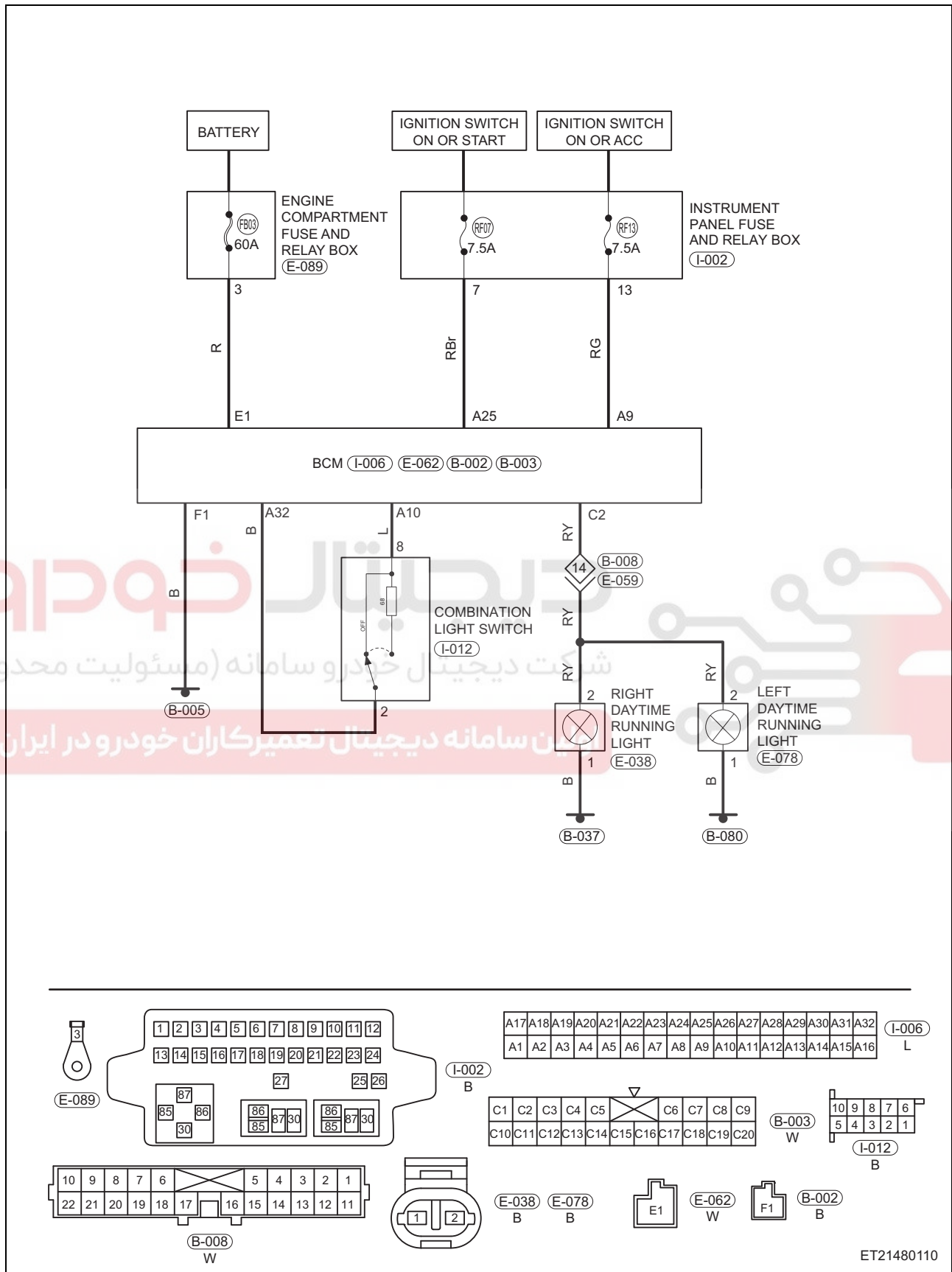


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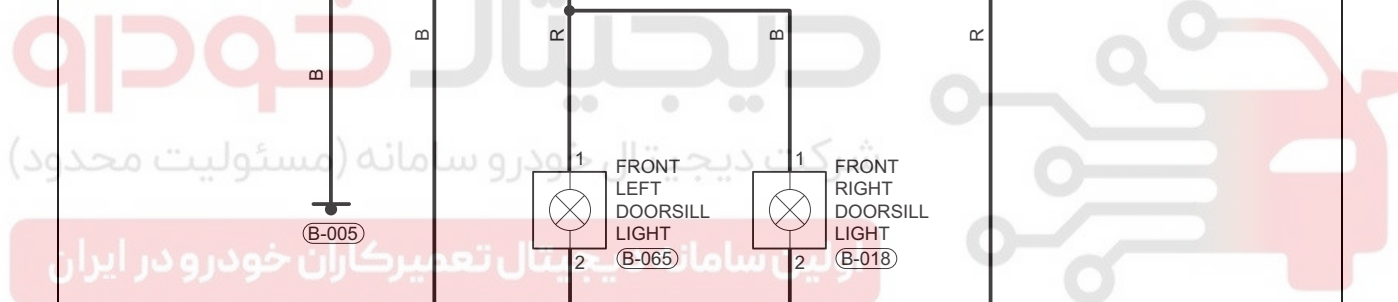
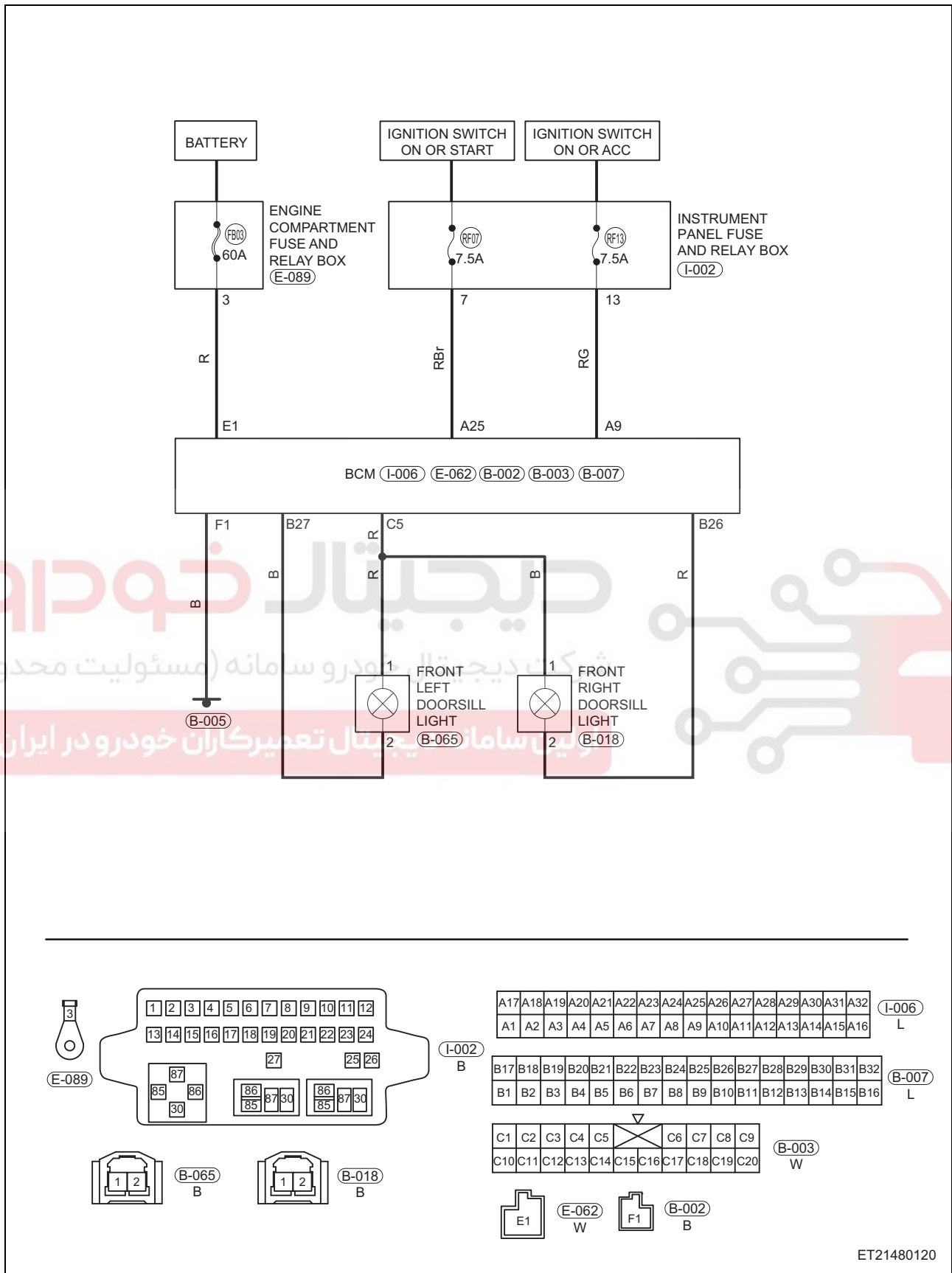
Front Door Courtesy Light



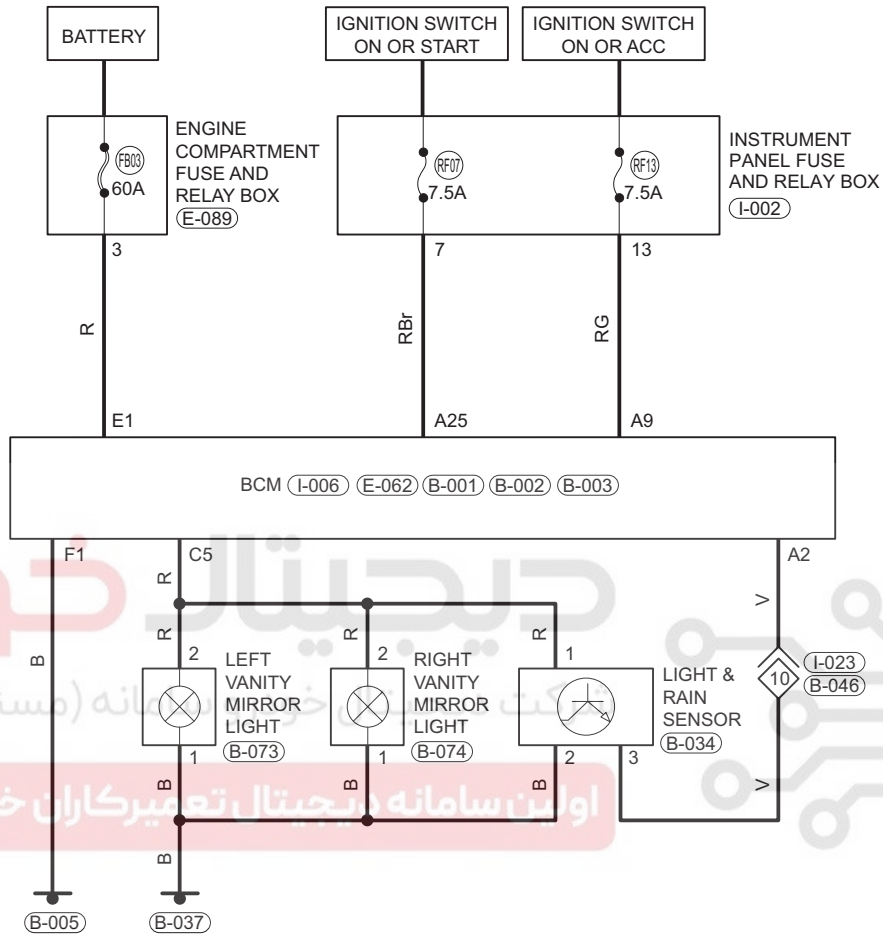
Daytime Running Light



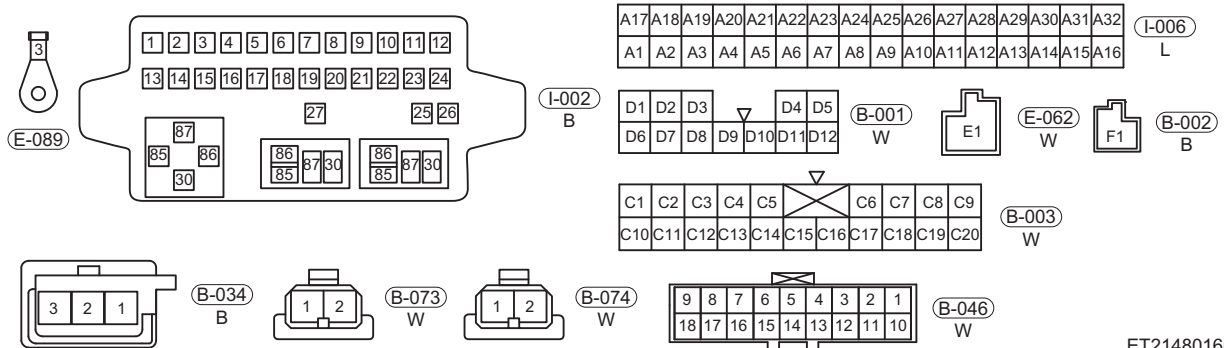
foot light



Vanity Light



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ET21480160

DIAGNOSIS & TESTING

Problem Symptoms Table

HINT:

Use the table below to help determine the cause of the problem. Check each suspected area in sequence. Repair or replace the faulty components, or adjust as necessary.

Position Light, Low Beam Light, High Beam Light

Symptom	Suspected Area	See page
Low beam does not come on (one side)	Fuse	68-59
	Headlight bulb	-
	Wire harness or connector	-
Low beam does not come on (both sides)	Fuse	68-59
	Headlight bulb	-
	Headlight adjustment switch assembly	48-67
	Low beam relay	68-59
	Wire harness or connector	-
	Body Control Module (BCM)	-
High beam does not come on (one side)	Fuse	68-59
	Headlight bulb	-
	Wire harness or connector	-
High beam does not come on (both sides)	Fuse	68-59
	Headlight bulb	-
	Headlight adjustment switch assembly	48-67
	High beam relay	68-59
	Wire harness or connector	-
	Body Control Module (BCM)	-
Position light does not come on (all)	Position light bulb (all)	-
	Wire harness or connector	-
	Headlight adjustment switch assembly	48-67
	Body Control Module (BCM)	-
Position light does not come on (one side)	Position light bulb	-
	Wire harness or connector	-

Front Fog Light

Symptom	Suspected Area	See page
Front fog light does not come on	Fuse	68-59
	Relay	68-59
	Front fog light bulb	-
	Headlight adjustment switch assembly	48-67
	Wire harness or connector	-
	Body Control Module (BCM)	-

Rear Fog Light

Symptom	Suspected Area	See page
Rear fog light does not come on	Rear fog light bulb	-
	Headlight adjustment switch assembly	48-67
	Wire harness or connector	-
	Body Control Module (BCM)	-

Turn Signal Light and Hazard Warning Light

Symptom	Suspected Area	See page
Hazard warning light and turn signal light do not come on	Bulb	-
	Wire harness or connector	-
	Hazard Warning Light Switch	48-92
	Headlight adjustment switch assembly	48-67
	Body Control Module (BCM)	-
Hazard warning light does not come on (turn signal light is normal)	Hazard Warning Light Switch	48-92
	Wire harness or connector	-
Turn signal light does not come on (hazard warning light is normal)	Headlight adjustment switch assembly	48-67
	Wire harness or connector	-

License Plate Light

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Symptom	Suspected Area	See page
License plate light does not come on	License plate light bulb	-
	Headlight adjustment switch assembly	48-67
	Wire harness or connector	-
	Body Control Module (BCM)	-

Luggage Compartment Light

Symptom	Suspected Area	See page
Luggage compartment light does not come on	Luggage compartment light bulb	-
	Wire harness or connector	-
	Body Control Module (BCM)	-

Front Door Courtesy Light

Symptom	Suspected Area	See page
Front door courtesy light does not come on	Front door courtesy light bulb	-
	Wire harness or connector	-
	Body Control Module (BCM)	-

Brake Light

Symptom	Suspected Area	See page
Brake light does not come on (all)	Brake light bulb	-
	Brake light switch	37-29
	Wire harness or connector	-
Only one brake light does not come on	Brake light bulb	-
	Wire harness or connector	-

Front Dome Light

Symptom	Suspected Area	See page
Front dome light does not come on	Front dome light bulb	-
	Wire harness or connector	-
	Front dome light assembly	48-82
	Body Control Module (BCM)	-

Back-up Light

Symptom	Suspected Area	See page
Back-up light does not come on (all)	Fuse	68-59
	Relay (CVT model)	68-59
	Back-up light bulb	-
	Back-up light switch	48-90
	Wire harness or connector	-

DTC Confirmation Procedure

Confirm that battery voltage is over 12 V before performing the following procedures.

- Turn ignition switch to LOCK.
- Connect X-431 3G diagnostic tester (the latest software) to Data Link Connector (DLC).
- Turn ignition switch to ON.
- Use X-431 3G diagnostic tester to record and clear the DTCs stored in the lighting system.
- Turn ignition switch to LOCK and wait for a few seconds.
- Turn ignition switch to ON and then select Read Code.
- If DTC is detected, the malfunction indicated by the DTC is current. Go to the diagnosis procedure - Step 1.
- If DTC is not detected, the malfunction indicated by the DTC is intermittent. Please refer to the Intermittent DTC Troubleshooting.

Intermittent DTC Troubleshooting

If malfunction is intermittent, perform the followings:

- Check if connectors are loose.
- Check if wire harnesses are worn, pierced, pinched or partially broken.
- Monitor X-431 3G diagnostic tester (the latest software) data that is related to this circuit.
- Wiggle related wire harnesses and connectors and observe if signal is interrupted in the related circuit.
- If possible, try to duplicate the conditions under which the DTC was set.
- Look for the data that has changed or the DTC to be reset during the wiggle test.
- Look for broken, bent, protruded or corroded terminals.
- Inspect the mounting areas of headlight adjustment switch assembly and light assemblies and so on for damage, foreign matter, etc. that will cause incorrect signals.
- If multiple trouble codes were set, refer to the circuit diagrams to look for any common ground circuit or power supply circuit applied to the DTC.
Refer to Technical Bulletin that is applied to the malfunction.

Ground Inspection

Groundings are very important to entire circuit system, which are normal or not can seriously affect the entire circuit system. Ground points are often exposed to moisture, dirt and other corrosive environments. Corrosion (rust) and oxidation may increase load resistance. This situation will seriously affect the normal operation of the circuit.

Electronically controlled circuits are very sensitive to proper grounding. A loose or corroded ground can affect the electronically controlled circuit. The operations to check the ground points are as follows:

1. Remove the ground bolt or nut.
2. Check all contact surfaces for tarnish, dirt and rust, etc.
3. Clean as necessary to ensure that contacting is in a good condition.
4. Reinstall the ground bolt or nut securely.
5. Check if add-on accessories interfere with the ground circuit.
6. If several wire harnesses are crimped into one ground terminal, check if they are installed correctly. Make sure all wire harnesses are clean, securely fastened and providing a good ground path.

System Diagnosis

1. Description
 - a. Lighting system data and Diagnostic Trouble Codes (DTCs) can be read from the Data Link Connector 3 (DLC3) of vehicle. When system seems to be malfunctioning, use X-431 3G diagnostic tester to check for a malfunction and perform repairs.
2. Check battery voltage

Standard Voltage: 11 to 14 V

If voltage is below 11 V, recharge or replace the battery before proceeding to next step.

DTC Check/Clear

1. Check DTCs
 - a. Connect X-431 3G diagnostic tester to Data Link Connector (DLC).
 - b. Turn ignition switch to ON, and turn X-431 3G diagnostic tester on.
 - c. Enter the following menus to read the current malfunction: T21/BCM/Read fault code/Read present fault code.
 - d. Read DTCs.
2. Clear DTCs.
 - a. Connect X-431 3G diagnostic tester to Data Link Connector (DLC).
 - b. Turn ignition switch to ON, and turn X-431 3G diagnostic tester on.
 - c. Enter the following menus: T21/BCM/Erase fault code.
 - d. Clear the DTCs by following the indications on the tester screen.

Data List/Active Test

1. Read the Data List.

HINT:

Using the X-431 3G diagnostic tester Data List to perform Active Tests allows the values or states of switches, sensors, actuators and other items to be read without removing any parts. This non-intrusive inspection can be very useful because intermittent problems or signals may be discovered before parts or wiring is disturbed. Reading the Data List information early in troubleshooting is one way to save diagnostic time.

CAUTION

- In the table below, the values listed under "Normal Condition" are reference values. Do not depend solely on these reference values when deciding whether a part is faulty or not.

- a. Connect X-431 3G diagnostic tester to Data Link Connector (DLC).
- b. Turn ignition switch to ON, and turn X-431 3G diagnostic tester on.
- c. Enter the following menus: T21/BCM/Read data stream/Input status (Light).
- d. Read the Data List according to the display on the tester.

Tester Display	Measurement Item/Range	Normal Condition
Left Hand Turn Light	Left turn signal/On or Off	Left turn signal On: Active Left turn signal Off: Inactive
Right Hand Turn Light	Right turn signal/On or Off	Right turn signal On: Active Right turn signal Off: Inactive
Front Fog Light	Front fog light signal/On or Off	Front fog light signal On: Active Front fog light signal Off: Inactive
Rear Fog Light	Rear fog light signal/On or Off	Rear fog light signal On: Active Rear fog light signal Off: Inactive
Position Light	Position light signal/On or Off	Position light signal On: Active Position light signal Off: Inactive
Low Beam	Low beam light signal/On or Off	Low beam light signal On: Active Low beam light signal Off: Inactive
High Beam	High beam light signal/On or Off	High beam light signal On: Active High beam light signal Off: Inactive
Hazard	Hazard light signal/On or Off	Hazard light signal On: Active Hazard light signal Off: Inactive
Reversing Light	Reversing light signal/On or Off	Reversing light signal On: Active Reversing light signal Off: Inactive
Passing Light	Passing light signal/On or Off	Passing light signal On: Active Passing light signal Off: Inactive

2. Perform the Active Test.

HINT:

Using the X-431 3G diagnostic tester to perform Active Tests allows items to be tested without removing any parts. This non-intrusive functional inspection can be very useful because intermittent problems may be discovered before parts or wiring is disturbed. Perform the Active Test early in troubleshooting is one way to save diagnostic time. The Data List information can be displayed when performing the Active Test.

- Connect X-431 3G diagnostic tester to Data Link Connector (DLC).
- Turn ignition switch to ON, and turn X-431 3G diagnostic tester on.
- Enter the following menus: T21/BCM/Action Test.
- Perform the Active Test according to the tester display.

Tester Part	Control Range
Left Hand Turn Light	Active/Inactive
Right Hand Turn Light	Active/Inactive
Position Light	Active/Inactive
Low Beam	Active/Inactive
High Beam	Active/Inactive
Front Fog Light	Active/Inactive
Rear Fog Light	Active/Inactive
Dome Lamp	Active/Inactive

Tester Part	Control Range
Welcome Lamp	Active/Inactive
Security Indicator	Active/Inactive

Diagnosis Procedure

HINT:

Perform troubleshooting according to the procedures below.

1	Vehicle brought to workshop
----------	------------------------------------

NEXT

2	Check battery voltage
----------	------------------------------

Standard voltage: 11 to 14 V

If the voltage is below 11 V, recharge or replace the battery before proceeding to next step.

NEXT

3	Check for DTCs (current DTC and history DTC)
----------	---

DTC occurs

For current DTC, go to step 4

No DTC

For history DTC, go to step 5

4	Diagnostic Trouble Code (DTC) chart
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NEXT

5	Circuit inspection
----------	---------------------------

NEXT

6	Repair or replace
----------	--------------------------

NEXT

7	Clear DTCs (current DTC and history DTC)
----------	---

NEXT

8 Check for DTCs (current DTC and history DTC)DTC
output

Go to step 4

NO DTC
output

Go to next step

9 Confirmation test

NEXT

10 End

دیجیتال خودرو

شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



Diagnostic Trouble Code (DTC) chart

DTC Code	DTC Definition
B100111	Left Side Turn Lamp Control Circuit Circuit Short to Ground
B100113	Left Side Turn Lamp Control Circuit Circuit Open
B100119	Left Side Turn Lamp Control Circuit Circuit Current Above Threshold
B100211	Right Side Turn Lamp Control Circuit Circuit Short to Ground
B100213	Right Side Turn Lamp Control Circuit Circuit Open
B100219	Right Side Turn Lamp Control Circuit Circuit Current Above Threshold
B100311	Left Park Light Output Control Circuit Circuit Short to Ground
B100313	Left Park Light output Control Circuit Circuit Open
B100319	Left Park Light Output Control Circuit Circuit Current Above Threshold
B100411	Right Park Light Output Control Circuit Circuit Short to Ground
B100413	Right Park Light output Control Circuit Circuit Open
B100419	Right Park Light Output Control Circuit Circuit Current Above Threshold
B100813	Rear Fog Control Circuit Circuit Open
B100871	Rear Fog Control Circuit Actuator Stuck

دیجیتال خودرو

شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



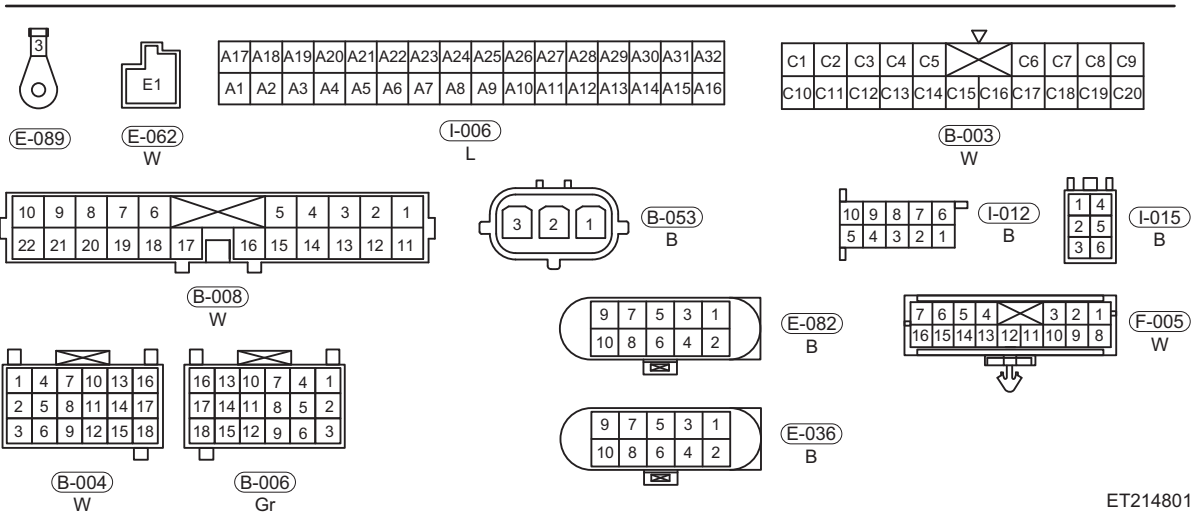
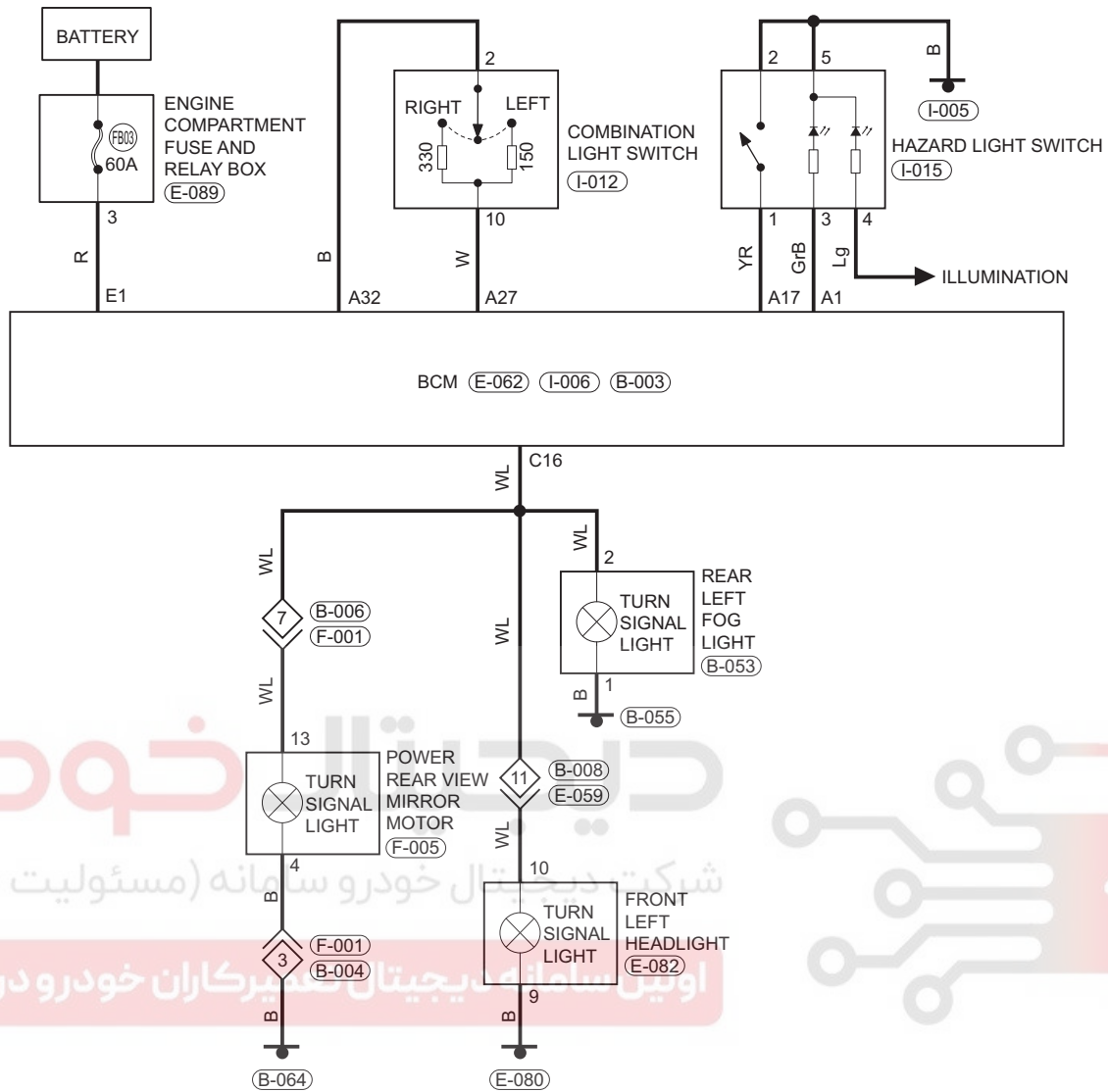
DTC	B100111	Left Side Turn Lamp Control Circuit Circuit Short to Ground
DTC	B100113	Left Side Turn Lamp Control Circuit Circuit Open
DTC	B100119	Left Side Turn Lamp Control Circuit Circuit Current Above Threshold

دیجیتال خودرو

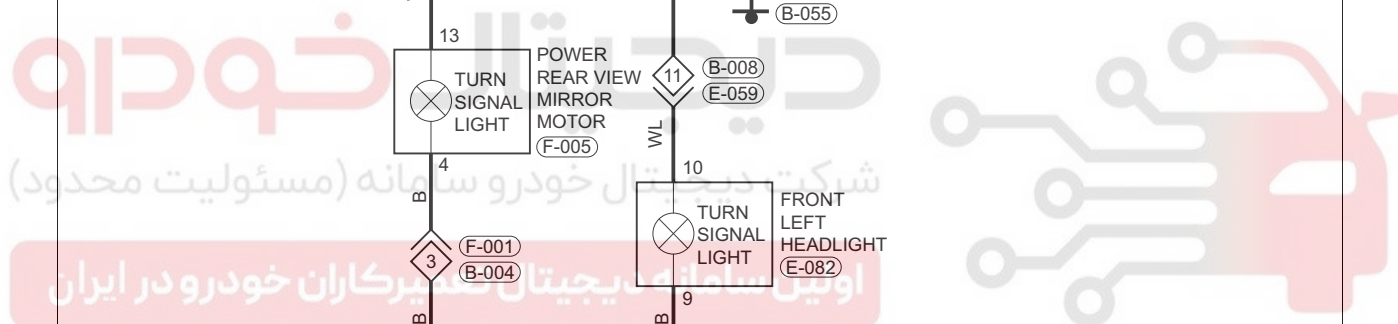
شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

اولین سامانه دیجیتال تعمیرکاران خودرو در ایران





ET21480170



Self-diagnosis Detection Logic

DTC Code	DTC Definitions	DTC Detection Conditions	DTC Setting Conditions
B100111	Left Side Turn Lamp Control Circuit Circuit Short to Ground	Ignition switch ON	<ul style="list-style-type: none"> • Turn signal light bulb • Wire harness or connector • Body Control Module (BCM)
B100113	Left Side Turn Lamp Control Circuit Circuit Open		
B100119	Left Side Turn Lamp Control Circuit Circuit Current Above Threshold		

HINT:

While performing the electrical diagnosis and testing, always refer to the relevant circuit diagram for the special circuit and component information.

Diagnosis Procedure

1 Check turn signal light bulb

a. Remove the turn signal light bulb, and check if the turn signal light bulb filament is blown.

NG Replace turn signal light bulb

OK

2 Check wire harness and connector

Use the circuit diagram as a guide to perform the following procedures:

- a. Turn ignition switch to LOCK, and disconnect the negative battery cable.
- b. Disconnect the Body Control Module (BCM) connectors B-003 and E-072.
- c. Disconnect the left turn signal light wire harness connectors F-005, E-056 and B-021.
- d. Disconnect the body wire harness connectors B-048 and B-041, front left door wire harness connector F-007 and engine compartment wire harness connector E-070.
- e. Check if wire harnesses are worn, pierced, pinched or partially broken.
- f. Look for broken, bent, protruded or corroded terminals.
- g. Check if the related connector terminal contact pins are in good condition.

NG Repair or replace related wire harness and connector

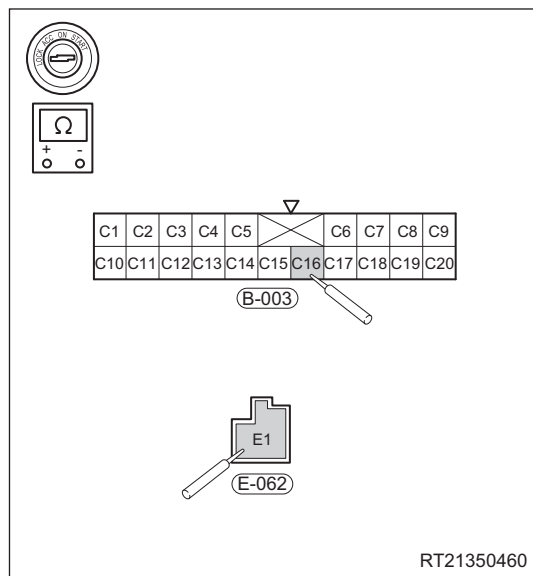
OK

3 Check left turn signal light control circuit

- a. Turn ignition switch to LOCK.
- b. Disconnect the negative battery cable.
- c. Disconnect the Body Control Module (BCM) connectors B-003 and E-062.
- d. Using a digital multimeter, check for continuity between terminal C16 of BCM connector B-003 and terminal E1 of BCM connector E-062 to check if it is short to power supply according to the table below.

Standard Condition

Multimeter Connection	Condition	Specified Condition
B-003 (C16) - E-062 (E1)	Always	No continuity

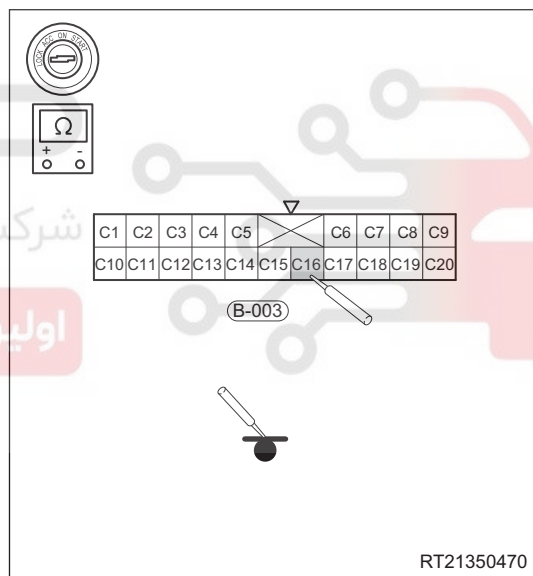


- e. Using a digital multimeter, check for continuity between terminal C16 of BCM connector B-003 and body ground to check if it is short to ground according to the table below.

Standard Condition

Multimeter Connection	Condition	Specified Condition
B-003 (C16) - Body ground	Always	No continuity

NG Repair or replace related wire harness and connector



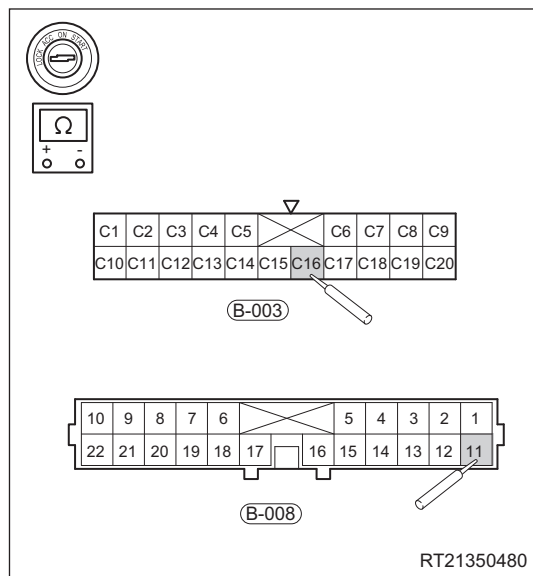
OK

4 Check wire harness and connector (left turn signal light - Body Control Module (BCM))

- a. Turn ignition switch to LOCK.
- b. Disconnect the negative battery cable.
- c. Disconnect the Body Control Module (BCM) connector B-003.
- d. Disconnect the left turn signal light wire harness connectors F-005, E-082 and B-053.
- e. Disconnect the body wire harness connectors B-008 and B-006, front left door wire harness connector F-001 and engine compartment wire harness connector B-059.
- f. Using a digital multimeter, check for continuity between terminal C16 of BCM connector B-003 and terminal 11 of body wire harness connector B-008 according to the table below.

Standard Condition

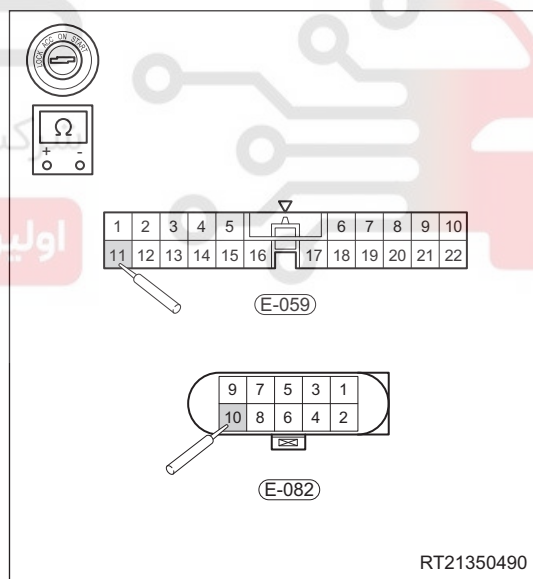
Multimeter Connection	Condition	Specified Condition
B-003 (C16) - B-008 (11)	Always	Continuity



- g. Using a digital multimeter, check for continuity between terminal 11 of engine compartment wire harness connector B-059 and terminal 10 of front left headlight wire harness connector E-082 according to the table below.

Standard Condition

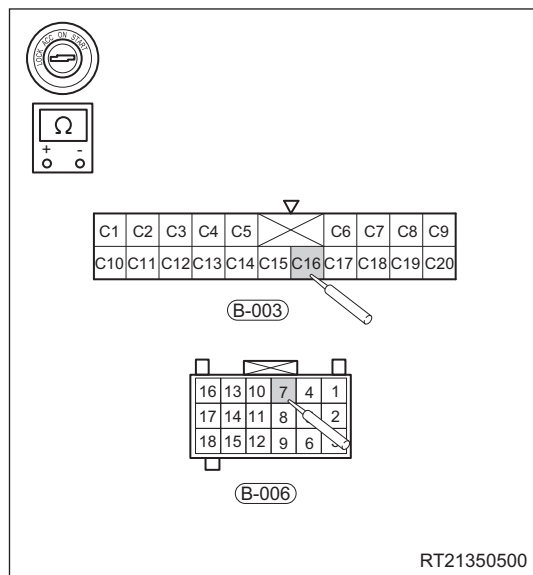
Multimeter Connection	Condition	Specified Condition
B-059 (11) - E-082 (10)	Always	Continuity



h. Using a digital multimeter, check for continuity between terminal C16 of BCM connector B-003 and terminal 7 of body wire harness connector B-006 according to the table below.

Standard Condition

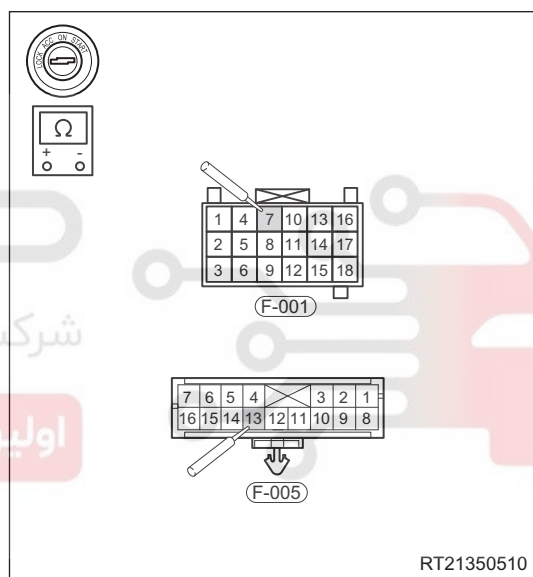
Multimeter Connection	Condition	Specified Condition
B-003 (C16) - B-006 (7)	Always	Continuity



i. Using a digital multimeter, check for continuity between terminal 7 of front left door wire harness connector F-001 and terminal 13 of left outside rear view mirror wire harness connector F-005 according to the table below.

Standard Condition

Multimeter Connection	Condition	Specified Condition
F-001 (7) - F-005 (13)	Always	Continuity

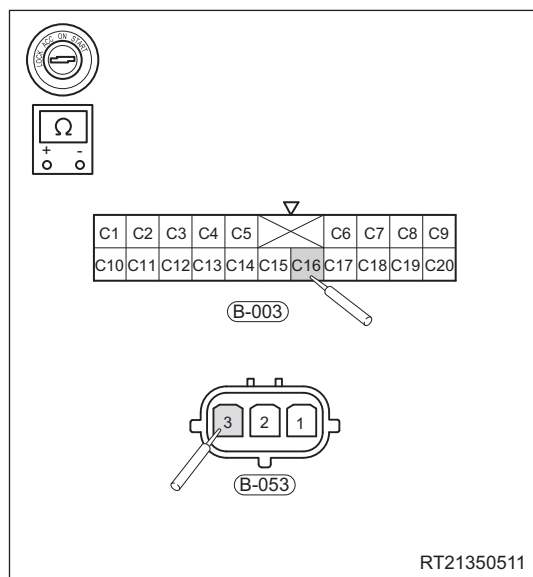


j. Using a digital multimeter, check for continuity between terminal C16 of BCM connector B-003 and terminal 3 of rear left combination light wire harness connector B-053 according to the table below.

Standard Condition

Multimeter Connection	Condition	Specified Condition
B-003 (C16) - B-053 (3)	Always	Continuity

NG → Repair or replace related wire harness and connector



OK

5 Reconfirm DTCs

- a. Firmly reconnect all disconnected connectors.
- b. Connect the negative battery cable.
- c. Turn ignition switch to ON.
- d. Use X-431 3G diagnostic tester (the latest software) to record and clear the DTCs stored in the Body Control Module (BCM).
- e. Turn ignition switch to LOCK and wait for a few seconds.
- f. Turn ignition switch to ON.
- g. Use X-431 3G diagnostic tester to read the DTCs in the Body Control Module (BCM) again.

Result	Precede to
DTC B100111, B100113 and B100119 are output	NG
No DTC is output	OK

NG

Replace Body Control Module (BCM)

OK

System is normal

شرکت دیجیتال خودرو (مسئولیت محدود)

اولین سامانه دیجیتال تعمیرکاران خودرو در ایران

DTC	B100211	Right Side Turn Lamp Control Circuit Circuit Short to Ground
DTC	B100213	Right Side Turn Lamp Control Circuit Circuit Open
DTC	B100219	Right Side Turn Lamp Control Circuit Circuit Current Above Threshold

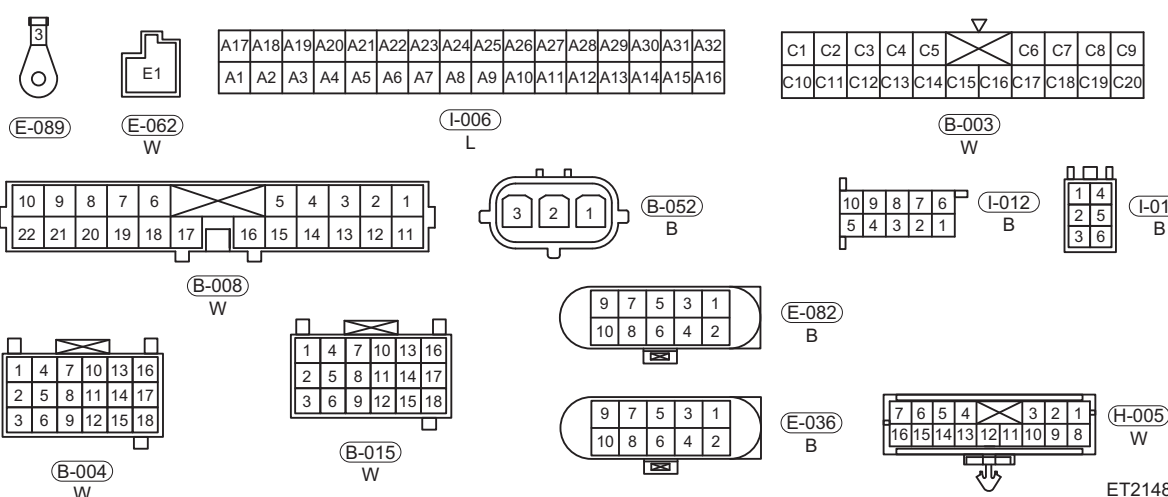
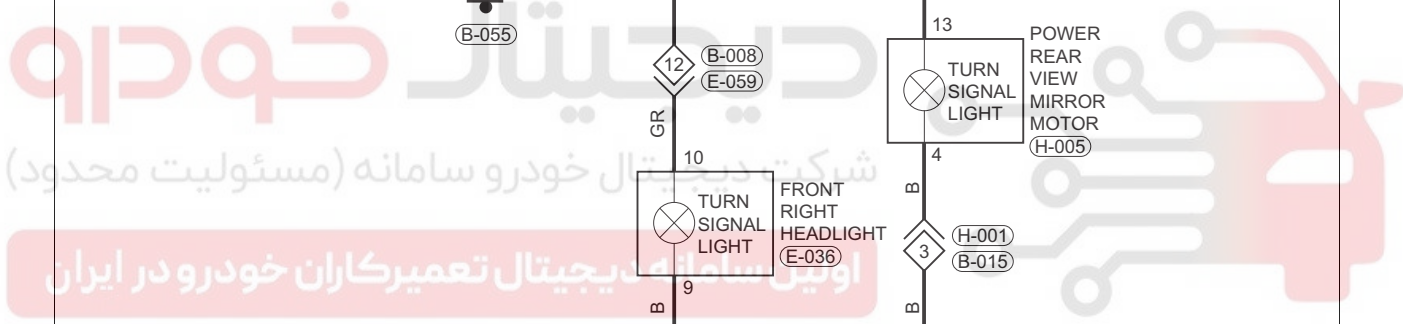
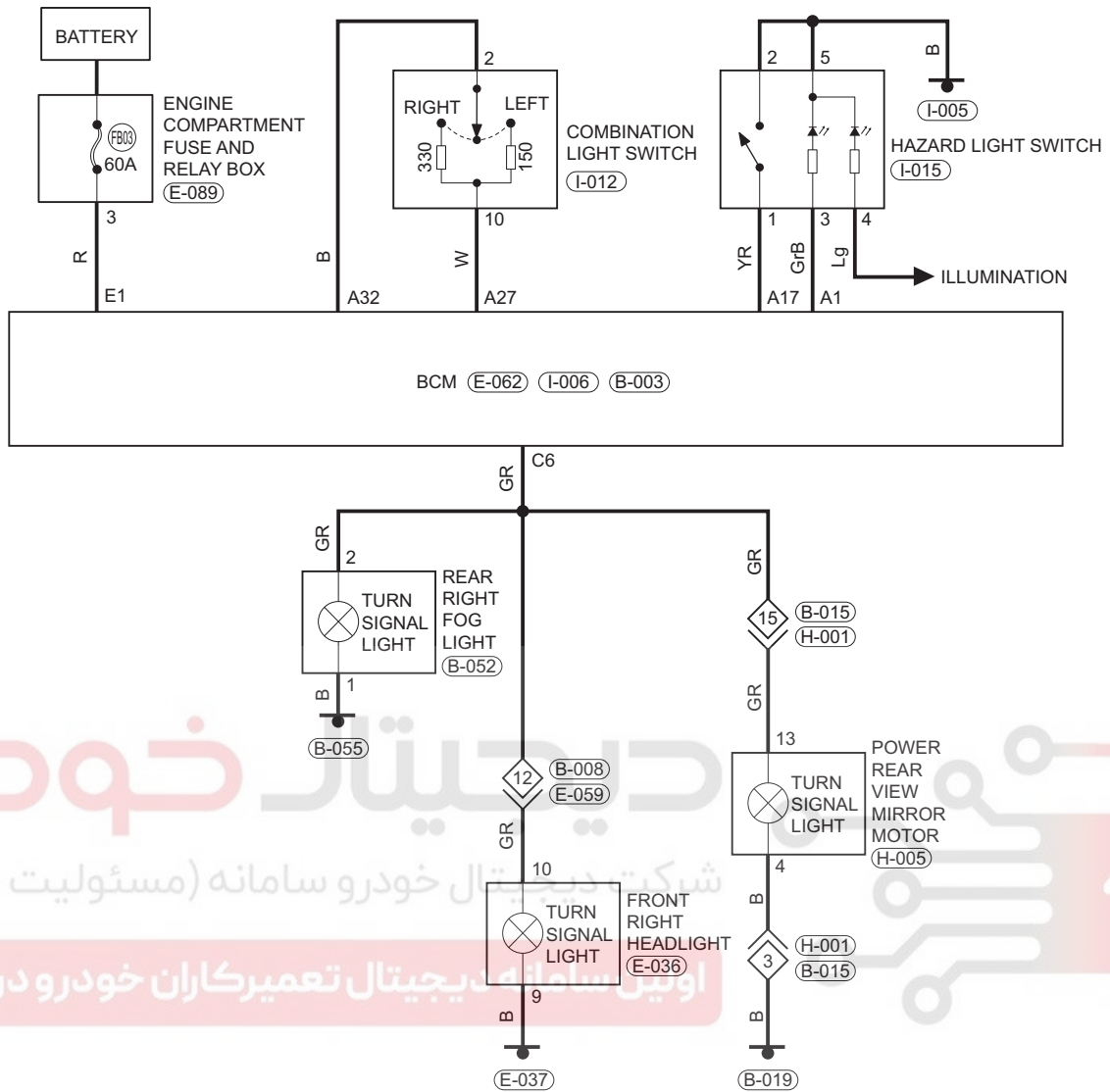
دیجیتال خودرو

شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



48 - LIGHTING SYSTEM



Self-diagnosis Detection Logic

DTC Code	DTC Definitions	DTC Detection Conditions	DTC Setting Conditions
B100211	Right Side Turn Lamp Control Circuit Circuit Short to Ground	Ignition switch ON	<ul style="list-style-type: none"> • Turn signal light bulb • Wire harness or connector • Body Control Module (BCM)
B100213	Right Side Turn Lamp Control Circuit Circuit Open		
B100219	Right Side Turn Lamp Control Circuit Circuit Current Above Threshold		

HINT:

While performing the electrical diagnosis and testing, always refer to the relevant circuit diagram for the special circuit and component information.

Diagnosis Procedure

1 Check turn signal light bulb

a. Remove the turn signal light bulb, and check if the turn signal light bulb filament is blown.

NG Replace turn signal light bulb

OK

2 Check wire harness and connector

Use the circuit diagram as a guide to perform the following procedures:

- a. Turn ignition switch to LOCK, and disconnect the negative battery cable.
- b. Disconnect the Body Control Module (BCM) connectors B-003 and E-062.
- c. Disconnect the right turn signal light wire harness connectors H-005, E-036 and B-052.
- d. Disconnect the body wire harness connectors B-008 and B-015, front right door wire harness connector H-001 and engine compartment wire harness connector E-059.
- e. Check if wire harnesses are worn, pierced, pinched or partially broken.
- f. Look for broken, bent, protruded or corroded terminals.
- g. Check if the related connector terminal contact pins are in good condition.

NG Repair or replace related wire harness and connector

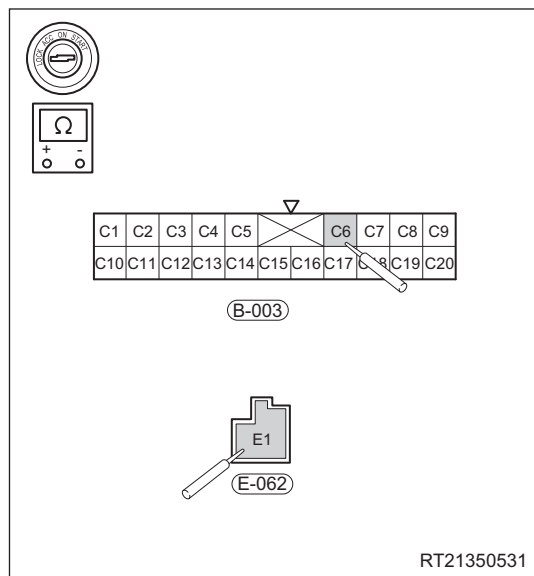
OK

3 Check right turn signal light control circuit

- a. Turn ignition switch to LOCK.
- b. Disconnect the negative battery cable.
- c. Disconnect the Body Control Module (BCM) connectors B-003 and E-062
- d. Using a digital multimeter, check for continuity between terminal C6 of BCM connector B-003 and terminal E1 of BCM connector E-062 to check if it is short to power supply according to the table below.

Standard Condition

Multimeter Connection	Condition	Specified Condition
B-003 (C6) - E-062 (E1)	Always	No continuity

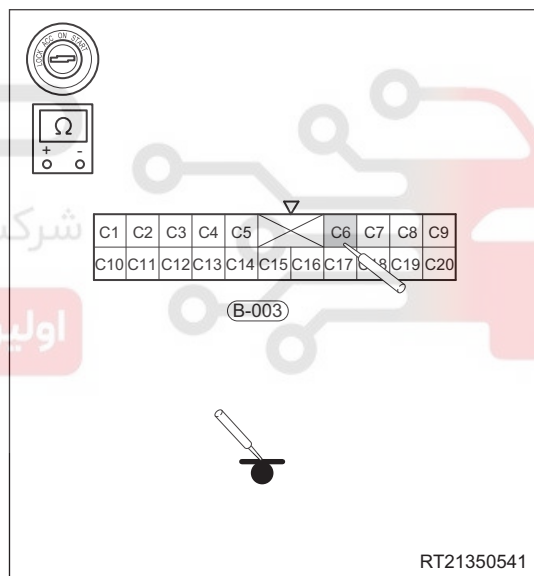


- e. Using a digital multimeter, check for continuity between terminal C6 of BCM connector B-003 and body ground to check if it is short to ground according to the table below.

Standard Condition

Multimeter Connection	Condition	Specified Condition
B-003 (C6) - Body ground	Always	No continuity

NG → **Repair or replace related wire harness and connector**



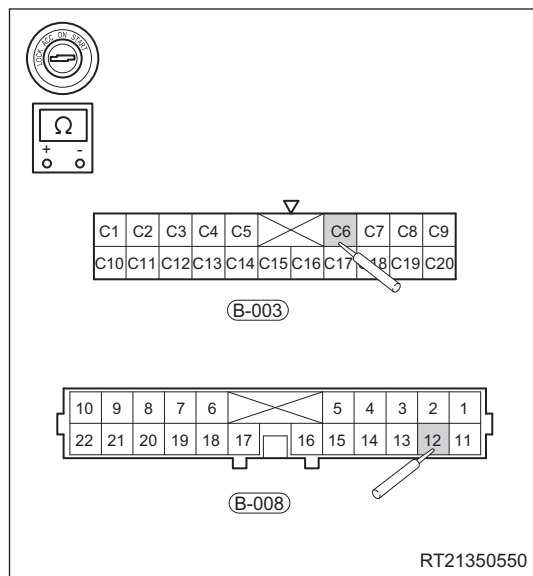
OK

4 Check wire harness and connector (right turn signal light - Body Control Module (BCM))

- a. Turn ignition switch to LOCK.
- b. Disconnect the negative battery cable.
- c. Disconnect the Body Control Module (BCM) connector B-003.
- d. Disconnect the right turn signal light wire harness connectors H-005, E-036 and B-053.
- e. Disconnect the body wire harness connectors B-008 and B-061, front right door wire harness connector H-001 and engine compartment wire harness connector E-059.
- f. Using the digital multimeter, check for continuity between terminal C6 of BCM connector B-003 and terminal 12 of body wire harness connector B-008 according to the table below.

Standard Condition

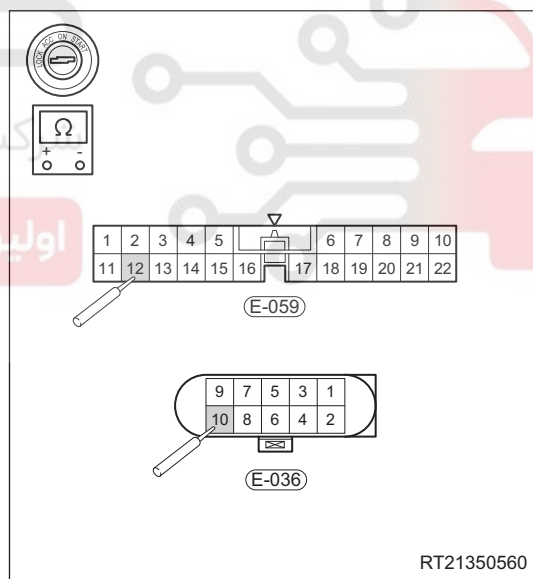
Multimeter Connection	Condition	Specified Condition
B-003 (C6) - B-008 (12)	Always	Continuity



- g. Using a digital multimeter, check for continuity between terminal 12 of engine compartment wire harness connector E-059 and terminal 10 of front right headlight wire harness connector E-036 according to the table below.

Standard Condition

Multimeter Connection	Condition	Specified Condition
E-059 (12) - E-036 (10)	Always	Continuity

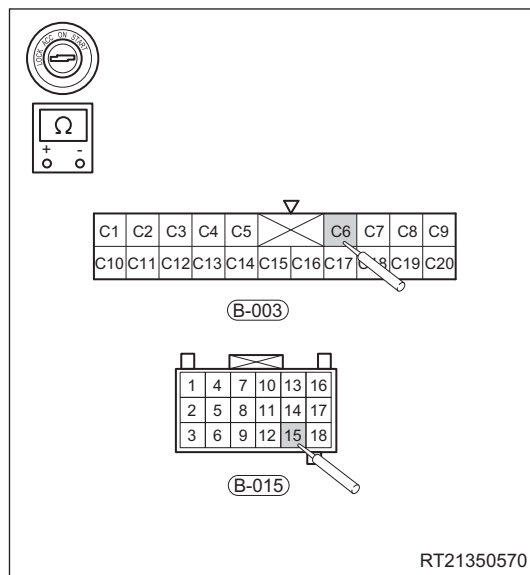


48 - LIGHTING SYSTEM

h. Using a digital multimeter, check for continuity between terminal C6 of BCM connector B-003 and terminal 15 of body wire harness connector B-015 according to the table below.

Standard Condition

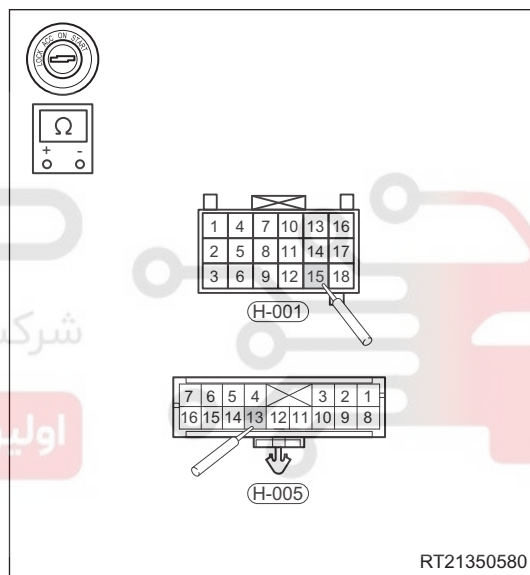
Multimeter Connection	Condition	Specified Condition
B-003 (C6) - B-015 (15)	Always	Continuity



i. Using a digital multimeter, check for continuity between terminal 15 of front right door wire harness connector H-001 and terminal 13 of right outside rear view mirror wire harness connector H-005 according to the table below.

Standard Condition

Multimeter Connection	Condition	Specified Condition
H-001 (15) - H-005 (13)	Always	Continuity

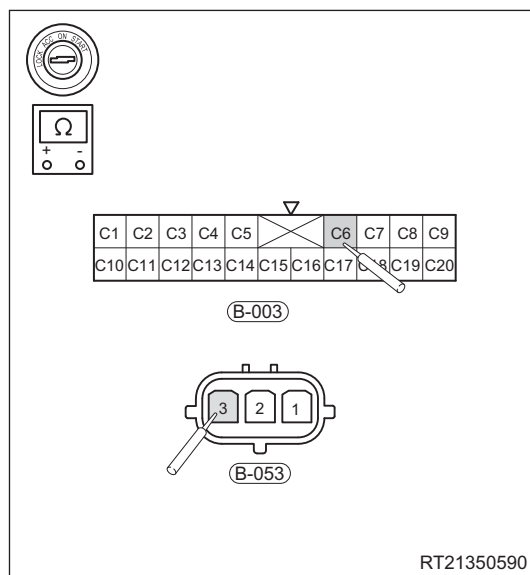


j. Using a digital multimeter, check for continuity between terminal C6 of BCM connector B-003 and terminal 3 of rear right combination light wire harness connector B-053 according to the table below.

Standard Condition

Multimeter Connection	Condition	Specified Condition
B-003 (C6) - B-053 (3)	Always	Continuity

NG → Repair or replace related wire harness and connector



OK

5 Reconfirm DTCs

- a. Firmly reconnect all disconnected connectors.
- b. Connect the negative battery cable.
- c. Turn ignition switch to ON.
- d. Use X-431 3G diagnostic tester (the latest software) to record and clear the DTCs stored in the Body Control Module (BCM).
- e. Turn ignition switch to LOCK and wait for a few seconds.
- f. Turn ignition switch to ON.
- g. Use X-431 3G diagnostic tester to read the DTCs in the Body Control Module (BCM) again.

Result	Precede to
DTC B100211, B100213 and B100219 are output	NG
No DTC is output	OK

NG

Replace Body Control Module (BCM)

OK

System is normal

شرکت دیجیتال خودرو (مسئولیت محدود)

اولین سامانه دیجیتال تعمیرکاران خودرو در ایران

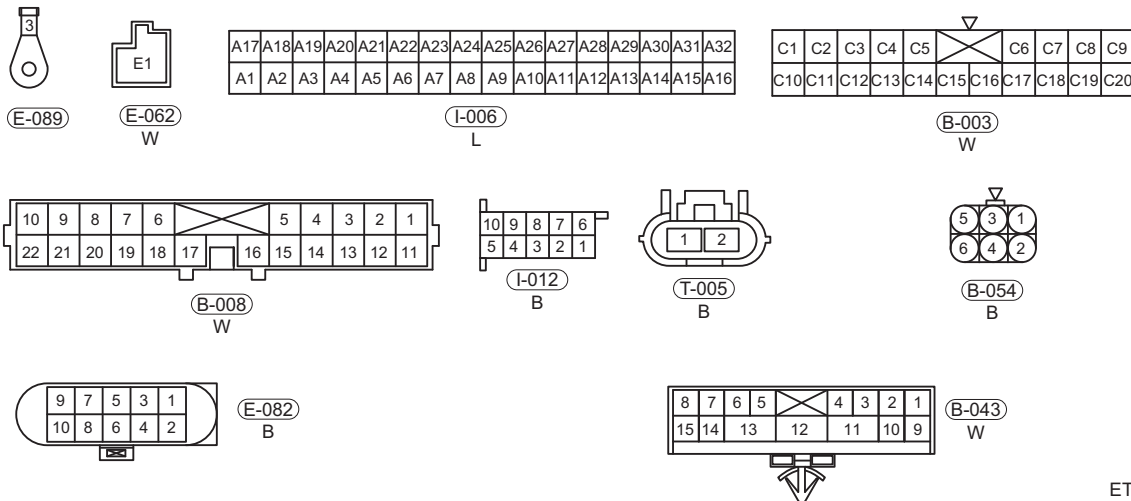
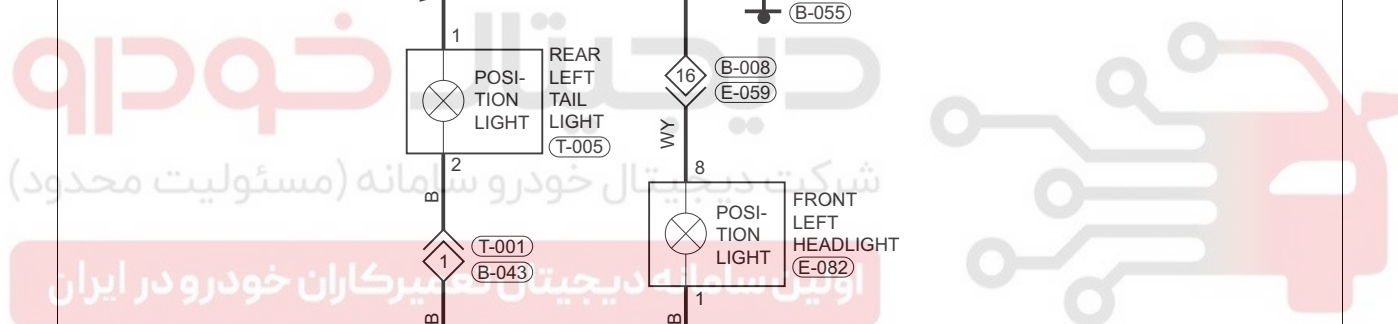
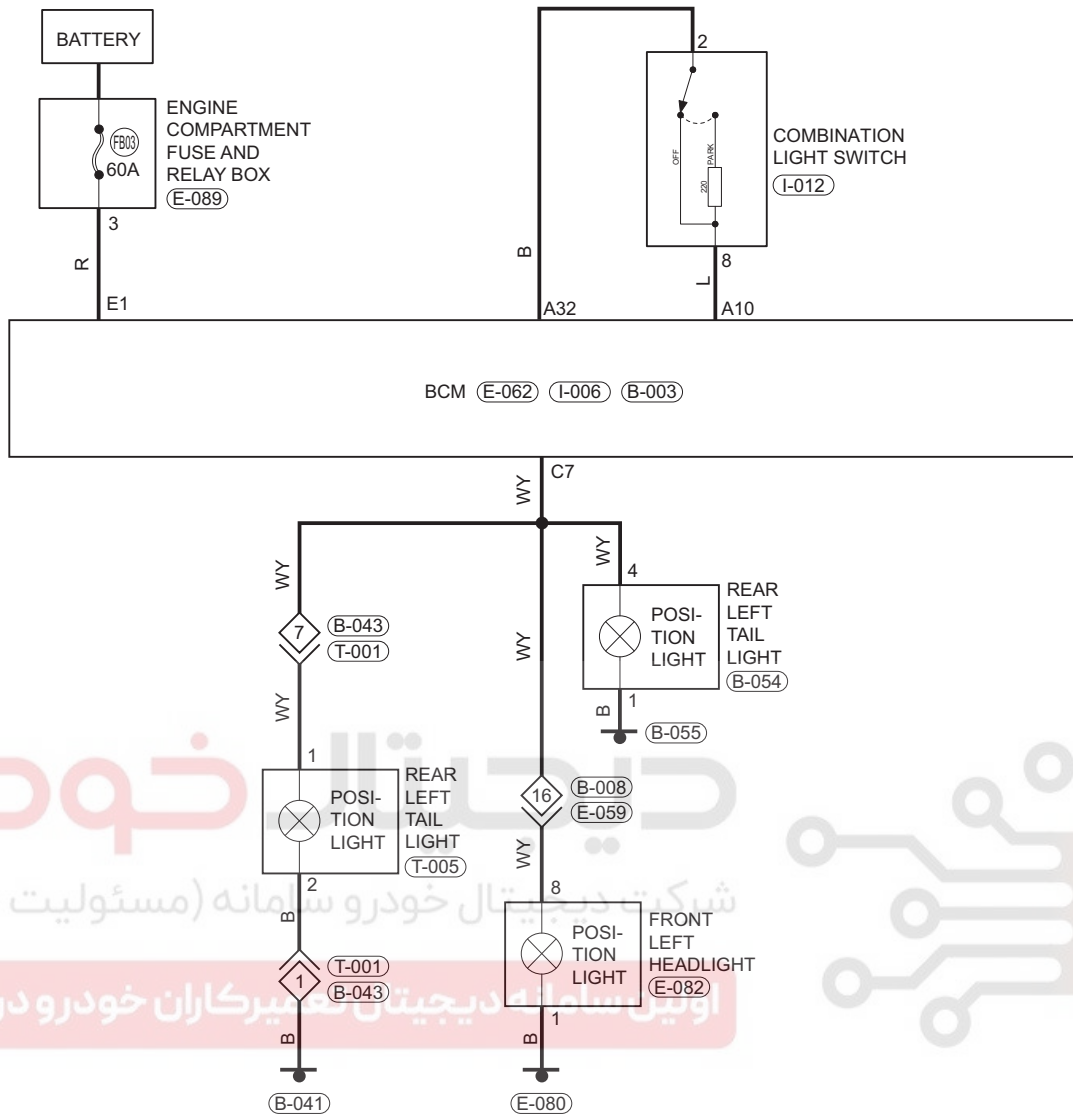
DTC	B100311	Left Park Light Output Control Circuit Circuit Short to Ground
DTC	B100313	Left Park Light output Control Circuit Circuit Open
DTC	B100319	Left Park Light Output Control Circuit Circuit Current Above Threshold

دیجیتال خودرو

شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

اولین سامانه دیجیتال تعمیرکاران خودرو در ایران





Self-diagnosis Detection Logic

DTC Code	DTC Definitions	DTC Detection Conditions	DTC Setting Conditions
B100311	Left Park Light Output Control Circuit Circuit Short to Ground	Ignition switch ON	<ul style="list-style-type: none"> • Position light bulb • Wire harness or connector • Body Control Module (BCM)
B100313	Left Park Light output Control Circuit Circuit Open		
B100319	Left Park Light Output Control Circuit Circuit Current Above Threshold		

HINT:

While performing the electrical diagnosis and testing, always refer to the relevant circuit diagram for the special circuit and component information.

Diagnosis Procedure

1 Check position light bulb

a. Remove the position light bulb, and check if the position light bulb filament is blown.

NG Replace position light bulb

OK

2 Check wire harness and connector

Use the circuit diagram as a guide to perform the following procedures:

- a. Turn ignition switch to LOCK, and disconnect the negative battery cable.
- b. Disconnect the Body Control Module (BCM) connectors B-003 and E-062.
- c. Disconnect the front left headlight wire harness connector E-082 and rear left combination light wire harness connector E-054.
- d. Disconnect the body wire harness connector B-008 and engine compartment wire harness connector E-059.
- e. Check if wire harnesses are worn, pierced, pinched or partially broken.
- f. Look for broken, bent, protruded or corroded terminals.
- g. Check if the related connector terminal contact pins are in good condition.

NG Repair or replace related wire harness and connector

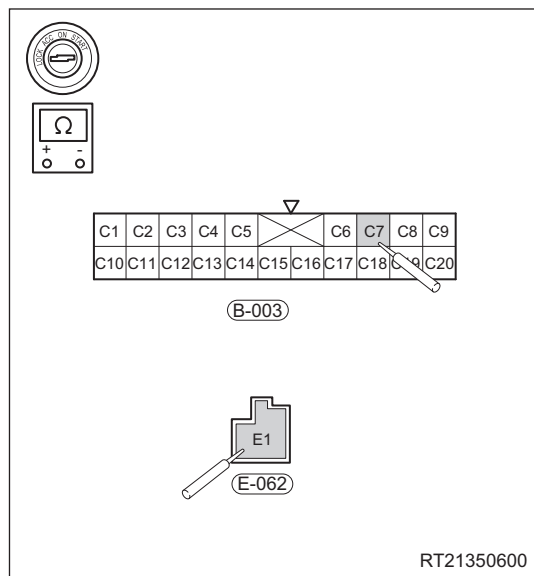
OK

3 Check left position light control circuit

- a. Turn ignition switch to LOCK.
- b. Disconnect the negative battery cable.
- c. Disconnect the Body Control Module (BCM) connectors B-003 and E-062.
- d. Using a digital multimeter, check for continuity between terminal C7 of BCM connector B-003 and terminal E1 of BCM connector E-062 to check if it is short to power supply according to the table below.

Standard Condition

Multimeter Connection	Condition	Specified Condition
B-003 (C7) - E-062 (E1)	Always	No continuity

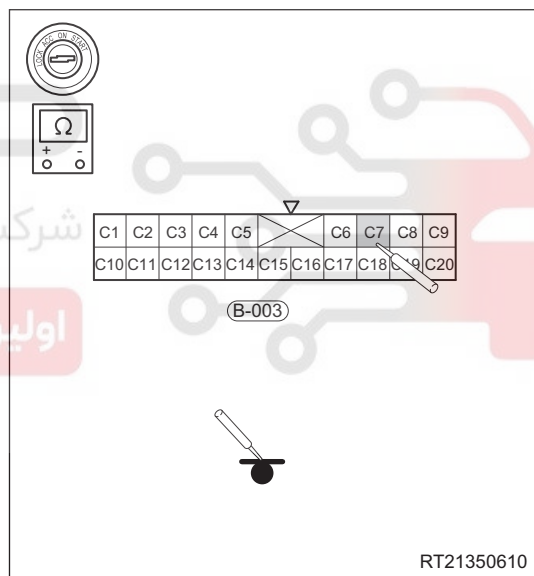


- e. Using a digital multimeter, check for continuity between terminal C7 of BCM connector B-003 and body ground to check if it is short to ground according to the table below.

Standard Condition

Multimeter Connection	Condition	Specified Condition
B-003 (C7) - Body ground	Always	No continuity

NG → **Repair or replace related wire harness and connector**



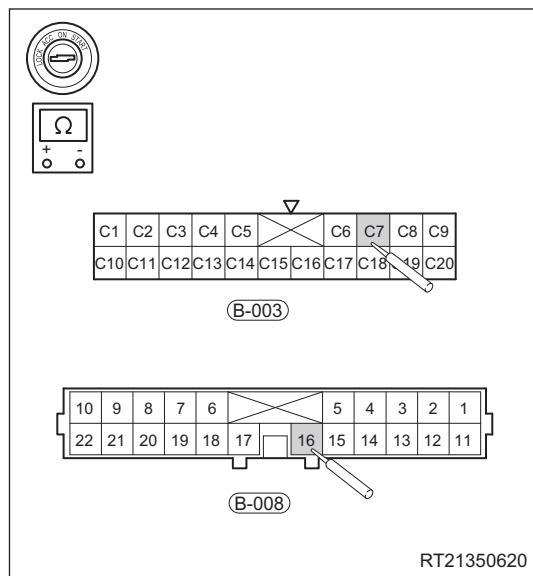
OK

4 Check wire harness and connector (left position light - Body Control Module (BCM))

- a. Turn ignition switch to LOCK.
- b. Disconnect the negative battery cable.
- c. Disconnect the Body Control Module (BCM) connector B-003.
- d. Disconnect the front left headlight wire harness connector E-082 and rear left combination light wire harness connector E-054.
- e. Disconnect the body wire harness connector B-048 and engine compartment wire harness connector E-059.
- f. Using the digital multimeter, check for continuity between terminal C7 of BCM connector B-003 and terminal 16 of body wire harness connector B-008 according to the table below.

Standard Condition

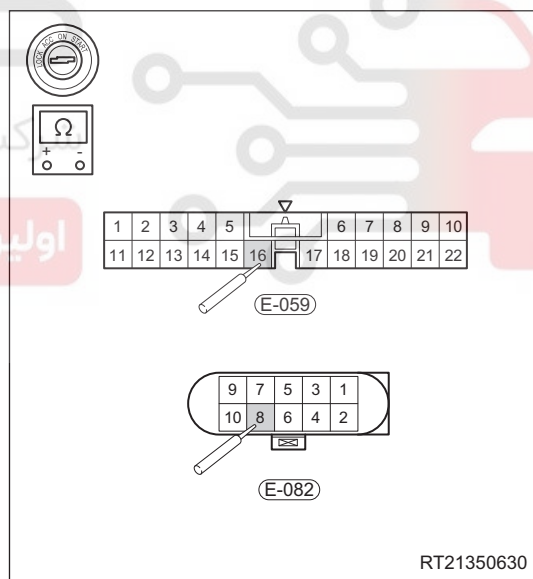
Multimeter Connection	Condition	Specified Condition
B-003 (C7) - B-008 (16)	Always	Continuity



- g. Using a digital multimeter, check for continuity between terminal 16 of engine compartment wire harness connector E-059 and terminal 8 of front left headlight wire harness connector E-082 according to the table below.

Standard Condition

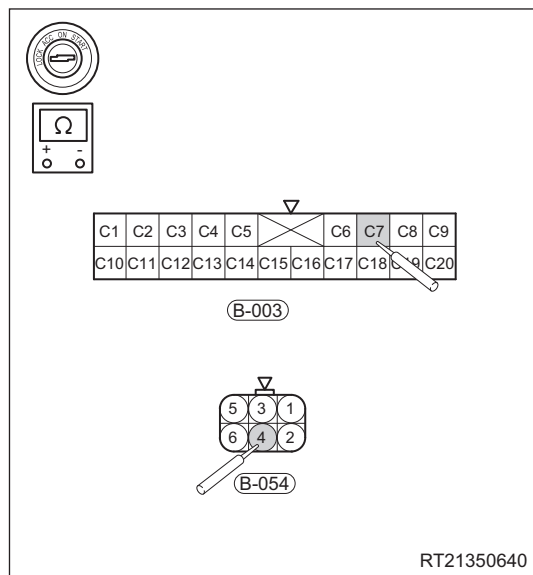
Multimeter Connection	Condition	Specified Condition
E-059 (16) - E-082 (8)	Always	Continuity



- h. Using a digital multimeter, check for continuity between terminal C7 of BCM connector B-003 and terminal 4 of rear left combination light wire harness connector E-054 according to the table below.

Standard Condition

Multimeter Connection	Condition	Specified Condition
B-003 (C7) - E-054 (4)	Always	Continuity

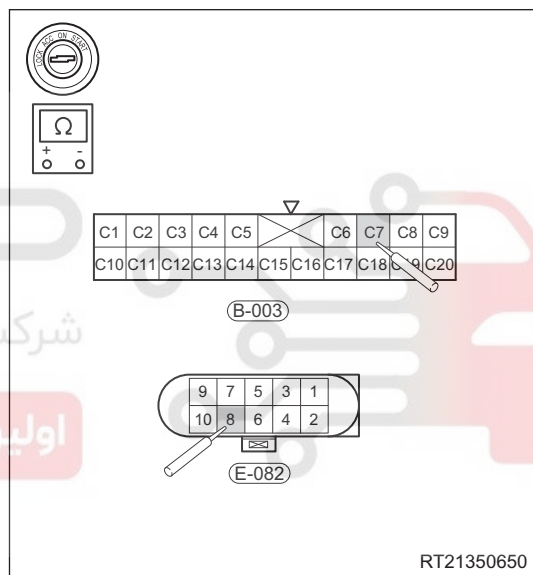


- i. Disconnect the body wire harness connector B-008 and engine compartment wire harness connector E-059.
- j. Using a digital multimeter, check for continuity between terminal C7 of BCM connector B-003 and terminal 8 of rear left combination light wire harness connector E-082 according to the table below.

Standard Condition

Multimeter Connection	Condition	Specified Condition
B-043 (C7) - E-082 (8)	Always	Continuity

NG Repair or replace related wire harness and connector



OK

5**Reconfirm DTCs**

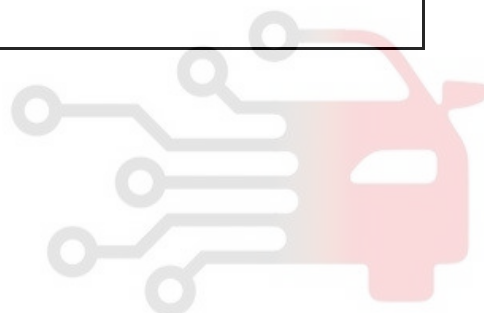
- a. Firmly reconnect all disconnected connectors.
- b. Connect the negative battery cable.
- c. Turn ignition switch to ON.
- d. Use X-431 3G diagnostic tester (the latest software) to record and clear the DTCs stored in the Body Control Module (BCM).
- e. Turn ignition switch to LOCK and wait for a few seconds.
- f. Turn ignition switch to ON.
- g. Use X-431 3G diagnostic tester to read the DTCs in the Body Control Module (BCM) again.

Result	Precede to
DTC B100311, B100313 and B100319 are output	NG
No DTC is output	OK

NG**Replace Body Control Module (BCM)****OK****System is normal**

دیجیتال خودرو
شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



DTC	B100411	Right Park Light Output Control Circuit Circuit Short to Ground
DTC	B100413	Right Park Light output Control Circuit Circuit Open
DTC	B100419	Right Park Light Output Control Circuit Circuit Current Above Threshold

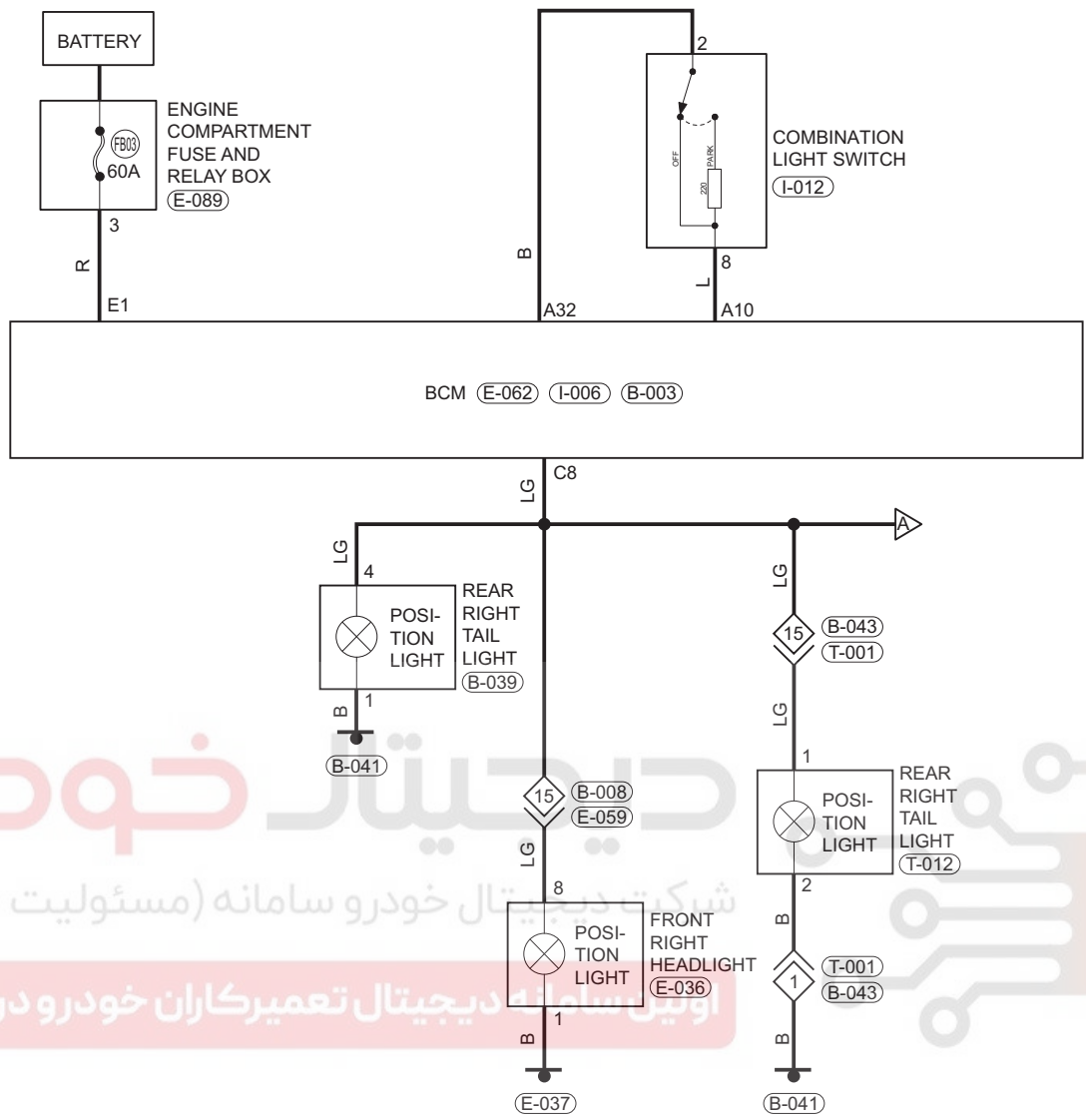
دیجیتال خودرو

شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

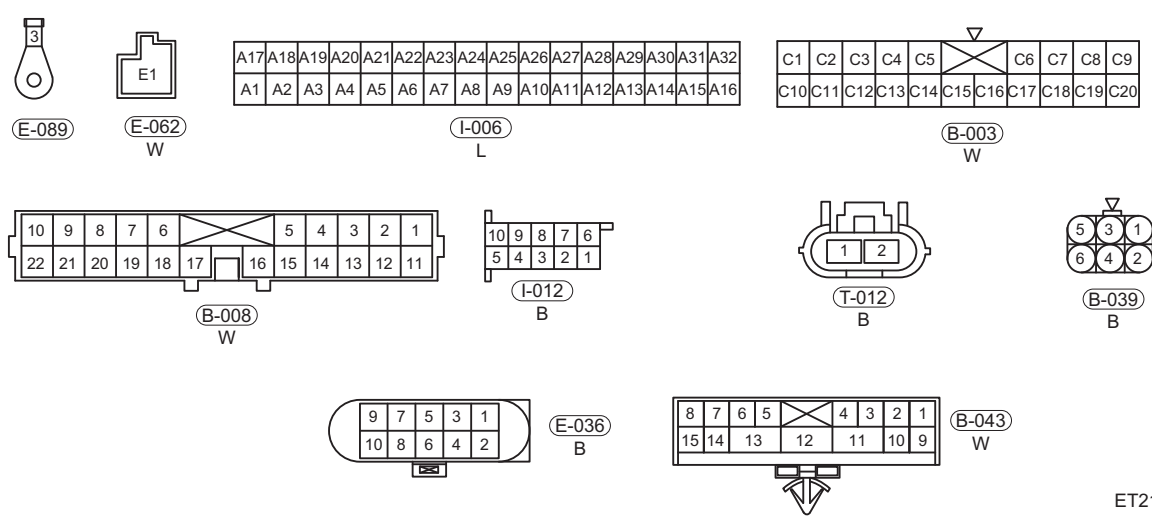
اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



48 - LIGHTING SYSTEM



دیجیتال خودرو
 شرکت دیجیتال خودرو سامانه (مسئولیت محدود)
 اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



ET21480200

Self-diagnosis Detection Logic

DTC Code	DTC Definitions	DTC Detection Conditions	DTC Setting Conditions
B100411	Right Park Light Output Control Circuit Circuit Short to Ground	Ignition switch ON	<ul style="list-style-type: none"> • Position light bulb • Wire harness or connector • Body Control Module (BCM)
B100413	Right Park Light output Control Circuit Circuit Open		
B100419	Right Park Light Output Control Circuit Circuit Current Above Threshold		

HINT:

While performing the electrical diagnosis and testing, always refer to the relevant circuit diagram for the special circuit and component information.

Diagnosis Procedure

1 Check position light bulb

- a. Remove the position light bulb, and check if the position light bulb filament is blown.

NG

Replace position light bulb

OK

2 Check wire harness and connector

Use the circuit diagram as a guide to perform the following procedures:

- Turn ignition switch to LOCK, and disconnect the negative battery cable.
- Disconnect the Body Control Module (BCM) connectors B-003 and E-062.
- Disconnect the front right headlight wire harness connector E-036 and rear right combination light wire harness connector B-039.
- Disconnect the body wire harness connector B-008 and engine compartment wire harness connector E-059.
- Check if wire harnesses are worn, pierced, pinched or partially broken.
- Look for broken, bent, protruded or corroded terminals.
- Check if the related connector terminal contact pins are in good condition.

NG

Repair or replace related wire harness and connector

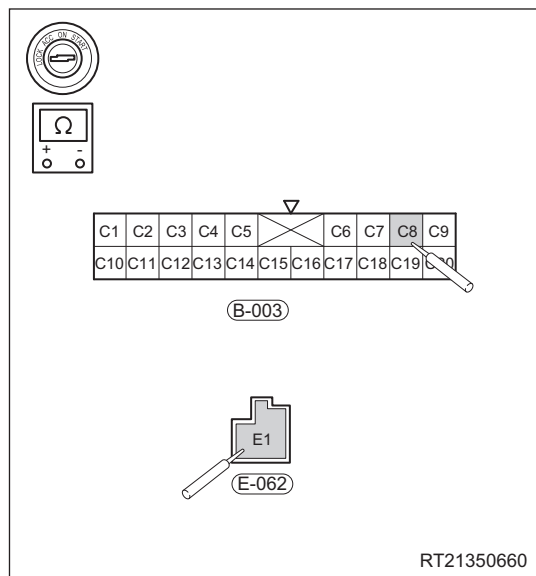
OK

3 Check right position light control circuit

- a. Turn ignition switch to LOCK.
- b. Disconnect the negative battery cable.
- c. Disconnect the Body Control Module (BCM) connectors B-003 and E-062.
- d. Using a digital multimeter, check for continuity between terminal C8 of BCM connector B-003 and terminal E1 of BCM connector E-062 to check if it is short to power supply according to the table below.

Standard Condition

Multimeter Connection	Condition	Specified Condition
B-003 (C8) - E-062 (E1)	Always	No continuity

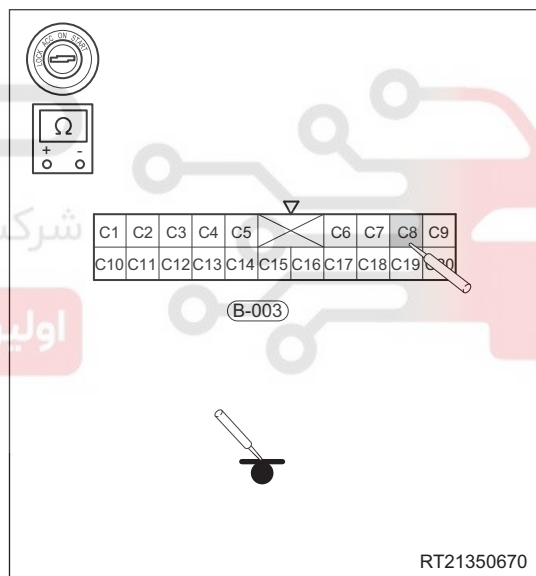


- e. Using a digital multimeter, check for continuity between terminal C8 of BCM connector B-003 and body ground to check if it is short to ground according to the table below.

Standard Condition

Multimeter Connection	Condition	Specified Condition
B-003 (C8) - Body ground	Always	No continuity

NG → **Repair or replace related wire harness and connector**



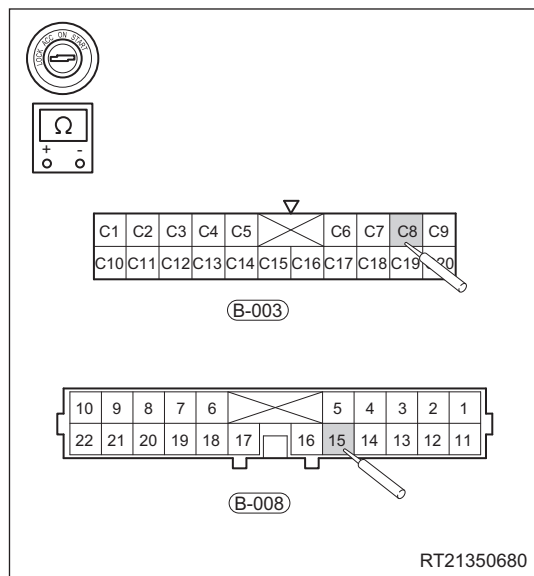
OK

4 Check wire harness and connector (right position light - Body Control Module (BCM))

- a. Turn ignition switch to LOCK.
- b. Disconnect the negative battery cable.
- c. Disconnect the Body Control Module (BCM) connector B-003.
- d. Disconnect the front right headlight wire harness connector E-036 and rear right combination light wire harness connector B-039.
- e. Disconnect the body wire harness connector B-008 and engine compartment wire harness connector E-059.
- f. Using the digital multimeter, check for continuity between terminal C8 of BCM connector B-003 and terminal 15 of body wire harness connector B-008 according to the table below.

Standard Condition

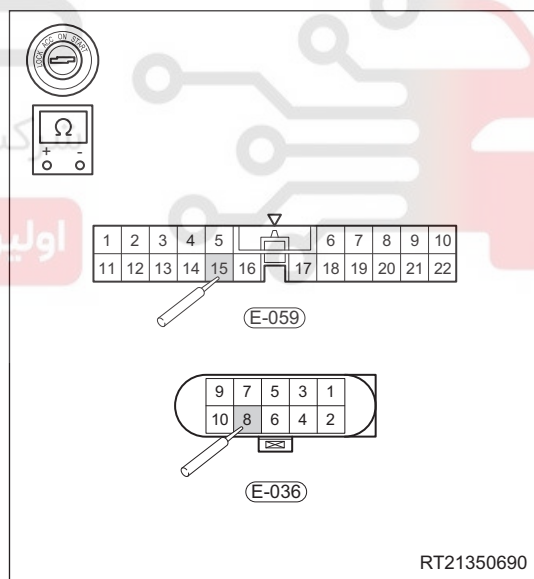
Multimeter Connection	Condition	Specified Condition
B-003 (C8) - B-008 (15)	Always	Continuity



- g. Using a digital multimeter, check for continuity between terminal 15 of engine compartment wire harness connector E-059 and terminal 8 of front right headlight wire harness connector E-036 according to the table below.

Standard Condition

Multimeter Connection	Condition	Specified Condition
E-059 (15) - E-036 (8)	Always	Continuity

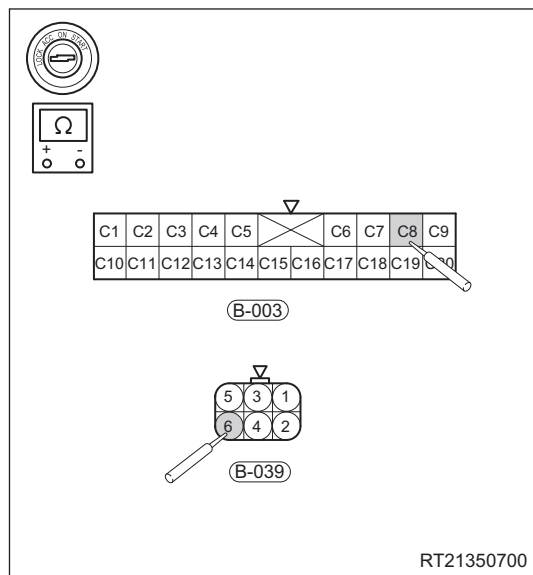


48 - LIGHTING SYSTEM

- h. Using a digital multimeter, check for continuity between terminal C8 of BCM connector B-003 and terminal 4 of rear right combination light wire harness connector B-039 according to the table below.

Standard Condition

Multimeter Connection	Condition	Specified Condition
B-003 (C8) - B-039 (4)	Always	Continuity

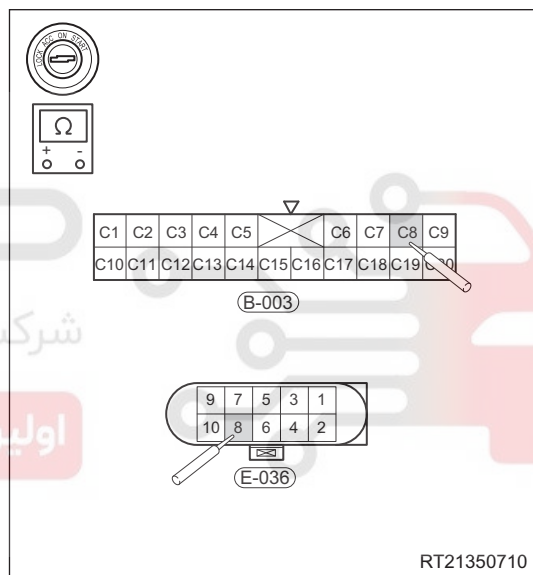


- i. Disconnect the body wire harness connector B-008 and engine compartment wire harness connector E-059.
- j. Using a digital multimeter, check for continuity between terminal C8 of BCM connector B-003 and terminal 8 of front right headlight wire harness connector E-036 according to the table below.

Standard Condition

Multimeter Connection	Condition	Specified Condition
B-043 (C8) - E-036 (8)	Always	Continuity

NG Repair or replace related wire harness and connector



OK

5 Reconfirm DTCs

- a. Firmly reconnect all disconnected connectors.
- b. Connect the negative battery cable.
- c. Turn ignition switch to ON.
- d. Use X-431 3G diagnostic tester (the latest software) to record and clear the DTCs stored in the Body Control Module (BCM).
- e. Turn ignition switch to LOCK and wait for a few seconds.
- f. Turn ignition switch to ON.
- g. Use X-431 3G diagnostic tester to read the DTCs in the Body Control Module (BCM) again.

Result	Precede to
DTC B100411, B100413 and B100419 are output	NG
No DTC is output	OK

NG

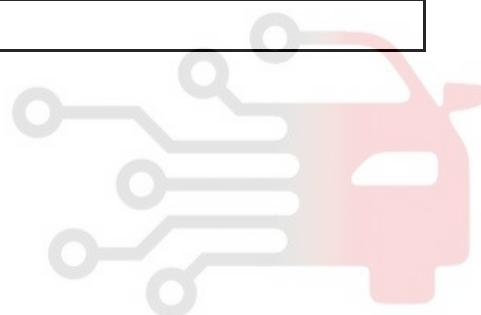
Replace Body Control Module (BCM)

OK

System is normal

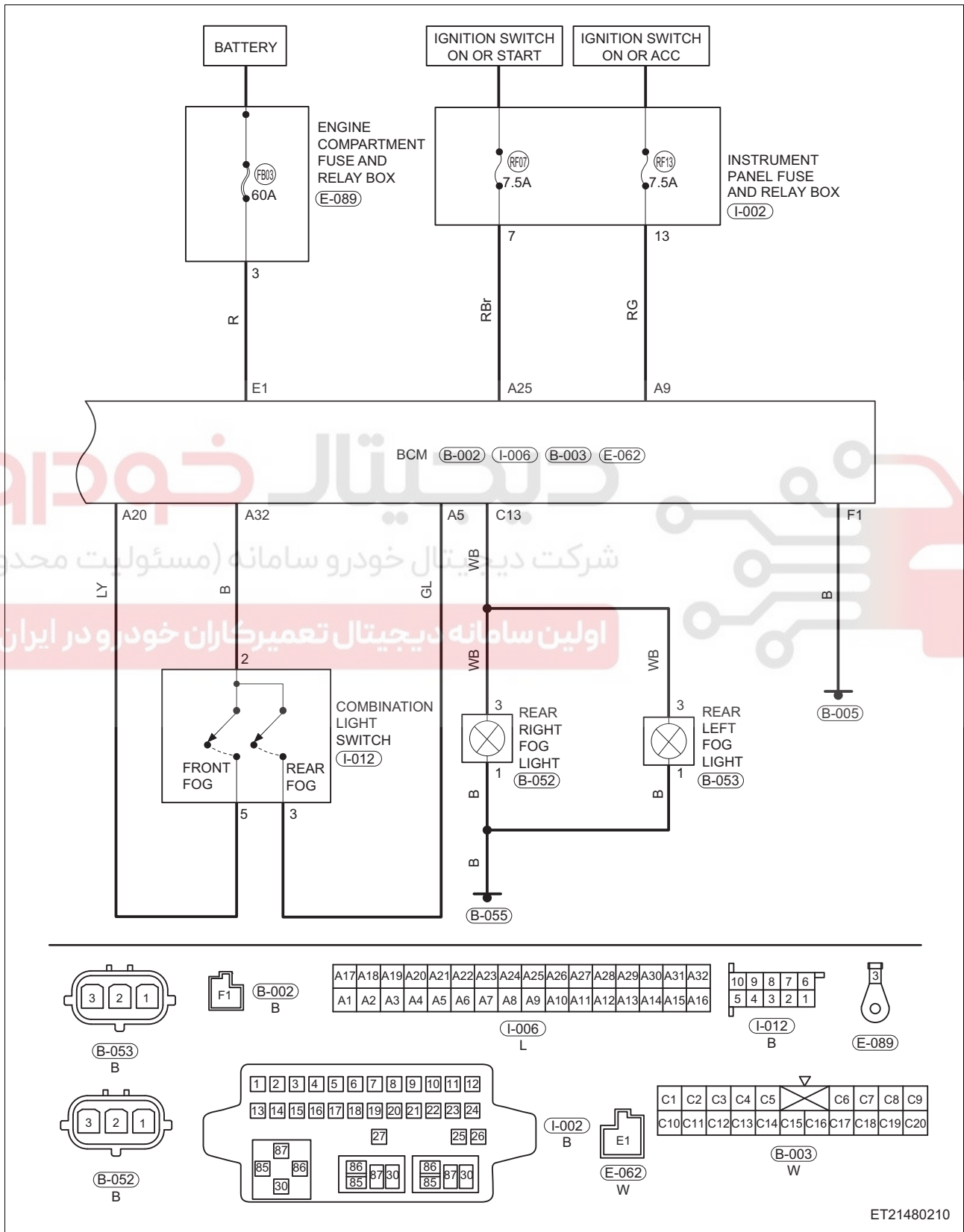
دیجیتال خودرو
شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



DTC	B100813	Rear Fog Control Circuit Circuit Open
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DTC	B100871	Rear Fog Control Circuit Actuator Stuck
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Self-diagnosis Detection Logic

DTC Code	DTC Definitions	DTC Detection Conditions	DTC Setting Conditions
B100813	Rear Fog Control Circuit Circuit Open	Ignition switch ON	<ul style="list-style-type: none"> • Rear fog light bulb • Wire harness or connector • Body Control Module (BCM)
B100871	Rear Fog Control Circuit Actuator Stuck		

HINT:

While performing the electrical diagnosis and testing, always refer to the relevant circuit diagram for the special circuit and component information.

Diagnosis Procedure

1 Check rear fog light bulb

a. Remove the rear fog light bulb, and check if the rear fog light bulb filament is blown.

NG Replace rear fog light bulb

OK

2 Check wire harness and connector

Use the circuit diagram as a guide to perform the following procedures:

- a. Turn ignition switch to LOCK, and disconnect the negative battery cable.
- b. Disconnect the Body Control Module (BCM) connectors B-003 and E-062.
- c. Disconnect the rear left fog light wire harness connector B-053 and rear right fog light wire harness connector B-052.
- d. Check if wire harnesses are worn, pierced, pinched or partially broken.
- e. Look for broken, bent, protruded or corroded terminals.
- f. Check if the related connector terminal contact pins are in good condition.

NG Repair or replace related wire harness and connector

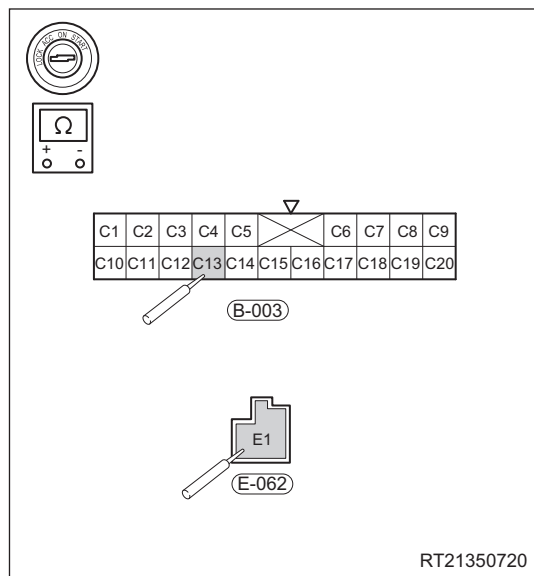
OK

3 Check rear fog light control circuit

- a. Turn ignition switch to LOCK.
- b. Disconnect the negative battery cable.
- c. Disconnect the Body Control Module (BCM) connectors B-003 and E-062.
- d. Using a digital multimeter, check for continuity between terminal C13 of BCM connector B-003 and terminal E1 of BCM connector E-062 to check if it is short to power supply according to the table below.

Standard Condition

Multimeter Connection	Condition	Specified Condition
B-003 (C13) - E-062 (E1)	Always	No continuity

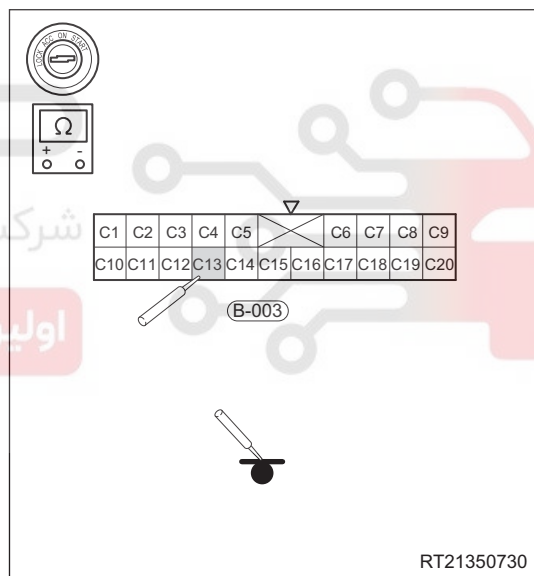


- e. Using a digital multimeter, check for continuity between terminal C13 of BCM connector B-003 and body ground to check if it is short to ground according to the table below.

Standard Condition

Multimeter Connection	Condition	Specified Condition
B-003 (C13) - Body ground	Always	No continuity

NG Repair or replace related wire harness and connector



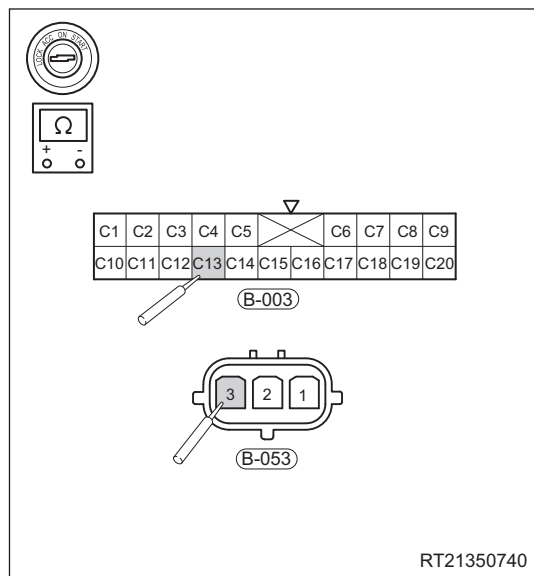
OK

4 Check wire harness and connector (rear fog light - Body Control Module (BCM))

- a. Turn ignition switch to LOCK.
- b. Disconnect the negative battery cable.
- c. Disconnect the Body Control Module (BCM) connector B-003.
- d. Disconnect the rear left fog light wire harness connector B-053 and rear right fog light wire harness connector B-052.
- e. Using a digital multimeter, check for continuity between terminal C13 of BCM connector B-003 and terminal 3 of rear left fog light wire harness connector B-053 according to the table below.

Standard Condition

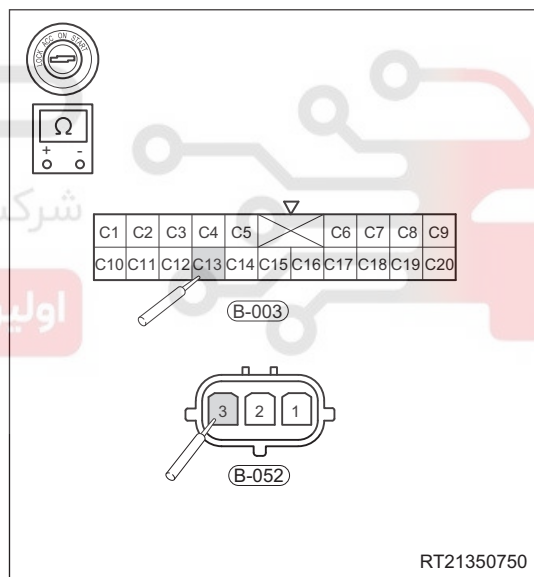
Multimeter Connection	Condition	Specified Condition
B-003 (C13) - B-053 (3)	Always	Continuity



- f. Using a digital multimeter, check for continuity between terminal C13 of BCM connector B-003 and terminal 3 of rear right fog light wire harness connector B-052 according to the table below.

Standard Condition

Multimeter Connection	Condition	Specified Condition
B-003 (C13) - B-052 (3)	Always	Continuity



NG Repair or replace related wire harness and connector

OK

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5 Reconfirm DTCs

- a. Firmly reconnect all disconnected connectors.
- b. Connect the negative battery cable.
- c. Turn ignition switch to ON.
- d. Use X-431 3G diagnostic tester (the latest software) to record and clear the DTCs stored in the Body Control Module (BCM).
- e. Turn ignition switch to LOCK and wait for a few seconds.
- f. Turn ignition switch to ON.
- g. Use X-431 3G diagnostic tester to read the DTCs in the Body Control Module (BCM) again.

Result	Precede to
DTC B100813 and B100871 are output	NG
No DTC is output	OK

NG

Replace Body Control Module (BCM)

OK

System is normal

شرکت دیجیتال خودرو (مسئولیت محدود)

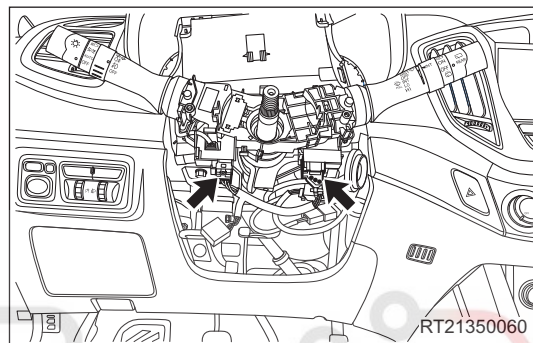
اولین سامانه دیجیتال تعمیرکاران خودرو در ایران

ON-VEHICLE SERVICE

Headlight Adjustment Switch Assembly

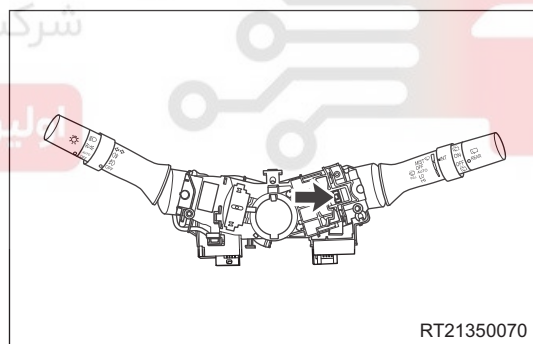
Removal

1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the driver airbag (See page 43-77).
4. Remove the steering wheel assembly (See page 39-16).
5. Remove the combination switch cover (See page 39-13).
6. Remove the spiral cable (See page 43-79).
7. Remove the headlight adjustment switch assembly.
 - a. Remove the headlight adjustment switch assembly and wiper switch assembly wire harness connectors (arrow).



- b. Remove the combination switch assembly from steering column.

- c. Press the claw (arrow) on wiper switch assembly, and separates it from headlight adjustment switch assembly.



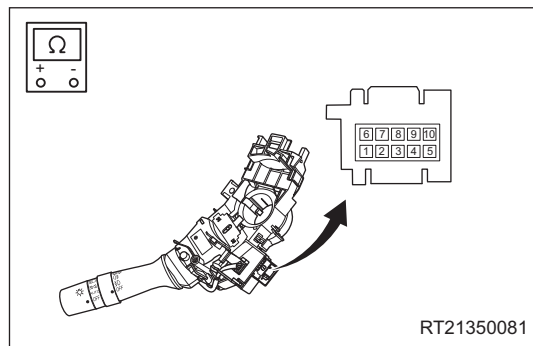
- d. Remove the headlight adjustment switch assembly.

Inspection (AUTO)

1. Check headlight adjustment switch assembly.
 - a. Using ohm band of digital multimeter, check for continuity between terminals as shown in the table. Headlight Adjustment Switch Assembly (Position Light/Low Beam Light/High Beam Light Switch)

Multimeter Connection	Switch Condition	Specified Condition
Terminal 2 - Terminal 8	Switch OFF	No continuity
Terminal 2 - Terminal 8	Switch in position light	3000 Ω
Terminal 2 - Terminal 8	Switch in low beam	1000 Ω
Terminal 2 - Terminal 9	Switch in high beam	1000 Ω
Terminal 2 - Terminal 9	Switch in passing light	3000 Ω

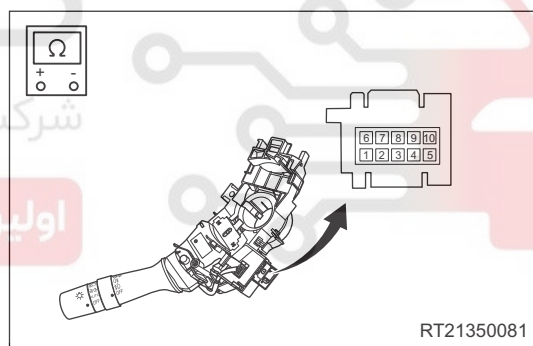
If result is not as specified, replace headlight adjustment switch assembly.



- b. Using ohm band of digital multimeter, check for continuity between terminals as shown in the table. Headlight Adjustment Switch Assembly (Front Fog Light/Rear Fog Light Switch)

Multimeter Connection	Switch Condition	Specified Condition
Terminal 2 - Terminal 5	Switch in front fog light	Continuity
Terminal 2 - Terminal 3	Switch in rear fog light	Continuity

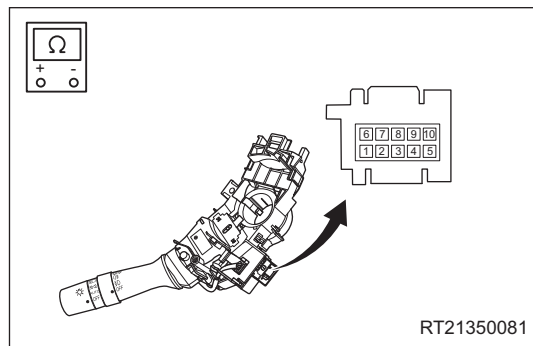
If result is not as specified, replace headlight adjustment switch assembly.



- c. Using ohm band of digital multimeter, check for continuity between terminals as shown in the table. Headlight Adjustment Switch Assembly (Turn Signal Light Switch)

Multimeter Connection	Switch Condition	Specified Condition
Terminal 2 - Terminal 10	Switch in left turn	1000 Ω
Terminal 2 - Terminal 10	Switch in right turn	3000 Ω

If result is not as specified, replace headlight adjustment switch assembly.

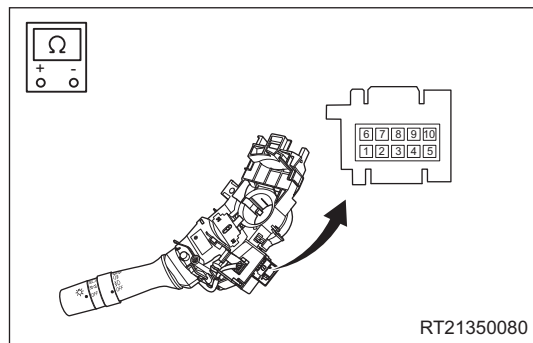


Inspection

1. Check headlight adjustment switch assembly.
 - a. Using ohm band of digital multimeter, check for continuity between terminals as shown in the table. Headlight Adjustment Switch Assembly (Position Light/Low Beam Light/High Beam Light Switch)

Multimeter Connection	Switch Condition	Specified Condition
Terminal 2 - Terminal 8	Switch OFF	No continuity
Terminal 2 - Terminal 8	Switch in position light	220 Ω
Terminal 2 - Terminal 8	Switch in low beam	150 Ω
Terminal 2 - Terminal 9	Switch in high beam	150 Ω
Terminal 2 - Terminal 9	Switch in passing light	330 Ω

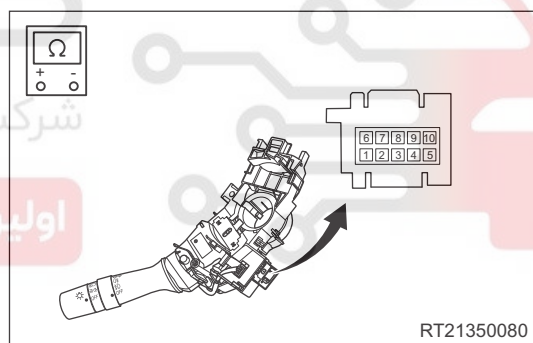
If result is not as specified, replace headlight adjustment switch assembly.



- b. Using ohm band of digital multimeter, check for continuity between terminals as shown in the table. Headlight Adjustment Switch Assembly (Front Fog Light/Rear Fog Light Switch)

Multimeter Connection	Switch Condition	Specified Condition
Terminal 2 - Terminal 5	Switch in front fog light	Continuity
Terminal 2 - Terminal 3	Switch in rear fog light	Continuity

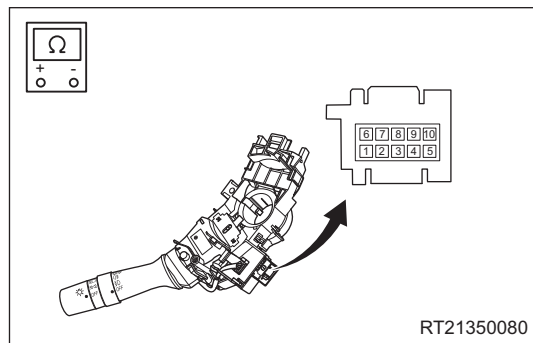
If result is not as specified, replace headlight adjustment switch assembly.



- c. Using ohm band of digital multimeter, check for continuity between terminals as shown in the table. Headlight Adjustment Switch Assembly (Turn Signal Light Switch)

Multimeter Connection	Switch Condition	Specified Condition
Terminal 2 - Terminal 10	Switch in left turn	150 Ω
Terminal 2 - Terminal 10	Switch in right turn	330 Ω

If result is not as specified, replace headlight adjustment switch assembly.



Installation

Installation is in the reverse order of removal.

CAUTION

- Always install spiral cable correctly according to the specified operating instructions.
- Check that the horn operates normally after installation.
- Check SRS warning light after installation, and make sure that supplemental restraint system operates normally.

دیجیتال خودرو

شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

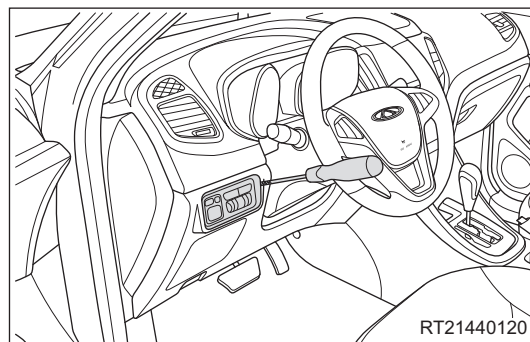
اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



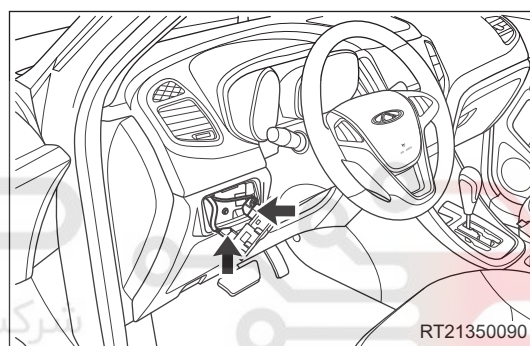
Combination Light Adjustment Switch

Removal

1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the combination light adjustment switch.
 - a. Using a screwdriver wrapped with protective tape, pry both ends of combination light adjustment switch carefully to remove it.



- b. Disconnect the combination light adjustment switch wire harness connectors (arrow).



- c. Remove the combination light adjustment switch.

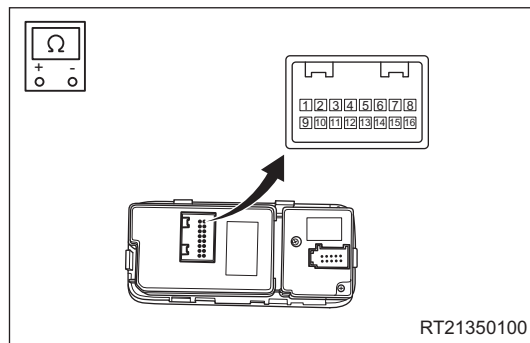
دیجیتال خودرو
شرکت دیجیتال خودرو سامانه (مسئولیت محدود)
اولین سامانه دیجیتال تعمیرات خودرو در ایران

Inspection

1. Check combination light adjustment switch (headlight leveling switch).
 - a. Turn digital multimeter to ohm band, and connect red probe of multimeter to terminal 1, and black probe to terminal 2.

Observe resistance change on the digital multimeter while turning the headlight leveling switch to each position.

Multimeter Connection	Switch Position	Specified Condition (KΩ)
Terminal 1 - Terminal 2	0	1.297
Terminal 1 - Terminal 2	1	1.808
Terminal 1 - Terminal 2	2	2.735
Terminal 1 - Terminal 2	3	3.945

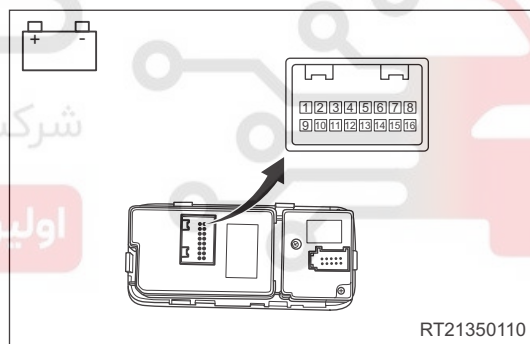


If result is not as specified, replace combination light adjustment switch.

2. Check combination light adjustment switch (backlight switch).
 - a. Connect positive battery lead to terminal 6 and negative battery lead to terminal 8 of combination light adjustment switch. Check if the backlight comes on.

Observe if the backlight brightness changes gradually while turning the backlight switch.

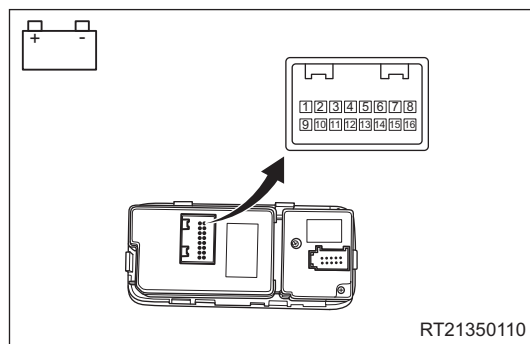
OK: Comes on and changes gradually.



- b. Connect positive battery lead to terminal 7 and negative battery lead to terminal 8 of combination light adjustment switch. Check if the backlight comes on.

OK: Comes on.

If result is not as specified, replace combination light adjustment switch.



Installation

Installation is in the reverse order of removal.

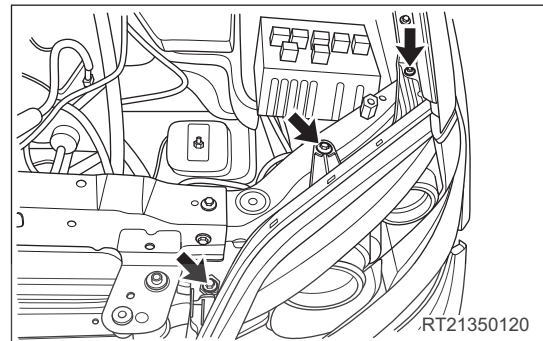
Headlight Assembly

Removal

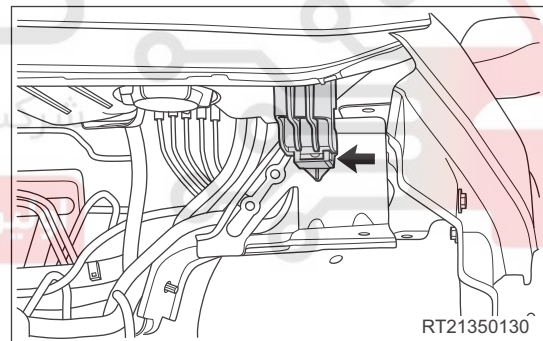
HINT:

Use the same procedures for the right side and left side.
Procedures listed below are for the left side.

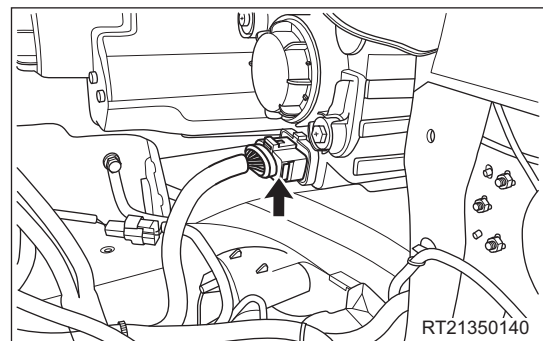
1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the radiator grille assembly (See page 62-8).
4. Remove the water tank upper crossmember trim board (See page 62-10).
5. Remove the headlight assembly.
 - a. Remove 3 fixing bolts (arrow) from headlight assembly.
(Tightening torque: 3.5 ± 0.5 N·m)



- b. Move the headlight assembly along vehicle driving direction, and detach the fixing clip (arrow) between headlight assembly and mounting bracket.



- c. Disconnect the headlight assembly wire harness connector (arrow), and remove the headlight assembly.



Installation

Installation is in the reverse order of removal.

CAUTION

- When installing headlight assembly, make sure the fitting clearance between headlight and hood, front fender, front bumper is appropriate. Adjust as necessary.

Adjustment

1. Preparations:

- Tire inflation pressure comes up to standard.
- Vehicle is unloaded (besides spare tire and tool kit, it is generally specified to include the weight of driver).
- Park vehicle on a level ground or a workplace.
- Keep lens surface of headlight free from dirt.
- Check if power supply operates normally and bulbs are installed correctly.
- Headlight beam can be adjusted up and down, left and right by using headlight leveling switch or adjustment area at the rear of headlight. Always perform adjustment according to the international standard.

No.	Item	Standard
1	Reference center height of headlight low beam	$H = 903 \text{ mm}$
2	Up and down offset of left/right low beam	Adjust center: $0.85H = 768 \text{ mm}$ Adjust range: $0.8H - 0.9H = 722 - 813 \text{ mm}$
3	Left and right offset of left low beam	Left offset no more than 170 mm, right offset no more than 350 mm
4	Left and right offset of right low beam	Left offset no more than 170 mm, right offset no more than 350 mm
5	Left and right offset of left high beam	Left offset no more than 170 mm, right offset no more than 350 mm
6	Left and right offset of right high beam	Left offset no more than 350 mm, right offset no more than 350 mm
7	High beam light intensity	$\geq 39000 \text{ cd}$

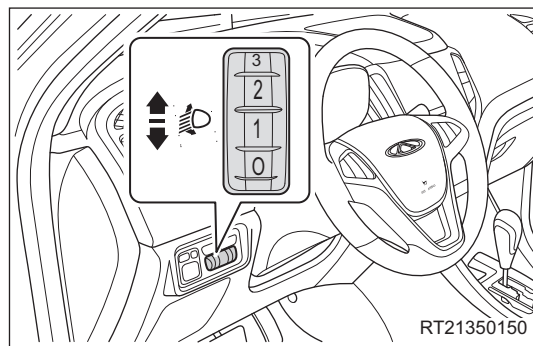
2. Headlight leveling can be adjusted according to the number of passengers and loading condition. There are 4 adjustment bands to select on headlight leveling knob: 0, 1, 2 and 3.

Turn up: Rise headlight beam.

Turn down: Lower headlight beam.

Adjust the light according to the table below.

Occupant and Luggage Loading Condition		Knob Position
Occupant	Luggage Loading	
Driver	None	0
Driver + Front Passenger	None	0
Full Occupied	None	1
Full Occupied	Full Luggage Loading	2
Driver	Full Luggage Loading	3



CAUTION

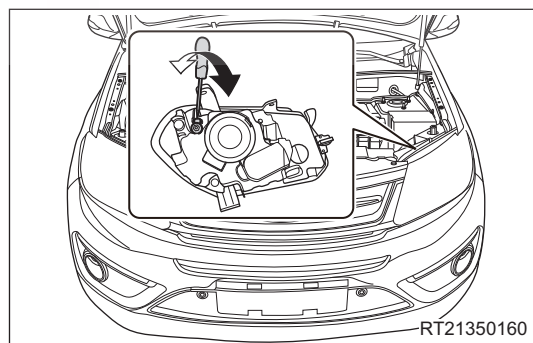
- Whether headlight leveling is correct or not will directly affects driving safety. Be sure to adjust it according to the related specification.

3. Manual headlight leveling: the headlight leveling can be changed by adjusting the following areas manually as shown in the illustration.

Adjustment method for left headlight

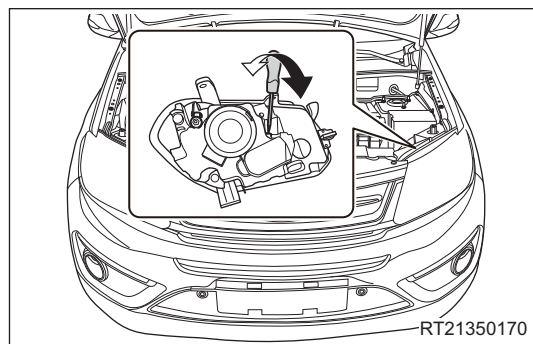
a. Headlight beam left/right adjustment

When rotating the screwdriver clockwise, the beam move to left; when rotating the screwdriver counterclockwise, the beam move to right.



b. Headlight beam up/down adjustment

When rotating the screwdriver clockwise, the beam move downward; when you rotating the screwdriver counterclockwise, the beam move upward.



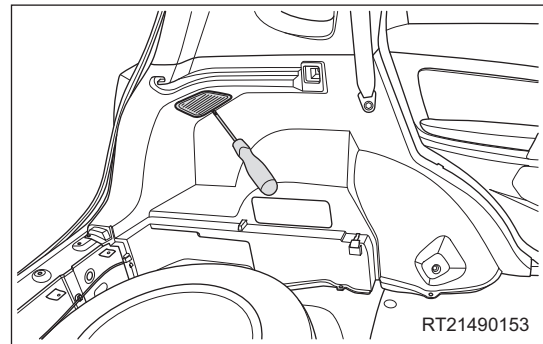
Rear Combination Light Assembly (Fixed Part)

Removal

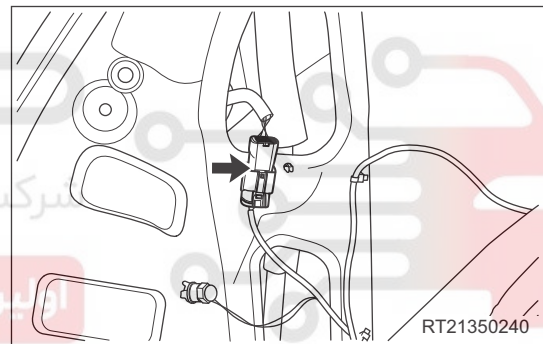
HINT:

- Use the same procedures for the right side and left side.
- Procedures listed below are for rear left combination light.

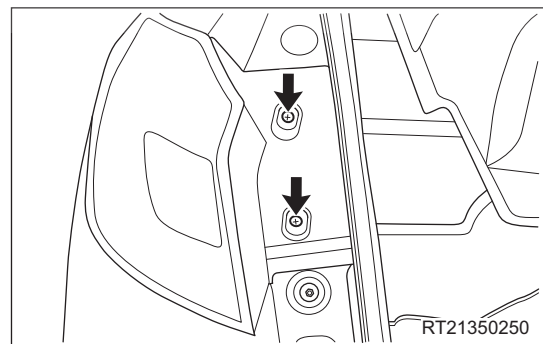
1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the rear combination light assembly (fixed part).
 - a. Using a flat tip screwdriver wrapped with protective tape, pry up and remove the rear combination light service cover.



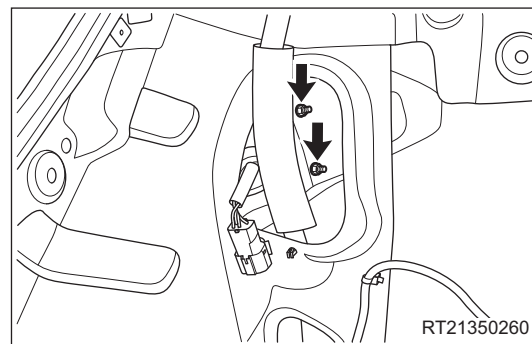
- b. Disconnect the rear combination light assembly (fixed part) wire harness connector (arrow), and detach the wire harness fixing clip.



- c. Remove 2 fixing screws (arrow) from outer part of rear combination light assembly (fixed part). (Tightening torque: 1.5 ± 0.5 N·m)



- d. Remove 2 fixing nuts (arrow) from inner part of rear combination light assembly (fixed part), and detach the inner fixing clip.
(Tightening torque: 4.5 ± 1 N·m)



- e. Remove the rear combination light assembly (fixed part).

Installation

Installation is in the reverse order of removal.

CAUTION

- When installing rear combination light assembly, make sure the fitting clearance between rear combination light assembly and back door, rear bumper is appropriate. Adjust it as necessary.

دیجیتال خودرو

شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

اولین سامانه دیجیتال تعمیرکاران خودرو در ایران

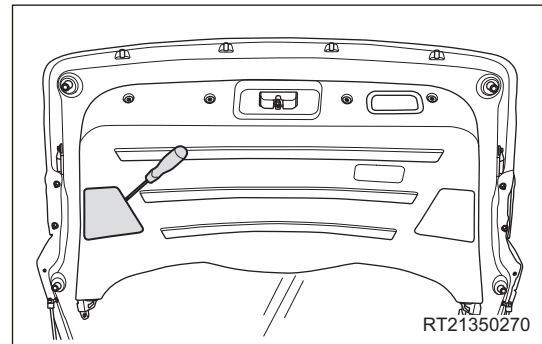


Rear Combination Light Assembly (Movable Part)

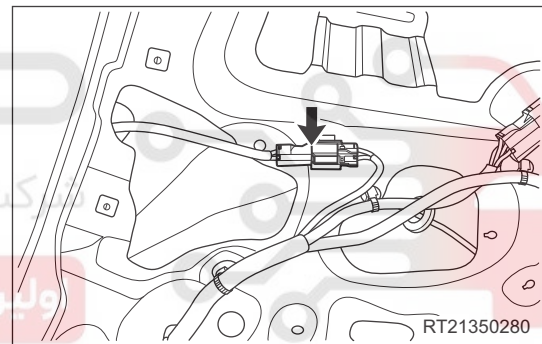
Removal

HINT:

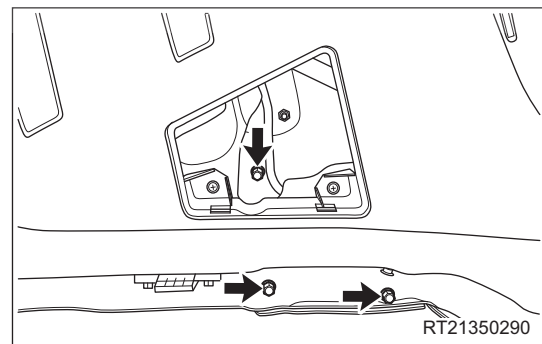
- Use the same procedures for the right side and left side.
 - Procedures listed below are for the left side.
1. Turn off all the electrical equipment and ignition switch.
 2. Disconnect the negative battery cable.
 3. Remove the rear combination light assembly (movable part).
 - a. Using a flat tip screwdriver wrapped with protective tape, pry up and remove the rear left combination light service cover on back door.



- b. Disconnect the rear combination light assembly (movable part) wire harness connector (arrow), and detach the wire harness fixing clip.



- c. Remove 3 fixing nuts (arrow) from rear combination light assembly (movable part). (Tightening torque: 4.5 ± 1 N·m)



- d. Remove the rear combination light assembly (movable part).

Installation

Installation is in the reverse order of removal.

CAUTION

- When installing rear combination light assembly, make sure the fitting clearance between rear combination light assembly and back door, rear bumper is appropriate. Adjust it as necessary.

دیجیتال خودرو

شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

اولین سامانه دیجیتال تعمیرکاران خودرو در ایران

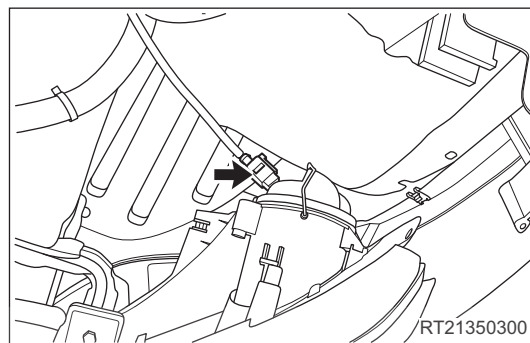


Front Fog Light Assembly

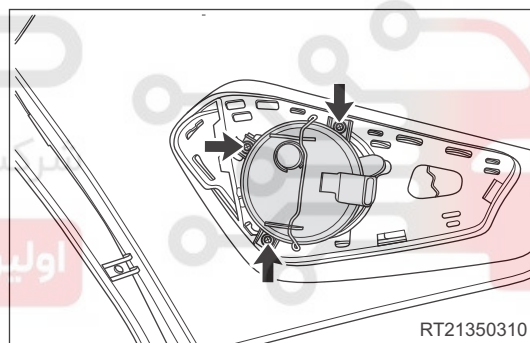
Removal

HINT:

- Use the same procedures for the right side and left side.
 - Procedures listed below are for the left side.
1. Turn off all the electrical equipment and ignition switch.
 2. Disconnect the negative battery cable.
 3. Remove the front wheel house protector assembly (See page 62-24).
 4. Remove the front fog light assembly.
 - a. Disconnect the front fog light assembly wire harness connector (arrow).



- b. Remove 3 fixing crews (arrow) from front fog light assembly. (Tightening torque: 1.5 ± 0.5 N·m)



- c. Remove the front fog light assembly.

Installation

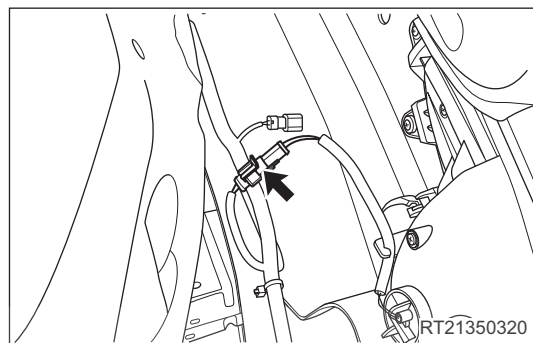
Installation is in the reverse order of removal.

Rear Fog Light & Reflector Assembly

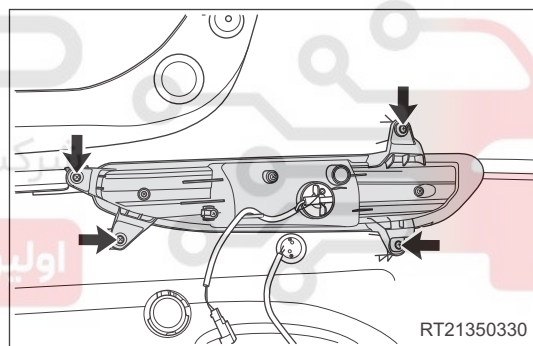
Removal

HINT:

- Use the same procedures for the right side and left side.
 - Procedures listed below are for the left side.
1. Turn off all the electrical equipment and ignition switch.
 2. Disconnect the negative battery cable.
 3. Remove the rear bumper assembly (See page 62-30).
 4. Remove the rear fog light & reflector assembly.
 - a. Disconnect the rear fog light & reflector assembly wire harness connector (arrow).



- b. Remove 4 fixing crews (arrow) from rear fog light & reflector assembly. (Tightening torque: 1.5 ± 0.5 N·m)



- c. Remove the rear fog light & reflector assembly.

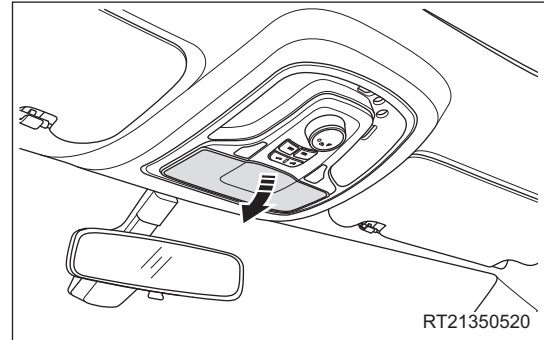
Installation

Installation is in the reverse order of removal.

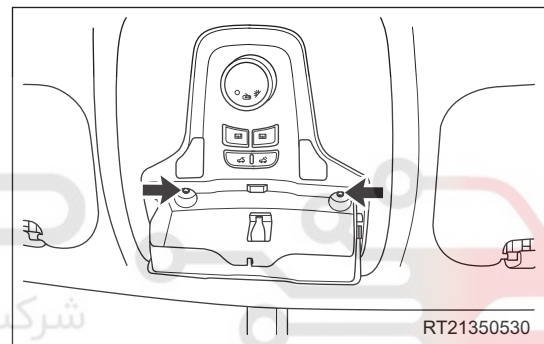
Front Dome Light Assembly

Removal

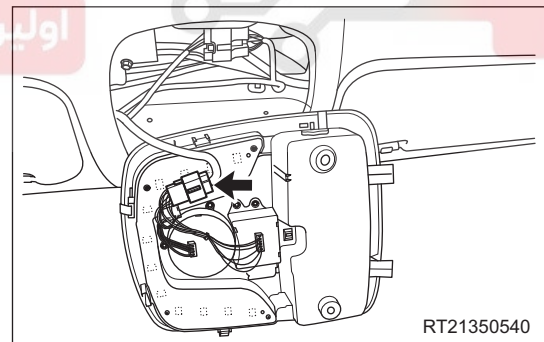
1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the front dome light assembly.
 - a. Open the glasses box in the direction of arrow as shown in the illustration.



- b. Remove 2 fixing crews (arrow) from front dome light assembly.
(Tightening torque: 1.5 ± 0.5 N·m)



- c. Disconnect the front dome light assembly wire harness connector (arrow).



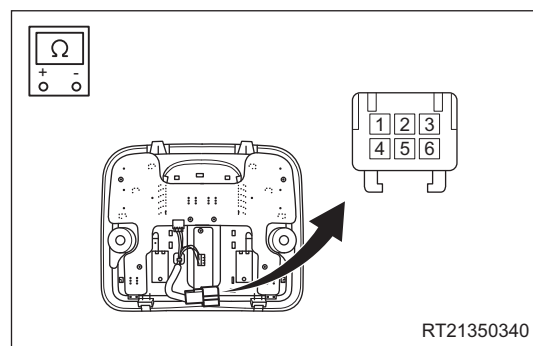
- d. Remove the front dome light assembly.

Inspection

1. Check front dome light assembly.
 - a. Using ohm band of digital multimeter, check for continuity between terminals of front dome light assembly as shown in the table.

Multimeter Connection	Switch Position	Specified Condition
Terminal 1 - Terminal 2	Switch pushed	Continuity
Terminal 1 - Terminal 2	Switch released	No continuity

If result is not as specified, replace front dome light assembly.



Installation

Installation is in the reverse order of removal.

دیجیتال خودرو

شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

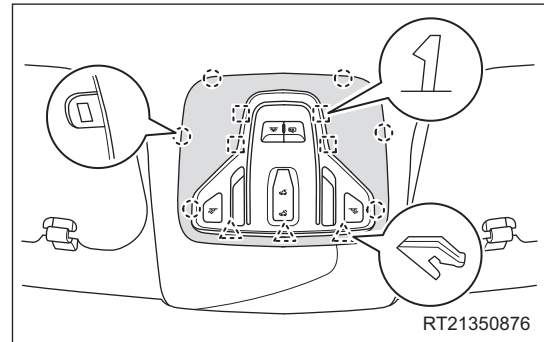
اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



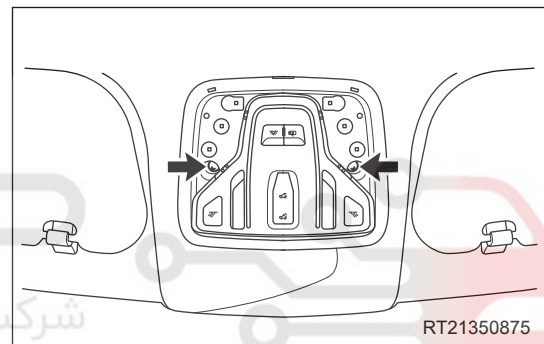
Front Dome Light Assembly

Removal

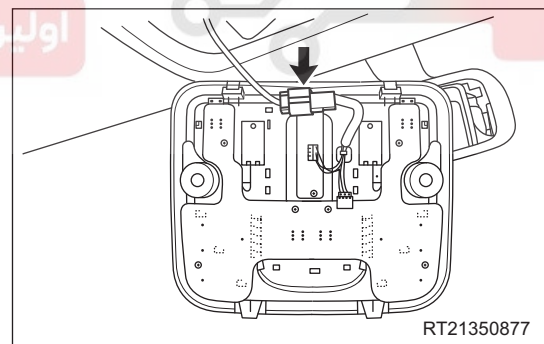
1. Turn off all electrical equipment and the ignition switch.
2. Disconnect the negative battery cable.
3. Remove the front dome light assembly.
 - a. Using a flat tip screwdriver wrapped with protective tape, remove the front dome light assembly cover.



- b. Remove 2 fixing screws (arrow) from front dome light assembly.
(Tightening torque: 1.5 ± 0.5 N·m)



- c. Disconnect the front dome light assembly wire harness connector (arrow).



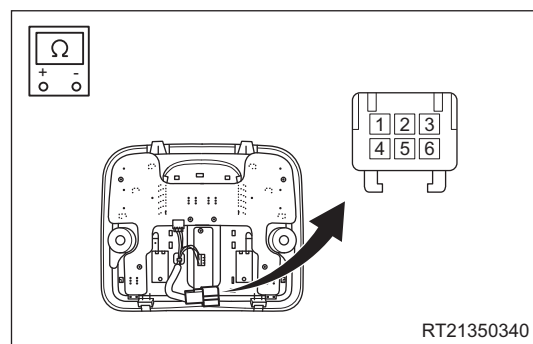
- d. Remove the front dome light assembly.

Inspection

1. Check the front dome light assembly.
 - a. Using ohm band of digital multimeter, check for continuity between terminals of front dome light assembly as shown in table.

Multimeter Connection	Switch Position	Specified Condition
Terminal 1 - Terminal 2	Switch pushed	Continuity
Terminal 1 - Terminal 2	Switch released	No continuity

If result is not as specified, replace the front dome light assembly.



Installation

Installation is in the reverse order of removal.

دیجیتال خودرو

شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

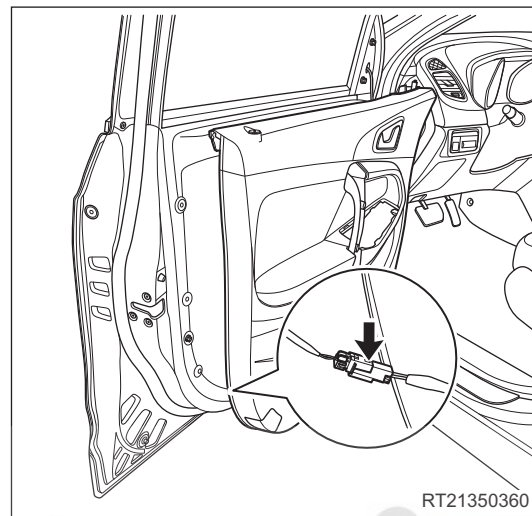
اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



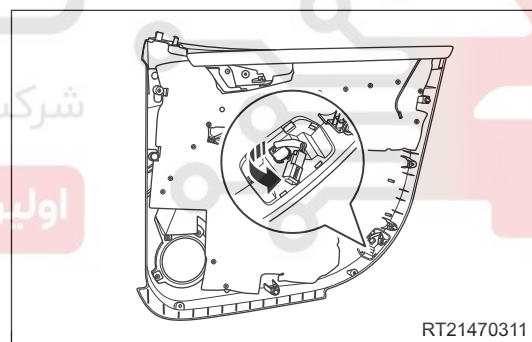
Front Door Courtesy Light

Removal

1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the front door protector assembly. (See page 61-23).
4. Remove the front door courtesy light.
 - a. Disconnect the front door courtesy light wire harness connector (arrow).



- b. Turn the front door courtesy light counterclockwise, and remove it from front door protector assembly.



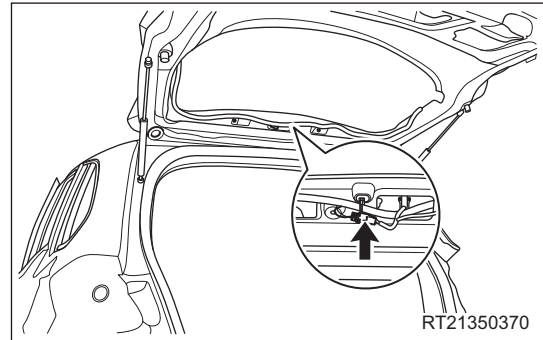
Installation

Installation is in the reverse order of removal.

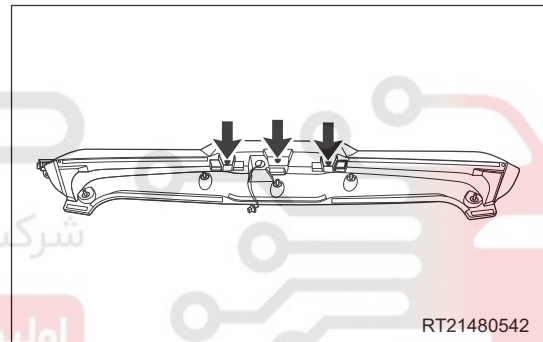
High Mounted Stop Light Assembly

Removal

1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the back door protector assembly (See page 61-47).
4. Remove the high mounted stop light assembly.
 - a. Disconnect the high mounted stop light assembly wire harness connector (arrow).



- b. Remove the rear spoiler assembly (See page 62-43).
- c. Remove 3 fixing nuts (arrow) from high mounted stop light assembly.
(Tightening torque: 3.5 ± 0.5 N·m)



- d. Remove the high mounted stop light assembly from rear spoiler assembly.

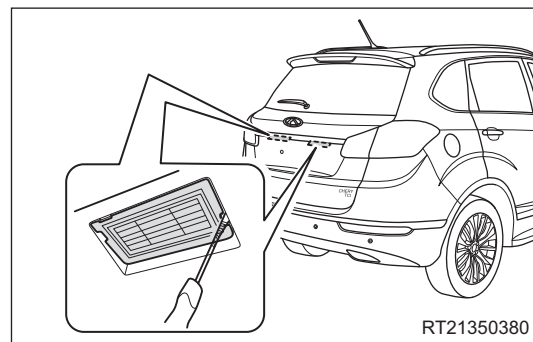
Installation

Installation is in the reverse order of removal.

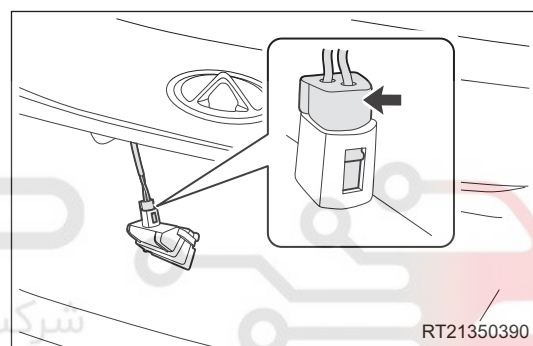
License Plate Light Assembly

Removal

1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the license plate light assembly.
 - a. Using a flat tip screwdriver wrapped with protective tape, pry out the license plate light assembly.



- b. Disconnect the license plate light assembly wire harness connector (arrow).



- c. Remove the license plate light assembly.

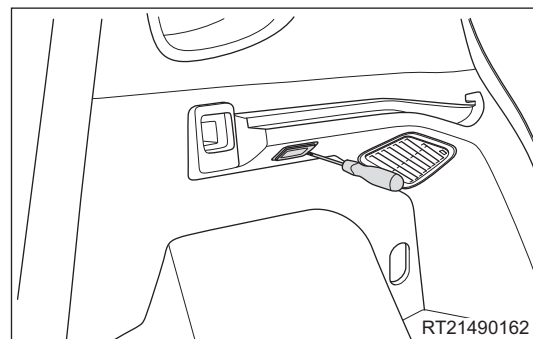
Installation

Installation is in the reverse order of removal.

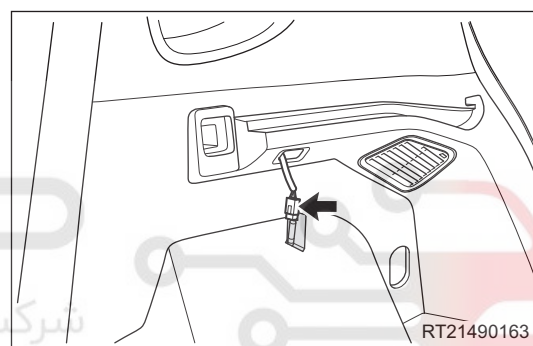
Luggage Compartment Light Assembly

Removal

1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the luggage compartment light assembly.
 - a. Using a flat tip screwdriver wrapped with protective tape, pry out the luggage compartment light assembly cover (right side).



- b. Disconnect the luggage compartment light assembly wire harness connector (arrow).



- c. Remove the luggage compartment light assembly.

Installation

Installation is in the reverse order of removal.

Back-up Light Switch Assembly (MT)

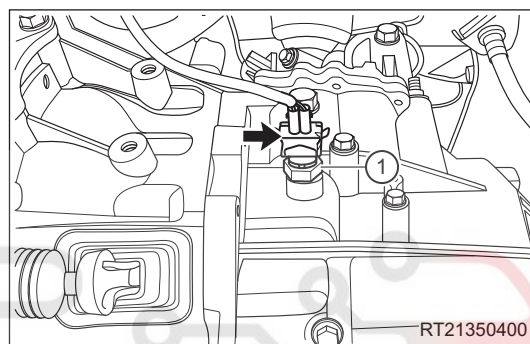
Removal

1. Remove the back-up light switch assembly.
 - a. Stop the vehicle on a lifter, and support it with the lifter.
 - b. Turn off all the electrical equipment and ignition switch.
 - c. Disconnect the negative battery cable.
 - d. Raise the vehicle with the lifter.

WARNING

- Bear sure to wear necessary safety equipments to avoid accidents.
- Check if safety lock of lifter is locked when performing vehicle lift repair and inspection.

- e. Disconnect the back-up light switch assembly wire harness connector (arrow).
- f. Remove the back-up light switch assembly (1).



HINT:

Transmission oil may flow out when removing back-up light switch assembly. Use a container to collect the oil.

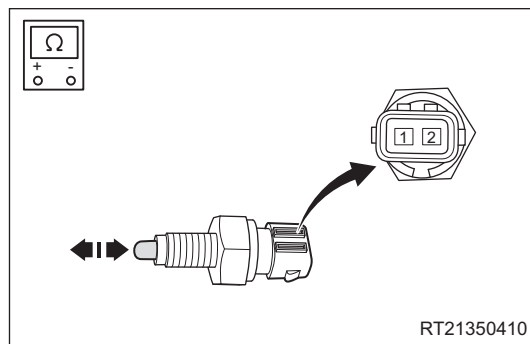
ENVIRONMENTAL PROTECTION

- Drained transmission oil should be collected with a recovering tool.

Inspection

1. Check back-up light switch assembly.
 - a. Using ohm band of digital multimeter, check for continuity between terminals of back-up light switch assembly as shown in the table.

Multimeter Connection	Switch Position	Specified Condition
Terminal 1 - Terminal 2	Switch pushed	Continuity
Terminal 1 - Terminal 2	Switch released	No continuity



Installation

1. Apply thread locker to the threads of back-up light, and clean the transmission oil on the area between transmission and back-up light switch assembly before installing the back-up light switch assembly. Then install and tighten the back-up light switch.
(Tightening torque: 20 ± 2 N·m)
2. Check if the transmission oil level is in the proper position after installation.
 - a. It is not necessary to do anything, if it is in the proper position.
 - b. It is necessary to fill transmission oil to the specified position, if it is not in the proper position (fill the oil until it flows out of retaining plug).

دیجیتال خودرو

شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

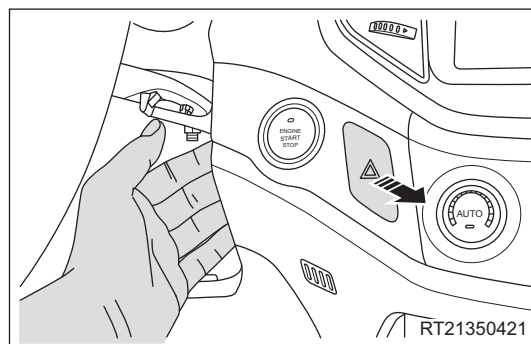
اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



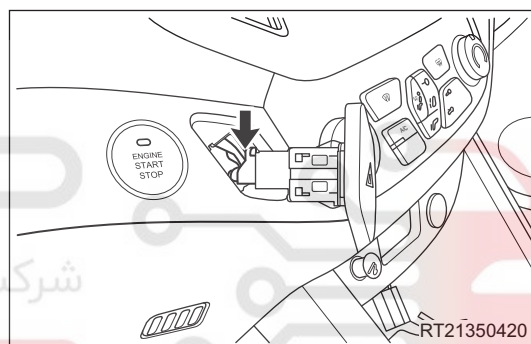
Hazard Warning Light Switch

Removal

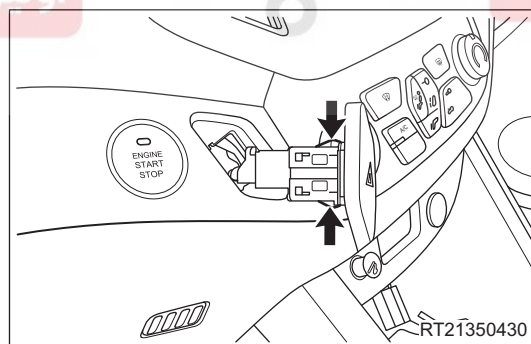
1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the combination switch cover (See page 39-13).
4. Remove the hazard warning light switch.
 - a. Insert hand into internal of instrument panel and push out hazard warning light switch from backside.



- b. Disconnect the hazard warning light switch wire harness connector (arrow).



- c. Press the claws (arrow) on both ends of the hazard warning light switch by hand, and push outward forcefully to remove it.



Inspection

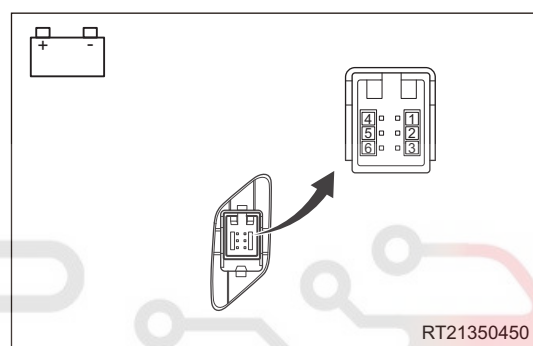
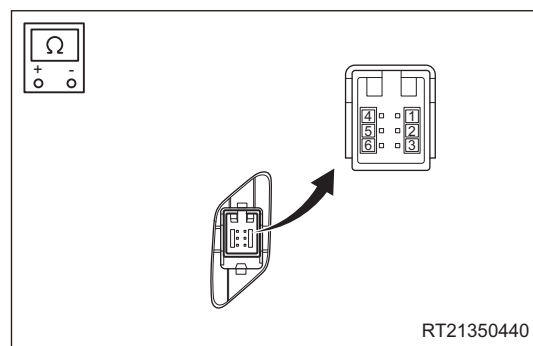
1. Check hazard warning light switch.
 - a. Using ohm band of digital multimeter, check for continuity between terminals of hazard warning light switch as shown in the table.

Multimeter Connection	Switch Condition	Specified Condition
Terminal 1 - Terminal 2	Switch pushed	Continuity
Terminal 1 - Terminal 2	Switch released	No continuity

If result is not as specified, replace hazard warning light switch.

2. Check hazard warning light switch illumination.
 - a. Connect positive (+) battery lead to terminal 3 and negative (-) battery lead to terminal 5, then check that the switch illumination comes on.
OK: LED comes on.
 - b. Connect the positive (+) battery lead to terminal 4 and negative (-) battery lead to terminal 5, then check that the switch illumination comes on.
OK: LED comes on.

If result is not as specified, replace hazard warning light switch.



Installation

Installation is in the reverse order of removal.

دیجیتال خودرو

شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



WIPER AND WASHER

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Ground Inspection	49-10	Installation	49-33
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B101471	49-13	Inspection	49-34
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B101713	49-13	Removal	49-36
B101771	49-13	Installation	49-37
B101813	49-13	Inspection	49-37
B101871	49-13	Washer Fluid Reservoir Assembly	49-38
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Removal	49-21	Installation	49-39
Inspection	49-22	Washer Line Assembly	49-40
Installation	49-22	Removal	49-40
Front Wiper Arm Assembly	49-23	Installation	49-41
Removal	49-23	Rain Gutter Rail Reinforcement	49-42
Installation	49-24	Assembly	49-42
Front Wiper Motor Assembly	49-25	Removal	49-42
Removal	49-25	Installation	49-43
Inspection	49-26	Rain Sensor Assembly (if equipped)	49-44
Installation	49-27	Removal	49-44
		Installation	49-45

دیجیتال خودرو

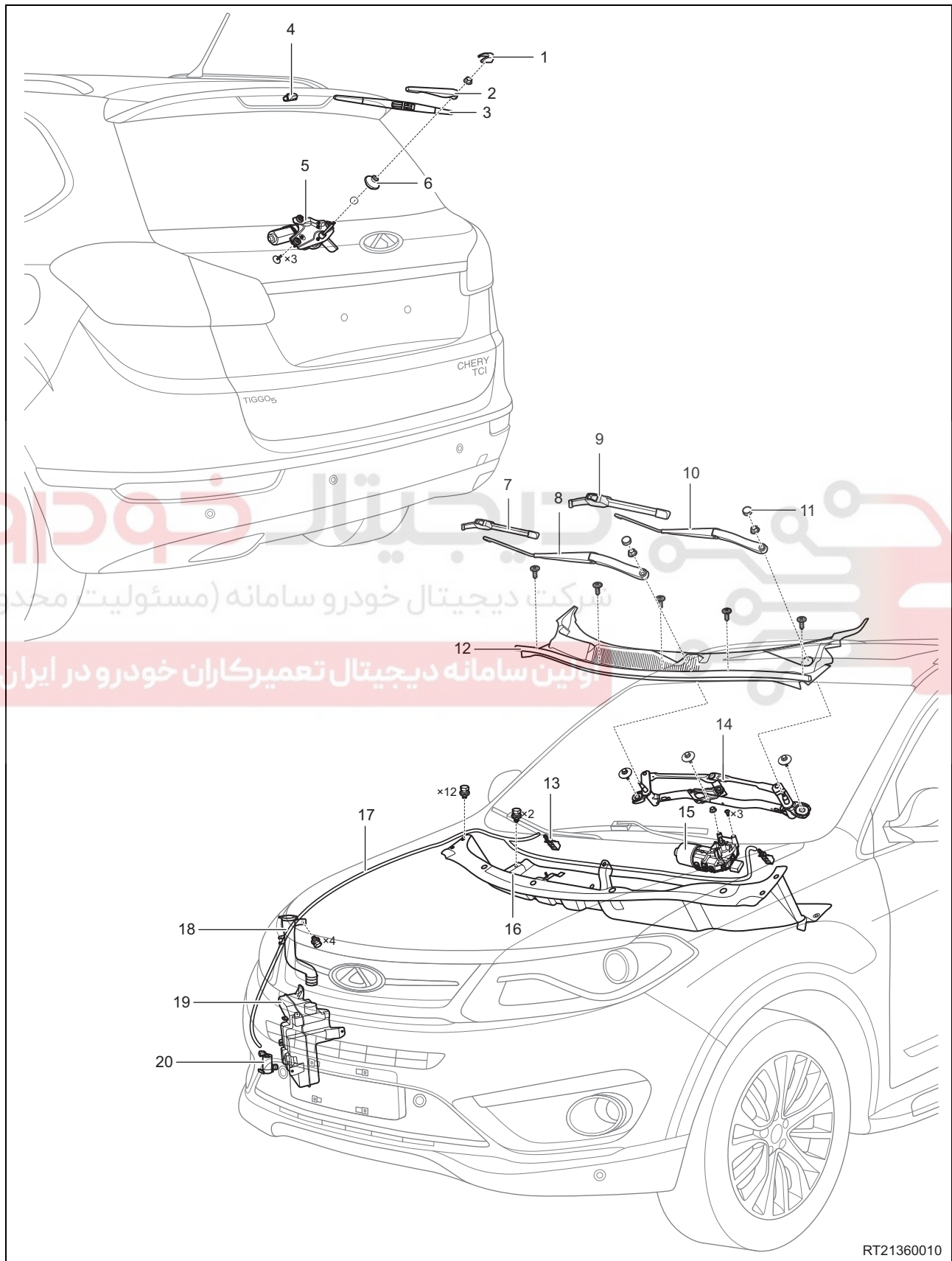
شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



GENERAL INFORMATION

Description



49 - WIPER AND WASHER

1 - Rear Wiper Arm Trim Cap	2 - Rear Wiper Arm Assembly
3 - Rear Wiper Arm Blade	4 - Rear Washer Nozzle Assembly
5 - Rear Wiper Motor Assembly	6 - Grommet
7 - Sub Wiper Arm Blade	8 - Sub Wiper Arm Assembly
9 - Main Wiper Arm Blade	10 - Main Wiper Arm Assembly
11 - Front Wiper Arm Trim Cap	12 - Front Windshield Lower Garnish Assembly
13 - Front Washer Nozzle Assembly	14 - Wiper Link Rod
15 - Front Wiper Motor Assembly	16 - Rain Gutter Rail Reinforcement Assembly
17 - Washer Line Assembly	18 - Guide Pipe Assembly
19 - Washer Fluid Reservoir Assembly	20 - Washer Pump

Wiper and washer are important equipment for cleaning the windshield assembly. Wiper and washer systems are controlled by wiper switch assembly, which can be operated only when the ignition switch is turned to ON. Driver controls all operations of wiper and washer by moving switch control lever.

دیجیتال خودرو

شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



Specifications

Torque Specifications

Description	Torque (N·m)
Front Wiper Arm Assembly Fixing Nut	18 ± 2
Wiper Motor and Link Rod Assembly Fixing Bolt	10 ± 1
Front Wiper Motor Assembly Fixing Screw	10 ± 1
Front Wiper Motor Assembly Fixing Nut	10 ± 1
Rear Wiper Arm Assembly Upper Fixing Nut	10 ± 1
Rear Wiper Motor Assembly Fixing Bolt	10 ± 1
Guide Pipe Assembly Fixing Bolt	7 ± 1
Washer Fluid Reservoir Assembly Fixing Bolt	7 ± 1
Brake Fluid Reservoir Assembly Fixing Nut	9 ± 1
Rain Gutter Rail Reinforcement Assembly Fixing Bolt	10 ± 1

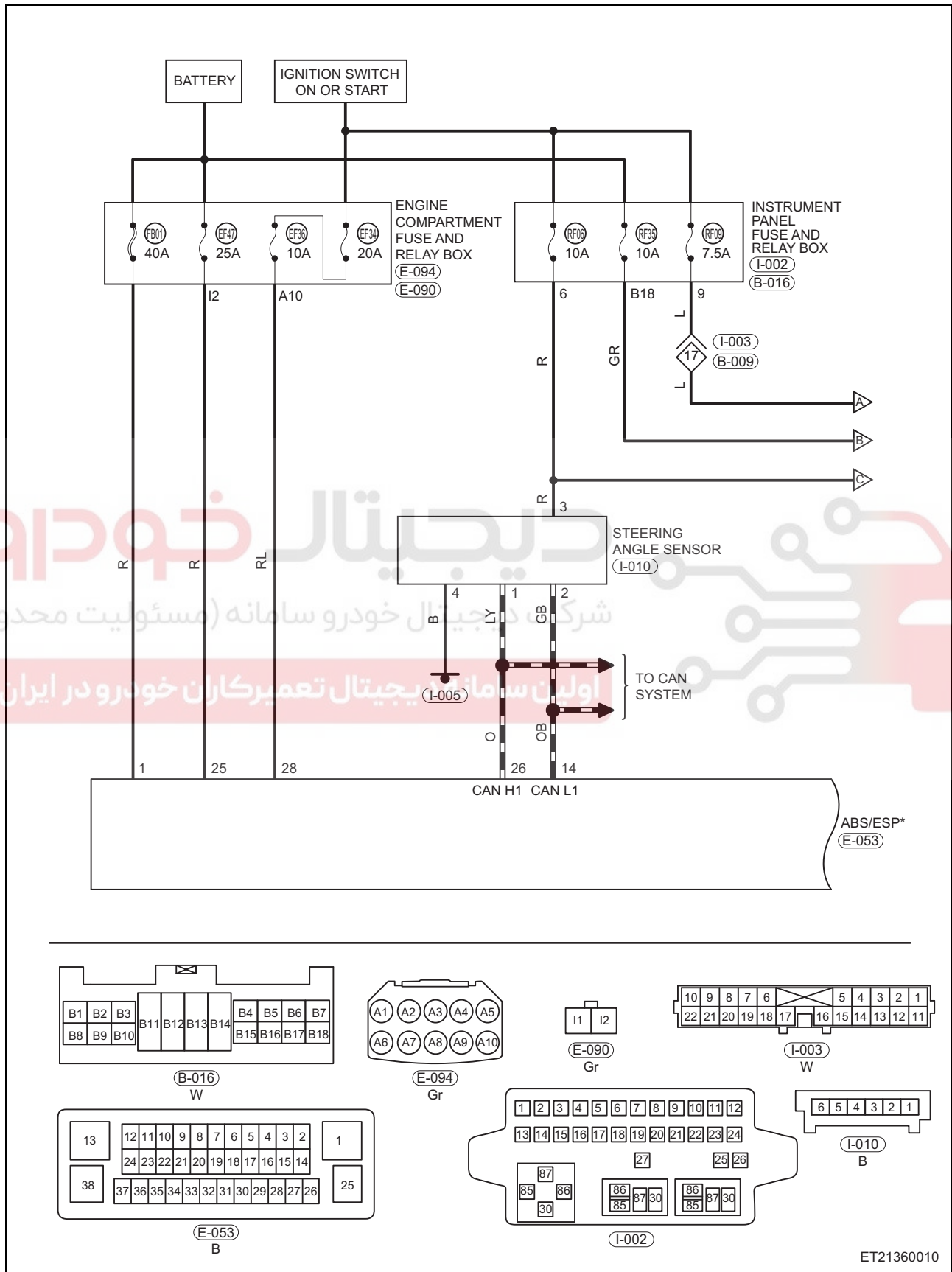
Tool

General Tool

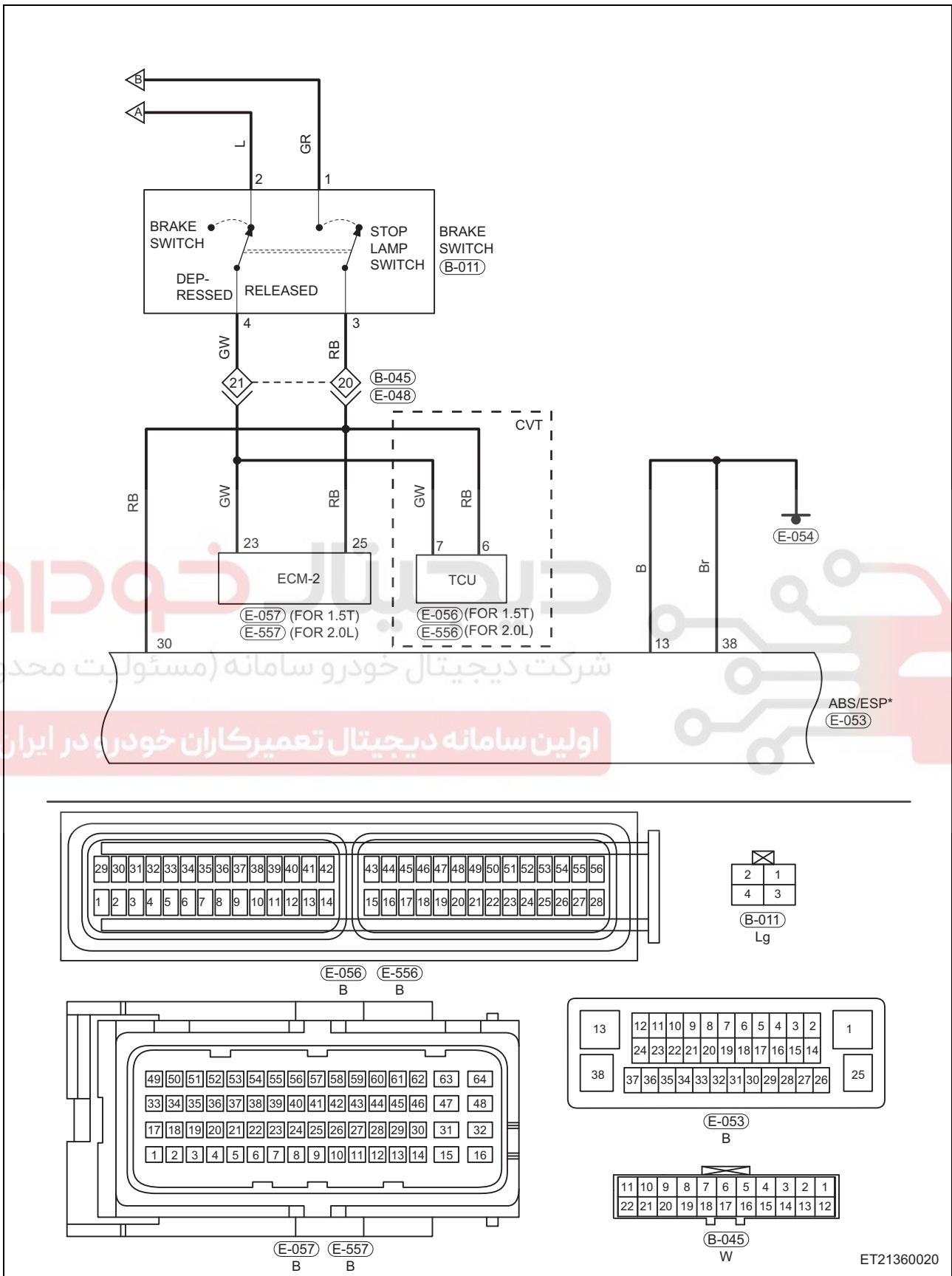
<p>دیجیتال خودرو</p> <p>شرکت دیجیتال خودرو سامانه (مسئولیت محدود)</p> <p>اولین سامانه دیجیتال تعمیرکاران خودرو در ایران</p> <p>Digital Multimeter</p>	 <p>RCH0000002</p>
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Circuit Diagram

Wiper and Washer Systems (Page 1 of 2)



Wiper and Washer Systems (Page 2 of 2)



شرکت دیجیتال خودرو سامانه (مستولیت محدود)
 اولین سامانه دیجیتال تعمیرکاران خودرو در ایران

DIAGNOSIS & TESTING

Problem Symptoms Table

HINT:

Use the table below to help determine the cause of problem symptoms. Check each suspected area in sequence. Repair or replace the faulty components, or adjust as necessary.

Symptom	Suspected Area	See page
Both front wiper and washer systems do not operate	Wiper switch assembly	49-21
	Front wiper motor assembly	49-25
	Washer pump	49-36
	BCM	-
	Wire harness or connector	-
Front wiper system does not operate in LO or HI	Wiper switch assembly	49-21
	Front wiper motor assembly	49-25
	BCM	-
	Wire harness or connector	-
Front wiper system does not operate in INT	Wiper switch assembly	49-21
	Front wiper motor assembly	49-25
	BCM	-
	Wire harness or connector	-
Front wiper system does not operate	Wiper switch assembly	49-21
	Front wiper motor assembly	49-25
	BCM	-
	Wire harness or connector	-
Front wiper arm and blade do not return to original position when front wiper switch is off	Front wiper motor assembly	49-25
	BCM	-
	Wire harness or connector	-
Both rear wiper and washer systems do not operate	Wiper switch assembly	49-21
	Rear wiper motor assembly	49-32
	Washer pump assembly	49-36
	BCM	-
	Wire harness or connector	-
Rear wiper system does not operate	Wiper switch assembly	49-21
	Rear wiper motor assembly	49-32
	BCM	-
	Wire harness or connector	-

Symptom	Suspected Area	See page
Rear washer system does not operate	Rear washer nozzle assembly	49-34
	Wiper switch assembly	49-21
	Washer pump assembly	49-36
	BCM	-
	Wire harness or connector	-

Diagnosis Tools

X-431 3G Diagnostic Tester

When connecting the X-431 3G diagnostic tester:

- Connect the X-431 3G diagnostic tester (the latest software) to the Data Link Connector (DLC) for communication with vehicle.
- DLC is located on the driver side instrument panel crossmember.
- DLC uses a trapezoidal design which can hold 16 terminals.

Digital Multimeter

When using the digital multimeter:

- Troubleshoot the electrical malfunctions and wire harness system.
- Look for the basic fault.
- Measure the voltage, current and resistance.

DTC Confirmation Procedure

Confirm that the battery voltage is normal before performing the following procedures.

- Turn ignition switch to LOCK.
- Connect the X-431 3G diagnostic tester (the latest software) to the Data Link Connector (DLC), and make it communicate with the vehicle electronic module by data network.
- Turn ignition switch ON.
- Using the X-431 3G diagnostic tester to record and clear the DTCs stored in Body Control Module (BCM).
- Turn ignition switch to LOCK and wait for a few seconds.
- Turn ignition switch ON, and then select "Read Code".
- If DTC is detected, the malfunction indicated by the DTC is current. Go to the diagnosis procedure - Step 1.
- If no DTC is detected, the malfunction indicated by the DTC is intermittent. Please refer to the Intermittent DTC Troubleshooting.

Intermittent DTC Troubleshooting

If the malfunction is intermittent, perform the followings:

- Check if connectors are loose.
- Check if wire harnesses are worn, pierced, pinched or partially broken.
- Wiggle the related wire harnesses and connectors and observe if the signal is interrupted in the related circuit.
- If possible, try to duplicate the conditions under which the DTC was set.
- Look for the data that has changed or the DTC to be reset during the wiggle test.
- Look for broken, bent, protruded or corroded terminals.
- Inspect the mounting areas of wiper motor assembly, wire harness or wire harness connector and so on for damage, foreign matter, etc. that will cause incorrect signals.
- Check and clean all the wire harness connectors and grounding parts related to the current DTC.
- Remove the Body Control Module (BCM) from the malfunctioning vehicle and install it to a new vehicle and perform a test. If the DTC cannot be cleared, the Body Control Module (BCM) is malfunctioning. If the DTC can be cleared, reinstall the Body Control Module (BCM) to the original vehicle.
- If multiple trouble codes were set, refer to the circuit diagrams to look for any common ground circuit or power supply circuit applied to the DTC.
- Refer to the Technical Bulletin that is applied to the malfunction.

Ground Inspection

Ground points are very important to the entire circuit system, and the grounding condition can seriously affect the entire circuit system. Ground points are often exposed to moisture, dirt and other corrosive environments. Corrosion (rust) and oxidation can increase load resistance. This situation will seriously affect the normal operation of circuit. Operations to check the ground points are as follows:

1. Remove the ground bolt or nut.
2. Check all the matching surfaces for tarnish, dirt, rust, etc.
3. Clean as necessary to ensure that the contacting is in a good condition.
4. Reinstall the ground bolt or nut securely.
5. Check if the add-on accessories interfere with the ground circuit.
6. If several wire harnesses are crimped into one ground terminal, check if they are installed correctly. Make sure all the wire harnesses are clean, securely fastened and providing a good ground path.

Diagnosis Procedure

HINT:

Use the following procedures to troubleshoot the wiper and washer systems.

1	Vehicle brought to workshop
----------	------------------------------------

NEXT

2	Check battery voltage
----------	------------------------------

Standard voltage: 11 to 14 V

If the voltage is below 11 V, recharge or replace the battery before proceeding to next step.

NEXT

3 Customer problem analysis

NEXT

4 Check for DTCs (current DTC and history DTC)

DTC
occurs

For current DTC, go to step 6

No
DTC

For history DTC, go to step 7

5 Problem repair (no DTC), then go to step 8

NEXT

6 Troubleshoot according to Diagnostic Trouble Code (DTC) chart, then go to step 8

NEXT

7 Troubleshoot according to Problem Symptoms Table, then go to step 8

NEXT

8 Adjust, repair or replace

NEXT

9 Conduct test and confirm malfunction has repaired

NEXT

10 End

49

Diagnostic Trouble Code (DTC) Chart

DTC Code	DTC Definition
B101471	Front Wiper Lo Control Circuit Actuator Stuck
B101571	Front Wiper HI Control Circuit Actuator Stuck
B101671	Rear Wiper Control Circuit Actuator Stuck
B101713	Front Washer Control Circuit Circuit Open
B101771	Front Washer Control Circuit Actuator Stuck
B101813	Rear Washer Control Circuit Circuit Open
B101871	Rear Washer Control Circuit Actuator Stuck

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DTC	B101471	Front Wiper Lo Control Circuit Actuator Stuck
DTC	B101571	Front Wiper HI Control Circuit Actuator Stuck
DTC	B101671	Rear Wiper Control Circuit Actuator Stuck
DTC	B101713	Front Washer Control Circuit Circuit Open
DTC	B101771	Front Washer Control Circuit Actuator Stuck
DTC	B101813	Rear Washer Control Circuit Circuit Open
DTC	B101871	Rear Washer Control Circuit Actuator Stuck

Self-diagnosis Detection Logic

DTC Code	DTC Definition	DTC Detection Condition	Warning Light Condition	Possible Cause
B101471	Front Wiper Lo Control Circuit Actuator Stuck	Ignition switch ON	ON	<ul style="list-style-type: none"> Wiper switch assembly Front wiper motor assembly Front washer pump Rear wiper motor assembly Rear washer pump Wire harness or connector Body Control Module (BCM)
B101571	Front Wiper HI Control Circuit Actuator Stuck			
B101671	Rear Wiper Control Circuit Actuator Stuck			
B101713	Front Washer Control Circuit Circuit Open			
B101771	Front Washer Control Circuit Actuator Stuck			
B101813	Rear Washer Control Circuit Circuit Open			
B101871	Rear Washer Control Circuit Actuator Stuck			

CAUTION

- When performing circuit diagnosis and test, always refer to circuit diagram for specific circuit and component information.

Diagnosis Procedure**1 Check wiper switch assembly**

- a. Remove the wiper switch assembly from malfunctioning vehicle, and install it to a new vehicle to perform a test.

NG Replace wiper switch assembly

OK

2 Check front wiper motor assembly

- a. Remove the front wiper motor assembly from malfunctioning vehicle, and install it to a new vehicle to perform a test.

NG Replace front wiper motor assembly

OK

3 Check rear wiper motor assembly

- a. Remove the rear wiper motor assembly from malfunctioning vehicle, and install it to a new vehicle to perform a test.

NG Replace rear wiper motor assembly

OK

4 Check washer pump

- a. Remove the front washer pump from malfunctioning vehicle, and install it to a new vehicle to perform a test.

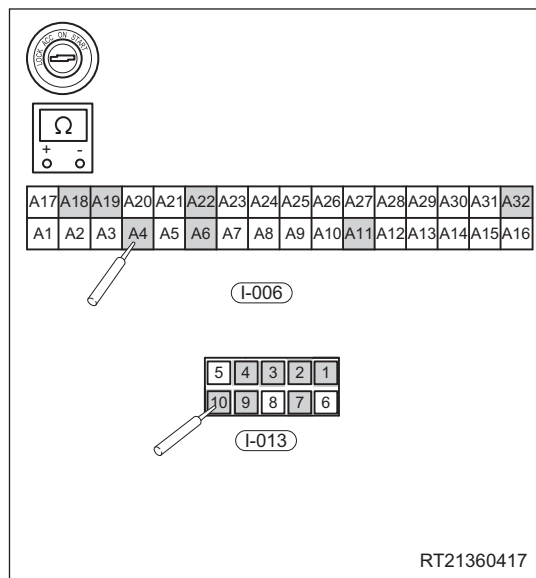
NG Replace front washer pump

OK

5 Check instrument panel wire harness and connector

- a. Turn ignition switch to LOCK.
- b. Disconnect the negative battery cable.
- c. Disconnect the instrument panel wire harness connectors I-006 and I-013.
- d. Using a digital multimeter, check for continuity between instrument panel wire harness connectors I-006 and I-013 according to the value(s) in the table below.

Multimeter Connection	Condition	Specified Condition
I-006 (A18) - I-013 (4)	Always	Continuity
I-006 (A11) - I-013 (10)	Always	Continuity
I-006 (A22) - I-013 (7)	Always	Continuity
I-006 (A6) - I-013 (9)	Always	Continuity
I-006 (A4) - I-013 (1)	Always	Continuity
I-006 (A19) - I-013 (2)	Always	Continuity
I-006 (A32) - I-013 (3)	Always	Continuity



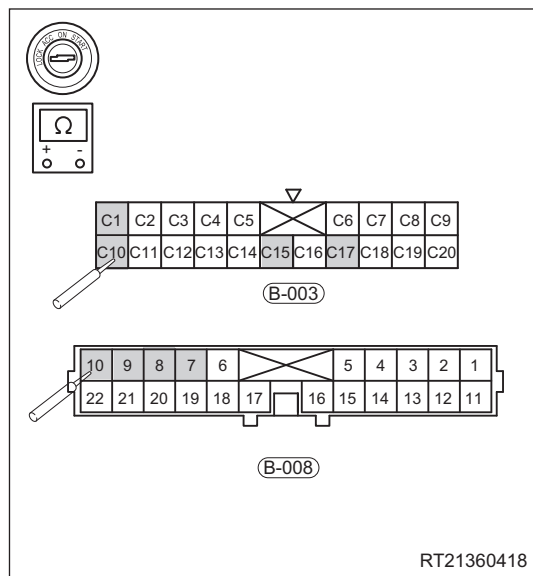
NG Repair or replace instrument panel wire harness and connector

OK

6 Check body wire harness and connector

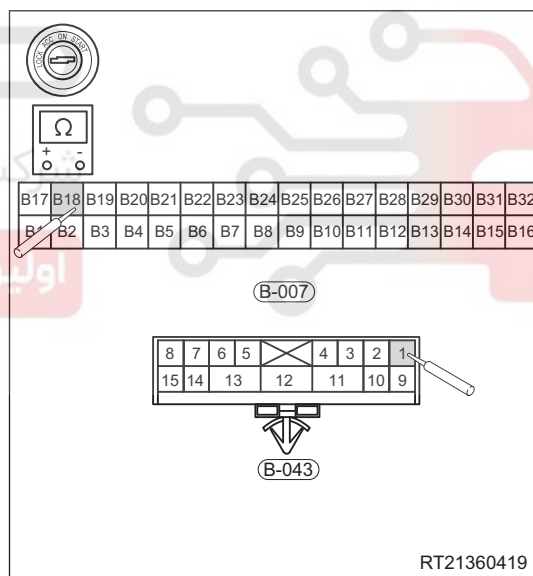
- a. Turn ignition switch to LOCK.
- b. Disconnect the negative battery cable.
- c. Disconnect the body wire harness connectors B-003 and B-008.
- d. Using a digital multimeter, check for continuity between body wire harness connectors B-003 and B-008 according to the value(s) in the table below.

Multimeter Connection	Condition	Specified Condition
B-003 (C15) - B-008 (10)	Always	Continuity
B-003 (C17) - B-008 (9)	Always	Continuity
B-003 (C1) - B-008 (7)	Always	Continuity
B-003 (C10) - B-008 (8)	Always	Continuity



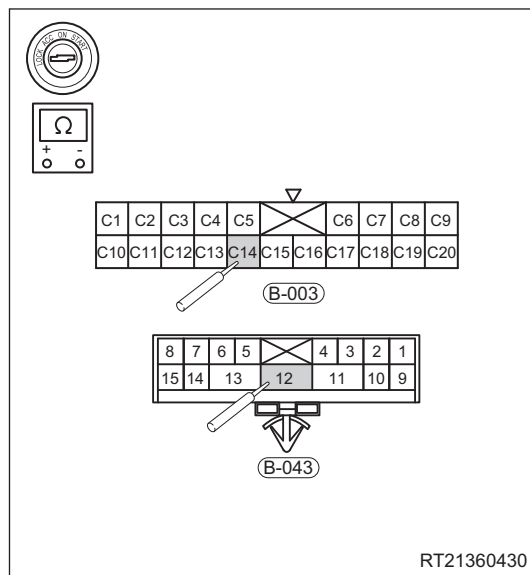
- e. Disconnect the body wire harness connectors B-007 and B-043.
- f. Using a digital multimeter, check for continuity between body wire harness connectors B-007 and B-043 according to the value(s) in the table below.

Multimeter Connection	Condition	Specified Condition
B-007 (B18) - B-043 (8)	Always	Continuity



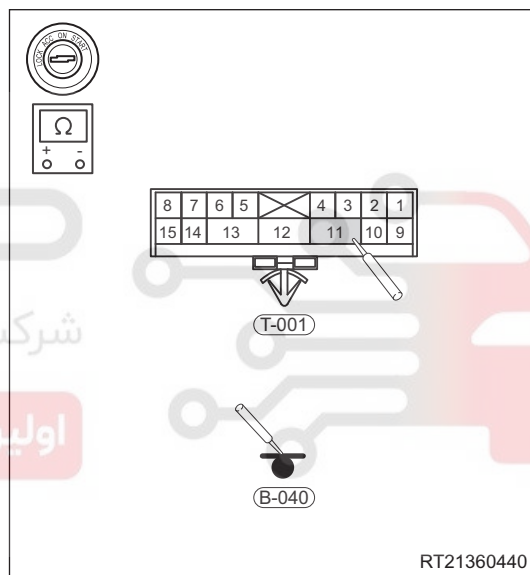
- g. Disconnect the body wire harness connectors B-003 and B-043.
- h. Using a digital multimeter, check for continuity between body wire harness connectors B-003 and B-043 according to the value(s) in the table below.

Multimeter Connection	Condition	Specified Condition
B-003 (C14) - B-043 (12)	Always	Continuity



- i. Disconnect the body wire harness connector T-001 and ground B-040.
- j. Using a digital multimeter, check for continuity between body wire harness connector T-001 and ground B-040 according to the value(s) in the table below.

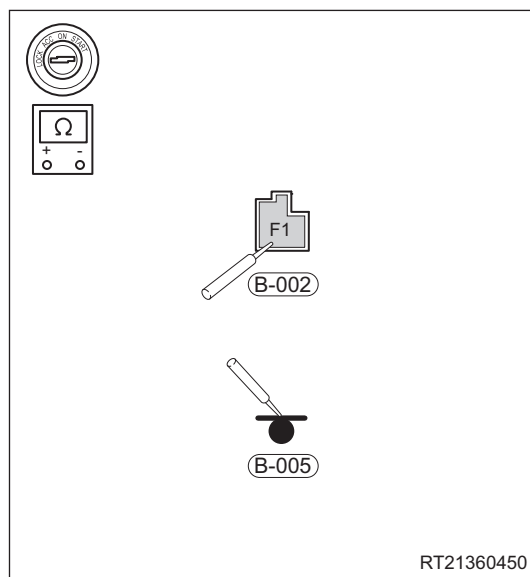
Multimeter Connection	Condition	Specified Condition
T-001 (11) - B-040	Always	Continuity



- k. Disconnect the body wire harness connector B-002 and ground B-005.
- l. Using a digital multimeter, check for continuity between body wire harness connector B-002 and ground B-005 according to the value(s) in the table below.

Multimeter Connection	Condition	Specified Condition
B-002 (F1) - B-005	Always	Continuity

NG → **Repair or replace body wire harness and connector**

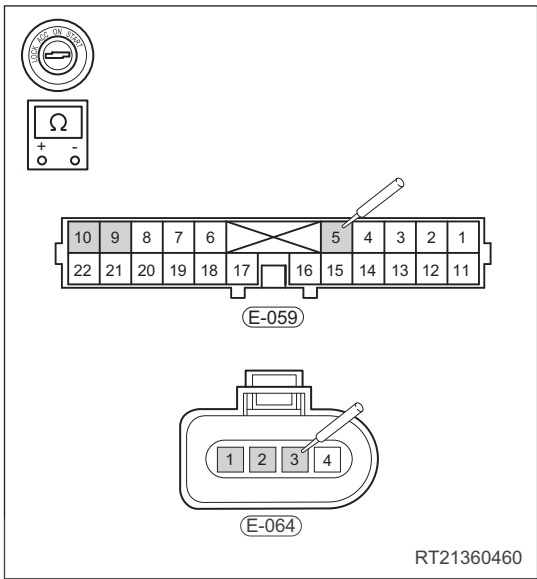




7 Check engine compartment wire harness and connector

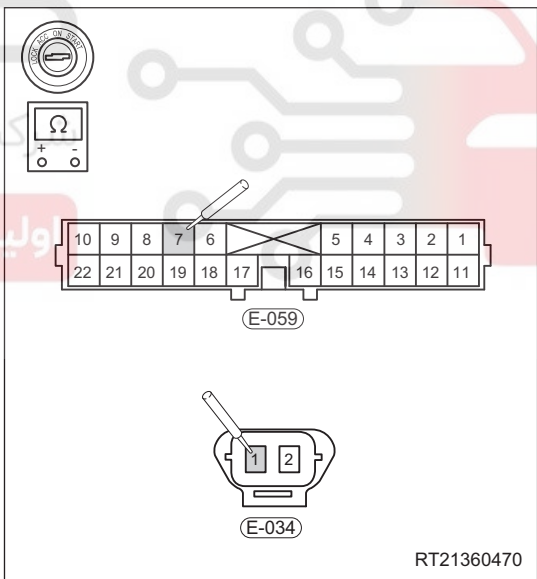
- a. Turn ignition switch to LOCK.
- b. Disconnect the negative battery cable.
- c. Disconnect the engine compartment wire harness connectors E-059 and E-064.
- d. Using a digital multimeter, check for continuity between engine compartment wire harness connectors E-059 and E-064 according to the value(s) in the table below.

Multimeter Connection	Condition	Specified Condition
E-059 (5) - E-064 (3)	Always	Continuity
E-059 (10) - E-064 (2)	Always	Continuity
E-059 (9) - E-064 (1)	Always	Continuity



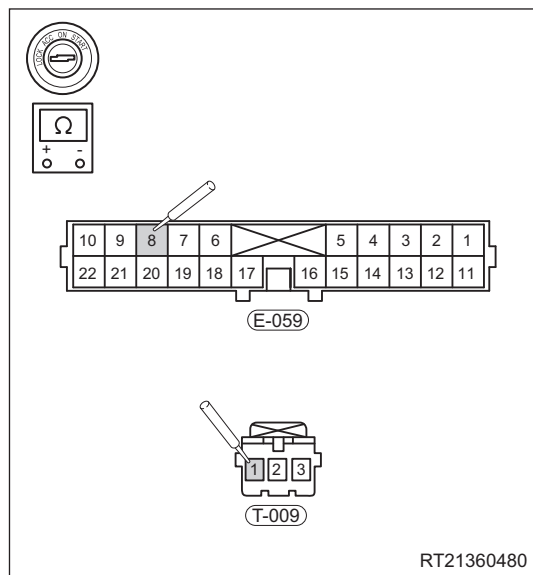
- e. Disconnect the engine compartment wire harness connectors E-059 and E-034.
- f. Using a digital multimeter, check for continuity between engine compartment wire harness connectors E-069 and E-034 according to the value(s) in the table below.

Multimeter Connection	Condition	Specified Condition
E-059 (7) - E-034 (1)	Always	Continuity



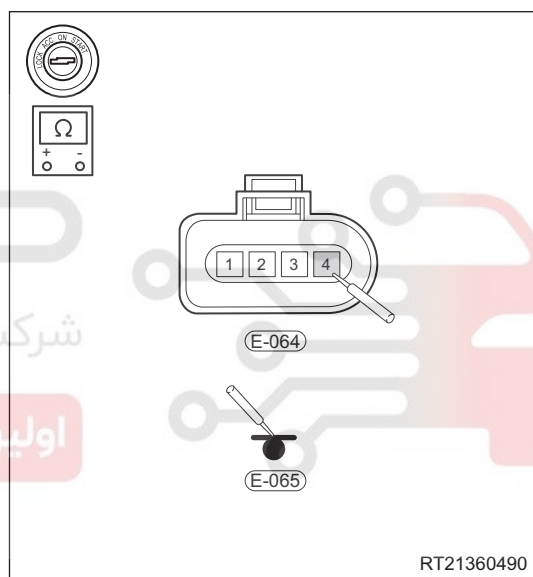
- g. Disconnect the engine compartment wire harness connectors E-059 and T-009.
- h. Using a digital multimeter, check for continuity between engine compartment wire harness connectors E-059 and T-009 according to the value(s) in the table below.

Multimeter Connection	Condition	Specified Condition
E-059 (8) - T-009 (1)	Always	Continuity



- i. Disconnect the engine compartment wire harness connector E-064 and ground E-065.
- j. Using a digital multimeter, check for continuity between engine compartment wire harness connector E-064 and ground E-065 according to the value(s) in the table below.

Multimeter Connection	Condition	Specified Condition
E-064 (4) - E-065	Always	Continuity

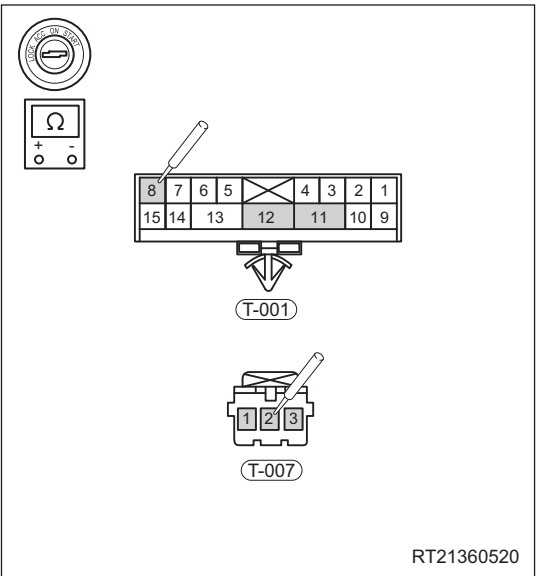


OK

8 Check back door wire harness and connector

- a. Turn ignition switch to LOCK.
- b. Disconnect the negative battery cable.
- c. Disconnect the back door wire harness connectors T-001 and T-007.
- d. Using a digital multimeter, check for continuity between back door wire harness connectors T-001 and T-007 according to the value(s) in the table below.

Multimeter Connection	Condition	Specified Condition
T-001 (8) - T-007 (2)	Always	Continuity
T-001 (12) - T-007 (3)	Always	Continuity
T-001 (11) - T-007 (1)	Always	Continuity



NG Repair or replace back door wire harness and connector

OK

9 Reconfirm DTCs

- a. Connect all connectors.
- b. Connect the negative battery cable.
- c. Turn ignition switch ON.
- d. Use the X-431 3G diagnostic tester (the latest software) to record and clear the DTCs stored in Body Control Module (BCM).
- e. Turn ignition switch to LOCK and wait for a few seconds.
- f. Turn ignition switch ON.
- g. Use the X-431 3G diagnostic tester (the latest software) to read DTCs stored in Body Control Module (BCM) again.
- h. Read DTCs.

Result	Precede to
DTCs B101471, B101571, B101671, B101713, B101771, B101813, B101871 are output	NG
No DTCs are output	OK

NG Replace Body Control Module (BCM)

OK

System operates normally

ON-VEHICLE SERVICE

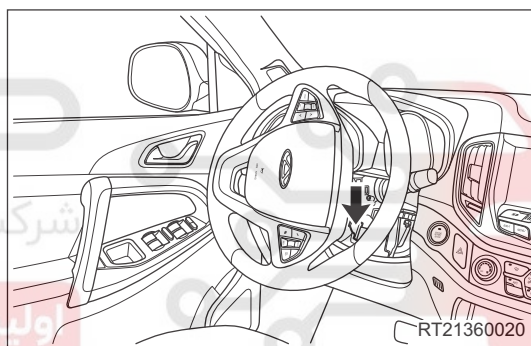
Wiper Switch Assembly

Removal

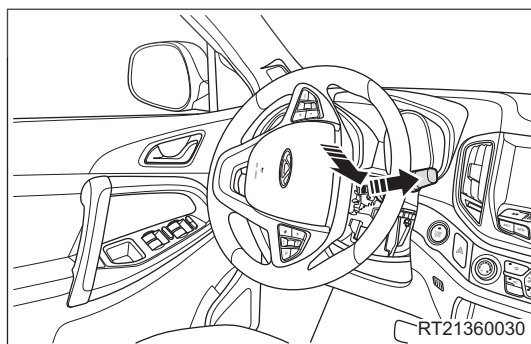
CAUTION

- Be sure to wear safety equipment to prevent accidents when removing wiper switch assembly.
- Appropriate force should be applied when removing wiper switch assembly. Be careful not to operate roughly.
- Try to prevent interior and body paint surface from being scratched when removing wiper switch assembly.

1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the combination switch cover.
4. Remove the wiper switch assembly.
 - a. Disconnect the wiper switch assembly connector (arrow).



- b. Using a screwdriver wrapped with protective tape, press the claws of wiper switch assembly and remove the wiper switch assembly by gently sliding outward.

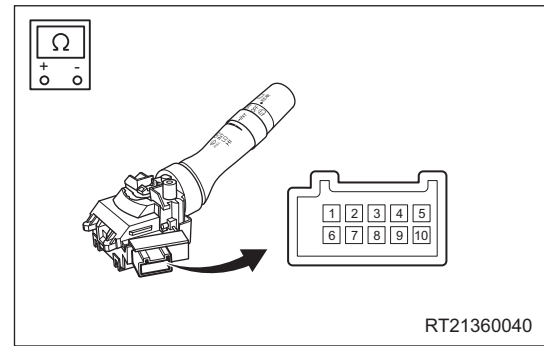


49 - WIPER AND WASHER

Inspection

1. Check wiper switch assembly.
 - a. Using a digital multimeter, check for continuity between terminals of wiper switch assembly according to the table below.

Multimeter Connection	Switch Condition	Specified Condition
Terminal 1 - Terminal 3	MIST	Continuity
Terminal 2 - Terminal 3	INT	Continuity
Terminal 1 - Terminal 3	LO	Continuity
Terminal 1, 2 - Terminal 3	HI	Continuity
Terminal 3 - Terminal 4	FRONT WASHER	Continuity
Terminal 3, 7 - Terminal 9	REAR WASHER	Continuity



If result is not as specified, replace wiper switch assembly.

Installation

Installation is in the reverse order of removal.

CAUTION

- Always operate carefully to prevent components from being damaged when installing wiper switch assembly.
- Install connector in place when installing wiper switch assembly.
- Check wiper switch for proper operation after installing wiper switch assembly.

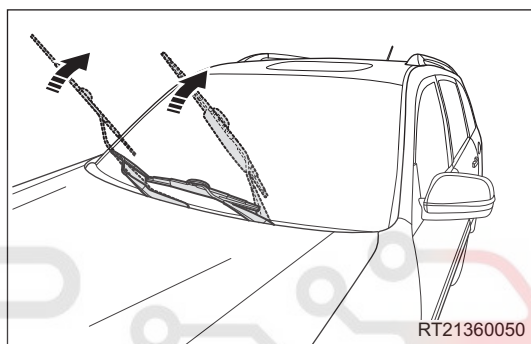
Front Wiper Arm Assembly

Removal

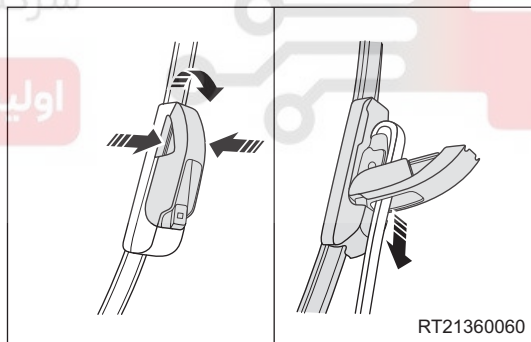
CAUTION

- Be sure to wear safety equipment to prevent accidents when removing front wiper arm assembly.
- Appropriate force should be applied when removing front wiper arm assembly. Be careful not to operate roughly.
- Try to prevent front windshield assembly from being scratched when removing front wiper arm assembly.

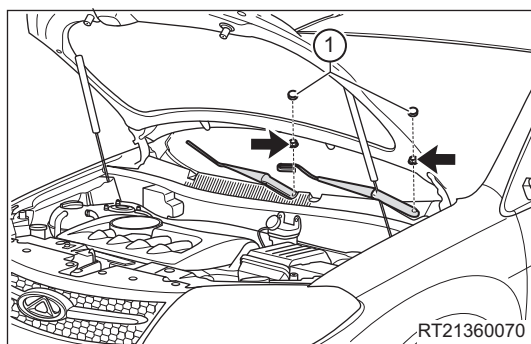
1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the front wiper arm blade.
 - a. Lift up the front wiper arm assembly in the direction of arrow as shown in the illustration.



- b. Pull the front wiper arm blade out of front wiper arm assembly in the direction of arrow as shown in the illustration.



4. Remove the front wiper arm assembly.
 - a. Using a screwdriver wrapped with protective tape, remove the front wiper arm trim caps (1).
 - b. Remove 2 fixing nuts (arrow) from front wiper arm assembly and remove the front wiper arm assembly. (Tightening torque: 18 ± 2 N·m)



Installation

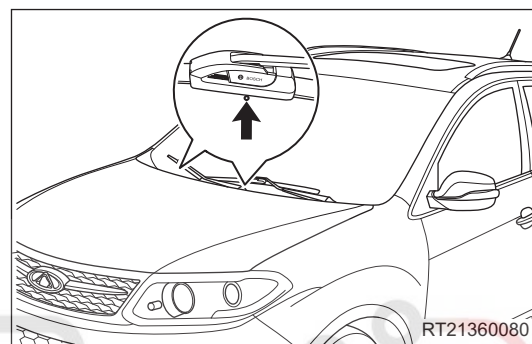
Installation is in the reverse order of removal.

CAUTION

- Always operate carefully to prevent other components from being damaged when installing front wiper arm assembly.
- Make sure to tighten fixing nuts to the specified torque when installing front wiper arm assembly.
- Check front wiper arm assembly for proper operation after installation.

HINT:

- Always adjust the front wiper arm assembly to the proper position during installation.
- Pay attention to the locating point on front windshield assembly during assembly. Wiper arm blade should be pressed against the locating point as shown in the illustration.



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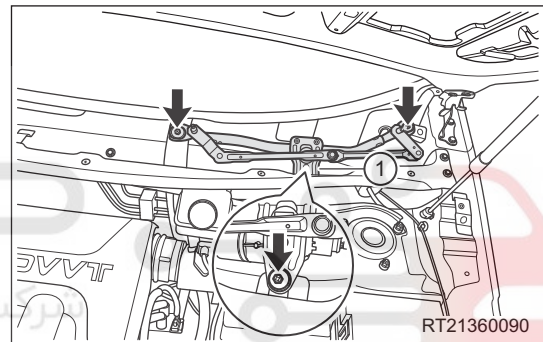
Front Wiper Motor Assembly

Removal

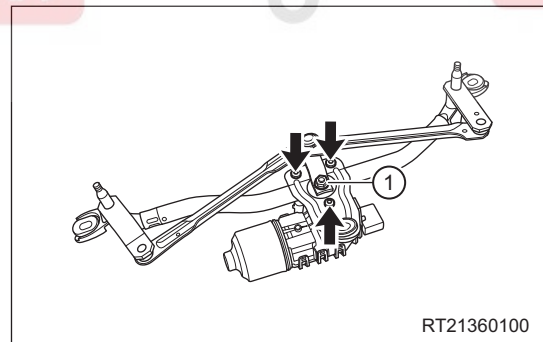
CAUTION

- Be sure to wear safety equipment to prevent accidents when removing front wiper motor assembly.
- Appropriate force should be applied when removing front wiper motor assembly. Be careful not to operate roughly.
- Try to prevent body paint surface from being scratched when removing front wiper motor assembly.

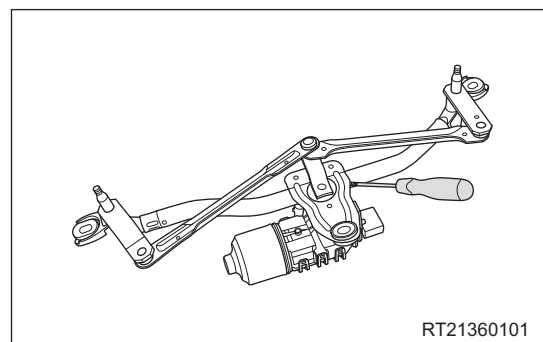
1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the front wiper arm assembly (See page 49-23).
4. Remove the front windshield lower garnish assembly (See page 62-39).
5. Remove the wiper motor and link rod assembly.
 - a. Disconnect the connector (1) from wiper motor and link rod assembly.
 - b. Remove 3 fixing bolts (arrow) from wiper motor and link rod assembly.
(Tightening torque: 10 ± 1 N·m)
 - c. Remove the wiper motor and link rod assembly.



6. Remove the front wiper motor assembly.
 - a. Remove 3 fixing bolts (arrow) from front wiper motor assembly.
(Tightening torque: 10 ± 1 N·m)
 - b. Remove the fixing nut (1) from front wiper motor assembly.
(Tightening torque: 10 ± 1 N·m)



- c. Using a screwdriver wrapped with protective tape, separate the front wiper motor assembly and wiper link rod.



Inspection

1. Check front wiper motor assembly.
 - a. Check LO operation.

Measurement Condition	Specified Condition
Battery positive (+) → Terminal 2 Battery negative (-) → Terminal 4	Motor running at low speed (LO)

If result is not as specified, replace front wiper motor assembly.

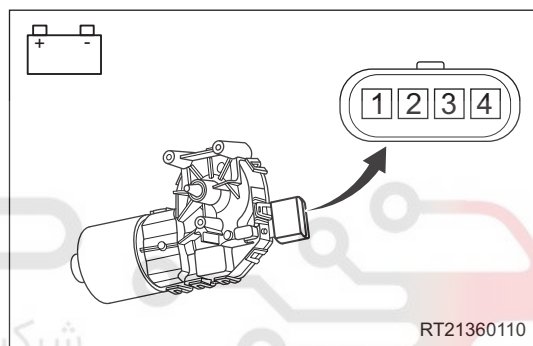
- b. Check HI operation.

Measurement Condition	Specified Condition
Battery positive (+) → Terminal 1 Battery negative (-) → Terminal 4	Motor running at high speed (HI)

If result is not as specified, replace front wiper motor assembly.

- c. Check auto reset function.

- Connect positive (+) battery lead to terminal 1 or 2 and negative (-) battery lead to terminal 4. When motor is running at low speed (LO) or high speed (HI), disconnect battery positive (+) to stop the front wiper motor at any position other than the original position.
- Connect terminals 2 and 3 with a lead, using another lead extracted from lead between terminals 2 and 3 to connect battery positive (+), and connect negative (-) battery lead to terminal 4 to run the motor to the original position at low speed (LO).



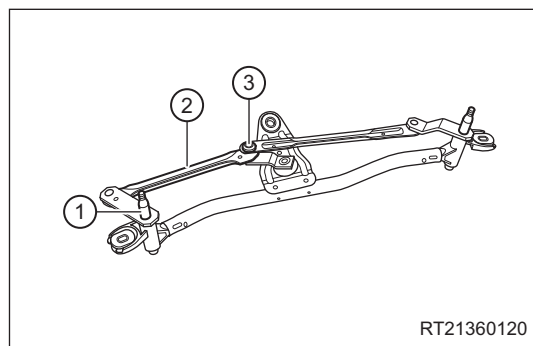
- Check if front wiper motor assembly can stop automatically after running to the original position.

OK: Motor stops automatically after running to the original position, which indicates that the motor can reset automatically.

If result is not as specified, replace front wiper motor assembly.

2. Check wiper link rod.

- a. Check the rotation shaft (1) for looseness or falling off, link rod (2) for deformation or break, and shaft sleeve (3) for sticking. Replace wiper link rod if necessary.



Installation

Installation is in the reverse order of removal.

CAUTION

- Always operate carefully to prevent other components from being damaged when installing front wiper motor assembly.
- Adjust and make sure wiper motor and wiper link rod are at the original position before installing front wiper motor assembly. Otherwise, wiper system will not operate normally.
- Install connector in place and tighten fixing bolts and nuts to the specified torque when installing front wiper motor assembly.
- Check wiper system for proper operation after installing front wiper motor assembly.

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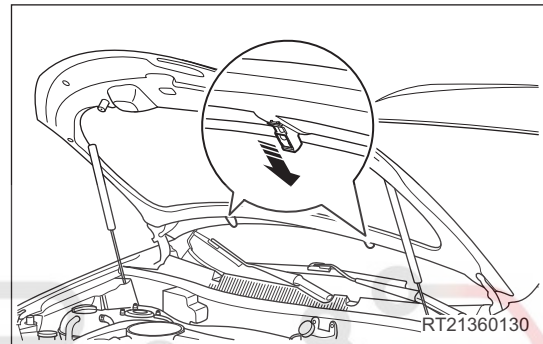
Front Washer Nozzle Assembly

Removal

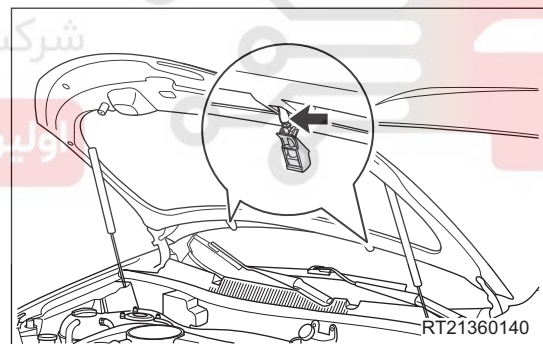
CAUTION

- Be sure to wear safety equipment to prevent accidents when removing front washer nozzle assembly.
- Appropriate force should be applied when removing front washer nozzle assembly. Be careful not to operate roughly.

1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the front washer nozzle assembly.
 - a. Loosen the front washer nozzle assembly in the direction of arrow as shown in the illustration.

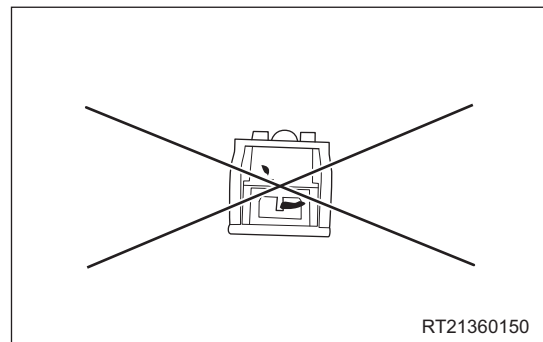


- b. Disconnect the joint (arrow) between washer line and front washer nozzle assembly, and remove the front washer nozzle assembly.



Inspection

1. Check front washer nozzle assembly.
 - a. Check front washer nozzle for blockage, deformation or damage. Replace front washer nozzle if necessary.



Installation

Installation is in the reverse order of removal.

CAUTION

- Always operate carefully to prevent components from being damaged when installing front washer nozzle assembly.
- Install washer line joint in place when installing front washer nozzle assembly.
- Check front washer nozzle for proper operation after installing front washer nozzle assembly.

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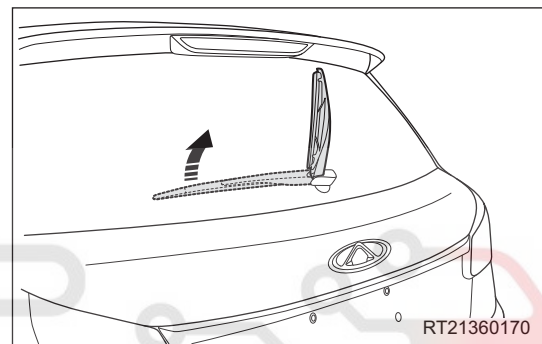
Rear Wiper Arm Assembly

Removal

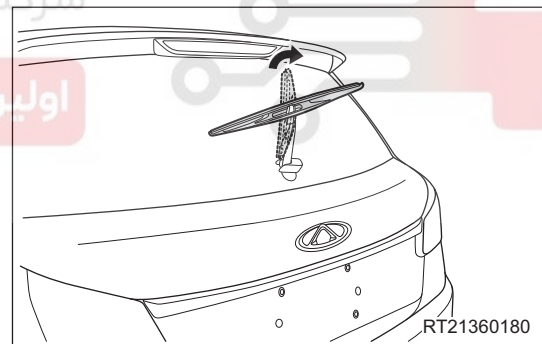
CAUTION

- Be sure to wear safety equipment to prevent accidents when removing rear wiper arm assembly.
- Appropriate force should be applied when removing rear wiper arm assembly. Be careful not to operate roughly.
- Try to prevent rear windshield assembly from being scratched when removing rear wiper arm assembly.

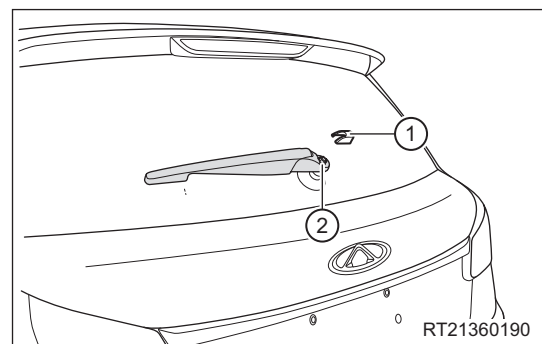
1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the rear wiper arm blade.
 - a. Lift up the rear wiper arm assembly in the direction of arrow as shown in the illustration.



- b. Pull the rear wiper arm blade out of rear wiper arm assembly in the direction of arrow as shown in the illustration.



4. Remove the rear wiper arm assembly.
 - a. Using a screwdriver wrapped with protective tape, remove the rear wiper arm trim cap (1).
 - b. Remove 2 fixing nuts (2) from rear wiper arm assembly. (Tightening torque: 10 ± 1 N·m)



- c. Remove the rear wiper arm assembly.

Installation

Installation is in the reverse order of removal.

CAUTION

- Always operate carefully to prevent other components from being damaged when installing rear wiper arm assembly.
- Make sure to tighten fixing nuts to the specified torque when installing rear wiper arm assembly.
- Check rear wiper arm assembly for proper operation after installation.

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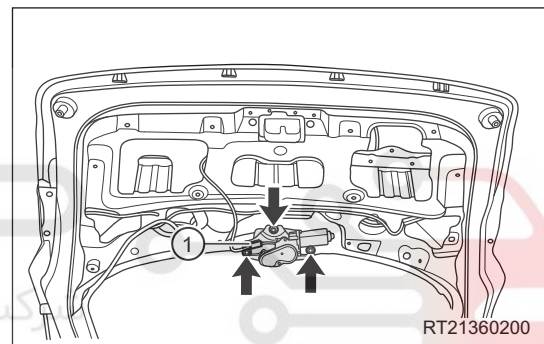
Rear Wiper Motor Assembly

Removal

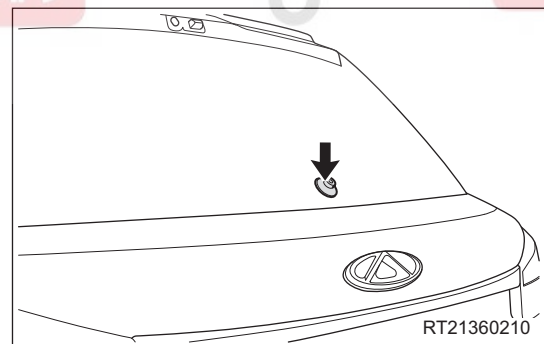
CAUTION

- Be sure to wear safety equipment to prevent accidents when removing rear wiper motor assembly.
- Appropriate force should be applied when removing rear wiper motor assembly. Be careful not to operate roughly.
- Try to prevent body paint surface from being scratched when removing rear wiper motor assembly.

1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the rear wiper arm assembly (See page 49-30).
4. Remove the back door protector assembly (See page 61-47).
5. Remove the rear wiper motor assembly.
 - a. Disconnect the rear wiper motor assembly connector (1).
 - b. Remove 3 fixing bolts (arrow) from rear wiper motor assembly.
(Tightening torque: 10 ± 1 N·m)



- c. Remove the rear wiper motor assembly.
- d. Using a screwdriver wrapped with protective tape, pry up the grommet (arrow).



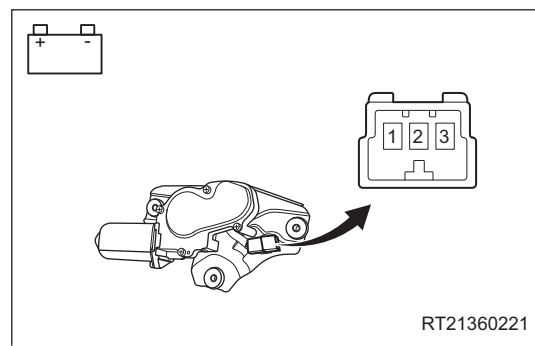
Inspection

1. Check rear wiper motor assembly.
 - a. Check operation of rear wiper motor assembly.

Measurement Condition	Specified Condition
Battery positive (+) → Terminal 3 Battery negative (-) → Terminal 1	Motor runs normally

If result is not as specified, replace rear wiper motor assembly.

- b. Check auto reset function.
 - Connect positive (+) battery lead to terminal 3 and negative (-) battery lead to terminal 1. When motor is running, disconnect battery negative (-) to stop rear wiper motor at any position other than the automatic stop position.
 - Connect positive (+) battery lead to terminal 3 and negative (-) battery lead to terminal 2 to make the motor run again.



- Check that motor can reset automatically.

OK: Motor can reset automatically.

If result is not as specified, replace rear wiper motor assembly.

2. Check grommet for deterioration, deformation or damage. Replace grommet if necessary.

Installation

Installation is in the reverse order of removal.

CAUTION

- Always operate carefully to prevent other components from being damaged when installing rear wiper motor assembly.
- Tighten fixing bolts to the specified torque when installing rear wiper motor assembly.
- Check wiper system for proper operation after installing rear wiper motor assembly.

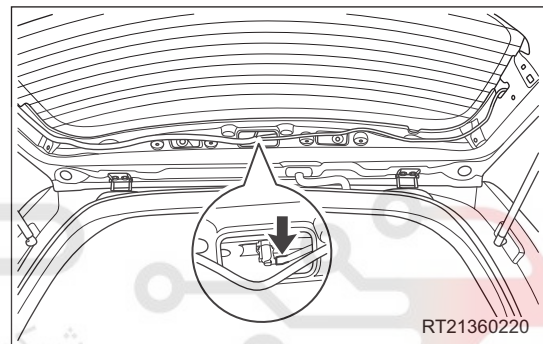
Rear Washer Nozzle Assembly

Removal

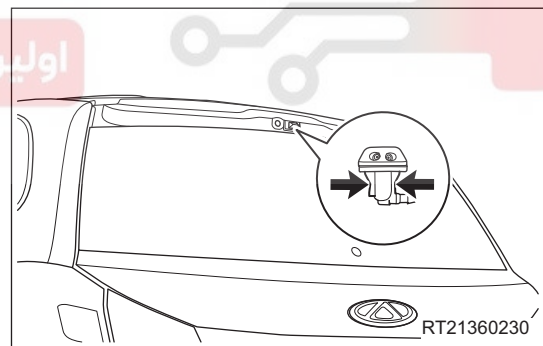
CAUTION

- Be sure to wear safety equipment to prevent accidents when removing rear washer nozzle assembly.
- Appropriate force should be applied when removing rear washer nozzle assembly. Be careful not to operate roughly.

1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the back door protector assembly (See page 61-47).
4. Remove the rear spoiler assembly (See page 62-43).
5. Remove the rear washer nozzle assembly.
 - a. Disconnect the joint (arrow) between washer line and rear washer nozzle assembly.

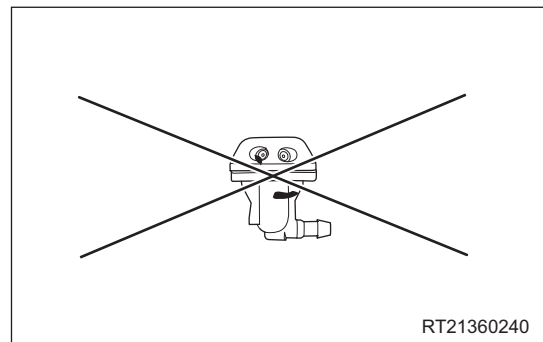


- b. As shown in the illustration, press the rear washer nozzle assembly claws (arrow) and remove the rear washer nozzle assembly.



Inspection

1. Check rear washer nozzle assembly.
 - a. Check rear washer nozzle assembly for blockage, deformation or damage. Replace rear washer nozzle if necessary.



Installation

Installation is in the reverse order of removal.

CAUTION

- Always operate carefully to prevent components from being damaged when installing rear washer nozzle assembly.
- Install washer line joint in place when installing rear washer nozzle assembly.
- Check rear washer nozzle for proper operation after installing rear washer nozzle assembly.

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Washer Pump Assembly

Removal

CAUTION

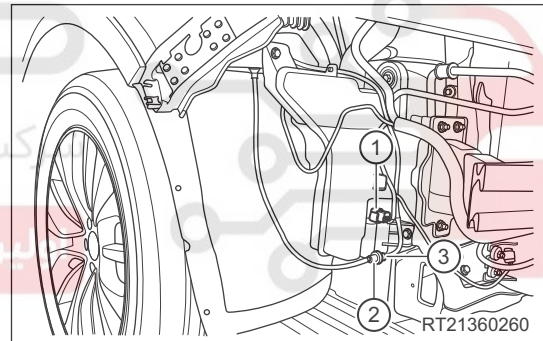
- Be sure to wear safety equipment to prevent accidents when removing washer pump assembly.
- Appropriate force should be applied when removing washer pump assembly. Be careful not to operate roughly.
- Try to prevent body paint surface from being scratched when removing washer pump assembly.

1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the front bumper assembly (See page 62-11).
4. Remove the washer pump assembly.

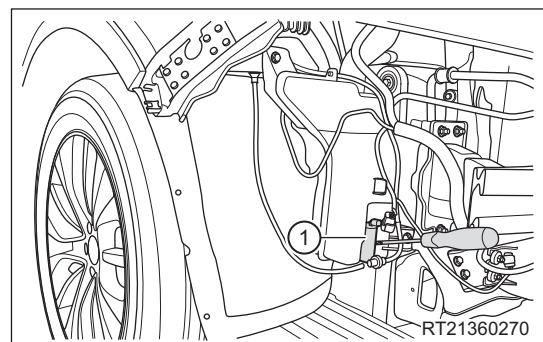
CAUTION

- Put a container under washer pump to collect washer fluid before removing washer pump assembly.

- a. Disconnect the washer pump connector (1).
- b. Disconnect the joint (2) between washer line and washer pump, and the joint (3) between washer line and washer pump.



- c. Using a screwdriver wrapped with protective tape, remove the washer pump assembly (1).



Installation

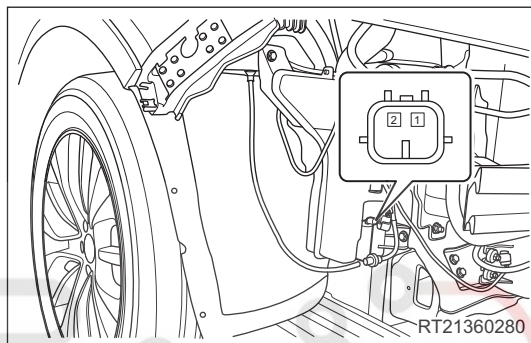
Installation is in the reverse order of removal.

CAUTION

- Always operate carefully to prevent components from being damaged when installing washer pump assembly.
- Install washer line joint in place when installing washer pump assembly.
- Check washer system for proper operation after installing washer pump assembly.

Inspection

1. Check washer pump assembly.
 - a. Fill washer fluid reservoir assembly with washer fluid.
 - b. Connect positive (+) battery lead to terminal 1 of washer pump and negative (-) battery lead to terminal 2.



- c. Check that washer fluid flows out of washer pump.

OK: Washer fluid flows out of washer pump.

If result is not as specified, replace washer pump assembly.

دیجیتال خودرو
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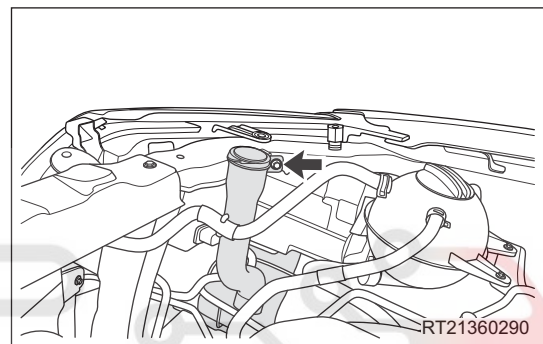
Washer Fluid Reservoir Assembly

Removal

CAUTION

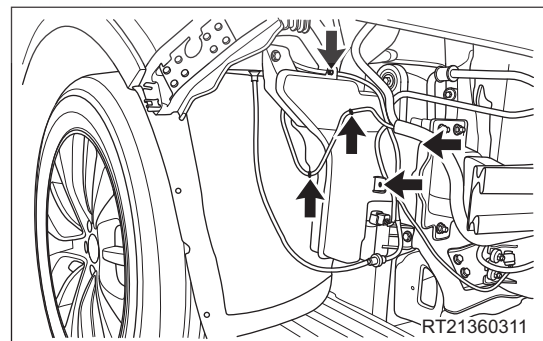
- Be sure to wear safety equipment to prevent accidents when removing washer fluid reservoir assembly.
- Appropriate force should be applied when removing washer fluid reservoir assembly. Be careful not to operate roughly.
- Try to prevent body paint surface from being scratched when removing washer fluid reservoir assembly.

1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the guide pipe assembly.
 - a. Remove the fixing bolt (arrow) from guide pipe assembly.
(Tightening torque: 7 ± 1 N·m)

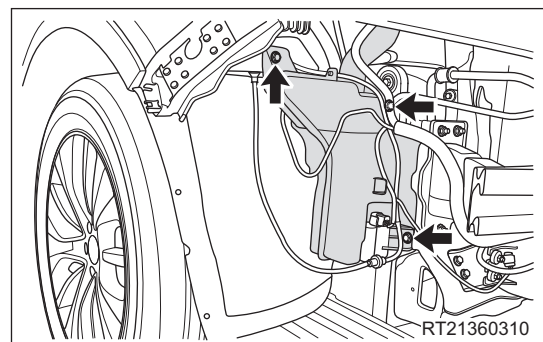


- b. Remove the guide pipe assembly from washer fluid reservoir assembly.
4. Remove the front bumper assembly (See page 62-11).
 5. Remove the washer pump assembly (See page 49-36).
 6. Remove the washer fluid reservoir assembly.

- a. Remove the clips (arrow) from washer fluid reservoir assembly.

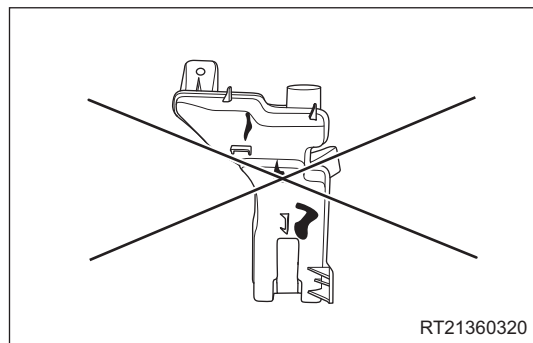


- b. Remove 3 fixing bolts (arrow) from washer fluid reservoir assembly, and remove the washer fluid reservoir assembly.
(Tightening torque: 7 ± 1 N·m)



Inspection

1. Check washer fluid reservoir assembly.
 - a. Check washer fluid reservoir assembly for leakage, deformation or damage. Replace washer fluid reservoir assembly if necessary.
 - b. Check internal and external sides of washer fluid reservoir for dirt. Remove dirt or replace washer fluid reservoir assembly if necessary.
 - c. Check the grommet for damage. Replace the grommet if necessary.



Installation

Installation is in the reverse order of removal.

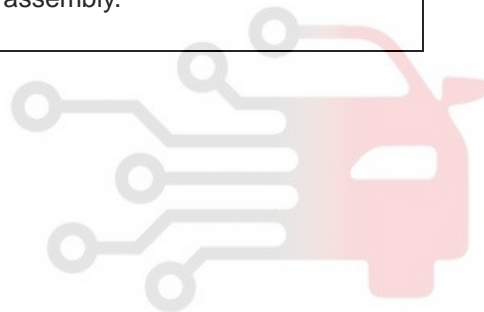
CAUTION

- Always operate carefully to prevent components from being damaged when installing washer fluid reservoir assembly.
- Tighten fixing bolts to the specified torque when installing washer fluid reservoir assembly.
- Install washer line joint in place when installing washer fluid reservoir assembly.

دیجیتال خودرو

شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



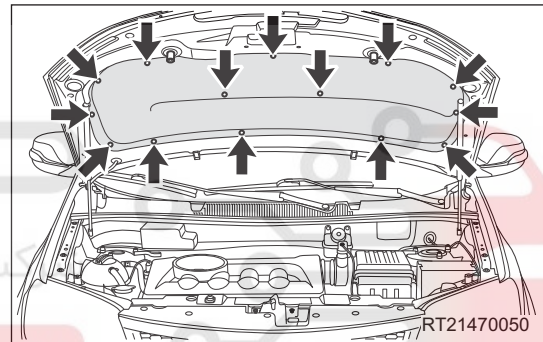
Washer Line Assembly

Removal

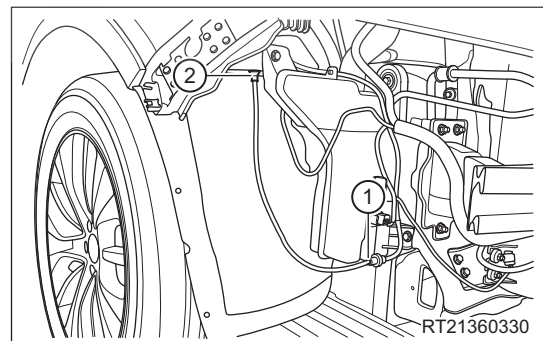
CAUTION

- Be sure to wear safety equipment to prevent accidents when removing washer line assembly.
- Appropriate force should be applied when removing washer line assembly. Be careful not to operate roughly.
- Try to prevent body paint surface from being scratched when removing washer line assembly.

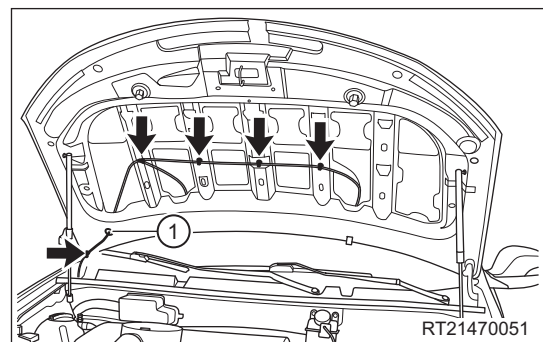
1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the front bumper assembly (See page 62-11).
4. Remove the front wheel house protector assembly (See page 62-24).
5. Remove the front washer nozzle assembly (See page 49-28).
6. Remove the hood sound-absorbing pad.
 - a. Remove the clips (arrow) from hood sound-absorbing pad, and remove the hood sound-absorbing pad.



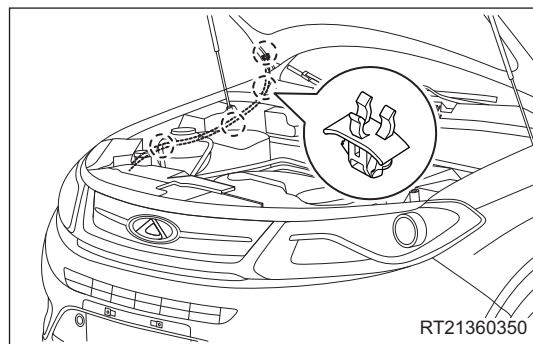
7. Remove the washer line assembly.
 - a. Disconnect the joint (1) between washer line and washer bump.
 - b. Detach the washer line from the groove on washer fluid reservoir assembly.
 - c. Using a screwdriver wrapped with protective tape, pry up the rubber cover (2).



- d. Using a screwdriver wrapped with protective tape, pry up the rubber cover (1).
- e. Detach the washer hose from clips (arrow).



f. Remove the washer line assembly from clips.



Installation

Installation is in the reverse order of removal.

CAUTION

- Always operate carefully to prevent components from being damaged when installing washer line assembly.
- Install washer line joint in place when installing washer line assembly.
- Check washer system for proper operation after installing washer line assembly.

دیجیتال خودرو

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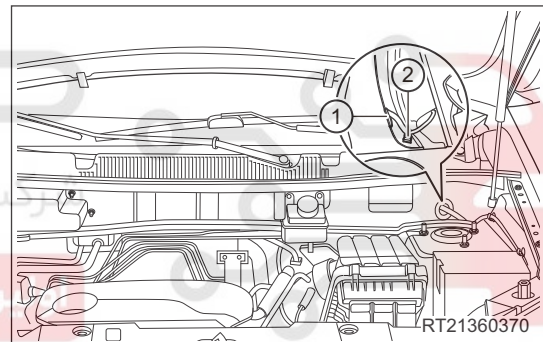
Rain Gutter Rail Reinforcement Assembly

Removal

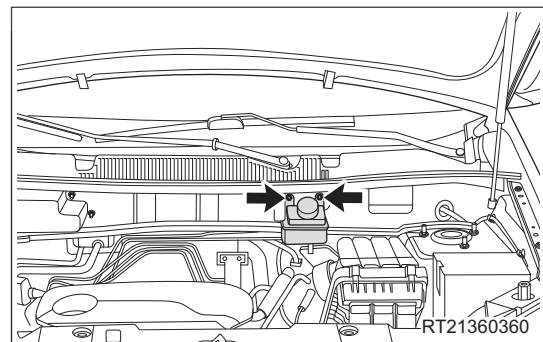
CAUTION

- Be sure to wear safety equipment to prevent accidents when removing rain gutter rail reinforcement assembly.
- Try to prevent body paint surface from being scratched when removing rain gutter rail reinforcement assembly.

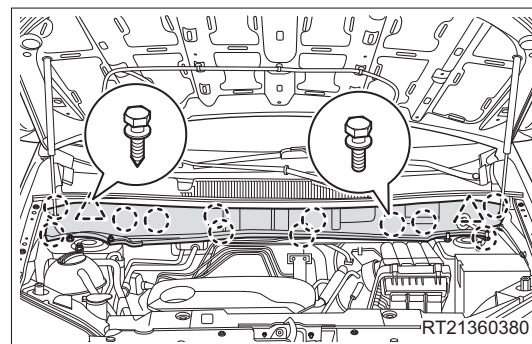
1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the front wiper arm assembly (See page 49-23).
4. Remove the front windshield lower garnish assembly (See page 62-39).
5. Remove the wiper motor assembly (See page 49-25).
6. Remove the Engine Control Module (ECM) (See page 06-257).
7. Remove the TCU (See page 29-130).
8. Remove the rain gutter rail reinforcement assembly.
 - a. Using a screwdriver wrapped with protective tape, loosen the rubber bush (1) and clip (2).



- b. Remove 2 fixing nuts (arrow) from brake fluid reservoir assembly, and remove the brake fluid reservoir assembly. (Tightening torque: 9 ± 1 N·m)



- c. Remove 12 fixing bolts from rain gutter rail reinforcement assembly, and remove the rain gutter rail reinforcement assembly.
(Tightening torque: 10 ± 1 N·m)



Installation

Installation is in the reverse order of removal.

CAUTION

- Always operate carefully to prevent components from being damaged when installing rain gutter rail reinforcement assembly.
- Try to prevent body paint surface from being scratched when installing rain gutter rail reinforcement assembly.

دیجیتال خودرو

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اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



Rain Sensor Assembly (if equipped)

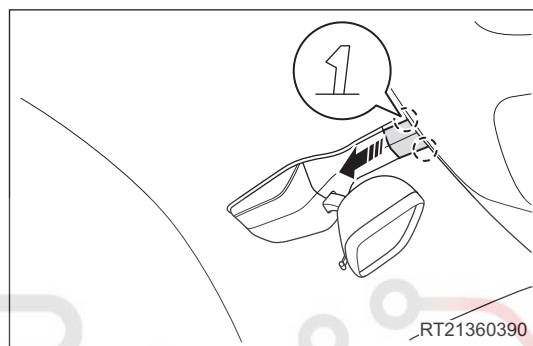
Removal

CAUTION

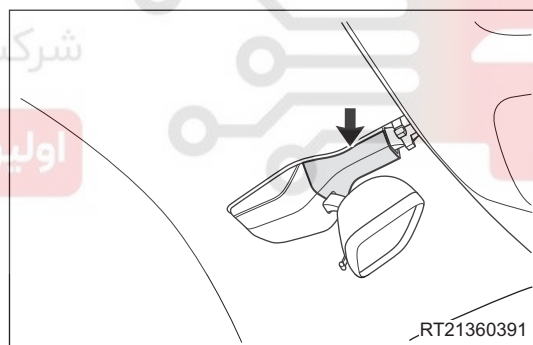
- Be sure to wear safety equipment to prevent accidents, when removing washer pump assembly.
- Be careful not to scratch windshield assembly and inside rear view mirror assembly, when removing and installing rain sensor assembly.
- Be careful not to damage, drop, squeeze and cover rain sensor, when removing and installing rain sensor assembly.

1. Remove the rain sensor.

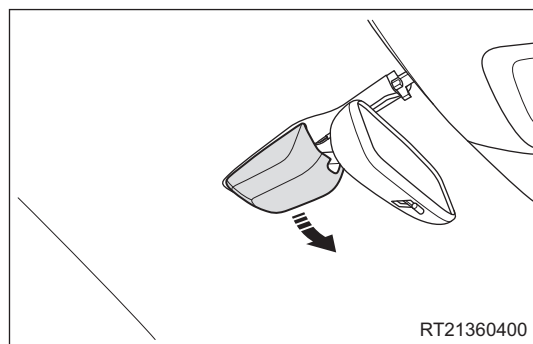
- a. Push down rear view mirror upper trim cover (arrow) by hands, and remove upper trim cover assembly.



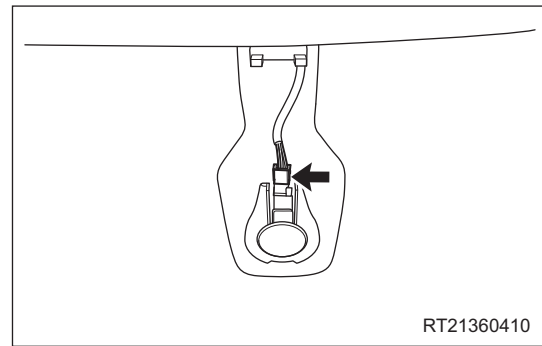
- b. Using an interior crow plate, pry off the rear view mirror center trim cover (arrow).



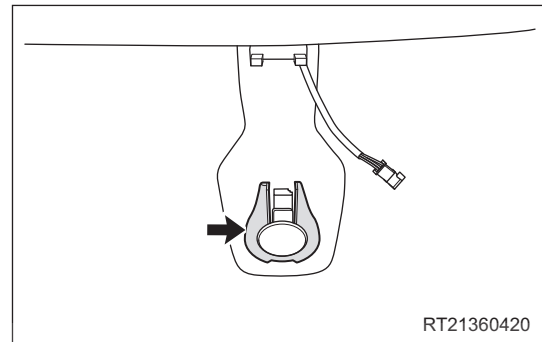
- c. Unscrew inside rear view mirror assembly and lower trim cover (rotation direction: arrow).



- d. Remove the rain sensor wire harness connector (arrow).



- e. Using a screwdriver wrapped with protective tape, pry off fixing metal retainer (arrow) from rain sensor.



- f. Remove the rain sensor.

Installation

Installation is in the reverse order of removal.

CAUTION

- Advice: When installing inside rear view mirror assembly, it is recommended to separate inside rear view mirror assembly and lower trim cover first, then install them in order.
- Always operate carefully to prevent components from being damaged, when installing inside rear view mirror assembly.
- Be sure to install in place and avoid tapping with large tool, when removing and installing inside rear view mirror assembly.
- Be careful not to damage, drop, squeeze and cover rain sensor, when installing rain sensor assembly.
- Keep rain sensor clean and prevent foreign matter from entering, when installing rain sensor.

دیجیتال خودرو

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DOOR LOCK

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دیجیتال خودرو

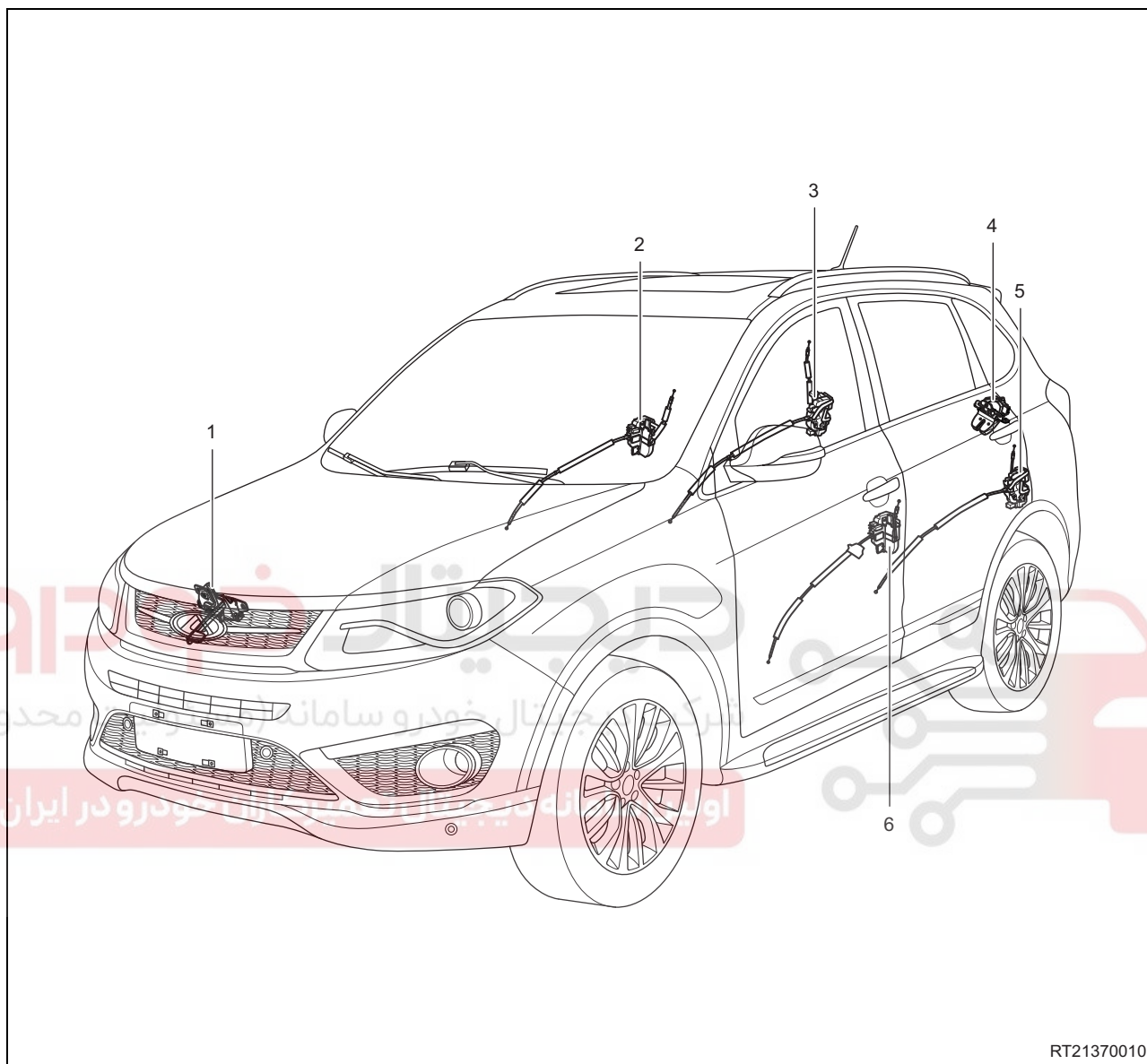
شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

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GENERAL INFORMATION

Description



1 - Engine Hood Lock Assembly	2 - Front Right Door Lock Assembly
3 - Rear Right Door Lock Assembly	4 - Back Door Lock Assembly
5 - Rear Left Door Lock Assembly	6 - Front Left Door Lock Assembly

50

1. Power door lock system function description (w/o passive entry & passive start)

- a. Power door lock system can lock/unlock all doors by remote controller, mechanical key and center controls operation.
 - Remote controller sends the lock/unlock request signals to Body Control Module (BCM). Then, Body Control Module (BCM) sends these request signals to the lock fastener of each door in order to lock/unlock all doors simultaneously.
 - After inserting the mechanical key into the driver side door key cylinder, all doors can be locked/unlocked by turning the key clockwise or counterclockwise, but anti-theft function cannot be set.

50 - DOOR LOCK

- Function active: effective at any time, even when engine starts.
- Lock success: when all doors are closed fully, lock signal from the center controls is input to execute the lock command.
- Lock failure: when at least one door is not closed fully, lock signal from the center controls is input to execute the lock command, and then lock command is executed after 1 second delay.
- Unlock success: unlock signal from the center controls is input to execute the unlock command, regardless of whether the doors are closed fully.
- Door lock response: when the protection is not activated, Body Control Module (BCM) responses to each input of lock or unlock.

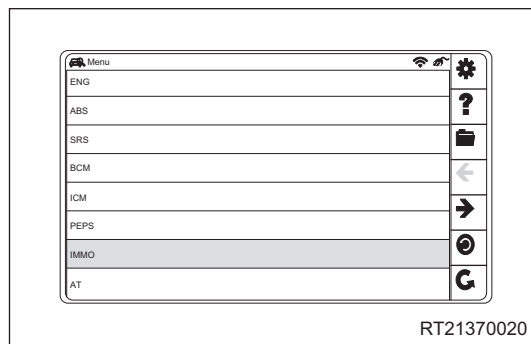
b. Function (w/o passive entry & passive start)

Component	Function
Remote Controller Lock/Unlock	Lock/unlock all doors. Remote controller lock/unlock request is input to Body Control Module (BCM), which outputs lock/unlock signal to lock/unlock each door.
Mechanical Key Lock/Unlock	Lock/unlock all doors. Mechanical key lock/unlock request is input to Body Control Module (BCM), which outputs lock/unlock signal to lock/unlock each door.
Center Controls Lock/Unlock	Lock/unlock all doors. Center controls lock/unlock request is input to Body Control Module (BCM), which outputs lock/unlock signal to lock/unlock each door.
Front Left Door Lock Assembly	Lock/unlock front left door with a fastener. Built-in door lock/unlock switch sends lock/unlock signal to Body Control Module (BCM) to lock/unlock each door.
Front Right Door Lock Assembly	Lock/unlock front right door with a fastener.
Rear Left Door Lock Assembly	Lock/unlock rear left door with a fastener.
Rear Right Door Lock Assembly	Lock/unlock rear right door with a fastener.

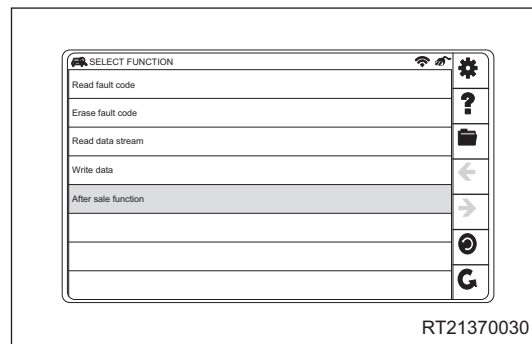
c. Wireless key match (w/o passive entry & passive start)

If the wireless key is lost, damaged, or Body Control Module (BCM) is replaced, the wireless key needs to rematch. There are two ways and detailed operation procedures are as follows:

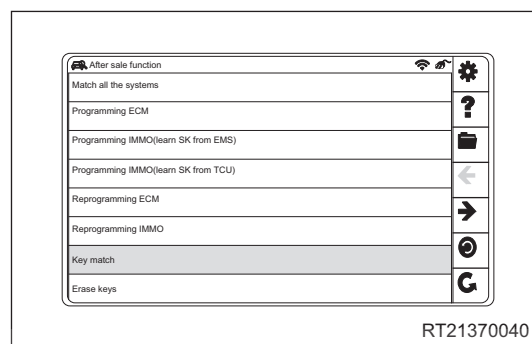
- Connect X-431 3G diagnostic tester (the latest software) to Data Link Connector (DLC), and make it communicate with vehicle electronic module by the data network. Then select corresponding model (T21) on X-431 3G diagnostic tester (the latest software) to enter system and select "IMMO" system.



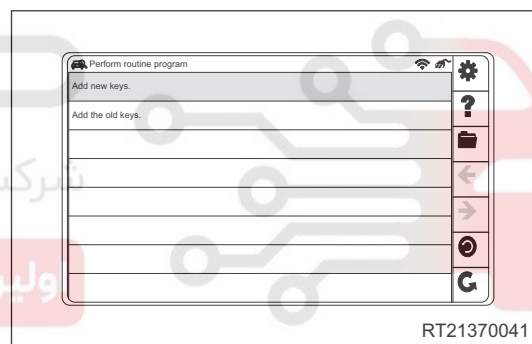
- Please select [After sale function] on SELECT FUNCTION screen.



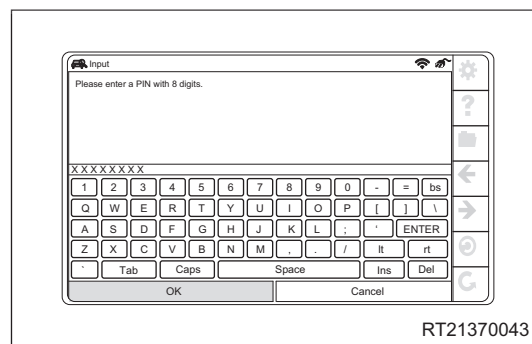
- Please select [Key match] on After sale function screen.



- Please select [Add new keys] on Perform routine program screen.

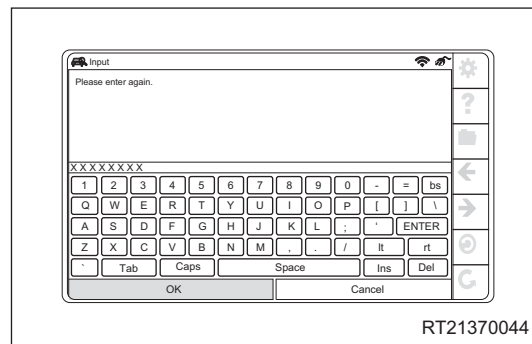


- When "Please enter a PIN with 8 digits" is displayed on Input screen, input PIN code and click "OK".

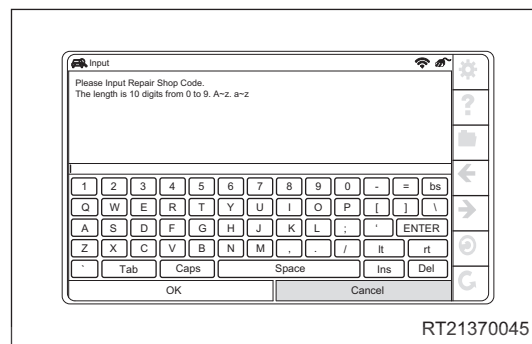


50 - DOOR LOCK

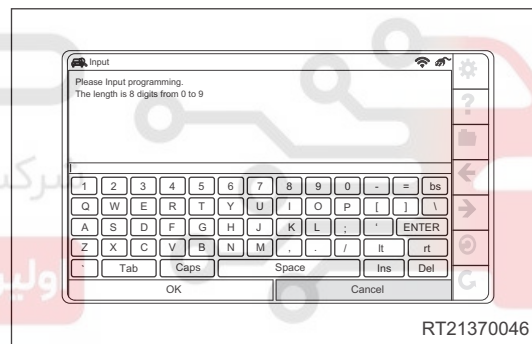
- When "Please enter again" is displayed on Input screen, input PIN code again and click "OK".



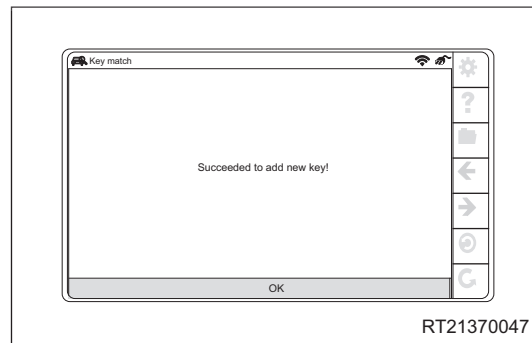
- When "Please Input Repair Shop Code. The length is 10 digits from 0 to 9, A-Z, a-z" is displayed, click "Cancel".



- When "Please Input programming. The length is 8 digits from 0 to 9" is displayed, click "Cancel".



- When "Succeeded to add new key!" is displayed, click "OK".



- Key match is completed.
- d. The vehicle security has 6 modes (w/o passive entry & passive start):
- Lock mode
- Enter lock mode when the following conditions are met:
 - Remove the key.
 - All doors, engine hood and back door are closed.
 - All doors are locked by the lock button on wireless key.

- When vehicle is in lock mode, following features will occur:
 - Turn signal lights blink once, anti-theft horn sounds once and anti-theft indicator on the front left door protector blinks normally to indicate that vehicle is in lock state.
 - In lock state, if no door is opened within 30 seconds after unlocking the doors by wireless key, the doors will lock again automatically.

Lock failure mode

- System will enter lock failure mode under the following conditions and will show the following features:
 - When any door is not closed fully, turn signal lights blink twice and anti-theft horn does not sound.
 - When engine hood is not closed fully, turn signal lights blink twice, doors are locked and horn does not sound.
 - When back door is not closed fully, turn signal lights blink twice, doors are locked and horn does not sound.

Lock deactivation mode

- In lock mode, the locking mode of entire vehicle will be deactivated if the following condition occurs:
 - Press the unlock button on the wireless key.
- The following features occur in lock deactivation mode (by wireless key):
 - All doors are unlocked.
 - Turn signal lights blink twice, anti-theft horn does not sound and anti-theft indicator stops blinking.
 - Within 30 s after the doors are unlocked by wireless key, when no further operation is performed (opening a door, turning the key or opening engine hood and back door), the vehicle will return to the locking state.
- If the following conditions occur within 30 s after the doors are unlocked by wireless key, the vehicle will not return to the locking state and the doors will not lock automatically:
 - Turn ignition switch to ON.
 - Any door is opened.
 - Engine hood is opened.
 - Back door is opened.

Alarm mode

- When vehicle is in lock mode, the alarm will be triggered if the following occurs:
 - Open any door, engine hood and back door manually.
 - Turn ignition switch to ON.
- When vehicle is in alarm mode, the following occurs:
 - After the alarm is triggered, turn signal lights blink and anti-theft horn sounds for 25 seconds. The condition will occur again after an interval of 5 seconds. This process will repeat for 3 times. At the same time, the security indicator blinks quickly to indicate system is in a non-secure state. If all doors/engine hood are fully closed or ignition switch is turned off during the cycle, the turn signal lights will complete the cycle and all doors will lock again automatically after an interval of 5 seconds. At this time, the vehicle anti-theft system will be reactivated.

Alarm deactivation mode

- The following operation will deactivate the alarm mode:
 - Press the unlock button on wireless key.

Back door open mode

- In lock mode, if the back door opener switch on remote controller is pressed for more than 1.5 seconds, turn signal lights will come on for 1 second. After that, if the back door opener switch is pressed with 30 seconds, BCM will open the back door, but the anti-theft horn will not alarm. After 30 seconds, the back door cannot be opened.

50 - DOOR LOCK

2. Power door lock system function description (w/ passive entry & passive start)

a. Power door lock system can lock/unlock all doors by remote controller, mechanical key, central controls and contact switch on handle operation.

- Remote controller sends lock/unlock request signals to Passive Entry & Passive Start (PEPS) controller to control the Body Control Module (BCM) by CAN. Then, Body Control Module (BCM) sends these request signals to the lock fastener of each door in order to lock/unlock all doors simultaneously.
- After inserting the mechanical key into the driver side door key cylinder, all doors can be locked/unlocked by turning the key clockwise or counterclockwise, but anti-theft function cannot be set.
- When the remote controller is outside vehicle, in an operation range of 1.5 m from front door handle, the door can be locked/unlocked by pressing door handle contact switch.
- When the remote controller is outside back door, in a operation range of 1.5 m from back door handle, the door can be locked/unlocked by pressing back door handle contact switch.
- Function active: effective at any time, even when engine starts.
- Lock success: when all doors are closed fully, lock signal from the center controls is input to execute the lock command.
- Lock failure: when at least one door is not closed fully, lock signal from the center controls is input to execute the lock command, and then lock command is executed after 1 second delay.
- Unlock success: unlock signal from the center controls is input to execute the lock command, regardless of whether the doors are closed fully.
- Door lock response: when the protection is not activated, Body Control Module (BCM) responses to each input of lock or unlock.

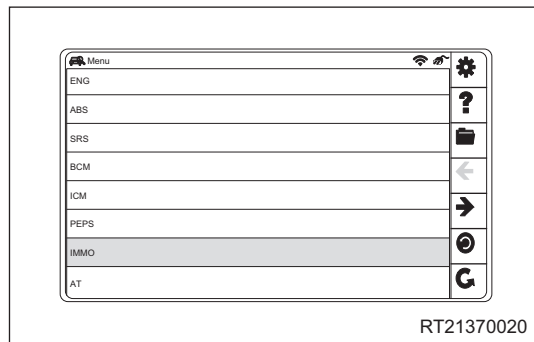
b. Function (w/ passive entry & passive start)

Component	Function
Remote Controller Lock/Unlock	Lock/unlock all doors. Remote controller inputs lock/unlock request to Passive Entry & Passive Start (PEPS), which controls Body Control Module (BCM) by CAN to output lock/unlock signals to lock/unlock each door.
Mechanical Key Lock/Unlock	Lock/unlock all doors. Mechanical key lock/unlock request is input Body Control Module (BCM), which outputs lock/unlock signal to lock/unlock each door.
Contact Switch on Handle Lock/Unlock Button	Lock/unlock all doors. Contact switch on handle inputs lock/unlock request to Passive Entry & Passive Start (PEPS), which controls Body Control Module (BCM) by CAN to output lock/unlock signals to lock/unlock each door.
Center Controls Lock/unlock Button	Lock/unlock all doors. Center Controls input lock/unlock request to Passive Entry & Passive Start (PEPS), which controls Body Control Module (BCM) by CAN to output lock/unlock signals to lock/unlock each door.
Front Left Door Lock Assembly	Lock/unlock front left door with a fastener. Built-in door lock/unlock switch sends lock/unlock signal to Body Control Module (BCM) to lock/unlock each door.

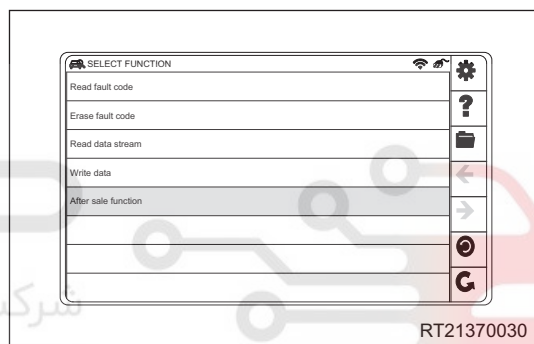
Component	Function
Front Right Door Lock Assembly	Lock/unlock front right door with a fastener.
Rear Left Door Lock Assembly	Lock/unlock rear left door with a fastener.
Rear Right Door Lock Assembly	Lock/unlock rear right door with a fastener.

c. Wireless key match (w/ passive entry & passive start)

- Connect X-431 3G diagnostic tester (the latest software) to Data Link Connector (DLC), and make it communicate with vehicle electronic module by the data network. Then select corresponding model (T21) from X-431 3G diagnostic tester (the latest software) to enter the system and select "IMMO" system.

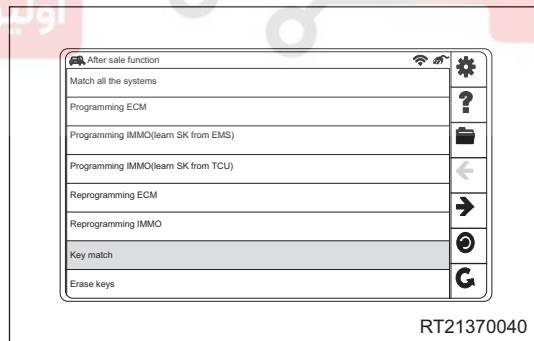


- Please select [After sale function] on SELECT FUNCTION screen.

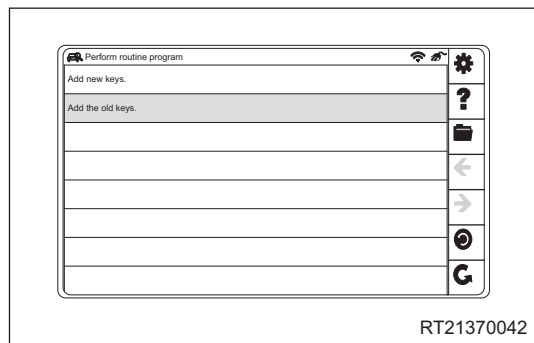


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شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

- Please select [Key match] on After sale function screen.

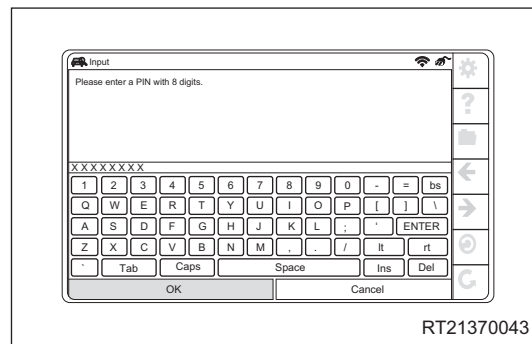


- Please select [Add the old keys] on Perform routine program screen.

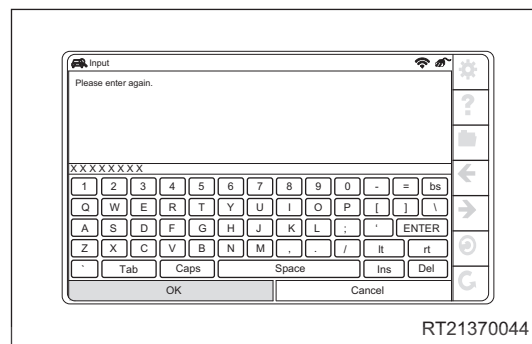


50 - DOOR LOCK

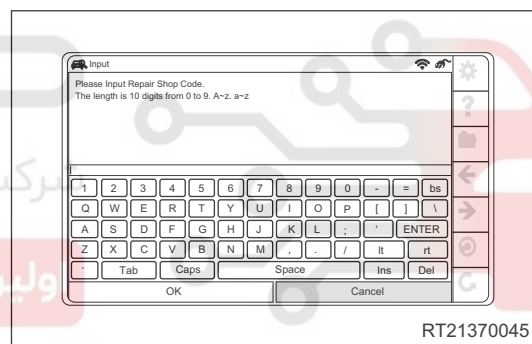
- When "Please enter a PIN with 8 digits" is displayed on Input screen, input PIN code and click "OK".



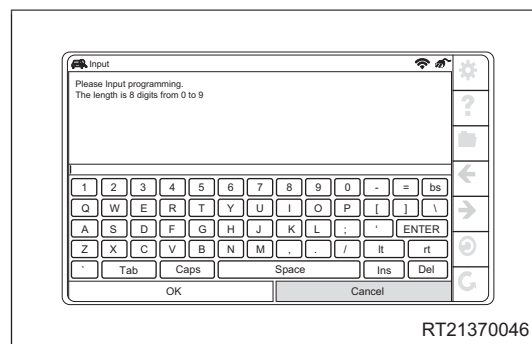
- When "Please enter again" is displayed on Input screen, input PIN code again and click "OK".



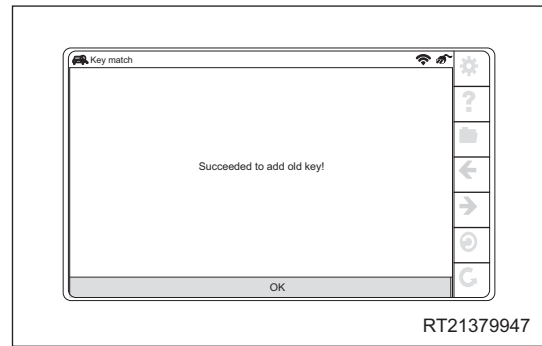
- When "Please Input Repair Shop Code. The length is 10 digits from 0 to 9, A-Z, a-z" is displayed, click "Cancel".



- When "Please Input programming. The length is 8 digits from 0 to 9" is displayed, click "Cancel".



- When "Succeeded to add old key!" is displayed, click "OK".



- Key match is completed.

d. The vehicle security has 6 modes (w/ passive entry & passive start):

Locking mode

- Enter lock mode when the following conditions are met:
 - All doors, engine hood and back door are closed.
 - All doors are locked by operating the lock button on PEPS controller.
 - All doors are locked by operating the front door handle button (REK of PEPS in the detecting range of this door handle antenna).
- When vehicle is in lock mode, following features will occur:
 - Turn signal lights blink once, anti-theft horn sounds once and anti-theft indicator on the front left door protector blinks normally to indicate that vehicle is in lock state.
 - In lock state, if no door is opened within 30 seconds after unlocking the doors by wireless key, the doors will lock again automatically.

Locking failure mode

- System will enter lock failure mode under the following conditions and will show the following features:
 - When any door is not closed fully, turn signal lights blink twice anti-theft and horn does not sound.
 - When engine hood is not closed fully, turn signal lights blink twice, doors are locked and horn does not sound.
 - When back door is not closed fully, turn signal lights blink twice, doors are locked and horn does not sound.

Lock deactivation mode

- In lock mode, the locking mode of entire vehicle will be deactivated if the following condition occurs:
 - Press the unlock button on PEPS controller.
 - Press the front door handle button (REK of PEPS in the detecting range of this door handle antenna).
- When vehicle is in lock deactivation mode (by PEPS controller and front door handle button (REK of PEPS in the detecting range of this door handle antenna)), following conditions will occur:
 - All doors are unlocked.
 - Turn signal lights blink twice, anti-theft horn does not sound and anti-theft indicator stops blinking.
 - Within 30 s after the doors are unlocked by wireless key, when no further operation is performed (opening a door, opening engine hood and back door), the vehicle will return to the lock state.
- If the following conditions occur within 30 s after the doors are unlocked by wireless key, the vehicle will not return to the locking state, also not lock automatically:
 - PEPS switch is in a position other than OFF.
 - Any door is opened.
 - Engine hood is opened.

50 - DOOR LOCK

- Back door is opened.

Alarm mode

- When vehicle is in lock mode, the alarm will be triggered if the following occurs:
 - Open any door, engine hood and back door manually.
 - Turn ignition switch to ON.
- When vehicle is in alarm mode, the following occurs:
 - After the alarm is triggered, turn signal lights blink and anti-theft horn sounds for 25 seconds. The condition will occur again after an interval of 5 seconds. This process will repeat for 3 times. At the same time, the security indicator blinks quickly to indicate system is in a state of insecurity. If all doors/engine hood are fully closed or ignition switch is turned off during the cycle, the turn signal lights will complete the cycle and all doors will lock again automatically after an interval of 5 seconds. At this time, the vehicle anti-theft system will be reactivated.

Alarm deactivation mode

- The following operations will deactivate the alarm mode:
 - Press the unlock button on PEPS controller.
 - Press the front door handle button (REK of PEPS in the detecting range of this door handle antenna).

Back door open mode

- In the lock mode, if the back door opener switch on PEPS controller is pressed for more than 1.5 seconds, the back door will be opened but the anti-theft horn will not alarm.
- When PEPS controller can be recognized by back door antenna, pressing the back door opener switch can open the back door without sounding an alarm.

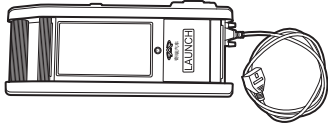
Specifications

Torque Specifications

Description	Torque (N·m)
Tank Upper Crossmember Deflector Fixing Nut	10 ± 1
Engine Hood Lock Assembly Fixing Nut	10 ± 1
Front Door Lock Assembly Fixing Screw	5.8 ± 0.7
Front Door Key Cylinder Cover Fixing Screw	5 ± 1
Front Door Lock Striker Assembly Fixing Screw	10 ± 1
Rear Door Lock Assembly Fixing Screw	5.8 ± 0.7
Rear Door Lock Striker Assembly Fixing Screw	10 ± 1
Back Door Lock Assembly Fixing Bolt	10 ± 1
Back Door Lock Striker Assembly Fixing Screw	10 ± 1
Auxiliary Fascia Console Rear Cover Plate Assembly Fixing Screw	1.5 ± 0.5
Front Door Outside Handle Fixing Screw	1.5
Wireless Key Upper Cover Fixing Screw	0.4 ± 0.1

Tools

Special Tool

<p>X-431 3G Diagnostic Tester</p>	 <p>RCH0000001</p>
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General Tool

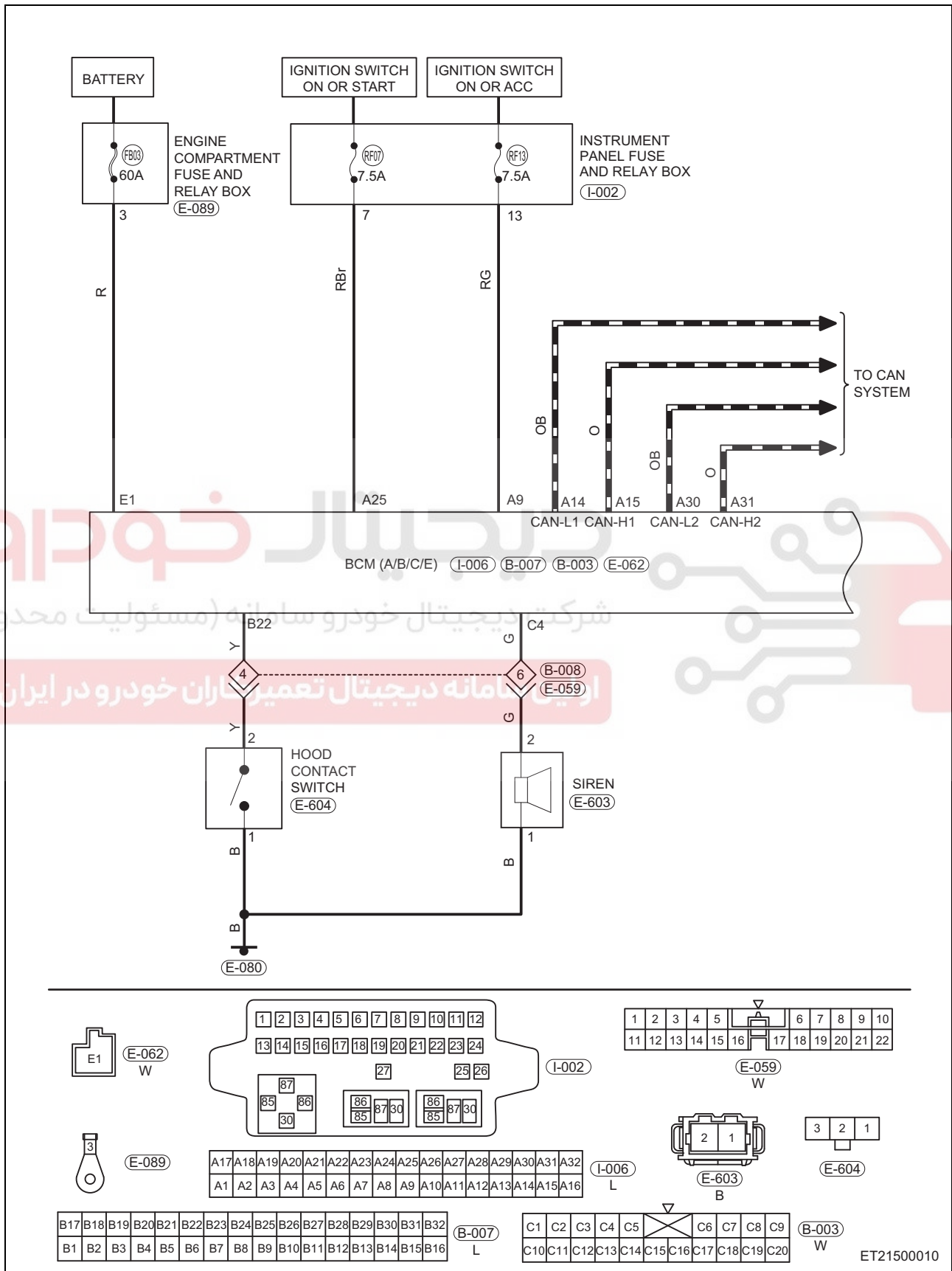
<p>Digital Multimeter</p>	 <p>RCH0000002</p>
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دیجیتال خودرو
شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

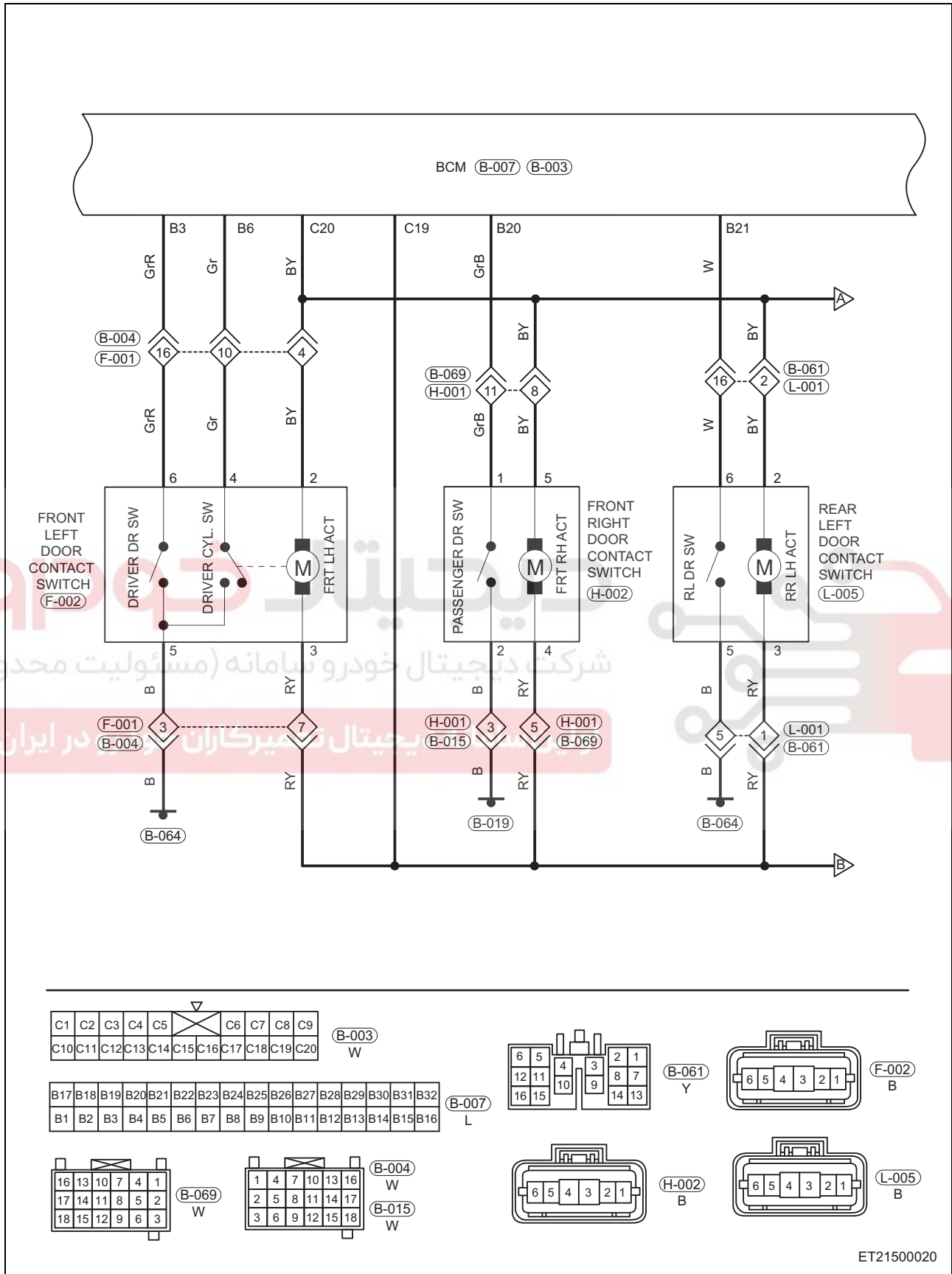
اولین سامانه دیجیتال تعمیرکاران خودرو در ایران

Circuit Diagram

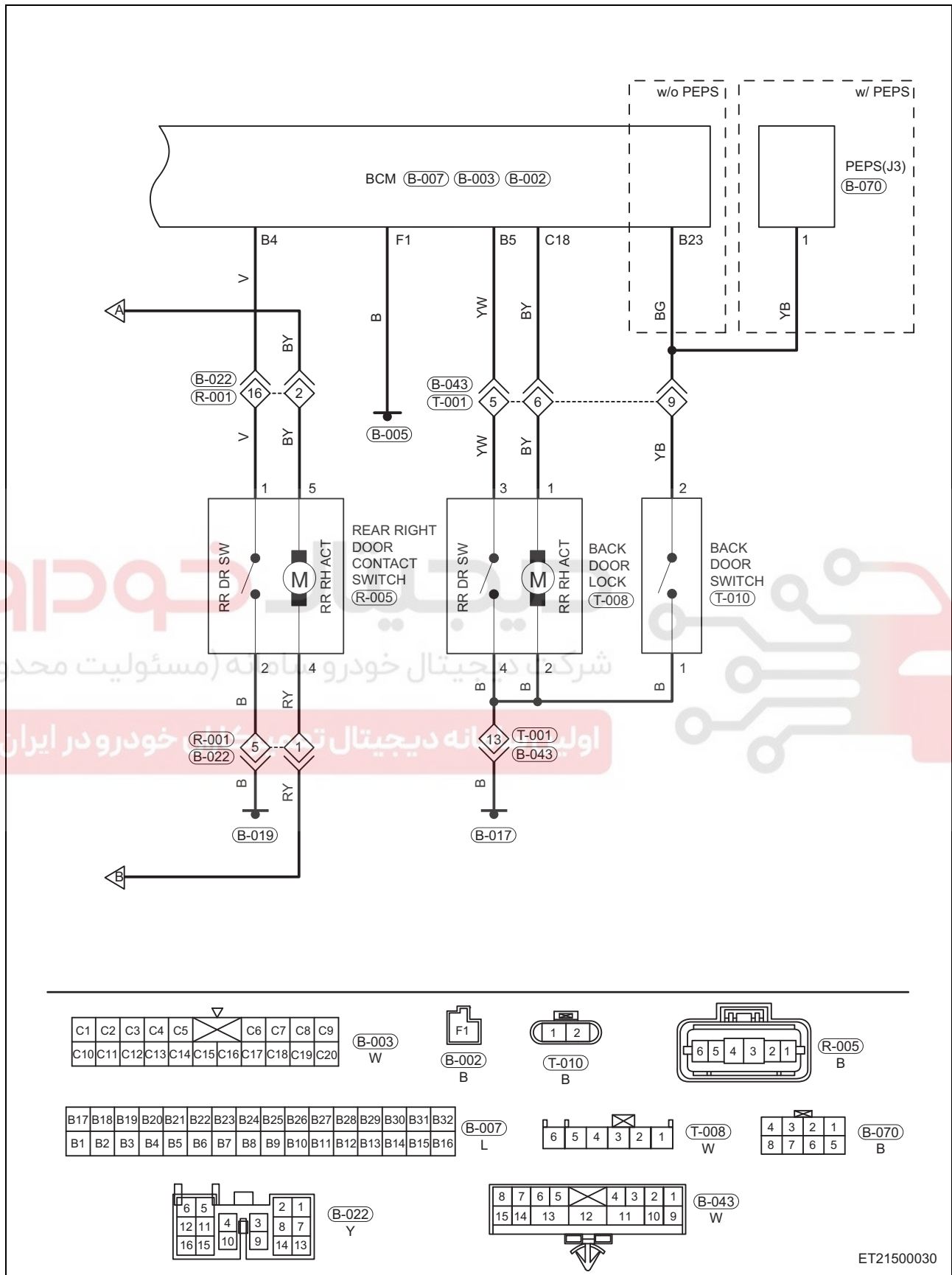
Power Door Lock System (Page 1 of 3)



Power Door Lock System (Page 2 of 3)



Power Door Lock System (Page 3 of 3)



C1	C2	C3	C4	C5	C6	C7	C8	C9
C10	C11	C12	C13	C14	C15	C16	C17	C18
C19	C20							

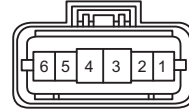
(B-003)
W



(B-002)
B



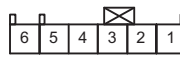
(T-010)
B



(R-005)
B

B17	B18	B19	B20	B21	B22	B23	B24	B25	B26	B27	B28	B29	B30	B31	B32
B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15	B16

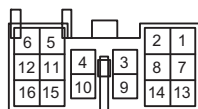
(B-007)
L



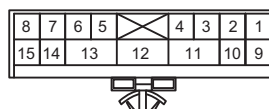
(T-008)
W



(B-070)
B



(B-022)
Y



(B-043)
W

ET21500030

DIAGNOSIS & TESTING

Problem Symptoms Table

HINT:

Use the table below to help determine the cause of the problem. Check each suspected area in sequence. Repair or replace the faulty components, or adjust as necessary.

Power Door Lock Control System

Symptom	Suspected Area	See page
All doors lock/unlock functions do not operate	Power door unlock/lock switch button	-
	Front left door lock assembly	50-41
	Other door lock assemblies	-
	Passive Entry & Passive Start (PEPS) controller	-
	Wire harness or connector	-
	Body Control Module (BCM)	-
Only driver side door lock/unlock functions do not operate	Power door unlock/lock switch button	-
	Front left door lock assembly	50-41
	Passive Entry & Passive Start (PEPS) controller	-
	Wire harness or connector	-
	Body Control Module (BCM)	-
Only passenger side door lock/ unlock functions do not operate	Front right door lock assembly	50-41
	Passive Entry & Passive Start (PEPS) controller	-
	Wire harness or connector	-
	Body Control Module (BCM)	-
Only rear left door lock/unlock functions do not operate	Rear left door lock assembly	50-47
	Passive Entry & Passive Start (PEPS) controller	-
	Wire harness or connector	-
	Body Control Module (BCM)	-
Only rear right door lock/unlock functions do not operate	Rear right door lock assembly	50-47
	Passive Entry & Passive Start (PEPS) controller	-
	Wire harness or connector	-
	Body Control Module (BCM)	-

50 - DOOR LOCK

Symptom	Suspected Area	See page
Only back door Close/Open functions do not operate	Back door lock assembly	50-51
	Passive Entry & Passive Start (PEPS) controller	-
	Wire harness or connector	-
	Body Control Module (BCM)	-

Wireless Door Lock Control System

Symptom	Suspected Area	See page
Only wireless control function does not operate	Wireless key battery	50-58
	Anti-theft match	50-4
	Passive Entry & Passive Start (PEPS) controller	-
	Wire harness or connector	-
	Body Control Module (BCM)	-
Only no answer-back	Turn signal lights	-
	Body Control Module (BCM)	-

Diagnosis Tools

X-431 3G Diagnostic Tester

When connecting X-431 3G diagnostic tester:

- Connect X-431 3G diagnostic tester (the latest software) to Data Link Connector (DLC) for communication with vehicle.
- DLC is located at the driver side instrument panel crossmember.
- DLC uses a trapezoidal design, which can hold 16 terminals.

Digital Multimeter

When using digital multimeter:

- Troubleshoot electrical malfunctions and wire harness system.
- Look for basic fault.
- Measure voltage, current and resistance.

DTC Confirmation Procedure

Confirm that battery voltage is normal before performing the following procedures.

- Turn ignition switch to LOCK.
- Connect X-431 3G diagnostic tester (the latest software) to Data Link Connector (DLC), and make it communicate with vehicle electronic module by the data network.
- Turn ignition switch to ON.
- Using X-431 3G diagnostic tester to record and clear the DTCs stored in the Body Control Module (BCM).
- Turn ignition switch to LOCK and wait for a few seconds.
- Turn ignition switch to ON, and then select "Read Code".
- If DTC is detected, the malfunction indicated by the DTC is current. Go to the diagnosis procedure - Step 1.
- If DTC is not detected, the malfunction indicated by the DTC is intermittent. Please refer to Intermittent DTC Troubleshooting.

Intermittent DTC Troubleshooting

If malfunction is intermittent, perform the followings:

- Check if connectors are loose.
- Check if wire harnesses are worn, pierced, pinched or partially broken.
- Wiggle related wire harnesses and connectors and observe if signal is interrupted in the related circuit.
- If possible, try to duplicate the conditions under which the DTC was set.
- Look for the data that has changed or the DTC to be reset during the wiggle test.
- Look for broken, bent, protruded or corroded terminals.
- Inspect the mounting areas of power door lock assembly, wire harness or wire harness connector and so on for damage, foreign matter, etc. that will cause incorrect signals.
- Check and clean all wire harness connectors and grounding parts related to the current DTC.
- Remove the Body Control Module (BCM) from the malfunctioning vehicle and install it to a new vehicle and perform a test. If DTC cannot be cleared, the Body Control Module (BCM) is malfunctioning. If DTC can be cleared, reinstall the Body Control Module (BCM) to original vehicle.
- If multiple trouble codes were set, refer to the circuit diagrams to look for any common ground circuit or power supply circuit applied to the DTC.
- Refer to Technical Bulletin that is applied to the malfunction.

Ground Inspection

Groundings are very important to entire circuit system, which are normal or not can seriously affect the entire circuit system. Ground points are often exposed to moisture, dirt and other corrosive environments. Corrosion (rust) and oxidation may increase load resistance. This situation will seriously affect the normal operation of the circuit. The operations to check the ground points are as follows:

1. Remove the ground bolt or nut.
2. Check all contact surfaces for tarnish, dirt and rust, etc.
3. Clean as necessary to ensure that contacting is in a good condition.
4. Reinstall the ground bolt or nut securely.
5. Check if add-on accessories interfere with the ground circuit.
6. If several wire harnesses are crimped into one ground terminal, check if they are installed correctly. Make sure all wire harnesses are clean, securely fastened and providing a good ground path.

Diagnosis Procedure

HINT:

Use the following procedure to troubleshoot the power door lock control system.

1	Vehicle brought to workshop
----------	------------------------------------

NEXT

2	Check battery voltage
----------	------------------------------

50

Standard voltage: 11 to 14 V

If voltage is below 11 V, recharge or replace the battery before proceeding to next step.

NEXT

50 - DOOR LOCK

3	Customer problem analysis
----------	---------------------------

NEXT

4	Check for DTCs (current DTC and history DTC)
----------	--

DTC occurs

For current DTC, go to step 6

No DTC

For history DTC, go to step 7

5	Problem repair (no DTC), then go to step 8
----------	--

NEXT

6	Troubleshoot according to Diagnostic Trouble Code (DTC) chart, then go to step 8
----------	--

NEXT

7	Troubleshoot according to Diagnostic Trouble Code (DTC) chart, then go to step 8
----------	--

NEXT

8	Adjust, repair or replace
----------	---------------------------

NEXT

9	Confirm troubleshooting, perform test
----------	---------------------------------------

NEXT

10	End
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Diagnostic Trouble Code (DTC) Chart

DTC Code	DTC Definition
B101D11	Siren Output Control Circuit Circuit Short to Ground
B101D13	Siren Output Control Circuit Circuit Open
B101D12	Siren Output Control Circuit Circuit Short to Battery
B102471	Trunk Lock Control Circuit Actuator Stuck
B102711	Battery Saver Output Control Circuit Circuit Short to Ground

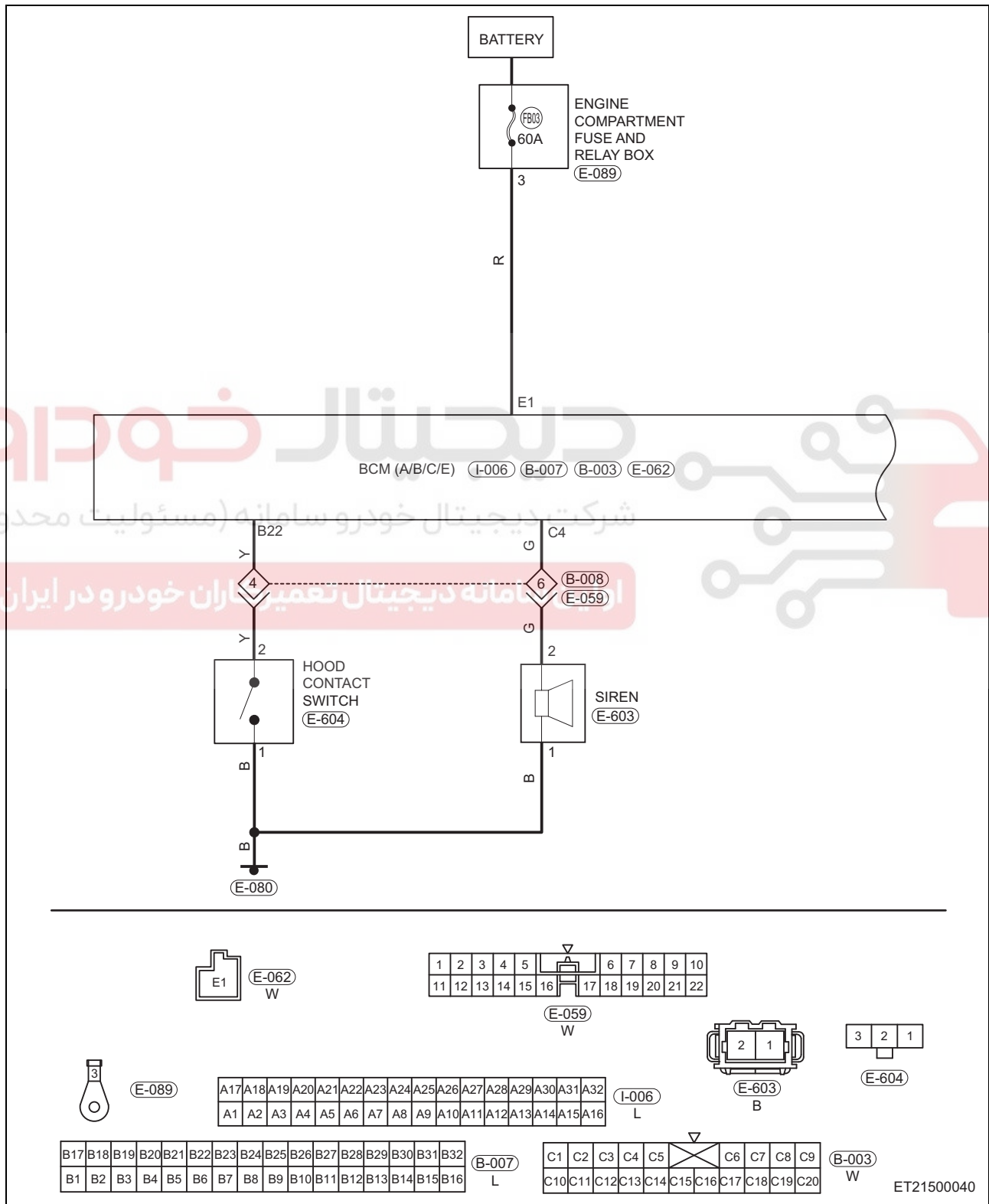
دیجیتال خودرو

شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



DTC	B101D11	Siren Output Control Circuit Circuit Short to Ground
DTC	B101D13	Siren Output Control Circuit Circuit Open
DTC	B101D12	Siren Output Control Circuit Circuit Short to Battery



Self-diagnosis Detection Logic

DTC Code	DTC Definition	DTC Detection Condition	Warning Light Condition	Possible Cause
B101D11	Siren Output Control Circuit Circuit Short to Ground	Ignition switch ON	ON	<ul style="list-style-type: none"> • Fuse • Anti-theft horn • Wire harness or connector • Body Control Module (BCM)
B101D13	Siren Output Control Circuit Circuit Open			
B101D12	Siren Output Control Circuit Circuit Short to Battery			

 CAUTION

- When performing the circuit diagnosis and test, always refer to the circuit diagram for the specific circuit and the component information.

Diagnosis Procedure

1 Check fuse FB03 (60A)

- Turn ignition switch to LOCK.
- Disconnect the negative battery cable.
- Pull out the fuse FB03 (60A).
- Check if the fuse is blown.

NG

Replace fuse FB03 (60A)

OK

2 Check anti-theft horn

- Remove the anti-theft horn from the malfunctioning vehicle and install it to a new vehicle and perform a test.

NG

Replace anti-theft horn

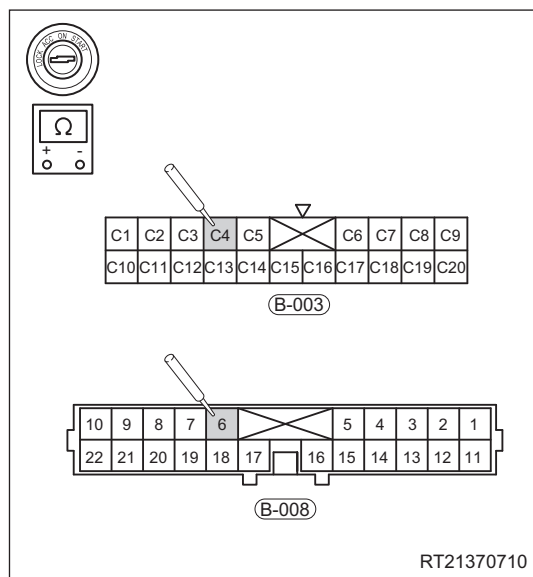
OK

3 Check body wire harness and connector

- a. Turn ignition switch to LOCK.
- b. Disconnect the negative battery cable.
- c. Disconnect the body wire harness connector B-003 and B-008.
- d. Using a digital multimeter, check for continuity between body wire harness connectors B-003 and B-008 according to the table below.

Multimeter Connection	Condition	Specified Condition
B-003 (C4) - B-008 (6)	Always	Continuity

NG Repair or replace body wire harness and connector

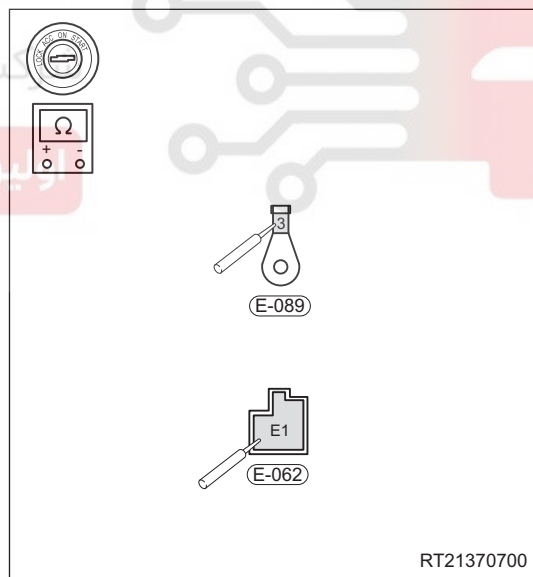


OK

4 Check wire harness and connector

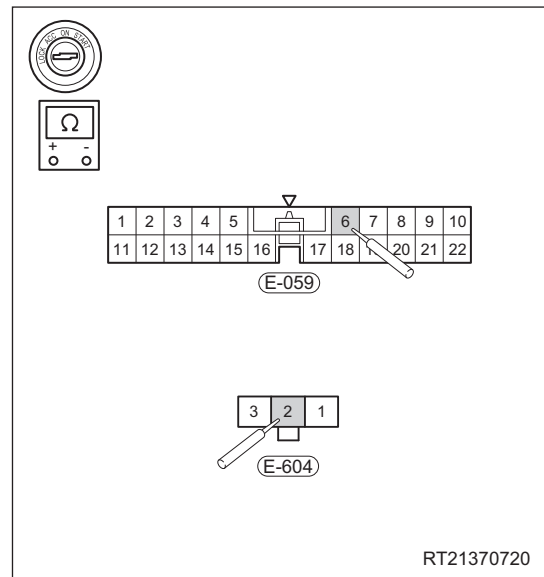
- a. Turn ignition switch to LOCK.
- b. Disconnect the negative battery cable.
- c. Disconnect the engine compartment wire harness connectors E-089 and E-062.
- d. Using a digital multimeter, check for continuity between engine compartment wire harness connectors E-089 and E-062 according to the table below.

Multimeter Connection	Condition	Specified Condition
E-089 (3) - E-062 (E1)	Always	Continuity



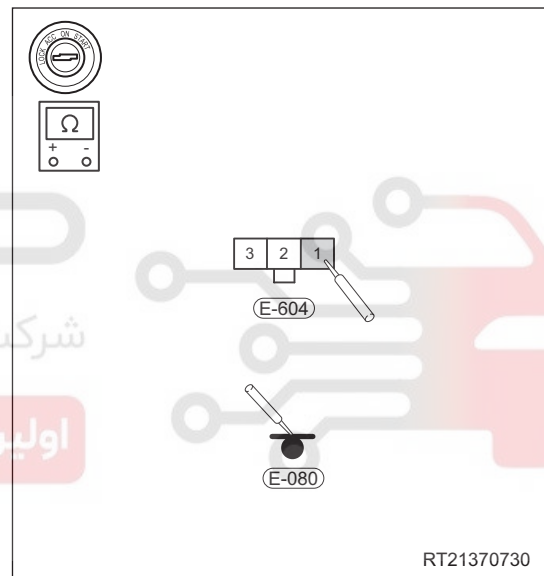
- e. Disconnect the engine compartment wire harness connectors E-059 and E-604.
- f. Using a digital multimeter, check for continuity between engine compartment wire harness connectors E-059 and E-604 according to the table below.

Multimeter Connection	Condition	Specified Condition
E-059 (6) - E-604 (2)	Always	Continuity



- g. Disconnect the engine compartment wire harness connector E-604 and ground E-080.
- h. Using a digital multimeter, check for continuity between engine compartment wire harness connector E-604 and ground E-080 according to the value(s) in the table below.

Multimeter Connection	Condition	Specified Condition
E-604 (1) - E-080	Always	Continuity



NG Repair or replace engine compartment wire harness and connector

OK

5 Reconfirm DTCs

- a. Connect all connectors.
- b. Connect the negative battery cable.
- c. Turn ignition switch to ON.
- d. Use the X-431 3G diagnostic tester (the latest software) to record and clear the DTCs stored in the Body Control Module (BCM).
- e. Turn the ignition switch to LOCK and wait for a few seconds.
- f. Turn ignition switch to ON.
- g. Use the X-431 3G diagnostic tester (the latest software) to read DTCs stored in the Body Control Module (BCM) again.

50 - DOOR LOCK

Result	Proceed to
DTC B101D11, B101D13 and B101D12 are output	NG
No DTC is output	OK

NG

Replace Body Control Module (BCM)

OK

System is normal

دیجیتال خودرو

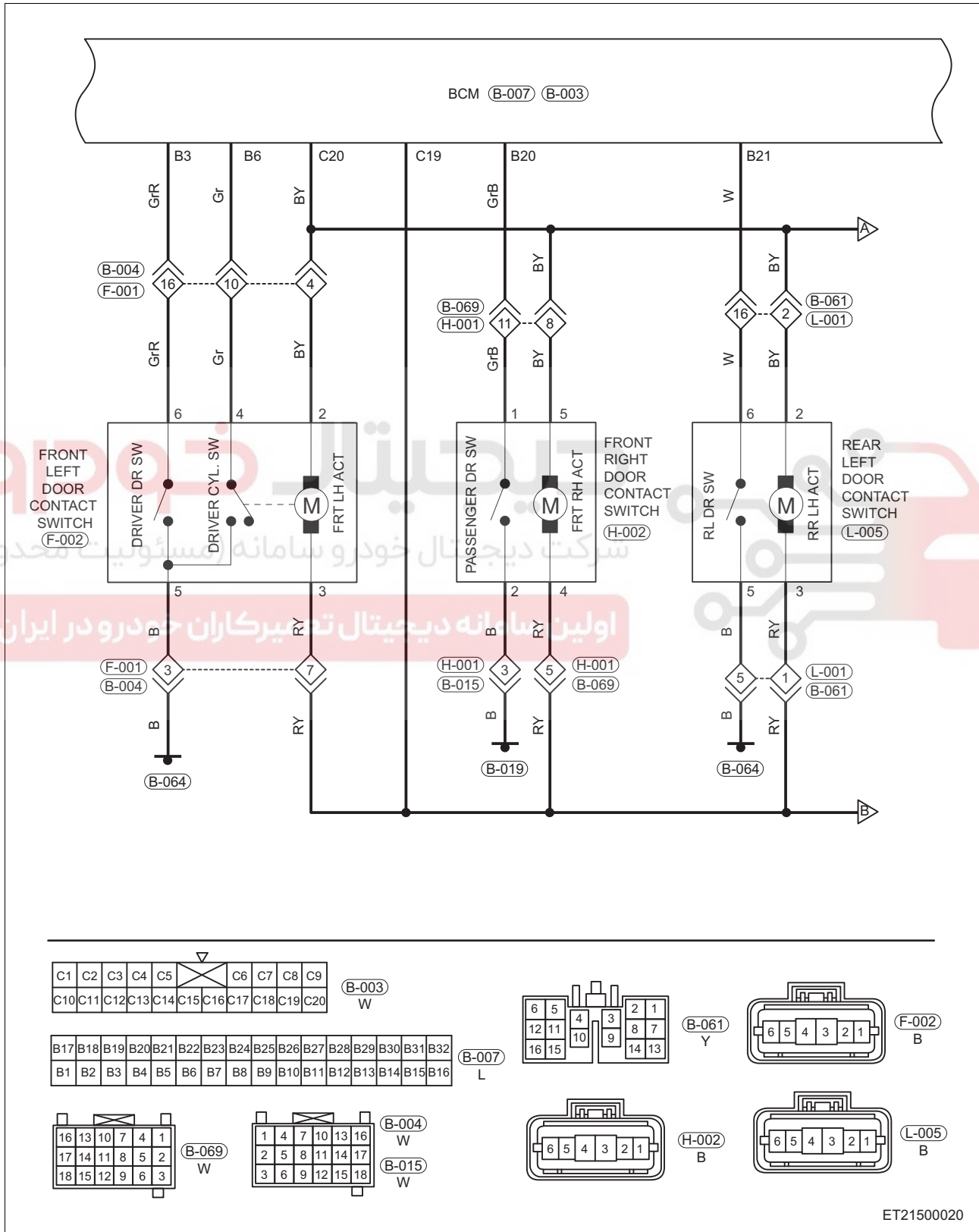
شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

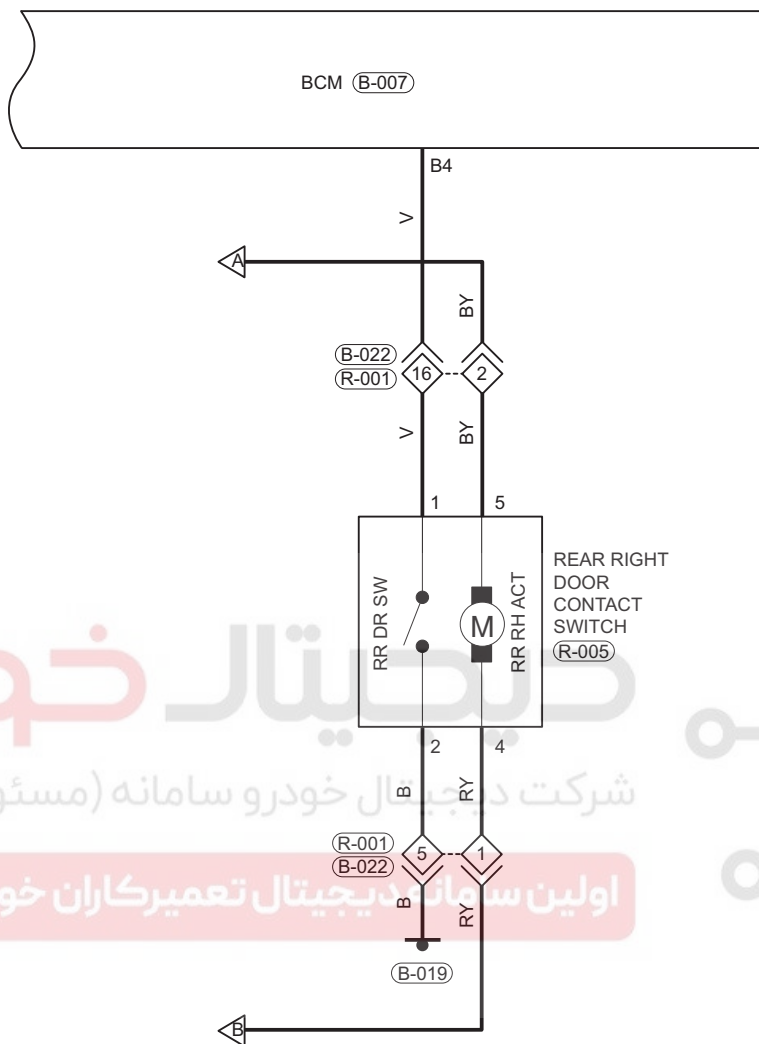
اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



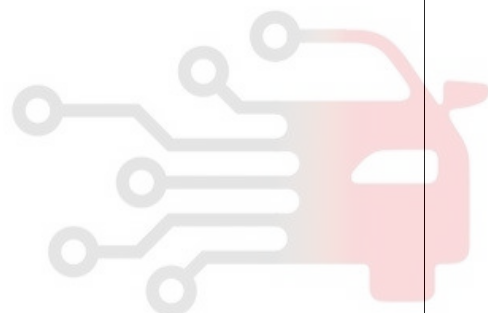
DTC	B102471	Trunk Lock Control Circuit Actuator Stuck
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DTC	B102711	Battery Saver Output Control Circuit Circuit Short to Ground
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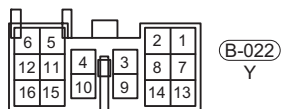
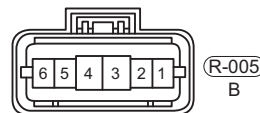


دیجیتال خودرو
 شرکت دیجیتال خودرو سامانه (مسئولیت محدود)
 اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



B17	B18	B19	B20	B21	B22	B23	B24	B25	B26	B27	B28	B29	B30	B31	B32
B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15	B16

(B-007) L



ET21500050

DTC Code	DTC Definition	DTC Detection Condition	Warning Light Condition	Possible Cause
B102471	Trunk Lock Control Circuit Actuator Stuck	Ignition switch ON	ON	<ul style="list-style-type: none"> • Front door lock assembly • Rear door lock assembly • Wire harness or connector • Body Control Module (BCM)
B102711	Battery Saver Output Control Circuit Short to Ground			

CAUTION

- When performing the circuit diagnosis and test, always refer to the circuit diagram for the specific circuit and the component information.

1 Check front door lock assembly

- a. Remove the front door lock assembly from malfunctioning vehicle, and install it to a new vehicle to perform a test.

NG

Replace front door lock assembly

OK

2 Check rear door lock assembly

- a. Remove the rear door lock assembly from malfunctioning vehicle, and install it to a new vehicle to perform a test.

NG

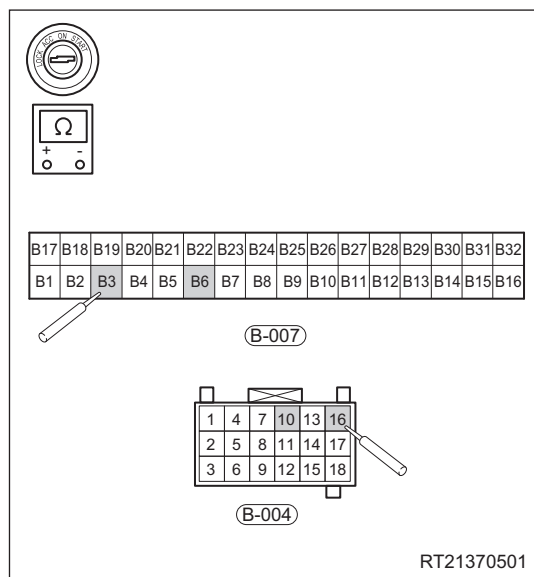
Replace rear door lock assembly

OK

3 Check body wire harness and connector

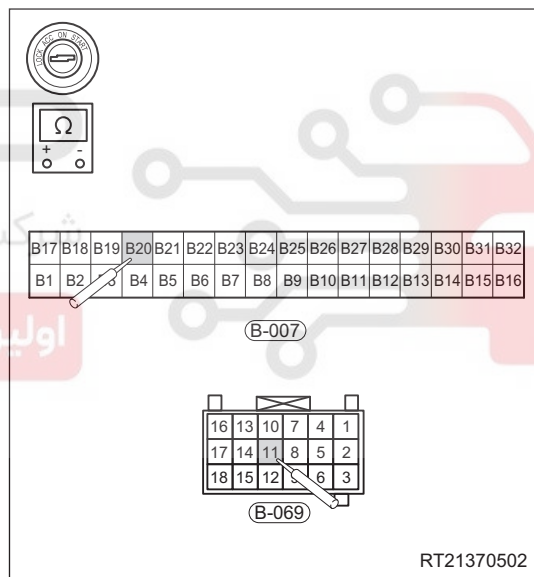
- a. Turn ignition switch to LOCK.
- b. Disconnect the negative battery cable.
- c. Disconnect the body wire harness connectors B-007 and B-004.
- d. Using a digital multimeter, check for continuity between body wire harness connectors B-007 and B-004 according to the table below.

Multimeter Connection Terminal	Condition	Specified Condition
B-007 (B3) - B-004 (16)	Always	Continuity
B-007 (B6) - B-004 (10)	Always	Continuity



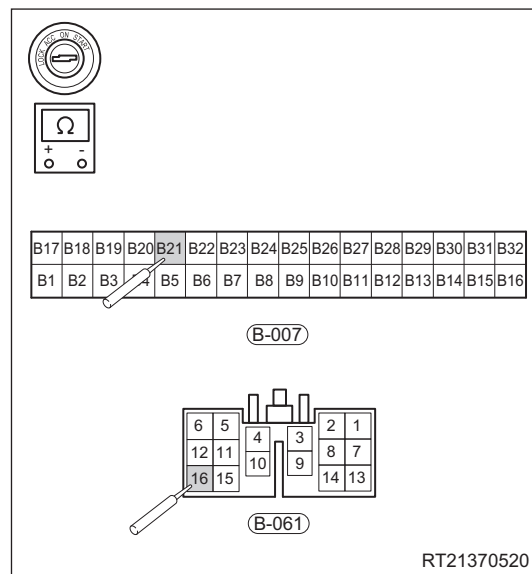
- e. Disconnect the body wire harness connectors B-007 and B-069.
- f. Using a digital multimeter, check for continuity between body wire harness connectors B-007 and B-069 according to the table below.

Multimeter Connection Terminal	Condition	Specified Condition
B-007 (B20) - B-069 (11)	Always	Continuity



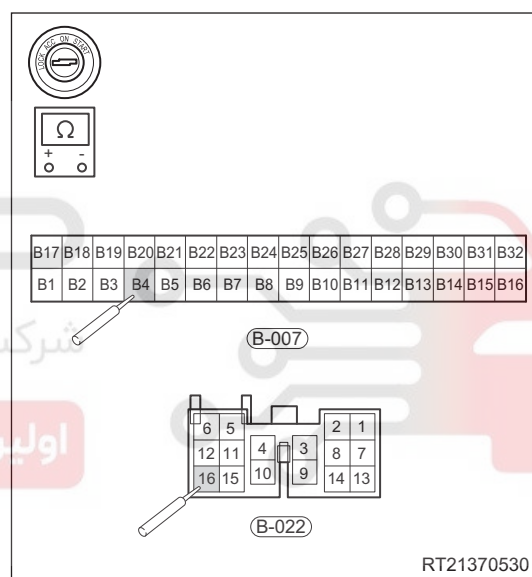
- g. Disconnect the body wire harness connectors B-007 and B-061.
- h. Using a digital multimeter, check for continuity between body wire harness connectors B-007 and B-061 according to the table below.

Multimeter Connection Terminal	Condition	Specified Condition
B-007 (B21) - B-061 (16)	Always	Continuity



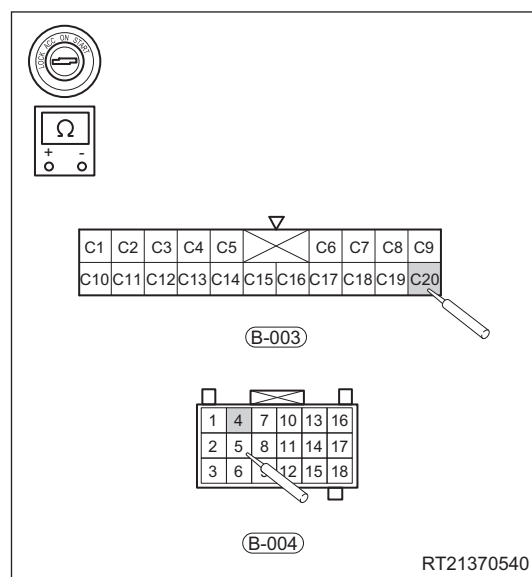
- i. Disconnect the body wire harness connectors B-007 and B-022.
- j. Using a digital multimeter, check for continuity between body wire harness connectors B-007 and B-022 according to the table below.

Multimeter Connection Terminal	Condition	Specified Condition
B-007 (B4) - B-022 (16)	Always	Continuity



- k. Disconnect the body wire harness connectors B-004 and B-003.
- l. Using a digital multimeter, check for continuity between body wire harness connectors B-004 and B-003 according to the table below.

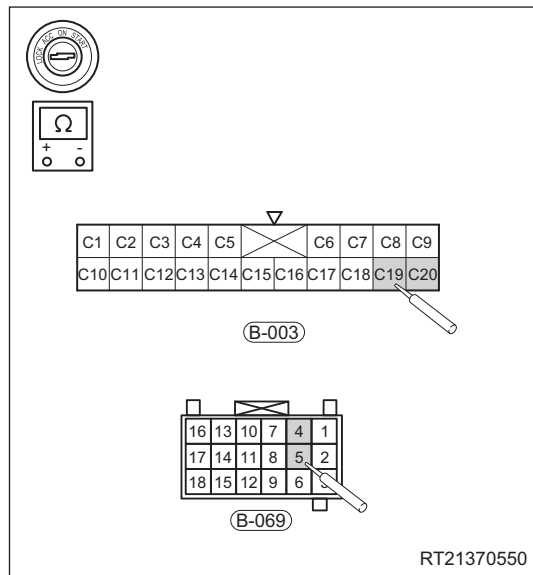
Multimeter Connection Terminal	Condition	Specified Condition
B-004 (4) - B-003 (C20)	Always	Continuity



50 - DOOR LOCK

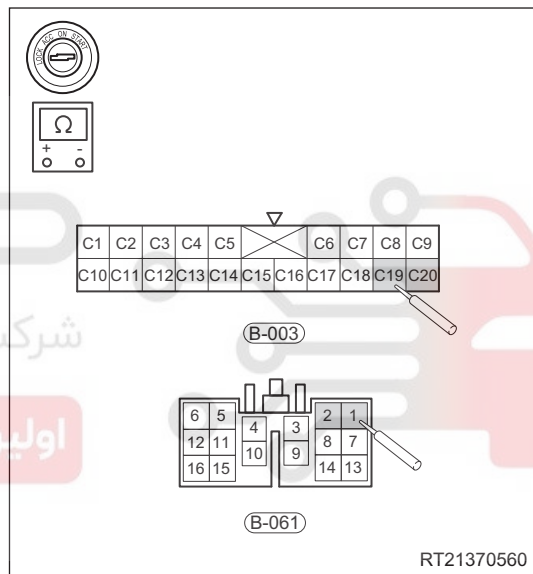
- m. Disconnect the body wire harness connectors B-003 and B-069.
- n. Using a digital multimeter, check for continuity between body wire harness connectors B-003 and B-069 according to the table below.

Multimeter Connection Terminal	Condition	Specified Condition
B-003 (C19) - B-069 (5)	Always	Continuity
B-003 (C20) - B-069 (4)	Always	Continuity



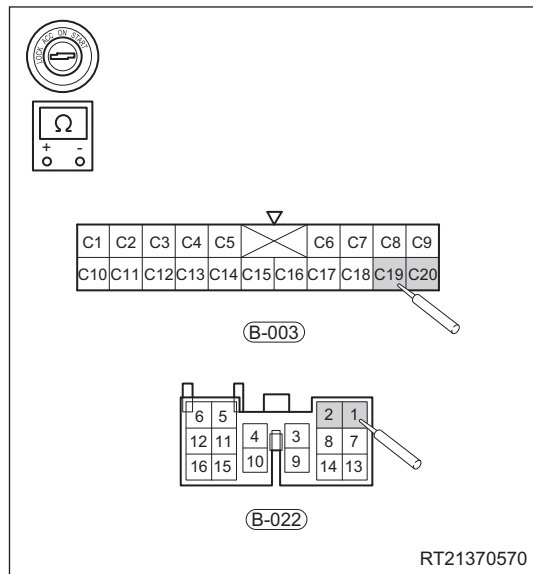
- o. Disconnect the body wire harness connectors B-003 and B-061.
- p. Using a digital multimeter, check for continuity between body wire harness connectors B-003 and B-061 according to the table below.

Multimeter Connection Terminal	Condition	Specified Condition
B-003 (C19) - B-061 (1)	Always	Continuity
B-003 (C20) - B-061 (2)	Always	Continuity



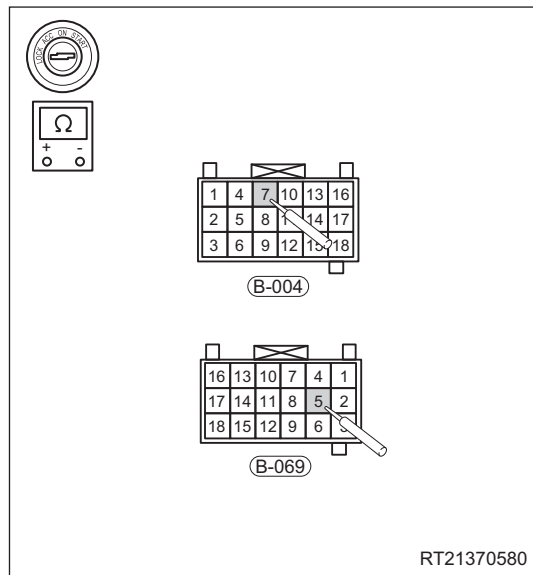
- q. Disconnect the body wire harness connectors B-003 and B-022.
- r. Using a digital multimeter, check for continuity between body wire harness connectors B-003 and B-022 according to the table below.

Multimeter Connection Terminal	Condition	Specified Condition
B-003 (C19) - B-022 (1)	Always	Continuity
B-003 (C20) - B-022 (2)	Always	Continuity



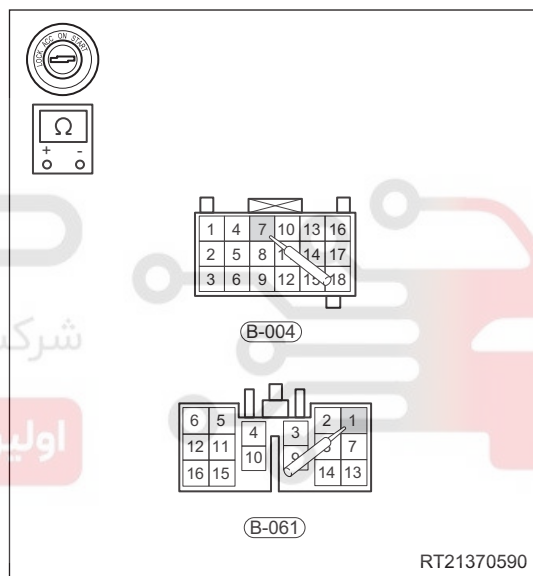
- s. Disconnect the body wire harness connectors B-004 and B-069.
- t. Using a digital multimeter, check for continuity between body wire harness connectors B-004 and B-069 according to the table below.

Multimeter Connection Terminal	Condition	Specified Condition
B-004 (7) - B-069 (5)	Always	Continuity



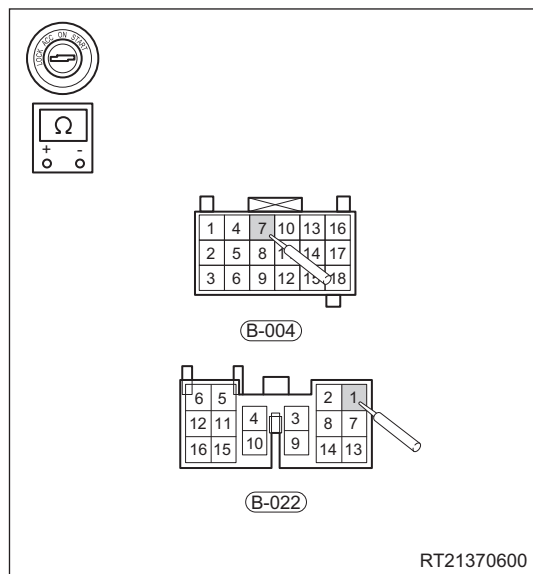
- u. Disconnect the body wire harness connectors B-004 and B-061.
- v. Using a digital multimeter, check for continuity between body wire harness connectors B-004 and B-061 according to the table below.

Multimeter Connection Terminal	Condition	Specified Condition
B-004 (7) - B-061 (1)	Always	Continuity



- w. Disconnect the body wire harness connectors B-004 and B-022.
- x. Using a digital multimeter, check for continuity between body wire harness connectors B-004 and B-022 according to the table below.

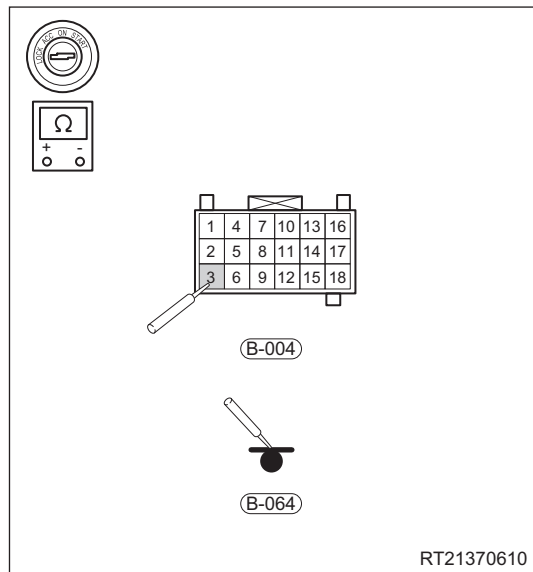
Multimeter Connection Terminal	Condition	Specified Condition
B-004 (7) - B-022 (1)	Always	Continuity



50 - DOOR LOCK

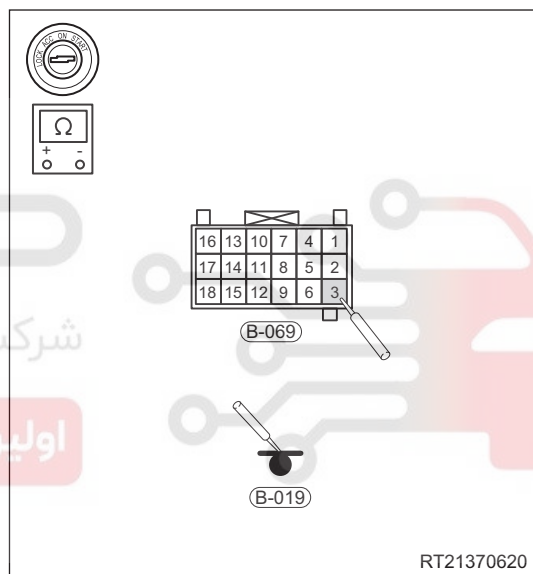
- y. Disconnect the body wire harness connector B-004 and ground B-064.
- z. Using a digital multimeter, check for continuity between body wire harness connector B-004 and B-064 according to the table below.

Multimeter Connection Terminal	Condition	Specified Condition
B-004 (3) - B-064	Always	Continuity



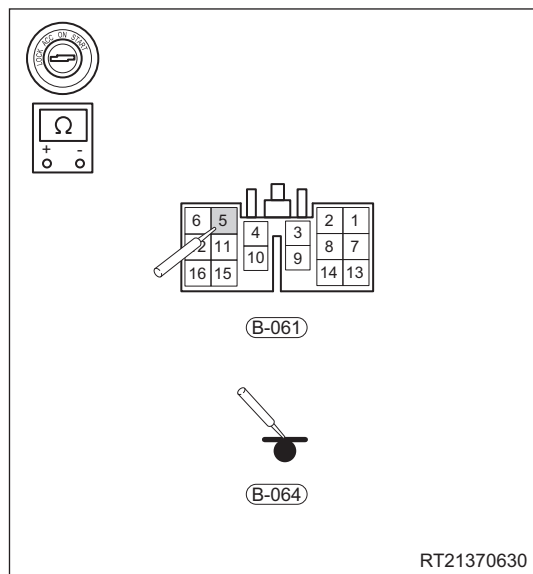
- aa. Disconnect the body wire harness connector B-069 and ground B-019.
- ab. Using a digital multimeter, check for continuity between body wire harness connector B-069 and B-019 according to the table below.

Multimeter Connection Terminal	Condition	Specified Condition
B-069 (3) - B-019	Always	Continuity



- ac. Disconnect the body wire harness connector B-061 and ground B-064.
- ad. Using a digital multimeter, check for continuity between body wire harness connector B-061 and B-064 according to the table below.

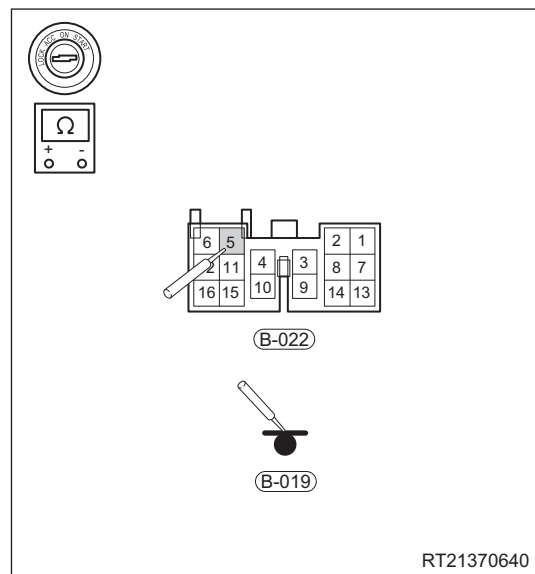
Multimeter Connection Terminal	Condition	Specified Condition
B-061 (5) - B-064	Always	Continuity



- ae. Disconnect the body wire harness connector B-022 and ground B-019.
- af. Using a digital multimeter, check for continuity between body wire harness connector B-022 and B-019 according to the table below.

Multimeter Connection Terminal	Condition	Specified Condition
B-022 (5) - B-019	Always	Continuity

NG Repair or replace body wire harness and connector



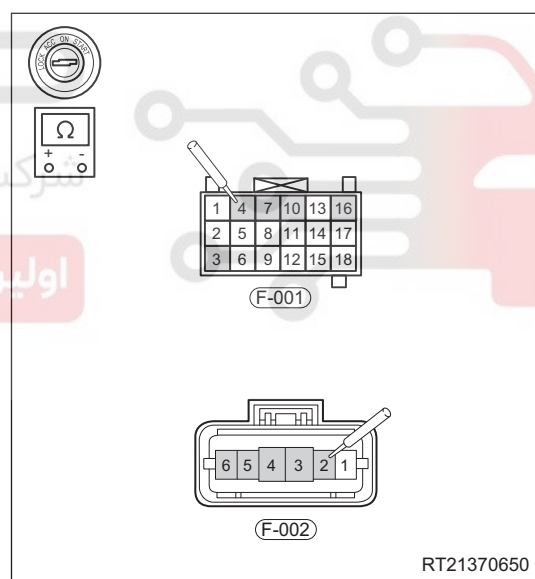
OK

4 Check front left door wire harness and connector

- a. Turn ignition switch to LOCK.
- b. Disconnect the negative battery cable.
- c. Disconnect the front left door wire harness connectors F-001 and F-002.
- d. Using a digital multimeter, check for continuity between front left door wire harness connectors F-001 and F-002 according to the table below.

Multimeter Connection Terminal	Condition	Specified Condition
F-001 (4) - F-002 (2)	Always	Continuity
F-001 (7) - F-002 (3)	Always	Continuity
F-001 (10) - F-002 (4)	Always	Continuity
F-001 (3) - F-002 (5)	Always	Continuity
F-001 (16) - F-002 (6)	Always	Continuity

NG Repair or replace front left door wire harness and connector

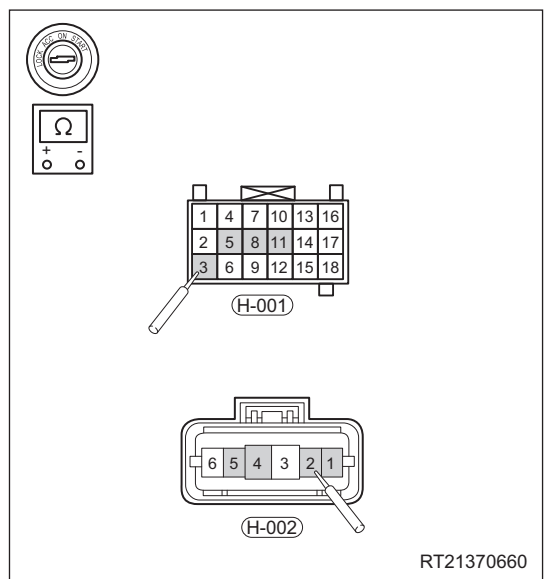


OK

5 Check front right door wire harness and connector

- a. Turn ignition switch to LOCK.
- b. Disconnect the negative battery cable.
- c. Disconnect the front right door wire harness connectors H-001 and H-002.
- d. Using a digital multimeter, check for continuity between front right door wire harness connectors H-001 and H-002 according to the table below.

Multimeter Connection Terminal	Condition	Specified Condition
H-001 (3) - H-002 (2)	Always	Continuity
H-001 (8) - H-002 (5)	Always	Continuity
H-001 (5) - H-002 (4)	Always	Continuity
H-001 (11) - H-002 (1)	Always	Continuity



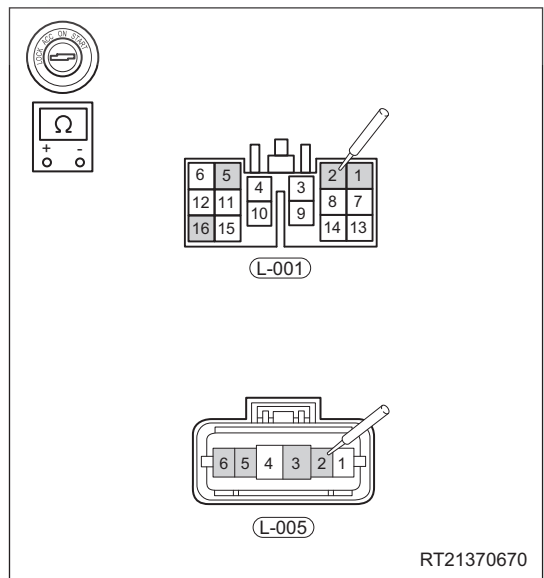
NG Repair or replace front right door wire harness and connector

OK

6 Check rear left door wire harness and connector

- a. Turn ignition switch to LOCK.
- b. Disconnect the negative battery cable.
- c. Disconnect the rear left door wire harness connectors L-001 and L-005.
- d. Using a digital multimeter, check for continuity between rear left door wire harness connectors L-001 and L-005 according to the table below.

Multimeter Connection Terminal	Condition	Specified Condition
L-005 (2) - L-001 (2)	Always	Continuity
L-005 (3) - L-001 (1)	Always	Continuity
L-005 (5) - L-001 (5)	Always	Continuity
L-005 (6) - L-001 (16)	Always	Continuity



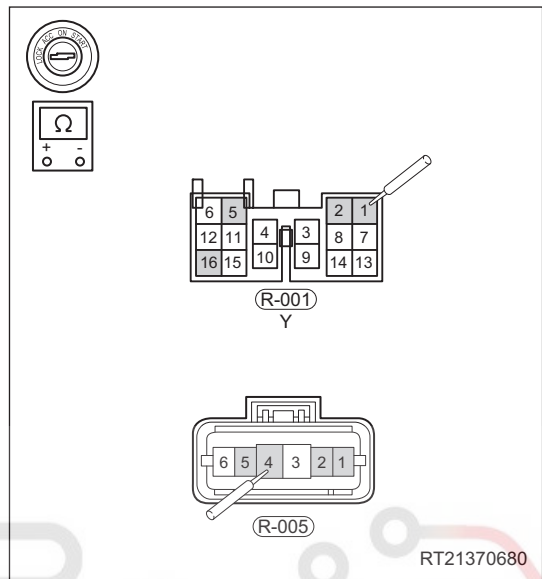
NG Repair or replace rear left door wire harness and connector

OK

7 Check rear right door wire harness and connector

- a. Turn ignition switch to LOCK.
- b. Disconnect the negative battery cable.
- c. Disconnect the rear right door wire harness connectors R-001 and R-005.
- d. Using a digital multimeter, check for continuity between rear right door wire harness connectors R-001 and R-005 according to the table below.

Multimeter Connection Terminal	Condition	Specified Condition
R-001 (1) - R-005 (4)	Always	Continuity
R-001 (2) - R-005 (5)	Always	Continuity
R-001 (5) - R-005 (2)	Always	Continuity
R-001 (16) - R-005 (1)	Always	Continuity



NG Repair or replace rear right door wire harness and connector

OK

8 Reconfirm DTCs

- a. Connect all connectors.
- b. Connect the negative battery cable.
- c. Turn ignition switch to ON.
- d. Use the X-431 3G diagnostic tester (the latest software) to record and clear the DTCs stored in the Body Control Module (BCM).
- e. Turn the ignition switch to LOCK and wait for a few seconds.
- f. Turn ignition switch to ON.
- g. Use the X-431 3G diagnostic tester (the latest software) to read DTCs stored in the Body Control Module (BCM) again.

Result	Precede to
DTC B102471 and B102711 are output	NG
No DTC is output	OK

50 - DOOR LOCK

NG

Replace Body Control Module (BCM)

OK

System is normal

دیجیتال خودرو

شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



ON-VEHICLE SERVICE

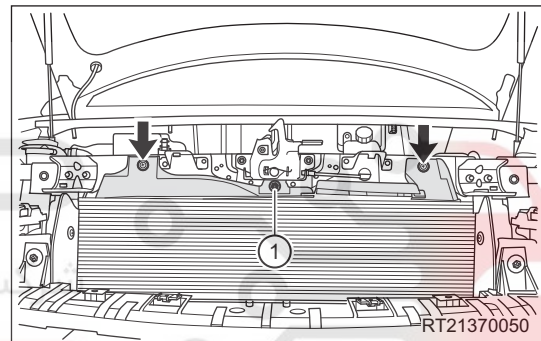
Engine Hood Lock Assembly

Removal

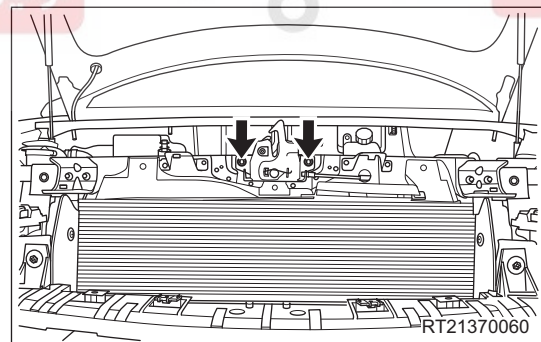
CAUTION

- Be sure to wear safety equipment to prevent accidents when removing engine hood lock assembly.
- Try to prevent body paint surface from being scratched when removing engine hood lock assembly.

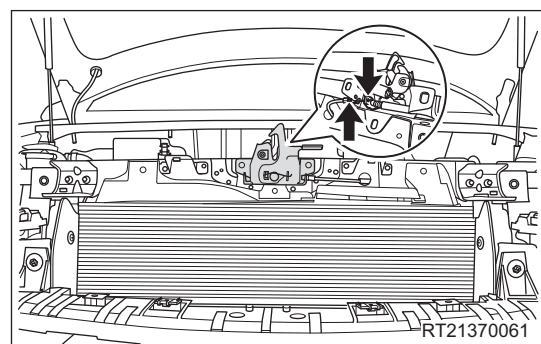
1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the radiator grille assembly (See page 62-8).
4. Remove the water tank upper crossmember trim board (See page 62-10).
5. Remove the tank upper crossmember deflector.
 - a. Remove 2 plastic clips (arrow) and the fixing nut (1) from tank upper crossmember deflector. (Tightening torque: 10 ± 1 N·m)
 - b. Remove the tank upper crossmember deflector.



6. Remove the engine hood lock assembly.
 - a. Remove 2 fixing nuts (arrow) from engine hood lock assembly. (Tightening torque: 10 ± 1 N·m)



- b. Detach the engine hood cable assembly (arrow) from clamping part, and remove the engine hood lock assembly.



Installation

Installation is in the reverse order of removal.

CAUTION

- Check if engine hood operates properly after installing engine hood lock assembly.

دیجیتال خودرو

شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



Front Door Lock Assembly

Removal

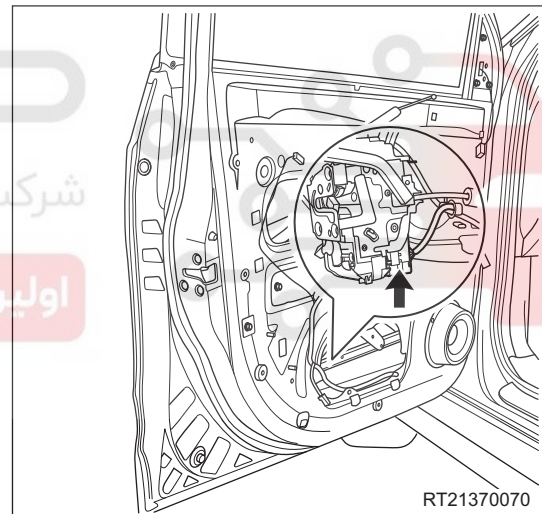
HINT:

- Use the same procedures for the right side and left side.
- Procedures listed below are for the left side.

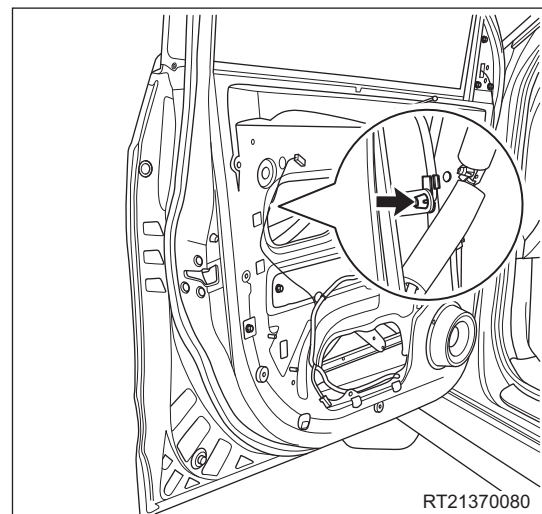
CAUTION

- Be sure to wear safety equipment to prevent accidents when removing front door lock assembly.
- Try to prevent interior and body paint from being scratched when removing front door lock assembly.

1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the front left door protector assembly (See page 61-23).
4. Remove the front left door assist grip mounting bracket assembly (See page 61-29).
5. Remove the front left door protective film assembly (See page 61-30).
6. Remove the front left door glass rear guide rail assembly (See page 57-86).
7. Remove the front left door lock assembly.
 - a. Disconnect the connector (arrow) from front door lock assembly.

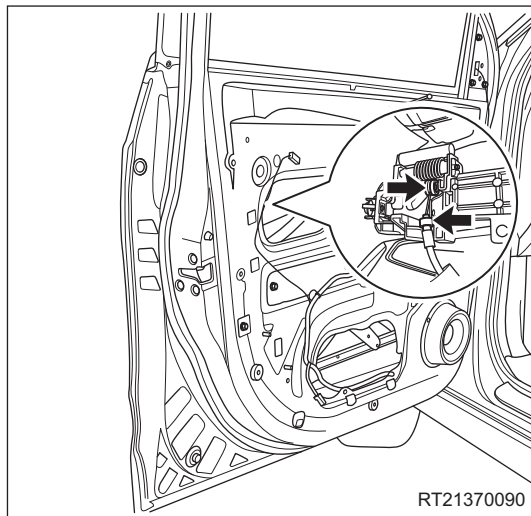


- b. Detach the clip (arrow) connecting front door lock assembly and front door key cylinder lever.

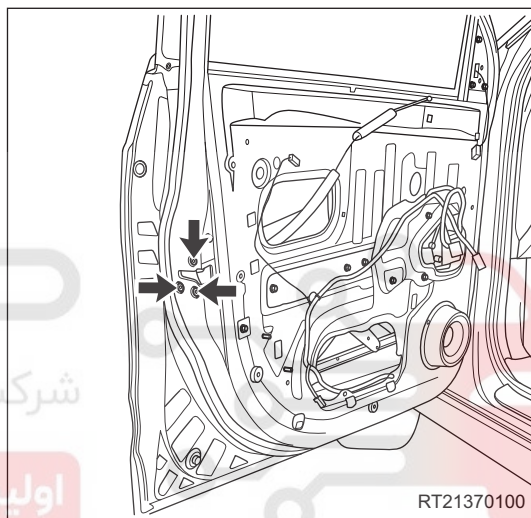


50 - DOOR LOCK

c. Detach the cable (arrow) connecting front door lock assembly and front door assist grip base.



d. Remove 3 fixing screws (arrow) from front door lock assembly, and remove the front door lock assembly. (Tightening torque: 5.8 ± 0.7 N·m)



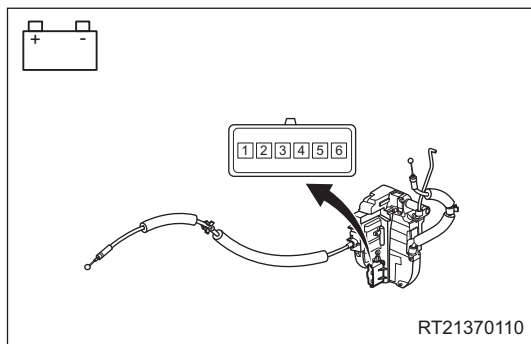
دیجیتال خودرو
 شرکت دیجیتال خودرو سامانه (مسئولیت محدود)
 اولین سامانه دیجیتال تعمیرکاران خودرو در ایران

Inspection

1. Check front door lock assembly (fastener assembly).
 - a. Apply battery voltage to terminals of front door lock assembly (fastener assembly) connector and check if front door lock assembly works properly according to the table below.

Front Left Door Lock Assembly

Measurement Condition	Specified Condition
Battery positive (+) → Terminal 3 Battery negative (-) → Terminal 2	Lock
Battery positive (+) → Terminal 2 Battery negative (-) → Terminal 3	Unlock



Front Right Door Lock Assembly

Measurement Condition	Specified Condition
Battery positive (+) → Terminal 4 Battery negative (-) → Terminal 5	Lock
Battery positive (+) → Terminal 5 Battery negative (-) → Terminal 4	Unlock

If result is not as specified, replace front door lock assembly.

Installation

Installation is in the reverse order of removal.

CAUTION

- Check if connector is installed correctly when installing front door lock assembly.
- Install clip and cable on the lever in place when installing front door lock assembly.
- Check if front door lock operates properly after installing front door lock assembly.

دیجیتال خودرو

شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



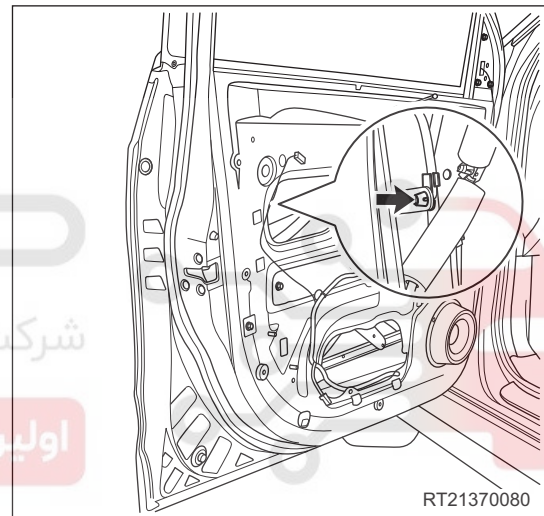
Front Door Key Cylinder

Removal

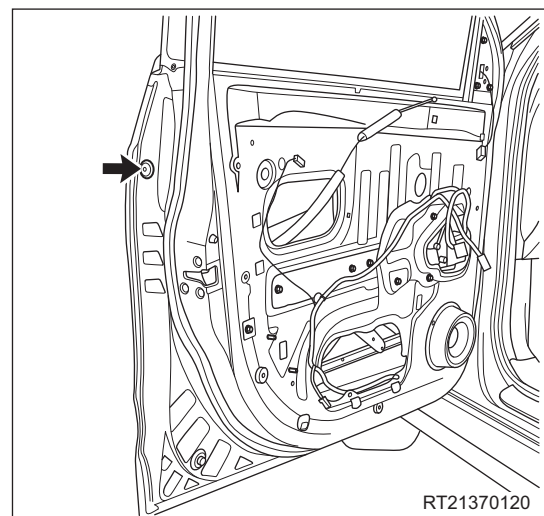
CAUTION

- Be sure to wear safety equipment to prevent accidents when removing front door key cylinder.
- Try to prevent interior and body paint from being scratched when removing front door key cylinder.

1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the front left door protector assembly (See page 61-23).
4. Remove the front left door assist grip mounting bracket assembly (See page 61-29).
5. Remove the front left door protective film assembly (See page 61-30).
6. Remove the front left door key cylinder protective cover.
 - a. Disconnect the clip (arrow) between front door lock assembly and front door lock key cylinder lever.



- b. Using a screwdriver wrapped with protective tape, remove the trim plug (arrow) of front door key cylinder protective cover.

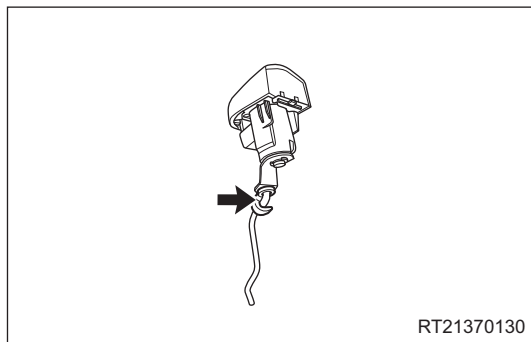


- c. Remove the fixing screw from front door key cylinder protective cover, and remove the front left door key cylinder protective cover.
(Tightening torque: 5 ± 1 N·m)

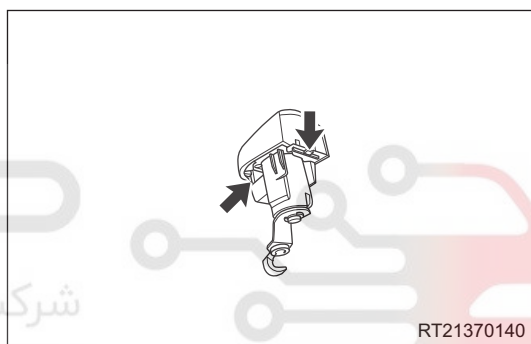
HINT:

It is not necessary to remove the fixing screw from front left door key cylinder protective cover, because the fixing screw is integrated with the front door key cylinder protective cover.

7. Remove the front left door key cylinder.
a. Detach the clip (arrow) from front door key cylinder lever.



- b. Using a screwdriver wrapped with protective tape, disengage the claws (arrow) to separate the front door key cylinder protective cover from front door key cylinder.



دیجیتال خودرو
شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

اولین سامانه دیجیتال تعمیرکاران خود Installation

Installation is in the reverse order of removal.

CAUTION

- Install clip on the lever in place when installing front door key cylinder.
- Check if front door key cylinder operates properly after installing front door key cylinder.

Front Door Lock Striker Assembly

Removal

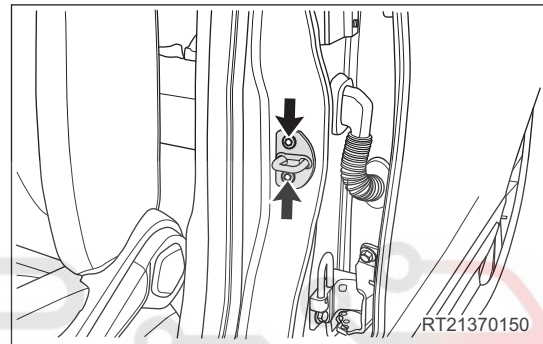
HINT:

- Use the same procedures for the right side and left side.
- Procedures listed below are for the left side.

CAUTION

- Be sure to wear safety equipment to prevent accidents when removing front door lock striker assembly.
- Try to prevent body paint surface from being scratched when removing front door lock striker assembly.

1. Remove the front left door lock striker assembly.
 - a. Remove 2 fixing crews (arrow) from front left door lock striker assembly.
(Tightening torque: 10 ± 1 N·m)
 - b. Remove the front left door lock striker assembly.



Installation

Installation is in the reverse order of removal.

CAUTION

- Try to prevent body paint surface from being scratched when installing front door lock striker assembly.

Rear Door Lock Assembly

Removal

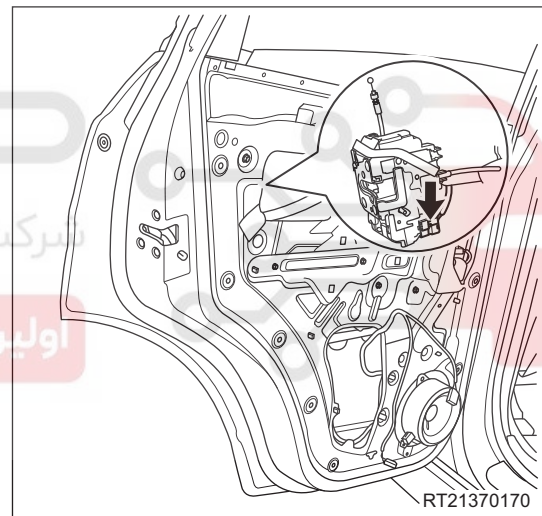
HINT:

- Use the same procedures for the right side and left side.
- Procedures listed below are for the left side.

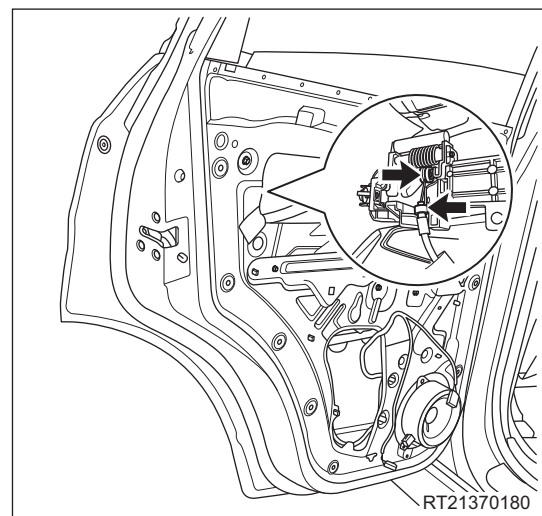
CAUTION

- Be sure to wear safety equipment to prevent accidents when removing rear door lock assembly.
- Try to prevent interior and body paint from being scratched when removing rear door lock assembly.

1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the rear left door protector assembly (See page 61-36).
4. Remove the rear left door assist grip mounting bracket assembly (See page 61-41).
5. Remove the rear left door protective film assembly (See page 61-41).
6. Remove the rear left door lock assembly.
 - a. Disconnect the connector (arrow) from rear door lock assembly.

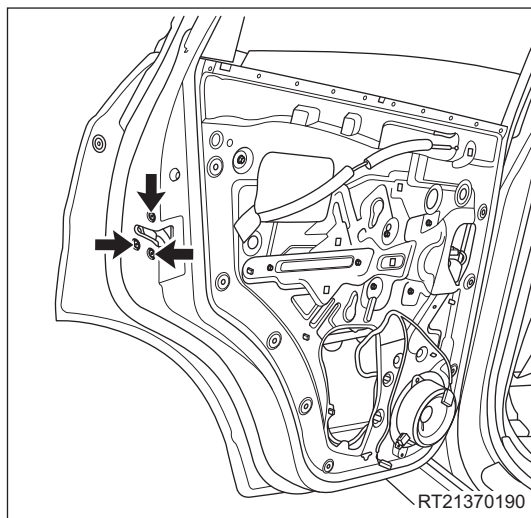


- b. Detach the cable (arrow) connecting rear door lock assembly and rear door assist grip base.



50 - DOOR LOCK

- c. Remove 3 fixing screws (arrow) from rear door lock assembly, and remove the rear door lock assembly. (Tightening torque: 5.8 ± 0.7 N·m)

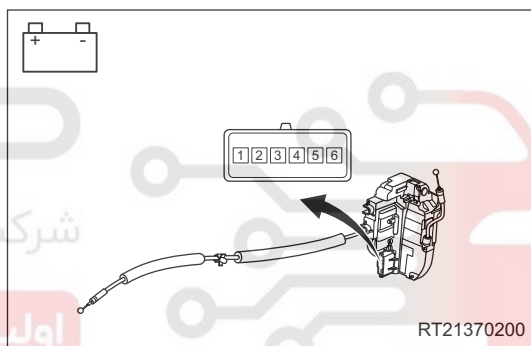


Inspection

- 1. Check rear door lock assembly (fastener assembly).
 - a. Apply battery voltage to terminals of rear door lock assembly (fastener assembly) connector and check if rear door lock assembly works properly according to the table below.

Rear Left Door Lock Assembly

Measurement Condition	Specified Condition
Battery positive (+) → Terminal 3 Battery negative (-) → Terminal 2	Lock
Battery positive (+) → Terminal 2 Battery negative (-) → Terminal 3	Unlock



Rear Right Door Lock Assembly

Measurement Condition	Specified Condition
Battery positive (+) → Terminal 4 Battery negative (-) → Terminal 5	Lock
Battery positive (+) → Terminal 5 Battery negative (-) → Terminal 4	Unlock

If result is not as specified, replace rear door lock assembly.

Installation

Installation is in the reverse order of removal.

CAUTION

- Check if connector is installed correctly when installing rear door lock assembly.
- Install the cable in place when installing rear door lock assembly.
- Check if rear door lock operates properly after installing rear door lock assembly.

دیجیتال خودرو

شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

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Rear Door Lock Striker Assembly

Removal

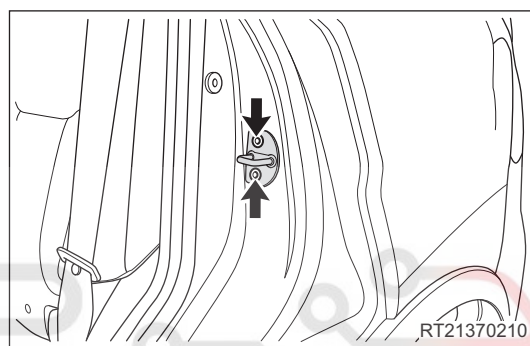
HINT:

- Use the same procedures for the right side and left side.
- Procedures listed below are for the left side.

CAUTION

- Be sure to wear safety equipment to prevent accidents when removing rear door lock striker assembly.
- Try to prevent body paint surface from being scratched when removing rear door lock striker assembly.

1. Remove the rear left door lock striker assembly.
 - a. Remove 2 fixing crews (arrow) from rear left door lock striker assembly.
(Tightening torque: 10 ± 1 N·m)
 - b. Remove the rear left door lock striker assembly.



Installation

Installation is in the reverse order of removal.

CAUTION

- Try to prevent body paint surface from being scratched when installing rear door lock striker assembly.

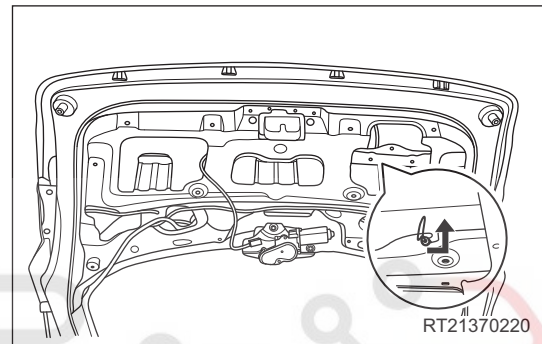
Back Door Lock Assembly

Removal

CAUTION

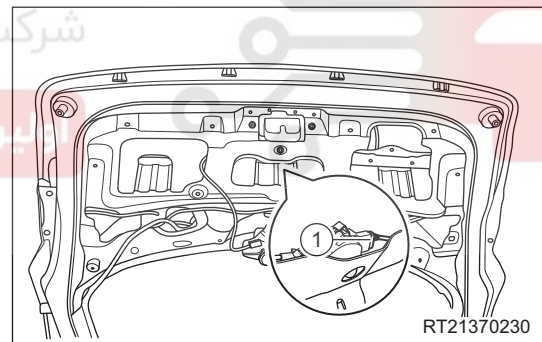
- Be sure to wear safety equipment to prevent accidents when removing back door lock assembly.
- Try to prevent interior and body paint from being scratched when removing back door lock assembly.

1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the back door protector assembly (See page 61-47).
4. Remove the back door lock assembly.
 - a. Disengage the back door lock mechanical opener cable assembly from the slot in the direction of arrow as shown in the illustration.

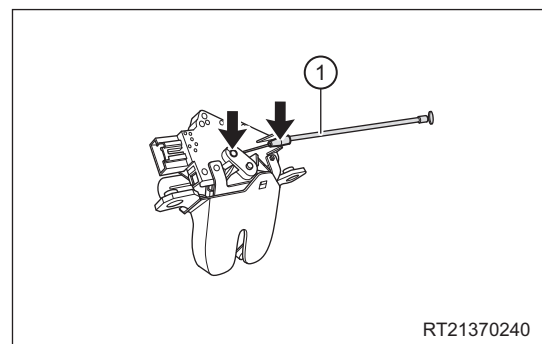


- b. Disconnect the connector (1) from back door lock assembly.

- c. Remove 3 fixing bolts (arrow) from back door lock assembly, and remove the back door lock assembly. (Tightening torque: 10 ± 1 N·m)



5. Remove the back door lock mechanical opener cable assembly.
 - a. Disengage the back door lock mechanical opener cable assembly (arrow) from the slot.
 - b. Remove the back door lock mechanical opener cable assembly (1).



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Inspection

1. Check back door lock assembly.
 - a. Using ohm band of digital multimeter, check for continuity between terminals of back door lock assembly according to the table below.

Measurement Condition	Switch Condition	Specified Condition
Terminal 1 - Terminal 2	ON	Continuity
	OFF	Continuity
Terminal 3 - Terminal 4	ON	Continuity
	OFF	No continuity

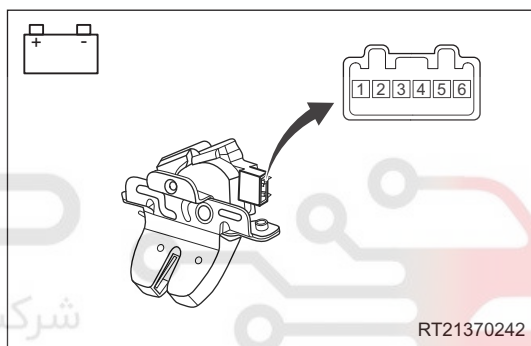
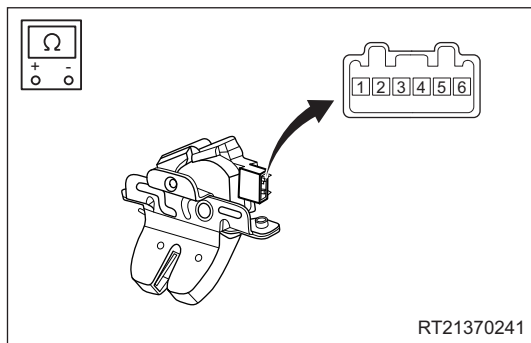
If result is not as specified, replace back door lock assembly.

2. Check back door lock assembly.
 - a. Apply battery voltage to the terminals of back door lock assembly connector and check the operation of back door lock assembly according to the table below.

Rear Right Door Lock Assembly

Measurement Condition	Specified Condition
Battery positive (+) → Terminal 1 Battery negative (-) → Terminal 2	ON

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



Installation

Installation is in the reverse order of removal.

CAUTION

- Check if connector is installed correctly when installing back door lock assembly.
- Install the cable in place when installing back door lock assembly.
- Check if back door lock operates properly after installing back door lock assembly.

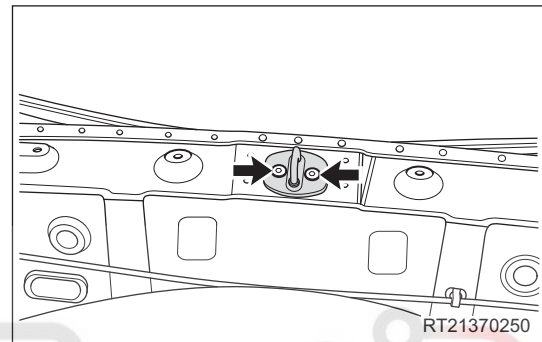
Back Door Lock Striker Assembly

Removal

CAUTION

- Be sure to wear safety equipment to prevent accidents when removing back door lock striker assembly.
- Try to prevent body paint surface from being scratched when removing back door lock striker assembly.

1. Remove the back doorsill pressure plate assembly (See page 63-13).
2. Remove the back door lock striker assembly.
 - a. Remove 2 fixing crews (arrow) from back door lock striker assembly.
(Tightening torque: 10 ± 1 N·m)
 - b. Remove the back lock latch.



Installation

Installation is in the reverse order of removal.

CAUTION

- Try to prevent body paint surface from being scratched when installing back door lock striker assembly.

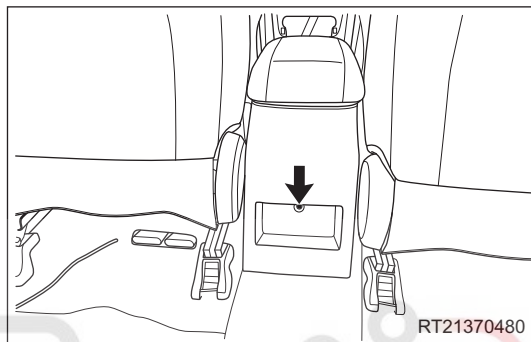
Low Frequency Antenna

Removal

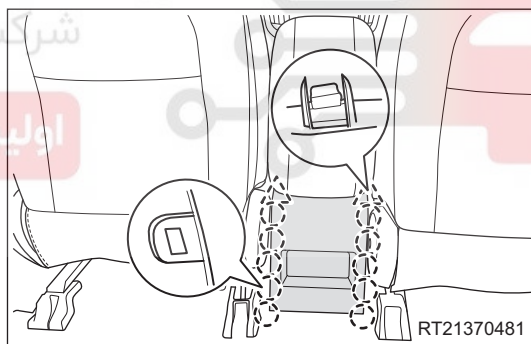
CAUTION

- Be sure to wear safety equipment to prevent accidents when removing low frequency antenna.
- Try to prevent body paint surface from being scratched when removing low frequency antenna.

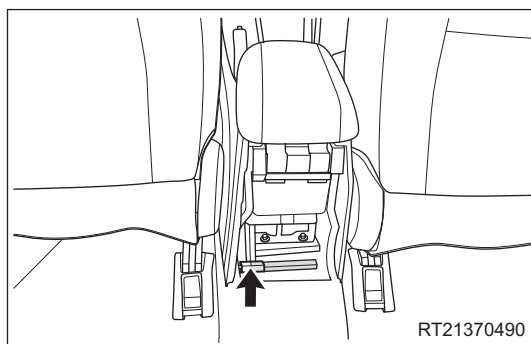
1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the auxiliary fascia console rear cover plate assembly.
 - a. Remove the fixing screw from auxiliary fascia console rear cover plate assembly.
(Tightening torque: 1.5 ± 0.5 N·m)



- b. Open the armrest box assembly.
- c. Using a screwdriver wrapped with protective tape, pry up the claws on auxiliary fascia console rear cover plate assembly, and remove the auxiliary fascia console rear cover plate assembly.



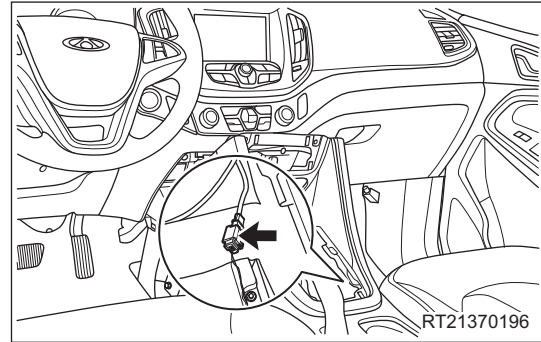
4. Remove the low/medium frequency antenna.
 - a. Disconnect the connector (arrow) from low/medium frequency antenna.
 - b. Using a screwdriver wrapped with protective tape, pry up the clip on low/medium frequency antenna, and remove the low/medium frequency antenna.



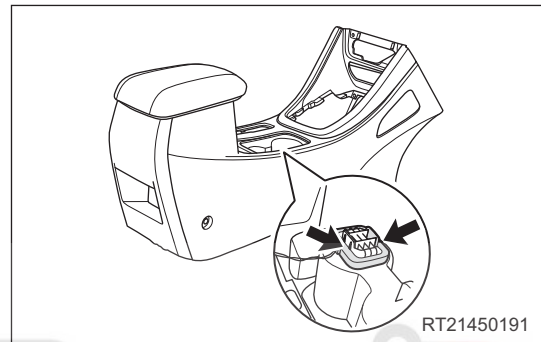
5. Remove the anti-theft coil.
 - a. Remove the auxiliary fascia console assembly (See page 59-9).

HINT:

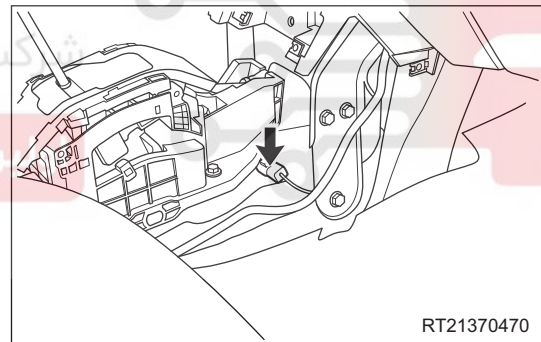
Anti-theft coil connector has been disconnected when removing the auxiliary fascia console assembly.



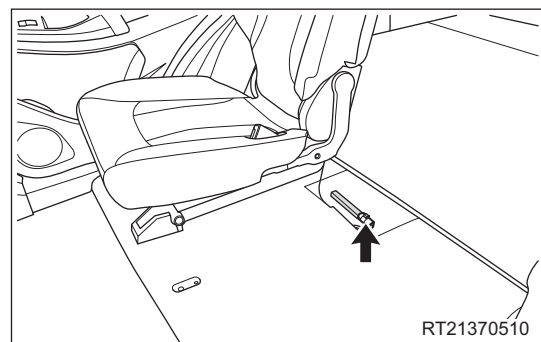
- b. Detach the claws (arrow), and remove the anti-theft coil.



6. Remove the front low frequency antenna.
 - a. Disconnect the connector (arrow) from front low frequency antenna.
 - b. Using a screwdriver wrapped with protective tape, pry up the clip on front low frequency antenna, and remove the front low frequency antenna.



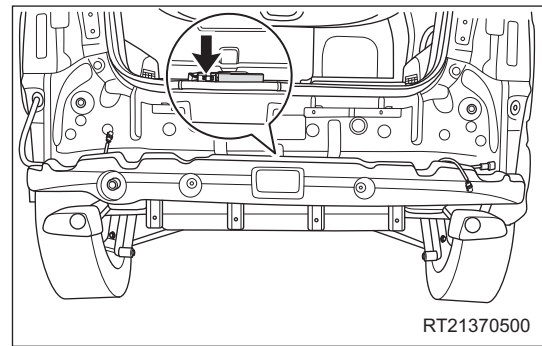
7. Remove the rear low frequency antenna.
 - a. Remove the rear left seat assembly (See page 60-26).
 - b. Disconnect the connector (arrow) from rear low frequency antenna.
 - c. Using a screwdriver wrapped with protective tape, pry up the clip on rear low frequency antenna, and remove the rear low frequency antenna.



8. Remove the rear bumper assembly (See page 62-19).
9. Remove the back door opener low frequency antenna.

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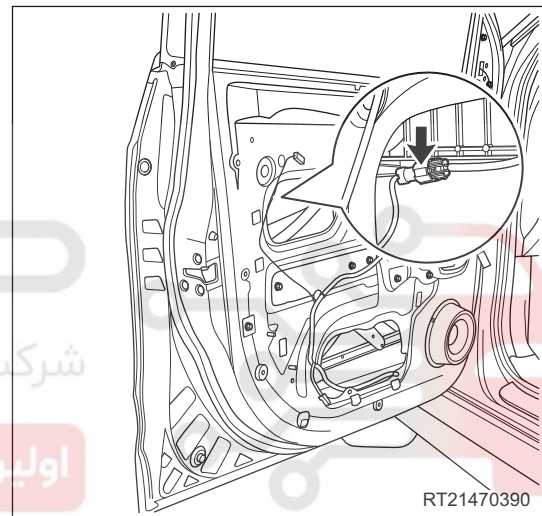
- a. Disconnect the connector (arrow) from back door opener low frequency antenna.
- b. Using a screwdriver wrapped with protective tape, pry up the clip on back door opener low frequency antenna, and remove the back door opener low frequency antenna.



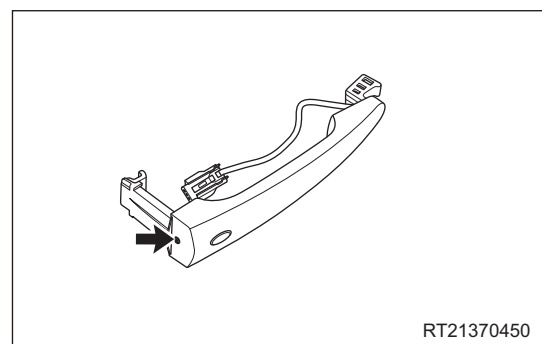
10. Remove the front left door protector assembly (See page 61-23).
11. Remove the front left door assist grip mounting bracket assembly (See page 61-29).
12. Remove the front left door protective film assembly (See page 61-30).
13. Remove the front left door key cylinder protective cover (See page 50-44).
14. Remove the front left door outside handle (See page 61-31).

HINT:

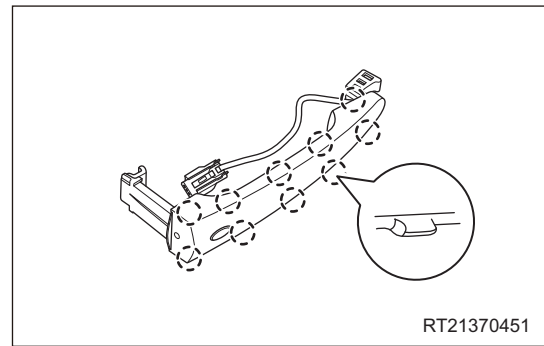
Front door handle sensor connector has been disconnected when removing the front door outside handle.



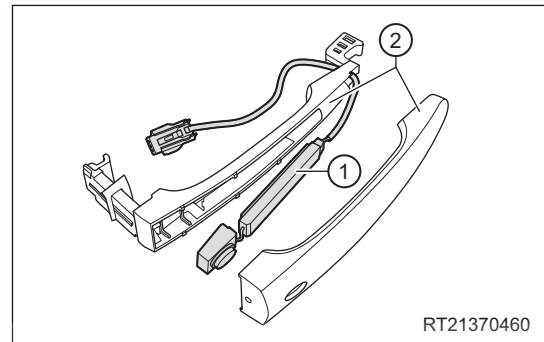
15. Remove the front left door handle sensor (built into low frequency antenna) (take left side as an example).
 - a. Remove the fixing crew (arrow) from front door outside handle.
(Tightening torque: 1.5 N·m)



- b. Using a screwdriver wrapped with protective tape, pry up the claws on front door outside handle.



- c. Separate the front door handle sensor (1) and front door outside handle (2).



Installation

Installation is in the reverse order of removal.

CAUTION

- Clip on low frequency antenna and antenna mounting bracket should be fitted properly when installing low frequency antenna.
- Check if functions are normal after installing low frequency antenna.

Wireless Key

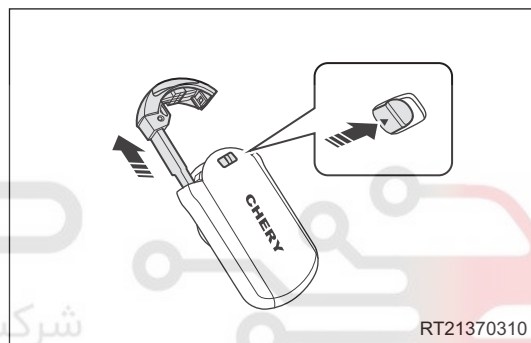
Removal

CAUTION

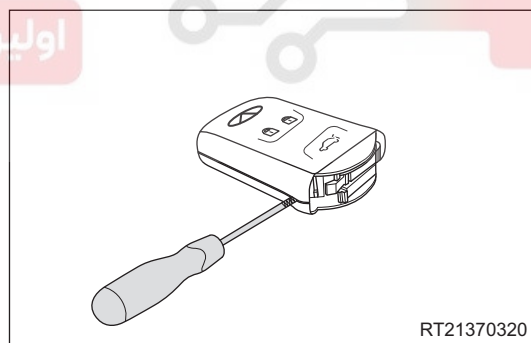
- DO NOT push the terminals with your hands when removing wireless key cover.
- Install battery positive and negative correctly when removing wireless key cover.
- DO NOT pry up the battery forcibly when removing wireless key cover, otherwise the terminals may be damaged.
- DO NOT touch the battery with wet hands when removing wireless key cover, otherwise the water may cause rust.
- DO NOT touch or move any components inside the transmitter when removing wireless key cover. Failure to do so may interfere with proper operation.

1. Remove the wireless key (w/ passive entry & passive start).

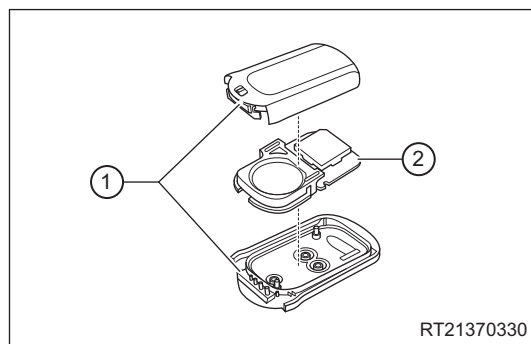
a. Remove the mechanical key billet in the direction of arrow as shown in the illustration.



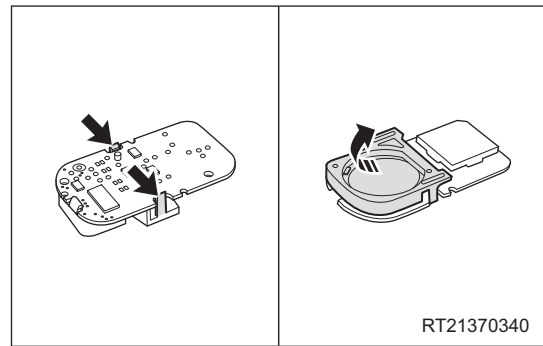
b. Using a screwdriver wrapped with protective tape, pry out the wireless key cover.



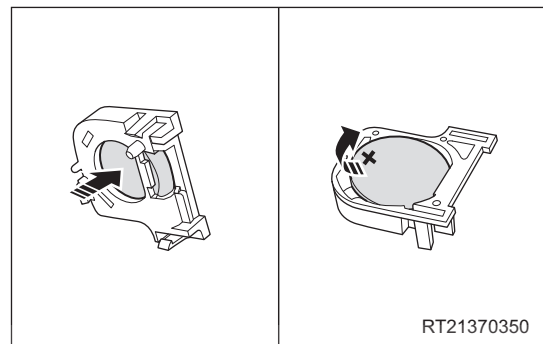
c. Separate the wireless key cover (1) and chip (2).



d. Detach the claws (arrow) on battery holder, and remove the battery holder in the direction of arrow.

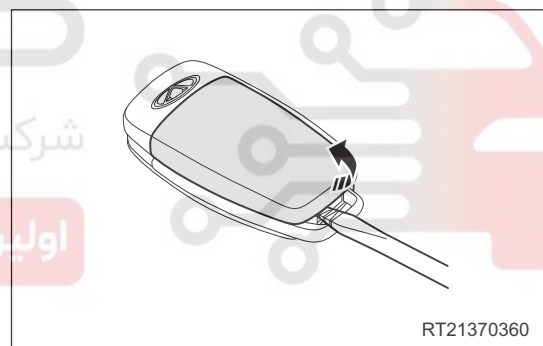


e. Take out the battery in the direction of arrow as shown in the illustration.

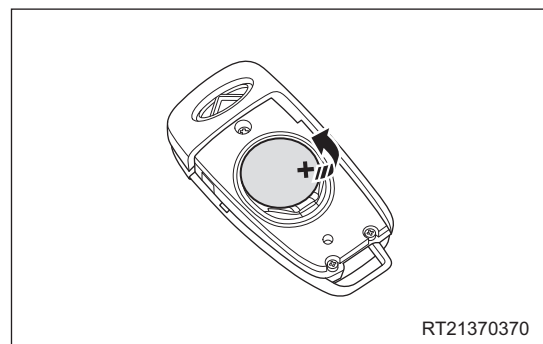


2. Remove the wireless key (w/o passive entry & passive start).

a. Using a screwdriver wrapped with protective tape, pry out the wireless key cover.

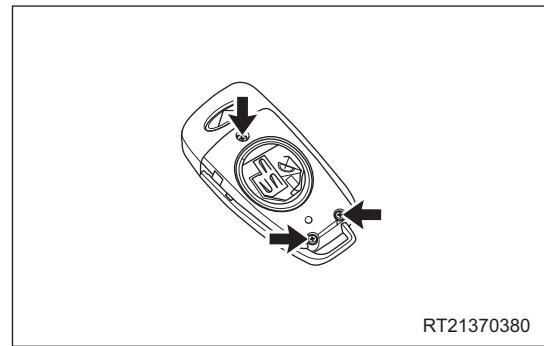


b. Take out the wireless key battery in the direction of arrow as shown in the illustration.

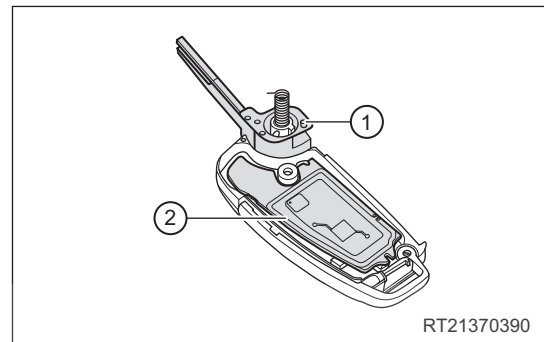


50 - DOOR LOCK

- c. Remove 3 fixing screws (arrow) from wireless key upper cover.
(Tightening torque: 0.4 ± 0.1 N·m)



- d. Remove the wireless key upper cover.
e. Remove the wireless key billet (1).
f. Remove the wireless key chip (2).



Installation

Installation is in the reverse order of removal.

CAUTION

- Check that the wireless key operates properly after installing the wireless key.

INSTRUMENT CLUSTER

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دیجیتال خودرو

شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

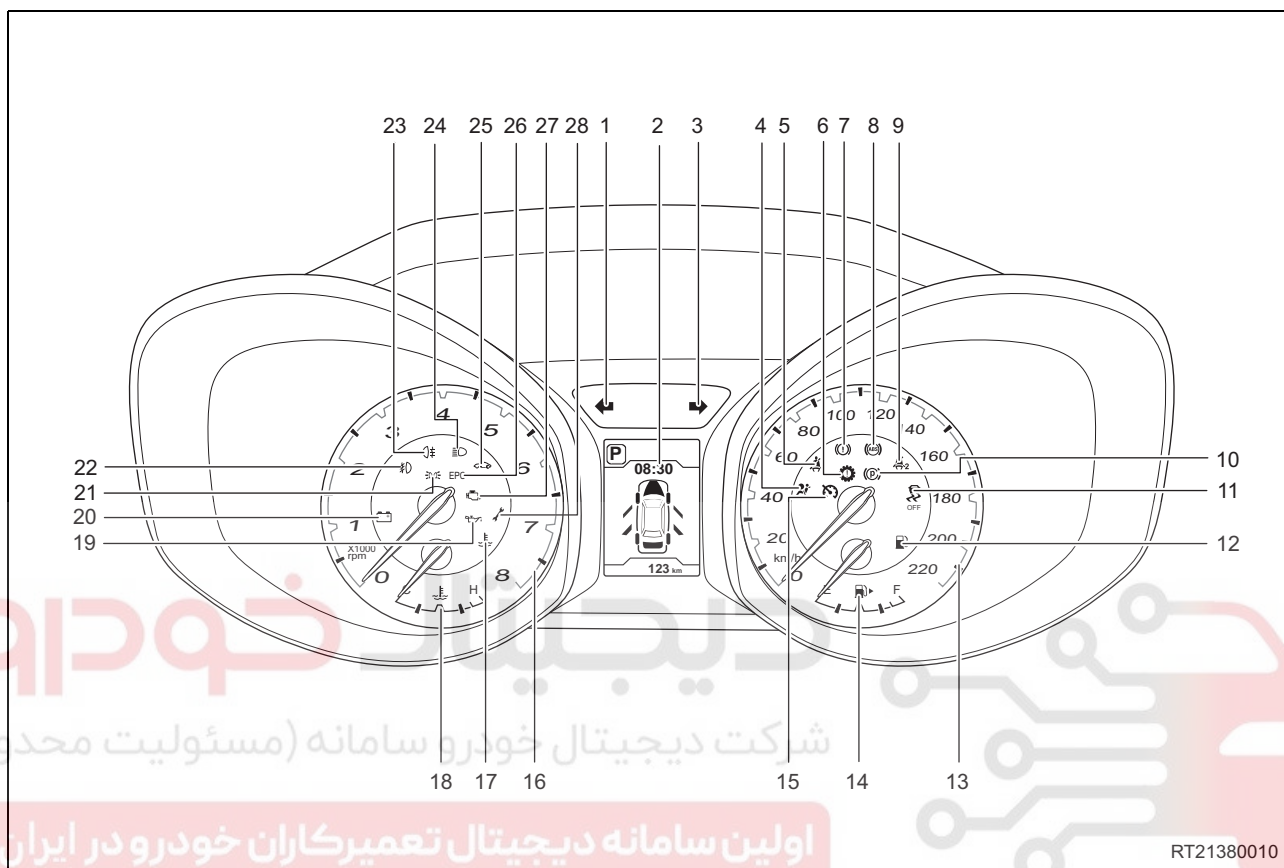
اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



GENERAL INFORMATION

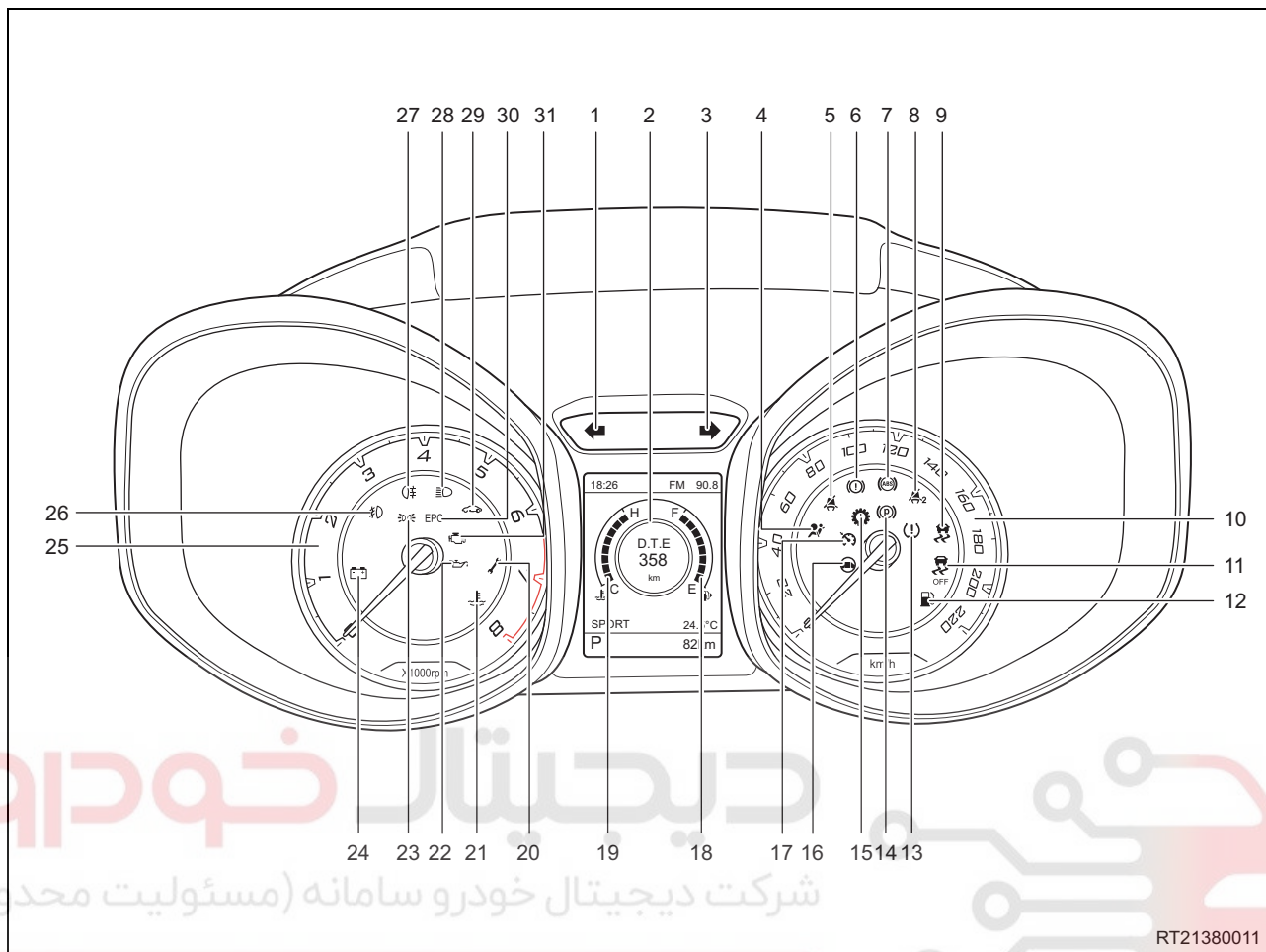
Description

Instrument Cluster (Type A)



1 - Left Turn Signal Indicator	2 - Multi-information Display
3 - Right Turn Signal Indicator	4 - SRS Warning Light
5 - Driver Seat Belt Reminder Light	6 - Transmission Malfunction Warning Light (for CVT Model)
7 - Brake System Warning Light	8 - ABS Warning Light
9 - Front Passenger Seat Belt Reminder Light	10 - Parking Brake Indicator
11 - ESP OFF Indicator (if equipped)	12 - Low Fuel Level Warning Light
13 - Speedometer	14 - Fuel Gauge
15 - Cruise Indicator (if equipped)	16 - Tachometer
17 - High Coolant Temperature Warning Light	18 - Engine Coolant Temperature Gauge
19 - Low Engine Oil Pressure Warning Light	20 - Charging System Warning Light
21 - Position Indicator	22 - Front Fog Indicator
23 - Rear Fog Indicator	24 - Headlight High Beam Indicator
25 - Engine Immobilizer System Warning Light	26 - EPC Warning Light
27 - Engine Malfunction Warning Light	28 - Maintenance Indicator

Instrument Cluster (Type B)



RT21380011

1 - Left Turn Signal Indicator	2 - Multi-information Display
3 - Right Turn Signal Indicator	4 - SRS Warning Light
5 - Driver Seat Belt Reminder Light	6 - Brake System Warning Light
7 - ABS Warning Light	8 - Front Passenger Seat Belt Reminder Light
9 - ESP Warning Light (if equipped)	10 - Speedometer
11 - ESP OFF Indicator (if equipped)	12 - Low Fuel Level Warning Light
13 - Low Tire Pressure Warning Light (if equipped)	14 - Parking Brake Indicator
15 - Transmission Malfunction Warning Light (for CVT Model)	16 - Electric Power Steering System Warning Light (if equipped)
17 - Cruise Indicator (if equipped)	18 - Fuel Gauge
19 - Engine Coolant Temperature Gauge	20 - Maintenance Indicator
21 - High Coolant Temperature Warning Light	22 - Low Engine Oil Pressure Warning Light
23 - Position Indicator	24 - Charging System Warning Light
25 - Tachometer	26 - Front Fog Indicator
27 - Rear Fog Indicator	28 - Headlight High Beam Indicator
29 - Engine Immobilizer System Warning Light	30 - EPC Warning Light
31 - Engine Malfunction Warning Light	

The instrument cluster is a highly integrated electronic instrument display system and mainly consists of engine coolant temperature gauge, tachometer, fuel gauge, speedometer, multi-information display and warning indication symbols. The multi-information display mainly displays vehicle information, which contains the following items: clock, trip, total mileage, instantaneous fuel consumption and speed.

Operation

Instrument cluster is located above the upper left of instrument panel assembly, which is used to monitor and display the operation status of each system and component in vehicle. Instrument cluster receives signals from each sensor and switch, and displays the operation status of each system through meter, multi-information display, indicator and warning lights. It also reminds and informs driver by flashing lights and sounding buzzer. As a result, it will be helpful for driver to eliminate possible troubles in time, thus avoiding malfunctions or accidents efficiently.

Specification

Torque Specification

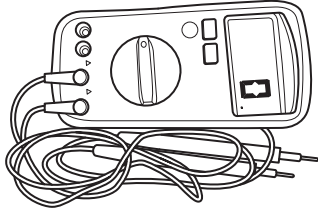
Description	Torque (N·m)
Instrument Cluster Fixing Screw	1.5 ± 0.5

Tools

Special Tool

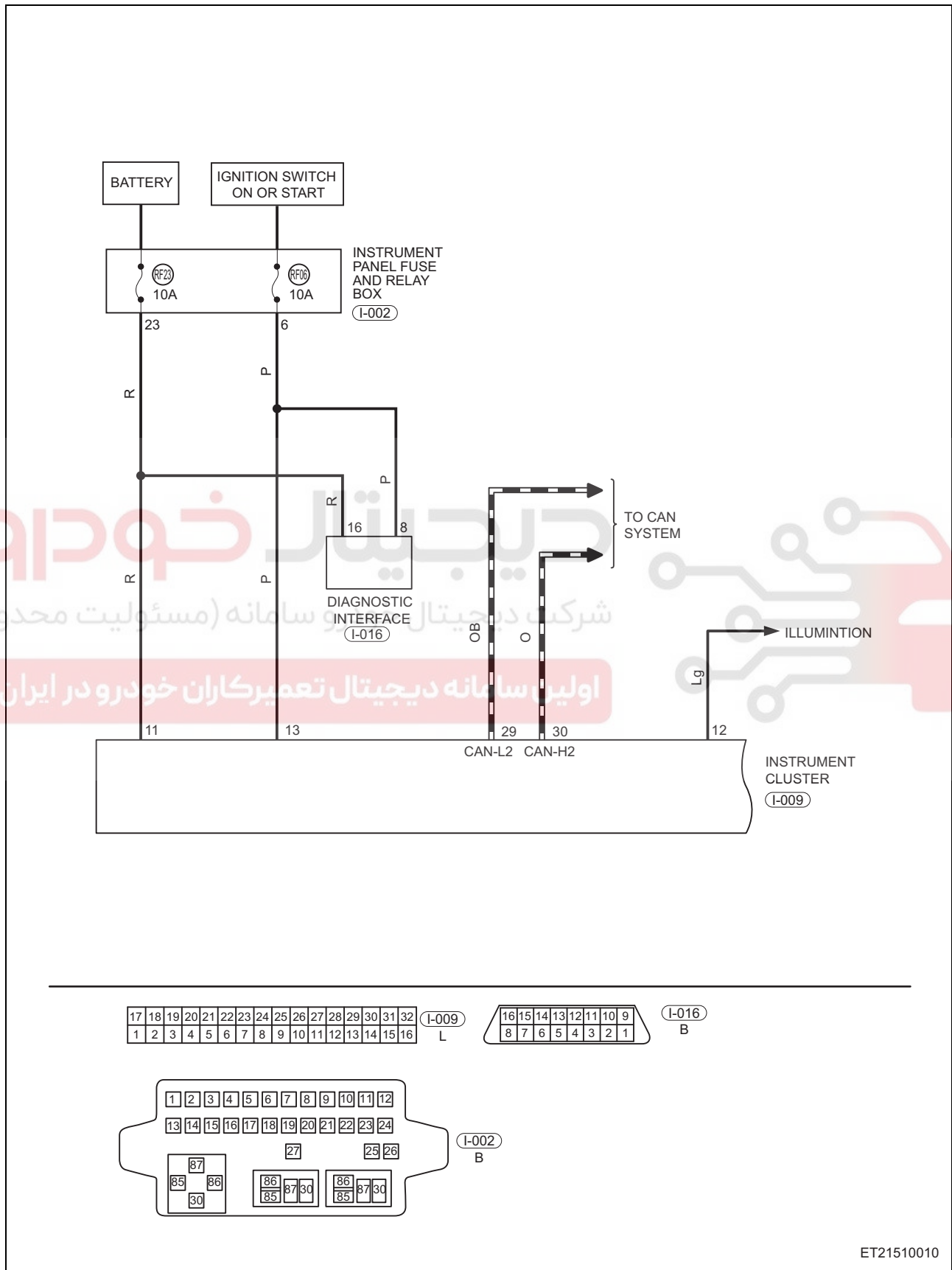
<p>X-431 3G Diagnostic Tester</p>	 <p>RCH0000001</p>
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General Tool

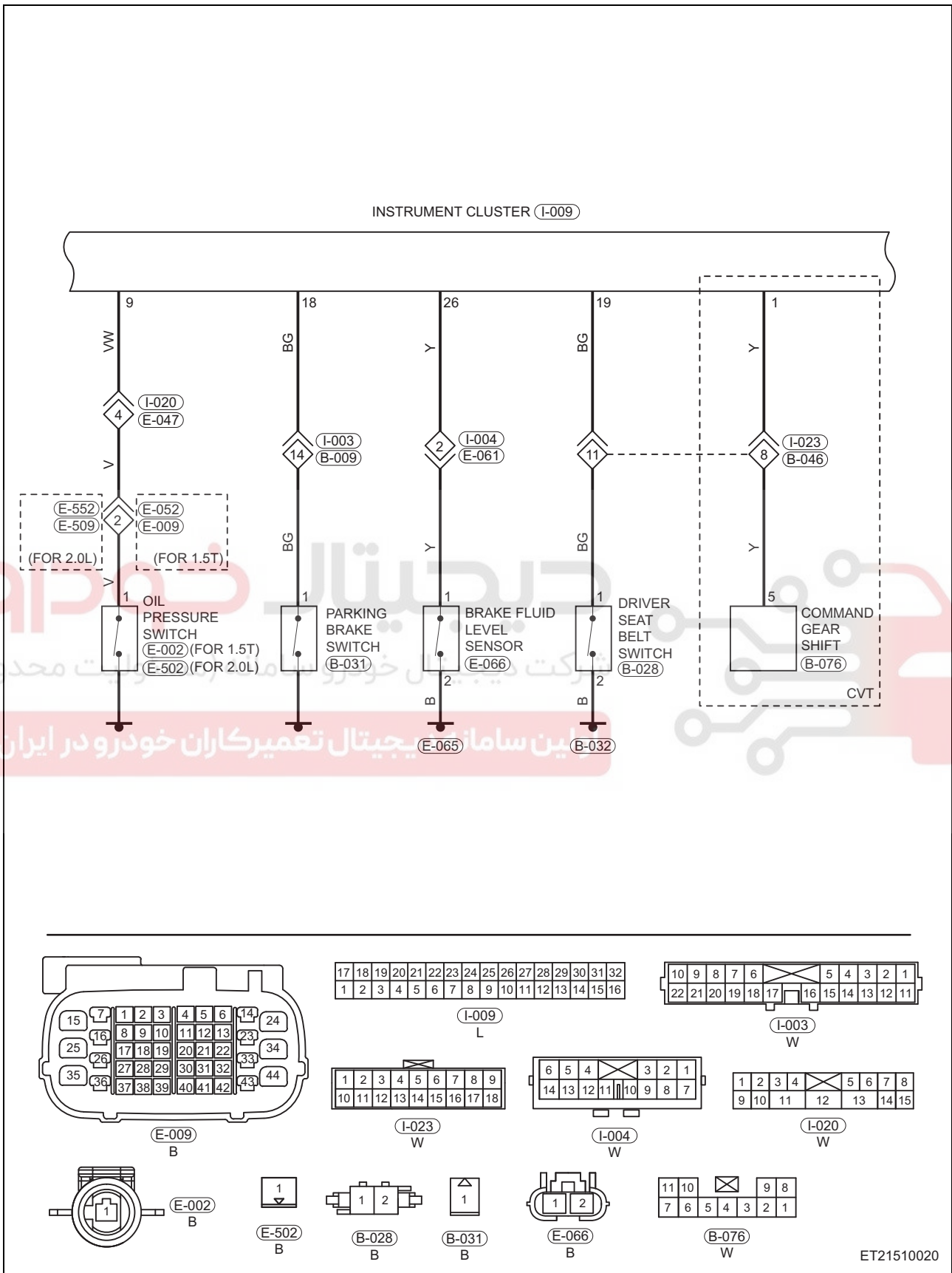
<p>Digital Multimeter</p>	 <p>RCH0000002</p>
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Circuit Diagram

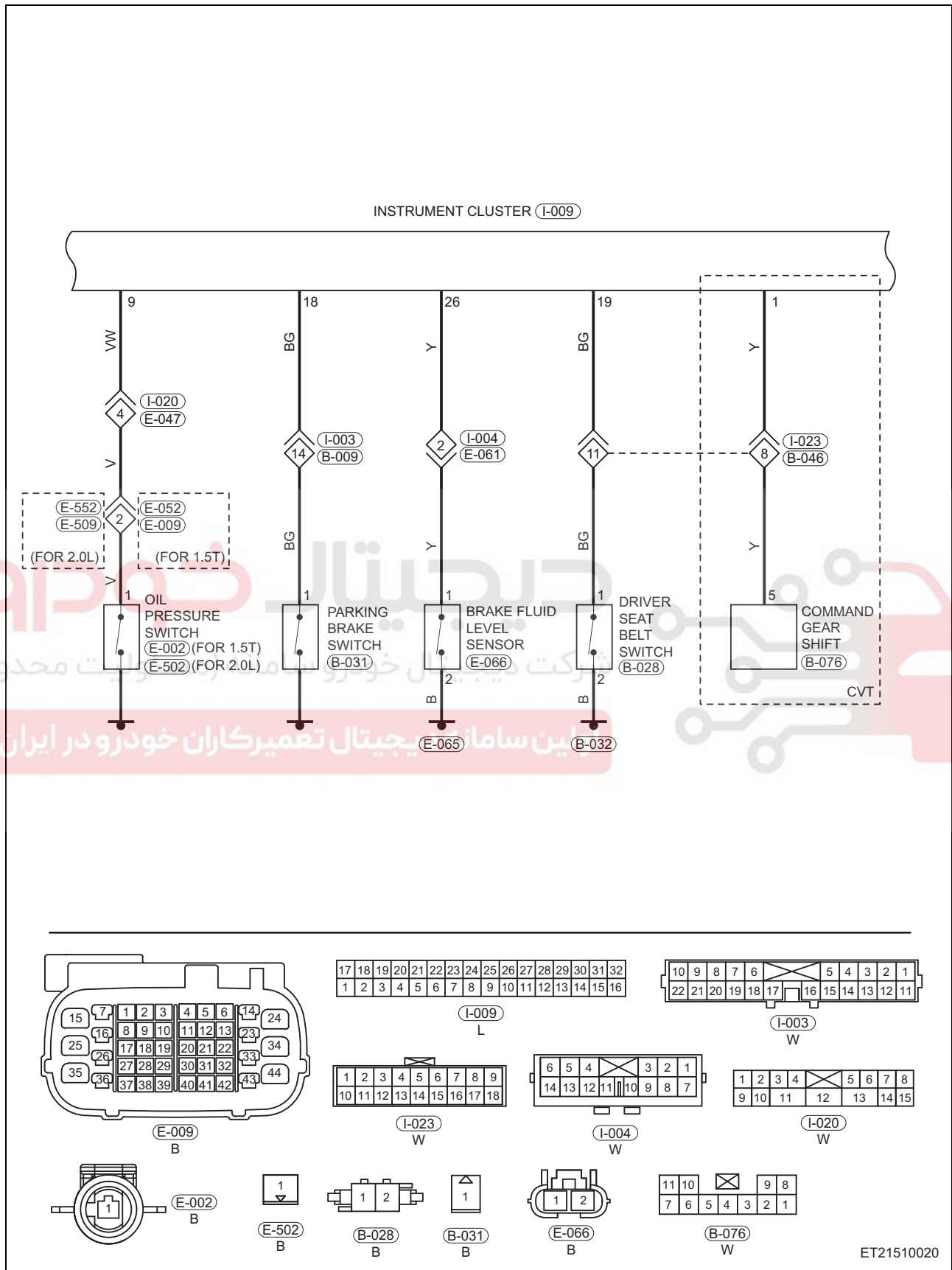
Instrument Cluster (Page 1 of 7)



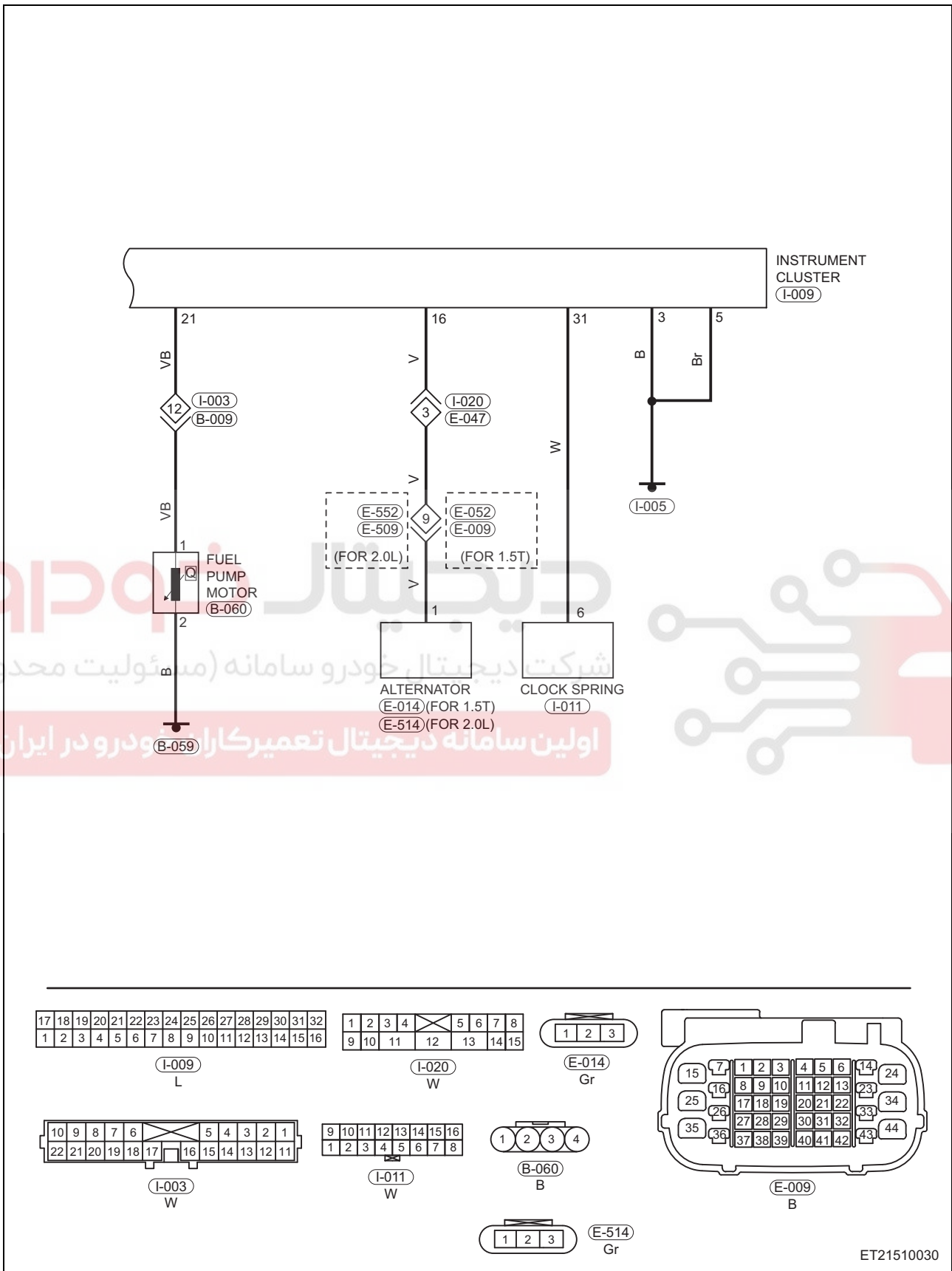
Instrument Cluster (Page 2 of 7) (1.5 T)



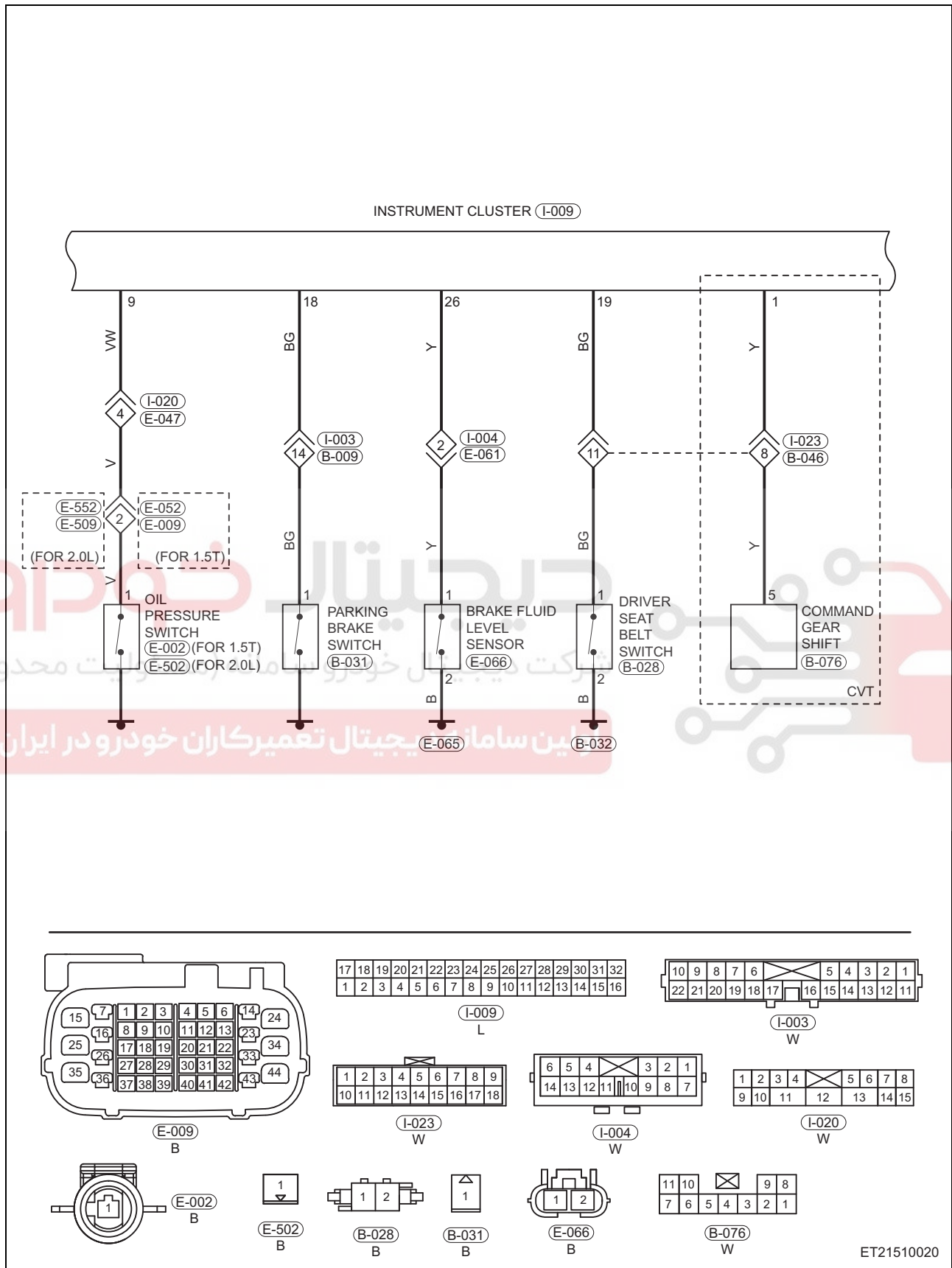
Instrument Cluster (Page3 of 7) (2.0 T)



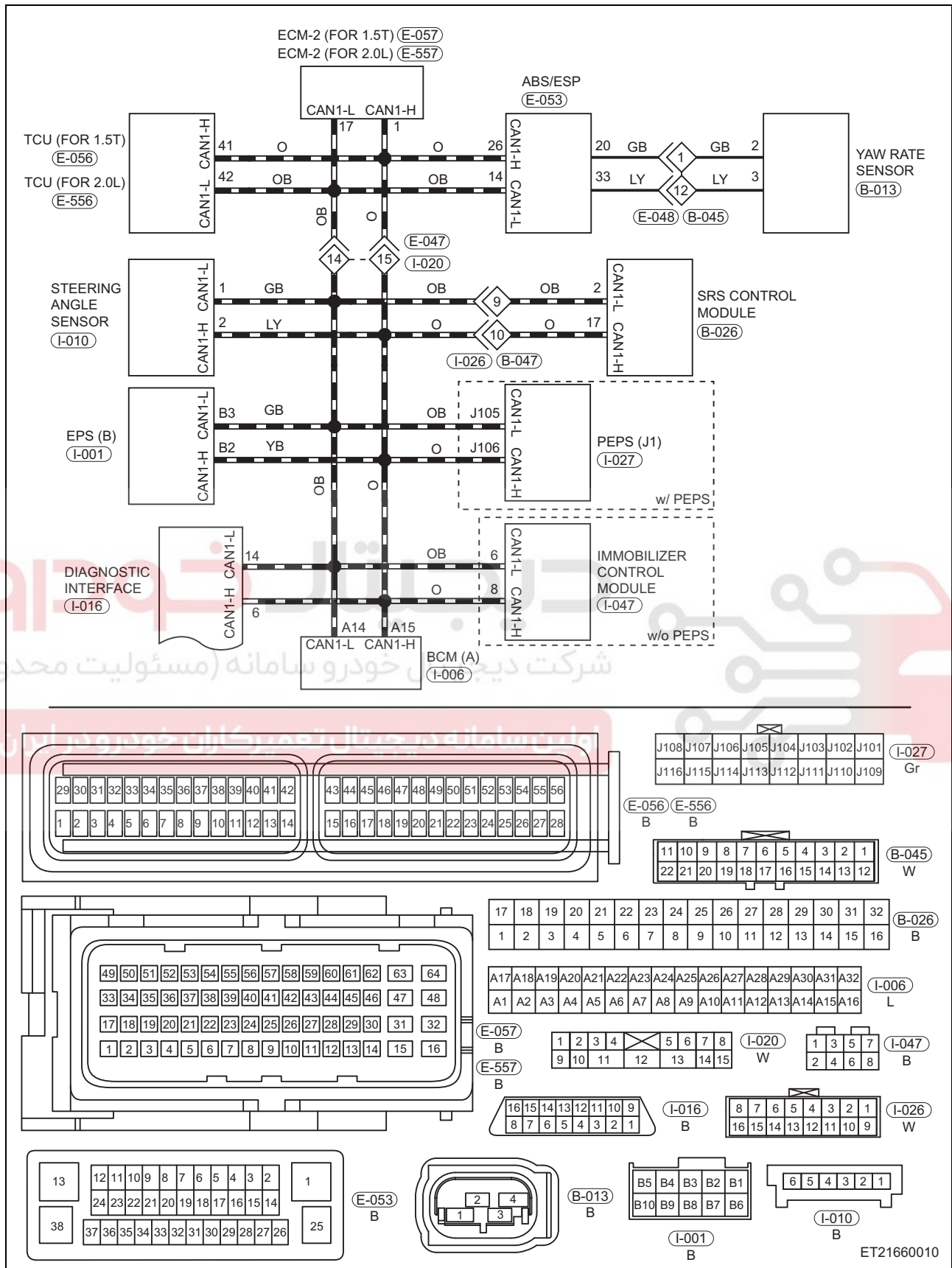
Instrument Cluster (Page 4 of 7) (1.5 T)



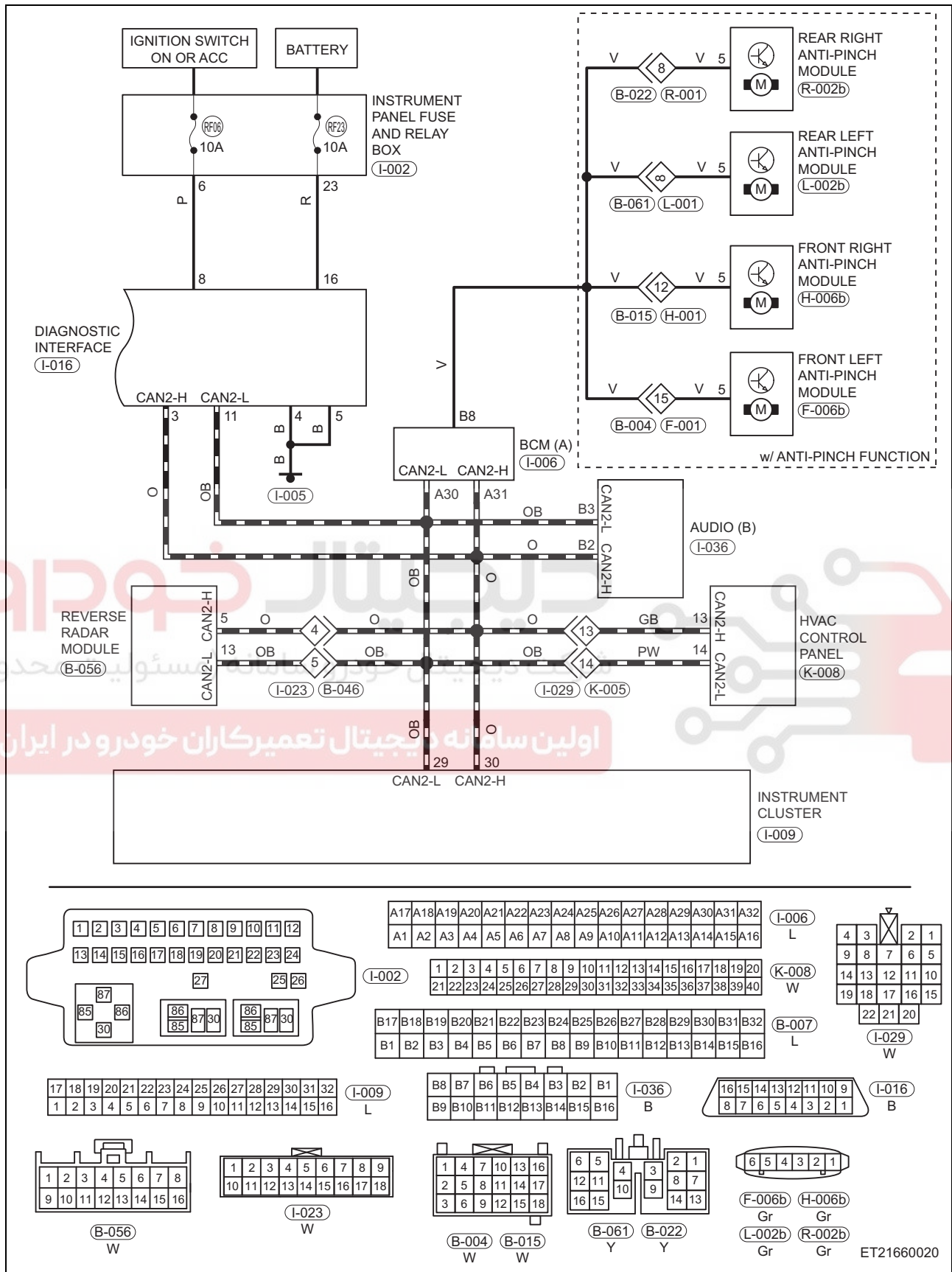
Instrument Cluster (Page 5 of 7) (2.0 T)



Instrument Cluster (Page 6 of 7)



Instrument Cluster (Page 7 of 7)



Instrument Cluster Terminal List

Terminal No.	Definition	Terminal No.	Definition
1	Gear Signal	17	-
2	-	18	Parking Brake Switch Signal
3	Ground	19	Driver Seat Belt Unfasten Indication Signal
4	-	20	-
5	Ground	21	Fuel Level Indication Signal
6	-	22	-
7	-	23	-
8	-	24	-
9	Engine Oil Pressure Indication Signal	25	-
10	-	26	Brake System Malfunction Indication Signal
11	Battery Power Supply	27	-
12	Illumination Input	28	-
13	Ignition Switch Power Supply	29	CAN-L
14	-	30	CAN-H
15	-	31	Steering Wheel Key Input
16	Charging System Indication Signal	32	-

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DIAGNOSIS & TESTING

Problem Symptoms Table

HINT:

Use the table below to help determine the cause of the problem symptoms. Check each suspected area in sequence. Repair or replace the faulty components, or adjust as necessary.

Symptom	Suspected Area	See page
Entire instrument cluster does not operate	Fuse	68-65
	Wire harness or connector	-
	Instrument cluster	51-48
Speed display abnormal	Wheel speed	-
	Wire harness or connector	-
	Instrument cluster	51-48
Tachometer abnormal	Engine speed sensor	-
	Wire harness and connector	-
	Instrument cluster	51-48
	Engine Control Module (ECM)	07-303
Fuel gauge abnormal	Fuel level sensor	-
	Wire harness or connector	-
	Instrument cluster	51-48
Position indicator abnormal	Position light switch (combination switch)	48-68
	Wire harness or connector	-
	Body Control Module (BCM)	-
	Instrument cluster	51-48
Turn signal indicator abnormal	Turn light switch (headlight adjustment switch assembly)	48-67
	Wire harness or connector	-
	Body Control Module (BCM)	-
	Instrument cluster	51-48
High beam indicator abnormal	High beam switch (headlight adjustment switch assembly)	48-67
	Wire harness or connector	-
	Body Control Module (BCM)	-
	Instrument cluster	51-48
Rear fog indicator abnormal	Rear fog light switch (headlight adjustment switch assembly)	48-67
	Wire harness or connector	-
	Body Control Module (BCM)	-
	Instrument cluster	51-48

Symptom	Suspected Area	See page
Front fog indicator abnormal	Front fog light switch (headlight adjustment switch assembly)	48-67
	Wire harness or connector	-
	Body Control Module (BCM)	-
	Instrument cluster	51-48
Charging system warning light abnormal	Alternator	27-10
	Wire harness or connector	-
	Instrument cluster	51-48
Low engine oil pressure warning light abnormal	Engine oil level	-
	Oil pressure switch	21-14
	Wire harness or connector	-
	Instrument cluster	51-48
ABS warning light abnormal	Wire harness or connector	-
	Instrument cluster	51-48
	ABS control module assembly	36-86
Low fuel level warning light abnormal	Fuel amount in tank	-
	Fuel level sensor	-
	Wire harness or connector	-
	Instrument cluster	51-48
Coolant temperature warning light abnormal	High engine coolant temperature	-
	Coolant temperature sensor	07-67
	Wire harness or connector	-
	Instrument cluster	51-48
	Engine Control Module (ECM)	07-303
Engine malfunction warning light abnormal	Communication line or connector	-
	Instrument cluster	51-48
	Engine Control Module (ECM)	07-303
SRS warning light abnormal	Communication line or connector	-
	Instrument cluster	51-48
	SRS control module assembly	43-84
Driver seat belt reminder light abnormal	Driver seat belt buckle switch	44-11
	Wire harness or connector	-
	Instrument cluster	51-48
Front passenger seat belt reminder light abnormal	Front passenger seat belt buckle switch	-
	Wire harness or connector	-
	Instrument cluster	51-48

Symptom	Suspected Area	See page
Brake system warning light abnormal	Low brake fluid level	-
	Parking brake switch assembly	37-27
	Wire harness or connector	-
	Instrument cluster	51-48

Diagnosis Tools

X-431 3G Diagnostic Tester

When connecting X-431 3G diagnostic tester:

- Connect X-431 3G diagnostic tester (the latest software) to Data Link Connector (DLC) for communication with vehicle.
- DLC is Located on the instrument panel crossmember of driver side.
- DLC uses trapezium design and can accommodate up to 16 terminals.

Digital Multimeter

When using digital multimeter:

- Troubleshoot electrical problems and wiring systems.
- Look for basic fault.
- Measure voltage, current and resistance.

DTC Confirmation Procedure

Confirm that battery voltage is normal before performing the following procedures.

- Turn ignition switch to LOCK.
- Connect the X-431 3G diagnostic tester (the latest software) to Data Link Connector (DLC), and make it communicate with vehicle electronic module by data network.
- Turn ignition switch to ON.
- Using X-431 3G diagnostic tester to record and clear the DTCs stored in the Body Control Module (BCM).
- Turn ignition switch to LOCK and wait for a few seconds.
- Turn ignition switch to ON and select "Read Code".
- If DTC is detected, the malfunction indicated by the DTC is current. Go to the diagnosis procedure - Step 1.
- If the DTC is not detected, the malfunction indicated by the DTC is intermittent. Please refer to "Intermittent DTC Troubleshooting".

Intermittent DTC Troubleshooting

If malfunction is intermittent, perform the followings:

- Check if connectors are loose.
- Check if wire harnesses are worn, pierced, pinched or partially broken.
- Wiggle related wire harnesses and connectors and observe if signal is interrupted in the related circuit.
- If possible, try to duplicate the conditions under which the DTC was set.
- Look for the data that has changed or the DTC to reset during the wiggle test.
- Look for broken, bent, protruded or corroded terminals.
- Inspect the mounting areas of instrument cluster, wire harness or wire harness connector and so on for damage, foreign matter, etc. that will cause incorrect signals.
- Check and clean all wire harness connectors and grounding parts related to the current DTC.

- Remove the instrument cluster from the malfunctioning vehicle and install it to a new vehicle and perform a test. If DTC cannot be cleared, the instrument cluster is malfunctioning. If the DTC can be cleared, reinstall the instrument cluster to original vehicle.
- If multiple trouble codes were set, use the circuit diagrams to look for any common ground circuit or power supply circuit applied to the DTC.
- Refer to Technical Bulletin that is applied to the malfunction.

Ground Inspection

Groundings are very important to entire circuit system, which are normal or not can seriously affect the entire circuit system. Ground points are often exposed to moisture, dirt and other corrosive environments. Corrosion (rust) and oxidation can increase load resistance. This situation will seriously affect the normal operation of the circuit. The operations to check the ground points are as follows:

1. Remove the ground bolt or nut.
2. Check all contact surfaces for tarnish, dirt and rust, etc.
3. Clean as necessary to ensure that contacting is in a good condition.
4. Reinstall the ground bolt or nut securely.
5. Check if add-on accessories interfere with the ground circuit.
6. If several wire harnesses are crimped into one ground eyelet terminal, check if they are installed correctly. Make sure all wire harnesses are clean, securely fastened and providing a good ground path.

Diagnosis Procedure

HINT:

Use the following procedures to troubleshoot the instrument cluster.

1 Vehicle brought to workshop

NEXT

2 Check battery voltage

Standard voltage: 11 to 14 V

If the voltage is below 11 V, recharge or replace the battery before proceeding to next step.

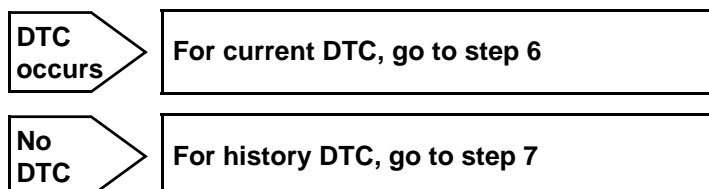
NEXT

3 Customer problem analysis

NEXT

4 Check for DTCs (current DTC and history DTC)

51



5 Problem repair (no DTC), then go to step 8

NEXT

6 Troubleshoot according to Diagnostic Trouble Code (DTC) chart, then go to step 8

NEXT

7 Troubleshoot according to Problem Symptoms Table, then go to step 8

NEXT

8 Adjust, repair or replace

NEXT

9 Confirm troubleshooting and perform test

NEXT

10 End اولین سامانه دیجیتال تعمیرکاران خودرو

ICM Configuration Learning

When replacing ICM assembly, configuration error will be occurred in ICM before configuration operation is not written by diagnostic tester, which will cause abnormal vehicle function. Therefore, for normal vehicle running, use diagnostic tester to rewrite configuration code for new controller.

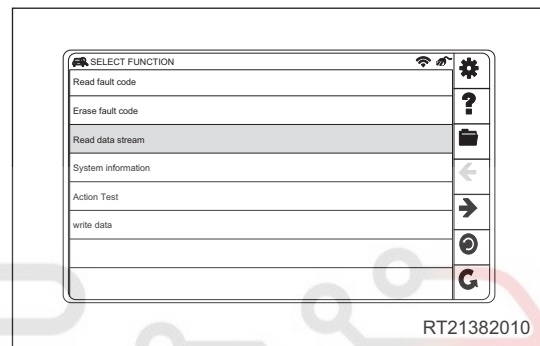
CAUTION

- PC diagnostic tester can use a copy/paste approach to input the configuration code, but X431 diagnostic tester needs to input configuration code manually due to hardware limit.
- Overall length of vehicle soft configuration code is 98 bytes (196 characters), and the code only includes numbers 0 - 9 and letters A - F.

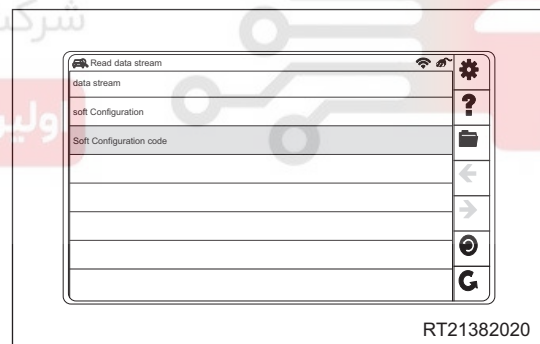
Operation Procedure

1. If configuration code in malfunctioning vehicle can be read, record code and perform following procedures.

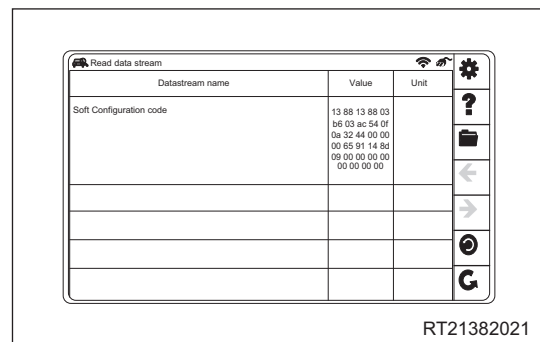
- Before replacing ICM, first enter "SELECT FUNCTION" screen.
- Enter "Read data stream" screen.



- Enter "Soft Configuration code" to read ICM configuration code.

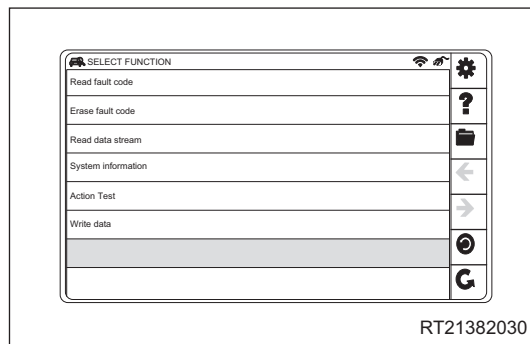


- Record ICM configuration code.

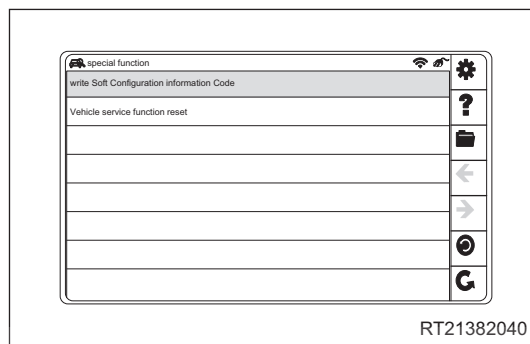


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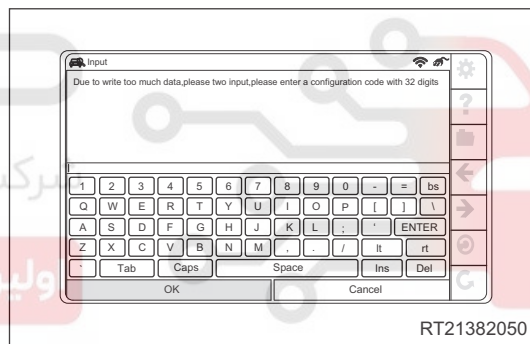
e. Enter "special function" after replacing ICM.



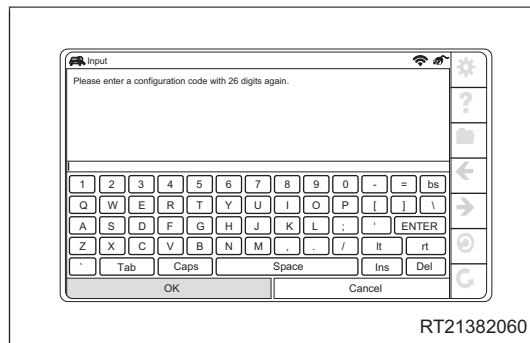
f. Enter "write Soft Configuration information Code" screen and write recorded configuration code into new ICM.



g. Due to too much written data, please enter it at twice. First enter a configuration code with 32 bits, then click OK.



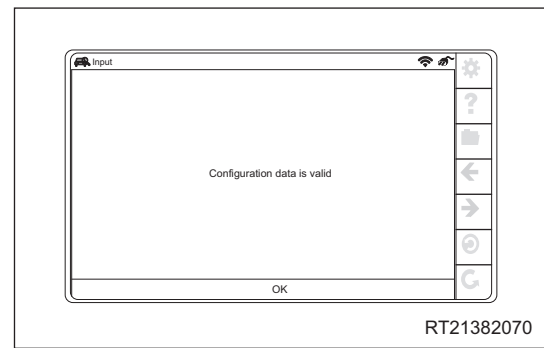
h. Enter a configuration code with 26 bits again.



CAUTION

- Vehicle soft configuration code only includes numbers 0 - 9 and letters A - F without space and error code.

- i. Turn ignition switch to OFF and then to ON, enter "SELECT FUNCTION/Read data stream/ICM configuration information" again, read ICM configuration code and compare it with the read code. Check if write is correct manually. If correct, DTC clearing is finished; if incorrect, perform configuration learning again.



2. If configuration code cannot be read or connected due to damaged BCM, check vehicle chassis number, then report it to after-sale service department of sale company and obtain the vehicle configuration code.
 - a. After replacing ICM, enter "body control system/special function/write vehicle configuration code" screen, and write the obtained vehicle configuration code into ICM.
 - b. Enter "body control system/Read data stream/ICM configuration information" screen and read ICM configuration code. If not all of read configuration codes is F, write is successful; if all of read configuration codes are F, write configuration code again.
 - c. Enter "body control system/clear code" and enter "body control system/read DTC". If there is DTC, write configuration code again; if no DTC, exit the diagnostic tester and ICM replacement is successful. The operation if finished.

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شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



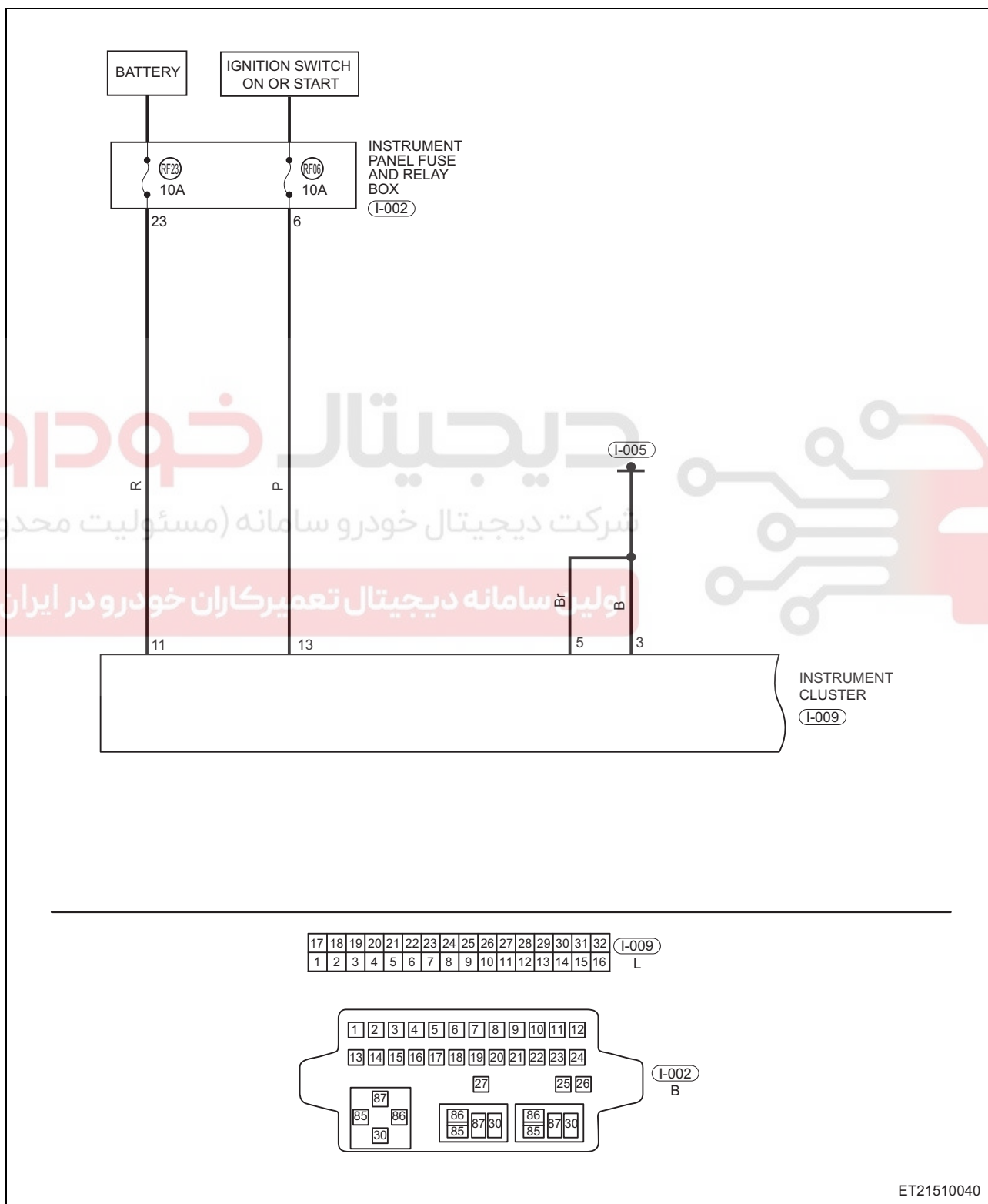
Diagnostic Trouble Code (DTC) Chart

DTC Code	DTC Definition
B1100-13	Power Supply Circuit Open
B1100-16	Power Supply Circuit Voltage Below Threshold
B1100-17	Power Supply Circuit Voltage Above Threshold
B1101-11	Fuel Sensor Fault Circuit Short to Ground
B1101-15	Fuel Sensor Fault Circuit Short to Battery or Open
B1103-00	LED Airbag Fault No Subtype Information
B1104-41	EEPROM Checksum Error
U0100-87	Lost Communication with EMS
U0101-87	Lost Communication with TCM
U0114-87	Lost Communication with TMM
U0126-87	Lost Communication with SAM
U0127-87	Lost Communication with TPM
U0129-87	Lost Communication with BSM
U0131-87	Lost Communication with EPS
U0140-87	Lost Communication with BCM
U0151-87	Lost Communication with ICM
U0164-87	Lost Communication With CLM
U0167-87	Lost Communication with IMMO
U0214-87	Lost Communication with PEPS
U0073-88	CAN Bus Off
U1300-55	Software Configuration Error, Not Configured

DTC	B1100-13	Power Supply Circuit Open
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DTC	B1100-16	Power Supply Circuit Voltage Below Threshold
-----	----------	--

DTC	B1100-17	Power Supply Circuit Voltage Above Threshold
-----	----------	--



Self-diagnosis Detection Logic

DTC Code	DTC Definition	DTC Detection Condition	Possible Cause
B1100-13	Power Supply Circuit Open	Ignition switch ON	<ul style="list-style-type: none"> • Charging system • Wire harness or connector • Instrument cluster
B1100-16	Power Supply Circuit Voltage Below Threshold		
B1100-17	Power Supply Circuit Voltage Above Threshold		

 CAUTION

- When performing circuit diagnosis and test, always refer to circuit diagram for specific circuit and component information.

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Diagnosis Procedure

1 Check battery

- a. Using a digital multimeter, measure the voltage between positive battery terminal and negative battery terminal.
- b. The battery voltage should be between 11 and 14 V.

NG → **Recharge or replace battery**

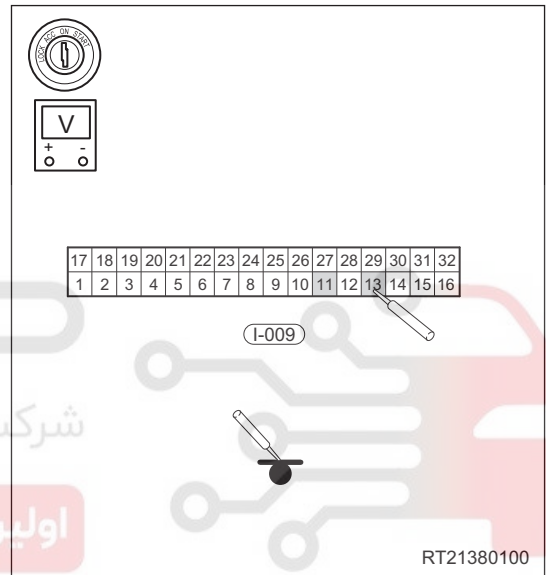
OK

2 Check instrument panel wire harness and connector

- a. Turn ignition switch to LOCK.
- b. Disconnect the negative battery cable.
- c. Disconnect the instrument panel wire harness connector I-009.
- d. Connect the negative battery cable.
- e. Turn ignition switch to ON.
- f. Using a digital multimeter, measure the supply voltage between instrument panel wire harness connector I-009 and body ground according to the value(s) in the table below to check if system power source control circuit is normal.

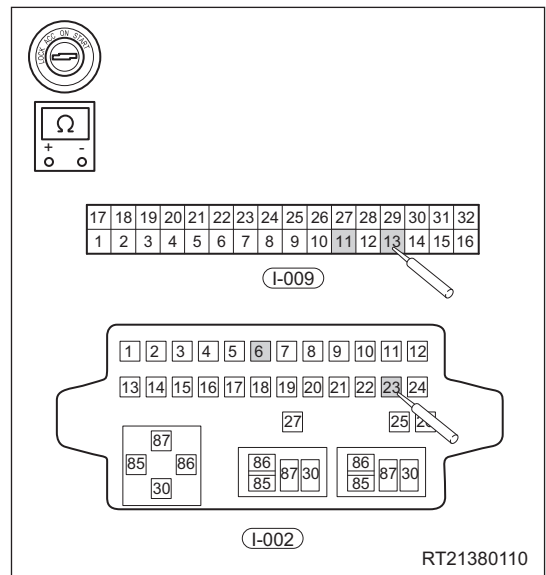
Standard Voltage

Multimeter Connection	Condition	Specified Condition
I-009 (11) - Body ground	Ignition switch ON	11 to 14 V
I-009 (13) - Body ground	Ignition switch ON	11 to 14 V



- g. Turn ignition switch to LOCK.
- h. Disconnect the negative battery cable.
- i. Disconnect the instrument panel wire harness connectors I-009 and I-002.
- j. Using a digital multimeter, check for continuity between instrument panel wire harness connectors I-009 and I-002 according to the table below.

Multimeter Connection	Condition	Specified Condition
I-009 (11) - I-002 (23)	Always	Continuity
I-009 (13) - I-002 (6)	Always	Continuity

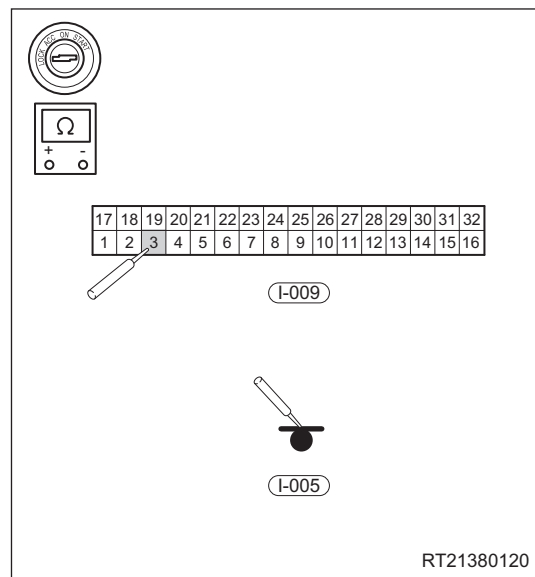


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- k. Disconnect the instrument panel wire harness connector I-009 and ground I-005.
- l. Using a digital multimeter, check for continuity between instrument panel wire harness connector I-009 and ground I-005 according to the table below.

Multimeter Connection	Condition	Specified Condition
I-009 (3) - I-005	Always	Continuity

NG → **Repair or replace instrument panel wire harness and connector**



OK

3 Reconfirm DTCs

- a. Connect all connectors.
- b. Connect the negative battery cable.
- c. Turn ignition switch to ON.
- d. Use X-431 3G diagnostic tester (the latest software) to record and clear the DTCs stored in the instrument panel control system.
- e. Turn ignition switch to LOCK and wait for a few seconds.
- f. Turn ignition switch to ON.
- g. Use X-431 3G diagnostic tester (the latest software) to read the DTCs in the instrument cluster control system again.
- h. Read the DTCs.

Result	Proceed to
DTC B1100-13, B1100-16 and B1100-17 are output	NG
No DTC is output	OK

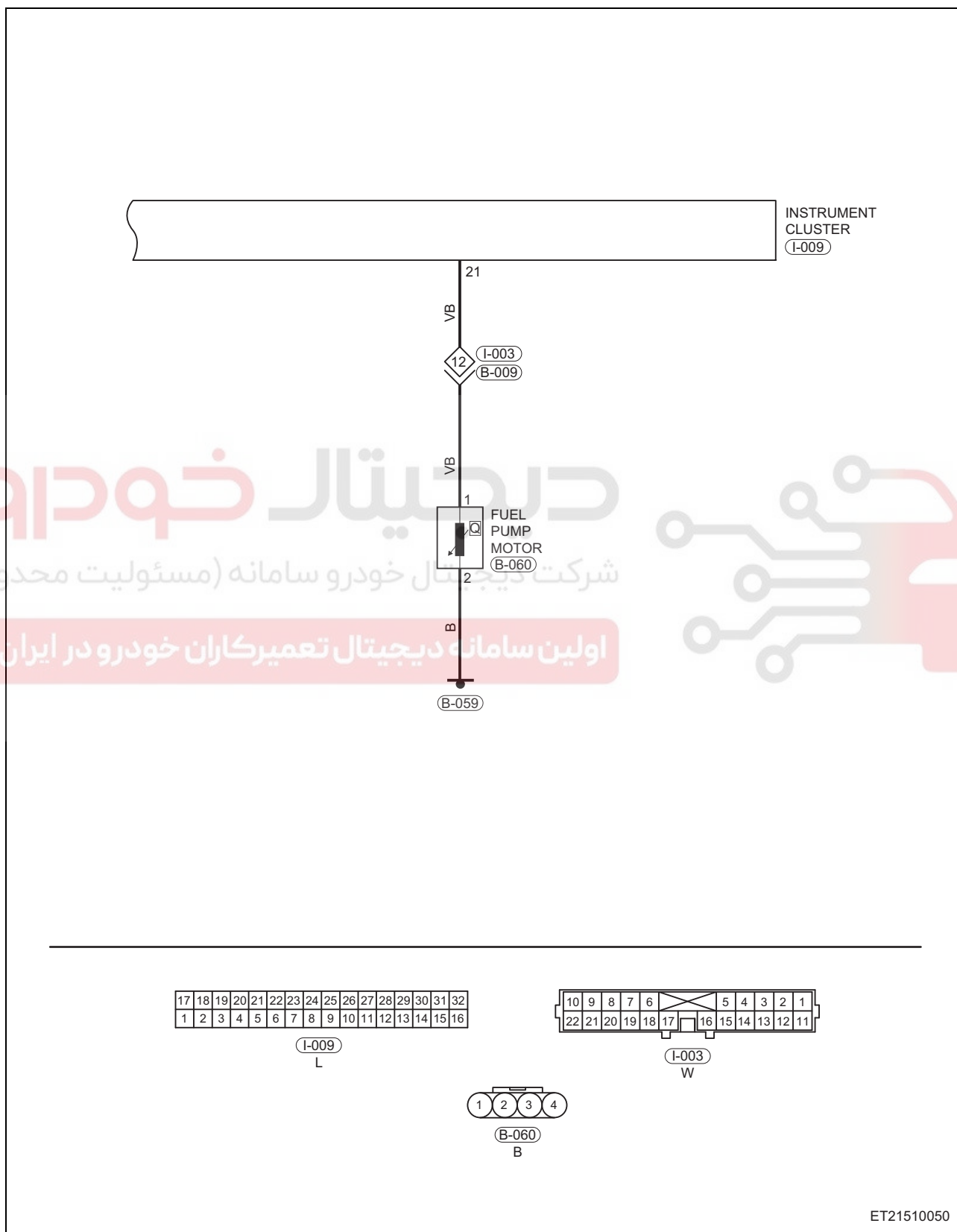
NG → **Replace instrument cluster**

OK

System is normal

DTC	B1101-11	Fuel Sensor Fault Circuit Short to Ground
-----	----------	---

DTC	B1101-15	Fuel Sensor Fault Circuit Short to Battery or Open
-----	----------	--



Self-diagnosis Detection Logic

DTC Code	DTC Definition	DTC Detection Condition	Possible Cause
B1101-11	Fuel Sensor Fault Circuit Short to Ground	Ignition switch ON	<ul style="list-style-type: none"> • Charging system • Wire harness or connector • Instrument cluster
B1101-15	Fuel Sensor Fault Circuit Short to Battery or Open		

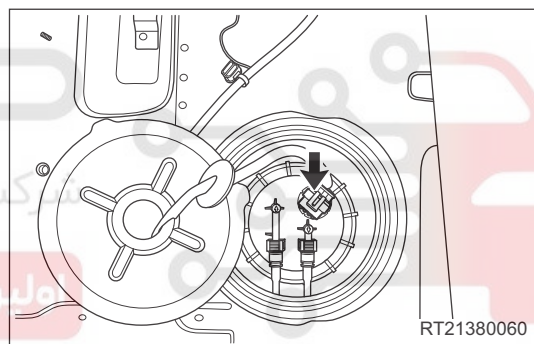
CAUTION

- When performing circuit diagnosis and test, always refer to circuit diagram for specific circuit and component information.

Diagnosis Procedure

1 Check fuel level sensor wire harness and connector

- Turn ignition switch to LOCK.
- Disconnect the negative battery cable.
- Disconnect the fuel level sensor and fuel pump connector B-060.
- Check the wire harness, connector and terminals for deformation, bend or damage.

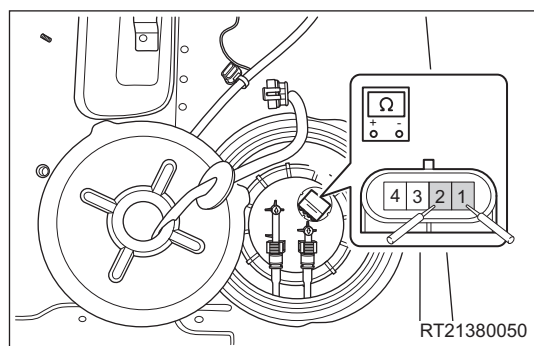


NG Repair or replace fuel level sensor wire harness and connector



2 Check fuel level sensor

- Connect the negative battery cable.
- Turn ignition switch to ON.
- Check the remaining oil amount segments from fuel gauge in the instrument cluster.
- Turn ignition switch to LOCK.
- Disconnect the negative battery cable.
- Disconnect the fuel level sensor and fuel pump connector B-060.
- Using a digital multimeter, measure the resistance between terminal 1 and terminal 2 of fuel level sensor.
- Check if fuel level sensor is normal according to the correspondence between fuel amount segments and standard resistance of fuel level sensor as shown in the table below.



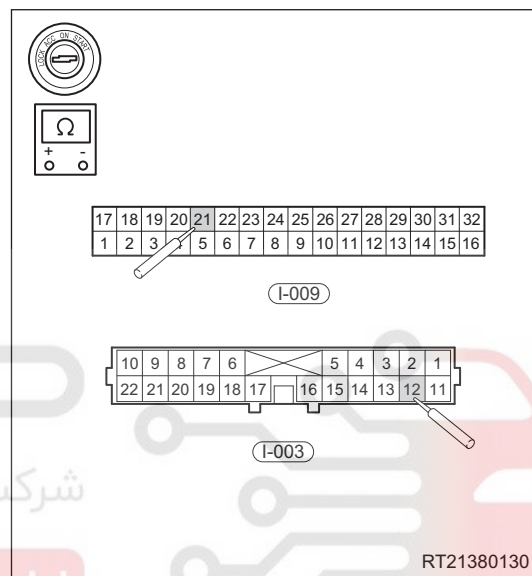
Fuel Gauge Position	Multimeter Connection	Specification (Ω)
E	1 - 2	275 ± 5
1/4	1 - 2	165 ± 5
1/2	1 - 2	97 ± 4
3/4	1 - 2	79 ± 3
F	1 - 2	32 ± 3

3 Check instrument panel wire harness and connector

- Turn ignition switch to LOCK.
- Disconnect the negative battery cable.
- Disconnect the instrument panel wire harness connectors I-009 and I-003.
- Using a digital multimeter, check for continuity between instrument panel wire harness connectors I-009 and I-003 according to the table below.

Multimeter Connection	Condition	Specified Condition
I-009 (21) - I-003 (12)	Always	Continuity

NG Repair or replace instrument panel wire harness and connector

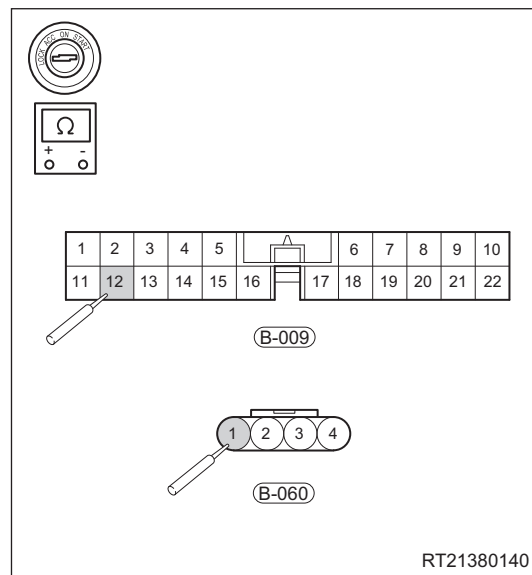


OK

4 Check body wire harness and connector

- Turn ignition switch to LOCK.
- Disconnect the negative battery cable.
- Disconnect the body wire harness connectors B-009 and B-060.
- Using a digital multimeter, check for continuity between body wire harness connectors B-009 and B-060 according to the table below.

Multimeter Connection	Condition	Specified Condition
B-009 (12) - B-060 (1)	Always	Continuity

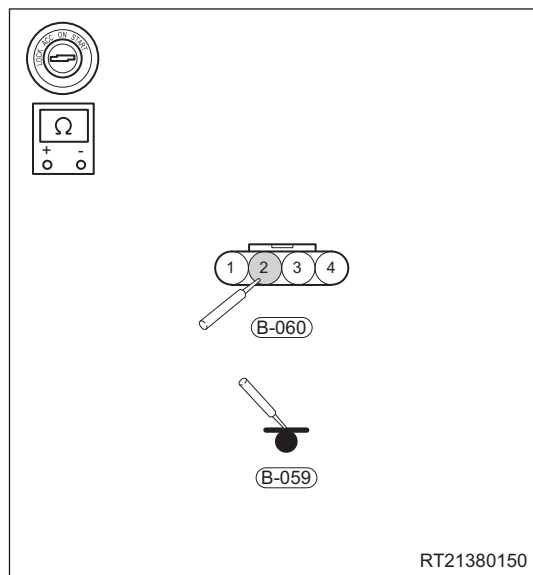


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- e. Disconnect the body wire harness connector B-060 and ground B-059.
- f. Using a digital multimeter, check for continuity between body wire harness connector B-060 and ground B-059 according to the table below.

Multimeter Connection	Condition	Specified Condition
B-060 (2) - B-059	Always	Continuity

NG → **Repair or replace body wire harness and connector**



OK

5 Reconfirm DTCs

- a. Connect all connectors.
- b. Connect the negative battery cable.
- c. Turn ignition switch to ON.
- d. Use X-431 3G diagnostic tester (the latest software) to record and clear the DTCs stored in the instrument panel control system.
- e. Turn ignition switch to LOCK and wait for a few seconds.
- f. Turn ignition switch to ON.
- g. Use X-431 3G diagnostic tester (the latest software) to read the DTCs in the instrument cluster system again.
- h. Read the DTCs.

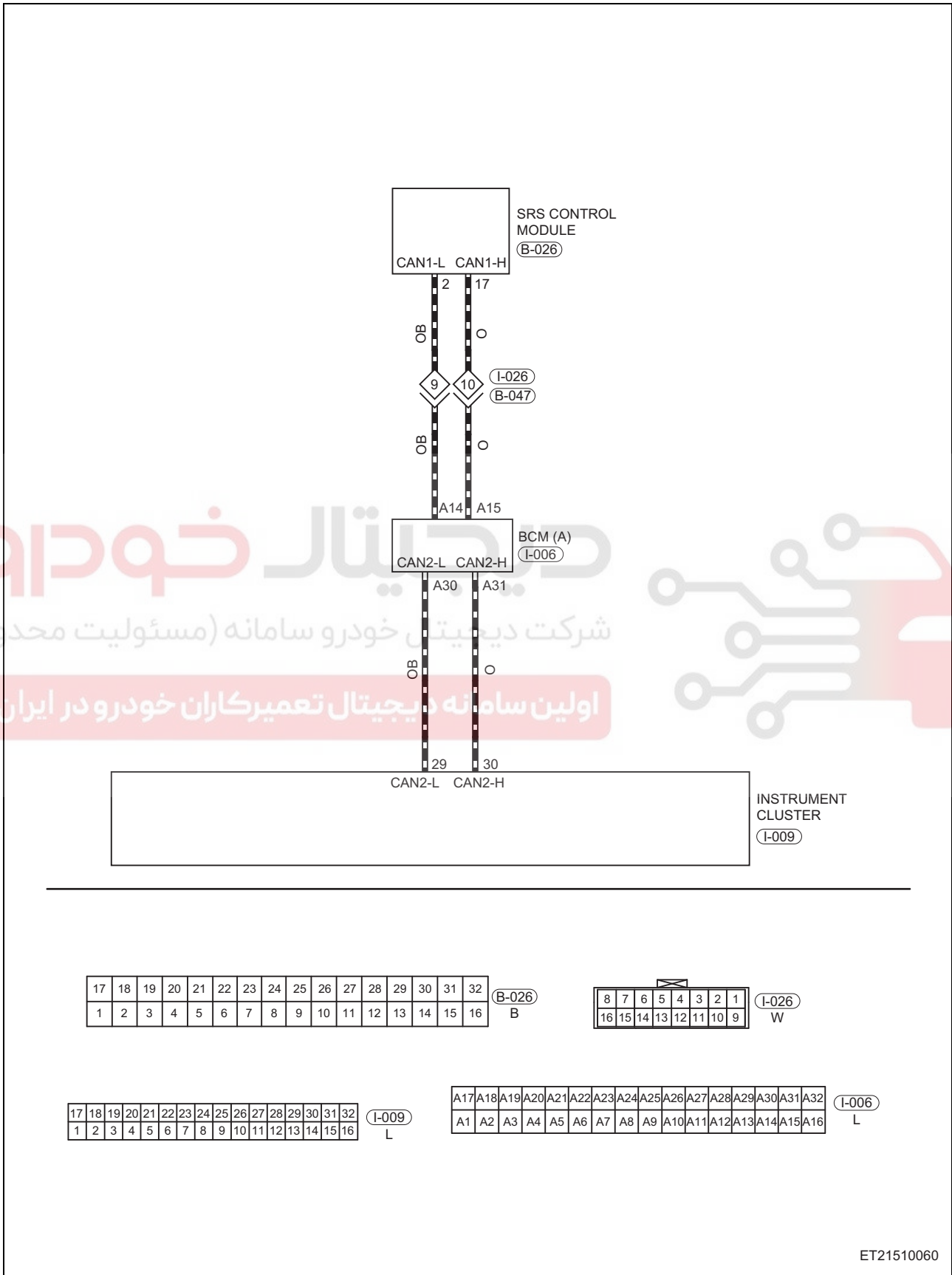
Result	Proceed to
DTC B1101-11 and B1101-15 are output	NG
No DTC is output	OK

NG → **Replace instrument cluster**

OK

System is normal

DTC B1103-00 LED Airbag Fault No Subtype Information



Self-diagnosis Detection Logic

DTC Code	DTC Definition	DTC Detection Condition	Possible Cause
B1103-00	LED Airbag Fault No Subtype Information	Ignition switch ON	<ul style="list-style-type: none"> Airbag system Wire harness or connector Instrument cluster

CAUTION

- When performing circuit diagnosis and test, always refer to circuit diagram for specific circuit and component information.

Diagnosis Procedure

1 Check driver airbag

a. Remove the driver airbag from the malfunctioning vehicle. Install it to a new vehicle and perform a test.

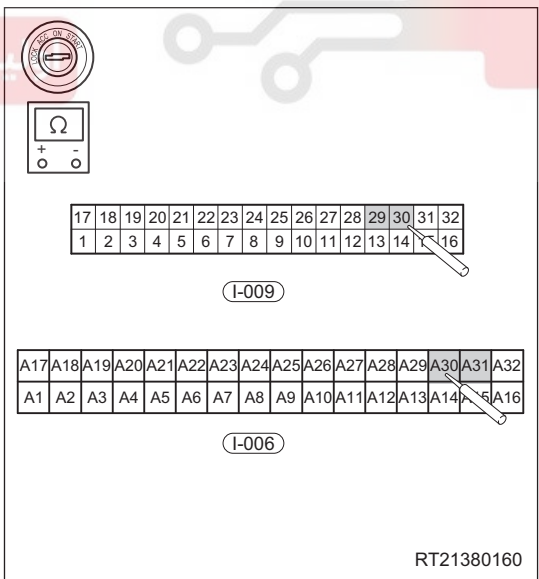
NG Repair or replace driver airbag

OK

2 Check instrument panel wire harness and connector

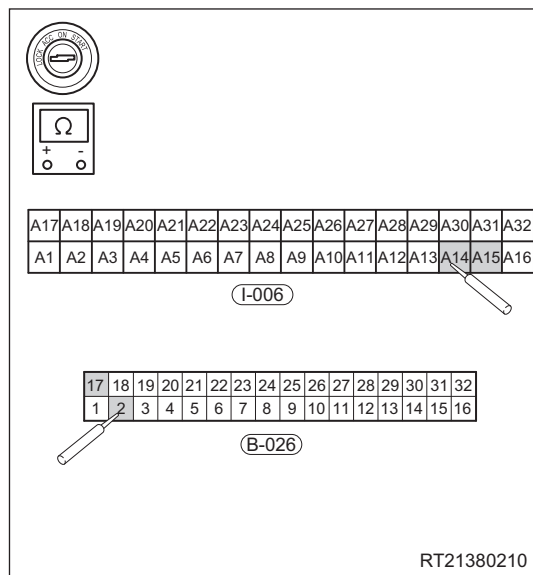
- Turn ignition switch to LOCK.
- Disconnect the negative battery cable.
- Disconnect the instrument panel wire harness connectors I-009 and I-006.
- Using a digital multimeter, check for continuity between instrument panel wire harness connectors I-009 and I-006 according to the table below.

Multimeter Connection	Condition	Specified Condition
I-009 (29) - I-006 (A30)	Always	Continuity
I-009 (30) - I-006 (A31)	Always	Continuity



- e. Disconnect the instrument panel wire harness connectors I-006 and B-026.
- f. Using a digital multimeter, check for continuity between instrument panel wire harness connectors I-006 and B-026 according to the table below.

Multimeter Connection	Condition	Specified Condition
I-006 (A14) - B-026 (2)	Always	Continuity
I-006 (A15) - B-026 (17)	Always	Continuity



NG → Repair or replace instrument panel wire harness and connector

OK

3 Reconfirm DTCs

- a. Connect all connectors.
- b. Connect the negative battery cable.
- c. Turn ignition switch to ON.
- d. Use X-431 3G diagnostic tester (the latest software) to record and clear the DTCs stored in the instrument panel control system.
- e. Turn ignition switch to LOCK and wait for a few seconds.
- f. Turn ignition switch to ON.
- g. Use X-431 3G diagnostic tester (the latest software) to read the DTCs in the instrument cluster control system again.
- h. Read the DTCs.

Result	Proceed to
DTC B1103-00 is output	NG
No DTC is output	OK

NG → Replace instrument cluster

OK

System is normal

DTC	B1104-41	EEPROM Checksum Error
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Self-diagnosis Detection Logic

DTC Code	DTC Definition	DTC Detection Condition	Possible Cause
B1104-41	EEPROM Checksum Error	Ignition switch ON	<ul style="list-style-type: none"> Instrument cluster

CAUTION

- When performing circuit diagnosis and test, always refer to circuit diagram for specific circuit and component information.

Diagnosis Procedure

1	Reconfirm DTCs
----------	-----------------------

- Use X-431 3G diagnostic tester (the latest software) to clear the DTCs stored in the instrument cluster control system.
- Turn ignition switch to LOCK and wait for a few seconds.
- Turn ignition switch to ON.
- Use X-431 3G diagnostic tester (the latest software) to read the DTCs in the instrument cluster control system again.
- Read the DTCs.

Result	Proceed to
DTC B1103-00 is output	NG
No DTC is output	OK

NG 

Replace instrument cluster

OK 

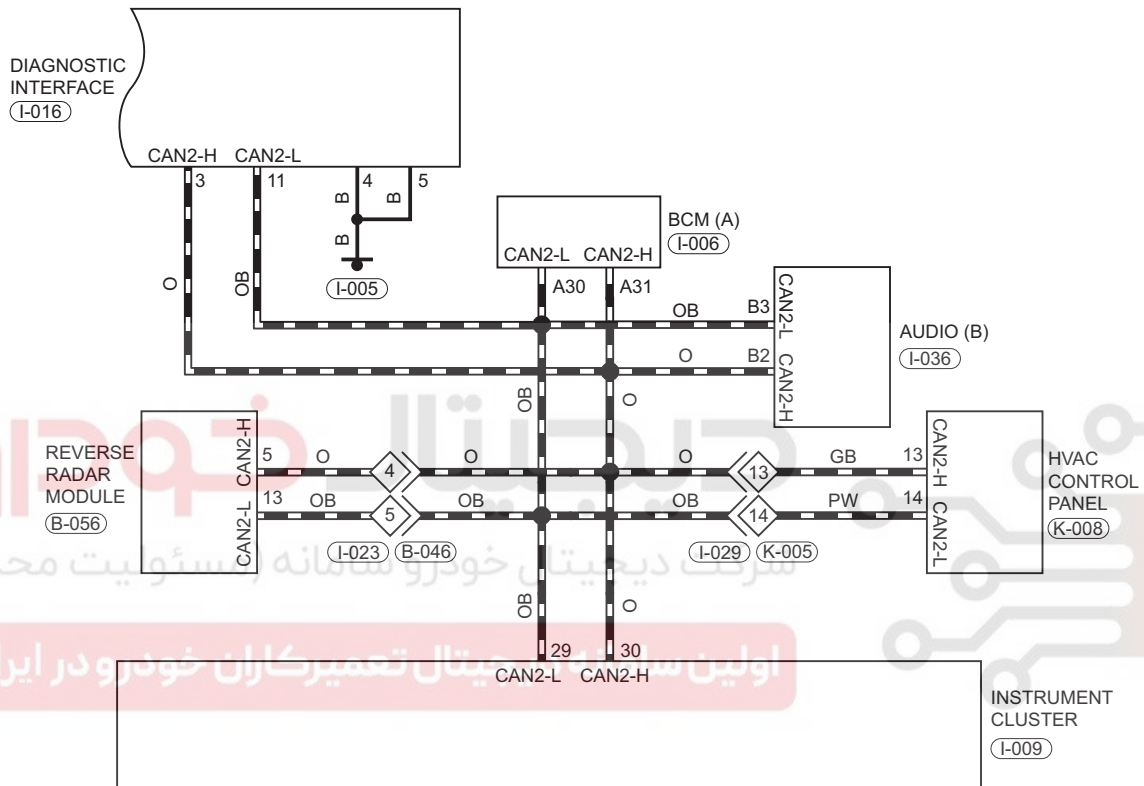
System is normal

DTC	U0100-87	Lost Communication with EMS
DTC	U0101-87	Lost Communication with TCM
DTC	U0129-87	Lost Communication with BSM
DTC	U0131-87	Lost Communication with EPS
DTC	U0140-87	Lost Communication with BCM
DTC	U0151-87	Lost Communication with ICM
DTC	U0164-87	Lost Communication With CLM
DTC	U0167-87	Lost Communication with IMMO
DTC	U0214-87	Lost Communication with PEPS
DTC	U0073-88	CAN Bus Off

شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

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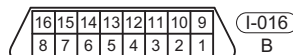
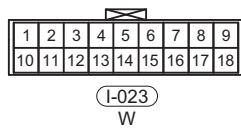
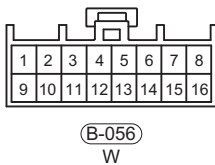
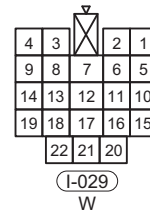
A17	A18	A19	A20	A21	A22	A23	A24	A25	A26	A27	A28	A29	A30	A31	A32	(I-006) L
A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12	A13	A14	A15	A16	

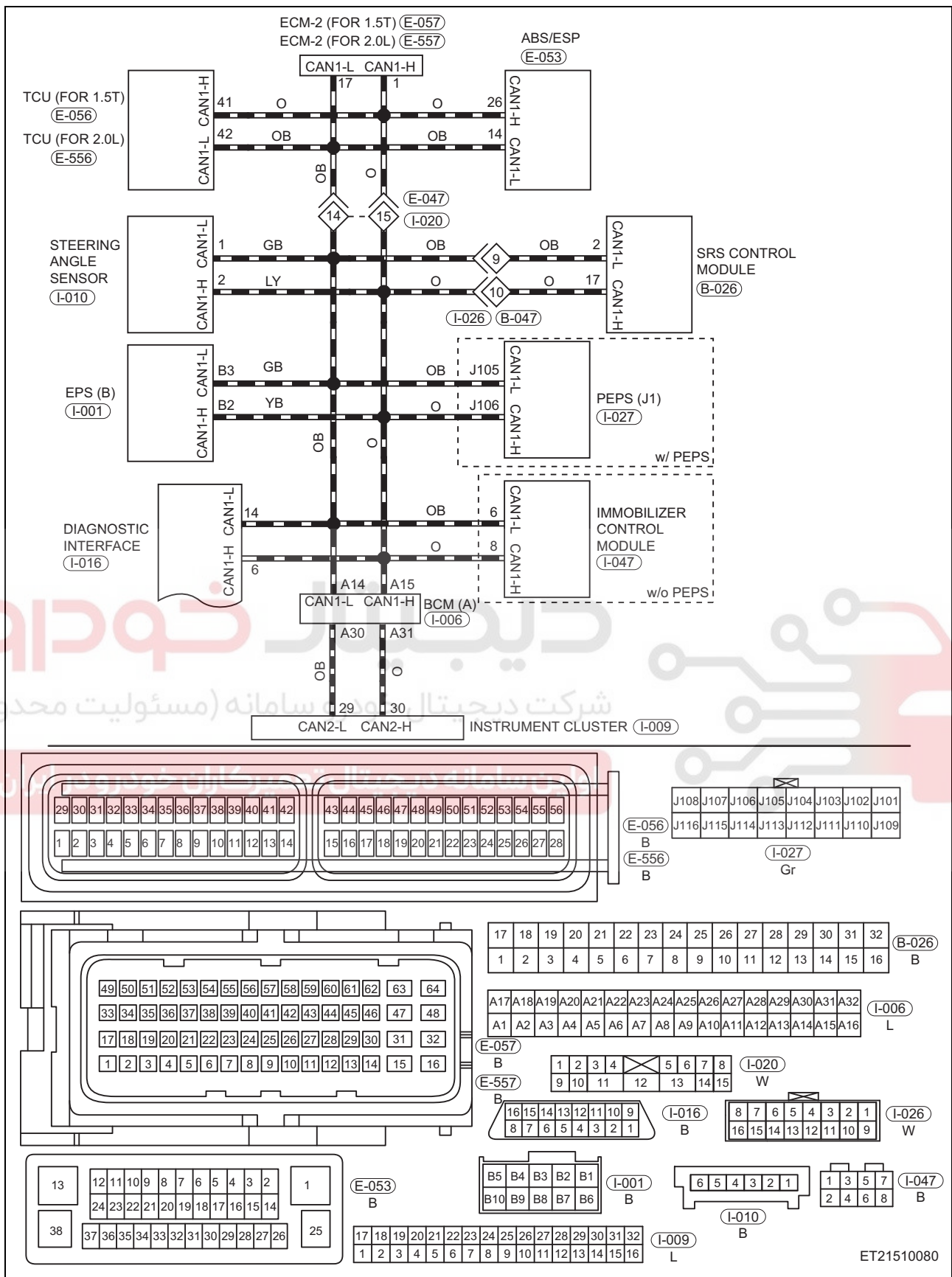
B17	B18	B19	B20	B21	B22	B23	B24	B25	B26	B27	B28	B29	B30	B31	B32	(B-007) L
B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15	B16	

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	(K-008) W
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	

17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	(I-009) L
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	

B8	B7	B6	B5	B4	B3	B2	B1	(I-036) B
B9	B10	B11	B12	B13	B14	B15	B16	





Self-diagnosis Detection Logic

DTC Code	DTC Definition	DTC Detection Condition	Possible Cause
U0100-87	Lost Communication with EMS	Ignition switch ON	<ul style="list-style-type: none"> • Engine Control Module (ECM) • Transmission Control Module (TCM) • ABS control module • EPS control module • Body Control Module (BCM) • SRS control module • Anti-theft control module • Instrument cluster • CAN line communication
U0101-87	Lost Communication with TCM		
U0129-87	Lost Communication with BSM		
U0131-87	Lost Communication with EPS		
U0140-87	Lost Communication with BCM		
U0151-87	Lost Communication with ICM		
U0164-87	Lost Communication With CLM		
U0167-87	Lost Communication with IMMO		
U0214-87	Lost Communication with PEPS		
U0073-88	CAN Bus Off		

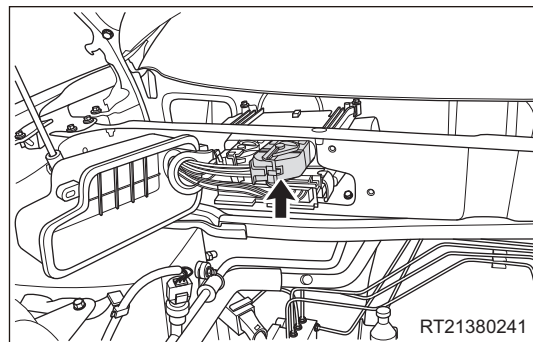
CAUTION

- When performing circuit diagnosis and test, always refer to circuit diagram for specific circuit and component information.

Diagnosis Procedure

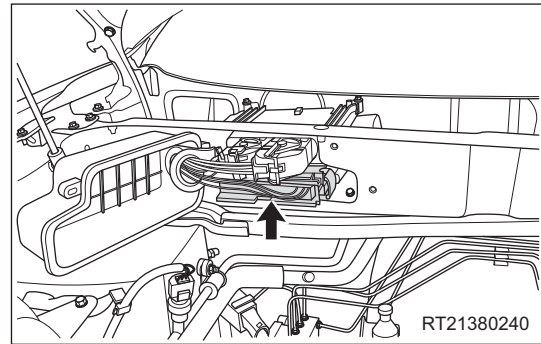
1 Check connector and terminal

- Turn ignition switch to LOCK.
- Disconnect the negative battery cable.
- Disconnect the Engine Control Module (ECM) connector E-057.
- Check the wire harness, connector and terminals for deformation, bend or damage.

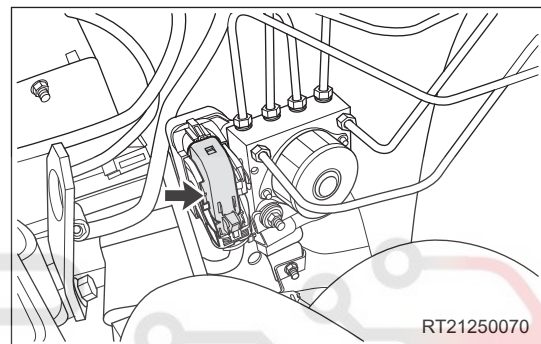


2 Check connector and terminal

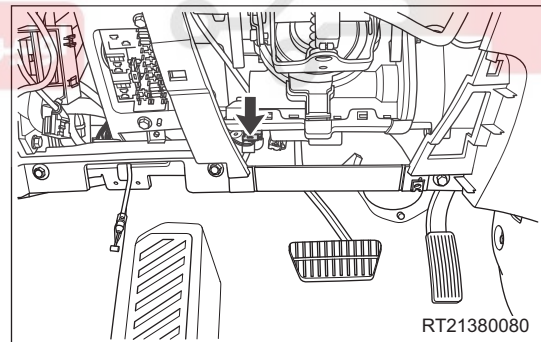
- a. Turn ignition switch to LOCK.
- b. Disconnect the negative battery cable.
- c. Disconnect the Transmission Control Module (TCM) connector E-056.
- d. Check the wire harness, connector and terminals for deformation, bend or damage.

**3 Check connector and terminal**

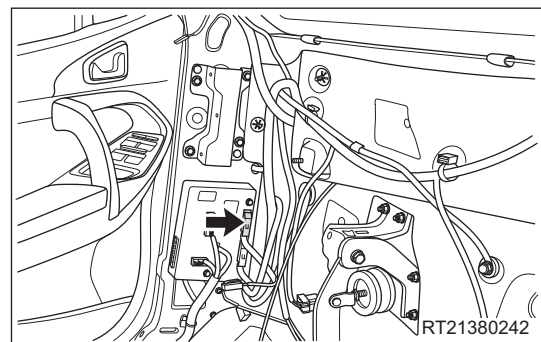
- a. Turn ignition switch to LOCK.
- b. Disconnect the negative battery cable.
- c. Disconnect the ABS control module connector E-053.
- d. Check the wire harness, connector and terminals for deformation, bend or damage.

**4 Check connector and terminal**

- a. Turn ignition switch to LOCK.
- b. Disconnect the negative battery cable.
- c. Disconnect the EPS control module connector I-001.
- d. Check the wire harness, connector and terminals for deformation, bend or damage.

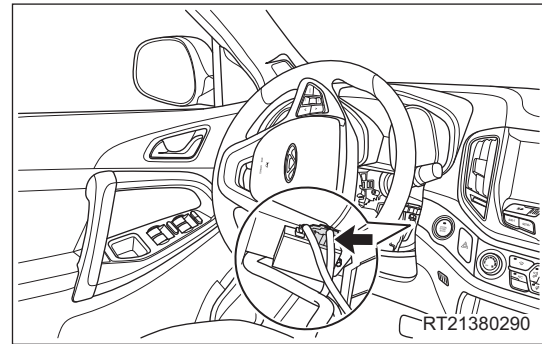
**5 Check connector and terminal**

- a. Turn ignition switch to LOCK.
- b. Disconnect the negative battery cable.
- c. Disconnect the Body Control Module (BCM) connector I-006.
- d. Check the wire harness, connector and terminals for deformation, bend or damage.

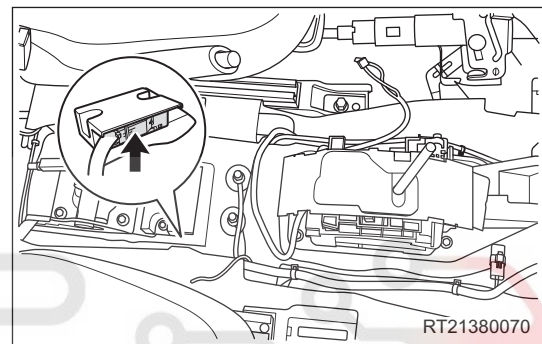


6 Check connector and terminal

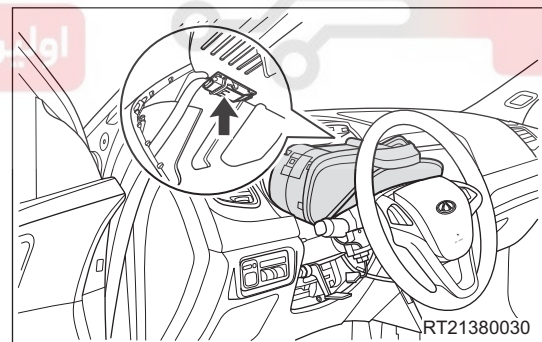
- Turn ignition switch to LOCK.
- Disconnect the negative battery cable.
- Disconnect the immobilizer control module connector I-047.
- Check the wire harness, connector and terminals for deformation, bend or damage.

**7 Check connector and terminal**

- Turn ignition switch to LOCK.
- Disconnect the negative battery cable.
- Disconnect the SRS control module connector B-026.
- Check the wire harness, connector and terminals for deformation, bend or damage.

**8 Check connector and terminal**

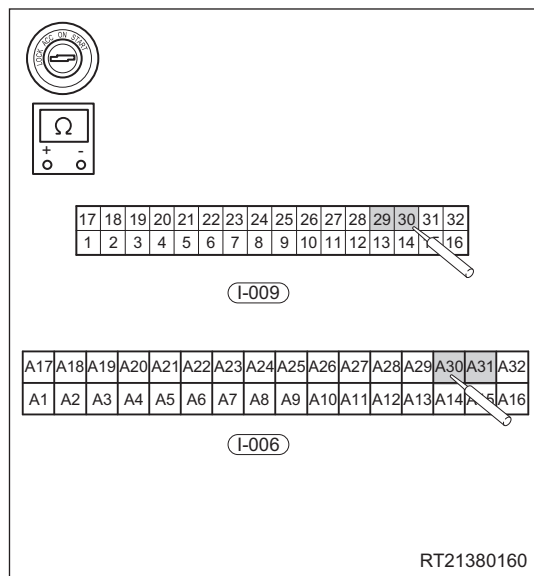
- Turn ignition switch to LOCK.
- Disconnect the negative battery cable.
- Disconnect instrument panel wire harness connector I-009.
- Check wire harness, connector and terminals for deformation, bend or damage.



9 Check instrument panel wire harness and connector

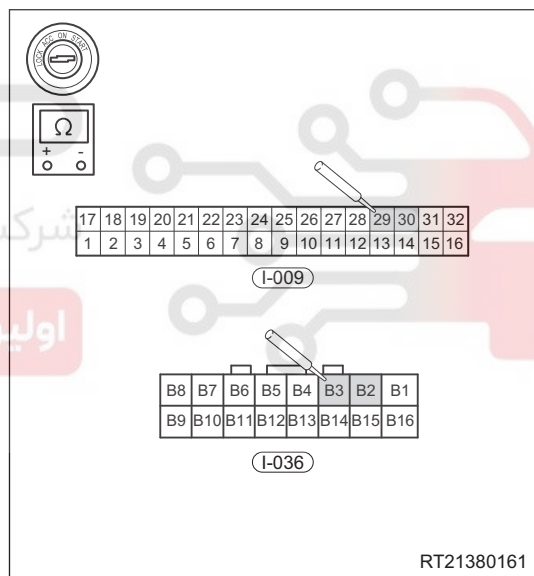
- a. Turn ignition switch to LOCK.
- b. Disconnect the negative battery cable.
- c. Disconnect instrument panel wire harness connectors I-009 and I-006.
- d. Using a digital multimeter, check for continuity between instrument panel wire harness connectors I-009 and I-006 according to the table below.

Multimeter Connection	Condition	Specified Condition
I-009 (29) - I-006 (A30)	Always	Continuity
I-009 (30) - I-006 (A31)	Always	Continuity



- e. Disconnect instrument panel wire harness connectors I-009 and I-036.
- f. Using a digital multimeter, check for continuity between instrument panel wire harness connectors I-009 and I-036 according to the table below.

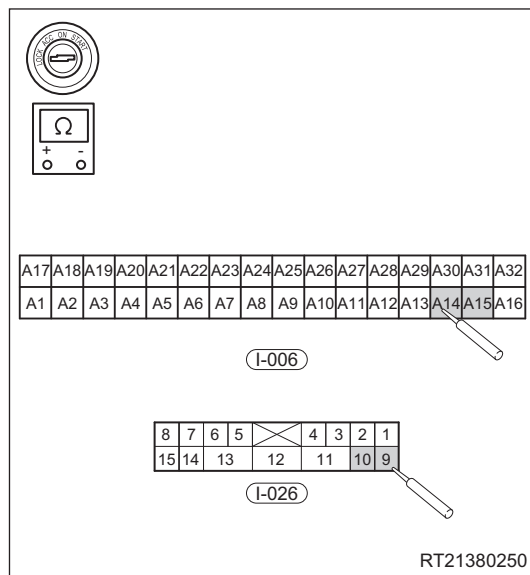
Multimeter Connection	Condition	Specified Condition
I-009 (29) - I-036 (B3)	Always	Continuity
I-009 (30) - I-036 (B2)	Always	Continuity



51 - INSTRUMENT CLUSTER

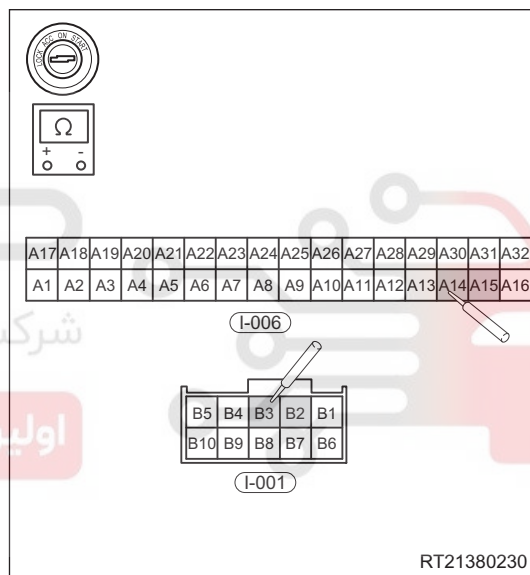
- g. Disconnect instrument panel wire harness connectors I-006 and I-026.
- h. Using a digital multimeter, check for continuity between instrument panel wire harness connectors I-006 and I-026 according to the table below.

Multimeter Connection	Condition	Specified Condition
I-006 (A14) - I-026 (9)	Always	Continuity
I-006 (A15) - I-026 (10)	Always	Continuity



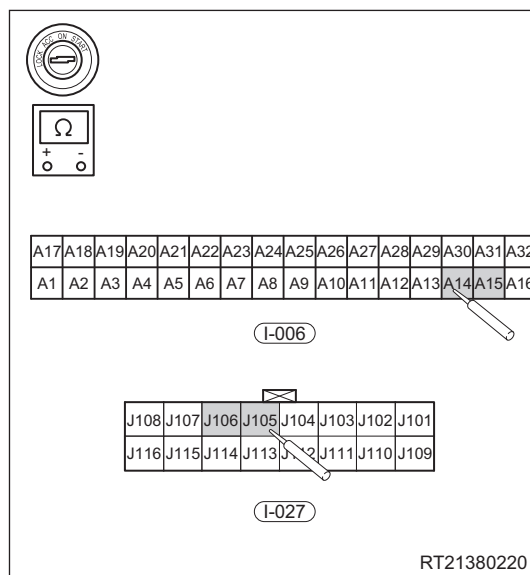
- i. Disconnect instrument panel wire harness connectors I-006 and I-001.
- j. Using a digital multimeter, check for continuity between instrument panel wire harness connectors I-006 and I-001 according to the table below.

Multimeter Connection	Condition	Specified Condition
I-006 (A14) - I-001 (B3)	Always	Continuity
I-006 (A15) - I-001 (B2)	Always	Continuity



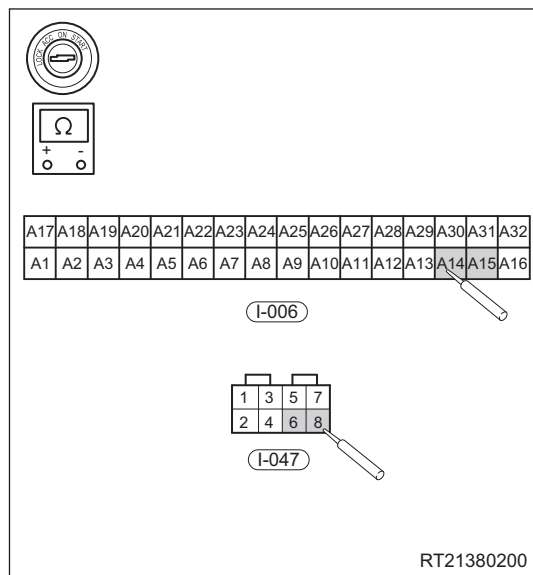
- k. Disconnect instrument panel wire harness connectors I-006 and I-027.
- l. Using a digital multimeter, check for continuity between instrument panel wire harness connectors I-006 and I-027 according to the table below.

Multimeter Connection	Condition	Specified Condition
I-006 (A14) - I-027 (J105)	Always	Continuity
I-006 (A15) - I-027 (J106)	Always	Continuity



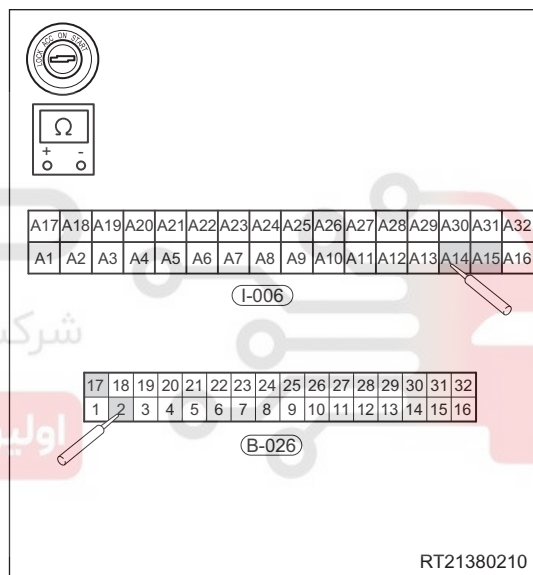
- m. Disconnect instrument panel wire harness connectors I-006 and I-047.
- n. Using a digital multimeter, check for continuity between instrument panel wire harness connectors I-006 and I-047 according to the table below.

Multimeter Connection	Condition	Specified Condition
I-006 (A14) - I-047 (6)	Always	Continuity
I-006 (A15) - I-047 (8)	Always	Continuity



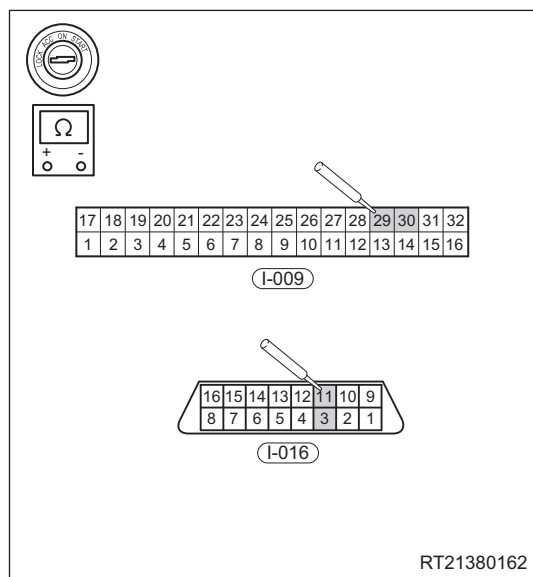
- o. Disconnect instrument panel wire harness connectors I-006 and B-026.
- p. Using a digital multimeter, check for continuity between instrument panel wire harness connectors I-006 and B-026 according to the table below.

Multimeter Connection	Condition	Specified Condition
I-006 (A14) - B-026 (2)	Always	Continuity
I-006 (A15) - B-026 (17)	Always	Continuity



- q. Disconnect instrument panel wire harness connectors I-009 and I-016.
- r. Using a digital multimeter, check for continuity between instrument panel wire harness connectors I-009 and I-016 according to the table below.

Multimeter Connection	Condition	Specified Condition
I-009 (29) - I-016 (11)	Always	Continuity
I-009 (30) - I-016 (3)	Always	Continuity

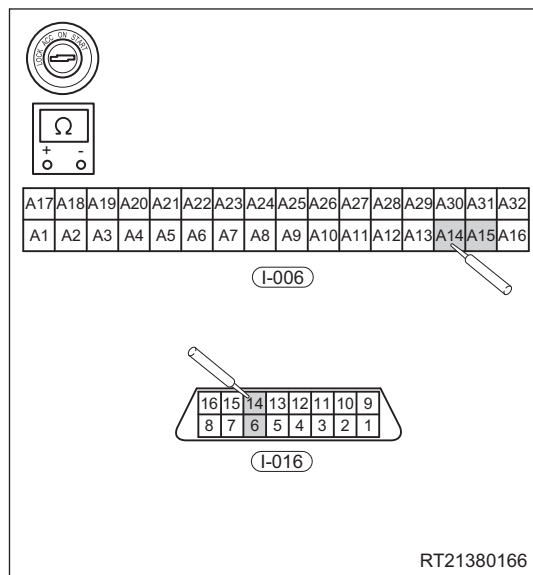


51 - INSTRUMENT CLUSTER

- s. Disconnect instrument panel wire harness connectors I-006 and I-016.
- t. Using a digital multimeter, check for continuity between instrument panel wire harness connectors I-006 and I-016 according to the table below.

Multimeter Connection	Condition	Specified Condition
I-006 (A14) - I-016 (14)	Always	Continuity
I-006 (A15) - I-016 (6)	Always	Continuity

NG Repair or replace instrument panel wire harness and connector

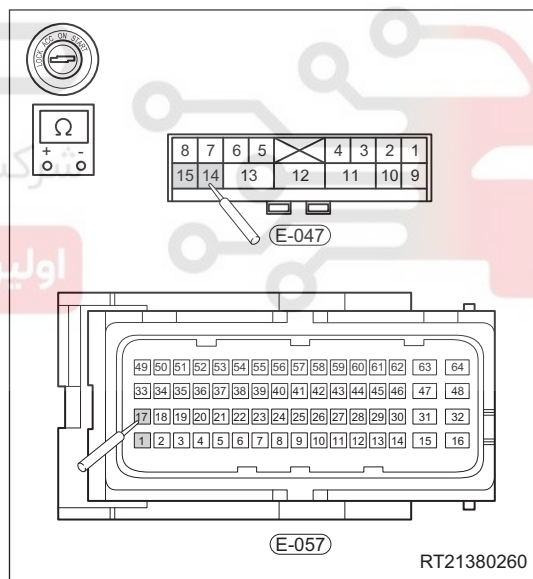


OK

10 Check engine compartment wire harness and connector

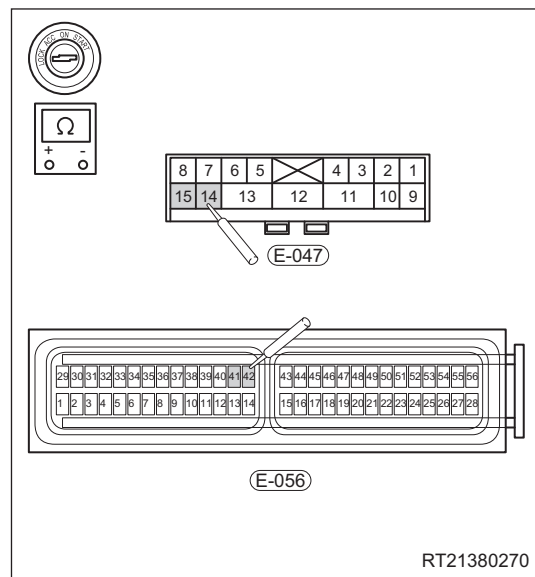
- a. Turn ignition switch to LOCK.
- b. Disconnect the negative battery cable.
- c. Disconnect engine compartment wire harness connectors E-047 and E-057.
- d. Using a digital multimeter, check for continuity between engine compartment wire harness connectors E-047 and E-057 according to the table below.

Multimeter Connection	Condition	Specified Condition
E-047 (14) - E-057 (17)	Always	Continuity
E-047 (15) - E-057 (1)	Always	Continuity



- e. Disconnect engine compartment wire harness connectors E-047 and E-056.
- f. Using a digital multimeter, check for continuity between engine compartment wire harness connectors E-047 and E-056 according to the table below.

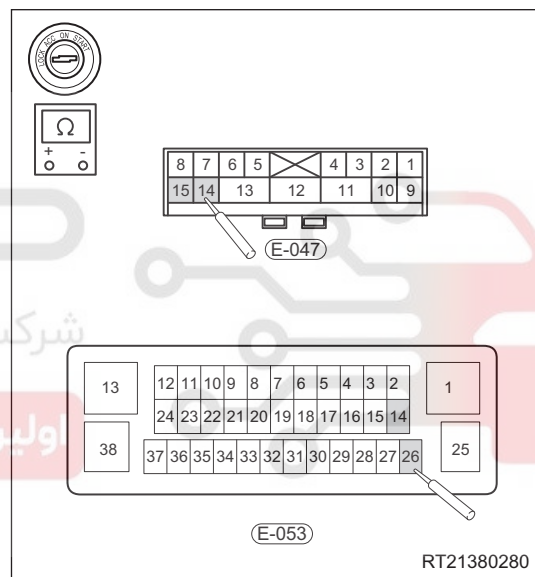
Multimeter Connection	Condition	Specified Condition
E-047 (14) - E-056 (42)	Always	Continuity
E-047 (15) - E-056 (41)	Always	Continuity



- g. Disconnect engine compartment wire harness connectors E-047 and E-053.
- h. Using a digital multimeter, check for continuity between engine compartment wire harness connectors E-047 and E-053 according to the table below.

Multimeter Connection	Condition	Specified Condition
E-047 (14) - E-053 (14)	Always	Continuity
E-047 (15) - E-053 (26)	Always	Continuity

NG Replace or repair engine compartment wire harness and connector



OK

11 Reconfirm DTCs

- a. Connect all connectors.
- b. Connect the negative battery cable.
- c. Turn ignition switch to ON.
- d. Use the X-431 3G diagnostic tester (the latest software) to record and clear the DTCs stored in the instrument panel control system.
- e. Turn ignition switch to LOCK and wait for a few seconds.
- f. Turn ignition switch to ON.
- g. Use X-431 3G diagnostic tester (the latest software) to read the DTCs in the instrument cluster control system again.
- h. Read the DTCs.

51 - INSTRUMENT CLUSTER

Result	Proceed to
DTC U0100-87, U0101-87, U0129-87, U0131-87, U0140-87, U0151-87, U0167-87, U0214-87 and U0073-88 are output	NG
No DTC is output	OK

NG Replace instrument cluster

OK

System is normal

دیجیتال خودرو

شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

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DTC	U1300-55	Software Configuration Error, Not Configured
------------	-----------------	---

Self-diagnosis Detection Logic

DTC Code	DTC Definition	DTC Detection Condition	Possible Cause
U1300-55	Software Configuration Error, Not Configured	Ignition switch ON	<ul style="list-style-type: none"> Instrument cluster

CAUTION

- When performing circuit diagnosis and test, always refer to circuit diagram for specific circuit and component information.

Diagnosis Procedure

1	Reconfirm DTCs
----------	-----------------------

- Use X-431 3G diagnostic tester (the latest software) to clear the DTCs stored in the instrument cluster control system.
- Turn ignition switch to LOCK and wait for a few seconds.
- Turn ignition switch to ON.
- Use X-431 3G diagnostic tester (the latest software) to read the DTCs in the instrument cluster control system again.
- Read the DTCs.

Result	Proceed to
DTC U1300-55 is output	NG
No DTC is output	OK

NG → **Replace instrument cluster**

OK

System is normal

ON-VEHICLE SERVICE

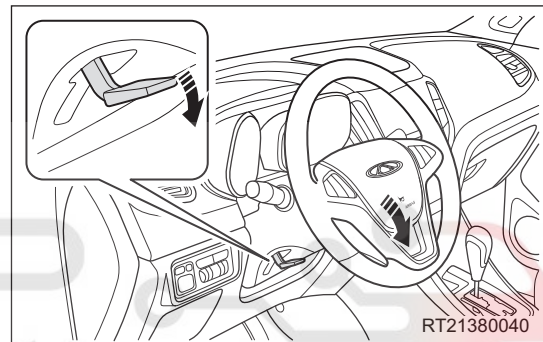
Instrument Cluster

Removal

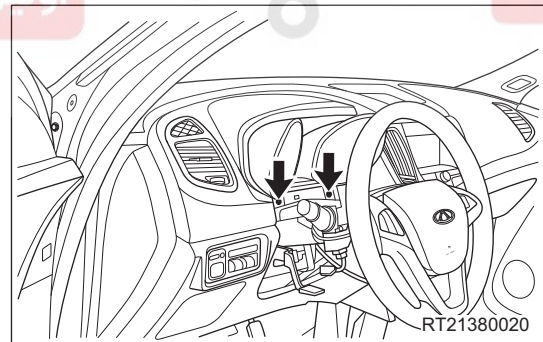
CAUTION

- Be sure to wear safety equipment to prevent accidents when removing instrument cluster.
- Operate carefully to prevent components from being damaged when removing instrument cluster.
- DO NOT scratch interior and body paint when removing instrument cluster.

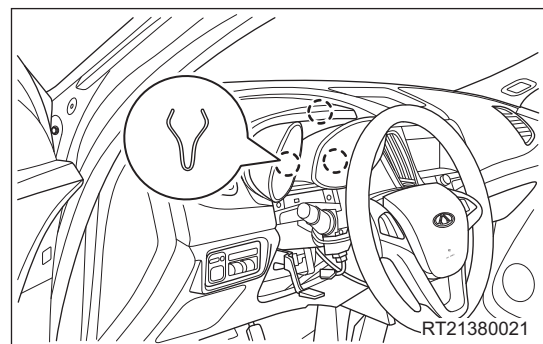
1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Lower the steering wheel in the direction of arrow as shown in the illustration.



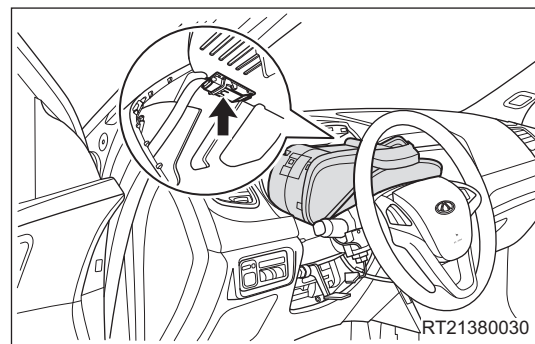
4. Remove the combination switch cover (See page 39-13).
5. Remove the instrument cluster.
 - a. Remove 2 fixing screws (arrow) from instrument cluster.
(Tightening torque: 1.5 ± 0.5 N·m)



- b. Using a screwdriver wrapped with protective tape, pry up the clips on instrument cluster.



- c. Disconnect the instrument cluster connector (arrow), and remove the instrument cluster.



Installation

Installation is in the reverse order of removal.

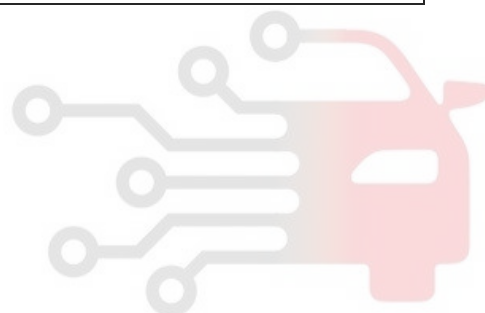
CAUTION

- When installing instrument cluster, be sure to align instrument cluster positioning hole with instrument panel dowel pin, and clips are clamped in place.
- When installing instrument cluster, be sure to install connector in place.
- When installing instrument cluster, be sure to tighten fixing screws in place.
- Operate carefully to prevent other components from being damaged when installing instrument cluster.

دیجیتال خودرو

شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



دیجیتال خودرو

شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



AUDIO SYSTEM

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Removal	52-11	Installation	52-21
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Installation	52-12	Removal	52-22
No Disc Navigator	52-13	Installation	52-23
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Inspection	52-14	Removal	52-24
Installation	52-14	Installation	52-25
Tweeter Assembly	52-15	Steering Wheel Quick Button	
Removal	52-15	(if equipped)	52-26
Inspection	52-15	Removal	52-26
Installation	52-15	Inspection	52-28
		Installation	52-28

اولین سامانه دیجیتال تعمیرکاران خودرو در ایران

دیجیتال خودرو

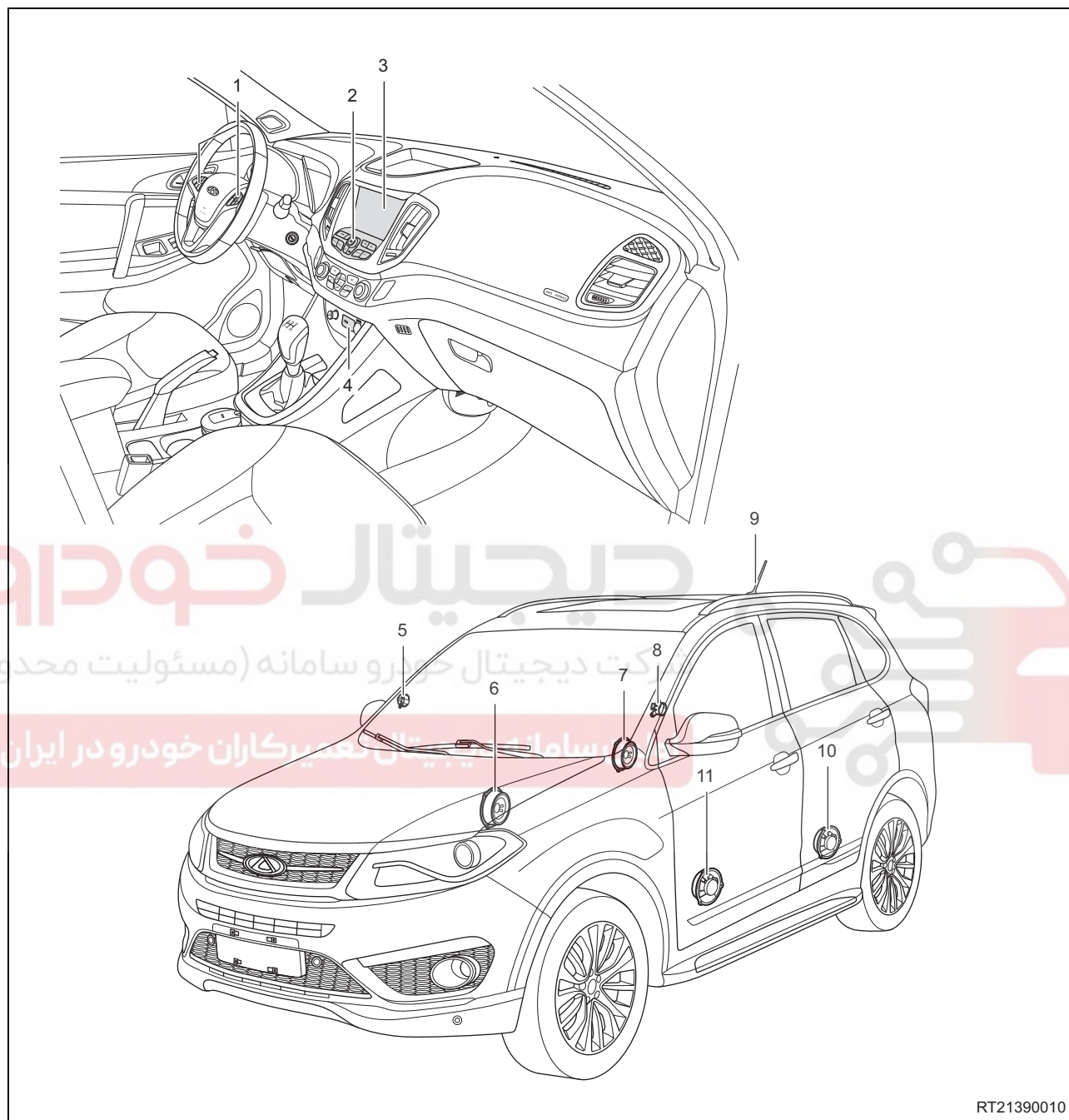
شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



GENERAL INFORMATION

Description



RT21390010

1 - Steering Wheel Quick Button (if equipped)	2 - No Disc DVD Control Panel
3 - No Disc DVD Assembly	4 - Multi-function Interface
5 - Right Tweeter Assembly	6 - Front Right Woofer Assembly
7 - Rear Right Woofer Assembly	8 - Left Tweeter Assembly
9 - Antenna Assembly (w/ Antenna Amplifier)	10 - Rear Left Woofer Assembly
11 - Front Left Woofer Assembly	

52 - AUDIO SYSTEM

Audio system mainly indicates radio receiver assembly. Primary function of radio receiver assembly is to receive frequency modulation and amplitude modulation broadcast signals sent from broadcast stations, and convert these signals into audio signal.

Radio receiver assembly consists of amplitude modulation tuner (AM) that receives the amplitude modulation broadcast signal and frequency modulation tuner (FM) that receives the frequency modulation broadcast signal.

Radio receiver assembly configuration in this model: no disc DVD assembly.

This vehicle is equipped with 6 speakers, which includes 2 tweeter assemblies and 4 woofer assemblies.

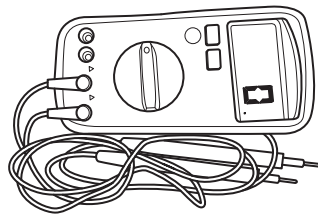
Operation

Essentially, radio receiver is a tuner. Radio receiver demodulates the radio frequency signal received from antenna, and outputs the low power audio signal, which is amplified by inner amplifier circuit and converted into original sound.

Specifications**Torque Specifications**

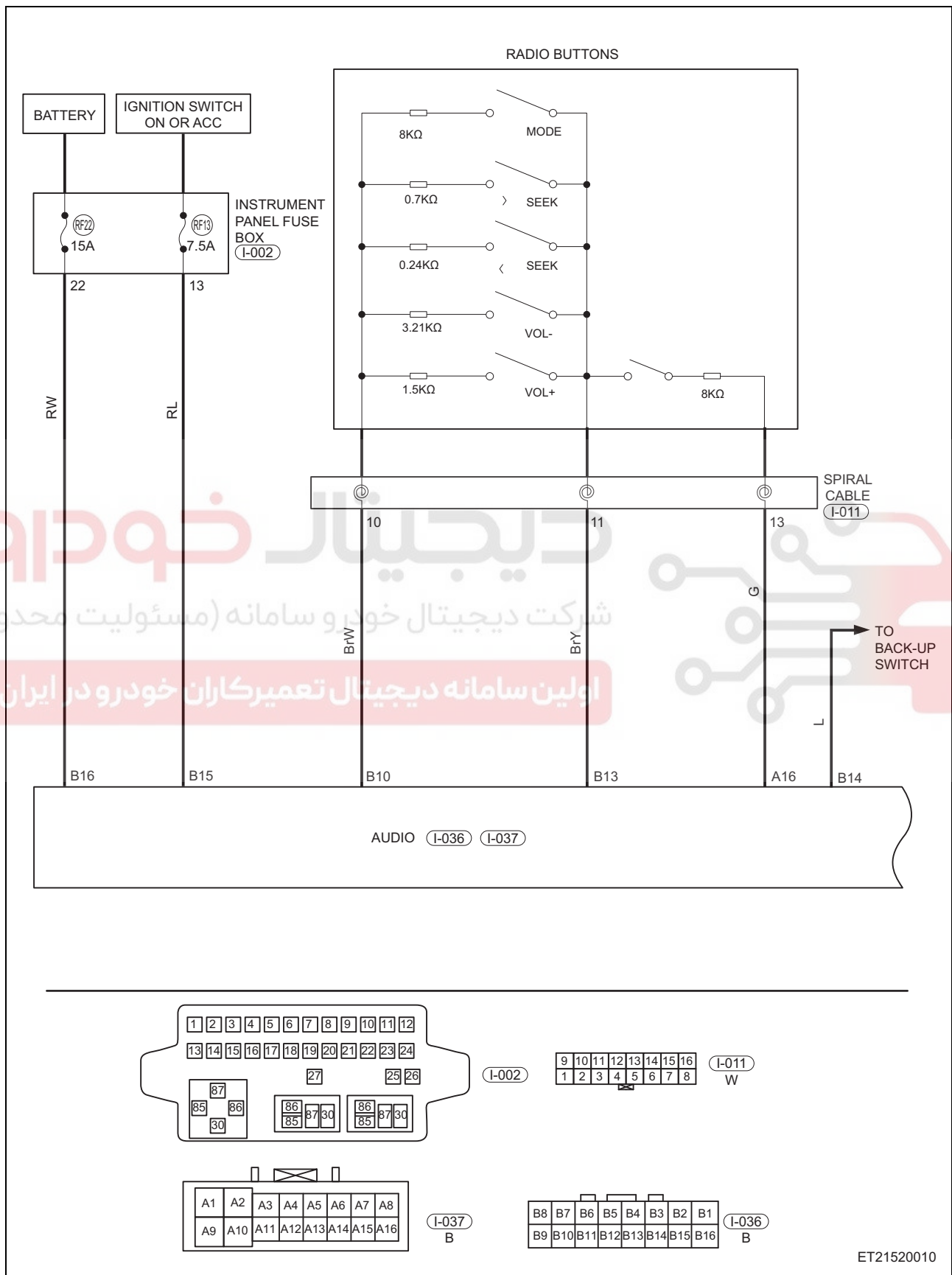
Description	Torque (N-m)
No Disc DVD Assembly Fixing Screw	2 ± 0.5
Tweeter Assembly Fixing Screw	3 ± 0.5
Front Woofer Assembly Fixing Screw	2.5 ± 0.5
Rear Woofer Assembly Fixing Screw	2.5 ± 0.5
Antenna Assembly Fixing Nut	5 ± 1
No Disc DVD Control Panel Fixing Screw	2 ± 0.5
Wire Harness Fixing Screw	0.7 ± 0.2
Steering Wheel Quick Button Trim Cover Fixing Screw	0.7 ± 0.2
Steering Wheel Quick Button Fixing Screw	0.7 ± 0.2

Tool**General Tool**

Digital Multimeter	 <p>RCH0000002</p>
--------------------	--

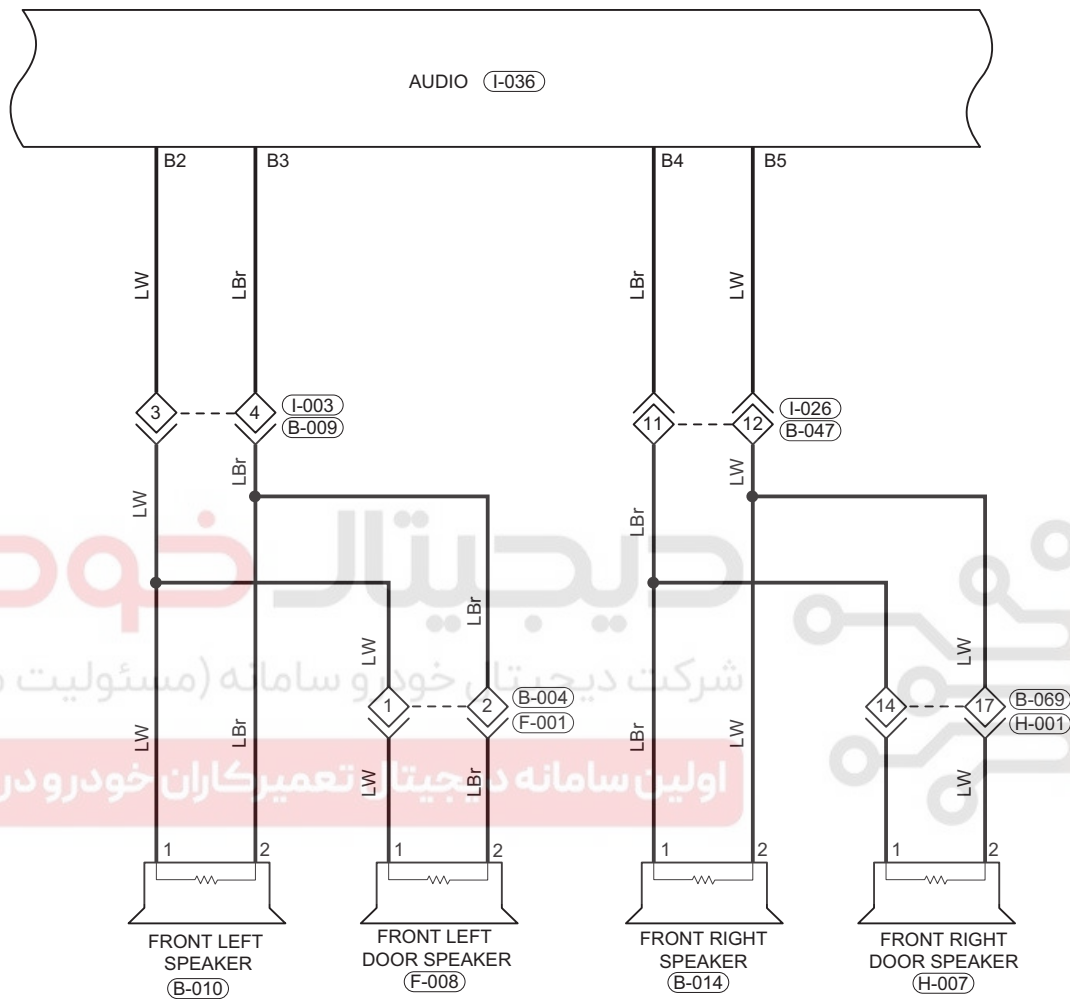
Circuit Diagram

Audio System (Page 1 of 3)

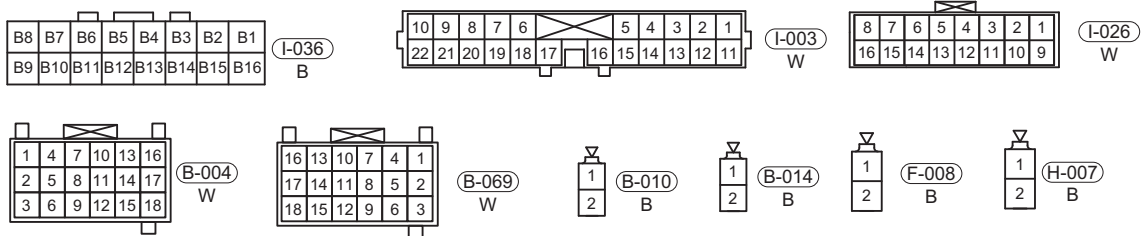


دیجی تار خودرو
 شرکت دیجیتال خودرو سامانه (مسئولیت محدود)
 اولین سامانه دیجیتال تعمیرکاران خودرو در ایران

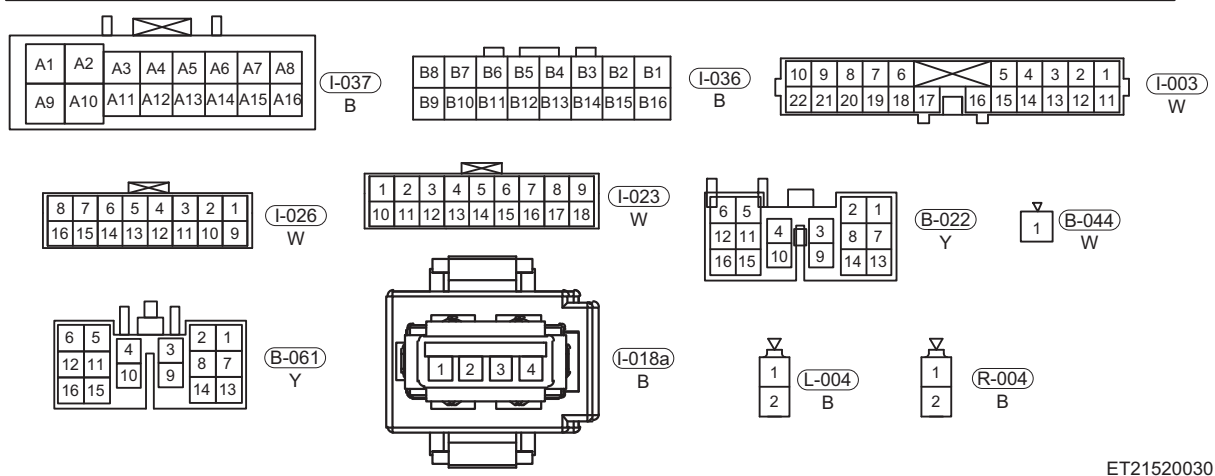
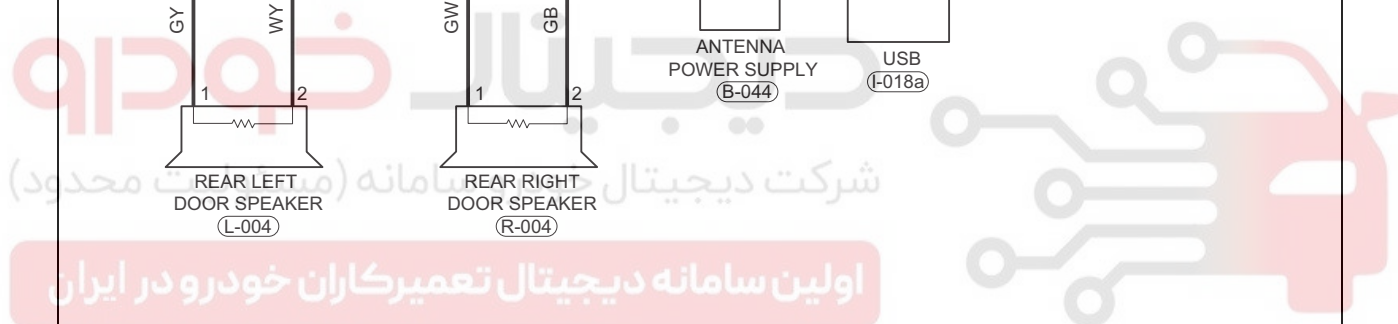
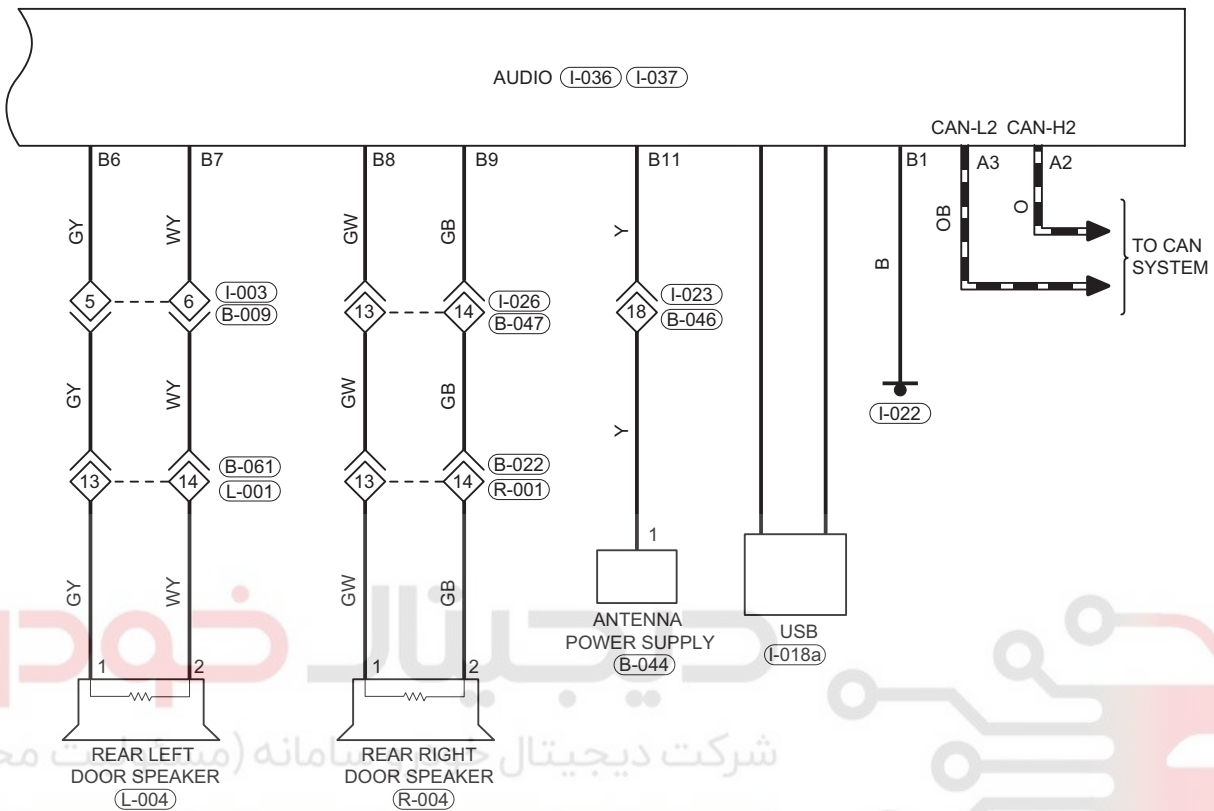
Audio System (Page 2 of 3)



دیجیتال خودرو
 شرکت دیجیتال خودرو سامانه (مسئولیت محدود)
 اولین سامانه دیجیتال تعمیرکاران خودرو در ایران

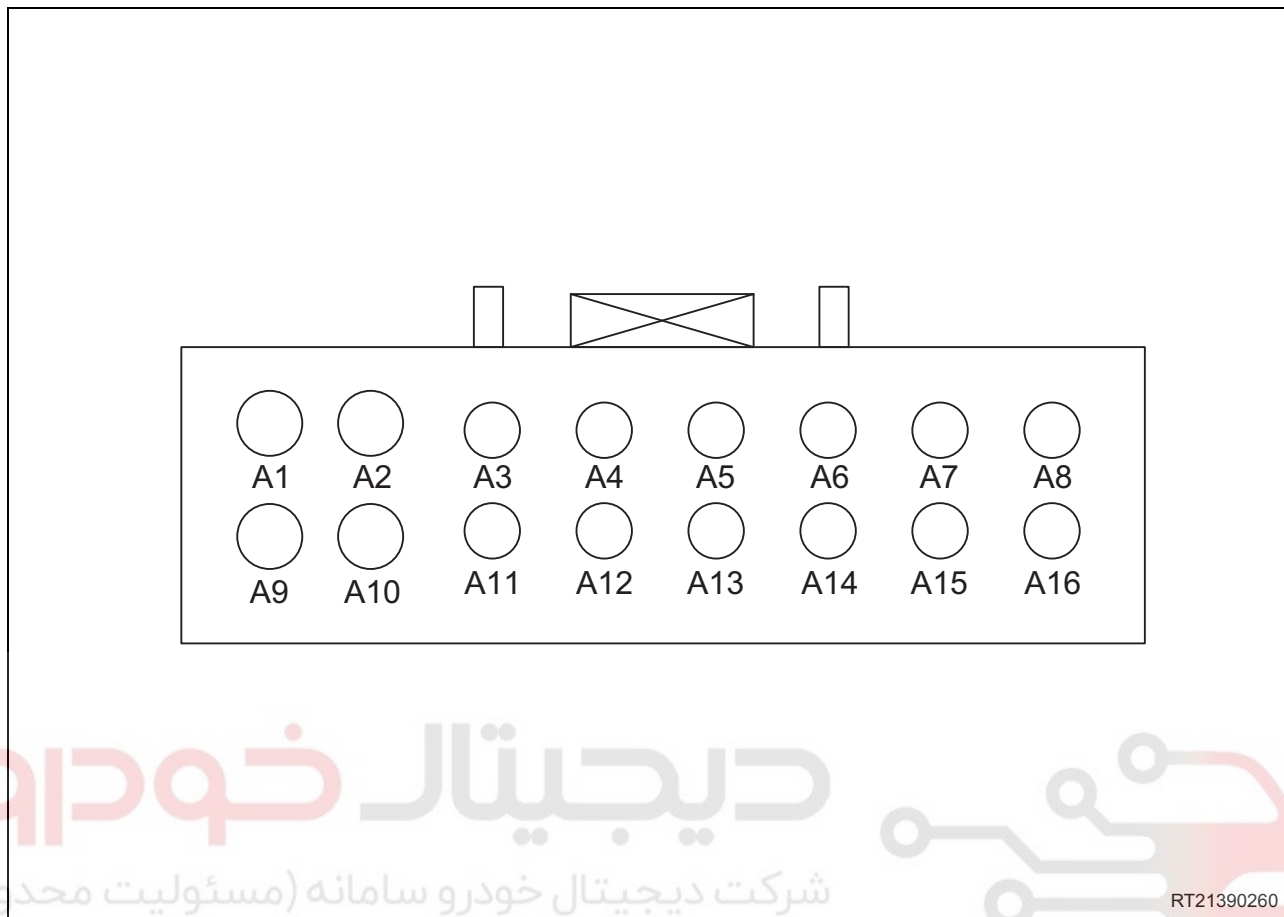


Audio System (Page 3 of 3)



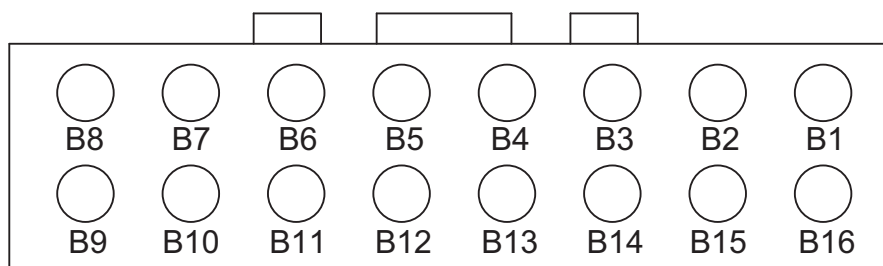
ET21520030

Audio System Control Module Terminal List



RT21390260

Terminal No.	Terminal Name	Terminal Definition
1	GND	Power Ground
2	FL+	Front Left Speaker Audio Signal+
3	FL-	Front Left Speaker Audio Signal-
4	FR+	Front Right Speaker Audio Signal+
5	FR-	Front Right Speaker Audio Signal-
6	RL+	Rear Left Speaker Audio Signal+
7	RL-	Rear Left Speaker Audio Signal-
8	RR+	Rear Right Speaker Audio Signal+
9	RR-	Rear Right Speaker Audio Signal-
10	Steer button power	Steering Wheel Quick Button Operation Power
11	AMP	Antenna Operation Power
12	-	-
13	Steer button signal	Steering Wheel Quick Button Signal
14	ILL	Backlight Adjustment Signal
15	ACC	Ignition Switch Power Supply
16	BATT	Battery Power Supply



RT21390270



Terminal No.	Terminal Name	Terminal Definition
1	Reverse	Reverse Signal (DC High is effective)
2	CAN_H	CAN High Signal
3	CAN_L	CAN Low Signal
4	RVC_CVBS-	Camera Video-
5	RVC_CVBS+	Camera Video+
6	RVC_VCC	Camera Power Supply
7	-	-
8	-	-
9	-	-
10	-	-
11	-	-
12	-	-
13	-	-
14	-	-
15	-	-
16	Phone Answer Signal	Phone Answer Signal

DIAGNOSIS & TESTING

Problem Symptoms Table

HINT:

Use the table below to help determine the cause of problem symptoms. Check each suspected area in sequence. Repair or replace the faulty components, or adjust as necessary.

Symptom	Suspected Area	See page
Noise occurs	Noise source (interference)	-
	Tweeter assembly (loose installation)	52-15
	Front woofer assembly (loose installation)	52-16
	Rear woofer assembly (loose installation)	52-18
	No disc DVD assembly (malfunction)	52-11
No disc DVD assembly does not operate	Fuse (blown)	52-5
	No disc DVD control panel	52-24
	No disc DVD assembly (malfunction)	52-11
	Wire harness and connector (malfunction)	-
No sound can be heard from speakers	Fuse (blown)	52-5
	Tweeter assembly (loose installation)	52-15
	Front woofer assembly (loose installation)	52-16
	Rear woofer assembly (loose installation)	52-18
	No disc DVD control panel	52-24
	No disc DVD assembly (malfunction)	52-11
	Wire harness and connector (malfunction)	-
Radio broadcast signal cannot be received (poor reception)	No disc DVD control panel	52-24
	Optional equipment (interference)	-
	No disc DVD assembly (malfunction)	52-11
	Antenna assembly (w/ antenna amplifier) (malfunction)	52-20
	Antenna wire harness and connector (malfunction)	-

HINT:

When checking general malfunctions of audio system, perform inspection at spacious area nearby free of obstacles.

ON-VEHICLE SERVICE

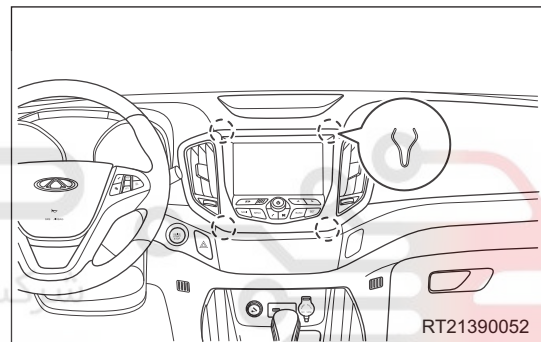
No Disc DVD Assembly

Removal

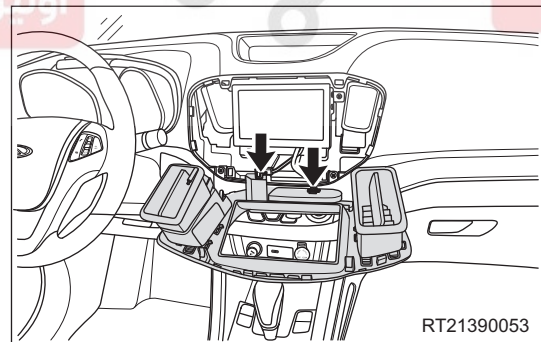
CAUTION

- Be sure to wear safety equipment to prevent accidents when removing no disc DVD assembly.
- Appropriate force should be applied when removing no disc DVD assembly. Be careful not to operate roughly.
- DO NOT scratch interior when removing no disc DVD assembly.

1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the DVD panel assembly.
 - a. Using a screwdriver wrapped with protective tape, pry the clips on DVD panel assembly.



- b. Disconnect the DVD panel assembly connectors (arrow) and remove the DVD panel assembly.



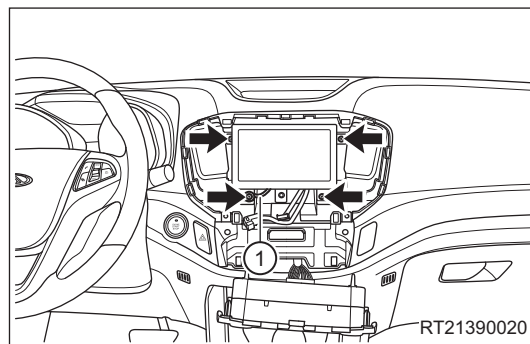
4. Remove the no disc DVD assembly.

CAUTION

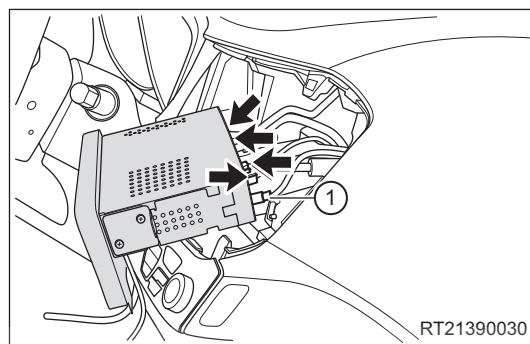
- Handle and operate carefully to prevent components from being scratched or damaged when removing no disc DVD assembly.

52 - AUDIO SYSTEM

- a. Remove 4 fixing screws (arrow) and ground (1) from the no disc DVD assembly.
(Tightening torque: 2 ± 0.5 N·m)



- b. Disconnect the no disc DVD assembly connectors (arrow) and antenna (1) and remove the no disc DVD assembly.



Inspection

1. Check no disc DVD assembly connectors and terminals for deformation or damage. Replace if necessary.
2. Check antenna and connectors for damage. Replace if necessary.
3. Check no disc DVD assembly house for deformation or damage. Replace if necessary.

Installation

Installation is in the reverse order of removal.

CAUTION

- Operate carefully to prevent components from being damaged when installing no disc DVD assembly.
- Be sure to tighten fixing screws to the specified torque when installing no disc DVD assembly.
- Install each connector in place when installing no disc DVD assembly.
- Check no disc DVD assembly for proper operation after installation.

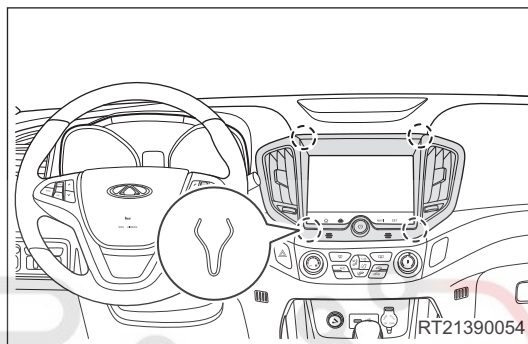
No Disc Navigator

Removal

CAUTION

- Be sure to wear safety equipment to prevent accidents, when removing no disc navigator.
- Appropriate force should be applied when removing no disc navigator. Be careful not to operate roughly.
- DO NOT scratch interior, when removing no disc navigator.

1. Turn off all electrical equipment and the ignition switch.
2. Disconnect the negative battery cable.
3. Remove the center control panel assembly.
 - a. Using a screwdriver wrapped with protective tape, pry up clips on center control panel assembly.

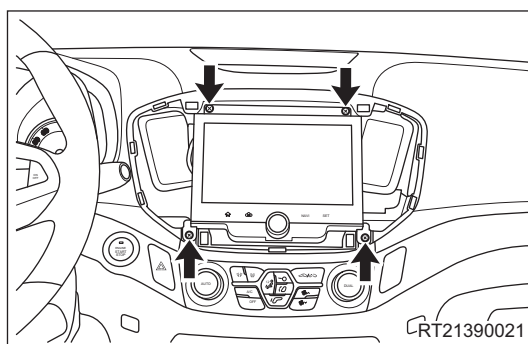


4. Remove the center control panel assembly.

CAUTION

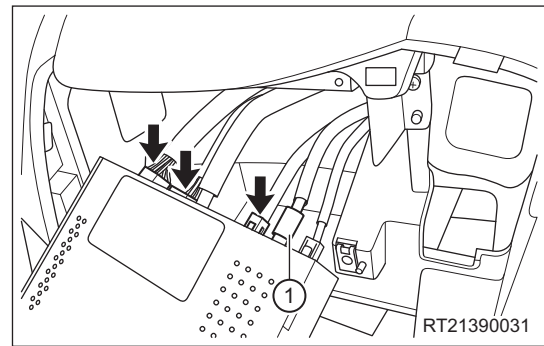
- Handle and operate carefully to prevent components from being scratched or damaged, when removing no disc navigator.

- a. Remove 4 fixing screws (arrow) and ground from no disc navigator.
(Tightening torque: $2 \pm 0.5 \text{ N}\cdot\text{m}$)



52 - AUDIO SYSTEM

- b. Disconnect no disc navigator connectors (arrow) and antenna (1) and remove no disc navigator.



Inspection

1. Check no disc navigator connectors and terminals for deformation or damage. Replace if necessary.
2. Check antenna and connectors for damage. Replace if necessary.
3. Check no disc navigator house for deformation or damage. Replace if necessary.

Installation

Installation is in the reverse order of removal.

CAUTION

- Operate carefully to prevent components from being damaged, when installing no disc navigator.
- Be sure to tighten fixing screws to the specified torque, when installing no disc navigator.
- Install each connector in place, when installing no disc navigator.
- Check no disc navigator for proper operation after installation.

Tweeter Assembly

Removal

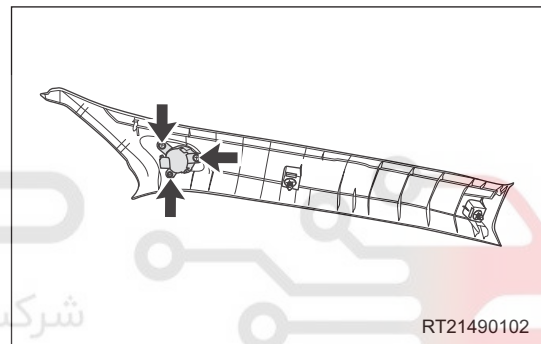
HINT:

- Use the same procedures for the right side and left side.
- Procedures listed below are for the left side.

CAUTION

- Be sure to wear safety equipment to prevent accidents when removing tweeter assembly.
- Appropriate force should be applied when removing tweeter assembly. Be careful not to operate roughly.

1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the A-pillar upper protector assembly (See page 63-17).
4. Remove the left tweeter assembly.
 - a. Remove 3 fixing screws (arrow) from tweeter assembly.
(Tightening torque: 3 ± 0.5 N·m)
 - b. Remove the left tweeter assembly.



Inspection

Check tweeter connector for damage and terminals for bend or poor connection. Replace if necessary.

Installation

Installation is in the reverse order of removal.

CAUTION

- Operate carefully to prevent components from being damaged when installing tweeter assembly.
- Be sure to tighten fixing screws to the specified torque when installing tweeter assembly.
- Install connector in place when installing tweeter assembly.
- Check tweeter assembly for proper operation after installation.

Front Woofer Assembly

Removal

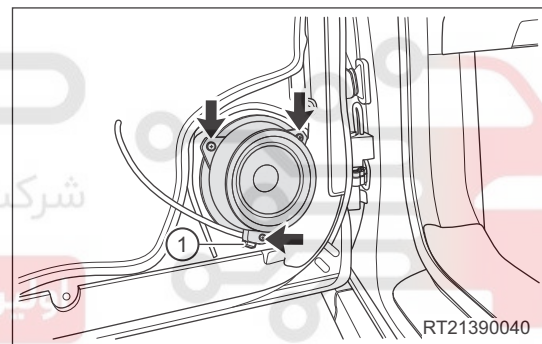
HINT:

- Use the same procedures for the right side and left side.
- Procedures listed below are for the left side.

CAUTION

- Be sure to wear safety equipment to prevent accidents when removing front woofer assembly.
- Appropriate force should be applied when removing front woofer assembly. Be careful not to operate roughly.
- Never touch the cone paper and other components of front woofer assembly during removal; otherwise it will affect sound effect or damage front woofer assembly.

1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the front left door protector assembly (See page 61-24).
4. Remove the front left woofer assembly.
 - a. Disconnect the front woofer connector (1).
 - b. Remove 3 fixing screws (arrow) from front woofer assembly, and then remove the front left woofer assembly.
(Tightening torque: 2.5 ± 0.5 N·m)



Inspection

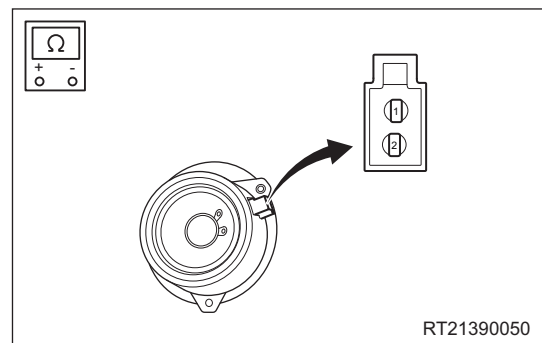
1. Check front woofer assembly.
 - a. Using a digital multimeter, measure resistance of front woofer assembly according to the table below.

Standard Resistance

Multimeter Connection	Condition	Specified Condition
Terminal 1 - Terminal 2	Always	Approximately 3.6 Ω

If result is not as specified, replace the front woofer assembly.

2. Check cone paper of front woofer assembly for damage or deformation. Replace if necessary.
3. Check front woofer connector for damage and terminals for bend or poor connection. Replace if necessary.



Installation

Installation is in the reverse order of removal.

CAUTION

- Operate carefully to prevent components from being damaged when installing front woofer assembly.
- Be sure to tighten fixing screws to the specified torque when installing front woofer assembly.
- Install connector in place when installing front woofer assembly.
- Check front woofer for proper operation after installing front woofer assembly.

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Rear Woofer Assembly

Removal

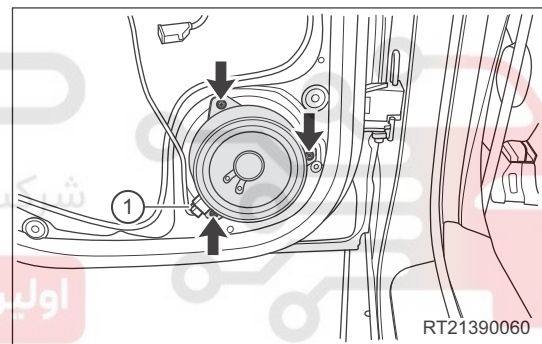
HINT:

- Use the same procedures for the right side and left side.
- Procedures listed below are for the left side.

CAUTION

- Be sure to wear safety equipment to prevent accidents when removing rear woofer assembly.
- Appropriate force should be applied when removing rear woofer assembly. Be careful not to operate roughly.
- Never touch the cone paper and other components of rear woofer assembly during removal; otherwise it will affect sound effect or damage rear woofer assembly.

1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the rear left door protector assembly (See page 61-36).
4. Remove the rear left woofer assembly.
 - a. Disconnect the rear woofer connector (1).
 - b. Remove 3 fixing screws (arrow) from rear woofer assembly, and then remove the rear woofer assembly. (Tightening torque: 2.5 ± 0.5 N·m)



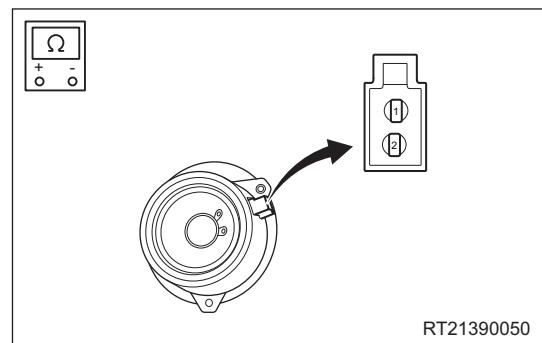
Inspection

1. Check rear woofer assembly.
 - a. Using a digital multimeter, measure resistance of rear woofer assembly according to the table below.

Standard Resistance

Multimeter Connection	Condition	Specified Condition
Terminal 1 - Terminal 2	Always	Approximately 3.6 Ω

If result is not as specified, replace the rear woofer assembly.



2. Check cone paper of rear woofer assembly for damage or deformation. Replace if necessary.
3. Check rear woofer connector for damage and terminals for bend or poor connection. Replace if necessary.

Installation

Installation is in the reverse order of removal.

CAUTION

- Operate carefully to prevent components from being damaged when installing rear woofer assembly.
- Be sure to tighten fixing screws to specified torque when installing rear woofer assembly.
- Install connector in place when installing rear woofer assembly.
- Check rear woofer for proper operation after installing rear woofer assembly.

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Antenna Assembly (w/ Antenna Amplifier)

Removal

CAUTION

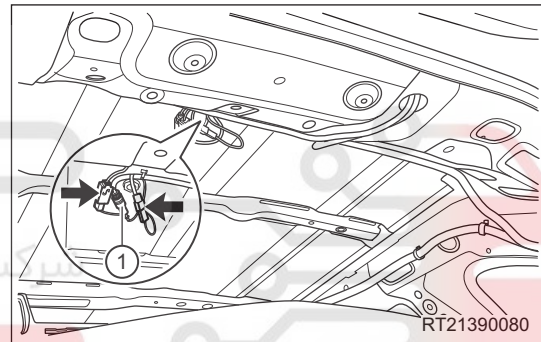
- Be sure to wear safety equipment to prevent accidents when removing antenna assembly.
- Appropriate force should be applied when removing antenna assembly. Be careful not to operate roughly.

1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the roof assembly (See page 63-32).

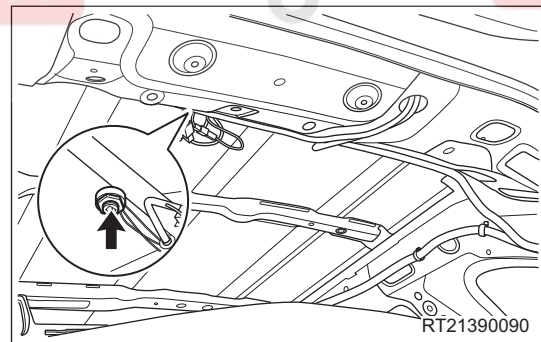
HINT:

It is not necessary to completely remove the roof assembly during removal, but it is necessary to lower the rear part of roof assembly so that antenna can be removed.

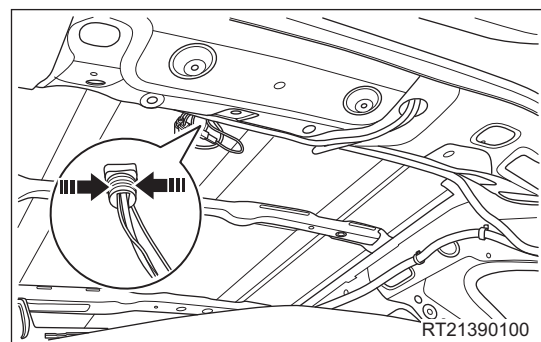
4. Remove the antenna assembly (w/ antenna amplifier).
 - a. Disconnect the antenna (1) and connectors (arrow) from antenna assembly.



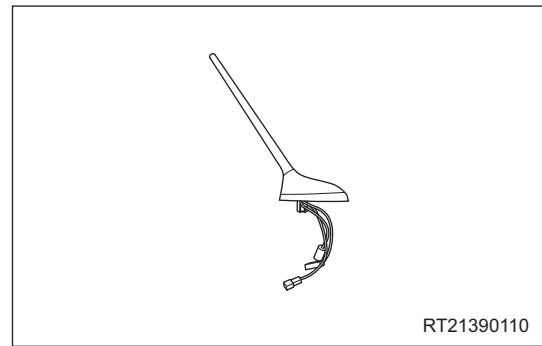
- b. Remove the fixing nut (arrow) from antenna assembly. (Tightening torque: 5 ± 1 N·m)



- c. Detach the attachment part between antenna assembly and body in the direction of arrow as shown in the illustration.



- d. Remove the antenna assembly from roof.



Inspection

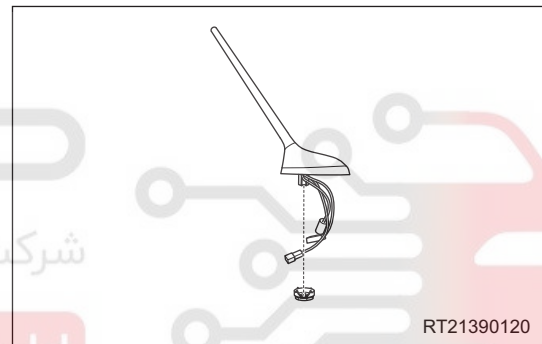
1. Check antenna assembly.
 - a. Check antenna assembly for wear, cracks, deformation or damage. Replace if necessary.
 - b. Check antenna assembly for looseness or disengagement. Replace if necessary.
 - c. Check terminals on antenna connector for deformation or bend. Replace if necessary.

Installation

Installation is in the reverse order of removal.

HINT:

When installing antenna assembly, align the boss at end of antenna assembly with the groove on fixing nut as shown in the illustration, and then firmly install the antenna assembly.



CAUTION

- Operate carefully to prevent components from being damaged when installing antenna assembly.
- Always insert dowel pin into body positioning hole and set it in place when installing antenna assembly.
- Be sure to tighten fixing nuts to the specified torque when installing antenna assembly.
- Install each connector and antenna in place when installing antenna assembly.
- Check audio system for proper operation after installing antenna assembly.

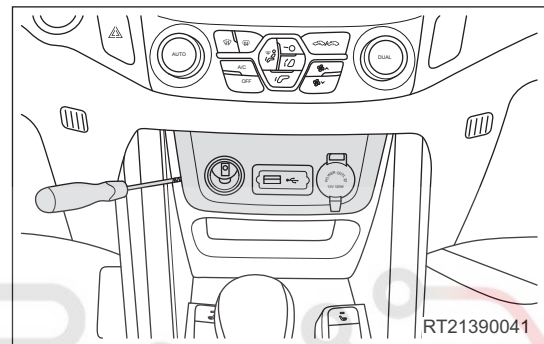
Multi-function Interface

Removal

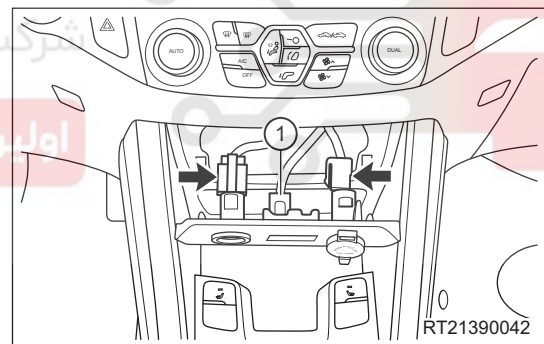
CAUTION

- Be sure to wear safety equipment to prevent accidents, when removing multi-function interface.
- Appropriate force should be applied when removing multi-function interface. Be careful not to operate roughly.

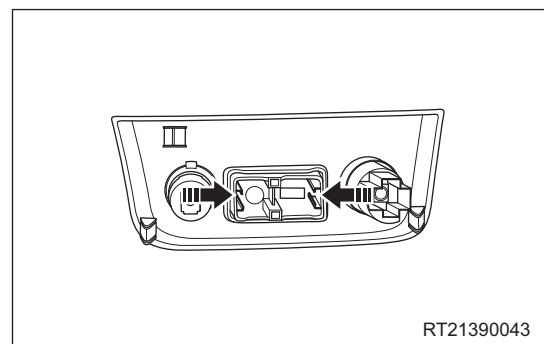
1. Turn off all electrical equipment and the ignition switch.
2. Disconnect the negative battery cable.
3. Remove the multi-function interface.
 - a. Using a screwdriver wrapped with protective tape, pry off the multi-function control panel assembly.



- b. Disconnect connectors (arrow) on multi-function control panel and multi-function interface connector (1).



- c. Press locating clips on multi-function interface in direction of arrow, and remove multi-function interface.



Installation

Installation is in the reverse order of removal.

CAUTION

- Operate carefully to prevent components from being damaged, when installing multi-function interface.
- Install connector in place, when installing multi-function interface.
- Check multi-function interface for proper operation after installation.

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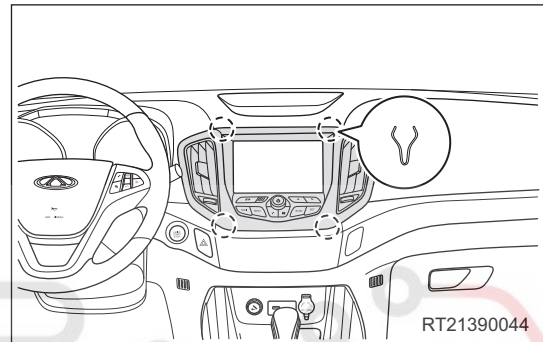
No Disc DVD Control Panel

Removal

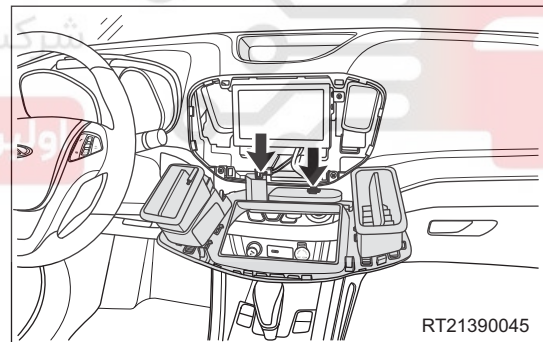
CAUTION

- Be sure to wear safety equipment to prevent accidents when removing no disc DVD control panel.
- Appropriate force should be applied when removing no disc DVD control panel. Be careful not to operate roughly.

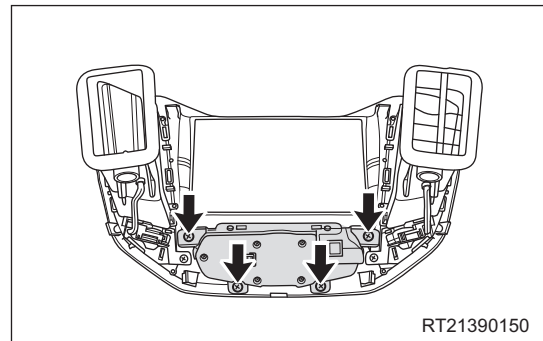
1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the DVD panel assembly.
 - a. Using a screwdriver wrapped with protective tape, pry up the clips on DVD panel assembly.



- b. Disconnect the DVD panel assembly connectors (arrow) and remove the DVD panel assembly.



4. Remove the no disc DVD control panel.
 - a. Remove 4 fixing screws (arrow) from no disc DVD control panel. (Tightening torque: 2 ± 0.5 N·m)
 - b. Remove the no disc DVD control panel from DVD panel assembly.



Installation

Installation is in the reverse order of removal.

CAUTION

- Operate carefully to prevent components from being damaged when installing no disc DVD control panel.
- Check no disc DVD for proper operation after installing no disc DVD control panel.

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Steering Wheel Quick Button (if equipped)

Removal

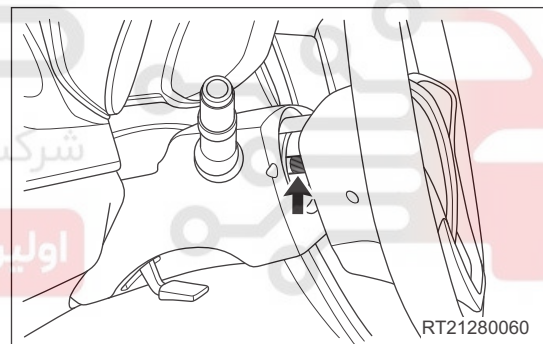
⚠ WARNING

- Be sure to read precautions for SRS airbag before removing steering wheel quick button (See page 43-4).

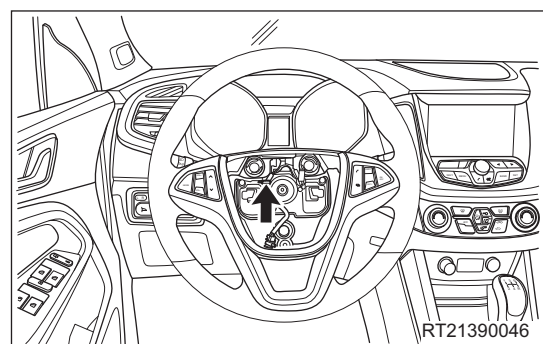
👁 CAUTION

- Be sure to wear safety equipment to prevent accidents when removing steering wheel quick button.
- Operate carefully to prevent claws on steering wheel quick button from being damaged when removing steering wheel quick button.

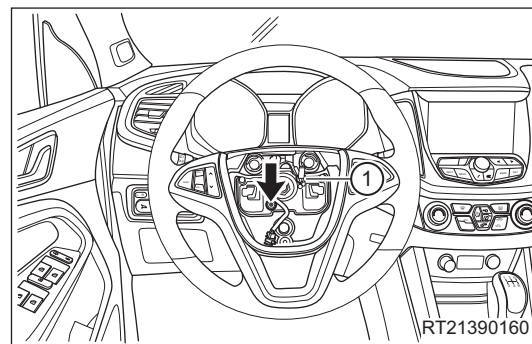
1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the driver airbag (See page 43-77).
4. Remove the steering wheel quick button trim cover.
 - a. Disconnect the steering wheel quick button connector (arrow).



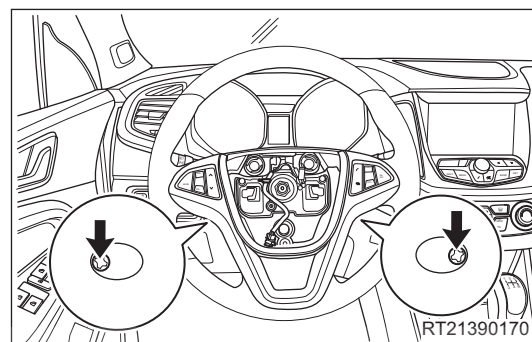
- b. Cut the wire harness band (arrow).



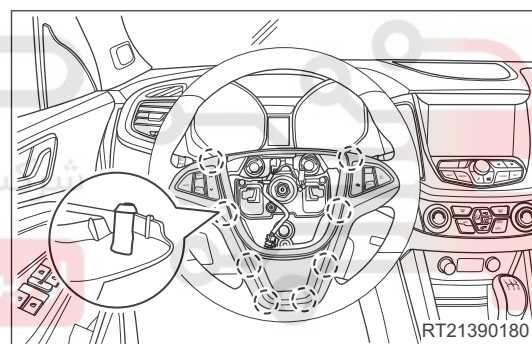
- c. Remove the fixing screw (arrow) from ground wire harness.
- d. Remove the wire harness fixing screw (1).
(Tightening torque: 0.7 ± 0.2 N·m)



- e. Remove 2 fixing screws (arrow) from steering wheel quick button trim cover.
(Tightening torque: 0.7 ± 0.2 N·m)

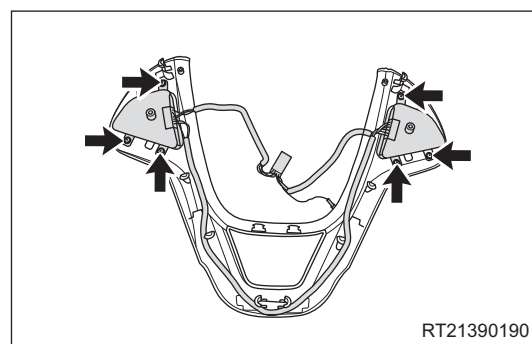


- f. Using a screwdriver wrapped with protective tape, pry up the claws on steering wheel quick button trim cover, and remove the steering wheel quick button trim cover.



5. Remove the steering wheel quick button.

- a. Remove 6 fixing screws (arrow) from steering wheel quick button, and remove the steering wheel quick button.
(Tightening torque: 0.7 ± 0.2 N·m)



Inspection

1. Check steering wheel quick button.
 - a. Check steering wheel quick button for damage. Replace if necessary.
 - b. Check steering wheel quick button connector for damage or poor terminal connection. Replace if necessary.
 - c. Check for continuity of wire harness between steering wheel quick button connector and audio unit (no disc DVD assembly). Replace if necessary.

Installation

Installation is in the reverse order of removal.

CAUTION

- Operate carefully to prevent components from being damaged when installing steering wheel quick button.
- Install each connector in place when installing steering wheel quick button.
- Tighten fixing screws to the specified torque when installing steering wheel quick button.

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REVERSING RADAR SYSTEM

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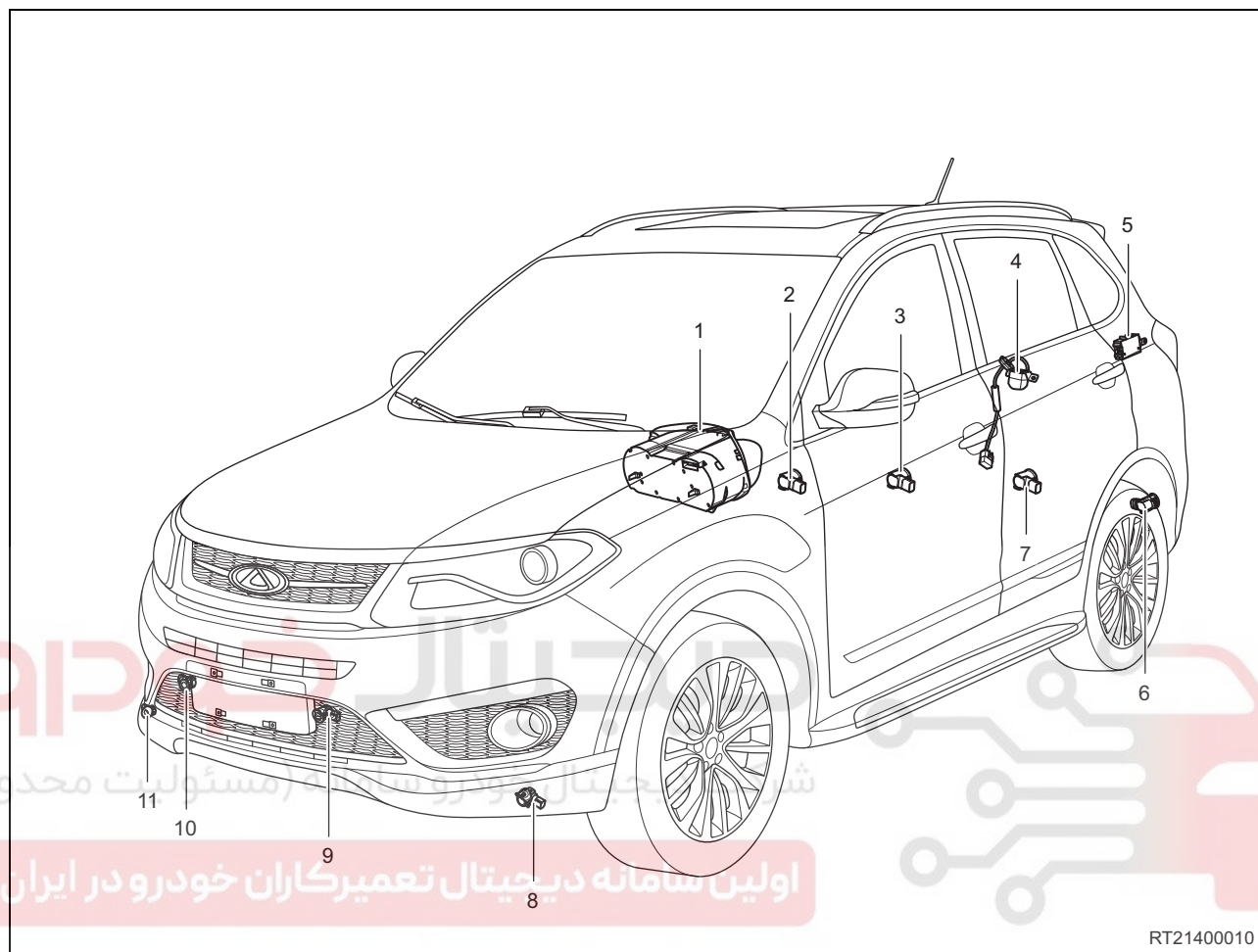
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GENERAL INFORMATION

Description



RT21400010

1 - Instrument Cluster	2 - Rear Right Reversing Radar Sensor
3 - Rear Right Center Reversing Radar Sensor	4 - Reversing Camera
5 - Reversing Radar Module	6 - Rear Left Reversing Radar Sensor
7 - Rear Left Center Reversing Radar Sensor	8 - Front Left Reversing Radar Sensor
9 - Front Left Center Reversing Radar Sensor	10 - Front Right Center Reversing Radar Sensor
11 - Front Right Reversing Radar Sensor	











Operation

Reversing radar system measures distance based on ultrasonic reflection principle. After reversing radar probe sends out ultrasonic and receives obstacle reflected ultrasonic, controller calculates distance to obstacle based on ultrasonic distance measuring principle, and send the data to display terminal for displaying and alarming.

System Composition













Reversing radar system consists of 1 reversing radar control module (ECU) and 8 probes, see table 1. Probe is adopted with separate structure, system related components are ignition switch, reverse switch, meter, PAS switch and vehicle speed (8 probes system). Ignition switch supplies operating power; reverse switch system provides operation activation signal; meter is the terminal of system, which provides sound alarm hint and distance display for driver; PAS switch and vehicle single can be associated for 8 probes system.

Reversing Radar System Information Meter Display Method (8 Probes)

Distance/cm	Meter Display Method				Remark
	Front Left	Front Left Center	Front Right Center	Front Right	
≤ 35					Continuous Sound, Three Red Arcs Remains ON
$40 \leq L \leq 60$					4Hz ON, Three Red Arcs Remains ON
$65 \leq L \leq 90$	-			-	2Hz ON, Two Yellow Arcs Remains ON
> 90	-	/	-	-	-

When more probes are malfunctioning, the malfunction information of each probe is displayed circularly in order shown in above table, each item displays for 5 seconds, and sound alarm is processed according to signals sent from radar module.

Rear Radar Display Method

Distance/cm	Meter Display Method				Remark
	Rear Left	Rear Left Center	Rear Right Center	Rear Right	
≤ 35					Continuous Sound, Arc Remains ON
$40 \leq L \leq 60$					4Hz ON, Arc Remains ON
$65 \leq L \leq 90$	-			-	2Hz ON, Arc Remains ON
$95 \leq L \leq 150$	-			-	1Hz ON, Arc Remains ON
> 150	-	-	-	-	-

HINT:

if there are 8 radar probes, 8 probes information are sent to meter display.

- When turning ignition switch ON and shift lever is shifted to reverse range, meter needs to change to vehicle screen; if the system does not detect obstacles (obstacle distance is more than 150 cm), it only displays vehicle screen, and arc is not displayed;
- If several probes are detected obstacles, meter display distances from each probe to an obstacle, and sounds the buzzer based on the shortest distance to obstacle according to signals sent from radar.

Reversing Radar Normal Alarm Display (4 Probes)

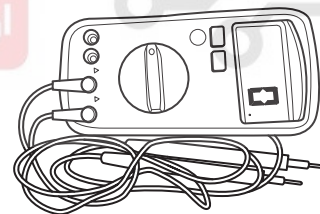
It is activated when the shift lever is shifted to reverse range and reversing at the speed below 5 km/h with ignition switch ON. The corresponding measured message will be displayed on multi-information display and alarm with buzzer in instrument cluster.

The response way of reversing radar system is buzzer response. The table below shows the correspondence between buzzer response frequency and actual obstacle distance:

Alarm Type	1st Section	2nd Section	3rd Section	4th Section	5th Section
Displayed Area	Safe Area	Pre-warning Area	Amble Area	Park Area	Park Area
Alarm Distance (cm)	> 150	95 - 150	65 - 90	40 - 60	≤ 35
Buzzer Sound Frequency	No Sound (OFF)	1Hz (ON 500 ms/ OFF 500 ms)	2Hz (ON 250 ms/ OFF 250 ms)	4Hz (ON 125 ms/ OFF 125 ms)	Continuous Sound

Tool**General Tool**

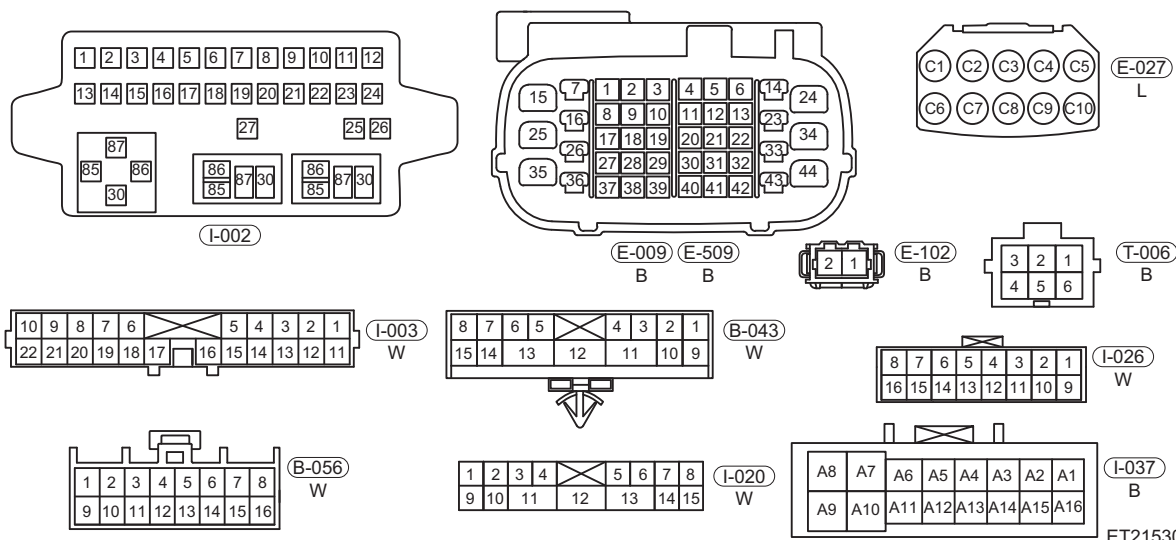
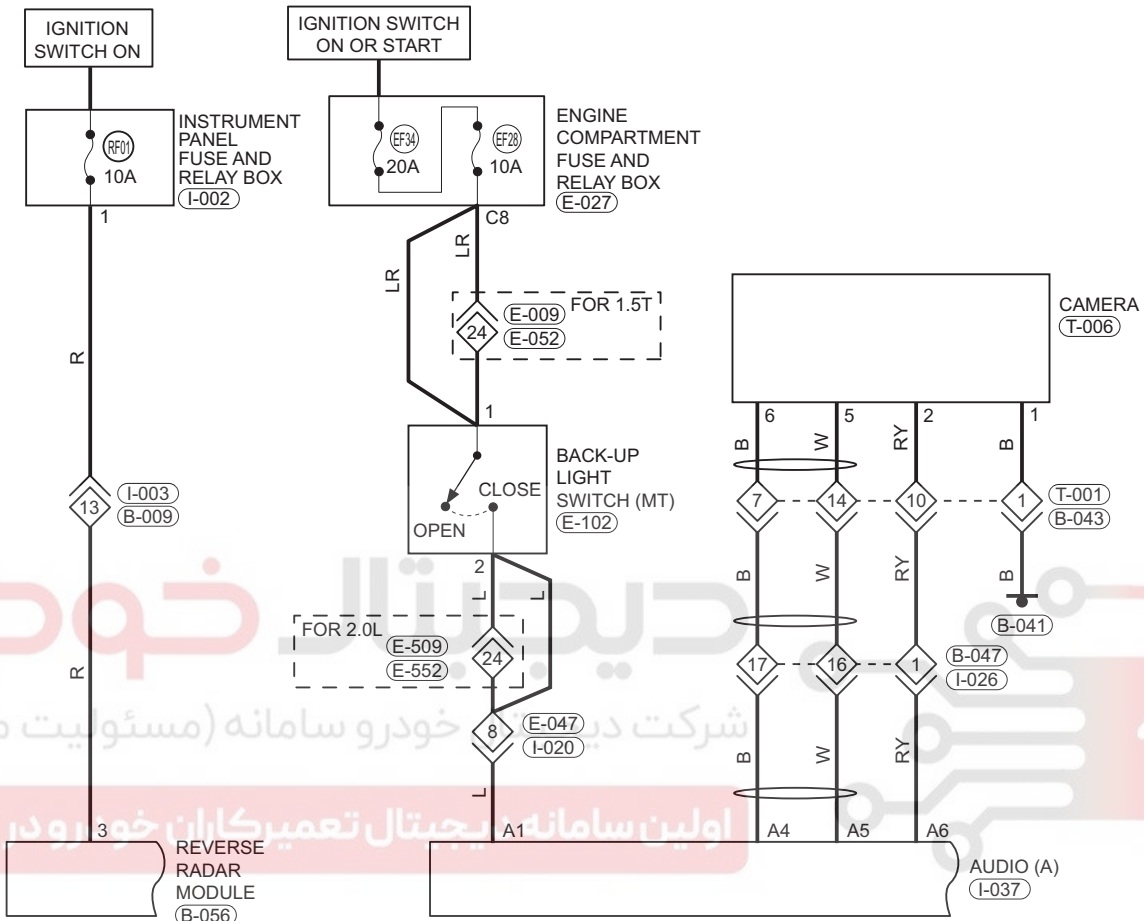
Digital Multimeter



RCH0000002

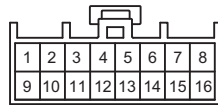
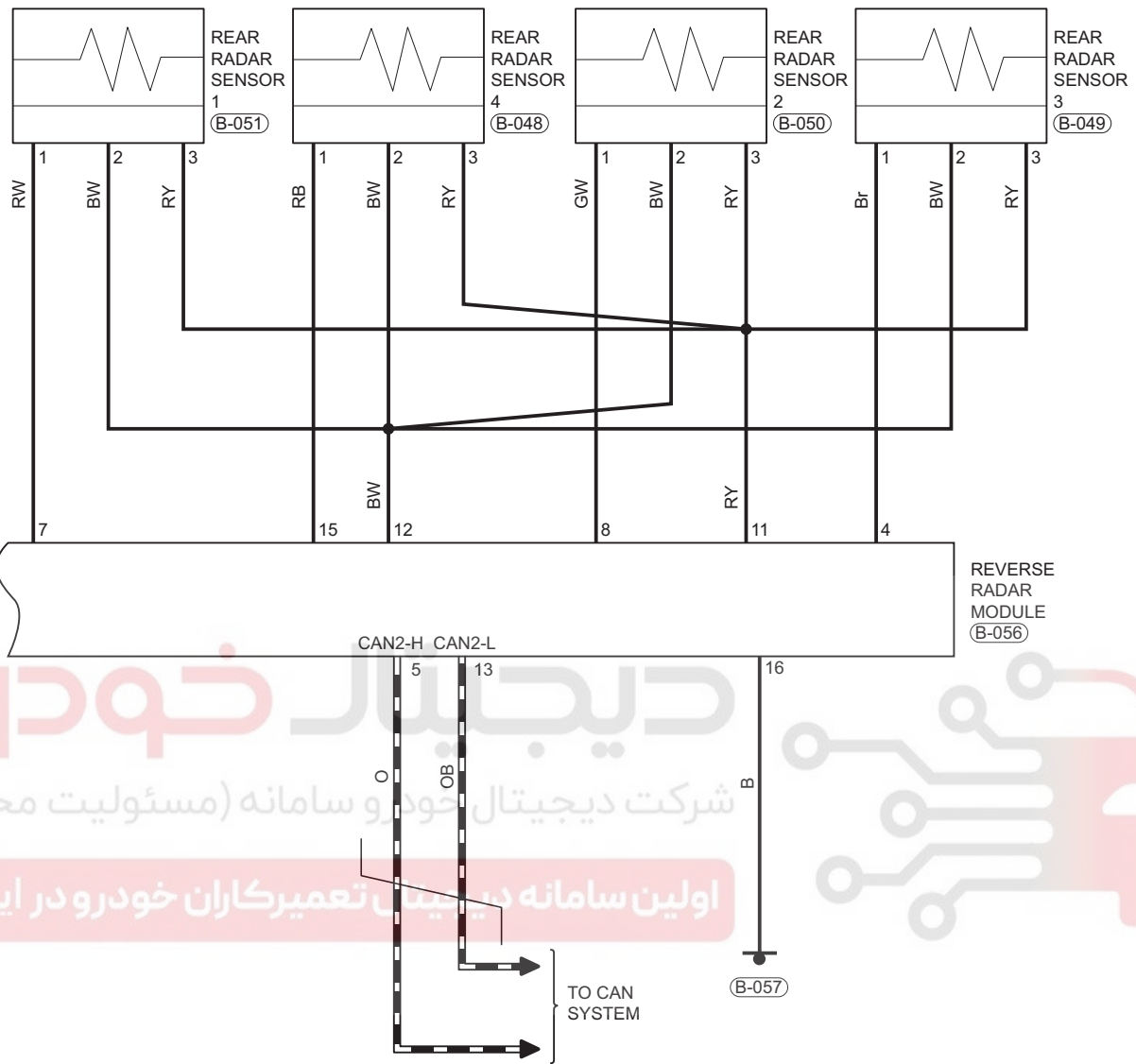
Circuit Diagram

FOR 4 SENSORS

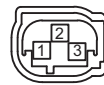


ET21530010

FOR 4 SENSORS



(B-056)
W

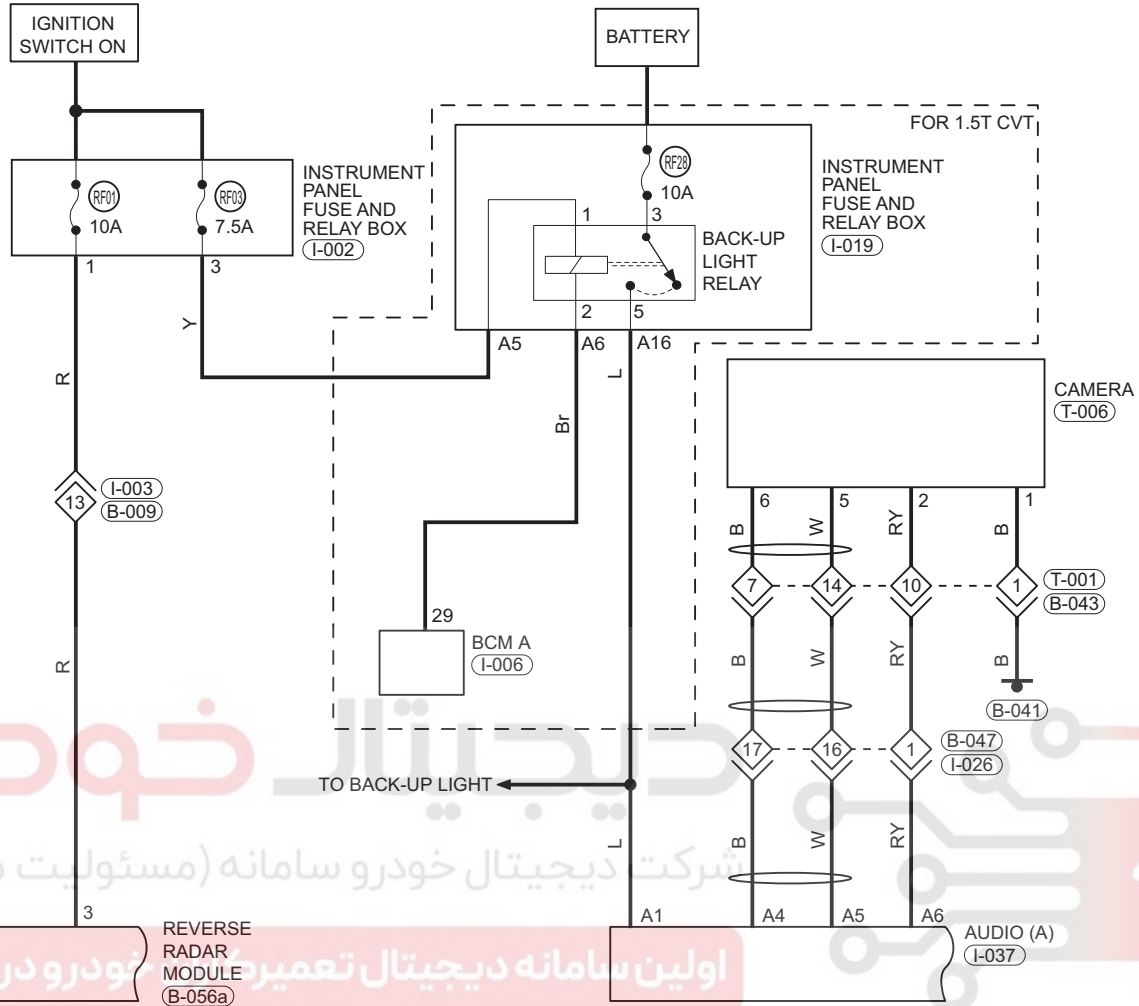


(B-048) (B-049)
B B
(B-050) (B-051)
B B

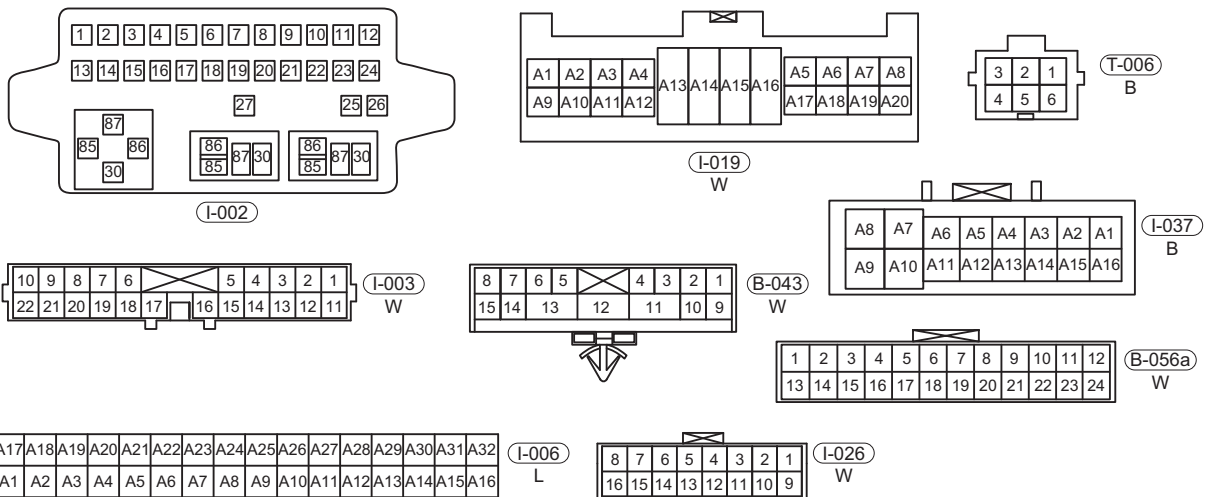
ET21530020

53 - REVERSING RADAR SYSTEM

FOR 8 SENSORS

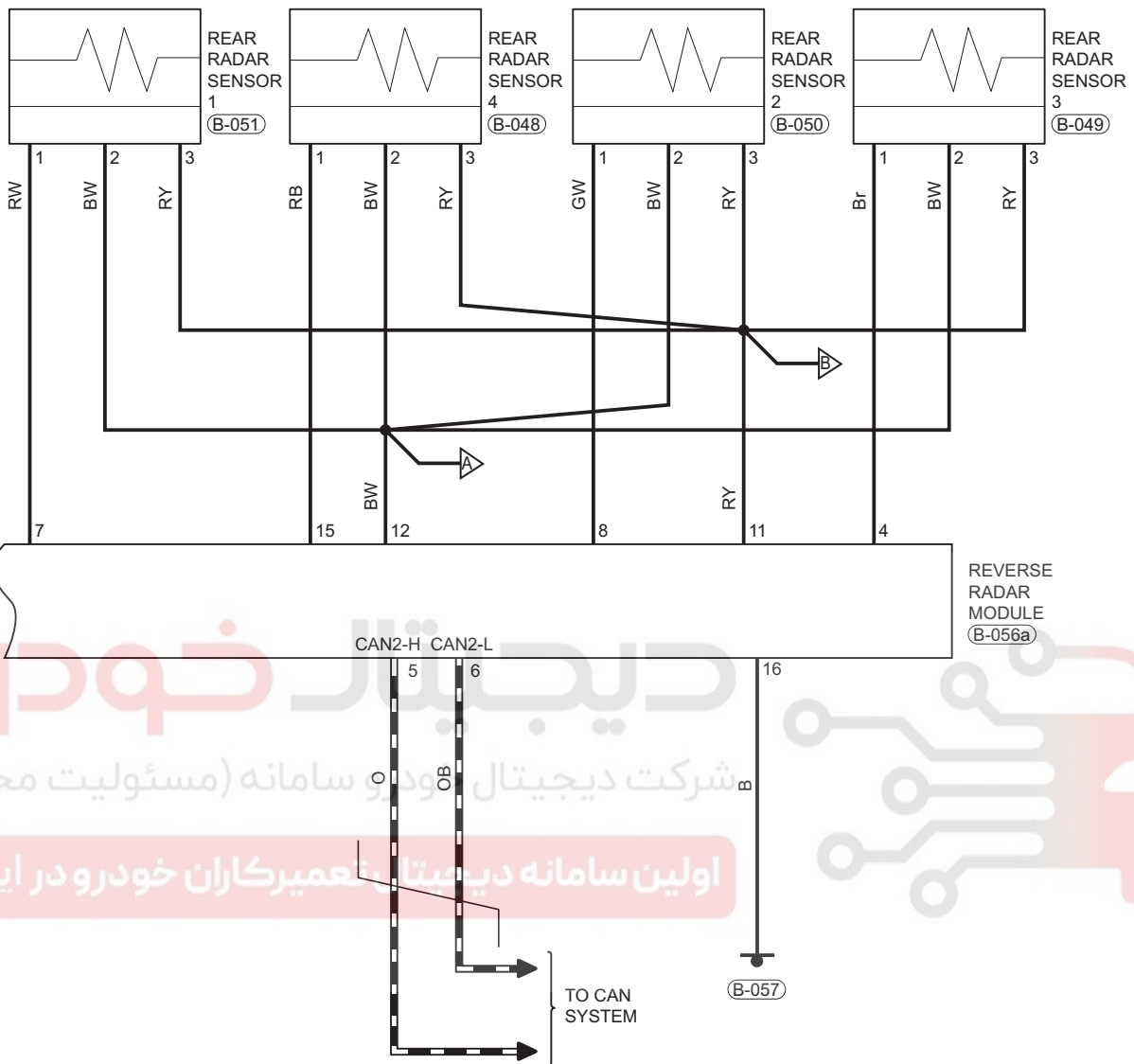


خودرو دیجیتال
 شرکت دیجیتال خودرو سامانه (مسئولیت محدود)
 اولین سامانه دیجیتال تعمیر خودرو در ایران

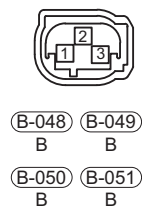
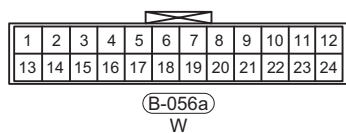


ET21530030

FOR 8 SENSORS



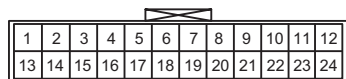
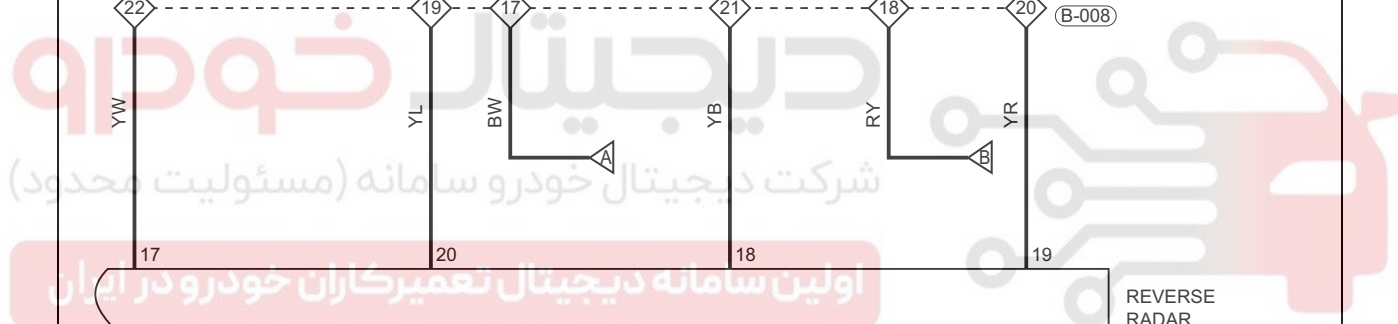
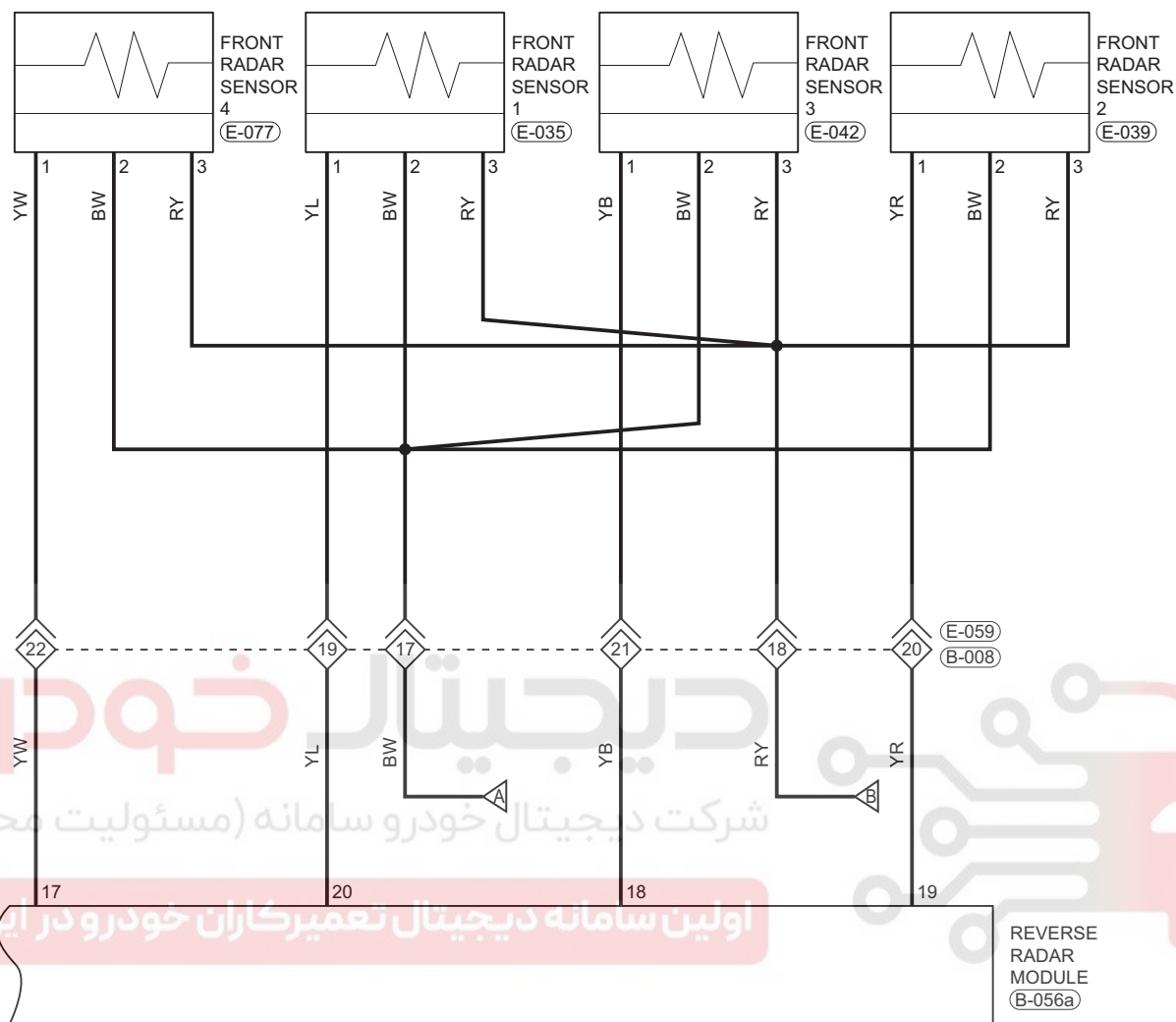
دیجیتال خودرو
 شرکت دیجیتال خودرو سامانه (مسئولیت محدود)
 اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



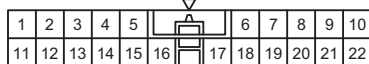
ET21530040

53 - REVERSING RADAR SYSTEM

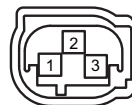
FOR 8 SENSORS



(B-056a)
W



(E-059)
W



(E-035) (E-039)
B B
(E-042) (E-077)
B B

ET21530050

Reversing Radar Control Module Assembly Terminal List (4 Probes)

Pin No.	Terminal Definition	Pin No.	Terminal Definition
1	R Range, Module Terminal (Reserve)	9	-
2	-	10	-
3	Reversing Radar Control Module Power Supply	11	Probe Power Supply
4	Rear Right Center Sensor	12	Probe Ground
5	CAN High	13	CAN Low
6	-	14	-
7	Rear Left Sensor	15	Rear Right Sensor
8	Rear Left Center Sensor	16	Power Supply Ground

Reversing Radar Control Module Assembly Terminal List (8 Probes)

Pin No.	Terminal Definition	Pin No.	Terminal Definition
1	R Range, Module Terminal (Reserve)	13	-
2	-	14	-
3	Reversing Radar Control Module Power Supply	15	Probe Power Supply
4	Rear Right Center Sensor	16	Probe Ground
5	CAN High	17	-
6	CAN Low	18	-
7	Rear Left Sensor	19	Rear Right Sensor
8	Rear Left Center Sensor	20	Power Supply Ground
9	-	21	Front Left Sensor
10	-	22	Front Left Center Sensor
11	Probe Power Supply	23	Front Right Center Sensor
12	Probe Ground	24	Front Right Sensor

DIAGNOSIS & TESTING

Problem Symptoms Table (4 Probes)

HINT:

Use symptoms table below to help determine cause of problem. Check each suspected area in sequence. Repair or adjust faulty components, or replace as necessary.

Symptom	Suspected Area	See page
Reversing radar system does not function (buzzer in instrument cluster does not sound)	Back-up light switch assembly	48-90
	Reversing Radar Sensor	53-17
	Reversing radar control module assembly	53-20
	Instrument cluster	51-48
	Wire harness and connector	-

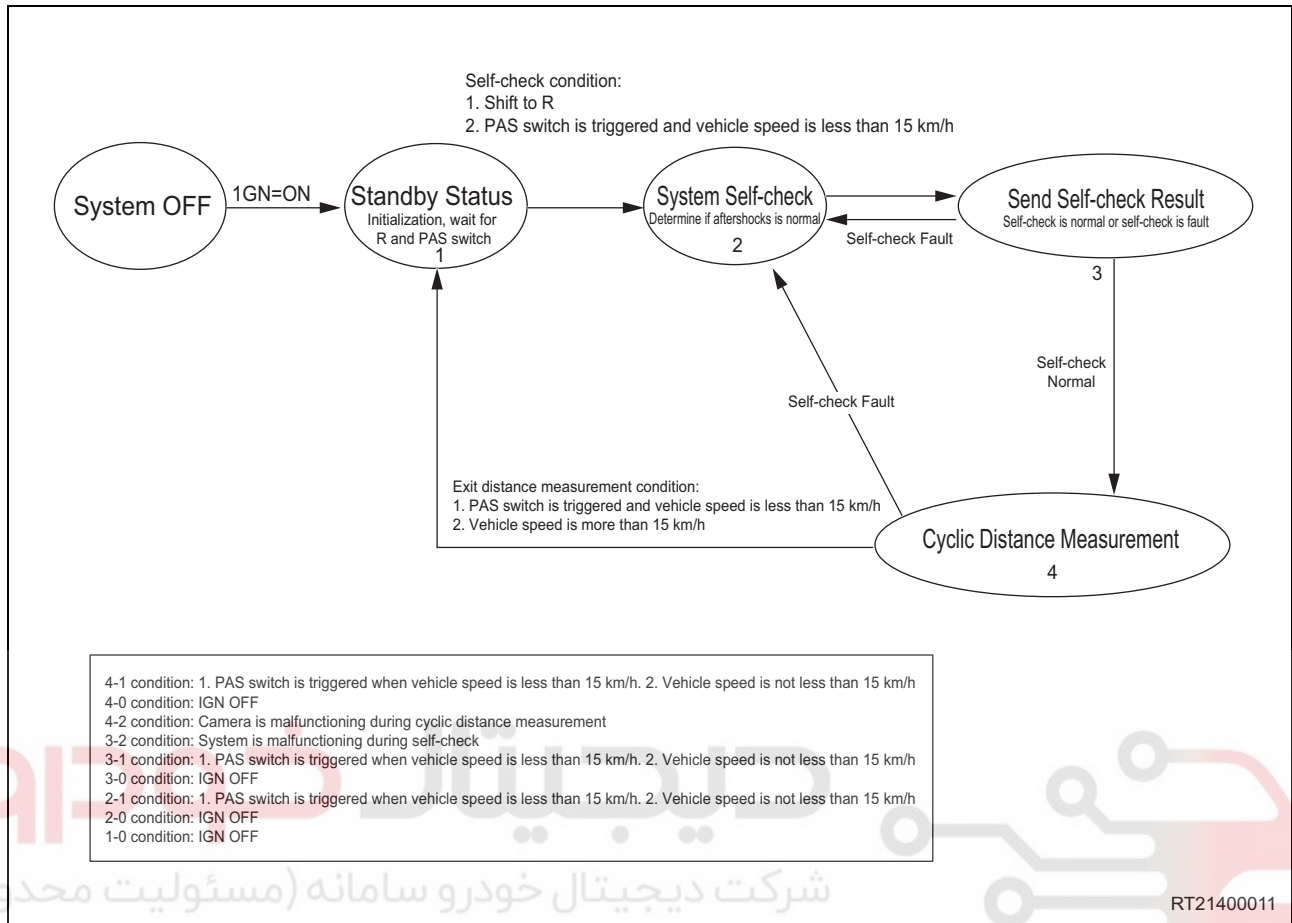
Problem Symptoms Table (8 Probes)

DTC	Description	Malfunction Type Definition	Malfunction Type	Detection Condition	Recovery Condition	Suspected Cause
B1A01 25	The Left of Front Ultrasonic Sensor Failure, Signal Shape/Waveform Failure	Component internal failure/circuit short to ground or open	Sensor malfunction	Aftershocks signal is abnormal during ultrasonic sensor self-check or normal operation;	Restart after sensor malfunction is recovered, and store history malfunction	Ultrasonic sensor damaged or poor connection with head unit
B1A02 25	The Left of Front Medium Ultrasonic Sensor Failure, Signal Shape/Waveform Failure		Sensor malfunction	Aftershocks signal is abnormal during ultrasonic sensor self-check or normal operation;	Restart after sensor malfunction is recovered, and store history malfunction	Ultrasonic sensor damaged or poor connection with head unit
B1A03 25	The Right of Front Medium Ultrasonic Sensor Failure, Signal Shape/Waveform Failure		Sensor malfunction	Aftershocks signal is abnormal during ultrasonic sensor self-check or normal operation;	Restart after sensor malfunction is recovered, and store history malfunction	Ultrasonic sensor damaged or poor connection with head unit

DTC	Description	Malfunction Type Definition	Malfunction Type	Detection Condition	Recovery Condition	Suspected Cause
B1A04 25	The Right of Front Ultrasonic Sensor Failure, Signal Shape/ Waveform Failure	Component internal failure/circuit short to ground or open	Sensor malfunction	Aftershocks signal is abnormal during ultrasonic sensor self-check or normal operation;	Restart after sensor malfunction is recovered, and store history malfunction	Ultrasonic sensor damaged or poor connection with head unit
B1A05 25	The Left of Back Ultrasonic Sensor Failure, Signal Shape/ Waveform Failure		Sensor malfunction	Aftershocks signal is abnormal during ultrasonic sensor self-check or normal operation;	Restart after sensor malfunction is recovered, and store history malfunction	Ultrasonic sensor damaged or poor connection with head unit
B1A06 25	The Left of Back Medium Ultrasonic Sensor Failure, Signal Shape/ Waveform Failure		Sensor malfunction	Aftershocks signal is abnormal during ultrasonic sensor self-check or normal operation;	Restart after sensor malfunction is recovered, and store history malfunction	Ultrasonic sensor damaged or poor connection with head unit
B1A07 25	The Right of Back Medium Ultrasonic Sensor Failure, Signal Shape/ Waveform Failure		Sensor malfunction	Aftershocks signal is abnormal during ultrasonic sensor self-check or normal operation;	Restart after sensor malfunction is recovered, and store history malfunction	Ultrasonic sensor damaged or poor connection with head unit
B1A08 25	The Right of Back Ultrasonic Sensor Failure, Signal Shape/ Waveform Failure		Sensor malfunction	Aftershocks signal is abnormal during ultrasonic sensor self-check or normal operation;	Restart after sensor malfunction is recovered, and store history malfunction	Ultrasonic sensor damaged or poor connection with head unit

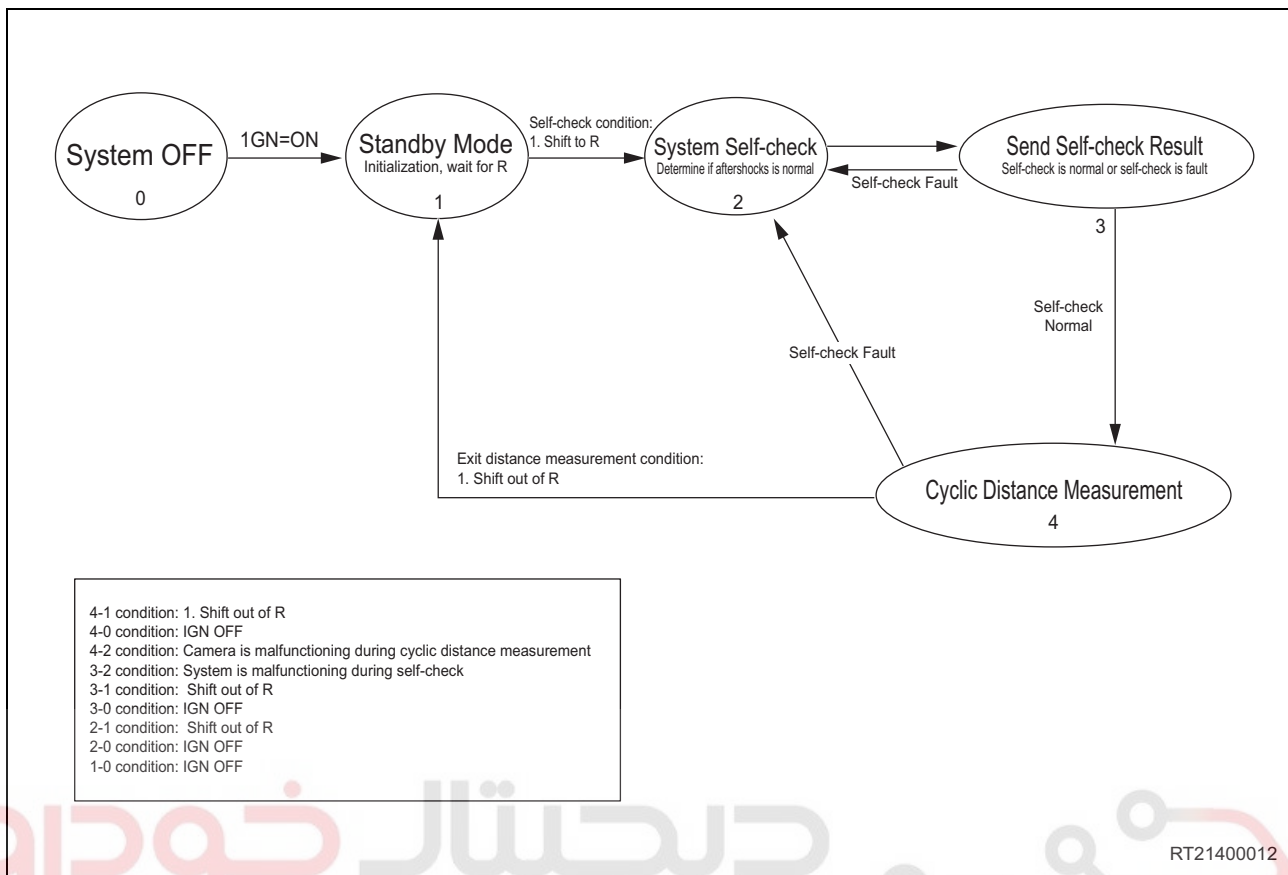
U0140 87	C1	40	87	Lost Communication With Body Control Module, Missing message	Missing message	√	√
U0129 87	C1	29	29	Lost Communication With Brake System Control Module, Missing message	Missing message	×	√

Operation Flowchart



دیجیتال خودرو سامانه (مسئولیت محدود)
شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

اولین سامانه دیجیتال تعمیرکاران خودرو در ایران

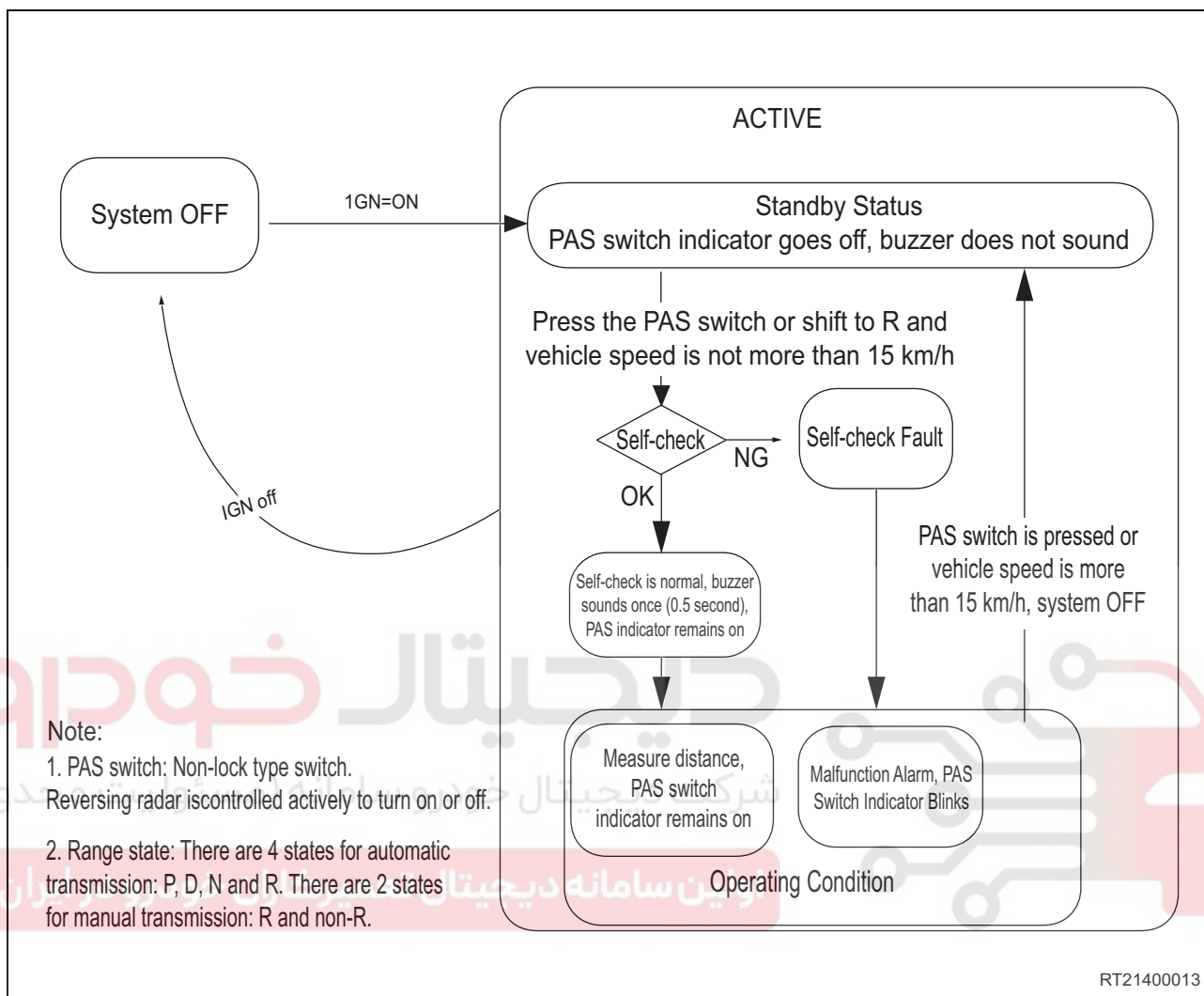


4 probes system logic strategy

1. System activation condition: 1GN=ON, and select reverse range;
2. Self-check condition: system begins self-check after system is activated?
3. If there is no malfunction in self-check, but probe is malfunctioning in this work cycle, system should send malfunction information timely;
4. If one or more probes do not operate, other probes should not operate, ECU send corresponding probe malfunction information to meter, buzzer sounds for 2 seconds continuously, and probe malfunction information is always displayed on meter;
5. If radar module is powered off suddenly, system will not operate and can not send malfunction information.

8 probes system logic strategy

8 probe system add vehicle and PAS switch associated condition, its logic is more complex than that of 4 probe system, it not only satisfies the strategy, but also meet the following requirements:



1. Reversing radar system (front and rear probes) operates when ignition switch is ON;
2. When ignition switch is ON, turn on reversing radar system using PAS switch or reverse switch, and reversing radar system automatically turns off when ignition switch is not ON;
3. Each time reversing radar system is activated, system performs the self-check, if the system is normal, the buzzer sounds for 0.5 second, PAS state indicator turns on and system starts measuring distance. If the system is malfunctioning, the buzzer sounds for 2 seconds, and malfunction information is always displayed until it is repaired;
4. Reversing radar system is activated with reverse switch (regardless of whether or not PAS switch is turned on before shifting to reverse range), and it still operates when shifting to other range;
5. If the vehicle is in forward state and reversing radar system is activated, radar system front and rear probes stop operating when vehicle speed is more than 15 km/h, and reversing radar system does not resume operation when vehicle speed decreases to 15 km/h or lower. At this time, turn on or off radar system by pressing PAS switch;

HINT:

- PAS switch parameter, point touch type, active-low level
- Vehicle single is obtained from CAN

ON-VEHICLE SERVICE

Reversing Radar Sensor

Removal

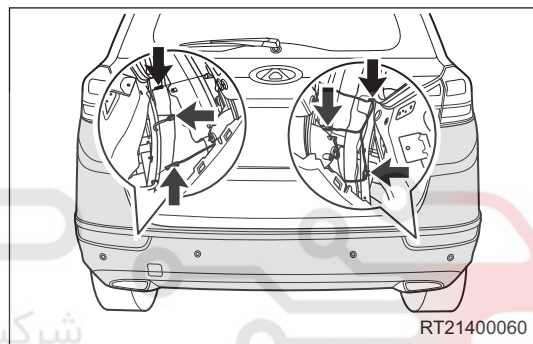
CAUTION

- Be sure to wear necessary safety equipment to prevent accidents, when removing reversing radar sensors.
- Operate carefully to avoid damaging reversing radar sensors, when removing reversing radar sensors.

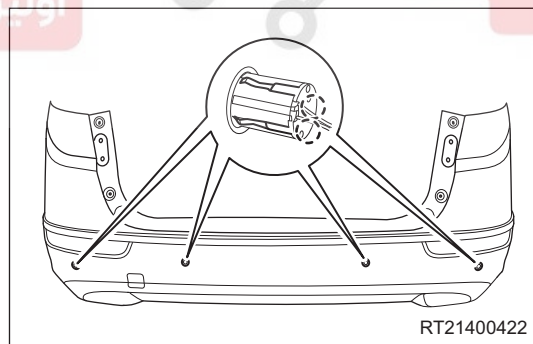
1. Turn off all electrical equipment and the ignition switch.
2. Disconnect the negative battery cable.
3. Remove the rear bumper assembly (See page 62-30).

HINT:

Reversing radar sensor connector (arrow) has been disconnected when removing rear bumper assembly.



4. Remove the reversing radar sensor.
 - a. Press claws on reversing radar sensor.
 - b. Remove reversing radar sensor from rear bumper assembly.



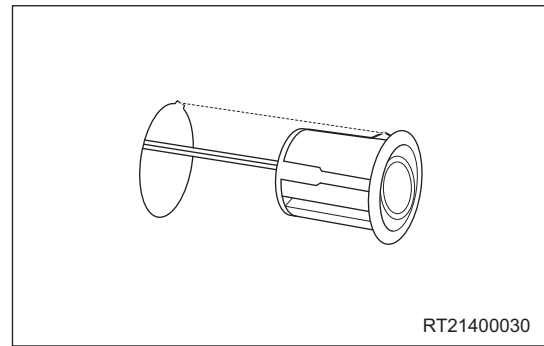
53 - REVERSING RADAR SYSTEM

Installation

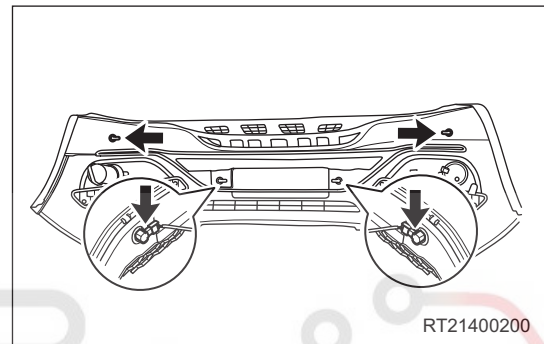
Installation is in the reverse order of removal.

HINT:

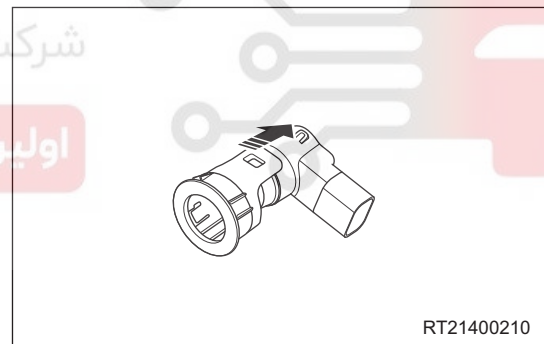
When installing reversing radar sensor, align boss at the end of reversing radar sensor with groove on rear bumper assembly, and then firmly install reversing radar sensor as shown in illustration.



1. Remove the front bumper assembly.
 - a. Disconnect the front probe connector (arrow).



- b. Press clamping portion on reversing radar sensor in direction of arrow as shown in illustration. Remove the reversing radar probe protector.



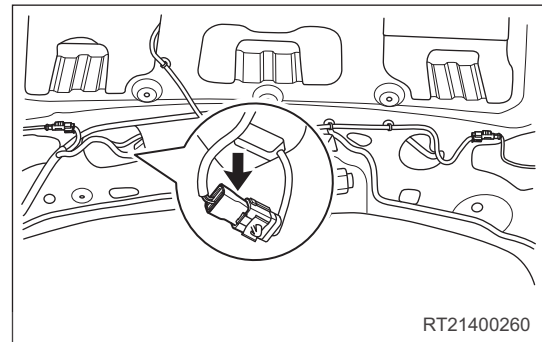
Rear View Monitor Camera

Removal

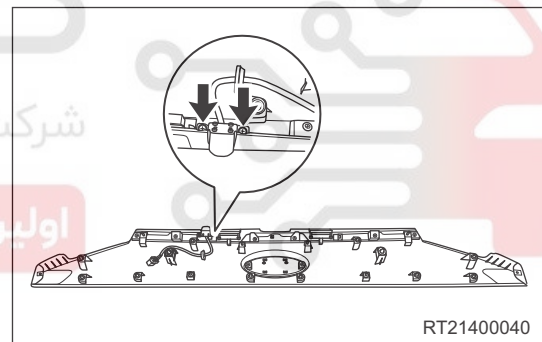
- Be sure to wear necessary safety equipment to prevent accidents, when removing rear view monitor camera.
 - Appropriate force should be applied, when removing rear view monitor camera. Be careful not operate roughly.
1. Turn off all electrical equipment and the ignition switch.
 2. Disconnect the negative battery cable.
 3. Remove the back door protector assembly (See page 61-47).

HINT:

Rear view monitor camera connector (arrow) has been disconnected when removing luggage compartment upper trim assembly.



4. Remove the rear view monitor camera.
 - a. Remove 2 fixing screws (arrow) from rear view monitor camera, and remove rear view monitor camera.
(Tightening torque: 6 ± 0.1 N·m)



Installation

Installation is in the reverse order of removal.

CAUTION

- Tighten fixing screws to specified torque when installing rear view monitor camera.
- Install connector in place when installing rear view monitor camera.
- Check reversing radar system for proper operation after installing rear view monitor camera.

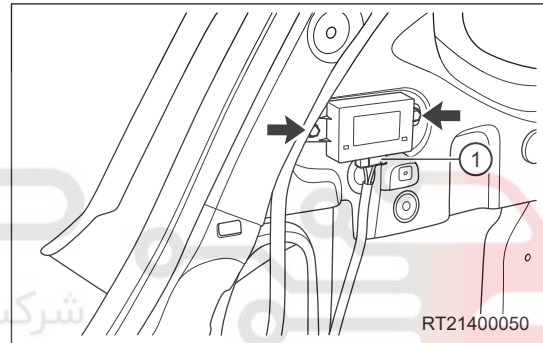
Reversing Radar Control Module Assembly

Removal

CAUTION

- Be sure to wear necessary safety equipment to prevent accidents, when removing reversing radar control module assembly.
- Appropriate force should be applied, when removing reversing radar control module assembly. Be careful not to operate roughly.

1. Turn off all electrical equipment and the ignition switch.
2. Disconnect the negative battery cable.
3. Remove the C-pillar lower protector assembly (See page 63-23).
4. Remove the C-pillar upper protector assembly (See page 63-26).
5. Remove the reversing radar control module assembly.
 - a. Disconnect the reversing radar control module assembly connector (1).
 - b. Remove 2 fixing bolts (arrow) between reversing radar control module assembly and body, and remove reversing radar control module assembly. (Tightening torque: 5 ± 1 N·m)



Installation

Installation is in the reverse order of removal.

CAUTION

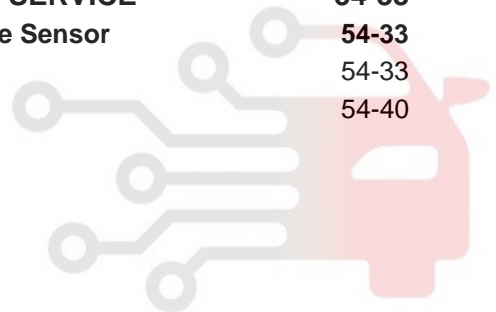
- Tighten fixing bolts to specified torque when installing reversing radar control module assembly.
- Install connector in place when installing reversing radar control module assembly.
- Check reversing radar system for proper operation after installing reversing radar control module assembly.

TIRE PRESSURE MONITORING SYSTEM

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دیجیتال خودرو

شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

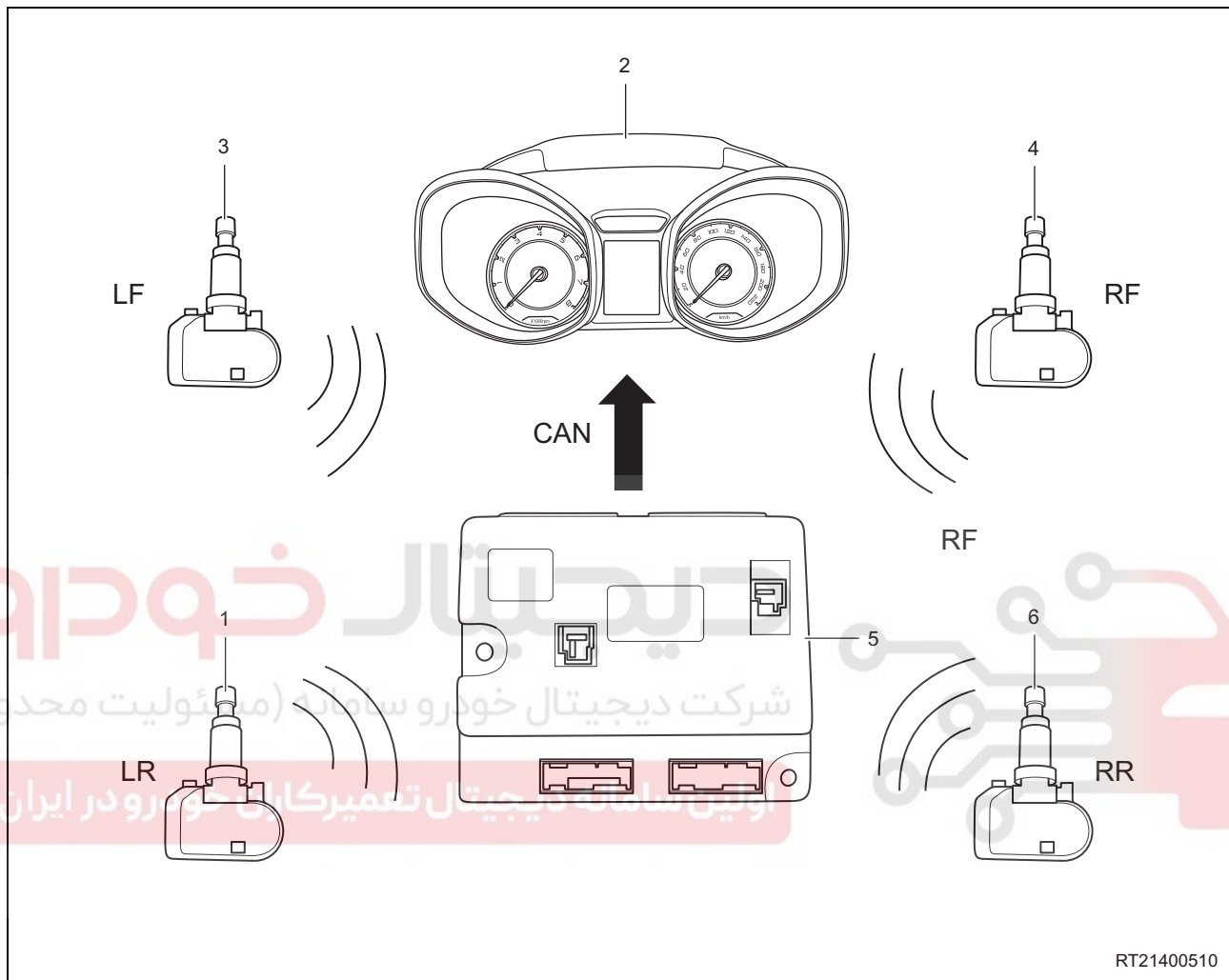
اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



GENERAL INFORMATION

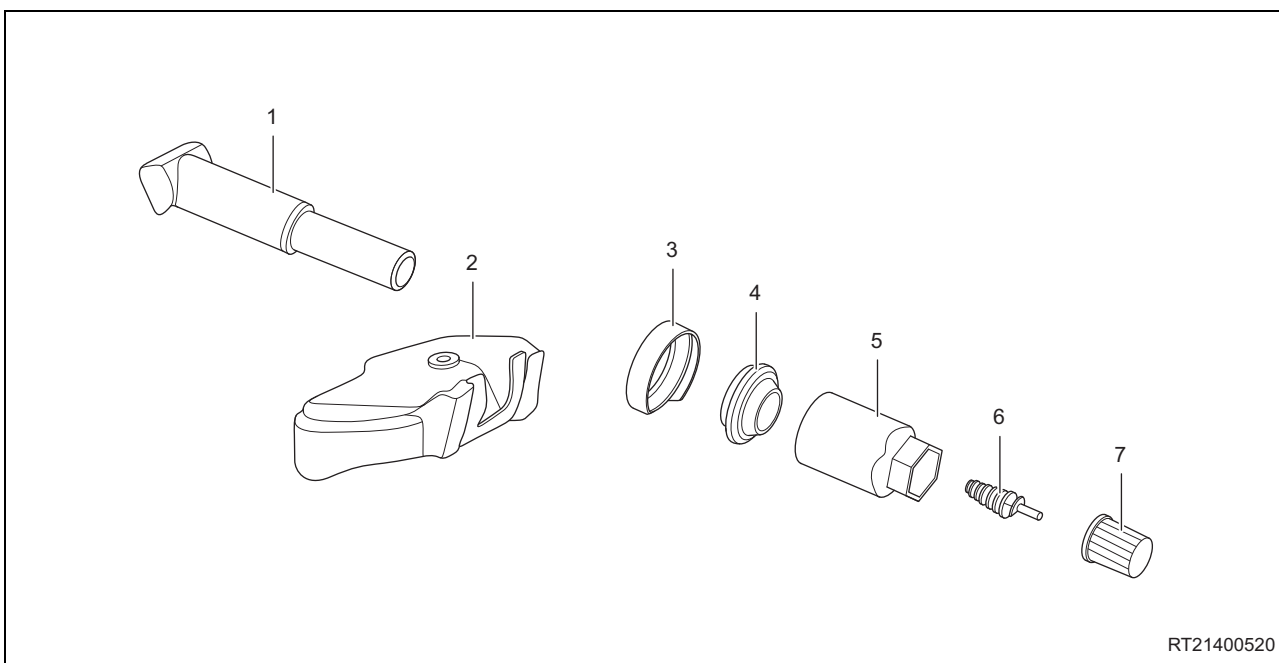
Description

Tire Pressure Monitoring System



1 - Rear Left Tire Pressure Sensor	2 - Instrument Cluster
3 - Front Left Tire Pressure Sensor	4 - Front Right Tire Pressure Sensor
5 - Body Controller	6 - Rear Right Tire Pressure Sensor

54 - TIRE PRESSURE MONITORING SYSTEM



RT21400520

1 - Valve Body	2 - Sensor Body
3 - sealing washer	4 - seal ring
5 - nut	6 - Valve Core
7 - Valve Cap	

Tire Pressure Monitoring System (TPMS) is an active safety device, which can monitor tire pressure and temperature in real time and display tire pressure on meter. When tire pressure is too low or temperature is too high, tire pressure monitoring system will warn.

Operation

Tire pressure sensor is the transmitting terminal of tire information, body controller is the receiving terminal of tire information and meter is the display terminal of tire information. Tire pressure sensor is core component of tire pressure monitoring system. Tire pressure sensor is installed on rim, which collects data such as pressure, temperature inside tire, and sends these data to body controller by radio-frequency signal. Frequency of wireless communication between tire pressure sensor and body controller is 433 MHz.

Body controller receives radio-frequency signal from tire pressure sensor and processes these data. Body controller processes data of tire pressure sensor, then sends them to meter via CAN bus. Tire pressure value displays on meter via CAN bus signal. When tire pressure is too high or too low, or temperature is too high, it informs driver of abnormal tire.

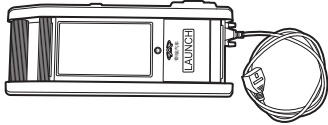
Specifications

Torque Specifications

Description	Torque (N·m)
Body Controller Fixing Nut	5 ± 1

Tools

Special Tool

X-431 3G Diagnostic Tester	 <p>RCH0000001</p>
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General Tool

Digital Multimeter	 <p>RCH0000002</p>
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DIAGNOSIS & TESTING

Problem Symptoms Table

HINT:

- Use symptoms table below to help determine cause of problem.
- Check each suspected area in sequence. Repair or adjust faulty components, or replace as necessary.

Meter self-check: For meter with tire pressure display function, from ACC/OFF to ON, meter drives LED (tire pressure indicator) to come on for 3 seconds. After self-check is finished, LED state is controlled by corresponding systems of vehicle. (If meter self-check indicator does not come on during self-check, check and repair the meter.)

Position Light, Low Beam Light, High Beam Light

Symptom	Suspected Area	Troubleshooting	See page
Low pressure warning (warning light remains on, malfunctioning wheel sign flashes)	Wheel pressure < 1.9 bar	Check and charge tire pressure	-
	Tire pressure sensor function is disabled	Replace, perform configuration and learning	54-10
	Body controller (BCM) is damaged	Replace body controller and perform sensor learning	54-10
	Tire pressure system set	Check and repair	-
High temperature warning (warning light remains on, wheel sign flashes)	Tire temperature > 85°C	Cool down naturally	-
	Tire pressure sensor function is disabled	Replace, perform configuration and learning	54-10
	Body controller (BCM) is damaged	Replace body controller and perform sensor learning	54-10
	Tire pressure system set	Check and repair	-
System malfunction warning (warning light remains on after flashing for 75 seconds, tire pressure value of corresponding wheel does not display and wheel sign will flash)	Tire pressure sensor function is disabled	Replace, perform configuration and learning	54-10
	Sensor configuration and learning are performed incorrectly when replacing new wheels (spare tire included)	Perform configuration and learning	54-10
	Electromagnetic interference/shield	Repair shielded objects outside of tire/strong electromagnetic radio interference	-
	Body controller (BCM) is damaged	Replace	54-10
	Tire pressure system set	Check and repair	-

Symptom	Suspected Area	Troubleshooting	See page
All of tire pressure information cannot be displayed (all of tire pressure information for four wheels display as "--")	Display status cannot be reached	Vehicle speed > 25 Km/h for 30 seconds	54-10
	Replaced tire pressure sensor is not configured correctly, sensor is not learned	Perform configuration and learning	54-10
	Body controller (BCM)	Replace body controller and perform sensor learning	54-10
	Four sensors are not installed or all of them are damaged (very rare)	Reinstall or replace	54-10
Some tire pressure information cannot be displayed (some tire pressure information displays as "--")	Electromagnetic interference/shield	Repair shielded objects outside of tire, strong electromagnetic radio interference	-
	Sensor configuration and learning are performed incorrectly when replacing new wheels (spare tire included)	Reconfigure and learn	54-10
	Sensor function is disabled	Replace, perform configuration and learning	54-10
	Body controller (BCM)	Replace body controller and perform sensor learning	54-10
	Tire pressure system set	Check and repair	-

اولین سامانه دیجیتال تعمیرکاران خودرو در ایران

Diagnosis Tools

X-431 3G Diagnostic Tester

When connecting X-431 3G diagnostic tester:

- Connect X-431 3G diagnostic tester (the latest software) to Data Link Connector (DLC) for communication with vehicle.
- DLC is located at driver side instrument panel crossmember.
- DLC uses a trapezoidal design which can hold 16 terminals.

Digital Multimeter

When using digital multimeter:

- Troubleshoot electrical malfunctions and wire harness system.
- Look for basic malfunction.
- Measure voltage, current and resistance.

Diagnostic Help

1. Connect X-431 3G diagnostic tester (the latest software) to Data Link Connector (DLC), and make it communicate with vehicle electronic module through data network.
2. Confirm that malfunction is current, and carry out diagnostic test and repair procedures.
3. If DTC cannot be deleted, malfunction is current.
4. Only use a digital multimeter to measure voltage of electronic system.
5. Refer to any Technical Bulletin that may apply to the malfunction.
6. Visually check the related wire harness.
7. Check and clean all system grounds related to the latest DTC.
8. If multiple trouble codes were set, use circuit diagrams and look for any common ground circuit or power supply circuit applied to DTC.

Intermittent DTC Troubleshooting

If malfunction is intermittent, perform the followings:

- Check if connectors are loose.
- Check if wire harnesses are worn, pierced, pinched or partially broken.
- Wiggle related wire harnesses and connectors and observe if signal in related circuit is interrupted.
- If possible, try to duplicate the conditions under which DTC was set.
- Look for data that has changed or DTC to reset during wiggle test.
- Look for broken, bent, protruded or corroded terminals.
- Check mounting areas of instrument cluster, wire harness or wire harness connector and so on for damage, foreign matter, etc. that will cause incorrect signals.
- Check and clean all wire harness connectors and ground parts related to DTC.
- Remove instrument cluster from malfunctioning vehicle, then install it to a new vehicle and perform a test. If this DTC cannot be cleared, instrument cluster is malfunctioning. If DTC can be cleared, reinstall instrument cluster to original vehicle.
- If multiple trouble codes were set, refer to circuit diagrams to look for any common ground circuit or power supply circuit applied to DTC.
- Refer to any Technical Bulletin that may apply to malfunction.

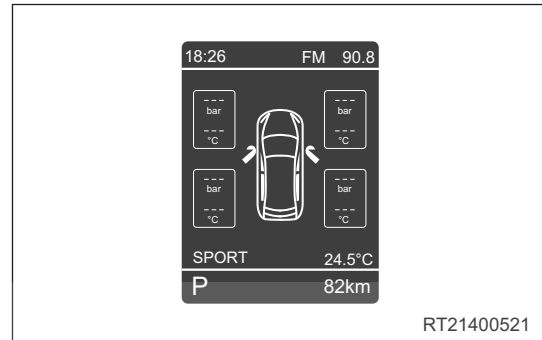
Precautions for Maintaining Tire Pressure Monitoring System

1. Effective conditions for tire pressure monitoring system

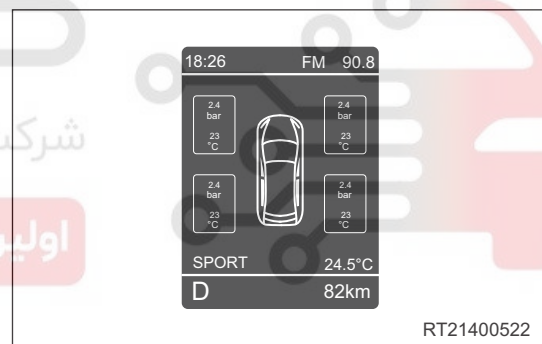
No.	Necessary Conditions
1	IGN-ON
2	Vehicle speed > 25 km/h, and continuous driving time is more than 45 seconds

Tire pressure monitoring system can be started normally only when key is in IGN-ON and vehicle driving speed is more than 25 km/h for more than 45 seconds. When key is not in IGN-ON, body controller cannot receive radio-frequency signal from tire pressure sensor; when vehicle speed cannot reach 25 km/h or driving time is short, tire pressure sensor cannot send radio-frequency signal.

- When vehicle is stationary and key is turned from IGN-OFF to IGN-ON, tire pressure and temperature information cannot be displayed on meter.



- When key is turned to IGN-ON, vehicle driving speed is more than 25 km/h and continuous driving time is more than 45 seconds, four wheel tire and temperature information will be displayed.



- If wheel pressure changes largely, tire pressure sensor will sent radio-frequency signal suddenly. If key is turned to IGN-ON, tire pressure monitoring system will process signal sent from tire pressure sensor immediately.

2. Tire inflation

Do not inflate tires depending on values displayed from tire pressure monitoring system. Tire pressure monitoring system can monitor tire pressure and temperature in real time only when vehicle speed is more than 25 km/h. If inflating tires using pressure values displayed from tire pressure monitoring system, inflation value may be higher than tire standard value, which will cause accidents. Do not inflate tires with high tire temperature, which will cause damage to the tire, even blowouts, resulting in accidents.

3. For tire pressure sensor

When system is fault or disabled, check tire pressure sensor and judge if it is the tire pressure sensor in Project T21FL of Chery Automobile Co., Ltd. If tire pressure sensor of other manufacturers (not Project T21FL of Chery Automobile Co., Ltd.) is used by customer, configuration and learning for tire pressure sensor cannot be performed and system is abnormal or disabled.

- Tire pressure sensor is integrated with functions of common valve nozzle, and inflating/bleeding operation is the same as common valve nozzle. Use genuine sensor fittings, without replacing components inside of sensor. After maintenance, install genuine waterproof cap of tire pressure sensor correctly. Never reuse disposed tire pressure sensor components, or it may cause leakage, resulting in accident. When inflating/bleeding or tire bead breaking, do not remove the sensor nuts. When tire

54 - TIRE PRESSURE MONITORING SYSTEM

pressure is more than external ambient pressure, if tire pressure sensor nuts are removed, there may be an accident.

- Tire pressure sensor must be assembled with a torque wrench, and tightening torque should be 8 ± 1 N·m. If torque is smaller, it will cause leakage, resulting in accident; if torque is larger, tire pressure sensor or its related components may be damaged, resulting in accident.

4. Tire pressure value increases

When vehicle is driving normally, heat is generated in the tire due to friction, which will cause tire pressure to increase. For every 10°C increase in tire temperature, tire pressure will increase by about 0.1 bar.

5. Replace tires

If replacing tires with tire pressure monitoring system with ones without tire pressure monitoring system, system malfunction warning will occur. If replacing with tire equipped with tire pressure sensor (Project T21FL of Chery Automobile Co., Ltd.), but configuration and learning are not performed, system malfunction warning still will occur. Spare tire in Project T21FL is not equipped with tire pressure sensor, so tire pressure monitoring system is still malfunctioning when spare tire is used in vehicle with tire pressure monitoring system.

When replacing tire, perform operations following assembly specification of tire pressure, to avoid damaging tire pressure sensor during replacement. For assembly and removal of tire, refer to Assembly and Removal of tire pressure sensor section. Never allow tire bead breaker and tire tread to squeeze the sensor.

Configuration & Learning for Tire Pressure Monitoring System

CAUTION

- Perform tire pressure sensor learning when rotating tire and replacing tire pressure sensor.

1. Flowchart

HINT:

For configuration and learning of tire pressure monitoring system, refer to the configuration of tire pressure receiver and meter and the learning of tire pressure sensor.

1 Vehicle brought to workshop

NEXT

2 Check if meter can enter tire pressure information screen

NG Reconfigure body controller and meter

OK

3 Perform tire pressure sensor learning

NEXT

4 Perform running test and vehicle speed is more than 25 km/h for 45 seconds

NEXT

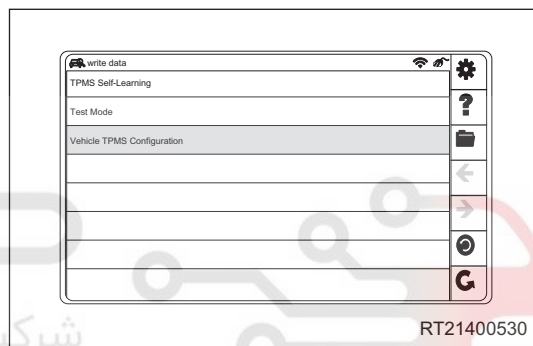
5 Check if tire pressure information is displayed correctly

NG Reconfigure body controller and meter

OK

6 End

- 2. Configuration of body controller and meter
 - a. Use diagnostic tester to enter write data menu, and click "Vehicle TPMS Configuration".

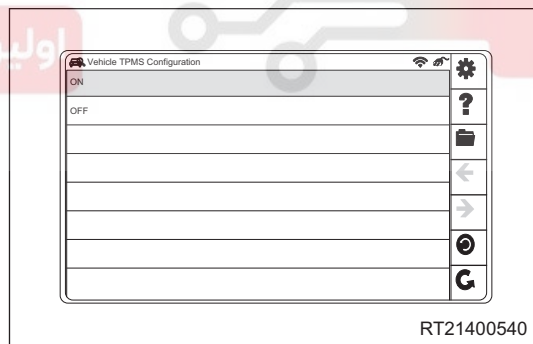


دیجیتال خودرو

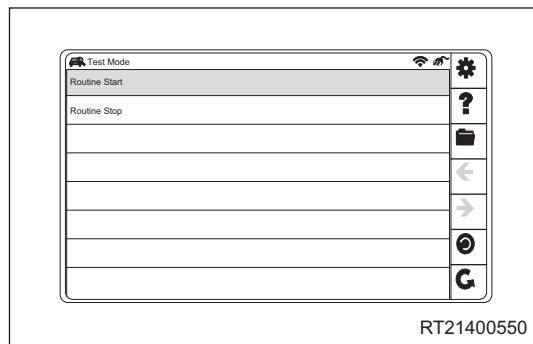
شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

اولین سیستم ایمنی ایرانی

- b. If tire pressure display function of meter is turned off currently, click "Vehicle TPMS Configuration" to turn on the function.

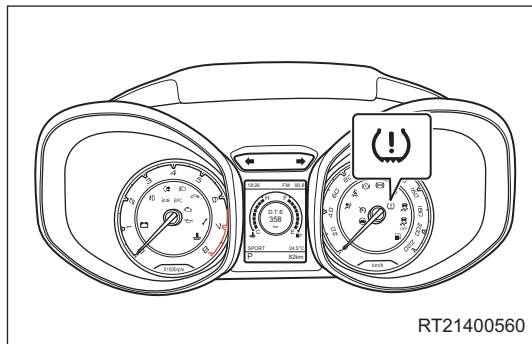


- c. Click Test Mode menu to detect if tire pressure display function of meter is turned on.



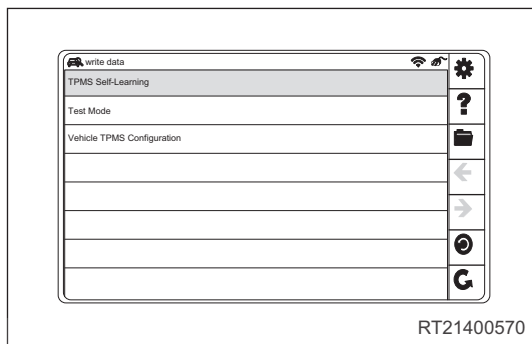
54 - TIRE PRESSURE MONITORING SYSTEM

d. When clicking "Routine Start" on meter, tire pressure malfunction indicator flashes and "Routine Start Successfully By The Tester" is displayed on diagnostic tester, which indicates that tire pressure display function of meter has been turned on successfully. Click "Routine Stop" to exit current test mode and tire pressure malfunction indicator on meter goes off. "Routine Stopped" is displayed on diagnostic tester, then return to previous menu.

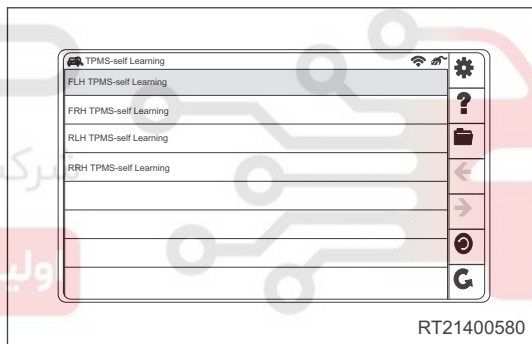


3. Tire pressure monitoring system enters sensor learning status by operating diagnostic tester

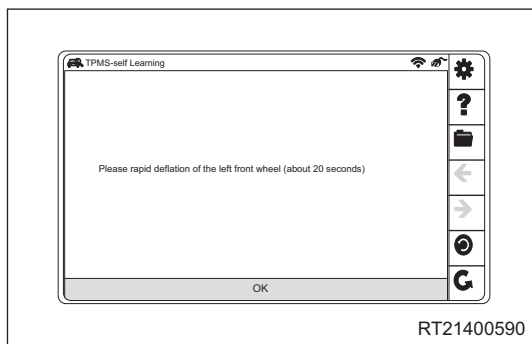
a. Turn ignition switch to ON, select write data menu and click TPMS Self-Learning.



b. Learning screen is shown in illustration, click tire menu that needs to learn (take front left tire as an example).



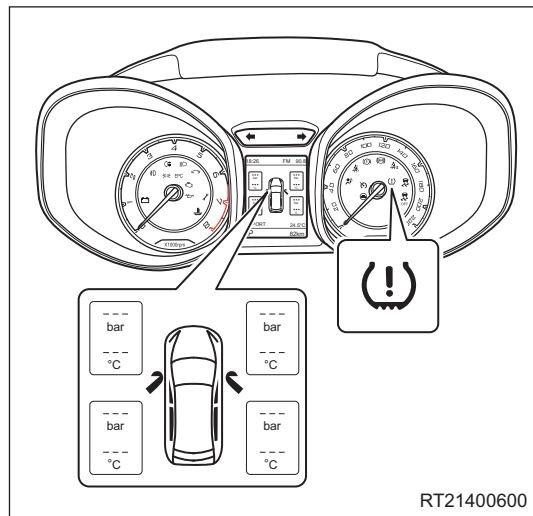
c. During learning, hint will be displayed on diagnostic tester.



CAUTION

- There are two methods for tire pressure sensor learning. One is air bleeding, another is low-frequency trigger learning. If low-frequency trigger is used, air bleeding will not be performed.

- d. When clicking "OK" button on diagnostic tester, tire pressure screen is displayed on meter and tire pressure warning light flashes. Perform tire pressure sensor learning when tire pressure monitoring system enters sensor learning status.



RT21400600

- e. After front left tire pressure sensor learning is successful, tire pressure malfunction indicator on meter goes off, front left tire pressure value is displayed and "Procedure is finished" is displayed on diagnostic tester which indicates that front left tire pressure sensor learning has been finished.

4. Tire pressure sensor learning methods

a. Precautions

No.	Precautions	Details
1	Avoid error learning of tire	Tire learned on diagnostic tester menu must be matched with bleeding tire
2	Avoid error learning of tire	Only operate one tire every time, and do not bleed (inflate) for other tires at this time
3	Avoid error learning of tire	Keep away from vehicle with tire pressure sensor, avoiding error learning or interference.

If only one tire shall be replaced, other tires should not be replaced and positions should not be changed, only learn one tire separately.

b. Correction methods for tire pressure monitoring system are as follows:

- Keep vehicle speed more than 25 km/h for about 45 seconds;
- If tire pressure monitoring system can be operated normally, pressure information of four tires is displayed;
- If certain tire pressure information is still not displayed, tire configuration may error and needs to be relearned.

c. Tire pressure learning method for inflating/bleeding

- After entering learning status with ignition key in IGN-ON, bleed the wheel to be learned quickly (bleeding for about 20 seconds). At this time, check pressure value of learned tire through meter, and learning is successful. If multiple wheels should be learned, one minute interval is required among each wheel learning.

HINT:

Use following procedures to troubleshoot the instrument cluster system.

1	Start
----------	--------------

NEXT

54 - TIRE PRESSURE MONITORING SYSTEM

2	There is enough pressure in tire (full loaded with pressure recommended)
---	--

NEXT

3	Tire pressure monitoring system enters learning status by operating diagnostic tester
---	---

NEXT

4	Perform tire pressure bleeding (for about 20 seconds)
---	---

NEXT

5	Learned tire pressure value can be displayed on meter
---	---

NEXT

6	Learning is successful
---	------------------------

NEXT

7	End اولین سامانه دیجیتال تعمیرکاران خودرو
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 CAUTION

- After learning is finished, use tire pressure gauge to inflate tire to standard pressure, then correct tire pressure monitoring system with vehicle speed more than 25 km/h for 45 seconds.

d. Tire pressure learning method for low-frequency trigger

After entering learning status with key in IGN-ON, tire pressure wireless signal will be generated from sensor directly using low-frequency trigger (inflating/bleeding for tire is not needed). After triggering is finished, pressure value of learned wheel will be displayed on meter, and learning is successful.

HINT:

Use following procedures to troubleshoot the instrument cluster system.

1	Start
---	-------

NEXT

2	Key is in IGN-ON
---	------------------

NEXT

3 Tire pressure monitoring system enters learning status by operating diagnostic tester

NEXT

4 Trigger tire pressure sensor to be learned using low-frequency trigger

NEXT

5 Sensor ID, temperature value and pressure value are displayed on low-frequency trigger

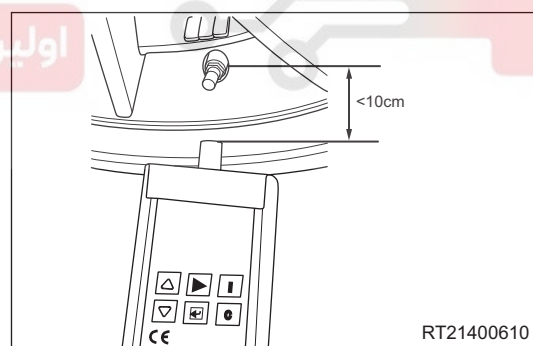
NEXT

6 Learning is successful

NEXT

7 End

- Distance between low-frequency trigger and tire pressure sensor is less than 10 cm, make antenna of low-frequency trigger close to tire around tire pressure sensor on wheel, then press trigger button on low-frequency trigger. After low-frequency trigger is triggered successfully, related information such as learned tire ID, pressure value and temperature value will be displayed.



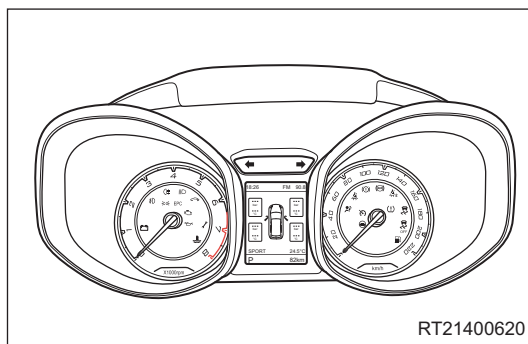
RT21400610

CAUTION

- After learning is finished, use tire pressure gauge to inflate tire to standard pressure, then correct tire pressure monitoring system with vehicle speed more than 25 km/h for 45 seconds.

Meter display image with tire pressure sensor learning successfully

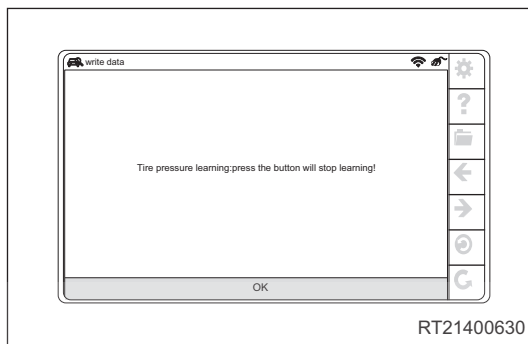
After inflating/bleeding learning or low-frequency trigger learning is successful, tire pressure value and temperature value will be displayed on meter.



RT21400620

If turn light stops flashing, front left wheel pressure value is 2.3bar and temperature value is 11°C, front left wheel learning is successful.

If tire pressure monitoring system is learning front left wheel, left and right turn lights will stop flashing after bleeding. At this time, one tire pressure sensor is learned successfully by tire pressure monitoring system, please click "OK" to finish front left wheel learning.



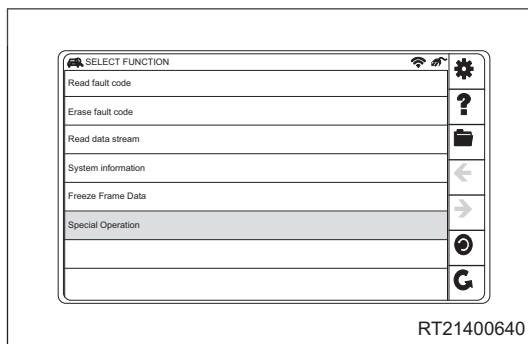
RT21400630

Learning methods for front right, rear right and rear left tire pressure sensors are the same as that for front left tire pressure sensor. If only one tire shall be replaced, other tires should not be replaced and positions should not be changed, only learn one tire separately.

5. Inspection of tire pressure monitoring system learning status

a. After reconfiguring tire pressure monitoring system, use reading function of datastream to perform inspection for each tire pressure sensor learning status in tire pressure monitoring system (take front left wheel as an example).

- Read following datastreams: front left sensor ID, front left sensor learning status.
- Front left wheel sensor ID can be read using diagnostic tester, if learning status is successful, it indicates that body controller is matched with front left sensor successfully. If not, it indicates that the match is not successful and front left wheel sensor should be relearned.



RT21400640

b. Use diagnostic tester to read following datastreams with vehicle speed higher than 25 km for 45 seconds or more.

- Front left wheel sensor pressure: Bar
- Front left wheel sensor temperature: °C
- Temperature is not default and tire pressure is close to the value displayed on meter, it indicates that body controller can receive wireless signals from front left tire pressure sensor. Or it indicates that learning is not successful or tire pressure sensor is fault.

Ground Inspection

Groundings are very important to entire circuit system, which are normal or not can seriously affect the entire circuit system. Ground points are often exposed to moisture, dirt and other corrosive environments. Corrosion (rust) and oxidation may increase load resistance. This situation will seriously affect the normal operation of circuit. Check the ground points as follows:

1. Remove ground bolt or nut.
2. Check all contact surfaces for tarnish, dirt and rust, etc.
3. Clean as necessary to ensure that contacting is in good condition.
4. Reinstall ground bolt or nut securely.
5. Check if add-on accessories interfere with ground circuit.
6. If several wire harnesses are crimped into one ground terminal, check for proper crimps. Make sure all wire harnesses are clean, securely fastened with providing a good ground path.

Diagnosis Procedure

HINT:

Use following procedures to troubleshoot the instrument cluster system.

1 Vehicle brought to workshop

NEXT

2 Check battery voltage

Standard voltage: 11 to 14 V

If voltage is below 11 V, recharge or replace the battery before proceeding to next step.

NEXT

3 Customer problem analysis

NEXT

4 Check for DTCs (current DTC and history DTC)

DTC
occurs

For current DTC, go to step 6

No
DTC

For history DTC, go to step 7

5 Problem repair (no DTC), then go to step 8

NEXT

6 Troubleshoot according to Diagnostic Trouble Code (DTC) chart, then go to step 8

NEXT

7 Troubleshoot according to Problem Symptoms Table, then go to step 8

NEXT

8 Adjust, repair or replace

NEXT

9 Conduct test and confirm malfunction has been repaired

NEXT

10 End

Diagnostic Trouble Code (DTC) Chart

DTC Code	DTC Definition
C1400 16	Power Supply Circuit Voltage Below Threshold
C1400 17	Power Supply Circuit Voltage Above Threshold
C1403 29	Front Left Hand Sensor Signal Invalid
C1403 54	Front Left Hand Sensor Missing Calibration
C1403 55	Front Left Hand Sensor Not Configured
C1403 96	Front Left Hand Sensor Component Internal Failure
C1404 29	Front Right Hand Sensor Signal Invalid
C1404 54	Front Right Hand Sensor Missing Calibration
C1404 55	Front Right Hand Sensor Not Configured
C1404 96	Front Right Hand Sensor Component Internal Failure
C1405 29	Rear Left Hand Sensor Signal Invalid
C1405 54	Rear Left Hand Sensor Missing Calibration
C1405 55	Rear Left Hand Sensor Not Configured
C1405 96	Rear Left Hand Sensor Component Internal Failure
C1406 29	Rear Right Hand Sensor Signal Invalid
C1406 54	Rear Right Hand Sensor Missing Calibration

DTC Code	DTC Definition
C1406 55	Rear Right Hand Sensor Not Configured
C1406 96	Rear Right Hand Sensor Component Internal Failure
C140B 00	Front Left Hand Tire Pressure, Component or System Over Pressure
C140C 00	Front Right Hand Tire Pressure, Component or System Over Pressure
C140D 00	Rear Left Hand Tire Pressure, Component or System Over Pressure
C140E 00	Rear Right Hand Tire Pressure, Component or System Over Pressure
C140F 00	Front Left Hand Tire Pressure, Component or System Low Pressure
C1410 00	Front Right Hand Tire Pressure, Component or System Low Pressure
C1411 00	Rear Left Hand Tire Pressure Component or System Low Pressure
C1412 00	Rear Right Hand Tire Pressure, Component or System Low Pressure
C1413 98	Front Left Hand Tire Temperature, Component or System Over Temperature
C1414 98	Front Right Hand Tire Temperature, Component or System Over Temperature
C1415 98	Rear Left Hand Tire Temperature, Component or System Over Temperature
C1416 98	Rear Right Hand Tire Temperature, Component or System Over Temperature
C1417 16	Front Left Hand Sensor Voltage, Component or System Low Voltage
C1418 16	Front Right Hand Sensor Voltage, Component or System Low Voltage
C1419 16	Rear Left Hand Sensor Voltage, Component or System Low Voltage
C141A 16	Rear Right Hand Sensor Voltage, Component or System Low Voltage
C142A 49	Receiver Internal Electronic Failure
U0073 88	CAN Bus Off
C1402 44	TPMS EEPROM Access Fail Data Memory Failure

DTC	C1403 29	Front Left Hand Sensor Signal Invalid
DTC	C1404 29	Front Right Hand Sensor Signal Invalid
DTC	C1405 29	Rear Left Hand Sensor Signal Invalid
DTC	C1406 29	Rear Right Hand Sensor Signal Invalid

Self-diagnosis Detection Logic

DTC Code	DTC Definitions	DTC Detection Conditions	DTC Setting Conditions
C1403 29	Front Left Hand Sensor Signal Invalid	Vehicle speed > 25 km/h for 45 seconds	<ul style="list-style-type: none"> No RF signals are sent from tire pressure sensor, or sent signal is too weak. Reception of body controller is poor, and no RF signals are received.
C1404 29	Front Right Hand Sensor Signal Invalid		
C1405 29	Rear Left Hand Sensor Signal Invalid		
C1406 29	Rear Right Hand Sensor Signal Invalid		

DTC Confirmation Procedure

Confirm that battery voltage is between 11 V and 14 V before performing the following procedures.

- Turn ignition switch to LOCK.
- Connect X-431 3G diagnostic tester (the latest software) to Data Link Connector (DLC), and make it communicate with vehicle electronic module through data network.
- Turn ignition switch to ON.
- Using X-431 3G diagnostic tester, record and clear DTCs stored in instrument cluster control system.
- Turn ignition switch to LOCK and wait for a few seconds.
- Turn ignition switch to ON, and then select Read Code.
- If DTC is detected, malfunction indicated by DTC is current. Go to diagnosis procedure - Step 1.
- If DTC is not detected, malfunction indicated by DTC is intermittent ([See page 54-8](#)).

CAUTION

- When performing circuit diagnosis and test, always refer to the circuit diagram for specific circuit and component information.

Diagnosis Procedure

1 Check body controller power supply voltage

- Using digital multimeter, measure voltage between body controller power supply terminal and ground.
- Power supply voltage should be between 11 V and 14 V.

NG

Check and repair battery and power supply system

OK

2 Check body controller ground circuit

- Check if body controller ground is loose or corroded.

NG

Tighten or replace body controller ground circuit

OK

3 Check configuration of tire pressure monitoring system

- After configuration is finished, drive vehicle with speed higher than 25 K/h for a period of time.

NG

Reconfigure tire pressure sensor of malfunctioning wheel

OK

4 Check body controller of malfunctioning wheel

- After replacement, perform configuration and test.

NG

Replace body controller of malfunctioning wheel

OK

5 Check tire pressure sensor of malfunctioning wheel

- After replacement, perform configuration.

NG

Replace tire pressure sensor of malfunctioning wheel

OK

6 System detection is normal

دیجیتال خودرو

شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



DTC	C1403 55	Front Left Hand Sensor Not Configured
DTC	C1404 55	Front Right Hand Sensor Not Configured
DTC	C1405 55	Rear Left Hand Sensor Not Configured
DTC	C1406 55	Rear Right Hand Sensor Not Configured

Self-diagnosis Detection Logic

DTC	DTC Definition	DTC Detection Condition	Possible Cause
C1403 55	Front Left Hand Sensor Not Configured	Vehicle speed > 25 km/h for 45 seconds	Configure BCM function and learning function is not finished.
C1404 55	Front Right Hand Sensor Not Configured		
C1405 55	Rear Left Hand Sensor Not Configured		
C1406 55	Rear Right Hand Sensor Not Configured		

DTC Confirmation Procedure

Confirm that battery voltage is between 11 V and 14 V before performing the following procedures.

- Turn ignition switch to LOCK.
- Connect X-431 3G diagnostic tester (the latest software) to Data Link Connector (DLC), and make it communicate with vehicle electronic module through data network.
- Turn ignition switch to ON.
- Using X-431 3G diagnostic tester, record and clear DTCs stored in instrument cluster control system.
- Turn ignition switch to LOCK and wait for a few seconds.
- Turn ignition switch to ON, and then select Read Code.
- If DTC is detected, malfunction indicated by DTC is current. Go to diagnosis procedure - Step 1.
- If DTC is not detected, malfunction indicated by DTC is intermittent ([See page 54-8](#)).

CAUTION

- When performing circuit diagnosis and test, always refer to the circuit diagram for specific circuit and component information.

Diagnosis Procedure

1	Check body controller power supply voltage
----------	---

- Using digital multimeter, measure voltage between body controller power supply terminal and ground.
- Power supply voltage should be between 11 V and 14 V.

54 - TIRE PRESSURE MONITORING SYSTEM

NG

Check and repair battery and power supply system

OK

2

Check body controller ground circuit

a. Check if body controller ground is loose or corroded.

NG

Tighten or replace body controller ground circuit

OK

3

Check configuration of tire pressure monitoring system

a. After configuration is finished, drive vehicle with speed higher than 25 K/h for a period of time.

NG

Reconfigure tire pressure sensor of malfunctioning wheel

OK

4

Check body controller of malfunctioning wheel

a. After replacement, perform configuration and test.

NG

Replace body controller of malfunctioning wheel

OK

5

Check tire pressure sensor of malfunctioning wheel

a. After replacement, perform configuration.

NG

Replace tire pressure sensor of malfunctioning wheel

OK

6

System detection is normal

DTC	C1403 96	Front Left Hand Sensor Component Internal Failure
DTC	C1404 96	Front Right Hand Sensor Component Internal Failure
DTC	C1405 96	Rear Left Hand Sensor Component Internal Failure
DTC	C1406 96	Rear Right Hand Sensor Component Internal Failure

Self-diagnosis Detection Logic

DTC	DTC Definition	DTC Detection Condition	Possible Cause
C1403 96	Front Left Hand Sensor Component Internal Failure	Vehicle speed > 25 km/h for 45 seconds	Sensor is abnormal, RF data indicates that sensor is malfunctioning.
C1404 96	Front Right Hand Sensor Component Internal Failure		
C1405 96	Rear Left Hand Sensor Component Internal Failure		
C1406 96	Rear Right Hand Sensor Component Internal Failure		

DTC Confirmation Procedure

Confirm that battery voltage is between 11 V and 14 V before performing the following procedures.

- Turn ignition switch to LOCK.
- Connect X-431 3G diagnostic tester (the latest software) to Data Link Connector (DLC), and make it communicate with vehicle electronic module through data network.
- Turn ignition switch to ON.
- Using X-431 3G diagnostic tester, record and clear DTCs stored in instrument cluster control system.
- Turn ignition switch to LOCK and wait for a few seconds.
- Turn ignition switch to ON, and then select Read Code.
- If DTC is detected, malfunction indicated by DTC is current. Go to diagnosis procedure - Step 1.
- If DTC is not detected, malfunction indicated by DTC is intermittent ([See page 54-8](#)).

CAUTION

- When performing circuit diagnosis and test, always refer to the circuit diagram for specific circuit and component information.

Diagnosis Procedure

1	Check body controller power supply voltage
---	--

54 - TIRE PRESSURE MONITORING SYSTEM

- a. Using digital multimeter, measure voltage between body controller power supply terminal and ground.
- b. Power supply voltage should be between 11 V and 14 V.

NG

Check and repair battery and power supply system

OK

2

Check body controller ground circuit

- a. Check if body controller ground is loose or corroded.

NG

Tighten or replace body controller ground circuit

OK

3

Check configuration of tire pressure monitoring system

- a. After configuration is finished, drive vehicle with speed higher than 25 K/h for a period of time.

NG

Reconfigure tire pressure sensor of malfunctioning wheel

OK

4

Check body controller of malfunctioning wheel

- a. After replacement, perform configuration and test.

NG

Replace body controller of malfunctioning wheel

OK

5

Check tire pressure sensor of malfunctioning wheel

- a. After replacement, perform configuration.

NG

Replace tire pressure sensor of malfunctioning wheel

OK

6

System detection is normal

DTC	C1413 98	Front Left Hand Tire Temperature, Component or System Over Temperature
-----	----------	--

DTC	C1414 98	Front Right Hand Tire Temperature, Component or System Over Temperature
-----	----------	---

DTC	C1415 98	Rear Left Hand Tire Temperature, Component or System Over Temperature
-----	----------	---

DTC	C1416 98	Rear Right Hand Tire Temperature, Component or System Over Temperature
-----	----------	--

Self-diagnosis Detection Logic

DTC	DTC Definition	DTC Detection Condition	Possible Cause
C1403 96	Front Left Hand Tire Temperature, Component or System Over Temperature	Vehicle speed > 25 km/h for 45 seconds	Sensor is abnormal, RF data indicates that sensor is malfunctioning.
C1404 96	Front Right Hand Tire Temperature, Component or System Over Temperature		
C1405 96	Rear Left Hand Tire Temperature, Component or System Over Temperature		
C1406 96	Rear Right Hand Tire Temperature, Component or System Over Temperature		

DTC Confirmation Procedure

Confirm that battery voltage is between 11 V and 14 V before performing the following procedures.

- Turn ignition switch to LOCK.
- Connect X-431 3G diagnostic tester (the latest software) to Data Link Connector (DLC), and make it communicate with vehicle electronic module through data network.
- Turn ignition switch to ON.
- Using X-431 3G diagnostic tester, record and clear DTCs stored in instrument cluster control system.
- Turn ignition switch to LOCK and wait for a few seconds.
- Turn ignition switch to ON, and then select Read Code.
- If DTC is detected, malfunction indicated by DTC is current. Go to diagnosis procedure - Step 1.
- If DTC is not detected, malfunction indicated by DTC is intermittent (See page 54-8).

54 - TIRE PRESSURE MONITORING SYSTEM

CAUTION

- When performing circuit diagnosis and test, always refer to the circuit diagram for specific circuit and component information.

Diagnosis Procedure**1 Check body controller power supply voltage**

- Using digital multimeter, measure voltage between body controller power supply terminal and ground.
- Power supply voltage should be between 11 V and 14 V.

NG**Check and repair battery and power supply system****OK****2 Check body controller ground circuit**

- Check if body controller ground is loose or corroded.

NG**Tighten or replace body controller ground circuit****OK****3 Check tire temperature**

- When temperature of one or more tires is higher than 85°C, system will send a high temperature warning while driving speed is higher than 25 km/h and driving for a period of time.
- When high temperature warning occurs, stop vehicle and cool down the tire naturally, or it may cause accidents.
- When tire temperature is too high, do not cool it down with cold water, which will cause tire damage, resulting in accidents.
- When driving speed is higher than 25 km/h for a period of time and tire temperature is lower than 80°C, high temperature warning will release automatically.

NG**Cool down naturally****OK****4 Check body controller of malfunctioning wheel**

- After replacement, perform configuration and test.

NG**Replace body controller of malfunctioning wheel**

OK

5 Check tire pressure sensor of malfunctioning wheel

a. After replacement, perform configuration.

NG

Replace tire pressure sensor of malfunctioning wheel

OK

6 System detection is normal

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54 - TIRE PRESSURE MONITORING SYSTEM

DTC	C1417 16	Front Left Hand Sensor Voltage, Component or System Low Voltage
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DTC	C1418 16	Front Right Hand Sensor Voltage, Component or System Low Voltage
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DTC	C1419 16	Rear Left Hand Sensor Voltage, Component or System Low Voltage
-----	----------	--

DTC	C141A 16	Rear Right Hand Sensor Voltage, Component or System Low Voltage
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Self-diagnosis Detection Logic

DTC	DTC Definition	DTC Detection Condition	Possible Cause
C1417 16	Front Left Hand Sensor Voltage, Component or System Low Voltage	Vehicle speed > 25 km/h for 45 seconds	Battery is discharged.
C1418 16	Front Right Hand Sensor Voltage, Component or System Low Voltage		
C1419 16	Rear Left Hand Sensor Voltage, Component or System Low Voltage		
C141A 16	Rear Right Hand Sensor Voltage, Component or System Low Voltage		

DTC Confirmation Procedure

Confirm that battery voltage is between 11 V and 14 V before performing the following procedures.

- Turn ignition switch to LOCK.
- Connect X-431 3G diagnostic tester (the latest software) to Data Link Connector (DLC), and make it communicate with vehicle electronic module through data network.
- Turn ignition switch to ON.
- Using X-431 3G diagnostic tester, record and clear DTCs stored in instrument cluster control system.
- Turn ignition switch to LOCK and wait for a few seconds.
- Turn ignition switch to ON, and then select Read Code.
- If DTC is detected, malfunction indicated by DTC is current. Go to diagnosis procedure - Step 1.
- If DTC is not detected, malfunction indicated by DTC is intermittent (See page 54-8).

CAUTION

- When performing circuit diagnosis and test, always refer to the circuit diagram for specific circuit and component information.

Diagnosis Procedure**1 Check body controller power supply voltage**

- Using digital multimeter, measure voltage between body controller power supply terminal and ground.
- Power supply voltage should be between 11 V and 14 V.

NG**Check and repair battery and power supply system****OK****2 Check body controller ground circuit**

- Check if body controller ground is loose or corroded.

NG**Tighten or replace body controller ground circuit****OK****3 Check if tire pressure information is displayed**

- If tire pressure information of malfunctioning wheel is still not displayed, replace tire pressure sensor.

NG**Replace tire pressure sensor****OK****4 Check body controller of malfunctioning wheel**

- After replacement, perform configuration and test.

NG**Replace body controller of malfunctioning wheel****OK****5 System detection is finished**

DTC	C142A 49	Receiver Internal Electronic Failure
------------	-----------------	---

Self-diagnosis Detection Logic

DTC	DTC Definition	DTC Detection Condition	Possible Cause
U142A 49	Receiver Internal Electronic Failure	System malfunction warning occurs, four wheel sensor signals are not received	There is internal circuit fault in receiver, no sensor signals are received.

DTC Confirmation Procedure

Confirm that battery voltage is between 11 V and 14 V before performing the following procedures.

- Turn ignition switch to LOCK.
- Connect X-431 3G diagnostic tester (the latest software) to Data Link Connector (DLC), and make it communicate with vehicle electronic module through data network.
- Turn ignition switch to ON.
- Using X-431 3G diagnostic tester, record and clear DTCs stored in instrument cluster control system.
- Turn ignition switch to LOCK and wait for a few seconds.
- Turn ignition switch to ON, and then select Read Code.
- If DTC is detected, malfunction indicated by DTC is current. Go to diagnosis procedure - Step 1.
- If DTC is not detected, malfunction indicated by DTC is intermittent ([See page 54-8](#)).

CAUTION

- When performing circuit diagnosis and test, always refer to the circuit diagram for specific circuit and component information.

ON-VEHICLE SERVICE

Tire Pressure Sensor

Removal

CAUTION

- Avoid dropping the sensor; if tire pressure sensor is dropped from the place with 1 m in height, it is interpreted as fault in tire pressure sensor.
- Tire pressure sensor must be installed on clean and dry hub.
- Valve cap must be installed on valve, except for inflation, bleeding and pressure inspection, etc.
- During installation and removal, used tools cannot touch with tire pressure sensor, to avoid damage to the tire pressure sensor.
- Sensor air pressure inlet cannot be covered partially or completely by lubricant or other materials.
- Tire pressure sensor screw cannot be tightened again after it is loosened.

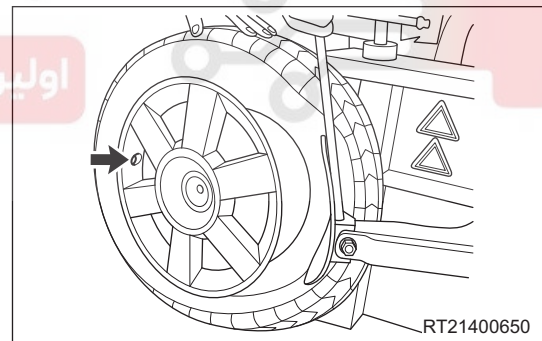
Remove the tire.

1. Remove tire and bleed air in tire completely (See page 35-7).

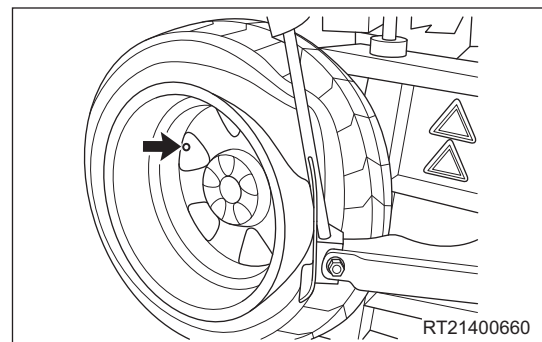
CAUTION

- During tire bead breaking, follow the operation specification, never damage the tire pressure sensor.

2. Keep one side with tire pressure sensor away from separation shovel (arrow) for about 30 cm, and put shovel block between rim and tire, then depress the pedal to separate the rim and tire.

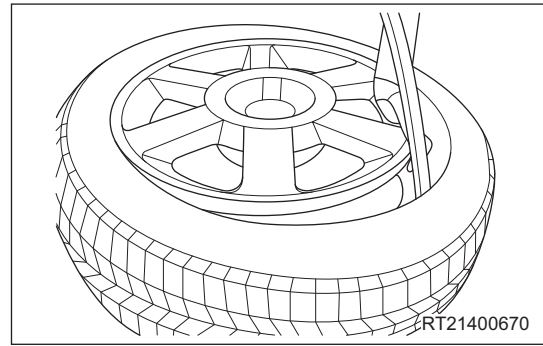


3. Turn over tire to keep one side with tire pressure sensor away from separation shovel (arrow) for about 30 cm, and put shovel block between rim and tire, then depress the pedal to separate the rim and tire.

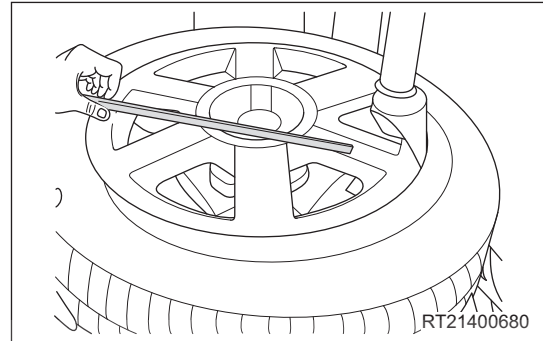


54 - TIRE PRESSURE MONITORING SYSTEM

4. Lock tire on wheel, lower replacer head and keep it away from sensor for 5 - 15 cm.



5. Use crowbar to pry out outside tire, and sleeve it to replacer head, then take away crowbar.

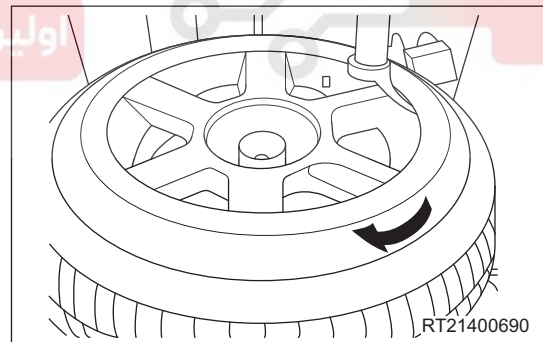


CAUTION

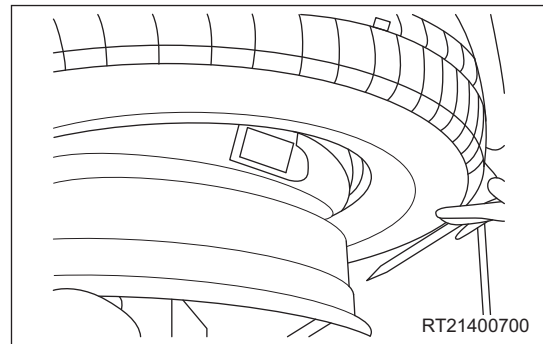
- Both crowbar and tire cannot touch with sensor.

6. Remove the tire.

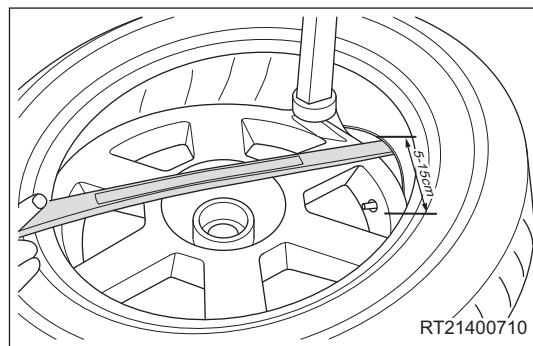
- a. Rotate wheel, and the movable direction of wheel should be the direction that replacer head is gradually kept away from tire pressure sensor (rotation arrow), then remove tire from upper part.



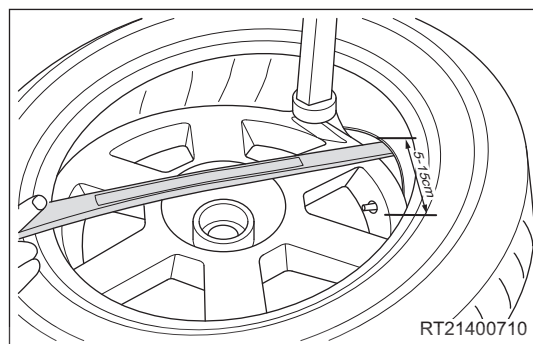
- b. Lift tire and pry out tire from lower part using crowbar.



- c. Lower replacer head and pry out lower side tire tread using crowbar, then sleeve it on replacer head and keep it away from sensor for 5 - 15 cm (arrow).

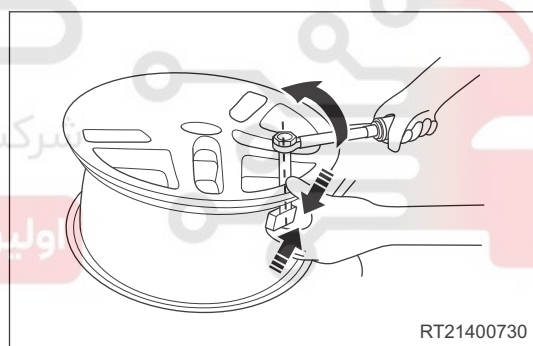


- d. Rotate wheel, and the movable direction of wheel should be the direction that replacer head is gradually kept away from tire pressure sensor (rotation arrow), then pry out tire completely.



Remove the tire pressure sensor.

1. Using a proper tool, turn nut counterclockwise until it separates from tire pressure sensor completely.



2. Remove tire pressure sensor from wheel hub.

Install the tire pressure sensor.

CAUTION

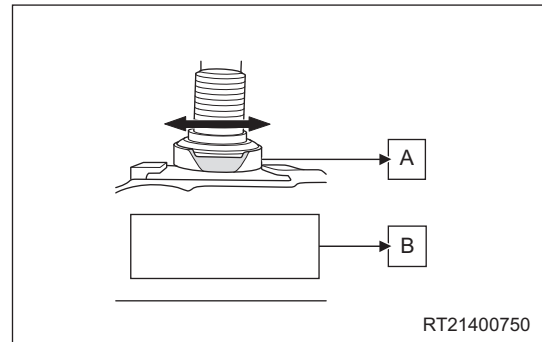
- Tire pressure sensor must be assembled with a torque wrench, and normal wrench cannot confirm the torque of 8 ± 1 N·m. If torque is smaller, it will cause leakage, resulting in accident; if torque is larger, tire pressure sensor or its related components may be damaged, resulting in accident.

Tire Pressure Sensor Tightening Speed and Assembling Torque List

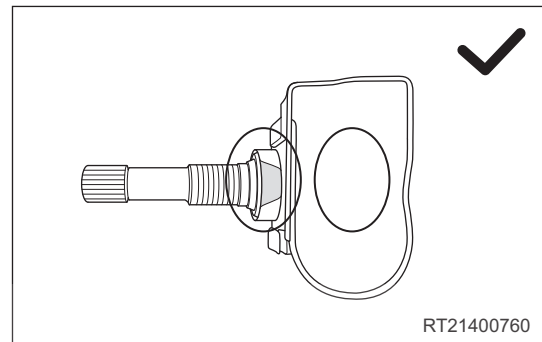
Tightening Speed	≤ 30 rpm
Assembling Torque	8 ± 1 N·m

54 - TIRE PRESSURE MONITORING SYSTEM

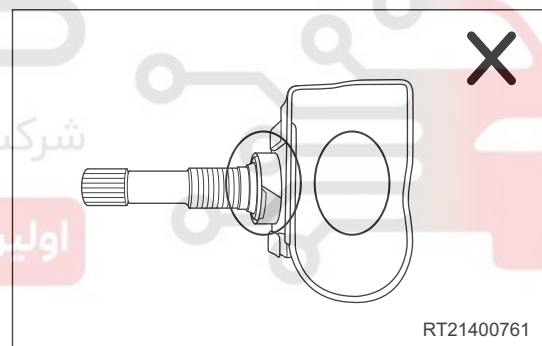
1. Adjust plane direction of seal washer cutout.
 - a. When removing sensor body, first check if seal washer cutout plane is parallel with polyester plane. If they are not parallel and there is an angle between two planes, turn seal washer to make seal washer cutout plane parallel with polyester plane.



- b. If seal washer cutout plane is parallel with polyester plane, it indicates that assembly is qualified.

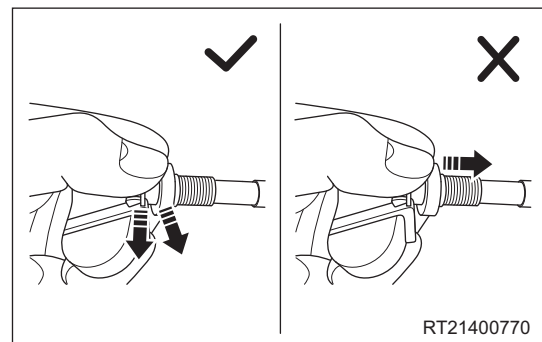


- c. If seal washer cutout plane is not parallel with polyester plane and there is a large angle between two planes, it indicates that assembly is not qualified.

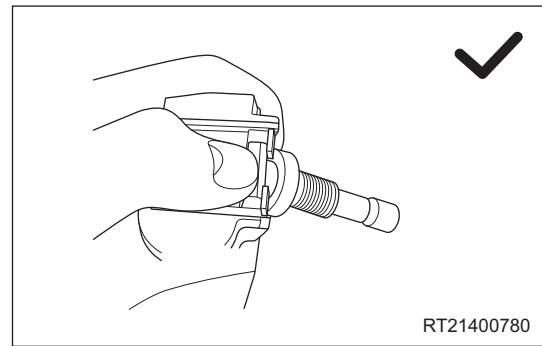


2. Adjust the valve lever position.

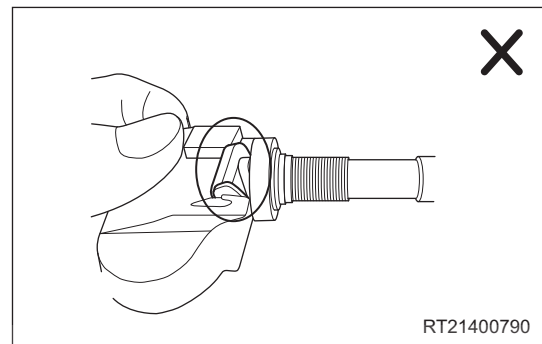
- a. Press root of valve lever using middle of thumb with action force downward along groove direction, so that root of valve lever enters groove completely; then, keep pressing valve lever using middle of thumb and press seal washer using tip of thumb with action force vertically downward along seal washer, so that valve lever bends with maximum angle, never apply horizontal action force along seal washer.



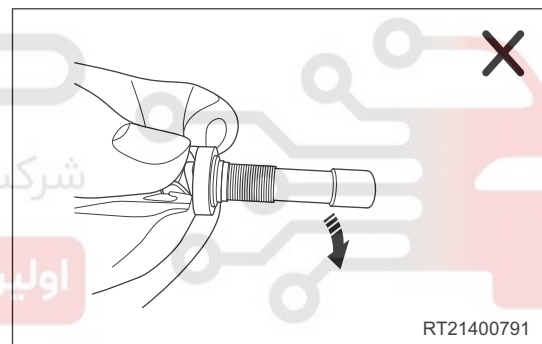
- b. If root of valve lever enters groove completely and valve lever bends with maximum angle, it indicates that assembly is qualified.



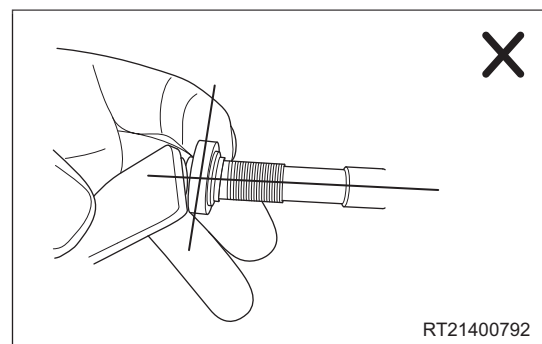
- c. If root of valve lever does not enter groove completely and valve lever does not bend with maximum angle, it indicates that assembly is not qualified.



- d. If valve lever does not bend with maximum angle, it indicates that assembly is not qualified.



- e. If seal washer plane is not perpendicular to valve lever after action force is applied along horizontal direction of seal washer, it indicates that assembly is not qualified.

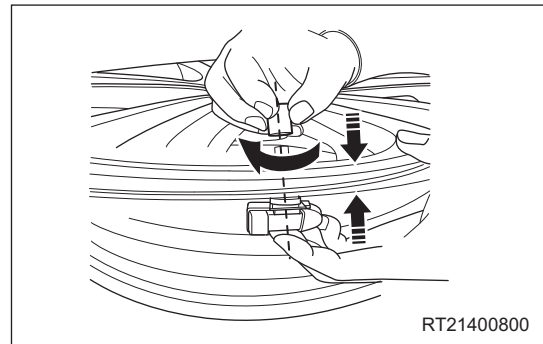


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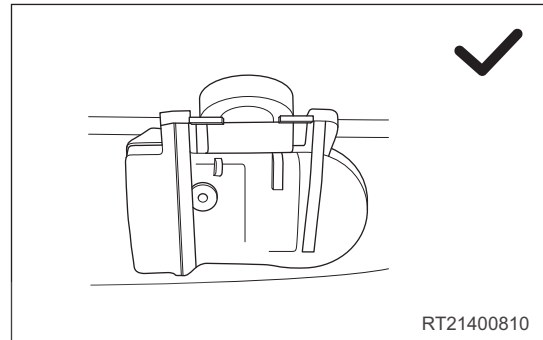
54 - TIRE PRESSURE MONITORING SYSTEM

3. Insert valve lever of tire pressure sensor into hub and pretightened nut.

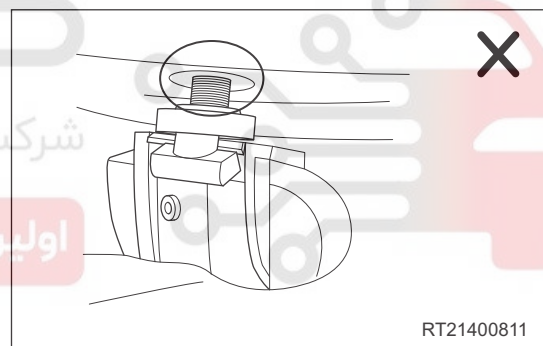
- a. Support tire pressure sensor using four fingers of left hand vertically upward, and do not apply horizontal inward force; hold outer edge of rim using thumb of left hand with force downward, so that both sides of sensor housing attaches with rim firmly. Pass valve lever through rim along center shaft of valve nozzle hole, with insert direction from internal part of tire assembly to external part of tire assembly. Tighten nut clockwise with right hand until tire pressure sensor is secured firmly.



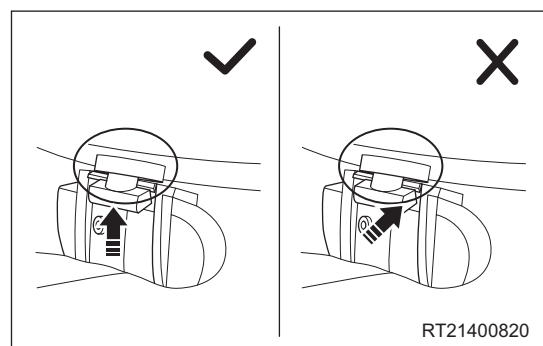
- b. If valve lever enters groove completely, sensor is secured completely and firmly and sensor housing attaches with rim firmly, it indicates that assembly is qualified.



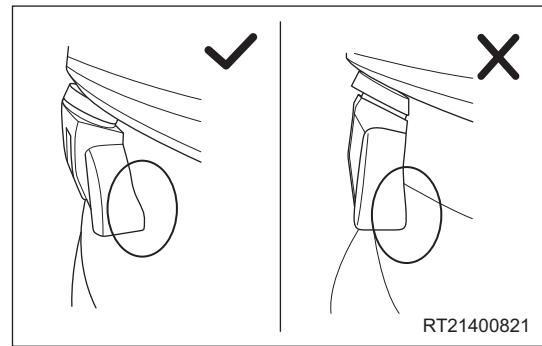
- c. If pretightened nut is not tightened in place, many threads exposed from valve lever can be seen and sensor is not secured, it indicates that assembly is not qualified.



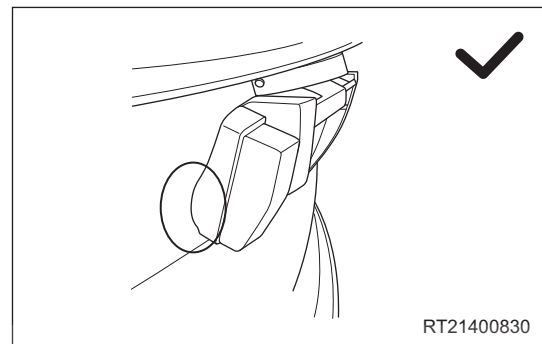
- d. If horizontal inward force is applied and valve lever of sensor slides out of groove, it indicates that assembly is not qualified.



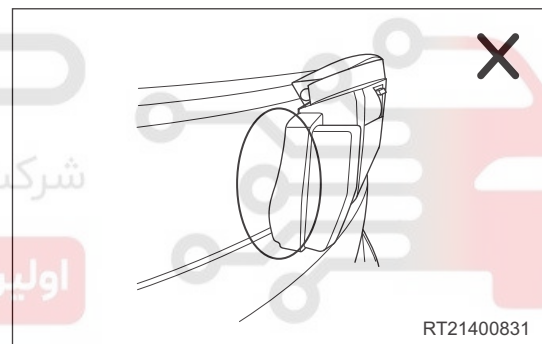
- e. If right side of sensor does not attach with rim firmly, it indicates that assembly is not qualified.



- f. If left side of sensor attaches with rim firmly, it indicates that assembly is qualified.

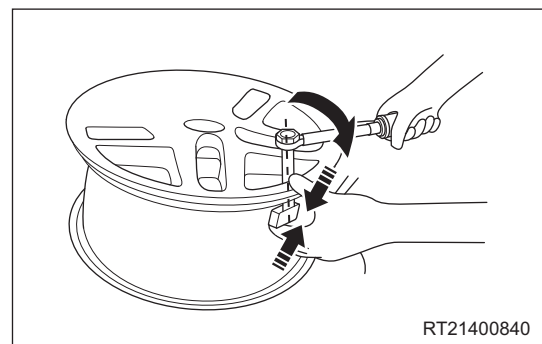


- g. If left side of sensor does not attach with rim firmly, it indicates that assembly is not qualified.



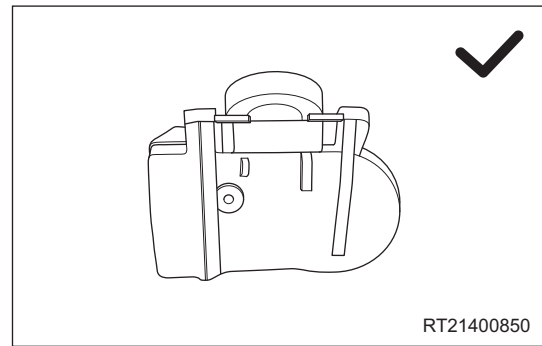
4. Tighten the nut firmly.

- a. Support bottom of sensor using four fingers of left hand with action force upward. Hold rim edge using thumb of left hand with action force downward. Apply force to make tire pressure sensor attach with rim firmly, and sensor cannot move during tightening. Axis of manual torque wrench socket overlaps with axis of valve lever without an angle. Tighten nut clockwise, and the tightening is finished when torque reaches 8 ± 1 N·m. Nut cannot be tightened again after tightening is finished.

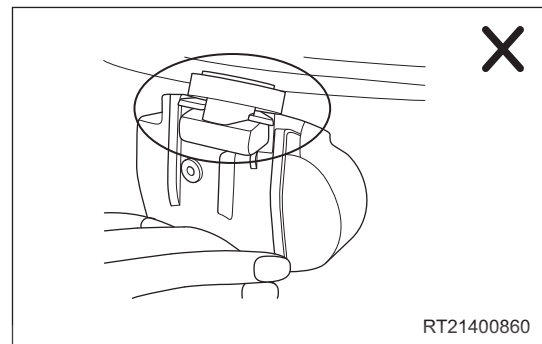


54 - TIRE PRESSURE MONITORING SYSTEM

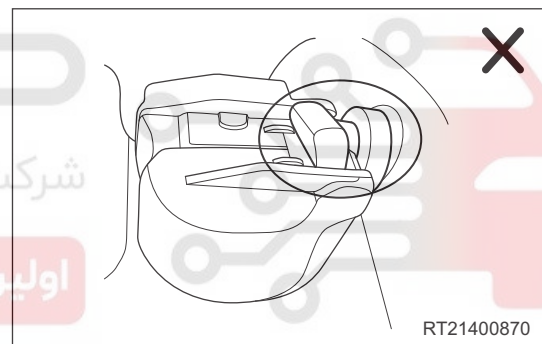
- b. If valve lever enters groove completely, sensor is secured completely and firmly and both sides of sensor housing attach with rim firmly, it indicates that assembly is qualified.



- c. If valve lever slides out of groove, it indicates that assembly is not qualified.



- d. If seal washer and seal ring are deformed and damaged due to excessive torque, it indicates that assembly is not qualified.



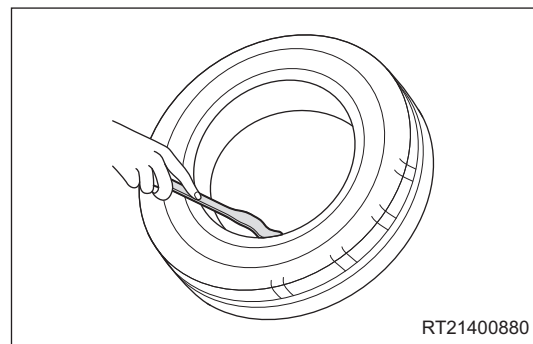
Installation

Install the tire.

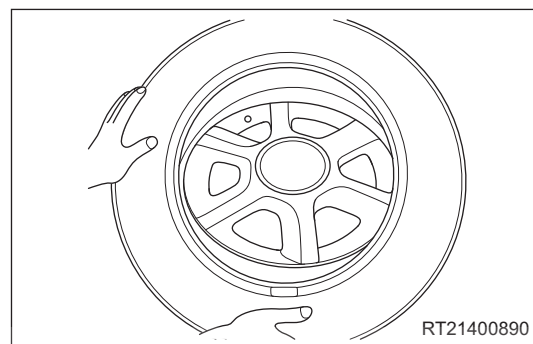
CAUTION

- Follow the operation specification, never damage the tire pressure sensor.
- Both crowbar and tire cannot touch with sensor.
- Confirm that distance between intersection and valve lever is proper.

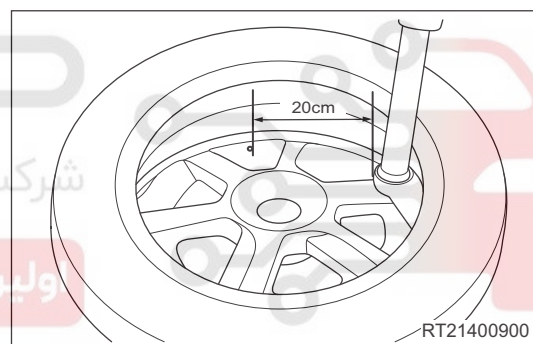
1. Installation is the same as common tire. Before loading tire, apply soapy water or glycerin to tire bead along inner circle.



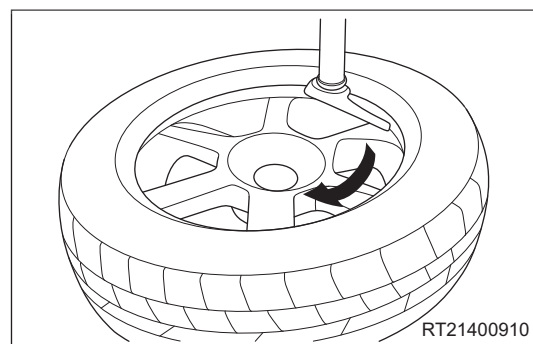
2. Put tire on hub and keep intersection between hub and tire edge away from valve lever for 15 - 20 cm.



3. Install bottom tire to make sure the distance between intersection and valve lever is about 20 cm.

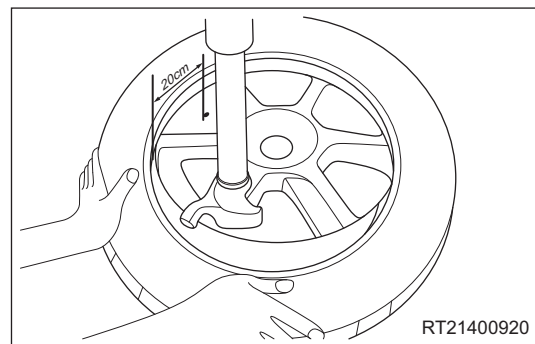


4. Rotate wheel to install one side of tire into hub. Rotation direction of wheel (rotation arrow) should be the direction that makes replacer head get farther and farther away from sensor.

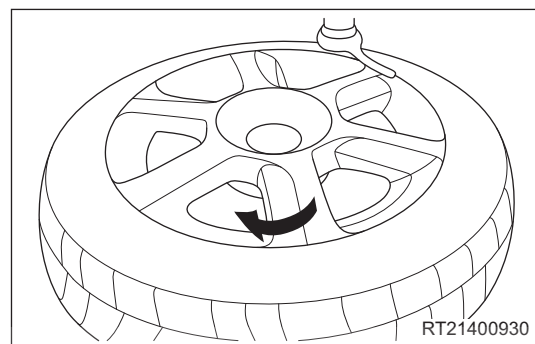


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5. Put another side of tire in place, so that intersection between tire edge and hub is away from valve lever for about 20 cm. Curving arrow indicates rotation direction of wheel.



6. Rotate wheel to install another side of tire into hub.



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HORN

GENERAL INFORMATION	55-3	Horn Fuse Inspection	55-6
Description	55-3	Horn Relay Inspection	55-7
Specification	55-4	ON-VEHICLE SERVICE	55-8
Tool	55-4	Horn	55-8
Circuit Diagram	55-5	Removal	55-8
DIAGNOSIS & TESTING	55-6	Inspection	55-8
Problem Symptoms Table	55-6	Installation	55-9

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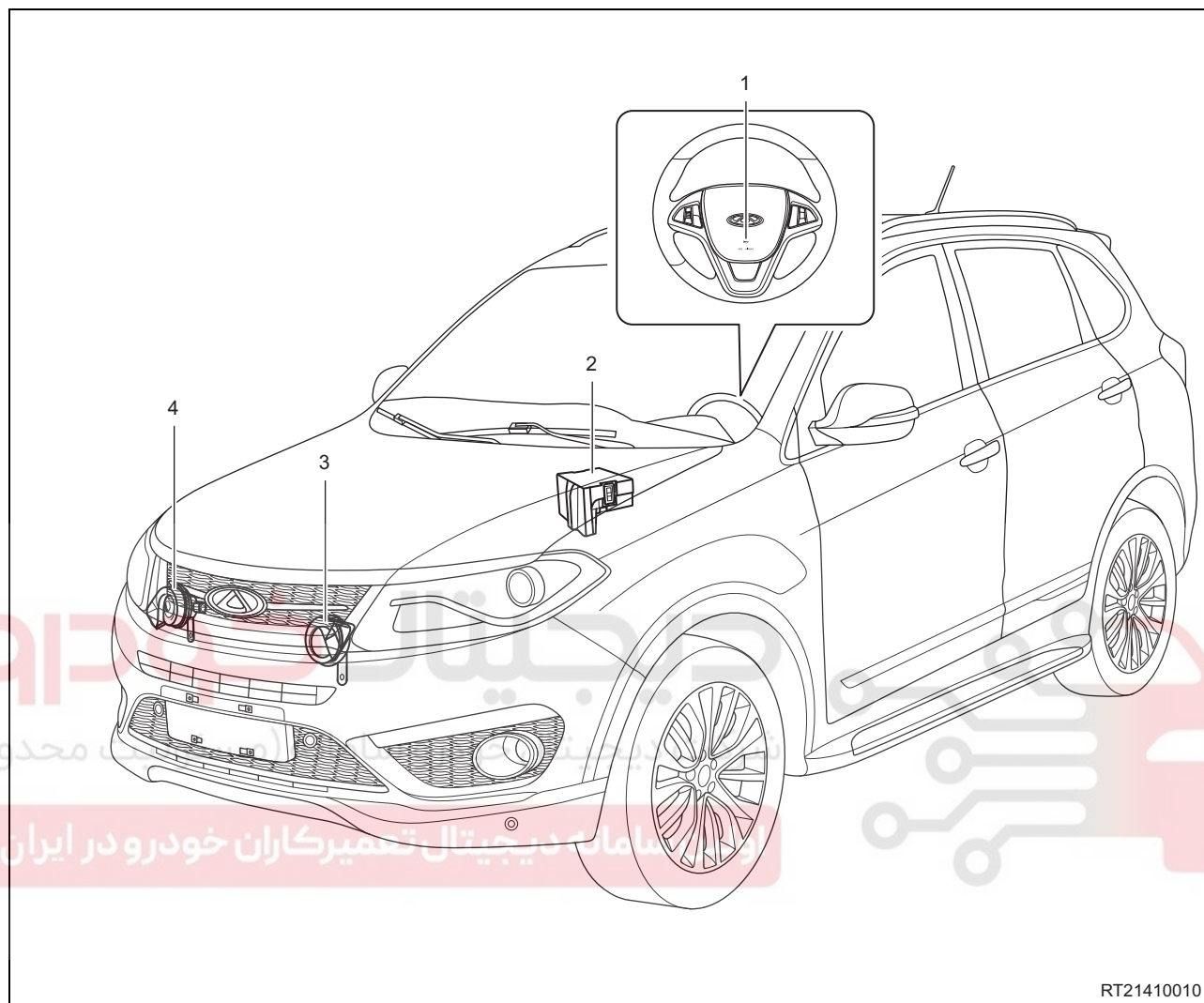
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GENERAL INFORMATION

Description



55

1 - Horn Switch	2 - Engine Compartment Fuse and Relay Box
3 - Low Pitched Horn	4 - High Pitched Horn

This vehicle is equipped with high pitched and low pitched electronic horn system.

Horn system consists of the following components:

- Horn: high pitched horn and low pitched horn are installed on front pump crossmember.
- Horn switch: horn switch is installed on steering wheel.
- Horn fuse: horn fuse is located in engine compartment fuse and relay box.
- Horn relay: horn relay is located in engine compartment fuse and relay box.

55 - HORN

Specification

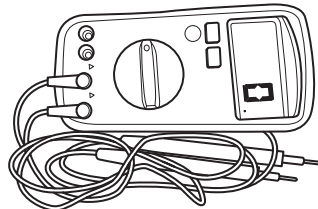
Torque Specification

Description	Torque (N·m)
Horn Fixing Bolt	16 ± 2

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Tool

General Tool

Digital Multimeter	 <p>RCH0000002</p>
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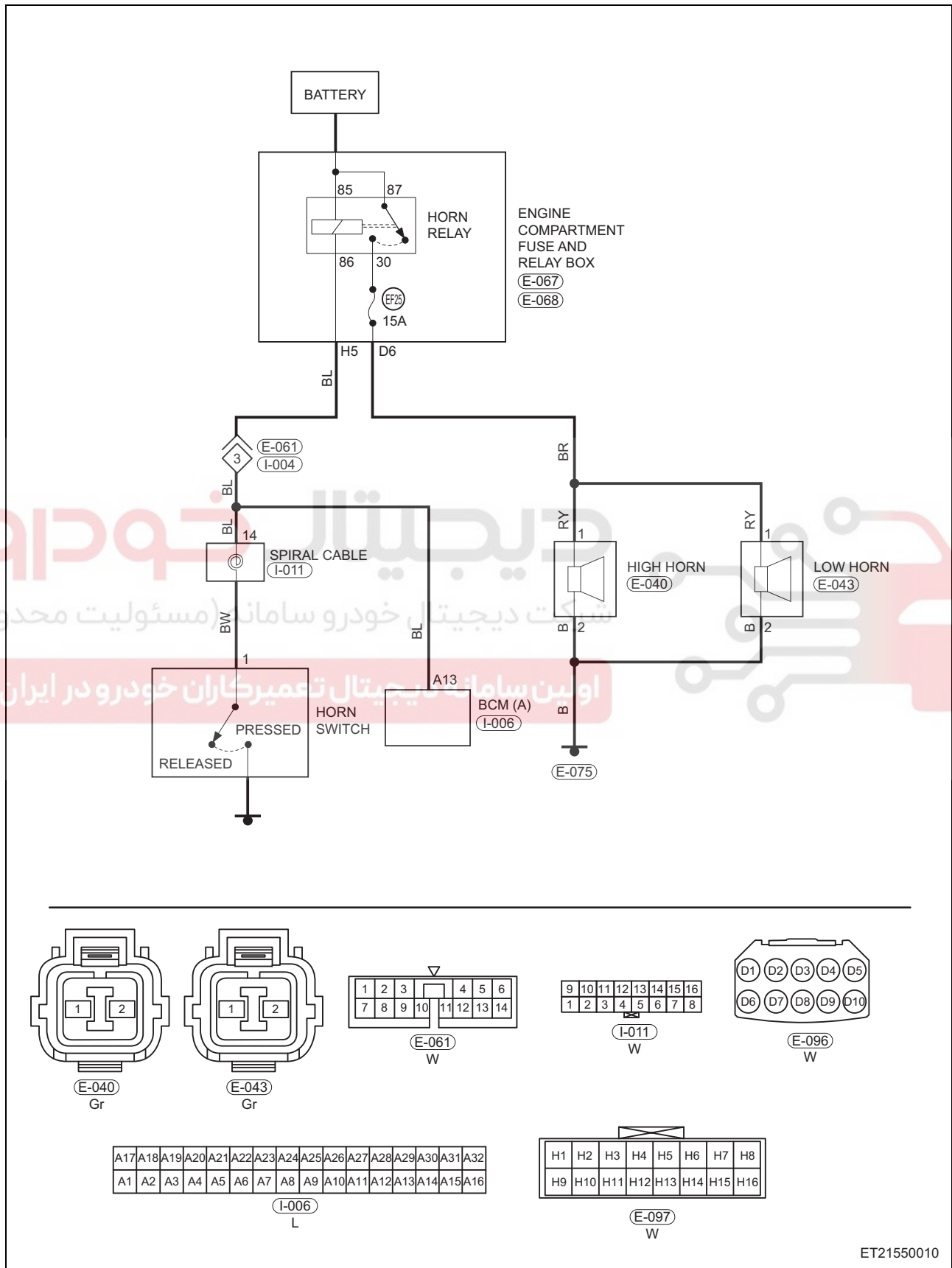
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Circuit Diagram

Horn System



DIAGNOSIS & TESTING

Problem Symptoms Table

HINT:

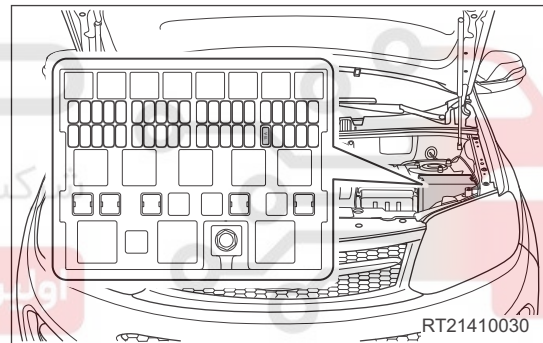
55

Use the table below to help determine the cause of the problem symptoms. Check each suspected area in sequence. Repair or replace the faulty components, or adjust as necessary.

Symptom	Suspected Area	See page
Horn does not sound	Horn fuse (blown)	68-59
	Low pitched horn (damaged)	55-8
	High pitched horn (damaged)	55-8
	Horn switch (damaged)	43-76
	Spiral cable (damaged)	43-79
	Wire harness (short or open)	-

Horn Fuse Inspection

1. Identify the horn fuse on the engine compartment fuse and relay box.



2. Check horn fuse.
 - a. Using a fuse puller, remove the horn fuse (15 A).
 - b. Check if the fuse is blown. Replace the fuse if it is blown.

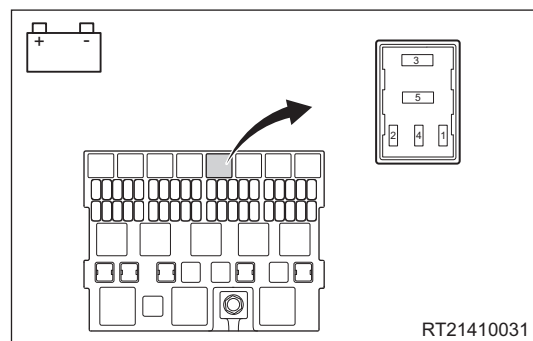
CAUTION

- Use a fuse with the same specification as the original fuse to avoid affecting normal usage of electrical equipment.

Horn Relay Inspection

1. Check horn relay.
 - a. Remove the relay from engine compartment fuse and relay box.
 - b. Measure resistance according to the table below.

Multimeter Connection	Condition	Specified Condition
Terminal 3 - Terminal 5	When battery voltage is not applied between terminal 2 and terminal 1	No continuity
Terminal 3 - Terminal 5	When battery voltage is applied between terminal 2 and terminal 1	Continuity



55

If result is not as specified, replace the relay.

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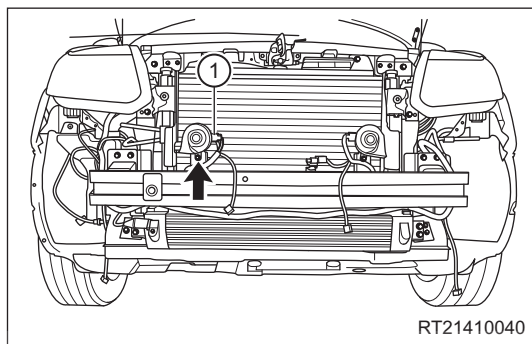
ON-VEHICLE SERVICE

Horn

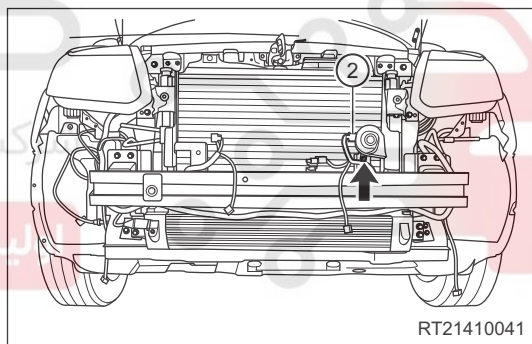
Removal

55

1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the radiator grille assembly (See page 62-8).
4. Remove the high pitched horn.
 - a. Disconnect the high pitched horn wire harness connector (1).
 - b. Remove the fixing bolt (arrow) from high pitched horn bracket, and remove the high pitched horn. (Tightening torque: 16 ± 2 N·m)



5. Remove the low pitched horn.
 - a. Disconnect the low pitched horn wire harness connector (2).
 - b. Remove the fixing bolt (arrow) from the low pitched horn bracket, and remove the low pitched horn. (Tightening torque: 16 ± 2 N·m)

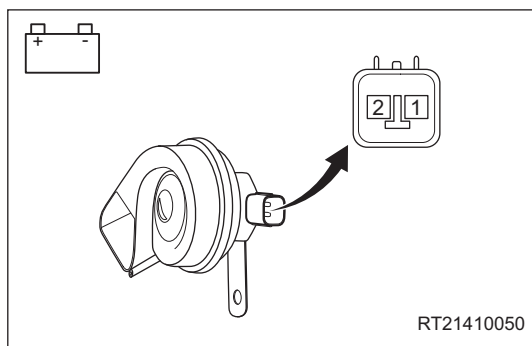


Inspection

1. Check high pitched horn.

Apply battery voltage to the high pitched horn and check the operation of high pitched horn.

Measurement Condition	Condition	Specified Condition
Battery positive (+) - Terminal 1	Always	Sounds
Battery negative (-) - Terminal 2		



If result is not as specified, replace the high pitched horn.

2. Check low pitched horn.

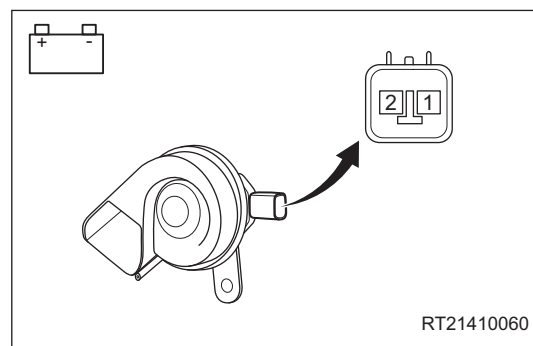
Apply battery voltage to the low pitched horn and check the operation of low pitched horn.

Measurement Condition	Condition	Specified Condition
Battery positive (+) - Terminal 1 Battery negative (-) - Terminal 2	Always	Sounds

If the result is not as specified, replace the high pitched horn.

3. Check wire harness.

Using a digital multimeter, check for an open, short or ground failure in the horn system wire harness. Replace if necessary.



Installation

Installation is in the reverse order of removal.

CAUTION

- Tighten fixing bolts to the specified torque.
- Install each connector in place.

شرکت دیجیتال خودرو (مسئولیت محدود)

اولین سامانه دیجیتال تعمیرکاران خودرو در ایران

دیجیتال خودرو

شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



OTHER SYSTEM

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دیجیتال خودرو

شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



دیجیتال خودرو

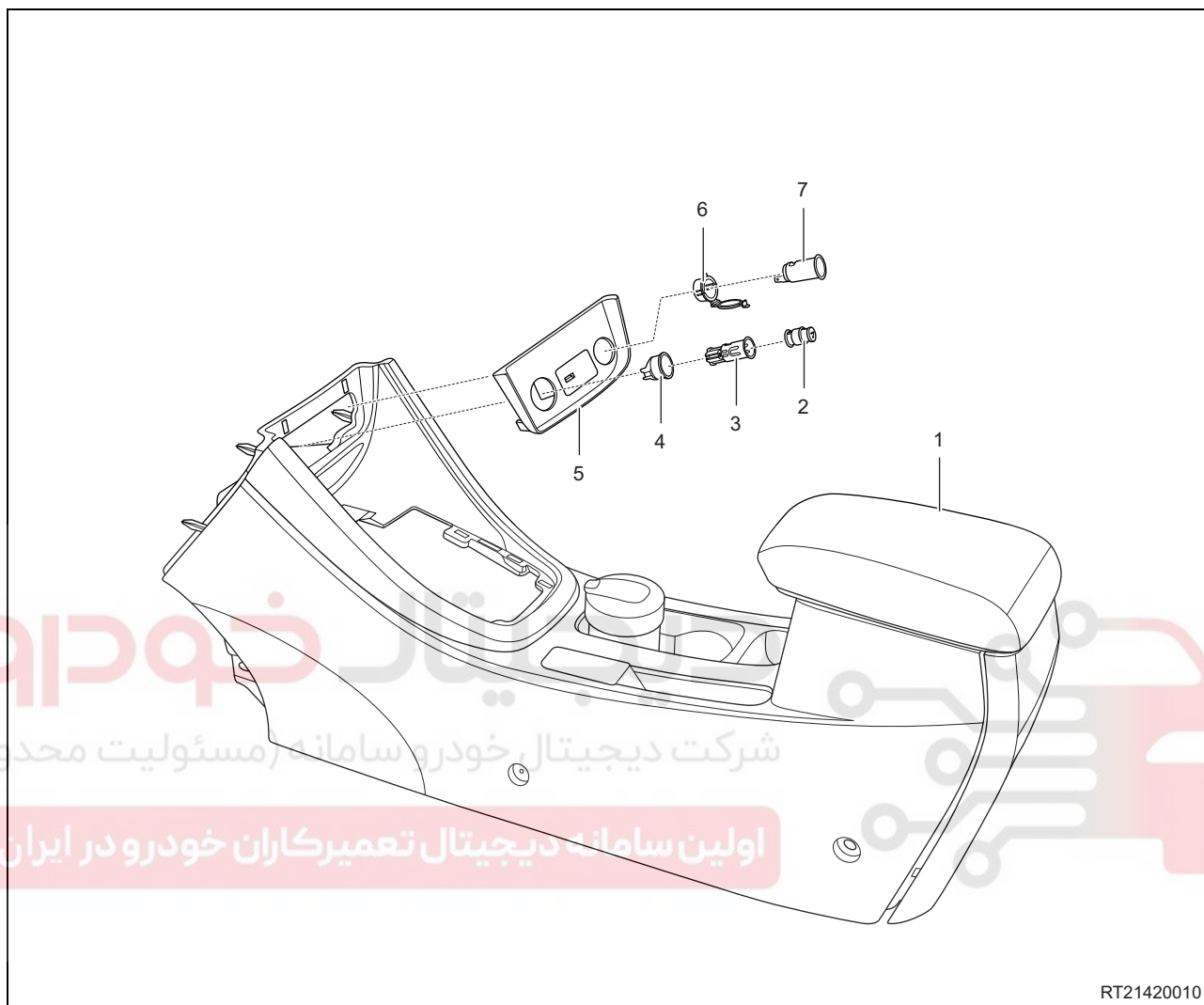
شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



GENERAL INFORMATION

Description



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RT21420010

1 - Auxiliary Fascia Console Assembly	2 - Cigarette Lighter End
3 - Cigarette Lighter Fixing Bush	4 - Cigarette Lighter Housing
5 - USB Panel Assembly	6 - Power Socket Cover
7 - Power Socket	

Cigarette lighter assembly is located on the USB panel assembly.

This model is equipped with a 12 V backup power supply, which is located on the USB panel assembly for charging at any time.

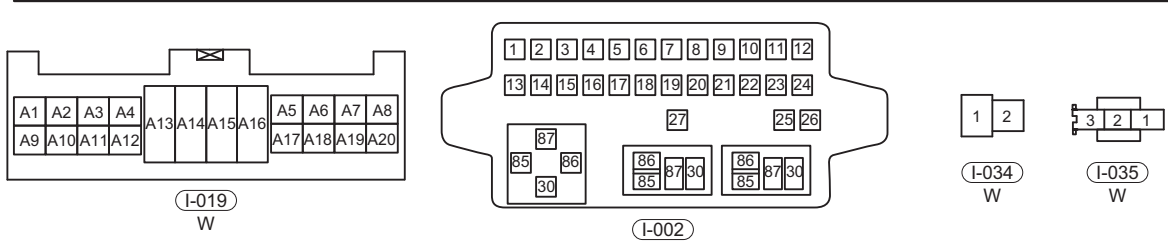
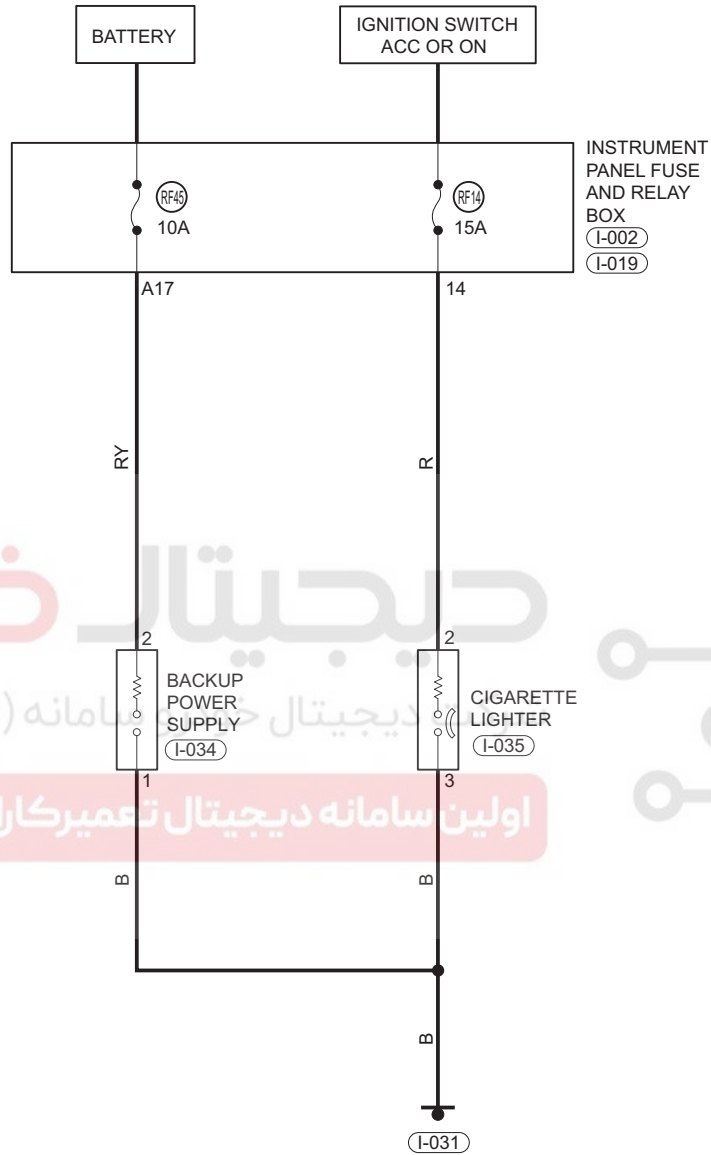
CAUTION

- Rated voltage of cigarette lighter socket is 12 V. DO NOT use electrical equipment with higher rated voltage.

Circuit Diagram

Cigarette Lighter System

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ET21560010

ON-VEHICLE SERVICE

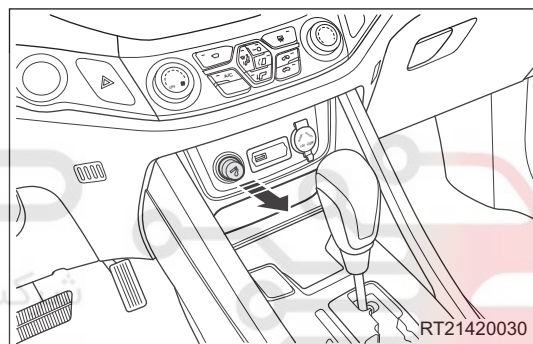
Cigarette Lighter Assembly

Removal

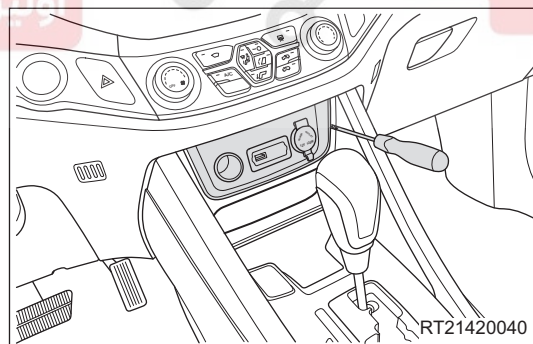
CAUTION

- Be sure to wear safety equipment to prevent accidents when removing cigarette lighter assembly.
- Appropriate force should be applied when removing cigarette lighter assembly. Be careful not to operate roughly.
- Try to prevent USB panel assembly from being scratched when removing cigarette lighter assembly.

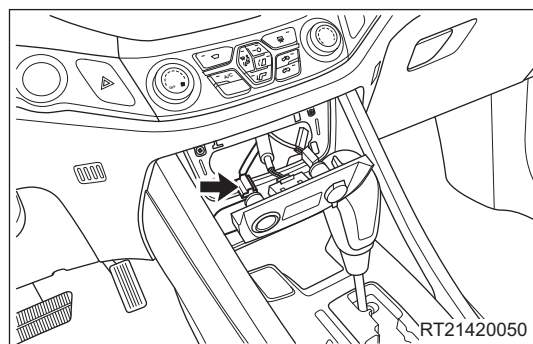
1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the cigarette lighter assembly.
 - a. Remove the cigarette lighter end in the direction of arrow as shown in the illustration.



- b. Using a screwdriver wrapped with protective tape, pry off the clips on USB panel assembly, and remove the cigarette lighter panel.

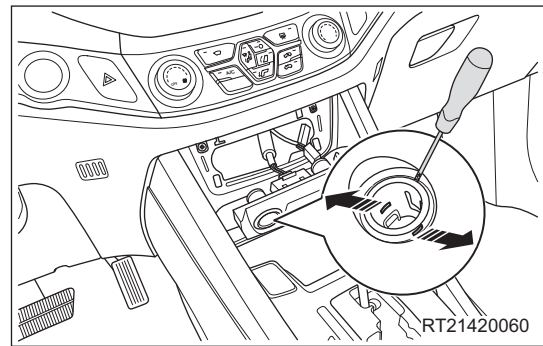


- c. Disconnect the cigarette lighter connector (arrow).

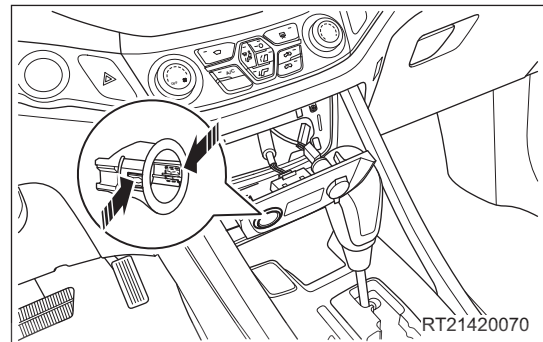


56 - OTHER SYSTEM

- d. While pressing the claws on cigarette lighter housing in the direction of arrow as shown in the illustration, remove the cigarette lighter fixing bush using a screwdriver wrapped with protective tape.



- e. Press the claws on cigarette lighter housing in the direction of arrow as shown in the illustration, and remove the cigarette lighter housing.

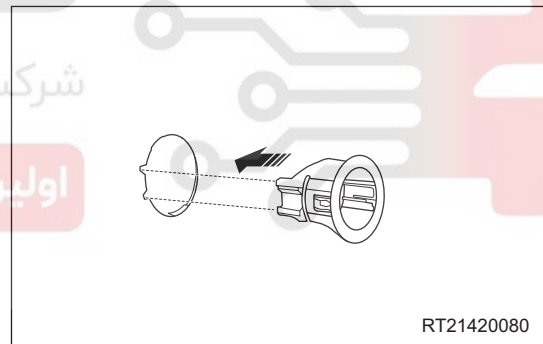


Installation

Installation is in the reverse order of removal.

HINT:

When installing cigarette lighter housing, align the protrusion of cigarette lighter housing end with the slot on USB panel, and install the cigarette lighter housing securely.



CAUTION

- Check the cigarette lighter for proper operation after installing cigarette lighter assembly.

Backup Power Supply Assembly

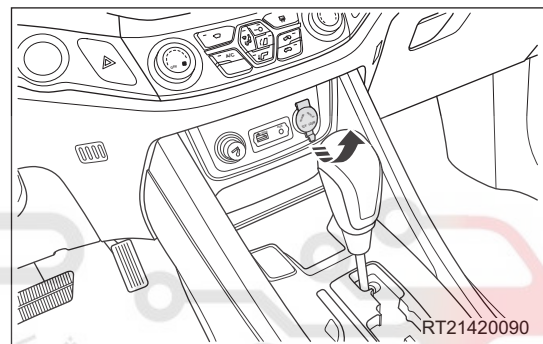
Removal

CAUTION

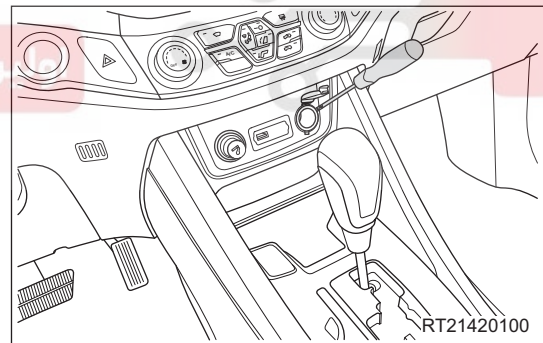
- Be sure to wear safety equipment to prevent accidents when removing backup power supply assembly.
- Appropriate force should be applied when removing backup power supply assembly. Be careful not to operate roughly.
- Try to prevent USB panel assembly from being scratched when removing backup power supply assembly.

56

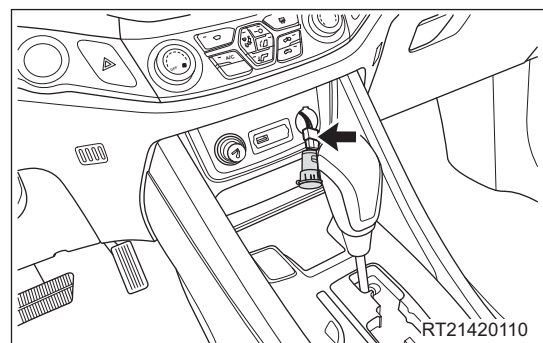
1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the backup power supply assembly.
 - a. Open the backup power supply cover in the direction of arrow as shown in the illustration.



- b. Using a screwdriver wrapped with protective tape, pry off the backup power supply assembly.

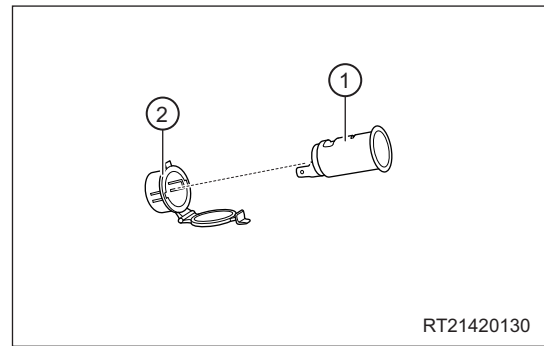


- c. Disconnect the backup power supply connector (arrow), and remove the backup power supply assembly.



56 - OTHER SYSTEM

- d. Separate the power socket (1) and power socket cover (2) as shown in the illustration.



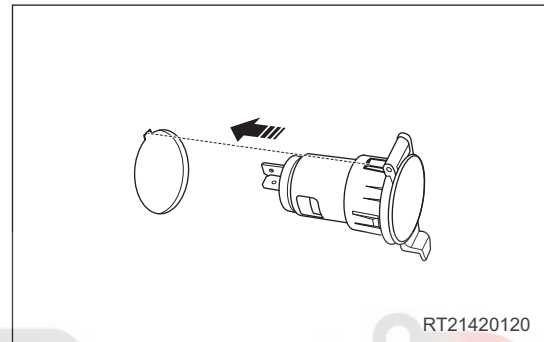
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Installation

Installation is in the reverse order of removal.

HINT:

When installing backup power supply assembly, align the protrusion of backup power supply assembly end with the slot on USB panel, and install the backup power supply assembly securely.

**CAUTION**

- Check the backup power supply assembly for proper operation after installing backup power supply assembly.

WINDSHIELD/WINDOW GLASS

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دیجیتال خودرو

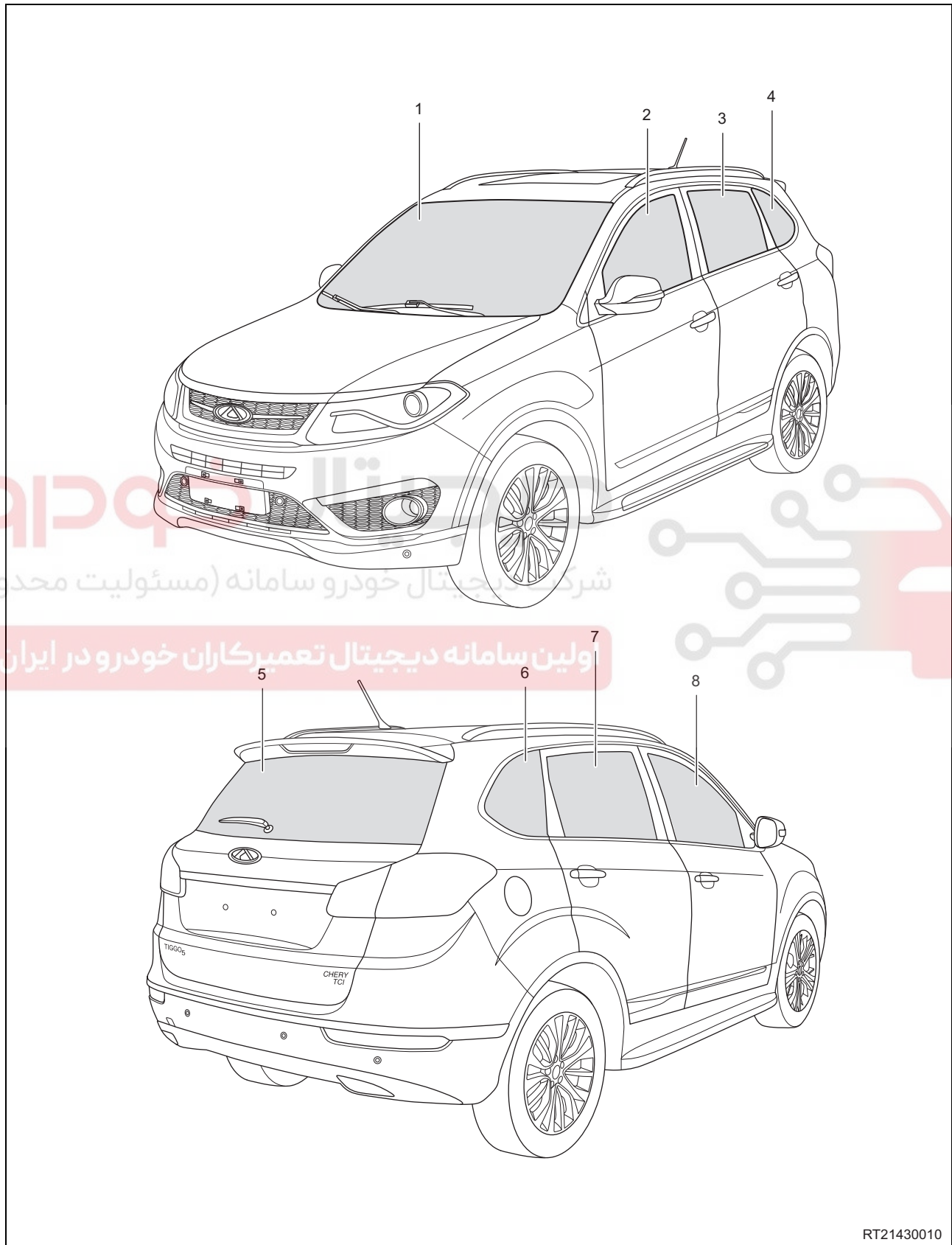
شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



GENERAL INFORMATION

Description

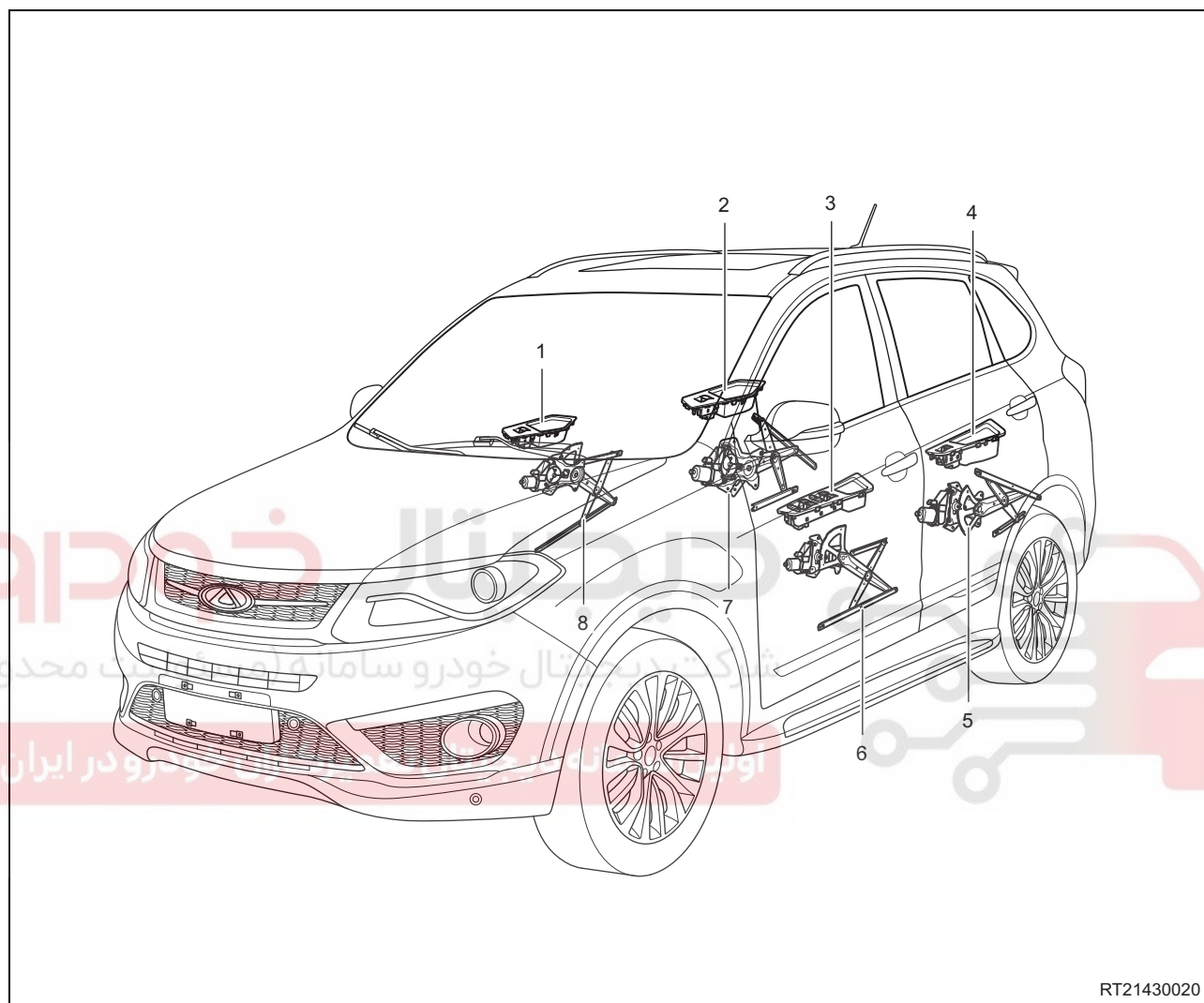


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57 - WINDSHIELD/WINDOW GLASS

1 - Front Windshield Assembly	2 - Front Left Door Glass Assembly
3 - Rear Left Door Glass Assembly	4 - Left Triangular Window Glass Assembly
5 - Rear Windshield Assembly	6 - Right Triangular Window Glass Assembly
7 - Rear Right Door Glass Assembly	8 - Front Right Door Glass Assembly

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RT21430020

1 - Front Right Door Power Glass Regulating Switch Assembly	2 - Rear Right Door Power Glass Regulating Switch Assembly
3 - Front Left Door Power Glass Regulating Control Master Switch Assembly	4 - Rear Left Door Power Glass Regulating Switch Assembly
5 - Rear Left Door Power Glass Regulator Assembly	6 - Front Left Door Power Glass Regulator Assembly
7 - Rear Right Door Power Glass Regulator Assembly	8 - Front Right Door Power Glass Regulator Assembly

Power window control system controls the power window glass UP/DOWN function by operating power glass regulating control switch on the door inner protector assembly. Main control devices of this system include: power glass regulating control master switch (built into driver side door) and power glass regulating switches (built into front passenger side door and rear doors). Press the power glass regulating control master switch or

any power glass regulating switch to transmit the UP/DOWN signal to corresponding power glass regulator motor, thus controlling the UP/DOWN operation of corresponding power window glass.

Jam Protection System Function Description

After system initialization is completed, glass is controlled to go up to jam protection area manually or automatically, at this time, if there is obstacle and limit value of jam protection force is reached, glass will move reversely.

Jam protection inhibition function description: jam protection inhibition function is a typical function of jam protection module, which is used to prevent glass keeping opened due to reverse movement in extreme conditions (such as there is obstacle during glass up). In such case, jam protection function will be prohibited and jam protection inhibition function will be activated.

Description for jam protection inhibition function: If reverse movement occurs again within 10 seconds after first reverse movement occurs during glass up, auto up/down function will be prohibited within 10 seconds after second reverse movement; and if glass continues to go up within 10 seconds, glass will not move reversely when it contacts obstacle, jam protection function will be prohibited and system will enter non-initialization mode.

After jam protection inhibition function is activated, glass can be controlled to go up manually without jam protection function, at this time, window will be closed by motor in maximum torque.

Window glass up/down function description (w/ jam protection):

For glass regulating switch with jam protection function, front left door glass regulating switch is connected to BCM, and other glass regulating switches are connected to corresponding jam protection module. Motor is driven by jam protection module directly, BCM communicates with jam protection module via LIN communication.

With key in ON or within 2 minutes after key is turned from ON to OFF or ACC, operate glass regulating switch to control window motor.

Glass up/down function supports the following 2 modes:

Manual function: long press glass regulating switch to operate glass, and glass will stop moving after releasing glass regulating switch.

Auto function: short press glass up/down switch, corresponding glass will go up/down automatically; press the switch again, glass will stop moving.

Within 2 minutes after key is turned to ACC or OFF, glass up/down function will be disabled if any front door is opened.

Function for long press up/down:

1. When key is in IGN-OFF, 4 doors are closed and long press wireless key unlock button for more than 1.5 seconds, 4 glasses will go down. When glass goes down to bottom or unlock button is released during glass down, glass will stop going down immediately.
2. When key is in IGN-OFF, 4 doors are closed and long press wireless key lock button for more than 1.5 seconds, 4 glasses will go up. When glass goes up to top or releasing lock button during glass up, glass will stop going up immediately.

Description: One touch up/down function is valid only after jam protection module is initialized.

Jam Protection Module Initialization (Self-learning)

After it is powered on for first time or error is detected, system will enter non-initialization mode.

The following functions will be disabled in non-initialization mode:

1. Auto up function
2. Soft stop function
3. Jam protection function
4. Remote up/down function and system initialization

In non-initialization mode, manual up is allowed.

57 Operate according to following procedures to complete jam protection module system initialization:

Turn ignition switch to ON, close all windows, lift up power window switch and hold it in that position for at least 1 second, then release the switch, lift it up again and hold it in that position. At this time, jam protection module initialization is completed. Restore the auto function of certain power window separately, and auto function of several power windows can be restored at the same time.

When any of following conditions is met, system will enter non-initialization mode:

1. Reconnect battery after it is disconnected;
2. External force is applied when jam protection inhibition function is activated.

Main Components Function

Component	Description
Power window lock switch	Locates on front left door inner protector assembly and controls operations of front and rear passenger door power window glass. When power window lock switch is in lock position, only driver side power glass regulating control master switch can control UP/DOWN operation of driver side power window glass.
Power glass regulating switch	Locates on door inner protector assembly. Each power glass regulating switch controls UP/DOWN operation of corresponding power window glass.
Power glass regulator motor	Receives switch signal and performs conversion in order to activate power glass regulator motor to change power window glass position.

System Function

Function	Description
Manual UP function	Power glass regulating control master switch and power glass regulating switches have manual UP function. Power window glass goes up when power glass regulating control master switch or any power glass regulating switch is pulled up and stops when switch is released.
Manual DOWN function	Power glass regulating control master switch and power glass regulating switches have manual DOWN function. Power window glass goes down when power glass regulating control master switch or any power glass regulating switch is pressed and held and stops when switch is released.

Function	Description
Automatic DOWN function	Power glass regulating control master switch and power glass regulating switches have automatic DOWN function. Power window glass goes down automatically when power glass regulating control master switch or any power glass regulating switch is pressed. To stop it partway, press switch again.
Power window LOCK function	When power window lock switch is pressed, corresponding power window glass cannot be operated with passenger side power glass regulating control switches. In this case, only driver side power window glass can be operated. This function can be canceled only when power window lock switch is pressed again.

Operation Inspection

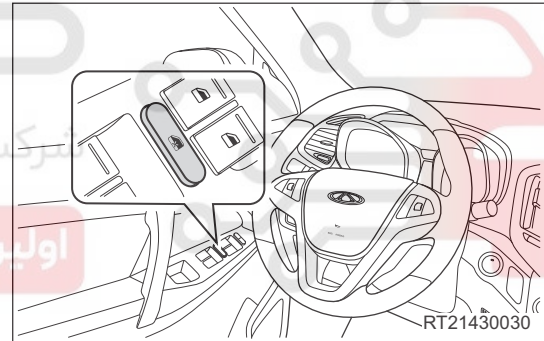
1. Check power window lock switch.

- a. Check that front passenger side power window glass and rear door window glass cannot be operated with front passenger side power glass regulating switch and rear door glass regulating switch when power window lock switch is pressed.

OK: Operation for front passenger side power glass regulating switch and rear door glass regulating switch is failed.

- b. Check that front passenger side power window glass and rear door window glass can be operated with front passenger side power glass regulating switch and rear door glass regulating switch when power window lock switch is pressed again.

OK: Front passenger side power glass regulating switch and rear door glass regulating switch can be operated.



2. Check manual UP/DOWN function.

- a. Check that driver side power window glass operates as follows:

OK

Condition	Power Glass Regulating Control Master Switch	Switch Operation	Power Window Glass
Ignition switch ON	Driver side	Pulled	UP (close)
		Pushed	DOWN (open)

57 - WINDSHIELD/WINDOW GLASS

- b. Check that power window glasses other than driver side power window glass operate as follows:

OK

Condition	Power Glass Regulating Switch	Switch Operation	Power Window Glass
Ignition switch ON Window lock switch OFF	Passenger side	Pulled	UP (close)
		Pushed	DOWN (open)
	Rear left side	Pulled	UP (close)
		Pushed	DOWN (open)
	Rear right side	Pulled	UP (close)
		Pushed	DOWN (open)

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3. Check remote manual UP/DOWN function.

- a. Check that driver side power window glass operates as follows:

OK

Condition	Power Glass Regulating Control Master Switch	Switch Operation	Power Window Glass
Ignition switch ON	Driver side	Fully pulled	UP (close)
		Fully pushed	DOWN (open)

- b. Check that power window glasses other than driver side power window glass operate as follows:

OK

Condition	Power Glass Regulating Switch	Switch Operation	Power Window Glass
Ignition switch ON Window lock switch OFF	Passenger side	Pulled	UP (close)
		Pushed	DOWN (open)
	Rear left side	Pulled	UP (close)
		Pushed	DOWN (open)
	Rear right side	Pulled	UP (close)
		Pushed	DOWN (open)

Specifications

Torque Specifications

Description	Torque (N·m)
Power Glass Regulating Control Master Switch Assembly Fixing Screw	2 ± 0.5
Power Glass Regulating Switch Assembly Fixing Screw	2 ± 0.5
Front Door Outer Weather Bar Fixing Screw	1.3 ± 0.2
Rear Door Outer Weather Bar Fixing Screw	1.3 ± 0.2
Front Door Glass Rear Guide Rail Assembly Fixing Bolt	9 ± 1
Rear Door Glass Rear Guide Rail Assembly Fixing Bolt	9 ± 1
Rear Door Glass Rear Guide Rail Assembly Fixing Screw	5 ± 0.5
Front Door Glass Assembly Fixing Bolt	9 ± 1
Rear Door Glass Assembly Fixing Bolt	9 ± 1
Front Door Power Glass Regulator Assembly Fixing Bolt	9 ± 1
Rear Door Power Glass Regulator Assembly Fixing Bolt	9 ± 1
A/C Control Panel Fixing Screw	2 ± 0.5

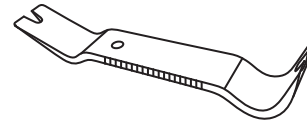
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اولین سامانه دیجیتال تعمیرکاران خودرو در ایران

Tools

Special Tool

Interior Crow Plate

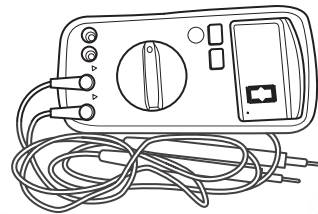


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General Tool

Digital Multimeter



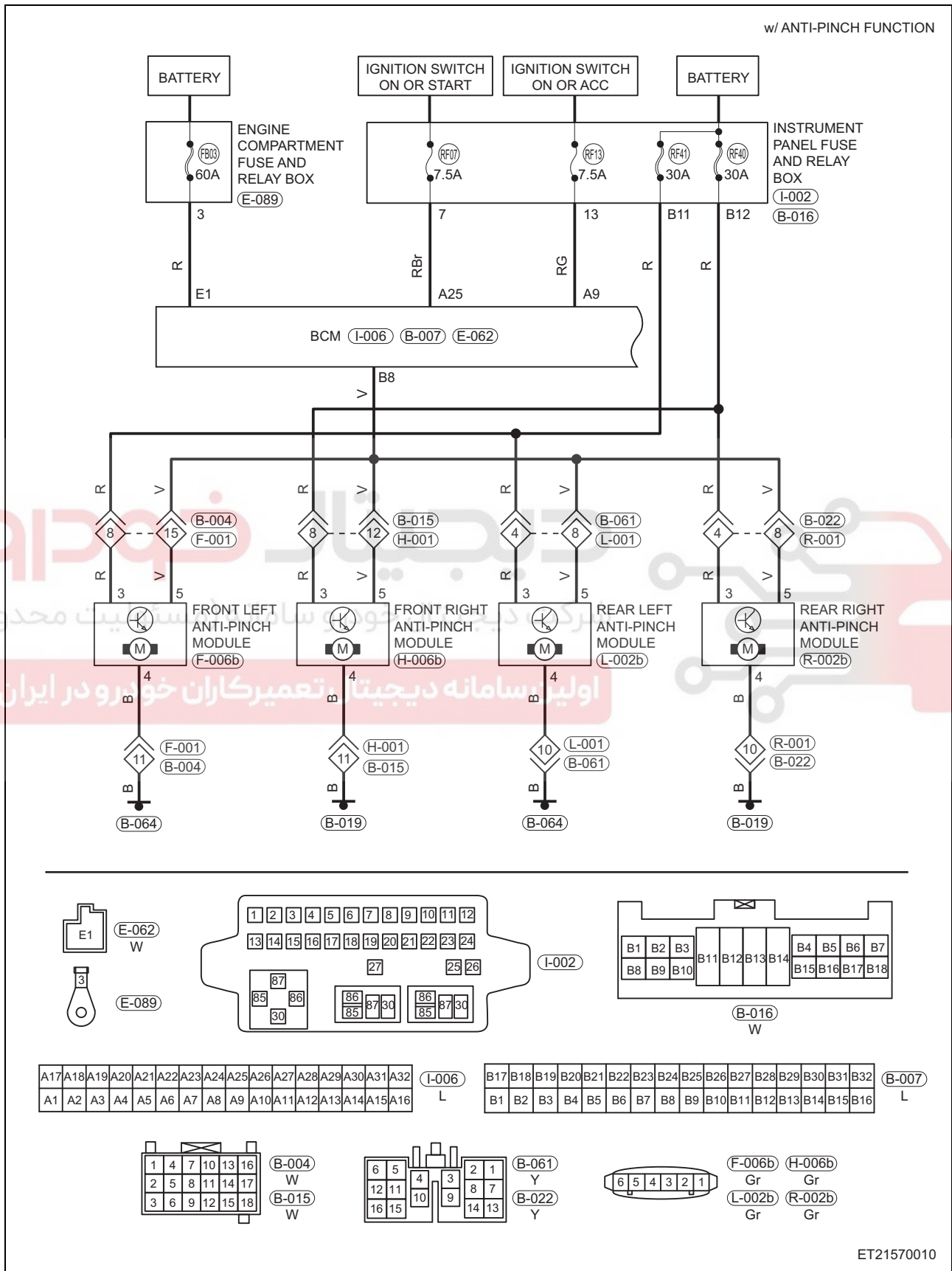
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دیجیتال خودرو
شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

اولین سامانه دیجیتال تعمیرکاران خودرو در ایران

Circuit Diagram

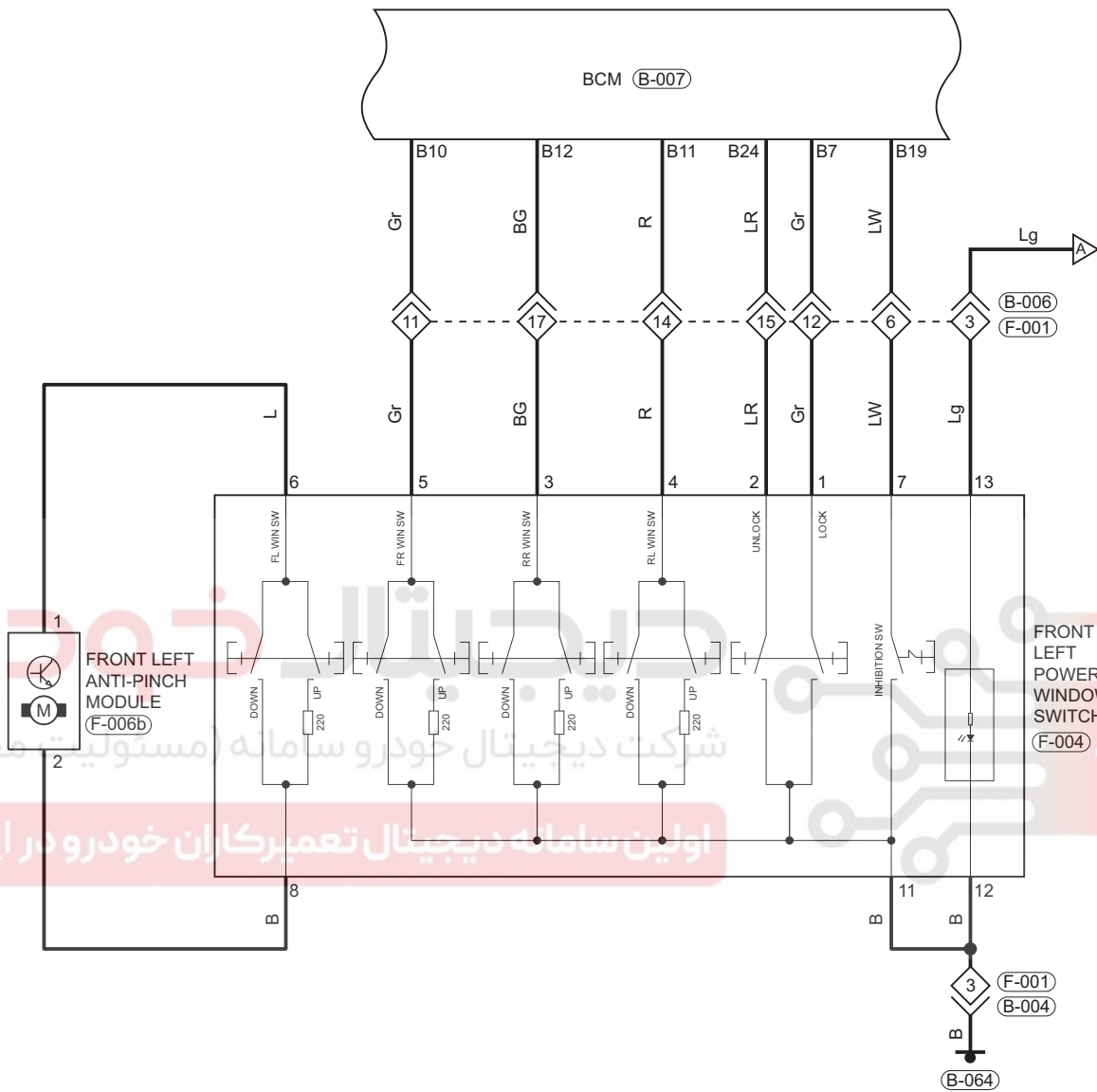
Power Window Control System (Page 1 of 7) (w/ Jam Protection Function)



Power Window Control System (Page 2 of 7) (w/ Jam Protection Function)

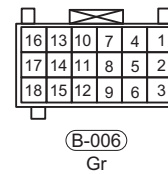
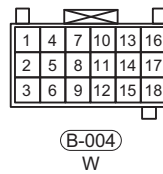
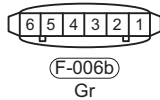
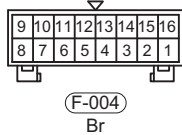
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w/ ANTI-PINCH FUNCTION



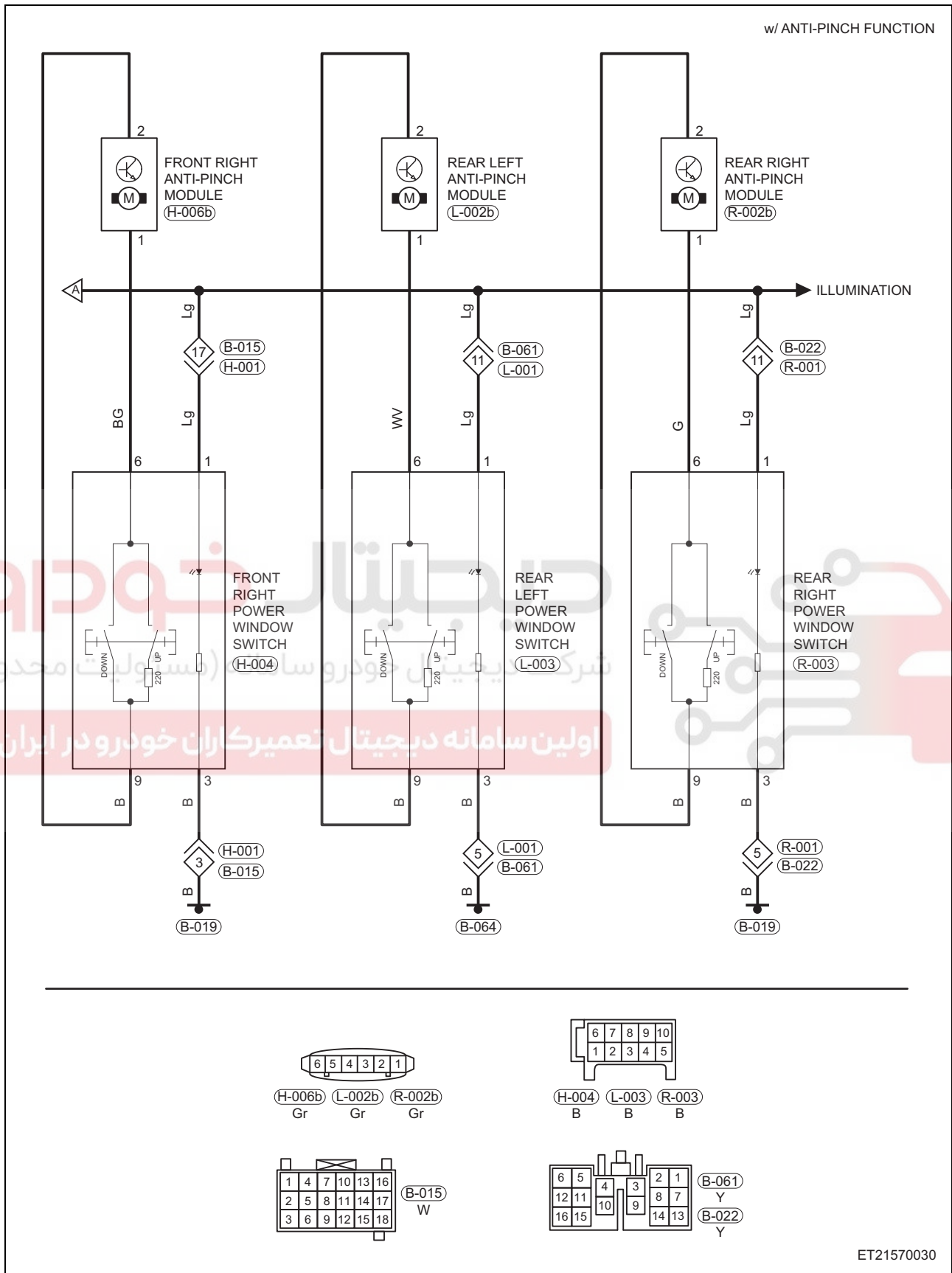
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B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15	B16

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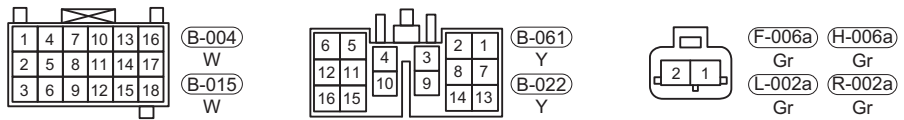
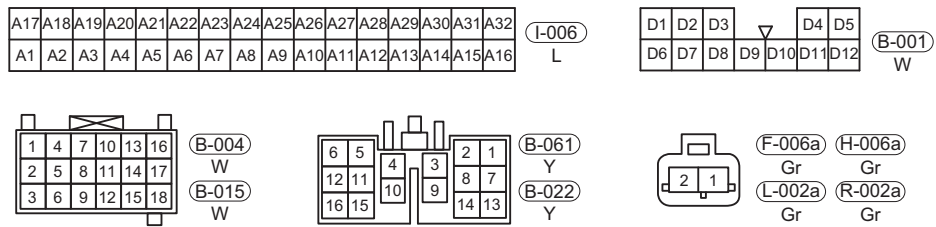
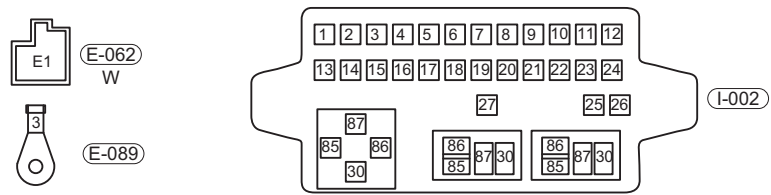
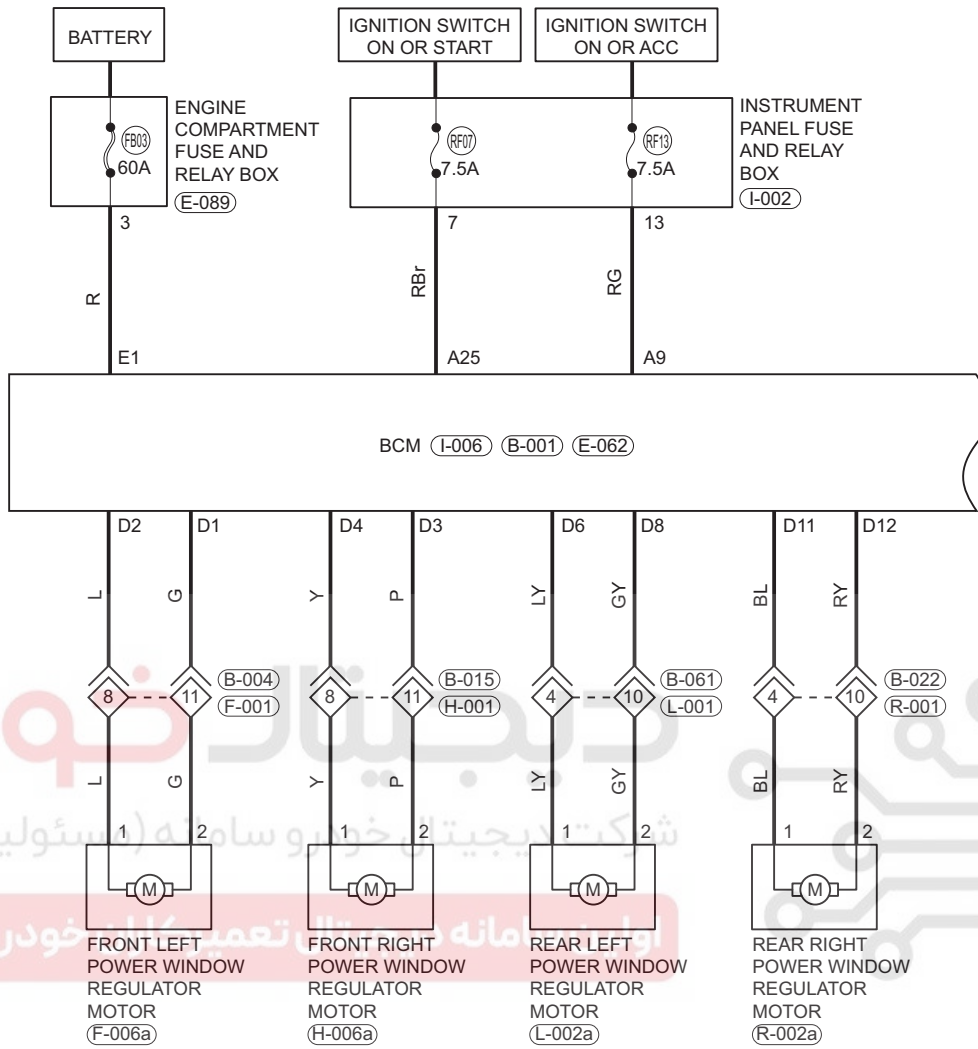
Power Window Control System (Page 3 of 7) (w/ Jam Protection Function)



Power Window Control System (Page 4 of 7) (w/o Jam Protection Function)

57

w/o ANTI-PINCH FUNCTION

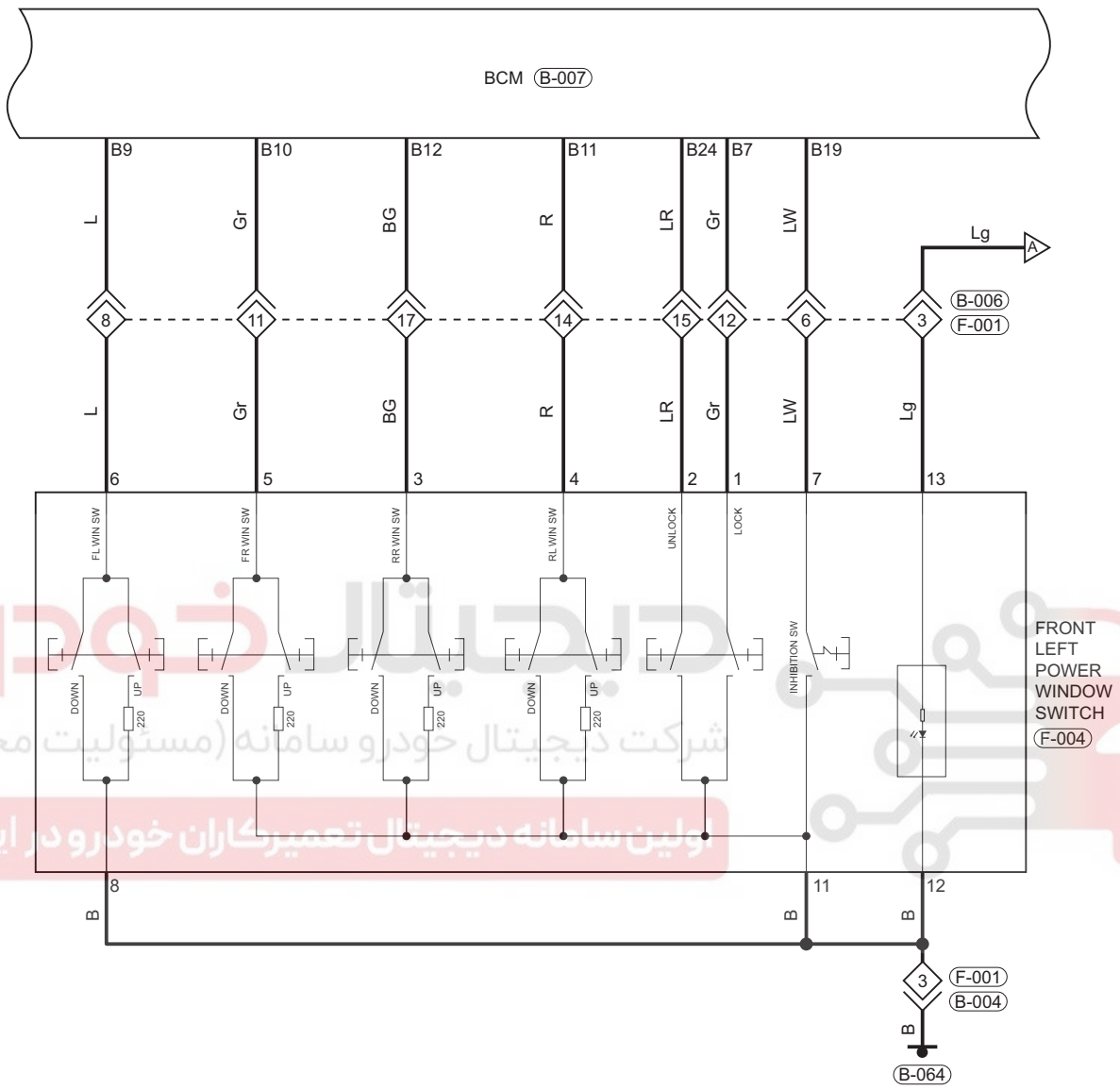


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Power Window Control System (Page 5 of 7) (w/o Jam Protection Function)

w/o ANTI-PINCH FUNCTION

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دیجیتال خودرو

شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

اولین سامانه دیجیتال تعمیرکاران خودرو در ایران

B17	B18	B19	B20	B21	B22	B23	B24	B25	B26	B27	B28	B29	B30	B31	B32
B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15	B16

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9	10	11	12	13	14	15	16
8	7	6	5	4	3	2	1

(F-004)
Br

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2	5	8	11	14	17
3	6	9	12	15	18

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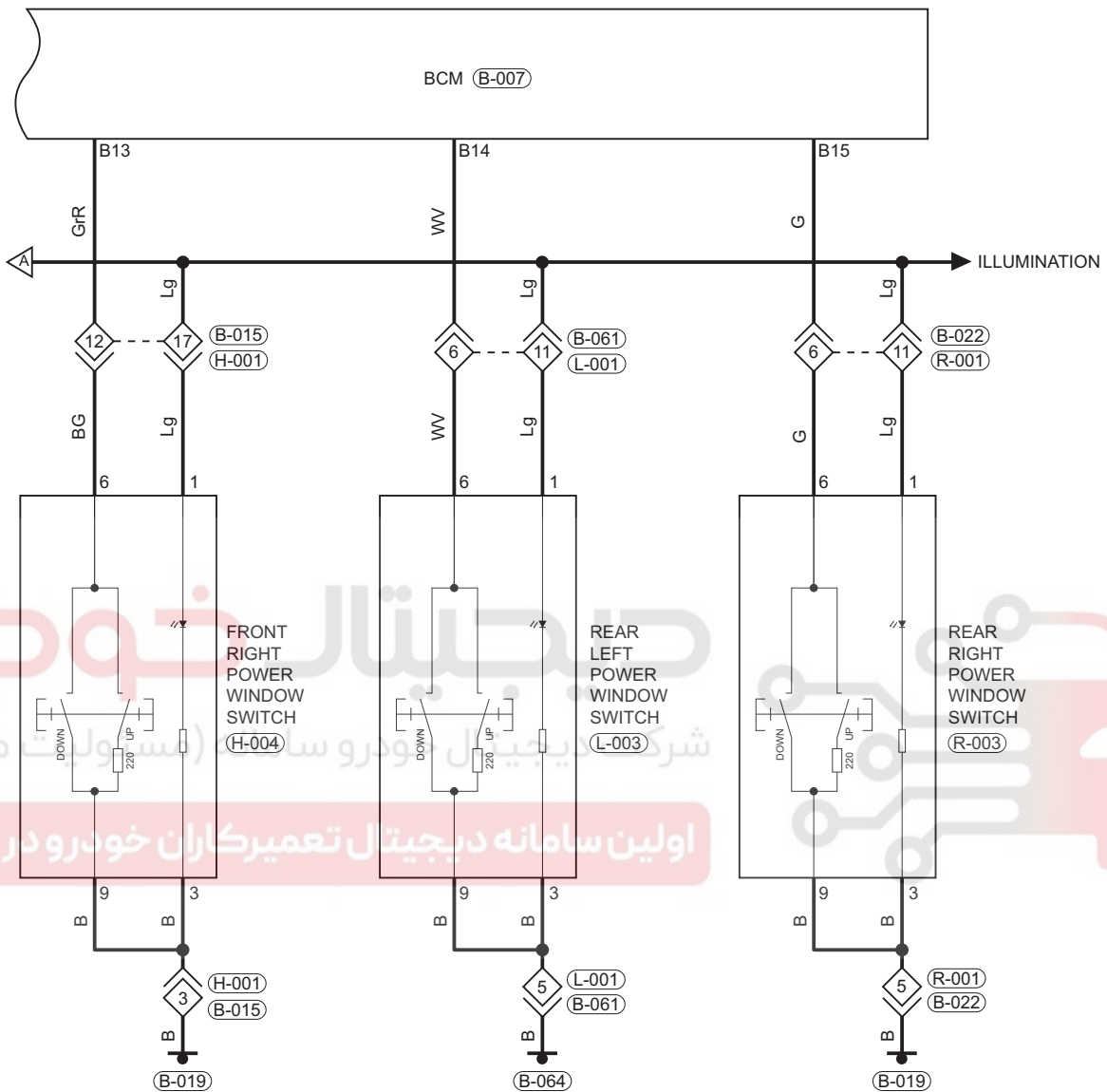
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ET21570050

Power Window Control System (Page 6 of 7) (w/o Jam Protection Function)

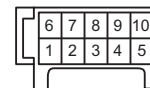
w/o ANTI-PINCH FUNCTION

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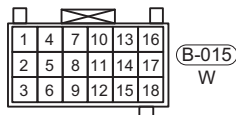


B17	B18	B19	B20	B21	B22	B23	B24	B25	B26	B27	B28	B29	B30	B31	B32
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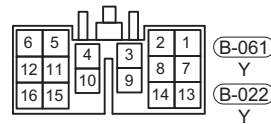
(B-007)
L



(H-004) (L-003) (R-003)
B B B



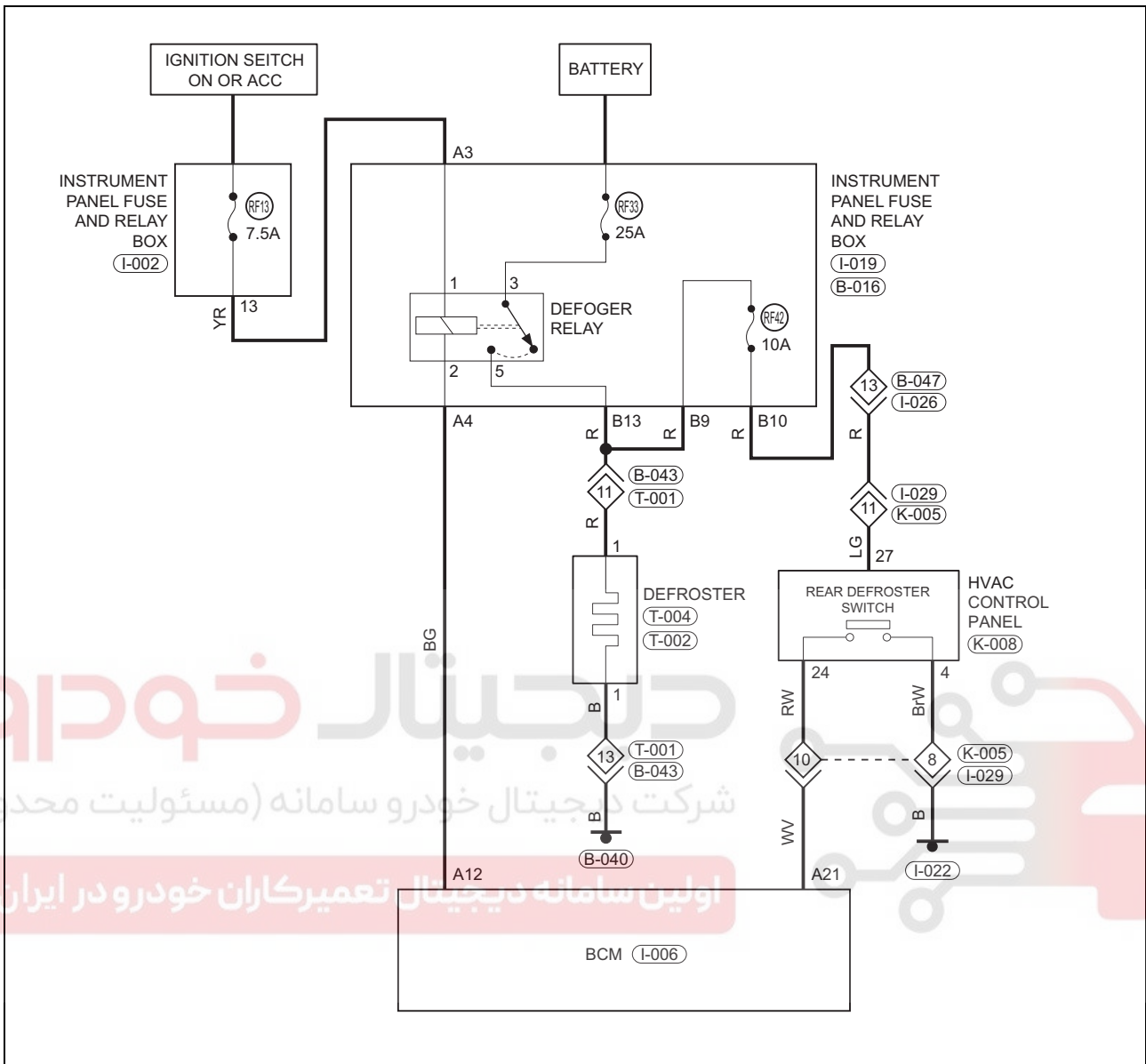
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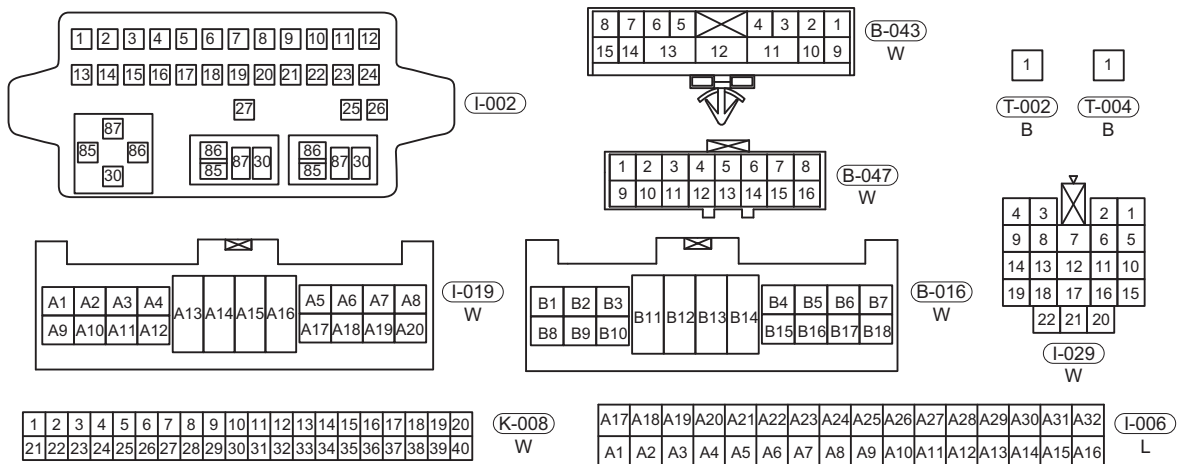
(B-061) (B-022)
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Power Window Control System (Page 7 of 7) (w/ Jam Protection Function)



درجیتال خودرو
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ET21570070

DIAGNOSIS & TESTING

Problem Symptoms Table

HINT:

Use the table below to help determine the cause of the problem. Check each suspected area in order. Repair or replace the faulty components, or adjust as necessary.

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Symptom	Suspected Area	See page
Driver side power window cannot be operated with driver side power glass regulating control switch	Fuse	68-37
	Driver side power glass regulating control switch	68-37
	Driver side power glass regulator assembly	57-79
	Wire harness or connector	-
	Body Control Module (BCM)	-
Passenger side power window cannot be operated with passenger side power glass regulating switch	Fuse	68-37
	Passenger side power glass regulating switch	-
	Passenger side power glass regulator assembly	68-37
	Wire harness or connector	-
	Body Control Module (BCM)	-
Power window has intermittent problem	Ground	-
	Wire harness or connector	-

Diagnosis Tools

X-431 3G Diagnostic Tester

When connecting X-431 3G diagnostic tester:

- Connect X-431 3G diagnostic tester (the latest software) to Data Link Connector (DLC) for communication with vehicle.
- DLC is located at the driver side instrument panel crossmember.
- DLC uses a trapezoidal design which can hold 16 terminals.

Digital Multimeter

When using digital multimeter:

- Troubleshoot electrical malfunctions and wire harness system.
- Look for basic fault.
- Measure voltage, current and resistance.

DTC Confirmation Procedure

Confirm that battery voltage is normal before performing the following procedures.

- Turn ignition switch to LOCK.
- Connect X-431 3G diagnostic tester (the latest software) to Data Link Connector (DLC), and make it communicate with vehicle electronic module by the data network.
- Turn ignition switch to ON.

- Using X-431 3G diagnostic tester to record and clear the DTCs stored in the Body Control Module (BCM).
- Turn ignition switch to LOCK and wait for a few seconds.
- Turn ignition switch to ON, and then select "Read Code".
- If DTC is detected, the malfunction indicated by the DTC is current. Go to the diagnosis procedure - Step 1.
- If DTC is not detected, the malfunction indicated by the DTC is intermittent. Please refer to Intermittent DTC Troubleshooting.

Intermittent DTC Troubleshooting

If malfunction is intermittent, perform the followings:

- Check if connectors are loose.
- Check if wire harnesses are worn, pierced, pinched or partially broken.
- Wiggle related wire harnesses and connectors and observe if signal is interrupted in the related circuit.
- If possible, try to duplicate the conditions under which the DTC was set.
- Look for the data that has changed or the DTC to be reset during the wiggle test.
- Look for broken, bent, protruded or corroded terminals.
- Inspect the mounting areas of power window assembly, wire harness or wire harness connector and so on for damage, foreign matter, etc. that will cause incorrect signals.
- Check and clean all wire harness connectors and grounding parts related to the current DTC.
- Remove the Body Control Module (BCM) from the malfunctioning vehicle and install it to a new vehicle and perform a test. If DTC cannot be cleared, the Body Control Module (BCM) is malfunctioning. If DTC can be cleared, reinstall the Body Control Module (BCM) to original vehicle.
- If multiple trouble codes were set, refer to the circuit diagrams to look for any common ground circuit or power supply circuit applied to the DTC.
- Refer to Technical Bulletin that is applied to the malfunction.

Ground Inspection

Grounding are very important to entire circuit system, which are normal or not can seriously affect the entire circuit system. Ground points are often exposed to moisture, dirt and other corrosive environments. Corrosion (rust) and oxidation may increase load resistance. This situation will seriously affect the normal operation of the circuit. The operations to check the ground points are as follows:

1. Remove the ground bolt or nut.
2. Check all contact surfaces for tarnish, dirt and rust, etc.
3. Clean as necessary to ensure that contacting is in a good condition.
4. Reinstall the ground bolt or nut securely.
5. Check if add-on accessories interfere with the ground circuit.
6. If several wire harnesses are crimped into one ground terminal, check if they are installed correctly. Make sure all wire harnesses are clean, securely fastened and providing a good ground path.

Diagnosis Procedure

HINT:

Use the following procedures to troubleshoot the power window control system.

1 Vehicle brought to workshop

NEXT

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2 Check battery voltage

Standard voltage: 11 to 14 V

If the voltage is below 11 V, recharge or replace the battery before proceeding to next step.

NEXT

3 Customer problem analysis

NEXT

4 Check for DTCs (current DTC and history DTC)

DTC
occurs

For current DTC, go to step 6

No
DTC

For history DTC, go to step 7

5 Problem repair (no DTC), then go to step 8

NEXT

6 Troubleshoot according to Diagnostic Trouble Code (DTC) chart, then go to step 8

NEXT

7 Troubleshoot according to Problem Symptoms Table, then go to step 8

NEXT

8 Adjust, repair or replace

NEXT

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9 Confirm troubleshooting, perform test

NEXT

10 End

دیجیتال خودرو

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Diagnostic Trouble Code (DTC) Chart

DTC Code	DTC Definition
B100C13	FL Window Up Control Circuit Circuit Open
B100C71	FL Window Up Control Circuit Actuator Stuck
B100D13	FL Window Down Control Circuit Circuit Open
B100D71	FL Window Down Control Circuit Actuator Stuck
B100E13	FR Window Up Control Circuit Circuit Open
B100E71	FR Window Up Control Circuit Actuator Stuck
B100F13	FR Window Down Control Circuit Circuit Open
B100F71	FR Window Down Control Circuit Actuator Stuck
B101013	RL Window Up Control Circuit Circuit Open
B101071	RL Window Up Control Circuit Actuator Stuck
B101113	RL Window Down Control Circuit Circuit Open
B101171	RL Window Down Control Circuit Actuator Stuck
B101213	RR Window Up Control Circuit Circuit Open
B101271	RR Window Up Control Circuit Actuator Stuck
B101313	RR Window Down Control Circuit Circuit Open
B101371	RR Window Down Control Circuit Actuator Stuck

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DTC	B100C13	FL Window Up Control Circuit Circuit Open
DTC	B100C71	FL Window Up Control Circuit Actuator Stuck
DTC	B100D13	FL Window Down Control Circuit Circuit Open
DTC	B100D71	FL Window Down Control Circuit Actuator Stuck

دیجیتال خودرو

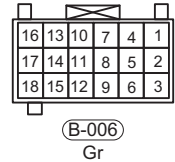
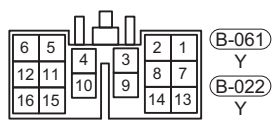
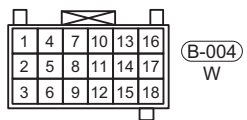
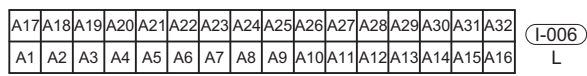
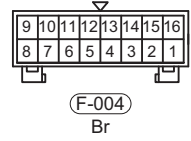
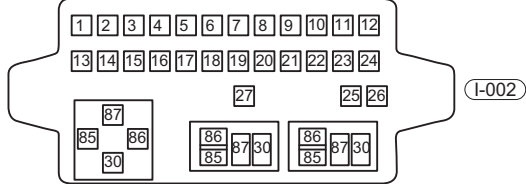
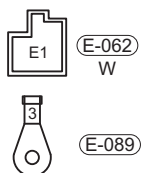
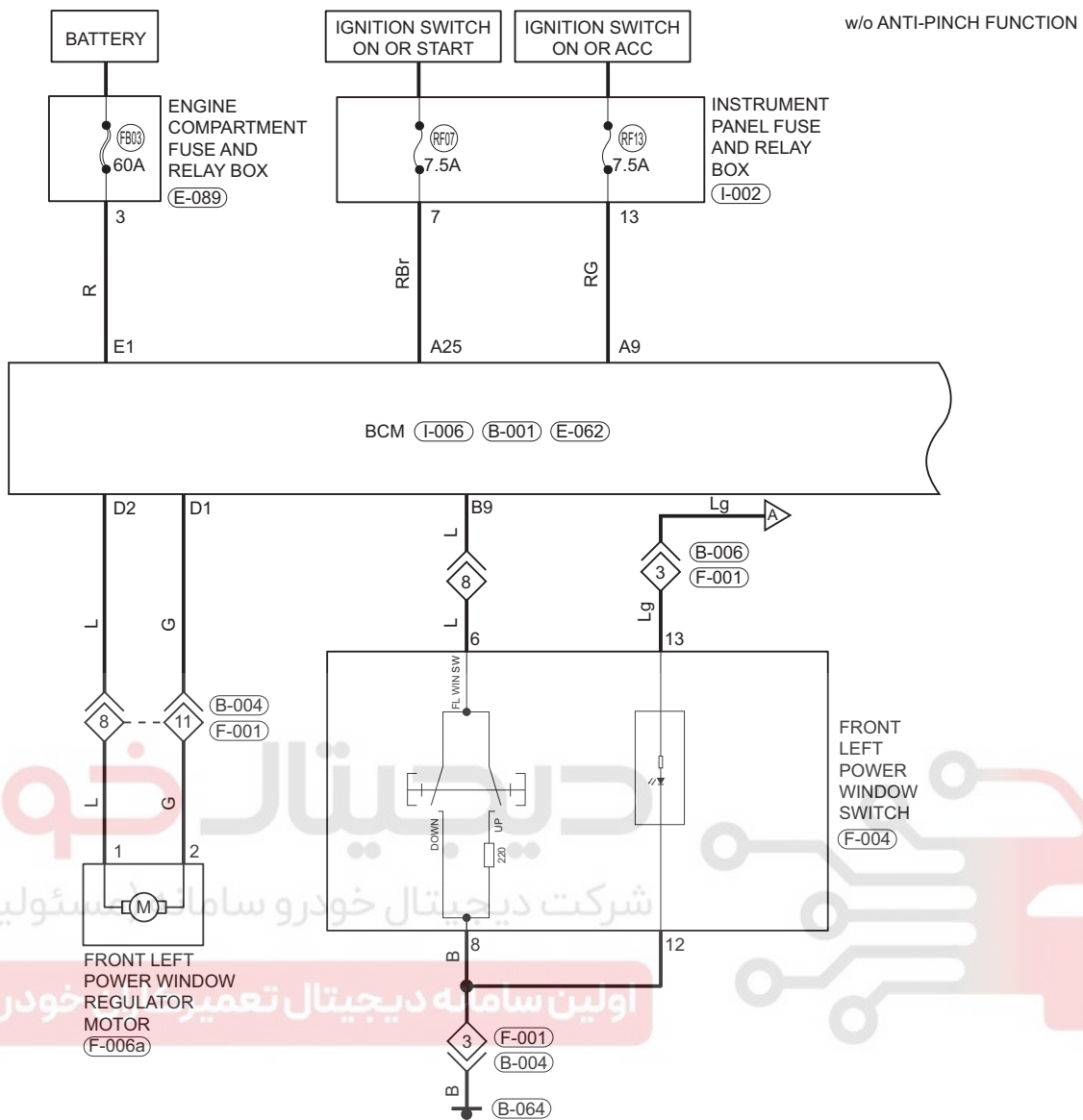
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57 - WINDSHIELD/WINDOW GLASS

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ET21570080

Self-diagnosis Detection Logic

DTC Code	DTC Definition	DTC Detection Condition	Warning Light Condition	Possible Cause
B100C13	FL Window Up Control Circuit Circuit Open	Ignition switch ON	ON	<ul style="list-style-type: none"> Glass regulating control master switch Power glass regulator assembly Wire harness or connector Body Control Module (BCM)
B100C71	FL Window Up Control Circuit Actuator Stuck			
B100D13	FL Window Down Control Circuit Circuit Open			
B100D71	FL Window Down Control Circuit Actuator Stuck			

CAUTION

- When performing the circuit diagnosis and test, always refer to the circuit diagram for specific circuit and component information.

Diagnosis Procedure

1 Check power glass regulating control master switch

a. Remove the power glass regulating control master switch from malfunctioning vehicle, and install it to a new vehicle to perform a test.

NG Replace power glass regulating control master switch

OK

2 Check front left door power glass regulator assembly

a. Remove the front left door power glass regulator assembly from malfunctioning vehicle, and install it to a new vehicle to perform a test.

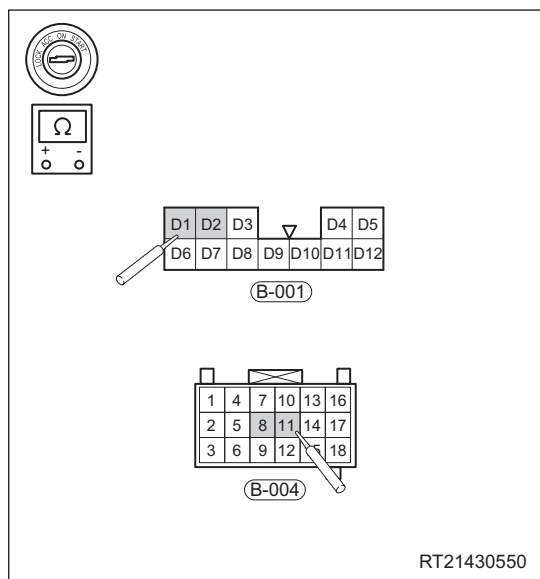
NG Replace front left door power glass regulator assembly

OK

3 Check body wire harness and connector

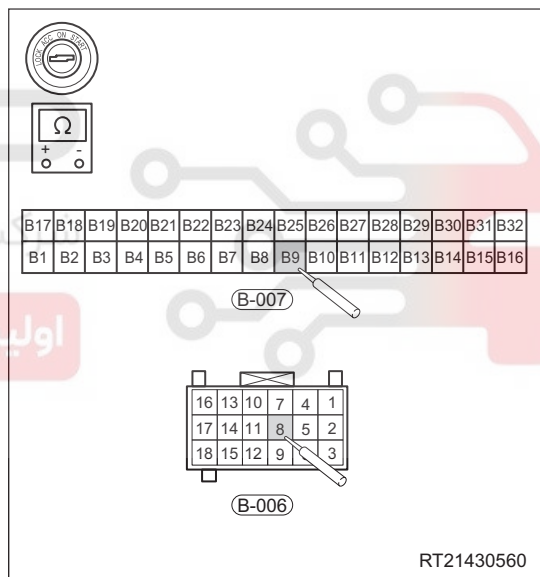
- a. Turn ignition switch to LOCK.
- b. Disconnect the negative battery cable.
- c. Disconnect the body wire harness connectors B-001 and B-004.
- d. Using a digital multimeter, check for continuity between body wire harness connectors B-001 and B-004 according to the table below.

Multimeter Connection	Condition	Specified Condition
B-001 (D1) - B-004 (11)	Always	Continuity
B-001 (D2) - B-004 (8)	Always	Continuity



- e. Disconnect the body wire harness connectors B-007 and B-006.
- f. Using a digital multimeter, check for continuity between body wire harness connectors B-007 and B-006 according to the table below.

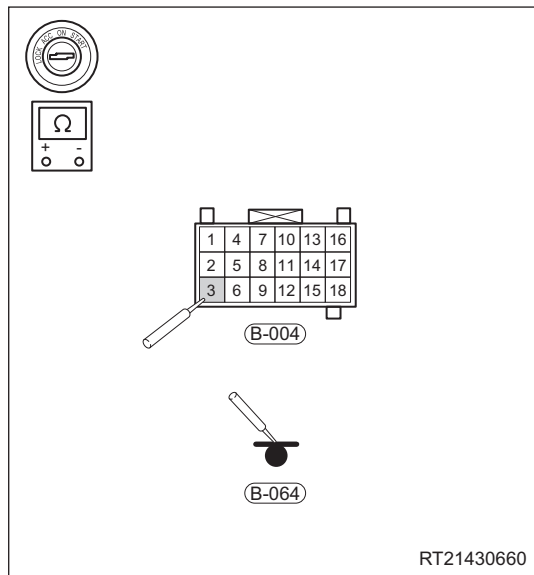
Multimeter Connection	Condition	Specified Condition
B-007 (B9) - B-006 (8)	Always	Continuity



- g. Disconnect the body wire harness connector B-004 and ground B-064.
- h. Using a digital multimeter, check for continuity between body wire harness connector B-004 and ground B-064 according to the table below.

Multimeter Connection	Condition	Specified Condition
B-004 (3) - B-064	Always	Continuity

NG Repair or replace body wire harness and connector



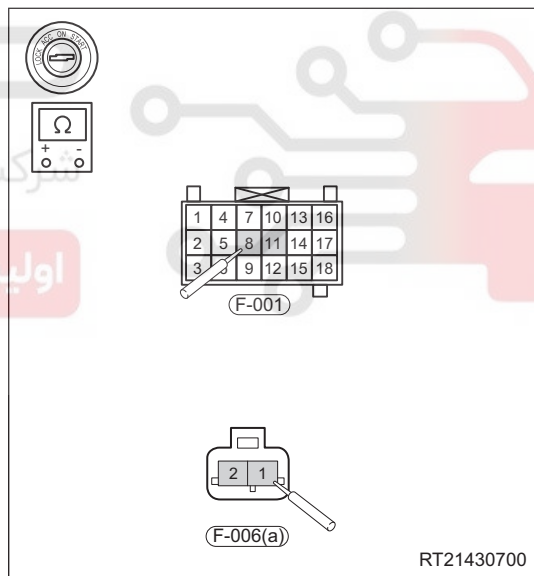
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OK

4 Check front left door wire harness and connector

- a. Turn ignition switch to LOCK.
- b. Disconnect the negative battery cable.
- c. Disconnect the front left door wire harness connectors F-001 and F-006 (a).
- d. Using a digital multimeter, check for continuity between front left door wire harness connectors F-001 and F-006 (a) according to the table below.

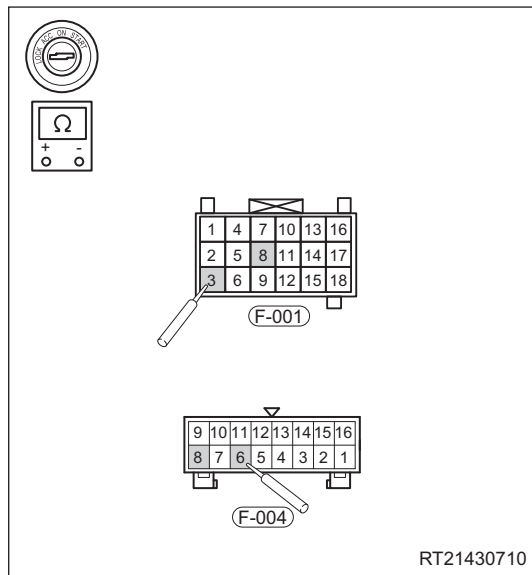
Multimeter Connection	Condition	Specified Condition
F-001 (8) - F-006 (a) (1)	Always	Continuity
F-001 (11) - F-006 (a) (2)	Always	Continuity



57 - WINDSHIELD/WINDOW GLASS

- e. Disconnect the front left door wire harness connectors F-001 and F-004.
- f. Using a digital multimeter, check for continuity between front left door wire harness connectors F-001 and F-004 according to the table below.

Multimeter Connection	Condition	Specified Condition
F-001 (3) - F-004 (8)	Always	Continuity
F-001 (8) - F-004 (6)	Always	Continuity



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NG → **Repair or replace front left door wire harness and connector**

OK

5 Reconfirm DTCs

- a. Connect all connectors.
- b. Connect the negative battery cable.
- c. Turn ignition switch to ON.
- d. Use X-431 3G diagnostic tester (the latest software) to record and clear DTCs stored in the Body Control Module (BCM).
- e. Turn ignition switch to LOCK and wait for a few seconds.
- f. Turn ignition switch to ON.
- g. Use X-431 3G diagnostic tester (the latest software) to read DTCs stored in the Body Control Module (BCM) again.

Result	Proceed to
DTC B100C13, B100C71, B100D13 and B100D71 are output	NG
No DTC is output	OK

NG → **Replace Body Control Module (BCM)**

OK

System is normal

DTC	B100E13	FR Window Up Control Circuit Circuit Open
DTC	B100E71	FR Window Up Control Circuit Actuator Stuck
DTC	B100F13	FR Window Down Control Circuit Circuit Open
DTC	B100F71	FR Window Down Control Circuit Actuator Stuck

دیجیتال خودرو

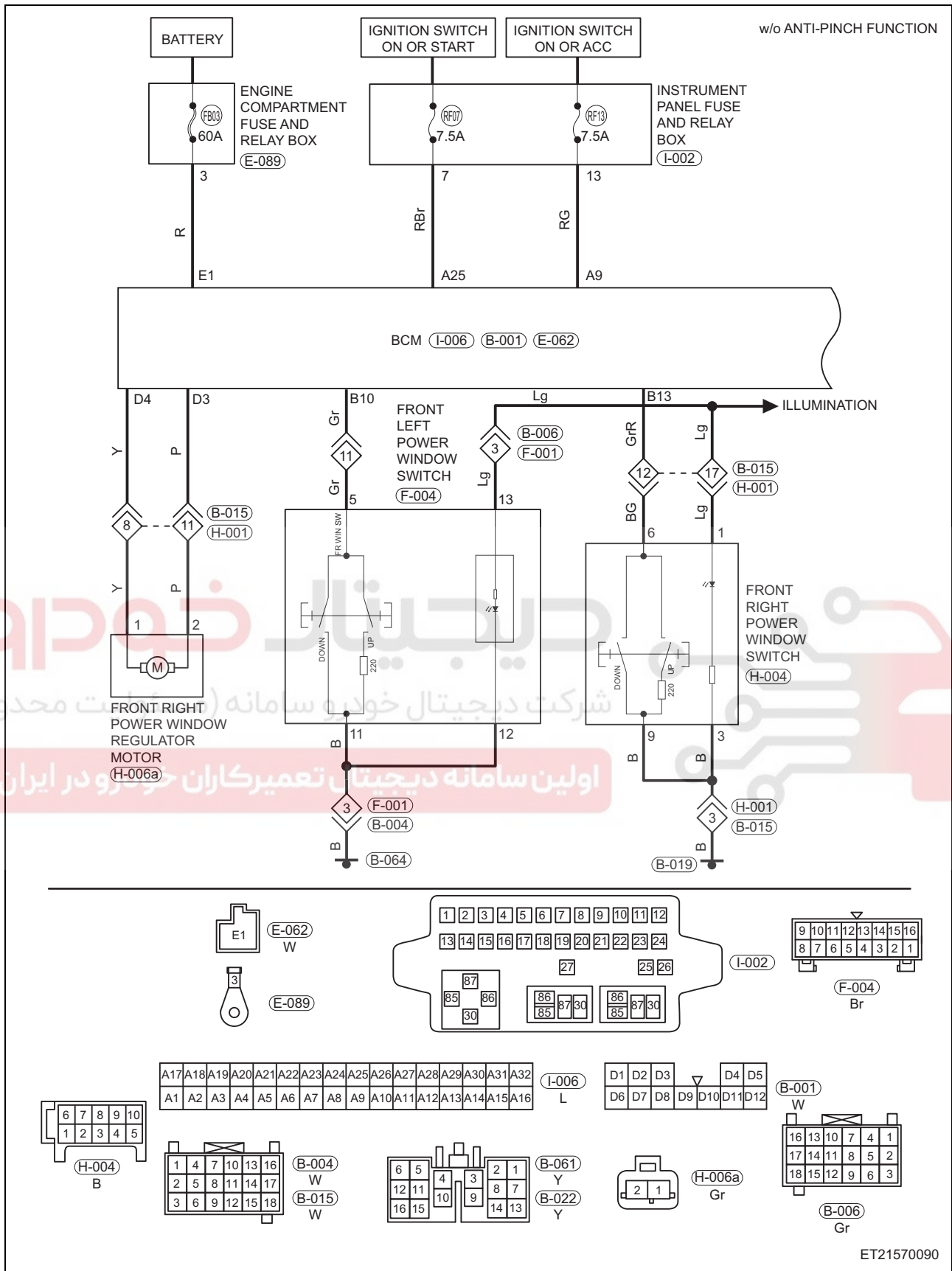
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اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



57 - WINDSHIELD/WINDOW GLASS

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ET21570090

Self-diagnosis Detection Logic

DTC Code	DTC Definition	DTC Detection Condition	Warning Light Condition	Possible Cause
B100E13	FR Window Up Control Circuit Circuit Open	Ignition switch ON	ON	<ul style="list-style-type: none"> • Glass regulating control switch • Power glass regulator assembly • Wire harness or connector • Body Control Module (BCM)
B100E71	FR Window Up Control Circuit Actuator Stuck			
B100F13	FR Window Down Control Circuit Circuit Open			
B100F71	FR Window Down Control Circuit Actuator Stuck			

CAUTION

- When performing the circuit diagnosis and test, always refer to the circuit diagram for specific circuit and component information.

Diagnosis Procedure

1 Check power glass regulating switch

a. Remove the power glass regulating switch from malfunctioning vehicle, and install it to a new vehicle to perform a test.

NG → **Replace power glass regulating switch**

OK

2 Check front right door power glass regulator assembly

a. Remove the front right door power glass regulator assembly from malfunctioning vehicle, and install it to a new vehicle to perform a test.

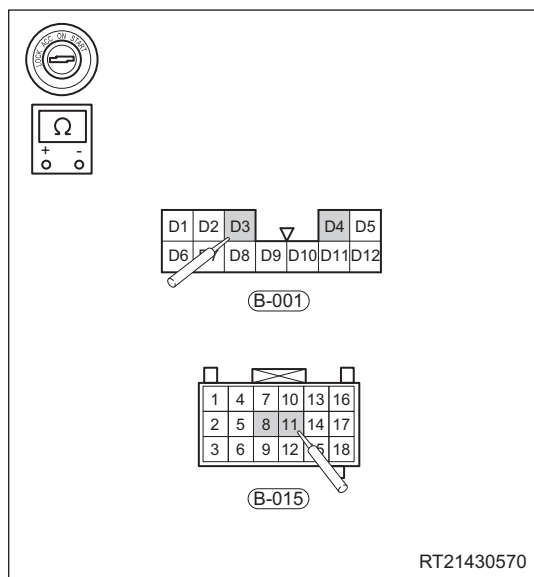
NG → **Replace front right door power glass regulator assembly**

OK

3 Check body wire harness and connector

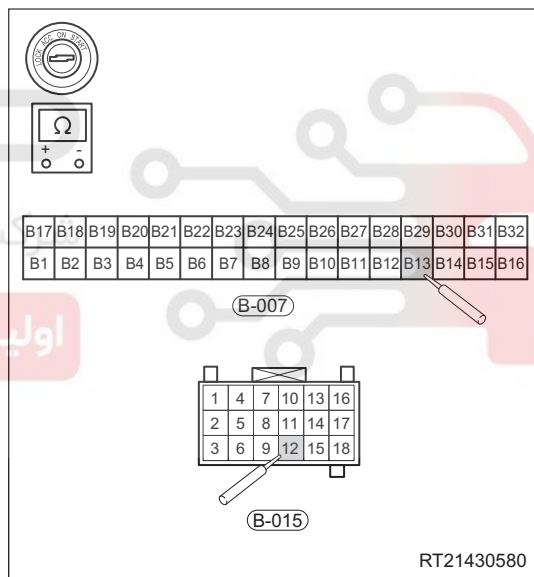
- a. Turn ignition switch to LOCK.
- b. Disconnect the negative battery cable.
- c. Disconnect the body wire harness connectors B-001 and B-015.
- d. Using a digital multimeter, check for continuity between body wire harness connectors B-001 and B-015 according to the table below.

Multimeter Connection	Condition	Specified Condition
B-001 (D3) - B-015 (11)	Always	Continuity
B-001 (D4) - B-015 (8)	Always	Continuity



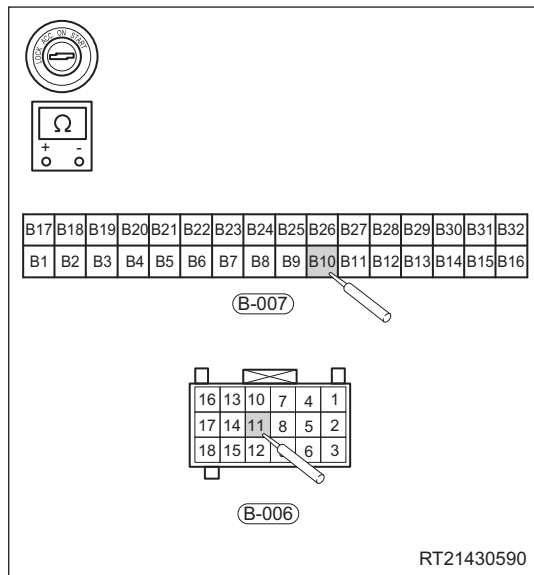
- e. Disconnect the body wire harness connectors B-007 and B-015.
- f. Using a digital multimeter, check for continuity between body wire harness connectors B-007 and B-015 according to the table below.

Multimeter Connection	Condition	Specified Condition
B-007 (B13) - B-015 (12)	Always	Continuity



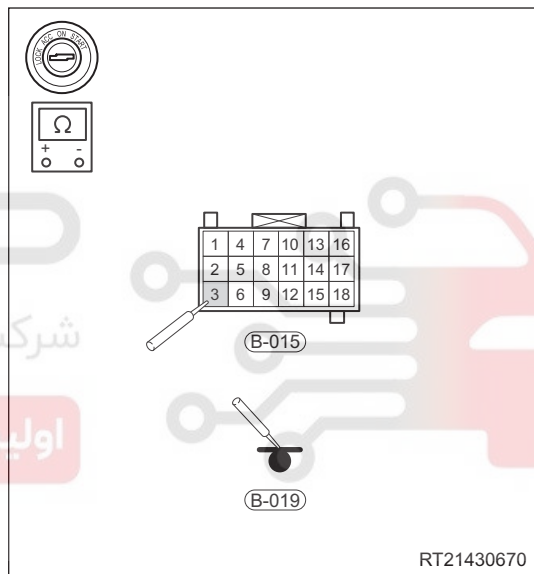
- g. Disconnect the body wire harness connectors B-007 and B-006.
- h. Using a digital multimeter, check for continuity between body wire harness connectors B-007 and B-006 according to the table below.

Multimeter Connection	Condition	Specified Condition
B-007 (B10) - B-006 (11)	Always	Continuity



- i. Disconnect the body wire harness connector B-015 and ground B-019.
- j. Using a digital multimeter, check for continuity between body wire harness connector B-015 and ground B-019 according to the table below.

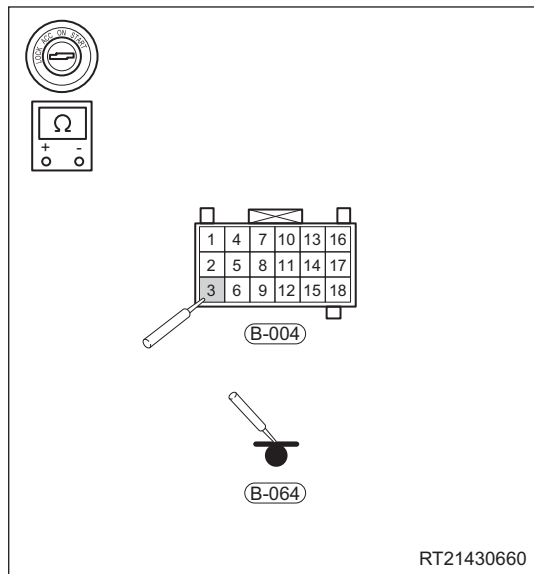
Multimeter Connection	Condition	Specified Condition
B-015 (3) - B-019	Always	Continuity



- k. Disconnect the body wire harness connector B-004 and ground B-064.
- l. Using a digital multimeter, check for continuity between body wire harness connector B-004 and ground B-064 according to the table below.

Multimeter Connection	Condition	Specified Condition
B-004 (3) - B-064	Always	Continuity

NG Repair or replace body wire harness and connector



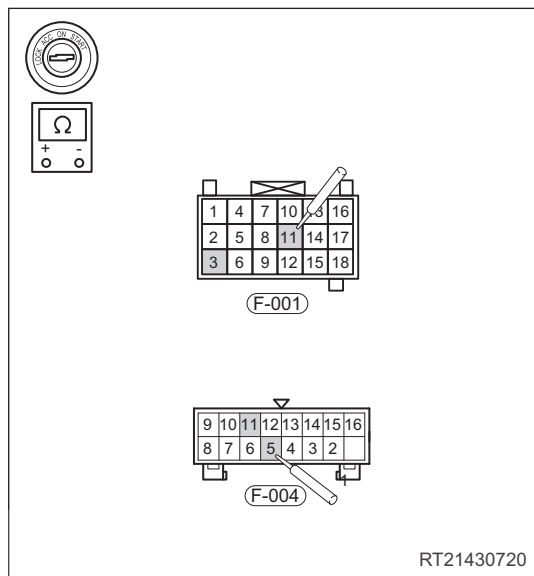
OK

4 Check front left door wire harness and connector

- a. Turn ignition switch to LOCK.
- b. Disconnect the negative battery cable.
- c. Disconnect the front left door wire harness connectors F-001 and F-004.
- d. Using a digital multimeter, check for continuity between front left door wire harness connectors F-001 and F-004 according to the table below.

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Multimeter Connection	Condition	Specified Condition
F-001 (11) - F-004 (5)	Always	Continuity
F-001 (3) - F-004 (11)	Always	Continuity



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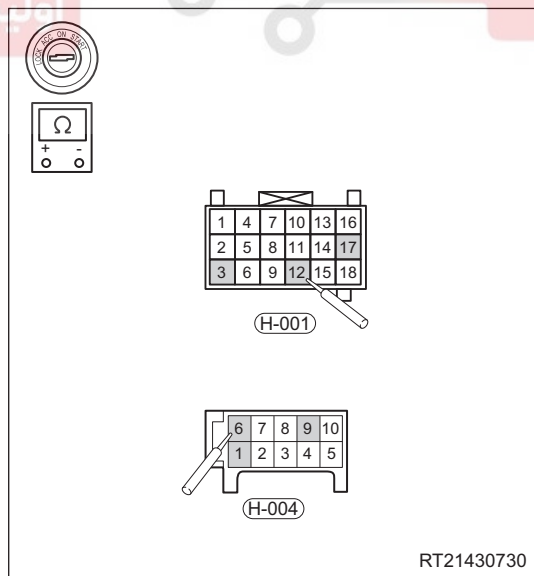
NG Repair or replace front left door wire harness and connector

OK

5 Check front right door wire harness and connector

- a. Turn ignition switch to LOCK.
- b. Disconnect the negative battery cable.
- c. Disconnect the front right door wire harness connectors H-001 and H-004.
- d. Using a digital multimeter, check for continuity between front right door wire harness connectors H-001 and H-004 according to the table below.

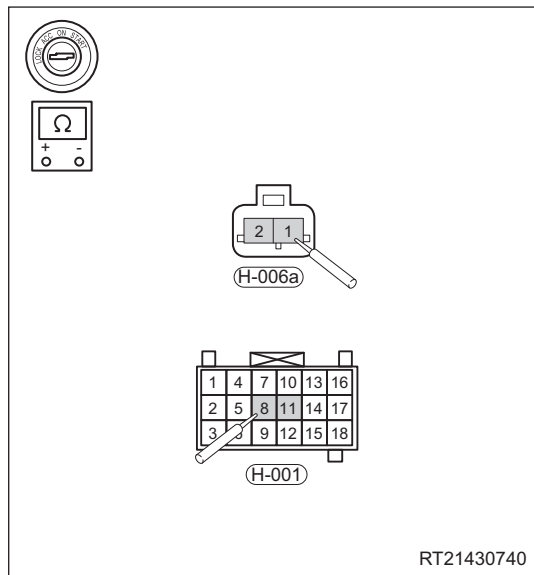
Multimeter Connection	Condition	Specified Condition
H-001 (12) - H-004 (6)	Always	Continuity
H-001 (17) - H-004 (1)	Always	Continuity
H-001 (3) - H-004 (9)	Always	Continuity



RT21430730

- e. Disconnect the front right door wire harness connectors H-006a and H-001.
- f. Using a digital multimeter, check for continuity between front right door wire harness connectors H-006a and H-001 according to the table below.

Multimeter Connection	Condition	Specified Condition
H-006a (1) - H-001 (8)	Always	Continuity
H-006a (2) - H-001 (11)	Always	Continuity



NG → **Repair or replace front right door wire harness and connector**

OK

6 Reconfirm DTCs

- a. Connect all connectors.
- b. Connect the negative battery cable.
- c. Turn ignition switch to ON.
- d. Use X-431 3G diagnostic tester (the latest software) to record and clear DTCs stored in the Body Control Module (BCM).
- e. Turn ignition switch to LOCK and wait for a few seconds.
- f. Turn ignition switch to ON.
- g. Use X-431 3G diagnostic tester (the latest software) to read DTCs stored in the Body Control Module (BCM) again.

Result	Proceed to
DTC B100E13, B100E71, B100F13 and B100F71 are output	NG
No DTC is output	OK

NG → **Replace Body Control Module (BCM)**

OK

System is normal

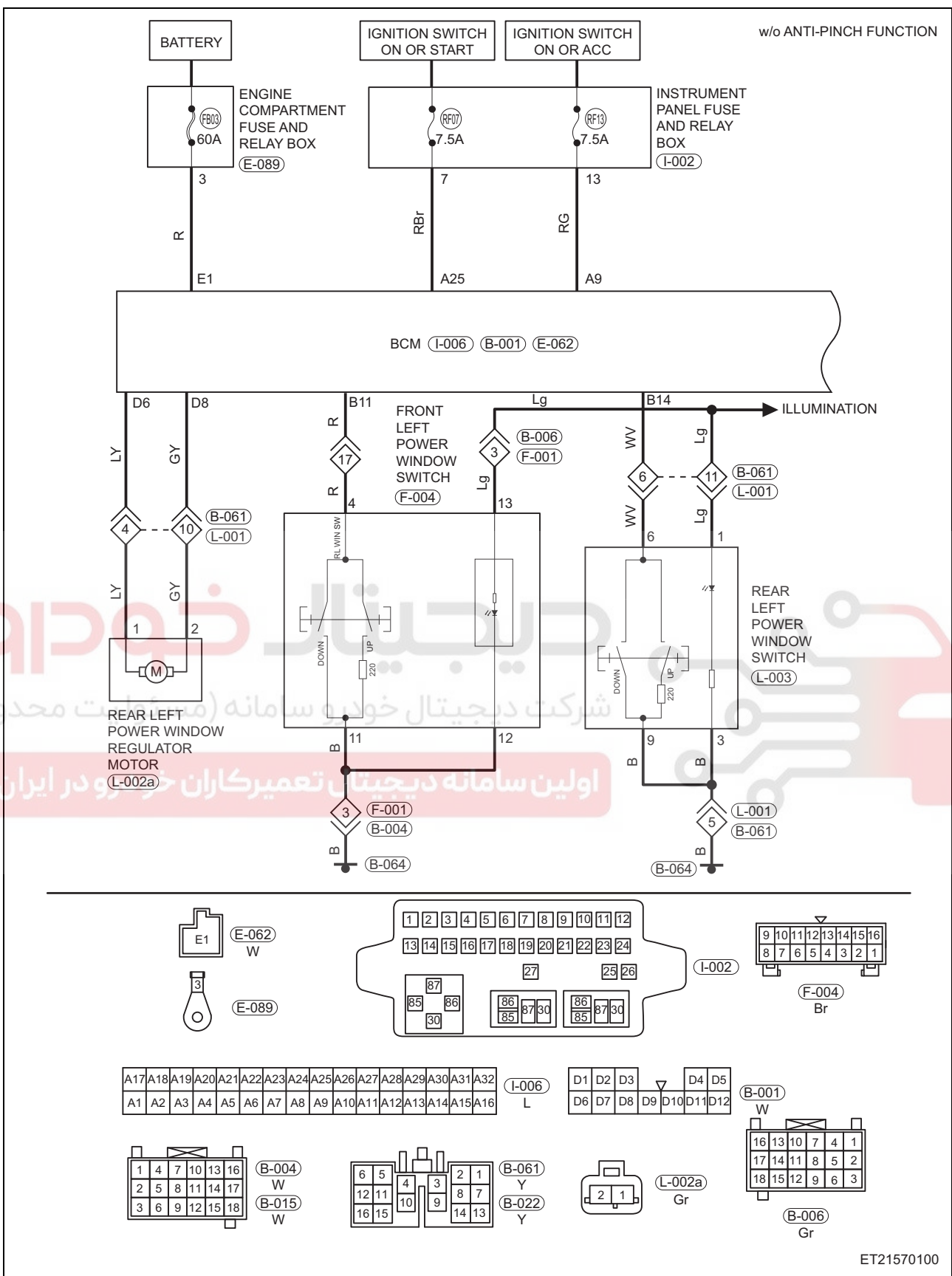
DTC	B101013	RL Window Up Control Circuit Circuit Open
DTC	B101071	RL Window Up Control Circuit Actuator Stuck
DTC	B101113	RL Window Down Control Circuit Circuit Open
DTC	B101171	RL Window Down Control Circuit Actuator Stuck

دیجیتال خودرو

شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

اولین سامانه دیجیتال تعمیرکاران خودرو در ایران





ET21570100

Self-diagnosis Detection Logic

DTC Code	DTC Definition	DTC Detection Condition	Warning Light Condition	Possible Cause
B101013	RL Window Up Control Circuit Circuit Open	Ignition switch ON	ON	<ul style="list-style-type: none"> • Glass regulating switch • Power glass regulator assembly • Wire harness or connector • Body Control Module (BCM)
B101071	RL Window Up Control Circuit Actuator Stuck			
B101113	RL Window Down Control Circuit Circuit Open			
B101171	RL Window Down Control Circuit Actuator Stuck			

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CAUTION

- When performing the circuit diagnosis and test, always refer to the circuit diagram for specific circuit and component information.

Diagnosis Procedure

1 Check power glass regulating switch

a. Remove the power glass regulating switch from malfunctioning vehicle, and install it to a new vehicle to perform a test.

NG Replace power glass regulating switch

OK

2 Check rear left door power glass regulator assembly

a. Remove the rear left door power glass regulator assembly from malfunctioning vehicle, and install it to a new vehicle to perform a test.

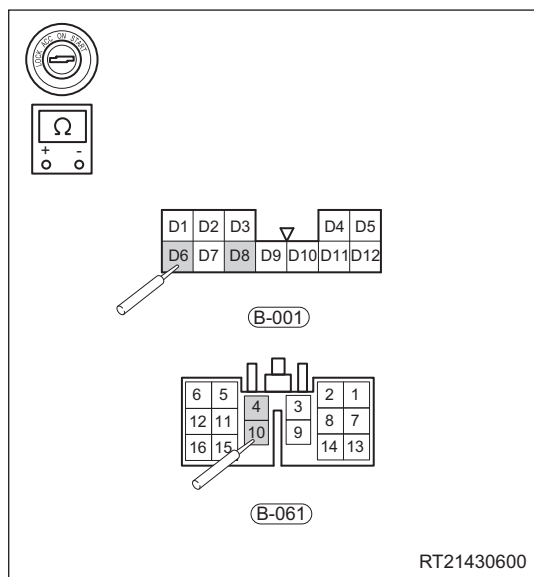
NG Replace rear left door power glass regulator assembly

OK

3 Check body wire harness and connector

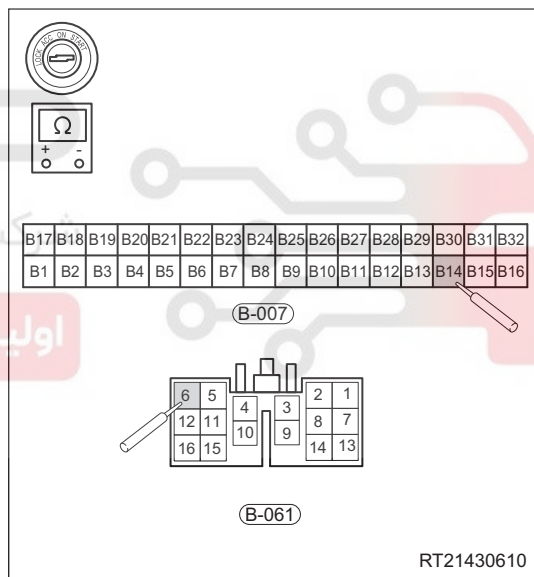
- a. Turn ignition switch to LOCK.
- b. Disconnect the negative battery cable.
- c. Disconnect the body wire harness connectors B-001 and B-061.
- d. Using a digital multimeter, check for continuity between body wire harness connectors B-001 and B-061 according to the table below.

Multimeter Connection	Condition	Specified Condition
B-001 (D6) - B-061 (4)	Always	Continuity
B-001 (D8) - B-061 (10)	Always	Continuity



- e. Disconnect the body wire harness connectors B-007 and B-061.
- f. Using a digital multimeter, check for continuity between body wire harness connectors B-007 and B-061 according to the table below.

Multimeter Connection	Condition	Specified Condition
B-007 (B14) - B-061 (6)	Always	Continuity

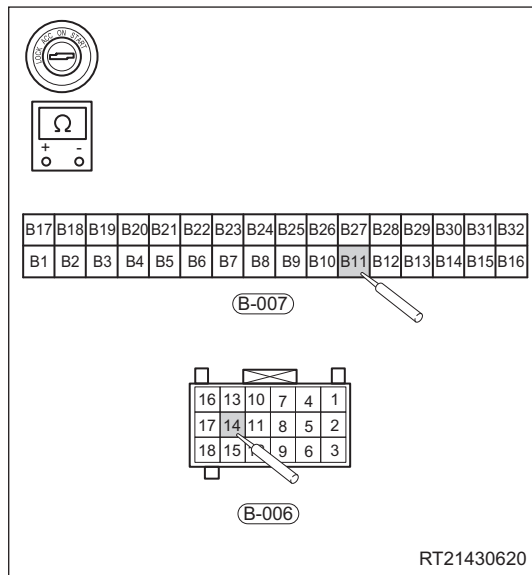


57 - WINDSHIELD/WINDOW GLASS

- g. Disconnect the body wire harness connectors B-007 and B-006.
- h. Using a digital multimeter, check for continuity between body wire harness connectors B-007 and B-006 according to the table below.

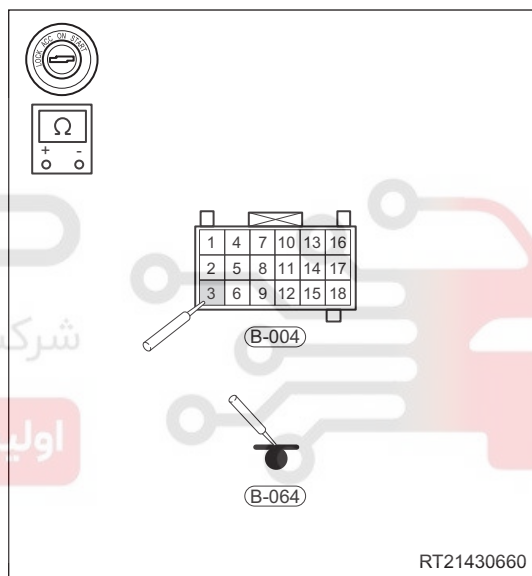
Multimeter Connection	Condition	Specified Condition
B-007 (B11) - B-006 (14)	Always	Continuity

57



- i. Disconnect the body wire harness connector B-004 and ground B-064.
- j. Using a digital multimeter, check for continuity between body wire harness connector B-004 and ground B-064 according to the table below.

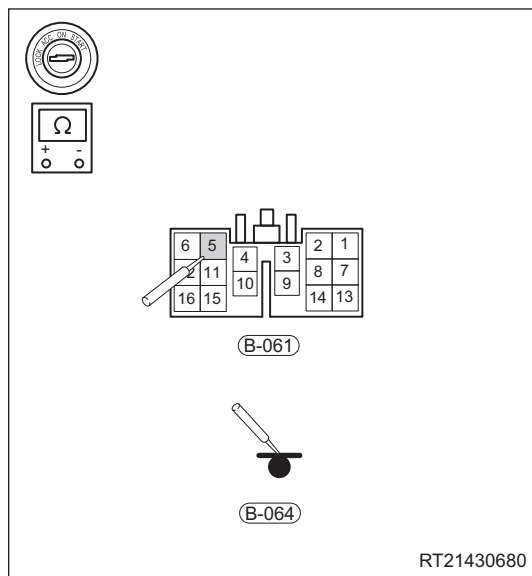
Multimeter Connection	Condition	Specified Condition
B-004 (3) - B-064	Always	Continuity



- k. Disconnect the body wire harness connector B-061 and ground B-064.
- l. Using a digital multimeter, check for continuity between body wire harness connector B-061 and ground B-064 according to the table below.

Multimeter Connection	Condition	Specified Condition
B-061 (5) - B-064	Always	Continuity

NG Repair or replace body wire harness and connector



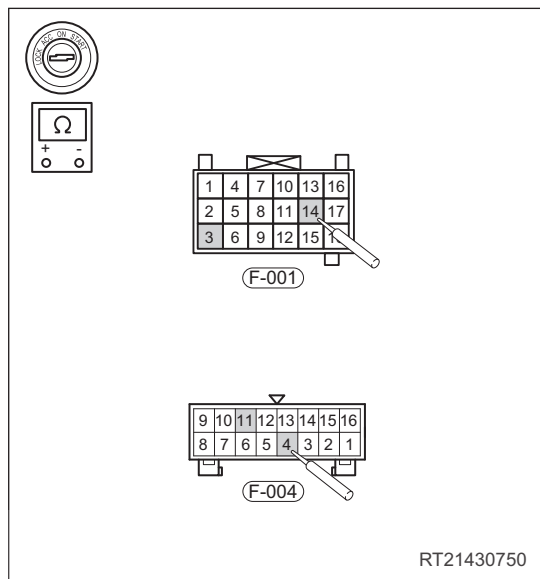
OK

57

4 Check front left door wire harness and connector

- a. Turn ignition switch to LOCK.
- b. Disconnect the negative battery cable.
- c. Disconnect the front left door wire harness connectors F-001 and F-004.
- d. Using a digital multimeter, check for continuity between front left door wire harness connectors F-001 and F-004 according to the table below.

Multimeter Connection	Condition	Specified Condition
F-001 (14) - F-004 (4)	Always	Continuity
F-001 (3) - F-004 (11)	Always	Continuity



RT21430750

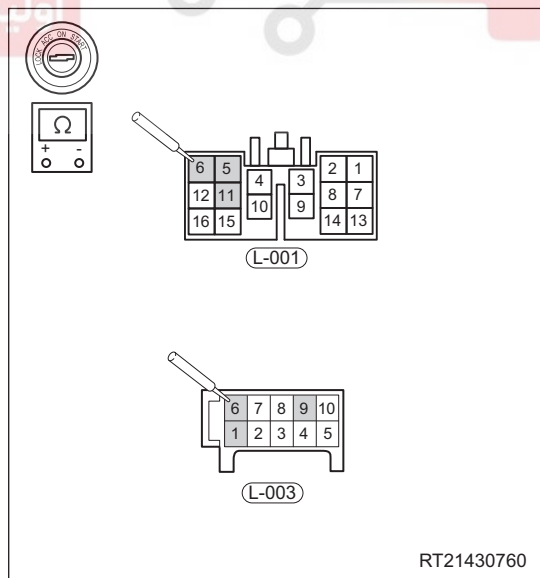
NG Repair or replace front left door wire harness and connector

OK

5 Check rear left door wire harness and connector

- a. Turn ignition switch to LOCK.
- b. Disconnect the negative battery cable.
- c. Disconnect the rear left door wire harness connectors L-001 and L-003.
- d. Using a digital multimeter, check for continuity between rear left door wire harness connectors L-001 and L-003 according to the table below.

Multimeter Connection	Condition	Specified Condition
L-001 (6) - L-003 (6)	Always	Continuity
L-001 (11) - L-003 (1)	Always	Continuity
L-001 (5) - L-003 (9)	Always	Continuity



RT21430760

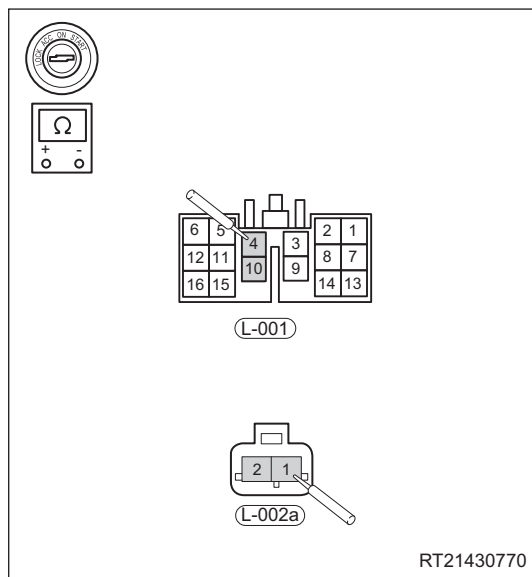
57 - WINDSHIELD/WINDOW GLASS

- e. Disconnect the rear left door wire harness connectors L-001 and L-002a.
- f. Using a digital multimeter, check for continuity between rear left door wire harness connectors L-001 and L-002a according to the table below.

Multimeter Connection	Condition	Specified Condition
L-001 (4) - L-002a (1)	Always	Continuity
L-001 (10) - L-002a (2)	Always	Continuity

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NG → **Repair or replace rear left wire harness and connector**



RT21430770

OK

6 Reconfirm DTCs

- a. Connect all connectors.
- b. Connect the negative battery cable.
- c. Turn ignition switch to ON.
- d. Use X-431 3G diagnostic tester (the latest software) to record and clear DTCs stored in the Body Control Module (BCM).
- e. Turn ignition switch to LOCK and wait for a few seconds.
- f. Turn ignition switch to ON.
- g. Use X-431 3G diagnostic tester (the latest software) to read DTCs stored in the Body Control Module (BCM) again.

Result	Proceed to
DTC B101013, B101071, B101113 and B101171 are output	NG
No DTC is output	OK

NG → **Replace Body Control Module (BCM)**

OK

System is normal

DTC	B101213	RR Window Up Control Circuit Circuit Open
DTC	B101271	RR Window Up Control Circuit Actuator Stuck
DTC	B101313	RR Window Down Control Circuit Circuit Open
DTC	B101371	RR Window Down Control Circuit Actuator Stuck

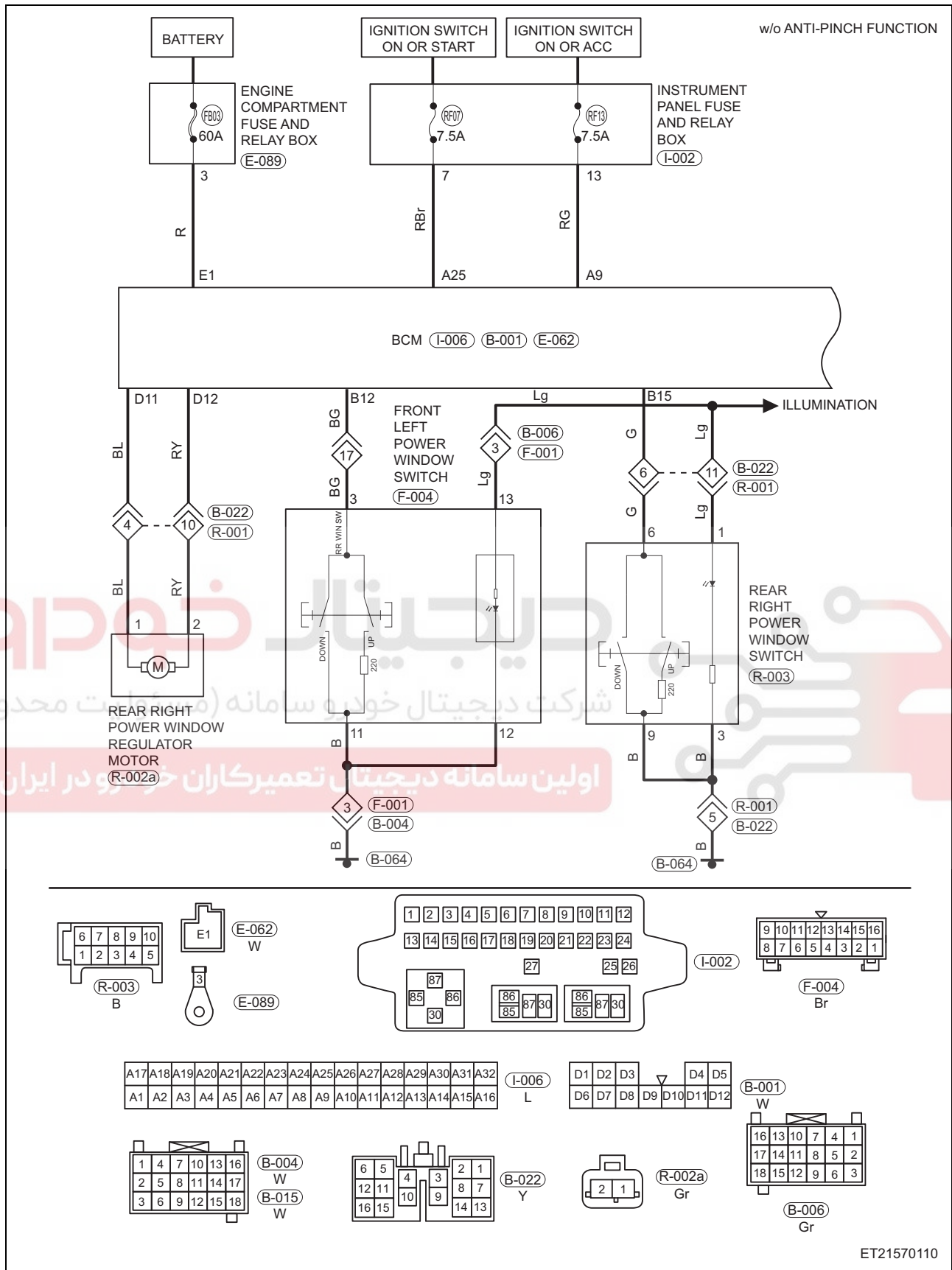
دیجیتال خودرو

شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



57 - WINDSHIELD/WINDOW GLASS



ET21570110

Self-diagnosis Detection Logic

DTC Code	DTC Definition	DTC Detection Condition	Warning Light Condition	Possible Cause
B101213	RR Window Up Control Circuit Circuit Open	Ignition switch ON	ON	<ul style="list-style-type: none"> • Glass regulating switch • Power glass regulator assembly • Wire harness or connector • Body Control Module (BCM)
B101271	RR Window Up Control Circuit Actuator Stuck			
B101313	RR Window Down Control Circuit Circuit Open			
B101371	RR Window Down Control Circuit Actuator Stuck			

CAUTION

- When performing the circuit diagnosis and test, always refer to the circuit diagram for specific circuit and component information.

Diagnosis Procedure

1 Check power glass regulating switch

a. Remove the power glass regulating switch from malfunctioning vehicle, and install it to a new vehicle to perform a test.

NG → **Replace power glass regulating switch**

OK

2 Check rear right door power glass regulator assembly

a. Remove the rear right door power glass regulator assembly from malfunctioning vehicle, and install it to a new vehicle to perform a test.

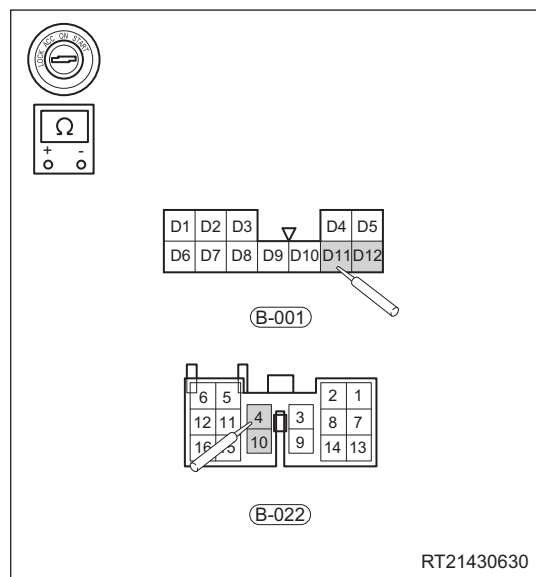
NG → **Replace rear right door power glass regulator assembly**

OK

3 Check body wire harness and connector

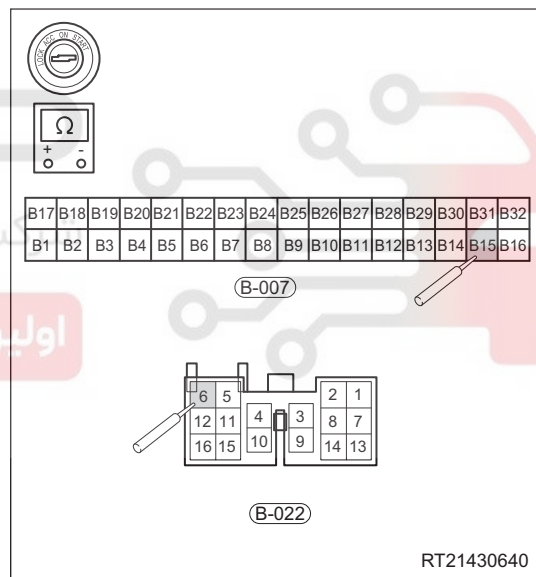
- a. Turn ignition switch to LOCK.
- b. Disconnect the negative battery cable.
- c. Disconnect the body wire harness connectors B-001 and B-022.
- d. Using a digital multimeter, check for continuity between body wire harness connectors B-001 and B-022 according to the table below.

Multimeter Connection	Condition	Specified Condition
B-001 (D11) - B-022 (4)	Always	Continuity
B-001 (D12) - B-022 (10)	Always	Continuity



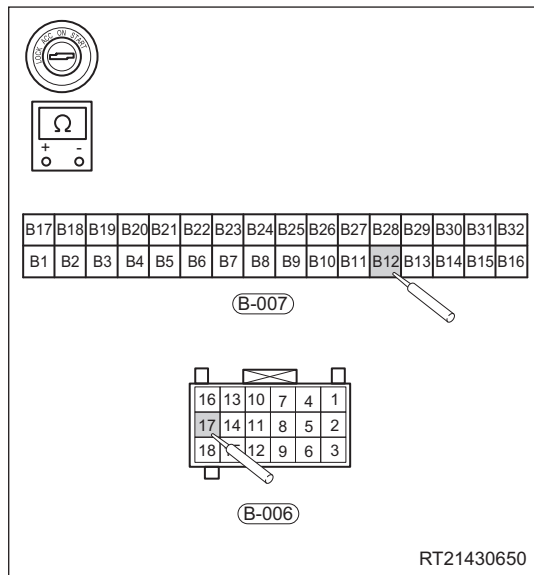
- e. Disconnect the body wire harness connectors B-007 and B-022.
- f. Using a digital multimeter, check for continuity between body wire harness connectors B-007 and B-022 according to the table below.

Multimeter Connection	Condition	Specified Condition
B-007 (B15) - B-022 (6)	Always	Continuity



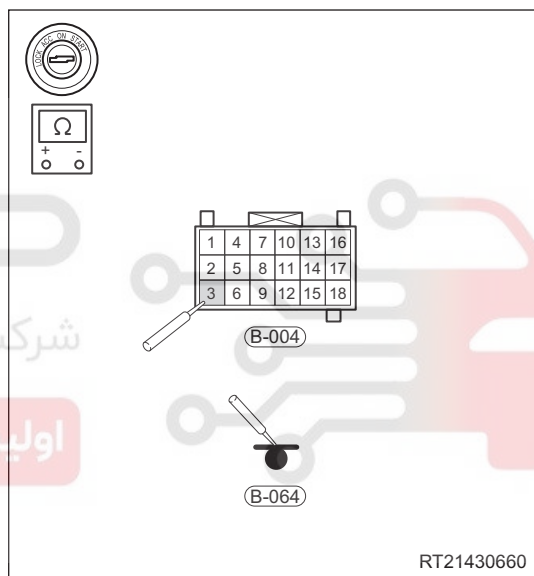
- g. Disconnect the body wire harness connectors B-007 and B-006.
- h. Using a digital multimeter, check for continuity between body wire harness connectors B-007 and B-006 according to the table below.

Multimeter Connection	Condition	Specified Condition
B-007 (B12) - B-006 (17)	Always	Continuity



- i. Disconnect the body wire harness connector B-004 and ground B-064.
- j. Using a digital multimeter, check for continuity between body wire harness connector B-004 and ground B-064 according to the table below.

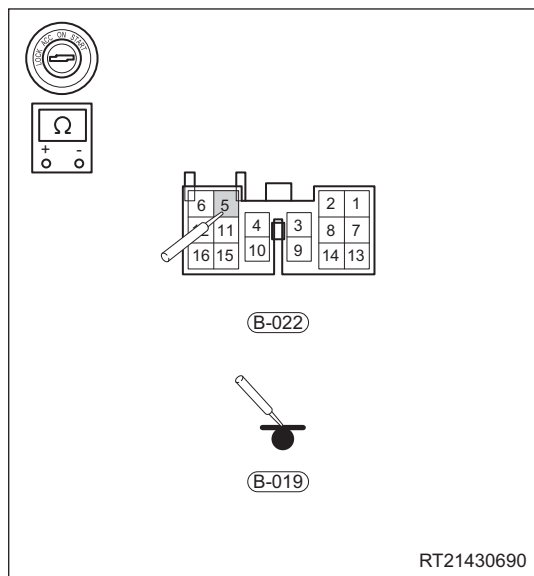
Multimeter Connection	Condition	Specified Condition
B-004 (3) - B-064	Always	Continuity



- k. Disconnect the body wire harness connector B-022 and ground B-019.
- l. Using a digital multimeter, check for continuity between body wire harness connector B-022 and ground B-019 according to the table below.

Multimeter Connection	Condition	Specified Condition
B-022 (5) - B-019	Always	Continuity

NG Repair or replace body wire harness and connector



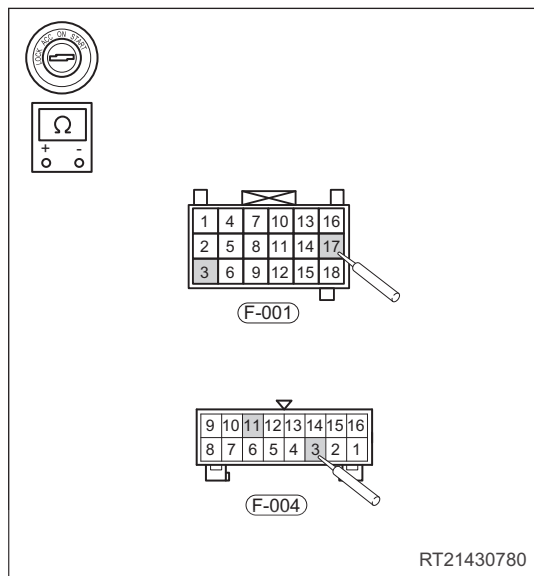
OK

4 Check front left door wire harness and connector

- a. Turn ignition switch to LOCK.
- b. Disconnect the negative battery cable.
- c. Disconnect the front left door wire harness connectors F-001 and F-004.
- d. Using a digital multimeter, check for continuity between front left door wire harness connectors F-001 and F-004 according to the table below.

57

Multimeter Connection	Condition	Specified Condition
F-001 (17) - F-004 (3)	Always	Continuity
F-001 (3) - F-004 (11)	Always	Continuity



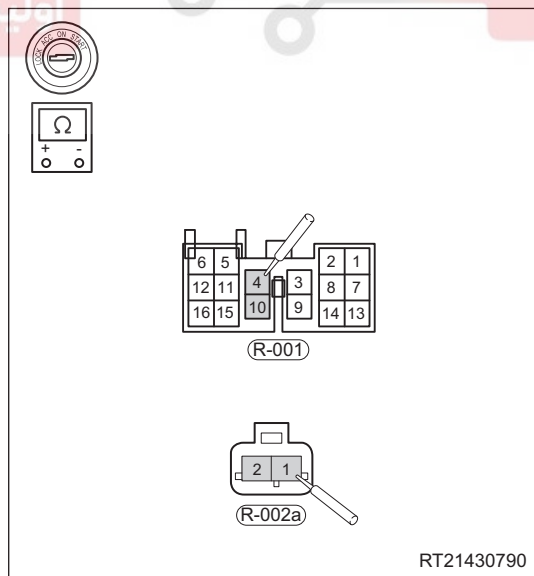
NG Repair or replace front left door wire harness and connector

OK

5 Check rear right door wire harness and connector

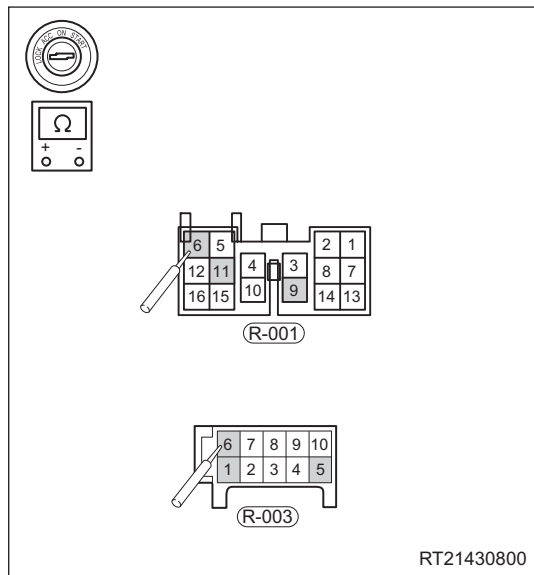
- a. Turn ignition switch to LOCK.
- b. Disconnect the negative battery cable.
- c. Disconnect the rear right door wire harness connectors R-002a and R-001.
- d. Using a digital multimeter, check for continuity between rear right door wire harness connectors R-002a and R-001 according to the table below.

Multimeter Connection	Condition	Specified Condition
R-002a (1) - R-001 (4)	Always	Continuity
R-002a (2) - R-001 (10)	Always	Continuity



- e. Disconnect the rear right door wire harness connectors R-001 and R-003.
- f. Using a digital multimeter, check for continuity between rear right door wire harness connectors R-001 and R-003 according to the table below.

Multimeter Connection	Condition	Specified Condition
R-001 (6) - R-003 (6)	Always	Continuity
R-001 (11) - R-003 (1)	Always	Continuity
R-001 (9) - R-003 (5)	Always	Continuity



NG Repair or replace rear right door wire harness and connector

OK

6 Reconfirm DTCs

- a. Connect all connectors.
- b. Connect the negative battery cable.
- c. Turn ignition switch to ON.
- d. Use X-431 3G diagnostic tester (the latest software) to record and clear DTCs stored in the Body Control Module (BCM).
- e. Turn ignition switch to LOCK and wait for a few seconds.
- f. Turn ignition switch to ON.
- g. Use X-431 3G diagnostic tester (the latest software) to read DTCs stored in the Body Control Module (BCM) again.

Result	Proceed to
DTC B101213, B101271, B101313 and B101371 are output	NG
No DTC is output	OK

NG Replace Body Control Module (BCM)

OK

System is normal

Diagnostic Trouble Code (DTC) Chart (w/ Jam Protection Function)

DTC Code	DTC Definition
B102809	FL Anti-pinch Module Circuit board Component failures
B102909	FL Window Lifter Switch Stuck Component Failures
B102A09	FL Window Lifter Motor Hall Sensor Component Failures
B102B16	FL Window Lifter Voltage Abnormal Circuit Voltage Below Threshold
B102B17	FL Window Lifter Voltage Abnormal Circuit Voltage Above Threshold
B102C98	Window Lifter Thermal Protection Component or System Over Temperature
B102D09	FR Anti-pinch Module Circuit Board Component Failures
B102E09	FR Window Lifter Switch Stuck Component Failures
B102F09	FR Window Lifter Motor Hall Sensor Component Failures
B103016	FR Window Lifter Voltage Circuit Voltage Below Threshold
B103017	FR Window Lifter Voltage Circuit Voltage Above Threshold
B103198	FR Window Lifter Thermal Protection Component or System Over Temperature
B103209	RL Anti-pinch Module Circuit Board Component Failures
B103309	RL Window Lifter Switch Stuck Component Failures
B103409	RL Window Lifter Motor Hall Sensor Component Failures
B103516	RL Window Lifter Voltage Circuit Voltage Below Threshold
B103517	RL Window Lifter Voltage Circuit Voltage Above Threshold
B103698	RL Window Lifter Thermal Protection Component or System Over Temperature
B103709	RR Anti-pinch Module Circuit Board Component Failures
B103809	RR Window Lifter Switch Stuck Component Failures
B103909	RR Window Lifter Motor Hall Sensor Component Failures
B103A16	RR Window Lifter Voltage Circuit Voltage Below Threshold
B103A17	RR Window Lifter Voltage Circuit Voltage Above Threshold
B103B98	RR Window Lifter Thermal Protection Component or System Over Temperature

DTC	B102809	FL Anti-pinch Module Circuit board Component failures
DTC	B102909	FL Window Lifter Switch Stuck Component Failures
DTC	B102A09	FL Window Lifter Motor Hall Sensor Component Failures
DTC	B102B16	FL Window Lifter Voltage Abnormal Circuit Voltage Below Threshold
DTC	B102B17	FL Window Lifter Voltage Abnormal Circuit Voltage Above Threshold
DTC	B102C98	Window Lifter Thermal Protection Component or System Over Temperature

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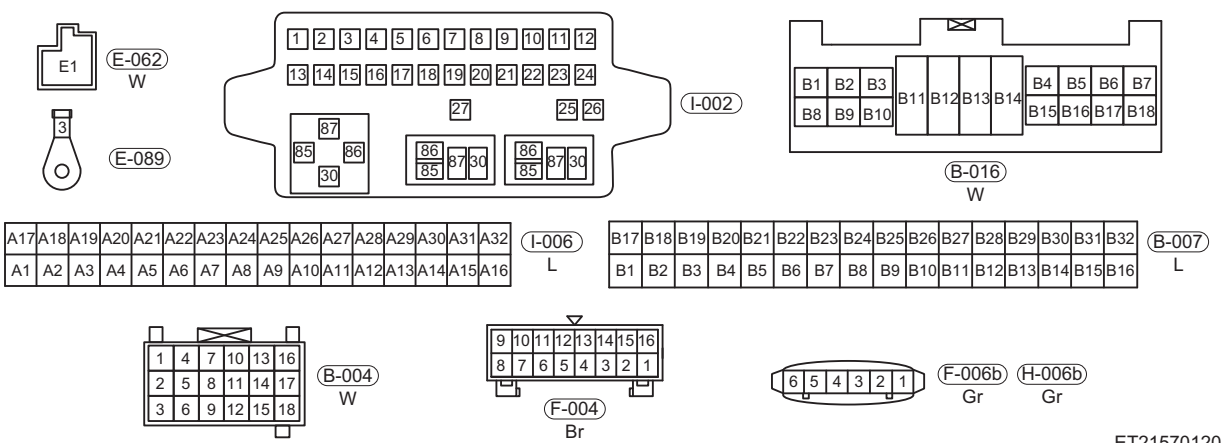
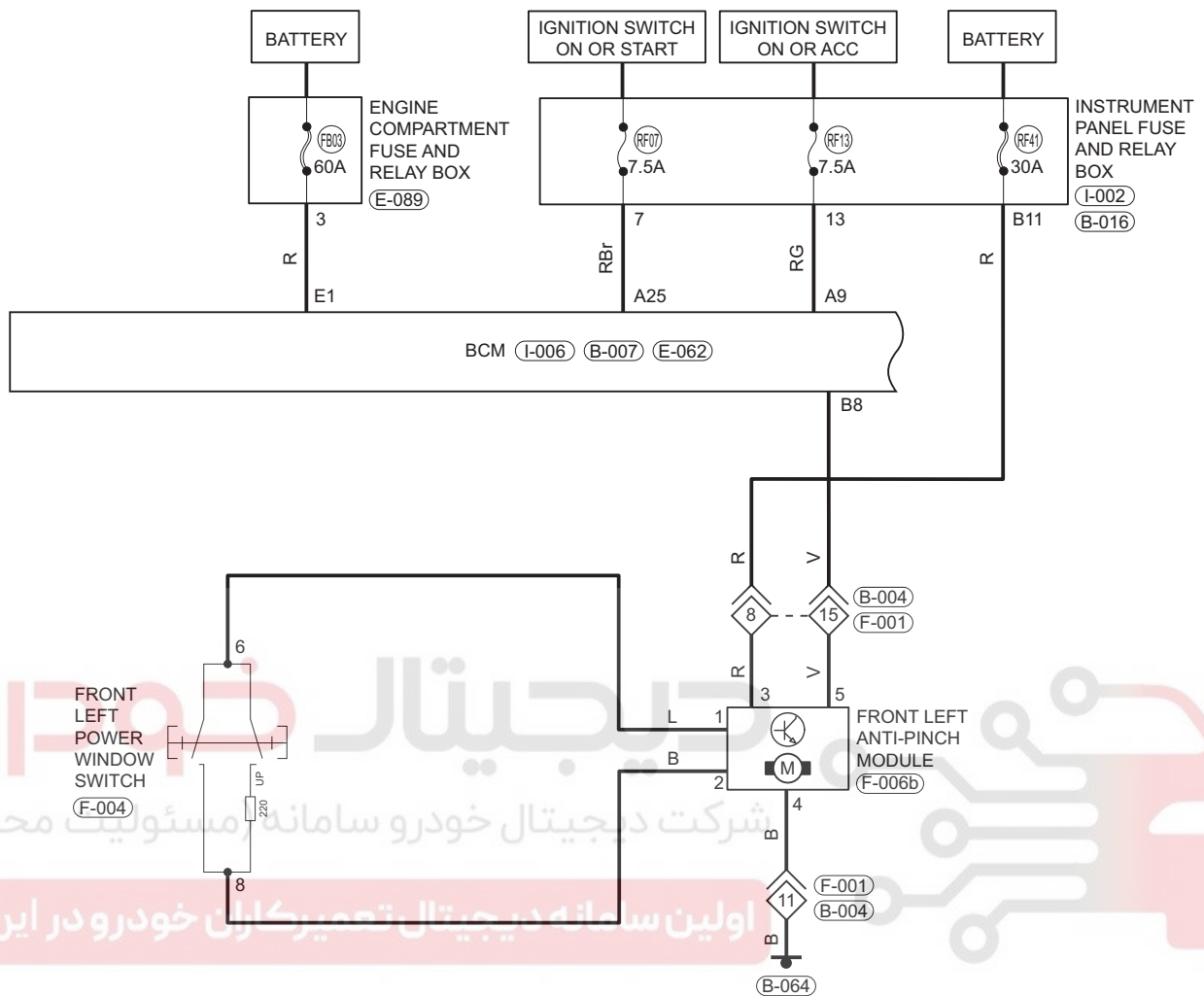
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57 - WINDSHIELD/WINDOW GLASS

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w/ ANTI-PINCH FUNCTION



ET21570120

Self-diagnosis Detection Logic

DTC Code	DTC Definition	DTC Detection Condition	Possible Cause
B102809	FL Anti-pinch Module Circuit board Component failures	Ignition switch ON	<ul style="list-style-type: none"> • Glass regulating control master switch • Jam protection module • Power glass regulator assembly • Wire harness or connector • Body Control Module (BCM)
B102909	FL Window Lifter Switch Stuck Component Failures		
B102A09	FL Window Lifter Motor Hall sensor Component Failures		
B102B16	FL Window Lifter Voltage Abnormal Circuit Voltage Below Threshold		
B102B17	FL Window Lifter Voltage Abnormal Circuit Voltage Above Threshold		
B102C98	Window Lifter Thermal Protection Component or System Over Temperature		

DTC Confirmation Procedure

Confirm that battery voltage is between 11 V and 14 V before performing the following procedures.

- Turn ignition switch to LOCK.
- Connect X-431 3G diagnostic tester (the latest software) to Data Link Connector (DLC), and make it communicate with vehicle electronic module through data network.
- Turn ignition switch to ON.
- Use X-431 3G diagnostic tester to record and clear DTCs stored in BCM.
- Turn ignition switch to LOCK and wait for a few seconds.
- Turn ignition switch to ON, and then select Read Code.
- If DTC is detected, malfunction indicated by DTC is current. Go to diagnosis procedure - Step 1.
- If DTC is not detected, malfunction indicated by DTC is intermittent (See page 57-18).

CAUTION

- When performing circuit diagnosis and test, always refer to the circuit diagram for specific circuit and component information.

Diagnosis Procedure

Using a digital multimeter, check if fuses FB03 (60A), RF07 (7.5A) and RF40 (30A) in instrument panel fuse box and engine compartment fuse and relay box are blown separately.

1	Check fuse
----------	-------------------

NG	Replace fuse
-----------	---------------------

OK

2 Use X-431 3G diagnostic tester to perform operation test for window system

NG

Check BCM and front left door glass regulator and their wire harness connectors

57

OK

3 Use X-431 3G diagnostic tester to read datastream of window system

NG

Check BCM and front left door glass regulating switch and their wire harness connectors

OK

4 Check front left door glass regulating switch

- Remove front left door glass regulating switch from malfunctioning vehicle, then install it to a new vehicle and perform a test.
- Connect all connectors.
- Connect negative battery cable, and turn ignition switch to ON.
- Check operation of front left door glass regulating switch.

NG

Replace front left door glass regulating switch

OK

5 Check front left door power glass regulator

- Remove front left door power glass regulator from malfunctioning vehicle, then install it to a new vehicle and perform a test.
- Connect all connectors.
- Connect negative battery cable, and turn ignition switch to ON.
- Check operation of front left door power glass regulator.

NG

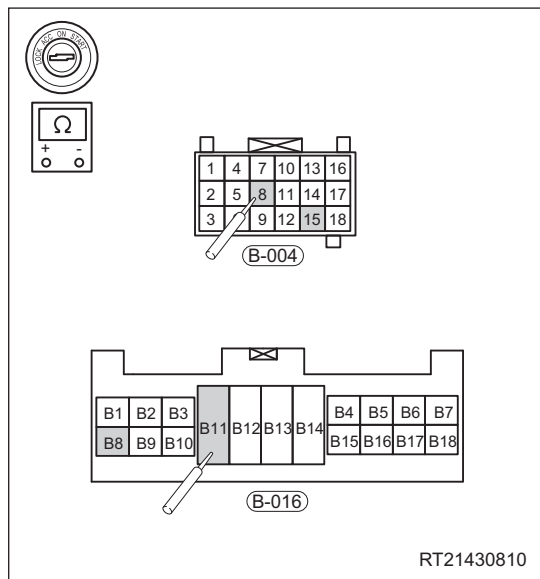
Replace front left door glass regulator

OK

6 Check wire harness, connector and jam protection module (from front left door glass regulating switch to BCM)

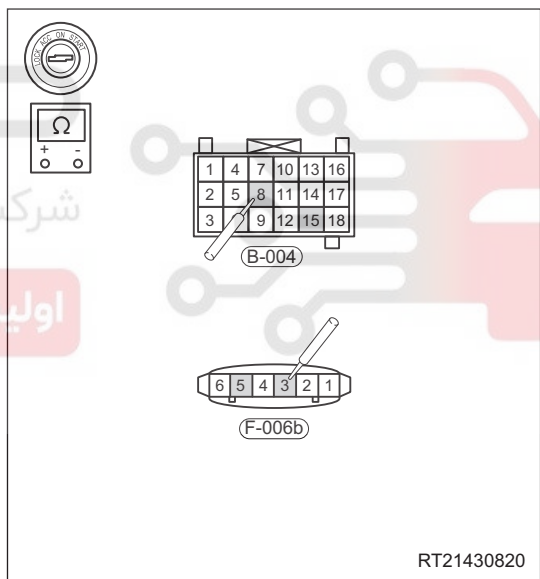
- a. Turn ignition switch to LOCK.
- b. Disconnect the negative battery cable.
- c. Disconnect body connector B-004, fuse box connectors B-016 and B-004, and BCM connector B-007.
- d. Using a digital multimeter, check for continuity between body connectors B-004 and B-007, and between connector B-004 and fuse box connector B-016 according to table below.

Multimeter Connection	Condition	Specified Condition
B-004 (8) - B-016 (B11)	Always	Continuity
B-004 (15) - B-016 (B8)	Always	Continuity



- e. Using a digital multimeter, check for continuity between body connector B-004 and front left window jam protection motor F-006b according to table below.

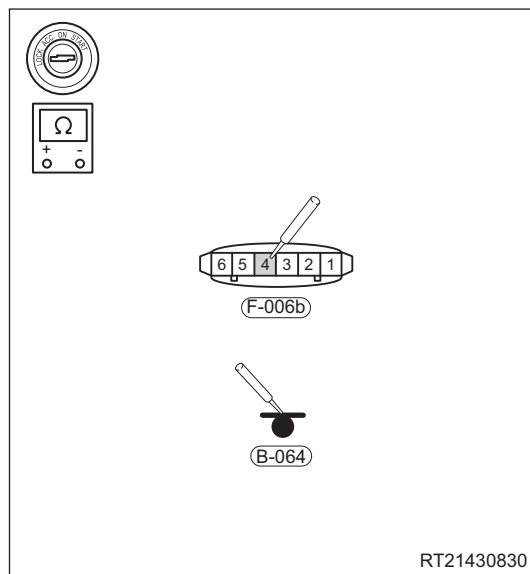
Multimeter Connection	Condition	Specified Condition
B-004 (8) - F-006b (3)	Always	Continuity
B-004 (15) - F-006b (5)	Always	Continuity



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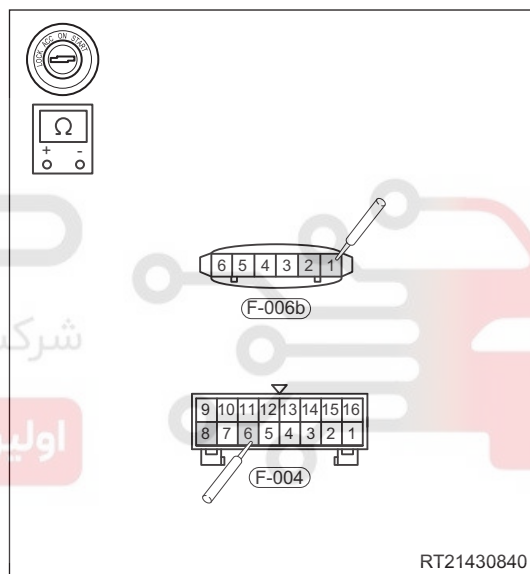
f. Using a digital multimeter, check for continuity between front left window jam protection module connector F-006b and ground according to table below.

Multimeter Connection	Condition	Specified Condition
F-006b (4) - B-064	Always	Continuity



g. Using a digital multimeter, check for continuity between front left window jam protection module connector F-006b and front left door glass regulating switch F-004 according to table below.

Multimeter Connection	Condition	Specified Condition
F-006b (1) - F-004 (6)	Always	Continuity
F-006b (2) - F-004 (8)	Always	Continuity



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7 Reconfirm DTCs

- Connect all connectors.
- Connect the negative battery cable.
- Turn ignition switch to ON.
- Use X-431 3G diagnostic tester (the latest software) to record and clear DTCs stored in body control system.
- Turn ignition switch to LOCK and wait for a few seconds.
- Turn ignition switch to ON.
- Use X-431 3G diagnostic tester (the latest software) to read DTCs stored in body control system again.

Result	Proceed to
B102809, B102909, B102A09, B102B16, B102B17, B102C98 are output	NG
No DTC is output	OK

NG

Replace jam protection module

OK

System is normal

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DTC	B102D09	FR Anti-pinch Module Circuit Board Component Failures
DTC	B102E09	FR Window Lifter Switch Stuck Component Failures
DTC	B102F09	FR Window Lifter Motor Hall Sensor Component Failures
DTC	B103016	FR Window Lifter Voltage Circuit Voltage Below Threshold
DTC	B103017	FR Window Lifter Voltage Circuit Voltage Above Threshold
DTC	B103198	FR Window Lifter Thermal Protection Component or System Over Temperature

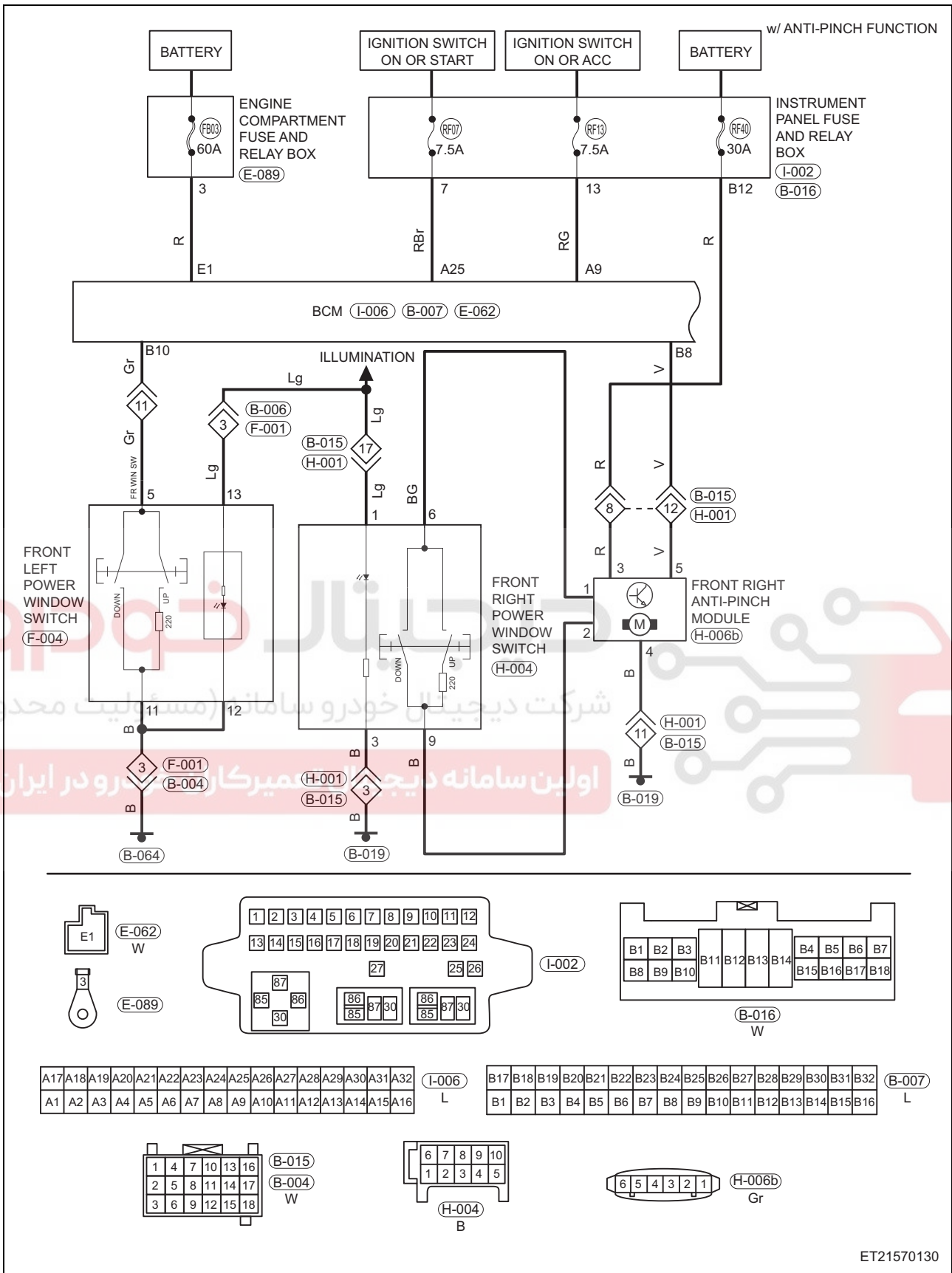
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دیجیتال خودرو

شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

اولین سامانه دیجیتال تعمیرکاران خودرو در ایران





ET21570130

Self-diagnosis Detection Logic

DTC Code	DTC Definition	DTC Detection Condition	Possible Cause
B102D09	FR Anti-pinch Module Circuit Board Component Failures	Ignition switch ON	<ul style="list-style-type: none"> • Glass regulating control switch • Glass jam protection module • Power glass regulator assembly • Wire harness or connector • Body Control Module (BCM)
B102E09	FR Window Lifter Switch Stuck Component Failures		
B102F09	FR Window Lifter Motor Hall Sensor Component Failures		
B103016	FR Window Lifter Voltage Circuit Voltage Below Threshold		
B103017	FR Window Lifter Voltage Circuit Voltage Above Threshold		
B103198	FR Window Lifter Thermal Protection Component or System Over Temperature		

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DTC Confirmation Procedure

Confirm that battery voltage is between 11 V and 14 V before performing the following procedures.

- Confirm that battery voltage is between 11 V and 14 V before performing the following procedures.
- Turn ignition switch to LOCK.
- Connect X-431 3G diagnostic tester (the latest software) to Data Link Connector (DLC), and make it communicate with vehicle electronic module through data network.
- Turn ignition switch to ON.
- Use X-431 3G diagnostic tester to record and clear DTCs stored in BCM.
- Turn ignition switch to LOCK and wait for a few seconds.
- Turn ignition switch to ON, and then select Read Code.
- If DTC is detected, malfunction indicated by DTC is current. Go to diagnosis procedure - Step 1.
- If DTC is not detected, malfunction indicated by DTC is intermittent ([See page 57-18](#)).

 CAUTION

- When performing circuit diagnosis and test, always refer to the circuit diagram for specific circuit and component information.

Diagnosis Procedure

Using a digital multimeter, check if fuses FB03 (60A), RF07 (7.5A) and RF40 (30A) in instrument panel fuse box and engine compartment fuse and relay box are blown separately.

1 Check fuse

NG Replace fuse

OK

2 Use X-431 3G diagnostic tester to perform operation test for window system

NG Check BCM and front right door glass regulator and their wire harness connectors

OK

3 Use X-431 3G diagnostic tester to read datastream of window system

NG Check BCM and front right door glass regulating switch and their wire harness connectors

OK

4 Check power glass regulating switch

- Remove front right door glass regulating switch from malfunctioning vehicle, then install it to a new vehicle and perform a test.
- Connect all connectors.
- Connect negative battery cable, and turn ignition switch to ON.
- Check operation of power glass regulating switch.

NG Replace power glass regulating switch

OK

5 Check front right door power glass regulator

- Remove front right door power glass regulator from malfunctioning vehicle, then install it to a new vehicle and perform a test.
- Connect all connectors.
- Connect negative battery cable, and turn ignition switch to ON.
- Check operation of front right door power glass regulator.

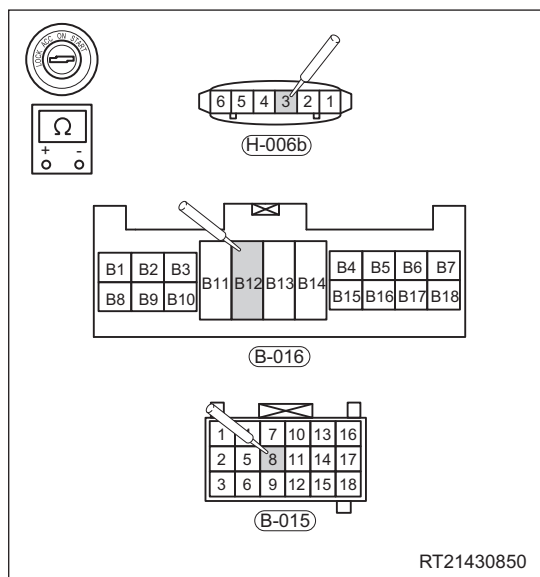
NG Replace front right door power glass regulator

OK

6 Check instrument panel relay box and jam protection module connector

- a. Turn ignition switch to LOCK.
- b. Disconnect the negative battery cable.
- c. Disconnect instrument panel relay box connector B-016, body connector B-015 and front right window jam protection module connector H-006b.
- d. Using a digital multimeter, check for continuity among instrument panel relay box connector B-016, body connector B-015 and front right window jam protection module connector H-006b according to table below.

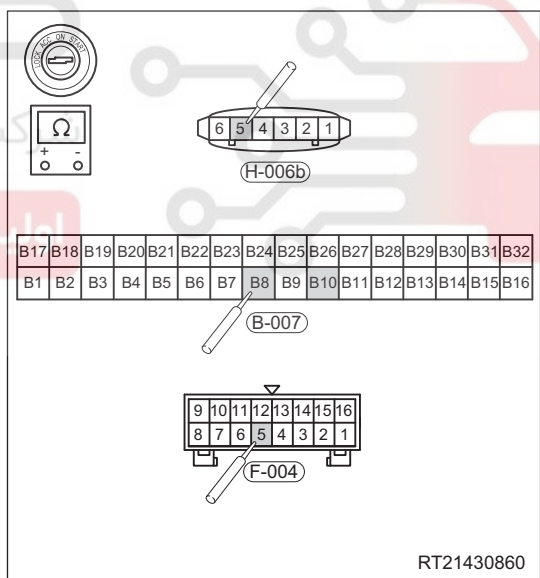
Multimeter Connection	Condition	Specified Condition
B-016 (B12) - B-015 (8)	Always	Continuity
B-015 (8) - H-006b (3)	Always	Continuity



7 Check for continuity between BCM connector and front left door glass regulating switch, and continuity between BCM connector and jam protection module

- a. Turn ignition switch to LOCK.
- b. Disconnect the negative battery cable.
- c. Disconnect connectors H-006b, B-007 and F-004.
- d. Using a digital multimeter, check for continuity between jam protection module connector H-006b and BCM connector B-007, and continuity between front left door glass regulating switch assembly connector F-004 and BCM connector B-007 according to table below.

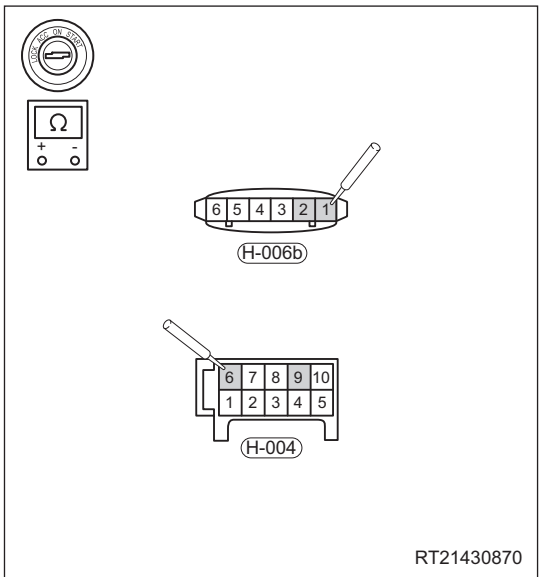
Multimeter Connection	Condition	Specified Condition
H-006b (5) - B-007 (B8)	Always	Continuity
F-004 (5) - B-007 (B10)	Always	Continuity



8 Check for continuity between BCM connector and front left door glass regulating switch, and continuity between BCM connector and jam protection module

- a. Turn ignition switch to LOCK.
- b. Disconnect the negative battery cable.
- c. Disconnect connectors H-006b and H-004.
- d. Using a digital multimeter, check for continuity between jam protection module connector H-006b and front right door glass regulating switch H-004 according to table below.

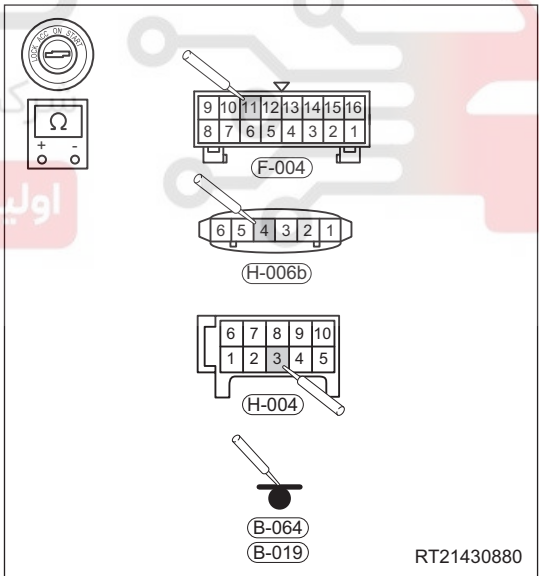
Multimeter Connection	Condition	Specified Condition
H-006b (1) - H-004 (6)	Always	Continuity
H-006b (2) - H-004 (9)	Always	Continuity



9 Check ground among front left door glass regulating switch assembly, front right door glass regulator assembly and front right window jam protection module

- a. Turn ignition switch to LOCK.
- b. Disconnect connectors F-004, H-004 and H-006b.
- c. Using a digital multimeter, check for continuity between the front left door glass regulating switch assembly connector F-004, front right door glass regulator assembly connector H-004, front right window jam protection module H-006b and the ground wire according to table below.

Multimeter Connection	Condition	Specified Condition
F-004 (11) - B-064	Always	Continuity
H-004 (3) - B-019	Always	Continuity
H-006b (4) - B-019	Always	Continuity



10 Reconfirm DTCs

- a. Connect all connectors.
- b. Connect the negative battery cable.
- c. Turn ignition switch to ON.
- d. Use X-431 3G diagnostic tester (the latest software) to record and clear DTCs stored in body control system.
- e. Turn ignition switch to LOCK and wait for a few seconds.
- f. Turn ignition switch to ON.
- g. Use X-431 3G diagnostic tester (the latest software) to read DTCs stored in body control system again.

57 - WINDSHIELD/WINDOW GLASS

Result	Proceed to
B102809, B102909, B102A09, B102B16, B102B17, B102C98 are output	NG
No DTC is output	OK

NG

Replace jam protection module

OK

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System is normal

دیجیتال خودرو

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DTC	B103209	RL Anti-pinch Module Circuit Board Component Failures
DTC	B103309	RL Window Lifter Switch Stuck Component Failures
DTC	B103409	RL Window Lifter Motor Hall Sensor Component Failures
DTC	B103516	RL Window Lifter Voltage Circuit Voltage Below Threshold
DTC	B103517	RL Window Lifter Voltage Circuit Voltage Above Threshold
DTC	B103698	RL Window Lifter Thermal Protection Component or System Over Temperature

دیجیتال خودرو

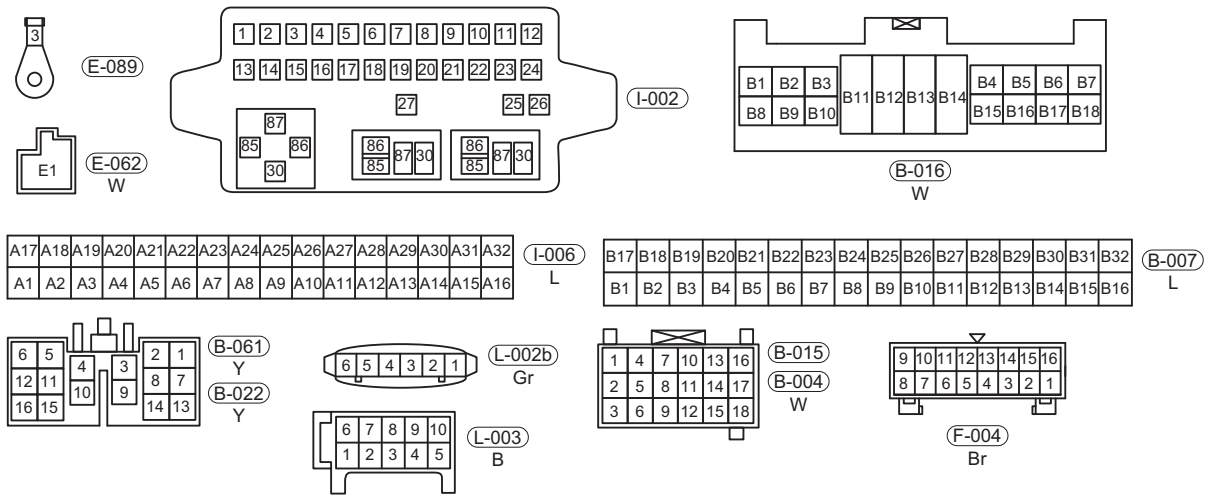
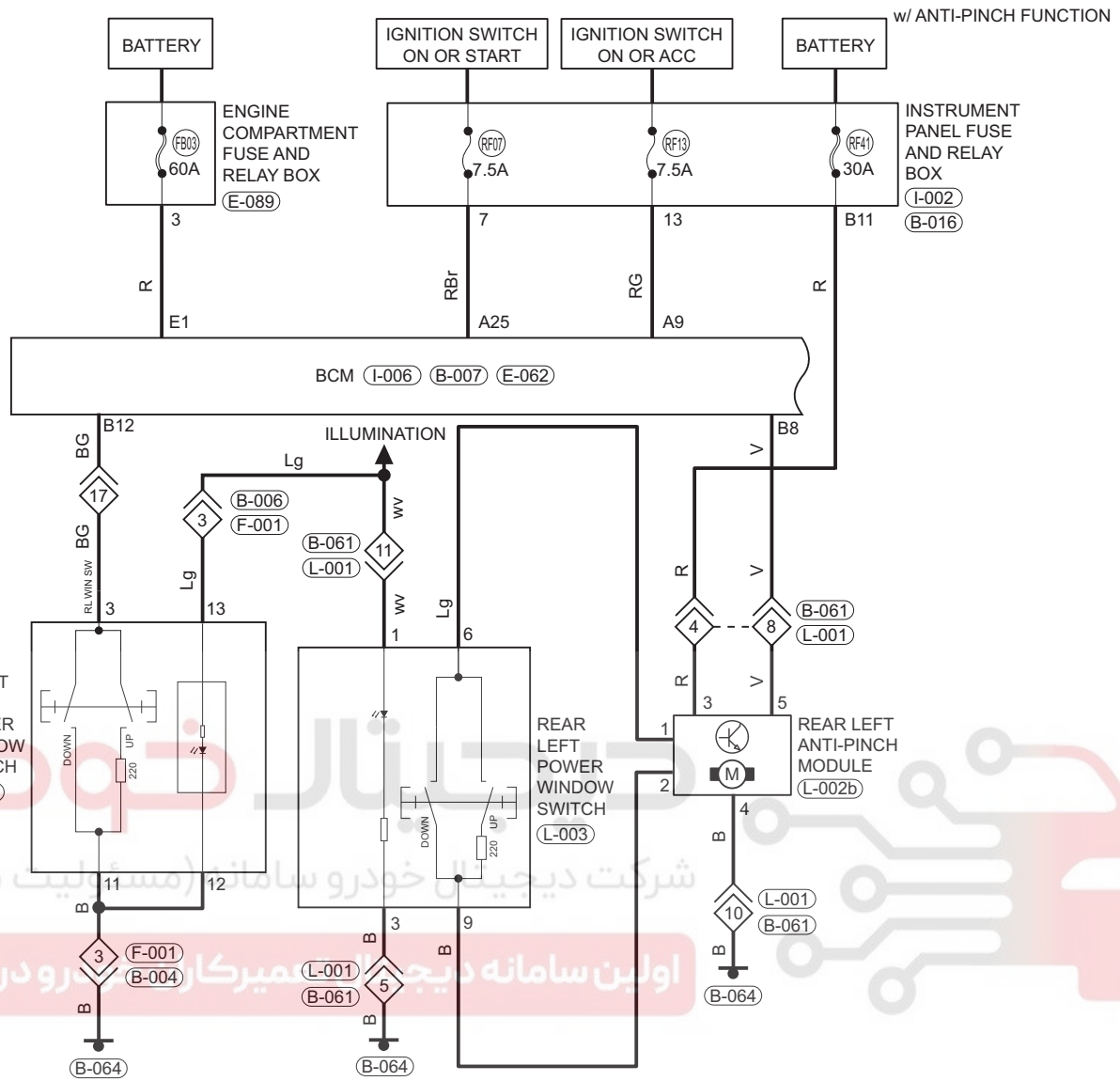
شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

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57 - WINDSHIELD/WINDOW GLASS

57



ET21570140

Self-diagnosis Detection Logic

DTC Code	DTC Definition	DTC Detection Condition	Possible Cause
B103209	RL Anti-pinch Module Circuit Board Component Failures	Ignition switch ON	<ul style="list-style-type: none"> • Glass regulating switch • Glass jam protection module • Power glass regulator assembly • Wire harness or connector • Body Control Module (BCM)
B103309	RL Window Lifter Switch Stuck Component Failures		
B103409	RL Window Lifter Motor Hall Sensor Component Failures		
B103516	RL Window Lifter Voltage Circuit Voltage Below Threshold		
B103517	RL Window Lifter Voltage Circuit Voltage Above Threshold		
B103698	RL Window Lifter Thermal Protection Component or System Over Temperature		

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DTC Confirmation Procedure

Confirm that battery voltage is between 11 V and 14 V before performing the following procedures.

- Turn ignition switch to LOCK.
- Connect X-431 3G diagnostic tester (the latest software) to Data Link Connector (DLC), and make it communicate with vehicle electronic module through data network.
- Turn ignition switch to ON.
- Use X-431 3G diagnostic tester to record and clear DTCs stored in BCM.
- Turn ignition switch to LOCK and wait for a few seconds.
- Turn ignition switch to ON, and then select Read Code.
- If DTC is detected, malfunction indicated by DTC is current. Go to diagnosis procedure - Step 1.
- If DTC is not detected, malfunction indicated by DTC is intermittent ([See page 57-18](#)).

CAUTION

- When performing circuit diagnosis and test, always refer to the circuit diagram for specific circuit and component information.

Diagnosis Procedure

Using a digital multimeter, check if fuses FB03 (60A), RF07 (7.5A) and RF41 (30A) in instrument panel fuse box and engine compartment fuse and relay box are blown separately.

57 - WINDSHIELD/WINDOW GLASS

1 Check fuse

NG Replace fuse

OK

2 Use X-431 3G diagnostic tester to perform operation test for window system

NG Check BCM and front left door glass regulator and their wire harness connectors

OK

3 Use X-431 3G diagnostic tester to read datastream of window system

NG Check BCM and rear left door glass regulating switch and their wire harness connectors

OK

4 Check power glass regulating switch

- Remove rear left door glass regulating switch from malfunctioning vehicle, then install it to a new vehicle and perform a test.
- Connect all connectors.
- Connect negative battery cable, and turn ignition switch to ON.
- Check operation of power glass regulating switch.

NG Replace power glass regulating switch

OK

5 Check rear left door power glass regulator

- Remove rear left door power glass regulator from malfunctioning vehicle, then install it to a new vehicle and perform a test.
- Connect all connectors.
- Connect negative battery cable, and turn ignition switch to ON.
- Check operation of rear left door power glass regulator.

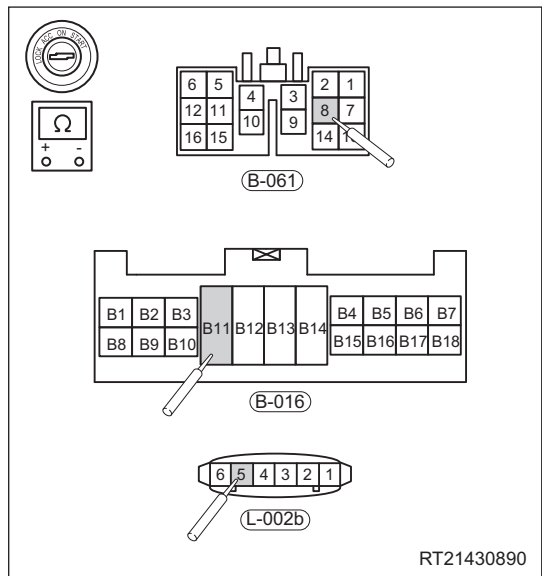
NG Replace rear left door power glass regulator

OK

6 Check instrument panel relay box and jam protection module connector

- a. Turn ignition switch to LOCK.
- b. Disconnect the negative battery cable.
- c. Disconnect instrument panel relay box connector B-016, body connector B-061 and rear left window jam protection module connector L-002b.
- d. Using a digital multimeter, check for continuity among instrument panel relay box connector B-016, body connector B-061 and rear left window jam protection module connector L-002b according to table below.

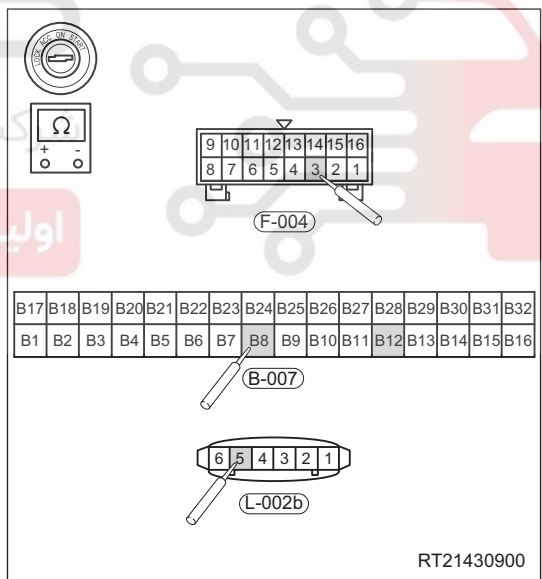
Multimeter Connection	Condition	Specified Condition
B-016 (B11) - B-061 (8)	Always	Continuity
B-061 (8) - L-002b (5)	Always	Continuity



7 Check for continuity between BCM connector and front left door glass regulating switch, and continuity between BCM connector and jam protection module

- a. Turn ignition switch to LOCK.
- b. Disconnect the negative battery cable.
- c. Disconnect connectors L-002b, B-007 and F-004.
- d. Using a digital multimeter, check for continuity between jam protection module connector L-002b and BCM connector B-007, and continuity between front left door glass regulating switch assembly connector F-004 and BCM connector B-007 according to table below.

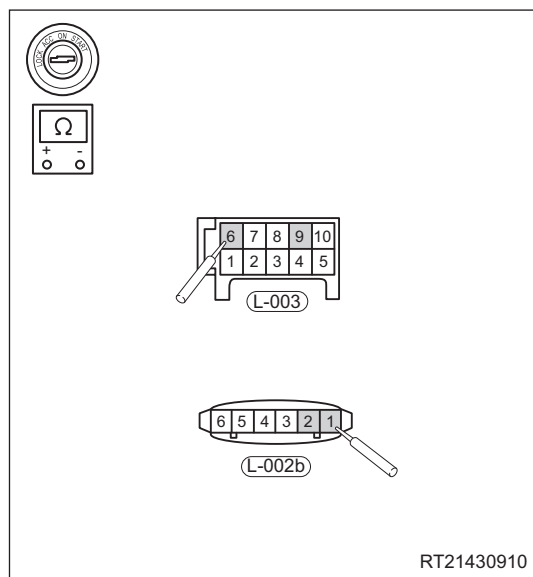
Multimeter Connection	Condition	Specified Condition
L-002b (5) - B-007 (B8)	Always	Continuity
F-004 (3) - B-007 (B12)	Always	Continuity



8 Check rear left door glass regulating switch and rear left window jam protection module

- a. Turn ignition switch to LOCK.
- b. Disconnect the negative battery cable.
- c. Disconnect connectors L-002b and L-003.
- d. Using a digital multimeter, check for continuity between jam protection module connector L-002b and rear left door glass regulating switch L-003 according to table below.

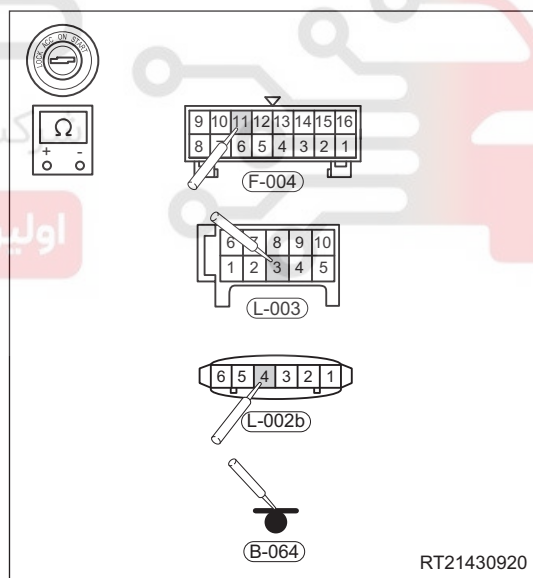
Multimeter Connection	Condition	Specified Condition
L-002b (1) - L-003 (6)	Always	Continuity
L-002b (2) - L-003 (9)	Always	Continuity



9 Check ground among front left door glass regulating switch assembly, rear left door glass regulator assembly and rear left window jam protection module

- a. Turn ignition switch to LOCK.
- b. Disconnect connectors F-004, L-003 and L-002b.
- c. Using a digital multimeter, check for continuity between the front left door glass regulating switch assembly connector F-004, rear left door glass regulator assembly connector L-003, rear left window jam protection module L-002b and the ground wire according to table below.

Multimeter Connection	Condition	Specified Condition
F-004 (11) - B-064	Always	Continuity
L-003 (3) - B-064	Always	Continuity
L-002b (4) - B-064	Always	Continuity



10 Reconfirm DTCs

- a. Connect all connectors.
- b. Connect the negative battery cable.
- c. Turn ignition switch to ON.
- d. Use X-431 3G diagnostic tester (the latest software) to record and clear DTCs stored in body control system.
- e. Turn ignition switch to LOCK and wait for a few seconds.
- f. Turn ignition switch to ON.
- g. Use X-431 3G diagnostic tester (the latest software) to read DTCs stored in body control system again.

Result	Proceed to
B102809, B102909, B102A09, B102B16, B102B17, B102C98 are output	NG
No DTC is output	OK

NG

Replace jam protection module

OK

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System is normal

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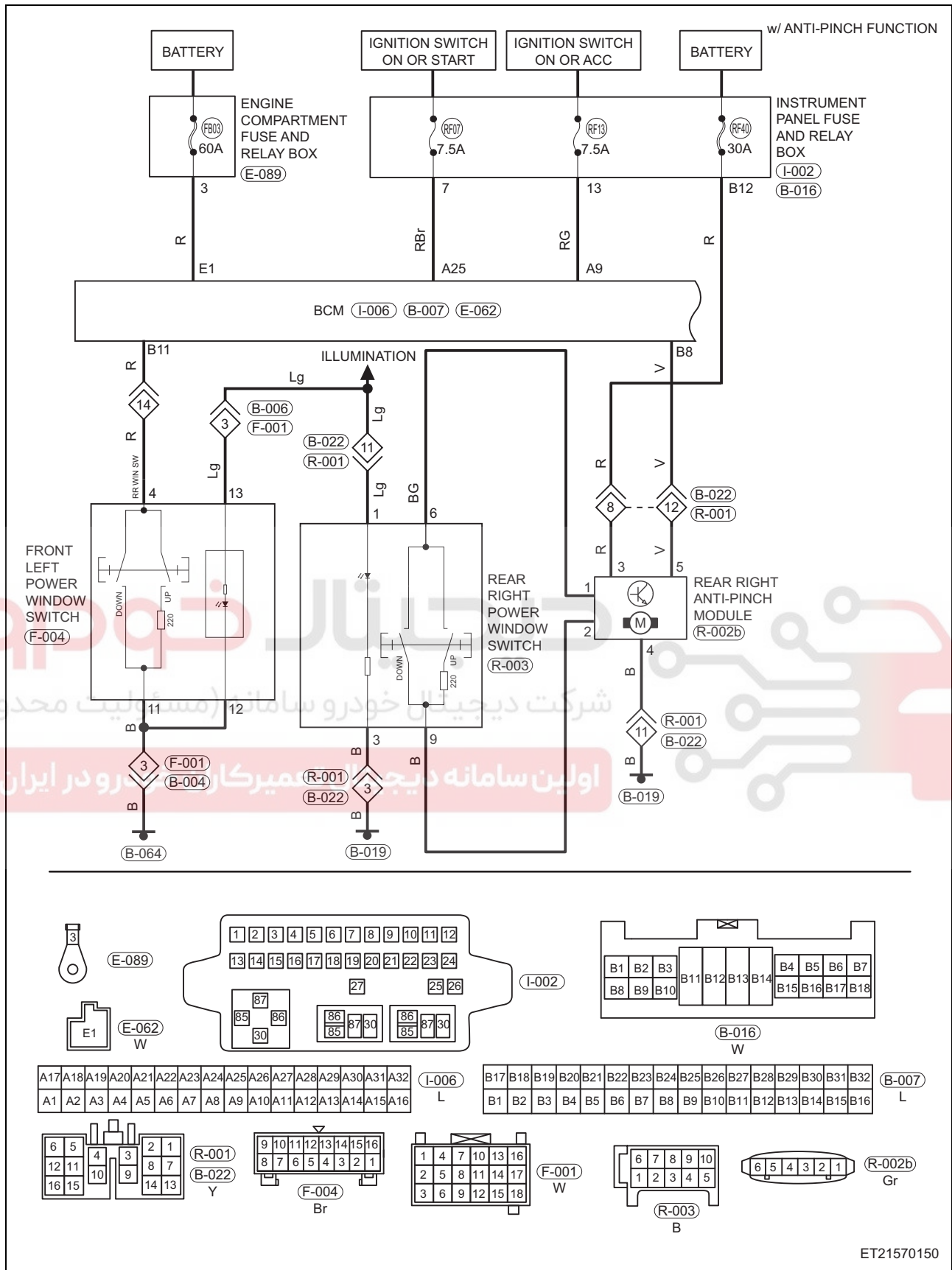
DTC	B103709	RR Anti-pinch Module Circuit Board Component Failures
DTC	B103809	RR Window Lifter Switch Stuck Component Failures
DTC	B103909	RR Window Lifter Motor Hall Sensor Component Failures
DTC	B103A16	RR Window Lifter Voltage Circuit Voltage Below Threshold
DTC	B103A17	RR Window Lifter Voltage Circuit Voltage Above Threshold
DTC	B103B98	RR Window Lifter Thermal Protection Component or System Over Temperature

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Self-diagnosis Detection Logic

DTC Code	DTC Definition	DTC Detection Condition	Possible Cause
B103709	RR Anti-pinch Module Circuit Board Component Failures	Ignition switch ON	<ul style="list-style-type: none"> • Glass regulating switch • Glass jam protection module • Power glass regulator assembly • Wire harness or connector • Body Control Module (BCM)
B103809	RR Window Lifter Switch Stuck Component Failures		
B103909	RR Window Lifter Motor Hall Sensor Component Failures		
B103A16	RR Window Lifter Voltage Circuit Voltage Below Threshold		
B103A17	RR Window Lifter Voltage Circuit Voltage Above Threshold		
B103B98	RR Window Lifter Thermal Protection Component or System Over Temperature		

DTC Confirmation Procedure

Confirm that battery voltage is between 11 V and 14 V before performing the following procedures.

- Turn ignition switch to LOCK.
- Connect X-431 3G diagnostic tester (the latest software) to Data Link Connector (DLC), and make it communicate with vehicle electronic module through data network.
- Turn ignition switch to ON.
- Use X-431 3G diagnostic tester to record and clear DTCs stored in BCM.
- Turn ignition switch to LOCK and wait for a few seconds.
- Turn ignition switch to ON, and then select Read Code.
- If DTC is detected, malfunction indicated by DTC is current. Go to diagnosis procedure - Step 1.
- If DTC is not detected, malfunction indicated by DTC is intermittent ([See page 57-18](#)).

 CAUTION

- When performing circuit diagnosis and test, always refer to the circuit diagram for specific circuit and component information.

Diagnosis Procedure

Using a digital multimeter, check if fuses FB03 (60A), RF07 (7.5A) and RF40 (30A) in instrument panel fuse box and engine compartment fuse and relay box are blown separately.

1 Check fuse

NG Replace fuse

OK

2 Use X-431 Use X-431 3G diagnostic tester to perform operation test for window system
diagnostic tester to perform operation test for window system

NG Check BCM and rear right door glass regulator and their wire harness connectors

OK

3 Use X-431 3G diagnostic tester to read datastream of window system

NG Check BCM and rear right door glass regulating switch and their wire harness connectors

OK

4 Check power glass regulating switch

- Remove rear right door glass regulating switch from malfunctioning vehicle, then install it to a new vehicle and perform a test.
- Connect all connectors.
- Connect negative battery cable, and turn ignition switch to ON.
- Check operation of power glass regulating switch.

NG Replace power glass regulating switch

OK

5 Check rear right door power glass regulator

- Remove rear right door power glass regulator from malfunctioning vehicle, then install it to a new vehicle and perform a test.
- Connect all connectors.
- Connect negative battery cable, and turn ignition switch to ON.
- Check operation of rear right door power glass regulator.

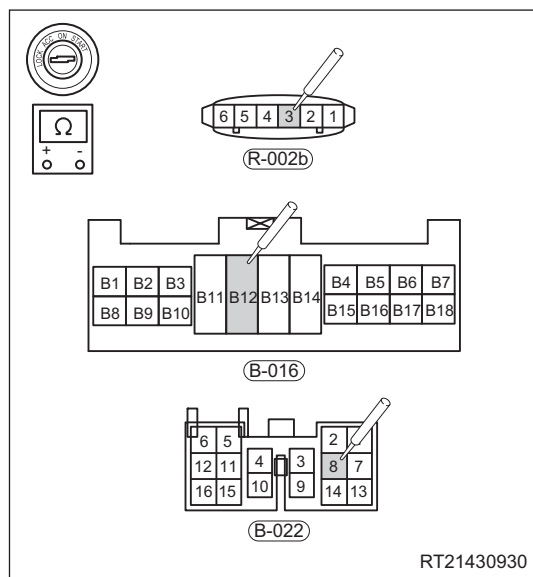
NG Replace rear right door power glass regulator

OK

6 Check instrument panel relay box and jam protection module connector

- a. Turn ignition switch to LOCK.
- b. Disconnect the negative battery cable.
- c. Disconnect instrument panel relay box connector B-016, body connector B-022 and rear right window jam protection module connector R-002b.
- d. Using a digital multimeter, check for continuity among instrument panel relay box connector B-016, body connector B-022 and rear right window jam protection module connector R-002b according to table below.

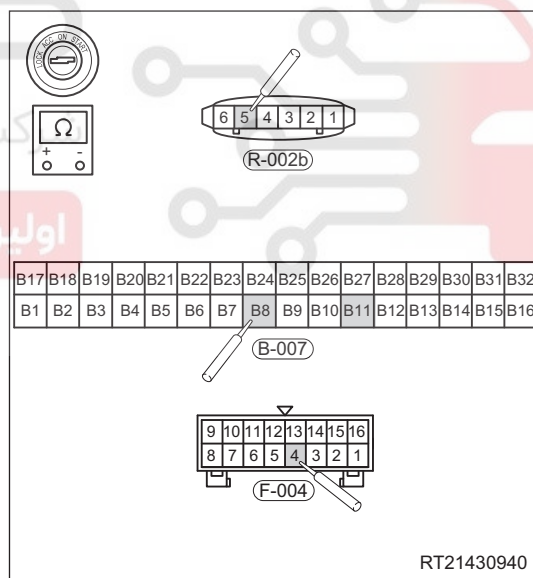
Multimeter Connection	Condition	Specified Condition
B-016 (B12) - B-022 (8)	Always	Continuity
B-022 (8) - R-002b (3)	Always	Continuity



7 Check for continuity between BCM connector and front left door glass regulating switch, and continuity between BCM connector and jam protection module

- a. Turn ignition switch to LOCK.
- b. Disconnect the negative battery cable.
- c. Disconnect connectors R-002b, B-007 and F-004.
- d. Using a digital multimeter, check for continuity between jam protection module connector R-002b and BCM connector B-007, and continuity between front left door glass regulating switch assembly connector F-004 and BCM connector B-007 according to table below.

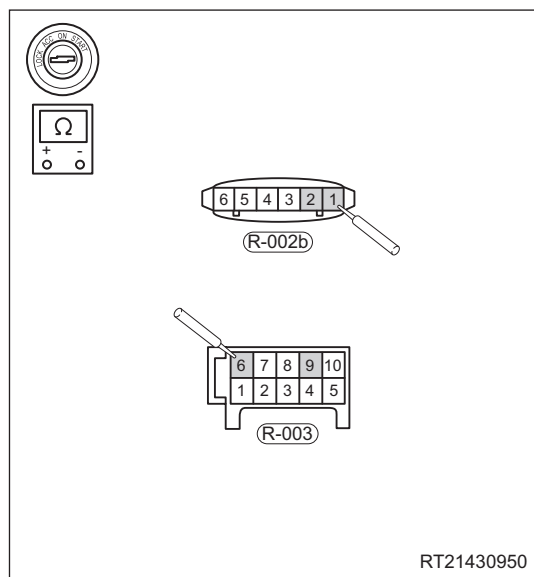
Multimeter Connection	Condition	Specified Condition
R-002b (5) - B-007 (B8)	Always	Continuity
F-004 (4) - B-007 (B11)	Always	Continuity



8 Check rear right door glass regulating switch and rear right window jam protection module

- a. Turn ignition switch to LOCK.
- b. Disconnect the negative battery cable.
- c. Disconnect connectors R-002b and R-003.
- d. Using a digital multimeter, check for continuity between jam protection module connector R-002b and rear right door glass regulating switch R-003 according to table below.

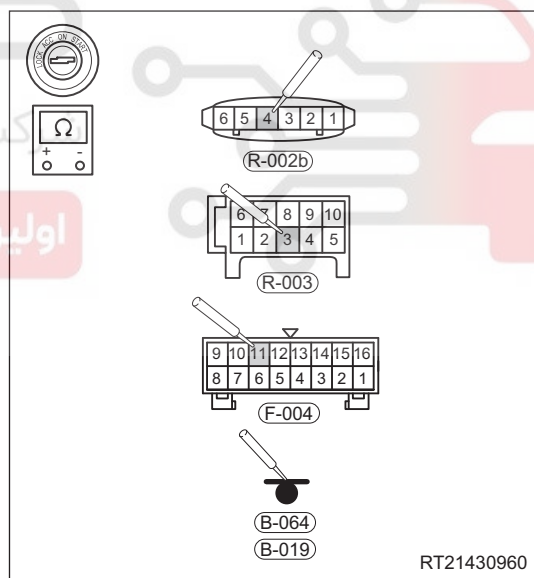
Multimeter Connection	Condition	Specified Condition
R-002b (1) - R-003 (6)	Always	Continuity
R-002b (2) - R-003 (9)	Always	Continuity



9 Check ground among front left door glass regulating switch assembly, rear right door glass regulator assembly and rear right window jam protection module

- a. Turn ignition switch to LOCK.
- b. Disconnect connectors F-004, R-003 and R-002b.
- c. Using a digital multimeter, check for continuity between the front left door glass regulating switch assembly connector F-004, rear right door glass regulator assembly connector R-003, rear right window jam protection module R-002b and the ground wire according to table below.

Multimeter Connection	Condition	Specified Condition
F-004 (11) - B-064	Always	Continuity
R-003 (3) - B-019	Always	Continuity
R-002b (4) - B-019	Always	Continuity



10 Reconfirm DTCs

- a. Connect all connectors.
- b. Connect the negative battery cable.
- c. Turn ignition switch to ON.
- d. Use X-431 3G diagnostic tester (the latest software) to record and clear DTCs stored in body control system.
- e. Turn ignition switch to LOCK and wait for a few seconds.
- f. Turn ignition switch to ON.
- g. Use X-431 3G diagnostic tester (the latest software) to read DTCs stored in body control system again.

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Result	Proceed to
B102809, B102909, B102A09, B102B16, B102B17, B102C98 are output	NG
No DTC is output	OK

NG

Replace jam protection module

OK

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System is normal

دیجیتال خودرو

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ON-VEHICLE SERVICE

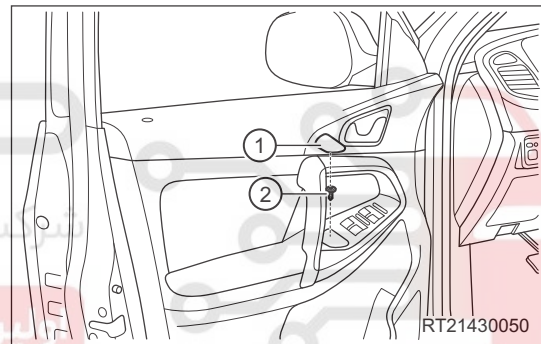
Power Glass Regulating Control Master Switch

Removal

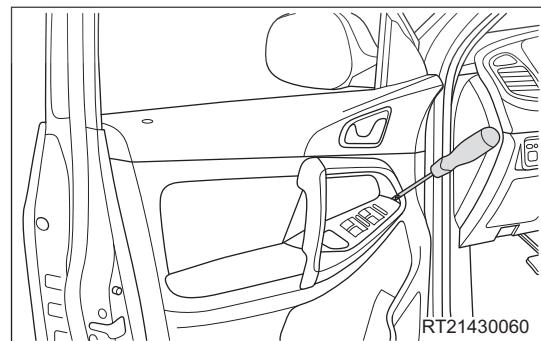
CAUTION

- Make sure to wear safety equipment to prevent accidents when removing power glass regulating control master switch.
- Appropriate force should be applied when removing power glass regulating control master switch. Be careful not to operate roughly.
- Try to prevent front door protector assembly from being scratched when removing power glass regulating control master switch.

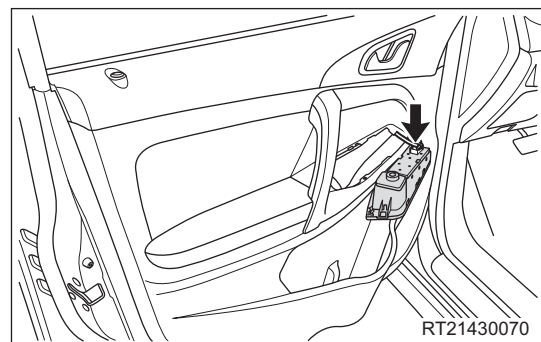
1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the power glass regulating control master switch assembly.
 - a. Remove the cushion rubber (1) from power glass regulating control master switch assembly.
 - b. Remove the fixing screw (2) from power glass regulating control master switch assembly. (Tightening torque: 2 ± 0.5 N·m)



- c. Using a screwdriver wrapped with protective tape, pry up the power glass regulating control master switch assembly.

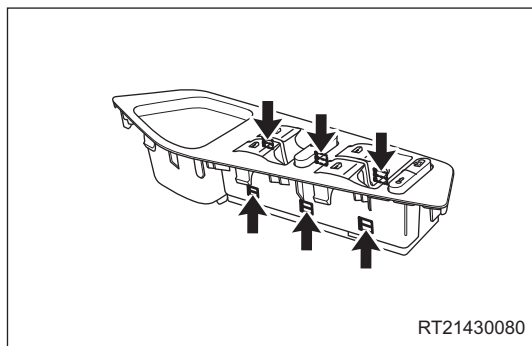


- d. Disconnect the connector (arrow) from power glass regulating control master switch assembly, and remove the power glass regulating control master switch assembly.



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4. Remove the power glass regulating control master switch.
 - a. Using a screwdriver wrapped with protective tape, pry up the claws (arrow) on power glass regulating control master switch, and remove the power glass regulating control master switch.

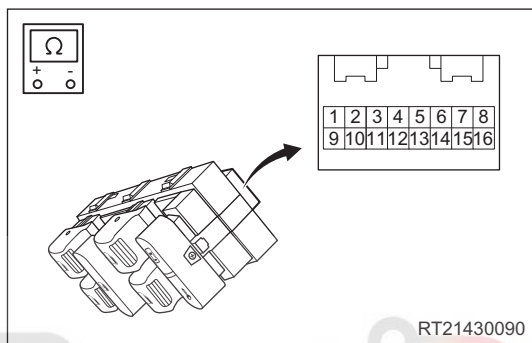


57

Inspection

1. Check power glass regulating control master switch.
 - a. Using a digital multimeter, check for continuity of power glass regulating control master switch according to the table below.

Area	Multimeter Connection	Switch Condition	Specified Condition
Front left door glass regulating switch	6 - 8	UP	220 Ω
		OFF	No continuity
	6 - 8	DOWN	Continuity
		OFF	No continuity
Front right door glass regulating switch	5 - 11	UP	220 Ω
		OFF	No continuity
	5 - 11	DOWN	Continuity
		OFF	No continuity
Rear left door glass regulating switch	4 - 11	UP	220 Ω
		OFF	No continuity
	4 - 11	DOWN	Continuity
		OFF	No continuity
Rear right door glass regulating switch	3 - 11	UP	220 Ω
		OFF	No continuity
	3 - 11	DOWN	Continuity
		OFF	No continuity

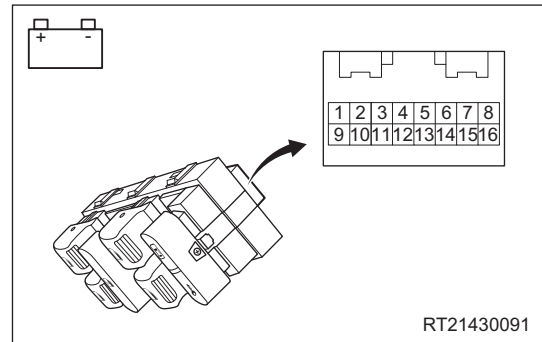


If result is not as specified, replace power glass regulating control master switch.

2. Check power glass regulating control master switch illumination.
- a. Apply battery voltage to the terminals of power glass regulating control master switch connector, and check the operation of power glass regulating control master switch according to the table below.

Measurement Condition		Specified Condition
Battery positive (+)	Battery negative (-)	
13	12	LED comes on

If result is not as specified, replace power glass regulating control master switch.



Installation

Installation is in the reverse order of removal.

CAUTION

- Check if connector is correctly installed when installing power glass regulating control master switch.
- Check if switch operates normally after installing glass regulating control master switch.

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Front Door Outer Weather bar

Removal

HINT:

- Use the same procedures for the right side and left side.
- Procedures listed below are for the left side.

CAUTION

57

- Make sure to wear safety equipment to prevent accidents when removing front door outer weather bar.
- Appropriate force should be applied when removing front door outer weather bar. Be careful not to operate roughly.
- Try to prevent body paint surface from being scratched when removing front door outer weather bar.

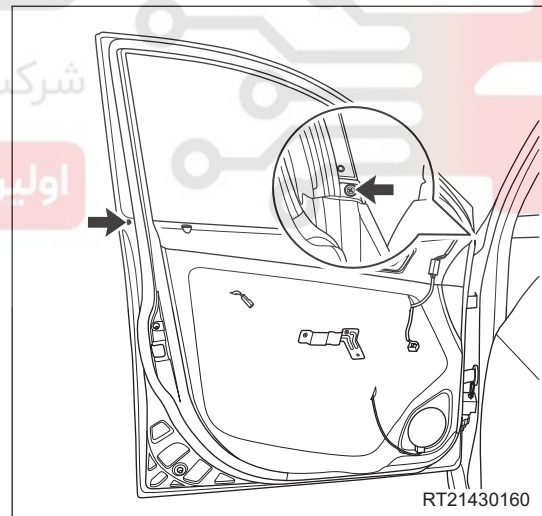
1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the outside rear view mirror assembly (See page 58-7).
4. Remove the front left door outer weather bar.
 - a. Remove the front left door frame weatherstrip.

HINT:

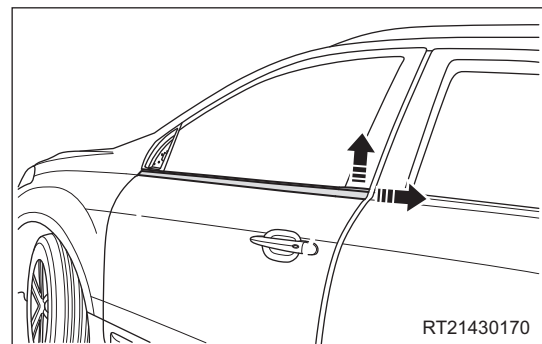
It is not necessary to remove the front left door frame weatherstrip completely. There is a fixing screw in the front door frame weatherstrip.

- b. Remove 2 fixing screws (arrow) from front door outer weather bar.

(Tightening torque: 1.3 ± 0.2 N·m)



- c. Remove the front left door outer weather bar in the direction of arrow as shown in the illustration.



Installation

Installation is in the reverse order of removal.

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Front Door Glass Assembly

Removal

HINT:

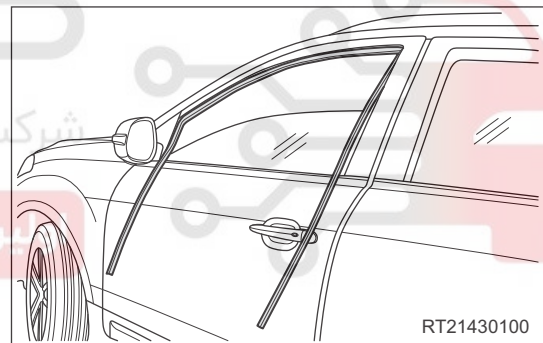
- Use the same procedures for the right side and left side.
- Procedures listed below are for the left side.

CAUTION

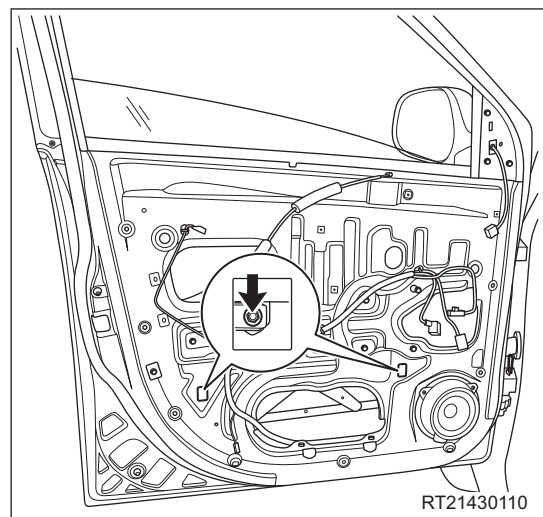
57

- Make sure to wear safety equipment to prevent accidents when removing front door glass assembly.
- Appropriate force should be applied when removing front door glass assembly. Be careful not to operate roughly.
- When removing front door glass assembly, avoid the window glass from dropping and becomes damaged.

1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the front left door protector assembly (See page 61-23).
4. Remove the front left door assist grip mounting bracket assembly (See page 61-29).
5. Remove the front left door protective film assembly (See page 61-30).
6. Remove the front left door glass run.
 - a. Lower the front door glass assembly and pull out the front left door glass run from the slot.



7. Remove the front left door glass assembly.
 - a. Raise the front door glass assembly to the proper position.
 - b. Remove 2 fixing bolts (arrow) from front left door glass assembly, and remove the front left door glass assembly.
(Tightening torque: 9 ± 1 N·m)



Installation

Installation is in the reverse order of removal.

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Front Door Glass Rear Guide Rail Assembly

Removal

HINT:

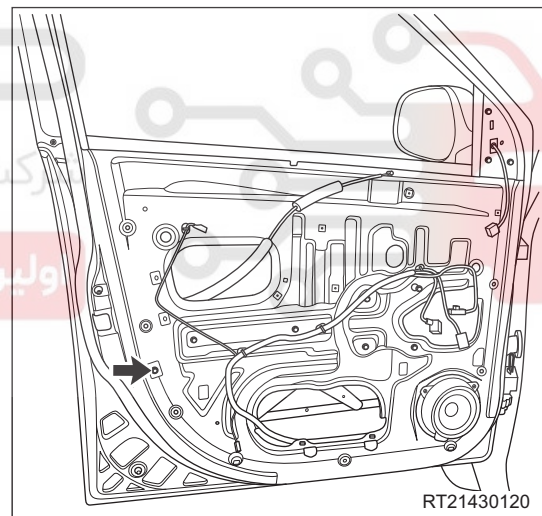
- Use the same procedures for the right side and left side.
- Procedures listed below are for the left side.

CAUTION

57

- Make sure to wear safety equipment to prevent accidents when removing front door glass rear guide rail assembly.
- Appropriate force should be applied when removing front door glass rear guide rail assembly. Be careful not to operate roughly.

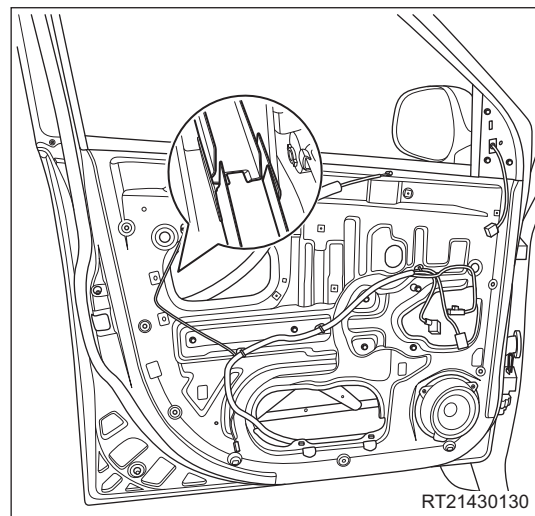
1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the front left door protector assembly (See page 61-23).
4. Remove the front left door assist grip mounting bracket assembly (See page 61-29).
5. Remove the front left door protective film assembly (See page 61-30).
6. Remove the front left door glass rear guide rail assembly.
 - a. Remove the fixing bolt (arrow) from front door glass rear guide rail assembly.
(Tightening torque: 9 ± 1 N·m)



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- b. Take out the front left door glass rear guide rail assembly from the slot.



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Installation

Installation is in the reverse order of removal.

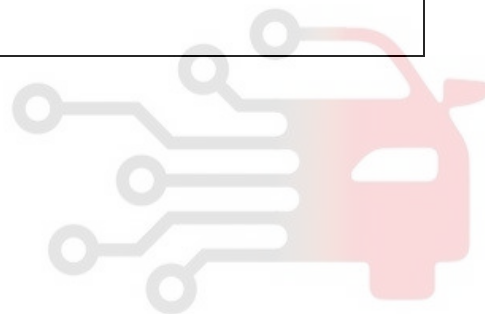
CAUTION

- After glass regulating system is installed, make sure that the window glass can go up and down smoothly and freely without any vibration, chattering or shock loading, etc.

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Front Door Power Glass Regulator Assembly

Removal

HINT:

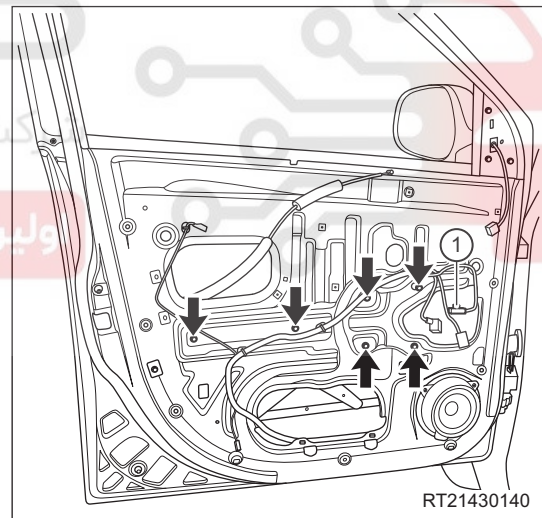
- Use the same procedures for the right side and left side.
- Procedures listed below are for the left side.

CAUTION

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- Make sure to wear safety equipment to prevent accidents when removing front door power glass regulator assembly.
- Appropriate force should be applied when removing front door power glass regulator assembly. Be careful not to operate roughly.

1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the front left door protector assembly (See page 61-23).
4. Remove the front left door assist grip mounting bracket assembly (See page 61-29).
5. Remove the front left door protective film assembly (See page 61-30).
6. Remove the front left door glass assembly (See page 57-84).
7. Remove the front left door power glass regulator assembly.
 - a. Disconnect the connector (1) from front left door power glass regulator assembly.
 - b. Remove 6 fixing bolts (arrow) from front left door power glass regulator assembly, and remove the front left door power glass regulator assembly. (Tightening torque: 9 ± 1 N·m)

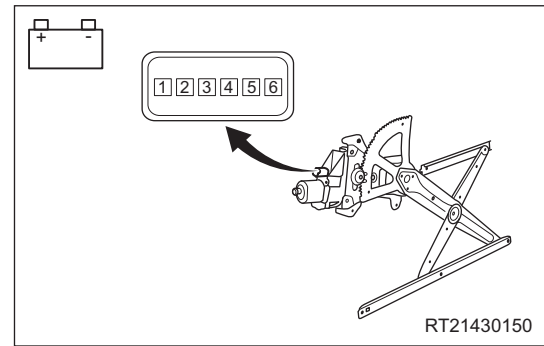


Inspection

1. Check front door power glass regulator motor.
 - a. Apply battery voltage to the terminals of power glass regulator motor connector, and check the operation of power glass regulator motor according to the table below.

Measurement Condition		Specified Condition
Battery positive (+)	Battery negative (-)	
1	2	UP smoothly
2	1	Down smoothly

If result is not as specified, replace front door power glass regulator assembly.



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Installation

Installation is in the reverse order of removal.

CAUTION

- After front door power glass regulator is installed, make sure that the window glass can go up and down smoothly and freely without any vibration, chattering or shock loading, etc.

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Power Glass Regulating Switch

Removal

HINT:

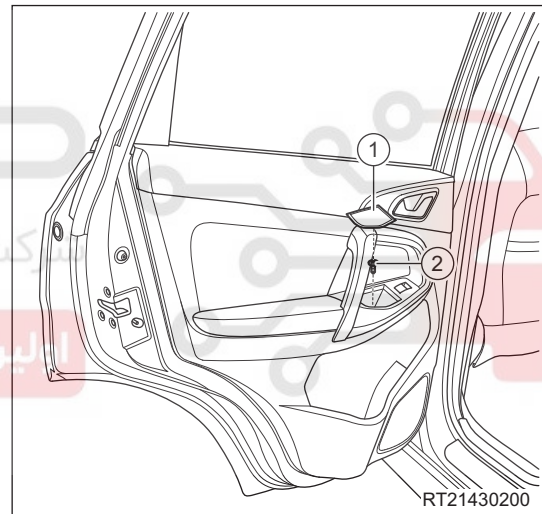
- Use the same procedures for the front right/rear right side and rear left side.
- Procedures listed below are for the rear left side.

CAUTION

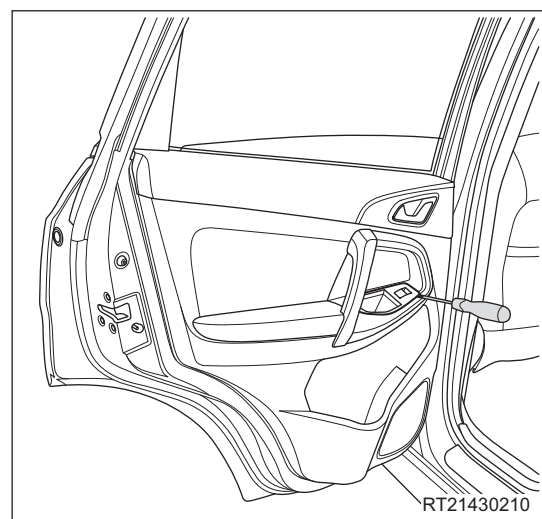
57

- Make sure to wear safety equipment to prevent accidents when removing power glass regulating switch.
- Appropriate force should be applied when removing power glass regulating switch. Be careful not to operate roughly.
- Try to prevent rear door protector assembly from being scratched when removing power glass regulating switch.

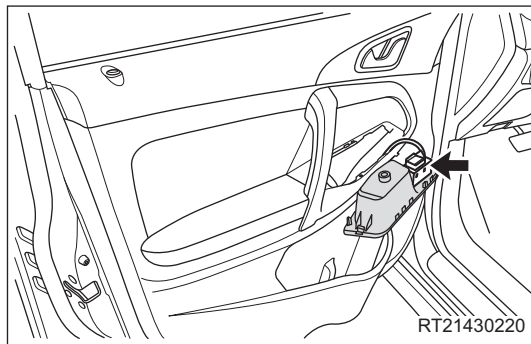
1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the left power glass regulating switch assembly.
 - a. Remove the cushion rubber (1) from power glass regulating switch assembly.
 - b. Remove the fixing screw (2) from power glass regulating switch assembly.
(Tightening torque: $2 \pm 0.5 \text{ N}\cdot\text{m}$)



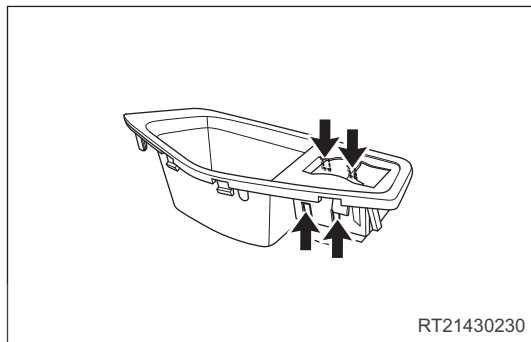
- c. Using a screwdriver wrapped with protective tape, pry up the power glass regulating switch assembly.



- d. Disconnect the connector (arrow) from power glass regulating switch assembly, and remove the left power glass regulating switch assembly.



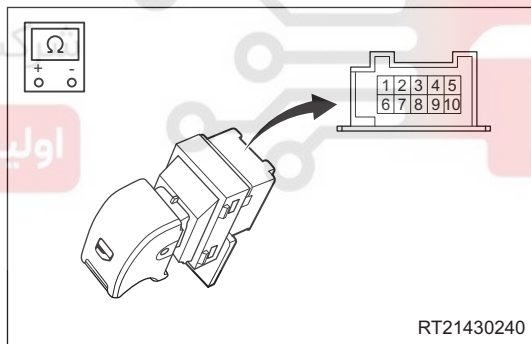
- 4. Remove the left power glass regulating switch.
 - a. Using a screwdriver wrapped with protective tape, pry up the claws (arrow) on power glass regulating switch, and remove the left power glass regulating control switch.



Inspection

- 1. Check power glass regulating switch.
 - a. Using a digital multimeter, check for continuity of power glass regulating switch according to the table below.

Area	Multimeter Connection	Switch Condition	Specified Condition
Front right door glass regulating switch	6 - 9	UP	220 Ω
		OFF	No continuity
	6 - 9	DOWN	Continuity
		OFF	No continuity
Rear left door glass regulating switch	6 - 9	UP	220 Ω
		OFF	No continuity
	6 - 9	DOWN	Continuity
		OFF	No continuity
Rear right door glass regulating switch	6 - 9	UP	220 Ω
		OFF	No continuity
	6 - 9	DOWN	Continuity
		OFF	No continuity



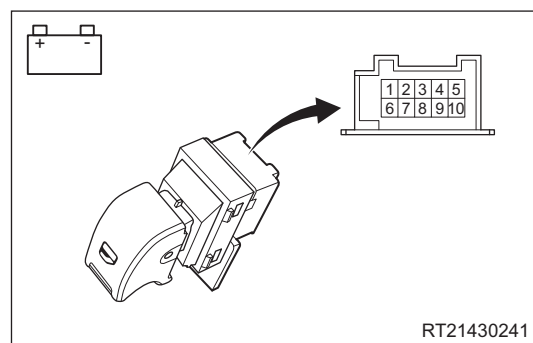
If result is not as specified, replace power glass regulating switch.

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2. Check power glass regulating switch illumination.
- a. Apply battery voltage to the terminals of power glass regulating switch connector, and check the operation of power glass regulating switch according to the table below.

Measurement Condition		Specified Condition
Battery positive (+)	Battery negative (-)	
1	3	LED comes on

If result is not as specified, replace power glass regulating switch.



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Installation

Installation is in the reverse order of removal.

CAUTION

- Check if connector is correctly installed when installing power glass regulating switch.
- Check if switch operates normally after installing power glass regulating switch.

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Rear Door Outer Weather bar

Removal

HINT:

- Use the same procedures for the right side and left side.
- Procedures listed below are for the left side.

CAUTION

- Make sure to wear safety equipment to prevent accidents when removing rear door outer weather bar.
- Appropriate force should be applied when removing rear door outer weather bar. Be careful not to operate roughly.
- Try to prevent body paint surface from being scratched when removing rear door outer weather bar.

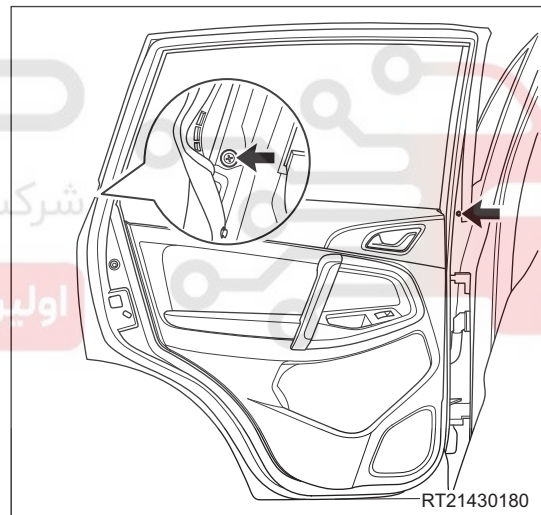
57

1. Remove the rear left door outer weather bar.
 - a. Remove the rear left door frame weatherstrip.

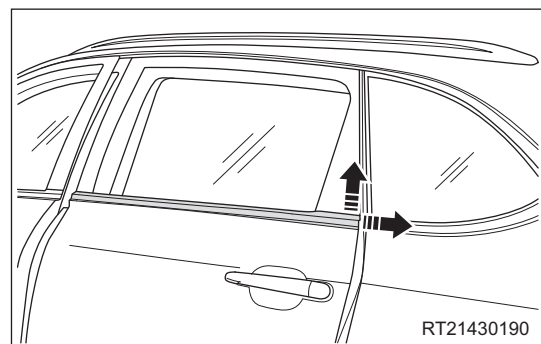
HINT:

It is not necessary to remove the rear left door weatherstrip completely. There is a fixing screw in the rear door weatherstrip.

- b. Remove 2 fixing screws (arrow) from rear door outer weather bar.
(Tightening torque: 1.3 ± 0.2 N·m)



- c. Remove the rear left door outer weather bar in the direction of arrow as shown in the illustration.



Installation

Installation is in the reverse order of removal.

Rear Door Glass Assembly

Removal

HINT:

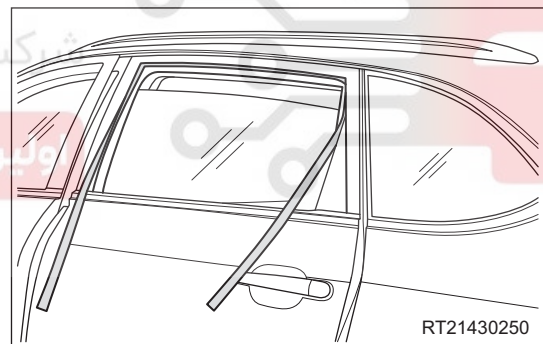
- Use the same procedures for the right side and left side.
- Procedures listed below are for the left side.

CAUTION

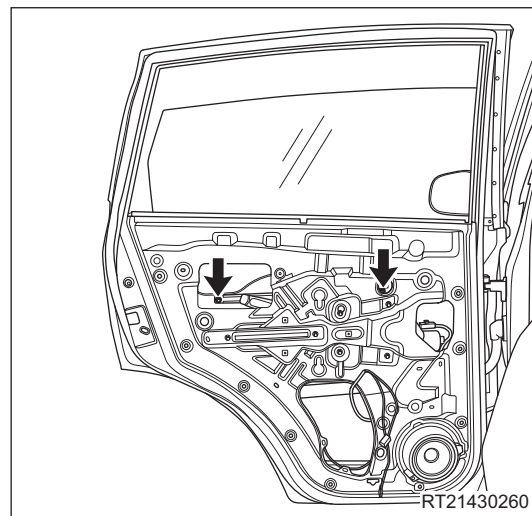
57

- Make sure to wear safety equipment to prevent accidents when removing rear door glass assembly.
- Appropriate force should be applied when removing rear door glass assembly. Be careful not to operate roughly.
- When removing the rear door glass assembly, avoid the window glass from dropping and becomes damaged.

1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the rear door outer weather bar (See page 57-93).
4. Remove the rear left door protector assembly (See page 61-36).
5. Remove the rear left door assist grip mounting bracket assembly (See page 61-30).
6. Remove the rear left door protective film assembly (See page 61-30).
7. Remove the rear door glass rear guide rail assembly (See page 57-96).
8. Remove the rear left door glass run.
 - a. Lower the rear door glass assembly and pull out the rear left door glass run from the slot.



9. Remove the rear left door glass assembly.
 - a. Raise the rear door glass assembly to the proper position.
 - b. Remove 2 fixing bolts (arrow) from rear door glass assembly, and remove the rear left door glass assembly.
(Tightening torque: 9 ± 1 N·m)



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Installation

Installation is in the reverse order of removal.

CAUTION

- When installing rear door glass assembly, avoid the window glass from dropping and becomes damaged.

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Rear Door Glass Rear Guide Rail Assembly

Removal

HINT:

- Use the same procedures for the right side and left side.
- Procedures listed below are for the left side.

CAUTION

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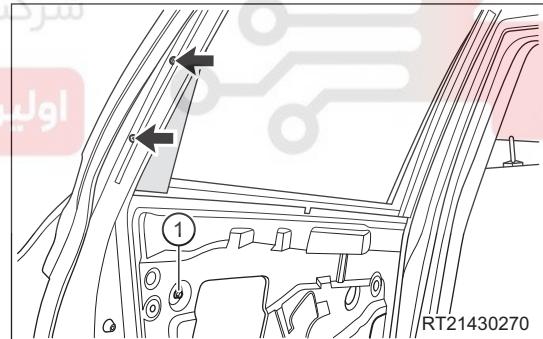
- Make sure to wear safety equipment to prevent accidents when removing rear door glass rear guide rail assembly.
- Appropriate force should be applied when removing rear door glass rear guide rail assembly. Be careful not to operate roughly.

1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the rear left door protector assembly (See page 61-36).
4. Remove the rear left door assist grip mounting bracket assembly (See page 61-41).
5. Remove the rear left door protective film assembly (See page 61-41).
6. Remove the rear left door glass rear guide rail assembly.
 - a. Remove the rear left door frame weatherstrip.

HINT:

It is not necessary to remove the rear left door frame weatherstrip completely. There is a fixing screw in the rear door frame weatherstrip.

- b. Remove 2 fixing screws (arrow) from rear door glass rear guide rail assembly.
(Tightening torque: 5 ± 0.5 N·m)
- c. Remove the fixing bolt (1) from rear door glass rear guide rail assembly, and remove the rear left door glass rear guide rail assembly.
(Tightening torque: 9 ± 1 N·m)



Installation

Installation is in the reverse order of removal.

CAUTION

- After glass regulating system is installed, make sure that the window glass can go up and down smoothly and freely without any vibration, chattering or shock loading, etc.

Rear Door Power Glass Regulator Assembly

Removal

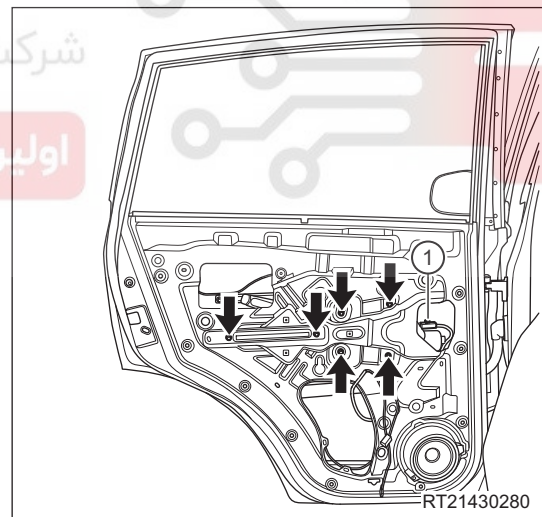
HINT:

- Use the same procedures for the right side and left side.
- Procedures listed below are for the left side.

CAUTION

- Make sure to wear safety equipment to prevent accidents when removing rear door power glass regulator assembly.
- Appropriate force should be applied when removing rear door power glass regulator assembly. Be careful not to operate roughly.

1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the rear door outer weather bar (See page 57-93).
4. Remove the rear left door protector assembly (See page 61-36).
5. Remove the rear left door assist grip mounting bracket assembly (See page 61-41).
6. Remove the rear left door protective film assembly (See page 61-41).
7. Remove the rear door glass rear guide rail assembly (See page 57-96).
8. Remove the rear left door glass assembly (See page 57-94).
9. Remove the rear left door power glass regulator assembly.
 - a. Disconnect the connector (1) from rear door power glass regulator assembly.
 - b. Remove 6 fixing bolts (arrow) from rear door power glass regulator assembly, and remove the rear left door power glass regulator assembly. (Tightening torque: 9 ± 1 N·m)

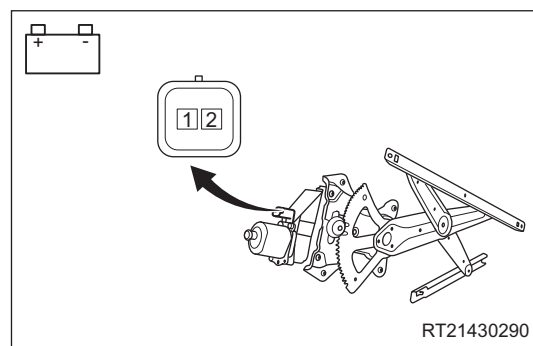


Inspection

1. Check rear door power glass regulator motor.
 - a. Apply battery voltage to the terminals of power glass regulator motor connector, and check the operation of power glass regulator motor according to the table below.

Measurement Condition		Specified Condition
Battery positive (+)	Battery negative (-)	
1	2	UP smoothly
2	1	Down smoothly

If result is not as specified, replace rear door power glass regulator assembly.



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Installation

Installation is in the reverse order of removal.

CAUTION

- After rear door power glass regulator is installed, make sure that the window glass can go up and down smoothly and freely without any vibration, chattering or shock loading, etc.

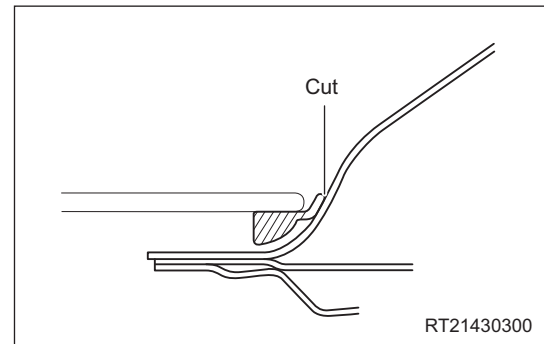
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Triangular Window Glass Assembly

Removal

1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the C-pillar upper protector assembly (See page 63-26).
4. Remove the triangular window glass trim board.
5. Remove the triangular window glass assembly.
 - a. Cut the adhesive with a knife.

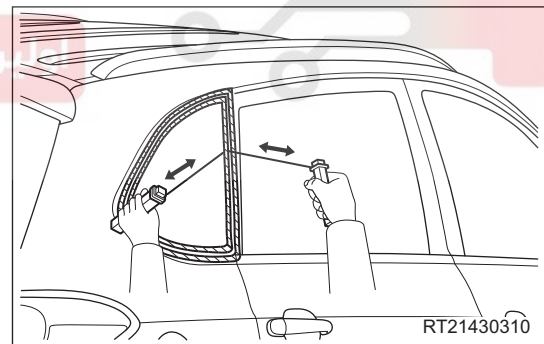


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CAUTION

- Try to prevent body paint surface from being scratched when cutting the adhesive.

- b. Apply protective tape to the outer surface of body to prevent scratches.
- c. Pass a piano wire through the seam between body and triangular window glass assembly.
- d. Tie wooden blocks or similar objects to both piano wire ends, cut off adhesive by pulling the piano wire around triangular window glass assembly, and remove the triangular window glass assembly.

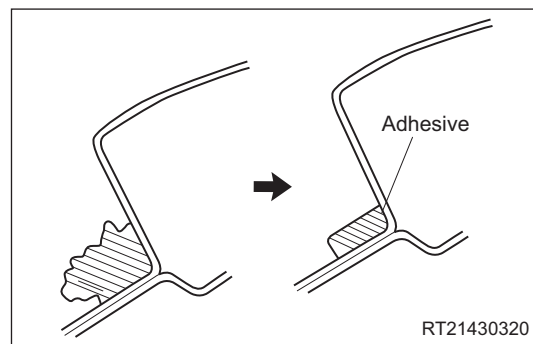


CAUTION

- When removing triangular window glass assembly, two technicians are required.
- DO NOT drop the triangular window glass assembly when removing it.
- Leave as much adhesive on body as possible when cutting the adhesive.
- When separating the triangular window glass assembly from vehicle, be careful not to damage the body paint or interior/exterior ornaments.

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6. Clean the vehicle body.
- a. Using a knife, cut away excess adhesive on the contact surface of vehicle body as shown in the illustration.



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CAUTION

- Try to prevent body paint surface from being scratched when cutting the adhesive.
- Leave as much adhesive on body as possible when cutting the adhesive.

- b. Clean the contact surface of vehicle body with cleaner.

CAUTION

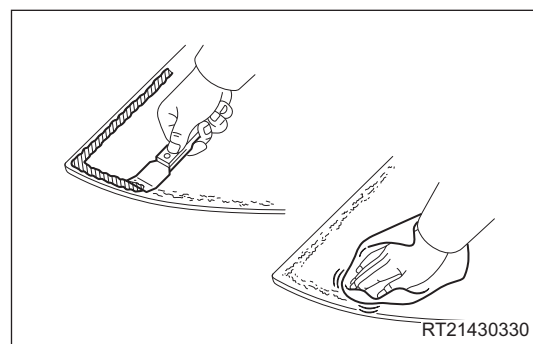
- Even if all adhesive has been removed, cleaning of vehicle would be necessary.

7. Clean the removed glass.

CAUTION

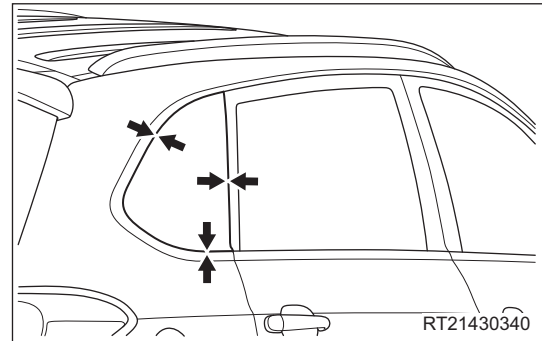
- DO NOT touch the glass after cleaning it.
- Even if new glass is used, it is necessary to clean it with glass cleaner.

- a. Remove the adhesive sticking to glass with a scraper.
- b. Clean the outer edges of glass with glass cleaner.



Installation

1. Position the triangular window glass assembly.
 - a. Align the clip with installation hole on roof panel.
 - b. Check if whole contact surface of glass rim is perfectly even.
 - c. Place matchmarks on the triangular window glass assembly and body at the positions shown in the illustration.

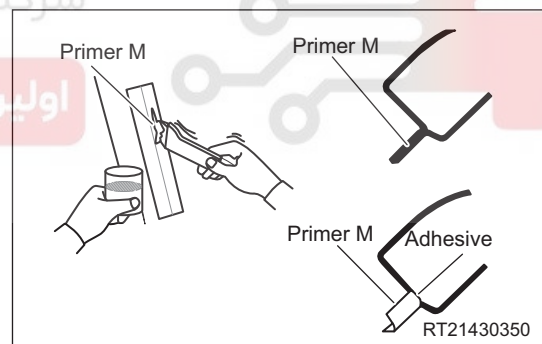


- d. Remove the triangular window glass assembly.
2. Apply a coat of primer M to the contact surface of body.

CAUTION

- Allow primer to dry for at least 3 minutes.
- DO NOT apply primer to the adhesive.
- DO NOT apply too much primer.
- DO NOT keep any opened primer M for later use.

- a. Using a brush, apply a coat of primer M to the contact surface of body.
- b. Width of primer is 13 - 15 mm.



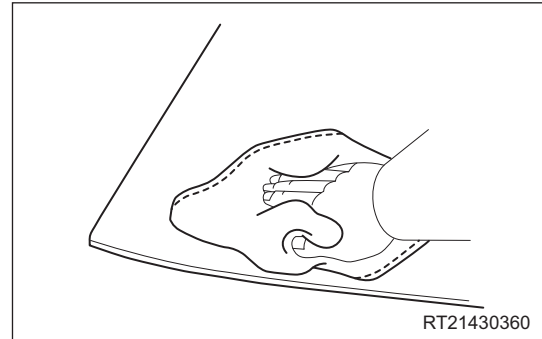
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3. Clean the contact surface of triangular window glass.

CAUTION

- DO NOT touch the triangular window glass surface after cleaning it.

a. Remove any residue on the contact surface of triangular window glass assembly with a piece of clean cloth soaked with glass cleaner.



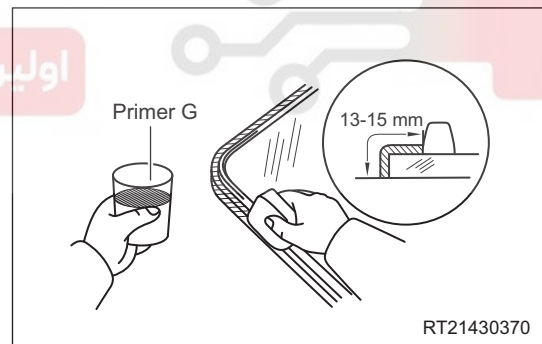
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4. Apply a coat of primer G to the contact surface of triangular window glass assembly.

CAUTION

- Allow primer to dry for at least 3 minutes.
- DO NOT apply primer to the adhesive.
- DO NOT apply too much primer.
- DO NOT keep any of the opened primer G for later use.

a. Using a brush or sponge, apply a coat of primer G to the glass rim and contact surface.
 b. Use a piece of clean cloth to wipe off the excess primer before drying.
 c. Width of primer is 13 - 15 mm.

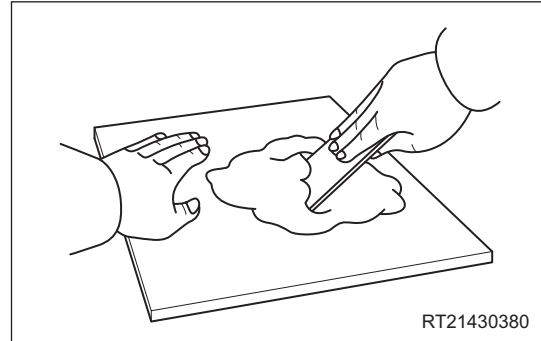


5. Mix the adhesive.

CAUTION

- Adhesive should be mixed thoroughly within 5 minutes.

- Using solvent, thoroughly clean the mixing board and scraper.
- Using a scraper, thoroughly mix 500 g main adhesive and 75 g hardener on the mixing board.



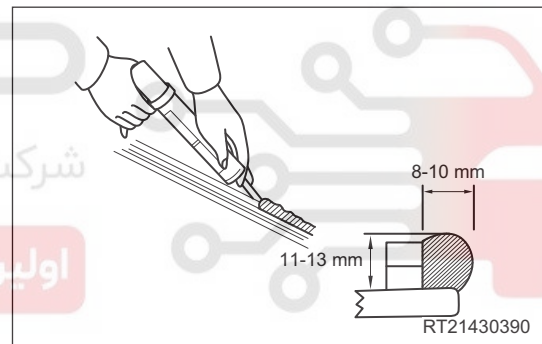
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6. Apply the adhesive.

- Cut off the tip of cartridge nozzle and add adhesive.
- Install the cartridge to sealer gun.
- Apply adhesive evenly to the triangular window glass assembly as shown in the illustration.

Adhesive width: 8 - 10 mm

Adhesive height: 11 - 13 mm

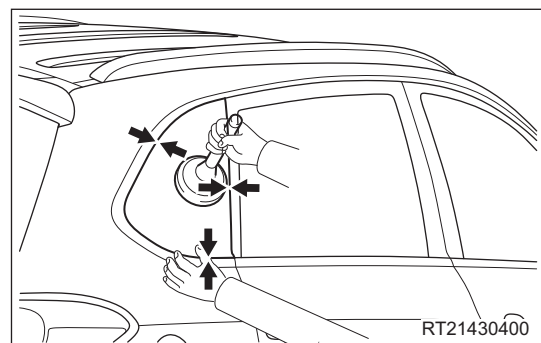


7. Install the triangular window glass assembly.

CAUTION

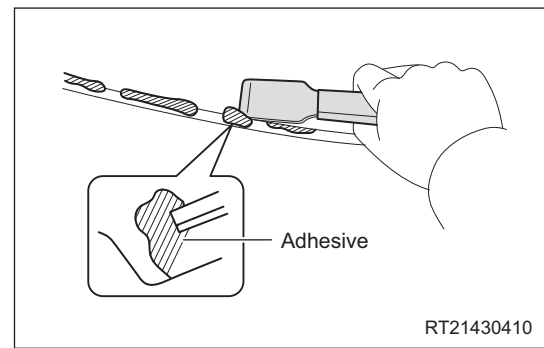
- Check that lower/upper clearance and right/left clearance of triangular window glass assembly are uniform.

- Align the matchmarks on glass and vehicle body, and gently press in glass along the rim.



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- b. Uniformly apply adhesive to the glass rim with a scraper.
- c. Remove any excessive or spilled adhesive with a scraper.



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- d. Apply tape around the triangular window glass, and remove them when the adhesive becomes hard.
8. Install the triangular window glass trim board.
9. Check and repair the sealing of glass.
 - a. Check the glass for leakage after adhesive has completely hardened.
 - b. If it leaks, seal the leaks by adding adhesive.
10. Install the C-pillar upper protector assembly.
11. Connect the negative battery cable.

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Front Windshield Assembly

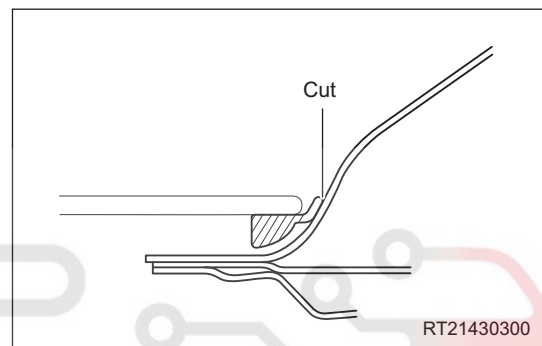
Removal

1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the roof assembly (See page 63-32).

HINT:

It is not necessary to completely remove the roof assembly. Lower the front part of roof assembly so that the front windshield assembly can be removed.

4. Remove the inside rear view mirror assembly (See page 58-11).
5. Remove the front wiper arm assembly (See page 49-23).
6. Remove the front windshield lower garnish assembly (See page 62-39).
7. Remove the front windshield weatherstrip.
8. Remove the front windshield assembly
 - a. Cut the adhesive with a knife.



CAUTION

- Try to prevent body paint surface from being scratched when cutting the adhesive.

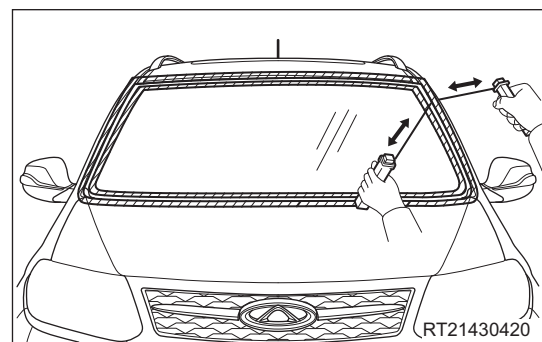
- b. Apply protective tape to the outer surface of body to prevent scratches.

CAUTION

- To prevent the instrument panel assembly from being scratched, place a plastic sheet between piano wire and instrument panel assembly.

- c. Pass a piano wire through the seam between body and front windshield assembly.

- d. Tie wooden blocks or similar objects to both piano wire ends, cut off adhesive by pulling the piano wire around front windshield assembly, and remove the front windshield assembly.

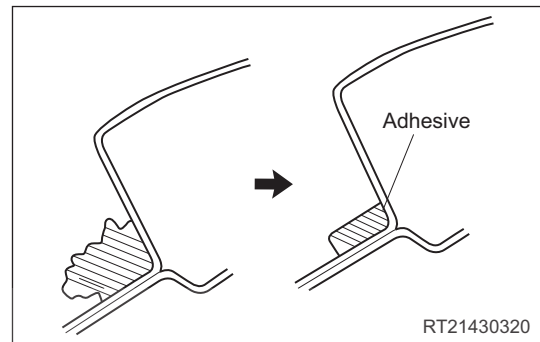


CAUTION

- When removing front windshield assembly, 2 technicians are required.
- DO NOT drop the front windshield assembly when removing it.
- Leave as much adhesive on body as possible when cutting the adhesive.
- When separating the front windshield assembly from vehicle, be careful not to damage the body paint or interior/exterior ornaments.

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9. Clean the vehicle body.
 - a. Using a knife, cut away excess adhesive on the contact surface of vehicle body as shown in the illustration.

**CAUTION**

- Try to prevent body paint surface from being scratched when cutting the adhesive.
- Leave as much adhesive on body as possible when cutting the adhesive.

- b. Clean the contact surface of vehicle body with cleaner.

CAUTION

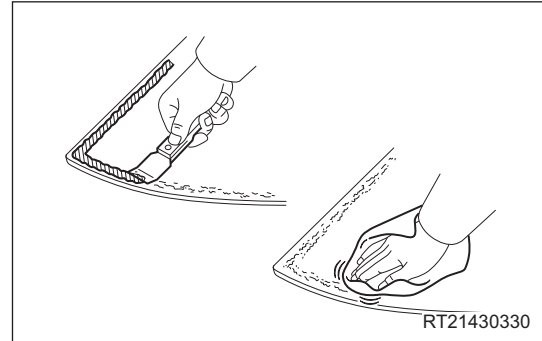
- Even if all adhesive has been removed, cleaning of vehicle would be necessary.

10. Clean the removed glass.

CAUTION

- DO NOT touch the glass after cleaning it.
- Even if new glass is used, it is necessary to clean it with glass cleaner.

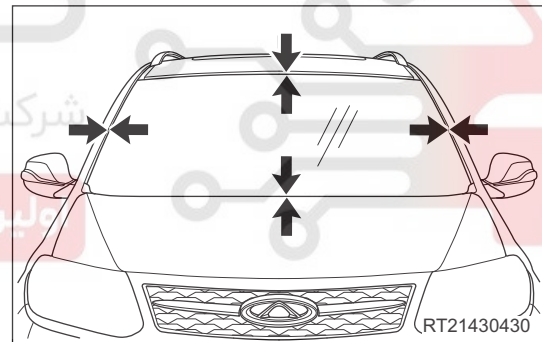
- Remove the adhesive sticking to glass with a scraper.
- Clean the outer edges of glass with glass cleaner.



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Installation

- Position the front windshield assembly.
 - Align the clip with installation hole on roof panel.
 - Check if whole contact surface of glass rim is perfectly even.
 - Place matchmarks on the front windshield and body at the positions shown in the illustration.



- Remove the front windshield assembly.

57 - WINDSHIELD/WINDOW GLASS

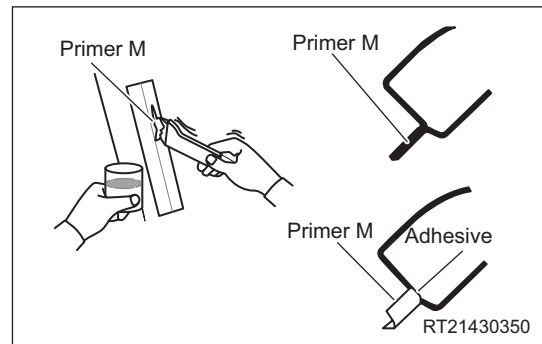
2. Apply a coat of primer M to the contact surface of body.

CAUTION

- Allow primer to dry for at least 3 minutes.
- DO NOT apply primer to the adhesive.
- DO NOT apply too much primer.
- DO NOT keep any opened primer M for later use.

57

- Using a brush, apply a coat of primer M to the contact surface of body.
- Width of primer is 13 - 15 mm.

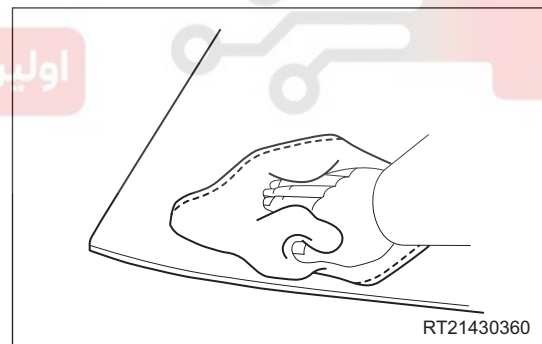


3. Clean the contact surface of the front windshield assembly.

CAUTION

- DO NOT touch the surface of front windshield after cleaning it.

- Remove any residue on the contact surface of front windshield assembly with a piece of clean cloth soaked with glass cleaner.

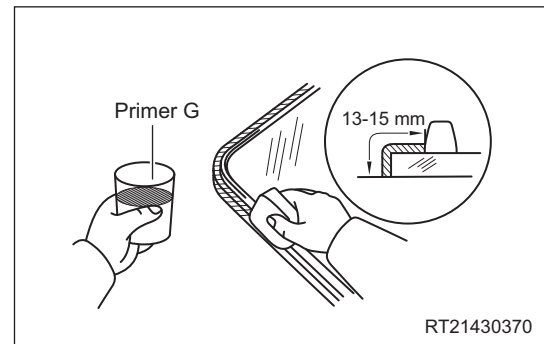


4. Apply a coat of primer G to the contact surface of front windshield assembly.

CAUTION

- Allow primer to dry for at least 3 minutes.
- DO NOT apply primer to the adhesive.
- DO NOT apply too much primer.
- DO NOT keep any of the opened primer G for later use.

- Using a brush or sponge, apply a coat of primer G to the glass rim and contact surface.
- Use a piece of clean cloth to wipe off the excess primer before drying.
- Width of primer is 13 - 15 mm.



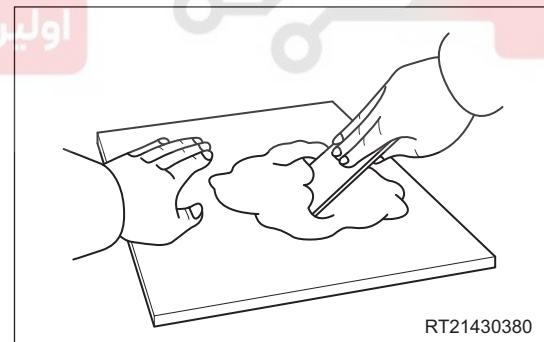
57

5. Mix the adhesive.

CAUTION

- Adhesive should be mixed thoroughly within 5 minutes.

- Using solvent, thoroughly clean the mixing board and scraper.
- Using a scraper, thoroughly mix the 500 g main adhesive and 75 g hardener on the mixing board.

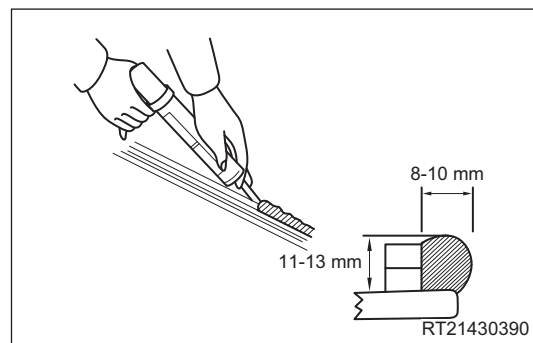


57 - WINDSHIELD/WINDOW GLASS

6. Apply the adhesive.
 - a. Cut off the tip of the cartridge nozzle and add the adhesive.
 - b. Install the cartridge to sealer gun.
 - c. Apply adhesive evenly to the front windshield assembly as shown in the illustration.

Adhesive width: 8 - 10 mm

Adhesive height: 11 - 13 mm

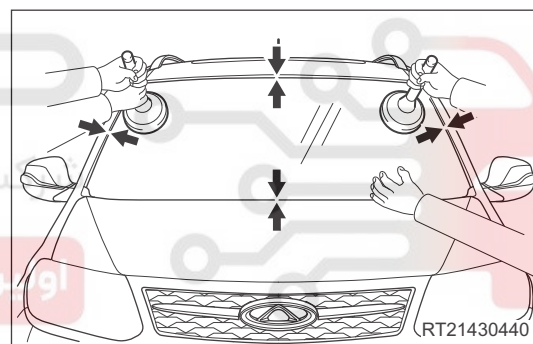


7. Install the front windshield assembly.

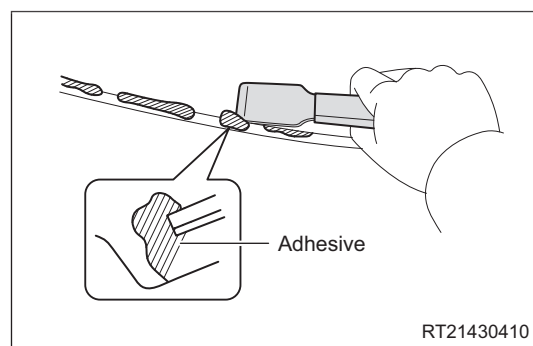
CAUTION

- Check that lower/upper clearance and right/left clearance of front windshield are uniform to ensure it is fit well with the surrounding moulding.

- a. Align the matchmarks on windshield and vehicle body, and gently press in the windshield along the rim.



- b. Uniformly apply adhesive to the windshield rim with a scraper.
- c. Remove any excessive or spilled adhesive with a scraper.



- d. Apply tape around the windshield, and remove them when the adhesive becomes hard.

8. Install the front windshield weatherstrip.
9. Check and repair the sealing of the glass.
 - a. Check the glass for leakage after adhesive has completely hardened.
 - b. If it leaks, seal the leaks by adding adhesive.
10. Install the front windshield lower garnish assembly.
11. Install the wiper arm assembly.
12. Install the inside rear view mirror assembly.
13. Install the roof assembly.
14. Connect the negative battery cable.

دیجیتال خودرو

شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

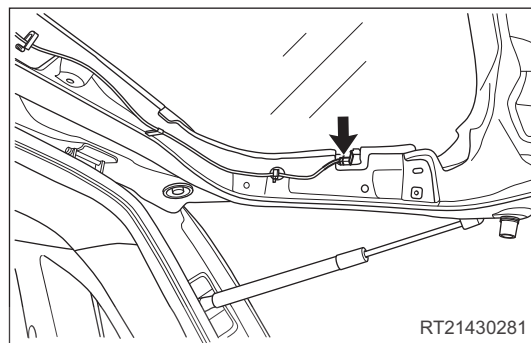
اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



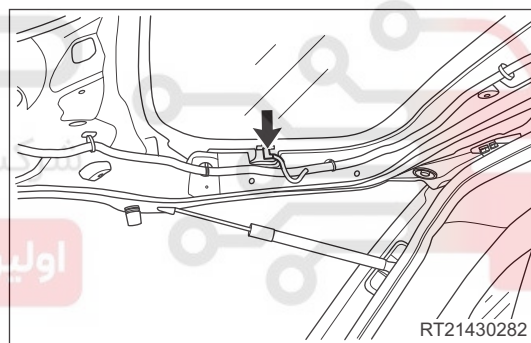
Rear Windshield Assembly

Removal

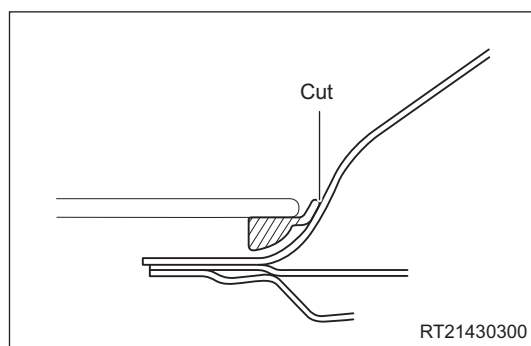
1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the back door protector assembly (See page 61-47).
4. Remove the rear wiper arm assembly (See page 49-30).
5. Remove the rear wiper motor assembly (See page 49-32).
6. Remove the rear spoiler assembly (See page 62-43).
7. Remove the defroster wire harness assembly.
 - a. Disconnect the left defroster wire harness connector (arrow).



- b. Disconnect the right defroster wire harness connector (arrow).



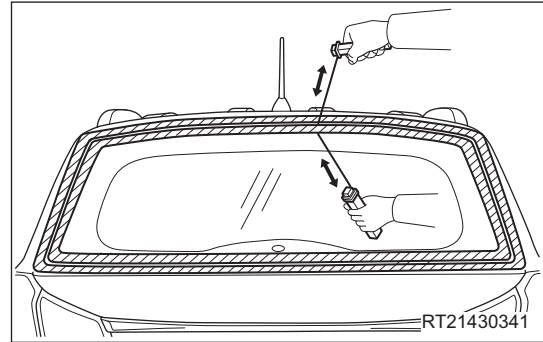
8. Remove the rear windshield weatherstrip.
9. Remove the rear windshield assembly.
 - a. Cut the adhesive with a knife.



CAUTION

- Try to prevent body paint surface from being scratched when cutting the adhesive.

- b. Apply protective tape to the outer surface of body to prevent scratches.
- c. Pass a piano wire through the seam between body and rear windshield assembly.
- d. Tie wooden blocks or similar objects to both piano wire ends, cut off adhesive by pulling the piano wire around rear windshield assembly, and remove the rear windshield assembly.



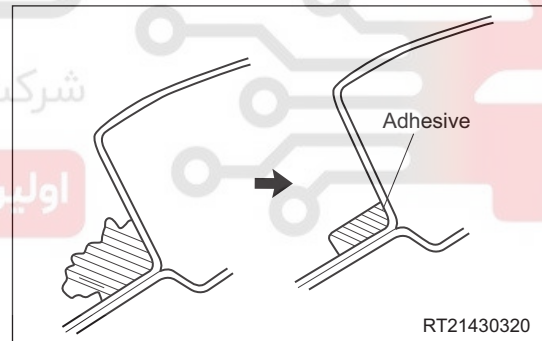
57

CAUTION

- When removing the rear windshield assembly, 2 technicians are required.
- DO NOT drop the rear windshield assembly when removing it.
- Leave as much adhesive on body as possible when cutting the adhesive.
- When separating the rear windshield assembly from the vehicle, be careful not to damage the body paint or interior/exterior ornaments.

10. Clean the vehicle body.

- a. Using a knife, cut away excess adhesive on the contact surface of vehicle body as shown in the illustration.



CAUTION

- Try to prevent body paint surface from being scratched when cutting the adhesive.
- Leave as much adhesive on body as possible when cutting the adhesive.

- b. Clean the contact surface of vehicle body with cleaner.

CAUTION

- Even if all adhesive has been removed, cleaning of vehicle would be necessary.

57 - WINDSHIELD/WINDOW GLASS

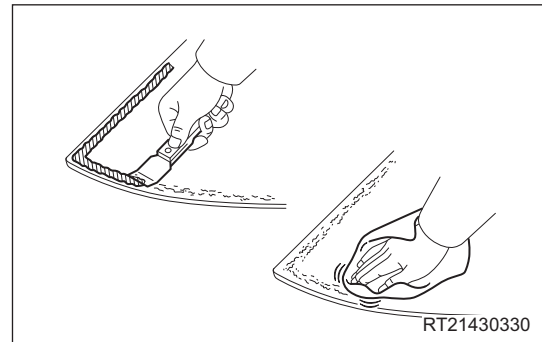
11. Clean the removed glass.

 CAUTION

- DO NOT touch the glass after cleaning it.
- Even if new glass is used, it is necessary to clean it with glass cleaner.

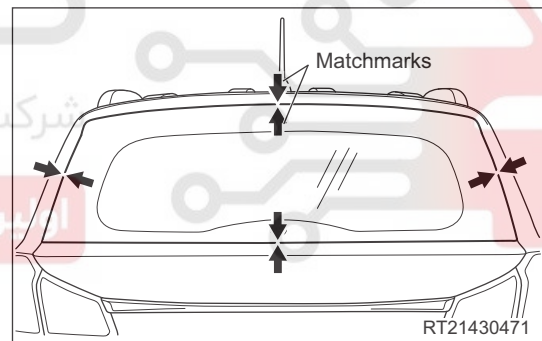
57

- Remove the adhesive sticking to glass with a scraper.
- Clean the outer edges of glass with glass cleaner.



Installation

- Position the rear windshield assembly.
 - Align the clip with installation hole on roof panel.
 - Check if whole contact surface of glass rim is perfectly even.
 - Place matchmarks on the rear windshield and body at the positions shown in the illustration.



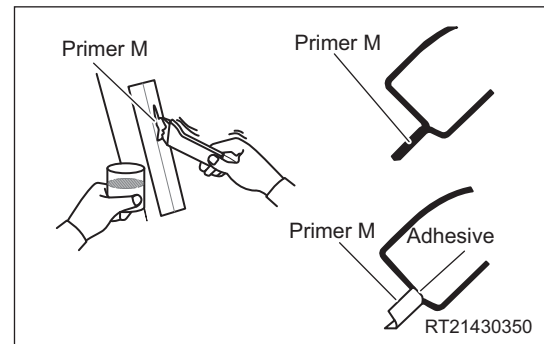
- Remove the rear windshield assembly.

2. Apply a coat of primer M to the contact surface of body.

CAUTION

- Allow primer to dry for at least 3 minutes.
- DO NOT apply primer to the adhesive.
- DO NOT apply too much primer.
- DO NOT keep any opened primer M for later use.

- Using a brush, apply a coat of primer M to the contact surface of body.
- Width of primer is 13 - 15 mm.



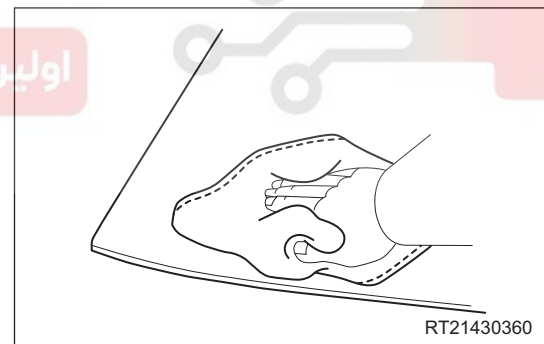
57

3. Clean the contact surface of rear windshield.

CAUTION

- DO NOT touch the surface of rear windshield after cleaning it.

- Remove any residue on the contact surface of rear windshield with a piece of clean cloth soaked with glass cleaner.



57 - WINDSHIELD/WINDOW GLASS

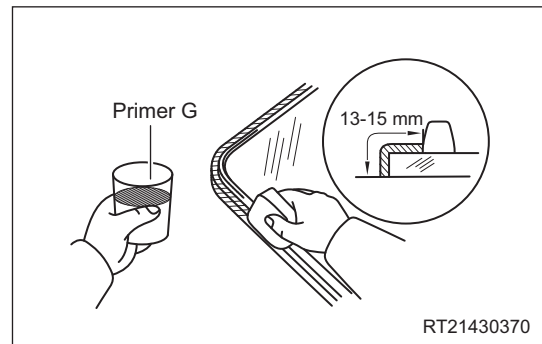
4. Apply a coat of primer G to the contact surface of rear windshield assembly.

CAUTION

- Allow primer to dry for at least 3 minutes.
- DO NOT apply primer to the adhesive.
- DO NOT apply too much primer.
- DO NOT keep any of the opened primer G for later use.

57

- Using a brush or sponge, apply a coat of primer G to the glass rim and contact surface.
- Use a piece of clean cloth to wipe off the excess primer before drying.
- Width of primer is 13 - 15 mm.

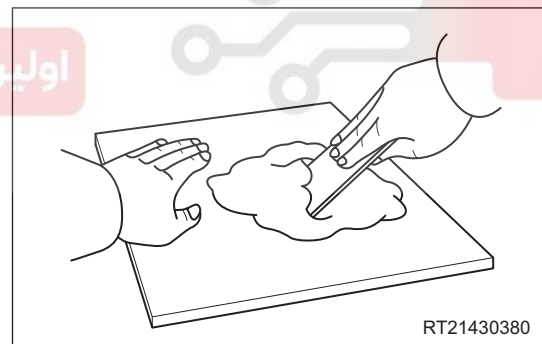


5. Mix the adhesive.

CAUTION

- Adhesive should be mixed thoroughly within 5 minutes.

- Using solvent, thoroughly clean the mixing board and scraper.
- Using a scraper, thoroughly mix 500 g main adhesive and 75 g hardener on the mixing board.

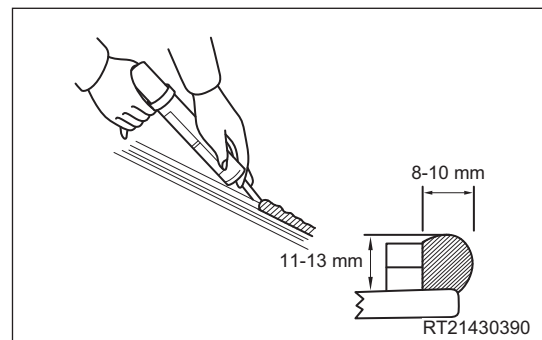


6. Apply the adhesive.

- Cut off the tip of the cartridge nozzle and add adhesive.
- Install the cartridge to sealer gun.
- Apply adhesive evenly to the rear windshield assembly as shown in the illustration.

Adhesive width: 8 - 10 mm

Adhesive height: 11 - 13 mm

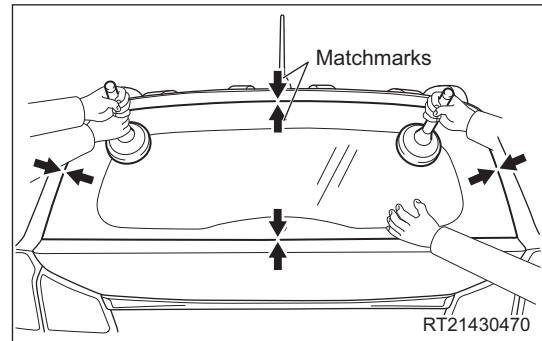


7. Install the rear windshield assembly.

CAUTION

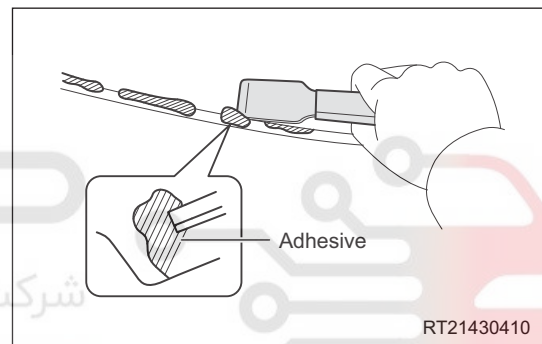
- Check that lower/upper clearance and right/left clearance of rear windshield are uniform to ensure it is fit well with the surrounding moulding.

a. Align the matchmarks on windshield and vehicle body, and gently press in the windshield along the rim.



57

b. Uniformly apply adhesive to the windshield rim with a scraper.
c. Remove any excessive or spilled adhesive with a scraper.



d. Apply tape around the windshield, and remove them when the adhesive becomes hard.

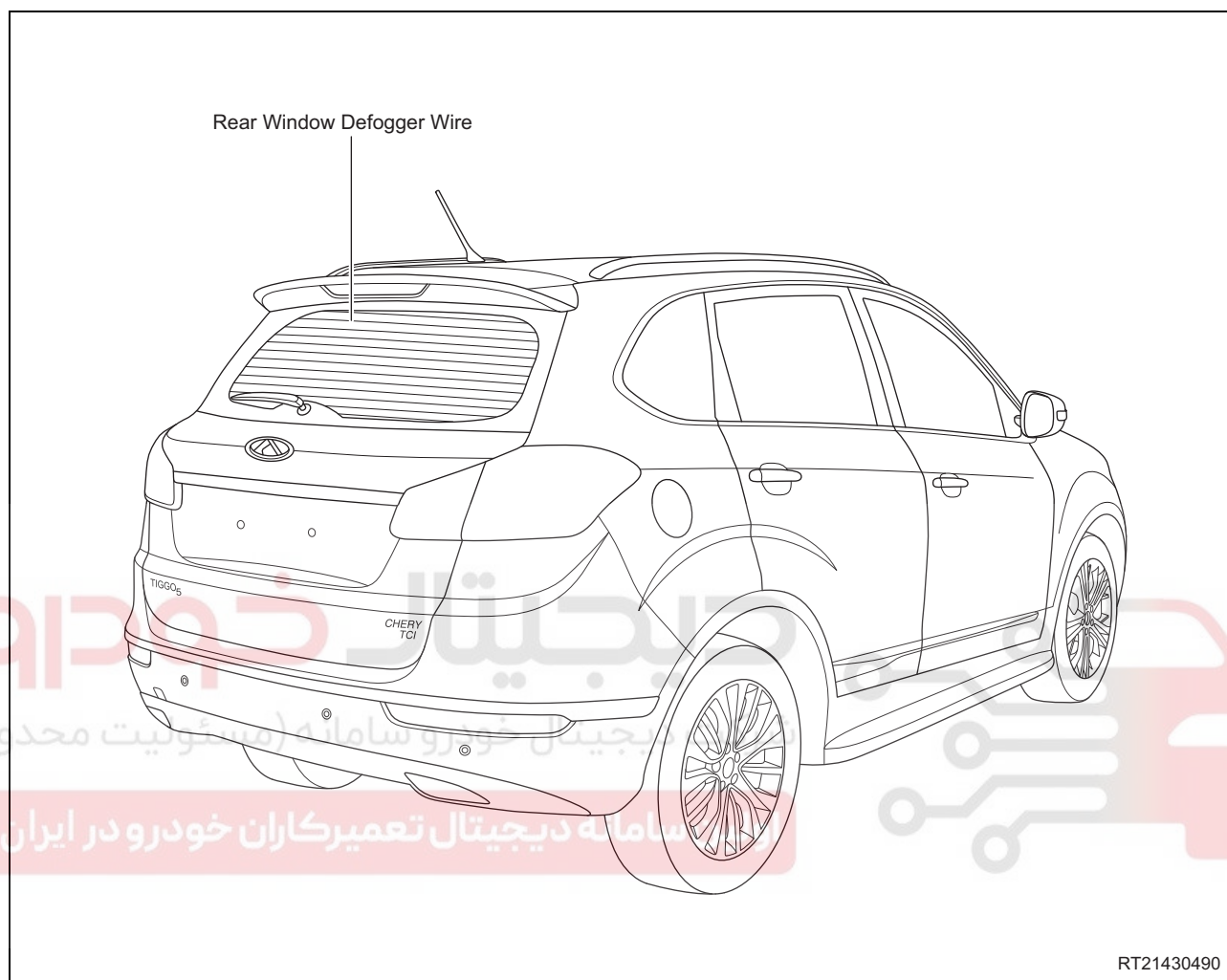
8. Install the rear windshield weatherstrip.
9. Check and repair the sealing of glass.
 - a. Check the glass for leakage after adhesive has completely hardened.
 - b. If it leaks, seal the leaks by adding adhesive.
10. Install the rear spoiler assembly.
11. Install the rear wiper motor assembly.
12. Install the rear wiper arm assembly.
13. Install the back door protector assembly.
14. Connect the negative battery cable.

Rear Window Defroster

General Information

Description

57



RT21430490

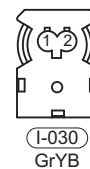
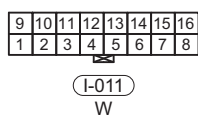
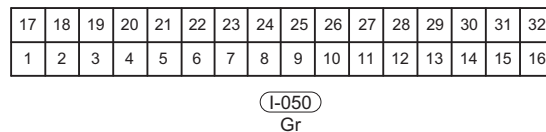
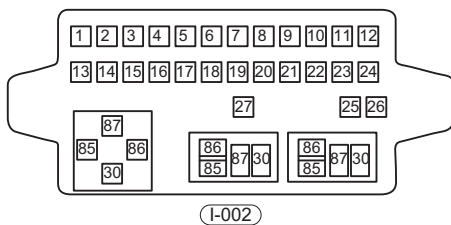
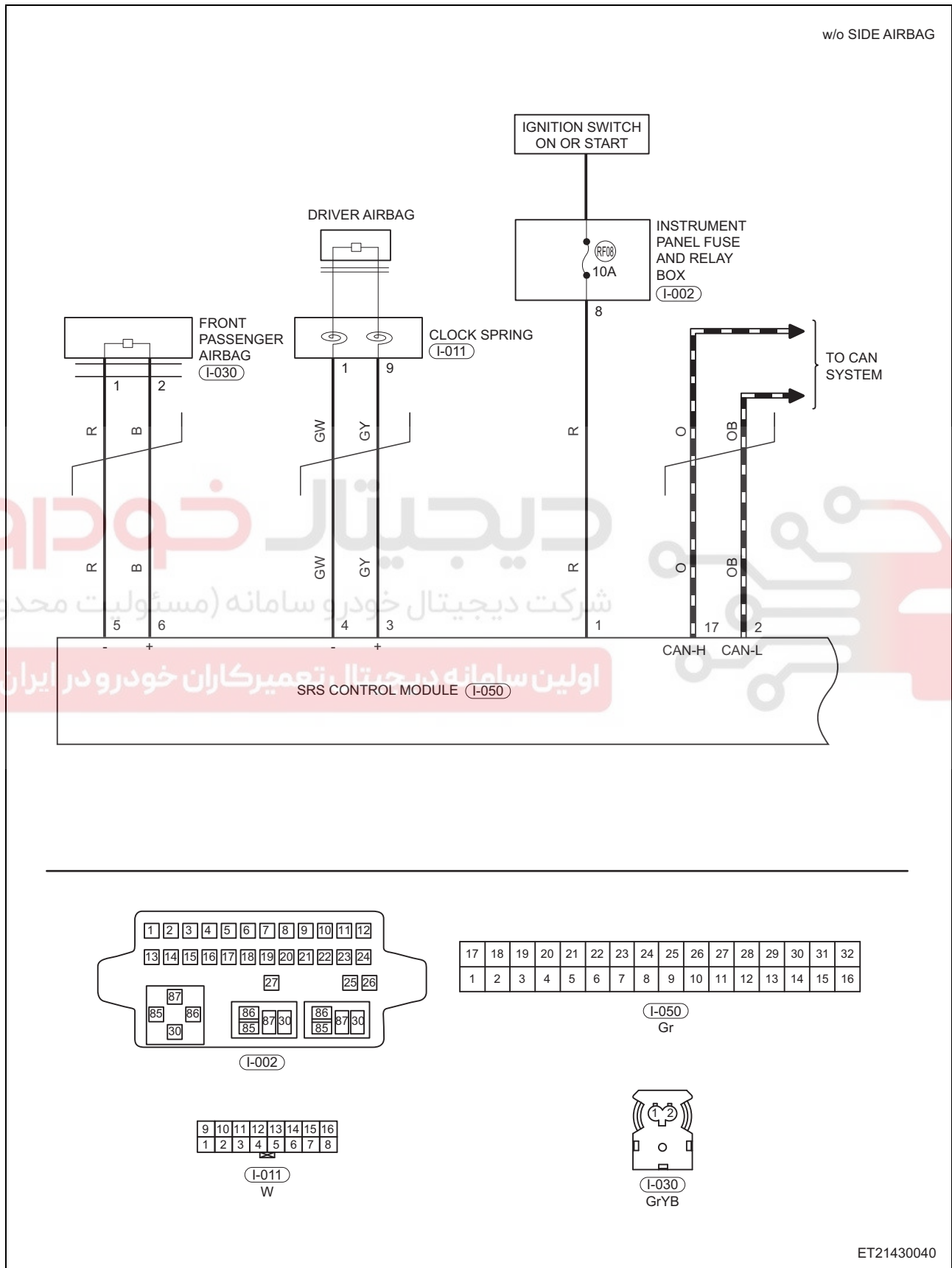
When rear window defroster switch is turned on, rear window defogger wire is heated to remove the fog, frost or water vapors on rear windshield, thus realizing a clear view.

To turn on the rear window defogger, it is necessary to turn ignition switch to ON and press rear window defogger switch. The rear window defogger switch indicator comes on while the rear window defogger operation begins. The rear window defogger stops and the indicator turns off after pressing the rear window defogger switch again.

Circuit Diagram

Rear Window Defroster System

w/o SIDE AIRBAG



ET21430040

Problem Symptoms Table

HINT:

Use the table below to help determine the cause of problem symptoms. Check each suspected area in sequence. Repair or replace the faulty components, or adjust as necessary.

Symptom	Suspected Area	See page
57 Rear window defogger switch is turned on but does not operate (indicator on)	Fuse	68-37
	Rear window defogger switch	-
	Rear window defogger wire	-
	Wire harness or connector	-
Rear window defogger switch is turned on but does not operate (indicator off)	Fuse	68-37
	Rear window defogger switch	-
	Wire harness or connector	-
Rear window defogger have intermittent problem	Ground	-
	Wire harness or connector	-

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Rear Window Defogger Switch

Removal

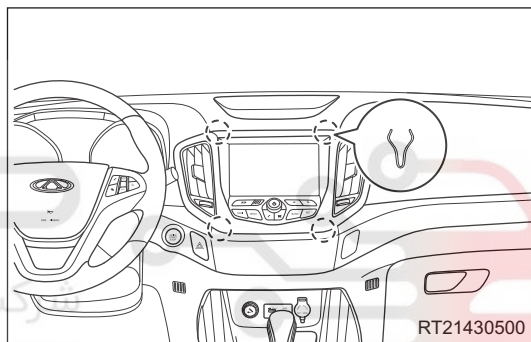
HINT:

Rear window defogger switch is installed on A/C control panel assembly, and cannot be disassembled.

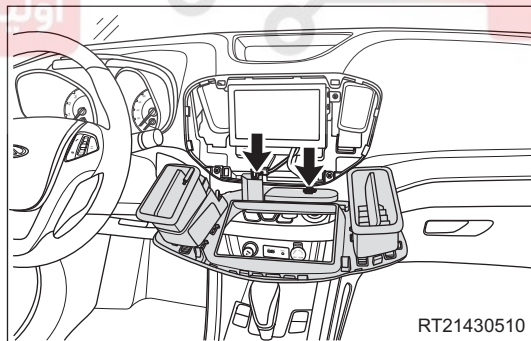
CAUTION

- Make sure to wear safety equipment to prevent accidents when removing rear window defogger switch.
- Appropriate force should be applied when removing rear window defogger switch. Be careful not to operate roughly.
- Try to prevent interior from being scratched when removing rear window defogger switch.

1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the DVD panel assembly.
 - a. Using a screwdriver wrapped with protective tape, pry up the clips on DVD panel assembly.

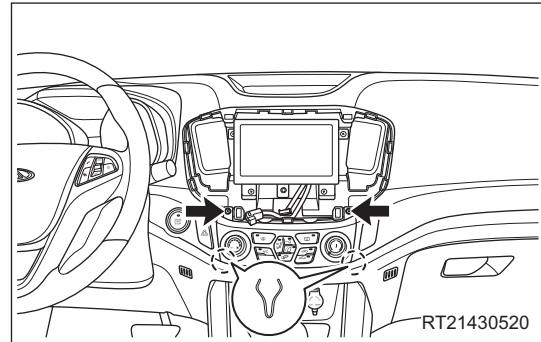


- b. Disconnect the connectors (arrow) from DVD panel assembly, and remove the DVD panel assembly.

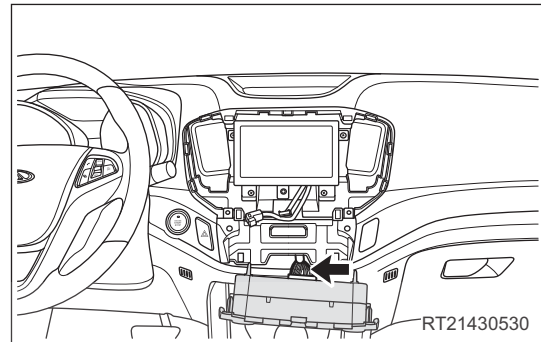


57 - WINDSHIELD/WINDOW GLASS

4. Remove the A/C control panel
 - a. Remove 2 fixing screws (arrow) from A/C control panel.
(Tightening torque: 2 ± 0.5 N·m)
 - b. Using a screwdriver wrapped with protective tape, pry up the clips on A/C control panel.



- c. Disconnect the connector (arrow) from A/C control panel, and remove the A/C control panel.



Installation

Installation is in the reverse order of removal.

CAUTION

- Install connectors in place when installing rear window defogger switch.
- Always operate carefully to prevent components from being damaged when installing rear window defogger switch.
- Check rear window defogger switch for proper operation after installation.

REAR VIEW MIRROR

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Tool	58-4	Outside Rear View Mirror Lens Assembly	58-10
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DIAGNOSIS & TESTING	58-6	Installation	58-10
Problem Symptoms Table	58-6	Inside Rear View Mirror Assembly	58-11
Repair & Inspection Items	58-6	Removal	58-11
ON-VEHICLE SERVICE	58-7	Installation	58-13
Outside Rear View Mirror Assembly	58-7	Rear View Mirror Adjustment Switch Assembly	58-14
Removal	58-7	Removal	58-14
Inspection	58-8	Inspection	58-15
Installation	58-8	Installation	58-16

دیجیتال خودرو

شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



دیجیتال خودرو

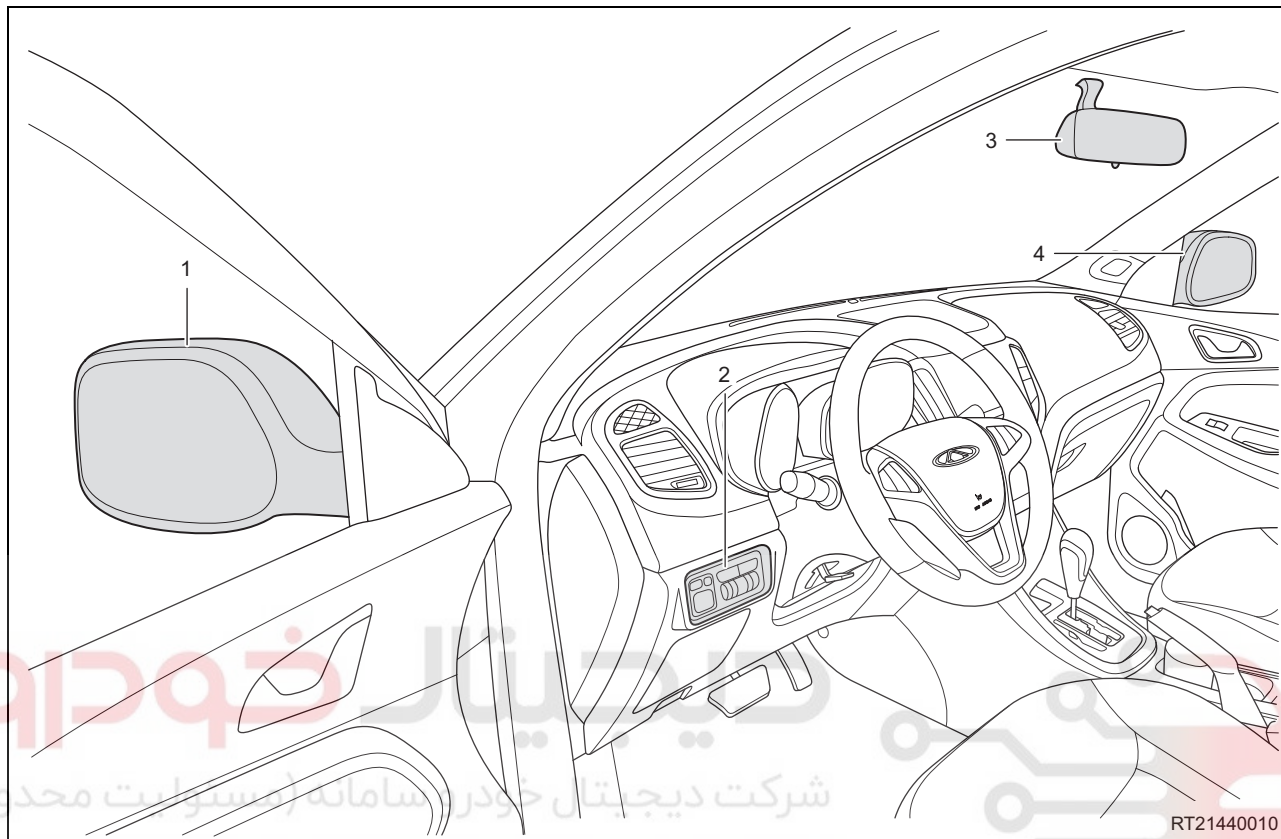
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GENERAL INFORMATION

Description



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1 - Left Outside Rear View Mirror Assembly	2 - Outside Rear View Mirror Adjustment Switch Assembly
3 - Inside Rear View Mirror Assembly	4 - Right Outside Rear View Mirror Assembly

This vehicle is equipped with power outside rear view mirror and inside rear view mirror.

Power outside rear view mirror: driver can control the rotation of motor by operating outside rear view mirror adjustment switch in vehicle, thus adjusting mirror surface to achieve a required visual angle.

Power outside rear view mirror adjustment switch is located on the instrument panel lower left protector assembly. With ignition switch ON, press power outside rear view mirror adjustment switch "L" or "R" to select the left or right outside rear view mirror that you want to adjust, and then press the rear view mirror up or down and left or right button to achieve a required visual angle.

It is necessary to adjust inside rear view mirror manually to desired direction. When driving at night, rear view mirror angle can be adjusted by pulling back the glare-resistant rod to reduce glare.

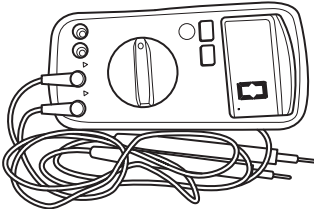
Specifications

Torque Specifications

Description	Torque (N·m)
Outside Rear View Mirror Assembly Fixing Bolt	6 ± 1
Inside Rear View Mirror Assembly Fixing Screw	1.5 ± 0.5

Tool

58 General Tool

Digital Multimeter	 <p>RCH0000002</p>
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دیجیتال خودرو

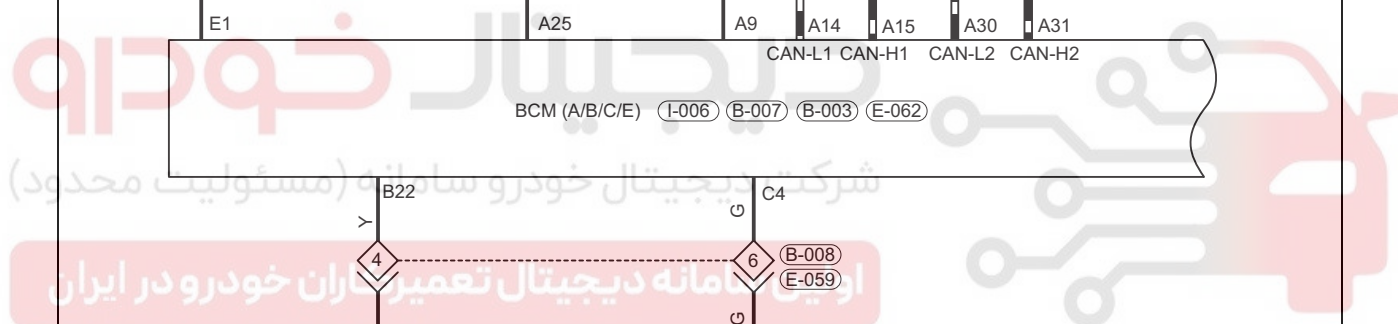
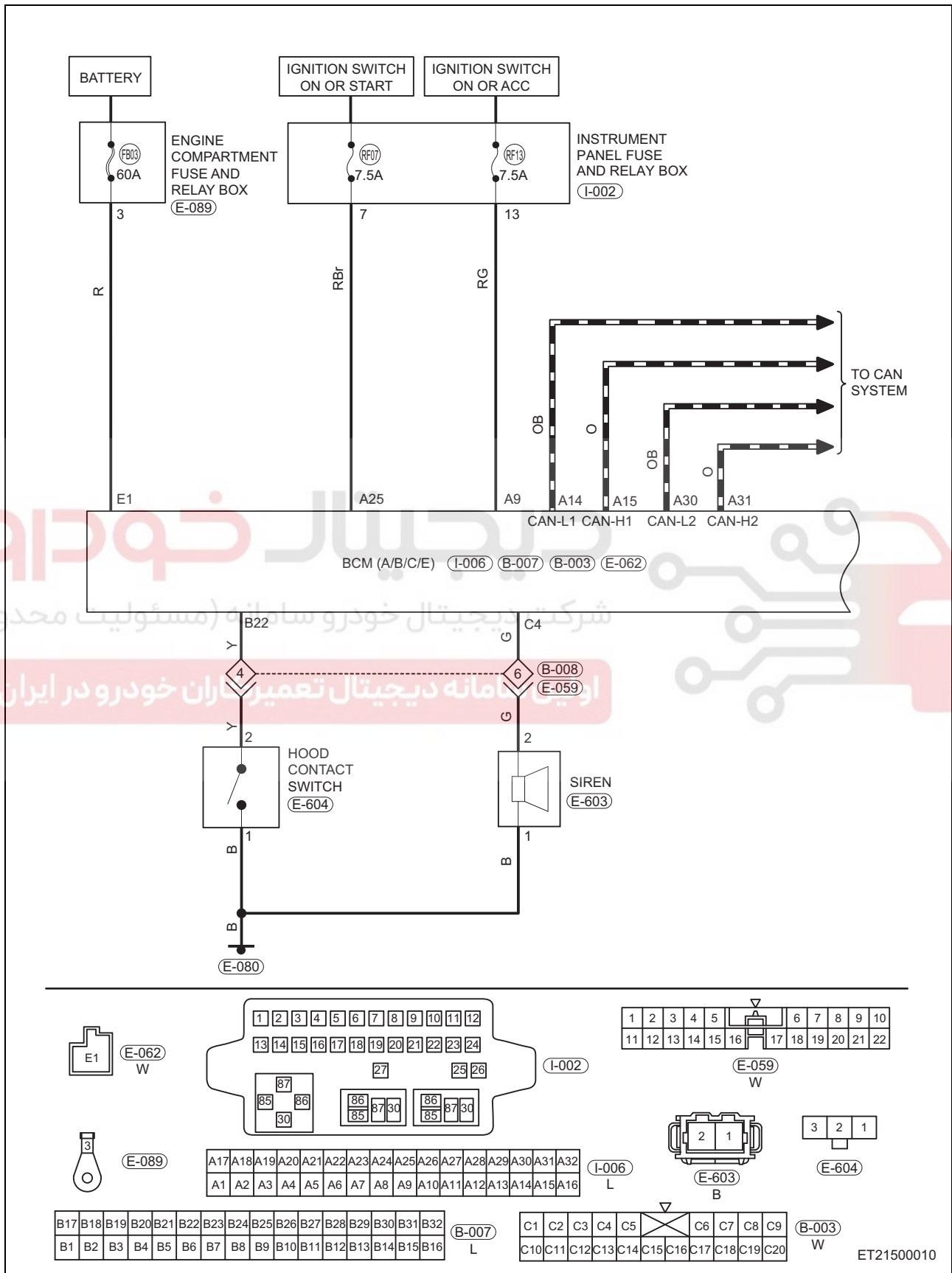
شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

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Circuit Diagram

Power Rear View Mirror Control System



DIAGNOSIS & TESTING

Problem Symptoms Table

HINT:

Use the table below to help determine the cause of the problem symptoms. Check each suspected area in sequence. Repair or replace the faulty components, or adjust them as necessary.

Symptom	Suspected Area	See page
Outside rear view mirror cannot operate	Fuse	68-36
	Rear view mirror adjustment switch assembly	58-14
	Outside rear view mirror assembly	58-7
	Wire harness or connector	-
Outside rear view mirror intermittent malfunction	Ground	68-29
	Wire harness or connector	-

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Repair & Inspection Items

Visual inspection can reduce unnecessary test and diagnostic time, so pay attention to inspection of the following items:

1. Check if fuse is damaged.
2. Check if wire harnesses and connectors related to rear view mirror are worn, pierced, pinched or partially broken.
3. Check wire harnesses and connectors related to rear view mirror for break, bend, protrusion or corroded terminals.
4. Check if terminal contact pins of connectors related to rear view mirror are in good condition.

ON-VEHICLE SERVICE

Outside Rear View Mirror Assembly

Removal

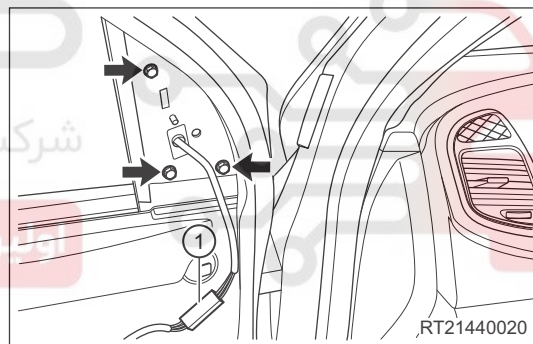
HINT:

- Use the same procedures for the right side and left side.
- Procedures listed below are for the left side.

CAUTION

- Make sure to wear safety equipment to prevent accidents when removing rear view mirror assembly.
- Operate carefully to prevent damage to the components when removing outside rear view mirror assembly.
- Prevent the interior and body paint from being scratched when removing outside rear view mirror assembly.

1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the front left door protector assembly (See page 61-24).
4. Remove the left outside rear view mirror assembly.
 - a. Disconnect the outside rear view mirror connector (1).
 - b. Remove 3 fixing bolts (arrow) from outside rear view mirror assembly.
(Tightening torque: 6 ± 1 N·m)

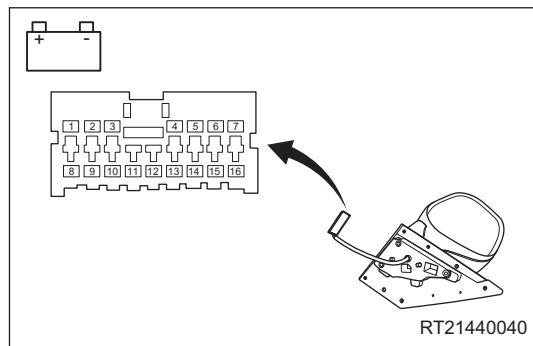


- c. Remove the left outside rear view mirror assembly.

Inspection

1. Inspect the left outside rear view mirror assembly.
 - a. Apply battery voltage to the terminals of outside rear view mirror assembly connector and check the operation of outside rear view mirror according to the table below.

Measurement Condition	Specified Condition
Battery positive (+) → Terminal 3 Battery negative (-) → Terminal 2	UP
Battery positive (+) → Terminal 2 Battery negative (-) → Terminal 3	DOWN
Battery positive (+) → Terminal 1 Battery negative (-) → Terminal 2	LEFT
Battery positive (+) → Terminal 2 Battery negative (-) → Terminal 1	RIGHT



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If result is not as specified, replace the left outside rear view mirror assembly.

Installation

Installation is in the reverse order of removal.

CAUTION

- When installing outside rear view mirror assembly, install connector in place and tighten fixing bolts to the specified torque.
- Make sure outside rear view mirror assembly can move smoothly after installation.

Outside Rear View Mirror Housing Assembly

Removal

HINT:

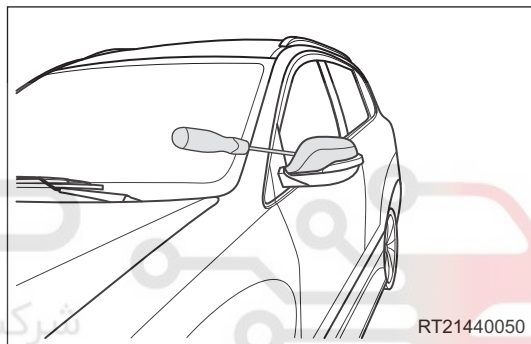
- Use the same procedures for the right side and left side.
- Procedures listed below are for the left side.

CAUTION

- Avoid breaking the claw when removing outside rear view mirror housing assembly.
- Avoid damaging lens due to dropping when removing outside rear view mirror housing assembly.
- Try to prevent body paint surface from being scratched when removing outside rear view mirror housing assembly.

58

1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the left outside rear view mirror housing assembly.
 - a. Using a screwdriver wrapped with protective tape, remove the clip from outside rear view mirror housing assembly, and remove the left outside rear view mirror housing assembly.



Installation

Installation is in the reverse order of removal.

CAUTION

- Make sure to install outside rear view mirror housing assembly in place.

Outside Rear View Mirror Lens Assembly

Removal

HINT:

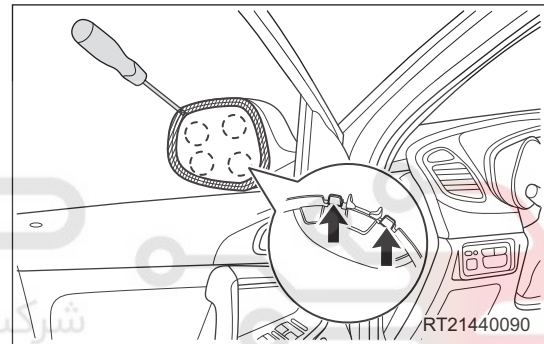
- Use the same procedures for the right side and left side.
- Procedures listed below are for the left side.

CAUTION

- Avoid breaking the claws when removing outside rear view mirror lens assembly.
- Avoid damaging lens due to dropping when removing outside rear view mirror lens assembly.
- Try to prevent body paint surface from being scratched when removing outside rear view mirror lens assembly.

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1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the left outside rear view mirror lens assembly.
 - a. Press the outside rear view mirror surface to tilt it.
 - b. Apply protective tape around the outside rear view mirror frame.
 - c. Using a screwdriver wrapped with protective tape, pry up the claws (arrow) of outside rear view mirror lens assembly.



- d. Remove the left outside rear view mirror lens assembly.

Installation

Installation is in the reverse order of removal.

CAUTION

- Make sure the lens can move smoothly after installing outside rear view mirror lens assembly.

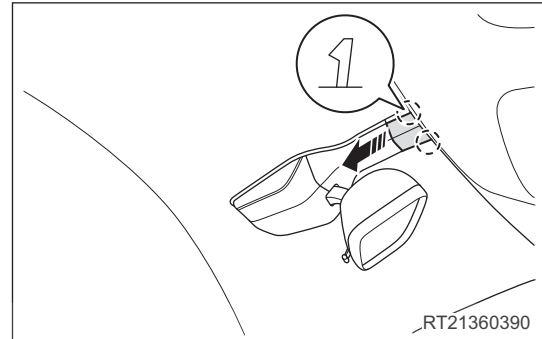
Inside Rear View Mirror Assembly

Removal

CAUTION

- Appropriate force should be applied when removing inside rear view mirror assembly, and operate carefully.
- Avoid scratching front windshield assembly when removing inside rear view mirror assembly.

1. Remove the inside rear view mirror assembly.
 - a. Push down rear view mirror upper trim cover (arrow) by hand, and remove upper trim cover assembly (arrow).



58

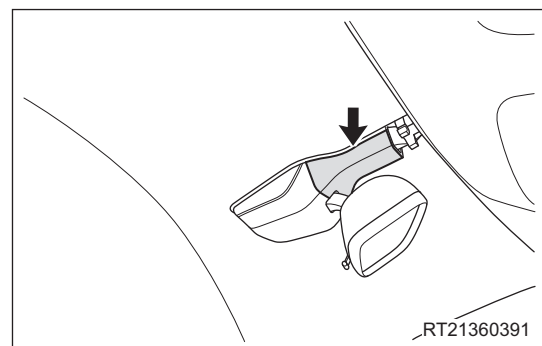
دیجیتال خودرو

شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



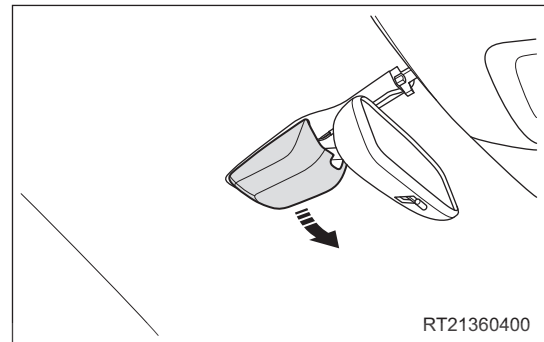
- b. Using an interior crow plate, pry off the rear view mirror center trim cover (arrow).



RT21360391-1

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- c. Unscrew inside rear view mirror assembly and lower trim cover (rotation direction: arrow).



دیجیتال خودرو

شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

اولین سامانه دیجیتال تعمیرکاران خودرو در ایران

RT21360400-1



Installation is in the reverse order of removal.

CAUTION

- Advice: When installing inside rear view mirror assembly, it is recommended to separate inside rear view mirror assembly and lower trim cover first, then install them in order.
- Always operate carefully to prevent components from being damaged, when installing rear view mirror assembly.
- Be sure to install in place and avoid tapping with large tool, when removing and installing inside rear view mirror assembly.
- Be careful not to damage, drop, squeeze and cover rain sensor, when installing rain sensor assembly.
- Keep rain sensor clean and prevent foreign matter from entering, when installing rain sensor.

Installation

Installation is in the reverse order of removal.

CAUTION

- Make sure the inside rear view mirror assembly can move smoothly after installation.

دیجیتال خودرو

شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



Rear View Mirror Adjustment Switch Assembly

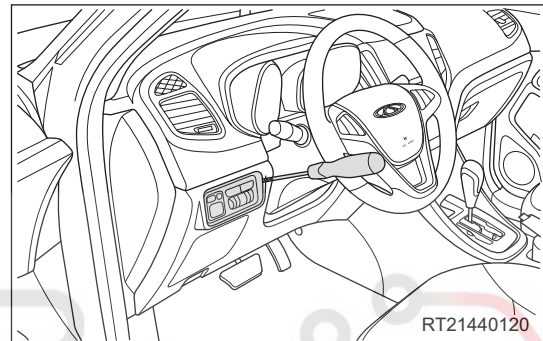
Removal

CAUTION

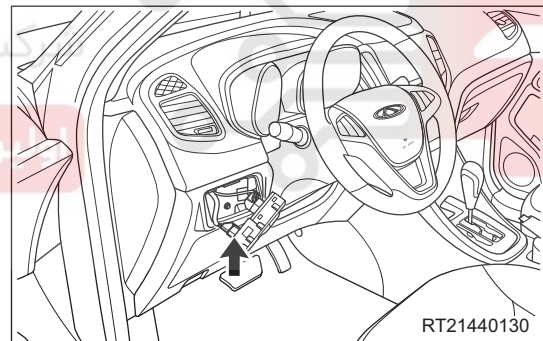
- Make sure to wear safety equipment to prevent accidents when removing rear view mirror adjustment switch assembly.
- Prevent instrument panel lower left protector assembly from being scratched when removing rear view mirror adjustment switch assembly.

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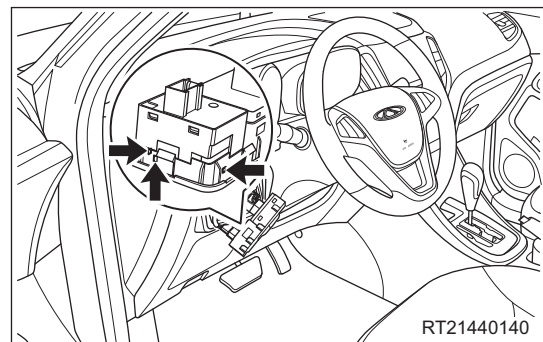
1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the rear view mirror adjustment switch assembly.
 - a. Using a screwdriver wrapped with protective tape, pry out the headlight adjustment switch unit panel.



- b. Unplug rear view mirror adjustment switch connector (2) and small light adjustment switch connector (1), and remove assembly.



- c. Using a screwdriver wrapped with protective tape, detach the claws (arrow) of rear view mirror adjustment switch assembly.



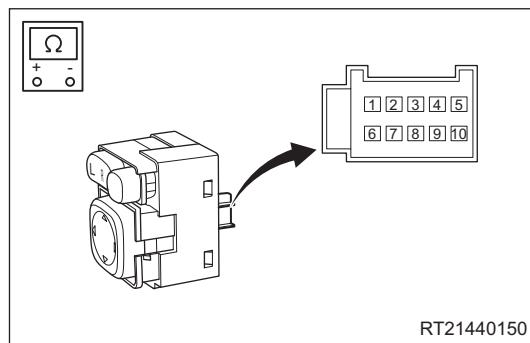
- d. Remove the rear view mirror adjustment switch assembly.

Inspection

Check the outside rear view mirror adjustment switch assembly.

- a. Adjust the rear view mirror adjustment switch assembly to "L" position.
- b. Using a multimeter, check for continuity between terminals of rear view mirror adjustment switch assembly according to the table below.

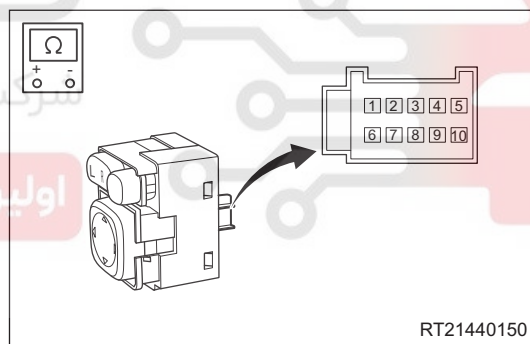
Multimeter Connection	Switch Condition	Specified Condition
Terminal 3 - 7	UP	Continuity
	Terminal 4 - 5	OFF
Terminal 3 - 5	DOWN	Continuity
	Terminal 4 - 7	OFF
Terminal 3 - 6	LEFT	Continuity
	Terminal 4 - 5	OFF
Terminal 3 - 5	RIGHT	Continuity
	Terminal 4 - 6	OFF



If result is not as specified, replace rear view mirror adjustment switch assembly.

- c. Adjust the rear view mirror adjustment switch assembly to "R" position.
- d. Using a multimeter, check for continuity between terminals of rear view mirror adjustment switch assembly according to the table below.

Multimeter Connection	Switch Condition	Specified Condition
Terminal 3 - 8	UP	Continuity
	Terminal 4 - 5	OFF
Terminal 3 - 5	DOWN	Continuity
	Terminal 4 - 8	OFF
Terminal 3 - 9	LEFT	Continuity
	Terminal 4 - 5	OFF
Terminal 3 - 5	RIGHT	Continuity
	Terminal 4 - 9	OFF



If result is not as specified, replace rear view mirror adjustment switch assembly.

Installation

Installation is in the reverse order of removal.

CAUTION

- Always operate carefully to prevent components from being damaged when installing the rear view mirror adjustment switch assembly.
- Install each connector in place when installing rear view mirror adjustment switch assembly.
- Check that switch can operate normally after installing rear view mirror adjustment switch assembly.

دیجیتال خودرو

شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



INSTRUMENT PANEL

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دیجیتال خودرو

شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



دیجیتال خودرو

شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

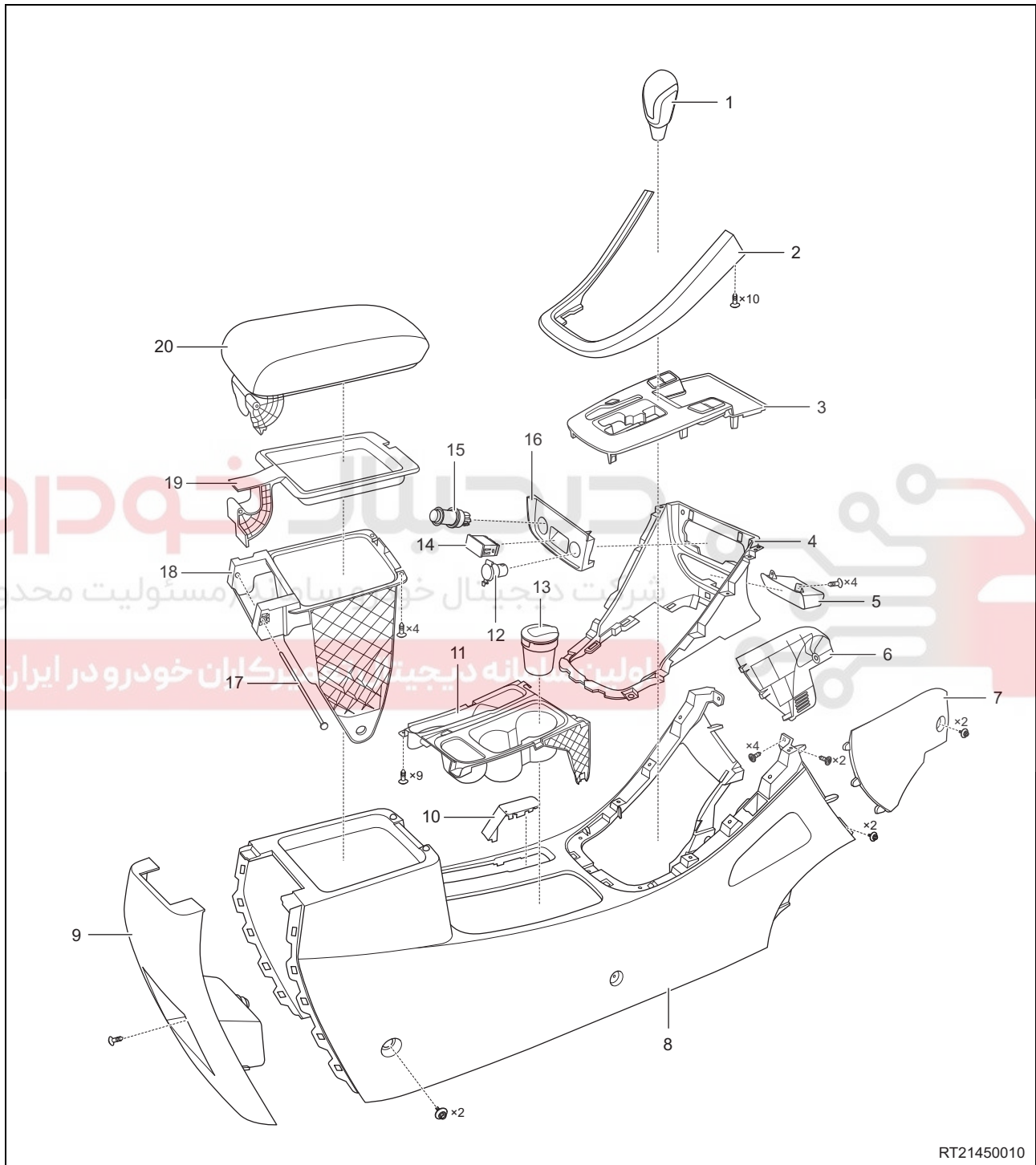
اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



GENERAL INFORMATION

Description

Auxiliary Fascia Console Assembly



RT21450010

59 - INSTRUMENT PANEL

1 - Shift Knob	2 - Auxiliary Fascia Console Front Trim Ring
3 - Gearshift Cover Plate Assembly	4 - Auxiliary Fascia Console Front Inner Protector Assembly
5 - Front Storage Box	6 - Auxiliary Fascia Console Front Left Protector
7 - Auxiliary Fascia Console Front Right Protector	8 - Auxiliary Fascia Console Assembly
9 - Auxiliary Fascia Console Rear Cover Plate Assembly	10 - Parking Brake Garnish
11 - Cup Holder Assembly	12 - Backup Power Supply Assembly
13 - Portable Ashtray Assembly	14 - Multifunctional Interface
15 - Cigarette Lighter Assembly	16 - USB Panel Assembly
17 - Hinge Shaft	18 - Armrest Box Assembly
19 - Armrest Inner Storage Box	20 - Armrest Box Cover Assembly

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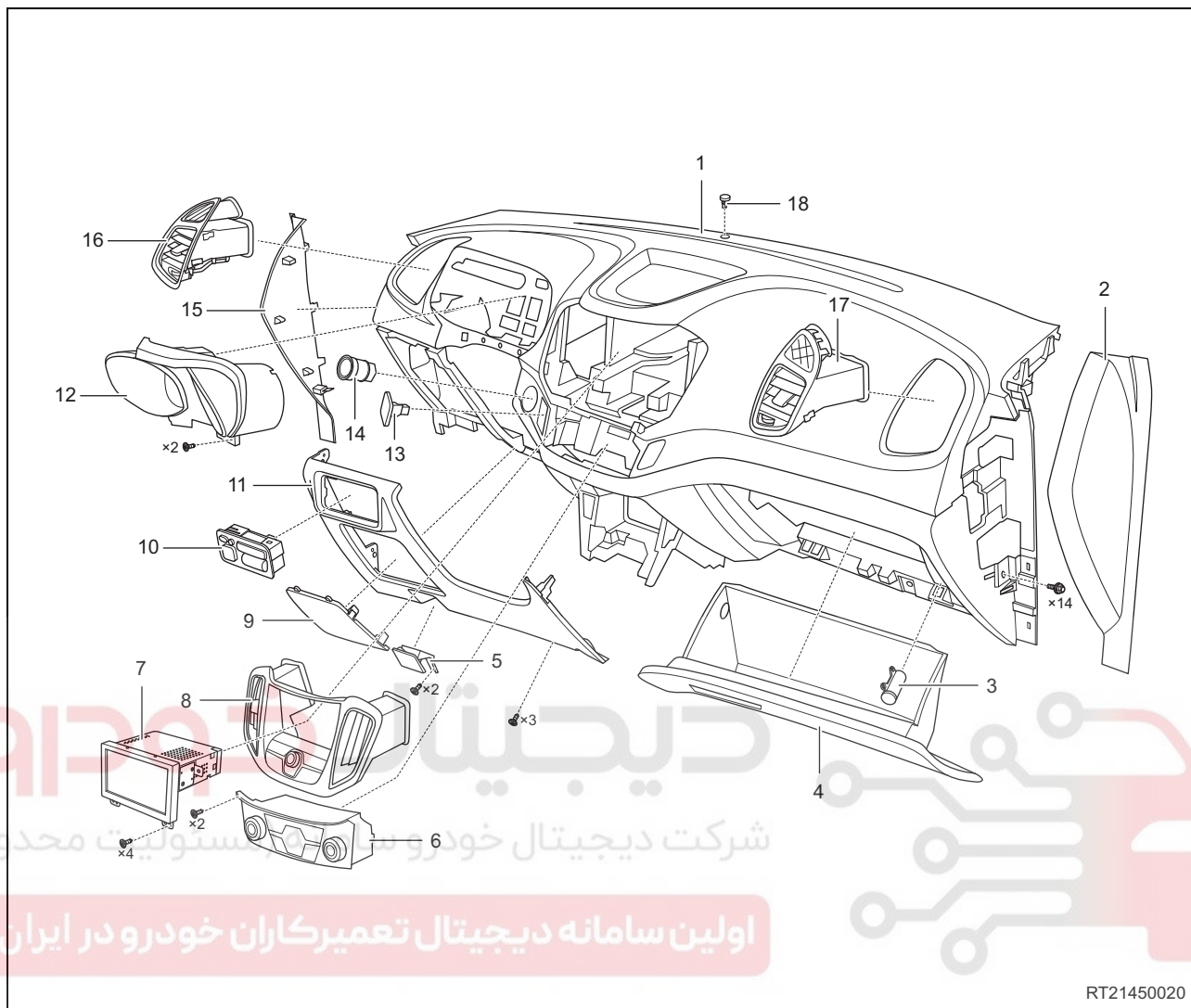
دیجیتال خودرو

شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

اولین سامانه دیجیتال تعمیرکاران خودرو در ایران

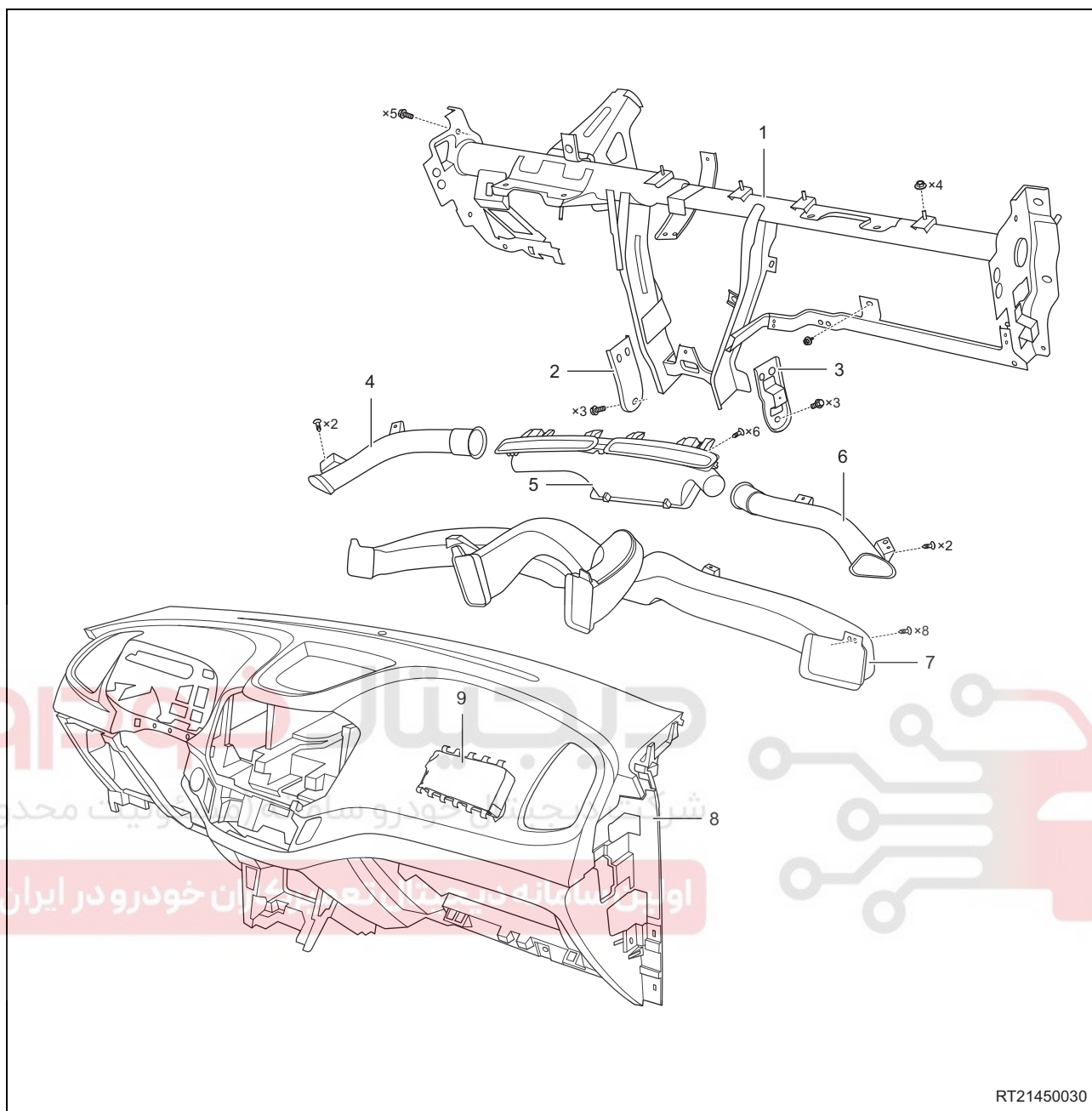


Instrument Panel Assembly



RT21450020

1 - Instrument Panel Assembly	2 - Instrument Panel Right End Panel Assembly
3 - Damper Assembly	4 - Glove Box Assembly
5 - Hood Grip Assembly	6 - A/C Control Panel Assembly
7 - No Disc DVD Assembly	8 - DVD Panel Assembly
9 - Fuse Box Cover	10 - Combination Light Adjust Switch Panel
11 - Instrument Panel Lower Left Protector Assembly	12 - Instrument Cluster
13 - Hazard Warning Light	14 - Engine Switch
15 - Instrument Panel Left End Panel Assembly	16 - Instrument Panel Left Outlet Assembly
17 - Instrument Panel Right Outlet Assembly	18 - Solar Sensor



RT21450030

1 - Instrument Panel Crossmember Assembly	2 - Instrument Panel Crossmember Lower Left Bracket Assembly
3 - Instrument Panel Crossmember Lower Right Bracket Assembly	4 - Left Defroster Duct Assembly
5 - Center Defroster Duct Assembly	6 - Right Defroster Duct Assembly
7 - Face Air Duct Assembly	8 - Instrument Panel Assembly
9 - Front Passenger Airbag	

Instrument panel of this model consists of instrument panel assembly, auxiliary fascia console assembly and instrument panel crossmember system.

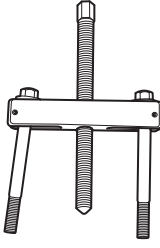
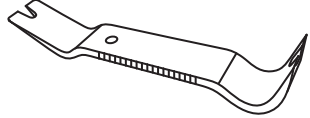
Specifications

Torque Specifications

Description	Torque (N·m)
Auxiliary Fascia Console Front Protector Fixing Bolt	5 ± 1
Auxiliary Fascia Console Assembly Fixing Screw	1.5 ± 0.5
Auxiliary Fascia Console Assembly Fixing Bolt	5 ± 1
Front Storage Box Fixing Screw	1.5 ± 0.5
Armrest Box Assembly Fixing Screw	1.5 ± 0.5
Auxiliary Fascia Console Rear Cover Plate Assembly Fixing Screw	1.5 ± 0.5
Cup Holder Assembly Fixing Screw	1.5 ± 0.5
Auxiliary Fascia Console Front Trim Ring Fixing Screw	1.5 ± 0.5
Gear Backlight Fixing Screw	1.5 ± 0.5
Instrument Panel Lower Left Protector Assembly Fixing Screw	2 ± 0.5
Front Passenger Airbag Assembly Fixing Bolt	10 ± 1
Instrument Panel Assembly Fixing Bolt	7 ± 1
Face Air Duct Assembly Fixing Screw	1.5 ± 0.5
Defroster Duct Assembly Fixing Screw	1.5 ± 0.5
Center Defroster Duct Assembly Fixing Screw	1.5 ± 0.5
Instrument Panel Right Outlet Assembly Fixing Screw	1.5 ± 0.5
Instrument Panel Fuse and Relay Box Fixing Bolt	7 ± 1
Connector Mounting Bracket Fixing Bolt	7 ± 1
Diagnostic Interface Fixing Screw	1.5
Smart Entry Start Controller Fixing Nut	7 ± 1
Instrument Panel Crossmember Lower Bracket Assembly	25 ± 3
Steering Column Assembly Fixing Nut	25 ± 3
Steering Column Assembly Fixing Bolt	25 ± 3
Blower Fixing Bolt	4 ± 1
Ground Wire Fixing Nut	15 ± 2
Instrument Panel Crossmember Assembly Fixing Bolt	25 ± 3
Instrument Panel Crossmember Assembly Fixing Nut	7 ± 1
Instrument Panel Crossmember Assembly Fixing Screw	7 ± 1
Instrument Panel Crossmember Bracket Assembly Fixing Bolt	25 ± 3

Tools

Special Tools

Steering Wheel Remover	 <p>RCH0000014</p>
Interior Crow Plate	 <p>RCH0000025</p>

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دیجیتال خودرو

شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



ON-VEHICLE SERVICE

Auxiliary Fascia Console Assembly

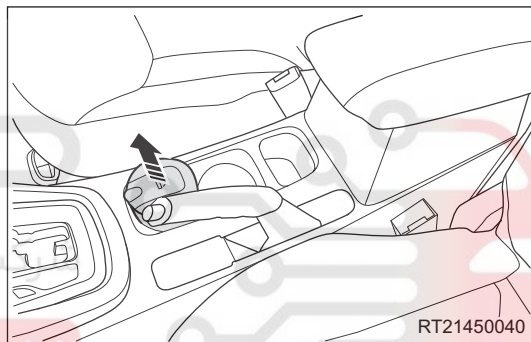
Removal

CAUTION

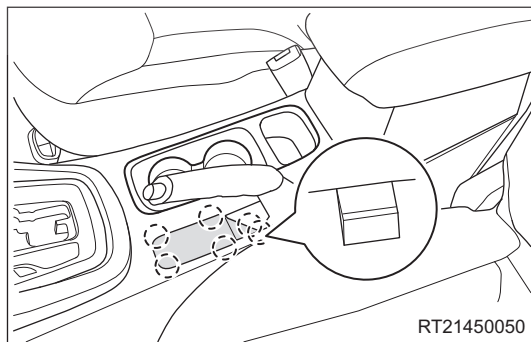
- Be sure to wear safety equipment to prevent accidents when removing auxiliary fascia console assembly.
- Appropriate force should be applied when removing auxiliary fascia console assembly. Be careful not to operate roughly.
- DO NOT scratch interior and body paint when removing auxiliary fascia console assembly.

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1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the portable ashtray assembly.
 - a. Remove the portable ashtray assembly in the direction of arrow as shown in the illustration.

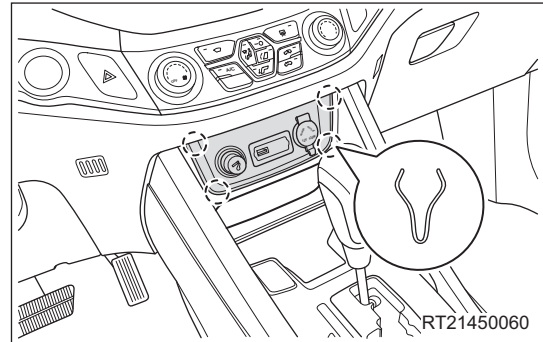


4. Remove the parking brake garnish.
 - a. Using a screwdriver wrapped with protective tape, pry up the claws on parking brake garnish, and remove the parking brake garnish.

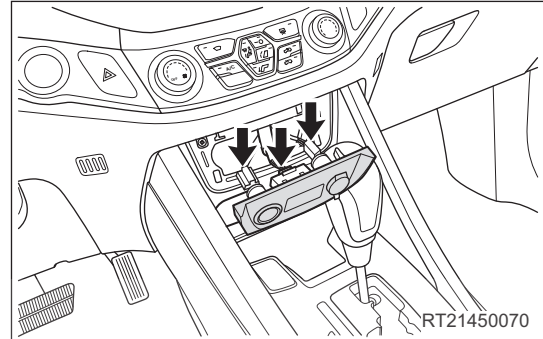


59 - INSTRUMENT PANEL

5. Remove the USB panel assembly.
 - a. Using a screwdriver wrapped with protective tape, pry up the clips on USB panel assembly.

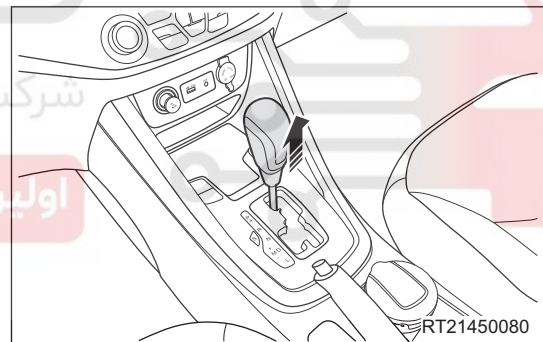


- b. Disconnect the connectors (arrow) from USB panel assembly, and remove the USB panel assembly.

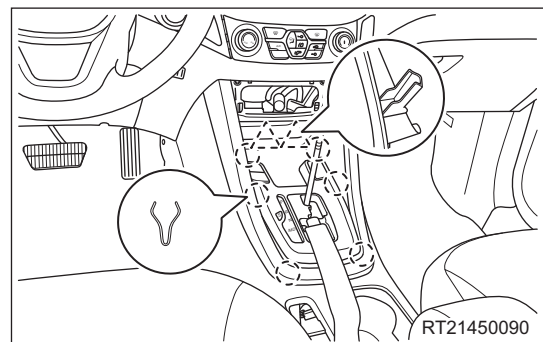


6. Remove the gearshift cover plate assembly (for CVT model).

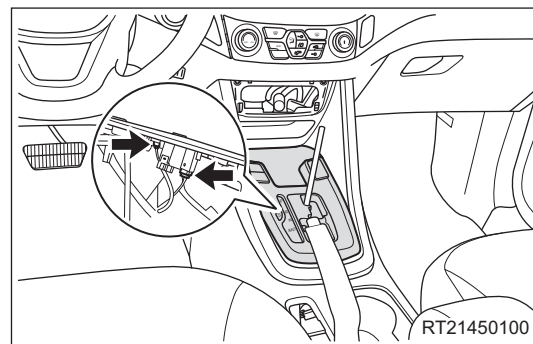
- a. Pull out the shift knob in the direction of arrow as shown in the illustration.



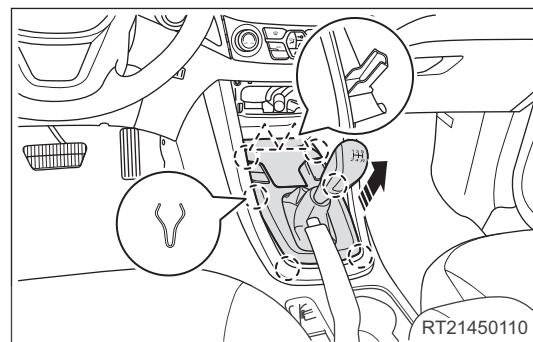
- b. Using a screwdriver wrapped with protective tape, pry up the clips on gearshift cover plate assembly.



- c. Disconnect the connectors (arrow) from gearshift cover plate assembly, and remove the gearshift cover plate assembly.

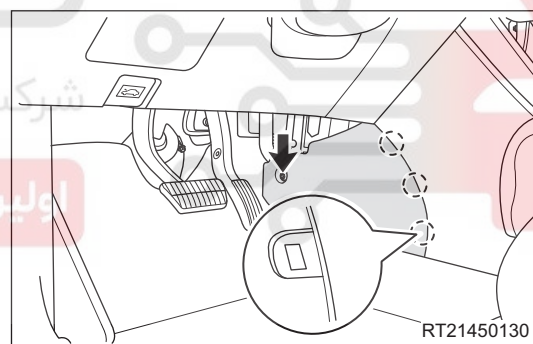


7. Remove the gearshift cover plate assembly (for MT model).
- Using a screwdriver wrapped with protective tape, pry up the clips on gearshift cover plate assembly.
 - Pull out the gearshift cover plate assembly in the direction of arrow as shown in the illustration.

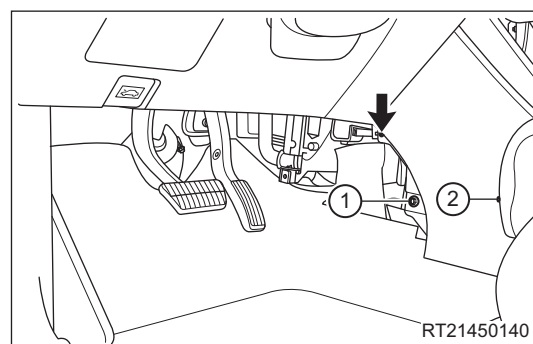


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8. Remove the auxiliary fascia console front left protector (take left side as an example).
- Remove the fixing bolt (arrow) from auxiliary fascia console front left protector.
(Tightening torque: 5 ± 1 N·m)
 - Using a screwdriver wrapped with protective tape, pry up the claws on auxiliary fascia console front left protector, and remove the auxiliary fascia console front left protector.

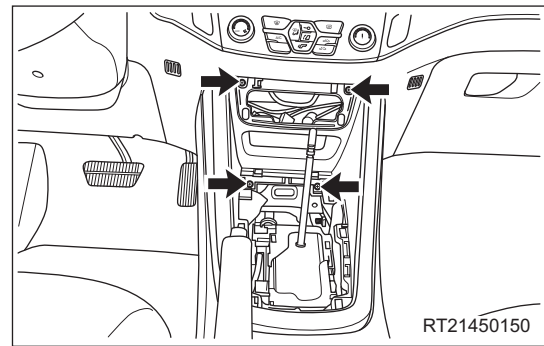


9. Remove the auxiliary fascia console assembly.
- Remove the fixing screw (arrow) from the side of auxiliary fascia console assembly (take left side as an example).
(Tightening torque: 1.5 ± 0.5 N·m)
 - Remove the fixing bolt (1) and screw (2) from the side of auxiliary fascia console assembly (take left side as an example).
(Tightening torque: 5 ± 1 N·m)



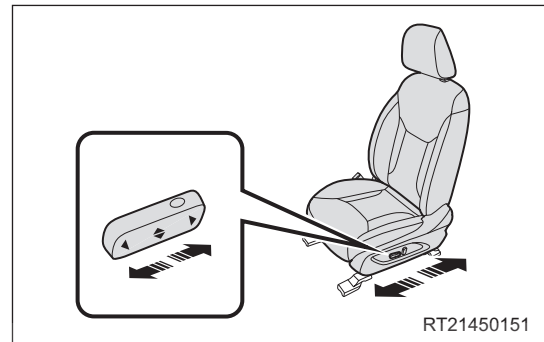
59 - INSTRUMENT PANEL

- c. Remove 4 fixing screws (arrow) from front part of auxiliary fascia console assembly.
(Tightening torque: 1.5 ± 0.5 N·m)

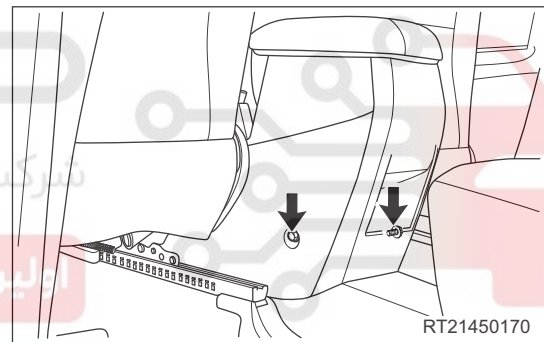


- d. Press seat adjustment switch to move seat to the foremost position.

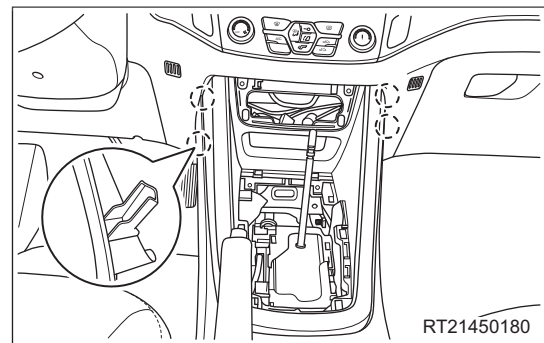
59



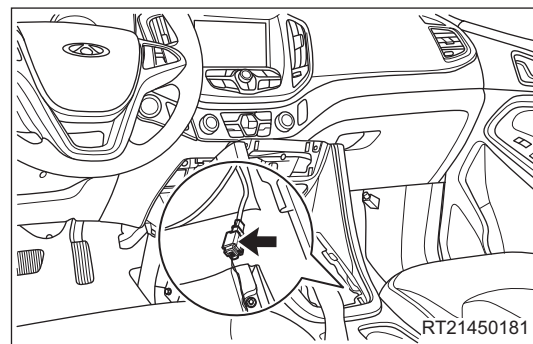
- e. Remove 2 fixing bolts (arrow) from rear part of auxiliary fascia console assembly.
(Tightening torque: 5 ± 1 N·m)



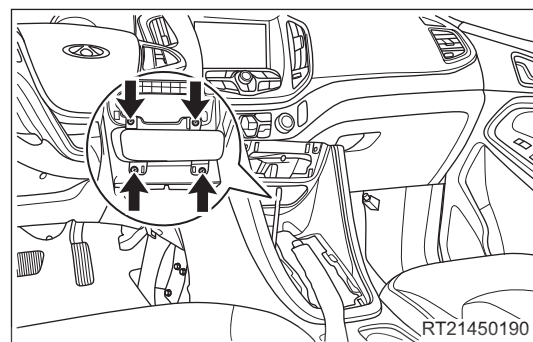
- f. Using an interior crow plate, pry up the dowel pins on the front part of auxiliary fascia console.



- g. Disconnect the anti-theft coil connector (arrow).



- h. Remove 4 fixing screws (arrow) from front storage box.
(Tightening torque: 1.5 ± 0.5 N·m)



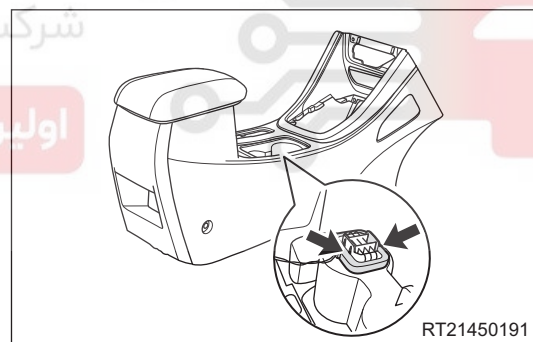
59

- i. Remove the auxiliary fascia console assembly.

Disassembly

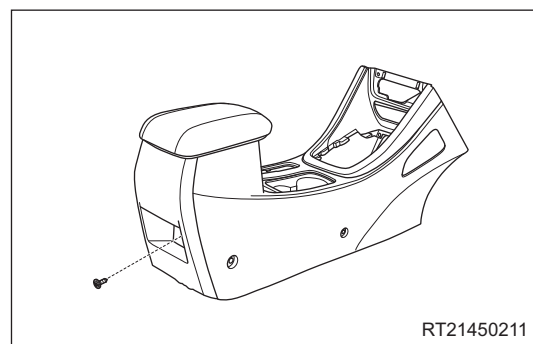
1. Remove the anti-theft coil (for CVT model).

- a. Disengage the claws (arrow), and remove the anti-theft coil.



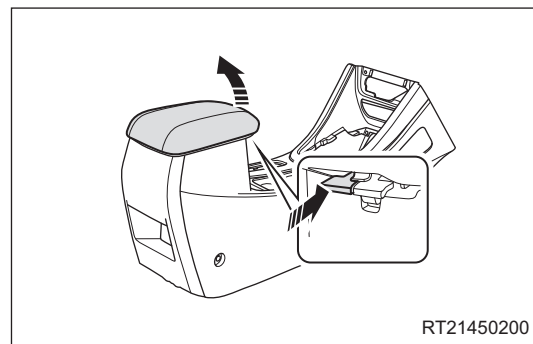
2. Remove the auxiliary fascia console rear cover plate assembly.

- a. Remove the fixing screw from auxiliary fascia console rear cover plate assembly.
(Tightening torque: 1.5 ± 0.5 N·m)



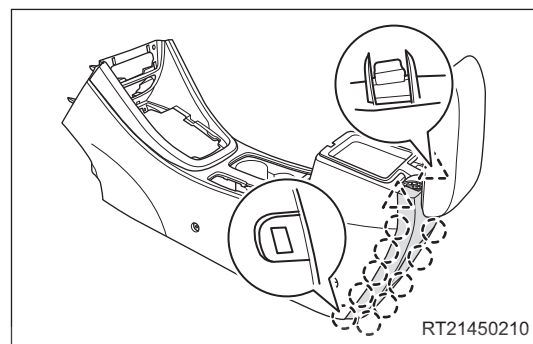
59 - INSTRUMENT PANEL

- b. Open the armrest box cover assembly in the direction of arrow as shown in the illustration.



- c. Using a screwdriver wrapped with protective tape, pry up the claws on auxiliary fascia console rear cover plate assembly.

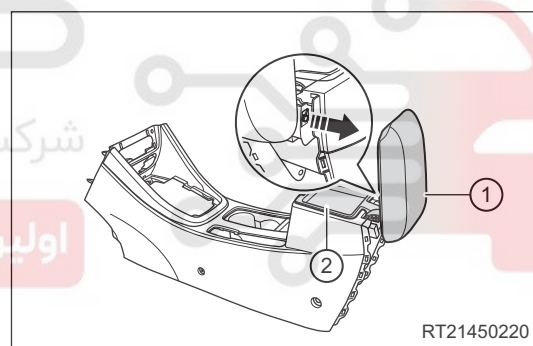
- d. Remove the auxiliary fascia console rear cover plate assembly from auxiliary fascia console assembly.



3. Remove the armrest box cover assembly and armrest inner storage box.

- a. Pull out the hinge shaft in the direction of arrow as shown in the illustration.

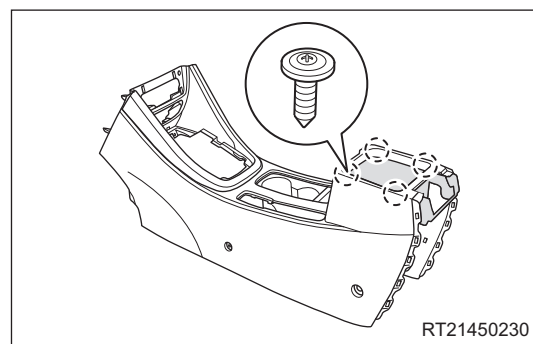
- b. Remove the armrest box cover assembly (1) and armrest inner storage box (2) from auxiliary fascia console assembly.



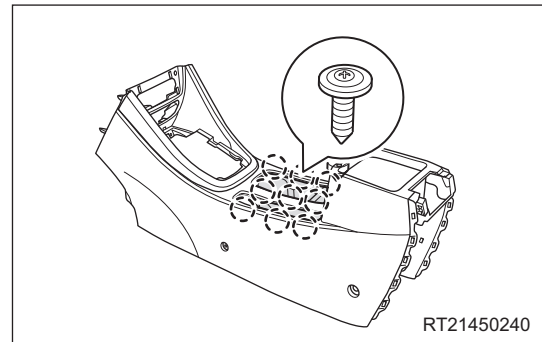
4. Remove the armrest box assembly.

- a. Remove 4 fixing screws from armrest box assembly. (Tightening torque: 1.5 ± 0.5 N·m)

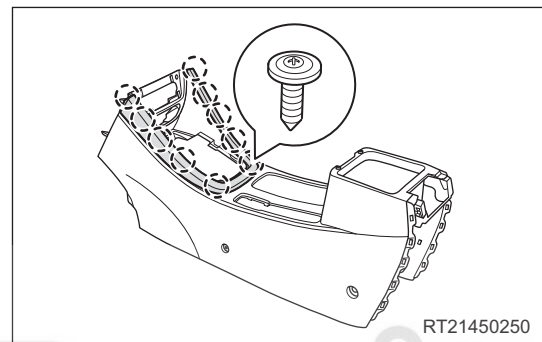
- b. Remove the armrest box assembly from auxiliary fascia console assembly.



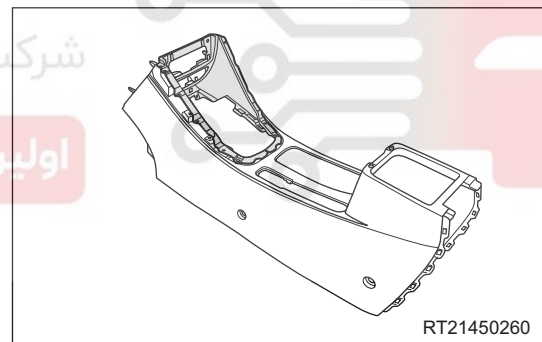
5. Remove the cup holder assembly.
 - a. Remove 9 fixing screws from cup holder assembly. (Tightening torque: 1.5 ± 0.5 N·m)
 - b. Remove the cup holder assembly from auxiliary fascia console assembly.



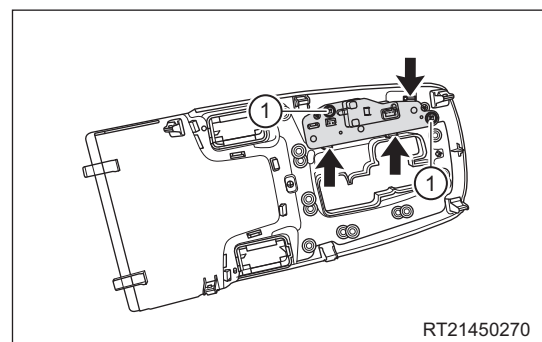
6. Remove the auxiliary fascia console front trim ring.
 - a. Remove 10 fixing screws from auxiliary fascia console front trim ring. (Tightening torque: 1.5 ± 0.5 N·m)
 - b. Remove the auxiliary fascia console front trim ring from auxiliary fascia console assembly.



7. Remove the auxiliary fascia console front inner protector assembly.
 - a. Remove the auxiliary fascia console front inner protector assembly from auxiliary fascia console assembly.



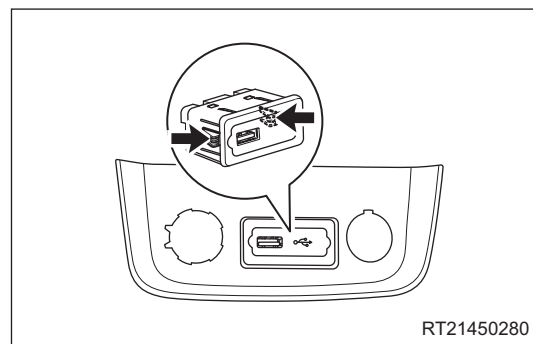
8. Remove the gear backlight.
 - a. Remove 2 fixing screws (1) from gear backlight. (Tightening torque: 1.5 ± 0.5 N·m)
 - b. Using a screwdriver wrapped with protective tape, disengage the claws (arrow).
 - c. Remove the gear backlight from gearshift cover plate.



9. Remove the cigarette lighter assembly (See page 56-5).
10. Remove the backup power supply assembly (See page 56-7).

59 - INSTRUMENT PANEL

11. Remove the multifunctional interface.
 - a. Press the claws (arrow) on multifunctional interface as shown in the illustration.
 - b. Remove the multifunctional interface from USB panel assembly.



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Assembly

Assembly is in the reverse order of disassembly.

Installation

Installation is in the reverse order of removal.

CAUTION

- Make sure to tighten fixing bolts and fixing screws to the specified torque when installing auxiliary fascia console assembly.
- Check each electrical equipment for proper operation after installing auxiliary fascia console assembly.

شرکت دیجیتال خودرو (مسئولیت محدود)

اولین سامانه دیجیتال تعمیرکاران خودرو در ایران

Instrument Panel Assembly

Removal

⚠ WARNING

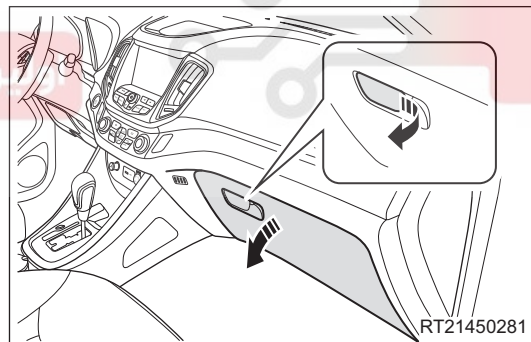
- Wait at least 60 seconds after disconnecting negative battery cable to disable supplementary restraint system.
- When removing and installing instrument panel assembly, all components related to airbag should be operated with battery power source off. It is forbidden to operate them with power source on. Because within 60 seconds after vehicle stops or fuse removed, there is enough power inside the airbag control module for activating the airbag, and the airbag can be accidentally activated, causing personal injury or vehicle damage.
- DO NOT expose airbag components to hot air or flame.
- Removed airbag should be well kept. If triggered accidentally, the airbag may cause personal injury.

59

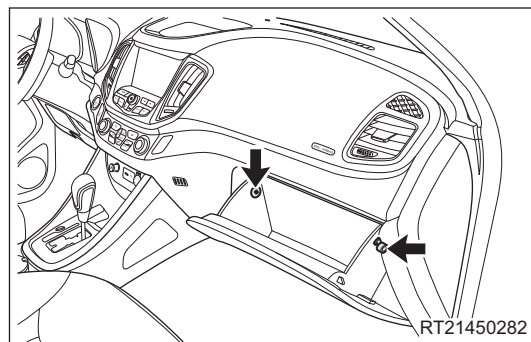
👁 CAUTION

- Be sure to wear safety equipment to prevent accidents when removing instrument panel assembly.
- DO NOT scratch interior and body paint when removing instrument panel assembly.

1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the glove box assembly.
 - a. Open the glove box assembly in the direction of arrow as shown in the illustration.

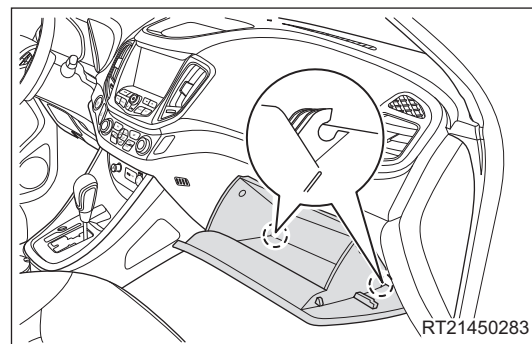


- b. Rotate the lock knobs (arrow) clockwise, and remove the lock knobs.



59 - INSTRUMENT PANEL

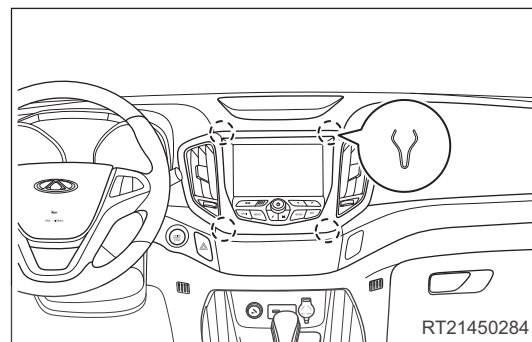
- c. Disengage the claws on the lower side of glove box assembly, and remove the glove box assembly.



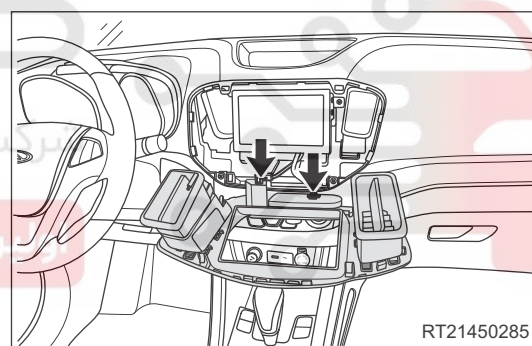
4. Remove the DVD panel assembly.

- a. Using a screwdriver wrapped with protective tape, pry up the clips on DVD panel assembly.

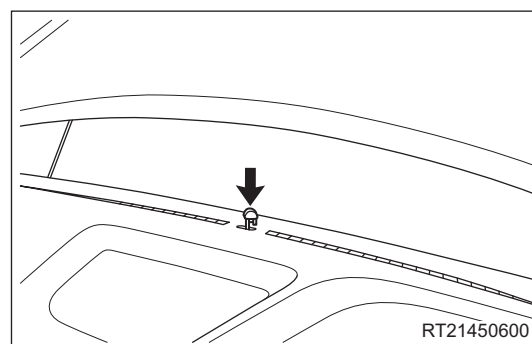
59



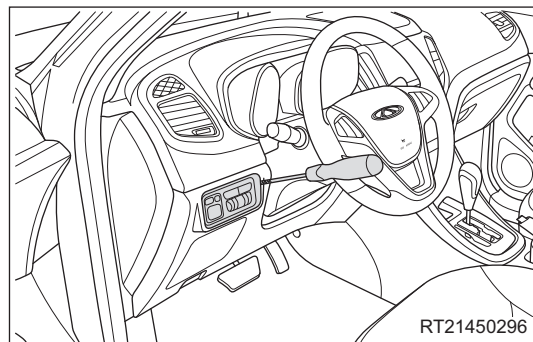
- b. Disconnect the connectors (arrow) from DVD panel assembly, and remove the DVD panel assembly.



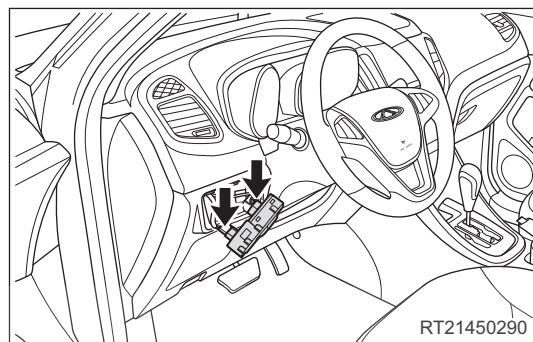
5. Remove the no disc DVD assembly (See page 52-11).
 6. Remove the A/C control panel assembly (See page 42-66).
 7. Remove solar sensor from upper center of instrument panel.



8. Remove the combination light adjust switch panel.
 - a. Using a screwdriver wrapped with protective tape, pry out the combination light adjust switch panel.

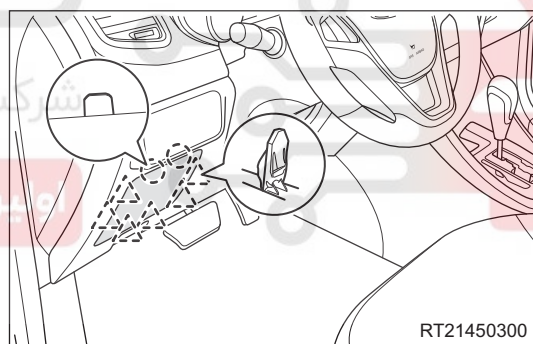


- b. Disconnect the connectors (arrow) from combination light adjust switch panel, and remove the combination light adjust switch panel.

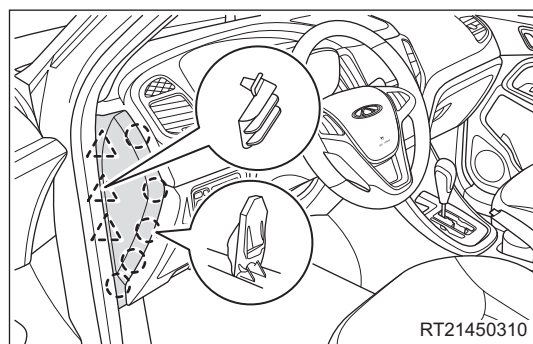


59

9. Remove the fuse box cover.
 - a. Using a screwdriver wrapped with protective tape, pry up the claws on fuse box cover, and remove the fuse box cover.



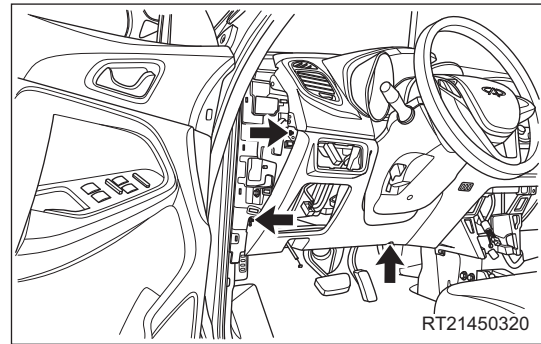
10. Remove the front door opening weatherstrip (See page 63-14).
11. Remove the instrument panel left end panel assembly (take left side as an example).
 - a. Using a screwdriver wrapped with protective tape, pry up the claws on instrument panel left end panel assembly, and remove the instrument panel left end panel assembly.



12. Remove the auxiliary fascia console assembly (See page 59-11).
13. Remove the front doorsill pressure plate assembly (See page 63-11).
14. Remove the A-pillar lower protector assembly (See page 63-19).

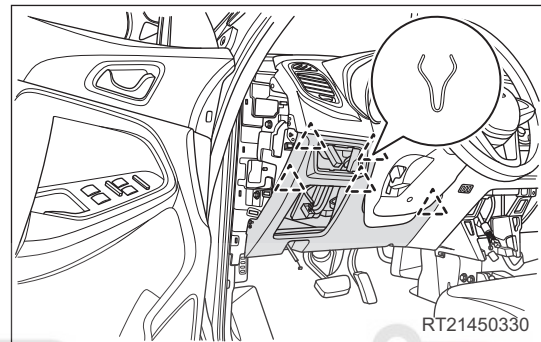
59 - INSTRUMENT PANEL

15. Remove the hood grip assembly (See page 61-19).
16. Remove the instrument panel lower left protector assembly.
- Remove 3 fixing screws (arrow) from instrument panel lower left protector assembly.
(Tightening torque: 2 ± 0.5 N·m)



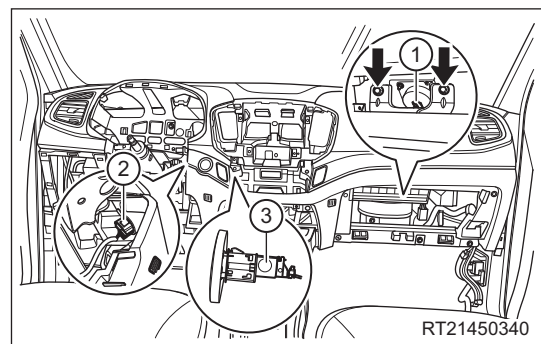
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- Using an interior crow plate, pry up the clips on instrument panel lower left protector assembly, and remove the instrument panel lower left protector assembly.

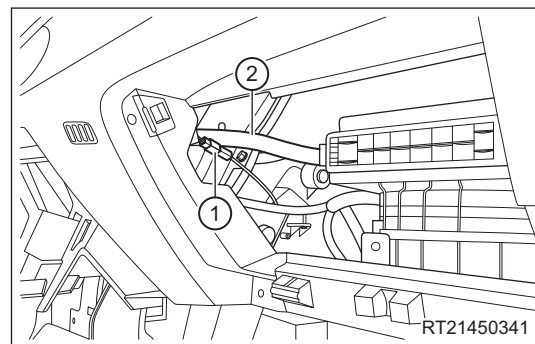


17. Remove the driver airbag (See page 43-77).
18. Remove the combination switch cover (See page 39-13).
19. Remove the steering wheel assembly (See page 39-10).
20. Remove the spiral cable (See page 43-79).
21. Remove the wiper switch assembly (See page 49-21).
22. Remove the headlight adjustment switch assembly (See page 48-67).
23. Remove the instrument cluster (See page 51-48).
24. Remove the A-pillar upper protector assembly (See page 63-17).
25. Remove the instrument panel assembly.

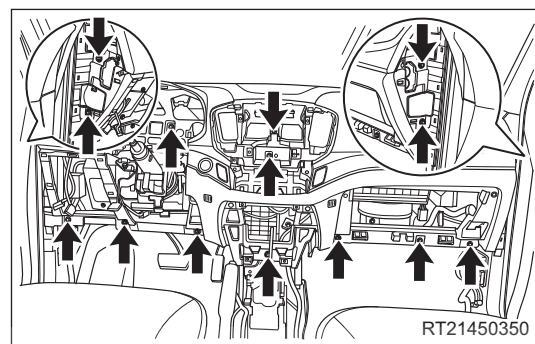
- Disconnect the front passenger airbag connector (1).
- Remove 2 fixing bolts (arrow) from front passenger airbag assembly.
(Tightening torque: 10 ± 1 N·m)
- Disconnect the engine switch connector (2).
- Disconnect the hazard warning light connector (3).



- e. Disconnect room temperature sensor connector (1) and ventilation hose (2) (take right side as an example).



- f. Remove 14 fixing bolts (arrow) from instrument panel assembly, and remove the instrument panel assembly.
(Tightening torque: 7 ± 1 N·m)



59

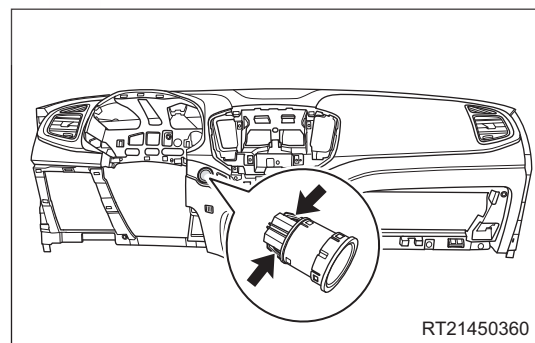
Disassembly

CAUTION

- Be sure to wear safety equipment to prevent accidents when removing instrument panel assembly.
- DO NOT scratch instrument panel surface when removing instrument panel assembly.

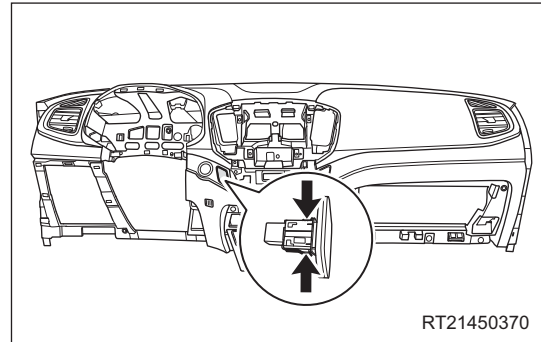
1. Remove the engine switch.

- Press the claws (arrow) on engine switch as shown in the illustration.
- Remove the engine switch from instrument panel assembly.



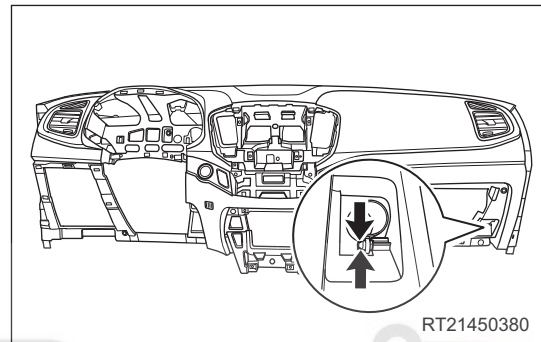
59 - INSTRUMENT PANEL

2. Remove the hazard warning light.
 - a. Press the claws (arrow) on hazard warning light as shown in the illustration.
 - b. Remove the hazard warning light from instrument panel assembly.

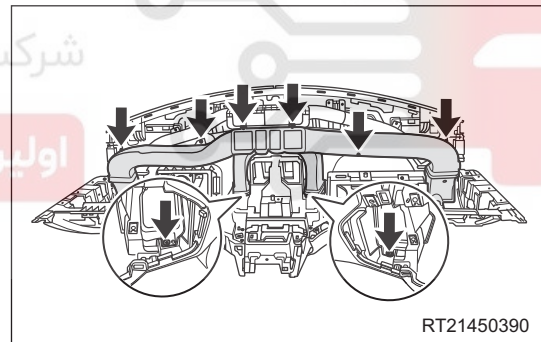


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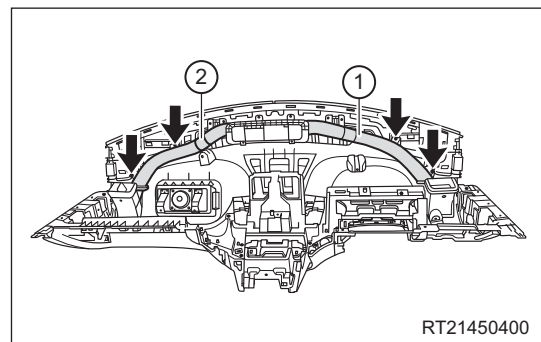
3. Remove the damper assembly.
 - a. Press the claws (arrow) as shown in the illustration.
 - b. Remove the damper assembly from instrument panel assembly.



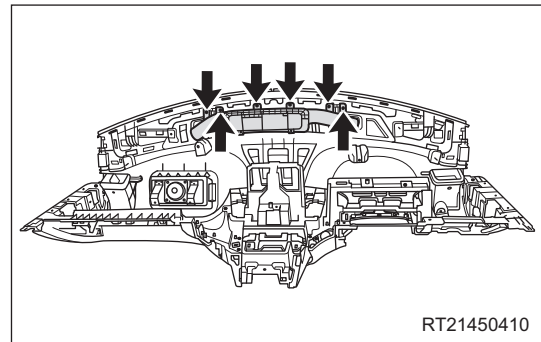
4. Remove the face air duct assembly.
 - a. Remove 8 fixing screws (arrow) from face air duct assembly. (Tightening torque: 1.5 ± 0.5 N·m)
 - b. Remove the face air duct assembly from instrument panel assembly.



5. Remove the defroster duct assembly.
 - a. Remove 4 fixing screws (arrow) from defroster duct assembly. (Tightening torque: 1.5 ± 0.5 N·m)
 - b. Remove the left defroster duct assembly (1) and right defroster duct assembly (2) from instrument panel assembly.

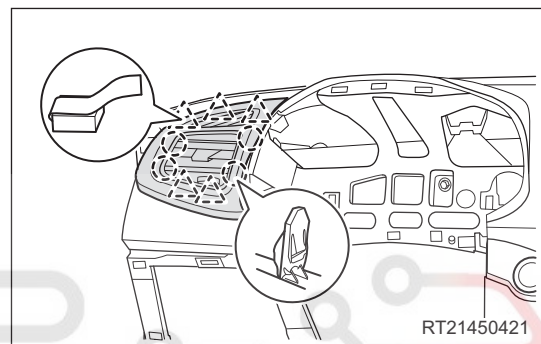


6. Remove the center defroster duct assembly.
 - a. Remove 6 fixing screws (arrow) from center defroster duct assembly.
(Tightening torque: 1.5 ± 0.5 N·m)
 - b. Remove the center defroster duct assembly from instrument panel assembly.

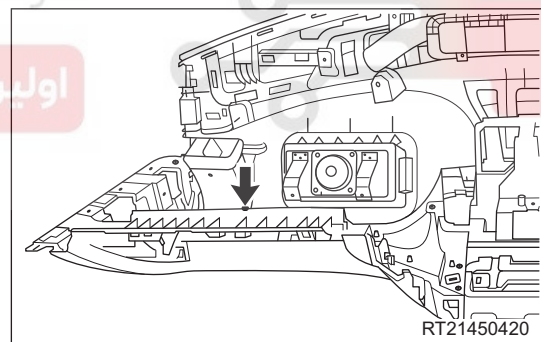


7. Remove the instrument panel left outlet assembly.
 - a. Using a screwdriver wrapped with protective tape, pry up the claws on instrument panel left outlet assembly.
 - b. Remove the instrument panel left outlet assembly from instrument panel assembly.

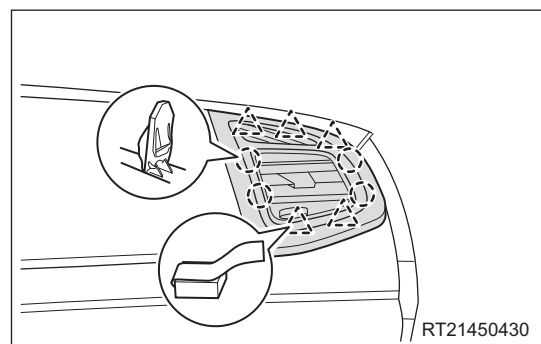
59



8. Remove the instrument panel right outlet assembly.
 - a. Remove the fixing screw (arrow) from instrument panel right outlet assembly.
(Tightening torque: 1.5 ± 0.5 N·m)

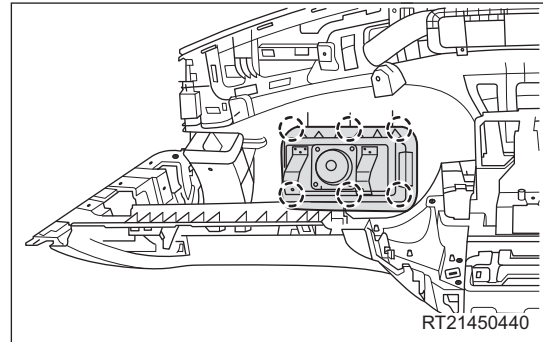


- b. Using a screwdriver wrapped with protective tape, pry up the claws on instrument panel right outlet assembly.
 - c. Remove the instrument panel right outlet assembly from instrument panel assembly.

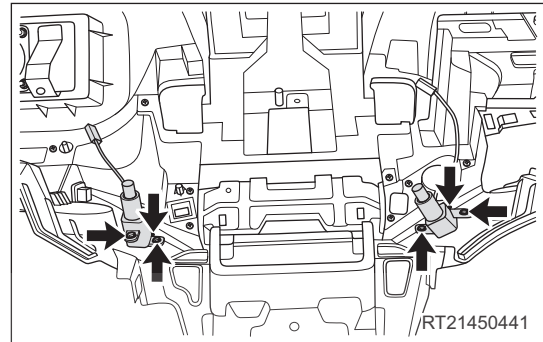


59 - INSTRUMENT PANEL

9. Remove the front passenger airbag.
 - a. Disengage the claws from front passenger airbag.
 - b. Remove the front passenger airbag from instrument panel assembly.



10. Remove the room temperature sensor.
 - a. Remove 6 fixing screws (arrow) from left and right room temperature sensors.
 - b. Remove room temperature sensor from instrument panel.



59

Assembly

Assembly is in the reverse order of disassembly.

Installation

Installation is in the reverse order of removal.

CAUTION

- Make sure to tighten fixing bolts and fixing screws to the specified torque when installing instrument panel assembly.
- Check airbag for proper installation after installing instrument panel assembly.
- Check each electrical equipment for proper operation after installing instrument panel assembly.

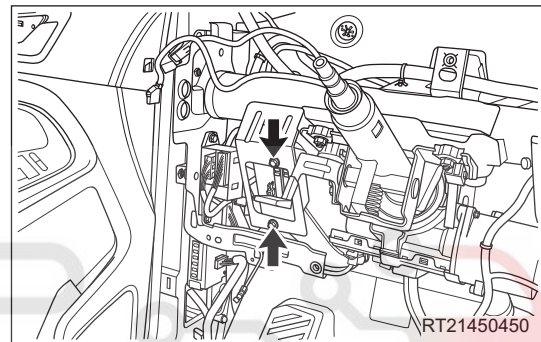
Instrument Panel Crossmember Assembly

Removal

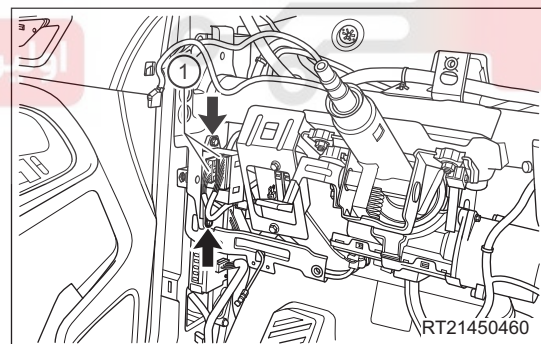
CAUTION

- Be sure to wear safety equipment to prevent accidents when removing instrument panel crossmember assembly.
- DO NOT scratch interior and body paint when removing instrument panel crossmember assembly.

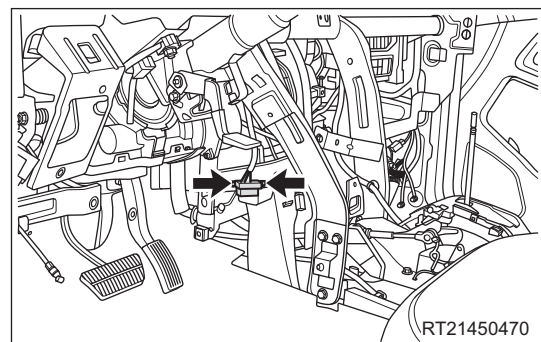
1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the instrument panel assembly (See page 59-20).
4. Loosen the instrument panel fuse and relay box.
 - a. Remove 2 fixing bolts (arrow) from instrument panel fuse and relay box, and loosen the instrument panel fuse and relay box.
(Tightening torque: 7 ± 1 N·m)



5. Loosen the connector mounting bracket.
 - a. Disconnect the connectors (1) from the inner part of connector mounting bracket.
 - b. Remove 2 fixing bolts (arrow) from connector mounting bracket, and loosen the connector mounting bracket.
(Tightening torque: 7 ± 1 N·m)

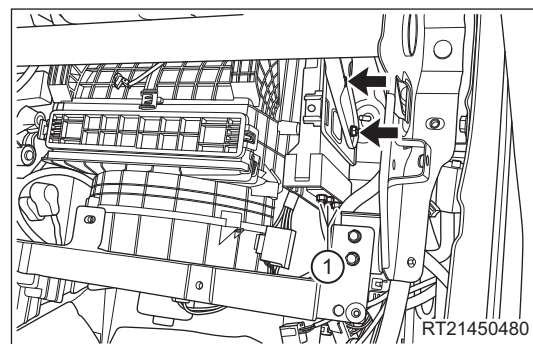


6. Loosen the diagnostic interface.
 - a. Remove 2 fixing screws (arrow) from diagnostic interface, and loosen the diagnostic interface.
(Tightening torque: 1.5 N·m)



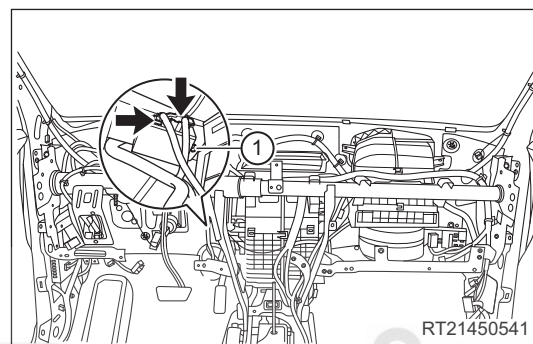
59 - INSTRUMENT PANEL

7. Remove the smart entry start controller.
 - a. Disconnect the connectors (1) from smart entry start controller.
 - b. Remove 2 fixing nuts (arrow) from smart entry start controller, and remove the smart entry start controller. (Tightening torque: 7 ± 1 N-m)

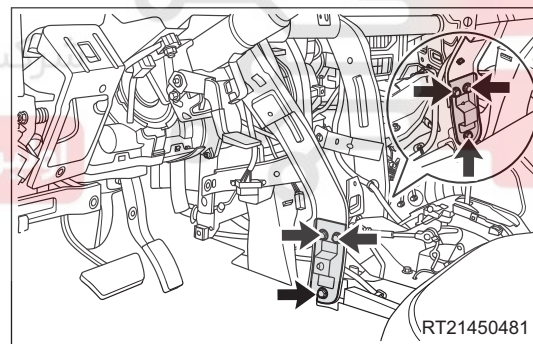


59

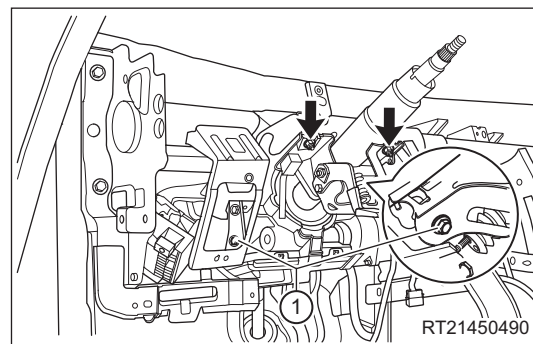
8. Remove the anti-theft module (for MT model).
 - a. Disconnect the connector (arrow) from the anti-theft module.
 - b. Remove the fixing bolt (1) from the anti-theft module. (Tightening torque: 7 ± 1 N-m)



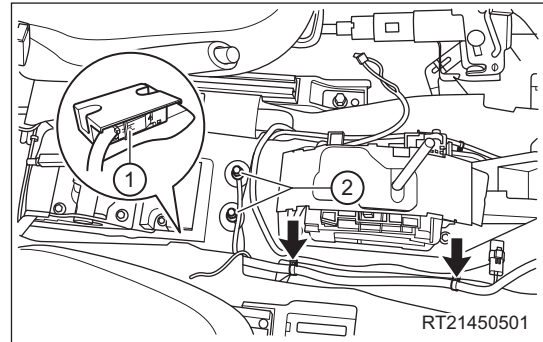
9. Remove the instrument panel crossmember lower bracket assembly.
 - a. Remove 6 fixing bolts (arrow) from instrument panel crossmember lower bracket assemblies, and remove the instrument panel crossmember lower bracket assemblies. (Tightening torque: 25 ± 3 N-m)



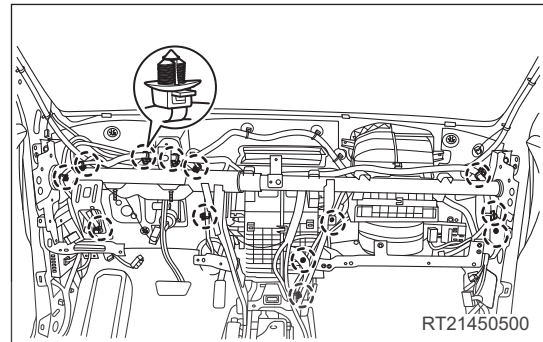
10. Loosen the steering column assembly.
 - a. Remove 2 fixing nuts (arrow) from steering column assembly. (Tightening torque: 25 ± 3 N-m)
 - b. Remove 2 fixing bolts (1) from steering column assembly. (Tightening torque: 25 ± 3 N-m)
 - c. Separate the steering column assembly from instrument panel crossmember.



11. Separate the instrument panel wire harness.
 - a. Disconnect the connector (1) from airbag control module.
 - b. Remove the fixing nuts (2) from ground wire. (Tightening torque: 15 ± 2 N·m)
 - c. Remove the clips (arrow) from lower part of instrument panel wire harness.



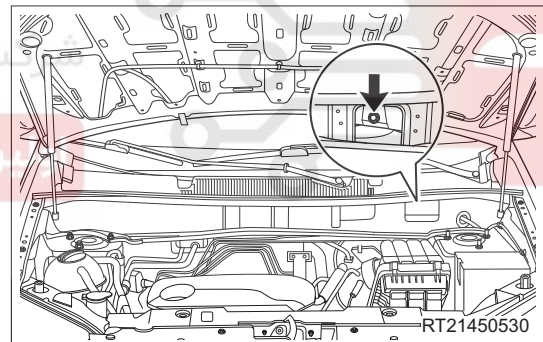
- d. Remove the clips from upper part of instrument panel wire harness, and separate the instrument panel wire harness from instrument panel crossmember.



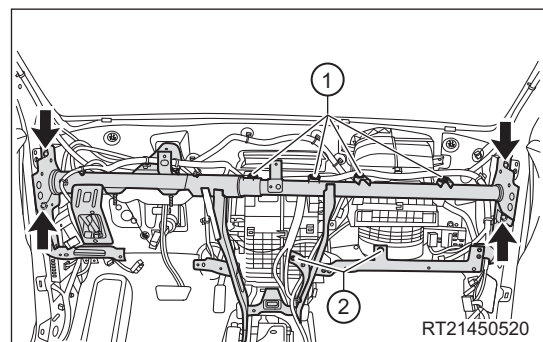
59

12. Remove the gearshift mechanism assembly (See page 29-127).
13. Remove the instrument panel crossmember assembly.

- a. Remove the fixing bolt (arrow) from outer part of instrument panel crossmember assembly. (Tightening torque: 25 ± 3 N·m)

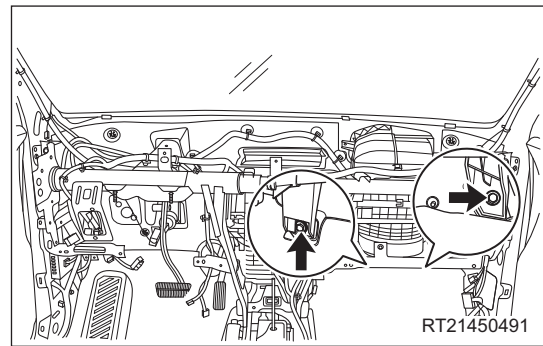


- b. Remove 4 fixing bolts (arrow) from instrument panel crossmember assembly. (Tightening torque: 25 ± 3 N·m)
 - c. Remove 4 fixing nuts (1) from instrument panel crossmember assembly. (Tightening torque: 7 ± 1 N·m)
 - d. Remove 2 fixing screws (2) from instrument panel crossmember assembly. (Tightening torque: 7 ± 1 N·m)

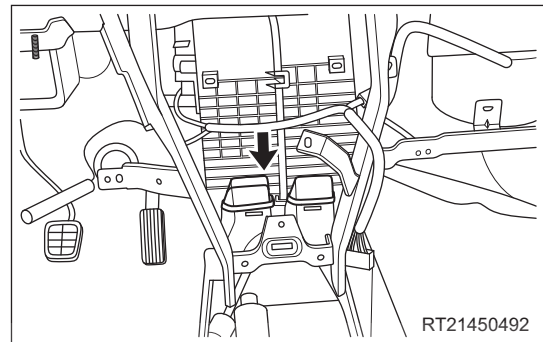


59 - INSTRUMENT PANEL

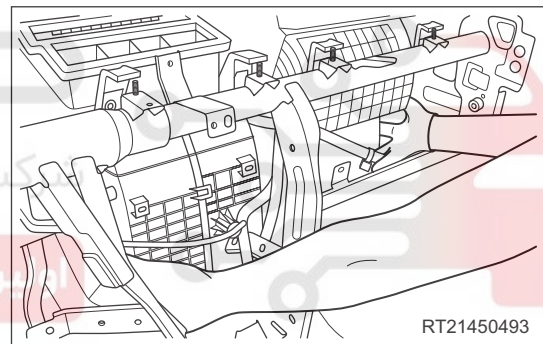
- e. Remove 2 fixing bolts (arrow) from blower.
(Tightening torque: 4 ± 1 N·m)



- f. Loosen connection (arrow) between HVAC assembly and rear foot air duct.

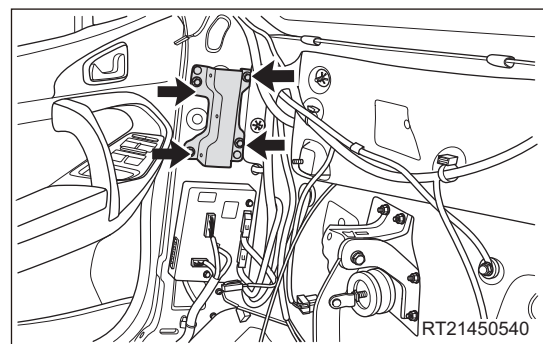


- g. Support HVAC assembly, separate connections between HVAC assembly and instrument panel crossmember, then remove instrument panel crossmember assembly.



14. Remove the instrument panel crossmember bracket assembly (take left side as an example).

- a. Remove 4 fixing bolts (arrow) from instrument panel crossmember bracket assembly.
(Tightening torque: 23 ± 2 N·m)
- b. Remove the instrument panel crossmember bracket assembly.



Installation

Installation is in the reverse order of removal.

CAUTION

- Make sure to tighten fixing bolts to the specified torque when installing instrument panel crossmember assembly.
- Check airbag for proper installation after installing instrument panel crossmember assembly.
- Check each electrical equipment for proper operation after installing instrument panel crossmember assembly.

دیجیتال خودرو

شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



دیجیتال خودرو

شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



SEAT

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دیجیتال خودرو

شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

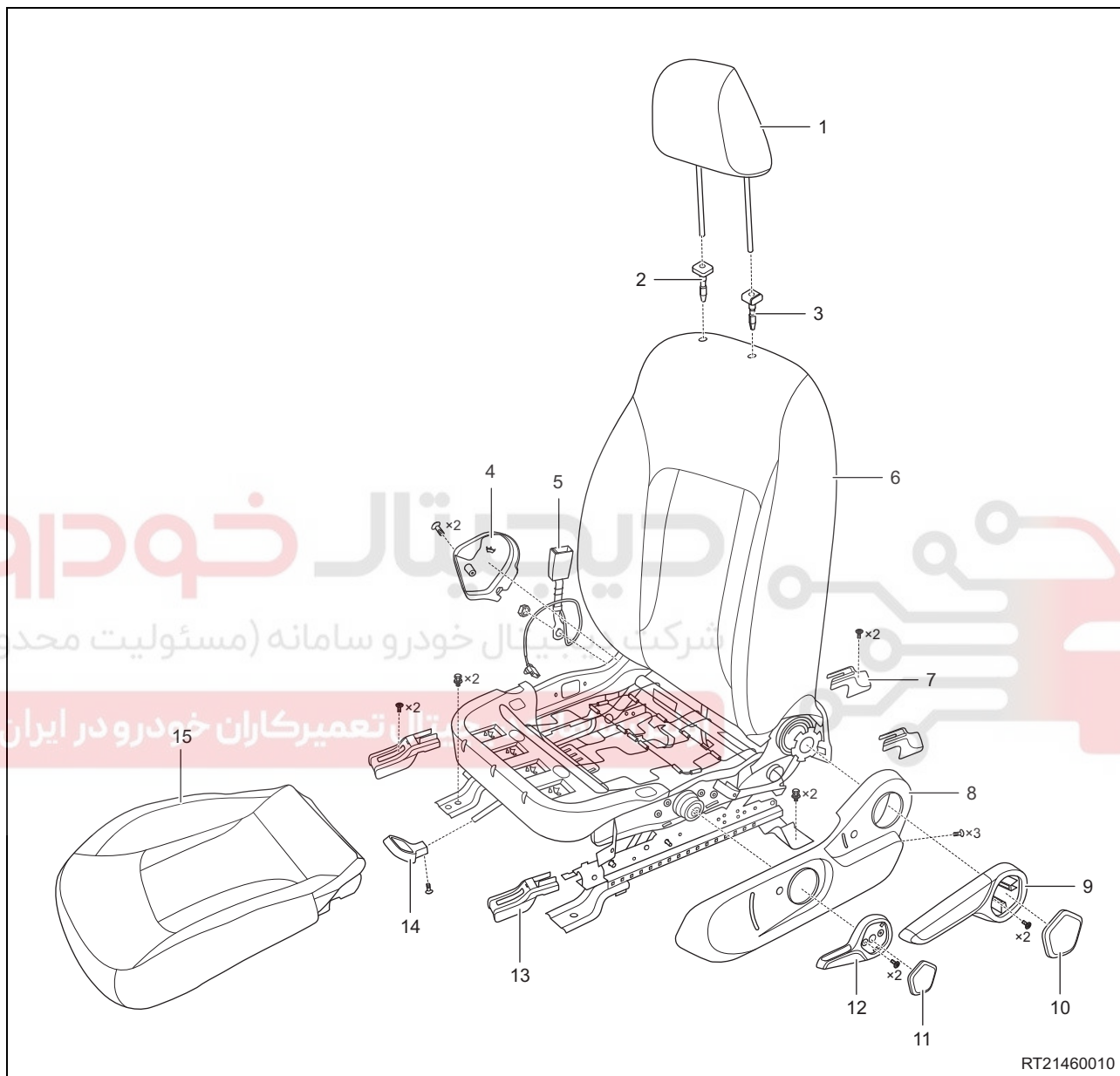
اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



GENERAL INFORMATION

Description

Driver Seat Assembly



60 - SEAT

1 - Driver Seat Headrest Assembly	2 - Driver Seat Headrest Guide w/o Button
3 - Driver Seat Headrest Guide w/ Button	4 - Drive Seat Inner Shield Assembly
5 - Driver Seat Belt Buckle Assembly	6 - Driver Seatback Assembly
7 - Driver Seat Rear Mounting Foot Cover Assembly	8 - Driver Seat Outer Shield Assembly
9 - Driver Seat Reclining Adjuster Handle	10 - Driver Seat Reclining Adjuster Handle Cover
11 - Driver Seat Height Adjuster Handle Cover	12 - Driver Seat Height Adjuster Handle
13 - Driver Seat Front Mounting Foot Cover Assembly	14 - Driver Seat Track Unlock Handle
15 - Driver Seat Cushion Assembly	

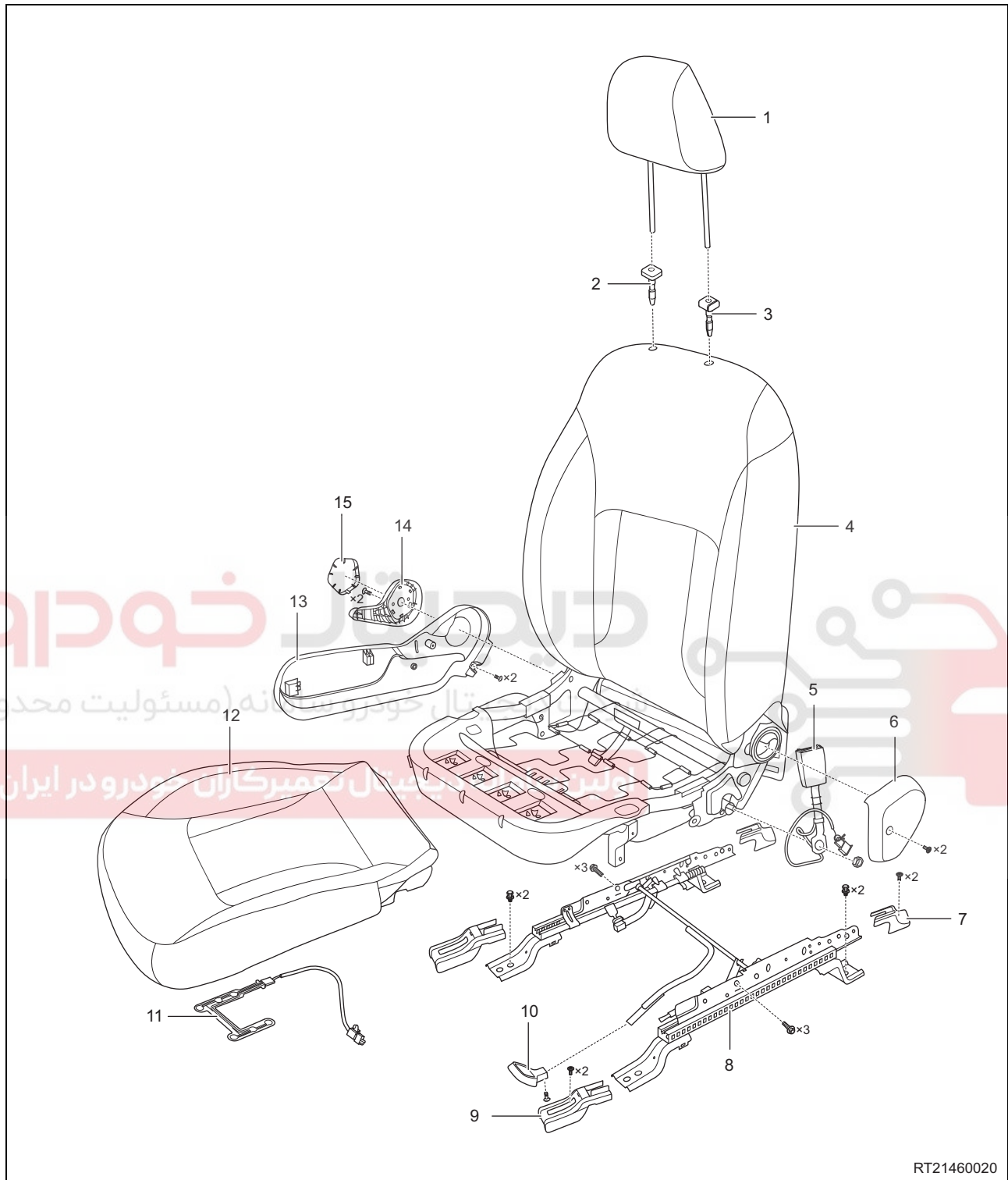
دیجیتال خودرو

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اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



Front Passenger Seat Assembly



60 - SEAT

1 - Front Passenger Seat Headrest Assembly	2 - Front Passenger Seat Headrest Guide w/o Button
3 - Front Passenger Seat Headrest Guide w/ Button	4 - Front Passenger Seatback Assembly
5 - Front Passenger Seat Belt Buckle Assembly	6 - Front Passenger Seat Inner Shield Assembly
7 - Front Passenger Seat Rear Mounting Foot Cover Assembly	8 - Front Passenger Seat Track Assembly
9 - Front Passenger Seat Front Mounting Foot Cover Assembly	10 - Front Passenger Seat Track Unlock Handle
11 - Passenger Side Seat Belt Reminder	12 - Front Passenger Seat Cushion Assembly
13 - Front Passenger Seat Outer Shield Assembly	14 - Front Passenger Seat Reclining Adjuster Handle
15 - Front Passenger Seat Reclining Adjuster Handle Cover	

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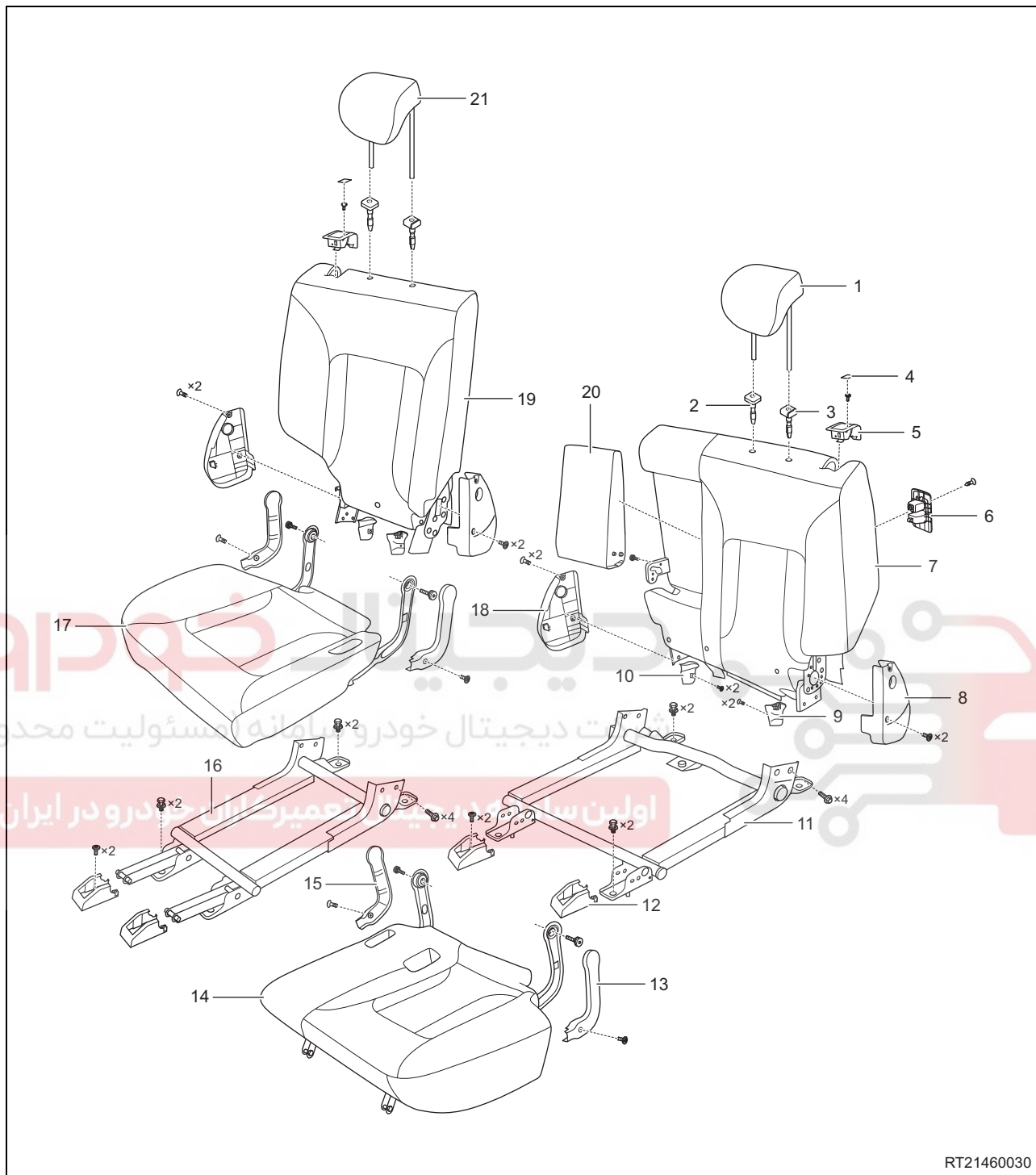
دیجیتال خودرو

شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



Rear Seat Assembly



RT21460030

60 - SEAT

1 - Rear Left Seat Headrest Assembly	2 - Rear Seat Headrest Guide w/o Button
3 - Rear Seat Headrest Guide w/ Button	4 - Rear Seatback Unlock Mechanism Cover
5 - Rear Seatback Unlock Mechanism Assembly	6 - Child Seat Upper Fixing Point Trim Cover
7 - Rear Left Seatback Assembly	8 - Rear Left Seat Folder Mechanism Assembly Outer Cover
9 - Rear Left Seat Reclining Adjuster Inner Cover	10 - Rear Right Seat Reclining Adjuster Inner Cover
11 - Rear Left Seat Bracket Assembly	12 - Rear Seat Mounting Foot Cover Assembly
13 - Attachment Trim Cover Between Rear Left Seat Cushion and Seatback	14 - Rear Left Seat Cushion Assembly
15 - Attachment Trim Cover Between Rear Right Seat Cushion and Seatback	16 - Rear Right Seat Bracket Assembly
17 - Rear Right Seat Cushion Assembly	18 - Rear Right Seat Folder Mechanism Assembly Outer Cover
19 - Rear Right Seatback Assembly	20 - Rear Seat Armrest Assembly
21 - Rear Right Seat Headrest Assembly	

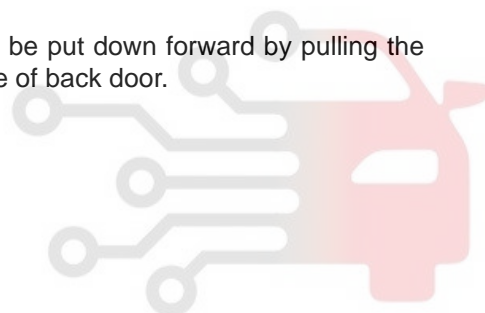
60

The front seat assemblies can be moved forward and backward by seat track unlock handle, and can be moved upward and downward by seat height adjuster handle, and the seatback reclining can be adjusted by seat reclining adjuster handle.

The rear seat position is not adjustable; however, the rear seatback can be put down forward by pulling the seatback unlock mechanism assembly to help increase the storage space of back door.

شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



Specifications

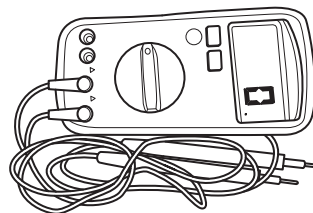
Torque Specifications

Description	Torque (N·m)
Front Seat Assembly Fixing Bolt	50 ± 5
Seat Track Unlock Handle Fixing Screw	4.8 ± 0.5
Seat Front Mounting Foot Cover Assembly Fixing Screw	4.8 ± 0.5
Seat Rear Mounting Foot Cover Assembly Fixing Screw	4.8 ± 0.5
Seat Height Adjuster Handle Fixing Screw	4.8 ± 0.5
Seat Reclining Adjuster Handle Fixing Screw	4.8 ± 0.5
Seat Outer Shield Assembly Fixing Screw	4.8 ± 0.5
Seat Belt Buckle Assembly Fixing Nut	50 ± 5
Seat Inner Shield Assembly Fixing Screw	4.8 ± 0.5
Seat Track Assembly Fixing Bolt	24 ± 2.4
Rear Seat Assembly Fixing Bolt	50 ± 5
Attachment Trim Cover Fixing Screw Between Rear Seat Cushion and Seatback	4.8 ± 0.5
Rear Seat Armrest Assembly Fixing Screw	4.8 ± 0.5
Child Seat Upper Fixing Point Trim Cover Fixing Screw	4.8 ± 0.5
Rear Seatback Unlock Mechanism Assembly Fixing Screw	4.8 ± 0.5
Rear Seat Mounting Foot Cover Assembly Fixing Screw	4.8 ± 0.5
Fixing Bolt Between Rear Seat Cushion Assembly and Seatback Assembly	48 ± 4.8
Rear Seat Folder Mechanism Assembly Outer Cover Fixing Screw	4.8 ± 0.5
Rear Seat Reclining Adjuster Inner Cover Fixing Screw	4.8 ± 0.5
Rear Seat Bracket Assembly Fixing Bolt	48 ± 4.8

Tool

General Tool

Digital Multimeter



RCH0000002

دیجیتال خودرو

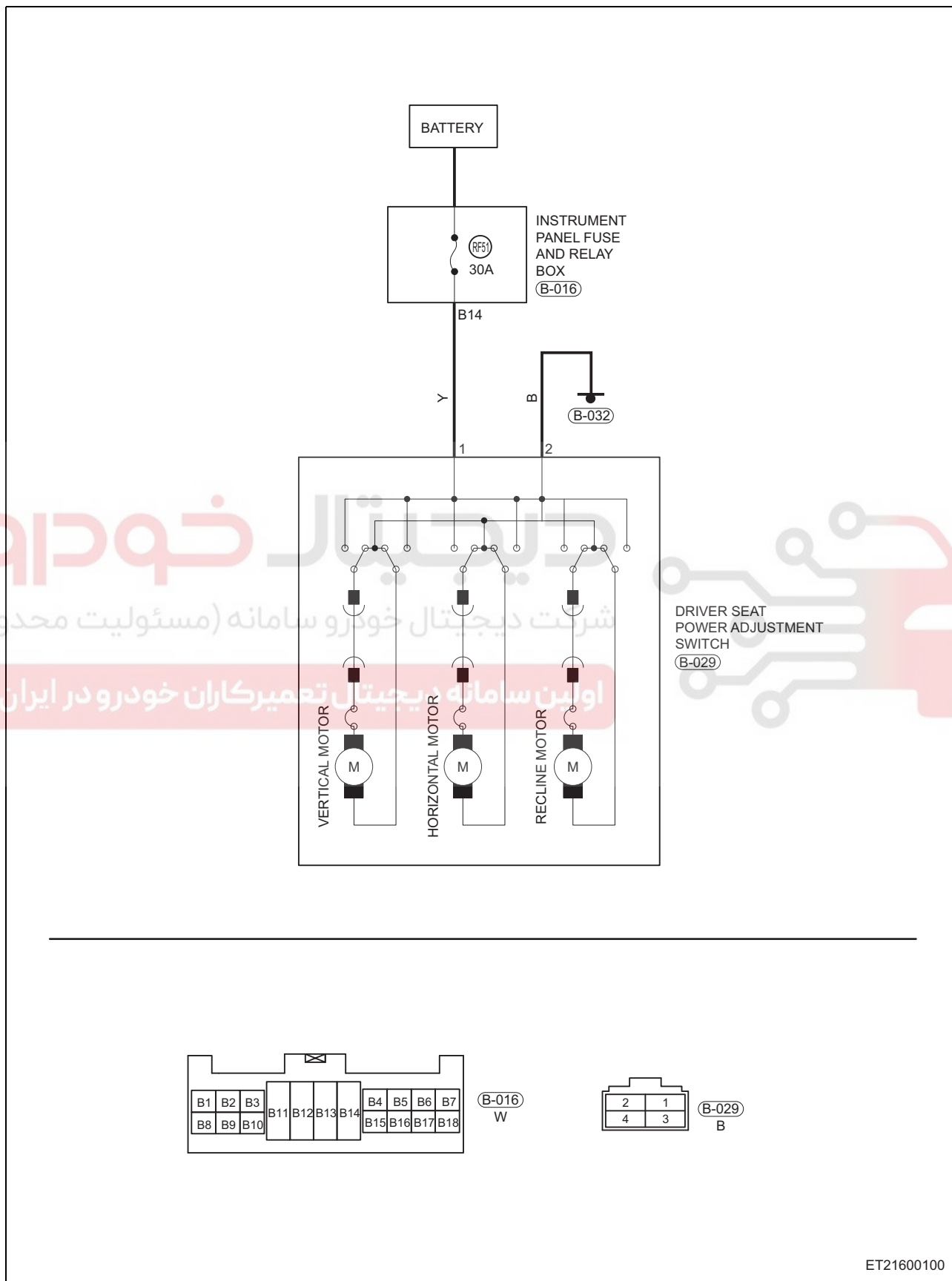
شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



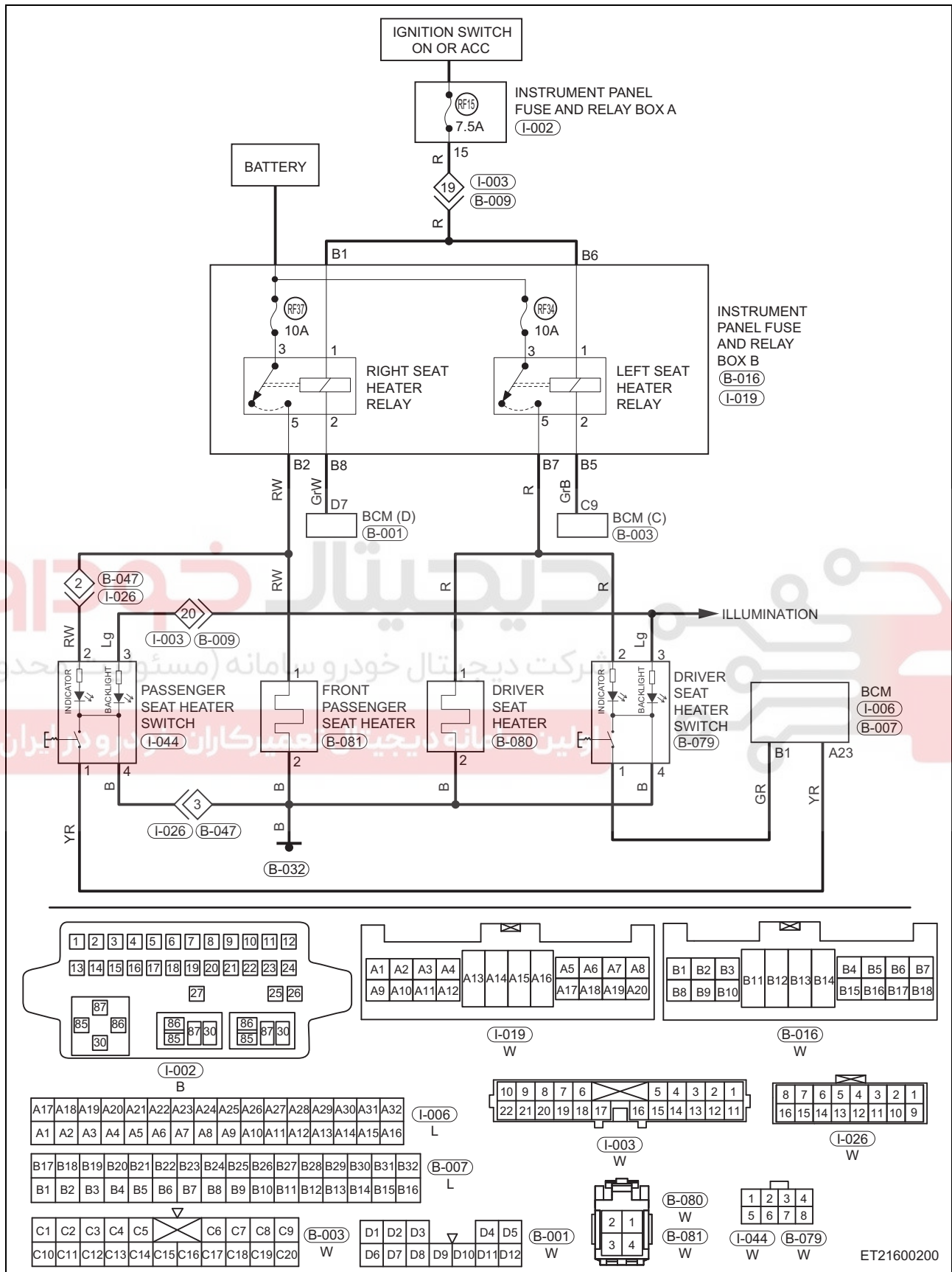
Circuit Diagram

Seat System (Page 1 of 2)



Seat System (Page 2 of 2)

60



ON-VEHICLE SERVICE

Front Seat Assembly

Removal

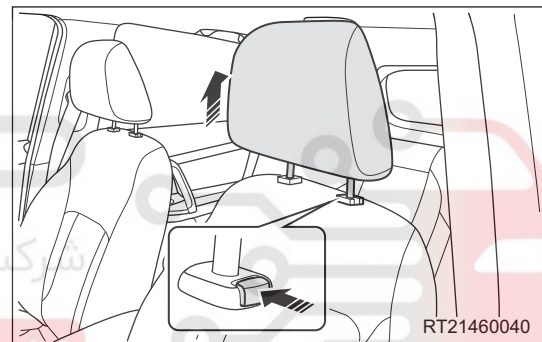
HINT:

- Use the same procedures for the front passenger seat assembly and driver seat assembly.
- Procedures listed below are for the driver seat assembly.

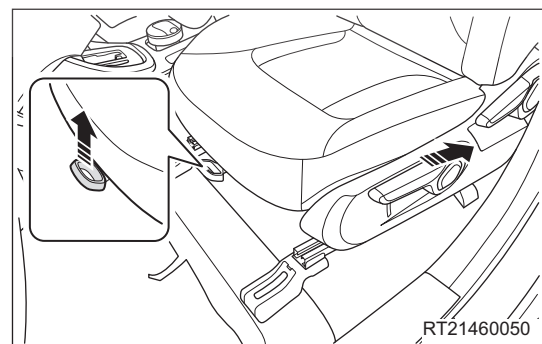
CAUTION

- Be sure to wear safety equipment to prevent accidents when removing seat assembly.
- Avoid scratch or damage to the body paint surface and carpet when removing seat assembly.

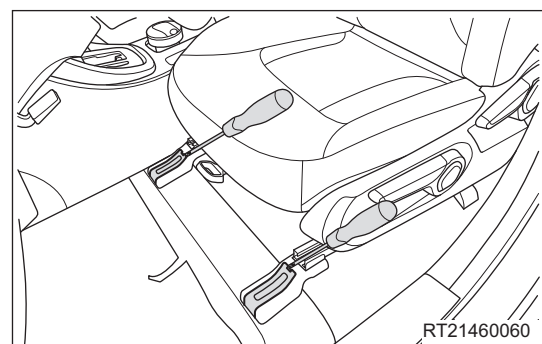
1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the driver seat headrest assembly.
 - a. As shown in the illustration, press the seat headrest guide w/ button and remove the driver seat headrest assembly.



4. Remove the driver seat assembly.
 - a. As shown in the illustration, pull up the seat track unlock handle and move the seat assembly to the rearmost position.

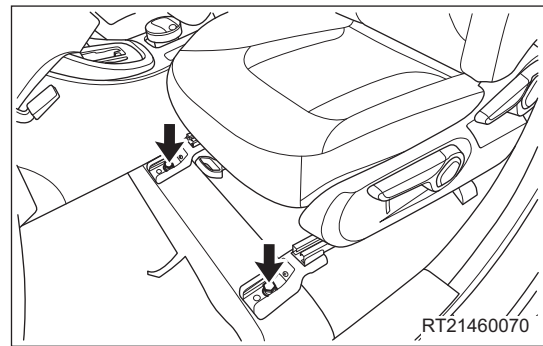


- b. Using a screwdriver wrapped with protective tape, pry up the seat front mounting foot cover.

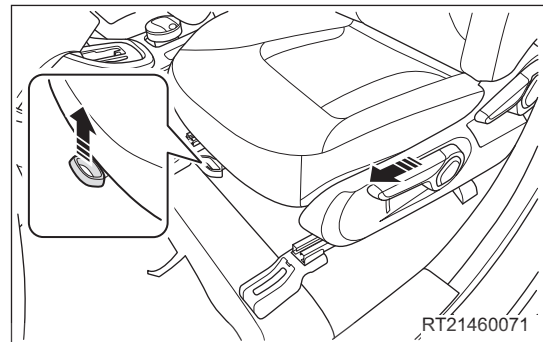


60 - SEAT

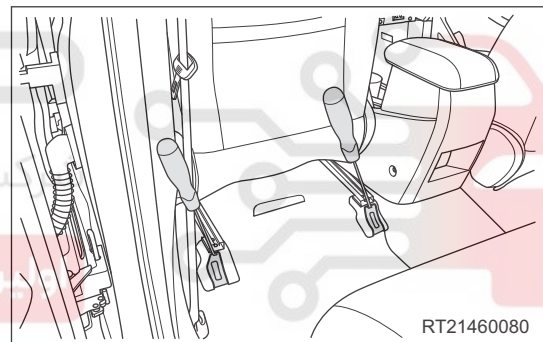
- c. Remove 2 fixing bolts (arrow) on the front side of seat assembly.
(Tightening torque: 50 ± 5 N·m)



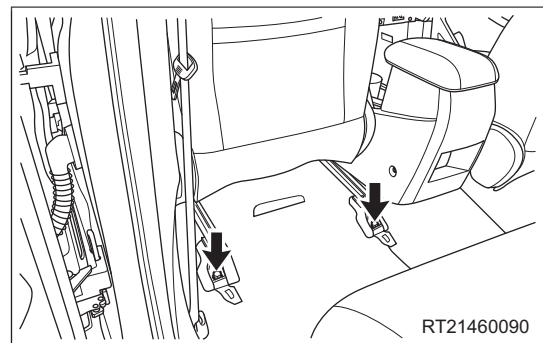
- d. As shown in the illustration, pull up the seat track unlock handle and move the seat assembly to the foremost position.



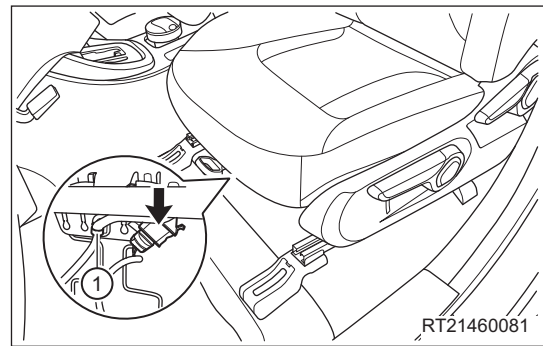
- e. Using a screwdriver wrapped with protective tape, pry up the seat rear mounting foot cover.



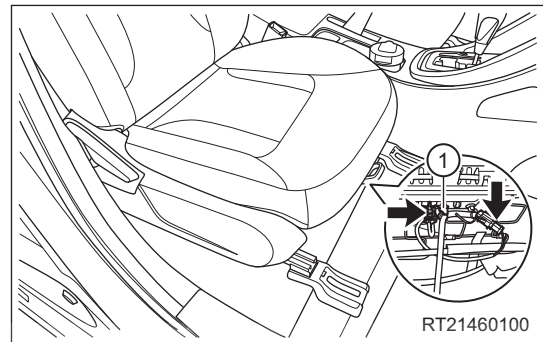
- f. Remove 2 fixing bolts (arrow) on the rear side of seat assembly.
(Tightening torque: 50 ± 5 N·m)



- g. Disconnect the wire harness connector (arrow) and clip (1) under the seat assembly (for driver seat assembly).



- h. Disconnect the wire harness connectors (arrow) and clip (1) under the seat assembly (for front passenger seat assembly).



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- i. Pull up the seat track unlock handle and move the seat assembly to the mid-position. At the same time, operate the seat reclining adjuster handle and move the seatback to the upright position, and remove the driver seat assembly.

Disassembly

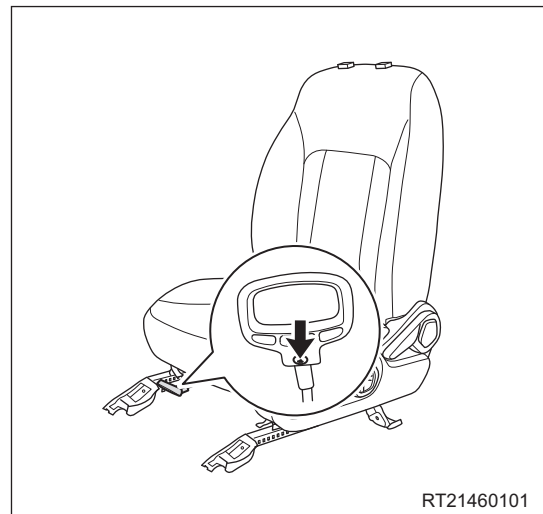
HINT:

- Use the same procedures for the front passenger seat assembly and driver seat assembly.
- Procedures listed below are for the driver seat assembly.

CAUTION

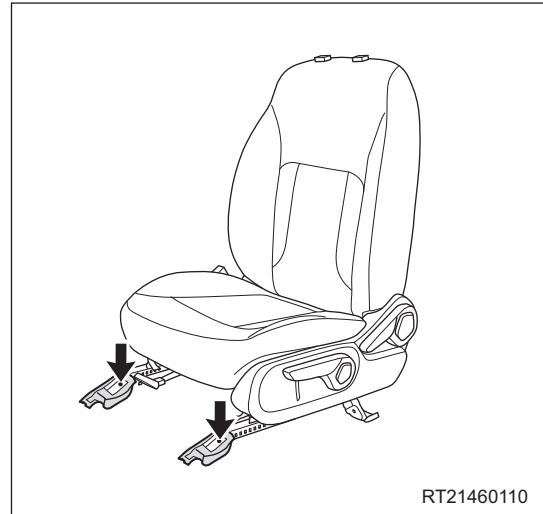
- Be sure to wear safety equipment to prevent accidents when disassembling seat assembly.

1. Remove the driver seat track unlock handle.
 - a. Remove the fixing screw (arrow) from the seat track unlock handle, and remove the driver seat track unlock handle.
(Tightening torque: 4.8 ± 0.5 N·m)

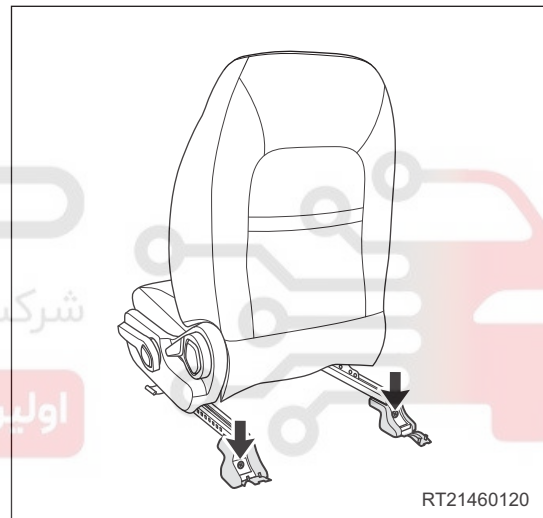


60 - SEAT

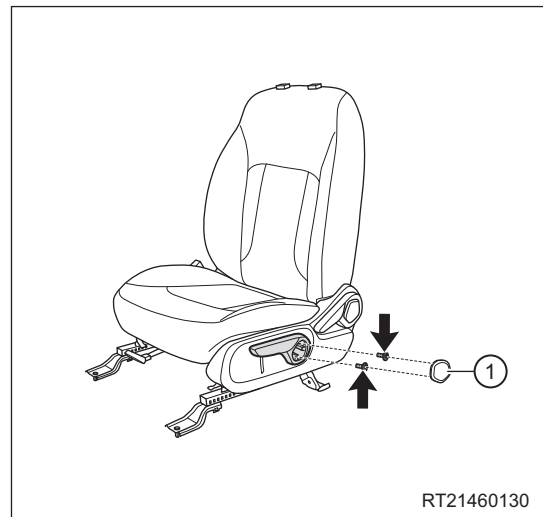
2. Remove the driver seat front mounting foot cover assembly.
 - a. Remove 2 fixing screws (arrow) from the seat front mounting foot cover assembly, and remove the driver seat front mounting foot cover assembly. (Tightening torque: 4.8 ± 0.5 N·m)



3. Remove the driver seat rear mounting foot cover assembly.
 - a. Remove 2 fixing screws (arrow) from the seat rear mounting foot cover assembly, and remove the driver seat rear mounting foot cover assembly. (Tightening torque: 4.8 ± 0.5 N·m)

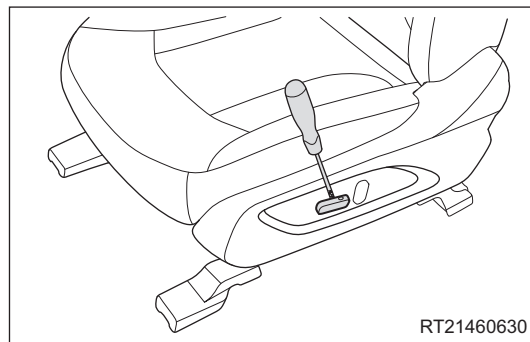


4. Remove the seat height adjuster handle (for driver side).
 - a. Using a screwdriver wrapped with protective tape, pry up the seat height adjuster handle cover (1).
 - b. Remove 2 fixing screws (arrow) from the seat height adjuster handle, and remove the seat height adjuster handle. (Tightening torque: 4.8 ± 0.5 N·m)



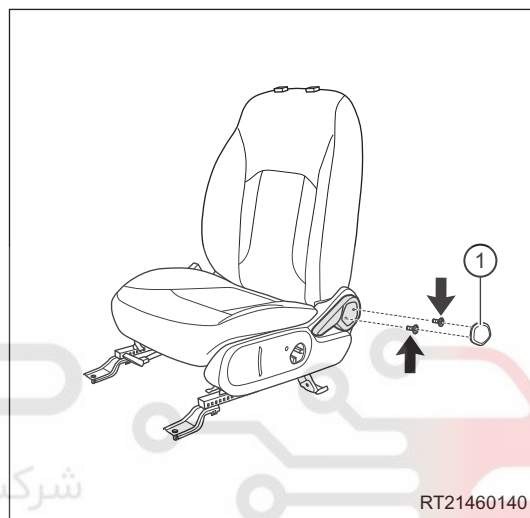
5. Remove the power seat position adjust switch (for driver side) (if equipped).

- a. Using a screwdriver wrapped with protective tape, pry up the claw on the power seat position adjust switch, and remove the power seat position adjust switch.



6. Remove the driver seat reclining adjuster handle.

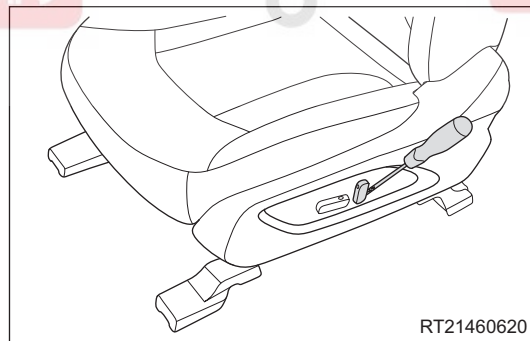
- a. Using a screwdriver wrapped with protective tape, pry up the seat reclining adjuster handle cover (1).
- b. Remove 2 fixing screws (arrow) from the seat reclining adjuster handle, and remove the driver seat reclining adjuster handle.
(Tightening torque: 4.8 ± 0.5 N·m)



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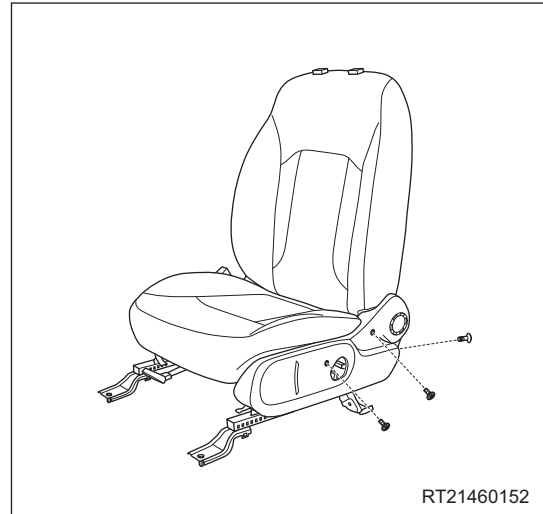
7. Remove the power seat reclining adjust switch (for driver side) (if equipped).

- a. Using a screwdriver wrapped with protective tape, pry up the claw on the power seat reclining adjust switch, and remove the power seat reclining adjust switch.

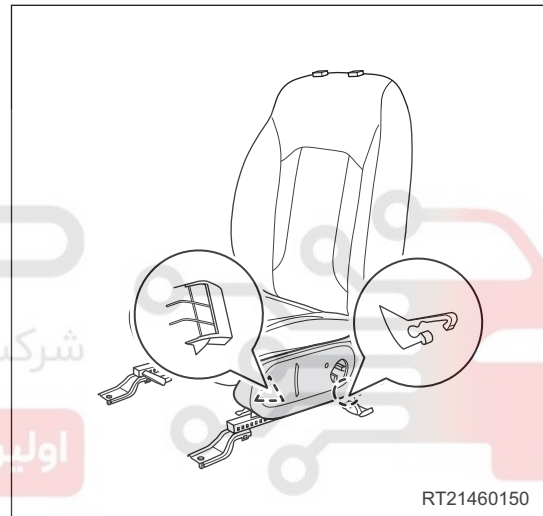


60 - SEAT

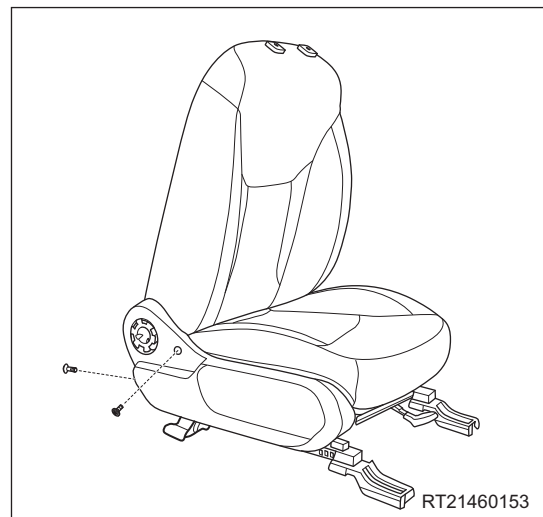
8. Remove the seat outer shield assembly (for driver side).
- Remove 3 fixing screws from the seat outer shield assembly.
(Tightening torque: 4.8 ± 0.5 N·m)



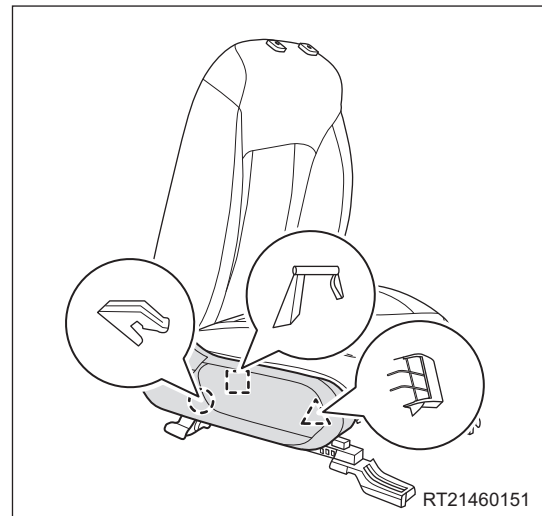
- Using a screwdriver wrapped with protective tape, pry up the claws on the seat outer shield assembly, and remove the seat outer shield assembly.



9. Remove the seat outer shield assembly (for front passenger side).
- Remove 2 fixing screws from the seat outer shield assembly.
(Tightening torque: 4.8 ± 0.5 N·m)



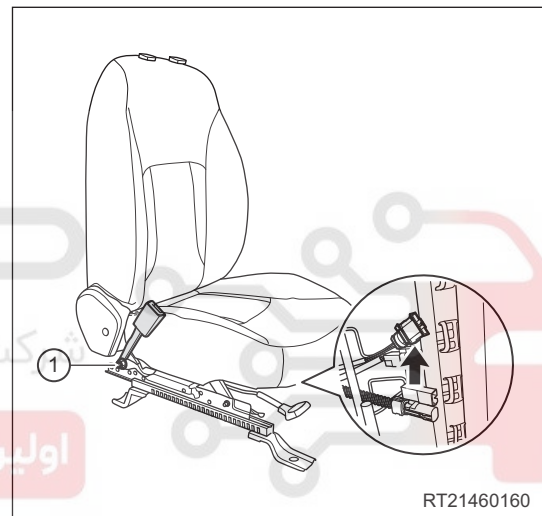
- b. Using a screwdriver wrapped with protective tape, pry up the claws on the seat outer shield assembly, and remove the seat outer shield assembly.



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10. Remove the driver seat belt buckle assembly.

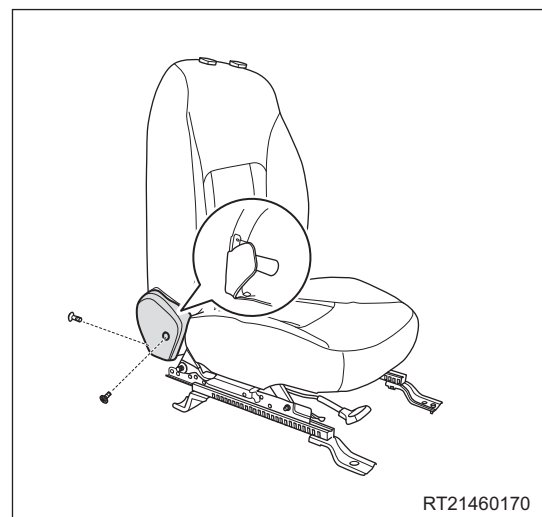
- a. Remove the fixing nut (1) from the seat belt buckle assembly.
(Tightening torque: 50 ± 5 N·m)
- b. Remove the clips (arrow) from the seat belt buckle assembly, and remove the driver seat belt buckle assembly.



دیجیتال خودرو
شکست دیجیتال خودرو سامانه (مسئولیت محدود)
اولین سامانه دیجیتال تعمیرکاران خودرو در ایران

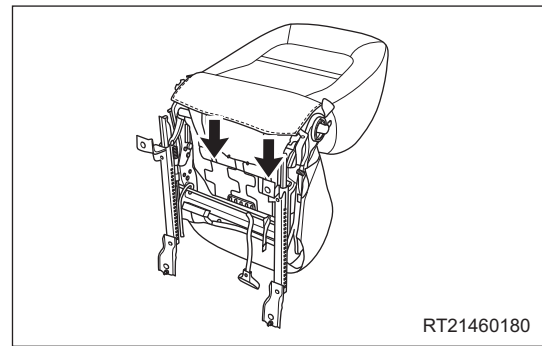
11. Remove the driver seat inner shield assembly.

- a. Remove 2 fixing screws from the seat inner shield assembly.
(Tightening torque: 4.8 ± 0.5 N·m)
- b. Using a screwdriver wrapped with protective tape, pry up the claws on the seat inner shield assembly, and remove the driver seat inner shield assembly.



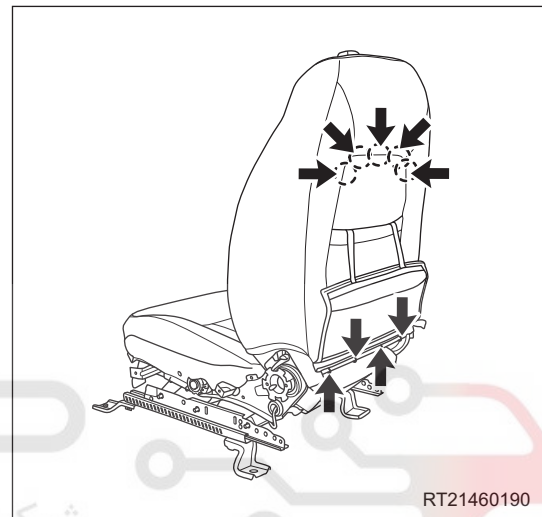
60 - SEAT

12. Remove the hooks (arrow) connecting the driver seatback assembly and seat cushion assembly.

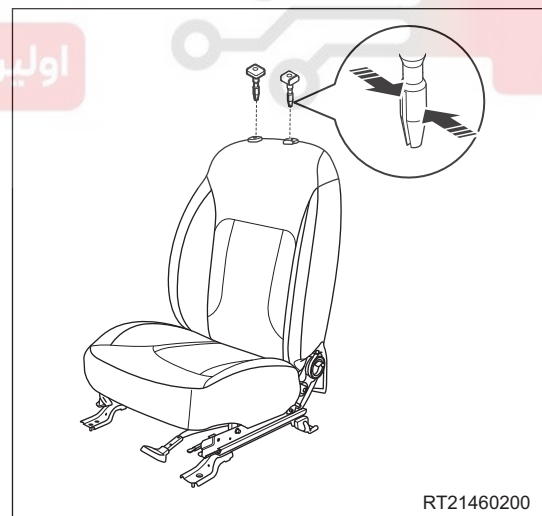


13. Remove the driver seat headrest guide.

a. Remove 9 hog rings (arrow) from the seatback assembly.

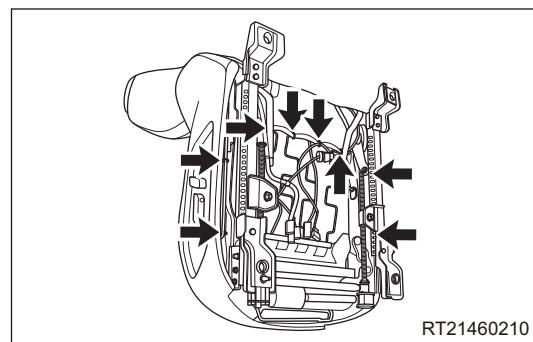


b. Press and hold the lower part of seat headrest guide in the direction of arrow as shown in the illustration, and remove the driver seat headrest guide.



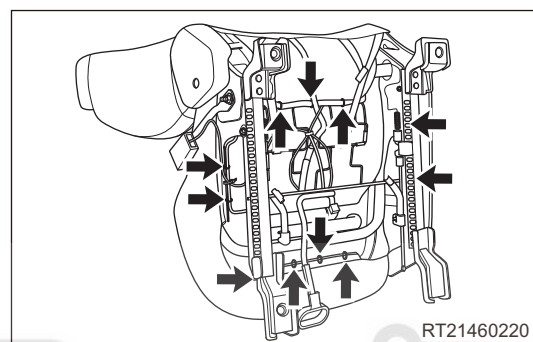
14. Remove the seat cushion assembly (for driver side).

- a. Remove 8 hog rings (arrow) from the seat cushion assembly.
- b. Remove the driver seat cushion assembly.



15. Remove the seat cushion assembly (for front passenger side).

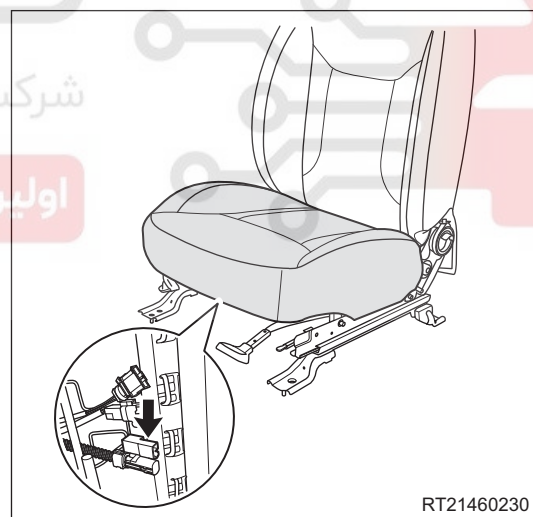
- a. Remove 11 hog rings (arrow) from the seat cushion assembly.



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- b. Disengage the clip (arrow) from the passenger side seat belt reminder connector.

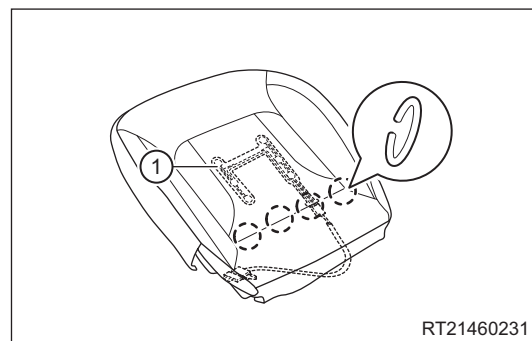
- c. Remove the front passenger seat cushion assembly.



60 - SEAT

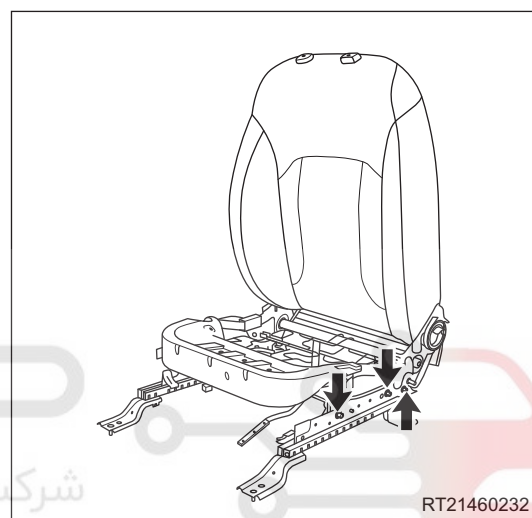
16. Remove the passenger side seat belt reminder (for front passenger side).

- a. Remove 4 hog rings from the seat cushion assembly.
- b. Remove the passenger side seat belt reminder (1).

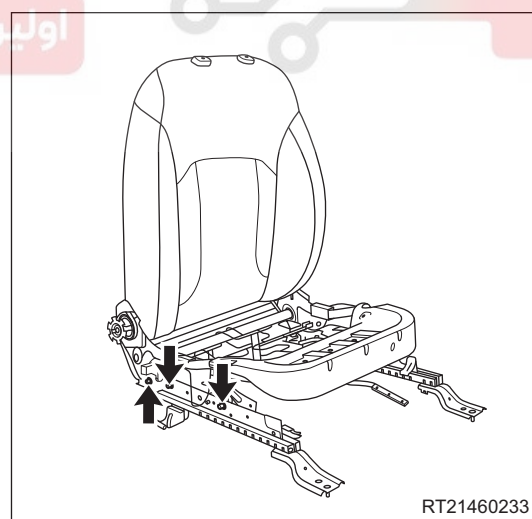


17. Remove the seat track assembly (for front passenger side).

- a. Remove 3 fixing bolts (arrow) from the left seat track assembly.
(Tightening torque: 24 ± 2.4 N·m)



- b. Remove 3 fixing bolts (arrow) from the right seat track assembly, and remove the front passenger seat track assembly.
(Tightening torque: 24 ± 2.4 N·m)



Assembly

Assembly is in the reverse order of disassembly.

CAUTION

- Be sure to wear safety equipment to prevent accidents when assembling seat.
- Be careful not to damage the seat cover during assembly.
- Replace the damaged hog rings during assembly.
- Keep the seat cover clean and tidy, and try to prevent wrinkles during assembly.

Installation

Installation is in the reverse order of removal.

CAUTION

- Be sure to wear safety equipment to prevent accidents when installing seat assembly.
- Be careful not to damage the body paint surface when installing seat assembly.
- Avoid scratch or damage to the carpet when installing seat assembly.

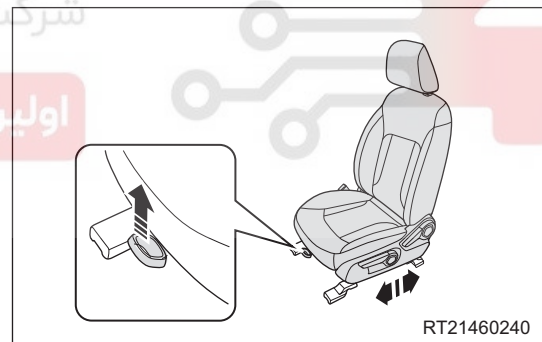
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Inspection

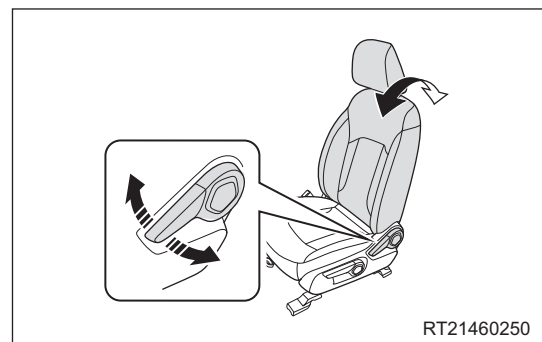
After completing the installation of seat assembly, check the basic functions of the seat assembly, and confirm that the following functions operates normally:

1. Manual seat assembly

- Move the seat to the foremost and rearmost positions by pulling up the seat track unlock handle, and check if the seat is difficult to move, stuck, has high sliding resistance, makes noise, etc. If the above conditions occur, repair or replace in time.

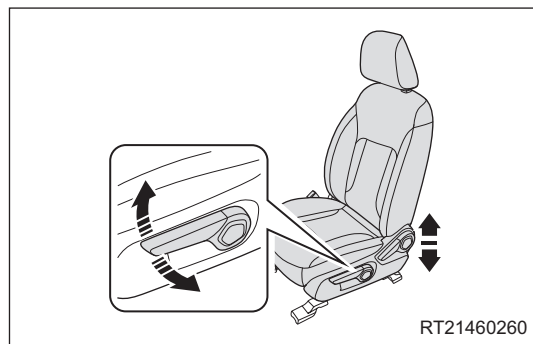


- Adjust the seatback reclining to the maximum and minimum angle by pulling up the seat reclining adjuster handle, and check if the seat is difficult to move, stuck, etc. If the above conditions occur, repair or replace in time.

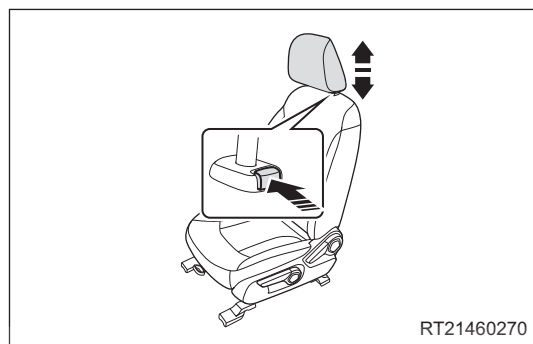


60 - SEAT

c. Adjust the seat height to the highest and lowest position by pulling up the seat height adjuster handle (for driver side), and check if the seat is difficult to move, stuck, etc. If the above conditions occur, repair or replace in time.



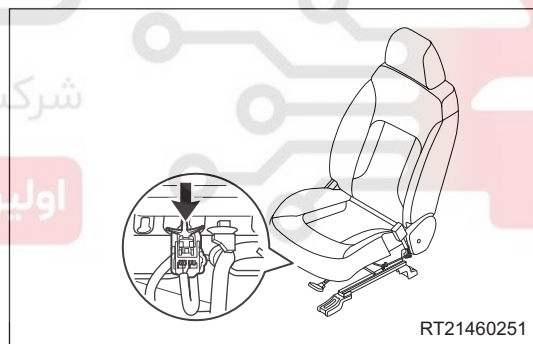
d. Press the headrest guide w/ button, move the headrest up and down, and check if the headrest is difficult to move, stuck, etc. If the above conditions occur, repair or replace in time.



e. Check if the fixing bolts are set in position. Tighten to the specified torque as necessary.

f. Check the passenger side seat belt reminder (for front passenger side).

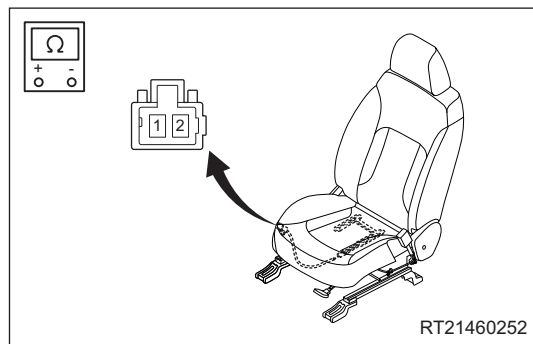
- Disconnect passenger side seat belt reminder connector (arrow).



- Using a digital multimeter, measure resistance between terminals of passenger side seat belt reminder according to the value(s) in the table below.

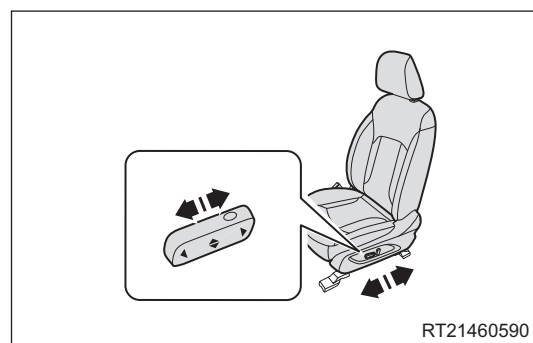
Multimeter Connection	Condition	Specified Condition
Terminal 1 - Terminal 2	No occupant	$\infty \Omega$
Terminal 1 - Terminal 2	With occupant	$\leq 20 \Omega$

If result is not as specified, replace passenger side seat belt reminder.

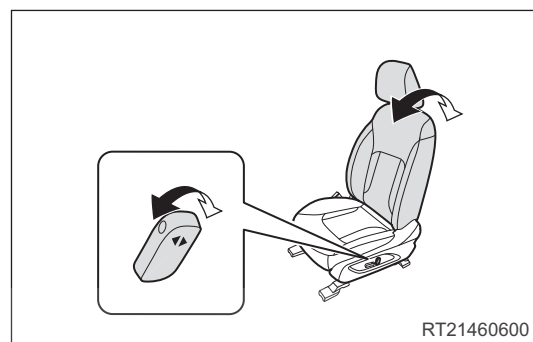


2. Power seat assembly

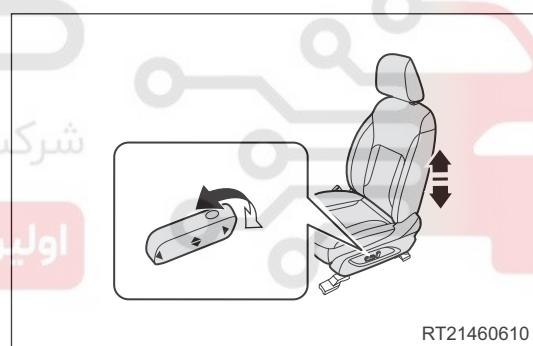
- a. Move the seat to the foremost and rearmost positions by moving the seat position adjust switch back and forth, and check if the seat is difficult to move, stuck, has high sliding resistance, makes noise, etc. If the above conditions occur, repair or replace in time.



- b. Adjust the seatback reclining to the maximum and minimum angle by pulling the seatback reclining adjust switch, and check if the seatback is difficult to move, stuck, etc. If the above conditions occur, repair or replace in time.



- c. Adjust the seat height to the highest and lowest position by pulling the seat cushion height adjust switch, and check if the seat is difficult to move, stuck, etc. If the above conditions occur, repair or replace in time.



Rear Seat Assembly

Removal

HINT:

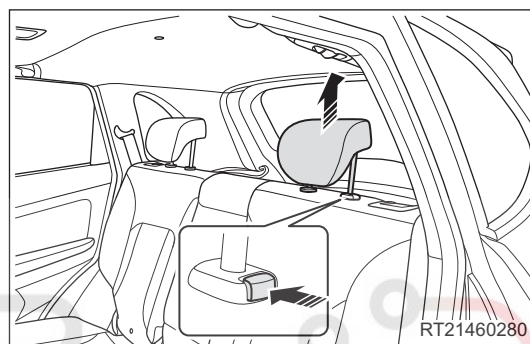
- Use the same procedures for the rear right seat assembly and rear left seat assembly.
- Procedures listed below are for the rear left seat assembly.

CAUTION

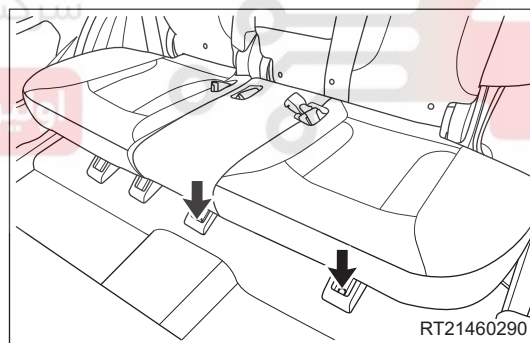
- Be sure to wear safety equipment to prevent accidents when removing rear seat assembly.
- Avoid scratch or damage to the body paint surface and carpet when removing rear seat assembly.

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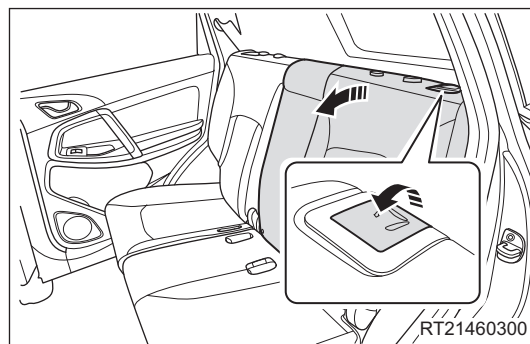
1. Remove the rear left seat headrest assembly.
 - a. As shown in the illustration, press the left seat headrest guide w/ button and remove the rear left seat headrest assembly.



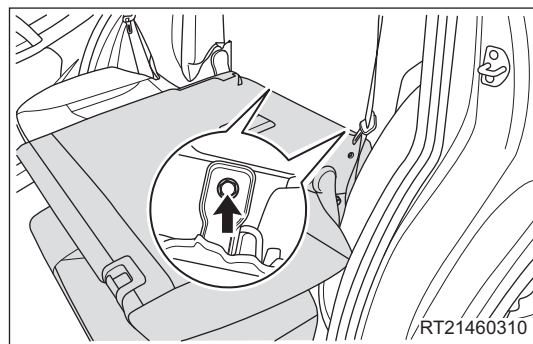
2. Remove the rear left seat assembly.
 - a. Remove 2 fixing bolts (arrow) from the front part of rear left seat assembly.
(Tightening torque: 50 ± 5 N·m)



- b. Put down the rear left seatback in the direction of arrow as shown in the illustration.



- c. Remove 2 fixing bolts (arrow) from the rear part of rear left seat assembly, and remove the rear left seat assembly.
(Tightening torque: 50 ± 5 N·m)



Disassembly

HINT:

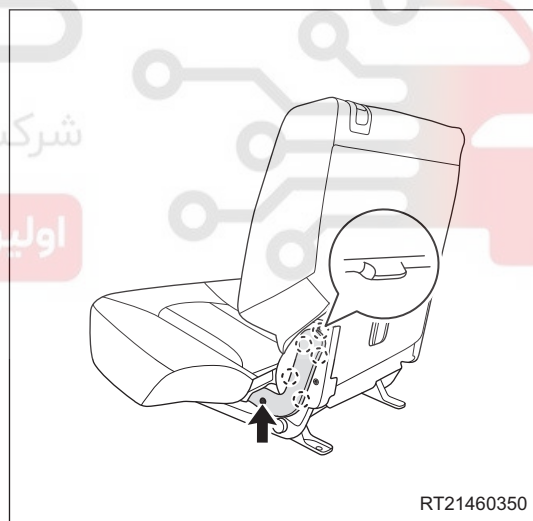
- Use the same procedures for the rear right seat assembly and rear left seat assembly.
- Procedures listed below are for the rear left seat assembly.

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CAUTION

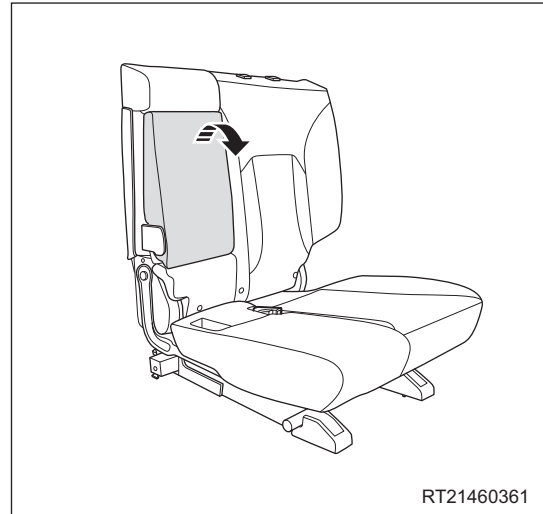
- Be sure to wear safety equipment to prevent accidents when disassembling rear seat assembly.

1. Remove the attachment trim cover between rear left seat cushion and seatback (take left side as an example).
 - a. Remove the attachment trim cover fixing screw (arrow) between rear left seat cushion and seatback.
(Tightening torque: 4.8 ± 0.5 N·m)
 - b. Using a screwdriver wrapped with protective tape, pry up the claws on the attachment trim cover between rear left seat cushion and seatback.
 - c. Remove the attachment trim cover between rear left seat cushion and seatback.

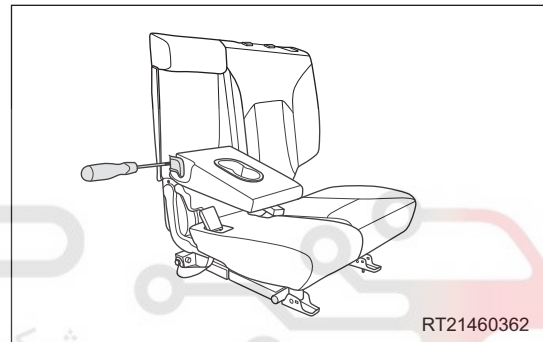


60 - SEAT

2. Remove the rear seat armrest assembly.
 - a. Open the rear seat armrest assembly in the direction of arrow as shown in the illustration.

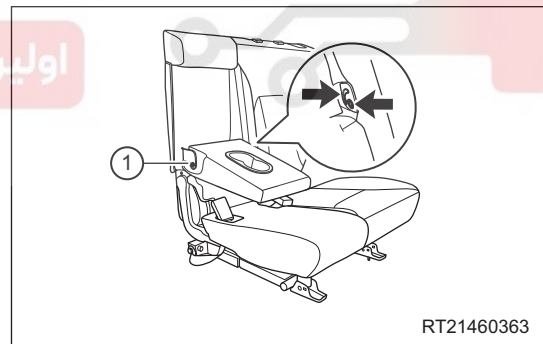


- b. Using a screwdriver wrapped with protective tape, pry up the claw on the rear seat armrest trim cover, and remove the rear seat armrest trim cover.

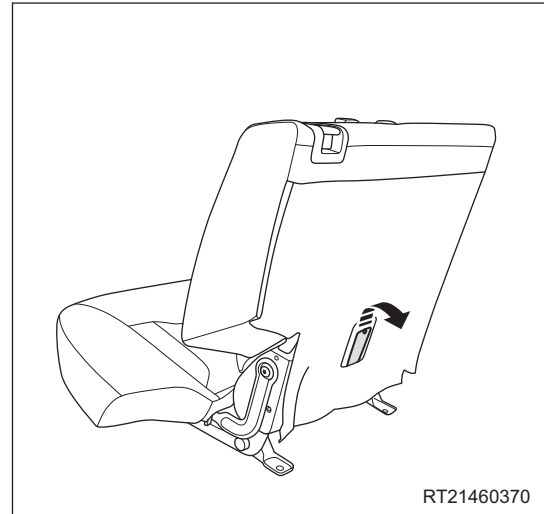


- c. Remove the fixing screw (1) from the rear seat armrest assembly. (Tightening torque: 4.8 ± 0.5 N·m)

- d. Remove the rear seat armrest assembly from the grooves (arrow).

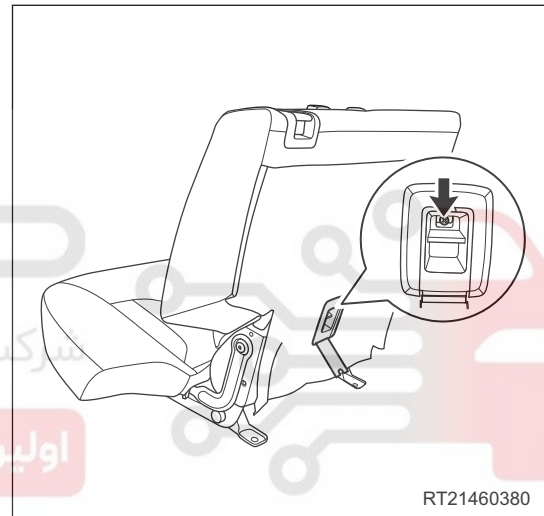


3. Remove the child seat upper fixing point trim cover.
 - a. Open the child seat upper fixing point trim cover in the direction of arrow as shown in the illustration.

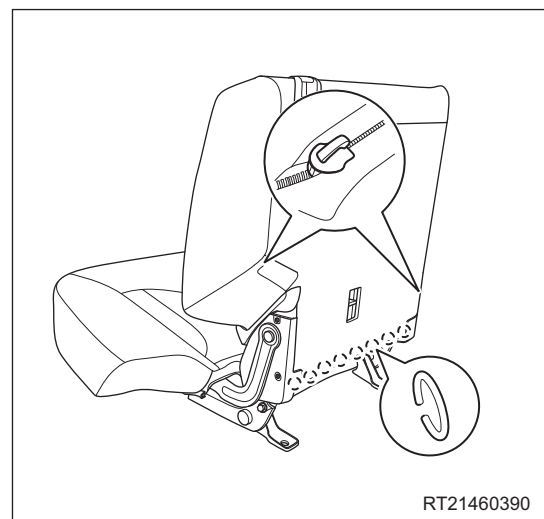


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- b. Remove the fixing screw (arrow) from the child seat upper fixing point trim cover.
(Tightening torque: 4.8 ± 0.5 N·m)
 - c. Using a screwdriver wrapped with protective tape, pry up the claw on the child seat upper fixing point trim cover.
 - d. Remove the child seat upper fixing point trim cover.

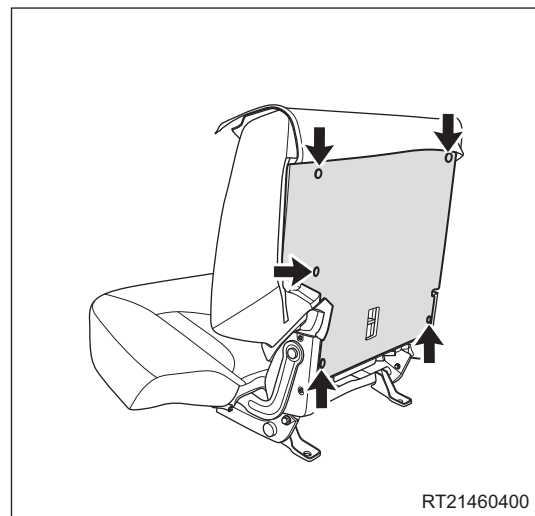


4. Remove the rear left seat headrest guide.
 - a. Remove 7 hog rings under the seatback.
 - b. Unzip the rear seatback assembly.



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- c. Remove 5 fixing clamps (arrow) from the rear seatback board, and remove the rear seatback board.

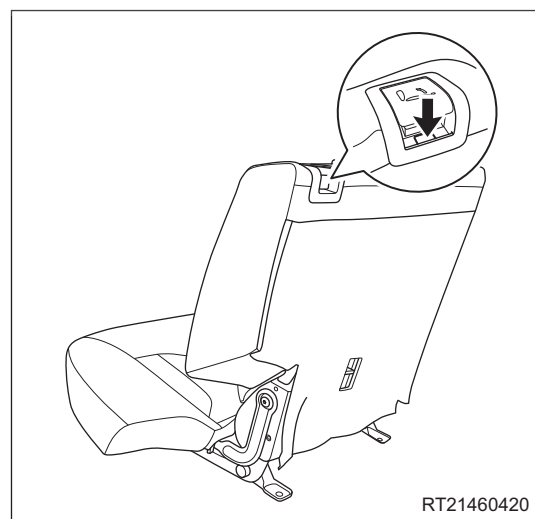


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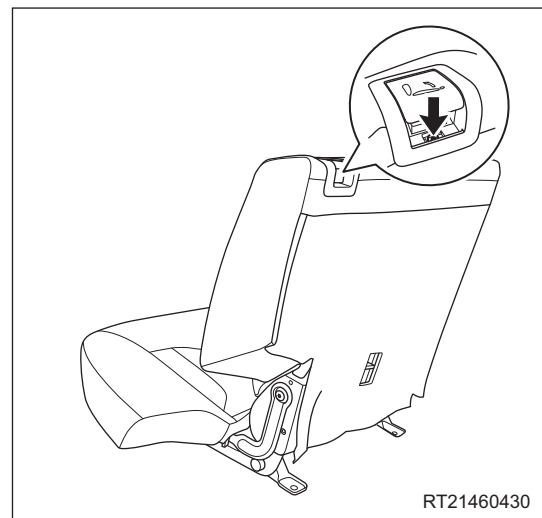
- d. Press the lower part of rear seat headrest guide in the direction of arrow as shown in the illustration, and remove the rear left seat headrest guide.



5. Remove the rear seatback unlock mechanism assembly.
a. Using a screwdriver wrapped with protective tape, pry up the cover (arrow) of rear seatback unlock mechanism assembly.



- b. Remove the fixing screw (arrow) from the rear seatback unlock mechanism assembly.
(Tightening torque: 4.8 ± 0.5 N·m)



- c. Disconnect the rear seatback unlock mechanism cables (arrow), and remove the rear seatback unlock mechanism assembly.

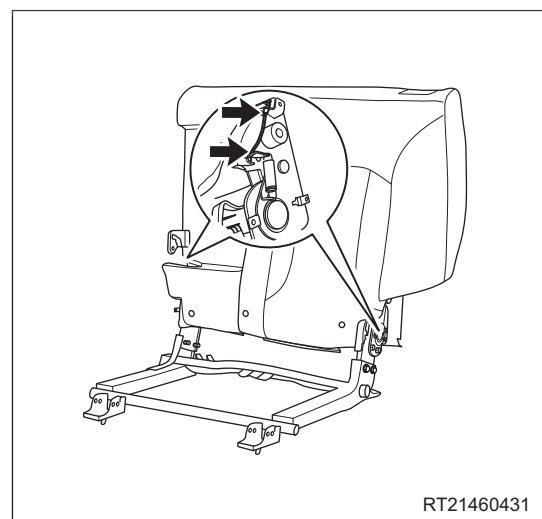


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شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

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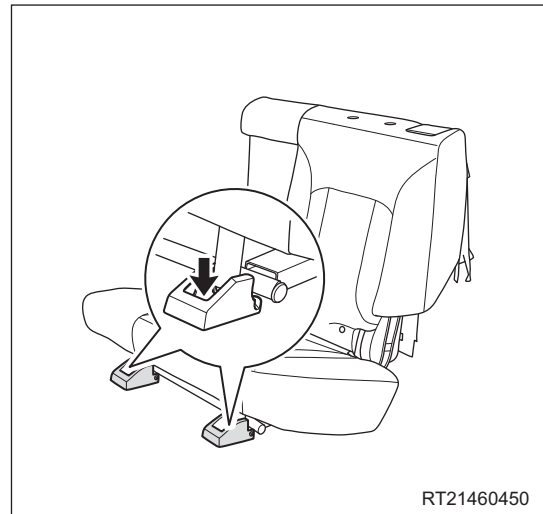
6. Remove the rear seatback unlock mechanism cable.
a. Remove the rear seatback unlock mechanism cables (arrow) from the groove as shown in the illustration.



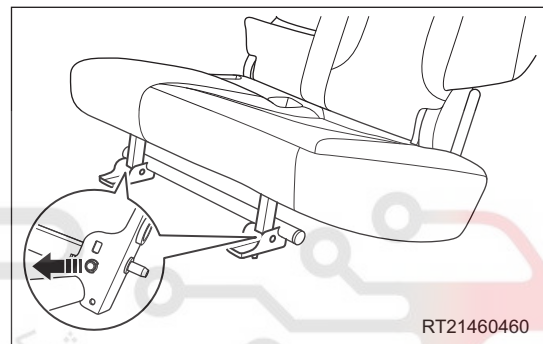
60 - SEAT

7. Separate the rear seat cushion assembly and seatback assembly.

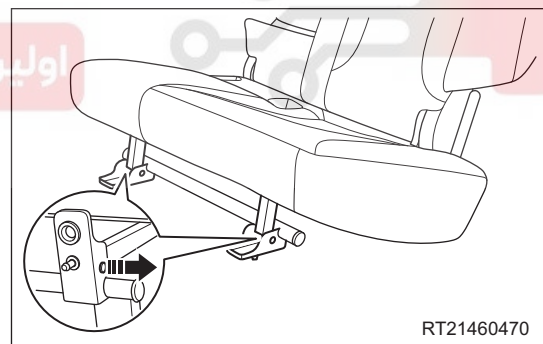
- a. Remove 2 fixing screws (arrow) from the rear seat mounting foot cover assembly, and remove the rear seat mounting foot cover assembly.
(Tightening torque: 4.8 ± 0.5 N·m)



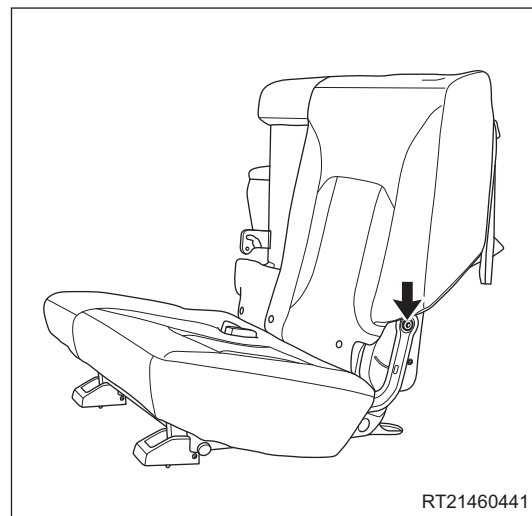
- b. Remove the snap ring in the direction of arrow as shown in the illustration.



- c. Pull out the coupling shaft in the direction of arrow as shown in the illustration.



- d. Remove the fixing bolt (arrow) between rear seat cushion assembly and left side of seatback assembly.
(Tightening torque: 48 ± 4.8 N·m)

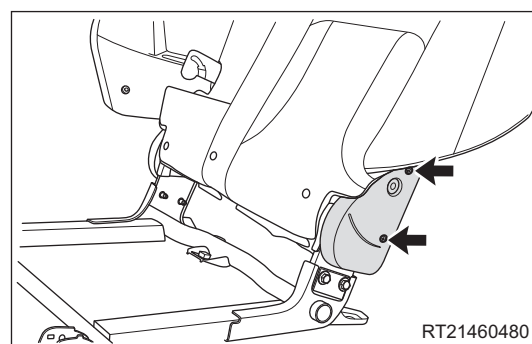


- e. Remove the fixing bolt (arrow) between rear seat cushion assembly and right side of seatback assembly.
(Tightening torque: 48 ± 4.8 N·m)



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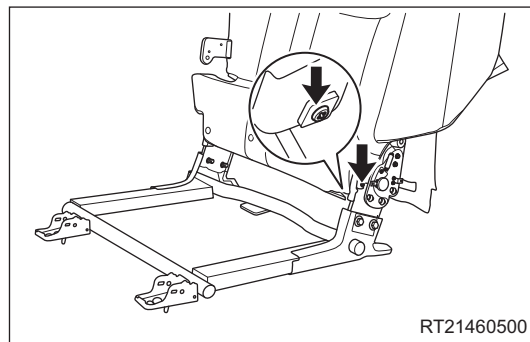
- f. Separate the rear seat cushion assembly and seatback assembly.
8. Remove the rear left seat folder mechanism assembly outer cover (take left side as an example).
- a. Remove 2 fixing screws (arrow) from the rear left seat folder mechanism assembly outer cover.
(Tightening torque: 4.8 ± 0.5 N·m)
- b. Remove the rear left seat folder mechanism assembly outer cover.



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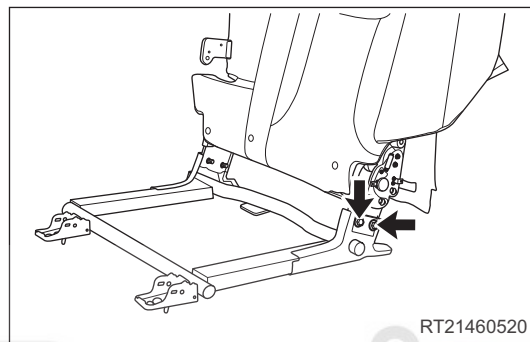
9. Remove the rear left seat reclining adjuster inner cover (take left side as an example).

- Remove 2 fixing screws (arrow) from the rear left seat reclining adjuster inner cover.
(Tightening torque: 4.8 ± 0.5 N·m)
- Remove the rear left seat reclining adjuster inner cover.

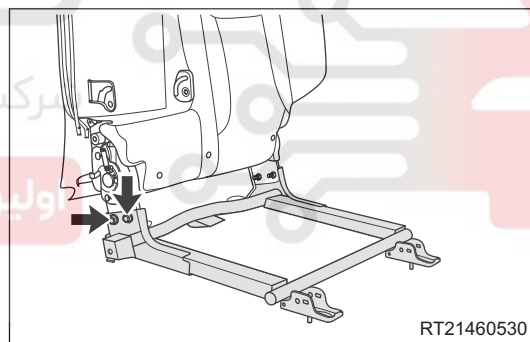


10. Remove the rear seat bracket assembly.

- Remove 2 fixing bolts (arrow) from the left side of rear seat bracket assembly.
(Tightening torque: 48 ± 4.8 N·m)



- Remove 2 fixing bolts (arrow) from the right side of rear seat bracket assembly.
(Tightening torque: 48 ± 4.8 N·m)
- Remove the rear seat bracket assembly.



Assembly

Assembly is in the reverse order of disassembly.

CAUTION

- Be sure to wear safety equipment to prevent accidents when assembling rear seat assembly.
- Be careful not to damage the seat cover during assembly.
- Replace the damaged hog rings during assembly.
- Keep the seat cover clean and tidy, and try to prevent wrinkles during assembly.

Installation

Installation is in the reverse order of removal.

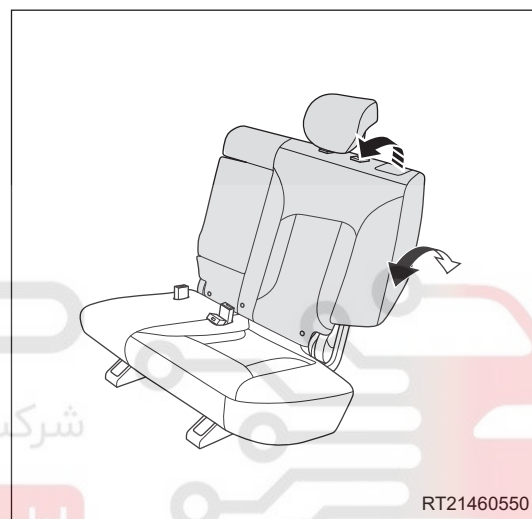
CAUTION

- Be sure to wear safety equipment to prevent accidents when installing rear seat assembly.
- Be careful not to damage the body paint surface when installing rear seat assembly.
- Avoid scratch or damage to the carpet when installing rear seat assembly.
- Make sure that the seat belt buckle is not under the seat cushion when installing rear seat cushion.

Inspection

After installing the rear seat assembly, check the basic functions of rear seat assembly, and confirm that the following functions operates normally:

1. Pull up the seatback unlock mechanism assembly, and check if the rear seatback is difficult to move, stuck, etc. Repair or replace as necessary.

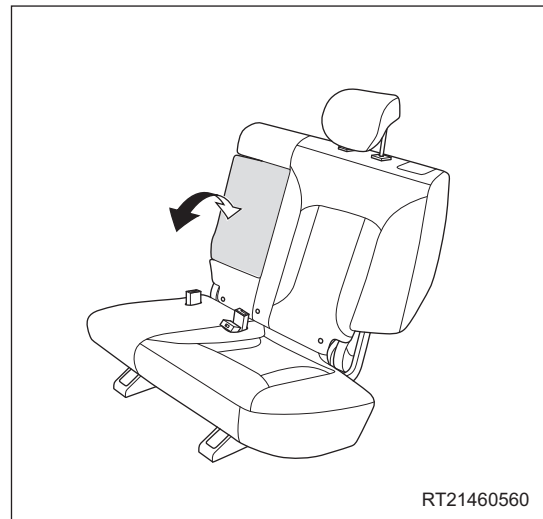


2. Press the headrest guide w/ button, move the headrest up and down, and check if the headrest is difficult to move, stuck, etc. If the above conditions occur, repair or replace in time.



60 - SEAT

3. Flip down the rear seat armrest assembly forward or backward, and check if the rear seat armrest assembly is difficult to move, stuck, etc. If the above conditions occur, repair or replace in time.



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4. Check if the fixing bolts are set in position. Tighten to the specified torque as necessary.

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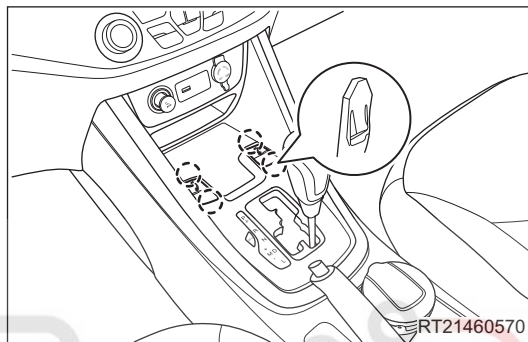
Seat Heater Switch

Removal

CAUTION

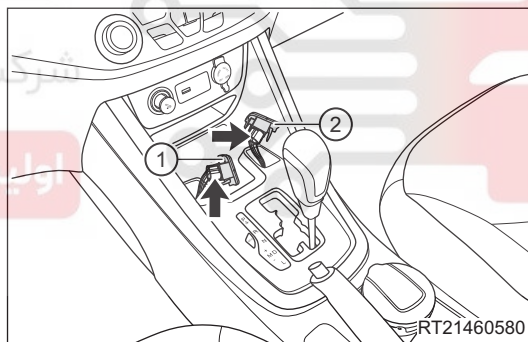
- Be sure to wear safety equipment to prevent accidents when removing seat heater switch.
- Avoid scratch or damage to the shift panel assembly when removing seat heater switch.

1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the seat heater switch.
 - a. Using a screwdriver wrapped with protective tape, pry up the claws on the seat heater switch.



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- b. Disconnect the seat heater switch connectors (arrow), and remove the driver seat heater switch (1) and front passenger seat heater switch (2).



Installation

Installation is in the reverse order of removal.

CAUTION

- Check seat heater switch for proper operation after installation.

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