

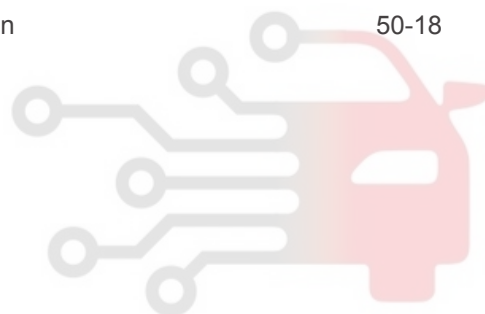
SUNROOF

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شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



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GENERAL INFORMATION

Overview

Description



RF0001001

1 - Sliding Roof Glass Assembly	2 - Sliding Roof Front Right Drain Hose Assembly
3 - Sliding Roof Front Left Drain Hose Assembly	4 - Sliding Roof Rear Right Drain Hose Assembly
5 - Sliding Roof Rear Left Drain Hose Assembly	6 - Sliding Roof Bracket Assembly
7 - Sliding Roof Switch Assembly	

By using principle of hydromechanics, sliding roof unit draws out turbid gas from vehicle to make air exchange fully. In hydromechanics research filed, experiments showed that pressure acting on tube wall from fluid is low at high flow velocity, and pressure is high at low flow velocity. During high speed driving, roof cover has a certain radian, so speed of outside airflow is high when it passes through roof cover. Pressure from outside airflow to roof cover is lower than pressure from inside airflow to roof cover. Inside air flows out to outside of vehicle, pressure becomes lower, then outside fresh air supplements into vehicle. Thus, inside air is circulated and fresh air is kept inside the vehicle. It has functions of increasing aesthetic, broadening horizon, increasing lighting, economy and practicability, beautifying car image, active window.

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Specifications

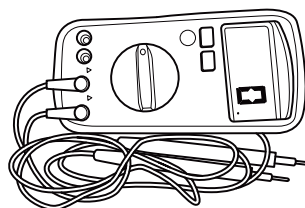
Torque Specifications

Description	Torque (N·m)
Sunroof Switch Assembly Fixing Screw	2.0 ± 0.5
Sliding Roof Mounting Bracket Fixing Bolt	9.0 ± 1.5
Glass Assembly Bracket Fixing Screw	5.0 ± 1.0

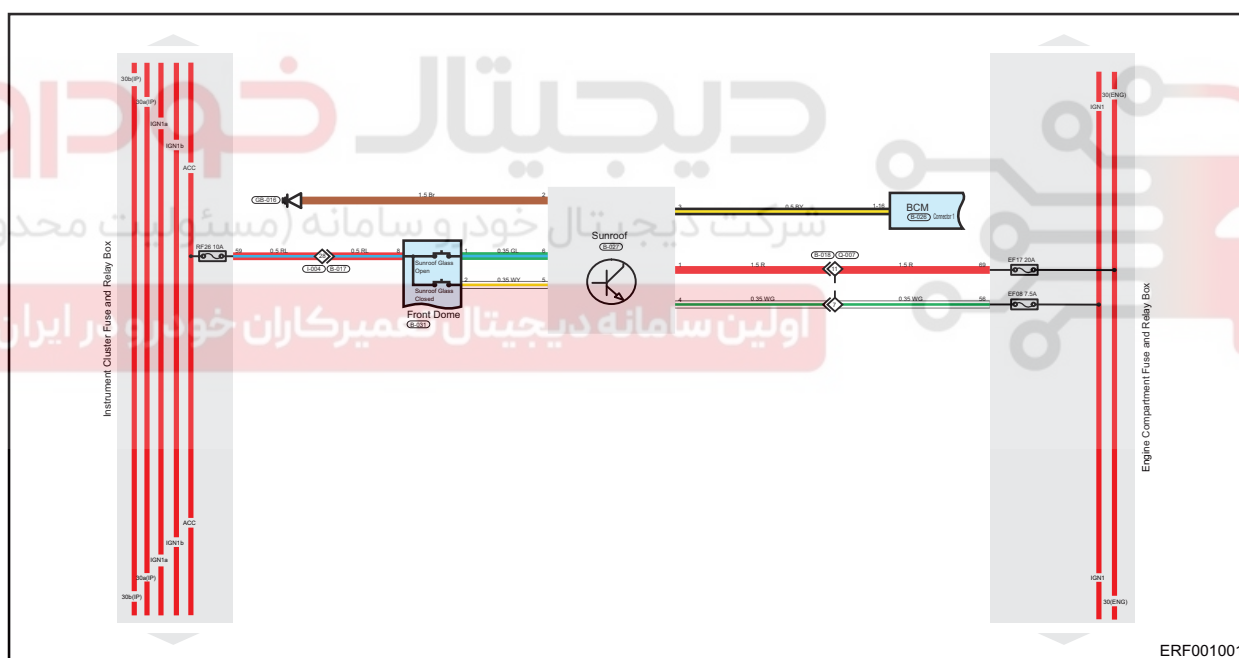
Tool

General Tool

Digital Multimeter



002



ERF001001

DIAGNOSIS & TESTING

Diagnosis Content

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.

Symptom	Suspected Area	Repair Operation Method
Water leakage	Drain hose is clogged or folded	Check condition of drain hose
	Distance between sliding roof glass and roof hole is extremely large or height of glass is poor	Adjust relative position of glass
Wind noise from sliding roof	Distance between sliding roof glass and roof hole is extremely large, height of glass is poor or spoiler is disabled	Adjust relative position of glass
Abnormal starting and operation	Poor connection in wire harness, fuse or ground wire	Check wire harness, fuse and ground wire
	Poor sliding roof control unit, sliding roof motor	Check or replace sliding roof control unit and sliding roof motor
	Sun visor comes off from guide rail, trim strip is damaged	Readjust condition of sun visor, install or replace trim strip
	Foreign matter exists in guide rail	Check and remove foreign matter
Incorrect starting	Sun visor comes off from guide rail, guide rail is scratched with trim strip after it is damaged	Readjust and install sun visor and reinstall trim strip (replace damaged parts at the same time)
	(A.T.S) jam protection function does not operate properly	Check if impact occurs between vehicle body and spoiler, loosen tension spring, check and remove foreign matter from guide rail
	Poor sliding roof motor	Replace motor
Noise occurs when starting	Operation is resisted when sun visor comes off from guide rail or trim strip is damaged	Readjust and install sun visor and reinstall trim strip (replace damaged parts at the same time)
	Impact between drain hose and vehicle body	Attach buffer sponge around drain hose
	Impact between roof cover and sliding roof frame	Apply glass cement or plastic cement between roof cover and sliding roof bracket
	Distance between sliding roof glass and roof hole is extremely large or height of glass is poor	Readjust height and relative position of glass
No response from sliding roof during DVD voice control or when local button "open" is pressed	Sliding roof is not initialized	Reinitialize sliding roof; Reinitialization method: 1. Long press the close button for more than 4 s to tilt up sliding roof, then release the button; 2. Long press the close button for more than 10 s again to finish reinitialization of sliding roof.

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Symptom	Suspected Area	Repair Operation Method
Sliding roof cannot be closed (with sliding roof opened, sliding roof moves to tilt position directly from open position when closing; with sliding roof tilted, sliding roof moves to open position directly from tilt position when closing)	Sliding roof position information is lost	Reinitialize sliding roof; Reinitialization method 1: 1. Long press the close button for more than 4 s to tilt up sliding roof, then release the button; 2. Long press the close button for more than 15 s again to finish reinitialization of sliding roof. Reinitialization method 2: Operate sliding roof to open position, press and hold close button and forcibly push sliding roof glass backward after sliding roof starts to move, so that sliding roof can move to open position by jam protection function; sliding roof starts to close after waiting for about 7s and stops automatically after moving to tilt position (during the whole process, do not release close button), thus, reinitialization is finished. PS: Please use method 2 if method 1 is invalid.

Sliding Roof Learning

Sliding roof losing initial position

Definition: Sliding roof cannot be opened, closed normally or closed to a normal position, and initial movement for sliding roof cannot be performed. When there is such problem in sliding roof, movement process for sliding roof will be disordered, and sliding roof initial position is lost.

Problem Symptom

1. Sliding roof cannot be closed and opened completely or tilted. Shuddering may occur during the process from tilt to close.
2. When opening, tilting or closing sliding roof, it cannot be reached to initial set position.
3. A function that short pressing the button to open and close sliding roof cannot be performed.
4. Sliding roof operation cannot be controlled by sliding roof module.

Solution Method

Perform repair according to following procedures, and make sure that power supply shall not be shut off during operation. Confirm that no hard objects (various obstacles) that block running of sliding mechanism are in sliding roof rail. Make sure that problem symptom occurred in sliding roof is in third point listed above.

1. Module initial memory position recovering method (pay attention to the pressing way and pressed button)
 - (a) 1st step: Press and hold open/tilt button (confirm that button is correct) for 15 seconds or more. (If sliding roof can reach to initial full-tilted position, problem may be solved)
 - (b) 2nd step: Adjust sliding roof, and continue to perform following operation if problem still cannot be solved.
 - (c) 3rd step: Press and hold open/tilt button to final position and then release it, remove interior front dome light control box, and pull out wire harness between module and motor (with connector located on module).
 - (d) 4th step: Short press open (or slide open) button several times after wire harness between module and motor is pulled out. Then, connect wire harness between module and motor.
 - (e) 5th step: Press and hold open/tilt button (confirm that button is correct) for 15 seconds or more. (At this time, sliding roof must be operated to full-tilted condition.)
 - (f) 6th step: Adjust sliding roof after completing above procedures, replace module or motor if symptom still cannot be solved.

2. Module replacement method: (pay attention that rotation sensor in module is clamped to cable)
- (a) 1st step: Perform following operations after sliding roof is operated to full-closed condition.
 - (b) 2nd step: Remove dome light and control unit/roof interior/front sun visor according to the method required by Chery, until sliding roof assembly is exposed and the whole module can be seen.
 - (c) 3rd step: Using a cross screwdriver, loosen screw on module. Pull module to the left side while gently loosening to remove it.
 - (d) 4th step: Clamp slot of new module to sliding roof according to the corresponding direction, and clamp cable to groove in the center of module and install to sliding roof directly, then secure screw with cross screwdriver.
 - (e) 5th step: Adjust the sliding roof.

Warning:

As initial memory for each new module has been set, if a new module is replaced with sliding roof not closed completely, please perform initial memory position recovering operation in the 1st step.

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ON-VEHICLE SERVICE

Sunroof Switch Assembly

Removal

Warning/Caution/Hint

Caution:

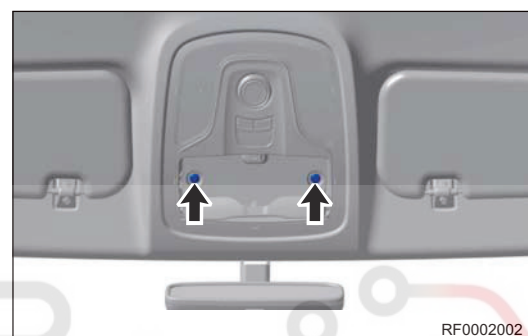
- Be sure to wear safety equipment to prevent accidents, when removing sliding roof switch assembly.
- Try to prevent interior from being scratched during operation, when removing sliding roof switch assembly.

1. Turn off all electrical equipment and the ENGINE START STOP switch.
2. Disconnect the negative battery cable.
3. Remove the sliding roof switch assembly.

- (a) Open glasses box on dome light switch assembly, and remove 2 fixing screws (arrow).

Tightening torque

$2 \pm 0.5 \text{ N}\cdot\text{m}$



- (b) Using a screwdriver wrapped with protective tape, pry off fixing clips from interior dome light.



- (c) Disconnect all wire harness connectors (arrow) from interior dome light.



- (d) Remove the interior dome light assembly.

Installation

1. Installation is in the reverse order of removal.

Caution:

- Connect connector in place and tighten fixing nut to specified torque, when installing sliding roof switch assembly.
- Make sure that sliding roof switch functions properly, after installing sliding roof switch assembly.

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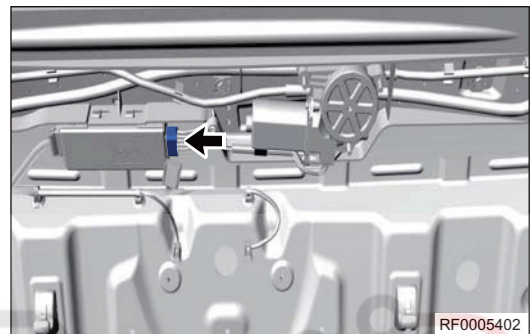
Sliding Roof Glass Motor

Removal

Warning/Caution/Hint

Caution:

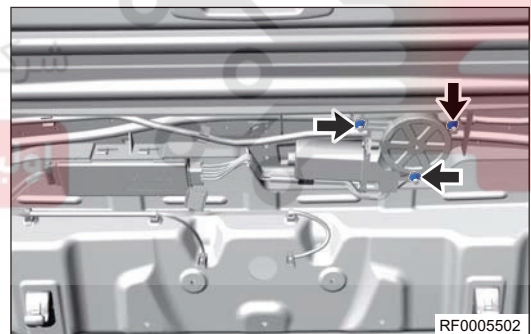
- Be sure to wear safety equipment to prevent accidents, when removing sliding roof glass motor.
 - Appropriate force should be applied, when removing sliding roof glass motor. Be careful not to operate roughly.
1. Turn off all electrical equipment and the ENGINE START STOP switch.
 2. Disconnect the negative battery cable.
 3. Remove the roof assembly (See page 49-23).
 4. Remove the sunroof glass motor.
 - (a) Disconnect wire harness connector (arrow) between sliding roof glass motor assembly and control module.



- (b) Cut off the band.

- (c) Remove 3 fixing bolts (arrow) from sliding roof glass motor assembly.

Tightening torque

 $5 \pm 1.0 \text{ N}\cdot\text{m}$


- (d) Remove the sliding roof glass motor assembly.

Installation

1. Installation is in the reverse order of removal.

Caution:

- Connect connector in place and tighten fixing nut to specified torque, when installing sliding roof glass motor assembly.
- After sliding roof glass motor is installed, there should be no abnormal noise and resistance when opening and closing the sliding roof glass.

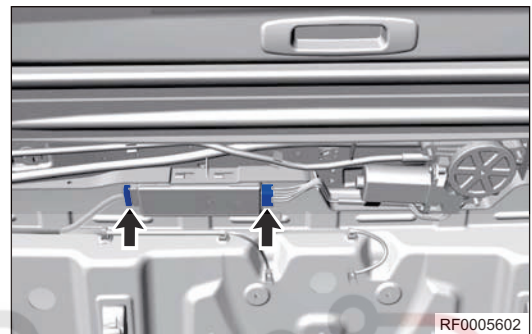
Sliding Roof Control Module

Removal

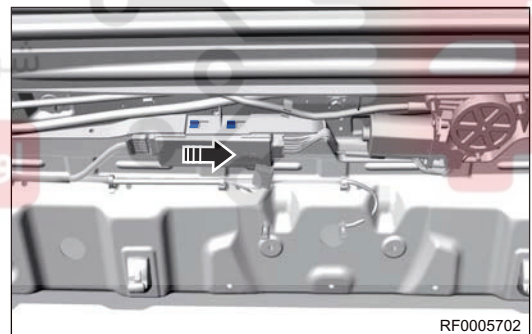
Warning/Caution/Hint

Caution:

- When removing motor module assembly, be sure to wear safety equipment to prevent accidents.
 - Try to prevent interior from being scratched during operation, when removing motor control module assembly.
1. Turn off all electrical equipment and the ENGINE START STOP switch.
 2. Disconnect the negative battery cable.
 3. Remove the roof assembly (See page 49-23).
 4. Remove the motor control module.
 - (a) Disconnect the sliding roof control module wire harness connector plug (arrow).



- (b) Cut off the band.
- (c) Move sliding roof control module in direction of arrow, and remove sliding roof control module.



Installation

1. Installation is in the reverse order of removal.

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Sliding Roof Glass

Removal

Warning/Caution/Hint

Caution:

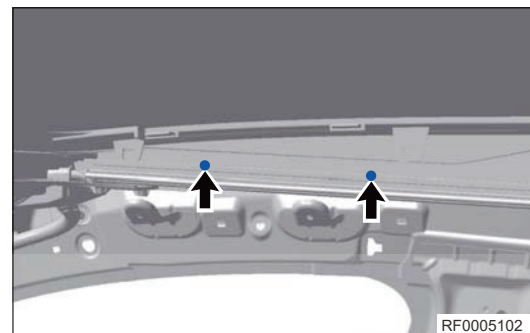
- Be sure to wear safety equipment to prevent accidents, when removing sliding roof glass.
- Appropriate force should be applied, when removing sliding roof glass. Be careful not to operate roughly.

1. Turn off all electrical equipment and the ENGINE START STOP switch.
2. Disconnect the negative battery cable.
3. Remove the sliding roof glass.

- (a) Remove 2 fixing bolts (arrow) from left side of sunroof glass (use same method for right side).

Tightening torque

$5.0 \pm 1.0 \text{ N}\cdot\text{m}$



- (b) Remove the sunroof front glass.

Installation

1. Installation is in the reverse order of removal.

Caution:

- The matching levelness tolerance between sliding roof front glass and tonneau cover is 0 - 2.0 mm (use tonneau cover as reference). Interference fit between glass weatherstrip and tonneau cover should be ensured without any gap, so as to seal and prevent water leakage.
- Adjust the glass after installation of sliding roof is completed. The sliding roof adjusting screws are located at sliding roof left and right bracket guiding rail separately, which are 4 in total. Two operators are required to perform adjustment of sliding roof (one operates in vehicle while the other is outside vehicle for assist). First, the outside person should check if the matching between sliding roof and tonneau cover reaches specified requirement and instruct the inside person to make adjustment. The inside person should follow the instruction from inside to find the corresponding adjusting screw and loosen it in advance. Then, the operator inside the vehicle should adjust height of sliding roof according to the instructions of operator outside the vehicle, so that it reaches the matching requirements with roof, then tighten the screw.

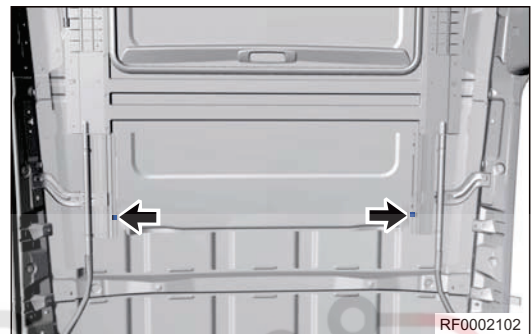
Sliding Roof Sun Visor Assembly

Removal

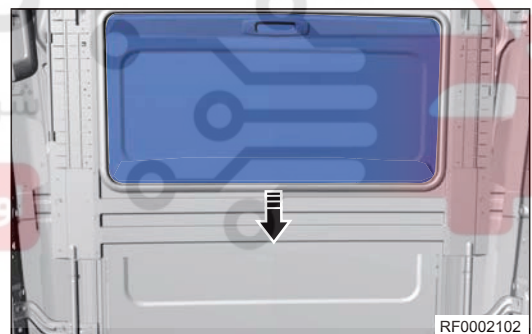
Warning/Caution/Hint

Caution:

- Be sure to wear safety equipment to prevent accidents, when removing sliding roof sun visor assembly.
 - Try to prevent interior from being scratched during operation, when removing sliding roof sun visor assembly.
1. Turn off all electrical equipment and the ENGINE START STOP switch.
 2. Disconnect the negative battery cable.
 3. Remove the roof assembly (See page 49-23).
 4. Remove the sliding roof sun visor assembly.
 - (a) Remove positioning stoppers (arrow) from left and right sides of sliding roof sun visor.



- (b) Remove sliding roof sun visor assembly in direction of arrow.



- (c) Remove the sun visor assembly.

Installation

1. Installation is in the reverse order of removal.

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Sliding Roof Drain Hose

Removal

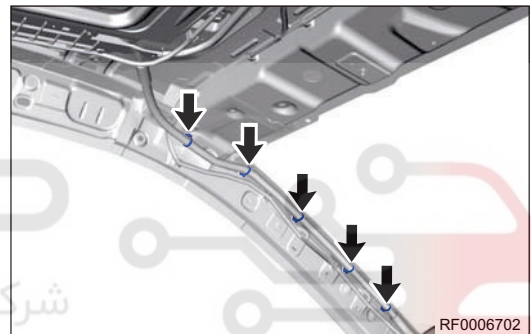
Warning/Caution/Hint

Caution:

- Be sure to wear safety equipment to prevent accidents, when removing sliding roof drain hose.
- Try to prevent interior from being scratched during operation, when removing sliding roof drain hose.
- Use same procedures for right and left sides.
- Procedures listed below are for left side.

1. Turn off all electrical equipment and the ENGINE START STOP switch.
2. Disconnect the negative battery cable.
3. Remove the left A-pillar upper protector assembly (See page 49-13).
4. Remove the left B-pillar upper protector assembly (See page 49-16).
5. Remove the left C-pillar upper protector assembly (See page 49-19).
6. Remove the roof assembly (See page 49-23).
7. Remove the sliding roof front drain hose.

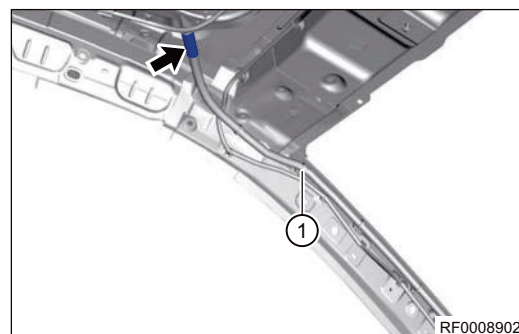
- (a) Using an interior pry bar, pry off fixing clips (arrow) from sunroof front drain hose.



- (b) Detach lower end of sliding roof front drain hose from plug hole on large round hole (arrow) of front windshield lower crossmember.

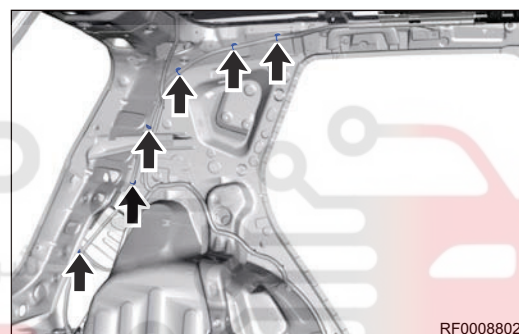


- (c) Disengage fixing part (arrow) of sliding roof front drain hose and remove sliding roof front drain hose (1).



8. Remove the sliding roof rear drain hose assembly.

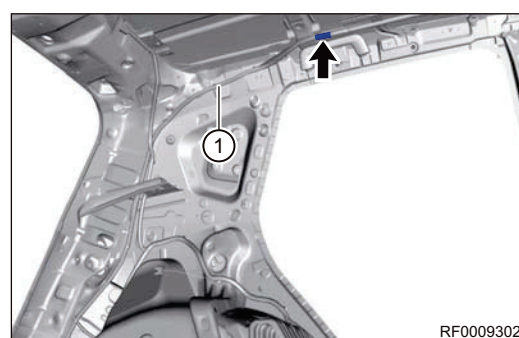
- (a) Using an interior crow plate, carefully pry off fixing clips (arrow) from sliding roof rear drain hose.



- (b) Disengage sliding roof rear drain hose lower part from body opening hole (arrow).



- (c) Disengage the connection (arrow) between sliding roof rear drain hose and sliding roof drain hose, remove sliding roof rear drain hose (1).



Installation

1. Installation is in the reverse order of removal.

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Caution:

- After installation, check drain hose for distortion to avoid rough draining or blockage.
- Note that the sponges on drain hose is installed in place and make sure that drain hose should not be scratched by metal panel.
- The drain hose blocking part should be installed in place and connected with drain hose and metal panel without any looseness.

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Sliding Roof Fixing Bracket

Removal

Warning/Caution/Hint

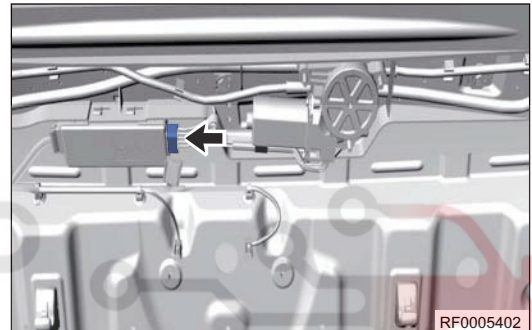
Caution:

- Be sure to wear safety equipment to prevent accidents, when removing sliding roof fixing bracket.
- Try to prevent interior from being scratched during operation, when removing sliding roof fixing bracket.

Caution:

When removing sliding roof fixing bracket, an assistant is needed to hold it. This can prevent sliding roof fixing bracket from dropping during operation, which may cause an accident.

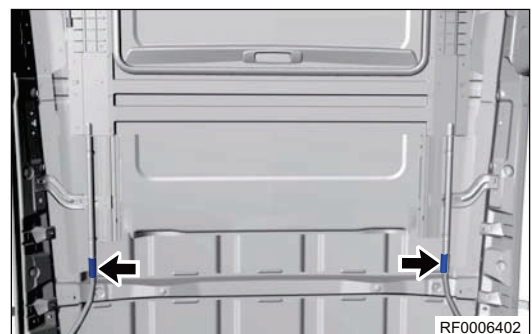
1. Turn off all electrical equipment and the ENGINE START STOP switch.
2. Disconnect the negative battery cable.
3. Remove the interior dome light assembly (See page 33-87).
4. Remove the roof assembly (See page 49-23).
5. Remove the sunroof fixing bracket assembly.
 - (a) Disconnect wire harness connector (arrow) from sliding roof glass motor assembly.



- (b) Disengage fixing part (arrow) of sliding roof front drain hose.



- (c) Disengage the connection (arrow) between sliding roof rear drain hose and sliding roof drain hose.

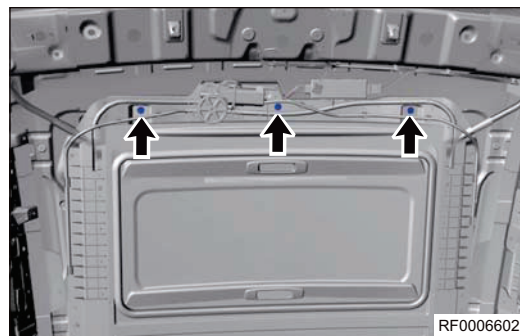


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- (d) Remove 3 fixing bolts (arrow) from front part of sliding roof fixing bracket.

Tightening torque

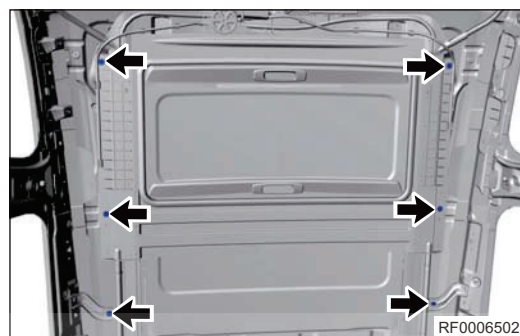
$9.0 \pm 1.5 \text{ N}\cdot\text{m}$



- (e) Remove 6 fixing bolts (arrow) between left and right sides of sunroof fixing bracket.

Tightening torque

$9.0 \pm 1.5 \text{ N}\cdot\text{m}$



- (f) Remove the sunroof fixing bracket assembly.

Installation

1. Installation is in the reverse order of removal.

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