

SUNROOF

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GENERAL INFORMATION

SLIDING ROOF

Description



RF0001001

1 - Sliding Roof Rear Glass Assembly	2 - Sliding Roof Front Glass Assembly
3 - Sliding Roof Frame	4 - Sliding Roof Glass Motor Assembly
5 - Sliding Roof Sunshade Motor Assembly	6 - Sliding Roof Sunshade Assembly
7 - Sliding Roof Deflector Panel	8 - Sliding Roof Front Right Drain Hose Assembly
9 - Sliding Roof Front Left Drain Hose Assembly	10 - Sliding Roof Rear Right Drain Hose Assembly
11 - Sliding Roof Rear Left Drain Hose Assembly	12 - Interior Front Dome Light Assembly
13 - Sliding Roof Dust Proof Strip	

The panoramic sliding roof of this model consists of sliding roof switch, sliding roof glass, electric sunshade, sliding roof motor, sunshade motor, sliding roof module and sliding roof drain hose.

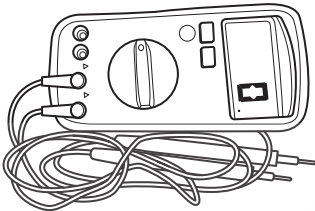
Specifications

Torque specifications

Description	Torque (N·m)
Sliding Roof Switch Assembly Fixing Screw	2.5 ± 0.5
Sliding Roof Mounting Bracket Fixing Bolt	9.0 ± 1.5
Motor Mounting Screw	4.0 ± 0.5
Glass Assembly Bracket Fixing Screw	5.5 ± 0.5

Tool

General Tool

Digital Multimeter	 002
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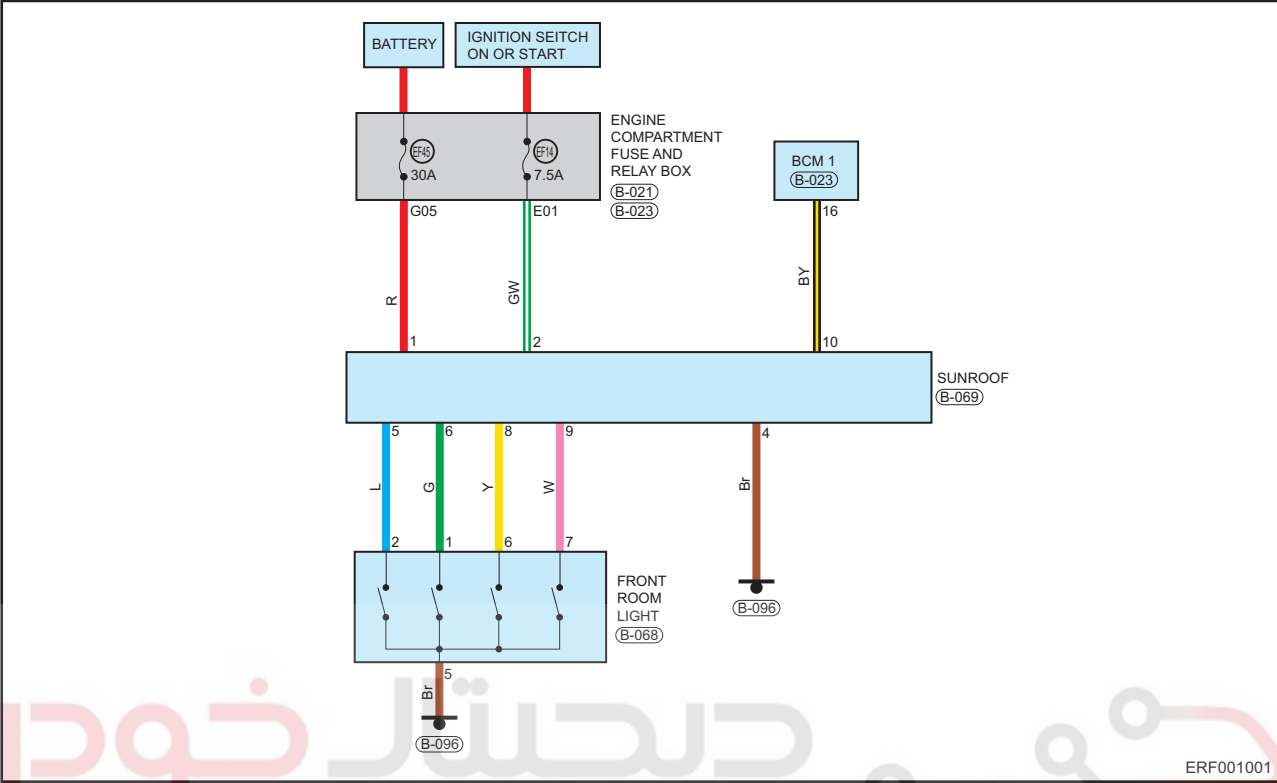
Inspection

1. Check sliding roof switch

Caution:

- When performing electrical equipment diagnosis and test, always refer to circuit diagram for related circuit and component information.
- (a) Turn ENGINE START STOP switch to OFF.
 - (b) Disconnect sliding roof switch connector B-068.

(c) Using a digital multimeter, check for continuity between the terminals of connector B-068 to check if the sliding roof switch functions normally according to the table below.



Multimeter Connection	Condition	Specified Condition
B-068 (2) - B-068 (5)	Press "Sliding Roof Glass Open " button	$\leq 1 \Omega$
B-068 (1) - B-068 (5)	Press "Sliding Roof Glass Close " button	$\leq 1 \Omega$
B-068 (6) - B-068 (5)	Press "Sunshade Open " button	$\leq 1 \Omega$
B-068 (7) - B-068 (5)	Press "Sunshade Close " button	$\leq 1 \Omega$

2. If result is not as specified, replace the sliding roof.

DIAGNOSIS & TESTING

Fault Symptom 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	Sliding roof weatherstrip damaged	Replace the sliding roof weatherstrip
	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	The fixation of sliding roof glass and roof is poor	Reinstall the glass
Abnormal starting and operation	Poor connection of wire, fuse or ground wire	Check wire, fuse or ground wire
	Poor sliding roof control unit, sliding roof motor	Replace sunroof control unit and sunroof motor after detecting
	Sunshade control unit and sunshade failure	Check and replace motor assembly or sunshade assembly
	Improper installation position between sunshade mounting	Adjust the relative position of the sunshade mounting bracket
	Sunshade comes off from guide rail	Readjust the sunshade
	Foreign matter exists in guide rail	Check and remove foreign matter
Incorrect starting	Sunshade switch failure	Replace sunshade switch
	Poor sliding roof motor	Replace motor
	Guide rail is scratched after sunshade comes off from guide rail or trim strip is damaged	Readjust and install sunshade and trim strip (replace damaged parts at the same time)
	Sunshade module failure	Replace module assembly
	Sunshade motor failure	Replace motor assembly
Sunshade operating noise	Operation is resisted after sunshade comes off from guide rail or trim strip is damaged	Readjust and install sunshade and trim strip (replace damaged parts at the same time)
	Sunshade guide rail is lack of grease	Regularly lubricate the guide rail.
	Impact between drain hose and vehicle body	Attach buffer sponge around drain hose
	Distance between sunroof glass and roof hole is extremely large or height of glass is poor	Readjust height and relative position of glass
	Sunshade mounting bracket deformation or improper position	Replace, check and repair the sunshade mounting bracket

47 Sliding Roof Learning

Sunroof Losing Initial Position

Definition: Sunroof cannot be opened, closed normally or closed to a normal position, and initial movement for sunroof 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.

Solution Method

Reinitialization method 1:

- Operate sliding roof to fully tilted state, then release close button and press it for a long time again. When sliding roof has a turn back action (the sliding roof moves for a while), release the button, and the reinitialization of sliding roof is completed.

Reinitialization method 2:

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 completed.

Caution

3. When reinitialization method 1 is invalid, use reinitialization method 2.

Sunshade Learning

Sunshade losing initial position

Definition: Sunshade cannot be opened, closed normally or closed to a normal position and initial movement for sunshade cannot be performed after power off. When there is such problem in sunshade, movement process for sunshade will be disordered, and sunshade initial position is lost.

Solution Method

Press sunshade switch, and the sunshade will be reset after one normal open and close cycle.

Caution:

- 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 guide rail and sunshade guide rail.
- The sunshade of this model has no anti-pinch function. Pay attention to safety during operation to avoid accidents.

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Interior Front Dome Light Assembly

Removal

Warning/Caution/Hint

Caution:

- Be sure to wear safety equipment to prevent accidents, when removing interior front dome light assembly.
- Try to prevent interior from being scratched during operation, when removing interior front dome light assembly.

1. Turn off all electrical equipment and the ENGINE START STOP switch
2. Disconnect the negative battery cable
3. Remove the interior front dome light assembly

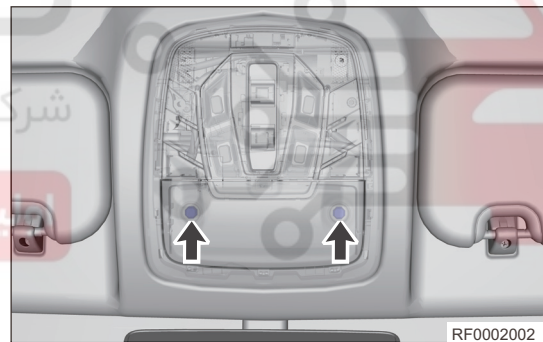
- (a) Open the glasses box (arrow) on front dome light as shown in illustration.



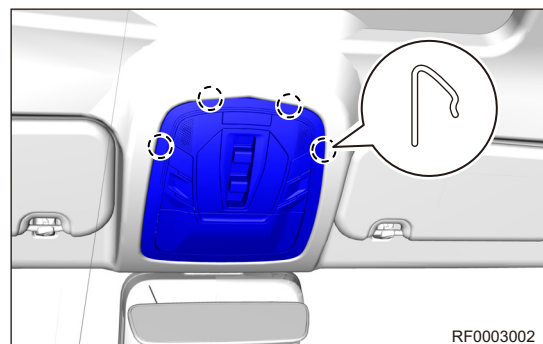
- (b) Remove 2 fixing screws (arrow).

Tightening torque

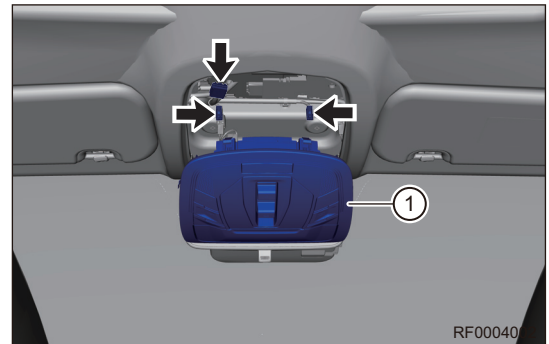
$2 \pm 0.5 \text{ N.m}$



- (c) Using a interior crow plate, pry off clips on interior front dome light carefully.



- (d) Disconnect all interior front dome light wire harness connectors (arrow), and remove interior dome light assembly (1).



Installation

1. Installation is in the reverse order of removal.

Caution:

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

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Sliding Roof Glass Motor

Removal

Warning/Caution/Hint

Caution:

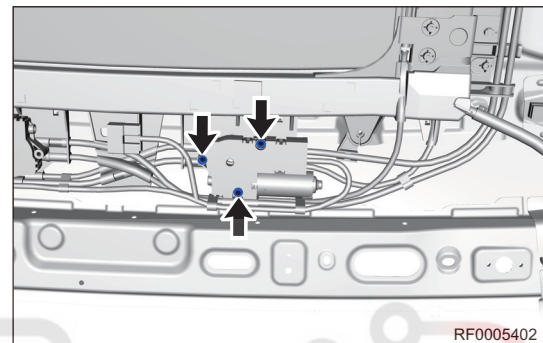
- Be sure to wear safety equipment to prevent accidents, when removing sliding roof glass motor.
- Appropriate force should be applied, when removing sliding roof glass motor. Be careful not to operate roughly.

1. Turn off all electrical equipment and the ENGINE START STOP switch
2. Disconnect the negative battery cable
3. Remove the roof (See page 46-24).
4. Remove the sliding roof glass motor

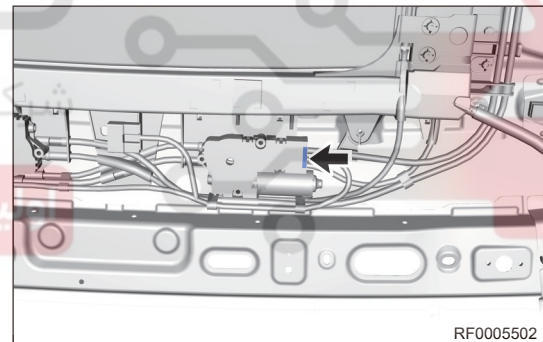
- (a) Remove 3 fixing screws (arrow) from sliding roof glass motor assembly.

Tightening torque

4.0 ± 0.5 N.m



- (b) Disconnect sliding roof glass motor assembly wire harness connector (arrow).



- (c) 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 screw 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.

Sunshade Motor Assembly

Removal

Warning/Caution/Hint

Caution:

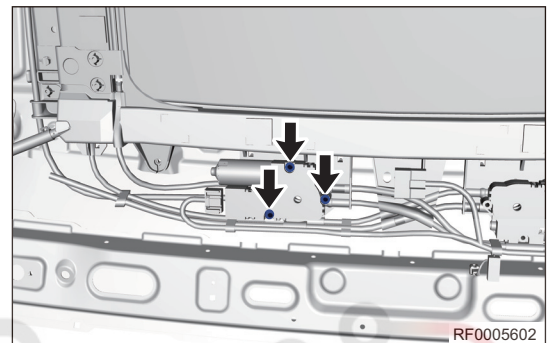
- Be sure to wear safety equipment to prevent accidents, when removing sunshade motor assembly.
- Try to prevent interior from being scratched during operation, when removing sunshade motor assembly.

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 46-24)
4. Remove the sunshade motor

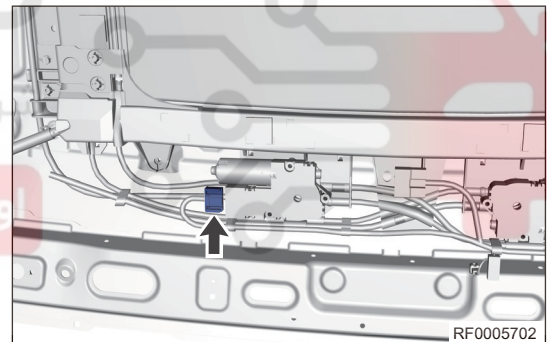
- (a) Remove 3 fixing screws (arrow) from sunshade motor assembly.

Tightening torque

4.0 ± 0.5 N.m



- (b) Disconnect sunshade motor assembly wire harness connector (arrow).



- (c) Remove the sunshade 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 sunshade motor assembly.
- After sunshade motor assembly is installed, there should be no abnormal noise and resistance when opening and closing the sunshade.
- It is necessary to reset the sunshade after installing the sunshade motor.

Sliding Roof Front Glass

Removal

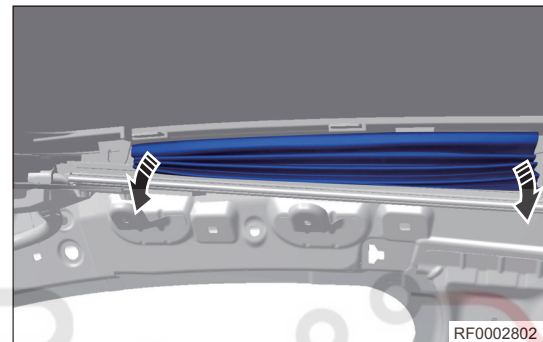
Warning/Caution/Hint

Caution:

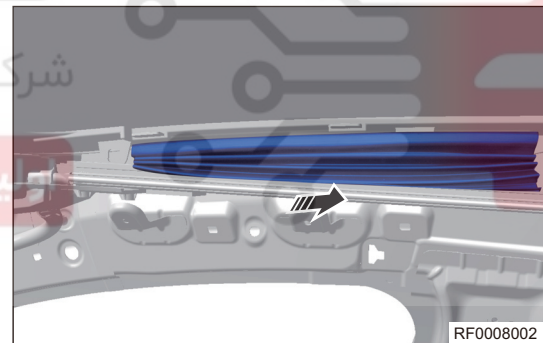
- Be sure to wear safety equipment to prevent accidents, when removing sliding roof front glass.
- Appropriate force should be applied, when removing sliding roof front glass. Be careful not to operate roughly.
- Before removing sliding roof front glass, press sliding roof switch to open sunshade to a proper position and adjust sliding roof glass to the maximum tilt state.

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

- (a) Remove upper edge of side dust proof strip from glass slot in the direction of (arrow).



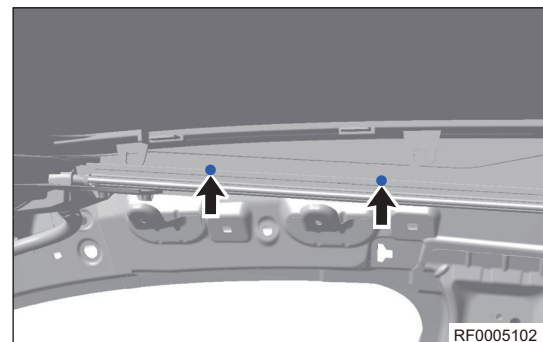
- (b) Push side dust proof strip in the direction of (arrow) along the guide rail to lower part of rear glass to expose front glass mounting screw.



- (c) Remove 2 fixing bolts (arrow) from left side of sliding roof front glass (use same method for right side).

Tightening torque

$5.5 \pm 0.5 \text{ N.m}$



- (d) Carefully remove sliding roof front glass assembly after jacking front glass assembly from bottom to a certain height.

Installation

1. Installation is in the reverse order of removal.

Caution:

- The tolerance of matching flatness between sliding roof front glass and top cover is $-0.5 \sim 0 + 1.5$ / -0.5 (the top cover is measurement basis)
- Flatness tolerance of front glass and rear glass is $0.5/-2.0$ (sliding roof front glass is the measurement basis)

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Sliding Roof Rear Glass

Removal

Warning/Caution/Hint

Caution:

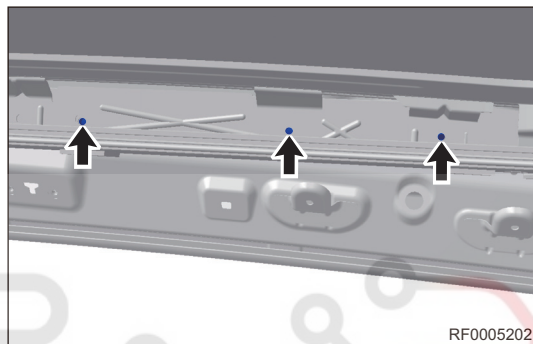
- Be sure to wear safety equipment to prevent accidents, when removing sliding roof rear glass.
- Try to prevent interior from being scratched during operation, when removing sliding roof rear glass.

1. Open the sunshade
2. Turn off all electrical equipment and the ENGINE START STOP switch
3. Disconnect the negative battery cable
4. Remove the roof (See page 46-24)
5. Remove the sliding roof (See page 47-3)
6. Remove sliding roof rear glass

- (a) Remove 3 fixing bolts (arrow) from left side of sliding roof rear glass.

Tightening torque

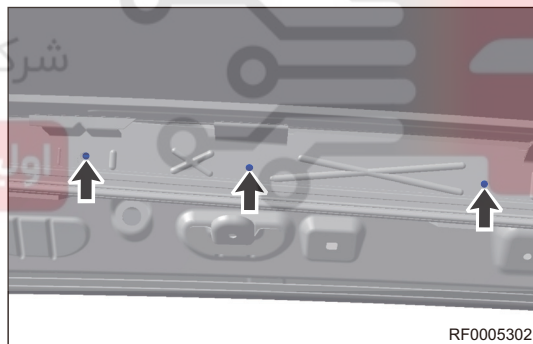
$5.0 \pm 0.5 \text{ N.m}$



- (b) Remove 3 fixing bolts (arrow) from right side of sliding roof rear glass.

Tightening torque

$5.0 \pm 0.5 \text{ N.m}$



- (c) Remove sliding roof rear glass.

Installation

47

1. Installation is in the reverse order of removal.

Caution:

- The tolerance of matching flatness between sliding roof front glass and top cover is $-0.5 \sim 0 + 1.5$ / -0.5 (the top cover is measurement basis)
- Flatness tolerance of front glass and rear glass is $0.5/-2.0$ (sliding roof front glass is the measurement basis)

Sliding Roof Drain Hose

Removal

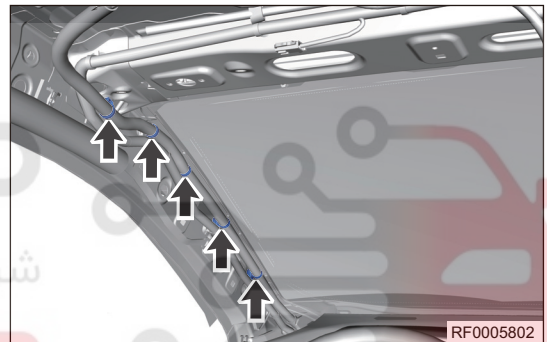
Warning/Caution/Hint

Caution:

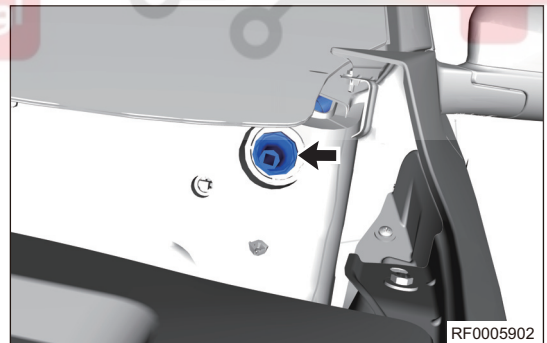
- Be sure to wear safety equipment to prevent accidents, when removing sliding roof drain hose.
- Try to prevent interior from being scratched during operation, when removing sliding roof drain hose.
- Use same procedures for right and left sides.
- Procedures listed below are for left side.

1. Turn off all electrical equipment and the ENGINE START STOP switch.
2. Disconnect the negative battery cable
3. Remove the front windshield lower support assembly (See page 45-16).
4. Remove the left A-pillar upper protector assembly (See page 46-13).
5. Remove the left B-pillar upper protector assembly (See page 46-16).
6. Remove the left C-pillar upper protector assembly (See page 46-19).
7. Remove the roof assembly (See page 46-24).
8. Remove the sliding roof front drain hose

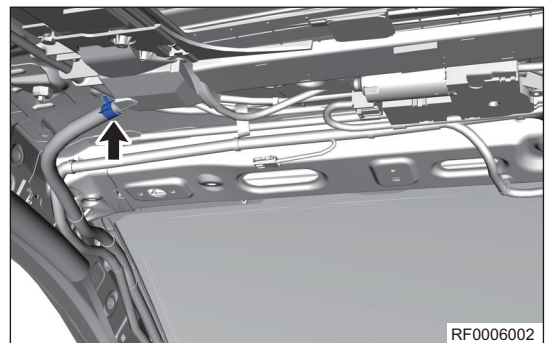
- (a) Using an interior pry bar, pry off fixing clips (arrow) from sliding roof front drain hose.



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

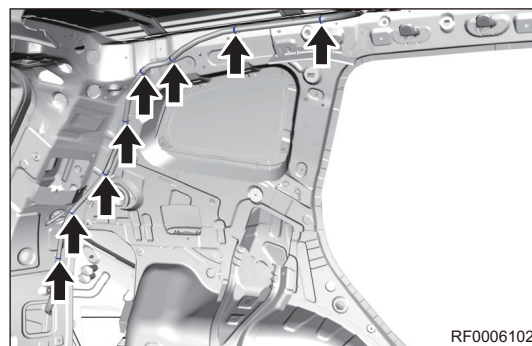


- (c) Loosen clamp (arrow) and remove sliding roof front drain hose.

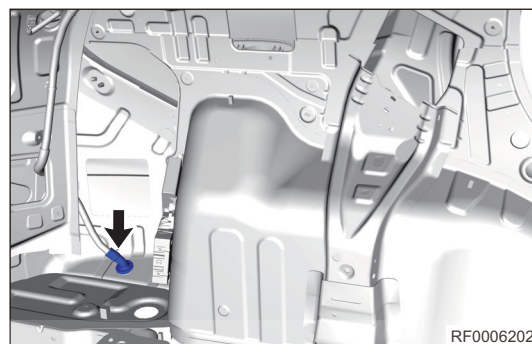


9. Remove the sliding roof rear drain hose assembly.

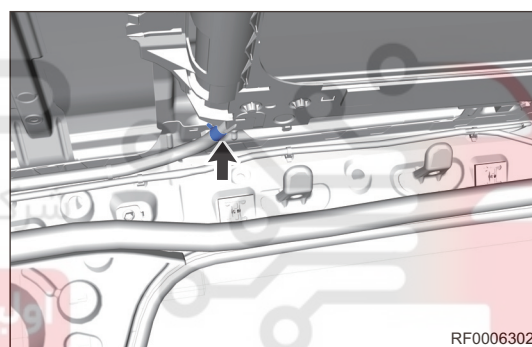
- (a) Using an interior crow plate, pry off fixing clips (arrow) from sliding roof rear drain hose.



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



- (c) Loosen clamp (arrow) and remove sliding roof rear drain hose.



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Installation

1. Installation is in the reverse order of removal.

Sliding Roof Fixing Bracket

Removal

Warning/Caution/Hint

Caution:

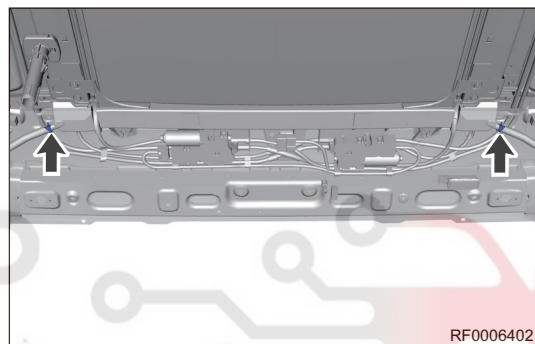
- Be sure to wear safety equipment to prevent accidents, when removing sliding roof fixing bracket.
- Try to prevent interior from being scratched during operation, when removing sliding roof fixing bracket.

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 front dome light assembly (See page 46-24).
4. Remove the roof assembly (See page 46-24).
5. Remove the sliding roof fixing bracket assembly

- (a) Loosen fixing clamps (arrow) of sliding roof front drain hose.



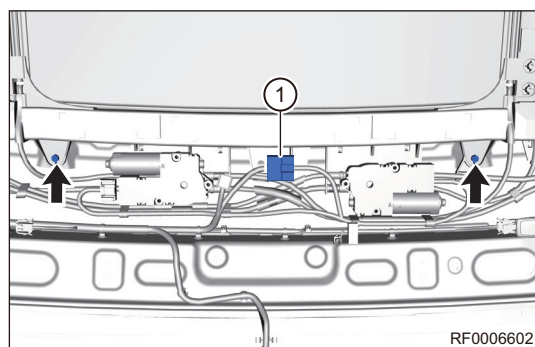
- (b) Loosen fixing clamps (arrow) of sliding roof rear drain hose.



- (c) Remove 2 fixing bolts (arrow) between front end of sliding roof fixing bracket and roof, and disconnect sliding roof wire harness connector (1).

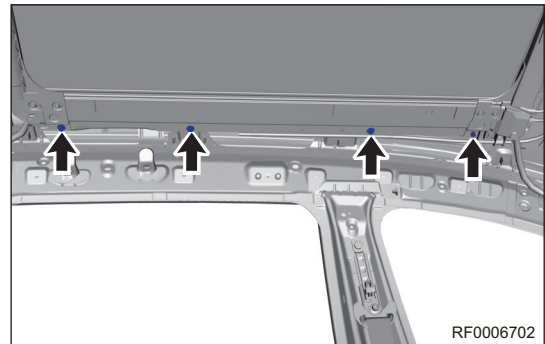
Tightening torque

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



- (d) Remove 4 fixing bolts (arrow) between left side of sliding roof fixing bracket and roof.

Tightening torque
 $9.0 \pm 1.5 \text{ N.m}$



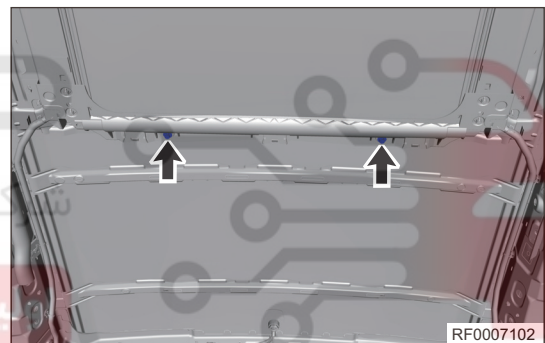
- (e) Remove 4 fixing bolts (arrow) between right side of sliding roof fixing bracket and roof.

Tightening torque
 $9.0 \pm 1.5 \text{ N.m}$



- (f) Remove 2 fixing bolts (arrow) between rear end of sliding roof fixing bracket and roof.

Tightening torque
 $9.0 \pm 1.5 \text{ N.m}$



- (g) Remove the sliding roof fixing bracket assembly.

Installation

1. Installation is in the reverse order of removal.

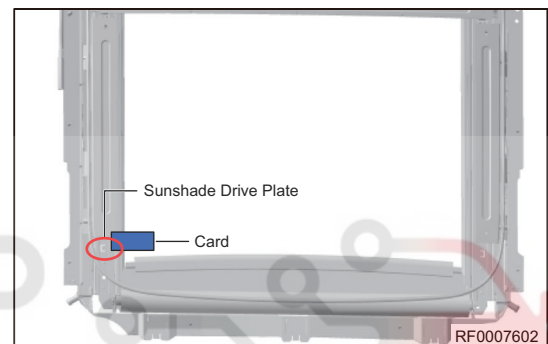
Sliding Roof Sunshade

Removal

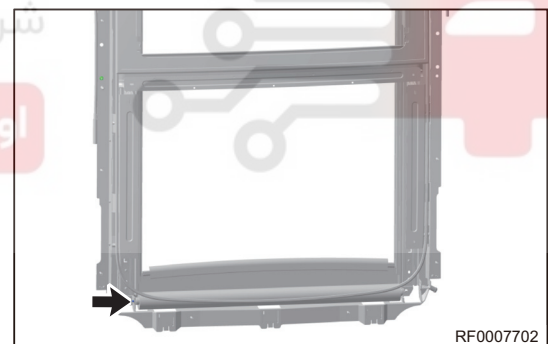
Warning/Caution/Hint

Caution:

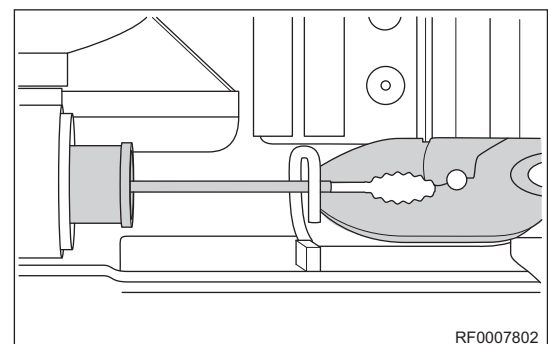
- Be sure to wear safety equipment to prevent accidents, when removing sliding roof sunshade.
 - Try to prevent interior from being scratched during operation, when removing sliding roof sunshade.
1. Turn off all electrical equipment and the ENGINE START STOP switch
 2. Disconnect the negative battery cable
 3. Remove the roof (See page 46-24).
 4. Remove the sliding roof (See page 47-3).
 5. Open sunshade and remove rear glass assembly from sliding roof
 6. Remove the sunshade assembly
 - (a) Remove the sunshade front beam cover plate
 - (b) Insert a card under clip of sunshade drive plate, and remove sunshade front beam from the drive plate.



- (c) Fold up the sunshade, press and hold the protrusion from the mounting hole in the direction of arrow on left side of sunshade rotating shaft, and move it out.



- (d) Clamp the right side of rotating shaft with pliers, pull the sunshade with left hand until the rotating shaft can not be pulled (about 2 cm), and then remove the sunshade.



Installation

1. Installation is in the reverse order of removal.

Sliding Roof Deflector Panel

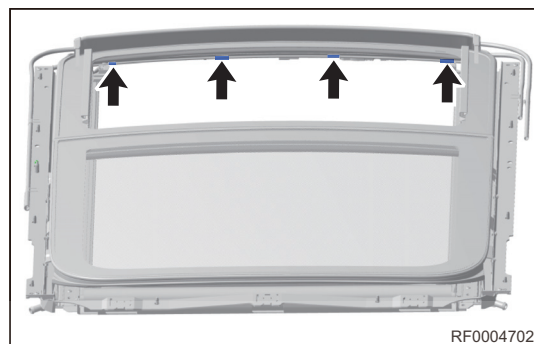
Removal

Warning/Caution/Hint

Caution:

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

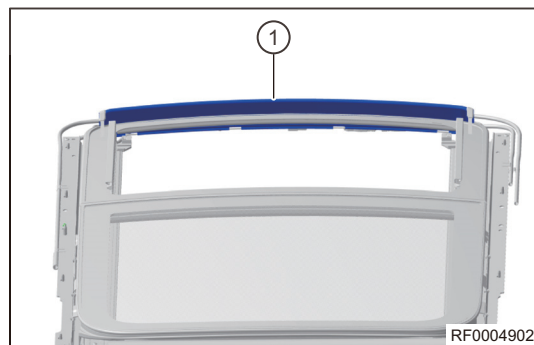
1. Remove sliding roof deflector panel
 - (a) Open front glass and sunshade
 - (b) Remove wire under wind screen from four clips of front beam (arrow).



- (c) Remove left and right spring plates of wind screen from guide rail slot (arrow).



- (d) Remove sliding roof deflector panel (1).



Installation

1. Installation is in the reverse order of removal.

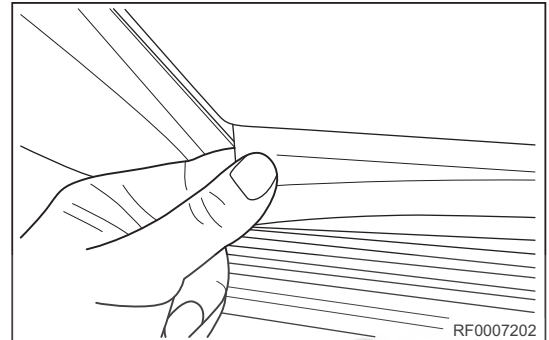
Sliding Roof Dust Proof Strip

Removal

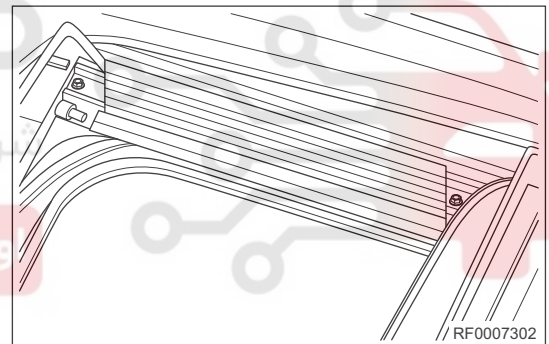
Warning/Caution/Hint

Caution:

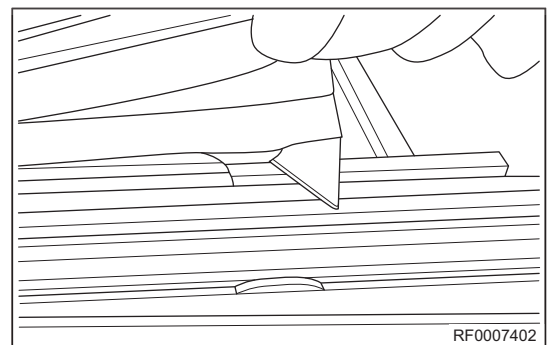
- Be sure to wear safety equipment to prevent accidents, when removing sliding roof dust proof strip.
 - Try to prevent interior from being scratched during operation, when removing sliding roof dust proof strip.
1. Turn off all electrical equipment and the ENGINE START STOP switch
 2. Disconnect the negative battery cable
 3. Remove sliding roof dust proof strip
 - (a) Open the sunshade, and remove upper edge of dust proof strip from glass slot.



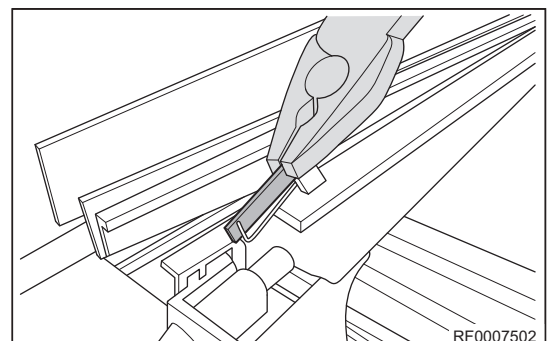
- (b) Try to prevent dust proof strip from being touched during operation, when opening front glass.



- (c) Cut the upper part of dust proof strip with a cutter, leaving the lower part.



- (d) Remove remaining part of dust proof strip from front of guide rail with a vice.



Installations

1. Installation is in the reverse order of removal.

دیجیتال خودرو

شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

اولین سامانه دیجیتال تعمیرکاران خودرو در ایران

