

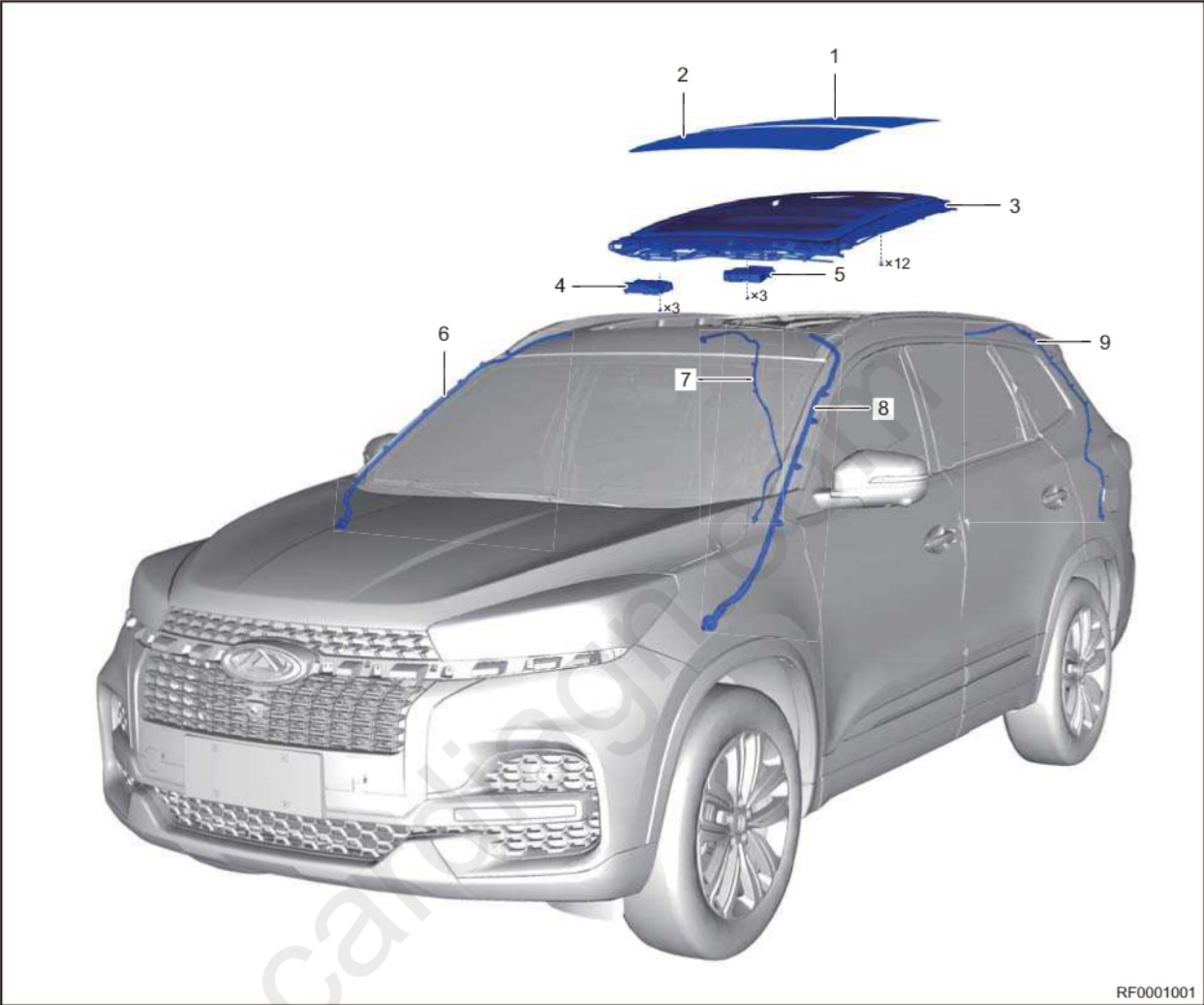
SUNROOF

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GENERAL INFORMATION

General
Description



RF0001001

1 - Sunroof Rear Glass Assembly	2 - Sunroof Front Glass Assembly
3 - Sunroof Mounting Bracket	4 - Sunroof Glass Motor Assembly
5 - Sunshade Motor Assembly	6 - Sunroof Front Drain Hose
7 - Sunroof Rear Drain Hose	8 - Sunroof Front Drain Hose
9 - Sunroof Rear Drain Hose	

The panoramic sunroof on this model is composed of sunroof switch, sunroof glass, power sunshade, sunroof motor, sunshade motor, sunroof module and sunroof drain hose.

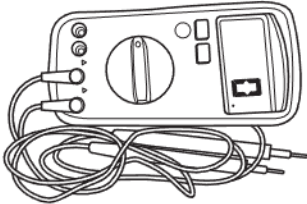
Specifications

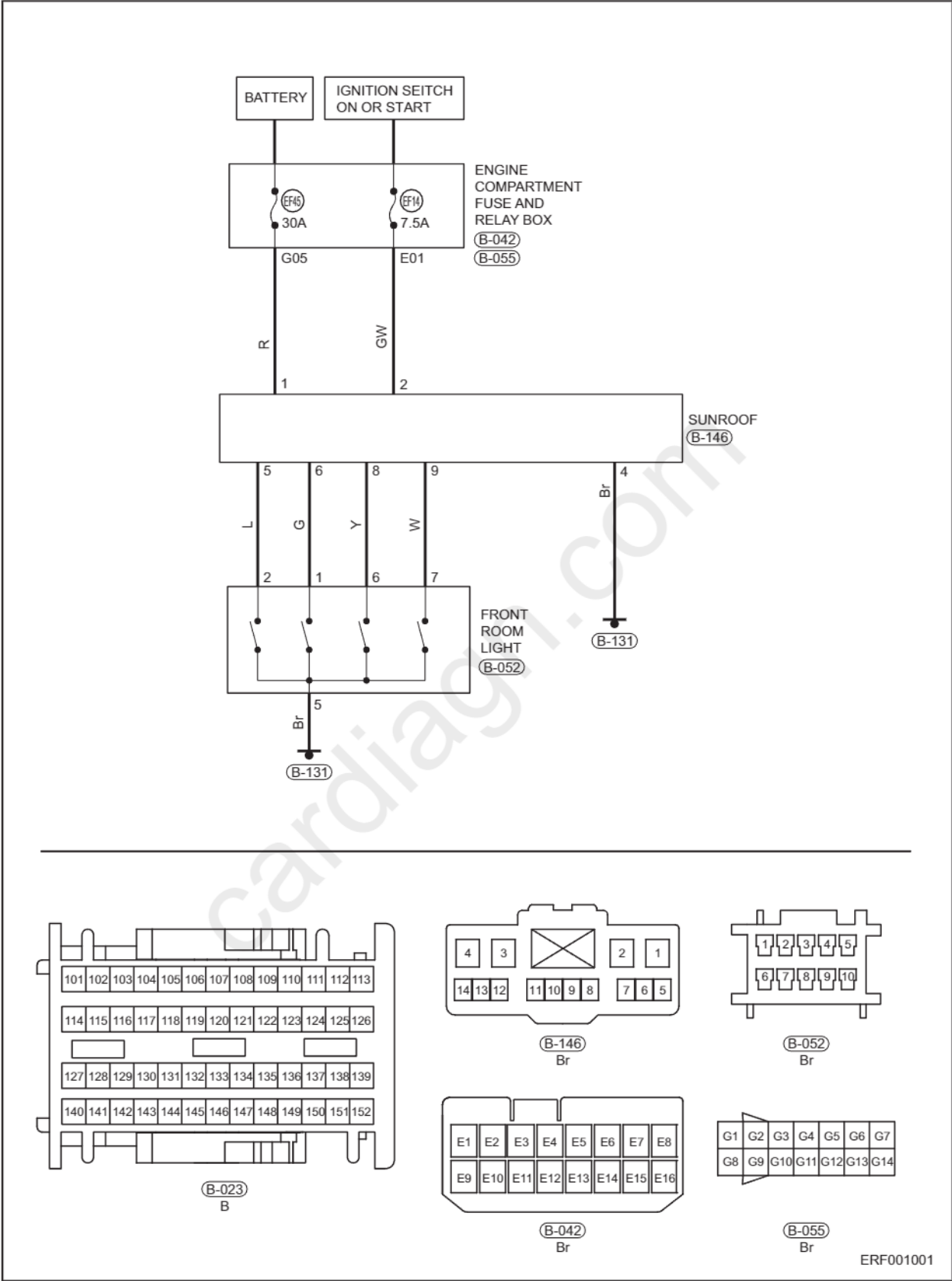
Torque Specifications

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

Tool

General Tool

Digital Multimeter	 002
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DIAGNOSIS & TESTING

Diagnosis Contents

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	Damage in sunroof weatherstrip	Replace the sunroof weatherstrip (See page 52-11)
	Blocked or folded drain hose	Check the drain hose condition
	Excessive distance between sunroof glass and roof hole or improper glass height	Adjust the relative position of glass
Wind noise from sunroof	Looseness between sunroof glass and roof	Reinstall the glass (See page 52-12)
Abnormal start or operation	Poor connection of wire, fuse and ground wire	Check wire, fuse and ground wire
	Inoperative sunroof control unit and sunroof motor	Replace sunroof control unit and sunroof motor after detecting
	Fault in sunshade control unit and sunshade	Check or replace motor assembly or sunshade assembly
	Incorrect installation between sunshades	Adjust relative position of sunshade mounting bracket
	Detachment of sunshade from rail	Readjust the sunshade condition
	Foreign matter in rail	Check and remove the foreign matter
Incorrect starting	Sunshade switch fault	Replace the sunshade switch (See page 52-8)
	Inoperative sunroof motor	Replace the motor (See page 52-9)
	Detachment of sunshade from rail and friction between damaged trim strip and rail	Readjust and reinstall sunshade, and reinstall trim strip (replace damaged parts at the same time)
	Sunshade module fault	Replace the module assembly (See page 52-10)
	Sunshade motor fault	Replace the motor assembly (See page 52-10)
Noise during sunshade running	Detachment of sunshade from rail and operation interference with damaged trim strip	Readjust and reinstall sunshade; reinstall trim strip (replace damaged parts at the same time)
	Lack of grease in sunshade rail	Lubricate the rail regularly
	Impact between drain hose and vehicle body	Apply cushion sponge around water pipe
	Excessive distance between sunroof glass and roof hole or improper glass height	Readjust height and relative position of the glass
	Sunshade mounting bracket is distorted or location is incorrect	Replace, check and repair sunshade mounting bracket (See page 52-17)

Sunroof Learning

Lost initial sunroof position

Definition: When the sunroof cannot be opened and closed normally, or closed to a normal position, and initial movement of sunroof cannot be performed normally. When such fault occurs in sunroof, the movement procedure for sunroof will be disordered, sunroof loses its initial position.

Solution Method

1st step: Press OPEN/UP sunroof button for more than 15 s. (This fault can be repaired if it can reach the fully open position) Adjust the sunroof and proceed to next step if the fault still cannot be repaired.

2nd step:

- (1) Press the OPEN/UP button all the way and then release it, remove the interior front dome light control box and unplug connection wire between module and motor.
- (2) Unplug connection wire between module and motor, then press OPEN (or SLIDE OPEN) button briefly for several times. After that, plug the connection wire between module and motor.
- (3) Press OPEN/UP sunroof button for more than 15 s. (At this time, the sunroof can move to fully open position)
- (4) Adjust the sunroof after above operation process is finished, and replace the module or motor if symptom still cannot be resolved.

3rd step: Replace the module or motor.

Warning:

The initial memory of each new module is preset, please perform the first step to resume initial memory position if the sunroof is not closed fully when a new module is replaced.

Sunshade Learning

Sunshade initial position losing

Definition: After the vehicle is turned off, sunshade cannot be opened, closed normally or closed to a normal position, and initial movement of sunshade cannot be performed normally; When there is such problem in sunshade, movement process for sunshade will be disordered, sunshade loses the initial position.

Solution Method

Press the sunshade switch, complete one open-close process normally and sunshade reset is completed.

Caution:

- Make sure that power supply shall not be shut off during operation, and confirm that no hard objects (various obstacles) that block running of sliding mechanism are in sunroof rail and sunshade rail.
- The sunshade of this model is not equipped with jam protection function, be careful during operation to prevent accidents.



ON-VEHICLE SERVICE

Sunroof Switch Assembly

Removal

Warning\Caution\Hint

Caution:

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

1. Turn off all electrical equipment and the ENGINE START STOP switch.
2. Disconnect the negative battery cable.
3. Remove the sunroof 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 sunroof switch assembly.
- Make sure that sunroof switch function can be used normally, after installing sunroof switch assembly.

Sunroof Glass Motor

Removal

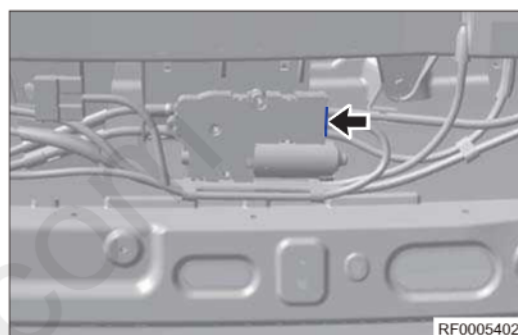
Warning\Caution\Hint

Caution:

- Be sure to wear safety equipment to prevent accidents when removing sunroof glass motor.
- Appropriate force should be applied when removing sunroof 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 51-24).
4. Remove the sunroof glass motor.

- (a) Disconnect the wire harness connector (arrow) from sunroof glass motor assembly.

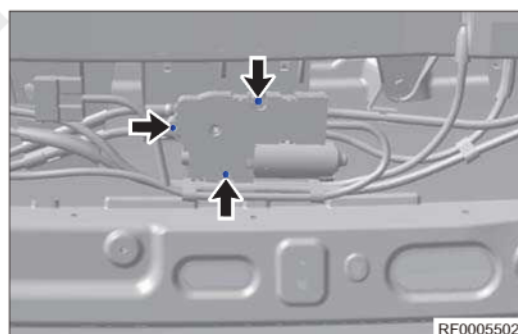


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- (b) Remove 3 fixing screws (arrow) from sunroof glass motor assembly.

Tightening torque

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



RF0005502

- (c) Remove the sunroof 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 sunroof glass motor assembly.
- After sunroof glass motor is installed, there should be no abnormal noise and resistance when opening and closing the sunroof glass.

Sunshade Motor Assembly

Removal

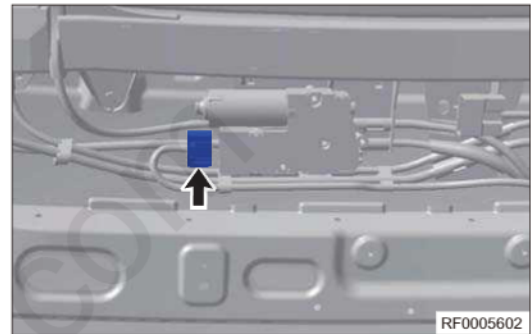
Warning\Caution\Hint

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 51-24).
4. Remove the sunshade motor.

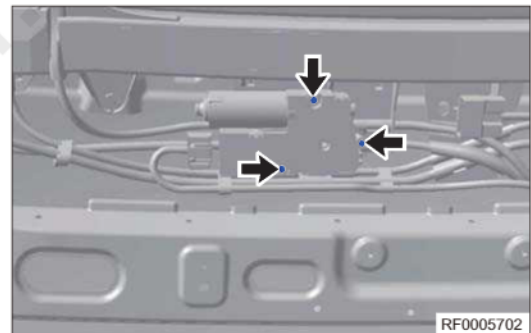
- (a) Disconnect sunshade motor assembly wire harness connector (arrow).



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

Tightening torque

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



- (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 is installed, there should be no abnormal noise and resistance when opening and closing the sunshade.
- After the sunshade motor is installed, it is necessary to perform reset operation.

Sunroof Glass

Removal

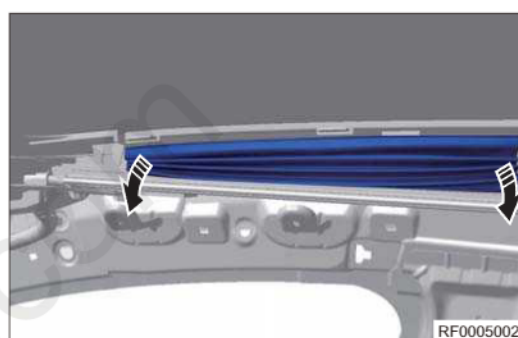
Warning\Caution\Hint

Caution:

- Be sure to wear safety equipment to prevent accidents when removing sunroof glass.
- Appropriate force should be applied when removing sunroof glass. Be careful not to operate roughly.
- Press the sunroof switch before removing sunroof front glass, open the sunshade to an appropriate position and adjust the sunroof glass to maximum inclining position. Open the sunshade to fully open position when sunroof rear glass is removed.

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

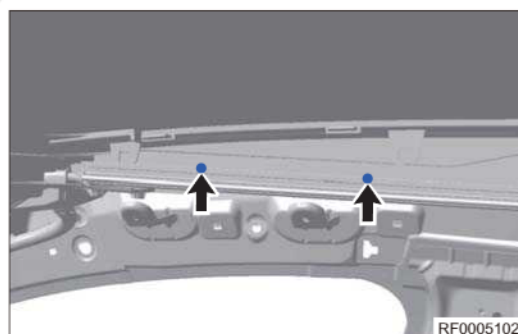
- (a) Carefully remove dust cover from sunroof front glass rail in direction indicated by arrow.



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

Tightening torque

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



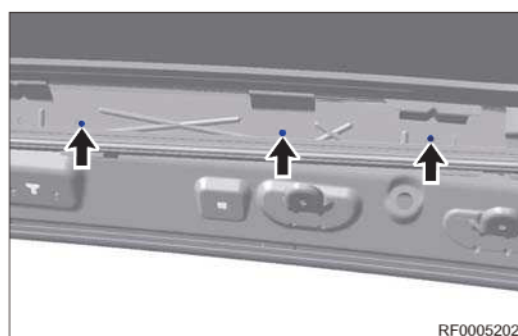
- (c) Remove the sunroof front glass.

4. Remove the sunroof rear glass (it is necessary to remove sunroof bracket assembly first).

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

Tightening torque

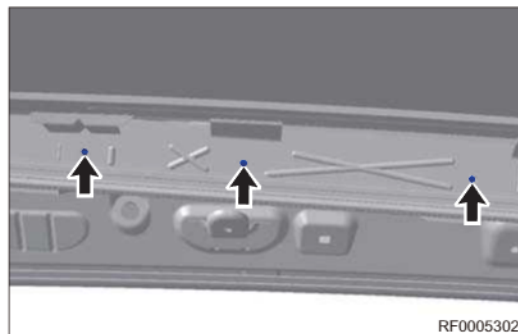
$9.0 \pm 1.5 \text{ N}\cdot\text{m}$



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

Tightening torque

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



- (c) Remove the sunroof rear glass.

Installation

1. Installation is in the reverse order of removal.

Caution:

- The matching levelness tolerance between sunroof front glass and roof is $-0.5 \sim 0 + 1.5 / -0.5$ (roof is the measurement basis).
- The levelness tolerance between front glass and rear glass is $0.5 \text{ } 0 / -2.0$ (front glass is the measurement basis)

Sunroof Drain Hose

Removal

Warning\Caution\Hint

Caution:

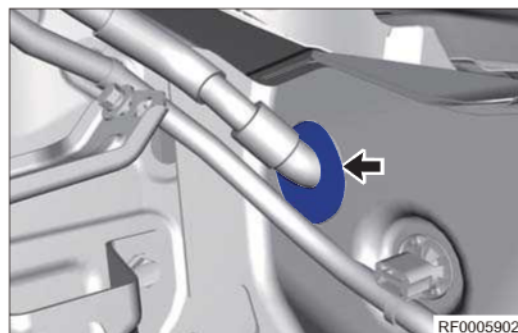
- Be sure to wear safety equipment to prevent accidents, when removing sunroof drain hose.
- Try to prevent interior from being scratched during operation, when removing sunroof drain hose.
- Use same procedures for right and left sides.
- Procedures listed below are for left side.

1. Turn off all electrical equipment and the ENGINE START STOP switch.
2. Disconnect the negative battery cable.
3. Remove the instrument panel assembly (See page 47-11).
4. Remove the left A-pillar upper protector assembly (See page 51-13).
5. Remove the left B-pillar upper protector assembly (See page 51-16).
6. Remove the left C-pillar upper protector assembly (See page 51-19).
7. Remove the roof assembly (See page 51-24).
8. Remove the sunroof front drain hose assembly.

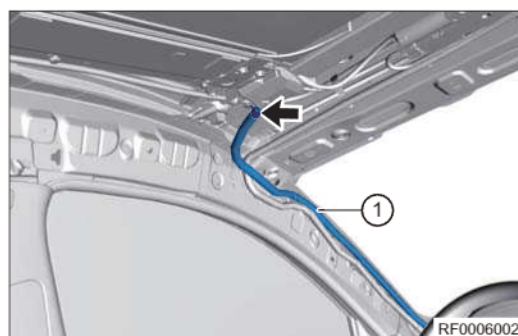
- (a) Using an interior pry bar, pry off fixing clips (arrow) from sunroof front drain hose.



- (b) Disengage lower end of sunroof front drain hose from fixing sponge (arrow).

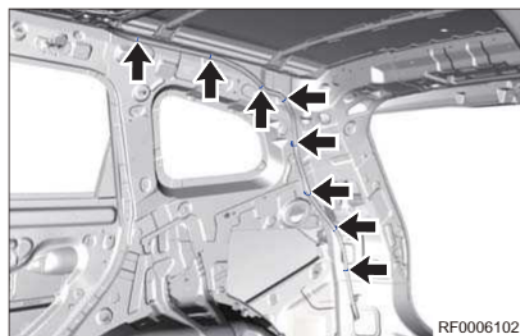


- (c) Loosen fixing clamp (arrow) from sunroof front drain hose, and remove the sunroof front drain hose (1).

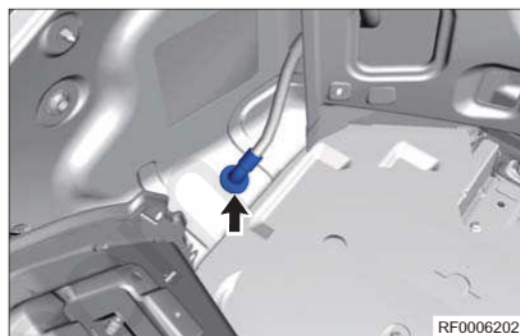


9. Remove the sunroof rear drain hose assembly.

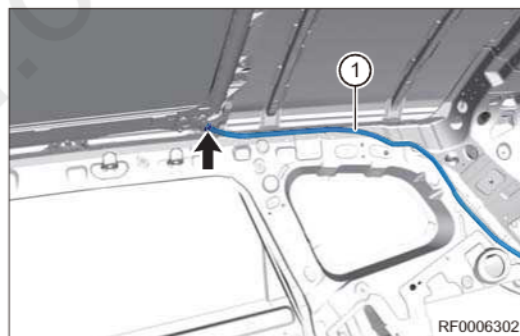
- (a) Using an interior pry bar, pry off fixing clips (arrow) from sunroof rear drain hose.



- (b) Disengage lower end of sunroof rear drain hose from fixing sponge (arrow).



- (c) Loosen fixing clamp (arrow) from sunroof rear drain hose, and remove the sunroof rear drain hose (1).



Installation

1. Installation is in the reverse order of removal.

Sunroof Fixing Bracket

Removal

Warning\Caution\Hint

Caution:

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

Caution:

When removing sunroof mounting bracket, an assistant is needed to hold it. This can prevent sunroof 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 34-69).
4. Remove the roof assembly (See page 51-24).
5. Remove the sunroof fixing bracket assembly.

- (a) Loosen fixing clamps (arrow) from sunroof glass front drain hose.



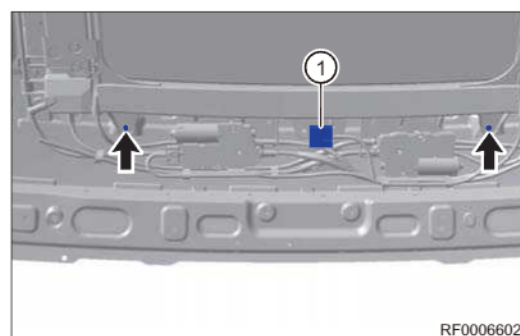
- (b) Loosen fixing clamps (1) from sunroof glass rear drain hose.



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

Tightening torque

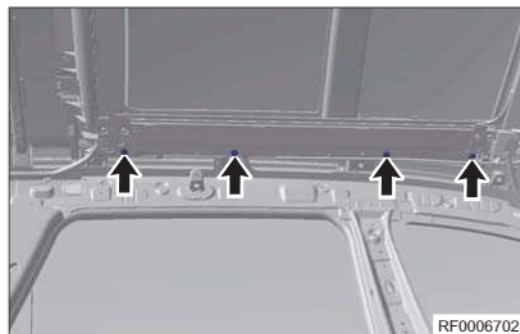
9.0 ± 1.5 N·m



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

Tightening torque

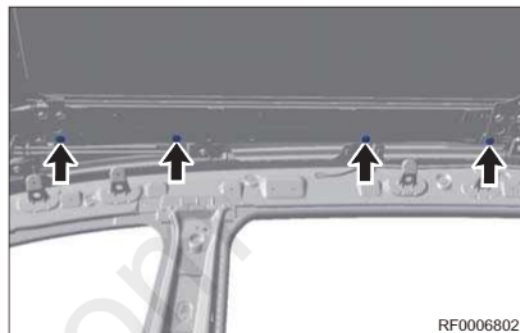
$9.0 \pm 1.5 \text{ N}\cdot\text{m}$



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

Tightening torque

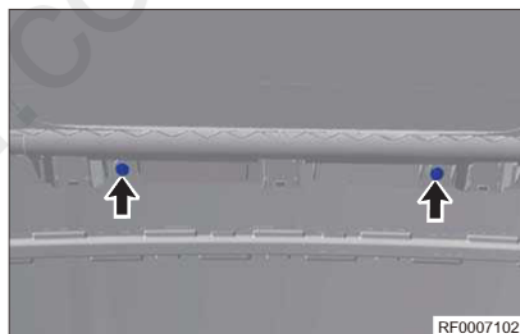
$9.0 \pm 1.5 \text{ N}\cdot\text{m}$



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

Tightening torque

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



Installation

1. Installation is in the reverse order of removal.

Sunshade

Removal

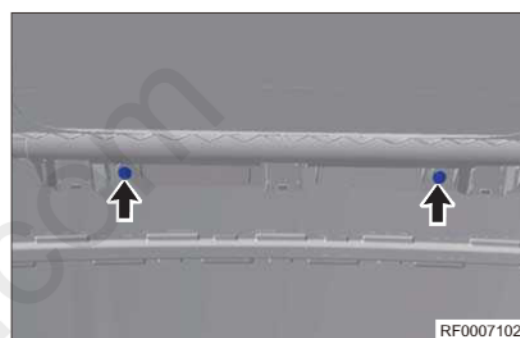
Warning\Caution\Hint

Caution:

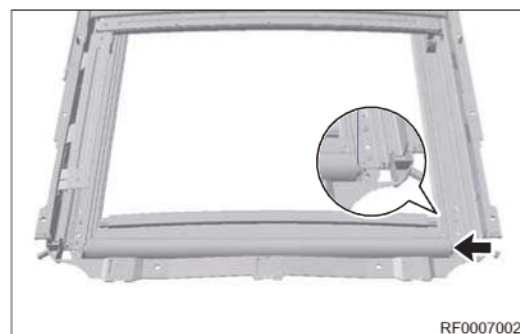
- Be sure to wear safety equipment to prevent accidents, when removing sunroof fixing bracket.
- Try to prevent interior from being scratched during operation, when removing sunroof fixing bracket.

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 51-24).
4. Remove the sunroof mounting bracket assembly (See page 52-15).
5. Remove sunroof front and rear glass (See page 52-11).
6. Remove the sunshade assembly.

- (a) Using a screwdriver wrapped with protective tape, pry off fixing clips (arrow) from sunshade rail.



- (b) Insert a needle into the hole (arrow) on the right side of sunshade (to prevent spring release).



- (c) Using a screwdriver wrapped with protective tape, press against the position (arrow) shown in the figure.



- (d) Remove the sunshade assembly.

Installation

1. Installation is in the reverse order of removal.



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