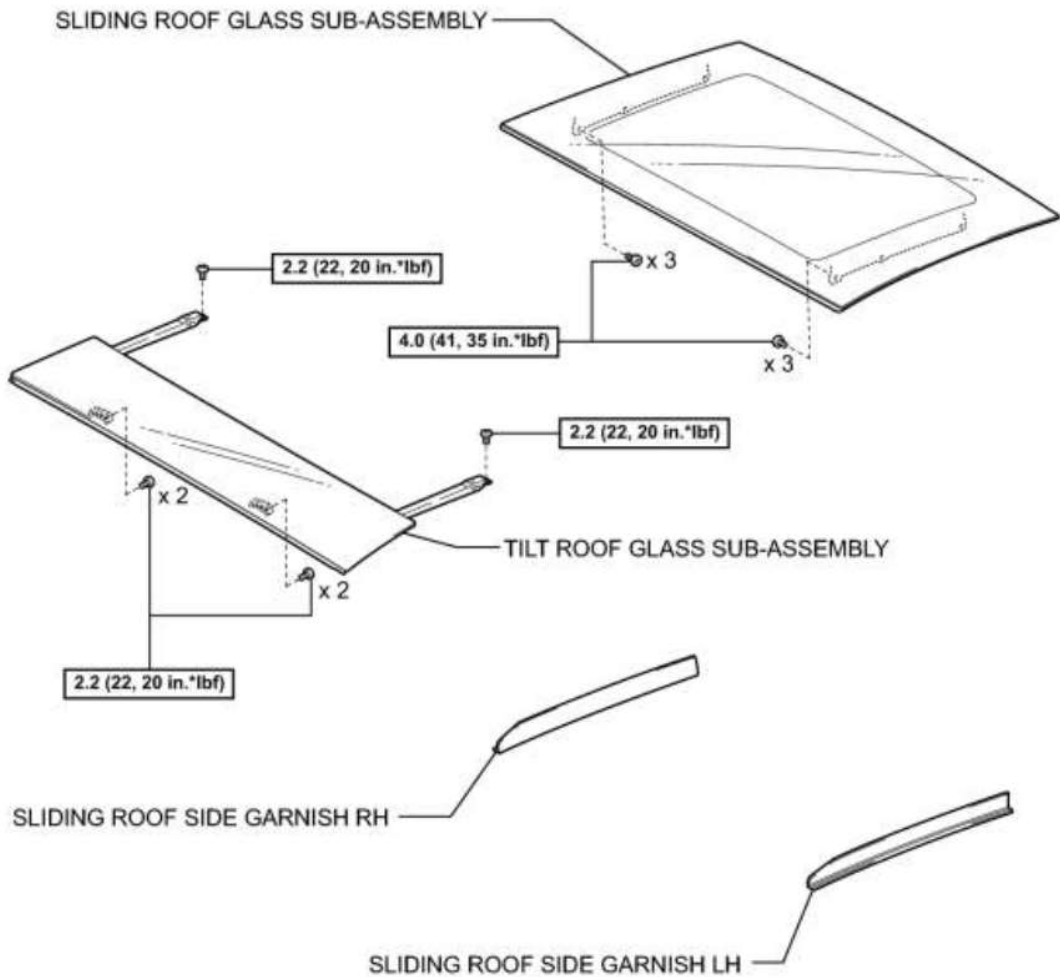


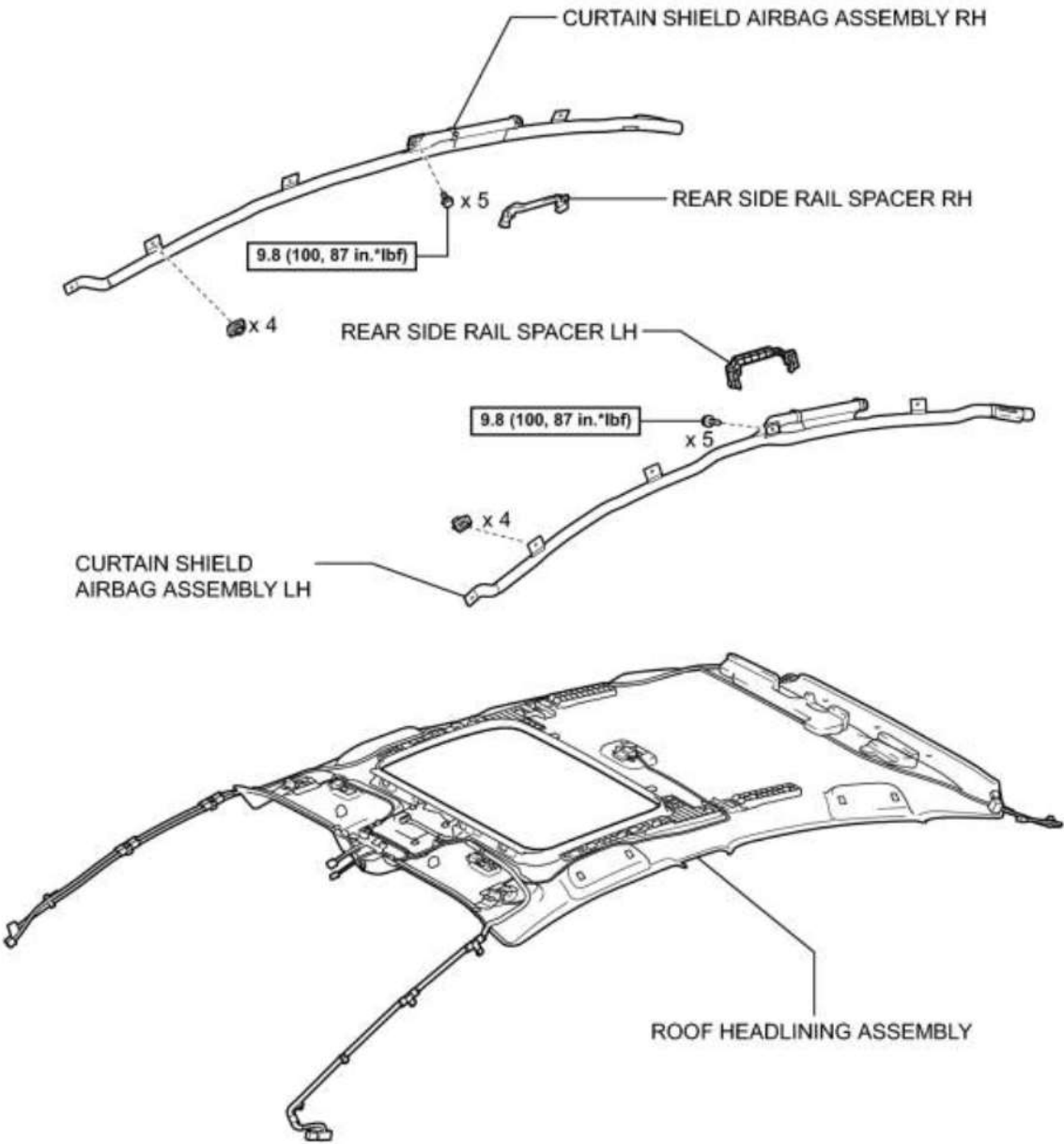
COMPONENTS

ILLUSTRATION



P

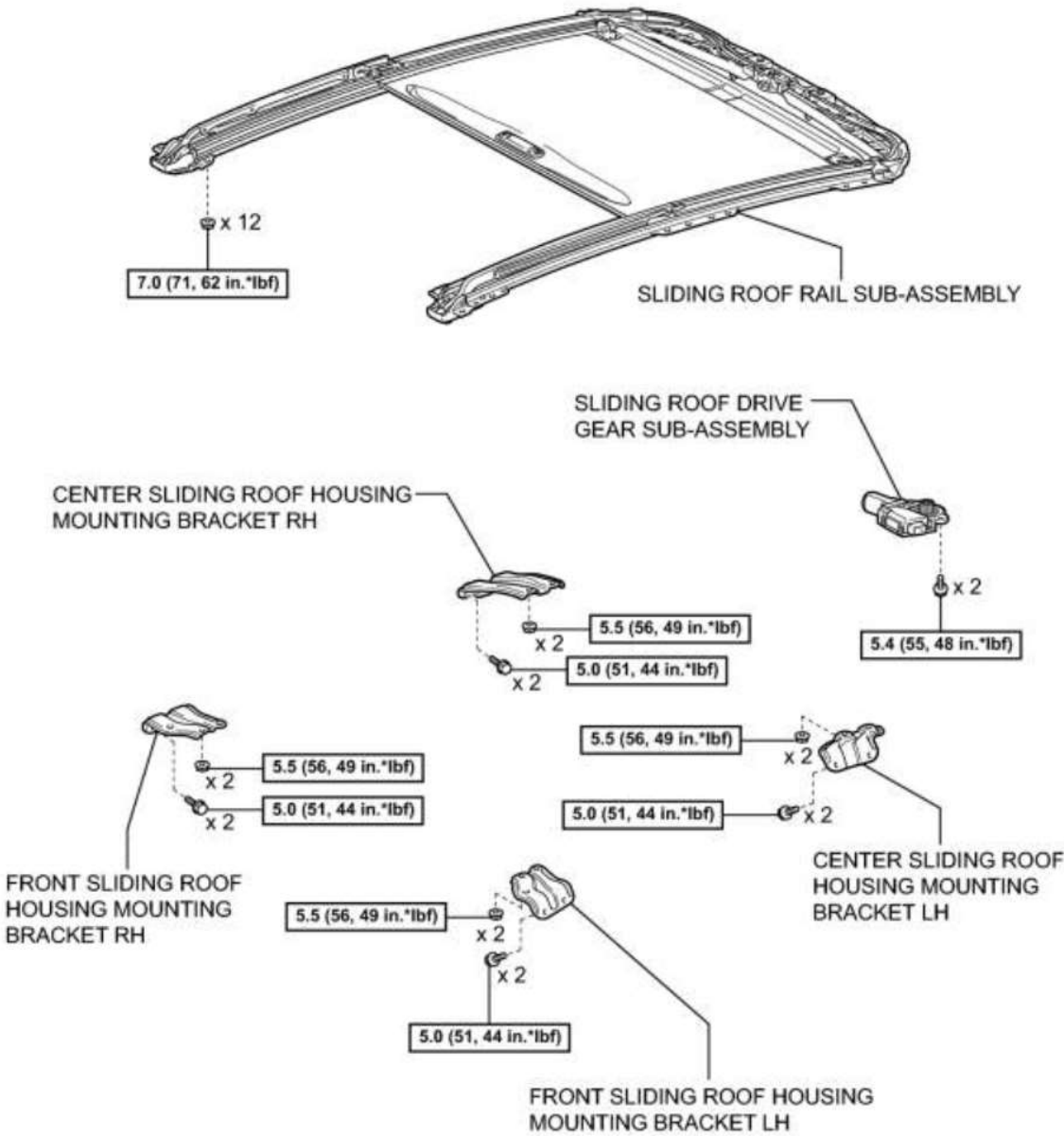
ILLUSTRATION



[N*m (kgf*cm, ft.*lbf)]: Specified torque

P

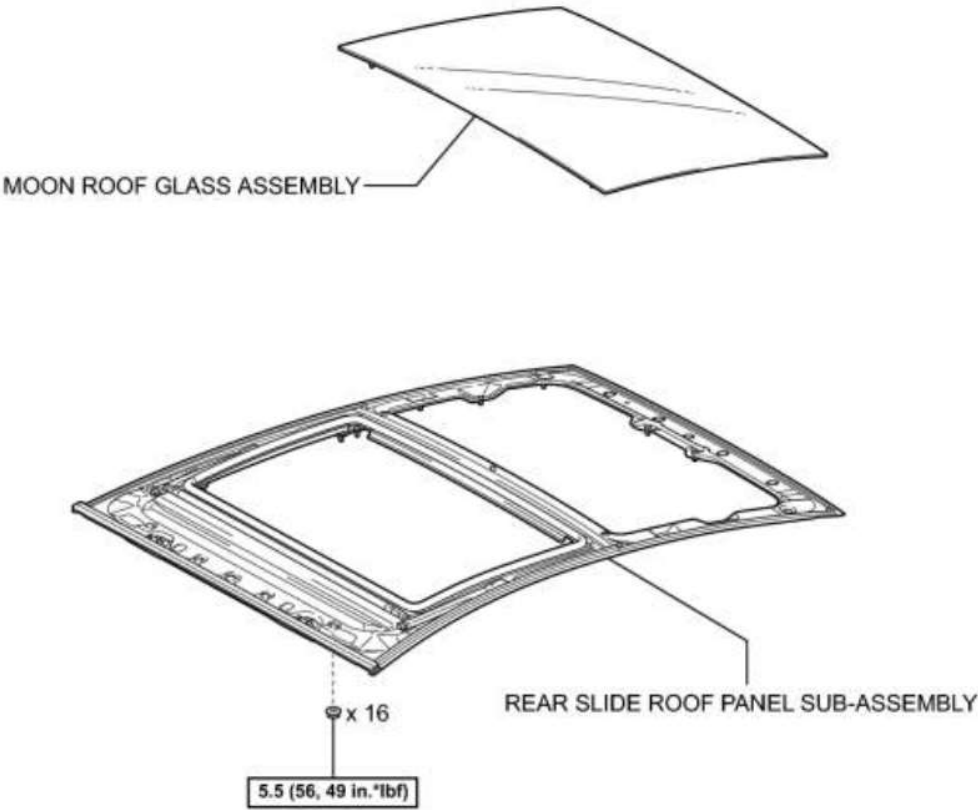
ILLUSTRATION



[N*m (kgf*cm, ft.*lbf)]: Specified torque

P

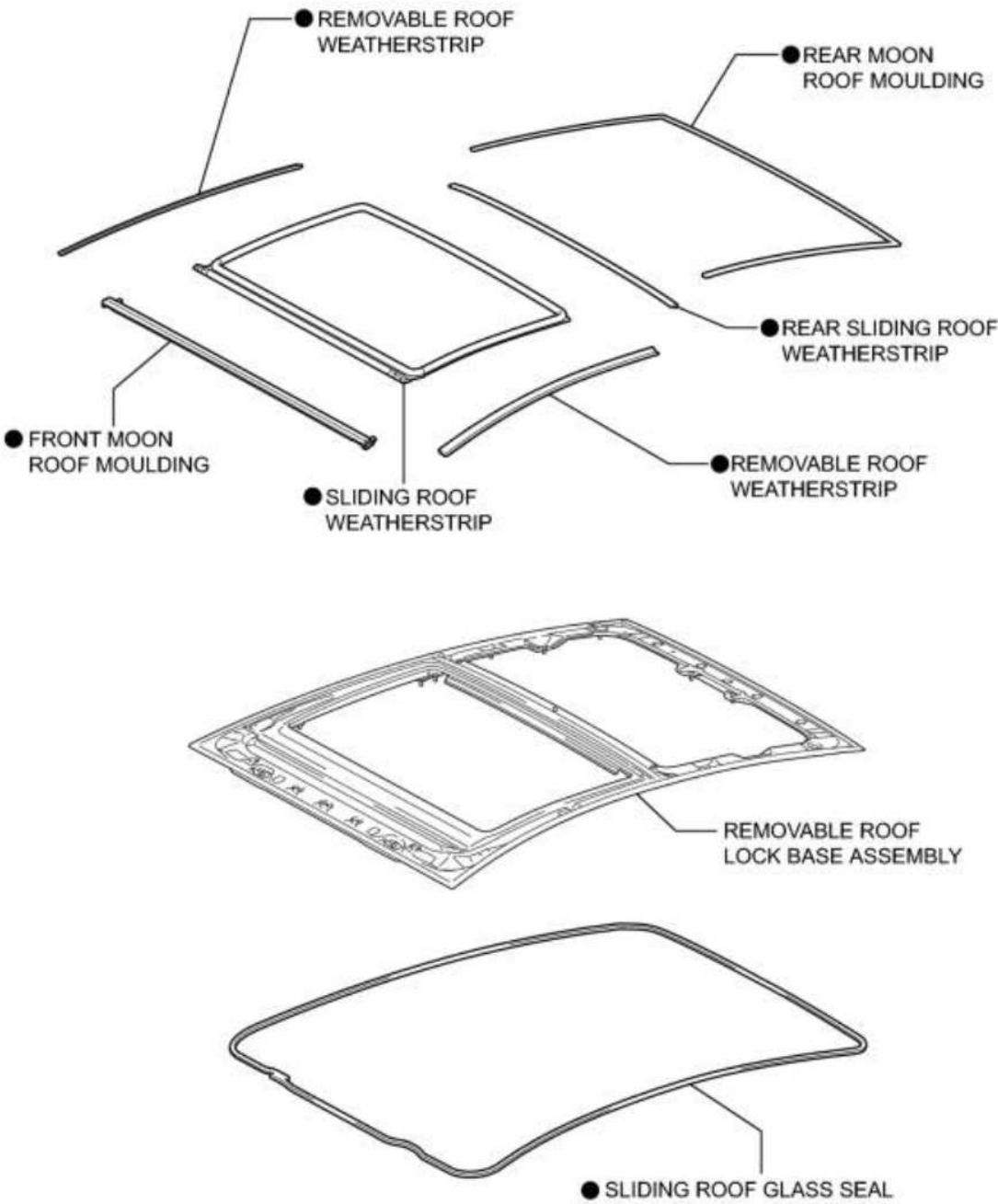
ILLUSTRATION



N*m (kgf*cm, ft.*lbf): Specified torque

P

ILLUSTRATION



cardiagn.com

● Non-reusable part

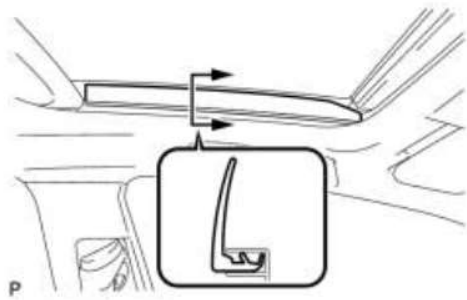
P

REMOVAL

CAUTION:

OPERATION PRECAUTIONS INFO

1. REMOVE SLIDING ROOF SIDE GARNISH LH



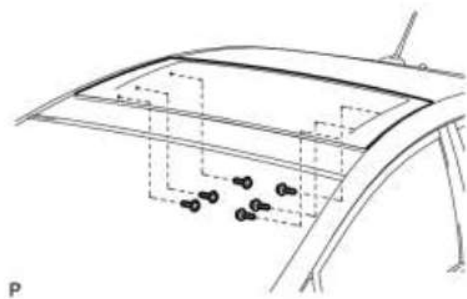
(a) Remove the sliding roof side garnish LH.

2. REMOVE SLIDING ROOF SIDE GARNISH RH

HINT:

Use the same procedure for the RH side and LH side.

3. REMOVE SLIDING ROOF GLASS SUB-ASSEMBLY

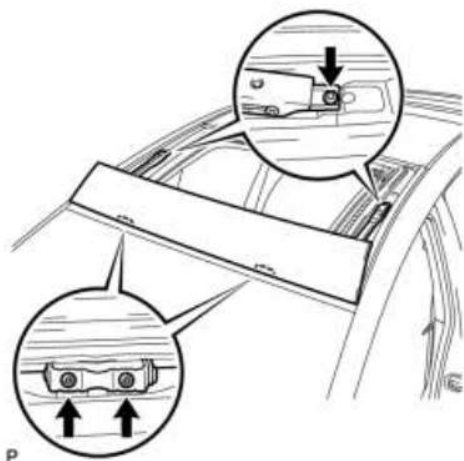


(a) Using a T25 "TORX" driver, remove the 6 screws.

(b) Remove the sliding roof glass sub-assembly.

4. REMOVE TILT ROOF GLASS SUB-ASSEMBLY

(a) Using a T20 "TORX" driver, remove the 6 screws and tilt roof glass sub-assembly.



5. REMOVE ROOF HEADLINING ASSEMBLY

HINT:

Refer to the procedure up to Remove Roof Headlining Assembly [INFO](#).

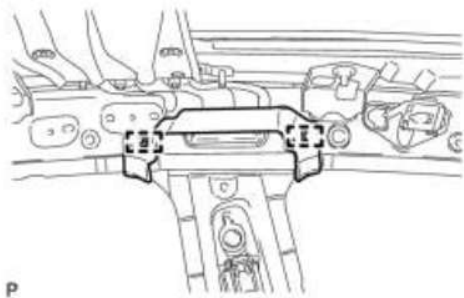
6. REMOVE CURTAIN SHIELD AIRBAG ASSEMBLY LH [INFO](#)

7. REMOVE CURTAIN SHIELD AIRBAG ASSEMBLY RH

HINT:

Use the same procedure for the RH side and LH side.

8. REMOVE REAR SIDE RAIL SPACER LH



(a) Engage the 2 clamps and remove the rear side rail spacer LH.

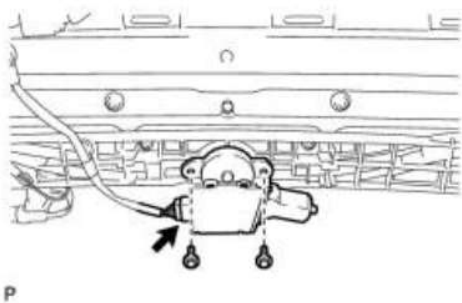
9. REMOVE REAR SIDE RAIL SPACER RH

HINT:

Use the same procedure for the RH side and LH side.

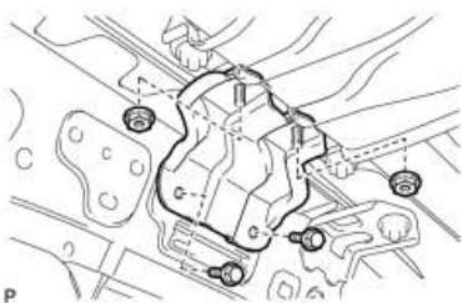
10. REMOVE SLIDING ROOF DRIVE GEAR SUB-ASSEMBLY

(a) Disconnect the connector.



(b) Remove the 2 bolts and sliding roof drive gear sub-assembly.

11. REMOVE FRONT SLIDING ROOF HOUSING MOUNTING BRACKET LH



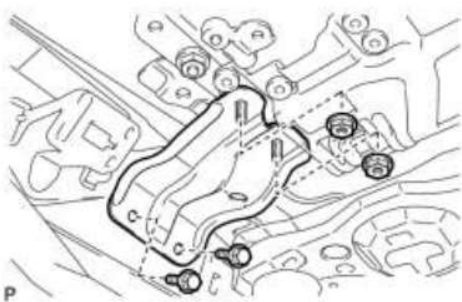
(a) Remove the 2 bolts, 2 nuts and front sliding roof housing mounting bracket LH.

12. REMOVE FRONT SLIDING ROOF HOUSING MOUNTING BRACKET RH

HINT:

Use the same procedure for the RH side and LH side.

13. REMOVE CENTER SLIDING ROOF HOUSING MOUNTING BRACKET LH



(a) Remove the 2 bolts, 2 nuts and center sliding roof housing mounting bracket LH.

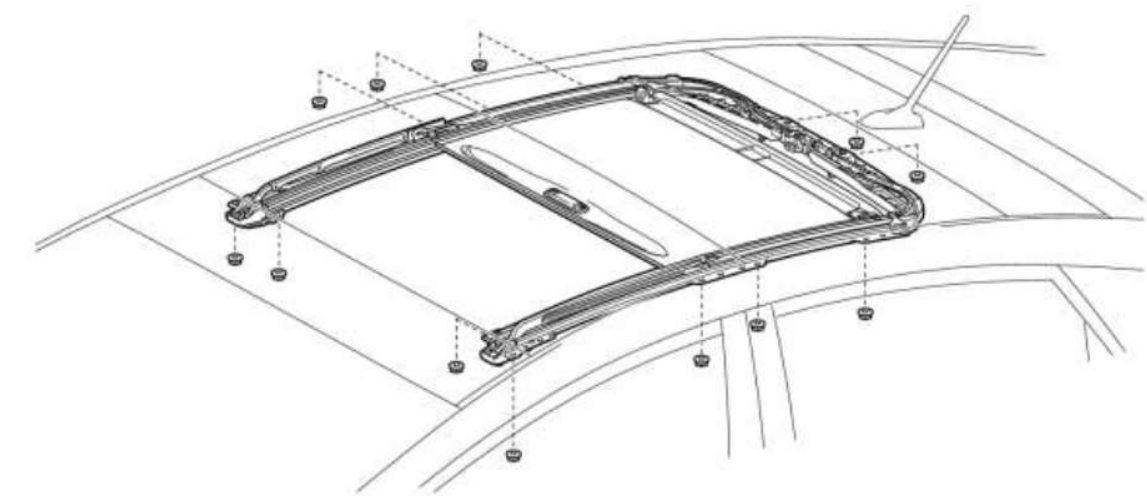
14. REMOVE CENTER SLIDING ROOF HOUSING MOUNTING BRACKET RH

HINT:

Use the same procedure for the RH side and LH side.

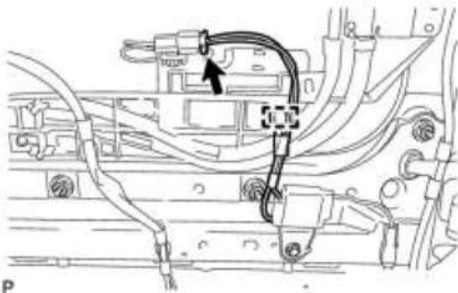
15. REMOVE SLIDING ROOF RAIL SUB-ASSEMBLY

(a) Remove the 12 nuts and sliding roof rail sub-assembly.



P

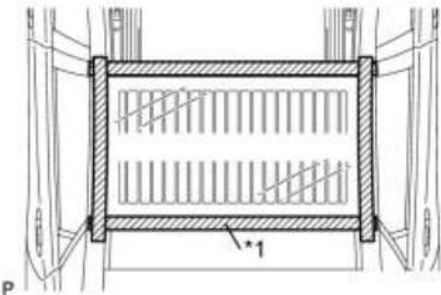
16. REMOVE MOON ROOF GLASS ASSEMBLY



P

(a) Disconnect the connector.

(b) Disengage the clamp.



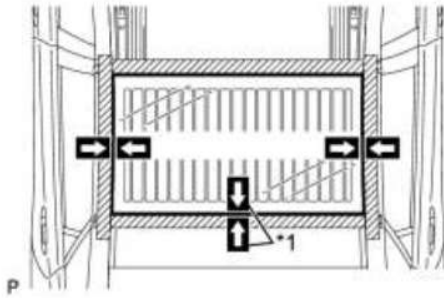
P

(c) Apply protective tape to the outer surface of the vehicle body to prevent scratches.

Text in Illustration

*1	Protective Tape
----	-----------------

(d) Place matchmarks on the moon roof glass assembly and vehicle body on the locations indicated in the illustration.

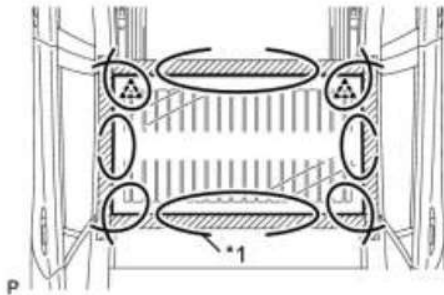


Text in Illustration

*1	Matchmark
----	-----------

HINT:

Matchmarks are not necessary if the moon roof glass assembly is not going to be reused.



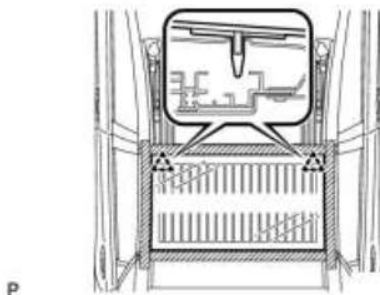
(e) Pass a piano wire between the rear slide roof panel sub-assembly and moon roof glass assembly from the interior, as shown in the illustration.

Text in Illustration

*1	Piano Wire
----	------------

(f) Tie both wire ends to wooden blocks or similar objects that can serve as handles.

(g) Cut off the adhesive by pulling the piano wire around the moon roof glass assembly.



(h) Using suction cups, disengage the 2 clips and remove the moon roof glass assembly.

17. CLEAN MOON ROOF GLASS ASSEMBLY



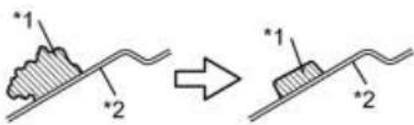
(a) Clean the outer edge of the moon roof glass with a non-residue solvent.

- Do not touch the moon roof glass surface after cleaning it.
- Be careful not to damage the glass.
- Even if using a new moon roof glass, clean the moon roof glass with a non-residue solvent.

18. CLEAN REAR SLIDE ROOF PANEL SUB-ASSEMBLY

(a) Using a scraper, remove the moulding and adhesive from the moon

roof glass.



Text in Illustration

*1	Adhesive
*2	Rear Slide Roof Panel Sub-assembly

P

- (b) Clean and shape the contact surfaces of the rear slide roof panel sub-assembly.
- (1) Using a knife, cut away excess adhesive on the contact surfaces of the rear slide roof panel sub-assembly, as shown in the illustration.

NOTICE:

Be careful not to damage the rear slide roof panel sub-assembly.

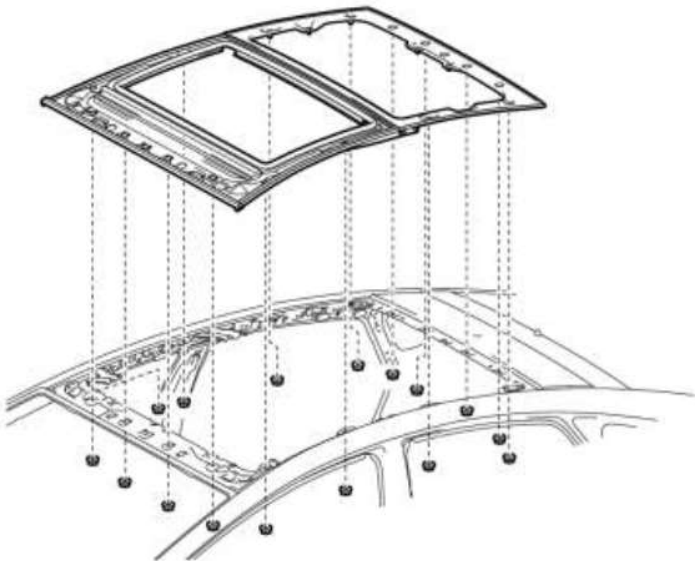
- (2) Clean the contact surfaces of the rear slide roof panel sub-assembly with a piece of cloth saturated with cleaner.

HINT:

Even if all the adhesive has been removed, clean the rear slide roof panel sub-assembly.

19. REMOVE REAR SLIDE ROOF PANEL SUB-ASSEMBLY

- (a) Remove the 16 nuts and rear slide roof panel sub-assembly.



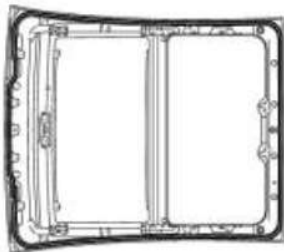
P

NOTICE:

- When removing the roof rail, be careful not to damage the vehicle.
- Perform this step with 2 or more technicians.

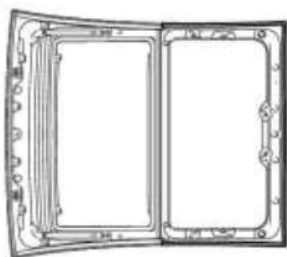
DISASSEMBLY

1. REMOVE SLIDING ROOF GLASS SEAL



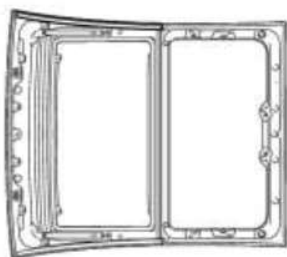
(a) Remove the sliding roof glass seal.

2. REMOVE REAR MOON ROOF MOULDING



(a) Remove the rear moon roof moulding.

3. REMOVE REMOVABLE ROOF WEATHERSTRIP



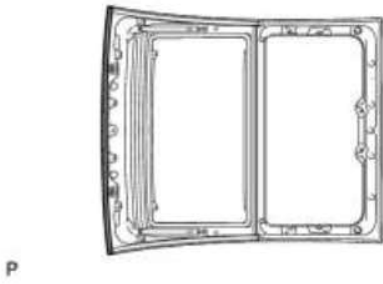
(a) Remove the removable roof weatherstrip.

HINT:

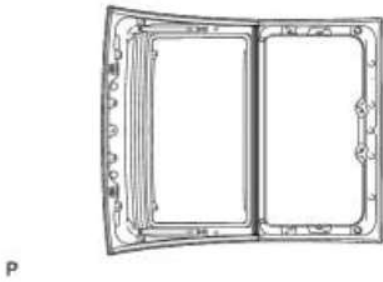
Use the same procedure for the RH side and LH side.

4. REMOVE FRONT MOON ROOF MOULDING

(a) Remove the front moon roof moulding.

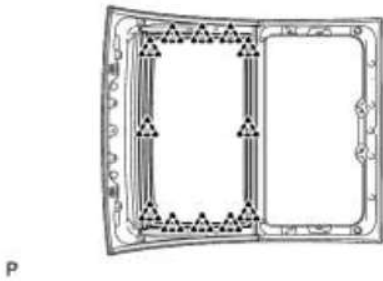


5. REMOVE REAR SLIDING ROOF WEATHERSTRIP



(a) Remove the rear sliding roof weatherstrip.

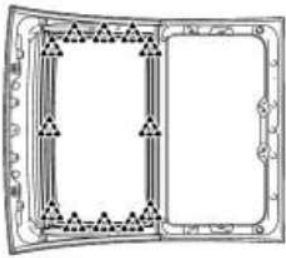
6. REMOVE SLIDING ROOF WEATHERSTRIP



(a) Disengage the 12 clips and remove the sliding roof weatherstrip.

REASSEMBLY

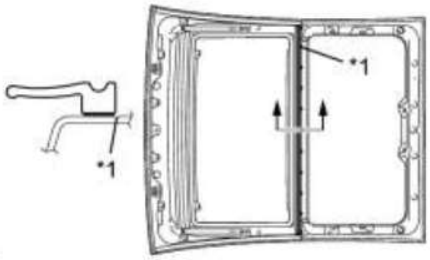
1. INSTALL SLIDING ROOF WEATHERSTRIP



P

(a) Engage the 12 clips and install the new sliding roof weatherstrip.

2. INSTALL REAR SLIDING ROOF WEATHERSTRIP



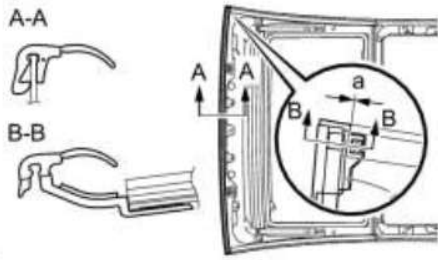
P

(a) Align the matchmarks on the new rear sliding roof weatherstrip and rear sliding roof rail assembly.

Text in Illustration

*1	Matchmark
----	-----------

3. INSTALL FRONT MOON ROOF MOULDING



P

(a) Install the new front moon roof moulding as shown in the illustration.

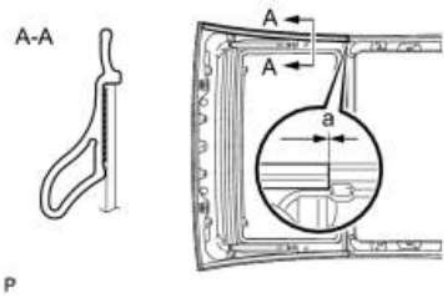
Standard

Area	Measurement
a	1.3 mm (0.00512 in.) or less

4. INSTALL REMOVABLE ROOF WEATHERSTRIP

(a) Install the new removal roof weatherstrip as shown in the illustration.

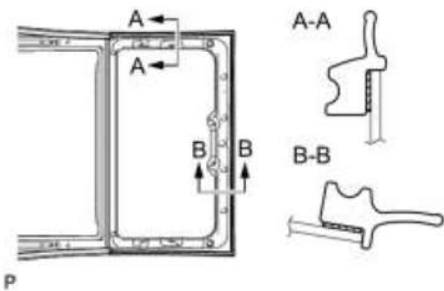
Standard



Area	Measurement
a	1.0 mm (0.0394 in.) or less

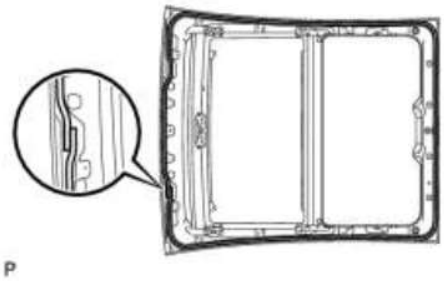
HINT:
Use the same procedure for the RH side and LH side.

5. INSTALL REAR MOON ROOF MOULDING



(a) Install the new rear moon roof moulding as shown in the illustration.

6. INSTALL SLIDING ROOF GLASS SEAL



(a) Install the new sliding roof glass seal as shown in the illustration.

INSTALLATION

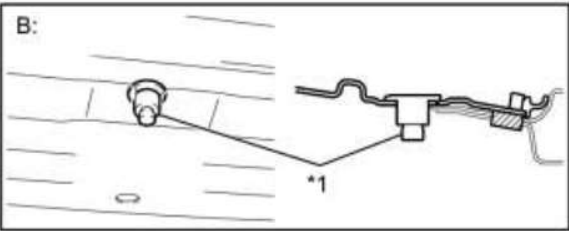
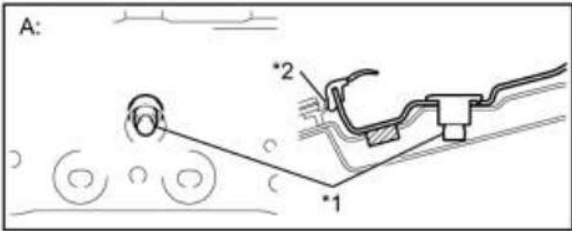
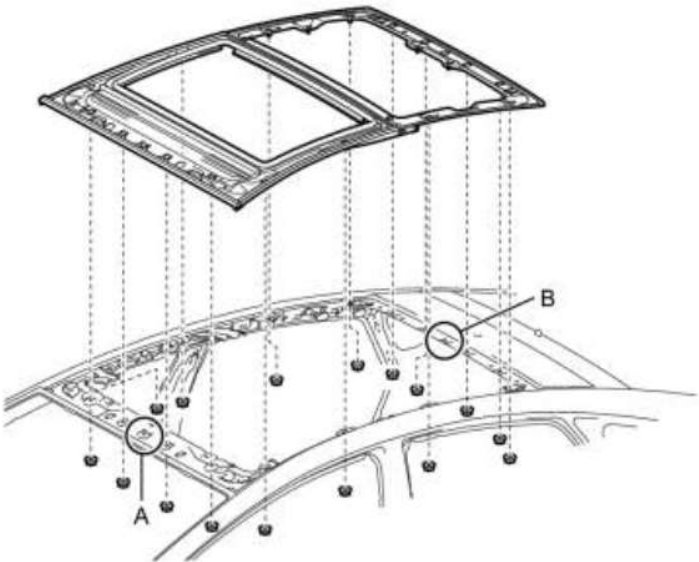
1. TEMPORARILY INSTALL REAR SLIDE ROOF PANEL SUB-ASSEMBLY

(a) Temporarily install the rear sliding roof rail sub-assembly with the 16 nuts.

NOTICE:

- When installing the roof rail to the vehicle, first install the roof rail center front and center rear alignment bolts to the vehicle front and rear alignment bolt installation points, as shown in the illustration.
- When installing the roof rail, be careful not to damage the vehicle.
- Perform this step with 2 or more technicians.

(b) Check that the alignment bolts are firmly installed.



P

Text in Illustration

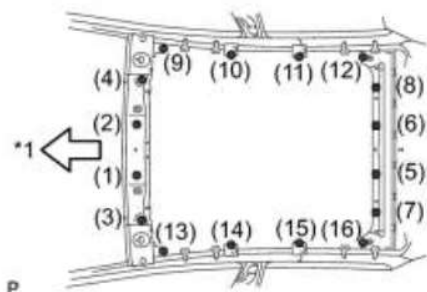
*1	Alignment Bolt	*2	Windshield Glass Moulding
----	----------------	----	---------------------------

NOTICE:

- When the bolts are not firmly installed, water leaks and malfunctions will occur.
- Make sure that the lip of the windshield glass moulding is not folded down.

2. FULLY TIGHTEN REAR SLIDE ROOF PANEL SUB-ASSEMBLY

(a) Fully tighten the 16 nuts to install the rear sliding roof rail sub-assembly.



Text in Illustration

*1	Front Side
----	------------

Torque: **5.5 N·m (56 kgf·cm, 49in·lbf)**

HINT:

Tighten the nuts in the order indicated in the illustration.

3. CLEAN MOON ROOF GLASS ASSEMBLY

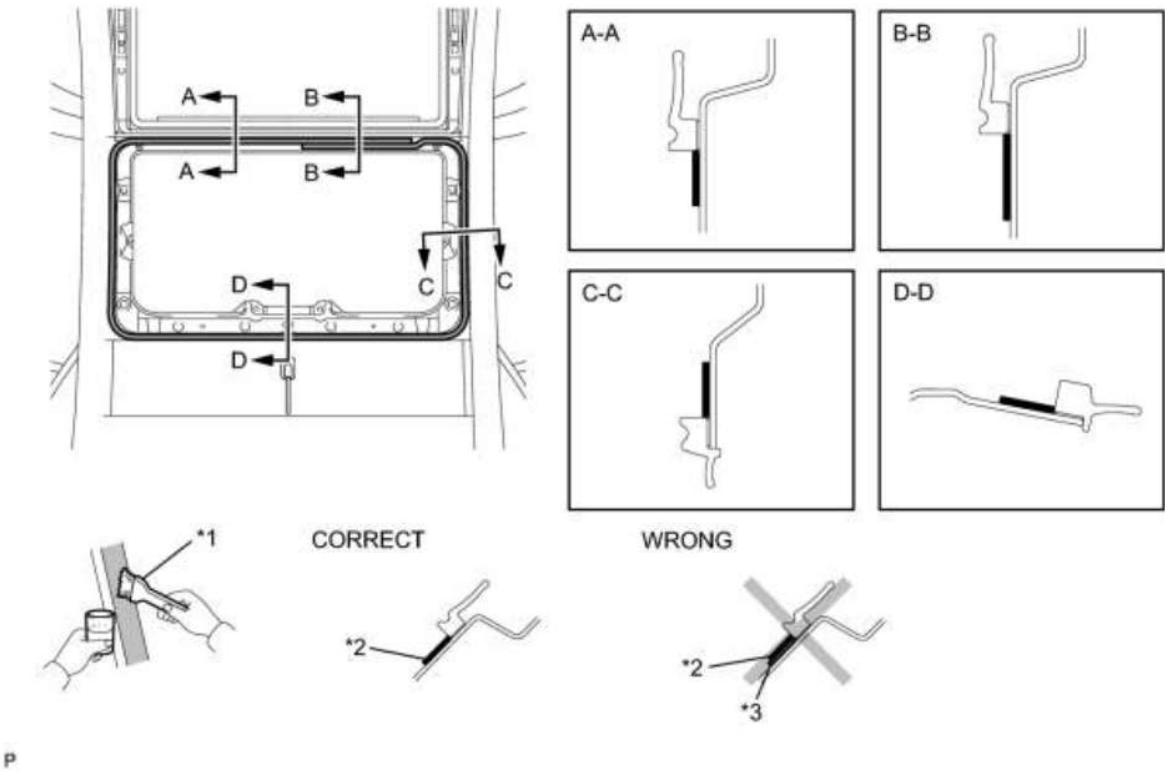


(a) Clean the outer edge of the moon roof glass with a non-residue solvent.

- Do not touch the moon roof glass surface after cleaning it.
- Be careful not to damage the glass.
- Even if using a new moon roof glass, clean the moon roof glass with a non-residue solvent.

4. INSTALL MOON ROOF GLASS ASSEMBLY

(a) Using a brush, coat the installation surface on the rear slide roof panel sub-assembly with Primer M.



Text in Illustration

*1	Brush	*2	Primer M
*3	Adhesive	-	-

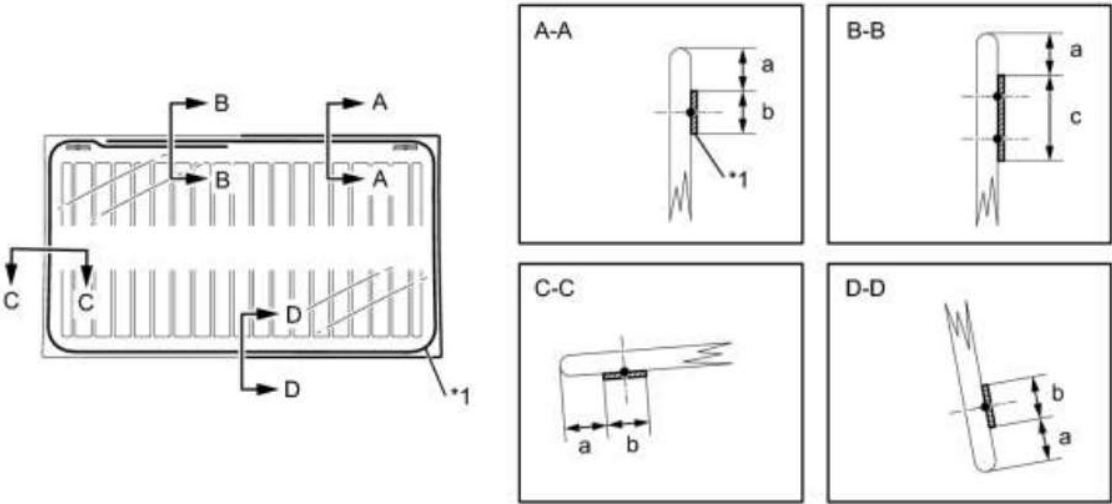
NOTICE:

- Do not coat the adhesive with Primer M.
- Do not apply too much primer.
- Allow the primer to dry for 3 minutes or more.
- Throw away any leftover primer.

HINT:

If an area other than that specified is coated by accident, wipe off the primer with a clean piece of cloth before it dries.

(b) Using a brush or a sponge, coat the application area of the adhesive with Primer G.



P

Text in Illustration

*1	Primer G
----	----------

Standard

Area	Dimension
a	8.0 mm (0.315 in.)
b	12.0 mm (0.472 in.)
c	24.0 mm (0.945 in.)

NOTICE:

- Do not apply too much primer.
- Allow the primer to dry for 3 minutes or more.
- Throw away any leftover primer.

HINT:

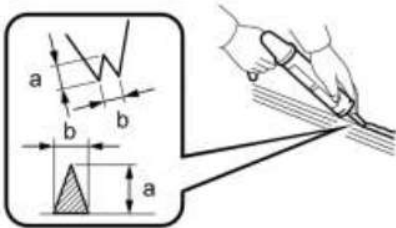
If an area other than that specified is coated by accident, wipe off the primer with a clean piece of cloth before it dries.

(c) Apply adhesive to the rear sliding roof rail sub-assembly.

Adhesive:

Toyota Genuine Windshield Glass Adhesive or equivalent

(1) Cut off the tip of the cartridge nozzle as shown in the illustration.



P

Standard Dimension

Area	Dimension
a	12.0 mm (0.472 in.)
b	8.0 mm (0.315 in.)

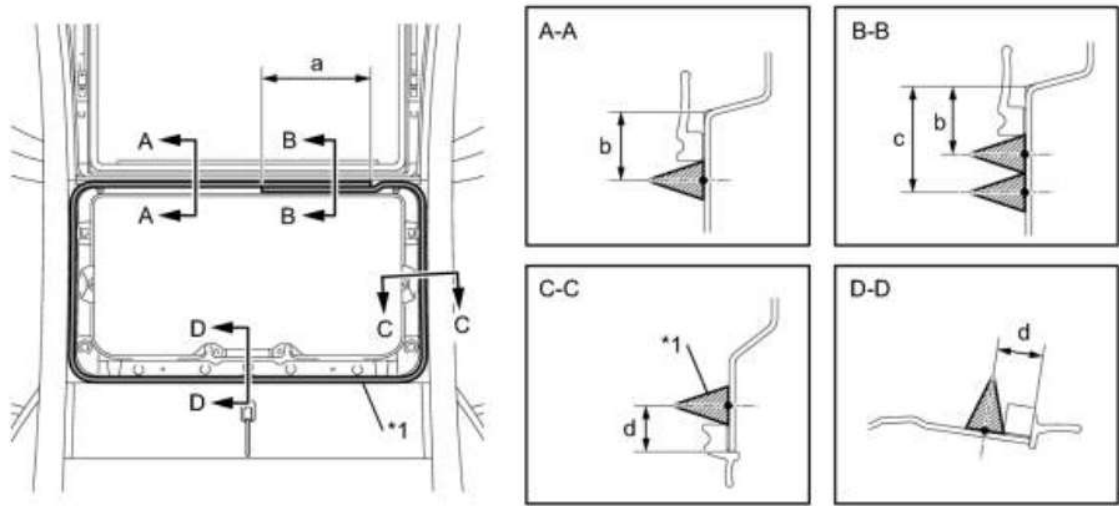
HINT:

After cutting off the tip, use all the adhesive within the time described in the table below.

Usage Time Frame

Temperature	Usage Time Frame
35°C (95°F)	15 minutes
20°C (68°F)	1 hour and 40 minutes
5°C (41°F)	8 hours

- (2) Load the sealer gun with cartridge.
- (3) Apply adhesive to the rear sliding roof rail sub-assembly as shown in the illustration.



P

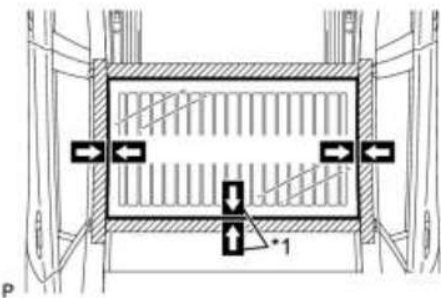
Text in Illustration

*1	Adhesive
----	----------

Standard Dimension

Area	Dimension
a	300 mm (11.8 in.)
b	14.0 mm (0.551 in.)
c	22.0 mm (0.866 in.)
d	8.0 mm (0.315 in.)

(d) Install the moon roof glass assembly.



(1) Position the moon roof glass assembly so that the matchmarks are aligned, and press it in gently along the rim (when glass without a clip is used).

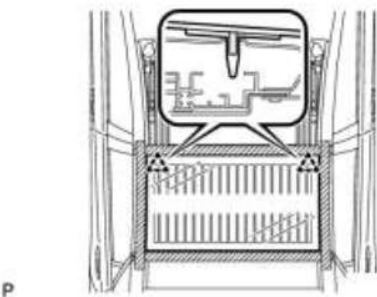
Text in Illustration

*1	Matchmark
----	-----------

(2) Lightly press the moon roof glass assembly to ensure that the moon roof glass assembly is securely fit to the vehicle body (when glass without a clip is used).

HINT:

Press the moon roof glass assembly with a force of 98 N (10 kgf, 22.0 lbf) or more.



(3) Using suction cups, engage the 2 clips to install the moon roof glass assembly.

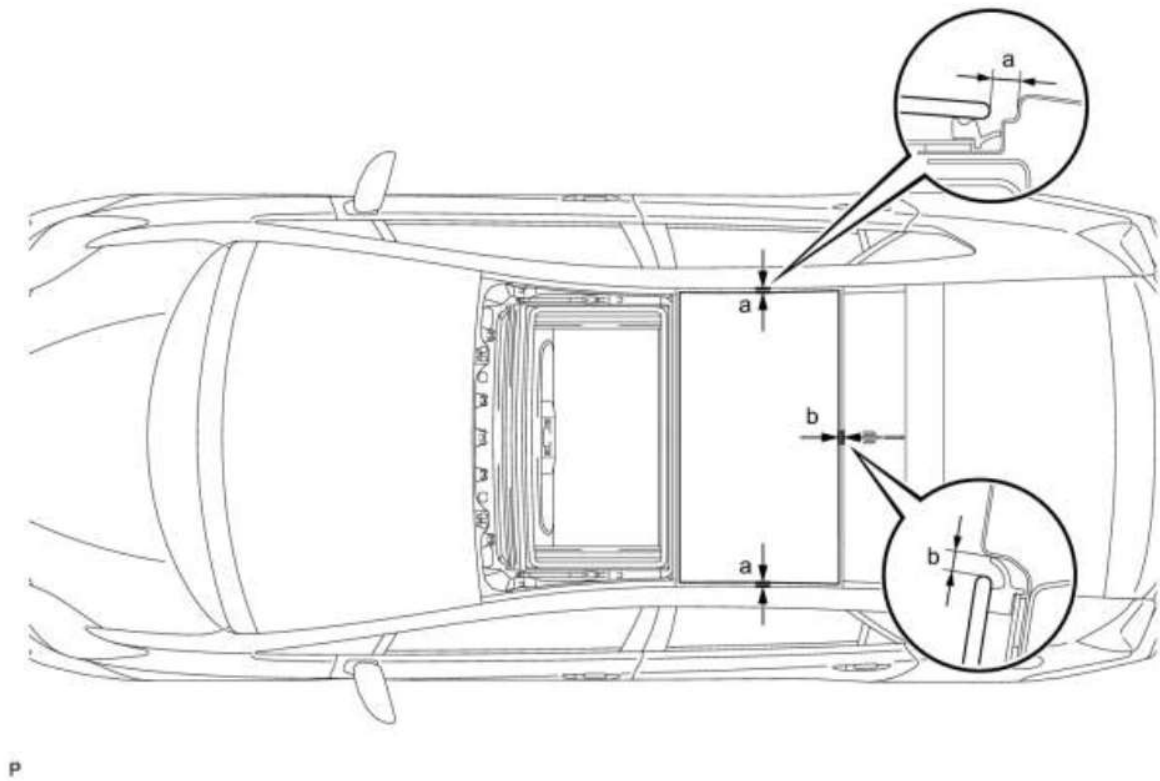
- Check that the clips are attached to the vehicle body correctly.
- Check the clearance between the vehicle body and moon roof glass assembly.

(4) Lightly press the front surface of the moon roof glass assembly to ensure that the moon roof glass assembly is securely fit to the vehicle body.

HINT:

Press the moon roof glass assembly with a force of 98 N (10 kgf, 22.0 lbf) or more.

(5) Inspect the position of the moon roof glass assembly so that the measurements are within the standard values shown in the illustration.



Standard

Area	Measurement
a	7.4 mm + 2.0 mm (0.291 in. + 0.0787 in.)
	7.4 mm - 2.0 mm (0.291 in. - 0.0787 in.)
b	5.0 mm + 2.0 mm (0.197 in. + 0.0787 in.)
	5.0 mm - 2.0 mm (0.197 in. - 0.0787 in.)

HINT:

"+" represents the condition that the glass is above the panel level. "-" represents the condition that the glass is below the panel level.

(6) Hold the moon roof glass assembly using protective tape until applied adhesive becomes hard.

NOTICE:

Do not drive the vehicle within the time described in the table below.

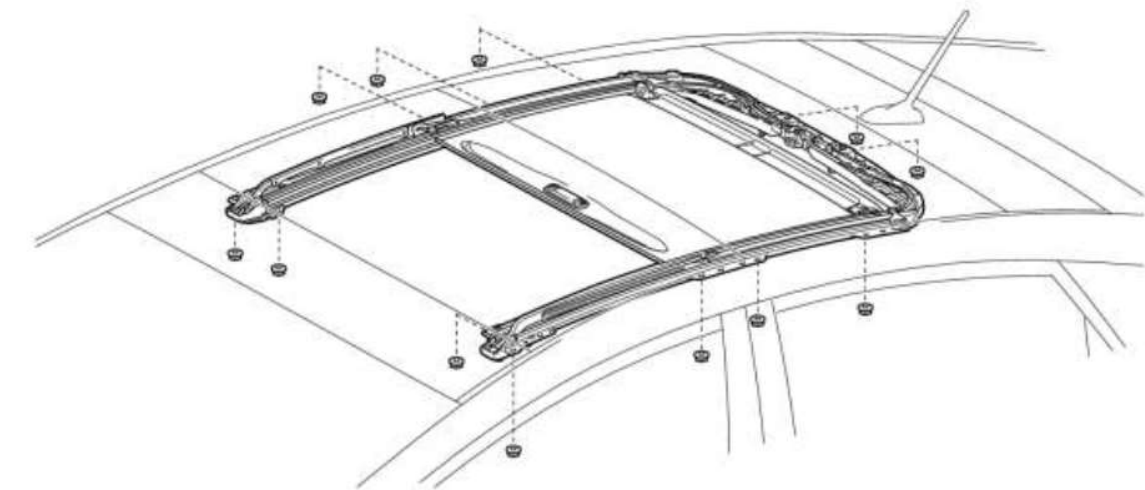
Minimum Time:

Temperature	Minimum Time prior to Driving Vehicle
35°C (95°F)	1 hour and 30 minutes

Temperature	Minimum Time prior to Driving Vehicle
20°C (68°F)	5 hours
5°C (41°F)	24 hours

5. INSTALL SLIDING ROOF RAIL SUB-ASSEMBLY

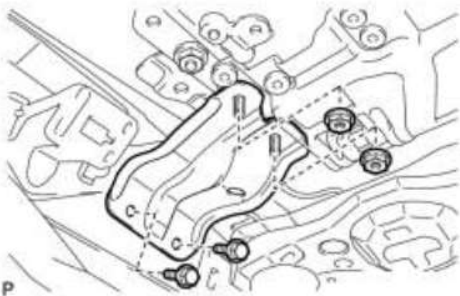
(a) Install the sliding roof rail sub-assembly with the 12 nuts.



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Torque: **7.0 N·m (71 kgf·cm, 62in·lbf)**

6. INSTALL CENTER SLIDING ROOF HOUSING MOUNTING BRACKET LH



P

(a) Install the center sliding roof housing mounting bracket LH with the 2 bolts and 2 nuts.

Bolt - Torque: **5.0 N·m (51 kgf·cm, 44in·lbf)**

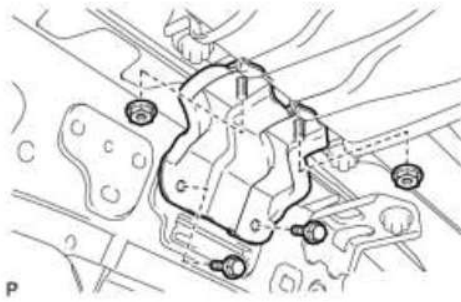
Nut - Torque: **5.5 N·m (56 kgf·cm, 49in·lbf)**

7. INSTALL CENTER SLIDING ROOF HOUSING MOUNTING BRACKET RH

HINT:

Use the same procedure for the RH side and LH side.

8. INSTALL FRONT SLIDING ROOF HOUSING MOUNTING BRACKET LH



(a) Install the front sliding roof housing mounting bracket LH with the 2 bolts and 2 nuts.

Bolt - Torque: **5.0 N·m (51 kgf·cm, 44in·lbf)**

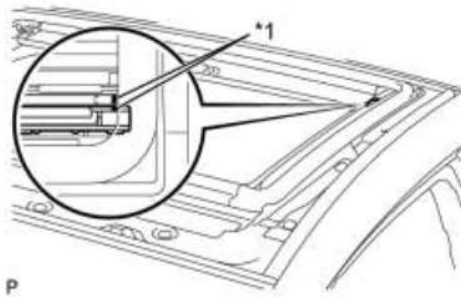
Nut - Torque: **5.5 N·m (56 kgf·cm, 49in·lbf)**

9. INSTALL FRONT SLIDING ROOF HOUSING MOUNTING BRACKET RH

HINT:

Use the same procedure for the RH side and LH side.

10. ADJUST FULLY CLOSED POSITION



(a) Using a screwdriver, slide the sliding roof drive cable to align the matchmarks.

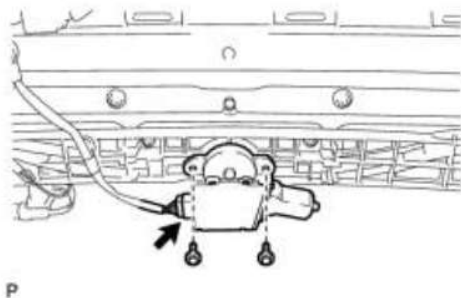
Text in Illustration

*1	Matchmark
----	-----------

HINT:

Tape the screwdriver tip before use.

11. INSTALL SLIDING ROOF DRIVE GEAR SUB-ASSEMBLY

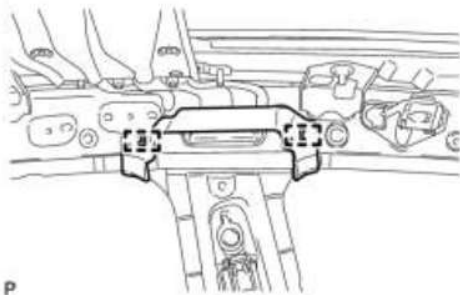


(a) Install the sliding roof drive gear sub-assembly with the 2 bolts.

Torque: **5.4 N·m (55 kgf·cm, 48in·lbf)**

12. INSTALL REAR SIDE RAIL SPACER LH

(a) Engage the 2 clamps and install the rear side rail spacer LH



13. INSTALL REAR SIDE RAIL SPACER RH

HINT:

Use the same procedure for the RH side and LH side.

14. INSTALL CURTAIN SHIELD AIRBAG ASSEMBLY LH

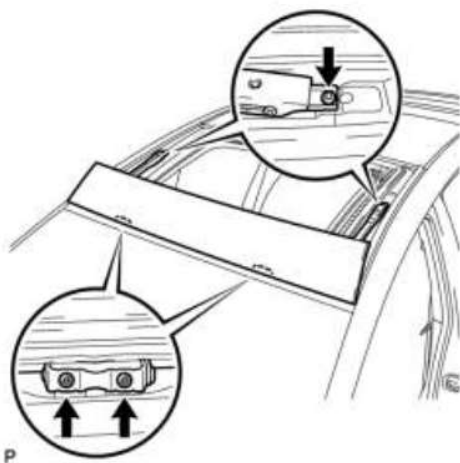
INFO

15. INSTALL CURTAIN SHIELD AIRBAG ASSEMBLY RH

HINT:

Use the same procedure for the RH side and LH side.

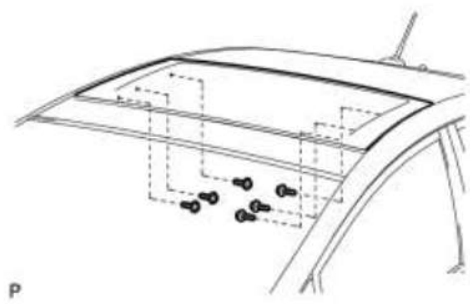
16. TEMPORARILY INSTALL TILT ROOF GLASS SUB-ASSEMBLY



(a) Using a T20 "TORX" driver, install the tilt roof glass sub-assembly with the 6 screws.

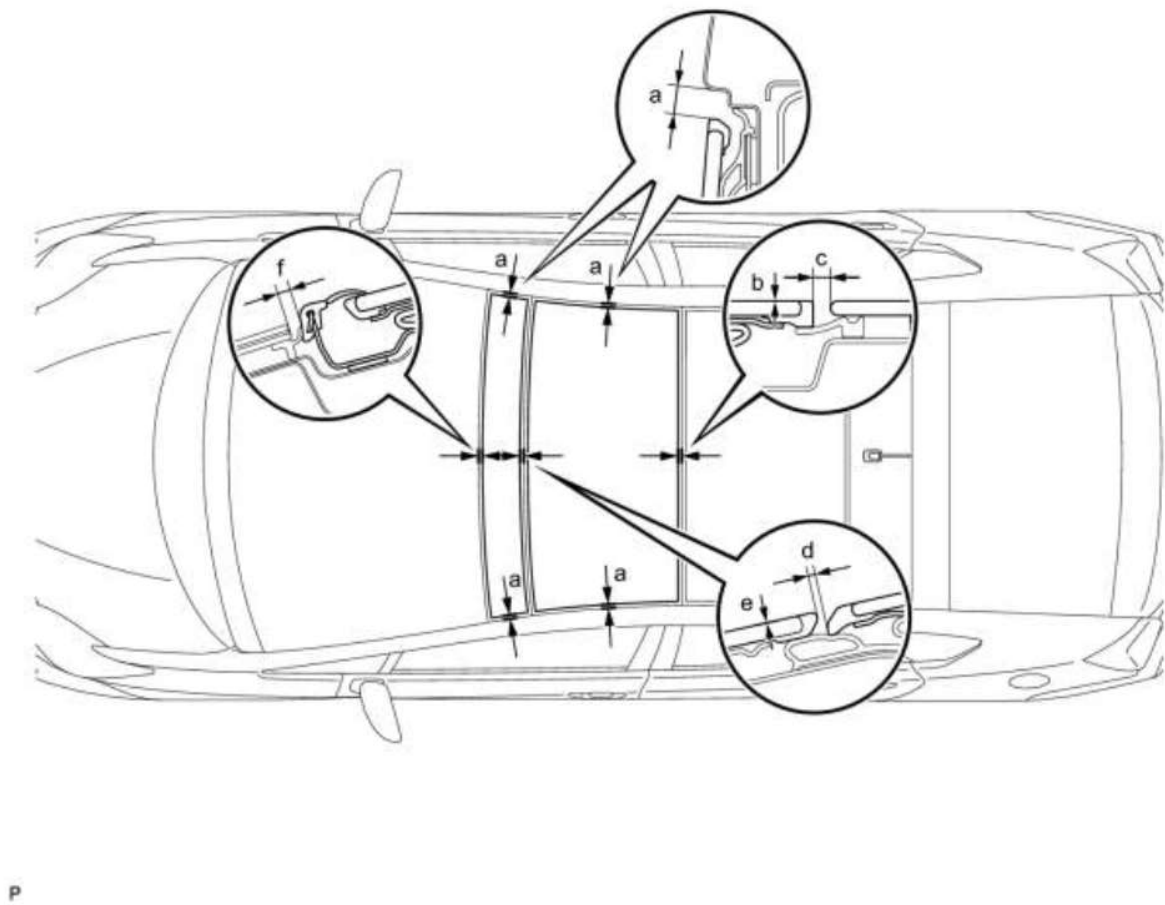
17. TEMPORARILY INSTALL SLIDING ROOF GLASS SUB-ASSEMBLY

(a) Using a T25 "TORX" driver, install the 6 screws.



18. ADJUST SLIDING ROOF GLASS

(a) Adjust the sliding roof glass sub-assembly:



(1) Adjust the position of the sliding roof glass sub-assembly so that the measurements are within the standard values shown in the illustration.

Standard

Area	Measurement
------	-------------

Area	Measurement
a	7.4 mm + 2.0 mm (0.291 in. + 0.0787 in.)
	7.4 mm - 2.0 mm (0.291 in. - 0.0787 in.)
b	0 + 2.0 mm (0 + 0.0787 in.)
	0 - 1.0 mm (0 - 0.0394 in.)
c	5.0 mm + 2.0 mm (0.197 in. + 0.0787 in.)
	5.0 mm - 2.0 mm (0.197 in. - 0.0787 in.)
d	1.9 mm + 1.0 mm (0.0748 in. + 0.0394 in.)
	1.9 mm - 1.0 mm (0.0748 in. - 0.0394 in.)

HINT:

"+" represents the condition that the glass is above the panel level. "-" represents the condition that the glass is below the panel level.

(2) After adjusting the sliding roof glass sub-assembly, using a T25 "TORX" driver, fully tighten the 6 screws to install the sliding roof glass sub-assembly.

Torque: **4.0 N·m (41 kgf·cm, 35in·lbf)**

(b) Adjust the tilt roof glass sub-assembly:

(1) Adjust the position of the tilt roof glass sub-assembly so that the measurements are within the standard values shown in the illustration.

Standard

Area	Measurement
a	7.4 mm + 2.0 mm (0.291 in. + 0.0787 in.)
	7.4 mm - 2.0 mm (0.291 in. - 0.0787 in.)
e	0 + 2.0 mm (0 + 0.0787 in.)
	0 - 1.0 mm (0 - 0.0394 in.)
f	4.0 mm + 2.0 mm (0.158 in. + 0.0787 in.)
	4.0 mm - 2.0 mm (0.158 in. - 0.0787 in.)

HINT:

"+" represents the condition that the glass is above the panel level. "-" represents the condition that the glass is below the panel level.

(2) After adjusting the tilt roof glass sub-assembly, using a T20 "TORX" driver, fully tighten the 6 screws to install the tilt roof glass sub-assembly.

Torque: **2.2 N·m (22 kgf·cm, 20in·lbf)**

19. INSPECT FOR WATER LEAKS

(a) After adjusting the roof glass sub-assembly, inspect for water leaks.

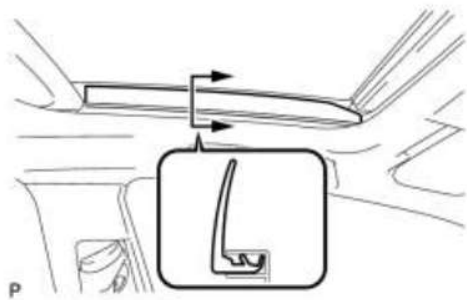
(b) If there are any leaks, readjust the roof glass sub-assembly.

20. INSTALL ROOF HEADLINING ASSEMBLY

HINT:

Refer to the procedure from Install Roof Headlining Assembly [INFO](#).

21. INSTALL SLIDING ROOF SIDE GARNISH LH



(a) Install the sliding roof side garnish LH.

22. INSTALL SLIDING ROOF SIDE GARNISH RH

HINT:

Use the same procedure for the RH side and LH side.

23. RESET SLIDING ROOF DRIVE GEAR SUB-ASSEMBLY

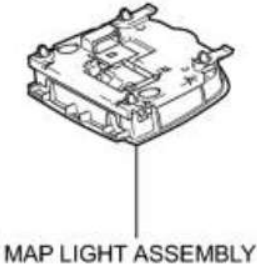
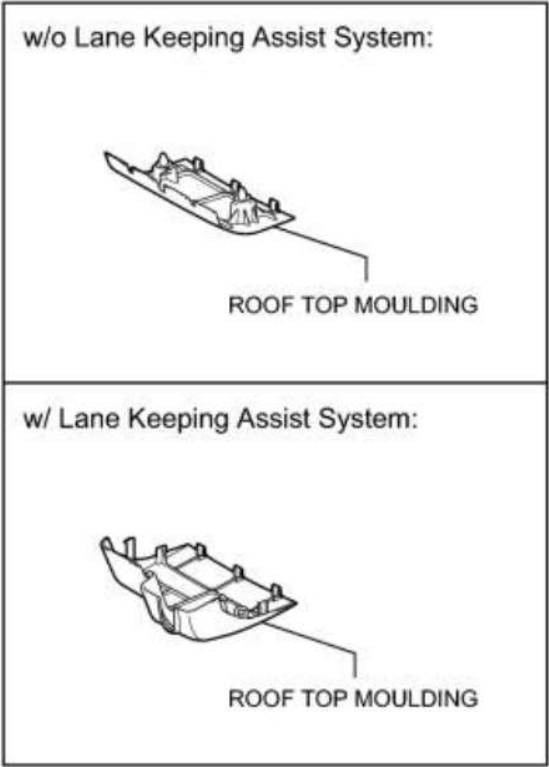
[INFO](#)

24. INSPECT SLIDING ROOF SYSTEM

[INFO](#)

COMPONENTS

ILLUSTRATION



P

REMOVAL

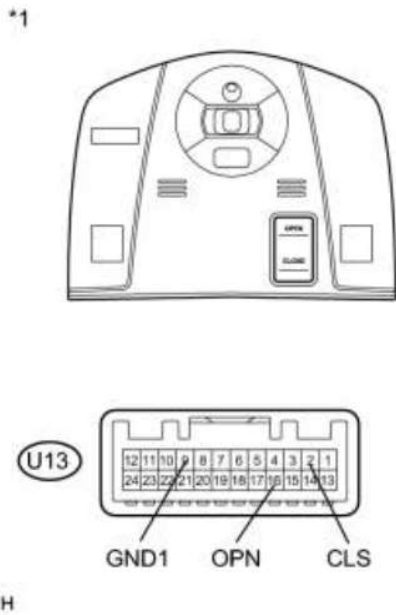
1. REMOVE ROOF TOP MOULDING (w/o Lane Keeping Assist System) 
2. REMOVE ROOF TOP MOULDING (w/ Lane Keeping Assist System) 
3. REMOVE MAP LIGHT ASSEMBLY 

INSPECTION

1. INSPECT SLIDING ROOF SWITCH (MAP LIGHT ASSEMBLY)

(a) Measure the resistance according to the value(s) in the table below.

Standard Resistance:



Tester Connection	Switch Condition	Specified Condition
U13-2 (CLS) - U13-9 (GND1)	CLOSE switch is pressed	Below 1 Ω
U13-2 (CLS) - U13-9 (GND1)	CLOSE switch is not pressed	10 k Ω or higher
U13-16 (OPN) - U13-9 (GND1)	OPEN switch is pressed	Below 1 Ω
U13-16 (OPN) - U13-9 (GND1)	OPEN switch is not pressed	10 k Ω or higher

Text in Illustration

*1	Component without harness connected (Sliding Roof Switch (Map Light Assembly))
----	---

If the result is not as specified, replace the sliding roof switch (map light assembly).

INSTALLATION

1. INSTALL MAP LIGHT ASSEMBLY_ 

2. INSTALL ROOF TOP MOULDING (w/o Lane Keeping Assist System)_ 

3. INSTALL ROOF TOP MOULDING (w/ Lane Keeping Assist System)_ 

PRECAUTION

NOTICE:

When disconnecting the cable from the negative (-) battery terminal, initialize the following system after the cable is reconnected.

System Name	See Procedure
Advanced Parking Guidance System	INFO

1. PRECAUTION FOR SOLAR PANEL

(a) Before disconnecting the solar module connector, make sure to cover the entire solar module with a material such as thick fabric which blocks sunlight.

CAUTION:

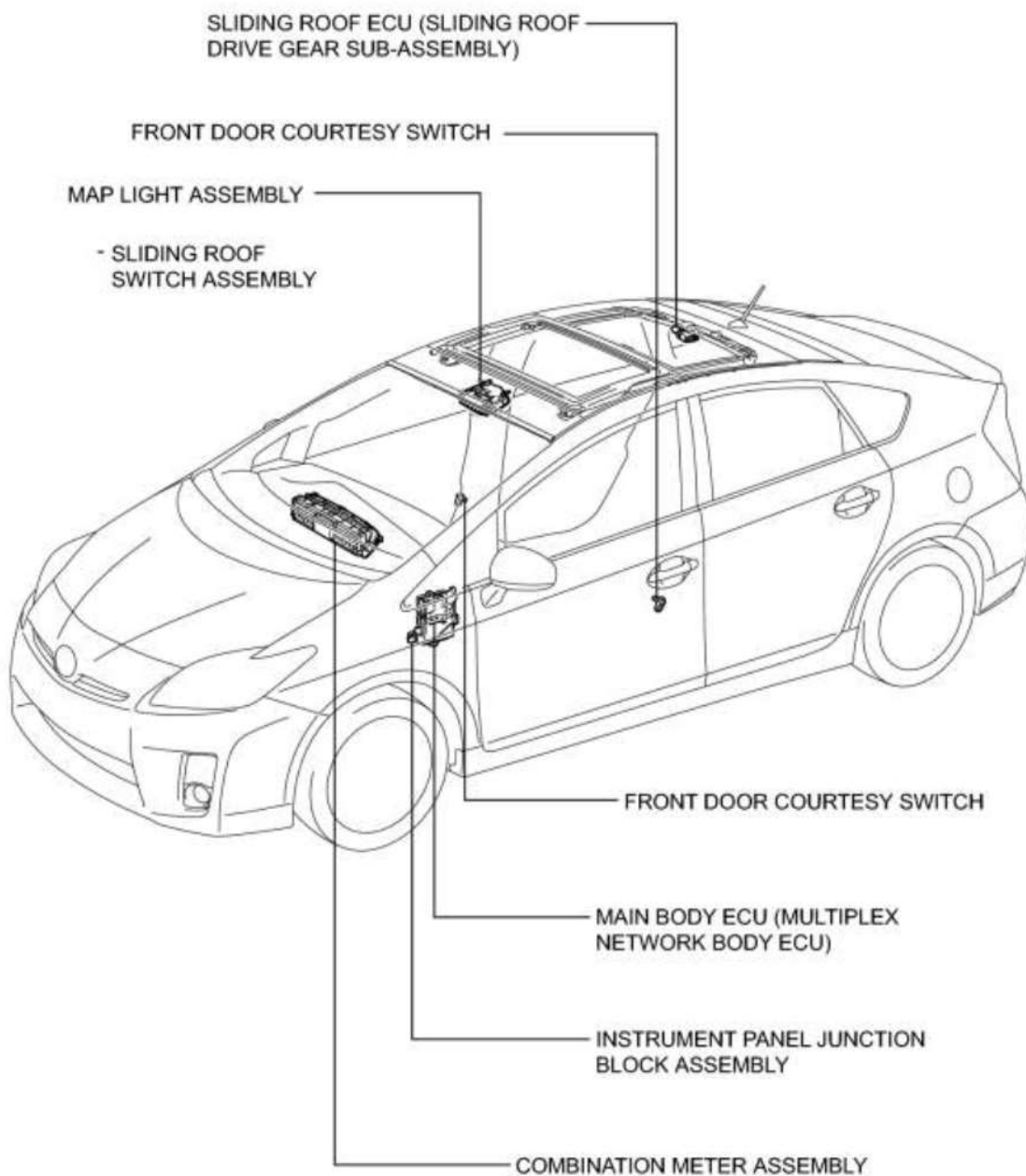
The solar module generates electricity from sunlight and other light sources. If the solar module connector is touched while the solar module is generating electricity, an accidental short circuit or electric shock may occur, causing serious injury.

HINT:

The solar module always generates electricity when exposed to light. When exposed to a light source such as sunlight, approximately 3.6 A and 22 V will be generated.

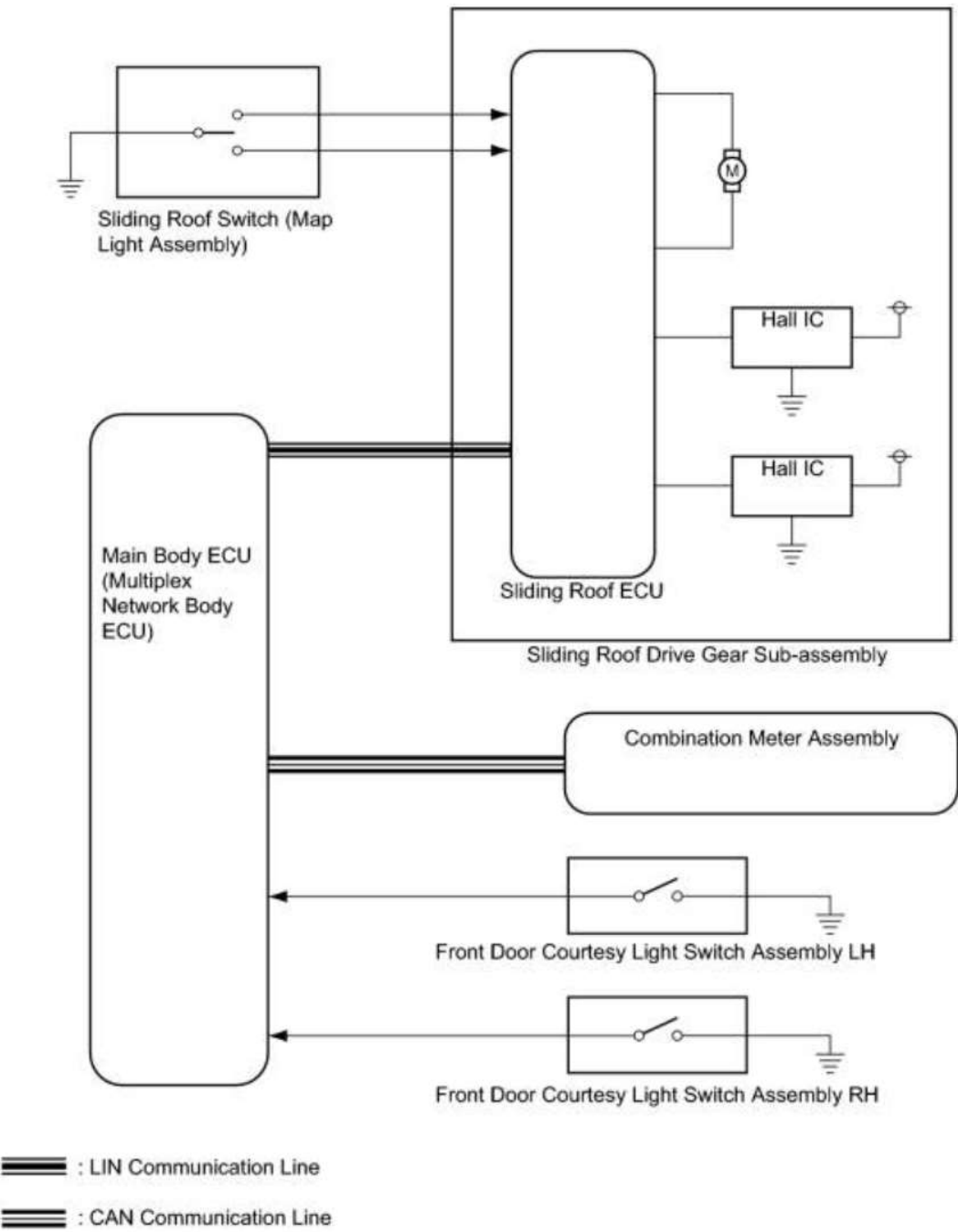
PARTS LOCATION

ILLUSTRATION



H

SYSTEM DIAGRAM



Communication Table

Sender	Receiver	Signal	Line
Main Body ECU (Multiplex Network Body ECU)	Sliding Roof ECU (Sliding Roof Drive Gear Sub-assembly)	- Key-off operation permit signal - Front door courtesy light switch	LIN

Sender	Receiver	Signal	Line
		assembly LH signal • Power switch on (IG) signal	
Main Body ECU (Multiplex Network Body ECU)	Combination Meter Assembly	Sliding roof open warning request signal	CAN

SYSTEM DESCRIPTION

1. GENERAL

The sliding roof system has the following functions:

manual open and close, auto open, jam protection and key off operation.

2. FUNCTION OF MAIN COMPONENT

Component	Outline
Sliding roof ECU (Sliding roof drive gear sub-assembly)	Sliding roof ECU (sliding roof drive gear sub-assembly) controls the rotational direction of the motor.
Sliding roof switch (Map light assembly)	Sliding roof switch (map light assembly) outputs operation signals to sliding roof ECU (sliding roof drive gear sub-assembly).

3. SYSTEM OPERATION

The sliding roof system has the following features:

Function	Outline
Manual open and close	This function causes sliding roof to open (tilt up and slide open) or close (slide close and tilt down) when OPEN switch or CLOSE switch is pressed for a maximum of 0.3 seconds. Sliding roof stops as soon as switch is released.
Auto open	This function causes sliding roof to fully tilts up or fully open when OPEN switch is pressed for a minimum of 0.3 seconds.
Jam protection	The jam protection function automatically stops the sliding roof and moves it open half way (or fully tilt up) if a foreign object gets jammed in the sliding roof during close operation.
Key-off operation	The key-off operation function makes it possible to operate the sliding roof for approximately 43 seconds after the power switch is turned on (ACC) or off, if the front doors are not opened.
Sliding roof open warning	When the power switch is turned from on (IG) to off and the driver door is opened with the sliding roof open, the buzzer in the combination meter assembly sounds once.

HOW TO PROCEED WITH TROUBLESHOOTING

HINT:

- Use the following procedure to troubleshoot the sliding roof system.
- *: Use the Techstream.

1. VEHICLE BROUGHT TO WORKSHOP

NEXT



2. CUSTOMER PROBLEM ANALYSIS

HINT:

- In troubleshooting, confirm that the problem symptoms have been accurately identified. Preconceptions should be discarded in order to make an accurate judgment. To clearly understand what the problem symptoms are, it is extremely important to ask the customer about the problem and the conditions at the time the malfunction occurred.
- Gather as much information as possible for reference. Past problems that seem unrelated may also help in some cases.
- The following 5 items are important points in the problem analysis:

What	Vehicle, system name
When	Date, time, occurrence frequency
Where	Road conditions
Under what conditions?	Driving conditions, weather conditions
How did it happen?	Problem symptoms

NEXT



3. INSPECT BATTERY VOLTAGE

(a) Measure the battery voltage with the power switch off.

Standard Voltage:

11 to 14 V

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

NEXT



4. INSPECT COMMUNICATION FUNCTION OF LIN COMMUNICATION SYSTEM*

(a) Using the Techstream, check if the LIN Communication System is functioning normally .

Result

Result	Proceed to
DTC is not output	A
DTC is output	B

  Go to LIN COMMUNICATION SYSTEM

A



5. INSPECT COMMUNICATION FUNCTION OF CAN COMMUNICATION SYSTEM*

(a) Use the Techstream to check if the CAN communication system is functioning normally.

Result:

Result	Proceed to
DTC is not output	A
DTC is output	B

  Go to CAN COMMUNICATION SYSTEM

A



6. CHECK DTC OUTPUT (SLIDING ROOF ECU)

(a) Clear the DTC .

(b) Recheck for DTCs.

Result

Result	Proceed to
DTC is not output	A
DTC is output	B

  Go to DIAGNOSTIC TROUBLE CODE CHART

A



7.

PROBLEM SYMPTOMS TABLE

(a) Refer to Problem Symptoms Table INFO.

Result

Result	Proceed to
Fault is not listed in Problem Symptoms Table	A
Fault is listed in Problem Symptoms Table	B

B ▶ Go to step 9

A



8.

OVERALL ANALYSIS AND TROUBLESHOOTING*

(a) Operation Check INFO

(b) Terminals of ECU INFO

(c) Data List / Active Test INFO

NEXT



9.

REPAIR OR REPLACE

NEXT



10.

CONFIRMATION TEST

NEXT ▶ **END**

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OPERATION CHECK

1. CHECK AUTO OPEN OPERATION

NOTICE:

Make sure that initialization is completed before inspection .

HINT:

When pressing the switch for 0.3 seconds or less, the roof glass moves but auto operation does not operate.

(a) Turn the power switch on (IG).

(b) When the roof glass is fully closed, press the OPEN switch for 0.3 seconds or more. Check that the roof glass automatically tilts up until it is fully tilted upward.

HINT:

When the OPEN switch is pressed for 1.7 seconds or more, the roof glass automatically opens to the comfort stop position without stopping at the fully tilted up position.

(c) When the roof glass is fully tilted upward, press the OPEN switch again for 0.3 seconds or more. Check that the roof glass automatically slides until it is comfort stop position.

(d) When the roof glass is comfort stop position, press the OPEN switch again for 0.3 seconds or more. Check that the roof glass automatically slides until it is fully open.

(e) When the auto operation is operating, check that pressing any sliding roof switch stops the roof glass operation.

2. CHECK SLIDING ROOF OPERATION AFTER POWER SWITCH IS TURNED OFF

(a) Turn the power switch from on (IG) to off, and check that the sliding roof can be operated. Then open the front door once, and check that the sliding roof cannot be operated.

(b) Turn the power switch from on (IG) to off and wait for approximately 45 seconds. Check that the sliding roof cannot be operated.

(c) Operate the auto open operation (tilt up or slide open) with the driver or front passenger side door open. While the roof glass is in motion, turn the power switch off. Check that the roof glass stops immediately.

3. CHECK JAM PROTECTION FUNCTION

CAUTION:

- Do not use a part of your body, for example, your hand, to check the jam protection function.
- Do not allow anything to become caught in the sliding roof by accident while performing this inspection.
- Perform the inspection from the inside of the vehicle.

NOTICE:

- Do not use hard objects, such as a hammer, to avoid damaging the roof.
- Make sure that initialization is completed before inspection INFO.
- If the jam protection function does not operate, reset the sliding roof drive gear (motor).
- The jam protection function does not operate when the roof glass is close to the fully closed position.

(a) When the slide close function is operating and an object is caught between the vehicle body and glass, check that the roof glass opens a distance of 218 mm (8.58 in.) from the point of contact with the object, or opens fully if an opening distance of 218 mm (8.58 in.) is not available.

(b) When the tilt down function is operating, and an object is caught between the vehicle body and the roof glass, check that the sliding roof tilts up fully.

4. CHECK SLIDING ROOF OPEN WARNING

(a) Open the sliding roof by using the sliding roof switch.

(b) When the power switch is turned from on (IG) to off and the driver door is opened with the key is in the vehicle, check that the warning buzzer in the combination meter assembly sounds once.

INITIALIZATION

1. INITIALIZE SLIDING ROOF ECU (SLIDING ROOF DRIVE GEAR SUB-ASSEMBLY)

NOTICE:

- When the sliding roof glass, sliding roof housing or sliding roof ECU (sliding roof drive gear sub-assembly) is replaced or removed and installed, the sliding roof drive gear requires initialization (pulse sensor initial position setting), as the glass position cannot be determined. If initialization is not performed, the auto slide open and tilt up functions, key-off operation and jam protection function may not operate, or the sliding roof may move in reverse or become misaligned.
- During initialization, do not apply a physical shock, such as opening/closing a door or driving the vehicle at 5 km/h (3 mph) or more, to the vehicle and do not perform the electrical operations:

HINT:

When the cable of the negative (-) battery terminal is disconnected and reconnected or the drive gear connector is disconnected and reconnected, sliding roof drive gear (pulse sensor initial position setting) initialization is not necessary.

(a) Perform initialization according to the table below.

Condition of Sliding Roof	Proceed to
Auto slide open and tilt up functions do not operate	Procedure A
Sliding roof moves in reverse direction during slide close (tilt down) operation	Procedure B
Sliding roof does not stop at the correct fully tilt up or open position during open operation	Procedure C

HINT:

Before performing initialization, make sure that there is no foreign matter on the guide rails and the guide rails are not deformed.

(1) Procedure A

1. Turn the power switch on (IG).
2. Press and hold the OPEN switch.

NOTICE:

Make sure not to release the switch during the initialization. If the switch is released, perform the initialization again.

3. The sliding roof glass starts open operation (tilt up and slide open operation) and stops at the fully open position.
4. After the sliding roof glass stops, check that the sliding roof glass moves slightly forward and stops at the correct fully open position.

HINT:

The initialization process ends when this operation completes.

(2) Procedure B

1. Turn the power switch on (IG).
2. Press and hold the CLOSE switch until the following movements finish: starts close operation (slide close or tilt down operation) → erroneously reverses → stops operation for 10 seconds → starts close operation (slide close or tilt down operation) → stops at the fully closed position.

NOTICE:

- If the switch is released before "stops operation for 10 seconds" finished, perform Procedure B again.
 - If the switch is released after "stops operation for 10 seconds" finished, perform Procedure A.
3. Perform Procedure A.

(3) Procedure C

1. Turn the power switch on (IG).
2. Press and hold the OPEN switch until the following movements finish: starts slide open operation → stops at the incorrect fully open position for 10 seconds → stops at the fully open position.

NOTICE:

- If the switch is released before "stops at the incorrect fully open position for 10 seconds" finished, perform Procedure C again.
 - If the switch is released after "stops at the incorrect fully open position for 10 seconds" finished, perform Procedure A.
3. After the sliding roof glass stops, check that the sliding roof glass moves slightly forward and stops at the correct fully open position.

HINT:

The initialization process ends when this operation completes.

PROBLEM SYMPTOMS TABLE

HINT:

- Use the table below to help determine the cause of problem symptoms. If multiple suspected areas are listed, the potential causes of the symptoms are listed in order of probability in the "Suspected Area" column of the table. Check each symptom by checking the suspected areas in the order they are listed. Replace parts as necessary.
- Inspect the fuses and relays related to this system before inspecting the suspected areas below.

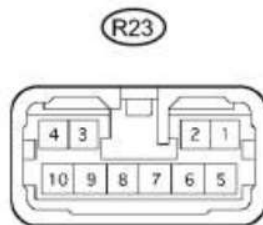
Sliding Roof System

Symptom	Suspected Area	See page
Sliding Roof does not Move by Operating Sliding Roof Control Switch	Sliding roof ECU (sliding roof drive gear sub-assembly)	INFO
	Wire harness or connector	INFO
	Sliding roof switch (map light assembly)	INFO

TERMINALS OF ECU

1. CHECK SLIDING ROOF ECU (SLIDING ROOF DRIVE GEAR SUB-ASSEMBLY)

(a) Disconnect the R23 ECU connector.



(b) Measure the resistance and voltage according to the value(s) in the table below.

HINT:

Measure the values on the wire harness side with the connector disconnected.

Tester Connection	Wiring Color	Terminal Description	Condition	Specified Condition
R23-1 (B) - R23-2 (E)	R - W-B	+B Power supply	Power switch off	11 to 14 V
R23-5 (IG) - R23-2 (E)	B - W-B	Power switch power supply	Power switch off	Below 1 V
R23-5 (IG) - R23-2 (E)	B - W-B	Power switch power supply	Power switch on (IG)	11 to 14 V
R23-2 (E) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω

If the result is not as specified, there may be a malfunction in the wire harness.

(c) Reconnect the R23 ECU connector.

(d) Measure the voltage according to the value(s) in the table below.

Tester Connection	Wiring Color	Terminal Description	Condition	Specified Condition
R23-7 (OPN) - R23-2 (E)	SB - W-B	Sliding roof motor open	Power switch on (IG), OPEN switch on	Below 1 V
R23-7 (OPN) - R23-2 (E)	SB - W-B	Sliding roof motor open	Power switch on (IG), OPEN switch off	11 to 14 V
R23-9 (CLS) - R23-2	BR - W-B	Sliding roof motor	Power switch on (IG), CLOSE	Below 1 V

Tester Connection	Wiring Color	Terminal Description	Condition	Specified Condition
(E)		close	switch on	
R23-9 (CLS) - R23-2 (E)	BR - W-B	Sliding roof motor close	Power switch on (IG), CLOSE switch off	11 to 14 V

If the result is not as specified, the sliding roof ECU (sliding roof drive gear sub-assembly) may have a malfunction.

DIAGNOSIS SYSTEM

1. DESCRIPTION

(a) Sliding roof system data and Diagnostic Trouble Codes (DTCs) can be read through the vehicle Data Link Connector 3 (DLC3). When the system seems to be malfunctioning, use the Techstream to check for malfunctions and perform repairs.

2. CHECK DLC3

(a) Check the DLC3 .

3. INSPECT BATTERY VOLTAGE

(a) Measure the battery voltage with the power switch off.

Standard Voltage:

11 to 14 V

- If the voltage is below 11 V, recharge or replace the battery.

DTC CHECK / CLEAR

1. CHECK DTC

- (a) Connect the Techstream to the DLC3.
- (b) Turn the power switch on (IG).
- (c) Turn the Techstream on.
- (d) Enter the following menus: Body Electrical / Sliding Roof / Trouble Codes.
- (e) Check the details of the DTC(s) .

2. CLEAR DTC

- (a) Connect the Techstream to the DLC3.
- (b) Turn the power switch on (IG).
- (c) Turn the Techstream on.
- (d) Enter the following menus: Body Electrical / Sliding Roof / Trouble Codes.
- (e) Clear the DTCs.

DATA LIST / ACTIVE TEST

1. READ DATA LIST

HINT:

Using the Techstream to read the Data List 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 conditions 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.

NOTICE:

In the following table, 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 the Techstream to the DLC3.
- (b) Turn the power switch on (IG).
- (c) Turn the Techstream on.
- (d) Enter the following menus: Body Electrical / Sliding Roof / Data List.
- (e) Read the Data List according to the display on the Techstream.

Sliding Roof (Sliding Roof ECU (Sliding Roof Drive Gear Sub-assembly))

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Open Switch	OPEN switch signal/ON or OFF	ON: OPEN switch pressed OFF: OPEN switch not pressed	-
Close Switch	CLOSE switch signal/ON or OFF	ON: CLOSE switch pressed OFF: CLOSE switch not pressed	-
Hall IC1 Pulse	Hall IC1 pulse output/Lo or Hi	Lo and Hi repeat during motor operation	Lo: Hall IC1 output is low Hi: Hall IC1 output is high
Hall IC1 Status	Status of Hall IC1/Normal or Error	Normal: Hall IC1 is normal Error: Hall IC1 is not normal	-
Hall IC2 Pulse	Hall IC2 pulse output/Lo or Hi	Lo and Hi repeat during motor operation	Lo: Hall IC2 output is low Hi: Hall IC2 output is high

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Hall IC2 Status	Status of Hall IC2/Normal or Error	Normal: Hall IC2 is normal Error: Hall IC2 is not normal	-
Ignition (Direct Signal)	Power switch signal/ON or OFF	ON: Power switch on (IG) OFF: Power switch off	-
Ignition (MPX)	Power switch signal (LIN signal)/ON or OFF	ON: Power switch on (IG) OFF: Power switch off	-
Door Courtesy	Driver side door courtesy light switch signal/ON or OFF	ON: Driver side door open OFF: Driver side door closed	-
Key Off Permission	Key-off sliding roof operation permit signal/ON or OFF	ON: Front doors are not opened within 45 seconds after power switch turned off OFF: Any status except "ON" status	-
Open Switch Failure(Past)	Open switch failure signal (Past)/ON or OFF	ON: Sliding roof open signal failure (Past) OFF: Sliding roof open signal not fail (Past)	-
Close Switch Failure(Past)	Close switch failure signal (Past)/ON or OFF	ON: Sliding roof close signal failure (Past) OFF: Sliding roof close signal not fail (Past)	-
Open Switch Failure(Current)	Open switch failure signal (Current)/ON or OFF	ON: Sliding roof open signal failure (Current) OFF: Sliding roof open signal not fail (Current)	-
Close Switch Failure(Current)	Close switch failure signal (Current)/ON or OFF	ON: Sliding roof close signal failure (Current) OFF: Sliding roof close signal not fail (Current)	-

2. PERFORM ACTIVE TEST

HINT:

Using the Techstream to perform Active Tests allows relays, VSVs, actuators and other items to be operated without removing any parts. This non-intrusive functional inspection can be very useful because intermittent operation may be discovered before parts or wiring is disturbed. Performing Active Tests early in

troubleshooting is one way to save diagnostic time. Data List information can be displayed while performing Active Tests.

- (a) Connect the Techstream to the DLC3.
- (b) Turn the power switch on (IG).
- (c) Turn the Techstream on.
- (d) Enter the following menus: Body Electrical / Sliding Roof / Active Test.
- (e) Perform the Active Test according to the display on the Techstream.

Sliding Roof (Sliding Roof ECU (Sliding Roof Drive Gear Sub-assembly))

Tester Display	Test Part	Control Range	Diagnostic Note
Slide Roof	Operate sliding roof	Opn/Dwn / Clos/Up / OFF	-

DIAGNOSTIC TROUBLE CODE CHART

Sliding Roof (Sliding Roof ECU (Sliding Roof Drive Gear Sub-assembly))

DTC Code	Detection Item	Trouble Area	See page
B2341	Sensor (Motor) Failure	1. Sliding roof ECU (Sliding roof drive gear sub-assembly) 2. Sliding roof switch (Map light assembly) 3. Wire harness or connector	INFO
B2342	Switch Failure	1. Sliding roof ECU (Sliding roof drive gear sub-assembly) 2. Sliding roof switch (Map light assembly) 3. Wire harness or connector	INFO
B2343	Position Initialization Incomplete	1. Sliding roof ECU (Sliding roof drive gear sub-assembly)	INFO
B2344	Position Failure	1. Sliding roof ECU (Sliding roof drive gear sub-assembly) 2. Sliding roof switch (Map light assembly) 3. Wire harness or connector	INFO

DTC	B2341	Sensor (Motor) Failure
DTC	B2344	Position Failure

DESCRIPTION

When the sliding roof ECU (sliding roof drive gear sub-assembly) detects a motor malfunction and the sliding roof operation is stopped, DTC B2341 is output.

When the sliding roof ECU (sliding roof drive gear sub-assembly) detects a gear position malfunction and the sliding roof operation is stopped, DTC B2344 is output.

DTC Code	DTC Detection Condition	Trouble Area
B2341	Sensor (motor) failure (When the ECU enters fail-safe mode due to a problem with the motor)	- Sliding roof ECU (Sliding roof drive gear sub-assembly) - Sliding roof switch (Map light assembly) - Wire harness or connector
B2344	Position failure (When the ECU enters fail-safe mode due to a problem with the gear position)	- Sliding roof ECU (Sliding roof drive gear sub-assembly) - Sliding roof switch (Map light assembly) - Wire harness or connector

WIRING DIAGRAM



2. CHECK DTC OUTPUT

(a) Clear the DTC .

(b) Recheck for DTCs.

OK:

DTC B2341 or B2344 is not output.

NG  REPLACE SLIDING ROOF ECU (SLIDING ROOF DRIVE GEAR SUB-ASSEMBLY)

OK  **USE SIMULATION METHOD TO CHECK**

3. INITIALIZE SLIDING ROOF ECU (SLIDING ROOF DRIVE GEAR SUB-ASSEMBLY)

(a) Check that the sliding roof ECU (sliding roof drive gear sub-assembly) can be initialized .

OK:

Sliding roof ECU (sliding roof drive gear sub-assembly) can be initialized.

NG  CHECK HARNESS AND CONNECTOR (SLIDING ROOF ECU - SLIDING ROOF SWITCH)

OK

**4. CHECK DTC OUTPUT**

(a) Clear the DTC .

(b) Recheck for DTCs.

OK:

DTC B2341 or B2344 is not output.

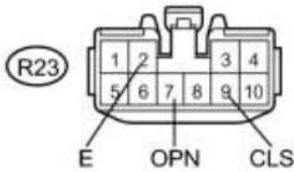
NG  REPLACE SLIDING ROOF ECU (SLIDING ROOF DRIVE GEAR SUB-ASSEMBLY)

OK  **END**

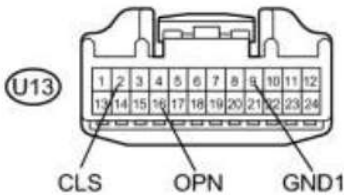
5. CHECK HARNESS AND CONNECTOR (SLIDING ROOF ECU - SLIDING ROOF SWITCH)

(a) Disconnect the sliding roof switch (map light assembly) connector.

*1



*2



- (b) Disconnect the sliding roof ECU (sliding roof drive gear sub-assembly) connector.
- (c) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
R23-9 (CLS) - U13-2 (CLS)	Always	Below 1 Ω
R23-9 (CLS) - Body ground	Always	10 kΩ or higher
R23-7 (OPN) - U13-16 (OPN)	Always	Below 1 Ω
R23-7 (OPN) - Body ground	Always	10 kΩ or higher
U13-9 (GND1) - Body ground	Always	Below 1 Ω
R23-2 (E) - Body ground	Always	Below 1 Ω

Text in Illustration

*1	Front view of wire harness connector (to Sliding Roof ECU (Sliding Roof Drive Gear Sub-assembly))
*2	Front view of wire harness connector (to Sliding Roof Switch (Map Light Assembly))

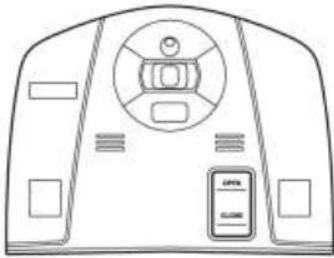
NG▶ REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

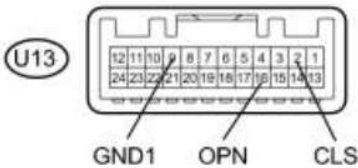


6.	INSPECT SLIDING ROOF SWITCH (MAP LIGHT ASSEMBLY)
----	--

*1



(a) Remove the sliding roof switch (map light assembly) INFO.



H

(b) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
U13-2 (CLS) - U13-9 (GND1)	CLOSE switch is pressed	Below 1 Ω
U13-2 (CLS) - U13-9 (GND1)	CLOSE switch is not pressed	10 k Ω or higher
U13-16 (OPN) - U13-9 (GND1)	OPEN switch is pressed	Below 1 Ω
U13-16 (OPN) - U13-9 (GND1)	OPEN switch is not pressed	10 k Ω or higher

Text in Illustration

*1	Component without harness connected (Sliding Roof Switch (Map Light Assembly))
----	---

NG REPLACE SLIDING ROOF SWITCH (MAP LIGHT ASSEMBLY)

OK REPLACE SLIDING ROOF ECU (SLIDING ROOF DRIVE GEAR SUB-ASSEMBLY)

DTC	B2342	Switch Failure
-----	-------	----------------

DESCRIPTION

This DTC is output when the sliding roof ECU (sliding roof drive gear sub-assembly) detects that the sliding roof switch is stuck for 30 seconds or more.

DTC Code	DTC Detection Condition	Trouble Area
B2342	Sliding roof ECU (sliding roof drive gear sub-assembly) detects sliding roof switch is stuck for 30 seconds or more.	- Sliding roof ECU (Sliding roof drive gear sub-assembly) - Sliding roof switch (Map light assembly) - Wire harness or connector

WIRING DIAGRAM

Refer to DTC B2341 [INFO](#).

INSPECTION PROCEDURE

NOTICE:

- Inspect the fuses for circuits related to this system before performing the following inspection procedure.
- When the sliding roof ECU (sliding roof drive gear sub-assembly) is replaced or removed and reinstalled, it requires initialization [INFO](#).

PROCEDURE

1.	READ VALUE USING TECHSTREAM (SLIDING ROOF SWITCH)
----	---

- Connect the Techstream to the DLC3.
- Turn the power switch on (IG).
- Turn the Techstream on.
- Enter the following menus: Body Electrical / Sliding Roof / Data List.
- Read the Data List according to the display on the Techstream.

Sliding Roof (Sliding Roof ECU (Sliding Roof Drive Gear Sub-assembly))

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Open Switch	Open switch failure signal	ON: Sliding roof open signal	-

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Failure(Past)	(Past)/ON or OFF	failure (Past) OFF: Sliding roof open signal not fail (Past)	
Close Switch Failure(Past)	Close switch failure signal (Past)/ON or OFF	ON: Sliding roof close signal failure (Past) OFF: Sliding roof close signal not fail (Past)	-
Open Switch Failure(Current)	Open switch failure signal (Current)/ON or OFF	ON: Sliding roof open signal failure (Current) OFF: Sliding roof open signal not fail (Current)	-
Close Switch Failure(Current)	Close switch failure signal (Current)/ON or OFF	ON: Sliding roof close signal failure (Current) OFF: Sliding roof close signal not fail (Current)	-

OK:

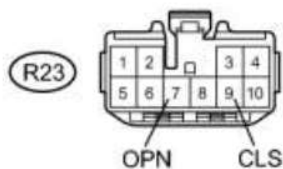
"OFF" appears on the Techstream screen.

NG ► [CHECK HARNESS AND CONNECTOR \(SLIDING ROOF ECU - BODY GROUND\)](#)

OK ► **REPLACE SLIDING ROOF ECU (SLIDING ROOF DRIVE GEAR SUB-ASSEMBLY)**

2.	CHECK HARNESS AND CONNECTOR (SLIDING ROOF ECU - BODY GROUND)
----	--

*1



(a) Disconnect the sliding roof ECU (sliding roof drive gear sub-assembly) connector.

(b) Disconnect the sliding roof switch (map light assembly) connector.

(c) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
R23-7 (OPN) - Body ground	Always	10 kΩ or higher
R23-9 (CLS) - Body ground	Always	10 kΩ or higher

Text in Illustration

*1	Front view of wire harness connector (to Sliding Roof ECU (Sliding Roof Drive Gear Sub-assembly))
----	--

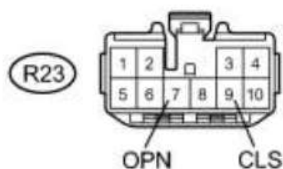
NG ► REPAIR OR REPLACE HARNESS OR CONNECTOR

OK



3.	CHECK HARNESS AND CONNECTOR (SLIDING ROOF SWITCH (MAP LIGHT ASSEMBLY))
----	--

*1



(a) Reconnect the sliding roof switch (map light assembly) connector.

(b) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
R23-7 (OPN) - Body ground	OPEN switch off	10 kΩ or higher
R23-9 (CLS) - Body ground	CLOSE switch off	10 kΩ or higher

Text in Illustration

*1	Front view of wire harness connector (to Sliding Roof ECU (Sliding Roof Drive Gear Sub-assembly))
----	--

NG ► REPLACE SLIDING ROOF SWITCH (MAP LIGHT ASSEMBLY)

OK ► REPLACE SLIDING ROOF ECU (SLIDING ROOF DRIVE GEAR SUB-ASSEMBLY)

DTC	B2343	Position Initialization Incomplete
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DESCRIPTION

This DTC is output when the sliding roof ECU (sliding roof drive gear sub-assembly) has not been initialized.

DTC Code	DTC Detection Condition	Trouble Area
B2343	Sliding roof ECU (sliding roof drive gear sub-assembly) has not been initialized.	Sliding roof ECU (Sliding roof drive gear sub-assembly)

WIRING DIAGRAM

Refer to DTC B2341 .

INSPECTION PROCEDURE

NOTICE:

- When DTC B2342 and B2343 are output simultaneously, perform troubleshooting for DTC B2342 first.
- When the sliding roof ECU (sliding roof drive gear sub-assembly) is replaced or removed and reinstalled, it requires initialization .

PROCEDURE

1.	INITIALIZE SLIDING ROOF ECU (SLIDING ROOF DRIVE GEAR SUB-ASSEMBLY)
----	--

(a) Check that the sliding roof ECU (sliding roof drive gear sub-assembly) can be initialized .

OK:

Sliding roof ECU (sliding roof drive gear sub-assembly) can be initialized.

NG  REPLACE SLIDING ROOF ECU (SLIDING ROOF DRIVE GEAR SUB-ASSEMBLY)

OK



2.	CHECK SLIDING ROOF OPERATION
----	------------------------------

(a) Check the sliding roof auto operation .

OK:

Auto operation operates normally.

NG  REPLACE SLIDING ROOF ECU (SLIDING ROOF DRIVE GEAR SUB-ASSEMBLY)

OK



3.	CHECK DTC OUTPUT
----	------------------

(a) Clear the DTC .

(b) Recheck for DTCs.

OK:

DTC B2343 is not output.

NG  REPLACE SLIDING ROOF ECU (SLIDING ROOF DRIVE GEAR SUB-ASSEMBLY)

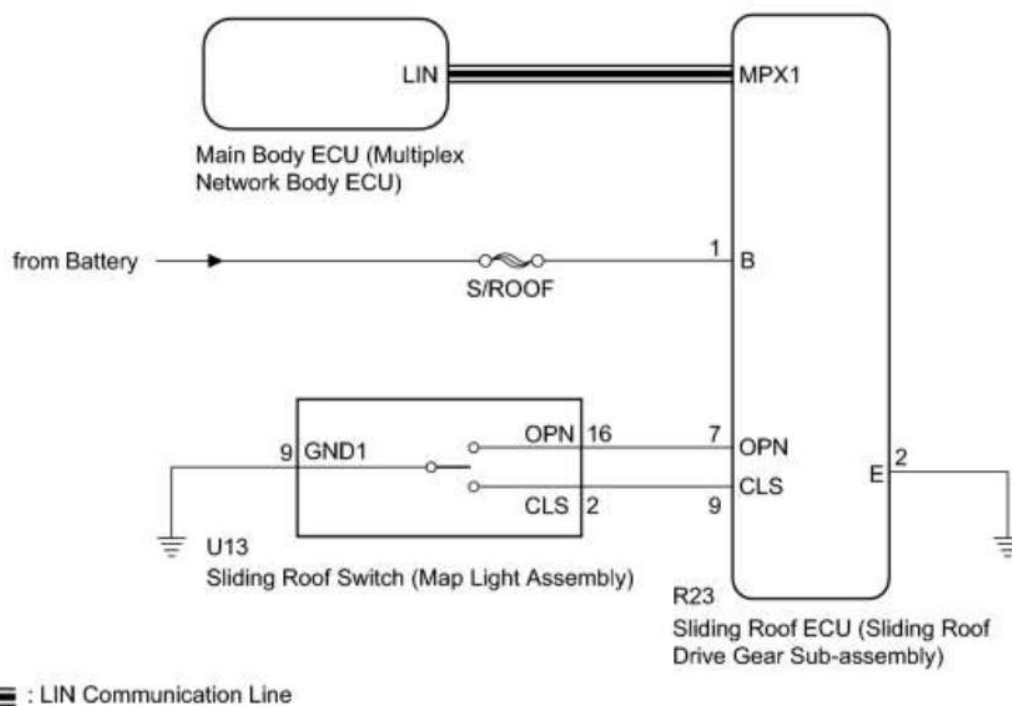
OK  **END**

Sliding Roof does not Move by Operating Sliding Roof Control Switch

DESCRIPTION

The sliding roof ECU (sliding roof drive gear sub-assembly) receives slide and tilt switch signals and drives its built-in motor.

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

- Inspect the fuses for circuits related to this system before performing the following inspection procedure.
- When the sliding roof ECU (sliding roof drive gear sub-assembly) is reinstalled or replaced, the sliding roof ECU (sliding roof drive gear sub-assembly) must be initialized [INFO](#).
- Since the sliding roof system has functions that use LIN communication, first confirm that there is no malfunction in the LIN communication system with the How to Proceed with Troubleshooting procedure [INFO](#).

PROCEDURE

1. READ VALUE USING TECHSTREAM

- (a) Connect the Techstream to the DLC3.
- (b) Turn the power switch on (IG).
- (c) Turn the Techstream on.
- (d) Enter the following menus: Body Electrical / Sliding Roof / Data List.
- (e) Read the Data List according to the display on the Techstream.

Sliding Roof (Sliding Roof ECU (Sliding Roof Drive Gear Sub-assembly))

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Open Switch	OPEN switch signal/ON or OFF	ON: OPEN switch pressed OFF: OPEN switch not pressed	-
Close Switch	CLOSE switch signal/ON or OFF	ON: CLOSE switch pressed OFF: CLOSE switch not pressed	-

OK:

The Techstream display changes according to switch operation as shown in the table.

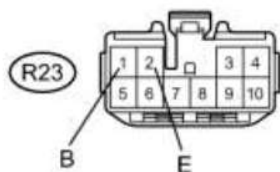
NG [INSPECT SLIDING ROOF SWITCH \(MAP LIGHT ASSEMBLY\)](#)

OK



2.	CHECK HARNESS AND CONNECTOR (SLIDING ROOF ECU - BATTERY, BODY GROUND)
----	---

*1



- (a) Disconnect the sliding roof ECU (sliding roof drive gear sub-assembly) connector.

- (b) Measure the voltage according to the value(s) in the table below.

Standard Voltage:

Tester Connection	Condition	Specified Condition
R23-1 (B) - Body ground	Power switch off	11 to 14 V

(c) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
R23-2 (E) - Body ground	Always	Below 1 Ω

Text in Illustration

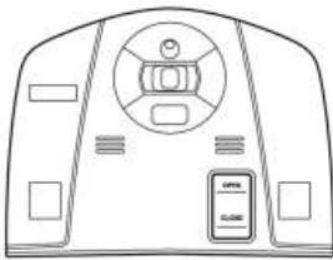
*1	Front view of wire harness connector (to Sliding Roof ECU (Sliding Roof Drive Gear Sub-assembly))
----	--

NG ► REPAIR OR REPLACE HARNESS OR CONNECTOR

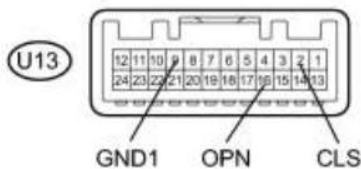
OK ► REPLACE SLIDING ROOF ECU (SLIDING ROOF DRIVE GEAR SUB-ASSEMBLY)

3.	INSPECT SLIDING ROOF SWITCH (MAP LIGHT ASSEMBLY)
----	--

*1



(a) Remove the sliding roof switch (map light assembly) INFO.



H

(b) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Switch Condition	Specified Condition
U13-2 (CLS) - U13-9 (GND1)	CLOSE switch is pressed	Below 1 Ω
U13-2 (CLS) - U13-9 (GND1)	CLOSE switch is not pressed	10 k Ω or higher
U13-16 (OPN) - U13-9 (GND1)	OPEN switch is pressed	Below 1 Ω
U13-16 (OPN) - U13-9 (GND1)	OPEN switch is not pressed	10 k Ω or higher

Text in Illustration

*1	Component without harness connected (Sliding Roof Switch (Map Light Assembly))
----	---

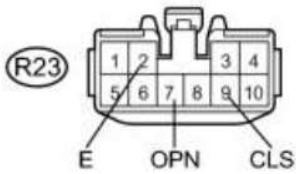
NG▶REPLACE SLIDING ROOF SWITCH (MAP LIGHT ASSEMBLY)

OK

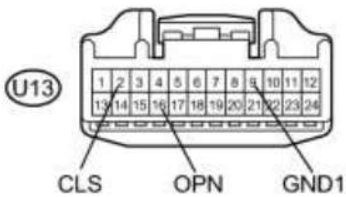


4.	CHECK HARNESS AND CONNECTOR (SLIDING ROOF ECU - SLIDING ROOF SWITCH)
----	--

*1



*2



(a) Disconnect the sliding roof ECU (sliding roof drive gear sub-assembly) connector.

(b) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

Tester Connection	Condition	Specified Condition
R23-9 (CLS) - U13-2 (CLS)	Always	Below 1 Ω
R23-9 (CLS) - Body ground	Always	10 kΩ or higher
R23-7 (OPN) - U13-16 (OPN)	Always	Below 1 Ω
R23-7 (OPN) - Body ground	Always	10 kΩ or higher
U13-9 (GND1) - Body ground	Always	Below 1 Ω
R23-2 (E) - Body ground	Always	Below 1 Ω

Text in Illustration

*1	Front view of wire harness connector (to Sliding Roof ECU (Sliding Roof Drive Gear Sub-assembly))
----	--

*2	Front view of wire harness connector (to Sliding Roof Switch (Map Light Assembly))
----	---

NG  REPAIR OR REPLACE HARNESS OR CONNECTOR

OK  **REPLACE SLIDING ROOF ECU (SLIDING ROOF DRIVE GEAR SUB-ASSEMBLY)**