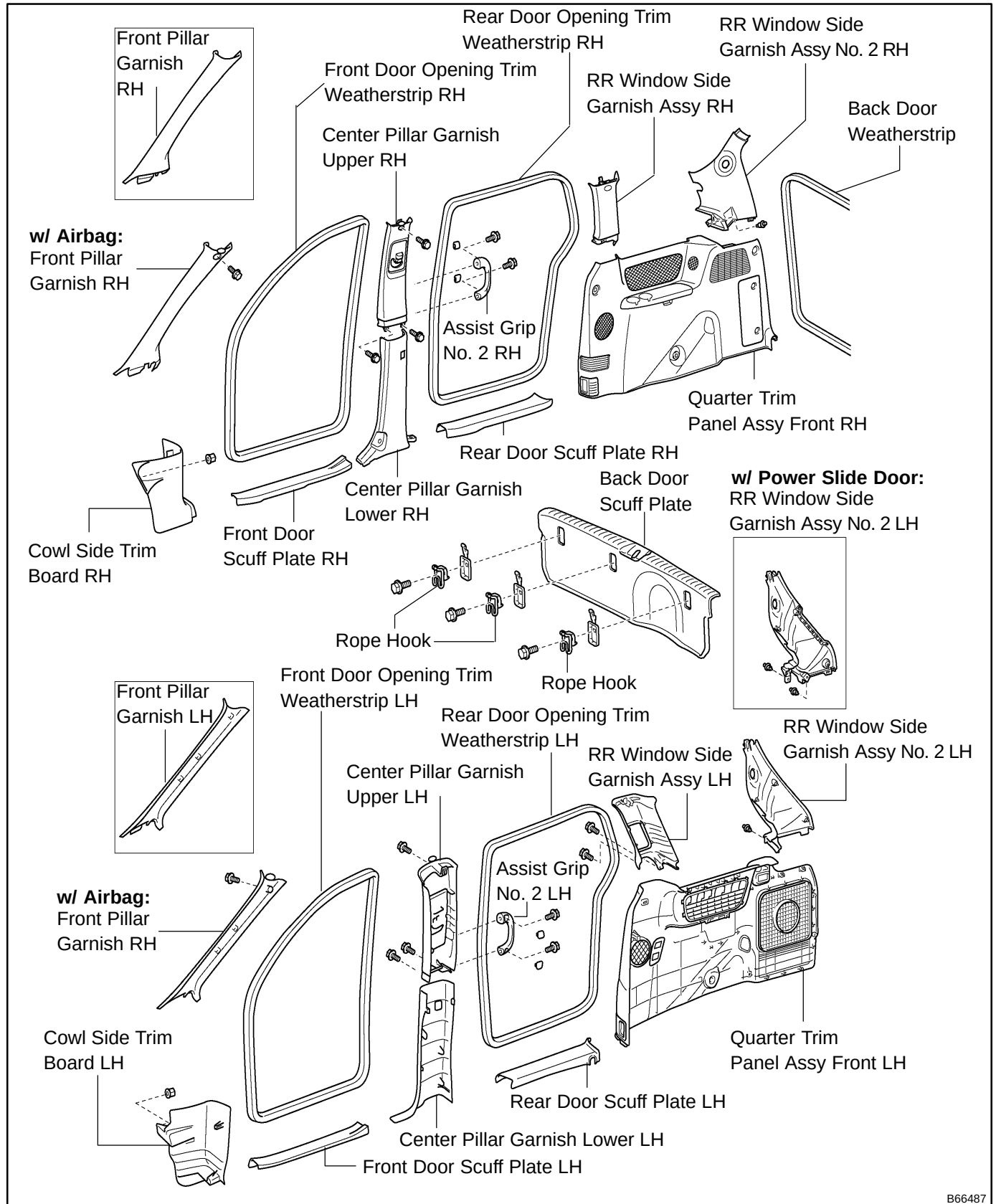
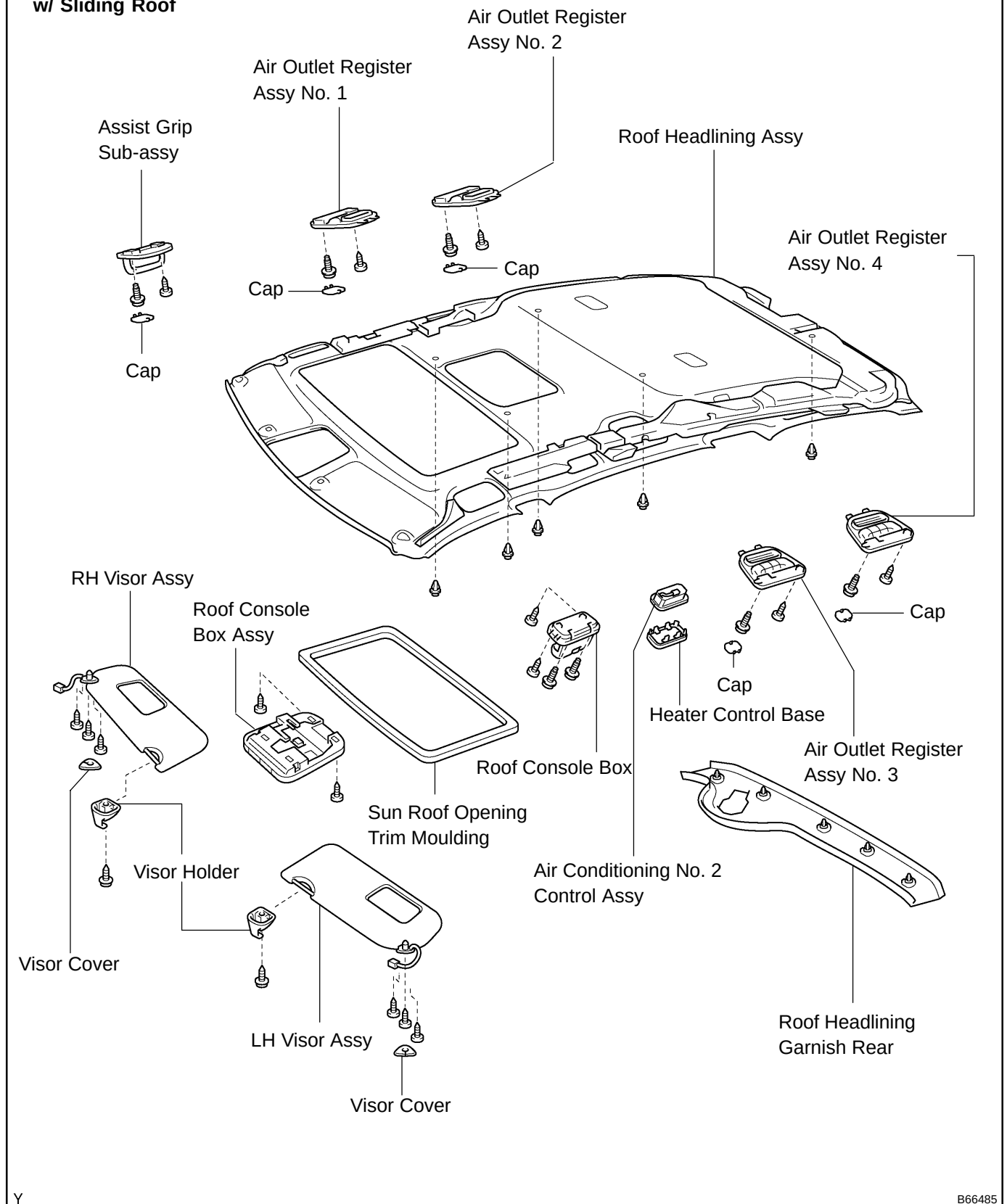


SLIDING ROOF COMPONENTS

7408I-01



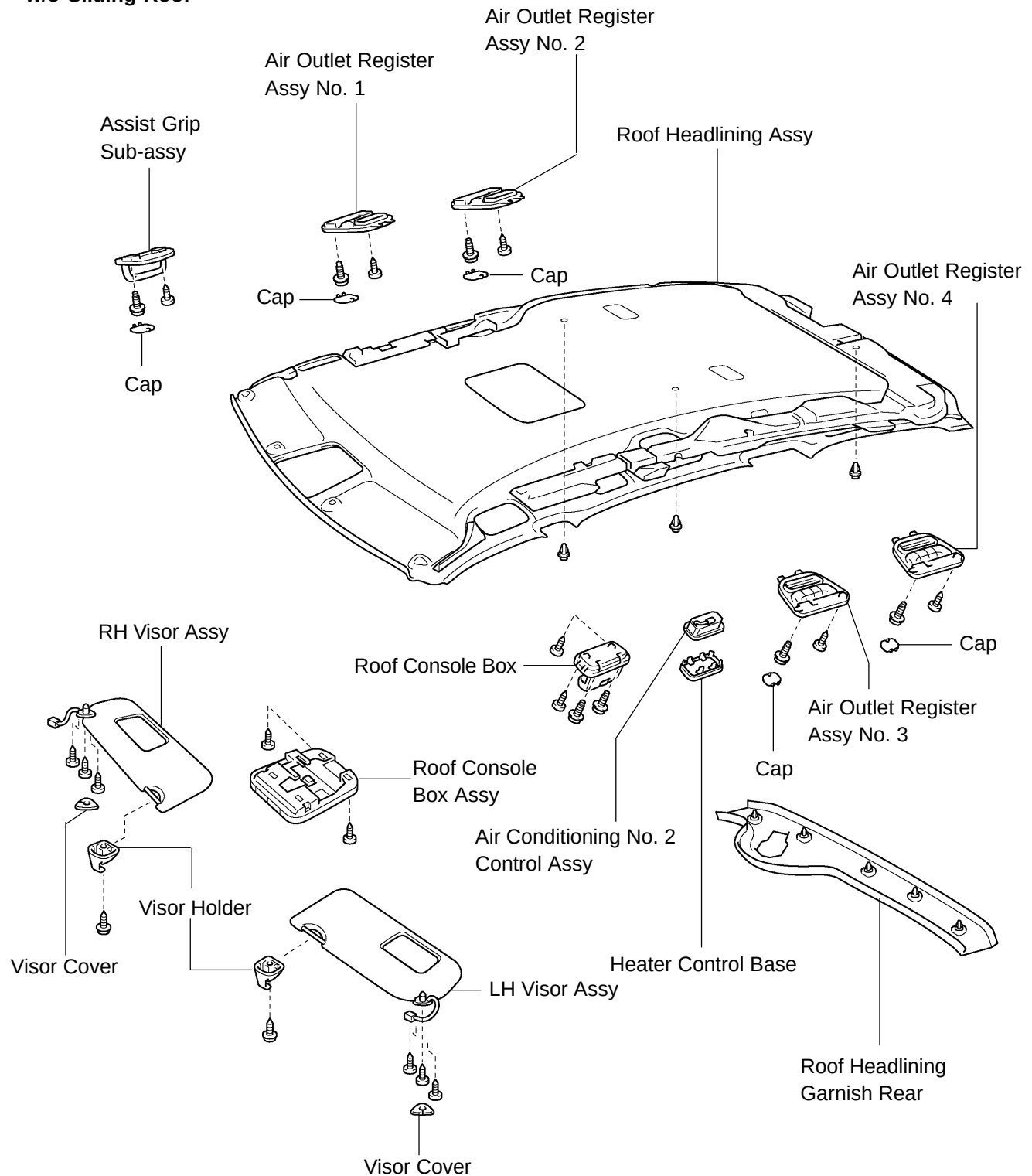
w/ Sliding Roof



Y

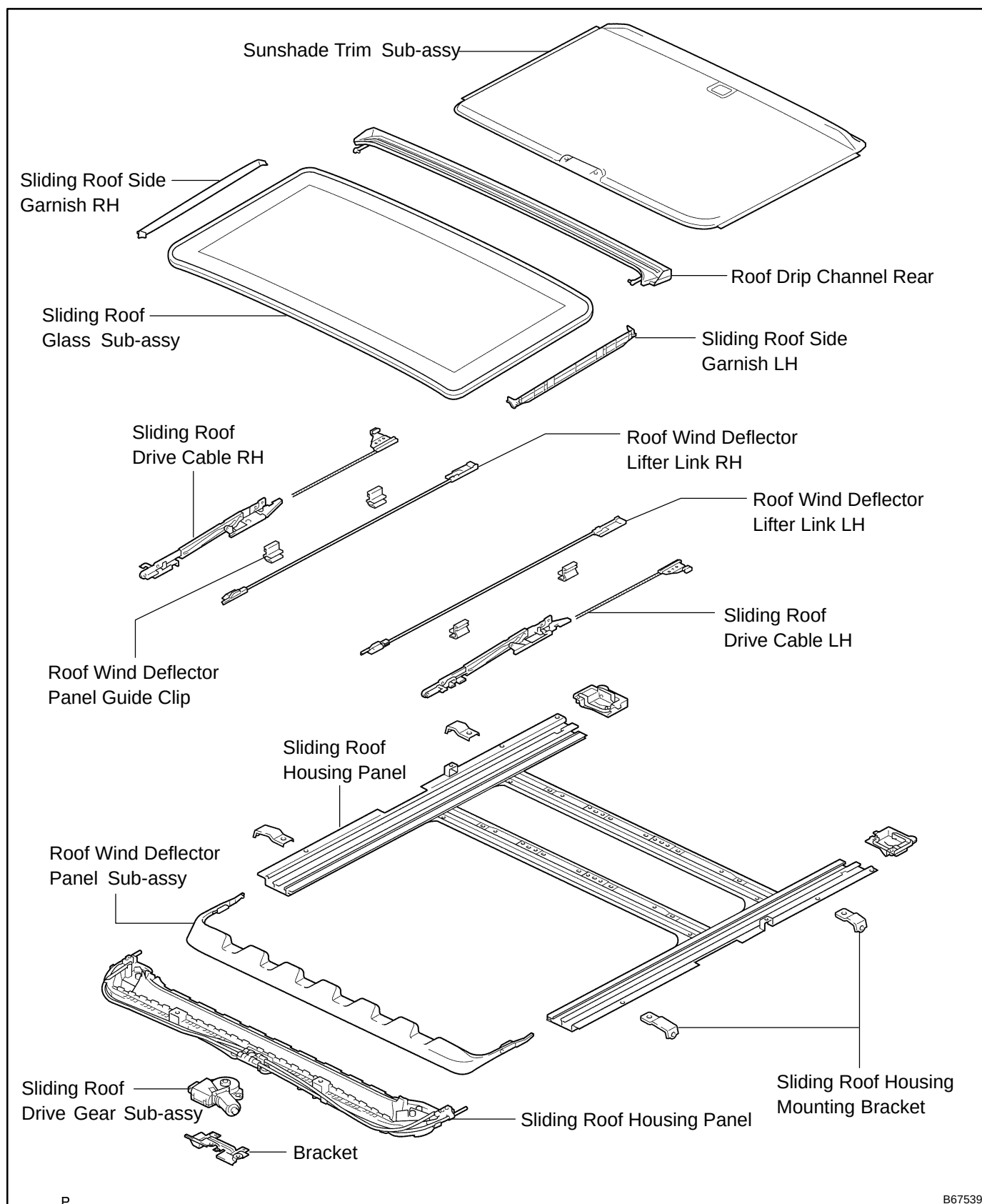
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w/o Sliding Roof

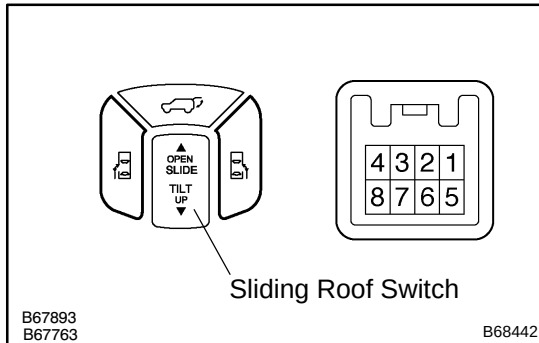


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INSPECTION



1. INSPECT SATELLITE SWITCH SET (SLIDING ROOF SWITCH)

- (a) Remove the switch (See page 76-27).
- (b) Check the resistance between the terminals when operating the switch.

Standard:

Terminals No.	Switch Operation	Specified Condition
6 ↔ 5	TILT UP is pressed	Below 1 Ω
2 ↔ 5	SLIDE OPEN is pressed	
2, 6 ↔ 5	OFF	10 kΩ or higher

If the result is not as specified, replace the switch set.

ON-VEHICLE INSPECTION

1. CHECK AUTO SLIDE-OPEN/CLOSE FUNCTION

- (a) Check that the sliding roof switch can operate the sliding roof glass as follows while the tilt-UP/ DOWN function is not operating:

Standard:

Condition	Switch	Switch Operation	Roof Glass
• Ignition switch ON	SLIDE OPEN	Pressed for more than 0.3 sec.	Fully open
• Window lock switch OFF	TILT UP		Fully closed

HINT:

The sliding roof stops partway when the sliding roof switch is pushed on either side during AUTO operation.

2. CHECK AUTO TILT UP/DOWN FUNCTION

- (a) Check that the sliding roof switch can operate the sliding roof as follows while the slide-OPEN/CLOSE function is not operating:

Standard:

Condition	Switch	Switch Operation	Roof Glass
• Ignition switch ON	TILT UP	Pressed for more than 0.3 sec.	Fully tilted up
• Window lock switch OFF	SLIDE OPEN		Fully closed

HINT:

The sliding roof stops partway when the sliding roof switch is pushed on either side during AUTO operation.

3. CHECK SLIDING ROOF OPERATION FUNCTION AFTER IGNITION IS TURNED OFF

- (a) When both of the following conditions are fulfilled, check that the power windows, the back door glass and the roof can be operated even after the ignition switch is turned OFF:
- Within 43 seconds after the ignition switch is turned OFF.
 - Either of the front doors is opened.

4. CHECK DEFLECTOR OPERATION

- (a) Check that the sliding roof automatically tilts UP/DOWN depending on the vehicle speed.
- (1) Conditions that enable the sliding roof to automatically tilt DOWN:
 - Sliding roof in fully open position
 - Sliding roof in UP position
 - Vehicle speed 70 km/h (43 mph) or less (during acceleration)
 - (2) Conditions that enable the sliding roof to automatically tilt UP:
 - Sliding roof in fully open position
 - Sliding roof in DOWN position
 - Vehicle speed 65 km/h (40 mph) or less (during deceleration)
- (b) Move the sliding roof into the fully open position from any position except the fully open position while the vehicle is driving in the vehicle speed of 85 km/h (53 mph) or more. Then operate the sliding roof switch on the TILT UP side. At this time, check that the sliding roof does not tilt UP.

5. CHECK JAM PROTECTION FUNCTION

HINT:

The jam protection function prevents any part of your body from getting caught by accident between the vehicle body and the roof glass during sliding roof operation.

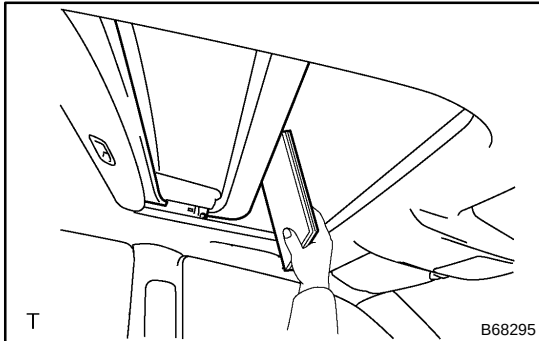
Operative condition:

- AUTO CLOSE
- AUTO CLOSE during sliding roof operation after the ignition switch is turned OFF.
- AUTO TILT-DOWN
- AUTO TILT-DOWN during sliding roof operation after the ignition switch is turned OFF.

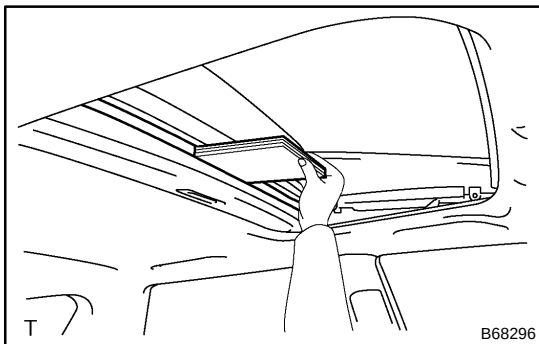
CAUTION:

- **Do not check this function using a part of your body such as your hand. Also, pay thorough attention that nothing gets caught by accident in this process.**

- If checking this function with something thin (less than 5 mm (0.20 in.)) inserted between the roof glass and vehicle body, this function may not operate.



- (a) When the slide-OPEN/CLOSE function is operating:
Check that the sliding roof opens by approximately 200 mm (7.87 in.) right when something gets caught between the vehicle body and the roof glass during sliding roof operation.



- (b) When the tilt-UP/DOWN function is operating:
Check that the sliding roof tilts up fully when something gets caught between the vehicle body and the roof glass during sliding roof operation.

6. CHECK FAIL-SAFE FUNCTION

- (a) If the sliding roof does not close because the jam protection function operates improperly, press the sliding roof switch on the TILT UP side and hold it until the sliding roof glass is fully tilted up. (It goes down a little after it is fully tilted up) Then, you can manually close the sliding roof.

7. CHECK SLIDING ROOF DRIVE GEAR ASSY

- (a) Disconnect the drive gear wire harness connector.
(b) Check the resistance or voltage between the terminals of the wire harness side connector.

Standard:

Terminal No.	Condition	Specified Condition
10 (+B) - Body ground	Continuity	10 to 14 V
9 (IG) - Body ground	Ignition switch OFF → ON	0 → 10 to 14 V
4 (PWS) - Body ground	Ignition switch ON → Within 45 seconds after ignition switch is turned OFF	10 to 14 V → 0 V
6 (OPEN/DOWN) - Body ground	SW OFF → ON	10 kΩ or higher → Below 1 Ω
7 (CLOSE/UP) - Body ground	SW OFF → ON	10 kΩ or higher → Below 1 Ω
5 (SPD) - Body ground	Vehicle speed 0 km/h (0 mph)	0 Hz
	Vehicle speed 70 km/h (43 mph)	49 Hz
	Vehicle speed 90 km/h (56 mph)	63 Hz

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

- (c) Reconnect the drive gear wire harness connector.
(d) Reset the sliding roof position (See page 74-8)
(e) Check the voltage of the terminals of the wire harness side connector.

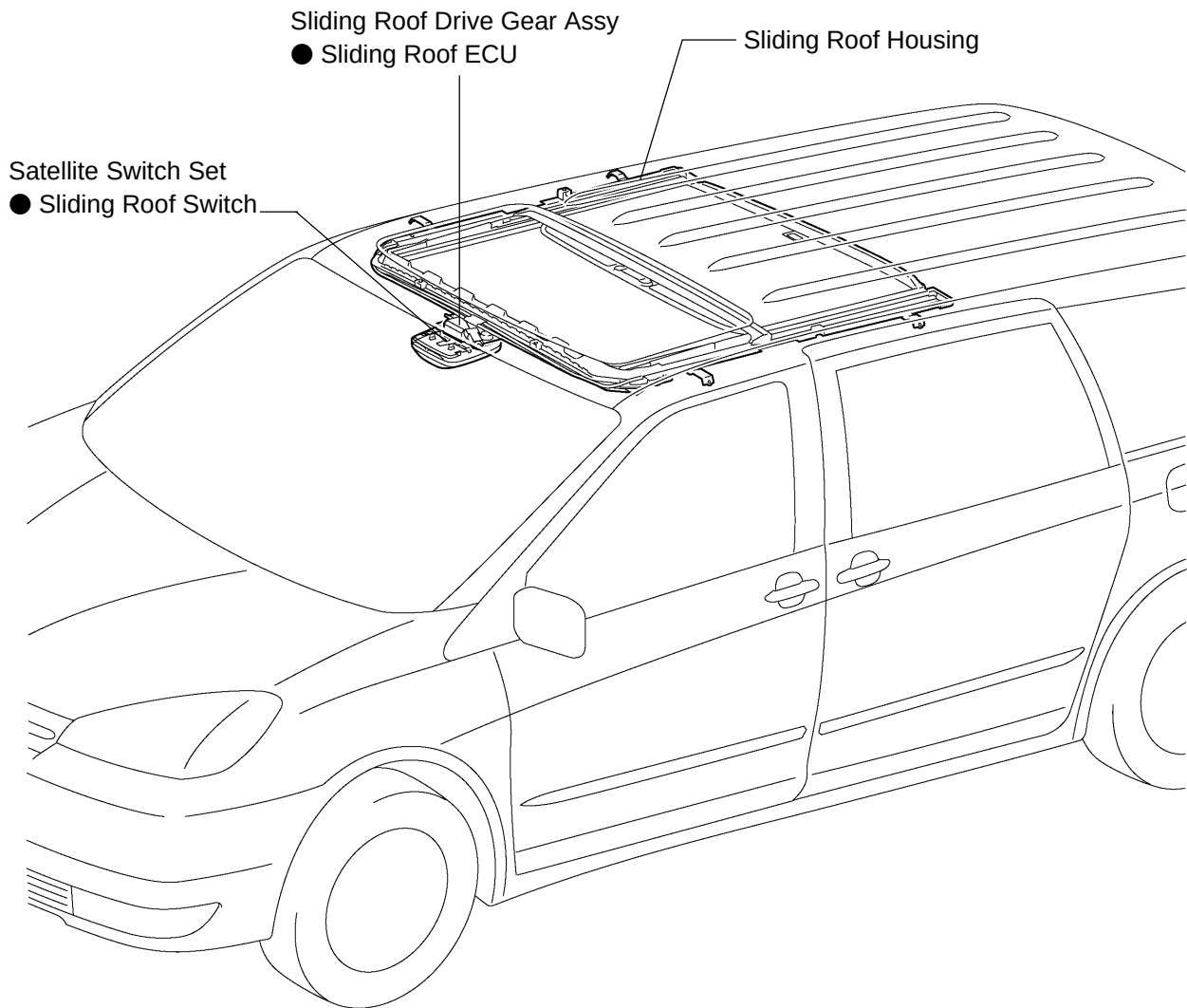
Standard:

Terminal No.	Condition	Specified Condition
6 (OPEN/DOWN) - Body ground	Ignition switch ON and OPEN/DOWN SW OFF → OPEN/DOWN SW ON	10 to 14 V → 0 V
7 (CLOSE/UP) - Body ground	Ignition switch ON and CLOSE/UP SW OFF → CLOSE/UP SW ON	10 to 14 V → 0 V

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

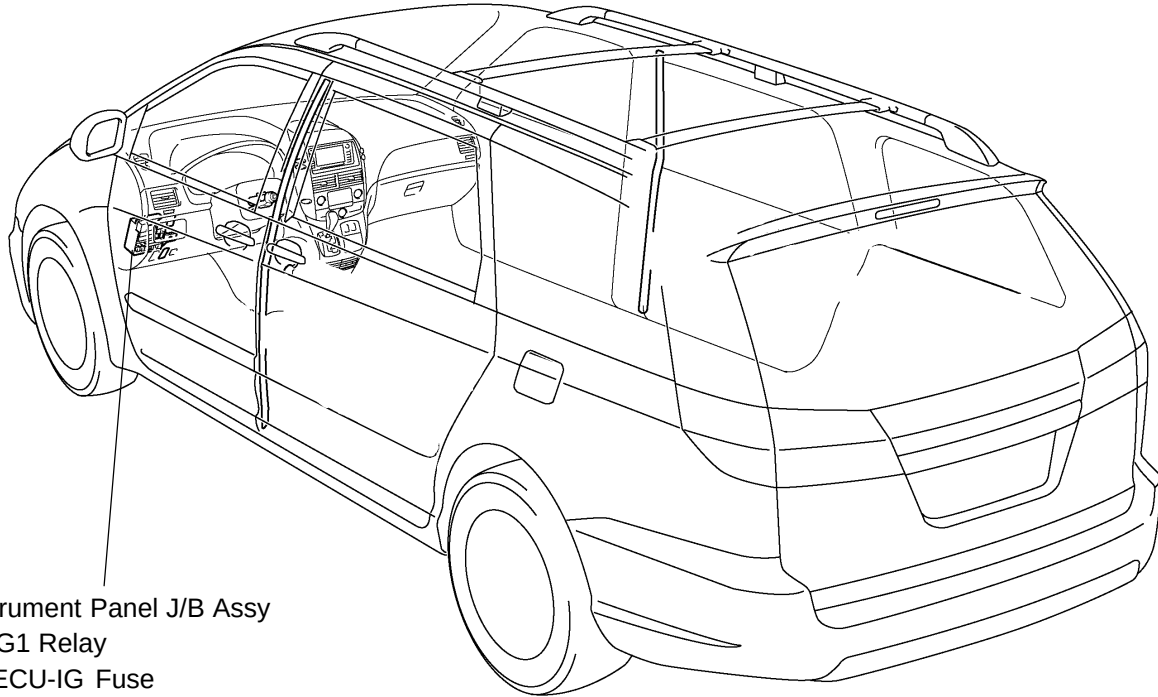
SLIDING ROOF SYSTEM LOCATION

7408H-01



T

B69319



Instrument Panel J/B Assy

- IG1 Relay
- ECU-IG Fuse
- S/ Roof Fuse

B69402

PROBLEM SYMPTOMS TABLE

Symptom	Suspected Area	See Page
AUTO function does not operate	1. Sliding roof motor assy	74-3
Sliding roof system does not operate	1. ECU-IG fuse	-
	2. S/Roof fuse	-
	3. IG1 relay	-
	4. Sliding roof housing assy	74-13
	5. Sliding roof motor switch assy	74-7
	6. Sliding roof motor assy	74-3
	7. Wire harness	74-3
Sliding roof system stops operation halfway	1. Sliding roof motor assy	74-3
	2. Wire harness	74-3
	3. Sliding roof housing assy	74-13

RESET

1. RESET SLIDING ROOF MOTOR

- (a) If the AUTO operation function does not operate, reset the sliding roof motor using any of the following methods.
- (1) Press the sliding roof switch on the TILT UP side and hold it until the sliding roof motor stops. Then release the switch and leave it untouched for 10 seconds or more.
 - (2) Press the sliding roof switch on the TILT UP side again for 10 seconds or more and hold it until the sliding roof stops at the fully open and up position.
 - (3) Release the switch, press it again within 5 seconds and hold it until a series of movements indicated below has done:
Fully closing → Fully opening → Fully closing

HINT:

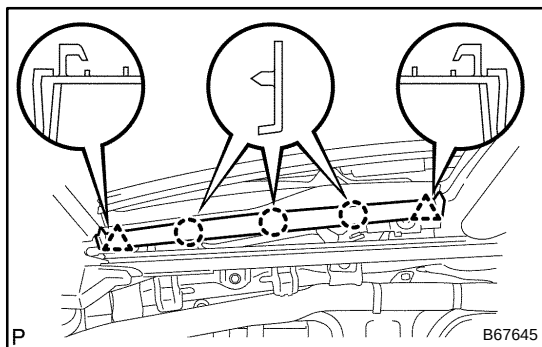
If the battery terminal is disconnected or after the jam protection function has operated, the sliding roof ECU may not detect a position of the roof glass. If the AUTO operation function is still disabled even if the sliding roof motor has been reset, the Hall IC (built in the sliding roof motor assy) for detecting the roof glass position may be malfunctioning.

REPLACEMENT

HINT:

The installation is in the reverse order of the removal. However, when there is a special point concerning the installation, it is indicated.

1. REMOVE ROOF HEADLINING ASSY (See page 76-27)



2. REMOVE SLIDING ROOF SIDE GARNISH LH

- Disengage the 3 claws.
- Disengage the rear clip.
- Disengage the front clip.
- Remove the slide garnish by pulling it rearward.

3. REMOVE SLIDING ROOF SIDE GARNISH RH

HINT:

Use the same procedures described above for the LH side.

4. REMOVE SLIDING ROOF GLASS SUB-ASSY

- Using a torx® wrench (T25), remove the 4 screws and sliding roof glass.

5. REMOVE SLIDING ROOF HOUSING ASSY

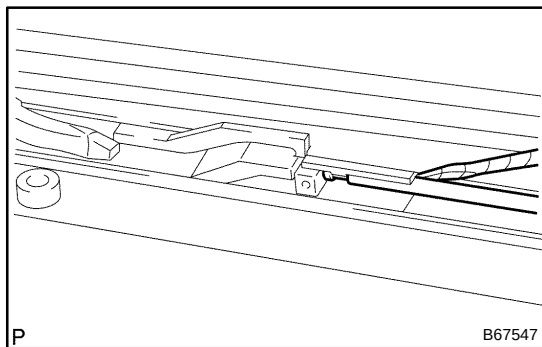
- Disconnect the 4 hoses and drive gear wire harness connector.
- Remove the 8 bolts and 4 brackets.
- Remove the 6 nuts and housing.

6. REMOVE SLIDING ROOF DRIVE GEAR SUB-ASSY

- Remove the 2 bolts and drive gear.

7. REMOVE SUNSHADE TRIM SUB-ASSY

8. REMOVE ROOF DRIP CHANNEL REAR

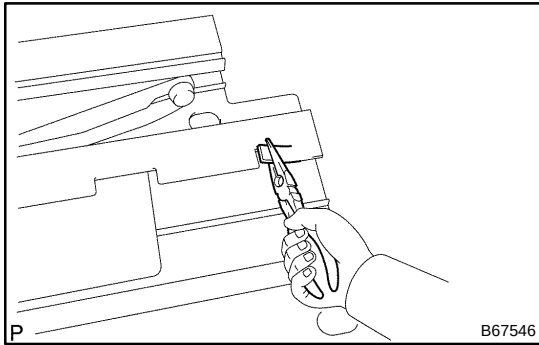


9. REMOVE SLIDING ROOF DRIVE CABLE LH

- Remove the 4 guide clips.
- Using a screwdriver, separate the link rod from the link holder, as shown in the illustration.

HINT:

Tape the screwdriver tip before use.

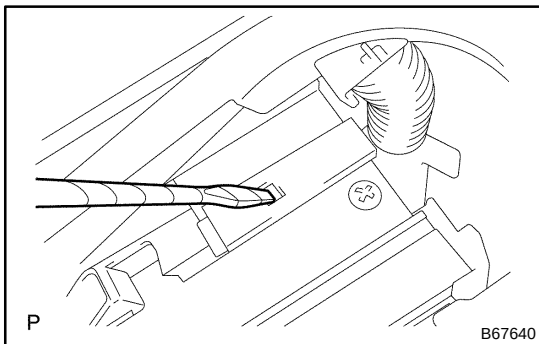


- (c) Using long nose pliers, level the part indicated in the illustration.
- (d) Pull out the deflector lifter link and drive cable together.

10. REMOVE SLIDING ROOF DRIVE CABLE RH

HINT:

Use the same procedures described above for the LH side.

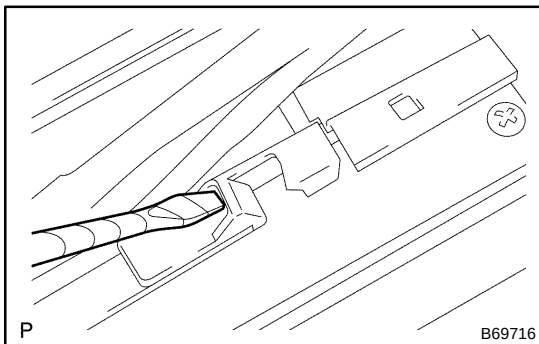


11. REMOVE ROOF WIND DEFLECTOR PANEL SUB-ASSY

- (a) Using a screwdriver, disengage the claw of the panel, as shown in the illustration.

HINT:

Tape the screwdriver tip before use.



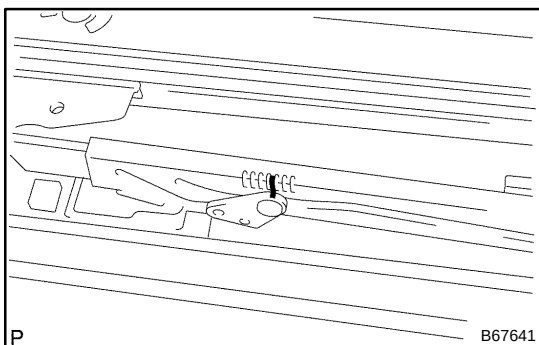
- (b) Using a screwdriver, push hard the part indicated in the illustration to remove the panel.

HINT:

Tape the screwdriver tip before use.

12. REMOVE SLIDING ROOF HOUSING PANEL

- (a) Remove the 2 screws and housing panel.



13. ADJUST FULLY CLOSED POSITION

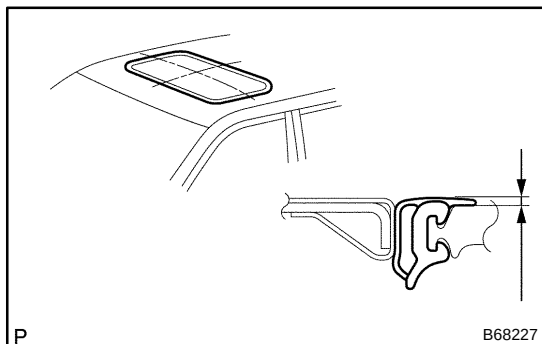
- (a) Using a screwdriver, slide the drive cable of the sliding roof to align the matchmarks.

HINT:

Tape the screwdriver tip before use.

14. INSTALL SLIDING ROOF HOUSING ASSY

- (a) Install the housing with the 6 nuts.
- (b) Install the 4 brackets with the 8 bolts.
- (c) Connect the 4 hoses and drive gear connector.

**15. ADJUST SLIDING ROOF GLASS SUB-ASSY**

- (a) Check for a difference in levels between the sliding roof (roof glass) and roof panel.

Difference: 0 ± 2.0 mm (0.072 in.)

NOTICE:

The clearance should be even all around.

16. INSTALL SLIDING ROOF GLASS SUB-ASSY

- (a) Using a torx[®] wrench T25, loosen the screw to adjust the sliding roof panel position. When the adjustment has been done, tighten the screw there.

17. RESET SLIDING ROOF POSITION (See page 74-8)**18. CHECK FOR WATER LEAKS**

- (a) Adjusting the sliding roof, check that there is no water leak.
- If a leak is found, readjust the sliding roof.

19. INSTALL ROOF HEADLINING ASSY (See page 76-27)