

Last Modified: 7-13-2007		1.6 A
Service Category: Vehicle Exterior	Section: Sliding Roof/Convertible	
Model Year: 2008	Model: ES350	Doc ID: RM000001F2A00QX
Title: SLIDING ROOF: SLIDING ROOF HOUSING (for Glass Roof): INSTALLATION (2008 ES350)		

INSTALLATION

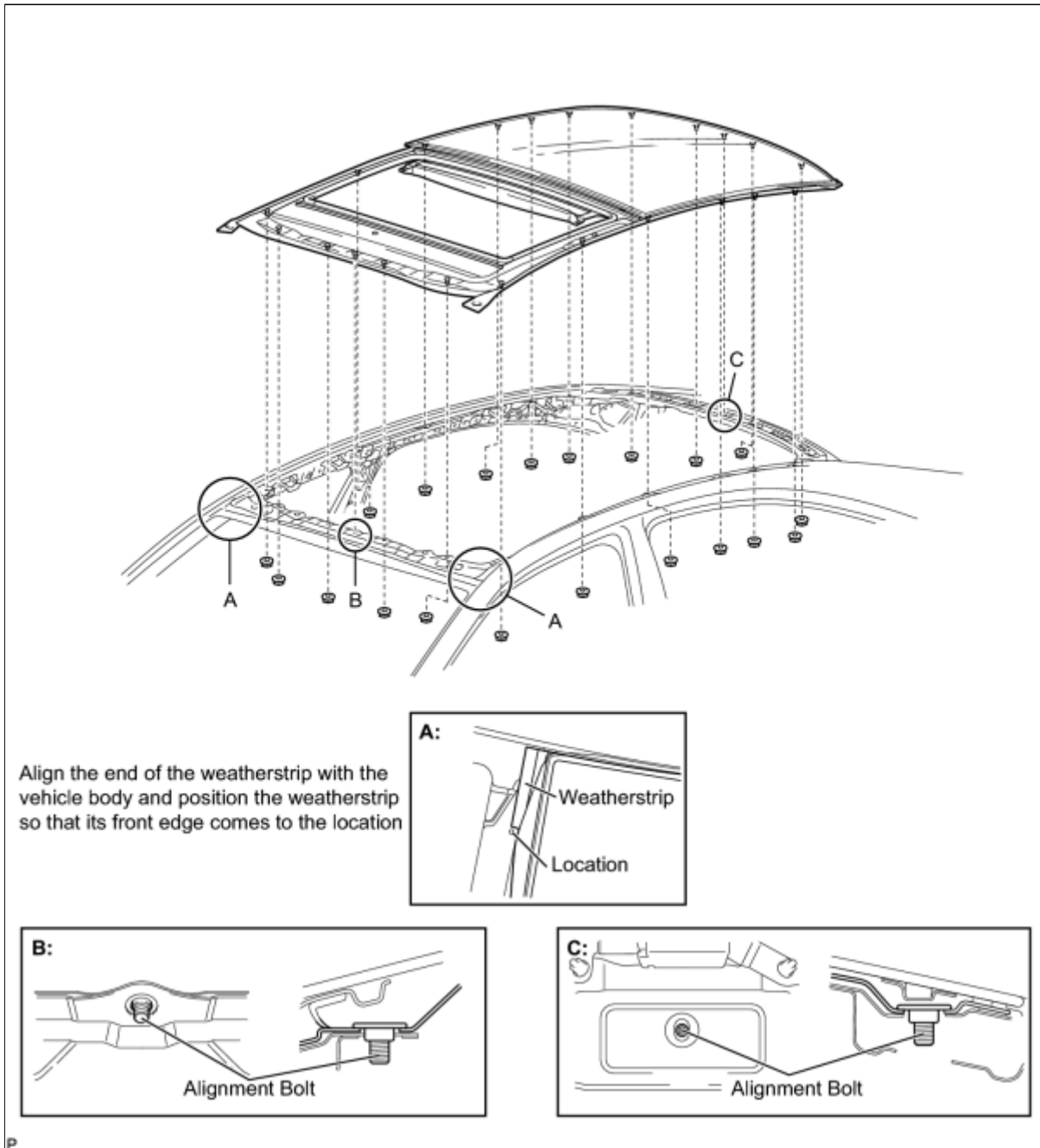
1. TEMPORARILY TIGHTEN SLIDING ROOF HOUSING PANEL

- (a) Temporarily install the sliding roof housing panel with the 20 nuts.

NOTICE:

- When installing the panel to the vehicle, first install the panel center front and center rear alignment bolts to the vehicle front and rear alignment bolt installation points, as shown in the illustration.
- Align the end of weatherstrip with the vehicle body and position the weatherstrip so that its front edge comes to the location.
- When installing the panel, be careful not to damage the vehicle.
- Perform this step with 2 or more technicians.

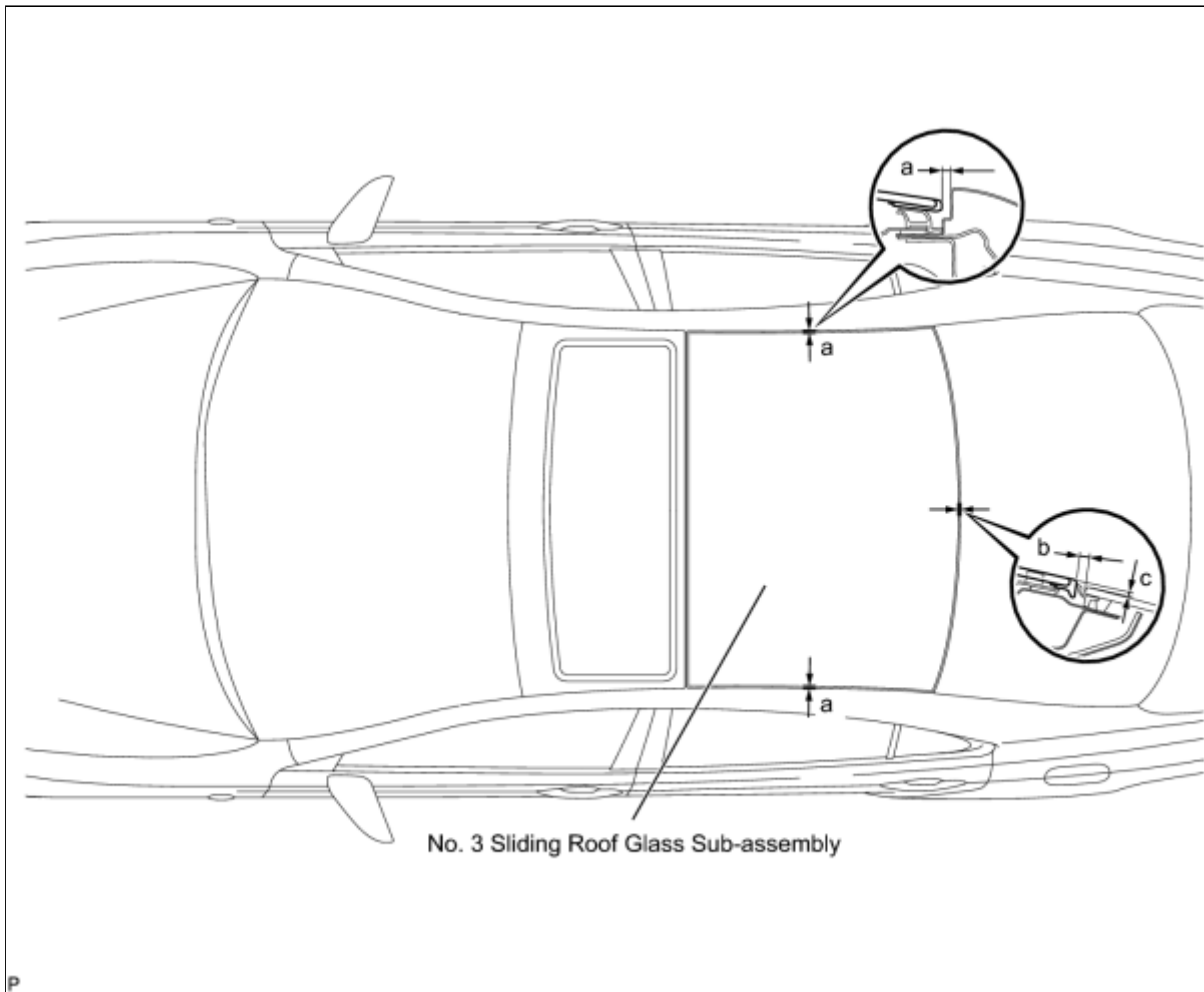
- (b) Check that the alignment bolts are firmly installed.

**NOTICE:**

When the bolts are not firmly installed, water leaks and malfunctions will occur.

2. ADJUST SLIDING ROOF HOUSING PANEL

- (a) The sliding roof glass does not have adjusting screws. Instead, change the position of the No. 3 sliding roof glass sub-assembly so that the measurements are within the standard values shown in the illustration.



Standard

AREA	MEASUREMENT
a	4.0 mm + 2.0 mm (0.158 in. + 0.079 in.) 4.0 mm - 2.0 mm (0.158 in. - 0.079 in.)
b	4.5 mm + 1.5 mm (0.177 in. + 0.059 in.) 4.5 mm - 1.5 mm (0.177 in. - 0.059 in.)
c	2.0 mm + 1.5 mm (0.079 in. + 0.059 in.) 2.0 mm - 1.5 mm (0.079 in. - 0.059 in.)

HINT:

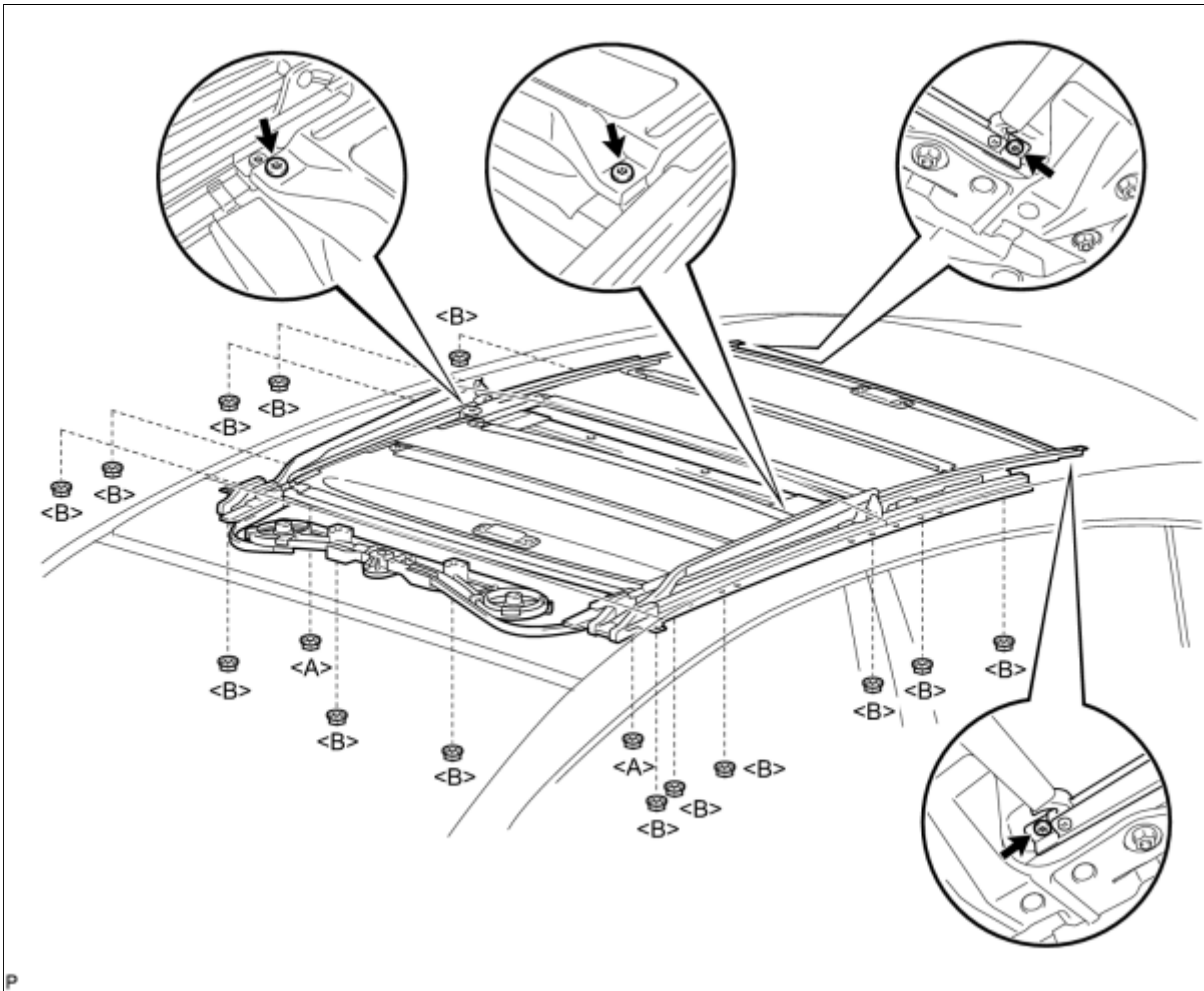
"+" represents the condition that the glass is above the panel level. "-" represents the condition that the glass is below the panel level.

- (b) After adjusting the No. 3 sliding roof glass sub-assembly, fully tighten the 20 nuts to install the sliding roof housing panel.

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

3. INSTALL SLIDING ROOF HOUSING ASSEMBLY

- (a) Install the sliding roof housing assembly with the 16 nuts.



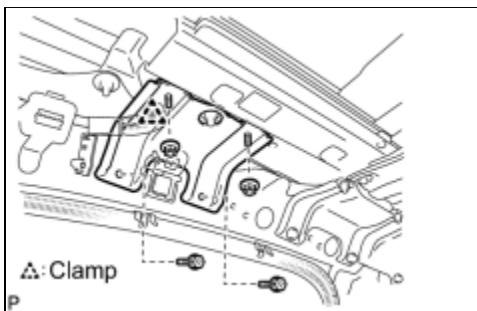
Torque: 7.0 N·m (71 kgf·cm, 62 in·lbf)

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

(b) Using a T25 "TORX" socket wrench, install the 4 screws.

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

4. INSTALL REAR SLIDING ROOF HOUSING MOUNTING BRACKET LH



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

Torque: 8.0 N·m (82 kgf·cm, 71 in·lbf)

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

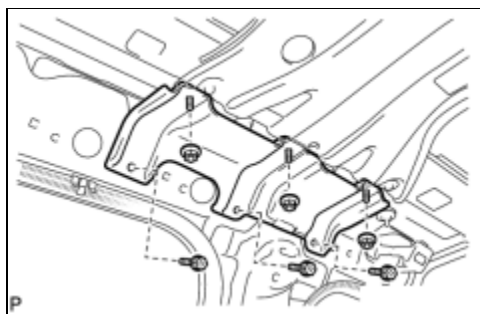
(b) Engage the clamp.

5. INSTALL REAR SLIDING ROOF HOUSING MOUNTING BRACKET RH

HINT:

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

6. INSTALL CENTER SLIDING ROOF HOUSING MOUNTING BRACKET LH



- (a) Install the center sliding roof housing mounting bracket LH with the 3 bolts and 3 nuts.

Torque: 8.0 N·m (82 kgf·cm, 71 in·lbf)

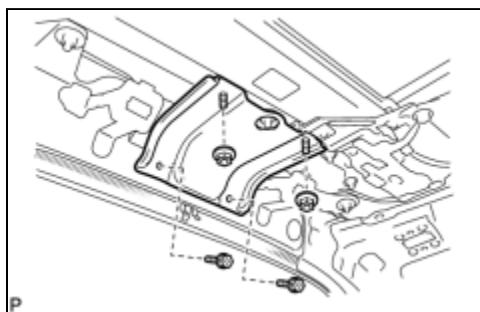
Torque: 5.5 N·m (56 kgf·cm, 49 in·lbf)

7. INSTALL CENTER SLIDING ROOF HOUSING MOUNTING BRACKET RH

HINT:

Use the same procedure for the RH side and the 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.

Torque: 8.0 N·m (82 kgf·cm, 71 in·lbf)

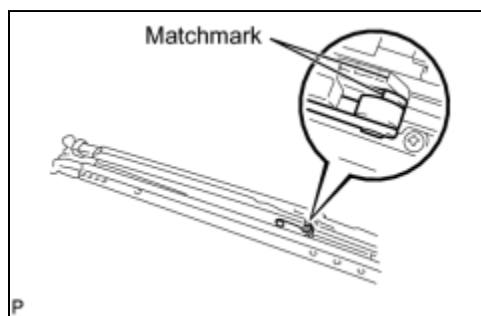
Torque: 5.5 N·m (56 kgf·cm, 49 in·lbf)

9. INSTALL FRONT SLIDING ROOF HOUSING MOUNTING BRACKET RH

HINT:

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

10. ADJUST FULLY CLOSED POSITION

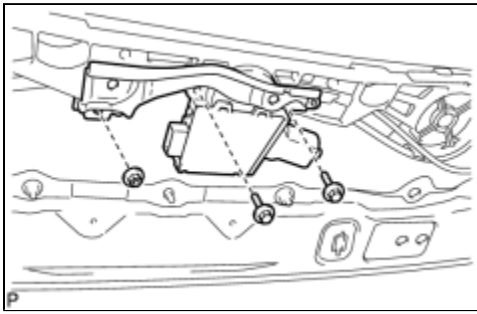


- (a) Using a screwdriver, slide the sliding roof drive cable to align the matchmarks.

HINT:

Tape the screwdriver tip before use.

11. INSTALL SLIDING ROOF DRIVE GEAR SUB-ASSEMBLY



- (a) Install the sliding roof drive gear sub-assembly and room light bracket with the 2 bolts and nut.

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

12. INSTALL CURTAIN SHIELD AIRBAG ASSEMBLY LH [INFO](#)

13. INSTALL CURTAIN SHIELD AIRBAG ASSEMBLY RH

HINT:

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

14. INSTALL ROOF HEADLINING ASSEMBLY [INFO](#)

15. INSTALL ASSIST GRIP SUB-ASSEMBLY [INFO](#)

16. INSTALL SPOT LIGHT ASSEMBLY [INFO](#)

17. INSTALL COAT HOOK [INFO](#)

18. INSTALL VISOR HOLDER [INFO](#)

19. INSTALL VISOR ASSEMBLY LH [INFO](#)

20. INSTALL VISOR ASSEMBLY RH [INFO](#)

21. INSTALL VISOR BRACKET COVER [INFO](#)

22. INSTALL ROOF CONSOLE BOX ASSEMBLY [INFO](#)

23. INSTALL RAIN SENSOR COVER [INFO](#)

24. INSTALL INNER REAR VIEW MIRROR STAY HOLDER COVER [INFO](#)

25. CONNECT STEREO COMPONENT AMPLIFIER ASSEMBLY CONNECTOR (w/ DVD Player) [INFO](#)

26. INSTALL LUGGAGE COMPARTMENT INNER TRIM COVER RH (w/ DVD Player) [INFO](#)

27. INSTALL REAR FLOOR FINISH PLATE (w/ DVD Player) [INFO](#)

28. INSTALL NO. 1 LUGGAGE COMPARTMENT TRIM HOOK (w/ DVD Player) [INFO](#)

29. INSTALL LUGGAGE HOLD BELT STRIKER ASSEMBLY (w/ DVD Player) [INFO](#)
30. INSTALL SPARE WHEEL COVER TRAY (w/ DVD Player)
31. INSTALL LUGGAGE COMPARTMENT FLOOR MAT (w/ DVD Player)
32. INSTALL FLOOR CARPET BRACKET LH
33. INSTALL FLOOR CARPET BRACKET RH
34. INSTALL SHIFT LEVER ASSEMBLY [INFO](#)
35. CONNECT TRANSMISSION CONTROL CABLE ASSEMBLY [INFO](#)
36. INSTALL NO. 2 CONSOLE BOX DUCT [INFO](#)
37. INSTALL NO. 3 CONSOLE BOX DUCT [INFO](#)
38. INSTALL REAR CONSOLE BOX ASSEMBLY [INFO](#)
39. INSTALL CONSOLE REAR END PANEL SUB-ASSEMBLY [INFO](#)
40. INSTALL CONSOLE BOX CARPET [INFO](#)
41. INSTALL CONSOLE BOX POCKET [INFO](#)
42. INSTALL HEATER SEAT SWITCH CONSOLE BASE (w/o Seat Heater System) [INFO](#)
43. INSTALL HEATER SEAT SWITCH CONSOLE BASE (w/ Seat Heater System) [INFO](#)
44. INSTALL UPPER CONSOLE PANEL ASSEMBLY WITH FRONT ASH RECEPTACLE [INFO](#)
45. INSTALL SHIFT LEVER KNOB SUB-ASSEMBLY [INFO](#)
46. INSTALL INSTRUMENT PANEL FINISH PANEL END LH [INFO](#)
47. INSTALL INSTRUMENT PANEL FINISH PANEL END RH [INFO](#)
48. INSTALL ROOF SIDE INNER GARNISH ASSEMBLY LH [INFO](#)
49. INSTALL REAR SEAT SIDE GARNISH LH (w/o Rear Seat Side Airbag) [INFO](#)
50. INSTALL REAR SEAT SIDE AIRBAG ASSEMBLY LH (w/ Rear Seat Side Airbag) [INFO](#)
51. INSTALL UPPER CENTER PILLAR GARNISH LH [INFO](#)
52. INSTALL LOWER CENTER PILLAR GARNISH LH [INFO](#)
53. INSTALL REAR DOOR SCUFF PLATE LH [INFO](#)

54. INSTALL FRONT PILLAR GARNISH LH [INFO](#)
55. INSTALL SIDE INSTRUMENT PANEL LH [INFO](#)
56. INSTALL FRONT DOOR OPENING TRIM COVER LH [INFO](#)
57. INSTALL FRONT DOOR SCUFF PLATE LH [INFO](#)
58. INSTALL ROOF SIDE INNER GARNISH ASSEMBLY RH [INFO](#)
59. INSTALL REAR SEAT SIDE GARNISH RH (w/o Rear Seat Side Airbag) [INFO](#)
60. INSTALL REAR SEAT SIDE AIRBAG ASSEMBLY RH (w/ Rear Seat Side Airbag) [INFO](#)
61. INSTALL UPPER CENTER PILLAR GARNISH RH [INFO](#)
62. INSTALL LOWER CENTER PILLAR GARNISH RH [INFO](#)
63. INSTALL REAR DOOR SCUFF PLATE RH [INFO](#)
64. INSTALL FRONT PILLAR GARNISH RH [INFO](#)
65. INSTALL SIDE INSTRUMENT PANEL RH [INFO](#)
66. INSTALL FRONT DOOR OPENING TRIM COVER RH [INFO](#)
67. INSTALL FRONT DOOR SCUFF PLATE RH [INFO](#)
68. INSTALL FRONT SEAT ASSEMBLY LH [INFO](#)
69. INSTALL FRONT SEAT REAR OUTER TRACK BRACKET COVER LH [INFO](#)
70. INSTALL FRONT SEAT REAR INNER TRACK BRACKET COVER LH [INFO](#)
71. INSTALL FRONT SEAT OUTER TRACK BRACKET COVER LH [INFO](#)
72. INSTALL FRONT SEAT INNER TRACK BRACKET COVER LH [INFO](#)
73. CONNECT FRONT SEAT OUTER BELT ASSEMBLY LH [INFO](#)
74. INSTALL SEAT BELT ANCHOR COVER CAP LH [INFO](#)
75. INSTALL FRONT SEAT HEADREST ASSEMBLY (for Driver Seat)
76. INSTALL FRONT SEAT ASSEMBLY RH [INFO](#)
77. INSTALL FRONT SEAT REAR OUTER TRACK BRACKET COVER RH [INFO](#)
78. INSTALL FRONT SEAT REAR INNER TRACK BRACKET COVER RH [INFO](#)

79. INSTALL FRONT SEAT OUTER TRACK BRACKET COVER RH INFO

80. INSTALL FRONT SEAT INNER TRACK BRACKET COVER RH INFO

81. CONNECT FRONT SEAT OUTER BELT ASSEMBLY RH INFO

82. INSTALL SEAT BELT ANCHOR COVER CAP RH INFO

83. INSTALL FRONT SEAT HEADREST ASSEMBLY (for Front Passenger Seat)

84. INSTALL REAR SEATBACK ASSEMBLY INFO

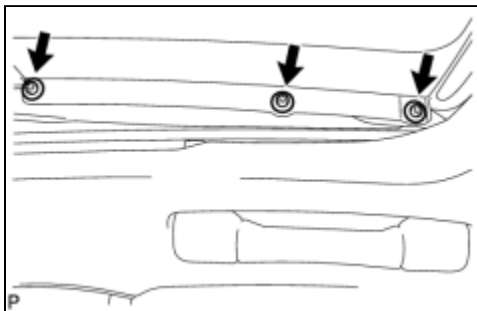
85. INSTALL REAR CENTER SEAT HEADREST ASSEMBLY

86. INSTALL REAR SEAT HEADREST ASSEMBLY

87. INSTALL REAR SEAT CUSHION ASSEMBLY INFO

88. TEMPORARILY TIGHTEN NO. 2 SLIDING ROOF GLASS SUB-ASSEMBLY

(a) Fully close the No. 2 sliding roof glass sub-assembly.

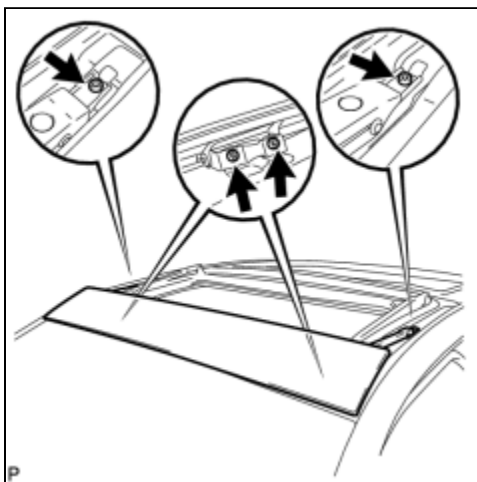


(b) Using a T25 "TORX" socket wrench, install the 3 screws.

HINT:

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

89. TEMPORARILY TIGHTEN NO. 1 SLIDING ROOF GLASS SUB-ASSEMBLY

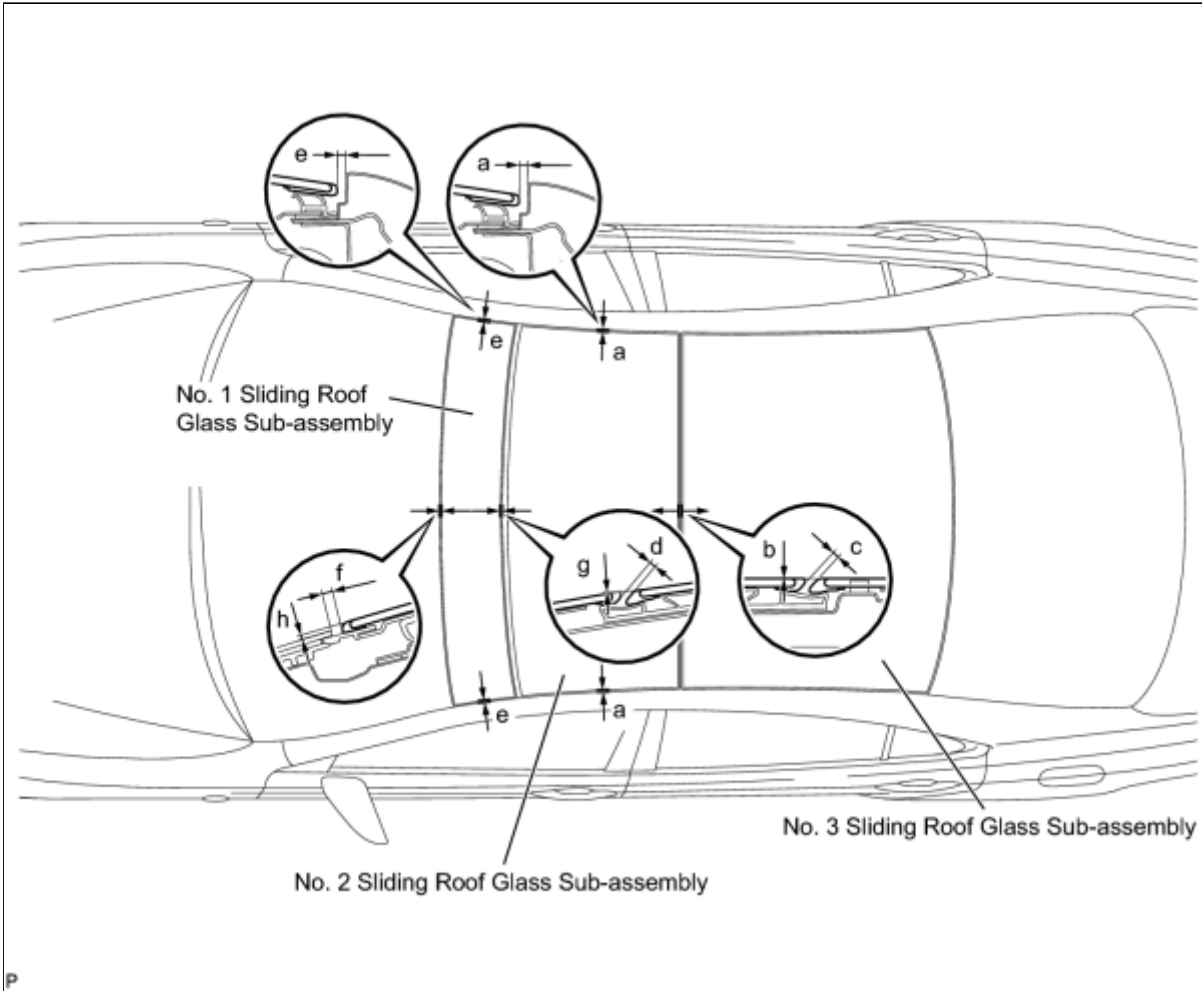


(a) Fully open the No. 2 sliding roof glass sub-assembly.

(b) Using a T20 "TORX" socket wrench, install the No. 1 sliding roof glass sub-assembly with the 6 screws.

90. ADJUST SLIDING ROOF GLASS SUB-ASSEMBLY (NO. 1, NO. 2)

(a) Adjust the No. 2 sliding roof glass sub-assembly:



(1) Adjust the position of the No. 2 sliding roof glass sub-assembly so that the measurements are within the standard values shown in the illustration.

Standard

AREA	MEASUREMENT
a	4.0 mm + 2.0 mm (0.158 in. + 0.079 in.) 4.0 mm - 2.0 mm (0.158 in. - 0.079 in.)
b	0 + 1.5 mm (0 + 0.059 in.) 0 - 0.5 mm (0 - 0.020 in.)
c	3.0 mm
d	3.0 mm

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 No. 2 sliding roof glass sub-assembly, using a T25 "TORX" driver, fully tighten the 6 screws to install the No. 2 sliding roof glass sub-assembly.

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

(b) Adjust the No. 1 sliding roof glass sub-assembly:

- (1) Adjust the position of the No. 1 sliding roof glass sub-assembly so that the measurements are within the standard values shown in the illustration.

Standard

AREA	MEASUREMENT
e	4.0 mm + 2.0 mm (0.158 in. + 0.079 in.) 4.0 mm - 2.0 mm (0.158 in. - 0.079 in.)
f	5.1 mm + 1.7 mm (0.201 in. + 0.067 in.) 5.1 mm - 1.7 mm (0.201 in. - 0.067 in.)
g	0 + 1.5 mm (0 + 0.059 in.) 0 - 0.5 mm (0 - 0.020 in.)
h	2.0 mm

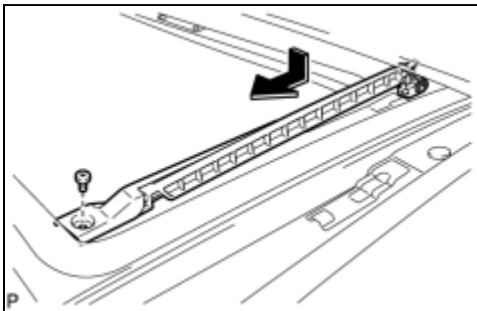
HINT:

"+" 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 No. 1 sliding roof glass sub-assembly, using a T20 "TORX" socket wrench, fully tighten the 6 screws to install the No. 1 sliding roof glass sub-assembly.

Torque: 2.0 N·m (20 kgf·cm, 18 in·lbf)

91. INSTALL SLIDING ROOF SIDE GARNISH LH



- (a) Temporarily install the sliding roof side garnish LH as shown in the illustration.

- (b) Using a T20 "TORX" socket wrench, install the sliding roof side garnish LH with the screw.

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

92. INSTALL SLIDING ROOF SIDE GARNISH RH

HINT:

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

93. INSPECT FOR WATER LEAKS

- (a) After adjusting the sliding roof glass sub-assembly, inspect for water leaks.
 (b) If there are any leaks, readjust the sliding roof glass sub-assembly.

94. PERFORM INITIALIZATION

NOTICE:

Some systems need initialization after reconnecting the cable to the negative battery terminal .

95. RESET SLIDING ROOF DRIVE GEAR SUB-ASSEMBLY



96. INSPECT SLIDING ROOF SYSTEM



97. INSPECT SHIFT LEVER POSITION

98. ADJUST SHIFT LEVER POSITION

99. INSPECT FRONT SEAT ASSEMBLY

100. INSPECT SRS WARNING LIGHT

