

## ACCESSORIES & EQUIPMENT

### Sliding Roof / Convertible (Service Specifications) - Sienna

## SLIDING ROOF / CONVERTIBLE

### TORQUE SPECIFICATIONS

### TORQUE SPECIFICATIONS

| Part Tightened                                                            | N*m | kgf*cm | ft.*lbf       |
|---------------------------------------------------------------------------|-----|--------|---------------|
| Sliding roof glass sub-assembly x Sliding roof housing assembly           | 4.0 | 41     | 35<br>in.*lbf |
| Sliding roof housing assembly x Body                                      | 5.5 | 56     | 49<br>in.*lbf |
| Television display bracket x Body                                         | 7.0 | 74     | 64<br>in.*lbf |
| Rear sliding roof housing assembly x Body                                 | 5.5 | 56     | 49<br>in.*lbf |
| Rear sliding roof glass sub-assembly x Rear sliding roof housing assembly | 4.0 | 41     | 35<br>in.*lbf |

## ACCESSORIES & EQUIPMENT

### Sliding Roof (Preparation) - Sienna

## SLIDING ROOF / CONVERTIBLE

### RECOMMENDED TOOLS

### RECOMMENDED TOOLS

|  |               |                                    |  |
|--|---------------|------------------------------------|--|
|  | 09010-3C120   | Set, "TORX" Socket Wrench          |  |
|  | (09013-1C100) | "TORX" Socket Wrench T-type<br>T20 |  |
|  | (09013-1C110) | "TORX" Socket Wrench T-type<br>T25 |  |
|  | 09080-1C110   | Toyota Electrical Tester Set       |  |

### EQUIPMENT

### EQUIPMENT

|                 |  |
|-----------------|--|
| Torque wrench   |  |
| Protective tape |  |
| Butyl tape      |  |

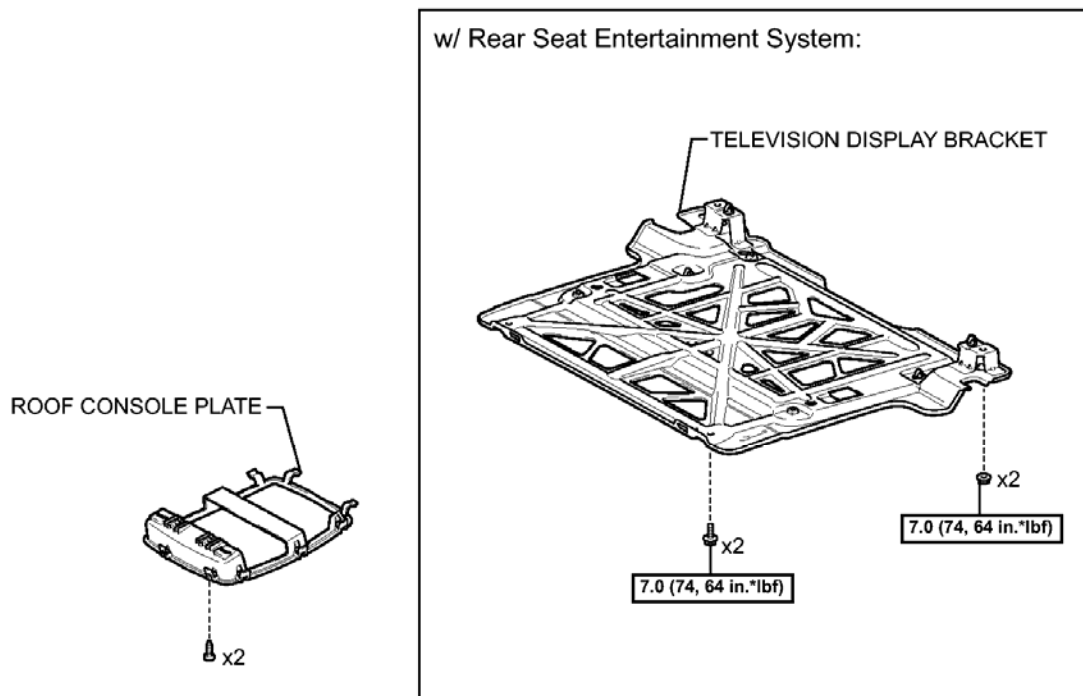
## ACCESSORIES & EQUIPMENT

### Sliding Roof (Service Information) - Sienna

## SLIDING ROOF HOUSING

### COMPONENTS

### ILLUSTRATION

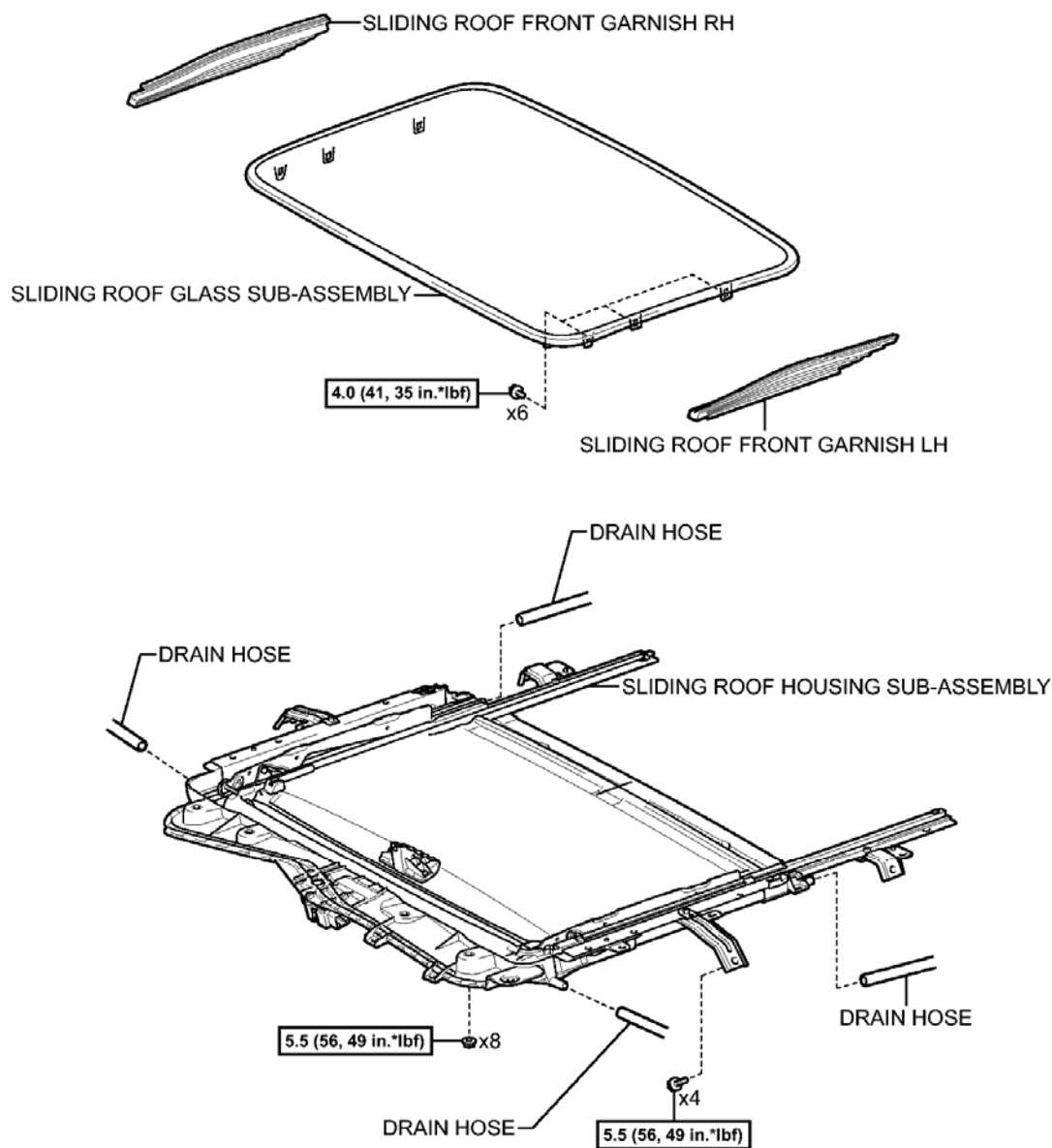


$\boxed{\text{N}\cdot\text{m} \text{ (kgf}\cdot\text{cm, ft.}\cdot\text{lbf)}}$ : Specified torque

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**Fig. 1: Sliding Roof Housing Replacement Components With Torque Specifications (1 of 3)**  
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

### ILLUSTRATION



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

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**Fig. 2: Sliding Roof Housing Replacement Components With Torque Specifications (2 of 3)**  
**Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.**

ILLUSTRATION

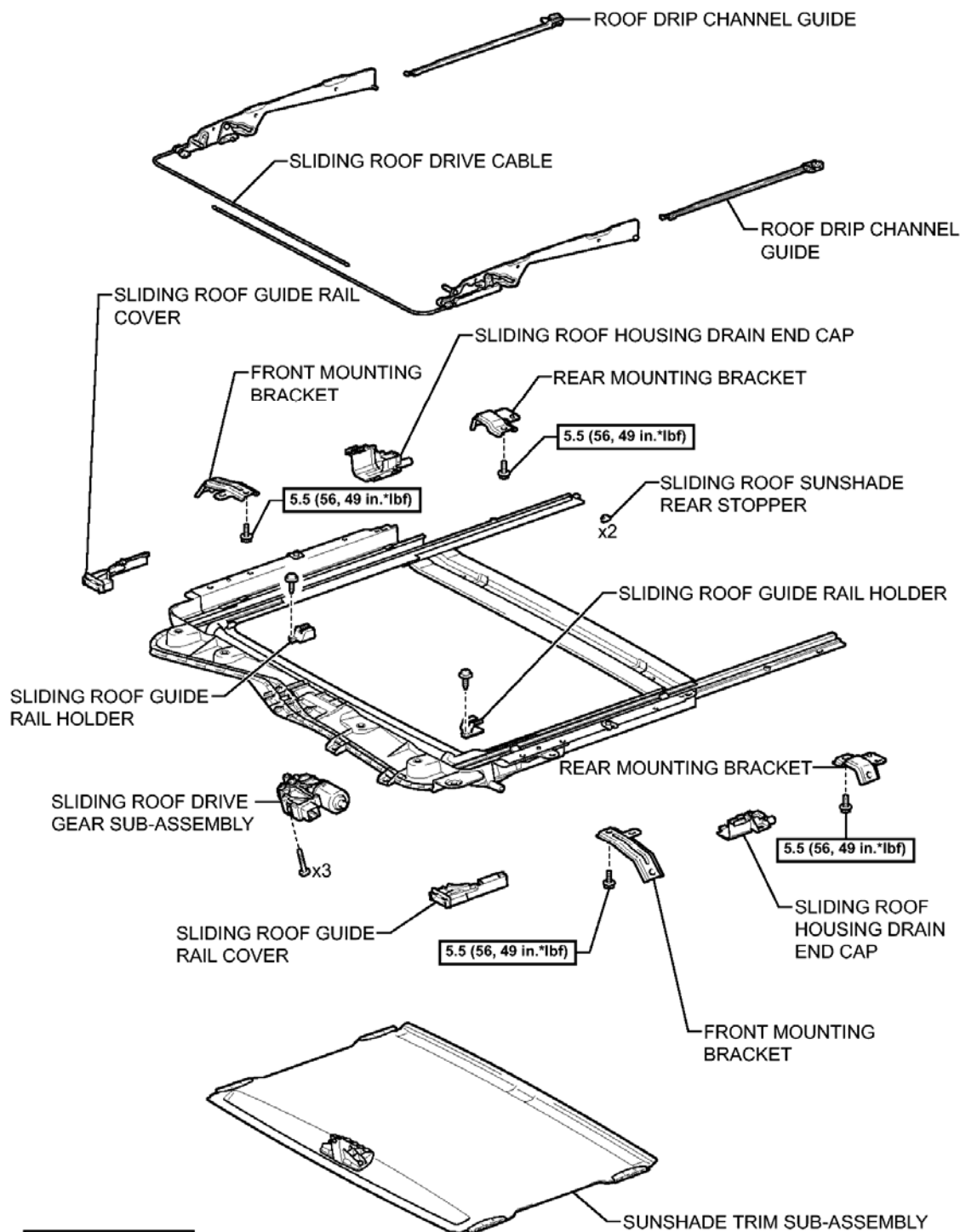


**Fig. 3: Sliding Roof Housing Replacement Components With Torque Specifications (3 of 3)**  
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

## REMOVAL

## REMOVAL

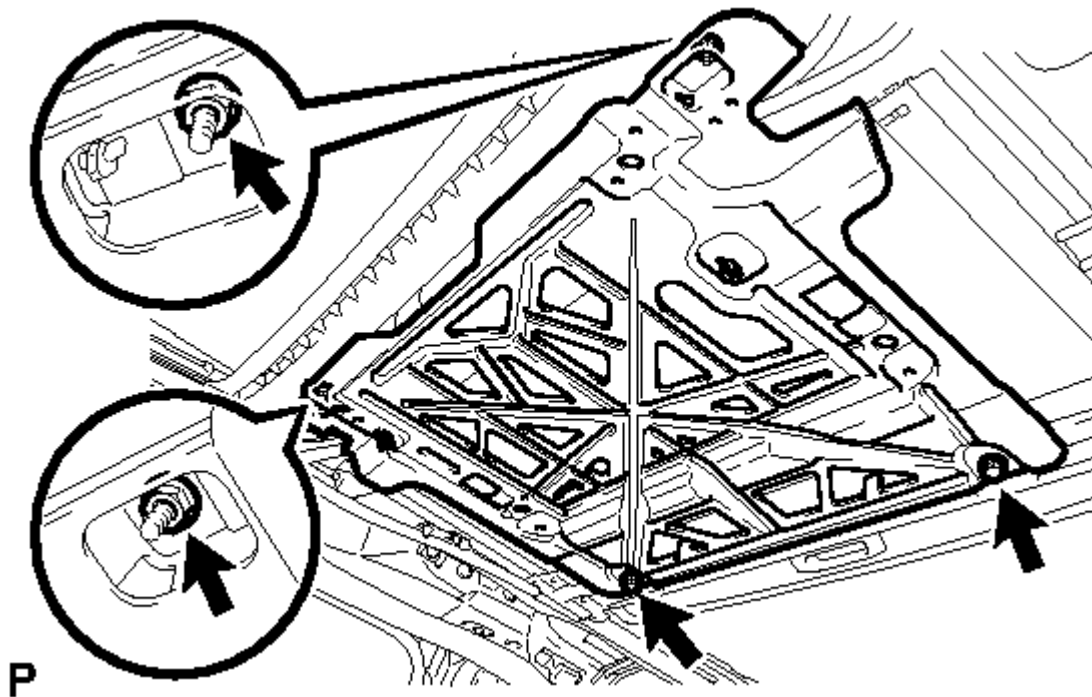
### HINT:

- Use the same procedure for both the RH and LH sides.
- The procedure described below is for the LH side.

#### 1. REMOVE ROOF HEADLINING ASSEMBLY

Refer to **REMOVAL**

#### 2. REMOVE TELEVISION DISPLAY BRACKET (w/ Rear Seat Entertainment System)

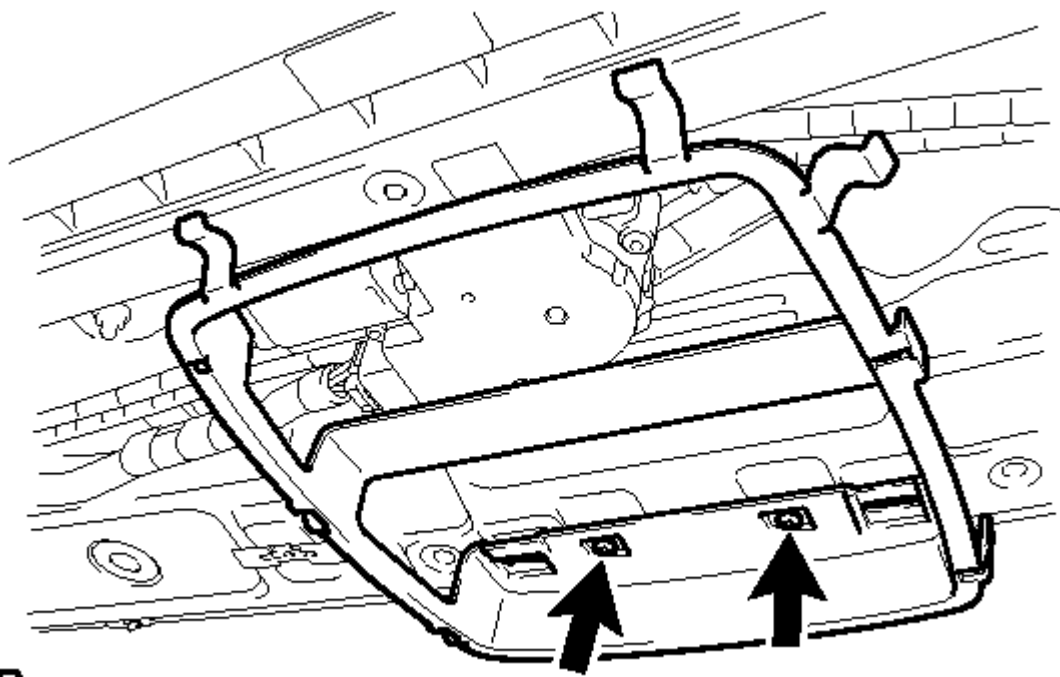


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**Fig. 4: Identifying Television Display Bracket Fasteners (w/ Rear Seat Entertainment System)**  
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- a. Remove the 2 bolts and 2 nuts and television display bracket.

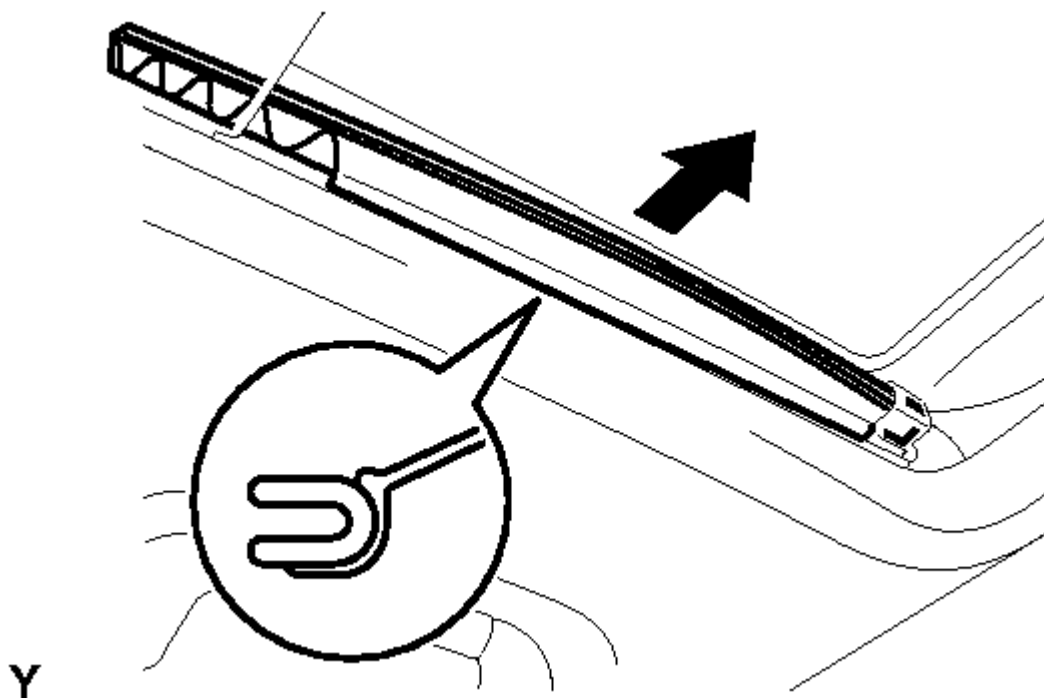
#### 3. REMOVE ROOF CONSOLE PLATE



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**Fig. 5: Identifying Roof Console Plate & Fasteners**  
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

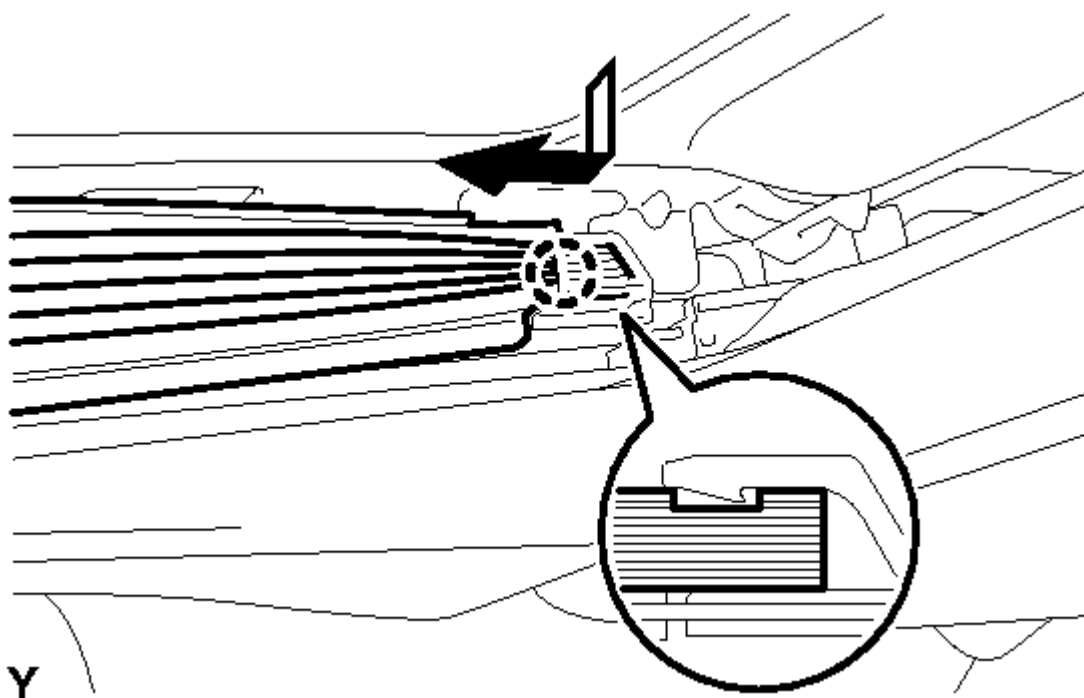
- a. Using a T20 "TORX" socket wrench, remove the 2 screws and roof console plate.
4. **REMOVE SLIDING ROOF FRONT GARNISH LH**
  - a. Pull the lower edge of the sliding roof front garnish LH toward the inside of the vehicle to separate it from the sliding roof housing sub-assembly.



**Y**  
**Fig. 6: Removing Sliding Roof Front Garnish LH**  
**Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.**

**NOTE:** To avoid breaking the sliding roof front garnish LH, do not pull on it too strongly.

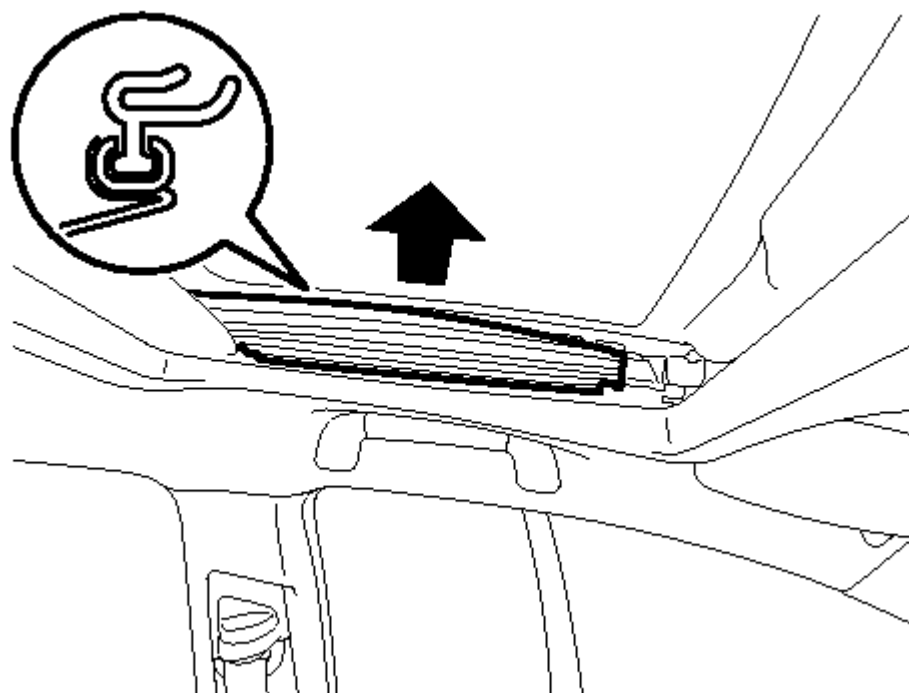
- b. Compress the forward edge of the sliding roof front garnish LH, disengage the claw, and slide the sliding roof front garnish LH towards the rear of the vehicle.



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**Fig. 7: Removing Sliding Roof Front Garnish LH**  
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- c. Disengage the sliding roof front garnish LH from the sliding roof glass sub-assembly, and remove the sliding roof front garnish LH.



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**Fig. 8: Removing Sliding Roof Front Garnish LF**

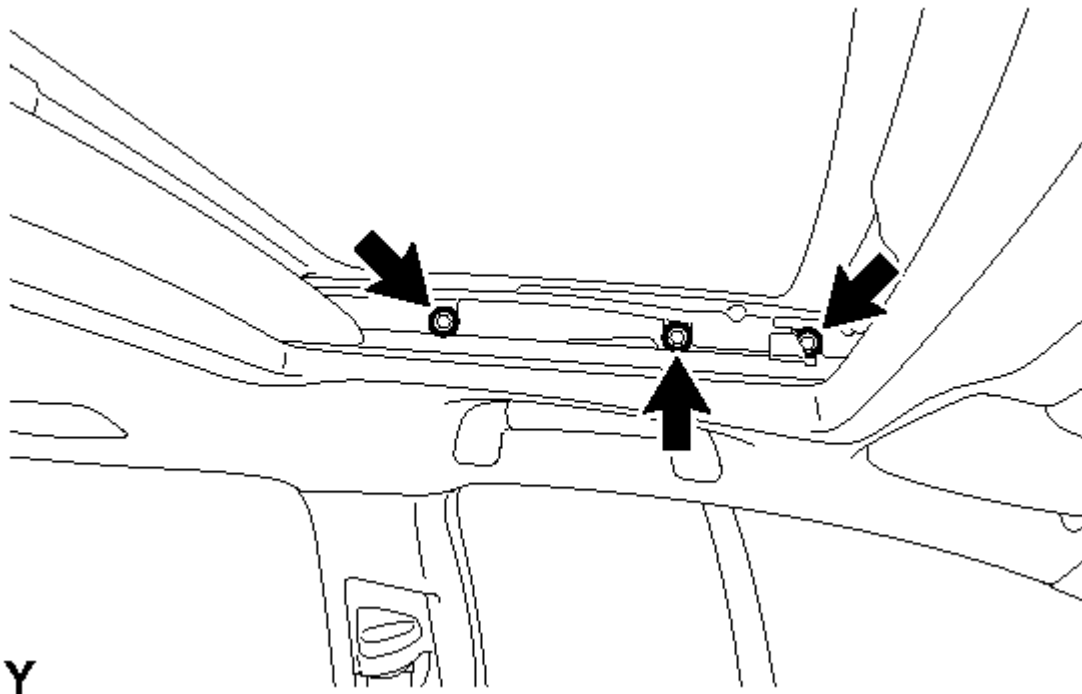
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

5. REMOVE SLIDING ROOF FRONT GARNISH RH

**HINT:**

Use the same procedure as for the LH side.

6. REMOVE SLIDING ROOF GLASS SUB-ASSEMBLY

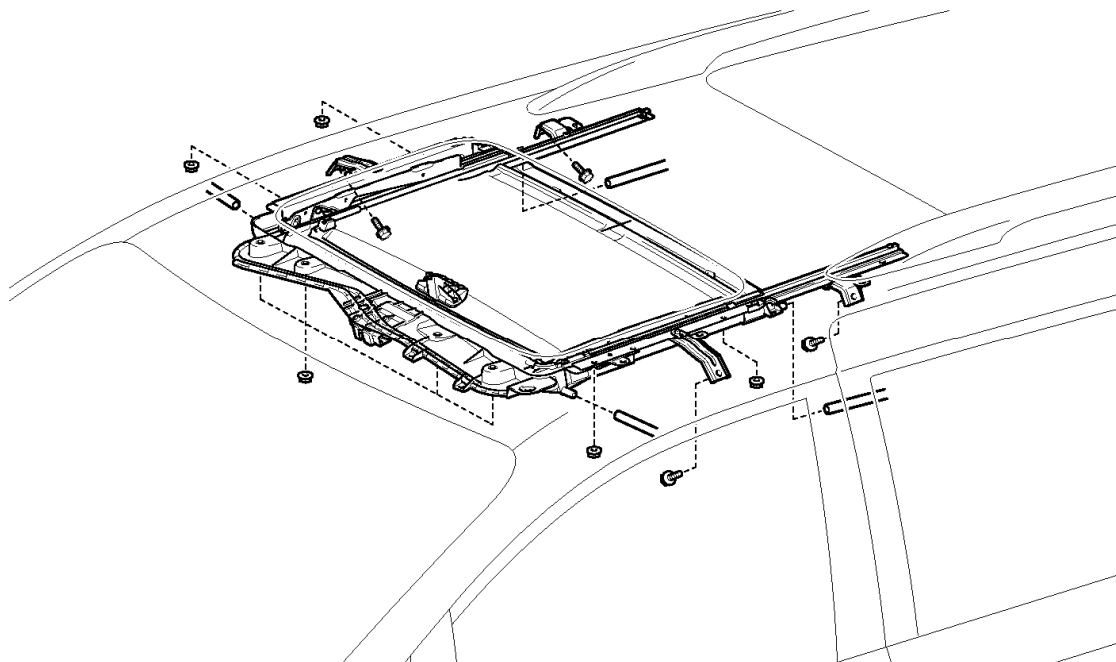


**Y**  
**Fig. 9: Identifying Sliding Roof Glass Sub-Assembly Fasteners**  
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- a. Using a T25 "TORX" socket wrench, remove the 6 screws and sliding roof glass sub-assembly.

**NOTE:** To prevent the sliding roof glass and sliding roof drive gear from being displaced, fully close the sliding roof glass (sliding roof drive cable), and then remove the sliding roof glass.

7. REMOVE SLIDING ROOF HOUSING SUB-ASSEMBLY



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**Fig. 10: Identifying Sliding Roof Housing Sub-Assembly, Drain Hoses & Fasteners**  
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- a. Disconnect the 4 sliding roof drain hoses.
- b. Remove the 4 bolts, 8 nuts and sliding roof housing sub-assembly.

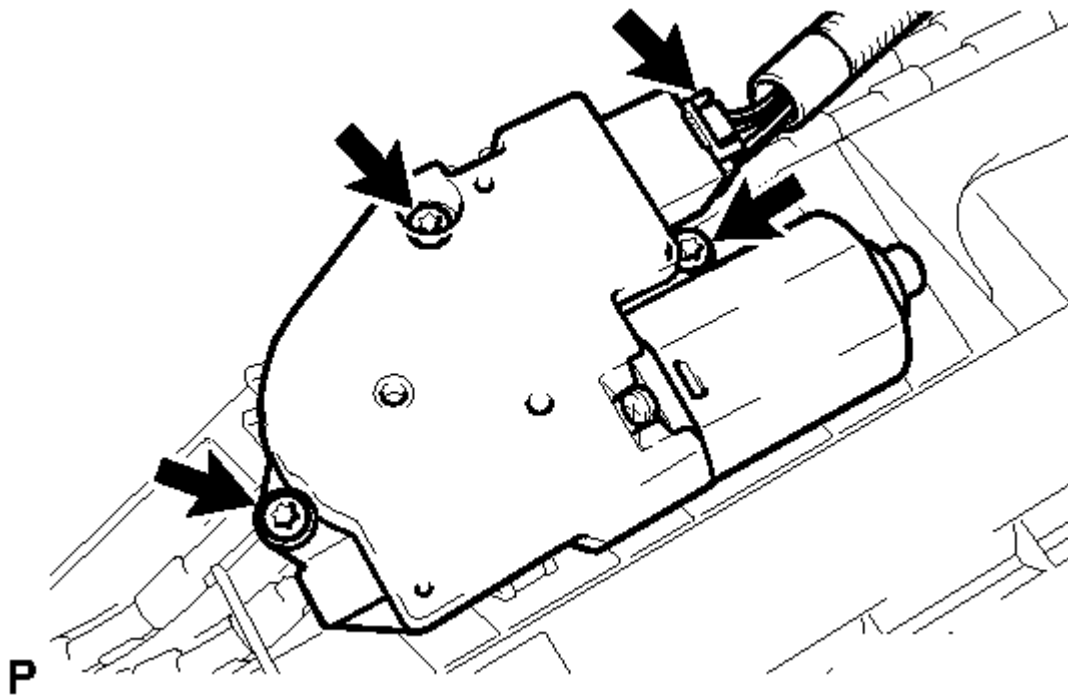
## **DISASSEMBLY**

## **DISASSEMBLY**

### **HINT:**

- Use the same procedure for both the RH and LH sides.
- The procedure described below is for the LH side.

### **1. REMOVE SLIDING ROOF DRIVE GEAR SUB-ASSEMBLY**

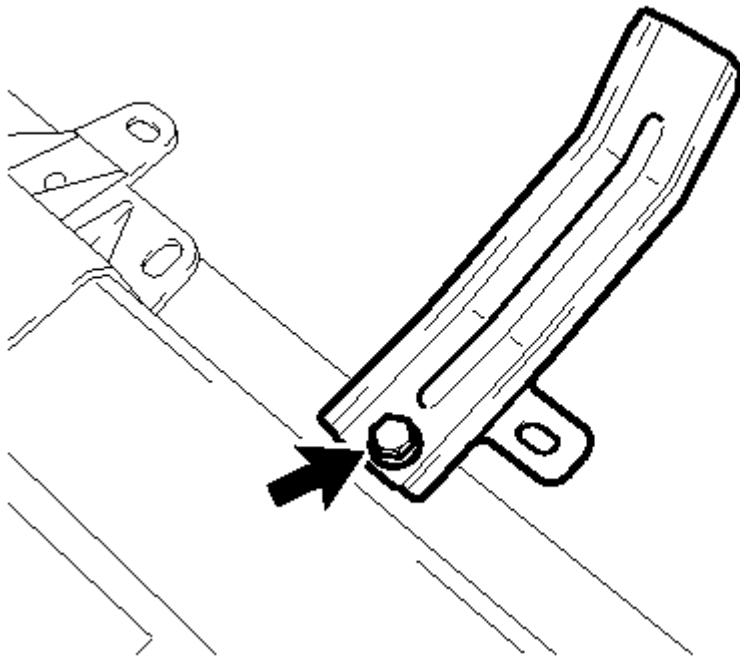


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**Fig. 11: Identifying Sliding Roof Drive Gear Sub-Assembly, Connector & Fasteners**  
**Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.**

- a. Disconnect the connector.
- b. Using a T25 "TORX" socket wrench, remove the 3 screws and sliding roof drive gear.

**NOTE:** To prevent the sliding roof glass and sliding roof drive gear from being displaced, fully close the sliding roof glass (sliding roof drive cable), and then remove the sliding roof drive gear.

## **2. REMOVE FRONT MOUNTING BRACKET**

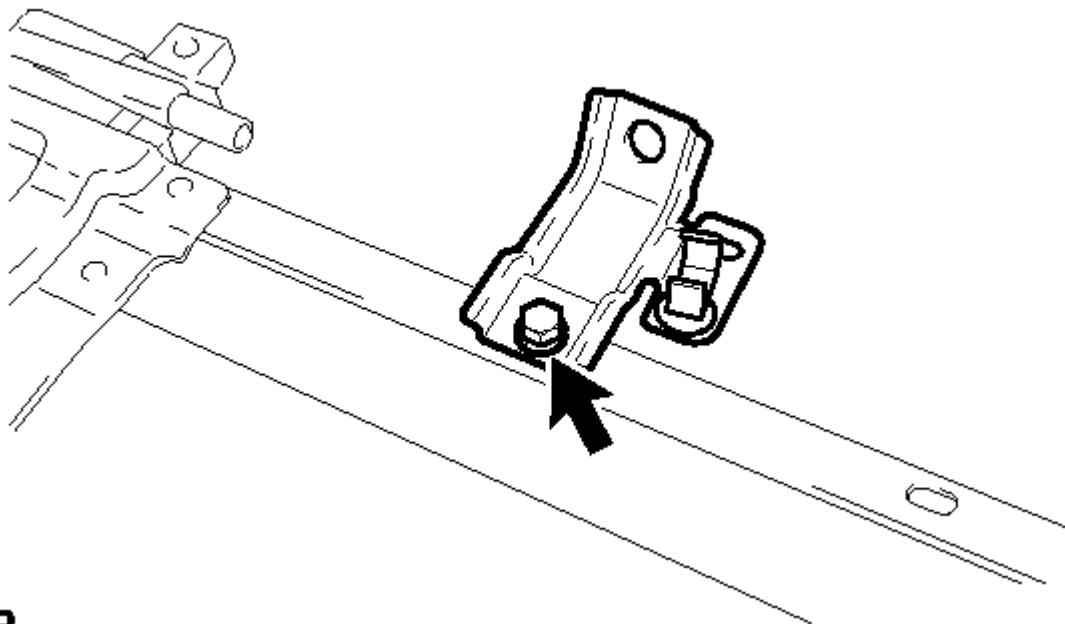


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**Fig. 12: Remove/Install Front Mounting Bracket & Bolt**  
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- a. Remove the bolt and front mounting bracket.

**3. REMOVE REAR MOUNTING BRACKET**



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**Fig. 13: Remove/Install Rear Mounting Bracket & Bolt**

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- a. Remove the bolt and rear mounting bracket.

**4. REMOVE SLIDING ROOF SUNSHADE REAR STOPPER**

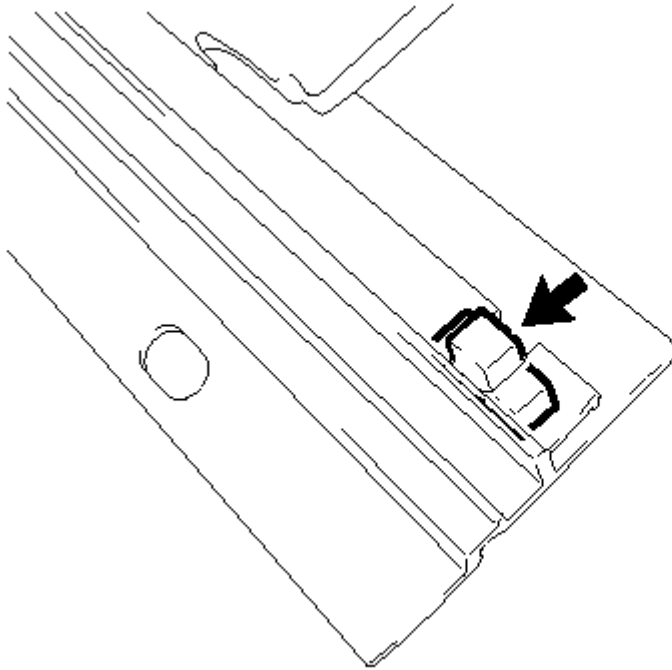
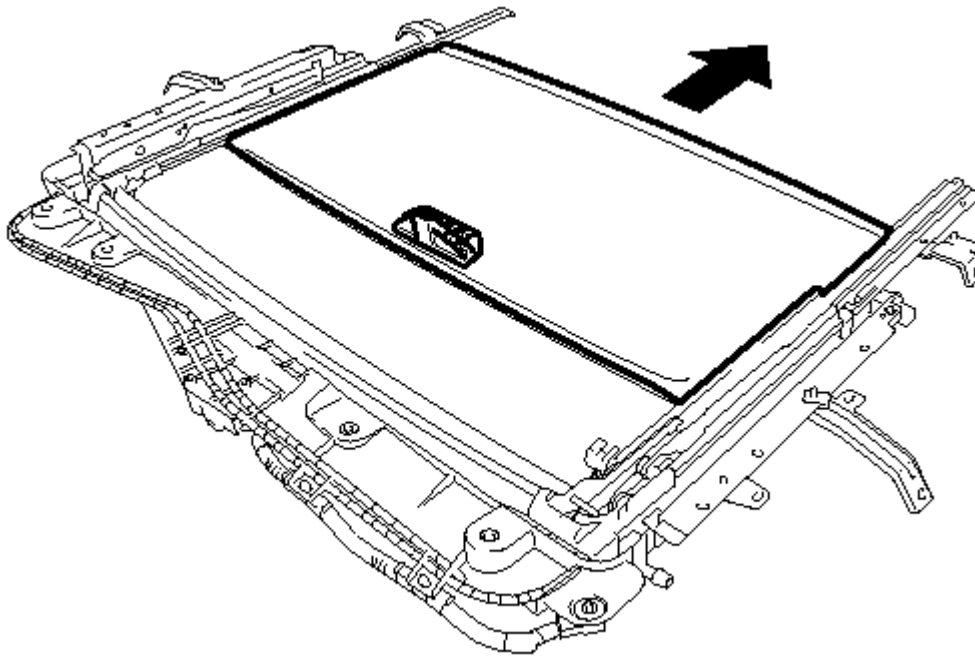


**Fig. 14: Remove/Install Sliding Roof Sunshade Rear Stopper**  
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- a. Remove the sunshade rear stopper.

**5. REMOVE SUNSHADE TRIM SUB-ASSEMBLY**

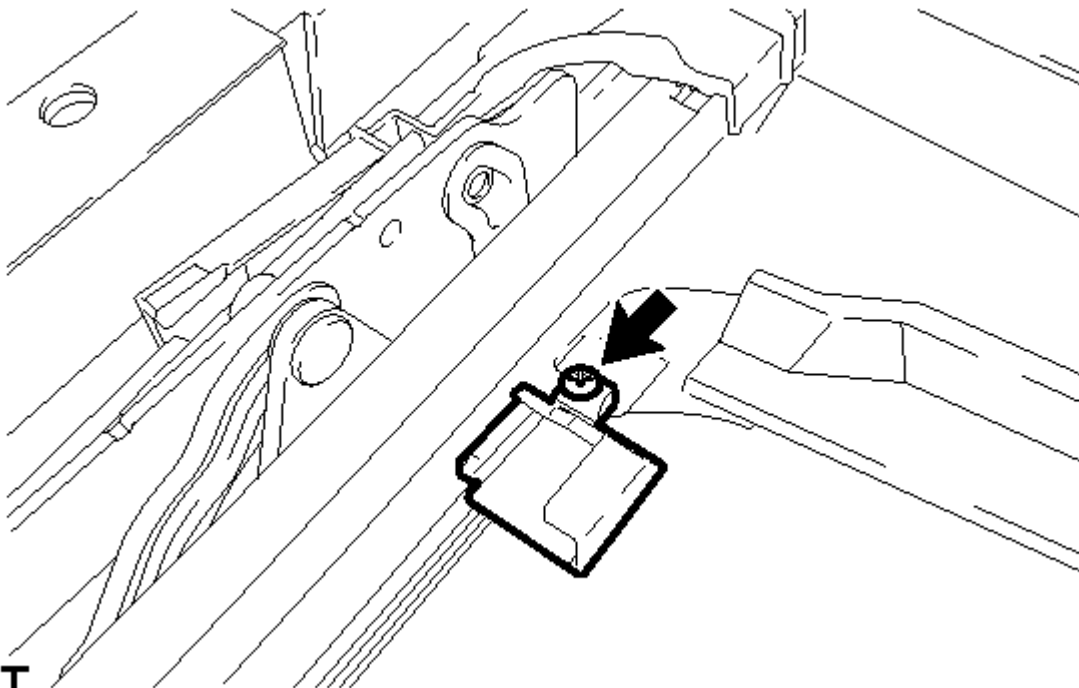


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**Fig. 15: Removing Sunshade Trim Sub-Assembly**  
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- a. Slide and remove the sunshade trim sub-assembly.

**6. REMOVE SLIDING ROOF GUIDE RAIL HOLDER**



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**Fig. 16: Remove/Install Sliding Roof Guide Rail Holder**

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- a. Remove the screw and sliding roof guide rail holder.

**7. REMOVE SLIDING ROOF GUIDE RAIL COVER**

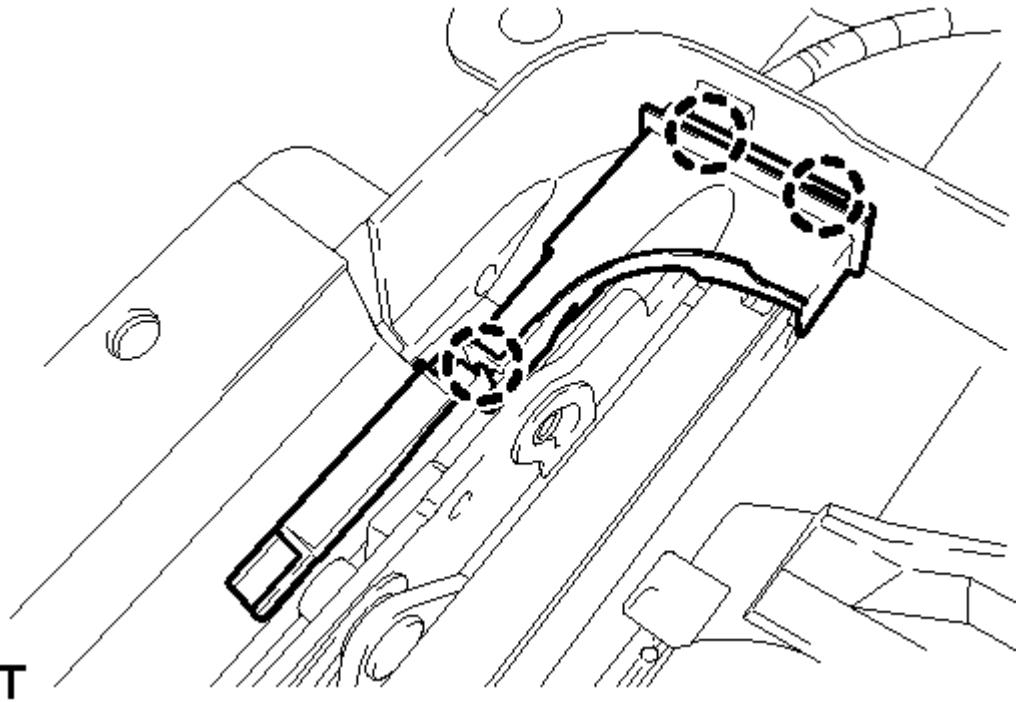


**Fig. 17: Remove/Install Sliding Roof Guide Rail Cover**  
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- a. Disengage the 3 claws and remove the sliding roof guide rail cover.

**8. REMOVE SLIDING ROOF DRIVE CABLE**

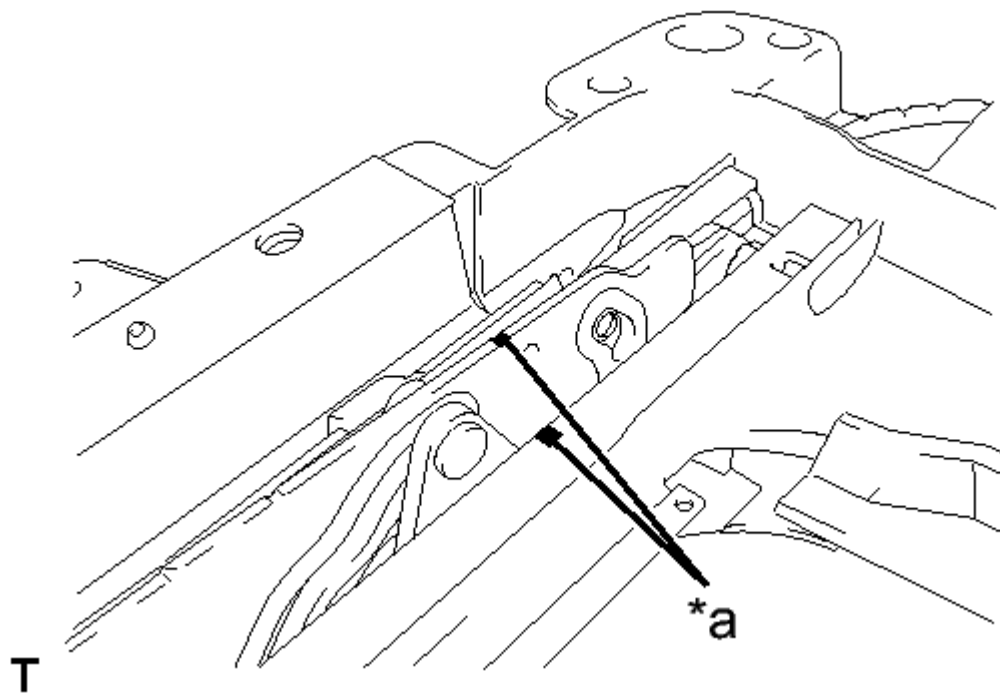


**Fig. 18: Remove/Install Sliding Roof Drive Cable**  
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- a. Put matchmarks on the sliding roof drive cable and sliding roof housing sub-assembly.

**TEXT IN ILLUSTRATION**

\*1 Matchmark

- b. Using a screwdriver with its tip wrapped in protective tape, slide the sliding roof drive cable sub-assembly in the direction indicated by the arrow in the illustration to remove it.

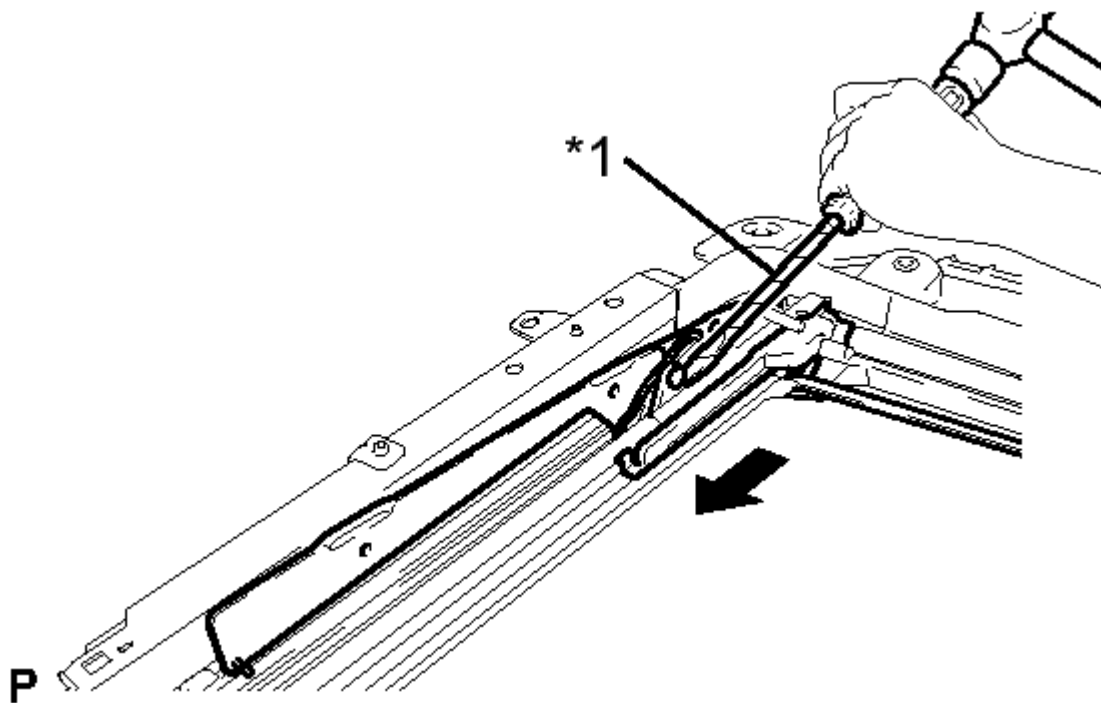
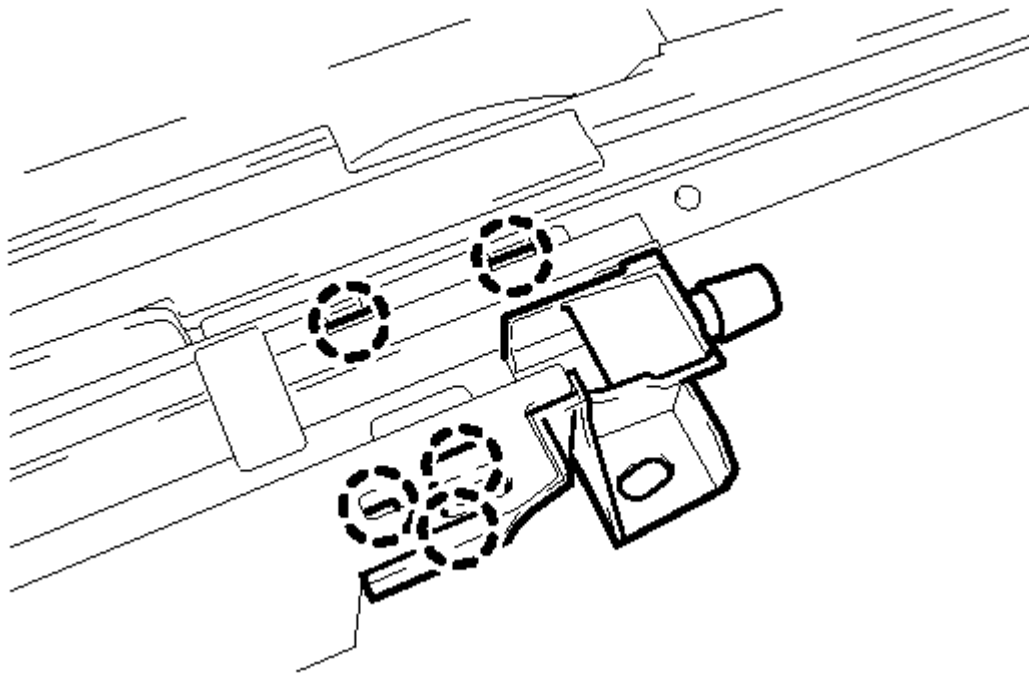


**Fig. 19: Removing Sliding Roof Drive Cable Sub-Assembly With Screwdriver**  
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

**TEXT IN ILLUSTRATION**

|    |                    |
|----|--------------------|
| *1 | Protective<br>Tape |
|----|--------------------|

**9. REMOVE SLIDING ROOF HOUSING DRAIN END CAP**



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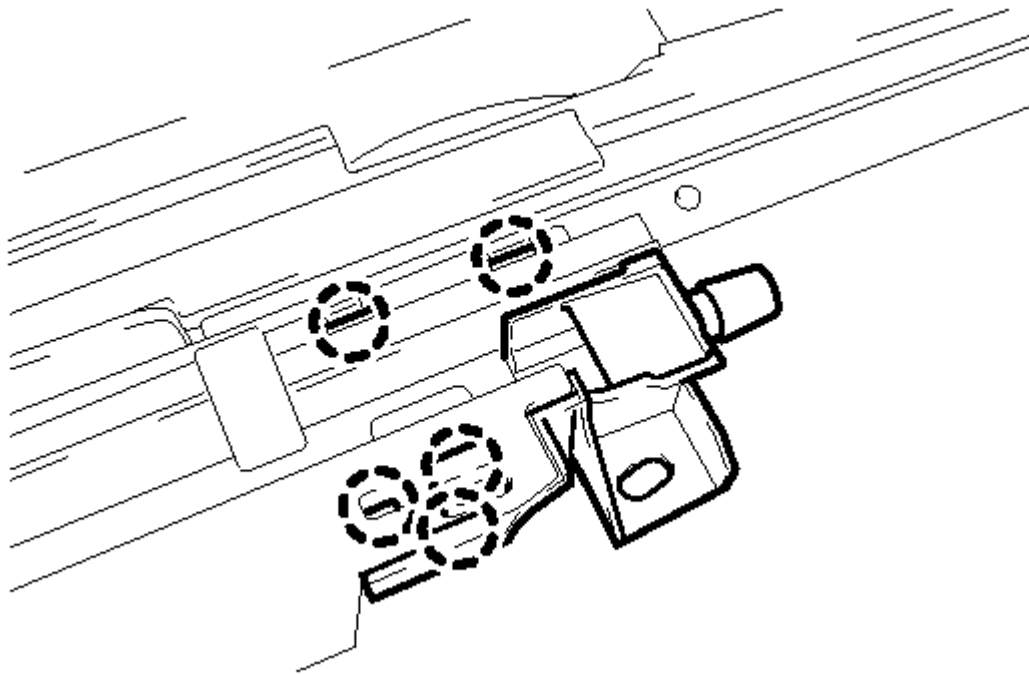
**Fig. 20: Identifying Sliding Roof Housing Drain End Cap & Claws**  
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- a. Disengage the 5 claws and remove the sliding roof housing drain end cap.

## **REASSEMBLY**

### **REASSEMBLY**

1. **INSTALL SLIDING ROOF HOUSING DRAIN END CAP**



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**Fig. 21: Identifying Sliding Roof Housing Drain End Cap & Claws**  
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- a. Apply butyl tape to the installation part of the sliding roof housing drain end cap.
- b. Engage the 5 claws and install the sliding roof housing drain end cap.

## **2. INSTALL SLIDING ROOF DRIVE CABLE**

- a. Install the roof drip channel guide onto the sliding roof drive cable sub-assembly.
- b. Using a screwdriver with its tip wrapped in protective tape, slide the sliding roof drive cable sub-assembly in the direction indicated by the arrow in the illustration to install it.

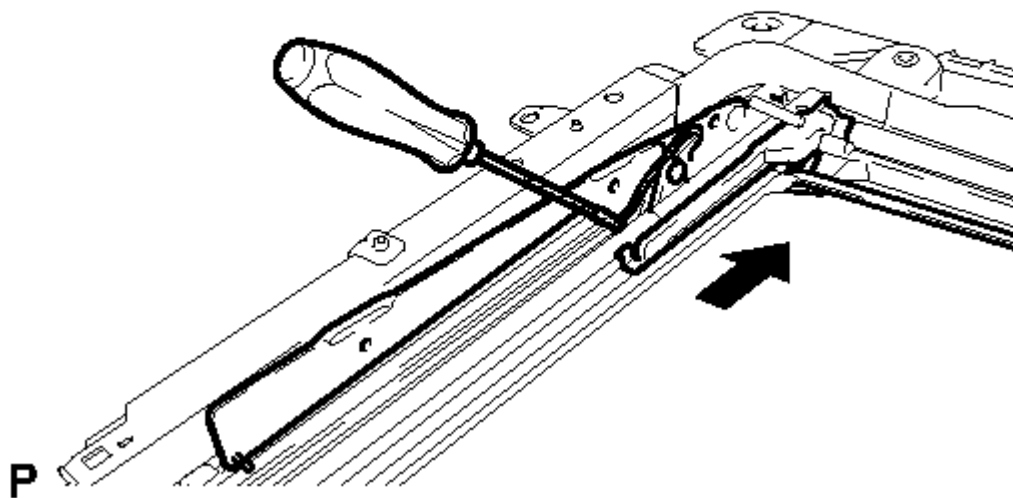


**Fig. 22: Installing Sliding Roof Drive Cable With Screwdriver**  
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

### 3. ADJUST FULLY CLOSED POSITION

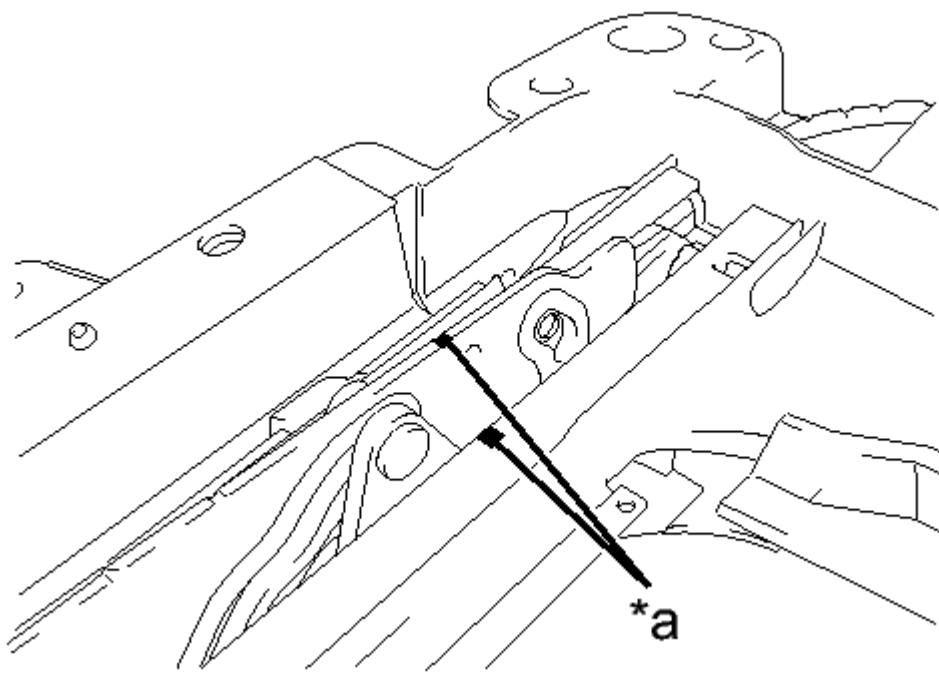


**Fig. 23: Remove/Install Sliding Roof Drive Cable**  
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- a. Using a screwdriver with its tip wrapped in protective tape, align the matchmarks by sliding the sliding roof drive cable.

**TEXT IN ILLUSTRATION**

**\*1 Matchmark**

**4. INSTALL SLIDING ROOF GUIDE RAIL COVER**

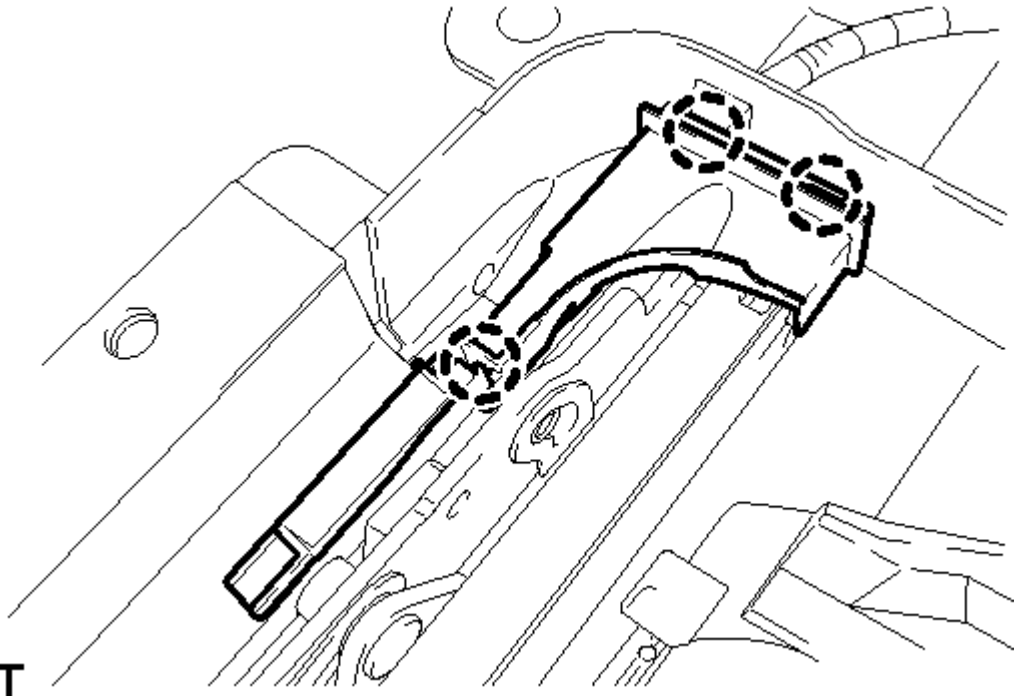


**Fig. 24: Remove/Install Sliding Roof Guide Rail Cover**  
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- a. Apply butyl tape to the installation part of the sliding roof guide rail cover.
- b. Engage the 3 claws and install the sliding roof guide rail cover.

**5. INSTALL SLIDING ROOF GUIDE RAIL HOLDER**

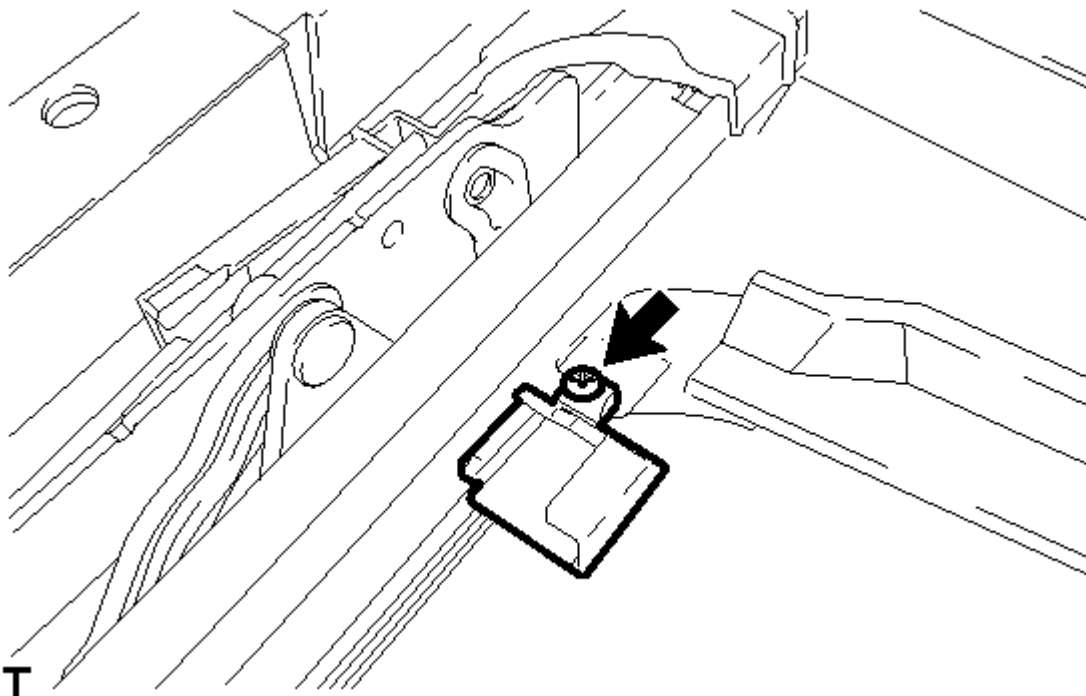


**Fig. 25: Remove/Install Sliding Roof Guide Rail Holder**  
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- a. Install the sliding roof guide rail holder with the screw.

#### 6. INSTALL SUNSHADE TRIM SUB-ASSEMBLY

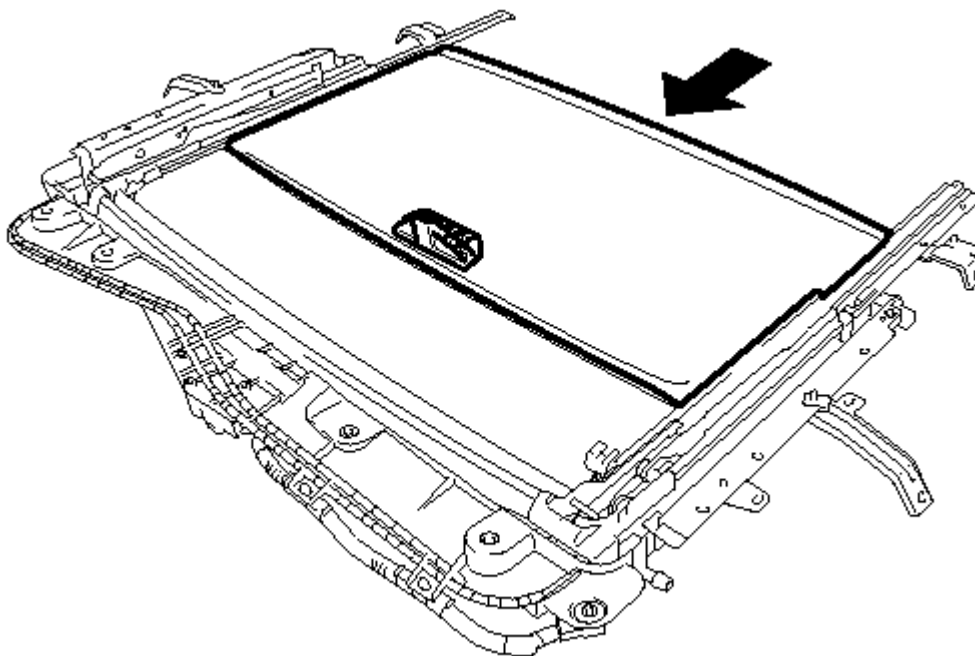


**Fig. 26: Installing Sunshade Trim Sub-Assembly Into Sliding Roof Housing Sub-Assembly**

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- a. Insert the sunshade trim sub-assembly into the sliding roof housing sub-assembly.

**7. INSTALL SLIDING ROOF SUNSHADE REAR STOPPER**

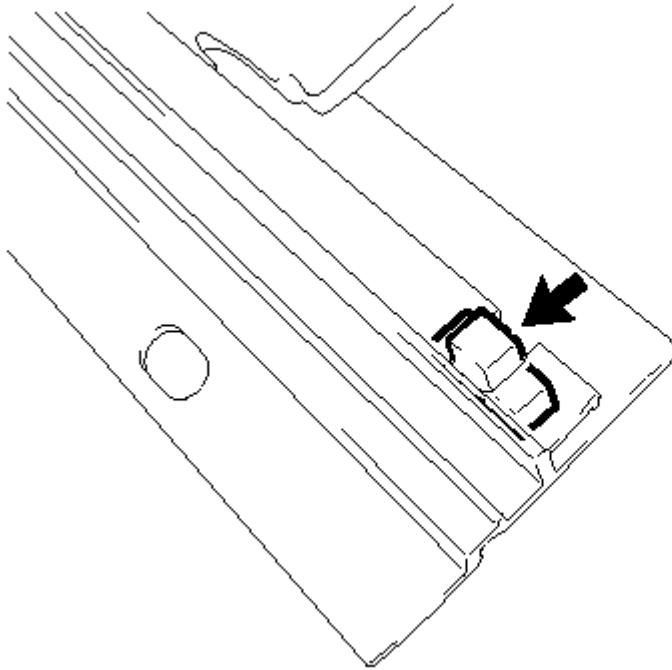
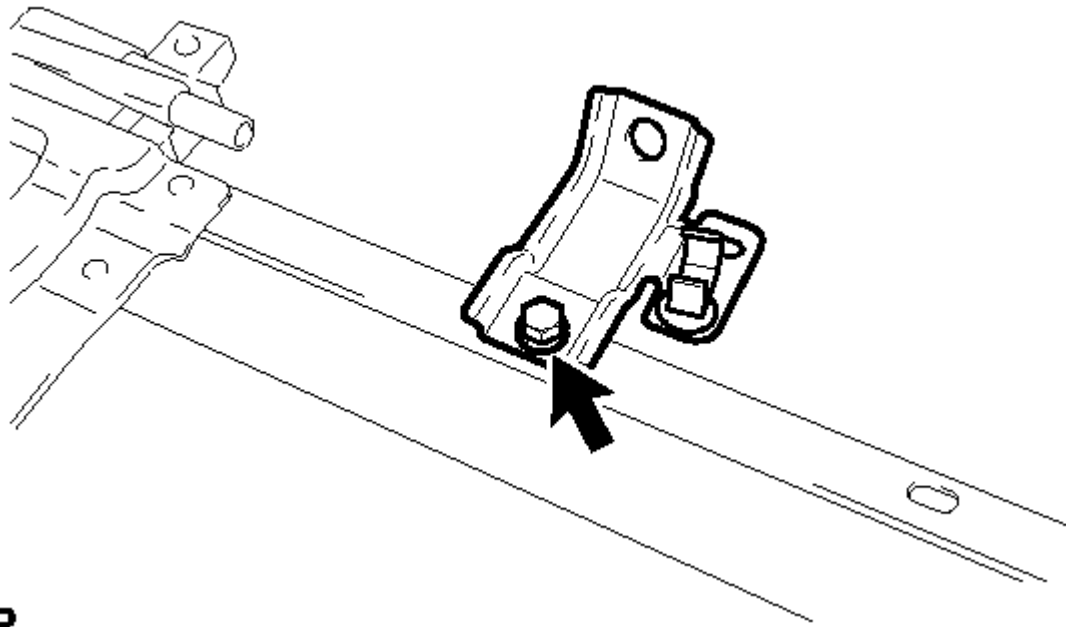


**Fig. 27: Remove/Install Sliding Roof Sunshade Rear Stopper**  
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- a. Install the sliding roof sunshade rear stopper.

**8. INSTALL REAR MOUNTING BRACKET**



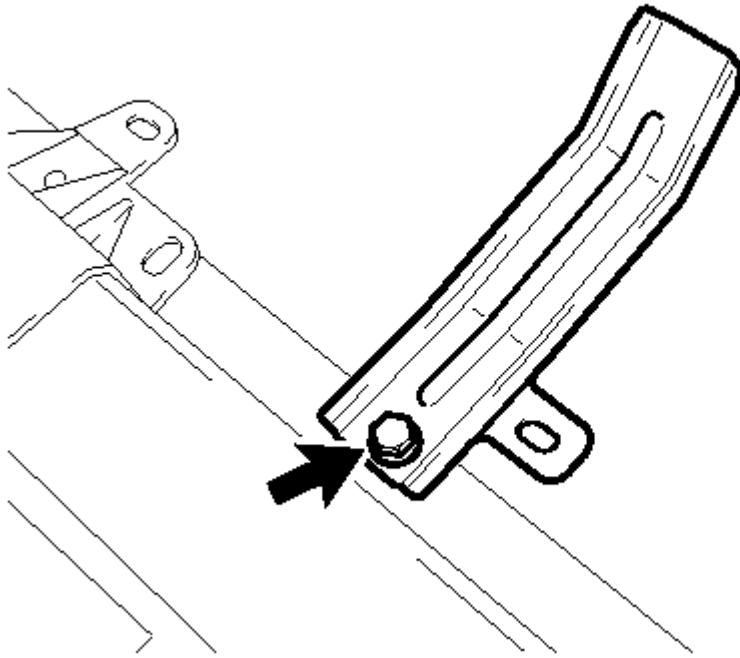
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**Fig. 28: Remove/Install Rear Mounting Bracket & Bolt**  
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- a. Install the rear mounting bracket with the bolt.

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

## **9. INSTALL FRONT MOUNTING BRACKET**



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**Fig. 29: Remove/Install Front Mounting Bracket & Bolt**  
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- a. Install the front mounting bracket with the bolt.

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

## **10. INSTALL SLIDING ROOF DRIVE GEAR SUB-ASSEMBLY**

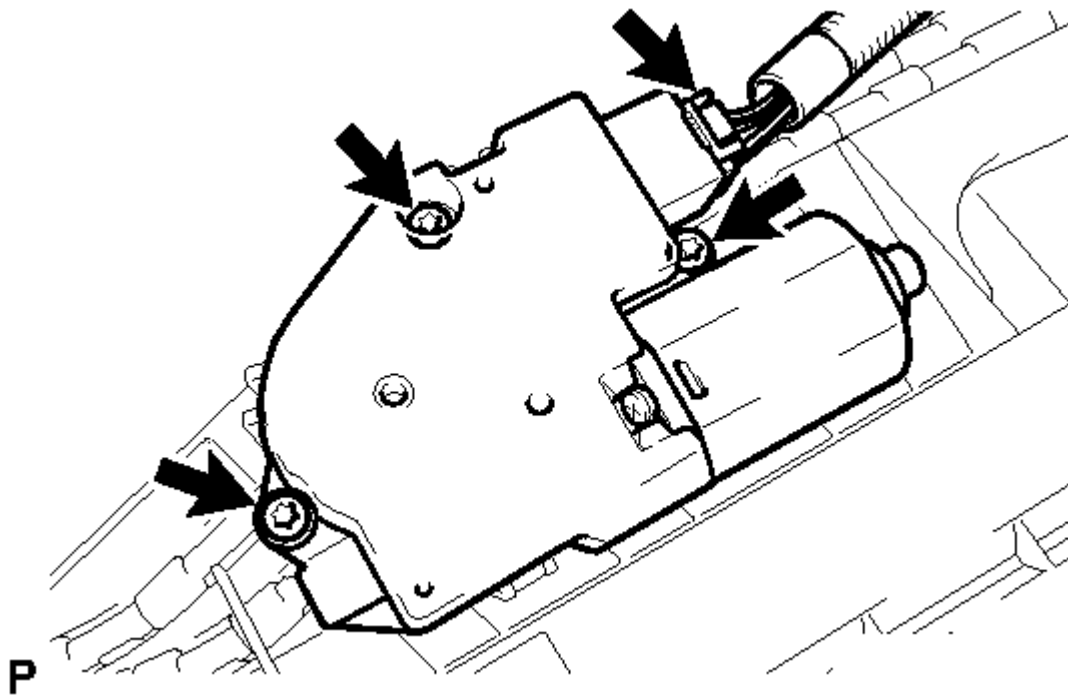


**Fig. 30: Identifying Sliding Roof Drive Gear Sub-Assembly, Connector & Fasteners**  
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- a. Connect the connector.
- b. Using a T25 "TORX" socket wrench, install the sliding roof drive gear with the 3 screws.

## **INSTALLATION**

### **INSTALLATION**

#### **1. INSTALL SLIDING ROOF HOUSING SUB-ASSEMBLY**

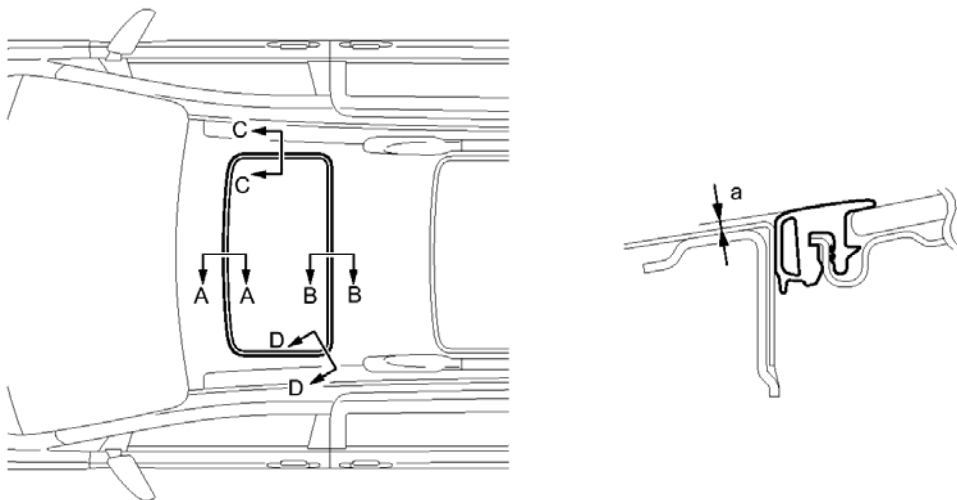
- a. Install the sliding roof housing sub-assembly with the 4 bolts and 8 nuts.

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

- b. Connect the 4 sliding roof drain hoses.

#### **2. INSTALL SLIDING ROOF GLASS SUB-ASSEMBLY**

- a. Using a T25 "TORX" socket wrench, temporarily install the sliding roof glass sub-assembly with the 6 screws.
- b. Perform a level check.



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**Fig. 31: Checking Sliding Roof Glass Sub-Assembly Clearance**  
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

1. Check the difference in level for "a" between the roof panel and the upper surface of the weatherstrip when the sliding roof glass is fully closed.

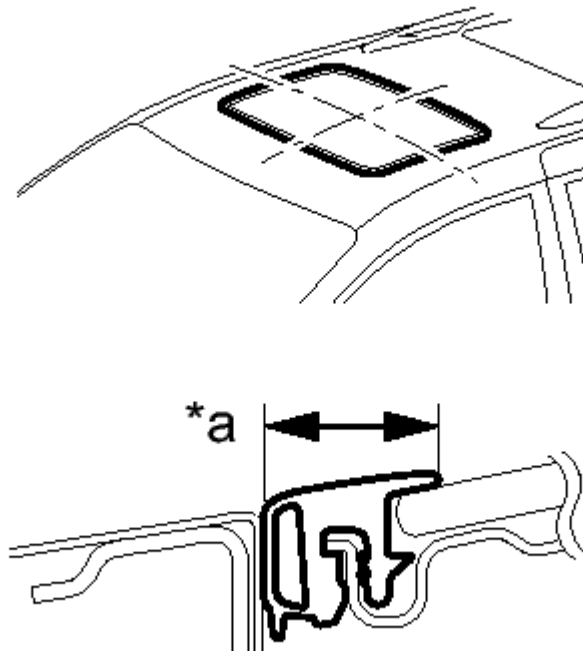
Standard

| Area     | Measurement                                                      |
|----------|------------------------------------------------------------------|
| A -<br>A | 0 + 1.0 mm (0<br>+ 0.0394 in.)<br>0 - 2.0 mm (0<br>- 0.0787 in.) |
| B -<br>B | 0 + 2.0 mm (0<br>+ 0.0787 in.)<br>0 - 1.0 mm (0<br>- 0.0394 in.) |
| C -<br>C | 0 + 1.5 mm (0<br>+ 0.0591 in.)<br>0 - 1.5 mm (0<br>- 0.0591 in.) |
| D -<br>D | 0 + 1.5 mm (0<br>+ 0.0591 in.)<br>0 - 1.0 mm (0<br>- 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.

- c. Perform a gap check.



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**Fig. 32: Performing Sliding Roof Glass Sub-Assembly Gap Check**  
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

**TEXT IN ILLUSTRATION**

**\*a** Even

1. Check the gap between the roof panel and roof glass.

**NOTE:**        **The gap must be even all around.**

- d. After adjusting the sliding roof glass sub-assembly, using a T25 "TORX" socket wrench, install the sliding roof glass sub-assembly with the 6 screws.

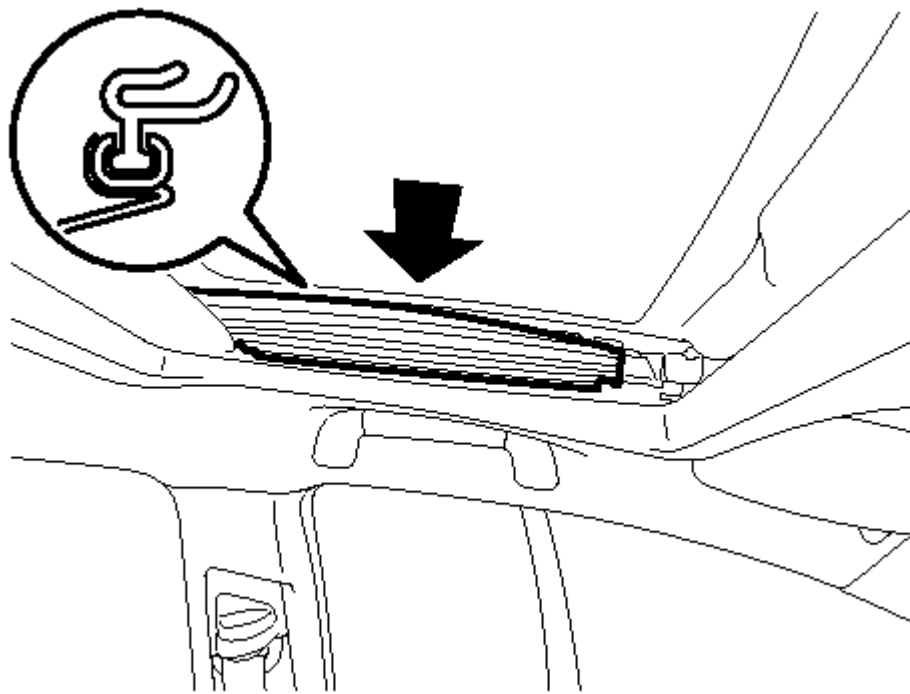
**Torque: 4.0 N\*m (41 kgf\*cm, 35 in.\*lbf)**

**3. CHECK FOR WATER LEAK**

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

**4. INSTALL SLIDING ROOF FRONT GARNISH LH**

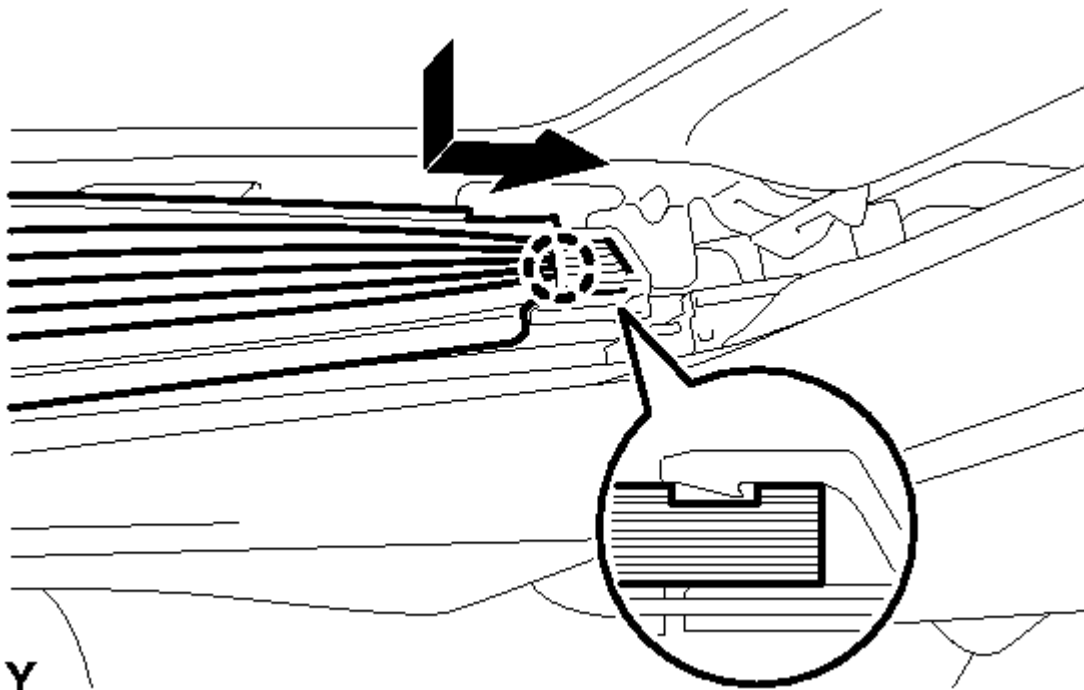
- a. Engage the upper edge of the sliding roof front garnish LH to the sliding roof glass sub-assembly.



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**Fig. 33: Installing Upper Edge Of Sliding Roof Front Garnish LH**  
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Compress the forward edge of the sliding roof front garnish LH, slide it towards the front of the vehicle, and engage the claw.



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**Fig. 34: Installing Forward Edge Of Sliding Roof Front Garnish LH To Claw**

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- c. Engage the lower edge of the sliding roof front garnish LH to the sliding roof housing sub-assembly, and install the sliding roof front garnish LH.

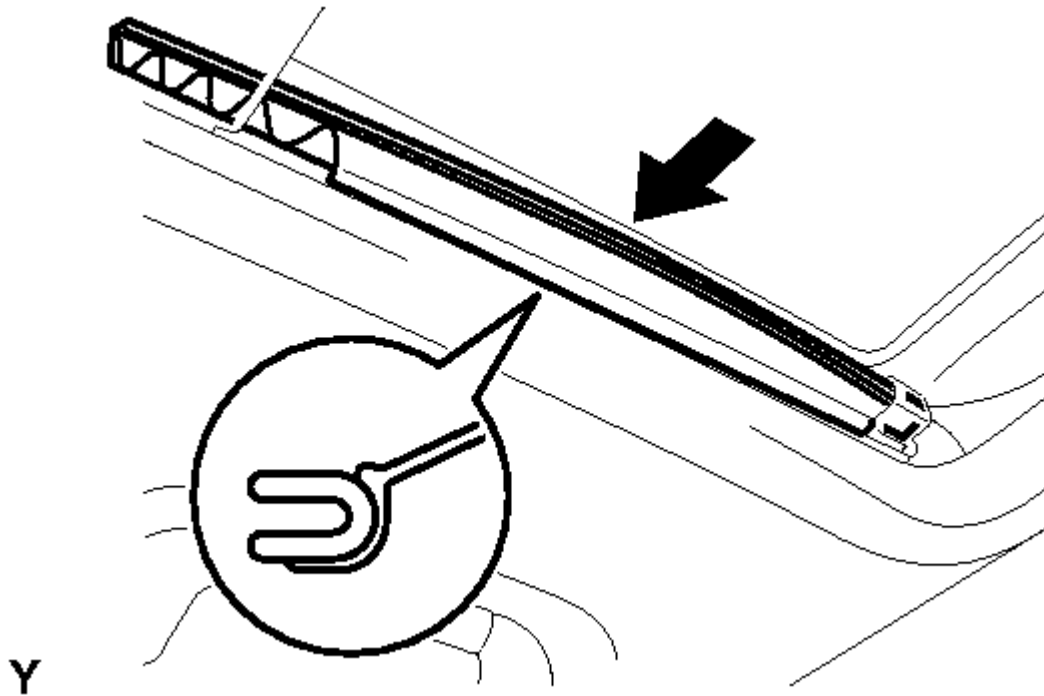


**Fig. 35: Installing Lower Edge Of Sliding Roof Front Garnish LH**  
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

#### **5. INSTALL SLIDING ROOF FRONT GARNISH RH**

##### **HINT:**

Use the same procedure as for the LH side.

#### **6. INSTALL ROOF CONSOLE PLATE**

- a. Using a T20 "TORX" socket wrench, install the roof console plate with the 2 screws.

#### **7. INSTALL TELEVISION DISPLAY BRACKET (w/ Rear Seat Entertainment System)**

- a. Install the television display bracket with the 2 bolts and 2 nuts.

**Torque: 7.0 N\*m (74 kgf\*cm, 64 in.\*lbf)**

#### **8. INSTALL ROOF HEADLINING ASSEMBLY**

Refer to **INSTALLATION**

#### **9. RESET SLIDING ROOF DRIVE GEAR ASSEMBLY**

Refer to **INITIALIZATION**

## **10. INSPECT SLIDING ROOF SYSTEM**

Refer to **OPERATION CHECK**

### **REAR SLIDE ROOF HOUSING**

#### **COMPONENTS**

#### **ILLUSTRATION**

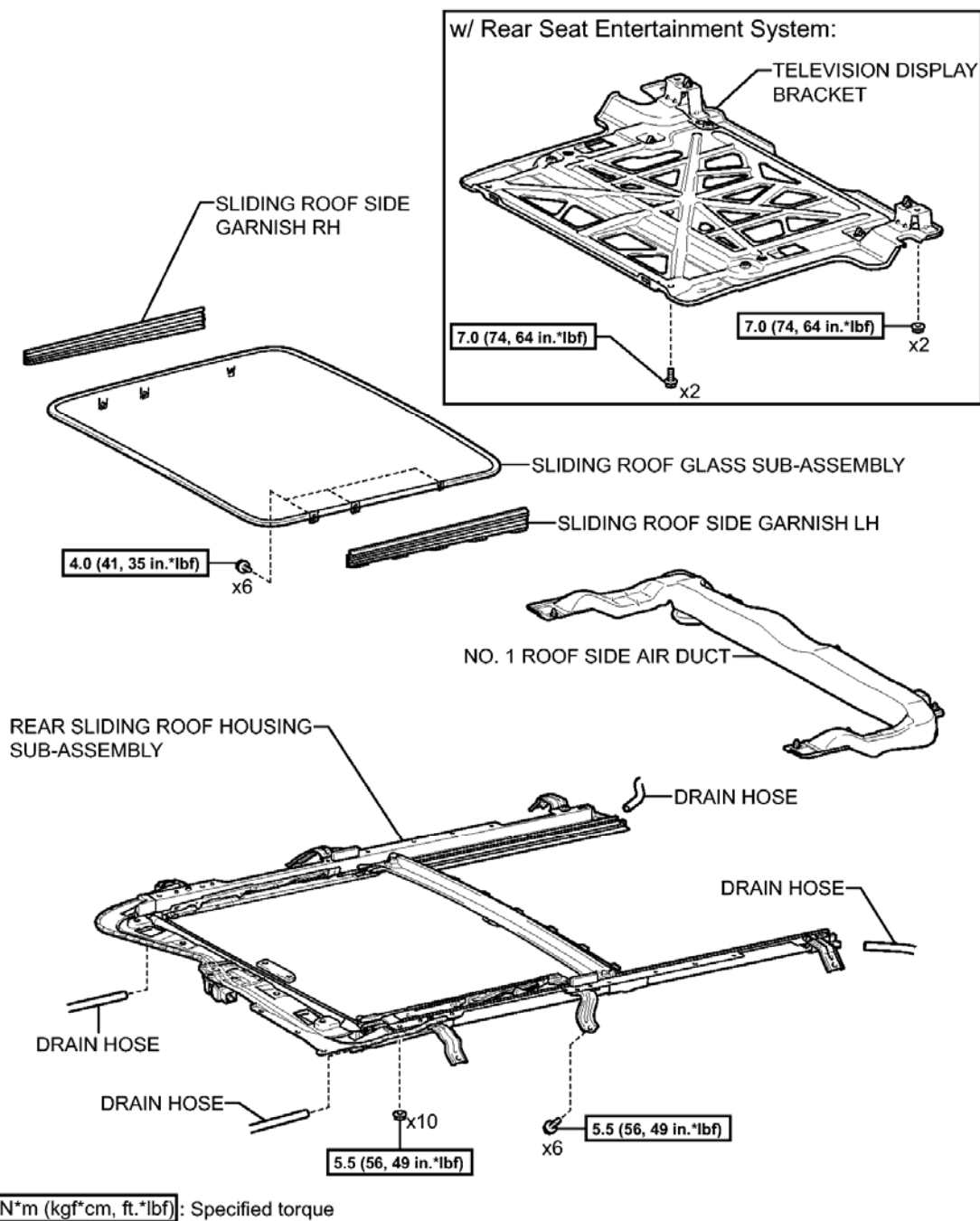
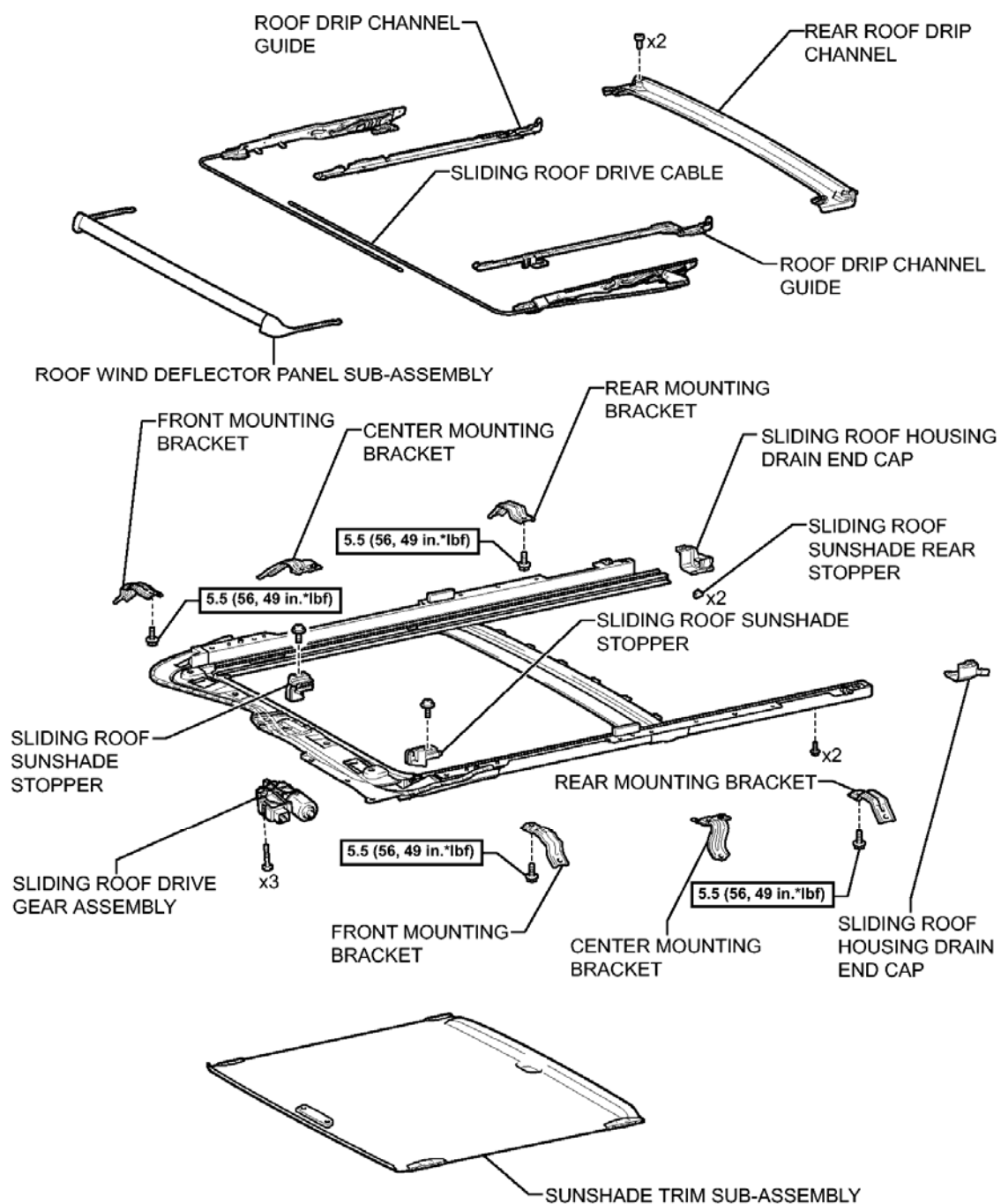


**Fig. 36: Rear Slide Roof Housing Replacement Components With Torque Specifications (1 Of 2)**  
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

ILLUSTRATION



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

T

**Fig. 37: Rear Slide Roof Housing Replacement Components With Torque Specifications (2 Of 2)**  
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

## REMOVAL

## REMOVAL

### HINT:

- Use the same procedure for both the RH and LH sides.
- The procedure described below is for the LH side.

#### 1. REMOVE TELEVISION DISPLAY BRACKET (w/ Rear Seat Entertainment System)

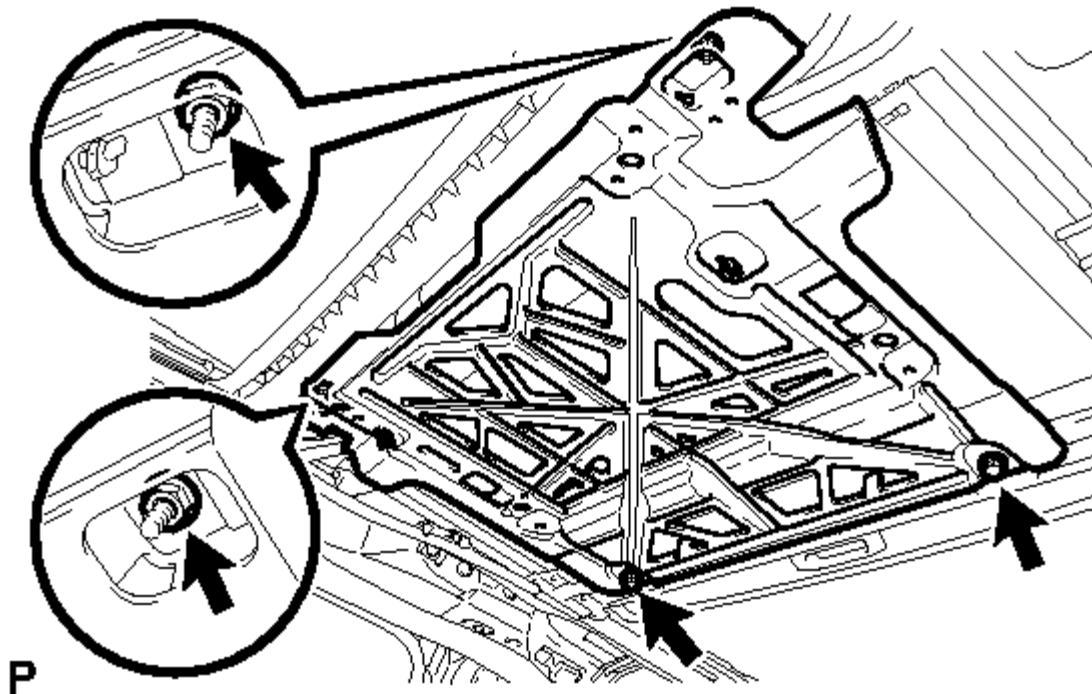


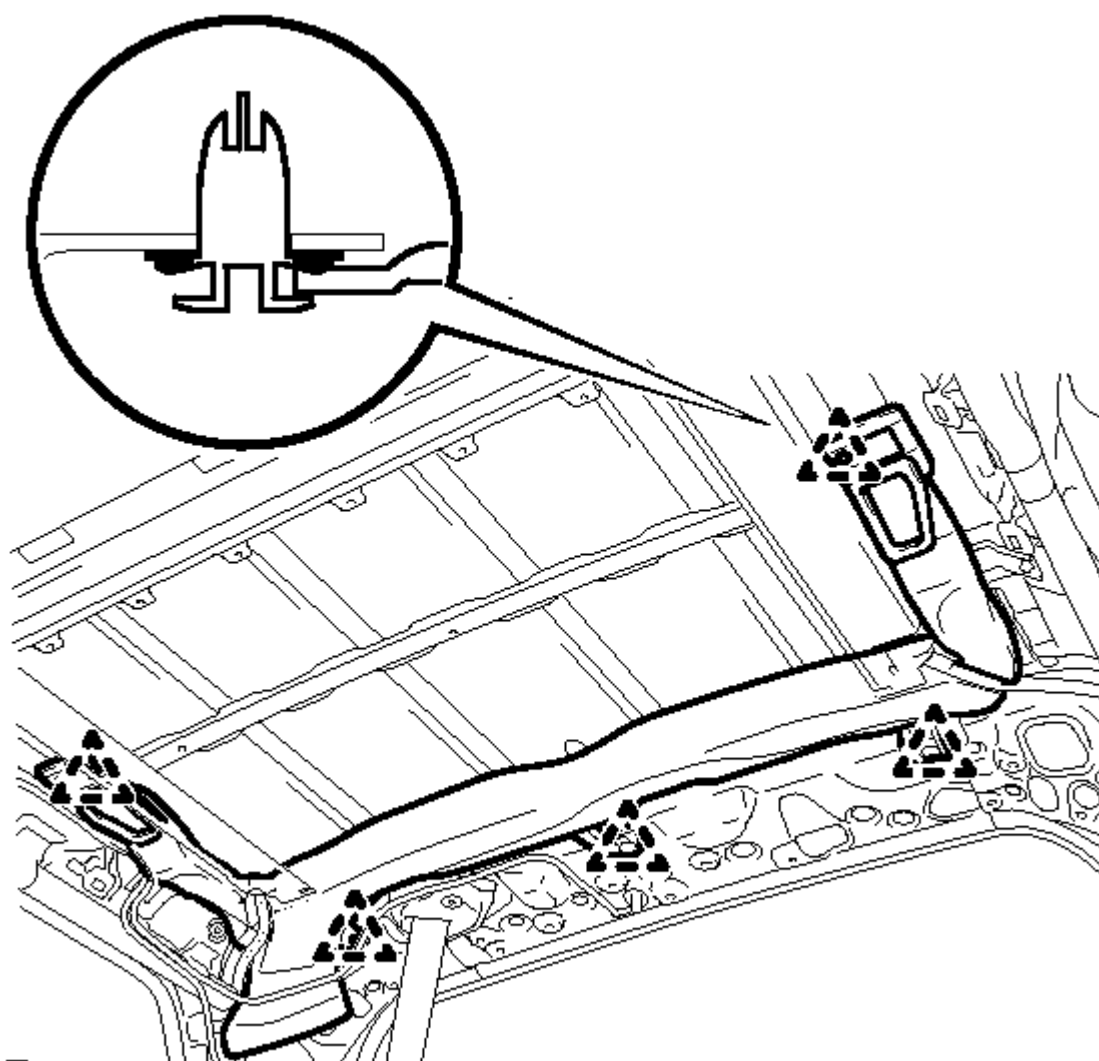
**Fig. 38: Identifying Television Display Bracket Fasteners (w/ Rear Seat Entertainment System)**  
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- a. Remove the 2 bolts, 2 nuts and the television display bracket.

#### 2. REMOVE ROOF HEADLINING ASSEMBLY

Refer to REMOVAL

#### 3. REMOVE NO. 1 ROOF SIDE AIR DUCT



**P**

**Fig. 39: Identifying No. 1 Roof Side Air Duct & Fasteners**  
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- a. Disengage the 5 clips and remove the No. 1 roof side air duct.
4. **REMOVE SLIDING ROOF SIDE GARNISH LH**

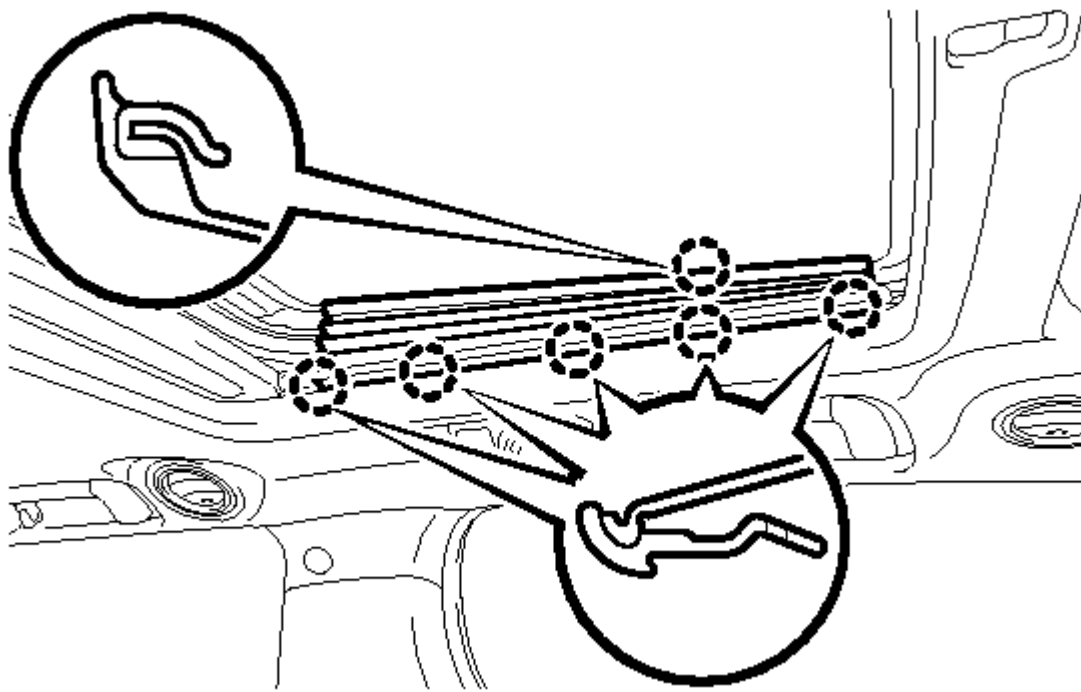


**Fig. 40: Remove Sliding Roof Side Garnish LH**  
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

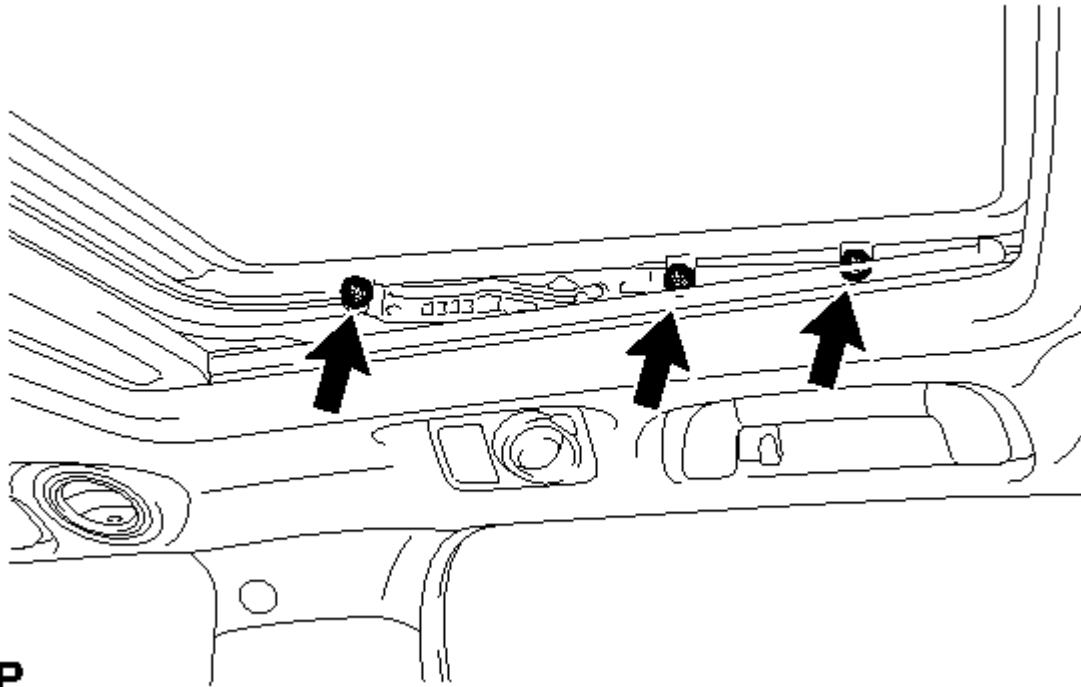
- a. Disengage the garnish top from the sliding roof glass sub-assembly.
- b. Disengage the 5 tabs of garnish bottom from the rear sliding roof housing sub-assembly.

**5. REMOVE SLIDING ROOF SIDE GARNISH RH**

**HINT:**

Use the same procedure as for the LH side.

**6. REMOVE SLIDING ROOF GLASS SUB-ASSEMBLY**



**P**

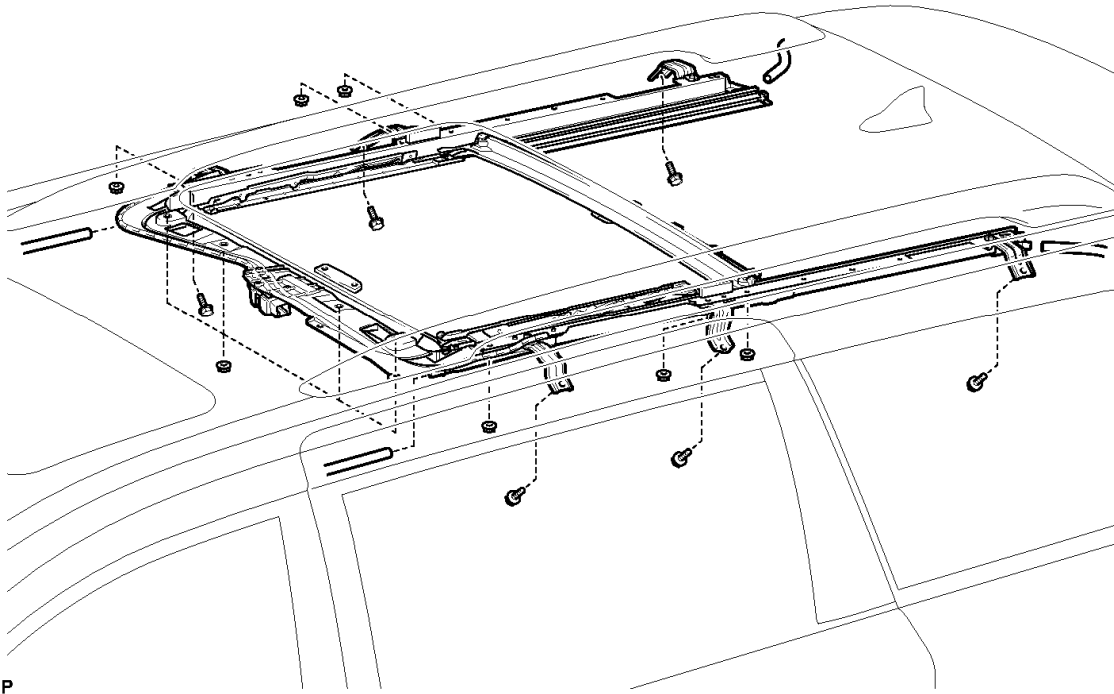
**Fig. 41: Identifying Sliding Roof Glass Sub-Assembly Fasteners**

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- a. Using a T25 "TORX" socket wrench, remove the 6 screws and sliding roof glass sub-assembly.

**NOTE:** To prevent the sliding roof glass and sliding roof drive gear from being displaced, fully close the sliding roof glass (sliding roof drive cable), and then remove the sliding roof glass.

## **7. REMOVE REAR SLIDING ROOF HOUSING SUB-ASSEMBLY**



P

**Fig. 42: Identifying Sliding Rear Roof Housing Sub-Assembly, Drain Hoses & Fasteners**  
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- a. Disconnect the 4 sliding roof drain hoses.
- b. Remove the 6 bolts and 10 nuts and sliding roof housing sub-assembly.

## **DISASSEMBLY**

## **DISASSEMBLY**

### **HINT:**

- Use the same procedure for both the RH and LH sides.
- The procedure described below is for the LH side.

### **1. REMOVE SLIDING ROOF DRIVE GEAR ASSEMBLY**

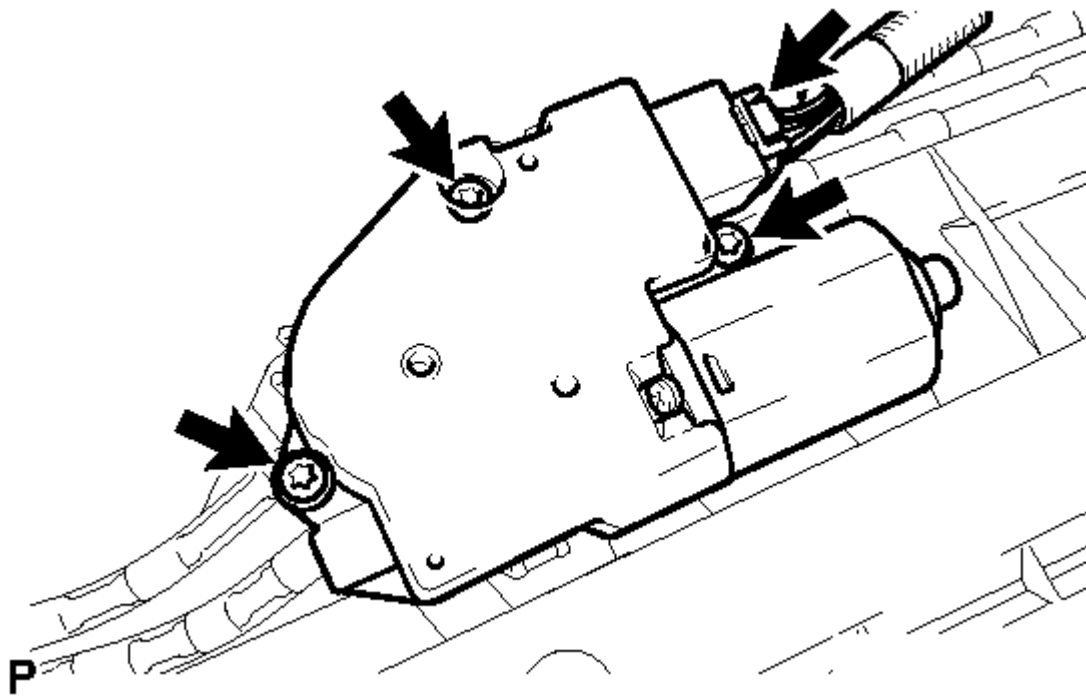
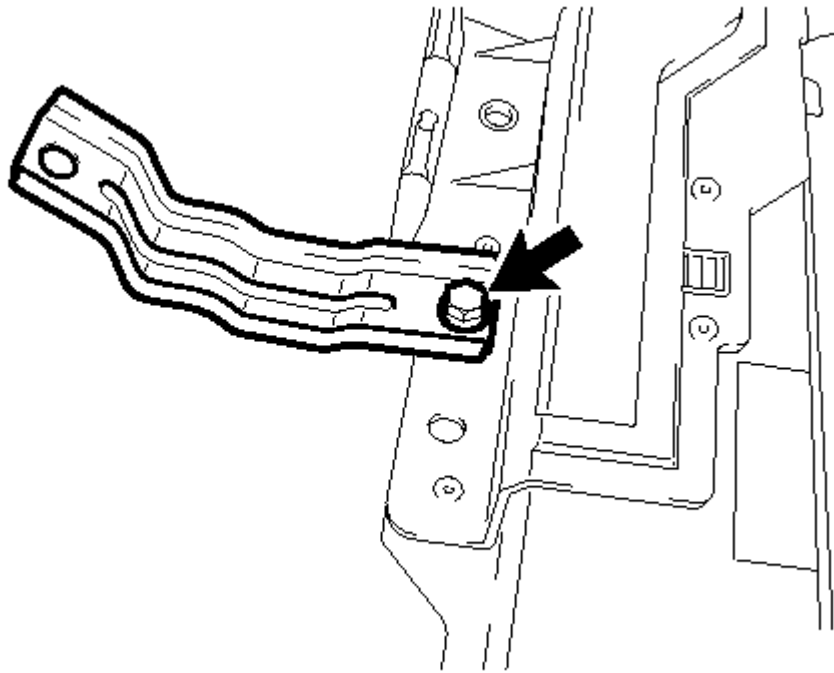


**Fig. 43: Remove/Install Sliding Roof Drive Gear Assembly, Connector & Fasteners**  
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- a. Disconnect the connector.
- b. Using a T25 "TORX" socket wrench, remove the 3 screws and sliding roof drive gear assembly.

**NOTE:** To prevent the sliding roof glass and sliding roof drive gear from being displaced, fully close the sliding roof glass (sliding roof drive cable), and then remove the sliding roof drive gear.

## 2. REMOVE FRONT MOUNTING BRACKET

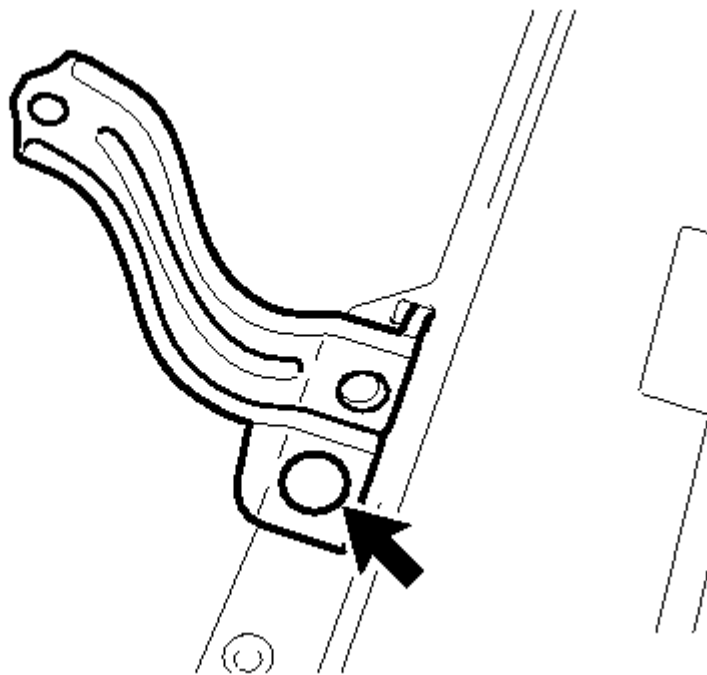


**P**

**Fig. 44: Remove/Install Front Mounting Bracket & Bolt**  
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- a. Remove the bolt and the front mounting bracket.

**3. REMOVE CENTER MOUNTING BRACKET**



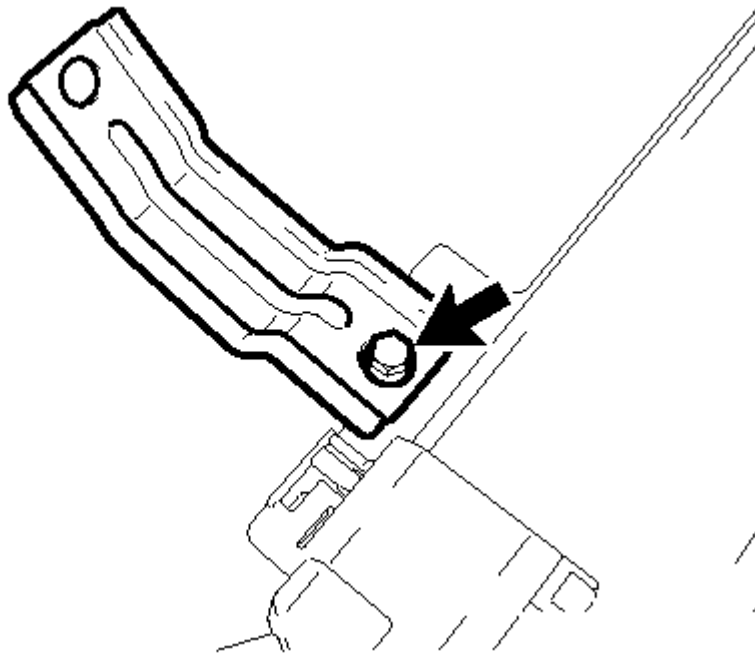
**P**

**Fig. 45: Remove/Install Center Mounting Bracket & Clip**

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- a. Remove the clip and the center mounting bracket.

**4. REMOVE REAR MOUNTING BRACKET**

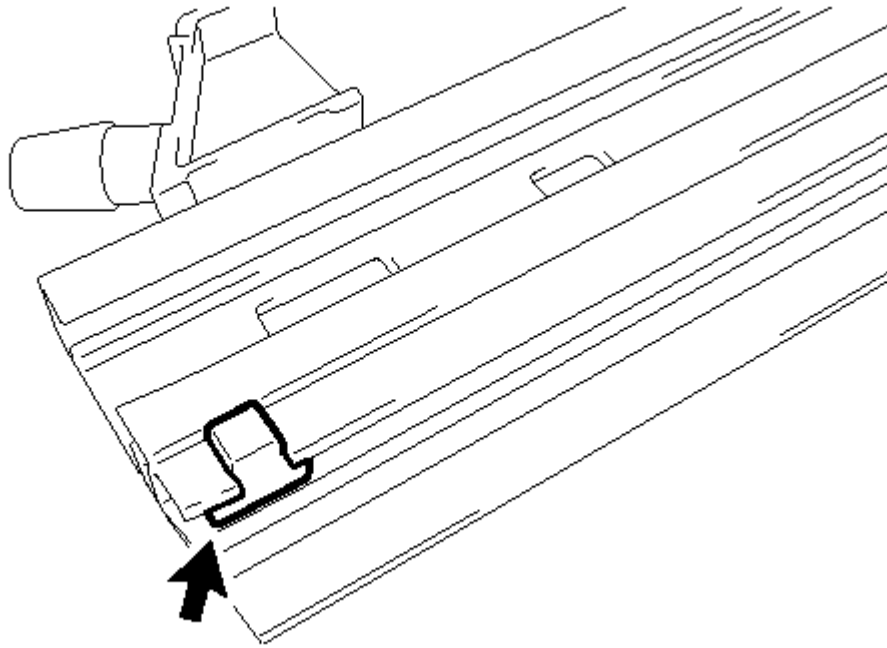


**P**

**Fig. 46: Remove/Install Rear Mounting Bracket & Bolt**  
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- a. Remove the bolt and the rear mounting bracket.

**5. REMOVE SLIDING ROOF SUNSHADE REAR STOPPER**

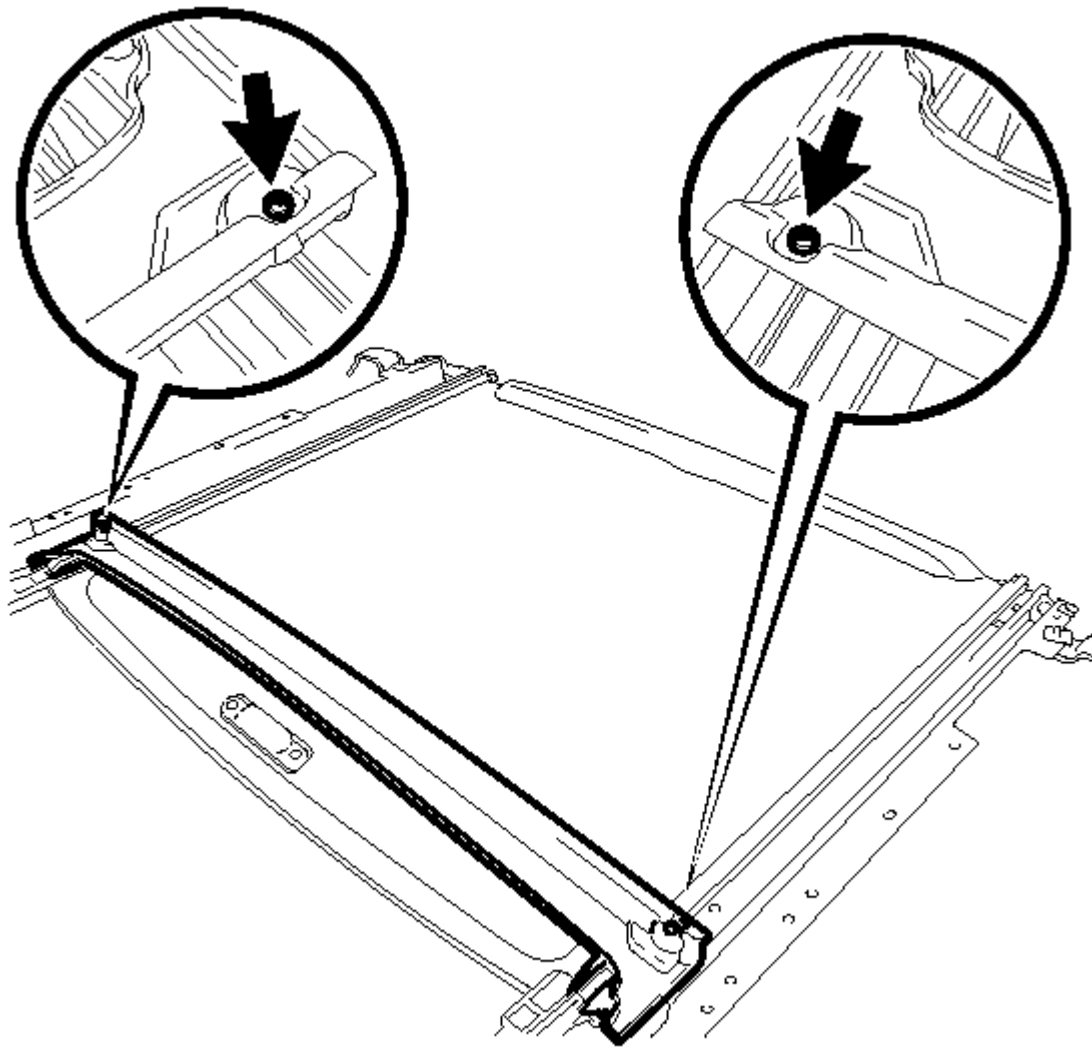


**T**

**Fig. 47: Remove/Install Sliding Roof Sunshade Rear Stopper**  
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- a. Remove the sliding roof sunshade rear stopper.

**6. REMOVE REAR ROOF DRIP CHANNEL**

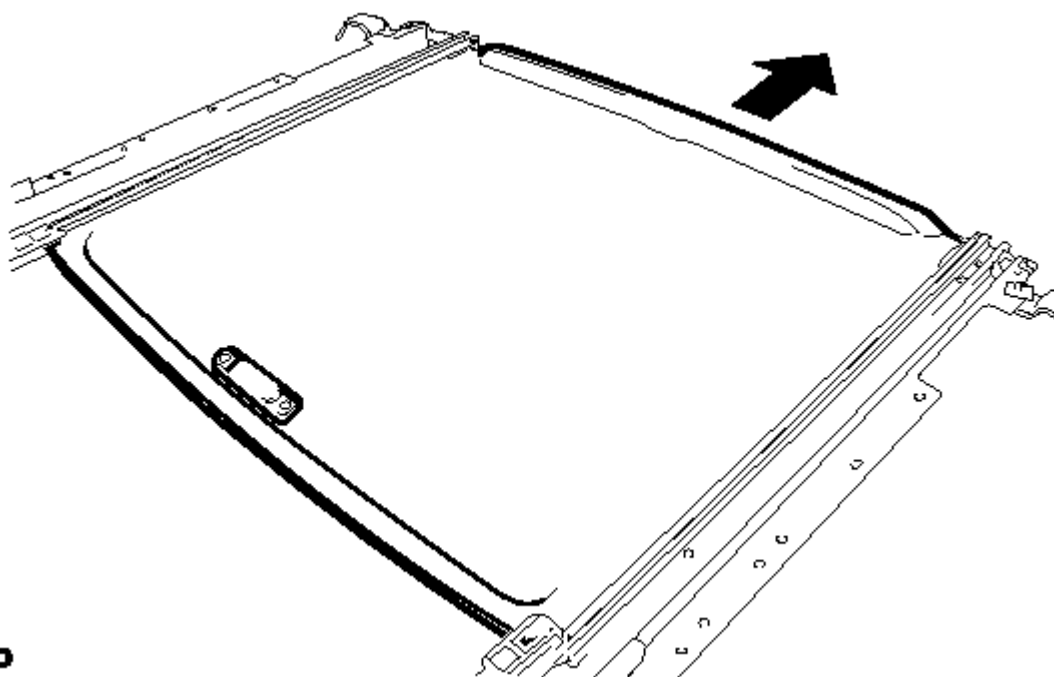


**P**

**Fig. 48: Remove/Install Rear Roof Drive Channel & Fasteners**  
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- a. Using a T10 "TORX" socket wrench, remove the 2 screws and rear roof drip channel.

**7. REMOVE SUNSHADE TRIM SUB-ASSEMBLY**



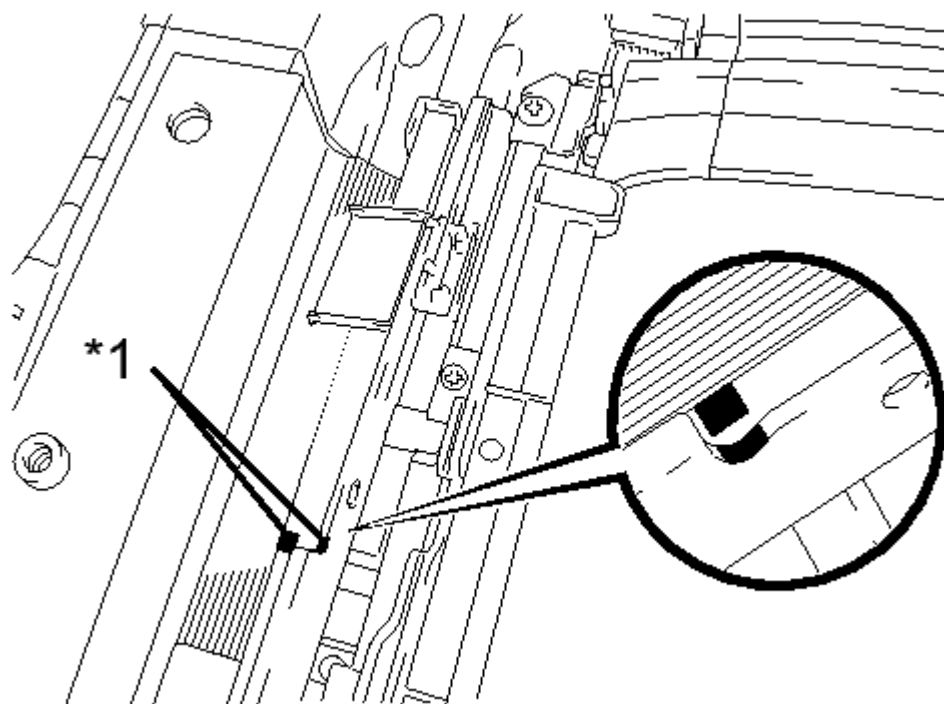
**P**

**Fig. 49: Removing Sunshade Trim Sub-Assembly**  
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- a. Slide and remove the sunshade trim sub-assembly.

#### **8. REMOVE SLIDING ROOF DRIVE CABLE**

- a. Put matchmarks on the sliding roof drive cable and the sliding roof housing sub-assembly.



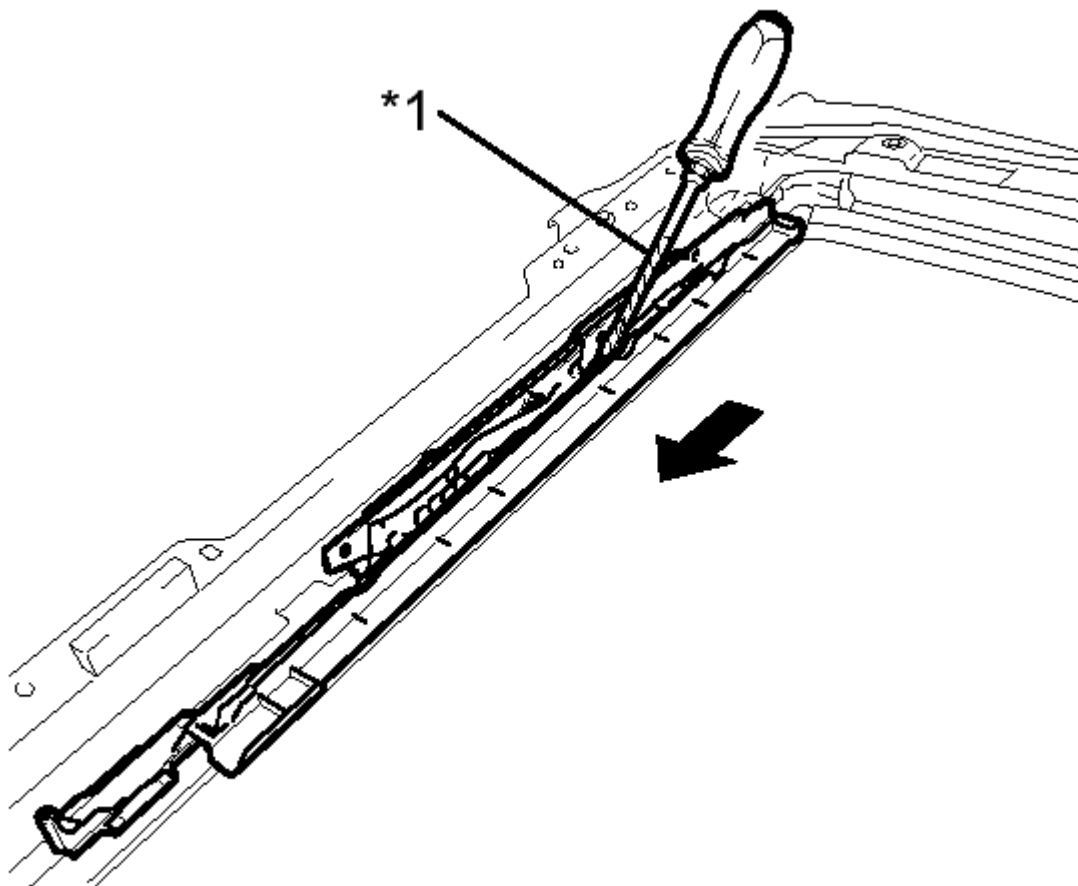
**P**

**Fig. 50: Identifying Drive Cable & Sliding Roof Housing Matchmarks**  
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

**TEXT IN ILLUSTRATION**

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

- b. Using a screwdriver with its tip wrapped in protective tape, slide the sliding roof drive cable in the direction indicated by the arrow in the illustration to remove it.



**P**

**Fig. 51: Removing Sliding Roof Drive Cable With Screwdriver**  
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

**TEXT IN ILLUSTRATION**

|    |                    |
|----|--------------------|
| *1 | Protective<br>Tape |
|----|--------------------|

**9. REMOVE SLIDING ROOF SUNSHADE STOPPER**

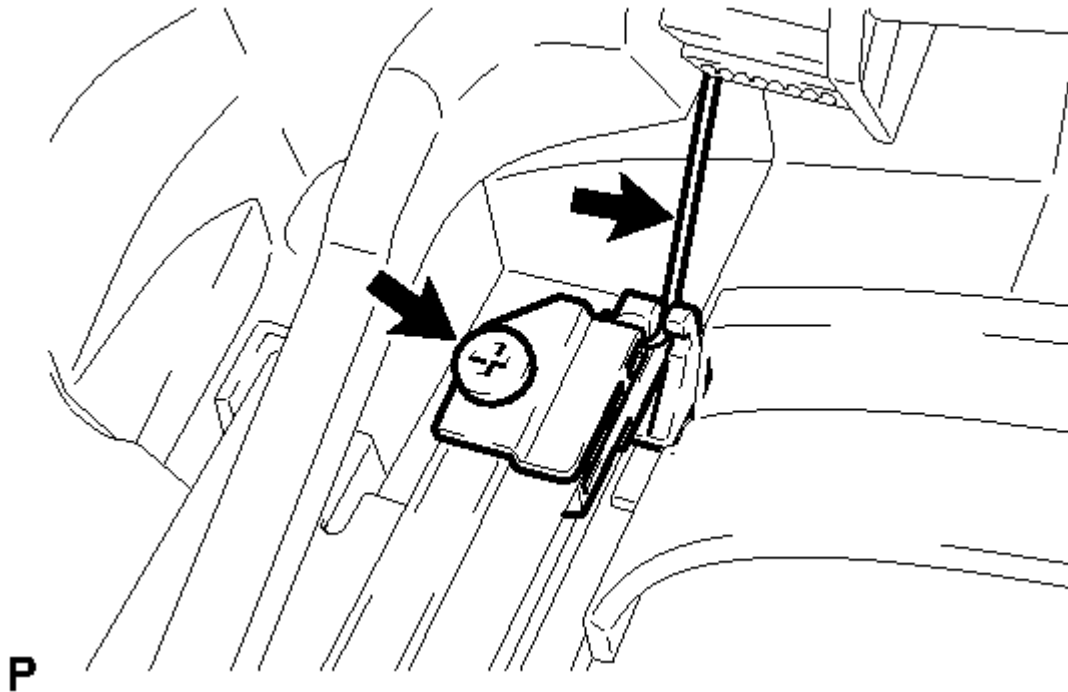
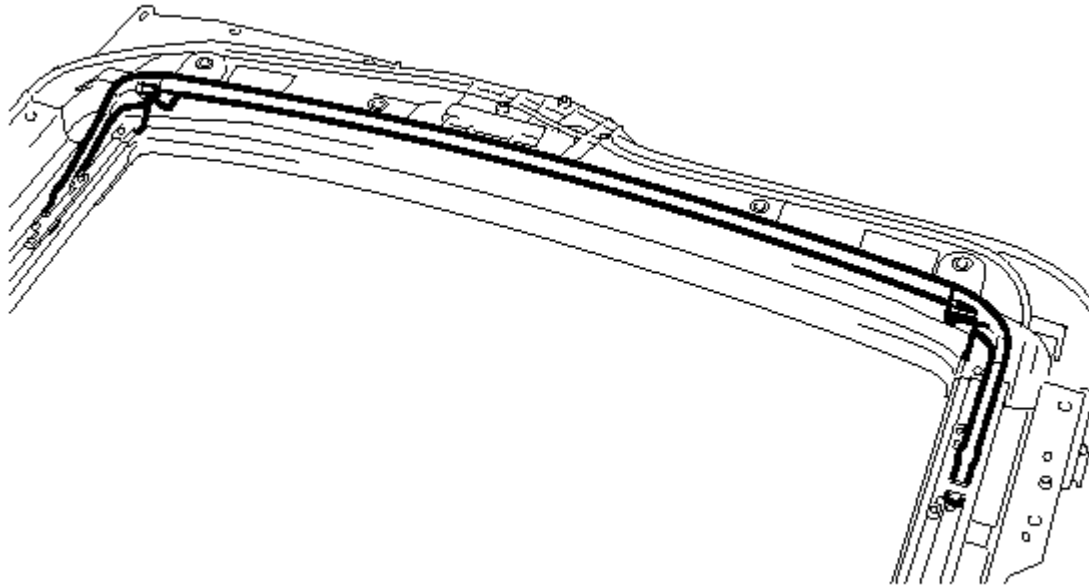


**Fig. 52: Remove/Install Sliding Roof Sunshade Stopper, Spring & Fastener**  
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- a. Remove the screw, spring and sliding roof sunshade stopper.

**10. REMOVE ROOF WIND DEFLECTOR PANEL SUB-ASSEMBLY**

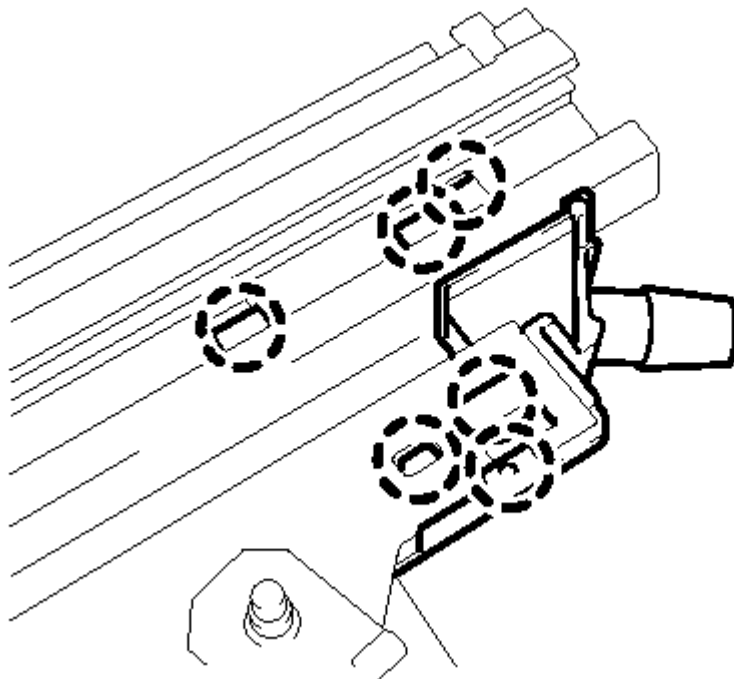


**P**

**Fig. 53: Identifying Roof Wind Deflector Panel Sub-Assembly**  
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- a. Remove the roof wind deflector panel sub-assembly.

**11. REMOVE SLIDING ROOF HOUSING DRAIN END CAP**



**P**

**Fig. 54: Identifying Sliding Roof Housing Drain End Cap & Claws**

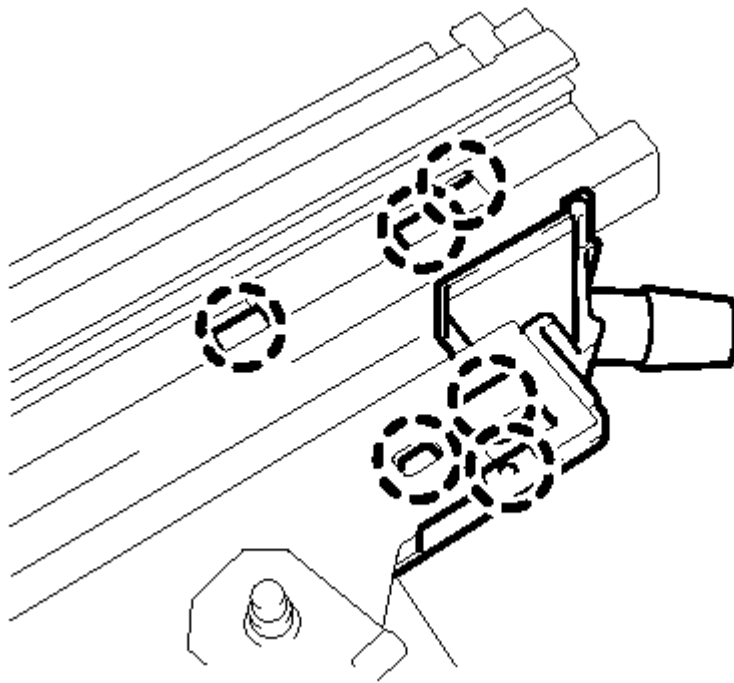
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- a. Disengage the 6 claws and the sliding roof housing drain end cap.

## REASSEMBLY

### REASSEMBLY

#### 1. INSTALL SLIDING ROOF HOUSING DRAIN END CAP

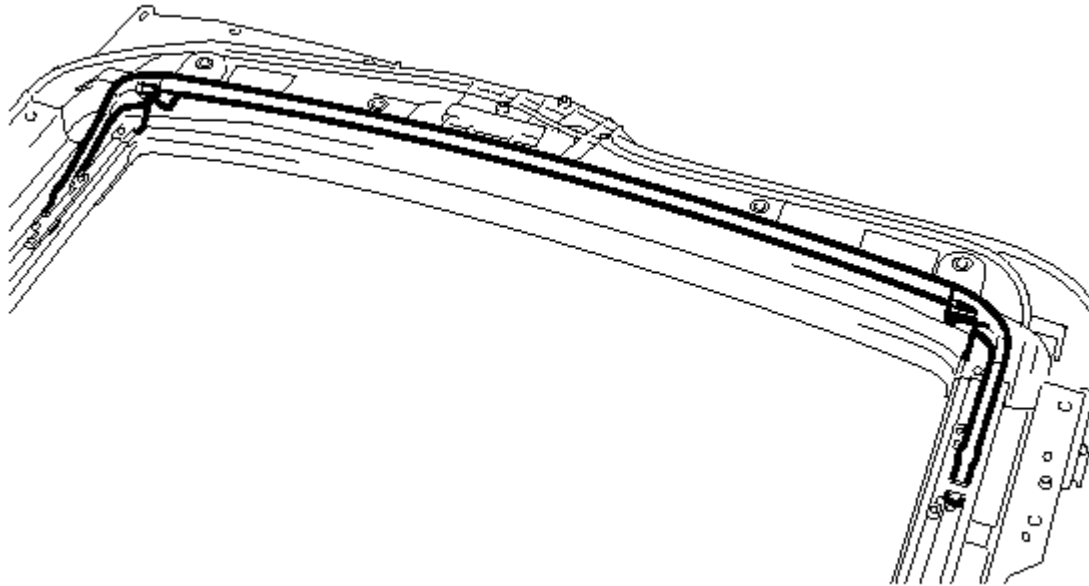


**P**

**Fig. 55: Identifying Sliding Rood Housing Drain End Cap & Claws**  
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- a. Apply butyl tape to the installation part of the sliding roof housing drain end cap.
- b. Engage the 6 claws and install the sliding roof housing drain end cap.

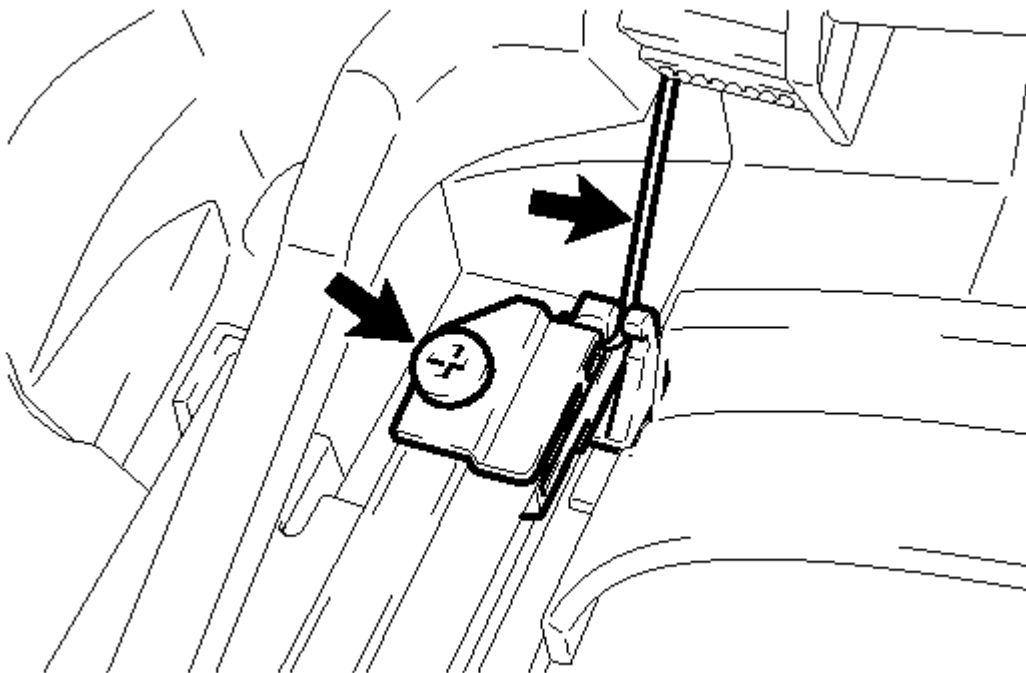
#### 2. INSTALL ROOF WIND DEFLECTOR PANEL SUB-ASSEMBLY



**P**

**Fig. 56: Identifying Roof Wind Deflector Panel Sub-Assembly**  
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- a. Install the roof wind deflector panel sub-assembly.
3. **INSTALL SLIDING ROOF SUNSHADE STOPPER**



**P**

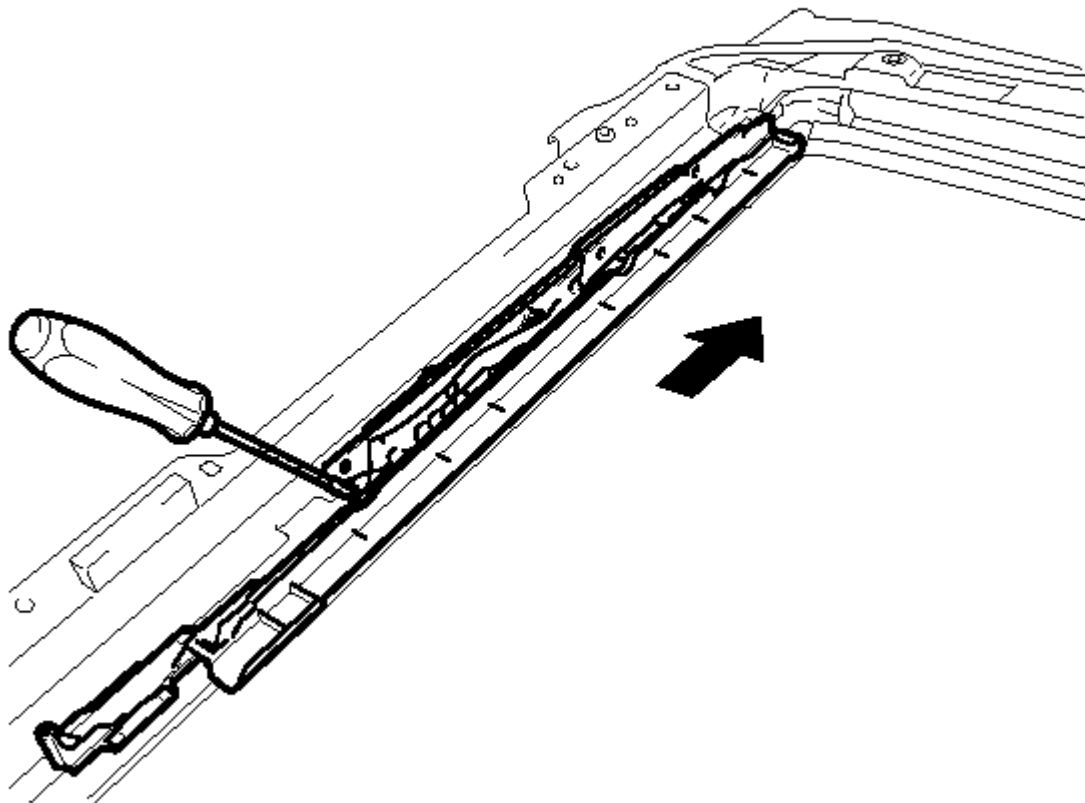
**Fig. 57: Remove/Install Sliding Roof Sunshade Stopper, Spring & Fastener**

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- a. Apply butyl tape to the installation part of the sliding roof sunshade stopper.
- b. Install the sliding roof sunshade stopper with the screw and spring.

**4. INSTALL SLIDING ROOF DRIVE CABLE**

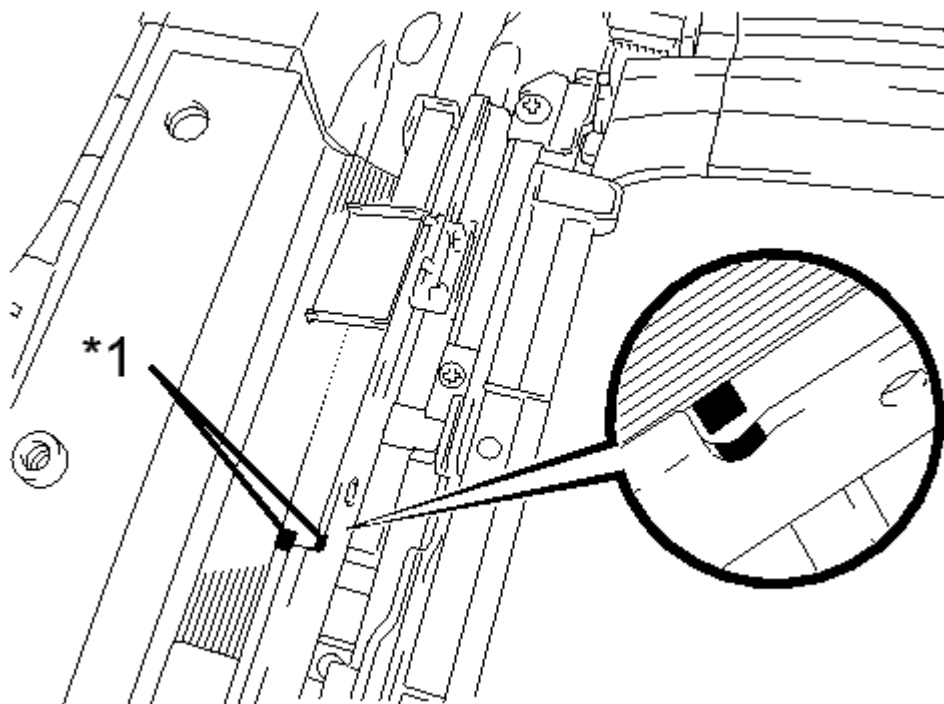
- a. Install the roof drip channel guide onto the sliding roof drive cable sub-assembly.
- b. Using a screwdriver with its tip wrapped in protective tape, slide the sliding roof drive cable in the direction indicated by the arrow in the illustration to install it.



**P**

**Fig. 58: Installing Sliding Roof Drive Cable With Screwdriver**  
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

**5. ADJUST FULLY CLOSED POSITION**



**P**

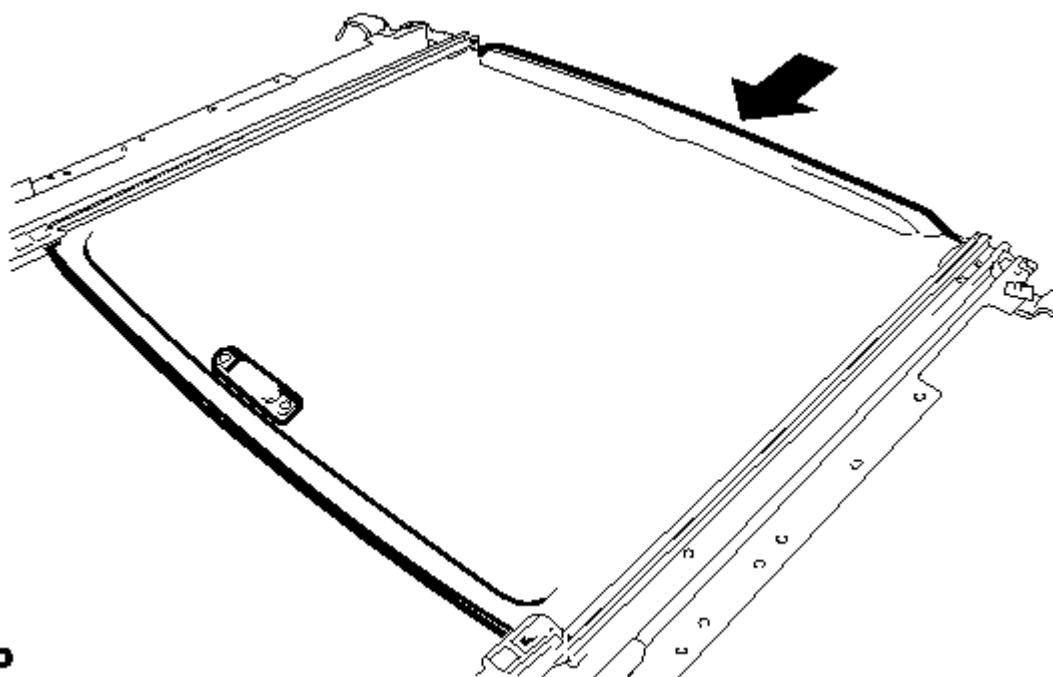
**Fig. 59: Identifying Drive Cable & Sliding Roof Housing Matchmarks**

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- a. Using a screwdriver with its tip wrapped in protective tape, align the matchmarks by sliding the sliding roof drive cable.

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

## 6. INSTALL SUNSHADE TRIM SUB-ASSEMBLY

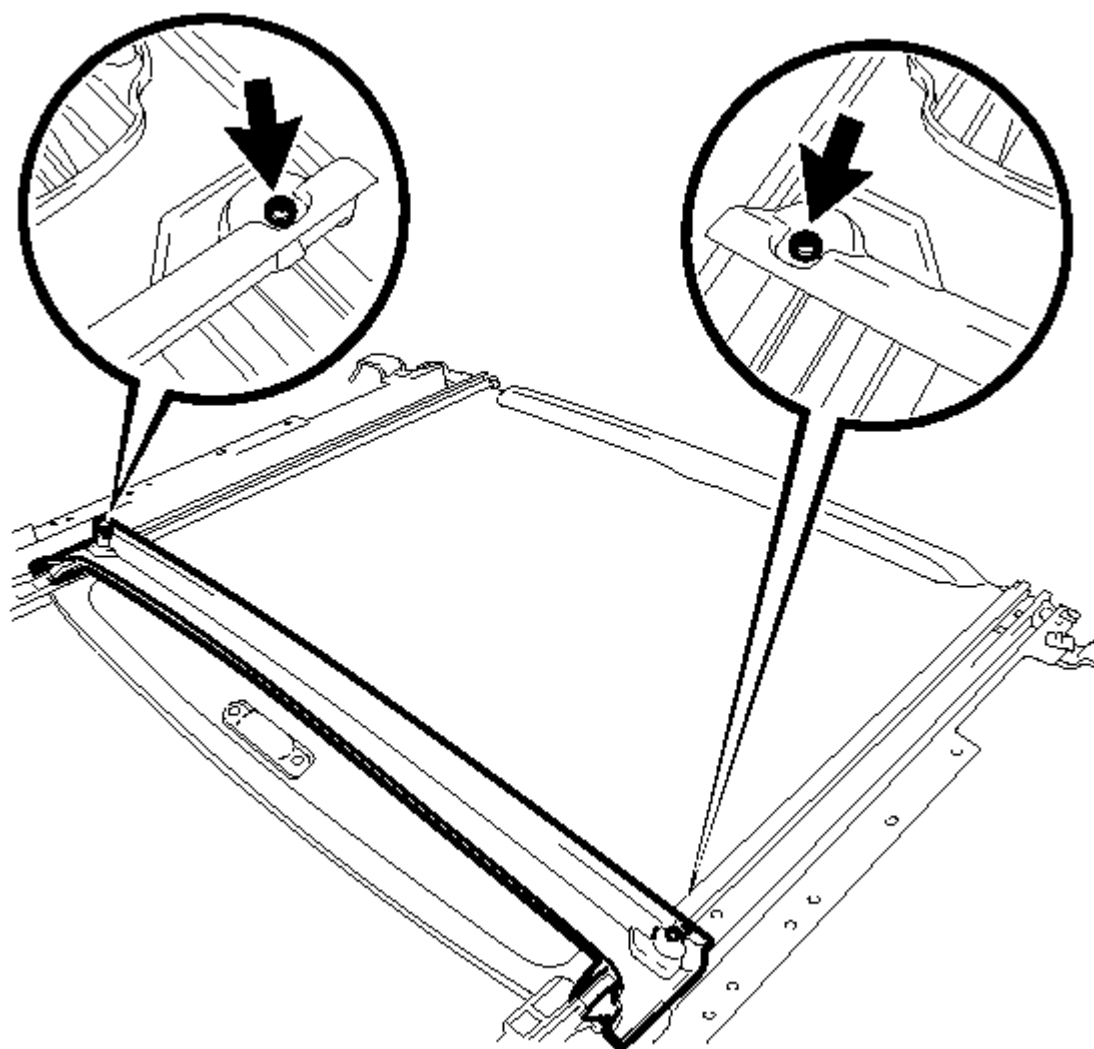


**P**

**Fig. 60: Installing Sunshade Trim Sub-Assembly**  
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- a. Insert the sunshade trim sub-assembly into the sliding roof housing sub-assembly.

**7. INSTALL REAR ROOF DRIP CHANNEL**



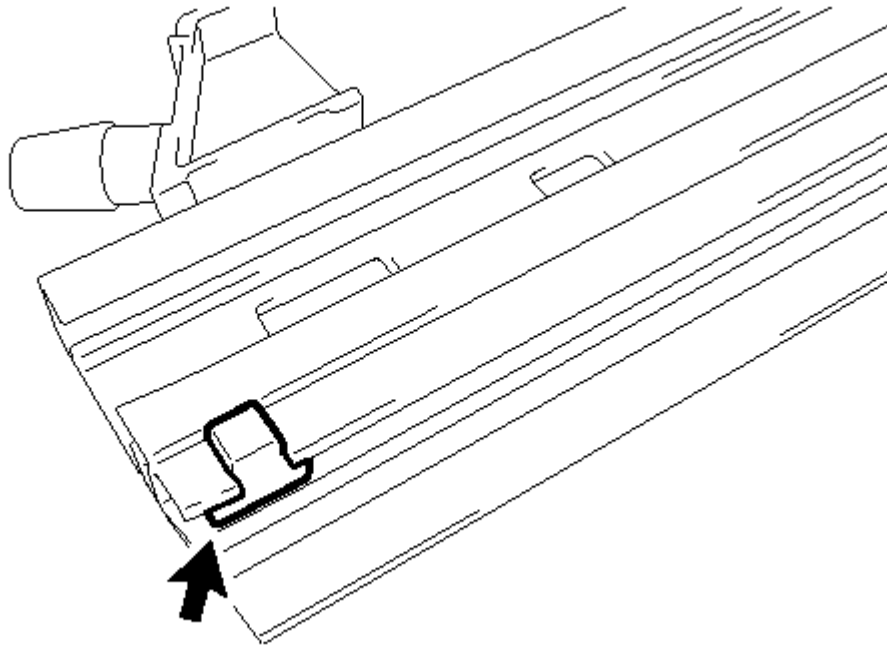
**P**

**Fig. 61: Remove/Install Rear Roof Drive Channel & Fasteners**

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- a. Using a T10 "TORX" socket wrench, install the rear roof drip channel with the 2 screws.

**8. INSTALL SLIDING ROOF SUNSHADE REAR STOPPER**

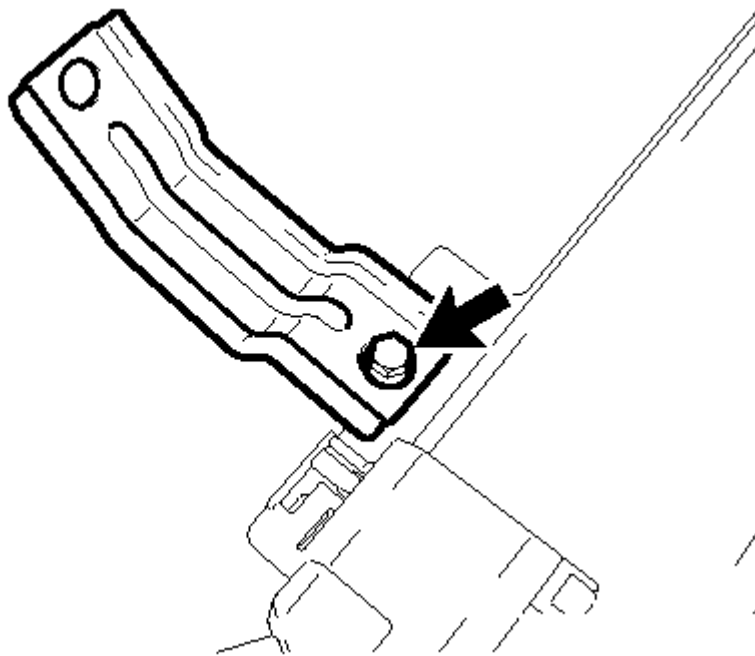


**T**

**Fig. 62: Remove/Install Sliding Roof Sunshade Rear Stopper**  
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- a. Install the sliding roof sunshade rear stopper.

**9. INSTALL REAR MOUNTING BRACKET**



**P**

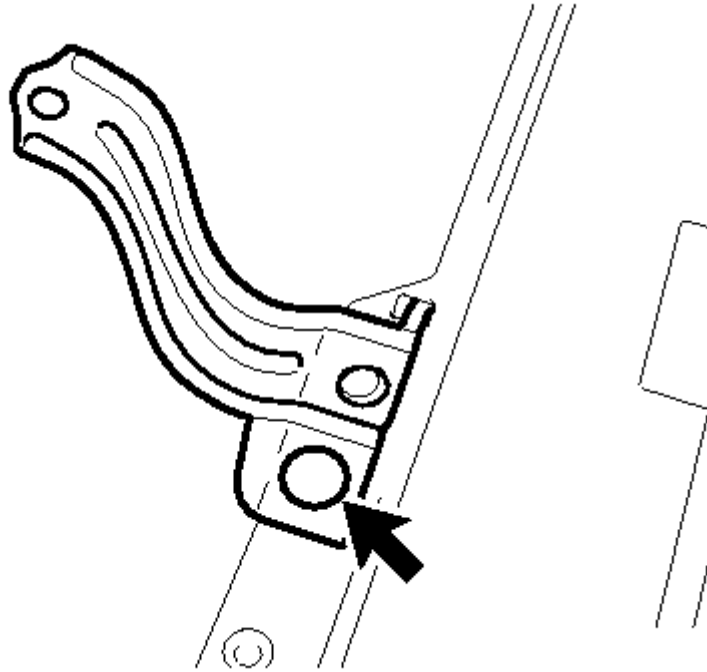
**Fig. 63: Remove/Install Rear Mounting Bracket & Bolt**

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- a. Install the rear mounting bracket with the bolt.

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

#### 10. INSTALL CENTER MOUNTING BRACKET

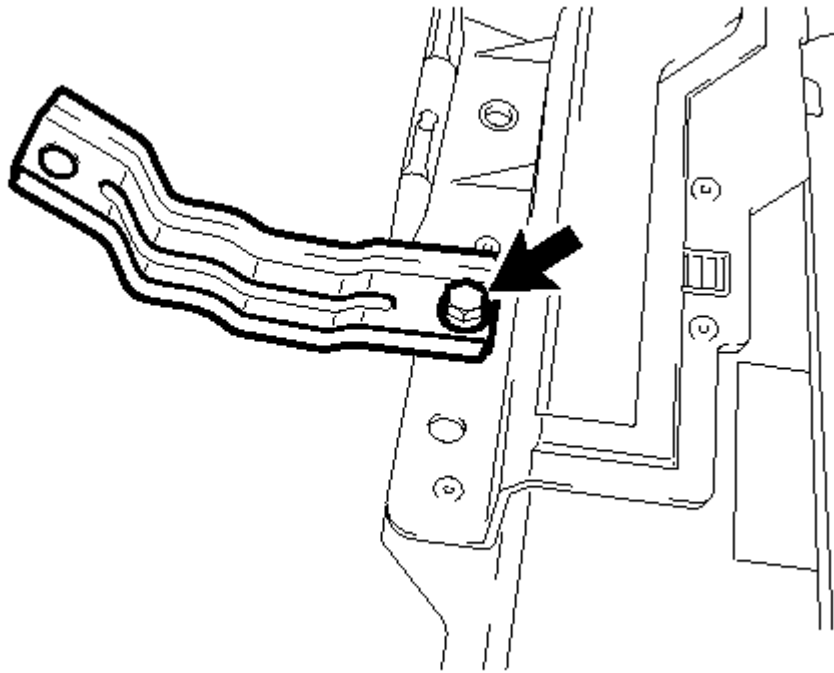


**P**

**Fig. 64: Remove/Install Center Mounting Bracket & Clip**  
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- a. Install the center mounting bracket with the clip.

#### 11. INSTALL FRONT MOUNTING BRACKET



**P**

**Fig. 65: Remove/Install Front Mounting Bracket & Bolt**  
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- a. Install the front mounting bracket with the bolt.

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

## **12. INSTALL SLIDING ROOF DRIVE GEAR ASSEMBLY**

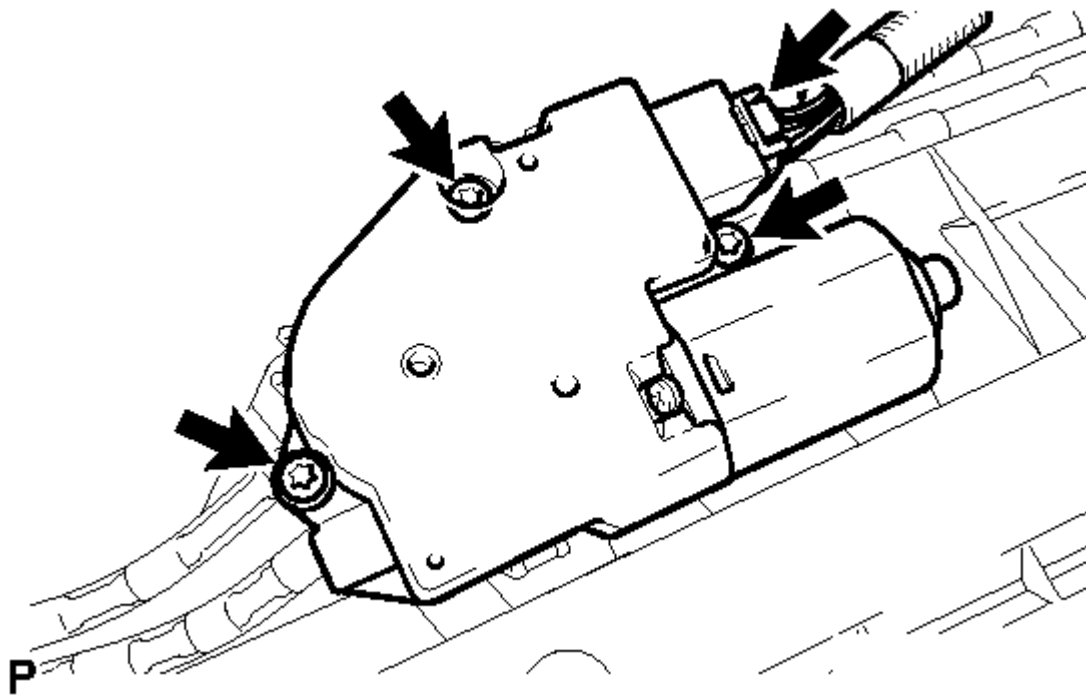


**Fig. 66: Remove/Install Sliding Roof Drive Gear Assembly, Connector & Fasteners**  
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- a. Using a T25 "TORX" socket wrench, install the sliding roof drive gear assembly with the 3 screws.
- b. Connect the connector.

## INSTALLATION

### INSTALLATION

#### 1. INSTALL REAR SLIDING ROOF HOUSING SUB-ASSEMBLY

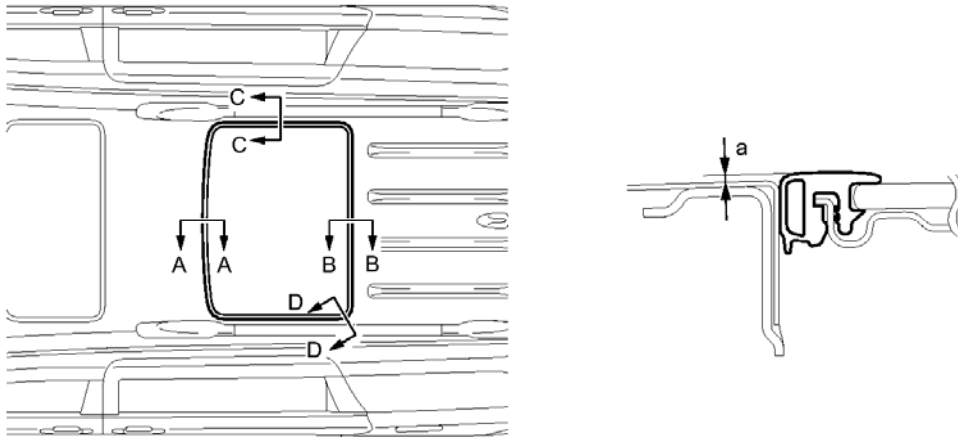
- a. Install the rear sliding roof housing sub-assembly with the 6 bolts and 10 nuts.

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

- b. Connect the 4 drain hoses.

#### 2. INSTALL SLIDING ROOF GLASS SUB-ASSEMBLY

- a. Using a T25 "TORX" socket wrench, temporarily install the sliding roof glass sub-assembly with the 6 screws.
- b. Perform a level check.



P

**Fig. 67: Checking Sliding Roof Glass Sub-Assembly Clearance**  
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

1. Check the difference in level for "a" between the roof panel and the upper surface of the weatherstrip when the sliding roof glass is fully closed.

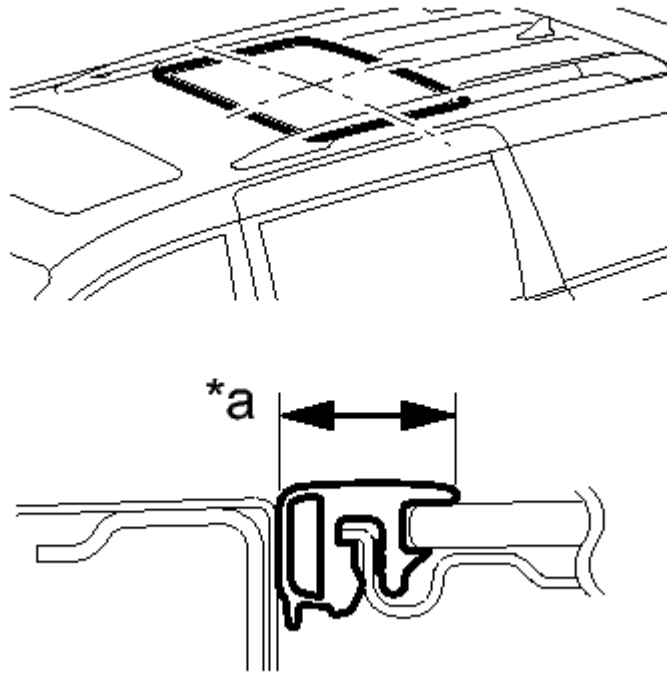
Standard

| Area     | Measurement                                                      |
|----------|------------------------------------------------------------------|
| A -<br>A | 0 + 1.0 mm (0<br>+ 0.0394 in.)<br>0 - 2.0 mm (0<br>- 0.0787 in.) |
| B -<br>B | 0 + 2.0 mm (0<br>+ 0.0787 in.)<br>0 - 1.0 mm (0<br>- 0.0394 in.) |
| C -<br>C | 0 + 1.5 mm (0<br>+ 0.0591 in.)<br>0 - 1.5 mm (0<br>- 0.0591 in.) |
| D -<br>D | 0 + 1.5 mm (0<br>+ 0.0591 in.)<br>0 - 1.0 mm (0<br>- 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.

- c. Perform a gap check.



**P**

**Fig. 68: Performing Sliding Roof Glass Sub-Assembly Gap Check**  
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

**TEXT IN ILLUSTRATION**

\*a Even

1. Check the gap between the roof panel and roof glass.

**NOTE: The gap must be even all around.**

- d. After adjusting the sliding roof glass sub-assembly, using a T25 "TORX" socket wrench, install the sliding roof glass sub-assembly with the 6 screws.

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

**3. CHECK FOR WATER LEAK**

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

**4. INSTALL SLIDING ROOF SIDE GARNISH LH**

- a. Engage the 5 tabs of garnish bottom edge to the rear sliding roof housing sub-assembly.
- b. Engage the garnish top edge to the sliding roof glass sub-assembly.

**5. INSTALL SLIDING ROOF SIDE GARNISH RH**

**HINT:**

Use the same procedure as for the LH side.

**6. INSTALL NO. 1 ROOF SIDE AIR DUCT**

- a. Engage the 5 clips and install the No. 1 roof side air duct.

**7. INSTALL TELEVISION DISPLAY BRACKET (w/ Rear Seat Entertainment System)**

- a. Install the television display bracket with the 2 bolts and 2 nuts.

**Torque: 7.0 N\*m (74 kgf\*cm, 64 in.\*lbf)**

**8. INSTALL ROOF HEADLINING ASSEMBLY**

Refer to **INSTALLATION**

**9. RESET SLIDING ROOF DRIVE GEAR ASSEMBLY**

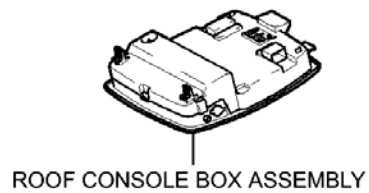
Refer to **INITIALIZATION**

**10. INSPECT SLIDING ROOF SYSTEM**

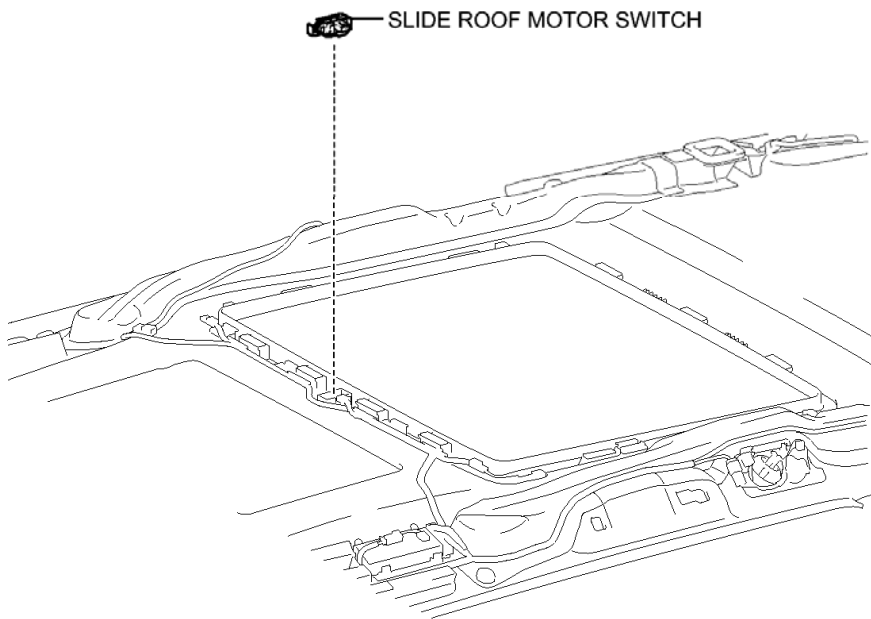
Refer to **OPERATION CHECK**

**SLIDING ROOF SWITCH ASSEMBLY****COMPONENTS****ILLUSTRATION**

for Front Side:



for Rear Side:



P

**Fig. 69: Sliding Roof Switch Assembly Replacement Components**  
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

## REMOVAL

### REMOVAL

1. REMOVE ROOF CONSOLE BOX ASSEMBLY

- a. Disengage the 2 claws and 2 clips.

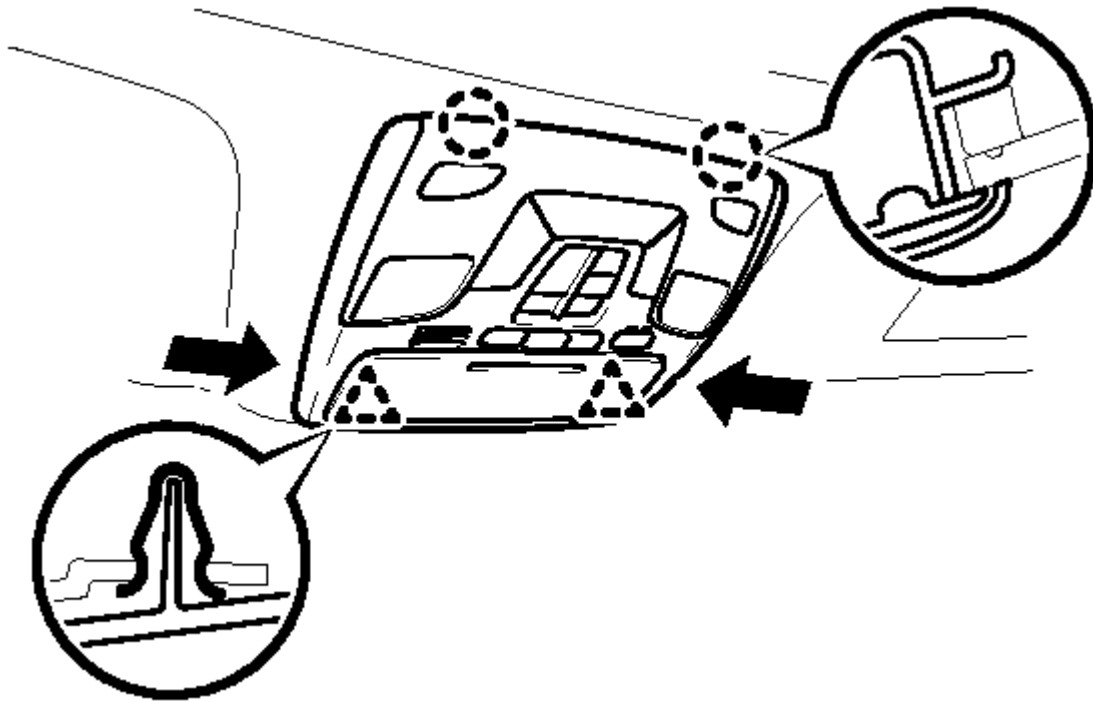


**Fig. 70: Identifying Roof Console Box Assembly & Fasteners**  
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

**NOTE:**

- Pull down on the sides of the console box, in the locations indicated by the arrows in the illustration, to disengage the clips.
- Do not pull down on the center portion of the console box. Pulling down on the center portion may cause the console box assembly to distort or crack.

- b. Disconnect the connectors and remove the roof console box.

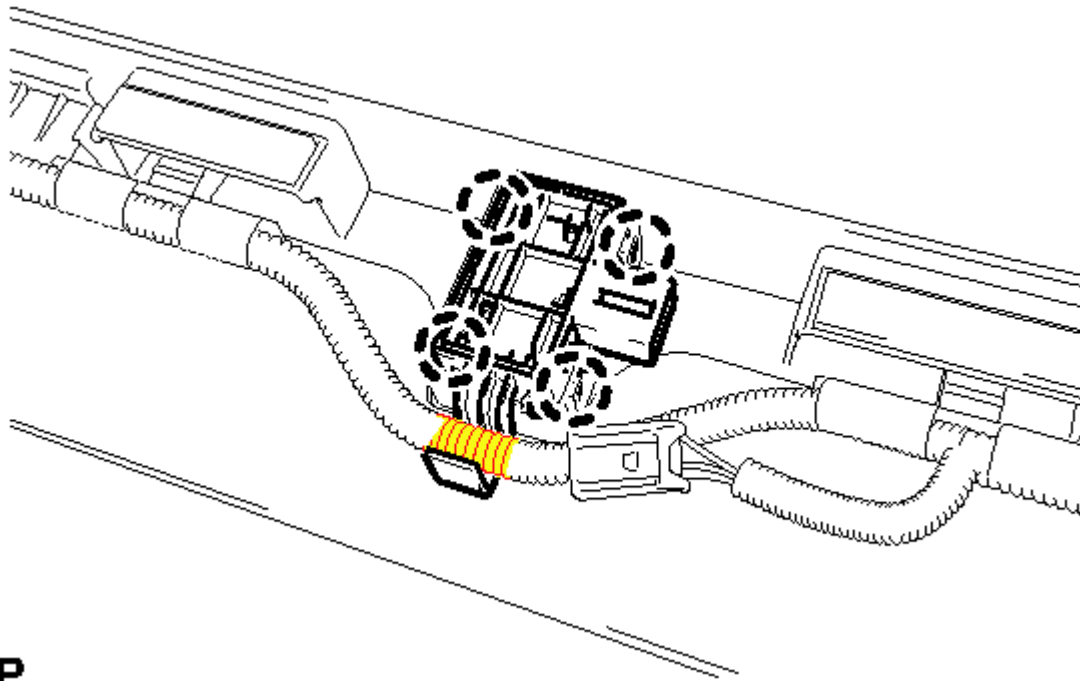
**2. SEPARATE ROOF HEADLINING ASSEMBLY**

Refer to **REMOVAL**

**HINT:**

- Slightly lower the center section of the roof headlining so that the slide roof motor switch can be removed.
- It is not necessary to completely remove the roof headlining assembly.

**3. REMOVE SLIDE ROOF MOTOR SWITCH**



**P**

**Fig. 71: Identifying Slide Roof Motor Switch & Claws**  
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

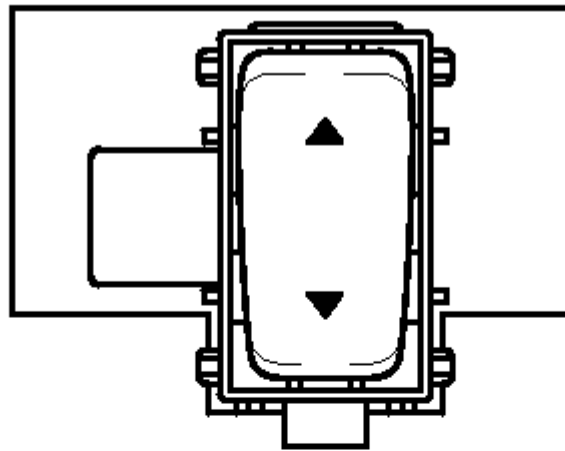
- a. Disengage the 4 claws and remove the slide roof motor switch.

## **INSPECTION**

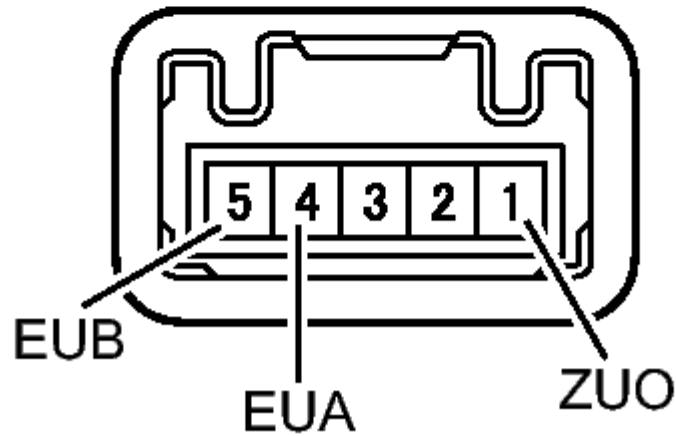
### **INSPECTION**

#### **1. INSPECT SLIDE ROOF MOTOR SWITCH**

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



\*a



**P**

**Fig. 72: Measuring Slide Roof Motor Switch Resistance**  
**Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.**

Standard Resistance

| Tester Connection                | Switch Condition                  | Specified Condition |
|----------------------------------|-----------------------------------|---------------------|
| 1 (ZUO) - 4 (EUA)                | Rear sliding roof switch is CLOSE | Below 1 ohms        |
| 1 (ZUO) - 4 (EUA)<br>1 (ZUO) - 5 | Rear sliding roof switch is       | 10 kohms or higher  |

|                   |                                  |              |
|-------------------|----------------------------------|--------------|
| (EUB)             | OFF                              |              |
| 1 (ZUO) - 5 (EUB) | Rear sliding roof switch is OPEN | Below 1 ohms |

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

#### TEXT IN ILLUSTRATION

|    |                                                               |
|----|---------------------------------------------------------------|
| *a | Component without harness connected (Slide Roof Motor Switch) |
|----|---------------------------------------------------------------|

### INSTALLATION

#### INSTALLATION

##### 1. INSTALL ROOF CONSOLE BOX ASSEMBLY

- a. Connect the connectors.
- b. Engage the 2 claws and 2 clips and install the roof console box.

##### 2. INSTALL SLIDE ROOF MOTOR SWITCH

- a. Engage the 4 claws and install the slide roof motor switch.

##### 3. INSTALL ROOF HEADLINING ASSEMBLY

Refer to INSTALLATION