

## Power Roof (for some models)

### Lifter

Index .....	20-115
Lifter Removal .....	20-116
Lifter Device Motor Removal .....	20-118
Lifter Device Replacement .....	20-119
Lifter Guide Frame	
Removal .....	20-122
Disassembly .....	20-125
Bearing Box Adjustment .....	20-126
Reassembly .....	20-127
Lifter Guide Rail/Lifter Frame	
Replacement .....	20-128
Vertical Alignment Check .....	20-131
Lifting Drag Check .....	20-132
Lifter Cover .....	20-137
Manual Operating Cables (Emergency) .....	20-134
Roof	
Index .....	20-138
Panel/Trims .....	20-139
Roof-Side Weatherstrip/ Retainer .....	20-140
Roof-Side Lock .....	20-142
Roof-Side Frame/Pilot Shaft Lock Assembly .....	20-143
Roof (Roof-Side Frame) and Lock Catcher Adjustment .....	20-145
Roof Center Lock/Roof Lock Cables .....	20-148
Roof Lock Cables Adjustment .....	20-150
Lock Catcher	
Replacement .....	20-151
Adjustment .....	20-152
Roof Removal/Installation .....	20-154

### Roof Slider

Index	
Roof Pilot/Drive Unit .....	20-96
Slider Frame .....	20-97
Trunk Lid	
Removal .....	20-98
Adjustment .....	20-99
Roof Slider Removal .....	20-101
Roof Pilot	
Removal .....	20-102
Disassembly .....	20-104
Drive Unit Motor .....	20-105
Drive Unit Removal .....	20-106
Drive Unit Cable/Main Rail .....	20-108
Sub Rail/Main Frame Guide .....	20-110
Slider Frame Disassembly .....	20-111
Roof Slider (Slider Frame) Adjustment .....	20-112
Sliding Drag Check .....	20-113
Roof Tilter/Motor/Cable .....	20-136
Trunk Lid Lock .....	20-133
Trunk Lid Weatherstrip/Upper Drain Tube .....	20-135

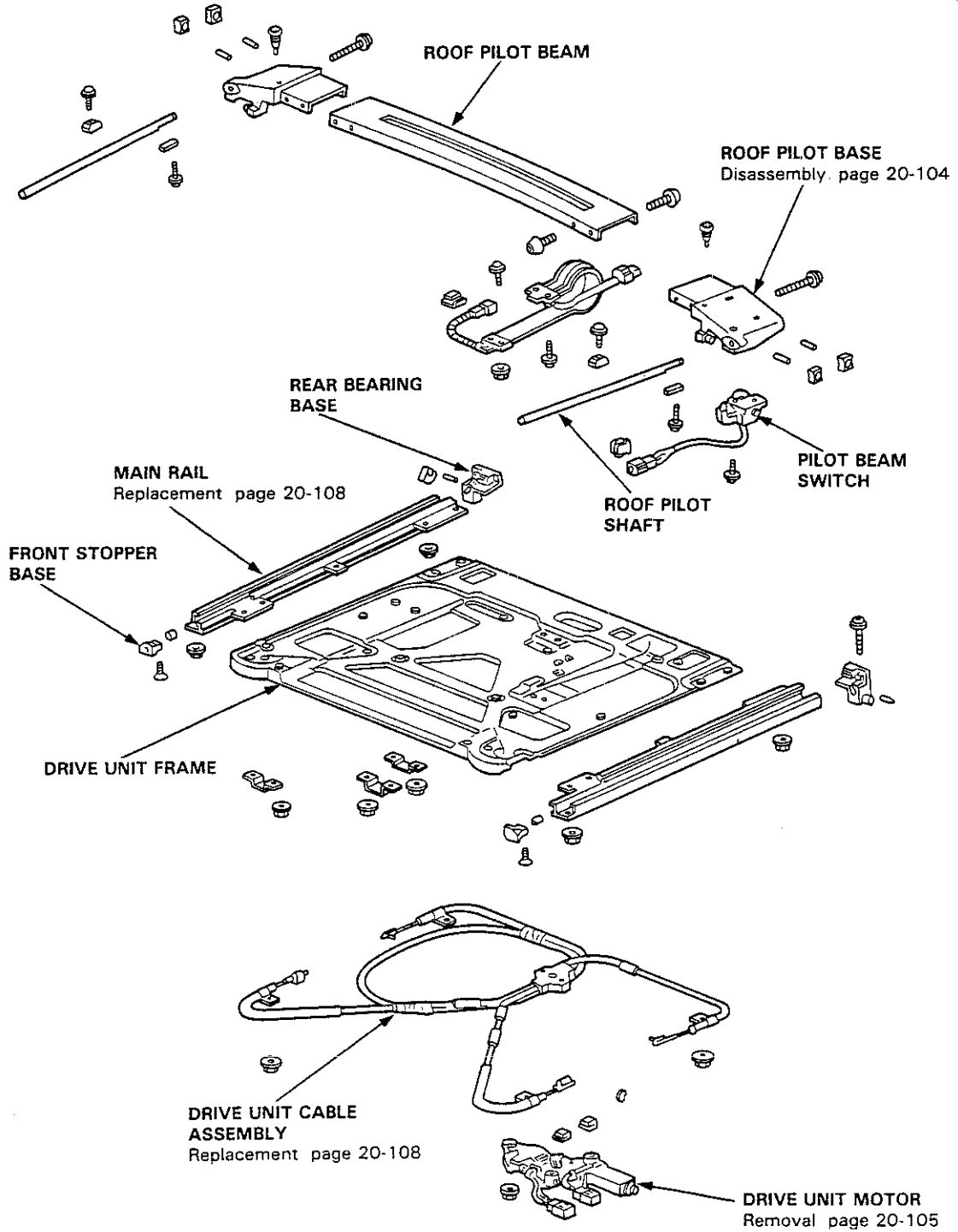


# Roof Slider

## Index

### Roof Pilot/Drive Unit:

Roof Pilot Removal, page 20-102  
Drive Unit Removal, page 20-106





**Slider Frame:**

Roof Slider Removal, page 20-101

**TRUNK LID**  
Removal, page 20-98  
Adjustment, page 20-99

**STRIKER**  
Adjustment, page 20-100

**MAIN FRAME GUIDE**  
Replacement, page 20-110

**FRAME GUIDE  
REAR BRACKET**

**FRONT SLIDER BASE**

**REAR FRAME**

**MAIN BRACKET**

**SUB RAIL STOPPER  
BASE**

**FRONT FRAME**

**SUB RAIL**  
Replacement, page 20-110

**MAIN FRAME**  
Disassembly, page 20-111

**RIGHT TRUNK LID  
SIDE PANEL**

**FRONT ROOF HOLDER**  
Replacement, page 20-110

**RIGHT LIFTER  
GUIDE TRIM PANEL**

**LEFT TRUNK LID  
SIDE PANEL**

**GUIDE FRAME  
TRIM PANEL**

**TRUNK LID  
CENTER PANEL**

**LEFT LIFTER  
GUIDE TRIM PANEL**

# Roof Slider

## Trunk Lid Removal

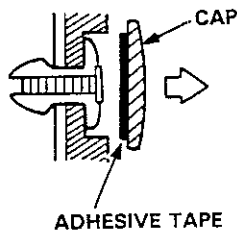
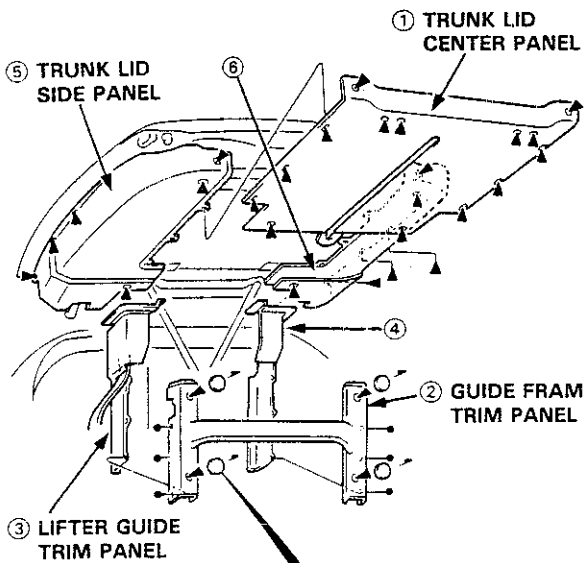
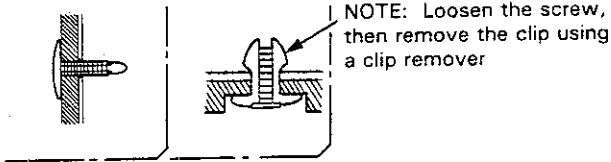
**CAUTION:** Do not apply strong force on the lifter (Do not force the fully open trunk lid down).

**NOTE:**

- Close the roof.
- When the roof closed, secure the roof by turning each roof-side lock handles and roof center handle. Make sure they are locked securely.
- An assistant is helpful when removing the trunk lid.
- When opening the trunk lid, close the rear window fully.
- Open the trunk lid.
- Take care not to damage the panels, trim panels and trunk lid.

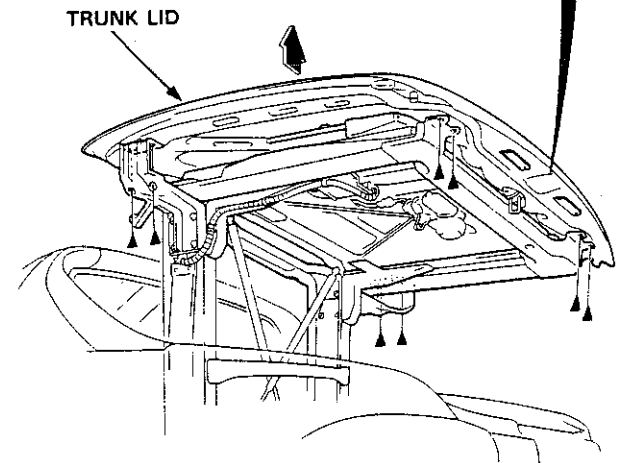
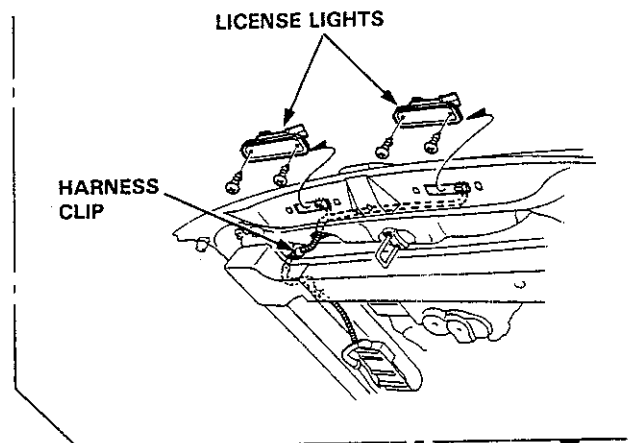
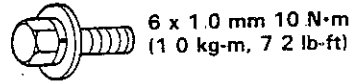
1. Remove the panels and trim panels.

●: Clip locations ▶: Clip locations



2. Remove the license lights, then disconnect the connectors (see Section 23) and detach the harness clip. Remove the mounting bolts, then remove the trunk lid by lifting it up.

▶: Mounting bolt locations



3. Installation is the reverse of the removal procedure

**NOTE:**

- Make sure the trunk lid is locked securely.
- Adjust the trunk lid alignment
- When installing the left lifter guide trim panel, make sure the harness is not pinched



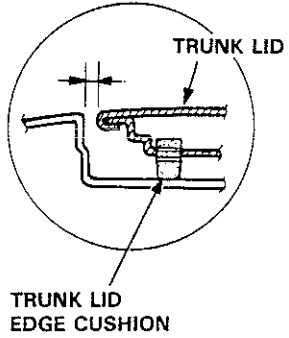
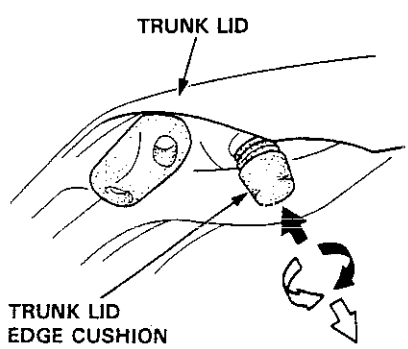
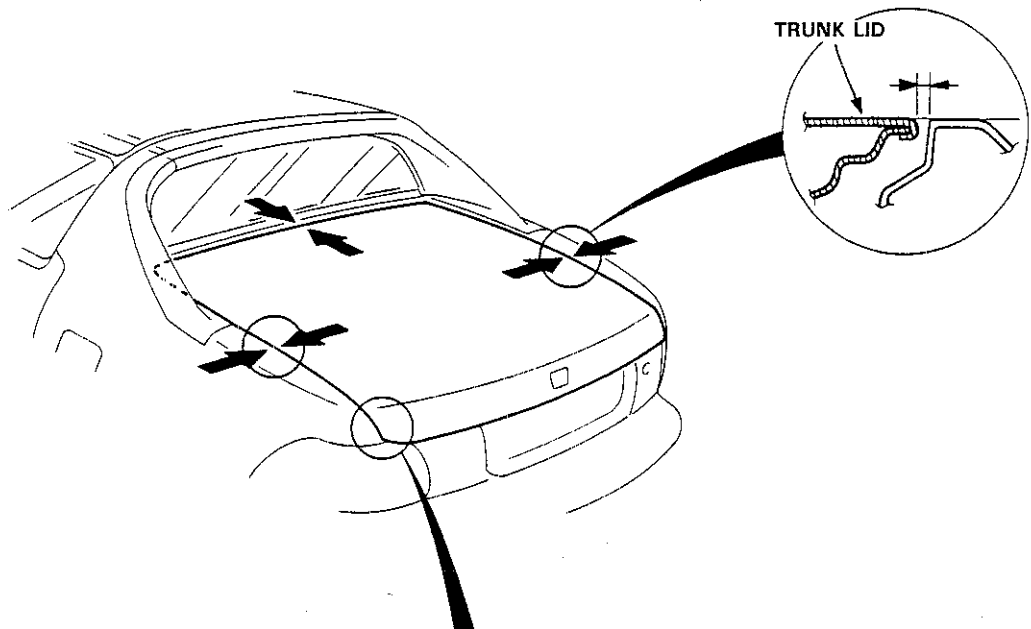
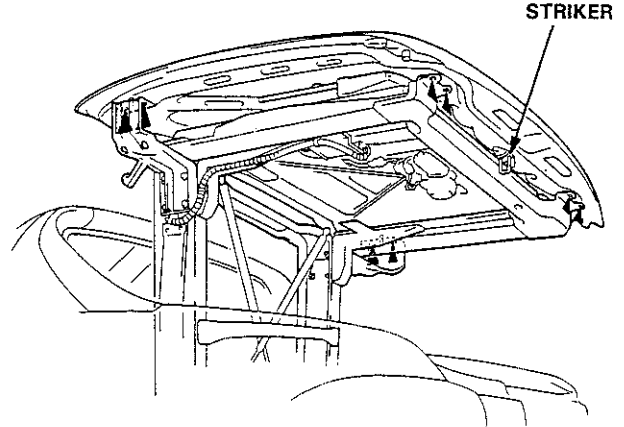
# Trunk Lid Adjustment

**NOTE:** Before adjustment, loosen the mounting bolts of the trunk lid and striker. Then lightly tighten the mounting bolts.

## ALIGNMENT:

- 1 Adjusting the trunk lid edge cushion
  - Turn the edge cushions as necessary to make the trunk lid fit flush with the body at rear and side edge.
- 2 Adjusting the gap between the trunk lid and the body
  - Adjust the trunk lid fore and aft, and right and left as necessary to equalize the gap by using the elongated holes

►: Mounting bolt locations

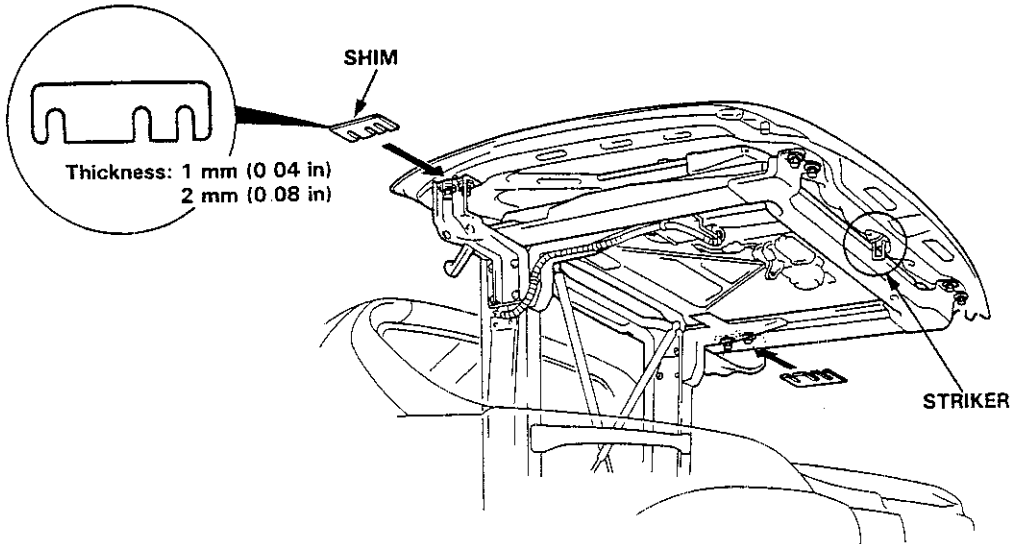


(cont'd)

# Roof Slider

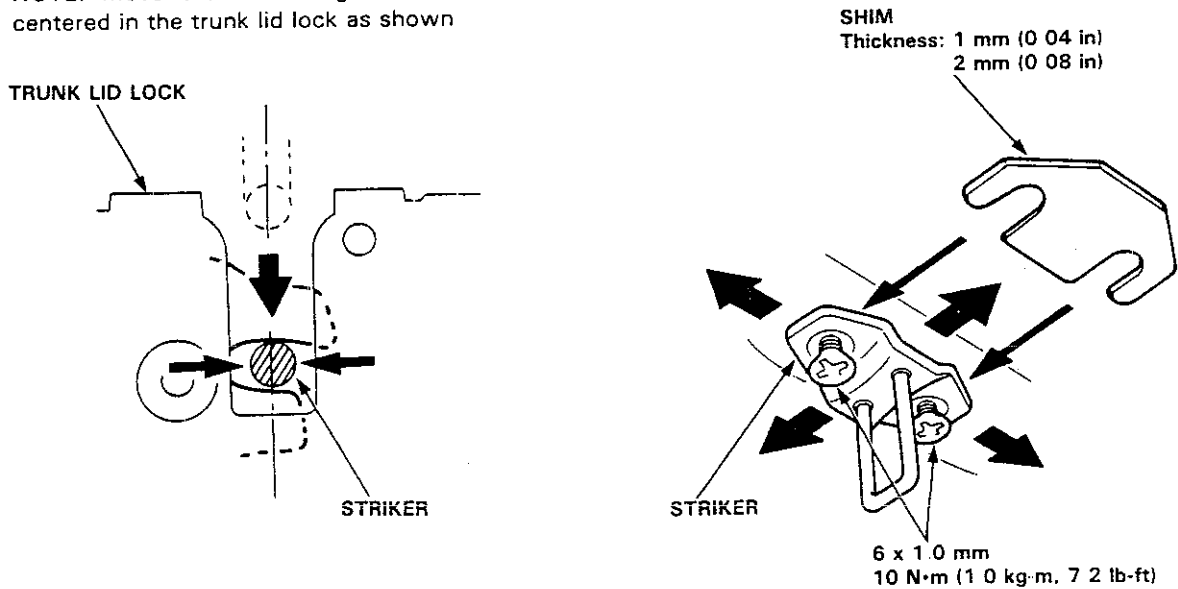
## Trunk Lid Adjustment (cont'd)

- 3 Adjusting the trunk lid height.
  - Use shims as necessary, to make the trunk lid fit flush with the body.



- 4 Adjusting the trunk lid fit to the trunk lid opening.
  - After adjusting the trunk lid height, use shims as necessary, to make the trunk lid fit flush with the body at the rear edge.

NOTE: Move the striker right or left until it's centered in the trunk lid lock as shown



- 5 After adjustment, with the trunk lid closed fully, check for water leak.



## Roof Slider Removal

**CAUTION:** Do not apply strong force on the lifter (Do not force the fully open trunk lid down).

**NOTE:**

- Close the roof
- When the roof closed, secure the roof by turning each roof-side lock handles and roof center handle. Make sure they are locked securely
- An assistant is helpful when removing the trunk lid
- When opening the trunk lid, close the rear window fully.
- Open the trunk lid fully.
- Take care not to damage the trunk lid and body

1. Remove:
  - Panels/trim panels (page 20-98)
  - Trunk lid (page 20-98)
2. Disconnect the connectors and harness clips. Remove the mounting bolts, then remove the roof slider assembly by lifting it up

▶: Mounting bolt location

▷: Harness clip locations

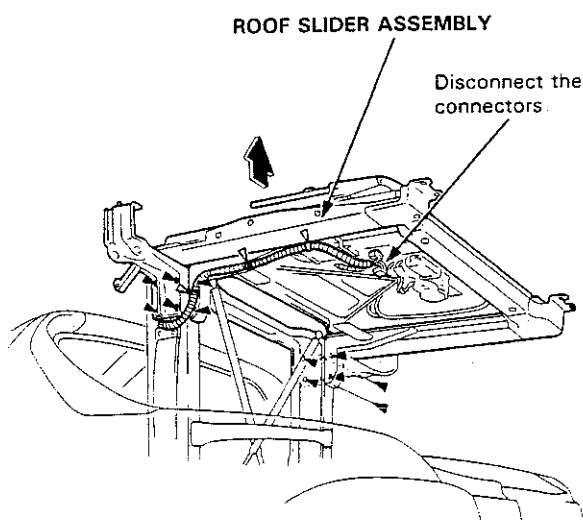


6 x 1.0 mm 10 N·m  
(1.0 kg·m, 7.2 lb·ft)

3. Installation is the reverse of the removal procedure

**NOTE:**

- After installing the roof slider assembly, make sure the roof slider assembly is located properly to the lifter guide frame.
- Operate the power roof, then check that the roof pilot shaft is contacted with the roof properly. If necessary, adjust the roof slider assembly alignment (page 20-112).
- Make sure the connectors are connected properly
- Make sure the trunk lid is locked securely
- Adjust the trunk lid alignment.



# Roof Slider

## Roof Pilot Removal

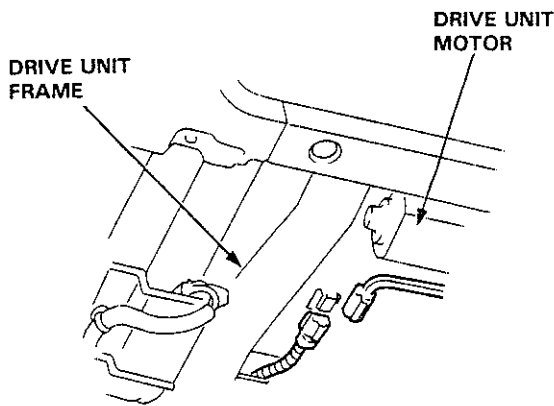
### CAUTION:

- Do not apply strong force on the lifter (Do not force the fully open trunk lid down).
- When the roof removed, the roof should be placed on a shop towel to prevent damage to the roof.

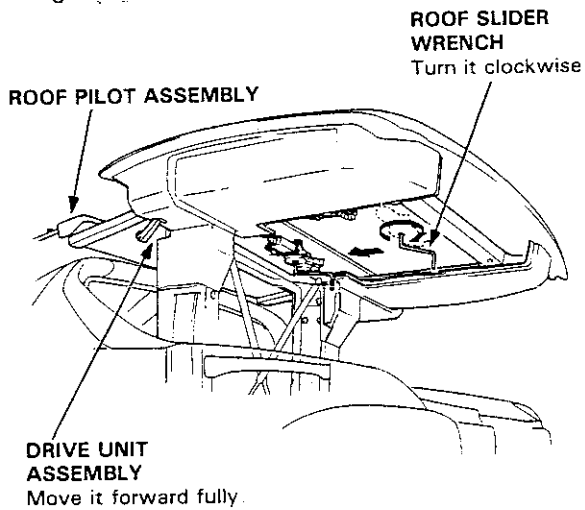
### NOTE:

- Remove the roof (page 20-154)
- Work with an assistant, when removing the roof
- Take care not to damage the trunk lid and body
- When opening the trunk lid, close the rear window fully.
- Open the trunk lid fully.

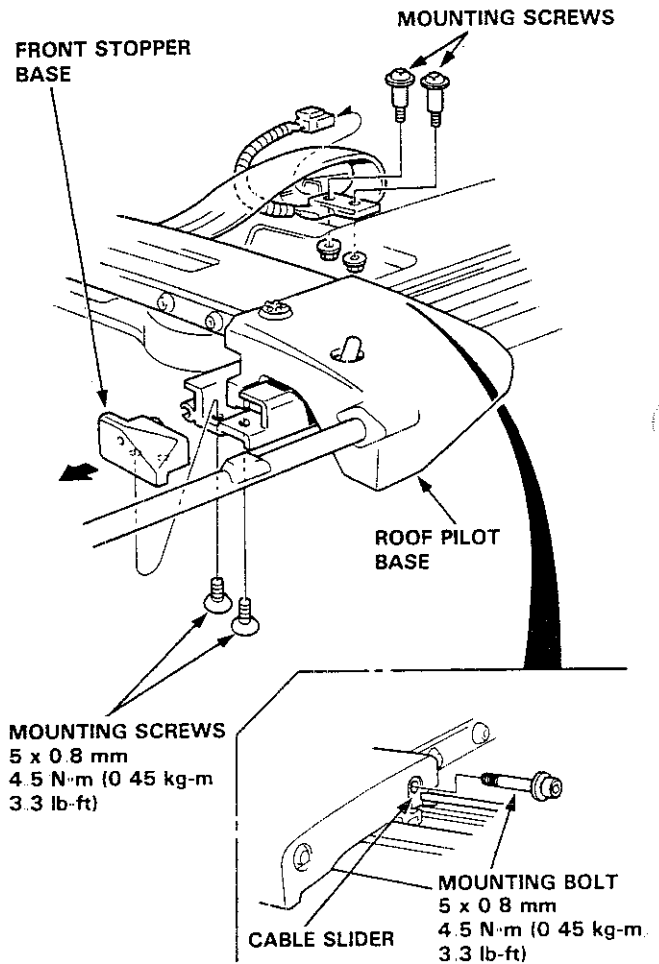
1. Remove the trunk lid center panel (page 20-98).
2. Disconnect the connector.



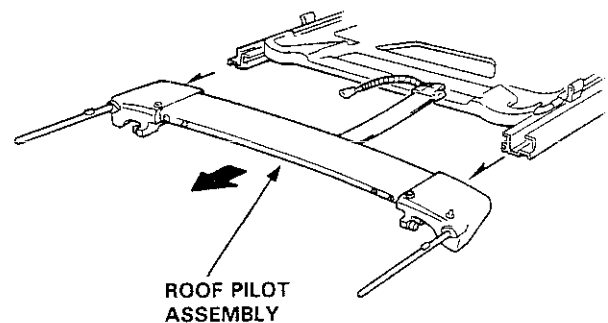
3. Move the drive unit assembly forward fully by using a roof slider wrench.



4. Remove each front stopper bases, then remove the mounting bolts from each roof pilot bases. Remove the harness from the drive unit frame.



5. Remove the roof pilot assembly by sliding it forward.



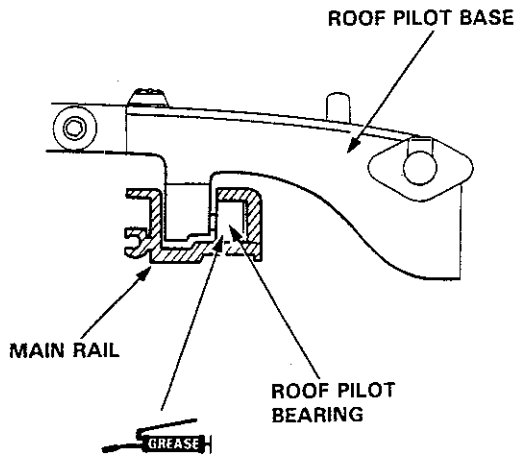




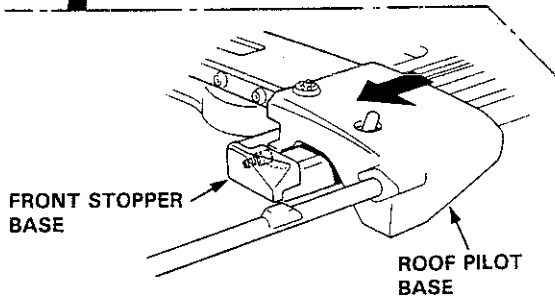
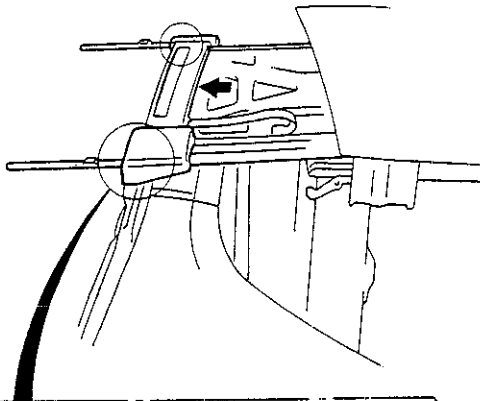
6 Installation is the reverse of the removal procedure.

**NOTE:**

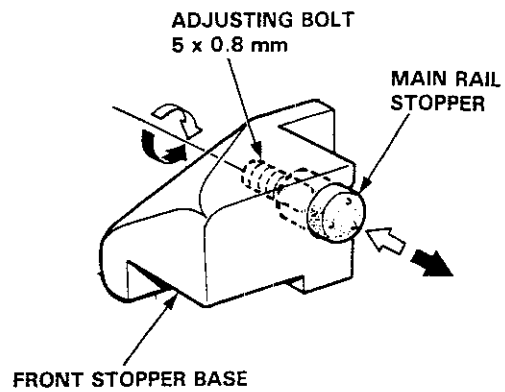
- Check the roof pilot bearing for play. Apply grease to the moving surface of the bearing.
- Clean the moving surface of the main rail, then apply grease to the moving surface. If necessary, replace any damaged stabilizers.



- Make sure the connector is connected properly.
- After installing the roof pilot assembly, forward the roof pilot assembly fully. Check that both roof pilot bases are contacted to both front stopper bases evenly and make sure the roof pilot assembly is not bend to the drive unit assembly.



- If necessary, adjust the main rail stopper by turning the adjusting bolt.



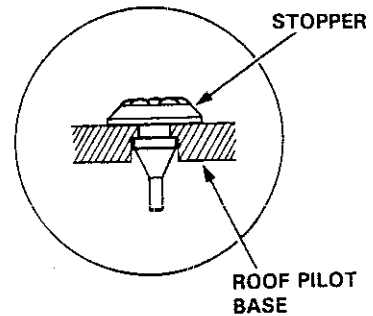
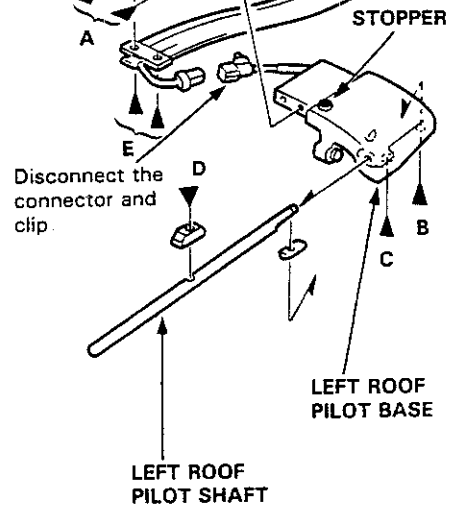
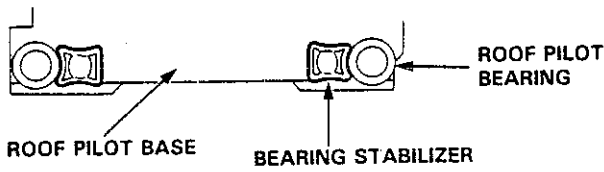
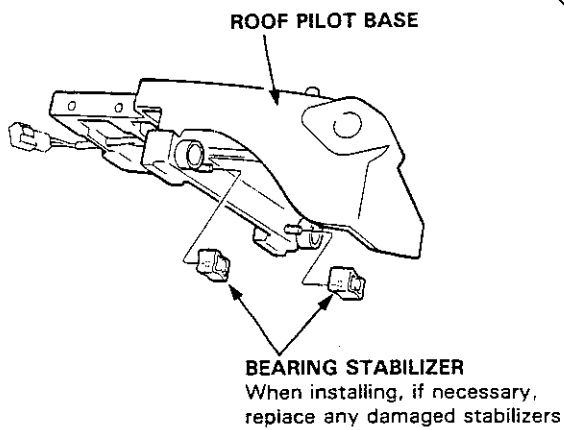
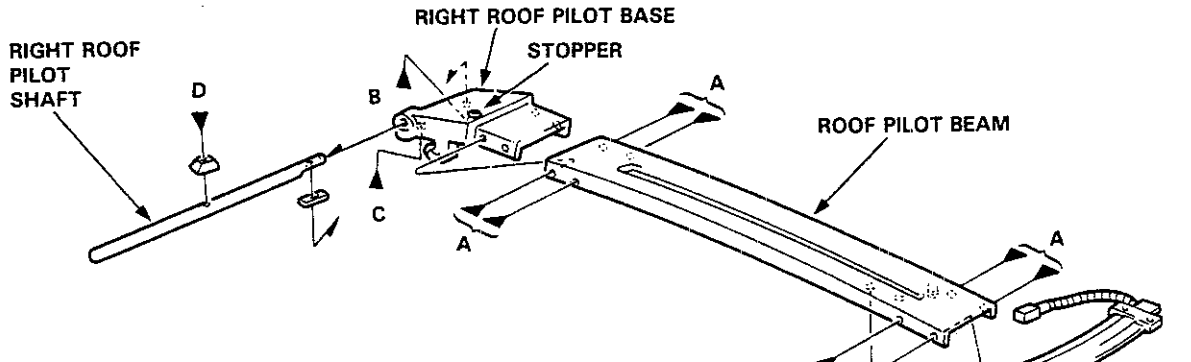
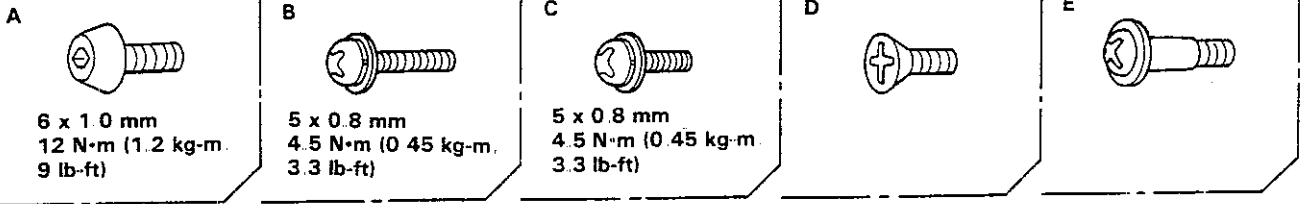
- Make sure the sliding the roof pilot assembly is smooth
- Adjust the trunk lid alignment

# Roof Slider

## Roof Pilot Disassembly

NOTE: Remove the roof pilot assembly (page 20-102)

►: Mounting screw, bolt locations



Reassembly is the reverse of the disassembly procedure.

NOTE:

- Make sure the connector is connected properly
- Check the roof pilot bearing for play
- Apply grease to the moving surface of the bearing.



## Drive Unit Motor Replacement

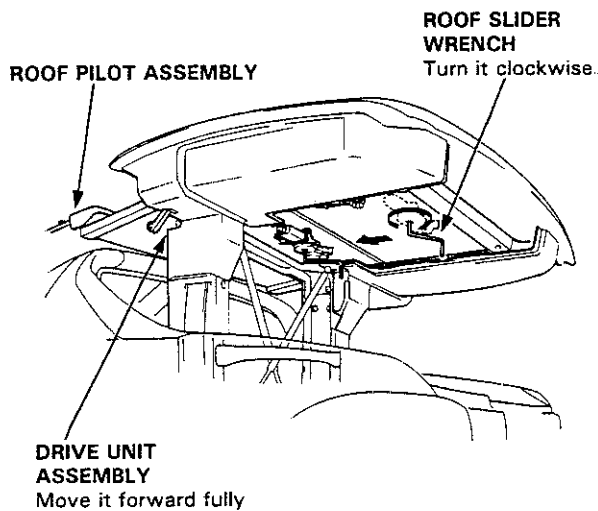
### CAUTION:

- Do not apply strong force on the lifter (Do not force the fully open trunk lid down).
- When the roof removed, the roof should be placed on a shop towel to prevent damage to the roof

### NOTE:

- Remove the roof (page 20-154).
- Work with an assistant, when removing the roof.
- Take care not to damage the trunk lid and body.
- When opening the trunk lid, close the rear window fully.
- Open the trunk lid fully

1. Remove the trunk lid center panel (page 20-98)
2. Move the drive unit assembly forward fully by using a roof slider wrench.



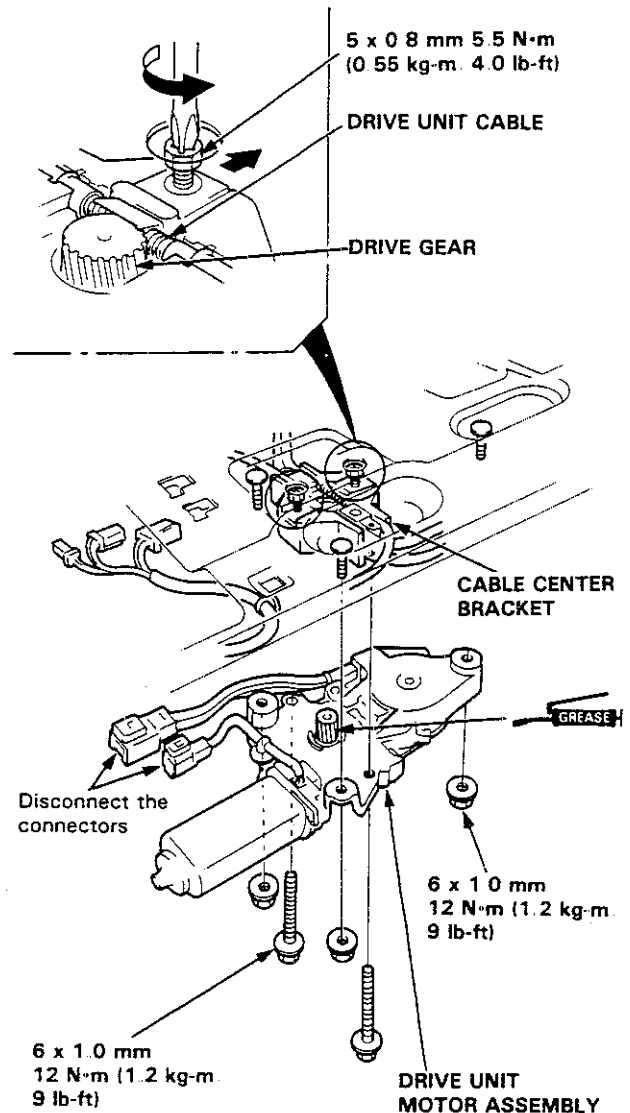
3. Loosen both bolts of the cable center bracket through the access hole in the drive unit frame

**NOTE:** Both bolts of the cable center bracket should be loosened certainly.

4. Slide the drive unit assembly rearward until you can see the drive unit motor mounting bolts and nuts by pulling the drive unit assembly.

5. Disconnect the connectors. Remove the mounting bolts and nuts, then remove the drive unit motor assembly

**CAUTION:** Before removing the drive unit motor assembly, move the drive unit assembly fully forward and release the cables from the drive gear (necessary, because position detection is done by the cam inside the drive unit motor assembly).



(cont'd)

# Roof Slider

## Drive Unit Motor Replacement (cont'd)

6. Installation is the reverse of the removal procedure.

### NOTE:

- Forward the roof pilot assembly fully, then check that both roof pilot bases are contacted to both front stopper bases evenly.
- After installing the drive unit motor assembly, forward the drive unit assembly and roof pilot assembly fully, then tighten both bolts of the cable center bracket certainly (page 20-105).
- Check for operating the power roof. If operation is degraded, see the troubleshooting as described on page 20-155.

## Drive Unit Removal

### CAUTION:

- Do not apply strong force on the lifter (Do not force the fully open trunk lid down).
- When the roof removed, the roof should be placed on a shop towel to prevent damage to the roof.

### NOTE:

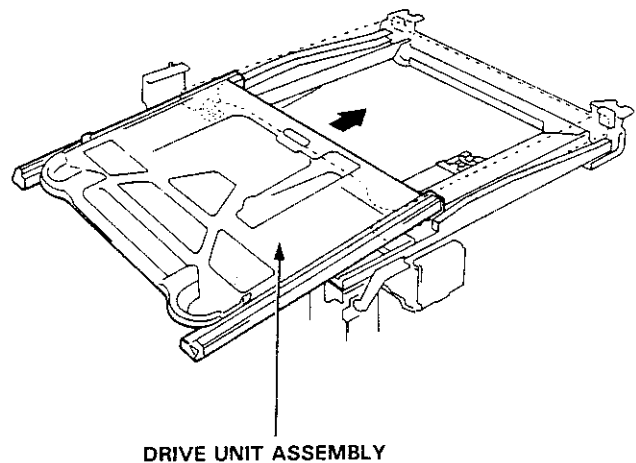
- Remove the roof (page 20-154).
- Work with an assistant, when removing the roof.
- Take care not to damage the trunk lid and body.
- When opening the trunk lid, close the rear window fully.
- Open the trunk lid fully.

### 1. Remove:

- Panels/trim panels (page 20-98)
- Trunk lid (page 20-98)
- Roof pilot assembly (page 20-102)
- Drive unit motor assembly (page 20-105)

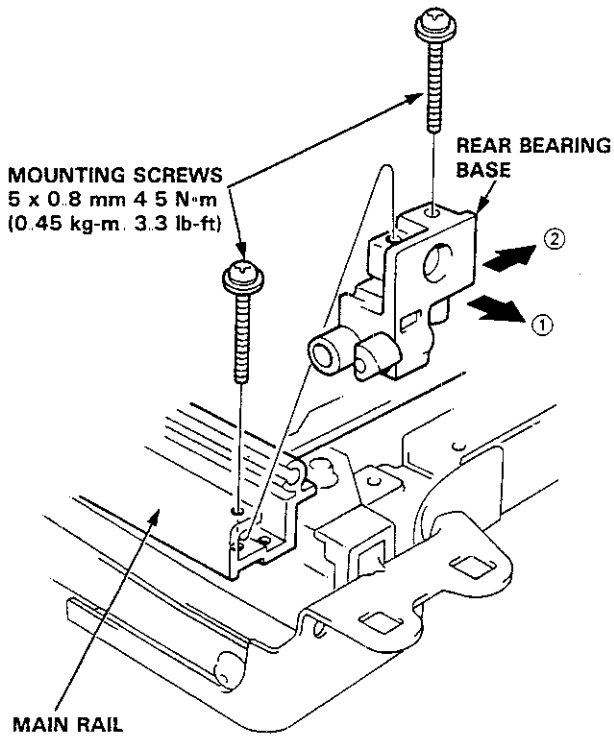
**CAUTION:** Before removing the drive unit motor assembly, move the drive unit assembly fully forward and release the cables from the drive gear (necessary, because position detection is done by the cam inside the drive unit motor assembly).

### 2. Slide the drive unit assembly rearward by pulling it

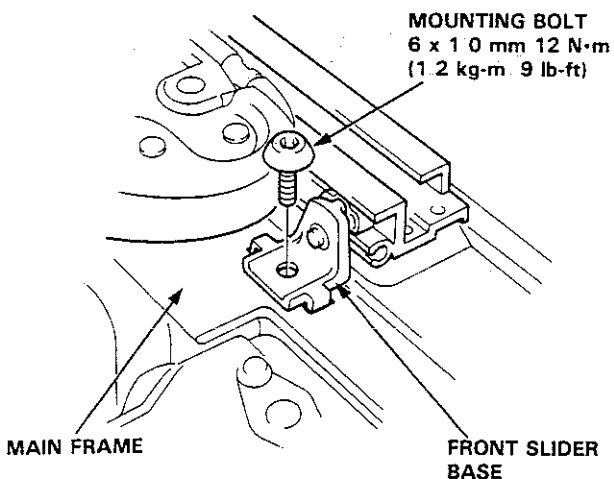




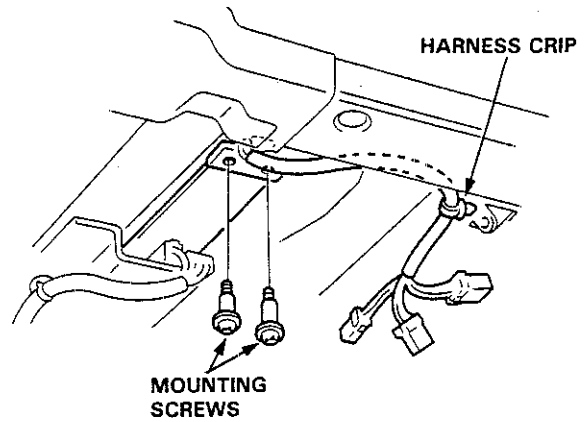
3. Remove the mounting screws from each main rails, then remove each rear bearing bases.



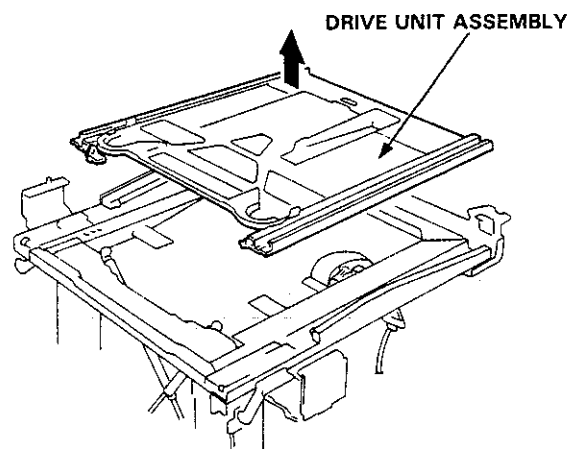
4. Slide the drive unit assembly rearward fully. Remove the mounting bolts, then remove each front slider bases from the main frame.



5. Remove the harness from the drive unit assembly.



6. Remove the drive unit assembly by lifting it up.



(cont'd)

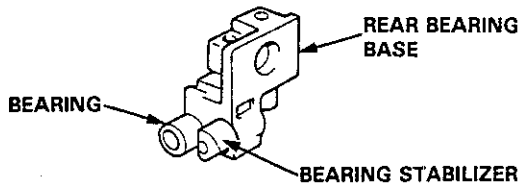
# Roof Slider

## Drive Unit Removal (cont'd)

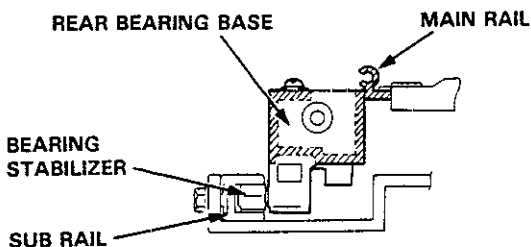
7. Installation is the reverse of the removal procedure.

**NOTE:**

- Check the bearing for play, then apply grease to the moving surface of the bearing. If necessary, replace any damaged stabilizer



- The bearing base should be set securely



- Before installing the drive unit motor assembly, make sure the sliding the drive unit assembly is smooth. If necessary, clean the moving surface of the sub rail, then apply grease to the moving surface.
- Forward the roof pilot assembly fully, then check that both roof pilot bases are contacted to both front stopper bases evenly
- After installing the drive unit motor assembly, forward the drive unit assembly and roof pilot assembly fully, then tighten both bolts of the cable center bracket certainly (page 20-105).
- Make sure the connectors is connected properly
- After installing, check for operating the power roof. If operation is degraded, see the troubleshooting as described on page 20-155.
- After installing the trunk lid, adjust it alignment (page 20-99)

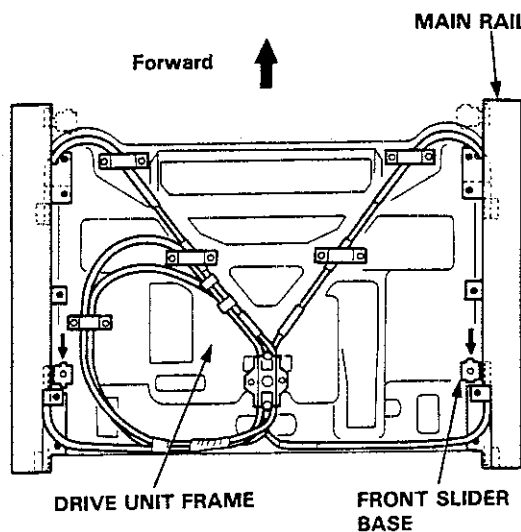
## Drive Unit Cable/Main Rail Replacement

1. Remove the drive unit assembly (page 20-105).
2. Slide each front slider bases as shown. Remove the main rail mounting nuts.

●: Mounting nut locations (10)



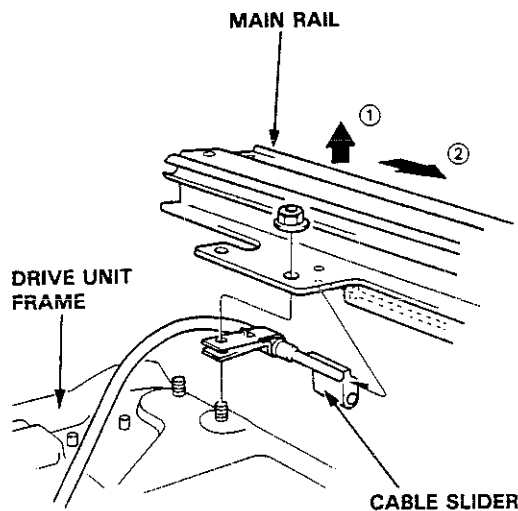
6 x 10 mm  
12 N·m (1.2 kg·m)  
9 lb·ft



3. Remove the main rail from the drive unit frame, then pull the cable slider out from the main rail

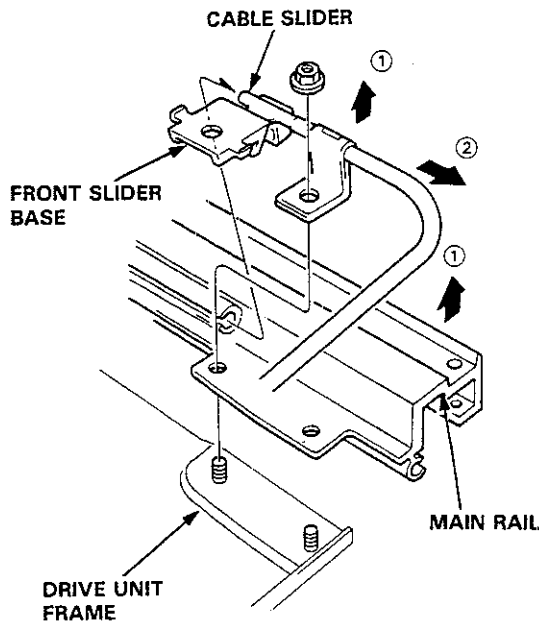
NOTE: Take care not to bend the cables.

Front:





Rear:



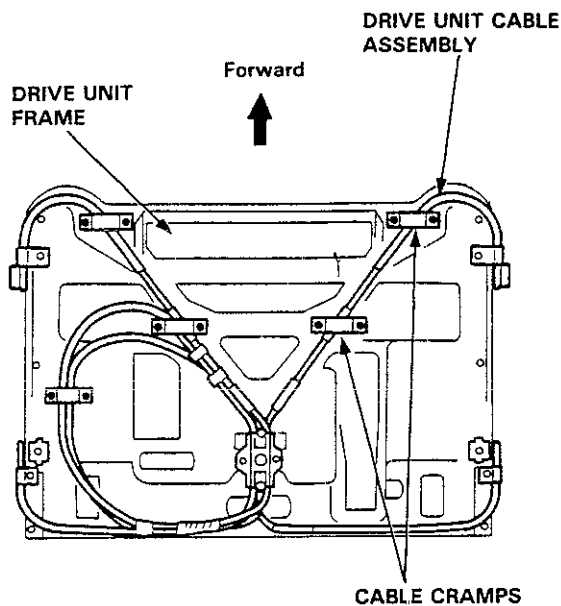
4. Remove the mounting nuts and cable cramps, then remove the drive unit cable assembly.

NOTE: Take care not to bend the cables

●: Mounting nut locations (10)



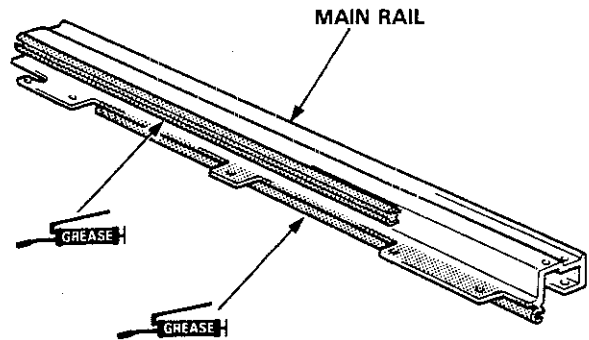
6 x 1.0 mm  
12 N·m (1.2 kg·m)  
9 lb·ft)



5. Installation is the reverse of the removal procedure

NOTE:

- Before installing the main rail, apply grease to the cable slider moving surface as shown



- Make sure the cable slider is set properly
- Make sure the sliding the cable slider is smooth.
- When installing the drive unit assembly, slide each front slider bases forward fully
- Forward the roof pilot assembly fully, then check that both roof pilot bases are contacted to both front stopper bases evenly
- After installing the drive unit motor assembly, forward the drive unit assembly and roof pilot assembly fully, then tighten both bolts of the cable center bracket certainly (page 20-105).
- Make sure the connectors is connected properly.
- After installing check for operating the power roof. If operation is degraded, see the troubleshooting as described on page 20-155.
- After installing the trunk lid, adjust it alignment (page 20-99)

# Roof Slider

## Sub Rail/Main Frame Guide Replacement

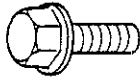
NOTE: Remove the drive unit assembly (page 20-106)

▷: Mounting nut locations



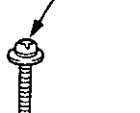
6 x 1.0 mm  
12 N·m (1.2 kg·m,  
9 lb-ft)

▶: Mounting bolt locations

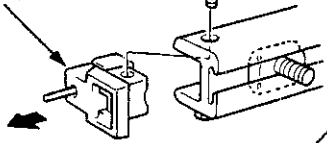


6 x 1.0 mm  
12 N·m (1.2 kg·m,  
9 lb-ft)

MOUNTING SCREW

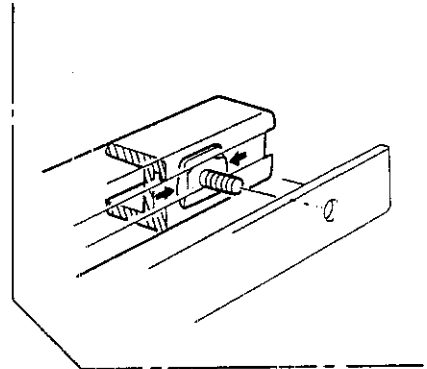


SUB RAIL STOPPER



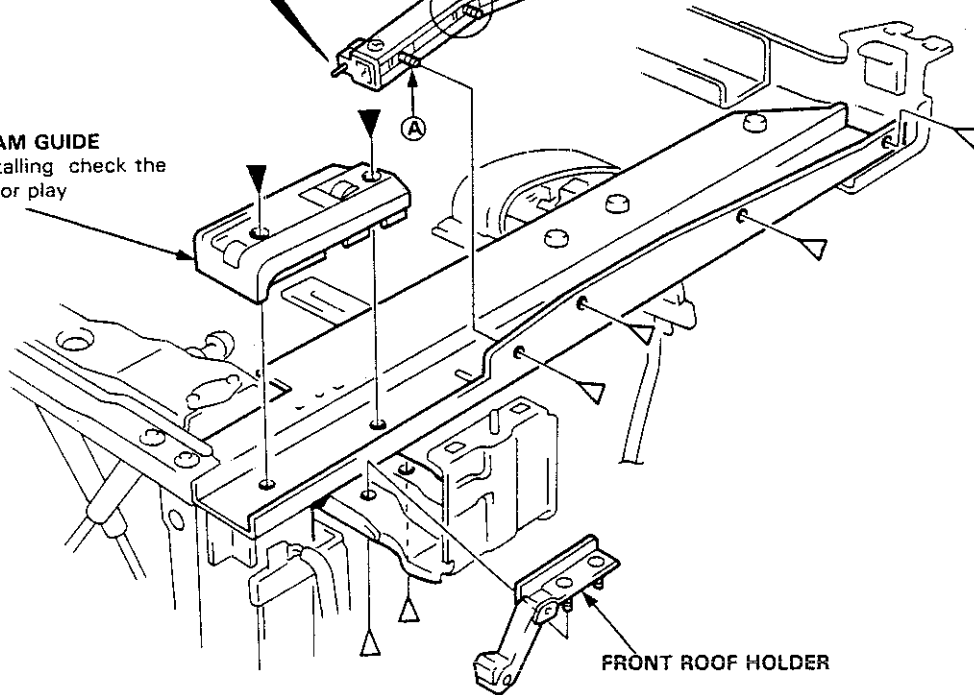
SUB RAIL

When installing the sub rail, first align the sub rail at the mounting bolt (A), then align another bolts to the holes of the main frame and install the sub rail



MAIN FRAM GUIDE

When installing check the bearings for play



FRONT ROOF HOLDER

Installation is the reverse of the removal procedure.

NOTE:

- Before installing the sub rail, clean the rail surface of the sub rail, then apply grease to the rail surface
- After installing the drive unit assembly, make sure the operating the power roof is smooth





## Slider Frame Disassembly

### NOTE:

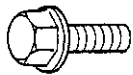
- Take care not to damage the body.
- An assistant is helpful when removing the slider frame.
- Remove the drive unit assembly (page 20-106).

→: Harness clip locations

Detach the harness clips, then remove the harness.

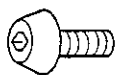
▶: Mounting bolt locations

A



6 x 1.0 mm  
12 N·m (1.2 kg-m,  
9 lb-ft)

B

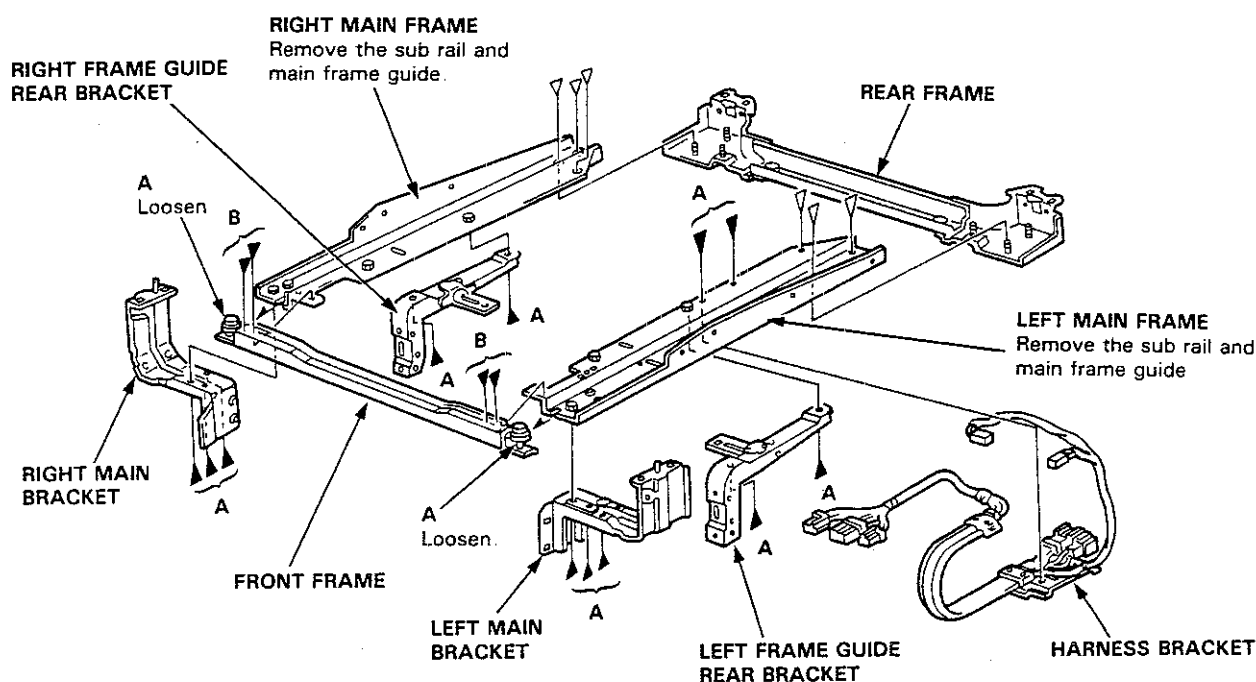
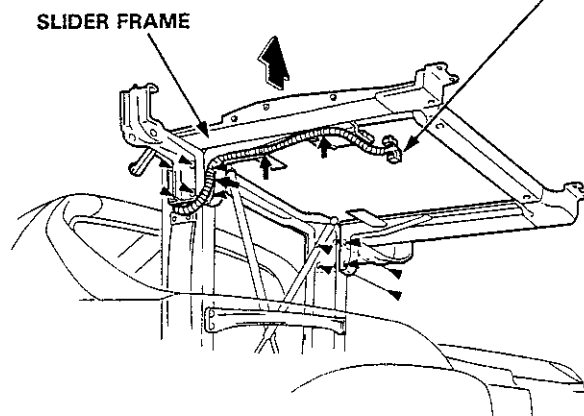


6 x 1.0 mm  
12 N·m (1.2 kg-m,  
9 lb-ft)

▷: Mounting nut locations



6 x 1.0 mm  
12 N·m (1.2 kg-m,  
9 lb-ft)



Reassemble and install as following

- 1 After reassemble the front frame, main frames and rear frame, then install the main brackets and frame guide rear brackets. Lightly tighten the mounting bolts and nuts.
- 2 Set the slider frame assembly to the lifter guide frame. Mount the brackets to the lifter guide frame properly. Make sure the brackets are located properly.

NOTE: An assistant is helpful when setting the slider frame assembly.

- 3 Make sure the slider frame assembly is located properly to the lifter guide frame, then fasten the slider frame assembly to the brackets securely.

### NOTE:

- After installing, operate the power roof, then check that the roof pilot shafts are contacted with the roof properly. If necessary, adjust the roof slider assembly alignment (page 20-112).
- Make sure the trunk lid is locked securely.
- Adjust the trunk lid alignment (page 20-99).

# Roof Slider

## Roof Slider (Slider Frame) Adjustment

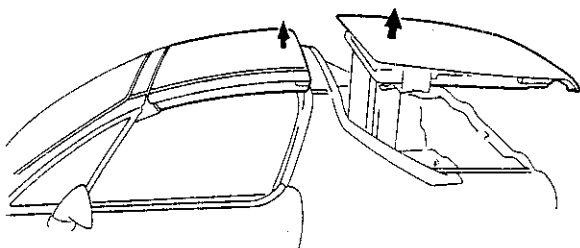
NOTE: An assistant is helpful when adjusting the roof slider.

1. Operate the power roof. After the roof tilter goes up to raise the edge of the roof, release the roof switch to stop the roof.

**▲WARNING** Do not operate the power roof in an enclosed area such as in a garage, etc. As the engine must be running to operate the roof, a hazardous condition can be created by the exhaust from the engine.

NOTE:

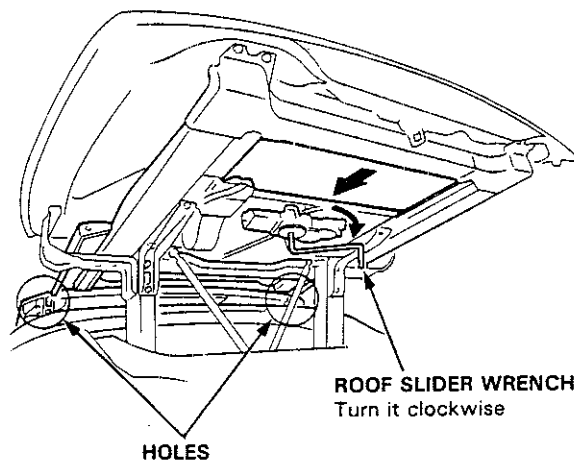
- To operate the power roof, check the following before operation.
  - 1. The parking brake is applied.
  - 2. The vehicle is stopped.
  - 3. The rear window is fully closed.
  - 4. The engine is running.



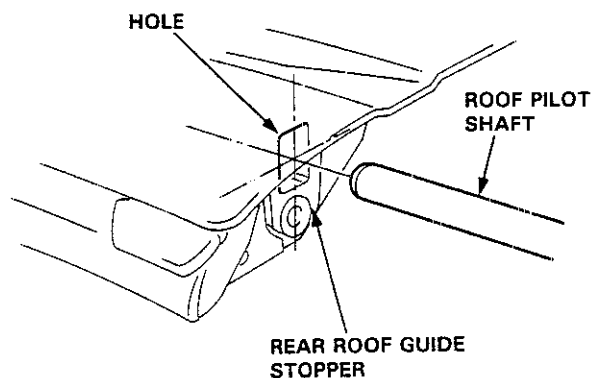
- When operating the power roof manually, refer to page 20-244.

2. Remove the panels and trim panels (page 20-98)

3. Move the drive unit assembly forward until the roof pilot shafts are contacted to the holes of the rear roof guide stopper by using a roof slider wrench.



4. Check that the contacting the roof pilot shafts are centered to the holes of the rear roof guide stopper as shown.

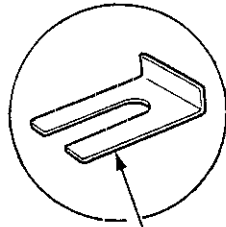




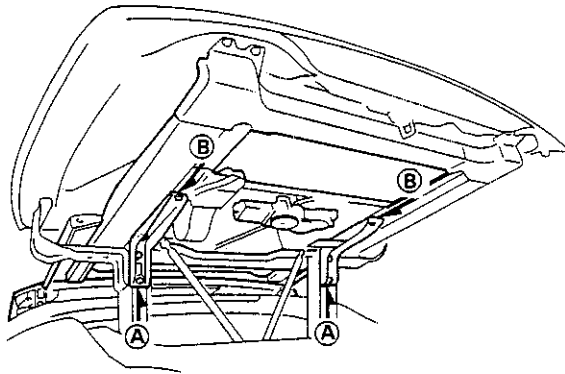
5. If necessary, adjust the roof slider assembly. Use shims, to make the contacting the roof pilot shafts are centered to the holes of the rear roof guide stopper.

NOTE: Use shims to (A) locations. If necessary, use shims to (B) locations.

 : Shim locations



SHIM  
Thickness: 1 mm  
(0.04 in)



6. After adjusting, operate the power roof, then make sure the operating the power roof is smooth
7. Adjust the trunk lid alignment (page 20-99).

## Sliding Drag Check (Motor Freed)

NOTE: Before installing the trunk lid and roof, move the drive unit assembly forward fully by using a roof slider wrench

1. Loosen the bolt to following measurements

NOTE: Do not loosen both bolts at the same time.

- Sliding drag of the roof pilot: Loosen the bolt (A).
- Sliding drag of the drive unit: Loosen the bolt (B).

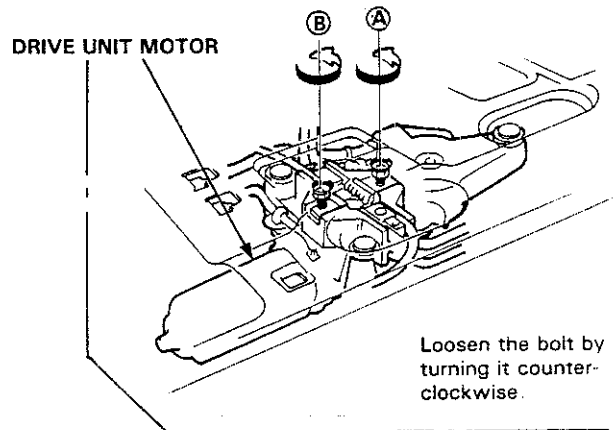
2. Attach a spring scale as shown

3. Measure the sliding drag by pulling a spring scale back.

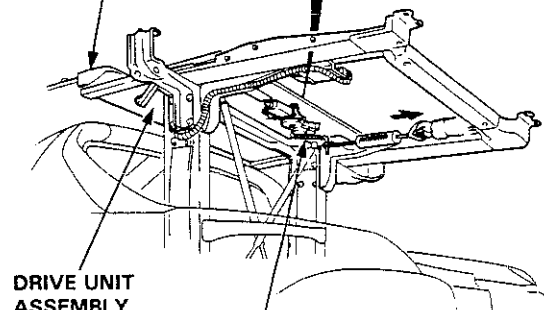
Sliding drag: Less than 9.8 N (1.0 kg, 2.2 lb)

4. If load is not within specification, check the following.

- The bolt is loosened.
- The roof pilot and drive unit are located properly



ROOF PILOT ASSEMBLY



ROOF SLIDER WRENCH

# Roof Slider

## Sliding Drag Check (Motor connected to the drive unit cables)

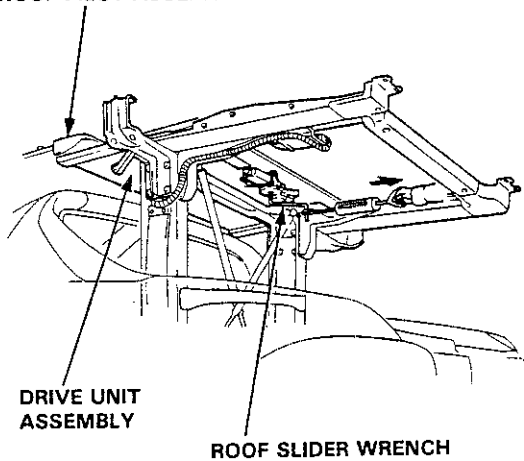
### NOTE:

- Before installing the trunk lid and roof, check the following.
- The drive unit motor assembly should be installed to the drive unit and the connectors should be disconnected from the motor

1. Move the drive unit assembly forward fully by using a roof slider wrench.
2. Attach a spring scale as shown
3. Measure the sliding drag by pulling a spring scale back.

Sliding drag: 14.7 N (1.5 kg, 3.3 lb)

### ROOF PILOT ASSEMBLY



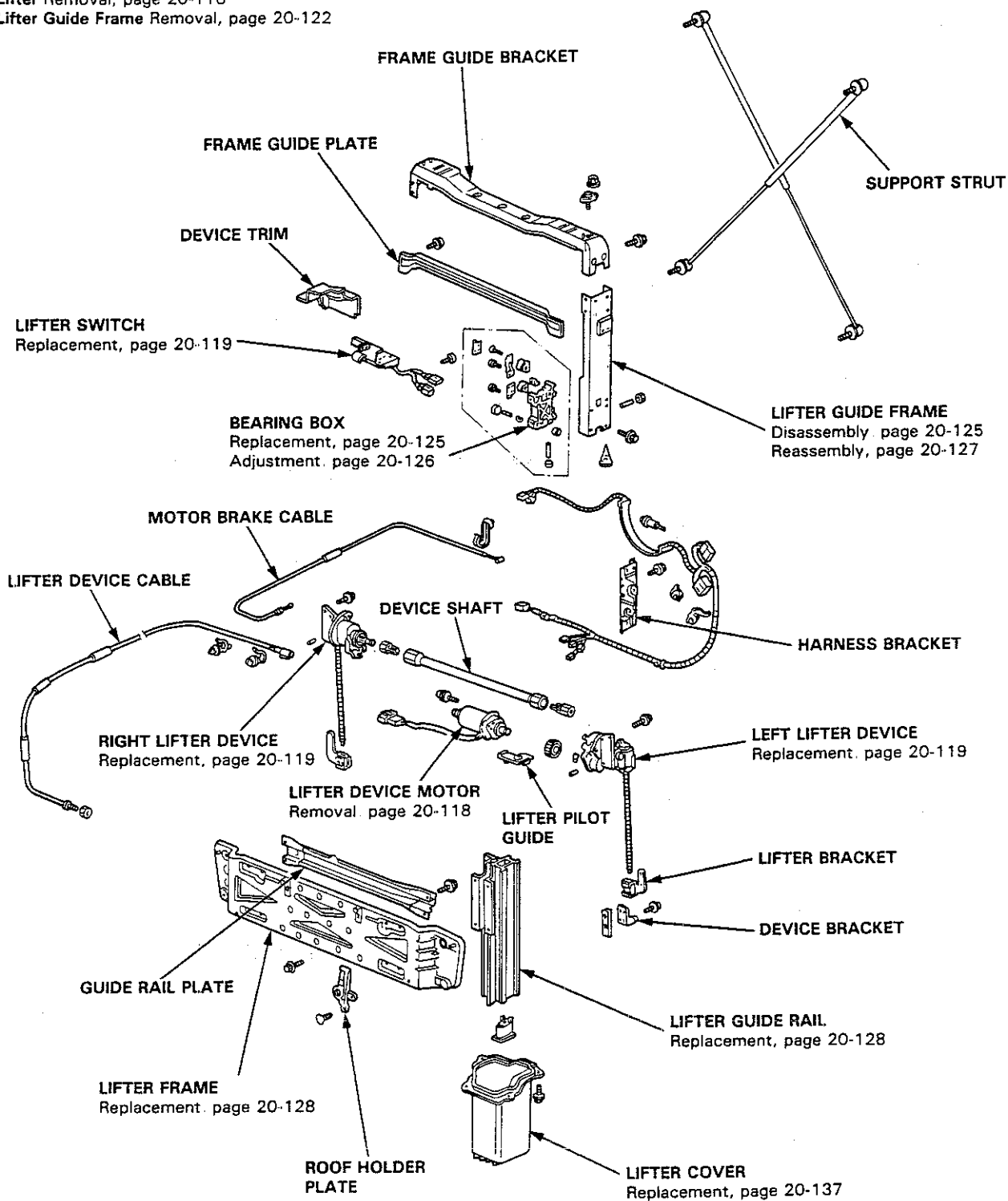
4. If load is not within specification, check the following.
  - The roof pilot and drive unit are located properly.
  - The moving surfaces are cleaned and grease is applied



# Lifter Index

Lifter Removal, page 20-116

Lifter Guide Frame Removal, page 20-122



# Lifter

## Lifter Removal

**CAUTION:** Do not apply force on the lifter (Do not force the fully open trunk lid down).

**NOTE:**

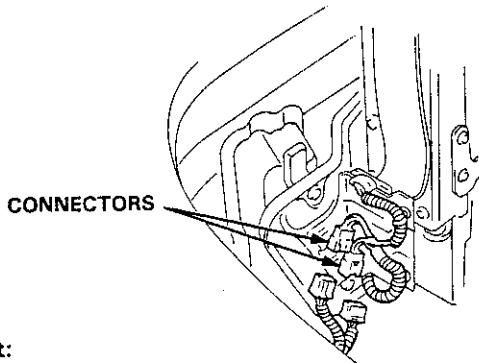
- Close the roof.
- When the roof closed, secure the roof by turning each roof-side lock handles and roof center handle. Make sure they are locked securely.
- An assistant is helpful when removing the lifter assembly.
- When opening the trunk lid, close the rear window fully.
- Open the trunk lid fully.
- Take care not to damage the trunk lid and body

1. Remove:
  - Lifter trim panels/spare tire lid (page 20-39)
  - Panels/trim panels (page 20-98)
  - Trunk lid (page 20-98)
  - Roof slider assembly (page 20-101)

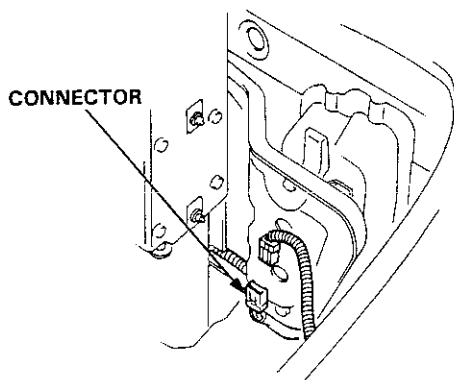
2. Disconnect the connectors and cables

**NOTE:** Take care not to bend the cables

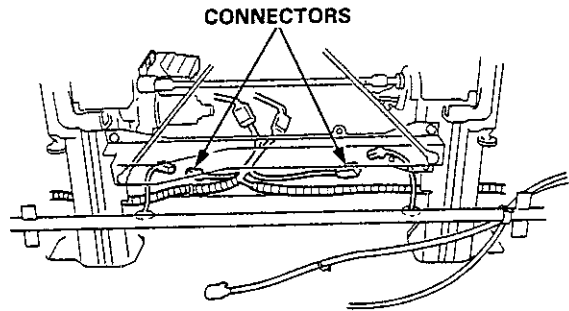
**Left:**



**Right:**



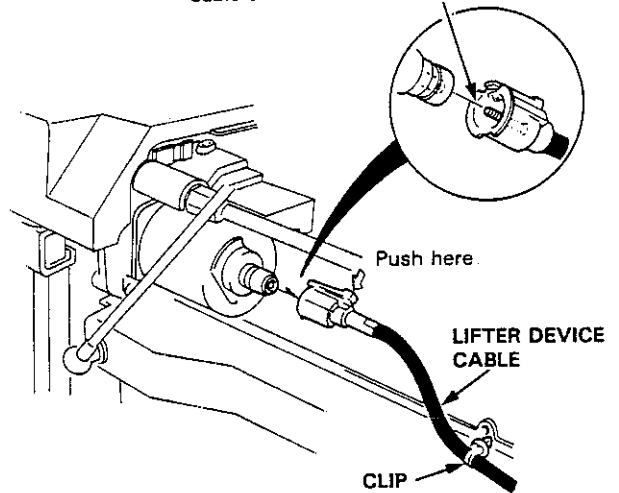
**Center:**



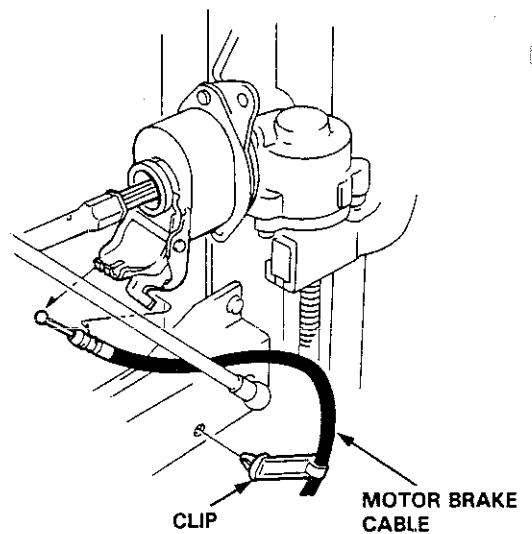
**Lifter device cable:**

**INNER CABLE**

When connecting the cable, the inner cable should be inset securely.



**Motor brake cable:**

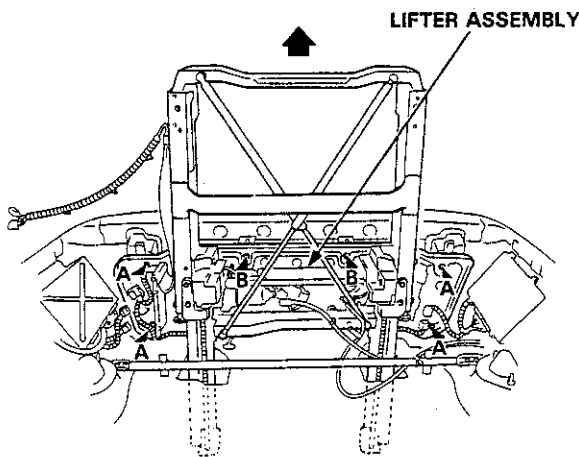
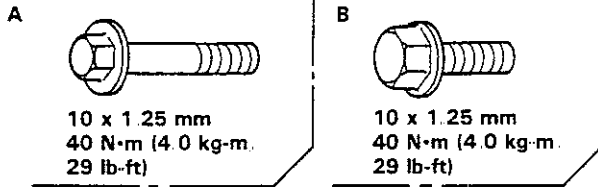




3. Remove the mounting bolts, then remove the lifter assembly by lifting it up

NOTE: Take care not to damage the body

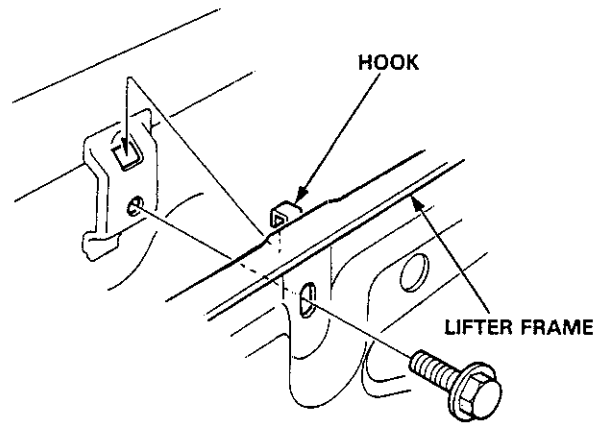
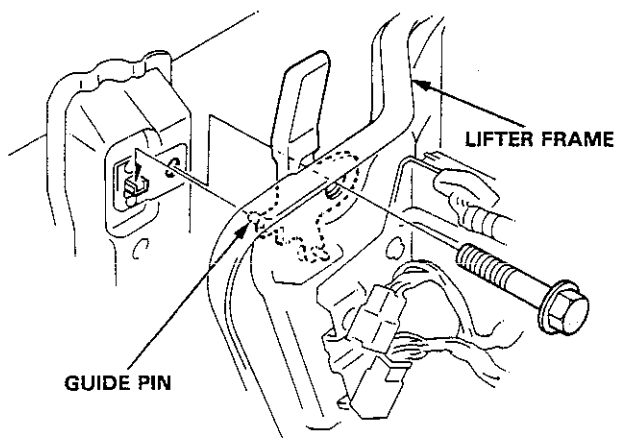
►: Mounting bolt locations



4. Installation is the reverse of the removal procedure.

NOTE:

- When installing the lifter assembly, the lifter assembly should be located to the body by using each guide pins and hooks as shown.



- Before tightening the mounting bolts make sure the wire harnesses are not pinched.
- After installing the lifter assembly, check for vertical alignment of the lifter assembly (page 20-131).
- Make sure the connectors are connected properly.
- After installing the roof slider assembly, make sure the roof slider assembly is located properly to the lifter assembly.
- Check for operating the power roof. If operation is degraded, see the troubleshooting as described on page 20-155
- Operate the power roof, then check that the roof pilot shafts are contacted with the roof properly. If necessary, adjust the roof slider assembly alignment (page 20-112).
- After installing the trunk lid, adjust its alignment (page 20-99).
- Make sure the trunk lid is locked securely.

# Lifter

## Lifter Device Motor Removal

**CAUTION:** Do not apply strong force on the lifter (Do not force the fully open trunk lid down).

**NOTE:**

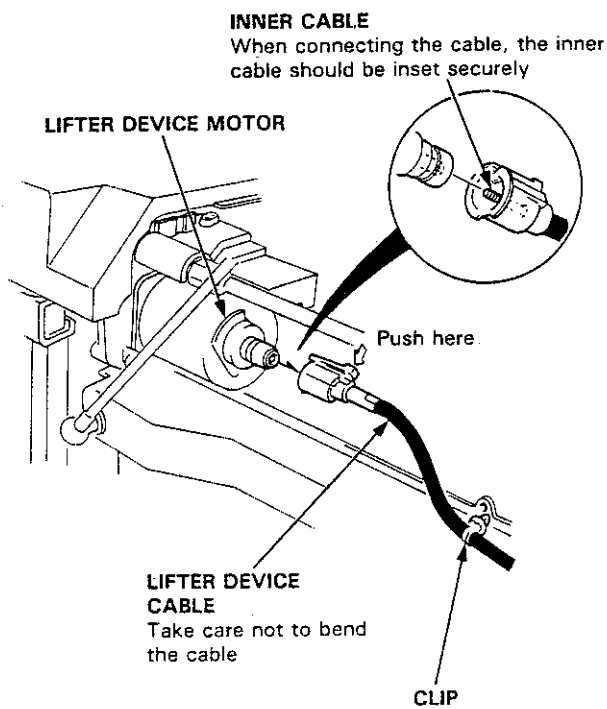
- When opening the trunk lid, close the rear window fully.
- Open the trunk lid fully.
- Take care not to damage the trunk lid and body.

1. Remove:

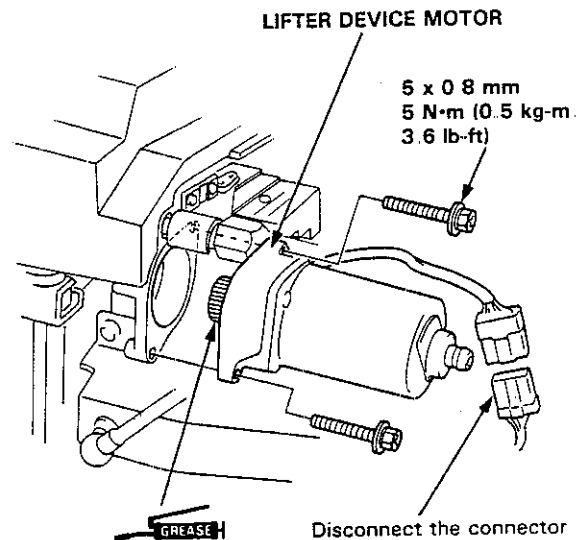
- Lifter trim panels (page 20-39)
- Spare tire lid (page 20-39)

2. Disconnect the lifter device cable.

**NOTE:** Take care not to bend the cable.



3. Remove the mounting bolts and disconnect the connector, then remove the lifter device motor.



4. Installation is the reverse of the removal procedure.

**NOTE:**

- Make sure the connector and cable are connected properly.
- After installing, check for operating the power roof. If operation is degraded, see the troubleshooting as described on page 20-155





## Lifter Device Replacement

**CAUTION:** Do not apply strong force on the lifter (Do not force the fully open trunk lid down).

**NOTE:**

- When opening the trunk lid, close the rear window fully.
- Open the trunk lid fully.
- Take care not to damage the trunk lid and body.

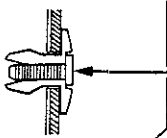
1. Remove:

- Lifter trim panels (page 20-39)
- Spare tire lid (page 20-39)

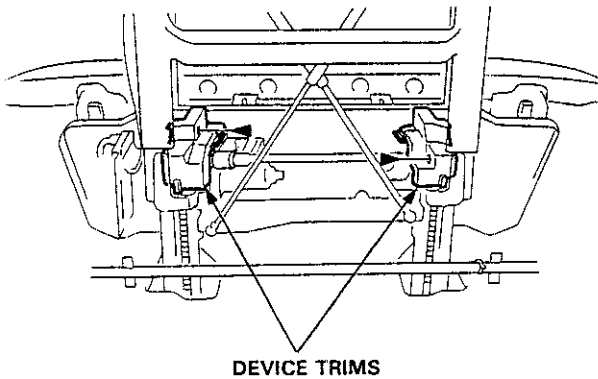
2. Remove the device trims.

**NOTE:** Take care not to scratch the trims.

►: Clip locations



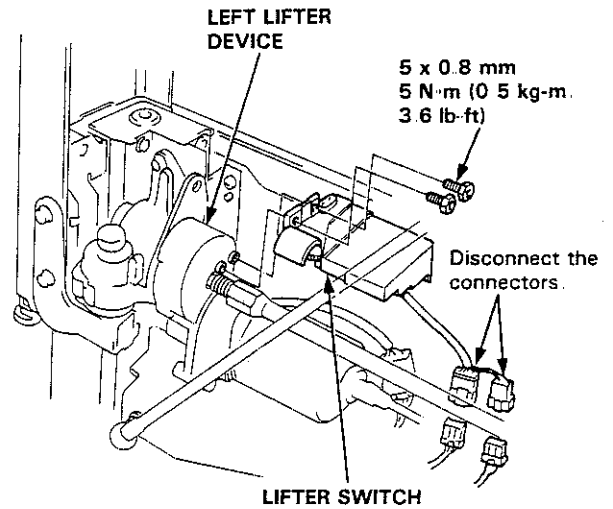
**NOTE:** Loosen the screws, then remove the clip using a clip remover.



DEVICE TRIMS

3. Disconnect the connectors. Remove the mounting bolts, then remove the lifter switch from the left lifter device

**CAUTION:** When removing the lifter switch, trunk lid should be opened fully.



5 x 0.8 mm  
5 N·m (0.5 kg-m,  
3.6 lb-ft)

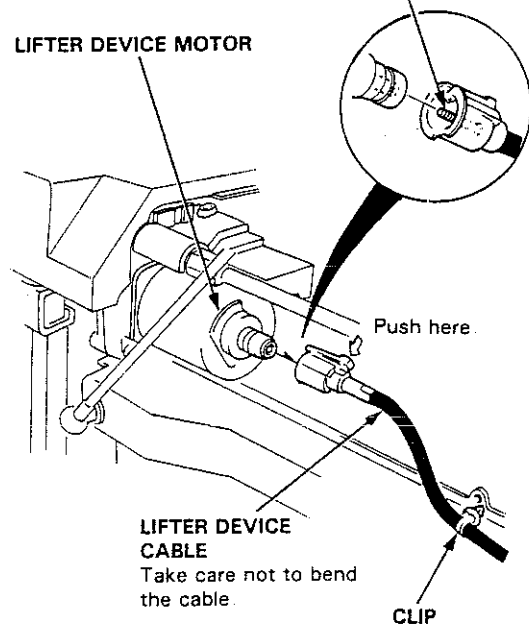
4. Disconnect the lifter device cable.

**NOTE:** Take care not to bend the cable.

**INNER CABLE**

When connecting the cable, the inner cable should be inset securely

**LIFTER DEVICE MOTOR**



**LIFTER DEVICE CABLE**  
Take care not to bend the cable.

(cont'd)

# Lifter

## Lifter Device Replacement (cont'd)

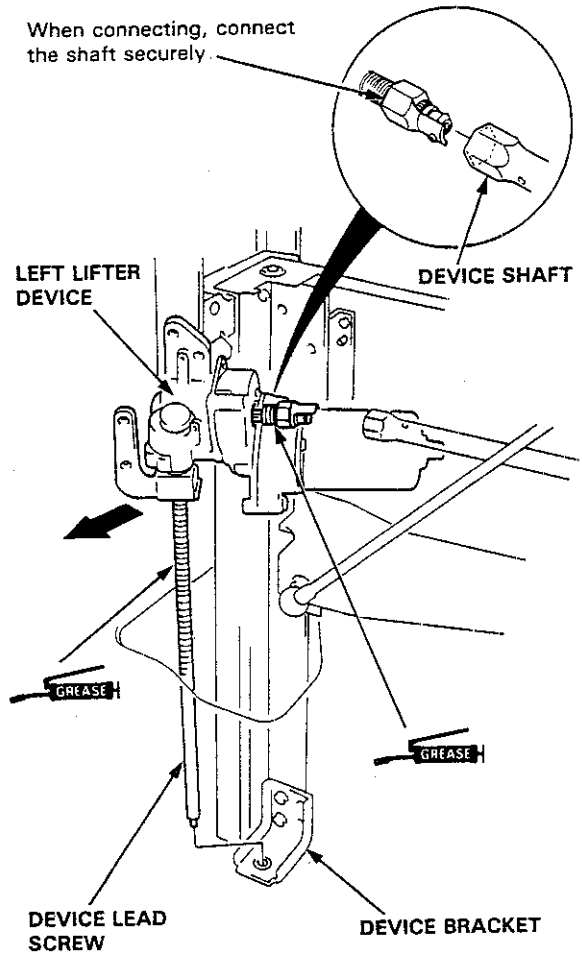
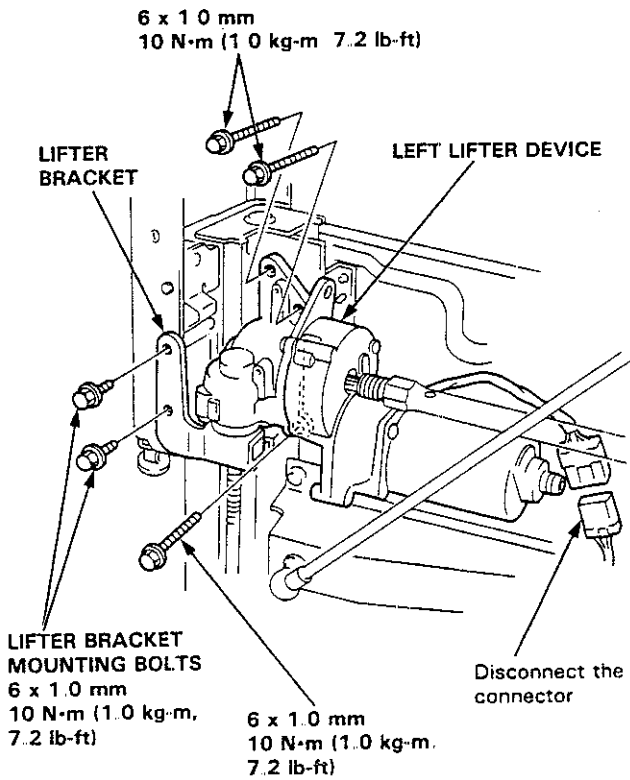
5. Disconnect the connector (left lifter device). Remove the lifter bracket mounting bolts and device mounting bolts, then remove the lifter device.

**CAUTION:** When removing the lifter bracket mounting bolts, do not apply strong force with the mounting bolts. Hold down the lifter guide frame (page 20-123).

**NOTE:**

- Take care not to drop the mounting bolts inside the lifter cover.
- Take care not to bend the device lead screw.

**Left lifter device:**

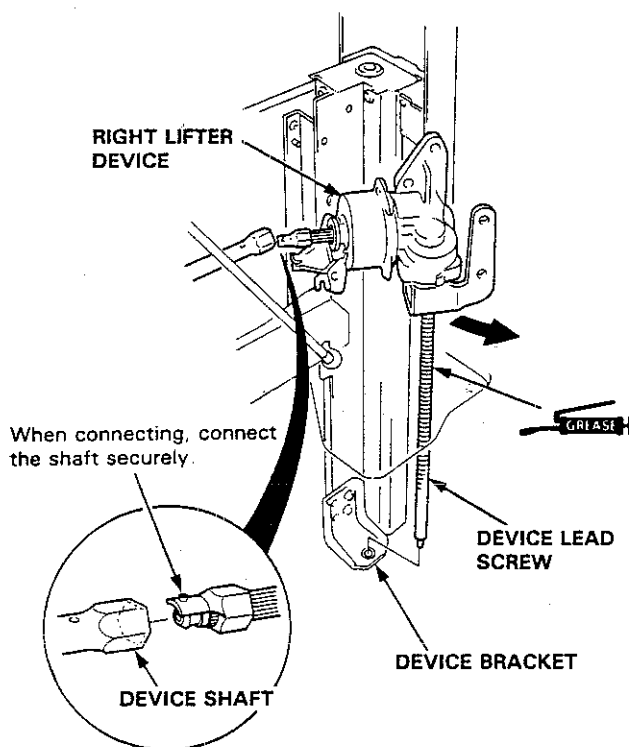
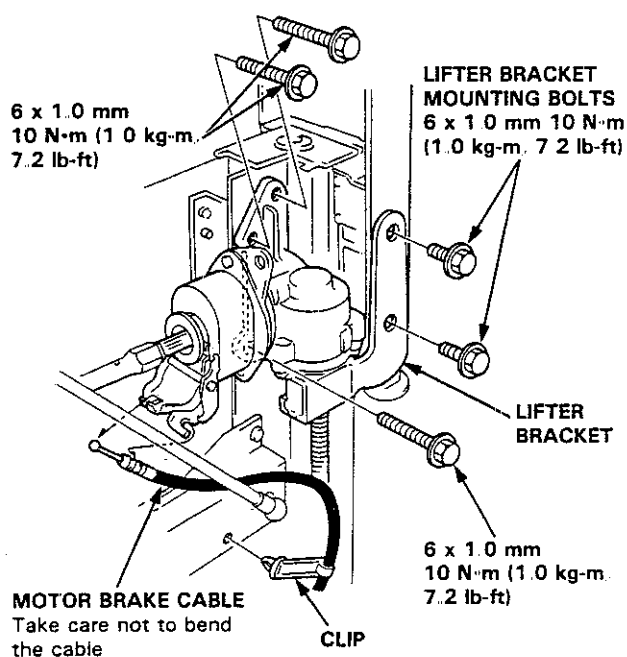


**NOTE:** Pull the device lead screw out by lifting the lifter device. Disconnect the device shaft by moving the lifter device rearward, then lift and remove the lifter device.



**Right lifter device:**

**NOTE:** Disconnect the motor brake cable.



**NOTE:** Pull the device lead screw out by lifting the lifter device. Disconnect the device shaft by moving the lifter device rearward, then lift and remove the lifter device.

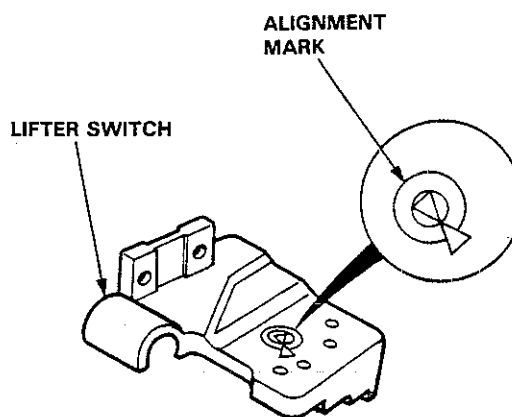
6. Pull out the device shaft.
7. Installation is the reverse of the removal procedure.

**NOTE:**

- Before installing the lifter device, apply grease to the worm gear of the left lifter device and device lead screw. Check the device lead screw for bend.
- The right and left lifter brackets are located to the upper of the device lead screws. Make sure the right and left lifter brackets are located to the same position
- The device lead screw should be set to the device bracket.
- Make sure the device shaft, connectors and cables are connected properly

**CAUTION:**

- When installing the lifter bracket mounting bolts, do not apply strong force with the mounting bolts. Hold down the lifter guide frame (page 20-123).
- When installing the lifter switch, make sure the alignment mark is aligned properly as shown



This alignment mark position indicates the opened trunk lid condition.

**NOTE:** After installing, check for operating the power roof. If operation is degraded, see the troubleshooting as described on page 20-155

# Lifter

## Lifter Guide Frame Removal

**CAUTION:** Do not apply strong force on the lifter (Do not force the fully open trunk lid down).

**NOTE:**

- Close the roof
- When the roof closed, secure the roof by turning each roof-side lock handles and roof center handle. Make sure they are locked securely.
- An assistant is helpful when removing the slider assembly and lifter guide frame assembly
- When opening the trunk lid, close the rear window fully.
- Open the trunk lid fully
- Take care not to damage the trunk lid and body.

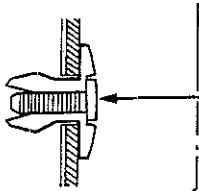
1. Remove:

- Lifter trim panels/spare tire lid (page 20-39)
- Panels/trim panels (page 20-98)
- Trunk lid (page 20-98)
- Roof slider assembly (page 20-101)

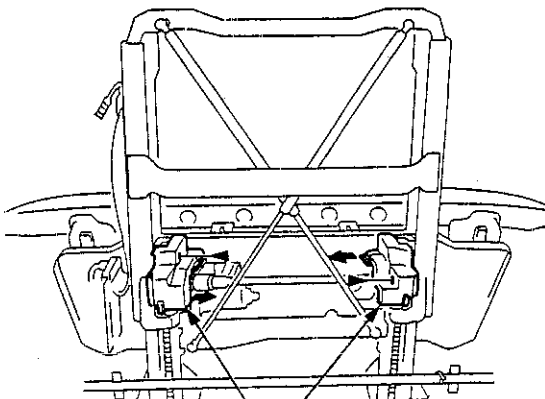
2. Remove each device trims.

**NOTE:** Take care not to scratch the trims.

►: Clip locations



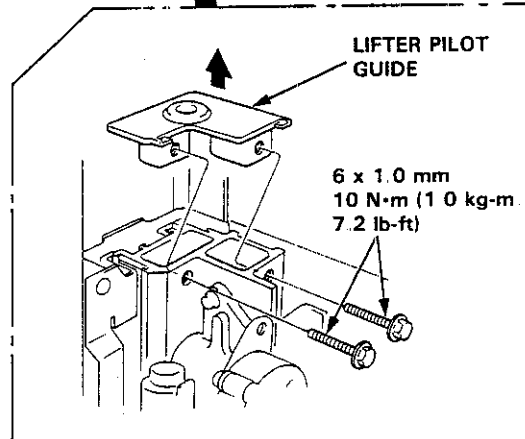
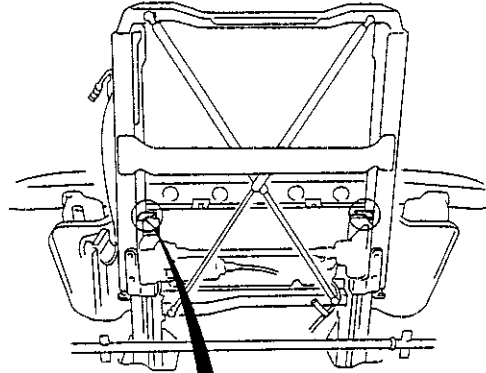
**NOTE:** Loosen the screw, then remove the clip using a clip remover.



DEVICE TRIMS

3. Remove the mounting bolts, remove each lifter pilot guides.

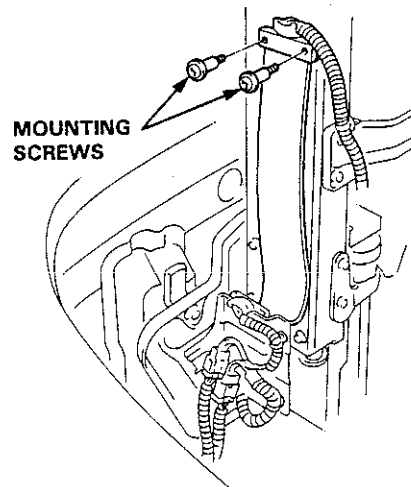
**NOTE:** Take care not to drop the mounting bolts inside the lifter cover.



LIFTER PILOT GUIDE

6 x 1.0 mm  
10 N·m (1.0 kg-m)  
7.2 lb-ft

4. Remove the mounting screws, then remove the harness.



MOUNTING SCREWS

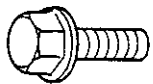


5. Remove the lifter bracket mounting bolts by holding the lifter guide frame assembly down, then dismount each lifter brackets.

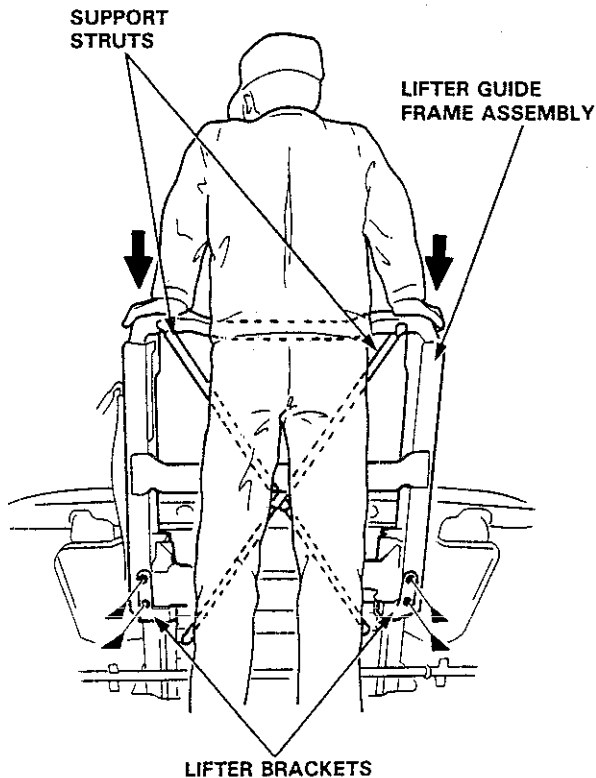
**CAUTION:** When removing the mounting bolts, have an assistant press down the lifter guide frame assembly, as the force of the support struts will move it upwards

**NOTE:** Take care not to drop the mounting bolts inside the lifter cover

►: Mounting bolt locations

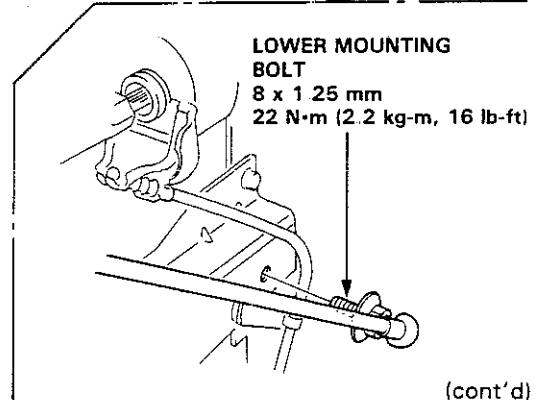
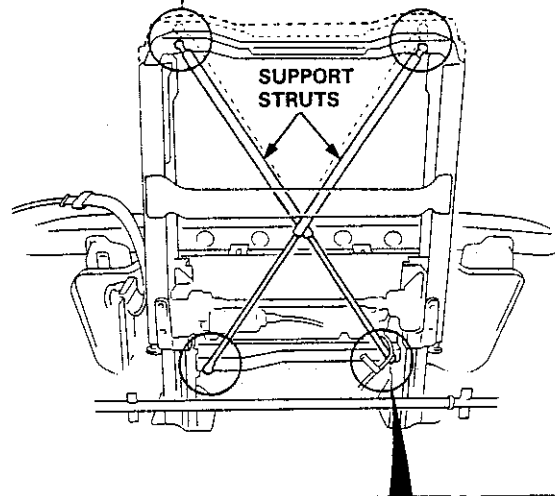
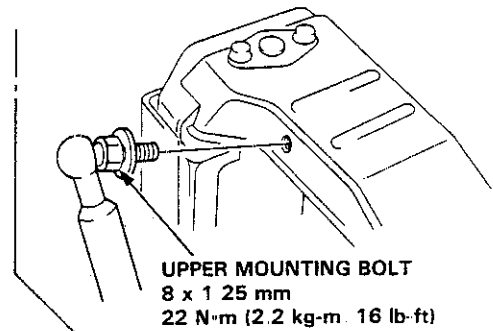


6 x 1.0 mm  
10 N·m (1.0 kg-m,  
7.2 lb-ft)



6. Remove each upper and lower mounting bolts of the support struts while holding the lifter guide frame assembly

**CAUTION:** When removing the support struts, take care not to drop them to ensure a smooth up and down movement of the lifter guide frame assembly.



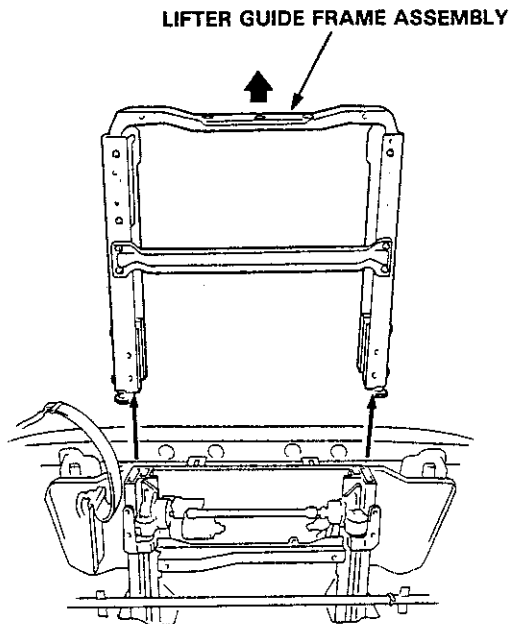
(cont'd)

# Lifter

## Lifter Guide Frame Removal (cont'd)

- 7 Remove the lifter guide frame assembly by lifting it up.

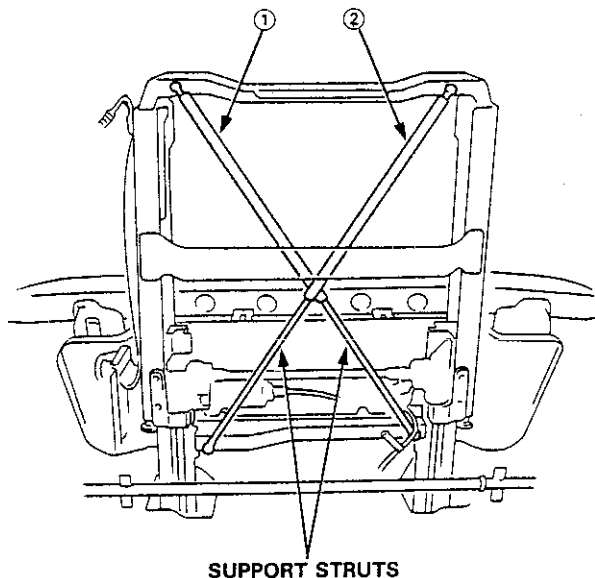
NOTE: Take care not to damage the body.



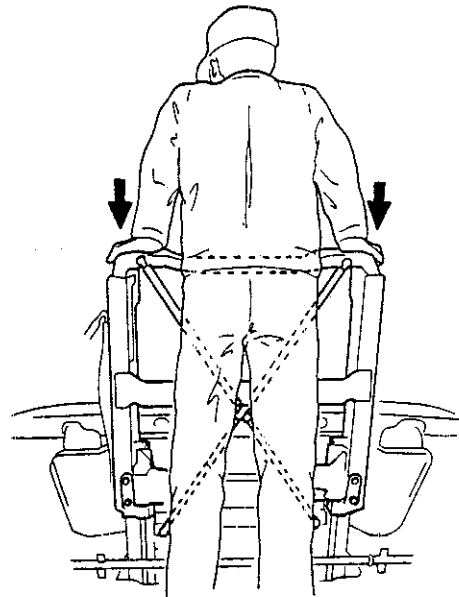
- 8 Installation is the reverse of the removal procedure.

NOTE:

- Install the support struts in numbered sequence while holding the lifter guide frame assembly.



- Before mounting the lifter brackets to the lifter guide frame assembly, check for rise and fall by pressing the lifter guide frame assembly. If necessary, adjust the bearing box assembly (page 20-126).
- Do not rise and fall the lifter guide frame assembly suddenly.



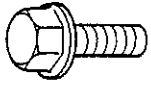
- After installing the slider assembly, make sure the roof slider assembly is located properly to the lifter assembly.
- Check for operating the power roof. If operation is degraded, see the troubleshooting as described on page 20-155.
- Operate the power roof, then check that the roof pilot shaft is contacted with the roof properly. If necessary, adjust the roof slider assembly alignment (page 20-112).
- After installing the trunk lid, adjust its alignment (page 20-99).
- Make sure the trunk lid is locked securely.



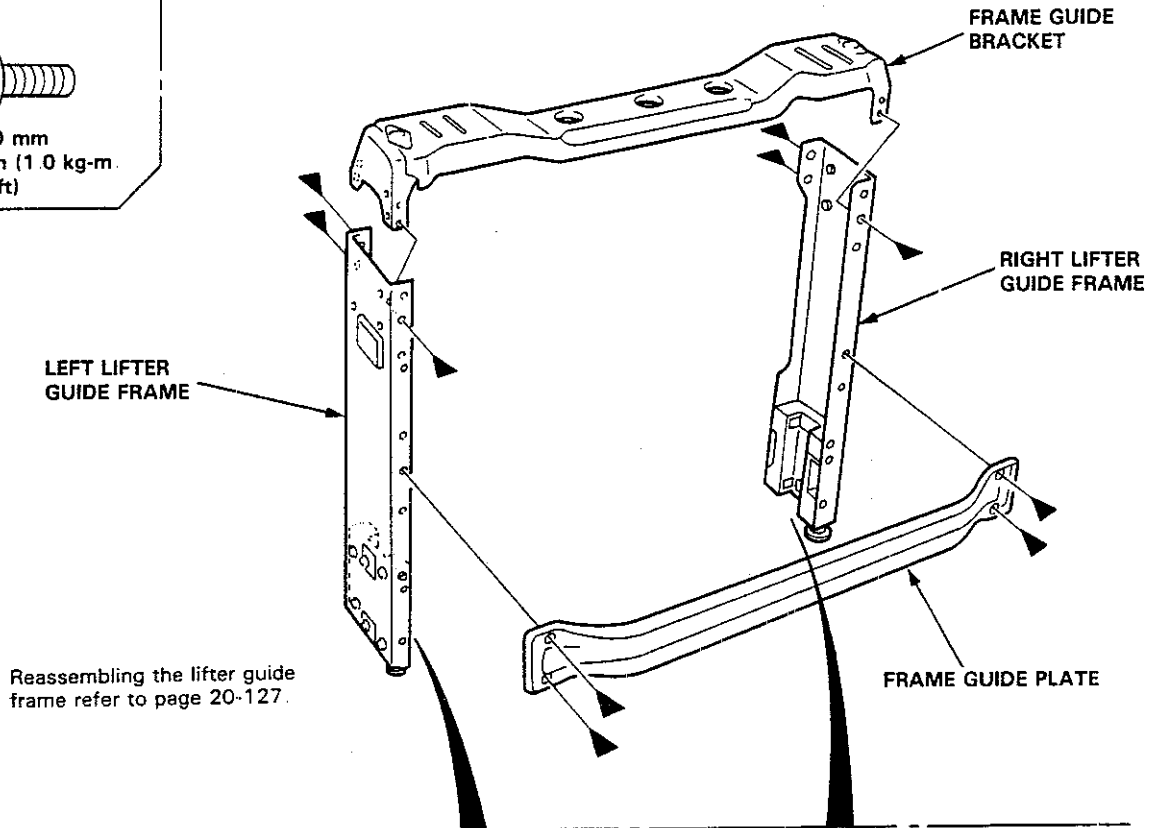
## Lifter Guide Frame Disassembly

NOTE: Remove the lifter guide frame assembly (page 20-122).

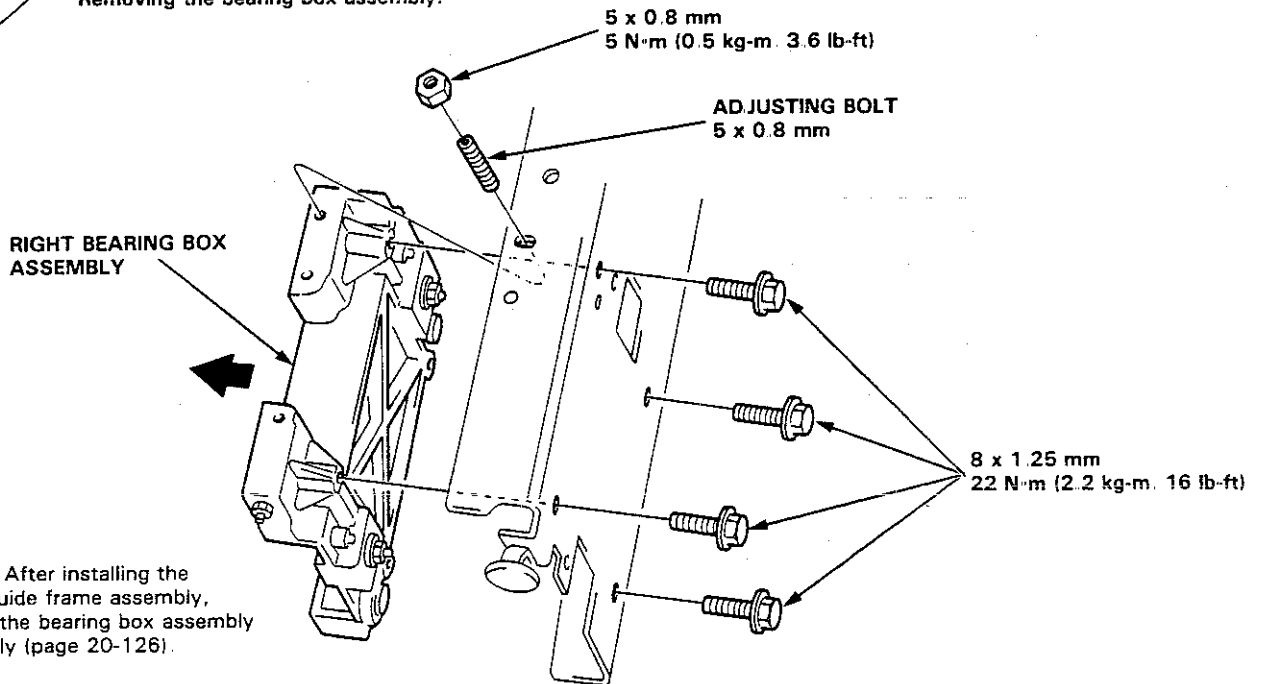
►: Mounting bolt locations



6 x 1.0 mm  
10 N·m (1.0 kg-m,  
7.2 lb-ft)



Removing the bearing box assembly:



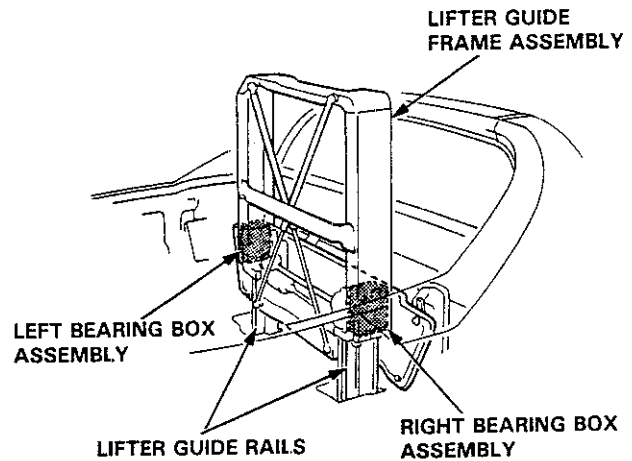
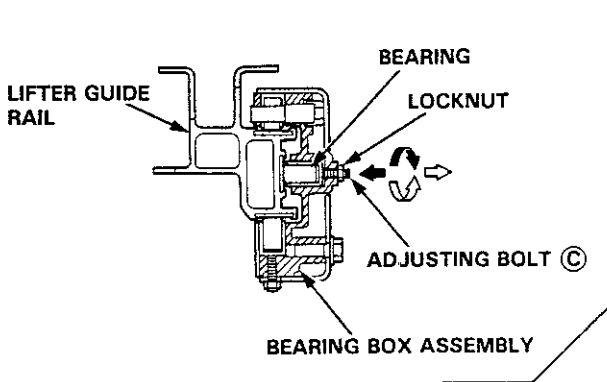
NOTE: After installing the lifter guide frame assembly, adjust the bearing box assembly carefully (page 20-126).

# Lifter

## Bearing Box Adjustment

**NOTE:**

- When adjusting the bearing box assemblies, install the lifter guide frame assembly to the lifter guide rails and the support struts should be installed.
- Before mounting the lifter brackets to the lifter guide frame assembly, adjust the bearing box assemblies.
- When adjusting the bearing box assemblies, the lifter guide frame assembly should be held uprightly



**Adjustment to fore and aft (Both side):**

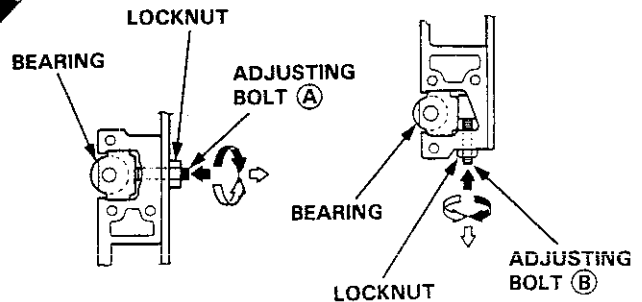
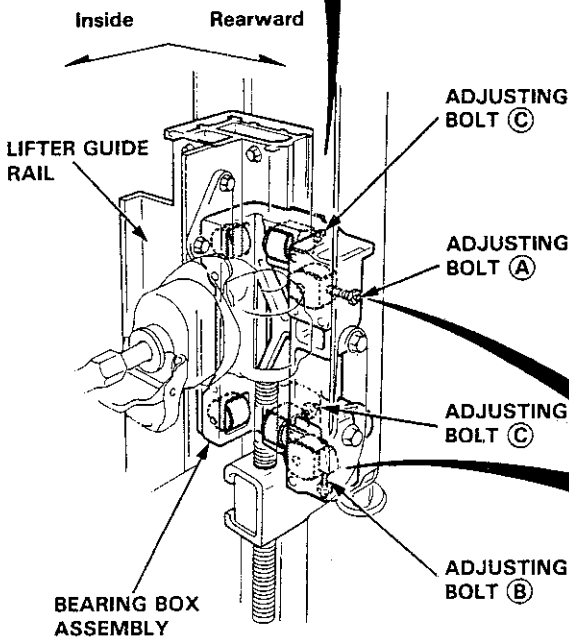
- After loosening the locknut, tighten the adjusting bolt (A) until the bearing is contacted with the lifter guide rail surface certainly. Then unfasten the adjusting bolt (A) 90°
- After loosening the locknut, tighten the adjusting bolt (B) until the bearing is contacted with the lifter guide rail surfaces certainly. Then unfasten the adjusting bolt (B) 360°.

NOTE: Adjust the right and left bearing box assemblies the same amount

**Adjustment to right and left (Right side only):**

- After loosening the locknut, the upper and lower bearings are contacted with the lifter guide rail surface reasonably by turning the adjusting bolts (C)

NOTE: Turn the upper and lower adjusting bolts (C) the same amount.



**NOTE:**

- Hold the adjusting bolts with a hex wrench when tightening the locknuts
- Check for rise and fall smoothly by pressing the lifter guide frame assembly.

LOCKNUT  
5 x 0.8 mm  
5 N·m (0.5 kg·m.  
3.6 lb-ft)

ADJUSTING BOLT





## Lifter Guide Frame Reassembly

1. Install each bearing box assemblies to the lifter guide frame (page 20-125).

NOTE: Apply grease to the bearings

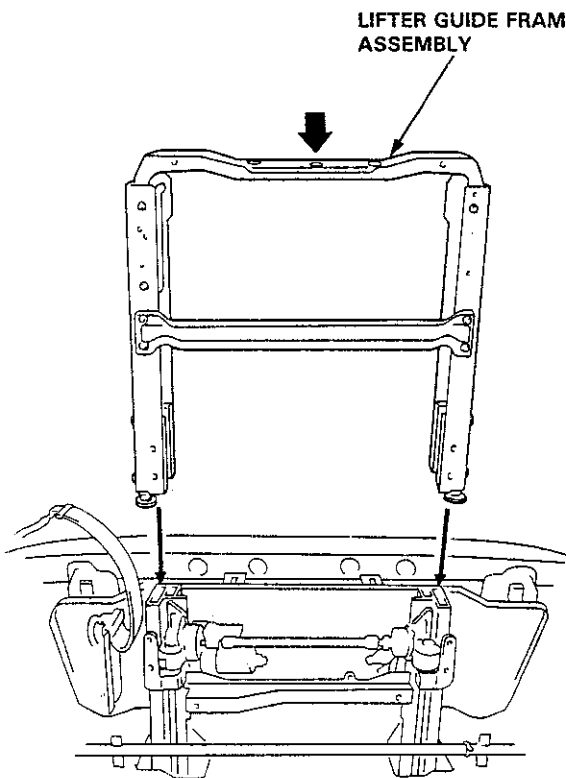
2. Reassemble the lifter guide frames, frame guide bracket and frame guide plate.

NOTE: Lightly tighten the mounting bolts

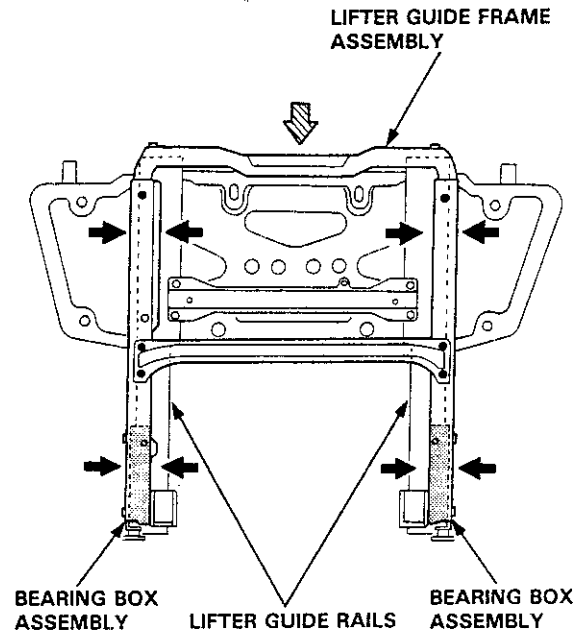
3. Set the lifter guide frame assembly to the lifter guide rails.

NOTE:

- Take care not to damage the body.
- Take care not to drop the lifter guide frame assembly.



4. Adjust for equalizing the gap between each lifter guide rails and lifter guide frame assembly. Make sure the lifter guide frame assembly is assembled properly, then tighten the mounting bolts.



5. Install the support struts (page 20-124)
6. Adjust the bearing box assemblies at both side.
7. Check for rise and fall smoothly by pressing the lifter guide frame assembly  
If necessary, readjust the bearing box assemblies at both side

NOTE: Do not rise and fall the lifter guide frame assembly suddenly.

# Lifter

## Lifter Guide Rail/Lifter Frame Replacement

**CAUTION:** Do not apply strong force on the lifter (Do not force the fully open trunk lid down).

**NOTE:**

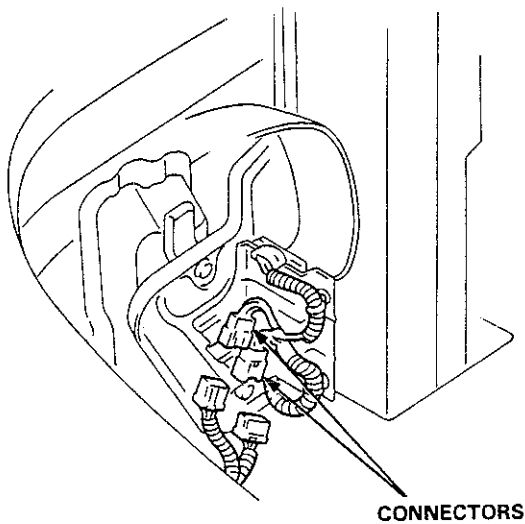
- Lifter trim panels/spare tire lid (page 20-39)
- When the roof closed, secure the roof by turning each roof-side lock handles and roof center handle. Make sure they are locked securely
- An assistant is helpful when removing the slider assembly and lifter guide frame assembly
- When opening the trunk lid, close the rear window fully.
- Open the trunk lid fully
- Take care not to damage the trunk lid and body.

1. Remove:

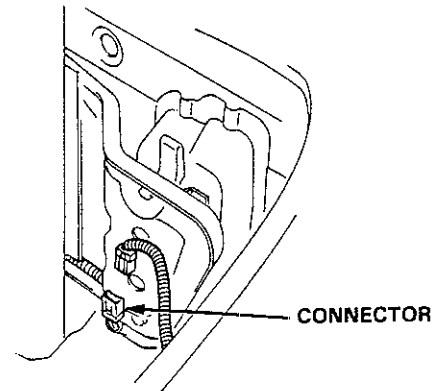
- Lifter trim panels/spare tire lid (page 20-39)
- Panels/trim panels (page 20-98)
- Trunk lid (page 20-98)
- Roof slider assembly (page 20-101)
- Lifter guide frame assembly (page 20-122)
- Right/left lifter device (page 20-119)

2. Disconnect the connectors.

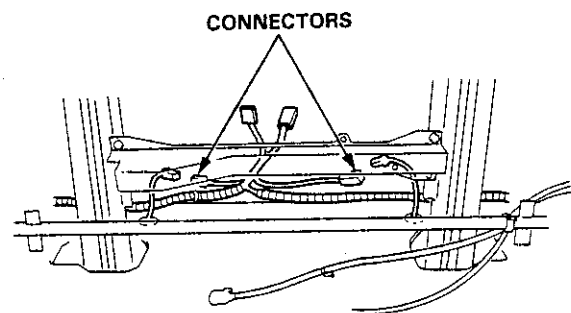
Left:



Right:



Center:

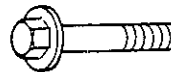


3. Remove the mounting bolts, then remove the lifter frame by lifting it up.

**NOTE:** Take care not to damage the body.

►: Mounting bolt locations

A

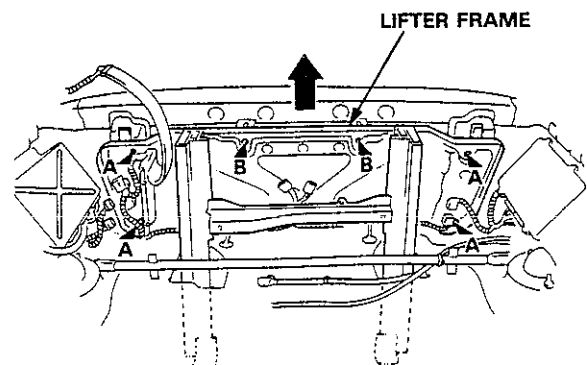


10 x 1.25 mm  
40 N·m (4.0 kg·m)  
29 lb·ft)

B



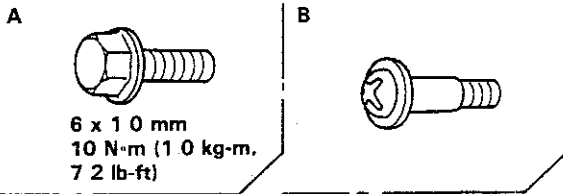
10 x 1.25 mm  
40 N·m (4.0 kg·m)  
29 lb·ft)



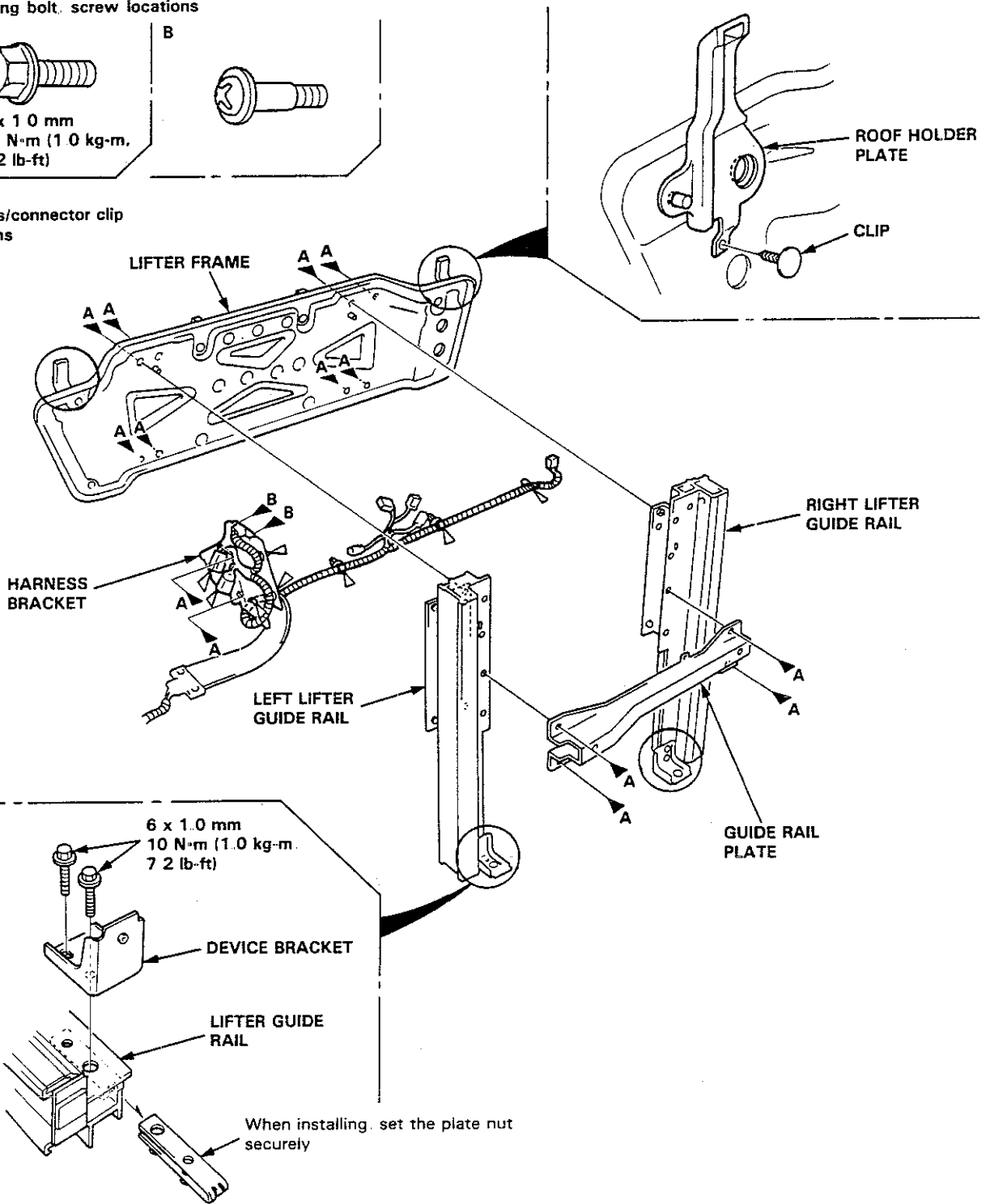


4 Remove the guide rail plate, then remove each lifter guide rails from the lifter frame. Remove the wire harness and harness bracket.

▶: Mounting bolt, screw locations



▷: Harness/connector clip locations



(cont'd)

# Lifter

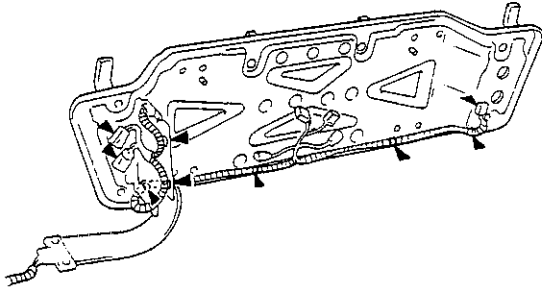
## Lifter Guide Rail/Lifter Frame Replacement (cont'd)

5. Installation is the reverse of the removal procedure.

**NOTE:**

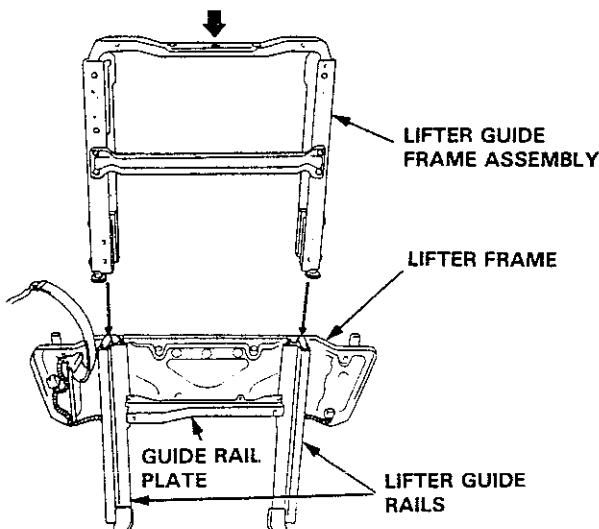
- Make sure the wire harness and connectors are fastened correctly on the lifter frame.

▶: **Harness/connector clip locations**

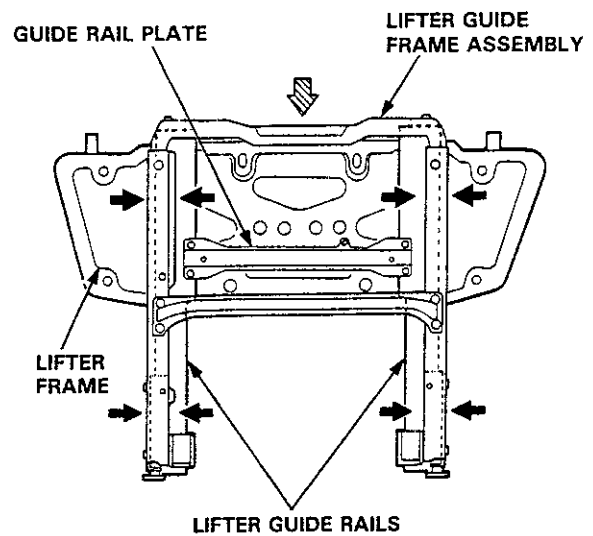


- When installing the lifter guide rails to the lifter frame, locate the lifter guide rail by using the lifter guide frame assembly properly as following.

- 1 Install each lifter guide rails and guide rail plate temporarily. Lightly tighten the mounting bolts.
- 2 Set the lifter guide frame assembly to the lifter guide rails  
An assistant is helpful when setting the lifter guide frame assembly.



- 3 Adjust for equalizing the gap between each lifter guide rails and lifter guide frame assembly. Make sure each lifter guide rails are located properly, then tighten the mounting bolts.



- When installing the lifter frame, the lifter frame should be located to the body by using each guide pins and hooks (page 20-117).
- Before tightening the mounting bolts, make sure the wire harnesses are not pinched.
- After installing the lifter frame, check for vertical alignment of the lifter frame.
- Make sure the connectors are connected properly.
- After installing the support struts, check for rise and fall by pressing the lifter guide frame assembly (page 20-124).
- After installing the slider assembly, make sure the roof slider assembly is located properly to the lifter assembly.
- Check for operating the power roof. If operation is degraded, see the troubleshooting as described on page 20-155.
- Operate the power roof, then check that the roof pilot shaft is contacted with the roof properly. If necessary, adjust the roof slider assembly alignment (page 20-112).
- After installing the trunk lid, adjust its alignment (page 20-98).
- Make sure the trunk lid is locked securely.



## Lifter Frame Vertical Alignment Check

### NOTE:

- When the lifter assembly removed and the lifter frame or lifter guide rails replaced, after installing them, then check for vertical alignment of the lifter frame
- Before installing the roof slider assembly, check for vertical alignment.
- Place the vehicle on a firm, level surface when checking

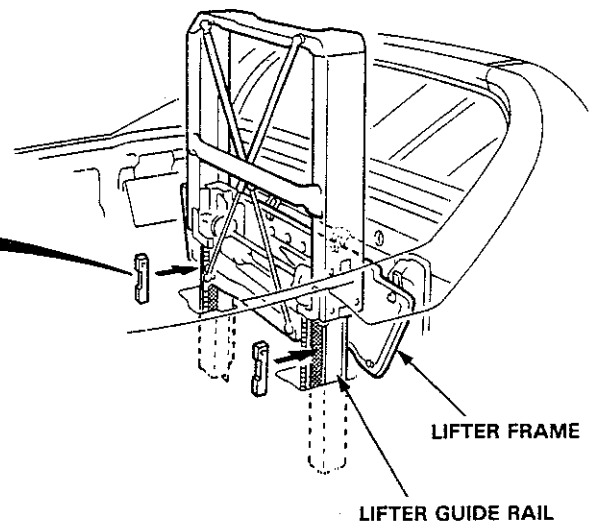
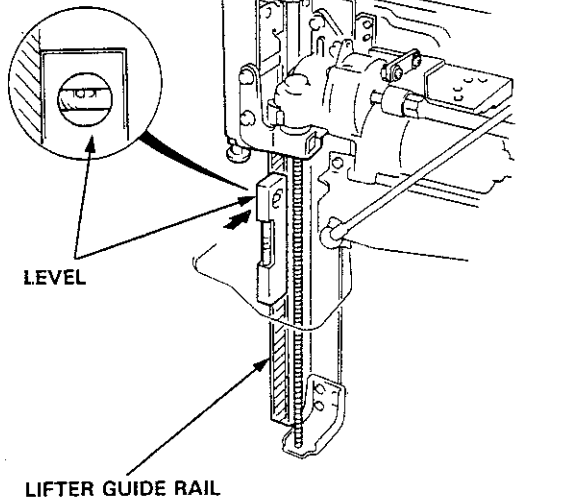
- 1 Check that the lifter frame is mounted certainly to the body.

NOTE: The lifter frame should be positioned properly by each guide pins and hooks (page 20-117).

2. Check for vertical alignment of the lifter frame against the body by using a level as shown

NOTE: Apply a level on the measuring surface properly

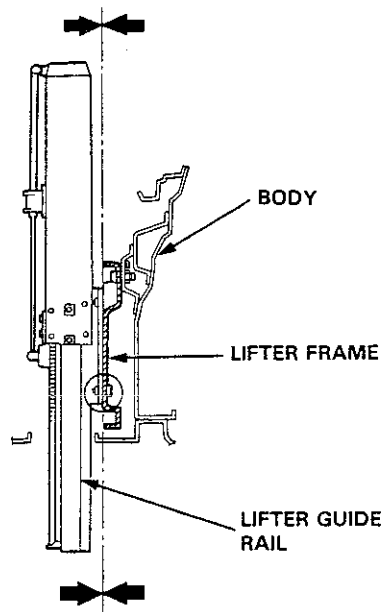
The bubble in the level should indicate vertical alignment.



- 3 If the lifter frame is not vertical against the body, check the following.

- The vehicle is placed on a firm level surface.
- The lifter frame is mounted certainly to the body.
- The mounting position of the lifter frame or lifter guide rails are not bend.

**CAUTION:** The deformed parts should be replaced certainly. If there are deformations on the lifter frame or lifter guide rails, make causes of failure



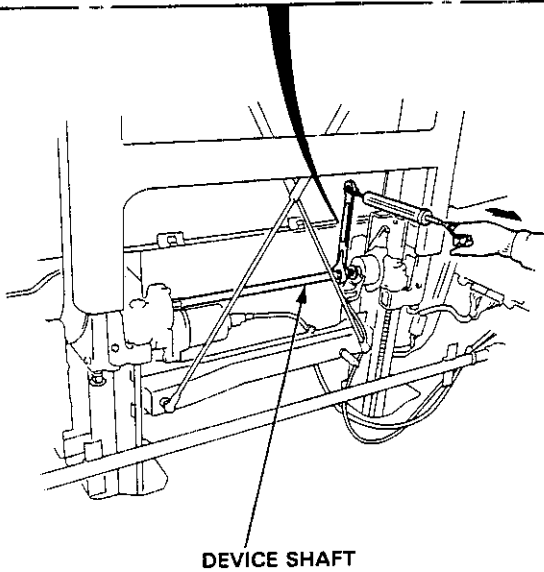
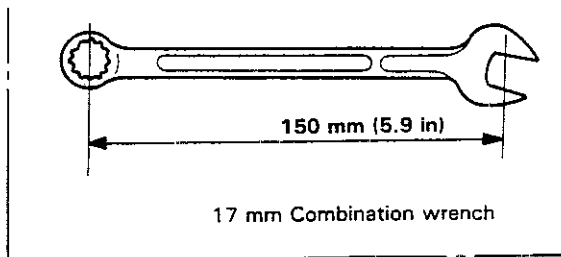
# Lifter

## Sliding Drag Check (Roof Slider Installed)

### NOTE:

- After installing the roof slider assembly and trunk lid, check the following.
- The roof should be closed securely by turning each roof-side lock handles and roof center handle.
- Open the trunk lid fully.

1. Attach a combination wrench to the device shaft.
2. Attach a spring scale as shown.
3. Measure the sliding drag by pulling a spring scale back.



Sliding drag: 0.98 – 1.64 N  
(100 – 167 g, 0.22 – 0.37 lb)

4. If load is not within specification, check the following.
  - The device lead screws is not bent
  - The bearing box assembly is adjusted properly.



# Trunk Lid Lock

## Replacement

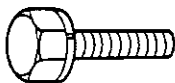
►: Mounting screw, bolt locations

A



6 x 1.0 mm 8 N·m  
(0.8 kg-m, 5.8 lb-ft)

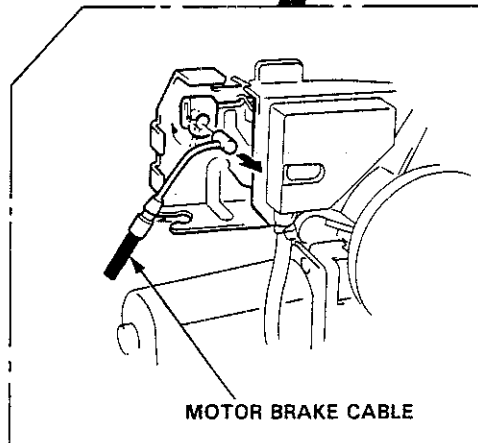
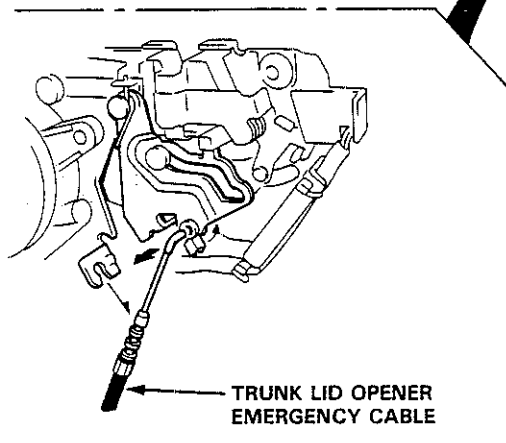
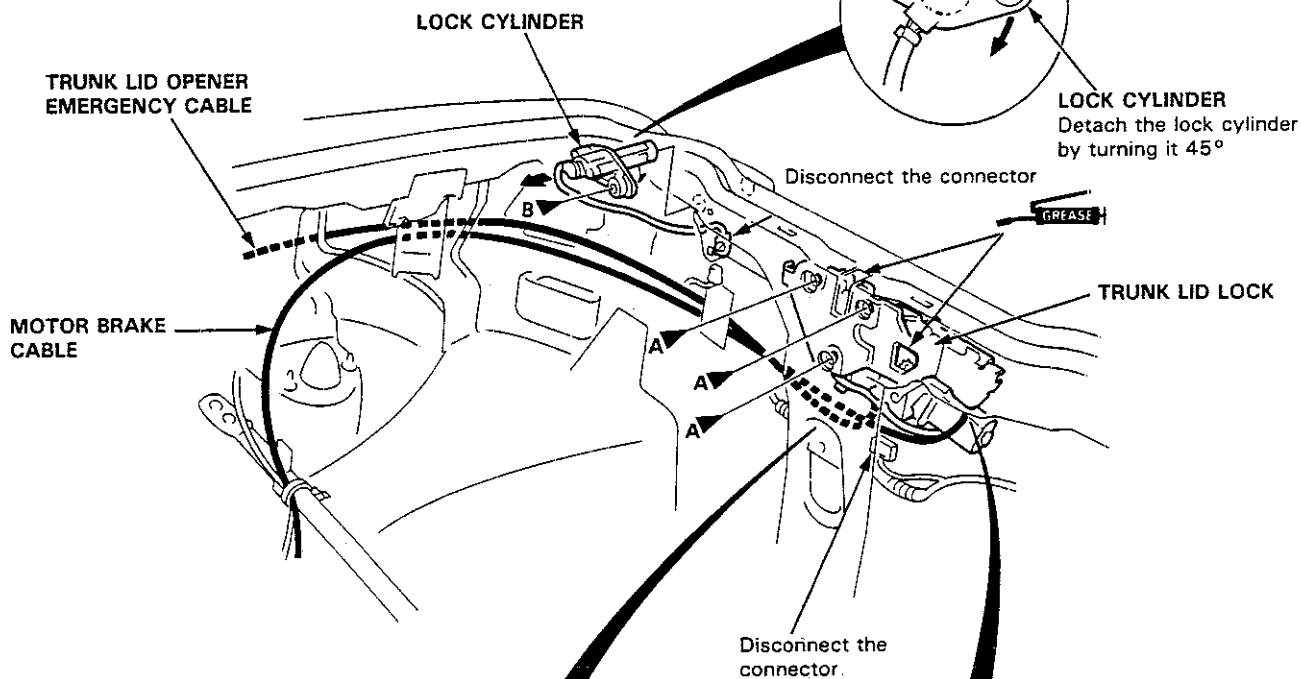
B



6 x 1.0 mm 10 N·m  
(1.0 kg-m, 7.2 lb-ft)

NOTE:

- Open the trunk lid
- Remove the rear trim panel (page 20-39).
- Take care not to bend the cables.



Installation is the reverse of the removal procedure.

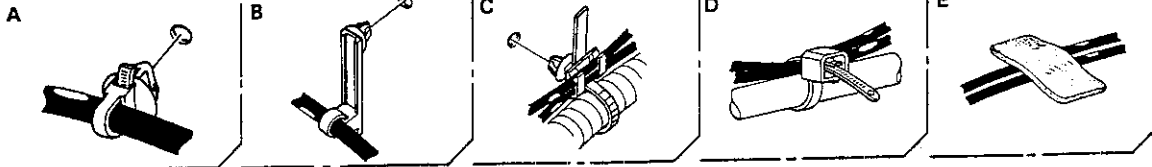
NOTE:

- Make sure the connector is connected properly
- Make sure the trunk lid is locked securely
- Make sure the trunk lid is opened putting the key in the lock and turning it clockwise.
- Make sure the trunk lid lock is unlocked by the trunk lid opener emergency cable (page 20-134). If necessary, adjust the fixing position of the cable

# Manual Operating Cables (Emergency)

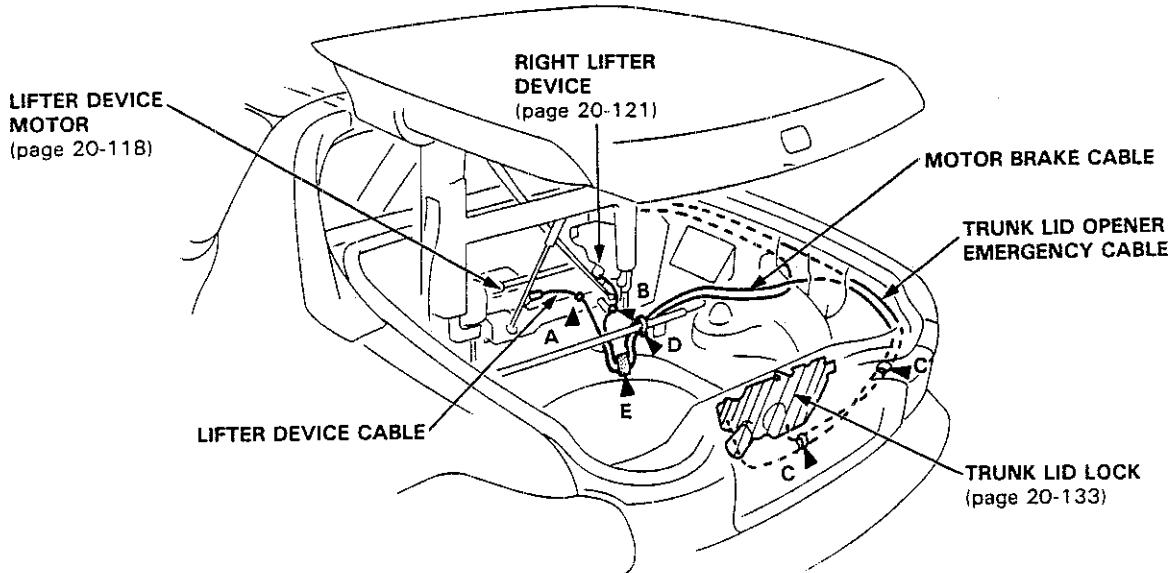
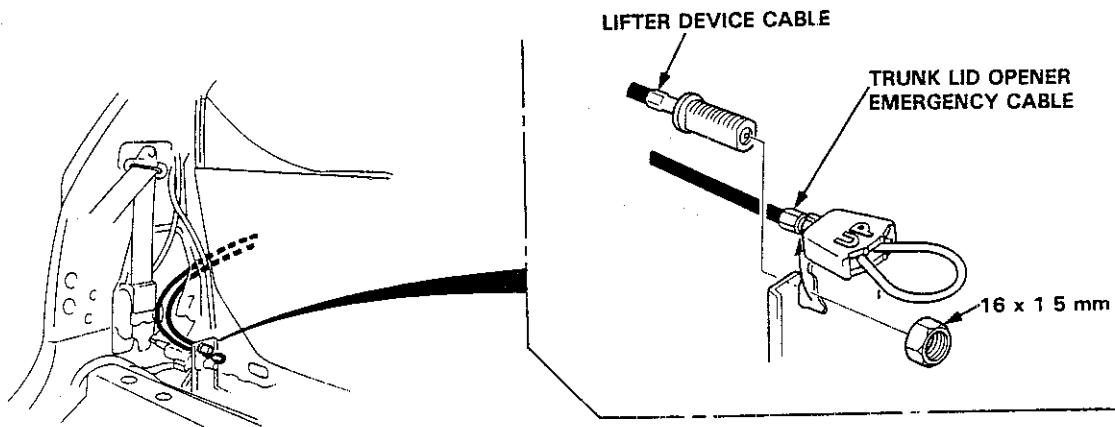
## Replacement

►: Clip, cable cushion locations



### NOTE:

- Close the rear window fully.
- Open the trunk lid.
- Remove the interior trims (page 20-36) and trunk trims (page 20-39)
- Take care not to bend the cables



Installation is the reverse of the removal procedure

### NOTE:

- Make sure the cables are routed and connected properly.
- Make sure the operating the power roof manually is smooth (page 20-244).
- Make sure the trunk lid lock is unlocked smoothly





# Trunk Lid Weatherstrip/Upper Drain Tube

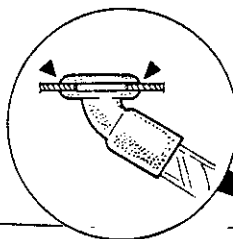
## Replacement

### NOTE:

- Close the rear window fully.
- Open the trunk lid.

UPPER DRAIN TUBE

NOTE: When installing, pass the drain tube certainly to the hole



UPPER DRAIN TUBE


NOTE: When installing, pass the tip of the drain tube to the hole on the body

ALIGNMENT MARK LOCATION

UPPER DRAIN TUBE

TRUNK LID WEATHERSTRIP

### NOTE:

- Before installing the weatherstrip, apply clear sealant to the  locations as shown.
- Align the weatherstrip with the mark to the center of opening trunk then gule the weatherstrip

UPPER DRAIN TUBE

First remove:

- Center pillar trim panel (page 20-64)
- Side lifter trim panel (page 20-39)

Installation is the reverse of the removal procedure.

### NOTE:

- When installing make sure there are no wrinkles in the weatherstrip.
- Make sure the drain tube is routed properly
- After installing close the trunk lid, check for water leak.

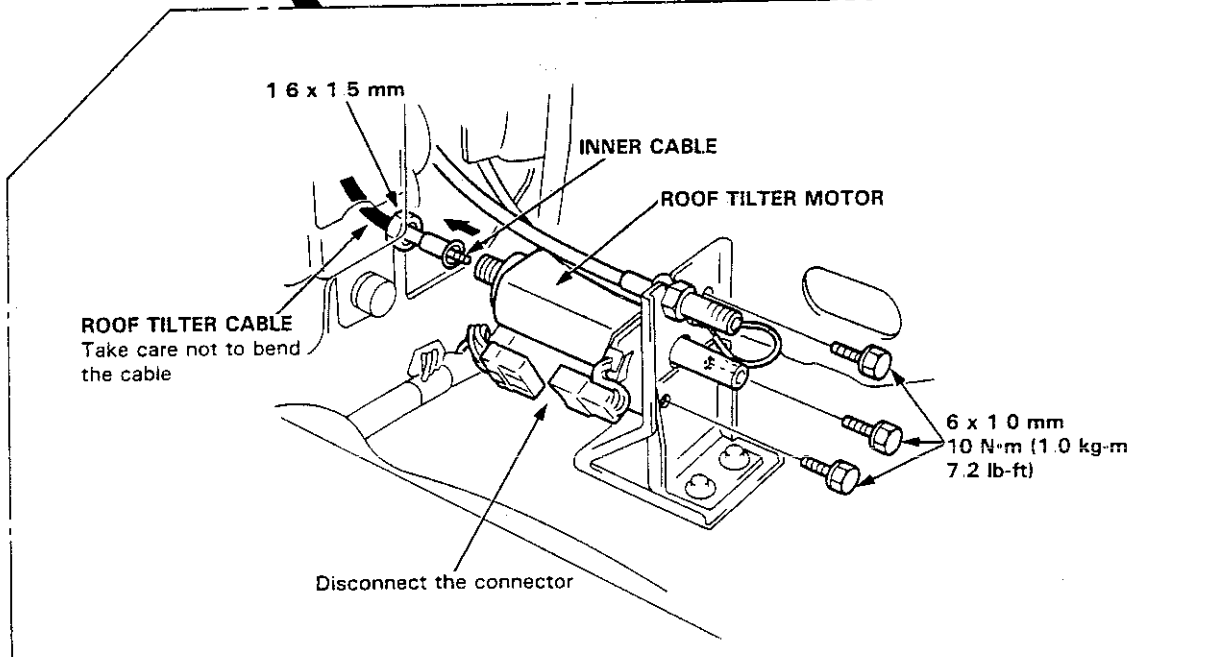
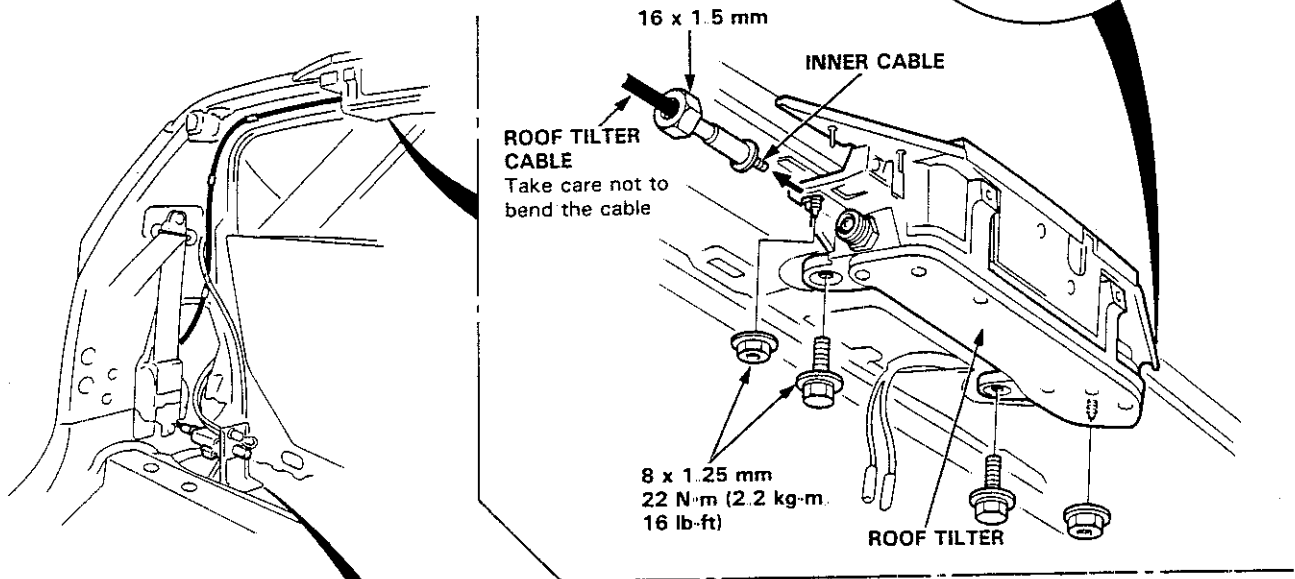
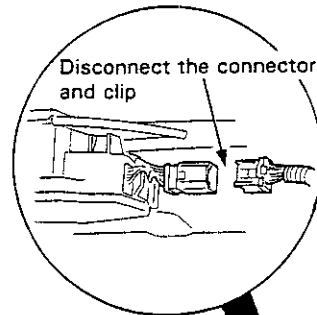
# Roof Tilter/Motor/Cable

## Replacement

**CAUTION:** To prevent damage to the roof, the roof should be placed on a shop towel.

**NOTE:**

- Remove the roof (page 20-154)
- Work with an assistant when removing the roof.
- Remove the interior trims (page 20-36).

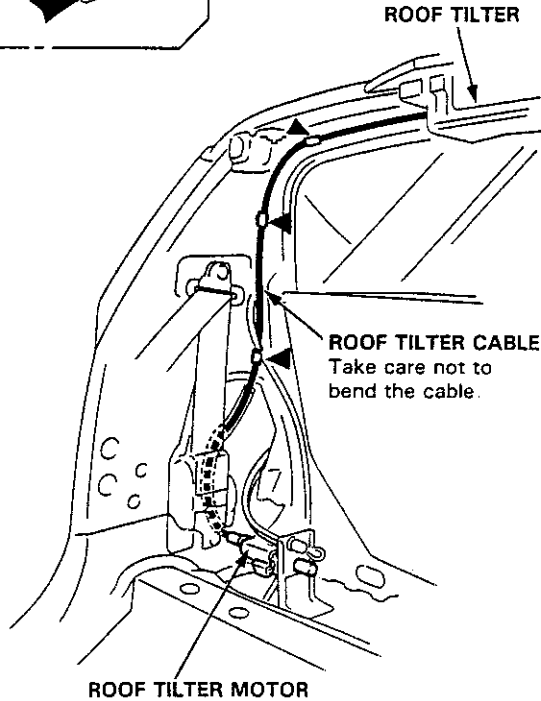
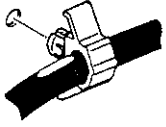




# Lifter Cover

## Replacement

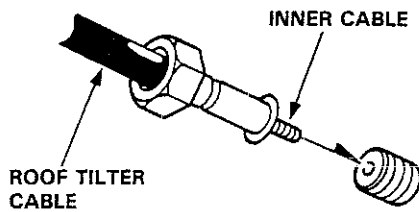
### ►: Clip locations



Installation is the reverse of the removal procedure

### NOTE:

- Make sure the connector is connected properly.
- When connecting the cable the inner cable should be inset securely.

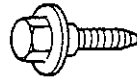


- After installing, make sure the operating the roof tilter is smooth. If the operation is degraded, see the troubleshooting as described on page 20-155.

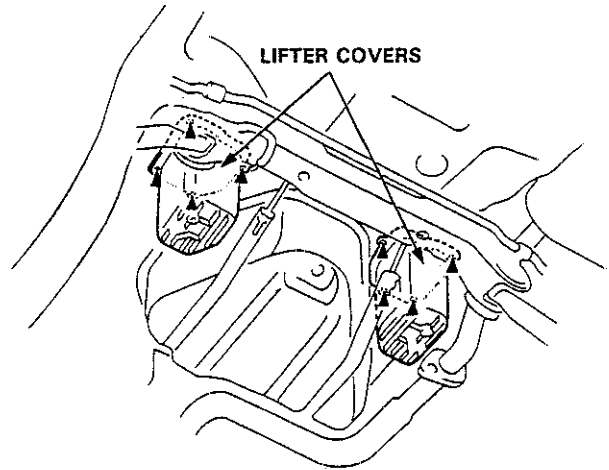
**▲ WARNING** Do not smoke while working on fuel system. Keep open flame away from work your work area.

NOTE: Block front wheels. Jack up the rear of the car and support with jackstands.

### ►: Mounting screw locations



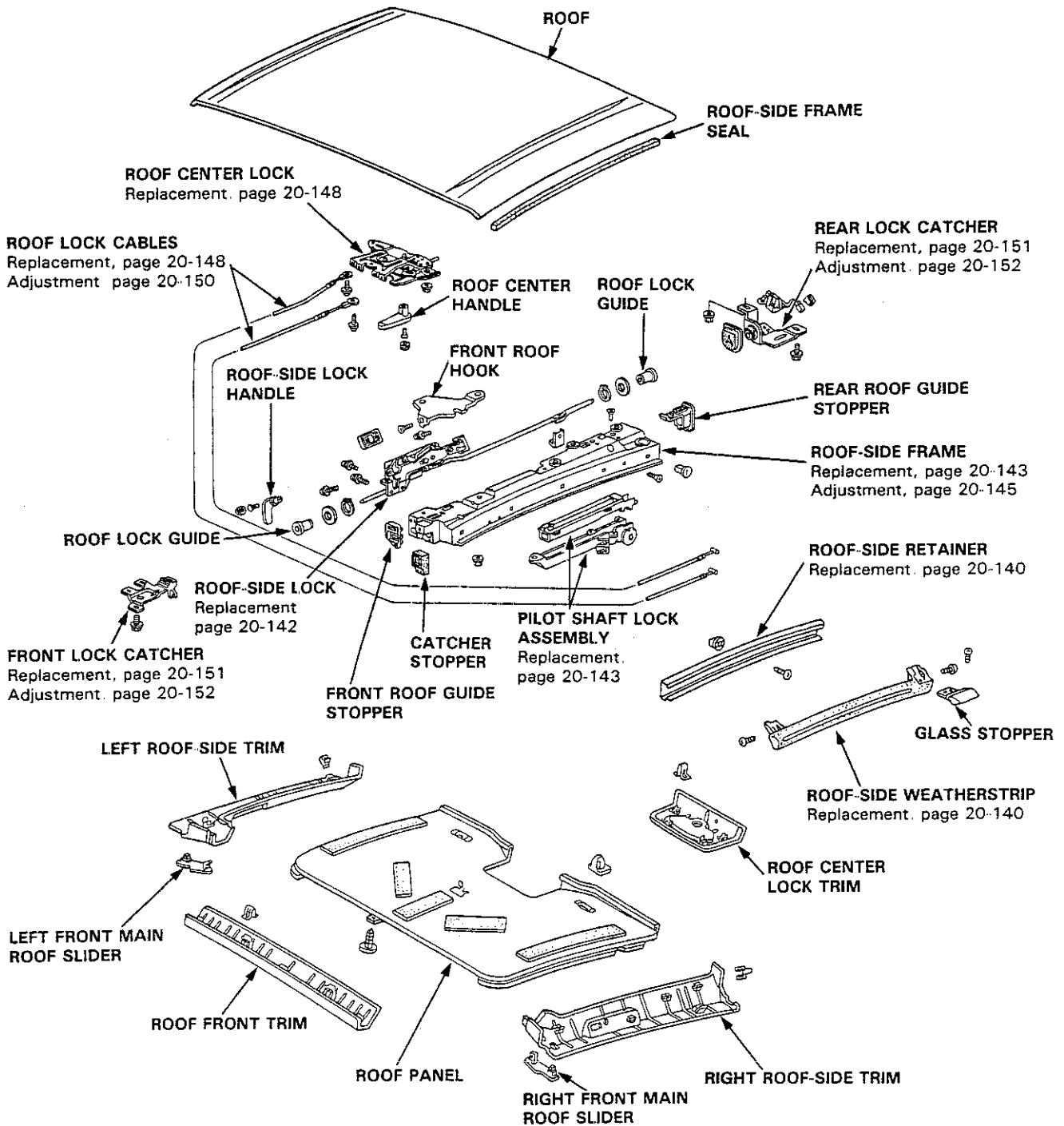
6 x 10 mm  
10 N·m (1.0 kg·m,  
7.2 lb-ft)



Installation is the reverse of the removal procedure

# Roof

## Index





# Roof Panel/Trims Replacement

### CAUTION:

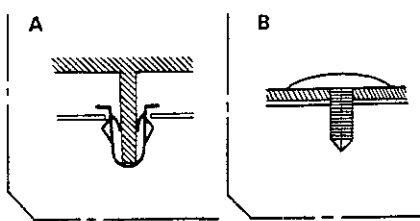
- To prevent damage to the roof, the roof should be placed on a shop towel.
- When prying with a flat tip screwdriver, wrap it with protective tape to prevent damage.

### NOTE:

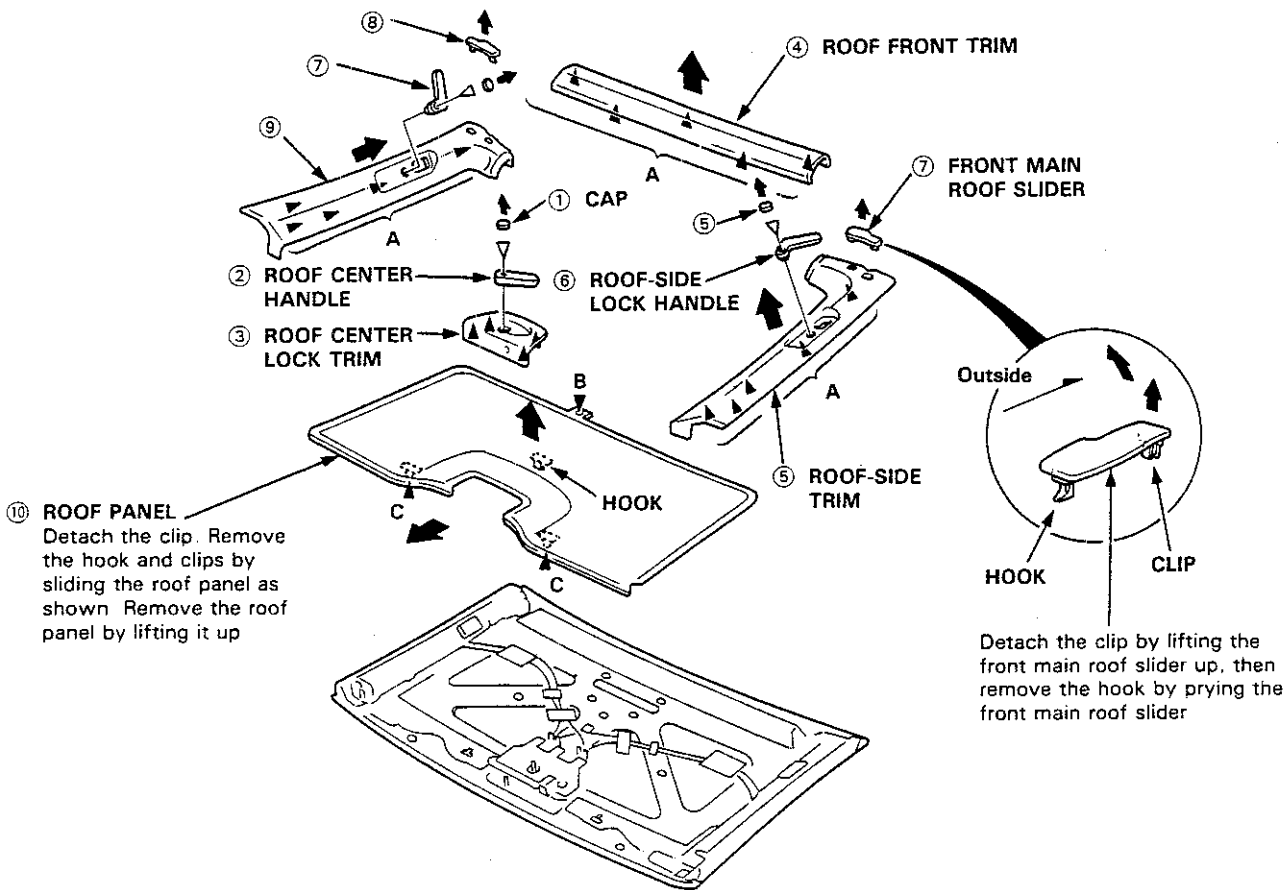
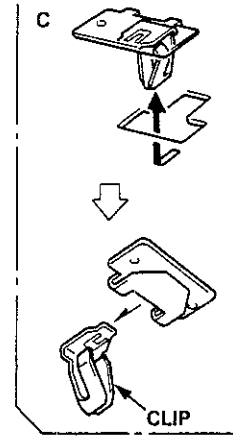
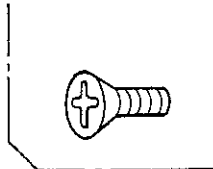
- Take care not to bend or scratch the panel and trims.
- Remove the roof (page 20-154)
- Work with an assistant, when removing the roof.

Disassemble in numbered sequence

### ▶ Clip locations



### ▷ Mounting screw locations



Installation is the reverse of the removal procedure.

### NOTE:

- If necessary, replace any damaged clips.
- Make sure the panel and trims are secured properly.
- When setting the roof in place on the car, secure the roof by turning each roof-side lock handles and roof center handle. Make sure they are locked securely.

# Roof

## Roof-Side Weatherstrip/Retainer Replacement

**CAUTION:** To prevent damage to the roof, the roof should be placed on a shop towel!

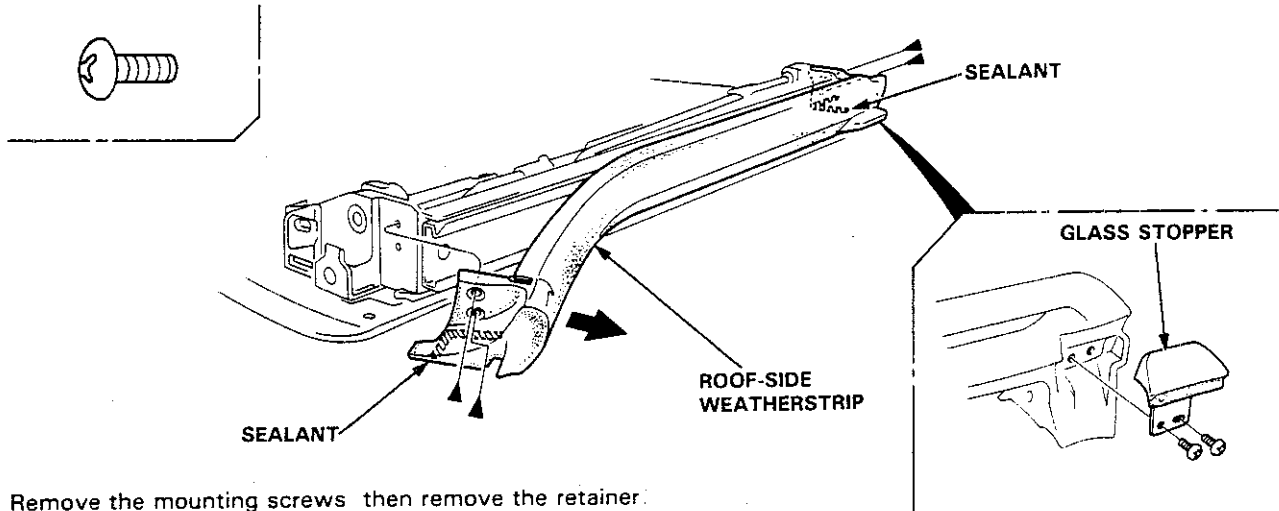
**NOTE:** Take care not to damage the weatherstrip

1. Remove the roof.

**NOTE:** Work with an assistant, when removing the roof.

2. Remove the roof-side trim (page 20-83).
3. Remove the mounting screws, then peel off the weatherstrip

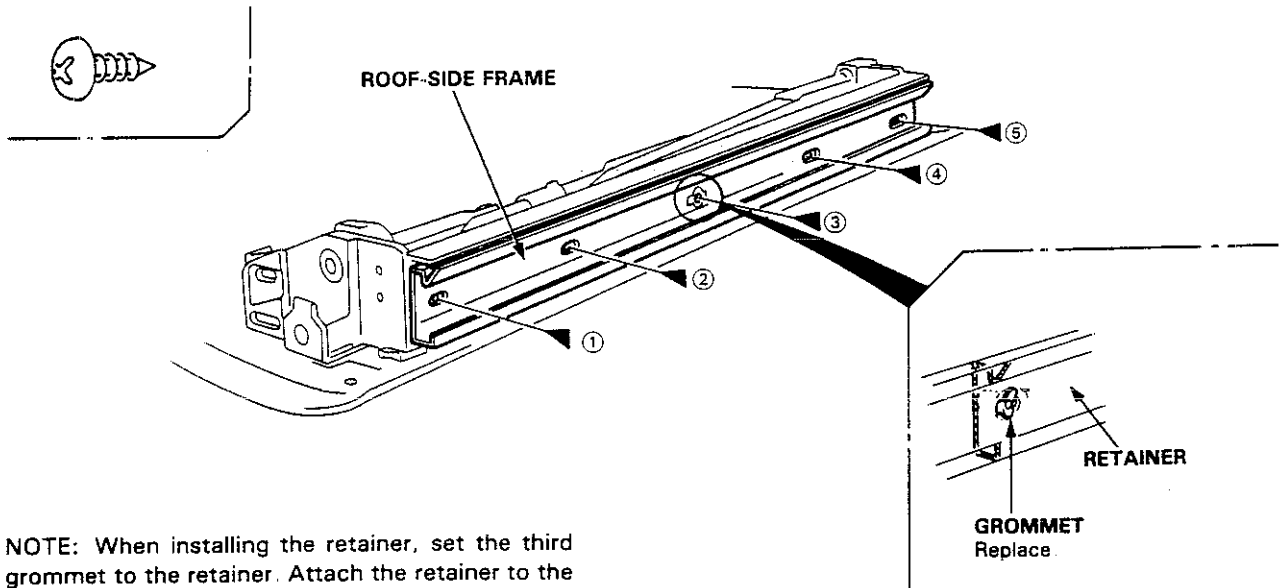
►: Mounting screw locations



4. Remove the mounting screws then remove the retainer.

**NOTE:** Take care not to bend or twist the retainer

►: Mounting screw locations



**NOTE:** When installing the retainer, set the third grommet to the retainer. Attach the retainer to the roof-side frame, then tighten the mounting screws in numbered sequence.

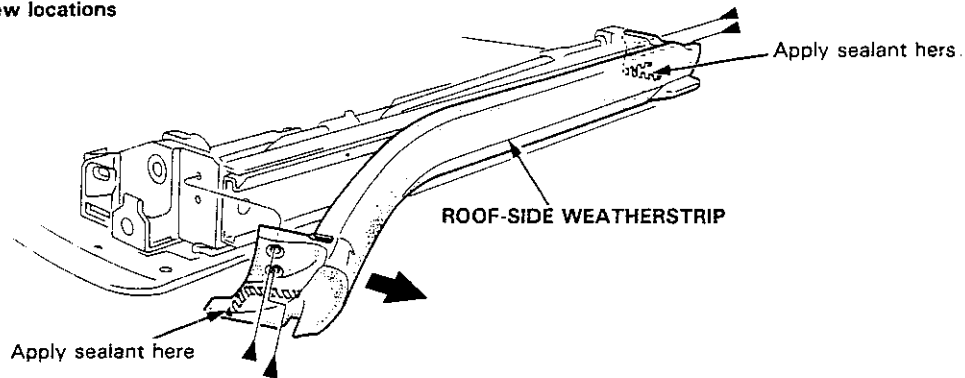


5. Installation is the reverse of the removal procedure.

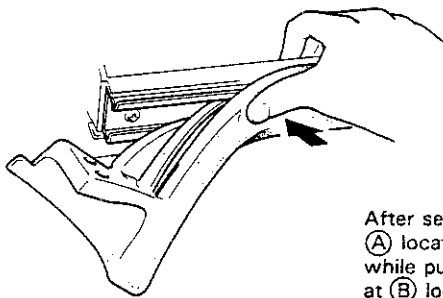
**NOTE:**

- When installing the weatherstrip, apply clear sealant to the shadowed areas as shown. Glue the weatherstrip with both ends. Make sure there are no twist the weatherstrip.

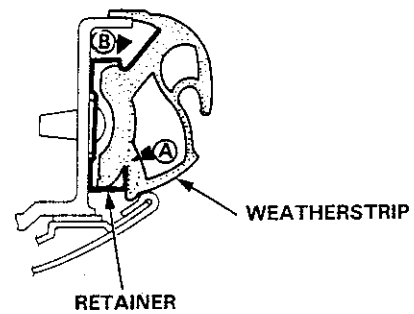
►: Mounting screw locations



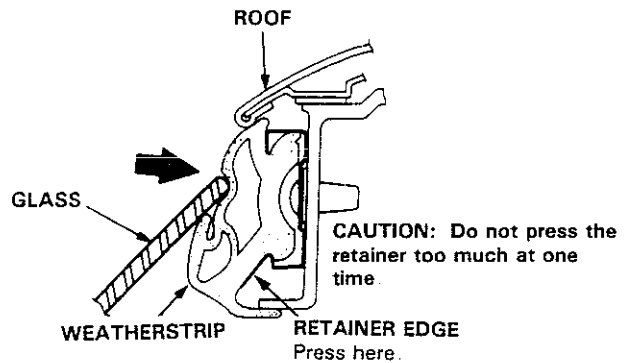
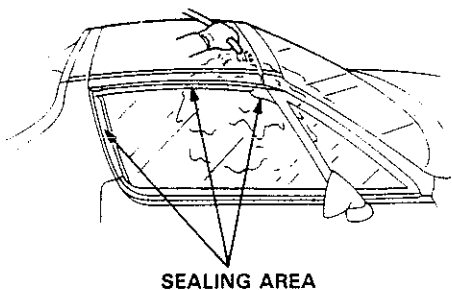
- The weatherstrip should be attached securely as shown. Make sure there are no twist the weatherstrip.



After setting the weatherstrip at (A) location, install the weatherstrip while pushing it on the retainer at (B) location.



- After installing, install the roof to the body. The roof should be locked securely. With the door, door glass and rear window closed fully, check for water and air leaks.
- Spray water over the roof. Do not spray to the sealing area directly and do not use high pressure water.
- Check that no water enters the passenger compartment from the roof.
- If there enters no water from the front pillar but only from the roof-side, repair by pressing against the retainer edge.



# Roof

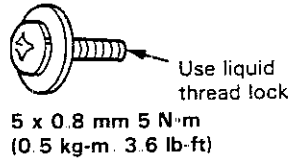
## Roof-Side Lock Replacement

**CAUTION:** To prevent damage to the roof, the roof should be placed on a shop towel.

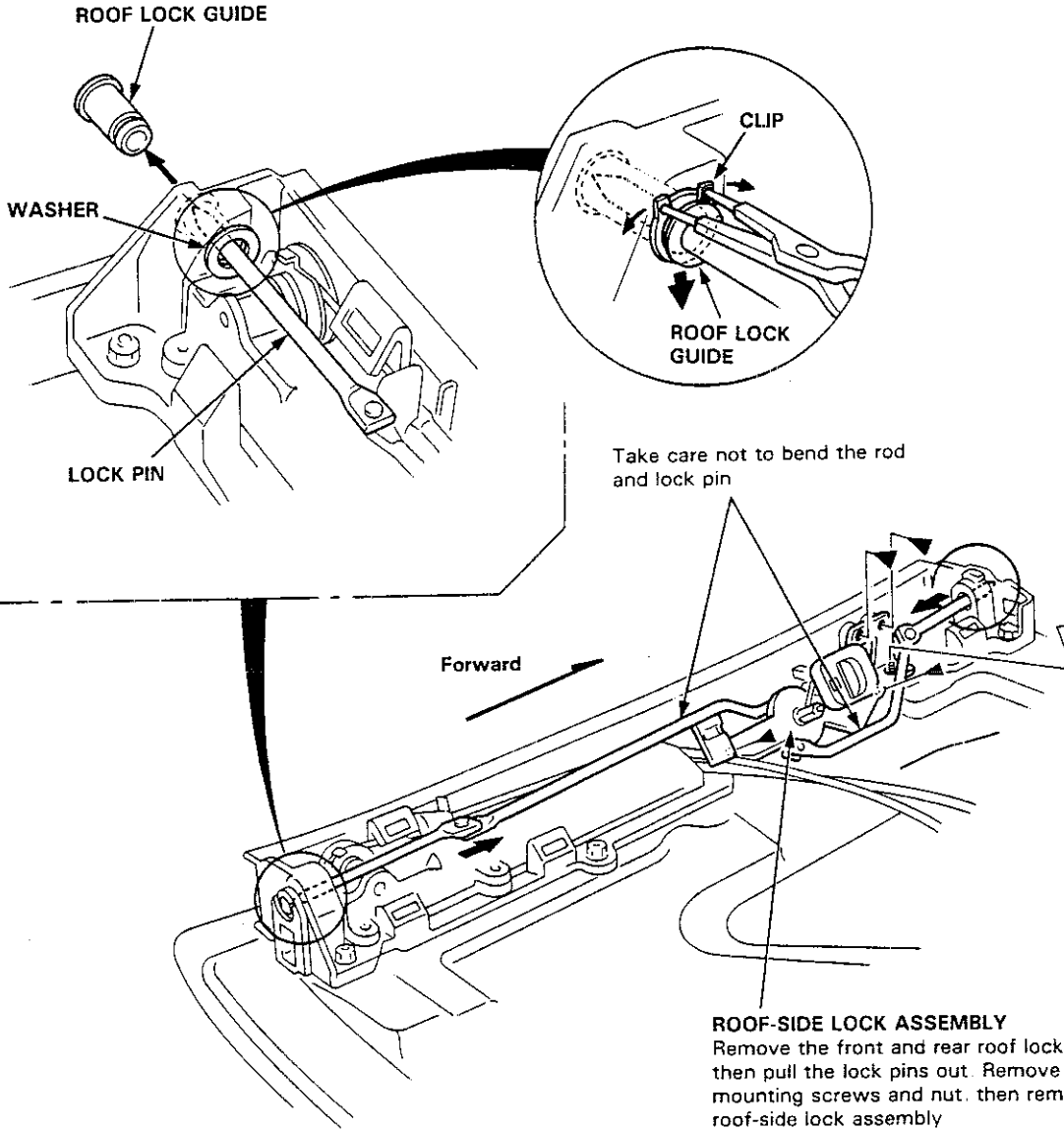
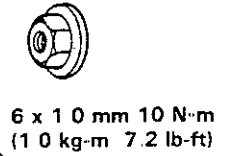
**NOTE:**

- Remove the roof (page 20-154).
- Work with an assistant when removing the roof
- Remove the roof panel and trims (page 20-139)

▶: Mounting screw locations



▷: Mounting nut locations



Installation is the reverse of the removal procedure

**NOTE:**

- Apply grease to the moving surface.
- Make sure the operating the roof-side lock is smooth.





## Roof-Side Frame/Pilot Shaft Lock Replacement

**CAUTION:** To prevent damage to the roof, the roof should be placed on a shop towel

1. Remove the roof (page 20-154).

NOTE: Work with an assistant when removing the roof.

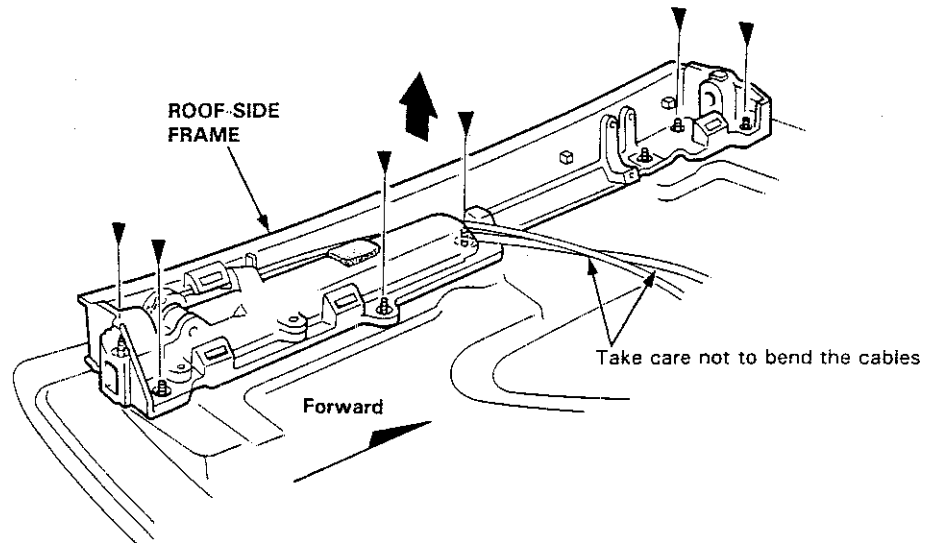
2. Remove:
  - Roof panel/trims (page 20-139)
  - Roof-side weatherstrip/retainer (page 20-140)
  - Roof-side lock assembly

3. Remove the mounting nuts, then remove the roof-side frame by lifting it up.

►: Mounting nut locations



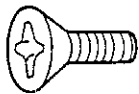
6 x 1.0 mm 10 N·m  
(1.0 kg·m, 7.2 lb-ft)



4. Remove the side trim panel bracket. Remove the mounting screws, then remove the pilot shaft lock assembly from the roof-side frame.

►: Mounting screw locations

A



5 x 0.8 mm  
5 N·m (0.5 kg·m,  
3.6 lb-ft)

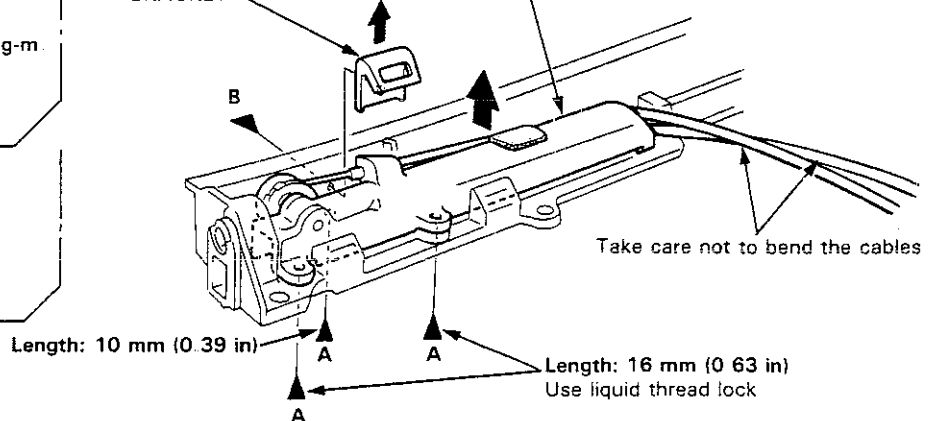
B



4 x 0.7 mm

SIDE TRIM PANEL  
BRACKET

PILOT SHAFT LOCK  
ASSEMBLY

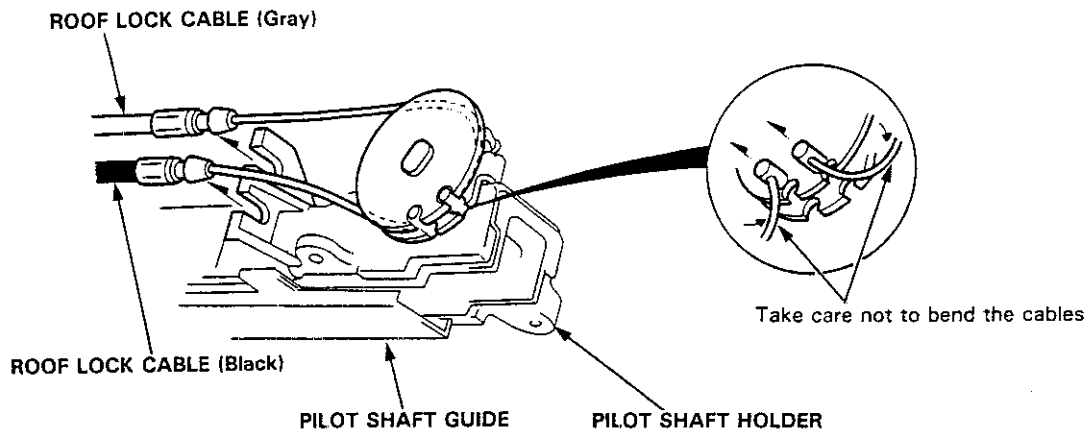


(cont'd)

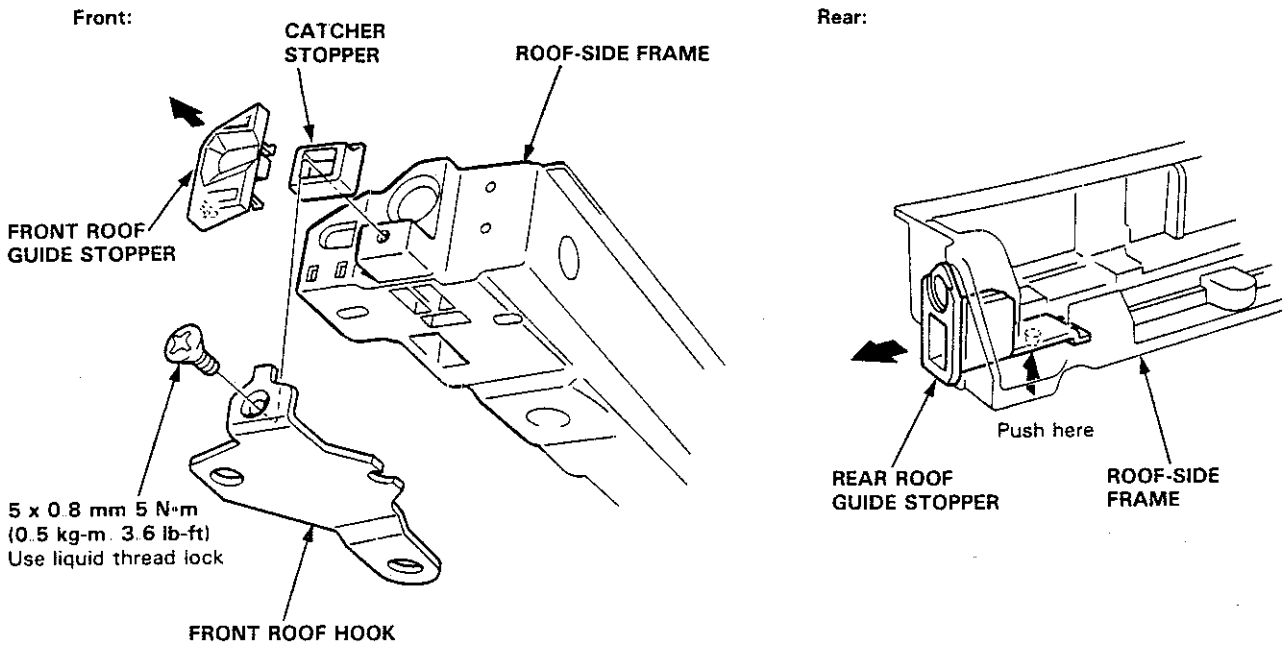
# Roof

## Roof-Side Frame/Pilot Shaft Lock Replacement (cont'd)

5. Remove the roof lock cables from the pilot shaft lock assembly



6. If necessary, remove the component parts from the roof-side frame



7. Installation is the reverse of the removal procedure.

### NOTE:

- When installing the pilot shaft lock assembly, apply grease to the moving surface.
- Make sure the roof lock cables are fastened securely.
- Make sure the operating the pilot shaft lock is smooth
- Before installing the roof-side trim panel, adjust the roof-side frame (page 20-145)



## Roof (Roof-Side Frame) and Lock Catcher Adjustment

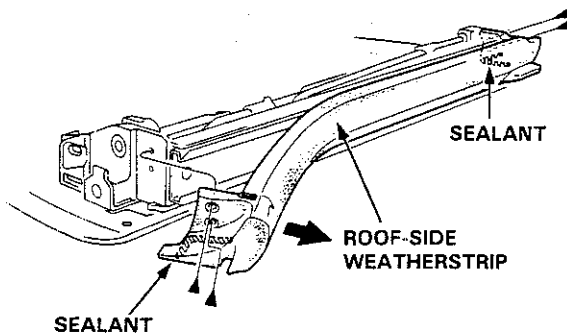
**NOTE:** This adjustment should be done in following order after removing or replacing the roof-side frame and lock catcher.

- 1 Remove each roof-side trims from the roof (page 20-139)

**CAUTION:** To prevent damage to the roof, the roof should be placed on a shop towel.

- 2 Remove each roof-side weatherstrips. Scrape the old sealant smoothly from the weatherstrips and roof. Clean the bonding surface with a sponge dampened in alcohol

►: Mounting screw locations



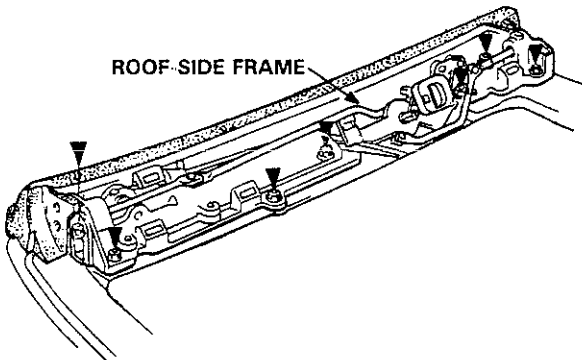
- 3 Refit the weatherstrips to the roof-side retainers (page 20-140).

**NOTE:** Make sure there are no twist the weatherstrips.

4. Loosen the roof-side frame mounting nuts.

**NOTE:** Tighten the mounting nuts lightly.

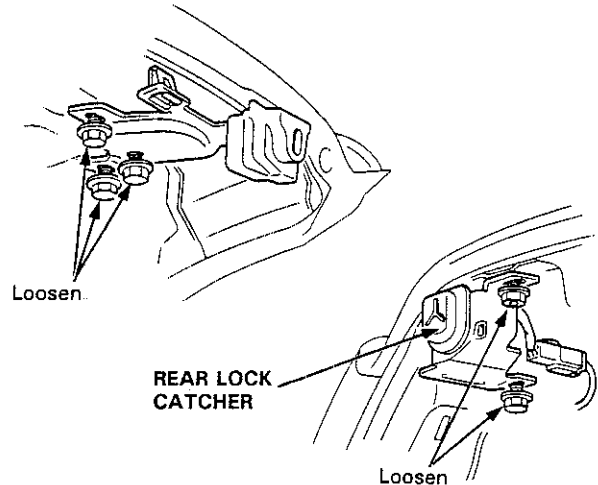
►: Mounting nut locations



5. Loosen the lock catcher mounting bolts and nut of the four corners.

**NOTE:**

- Tighten the mounting bolts and nut lightly.
- If the lock catchers have not been removed or replaced, there is no need to loosen their mounting bolts and nuts

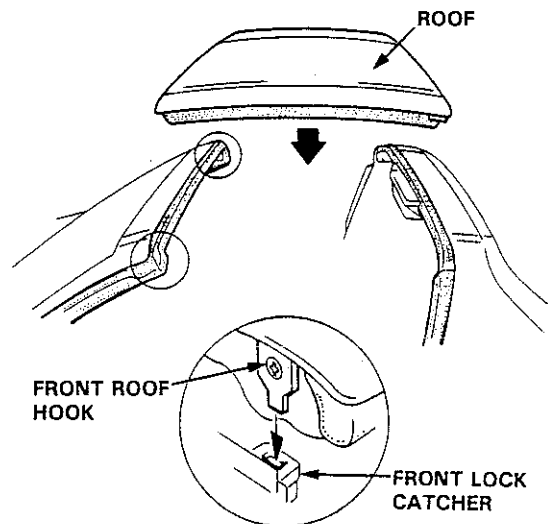


6. Set the roof on the body

**NOTE:**

- Work with an assistant, when setting the roof.
- Make sure each front roof hooks are set to the front lock catcher properly
- Install each roof side-lock handles

**CAUTION:** When setting the roof, make sure each roof-side locks and roof center lock are unlocked.



(cont'd)

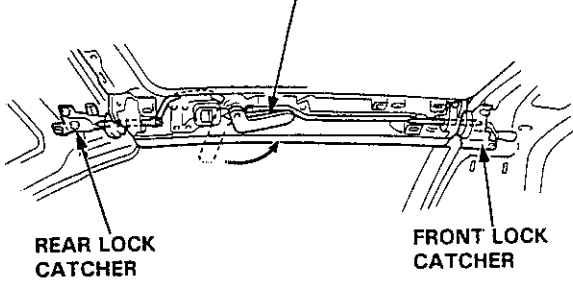
# Roof

## Roof (Roof-Side Frame) and Lock Catcher Adjustment (cont'd)

7. Secure the roof by turning each roof-side lock handles and roof center handle. Make sure they are locked securely.

NOTE: Turn each roof-side lock handles and roof center handle until a faint click is heard.

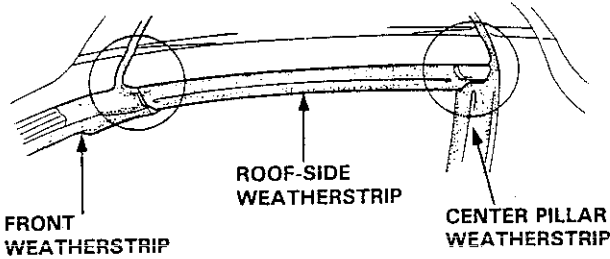
ROOF-SIDE LOCK HANDLE



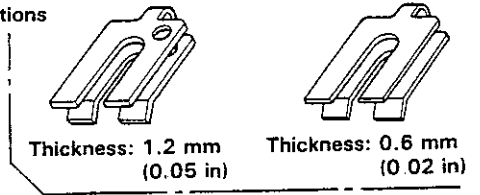
8. Tighten the lock catcher mounting bolts and nut of the four corners.
9. Check for the height of the roof with the body and check that the weatherstrips fit flush. If necessary, loosen each lock catchers mounting bolts and nut, and adjust the roof and lock catchers right and left by using the elongated holes. Use shims as necessary, to make the roof fit flush with the body.

NOTE:

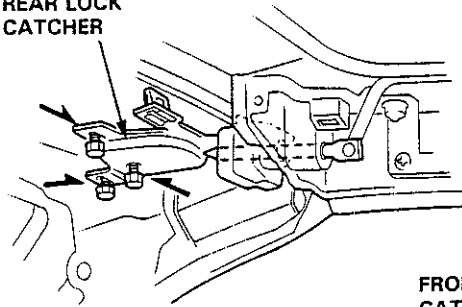
- The weatherstrips should be fit flush.
- If the lock catchers have not been removed or replaced, there is no need to adjust the lock catchers.



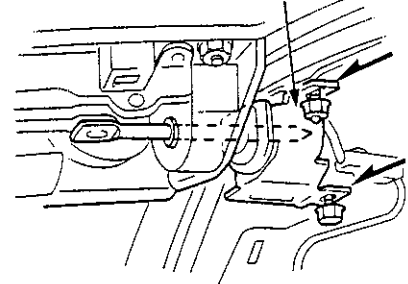
▲ : Shim locations



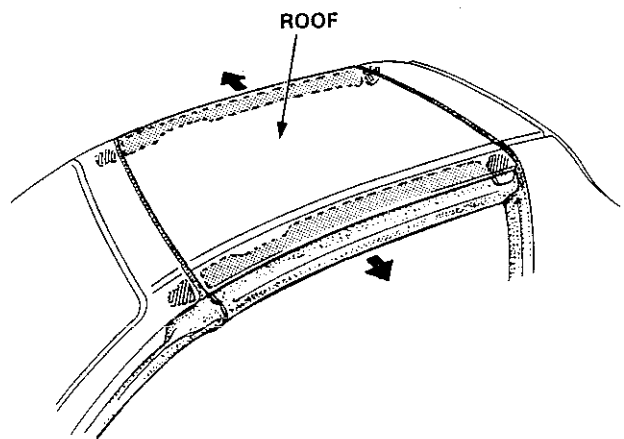
REAR LOCK CATCHER



FRONT LOCK CATCHER



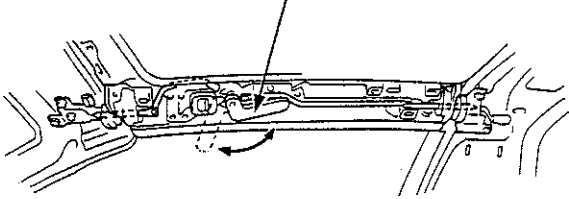
10. Tighten the lock catcher mounting bolts and nut.
11. Adjust the roof alignment by moving the roof.





12. Tighten the roof-side frame mounting nuts
13. Check that each roof-side lock handles and roof center handle are turned smoothly.

**ROOF-SIDE LOCK HANDLE**



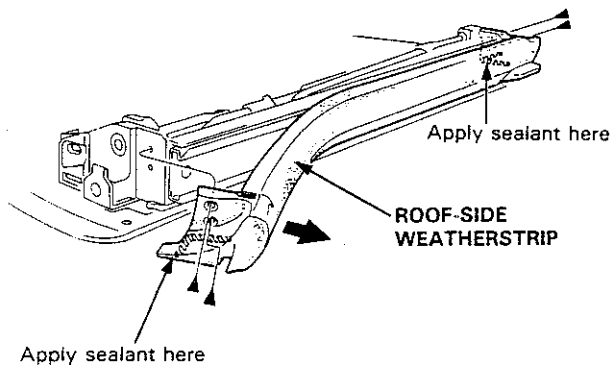
14. Remove the roof, then install the each weatherstrips (page 20-141) and roof-side trims (page 20-139)

**CAUTION:** To prevent damage to the roof, the roof should be placed on a shop towel

**NOTE:**

- Apply clear sealant to the shadowed area as shown. Glue the weatherstrips with the both ends
- Make sure there are no twist the weatherstrips.

►: Mounting screw locations



- 15 Set the roof, then secure the roof by turning each roof-side lock handles and roof center handle. Make sure they are locked securely.

**NOTE:**

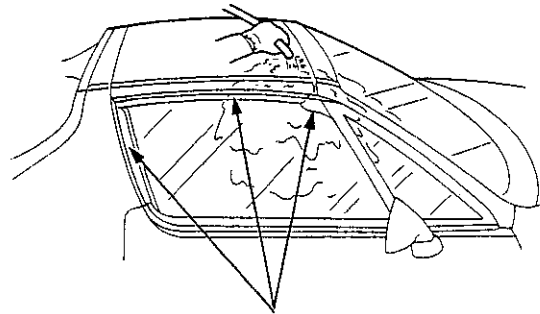
- Work with an assistant. when setting the roof
- Make sure the each front roof hooks are set to the front lock catcher properly.

**CAUTION:** When setting the roof, make sure the each roof-side locks and roof center lock are unlocked.

16. After adjusting, with the door, door glass and rear window closed fully, check for water leak.

**NOTE:**

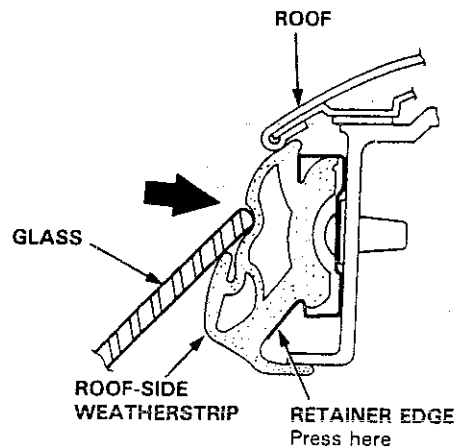
- Spray water over the roof
- Do not spray to the sealing area directly and do not use high pressure water.
- Check that no water enters the passenger compartment from the roof.



**SEALING AREA**

- If there enters no water from the front pillar but only from the roof-side. repair by pressing against the retainer edge

**CAUTION:** Do not press the retainer too much at one time



# Roof

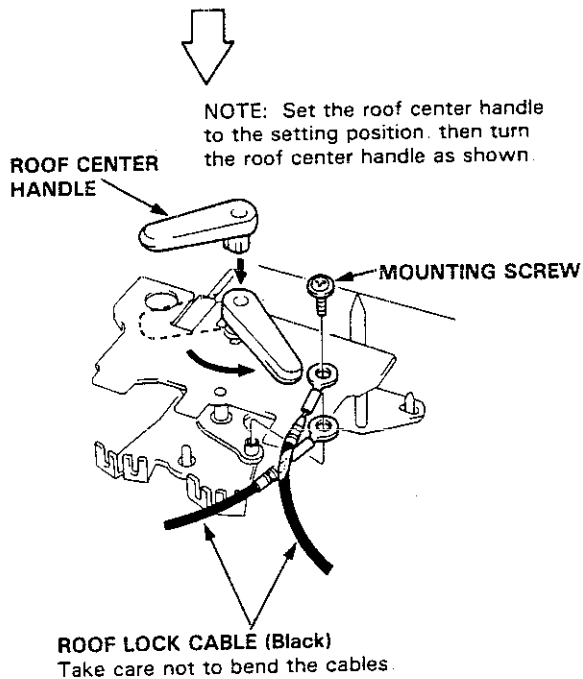
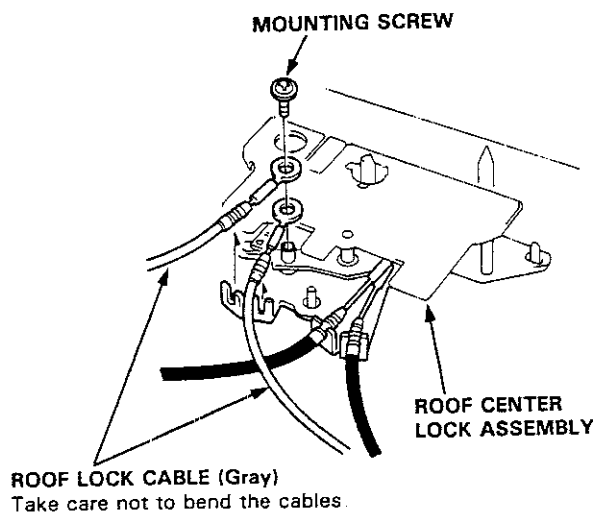
## Roof Center Lock/Roof Lock Cables Replacement

**CAUTION:** To prevent damage to the roof, the roof should be placed on a shop towel.

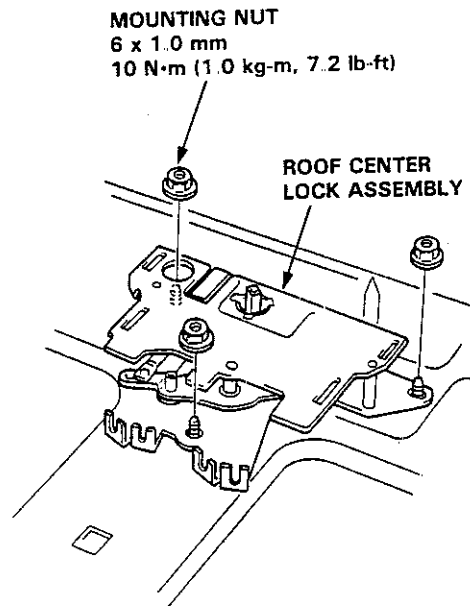
1. Remove the roof (page 20-154)

**NOTE:** Work with an assistant, when removing the roof

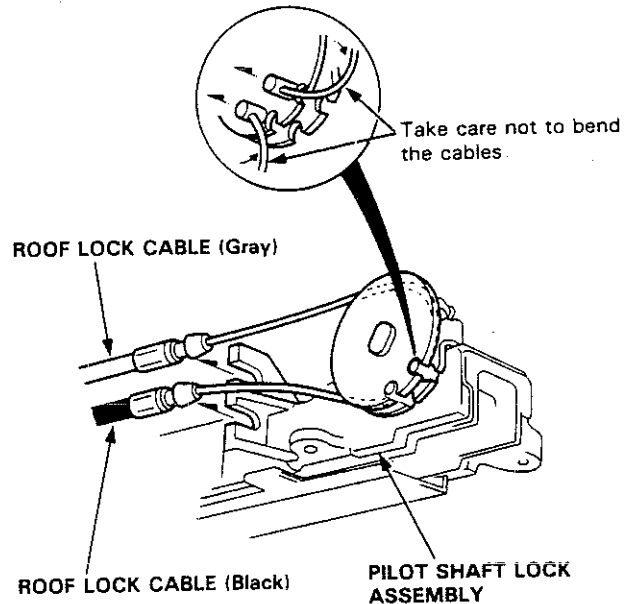
2. Remove:
  - Roof panel/trims (page 20-139)
  - Roof-side weatherstrip/retainer (page 20-140)
  - Roof-side lock assembly (page 20-142)
  - Pilot shaft lock assembly (page 20-143)
3. Remove the mounting screws, then remove the roof lock cables as shown.



4. Remove the mounting nuts, then remove the roof center lock assembly.

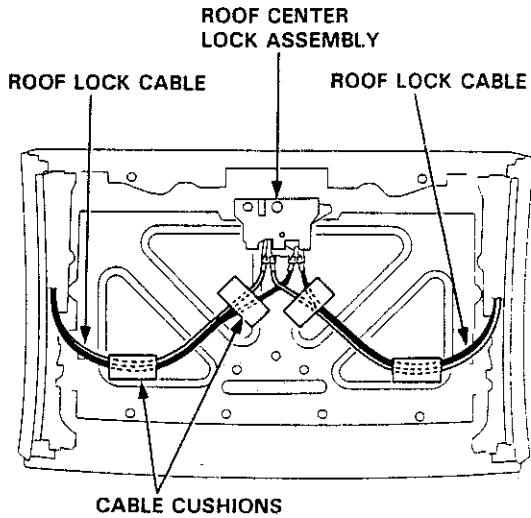


5. Remove the roof lock cables from each pilot shaft lock assemblies.





6. Peel off the cable cushions, then remove the roof lock cables



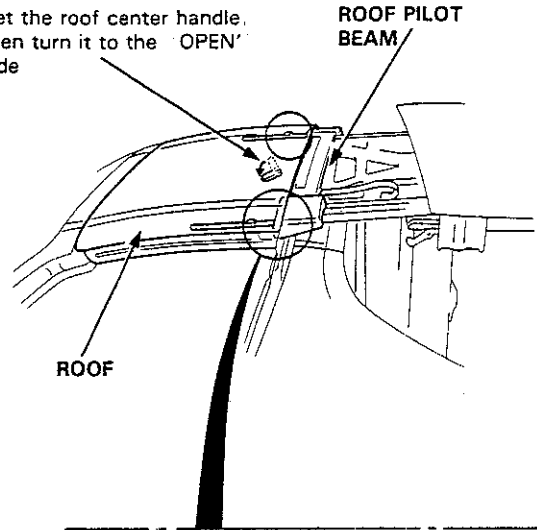
- 7 Installation is the reverse of the removal procedure

**NOTE:**

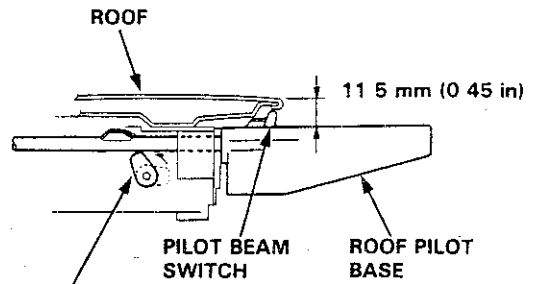
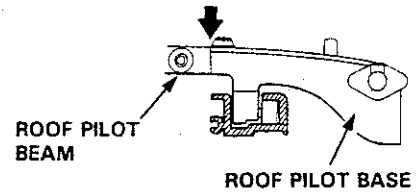
- Make sure the roof lock cables are connected and fastened securely
- If necessary, replace any damaged cable cushions
- When installing the roof center lock assembly, apply grease to the moving surface.
- Make sure the operating the roof center lock is smooth.
- Before installing the roof panel and trims, set the roof on the body and operate the power roof. Then check the following

Check for the height between the roof pilot beam and rear edge of the roof when the roof pilot is contacted with the roof as shown. If necessary, adjust the fixing position of the roof lock cables (page 20-150)

Set the roof center handle, then turn it to the 'OPEN' side



Measuring Point:



The pilot shaft is locked by turning the cam

# Roof

## Roof Lock Cables Adjustment

**⚠ WARNING** Do not operate the power roof in an enclosed area such as in a garage, etc. As the engine must be running to operate the roof, a hazardous condition can be created by the exhaust from the engine.

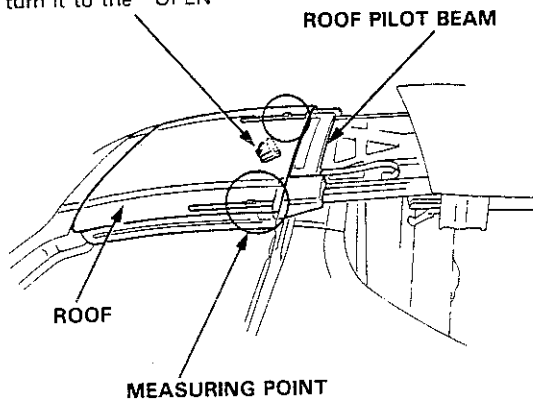
**NOTE:**

- To operate the power roof, check the following before operation.
  - 1. The parking brake is applied.
  - 2. The vehicle is stopped.
  - 3. The rear window is fully closed.
  - 4. The engine is running.
- When setting the roof in place on the car, secure the roof by turning each roof-side lock handles and roof center handle. Make sure they are locked securely.
- When operating the power roof manually, refer to page 20-244.

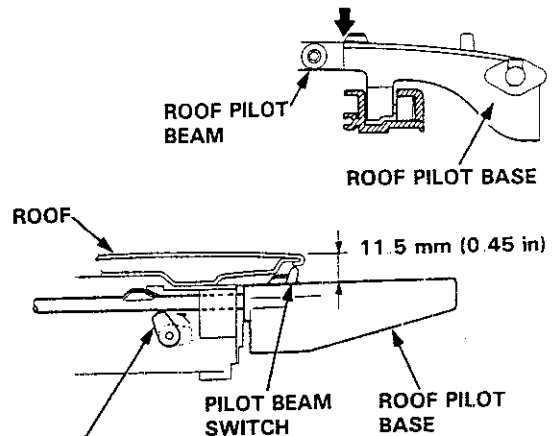
1. Remove the roof panel and trims (page 20-139), then set the roof on the body.
2. Operate the power roof.
3. Check for the height between the roof pilot beam and rear edge of the roof when the roof pilot is contacted with the roof as shown.

**NOTE:** Adjust the height between the roof pilot beam and rear edge of the roof properly by adjusting the roof lock cables. If height is not within specification, the pilot beam switch won't be operated causing malfunction.

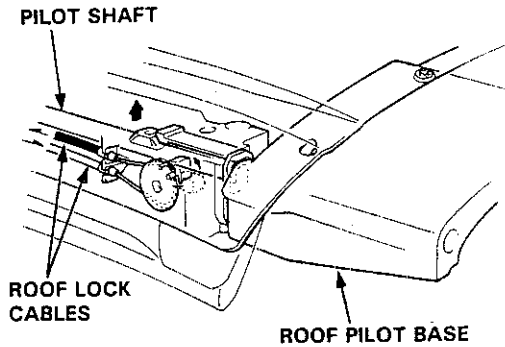
Set the roof center handle then turn it to the "OPEN" side.



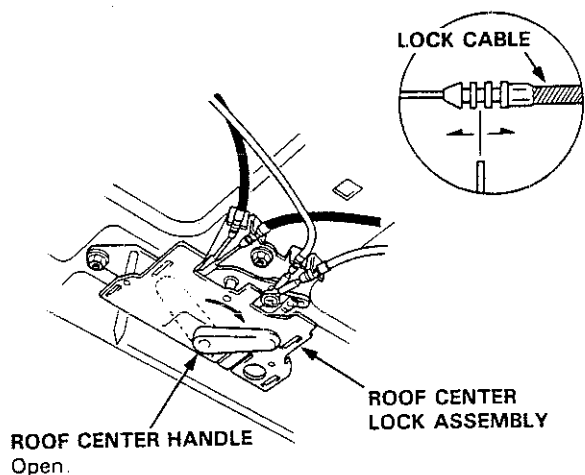
Measuring point:



The pilot shaft is locked by turning the cam.



4. Adjust the fixing position of the roof lock cables at the roof center lock.



5. After adjusting, install the roof panel and trims.



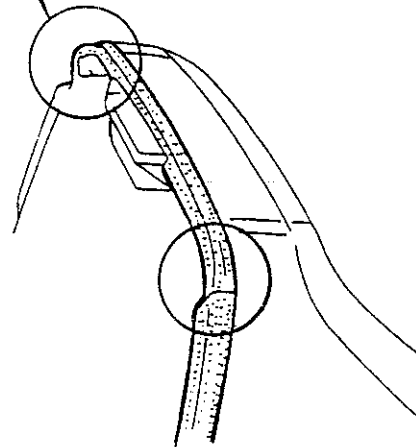
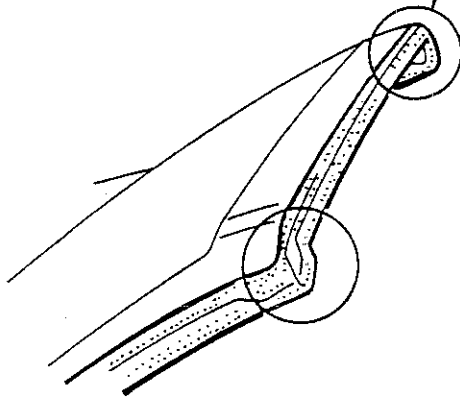
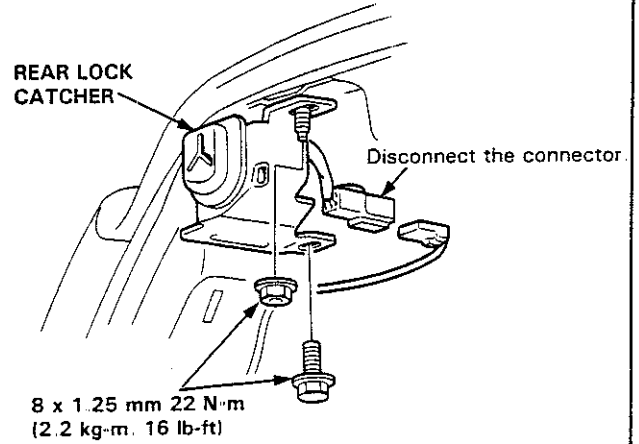
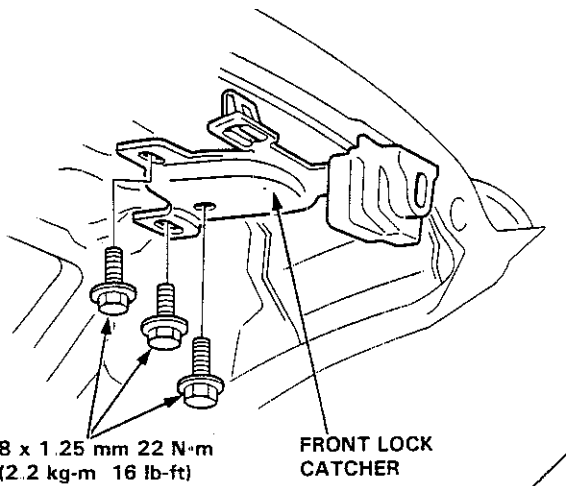


## Lock Catcher Replacement

**CAUTION:** When the roof removed, the roof should be placed on a shop towel to prevent damage to the roof.

**NOTE:**

- Remove the roof (page 20-154)
- Work with an assistant, when removing the roof
- Remove the front roof trim panel, front pillar trims (page 20-35), rear roof trim panel and quarter trim panels (page 20-37).



Installation is the reverse of the removal procedure

**NOTE:**

- Make sure the connector is connected properly.
- Adjust the lock catchers alignment (page 20-152).

# Roof

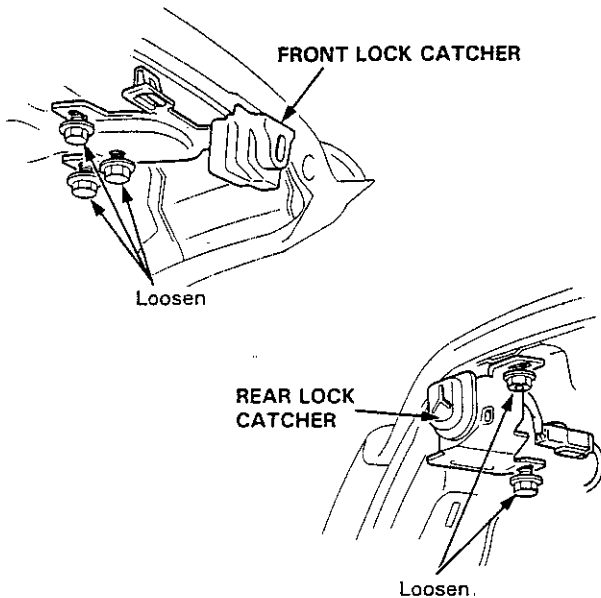
## Lock Catcher Adjustment

**NOTE:**

- This adjustment should be done in following order if the roof-side frame and lock catcher have not been removed or replaced.
- If the roof-side frame has been removed or replaced, refer to page 20-145

1. Loosen the lock catcher mounting bolts and nut of the four corners.

**NOTE:** Tighten the mounting bolts and nut lightly.

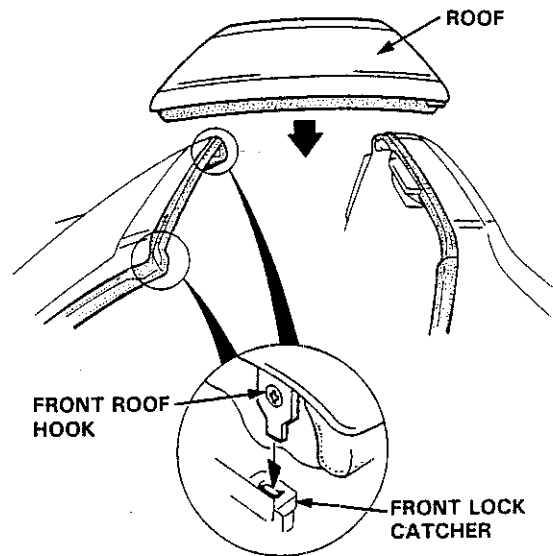


2. Set the roof on the body

**NOTE:**

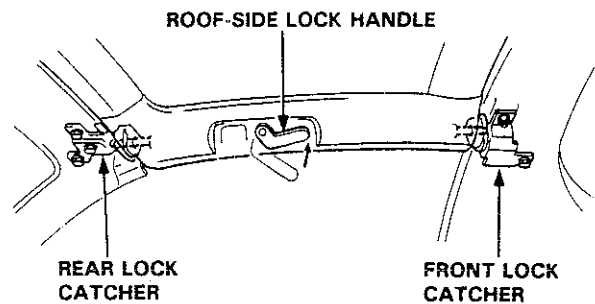
- Work with an assistant, when setting the roof.
- Make sure each front roof hooks are set to the front lock catcher properly.

**CAUTION:** When setting the roof, make sure each roof-side locks and roof center lock are unlocked.



3. Secure the roof by turning each roof-side lock handles and roof center handle.  
Make sure they are locked securely

**NOTE:** Turn each roof-side lock handles and roof center handle until a faint click is heard.

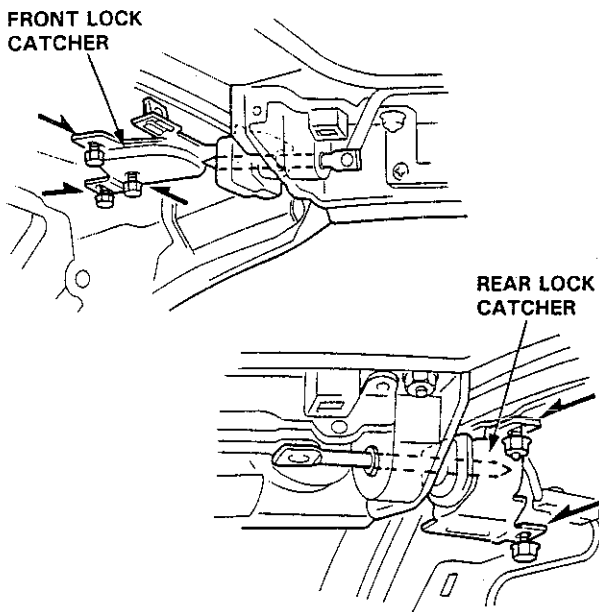
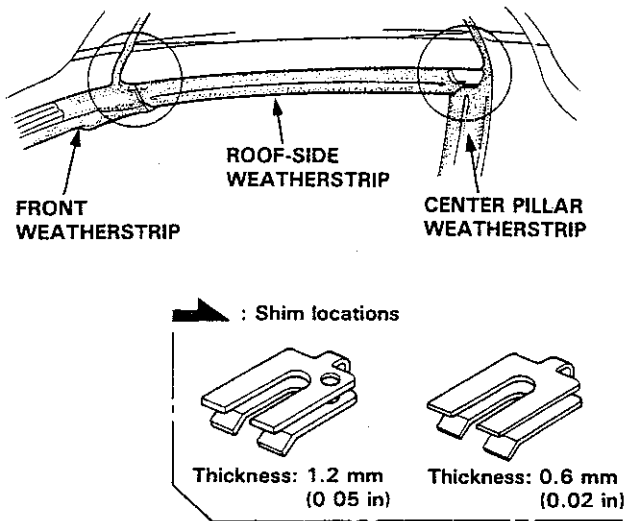


4. Tighten the lock catcher mounting bolts and nut of the four corners



5. Check for the height of the roof with the body and check that the weatherstrips fit flush. If necessary, loosen each lock catchers mounting bolts and nut, and adjust the lock catchers right and left by using the elongated holes. Use shims as necessary, to make the roof fit flush with the body.

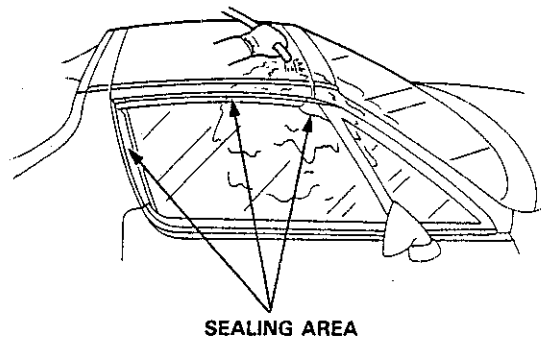
NOTE: The weatherstrip should be fit flush.



6. Tighten the lock catcher mounting bolts and nut
7. Check that each roof-side lock handles are turned smoothly
8. After adjusting, with the door, door glass and rear window closed fully, check for water leak

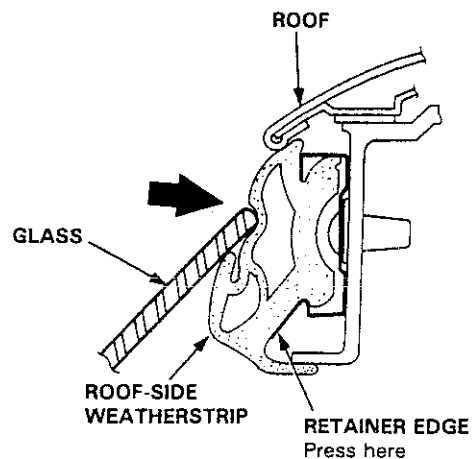
NOTE:

- Spray water over the roof
- Do not spray to the sealing area directly and do not use high pressure water.
- Check that no water enters the passenger compartment from the roof.



- If there enters no water from the front pillar but only from the roof-side, repair by pressing against the retainer edge

CAUTION: Do not press the retainer too much at one time.



# Roof

## Roof Removal/Installation

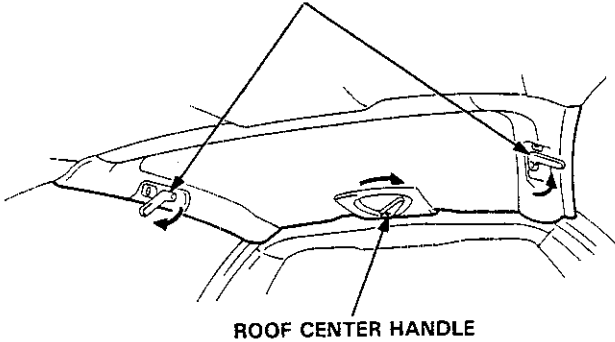
**NOTE:**

- Work with an assistant, when removing the roof.
- Lower both door glasses fully

1. Unlock the roof by turning each roof-side lock handles and roof center handle

**ROOF-SIDE LOCK HANDLE**

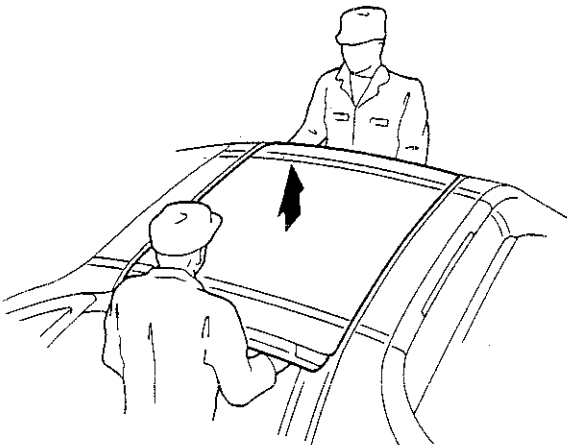
Push the lock tub sideways and pull down the handle



**ROOF CENTER HANDLE**

2. Lift the roof straight up by holding each side of the roof.

**NOTE:** Take care not to damage the body and roof.



**CAUTION:** To prevent damage to the roof, the removed roof should be placed on a shop towel.

3. Installation is the reverse of the removal procedure.

**NOTE:**

- When setting the roof in place on the car, secure the roof by turning each roof-side lock handles and roof center handle. Make sure they are locked securely.
- Turn the each roof-side lock handles until a faint click is heard