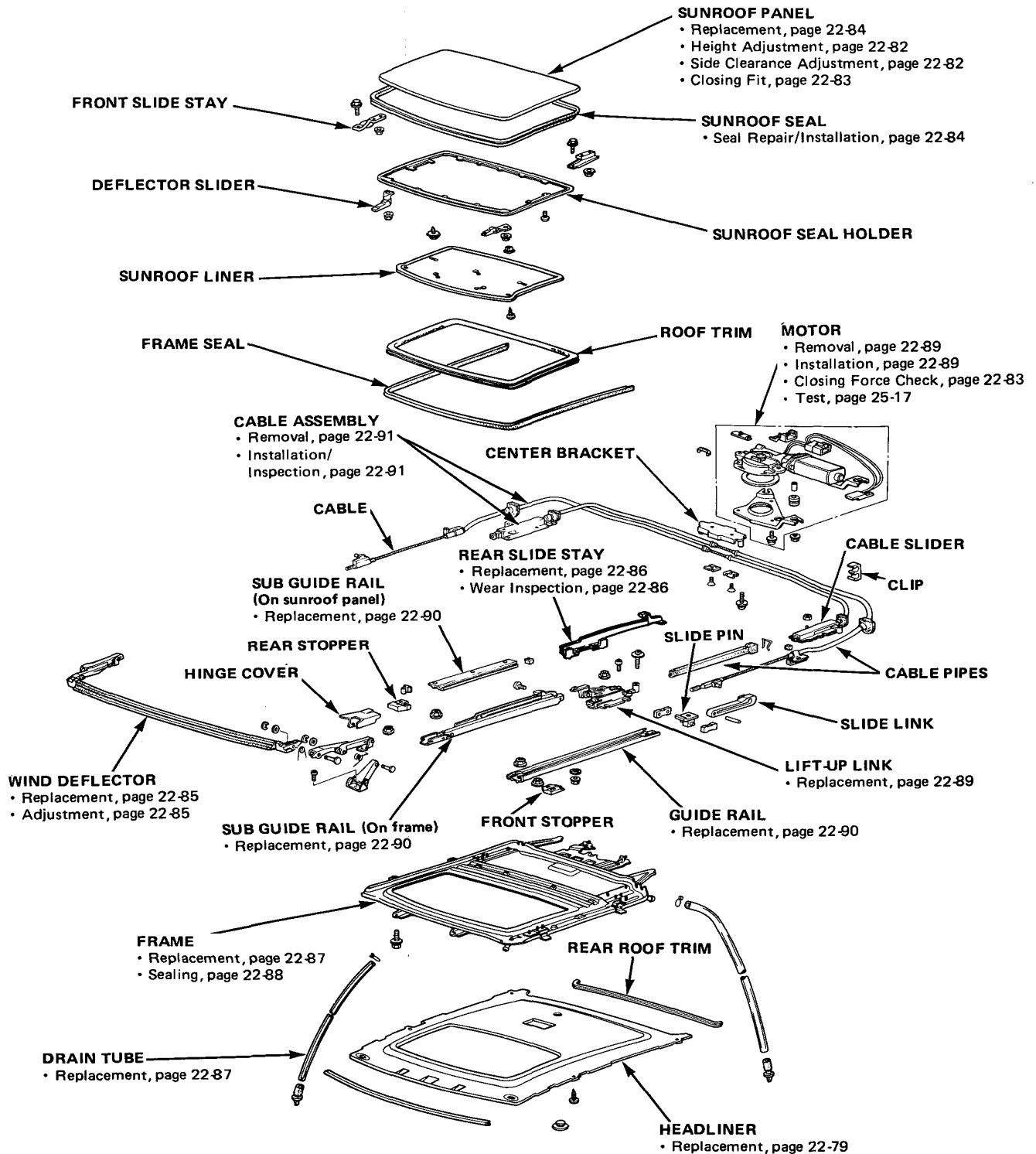


Sunroof (Coupe)

Index





Troubleshooting

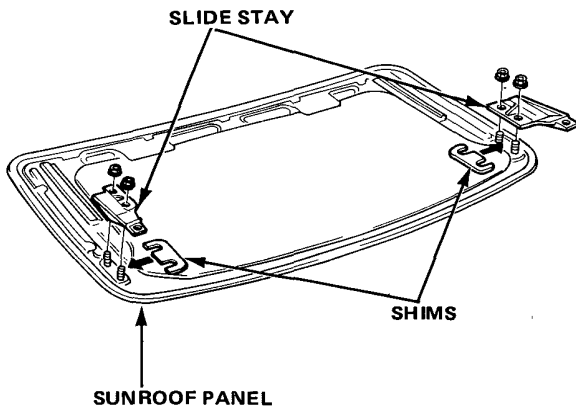
Symptom	Probable Causes
Water leak	<ol style="list-style-type: none">1. Improperly installed sunroof seal and sunroof panel (page 22-84).2. Gap between sunroof seal and roof panel (page 22-82).3. Clogged drain tube.4. Gap between frame seal and frame.5. Improper sealing between cable pipe and frame (page 22-88).6. Improper sealing between guide rail and frame (page 22-88).
Wind noise	<ol style="list-style-type: none">1. Improper clearance between sunroof seal and roof panel (page 22-82).2. Loose headliner and roof trim.
Deflector noise	<ol style="list-style-type: none">1. Improper clearance between deflector blade and roof panel (page 22-85).2. Insufficient deflector extension.3. Deformed deflector.
Motor noise	<ol style="list-style-type: none">1. Loose motor.2. Worn gear or bearing.3. Worn cable.4. Deformed cable pipe.
Sunroof does not move, but motor turns.	<ol style="list-style-type: none">1. Foreign matter stuck between guide rail and sub guide rail (page 22-86).2. Interference between moving parts.3. Cable slider loose.4. Cable pipe loose or not attached properly.5. Clutch out of adjustment (page 22-83).6. Sunroof not tilting up properly.
Sunroof does not move and motor does not turn (Sunroof can be moved manually).	<ol style="list-style-type: none">1. Blown fuse.2. Faulty switch (page 25-17).3. Battery run down (page 27-5).4. Faulty relay (page 25-18).
Sunroof vibrates	<ol style="list-style-type: none">1. Worn rear slide stay (page 22-86).2. Improperly installed guide rails.
Sunroof remains tilted	<ol style="list-style-type: none">1. Faulty cable slider (page 22-91).2. Faulty limit switch (page 25-18).

Sunroof (Coupe)

Height Adjustment

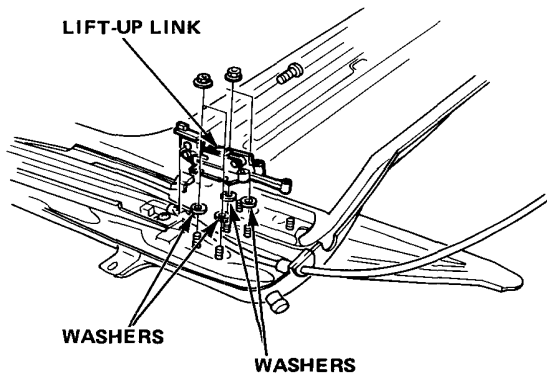
The roof panel should be flush with the sunroof seal.

1. To adjust the front of the sunroof, remove the sunroof panel (page 22-84) and add or remove shims between the slide stay and the sunroof panel as shown.



2. To adjust the rear height, remove the lift-up link (page 22-89) and add or remove washers between the lift-up link and frame as shown.

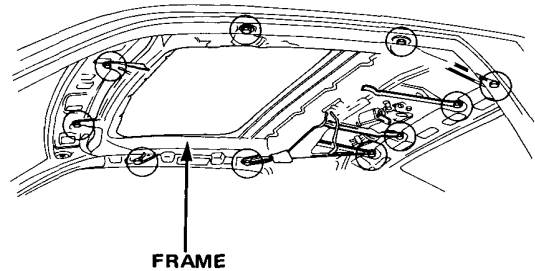
NOTE: The washers should be of equal thickness.



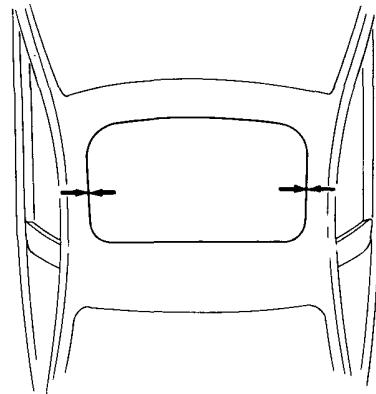
Side Clearance Adjustment

If sunroof seal fits too tight against the roof panel on one side when closed, remove the headliner, then:

1. Loose all frame mount bolts.



2. Side-to-side fit of sunroof seal can be adjusted by moving it right or left by hand.

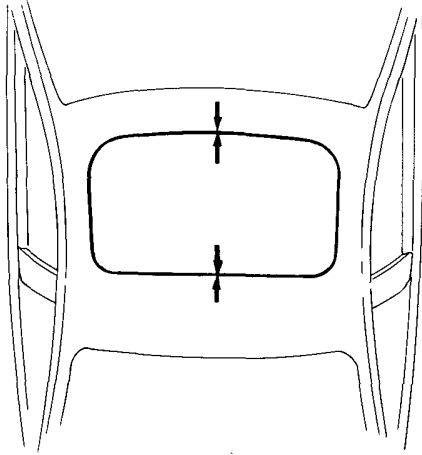


3. Tighten bolts, re-check.



Closing Fit

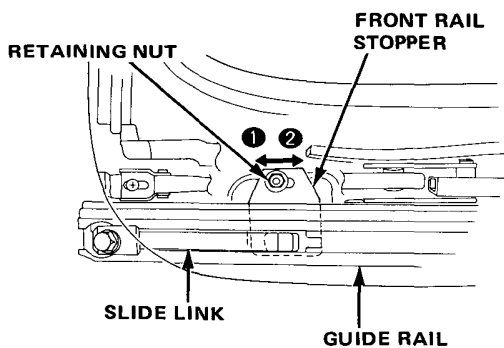
If the fit of the sunroof seal is too tight at the front seal when the sunroof is closed, or too tight at the rear seal when it is pulled down from the pick-up position, proceed as follows:



1. Open the sunroof fully.
2. Loosen the front rail stopper nuts.
3. Slide the stoppers forward or back until the sunroof closes snugly.

NOTE: Slide the right and left stoppers equally.

- ① : To increase clearance at rear seal.
- ② : To increase clearance at front seal.

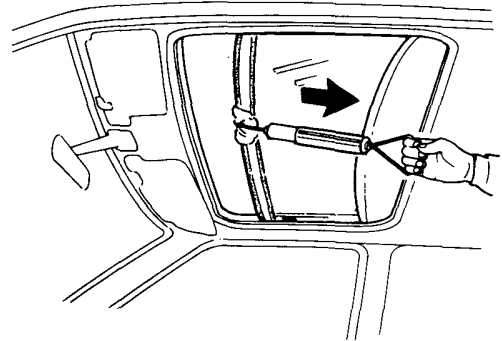


Closing Force Check

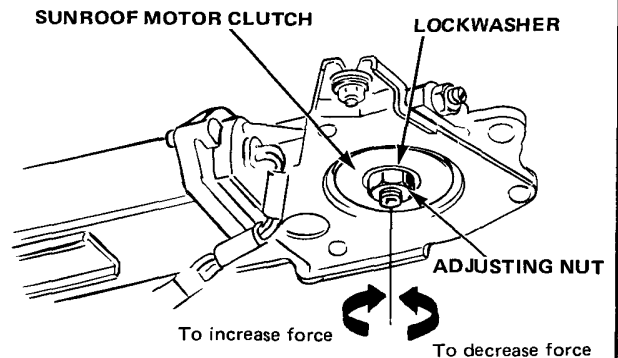
1. After installing all removed parts, have a helper hold the switch to close the sunroof while you measure force required to stop it. Attach spring scale as shown. Read force as soon as sunroof stops moving, then immediately release the switch and spring scale.

CAUTION: When using the spring scale, protect the leading edge of the sunroof with a shop rag.

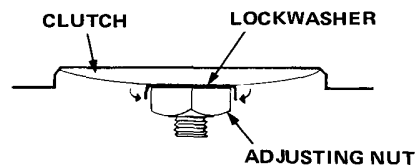
Closing Force: 196–245 N (20–30 kg, 44–66 lb)



2. If force is not within specification, adjust by turning sunroof motor clutch adjusting nut.



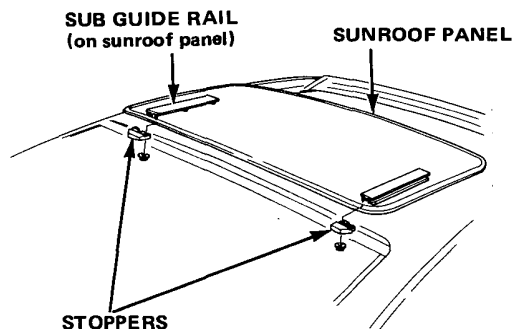
3. After adjusting, install a new lockwasher and bend it against flat on the adjusting nut.



Sunroof (Coupe)

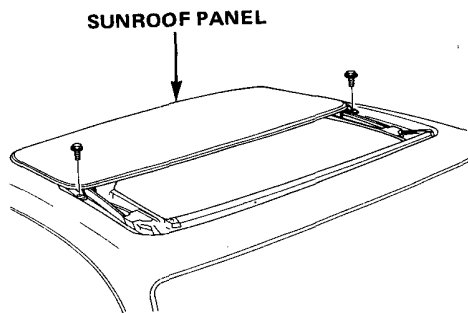
Sunroof Panel Replacement

1. Open the sunroof.
2. Remove the rear stoppers by removing the attaching nuts.



3. Remove the front mounting bolts. Remove the sunroof panel from the rear slide stay by sliding it forward by hand.

NOTE: Use extreme care to avoid damaging the body when removing the panel.



4. Install the sunroof panel in the reverse order of removal.

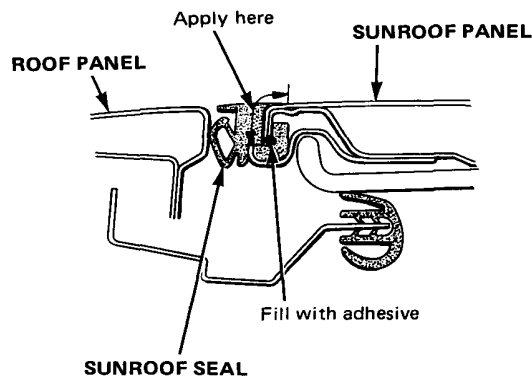
Seal Repair/Installation

If a seal is leaking, or if it is to be replaced, proceed as follows.

1. Remove the sunroof panel; remove the sunroof liner, front slide stay and deflector slider.
2. Remove the seal holder. Carefully peel the seal off the sunroof panel.
3. Clean the seal attaching surfaces with a clean cloth dampened in un-leaded gasoline or alcohol.

NOTE: After cleaning, keep oil, grease or water from getting on the surface.

4. Fill the seal groove with adhesive. Coat the seal attaching surfaces of the sunroof panel with the same adhesive.

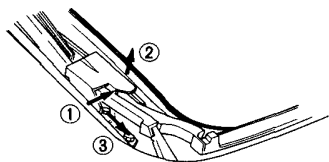


5. Fit the seal onto the sunroof panel evenly all the way around.
6. Wipe off excess adhesive with a clean cloth dampened with un-leaded gasoline or alcohol.
7. Let the sunroof panel stand for at least 4 hours after installing the seal.

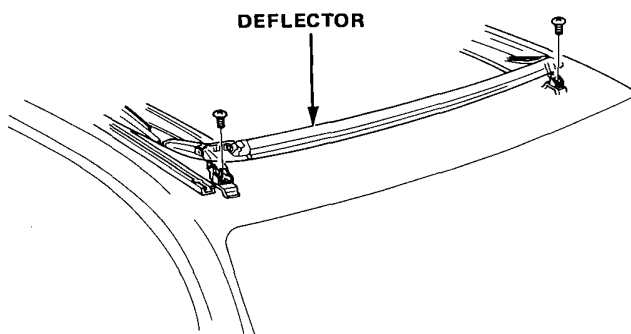


Wind Deflector Replacement

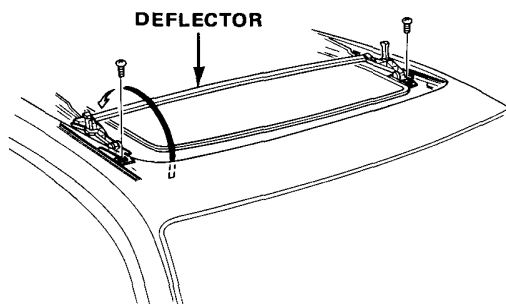
1. Remove the hinge covers:
 - ① Press the front end.
 - ② Lift the cover up.
 - ③ Slide it off forward.



2. Remove the deflector mount screws.



3. Swing the deflector over backward; remove the rear mount screws.

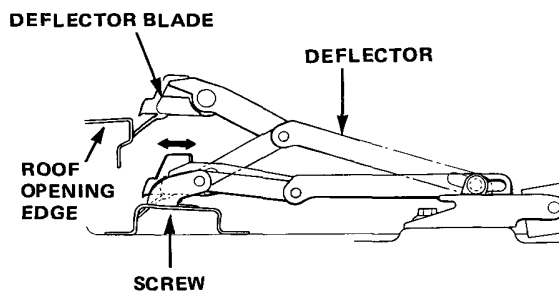


4. Install the deflector in the reverse order of removal. Adjust the deflector.

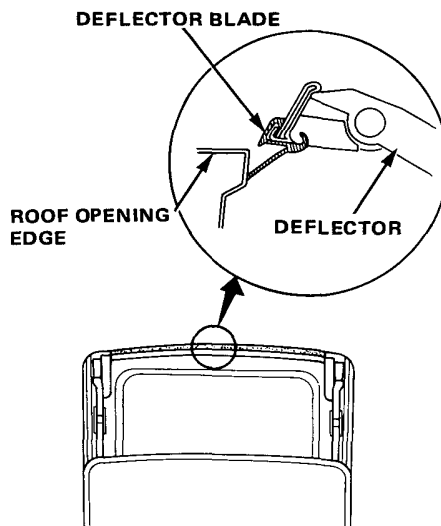
Wind Deflector Adjustment

NOTE: A gap between deflector blade and roof opening edge will cause wind noise when driving at high speed with the roof open.

1. Open the sunroof fully.
2. Loosen the deflector mount screws.



3. Adjust the deflector forward or back so the edge of its blade touches the front edge of the roof opening evenly.



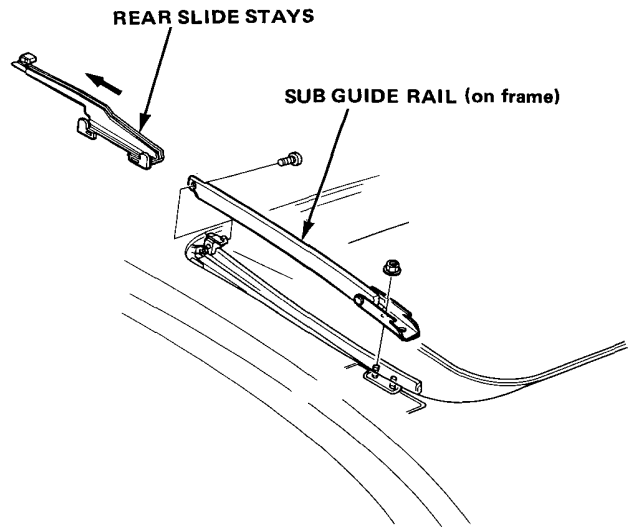
4. Check the height of the deflector.

NOTE: The height of the deflector cannot be adjusted. If damaged or deformed, replace or repair it.

Sunroof (Coupe)

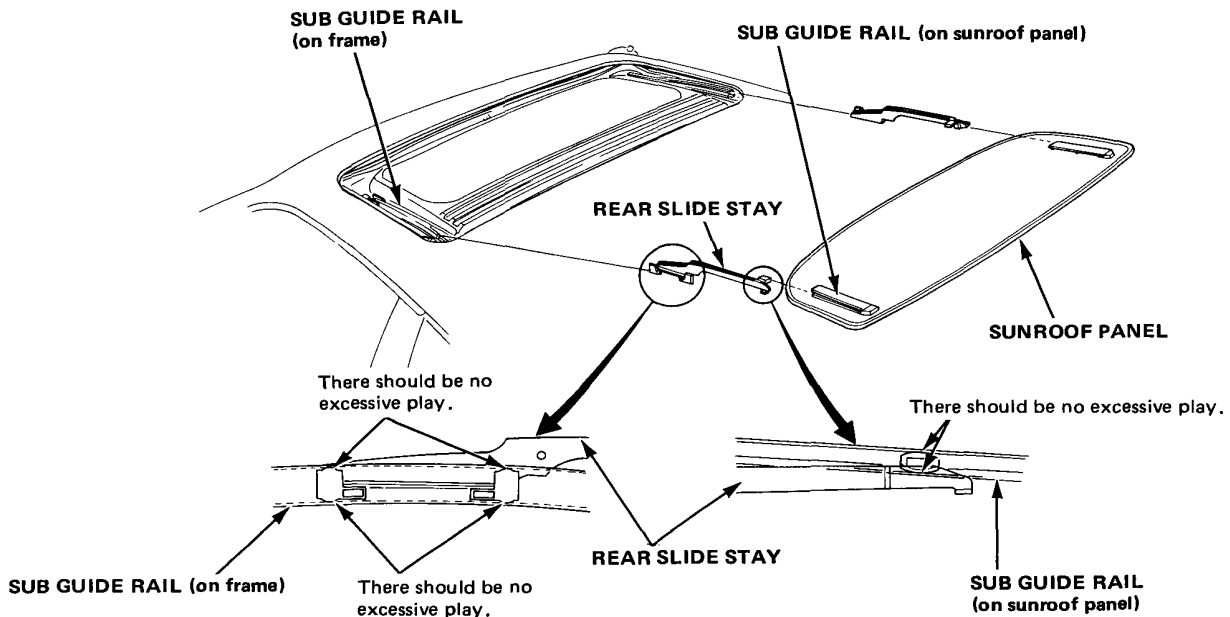
Rear Slide Stay Replacement

1. Remove the sunroof panel (page 22-84).
2. Remove the wind deflector (page 22-85).
3. Remove the mount nut and screw and remove the sub guide rail (on frame); slide the rear slide stay off the guide rail.
4. Install the stay in the reverse order of removal. Before installing the rear slide stay, check that there is no excessive play between the stay and sub guide rails (on the sunroof panel and the frame.)



Rear Slide Stay Wear Inspection

Remove the rear slide stays. Check the sub guide rails (on the sunroof panel and the frame) and rear slide stays for excessive wear on the sliding faces. Replace the rear slide stays with new ones if worn excessively.





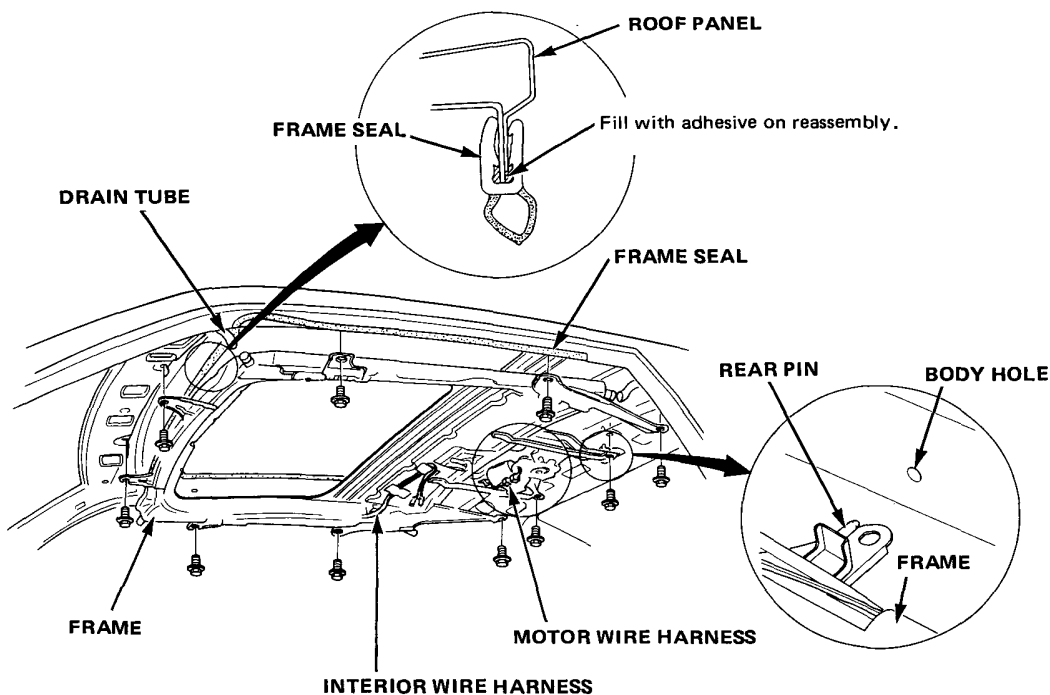
Drain Tube, Frame, and Frame Seal Replacement

1. Remove the sunroof panel (page 22-84) and the headliner (page 22-79).
2. Disconnect the motor wire harness; remove the tape securing the interior light wire harness.
3. Slide back the drain tube clamps and remove the drain tubes.
4. Remove the frame mount bolts, and remove the frame from the car.

NOTE:

- Remove the 2 front bolts last.
- Use added care not to damage the seats or other interior trim.

5. Carefully remove the frame seal.



6. To install, insert the frame's rear pins into the body holes, then install parts in the reverse order of removal.

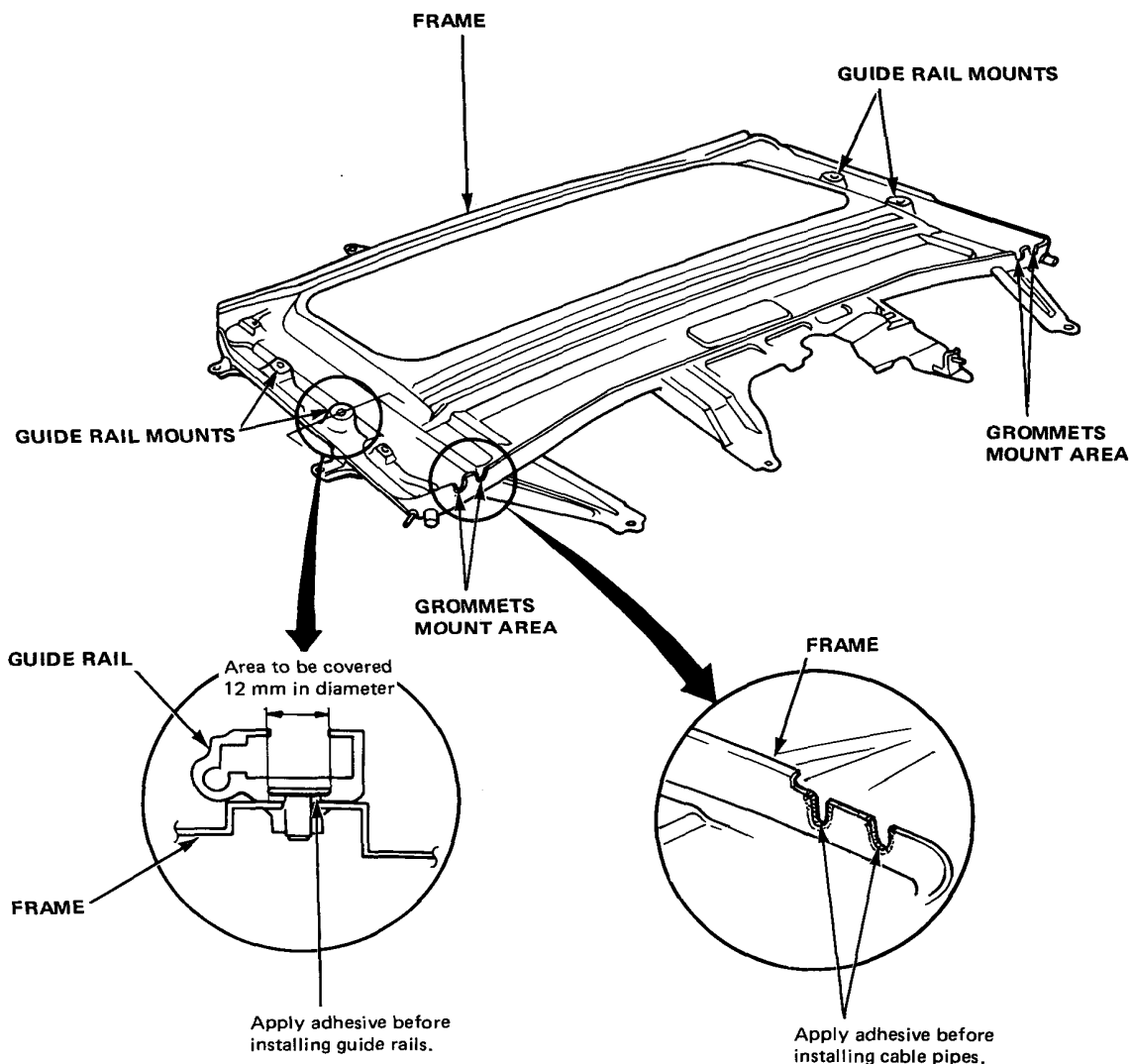
NOTE:

- When installing the frame seal, fill the groove with adhesive.
- Do not tighten the frame mount bolts before adjusting the side clearance of the sunroof (page 22-82).

Sunroof (Coupe)

Frame Sealing

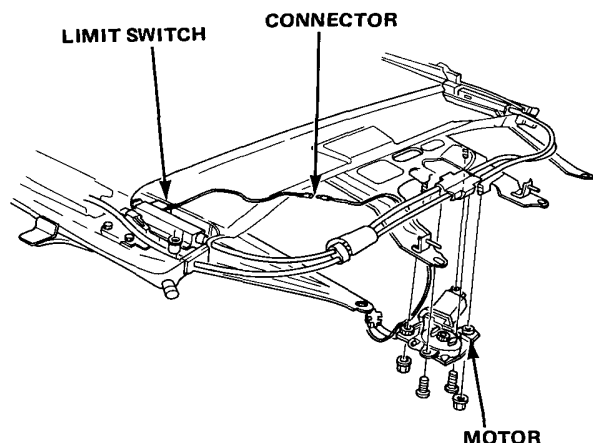
Water may leak through one or more of the 4 guide rail mounts or cable pipe grommets. Use adhesive at the points shown, to avoid leaks when the guide rails or cable pipes are reinstalled.





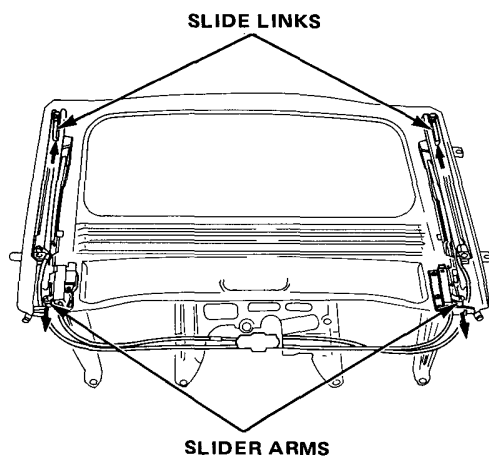
Motor Removal

1. Remove the headliner (page 22-79).
2. Disconnect the motor and the limit switch.
3. Remove the motor by removing the 2 screws and 3 nuts.



Motor Installation

1. Check that the slide links are fully forward, and cable slider arms are fully to the rear (Sunroof, completely closed).

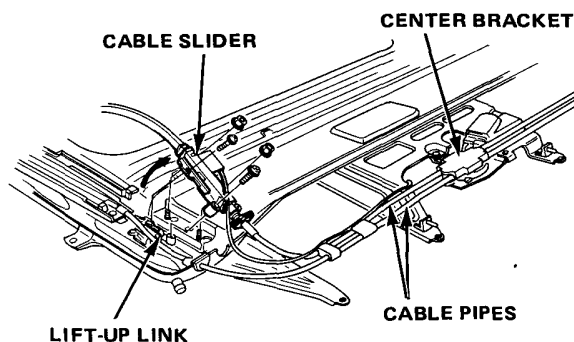


2. Check the gears for wear or damage; install the motor (Motor and limit switch is on pages 25-17 and 18).

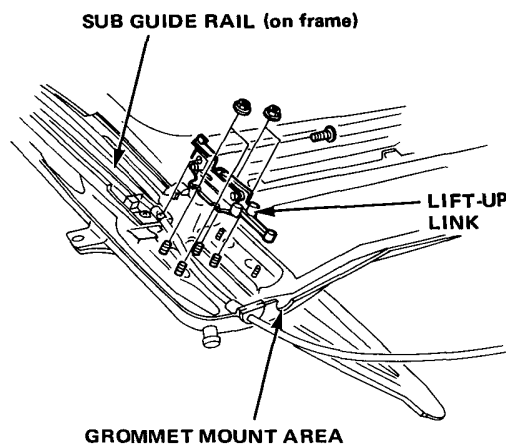
Lift-up Link Replacement

1. Remove the frame (page 22-87).
2. Remove the 2 nuts and 2 screws attaching the cable slider.
3. Raise the cable slider just enough to remove the lift-up link nuts.

NOTE: Do not force the slider up as this will deform the cable pipes. If you encounter difficulty in raising the slider, remove the motor and center bracket.



4. Remove the lift-up link by removing the sub guide rail (on frame) screw and the 4 link nuts.



5. Install the link in the reverse order of removal. Before installing the cable pipes, apply adhesive to the grommet mount area of the frame (see page 22-88).

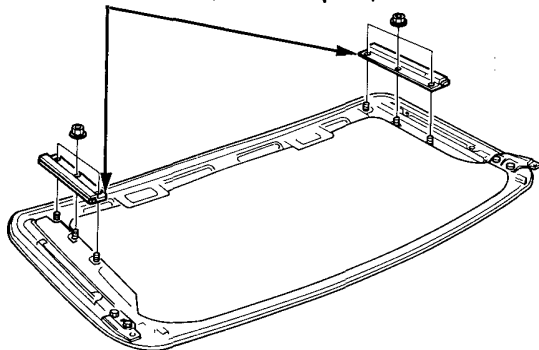
Sunroof (Coupe)

Guide Rail Replacement

Sub Guide Rail (on Sunroof panel):

1. Remove the sunroof panel (page 22-84).
2. Remove the nuts and sub guide rails.

SUB GUIDE RAILS (on sunroof panel)

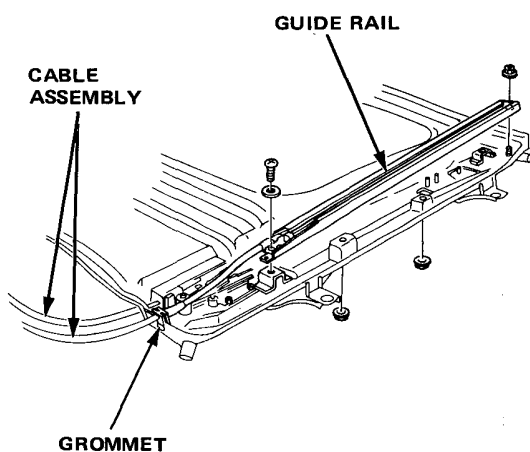


Sub Guide Rail (on frame):

- See page 22-86.

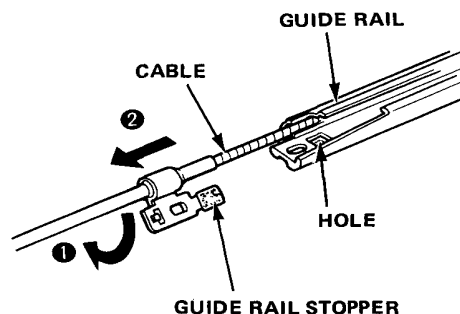
Guide Rail:

1. Remove the frame (page 22-87).
2. Remove one screw and the 3 nuts attaching the guide rail.



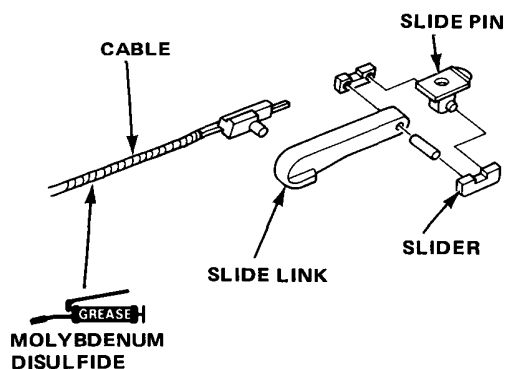
3. Pry the guide rail stopper out of the hole of the guide rail; pull out the cable.

NOTE: Remove the guide rail slowly and carefully as it is cemented to the frame.



4. Install the guide rail in the reverse order of removal, and also:

- Check that the slide pin, slider and slide link are reassembled properly when installing the cable to the guide rail.

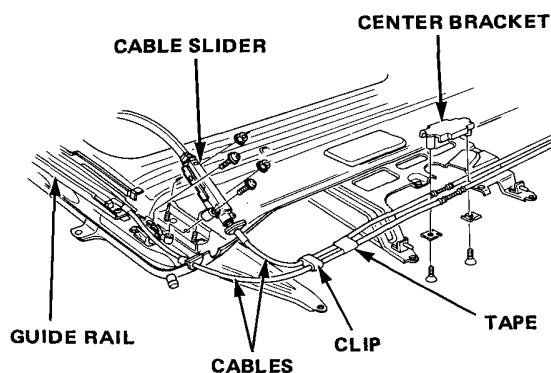


- Before installing the cable pipes and guide rails on the frame, coat the cable pipe grommets and guide rails attaching surfaces with adhesive (see page 22-88).



Cable Removal

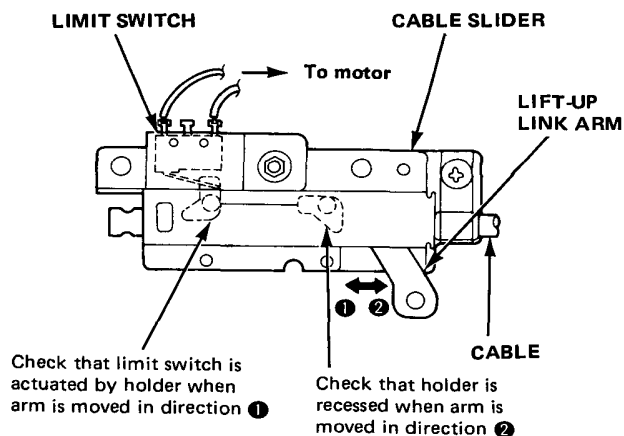
1. Remove the frame (page 22-87) and the motor (page 22-89).
2. Remove the guide rails (page 22-90).
3. Remove the screws and center bracket, then pry off all cable clips.
4. Take the cable slider off the frame by removing the 2 nuts and 2 screws.



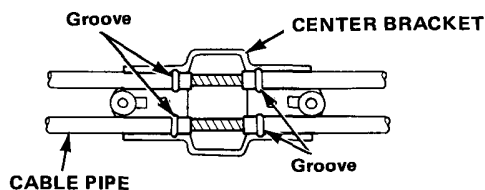
5. Carefully remove the cables being sure not to bend the cable pipes.

Cable Installation/Inspection

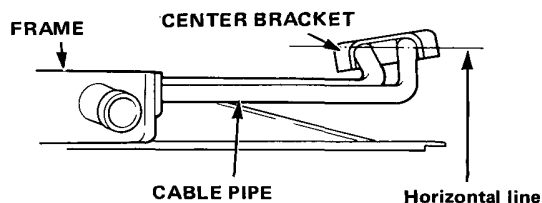
1. Check the cables for wear or damage.
2. Apply molybdenum disulfide grease to the cables. Route the cables through the cable pipes.
3. Check operation of the cable slider.



4. Apply adhesive to the cable pipe grommets and guide rail mount faces of the frame (page 22-88).
5. Attach the cables to the guide rails, then install them on the frame. Secure the cable pipes with the center bracket and clips.

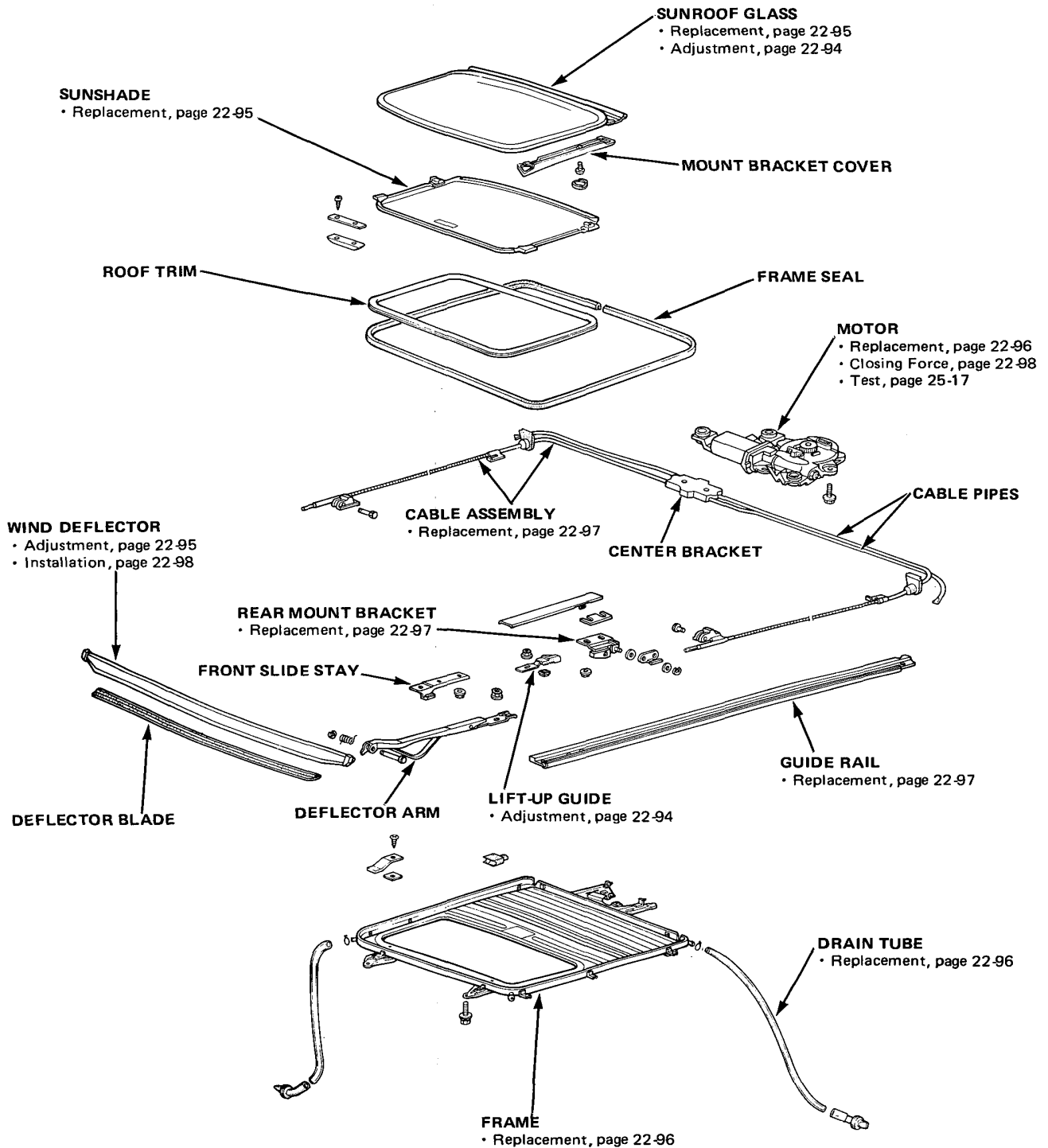


NOTE: Check that the center bracket is not tilted. If it is tilted, check the cable pipes for deformation or improper installation.



Sunroof (4D H/B)

Index





Troubleshooting

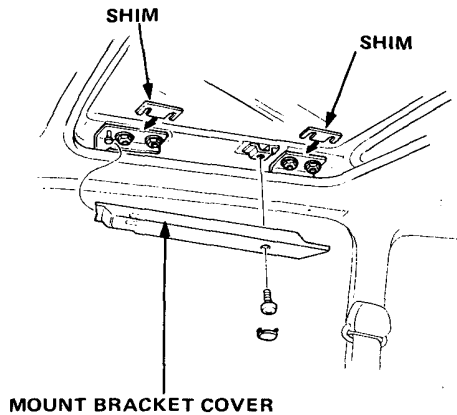
Symptom	Probable Causes
Water leak	<ol style="list-style-type: none">1. Gap between glass weatherstrip and roof panel.2. Defective or improperly installed glass weatherstrip.3. Clogged drain tube.4. Gap between glass weatherstrip and body.
Wind noise	<ol style="list-style-type: none">1. Excessive clearance between glass weatherstrip and roof panel.
Deflector noise	<ol style="list-style-type: none">1. Improper clearance between deflector blade and roof panel (page 22-95).2. Insufficient deflector extension.3. Deformed deflector.
Motor noise	<ol style="list-style-type: none">1. Loose motor.2. Worn gear or bearing.3. Cable pipe deformed.
Sunroof does not move, but motor turns	<ol style="list-style-type: none">1. Foreign matter stuck between guide rail and sliding stay.2. Interference between parts.3. Cable pipe loose.4. Cable pipe not attached properly.5. Clutch out of adjustment.
Sunroof does not move and motor does not turn (Sliding panel can be moved with sunroof wrench)	<ol style="list-style-type: none">1. Blown fuse.2. Faulty switch (page 25-17).3. Battery run down (page 27-5).4. Defective motor.

Sunroof (4D H/B)

Glass Height Adjustment

Roof panel should be even with the glass weatherstrip, to within $1 \pm 1.5 \text{ mm}$ ($0.04 \pm 0.06 \text{ in.}$) all the way around. If not, slide sunshade back, and:

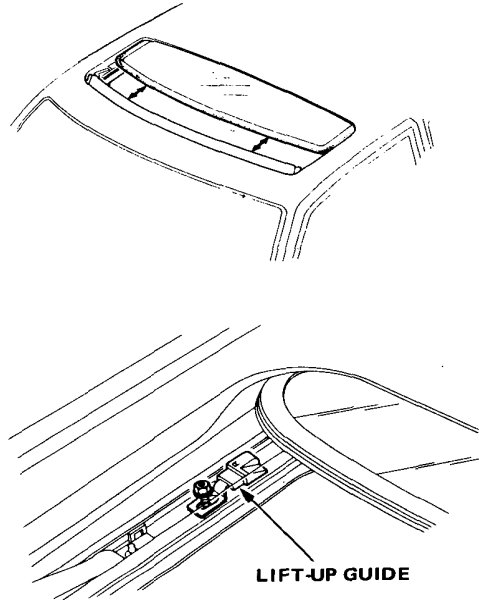
1. Pry plug out of the glass mount bracket cover, remove the screw, then slide cover off to the rear.
2. Loosen mount bracket nuts and install shims between glass frame and bracket as shown.
3. Repeat on opposite side if necessary.



Rear Edge Closing Adjustment

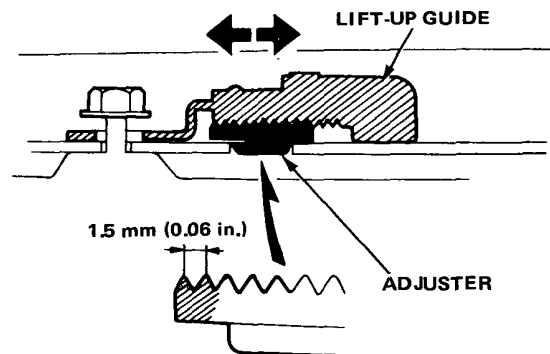
Open the glass about a foot then close it to check where rear edge begins to rise. If it rises too soon and seats too tight against roof panel, or too late and does not seat tight enough, adjust it:

1. Open the glass fully.
2. Remove the rail covers from both sides, and loosen the lift-up guide nuts.



3. Move the guides forward or back, then tighten nuts and re-check roof closing.

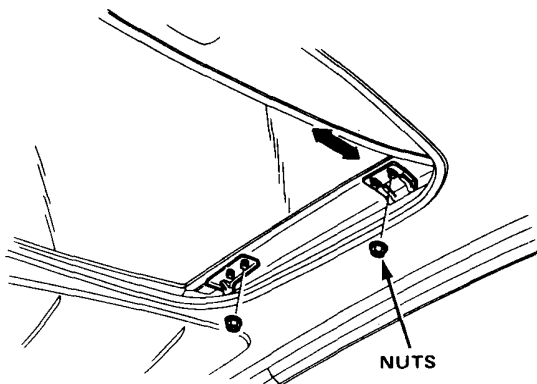
The guides have notches of 1.5 mm (0.06 in.) each and can be adjusted 2 notches forward or back.



Glass Side Clearance Adjustment

If the glass weatherstrip fits too tight against the roof panel on one side when closed, slide sunshade back, then:

1. Pry plug out of each mount bracket cover, remove screw, then slide cover off to the rear.
2. Loosen all eight mount bracket nuts.
3. Move the glass right or left as necessary.
4. Tighten nuts.



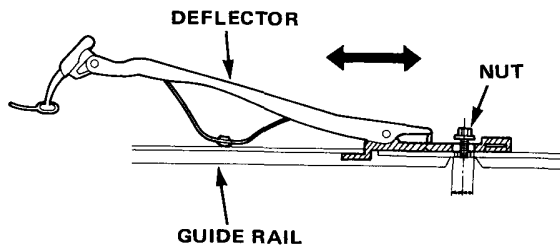


Wind Deflector Adjustment

NOTE: A gap between deflector blade and roof panel will cause wind noise when driving at high speed with the roof open.

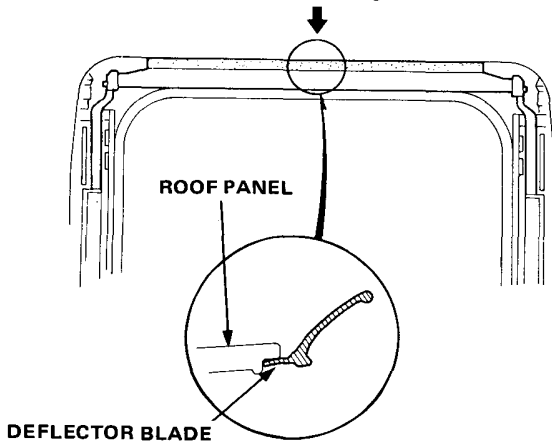
1. Open the sunroof and pry the rail covers off both sides.
2. Loosen deflector mounting nuts.

NOTE: Wind deflector can be adjusted 2 mm (0.08 in.) forward or back.



3. Adjust deflector forward or back so the edge of its blade touches the roof panel evenly.

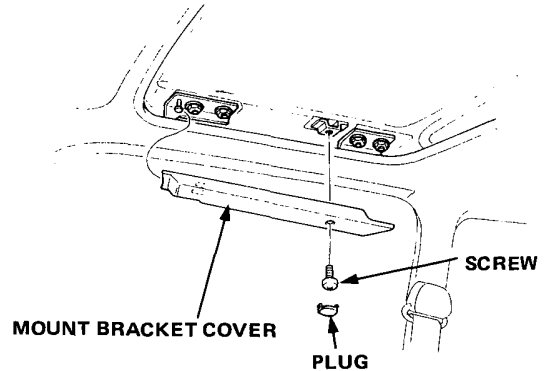
Deflector blade should touch panel across entire front edge.



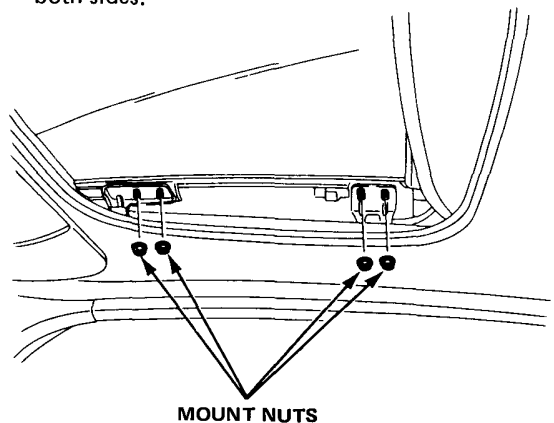
NOTE: The height of the deflector when open cannot be adjusted. If damaged or deformed, replace it.

Glass and Sunshade Replacement

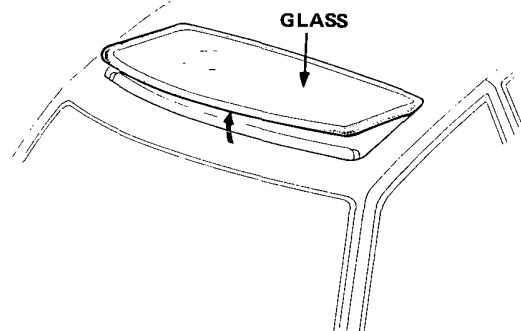
1. Slide sunshade all the way back.
2. Pry plug out of each bracket cover, remove screw, and slide cover off to the rear.



3. Close the glass fully.
4. Remove the nuts from front and rear mounts on both sides.



5. Remove the glass by lifting up and pulling forward as shown.



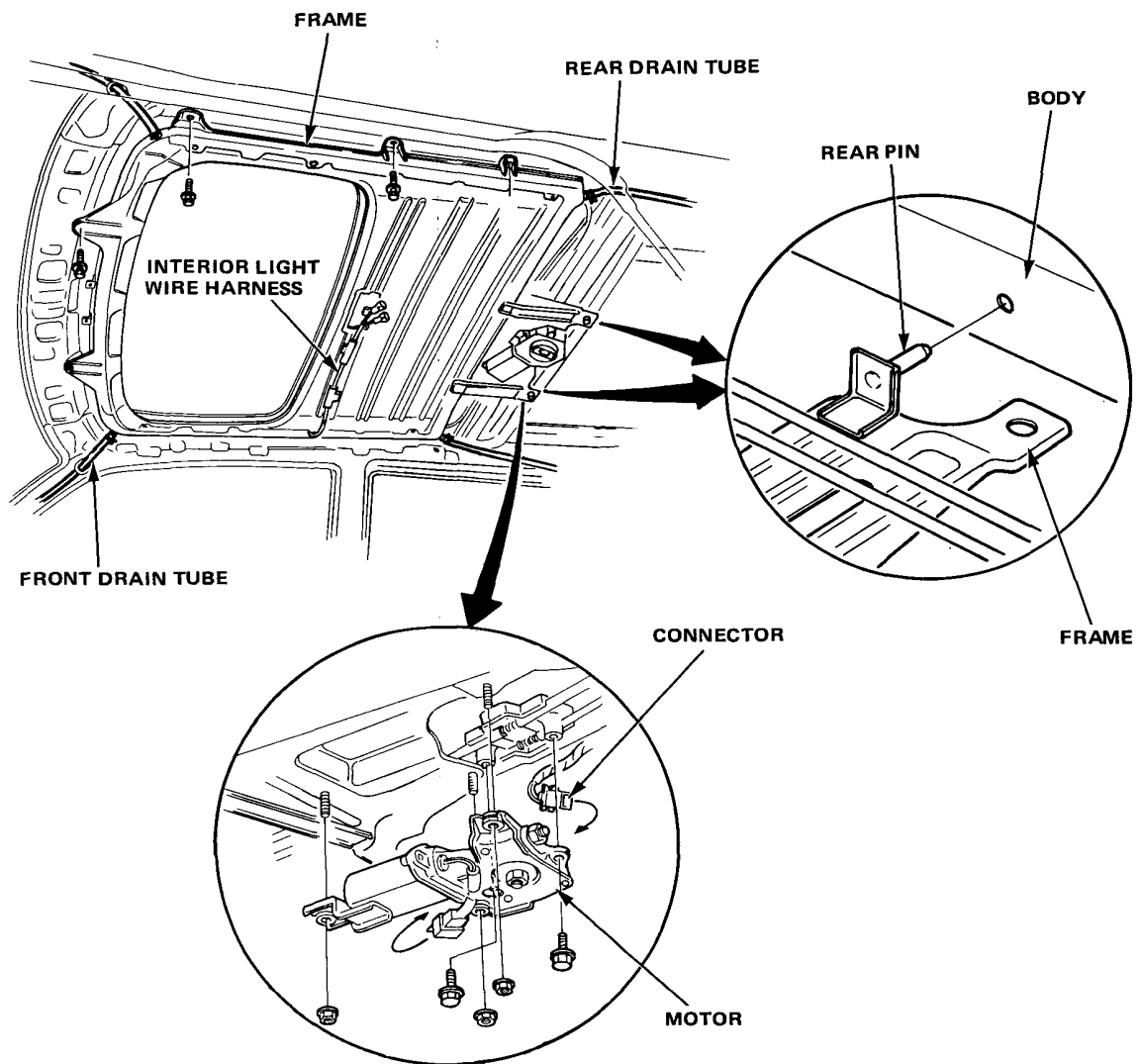
6. The sunshade may now be pulled out.

NOTE: The sunshade may be bent slightly to ease removal.

Sunroof (4D H/B)

Motor, Drain Tube, and Frame Replacement

1. Remove the headliner (page 22-79).
2. Remove the sunroof motor by removing the two bolts and three nuts.
3. Disconnect the wire harness at the connector, and remove the motor.

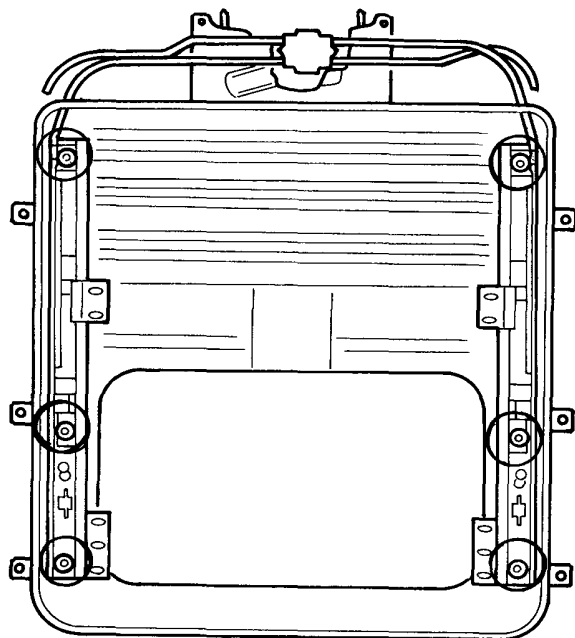


4. Slide back the drain tube clamps and remove the drain tubes.
5. Remove the 10 mounting bolts from the sunroof frame, and remove the frame from the car.
6. To install, insert the frame's rear pins into the body holes, then install parts in the reverse order of removal. (Motor test is on page 25-17).



Cable, Guide Rail, and Rear Mount Bracket Replacement

1. Remove the frame (page 22-96).
2. Remove the nuts attaching the guide rails.

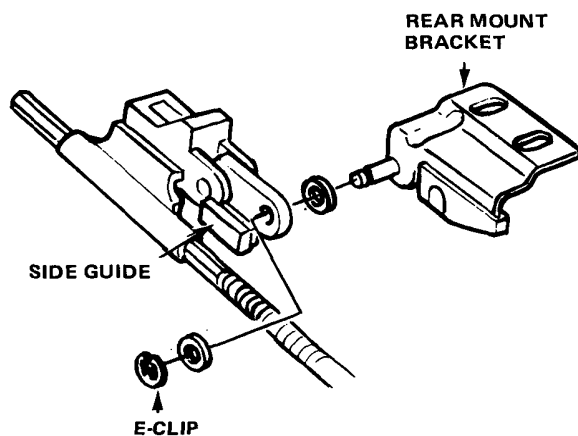


3. Lift off the guide rails and pull out the cable with the rear mount brackets.

NOTE: Remove the guide rail slowly and carefully as it is cemented to the frame.

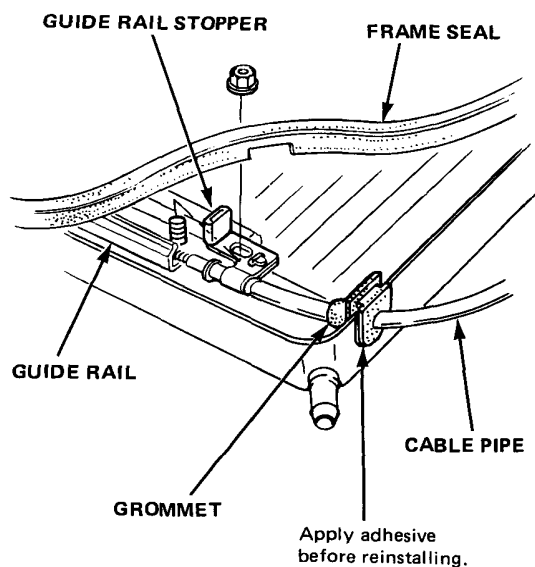
4. Pry the E-clip off the pin, and remove the rear mount bracket from the side guide.

NOTE: Replace the E-clip with new one whenever it is disassembled.



5. Install the cable and guide rail in the reverse order of removal, and also:

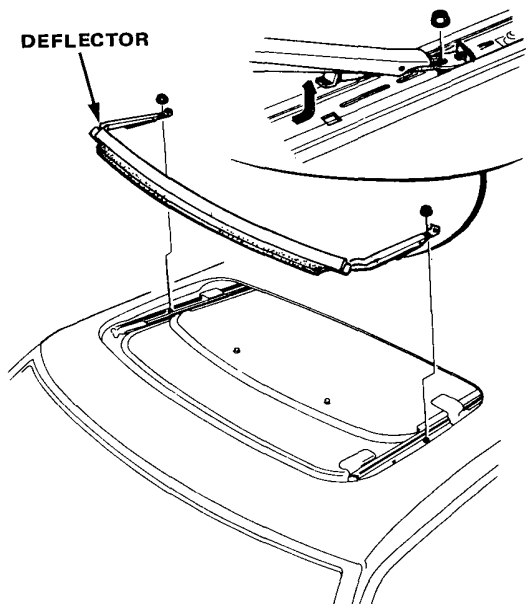
- Apply molybdenum grease to the inner cable.
- Before installing the cable pipes and guide rails on the frame, coat the cable pipe grommets and guide rails attaching surfaces with adhesive.



Sunroof (4D H/B)

Wind Deflector Installation

Installing is done in the reverse order of removal. When installing, make sure to insert the deflector ends tightly into the guide rails and adjust the deflector.

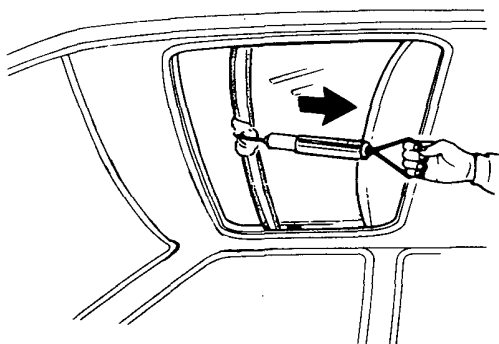


Closing Drag Check (Motor Removed)

Before installing the sunroof motor, measure effort required to close sliding panel using a spring scale as shown.

CAUTION: When using the spring scale, protect the leading edge of the sunroof with a shop rag.

If load is over 98N (10 kg, 22 lb), check side clearance and glass height adjustment (page 22-94).



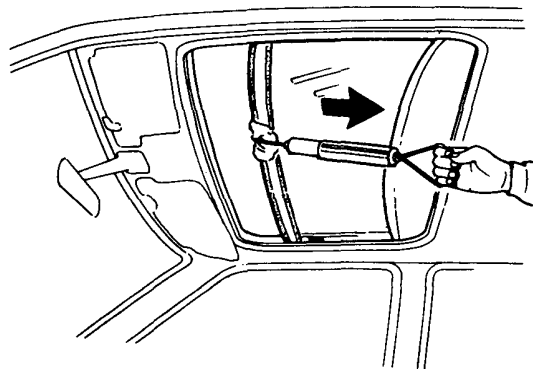
Closing Drag: Less than 98 N (10 kg, 22 lb)

Closing Force Check (Motor Installed)

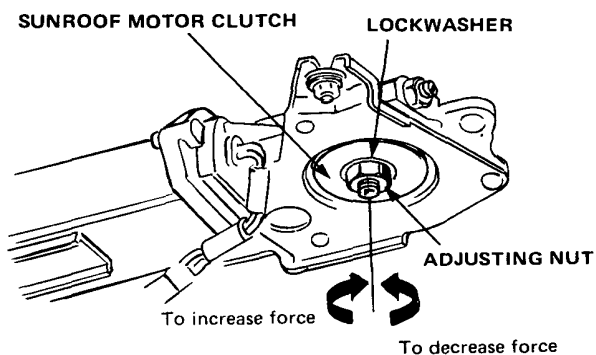
1. After installing all removed parts, have a helper hold the switch to close the sunroof while you measure force required to stop it. Attach spring scale as shown. Read force as soon as glass stops moving, then immediately release the switch and spring scale.

CAUTION: When using the spring scale, protect the leading edge of the sunroof with a shop rag.

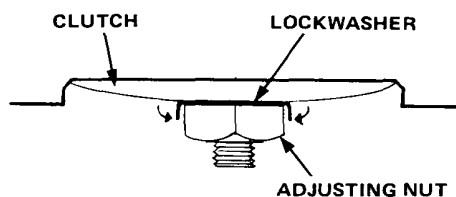
Closing Force: 196–245 N (20–30 kg, 44–66 lb)



2. If force is not within specification, adjust by turning sunroof motor clutch adjusting nut.



3. After adjusting, install a new lockwasher and bend it against flat on the adjusting nut.



Detachable Sunroof (2D H/B)



Disassembly

NOTE: To adjust the height of the sunroof, add or remove shims between the sunroof glass and the latch, or between the sunroof glass and the male hinges.

