

Sunroof

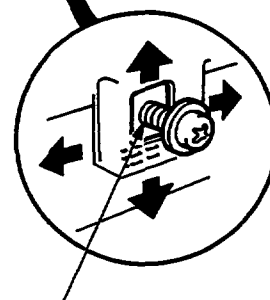
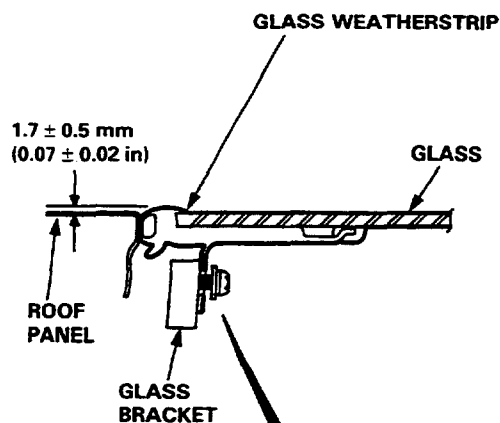
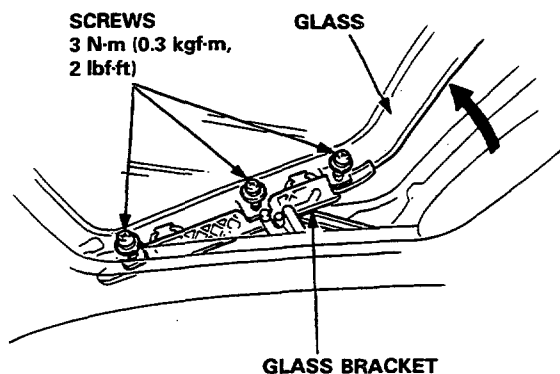
Troubleshooting

Symptom	Probable Cause
Water leak	<ol style="list-style-type: none"> 1. Clogged drain tube. 2. Gap between glass weatherstrip and roof panel. 3. Defective or improperly installed glass weatherstrip. 4. Gap between drain seal and roof panel.
Wind noise	<ol style="list-style-type: none"> 1. Excessive clearance between glass weatherstrip and roof panel.
Motor noise	<ol style="list-style-type: none"> 1. Loose motor. 2. Worn gear or bearing. 3. Drive unit deformed.
Glass does not move, but motor turns	<ol style="list-style-type: none"> 1. Clutch out of adjustment. 2. Foreign matter stuck between guide rail and slider. 3. Inner cable loose. 4. Outer cable not attached properly.
Glass does not move and motor does not turn (glass can be moved with sunroof wrench)	<ol style="list-style-type: none"> 1. Blown fuse. 2. Faulty switch. 3. Battery run down. 4. Defective motor. 5. Faulty relay.

Glass Height Adjustment

The roof panel should be even with the glass weatherstrip, to within 1.7 ± 0.5 mm (0.07 ± 0.02 in) all the way around. If not, slide the sunshade back, and:

1. Tilt-up the glass.
2. Loosen the screws and adjust the glass.
3. Repeat on opposite side if necessary.



NOTE: Apply liquid thread lock to the screw.

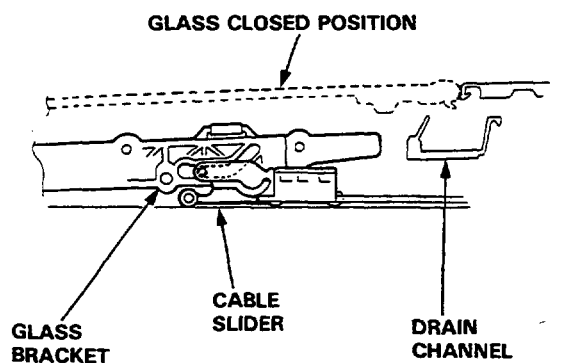
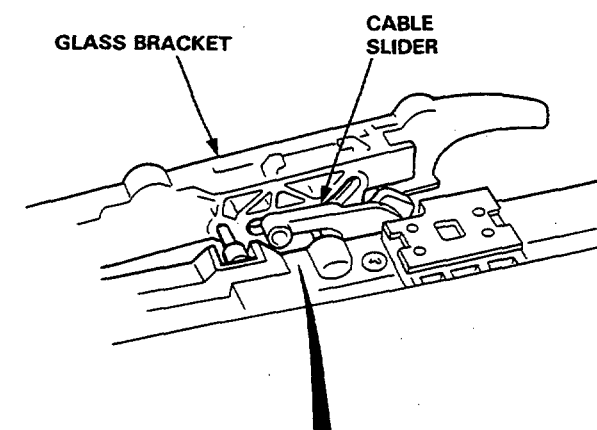
4. Side-to-side fit of glass weatherstrip can be adjusted by loosening the frame bolts and moving the frame right or left by hand (see page 20-52).



Glass Closing Adjustment

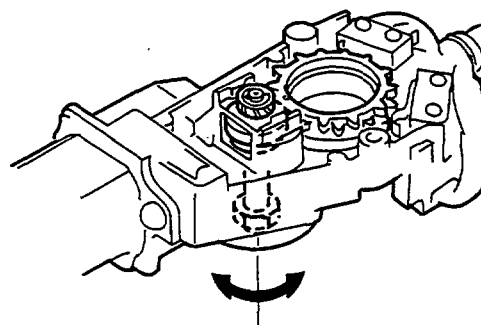
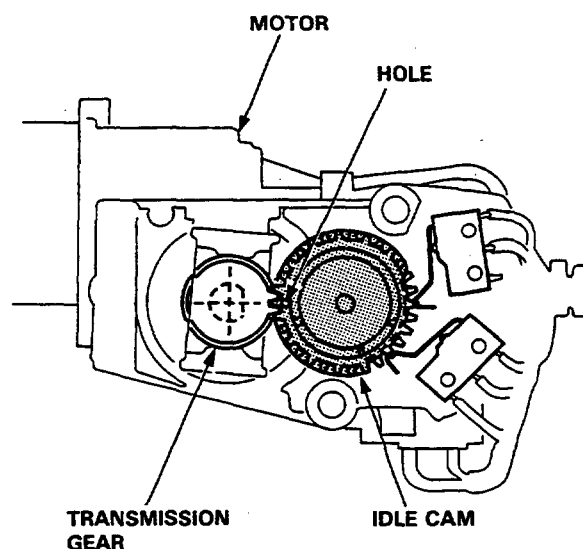
Open the glass about a foot, then close it to check where rear edge begins to rise. If it rises too soon and seats too tightly against the roof panel, or too late and does not seat tightly enough adjust it.

1. Remove the headliner (see page 20-59).
2. Remove the motor (see page 20-51).
3. Align the fully closed position of the glass bracket and cable slider on each side.



4. Check the fully closed position of the motor (idle cam) as shown.

NOTE: If necessary, adjust position of the idle cam by turning the motor (transmission gear) with the sunroof wrench.



5. Install the motor, check the operation of the glass (from tilt-up position to fully closed position, from fully open position to fully closed position) by operating the sunroof switch.

NOTE: Check the height of the glass (see page 20-48).

6. Close the glass fully, then check for water leaks.

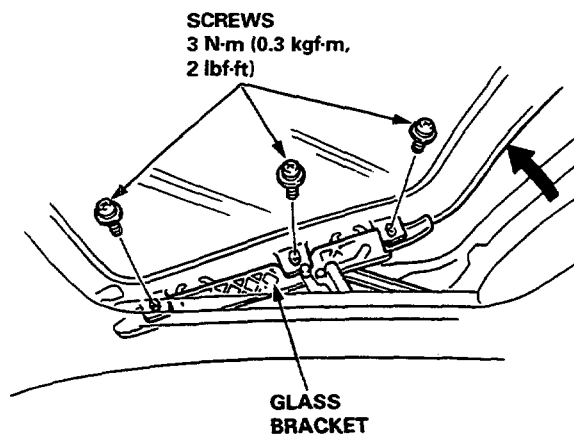
NOTE: Do not use high-pressure water.

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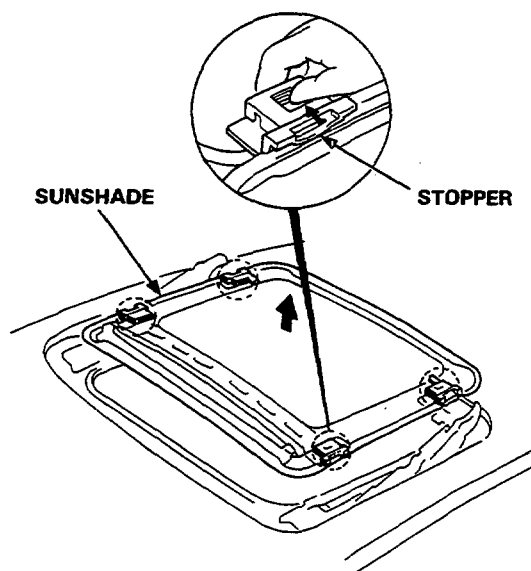
Glass and Sunshade Replacement

1. Open the sunshade.
2. Tilt-up the glass.
3. Remove the screws, then lift and remove the glass from the glass bracket.

NOTE: Apply liquid thread lock to the screws.



4. Slide the sunshade forward.
5. Detach the stoppers, then remove the sunshade from the guide rails.

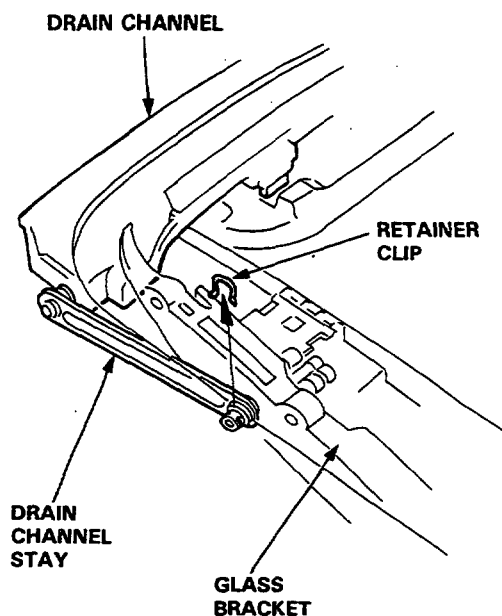


6. Installation is the reverse of the removal procedure.
7. Check for water leaks.

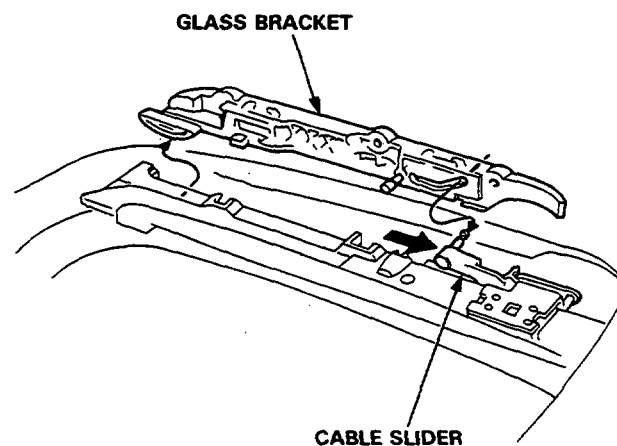
NOTE: Do not use high-pressure water.

Glass Bracket Replacement

1. Remove the glass.
2. Pull out the retainer clip, then remove the drain channel stay from the glass bracket on each side.



3. Using the sunroof wrench, move the cable slider. Pull out the glass bracket from the cable slider, then remove the glass bracket.



4. Installation is the reverse of the removal procedure.

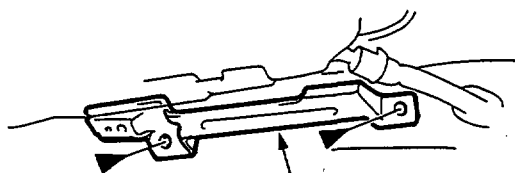
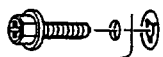


Motor, Drain Tube and Frame Replacement

CAUTION: Be careful not to damage the seats, dashboard and other interior trim.

1. Remove the glass (see page 20-50) and headliner (see page 20-59).
2. Remove the grab handle brackets.

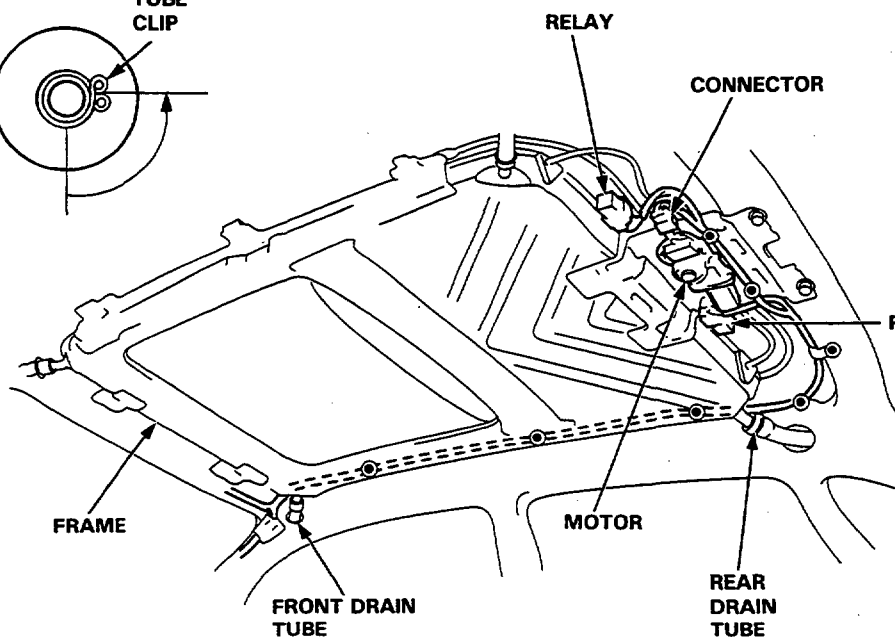
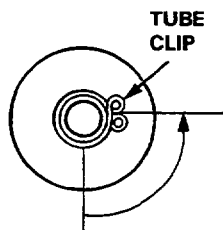
►: Bolt locations ,2



GRAB HANDLE
BRACKET

3. Disconnect the motor connector, harness clips and remove the relays.
4. Disconnect the drain tubes.

NOTE: Install the tube clips with the ends facing the side to ease installation of the headliner.



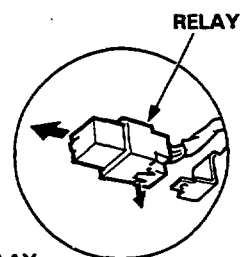
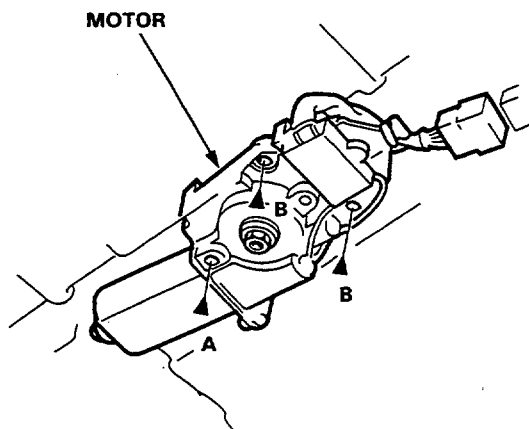
5. To remove the motor, remove the three screws.

NOTE: Make sure the cable sliders are parallel when installing the motor.

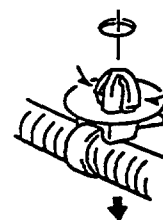
Use a Torx T20 bit.

A ►: Screw location, 1

B ►: Screw location, 2



●: Clip locations ,7



(cont'd)

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Motor, Drain Tube and Frame Replacement (cont'd)

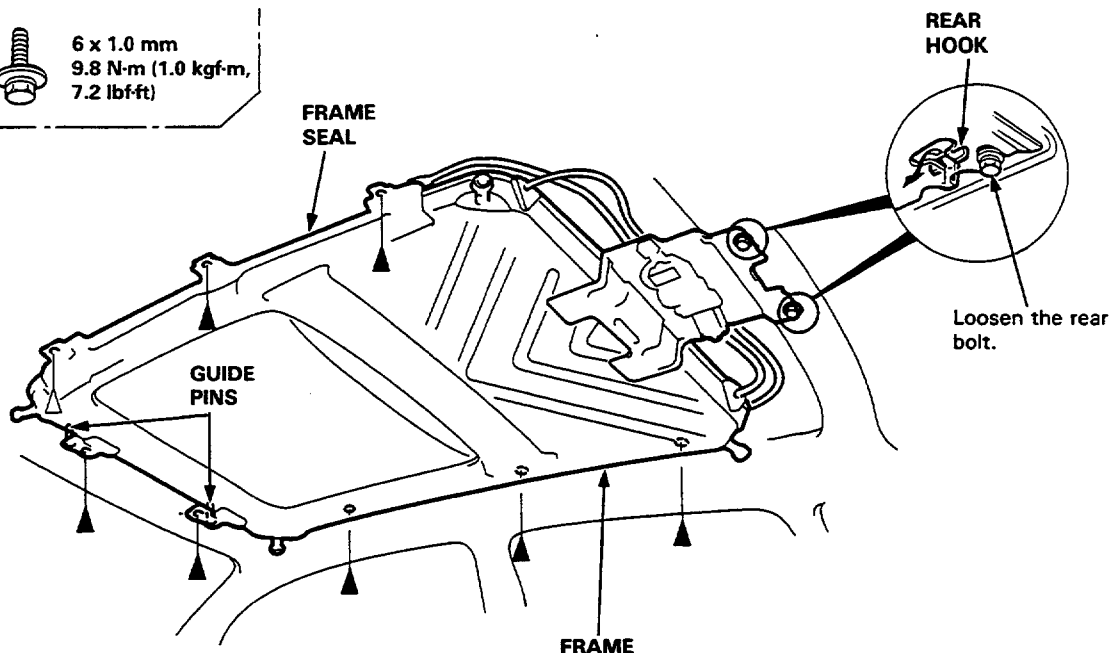
6. Loosen the rear bolts.
7. Remove the eight bolts and detach the rear hooks, then remove the frame from the car.

NOTE: You may require assistance when removing the frame.

►: Bolt locations ,8

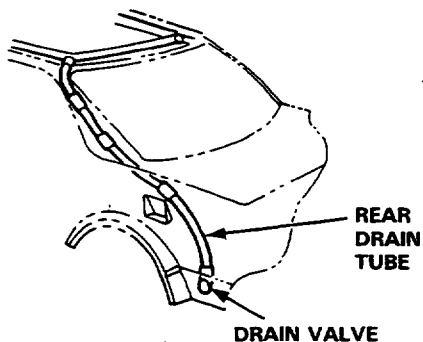
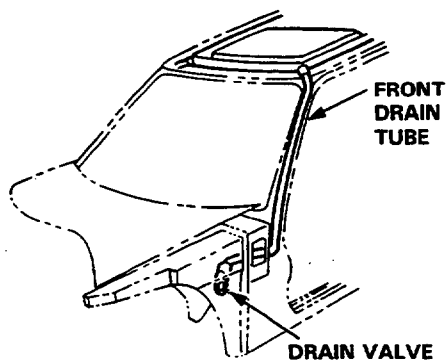


6 x 1.0 mm
9.8 N·m (1.0 kgf·m,
7.2 lbf·ft)



8. Pull the drain tubes out the front and rear pillars.

NOTE: Before pulling out the drain tube, tie a string to the end of it so it can be reinstalled.



9. Installation is the reverse of the removal procedure.

NOTE:

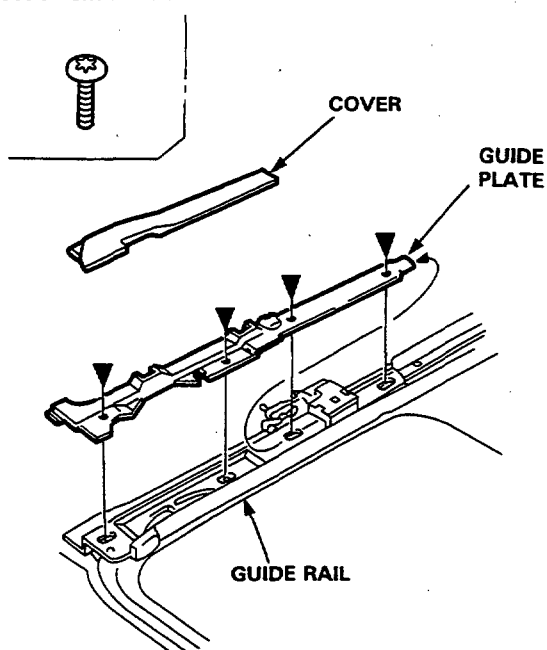
- Clean the surface of the frame.
- Check the frame seal.
- Check for water leaks.



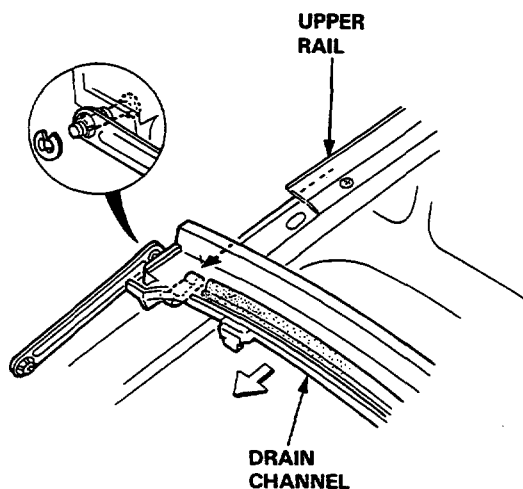
Guide Rails and Drive Unit Replacement

1. Remove the frame from the car (see page 20-51).
2. Remove the motor (see page 20-51).
3. Remove the glass brackets (see page 20-50).
4. Remove the covers and screws, then remove the guide plates.

►: Screw locations, 4
Use a Torx T20 bit.



5. Slide the drain channel forward, then remove it.

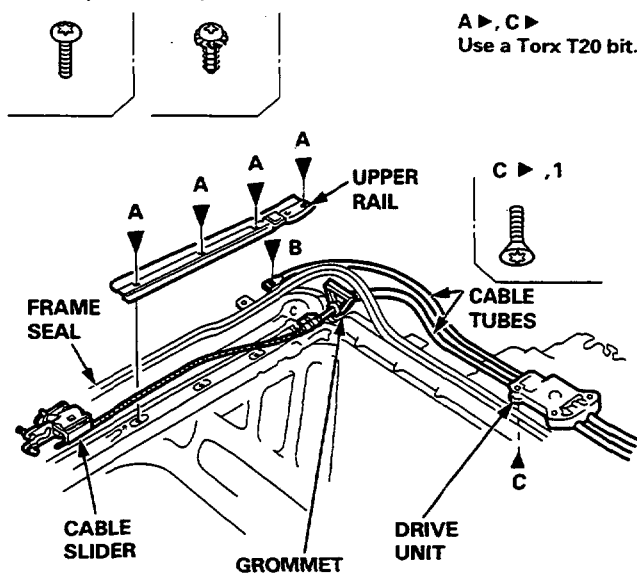


6. Remove the upper rails.
7. Remove the screws, then remove the drive unit with cable sliders attached.

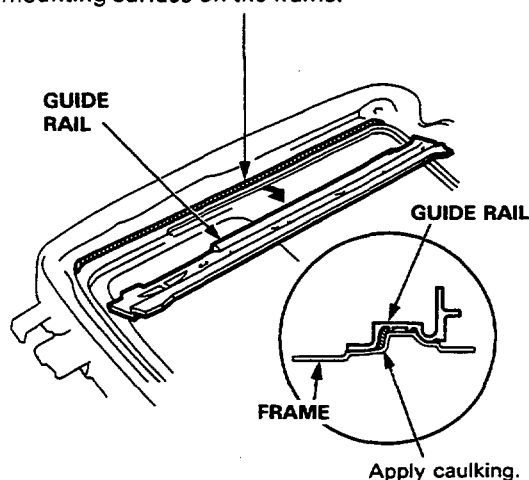
NOTE:

- Take care not to bend the cable tubes.
- When installing the drive unit, fill the groove in each grommet with sealant, then install the grommet to the frame.

►: Screw locations
A ►, 4 B ►, 2



8. Remove the guide rails.
- NOTE: To install, apply caulking to the guide rail mounting surface on the frame.



9. Installation is the reverse of the removal procedure.
- NOTE:
- Damaged parts should be replaced.
 - Apply grease to the sliding portion.

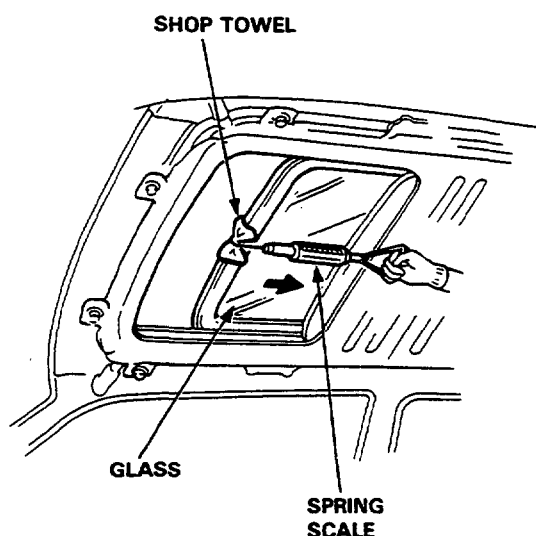
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Opening Drag Check (Motor Removed)

Before installing the motor, measure the effort required to open the glass using a spring scale as shown.

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

If load is over 40 N (4 kgf, 9 lbf), check side clearance and glass height adjustment (see page 20-48).

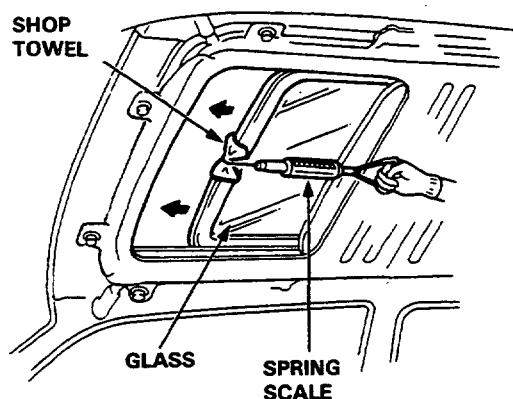


Closing Force Check (Motor Installed)

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

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

Closing Force: 200 – 290 N
(20 – 30 kgf, 44 – 66 lbf)



2. If the force is not within specification, install a new lock washer, adjust the tension by turning the motor clutch adjusting nut, and bend the lock washer against the motor clutch adjusting nut.

