

ROOF AND SUN ROOF

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DIAGNOSIS

SUN ROOF DIAGNOSIS

CONDITION	CAUSE	CORRECTION
Sun roof does not operate parallel.	Transporter cable lengths equal.	Close sun roof, slide sun roof frame to rear, remove crank handle and cable crank. Check that sun roof bears against sun roof opening velvet strip and that lifter' portion of rear lifter guides is positioned approximately 90 degrees to guide rails. Turn cable crank fully clockwise and reinstall into cable box.
	Transporter cables damaged or worn.	Replace cables. Both cables must be replaced if either one is damaged or worn.

Condition	Cause	Correction
Sun roof lifts up on one side only.	Lifter wedge welded to under- side of sun roof panel does not run up ramp welded in center of sun roof track.	Remove sun roof panel and bend lifter wedge so that it squarely hits ramp. The only adjustment for the ramp is the angle of the rear portion. This should be adjusted so that the wedge smoothly rides up the ramp.
	Transporter cable or drive pinion damaged.	If the transporter cable is worn or damaged, replace both cables. If drive pinion worn or damaged, replace drive pinion and also both transporter cables.
Sun roof scrapes on car roof when closing sun roof.	Lifters do not lie flat.	Close sun roof, slide sun roof frame to the rear and open and close sun roof slightly noting operation of lifters. Rework if necessary, plastic lifter cushion with tile to permit lifter to lie flat. Sparingly lubricate lifter guide.
Sun roof frame becomes detached.	Attaching clips have lost elasticity.	Install new clips
Water enters car interior.	Water drain hoses blocked.	Clean hoses with compressed air or a flexible steel cable. NOTE: To clear rear water drain hoses, the sun roof panel and frame must be removed. Blowing out of rear drain hoses from trunk compartment hose end is not recommended due to possibility of soiling car interior.
	Bent water drain hoses	Attempt to straighten drain hoses by working a suitable tube or cable through hose. Replace hose if above corrective action is not satisfactory.
	Rear water drain hoses have been pulled out of rubber grommets.	Apply a small amount of rubber cement to rear water drain hoses and reinsert into rubber grommet located in luggage compartment floor panel.
	Velvet strips on front and rear of sun roof do not seal properly.	Check sun roof for correct height adjustment. If height adjustment is correct, but a tight seal does not exist, relocate velvet strip upward for better seal, or replace velvet strip.

MAINTENANCE AND ADJUSTMENTS

ADJUSTING HEIGHT OF SUN ROOF PANEL

Adjust height of sun roof as follows:

1. Open sun roof to half open position and pry apart sun roof frame from sun roof panel (see Figure 2F-1).

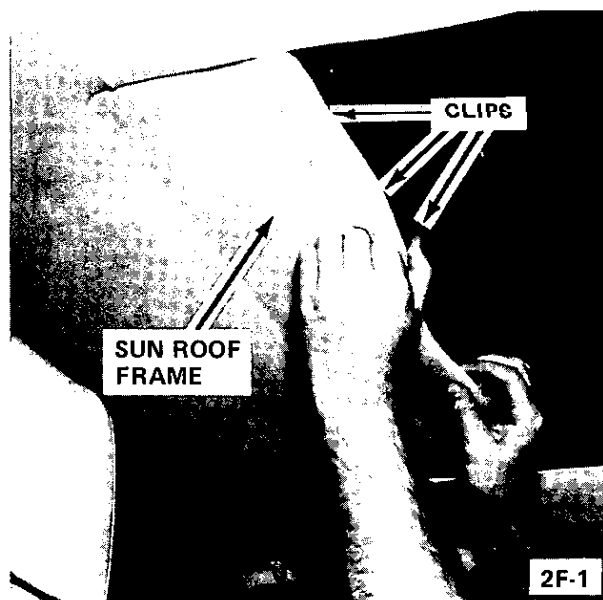


Figure 2F-1 Separating Sun Roof Frame From Sun Roof Panel

2. Push detached sun roof frame rearward until it contacts car roof stop.

NOTE: If difficulty is encountered when pushing sun roof frame to rear due to the frame hooking into the sun roof panel, close sun roof until lifters come into operation. The sun roof frame should now easily slide rearward.

ADJUSTMENT FRONT OF SUN ROOF

To adjust height of front of sun roof proceed as follows:

1. Close sun roof.
2. Loosen screws securing front guides to front of sun roof panel (see Figure 2F-2). Rotate height adjustment ring until desired height is attained.
3. Readjust guides outward so that guides just touch sides of rails and are not wedged or cocked against rail sides and tighten screws. Recheck height adjustment.

NOTE: The guides should lightly contact the guide

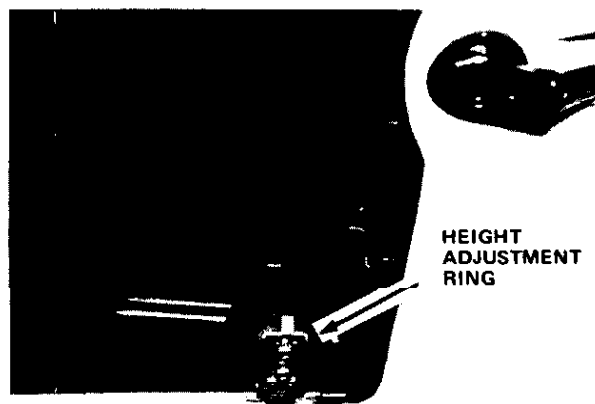


Figure 2F-2 Sun Roof Front Guide

rail and should have a clearance of no more than 0.02 inch.

ADJUSTMENT. REAR OF SUN ROOF

To adjust height of rear of sun roof proceed as follows:

1. Completely close sun roof and check that the rear sun roof lifter guides from approximately a 90 degree angle with respect to the guide rail and that the lifter contacts the guide stop (see Figure 2F-3). If this is

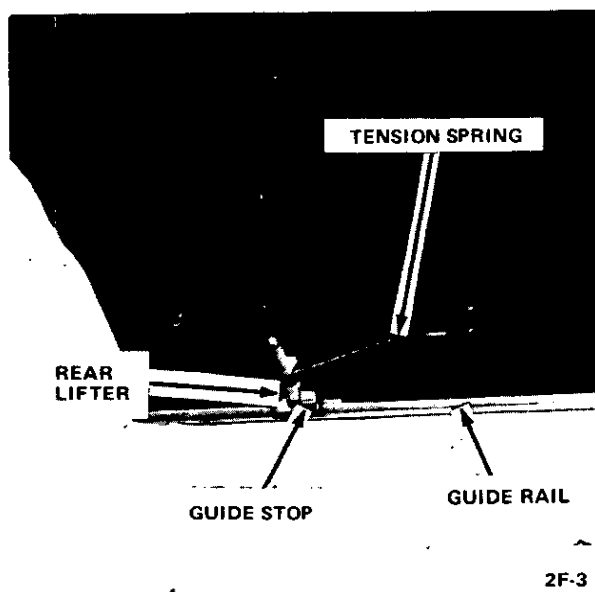


Figure 2F-3 Rear Sun Roof Lifter 90 Degrees to Guide Rail

not the case, take off crank handle and cable crank (see Figure 2F-4) and physically reposition lifters to be approximately 90 degrees to guide rails and to contact guide stops. Rotate cable crank to its fully clockwise limit **and** reinstall.

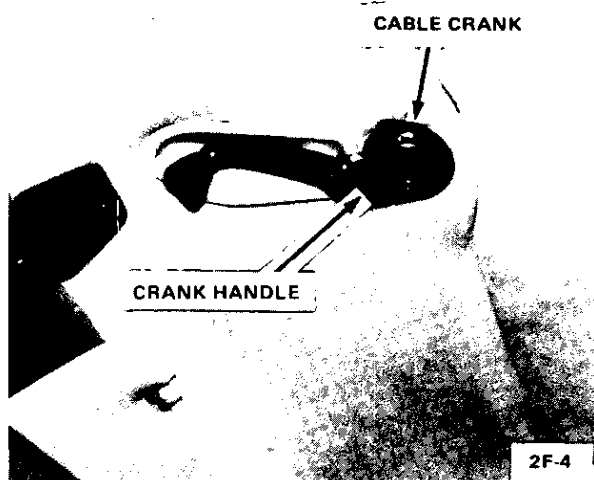


Figure 2F-4 Sun Roof Cranking Handle and Cable Crank

2. Open sun roof until rear lifters lay in a horizontal position (see Figure 2F-5), loosen lifter pin nut and turn lifter pin adjusting screw accordingly to lower or raise lifter pin in slot of lifter.

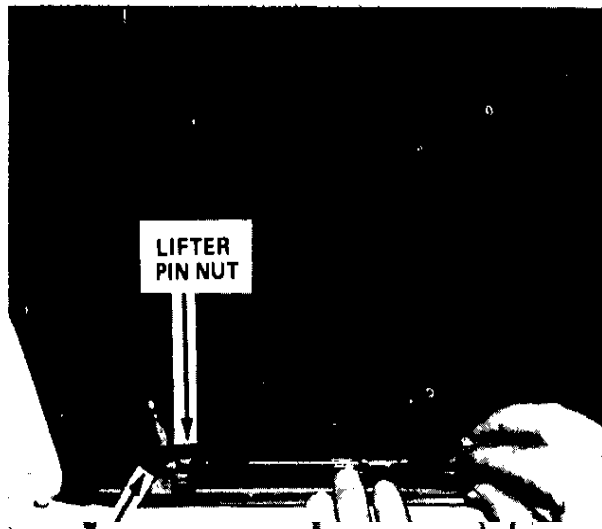


Figure 2F-5 Lifter Pin Adjusting Screw

3. Hold lifter pin adjusting screw down and tighten lifter pin nut.

4. Recheck operation of sun roof and note that lifter contacts stop when lifter is approximately 90 degrees to guide rail.

Pull sun roof frame forward and reattach to sun roof panel.

MAJOR REPAIR

REMOVAL AND INSTALLATION OF SUN ROOF PANEL AND SUN ROOF FRAME

Removal of Sun Roof Panel

1. Open sun roof to half open position and pry loose sun roof frame from sun roof panel (see Figure 2F-1).

2. Push detached sun roof frame toward the rear until it contacts car roof stop.

NOTE: If **difficulty** is encountered when pushing sun roof frame rearward due to the frame hooking into sun roof panel, close sun roof panel completely and then proceed to push sun roof frame toward rear of car.

3. Close sun roof panel and then open it approximately one turn of operating crank.

4. Remove one of two screws holding each of front

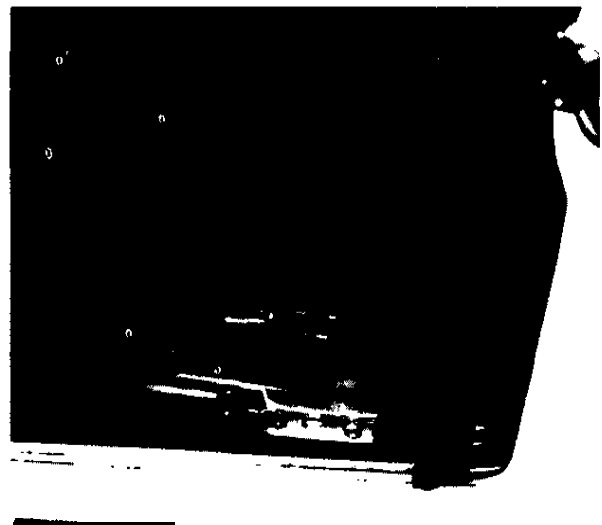


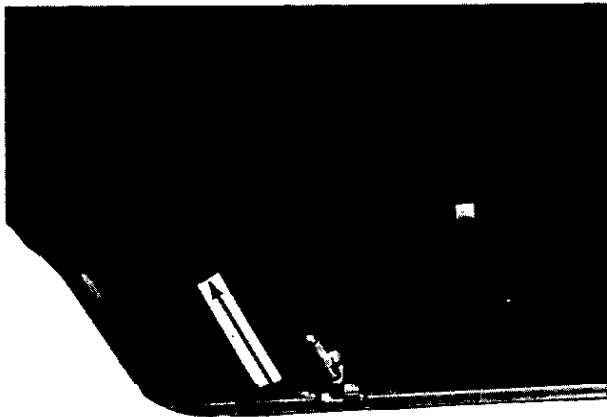
Figure 2F-6 Swinging Front Guide Inboard

guides to height adjustment rings, loosen second screw (see Figure 2F-6), and swing guides away from guide rail.

NOTE: When swinging front guides inboard, be careful not to change position of height adjustment rings. It is suggested that the position of the height adjustment rings be marked with a pencil prior to loosening of front guide attaching screws.

5. Retighten remaining screw holding front guide in position to prevent height adjustment rings from turning.

6. Turn lifter guide tension springs 90 degrees inboard and pull lifters out of sun roof panel brackets (see Figure 2F-7).



2F-7

Figure 2F-7 Pulling Rear Lifter Guide out of Sun Roof Panel Bracket

NOTE: Do not loosen lifter pin nut as this will change height adjustment on rear of sun roof.

7. Lift out sun roof panel.

Installation of Sun Roof Panel

1. Install sun roof panel onto guide rails and locate panel evenly in sun roof opening.

2. Reposition front guides in original position on guide rails. Be sure that they squarely contact guide rails and are not cocked.

NOTE: To achieve proper clearance of front guides to guide rail, the guides should lightly touch edge of

the guide rails and should have a clearance of no more than 0.02 inch.

3. Reconnect rear lifter guides onto sun roof panel brackets and reposition tension spring as shown in Figure 2F-3.

4. Crank sun roof fully closed and check that the rear lifters are at approximately 90 degrees with respect to guide rails and contact guide stops (see Figure 2F-3). If adjustment is required remove crank handle and cable crank (see Figure 2F-4) and physically reposition lifters to position described above. Rotate cable crank to its fully clockwise limit and reinstall.

5. Pull sun roof frame forward and reattach to sun roof panel.

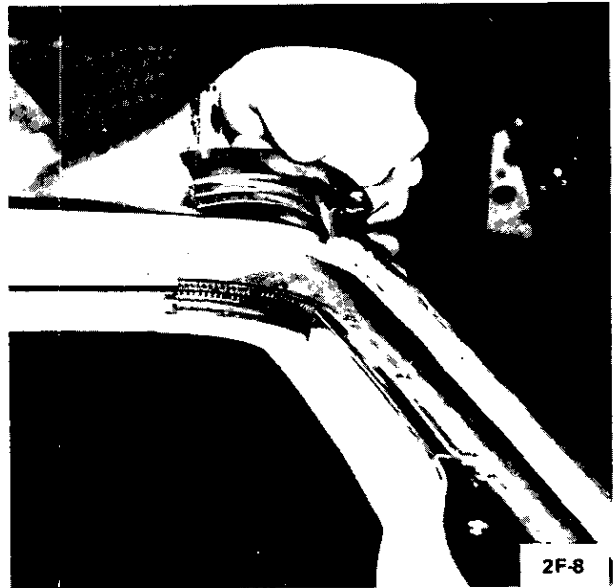
6. Open and close sun roof several times and recheck for smoothness of operation.

Removal of Sun Roof Frame

1. Remove sun roof panel.

2. Crank rear lifter guides to furthestmost rear position.

3. Remove screws securing upper corner plates in position and lift out upper corner plates (see Figure 2F-8).



2F-8

Figure 2F-8 Removing Upper Corner Plates

4. Remove screws securing left and right guide rails, lift up front ends of guide rails and insert wedge under forward guide rail ends. Slide out sun roof frame.

Installation of Sun Roof Frame

1. Slide sun roof frame into lower slot of guide rails, position fully rearward and reattach guide rails to roof.

NOTE: Be sure guide rail retainers at rear of guide rails are positioned with their dowels in bores of roof frame.

2. Install upper corner plates and secure in place..

3. Install sun roof panel.

REMOVAL AND INSTALLATION OF VELVET STRIP ON SUN ROOF OPENING, AND VELVET STRIP AND WEATHERSTRIP ON REAR OF SUN ROOF PANEL

Removal of Velvet Strip on Sun Roof Opening

1. Fully open sun roof.
2. Carefully pull off velvet strip using solvent to dissolve cement. Clean area thoroughly before installing new velvet strip.

Installation of Velvet Strip On Sun Roof Opening

1. Cut away for a distance of 1.5 inch the velvet material on velvet strip that will be on the outside when strip is cemented in position. Also cut off to this dimension the plastic cord inside velvet strip. Do not cut away velvet material on inboard side of velvet strip which is to be cemented to sun roof opening.

2. Using nitrile vinyl trim adhesive (3M Vinyl Trim Adhesive, Permalastic Vinyl Trim Adhesive or equivalent) apply sparingly to both sun roof opening and side of velvet strip to be cemented.

3. Immediately install new velvet strip and position so that upper edge of velvet strip is flush with car roof.

4. Clean off excess cement being careful not to contact velvet strip.

Removal of Velvet Strip and Weatherstrip on Rear of Sun Roof Panel

1. Remove sun roof panel.
2. Carefully detach weatherstrip and velvet strip from sun roof panel using solvent as required to dissolve cement. Thoroughly clean area before installing new velvet strip and weatherstrip.

Installing Velvet Strip and Weatherstrip On Rear of Sun Roof Panel

1. Using nitrile vinyl trim adhesive (3M Vinyl Trim Adhesive Permalastic Vinyl Trim Adhesive or equivalent) apply sparingly to vertical and horizontal contact areas at rear of sun roof panel (see Figure 2F-9) and also to side of velvet strip which will touch sun roof panel.

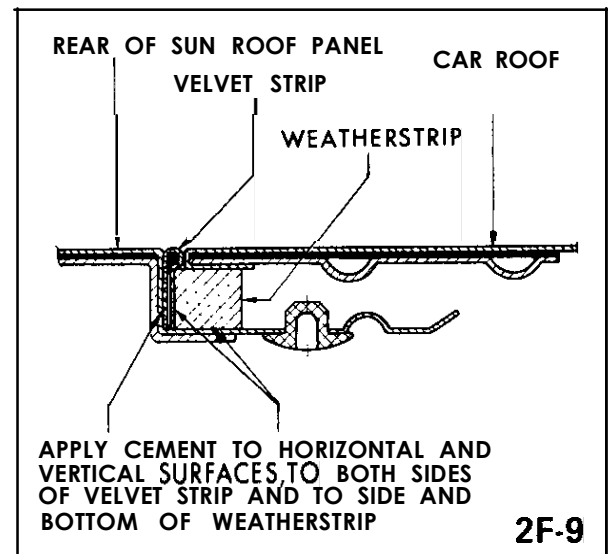


Figure 2F-9 Installing Velvet Strip and Weatherstrip on Rear of Sun Roof Panel

2. Immediately install new velvet strip and position so that top edge of velvet strip is flush with sun roof panel.
3. Apply cement to outboard edge of velvet strip and to top and bottom contact surfaces of weatherstrip, and install weatherstrip in position.
4. Clean off excess cement being careful not to contact velvet strip.
5. Install sun roof panel.

REMOVAL AND INSTALLATION OF REAR GUIDES AND CABLE

Removal of Rear Guides and Cable

1. Remove sun roof panel.
2. Crank rear lifter guides fully rearward and then remove crank handle and cable crank.

3. Unscrew and remove upper and lower corner plates (see Figure 2F-8).
4. Unscrew and remove left and right upper cable shields and pull cable ends out of cable box.
5. Pull cable and rear lifter guides out of left and right guide rails.

Installation of Rear Guides and Cable

1. Check both cables for wear or damage. If either cable is defective, replace both cables.
2. Check pinion on cable crank (see Figure 2F-10) for wear or damage. If replacement of pinion is required, also replace both cables.

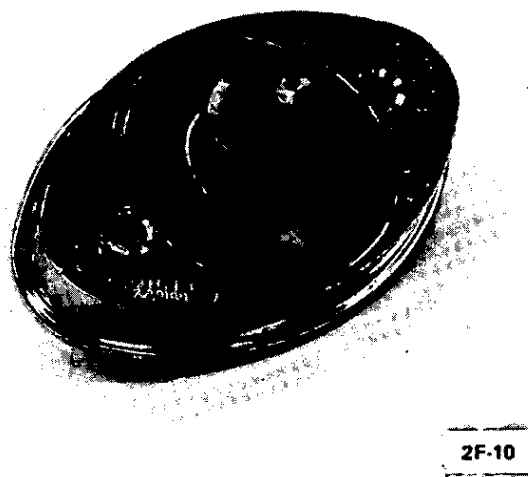


Figure 2F-10 Cable Crank

3. Install cables and rear lifter guides into guide rails and work cables inward until they hit stops.
4. Unscrew and lift off cable box cover (see Figure 2F-11).
5. Insert cable ends into cable box and locate cable ends in respective lower cable shields.
6. Install cable box cover, right and left upper cable shields and right and left upper corner plates.
7. Temporarily install cable crank and crank handle. Crank rear lifter guides to closed position. Remove cable crank and crank handle.
8. Install sun roof panel and reposition front guides to original position on guide rails. Be sure front



Figure 2F-11 Cable Box

guides squarely touch guide rails and are not cocked. Also be sure sun roof panel is not cocked and is evenly located in opening.

NOTE: To achieve proper clearance of front guides to guide rail, the guides should lightly touch the edge of guide rails and should have a clearance of no more than 0.02 inch.

9. Reconnect rear lifter guides onto sun roof panel brackets and reposition tension spring as shown in Figure 2F-3.

10. Push sun roof panel forward so that it contacts roof panel velvet strip and manually raise rear lifters to their 90 degree position. Sun roof panel will now be fully closed.

11. Rotate cable crank to its limit in a clockwise direction and reinstall.

NOTE: Be sure that drive pinion of cable crank meshes with spirals of cable.

12. Reinstall cable crank and crank handle.
13. Pull sun roof frame forward and reattach to sun roof panel.
14. Open and close sun roof several times to recheck for smoothness of operation.

REMOVAL AND INSTALLATION OF DRIVE PINION

Removal

1. Position sun roof in fully closed position and take off crank handle and cable crank.

2. Press off snap ring holding drive pinion in place and remove drive pinion (see Figure 2F-10).

Installation

1. Install drive pinion reverse of removal.

NOTE: If drive pinion is to be replaced, also replace both cables to insure smooth operation of sun roof.

2. Rotate cable crank to its limit in a clockwise direction and install reverse of removal procedure.

REMOVAL AND INSTALLATION OF FRONT AND REAR WATER DRAINAGE HOSES

Removal of Front Water Drainage Hose

1. Remove sun visor from side of car which will have drainage pipe taken out.
2. Partially detach pinchweld finishing strip from door opening involved.

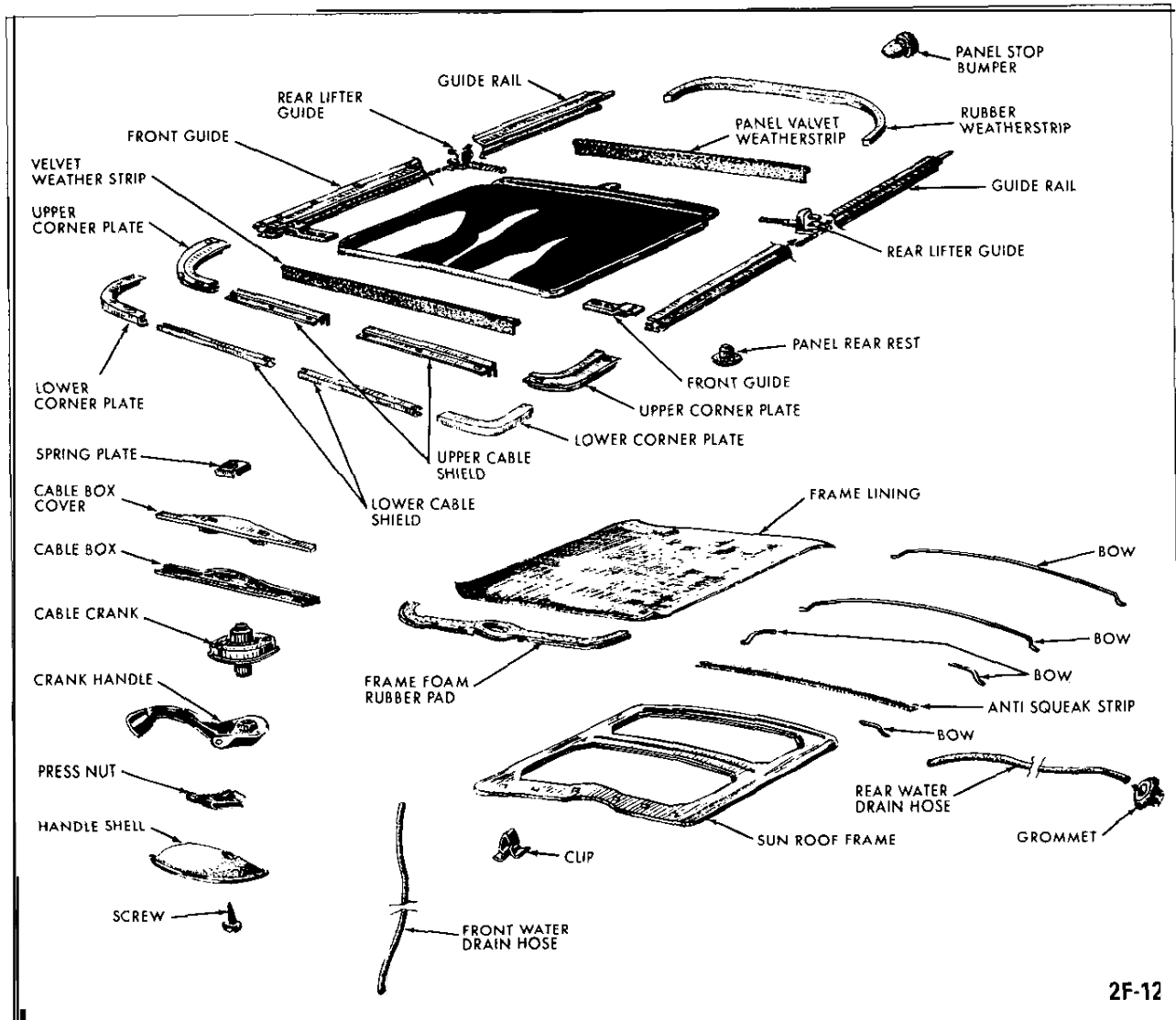


Figure 2F-12 Sun Roof (Exploded View)

3. Carefully detach a portion of headlining around window corner post involved.
4. Detach water drain hose from sun roof hose fitting.
5. Remove cowl side kickpads.
6. Pull out from upper end front water drain hose.

Installation of Front Water Drain Hose

1. Insert from above water drain hose (wider end upward) into door hinge pillar.

NOTE: Do not mistake front and rear water hoses. The front hose is thinner than the rear hose and is wider at the end which connects to hose fitting on sun roof. The rear hose is uniform over its entire length.

2. Work water drain hose downward through lower half of door hinge pillar and be sure hose terminates behind door sill flange at bottom of front fender.
3. Cement upper portion of water drain hose to sun roof hose fitting.
4. Cement detached portions of headlining into place by use of rubber cement or nitrile vinyl trim adhesive (3M Vinyl Trim Adhesive, Permalastic Vinyl Trim Adhesive or equivalent).
5. Complete installation reverse of removal procedures.

Removal of Rear Water Drain Hose

1. Remove rear seat and rear seat back.

2. Pry out plastic fasteners securing cardboard parcel shelf in position and remove shelf.
3. Remove rear quarter trim pad.
4. Detach headlining only as required from area around rear window pillar.
5. Pull out rear water drain hose.

Installation of Rear Water Drain Hose

1. Install rear water drain hose in original position. Insert hose from above and **work** downward. Cement both ends of hose in place.
2. Secure water drain hose in place along wheelhouse.
3. Complete installation reverse of removal procedures.

REMOVAL AND INSTALLATION OF LUGGAGE RACK

All 1973 luggage racks will be dealer installed, and are held to the roof at the 4 corners. Removal and installation is accomplished by removing the attaching screw at each corner. See Figure 2F-14.

DEALER INSTALLED LUGGAGE RACKS ATTACH AT THE FOUR (4) CORNERS AND DO NOT HAVE CENTER ATTACHING SUPPORTS



Figure 2F-14 Luggage Rack