

## SECTION 14 SUN ROOF

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#### GENERAL

Sun roof kits are available for CJ-7 with hardtop, Cherokee, Wagoneer and Truck models. The sun roof may be either completely removed and stowed or partially opened.

#### INSTALLATION—SUN ROOF

##### CJ-7 Model with Hardtop

Before starting installation, ensure the kit is complete and the necessary tools are available.

(1) Cut out sun roof outline pattern included in kit container box.

(2) Thoroughly clean wax and dirt from top surface of roof.

(3) Position and attach outline pattern on roof (fig. 14-1). Ensure front of pattern is parallel with front roof edge.

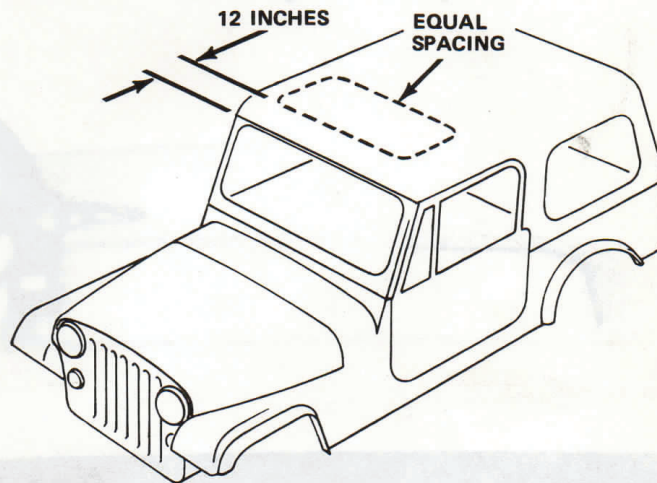
(4) With felt tip pen or grease pencil, mark perimeter of pattern on vehicle roof. Remove pattern.

(5) Mask around outside perimeter of outline on roof to prevent paint damage when sawing. Cover interior of vehicle with plastic sheeting to catch sawdust.

(6) Drill a 1/4-inch diameter pilot hole (minimum) inboard of outline on roof (fig. 14-2). Use hole for sabre saw starting cut.

(7) Cut opening for sun roof along outline perimeter with sabre saw. Use a coarse tooth blade (e.g., 10 teeth per inch). If using a variable speed saw, use slower speeds (fig. 14-3).

(8) Remove cutout section and, if perimeter edge is rough, smooth with file (fig. 14-4).



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Fig. 14-1 Correct Position of Outline Pattern

(9) Remove plastic sheeting with sawdust.

(10) Remove operating panel from sun roof main frame by rotating forward until hinges disengage (fig. 14-5).

(11) Position trim ring on underside of main frame. With trim ring attaching holes aligned with frame groove, mark locations for drilling holes in groove (fig. 14-6).

(12) Centerpunch hole locations and drill 9/64-inch holes in main frame groove. If power tool is used for installation of trim ring, drill 1/8-inch holes.

(13) Install foam sealing tape around main frame flange (fig. 14-7). Ensure that tape ends meet squarely on frame side **opposite** hinge pivots. Do not stretch tape when rounding corners of frame.

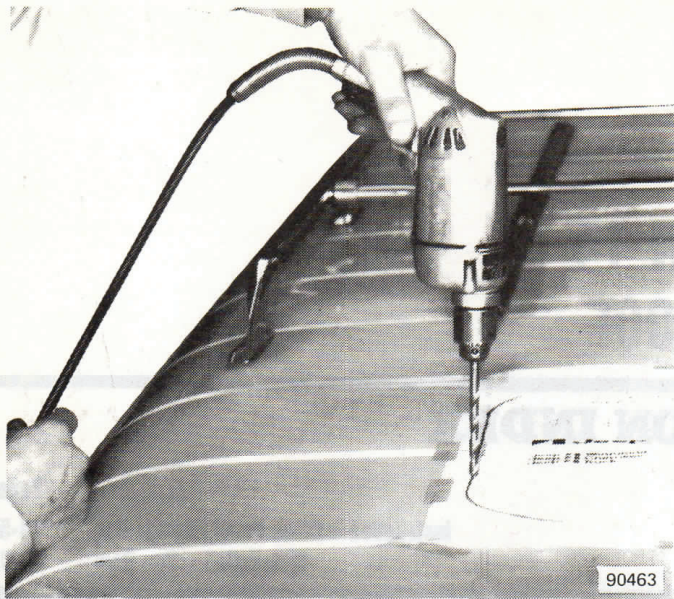


Fig. 14-2 Drilling Pilot Hole

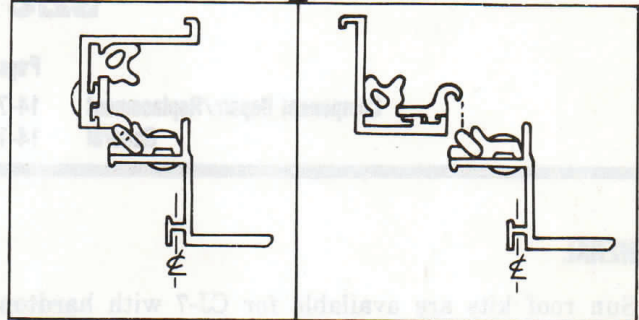
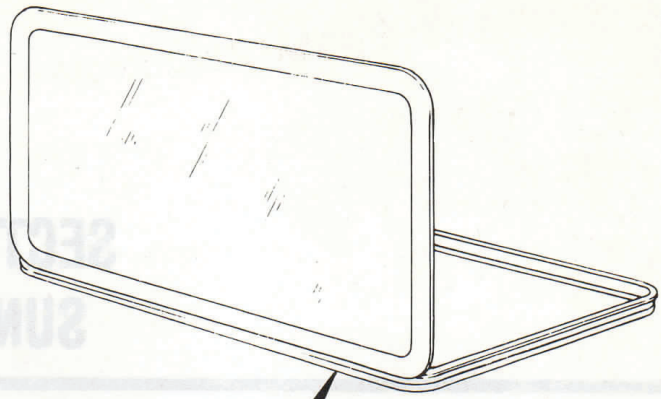


Fig. 14-5 Removing Operating Panel from Main Frame

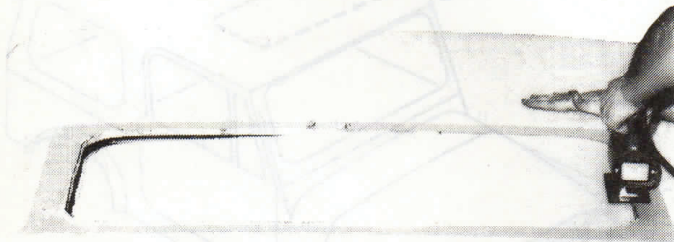


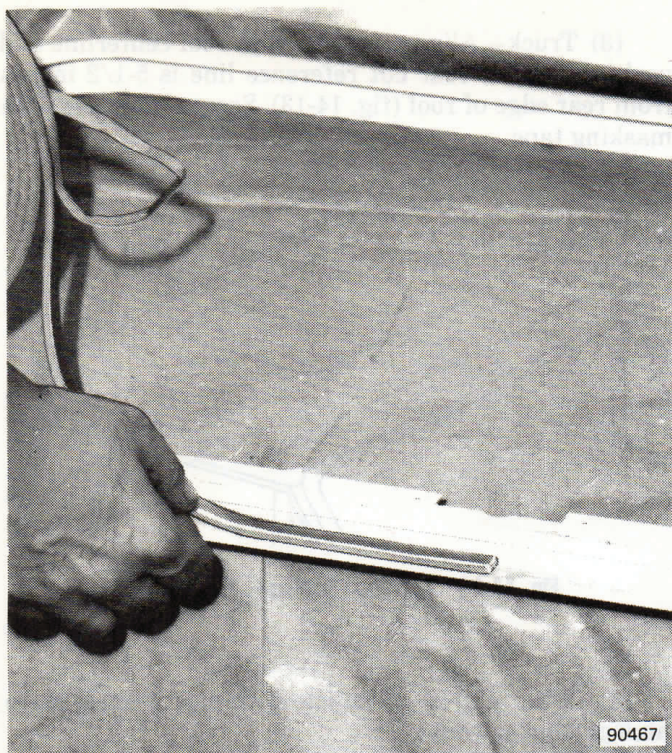
Fig. 14-3 Cutting Opening for Sun Roof



Fig. 14-4 Smoothing Rough Edge of Sun Roof Opening



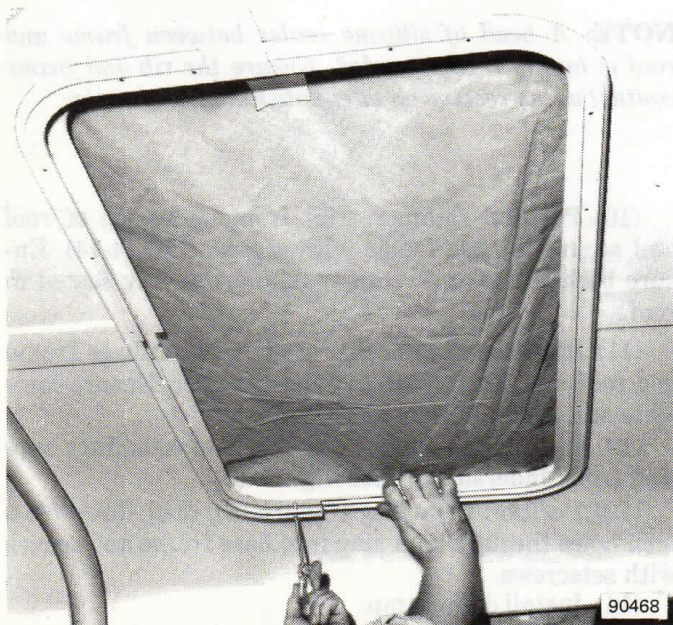
Fig. 14-6 Marking Locations for Holes in Main Frame Groove



**Fig. 14-7 Installing Foam Sealing Tape on Main Frame**

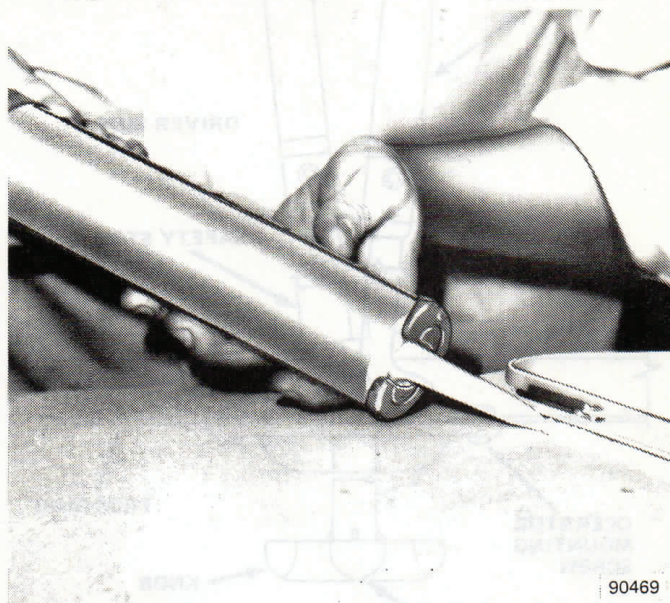
(14) Position main frame in roof opening with hinge pivots forward.

(15) Position trim ring in underside of roof opening. Tape ring to roof on one side and loosely install a screw in attaching hole adjacent to joining ends on opposite side of ring (fig. 14-8). Loosely install remaining attaching screws.



**Fig. 14-8 Trim Ring Installation**

(16) With roof and main frame clean and dry, seal perimeter of main frame flange and roof with silicone sealer. This is necessary to ensure a water-tight installation (fig. 14-9).

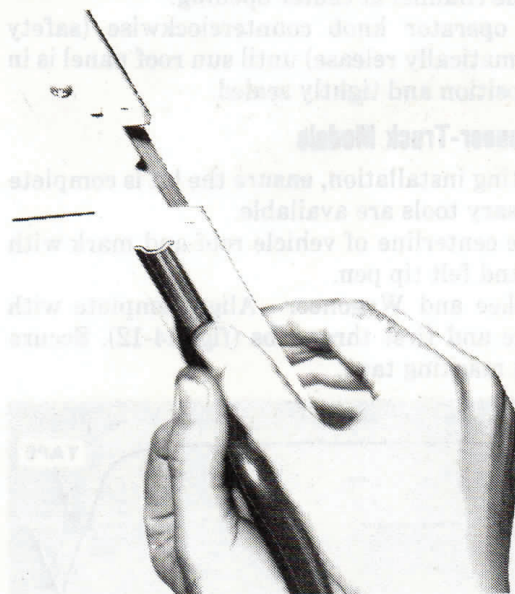


**Fig. 14-9 Sealing Sun Roof Frame**

(17) Tighten trim ring attaching screws until main frame and trim ring are firmly seated in roof.

(18) Smooth and remove excess silicone sealer. Ensure a complete seal exists around perimeter of frame.

(19) Install screw cover into channel on trim ring (fig. 14-10) by bending edges together and snapping in place. Cut off excess material.



**Fig. 14-10 Installing Screw Cover into Trim Ring Channel**

(20) Install operator on trim ring with two pan-head machine screws and nuts. Slide buttons on operator lever arms must face rear of vehicle (fig. 14-11). Install knob on operator and attach with machine screw.

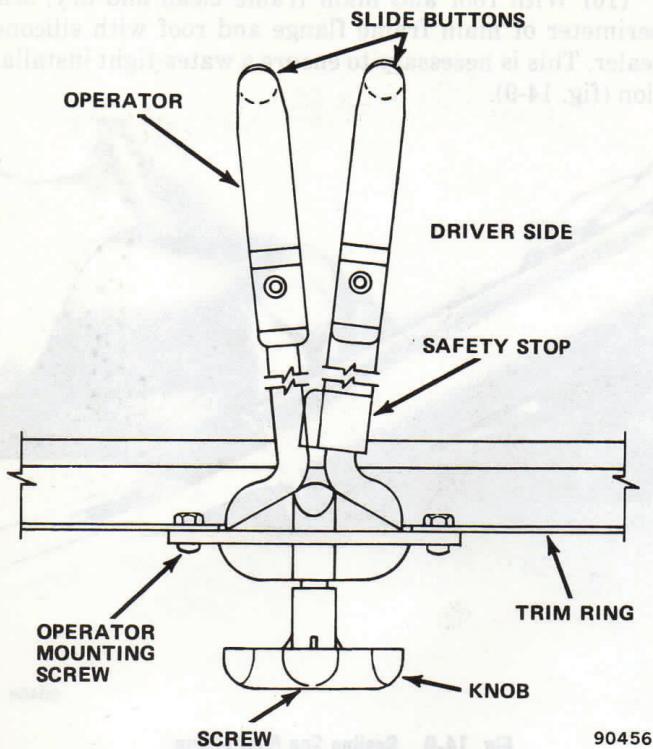


Fig. 14-11 Operator Installed on Trim Ring

(21) Slide up safety stop on driver side lever arm (fig. 14-11) and turn knob clockwise until arms meet in vertical position. Position hinged edge of sun roof panel on front of main frame 110 degrees from full closed position and interlock hinges by pivoting panel toward closed position. Engage slide buttons on operator lever arms with slide channel at center opening.

(22) Turn operator knob counterclockwise (safety stop will automatically release) until sun roof panel is in fully closed position and tightly sealed.

**Cherokee-Wagoneer-Truck Models**

Before starting installation, ensure the kit is complete and the necessary tools are available.

(1) Locate centerline of vehicle roof and mark with straightedge and felt tip pen.

(2) Cherokee and Wagoneer—Align template with roof centerline and first three ribs (fig. 14-12). Secure template with masking tape.

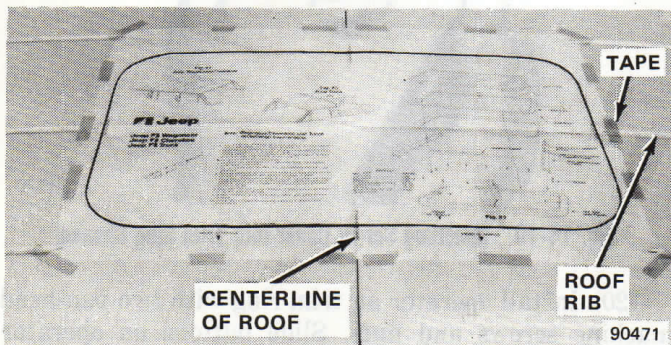


Fig. 14-12 Aligning Template on Vehicle Roof—Cherokee and Wagoneer Models

(3) Truck—Align template with roof centerline and position so that rear cut reference line is 5-1/2 inches from rear edge of roof (fig. 14-13). Secure template with masking tape.

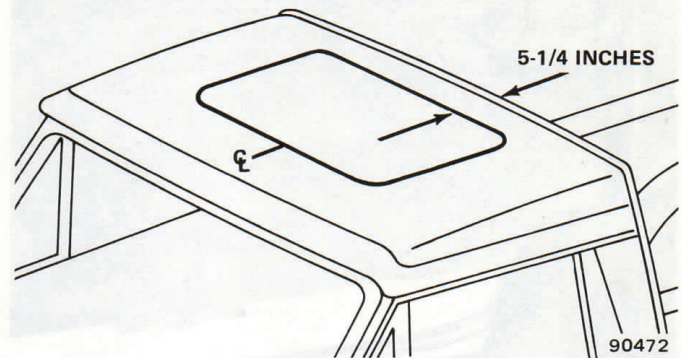


Fig. 14-13 Aligning Template—Truck Models

(4) Cover interior of vehicle with plastic sheeting to catch cutting sawdust.

(5) Centerpunch and drill a 5/16-inch pilot hole at any point on inboard side of cut reference line.

(6) Using a sabre saw with extra long, medium/fine tooth blade, saw sun roof opening in roof and headliner. Remove rough metal edges with file.

(7) Remove cutouts and plastic sheeting with debris.

(8) Remove dome lamp assembly.

(9) Position sun roof base frame into opening on top side of roof.

**NOTE:** A bead of silicone sealer between frame and roof is highly recommended. Ensure the rib and frame contact areas receive an adequate amount of sealer.

(10) Position retainer trim from underside of roof and secure to base frame with screws (fig. 14-14). Ensure base frame and retainer trim are firmly seated in roof.

(11) If silicone sealer was used between base frame and roof, smooth and remove excess sealer. Ensure complete seal around perimeter of frame.

(12) Install roof reinforcements and headliner support from underside of roof (fig. 14-15).

(13) Position trim ring (fig. 14-16), drill three 7/64-inch holes through trim ring into base frame and secure with setscrews.

(14) Install dome lamp.

(15) Position sun roof glass assembly on base frame with studs in slots and secure with safety pull pin (fig. 14-17).

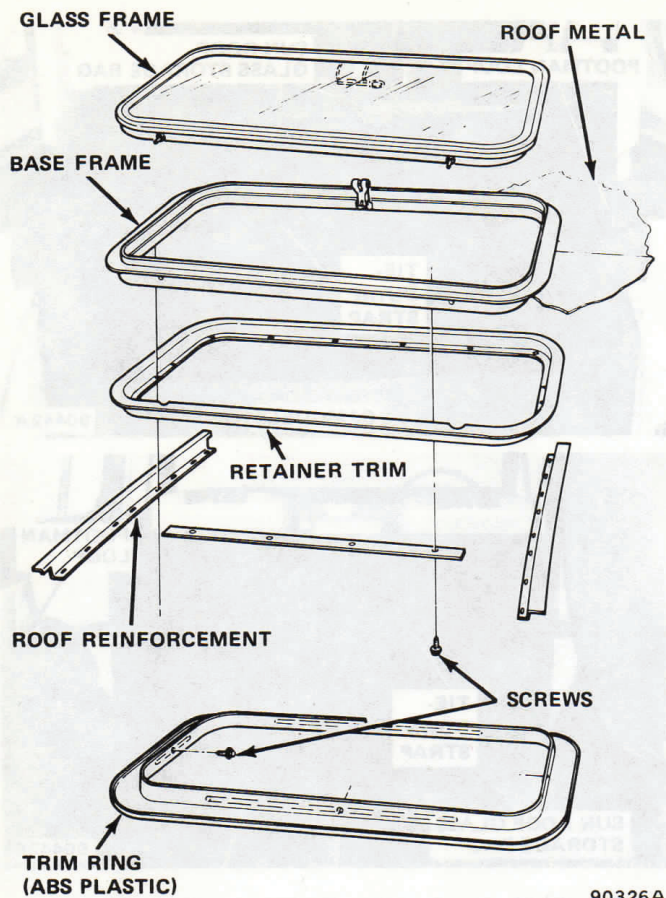


Fig. 14-14 Base Frame and Retainer Trim

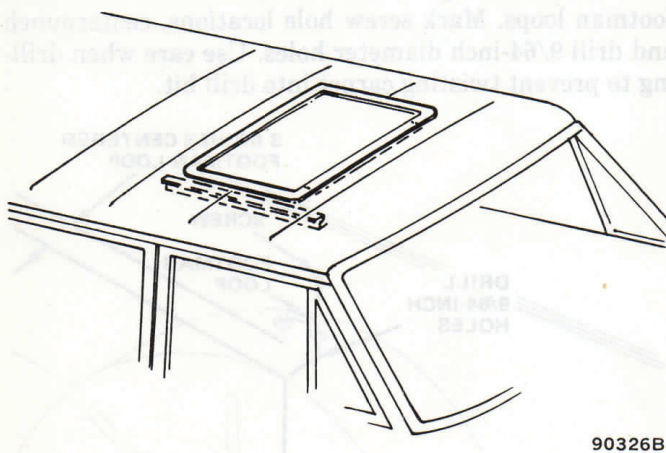


Fig. 14-15 Roof Reinforcements and Headliner Support

**INSTALLATION—GLASS PANEL STORAGE BAG**

**CJ-7 Models**

If a sun roof glass panel is removed, it must be properly stowed in a protective bag that is firmly anchored to the vehicle.

**WARNING:** Failure to properly store the sun roof can result in injury to occupants if the vehicle must stop suddenly.

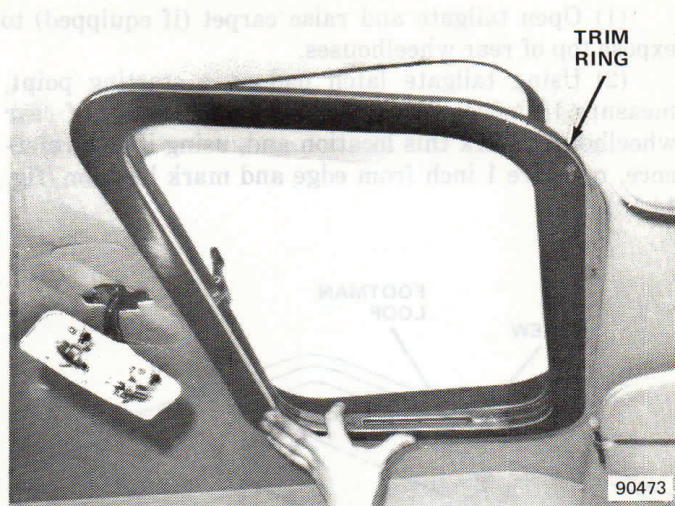


Fig. 14-16 Positioning Trim Ring

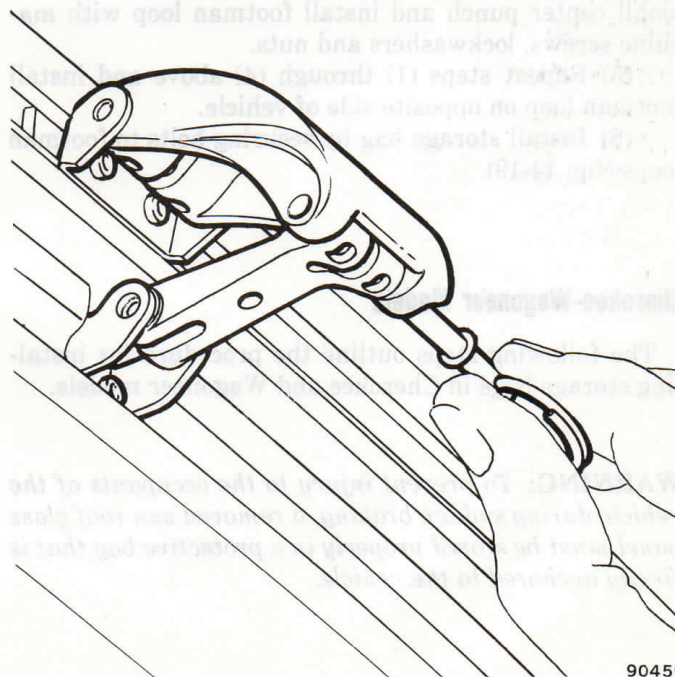
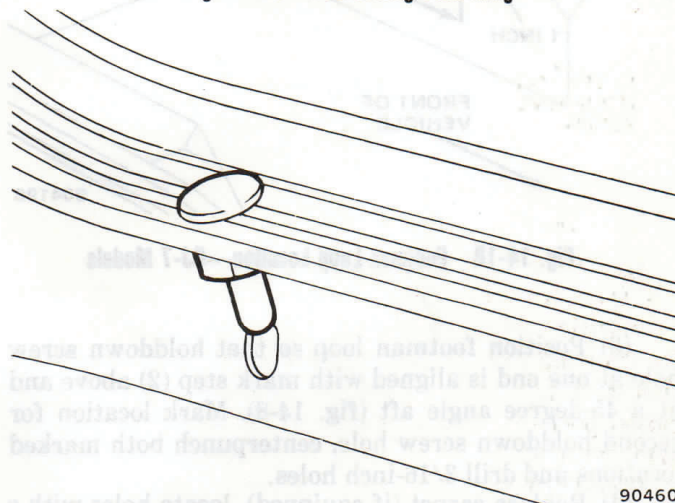


Fig. 14-17 Sun Roof Glass Panel Positioned on Base Frame

(1) Open tailgate and raise carpet (if equipped) to expose top of rear wheelhouses.

(2) Using tailgate latch pad as a starting point, measure 15 inches forward along inboard edge of rear wheelhouse. Mark this location and, using it as a reference, measure 1 inch from edge and mark location (fig. 14-18).

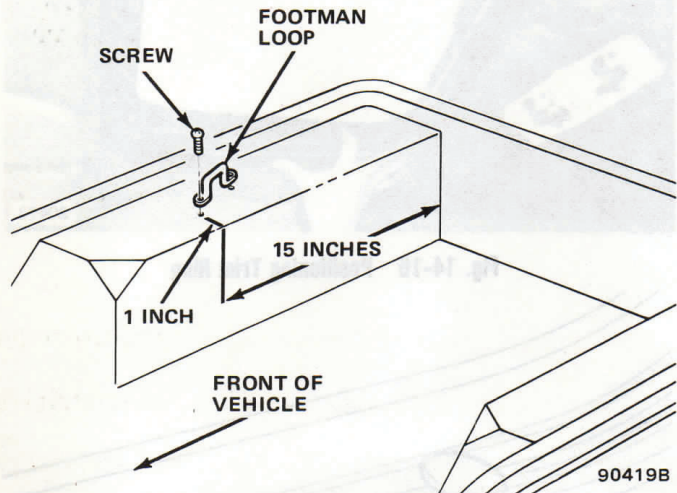


Fig. 14-18 Footman Loop Location—CJ-7 Models

(3) Position footman loop so that holddown screw hole at one end is aligned with mark step (2) above and at a 45-degree angle aft (fig. 14-8). Mark location for second holddown screw hole, centerpunch both marked locations and drill 3/16-inch holes.

(4) Replace carpet (if equipped), locate holes with a small center punch and install footman loop with machine screws, lockwashers and nuts.

(5) Repeat steps (1) through (4) above and install footman loop on opposite side of vehicle.

(6) Install storage bag by securing belts to footman loops (fig. 14-19).

### Cherokee-Wagoneer Models

The following steps outline the procedure for installing storage bags in Cherokee and Wagoneer models.

**WARNING:** To prevent injury to the occupants of the vehicle during sudden braking, a removed sun roof glass panel must be stored properly in a protective bag that is firmly anchored to the vehicle.

**NOTE:** Truck sun roof glass panel storage bags are stored behind the seat. Anchoring is not necessary.

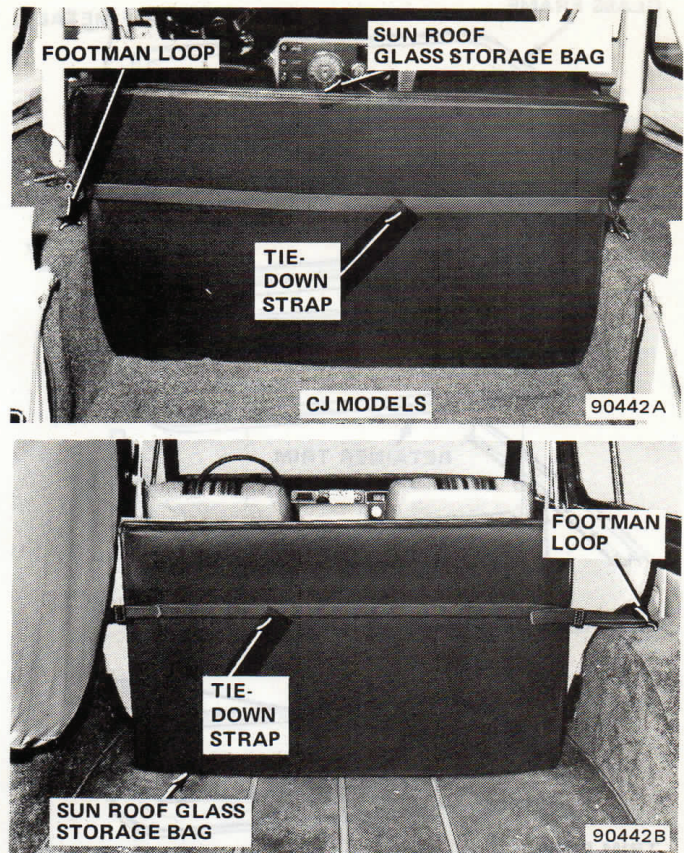


Fig. 14-19 Sun Roof Glass Panel Storage Bag Installation

(1) Refer to figure 14-20 for installation location of footman loops. Mark screw hole locations, centerpunch and drill 9/64-inch diameter holes. Use care when drilling to prevent twisting carpet into drill bit.

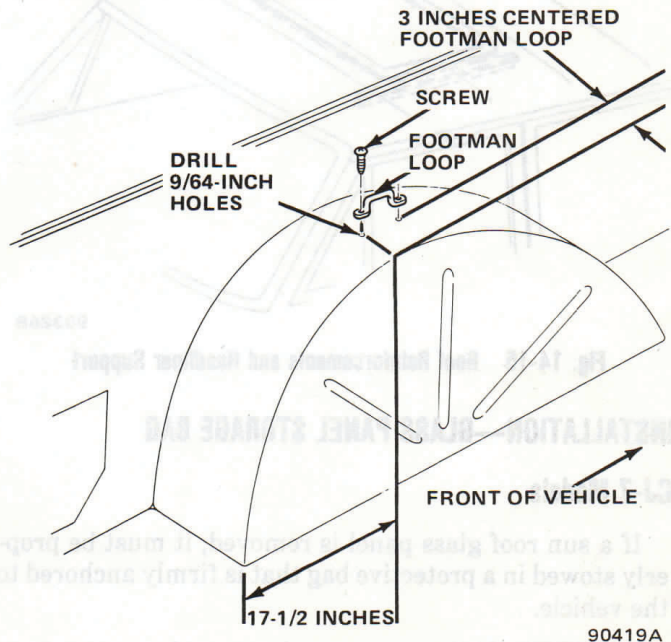


Fig. 14-20 Footman Loop Location—Cherokee-Wagoneer Models

- (2) Install footman loops with self-tapping screws.
- (3) Install storage bag by securing belts to footman loops.

## COMPONENT REPAIR/REPLACEMENT

### Glass/Frame Assembly—CJ-7 Models

#### Removal

- (1) Remove glass and aluminum frame assembly (fig. 14-21) from vehicle and place upside down on clean work bench.

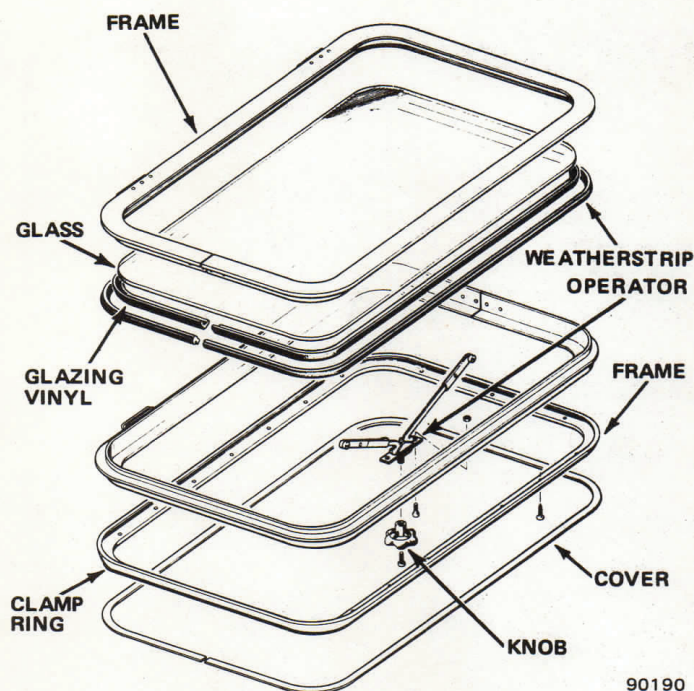


Fig. 14-21 Sun Roof Components—CJ-7 Models

- (2) Using wooden wand or fiber stick, pry vinyl glazing strip away from glass and frame, and remove glass.

#### Installation

- (1) Remove any glass sealant residue on glass or frame sealing surfaces with 3M General Purpose Adhesive Cleaner or equivalent.
- (2) Install a thin bead of 3M Clear Silicone Sealer or equivalent on glass frame sealing area.
- (3) Install glass into frame and install a thin bead of 3M Clear Silicone Sealer or equivalent around the outer glass edge.
- (4) Install vinyl glazing strip into frame channel and test for water leaks.
- (5) Install glass and aluminum frame assembly in vehicle.

### Glass Frame Weatherseal—CJ-7 Models

To remove glass frame weatherseal, use a wooden wand or fiber stick to pry weatherseal from sun roof glass frame. Clean weatherseal and adhesive residue from frame channel with 3M General Purpose Adhesive Cleaner or equivalent.

To install replacement weatherseal, first apply a thin bead of 3M Super Weatherseal Adhesive or equivalent to glass frame locating channel. Using wooden wand or fiber stick, install weatherseal in sun roof glass frame.

### Metal Frame/Clamp Ring—CJ-7 Models

The sun roof metal frame and clamp ring are fitted together with self-tapping screws to properly locate the metal frame to the roof opening.

#### Removal

- (1) Pry the sun roof screw vinyl cover from the clamp ring.
- (2) Remove self-tapping screws and lower retaining ring.
- (3) Break the sealant bond between metal frame and roof and remove metal frame from roof.

#### Installation

- (1) Lightly position metal frame to roof panel.
- (2) If sealing voids are evident, use 3M Auto Bedding and Glazing Compound or equivalent to ensure a positive seal.
- (3) Locate clamp ring to underside of roof and install self-tapping screws.
- (4) Install vinyl cover around clamp ring.

### Operator—CJ-7 Models

The operator (regulator) is retained on the metal frame with two machine screws and hex nuts. To remove operator, run the operator arms up until it lightly contacts the safety stop. Support the sun roof glass and frame assembly, and remove operator screws and nuts. Slide the safety stop up the operator arm and remove operator.

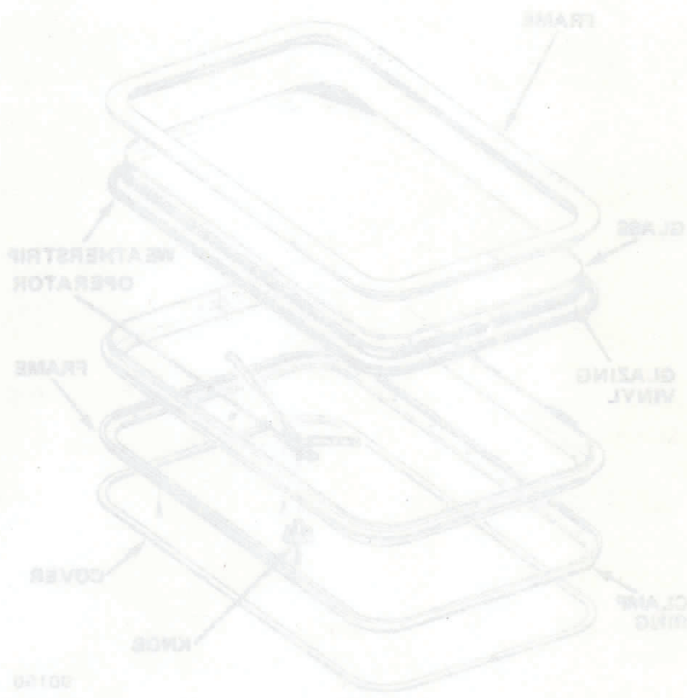
### Reseal Sun Roof—Cherokee-Wagoneer-Truck Models

With the glass panel removed (see above), reseal the sun roof according to the following procedure.

- (1) Remove dome lamp assembly.
- (2) Remove trim ring.
- (3) Remove headliner support and roof reinforcements. Mark screw hole locations in reinforcements for installation purposes.
- (4) Remove retainer trim.
- (5) Remove base frame.

- (6) Remove sealer from base frame and roof top. Thoroughly clean frame/roof contact surface areas.
- (7) Place bead of silicone sealer around perimeter of roof opening.
- (8) Position base frame in roof opening.
- (9) Install retainer trim. Ensure base frame and retainer trim are firmly seated on upper and underside of roof.

- (10) Smooth out and remove excess silicone sealer. Ensure a complete seal exists around perimeter of frame.
- (11) Install roof reinforcements noting screw locations. Install headliner support.
- (12) Install trim ring and dome lamp assembly.
- (13) Install panel glass and secure with safety pull pin.



The sun roof metal frame and clamp ring are fitted together with self-tapping screws to properly locate the metal frame to the roof opening.

- (1) Fit the sun roof screw vinyl cover from the clamp ring.
- (2) Remove self-tapping screws and lower retaining trim.
- (3) Break the sealant bond between metal frame and roof and remove metal frame from roof.

- (1) Lightly position metal frame to roof panel.
- (2) If sealing voids are evident, use 3M Seal-Bonding and Glazing Compound or equivalent to ensure a positive seal.
- (3) Locate clamp ring to underside of roof and install self-tapping screws.
- (4) Install vinyl cover around clamp ring.

The operator (regulator) is retained on the metal frame with two machine screws and lock nuts. To re-move operator, run the operator arm up until it lightly contacts the safety stop. Support the sun roof glass and frame assembly and remove operator screws and nuts. Slide the safety stop up the operator arm and remove operator.

- (1) Remove base frame.
- (2) Remove retainer trim.
- (3) Remove headliner support and roof reinforcements. Mark screw hole locations in reinforcements for installation purposes.
- (4) Remove retainer trim.
- (5) Remove base frame.

- (1) Remove any glass sealant residue on glass or frame sealing surfaces with 3M General Purpose Adhesive Cleaner or equivalent.
- (2) Install a thin bead of 3M Clear Silicone Sealer or equivalent on glass frame sealing area.
- (3) Install glass into frame and install a thin bead of 3M Clear Silicone Sealer or equivalent around the outer glass edge.
- (4) Install vinyl glazing strip into frame channel and test for water leaks.
- (5) Install glass and aluminum frame assembly in vehicle.
- (6) Label weather wand or fiber stick, pry vinyl glazing strip away from glass and frame and remove glass.
- (7) Remove any glass sealant residue on glass or frame sealing surfaces with 3M General Purpose Adhesive Cleaner or equivalent.
- (8) Install a thin bead of 3M Clear Silicone Sealer or equivalent on glass frame sealing area.
- (9) Install glass into frame and install a thin bead of 3M Clear Silicone Sealer or equivalent around the outer glass edge.
- (10) Install vinyl glazing strip into frame channel and test for water leaks.
- (11) Install glass and aluminum frame assembly in vehicle.