

**2001 ACCESSORIES & EQUIPMENT****Power Sun Roofs - Catera****DESCRIPTION & OPERATION****POWER SUN ROOF**

The power sun roof system consists of a combined sun roof switch/motor, sun roof glass, sunshade, wind deflector, rail and track assembly, door jamb switch (inputs), SUN ROOF fuse No. 25 (20-amp) and CLAMP/CRUISE fuse No. 15 (15-amp). The power sun roof has the following operating modes: express open, express fully close, express vent open, and anti-pinch guard. Sunshade is manually operated. Retained Accessory Power (RAP) feature will allow power sun roof operation after ignition is turned off provided vehicle doors have not been opened. If vehicle power is lost, sun roof may be closed manually. After correcting a vehicle power loss, sun roof motor will need to be reprogrammed.

**Sun Roof Switch/Motor**

**NOTE: Sun roof switch and motor are serviced as an assembly.**

Sun roof movement is accomplished through a bi-directional motor. When motor is not operating, both circuits are grounded. When sun roof switch is activated, voltage is supplied to a sun roof motor open circuit. Sun roof motor is equipped with a timer circuit that stops sun roof motor operation after 8 seconds.

**Anti-Pinch Guard**

If an object obstructs sun roof movement, sun roof glass will stop and depending on sun roof glass position, may reverse direction to a factory (preset) position. Anti-pinch guard may be temporarily disabled. As sun roof is closing, press sun roof switch upward as sun roof is closing. This will override anti-pinch guard allowing sun roof to close. When sun roof switch is released, anti-pinch guard is enabled.

**Vehicle Speed Signal**

Vehicle Speed Signal (VSS) input to sun roof motor is used to assist closing sun roof glass while driving. When vehicle is driven at high speeds, sun roof motor must compensate for the additional resistance caused by wind passing over sun roof glass. If VSS input to sun roof motor is missing, sun roof anti-pinch guard may be activated preventing sun roof from closing.

**MANUAL OPERATION OF POWER SUN ROOF**

Power sun roof may be operated manually in case of power loss. Obtain special screwdriver from tool kit located in trunk. Remove trim cover at rear of overhead console. Insert special screwdriver and manually open or close power sun roof. After power loss, power sun roof motor must be programmed. See **SUN ROOF MOTOR PROGRAMMING** under PROGRAMMING.

**COMPONENT LOCATIONS****COMPONENT LOCATIONS**

<b>Component</b>	<b>Location</b>
Body Control Module	Mounted on Right "A" Pillar, Behind Trim Panel
Data Link Connector	Attached To Instrument Panel Carrier, Left Of Steering Wheel
Door Jamb Switches	Right & Left Side "A" Pillars
Fuse Block	Lower Left Of Steering Column, Mounted To Instrument Panel
Power Sun Roof Motor	Front Center Of Roof, Above Rear View Mirror

## ON-VEHICLE SERVICE

### INSPECTING/CLEANING DRAIN HOSES

**NOTE:** Drain hoses are pushed (not clamped or glued) onto fittings.

#### Front Drain Hoses

Completely open sun roof. Drain hose openings are located at front corners of sun roof opening. Drain hoses drain at bottom rear of front fenders, behind wheel. Use either water or compressed air to verify drain hoses are open. Clean as necessary.

#### Rear Drain Hoses

Completely open sun roof. Drain hose openings are located at rear corners of sun roof opening. Drain hoses drain at rear of vehicle, near rear bumper. Inspection and cleaning of rear drain hoses requires removal of sun roof assembly. See **SUN ROOF ASSEMBLY** under REMOVAL & INSTALLATION. After removal of sun roof assembly, use either water or compressed air to verify drain hoses are open. Clean as necessary.

### LUBRICATION

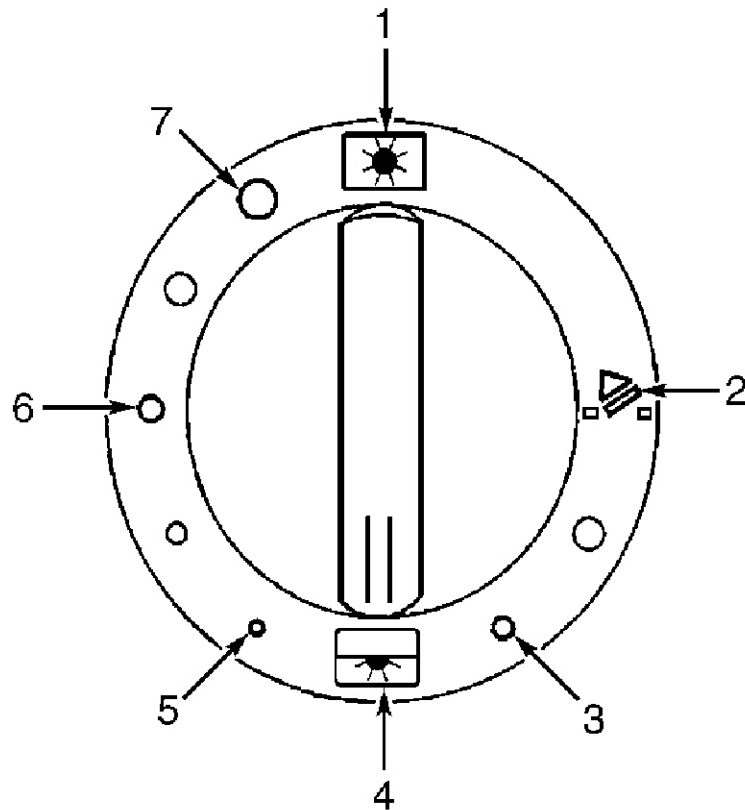
If guides, tracks or cables are replaced, sparingly lubricate with Silicone Grease (GM-12345579).

## PROGRAMMING

### SUN ROOF MOTOR PROGRAMMING

**NOTE:** After a vehicle power loss, sun roof motor must be programmed for open/close stop positions, and vent position.

1. To identify sun roof switch positions, see **Fig. 1**. Turn ignition on with engine off. Select close position on sun roof switch. Press up and hold while sun roof motor is running. Continue to press sun roof switch up for approximately 3 seconds after sun roof motor has stopped. Sun roof should now be fully closed.
2. Select vent (tilt) position on sun roof switch. Press up and hold while sun roof motor is running. Continue to press sun roof switch up for approximately 3 seconds after sun roof motor has stopped. Sun roof should now be in full vent position.
3. Select close position on sun roof switch. Press up and hold while sun roof motor is running. Continue to press sun roof switch up for approximately 3 seconds after sun roof motor has stopped. Sun roof should now be fully closed.
4. Select open position on sun roof switch. Press up and hold while sun roof motor is running. Continue to press sun roof switch up for approximately 3 seconds after sun roof motor has stopped. Sun roof should now be fully open.
5. Select close position on sun roof switch. Press up and hold while sun roof motor is running. Continue to press sun roof switch up for approximately 3 seconds after sun roof motor has stopped. Sun roof should now be fully closed.
6. Sun roof motor programming is now complete. If sun roof opens after selecting close, it may be necessary to perform motor programming up to 3 more times.



- |                               |                            |
|-------------------------------|----------------------------|
| 1. Position "A" (Full Open)   | 5. Position "D" (25% Open) |
| 2. Position "G" (Full Tilted) | 6. Position "C" (50% Open) |
| 3. Position "F" (40% Tilted)  | 7. Position "B" (80% Open) |
| 4. Position "E" (Full Closed) |                            |

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**Fig. 1: Identifying Sun Roof Switch Positions**  
 Courtesy of GENERAL MOTORS CORP.

## ADJUSTMENTS

### SLIDER ADJUSTMENT

Fully open sunshade. Remove sun roof glass panel. See **SUN ROOF GLASS PANEL** under REMOVAL & INSTALLATION. Loosen left and right slide adjustment bolts (2 on each side). Both left and right sliders must be positioned fully rearward for proper alignment. Apply a slight pressure to sliders to hold in place. Tighten left and right slide adjustment bolts to 44 INCH lbs. (5 N.m). Install sun roof glass panel. See **SUN ROOF GLASS PANEL** under REMOVAL & INSTALLATION. Close sunshade.

### GLASS HEIGHT & OPENING FIT

Remove brush cover. See **BRUSH COVER** under REMOVAL & INSTALLATION. Remove left and right covers that cover sun roof glass panel attachment bolts. Loosen sun roof glass panel bolts (3 each side). Each corner of sun roof glass panel is adjusted separately. Adjust sun roof glass panel so leading edge (front) is 1/32" (1 mm) below roof panel. Adjust rear of sun roof glass panel so trailing edge (rear) is 1/32" (1 mm) above roof panel. Tighten sun roof glass panel bolts to 44 INCH lbs. (5 N.m). Install left and right sun roof glass panel attachment bolt covers. Reinstall brush cover. See **BRUSH COVER** under REMOVAL & INSTALLATION.

## TROUBLE SHOOTING

**PRELIMINARY INSPECTION**

Inspect sun roof assembly for mechanical binding. Repair as necessary. If lubrication is necessary, see **LUBRICATION** under ON-VEHICLE SERVICE. Check SUN ROOF fuse No. 25 (20-amp) and CLAMP/CRUISE fuse No. 15 (15-amp) located at instrument panel fuse block. Ensure all electrical connectors, circuits and grounds are okay. If any problems are found, repair as necessary. If no problems are found, go to **POWER SUN ROOF DIAGNOSTIC SYSTEM CHECK** under SELF-DIAGNOSTIC SYSTEM.

**SELF-DIAGNOSTIC SYSTEM**

**CAUTION:** To prevent damage to terminals, Connector Test Adaptor Kit (J-35616-A) must be used whenever a diagnostic procedure requires checking or probing terminals. See **WIRING DIAGRAMS** .

**POWER SUN ROOF DIAGNOSTIC SYSTEM CHECK**

1. Connect scan tool to Data Link Connector (DLC). If scan tool powers up, go to next step. If scan tool does not power up, go to TEST B: SCAN TOOL DOES NOT POWER UP under SYSTEM TESTS in BODY CONTROL MODULES - CATERA article.
2. Turn ignition on with engine off. Using scan tool, attempt to communicate with sun roof motor. If scan tool communicates with sun roof motor, go to next step. If scan tool does not communicate with sun roof motor, go to TEST A: SCAN TOOL DOES NOT COMMUNICATE WITH CLASS 2 DEVICE under SYSTEM TESTS in BODY CONTROL MODULES - CATERA article.
3. Select sun roof motor and retrieve DTCs. If any DTCs exist, see **DIAGNOSTIC TROUBLE CODE DEFINITIONS** . If no DTCs exist, diagnose by symptom. See **SYSTEM TESTS** .

**DIAGNOSTIC TROUBLE CODE DEFINITIONS****DIAGNOSTIC TROUBLE CODE DEFINITIONS**

DTC (1)	Description
<b>050, 051 or 055</b>	Sun Roof Motor
(1) Codes listed in this table are only for testing covered in this article. For a complete list of codes, see BODY CONTROL MODULES - CATERA article.	

**DIAGNOSTIC TESTS****DTC 50, 51 & 55: POWER SUN ROOF MOTOR MALFUNCTION**

**NOTE:** Sun roof switch and motor are serviced as an assembly.

**Description**

Internal hardware failure, EEPROM, RAM, or ROM defective in power sun roof motor will set DTCs. Sun roof motor will be disabled.

**Diagnostic Procedure**

1. Perform **POWER SUN ROOF DIAGNOSTIC SYSTEM CHECK** under SELF-DIAGNOSTIC SYSTEM. After performing power sun roof diagnostic system check, go to next step.
2. With scan tool installed, turn ignition on with engine off. Using scan tool, read DTCs. If scan tool displays DTC 055, go to next step. If scan tool does not display DTC 055, go to step 4 .
3. Replace sun roof motor. See **SUN ROOF MOTOR** under REMOVAL & INSTALLATION. After replacing sun roof motor, go to next step.

4. Perform sun roof motor programming. See **SUN ROOF MOTOR PROGRAMMING** under PROGRAMMING. Operate sun roof to verify repair. If sun roof operates okay, repair is complete. If sun roof does not operate satisfactorily, go to step 3 .

## SYSTEM TESTS

**CAUTION:** To prevent damage to terminals, Connector Test Adaptor Kit (J-35616-A) must be used whenever a diagnostic procedure requires checking or probing terminals. To locate and identify terminals, see **WIRING DIAGRAMS** .

## SYMPTOM INDEX

Symptom	Perfrom Test
Power Sun Roof Anti-Pinch Guard Inoperative	<u><b>A</b></u>
Power Sun Roof Inoperative	<u><b>B</b></u>
Power Sun Roof Operates After Retained Accessory Power Time-Out	<u><b>C</b></u>
Power Sun Roof Switch Illumination Inoperative	<u><b>D</b></u>

### TEST A: POWER SUN ROOF ANTI-PINCH GUARD INOPERATIVE

1. Perform **POWER SUN ROOF DIAGNOSTIC SYSTEM CHECK** under SELF-DIAGNOSTIC SYSTEM. After performing power sun roof diagnostic system check, go to next step.
2. Perform sun roof motor programming. See **SUN ROOF MOTOR PROGRAMMING** under PROGRAMMING. Turn ignition on with engine off. Select open position on sun roof switch. See **Fig. 1** . Select close position on sun roof switch. Using an object, obstruct sun roof from closing. Sun roof should detect an obstruction and stop sun roof operation, then open sun roof to a factory (preset) position. If anti-pinch guard does not function, go to next step. If anti-pinch guard functions, sun roof system is operating properly.
3. Replace sun roof motor. See **SUN ROOF MOTOR** under REMOVAL & INSTALLATION. After replacement, go to next step.
4. Reconnect all power sun roof connectors. Operate power sun roof anti-pinch guard feature. If sun roof operates properly, repair is complete. If sun roof does not operate properly, go to step 2 .

### TEST B: POWER SUN ROOF INOPERATIVE

1. Perform **POWER SUN ROOF DIAGNOSTIC SYSTEM CHECK** under SELF-DIAGNOSTIC SYSTEM. After performing power sun roof diagnostic system check, go to next step.
2. Turn ignition on with engine off. Select vent (tilt) position on sun roof switch. See **Fig. 1** . Select open position on sun roof switch. Select close position on sun roof switch. If sun roof does not operate properly, go to next step. If sun roof operates properly, condition is intermittent. See **PRELIMINARY INSPECTION** under TROUBLE SHOOTING. Repair as necessary.
3. Perform sun roof motor programming. See **SUN ROOF MOTOR PROGRAMMING** under PROGRAMMING. Operate sun roof to verify proper operation. If power sun roof properly operates, repair is complete. If power sun roof does not properly operate, go to next step.
4. Turn ignition off. Connect scan tool. Turn ignition on with engine off. Using scan tool, observe IGNITION STATUS parameter. If ignition status is ON, go to step 9 . If ignition status is OFF, go to next step.
5. Turn ignition off. Open any door. Disconnect sun roof motor 6-pin Black connector. Turn ignition on with engine off. Using a DVOM, check voltage of ignition voltage circuit terminal No. 5 (Brown wire) at motor 6-pin Black connector. If battery voltage is present, go to next step. If battery voltage is not present, go to step 7 .
6. Inspect sun roof motor 6-pin Black connector for poor contact and damage. Repair as necessary. If a repair

was made, go to step 10 . If a repair was not made, go to step 9 .

7. Check ignition voltage circuit (Brown wire) for high resistance or a short to ground. See **WIRING DIAGRAMS** . Repair as necessary. If a repair was made, go to step 10 . If a repair was not made, go to next step.
8. Inspect terminal No. 5 (Brown wire) at motor 6-pin Black connector for poor contact and damage. Repair as necessary. If a repair was made, go to step 10 . If a repair was not made, go to next step.
9. Replace sun roof motor. See **SUN ROOF MOTOR** under REMOVAL & INSTALLATION. After replacement, go to next step.
10. Remove scan tool. Replace CLAMP/CRUISE fuse No. 15 (15-amp) if necessary. Reconnect all power sun roof connectors. Perform sun roof motor programming. See **SUN ROOF MOTOR PROGRAMMING** under PROGRAMMING. Operate power sun roof. If sun roof operates properly, repair is complete. If sun roof does not operate properly, go to step 3 .

#### TEST C: POWER SUN ROOF OPERATES AFTER RETAINED ACCESSORY POWER TIME-OUT

1. Perform **POWER SUN ROOF DIAGNOSTIC SYSTEM CHECK** under SELF-DIAGNOSTIC SYSTEM. After performing power sun roof diagnostic system check, go to next step.
2. Turn ignition on with engine off. Close all doors. Turn ignition off. Operate sun roof. While sun roof is moving, open a door. Sun roof should immediately stop operating. If sun roof operates properly, problem is intermittent. See **PRELIMINARY INSPECTION** under TROUBLE SHOOTING. Repair as necessary. If sun roof is not operating properly, go to next step.
3. Turn ignition off. Connect scan tool. Turn ignition on with engine off. Using scan tool, observe DOOR SWITCH parameter. If door switch parameter is INACTIVE, go to next step. If door switch parameter is ACTIVE, go to step 7 .
4. While observing DOOR SWITCH parameter on scan tool, open and close each door. Door switch parameter should change with opening and closing of each door. If door switch parameter correctly changed, go to next step. If door switch parameter did not correctly change, go to step 8 .
5. Using scan tool, observe IGNITION STATUS parameter in POWER ROOF data list. If ignition status is ON, go to step 17 . If ignition status is OFF, go to next step.
6. Turn ignition off. Open any door. Disconnect sun roof motor 6-pin Black connector. Turn ignition on with engine off. Using a DVOM, check voltage of ignition voltage circuit terminal No. 5 (Brown wire) at motor 6-pin Black connector. If battery voltage is present, go to step 11 . If battery voltage is not present, go to step 13 .
7. Disconnect sun roof motor 6-pin Black connector. Close all doors. Using a DVOM, check continuity of door open signal circuit between sun roof motor 6-pin Black connector terminal No. 3 (Gray wire) and ground. While observing DVOM, disconnect and reconnect each door jamb switch one at a time. Continuity should not be present as each door jamb switch is disconnected. If continuity is as specified, go to step 16 . If continuity is not as specified, go to step 10 .
8. If door switch parameter changed with any of the doors opening and closing, go to next step. If door switch parameter did not change with any of the doors opening and closing, go to step 10 .
9. Connect a jumper wire between door open signal circuit at inactive door jamb switch and ground. Using scan tool, observe DOOR SWITCH parameter. If door switch parameter changed, go to step 12 . If door switch parameter did not change, go to step 14 .
10. Disconnect sun roof motor 6-pin Black connector. Close all doors. Using a DVOM, check resistance of door open signal circuit between sun roof motor 6-pin Black connector terminal No. 3 (Gray wire) and ground. Resistance should be 1-3 ohms. If resistance is within specification, go to next step. If resistance is not within specification, go to step 14 .
11. Inspect sun roof motor 6-pin Black connector for poor contact and damage. Repair as necessary. If a repair was made, go to step 18 . If a repair was not made, go to step 17 .
12. Inspect door jamb switch connector for poor contact and damage. Repair as necessary. If a repair was made,

go to step 18 . If a repair was not made, go to step 16 .

13. Check ignition voltage circuit (Brown wire) for an open, high resistance or a short to ground. See **WIRING DIAGRAMS** . Repair as necessary. After repair, go to step 18 .
14. Repair open or high resistance in door open signal circuit. See **WIRING DIAGRAMS** . After repair, go to step 18 .
15. Repair short to ground in door open signal circuit. See **WIRING DIAGRAMS** . After repair, go to step 18 .
16. Replace door jamb switch. After repair, go to step 18 .
17. Replace sun roof motor. See **SUN ROOF MOTOR** under REMOVAL & INSTALLATION. After repair, go to next step.
18. Remove scan tool. Remove any jumper wires. Replace CLAMP/CRUISE fuse No. 15 (15-amp) if necessary. Reconnect all power sun roof connectors. Perform sun roof motor programming. See **SUN ROOF MOTOR PROGRAMMING** under PROGRAMMING. Operate power sun roof. If sun roof operates properly, repair is complete. If sun roof does not operate properly, go to step 3 .

#### TEST D: POWER SUN ROOF SWITCH ILLUMINATION INOPERATIVE

**NOTE:** Sun roof switch and motor are serviced as an assembly.

1. Perform **POWER SUN ROOF DIAGNOSTIC SYSTEM CHECK** under SELF-DIAGNOSTIC SYSTEM. After performing power sun roof diagnostic system check, go to next step.
2. Turn ignition on with engine off. Observe sun roof switch illumination. If switch is not illuminated, go to next step. If switch is illuminated, problem is intermittent. See **PRELIMINARY INSPECTION** under TROUBLE SHOOTING.
3. Turn ignition off. Connect a scan tool. Turn ignition on with engine off. Using scan tool, observe IGNITION STATUS parameter in POWER ROOF data list. If ignition status is ON, go to next step. If ignition status is OFF, go to step 10 .
4. Remove sun roof switch bulb. Using a DVOM, check voltage at sun roof switch bulb socket. If voltage is battery voltage, go to step 7 . If voltage is not battery voltage, go to step 10 .
5. Turn ignition off. Open any door. Disconnect sun roof motor 6-pin Black connector. Turn ignition on with engine off. Using a DVOM, check voltage of ignition voltage circuit terminal No. 5 (Brown wire) at motor 6-pin Black connector. If battery voltage is present, go to next step. If battery voltage is not present, go to step 8 .
6. Inspect sun roof motor 6-pin Black connector for poor contact and damage. Repair as necessary. If a repair was made, go to step 11 . If a repair was not made, go to step 10 .
7. Inspect sun roof switch bulb for proper connection. Repair as necessary. If bulb connection was repaired, go to step 11 . If bulb connection was not repaired, go to step 9 .
8. Check ignition voltage circuit (Brown wire) for an open, high resistance or a short to ground. See **WIRING DIAGRAMS** . Repair as necessary. After repair, go to step 11 .
9. Replace sun roof switch bulb. After replacement, go to step 11 .
10. Replace sun roof motor. See **SUN ROOF MOTOR** under REMOVAL & INSTALLATION. After repair, go to next step.
11. Remove scan tool. Replace CLAMP/CRUISE fuse No. 15 (15-amp) if necessary. Reconnect all power sun roof connectors. Perform sun roof motor programming. See **SUN ROOF MOTOR PROGRAMMING** under PROGRAMMING. Operate power sun roof. If sun roof operates properly, repair is complete. If sun roof does not operate properly, go to step 3 .

#### REMOVAL & INSTALLATION

**WARNING:** When battery is disconnected, vehicle computer and memory systems may

lose memory data. Driveability problems may exist until computer systems have completed a relearn cycle. See **COMPUTER RELEARN PROCEDURES** article in **GENERAL INFORMATION** before disconnecting battery.

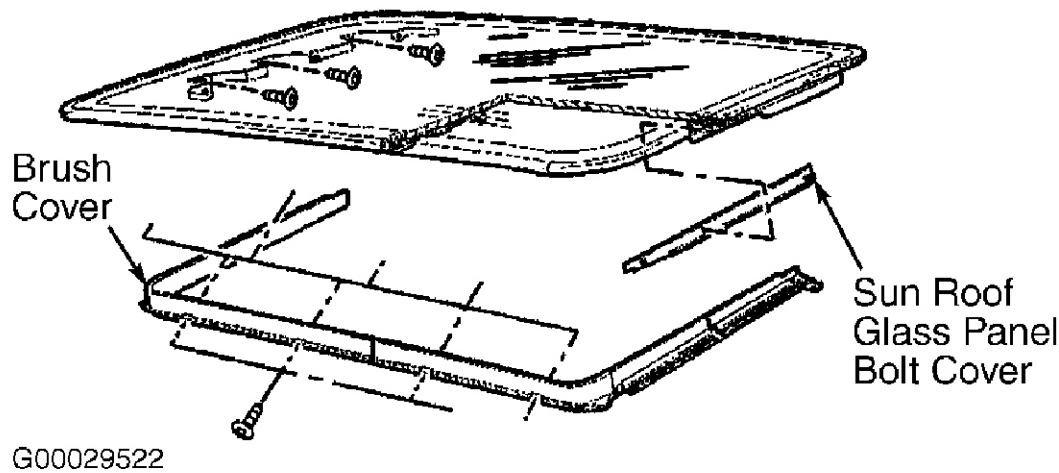
## BRUSH COVER

### Removal

Fully open sunshade. Open sun roof glass panel to half-way position. Remove screws from front edge of brush cover. See **Fig. 2** . Unclip brush cover at both rear corners. Open sun roof glass panel to full open position. Remove brush cover through sun roof opening.

### Installation

Install brush cover through sun roof opening. Close sun roof glass panel to half-way position. Clip brush cover at both rear corners. Install screws at front edge of brush cover. Tighten brush cover screws to 18 INCH lbs. (2 N.m).



**Fig. 2: Identifying Sun Roof Glass Panel & Brush Cover**  
Courtesy of GENERAL MOTORS CORP.

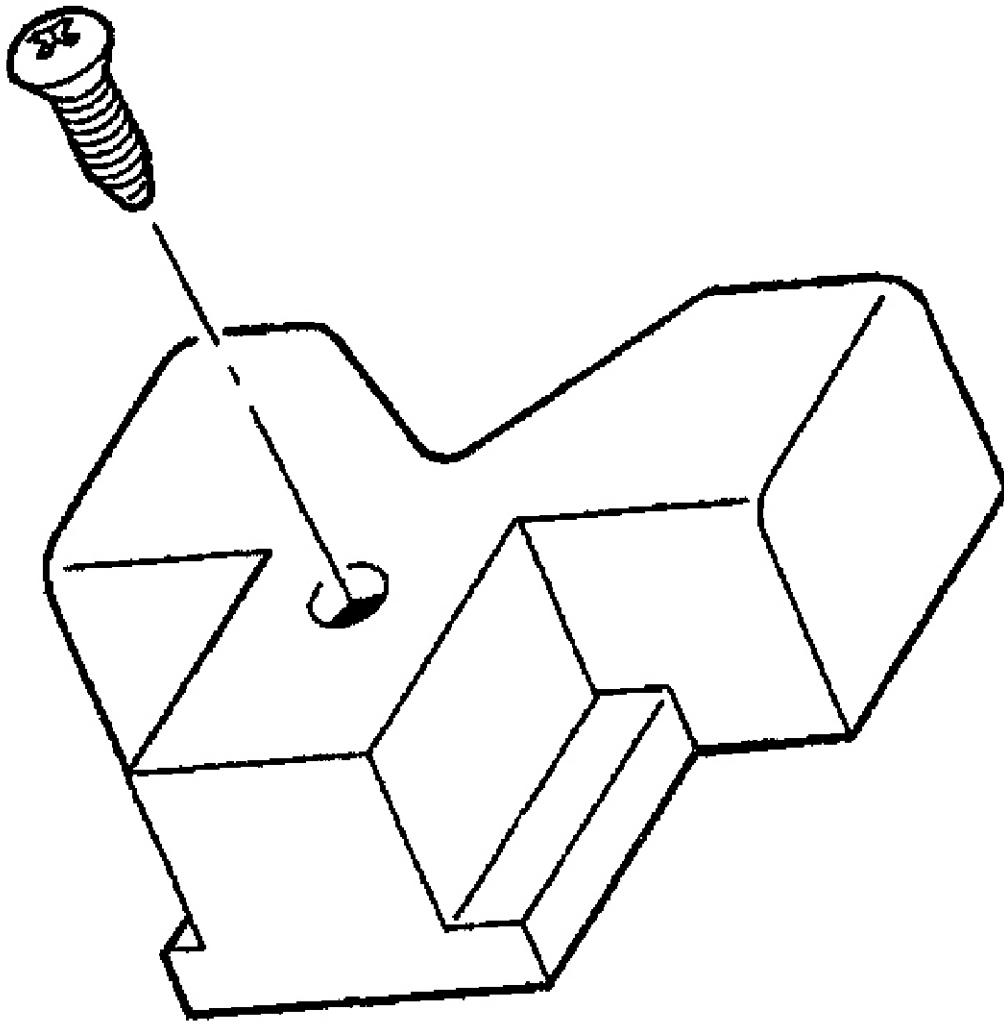
## CABLE & REAR GUIDE

**NOTE:** Cables and rear guides must be replaced in pairs.

### Removal

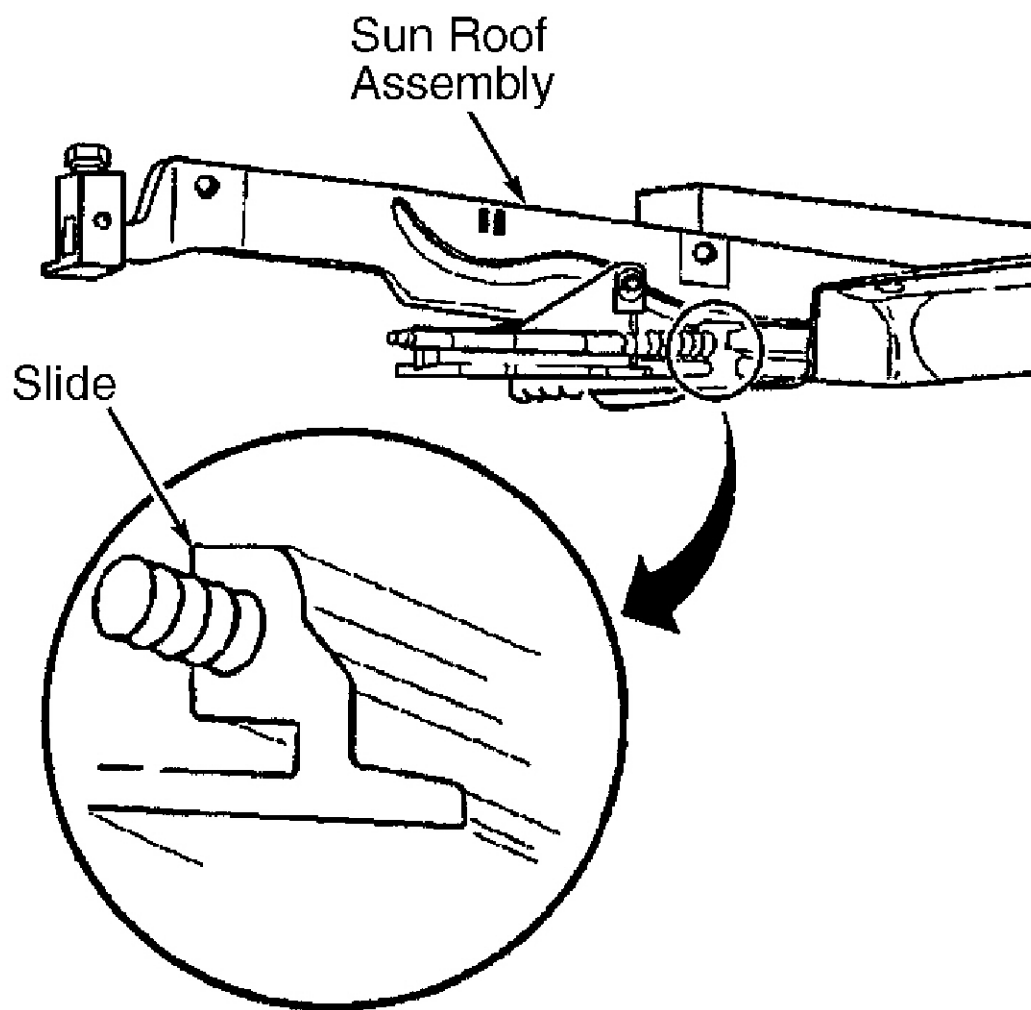
Remove sun roof assembly. See **SUN ROOF ASSEMBLY** under REMOVAL & INSTALLATION. Remove water gutter. See **WATER GUTTER** under REMOVAL & INSTALLATION. Remove sun roof assembly cable stop. See **Fig. 3** . Remove slide from sun roof assembly. See **Fig. 4** . Remove "C" clip and pin from guide. See **Fig. 5** . Disconnect cable and rear guide from slide. Remove cable and rear guide from slide.





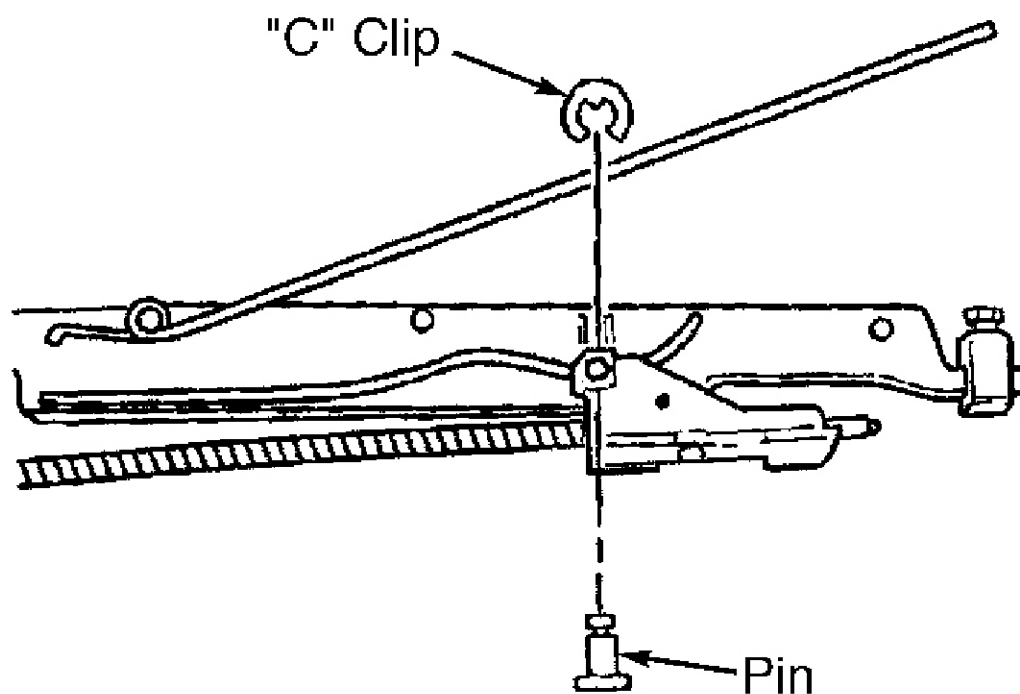
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**Fig. 3: Identifying Sun Roof Assembly Cable Stop**  
Courtesy of GENERAL MOTORS CORP.



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**Fig. 4: Identifying Sun Roof Slide**  
Courtesy of GENERAL MOTORS CORP.



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**Fig. 5: Identifying "C" Clip & Pin Location**  
 Courtesy of GENERAL MOTORS CORP.

#### Installation

Sparingly lubricate cables using with Silicone Grease (GM-12345579). Install cable and rear guide to slide. Install pin and "C" clip. Install slide to sun roof assembly. Install sun roof assembly cable stop. Tighten sun roof assembly cable stop screw to 18 INCH lbs. (2 N.m). To complete installation, reverse removal procedure. Adjust slider. See **SLIDER ADJUSTMENT** under ADJUSTMENTS.

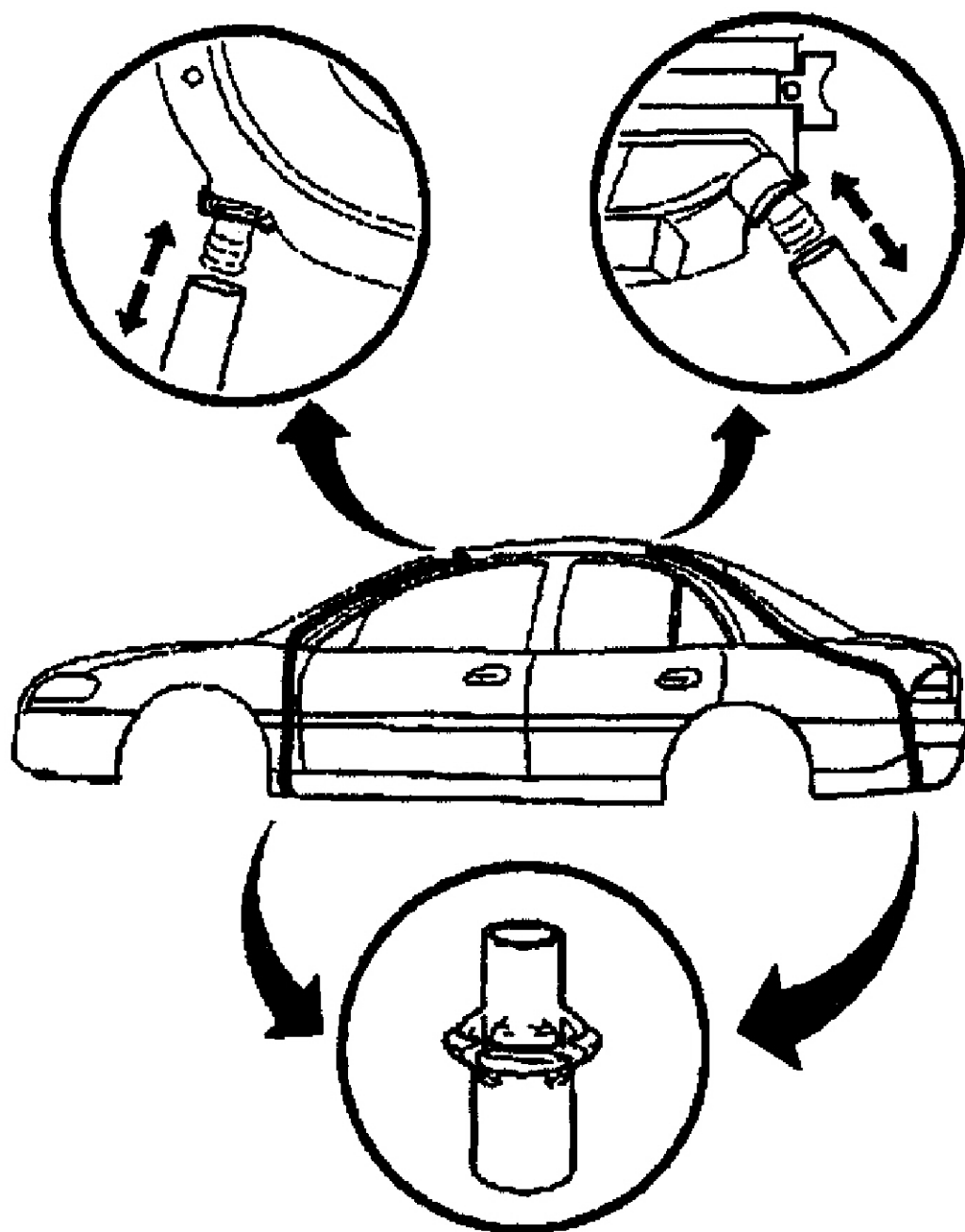
#### DRAIN HOSES

**NOTE:** Sun roof assembly has a drain hose from each corner (2 front, 2 rear). Drain hoses are pushed (not clamped or glued) onto fittings.

#### Removal & Installation

**Front Drain Hoses** - Remove interior headliner. See **HEADLINER** under REMOVAL & INSTALLATION. Remove "A" pillar interior trim panel. Note front drain hose routing prior to removal. See **Fig. 6**. Disconnect front drain hose from sun roof assembly. Tie a piece of string onto disconnected end of front drain hose. To remove, pull front drain hose down from bottom (under car). Ensure string remains in "A" pillar to facilitate installation. To install, tie string to replacement drain hose. Carefully pull string down from bottom (under car) to route front drain hose through "A" pillar. To complete installation, reverse removal procedure.

**Rear Drain Hoses** - Remove interior headliner. See **HEADLINER** under REMOVAL & INSTALLATION. Remove rear window trim panel. Remove left or right rear interior trim panel to facilitate servicing of either left or right rear drain hose. Disconnect rear drain hose from sun roof assembly. Release rear drain hose from retainers. To remove, pull rear drain hose from grommet in body. See **Fig. 6**. To install, reverse removal procedure.



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**Fig. 6: Locating Sun Roof Drain Hoses**  
 Courtesy of GENERAL MOTORS CORP.

#### HEADLINER

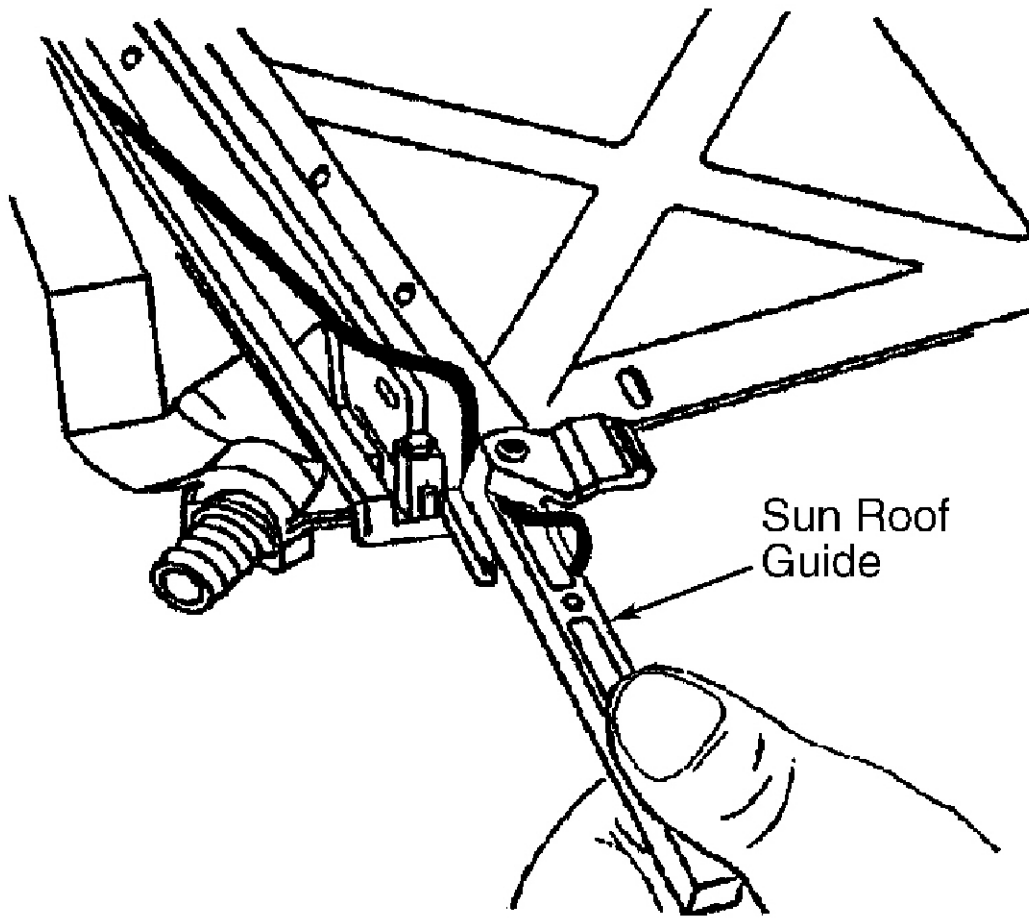
##### Removal & Installation

Fully open sunshade. Remove sun roof motor cover. See **SUN ROOF MOTOR COVER** under REMOVAL & INSTALLATION. Remove dome and reading lights. Remove sun visors. Remove sun visor retainers. Remove headliner finish molding around sun roof opening. Remove windshield garnish moldings. Remove front seat headrests. Position front seats in a forward position. Remove "B" pillar trim panels. Remove roof rail courtesy lights. Remove rear seat cushion. Remove rear window upper garnish molding. Remove rear quarter trim upper garnish molding. Remove headliner through right rear door. To install, reverse removal procedure.

#### SLIDING BLOCK GUIDE

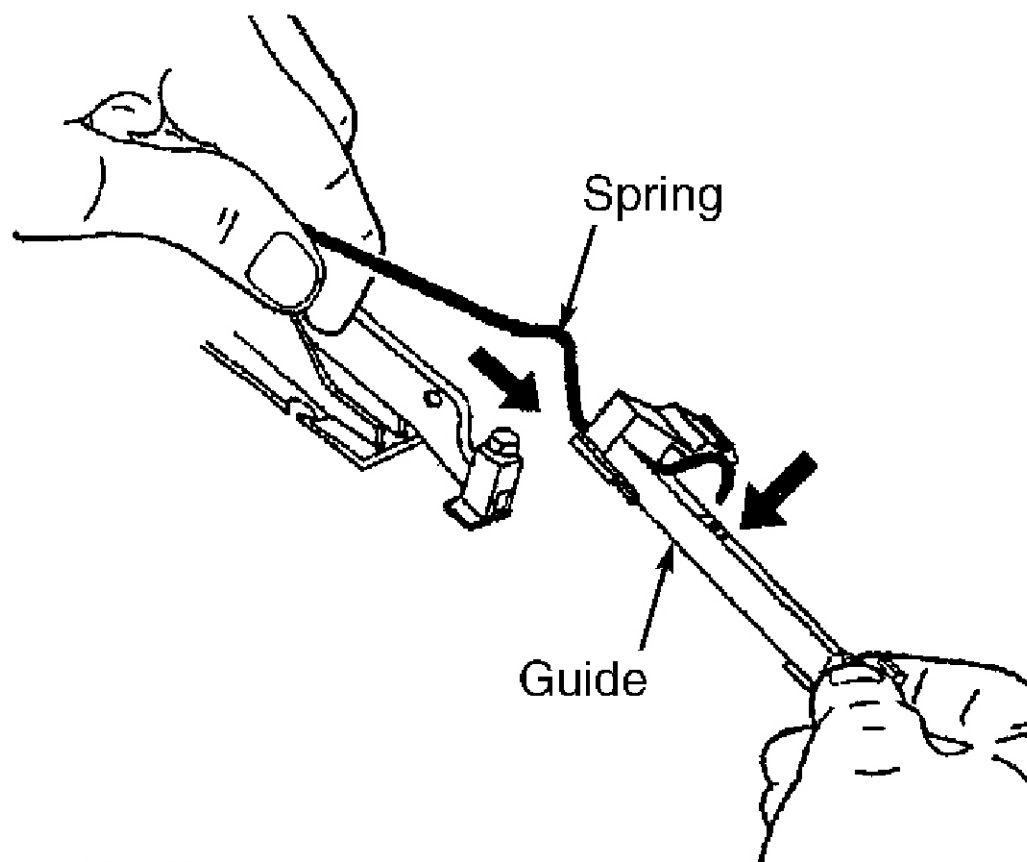
##### Removal & Installation

Remove sun roof assembly from vehicle. See **SUN ROOF ASSEMBLY** under REMOVAL & INSTALLATION. Remove water gutter. See **WATER GUTTER** under REMOVAL & INSTALLATION. Remove sun roof assembly cable stop. See **Fig. 3**. Remove guide from sun roof assembly by pulling out from end of sun roof assembly. See **Fig. 7**. Remove spring from guide. See **Fig. 8**. To install, reverse removal procedure. Tighten sun roof cable stop screw to 18 INCH lbs. (2 N.m).



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**Fig. 7: Removing & Installing Sun Roof Guide**  
Courtesy of GENERAL MOTORS CORP.



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**Fig. 8: Removing & Installing Spring From Guide**  
 Courtesy of GENERAL MOTORS CORP.

#### SUNSHADE PANEL

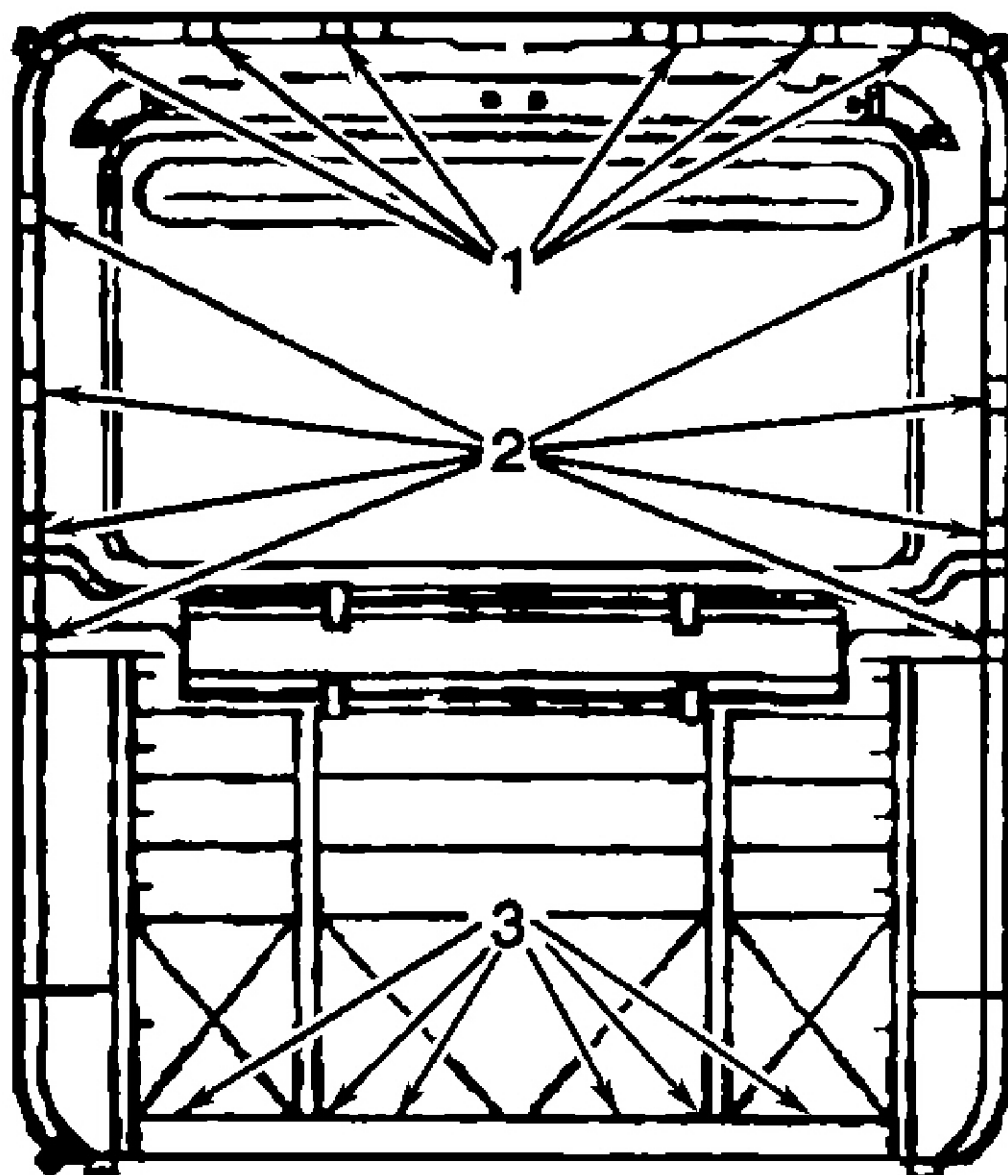
##### Removal & Installation

Remove sun roof glass panel. See **SUN ROOF GLASS PANEL** under REMOVAL & INSTALLATION. Remove interior headliner. See **HEADLINER** under REMOVAL & INSTALLATION. Remove sun roof assembly. See **SUN ROOF ASSEMBLY** under REMOVAL & INSTALLATION. Remove water gutter. See **WATER GUTTER** under REMOVAL & INSTALLATION. Using a flat blade screwdriver, push in on sides of sun shade until it releases from tracks. Remove sunshade. To install, reverse removal procedure.

#### SUN ROOF ASSEMBLY

##### Removal & Installation

Remove sun roof glass panel. See **SUN ROOF GLASS PANEL** under REMOVAL & INSTALLATION. Remove interior headliner. See **HEADLINER** under REMOVAL & INSTALLATION. Remove sun roof motor. See **SUN ROOF MOTOR** under REMOVAL & INSTALLATION. Disconnect drain hoses from sun roof assembly. Remove 6 bolts across front of sun roof assembly. Remove 8 bolts (4 each side) from side of sun roof assembly. Remove 4 bolts across back of sun roof assembly. See **Fig. 9**. Remove sun roof assembly cable stop. See **Fig. 3**. Remove sun roof assembly from vehicle. To install, reverse removal procedure.



1. Front Bolts      3. Rear Bolts  
2. Side Bolts

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**Fig. 9: Identifying Sun Roof Assembly Bolts**  
Courtesy of GENERAL MOTORS CORP.

#### SUN ROOF MOTOR COVER

##### Removal & Installation

Remove sun roof switch by pulling down on switch. Using needle nose pliers, remove potentiometer from sun roof switch by pressing tabs inward. Using a flat bladed screwdriver, remove dome light lens. Remove dome light assembly from panel. Disconnect dome light electrical connector. Remove 2 sun roof motor cover screws. Pull down and forward to remove sun roof motor cover from headliner. To install, reverse removal procedure.

#### SUN ROOF MOTOR

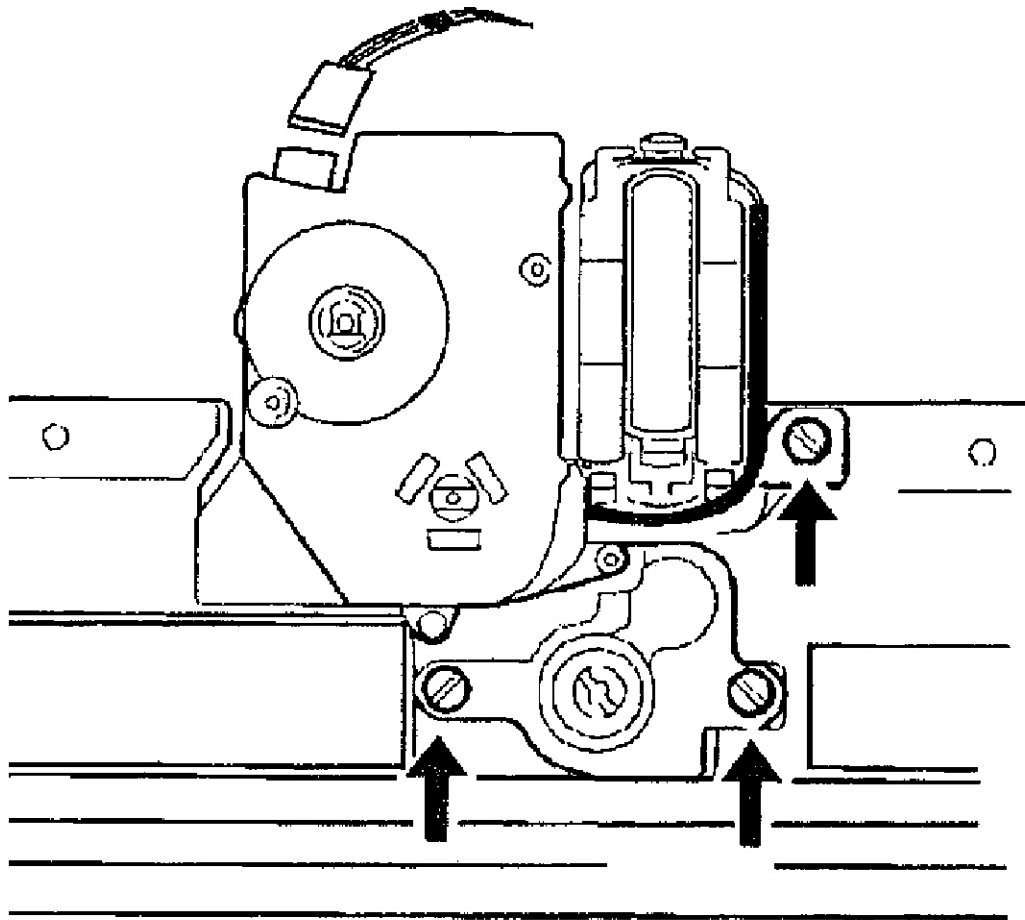
**NOTE:** Sun roof switch and motor are serviced as an assembly.

**Removal**

Remove sun roof motor cover. See **SUN ROOF MOTOR COVER** under REMOVAL & INSTALLATION. Remove 3 sun roof motor screws. See **Fig. 10**. Disconnect sun roof motor electrical connectors. Slightly rotate sun roof motor to disengage motor from cables. Remove sun roof motor assembly.

**Installation**

Manually push sun roof glass panel to full open position. This will set both sun roof guides and cables to same position. Install sun roof motor assembly. Tighten sun roof motor assembly screws to 44 INCH lbs. (5 N.m). Connect sun roof motor electrical connectors. Install sun roof motor cover. See **SUN ROOF MOTOR COVER** under REMOVAL & INSTALLATION. Program sun roof motor. See **SUN ROOF MOTOR PROGRAMMING** under PROGRAMMING. Verify proper sun roof operation.



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**Fig. 10: Removing & Installing Sun Roof Motor**  
Courtesy of GENERAL MOTORS CORP.

**SUN ROOF GLASS PANEL****Removal**

Remove wind deflector. See **WIND DEFLECTOR** under REMOVAL & INSTALLATION. Remove brush cover. See **BRUSH COVER** under REMOVAL & INSTALLATION. Remove left and right covers that cover sun roof glass panel attachment bolts. Remove sun roof glass panel bolts (3 each side). See **Fig. 2**. Slide sun roof glass panel rearward 1/2 inch and lift out.

**Installation**



Position sun roof glass panel so stenciled information/logo is toward rear of vehicle. Center sun roof glass panel in sun roof opening. Slide sun roof glass panel forward 1/2 inch. Install sun roof glass panel bolts. DO NOT tighten bolts at this time. Adjust sun roof glass panel. See **GLASS HEIGHT & OPENING FIT** under ADJUSTMENTS. Install brush cover. See **BRUSH COVER** under REMOVAL & INSTALLATION. Install wind deflector. See **WIND DEFLECTOR** under REMOVAL & INSTALLATION.

### SUN ROOF GLASS PANEL SEAL

#### Removal

Remove sun roof glass panel. See **SUN ROOF GLASS PANEL** under REMOVAL & INSTALLATION. Position sun roof glass panel upside down on a protective cover. Remove sun roof glass seal screws from seal retainer. Remove sun roof glass panel seal retainer. Remove sun roof glass panel seal. Clean sun roof glass panel with Adhesive Remover (3M-8984). After using seal remover, clean sun roof glass panel with a 50/50 mixture of isopropyl alcohol and water.

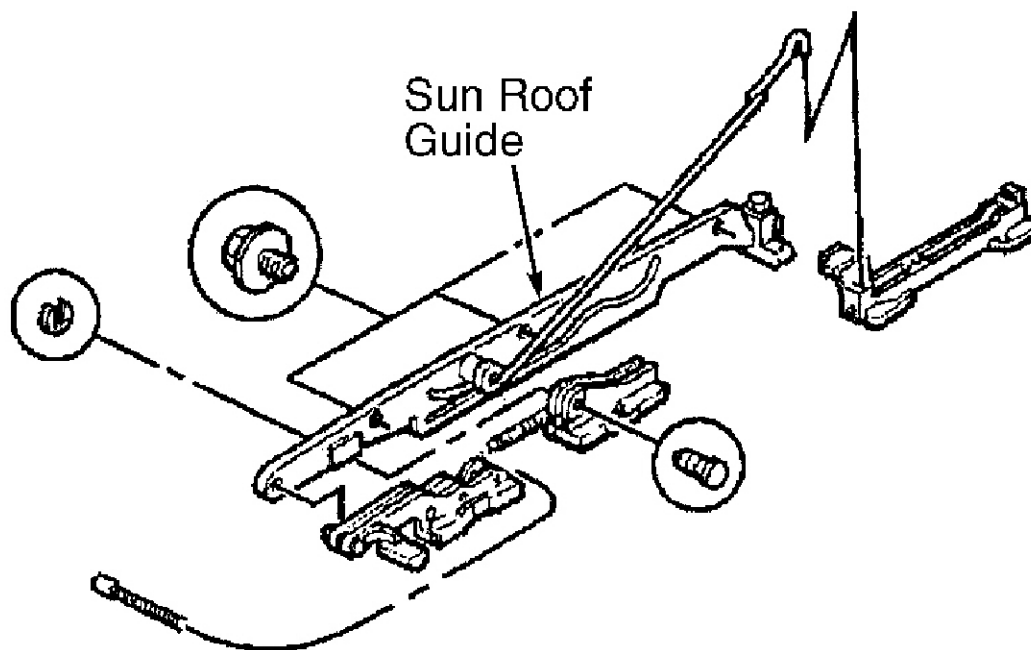
#### Installation

Apply Adhesive (3M-08011) to sun roof glass panel seal. Install sun roof glass panel seal onto sun roof glass panel. Install sun roof glass panel seal retainer onto sun roof glass panel. Install sun roof glass panel seal retainer screws. Tighten sun roof glass panel seal retainer screws to 18 INCH lbs. (2 N.m). Install sun roof glass panel. See **SUN ROOF GLASS PANEL** under REMOVAL & INSTALLATION.

### SUN ROOF GUIDE ASSEMBLY

#### Removal & Installation

Remove sun roof assembly. See **SUN ROOF ASSEMBLY** under REMOVAL & INSTALLATION. Remove water gutter. See **WATER GUTTER** under REMOVAL & INSTALLATION. Remove sun roof assembly cable stop. See **Fig. 3**. Remove sun roof guide assembly from sun roof assembly. See **Fig. 11**. To install, reverse removal procedure. Tighten sun roof assembly cable stop screw to 18 INCH lbs. (2 N.m). Install water gutter. See **WATER GUTTER** under REMOVAL & INSTALLATION. Install sun roof assembly. See **SUN ROOF ASSEMBLY** under REMOVAL & INSTALLATION.



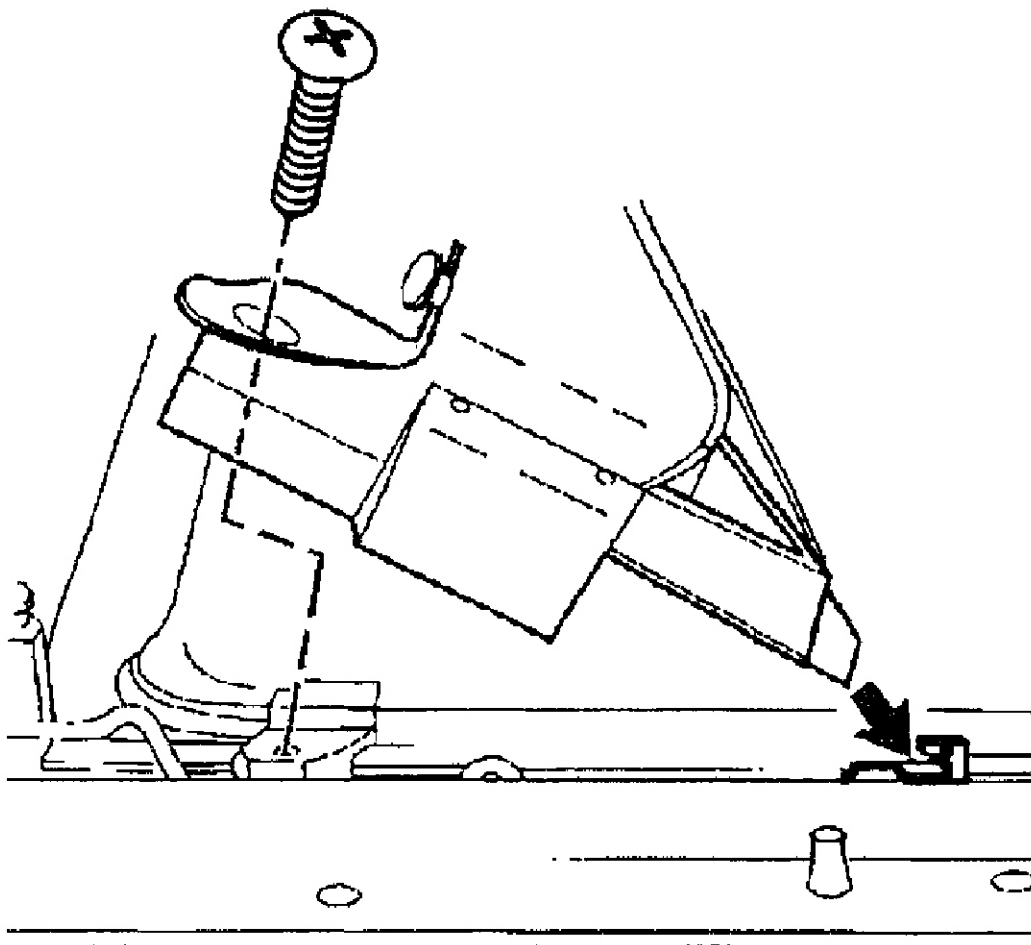
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**Fig. 11: Removing & Installing Sun Roof Guide Assembly**  
Courtesy of GENERAL MOTORS CORP.

**WATER GUTTER**

**Removal & Installation**

Remove sun roof assembly. See **SUN ROOF ASSEMBLY** under REMOVAL & INSTALLATION. Remove water gutter from sun roof assembly. See **Fig. 12** . To install, reverse removal procedure. Tighten water gutter screws to 18 INCH lbs. (2 N.m). Install sun roof assembly. See **SUN ROOF ASSEMBLY** under REMOVAL & INSTALLATION.



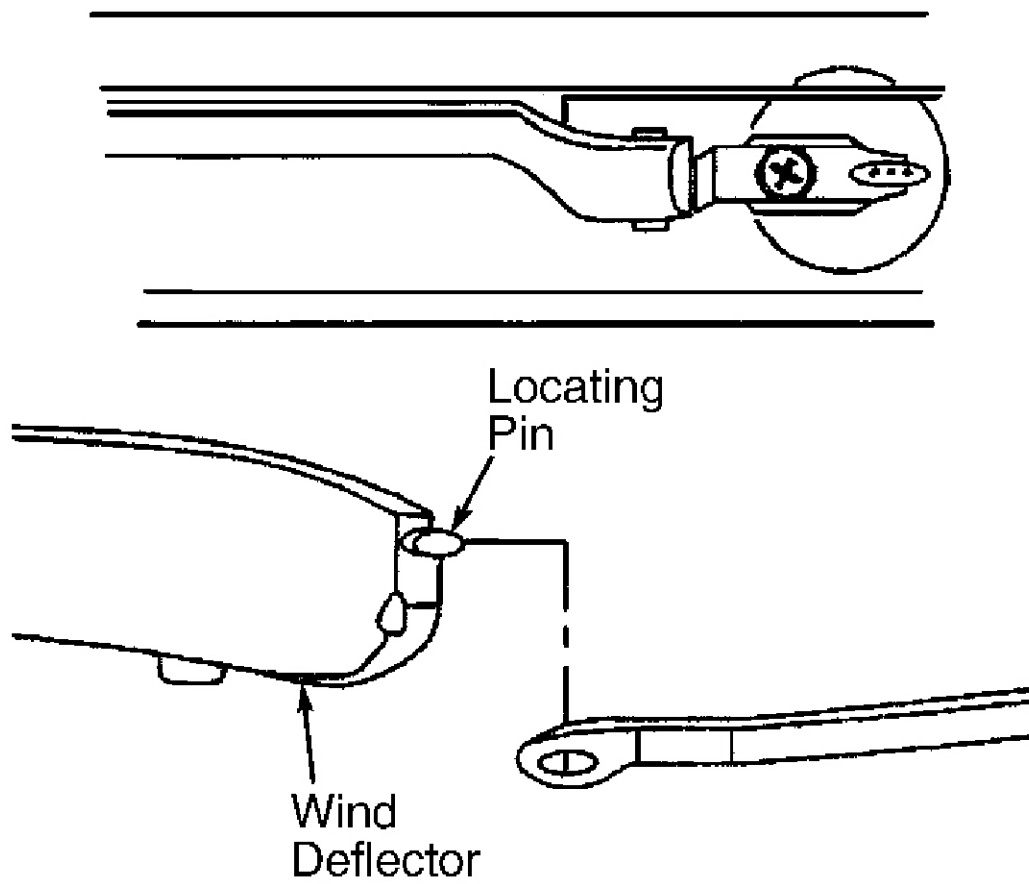
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**Fig. 12: Removing & Installing Water Gutter**  
Courtesy of GENERAL MOTORS CORP.

**WIND DEFLECTOR**

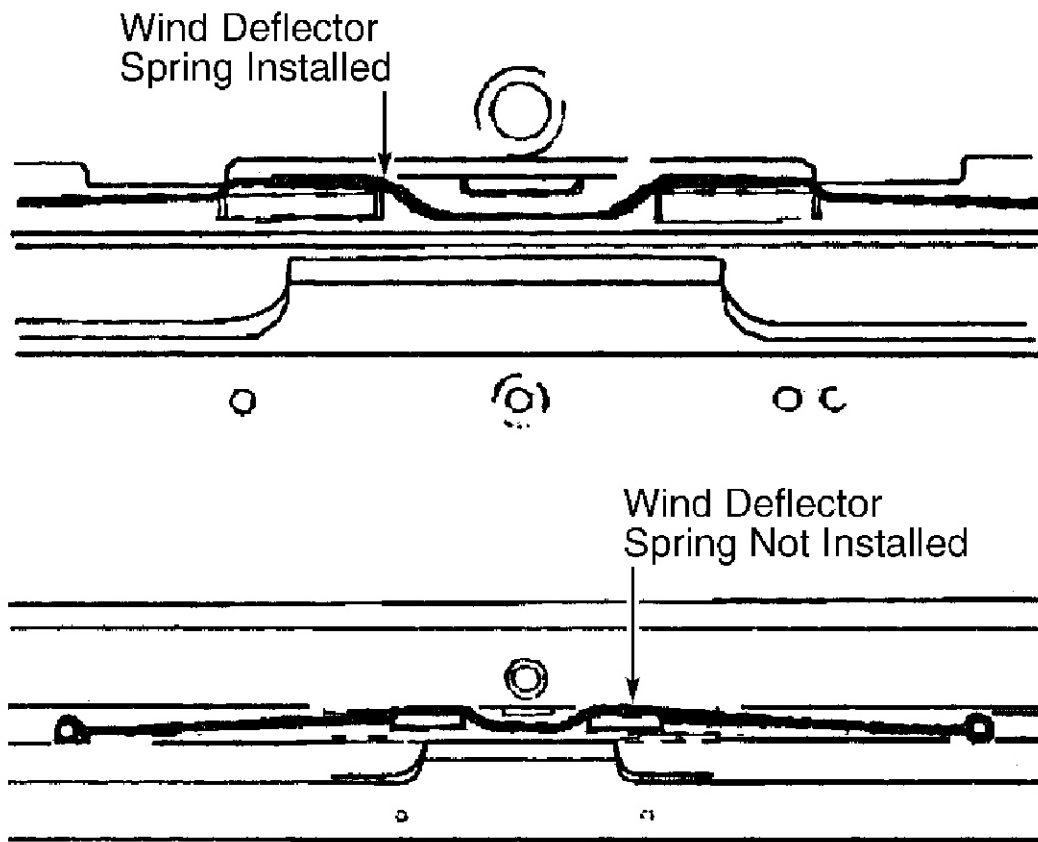
**Removal & Installation**

Fully open sunshade. Open sun roof glass panel. Remove one screw from each wind deflector lift arm. See **Fig. 13** . Remove wind deflector by lifting wind deflector arms from locator pins. See **Fig. 13** . Remove lift spring (if necessary). See **Fig. 14** . To install, reverse removal procedure. Tighten wind deflector screws to 18 INCH lbs. (2 N.m).



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**Fig. 13: Removing & Installing Wind Deflector**  
Courtesy of GENERAL MOTORS CORP.



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**Fig. 14: Removing & Installing Wind Deflector Spring**  
Courtesy of GENERAL MOTORS CORP.

## WIRING DIAGRAMS

**2001 Cadillac Catera**

2001 ACCESSORIES & EQUIPMENT Power Sun Roofs - Catera

**Fig. 15: Power Sun Roof System Wiring Diagram (Catera)**

**2001 Cadillac Catera**

2001 ACCESSORIES & EQUIPMENT Power Sun Roofs - Catera

**2001 Cadillac Catera**

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