

2008 Isuzu Ascender LS

2008 Accessories & Equipment Sunroof - Ascender, Envoy & Trailblazer

2008 Accessories & Equipment Sunroof - Ascender, Envoy & Trailblazer

SPECIFICATIONS

FASTENER TIGHTENING SPECIFICATIONS

Application	Specifications	
	Metric	English
Sunroof Actuator to Bracket Screws	3 N.m	27 lb in
Sunroof Module	10 N.m	7 lb ft
Sunroof Water Trough to Sunroof Module Screws	1 N.m	9 lb in
Sunroof Window to Module Screws	3 N.m	27 lb in

SCHEMATIC & ROUTING DIAGRAMS

SUNROOF SCHEMATICS

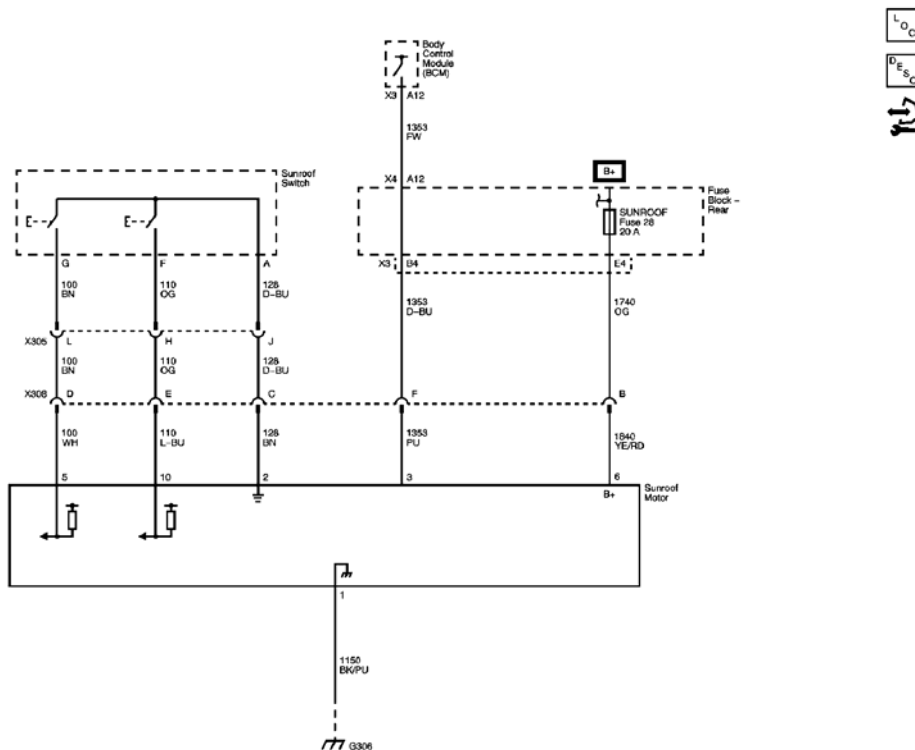


Fig. 1: Sunroof Schematic
Courtesy of GENERAL MOTORS CORP.

DIAGNOSTIC INFORMATION & PROCEDURES

DIAGNOSTIC STARTING POINT - ROOF

For Power Roof and Power Sunroof Systems, begin the system diagnosis with the **Diagnostic System Check - Vehicle** . The Diagnostic System Check will provide the following information:

- The identification of the control modules which command the system
- The ability of the control modules to communicate through the serial data circuit
- The identification of any stored DTCs and their status

The use of the Diagnostic System Check will identify the correct procedure for diagnosing the system and where the procedure is located.

Symptoms

When no DTCs are present, begin symptom diagnosis by reviewing the **Sunroof Description and Operation**. Reviewing the Description and Operation information will help you determine the correct symptom diagnostic procedure when a malfunction exists. Reviewing the Description and Operation information will also help you determine if the condition described by the customer is normal operation. Refer to **Symptoms - Roof** in order to identify the correct procedure for diagnosing the system and where the procedure is located.

SYMPTOMS - ROOF

IMPORTANT: Complete the following procedures before using the symptom tables.

1. Perform the **Diagnostic System Check - Vehicle** , in order to verify that all of the following conditions are true:
 - No DTCs are set.
 - The control modules can communicate via the serial data link.
2. Review the system operation in order to learn the system functions. Refer to **Sunroof Description and Operation**.

Visual/Physical Inspection

- Inspect for aftermarket devices which can affect the operation of the power sunroof system. Refer to **Checking Aftermarket Accessories** .
- Inspect the accessible system components for obvious damage or for conditions which can cause the symptom.

Intermittent

Bad electrical connections or wiring may cause intermittent conditions. Refer to **Testing for Intermittent Conditions and Poor Connections** .

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Symptom List

Refer to **Power Sunroof Malfunction** in order to diagnose the symptom.

POWER SUNROOF MALFUNCTION

Diagnostic Instructions

- Perform the **Diagnostic System Check - Vehicle** prior to using this diagnostic procedure.
- Review **Strategy Based Diagnosis** for an overview of the diagnostic approach.
- **Diagnostic Procedure Instructions** provides an overview of each diagnostic category.

Diagnostic Fault Information

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
Battery Positive Voltage	1	1	-	-
RAP Fuse Supply Voltage	1	1	-	-
Sunroof Switch Open Signal	2	2	1	-
Sunroof Switch Close Signal	3	3	1	-
Sunroof Switch Low Reference	-	3	-	-
Sunroof Motor Ground	-	3	-	-
1. Power Sunroof Malfunction 2. Power Sunroof Does Not Open 3. Power Sunroof Does Not Close				

Circuit/System Description

The sunroof motor module supplies voltage to the sunroof switch through the sunroof switch open and close signal circuits. It also supplies ground to the sunroof switch through the switch low reference circuit. When the roof open or closed switch is pressed, ground is applied through the switch contacts and the appropriate signal circuit to the sunroof motor module. The sunroof motor module then internally applies battery positive voltage and ground to the appropriate circuits of the reversible power sunroof motor in order to move the sunroof glass panel to the vent, open or close position.

Reference Information

Schematic Reference

Sunroof Schematics

Connector End View Reference

Component Connector End Views

Description and Operation

Sunroof Description and Operation

Electrical Information Reference

- **Circuit Testing**
- **Connector Repairs**
- **Testing for Intermittent Conditions and Poor Connections**
- **Wiring Repairs**

Scan Tool Reference

Control Module References for Scan Tool Information

Circuit/System Verification

1. With the sunroof in the closed position, press the sunroof open switch. The sunroof should vent.
2. With the sunroof in the closed position, press and hold the sunroof open switch for 2 seconds. The sunroof should open.
3. With the sunroof in the open position, press the sunroof close switch. The sunroof should close.

Circuit/System Testing

1. Ignition OFF, disconnect the harness connector at the sunroof switch.
2. Ignition OFF, test for less than 5 ohms between the low reference circuit terminal A and ground.
 - Sunroof switch low reference circuit terminal A
 - Sunroof motor ground circuit terminal 1
 - If greater than the specified range, test the following low reference/ground circuits for an open/high resistance. If the circuit tests normal, replace the sunroof motor.
3. Connect a 3A fused jumper wire between the following sunroof switch signal circuits and the low reference circuit terminal A. The roof should be inoperative in at least one or more directions.
 - Sunroof switch open signal terminal G
 - Sunroof switch close signal terminal F
 - If the roof moved in all directions, replace the sunroof switch.
4. Ignition OFF, disconnect the harness connector at the sunroof motor.
5. Ignition OFF, test for less than 5 ohm between the ground circuit terminal 1 and ground.
 - If greater than the specified range, test the ground circuit for an open/high resistance.
6. Ignition ON, verify a test lamp illuminates between the B+ circuit terminal 6 and ground.
 - If the test lamp does not illuminate, test the B+ circuit for a short to ground or an open/high resistance.
7. Verify a test lamp illuminates between the RAP fuse supply voltage circuit terminal 3 and ground.
 - If the test lamp does not illuminate, test the RAP fuse supply voltage circuit for a short to ground or an open/high resistance. If the circuit tests normal, refer to **Retained Accessory Power (RAP)**

Malfunction

8. Ignition OFF, connect the harness connector at the sunroof motor.
9. Ignition ON, test for 4.8-5.2 volts between the following sunroof switch signal circuits and ground.
 - Sunroof switch open signal terminal G
 - Sunroof switch close signal terminal F
 - If less than the specified range, test the signal circuit for a short to ground or an open/high resistance. If the circuit tests normal, replace the sunroof motor.
 - If greater than the specified range, test the signal circuit for a short to voltage. If the circuit tests normal, replace the sunroof motor.
10. If all circuits test normal, replace the sunroof motor.

Component Testing

1. Ignition OFF, disconnect the harness connector at the sunroof switch.
2. Test for infinite resistance between the following sunroof switch terminals and the low reference terminal A with the switch in the open position.
 - Sunroof switch open signal terminal G
 - Sunroof switch close signal terminal F
 - If less than the specified range, replace the sunroof switch.

IMPORTANT: If the switch tests open in any switch position other than Off, test the sunroof switch signal circuits for a short to voltage before replacing the switch.

3. Test for less than 3 ohms between the following sunroof switch terminals and the low reference terminal A with the switch in the closed position.
 - Sunroof switch open signal terminal G
 - Sunroof switch close signal terminal F
 - If greater than the specified range, replace the sunroof switch.

Repair Procedures

Perform the **Diagnostic Repair Verification** after completing the diagnostic procedure.

- **Sunroof Switch Replacement**
- **Sunroof Motor/Actuator Replacement**
- **Control Module References** for sunroof control module replacement, setup, and programming

REPAIR INSTRUCTIONS

SUNROOF HOUSING FRONT DRAIN HOSE REPLACEMENT

Removal Procedure

1. Lower the headliner. Refer to [Headlining Trim Panel Replacement](#) .

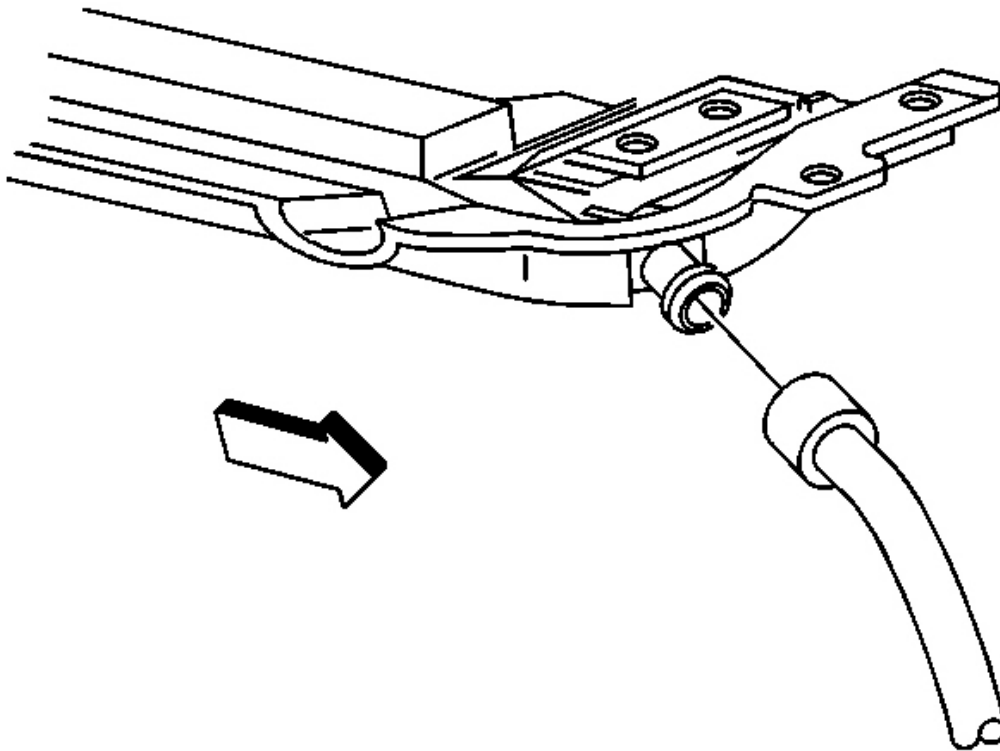


Fig. 2: Identifying Front Sunroof Drain Hose Connection
Courtesy of GENERAL MOTORS CORP.

2. Disconnect the front sunroof drain hose from the sunroof module front spigot, right or left side, as needed.

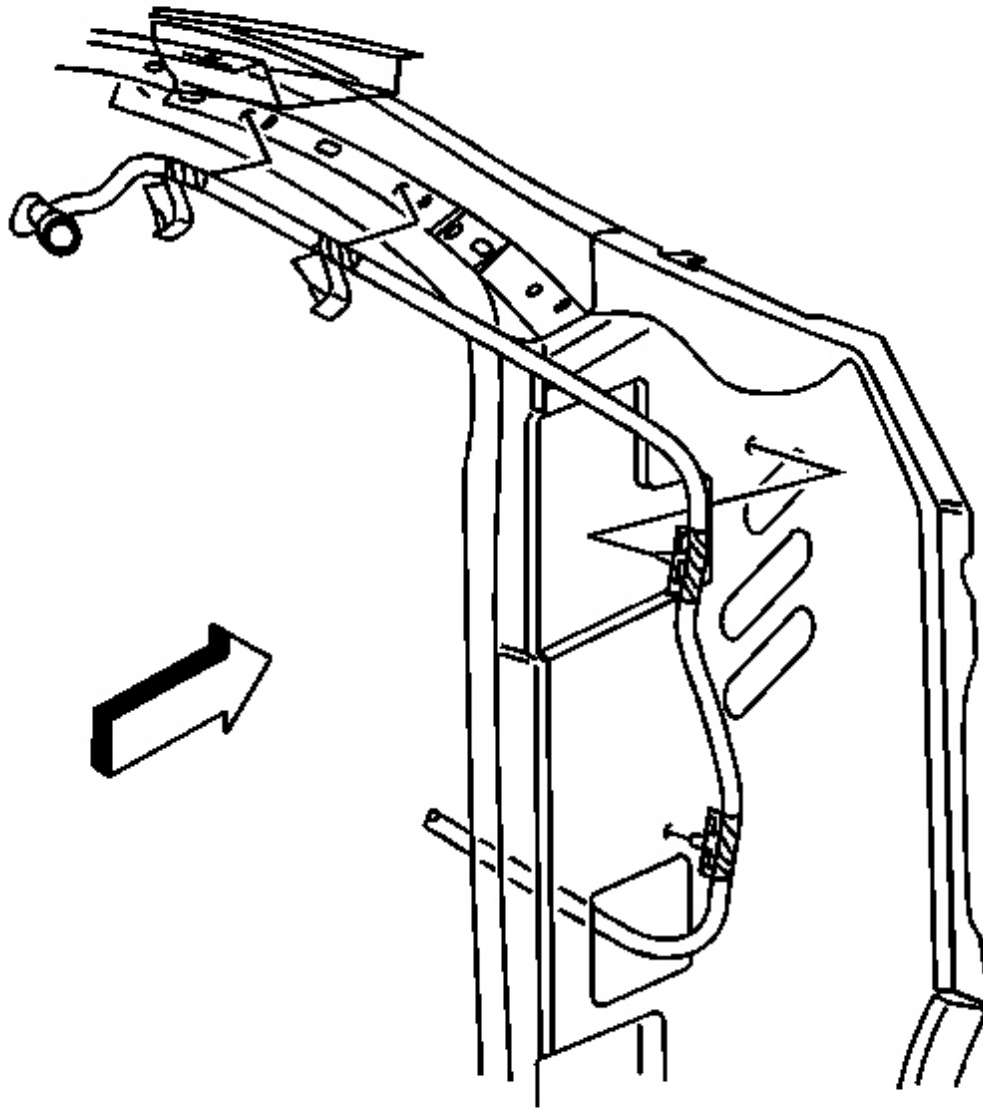


Fig. 3: Identifying Hose Clips Securing Drain Hose To Cowl Panel & Side Door Frame
Courtesy of GENERAL MOTORS CORP.

3. Remove the 2 hose clips securing the drain hose to the cowl panel, right or left side, as needed.
4. Remove the 2 hose clips securing the drain hose to the side door frame, right or left side, as needed.

IMPORTANT: In order to aid in installation, attach a mechanic's wire to the end of the

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hose.

5. Remove the drain hose from the vehicle, right or left side, as needed.

Leave the mechanic's wire behind the instrument panel.

Installation Procedure

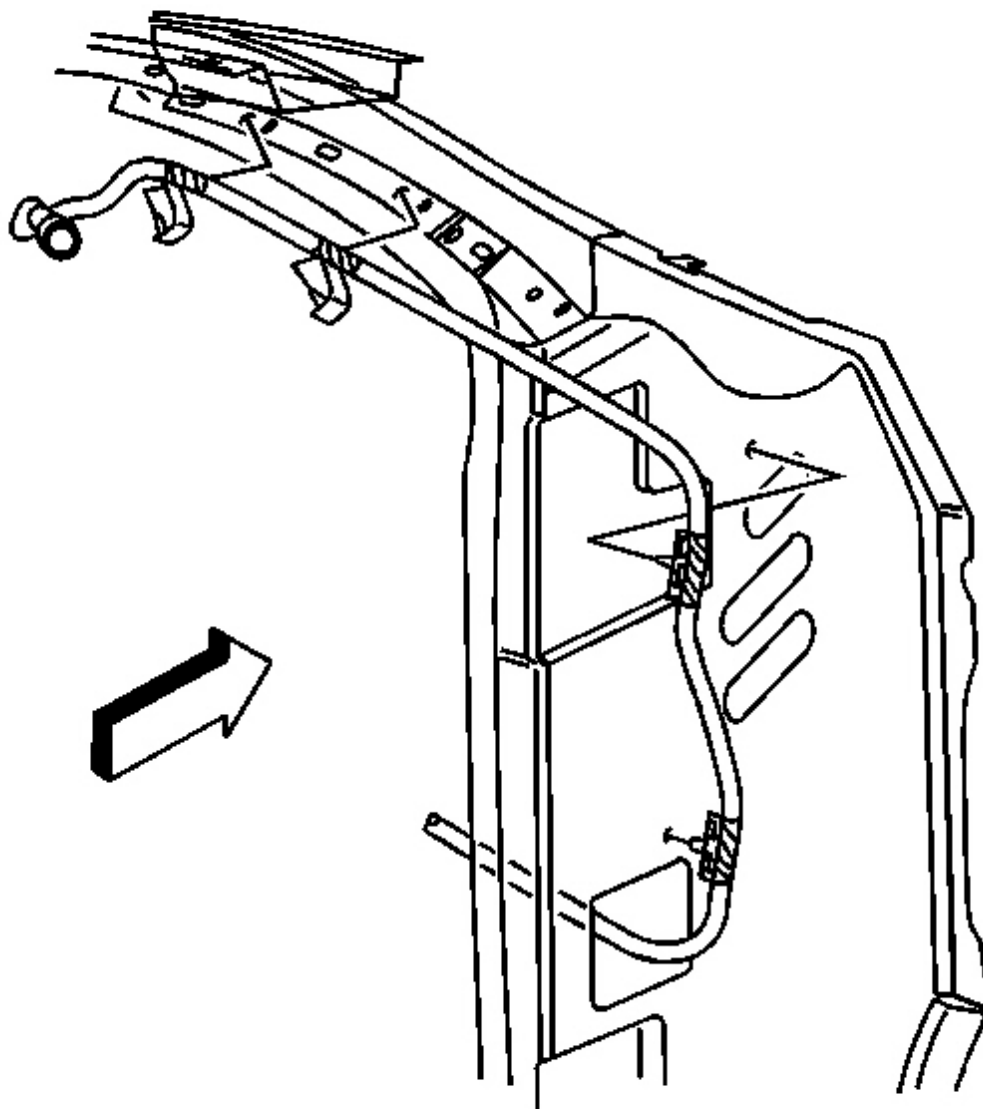


Fig. 4: Identifying Hose Clips Securing Drain Hose To Cowl Panel & Side Door Frame
Courtesy of GENERAL MOTORS CORP.

1. Attach the mechanic's wire to the drain hose.
2. Route the end of the drain hose through side cowl panel until the paint mark is visible, right or left side, as needed.
3. Install the 2 hose clips securing the drain hose to the side door frame, right or left side, as needed.
4. Install the 2 hose clips securing the drain hose to the cowl panel, right or left side, as needed.

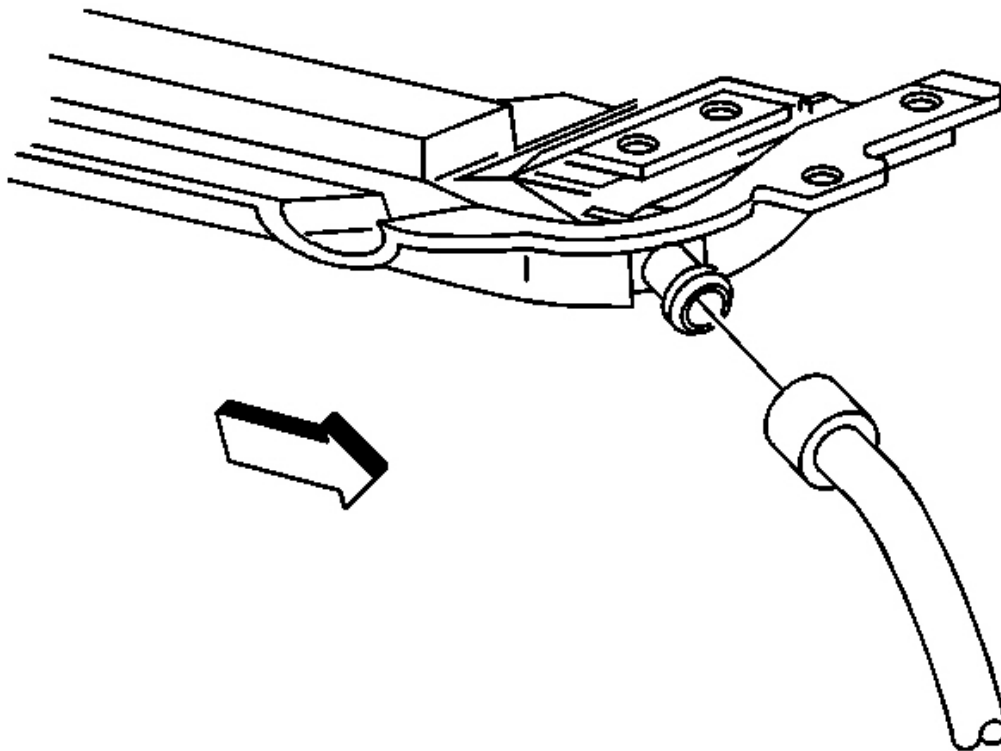


Fig. 5: Identifying Front Sunroof Drain Hose Connection
Courtesy of GENERAL MOTORS CORP.

5. Connect the front sunroof drain hose to the sunroof module front spigot, right or left side, as needed.
6. Install the headliner. Refer to **Headlining Trim Panel Replacement** .

SUNROOF HOUSING REAR DRAIN HOSE REPLACEMENT

Removal Procedure

1. Lower the headliner. Refer to **Headlining Trim Panel Replacement** .

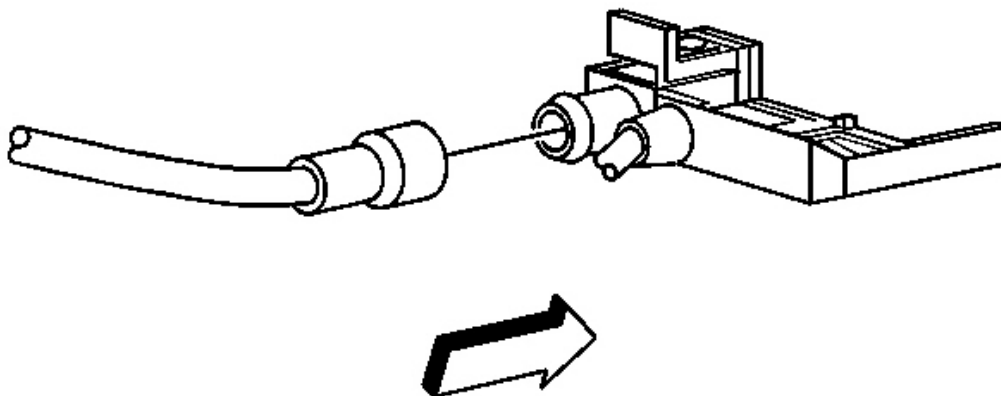


Fig. 6: Identifying Rear Sunroof Drain Hose Connection
Courtesy of GENERAL MOTORS CORP.

2. Disconnect the rear sunroof drain hose from the sunroof module rear spigot, right or left side, as needed.

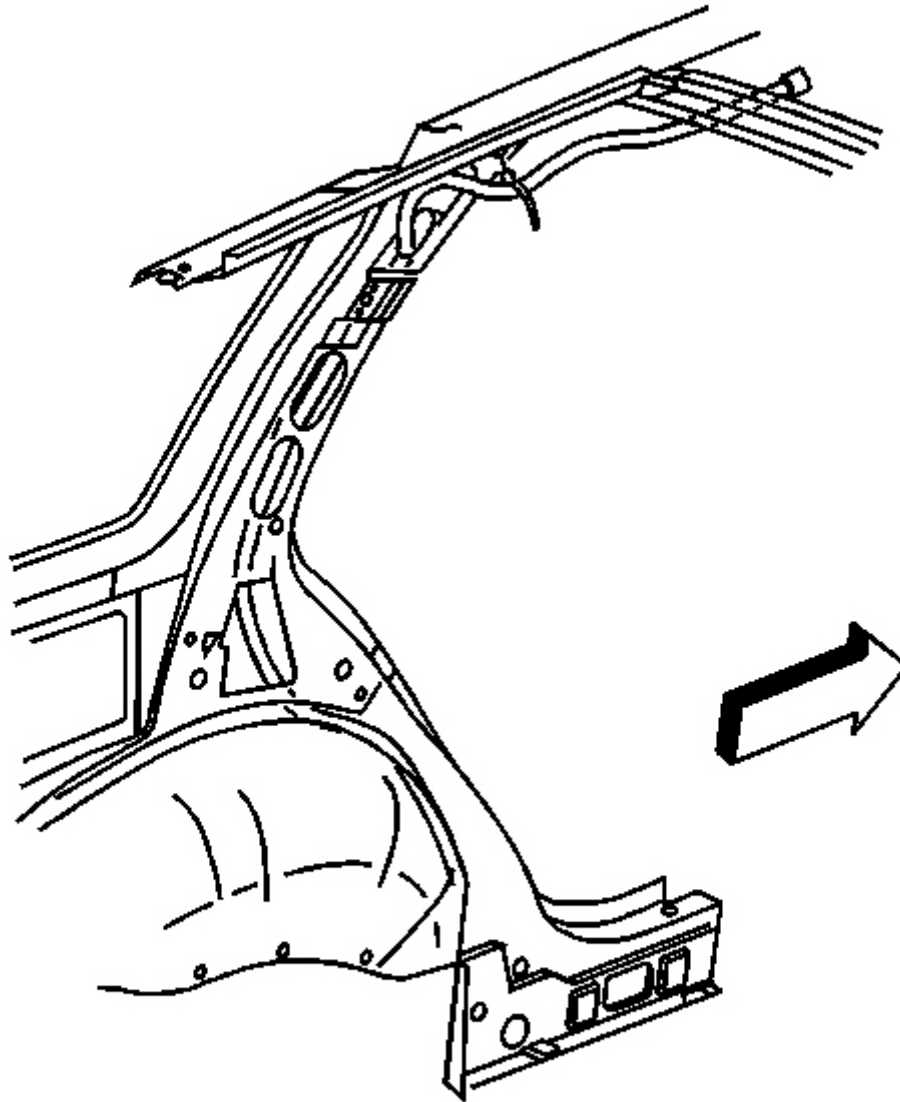


Fig. 7: View Of Drain Hose Through Access Hole & Down Inner Side Panel
Courtesy of GENERAL MOTORS CORP.

3. Remove the hose clip securing the drain hose to the vehicle, right or left side, as needed.
4. Remove the drain hose from the vehicle, right or left side, as needed.

Installation Procedure

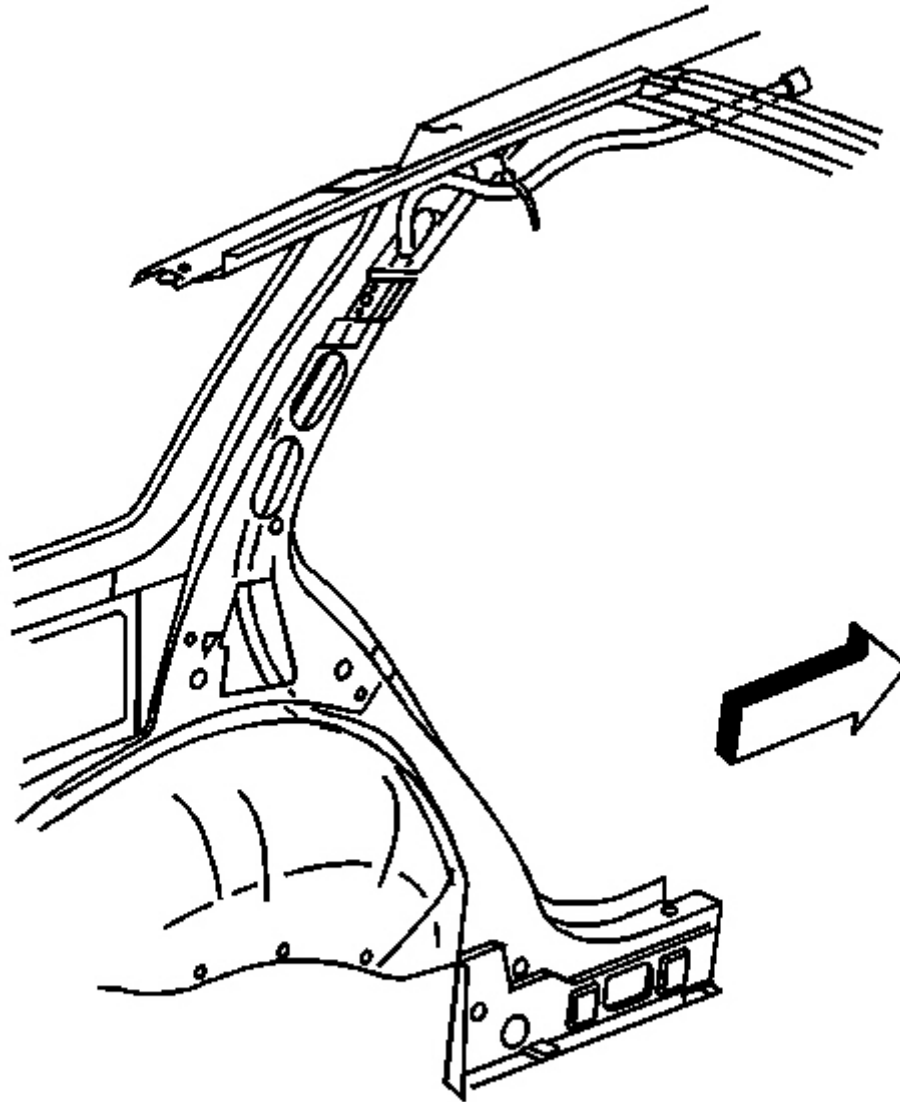


Fig. 8: View Of Drain Hose Through Access Hole & Down Inner Side Panel
Courtesy of GENERAL MOTORS CORP.

1. Route the end of the drain hose through the access hole and down the inner side panel, right or left side, as needed.
2. Install the hose clip to the door frame securing the drain hose to the vehicle, right or left side, as needed.

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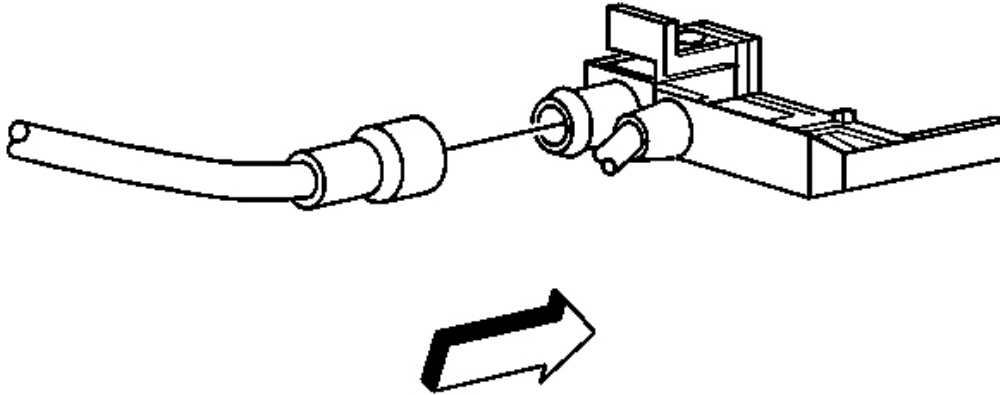


Fig. 9: Identifying Rear Sunroof Drain Hose Connection
Courtesy of GENERAL MOTORS CORP.

3. Connect the rear drain sunroof hose to the sunroof module rear spigot, right or left side, as needed.
4. Install the headliner. Refer to **Headlining Trim Panel Replacement** .

SUNROOF MODULE ASSEMBLY REPLACEMENT

Removal Procedure

IMPORTANT: Do not remove the headliner.

1. Lower the headliner. Refer to **Headlining Trim Panel Replacement** .

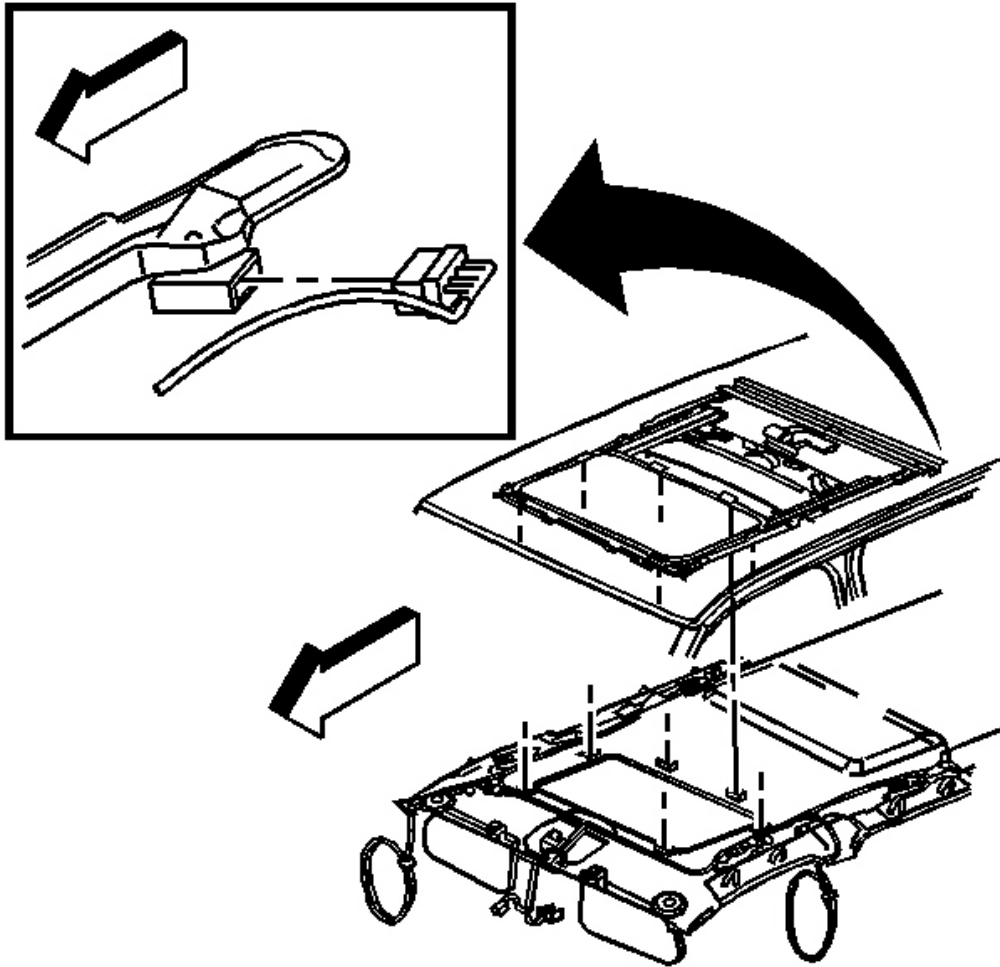


Fig. 10: View Of Sunroof Assembly Electrical Connector
Courtesy of GENERAL MOTORS CORP.

2. Disconnect the sunroof harness electrical connector.

IMPORTANT: Do not remove the drain hoses.

3. Disconnect the drain hoses from the sunroof assembly. Refer to the following procedures:
 - **Sunroof Housing Front Drain Hose Replacement**
 - **Sunroof Housing Rear Drain Hose Replacement**

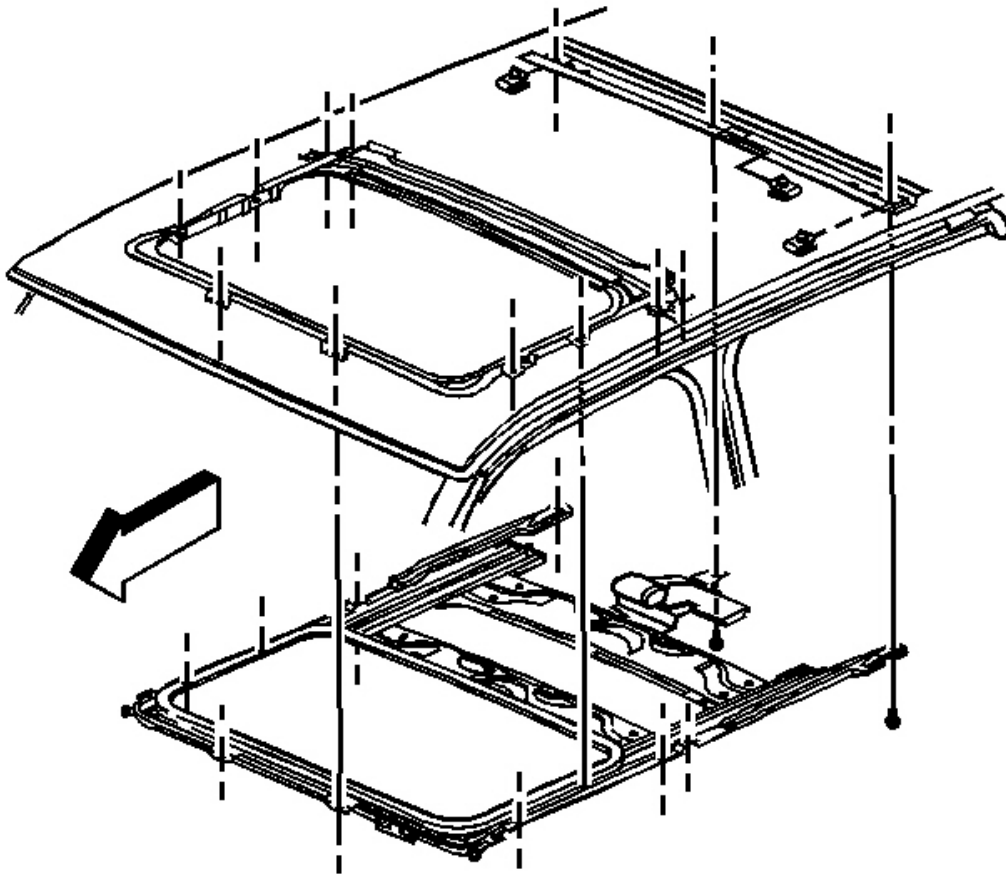


Fig. 11: Identifying Sunroof Module Assembly
Courtesy of GENERAL MOTORS CORP.

4. Support the sunroof with an assistant.
5. Remove the bolts that retain the sunroof module assembly to the roof panel
6. Remove the sunroof module assembly from the vehicle and place on a clean, prepared surface with an assistant.
7. Remove the sunroof motor/actuator from the sunroof module assembly. Refer to **Sunroof Motor/Actuator Replacement**.
8. Remove the sunroof window from the sunroof module assembly. Refer to **Sunroof Window Replacement**.
9. Remove the sunroof sunshade panel from the sunroof module assembly. Refer to **Sunroof Sunshade Replacement**.

1. Install the sunroof sunshade panel to the sunroof module assembly. Refer to **Sunroof Sunshade Replacement**.
2. Install the sunroof window to the sunroof module assembly. Refer to **Sunroof Window Replacement**.
3. Install the sunroof motor/actuator to the sunroof module assembly. Refer to **Sunroof Motor/Actuator Replacement**.

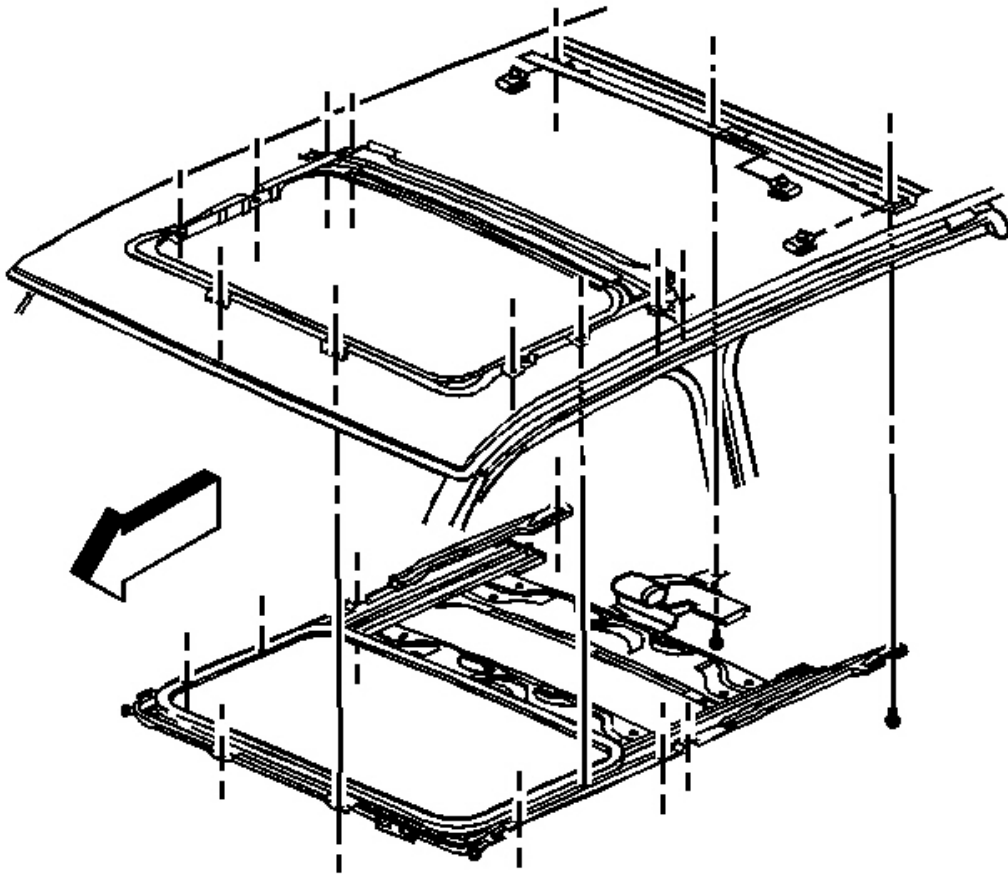


Fig. 12: Identifying Sunroof Module Assembly
Courtesy of GENERAL MOTORS CORP.

4. Position the sunroof module assembly to the vehicle with an assistant.

NOTE: Refer to **Fastener Notice** .

5. Install the bolts that retain the sunroof module assembly to the roof panel.

Tighten: Tighten the bolts to 10 N.m (7 lb ft).

6. Connect the drain hoses to the sunroof module assembly. Refer to the following procedures:
 - Sunroof Housing Front Drain Hose Replacement
 - Sunroof Housing Rear Drain Hose Replacement

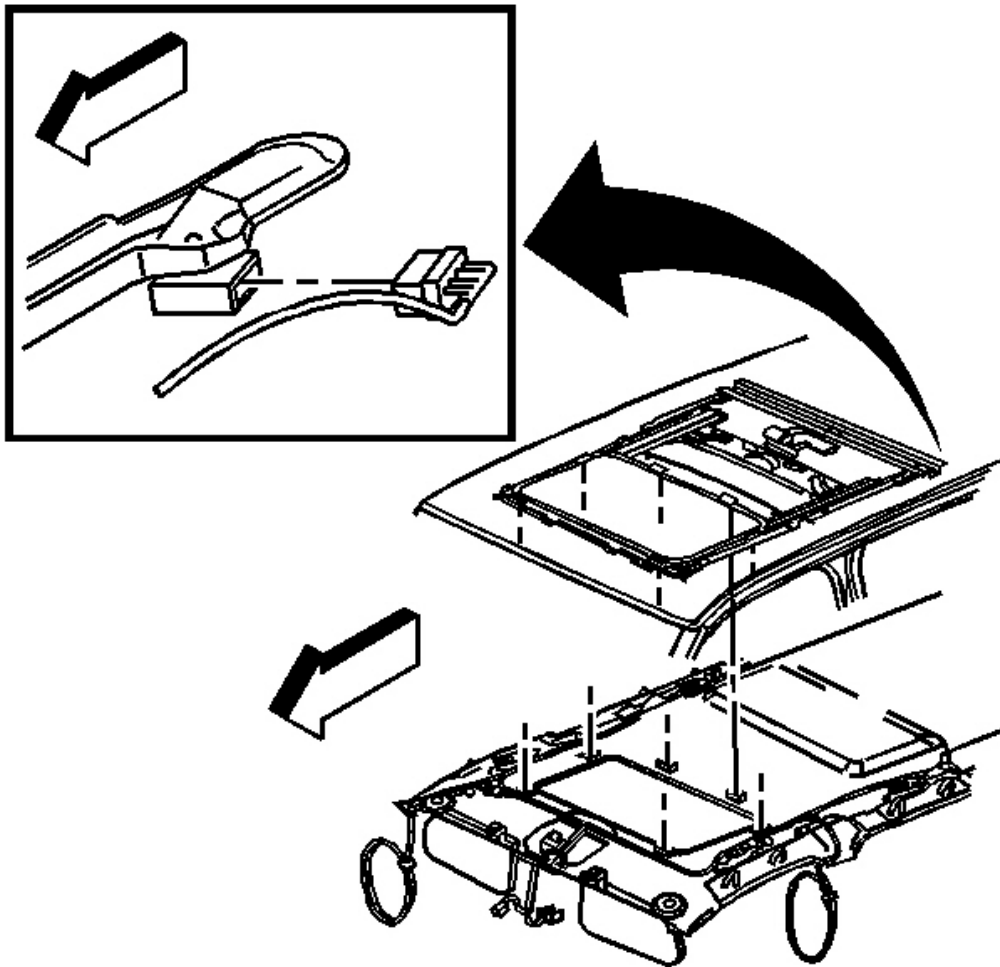


Fig. 13: View Of Sunroof Assembly Electrical Connector
Courtesy of GENERAL MOTORS CORP.

7. Connect the sunroof harness electrical connector.
8. Install the headliner. Refer to Headlining Trim Panel Replacement .

SUNROOF MOTOR/ACTUATOR INITIALIZATION/TEACH PROCESS (NEW MOTOR)

Perform the Initialization/Teach Procedure any time a new sunroof motor actuator is installed in the vehicle.

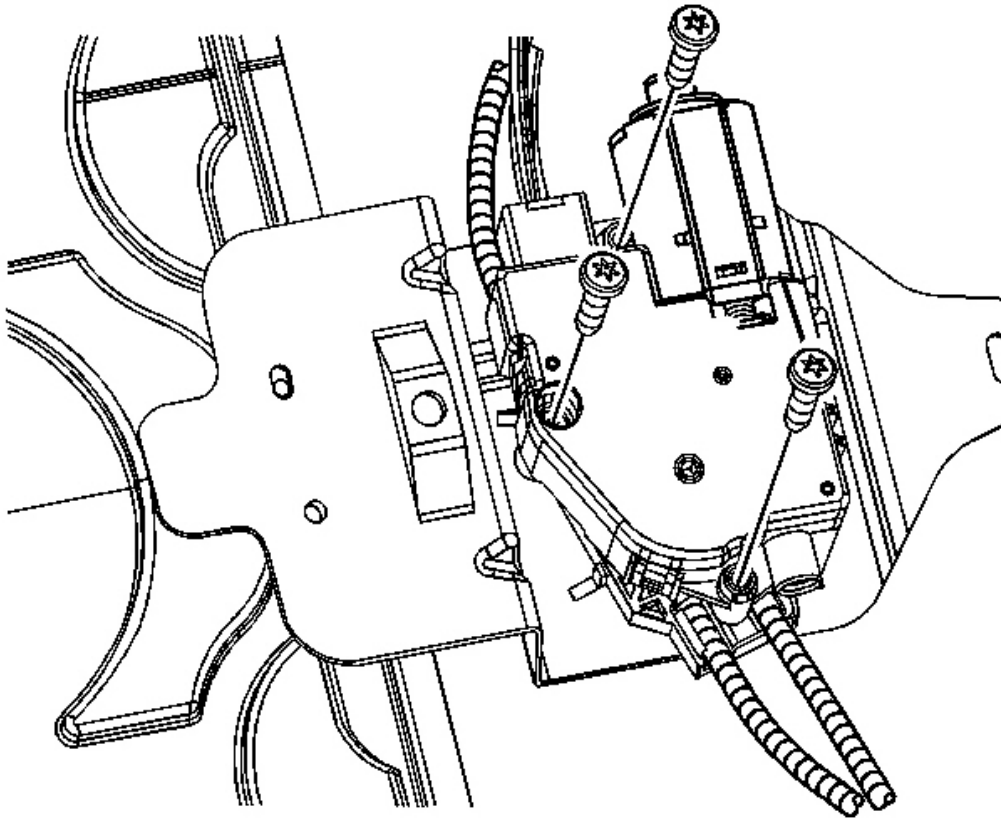


Fig. 14: Identifying Sunroof Motor/Actuator (New Style MD4)
Courtesy of GENERAL MOTORS CORP.

1. Press and hold the open switch until the glass panel stalls at the hard stop, then moves slightly forward. This position is called the soft stop or full open position.
2. Release the switch.
3. Press and hold the open switch within 6 seconds.
4. Hold the open switch until the glass panel moves to the closed position and stops.
5. Release the switch.

SUNROOF MOTOR/ACTUATOR INITIALIZATION/TEACH PROCESS (EXISTING MOTOR)

Perform the Initialization/Teach Procedure any time a new sunroof motor actuator is installed in the vehicle.

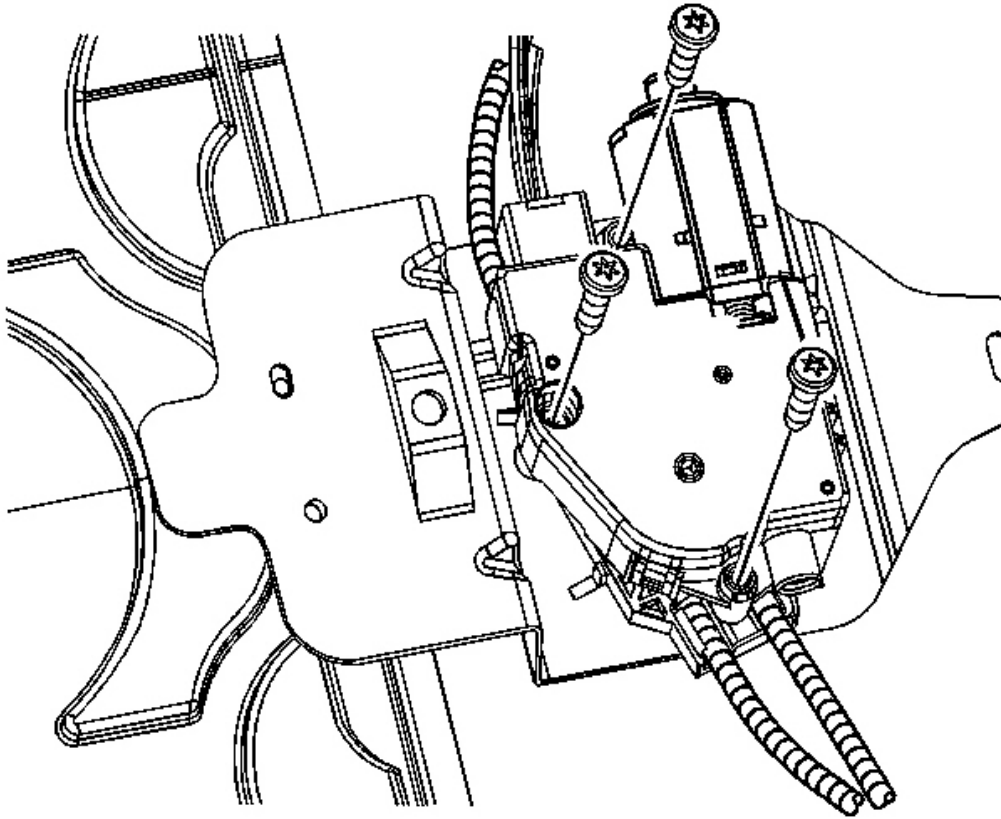


Fig. 15: Identifying Sunroof Motor/Actuator (New Style MD4)
Courtesy of GENERAL MOTORS CORP.

1. Press and hold the open switch until the full open position.
2. Release the switch.
3. Press and hold the open switch for 10 seconds or more. The glass panel will move further rearward of the open position, stall at the hard stop, and move back slightly to the soft stop or full-open position.
4. Release the switch
5. Press and hold the open switch within 6 seconds.
6. Hold the open switch until the glass panel moves to the closed position and stops.
7. Release the switch.

SUNROOF MOTOR/ACTUATOR REPLACEMENT

Removal Procedure

1. Lower the headliner. Refer to **Headlining Trim Panel Replacement** .
2. Remove the tie strap that retains the white connector to the drive cable tube sunroof motor wiring harness.

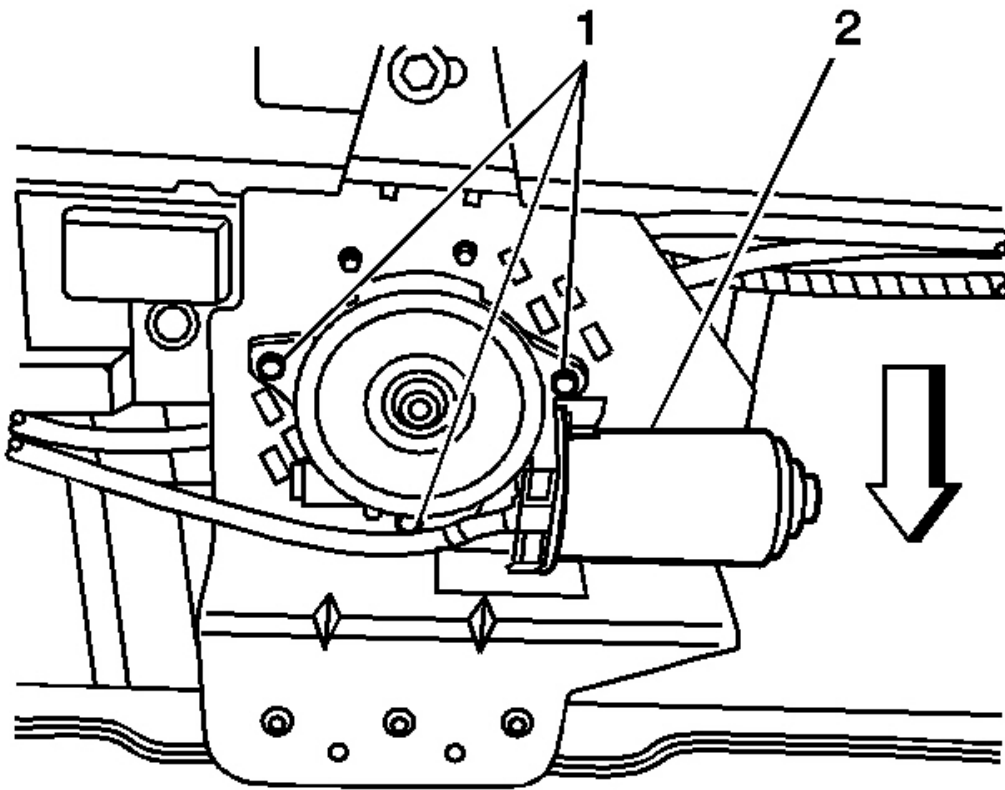


Fig. 16: Identifying Sunroof Motor/Actuator & Retaining Screws
Courtesy of GENERAL MOTORS CORP.

3. Disconnect the sunroof motor/actuator wiring harness electrical connector.
4. Remove the screws (1) which retain the sunroof motor/actuator (2) to the sunroof module assembly.
5. Remove the sunroof motor/actuator (2) from the sunroof module assembly.

Installation Procedure

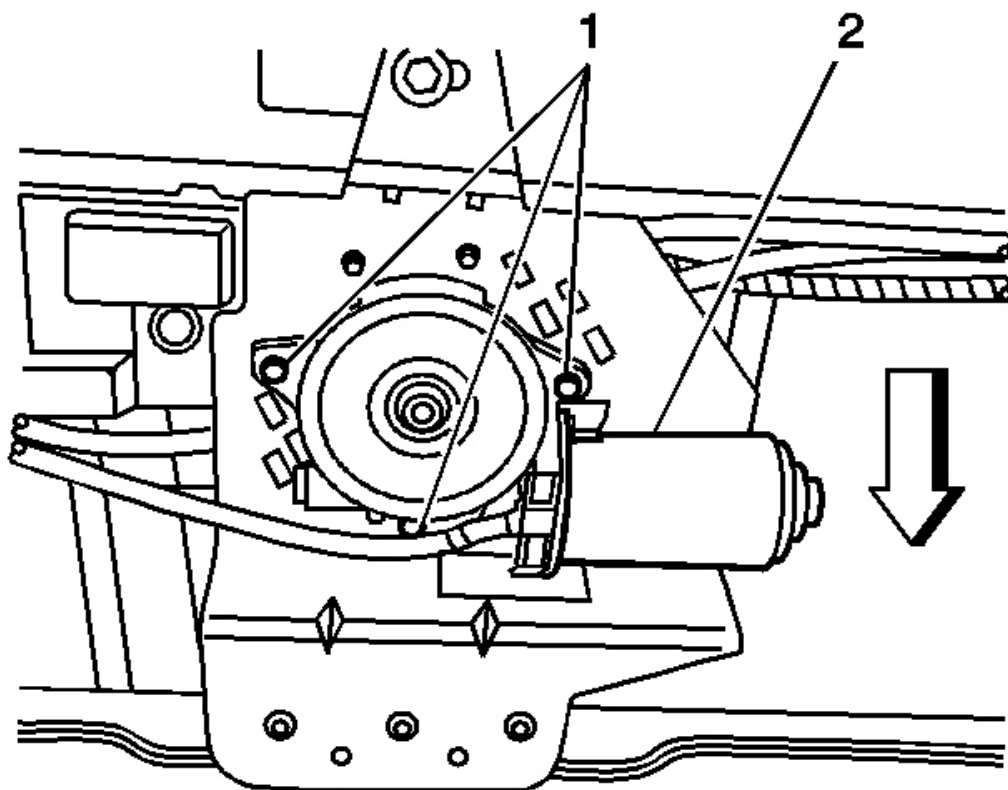


Fig. 17: Identifying Sunroof Motor/Actuator & Retaining Screws
Courtesy of GENERAL MOTORS CORP.

1. Align the splines on the sunroof motor/actuator shaft with the drive gear on the sunroof module assembly.
2. Install the sunroof motor/actuator (2) to the mounting bracket, ensuring that the sunroof motor/actuator is fully seated.

NOTE: Refer to Fastener Notice .

3. Install the screws (1) that retain the sunroof motor/actuator (2) to the mounting bracket.

Tighten: Tighten the sunroof motor/actuator screws to 3 N.m (27 lb in).

4. Connect the sunroof motor/actuator wiring harness electrical connector.
5. Install the tie strap retaining the sunroof motor/actuator wiring harness.
6. Press and hold the open switch until the glass panel stalls at the hard stop. The glass panel then moves forward several millimeters. This position is called the soft stop or full open position.

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7. Release the switch.
8. Press and hold the open switch within six seconds of step 8, continue holding until the glass panel moves to the closed position and stops.
9. Release the switch.
10. Install the headliner. Refer to **Headlining Trim Panel Replacement** .

SUNROOF SUNSHADE REPLACEMENT

Removal Procedure

1. Remove the sunroof window. Refer to **Sunroof Window Replacement**.

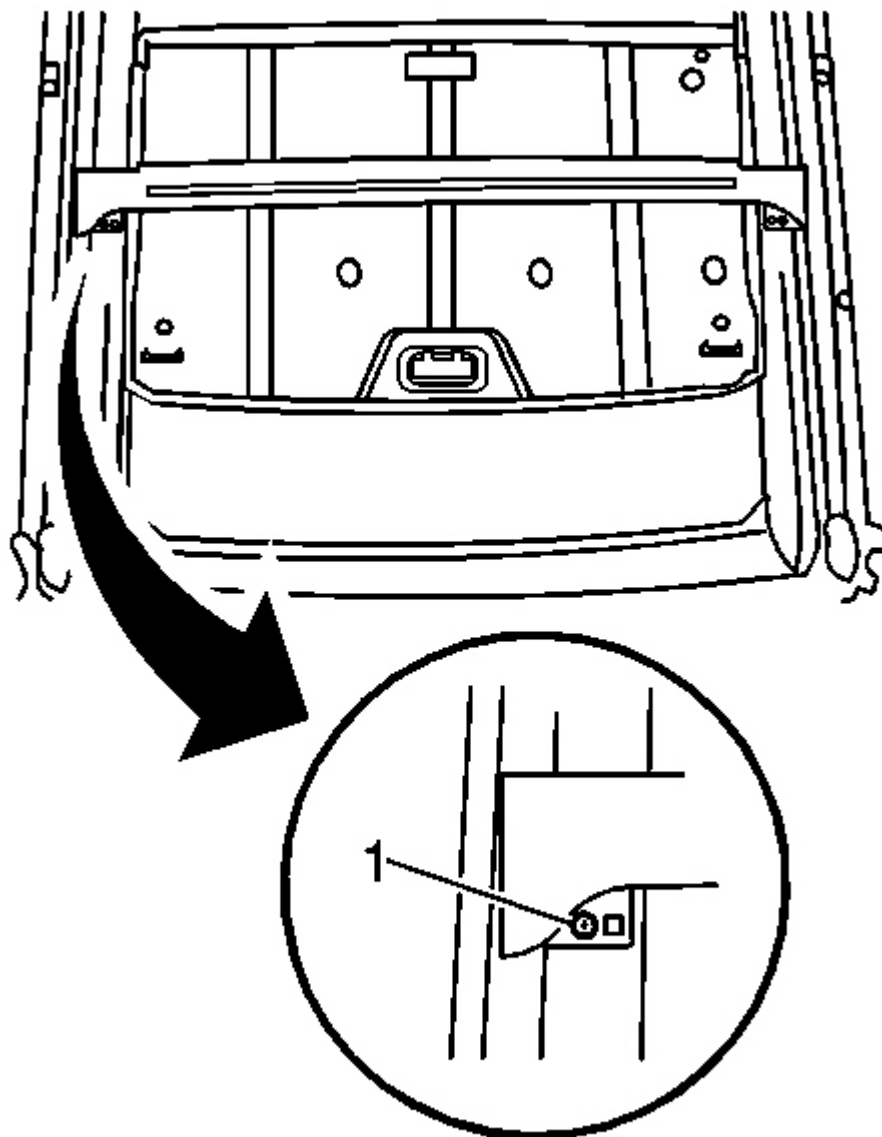


Fig. 18: View Of Sunroof Assembly Retaining Screw
Courtesy of GENERAL MOTORS CORP.

2. Remove the screws (1) that retain the water trough to the sunroof assembly.
3. Remove the water trough from the sunroof assembly from the top of the vehicle.

IMPORTANT: The sunshade must be removed from the top of the vehicle.

4. Slide the sunshade forward.

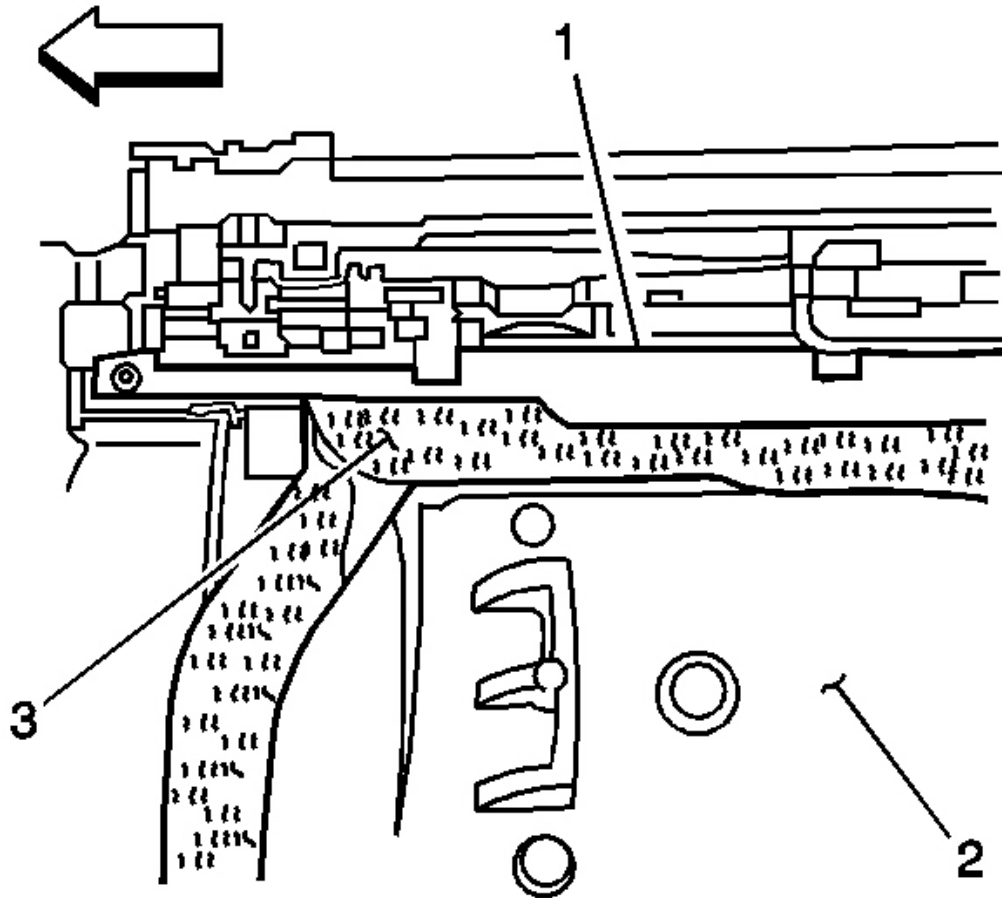


Fig. 19: View Of Track Slot, Retaining Tabs & Sunshade
Courtesy of GENERAL MOTORS CORP.

5. Flex the center of the sunshade (2) upward while simultaneously sliding the panel sideways to release the retaining tabs (3) from the track slot (1).
6. Remove the sunshade from the top of the vehicle.

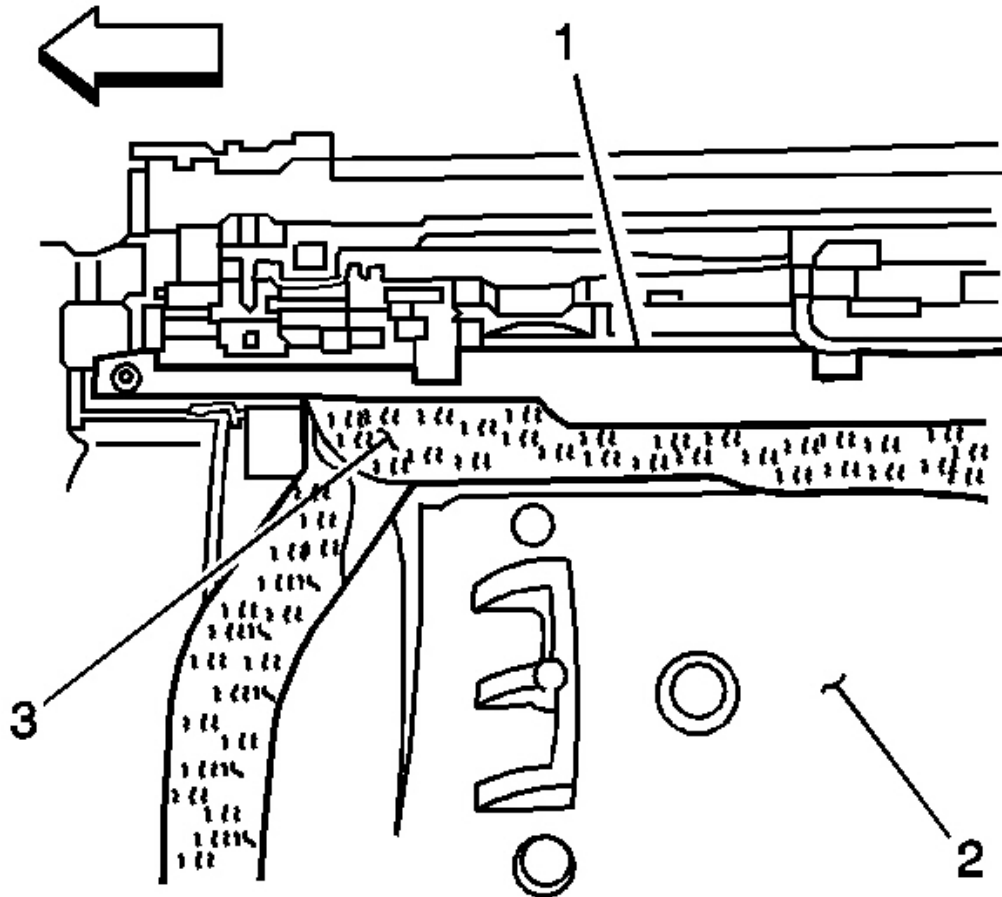


Fig. 20: View Of Track Slot, Retaining Tabs & Sunshade
Courtesy of GENERAL MOTORS CORP.

1. Position the sunshade to the vehicle from the top of the vehicle.
2. Install the retaining tabs on one side of the sunshade into the track slot of the sunroof.
3. Flex the center of the sunshade (2) upwards while simultaneously inserting the retaining tabs (3) into the track slot (1).
4. Ensure that the sunshade tabs are fully seated in the track slots, and the sunshade slides smoothly.

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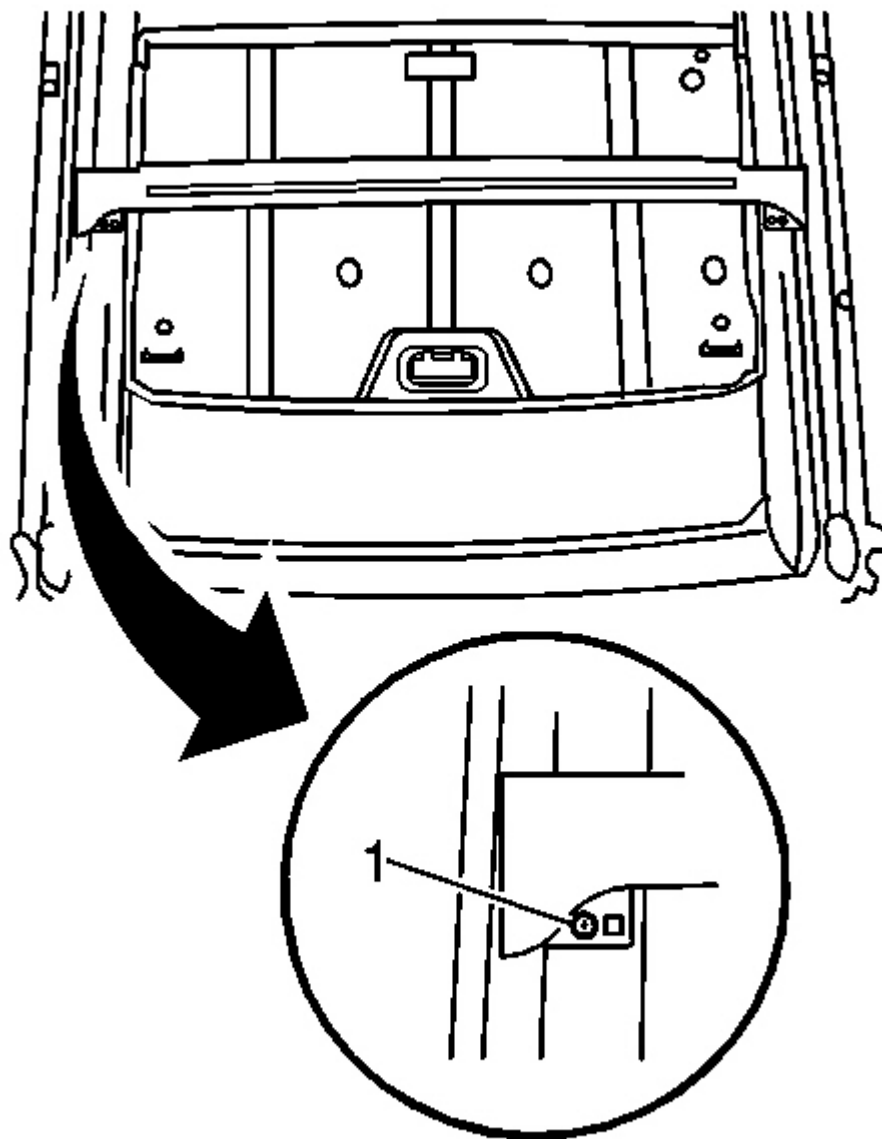


Fig. 21: View Of Sunroof Assembly Retaining Screw
Courtesy of GENERAL MOTORS CORP.

5. Install the water trough to the sunroof from the top of the vehicle.

NOTE: Refer to Fastener Notice .

6. Install the screws (1) that retain the water trough to the sunroof.

Tighten: Tighten the screws to 1 N.m (9 lb in).

7. Install the sunroof window. Refer to **Sunroof Window Replacement**.

SUNROOF SWITCH REPLACEMENT

Removal Procedure

1. Remove the overhead console in order to access the sunroof switch. Refer to **Roof Console Replacement**.

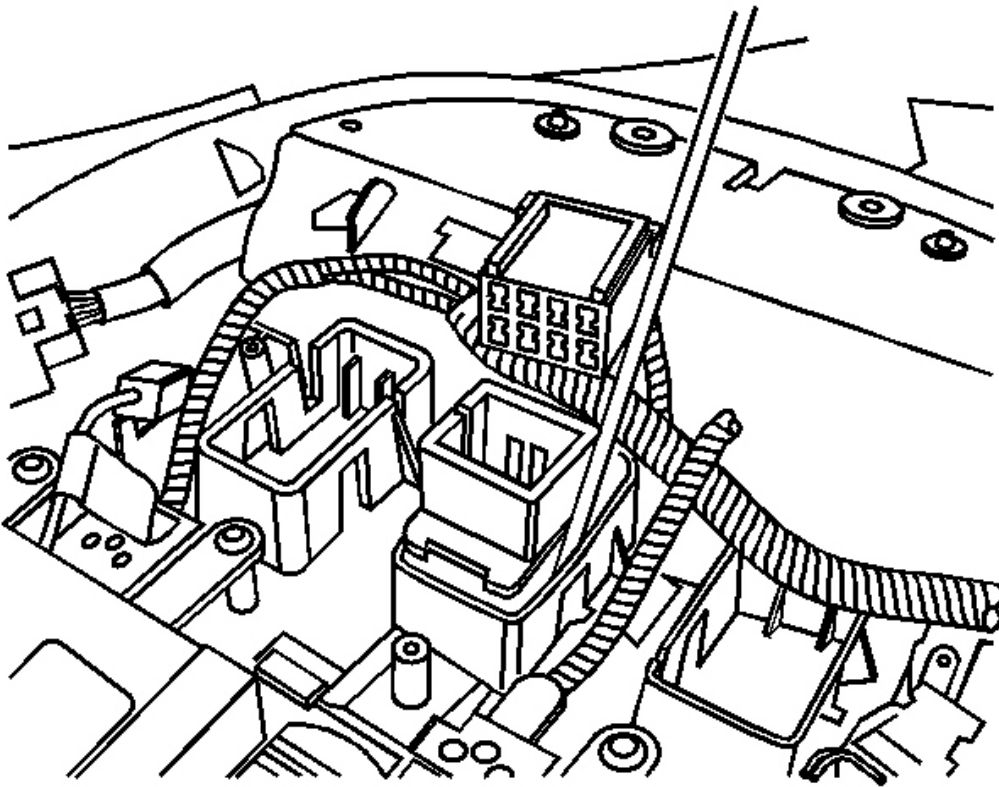


Fig. 22: Identifying Sunroof Switch Electrical Connector
Courtesy of GENERAL MOTORS CORP.

2. Disconnect the electrical connector from the sunroof switch.
3. With a flat bladed tool carefully release the tabs that retain the sunroof switch to the overhead console.

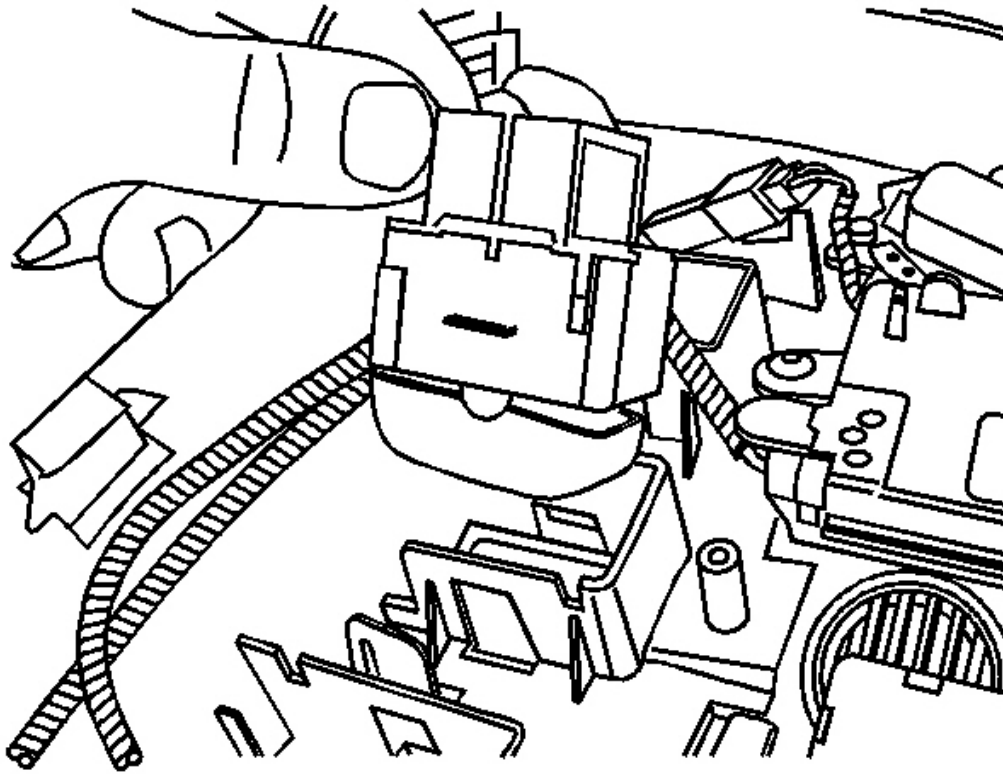


Fig. 23: Identifying Sunroof Switch
Courtesy of GENERAL MOTORS CORP.

4. Remove the sunroof switch from the overhead console.

Installation Procedure

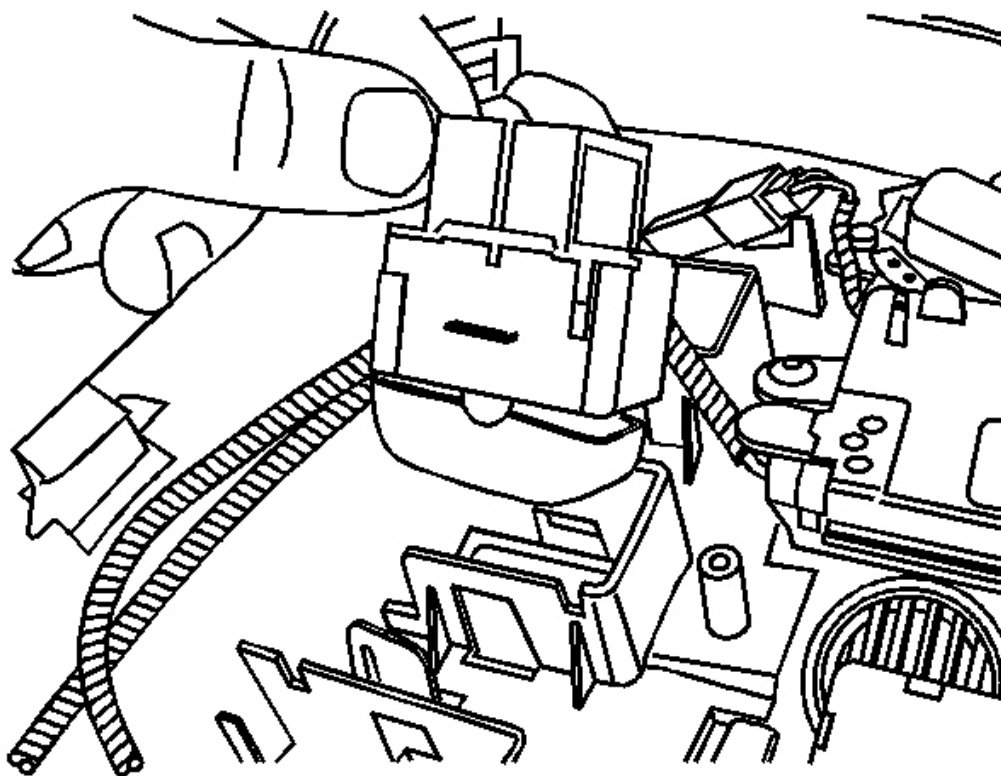


Fig. 24: Identifying Sunroof Switch
Courtesy of GENERAL MOTORS CORP.

1. Position the sunroof switch alignment tabs to the slots in the console.
2. Install the sunroof switch into the console, ensuring that the retaining tabs are fully seated.
3. Connect the electrical connector to the sunroof switch.
4. Install the overhead console to the roof. Refer to **Roof Console Replacement** .

SUNROOF TRACK TIMING/SYNCHRONIZATION

Removal Procedure

1. Place the module in the full open position.
2. It is only necessary to lower the headliner. Only do those step in headliner replacement that will lower the headliner enough to gain access to the part. Refer to **Headlining Trim Panel Replacement** .
3. Disconnect the electrical connector from the motor/actuator.
4. Remove the motor. Refer to **Sunroof Motor/Actuator Replacement**.

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5. Push the window guides rearward on the track until the guides are positioned against the rear hard stop.

Installation Procedure

1. Install the motor. Refer to **Sunroof Motor/Actuator Replacement**.
2. Connect the electrical connector to the motor/actuator.
3. Install the headliner. Refer to **Headlining Trim Panel Replacement** .
4. Perform the Initialization/Teach Procedure. Refer to **Sunroof Motor/Actuator Initialization/Teach Process (New Motor)** or **Sunroof Motor/Actuator Initialization/Teach Process (Existing Motor)**.
5. Verify the operation of the sunroof.

SUNROOF WINDOW WEATHERSTRIP REPLACEMENT

Removal Procedure

1. Remove the sunroof window. Refer to **Sunroof Window Replacement**.

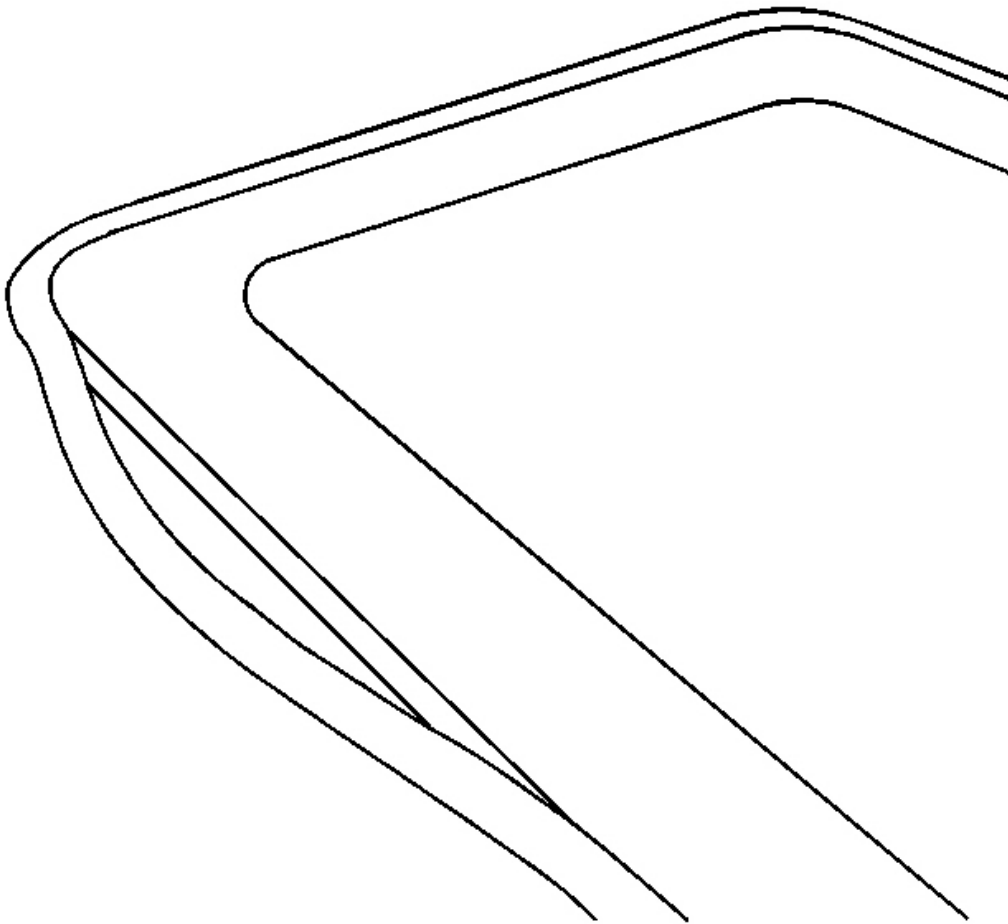


Fig. 25: View Of Sunroof Window Weatherstrip
Courtesy of GENERAL MOTORS CORP.

2. Carefully remove the sunroof window weatherstrip from the perimeter of the sunroof window.

Installation Procedure

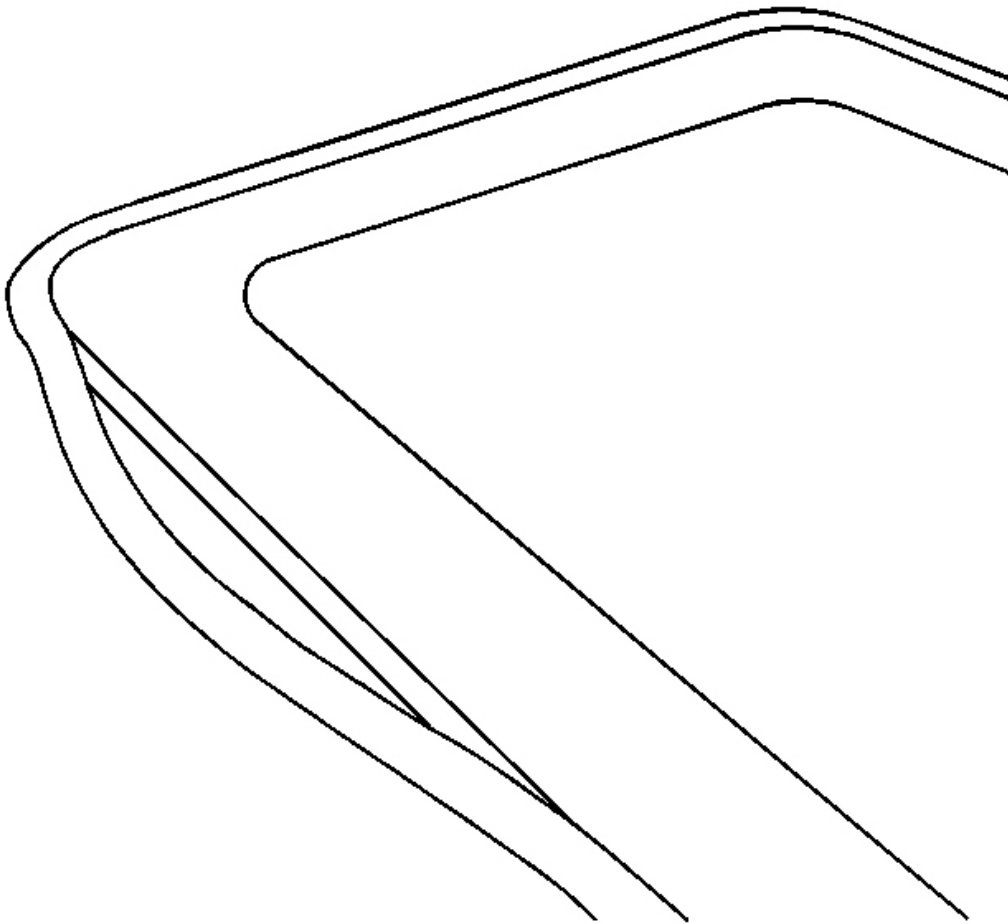


Fig. 26: View Of Sunroof Window Weatherstrip
Courtesy of GENERAL MOTORS CORP.

1. Carefully install the sunroof window weatherstrip to the perimeter of the sunroof window, ensuring that the weatherstrip is fully seated.
2. Install the sunroof window to the sunroof module assembly. Refer to **Sunroof Window Replacement**.
3. Ensure that the sunroof does not have any air or waterleaks.

SUNROOF WINDOW REPLACEMENT

Removal Procedure

IMPORTANT: The sunroof must be in the fully closed position prior to removing the sunroof window.

1. Open the sunshade panel.

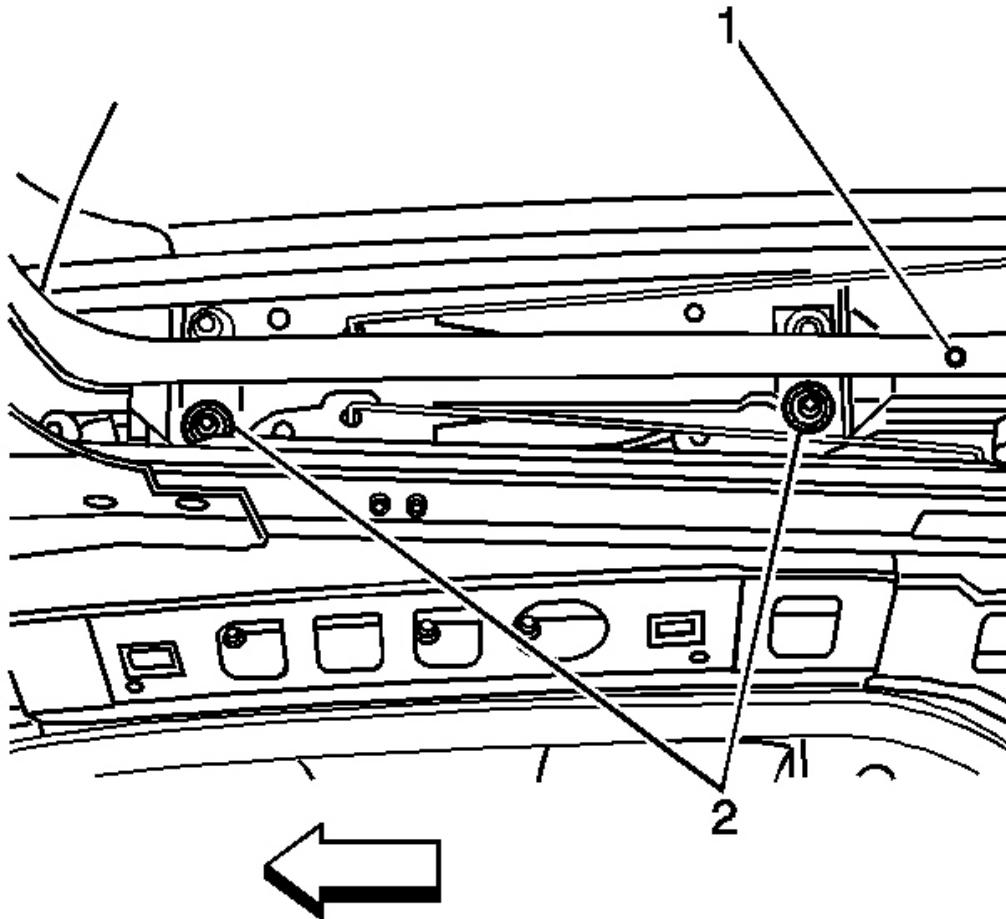


Fig. 27: View Of Sunroof Window & Retaining Screws
Courtesy of GENERAL MOTORS CORP.

2. Remove the 4 screws (2) that retain the sunroof window (1) to the sunroof module assembly.
3. Remove the sunroof window from the top of the vehicle.

Installation Procedure

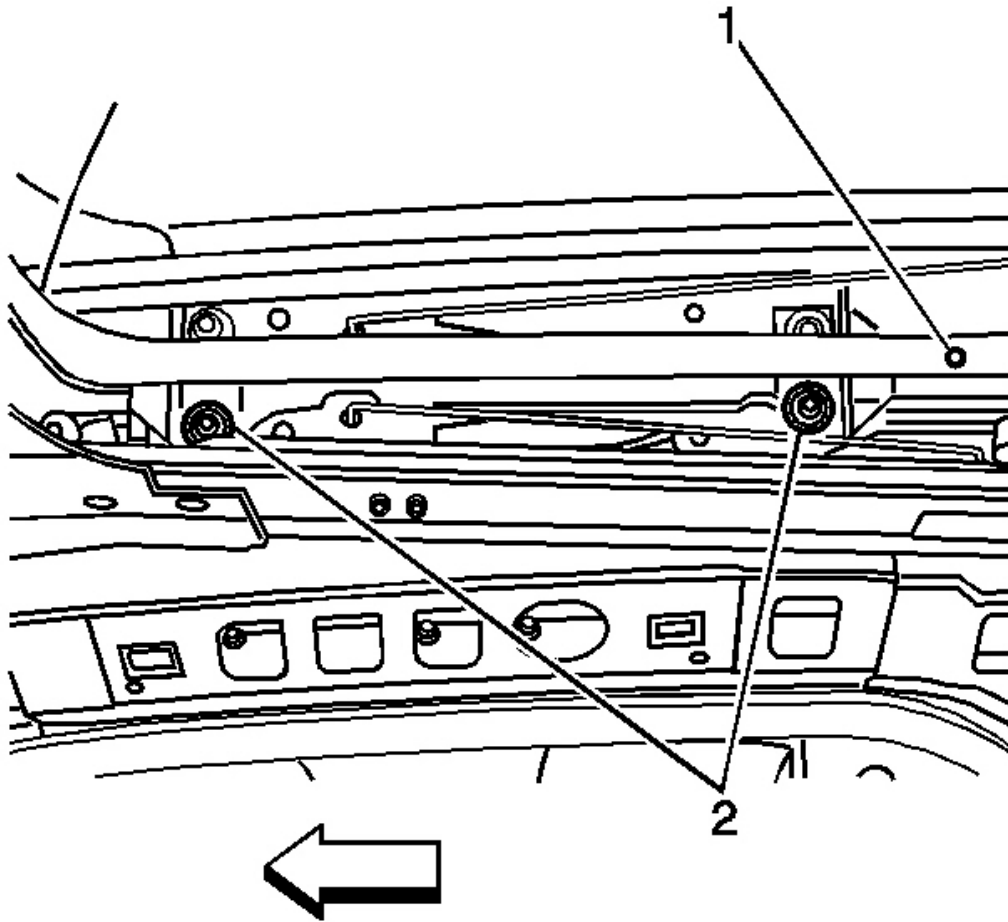


Fig. 28: View Of Sunroof Window & Retaining Screws
Courtesy of GENERAL MOTORS CORP.

1. Position the sunroof window (1) to the vehicle.
2. Loosely insert the screws (2) that retain the sunroof window (1) to the sunroof module assembly.

NOTE: Refer to Fastener Notice

3. Adjust the sunroof window height so that the window is flush with the roof panel.

Tighten: Tighten the screws to 3 N.m (27 lb in).

DESCRIPTION & OPERATION

SUNROOF DESCRIPTION & OPERATION

Power Sunroof System Components

The Power Sunroof System consists of the following components:

- Sunroof motor/module assembly
- Sunroof switch
- Sunroof glass, tilt/slide style, with glass sliding between the headliner and roof
- Sunshade
- Rail and track assembly upon which the sunroof glass rides
- Power supply for the sunroof motor/module assembly:
 - SUNROOF 20-amp fuse for motor operation
 - Sunroof module logic circuitry:
 - Short wheelbase and Envoy XUV-Retained accessory power (RAP) supply voltage is supplied and controlled directly from the body control module (BCM) for the RAP function.
 - Long wheelbase-VENT WDO 20-amp fuse supplies the voltage through the RAP relay, that is controlled by the BCM, for the RAP function.
- Ground from G306

Power Sunroof Operation

The sunroof motor/module assembly has 2 power circuits battery positive voltage and the retained accessory power (RAP) supply voltage circuit. The Sunroof 20-amp fuse is hot at all times supplying the battery positive voltage circuit for the operation of the sunroof motor. The RAP supply voltage circuit is for the sunroof module logic circuitry and is controlled from, or by the body control module (BCM), depending on the wiring configuration. The power sunroof will operate with the ignition switch turned to Accessory or RUN supplying RAP supply voltage. Once the ignition switch is turned to OFF the sunroof will continue to operate until any door is open or when the RAP has timed out.

Use the rocker type sunroof switch to command the sunroof to :

- Express Open
- Close
- Vent

Pressing the sunroof switch rearward, the sunroof glass will slide from:

- Vent position to the closed position
- Closed position to the open position

Pressing the sunroof switch forward, the sunroof glass will slide from:

- Open position to the closed position

2008 Isuzu Ascender LS

2008 Accessories & Equipment Sunroof - Ascender, Envoy & Trailblazer

- Closed position to the vent position

Express Open

The express open will operate from the closed or partially open position. To express open the power sunroof, turn the ignition to RUN. Press the sunroof switch rearward once. This will apply the sunroof switch low reference to the sunroof switch open signal circuit. From the closed position, the sunroof motor/module assembly will control the motor to lower the rear of the sunroof glass slightly and then slide it rearward between the roof and the headliner, along with the sunshade. The wind deflector will raise upward. To stop the sunroof glass in a desired position other than to the express open position, press the sunroof switch, in either direction, to stop the movement.

To Close

To close the power sunroof, turn the ignition to RUN, and from the:

- Open position-press and hold the sunroof switch forward. This will apply the sunroof switch low reference to the sunroof switch close signal circuit. The sunroof motor/module assembly needs to have a constant switch press to allow the sunroof motor to drive the sunroof glass until it reaches the closed position. The wind deflector will retract prior to the glass reaching the fully closed position. To close the sunshade, this will have to be manually slid closed.
- Vent position-press and hold the sunroof switch rearward. This will apply the sunroof switch low reference to the sunroof switch open signal circuit. The sunroof motor/module assembly needs to have a constant switch press to allow the sunroof motor to drive the rear of the sunroof glass down to the fully closed position.

To Vent Open

To open the power sunroof to the vent position from the closed position, turn the ignition to RUN. Press and hold the sunroof switch forward. This will apply the sunroof switch low reference to the sunroof switch close signal circuit. The sunroof motor/module assembly needs to have a constant switch press to allow the sunroof control module to control the sunroof motor to tilt the rear of the glass upward to the full vent position.

Sunroof Motor

The sunroof motor/module assembly has a bi-directional motor. The sunroof motor understands when it has driven the sunroof glass to the vent, close and full open positions based on the hall effect sensors within the sunroof motor/module assembly. The sunroof motor/module assembly interprets the hall effect sensor combinations and controls the sunroof motor to soft stop the sunroof glass at the positions. After servicing sunroof system components which may effect the position of the glass panel to the seal in the closed position, the soft stop locations must be reset, refer to **Sunroof Motor/Actuator Initialization/Teach Process (New Motor)** or **Sunroof Motor/Actuator Initialization/Teach Process (Existing Motor)**.