

2006 Chevrolet Impala LS

2006 ACCESSORIES & EQUIPMENT Stationary Windows - Impala

2006 ACCESSORIES & EQUIPMENT

Stationary Windows - Impala

SPECIFICATIONS

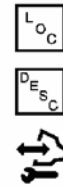
FASTENER TIGHTENING SPECIFICATIONS

Fastener Tightening Specifications

Application	Specification	
	Metric	English
Rearview Mirror Screw	2 N.m	18 lb in

SCHEMATIC AND ROUTING DIAGRAMS

DEFOGGER SCHEMATICS



INSIDE REARVIEW MIRROR SCHEMATICS

2006 Chevrolet Impala LS

2006 ACCESSORIES & EQUIPMENT Stationary Windows - Impala

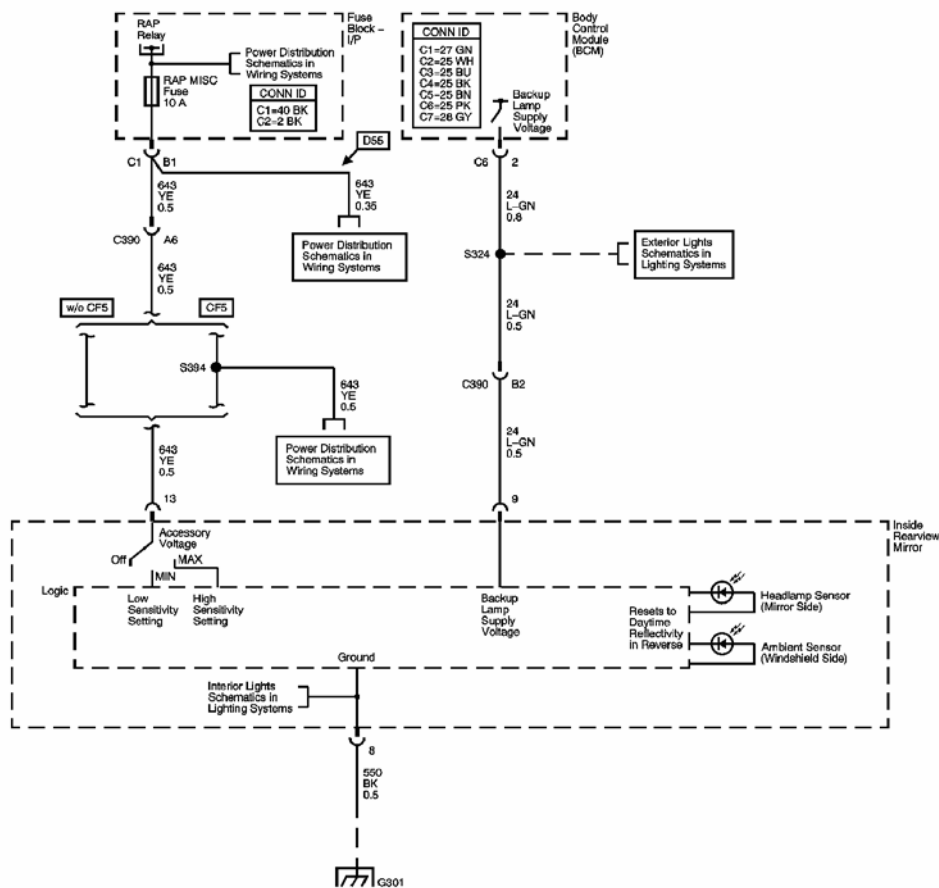


Fig. 2: Inside Rearview Mirror Schematics - Wiring Diagram
 Courtesy of GENERAL MOTORS CORP.

COMPONENT LOCATOR

STATIONARY WINDOWS COMPONENT VIEWS

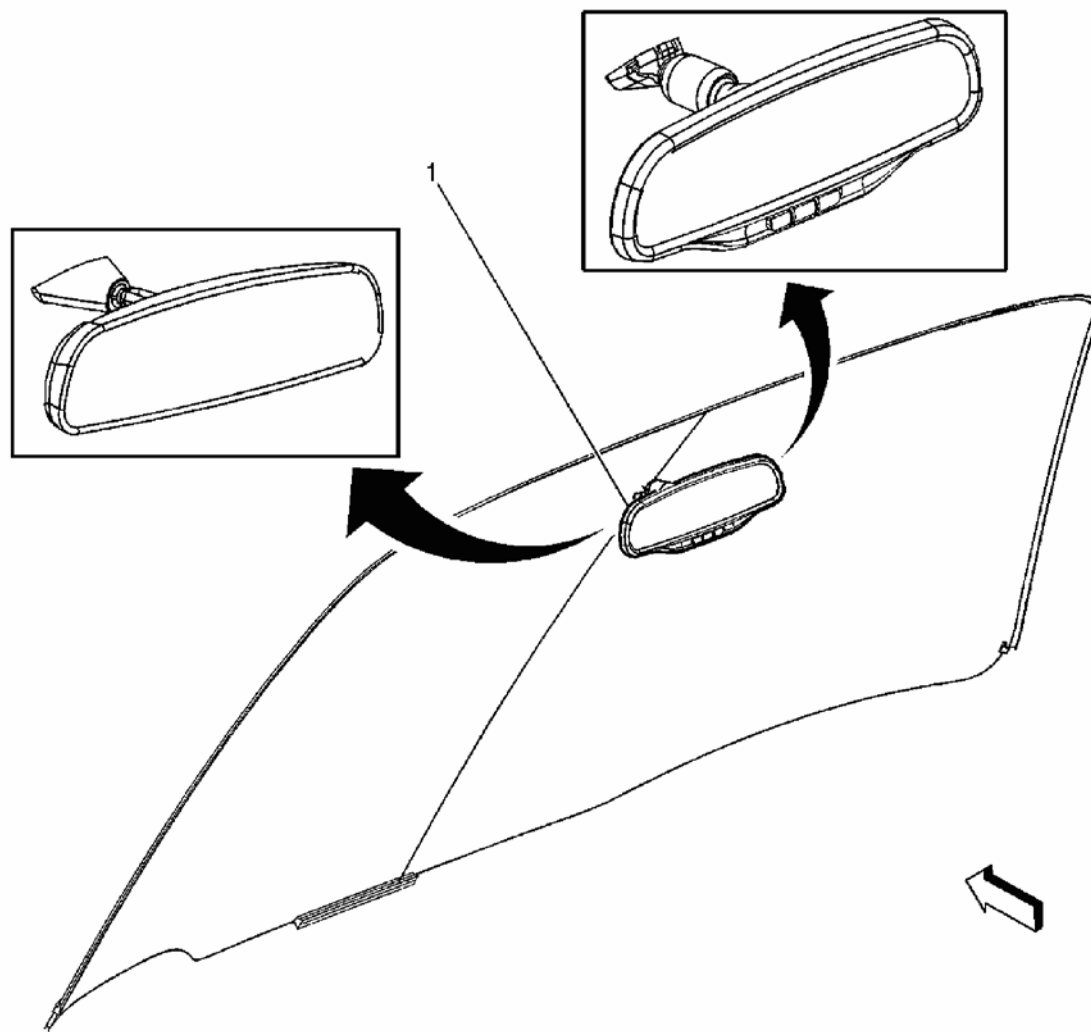


Fig. 3: View Of Roof/Headliner Components
 Courtesy of GENERAL MOTORS CORP.

Callouts For Fig. 3

Callout	Component Name
1	Inside Rearview Mirror

2006 Chevrolet Impala LS

2006 ACCESSORIES & EQUIPMENT Stationary Windows - Impala

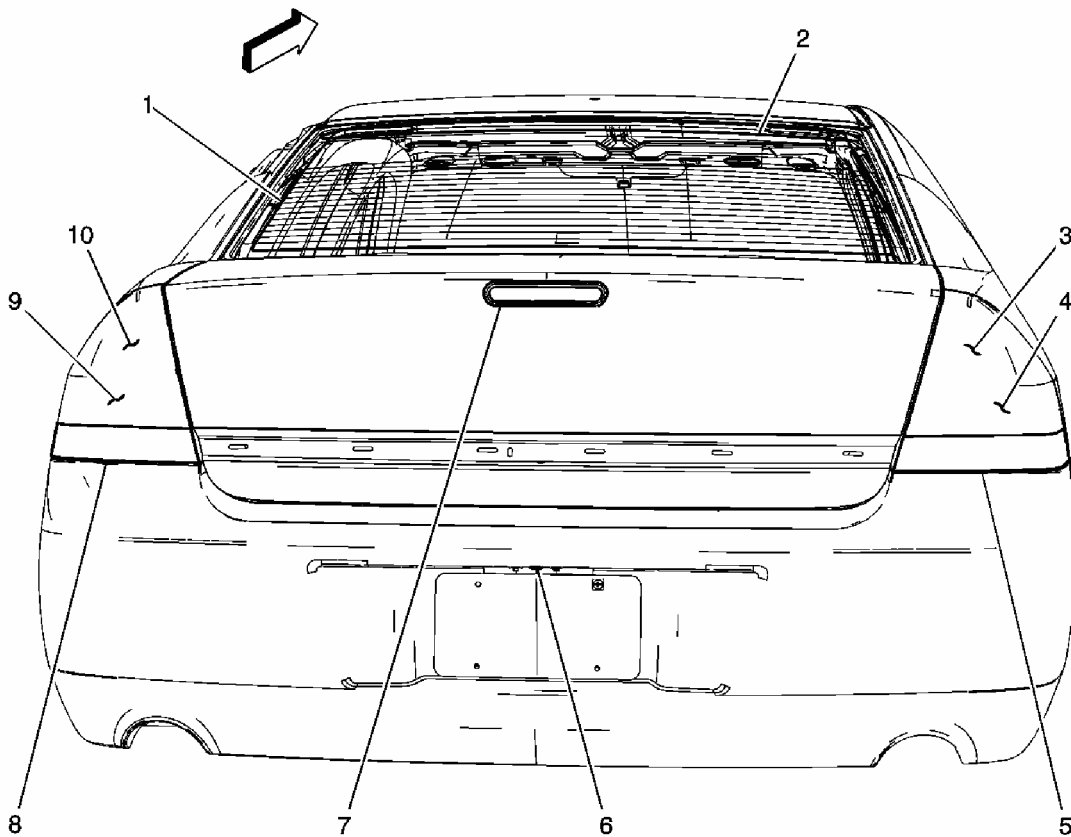


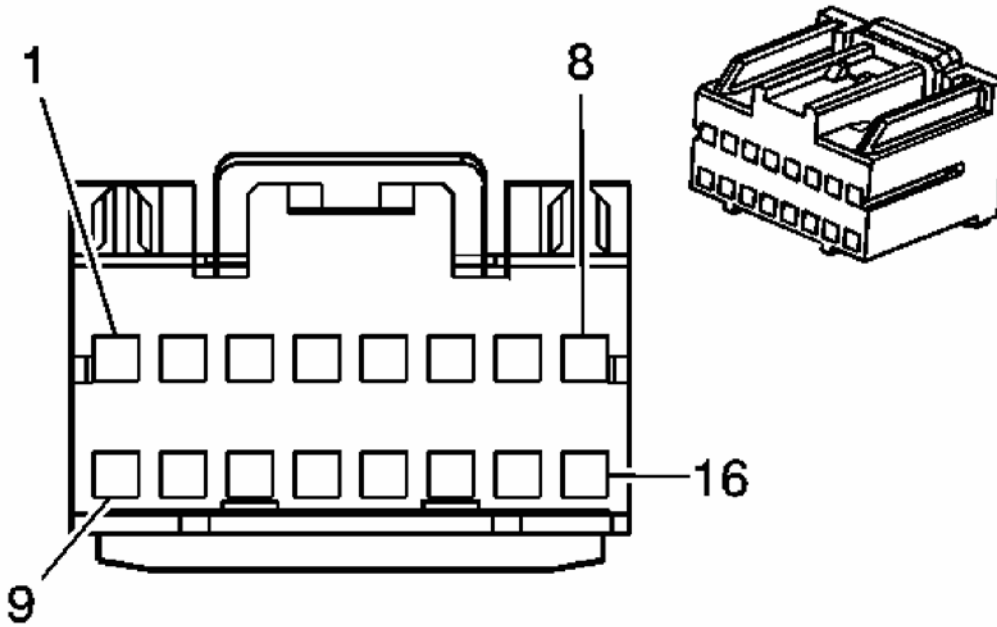
Fig. 4: Rear of the Vehicle
Courtesy of GENERAL MOTORS CORP.

Callouts For Fig. 4

Callout	Component Name
1	Rear Window Defogger Grid
2	Cellular and Navigation Antenna
3	Stop Lamp - Right
4	Tail/Stop and Turn Signal - Right
5	Backup Lamp - Right
6	License Lamp
7	Center High Mounted Stop Lamp (CHMSL)
8	Backup Lamp - Left
9	Tail/Stop and Turn Signal - Left
10	Stop Lamp - Left

STATIONARY WINDOWS CONNECTOR END VIEWS

Inside Rear View Mirror (DD6)

**Fig. 5: Connector End View**

Courtesy of GENERAL MOTORS CORP.

Stationary Windows Connector End Views**Connector Part Information**

- OEM: 15441350
- Service: See Catalog
- Description: 16-Way F Micro 100A (BK)

Terminal Part Information

- Pins: 2, 6, 8, 9, 10, 11, 12, 13, 14, 15
- Terminal/Tray: 15445905
- Core/Insulation Crimp: See Terminal Repair Kit
- Release Tool/Test Probe: See Terminal Repair Kit

Inside Rear View Mirror (DD6)

Pin	Wire Color	Circuit No.	Function
1	-	-	Not Used
2	-	1489	Drain Wire
3-5	-	-	Not Used

2006 Chevrolet Impala LS

2006 ACCESSORIES & EQUIPMENT Stationary Windows - Impala

6	OG	1732	Courtesy Lamps Supply Voltage
7	-	-	Not Used
8	BK	550	Ground
9	L-GN	24	Backup Lamp Supply Voltage
10	GY	655	Cellular Microphone Signal
11	D-GN/WH	2514	Keypad Signal
12	L-GN/BK	2515	Keypad Supply Voltage
13	YE	643	Accessory Voltage
14	YE/BK	2516	Keypad Green LED Signal
15	BN/WH	2517	Keypad Red LED Signal
16	-	-	Not Used

Inside Rear View Mirror (w/o DD6)

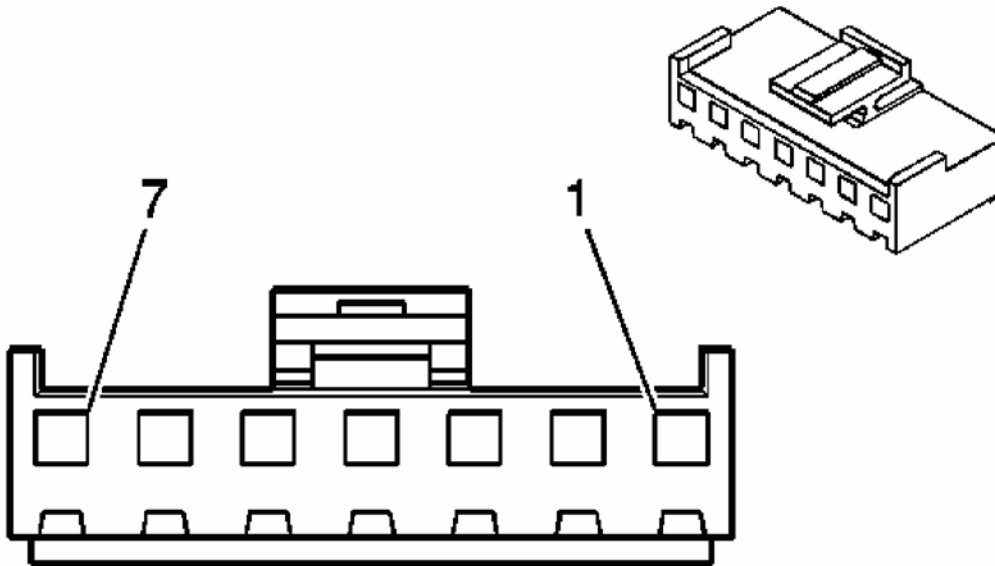


Fig. 6: Connector End View

Courtesy of GENERAL MOTORS CORP.

Stationary Windows Connector End Views

Connector Part Information

- OEM: 12124782
- Service: 15306078

- Description: 7-Way F MISC (BK)

Terminal Part Information

- Pins: 2, 7
- Terminal/Tray: SVH-21T-P1.1/20
- Core/Insulation Crimp: E/2
- Release Tool/Test Probe: 12094429/J-35616-18 (BK)

Inside Rear View Mirror (w/o DD6)

Pin	Wire Color	Circuit No.	Function
1	-	-	Not Used
2	OG	1732	Courtesy Lamps Supply Voltage
3-6	-	-	Not Used
7	BK	550	Ground

Rear Window Defogger Grid C1

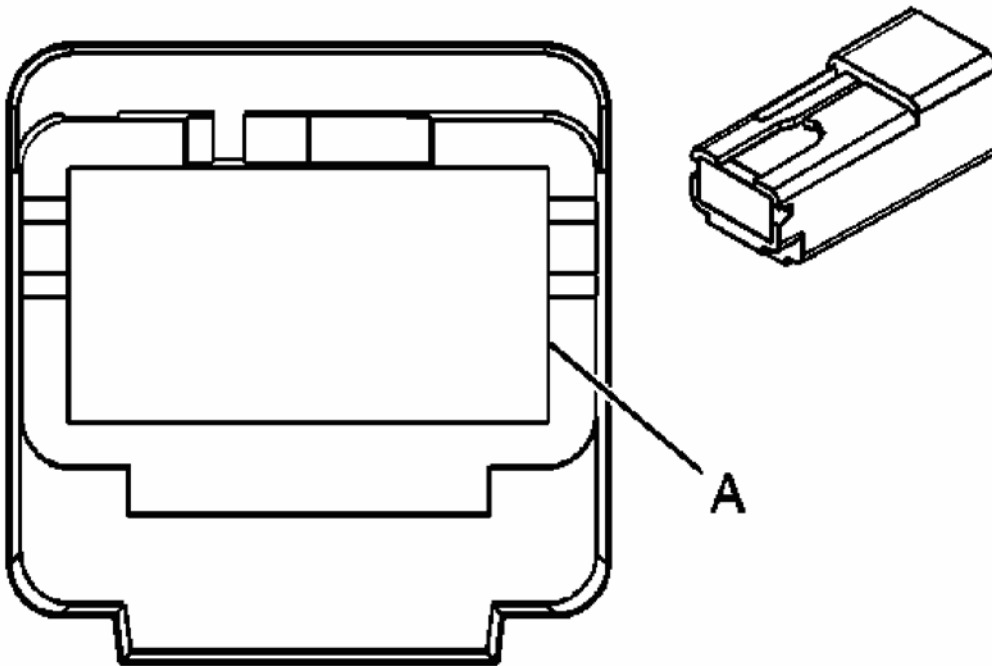


Fig. 7: Rear Window Defogger Grid C1 Connector End View
Courtesy of GENERAL MOTORS CORP.

2006 Chevrolet Impala LS

2006 ACCESSORIES & EQUIPMENT Stationary Windows - Impala

Stationary Windows Connector End Views

Connector Part Information

- OEM: 12092133
- Service: 12167133
- Description: 1-Way F Metri-Pack 630 (BK)

Terminal Part Information

- Pins: A, A
- Terminal/Tray: 12034110/18
- Core/Insulation Crimp: Pins A - F/G
- Core/Insulation Crimp: Pins A - B/G
- Release Tool/Test Probe: 12094430/J-35616-42 (RD)

Rear Window Defogger Grid C1

Pin	Wire Color	Circuit No.	Function
A	PU	293	Rear Defog Element Supply Voltage
A	PU	293	Rear Defog Element Supply Voltage

Rear Window Defogger Grid C2

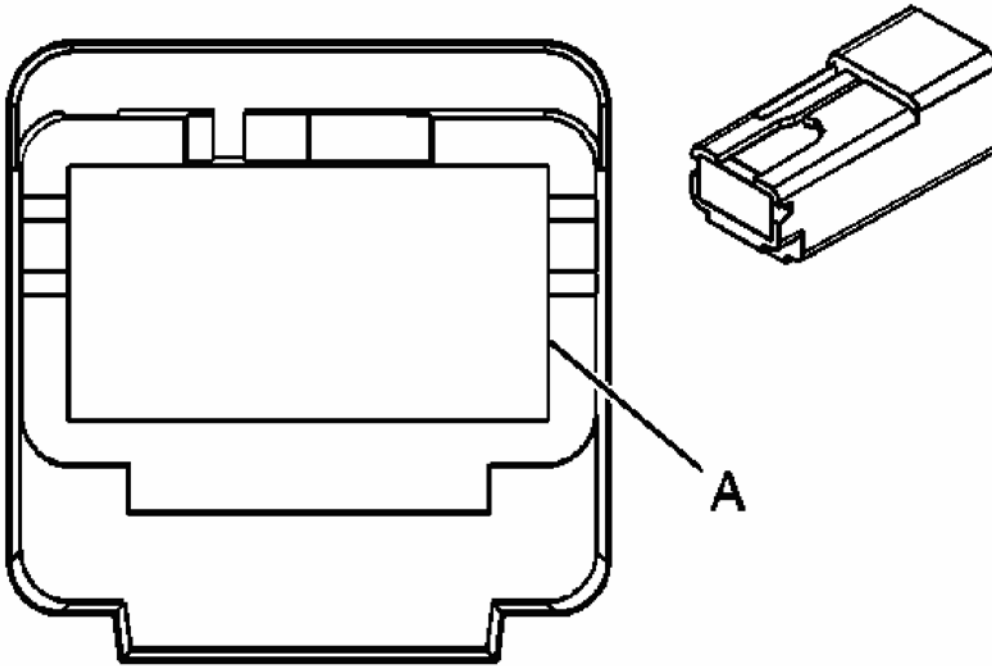


Fig. 8: Rear Window Defogger Grid C2 Connector End View
 Courtesy of GENERAL MOTORS CORP.

Stationary Windows Connector End Views

Connector Part Information

- OEM: 12092133
- Service: 12167133
- Description: 1-Way F Metri-Pack 630 (BK)

Terminal Part Information

- Terminal/Tray: 12034110/18
- Core/Insulation Crimp: B/G
- Release Tool/Test Probe: 12094430/J-35616-42 (RD)

Rear Window Defogger Grid C2

Pin	Wire Color	Circuit No.	Function
A	BK	1150	Ground

DIAGNOSTIC STARTING POINT - STATIONARY WINDOWS

Begin diagnosis with the **Diagnostic System Check - Vehicle** in Vehicle DTC Information. 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 diagnostic trouble codes (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.

SCAN TOOL OUTPUT CONTROLS**Body Control Module**

Scan Tool Output Control	Additional Menu Selection(s)	Description
Rear Defogger Relay	Miscellaneous Test	The Body Control Module actuates the Rear Window Defogger relay. The rear window defogger grid should become warm.

SCAN TOOL DATA LIST**Body Control Module**

Scan Tool Parameter	Data List	Units Displayed	Typical Data Value
Ignition ON/Engine OFF			
Rear Defog Relay	Outputs	On/Off	Off

SCAN TOOL DATA DEFINITIONS**Body Control Module****Rear Defog Relay**

The scan tool displays On/Off. When the rear window defogger switch is depressed, the body control module energizes the Rear Window Defogger relay by grounding the control circuit of the relay, which the scan tool displays as On.

DTC B0283**Circuit Description**

The body control module (BCM) controls the REAR WINDOW DEFOGGER relay circuit. When the ignition switch is in Run position and the operator has depressed the defogger

switch, the BCM provides ground to the REAR WINDOW DEFOGGER relay control circuit and the electronic compass module. The electronic compass module translates the signal to compass data which is then transmitted to the instrument panel cluster (IPC) for display of the rear defogger mode.

DTC Descriptor

This diagnostic procedure supports the following DTC:

DTC B0283

Electric Rear Defrost

Conditions for Running the DTC

The system voltage must be between 9-16 volts.

Conditions for Setting the DTC

- The BCM detects a short to battery positive voltage in the REAR WINDOW DEFOGGER relay control circuit when the BCM is trying to energize the relay.
- The BCM detects that the REAR WINDOW DEFOGGER relay control circuit is open.
- The condition above must be present for more than 1 second.

Action Taken When the DTC Sets

- The BCM stores DTC B0283 in memory.
- The rear window defogger will not operate.

Conditions for Clearing the DTC

- A current DTC clears when the malfunction is no longer present.
- A history DTC clears when the module ignition cycle counter reaches the reset threshold, without a repeat of the malfunction.

Test Description

The numbers below refer to the step numbers on the diagnostic table.

2: Tests for battery positive voltage at the coil side of the rear window defogger relay. The BATT MAIN 3 fuse supplies power to the coil side of the REAR WINDOW DEFOGGER relay.

3: Tests the control circuit side of the REAR WINDOW DEFOGGER relay for faults that cause DTC B0283.

4: Listen for an audible click when the REAR WINDOW DEFOGGER relay operates. Command both the ON and OFF states. Repeat the commands as necessary.

2006 Chevrolet Impala LS

2006 ACCESSORIES & EQUIPMENT Stationary Windows - Impala

5: Verifies that the BCM is providing ground to the REAR WINDOW DEFOGGER relay.

DTC B0283

Step	Action	Yes	No
Schematic Reference: Defogger Schematics			
Connector End View Reference: Stationary Windows Connector End Views			
1	Did you perform the Diagnostic System Check - Vehicle?	Go to Step 2	Go to Diagnostic System Check - Vehicle in Vehicle DTC Information
2	1. Remove the REAR WINDOW DEFOGGER relay. 2. Connect a test lamp between the REAR WINDOW DEFOGGER relay BATT main 3 fused voltage supply circuit and ground at the REAR WINDOW DEFOGGER relay socket. Refer to Circuit Testing in Wiring Systems. 3. Turn ON the ignition, with the engine OFF. Does the test lamp illuminate?	Go to Step 3	Go to Step 8
3	1. Turn OFF the ignition. 2. Test the control circuit of the REAR WINDOW DEFOGGER relay for a short to battery positive voltage and ground. Refer to Circuit Testing in Wiring Systems. Did you find and correct the condition?	Go to Step 11	Go to Step 4
4	1. Connect a test lamp between the BATT main 3 fused voltage supply circuit and the control circuit of the REAR WINDOW DEFOGGER relay socket. 2. Turn ON the ignition, with the engine OFF.		

2006 Chevrolet Impala LS

2006 ACCESSORIES & EQUIPMENT Stationary Windows - Impala

	3. Using a scan tool, command the relay ON then OFF.		
	Does the test lamp turn ON and OFF?	Go to Step 6	Go to Step 5
5	Test the control circuit of the REAR WINDOW DEFOGGER relay for an open. Refer to Circuit Testing in Wiring Systems. Did you find and correct the condition?	Go to Step 11	Go to Step 7
6	Inspect for poor connections and terminal damage at the relay socket. Refer to Testing for Intermittent Conditions and Poor Connections and Connector Repairs in Wiring Systems. Did you find and correct the condition?	Go to Step 11	Go to Step 9
7	Inspect for poor connections at the harness connector of the body control module (BCM). Refer to Testing for Intermittent Conditions and Poor Connections and Connector Repairs in Wiring Systems. Did you find and correct the condition?	Go to Step 11	Go to Step 10
8	Repair the short to ground, poor connection or an open in the BATT 3 fused voltage supply circuit. Refer to Circuit Testing and Wiring Repairs in Wiring Systems. Did you complete the repair?	Go to Step 11	-
9	Replace the REAR WINDOW DEFOGGER relay. Refer to Relay Replacement (Within an Electrical Center) or Relay Replacement (Attached to Wire Harness) in Wiring Systems. Did you complete the replacement?	Go to Step 11	-
10	Replace the BCM. Refer to Control Module References in Computer/Integrating Systems for replacement, setup, and programming. Did you complete the replacement?	Go to Step 11	-
11	1. Use the scan tool in order to clear the DTCs. 2. Operate the vehicle within the Conditions for Running the DTC as specified in the supporting text.		
	Does the DTC reset?	Go to Step 2	System OK

SYMPTOMS - STATIONARY WINDOWS

IMPORTANT: For the inside rearview mirror with the automatic day-night feature, review the system operation in order to familiarize yourself with the system functions. Refer to Automatic Day-Night Mirror Description and Operation.
For the rear window defogger system, the following steps must be performed before using the symptom tables.

1. Perform the Diagnostic System Check - Vehicle in Vehicle DTC Information, before using the symptom tables in order to verify that all of the following are true:
 - There are no DTCs set.
 - The control modules can communicate via the serial data link.
2. Review the rear window defogger system operation in order to familiarize yourself with the system functions. Refer to Rear Window Defogger Description and Operation.
3. Review the Automatic Day-Night Mirror Operation in order to familiarize yourself with the system functions. Refer to Automatic Day-Night Mirror Description and Operation.

Visual/Physical Inspection

- Inspect for aftermarket devices which could affect the operation of the rear window defogger or the automatic day-night feature of the inside rearview mirror. Refer to Checking Aftermarket Accessories in Wiring Systems.
- Inspect the easily accessible or visible system components for obvious damage or conditions which could cause the symptom.

Intermittent

Faulty electrical connections or wiring may be the cause of intermittent conditions. Refer to Testing for Intermittent Conditions and Poor Connections in Wiring Systems.

Symptom List

Refer to a symptom diagnostic procedure from the following list in order to diagnose the symptom:

- Defogger Always On - Rear Window
- Defogger Inoperative - Rear Window
- Mirrors - Automatic Day-Night Inoperative

DEFOGGER ALWAYS ON - REAR WINDOW

2006 Chevrolet Impala LS

2006 ACCESSORIES & EQUIPMENT Stationary Windows - Impala

Defogger Always On - Rear Window

Step	Action	Yes	No
Schematic Reference: Defogger Schematics Connector End View Reference: Master Electrical Component List			
1	Did you perform the Diagnostic System Check - Vehicle?	Go to Step 2	Go to Diagnostic System Check - Vehicle in Vehicle DTC Information
2	1. Turn OFF the ignition. 2. Remove the REAR WINDOW DEFOGGER relay. Does the rear window defogger still on?	Go to Step 5	Go to Step 3
3	Using a test lamp, probe between the REAR WINDOW DEFOGGER relay battery positive voltage coil supply circuit and the REAR WINDOW DEFOGGER relay context circuit. Does the test lamp illuminate?	Go to Step 4	Go to Step 6
4	Test for a short to ground in the REAR WINDOW DEFOGGER relay control circuit. Refer to Circuit Testing and Wiring Repairs in Wiring Systems. Did you find and correct the condition?	Go to Step 8	Go to Step 7
5	Repair a short to battery positive voltage in the rear defog element supply voltage circuit. Refer to Circuit Testing and Wiring Repairs in Wiring Systems. Did you complete the repair?	Go to Step 8	-
6	Replace the REAR WINDOW DEFOGGER relay. Refer to Relay Replacement (Within an Electrical Center) or Relay Replacement (Attached to Wire Harness) in Wiring Systems. Did you complete the replacement?	Go to Step 8	-
7	Replace the body control module (BCM). Refer to Control Module References in Computer/Integrating Systems for replacement, setup, and programming. Did you complete the replacement?	Go to Step 8	-

2006 Chevrolet Impala LS

2006 ACCESSORIES & EQUIPMENT Stationary Windows - Impala

8	Operate the system in order to verify the repair. Did you correct the condition?	System OK	Go to Step 2
---	---	-----------	---------------------

DEFOGGER INOPERATIVE - REAR WINDOW

Test Description

The number below refers to the step number on the diagnostic table.

5: Listen for an audible click when the REAR DEFOG relay operates. Command both the ON and OFF states of the REAR DEFOG relay. Repeat the commands as necessary.

Defogger Inoperative - Rear Window

Step	Action	Yes	No
Schematic Reference: <u>Defogger Schematics</u>			
Connector End View Reference: <u>Stationary Windows Connector End Views</u>			
1	Did you perform the Diagnostic System Check - Vehicle?	Go to Step 2	Go to Diagnostic System Check - Vehicle in Vehicle DTC Information
2	IMPORTANT: Make sure that the park or head lights are turned OFF. The backlighting will effect the illumination of the rear window defogger indicator. 1. Start the engine. 2. Depress the rear window defogger switch. 3. Observe the rear window defogger indicator on the HVAC control module. Does the rear window defogger indicator illuminate?	Go to Step 3	Go to Step 12
3	Connect a test lamp between the rear window defogger grid and ground. Does the test lamp illuminate?	Go to Step 4	Go to Step 5
	Connect a test lamp between the left side of the rear window defogger grid and the right side of the rear window defogger grid.	Go to Testing for Intermittent Conditions and	

2006 Chevrolet Impala LS

2006 ACCESSORIES & EQUIPMENT Stationary Windows - Impala

4	Does the test lamp illuminate?	Poor Connections in Wiring Systems	Go to Step 19
5	Command the REAR DEFOG relay ON and OFF, by depressing the rear defogger switch on the HVAC control module. Do you hear a click when you command the REAR DEFOG relay ON and OFF?	Go to Step 8	Go to Step 6
6	1. Turn OFF the ignition. 2. Disconnect the REAR DEFOG relay. 3. Start the engine. 4. Connect a test lamp between the supply voltage circuit of the REAR DEFOG relay coil and ground. Does the test lamp illuminate?	Go to Step 7	Go to Step 11
7	1. Connect a test lamp between the supply voltage circuit of the REAR DEFOG relay coil and the control circuit of the REAR DEFOG relay. 2. Depress the rear window defogger switch. Does the test lamp illuminate?	Go to Step 17	Go to Step 12
8	1. Turn OFF the ignition. 2. Disconnect the REAR DEFOG relay. 3. Connect a test lamp between the battery positive voltage circuit of the REAR DEFOG relay switched input and ground. Does the test lamp illuminate?	Go to Step 9	Go to Step 13
9	1. Connect a 30-amp fused wire between the battery positive voltage circuit of the REAR DEFOG relay switched input and the relay switched output to the supply voltage circuit of the rear window defogger grid. 2. Connect a test lamp between the rear window defogger grid and ground.		

2006 Chevrolet Impala LS

2006 ACCESSORIES & EQUIPMENT Stationary Windows - Impala

	Does the test lamp illuminate?	Go to Step 17	Go to Step 10
10	1. Disconnect the harness connector of the radio antenna module. 2. Connect a test lamp between the supply voltage circuit of the rear window defogger grid and ground. Does the test lamp illuminate?	Go to Step 14	Go to Step 21
11	Test the supply voltage circuit of the REAR DEFOG relay coil for an open or short to ground. Refer to Circuit Testing and to Wiring Repairs in Wiring Systems. Did you find and correct the condition?	Go to Step 26	Go to Step 16
12	Test the control circuit of the REAR DEFOG relay for an open or short to battery positive voltage. Refer to Circuit Testing and to Wiring Repairs in Wiring Systems. Did you find and correct the condition?	Go to Step 26	Go to Step 15
13	Test the battery positive voltage circuit of the REAR DEFOG relay switched input for an open or short to ground. Refer to Circuit Testing and to Wiring Repairs in Wiring Systems. Did you find and correct the condition?	Go to Step 26	Go to Step 20
14	Test the supply voltage circuit of the rear window defogger grid between the radio antenna module and the rear window defogger grid for an open or high resistance. Refer to Circuit Testing and to Wiring Repairs in Wiring Systems. Did you find and correct the condition?	Go to Step 26	Go to Step 18
15	Inspect for a poor connection at the harness connector of the HVAC control module. Refer to Testing for Intermittent Conditions and Poor Connections and to Connector Repairs in Wiring Systems. Did you find and correct the condition?	Go to Step 26	Go to Step 22
16	Inspect for a poor connection at the harness connector of the body control module (BCM). Refer to Testing for Intermittent Conditions and Poor Connections and to Connector Repairs in Wiring Systems.		

2006 Chevrolet Impala LS

2006 ACCESSORIES & EQUIPMENT Stationary Windows - Impala

	Did you find and correct the condition?	Go to Step 26	Go to Step 23
17	Inspect for a poor connection at the REAR DEFOG relay. Refer to Testing for Intermittent Conditions and Poor Connections and to Connector Repairs in Wiring Systems. Did you find and correct the condition?	Go to Step 26	Go to Step 24
18	Inspect for a poor connection at the harness connector of the radio antenna module. Refer to Testing for Intermittent Conditions and Poor Connections and to Connector Repairs in Wiring Systems. Did you find and correct the condition?	Go to Step 26	Go to Step 25
19	Repair an open or high resistance in the ground circuit of the rear window defogger grid. Refer to Wiring Repairs in Wiring Systems. Did you complete the repair?	Go to Step 26	-
20	Repair the short to ground in the supply voltage circuit of the rear window defogger grid. Refer to Wiring Repairs in Wiring Systems. Did you complete the repair?	Go to Step 26	-
21	Repair an open or high resistance in the supply voltage circuit of the rear window defogger grid. Refer to Wiring Repairs in Wiring Systems. Did you complete the repair?	Go to Step 26	-
22	Replace the HVAC control module. Refer to Control Module References in Computer/Integrating Systems for replacement, setup, and programming. Did you complete the replacement?	Go to Step 26	-
23	Replace the BCM. Refer to Control Module References in Computer/Integrating Systems for replacement, setup, and programming. Did you complete the replacement?	Go to Step 26	-
24	Replace the REAR DEFOG relay. Refer to Relay Replacement (Within an Electrical Center) or Relay Replacement (Attached to Wire Harness) in Wiring Systems. Did you complete the replacement?	Go to Step 26	-

25	Replace the radio antenna module. Refer to Antenna Module Replacement in Entertainment. Did you complete the replacement?	Go to Step 26	-
26	Operate the system in order to verify the repair. Did you correct the condition?	System OK	Go to Step 2

DEFOGGER GRID LINES DIAGNOSIS

1. Start the engine.
2. Activate the rear window defogger system.
3. Connect a test lamp to ground.

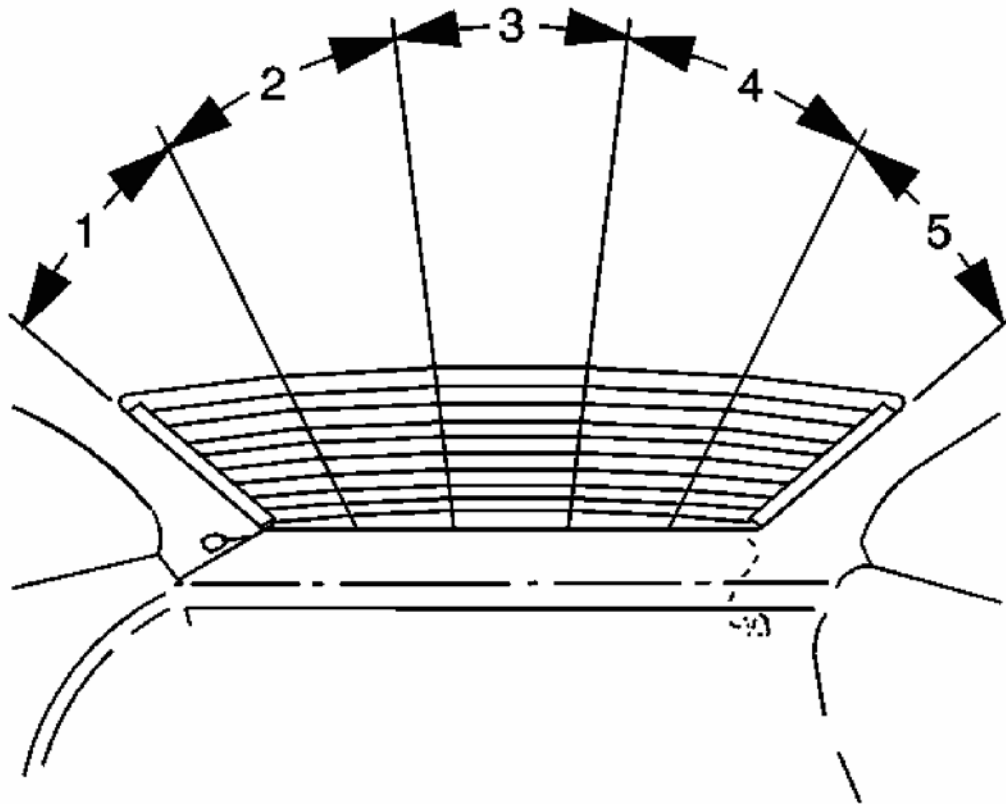


Fig. 9: Identifying Defogger Grid Line Zones
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: The test lamp brilliance will decrease proportionately to

the increased resistance in the grid line as the probe is moved from the battery positive bus wire to the ground bus wire. The test lamp brilliance may vary from one window to another.

4. Move the test lamp probe from zone 5 to zone 1 along each grid line.
 - If the test lamp shows full brilliance at both ends of the grid lines, inspect for an open or poor connection in the ground circuit of the rear window defogger grid. Refer to **Testing for Intermittent Conditions and Poor Connections** and **Connector Repairs** in Wiring Systems.

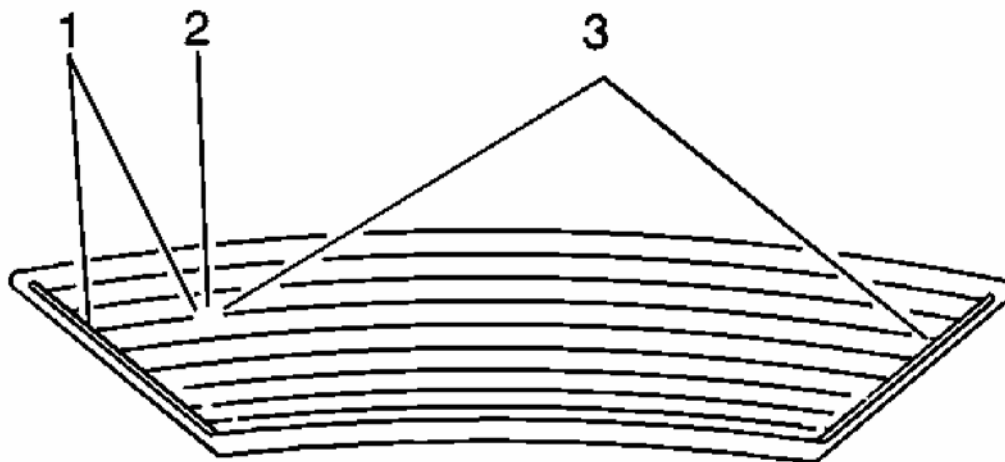


Fig. 10: Identifying Grid Line Test Locations
Courtesy of GENERAL MOTORS CORP.

- If the test lamp goes out, test the grid line in at least 2 places (1, 3) to eliminate the possibility of bridging the open (2) in the grid line.
5. If an open is discovered replace the rear window. Refer to **Rear Window Replacement**.

MIRRORS - AUTOMATIC DAY-NIGHT INOPERATIVE

Diagnostic Aids

The automatic day-night feature of the inside rearview mirror may not operate properly or become inoperative due to an intermittent short to battery voltage in the backup lighting system.

2006 Chevrolet Impala LS

2006 ACCESSORIES & EQUIPMENT Stationary Windows - Impala

Mirrors - Automatic Day-Night Inoperative

Step	Action	Value(s)	Yes	No
Schematic Reference: Inside Rearview Mirror Schematics Connector End View Reference: Master Electrical Component List in Wiring Systems				
1	Did you perform the Diagnostic System Check - Vehicle?	-	Go to Step 2	Go to Diagnostic System Check - Vehicle in Vehicle DTC Information
2	1. Turn ON the ignition, with the engine OFF. 2. Turn ON the automatic day-night feature of the inside rearview mirror. 3. Cover the sensor on the inside rearview mirror back, facing the front window. 4. Shine a bright light into the sensor on the inside rearview mirror face, facing the rear window. Does the inside rearview mirror darken?	-	Go to Diagnostic Aids	Go to Step 3
3	1. Turn OFF the ignition. 2. Disconnect the harness connector of the inside rearview mirror. 3. Measure the resistance between the ground circuit of the inside rearview mirror and ground. Is the resistance less than the specified value?	3 ohms	Go to Step 4	Go to Step 9
4	1. Turn ON the ignition, with the engine OFF. 2. Measure the voltage between the ignition voltage circuit and the ground circuit of the inside	9-16 V		

2006 Chevrolet Impala LS

2006 ACCESSORIES & EQUIPMENT Stationary Windows - Impala

	rearview mirror. Is the voltage within the specified range?		Go to Step 5	Go to Step 10
5	1. Place the transmission in PARK. 2. Measure the voltage between the backup lamp supply voltage circuit and the ground circuit of the inside rearview mirror. Is the voltage less than the specified value?	0.5 V	Go to Step 6	Go to Backup Lamps Inoperative in Lighting Systems
6	1. Place the transmission in REVERSE. 2. Measure the voltage between the backup lamp supply voltage circuit and the ground circuit of the inside rearview mirror. Is the voltage within the specified range?	9-16 V	Go to Step 8	Go to Step 7
7	Test the backup lamp supply voltage circuit of the inside rearview mirror for an open or short to ground. Refer to Circuit Testing and Wiring Repairs in Wiring Systems. Did you find and correct the condition?	-	Go to Step 12	Go to Backup Lamps Inoperative in Lighting Systems
8	Inspect for poor connections at the harness connector of the inside rearview mirror. Refer to Testing for Intermittent Conditions and Poor Connections and Connector Repairs in Wiring Systems. Did you find and correct the condition?	-	Go to Step 12	Go to Step 11
9	Repair an open or high resistance in the ground circuit of the inside rearview mirror. Refer to Wiring Repairs in Wiring Systems. Did you complete the repair?	-	Go to Step 12	-
	Repair an open or short to ground in			

10	the ignition voltage circuit of the inside rearview mirror. Refer to Wiring Repairs in Wiring Systems. Did you complete the repair?	-	Go to Step 12	-
11	Replace the inside rearview mirror. Refer to Rearview Mirror Replacement . Did you complete the replacement?	-	Go to Step 12	-
12	Operate the system in order to verify the repair. Did you correct the condition?	-	System OK	Go to Step 2

REPAIR INSTRUCTIONS

STATIONARY WINDOW REVEAL MOLDING REPAIR

Removal Procedure

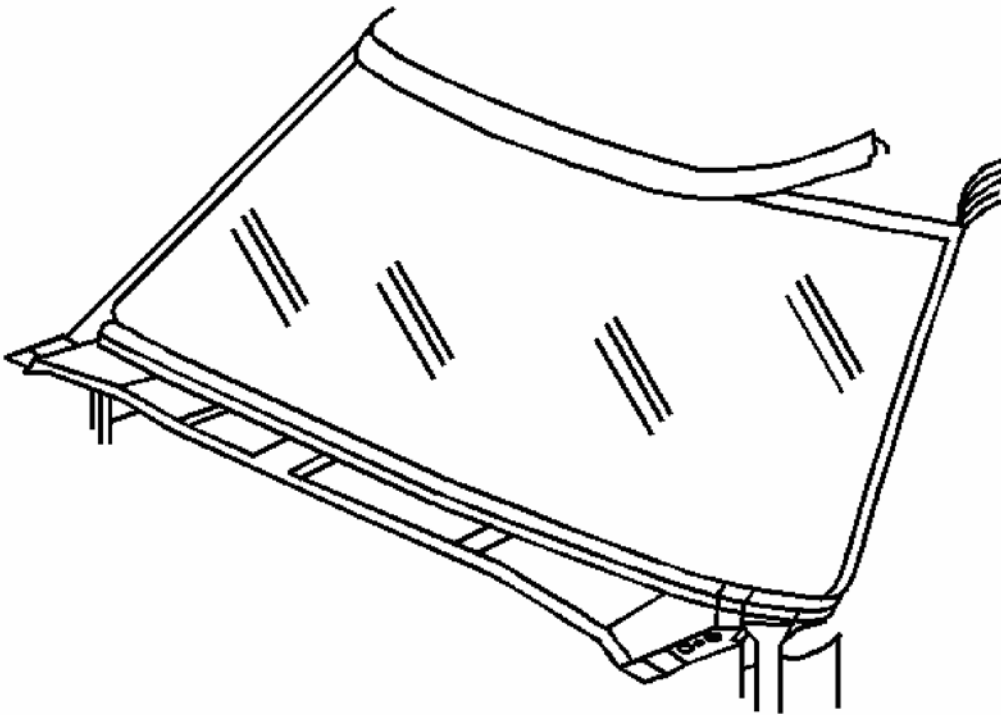


Fig. 11: View Of Window Reveal Molding
Courtesy of GENERAL MOTORS CORP.

CAUTION: Refer to GLASS AND SHEET METAL HANDLING CAUTION in Cautions and Notices.

IMPORTANT: The window reveal molding fills the cavity between the body and window. If the reveal molding is stretched or damaged, it cannot be reused and it must be replaced.

1. Lift up on the loose area of the reveal molding.
2. Clean the top edge of the window surface and the reveal molding with a 50/50 mixture of isopropyl alcohol and water by volume on a dampened lint-free cloth.

Installation Procedure

CAUTION: Refer to Window Retention Caution in Cautions and Notices.

1. Verify all primers and urethane adhesive are within expiration dates.

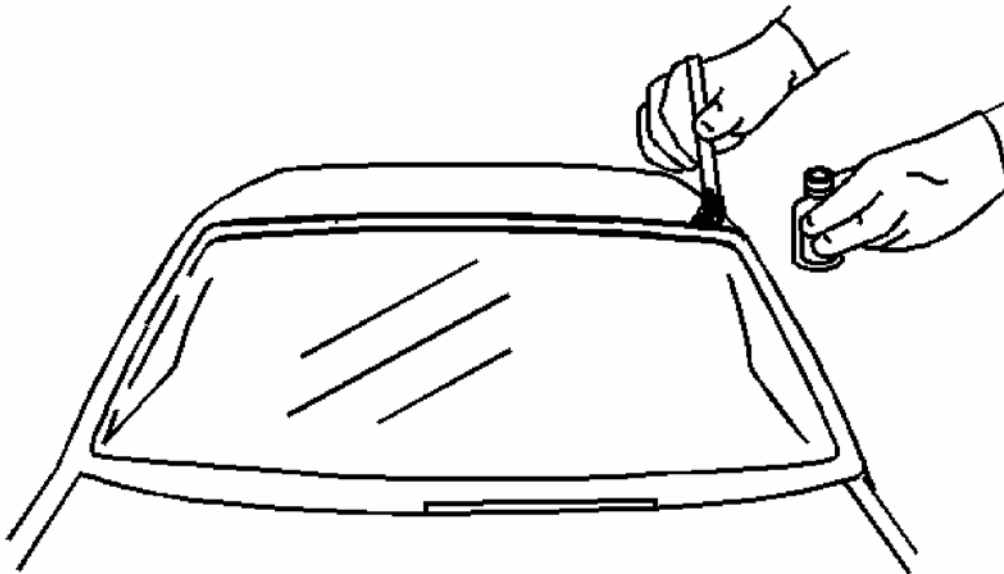


Fig. 12: Applying Glass Prep
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Use care when applying the prep, clear #1, to the window. This primer dries almost instantly, and may stain the

viewing area of the window if not applied evenly.

2. Use a new dauber in order to apply glass prep, clear #1, to the channel area approximately 13 mm (1/2 in) to the upper edge of the window.
3. Wipe the glass primed area immediately with a clean lint-free cloth.
4. Shake the glass primer, black #2, for at least 1 minute.
5. Use a new dauber in order to apply glass primer, black #2, to the top edge of the window.

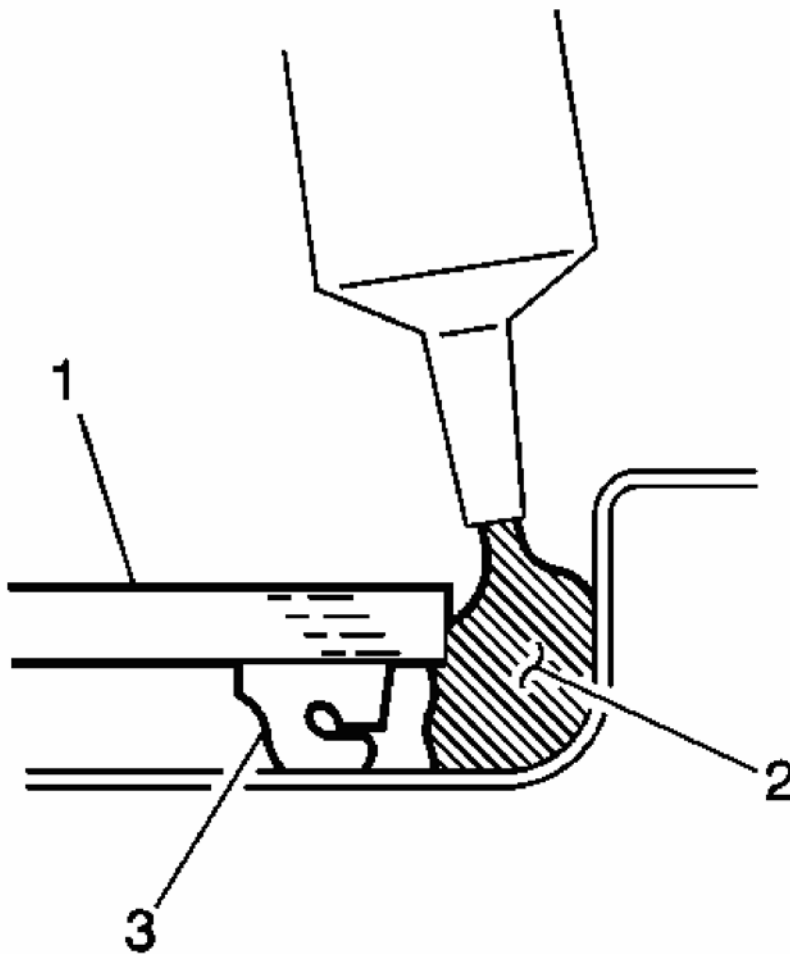


Fig. 13: Applying Urethane Adhesive Between Window & Pinch-Weld
Courtesy of GENERAL MOTORS CORP.

6. Apply a small bead of urethane adhesive (2) between the window (1) and the pinch-

weld.

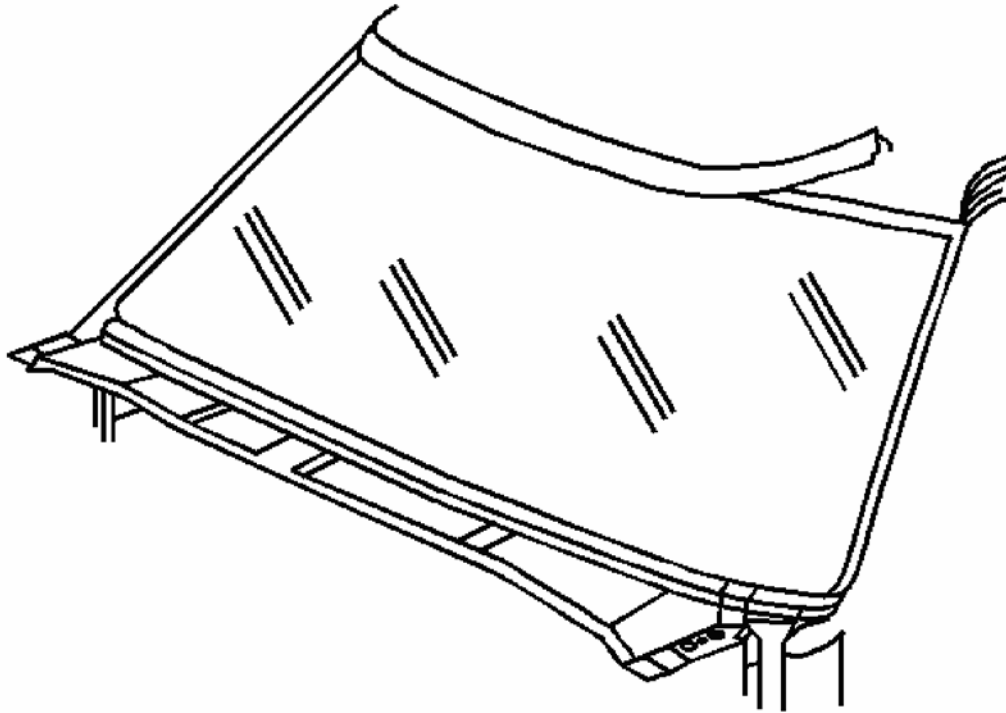


Fig. 14: View Of Window Reveal Molding
Courtesy of GENERAL MOTORS CORP.

7. Reinstall the window reveal molding.
 1. Start from the loose area and hand-press the reveal molding into place over the edge of the window.
 2. Run warm water over the reveal molding in order to speed the setup time of the urethane adhesive.
 3. Tape should be applied in order to retain the reveal molding to the window. This will maintain a flush fit with the body.
 4. The tape is to be removed after 6 hours.

WINDSHIELD REVEAL MOLDING REPLACEMENT

The windshield reveal molding is an applied molding design separate from the window. The reveal molding is bonded to the windshield and may be bonded to the body. The reveal molding may be replaced with the windshield as an assembly, or the reveal molding may be available as a separate service part. Refer to **Urethane Adhesive Installation of Stationary**

Windows.

REAR WINDOW REVEAL MOLDING REPLACEMENT

The rear window reveal molding is an applied molding design separate from the window. The rear window reveal molding is bonded to the rear window and may be bonded to the body. The rear window reveal molding may be replaced with rear window as an assembly, or the rear window reveal molding may be available as a separate service part. Refer to Urethane Adhesive Installation of Stationary Windows.

REARVIEW MIRROR REPLACEMENT

Removal Procedure

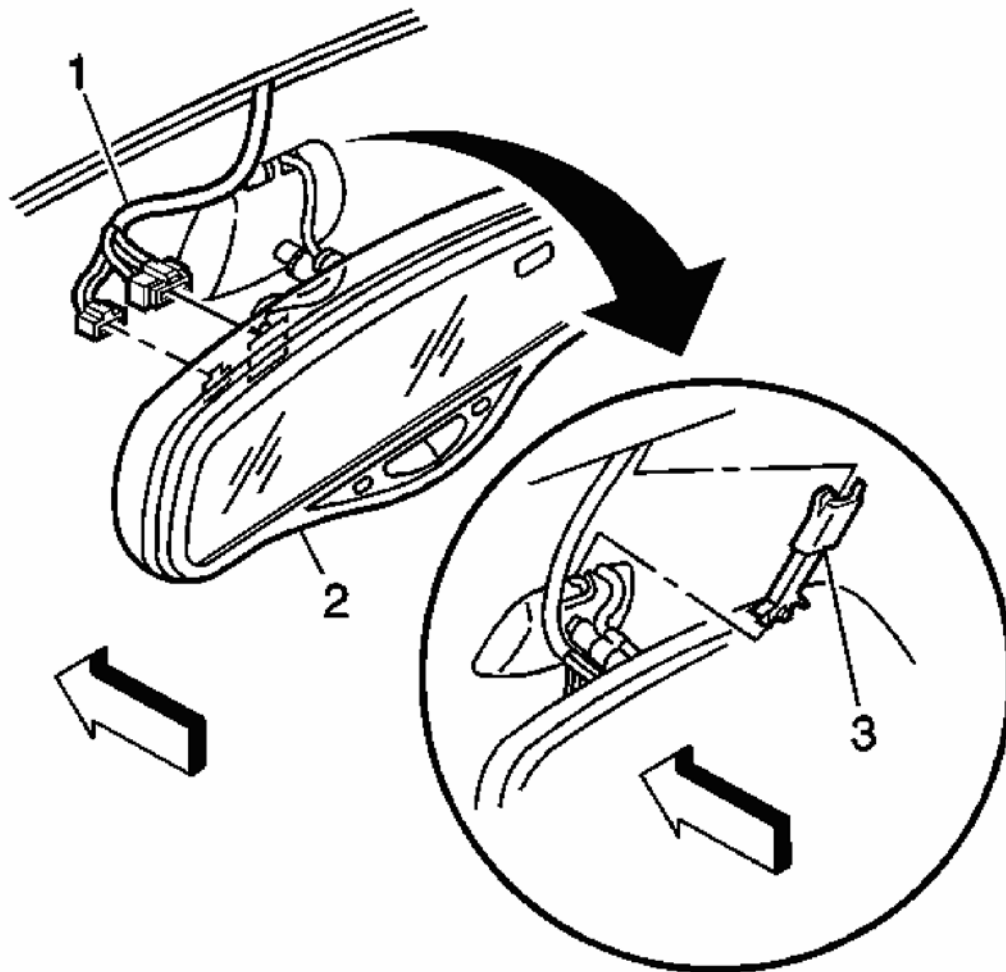


Fig. 15: Rearview Mirror Electrical Connector

Courtesy of GENERAL MOTORS CORP.

1. Disconnect the electrical connector (3) from the back of the mirror.
2. Remove the wire harness cover.
3. Adjust the mirror to the full upward position.
4. Remove the base trim cover.

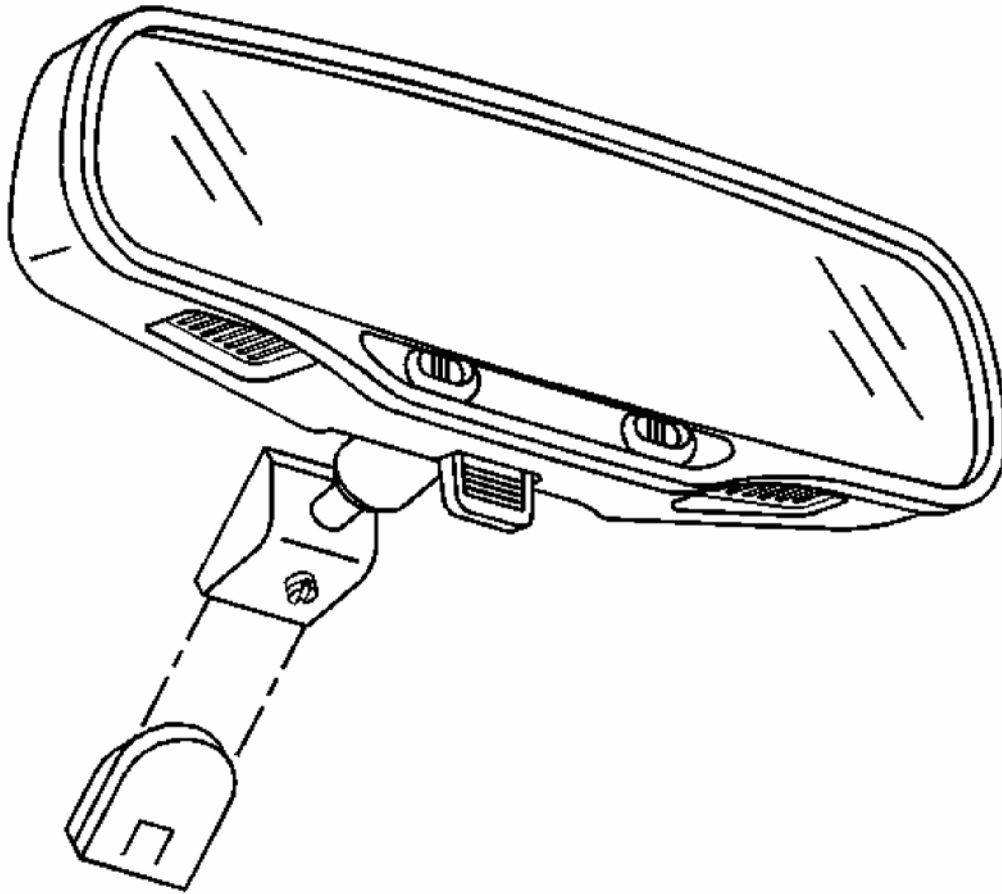


Fig. 16: Removing/Installing Rearview Mirror
Courtesy of GENERAL MOTORS CORP.

5. Loosen the screw at the base in order to remove the mirror from the button.
6. Slide the mirror in an upward motion in order to remove.

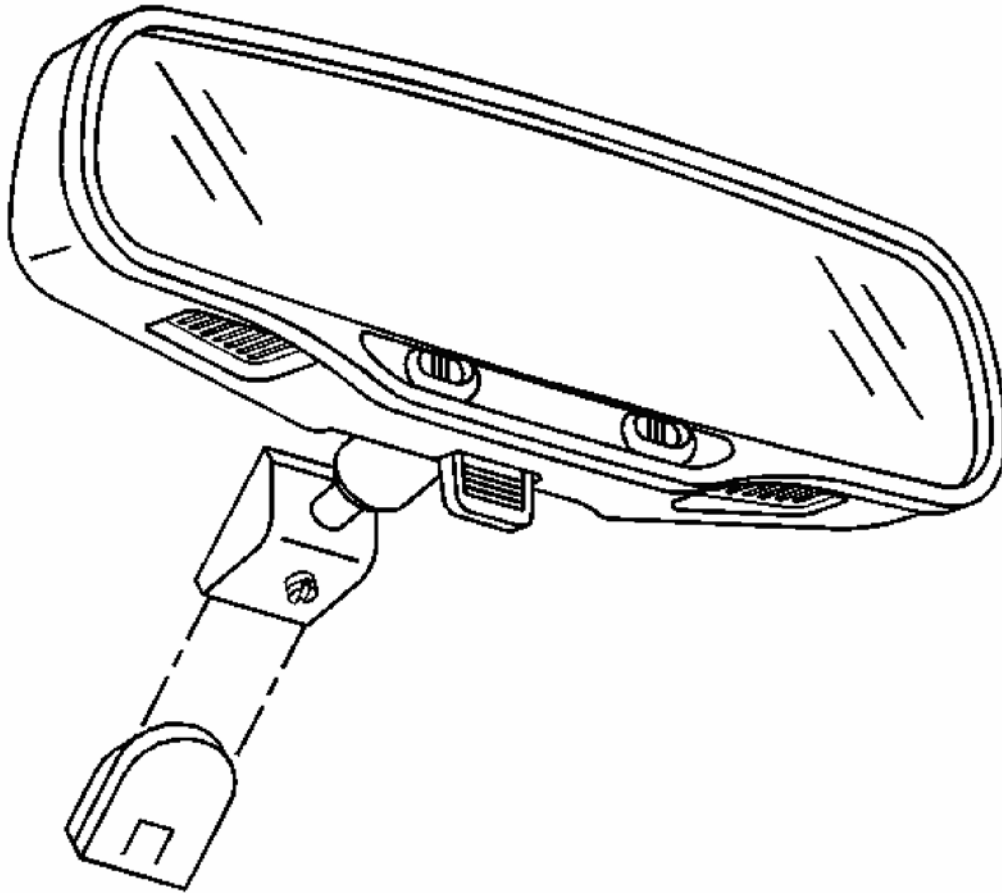


Fig. 17: Removing/Installing Rearview Mirror
Courtesy of GENERAL MOTORS CORP.

1. Position the center bottom of the mirror mount against the windshield at the top of the support button.
2. Slide the base of the mirror onto the button.

NOTE: Refer to **FASTENER NOTICE** in Cautions and Notices.

3. Make sure the mirror is firmly seated on the windshield button by pushing down on the base of the mirror.

Tighten: Tighten the screw (3) to 1.8 N.m (16 lb in) in order to secure the mirror base to the button.

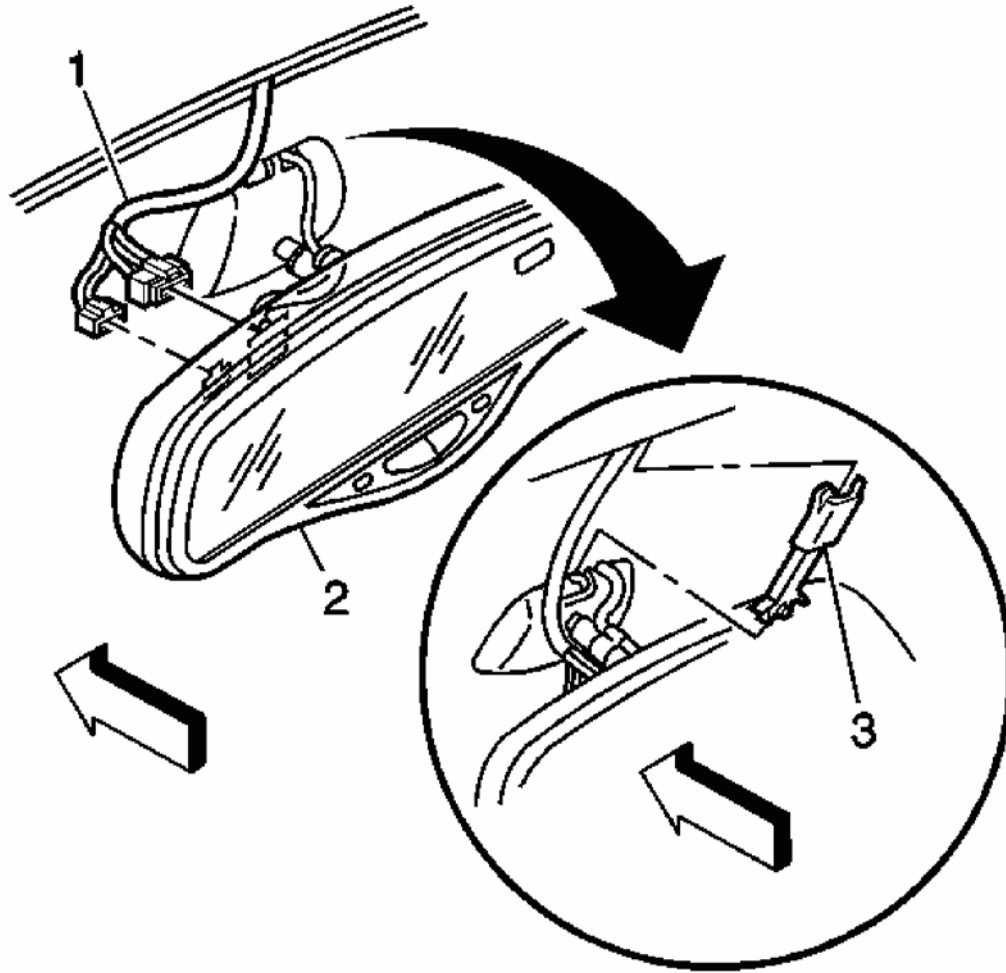


Fig. 18: Rearview Mirror Electrical Connector
Courtesy of GENERAL MOTORS CORP.

4. Install the base trim cover.
5. Connect the electrical connector (3) to the back of the mirror.
6. Install the wire harness cover.
7. Reposition the mirror.

REARVIEW MIRROR SUPPORT INSTALLATION

Tools Required

- Inside Mirror Adhesive Kit GM P/N 1052369 (Canadian P/N 993362), or equivalent
- Safety Razor or Utility Knife

1. Determine the location of the mirror mounting base by marking the outside of the windshield with a marking pencil where the base was previously located. If it is not clear where the base was mounted, use the following steps to determine where the base should be installed:

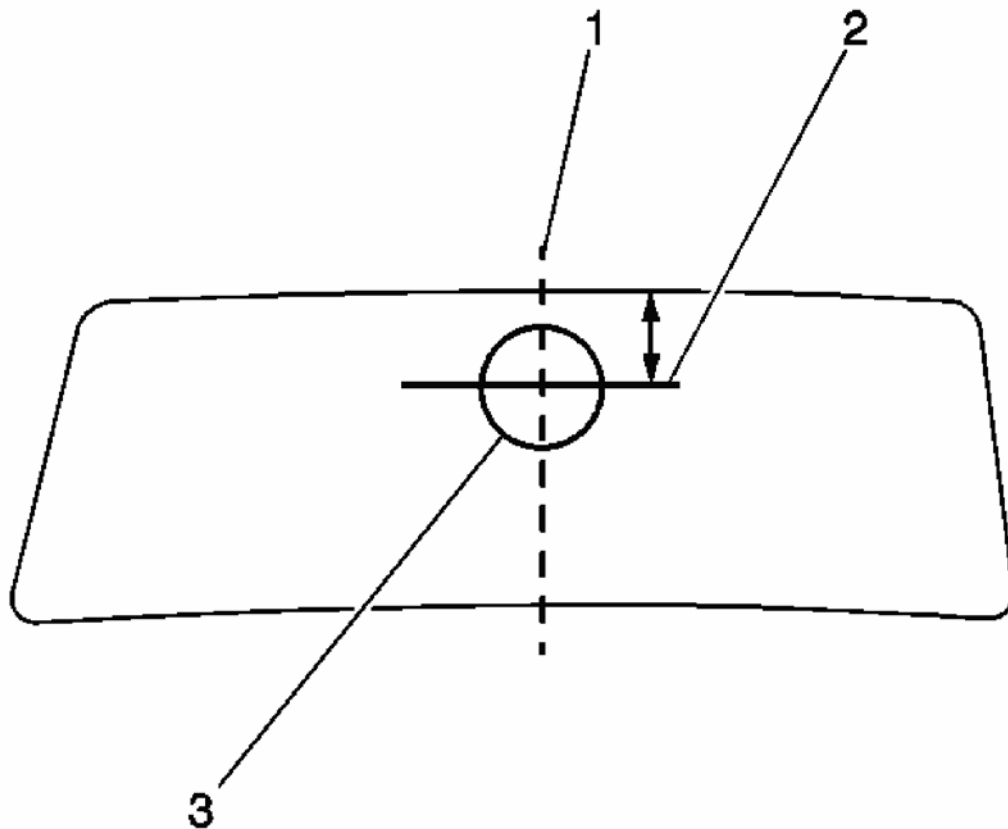


Fig. 19: Identifying Mirror Mounting Base Location
Courtesy of GENERAL MOTORS CORP.

1. Using a measuring tape, measure the distance between the windshield pillars from the base of the shade line .
2. Using a marking pencil, halfway between the windshield pillars, draw a centerline (1) on the windshield from the roof panel to the windshield base.
3. Draw a perpendicular line intersecting the centerline (2) at that location.

The top center of the mirror mounting base will be at the intersection of these lines.

2. Scrape the inside windshield thoroughly with a safety razor or utility knife in order to

remove all old adhesive.

3. If reinstalling the original mounting base, place the mirror mounting base in a suitable holding device, such as a vise.
4. Clean the mirror mounting base thoroughly with a safety razor or utility knife in order to remove all old adhesive.
5. Clean the inside windshield and the mounting surface of the mirror mounting base thoroughly with a clean cloth saturated with naphtha or a 50/50 mixture (by volume) of clean water and isopropyl alcohol.

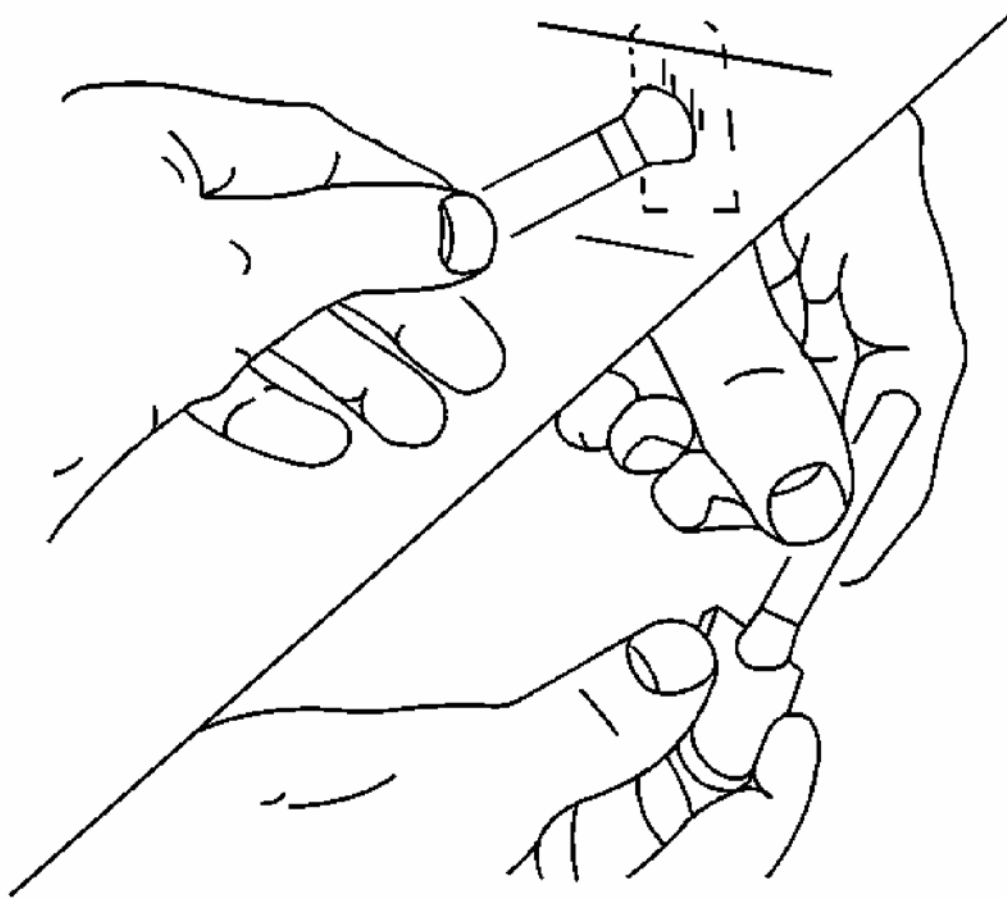


Fig. 20: Applying Adhesive To Mirror Base & Window
Courtesy of GENERAL MOTORS CORP.

6. Use Inside Mirror Adhesive Kit GM P/N 1052369 (Canadian P/N 993362), or equivalent, to apply a small amount of activator to the mounting surface of the mirror mounting base.
7. Apply a small amount of activator to the windshield where the mounting base is to be

installed.

8. Allow the activator to dry 5 minutes.

IMPORTANT: Do not touch the mounting surface of the mirror mounting base or the window.

9. Apply 1 drop of adhesive to the center of the mirror mounting base.

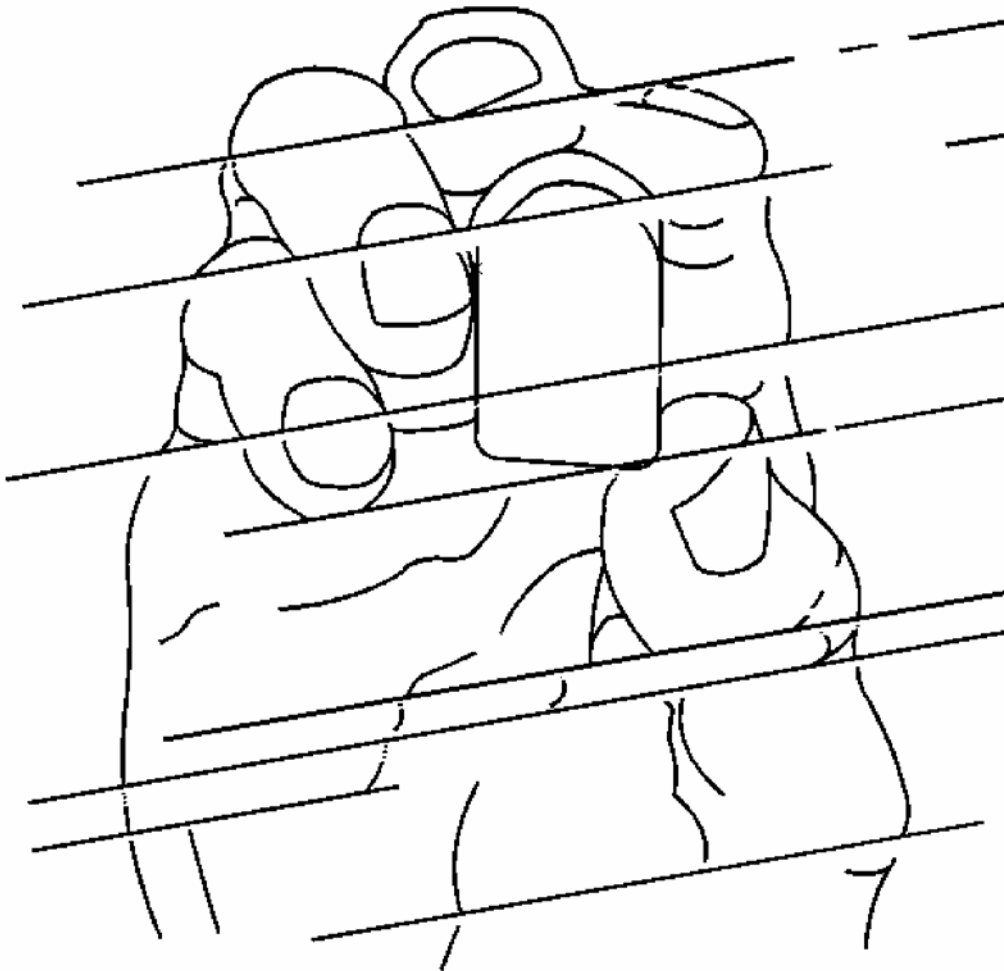


Fig. 21: Installing Mirror Mounting Base
Courtesy of GENERAL MOTORS CORP.

10. Immediately apply the mounting base to the windshield, ensuring that the mounting base aligns correctly to the marks made on the outside of the windshield.
11. Hold the mounting base firmly in place for 1 minute.

12. Allow the adhesive to set for 15 minutes.
13. Install the mirror to the mirror mounting base and fasten, if necessary.
14. Connect the electrical connector and install the wire cover, if equipped.

WINDSHIELD REPLACEMENT

Tools Required

- **J 24402-A** Glass Sealant Cold Knife Remover. See **Special Tools**.
- **J 39032** Stationary Glass Removal Tool. See **Special Tools**.
- Urethane Adhesive Kit GM P/N 12346392 or Equivalent
- Isopropyl Alcohol or Equivalent
- Cartridge-type Caulking Gun
- Commercial-type Utility Knife
- Razor Blade Scraper
- Suction Cups
- Plastic Paddle

Removal Procedure

IMPORTANT: Before cutting out a stationary window, apply a double layer of masking tape around the perimeter of the painted surfaces and the interior trim.

1. Open the hood.
2. Remove the windshield wiper arms and blades. Refer to **Wiper Arm Replacement** in Wipers/Washers Systems.
3. Remove the air inlet grille. Refer to **Air Inlet Grille Panel Replacement** in Body Front End.
4. Remove the windshield garnish moldings. Refer to **Garnish Molding Replacement - Windshield Pillar (Impala)** or **Garnish Molding Replacement - Windshield Pillar (Monte Carlo)** in Interior Trim.
5. Remove the rearview mirror. Refer to **Rearview Mirror Replacement** in Squeaks and Rattles.

CAUTION: If broken glass falls into the defroster outlets, it can be blown into the passenger compartment and cause personal injury.

6. Cover to protect the following parts from broken glass:
 1. Upper dash pad.

2. Defroster outlets and A/C outlets.
3. Seats and carpeting.

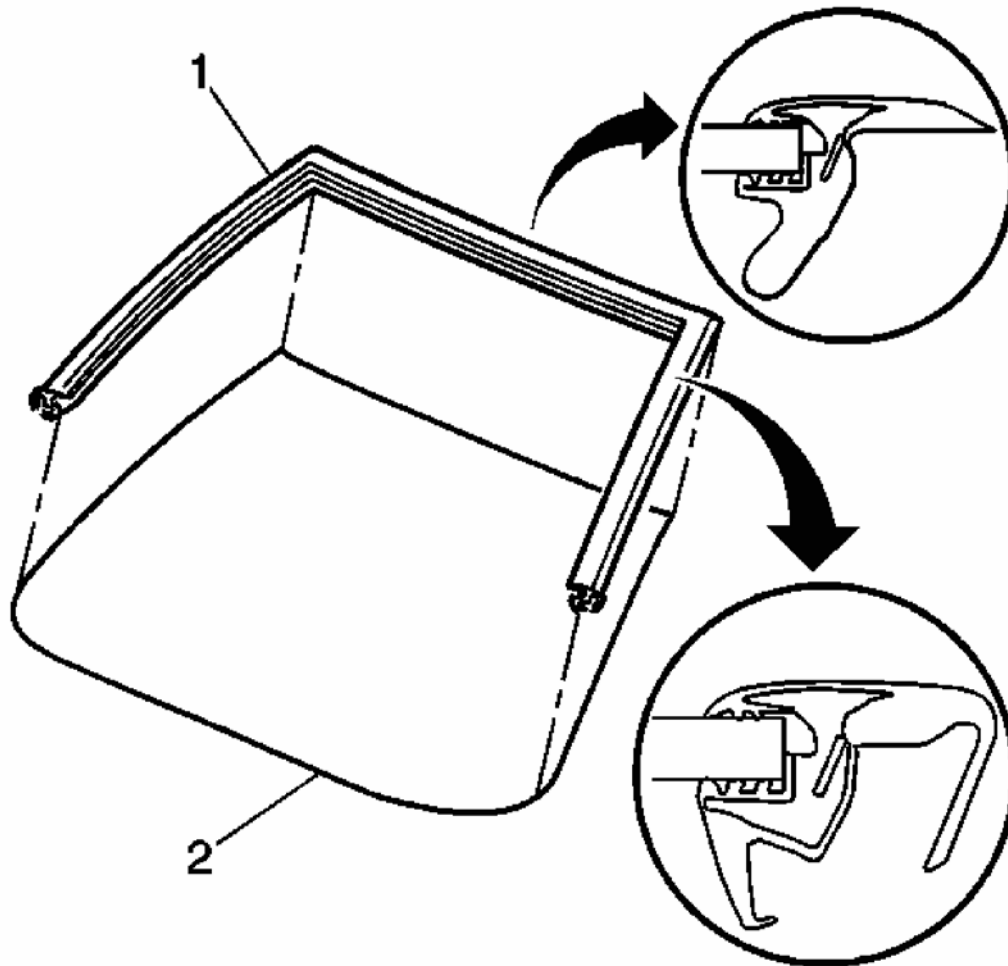


Fig. 22: Identifying Windshield Reveal Molding
Courtesy of GENERAL MOTORS CORP.

CAUTION: Refer to GLASS AND SHEET METAL HANDLING
CAUTION in Cautions and Notices.

IMPORTANT: The windshield reveal molding (1) is a one piece molding and fills the cavities between the body and windshield (2).

7. If the windshield reveal molding (1) is stretched or damaged it can not be reused.

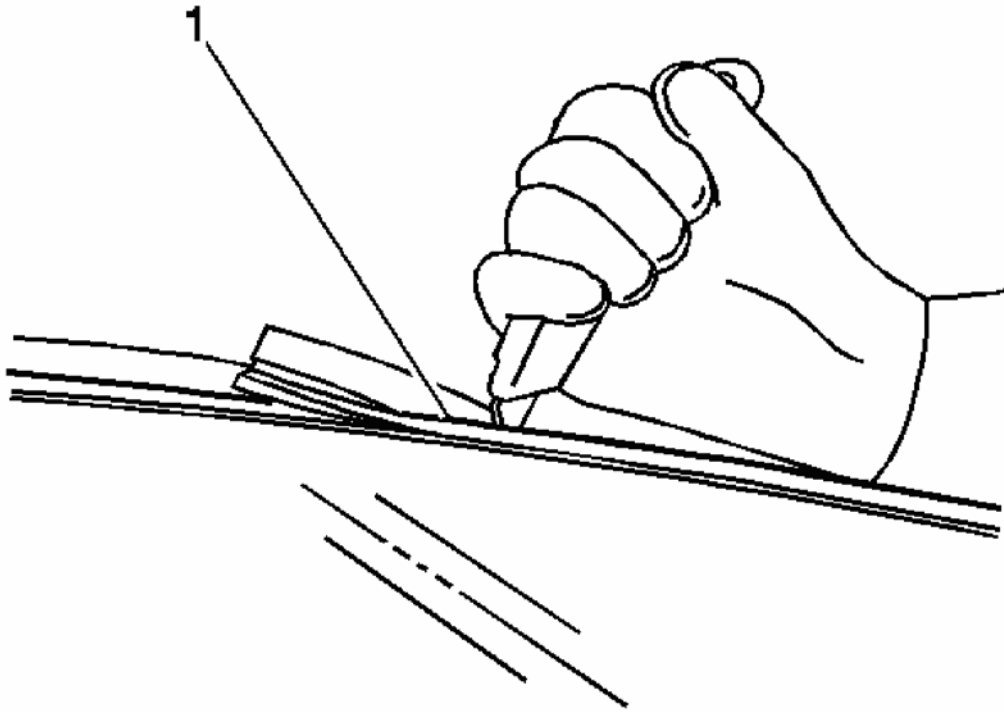


Fig. 23: Using Utility Knife To Remove Reveal Molding
Courtesy of GENERAL MOTORS CORP.

8. Remove the windshield reveal molding (1). Refer to **Windshield Reveal Molding Replacement**.

Grasp the lower corner of the windshield reveal molding by hand and slowly pull the reveal molding away from the windshield.

If the windshield reveal molding will not release, use a utility knife in order to cut around the windshield in order to remove the windshield reveal molding.

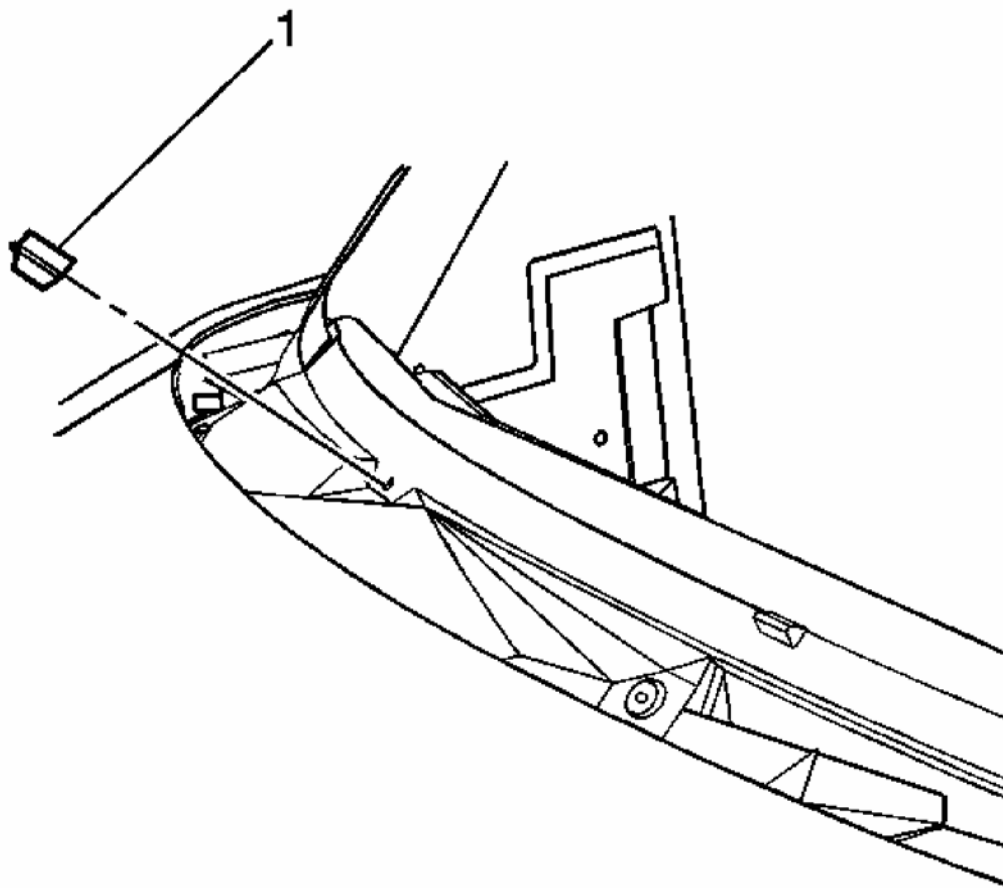


Fig. 24: Identifying Lower Windshield Supports
Courtesy of GENERAL MOTORS CORP.

9. Remove the lower windshield supports (1) from the cowl panel, if equipped.

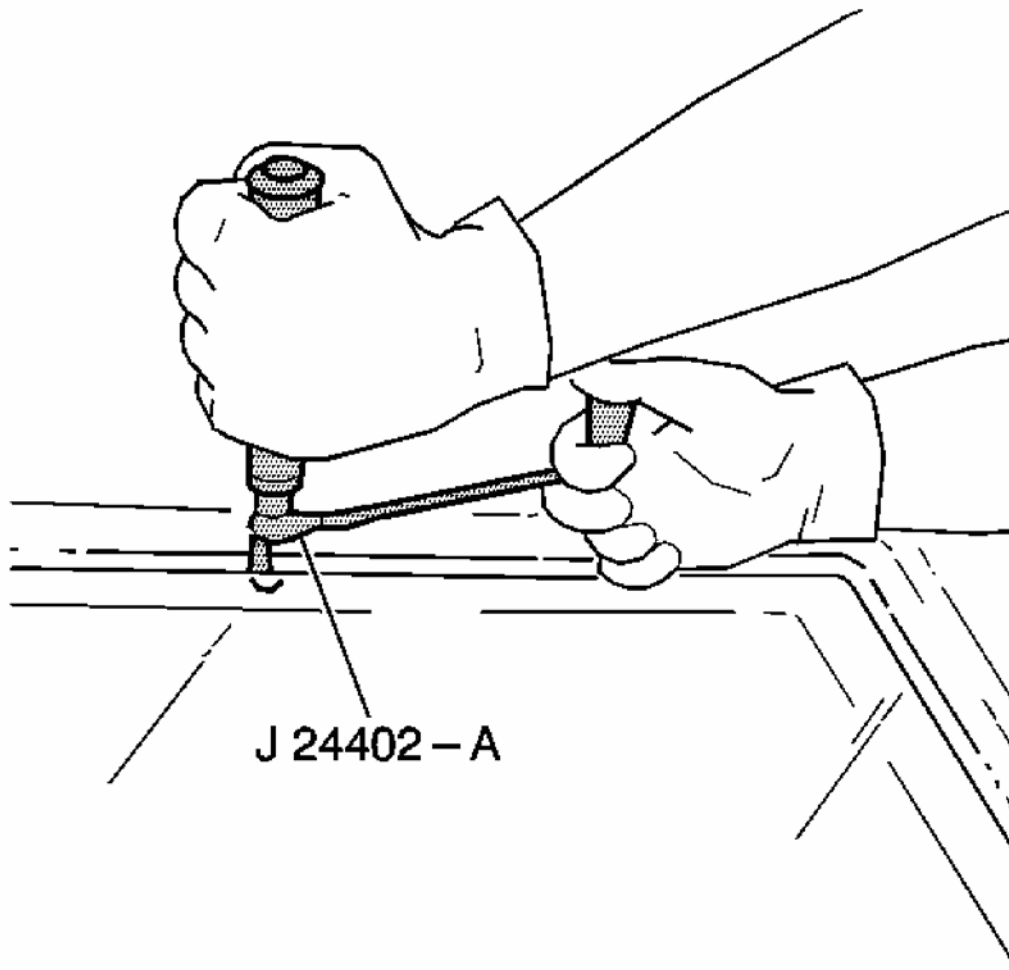


Fig. 25: Separating Urethane Adhesive From Window
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Keep the cutting edge of the tool against the window.

10. This will allow the urethane adhesive to be separated from the window.
 - Leave a base of urethane on the pinch-weld flange.
 - The only suitable lubrication is clear water.
 - Use **J 24402-A** , **J 39032** or equivalent in order to remove the window. See **Special Tools**.

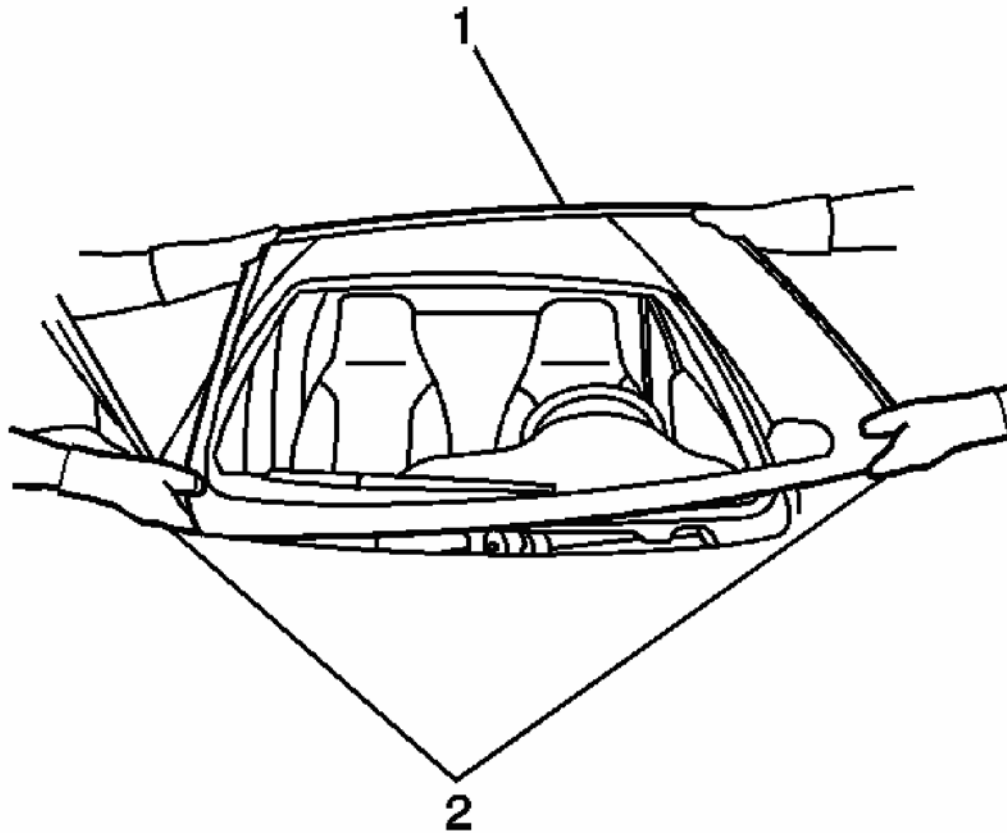


Fig. 26: Removing/Installing Windshield
Courtesy of GENERAL MOTORS CORP.

11. Remove the windshield (1) from the vehicle with the aid of an assistant (2).

Installation Procedure

1. Install a stationary window into the opening. Refer to **Urethane Adhesive Installation of Stationary Windows**.
2. Install the rearview mirror. Refer to **Rearview Mirror Replacement** in Squeaks and Rattles.
3. Install the windshield garnish molding. Refer to **Garnish Molding Replacement - Windshield Pillar (Impala)** or **Garnish Molding Replacement - Windshield Pillar (Monte Carlo)** in Interior Trim.
4. Install the air inlet grille. Refer to **Air Inlet Grille Panel Replacement** in Body Front End.
5. Install the windshield wipers arms and blades. Refer to **Wiper Arm Replacement** in

Wipers/Washer Systems.

6. Remove the double layer of masking tape around the perimeter of the painted surfaces and the interior trim.
7. Close the hood.

QUARTER WINDOW REPLACEMENT (MONTE CARLO)

Tools Required

- **J 39032** Stationary Glass Removal Tool. See **Special Tools**.
- Urethane Adhesive Kit GM P/N 12346392 or Equivalent
- Isopropyl Alcohol or Equivalent
- Cartridge-type Caulking Gun
- Commercial-type Utility Knife
- Razor Blade Scraper
- Suction Cups
- Plastic Paddle

Removal Procedure

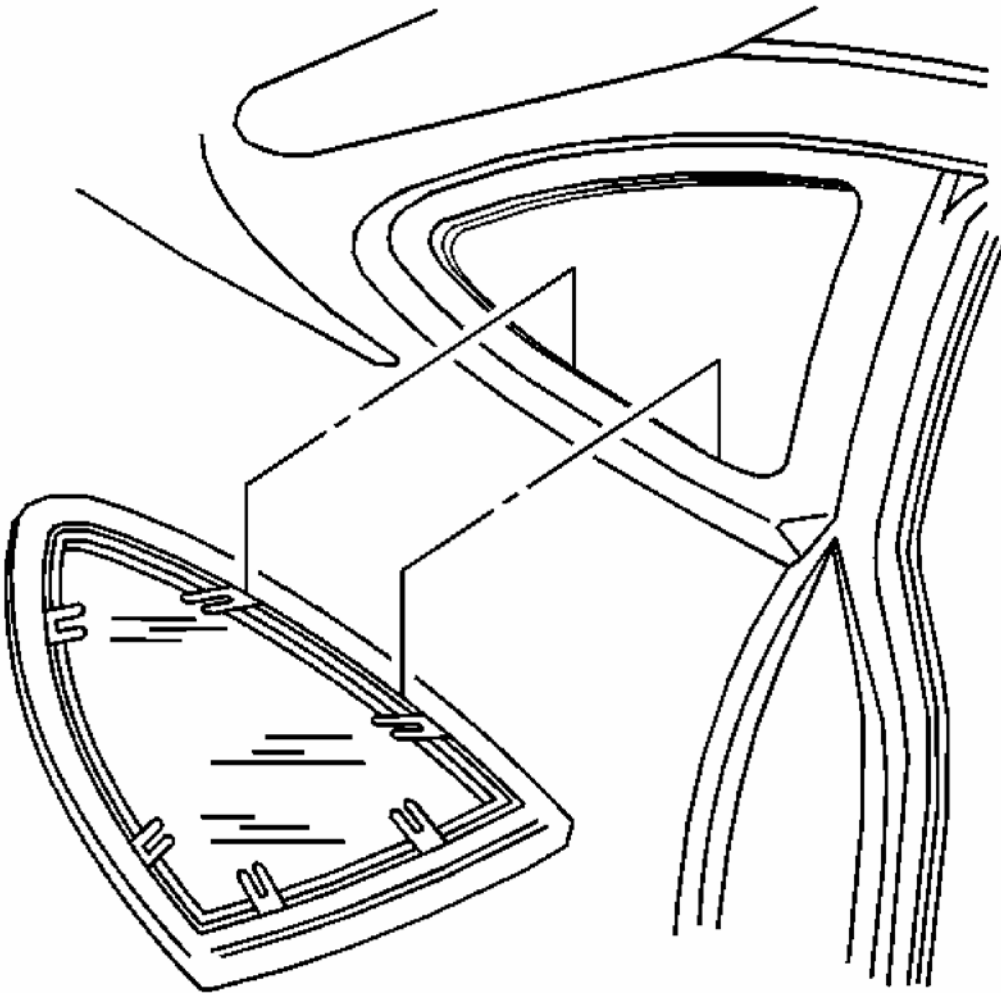


Fig. 27: View Of Rear Quarter Trim
Courtesy of GENERAL MOTORS CORP.

CAUTION: If a window is cracked but still intact, crisscross the window with masking tape in order to reduce the risk of damage or personal injury.

IMPORTANT: Before cutting out a stationary window, apply a double layer of masking tape around the perimeter of the painted surfaces and inner trim.

1. Remove the rear quarter upper trim. Refer to Trim Panel Replacement - Rear Quarter Upper (Impala) or Trim Panel Replacement - Rear Quarter Upper

(Monte Carlo) in Interior Trim.

2. Remove the rear quarter lower trim. Refer to **Trim Panel Replacement - Rear Quarter Lower (Impala)** or **Trim Panel Replacement - Rear Quarter Lower (Monte Carlo)** in Interior Trim.

CAUTION: Refer to GLASS AND SHEET METAL HANDLING CAUTION in Cautions and Notices.

IMPORTANT: Keep the cutting edge of the tool against the window. Do this from inside the vehicle to protect the outer painted surface.

3. This will allow the urethane adhesive to be separated from the window.
 - Leave a base of urethane on the pinch-weld flange.
 - The only suitable lubrication is clear water.
 - Use **J 39032** or equivalent in order to remove the window. See **Special Tools**.
 - Remove the quarter modular window from the pinch-weld flange.

Installation Procedure

1. Install a stationary window into the opening. Refer to **Urethane Adhesive Installation of Stationary Windows**.
2. Install the rear quarter lower trim. Refer to **Trim Panel Replacement - Rear Quarter Lower (Impala)** or **Trim Panel Replacement - Rear Quarter Lower (Monte Carlo)** in Interior Trim.
3. Install the rear quarter upper trim panel. Refer to **Trim Panel Replacement - Rear Quarter Upper (Impala)** or **Trim Panel Replacement - Rear Quarter Upper (Monte Carlo)** in Interior Trim.
4. Remove the double layer of masking tape around the perimeter of the painted surfaces and the interior trim.

QUARTER WINDOW REPLACEMENT (IMPALA)

Tools Required

- **J 39032** Stationary Glass Removal Tool. See **Special Tools**.
- Urethane Adhesive Kit GM P/N 12346392 or Equivalent
- Isopropyl Alcohol or Equivalent
- Cartridge-type Caulking Gun
- Commercial-type Utility Knife
- Razor Blade Scraper

- Suction Cups
- Plastic Paddle

Removal Procedure

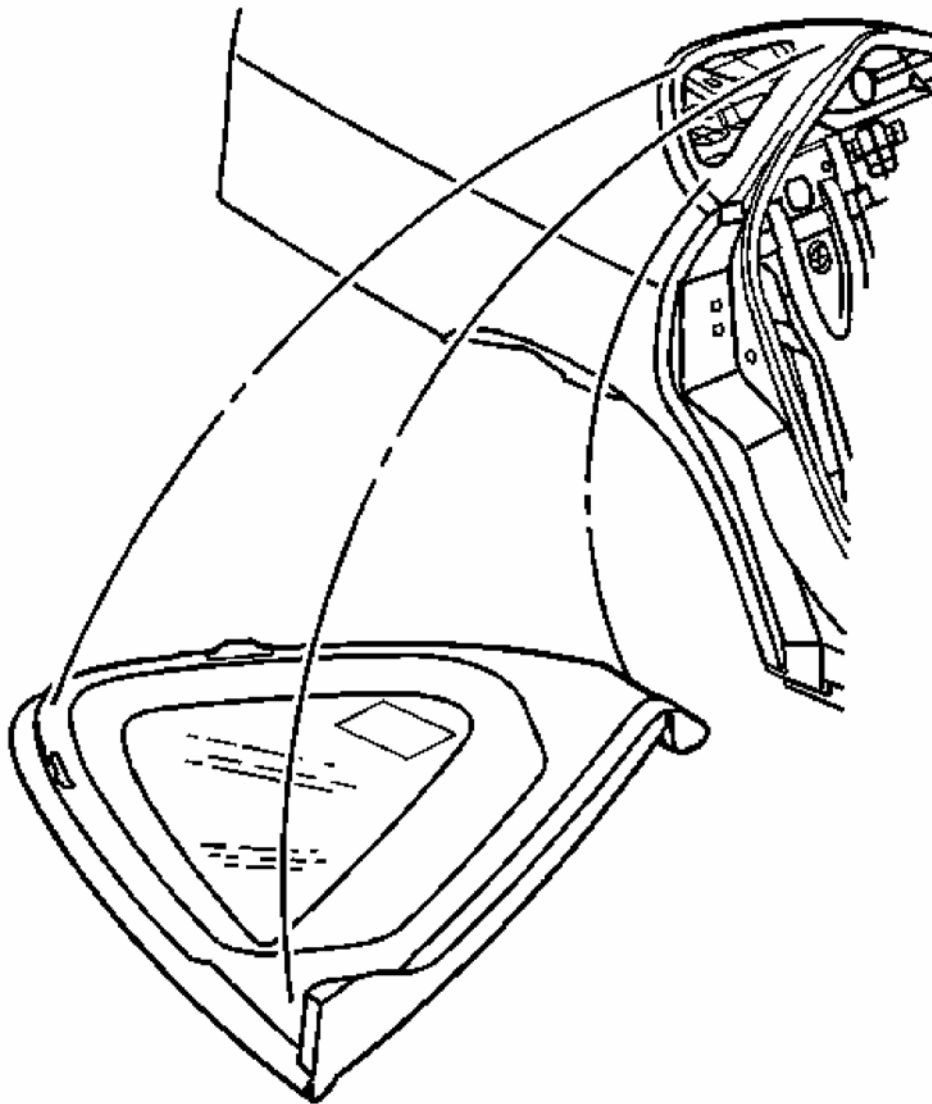


Fig. 28: Quarter Panel (Impala)
Courtesy of GENERAL MOTORS CORP.

CAUTION: If a window is cracked but still intact, crisscross the window with masking tape in order to reduce the risk of

damage or personal injury.

IMPORTANT: Before cutting out a stationary window, apply a double layer of masking tape around the perimeter of the painted surfaces and inner trim of the window.

1. Remove the rear quarter upper trim. Refer to Trim Panel Replacement - Rear Quarter Upper (Impala) or Trim Panel Replacement - Rear Quarter Upper (Monte Carlo) in Interior Trim.
2. Remove the rear quarter lower trim. Refer to Trim Panel Replacement - Rear Quarter Lower (Impala) or Trim Panel Replacement - Rear Quarter Lower (Monte Carlo) in Interior Trim.

CAUTION: Refer to GLASS AND SHEET METAL HANDLING CAUTION in Cautions and Notices.

IMPORTANT: Keep the cutting edge of the tool against the window. Do this from inside the vehicle to protect the outer painted surface.

3. This will allow the urethane adhesive to be separated from the window.
 - Leave a base of urethane on the pinch-weld flange.
 - The only suitable lubrication is clear water.
 - Use **J 39032** or equivalent in order to remove the window. See Special Tools.
 - Remove the quarter modular window from the pinch-weld flange.

Installation Procedure

1. Install a stationary window into the opening. Refer to Urethane Adhesive Installation of Stationary Windows.
2. Install the rear quarter lower trim. Refer to Trim Panel Replacement - Rear Quarter Lower (Impala) or Trim Panel Replacement - Rear Quarter Lower (Monte Carlo) in Interior Trim.
3. Install the rear quarter upper trim panel. Refer to Trim Panel Replacement - Rear Quarter Upper (Impala) or Trim Panel Replacement - Rear Quarter Upper (Monte Carlo) in Interior Trim.
4. Remove the double layer of masking tape around the perimeter of the painted surfaces and the interior trim.

URETHANE ADHESIVE INSTALLATION OF STATIONARY WINDOWS

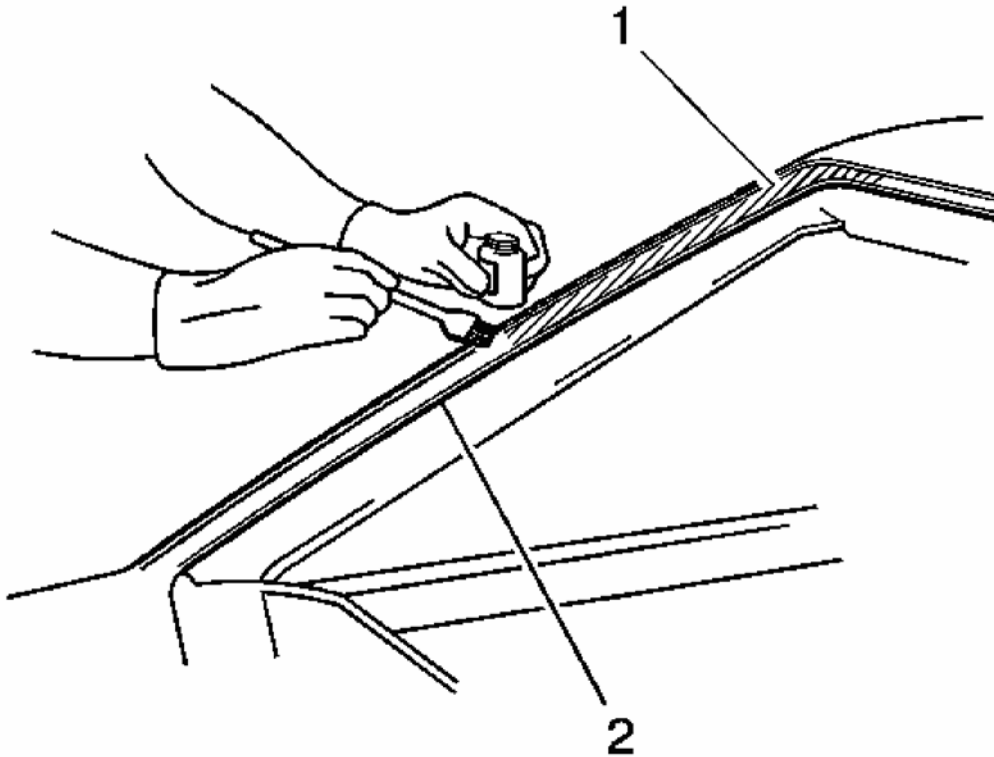


Fig. 29: Applying Pinch-Weld Primer
Courtesy of GENERAL MOTORS CORP.

CAUTION: Refer to GLASS AND SHEET METAL HANDLING CAUTION in Cautions and Notices.

IMPORTANT: Remove all but approximately 2 mm (3/64 in) of the existing bead of urethane adhesive from the pinch-weld flange.

1. Remove all mounds or loose pieces of urethane adhesive from the pinch-weld area.
2. If the original window is being reused, remove all but a thin film of the existing urethane adhesive from the window surface by using a clean utility knife or razor blade scraper.
3. Inspect the following components for the causes of a broken window:
 - The flange of the window opening
 - The window reveal molding
4. Inspect for any of the following problems in order to help prevent future breakage of the window:

- High weld
- Solder spots on the pinchweld
- Hardened sealer
- Any other obstruction or irregularity in the pinch-weld flange

IMPORTANT: If corrosion of the pinch-weld flange is present or if sheet metal repairs or replacements are required, the pinch-weld flange must be refinished in order to restore the bonding area strength. If paint repairs are required, mask the flange bonding area prior to applying the color coat in order to provide a clean primer only surface. Materials such as BASF DE15®, DuPont 2610®, Sherwin-Williams PSE 4600 and NP70® and Martin-Semour 5120 and 5130® PPG DP90LF SPIES/ HECKER 3688/8590 - 3688/5150 - 4070/5090 STANDOX 11158/13320 - 14653/14980 products are approved for this application.

5. After repairing the opening as indicated, perform the following steps:
 1. Remove all traces of broken glass from the outer cowl panel, seats, floor and defroster ducts.
 2. Clean around the edge of the inside surface of the window with a 50/50 mixture of isopropyl alcohol and water by volume on a dampened lint free cloth.

CAUTION: Refer to WINDOW RETENTION CAUTION in Cautions and Notices.

6. Verify all primers and urethane adhesive are within expiration dates.

CAUTION: Failure to prep the area prior to the application of primer may cause insufficient bonding of urethane adhesive. Insufficient bonding of urethane adhesive may allow unrestrained occupants to be ejected from the vehicle resulting in personal injury.

IMPORTANT: Do not apply the black #3 primer to the existing bead (1) of the urethane adhesive on the pinch-weld flange. Apply the primer only to nicks, scratches or the primed surfaces.

7. Shake the pinch-weld primer black #3 for at least 1 minute.
8. Use a new dauber in order to apply the primer to the surface of the pinch-weld flange (1).

9. Allow the pinch-weld primer to dry for approximately 10 minutes.

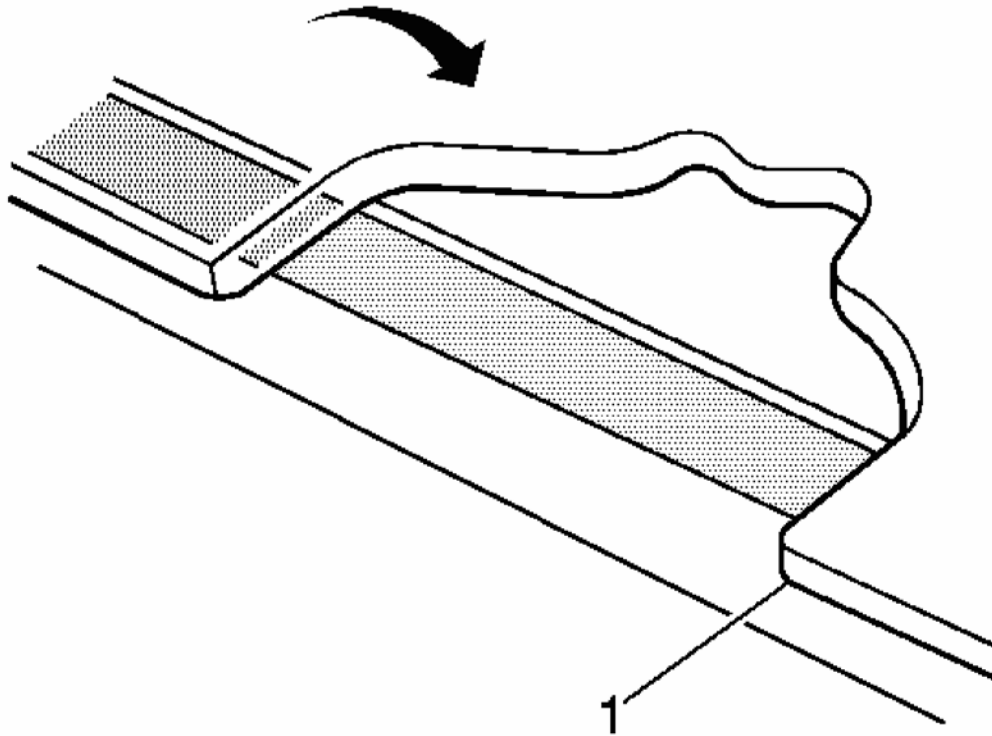


Fig. 30: Identifying Windshield & VIN Plate Filler Strip
Courtesy of GENERAL MOTORS CORP.

NOTE: Do not use spacers when installing a windshield. The stress caused by the spacers may damage the windshield.

10. Install the windshield (1) and the VIN plate filler strip, if equipped.

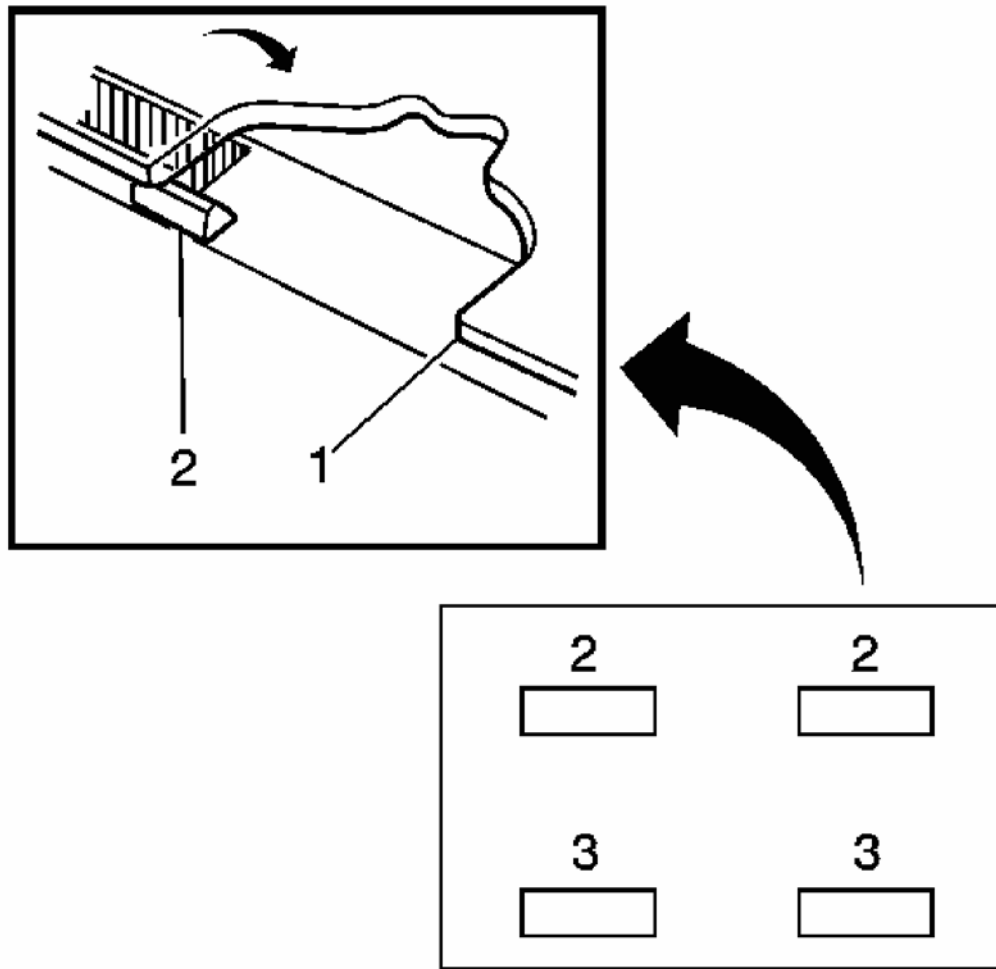


Fig. 31: Positioning Spacers & Blocks
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: When installing spacers (2) and/or blocks (3) space them equally around the quarter window, back window or the liftgate window (1) to aid in the height set, if equipped.

11. Install the window to the vehicle.

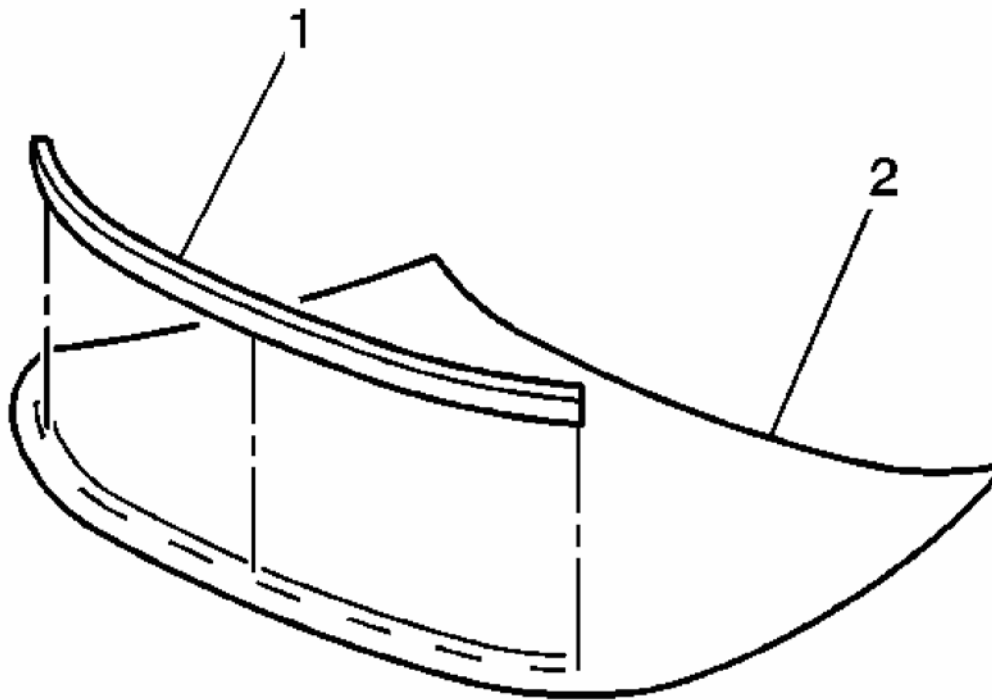


Fig. 32: Identifying Windshield Acoustic Strip
Courtesy of GENERAL MOTORS CORP.

12. Install the new windshield acoustic strip (1) to the windshield (2), if equipped or damaged.

The acoustic strip aids in reducing noise.

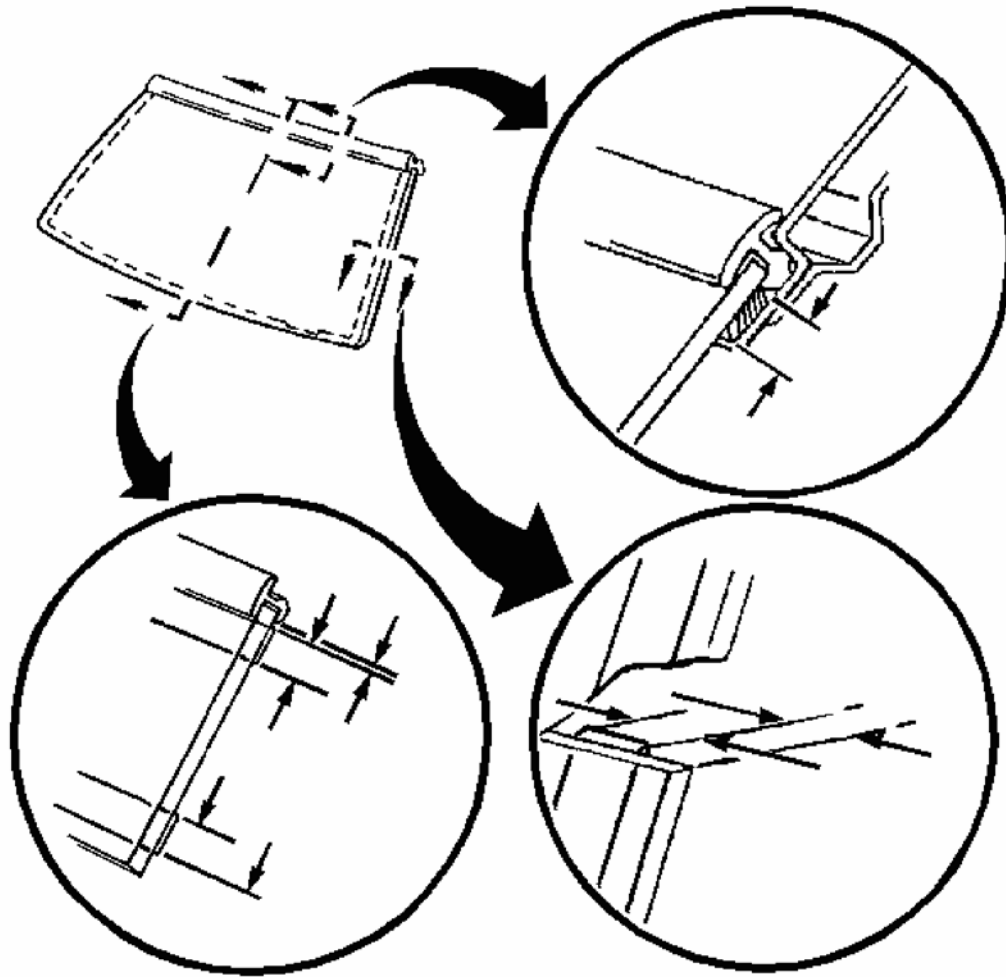


Fig. 33: Identifying Window Reveal Molding Installation Specifics
Courtesy of GENERAL MOTORS CORP.

13. If installing a new window reveal molding, start in the center and work toward each end pressing firmly into place.

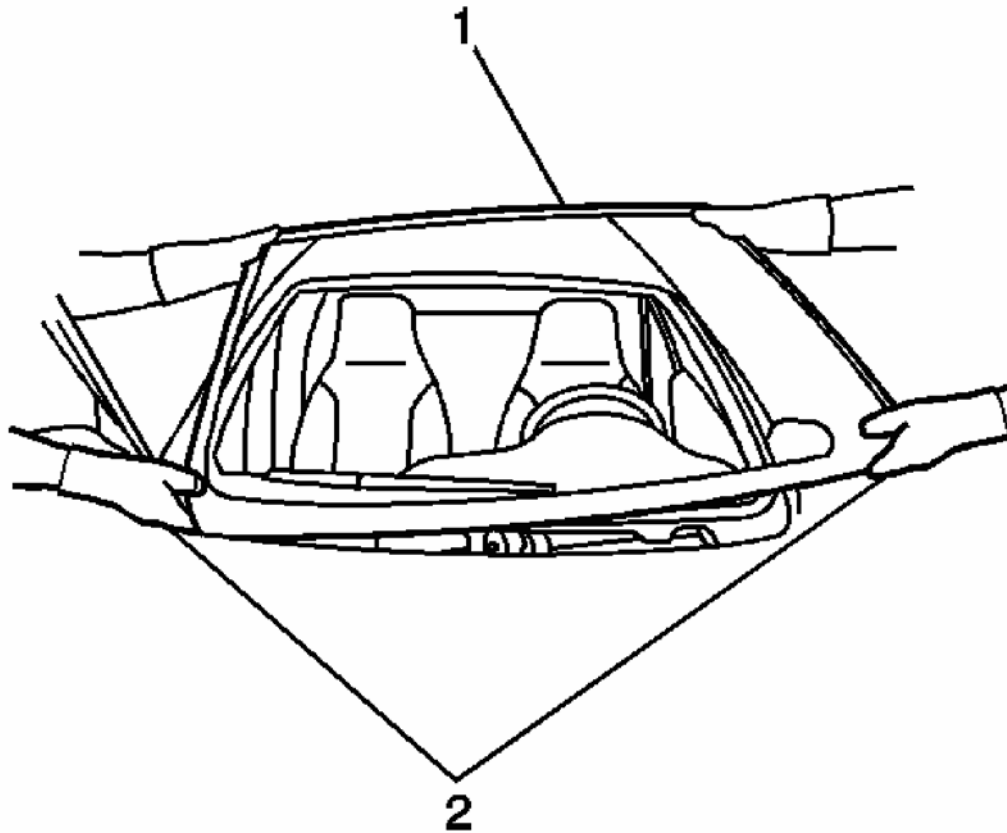


Fig. 34: Removing/Installing Windshield
Courtesy of GENERAL MOTORS CORP.

14. With the aid of an assistant, dry fit the window (1) to the opening in order to determine the correct position.

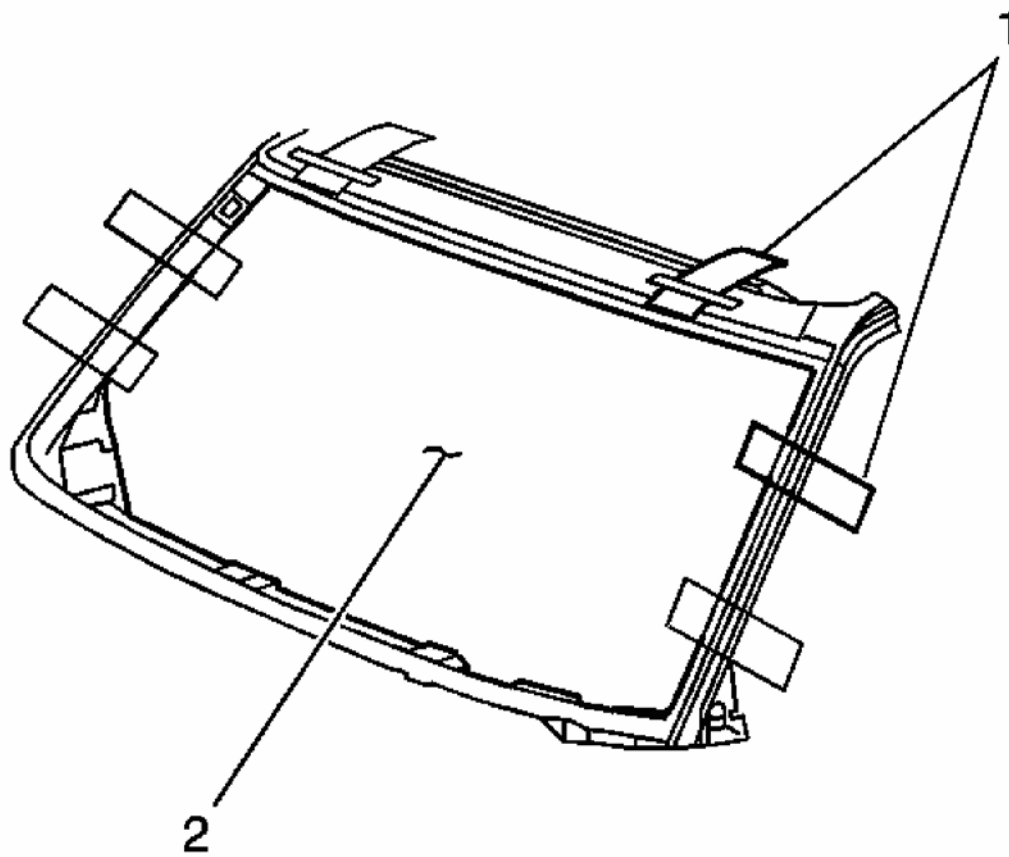


Fig. 35: Aligning Tape Lines On Window To Body
Courtesy of GENERAL MOTORS CORP.

15. Use masking tape in order to mark the locations (1) of the window (2) in the opening.
16. Cut the masking tape in the center and remove the window from the opening.

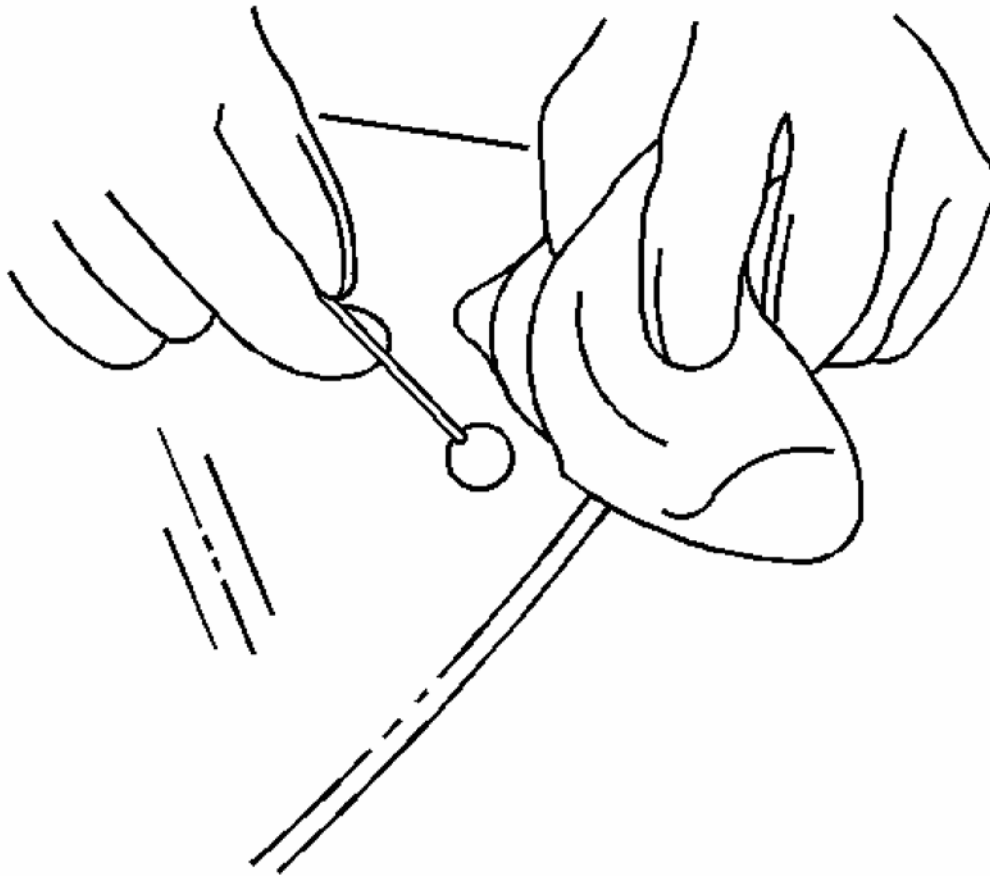


Fig. 36: Applying Glass Prep
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Use care when applying glass prep clear #1 on the window. This primer dries almost instantly, and may stain the viewing area of the window if not applied evenly.

17. Use a new dauber in order to apply glass prep clear #1 to the area approximately 10-16 mm (3/8-5/8 in) around the entire perimeter of the window inner surface.

Immediately wipe the glass primed area using a clean, lint-free cloth.

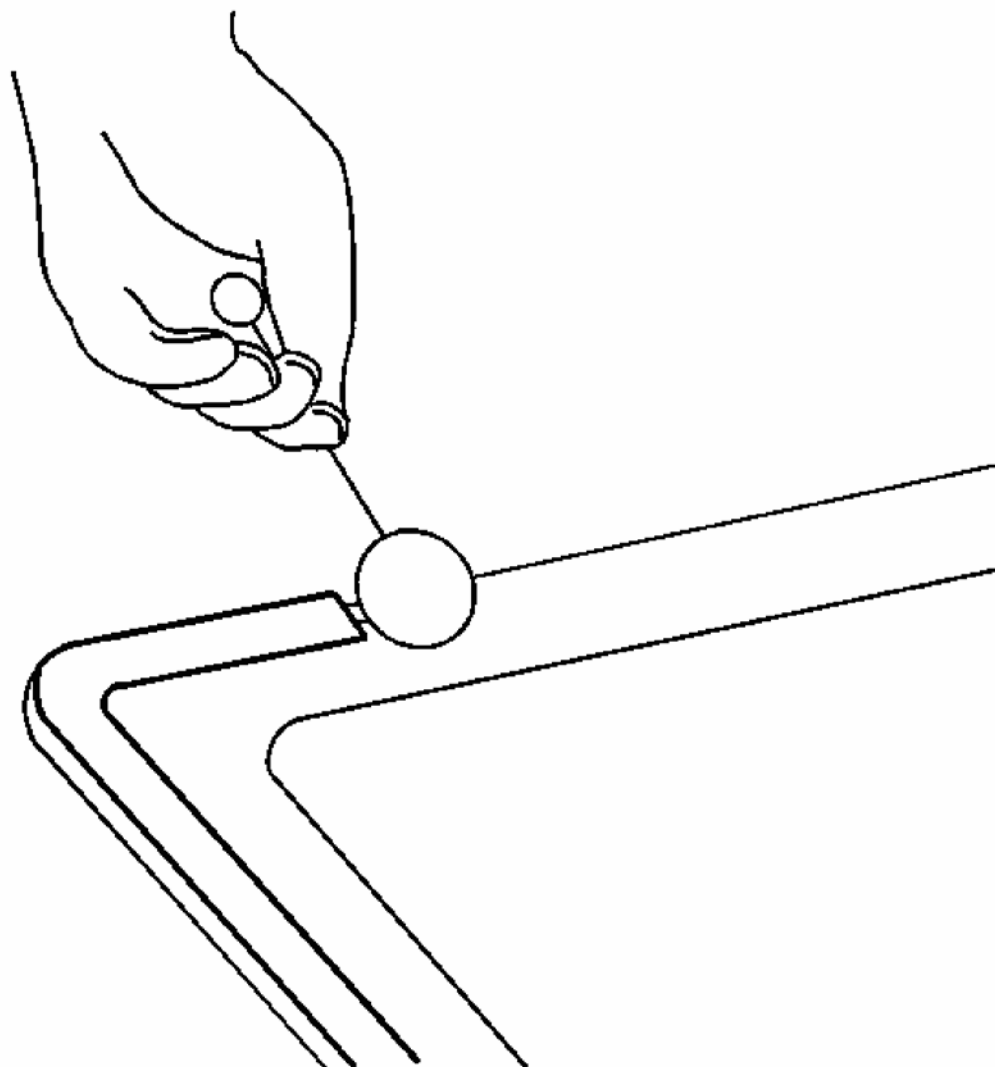


Fig. 37: Applying Glass Prep
Courtesy of GENERAL MOTORS CORP.

18. Apply a second coat of the glass prep clear #1 to the same area of the glass.

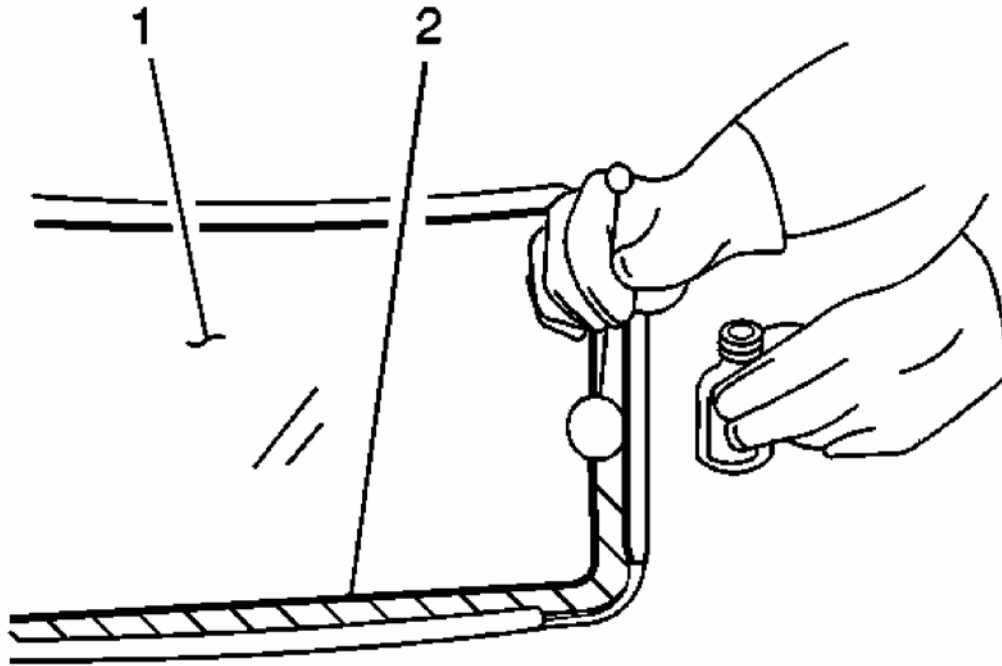


Fig. 38: Applying Glass Primer
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: The glass primer black #2 is effective up to 8 hours after applying it to the glass. The primed surface of the glass must be kept clean.

19. Shake the glass primer black #2 for at least 1 minute.
20. Use a new dauber in order to apply the glass primer black #2 to the same areas (2) that glass prep clear #1 was applied.
21. Allow the glass primer to dry for approximately 10 minutes.

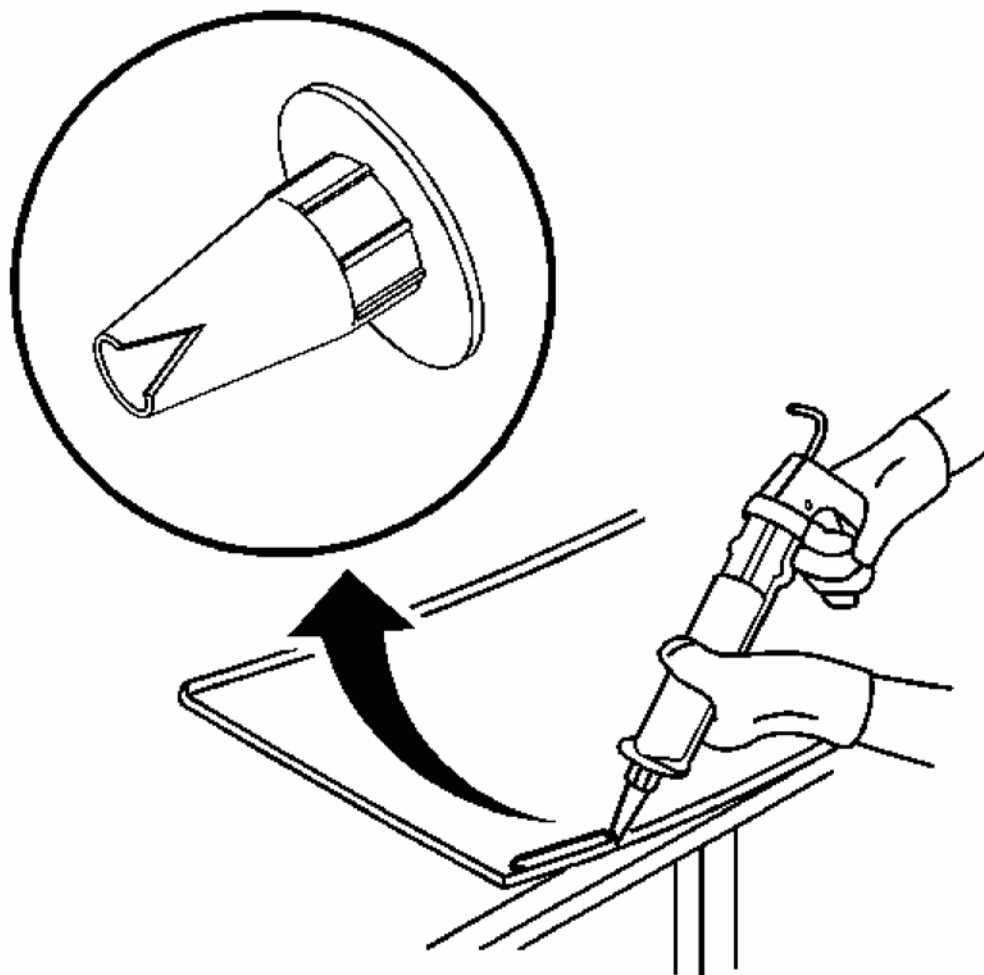


Fig. 39: View Of Modified Applicator Nozzle
Courtesy of GENERAL MOTORS CORP.

22. Cut the applicator nozzle in order to provide a bead of 12.7 mm (1/2 in) wide and 12.7 mm (1/2 in) high.

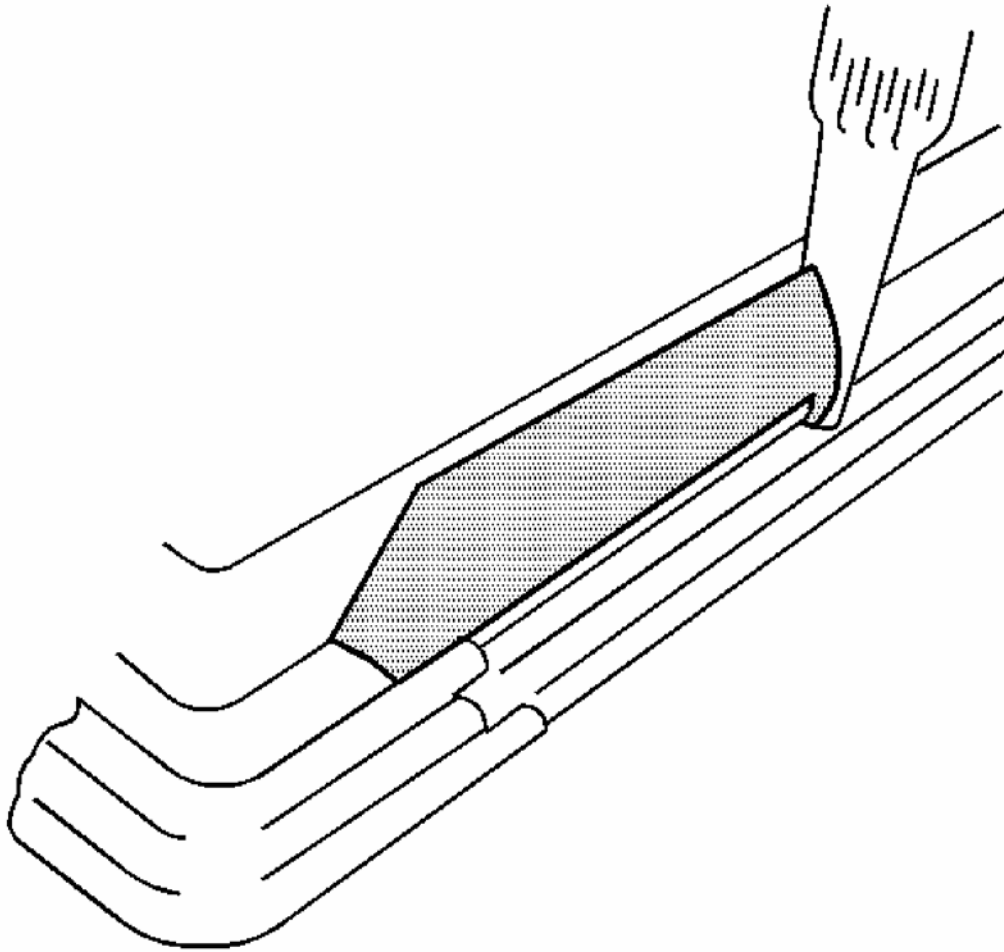


Fig. 40: Applying Bead Of Urethane Adhesive
Courtesy of GENERAL MOTORS CORP.

23. Use a cartridge-type caulking gun in order to apply a smooth, continuous bead of urethane adhesive.

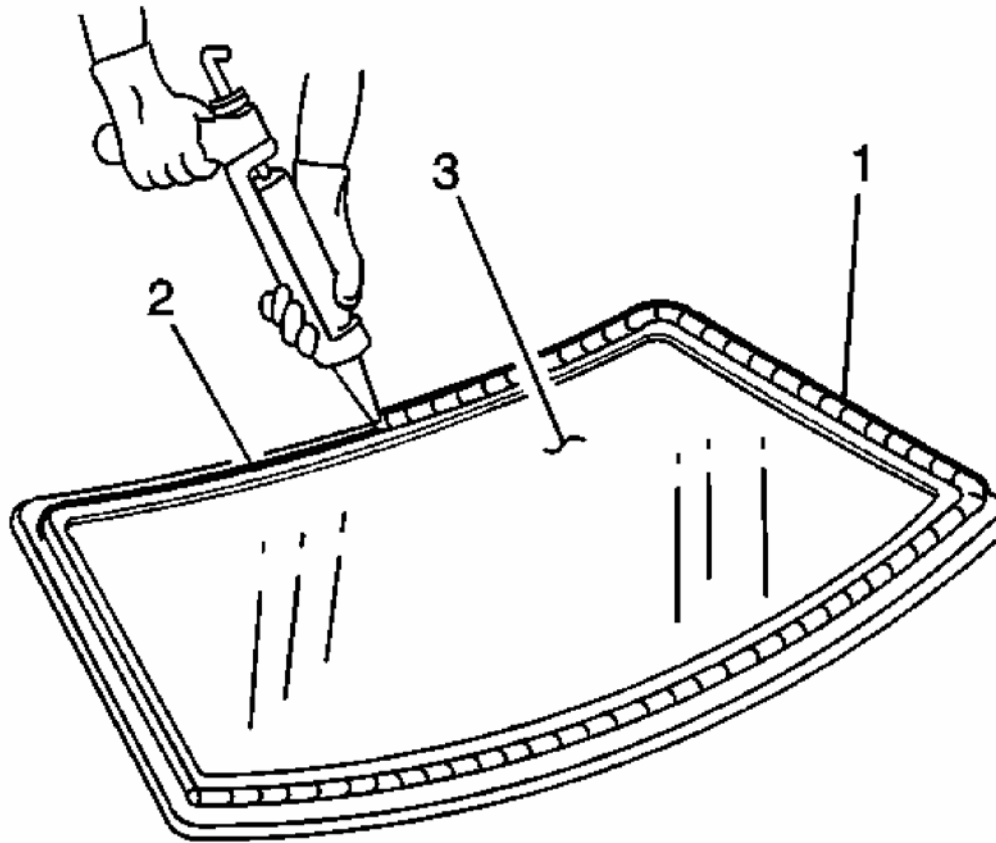


Fig. 41: Applying Urethane Adhesive To Inner Surface Of Window
Courtesy of GENERAL MOTORS CORP.

24. Use the edge of the window or the inside edge of the reveal molding as a guide for the nozzle in order to apply the urethane adhesive (1) to the inner surface of the window (3).

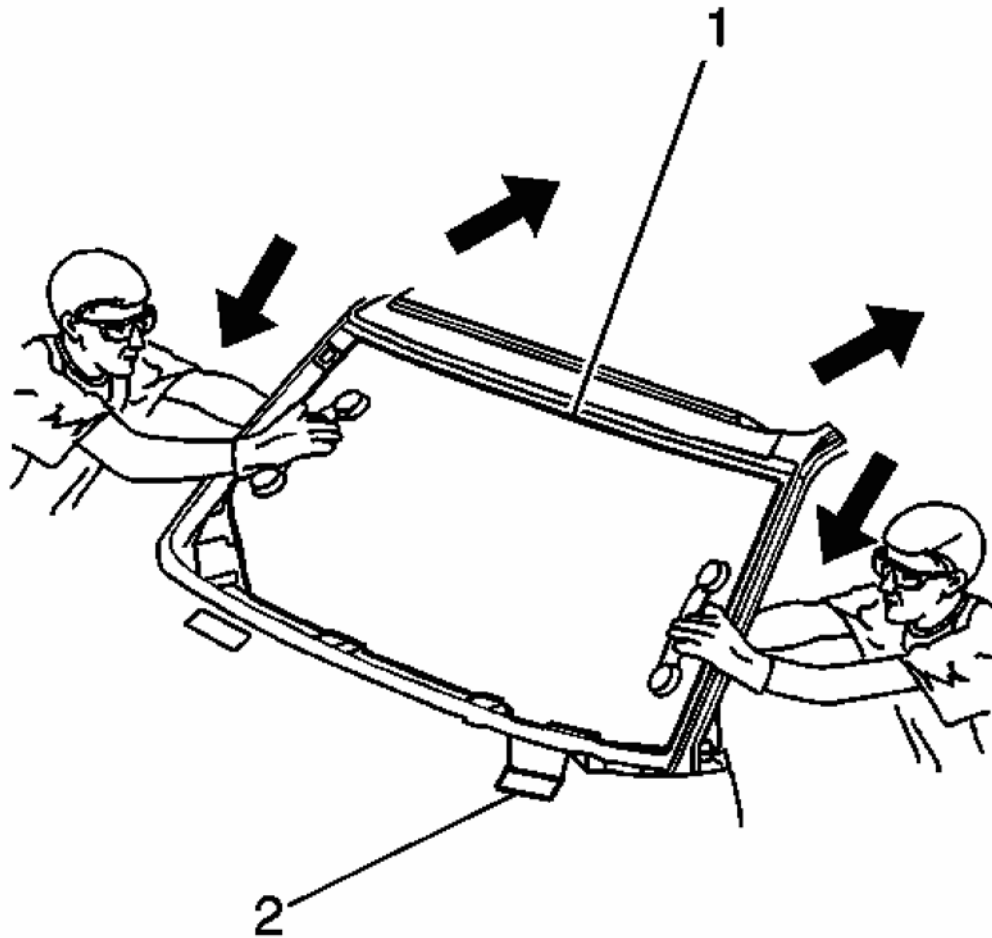


Fig. 42: Installing Windshield
Courtesy of GENERAL MOTORS CORP.

25. With the aid of an assistant, place the window in the opening. If installing a windshield, place the windshield on the lower supports (2), if equipped.

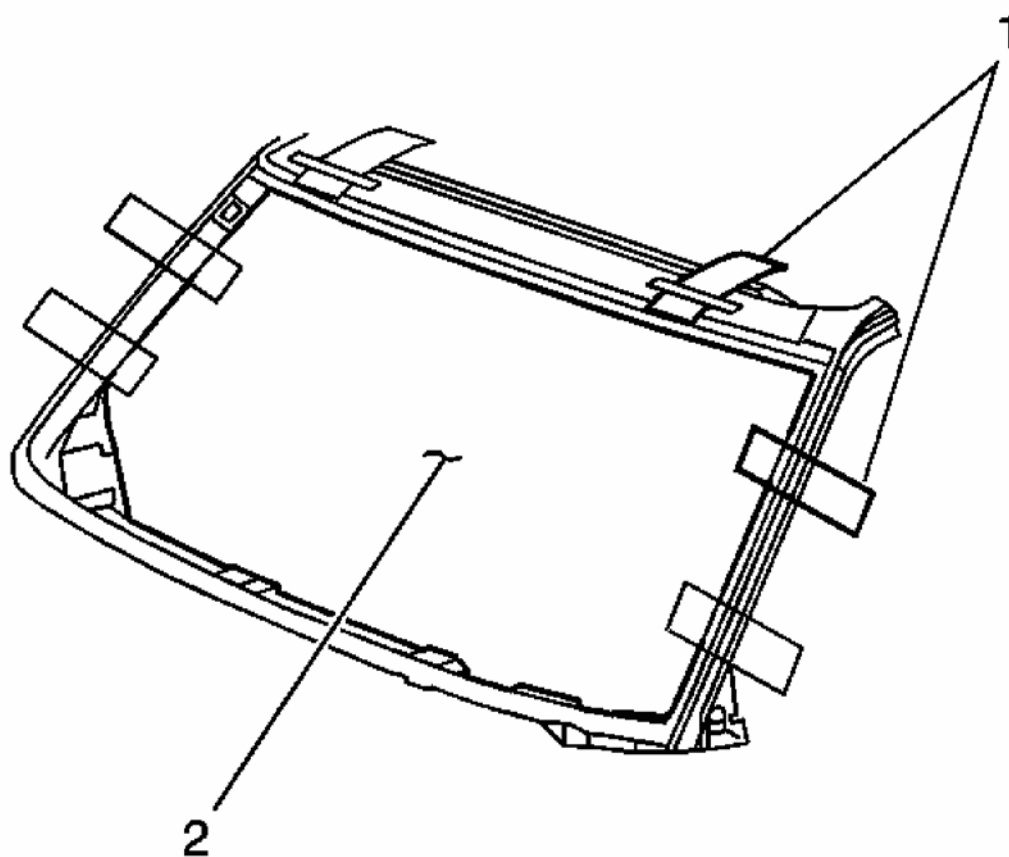


Fig. 43: Aligning Tape Lines On Window To Body
Courtesy of GENERAL MOTORS CORP.

26. Align the masking tape (1) lines on the window (2) and the body.

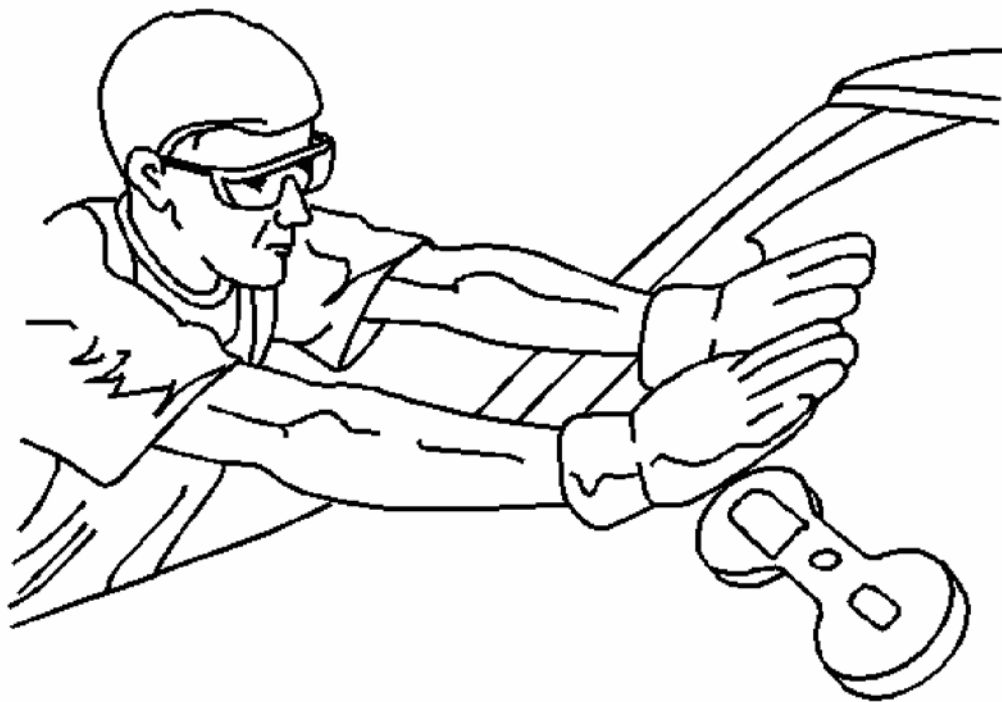


Fig. 44: Pressing Window Into Place
Courtesy of GENERAL MOTORS CORP.

27. Press the window firmly into place.
28. Tape the window to the body in order to minimize movement until the urethane adhesive cures.

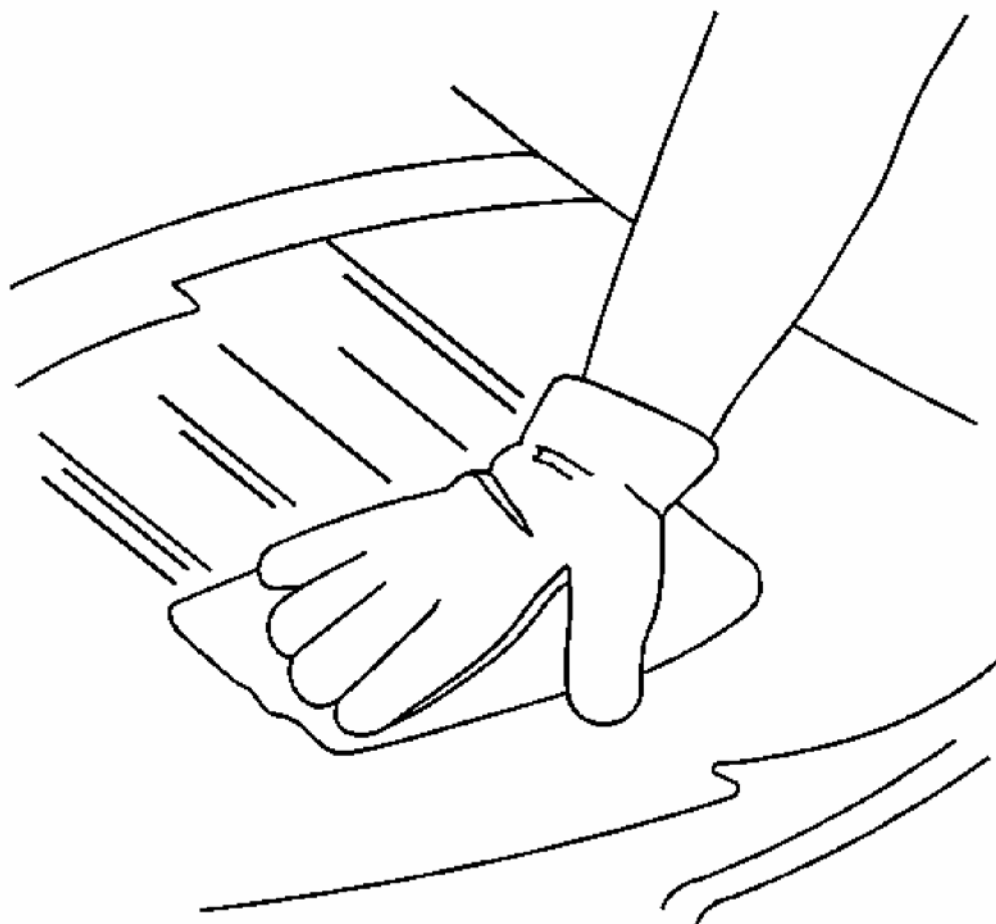


Fig. 45: Cleaning Window
Courtesy of GENERAL MOTORS CORP.

29. Clean any excess urethane adhesive from the body.

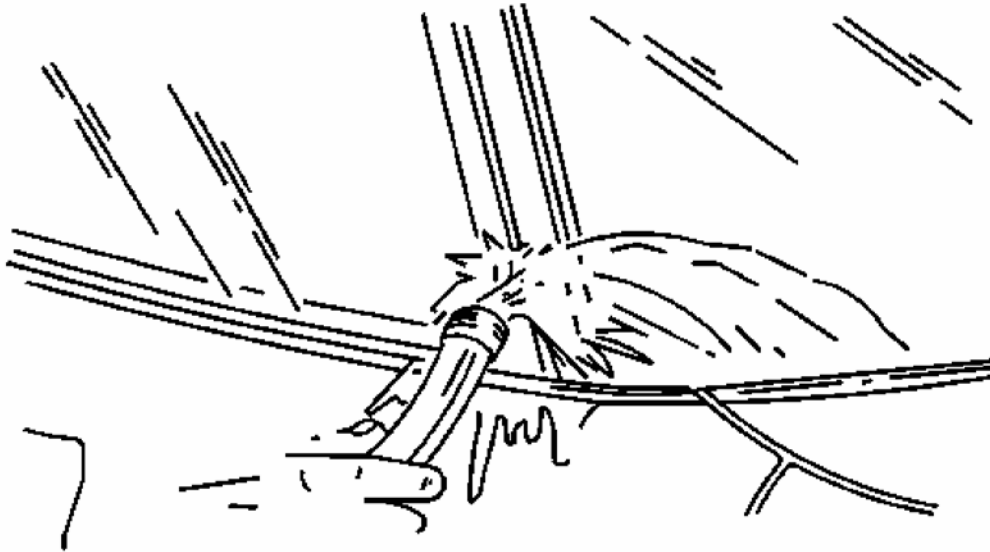


Fig. 46: Performing Water Hose Test
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Do not direct a hard stream of high pressure water to the freshly applied urethane adhesive.

30. Use a soft spray of warm water in order to immediately water test the window.
31. Inspect the window for leaks.
32. If any leaks are found, use a plastic paddle in order to apply extra urethane adhesive at the leak point.
33. Retest the window for leaks.

CAUTION: Insufficient curing of urethane adhesive may allow unrestrained occupants to be ejected from the vehicle resulting in personal injury.

- For the moisture-curing type of urethane adhesive, allow a minimum of 6 hours at 21°C (70°F) or greater and with at least 30 percent relative humidity. Allow at least 24 hours for the complete curing of the urethane adhesive.
- For the chemical-curing type of urethane adhesive, allow a minimum of 1 hour.

Do NOT physically disturb the repair area until after these minimum times have elapsed.

34. Maintain the following conditions in order to properly cure the urethane adhesive:
- Partially lower a door window in order to prevent pressure buildups when closing doors before the urethane adhesive cures.
 - Do not drive the vehicle until the urethane adhesive is cured. Refer to the above curing times.
 - Do not use compressed air in order to dry the urethane adhesive.
35. Complete the window installation.

URETHANE ADHESIVE INSTALLATION OF ENCAPSULATED STATIONARY WINDOWS

IMPORTANT: Remove all but 2 mm (3/64 in) of the existing urethane adhesive from the pinch-weld flange. This will ensure proper depth of window in relations exterior trim.

1. Remove all mounds or loose pieces of urethane adhesive from pinch-weld flange areas.
2. If the original window assembly is being reused, remove all but a thin film of existing urethane from the window frame surface by using a clean utility knife or razor blade scraper.

IMPORTANT: If corrosion of the pinch-weld flange is present or if sheet metal repairs or replacement are required, the pinch-weld flange must be refinished in order to restore the bonding area strength. If paint repairs are required, mask the flange bonding area prior to applying the color coat in order to provide a clean primer only surface. Materials such as BASF DE15, DuPont 2610, Sherwin-Williams PSE 4600 and NP70, Martin-Semour 5120, PPG DP90LF, Spies/Hecker 3688/8590 3688/5150 4070/5090, and Standox 11158/13320 14653/14980 are approved for this application.

3. Clean around the inside edge of the window assembly with a 50/50 mixture of isopropyl alcohol and water on a dampened lint free cloth.
4. Verify all primers an urethane adhesives are within expiration dates.

CAUTION: Refer to WINDOW RETENTION CAUTION in Cautions and Notices.

5. Failure to prepare the area prior to application of primer may cause insufficient bonding

of urethane adhesive. Insufficient bonding of urethane adhesive may allow unrestrained occupants to be ejected from the vehicle resulting in personal injury.

IMPORTANT: Do not apply the black #3 primer to the existing bead of urethane adhesive on the pinch-weld flange. Apply the primer only to nicks, scratches or the primed surfaces.

6. Shake the black #3 primer for at least 1 minute.
7. Use a dauber in order to apply the primer to the surface of the pinch-weld flange.
8. Allow the pinch-weld primer to dry for approximately 10 minutes.
9. With an assistant, dry fit the window assembly into the opening to determine correct position.
10. Using masking tape, mark the location of the window assembly to the opening.
11. Apply Glass Prep #1 followed by Glass Primer #2 on the encapsulation material. Allow to dry for 6 to 10 minutes.

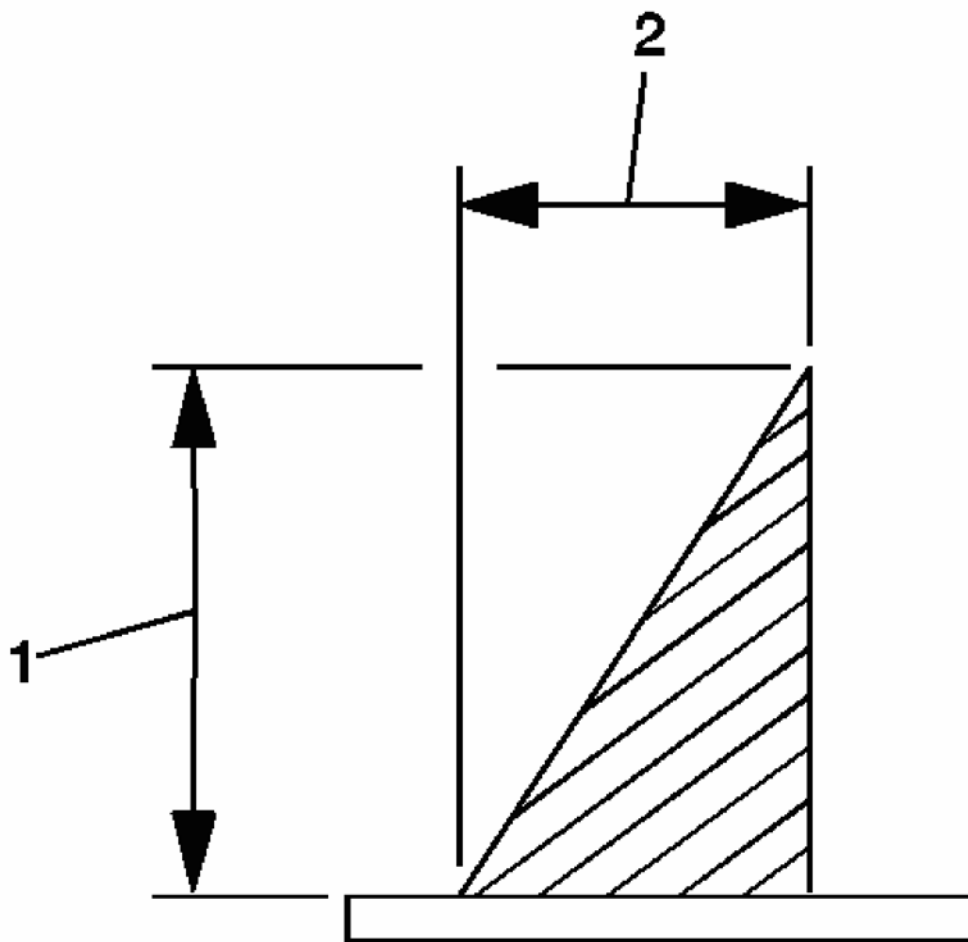


Fig. 47: Applicator Nozzle Hole Measurements
Courtesy of GENERAL MOTORS CORP.

12. Cut the applicator nozzle in order to provide a bead of 10 mm high (1) and 6 mm wide (2).

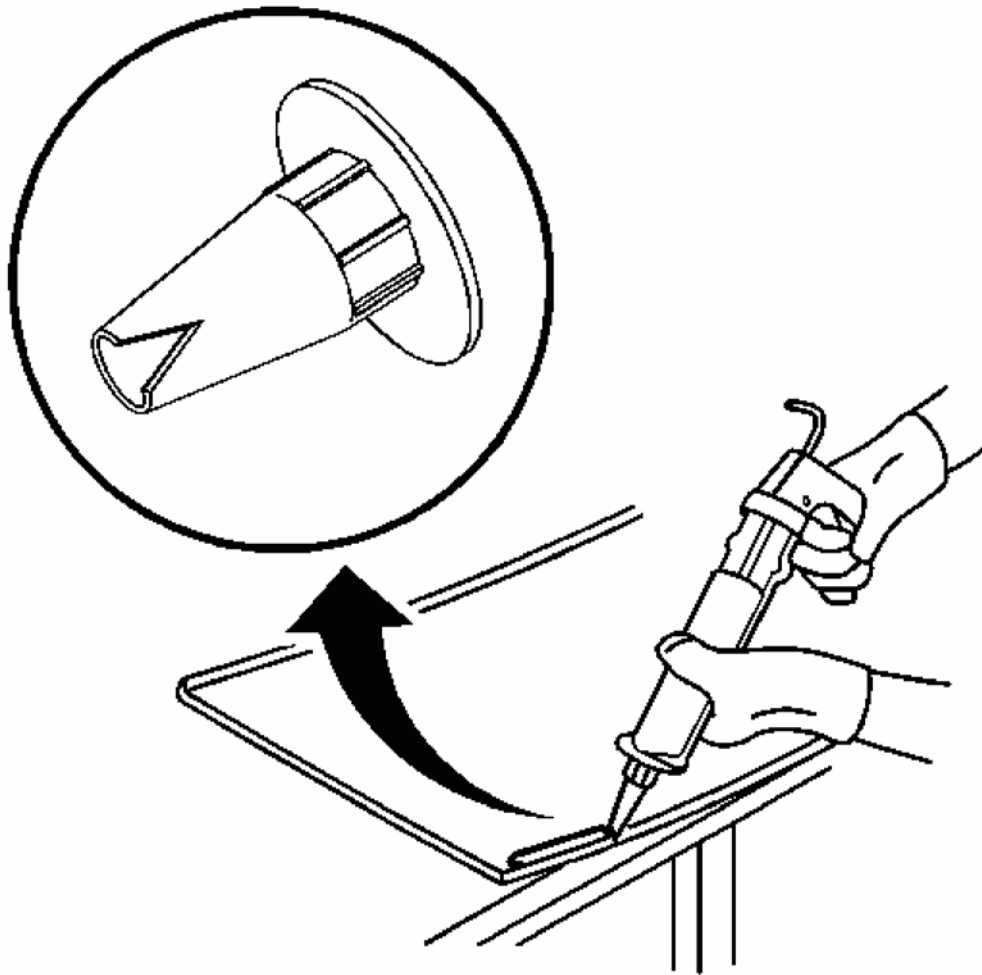


Fig. 48: View Of Modified Applicator Nozzle
Courtesy of GENERAL MOTORS CORP.

13. Using a cartridge-type caulking gun in order to apply a smooth continuous bead of urethane adhesive.

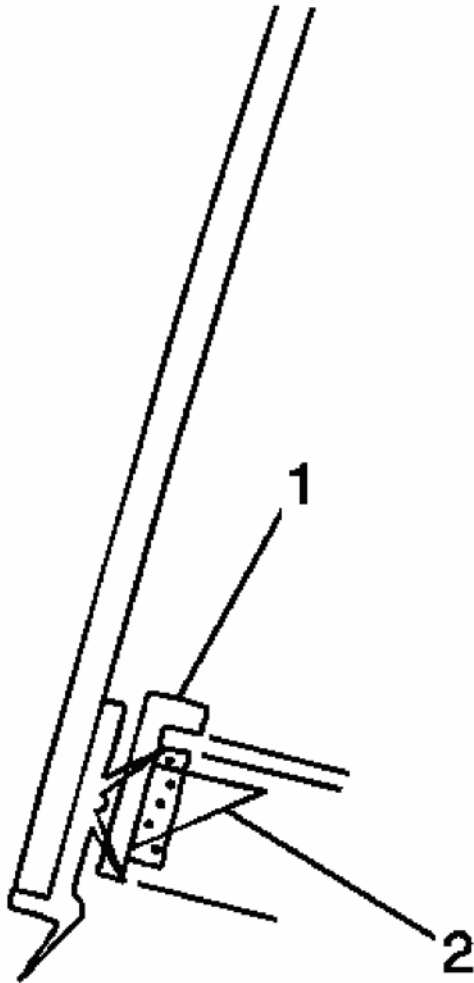


Fig. 49: Window Frame And Urethane Adhesive Bead
Courtesy of GENERAL MOTORS CORP.

14. Use the inside edge of the window frame (1) as a guide for the nozzle in order to apply the urethane adhesive bead (2) to the window frame bonding surface.
15. With the aid of an assistant, place the window assembly into the opening. Make sure window frame alignment pins are properly located.
16. Press the window firmly into place.
17. Tape to window to the body in order to minimize movement until the urethane adhesive cures.
18. Clean any excess urethane adhesive from the body.

IMPORTANT: Do not direct a stream of high pressure water to the freshly applied urethane adhesive.

19. Use a soft spray of warm water in order to immediately water test the window.
20. Inspect the window for leaks.
21. If any leaks are found, use a plastic paddle in order to apply extra urethane adhesive at the leak point.
22. Retest the window for leaks.

CAUTION: Insufficient curing of urethane adhesive may allow unrestrained occupants to be ejected from the vehicle resulting in personal injury.

- For the moisture-curing type of urethane adhesive, allow a minimum of 6 hours at 21°C (70°F) or greater and with at least 30 percent relative humidity. Allow at least 24 hours for the complete curing of the urethane adhesive.
- For the chemical-curing type of urethane adhesive, allow a minimum of 1 hour.

Do NOT physically disturb the repair area until after these minimum times have elapsed.

23. Maintain the following conditions in order to properly cure the urethane adhesive.
 - Partially lower a door window in order to prevent pressure buildups when closing doors before the urethane cures.
 - Do not drive the vehicle until the urethane adhesive is cured. Refer to above curing times.
 - Do not use compressed air in order to dry urethane adhesive.

REAR WINDOW REPLACEMENT

Tools Required

- **J 24402-A** Glass Sealant Cold Knife Remover. See **Special Tools**.
- **J 39032** Stationary Glass Removal Tool. See **Special Tools**.
- Urethane Adhesive Kit GM P/N 12346392 or Equivalent
- Isopropyl Alcohol or Equivalent
- Cartridge-type Caulking Gun

- Commercial-type Utility Knife
- Razor Blade Scraper
- Suction Cups
- Plastic Paddle

Removal Procedure

CAUTION: If a window is cracked but still intact, crisscross the window with masking tape in order to reduce the risk of damage or personal injury.

IMPORTANT: Before cutting out a stationary window, apply a double layer of masking tape around the perimeter of the painted surfaces and inner trim.

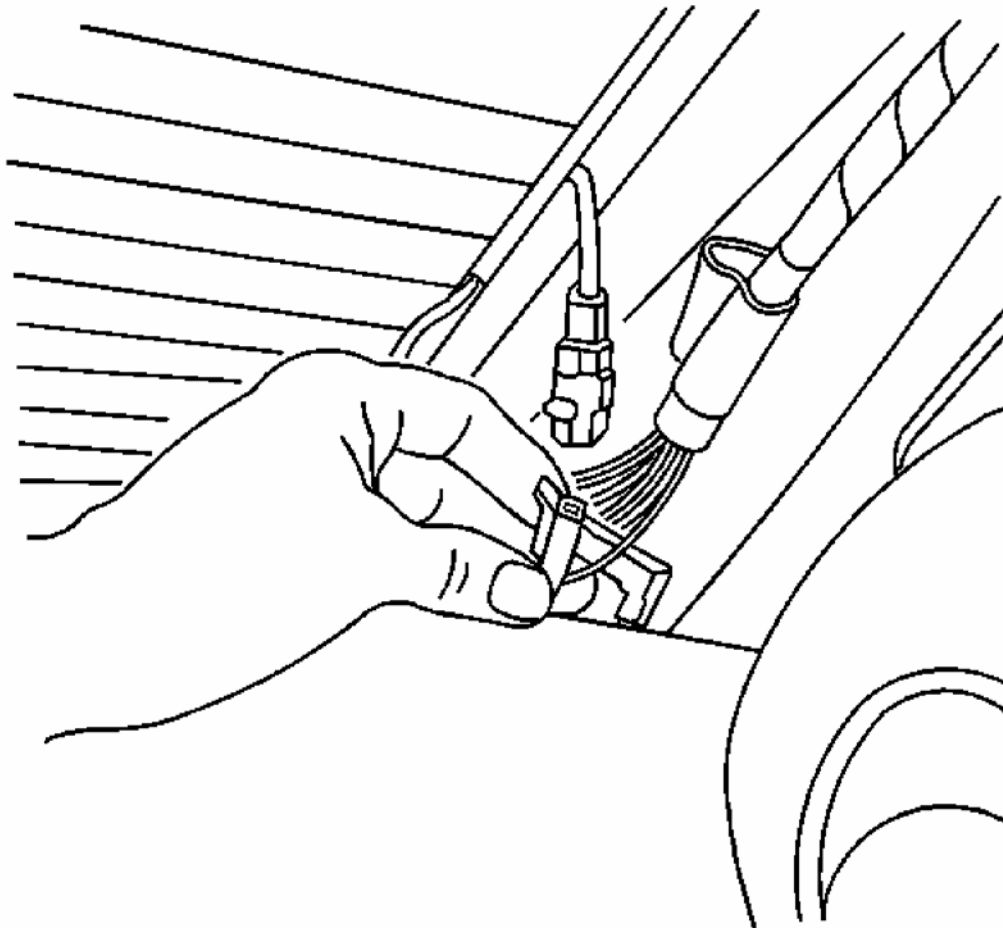


Fig. 50: Locating Rear Window Defogger Electrical Connector
Courtesy of GENERAL MOTORS CORP.

1. Disconnect the rear window defogger electrical connectors.
2. Disconnect the OnStar® connector, if equipped.

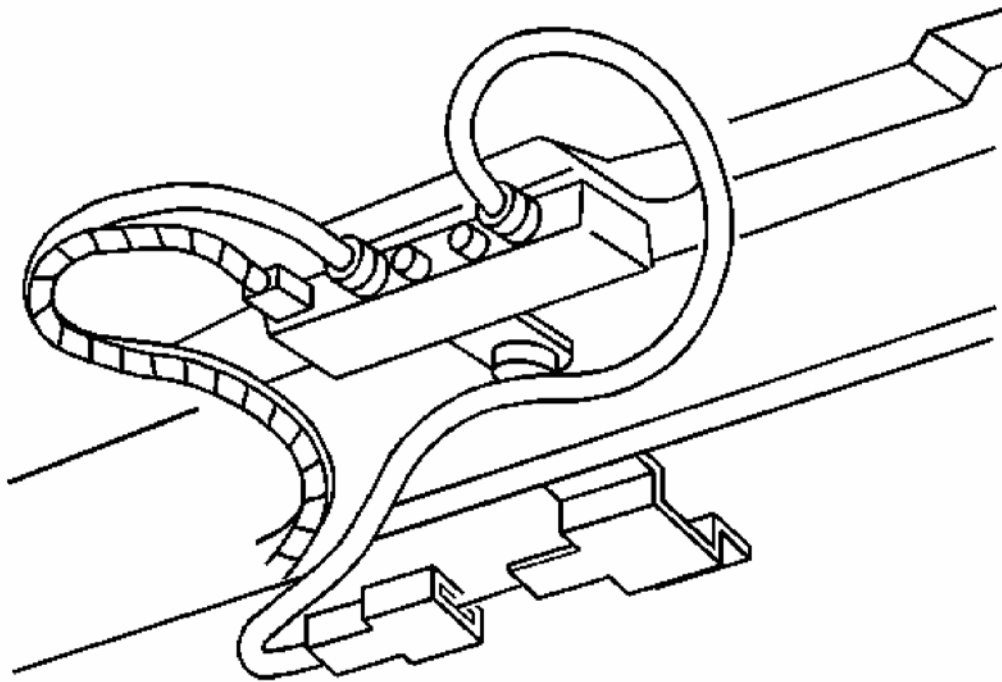


Fig. 51: Rear Window Radio Antenna Connector
Courtesy of GENERAL MOTORS CORP.

3. Disconnect the rear window radio antenna connector.

CAUTION: If broken glass falls into the defroster outlets, it can be blown into the passenger compartment and cause personal injury.

4. Cover to protect the following parts from broken glass:
 - Upper dash pad.
 - Defroster outlets and A/C outlets.
 - Seats and carpeting.
5. Open the rear compartment lid in order to access the reveal molding.

CAUTION: Refer to **GLASS AND SHEET METAL HANDLING CAUTION** in Cautions and Notices.

IMPORTANT: The rear window reveal molding is a one piece molding and fills the cavities between the body and window.

6. If the rear window reveal molding (1) is stretched or damaged it can not be reused.

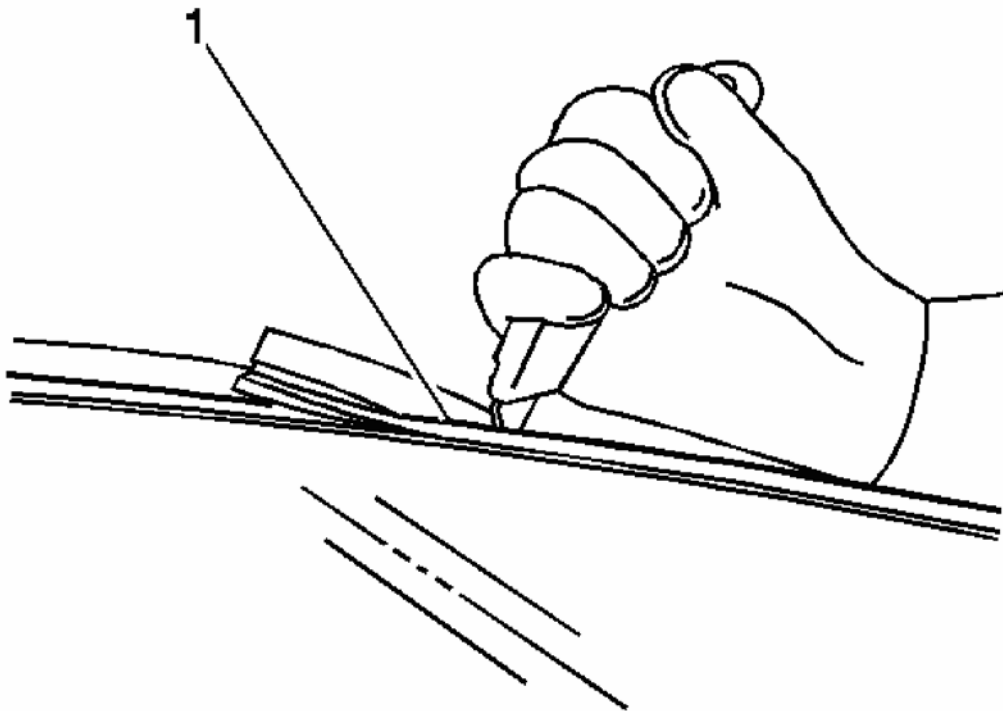


Fig. 52: Using Utility Knife To Remove Reveal Molding
Courtesy of GENERAL MOTORS CORP.

7. Remove the rear window reveal molding (1). Refer to **Rear Window Reveal Molding Replacement**.

Grasp the lower corner of the window reveal molding by hand and slowly pull the reveal molding away from the window.

If the rear window reveal molding will not release, use a utility knife in order to cut around the rear window in order to remove the window reveal molding.

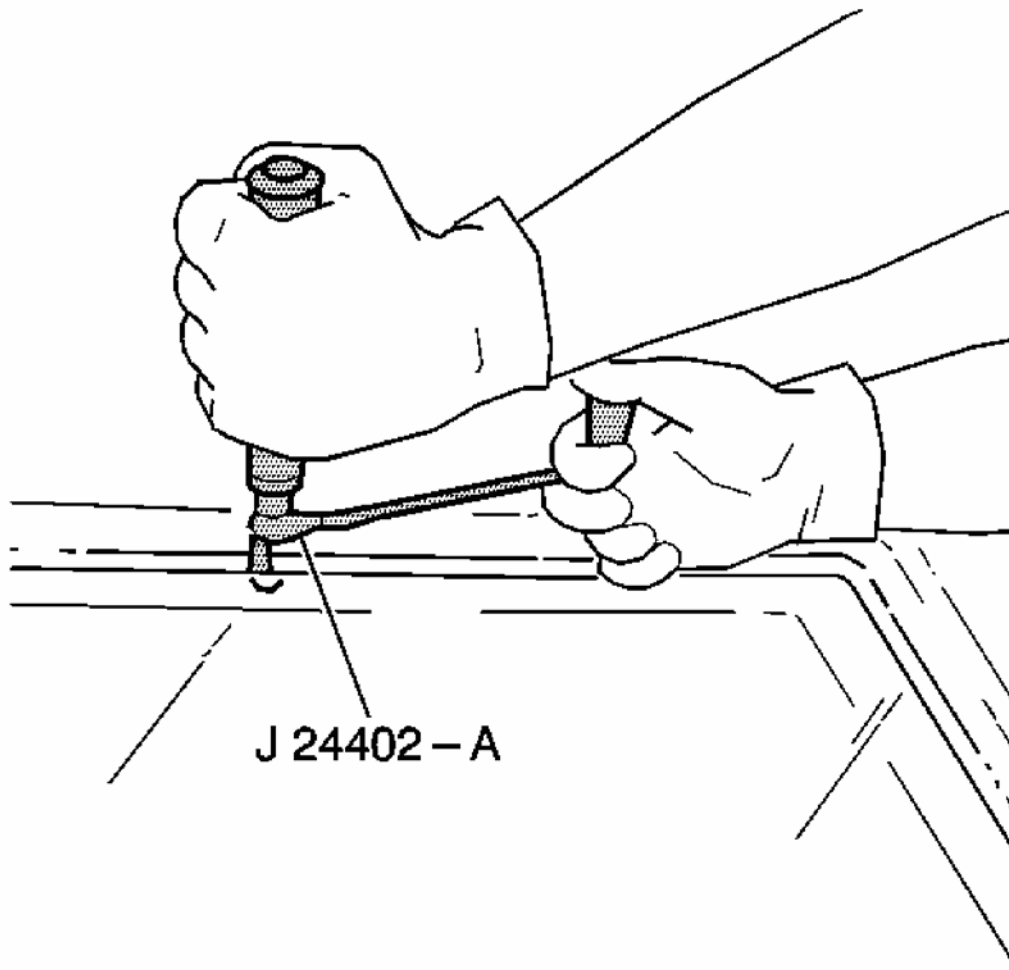


Fig. 53: Separating Urethane Adhesive From Window
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Keep the cutting edge of the tool against the window.

8. This will allow the urethane adhesive to be separated from the window.
 - Leave a base of urethane on the pinch-weld flange.
 - The only suitable lubrication is clear water.
 - Use **J 24402-A** , **J 39032** or equivalent in order to remove the window. See Special Tools.

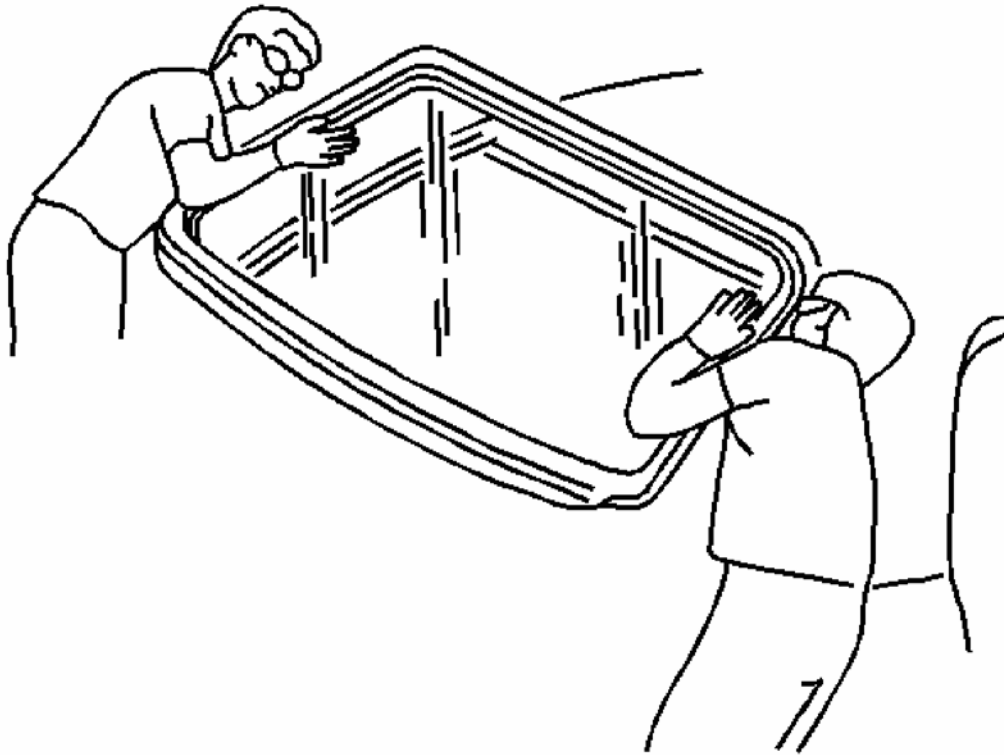


Fig. 54: Removing/Installing Rear Window
Courtesy of GENERAL MOTORS CORP.

9. With the aid of an assistant, use the suction cups in order to lift the rear window from the opening.

Installation Procedure

1. Install the rear window into the opening. Refer to **Urethane Adhesive Installation of Stationary Windows**.
2. Connect the OnStar® connector, if equipped.

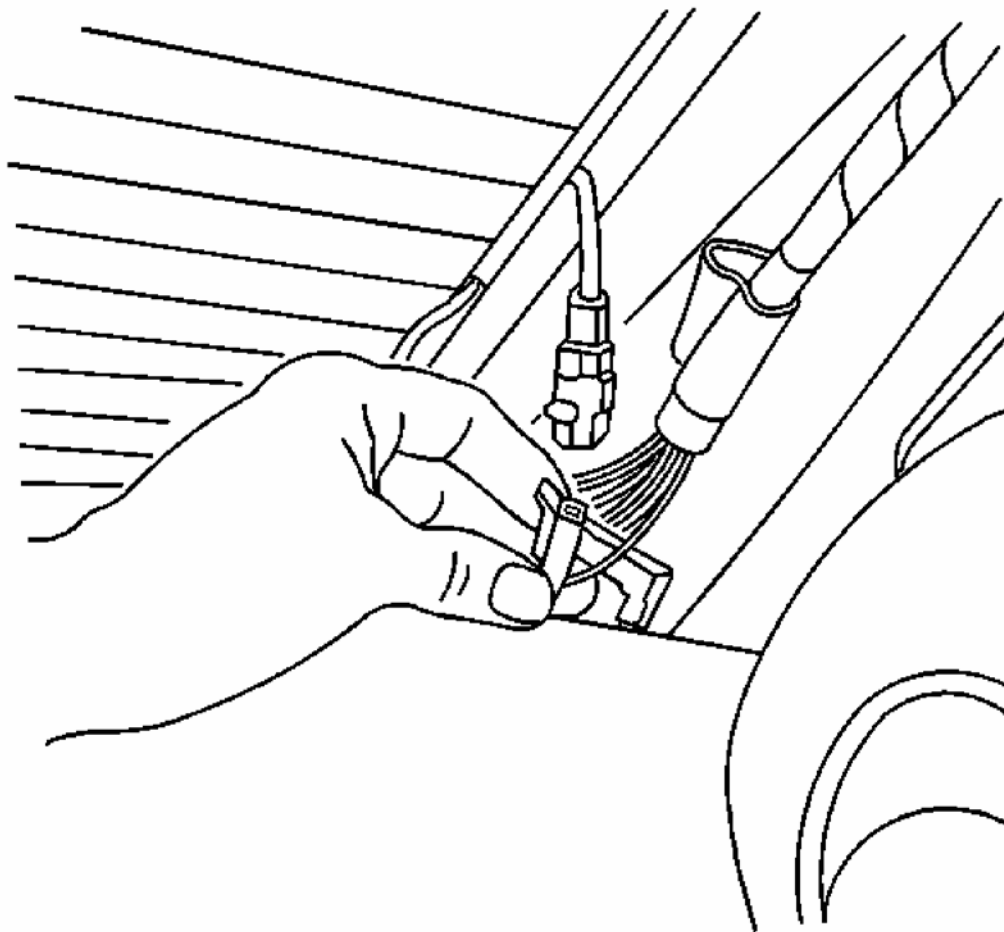


Fig. 55: Locating Rear Window Defogger Electrical Connector
Courtesy of GENERAL MOTORS CORP.

3. Connect the rear window defogger electrical connector, if equipped.

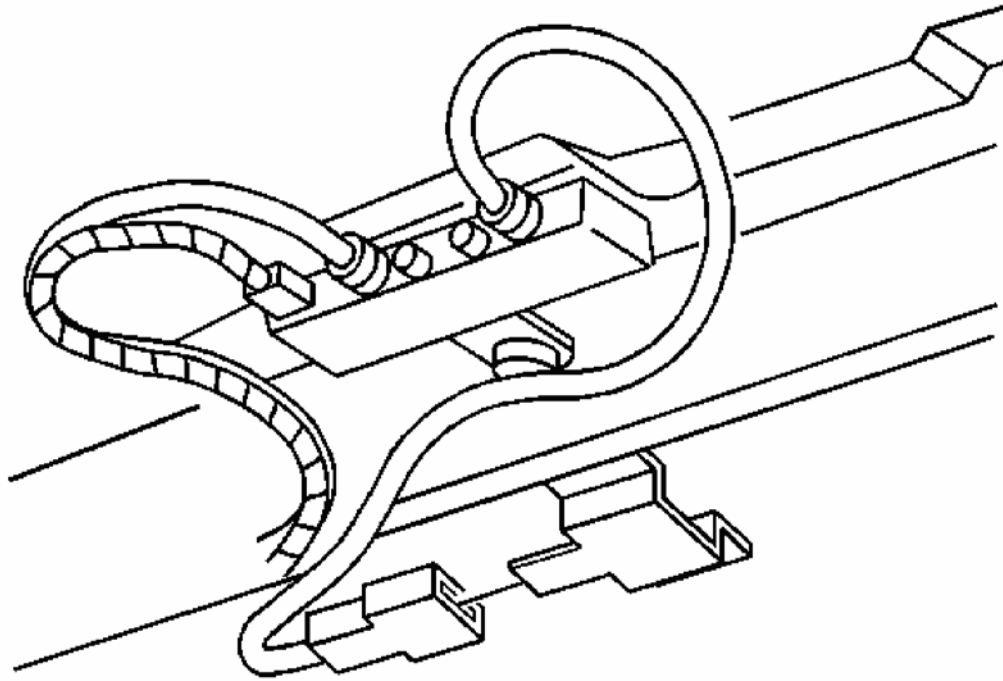


Fig. 56: Rear Window Radio Antenna Connector
Courtesy of GENERAL MOTORS CORP.

4. Connect the rear window radio antenna connector.
5. Connect the OnStar® system.
6. Verify the radio and the OnStar® has reception.
7. Close the rear compartment lid.
8. Remove the double layer of masking tape around the perimeter of the painted surfaces and the interior trim.

DESCRIPTION AND OPERATION

ADHESIVE SERVICE KIT DESCRIPTION

The GM of Canada Adhesive Caulking Kit, P/N 10952983, contains the following items:

- Four different primers
- A tube of urethane adhesive with a nozzle
- Four daubers
- Instructions with warnings

Use the urethane adhesive caulking kit for replacement of any urethane adhesive-installed window using the full cut method.

In the United States or Canada, you may use any of the following equivalent urethane adhesive systems which meet GM Specification GM 3651G:

- Dow Automotive - Essex 400HV. One part and requires associated primers.
- Dow Automotive - Essex U216. Two part and requires associated primers.

Call Dow Automotive at 1-800-453-3779 for more information.

- 3M™ "Fast Cure" Auto Glass Urethane. One part and requires associated primers.

Call 3M™ at 1-877-666-2277 for more information.

Use these materials based on specific manufacturer. Do NOT intermix primers or adhesives from one manufacturer to another.

Always follow the system manufacturer's instructions for application, handling, and curing.

FULL-CUT METHOD DESCRIPTION

Use only the full cut method, also known in the field as full strip method, when installing windows.

This method includes the following:

- The replacement of a majority of the urethane adhesive bead. Remove all but approximately 2 mm (3/64 in) of the existing bead of urethane adhesive from the pinch-weld flange.
- Apply pinch-weld primer to any exposed painted areas on the pinch-weld flange.

No mounds or loose pieces of urethane adhesive should remain on the pinch-weld flange. Do not remove all traces of urethane adhesive.

IMPORTANT:

- If corrosion of the pinch-weld flange is present, or if sheet metal repairs or replacements are required, refinish the pinch-weld flange in order to present a clean, primer-only surface.
- If paint repairs are required, mask the flange bonding area, prior to applying the color coat, in order to provide a clean, primer-only surface.
- Appropriate materials for these primer applications are typically 2 component catalyzed products. Use materials

such as BASF DE15®, DuPont 2610®, Sherwin-Williams PSE 4600 and NP70® and Martin-Semour 5120,5130®, PPG DP90LF SPIES/HECKER 3688/8590 - 3688/5150 - 4070/5090 STANDOX 11158/13320 - 14653/14980 products are approved for this application. Follow the manufacturer's directions for the mix, the application, and the drying times.

- After repairing the opening as indicated, shake the pinch-weld primer black #3 well. Using a new dauber, apply the primer to the primed surface of the flange in the bonding area. Allow the primer to dry for 10 minutes.

STATIONARY WINDOW DESCRIPTION

Most stationary windows, specifically windshields, are retained to the body with urethane adhesive which adheres the window to the body, increasing structural integrity. The reinstallation of the windows with urethane adhesive requires complete replacement of the urethane adhesive bead, and is known as the full cut method.

REAR WINDOW DEFOGGER DESCRIPTION AND OPERATION

Rear Window Defogger

The rear window defogger system consists of the following components:

- Body Control Module (BCM)
- Electronic compass
- HVAC control module
- Instrument Panel Cluster (IPC)
- Rear window defogger grid
- REAR WINDOW DEFOGGER relay

Battery positive voltage is supplied at all times from the BATT MAIN 3 fuse in the underhood fuse block to the coil and switch side of the REAR WINDOW DEFOGGER relay in the instrument panel (I/P) fuse block. When the rear defogger switch is pressed in the HVAC control module, a class 2 data signal is sent to the BCM. The BCM then applies a ground to the REAR WINDOW DEFOGGER relay. This energizes the relay and allows the battery positive voltage to be applied through the switched side of the relay to the rear window defogger grid. The rear window defogger grid is grounded at all times at G301.

When you start the engine and press the rear window defogger switch for the first time, the defogger cycle last for approximately 15 minutes. Further operations result in a 7.5 minute cycle. The defogger cycle is reset to 15 minutes when you cycle the ignition to the OFF position then back to the ON position.

If the battery is low, the BCM will disable the rear window defogger by removing the ground supplied to the REAR WINDOW DEFOGGER relay.

AUTOMATIC DAY-NIGHT MIRROR DESCRIPTION AND OPERATION

Inside Rearview Mirror with Automatic Day-Night System

The automatic day-night system consists of the following components:

- Body Control Module (BCM)
- Inside rearview mirror
- SUN ROOF Fuse 20A

The inside rearview mirror consist of 2 photocell sensors. The headlight sensor, located on the front of the mirror is used to determine light conditions present at the mirror face from sources behind the vehicle. The ambient light sensor, located on the rear of the mirror is used to determine exterior light conditions present at the mirror. At night, with the automatic day-night feature enabled, the inside rearview mirror will automatically darken to reduce glare from headlamps behind the vehicle.

In daytime conditions, the mirror operates at a normal, clear state due to the high exterior light conditions that are indicated by the ambient light sensor. When the vehicles gear selector is placed in the REVERSE position, backup lamp voltage is supplied as an input to the inside rearview mirror. In night time conditions only, the inside rearview mirror monitors the backup lamp voltage to disable the automatic day-night feature. This allows the inside rearview mirror face to gradually change to a normal, clear state and allow the driver to see objects in the mirror clearly when backing up.

Inside Rearview Mirror with Automatic Day-Night Switch Operation

The inside rearview mirror with only the automatic day-night feature has 2 switches that perform the following functions:

- The AUTO switch is used to enable the automatic day-night feature of the inside rearview mirror. To enable the automatic day-night feature, turn the ignition ON and depress the AUTO switch. A green indicator will illuminate on the inside rearview mirror when the automatic day-night feature is enabled.
- The OFF switch is used to disable the automatic day-night feature of the inside rearview mirror.

Inside Rearview Mirror with Automatic Day-Night and OnStar® Switch Operation

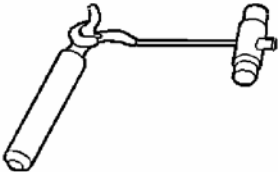
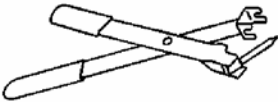
The inside rearview mirror with automatic day-night and OnStar features has 4 switches that perform the following functions:

- The on/off switch is used to enable/disable the automatic day-night feature of the inside rearview mirror. To enable the automatic day-night feature, turn the ignition ON and depress the on/off switch. A green indicator will illuminate on the inside rearview mirror when the automatic day-night feature is enabled. To disable the automatic day-night feature depress the on/off switch.
- The three switches on the right side of the mirror are for OnStar® operation. For more information, refer to **OnStar Description and Operation** in Cellular Communication.

SPECIAL TOOLS AND EQUIPMENT

SPECIAL TOOLS

Special Tools

Illustration	Tool Number/ Description
	J-24402-A Glass Sealant Cold Knife Remover
	J-33431-C Signal Generator and Instrument Panel Tester
	J-34946 Window Pin Remover
	J-39032 Stationary Glass Removal Tool

2006 Chevrolet Impala LS

2006 ACCESSORIES & EQUIPMENT Stationary Windows - Impala



J-39040
Quarter Window Remover