

## 2006 Chevrolet HHR LT

2006 ACCESSORIES & EQUIPMENT Stationary Windows - HHR

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#### Stationary Windows - HHR

## SPECIFICATIONS

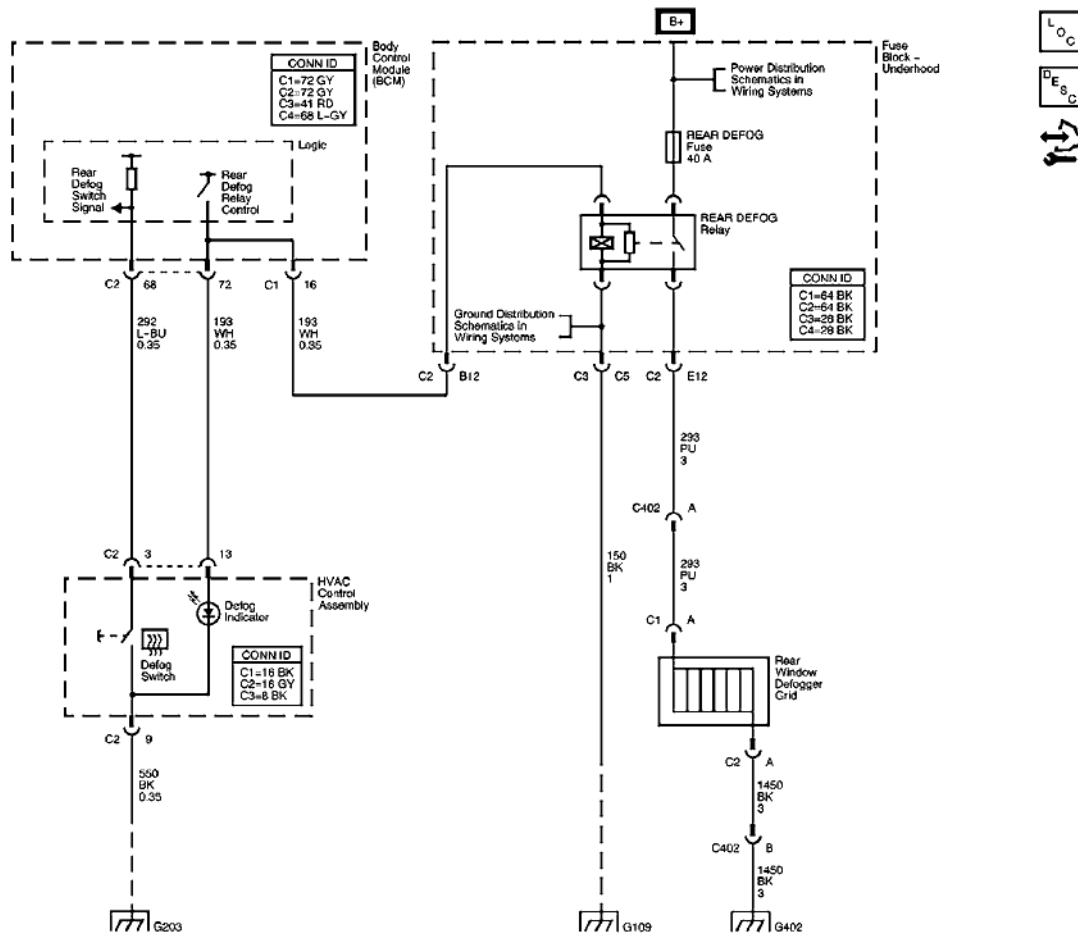
### FASTENER TIGHTENING SPECIFICATIONS

#### Fastener Tightening Specifications

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

## SCHEMATIC AND ROUTING DIAGRAMS

### DEFOGGER SCHEMATICS

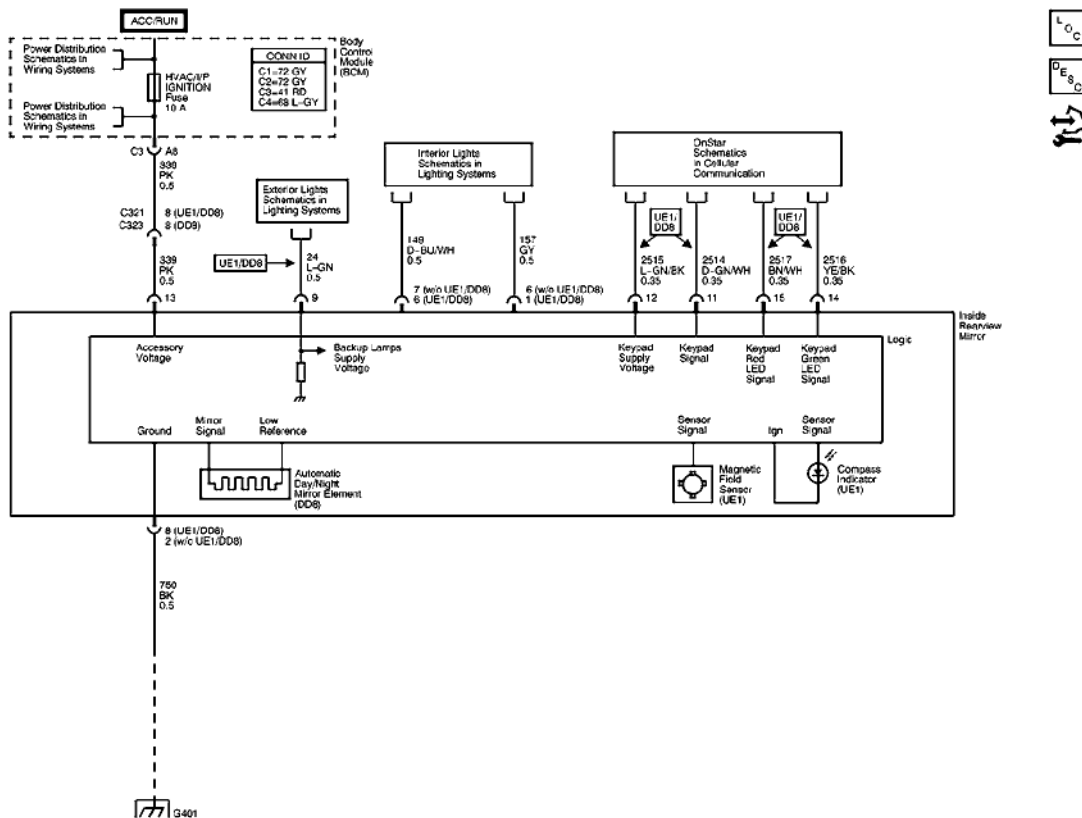


**Fig. 1: Defogger Schematic**  
Courtesy of GENERAL MOTORS CORP.

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## INSIDE REARVIEW MIRROR SCHEMATICS



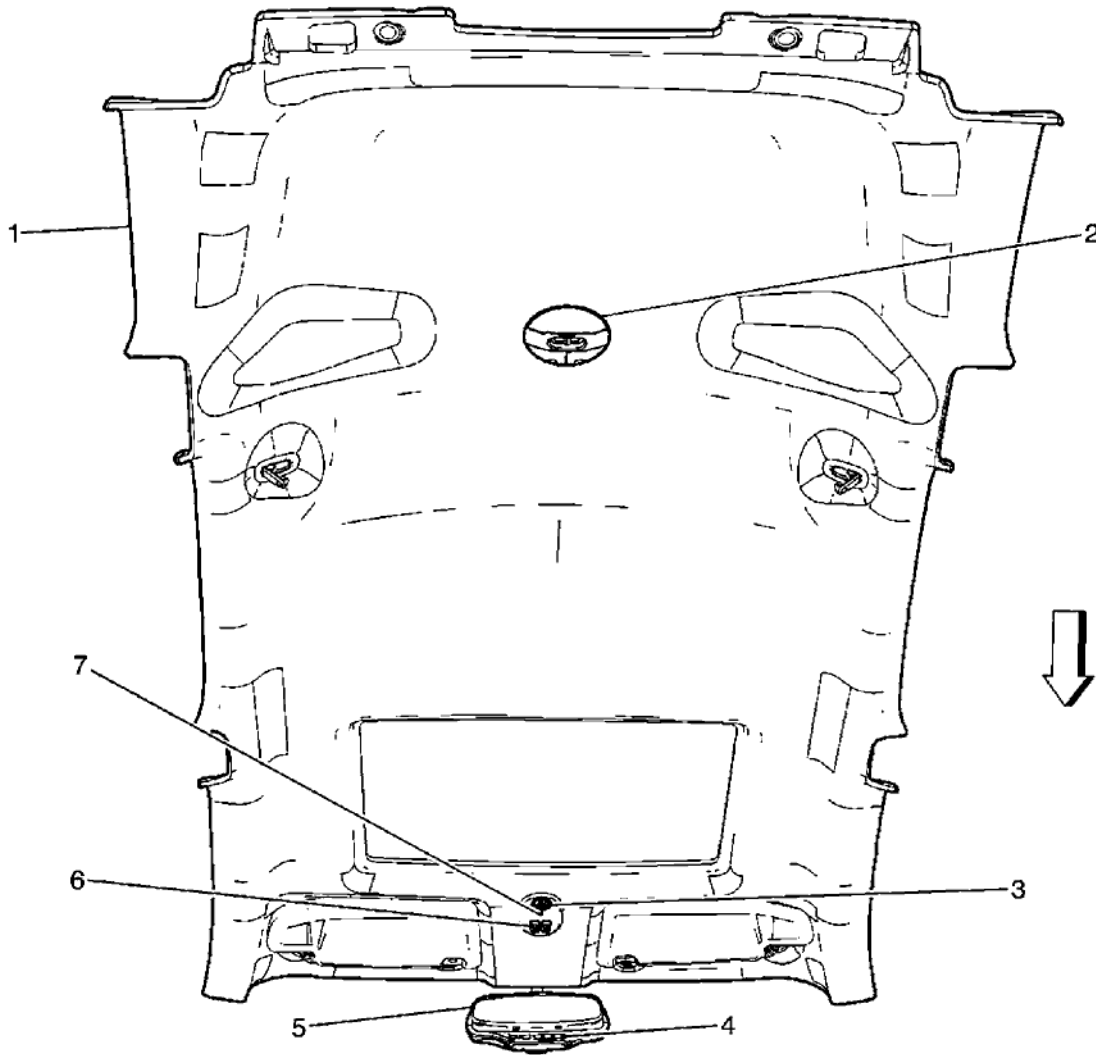
**Fig. 2: Inside Rearview Mirror Schematic**  
Courtesy of GENERAL MOTORS CORP.

## COMPONENT LOCATOR

### STATIONARY WINDOWS COMPONENT VIEWS

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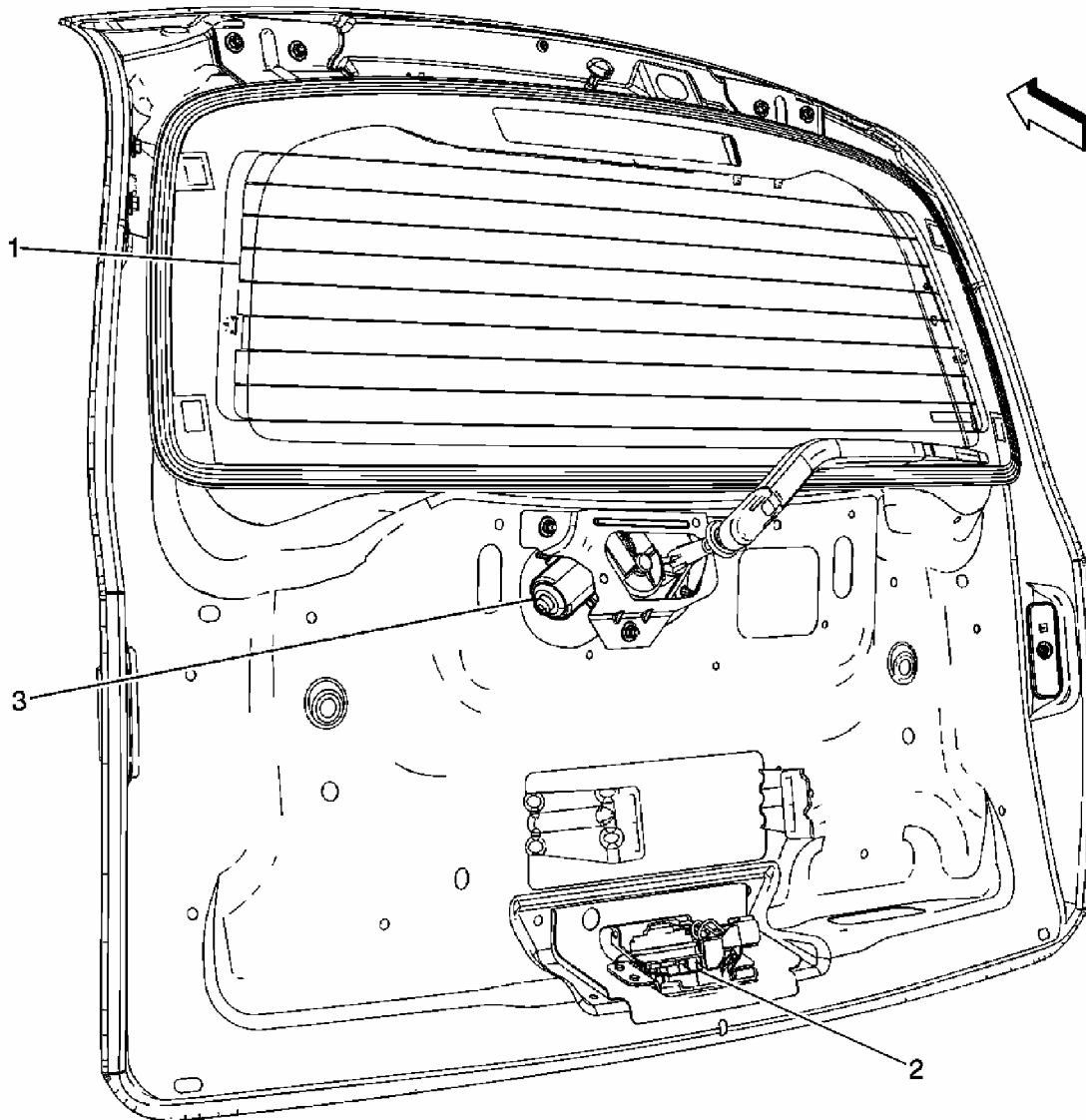
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**Fig. 3: Headliner Components - Bottom**  
Courtesy of GENERAL MOTORS CORP.

### Callouts For Fig. 3

| Callout | Component Name               |
|---------|------------------------------|
| 1       | Headliner                    |
| 2       | Dome Lamp                    |
| 3       | Cellular Microphone (UE1)    |
| 4       | OnStar Button Assembly (UE1) |
| 5       | Inside Rearview Mirror       |
| 6       | Sunroof Switch (CF5)         |



**Fig. 4: Liftgate Components**  
Courtesy of GENERAL MOTORS CORP.

**Callouts For Fig. 4**

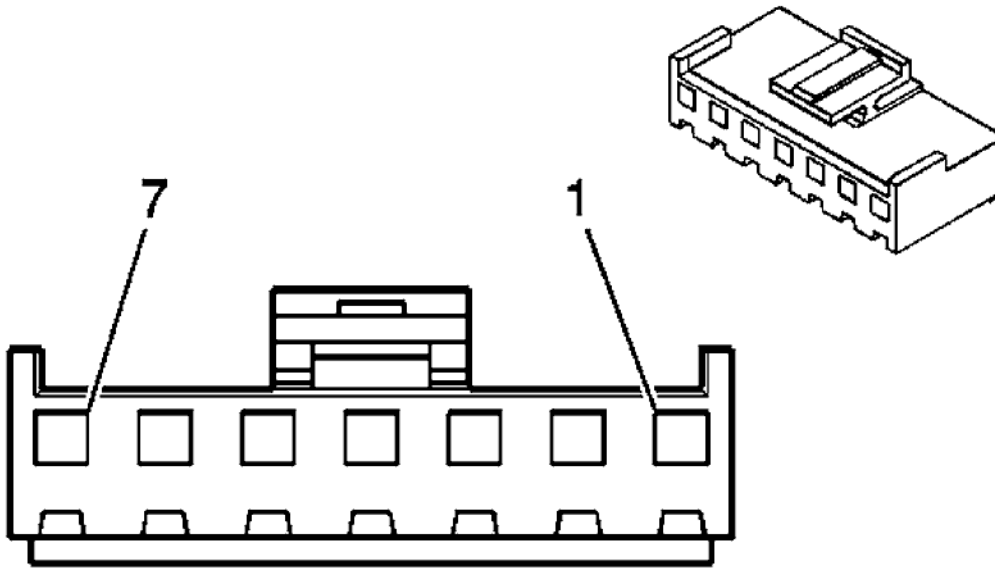
| Callout | Component Name            |
|---------|---------------------------|
| 1       | Rear Window Defogger Grid |
| 2       | Door Latch - Liftgate     |
| 3       | Rear Window Wiper Motor   |

**STATIONARY WINDOWS CONNECTOR END VIEWS**

Inside Rearview Mirror (w/o UE1/DD8)

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**Fig. 5: Inside Rearview Mirror (w/o UE1/DD8) Connector**  
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:
- Terminal:
- Core/Insulation Crimp:
- Release Tool/Test Probe:

### Inside Rearview Mirror (w/o UE1/DD8)

| Pin | Wire Color | Circuit No. | Function              |
|-----|------------|-------------|-----------------------|
| 1   | -          | -           | Not Used              |
| 2   | BK         | 750         | Ground                |
| 3-5 | -          | -           | Not Used              |
| 6   | GY         | 157         | Interior Lamp Control |

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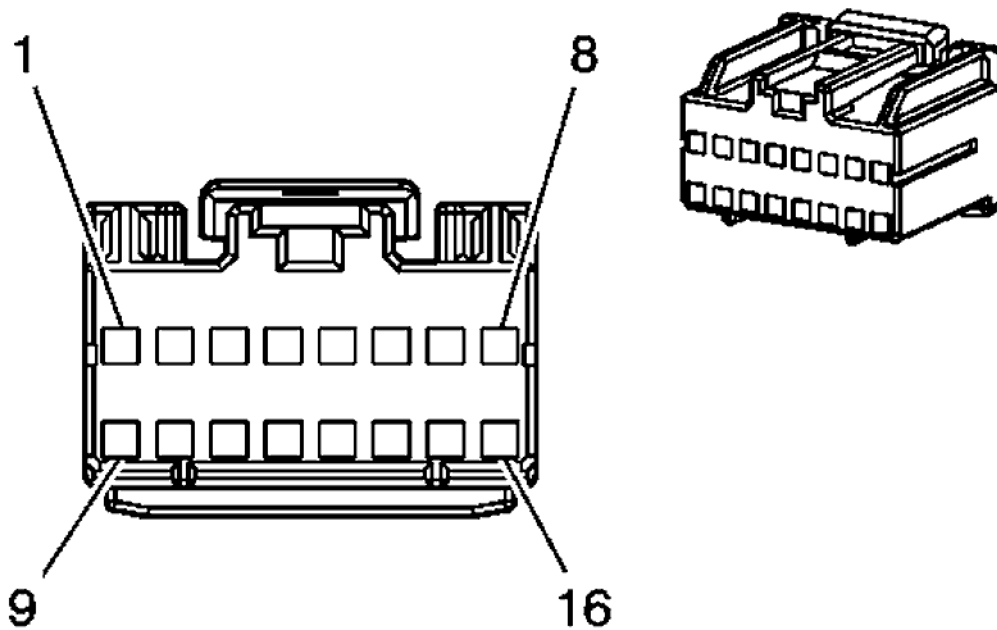
7

D-BU/WH

149

Courtesy Lamp Supply Voltage

### Inside Rearview Mirror (UE1/DD8)



**Fig. 6: Inside Rearview Mirror (UE1/DD8) Connector**  
Courtesy of GENERAL MOTORS CORP.

### Stationary Windows Connector End Views

#### Connector Part Information

- OEM: 15441350
- Service: 15306351
- Description: 16-Way F

#### Terminal Part Information

- Pins:
- Terminal:
- Core/Insulation Crimp:
- Release Tool/Test Probe:

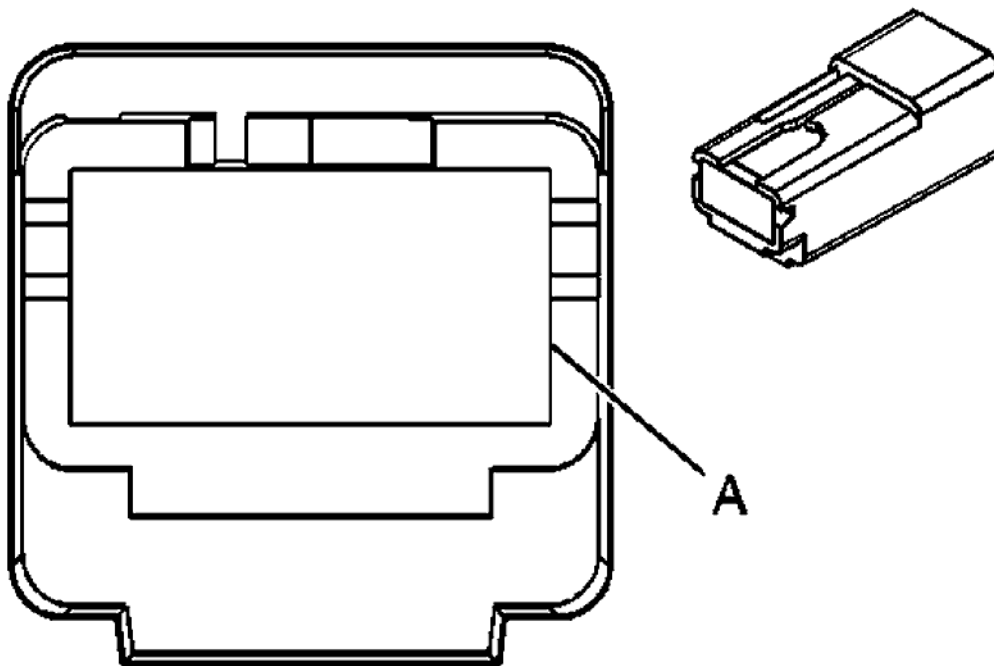
### Inside Rearview Mirror (UE1/DD8)

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| Pin | Wire Color | Circuit No. | Function                     |
|-----|------------|-------------|------------------------------|
| 1   | GY         | 157         | Interior Lamp Control        |
| 2-5 | -          | -           | Not Used                     |
| 6   | D-BU/WH    | 149         | Courtesy Lamp Supply Voltage |
| 7   | -          | -           | Not Used                     |
| 8   | BK         | 750         | Ground                       |
| 9   | L-GN       | 24          | Backup Lamp Supply Voltage   |
| 10  | -          | -           | Not Used                     |
| 11  | D-GN/WH    | 2514        | Keypad Signal                |
| 12  | L-GN/BK    | 2515        | Keypad Supply Voltage        |
| 13  | PK         | 339         | Run/Crank Ignition 1 Voltage |
| 14  | YE/BK      | 2516        | Keypad Green LED             |
| 15  | BN/WH      | 2517        | Keypad Red LED               |
| 16  | -          | -           | Not Used                     |

### Rear Window Defogger Grid C1



**Fig. 7: Rear Window Defogger Grid C1 Connector End View**  
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### Stationary Windows Connector End Views

#### Connector Part Information

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

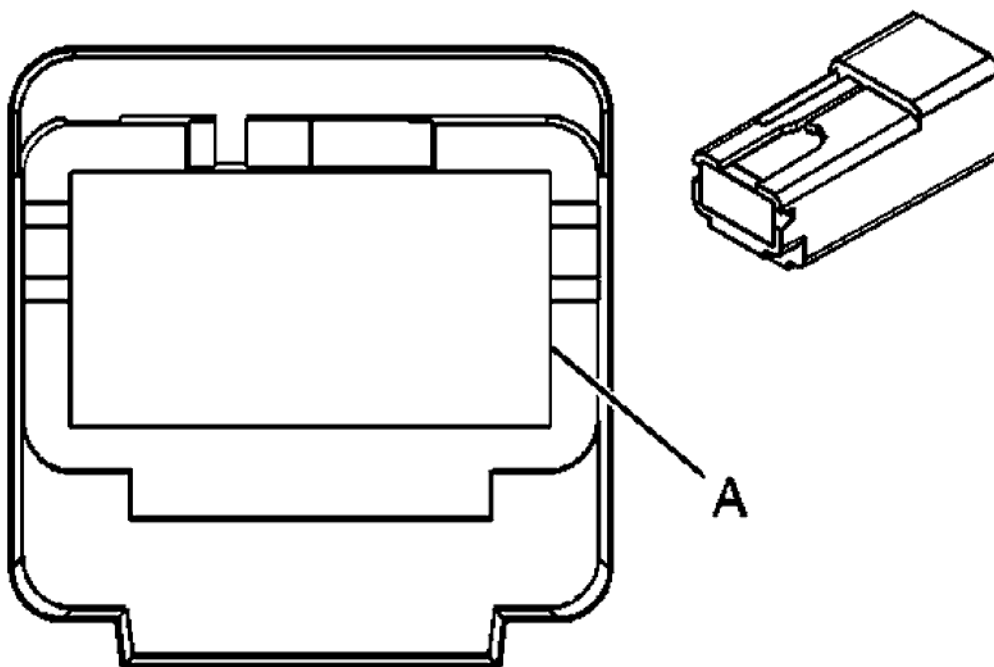
#### Terminal Part Information

- Pins:
- Terminal:
- Core/Insulation Crimp:
- Release Tool/Test Probe:

### Rear Window Defogger Grid C1

| Pin | Wire Color | Circuit No. | Function                          |
|-----|------------|-------------|-----------------------------------|
| 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 Series (BK)

#### Terminal Part Information

- Pins:
- Terminal:
- Core/Insulation Crimp:
- Release Tool/Test Probe:

### Rear Window Defogger Grid C2

| Pin | Wire Color | Circuit No. | Function |
|-----|------------|-------------|----------|
| A   | BK         | 1450        | Ground   |

## DIAGNOSTIC INFORMATION AND PROCEDURES

### DIAGNOSTIC STARTING POINT - STATIONARY WINDOWS

For the inside rearview mirror with the automatic day-night feature, begin the diagnosis by reviewing the system 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 **Diagnostic System Check - Vehicle** in Vehicle DTC Information, in order to identify the correct procedure for diagnosing the system and where the procedure is located.

For the rear window defogger, begin the 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

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### Body Control Module (BCM)

| Scan Tool Output Control | Additional Menu Selection(s) | Description                                                                                                    |
|--------------------------|------------------------------|----------------------------------------------------------------------------------------------------------------|
| Rear Defogger            | Miscellaneous Test           | The BCM actuates the Rear Defogger relay when you select ON. The rear window defogger grid should become warm. |

### SCAN TOOL DATA LIST

### Body Control Module (BCM)

| Scan Tool Parameter                                                                           | Units Displayed | Typical Data Value |
|-----------------------------------------------------------------------------------------------|-----------------|--------------------|
| <b>Operating Conditions: Ignition in RUN Position, Engine OFF, All Doors CLOSED, DRLs OFF</b> |                 |                    |
| A/C Switch                                                                                    | On/Off          | Varies             |
| Battery 1                                                                                     | Volts           | Varies             |
| Rear Defog Relay Cmd                                                                          | On/Off          | Off                |
| Rear Defog Switch Input                                                                       | On/Off          | Off                |

### SCAN TOOL DATA DEFINITIONS

#### Body Control Module (BCM)

##### A/C Switch

The scan tool displays On or Off. The BCM displays On when it receives an input from the HVAC control head indicator an A/C request.

##### Battery 1

The scan tool displays the value of the vehicle battery voltage.

##### Rear Defog Relay

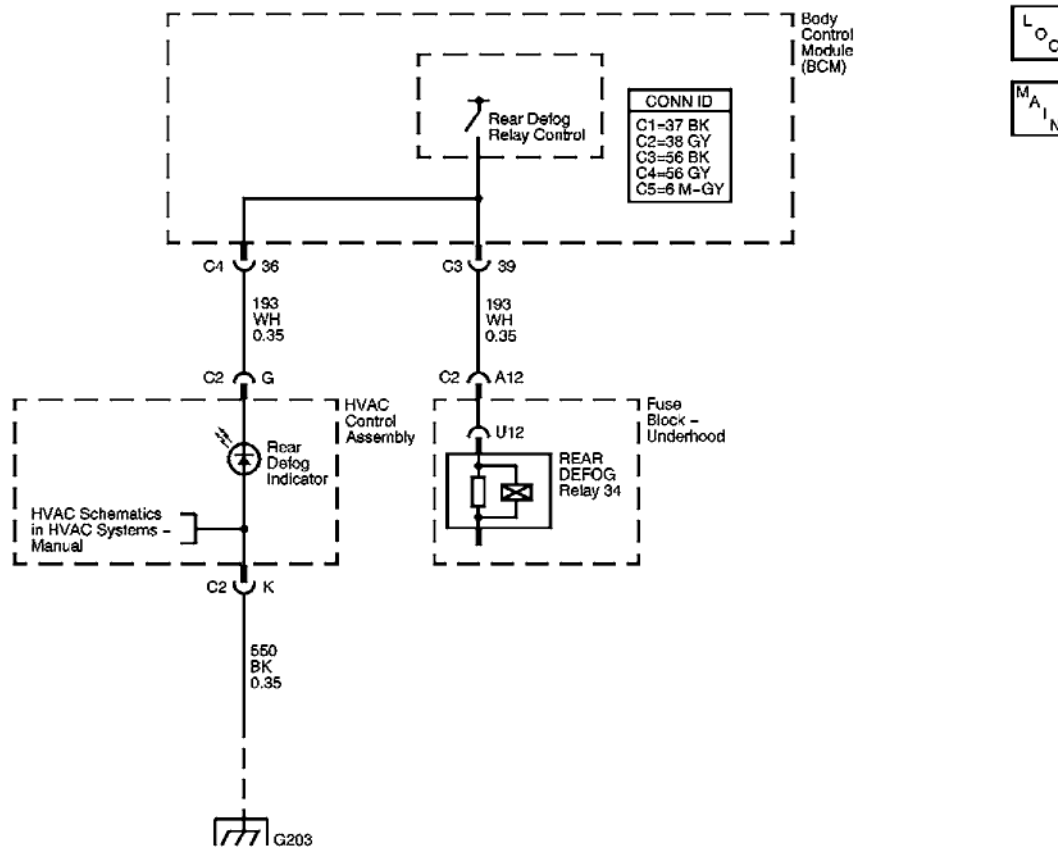
The scan tool displays On or Off. When the BCM energizes the Rear Defogger relay, the scan tool will display On. When the BCM de-energizes the Rear Defogger relay, the scan tool will display Off.

##### Rear Defog Switch Input

The scan tool displays On or Off. When you depress the rear window defogger switch, the switch pulls the rear defogger switch signal circuit of the BCM low. The scan tool will display On. When you depress the switch again, the rear defogger switch signal circuit of the BCM will return to its normal state. The scan tool will display Off.

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**Fig. 9: REAR DEFOG Relay Circuit**  
Courtesy of GENERAL MOTORS CORP.

#### Circuit Description

The body control module (BCM) monitors the voltage level on the supply voltage circuit of the REAR DEFOG relay. The voltage level should be low while the REAR DEFOG relay is de-energized. The voltage will be near system voltage when the BCM energizes the REAR DEFOG relay.

#### DTC Descriptor

This diagnostic procedure supports the following DTC:

DTC B0285 Electric Rear Defrost Circuit Low

#### Conditions for Running the DTC

- The ignition is ON.
- Fog lights are active, if equipped.

#### Conditions for Setting the DTC

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The BCM detects a low voltage level on the supply circuit of the REAR DEFOG relay when the relay is energized.

#### Action Taken When the DTC Sets

The rear window defogger will be disabled until the condition is no longer present.

#### Conditions for Clearing the DTC

- This DTC will change from current to history when the fault is no longer present.
- A history DTC will clear after 100 consecutive ignition cycles if the condition for the malfunction is no longer present.

#### Test Description

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

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

**3:** Verifies that the BCM is providing voltage to the REAR DEFOG relay.

**5:** Tests for a short to ground on the supply voltage circuit of the REAR DEFOG relay coil.

#### DTC B0285

| Step                                                                               | Action                                                                                                                                                                                                                                                                                                                    | Yes                                                              | No                                                                               |
|------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|----------------------------------------------------------------------------------|
| <b>Schematic Reference: <u>Defogger Schematics</u></b>                             |                                                                                                                                                                                                                                                                                                                           |                                                                  |                                                                                  |
| <b>Connector End View Reference: <u>Stationary Windows Connector End Views</u></b> |                                                                                                                                                                                                                                                                                                                           |                                                                  |                                                                                  |
| 1                                                                                  | Did you perform the Diagnostic System Check - Vehicle?                                                                                                                                                                                                                                                                    | Go to <b>Step 2</b>                                              | Go to <b><u>Diagnostic System Check - Vehicle</u></b> in Vehicle DTC Information |
| 2                                                                                  | <ol style="list-style-type: none"><li>1. Install a scan tool.</li><li>2. Turn ON the ignition, with the engine OFF.</li><li>3. From miscellaneous test menu, select the rear defogger from the body control module (BCM) output controls.</li><li>4. With a scan tool, command the REAR DEFOG relay ON and OFF.</li></ol> | Go to <b><u>Testing for Intermittent Conditions and Poor</u></b> |                                                                                  |

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|          | Do you hear a click when you command the REAR DEFOG relay ON and OFF?                                                                                                                                                                                                                                                                                                                                             | <u>Connections</u> in Wiring Systems | Go to <b>Step 3</b>  |
|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|----------------------|
| <b>3</b> | <ol style="list-style-type: none"> <li>1. Turn OFF the ignition.</li> <li>2. Disconnect the REAR DEFOG relay.</li> <li>3. Turn ON the ignition, with the engine OFF.</li> <li>4. Connect a test lamp between the supply voltage circuit of the REAR DEFOG relay coil and a good ground.</li> <li>5. With the scan tool, command the REAR DEFOG relay ON and OFF.</li> </ol> <p>Does the test lamp illuminate?</p> | Go to <b>Step 4</b>                  | Go to <b>Step 5</b>  |
| <b>4</b> | <ol style="list-style-type: none"> <li>1. Connect a test lamp between the supply voltage circuit of the REAR DEFOG relay coil and the ground circuit of the REAR DEFOG relay coil.</li> <li>2. With the scan tool, command the REAR DEFOG relay ON and OFF.</li> </ol> <p>Does the test lamp turn ON and OFF with each command?</p>                                                                               | Go to <b>Step 7</b>                  | Go to <b>Step 9</b>  |
| <b>5</b> | <p>Test the supply voltage circuit of the REAR DEFOG relay for a short to ground. Refer to <b>Circuit Testing</b> and <b>Wiring Repairs</b> in Wiring Systems.</p> <p>Did you find and correct the condition?</p>                                                                                                                                                                                                 | Go to <b>Step 12</b>                 | Go to <b>Step 6</b>  |
| <b>6</b> | <p>Test the supply voltage circuit of the rear window defogger indicator for a short to ground. Refer to <b>Circuit Testing</b> and <b>Wiring Repairs</b> in Wiring Systems.</p> <p>Did you find and correct the condition?</p>                                                                                                                                                                                   | Go to <b>Step 12</b>                 | Go to <b>Step 8</b>  |
| <b>7</b> | <p>Inspect for poor connections at the REAR DEFOG relay. Refer to <b>Testing for Intermittent Conditions and Poor Connections</b> and <b>Connector Repairs</b> in Wiring Systems.</p> <p>Did you find and correct the condition?</p>                                                                                                                                                                              | Go to <b>Step 12</b>                 | Go to <b>Step 10</b> |
|          | <p>Inspect for poor connections at the harness connector of the BCM. Refer to <b>Testing for</b></p>                                                                                                                                                                                                                                                                                                              |                                      |                      |

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|    |                                                                                                                                                                                      |                      |                      |
|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------------|
| 8  | <b>Intermittent Conditions and Poor Connections</b> and <b>Connector Repairs</b> in Wiring Systems.<br>Did you find and correct the condition?                                       | Go to <b>Step 12</b> | Go to <b>Step 11</b> |
| 9  | Repair an open or high resistance in the ground circuit of the REAR DEFOG relay. Refer to <b>Wiring Repairs</b> in Wiring Systems.<br>Did you complete the repair?                   | Go to <b>Step 12</b> | -                    |
| 10 | Replace the REAR DEFOG relay.<br>Did you complete the replacement?                                                                                                                   | Go to <b>Step 12</b> | -                    |
| 11 | Replace the BCM. Refer to <b>Control Module References</b> in Computer/Integrating Systems for replacement, setup, and programming.<br>Did you complete the replacement?             | Go to <b>Step 12</b> | -                    |
| 12 | 1. Use the scan tool in order to clear the DTCs.<br>2. Operate the vehicle within the Conditions for Setting the DTC as specified in the supporting text.<br><br>Does the DTC reset? | Go to <b>Step 2</b>  | 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**.

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- 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 Inoperative - Rear Window**
- **Defogger Indicator Always On**
- **Defogger Grid Lines Diagnosis**
- **Mirrors - Automatic Day-Night Inoperative**

#### DEFOGGER INOPERATIVE - REAR WINDOW

##### Test Description

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

**8:** Listen for an audible click when the 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                                                                        |
|-----------------------------------------------------------------------------|---------------------------------------------------------------------|---------------------|---------------------------------------------------------------------------|
| <b>Schematic Reference: Defogger Schematics</b>                             |                                                                     |                     |                                                                           |
| <b>Connector End View Reference: Stationary Windows Connector End Views</b> |                                                                     |                     |                                                                           |
| 1                                                                           | Did you perform the Diagnostic System Check - Vehicle?              | Go to <b>Step 2</b> | Go to <b>Diagnostic System Check - Vehicle</b> in Vehicle DTC Information |
|                                                                             | 1. Start the engine.<br>2. Depress the rear window defogger switch. |                     |                                                                           |

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|   |                                                                                                                                                                                                                                                                                                                                                                      |                                                                                         |                      |
|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|----------------------|
| 2 | <p>3. Observe the rear window defogger indicator on the HVAC control assembly.</p> <p>Does the rear window defogger indicator illuminate?</p>                                                                                                                                                                                                                        | Go to <b>Step 3</b>                                                                     | Go to <b>Step 5</b>  |
| 3 | <p>Connect a test lamp between the rear window defogger grid and a good ground.</p> <p>Does the test lamp illuminate?</p>                                                                                                                                                                                                                                            | Go to <b>Step 4</b>                                                                     | Go to <b>Step 8</b>  |
| 4 | <p>Connect a test lamp between the left side of the rear window defogger grid and the right side of the rear window defogger grid.</p> <p>Does the test lamp illuminate?</p>                                                                                                                                                                                         | Go to <b>Testing for Intermittent Conditions and Poor Connections</b> in Wiring Systems | Go to <b>Step 20</b> |
| 5 | <p>1. Install a scan tool.</p> <p>2. With the scan tool, observe the Rear Defog Switch Input parameter in the body control module (BCM) HVAC data list.</p> <p>3. Depress the rear window defogger switch.</p> <p>Does the scan tool display On?</p>                                                                                                                 | Go to <b>Step 7</b>                                                                     | Go to <b>Step 6</b>  |
| 6 | <p>1. Turn the ignition OFF.</p> <p>2. Disconnect harness connector C4 of the BCM.</p> <p>3. Turn the ignition ON, with the engine OFF.</p> <p>4. Connect a test lamp between battery voltage and the rear defogger switch signal circuit of the HVAC control assembly.</p> <p>5. Depress the rear window defogger switch.</p> <p>Does the test lamp illuminate?</p> | Go to <b>Step 19</b>                                                                    | Go to <b>Step 15</b> |
|   | <p>1. Turn the ignition OFF.</p> <p>2. Disconnect harness connector C4 of the BCM.</p>                                                                                                                                                                                                                                                                               |                                                                                         |                      |

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|    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                      |                      |
|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------------|
| 7  | <ol style="list-style-type: none"><li>3. Turn the ignition ON, with the engine OFF.</li><li>4. Connect a 3-ampere fused jumper between battery voltage and the supply voltage circuit of the rear window defogger indicator for the HVAC control assembly.</li></ol> <p>Does the indicator illuminate?</p>                                                                                                                                                                                                         | Go to <b>Step 19</b> | Go to <b>Step 16</b> |
| 8  | <ol style="list-style-type: none"><li>1. Install a scan tool.</li><li>2. From the miscellaneous test menu, select the rear defogger under from the BCM output controls.</li><li>3. Command the REAR DEFOG relay ON and OFF.</li></ol> <p>Do you hear a click when you command the REAR DEFOG relay ON and OFF?</p>                                                                                                                                                                                                 | Go to <b>Step 11</b> | Go to <b>Step 9</b>  |
| 9  | <ol style="list-style-type: none"><li>1. Turn the ignition OFF.</li><li>2. Disconnect the REAR DEFOG relay.</li><li>3. Turn the ignition ON, with the engine OFF.</li><li>4. Connect a test lamp between the supply voltage circuit and the ground circuit of the REAR DEFOG relay coil.</li><li>5. From the miscellaneous test menu, select the rear defogger under from the BCM output controls.</li><li>6. With the scan tool, command the REAR DEFOG relay ON.</li></ol> <p>Does the test lamp illuminate?</p> | Go to <b>Step 17</b> | Go to <b>Step 10</b> |
| 10 | <ol style="list-style-type: none"><li>1. Install a scan tool.</li><li>2. Connect a test lamp between the supply voltage circuit of the REAR DEFOG relay coil and a good ground.</li><li>3. With the scan tool, command the REAR DEFOG relay ON.</li></ol>                                                                                                                                                                                                                                                          |                      |                      |

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|    | Does the test lamp illuminate?                                                                                                                                                                                                                                                                                                              | Go to <b>Step 21</b> | Go to <b>Step 13</b> |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------------|
| 11 | <ol style="list-style-type: none"> <li>1. Turn the ignition OFF.</li> <li>2. Disconnect the REAR DEFOG relay.</li> <li>3. Turn the ignition ON, with the engine OFF.</li> <li>4. Connect a test lamp between the switched battery voltage circuit input of the REAR DEFOG relay and a good ground.</li> </ol>                               |                      |                      |
|    | Does the test lamp illuminate?                                                                                                                                                                                                                                                                                                              | Go to <b>Step 12</b> | Go to <b>Step 14</b> |
| 12 | <ol style="list-style-type: none"> <li>1. Connect a test lamp between the rear window defogger grid and a good ground.</li> <li>2. Connect a 30-ampere fused jumper between the switched battery voltage circuit input of the REAR DEFOG relay and the switched relay output to the supply voltage circuit of the rear defogger.</li> </ol> |                      |                      |
|    | Does the test lamp illuminate?                                                                                                                                                                                                                                                                                                              | Go to <b>Step 17</b> | Go to <b>Step 23</b> |
| 13 | Test the supply voltage circuit of the REAR DEFOG relay coil for an open or short to ground. Refer to <b>Circuit Testing</b> and <b>Wiring Repairs</b> in Wiring Systems. Did you find and correct the condition?                                                                                                                           | Go to <b>Step 27</b> | Go to <b>Step 19</b> |
| 14 | Test the switched battery voltage circuit input of the REAR DEFOG relay for an open or high resistance. Refer to <b>Circuit Testing</b> and <b>Wiring Repairs</b> in Wiring Systems. Did you find and correct the condition?                                                                                                                | Go to <b>Step 27</b> | Go to <b>Step 22</b> |
| 15 | Test the rear defogger switch signal circuit of the HVAC control assembly for an open or short to voltage. Refer to <b>Circuit Testing</b> and <b>Wiring Repairs</b> in Wiring Systems. Did you find and correct the condition?                                                                                                             | Go to <b>Step 27</b> | Go to <b>Step 18</b> |
| 16 | Test the supply voltage circuit of the rear window defogger indicator for the HVAC control assembly for an open or short to ground. Refer to <b>Circuit Testing</b> and                                                                                                                                                                     |                      |                      |

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|    |                                                                                                                                                                                                                                                         |                      |                      |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------------|
|    | <b>Wiring Repairs</b> in Wiring Systems.<br>Did you find and correct the condition?                                                                                                                                                                     | Go to <b>Step 27</b> | Go to <b>Step 18</b> |
| 17 | Inspect for poor connections at the REAR DEFOG relay. Refer to <b>Testing for Intermittent Conditions and Poor Connections</b> and <b>Connector Repairs</b> in Wiring Systems.<br>Did you find and correct the condition?                               | Go to <b>Step 27</b> | Go to <b>Step 24</b> |
| 18 | Inspect for poor connections at the harness connector of the HVAC control assembly. Refer to <b>Testing for Intermittent Conditions and Poor Connections</b> and <b>Connector Repairs</b> in Wiring Systems.<br>Did you find and correct the condition? | Go to <b>Step 27</b> | Go to <b>Step 25</b> |
| 19 | Inspect for poor connections at the harness connector of the BCM. Refer to <b>Testing for Intermittent Conditions and Poor Connections</b> and <b>Connector Repairs</b> in Wiring Systems.<br>Did you find and correct the condition?                   | Go to <b>Step 27</b> | Go to <b>Step 26</b> |
| 20 | Repair an open or high resistance in the ground circuit of the rear window defogger. Refer to <b>Wiring Repairs</b> in Wiring Systems.<br>Did you complete the repair?                                                                                  | Go to <b>Step 27</b> | -                    |
| 21 | Repair an open or high resistance in the ground circuit of the REAR DEFOG relay coil. Refer to <b>Wiring Repairs</b> in Wiring Systems.<br>Did you complete the repair?                                                                                 | Go to <b>Step 27</b> | -                    |
| 22 | Repair a short to ground in the supply voltage circuit of the rear window defogger. Refer to <b>Wiring Repairs</b> in Wiring Systems.<br>Did you complete the repair?                                                                                   | Go to <b>Step 27</b> | -                    |
| 23 | Repair an open or high resistance in the supply circuit of the rear window defogger. Refer to <b>Wiring Repairs</b> in Wiring Systems.<br>Did you complete the repair?                                                                                  | Go to <b>Step 27</b> | -                    |
| 24 | Replace the REAR DEFOG relay.<br>Did you complete the replacement?                                                                                                                                                                                      | Go to <b>Step 27</b> | -                    |

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|    |                                                                                                                                                                          |                      |                     |
|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|---------------------|
| 25 | Replace the HVAC control assembly. Refer to <b>HVAC Control Assembly Replacement</b> in HVAC Systems - Manual.<br>Did you complete the replacement?                      | Go to <b>Step 27</b> | -                   |
| 26 | Replace the BCM. Refer to <b>Control Module References</b> in Computer/Integrating Systems for replacement, setup, and programming.<br>Did you complete the replacement? | Go to <b>Step 27</b> | -                   |
| 27 | Operate the system in order to verify the repair.<br>Did you correct the condition?                                                                                      | System OK            | Go to <b>Step 2</b> |

**DEFOGGER INDICATOR ALWAYS ON****Test Description**

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

**3:** Command both the ON and OFF states of the rear window defogger switch. Repeat the command as necessary to verify the Rear Defog Switch Input data parameter does or doesn't change states.

**Defogger Indicator Always On**

| Step                                                                        | Action                                                                                                                                                                                                                                                                                                                                            | Yes                                                                      | No                                                                        |
|-----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|---------------------------------------------------------------------------|
| <b>Schematic Reference: Defogger Schematics</b>                             |                                                                                                                                                                                                                                                                                                                                                   |                                                                          |                                                                           |
| <b>Connector End View Reference: Stationary Windows Connector End Views</b> |                                                                                                                                                                                                                                                                                                                                                   |                                                                          |                                                                           |
| 1                                                                           | Did you perform the Diagnostic System Check - Vehicle?                                                                                                                                                                                                                                                                                            | Go to <b>Step 2</b>                                                      | Go to <b>Diagnostic System Check - Vehicle</b> in Vehicle DTC Information |
| 2                                                                           | <ol style="list-style-type: none"> <li>1. Turn ON the ignition, with the engine OFF.</li> <li>2. Observe the rear window defogger indicator on the HVAC control assembly.</li> <li>3. Command the rear window defogger indicator ON and OFF, by depressing the rear window defogger switch.</li> </ol><br>Does the rear window defogger indicator | Go to <b>Testing for Intermittent Conditions and Poor Connections</b> in |                                                                           |

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|          | turn ON and OFF with each command?                                                                                                                                                                                                                                                                                                              | Wiring Systems       | Go to <b>Step 3</b>  |
|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------------|
| <b>3</b> | <ol style="list-style-type: none"> <li>1. Install a scan tool.</li> <li>2. With the scan tool, observe the Rear Defog Switch Input Data parameter in the body control module (BCM) HVAC data list.</li> <li>3. Depress the rear window defogger switch.</li> </ol> <p>Does the Rear Defog Switch Input Data parameter always display On?</p>    |                      |                      |
|          |                                                                                                                                                                                                                                                                                                                                                 | Go to <b>Step 4</b>  | Go to <b>Step 5</b>  |
| <b>4</b> | <ol style="list-style-type: none"> <li>1. Turn OFF the ignition.</li> <li>2. Disconnect harness connector C4 of the BCM.</li> <li>3. Turn ON the ignition, with the engine OFF.</li> <li>4. Connect a test lamp from the rear window defogger switch signal circuit to battery voltage.</li> </ol> <p>Does the test lamp illuminate?</p>        |                      |                      |
|          |                                                                                                                                                                                                                                                                                                                                                 | Go to <b>Step 6</b>  | Go to <b>Step 7</b>  |
| <b>5</b> | <ol style="list-style-type: none"> <li>1. Turn OFF the ignition.</li> <li>2. Disconnect harness connector C3 of the BCM.</li> <li>3. Turn ON the ignition, with the engine OFF.</li> <li>4. Connect a test lamp from the supply voltage circuit of the REAR DEFOG relay coil to a good ground.</li> </ol> <p>Does the test lamp illuminate?</p> |                      |                      |
|          |                                                                                                                                                                                                                                                                                                                                                 | Go to <b>Step 9</b>  | Go to <b>Step 10</b> |
| <b>6</b> | <p>Test the rear defogger switch signal circuit of the HVAC control assembly for short to ground. Refer to <b>Circuit Testing</b> and <b>Wiring Repairs</b> in Wiring Systems.</p> <p>Did you find and correct the condition?</p>                                                                                                               |                      |                      |
|          |                                                                                                                                                                                                                                                                                                                                                 | Go to <b>Step 13</b> | Go to <b>Step 8</b>  |
| <b>7</b> | <p>Inspect for poor connections at the harness connector of the BCM. Refer to <b>Testing for Intermittent Conditions and Poor Connections</b> and <b>Connector Repairs</b> in Wiring Systems.</p>                                                                                                                                               |                      |                      |

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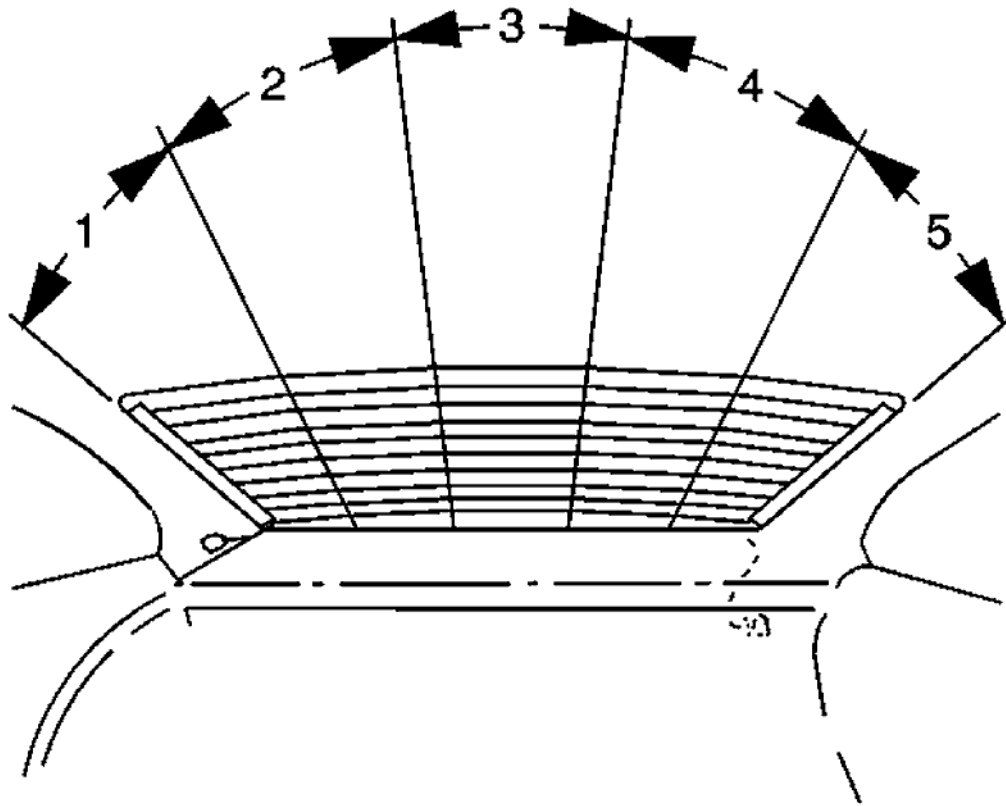
2006 ACCESSORIES &amp; EQUIPMENT Stationary Windows - HHR

|    | Did you find and correct the condition?                                                                                                                                                                                                              | Go to <b>Step 13</b> | Go to <b>Step 11</b> |
|----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------------|
| 8  | Inspect for poor connections at the harness connector of the HVAC control assembly. Refer to <b>Testing for Intermittent Conditions and Poor Connections</b> and <b>Connector Repairs</b> in Wiring Systems. Did you find and correct the condition? | Go to <b>Step 13</b> | Go to <b>Step 12</b> |
| 9  | Repair a short to voltage in the supply voltage circuit of the REAR DEFOG relay coil. Refer to <b>Wiring Repairs</b> in Wiring Systems. Did you complete the repair?                                                                                 | Go to <b>Step 13</b> | -                    |
| 10 | Repair a short to voltage in the supply voltage circuit of the rear window defogger indicator. Refer to <b>Wiring Repairs</b> in Wiring Systems. Did you complete the repair?                                                                        | Go to <b>Step 13</b> | -                    |
| 11 | Replace the BCM. Refer to <b>Control Module References</b> in Computer/Integrating Systems for replacement, setup, and programming. Did you complete the replacement?                                                                                | Go to <b>Step 13</b> | -                    |
| 12 | Replace the HVAC control assembly. Refer to <b>HVAC Control Assembly Replacement</b> in HVAC Systems - Manual. Did you complete the replacement?                                                                                                     | Go to <b>Step 13</b> | -                    |
| 13 | Operate the system in order to verify the repair. Did you correct the condition?                                                                                                                                                                     | System OK            | Go to <b>Step 2</b>  |

**DEFOGGER GRID LINES DIAGNOSIS**

**IMPORTANT:** This test is for reference only. A grid line fault requires rear window replacement. Refer to **Window Replacement - Liftgate** .

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



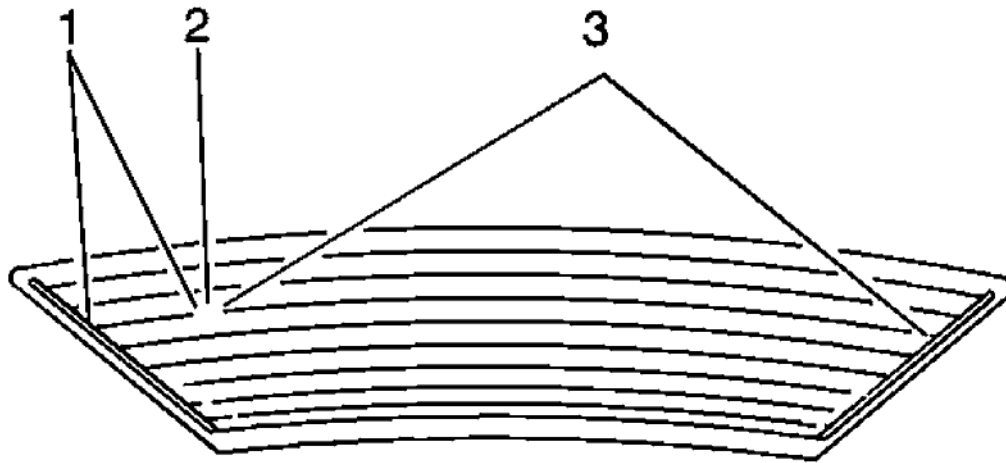
**Fig. 10: Identifying Defogger Grid Line Zones**  
Courtesy of GENERAL MOTORS CORP.

**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.

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**Fig. 11: 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. Once the open (2) is located, replace the rear window. Refer to **Window Replacement - Liftgate**.

## 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 positive voltage in the backup lighting system.

### Mirrors - Automatic Day-Night Inoperative

| Step                                                                                                                                         | Action                                                                                                                               | Values | Yes          | No                                         |
|----------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|--------|--------------|--------------------------------------------|
| <b>Schematic Reference: Inside Rearview Mirror Schematics</b><br><b>Connector End View Reference: Stationary Windows Connector End Views</b> |                                                                                                                                      |        |              |                                            |
| 1                                                                                                                                            | Did you review the operation of the automatic day-night feature of the inside rearview mirror and perform the necessary inspections? | -      | Go to Step 2 | Go to <b>Symptoms - Stationary Windows</b> |
|                                                                                                                                              | 1. Turn the ignition ON, with the engine OFF.                                                                                        |        |              |                                            |

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|   |                                                                                                                                                                                                                                                                                                                                                                                   |        |                       |                                                 |
|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|-----------------------|-------------------------------------------------|
| 2 | <ol style="list-style-type: none"> <li>2. Turn ON the automatic day-night feature of the inside rearview mirror.</li> <li>3. Cover the sensor on the inside rearview mirror back, facing the front window.</li> <li>4. Shine a bright light into the sensor on the inside rearview mirror face, facing the rear window.</li> </ol> <p>Does the inside rearview mirror darken?</p> | -      | Go to Diagnostic Aids | Go to <b>Step 3</b>                             |
| 3 | <ol style="list-style-type: none"> <li>1. Turn the ignition OFF.</li> <li>2. Disconnect the harness connector of the inside rearview mirror.</li> <li>3. Measure the resistance between the ground circuit of the inside rearview mirror and a good ground.</li> </ol> <p>Is the resistance less than the specified value?</p>                                                    | 3 ohms | Go to <b>Step 4</b>   | Go to <b>Step 9</b>                             |
| 4 | <ol style="list-style-type: none"> <li>1. Turn the ignition ON, with the engine OFF.</li> <li>2. Measure the voltage between the accessory voltage circuit of the inside rearview mirror and the ground circuit of the inside rearview mirror.</li> </ol> <p>Is the voltage within the specified range?</p>                                                                       | B+     | Go to <b>Step 5</b>   | Go to <b>Step 10</b>                            |
| 5 | <ol style="list-style-type: none"> <li>1. Place the transmission in PARK.</li> <li>2. Measure the voltage between the backup lamp supply voltage circuit of the inside rearview mirror and the ground circuit of the inside rearview mirror.</li> </ol> <p>Is the voltage less than the specified</p>                                                                             | 0.5 V  |                       | Go to <b>Backup Lamps Always On</b> in Lighting |

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|    | value?                                                                                                                                                                                                                                                              |    | Go to <b>Step 6</b>  | Systems                                                   |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|----------------------|-----------------------------------------------------------|
| 6  | <p>1. Place the transmission in REVERSE.</p> <p>2. Measure the voltage between the backup lamp supply voltage circuit of the inside rearview mirror and the ground circuit of the inside rearview mirror.</p> <p>Is the voltage within the specified range?</p>     | B+ |                      |                                                           |
|    |                                                                                                                                                                                                                                                                     |    | Go to <b>Step 8</b>  | Go to <b>Step 7</b>                                       |
| 7  | <p>Test the backup lamp supply voltage circuit of the inside rearview mirror for an open or high resistance. Refer to <b>Circuit Testing</b> and <b>Wiring Repairs</b> in Wiring Systems.</p> <p>Did you find and correct the condition?</p>                        | -  | Go to <b>Step 12</b> | Go to <b>Backup Lamps Inoperative</b> in Lighting Systems |
| 8  | <p>Inspect for poor connections at the harness connector of the inside rearview mirror. Refer to <b>Testing for Intermittent Conditions and Poor Connections</b> and <b>Connector Repairs</b> in Wiring Systems.</p> <p>Did you find and correct the condition?</p> | -  | Go to <b>Step 12</b> | Go to <b>Step 11</b>                                      |
| 9  | <p>Repair an open or high resistance in the ground circuit of the inside rearview mirror. Refer to <b>Wiring Repairs</b> in Wiring Systems.</p> <p>Did you complete the repair?</p>                                                                                 | -  | Go to <b>Step 12</b> | -                                                         |
| 10 | <p>Repair an open or short to ground in the accessory voltage circuit of the inside rearview mirror. Refer to <b>Wiring Repairs</b> in Wiring Systems.</p> <p>Did you complete the repair?</p>                                                                      | -  | Go to <b>Step 12</b> | -                                                         |
| 11 | <p><b>IMPORTANT:</b></p> <p><b>Perform the Compass Calibration and Variance procedure for the inside rearview mirror with compass.</b></p> <p>Replace the inside rearview mirror. Refer to <b>Rearview Mirror</b></p>                                               | -  |                      |                                                           |

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|    |                                                                                     |   |                      |                     |
|----|-------------------------------------------------------------------------------------|---|----------------------|---------------------|
|    | <b>Replacement.</b> Did you complete the replacement?                               |   | Go to <b>Step 12</b> | -                   |
| 12 | Operate the system in order to verify the repair.<br>Did you correct the condition? | - | System OK            | Go to <b>Step 2</b> |

## REPAIR INSTRUCTIONS

### WINDSHIELD REVEAL MOLDING REPLACEMENT

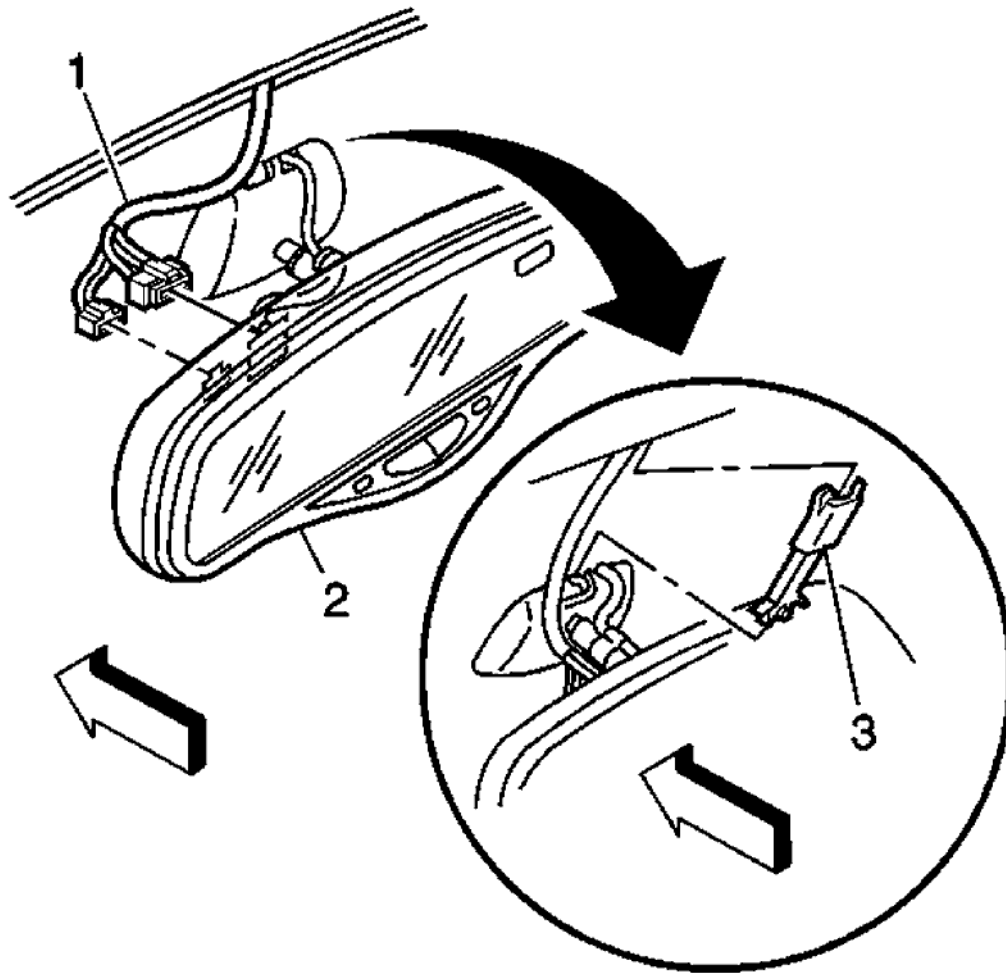
The windshield reveal molding is an applied molding design separate from the window. The reveal molding is bonded to the windshield and may be bonded to the body. The reveal molding may be replaced with the windshield as an assembly, or the reveal molding may be available as a separate service part.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

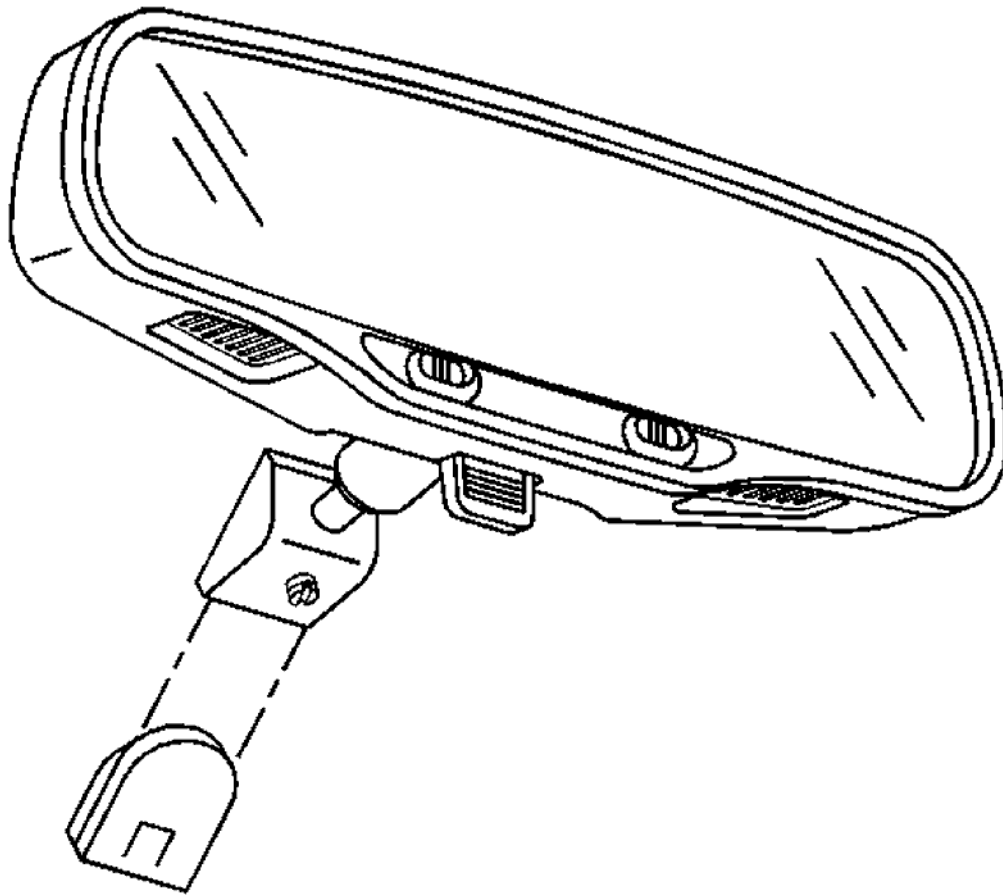


**Fig. 12: Rearview Mirror Electrical Connector**  
Courtesy of GENERAL MOTORS CORP.

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.

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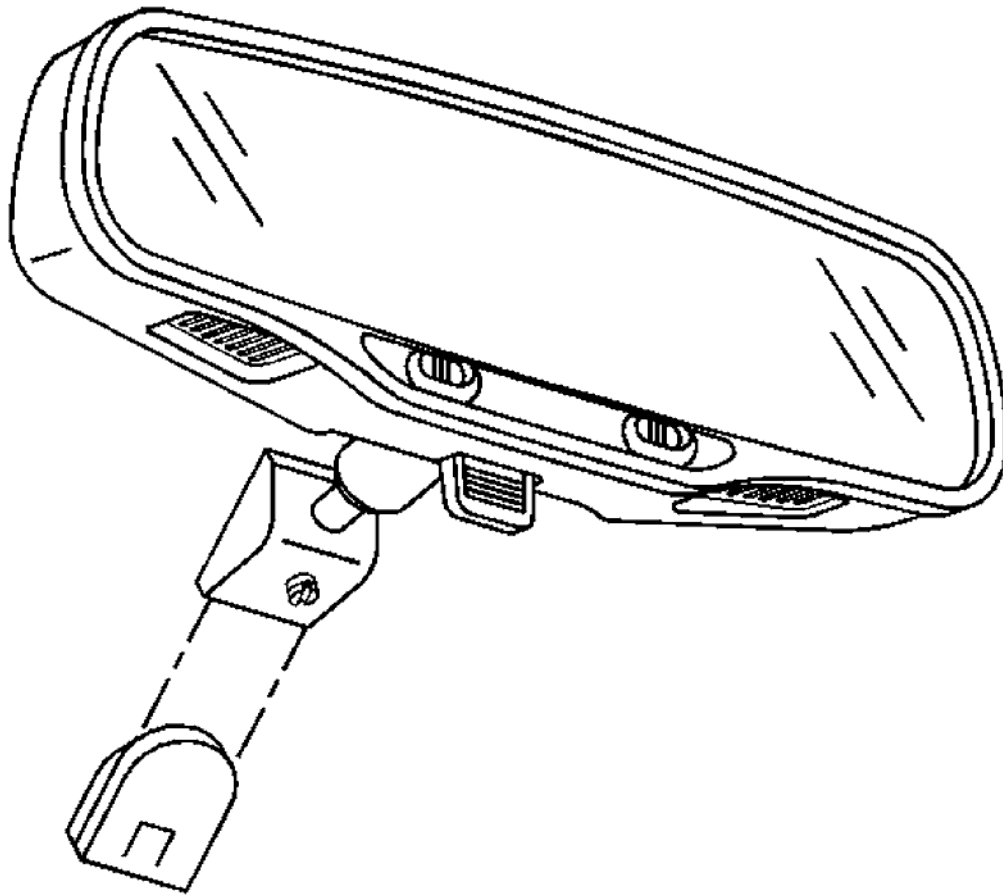
**Fig. 13: Removing/Installing Rearview Mirror**  
**Courtesy of GENERAL MOTORS CORP.**

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.

### Installation Procedure

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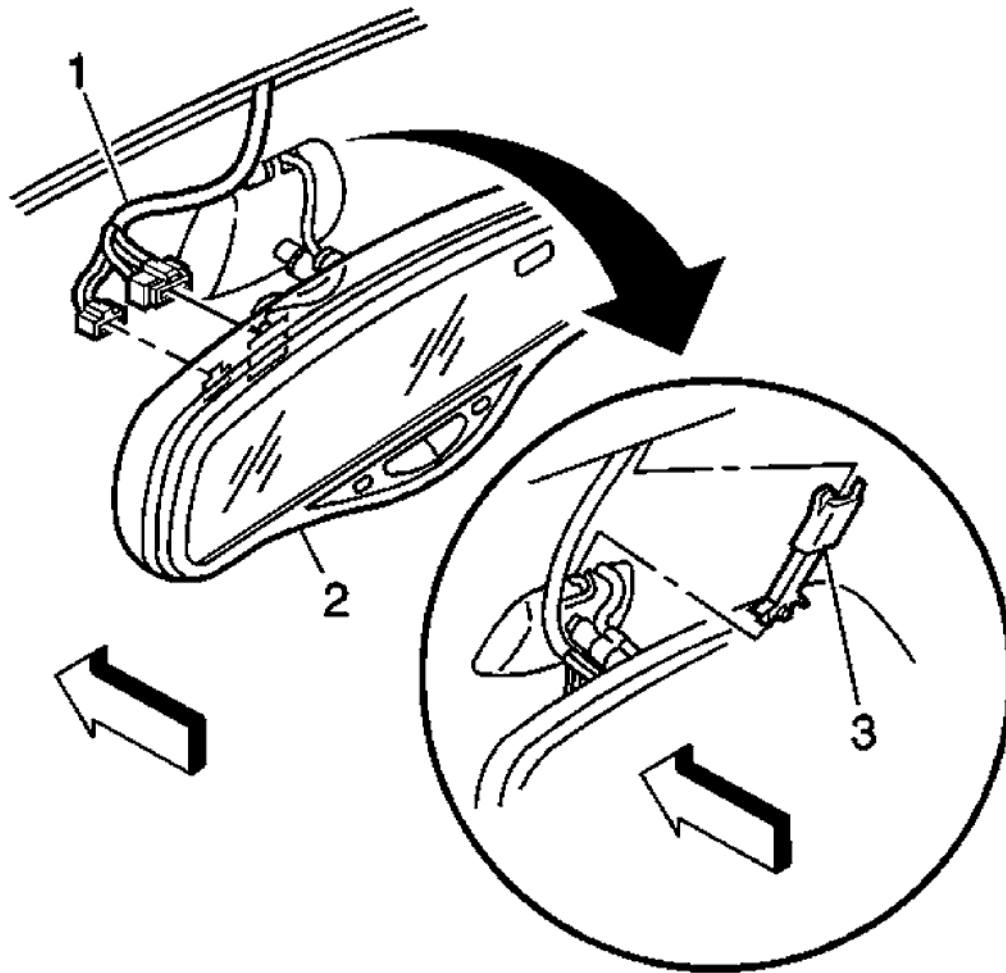
**Fig. 14: Removing/Installing Rearview Mirror**  
**Courtesy of GENERAL MOTORS CORP.**

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. 15: 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

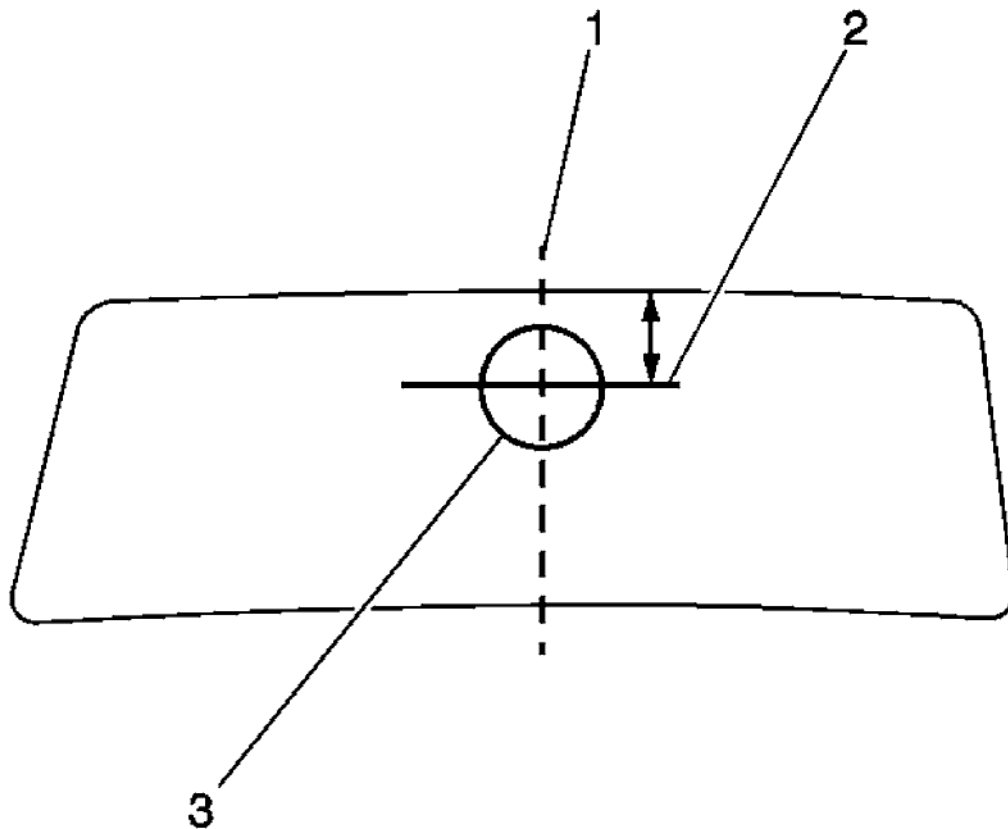
##### Tools Required

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

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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. 16: Identifying Mirror Mounting Base Location**  
Courtesy of GENERAL MOTORS CORP.

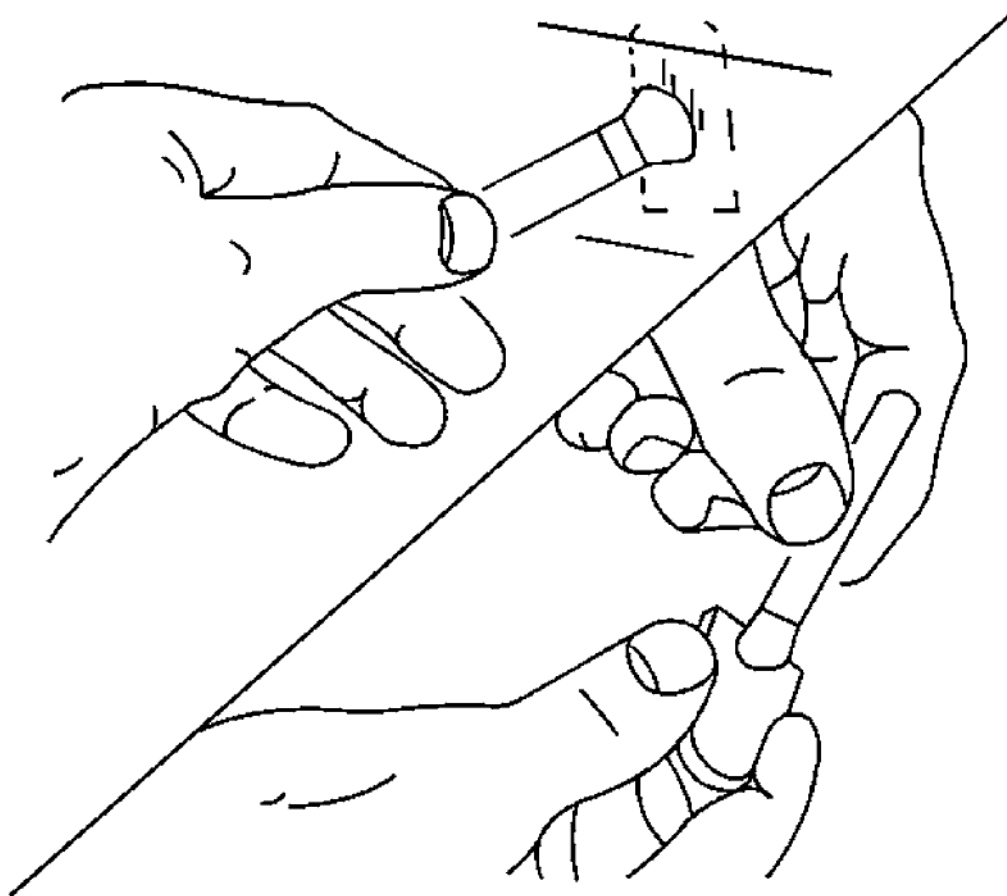
1. Using a measuring tape, measure the distance between the windshield pillars from the base of the shade line .
2. Using a marking pencil, halfway between the windshield pillars, draw a centerline (1) on the windshield from the roof panel to the windshield base.
3. Draw a perpendicular line intersecting 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. 17: Applying Adhesive To Mirror Base & Window**  
**Courtesy of GENERAL MOTORS CORP.**

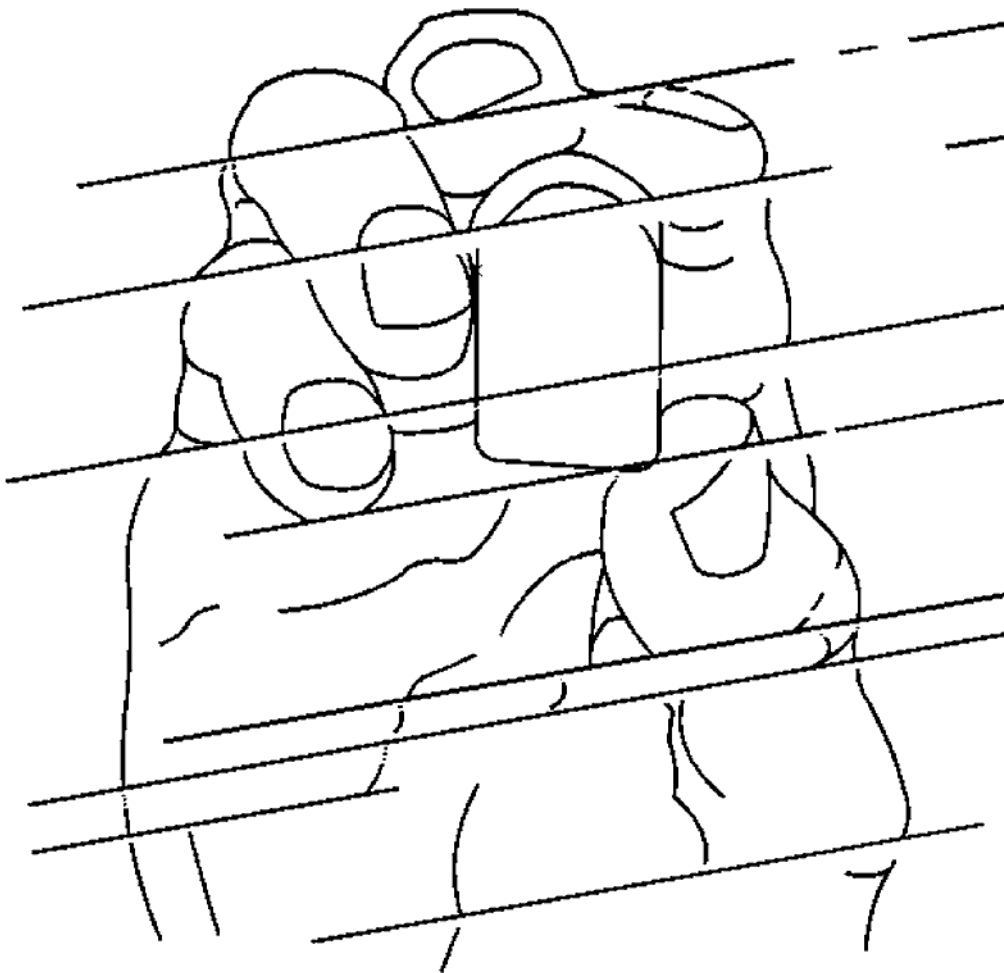
6. Use Inside Mirror Adhesive Kit GM P/N 1052369 (Canadian P/N 993362), or equivalent, to apply a small amount of activator to the mounting surface of the mirror mounting base.
7. Apply a small amount of activator to the windshield where the mounting base is to be

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. 18: 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 Remover (Cold Knife)
- **J 39032** Stationary Glass Removal Tool
- 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.

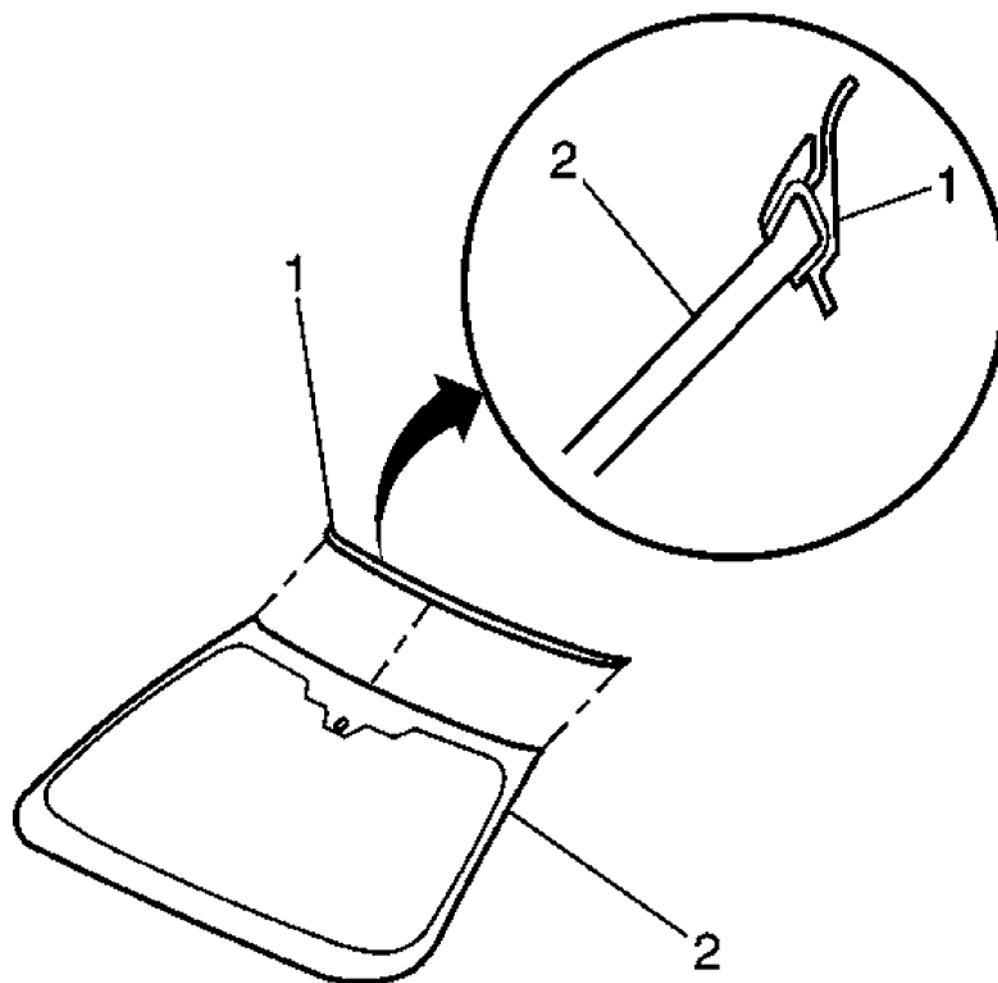
1. Open the hood.

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

2. Cover and protect the following parts from broken glass:
  - Upper dash pad
  - Defroster outlets and A/C outlets
  - Seats and carpeting
3. Remove the fixed antenna mast, if equipped. Refer to **Fixed Antenna Replacement**.
4. Remove the windshield wiper arms. Refer to **Wiper Arm Replacement**.
5. Remove the cowl air inlet grille panel. Refer to **Air Inlet Grille Panel Replacement**.
6. Remove the rearview mirror. Refer to **Rearview Mirror Replacement**.

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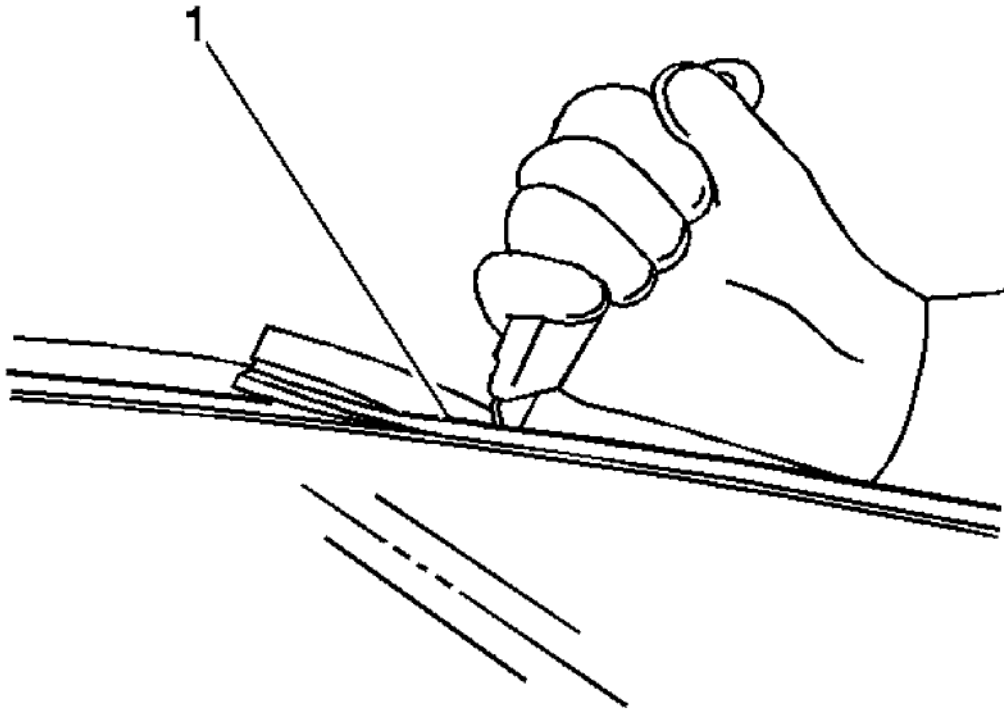


**Fig. 19: Identifying Upper Reveal Molding from Windshield**  
Courtesy of GENERAL MOTORS CORP.

**CAUTION:** Refer to Glass and Sheet Metal Handling Caution .

**IMPORTANT:** The upper windshield reveal molding (1) fills the cavities between the body and windshield.

7. If the reveal molding is stretched or damaged it cannot be reused. It must be replaced.

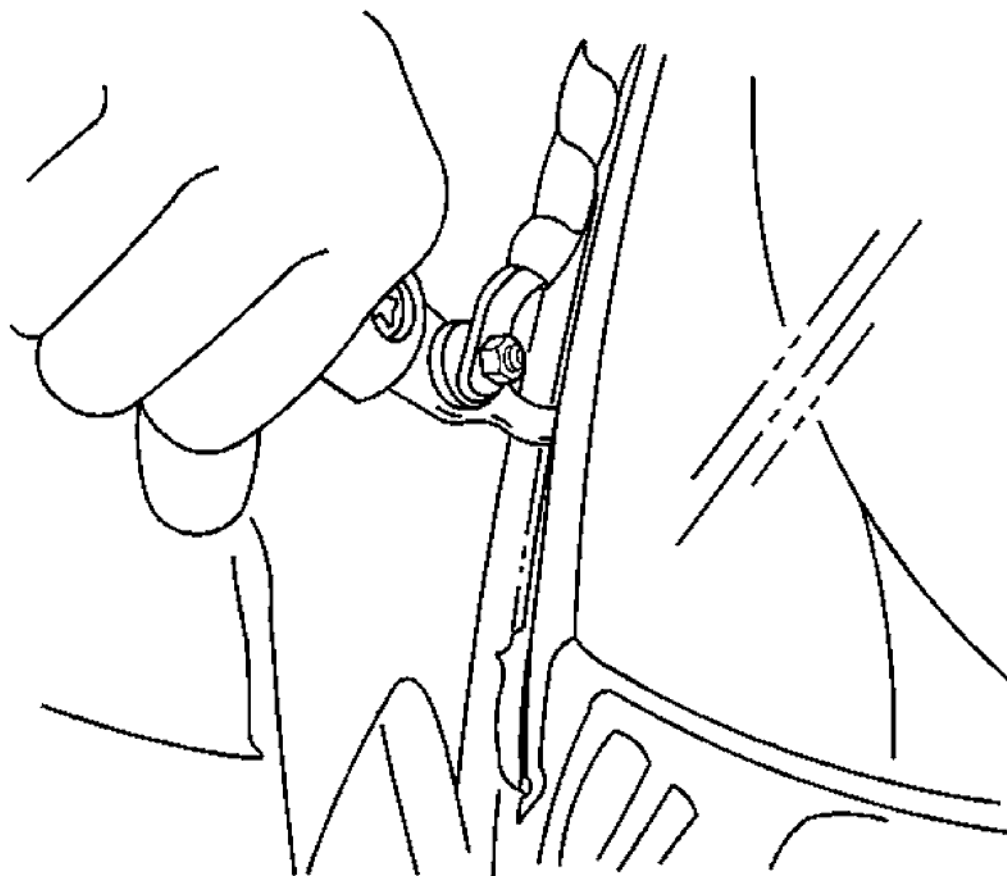


**Fig. 20: Using Utility Knife To Remove Reveal Molding**  
Courtesy of GENERAL MOTORS CORP.

8. Remove the upper windshield reveal molding (1).

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

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



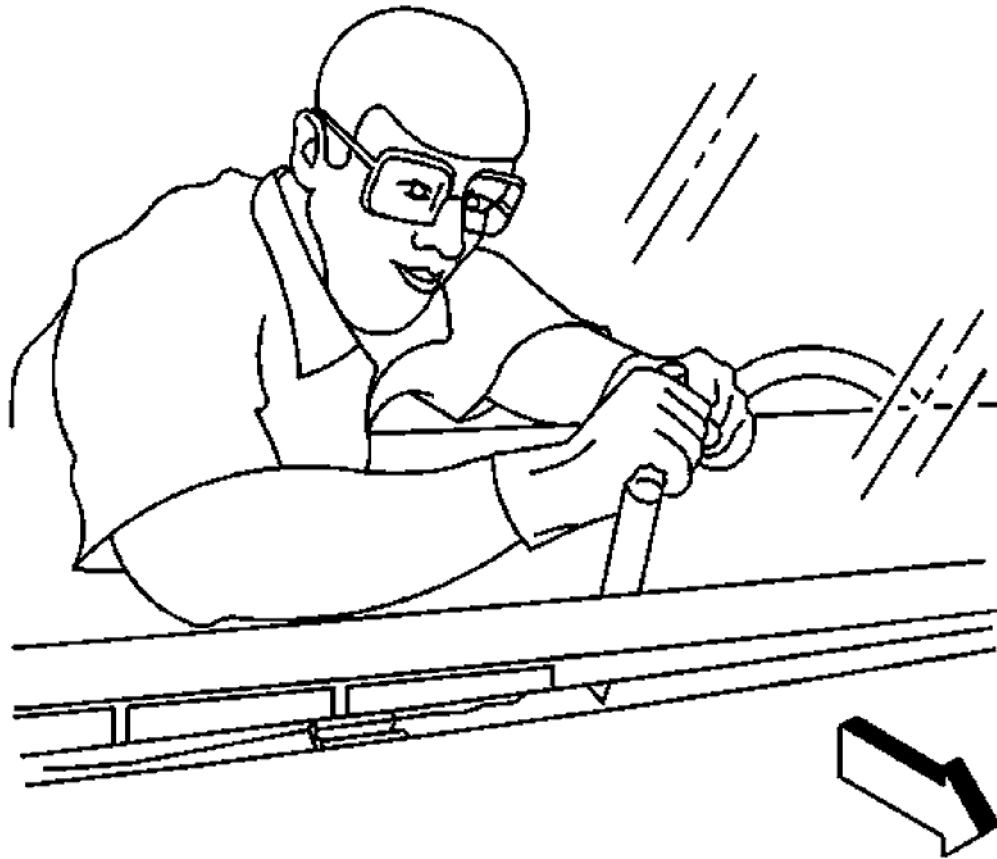
**Fig. 21: Separating Urethane Adhesive From Window**  
Courtesy of GENERAL MOTORS CORP.

**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.

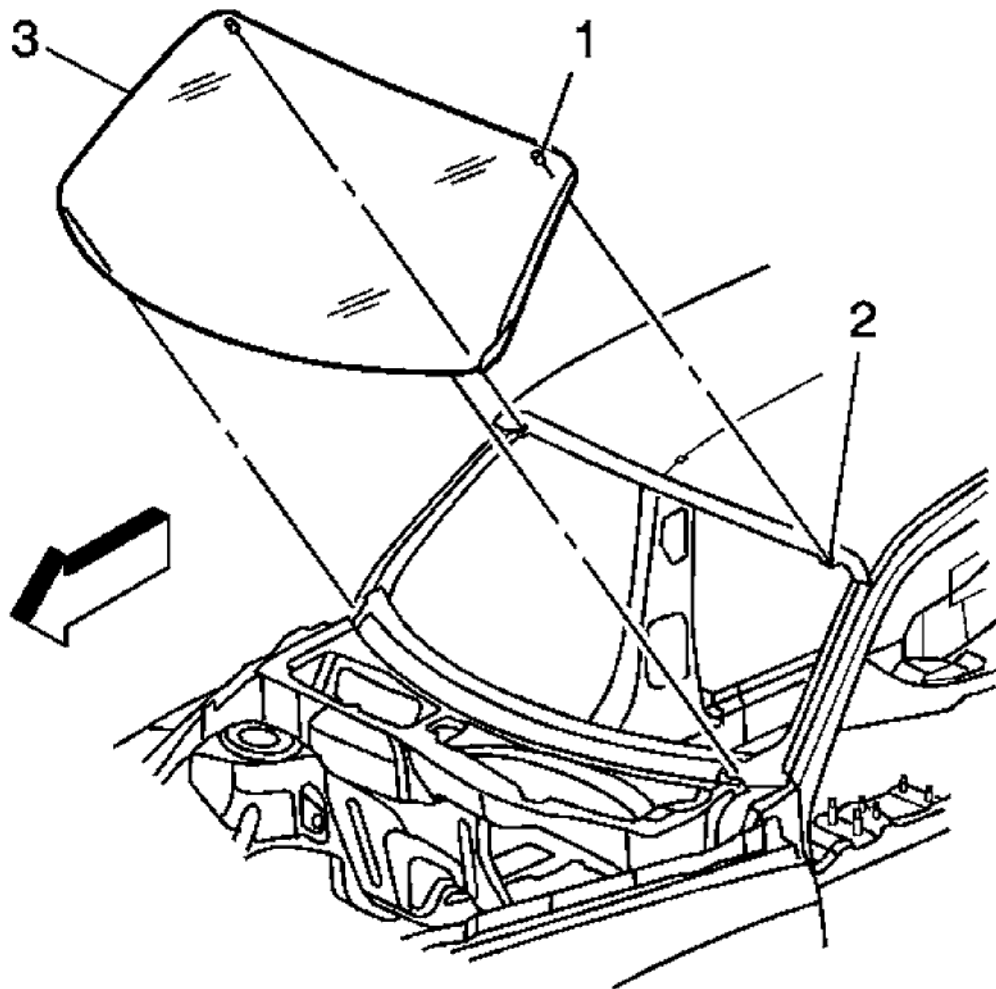
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**Fig. 22: Separating Bottom Of Window**  
**Courtesy of GENERAL MOTORS CORP.**

11. Remove the bottom of the windshield from the urethane adhesive using a long utility knife or similar tool. Keep the cutting edge of the utility knife against the glass. Do this from inside the vehicle.



**Fig. 23: Windshield**  
Courtesy of GENERAL MOTORS CORP.

12. With the aid of an assistant, remove the windshield (3) from the vehicle.

**Installation Procedure**

1. Install the cowl air inlet grille panel. Refer to **Air Inlet Grille Panel Replacement** .
2. Install the windshield wiper arms. Refer to **Wiper Arm Replacement** .
3. Install the antenna mast, if equipped. Refer to **Fixed Antenna Replacement** .
4. Install the rearview mirror. Refer to **Rearview Mirror Replacement**.
5. Close the hood.
6. Remove the double layer of masking tape around the perimeter of the painted surfaces

and the interior trim.

## **QUARTER WINDOW REPLACEMENT**

### **Tools Required**

- **J 24402-A** Glass Sealant (Cold Knife) Remover
- **J 39032** Stationary Glass Removal Tool
- 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: Refer to Cracked Window Caution .**

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

1. Open the liftgate.
2. Remove the inside rear garnish molding. Refer to Trim Panel Replacement - Rear Quarter Upper .
3. Remove the inside rear garnish molding. Refer to Trim Panel Replacement - Rear Quarter Lower .

**CAUTION: Refer to Defroster Outlet Caution .**

4. Cover the following parts to protect from broken glass:
  - Upper dash pad
  - Defroster outlets and air conditioning (A/C) outlets
  - Seats and carpeting

**CAUTION: Refer to Glass and Sheet Metal Handling Caution .**

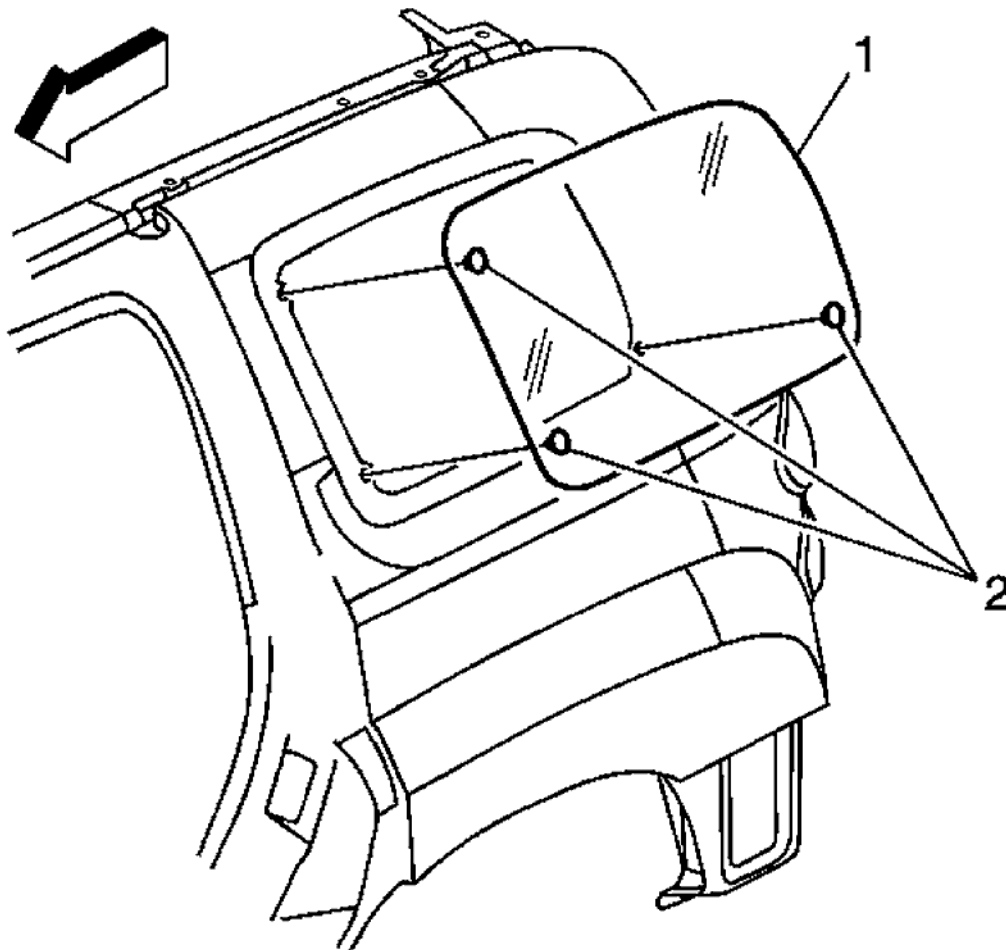
## 2006 Chevrolet HHR LT

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**IMPORTANT:** When cutting out the quarter window use care not to damage the encapsulation around the perimeter of the quarter window. If the encapsulation is damaged, the window must be replaced.

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

5. Remove the window from the urethane adhesive.
  - Leave a base of urethane approximately 2 mm (0.078 in) on the pinch-weld flange.
  - The only suitable lubrication is clear water.
  - Use the **J 24402-A** , **J 39032** , or equivalent in order to remove the quarter window.



**Fig. 24: Window**

Courtesy of GENERAL MOTORS CORP.

6. With the aid of an assistant, remove the window (1) from the vehicle.

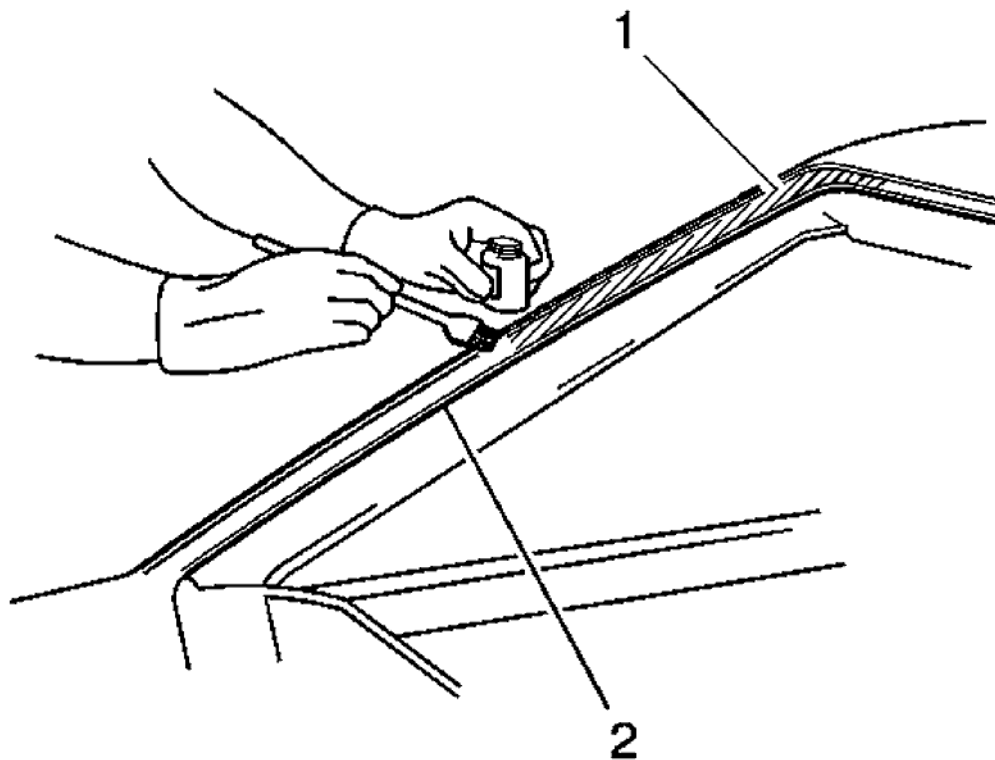
#### Installation Procedure

**IMPORTANT:** The molded encapsulation surrounding the quarter window is made using PVC plastic materials. Use a specific PVC primer application prior to applying the urethane adhesive bead to the window.

1. Install the quarter window locator pins to the slots in the opening of the quarter panel.
2. Install the inside rear garnish molding. Refer to Trim Panel Replacement - Rear Quarter Upper .

3. Install the inside rear garnish molding. Refer to **Trim Panel Replacement - Rear Quarter Lower**.
4. Remove the double layer of masking tape around the perimeter of the painted surfaces and the interior trim.
5. Close the liftgate.

#### URETHANE ADHESIVE INSTALLATION OF STATIONARY WINDOWS



**Fig. 25: 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.

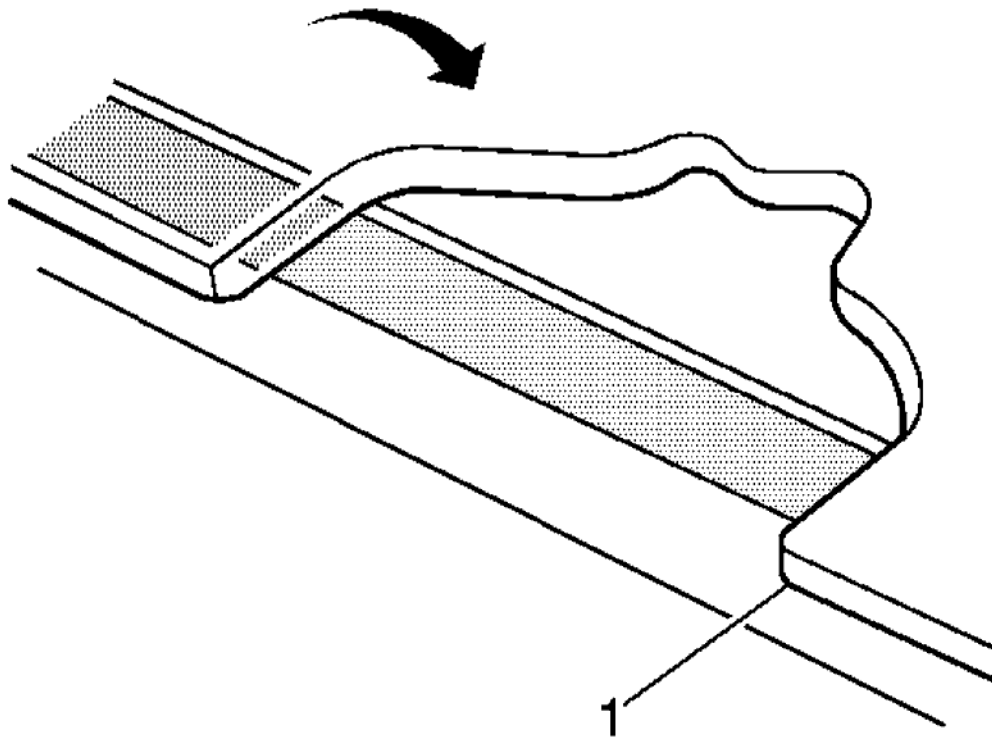
6. Verify all primers and urethane adhesive are within expiration dates.

**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.

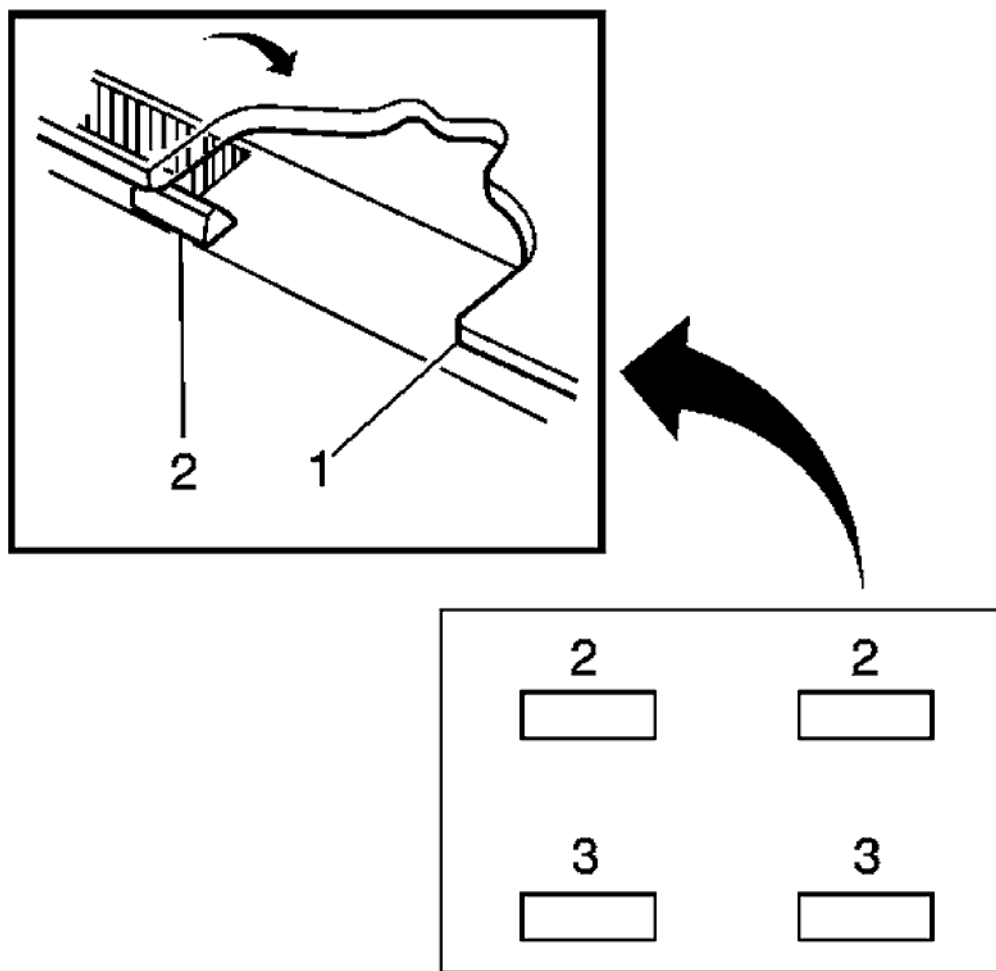
7. Shake the pinch-weld primer black #3 for at least 1 minute.
8. Use a new dauber in order to apply the primer to the surface of the pinch-weld flange (1).
9. Allow the pinch-weld primer to dry for approximately 10 minutes.



**Fig. 26: 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.

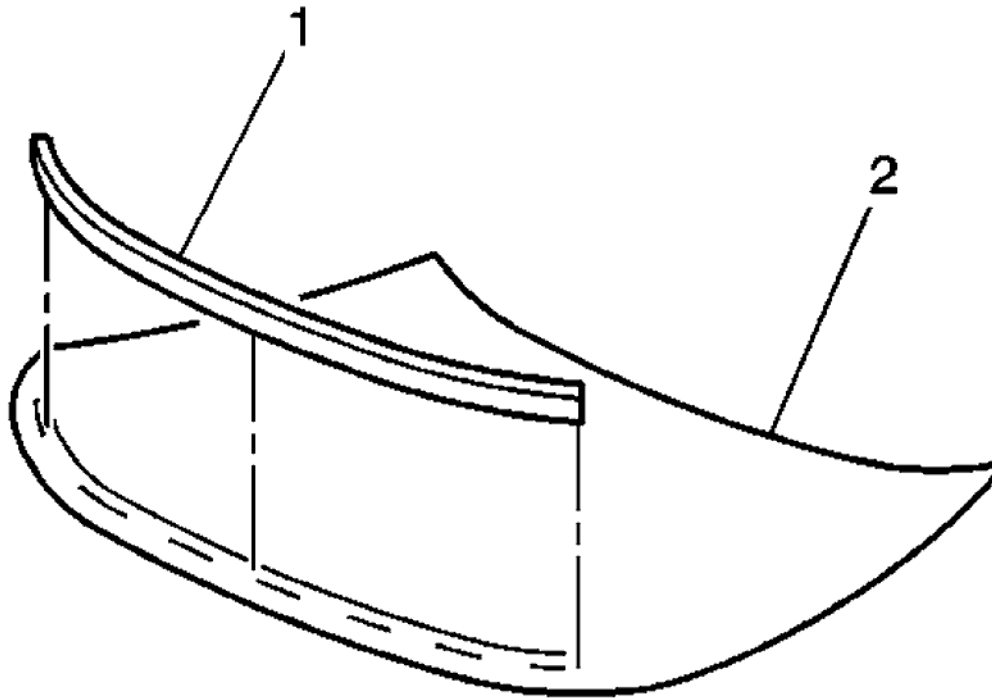
10. Install the windshield (1) and the VIN plate filler strip, if equipped.



**Fig. 27: 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.

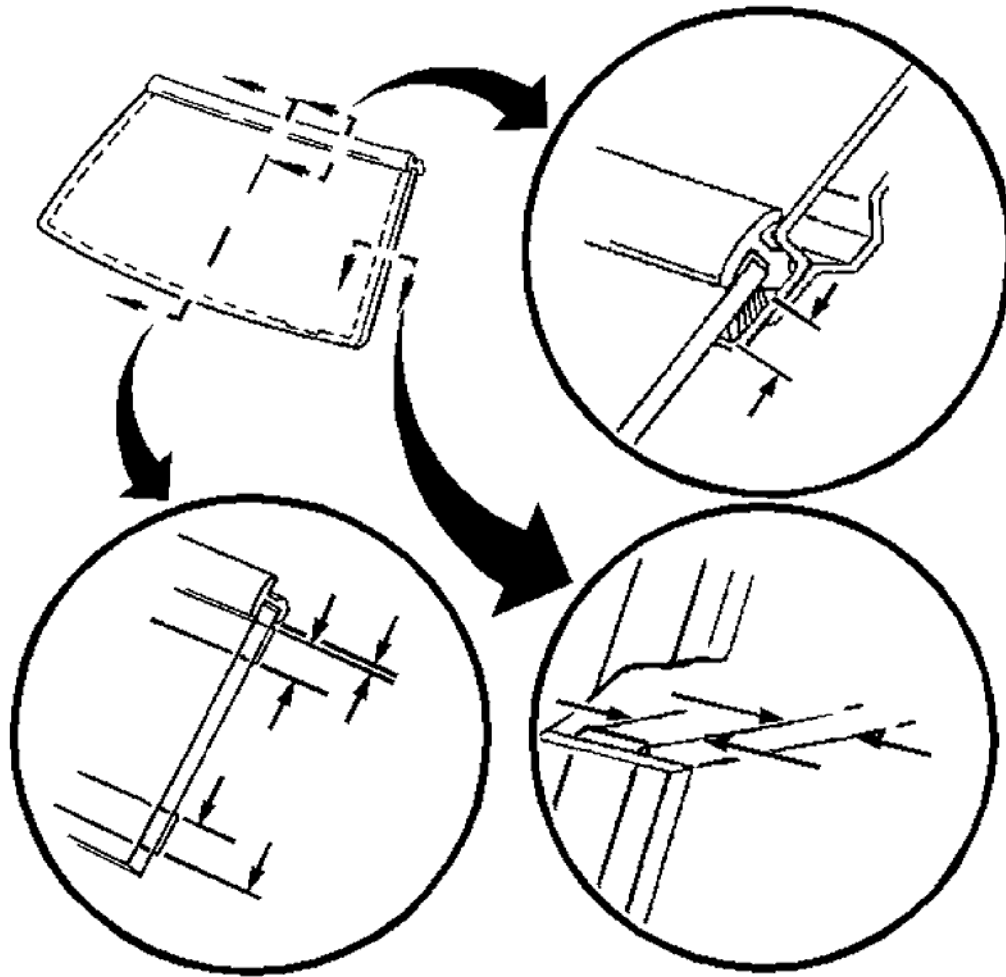
11. Install the window to the vehicle.



**Fig. 28: 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.

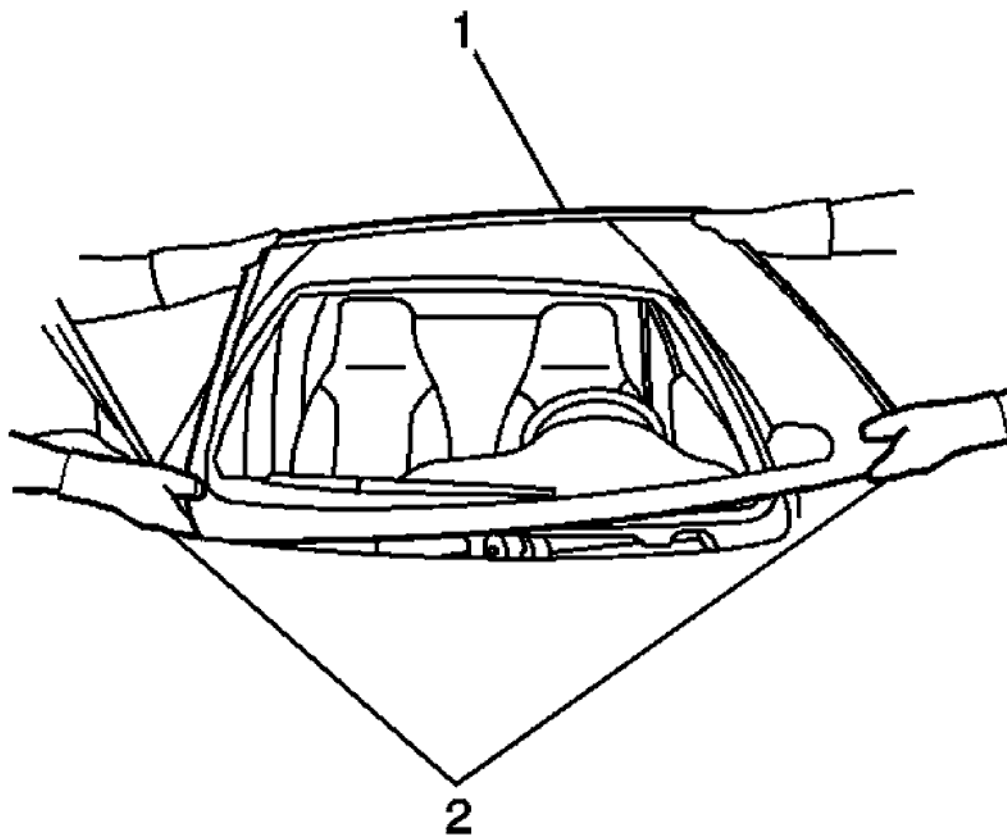


**Fig. 29: Identifying Window Reveal Molding Installation Specifics**  
Courtesy of GENERAL MOTORS CORP.

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

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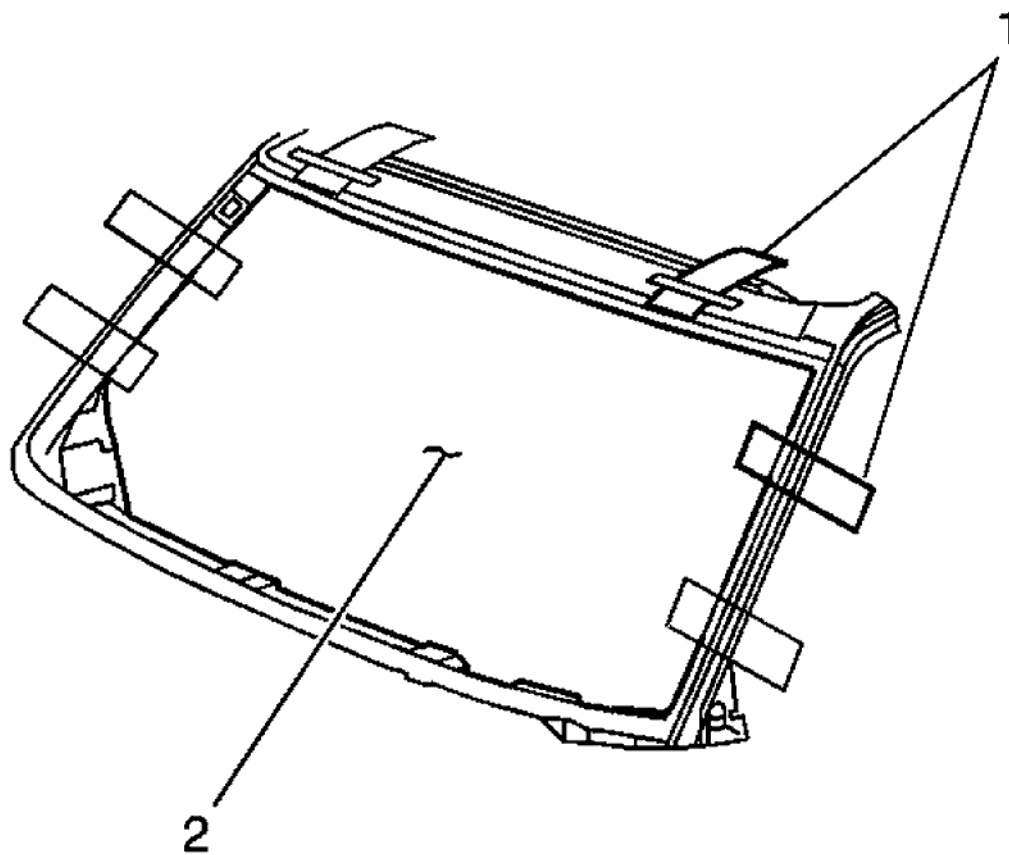


**Fig. 30: Removing/Installing Windshield**  
**Courtesy of GENERAL MOTORS CORP.**

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

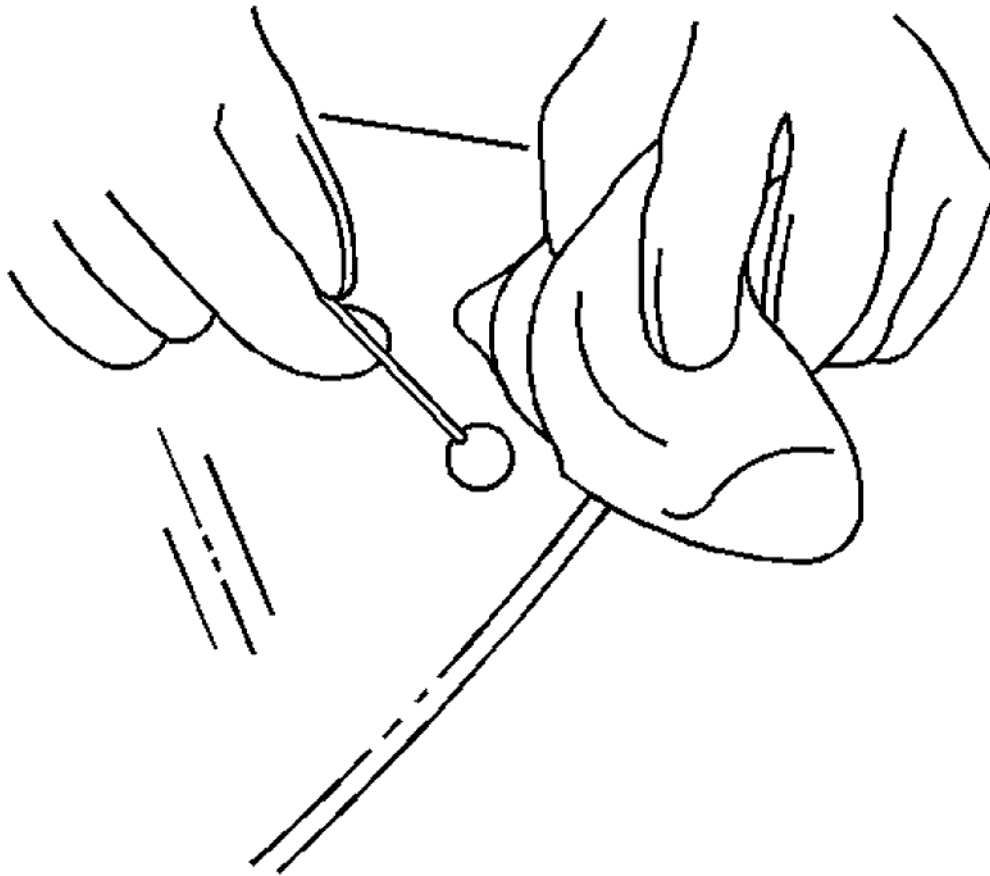
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**Fig. 31: Aligning Tape Lines On Window To Body**  
**Courtesy of GENERAL MOTORS CORP.**

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.

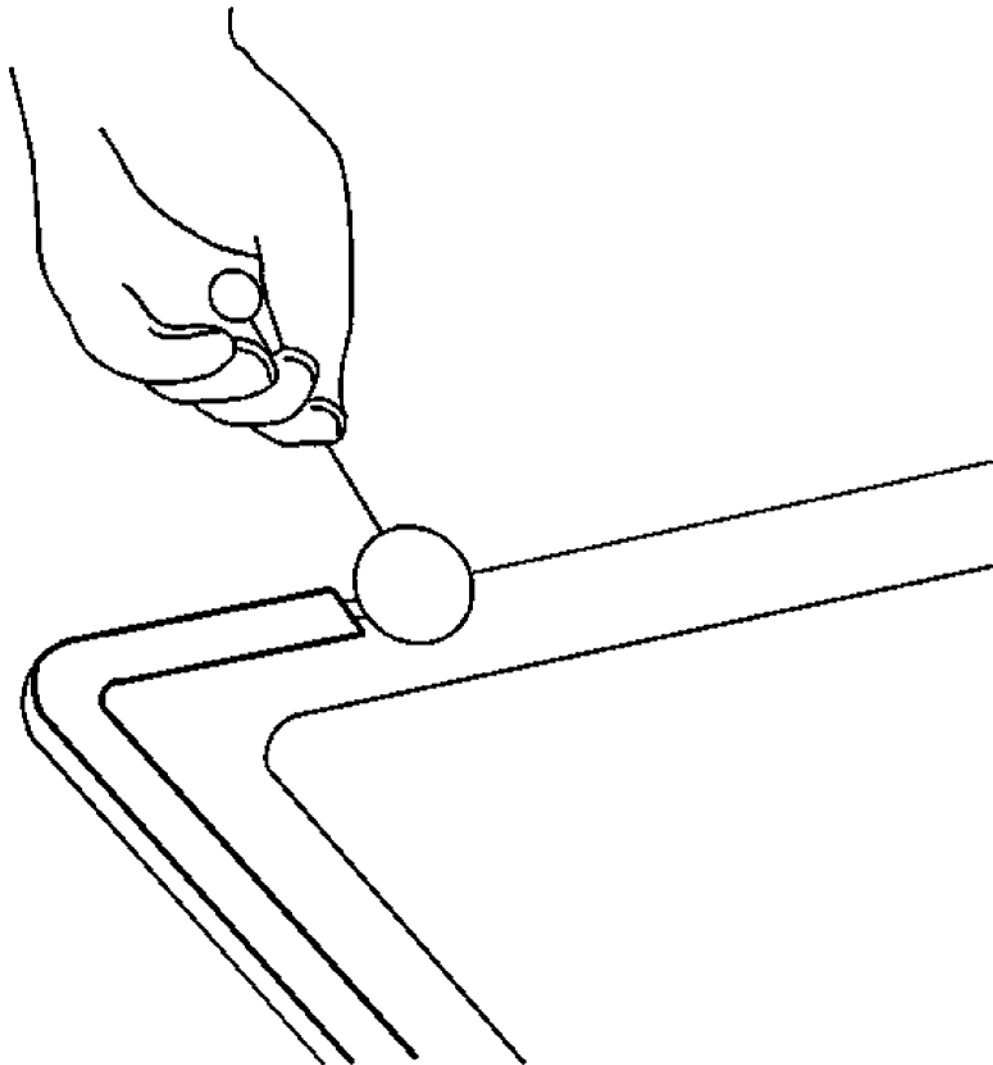


**Fig. 32: Applying Glass Prep**  
Courtesy of GENERAL MOTORS CORP.

**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.

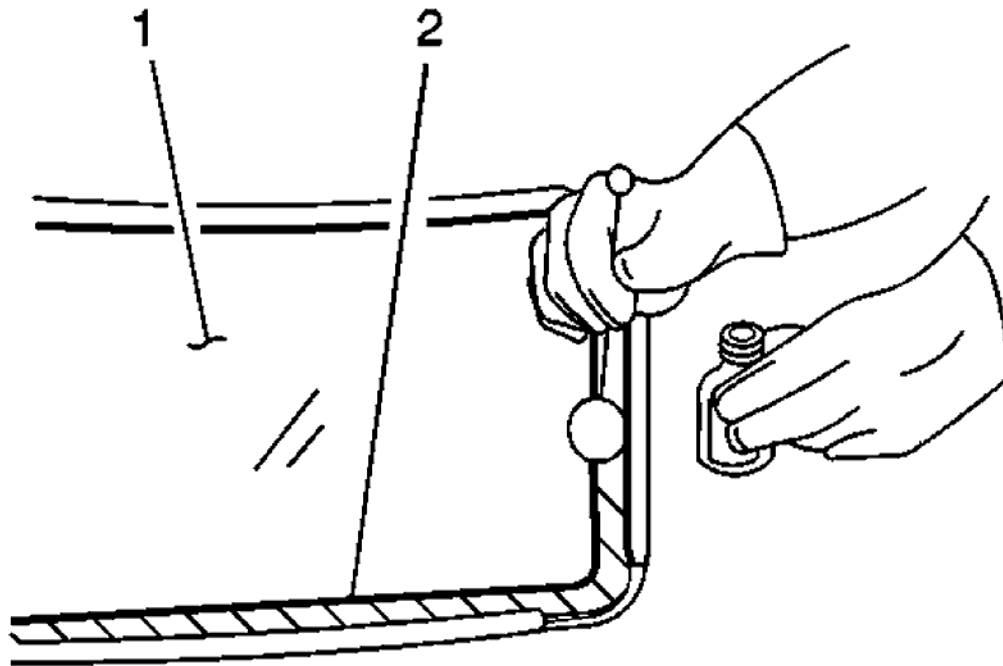
17. Use a new dauber in order to apply glass prep clear #1 to the area approximately 10-16 mm (3/8-5/8 in) around the entire perimeter of the window inner surface.

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



**Fig. 33: Applying Glass Prep**  
**Courtesy of GENERAL MOTORS CORP.**

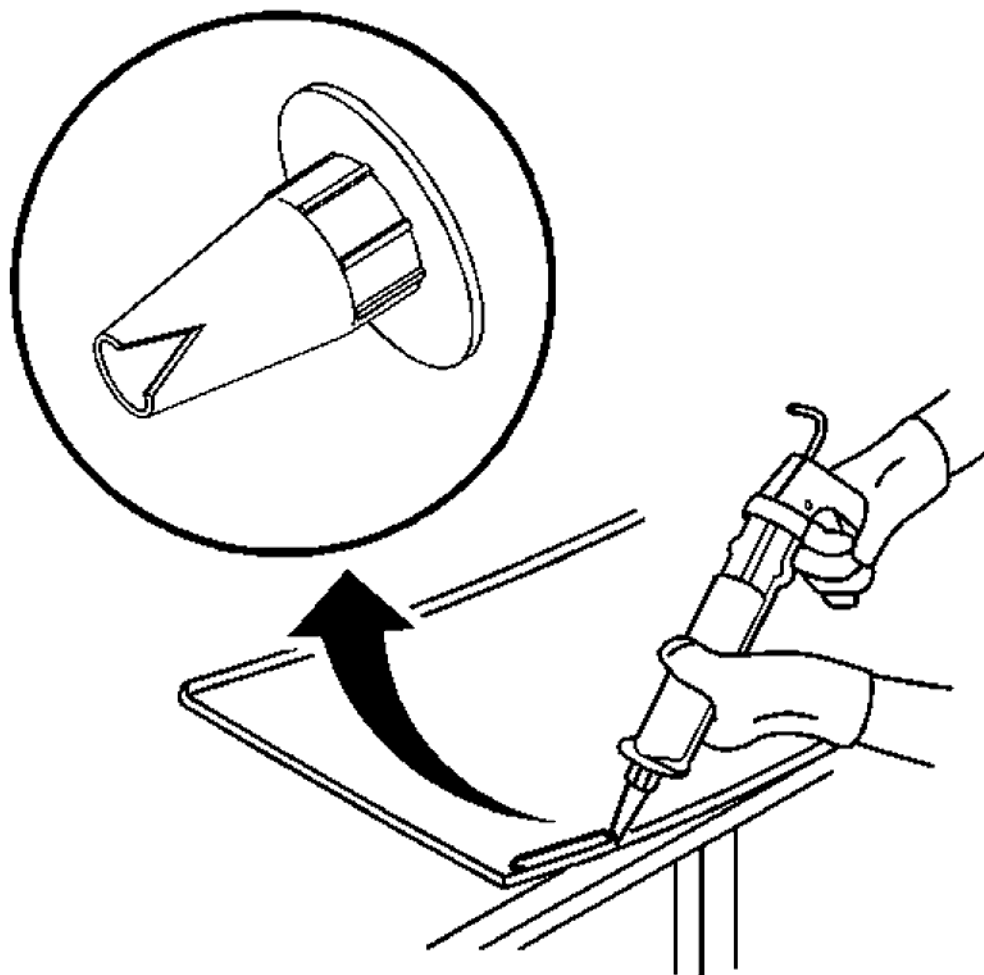
18. Apply a second coat of the glass prep clear #1 to the same area of the glass.



**Fig. 34: Applying Glass Primer**  
Courtesy of GENERAL MOTORS CORP.

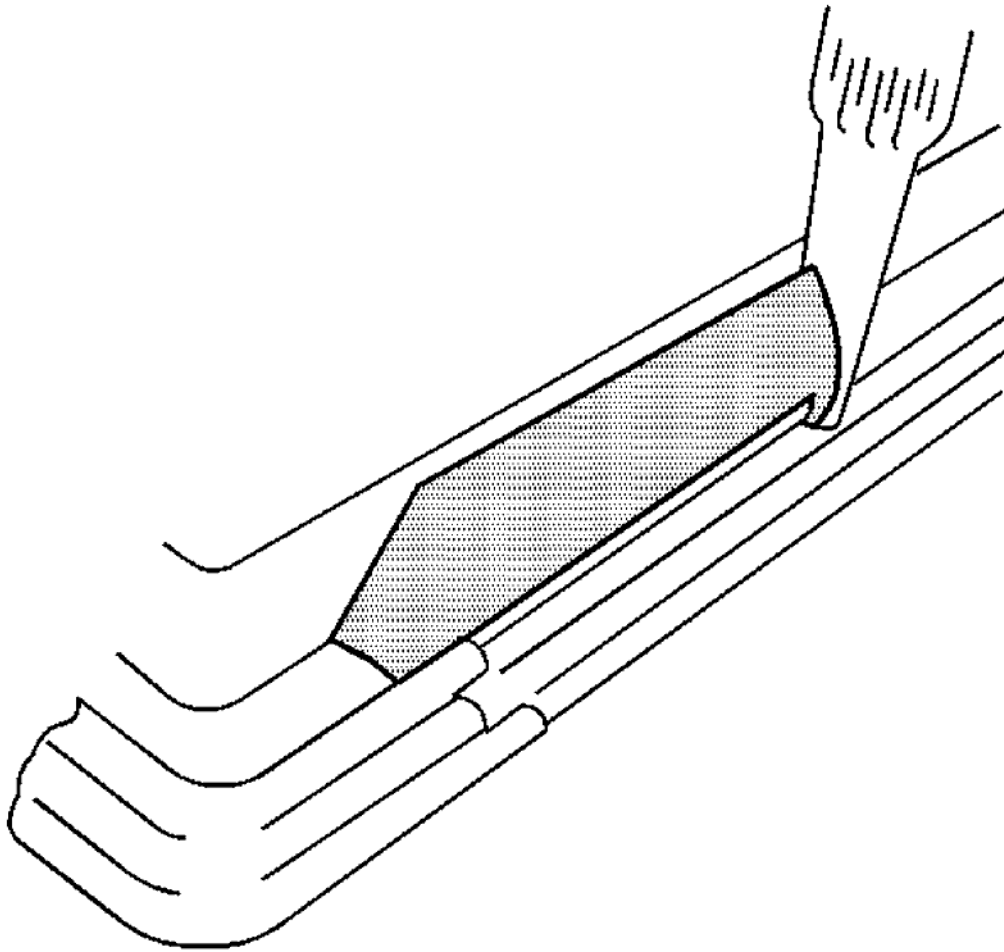
**IMPORTANT:** The glass primer black #2 is effective up to 8 hours after applying it to the glass. The primed surface of the glass must be kept clean.

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.



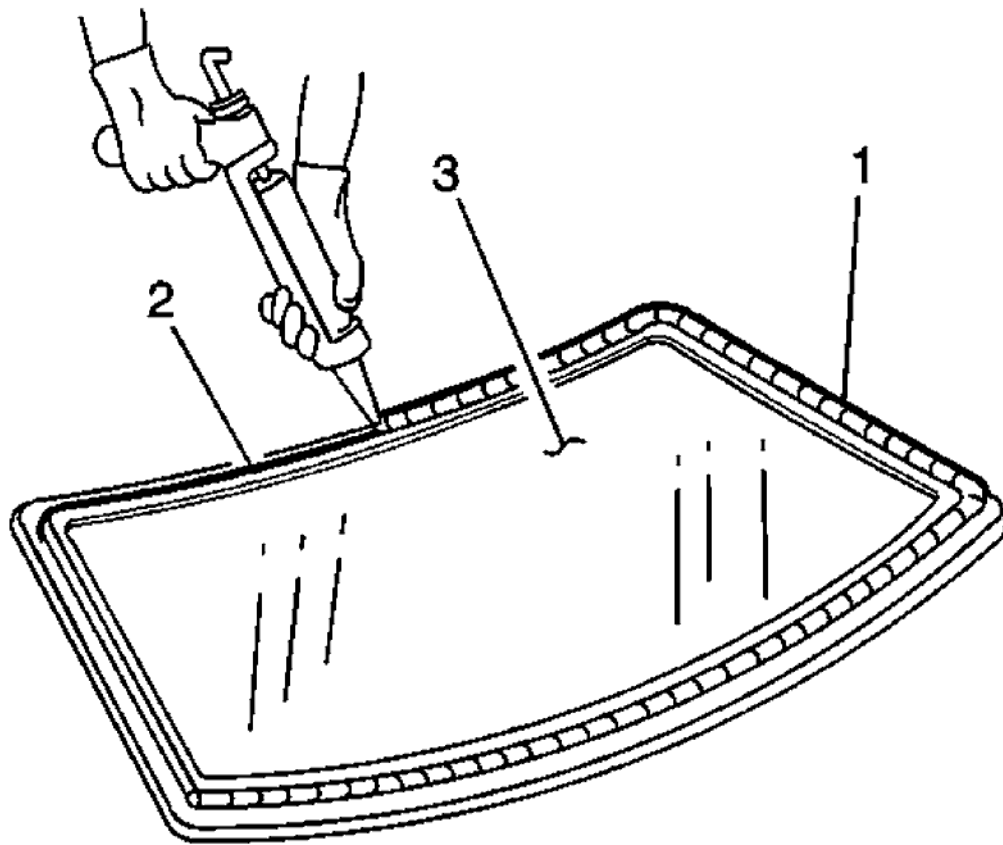
**Fig. 35: View Of Modified Applicator Nozzle**  
**Courtesy of GENERAL MOTORS CORP.**

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. 36: 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.

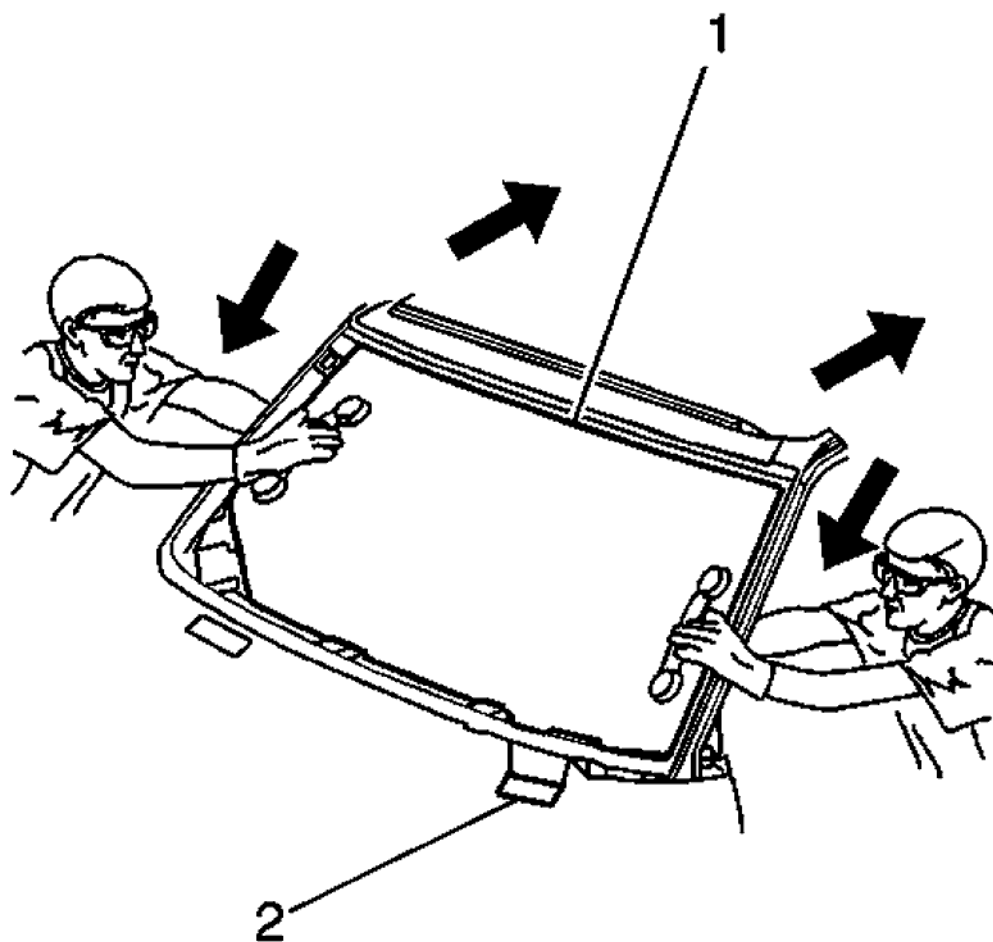


**Fig. 37: Applying Urethane Adhesive To Inner Surface Of Window**  
Courtesy of GENERAL MOTORS CORP.

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).

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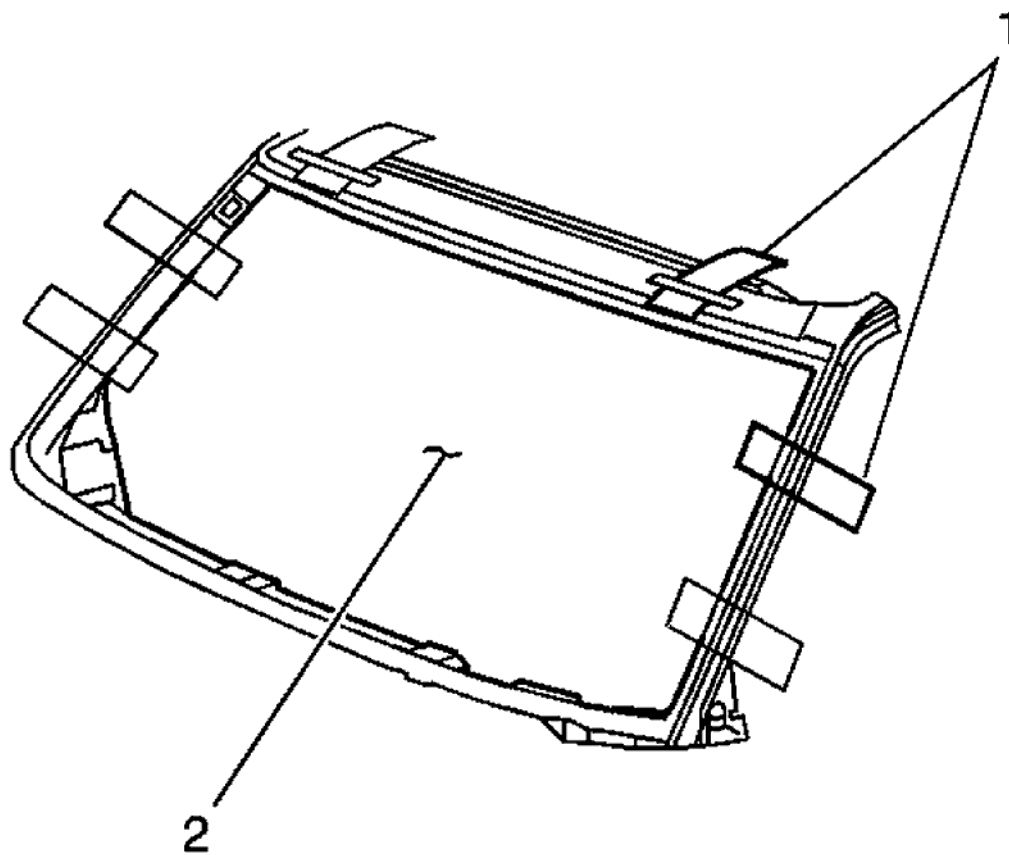


**Fig. 38: Installing Windshield**  
Courtesy of GENERAL MOTORS CORP.

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.

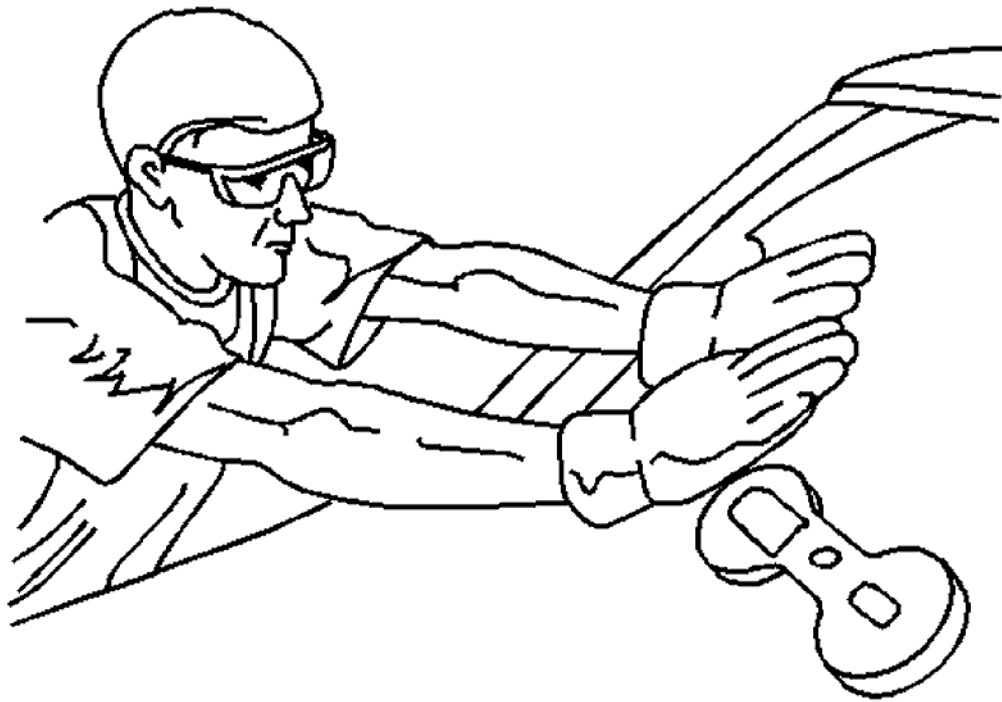
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**Fig. 39: Aligning Tape Lines On Window To Body**  
**Courtesy of GENERAL MOTORS CORP.**

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

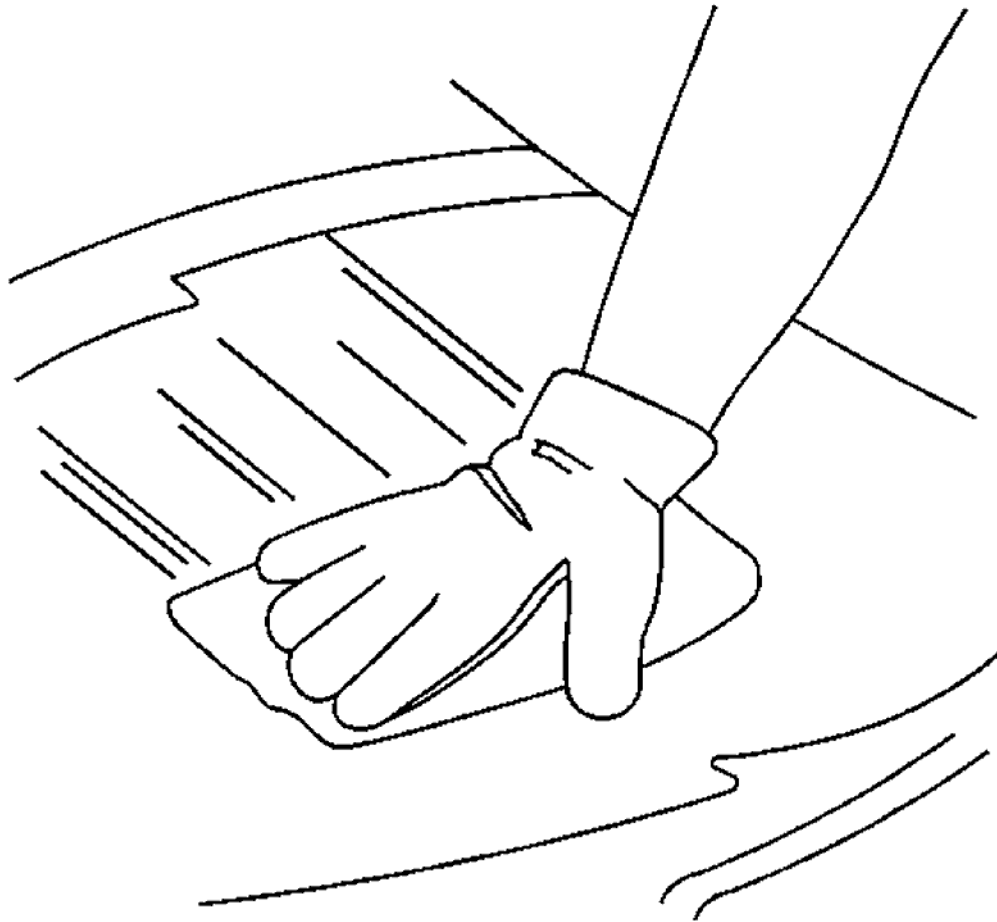


**Fig. 40: Pressing Window Into Place**  
**Courtesy of GENERAL MOTORS CORP.**

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

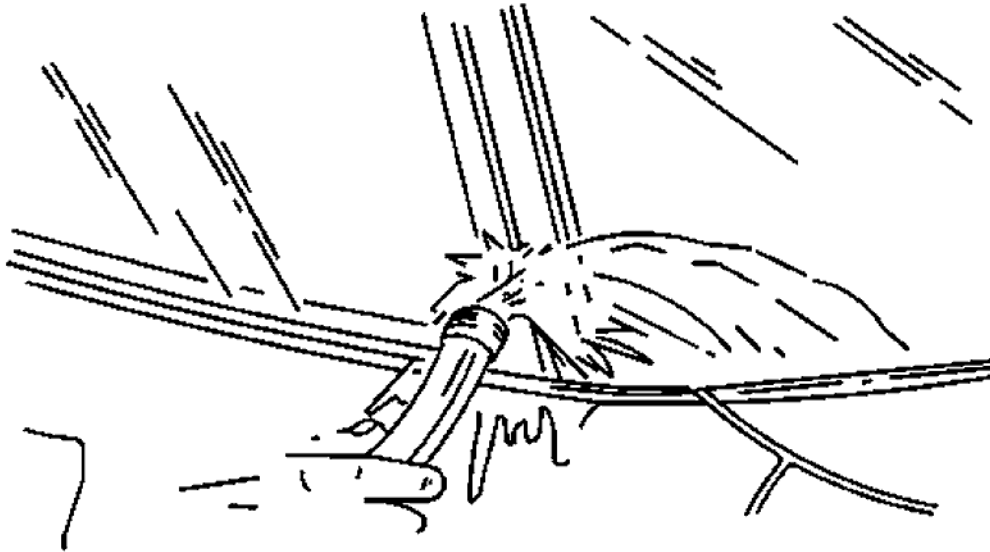
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**Fig. 41: Cleaning Window**  
Courtesy of GENERAL MOTORS CORP.

29. Clean any excess urethane adhesive from the body.



**Fig. 42: 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 BODYSIDE STATIONARY WINDOWS**

**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
  - Hardened sealer
  - Any other obstruction or irregularity in the pinch-weld flange

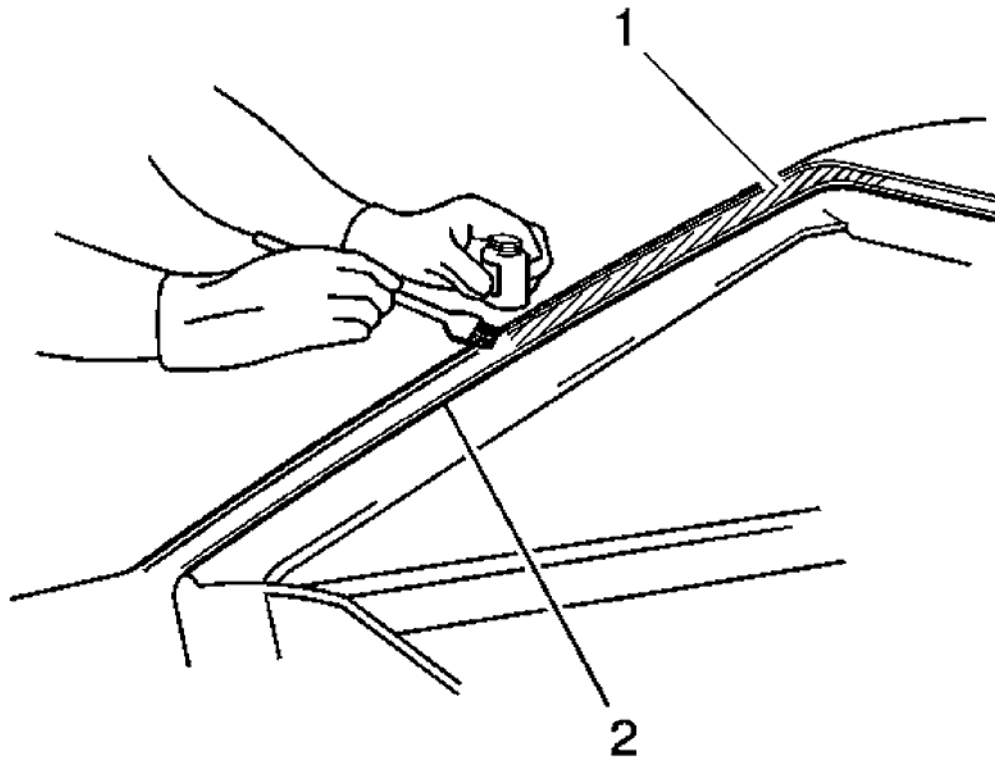
**IMPORTANT: If corrosion of the pinch-weld flange is present or if sheet metal repairs or replacements are required, the pinch-weld flange must be refinished in order to restore the bonding area strength. If paint repairs are required, mask the flange bonding area prior to applying the color coat in 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.



**Fig. 43: Applying Pinch-Weld Primer**  
**Courtesy of GENERAL MOTORS CORP.**

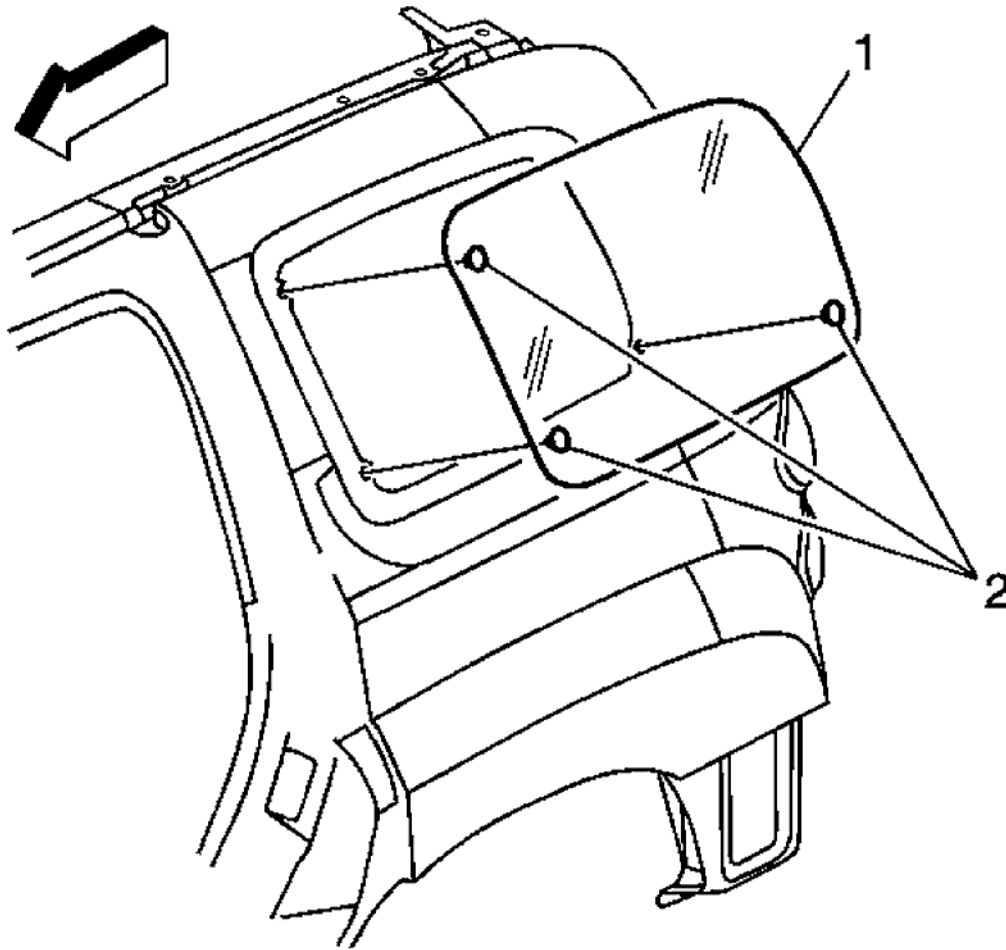
**CAUTION:** Failure to prep the area prior to the application of primer may cause insufficient bonding of urethane adhesive. Insufficient bonding of urethane adhesive may allow unrestrained occupants to be ejected from the vehicle resulting in personal injury.

**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.

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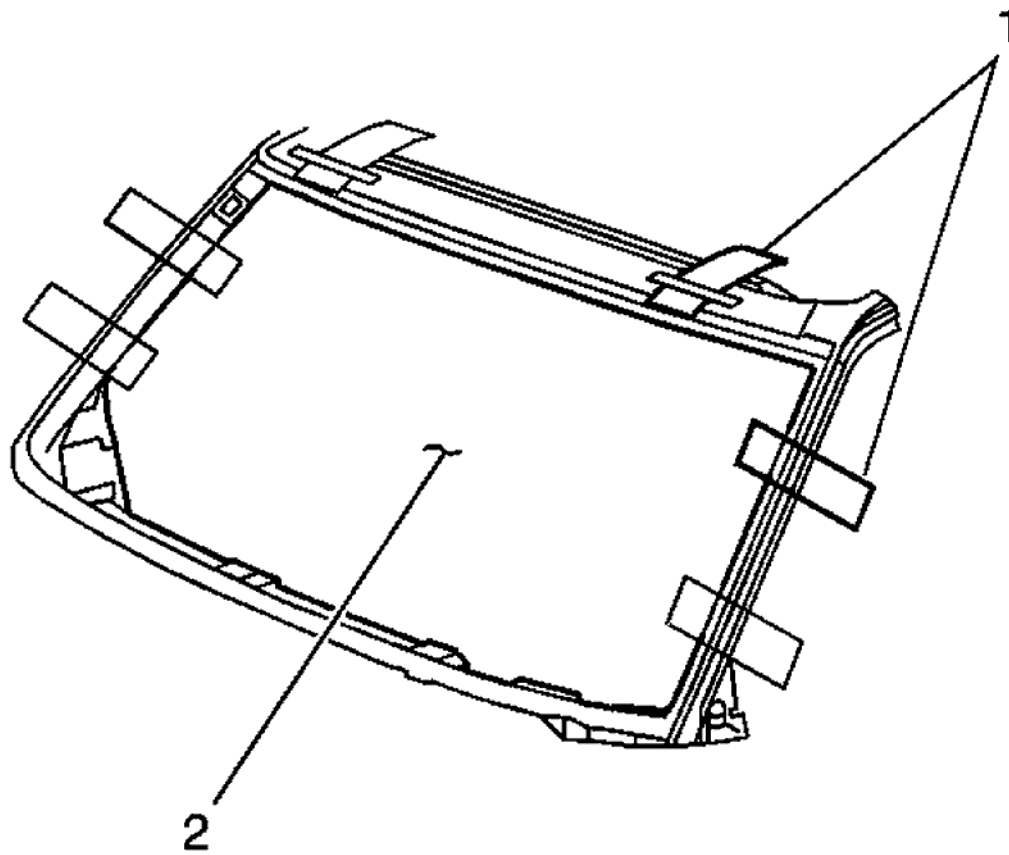
**Fig. 44: Window**

**Courtesy of GENERAL MOTORS CORP.**

10. With the aid of an assistant, dry fit the window (1) to the opening in order to determine the correct position.
11. Ensure that the locator pins (2) are positioned into the locator slots on the upper pinch-weld flange.

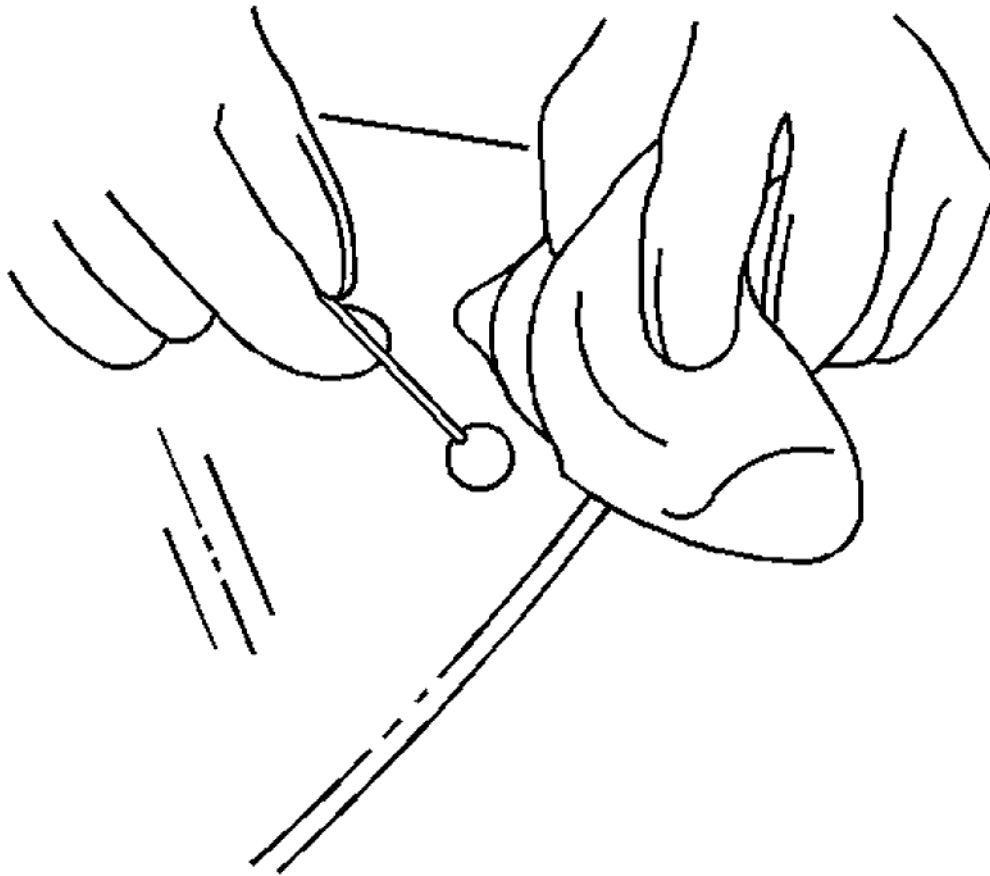
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**Fig. 45: Aligning Tape Lines On Window To Body**  
**Courtesy of GENERAL MOTORS CORP.**

12. Use masking tape to mark the locations of the window in the opening.
13. Cut the masking in the center and remove the window from the opening.



**Fig. 46: Applying Glass Prep**  
Courtesy of GENERAL MOTORS CORP.

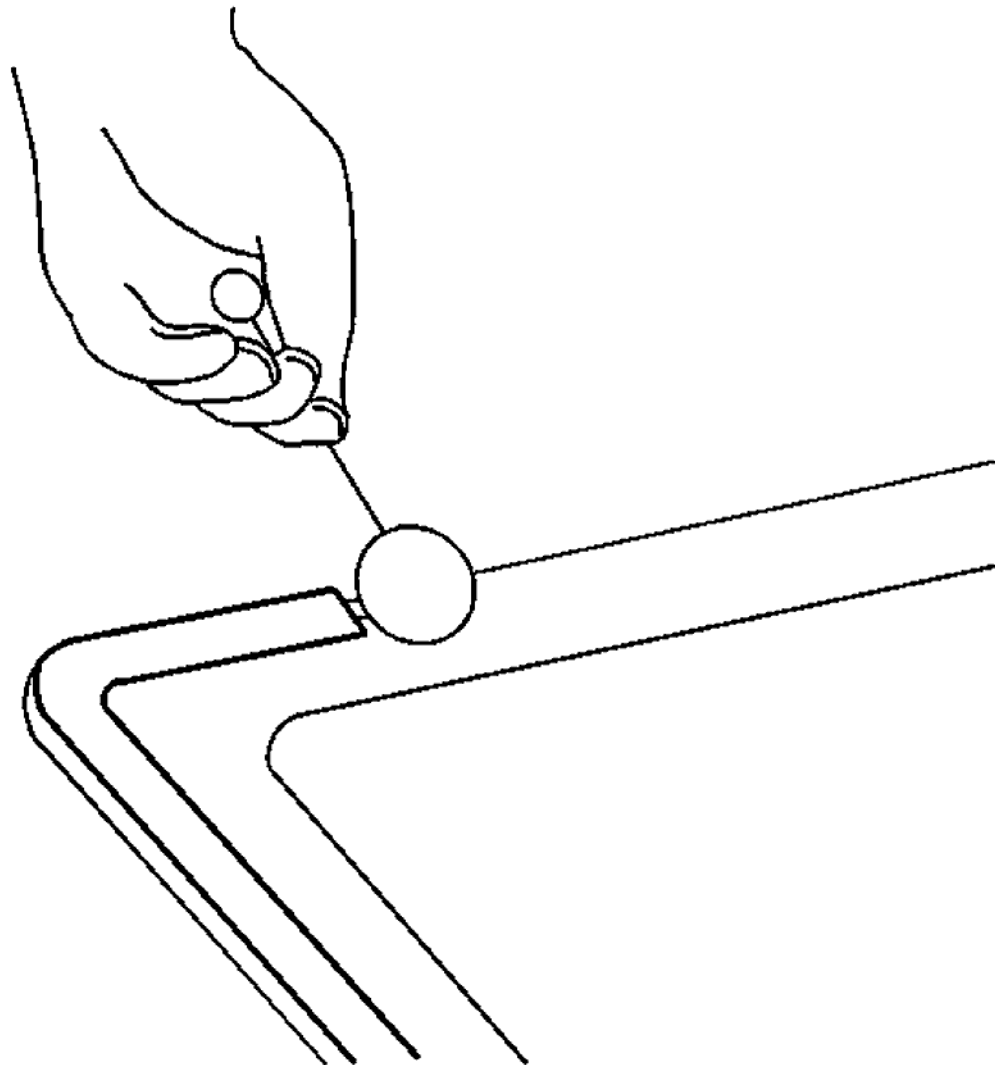
**IMPORTANT:** Use care when applying glass prep clear #1 on the window. This primer dries almost instantly, and may stain the viewing area of the window if not applied evenly.

14. Use a new dauber in order to apply glass prep clear #1 to the area approximately 18 mm (0.71 in) around the entire perimeter of the window inner surface.

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

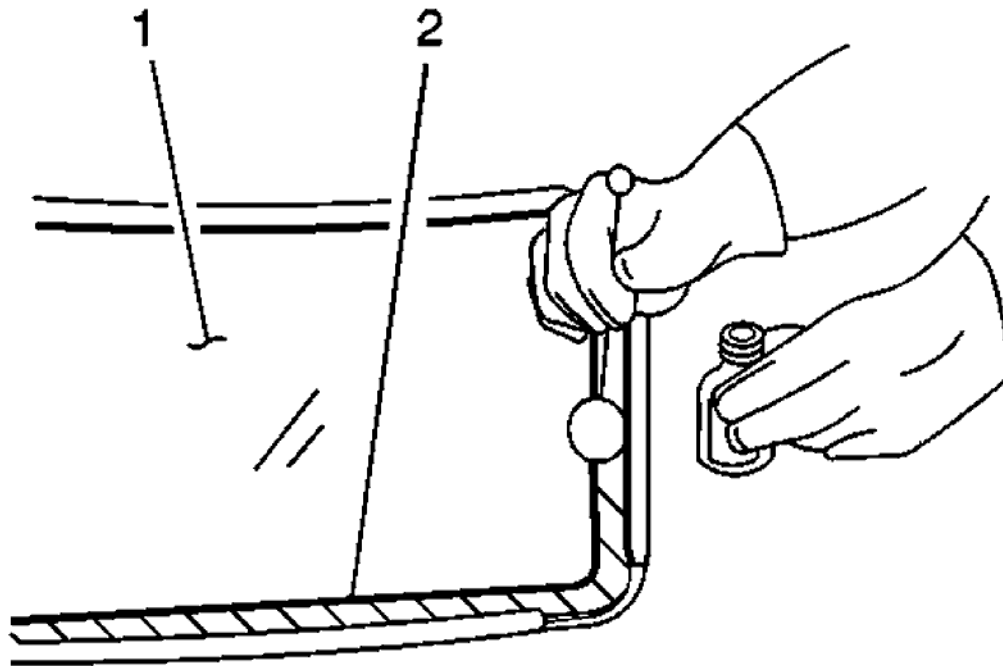
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**Fig. 47: Applying Glass Prep**  
**Courtesy of GENERAL MOTORS CORP.**

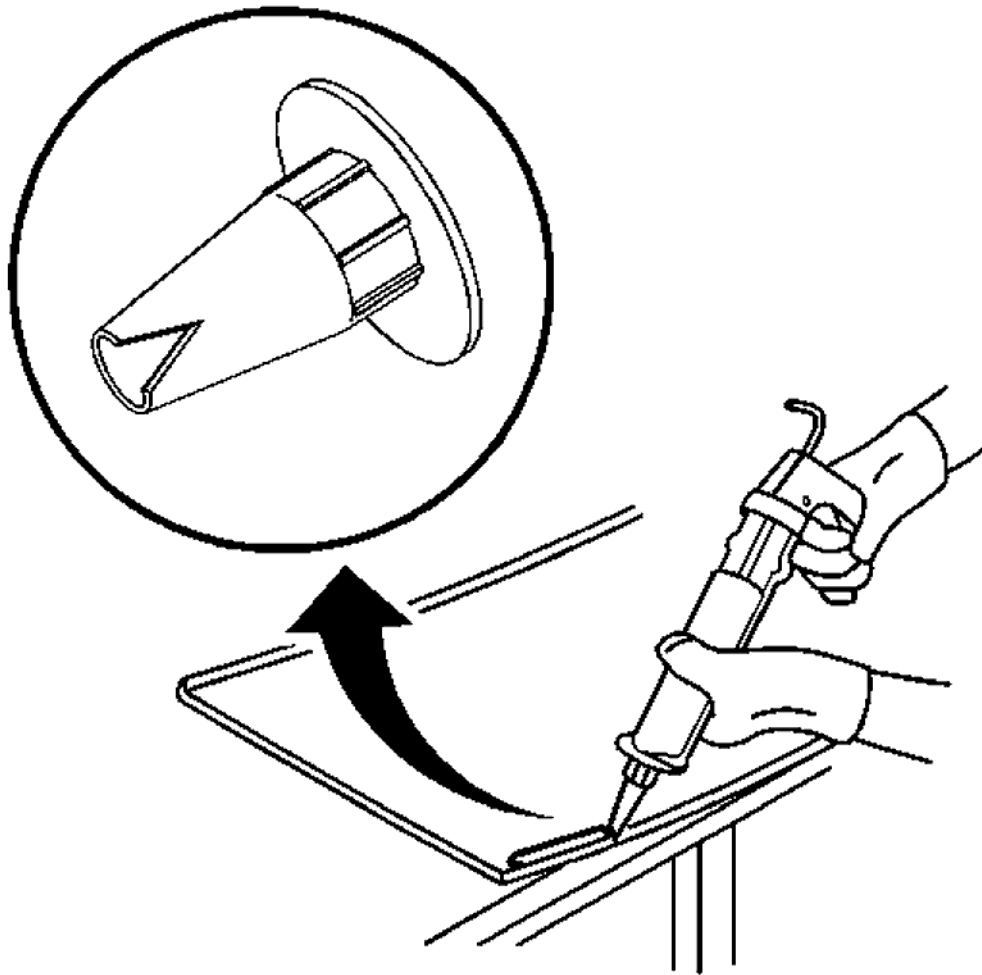
15. Apply a second coat of the glass prep clear #1 to the same area of the glass.



**Fig. 48: Applying Glass Primer**  
Courtesy of GENERAL MOTORS CORP.

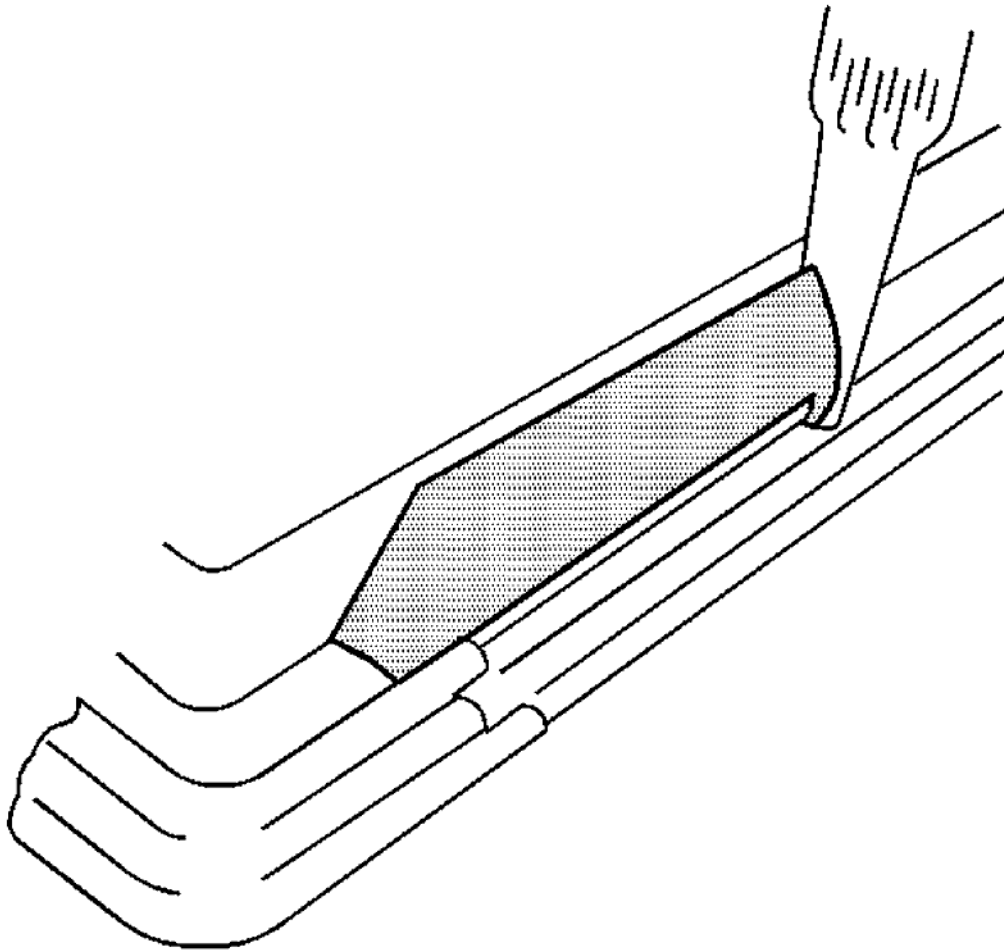
**IMPORTANT:** The glass primer black #2 is effective up to 8 hours after applying it to the glass. The primed surface of the glass must be kept clean.

16. Shake the glass primer black #2 for at least 1 minute.
17. 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.
18. Allow the glass primer to dry for approximately 10 minutes.



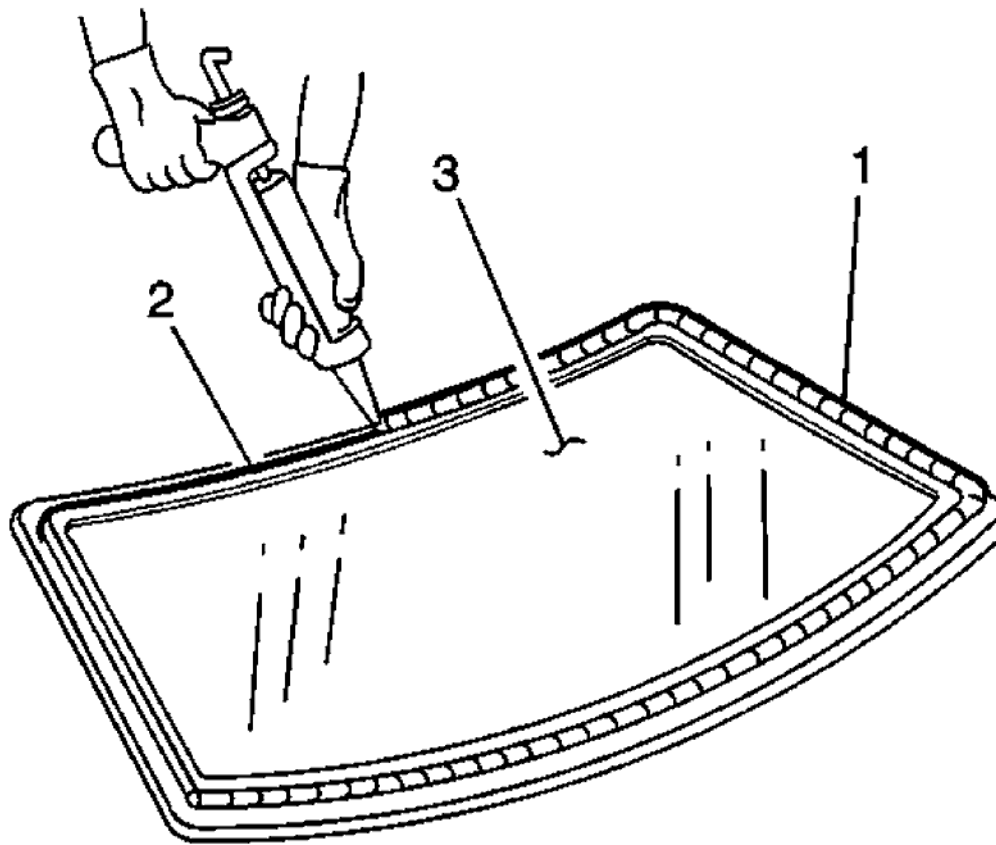
**Fig. 49: View Of Modified Applicator Nozzle**  
**Courtesy of GENERAL MOTORS CORP.**

19. Cut the applicator nozzle in order to provide a minimum urethane bead of 8 mm (0.31 in) wide and 16 mm (0.63 in) high.



**Fig. 50: Applying Bead Of Urethane Adhesive**  
**Courtesy of GENERAL MOTORS CORP.**

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

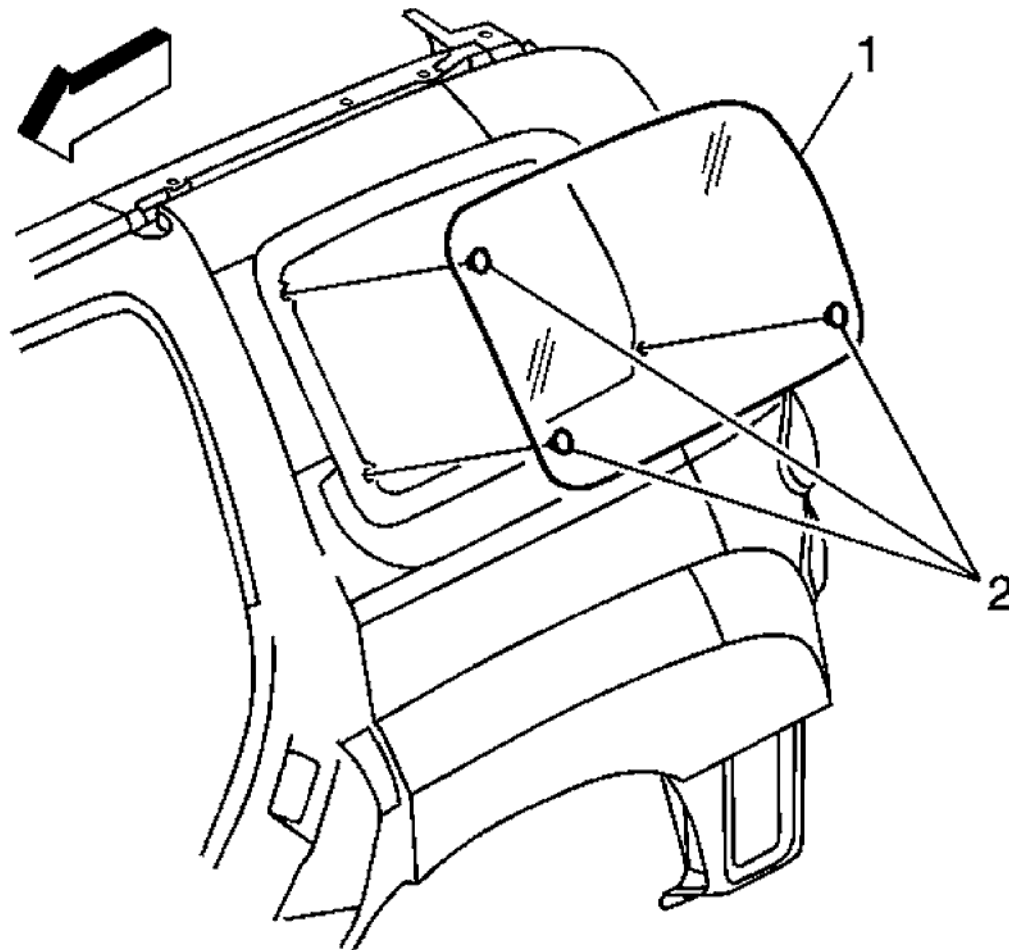


**Fig. 51: Applying Urethane Adhesive To Inner Surface Of Window**  
**Courtesy of GENERAL MOTORS CORP.**

21. Use the edge of the window as a guide for the nozzle in order to apply the urethane adhesive (1) to the inner surface of the window (3).

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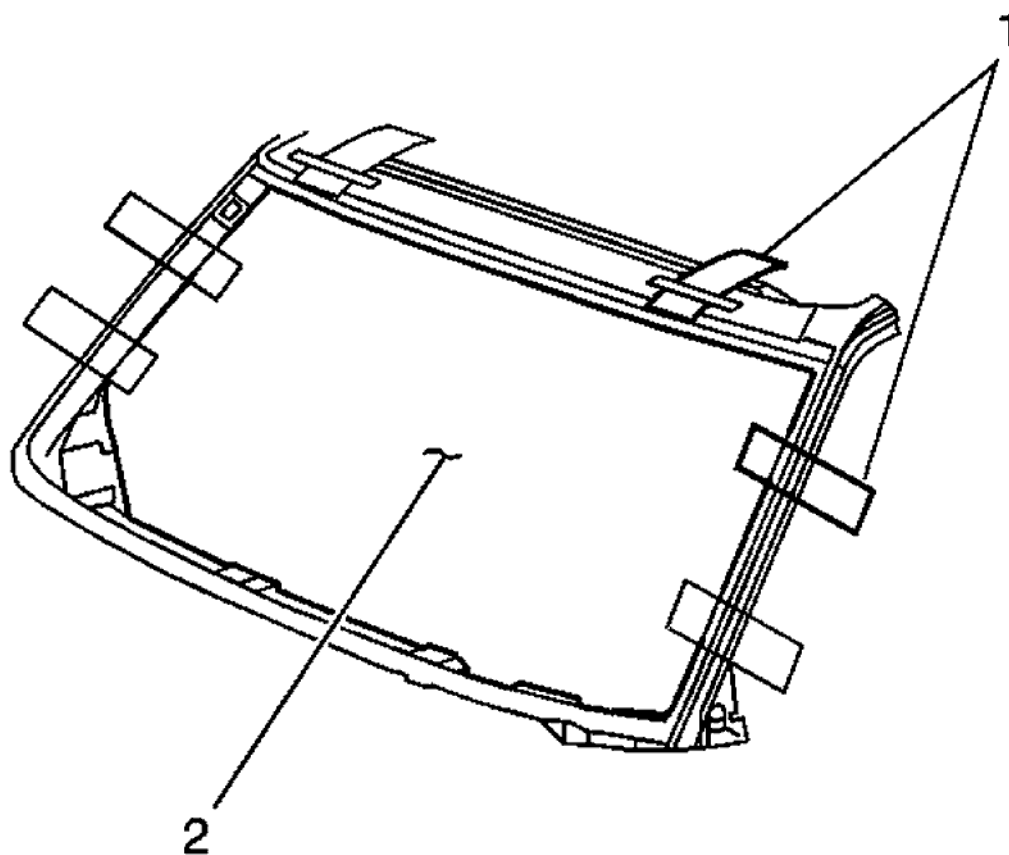
**Fig. 52: Window**

**Courtesy of GENERAL MOTORS CORP.**

22. With the aid of an assistant, place the window (1) in the opening.

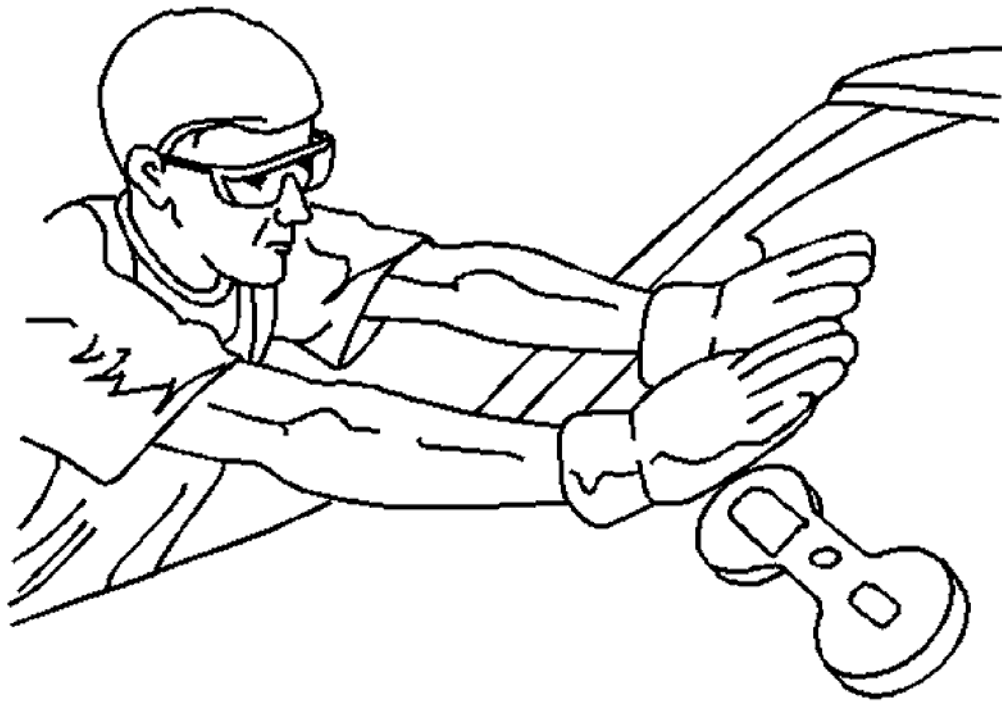
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**Fig. 53: Aligning Tape Lines On Window To Body**  
Courtesy of GENERAL MOTORS CORP.

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



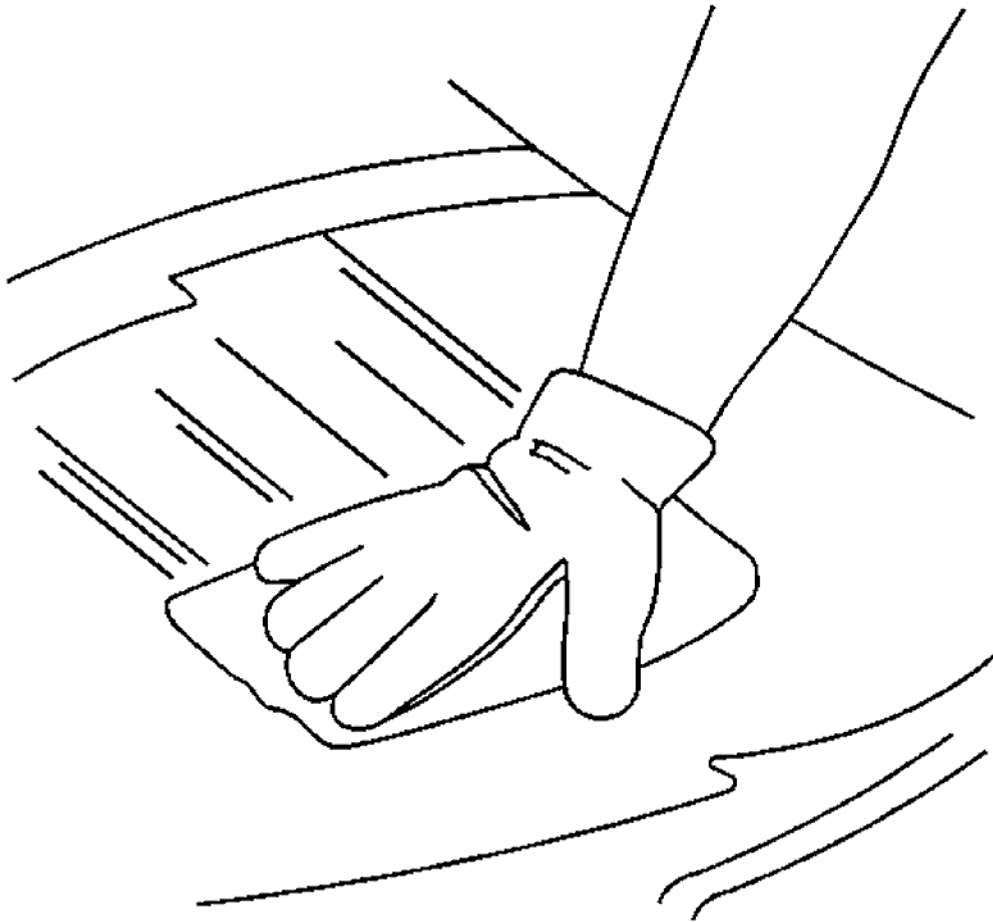
**Fig. 54: Pressing Window Into Place**  
Courtesy of GENERAL MOTORS CORP.

**IMPORTANT:** To prevent damage to the window due to objects impacting an exposed edge, upon installation, the window must rest 1 mm (0.040 in) below the surface of the sheet metal.

24. Press firmly around the entire periphery of the window in order to wet-out the urethane bead.
25. Tape the window to the body in order to minimize movement until the urethane adhesive cures.

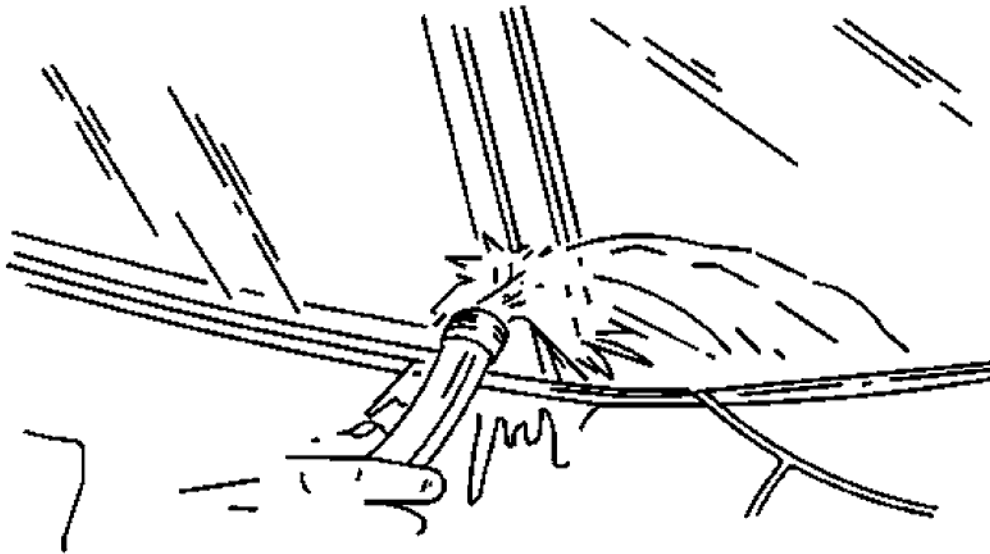
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**Fig. 55: Cleaning Window**  
Courtesy of GENERAL MOTORS CORP.

26. Clean any excess urethane adhesive from the body.



**Fig. 56: 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.

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

31. 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.
32. Complete the window installation.

#### **URETHANE ADHESIVE INSTALLATION OF REAR WINDOWS**

**CAUTION: Refer to Glass and Sheet Metal Handling Caution in Cautions and Notices.**

**IMPORTANT: Remove all but approximately 2 mm (0.078 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
  - Hardened sealer
  - Any other obstruction or irregularity in the pinch-weld flange

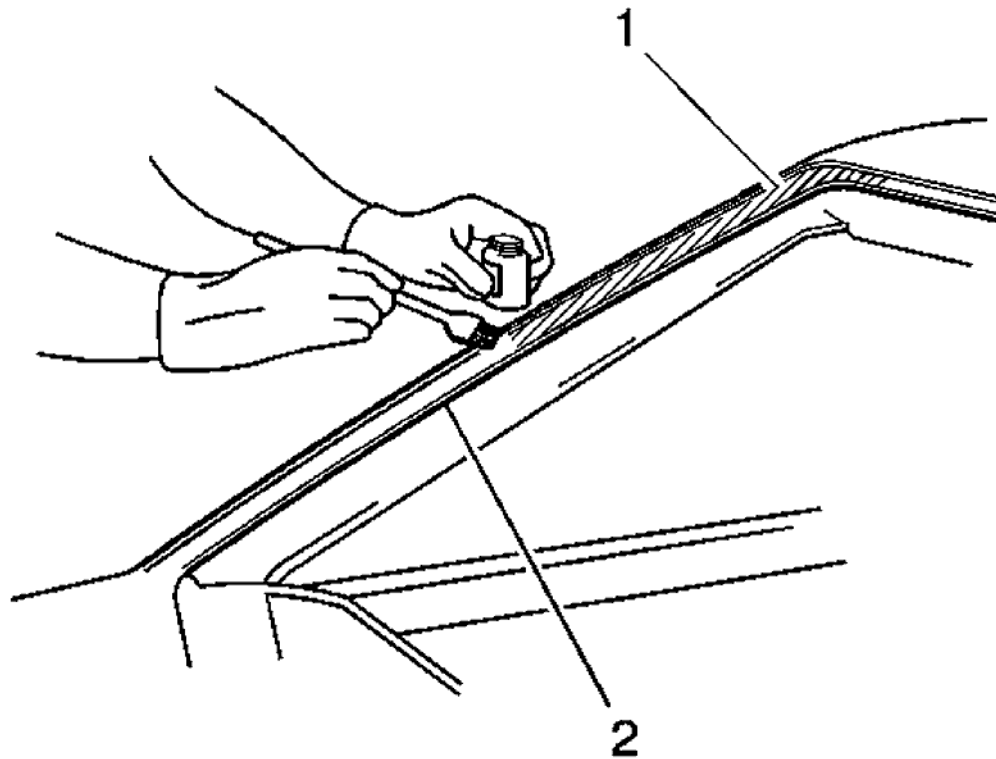
**IMPORTANT: If corrosion of the pinch-weld flange is present or if sheet metal repairs or replacements are required, the pinch-weld flange must be refinished in order to restore the bonding area strength. If paint repairs are required, mask the flange bonding area prior to applying the color coat in order to**

**provide a clean primer only surface. Materials such as BASF DE17®, 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 seats, floor and/or defroster ducts, if applicable.
  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.
  3. Allow the isopropyl alcohol to dry completely before applying the primers.

**CAUTION: When replacing stationary windows, use Urethane Adhesive Kit GM P/N 12346392 (Canadian P/N 10952983), or a urethane adhesive system meeting GM Specification GM3651G, to maintain original installation integrity. Failure to use the urethane adhesive kit will result in poor retention of the window which may allow unrestrained occupants to be ejected from the vehicle resulting in personal injury.**

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



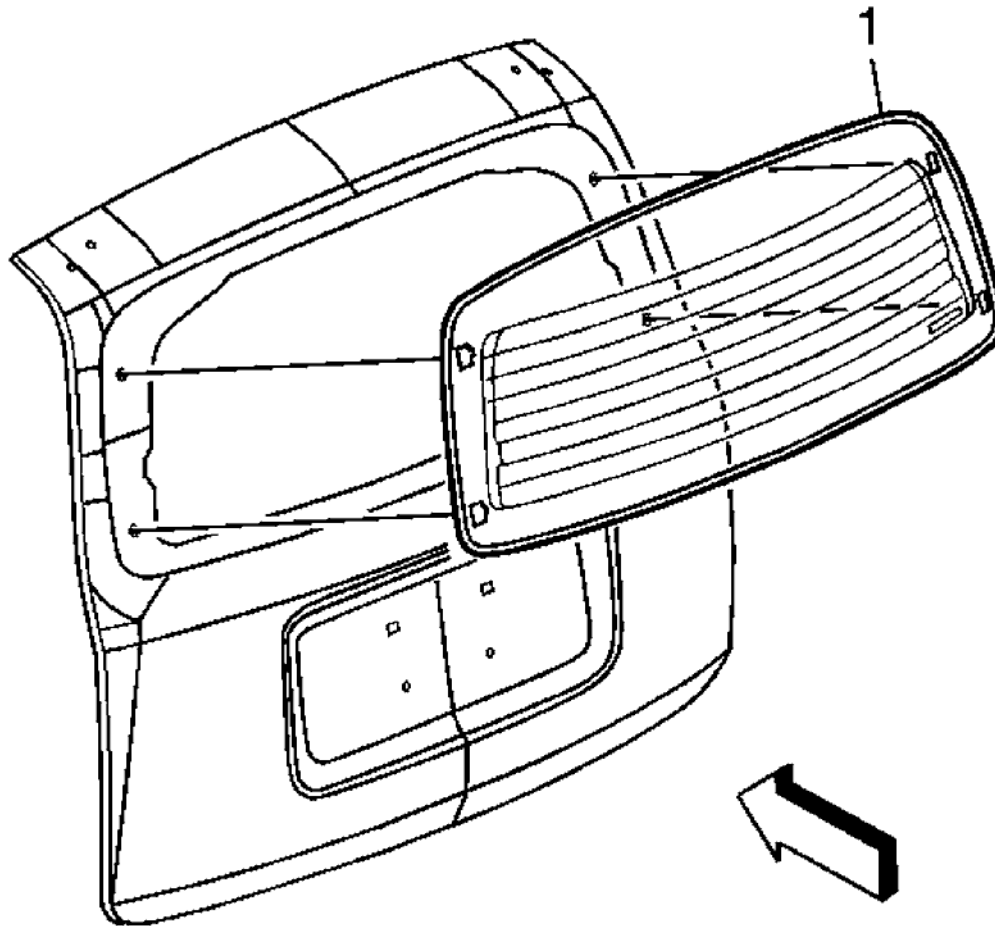
**Fig. 57: Applying Pinch-Weld Primer**  
Courtesy of GENERAL MOTORS CORP.

**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 of the urethane adhesive on the pinch-weld flange. Apply the primer only to nicks, scratches or the primed surfaces.

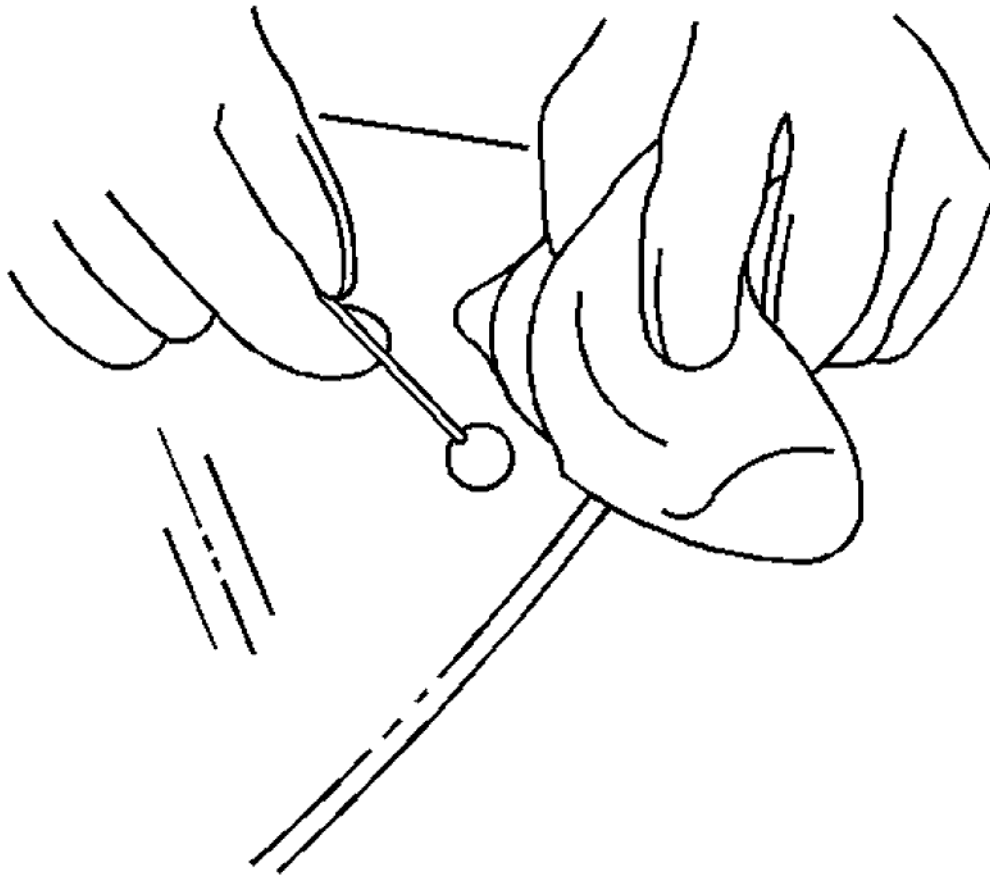
7. Shake the pinch-weld black #3 primer for at least 1 minute.
8. Use a new dauber in order to apply the primer to the surface (1) of the pinch-weld flange.
9. Allow the pinch-weld primer to dry for approximately 10 minutes.
10. If the original window is being reused, and the window reveal moldings are damaged or

become detached, replace the reveal moldings. Refer to **Windshield Reveal Molding Replacement**.



**Fig. 58: Rear Window**  
**Courtesy of GENERAL MOTORS CORP.**

11. With the aid of an assistant dry fit the window (1) to the opening in order to determine the correct position.
12. Ensure that the window locator pins are positioned into the locator slots on the upper liftgate sheet metal.
13. Center the window side to side into the liftgate opening.
14. Use masking tape in order to mark the locations of the liftgate window in the opening.
15. Cut the masking in the center. Remove the liftgate window from the opening.



**Fig. 59: Applying Glass Prep**  
Courtesy of GENERAL MOTORS CORP.

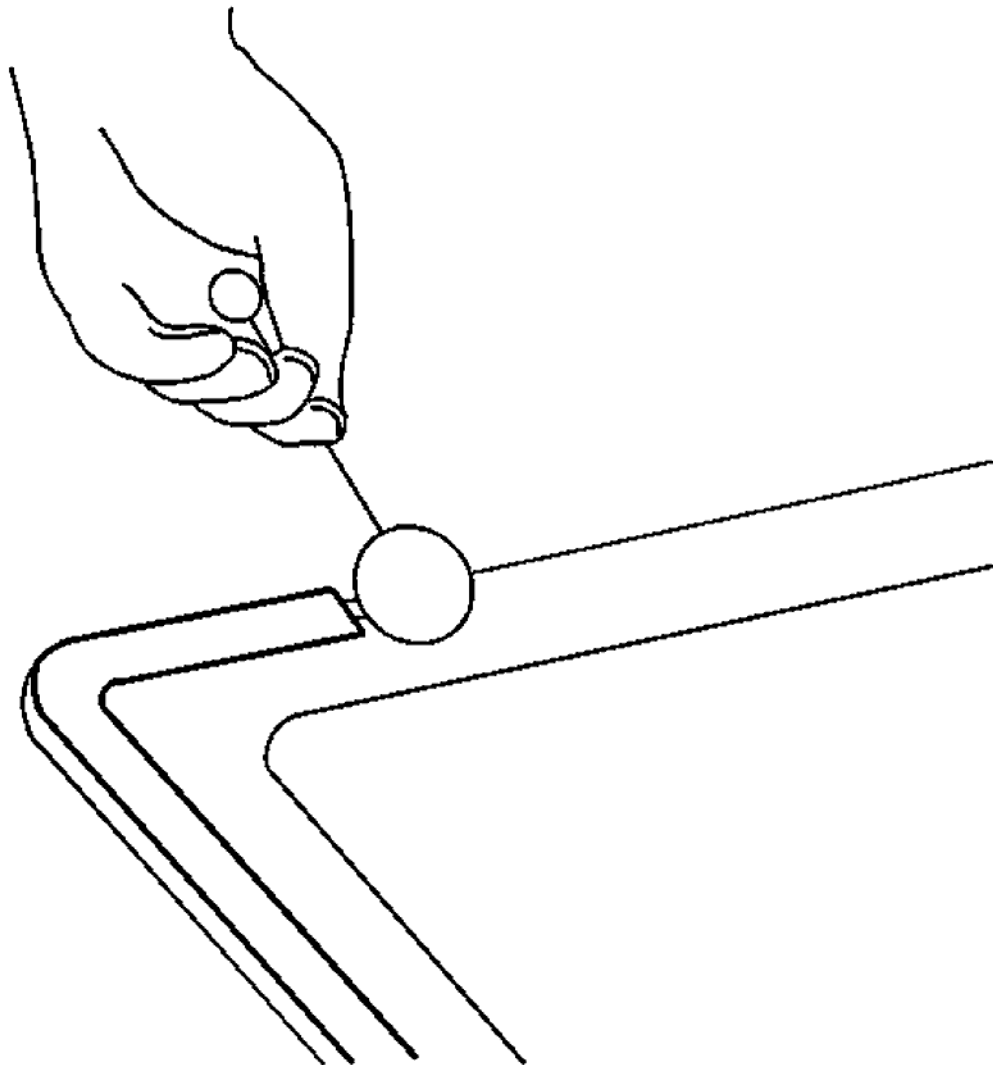
**IMPORTANT:** Use care when applying clear #1 glass prep on the window. This primer dries almost instantly, and may stain the viewing area of the window if not applied evenly.

16. Use a new dauber in order to apply clear #1 glass prep to the area approximately 18 mm (0.71 in) around the entire perimeter of the window inner surface.

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

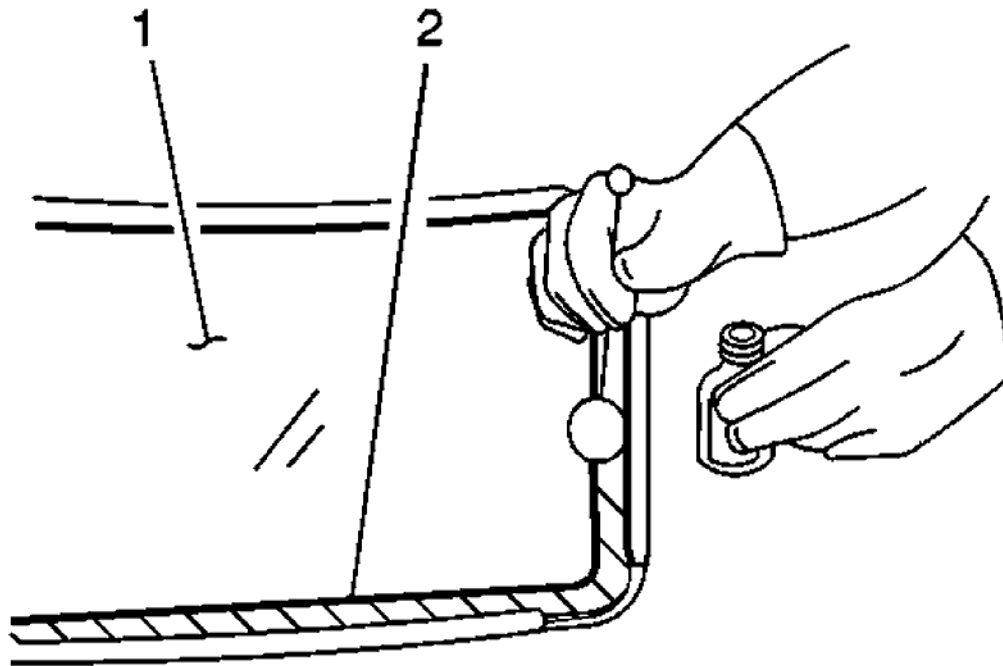
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**Fig. 60: Applying Glass Prep**  
**Courtesy of GENERAL MOTORS CORP.**

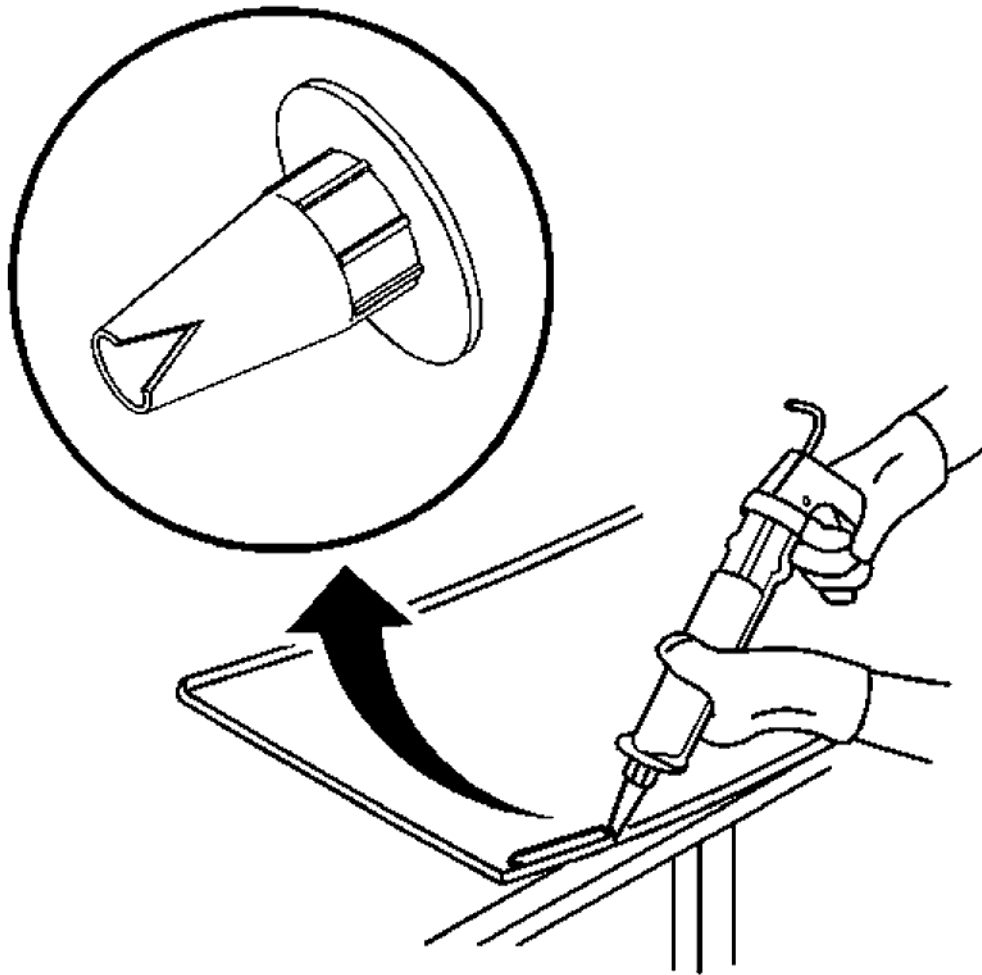
17. Apply a second coat of the glass prep clear #1 to the same area of the glass.



**Fig. 61: Applying Glass Primer**  
Courtesy of GENERAL MOTORS CORP.

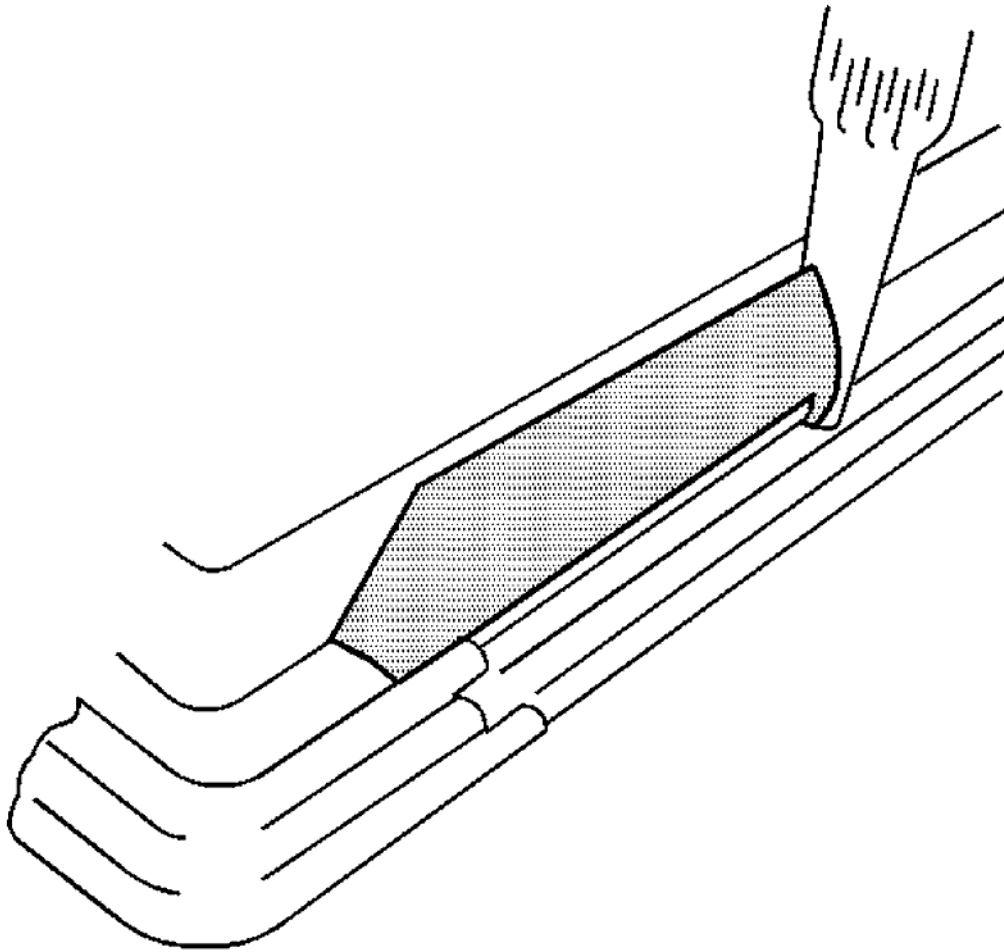
**IMPORTANT:** The black #2 glass primer is effective up to 8 hours after applying it to the glass. The primed surface of the glass must be kept clean.

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



**Fig. 62: View Of Modified Applicator Nozzle**  
**Courtesy of GENERAL MOTORS CORP.**

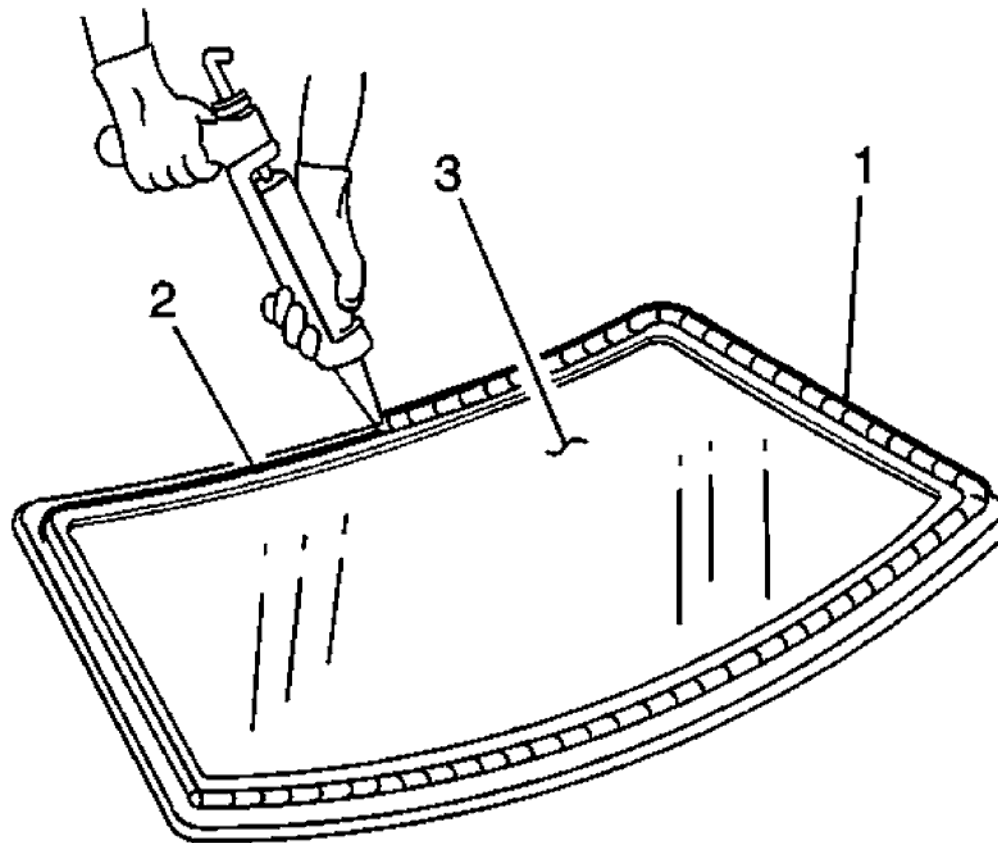
21. Cut the applicator nozzle in order to provide a minimum urethane bead of 8 mm (0.31 in) wide and 16 mm (0.63 in) high.



**Fig. 63: Applying Bead Of Urethane Adhesive**  
Courtesy of GENERAL MOTORS CORP.

**IMPORTANT:** The urethane adhesive bead must maintain a consistent height and width uniformity.

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



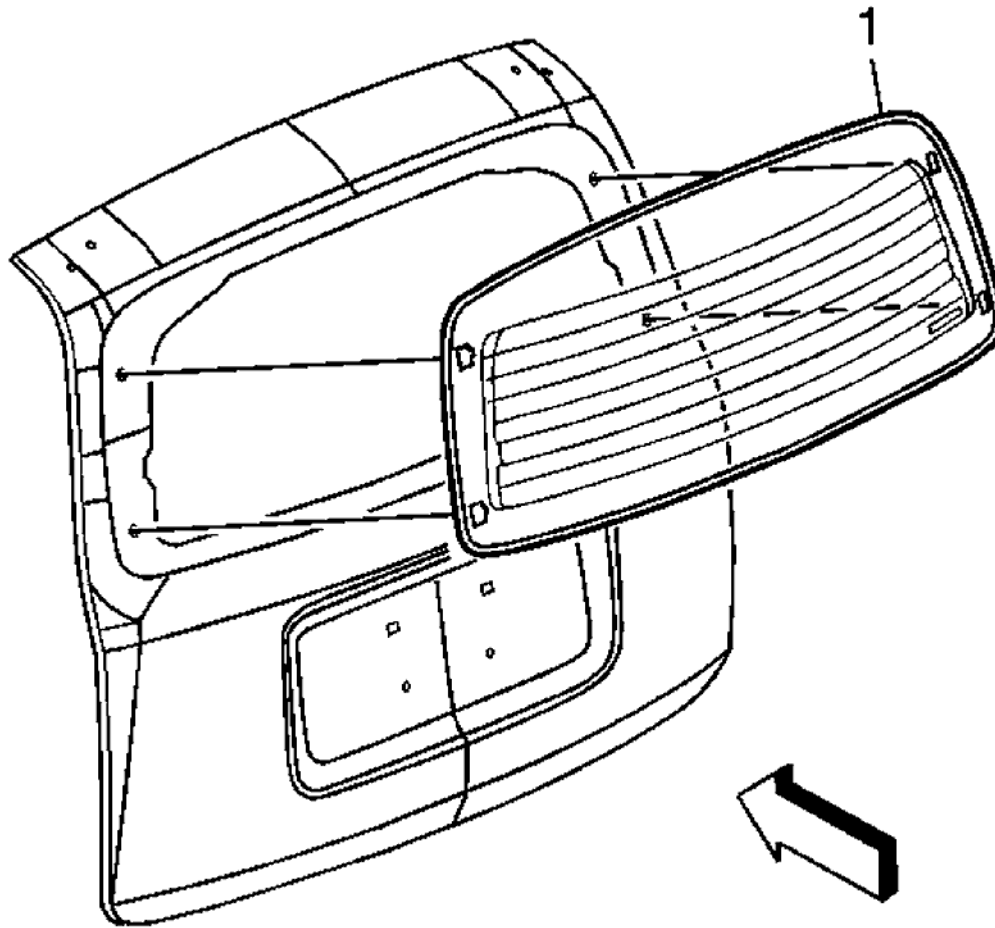
**Fig. 64: Applying Urethane Adhesive To Inner Surface Of Window**  
Courtesy of GENERAL MOTORS CORP.

23. 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).

**IMPORTANT:** The liftgate glass must be installed to the liftgate opening within 5 minutes after the urethane adhesive is dispensed.

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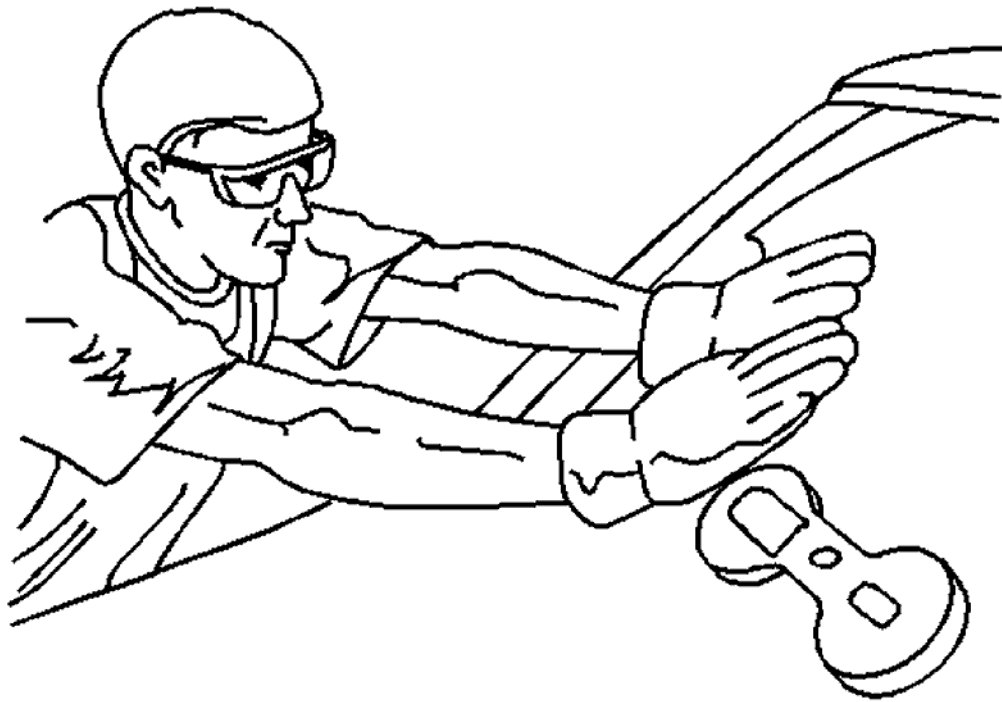
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**Fig. 65: Rear Window**

**Courtesy of GENERAL MOTORS CORP.**

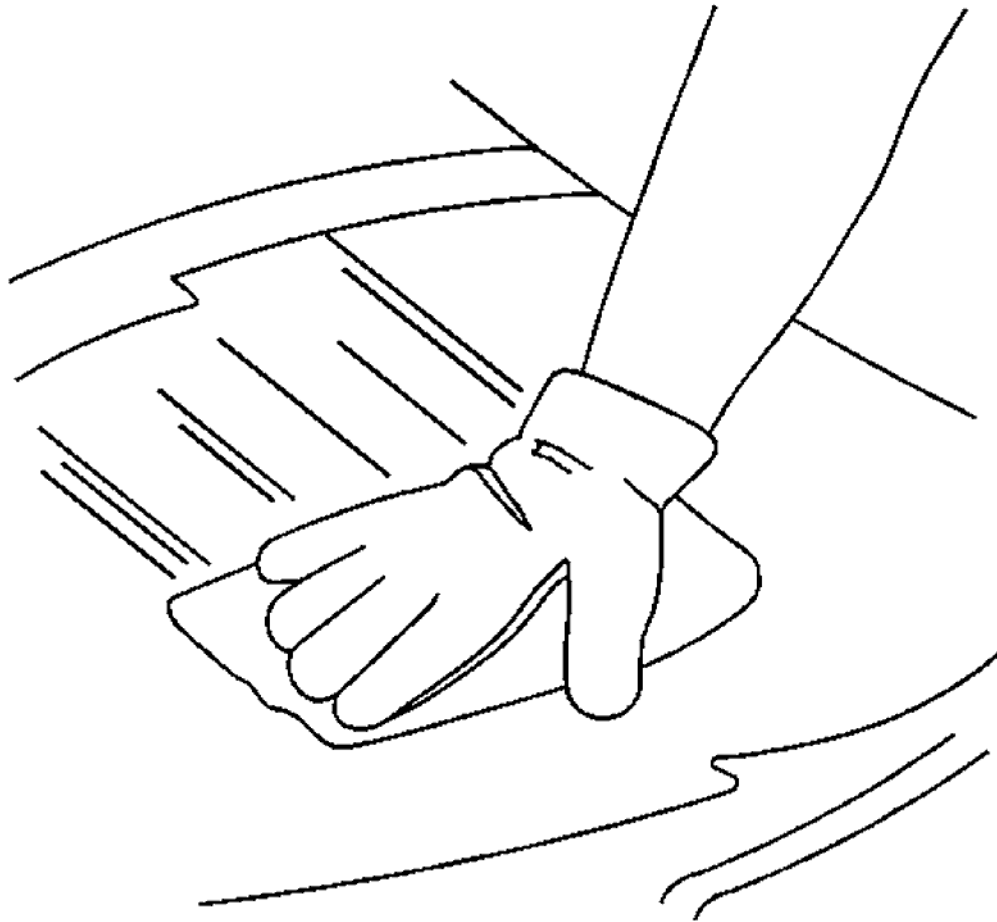
24. With the aid of an assistant, position the window (1) into the liftgate opening.
25. Align the masking tape on the liftgate window to the liftgate masking tape.



**Fig. 66: Pressing Window Into Place**  
Courtesy of GENERAL MOTORS CORP.

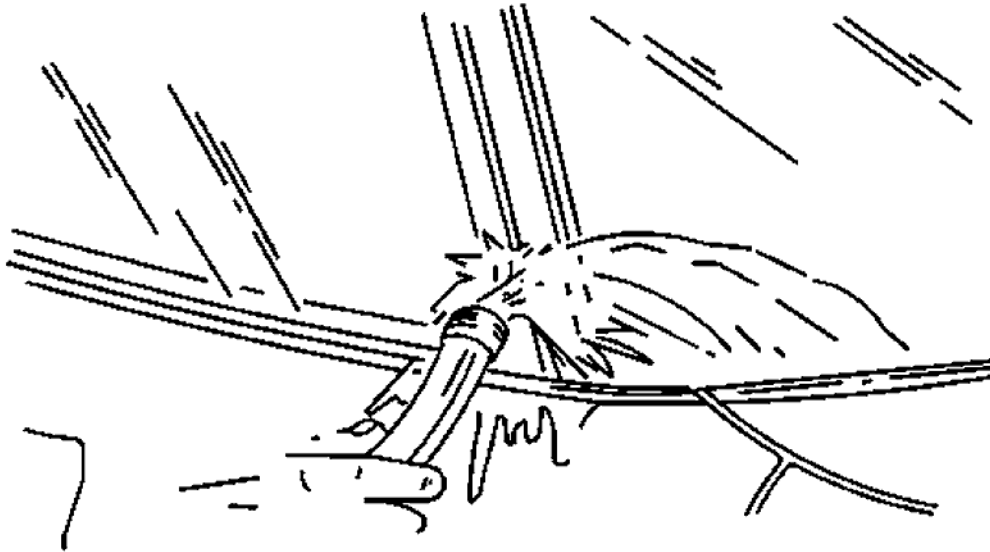
**IMPORTANT:** To prevent damage to the window due to objects impacting an exposed edge, upon installation, the window must rest 1 mm (0.040 in) below the surface of the sheet metal.

26. Press firmly around the entire periphery of the liftgate window edge in order to wet-out the urethane adhesive bead.
27. Tape the window to the liftgate in order to minimize movement until the urethane adhesive cures.



**Fig. 67: Cleaning Window**  
**Courtesy of GENERAL MOTORS CORP.**

28. Clean any excess urethane adhesive from the body by using VMP Naptha.
29. Clean any excess urethane adhesive from the interior trim by using Acrysol.



**Fig. 68: 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.

## **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 System Components**

The rear window defogger system consist of the following components:

- The HVAC control assembly
- The body control module (BCM)
- The REAR DEFOG relay
- The rear window grid

**Rear Window Defogger Operation**

Battery positive voltage is supplied through the RR DEFOG fuse, in the underhood fuse block, to the REAR DEFOG relay switched input. Ground for the REAR DEFOG relay is provided by G101. The BCM supplies 12 volts on the rear window defogger switch signal circuit to the HVAC control assembly. When you depress the rear window defogger switch, the rear window defogger switch pulls the signal circuit low. The BCM interprets as a request for the rear window defogger system. The BCM enables the rear window defogger system by supplying voltage to the REAR DEFOG relay coil. The relay coil supply voltage is also spliced off internally in the BCM to the supply voltage circuit of the rear window defogger indicator. The REAR DEFOG relay is energized and the rear window defogger indicator is illuminated. With the relay energized, battery positive voltage is allowed from the relay switched input through the switch contacts and out the relay switched output to the rear window defogger grid. Ground for the rear window defogger grid is provided by G403.

When you start the engine and press the rear window defogger switch for the first time, the defogger cycle lasts for 15 minutes. Further operation results in 7.5 minute defogger cycles. The rear defogger feature will not time out if vehicle speed is above 80 km/h (50 mph). The defogger cycle resets to 15 minutes when you cycle the ignition to the OFF position and then to the ON position.

**AUTOMATIC DAY-NIGHT MIRROR DESCRIPTION AND OPERATION****Inside Rearview Mirror with the Automatic Day-Night Feature System Components**

The inside rearview mirror with the automatic day-night feature system consist of the Inside rearview mirror.

**Power and Ground of the Inside Rearview Mirror**

- With the ignition ON, ignition voltage is supplied to the mirror from the SUNROOF fuse in the body control module (BCM).
- Ground for the mirror is provided by G401.

**Inside Rearview Mirror with the Automatic Day-Night Feature System Operation**

The inside rearview mirror uses 2 photocell sensors. One sensor is the headlight sensor,

located on the face side of the mirror. The headlight sensor is used to determine light conditions present at the mirror face. The other sensor is the ambient light sensor, located on the front of the mirror or windshield side. The ambient light sensor is used to determine light conditions present at the mirror. With automatic day-night feature enabled, the mirror uses the ambient light sensor to determine the exterior light condition. With a low light condition detected, and a high light condition from behind at the headlight sensor, the inside rearview mirror will automatically darken the face of the mirror.

With the gear selector lever in the REVERSE position, backup lamp supply voltage is supplied as an input to the inside rearview mirror. The mirror monitors this input to disable the automatic day-night feature which allows the face to gradually change to a normal state. This allows the driver to see objects in the mirror clearly when backing up.

#### Switches of the Inside Rearview Mirror with the Automatic Day-Night Feature and OnStar®

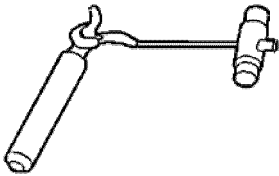
The inside rearview mirror has 4 switches that perform the following functions:

- The on/off switch located at the left side of the mirror turns the automatic day-night feature on/off.
- The 3 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

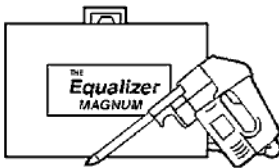
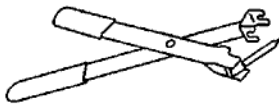
### SPECIAL TOOLS

#### Special Tools

| Illustration                                                                        | Tool Number/ Description                                  |
|-------------------------------------------------------------------------------------|-----------------------------------------------------------|
|  | J-24402-A<br>Glass Sealant Cold Knife Remover             |
|                                                                                     | J-33431-C<br>Signal Generator and Instrument Panel Tester |

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J-34946  
Window Pin Remover

J-39032  
Stationary Glass Removal Tool

J-39040  
Quarter Window Remover