

Stationary Windows - Vue

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

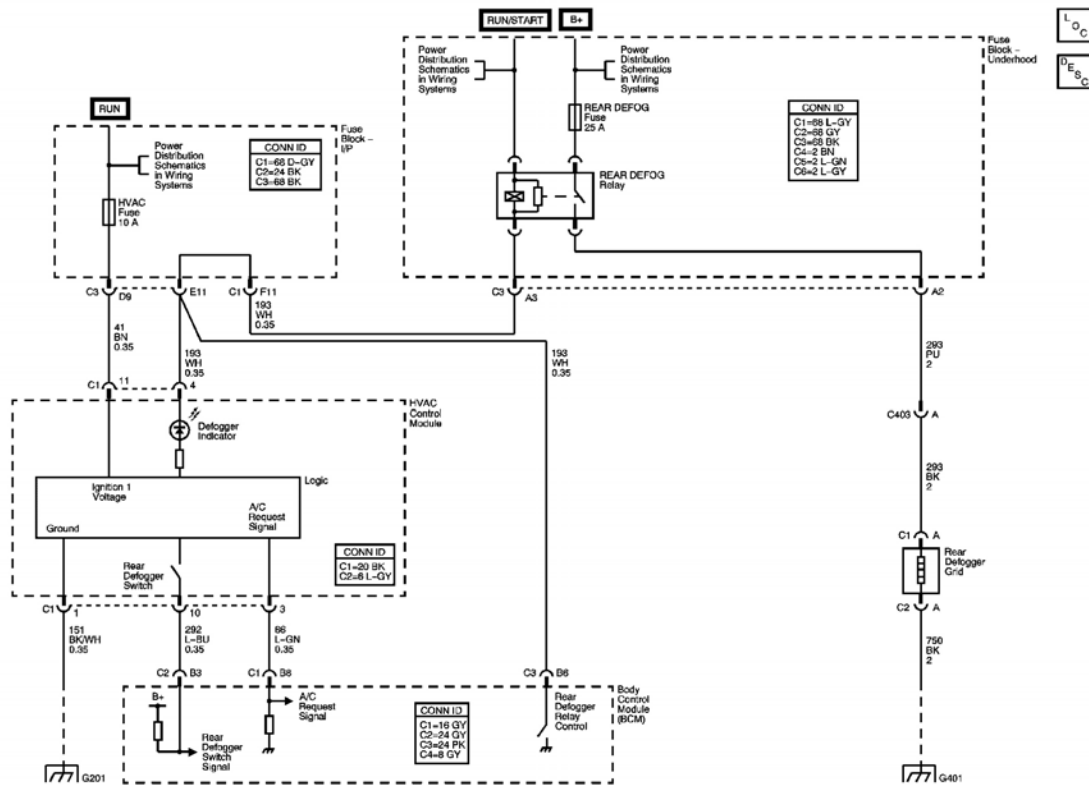


Fig. 1: Defogger Schematic
Courtesy of GENERAL MOTORS CORP.

INSIDE REARVIEW MIRROR SCHEMATICS

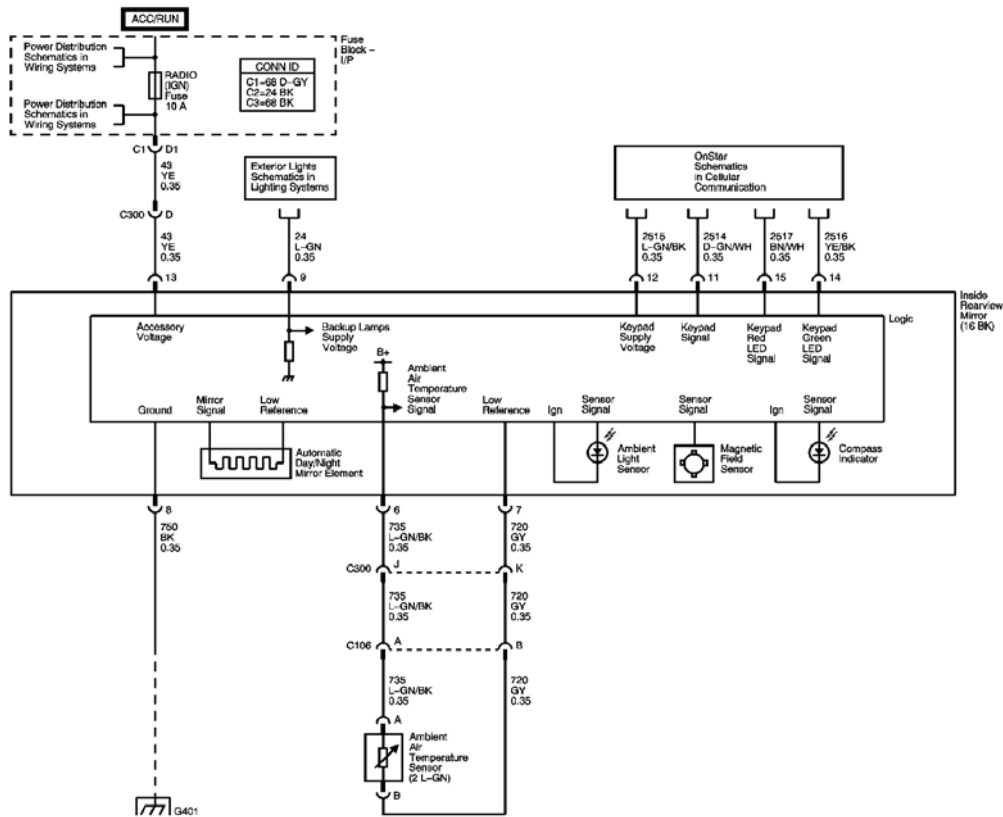


Fig. 2: Rearview Mirror Schematic
 Courtesy of GENERAL MOTORS CORP.

COMPONENT LOCATOR

STATIONARY WINDOWS COMPONENT VIEWS

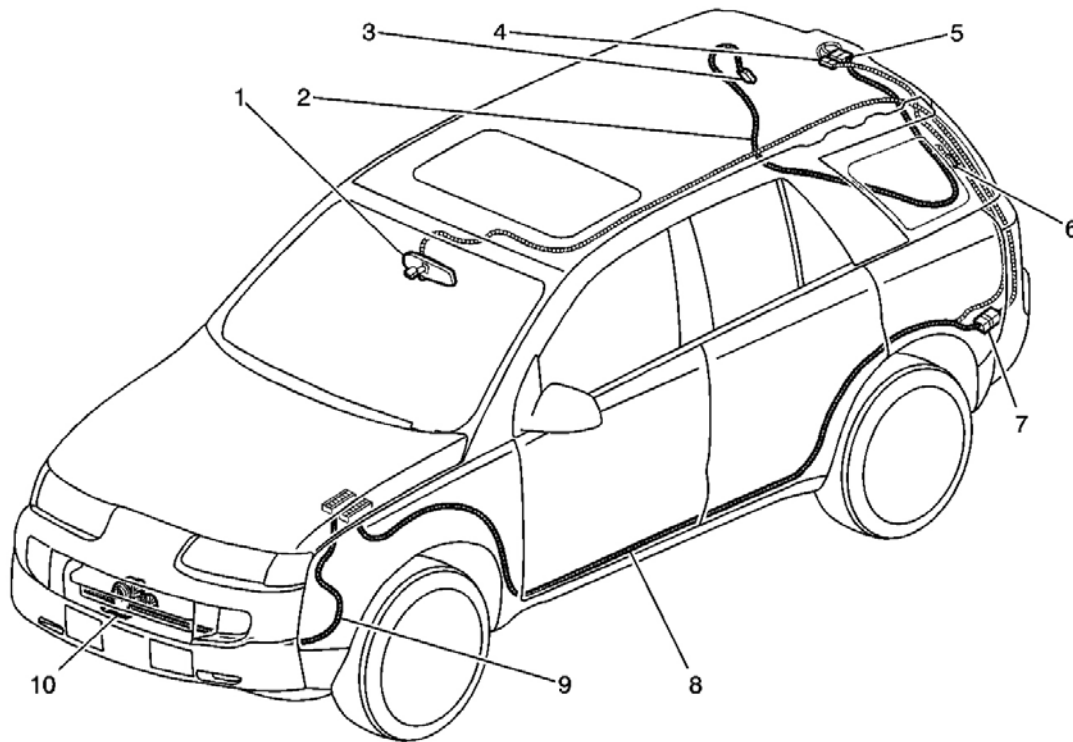


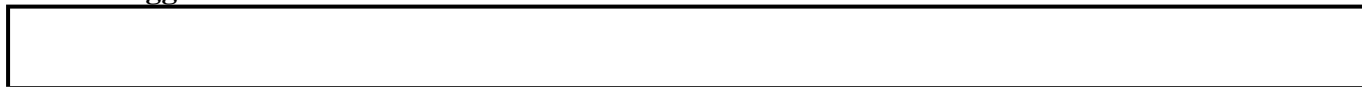
Fig. 3: Stationary Windows Component View
 Courtesy of GENERAL MOTORS CORP.

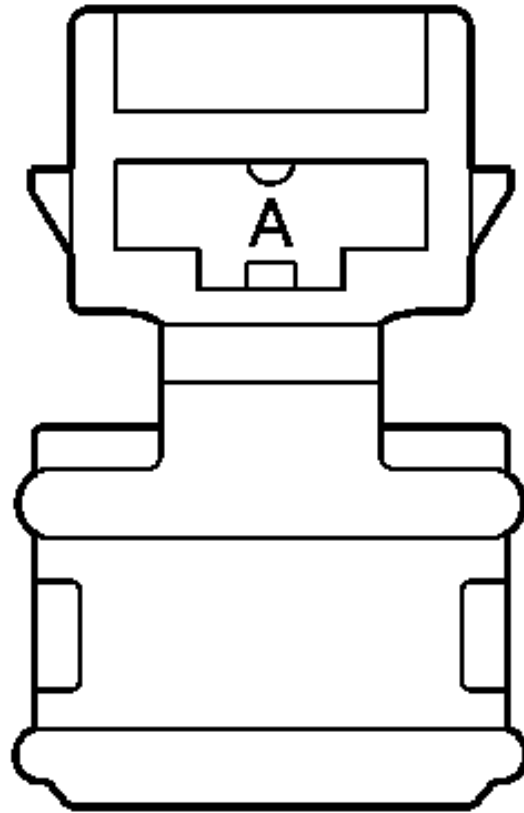
Callouts For Fig. 3

Callout	Component Name
1	Inside Rearview Mirror (16 BK)
2	Liftgate Harness
3	Rear Defogger Grid C2 (1 BK)
4	Liftgate Harness to the Body Harness Connector C403 (2 BK)
5	Liftgate Harness to the Body Harness Connector C402 (10 WH)
6	Rear Defogger Grid C1 (1 BK)
7	Body Harness to the Headliner Harness Inline Connector C300 (10 WH)
8	Body Harness
9	Forward Lamp Harness
10	Ambient Air Temperature Sensor (2 L-GN)

STATIONARY WINDOWS CONNECTOR END VIEWS

Rear Defogger C1 Connector End View

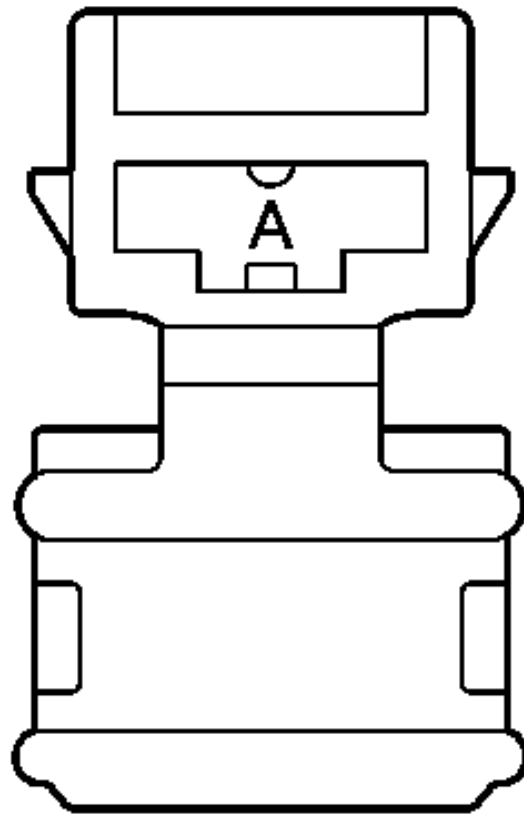




Connector Part Information		<ul style="list-style-type: none">• 520961-1• 1-Way (BK)	
Pin	Wire Color	Circuit Number	Function
A	BK	293	Defogger Relay Control

Rear Defogger C2 Connector End View





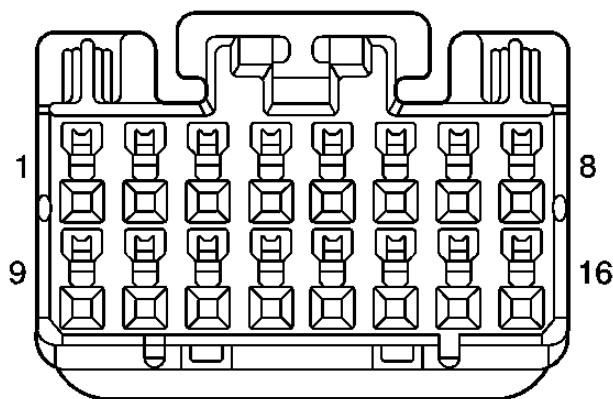
Connector Part Information

- 520961-1
- 1-Way (BK)

Pin	Wire Color	Circuit Number	Function
A	BK	750	Ground

Inside Rearview Mirror (ISRVM) Connector End View





Connector Part Information		<ul style="list-style-type: none"> • 917981-2 • 16-Way F Housing Hybrid I/O (BK) 	
Pin	Wire Color	Circuit Number	Function
1-5	-	-	Not Used
6	L-GN/BK	735	Ambient Air Temperature Sensor Signal (w/DH3)
7	GY	720	Low Reference
8	BK	750	Ground
9	L-GN	24	Backup Lamps Supply Voltage
10	-	-	Not Used
11	D-GN/WH	2514	Keypad Signal (w/UE1)
12	L-GN/BK	2515	Keypad Supply Voltage (w/UE1)
13	YE	43	Accessory Voltage
14	YE/BK	2516	Keypad Green LED Signal (w/UE1)
15	BN/WH	2517	Keypad Red LED Signal (w/UE1)
16	-	-	Not Used

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 **Symptoms - Stationary Windows** 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 - Defogger**. 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.

DIAGNOSTIC SYSTEM CHECK - DEFOGGER

Test Description

The number(s) below refer to the step number(s) on the diagnostic table.

2: Lack of communication may be due to a partial malfunction of the class 2 serial data circuit. The specified procedure will determine the particular condition.

3: The symptom table will determine the correct diagnostic procedure to use.

4: The presence of DTCs which begin with "U" indicate some other module is not communicating. The specified procedure will compile all the available information before tests are performed.

Diagnostic System Check - Defogger

Step	Action	Yes	No
1	Install a scan tool. Does the scan tool power up?	Go to Step 2	Go to <u>Scan Tool Does Not Power Up</u> in Data Link Communications
2	1. Turn ON the ignition, with the engine OFF. 2. Attempt to establish communication with the body control module (BCM). Does the scan tool communicate with the module?	Go to Step 3	Go to <u>Scan Tool Does Not Communicate with Class 2 Device</u> in Data Link Communications
3	Select the display DTCs function on the scan tool for the body control module (BCM). Does the scan tool display any DTCs?	Go to Step 4	Go to <u>Symptoms - Stationary Windows</u>
4	Does the scan tool display DTCs that begin with "U"?	Go to <u>Scan Tool Does Not Communicate with Class 2 Device</u> in Data Link Communications	Go to Step 5

5	Does the scan tool display DTC B1000, B1001, B1372, or B1382?	Go to Diagnostic Trouble Code (DTC) List in Body Control System	Go to Step 6
6	Does the scan tool display DTC B1327 or B1328?	Go to Diagnostic Trouble Code (DTC) List in Engine Electrical	Go to Diagnostic Trouble Code (DTC) List

SCAN TOOL OUTPUT CONTROLS

Body Control Module (BCM) Scan Tool Output Controls

Scan Tool Output Control	Additional Menu Selection(s)	Description
Miscellaneous Tests	Rear Defogger Relay	The BCM actuates the Rear Defogger relay when ON is selected. The rear window defogger grid should become warm.

SCAN TOOL DATA LIST

Accessory Scan Tool Data List

Scan Tool Parameter	Units Displayed	Typical Data Value
Operating Conditions: Ignition in RUN, Engine OFF, All Doors Closed, Park Brake Applied (DRLs OFF)		
Rear Defog Relay Cmd.	On/Off	Off
Rear Defog Relay Fdbk.	High/Low	Low
Rear Defog Switch	On/Off	Off

SCAN TOOL DATA DEFINITIONS

Rear Defog Relay Cmd.

The scan tool displays On/Off. The body control module will indicate if it is commanding the rear defog relay On or Off.

Rear Defog Relay Fdbk.

The scan tool displays High/Low. This input to the BCM displays the state of the rear defog relay feedback circuit. Low is displayed when the BCM is providing a ground to the rear defog relay control circuit.

Rear Defog Switch

The scan tool displays On/Off. The BCM receives an input from the HVAC control head indicating On when the rear defog system is turned On.

DIAGNOSTIC TROUBLE CODE (DTC) LIST

Diagnostic Trouble Code (DTC) List

DTC	Diagnostic Procedure	Module(s)
B0285	DTC B0285	BCM
B0286	DTC B0286	BCM

DTC B0285

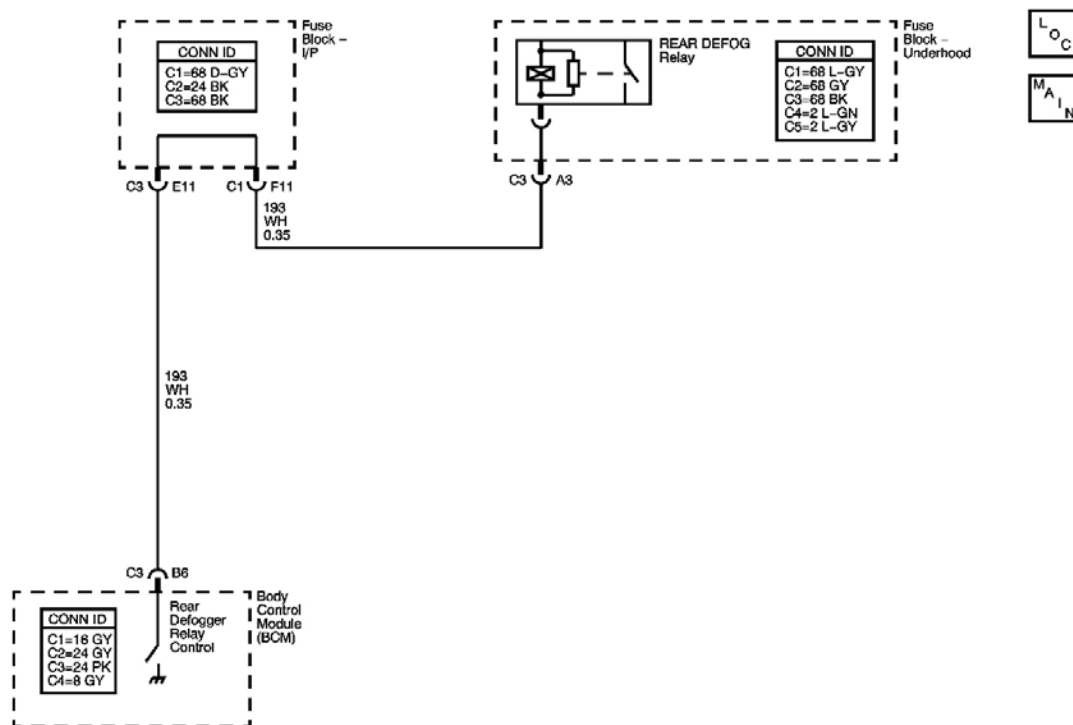


Fig. 4: DTC B0285 Circuit
 Courtesy of GENERAL MOTORS CORP.

Circuit Description

The body control module (BCM) monitors the rear defogger switch input. When the rear defogger is turned on, rear defog switch closed, the BCM grounds the coil side of the rear defog relay. This will energize the relay activating the rear defogger.

The first time in an ignition cycle that the rear defogger is activated, the rear defogger will remain on for 15 minutes, or until the ignition switch is turned OFF. If the rear defogger is activated again during the same ignition cycle, the rear defogger will remain on for 7 1/2 minutes, or until the ignition switch is turned OFF.

Conditions for Running the DTC

The ignition is in RUN.

Conditions for Setting the DTC

- The BCM detects an open or short to ground in the rear defog relay control circuit when the relay is energized.
- The condition exists for 30 seconds.
- The BCM is not requesting the rear defogger system.

Action Taken When the DTC Sets

- The rear window defogger will be disabled until the condition is no longer present.
- The LED on the defogger switch will not illuminate when pressed.

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 ground input to the REAR DEFOG relay.

5: Tests for a short to ground on the rear defog relay control circuit of the REAR DEFOG relay coil.

DTC B0285

Step	Action	Yes	No
Connector End View Reference: Master Electrical Component List in Wiring Systems			
1	Did you perform the Defogger Diagnostic System Check?	Go to Step 2	Go to Diagnostic System Check - Defogger
2	<ol style="list-style-type: none">1. Turn ON the ignition, with the engine OFF.2. With a scan tool select from special functions, the Rear Defogger Relay from the BCM output controls.3. Command the REAR DEFOG relay ON and OFF. Do you hear a click when you command the REAR DEFOG relay ON and OFF?	Go to Testing for Intermittent Conditions and Poor Connections in Wiring Systems	Go to Step 3
	<ol style="list-style-type: none">1. Turn OFF the ignition.		

3	<ol style="list-style-type: none"> 2. Disconnect the REAR DEFOG relay. 3. Turn ON the ignition, with the engine OFF. 4. Connect a test lamp between the rear defog relay control circuit of the REAR DEFOG relay coil and B+. 5. With a scan tool, command the REAR DEFOG relay ON and OFF. <p>Does the test lamp turn ON and OFF with each command?</p>	Go to Step 4	Go to Step 5
4	<ol style="list-style-type: none"> 1. Connect a test lamp between the supply voltage circuit of the REAR DEFOG relay and the rear defog relay control circuit of the REAR DEFOG relay coil. 2. With a scan tool, command the REAR DEFOG relay ON and OFF. <p>Does the test lamp turn ON and OFF with each command?</p>	Go to Step 7	Go to Step 9
5	<p>Test the rear defog relay control circuit of the REAR DEFOG relay for a short to ground. Refer to Circuit Testing and Wiring Repairs in Wiring Systems.</p> <p>Did you find and correct the condition?</p>	Go to Step 12	Go to Step 6
6	<p>Test the rear defog relay control circuit of the rear window defogger indicator for a short to ground. Refer to Circuit Testing and Wiring Repairs in Wiring Systems.</p> <p>Did you find and correct the condition?</p>	Go to Step 12	Go to Step 8
7	<p>Inspect for poor connections at the REAR DEFOG relay. Refer to Testing for Intermittent Conditions and Poor Connections and Connector Repairs in Wiring Systems.</p> <p>Did you find and correct the condition?</p>	Go to Step 12	Go to Step 10
8	<p>Inspect for poor connections at the harness connector of the BCM. Refer to Testing for Intermittent Conditions and Poor Connections and Connector Repairs in Wiring Systems.</p> <p>Did you find and correct the condition?</p>	Go to Step 12	Go to Step 11
9	<p>Repair an open or high resistance in the rear defog relay control circuit of the REAR DEFOG relay. Refer to Wiring Repairs in Wiring Systems.</p> <p>Did you complete the repair?</p>	Go to Step 12	-
	<p>Replace the REAR DEFOG relay. Refer to Relay</p>		

10	<p>Replacement (Within an Electrical Center) or Relay Replacement (Attached to Wire Harness) in Wiring Systems.</p> <p>Did you complete the replacement?</p>	Go to Step 12	-
11	<p>IMPORTANT:</p> <p>Perform the programming or setup procedure for the replaced control module if required.</p> <p>Replace the BCM. Refer to Body Control Module Replacement in Body Control System for applicable replacement procedure. Did you complete the replacement?</p>	Go to Step 12	-
12	<ol style="list-style-type: none"> 1. Use the scan tool in order to clear the DTCs. 2. Operate the vehicle within the Conditions for Setting the DTC as specified in the supporting text. <p>Does the DTC reset?</p>	Go to Step 2	System OK

DTC B0286

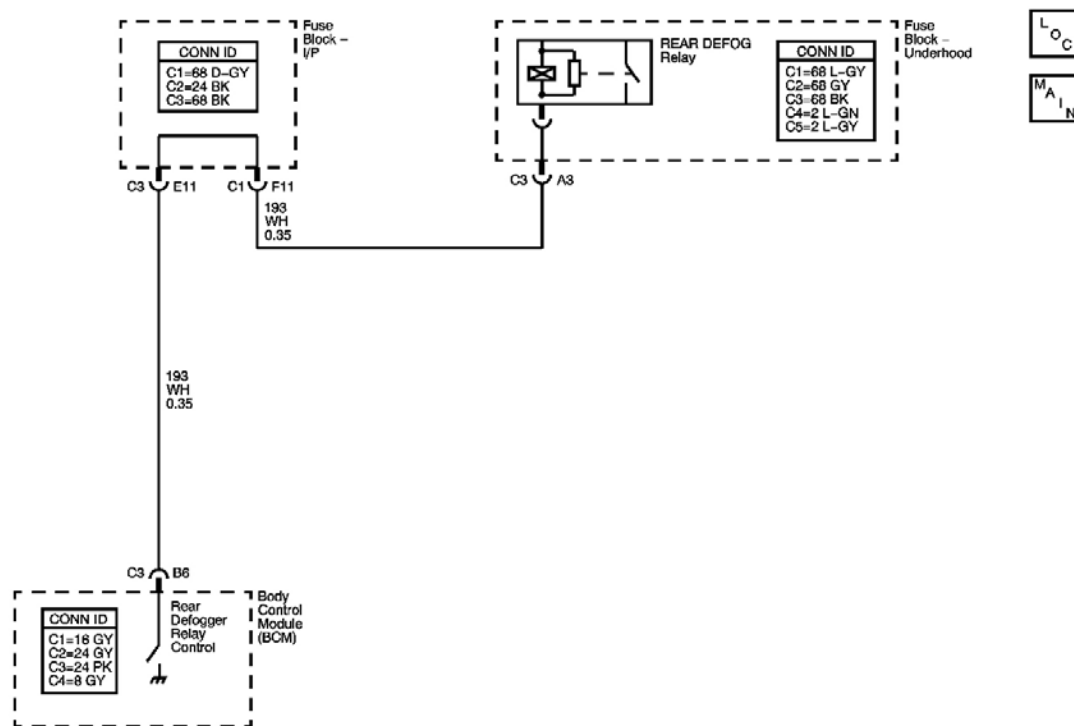


Fig. 5: DTC B0286 Circuit

Courtesy of GENERAL MOTORS CORP.

Circuit Description

The body control module (BCM) monitors the rear defogger switch input. When the rear defogger is turned on, rear defog switch closed, the BCM grounds the coil side of the rear defog relay. This will energize the relay activating the rear defogger.

The first time that the rear defogger is activated in an ignition cycle, the rear defogger will remain on for 15 minutes, or until the ignition switch is turned off. If the rear defogger is activated again during the same ignition cycle, the rear defogger will remain on for 7 1/2 minutes, or until the ignition switch is turned off.

Conditions for Running the DTC

The ignition is in RUN.

Conditions for Setting the DTC

- The rear defogger relay control circuit is shorted to battery voltage.
- The BCM is commanding the rear defog system to the on state.

Actions Taken When the DTC Sets

- No light will illuminate in the I/P.
- When a shorted to battery voltage condition exists in the rear defogger relay control circuit and the BCM has been requested to activate the rear defog system, the BCM will attempt to switch the rear defogger relay control circuit. High current flow will result and the BCM output will go into a protective state. The BCM output will not allow itself to be activated for as much as 3 minutes.

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.

DTC B0286

Step	Action	Yes	No
Connector End View Reference: Master Electrical Component List in Wiring Systems			
1	Did you perform the Defogger Diagnostic System Check?	Go to Step 2	Go to Diagnostic System Check - Defogger
	<ol style="list-style-type: none">1. Turn ON the ignition, with the engine OFF.2. With a scan tool select from special functions, the Rear Defogger Relay from the BCM output controls.		

2	<p>3. Command the REAR DEFOG relay ON and OFF.</p> <p>Do you hear a click when you command the REAR DEFOG relay ON and OFF?</p>	<p>Go to <u>Testing for Intermittent Conditions and Poor Connections</u> in Wiring Systems</p>	<p>Go to Step 3</p>
3	<p>1. Turn OFF the ignition.</p> <p>2. Disconnect the REAR DEFOG relay.</p> <p>3. Connect a test lamp between the rear defog relay control circuit of the REAR DEFOG relay coil and the supply voltage circuit of the REAR DEFOG relay coil.</p> <p>4. With a scan tool, command the REAR DEFOG relay ON and OFF.</p> <p>Does the test lamp turn ON and OFF with each command?</p>	<p>Go to Step 5</p>	<p>Go to Step 4</p>
4	<p>Test the rear defog relay control circuit of the REAR DEFOG relay for a short to voltage. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> in Wiring Systems.</p> <p>Did you find and correct the condition?</p>	<p>Go to Step 9</p>	<p>Go to Step 6</p>
5	<p>Inspect for poor connections at the REAR DEFOG relay. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> in Wiring Systems.</p> <p>Did you find and correct the condition?</p>	<p>Go to Step 9</p>	<p>Go to Step 7</p>
6	<p>Inspect for poor connections at the harness connector of the BCM. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> in Wiring Systems.</p> <p>Did you find and correct the condition?</p>	<p>Go to Step 9</p>	<p>Go to Step 8</p>
7	<p>Replace the REAR DEFOG relay. Refer to <u>Relay Replacement (Within an Electrical Center)</u> or <u>Relay Replacement (Attached to Wire Harness)</u> in Wiring Systems.</p> <p>Did you complete the replacement?</p>	<p>Go to Step 9</p>	<p>-</p>
8	<p>IMPORTANT: Perform the programming or setup procedure for the replaced control module if required.</p> <p>Replace the BCM. Refer to <u>Body Control Module Replacement</u> in Body Control System for applicable replacement procedure. Did you complete the replacement?</p>	<p>Go to Step 9</p>	<p>-</p>

9	<ol style="list-style-type: none"> 1. Use the scan tool in order to clear the DTCs. 2. Operate the vehicle within the Conditions for Setting the DTC as specified in the supporting text. 		
	Does the DTC reset?	Go to Step 2	System OK

SYMPTOMS - STATIONARY WINDOWS

IMPORTANT: For the inside rearview mirror with the automatic day-night feature, review the system operation in order to familiarize yourself with the system functions. Refer to Automatic Day-Night Mirror Description and Operation .

For the rear window defogger system, the following steps must be performed before using the symptom tables.

1. Perform the **Diagnostic System Check - Defogger** 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** .

Visual/Physical Inspection

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

Intermittent

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

Symptom List

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

- **Defogger Inoperative - Rear Window**
- **Defogger Grid Lines Diagnosis**
- **Mirrors - Automatic Day-Night Inoperative**
- **Mirrors - Temperature Displays SC or OC**

• **Mirrors - Compass Display Inoperative or Inaccurate**

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
Schematic Reference: Defogger Schematics			
Connector End View Reference: Master Electrical Component List in Wiring Systems			
1	Did you perform the Defogger Diagnostic System Check?	Go to Step 2	Go to <u>Diagnostic System Check - Defogger</u>
2	1. Start the engine. 2. Depress the rear defogger switch. 3. Observe the rear defogger indicator on the HVAC control module. Does the rear defogger indicator illuminate?	Go to Step 3	Go to Step 5
3	Connect a test lamp between the rear defogger grid and a good ground. Does the test lamp illuminate?	Go to Step 4	Go to Step 8
4	Connect a test lamp between the left side and the right side of the rear defogger grid. Does the test lamp illuminate?	Go to <u>Testing for Intermittent Conditions and Poor Connections</u> in Wiring Systems	Go to Step 15
5	1. With a scan tool, observe the Rear Defog Switch parameter in the body control module (BCM) switch Input data list. 2. Depress the rear window defogger switch. Does the scan tool display On?	Go to Step 7	Go to Step 6
	1. Turn OFF the ignition. 2. Disconnect the harness C2 connector of the BCM. 3. Turn ON the ignition, with the engine OFF. 4. Connect a test lamp between battery voltage and		

6	<p>the rear defogger switch signal circuit of the HVAC control module at the BCM.</p> <p>5. Depress the rear defogger switch.</p> <p>Does the test lamp illuminate?</p>	Go to Step 14	Go to Step 10
7	<p>Connect a test lamp between the rear defog switch indicator control circuit and the rear defog switch indicator supply voltage circuit.</p> <p>Does the test lamp illuminate?</p>	Go to Step 13	Go to Step 11
8	<p>1. With a scan tool select from the Special Functions, the Rear Defogger Relay under the BCM output controls.</p> <p>2. Command the REAR DEFOG relay ON and OFF.</p> <p>Do you hear a click when you command the relay ON and OFF?</p>	Go to Step 9	Go to Step 12
9	<p>Connect a test lamp between the supply voltage circuit of the REAR DEFOG relay switched input, at the under hood fuse block, and a good ground.</p> <p>Does the test lamp illuminate?</p>	Go to Step 16	Go to Step 19
10	<p>Test the rear defogger switch signal circuit and the rear defogger switch ground circuit of the HVAC control module for an open or short to voltage. Refer to Circuit Testing and Wiring Repairs in Wiring Systems.</p> <p>Did you find and correct the condition?</p>	Go to Step 21	Go to Step 13
11	<p>Test the supply voltage circuit of the rear defogger indicator of the HVAC control module for an open or short to ground and test the rear defog relay circuit of the rear defogger indicator of the HVAC control module for an open. Refer to Circuit Testing and Wiring Repairs in Wiring Systems.</p> <p>Did you find and correct the condition?</p>	Go to Step 21	Go to Step 13
12	<p>Inspect for poor connections at the REAR DEFOG relay. Refer to Testing for Intermittent Conditions and Poor Connections and Connector Repairs in Wiring Systems.</p> <p>Did you find and correct the condition?</p>	Go to Step 21	Go to Step 17
13	<p>Inspect for poor connections at the harness connector of the HVAC control module. Refer to Testing for Intermittent Conditions and Poor Connections and Connector Repairs in Wiring Systems.</p> <p>Did you find and correct the condition?</p>	Go to Step 21	Go to Step 18
14	<p>Inspect for poor connections at the harness connector of the BCM. Refer to Testing for Intermittent Conditions and Poor Connections and Connector Repairs in Wiring Systems.</p>		

	Did you find and correct the condition?	Go to Step 21	Go to Step 20
15	Repair an open or high resistance in the ground circuit of the rear defogger. Refer to Wiring Repairs in Wiring Systems. Did you complete the repair?	Go to Step 21	-
16	Repair an open, a high resistance, or a short to ground in the supply circuit of the rear defogger. Refer to Wiring Repairs in Wiring Systems. Did you complete the repair?	Go to Step 21	-
17	Replace the REAR DEFOG relay. Refer to Relay Replacement (Within an Electrical Center) or Relay Replacement (Attached to Wire Harness) in Wiring Systems. Did you complete the replacement?	Go to Step 21	-
18	Replace the HVAC control module. Refer to HVAC Control Module Replacement in HVAC Systems - Manual. Did you complete the replacement?	Go to Step 21	-
19	Replace the underhood fuse block. Refer to Underhood Electrical Center or Junction Block Replacement in Wiring Systems. Did you complete the replacement?	Go to Step 21	-
20	IMPORTANT: Perform the programming or set up procedure for the replaced control module if required. Replace the BCM. Refer to Body Control Module Replacement in Body Control System for applicable replacement procedure. Did you complete the replacement?	Go to Step 21	-
21	Operate the system in order to verify the repair. Did you correct the condition?	System OK	Go to Step 2

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.

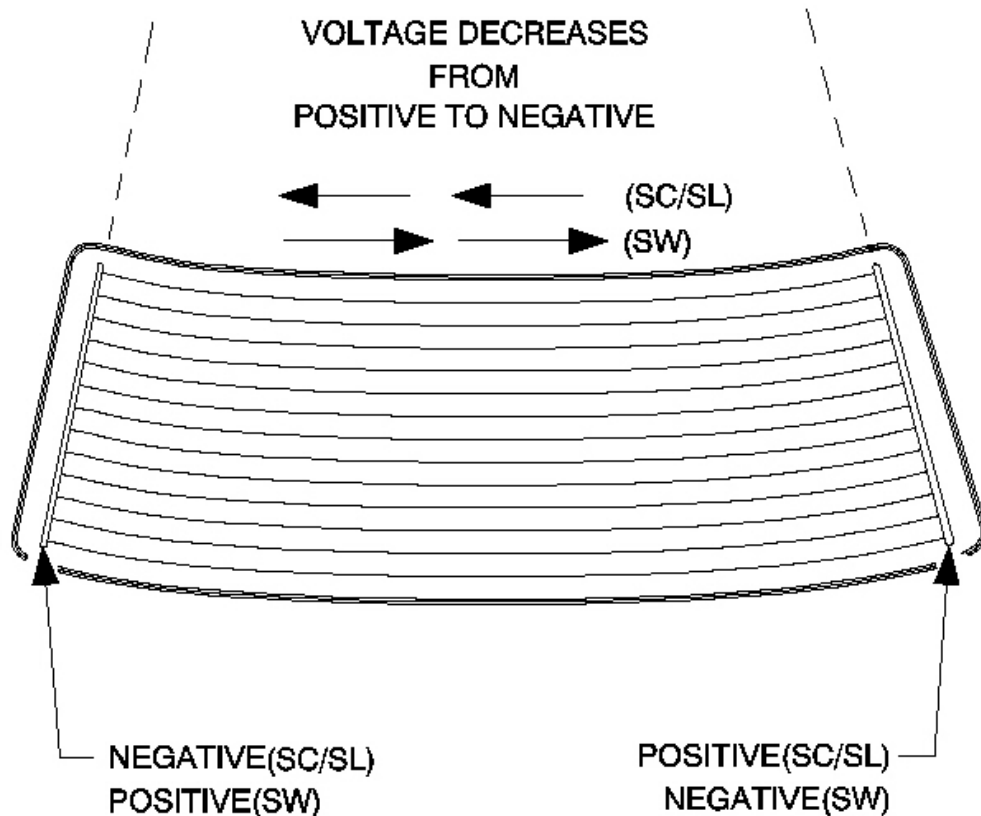


Fig. 6: View Of Defogger Grid Lines
 Courtesy of GENERAL MOTORS CORP.

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 the positive to the negative wire.
 - 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.

- If the test lamp goes out, test the grid line in at least 2 places to eliminate the possibility of bridging the open in the grid line.

5. Once the open 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	Value (s)	Yes	No
Schematic Reference: Inside Rearview Mirror Schematics				
Connector End View Reference: Master Electrical Component List in Wiring Systems				
1	Did you review the description and operation of the automatic inside day-night rearview mirror feature and perform the necessary inspections?	-	Go to Step 2	Go to Symptoms - Stationary Windows
2	<ol style="list-style-type: none"> 1. Turn ON the ignition, with the engine OFF. 2. Make sure the vehicle is not in Reverse. 3. Turn ON the automatic day-night feature of the inside rearview mirror. 4. Cover the sensor on the inside rearview mirror back, facing the front window. 5. Shine a bright light into the sensor on the inside rearview mirror face, facing the rear window. <p>Does the inside rearview mirror darken?</p>	-	Go to Diagnostic Aids	Go to Step 3
3	<ol style="list-style-type: none"> 1. Turn OFF the ignition. 2. Disconnect the harness connector of the inside rearview mirror. 3. Measure the resistance between the ground circuit of the inside rearview mirror and a good ground. <p>Is the resistance less than the specified value?</p>	3 ohm	Go to Step 4	Go to Step 9
4	<ol style="list-style-type: none"> 1. Turn ON the ignition, with the engine OFF. 2. Measure the voltage between the accessory voltage circuit of the inside rearview mirror and the ground circuit of the inside rearview mirror. <p>Is the voltage within the specified range?</p>	B+	Go to Step 5	Go to Step 10

5	<ol style="list-style-type: none"> Place the transmission in PARK. 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>Is the voltage less than the specified value?</p>	0.5 V	Go to Step 6	Go to Backup Lamps Always On in Lighting Systems
6	<ol style="list-style-type: none"> Place the transmission in REVERSE. 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>Is the voltage within the specified range?</p>	B+	Go to Step 8	Go to Step 7
7	<p>Test the backup lamp supply voltage circuit of the inside rearview mirror for an open or high resistance. Refer to Circuit Testing and Wiring Repairs in Wiring Systems.</p> <p>Did you find and correct the condition?</p>	-	Go to Step 12	Go to Backup Lamps Inoperative in Lighting Systems
8	<p>Inspect for poor connections at the harness connector of the inside rearview mirror. Refer to Testing for Intermittent Conditions and Poor Connections and Connector Repairs in Wiring Systems.</p> <p>Did you find and correct the condition?</p>	-	Go to Step 12	Go to Step 11
9	<p>Repair an open or high resistance in the ground circuit of the inside rearview mirror. Refer to Wiring Repairs in Wiring Systems.</p> <p>Did you complete the repair?</p>	-	Go to Step 12	-
10	<p>Repair an open or short to ground in the accessory voltage circuit of the inside rearview mirror. Refer to Wiring Repairs in Wiring Systems.</p> <p>Did you complete the repair?</p>	-	Go to Step 12	-
11	<p>IMPORTANT: Perform the Compass Calibration and Variance procedure for the inside rearview mirror with compass after replacement.</p> <p>Replace the inside rearview mirror. Refer to Rearview Mirror Replacement. Did you complete the replacement?</p>	-	Go to Step 12	-
12	<p>Operate the system in order to verify the repair.</p> <p>Did you correct the condition?</p>	-	System OK	Go to Step 2

Ambient Air Temperature Sensor Resistance Table

The following table will be used to measure the resistance of the sensor and compare it with the actual ambient temperature. The mirror's temperature accuracy should be within 5° of the actual temperature. The actual temperature should not be taken from a radio station, a sign displaying the temperature, etc. A temperature measuring tool such as a thermometer should be used. Some temperature measuring tools may be within 5° of the actual temperature. Make sure to consult the manufacturer for the accuracy of the tool. This comparison can make the mirror seem off by 5-10° of the actual temperature when it is not.

Ambient Air Temperature Sensor Resistance

Temperature		Ambient Air Temperature Sensor Resistance	
°C	°F	Minimum Resistance K Ohms	Maximum Resistance K Ohms
-35	-31	234.81	250.59
-30	-22	171.69	182.31
-25	-13	126.82	133.99
-20	-4	94.63	99.49
-15	5	71.30	74.58
-10	14	54.21	56.43
-5	23	41.48	43.17
0	32	32.00	33.31
5	41	24.96	25.83
10	50	19.61	20.19
15	59	15.49	15.94
20	68	12.31	12.67
25	77	9.85	10.12
30	86	7.96	8.15
35	95	6.45	6.61
40	104	5.27	5.39
45	113	4.32	4.42
50	122	3.56	3.64
55	131	2.95	3.02
60	140	2.46	2.52

Mirrors - Temperature Displays SC or OC

Step	Action	Yes	No
Schematic Reference: Inside Rearview Mirror Schematics			
Connector End View Reference: Master Electrical Component List in Wiring Systems			
1	Did you review the temperature display operation of the inside rearview mirror and perform the necessary inspections?	Go to Step 2	Go to Symptoms - Stationary Windows
	1. Turn ON the ignition, with the engine OFF.		

2	<p>2. Turn ON the temperature display on the inside rearview mirror.</p> <p>Does the temperature display show a temperature reading?</p>	Go to Step 3	Go to Step 5
3	<p>Does the temperature display show an accurate temperature reading?</p>	Go to Testing for Intermittent Conditions and Poor Connections in Wiring Systems	Go to Step 4
4	<p>1. Turn OFF the ignition.</p> <p>2. Disconnect the ambient air temperature sensor.</p> <p>3. Measure the resistance of the ambient air temperature sensor from the sensor signal circuit to the low reference circuit.</p> <p>4. Compare the ambient air temperature sensor resistance reading with the chart above.</p> <p>Is the ambient air temperature sensor resistance within the range specified in the chart above?</p>	Go to Step 12	Go to Step 13
5	<p>Does the temperature display show SC?</p>	Go to Step 6	Go to Step 7
6	<p>1. Turn OFF the ignition.</p> <p>2. Disconnect the ambient air temperature sensor.</p> <p>3. Turn ON the ignition, with the engine OFF.</p> <p>Does the temperature display show SC?</p>	Go to Step 9	Go to Step 13
7	<p>1. Turn OFF the ignition.</p> <p>2. Disconnect the ambient air temperature sensor.</p> <p>3. Connect a 3-ampere fused jumper between the ambient air temperature sensor signal circuit and a good ground.</p> <p>4. Turn ON the ignition, with the engine OFF.</p> <p>Does the temperature display show SC?</p>	Go to Step 8	Go to Step 10
8	<p>1. Turn OFF the ignition.</p> <p>2. Connect a 3-ampere fused jumper between the ambient air temperature sensor signal circuit and the low reference circuit of the ambient air temperature sensor.</p> <p>3. Turn ON the ignition, with the engine OFF.</p> <p>Does the mirror temperature display show SC?</p>	Go to Step 13	Go to Step 11
	<p>Test the signal circuit of the ambient air temperature</p>		

9	sensor for a short to ground. Refer to <u>Circuit Testing</u> and to <u>Wiring Repairs</u> in Wiring Systems. Did you find and correct the condition?	Go to Step 17	Go to Step 14
10	Test the signal circuit of the ambient air temperature sensor for an open or for a short to battery positive voltage. Refer to <u>Circuit Testing</u> and to <u>Wiring Repairs</u> in Wiring Systems. Did you find and correct the condition?	Go to Step 17	Go to Step 14
11	Test the low reference circuit of the ambient air temperature sensor for an open or for a high resistance. Refer to <u>Circuit Testing</u> and to <u>Wiring Repairs</u> in Wiring Systems. Did you find and correct the condition?	Go to Step 17	Go to Step 14
12	Test the signal and low reference circuits of the ambient air temperature sensor for high resistance. Refer to <u>Circuit Testing</u> and to <u>Wiring Repairs</u> in Wiring Systems. Did you find and correct the condition?	Go to Step 17	Go to Step 14
13	Inspect for a poor connection at the harness connector of the ambient air temperature sensor. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and to <u>Connector Repairs</u> in Wiring Systems. Did you find and correct the condition?	Go to Step 17	Go to Step 15
14	Inspect for a poor connection at the harness connector of the inside rearview mirror. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and to <u>Connector Repairs</u> in Wiring Systems. Did you find and correct the condition?	Go to Step 17	Go to Step 16
15	Replace the ambient air temperature sensor. Refer to <u>Ambient Air Temperature Sensor Replacement</u> . Did you complete the replacement?	Go to Step 17	-
16	IMPORTANT: <u>Perform Compass Calibration and Variance Procedure for the inside rearview mirror with compass after replacement.</u> Replace the inside rearview mirror. Refer to <u>Rearview Mirror Replacement</u> .Did you complete the replacement?	Go to Step 17	-
17	Operate the system in order to verify the repair. Did you correct the condition?	System OK	Go to Step 2

MIRRORS - COMPASS DISPLAY INOPERATIVE OR INACCURATE

Mirrors - Compass Display Inoperative or Inaccurate

Step	Action	Yes	No
Schematic Reference: <u>Inside Rearview Mirror Schematics</u>			
Connector End View Reference: <u>Master Electrical Component List</u> in Wiring Systems			
1	Did you review the compass operation of the inside rearview mirror and perform the necessary inspections?	Go to Step 2	Go to Symptoms - Stationary Windows
2	Does the automatic day-night feature of the inside rearview mirror operate correctly?	Go to Step 3	Go to Mirrors - Automatic Day-Night Inoperative
3	<ol style="list-style-type: none"> 1. Turn ON the ignition, with the engine OFF. 2. Turn ON the compass. 3. Verify that the compass has one of the following conditions: <ul style="list-style-type: none"> • An incorrect reading on the display. • The letter "C" or "CAL" is displayed. • The compass display is blank. <p>Does the compass have one of the conditions mentioned above?</p>	Go to Step 4	Go to Testing for Intermittent Conditions and Poor Connections in Wiring Systems
4	Is the compass display totally blank?	Go to Step 8	Go to Step 5
5	Is the letter "C" or "CAL" displayed on the mirror?	Go to Step 6	Go to Step 7
6	Perform the compass calibration procedure. Refer to Compass Calibration and Variance Procedure . Is the compass accurate and operating properly?	Go to Step 10	Go to Step 7
7	Perform the compass magnetic variation adjustment procedure. Refer to Compass Calibration and Variance Procedure . Is the compass accurate and operating properly?	Go to Step 10	Go to Step 8
8	Inspect for a poor connection at the harness connector of the inside rearview mirror. Refer to Testing for Intermittent Conditions and Poor Connections and to Connector Repairs in Wiring Systems. Did you find and correct the condition?	Go to Step 10	Go to Step 9
9	IMPORTANT: Perform Compass Calibration and Variance Procedure for the inside rearview mirror with compass after replacement. Replace the inside rearview mirror. Refer to Rearview Mirror Replacement .Did you complete the replacement?	Go to Step 10	-
10	Operate the system in order to verify the repair. Did you correct the condition?	System OK	Go to Step 3

REPAIR INSTRUCTIONS

AMBIENT AIR TEMPERATURE SENSOR REPLACEMENT

Removal Procedure

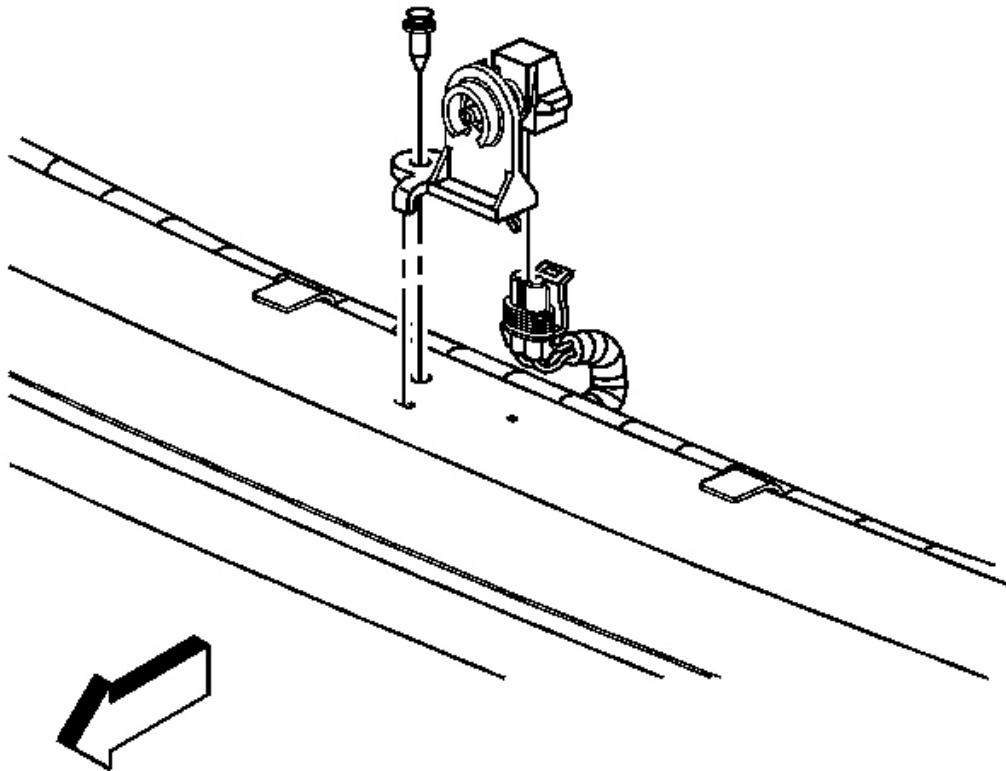


Fig. 7: View Of Ambient Air Temperature Sensor
Courtesy of GENERAL MOTORS CORP.

1. Remove the front fascia. Refer to **Fascia Replacement - Front Bumper** in Bumpers.
2. Remove the push-in retainer that secures the ambient air temperature sensor to the impact bar.
3. Disconnect the electrical connector from the ambient air temperature sensor.
4. Remove the sensor from the vehicle.

Installation Procedure

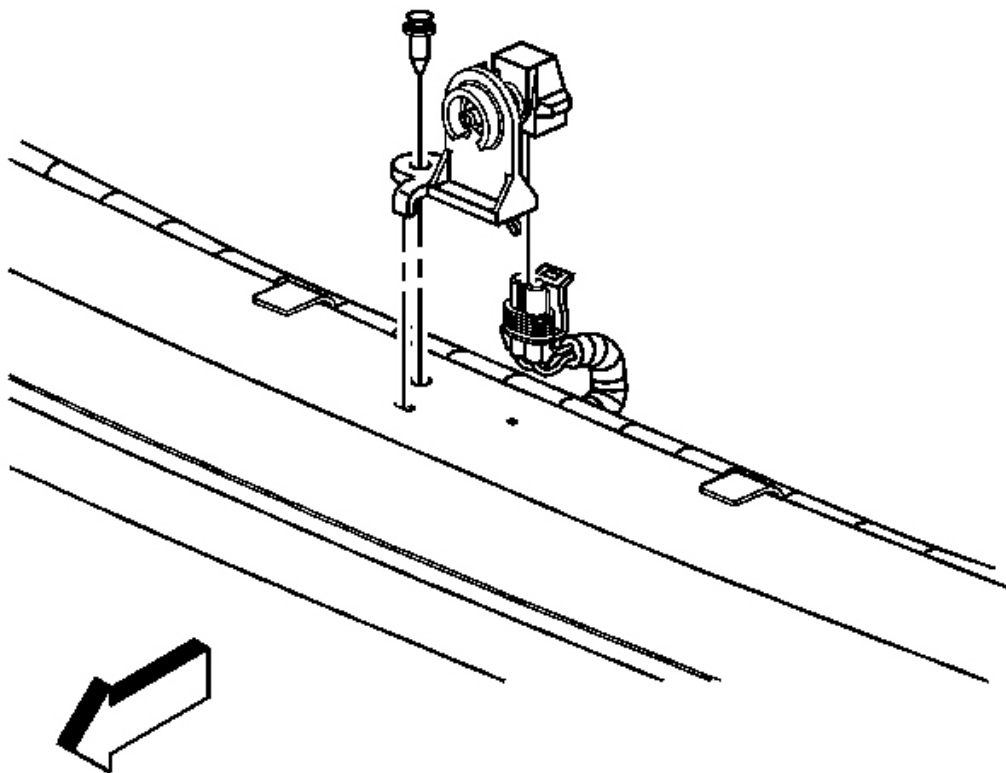


Fig. 8: View Of Ambient Air Temperature Sensor
Courtesy of GENERAL MOTORS CORP.

1. Connect the electrical connector to the ambient air temperature sensor.
2. Install the ambient air temperature sensor to the impact bar and with the push-in retainer.
3. Install the front fascia. Refer to **Fascia Replacement - Front Bumper** in Bumpers.

WINDSHIELD UPPER REVEAL MOLDING REPLACEMENT

Removal Procedure

IMPORTANT: The windshield molding can only be replaced by removing the windshield and then removing and installing a new windshield molding.

1. Remove the windshield. Refer to **Windshield Replacement** .

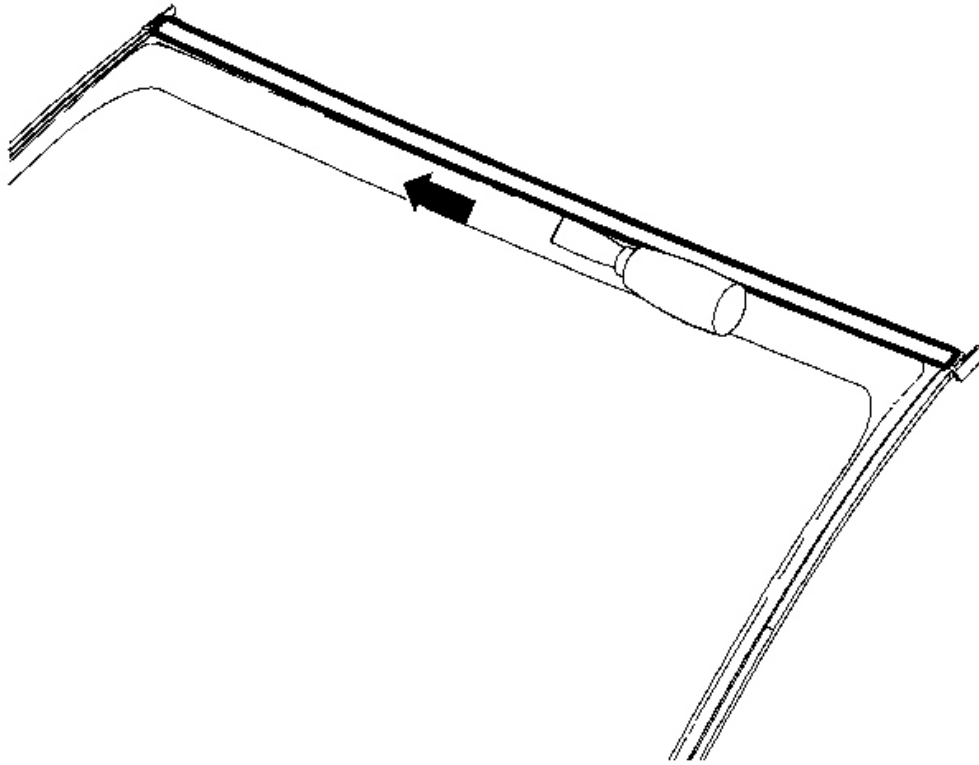


Fig. 9: Removing/Installing Upper Windshield Molding
Courtesy of GENERAL MOTORS CORP.

2. Remove the upper windshield molding from the windshield using a scraper to cut the adhesive from the windshield surface and edge. This may take several passes to remove all of the adhesive.
3. Clean the old adhesive from the glass using isopropyl alcohol.

Installation Procedure

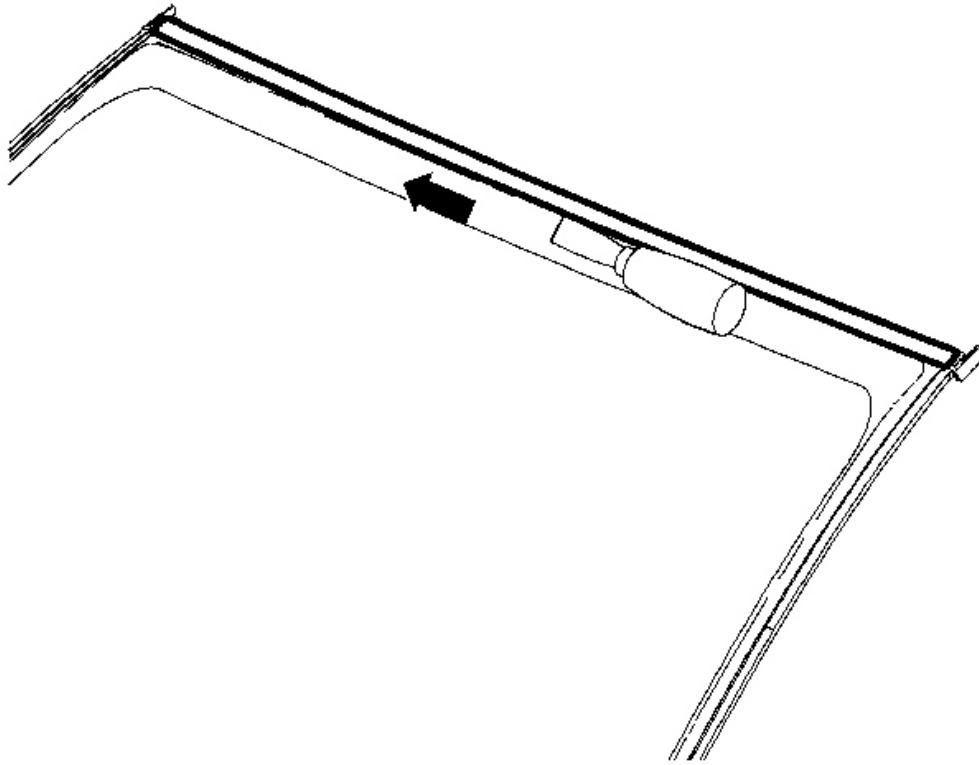


Fig. 10: Removing/Installing Upper Windshield Molding
Courtesy of GENERAL MOTORS CORP.

1. Apply a small amount of urethane adhesive to the top edge of the windshield.
2. Install the new roof molding to windshield by pressing firmly into place.
3. Install the windshield. Refer to **Windshield Replacement** .

WINDSHIELD SIDE REVEAL MOLDING REPLACEMENT

Removal Procedure

1. Remove the front roof panel applique. Refer to **Panel Applique Replacement - Roof Front** in Exterior Trim.

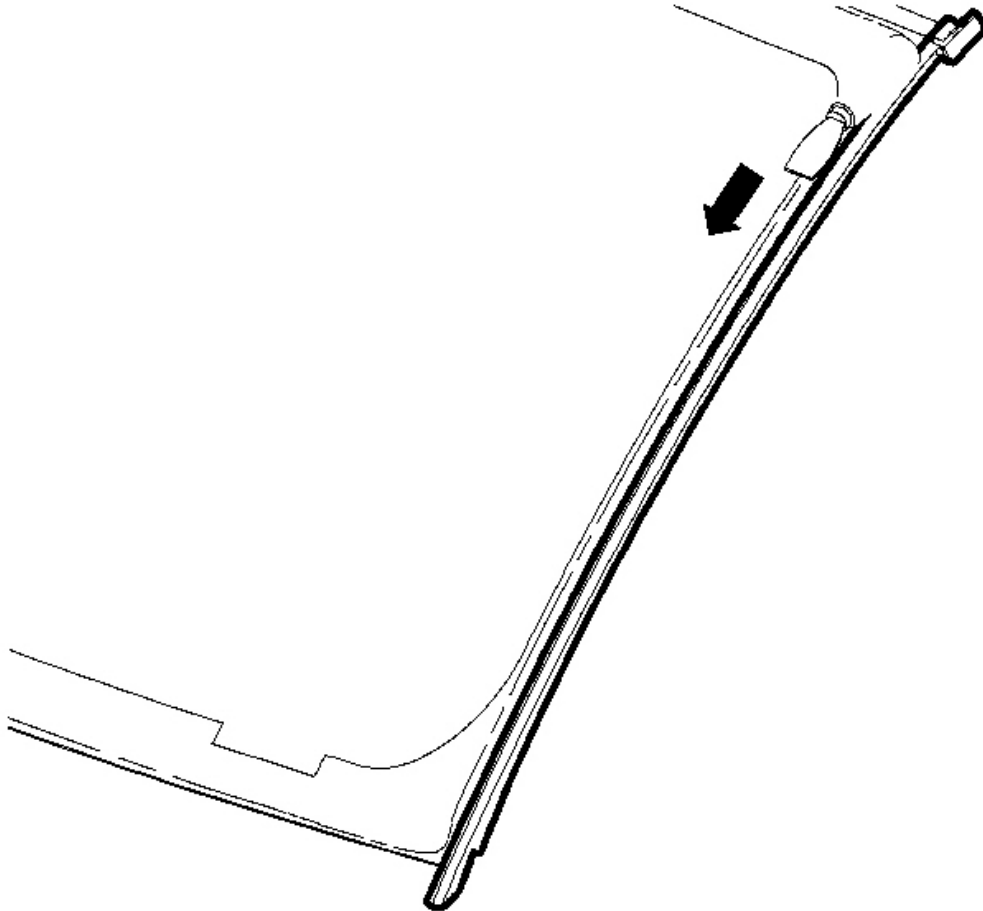


Fig. 11: View Of Side Windshield Molding
Courtesy of GENERAL MOTORS CORP.

2. Remove the side windshield molding from the windshield using a scraper to cut the adhesive from the windshield surface. This may take several passes to remove all of the adhesive.
3. Clean the old adhesive from the glass using isopropyl alcohol.

Installation Procedure

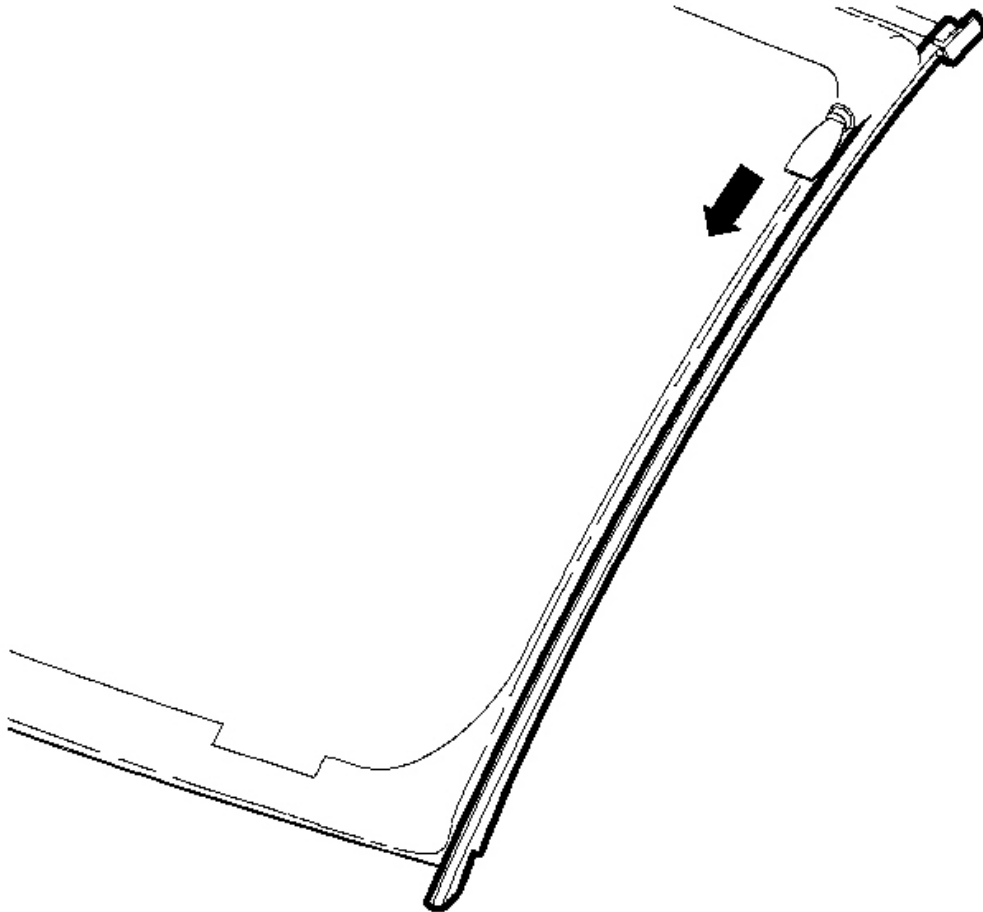


Fig. 12: View Of Side Windshield Molding
Courtesy of GENERAL MOTORS CORP.

1. Remove the backing from the new molding adhesive tape.
2. Install the new side molding to windshield by pressing firmly into place.
3. Install the front roof panel applique. Refer to **Panel Applique Replacement - Roof Front** in Exterior Trim.

REARVIEW MIRROR REPLACEMENT

Removal Procedure

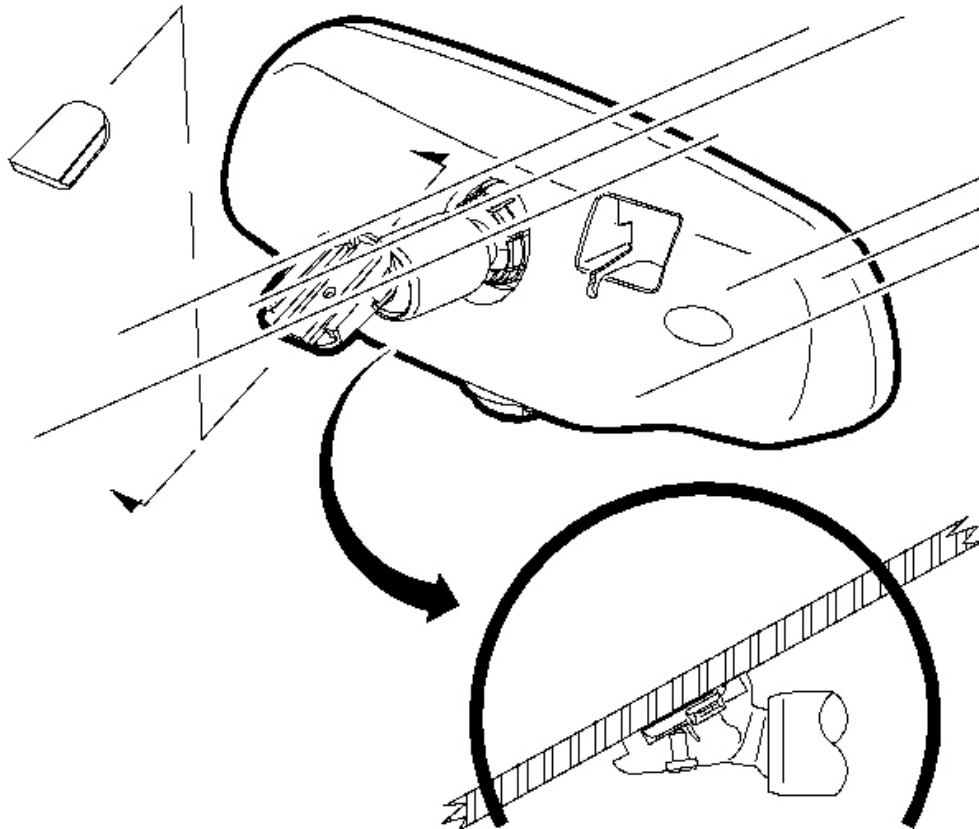


Fig. 13: View Of Rearview Mirror
Courtesy of GENERAL MOTORS CORP.

1. Loosen the screw in the base of the mirror.
2. Remove the mirror from the mounting pad.
3. Disconnect the rearview mirror wiring harness, if applicable.

Installation Procedure

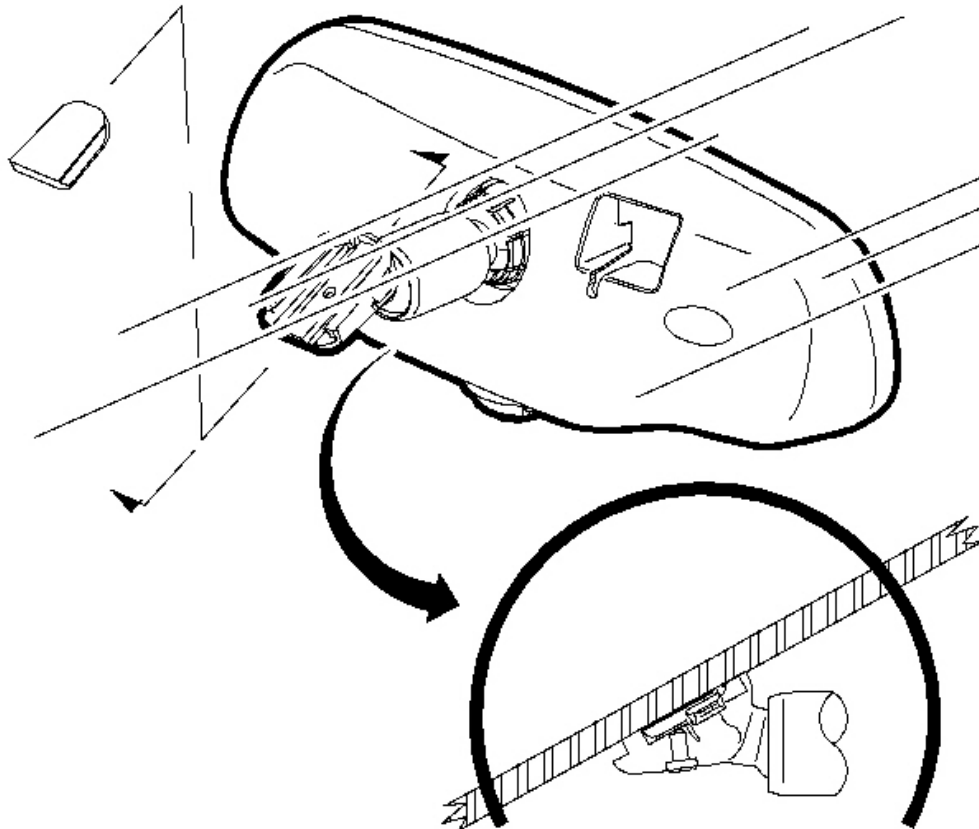


Fig. 14: View Of Rearview Mirror
Courtesy of GENERAL MOTORS CORP.

1. Install the mirror to the mounting pad.

NOTE: Refer to Fastener Notice in Cautions and Notices.

2. Tighten the screw that retains the mirror base to the mounting pad.

Tighten: Tighten the mirror set screw to 2 N.m (18 lb in).

3. Install the rearview mirror wiring harness, if applicable.

REARVIEW MIRROR SUPPORT INSTALLATION

The rearview mirror is attached to a support which is bonded to the windshield glass. This support is installed by the glass supplier using an autoclaving process.

Service replacement windshield glass has the mirror support bonded to the glass assembly. To install a detached mirror support the following items are needed:

- P/N 11067-2, LOCTITE(R) Rearview Mirror Adhesive, or equivalent
- Original mirror support
- Wax marking pencil or crayon
- Rubbing alcohol
- Clean paper towel
- Fine grade emery cloth or sandpaper (No. 320 or No. 360)
- Clean toothpick

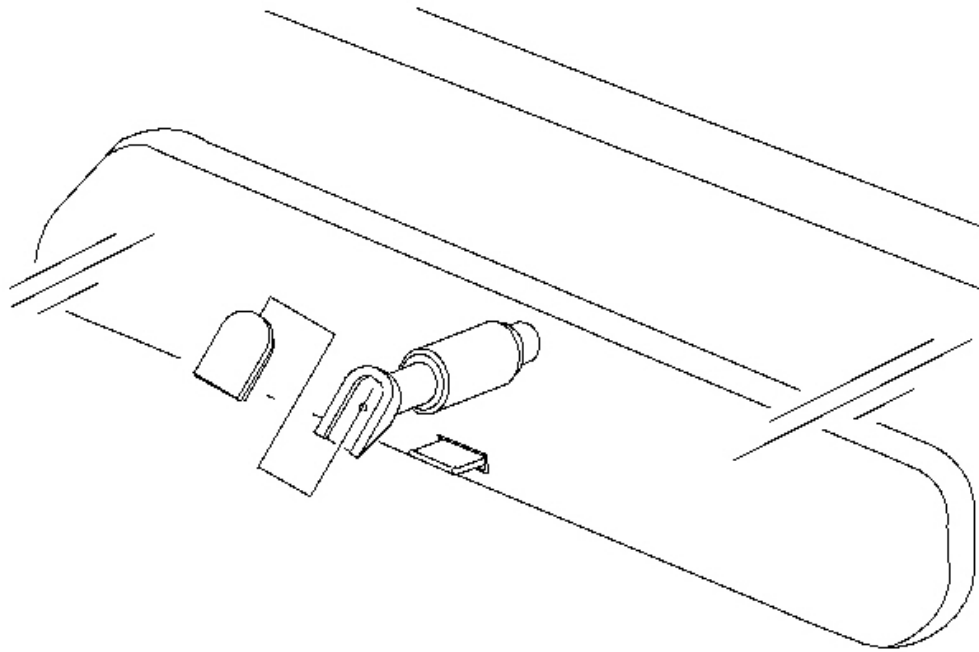


Fig. 15: View Of Rearview Mirror Support
Courtesy of GENERAL MOTORS CORP.

1. Center the support within the black-out area.
2. On the inside glass surface, clean the mirror support black-out area with paper towel and a domestic scouring cleanser, glass cleaning solution, or polishing compound. Rub until the area is completely clean and dry. When dry, clean the area with an alcohol saturated paper towel to remove any traces of scouring powder or cleaning solution from these area.
3. Separate the mirror from the support by loosening the screw and using a T-20 TORX screwdriver. With piece of fine grade emery cloth (No. 320 or No. 360) or sandpaper, sand the bonding surface of the rearview mirror support. All traces of factory installed adhesive must be removed prior to installation.
4. Wipe the sanded mirror support with clean paper towel saturated with alcohol and allow to dry.

5. Follow directions on the manufacturer's kit to prepare the rearview mirror support prior to installation on the glass.
6. Center the support within the black-out area with the rounded end pointed upward. Press the support against the glass for 30-60 seconds, exerting steady pressure against the glass. After 5 minutes, any excess adhesive may be removed with an alcohol moistened paper towel or glass cleaning solution.
7. Install the mirror and connect the electrical connection, if equipped.

WINDSHIELD REPLACEMENT

Tools Required

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

Removal Procedure

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

1. Open the hood.
2. Remove the windshield wiper arms and blades. Refer to **Wiper Arm Replacement** in Wipers/Washer Systems.
3. Remove the air inlet grille. Refer to **Air Inlet Grille Panel Replacement** in Body Front End.
4. Remove the windshield frame appliques. Refer to **Applique Replacement - Windshield Frame** and **Panel Applique Replacement - Roof Front** in Exterior Trim.
5. Remove the interior windshield pillar garnish molding. Refer to **Windshield Upper Garnish Molding Replacement** in Interior Trim.
6. Remove the rearview mirror. Refer to **Rearview Mirror Replacement** .

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

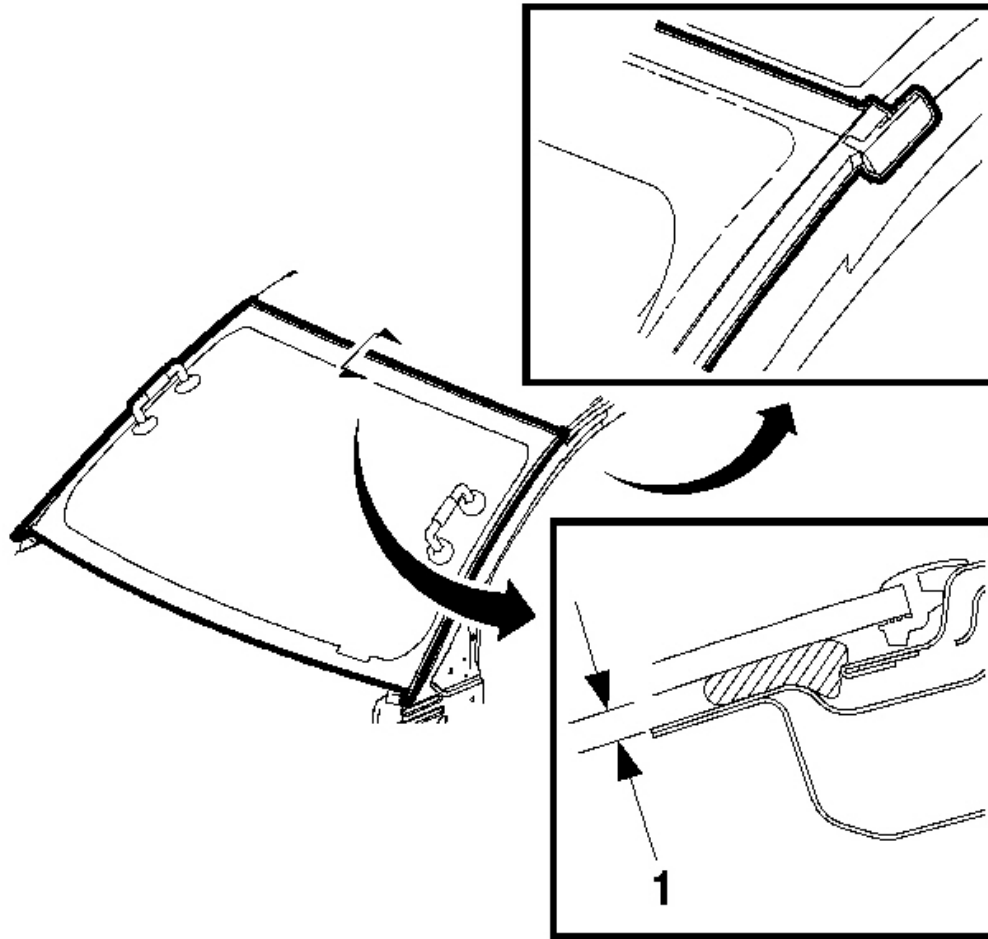


Fig. 16: View Of Windshield
Courtesy of GENERAL MOTORS CORP.

7. Cover the following parts to protect from broken glass:
- Upper dash pad
 - Defroster outlets and A/C outlets
 - Seats and carpeting

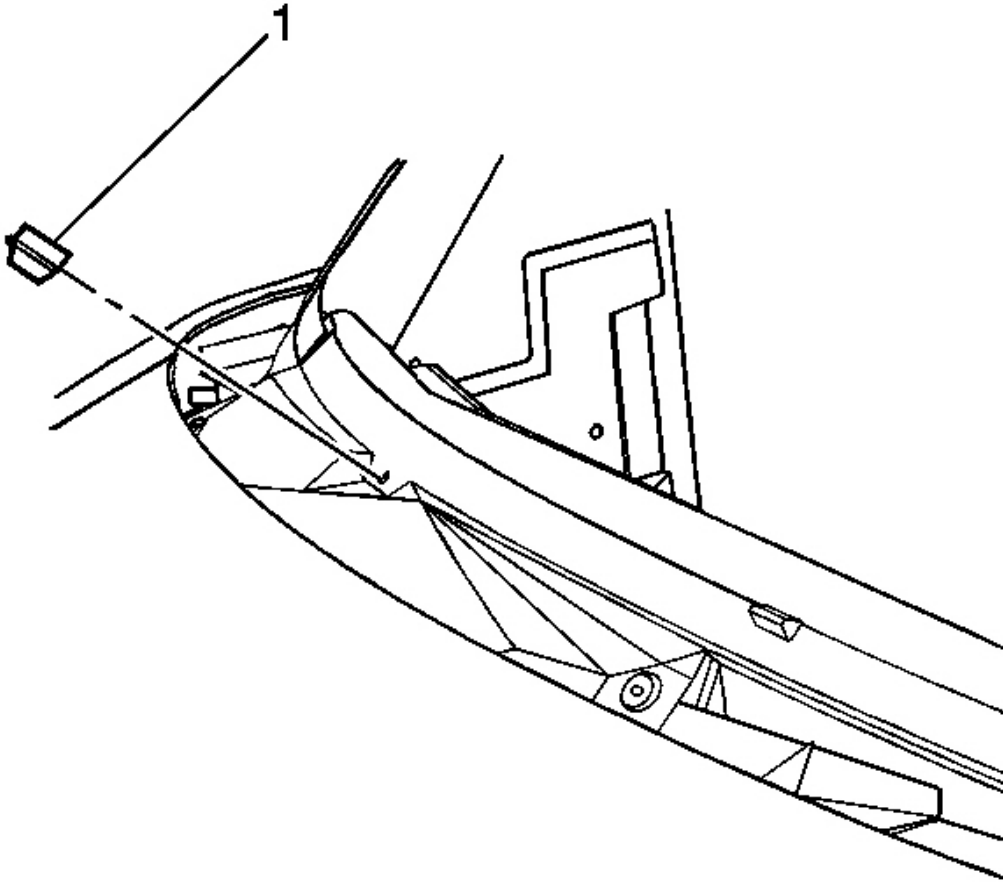


Fig. 17: Lower Windshield Supports
Courtesy of GENERAL MOTORS CORP.

CAUTION: When working with any type of glass or sheet metal with exposed or rough edges, wear approved safety glasses and gloves in order to reduce the chance of personal injury.

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

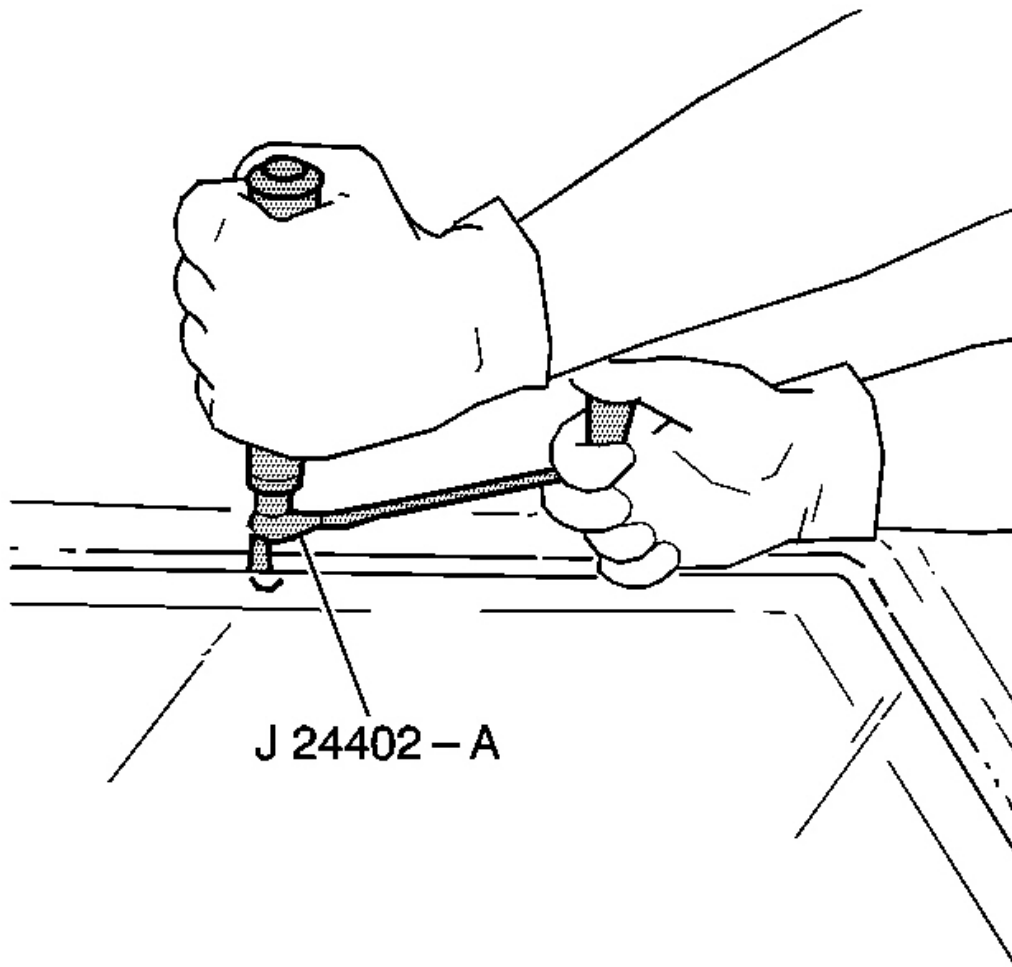


Fig. 18: Separating Urethane Adhesive From Window
Courtesy of GENERAL MOTORS CORP.

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

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

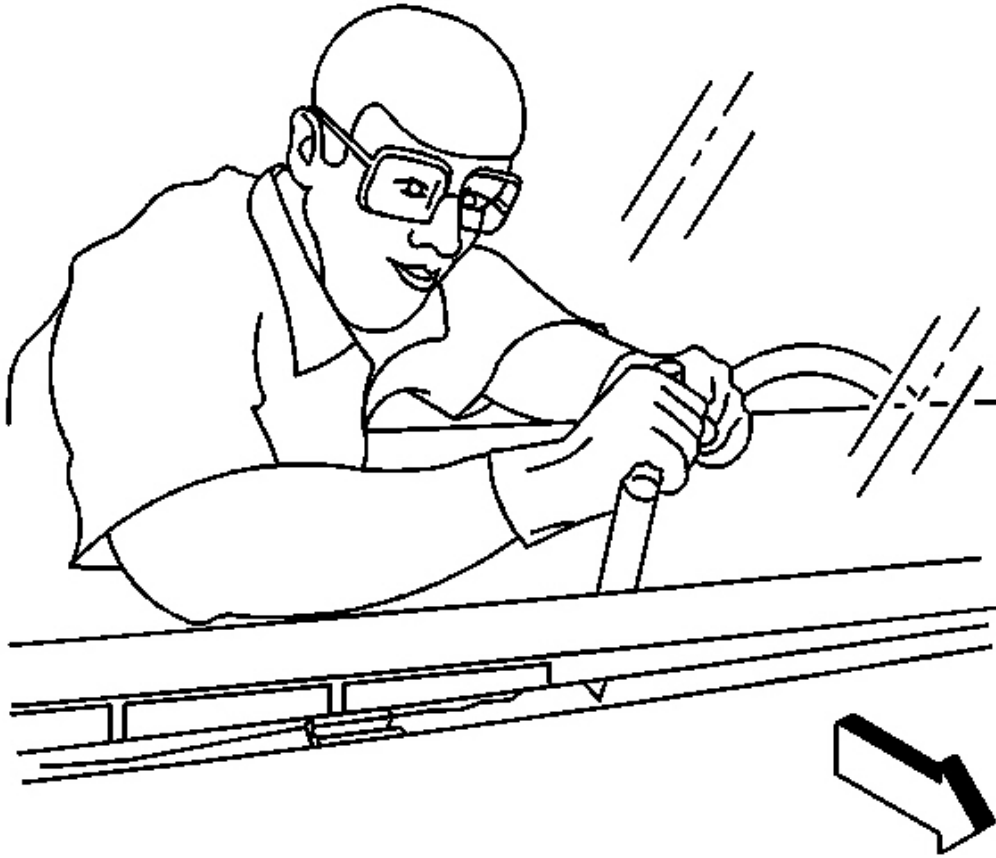


Fig. 19: Removing Bottom Of Window
Courtesy of GENERAL MOTORS CORP.

10. Remove the bottom of the window 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.

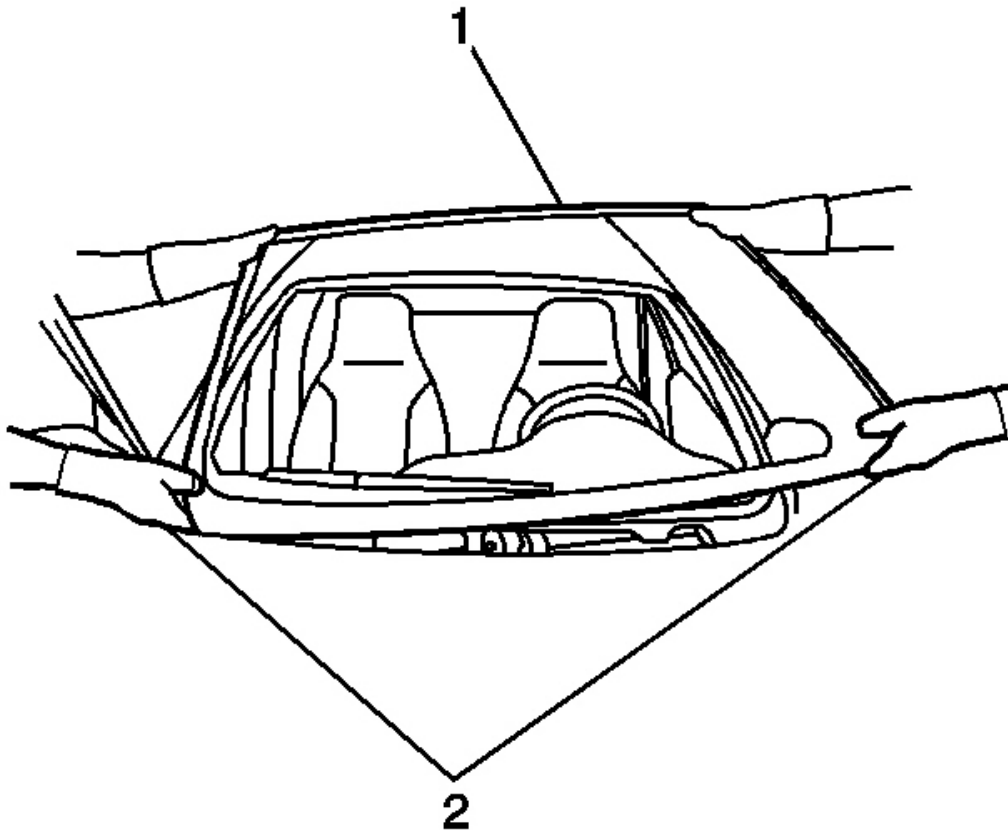


Fig. 20: Dry Fitting Windshield
Courtesy of GENERAL MOTORS CORP.

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

Installation Procedure

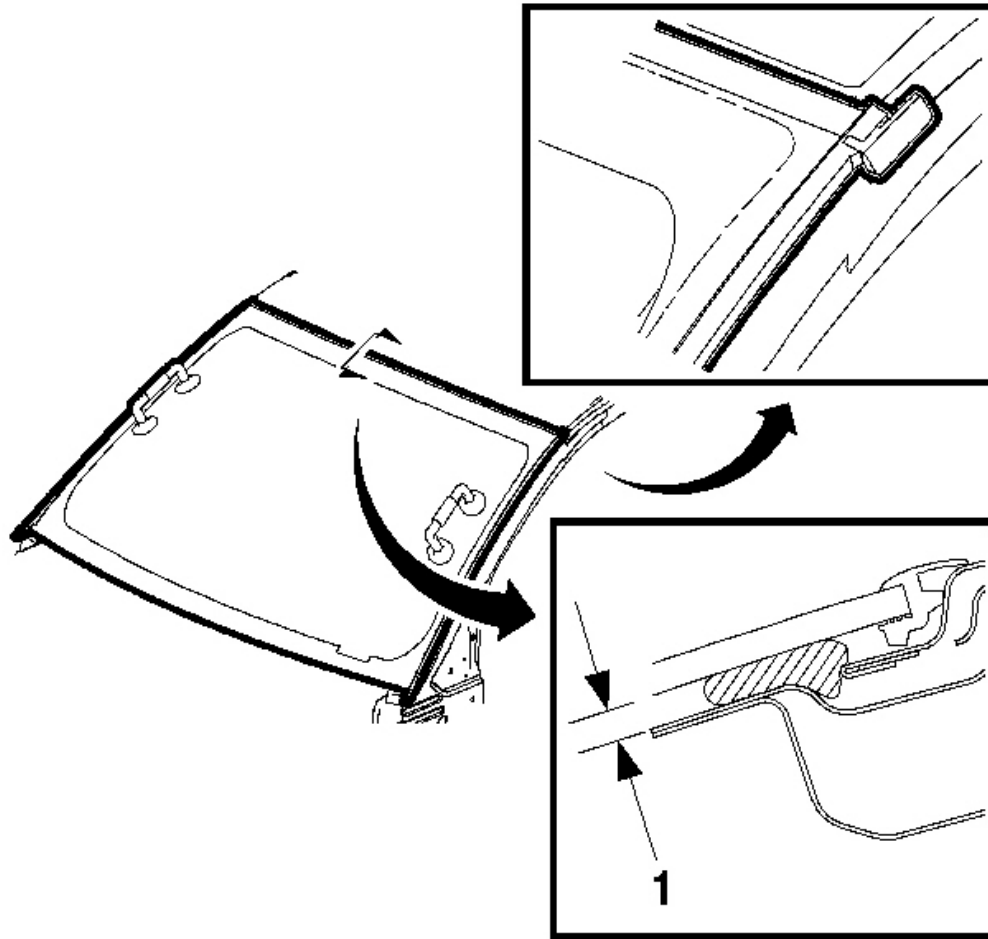


Fig. 21: View Of Windshield
Courtesy of GENERAL MOTORS CORP.

1. Install a stationary window into the opening. Refer to **Urethane Adhesive Installation of Stationary Windows** .
2. Install the rearview mirror. Refer to **Rearview Mirror Replacement** .
3. Install the interior windshield pillar garnish molding. Refer to **Windshield Upper Garnish Molding Replacement** in Interior Trim.
4. Install the windshield frame appliques. Refer to **Applique Replacement - Windshield Frame** and **Panel Applique Replacement - Roof Front** in Exterior Trim.
5. Install the air inlet grille. Refer to **Air Inlet Grille Panel Replacement** in Body Front End.
6. Install the windshield wipers arms and blades. Refer to **Wiper Arm Replacement** in Wipers/Washer

Systems.

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

QUARTER WINDOW REPLACEMENT

Tools Required

- **J 24402-A** Glass Sealant Cold Knife Remover. See **Special Tools and Equipment** .
- **J 39032** Stationary Glass Removal Tool. See **Special Tools and Equipment** .
- **J 25070** Heat Gun
- Urethane Adhesive Kit GM P/N 12346392 or Equivalent
- Isopropyl Alcohol or Equivalent
- Cartridge-type Caulking Gun
- Commercial-type Utility Knife
- Razor Blade Scraper
- Suction Cups
- Plastic Paddle

Removal Procedure

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

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

1. Remove the roof center panel assembly. Refer to **Panel Applique Replacement - Roof Center** in Exterior Trim.
2. Remove the roof rear panel assembly. Refer to **Panel Applique Replacement - Roof Rear** in Exterior Trim.
3. Remove the tail lamp assembly. Refer to **Tail Lamp Assembly and/or Backup, Sidemarkers, Stop, Turn Signal Bulb Replacement** in Lighting Systems.

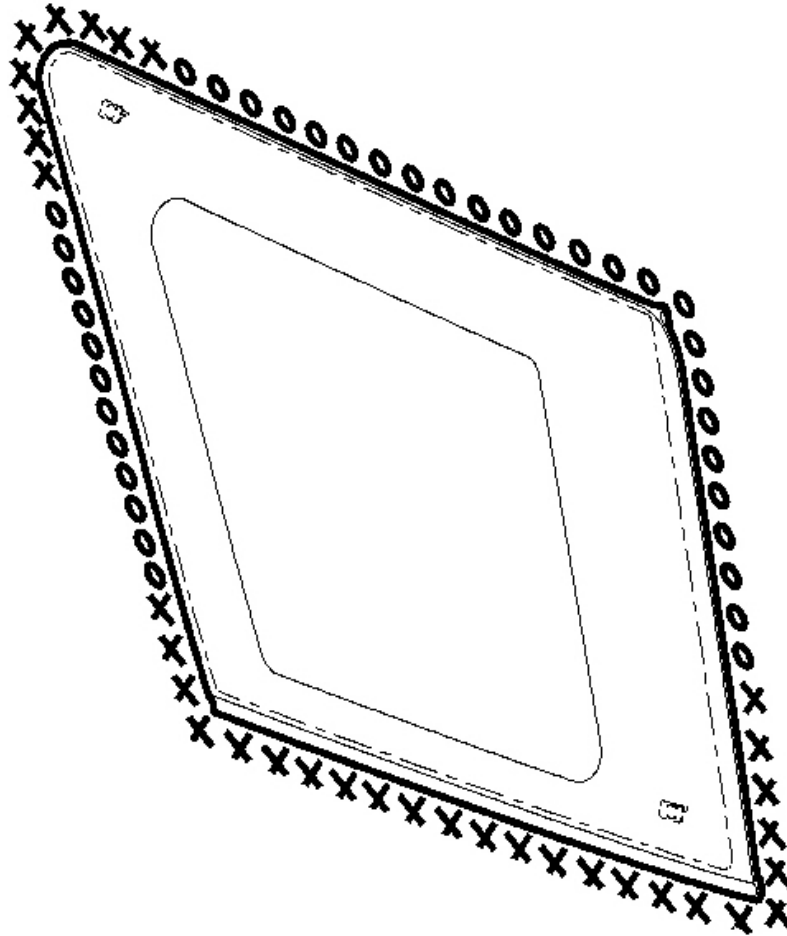


Fig. 22: View Of Quarter Window
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: The quarter window has hard plastic alignment pins at the front upper and rear lower corners of the glass. It may be necessary to push the window away from the vehicle in order to completely cut the urethane adhesive.

4. Use **J 24402-A** , **J 39032** or equivalent in order to remove the window. See **Special Tools and Equipment** .

CAUTION: When working with any type of glass or sheet metal with exposed or rough edges, wear approved safety glasses and gloves in order to

reduce the chance of personal injury.

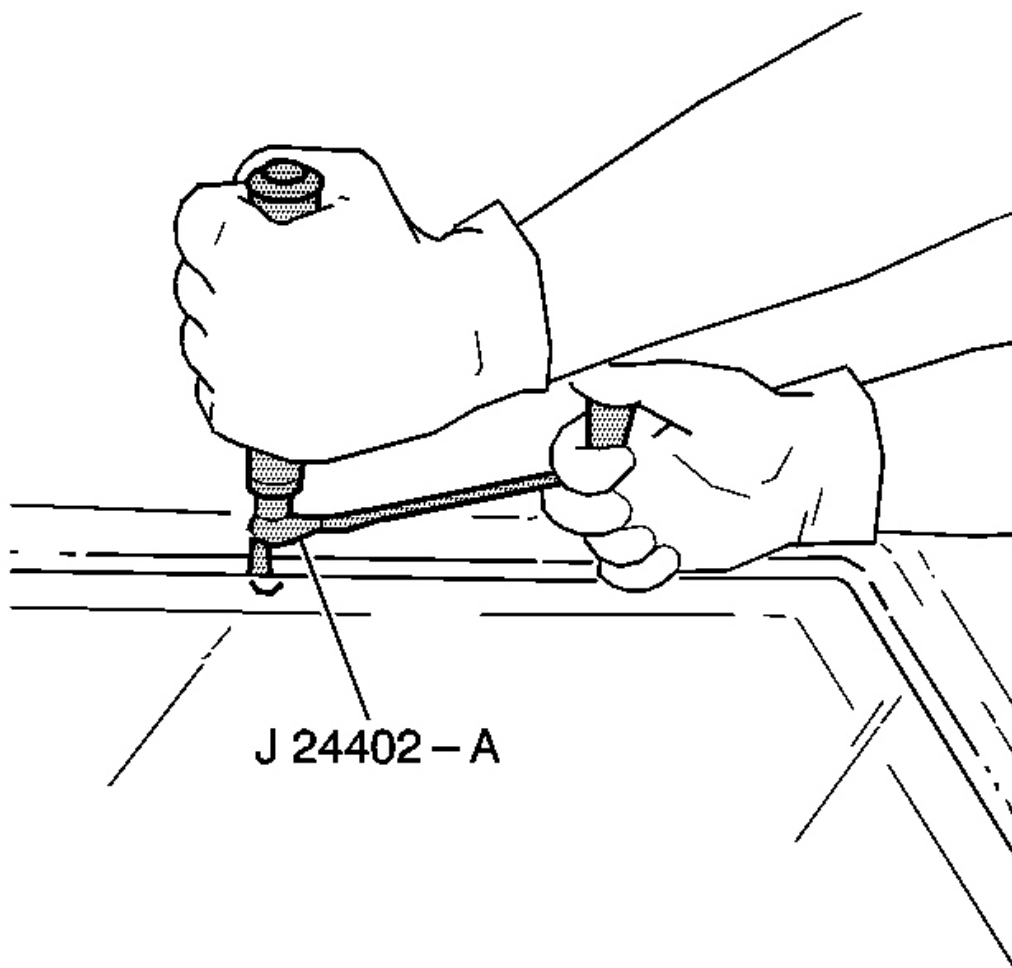


Fig. 23: Separating Urethane Adhesive From Window
Courtesy of GENERAL MOTORS CORP.

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

5. This will allow the urethane adhesive to be separated from the window.
 - Leave a base of urethane on the pinchweld flange.
 - The only suitable lubrication is clear water.
 - Use the **J 39032** or equivalent in order to remove the window. See **Special Tools and Equipment** .

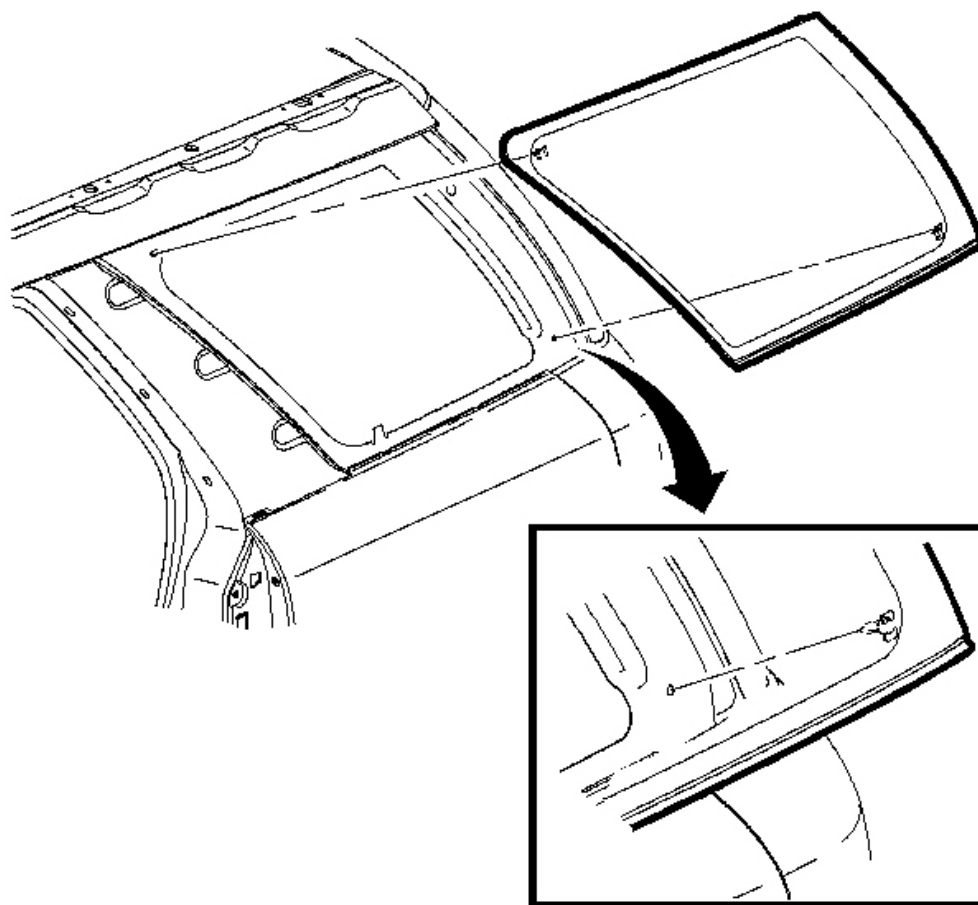


Fig. 24: Removing/Installing Stationary Window
Courtesy of GENERAL MOTORS CORP.

6. Remove the stationary window from the pinchweld flange with the aid of an assistant.

Installation Procedure

1. Install a stationary window into the opening. Refer to **Urethane Adhesive Installation of Bodyside Stationary Windows** .
2. Install the tail lamp assembly. Refer to **Tail Lamp Assembly and /or Backup, Sidemarker, Stop, Turn Signal Bulb Replacement** in Lighting Systems.
3. Install the roof center panel assembly. Refer to **Panel Applique Replacement - Roof Center** in Exterior Trim.

4. Install the roof rear panel assembly. Refer to **Panel Applique Replacement - Roof Rear** in Exterior Trim.
5. Remove the double layer of masking tape around the perimeter of the painted surfaces and the interior trim.

URETHANE ADHESIVE INSTALLATION OF 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 pinchweld flange.

1. Remove all mounds or loose pieces of urethane adhesive from the pinchweld 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 pinchweld flange

IMPORTANT: If corrosion of the pinchweld flange is present or if sheet metal repairs or replacements are required, the pinchweld 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(R), DuPont 2610(R), Sherwin-Williams PSE 4600 and NP70(R) and Martin-Semour 5120 and 5130(R) 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: 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 the urethane adhesive are within the expiration dates.

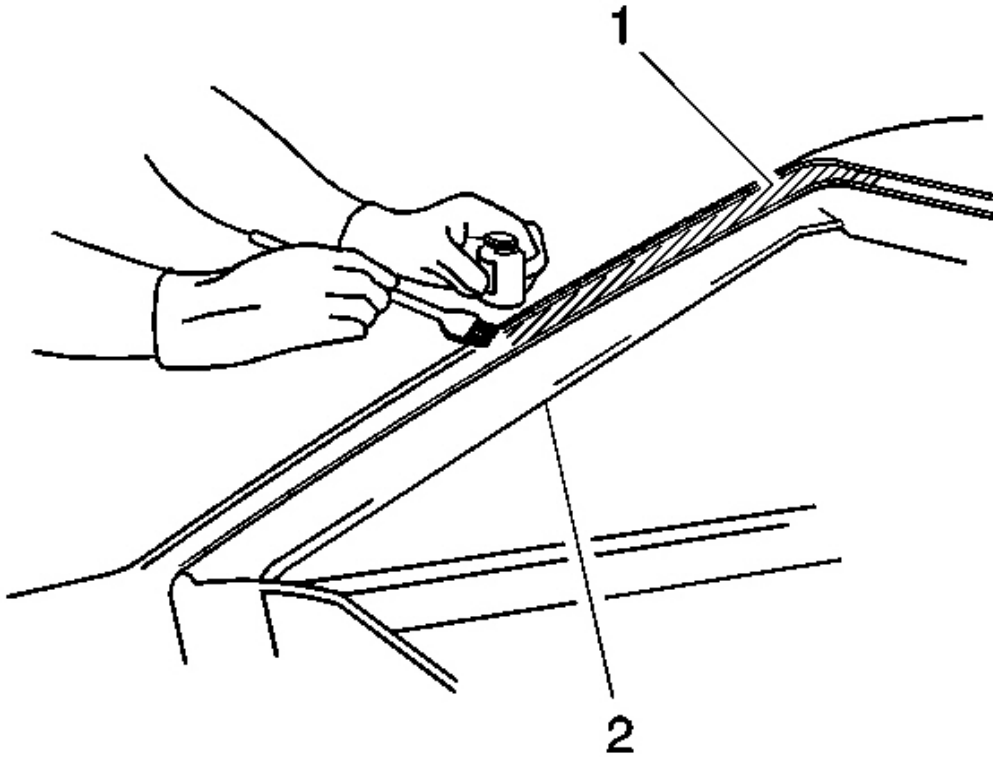


Fig. 25: Applying Pinch-Weld Primer (Black #3)
Courtesy of GENERAL MOTORS CORP.

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 pinchweld flange. Apply the primer only to nicks,

scratches or the primed surfaces.

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

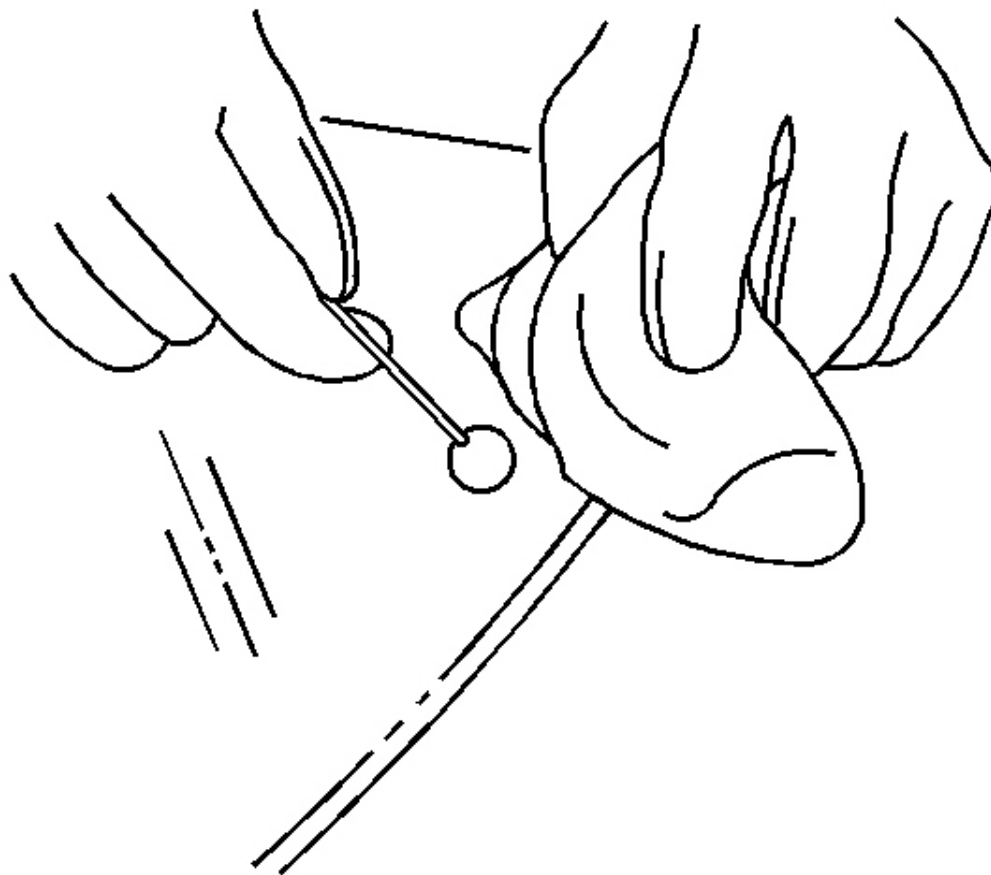


Fig. 26: Applying Glass Prep (Clear #1)
Courtesy of GENERAL MOTORS CORP.

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.

10. 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.

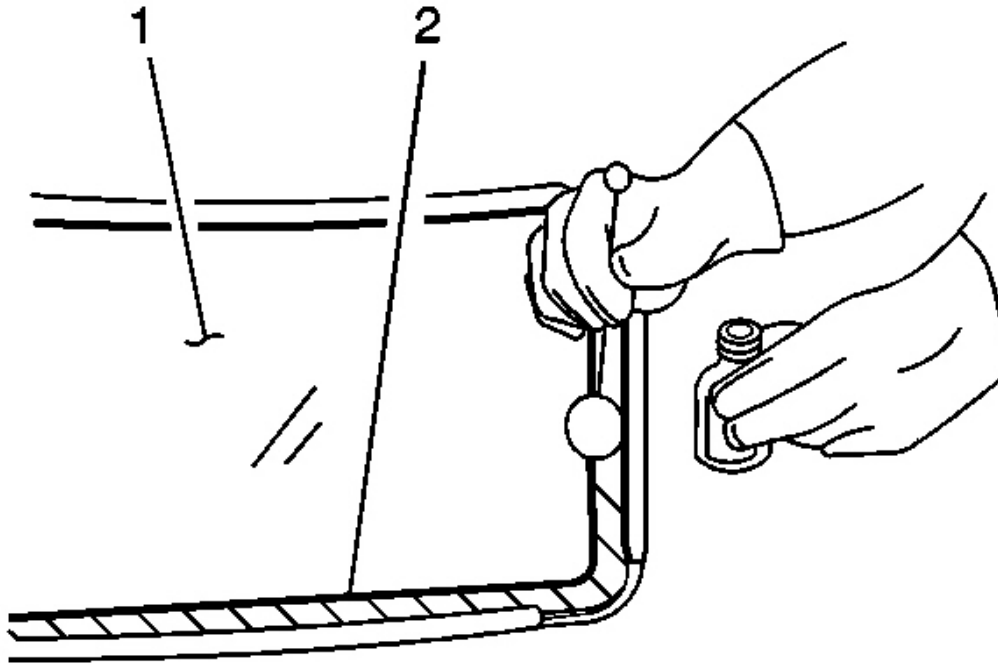


Fig. 27: Applying Glass Primer (Black #2)
Courtesy of GENERAL MOTORS CORP.

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.

11. Shake the glass primer black #2 for at least 1 minute.
12. 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.
13. Allow the glass primer to dry for approximately 10 minutes.

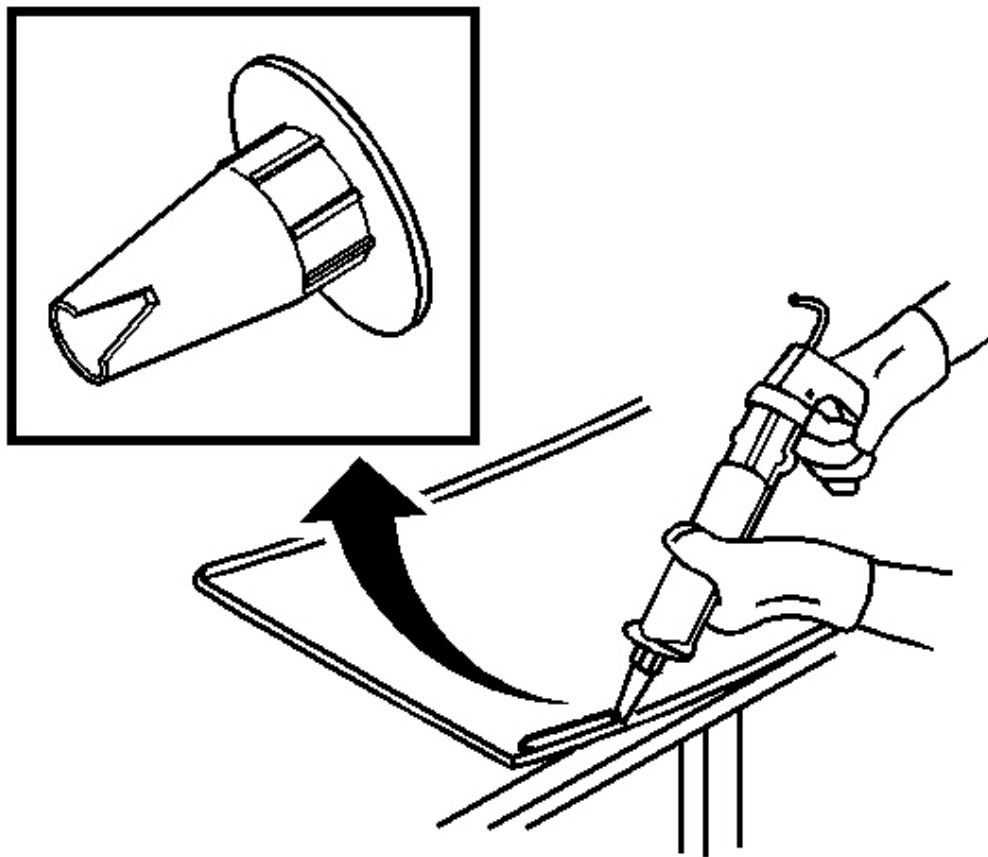


Fig. 28: Cutting Applicator Nozzle
Courtesy of GENERAL MOTORS CORP.

14. Cut the applicator nozzle as indicated in order to provide a minimum bead size of 10 mm (0.39 in) wide and 14 mm (0.55 in) high.

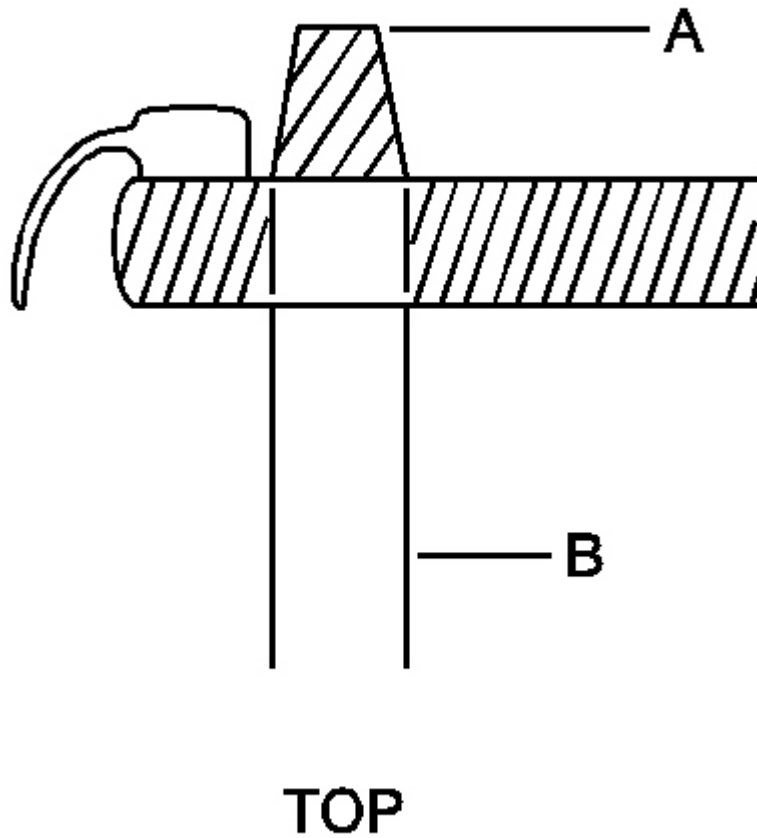


Fig. 29: Identifying Urethane Adhesive Bead
Courtesy of GENERAL MOTORS CORP.

15. The urethane adhesive bead must maintain a consistent height (A) and width (B) uniformity.

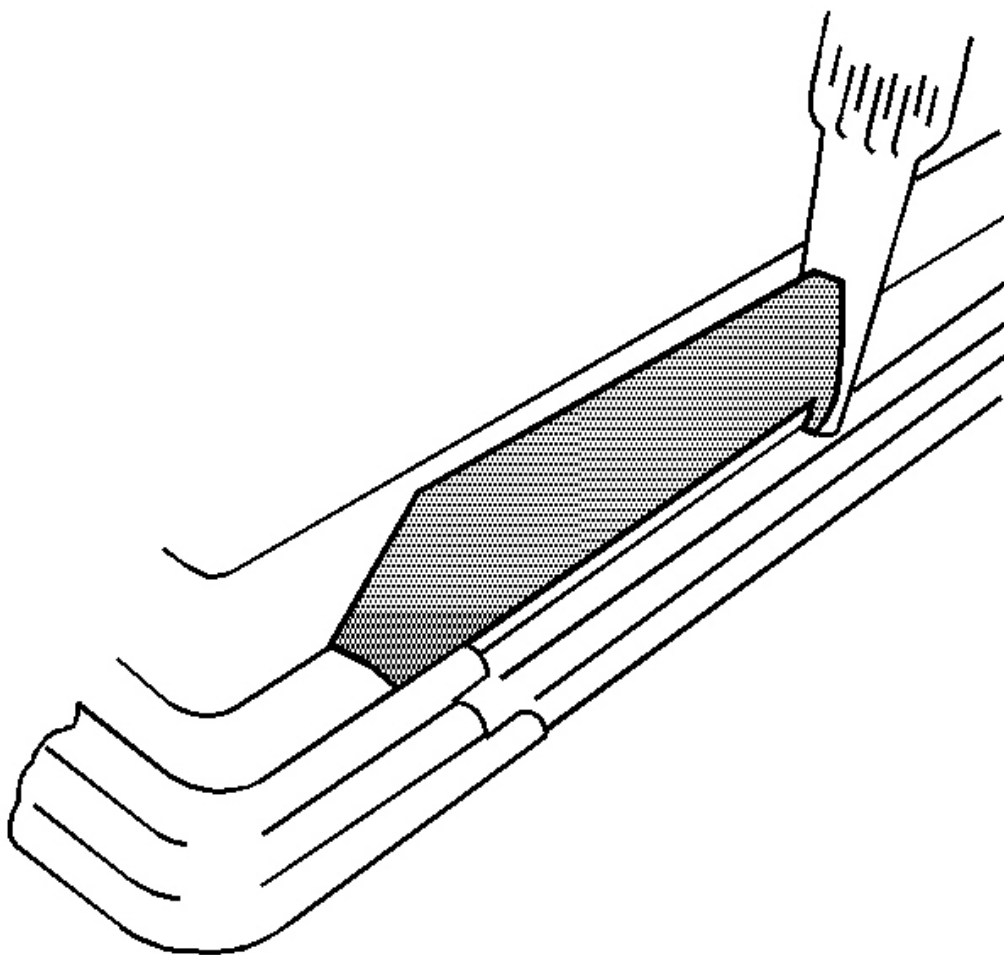


Fig. 30: Applying Urethane Adhesive Bead By Using Caulking Gun
Courtesy of GENERAL MOTORS CORP.

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

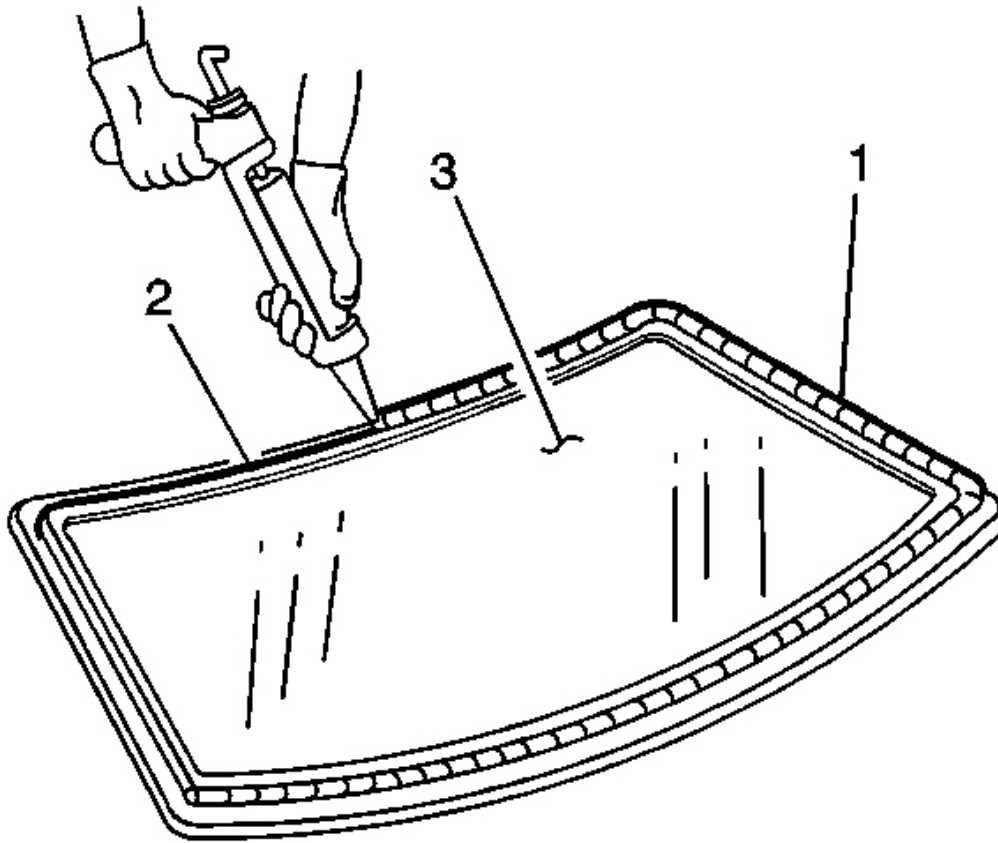


Fig. 31: Applying Urethane Adhesive To Window Inner Surface
Courtesy of GENERAL MOTORS CORP.

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

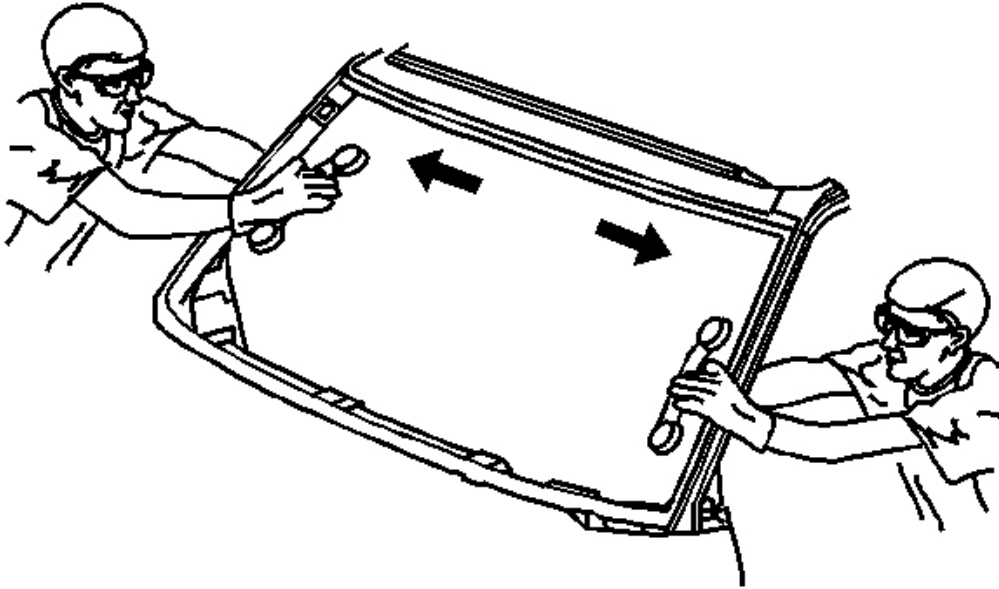


Fig. 32: Placing Window Into Opening While Positioning The Locator Pins
Courtesy of GENERAL MOTORS CORP.

18. With the aid of an assistant, place the window into the opening while positioning the locator pins to the body.

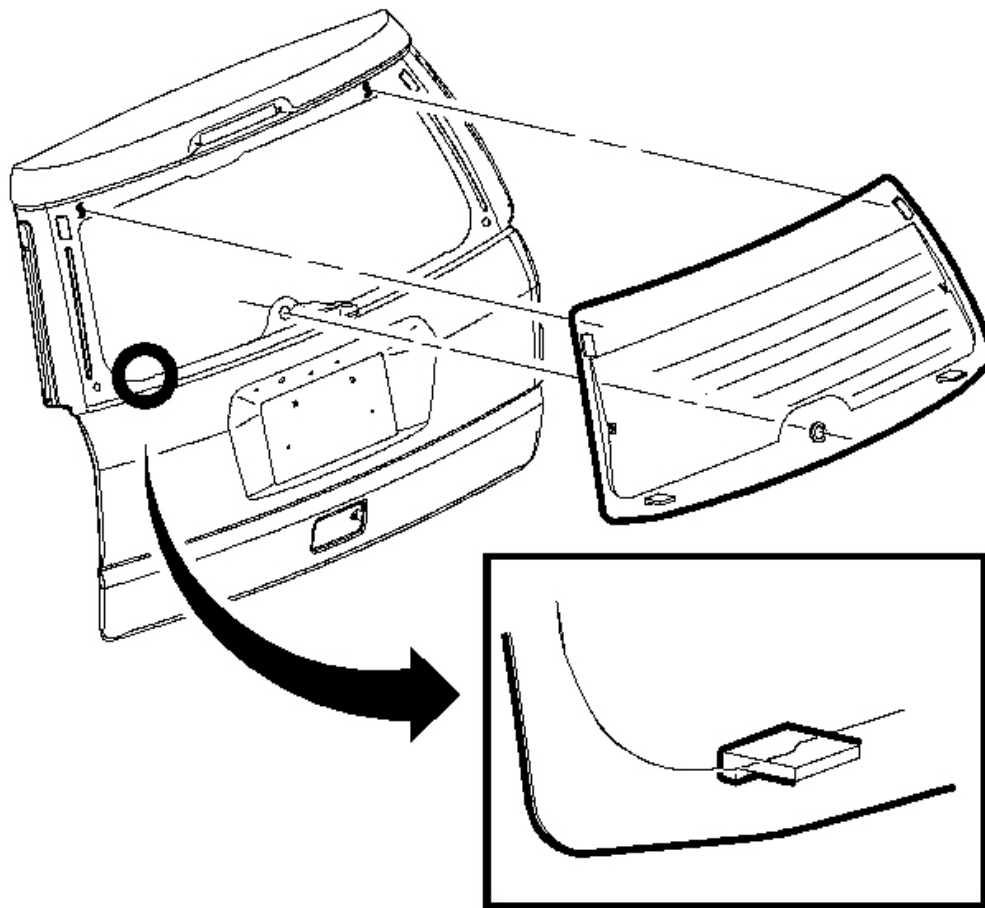


Fig. 33: Placing Lift Gate Window Into Position
Courtesy of GENERAL MOTORS CORP.

19. With the aid of an assistant, place the lift gate window into position with the alignment tabs resting in the recesses in the lift gate frame. Starting at the bottom edge, rock the lift gate window into position. The lift gate window should have a 4 mm (0.16 in) gap to the lift gate appliques on each side.

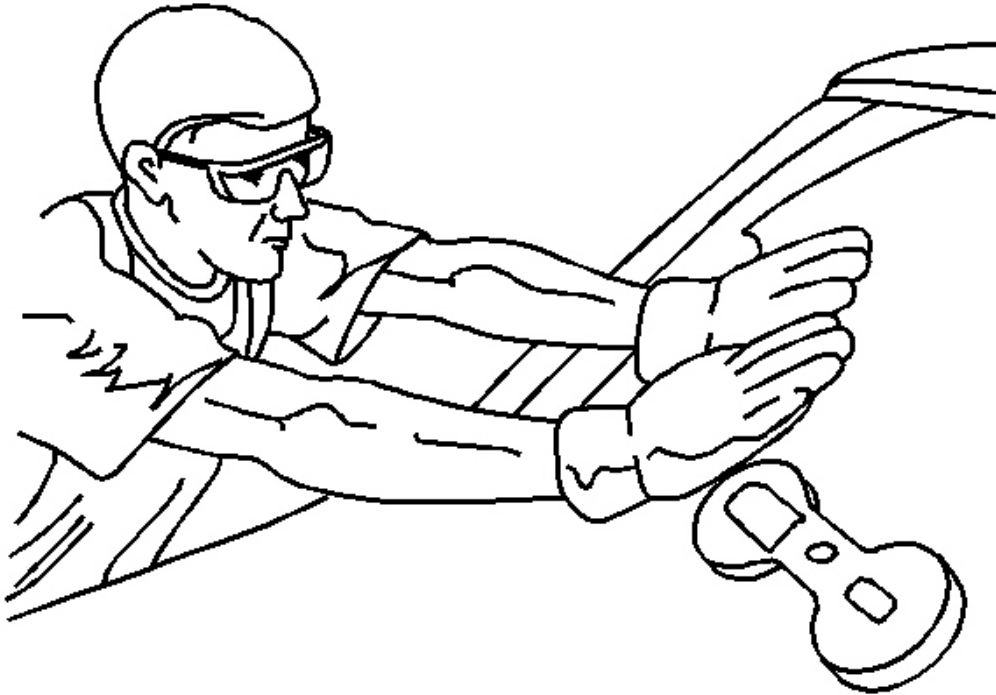


Fig. 34: Pressing Window Into Place
Courtesy of GENERAL MOTORS CORP.

20. Press firmly around the entire periphery of the window in order to wet-out the urethane adhesive bead.
21. Press the top corners of the lift gate window to engage the dual-lock patches.

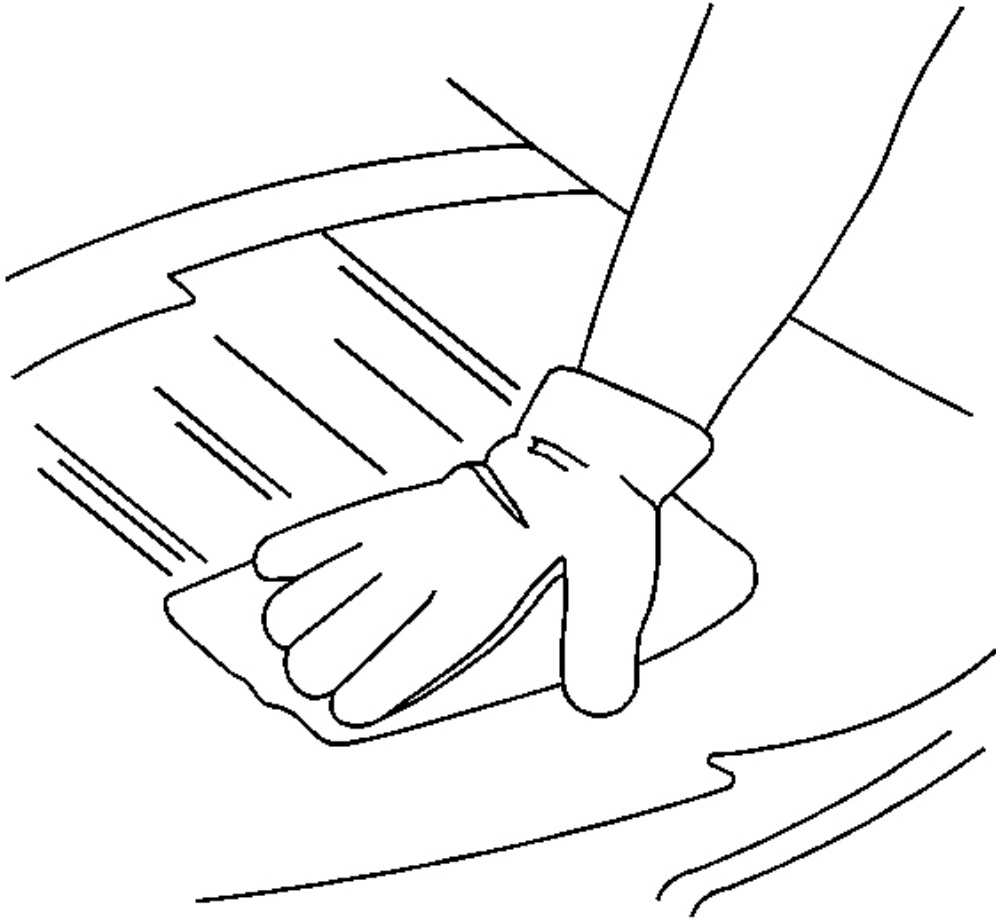


Fig. 35: Cleaning Excess Urethane Adhesive
Courtesy of GENERAL MOTORS CORP.

22. Clean any excess urethane adhesive from the body using VM&P Naptha.
23. Clean any excess urethane adhesive from the interior trim using acrysol.

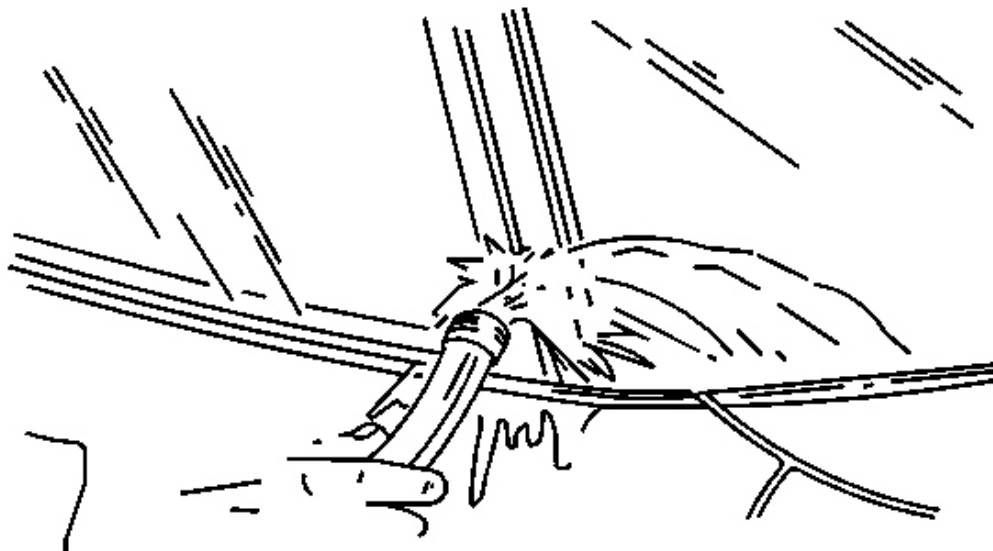


Fig. 36: Water Hose Test
Courtesy of GENERAL MOTORS CORP.

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

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

28. 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.
29. 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 (0.078 in) of the existing bead of urethane adhesive from the pinchweld flange.

1. Remove all mounds or loose pieces of urethane adhesive from the pinchweld 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 pinchweld flange area for the cause of a broken window.
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 pinchweld flange

IMPORTANT: If corrosion of the pinchweld flange is present or if sheet metal repairs or replacements are required, the pinchweld 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(R), DuPont 2610(R), Sherwin-Williams PSE 4600 and NP70(R) and Martin-Semour 5120 and 5130(R) 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.

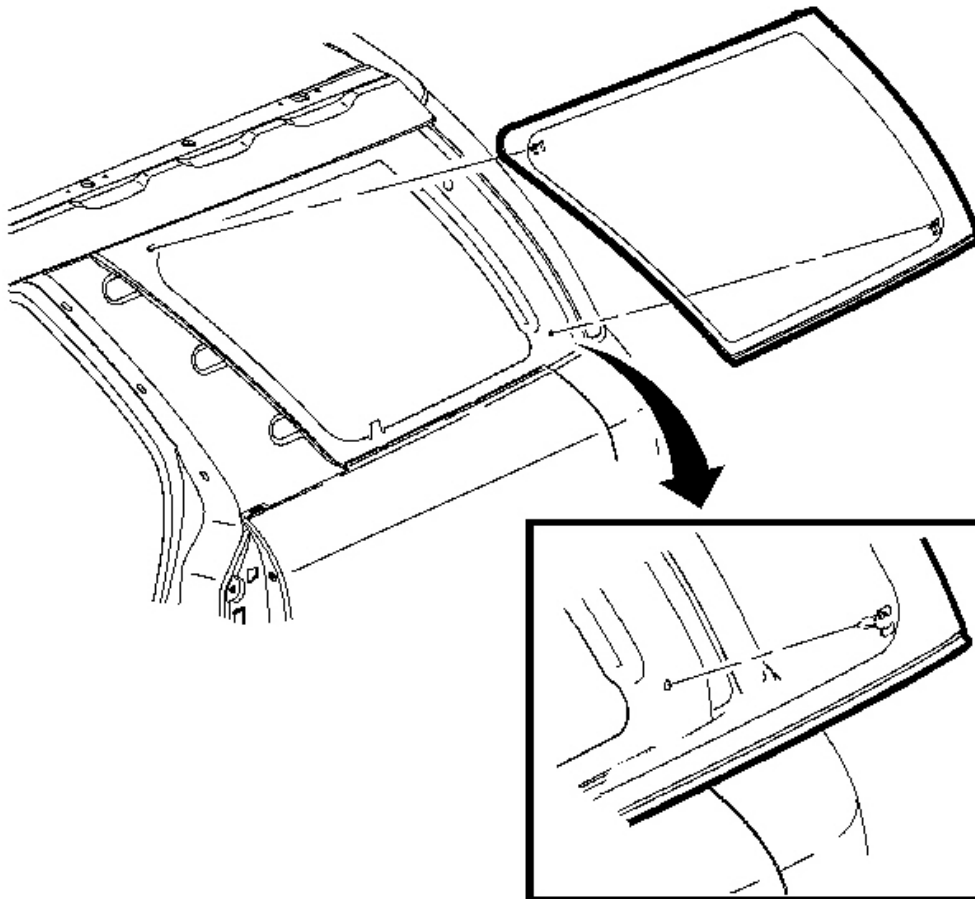


Fig. 37: Removing/Installing Stationary Window
Courtesy of GENERAL MOTORS CORP.

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 pinchweld flange. Apply the primer only to nicks, scratches or the primed surfaces.

7. Shake the pinchweld primer (black #3) for at least 1 minute.
8. Use a new dauber in order to apply the primer to the surface of the pinchweld flange.
9. Allow the pinchweld primer to dry for approximately 10 minutes.
10. With the aid of an assistant dry fit the window to the opening in order to determine the correct position.
11. Ensure the locators are positioned into the locator slots on the lower pinchweld flange.
12. Center the glass side to side into the body opening.
13. Use masking tape in order to mark the locations of the bodyside window in the opening.
14. Cut the masking in the center and remove the bodyside window from the opening.

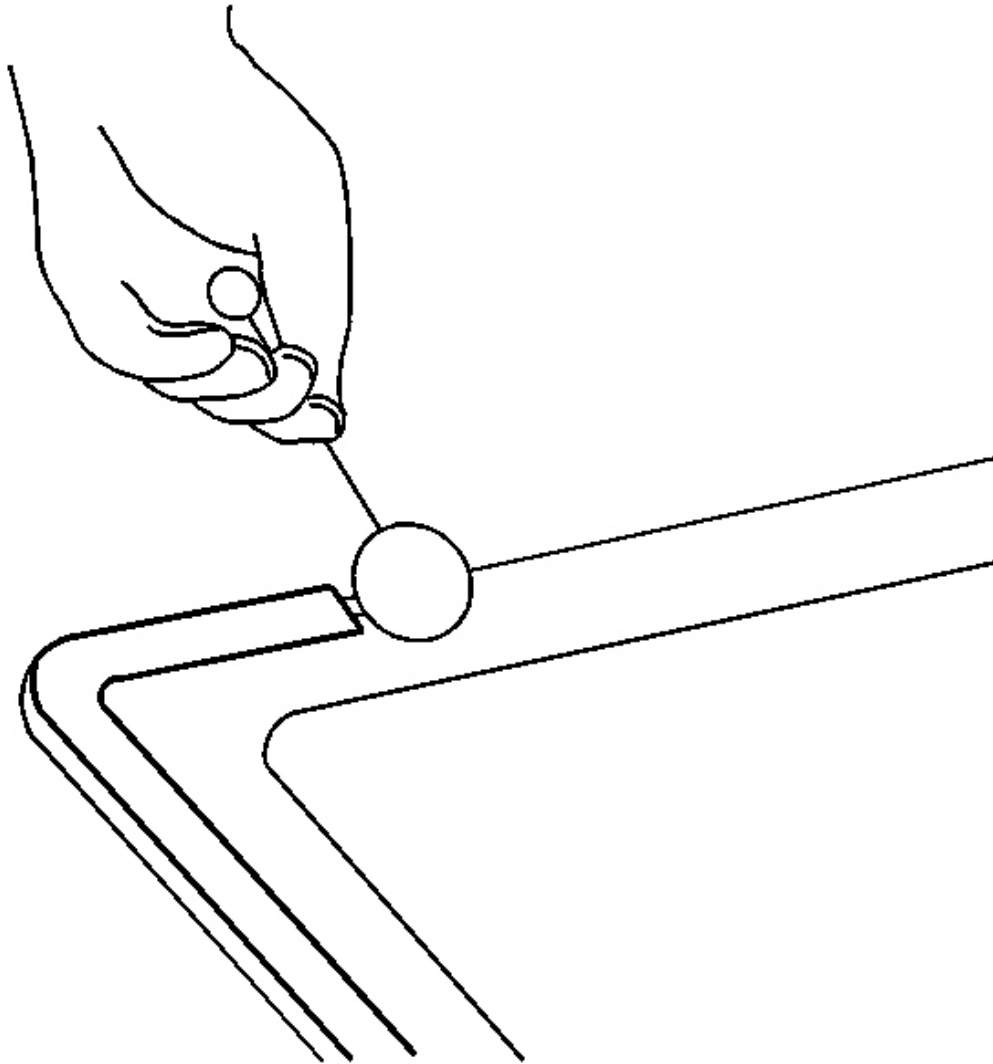


Fig. 38: Applying Glass Prep (Clear #1)
Courtesy of GENERAL MOTORS CORP.

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.

15. 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.

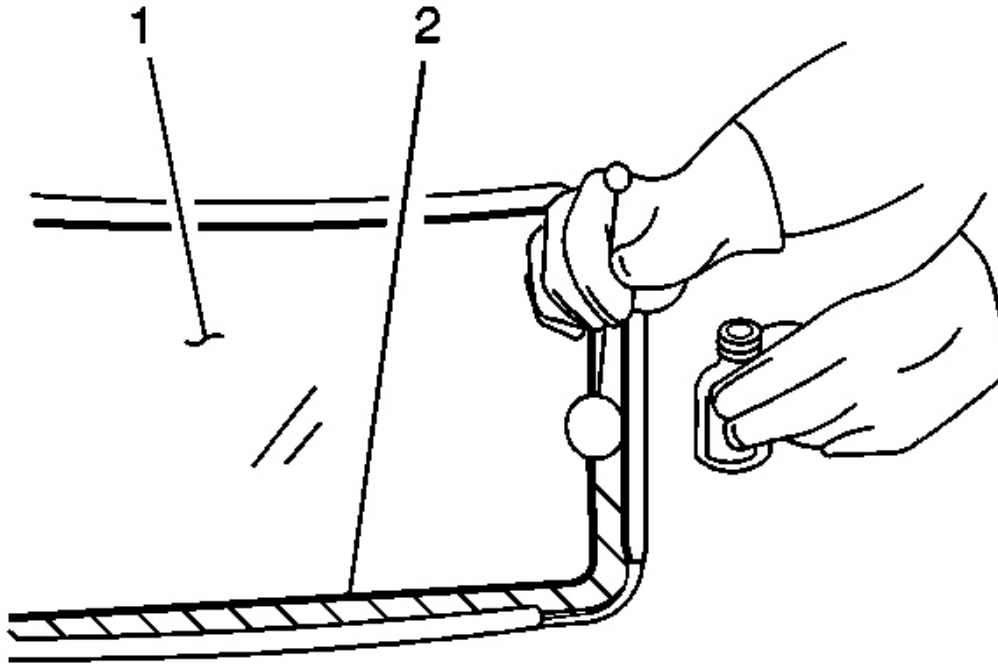


Fig. 39: Applying Glass Primer (Black #2)
Courtesy of GENERAL MOTORS CORP.

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.

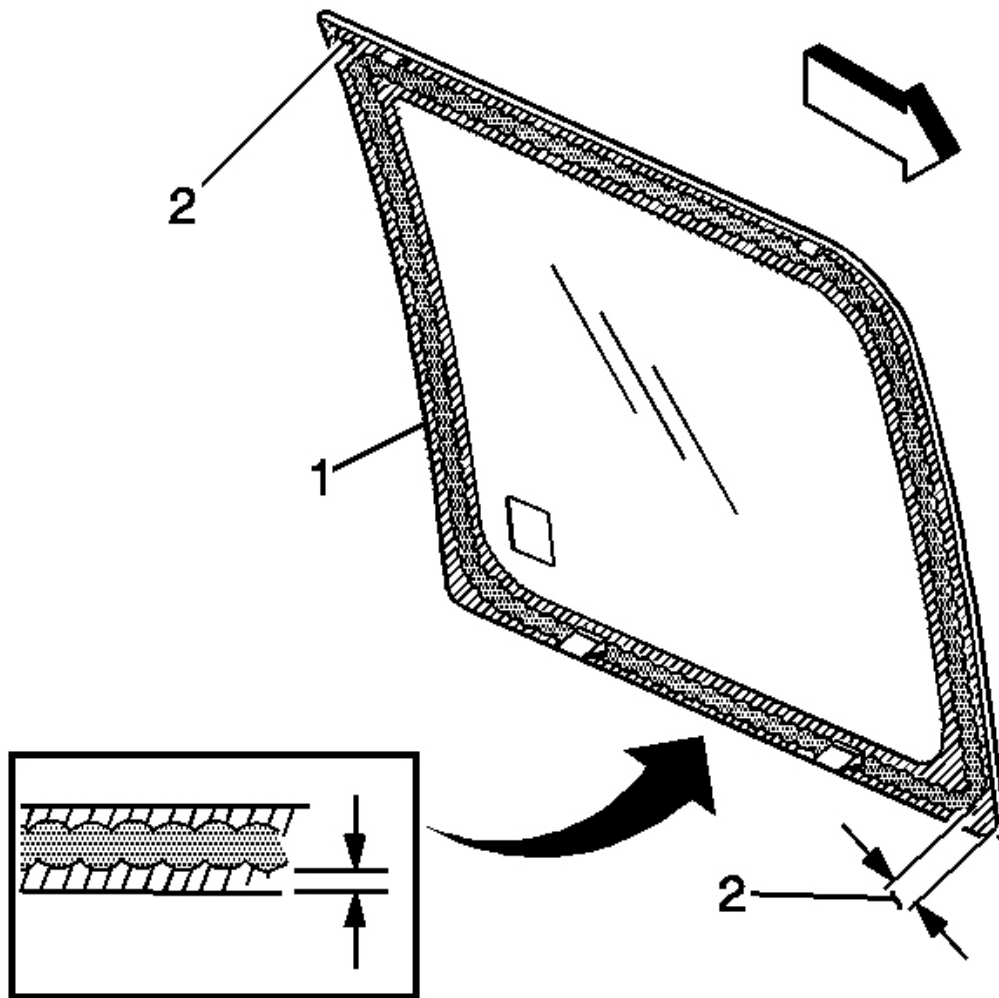


Fig. 40: Applying Urethane Bead
 Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Measure a distance of 14-17 mm (0.55-0.669 in) inward, from the top, bottom and side edges of the window (1) in order to apply the urethane bead onto the window.

19. When applying around the radius edges of the window (2), measure a distance of 17-22 mm (0.669-0.866 in) inward, for the radius edges only.

Use the measurements as a guide in order to apply the urethane adhesive bead to the blackout area of the window.

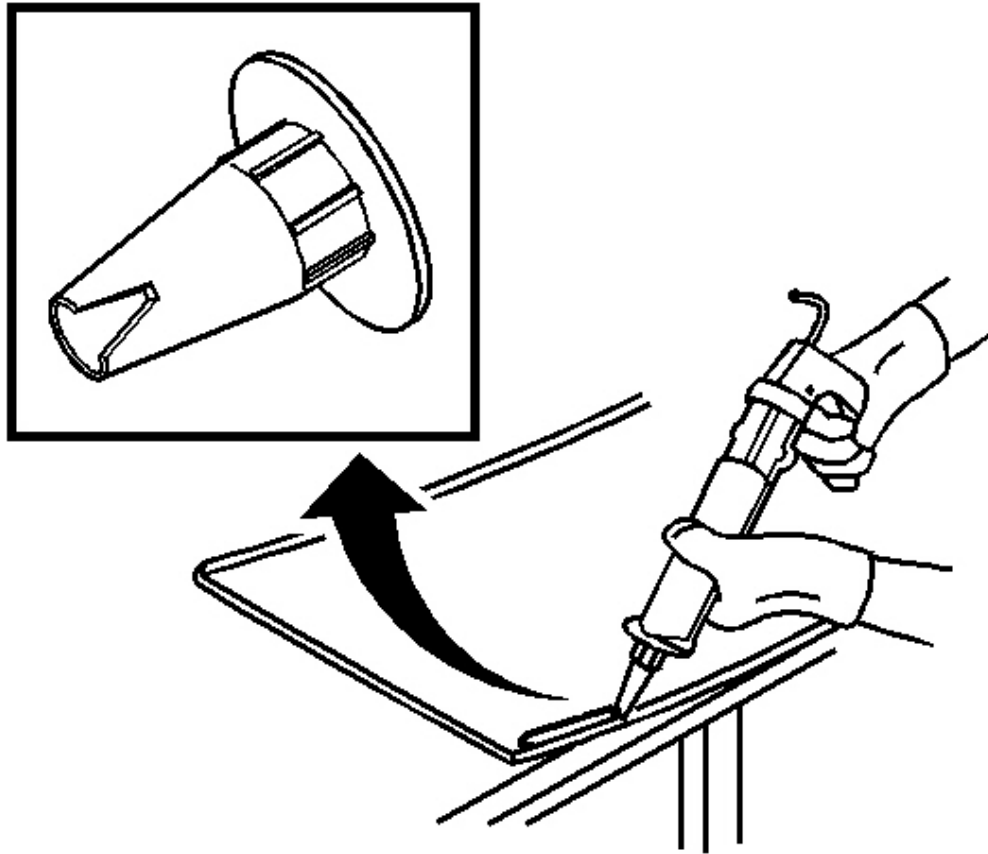


Fig. 41: Cutting Applicator Nozzle
Courtesy of GENERAL MOTORS CORP.

20. Cut the applicator nozzle in order to provide a minimum bead of 12 mm (0.393 in) wide and 7 mm (0.590 in) high.

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

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

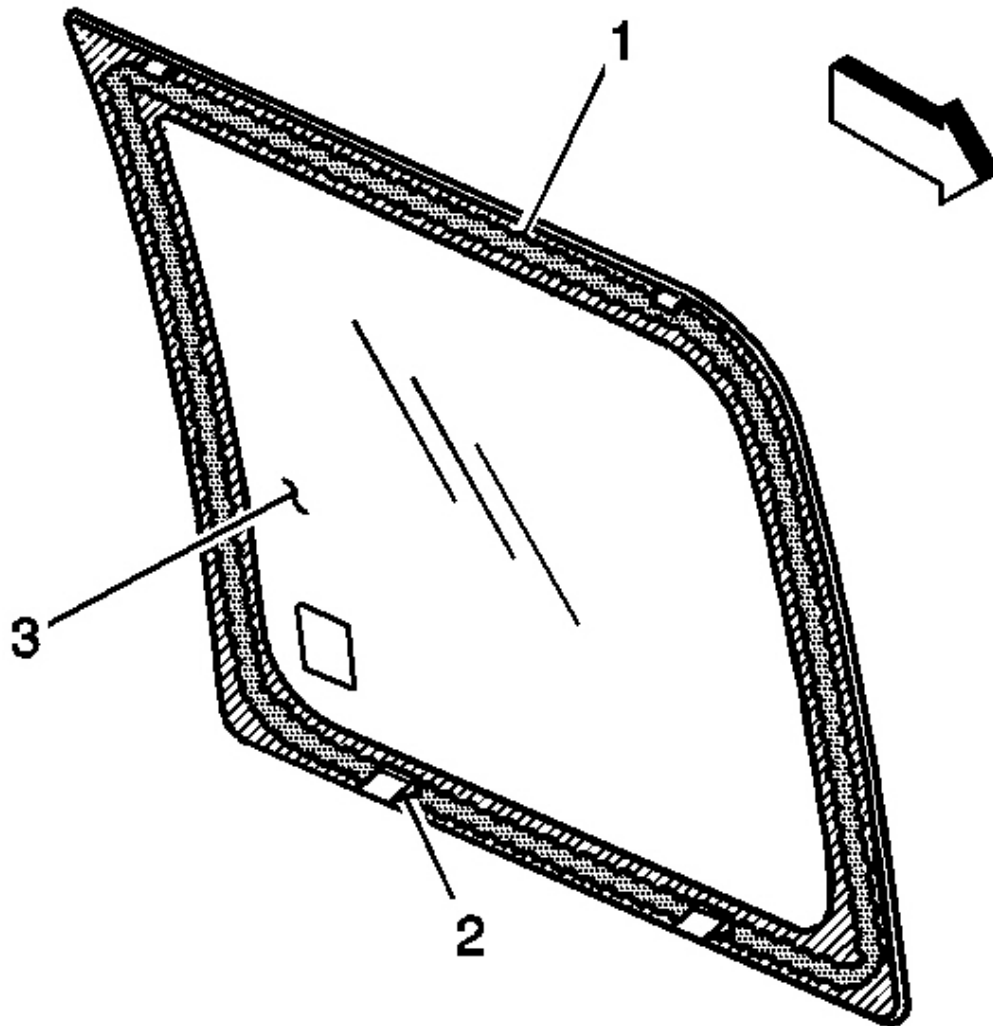


Fig. 42: Applying Urethane Adhesive To Inner Surface Of Window
Courtesy of GENERAL MOTORS CORP.

22. Use the specifications as listed above to guide for the nozzle in order to apply the urethane adhesive to the inner surface of the window.

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

23. Position the window into the bodyside opening.

24. Place the bodyside glass locators (2) onto the slots in the pinchweld flange.
25. Align the masking tape on the bodyside window to the body masking tape.
26. Press around the entire periphery of the bodyside glass edge in order to wet-out the urethane adhesive bead.
27. Tape the window to the body in order to minimize movement until the urethane adhesive cures.

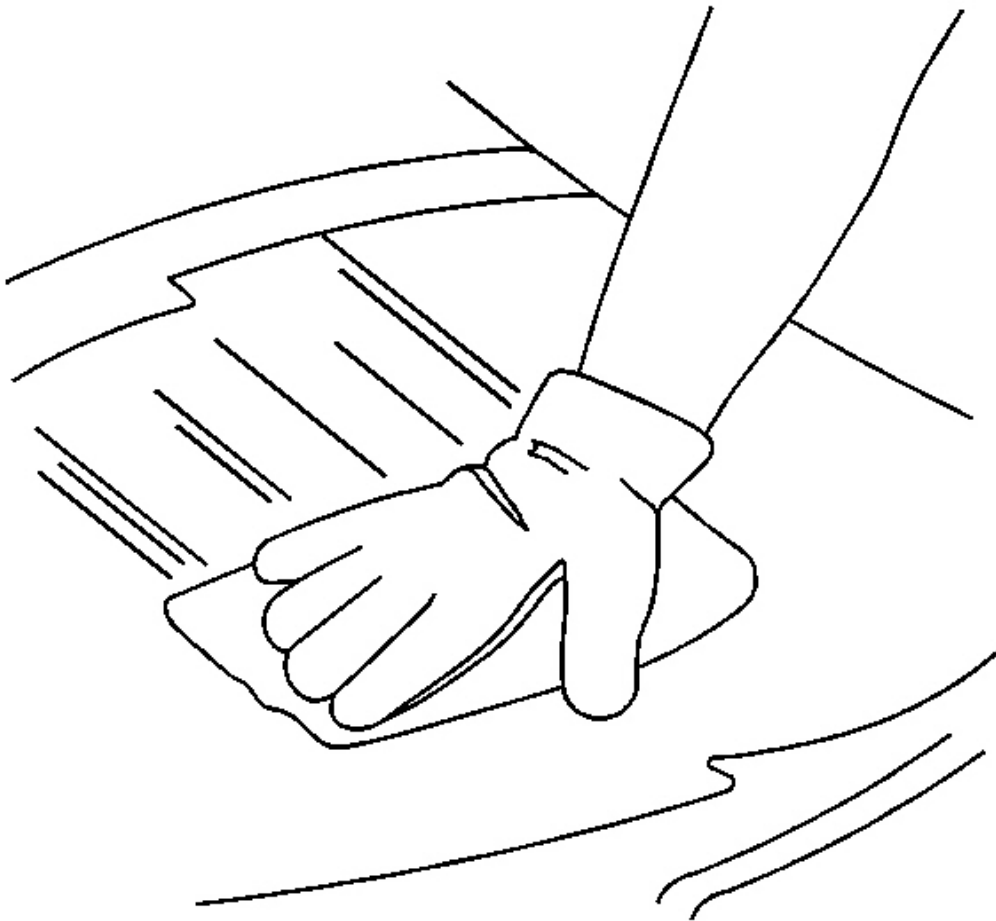


Fig. 43: Cleaning Excess Urethane Adhesive
Courtesy of GENERAL MOTORS CORP.

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.

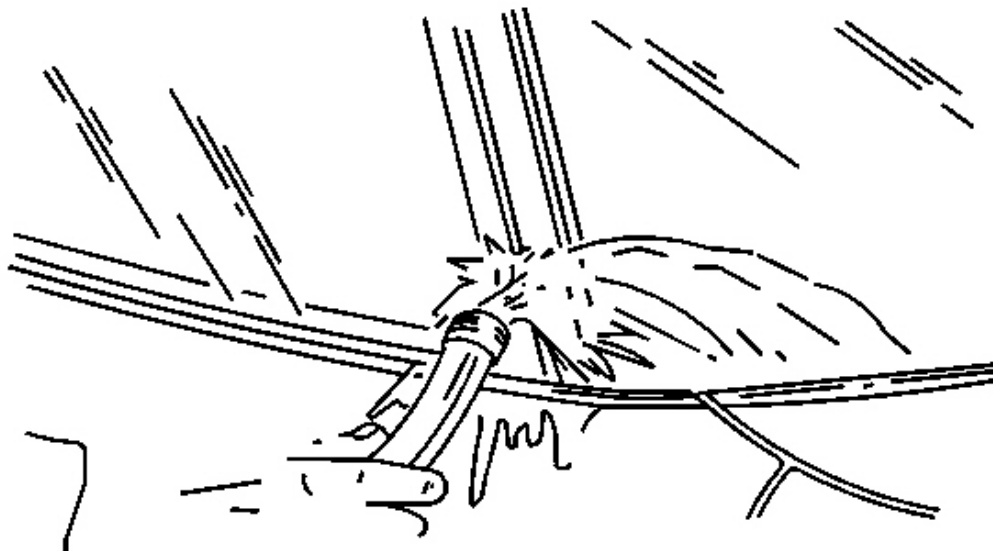


Fig. 44: Water Hose Test
Courtesy of GENERAL MOTORS CORP.

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.

WINDOW REPLACEMENT - LIFTGATE

Tools Required

- **J 24402-A** Glass Sealant Cold Knife Remover. See **Special Tools and Equipment** .
- **J 39032** Stationary Glass Removal Tool. See **Special Tools and Equipment** .
- 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

1. Remove the lift gate applique. Refer to **Liftgate Applique Replacement** in Body Rear End.
2. Remove the rear wiper arm. Refer to **Wiper Arm Replacement - Rear** in Wiper/Washer Systems.
3. Remove the lift gate trim panel. Refer to **Trim Panel Replacement - Liftgate** in Body Rear End.
4. Remove the rear wiper module. Refer to **Wiper Motor Replacement - Liftgate** in Wiper/Washer Systems.

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

NOTE: Care must be taken to avoid damaging paint around glass during removal.

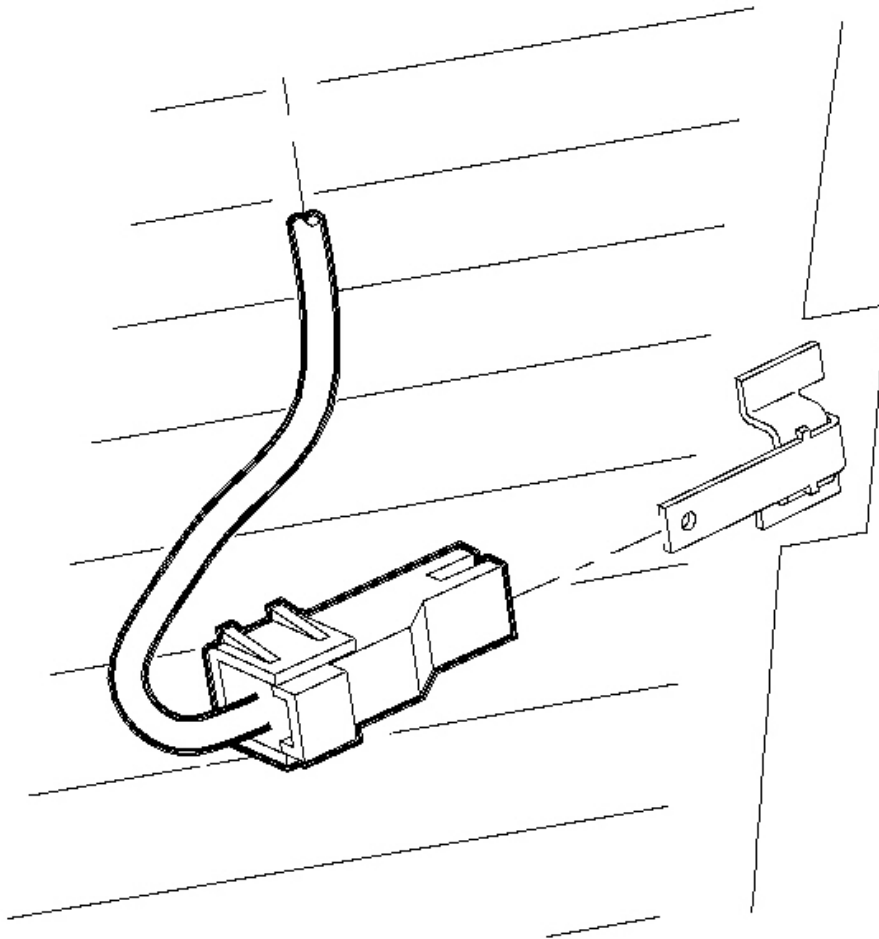


Fig. 45: View Of Rear Window Defogger Electrical Connector
Courtesy of GENERAL MOTORS CORP.

5. Remove the electrical connectors from the rear window defogger bus bars. Position the electrical connectors so not to damage the wiring/connectors when using the urethane power removal tool.

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

6. Apply two 15 cm (6 in) pieces of duct tape to the top and bottom of the glass to prevent it from falling out when the urethane adhesive is cut.

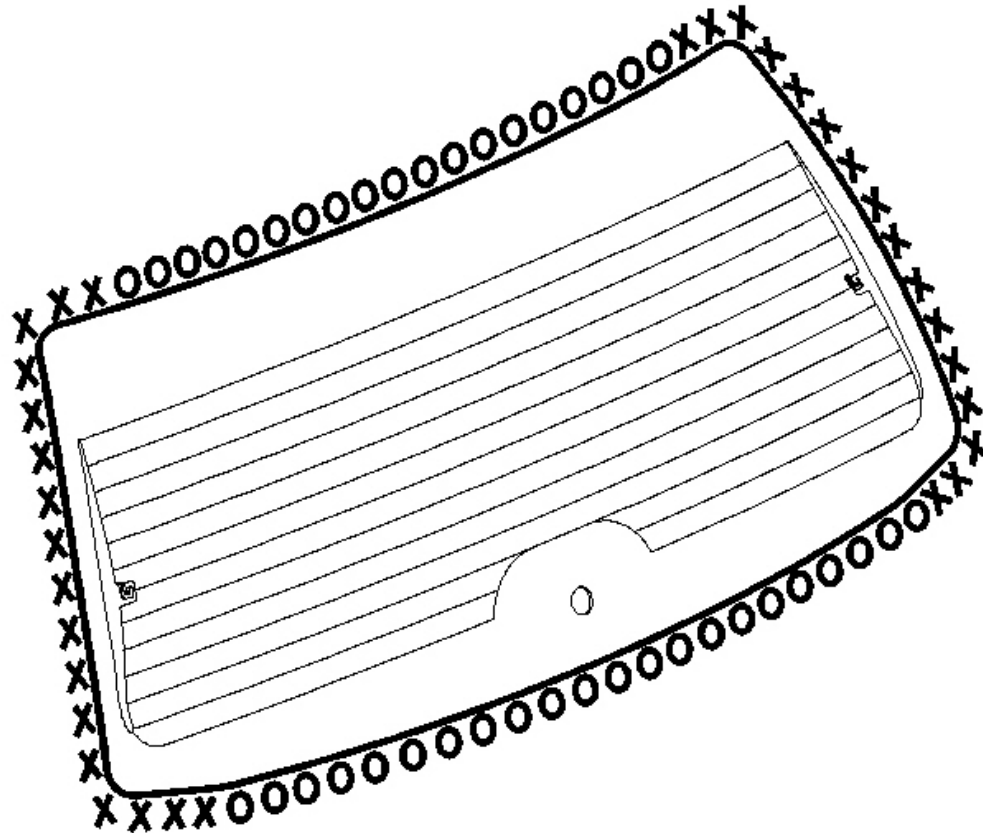


Fig. 46: Cutting Urethane Around The Glass
Courtesy of GENERAL MOTORS CORP.

CAUTION: When using power tools that may create smoke when cutting urethane sealant, work should be done in a well ventilated area and/or with a NIOSH/MSHA Approved air supplied respirator to prevent possible harmful exposure. When the urethane adhesive is heated enough to give off smoke, high levels of methylene diisocyanate (MDI) may be present. Unprotected exposure to methylene diisocyanate (MDI) may result in severe, chronic, debilitating respiratory problems.

Equipment .

8. With the aid of an assistant, remove the lift gate window from the opening.

Installation Procedure

1. Install the rear window into the opening. Refer to **Urethane Adhesive Installation of Stationary Windows** .

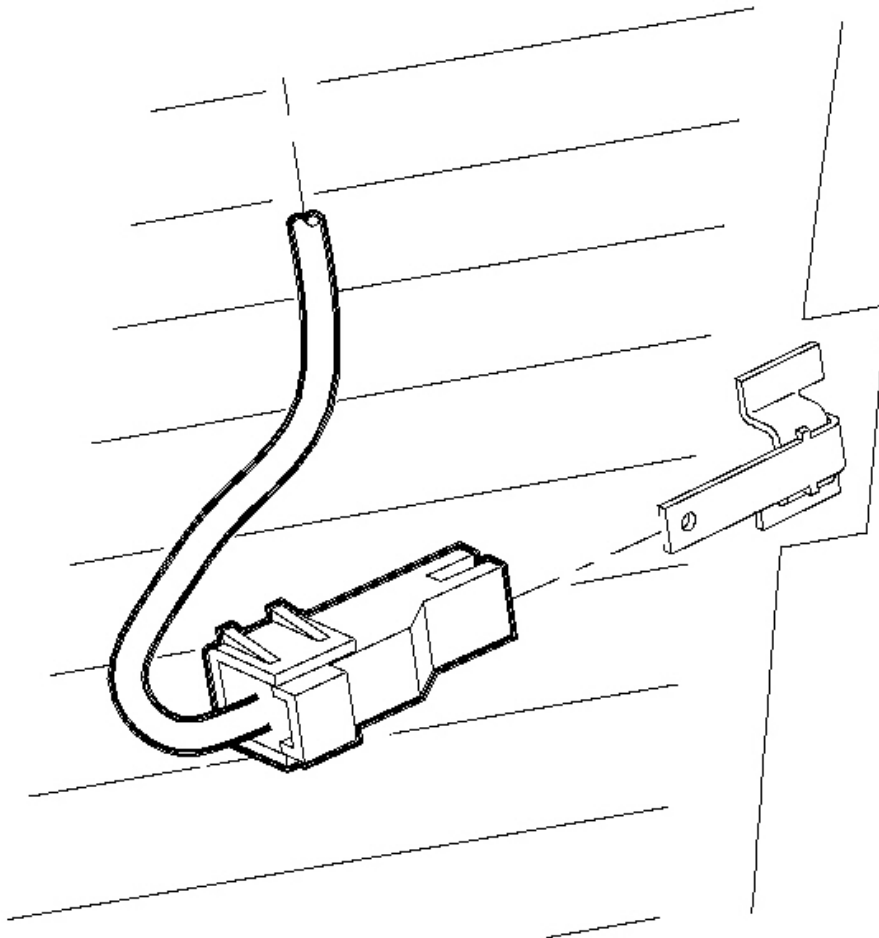


Fig. 47: View Of Rear Window Defogger Electrical Connector
Courtesy of GENERAL MOTORS CORP.

2. Connect the rear window defogger electrical connectors to the bus bars.
3. Install the rear wiper module. Refer to **Wiper Motor Replacement - Liftgate** in Wiper/Washer Systems.

4. Install the lift gate trim panel. Refer to **Trim Panel Replacement - Liftgate** in Body Rear End.
5. Install the rear wiper arm. Refer to **Wiper Arm Replacement - Rear** in Wiper/Washer Systems.
6. Install the lift gate applique. Refer to **Liftgate Applique Replacement** in Body Rear End.

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(tm) "Fast Cure" Auto Glass Urethane. One part and requires associated primers.

Call 3M(tm) 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.

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 following components:

- Inside rearview mirror
- Ambient air temperature sensor

Power and Ground of the Inside Rearview Mirror

- With the ignition ON, ignition voltage is supplied to the mirror from the RADIO (IGN) 10A fuse in the I/P fuse block.
- 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 rear 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 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.

In the daytime, the mirror is in a normal state because of the high light condition that is indicated by the ambient light sensor. With the gear selector lever in the REVERSE position, backup lamp supply voltage is supplied as an input to the inside rearview mirror. In night time conditions only, 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.

Compass

The mirror uses two magnetic field sensors for compass direction. One sensor is for north and south, the other is for east and west. The mirror supplies a signal and low reference to each sensor. As the vehicle travels with or against the earth's magnetic pull, there will be a change in voltage on one or both sensors. As a result of the change in voltage, the mirror changes the heading on the compass display.

Temperature Display

The inside rearview mirror monitors the ambient air temperature sensor. As the outside air temperature gets warmer, the ambient air temperature sensor will lower resistance. The inside rearview mirror monitors this change and will show this as a warmer temperature on the display. Temperatures exceeding 62°C (143°F) will be out of the mirror's temperature range and SC will be shown on the temperature display. In colder outside air temperatures, the ambient air temperature sensor will raise in resistance. The inside rearview mirror will show a colder temperature on the display. Temperatures lower than -40°C (-40°F) will be out of the mirror's temperature range which OC will be shown on the temperature display. In cold temperatures such as 3°C (37°F) or below, the temperature display will show ICE when the ignition is first turned on. The display will toggle between ICE and the actual outside temperature until the temperature update process is complete.

Temperature Display Update Process

The inside rearview mirror has a temperature program that takes in account the fact that the radiator will heat the ambient air temperature sensor if the radiator is warm and the vehicle is not moving. If the vehicle has been off for more than 2 hours, the mirror temperature program assumes that the radiator has cooled and that the temperature supplied by the ambient air temperature sensor is accurate. Because of this, if the vehicle has been

off for more than 2 hours, the mirror displays the temperature as reported by the ambient air temperature sensor. When the ambient air temperature sensor reports a new temperature to the mirror, one of the following cases will apply:

- Ignition is off for more than 2 hours, then is turned on for more than 3 minutes. The outside temperature is greater than the last temperature recorded by the mirror for 2 minutes. The mirror will increase the last temperature reading by one degree every 2 minutes for 8 consecutive times. If the outside temperature is not matched after the 8th update, the mirror will then display the current outside temperature.
- Ignition is off for more than 2 hours, then is turned on for less than 3 minutes. The mirror will update the temperature display every 2 seconds.
- Ignition is off for more than 2 hours, then is turned on for more than 3 minutes. The outside temperature is less than the last temperature recorded by the mirror. The mirror will then display the current outside temperature.
- Ignition has been off for less than 2 hours. The outside temperature is greater than the last temperature recorded by the mirror, but the ignition is cycled from on to off within 2 minutes. The mirror will display the old temperature.
- Ignition has been off for less than 2 hours. The outside temperature is less than the last temperature recorded by the mirror. The mirror will then display the current outside temperature.

Switches of the Inside Rearview Mirror with the Automatic Day-Night Feature, Compass/Temperature Display with OnStar(R)

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

- The on/off switch located at the left side of the mirror performs the following functions:
 - To enable or disable the automatic day-night feature of the mirror. With the ignition in the ON position, depress and hold the on/off switch for 6 seconds to enable the automatic day-night feature of the mirror. A green indicator will illuminate on the mirror when the automatic day-night feature is enabled. To disable the automatic day-night feature of the mirror, depress and hold the on/off switch for 6 seconds.
 - To turn the compass/temperature display on and off. With the ignition in the ON position, depress the on/off switch to turn the compass/temperature display on in Fahrenheit (°F). Depress the on/off switch again to turn the compass/temperature from Fahrenheit (°F) to Celsius (°C). Depress the on/off switch again to turn off the display. The on/off switch is also used to place the compass into a calibration or zone mode. For more information, refer to **Compass Calibration and Variance Procedure** .
- The three switches on the right side of the mirror are for OnStar(R) operation. For more information, refer to **OnStar Description and Operation** in Cellular Communications.

COMPASS CALIBRATION AND VARIANCE PROCEDURE

Compass Calibration

Before calibrating the compass, drive the vehicle to an open area that is magnetically clean or free of large metallic objects such as high tension power lines or large steel buildings. Verify there are no magnetized roof antennas, magnets on or hanging from the mirror, or any other magnetized objects on the inside or outside of

the vehicle close to the mirror.

1. Start the engine.

IMPORTANT: Before calibrating the compass, make sure the mirror has the correct zone number. Refer to Compass Magnetic Variation Adjustment mentioned below.

2. Press and hold the on/off switch for the compass until the letter "C" or "CAL" is displayed.
3. Drive the vehicle in circles at a speed of less than 8 km/h (5 mph) until the "C" or "CAL" is replaced by a proper vehicle heading. The calibration procedure is now complete.

Compass Magnetic Variation Adjustment

Magnetic variation adjustments are required when the compass displays a constant error in heading. Variation is the difference between magnetic north and true north due to geographical location.

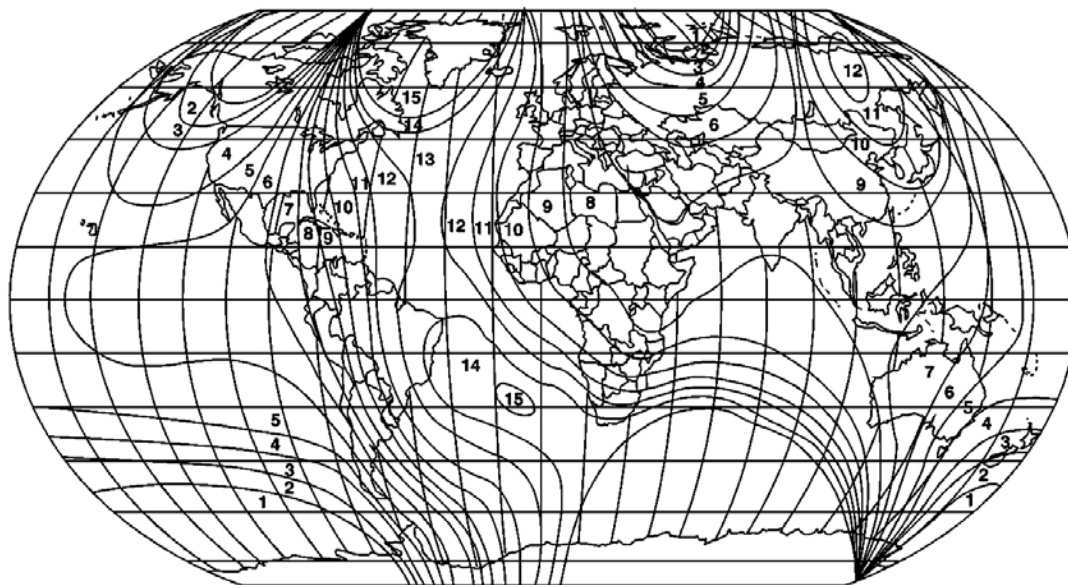


Fig. 48: World Magnetic Variation Map
Courtesy of GENERAL MOTORS CORP.

1. Locate your current geographic location on the World Magnetic Variation Map.
2. Turn ON the ignition, with the engine OFF.
3. Press and hold the on/off switch for the compass until a zone number appears on the compass display.
4. Depress the switch for the compass to select the desired zone number.
5. Wait 5 seconds. The display will return to a compass heading. The variance procedure is now complete.

6. Calibrate the compass. Refer to Compass Calibration mentioned above.

REAR WINDOW DEFOGGER DESCRIPTION AND OPERATION

Rear Window Defogger System Components

The rear window defogger system consist of the following components:

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

Rear Window Defogger Operation

Battery positive voltage is supplied through the REAR DEFOG fuse, in the underhood fuse block, to the REAR DEFOG relay switched input. Ground for the coil of the REAR DEFOG relay is provided by the BCM. Battery voltage is supplied from the IGNITION 30A MaxiFuse to the supply voltage on the rear defog relay coil side. When you depress the rear defogger switch, the rear defogger switch pulls the signal circuit low as an input to the BCM. The BCM interprets this as a request for the rear defogger system. The BCM enables the rear defogger system by supplying ground to the REAR DEFOG relay coil. The relay coil ground is also spliced off to the ground circuit of the rear defogger indicator. The REAR DEFOG relay is energized and the rear 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 defogger grid. Ground for the rear defogger grid is provided by G401.

When you start the engine and press the rear defogger switch for the first time, the defogger cycle lasts for 15 minutes. Further operation results in 7.5 minute defogger cycles. The defogger cycle resets to 15 minutes when you cycle the ignition to the off position and then to the on position.

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.

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.

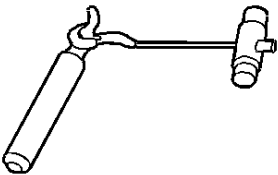
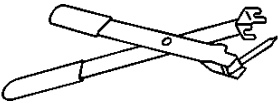
IMPORTANT:

- 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(R), DuPont 2610(R), Sherwin-Williams PSE 4600 and NP70(R) and Martin-Semour 5120, 5130(R), 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.

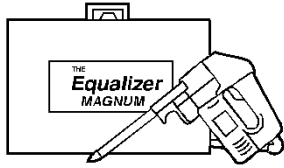
SPECIAL TOOLS AND EQUIPMENT

SPECIAL TOOLS

Special Tools

Illustration	Tool Number/ Description
	<p>J 24402-A Glass Sealant Cold Knife Remover</p>
	<p>J 34946 Window Pin Remover</p>
	<p>J 39032</p>

Stationary Glass Removal Tool



J 39040
Quarter Window Remover