

2008 ACCESSORIES & EQUIPMENT

Fixed and Moveable Windows - LaCrosse

SPECIFICATIONS

FASTENER TIGHTENING SPECIFICATIONS

Application	Specification	
	Metric	English
Front Door Outer Belt Sealing Strip Screws	2 N.m	18 lb in
Front Door Window Channel Retaining Screws	2 N.m	18 lb in
Rear Door Outer Belt Sealing Strip Screws	2 N.m	18 lb in
Window Regulator Bolts	10 N.m	89 lb in
Window Regulator Motor Bolts	6 N.m	53 lb in

SCHEMATIC AND ROUTING DIAGRAMS

MOVEABLE WINDOW SCHEMATICS

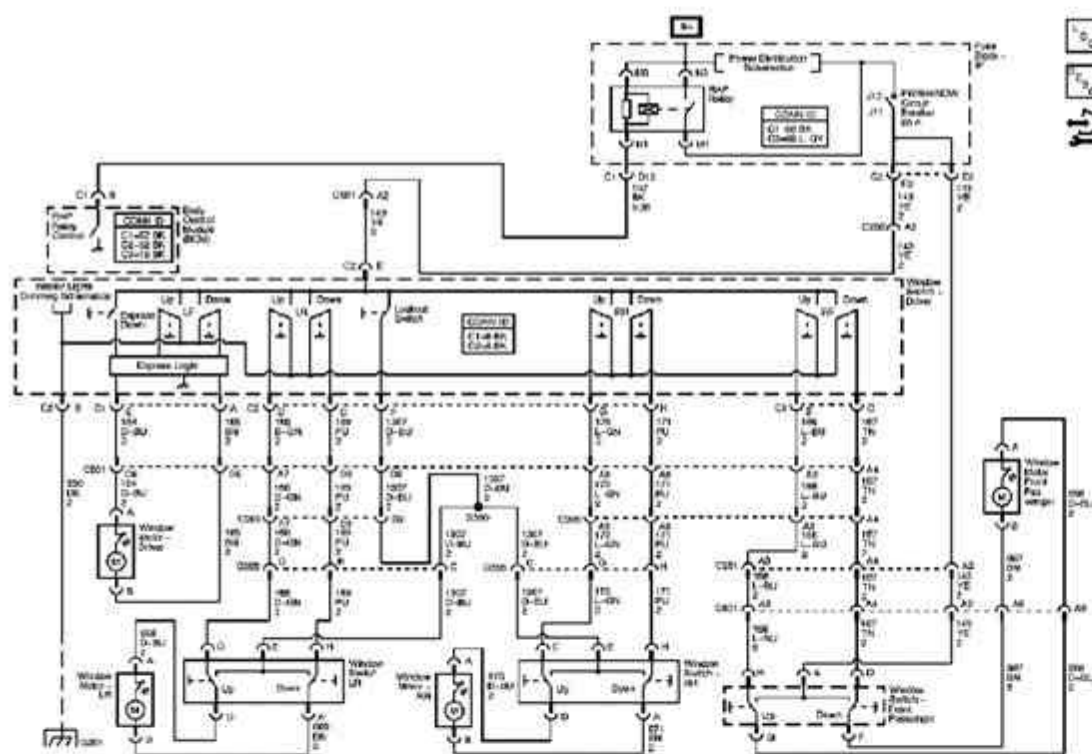


Fig. 1: Moveable Windows Schematic
 Courtesy of GENERAL MOTORS CORP.

DEFOGGER SCHEMATICS

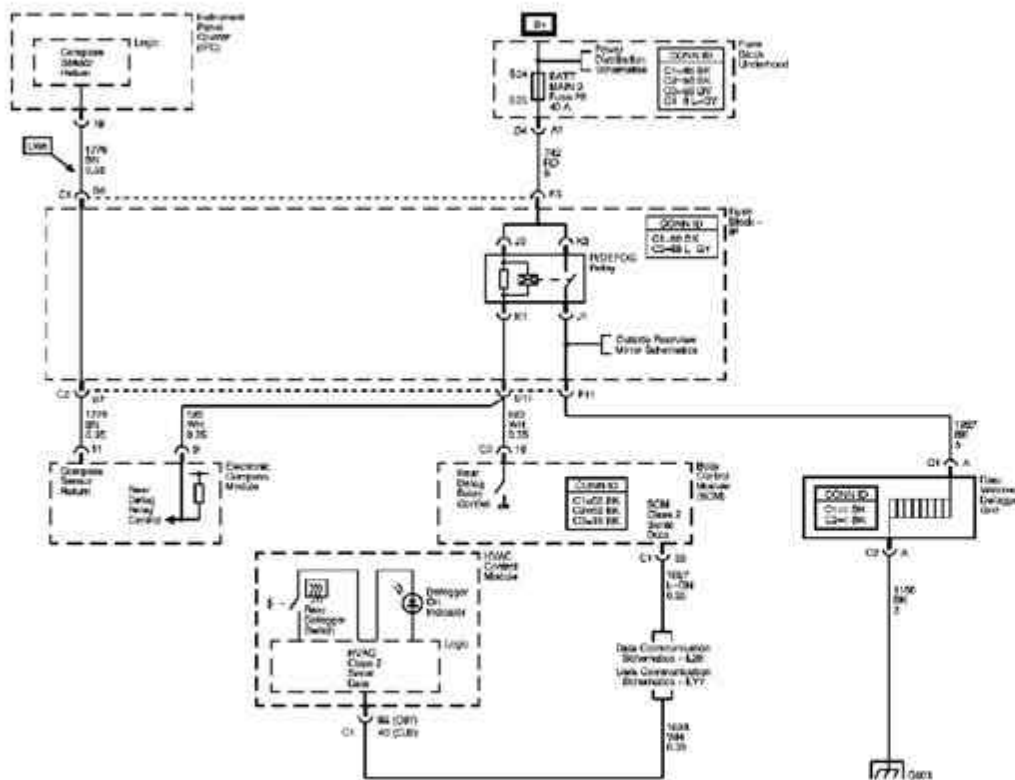


Fig. 2: Defogger Schematic
 Courtesy of GENERAL MOTORS CORP.

DIAGNOSTIC INFORMATION AND PROCEDURES

DIAGNOSTIC CODE INDEX

DIAGNOSTIC CODE INDEX

DTC	Description
DTC B0283	B0283: Electric Rear Defrost Circuit

DIAGNOSTIC STARTING POINT - FIXED AND MOVEABLE WINDOWS

Begin the system diagnosis with the **Diagnostic System Check - Vehicle**. The Diagnostic System Check will provide the following information:

- The identification of the control modules which command the system.
- The ability of the control modules to communicate through the serial data circuit.
- The identification of any stored diagnostic trouble codes (DTC) 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.

DTC B0283

Diagnostic Instructions

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

DTC Descriptor

DTC B0283

Electric Rear Defrost Circuit

Diagnostic Fault Information

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
Relay B+ Circuit	2	2	-	-
Rear Defog Relay Control	B0283	B0283	B0283	-
Rear Defogger Control Circuit	2	2	1	-
HVAC Class 2 Serial Data	2	2	2	-
Rear Window Defogger Grid Ground	-	2	2	-
1. Rear defogger always ON 2. Rear defogger inoperative				

Circuit/System Description

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

Conditions for Running the DTC

Battery voltage must be between 9-16 volts.

Conditions for Setting the DTC

The DTC will set when the BCM detects a fault in the Rear Defog Relay Control circuit for 1 second or greater.

Action Taken When the DTC Sets

- The BCM stores the DTC to memory.
- The rear window defogger will not operate.

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.

Reference Information

Schematic Reference

Defogger Schematics

Connector End View Reference

Component Connector End Views

Description and Operation

Rear Window Defogger Description and Operation

Electrical Information Reference

- Circuit Testing

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

Scan Tool Reference

Control Module References for Scan Tool Information

Circuit/System Verification

Ignition ON, command the rear window defogger ON and OFF with a scan tool. Observe the rear window defogger operation as the rear window defogger turns ON and OFF.

Circuit/System Testing

1. Ignition OFF, disconnect the R/DEFOG relay.
2. Connect a test lamp between the B+ circuit terminal J3 and the control circuit terminal K1.
3. Ignition ON, command the rear defog relay ON and OFF with a scan tool. The test lamp should turn ON and OFF when changing between the commanded states.
 - If the test lamp is always ON, test the control circuit for a short to voltage. If the circuit tests normal, replace the BCM.
 - If the test lamp is always OFF, test the control circuit for a short to ground or an open/high resistance. If the circuit tests normal, replace the BCM.
4. If all circuits test normal, test or replace the R/DEFOG relay.

Component Testing

1. Ignition OFF, disconnect the R/DEFOG relay.
2. Test for 60-180 ohms of resistance between terminals 85 and 86.
 - If the resistance is not within the specified range, replace the relay.
3. Test for infinite resistance between the following terminals:
 - 30 and 86
 - 30 and 87
 - 30 and 85
 - 85 and 87
 - If greater than the specified range, replace the relay.
4. Install a 40-amp fused jumper wire between relay terminal 85 and 12 volts. Install a jumper wire between relay terminal 86 and ground. Test for less than 2 ohms of resistance between terminals 30 and 87.
 - If greater than the specified range, replace the relay.

Repair Procedures

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

- **Body Control Module Replacement**
- **Relay Replacement (Attached to Wire Harness)** or **Relay Replacement (Within an Electrical Center)**

SYMPTOMS - FIXED AND MOVEABLE WINDOWS

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

1. Perform the **Diagnostic System Check - Vehicle** 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 power window system operation or 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. Refer to **Checking Aftermarket Accessories**.
- 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**.

Symptom List

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

- **Rear Window Defogger Malfunction**
- **Power Windows Malfunction**

REAR WINDOW DEFOGGER MALFUNCTION**Diagnostic Instructions**

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

Diagnostic Fault Information

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
Relay B+ Circuit	2	2	-	-
Rear Defog Relay Control	B0283	B0283	B0283	-
Rear Defogger Control Circuit	2	2	1	-
HVAC Class 2 Serial Data	2	2	2	-
Rear Window Defogger Grid Ground	-	2	2	-
1. Rear defogger always ON 2. Rear defogger inoperative				

Circuit/System Description

With the ignition in the RUN position, and the rear window defogger switch depressed, a class 2 serial data message is sent from the HVAC control module to the body control module (BCM) requesting rear defog operation. The BCM responds by providing ground to the rear defog control signal circuit energizing the R/DEFOG relay. The R/DEFOG relay then provides voltage to the rear defog element supply voltage circuit

operating the rear defog system. The HVAC control module illuminates the rear window defogger indicator when a class 2 serial data message is received indicating that the BCM is requesting rear defog operation. The R/DEFOG relay receives battery positive voltage to both the coil and switch input sides from the BATT MAIN 3 fuse in the underhood fuse block. Ground for the rear window defogger is provided at G301.

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 defogger cycle resets to 15 minutes when you cycle the ignition to the OFF position and then back to the ON position.

If battery voltage is low, the BCM will disable the rear window defogger

Reference Information

Schematic Reference

Defogger Schematics

Connector End View Reference

Component Connector End Views

Description and Operation

Rear Window Defogger Description and Operation

Electrical Information Reference

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

Scan Tool Reference

Control Module References for Scan Tool Information

Circuit/System Verification

1. Ignition ON, observe the scan tool BCM Rear Defog Relay parameter while pressing the rear window defogger switch. The reading should change between ON and OFF.
 - If the reading does not change between the commanded states, replace the HVAC control module.
2. Observe the operation of the rear window defogger indicator while pressing the rear window defogger switch. The indicator should turn ON or OFF each time the rear window defogger switch is pressed.
 - If the indicator does not turn ON or OFF with each switch press, replace the HVAC control module.
3. Command the rear window defogger ON and OFF with a scan tool. The rear window defogger should turn ON and OFF when changing between the commanded states.

Circuit/System Testing

1. Ignition OFF, disconnect the R/DEFOG relay.
2. Ignition ON, verify a test lamp does not illuminate between the output circuit terminal J1 and ground.
 - If the test lamp illuminates, test output circuit for a short to voltage.
3. Verify a test lamp illuminates between the B+ circuit terminal J3 and ground.

- If the test lamp does not illuminate, test the B+ circuit for a short to ground or an open/high resistance. If the circuit tests normal and the BATT MAIN 3 fuse is open, test or replace the R/DEFOG relay.
- 4. Verify a test lamp illuminates between the B+ circuit terminal K3 and ground.
 - If the test lamp does not illuminate, test the B+ circuit for a short to ground or an open/high resistance. If the circuit tests normal and the BATT MAIN 3 fuse is open, test the output circuit terminal for a short to ground.
- 5. Disconnect the harness connector at the rear window defogger grid.
- 6. Ignition OFF, test for less than 1 ohm of resistance between the ground circuit terminal A and ground.
 - If greater than the specified range, test the ground circuit for an open/high resistance.
- 7. Connect the harness connector at the rear window defogger grid.
- 8. Ignition ON, connect a 40A fused jumper wire between the B+ circuit terminal K3 and the output circuit terminal J1. Verify the rear window defogger grid is activated.
 - If the rear window defogger grid does not activate, test the output circuit terminal for an open/high resistance. If the circuit tests normal, test or replace the rear window defogger grid.
- 9. Connect a test lamp between the B+ circuit terminal J3 and the control circuit terminal K1.
- 10. Command the rear window defogger ON and OFF with a scan tool. The test lamp should turn ON and OFF when changing between the commanded states.
 - If the test lamp is always ON, test the control circuit for a short to voltage. If the circuit tests normal, replace the BCM.
 - If the test lamp is always OFF, test the control circuit for a short to ground or an open/high resistance. If the circuit tests normal, replace the BCM.
- 11. If all circuits test normal, test or replace the R/DEFOG relay.

Component Testing

Rear Window Defogger Grid Test

1. Ignition ON, turn on the rear window defogger.
2. Verify that a test lamp illuminates between each rear window defogger grid line and ground. The test lamp should be off when testing at the ground side of the grid and get brighter as the test lamp moves closer to the voltage supply side of the grid. The test lamp should be dim when testing each grid line in the middle.
 - If the test lamp remains bright at the middle of the grid line, test for an open between the test point and the ground side of the grid.
 - If the test lamp remains off at the middle of the grid line, test for an open between the test point and the voltage supply side of the grid.

Relay Test

1. Ignition OFF, disconnect the R/DEFOG relay.
2. Test for 60-180 ohms of resistance between terminals 85 and 86.
 - If the resistance is not within the specified range, replace the relay.
3. Test for infinite resistance between the following terminals:
 - 30 and 86
 - 30 and 87
 - 30 and 85
 - 85 and 87
 - If not the specified value, replace the relay.
4. Install a 5A fused jumper wire between the relay terminal 85 and B+. Install a jumper wire between the relay

terminal 86 and ground. Test for less than 2 ohms of resistance between terminals 30 and 87.

- o If greater than the specified range, replace the relay.

Repair Procedures

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

- **Rear Window Replacement**
- **Relay Replacement (Attached to Wire Harness)** or **Relay Replacement (Within an Electrical Center)**
- **Control Module References** for control module replacement, setup, and programming

POWER WINDOWS MALFUNCTION

Diagnostic Instructions

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

Diagnostic Fault Information

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
Driver Window Switch B+	1	1	-	-
Passenger Window Switch B+	2	2	-	-
Lockout Switch Control Circuit	3	3	-	-
Driver Window Motor Control Circuit	1	1	1	-
Passenger Window Motor Control Circuit	2	2	2	-
Rear Window Motor Control Circuit	3	3	3	-
Driver Window Switch Ground	-	1, 2, 3	1, 2, 3	-
1. Driver Window Malfunction 2. Passenger Window Malfunction 3. Rear Windows Malfunction				

Circuit/System Description

When the ignition switch is in the RUN or ACCY position, or retained accessory power (RAP) is enabled and the driver or passenger window switch is pressed in the down position, voltage is applied to the appropriate window motor causing that window to open. When the driver or passenger window switch is pulled in the up position, voltage is applied to the appropriate window motor in the opposite direction causing that window to close.

The driver master control contains a rear window lockout switch which disconnects the battery positive voltage supply to both rear passenger door window switches, disabling them. The RR and LR window switches on the driver master control will continue to function normally.

Reference Information

Schematic Reference

Moveable Window Schematics

Connector End View Reference

Component Connector End Views

Description and Operation

Power Windows Description and Operation

Electrical Information Reference

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

Scan Tool Reference

Control Module References for scan tool information

Circuit/System Verification

1. Ignition ON, command the driver window UP and DOWN using the driver window switch. The driver window should perform the UP and DOWN functions.
 - If the driver window does not perform the UP/DOWN function, refer to Driver Window Malfunction in Circuit/System Testing.
2. Command the each passenger window UP and DOWN using the appropriate window switch on the driver master control and the appropriate passenger door window switch. The each passenger window should perform the UP and DOWN functions from each switch.
 - If the front passenger window does not perform the UP/DOWN function, refer to Front Passenger Window Malfunction in Circuit/System Testing.
 - If either rear power windows do not perform the UP/DOWN function, refer to Rear Window Malfunction in Circuit/System Testing.
3. Disable and enable the rear window door switches by pressing the lockout switch on the driver master control. The rear door power window switches should be enabled and disabled when changing between the commanded states.
 - If both rear window switches continue to function while disabled, refer to Lockout Switch Malfunction in Circuit/System Testing.
4. Command the express down of the driver door window by pressing the driver window switch past the first detent and releasing. The driver window should roll completely down.
 - If the driver window fails to roll completely down, replace the driver window switch.

Circuit/System Testing

Driver Window Malfunction

1. Ignition OFF, disconnect the harness connector X2 at the driver window switch.
2. Ignition OFF, test for less than 1 ohm between the ground circuit terminal B and ground.
 - If greater than the specified range, test the ground circuit for an open/high resistance.
3. Ignition ON, verify that a test lamp illuminates between the B+ circuit terminal E and ground.
 - If the test lamp does not illuminate, test the B+ circuit for a short to ground or an open/high resistance.
4. Ignition OFF, connect the harness connector at the driver window switch and disconnect the harness

connector at the driver window motor.

5. Ignition OFF, test for less than 1 ohm between the control circuit terminal A and ground.
 - o If greater than the specified range, test the control circuit for a short to voltage or an open/high resistance. If the circuit tests normal, test or replace the driver window switch.
6. Ignition OFF, test for less than 1 ohm between the control circuit terminal B and ground.
 - o If greater than the specified range, test the control circuit for a short to voltage or an open/high resistance. If the circuit tests normal, test or replace the driver window switch.
7. Connect a test lamp between control circuit terminal A and control circuit terminal B.
8. Ignition ON, command the driver door window UP and DOWN using the driver window switch. The test lamp should illuminate when commanding the UP and DOWN states.
 - o If the test lamp does not illuminate during either of the commands, test both control circuits for a short to ground. If the circuits test normal, test or replace the driver window switch.
9. If all circuits tests normal, test or replace the driver window motor.

Front Passenger Window Malfunction

1. Ignition OFF, disconnect the harness connector at the front passenger window switch.
2. Ignition ON, verify that a test lamp illuminates between the B+ circuit terminal A and ground.
 - o If the test lamp does not illuminate, test the ignition circuit for an open/high resistance
3. Ignition OFF, test for less than 1 ohm between the control circuit terminal D and ground.
 - o If greater than the specified range, test the control circuit for a short to voltage or an open/high resistance. If the circuit tests normal, test or replace the driver window switch.
4. Ignition OFF, test for less than 1 ohm between the control circuit terminal H and ground.
 - o If greater than the specified range, test the control circuit for a short to voltage or an open/high resistance. If the circuit tests normal, test or replace the driver window switch.
5. Connect a test lamp between control circuit terminal D and control circuit terminal H.
6. Ignition ON, command the front passenger door window UP and DOWN by operating the RF window switch on the driver master control. The test lamp should illuminate when commanding the UP and DOWN states.
 - o If the test lamp does not illuminate during either of the commands, test both control circuits for a short to ground. If the circuits test normal, test or replace the driver window switch.
7. Ignition OFF, connect the harness connector at the front passenger window switch and disconnect the harness connector at the front passenger window motor.
8. Ignition OFF, test for less than 1 ohm between the control circuit terminal A and ground.
 - o If greater than the specified range, test the control circuit for a short to voltage or an open/high resistance. If the circuit tests normal, test or replace the front passenger window switch.
9. Ignition OFF, test for less than 1 ohm between the control circuit terminal B and ground.
 - o If greater than the specified range, test the control circuit for a short to voltage or an open/high resistance. If the circuit tests normal, test or replace the front passenger window switch.
10. Connect a test lamp between control circuit terminal A and control circuit terminal B.
11. Ignition ON, command the front passenger door window UP and DOWN using the passenger window switch. The test lamp should illuminate when commanding the UP and DOWN states.
 - o If the test lamp does not illuminate during either of the commands, test for a short to ground on either control circuit. If the circuits test normal, test or replace the front passenger window switch.
12. If all circuits test normal, test or replace the front passenger window motor.

Rear Window Malfunction

1. Ignition OFF, disconnect the harness connector at the appropriate rear window switch.

2. Ignition ON, with the lockout switch closed, verify that a test lamp illuminates between the control circuit terminal E and ground.
 - If the test lamp does not illuminate, test the control circuit for a short to ground or an open/high resistance. If the circuit tests normal, test or replace the driver window switch.
3. Ignition OFF, test for less than 1 ohm between the control circuit terminal C and ground.
 - If greater than the specified range, test the control circuit for a short to voltage or an open/high resistance. If the circuit tests normal, test or replace the driver window switch.
4. Ignition OFF, test for less than 1 ohm between the control circuit terminal H and ground.
 - If greater than the specified range, test the control circuit for a short to voltage or an open/high resistance. If the circuit tests normal, test or replace the driver window switch.
5. Connect a test lamp between control circuit terminal C and control circuit terminal H.
6. Ignition ON, command the appropriate rear passenger door window UP and DOWN using the appropriate window switch on the driver master control. The test lamp should illuminate when commanding the UP and DOWN states.
 - If the test lamp does not illuminate during either of the commands, test both control circuits for a short to ground. If the circuits test normal, test or replace the driver window switch.
7. Ignition OFF, connect the harness connector at the appropriate rear window switch and disconnect the harness connector at the appropriate rear window motor.
8. Ignition OFF, test for less than 1 ohm between the control circuit terminal A and ground.
 - If greater than the specified range, test the control circuit for a short to voltage or an open/high resistance. If the circuit tests normal, test or replace the appropriate rear window switch.
9. Ignition OFF, test for less than 1 ohm between the control circuit terminal B and ground.
 - If greater than the specified range, test the control circuit for a short to voltage or an open/high resistance. If the circuit tests normal, test or replace the appropriate rear window switch.
10. Connect a test lamp between control circuit terminal A and control circuit terminal B.
11. Ignition ON, command the appropriate rear window UP and DOWN using the appropriate rear window switch. The test lamp should illuminate when commanding the UP and DOWN states.
 - If the test lamp does not illuminate during either of the commands, test both control circuits for a short to ground. If the circuits test normal, test or replace the appropriate rear window switch.
12. If all circuits test normal, test or replace the appropriate rear window motor.

Lockout Switch Malfunction

1. Ignition OFF, disconnect the harness connector at the appropriate rear window switch.
2. Connect a test lamp between the control circuit terminal E and ground.
3. Command the rear window lockout ON and OFF by pressing and depressing the lockout switch on the driver master control. The test lamp should turn ON and OFF when changing between the commanded states
 - If the test lamp is always ON, test the control circuit for a short to voltage.
 - If the test lamp is always OFF, test the control circuit for a short to ground or an open/high resistance.
4. If all circuits test normal, test or replace the driver window switch.

Component Testing

Driver Window Switch

1. Ignition OFF, disconnect the harness connector at the driver window switch.
2. Test for less than 2 ohms between the lockout control terminal F and the B+ terminal E with the lockout switch in the ENABLE position.

- If greater than the specified value, replace the driver window switch
- 3. Test for infinite resistance between the lockout control terminal F and the B+ circuit terminal E with the lockout switch in the DISABLE position.
 - If less than the specified value, replace the driver window switch.
- 4. With the switch in the INACTIVE position, test for infinite resistance between the appropriate control terminals and the B+ terminal E listed below:
 - LR window switch control terminals D and C
 - RR window switch control terminals G and H
 - RF window switch control terminals B and C
 - Driver window switch control terminals A and E
 - If less than the specified value, replace the driver window switch.
- 5. With the switch in the UP position, test for less than 2 ohms between the appropriate control terminals and the B+ terminal E listed below:
 - LR window switch control terminal D
 - RR window switch control terminal G
 - RF window switch control terminal B
 - Driver window switch control terminal E
 - If greater than the specified range, replace the driver window switch.
- 6. With the switch in the DOWN position, test for less than 2 ohms between the appropriate control terminals and the B+ terminal E listed below:
 - LR window switch control terminal C
 - RR window switch control terminal H
 - RF window switch control terminal C
 - Driver window switch control terminal A
 - If greater than the specified range, replace the driver window switch.

Front Passenger Window Switch

1. Ignition OFF, disconnect the harness connector at the window switch.
2. Test for infinite resistance between the control terminals F and G and the B+ terminal A with the switch in the INACTIVE position.
 - If less than the specified value, replace the window switch.
3. Test for less than 2 ohms between the control terminal F and the B+ terminal A with the switch in the UP position.
 - If greater than the specified range, replace the window switch.
4. Test for less than 2 ohms between the control terminal G and the B+ terminal A with the switch in the DOWN position.
 - If greater than the specified range, replace the window switch

Rear Passenger Window Switch

1. Ignition OFF, disconnect the harness connector at the appropriate window switch.
2. Test for infinite resistance between the control terminals D and A and the control terminal E with the switch in the INACTIVE position.
 - If less than the specified value, replace the window switch.
3. Test for less than 2 ohms between the control terminal D and the control terminal E with the switch in the UP position.

- If greater than the specified range, replace the window switch.
- 4. Test for less than 2 ohms between the control terminal A and the control terminal E with the switch in the DOWN position.
 - If greater than the specified range, replace the window switch

Window Motor

1. Install a 25-amp fused jumper wire between the control terminal A and 12 volts. Momentarily install a jumper wire between the control terminal B and ground. The appropriate window motor should perform the UP/DOWN function.
 - If the function does not perform as specified, replace the appropriate window motor.
2. Reverse the jumper wires; the appropriate window motor should perform the DOWN/UP function.
 - If the function does not perform as specified, replace the appropriate window motor.

Repair Procedures

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

- **Front Side Door Window Regulator Motor Replacement**
- **Front Side Door Window Switch Replacement**
- **Rear Side Door Window Regulator Motor Replacement**
- **Rear Side Door Window Switch Replacement**

REPAIR INSTRUCTIONS

WINDSHIELD REPLACEMENT

Tools Required

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

Removal Procedure

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

1. Open the hood.
2. Remove the windshield wiper arms and blades. Refer to **Windshield Wiper Arm Replacement**.
3. Remove the air inlet grille. Refer to **Air Inlet Grille Panel Replacement**.
4. Remove the windshield garnish moldings. Refer to **Windshield Pillar Garnish Molding Replacement**.
5. Remove the rearview mirror. Refer to **Inside Rearview Mirror Replacement**.
6. Disconnect the rain sensor connector, if equipped.

7. Disconnect the diversity antenna, if equipped.

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

8. Cover to protect the following parts from broken glass:

- Upper dash pad
- Defroster outlets and A/C outlets
- Seats and carpeting

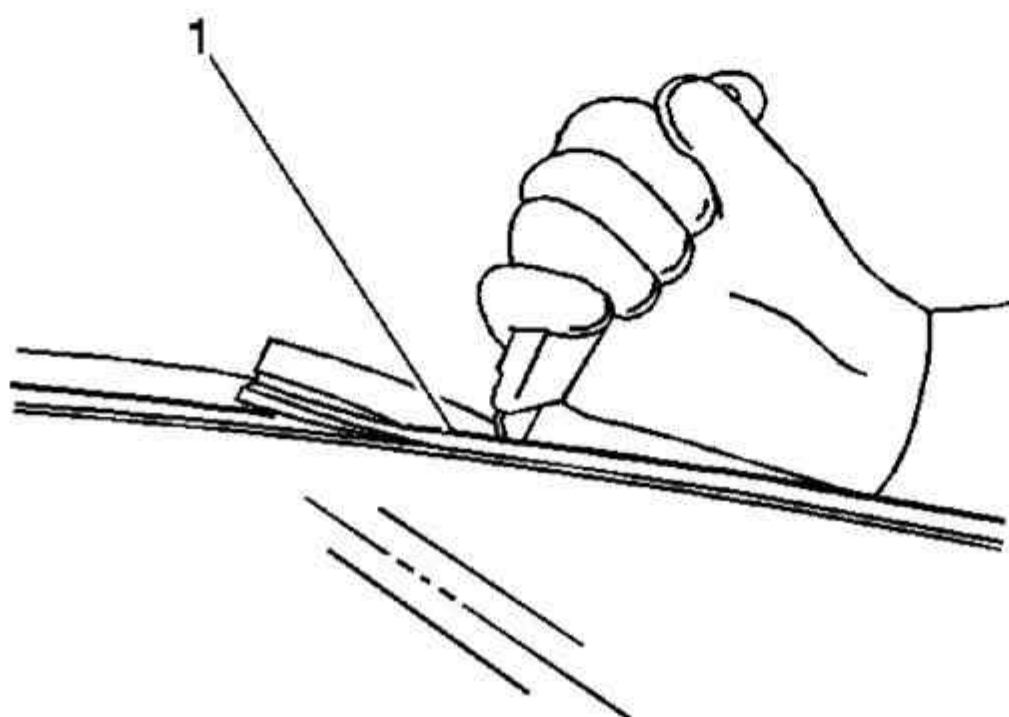


Fig. 3: Using Utility Knife To Remove Reveal Molding
Courtesy of GENERAL MOTORS CORP.

CAUTION: Refer to GLASS AND SHEET METAL HANDLING CAUTION.

IMPORTANT: The windshield reveal molding (1) is a one piece molding and fills the cavities between the body and windshield (2).
If the windshield reveal molding (1) is stretched or damaged it can not be reused.

9. Remove the windshield reveal molding (1). Refer to Adhesive Installation of Stationary Windows.

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

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

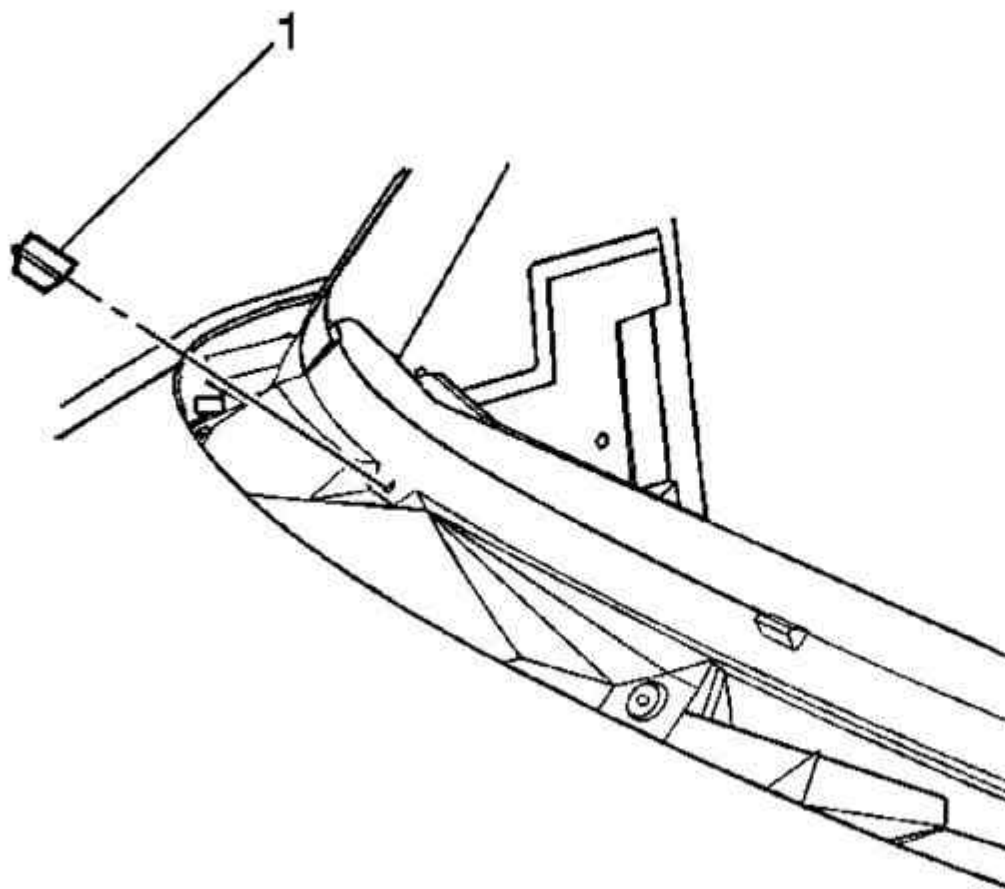


Fig. 4: Identifying Lower Windshield Supports
Courtesy of GENERAL MOTORS CORP.

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

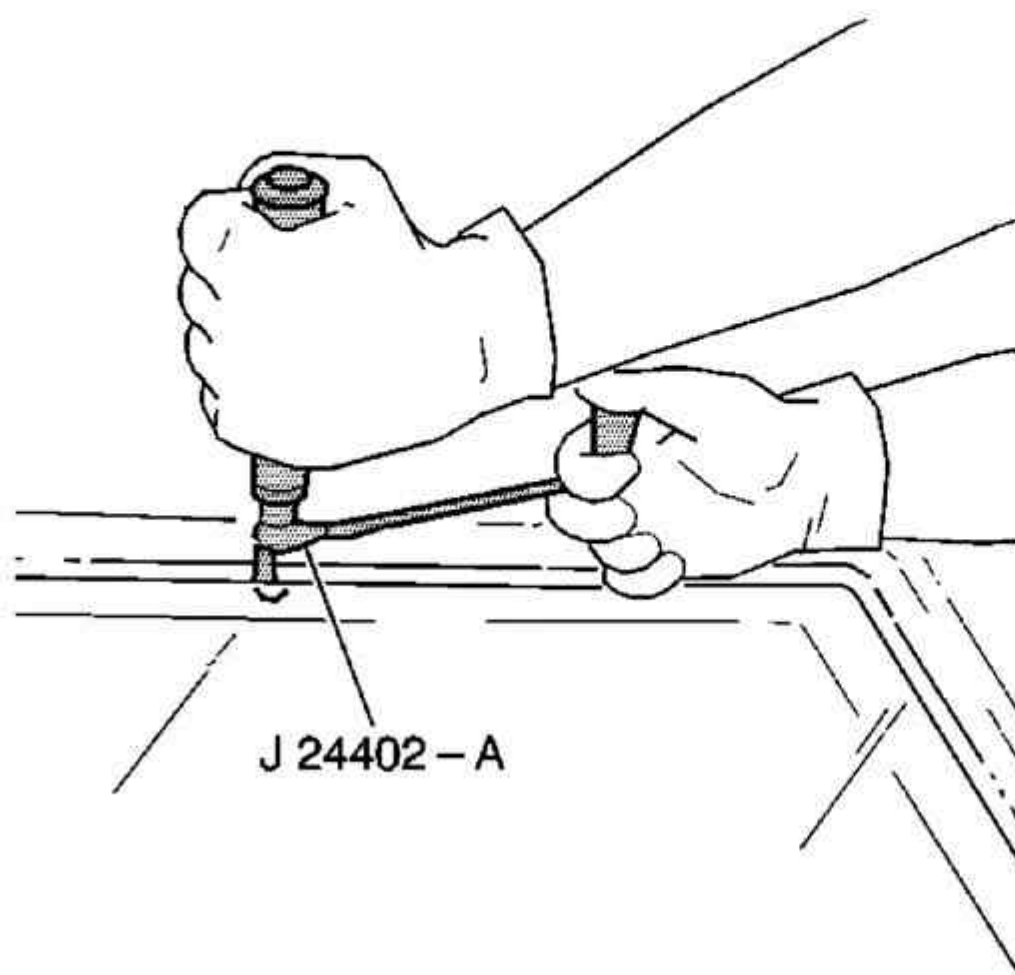


Fig. 5: Separating Urethane Adhesive From Window
Courtesy of GENERAL MOTORS CORP.

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

12. 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 J 24402-A , J 39032 or equivalent in order to remove the window. See **Special Tools**.

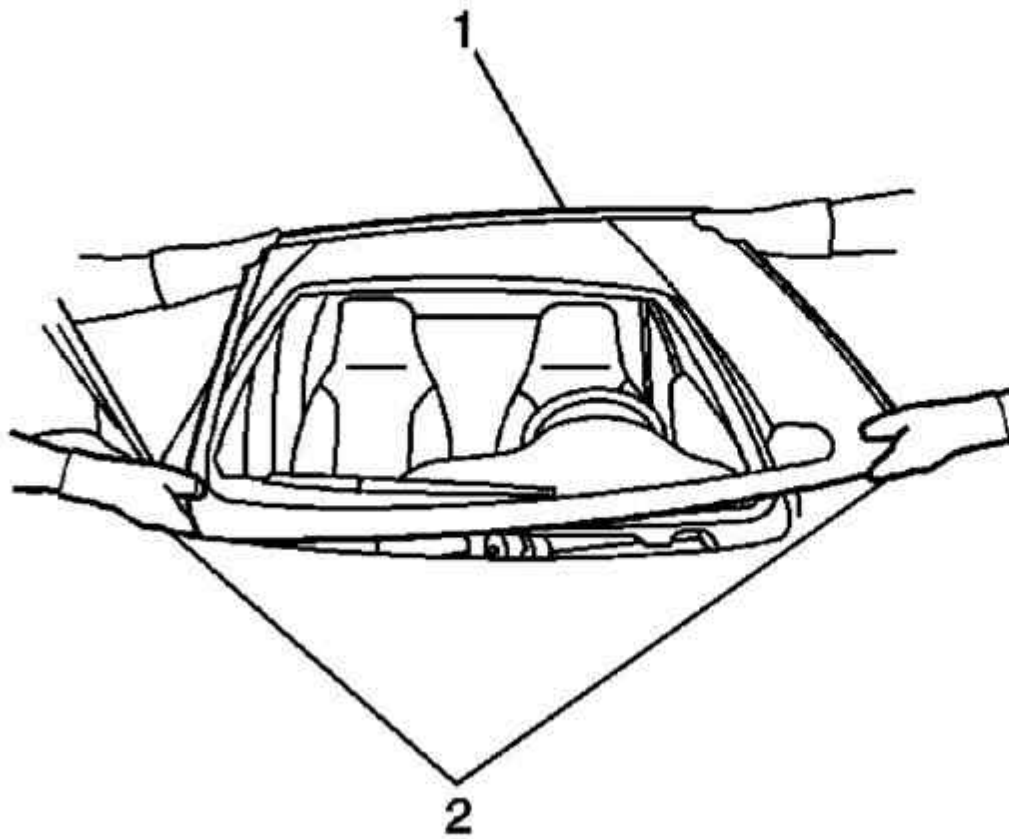


Fig. 6: View of Windshield Placement
Courtesy of GENERAL MOTORS CORP.

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

Installation Procedure

1. Install a stationary window into the opening. Refer to **Adhesive Installation of Stationary Windows**.
2. Install the air inlet grille. Refer to **Air Inlet Grille Panel Replacement**.
3. Install the windshield wipers arms and blades. Refer to **Windshield Wiper Arm Replacement**.
4. Install the windshield garnish molding. Refer to **Windshield Pillar Garnish Molding Replacement**.
5. Install the rearview mirror. Refer to **Inside Rearview Mirror Replacement**.
6. Connect the rain sensor connector, if equipped.
7. Connect the diversity antenna, if equipped.
8. Remove the double layer of masking tape around the perimeter of the painted surfaces and the interior trim.
9. Close the hood.

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 **Adhesive Installation of Stationary Windows**.

FRONT SIDE DOOR WINDOW ADJUSTMENT

Causes of Slow Moving Window

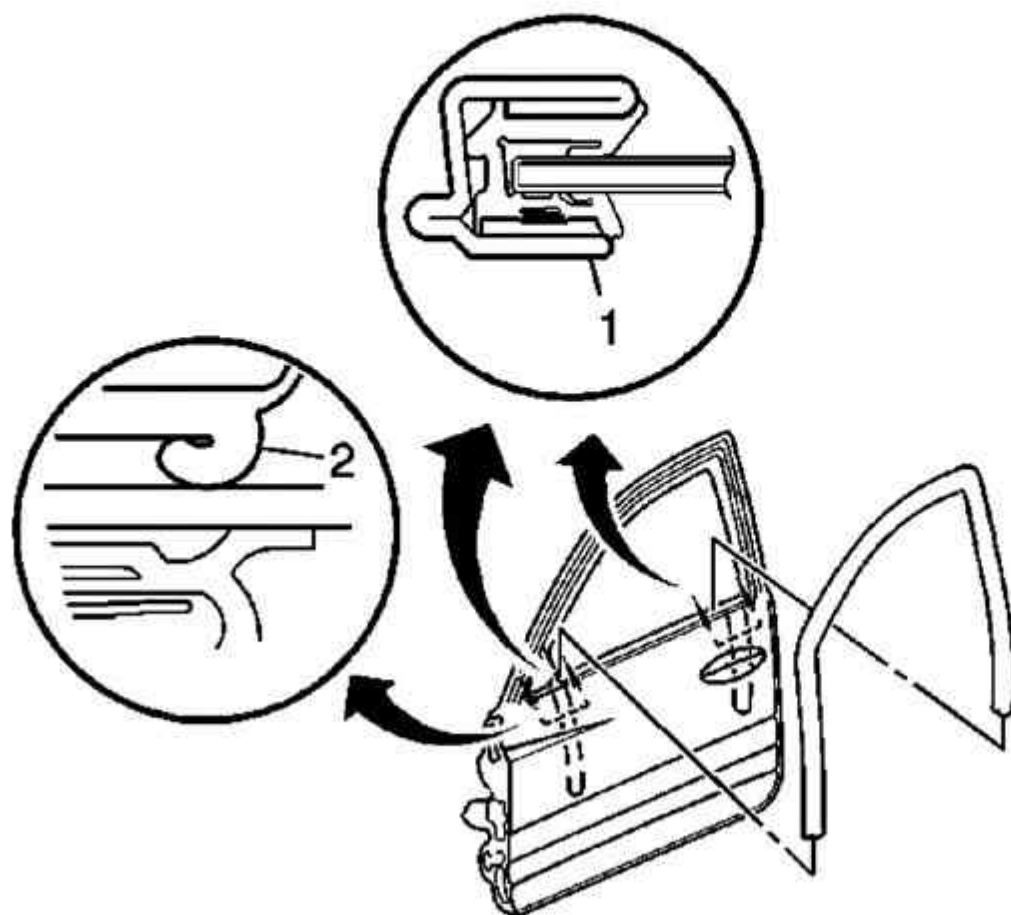


Fig. 7: View Of Internal Detail For Front Door Window Adjustment
Courtesy of GENERAL MOTORS CORP.

CAUTION: Disconnect the power window switch when working inside the driver door. When operated, the Express Up/Down Feature allows the door window to move very quickly, without stopping, which could cause personal injury.

IMPORTANT: Owners may comment that the windows operate slowly when going up or down.

1. Listed below are conditions that may cause a slow moving window.

- The window run channel outboard lip at the rearview mirror is rolled over or the window run channel outboard lip at the rear of door frame (2).
- The window is not seated in the run channel.
- The window is misaligned in the opening.
- The regulator is misaligned causing misalignment of the window.
- Inspect the power window motor for being loose.

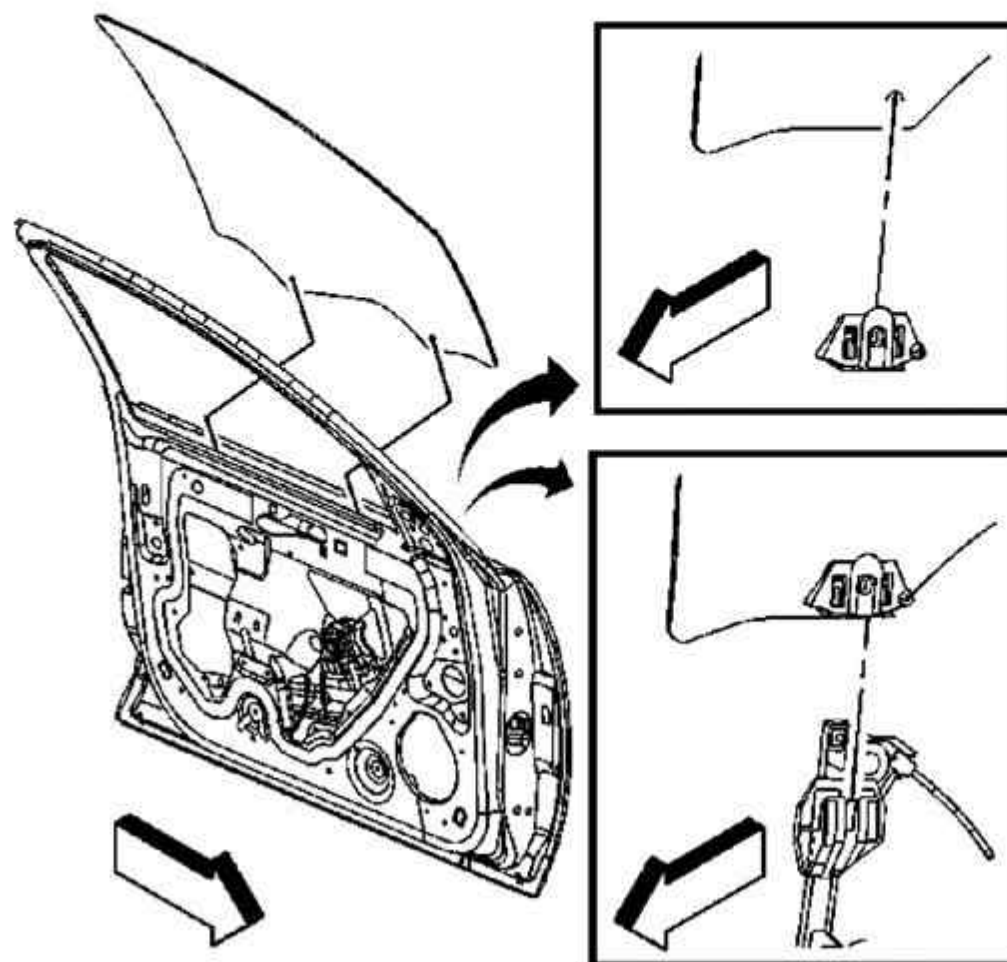


Fig. 8: Identifying Power Window Motor Electrical Connector
Courtesy of GENERAL MOTORS CORP.

2. After inspecting the conditions above, do the following:

Remove the front door trim panel. Refer to **Front Side Door Trim Panel Replacement**.

3. Remove the front door water deflector. Refer to **Front Side Door Water Deflector Replacement**.
4. Ensure that the window guide is fully seated and clipped.
5. Ensure that the window is fully seated into the window guide run channel.
6. Inspect the window for equal distance between the front and rear run channels.

Adjustment Procedure

1. Inspect for the following conditions before making adjustments.
 - Using a flat-bladed tool, straighten the run channel lip by pulling it out to its correct position.
 - Use a flat-bladed tool to push the run channel rearward to seat it in the door frame.
 - Inspect the window guide retainer to window for the proper alignment to the slots in the window.
 - Inspect the window to be straight up and down position.

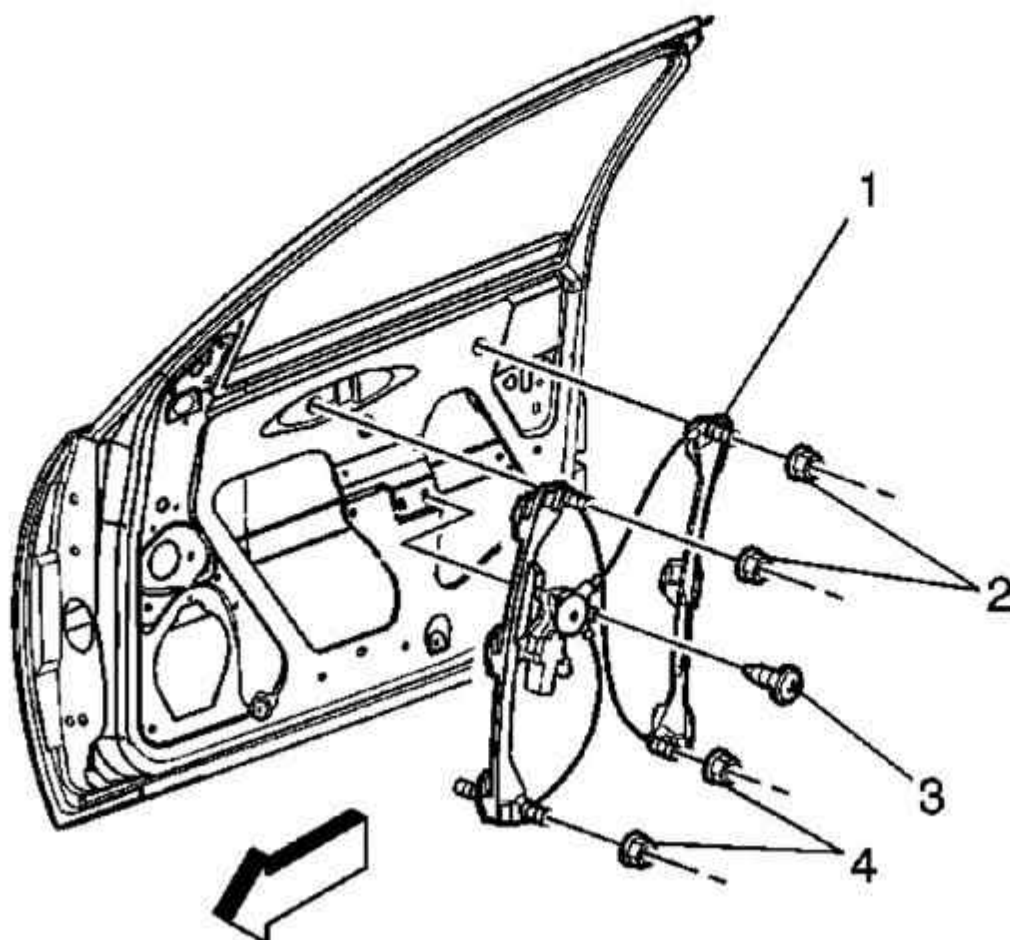


Fig. 9: View Of Window Regulator
Courtesy of GENERAL MOTORS CORP.

- Loosen the bolts that attach the window regulator (1) to the inner door panel, in the specified sequence (2, 3, 4).

NOTE: Refer to FASTENER NOTICE .

2. Tighten the bolts that attach the window regulator (1) to the inner door panel in the specified sequence (2, 3, 4).

Tighten: Tighten the bolts to 10 N.m (89 lb in).

3. Inspect the window for proper operation.
4. Install the front door water deflector. Refer to Front Side Door Water Deflector Replacement .
5. Install the front door trim panel. Refer to Front Side Door Trim Panel Replacement .

FRONT SIDE DOOR WINDOW REPLACEMENT

Removal Procedure

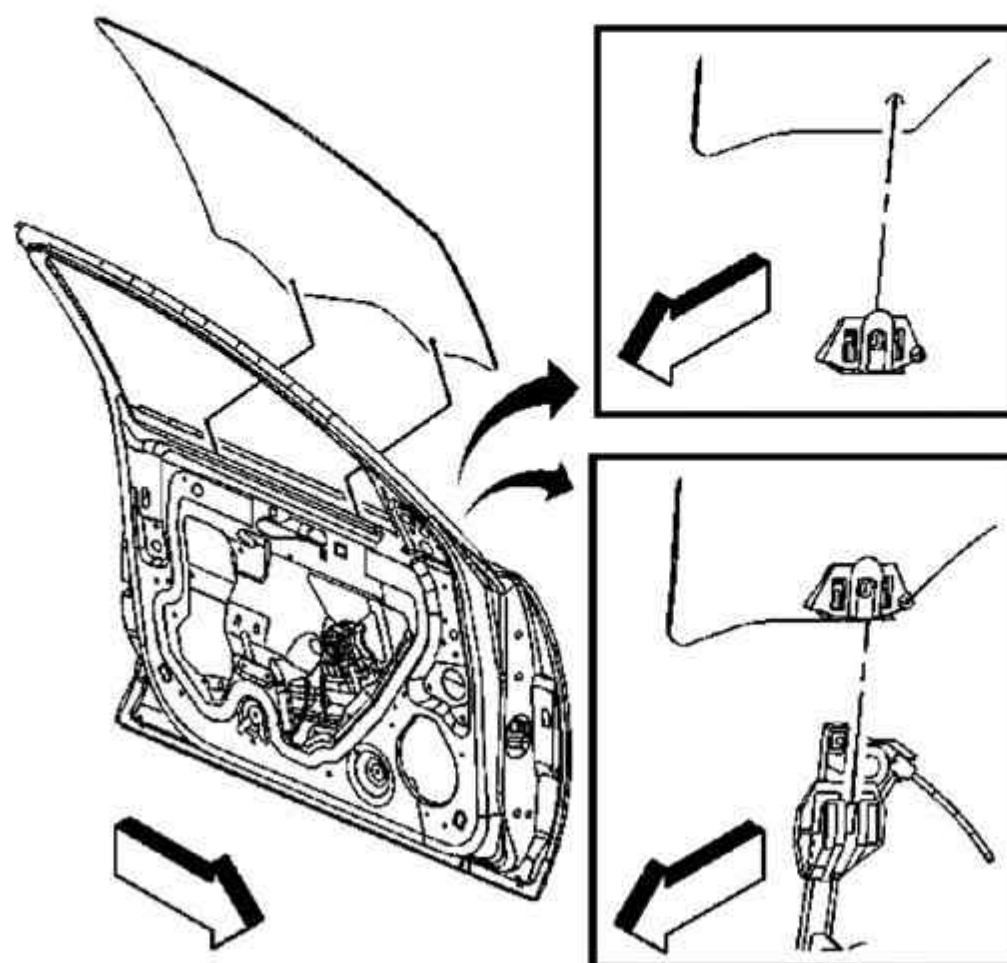


Fig. 10: Identifying Power Window Motor Electrical Connector
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to PAINT DAMAGE NOTICE .

1. Apply masking tape to the outer applique and frame.
2. Remove the front door trim panel. Refer to Front Side Door Trim Panel Replacement .
3. Remove the front door water deflector. Refer to Front Side Door Water Deflector Replacement .
4. Remove the front door inner window belt sealing strip. Refer to Front Side Door Window Belt Inner Sealing Strip Replacement .
5. Lower the window far enough in order to gain access through the inner panel, unsnap the window guide retainer from the window.
6. Push inward on the window guide retainer clip locks, lift upward on the window until released from the retaining clip.
7. Lower the window regulator to the full down position.
8. Remove the window from the door.

Installation Procedure

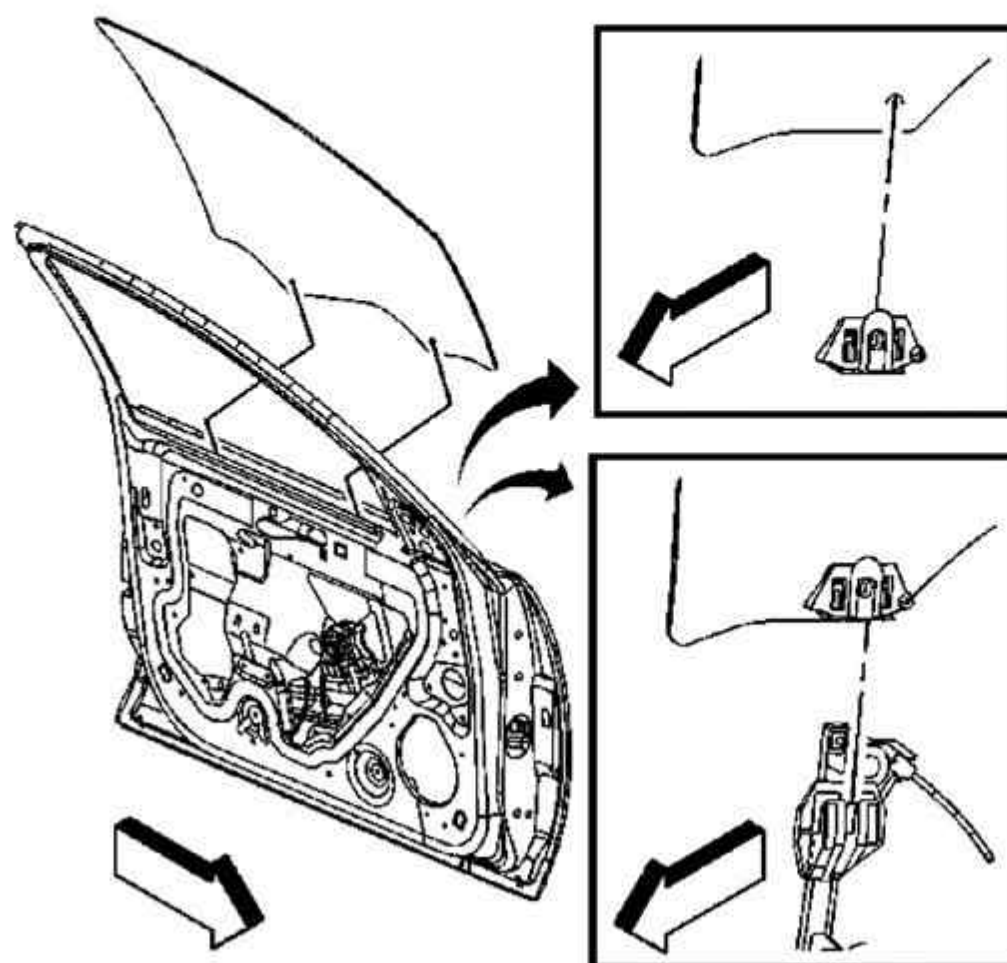


Fig. 11: Identifying Power Window Motor Electrical Connector
 Courtesy of GENERAL MOTORS CORP.

1. Position the window in between the inner and the outer panels.
 1. Point the lower front corner of the front door window down.
 2. Pass the front door window through the belt opening.
 3. Align the edges of the window with the door window weatherstrip.
 4. Ensure that both sealing lips on the front door outer belt sealing strip are not rolled over and pointing downward.

If this condition is present, the window will not raise properly.

2. Raise the window regulator to the middle position.
3. Install the rearward window to the guide retainer, snap the window into the window regulator.
4. Remove the masking tape.
5. Inspect the window for proper operation.
6. Install the front door inner belt sealing strip. Refer to Front Side Door Window Belt Inner Sealing Strip Replacement.
7. Install the front door water deflector. Refer to Front Side Door Water Deflector Replacement.
8. Install the front door trim panel. Refer to Front Side Door Trim Panel Replacement.

REAR SIDE DOOR WINDOW ADJUSTMENT

Causes of Slow Moving Window

IMPORTANT: Owners may comment that the windows operate slowly when going up or down.

1. Listed below are conditions that may cause a slow moving window:
 - The window run channel outboard lip at the rear of door frame.
 - The window is not seated in the run channel.
 - The window is misaligned in the opening.
 - The regulator is misaligned causing misalignment of the window.

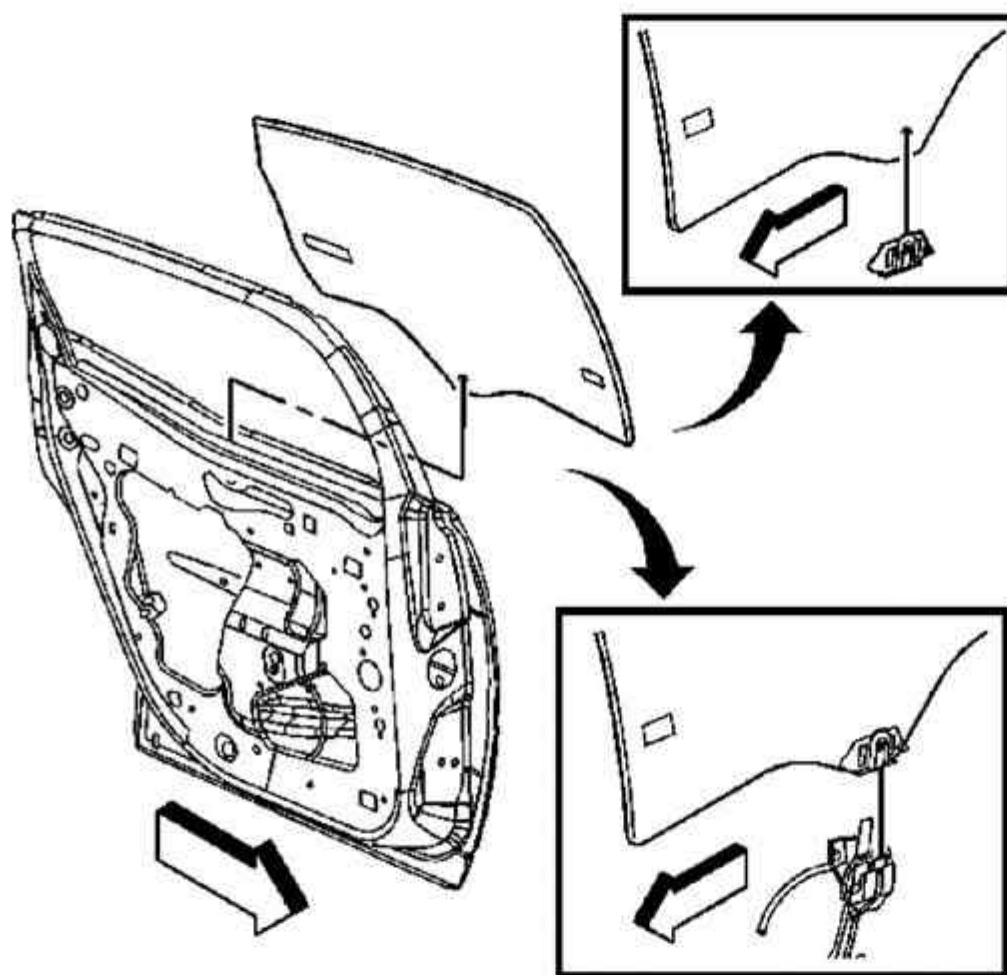


Fig. 12: View Of Window Guide
Courtesy of GENERAL MOTORS CORP.

2. After inspecting the conditions above, do the following:
 1. Remove the rear door trim panel. Refer to **Rear Side Door Trim Panel Replacement**.
 2. Remove the rear door water deflector. Refer to **Rear Side Door Water Deflector Replacement**.
 3. Ensure that the window guide is fully seated and clipped.

Ensure that the window is fully seated in the window guide run channel.

 4. Inspect the window for equal distance between the front and rear run channels.
 5. Inspect the power window motor for being loose.

6. Inspect the window for alignment.

Adjustment Procedure

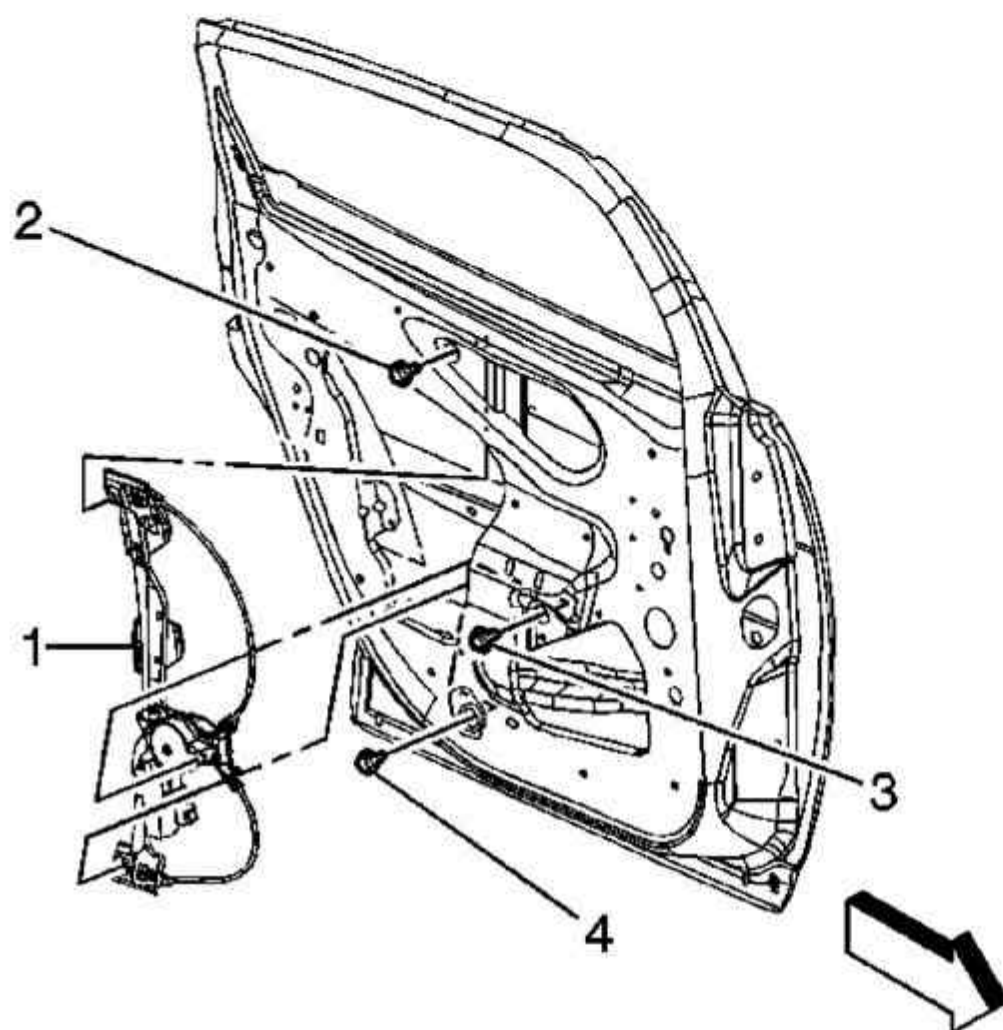


Fig. 13: View Of Window Regulator
Courtesy of GENERAL MOTORS CORP.

1. Inspect for the following conditions before making adjustments:
 - Using a flat-bladed tool, straighten the run channel lip by pulling it out to its correct position.
 - Use a flat-bladed tool to push the run channel rearward to seat it in the door frame.
 - Inspect the window guide channel to window bolts to ensure that they are in the proper slots and the window is not tilted forward.
 - Inspect the window to be straight up and down position.
 - Loosen the bolts that attach the window regulator (1) to the inner door panel, in the specified sequence (2, 3, 4).

NOTE: Refer to Fastener Notice .

2. Loosen the bolts that attach the window regulator (1) to the inner door panel in the specified sequence (2, 3, 4).

Tighten: Tighten the bolts to 10 N.m (89 lb in).

3. Inspect the window for proper operation.
4. Install the rear door water deflector. Refer to **Rear Side Door Water Deflector Replacement**.
5. Install the rear door trim panel. Refer to **Rear Side Door Trim Panel Replacement**.

REAR SIDE DOOR WINDOW REPLACEMENT

Removal Procedure

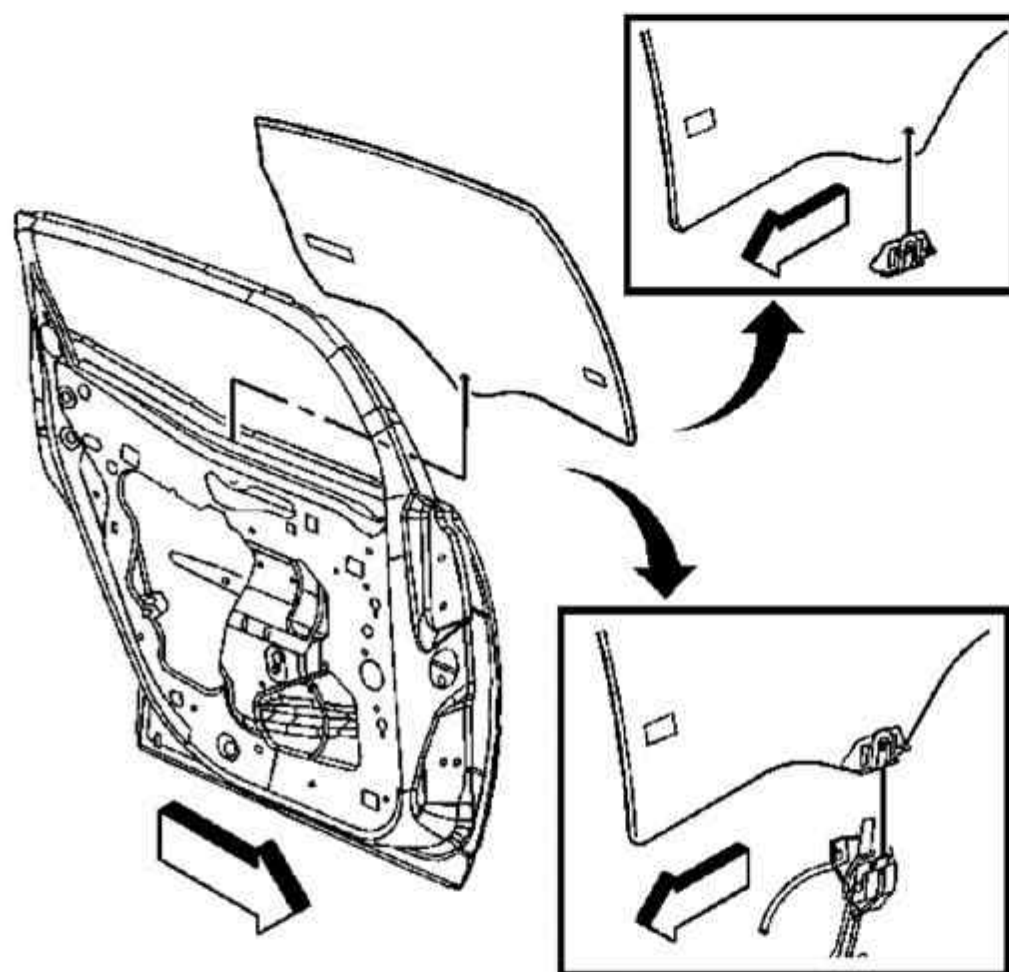


Fig. 14: View Of Window Guide
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to **PAINT DAMAGE NOTICE**.

1. Apply masking tape to the outer applique and frame.
2. Remove the rear door trim panel. Refer to **Rear Side Door Trim Panel Replacement**.
3. Remove the rear door water deflector. Refer to **Rear Side Door Water Deflector Replacement**.
4. Remove the rear door window inner belt sealing strip. Refer to **Rear Door Window Belt Inner Sealing Strip Replacement**.
5. Lower the window far enough in order to gain access through the inner panel, unsnap the window guide retainer from the window.
6. Push inward on the window guide retainer clip locks, lift upward on the window until released from the retaining clip.
7. Lower the window regulator to the full down position.

8. Remove the window from the door.

Installation Procedure

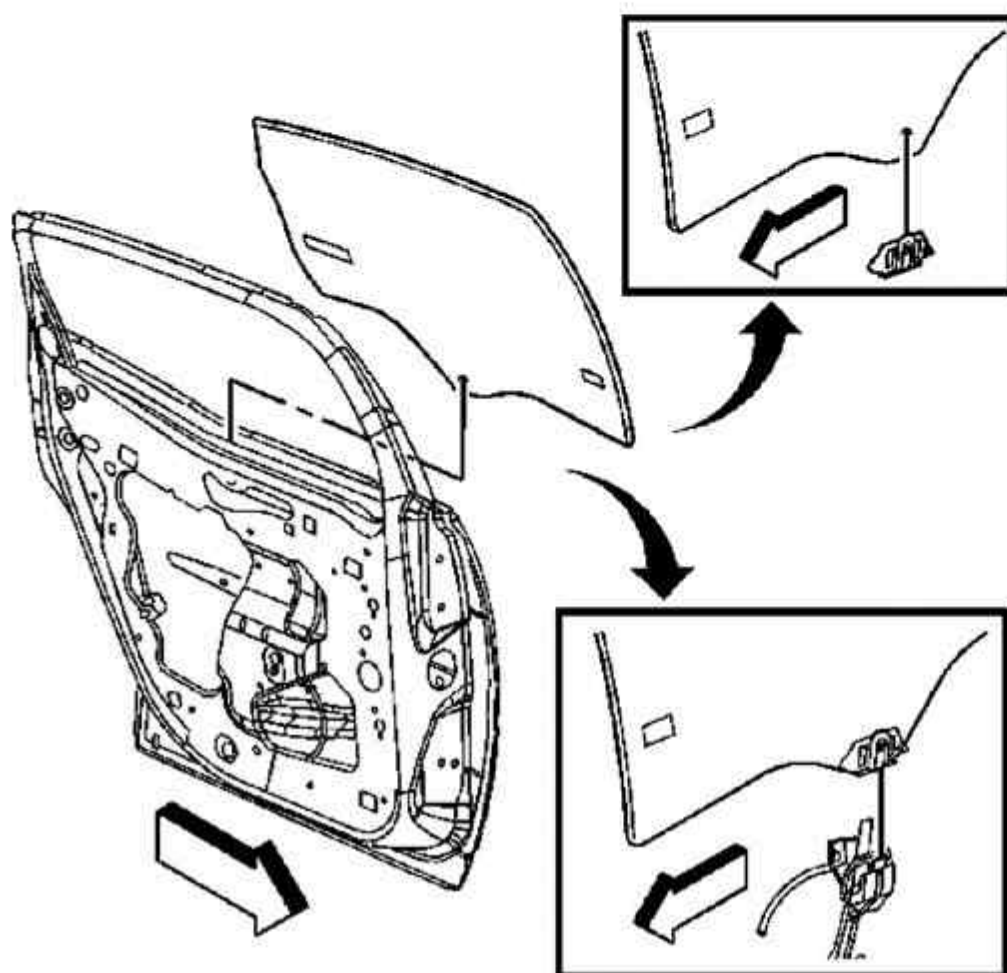


Fig. 15: View Of Window Guide
Courtesy of GENERAL MOTORS CORP.

1. Position the window in between the inner and the outer panels.
 1. Point the lower front corner of the rear door window down.
 2. Pass the rear door window through the belt opening.
 3. Align the edges of the window with the rear door window weatherstrip.
 4. Ensure that both sealing lips on the rear door outer belt sealing strip are not rolled over and pointing downward.

If this condition is present, the rear door window will not raise properly.

2. Raise the window regulator to the middle position.
3. Install the rearward window into the window guide retainer, snap the window into the window regulator.
4. Remove the masking tape.
5. Inspect the window for proper operation.
6. Install the rear door window inner belt sealing strip. Refer to **Rear Door Window Belt Inner Sealing Strip Replacement**.
7. Install the rear door water deflector. Refer to **Rear Side Door Water Deflector Replacement**.

8. Install the rear door trim panel. Refer to Rear Side Door Trim Panel Replacement.

QUARTER WINDOW REPLACEMENT

Tools Required

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

Removal Procedure

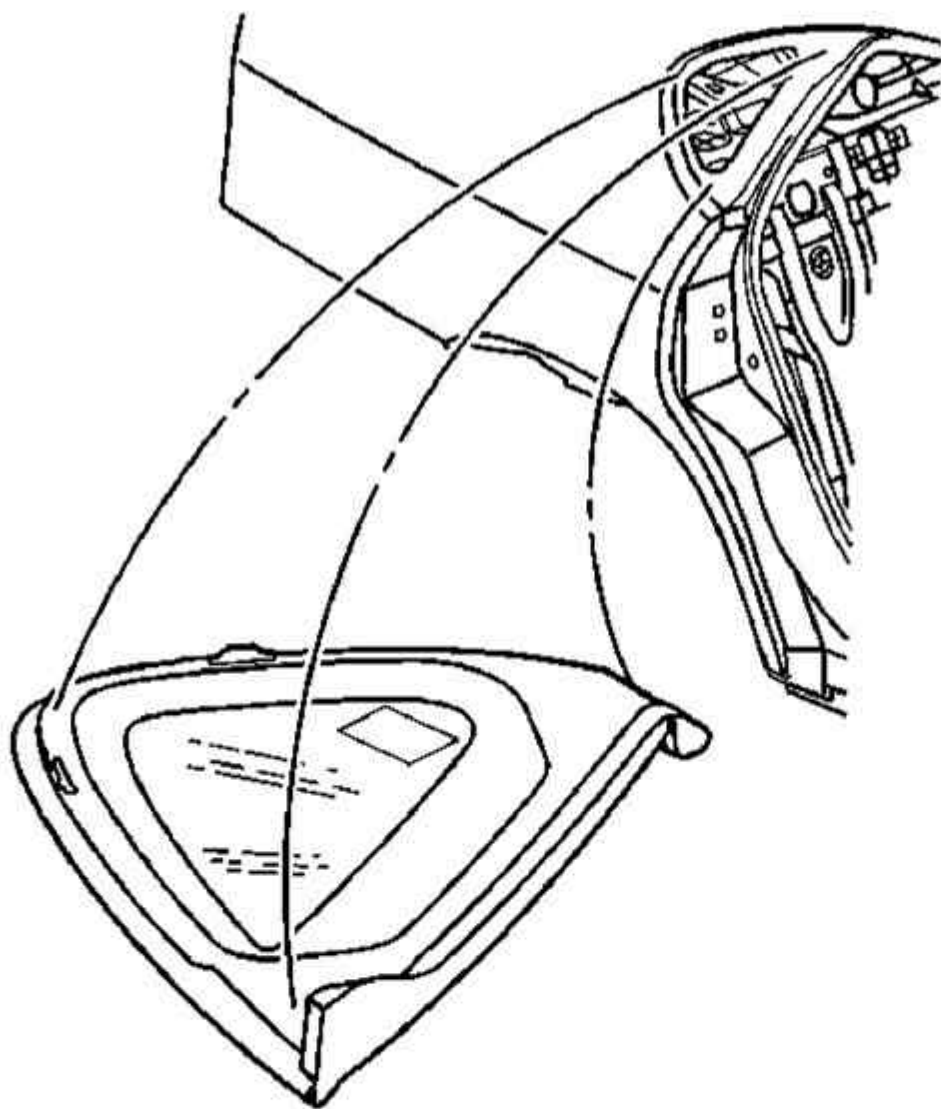


Fig. 16: Quarter Panel (Impala)
Courtesy of GENERAL MOTORS CORP.

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

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

1. Remove the rear quarter upper trim. Refer to [Rear Quarter Upper Trim Panel Replacement](#) .
2. Remove the rear quarter lower trim. Refer to [Rear Quarter Lower Trim Panel Replacement](#) .

CAUTION: Refer to [Glass and Sheet Metal Handling Caution](#) .

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

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

Installation Procedure

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

REAR WINDOW REPLACEMENT

Tools Required

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

Removal Procedure

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

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

1. Remove the rear window reveal molding. Refer to **Adhesive Installation of Stationary Windows**.
2. Open the rear compartment lid in order to access the reveal molding.

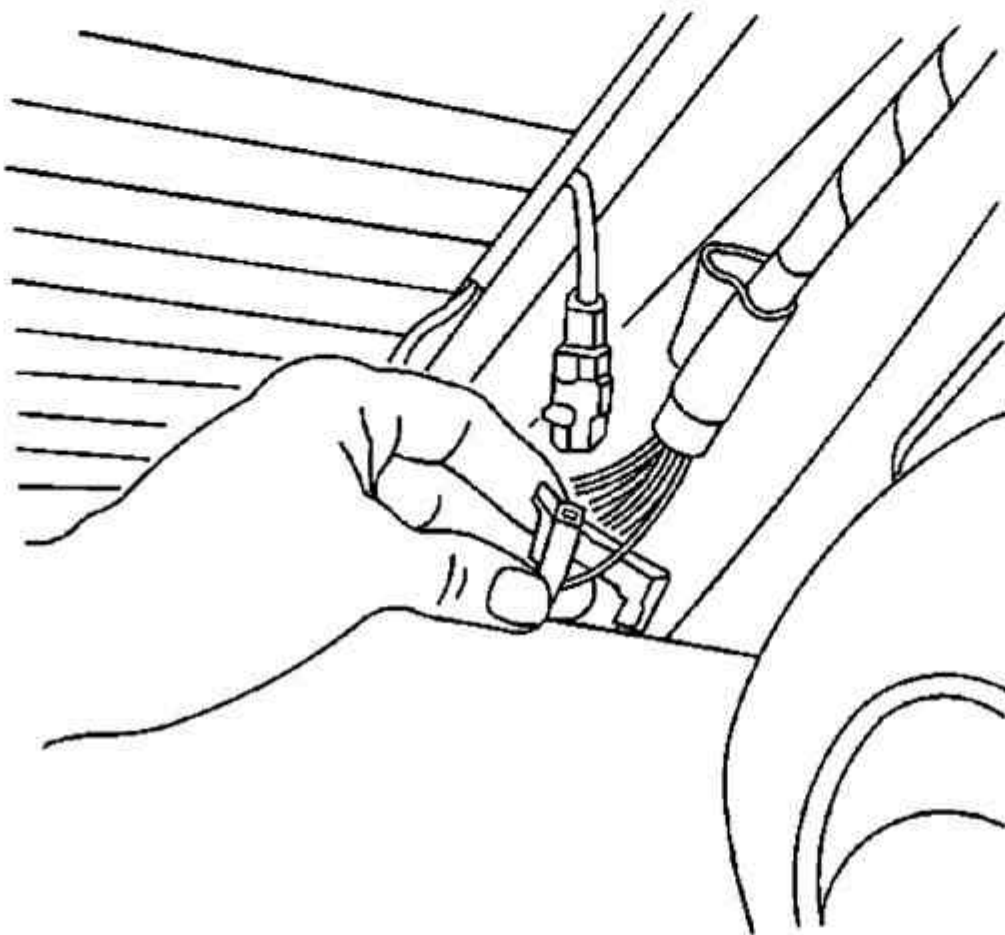


Fig. 17: Locating Rear Window Defogger Electrical Connector
Courtesy of GENERAL MOTORS CORP.

3. Disconnect the rear window defogger electrical connectors.
4. Disconnect the OnStar® antenna, if equipped.

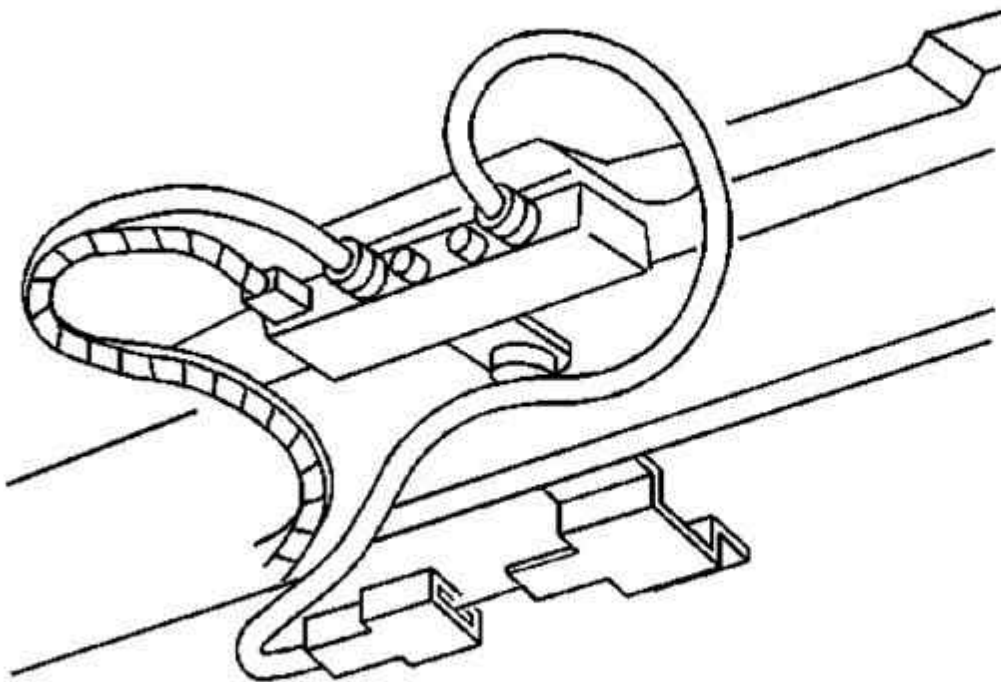


Fig. 18: View Of Rear Window Radio Antenna Connector
Courtesy of GENERAL MOTORS CORP.

5. Disconnect the rear window radio antenna connector.

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

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

CAUTION: Refer to GLASS AND SHEET METAL HANDLING CAUTION.

IMPORTANT: The rear window reveal molding fills the cavities between the body and window. If the window reveal molding is stretched or damaged it cannot be reused.

7. The rear window reveal molding is a one-piece molding. Grasp the lower corner of the window reveal molding by hand and slowly pull the reveal molding away from the window.

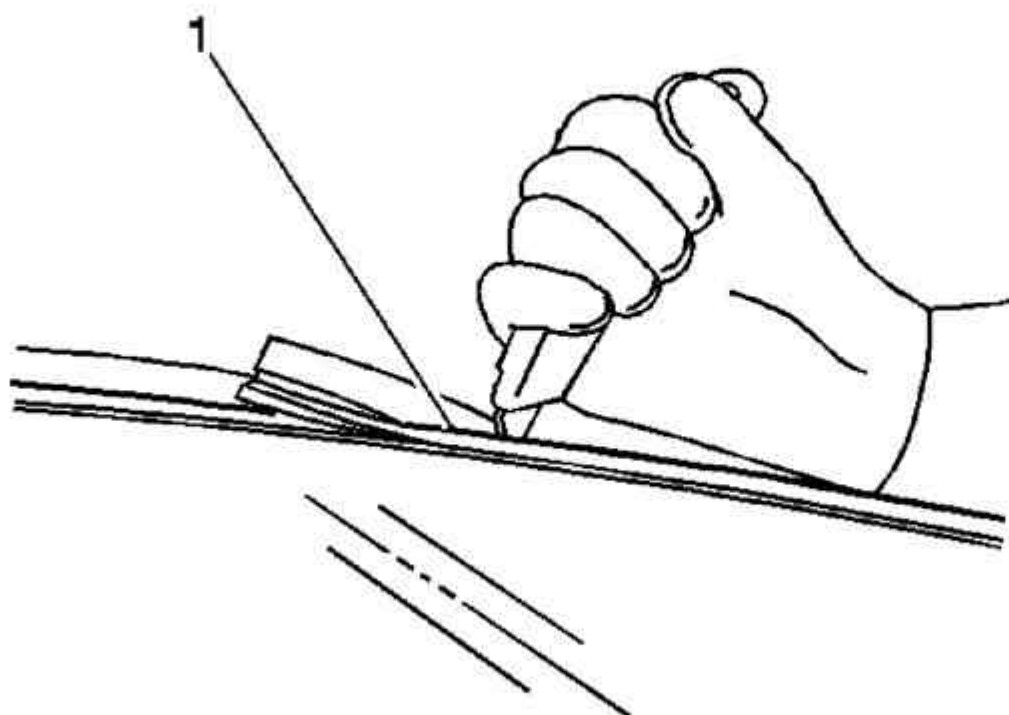


Fig. 19: Using Utility Knife To Remove Reveal Molding
Courtesy of GENERAL MOTORS CORP.

8. Remove the rear window reveal molding (1). Refer to **Rear Window Reveal Molding Replacement**.
9. If the window reveal molding (1) will not release, use a utility knife in order to cut around the window in order to remove the rear window reveal molding.

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

10. 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 **J 39032** or equivalent in order to remove the window. See **Special Tools**.
 - Remove the quarter modular window from the pinchweld flange.



Fig. 20: Identifying Rear Window
Courtesy of GENERAL MOTORS CORP.

11. With the aid of an assistant lift the rear window from the opening.

Installation Procedure

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

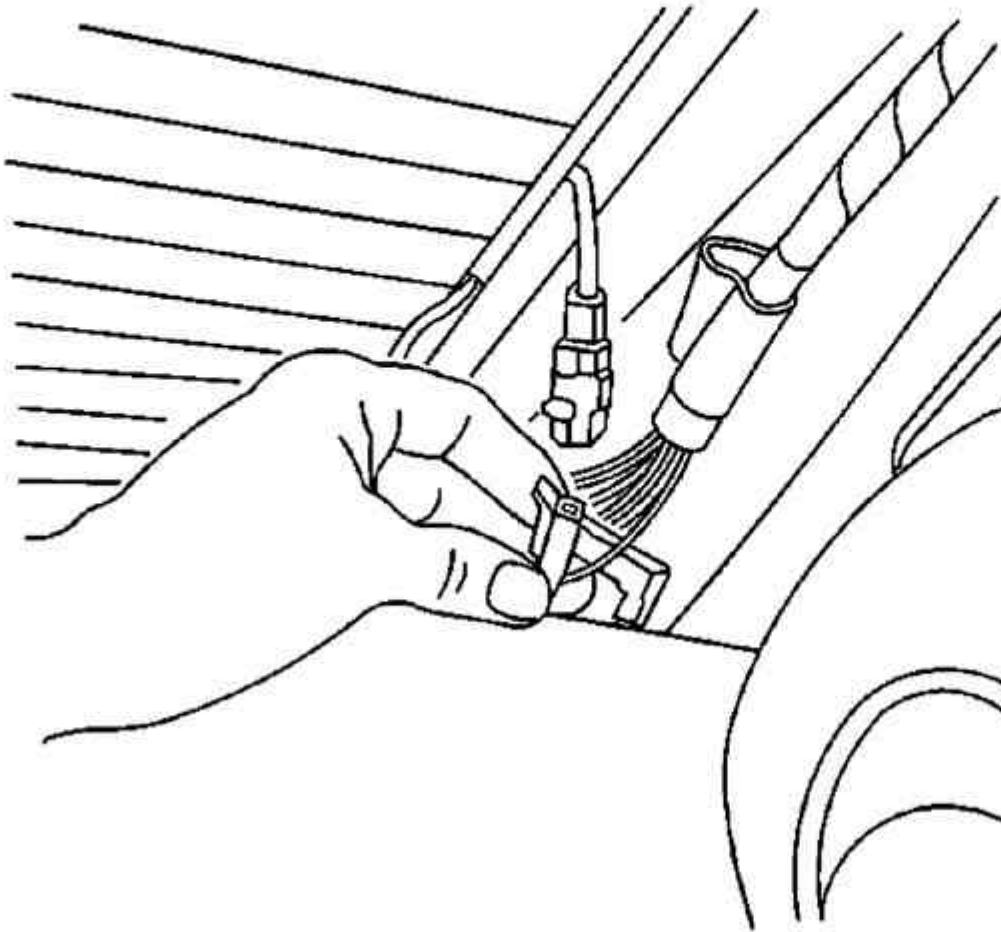


Fig. 21: Locating Rear Window Defogger Electrical Connector
Courtesy of GENERAL MOTORS CORP.

2. Connect the rear window defogger electrical connectors.

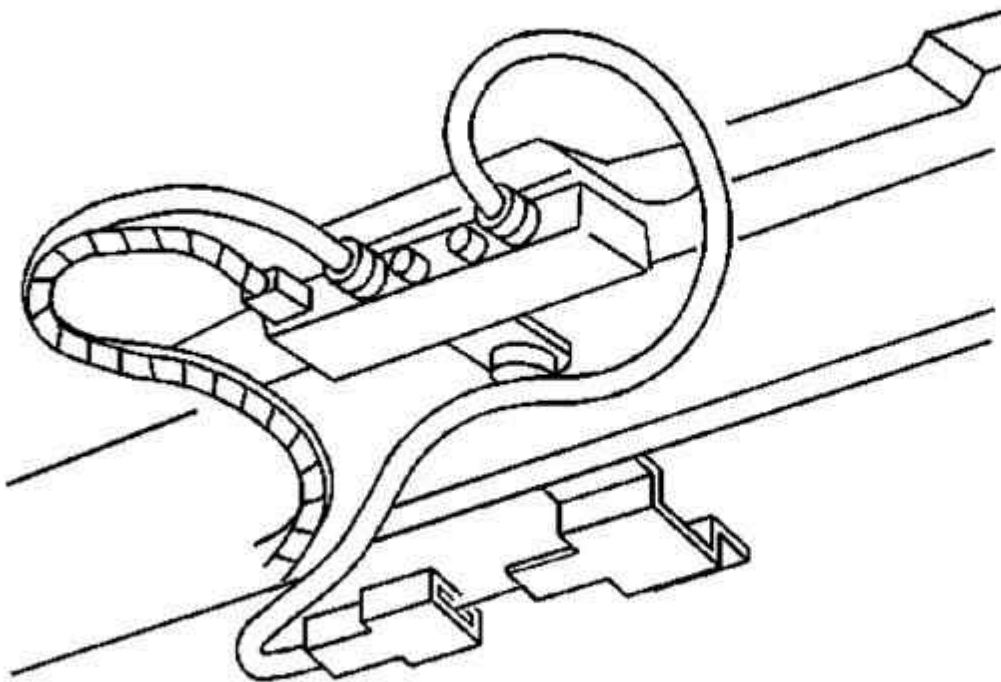


Fig. 22: View Of Rear Window Radio Antenna Connector
Courtesy of GENERAL MOTORS CORP.

3. Install the rear window radio antenna connector.
4. Connect the OnStar® antenna, if equipped.

Check the radio and OnStar® system to verify reception.

5. Close the rear compartment lid.
6. Remove the double layer of masking tape around the perimeter of the painted surfaces and the interior trim.

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 **Adhesive Installation of Stationary Windows**.

REAR SIDE DOOR WINDOW CHANNEL REPLACEMENT

Removal Procedure

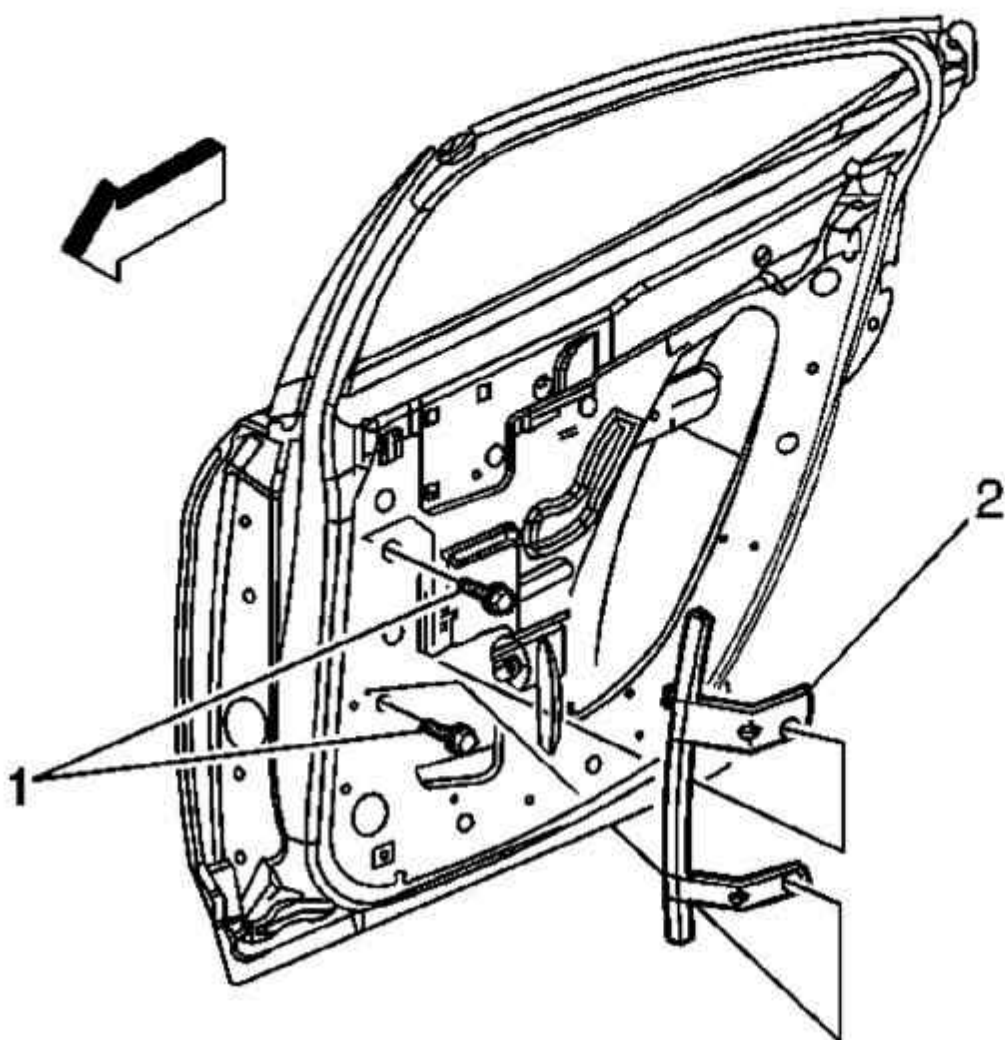


Fig. 23: Identifying Window Run Channel - Rear Door
Courtesy of GENERAL MOTORS CORP.

1. Remove the rear door trim panel. Refer to Rear Side Door Trim Panel Replacement.
2. Remove the rear door water deflector. Refer to Rear Side Door Water Deflector Replacement.
3. Position the window in the full down position.
4. Remove the window lower run channel bolts (1).
5. Remove the window lower run channel (2) from the door.

Installation Procedure

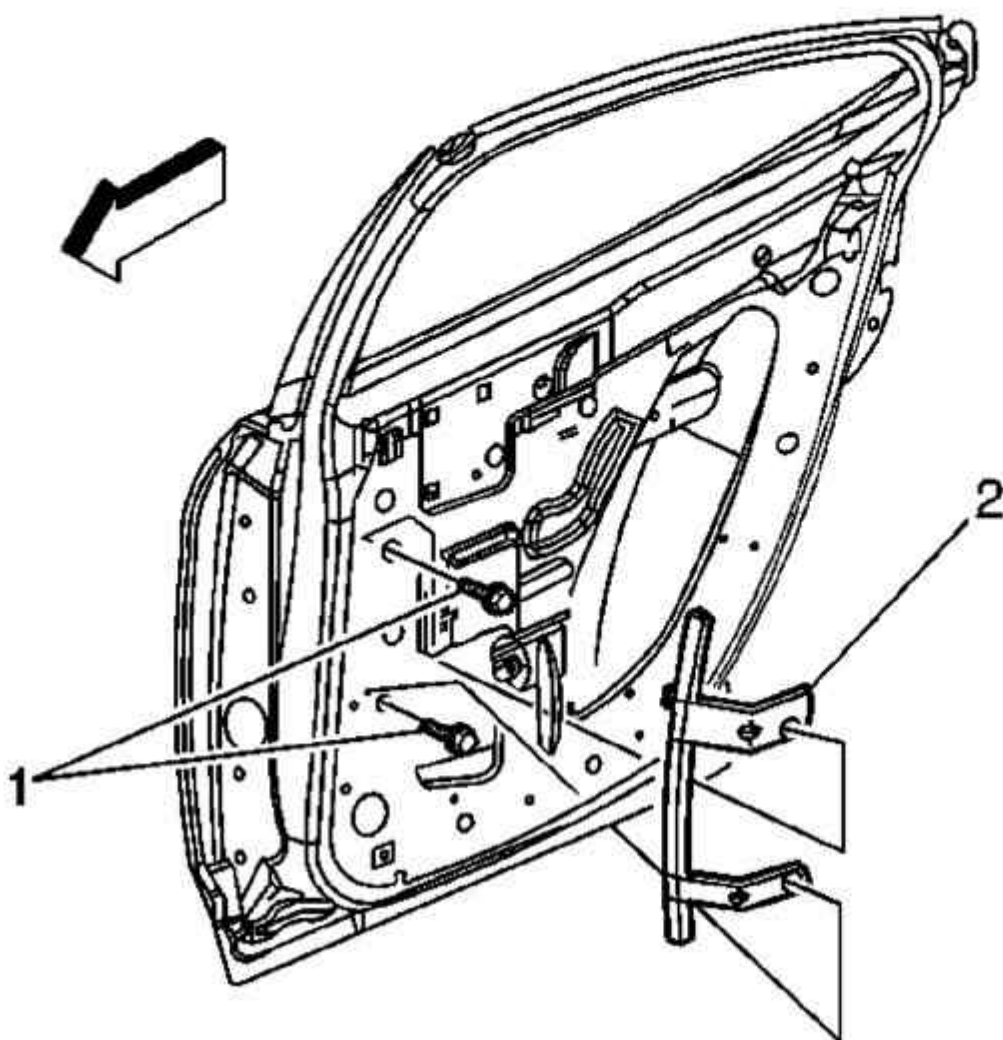


Fig. 24: Identifying Window Run Channel - Rear Door
Courtesy of GENERAL MOTORS CORP.

1. Install the window lower run channel (2) in the door.

NOTE: Refer to FASTENER NOTICE .

2. Install the window lower run channel bolts (1).

Tighten: Tighten the bolts to 10 N.m (89 lb in).

3. Inspect the window for proper operation.
4. Install the rear door water deflector. Refer to Rear Side Door Water Deflector Replacement .
5. Install the rear door trim panel. Refer to Rear Side Door Trim Panel Replacement .

FRONT SIDE DOOR WINDOW SWITCH REPLACEMENT

Removal Procedure

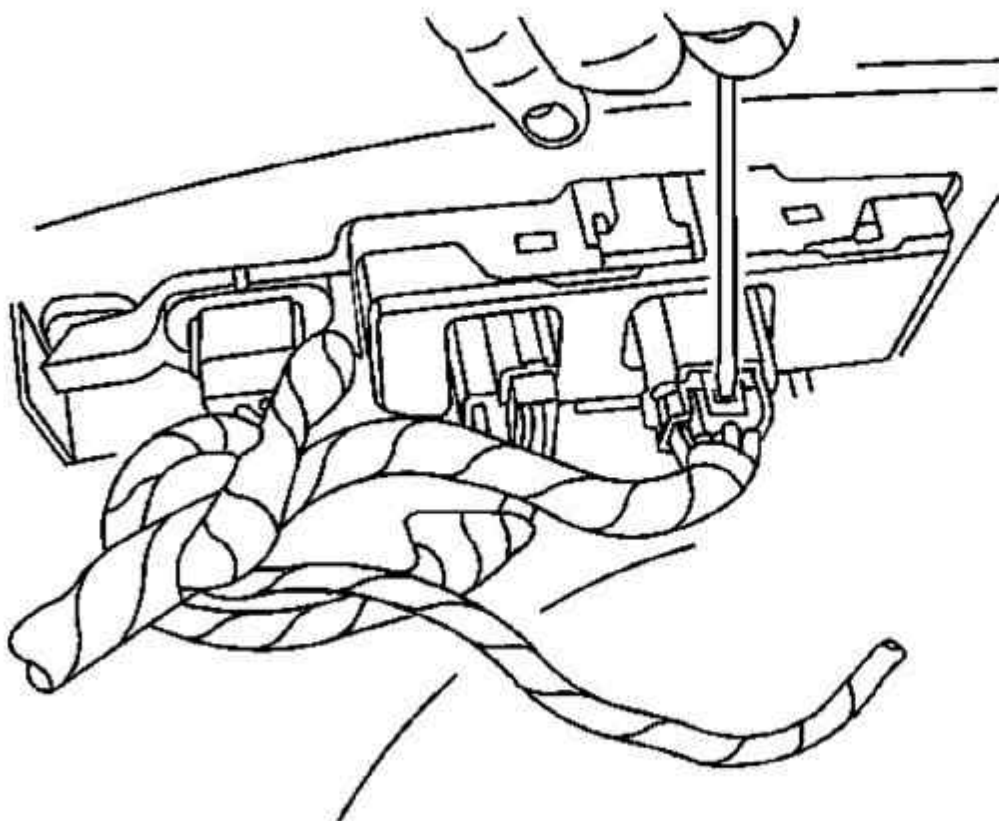


Fig. 25: Identifying Window & Rearview Mirror Switches
Courtesy of GENERAL MOTORS CORP.

1. Remove the front door trim panel. Refer to **Front Side Door Trim Panel Replacement**.
2. Use a flat-bladed tool to remove the power window electrical connectors.

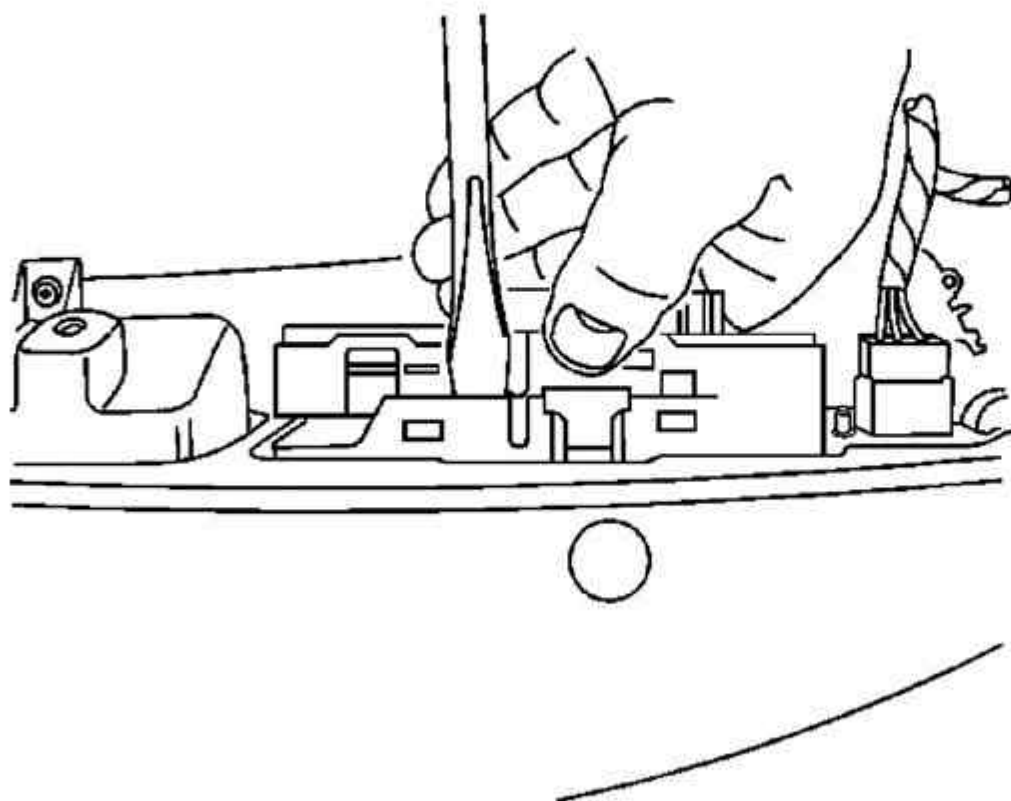


Fig. 26: Identifying Trim Mounting Plate
Courtesy of GENERAL MOTORS CORP.

3. Use a flat-bladed tool to remove the power window switch from the trim mounting plate.
4. Remove the switch from the vehicle.

Installation Procedure

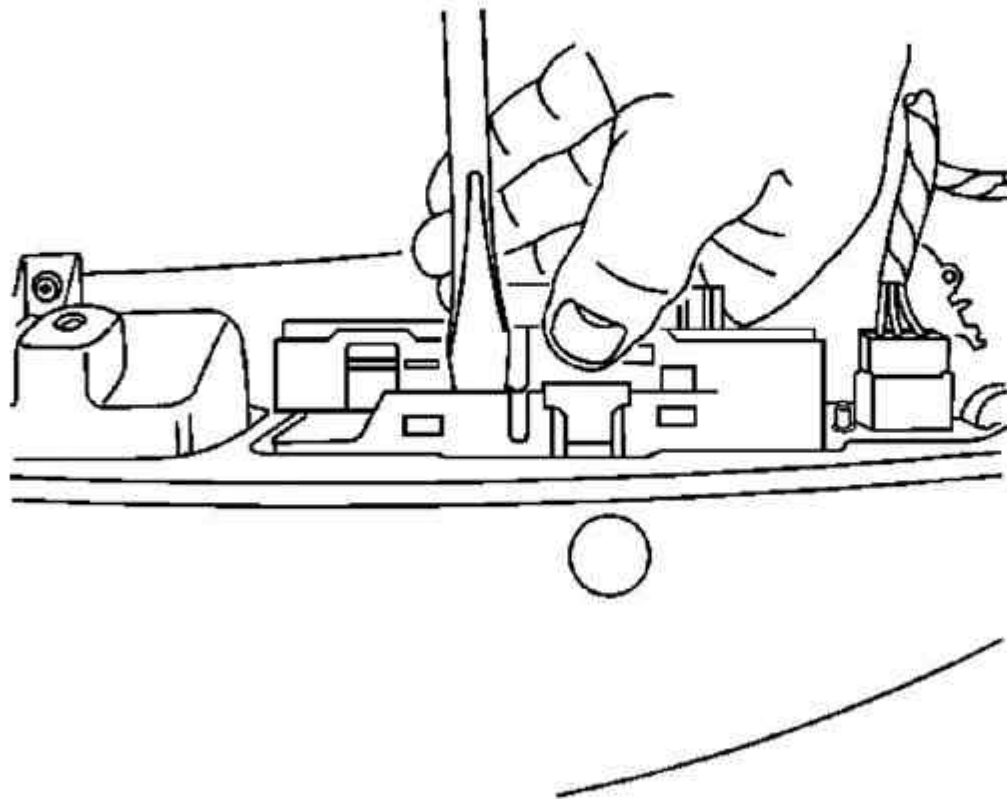


Fig. 27: Identifying Trim Mounting Plate
Courtesy of GENERAL MOTORS CORP.

1. Install the switch into the mounting plate.

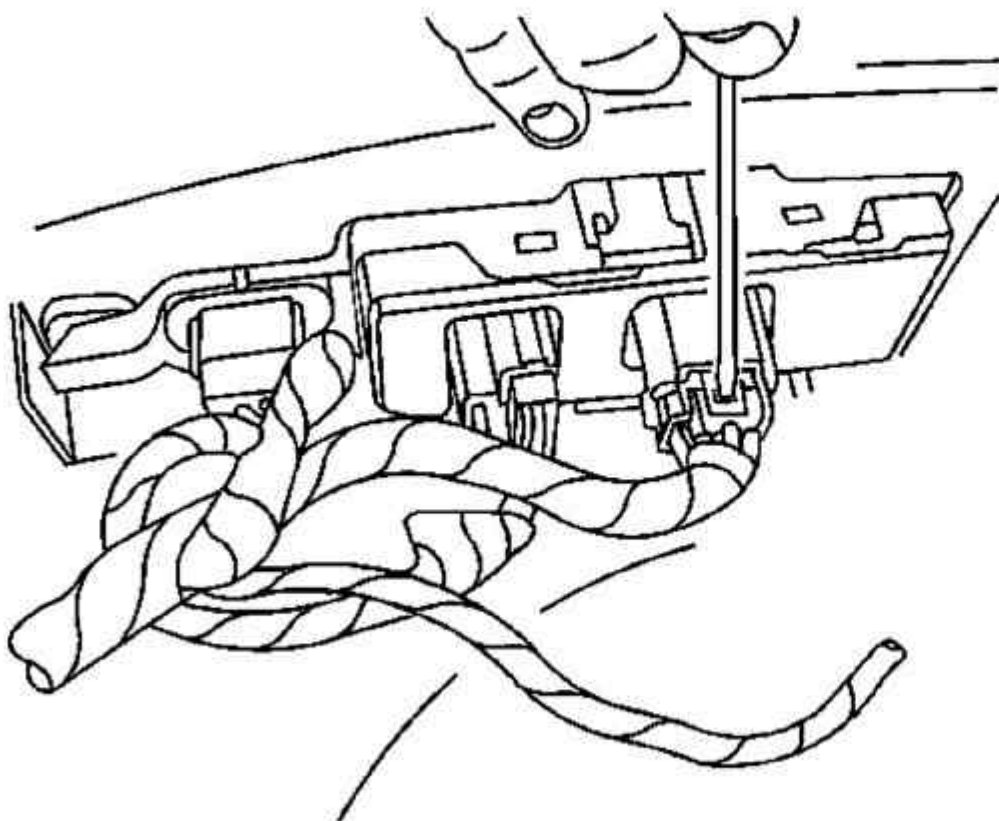


Fig. 28: Identifying Window & Rearview Mirror Switches
Courtesy of GENERAL MOTORS CORP.

2. Connect the electrical connectors.
3. Install the front door trim panel. Refer to **Front Side Door Trim Panel Replacement**.

REAR SIDE DOOR WINDOW SWITCH REPLACEMENT

Removal Procedure

1. Remove the rear door trim panel. Refer to **Rear Side Door Trim Panel Replacement**.

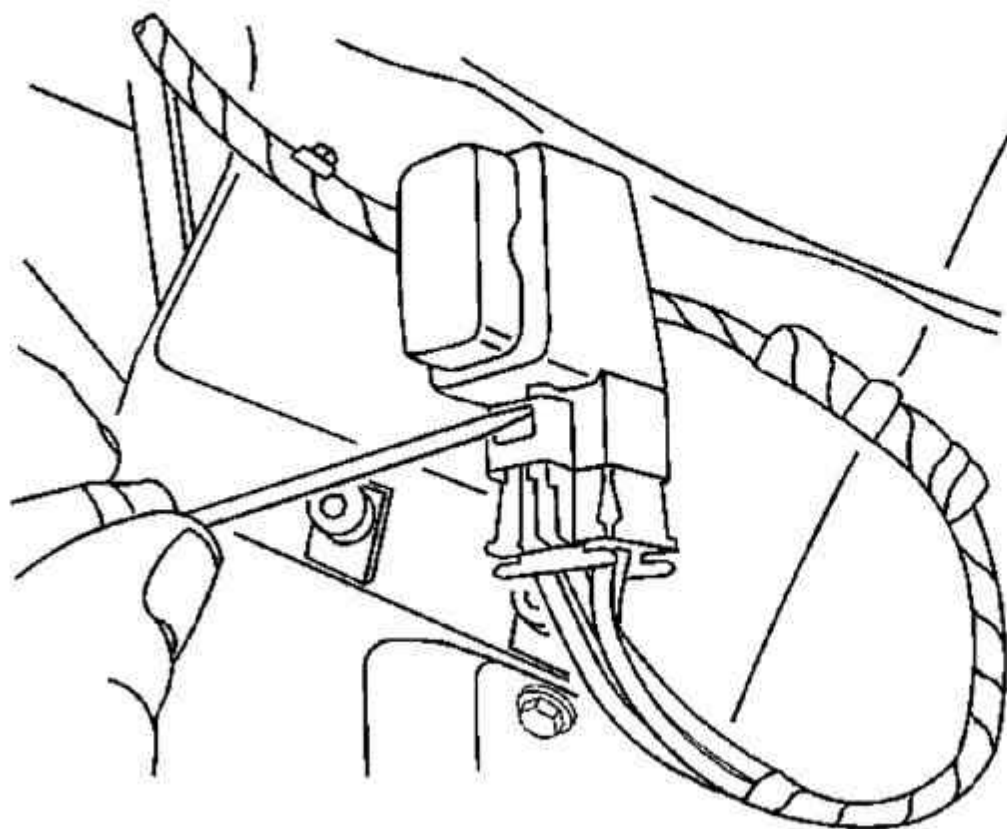


Fig. 29: View Of Door Harness Connector
Courtesy of GENERAL MOTORS CORP.

2. Use a flat-bladed tool to remove the power window switch from the door harness connector.
3. Remove the switch from the vehicle.

Installation Procedure

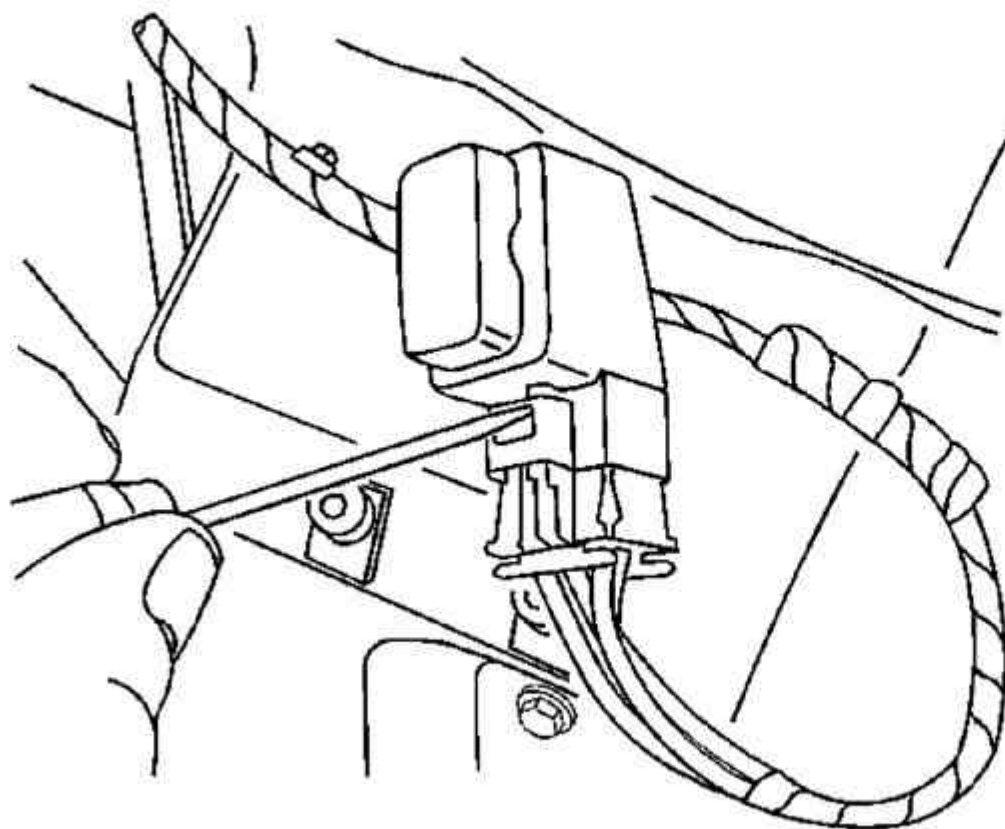


Fig. 30: View Of Door Harness Connector
Courtesy of GENERAL MOTORS CORP.

1. Connect the window switch to the door harness electrical connector.
2. Install the rear door trim panel. Refer to Rear Side Door Trim Panel Replacement .

FRONT SIDE DOOR WINDOW REGULATOR REPLACEMENT

Removal Procedure

CAUTION: Disconnect the power window switch when working inside the driver door. When operated, the Express Up/Down Feature allows the door window to move very quickly, without stopping, which could cause personal injury.

1. Remove the front door trim panel. Refer to Front Side Door Trim Panel Replacement .
2. Remove the front door water deflector. Refer to Front Side Door Water Deflector Replacement .

NOTE: Refer to PAINT DAMAGE NOTICE .

3. Apply masking tape to the outer reveal.

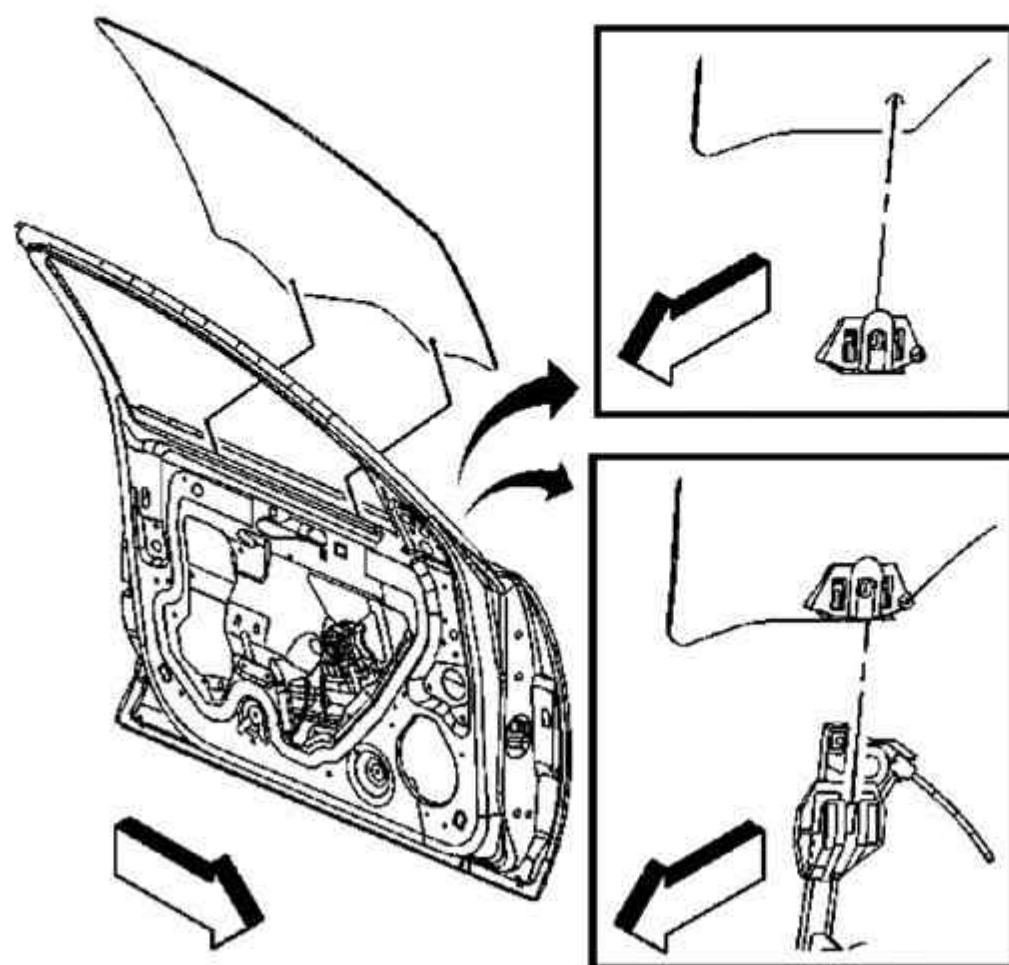


Fig. 31: Identifying Power Window Motor Electrical Connector
Courtesy of GENERAL MOTORS CORP.

4. Raise the window far enough in order to gain access through the inner door panel to the window guide retainer clip.
5. Push inward on the window guide retainer clip locks, lift upward on the window until released from the retaining clip.
6. Raise the window to the full up position and tape in place.
7. Disconnect the electrical connector from the power window motor by pulling up on the tab to release it.

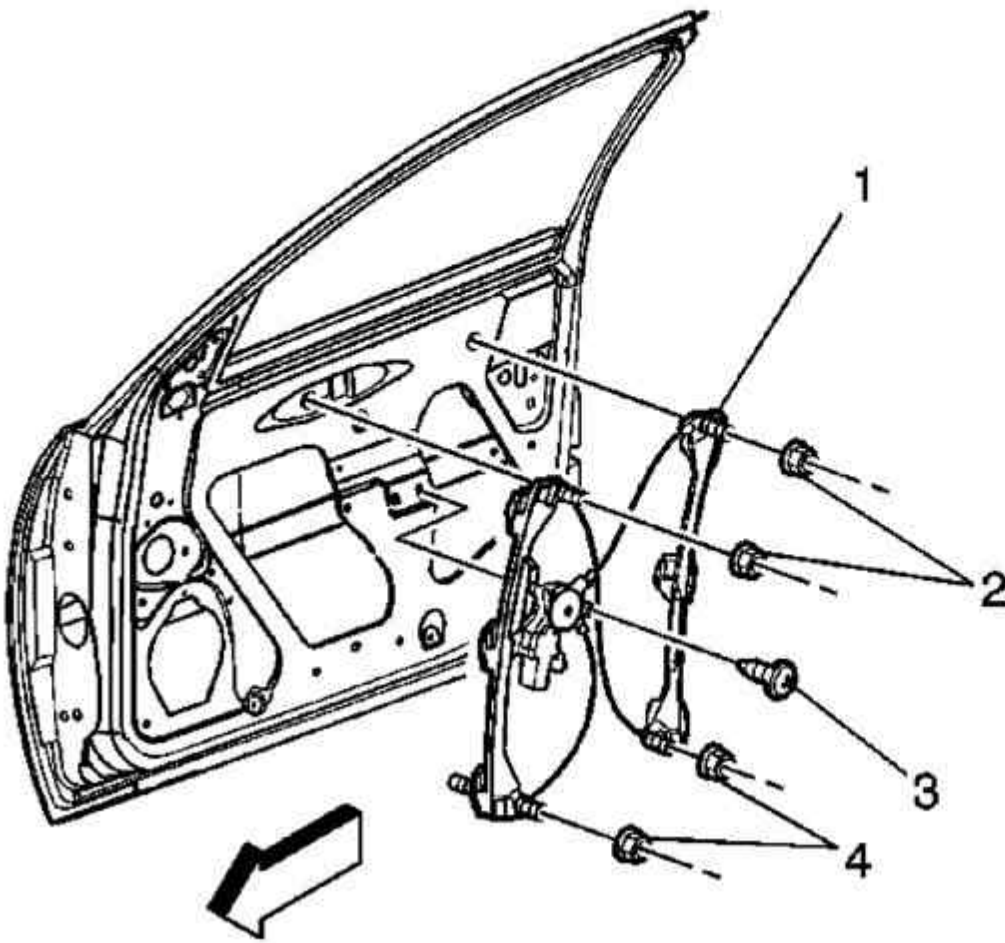


Fig. 32: View Of Window Regulator
Courtesy of GENERAL MOTORS CORP.

8. Remove the bolt from the window regulator motor (3).
9. Remove the nuts (2, 4) from the window regulator studs.
10. Remove the window regulator and motor through the access opening in the inner door panel.
11. Remove the power window motor from the window regulator. Refer to **Front Side Door Window Regulator Motor Replacement**.

Installation Procedure

1. Install the power window motor to the window regulator. Refer to **Front Side Door Window Regulator Motor Replacement**.

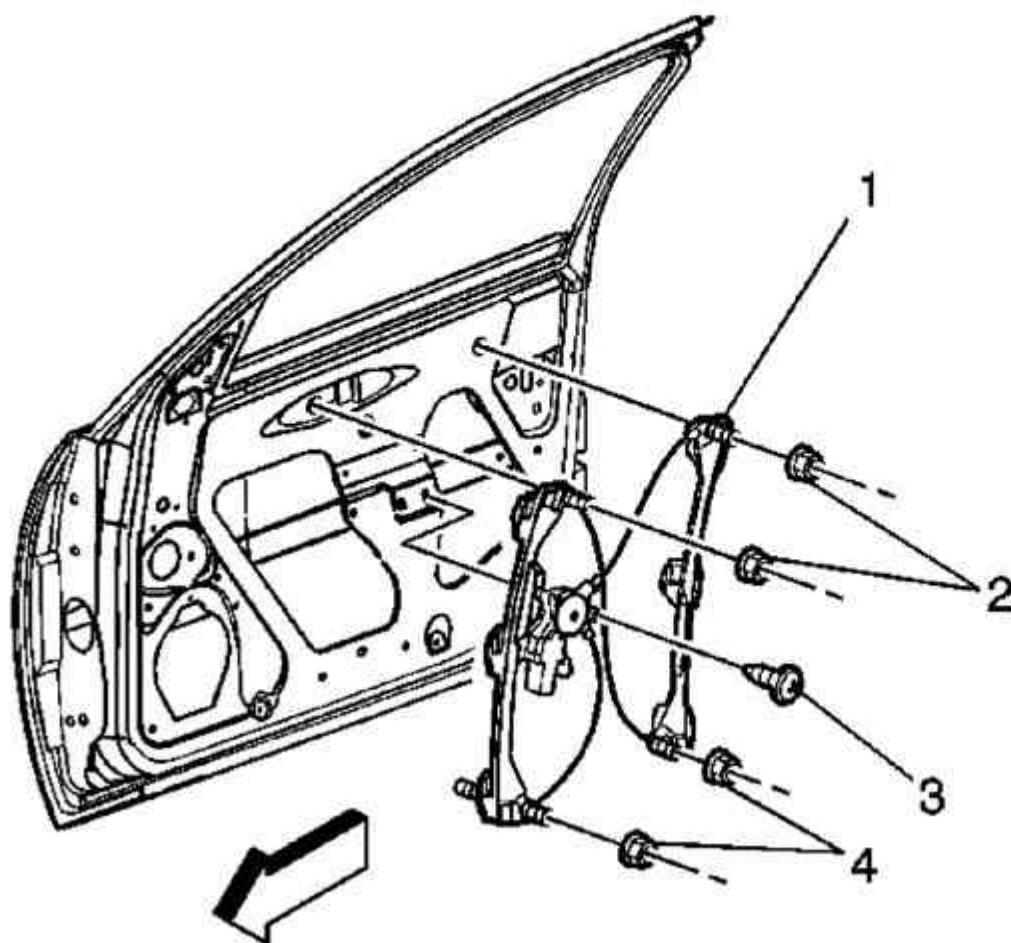


Fig. 33: View Of Window Regulator
Courtesy of GENERAL MOTORS CORP.

2. Install the window regulator and motor through the access opening in the inner door panel.
3. Install the nuts (2, 4) to the window regulator studs.
4. Install the window regulator motor bolts (3).

NOTE: Refer to FASTENER NOTICE .

5. Tighten the window regulator bolt and nuts to the door.

Tighten: Tighten the bolt and nuts to 10 N.m (89 lb in).

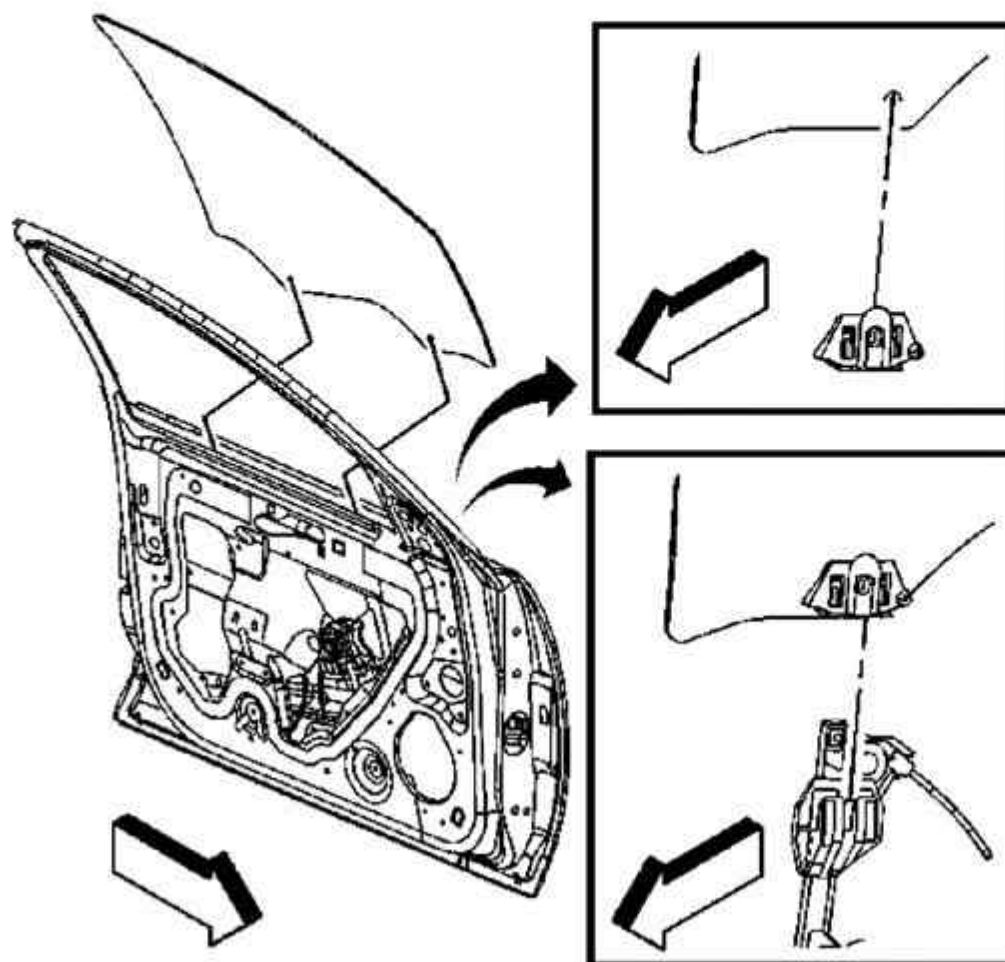


Fig. 34: Identifying Power Window Motor Electrical Connector
Courtesy of GENERAL MOTORS CORP.

6. Connect the electrical connector to the power window motor and push in on the tab to lock in place.
7. Remove the masking tape.
8. Lower the window far enough in order to gain access through the inner panel to the window guide retainer to snap the window into the retainer.
9. Inspect the window for proper operation and programming. Refer to **Window Regulator Motor Programming and Setup**.
10. Install the front door water deflector. Refer to **Front Side Door Water Deflector Replacement**.
11. Install the front door trim panel. Refer to **Front Side Door Trim Panel Replacement**.

FRONT SIDE DOOR WINDOW REGULATOR MOTOR REPLACEMENT

Removal Procedure

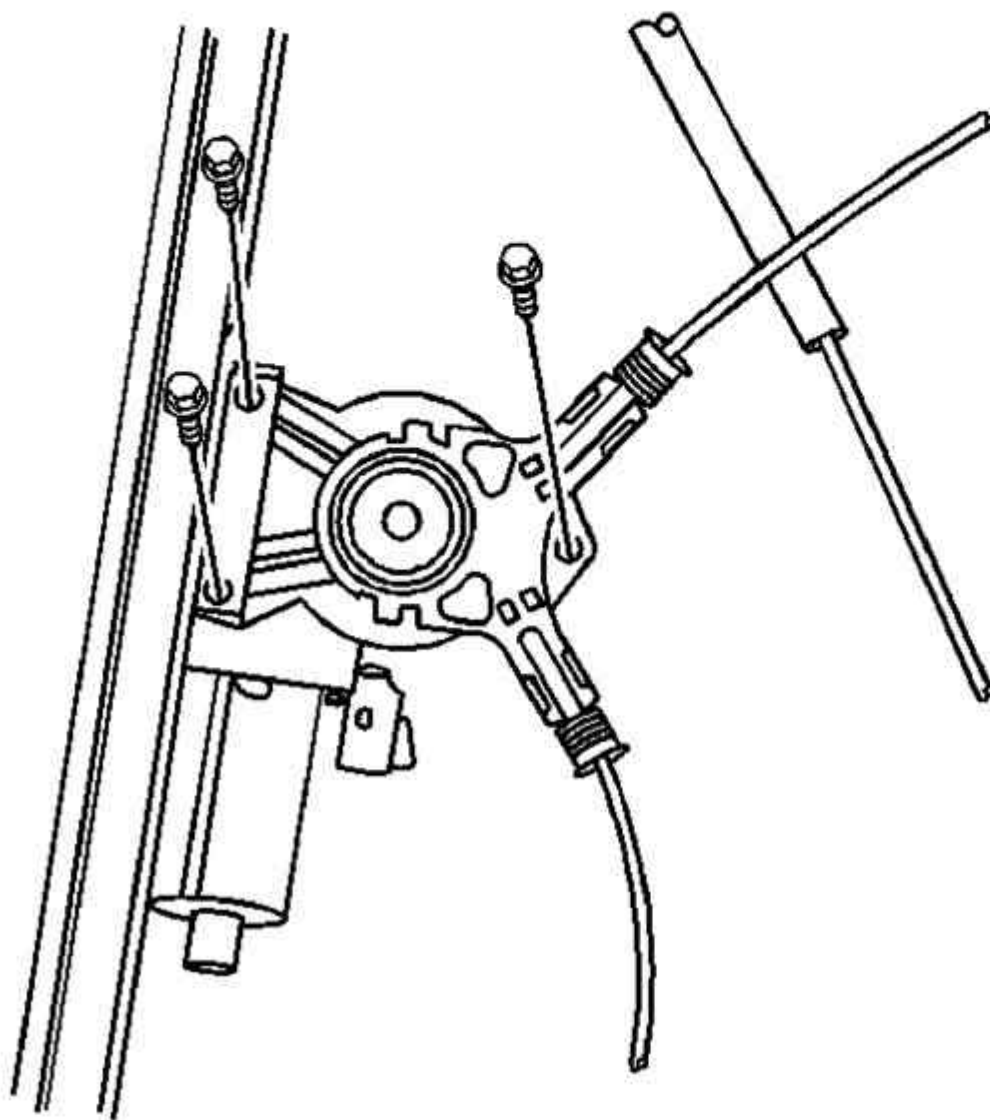


Fig. 35: Identifying Window Regulator Motor Bolts (Front Door)
Courtesy of GENERAL MOTORS CORP.

CAUTION: Disconnect the power window switch when working inside the driver door. When operated, the Express Up/Down Feature allows the door window to move very quickly, without stopping, which could cause personal injury.

1. Remove the front door trim panel. Refer to Front Side Door Trim Panel Replacement.
2. Remove the front door water deflector. Refer to Front Side Door Water Deflector Replacement.
3. Remove the front door window regulator. Refer to Front Side Door Window Regulator Replacement.
4. Remove the window regulator and motor through the access opening in the inner panel.
5. Remove the power window motor bolts from the window regulator.

Installation Procedure

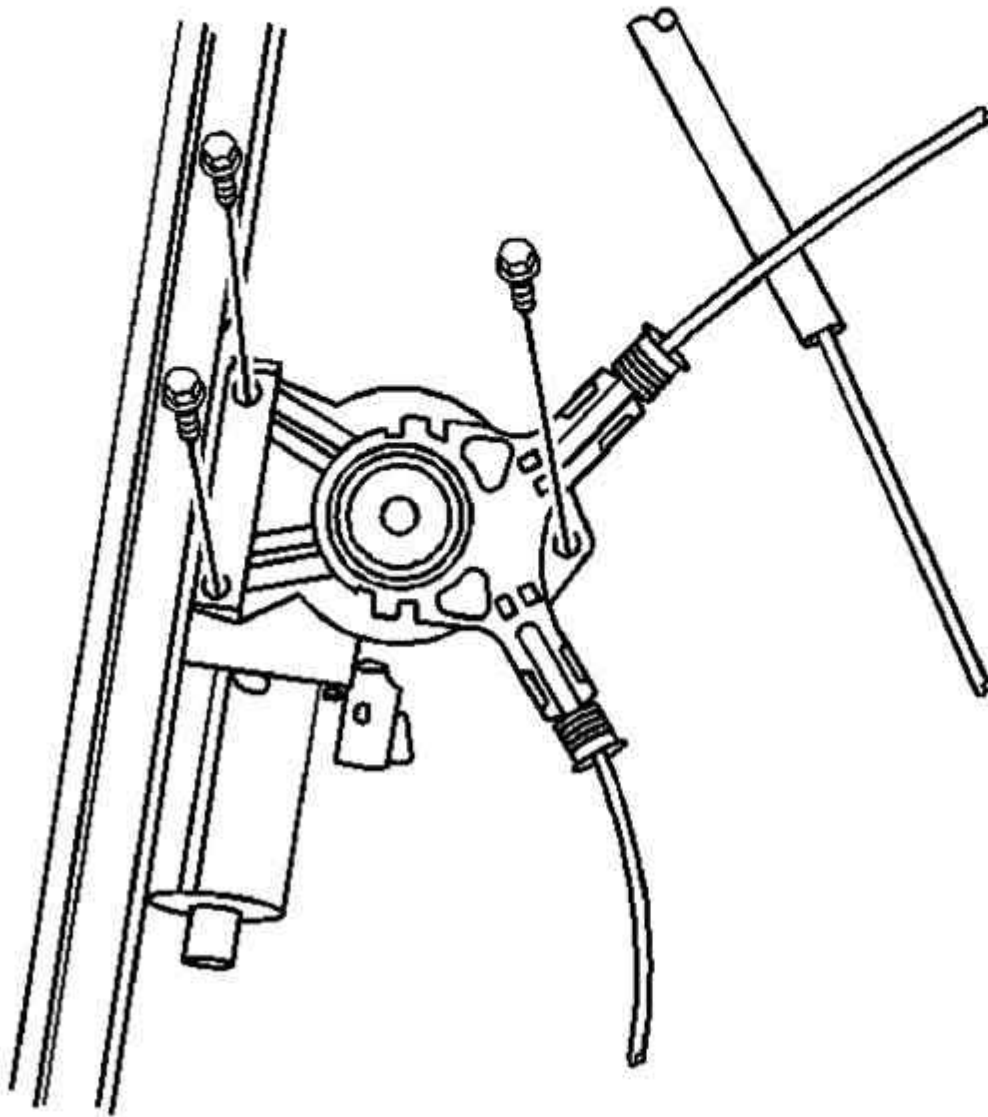


Fig. 36: Identifying Window Regulator Motor Bolts (Front Door)
Courtesy of GENERAL MOTORS CORP.

1. Install the window regulator and motor through the access opening in the inner panel.

NOTE: Refer to FASTENER NOTICE.

2. Install the power window motor bolts to the window regulator.

Tighten: Tighten the bolts to 6 N.m (53 lb in).

3. Install the window regulator and motor through the access opening.
4. Install the front door window regulator. Refer to Front Side Door Window Regulator Replacement.
5. Inspect the window for proper operation and programming. Refer to Window Regulator Motor Programming and Setup.
6. Install the front door water deflector. Refer to Front Side Door Water Deflector Replacement.
7. Install the front door trim panel. Refer to Front Side Door Trim Panel Replacement.

REAR SIDE DOOR WINDOW REGULATOR REPLACEMENT

Removal Procedure

1. Remove the rear door trim panel. Refer to Rear Side Door Trim Panel Replacement.
2. Remove the rear door water deflector. Refer to Rear Side Door Water Deflector Replacement.

NOTE: Refer to PAINT DAMAGE NOTICE.

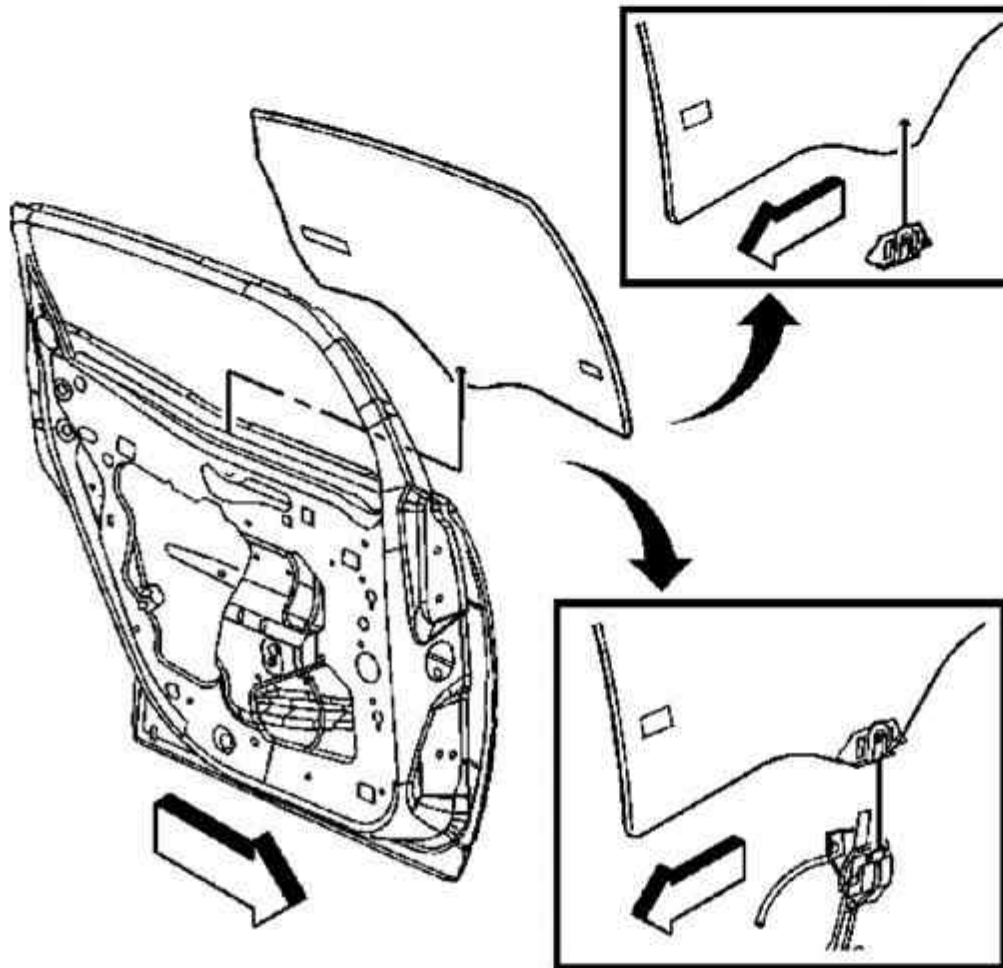


Fig. 37: View Of Window Guide
Courtesy of GENERAL MOTORS CORP.

3. Raise the window far enough in order to gain access through the inner door panel to the window guide retainer clips.
4. Push inward on the window guide retainer clip locks, lift upward on the window until released from the retaining clip.
5. Raise the window to the full up position and tape in place.
6. Disconnect the electrical connector from the power window motor.

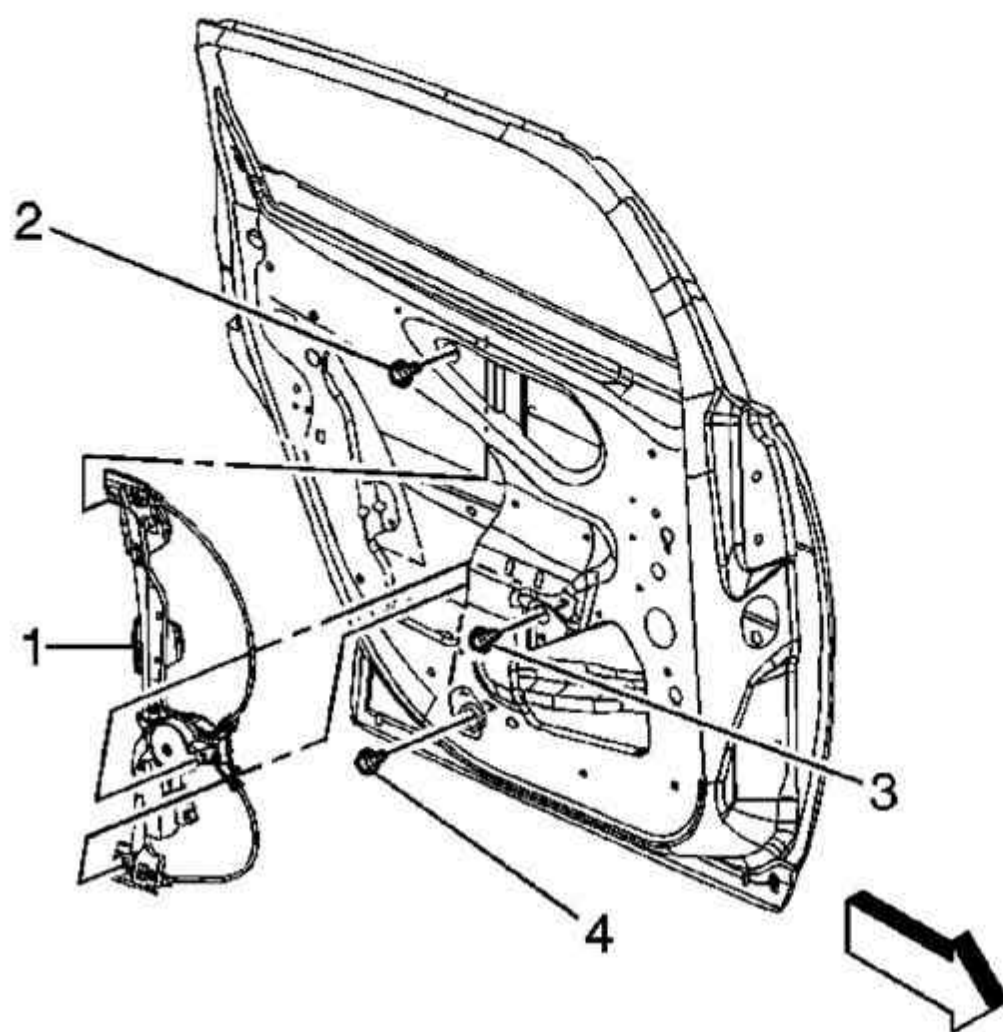


Fig. 38: View Of Window Regulator
Courtesy of GENERAL MOTORS CORP.

7. Loosen the bolt to the window regulator motor (2, 3, 4).
8. Lift the motor free of the retaining slot.
9. Remove the window regulator and motor from the door.
10. Remove the power window motor from the window regulator. Refer to Rear Side Door Window Regulator Motor Replacement.

Installation Procedure

1. Install the power window motor to the window regulator. Refer to Rear Side Door Window Regulator Motor Replacement.

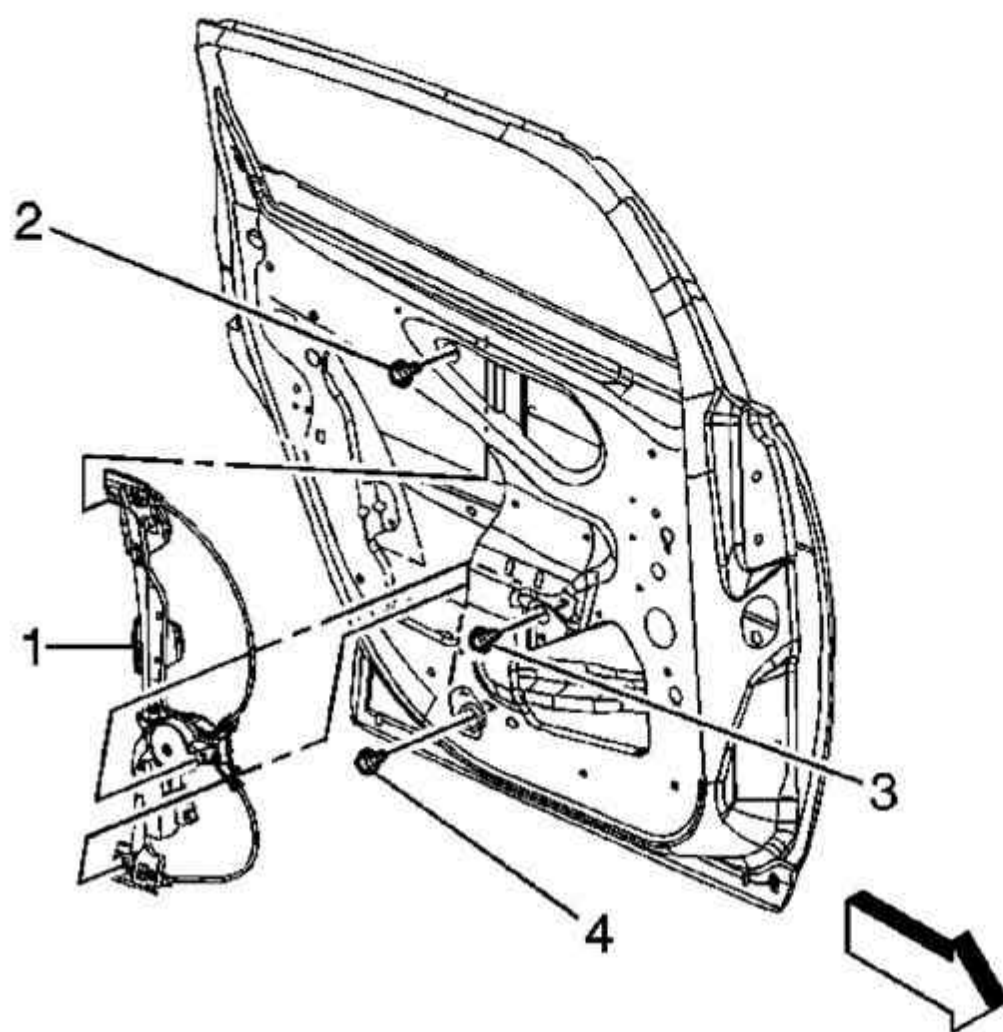


Fig. 39: View Of Window Regulator
Courtesy of GENERAL MOTORS CORP.

2. Install the bolts (2, 3, 4) to the window regulator and motor.
3. Position the window regulator and motor into the locating slots of the inner door panel.

NOTE: Refer to FASTENER NOTICE .

4. Install the window regulator and motor bolts to the door.

Tighten: Tighten the bolts to 10 N.m (89 lb in).

5. Connect the electrical connector to the power window motor.
6. Remove the masking tape.

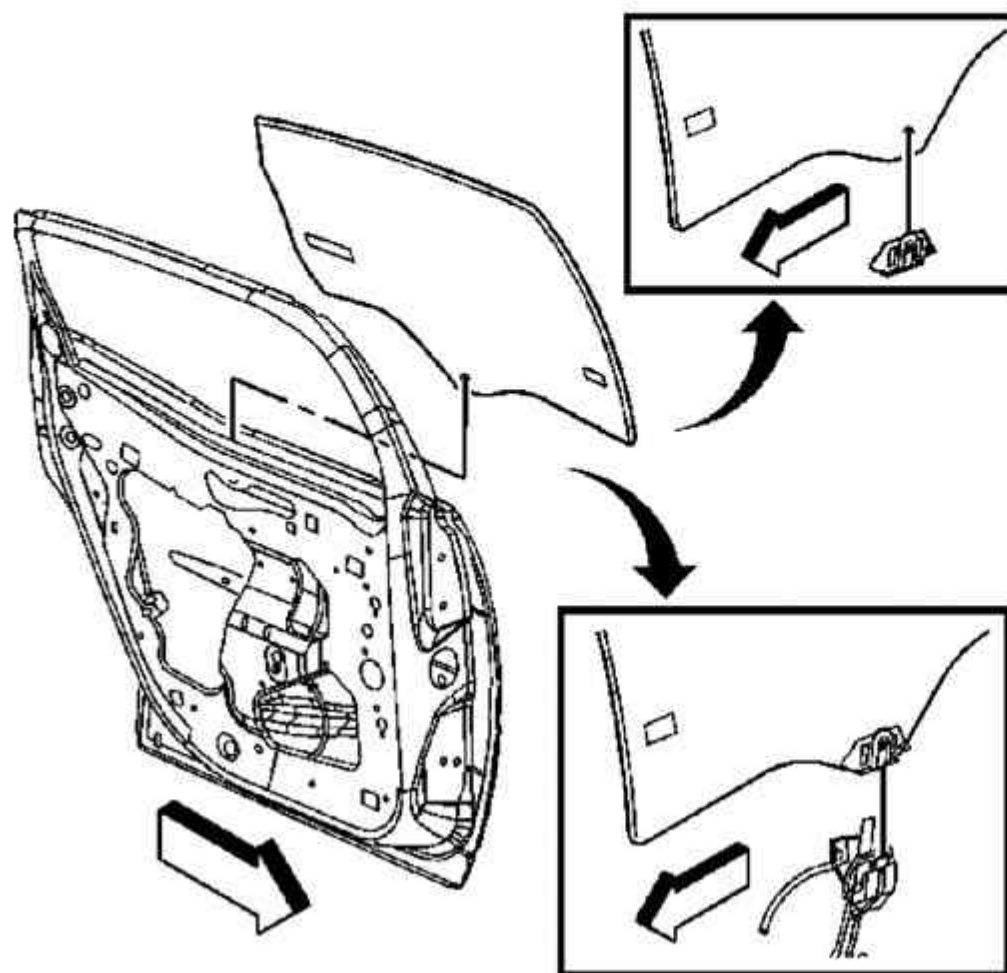


Fig. 40: View Of Window Guide

Courtesy of GENERAL MOTORS CORP.

7. Lower the window far enough in order to gain access through the inner door panel to the window guide retainer clips.
8. Inspect the window for proper operation and programming. Refer to **Window Regulator Motor Programming and Setup**.
9. Install the rear door water deflector. Refer to **Rear Side Door Water Deflector Replacement**.
10. Install the rear door trim panel. Refer to **Rear Side Door Trim Panel Replacement**.

REAR SIDE DOOR WINDOW REGULATOR MOTOR REPLACEMENT

Removal Procedure

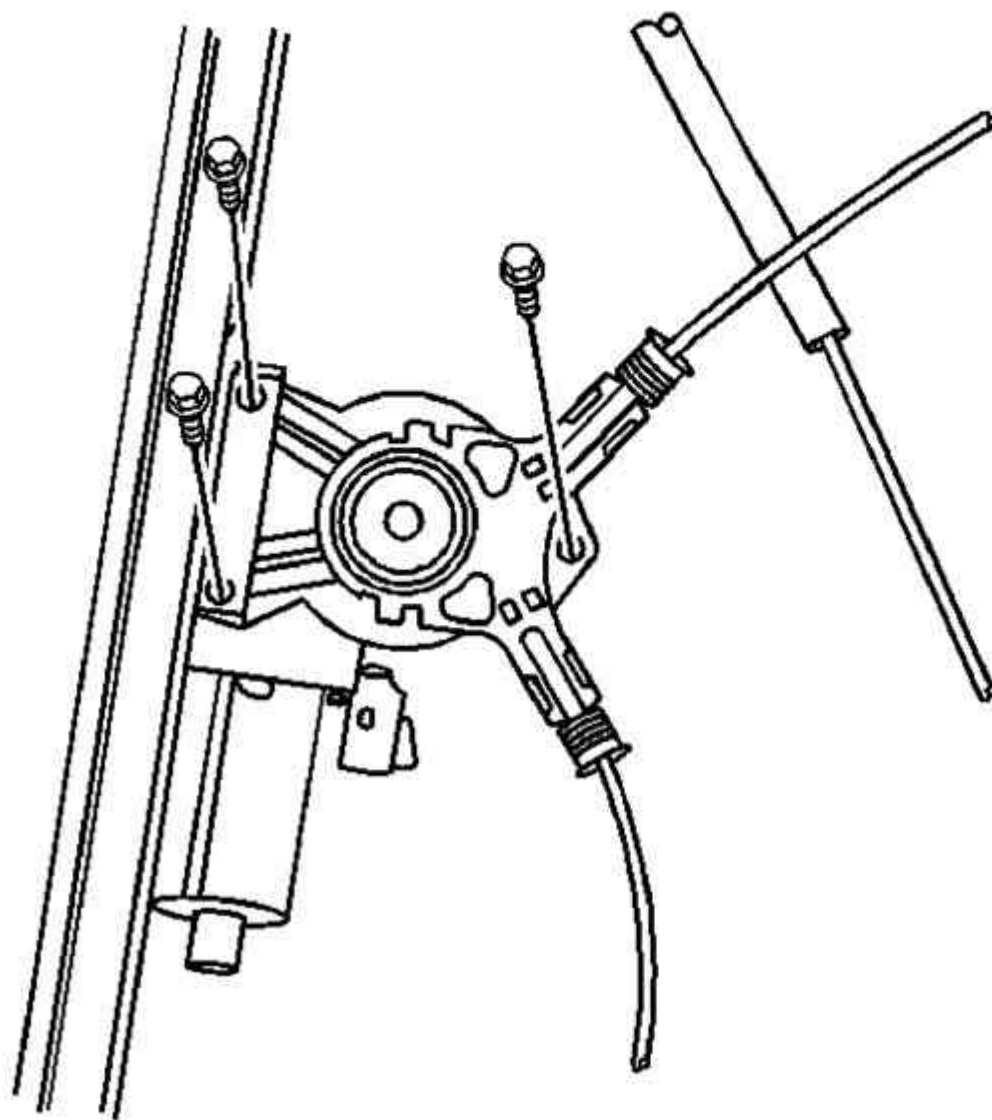


Fig. 41: Identifying Window Regulator Motor Bolts (Front Door)
Courtesy of GENERAL MOTORS CORP.

1. Remove the rear door trim panel. Refer to Rear Side Door Trim Panel Replacement .
2. Remove the rear door water deflector. Refer to Rear Side Door Water Deflector Replacement .

NOTE: Refer to PAINT DAMAGE NOTICE .

3. Remove the window regulator. Refer to Rear Side Door Window Regulator Replacement.
4. Remove the window regulator and motor through the access opening in the door panel.
5. Remove the window regulator motor bolts from the window regulator.

Installation Procedure

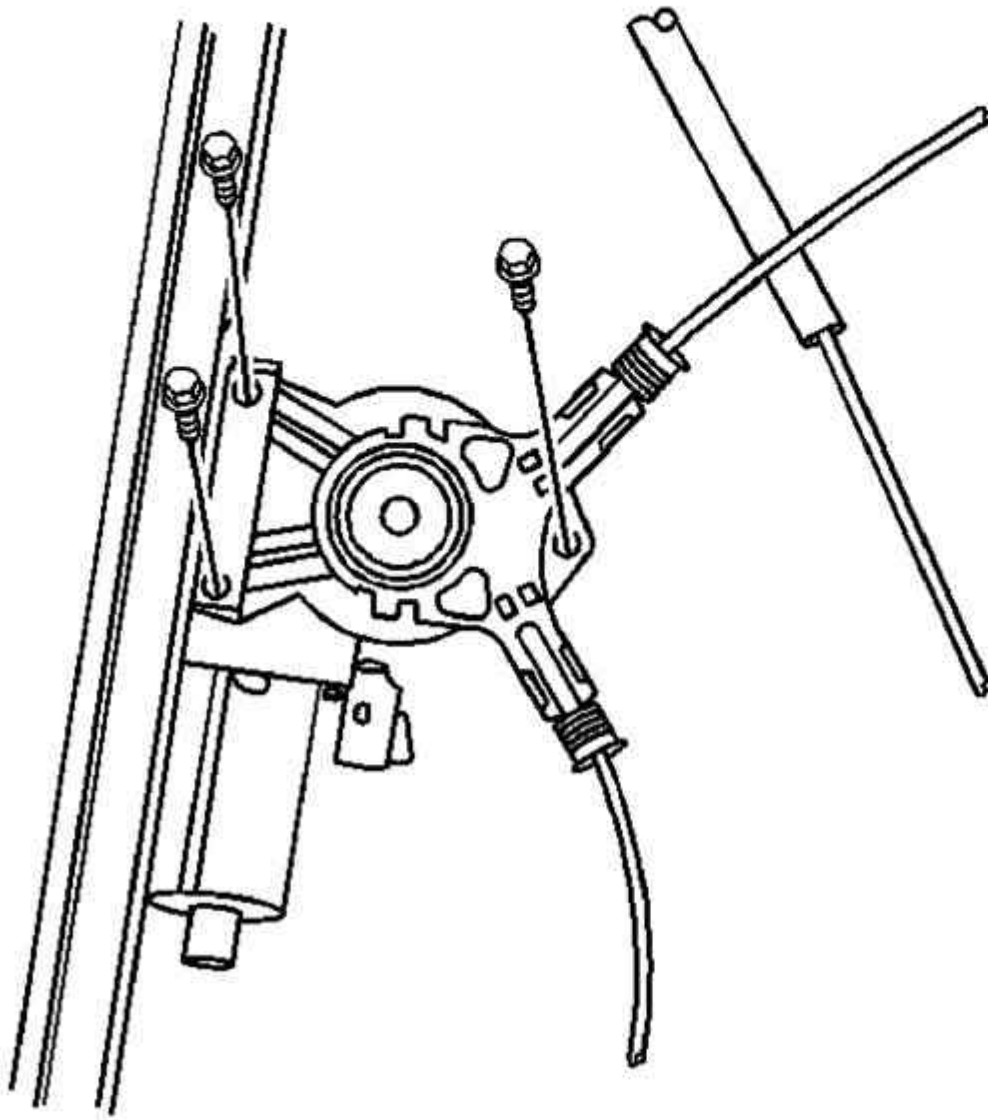


Fig. 42: Identifying Window Regulator Motor Bolts (Front Door)
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to FASTENER NOTICE .

1. Install the window regulator motor bolts to the window regulator.

Tighten: Tighten the bolts to 6 N.m (53 lb in).

2. Install the window regulator and motor through the access opening.
3. Install the window regulator. Refer to Rear Side Door Window Regulator Replacement.
4. Remove the masking tape.
5. Inspect the window for proper operation and programming. Refer to Window Regulator Motor Programming and Setup .
6. Install the rear door water deflector. Refer to Rear Side Door Water Deflector Replacement .
7. Install the rear door trim panel. Refer to Rear Side Door Trim Panel Replacement .

Removal Procedure

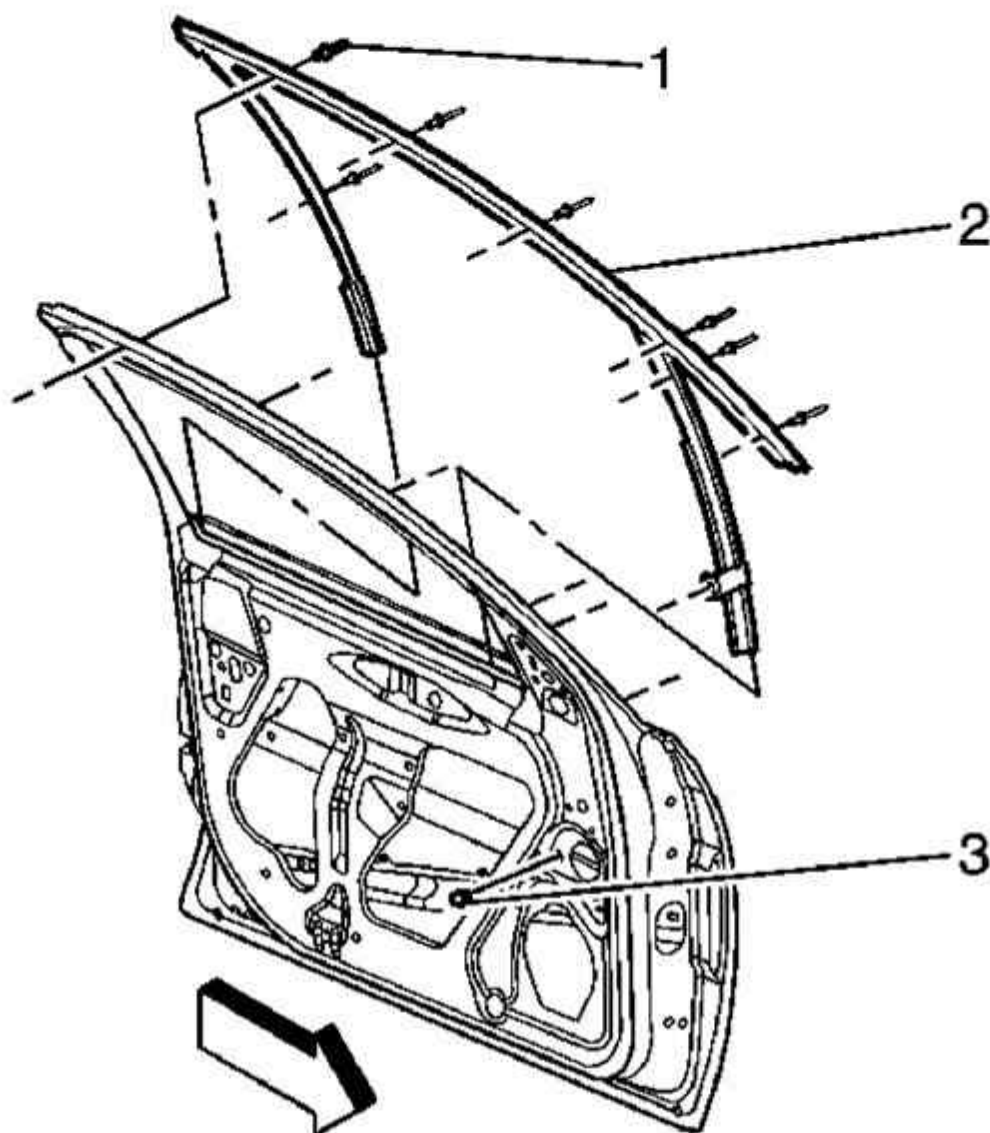


Fig. 43: Identifying Front Door Window Channel Retainer Bolts & Rivets
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to PAINT DAMAGE NOTICE .

1. Remove the front door frame applique. Refer to Front Door Frame Applique Replacement .
2. Remove the front door trim panel. Refer to Front Side Door Trim Panel Replacement .
3. Remove the front door water deflector. Refer to Front Side Door Water Deflector Replacement .
4. Remove the outside rear view mirror. Refer to Power Mirror Replacement .
5. Remove the front door inner window belt sealing strip. Refer to Front Side Door Window Belt Inner Sealing Strip Replacement .
6. Position the window to the full down position.
7. Remove the front door window weatherstrip. Refer to Front Side Door Window Weatherstrip Replacement .
8. Remove the bolt (3) from the window channel retainer (2).
9. Drill out the 4 mm (5/32 in) rivets (1) along the inside edge of the window channel retainer.

10. Remove the window channel retainer from the door.

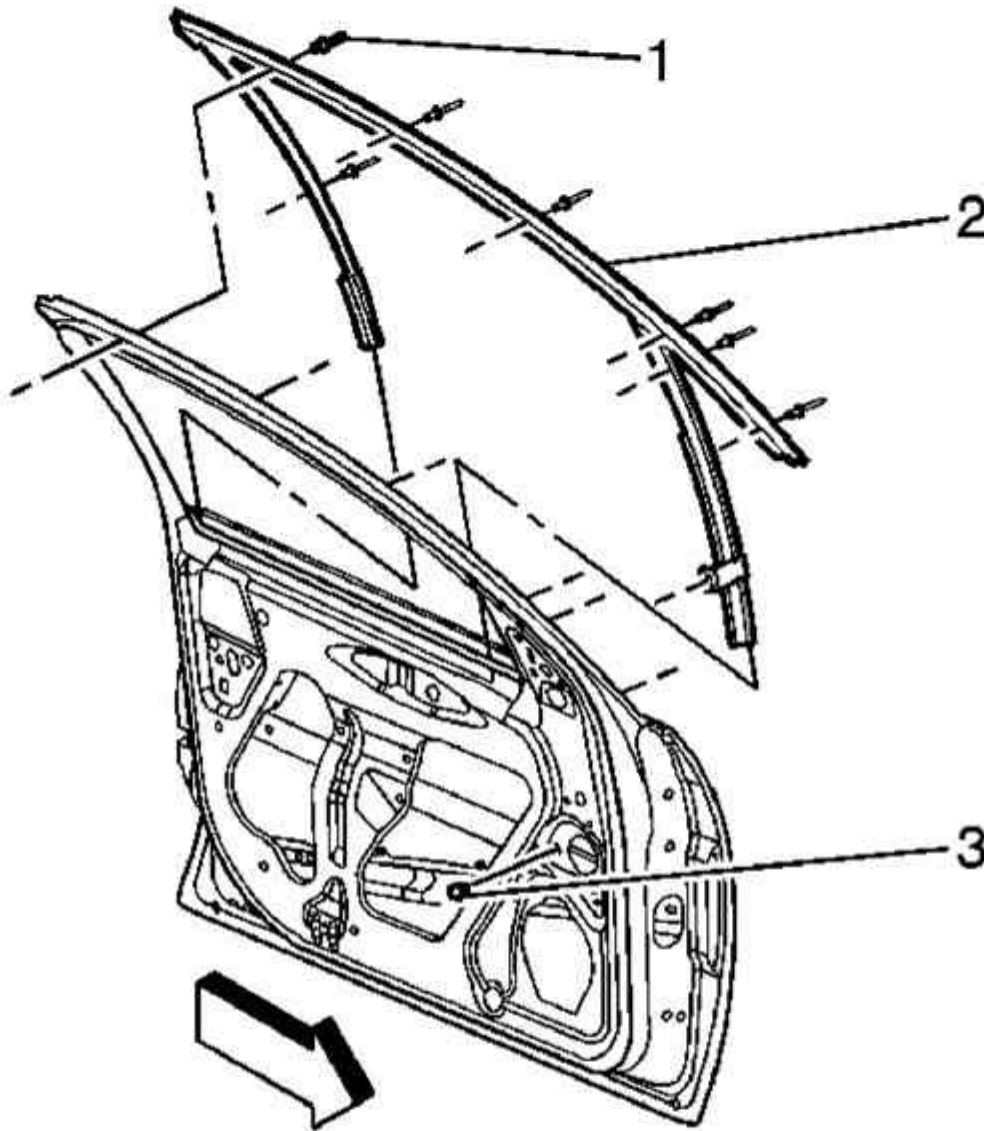
Installation Procedure

Fig. 44: Identifying Front Door Window Channel Retainer Bolts & Rivets
Courtesy of GENERAL MOTORS CORP.

1. Install the window channel retainer to the door.
2. Install the new 4 mm (5/32 in) rivets (1) along the inside edge of the window channel retainer.
3. Install the bolt (3) to the window channel retainer (2).

NOTE: Refer to FASTENER NOTICE.

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

4. Install the front door window weatherstrip. Refer to Front Side Door Window Weatherstrip Replacement.

Install the front door window weatherstrip by working it around the door frame. Ensure that the weatherstrip

is fully seated into the window channel retainer.

5. Inspect the window for proper operation.
6. Install the front door frame applique. Refer to Front Door Frame Applique Replacement.
7. Install the front door inner window belt sealing strip. Refer to Front Side Door Window Belt Inner Sealing Strip Replacement.
8. Install the outside mirror. Refer to Power Mirror Replacement.
9. Install the front door water deflector. Refer to Front Side Door Water Deflector Replacement.
10. Install the front door trim panel. Refer to Front Side Door Trim Panel Replacement.

REAR SIDE DOOR WINDOW CHANNEL RETAINER REPLACEMENT

Removal Procedure

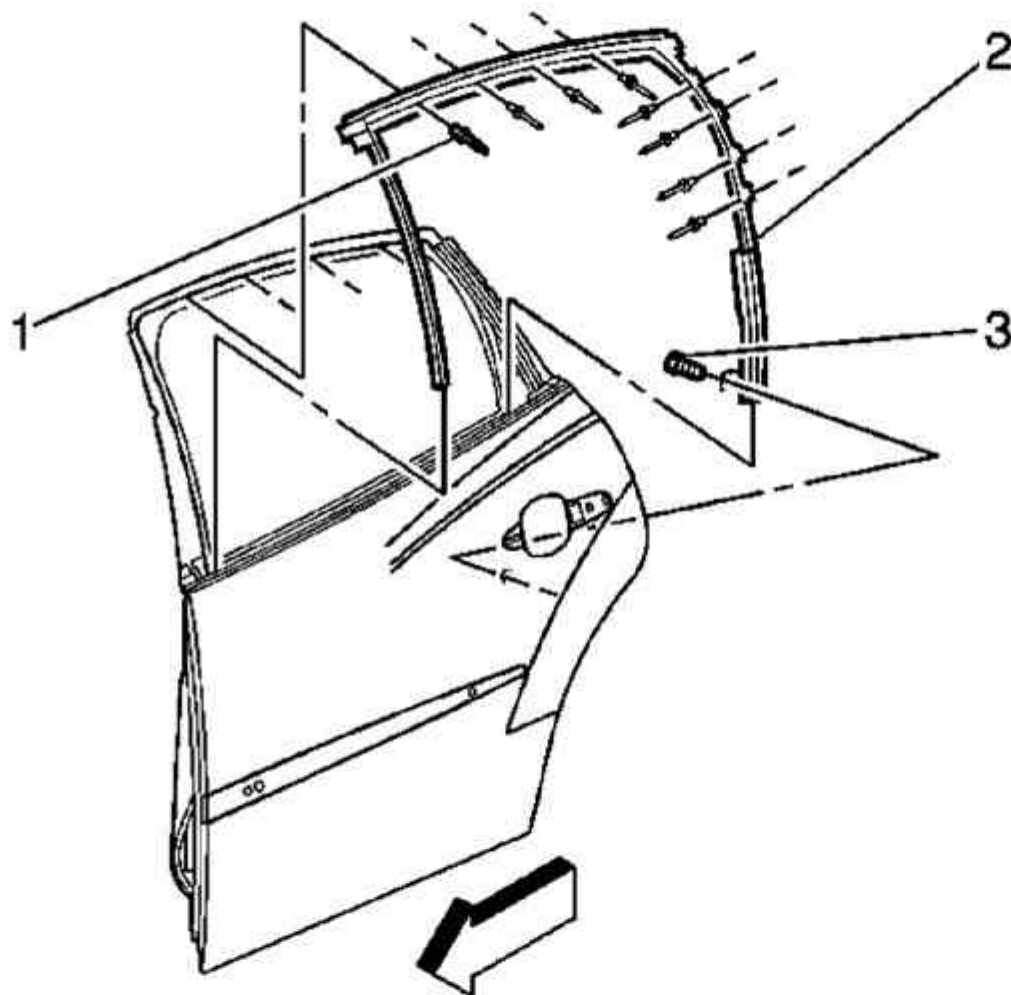


Fig. 45: Identifying Rear Door Window Channel Retainer Bolts & Rivets
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to PAINT DAMAGE NOTICE.

1. Remove the rear door frame applique. Refer to Rear Door Frame Applique Replacement.
2. Remove the rear door trim panel. Refer to Rear Side Door Trim Panel Replacement.
3. Remove the rear door water deflector. Refer to Rear Side Door Water Deflector Replacement.

4. Position the window to the full down position.
5. Remove the rear door inner belt sealing strip. Refer to **Rear Door Window Belt Inner Sealing Strip Replacement**.
6. Remove the rear door outer belt sealing strip. Refer to **Rear Door Window Belt Outer Sealing Strip Replacement**.
7. Remove the rear door window weatherstrip. Refer to **Rear Side Door Window Weatherstrip Replacement**.
8. Drill out the 4 mm (5/32 in) rivets (1) along the inside edge of the window channel retainer (2).
9. Remove the bolt (3) from the corner of the window channel retainer (2).
10. Remove the window channel retainer from the door.

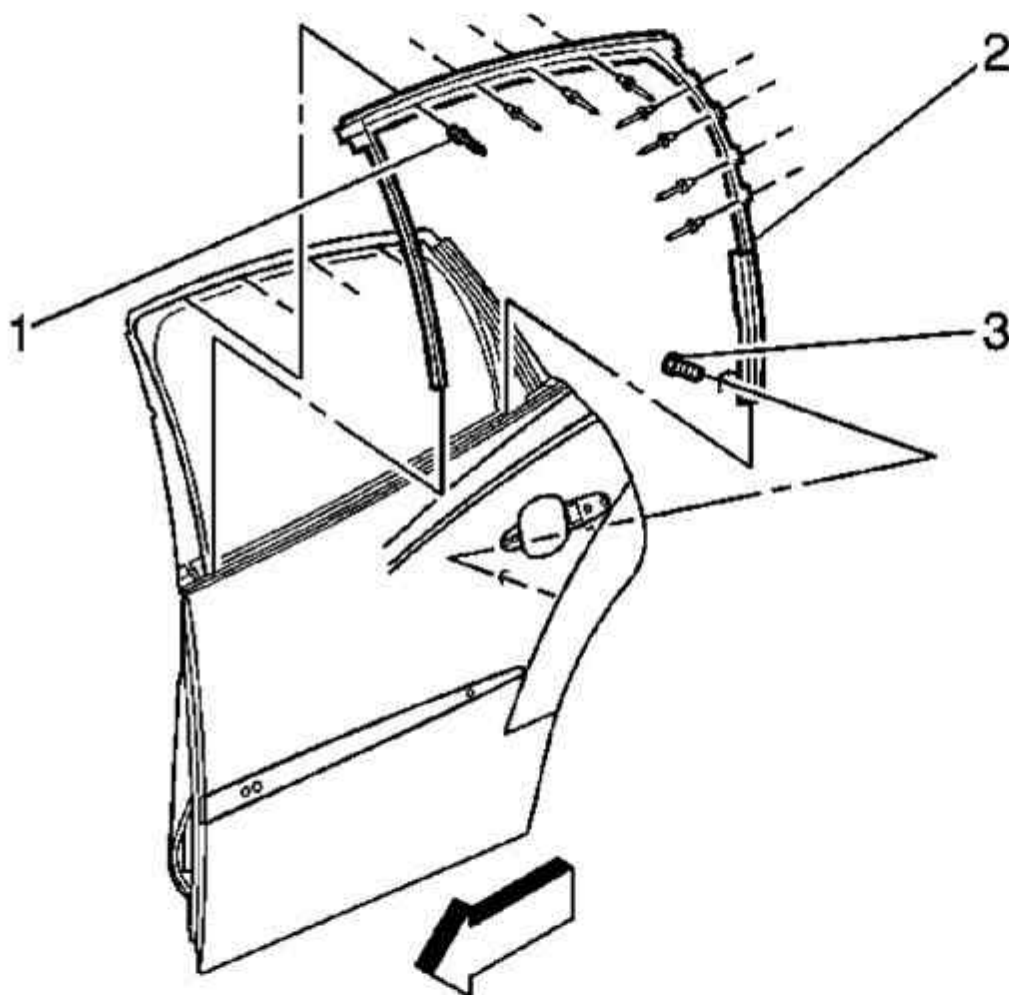
Installation Procedure

Fig. 46: Identifying Rear Door Window Channel Retainer Bolts & Rivets
Courtesy of GENERAL MOTORS CORP.

1. Install the window channel retainer to the door.
2. Install the new 4 mm (5/32 in) rivets (1) along the inside edge of the window channel retainer (2).
3. Install the bolt (3) to the lower corner of the window channel retainer (2).

NOTE: Refer to **FASTENER NOTICE** .

4. Install the bolt (3) to the lower corner of the window channel retainer (2).

Tighten: Tighten the screw to 10 N.m (89 lb in).

5. Install the rear door window weatherstrip. Refer to Rear Side Door Window Weatherstrip Replacement.

Install the door window weatherstrip by working it around the door frame. Ensure that the weatherstrip is fully seated into the window channel retainer.

6. Install the rear door outer belt sealing strip. Refer to Rear Door Window Belt Outer Sealing Strip Replacement.
7. Install the rear door inner belt sealing strip. Refer to Rear Door Window Belt Inner Sealing Strip Replacement.
8. Install the front door frame applique. Refer to Front Door Frame Applique Replacement.
9. Inspect the window for proper operation.
10. Install the rear door water deflector. Refer to Rear Side Door Water Deflector Replacement.
11. Install the rear door trim panel. Refer to Rear Side Door Trim Panel Replacement.

FRONT SIDE DOOR WINDOW BELT OUTER SEALING STRIP REPLACEMENT

Removal Procedure

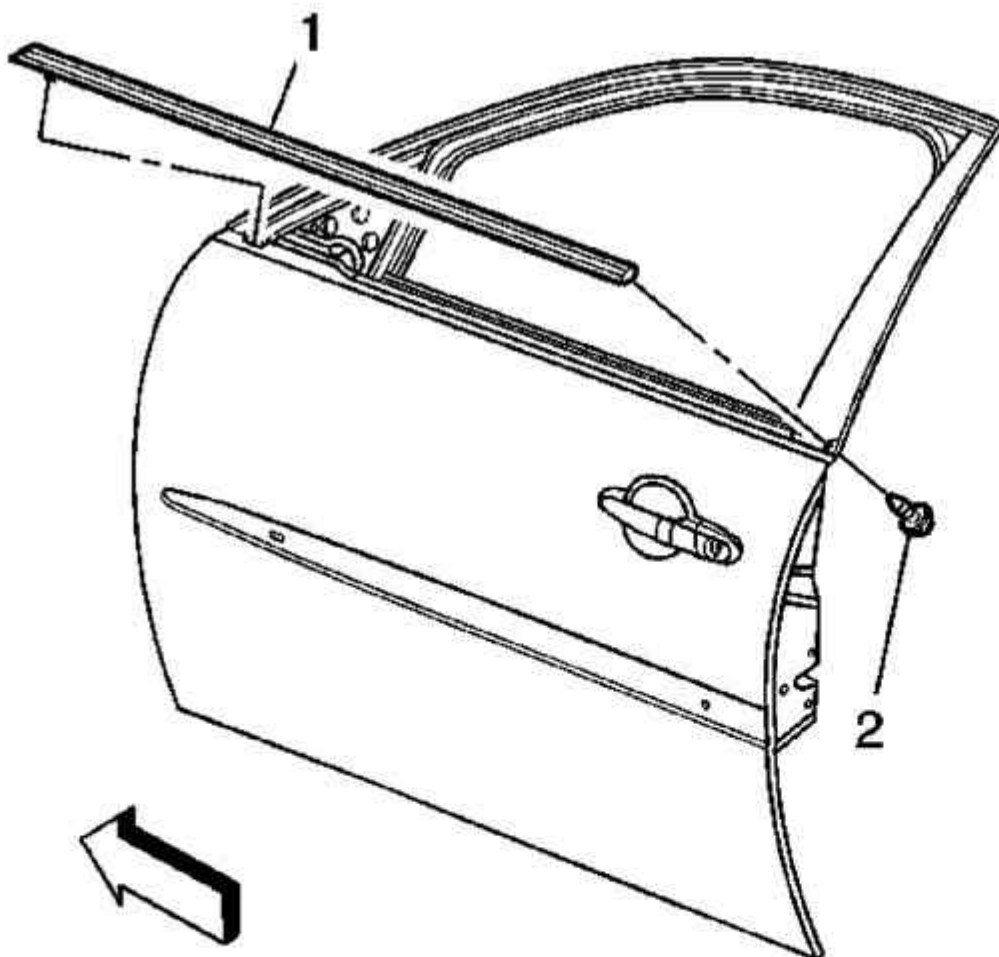


Fig. 47: View Of Sealing Strip - Front Door Window Belt Outer
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to PAINT DAMAGE NOTICE.

1. Apply masking tape to the door and applique.
2. Lower the window to the full down position.
3. Remove the outside rearview mirror. Refer to Power Mirror Replacement.
4. Remove the outer belt sealing strip screw (2) located at the rear of the door.

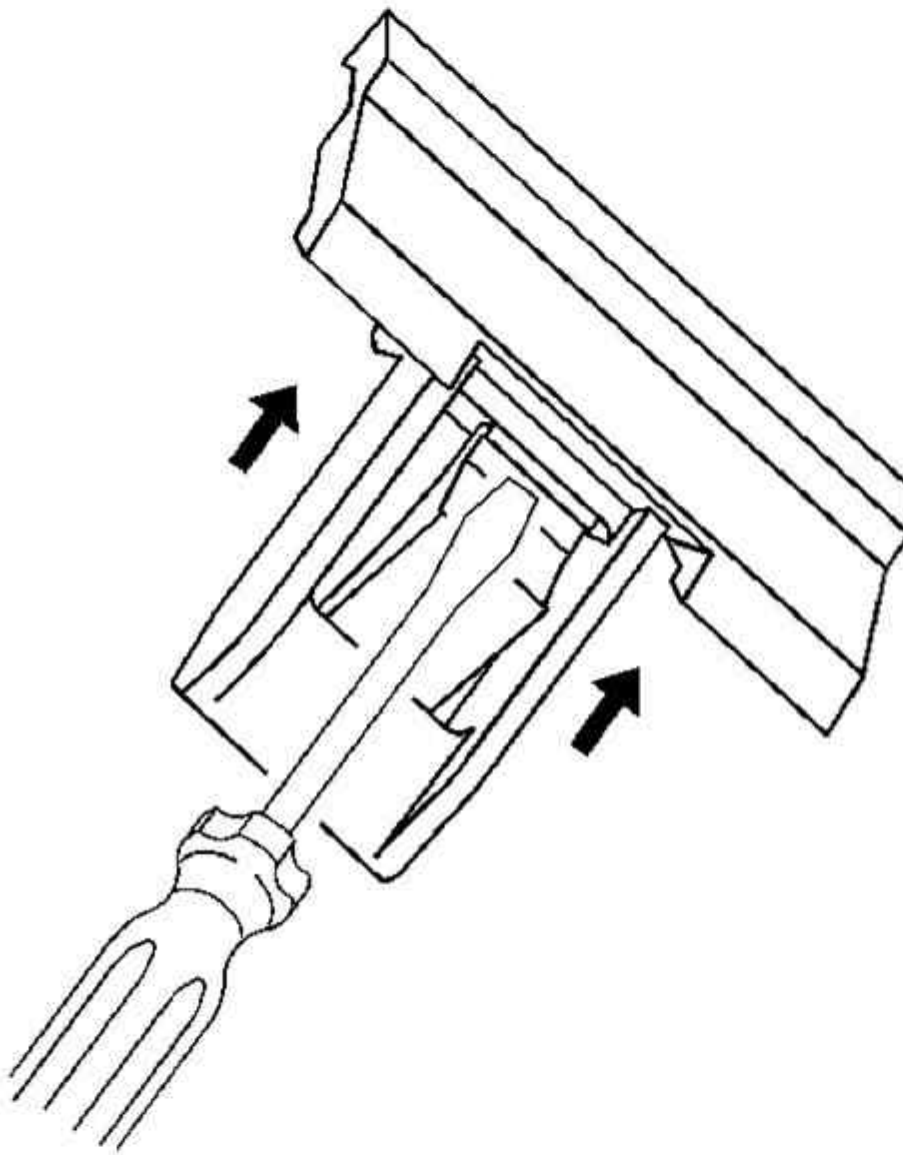


Fig. 48: Releasing Outer Belt Sealing Strip Clip
Courtesy of GENERAL MOTORS CORP.

5. Release the front outer belt sealing strip retaining clip, by inserting a suitable flat-bladed tool to the front edge and lift upward.
6. Remove the outer belt sealing strip from the door.

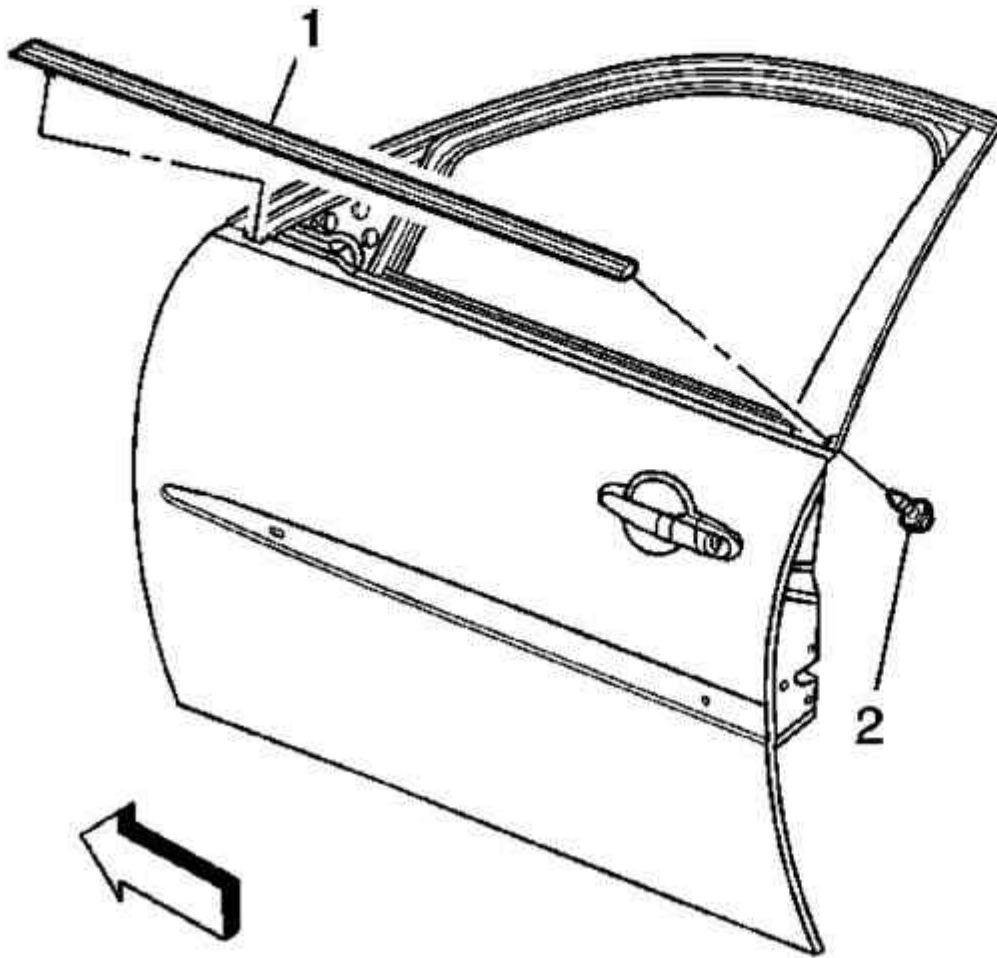


Fig. 49: View Of Sealing Strip - Front Door Window Belt Outer
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: When installing the outer belt sealing strip align the molding to the holes properly before pressing the front into place.

1. Install the outer belt sealing strip to the door.
 1. Insert the retaining clip for the outer belt sealing strip into the front hole of the door and push down firmly to lock in place.
 2. Install the outer belt sealing strip to pinch-weld flange.

NOTE: Refer to FASTENER NOTICE .

2. Install the outer belt sealing strip screw (2).

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

3. Install the outside rearview mirror. Refer to Power Mirror Replacement .
4. Install the front door trim panel. Refer to Front Side Door Trim Panel Replacement .
5. Inspect the window for proper operation.
6. Remove the masking.

Removal Procedure

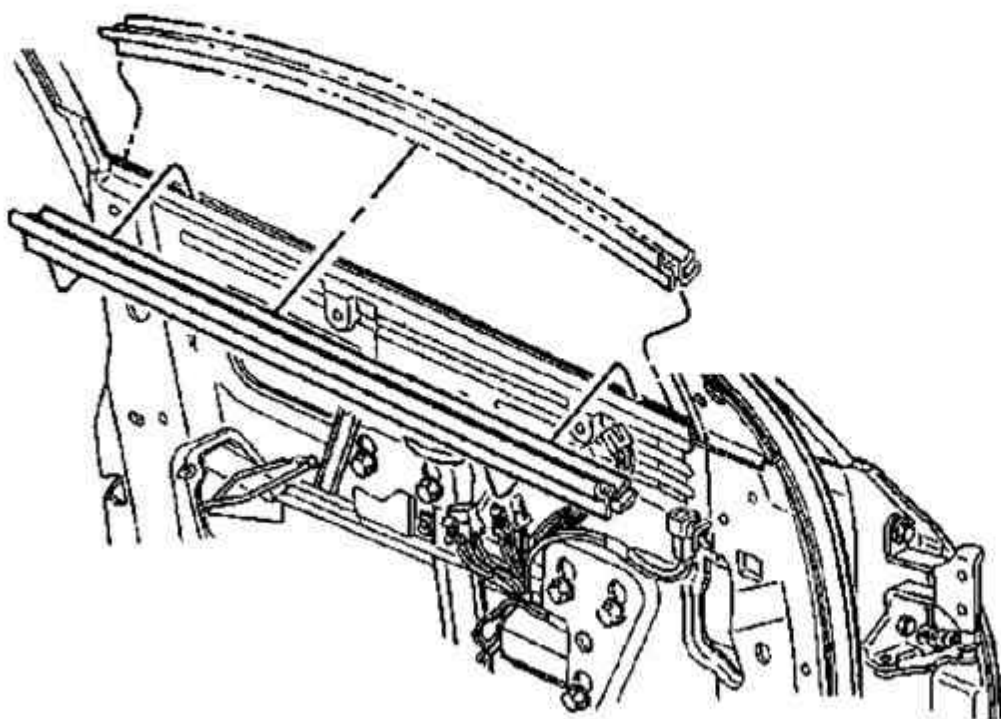


Fig. 50: View Of Front Door Window Belt Inner Sealing Strip & Pinch-Weld Flange
Courtesy of GENERAL MOTORS CORP.

1. Remove the front door trim panel. Refer to **Front Side Door Trim Panel Replacement**.
2. Lower the window to the full down position.
3. Remove the window belt inner sealing strip by lifting it off the pinch-weld flange.

Installation Procedure

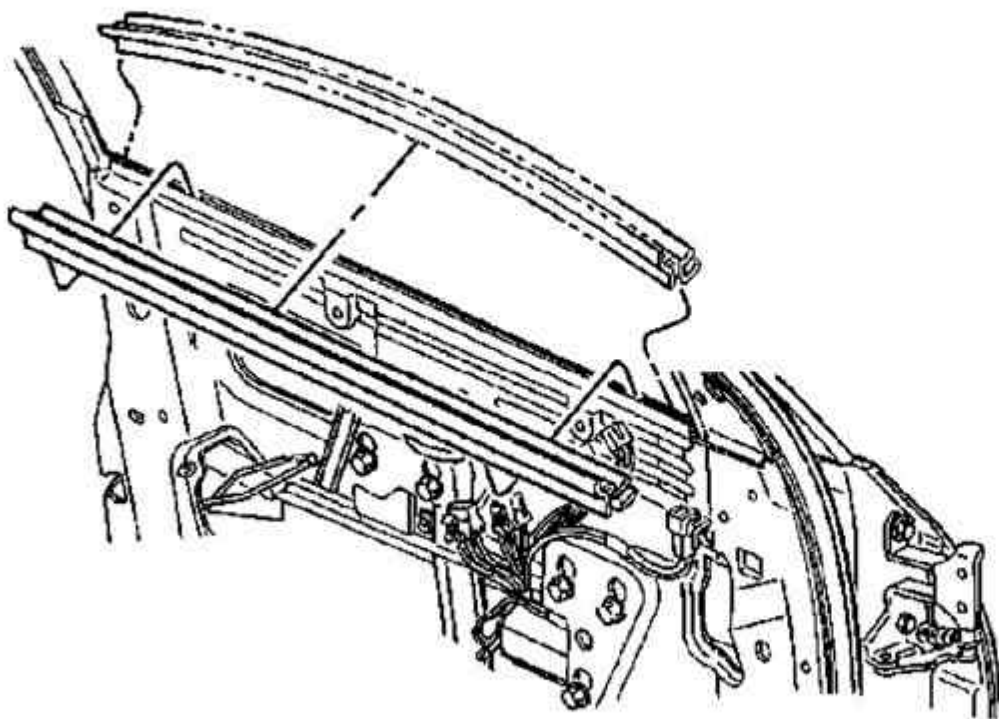


Fig. 51: View Of Front Door Window Belt Inner Sealing Strip & Pinch-Weld Flange
Courtesy of GENERAL MOTORS CORP.

1. Position the window belt inner sealing strip to the door flange.

Engage each end of the window belt inner sealing strip by pressing firmly onto the front and the rear ends of the pinch-weld flange.

IMPORTANT:

- Ensure the front end of the strip is inserted into the gap formed by the window weatherstrip and the door inner panel.
- Ensure the rear end of the strip is flush to the rear leg of the window weatherstrip but not interfering with the path of the window.

2. Firmly seat the entire length of the sealing strip.
3. Inspect the window for proper operation.
4. Install the front door trim panel. Refer to Front Side Door Trim Panel Replacement.

REAR DOOR WINDOW BELT INNER SEALING STRIP REPLACEMENT

Removal Procedure

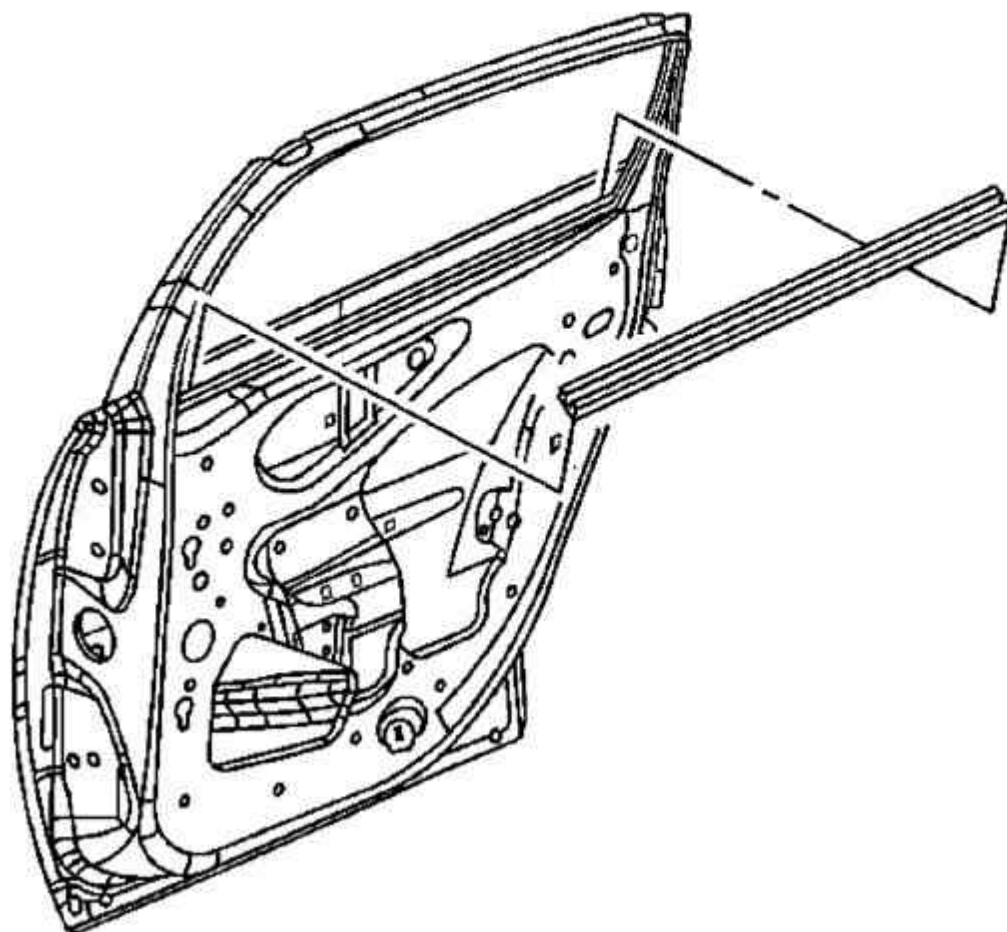


Fig. 52: View Of Sealing Strip - Rear Door Window Belt Inner
Courtesy of GENERAL MOTORS CORP.

1. Lower the window to the full down position.
2. Remove the rear door trim panel. Refer to **Rear Side Door Trim Panel Replacement**.
3. Lift the rear door window inner belt sealing strip off the pinch-weld flange.
4. Remove the inner window belt sealing strip from the door.

Installation Procedure

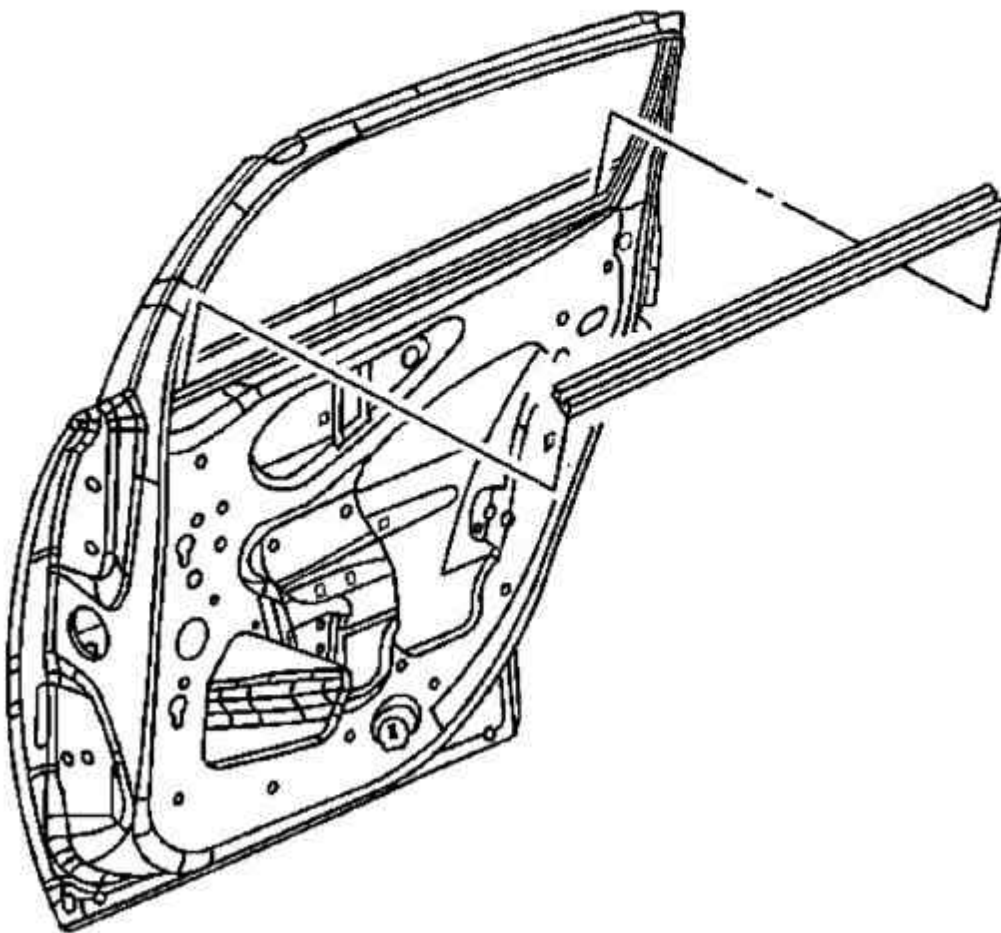


Fig. 53: View Of Sealing Strip - Rear Door Window Belt Inner
Courtesy of GENERAL MOTORS CORP.

1. Position the window belt inner sealing strip to the door flange.
2. Engage each end of the window belt inner sealing strip by pressing firmly onto the front and the rear ends of the pinch-weld flange.

IMPORTANT:

- Ensure the front end of the window inner belt sealing strip is inserted into the gap formed by the weatherstrip and the door inner panel.
- Ensure the rear end of the window inner belt sealing strip is flush to the rear leg of the weatherstrip.
- Ensure the rear end of the window inner belt sealing strip does not interfere with the path of the window.

3. Use hand pressure in order to firmly seat the rear door window inner belt sealing strip on the pinch-weld flange.
4. Inspect the door for proper operation.
5. Install the rear door trim panel. Refer to Rear Side Door Trim Panel Replacement.

REAR DOOR WINDOW BELT OUTER SEALING STRIP REPLACEMENT

Removal Procedure

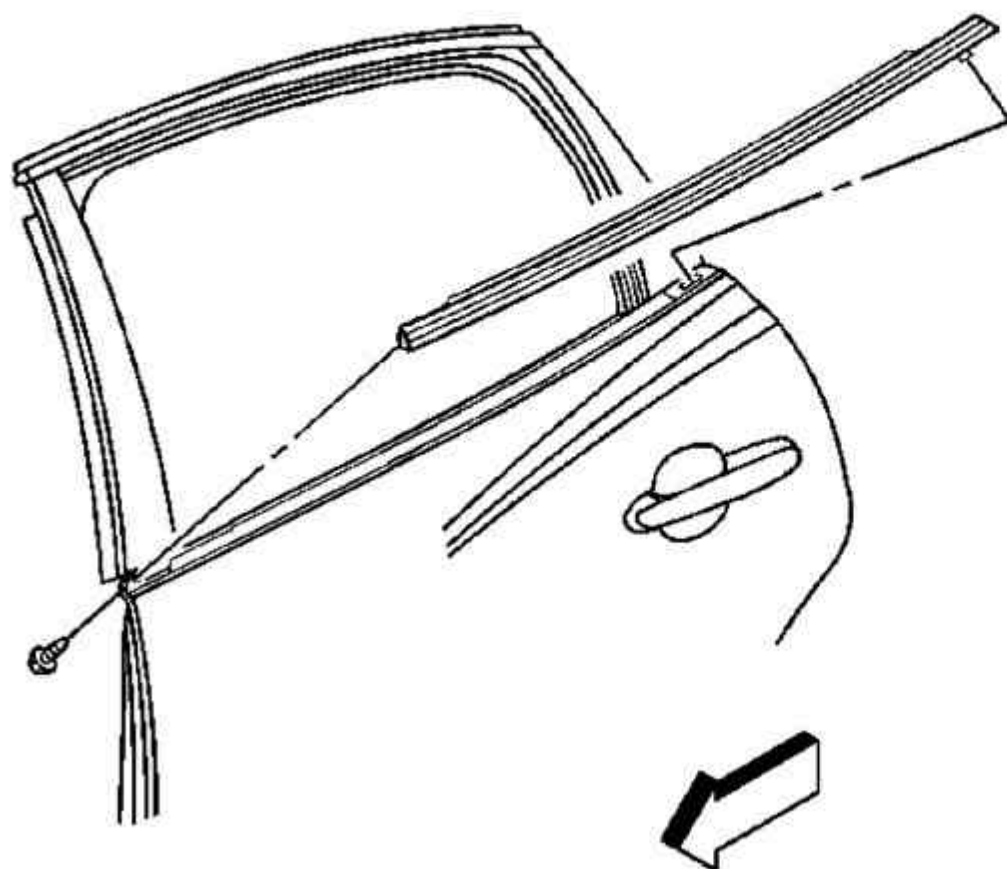


Fig. 54: View Of Sealing Strip - Rear Door Window Belt Outer
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to PAINT DAMAGE NOTICE .

1. Apply masking tape to the door frame and applique.
2. Remove the rear door trim panel. Refer to Rear Side Door Trim Panel Replacement .
3. Lower the window to the full down position.

IMPORTANT: Lift upward on the sealing strip at the front edge of the rear door stationary window to prevent damage to the sealing strip.

4. Remove the outer belt sealing strip screw.

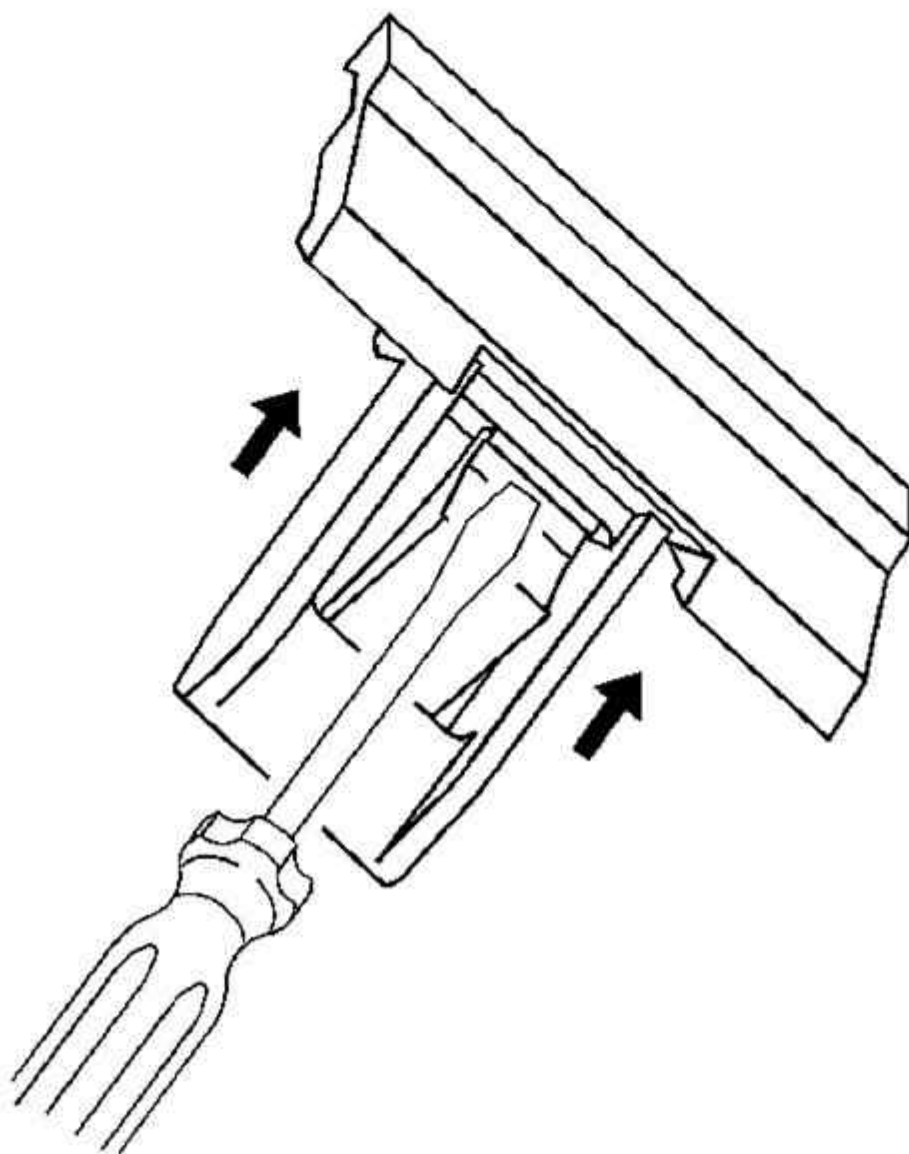


Fig. 55: Releasing Outer Belt Sealing Strip Clip
Courtesy of GENERAL MOTORS CORP.

5. Release the outer belt sealing strip clip, by inserting a suitable flat-bladed tool to the rear edge and lift upward.
6. Remove the outer belt sealing strip from the door.

Installation Procedure

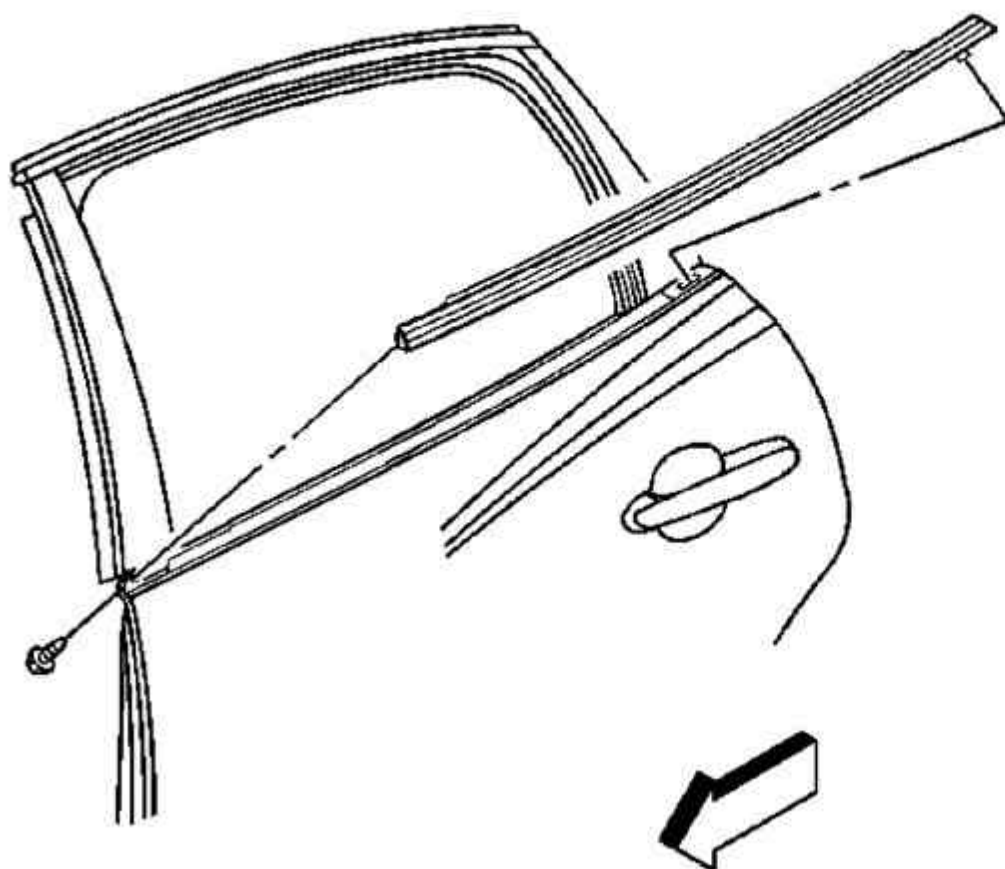


Fig. 56: View Of Sealing Strip - Rear Door Window Belt Outer
Courtesy of GENERAL MOTORS CORP.

1. Install the outer belt sealing strip to the door.

Insert the retaining clip for the outer belt sealing strip into the rear hole of the door and push down firmly to lock in place.

NOTE: Refer to FASTENER NOTICE .

2. Install the outer belt sealing strip screw.

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

3. Remove the masking tape.
4. Inspect the window for proper operation.
5. Install the rear door trim panel. Refer to Rear Side Door Trim Panel Replacement .

FRONT SIDE DOOR WINDOW WEATHERSTRIP REPLACEMENT

Removal Procedure

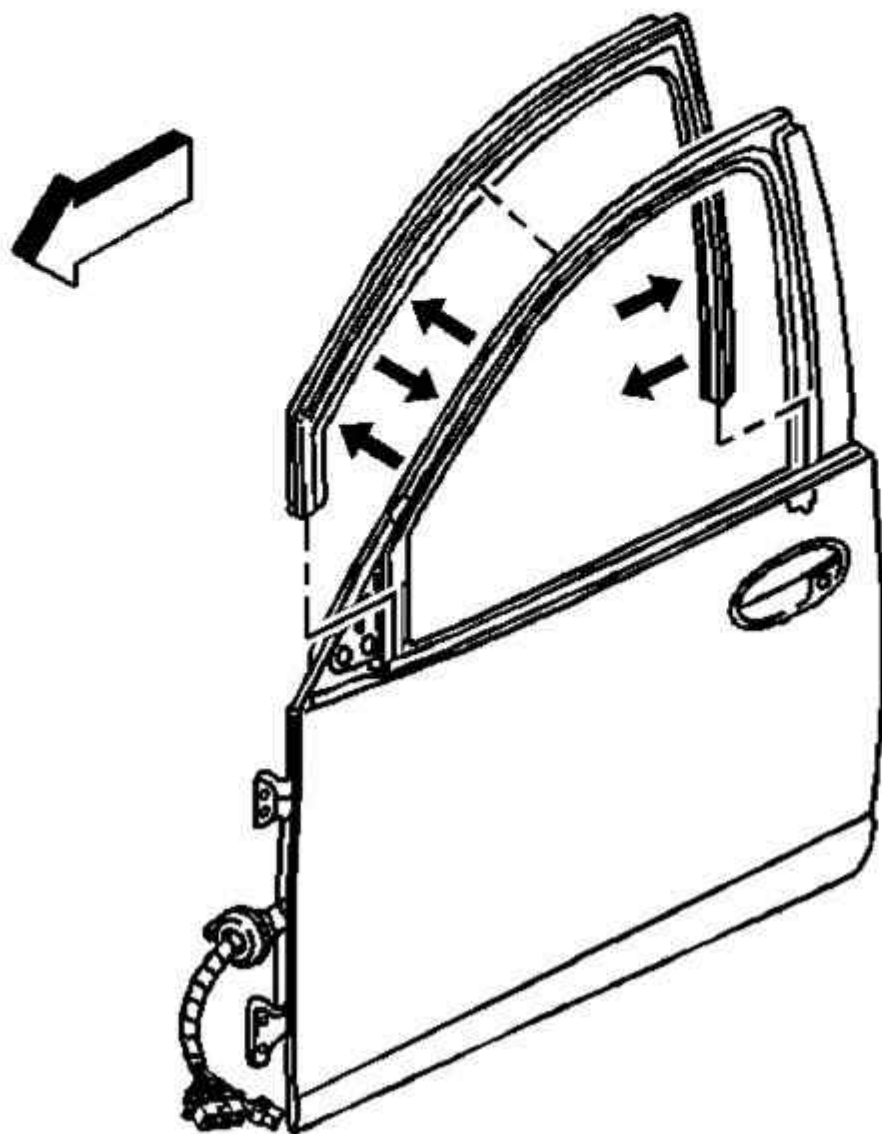


Fig. 57: View Of Front Door Window Weatherstrip
Courtesy of GENERAL MOTORS CORP.

1. Open the door.
2. Lower the window to the full down position.
3. Grasp the window weatherstrip in the center.

Pull downward until the window weatherstrip fully releases from the door frame.

4. Remove the window weatherstrip from the front door.

Installation Procedure

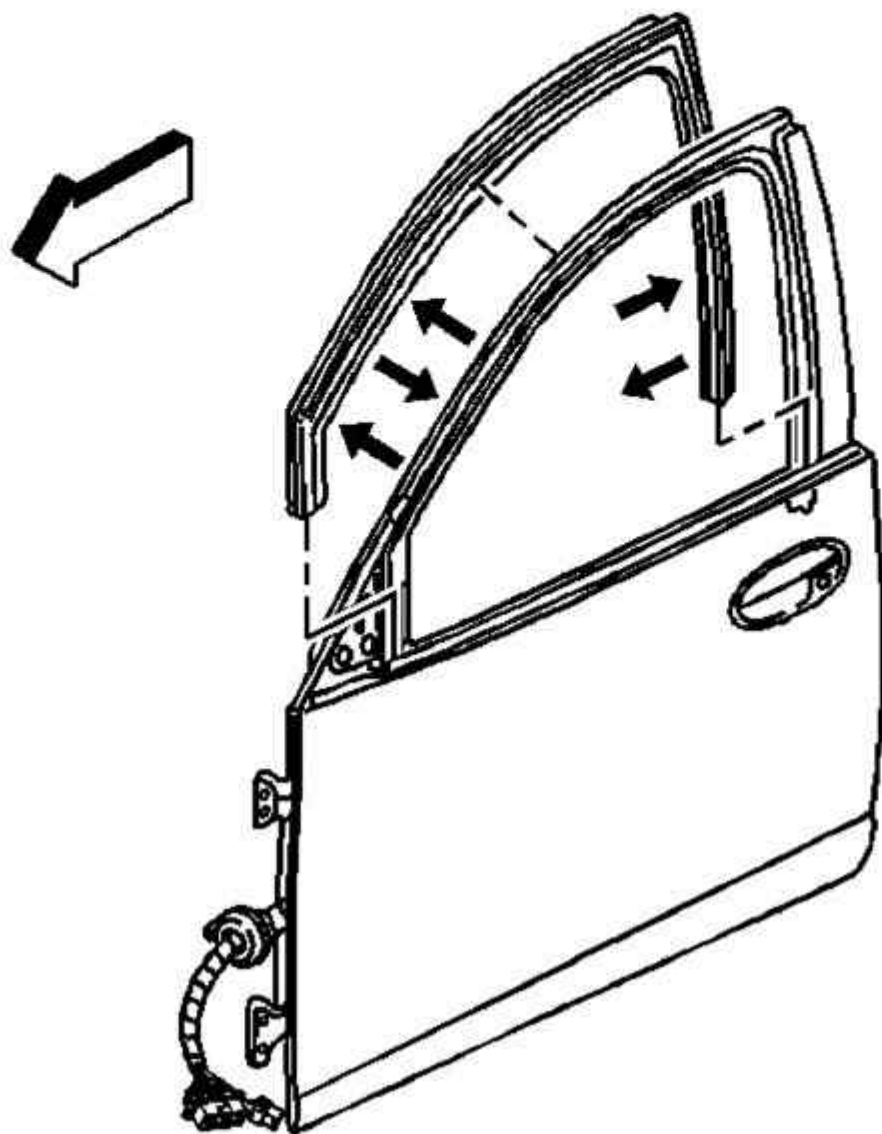


Fig. 58: View Of Front Door Window Weatherstrip
Courtesy of GENERAL MOTORS CORP.

1. Position the window weatherstrip to the door starting in the corner.
2. Firmly seat the window weatherstrip to the door, working out in both directions.
3. Inspect the window to ensure the weatherstrip is properly positioned.
4. Inspect the window for proper operation.
5. Close the door.

REAR SIDE DOOR WINDOW WEATHERSTRIP REPLACEMENT

Removal Procedure

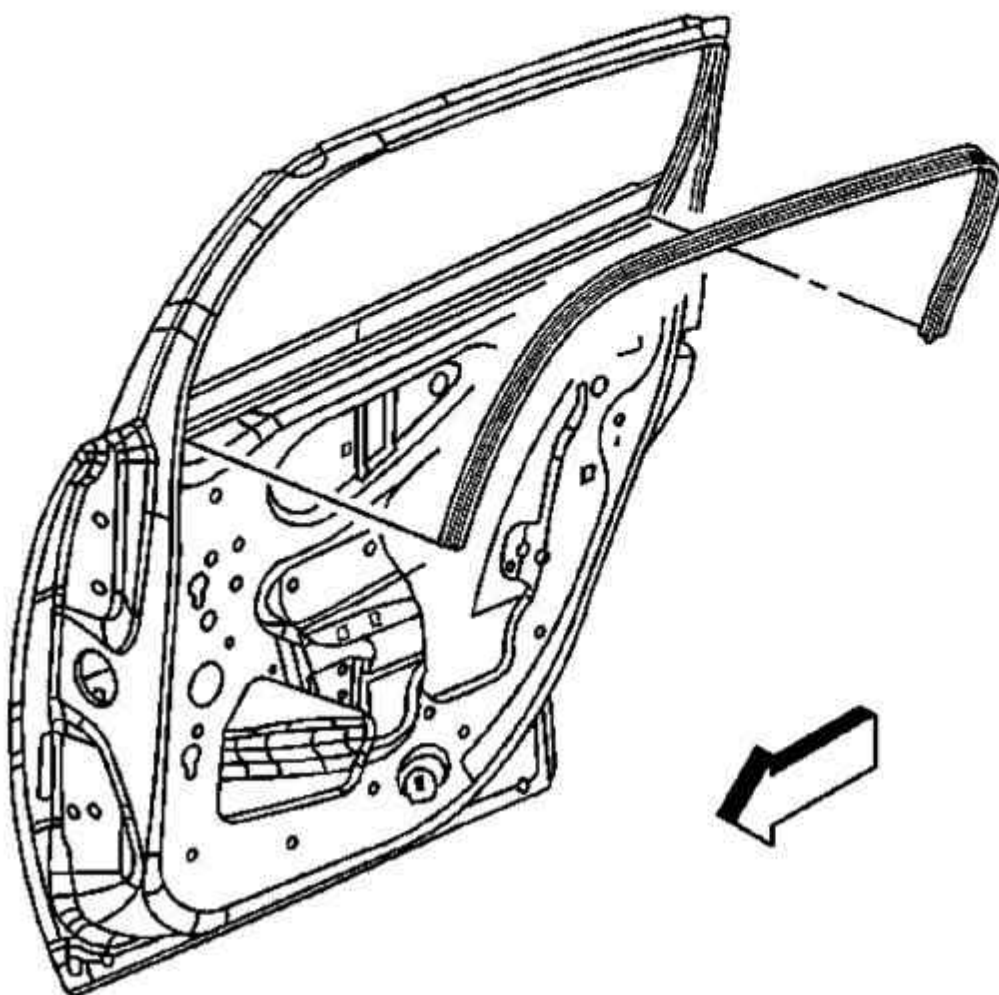


Fig. 59: View Of Weatherstrip - Rear Door Window
Courtesy of GENERAL MOTORS CORP.

1. Open the rear door.
2. Lower the window to the full down position.
3. Grasp the door window weatherstrip in the center. Pull downward until the weatherstrip fully releases from the door frame.
4. Remove the window weatherstrip from the door.

Installation Procedure

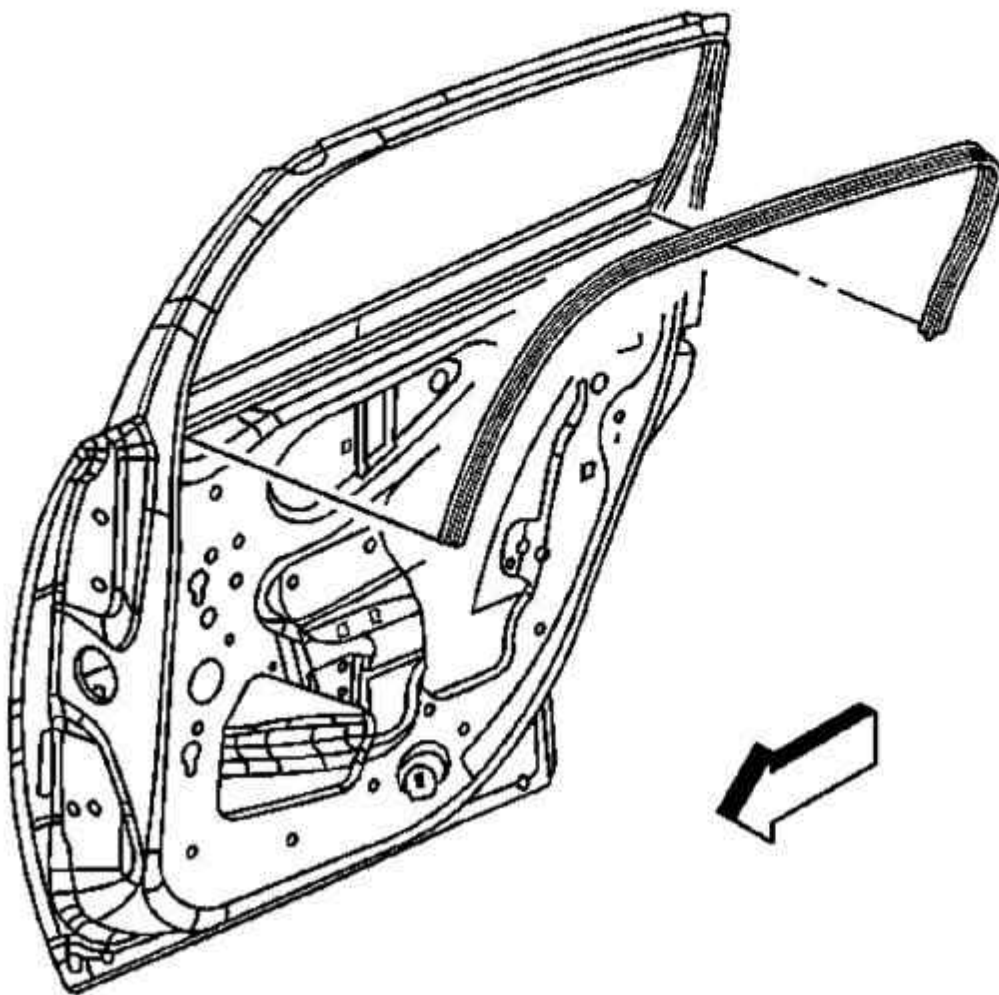


Fig. 60: View Of Weatherstrip - Rear Door Window
Courtesy of GENERAL MOTORS CORP.

1. Install the window weatherstrip to the door
2. Position the window weatherstrip to the window opening.
 1. Starting in the corners, position the window weatherstrip to the pinch-weld flange of the door frame.
 2. Working outward in both directions fitting the window weatherstrip.
3. Inspect the operation of the window to ensure that the weatherstrip is properly positioned to the door frame.
4. Close the rear door.

ADHESIVE INSTALLATION OF STATIONARY WINDOWS

CAUTION: Refer to Glass and Sheet Metal Handling Caution .

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 .

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

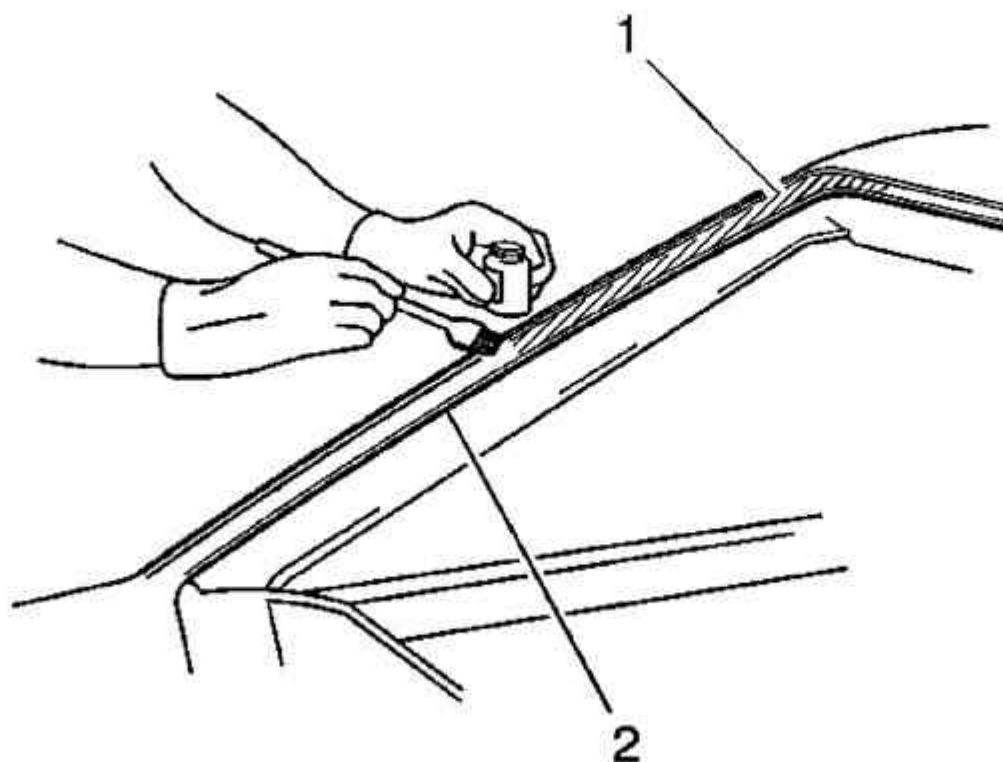


Fig. 61: Applying Pinch-Weld Primer
Courtesy of GENERAL MOTORS CORP.

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.

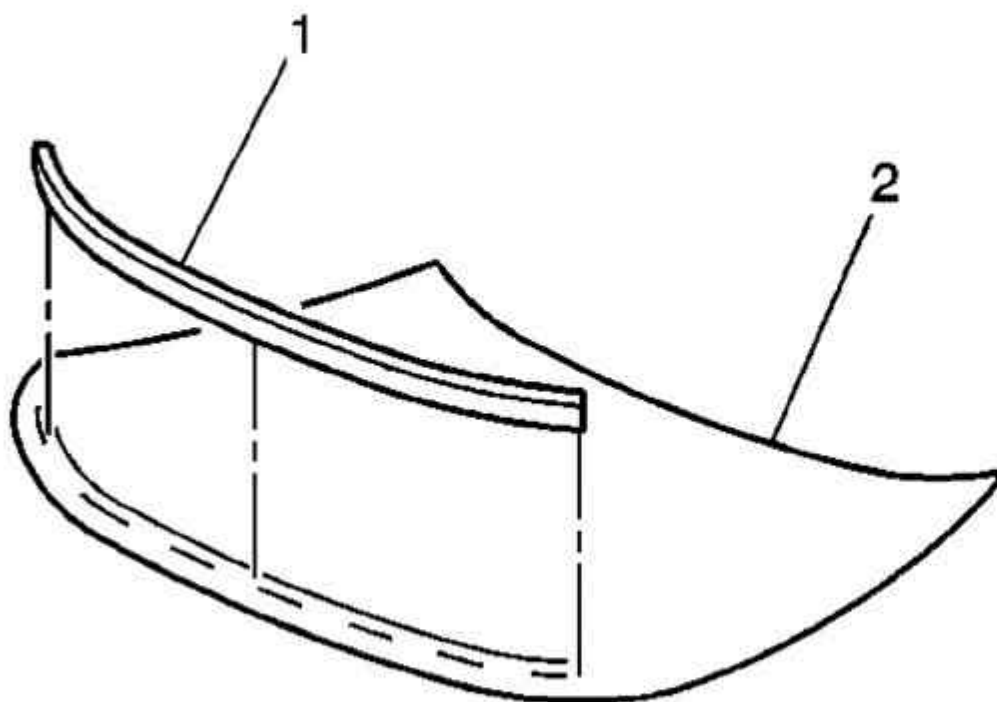


Fig. 62: Identifying Windshield Acoustic Strip
Courtesy of GENERAL MOTORS CORP.

10. Install the new windshield acoustic strip (1) to the windshield (2), if equipped or damaged.
The acoustic strip aids in reducing noise.
11. If the original windshield is being reused, and the windshield reveal molding is damaged or becomes detached, replace the windshield reveal molding. Refer to **Windshield Reveal Molding Replacement**.

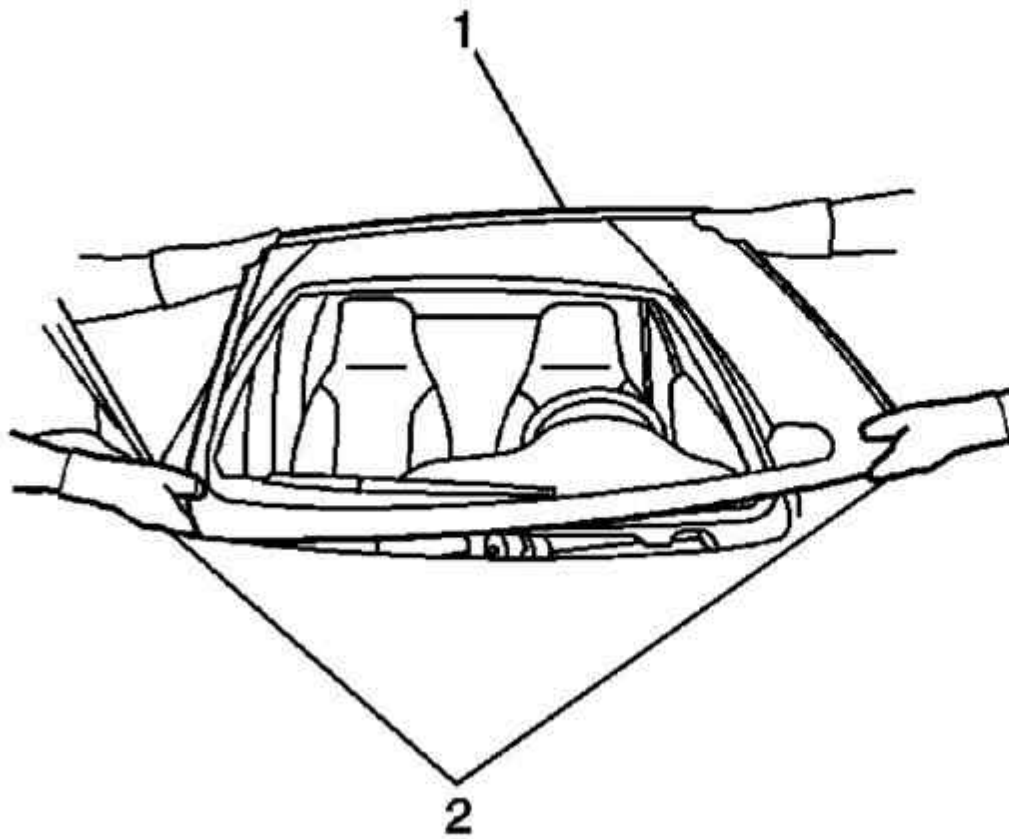


Fig. 63: View of Windshield Placement
Courtesy of GENERAL MOTORS CORP.

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

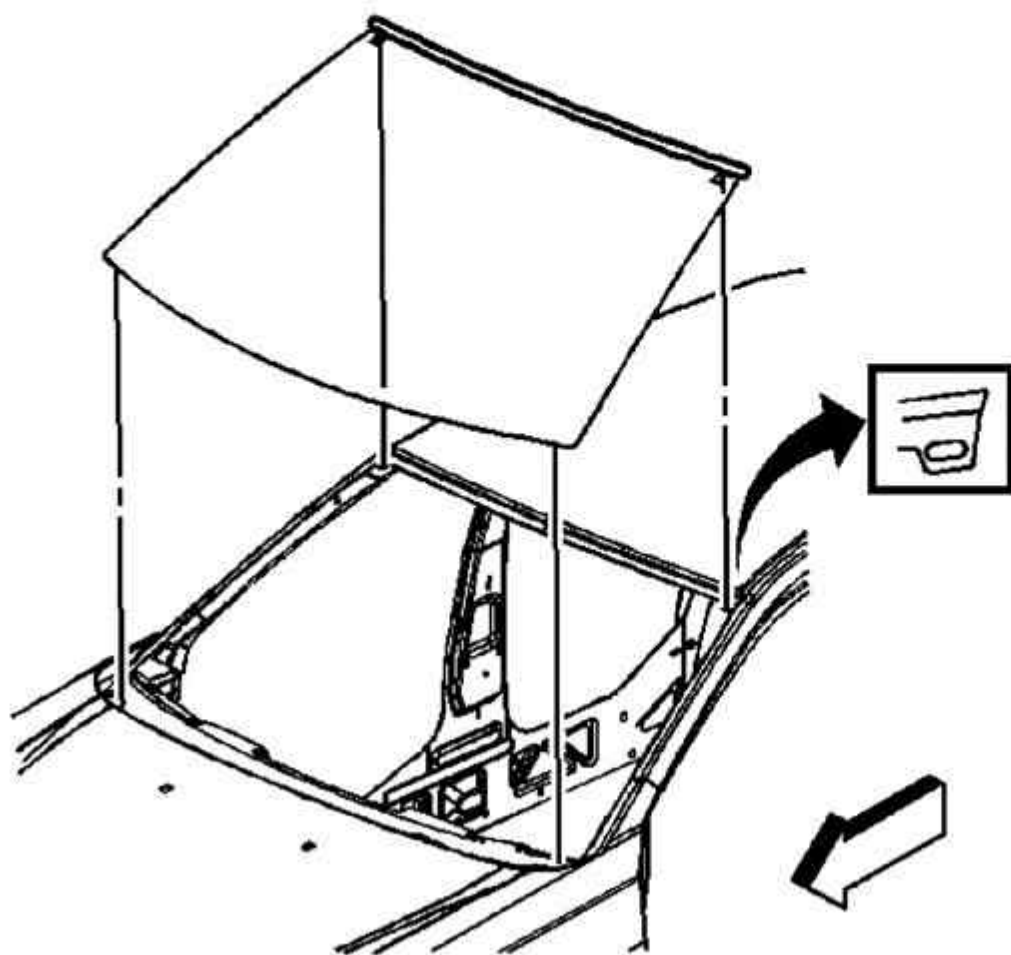


Fig. 64: Identifying Upper Sheet Metal Window Slots
Courtesy of GENERAL MOTORS CORP.

13. If equipped, ensure that the windshield locator pins are positioned into the locator slots on the upper pinch-weld flange.

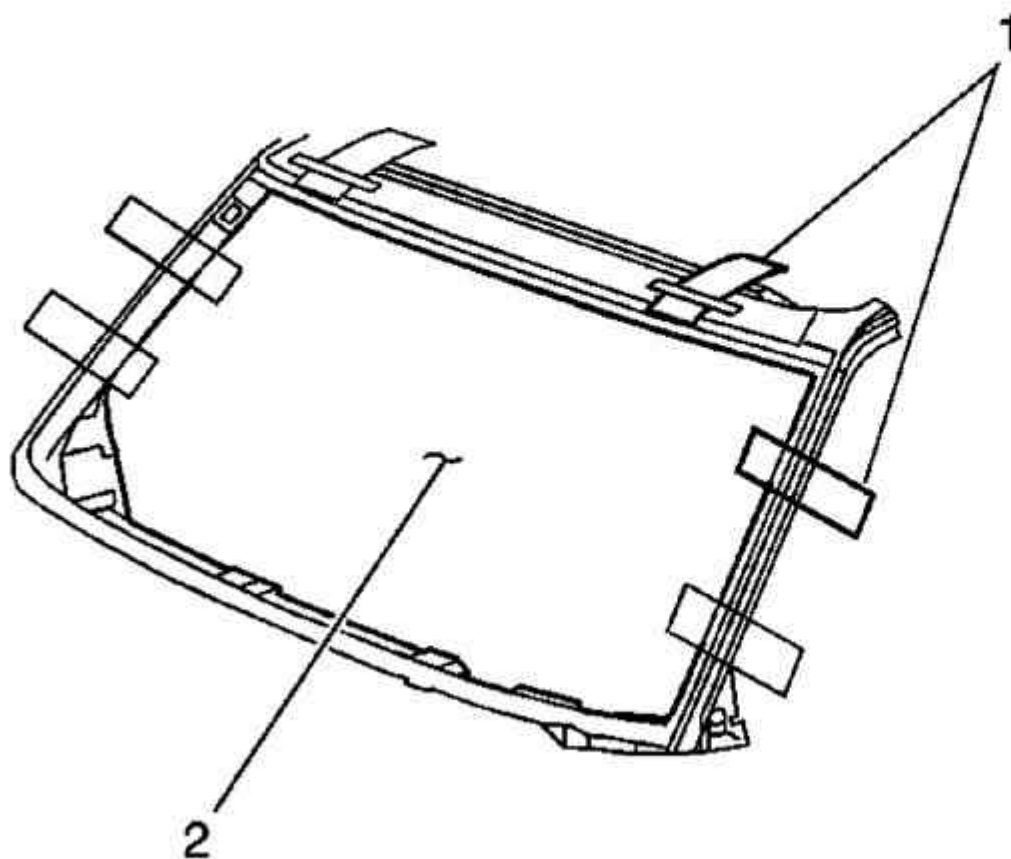


Fig. 65: Aligning Tape Lines On Window To Body
Courtesy of GENERAL MOTORS CORP.

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

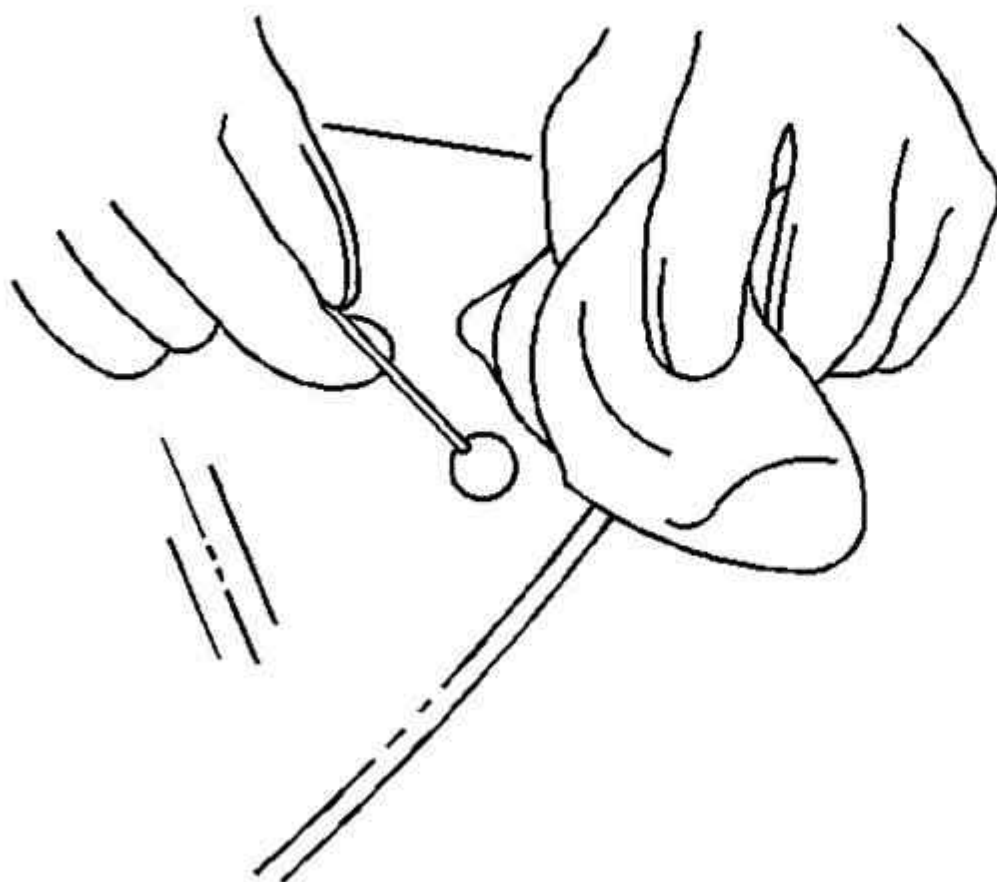


Fig. 66: Applying Glass Prep
Courtesy of GENERAL MOTORS CORP.

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.

16. 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.

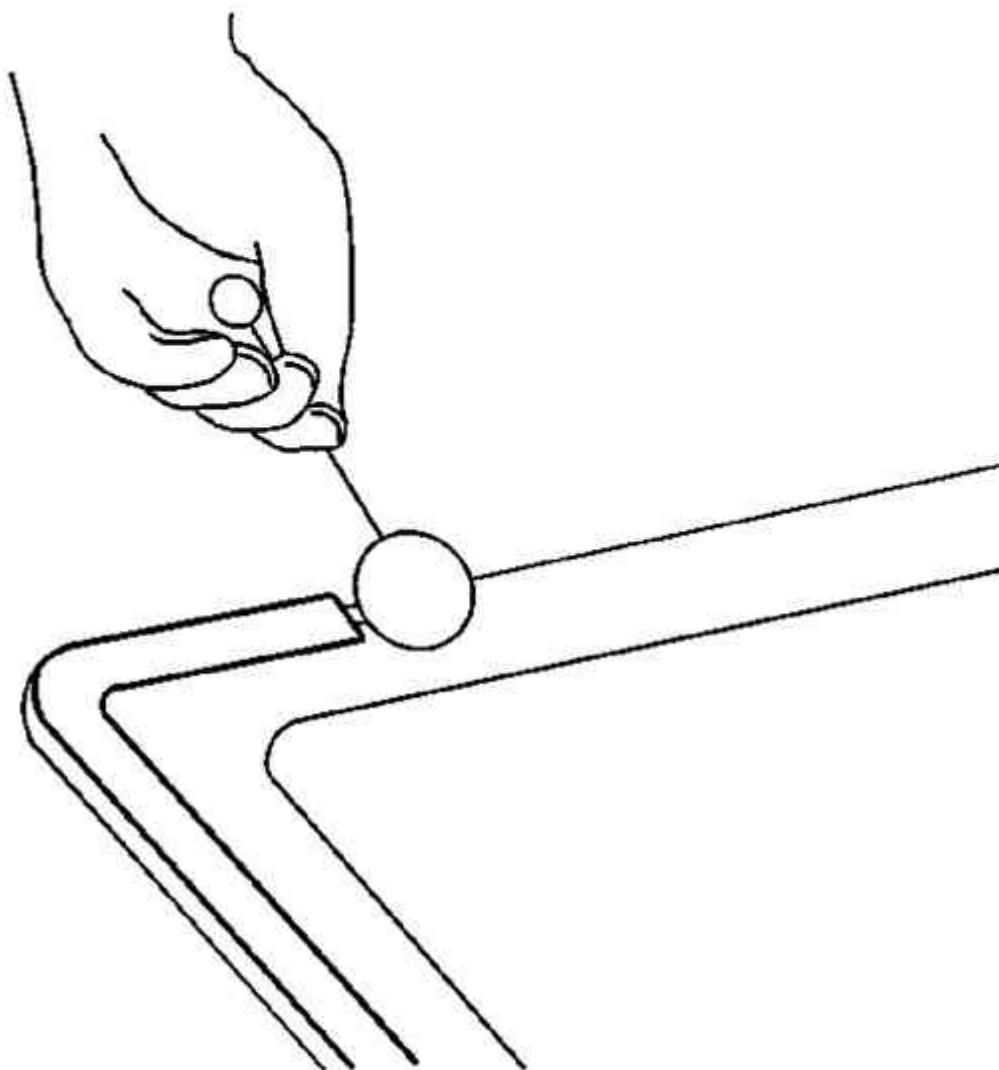


Fig. 67: Applying Glass Prep

Courtesy of GENERAL MOTORS CORP.

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

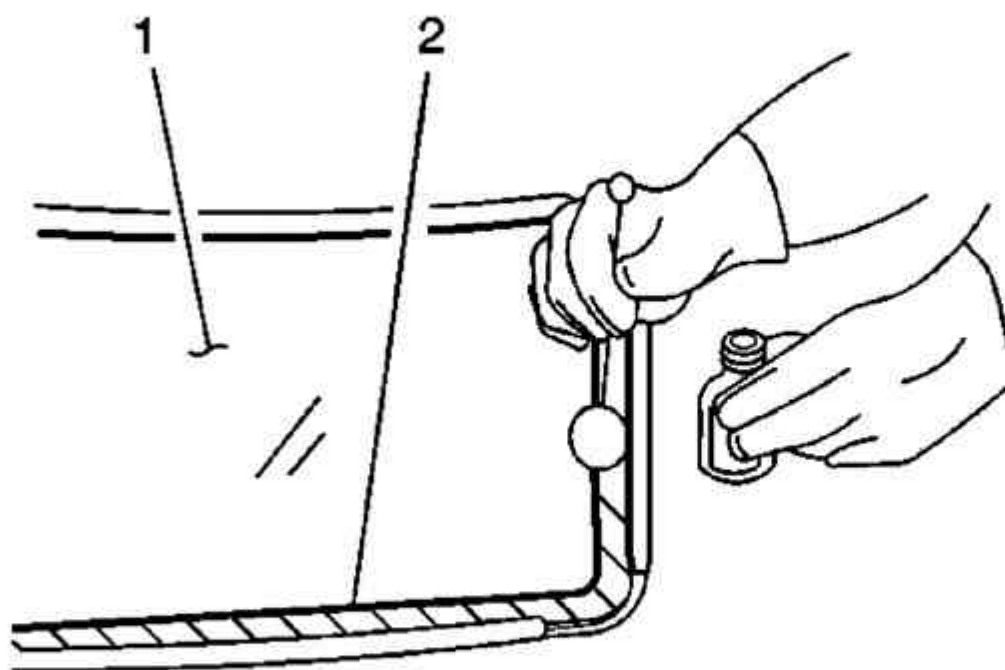


Fig. 68: Applying Glass Primer

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.

18. Shake the glass primer black #2 for at least 1 minute.
19. 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.
20. Allow the glass primer to dry for approximately 10 minutes.

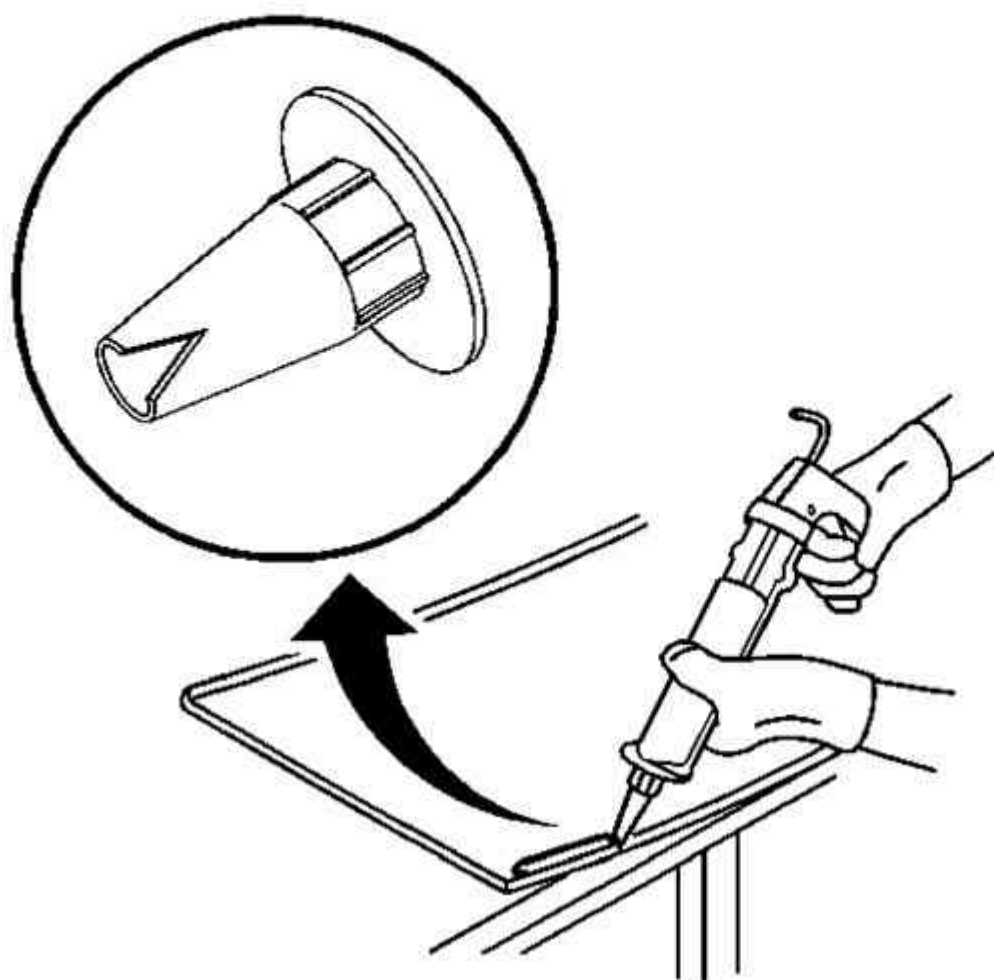


Fig. 69: View Of Modified Applicator Nozzle
Courtesy of GENERAL MOTORS CORP.

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.

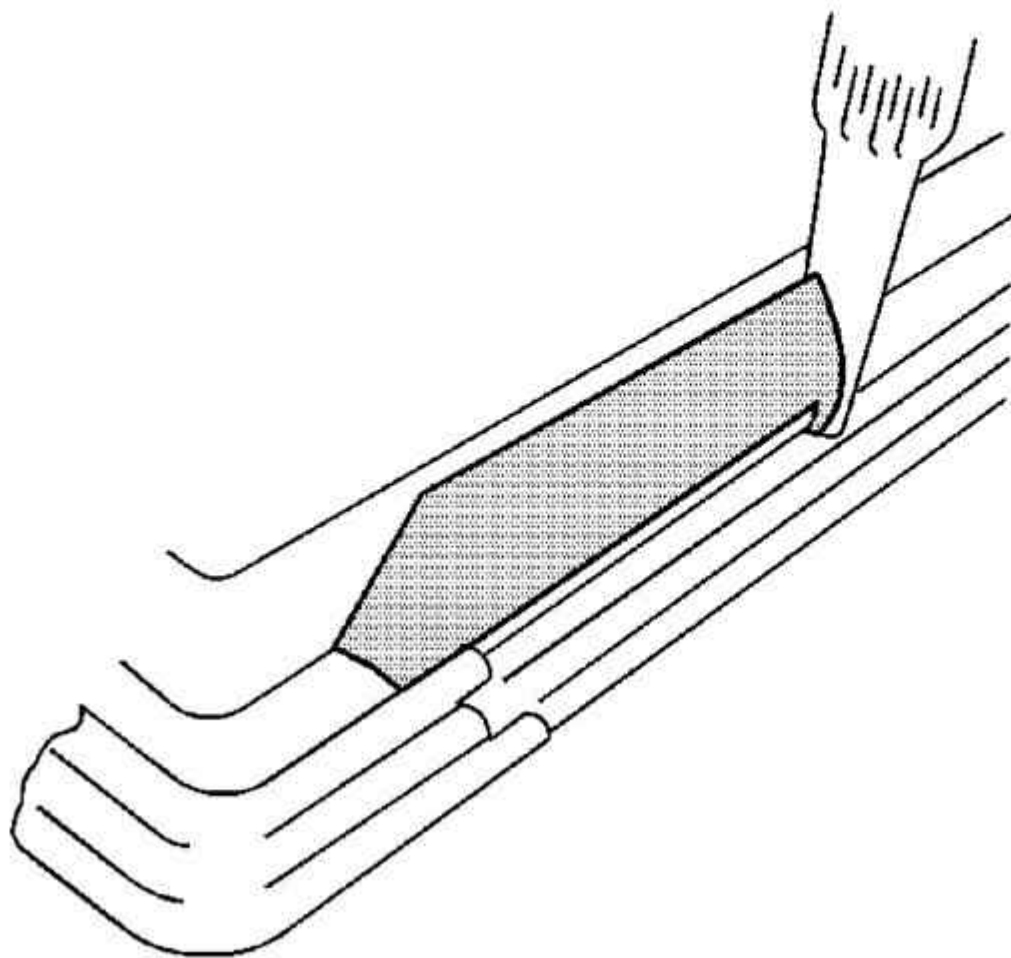


Fig. 70: Applying Bead Of Urethane Adhesive
Courtesy of GENERAL MOTORS CORP.

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

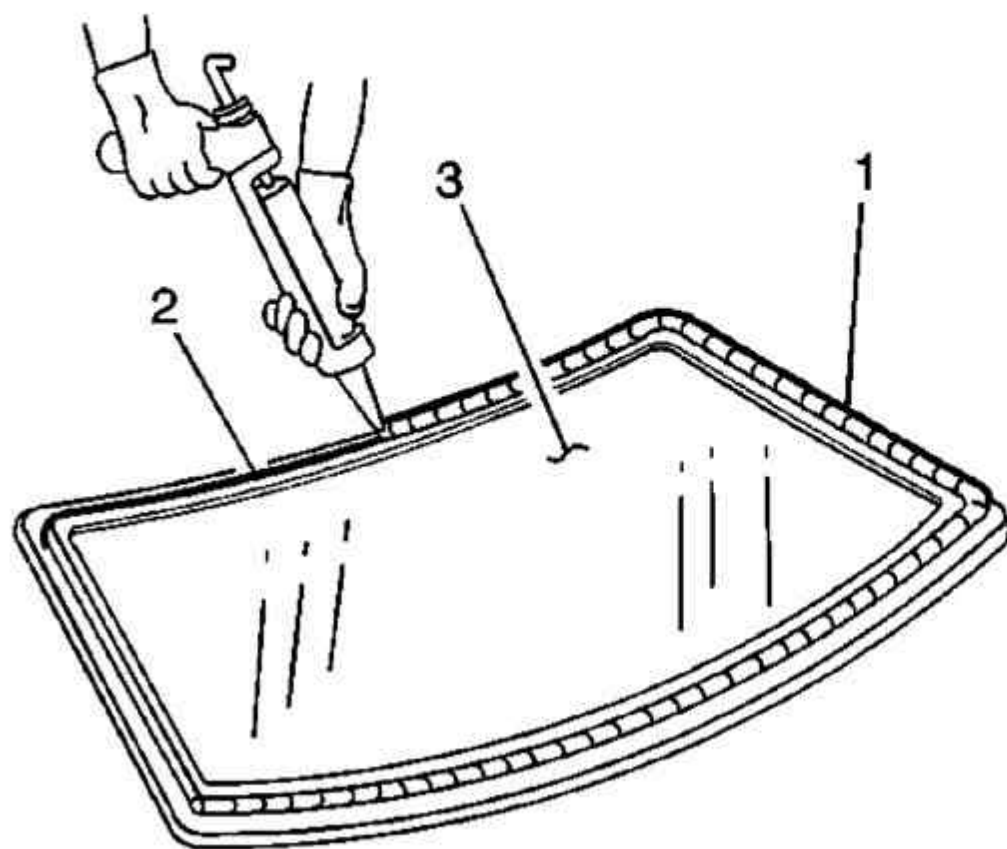


Fig. 71: Applying Urethane Adhesive To Inner Surface Of Window
Courtesy of GENERAL MOTORS CORP.

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).

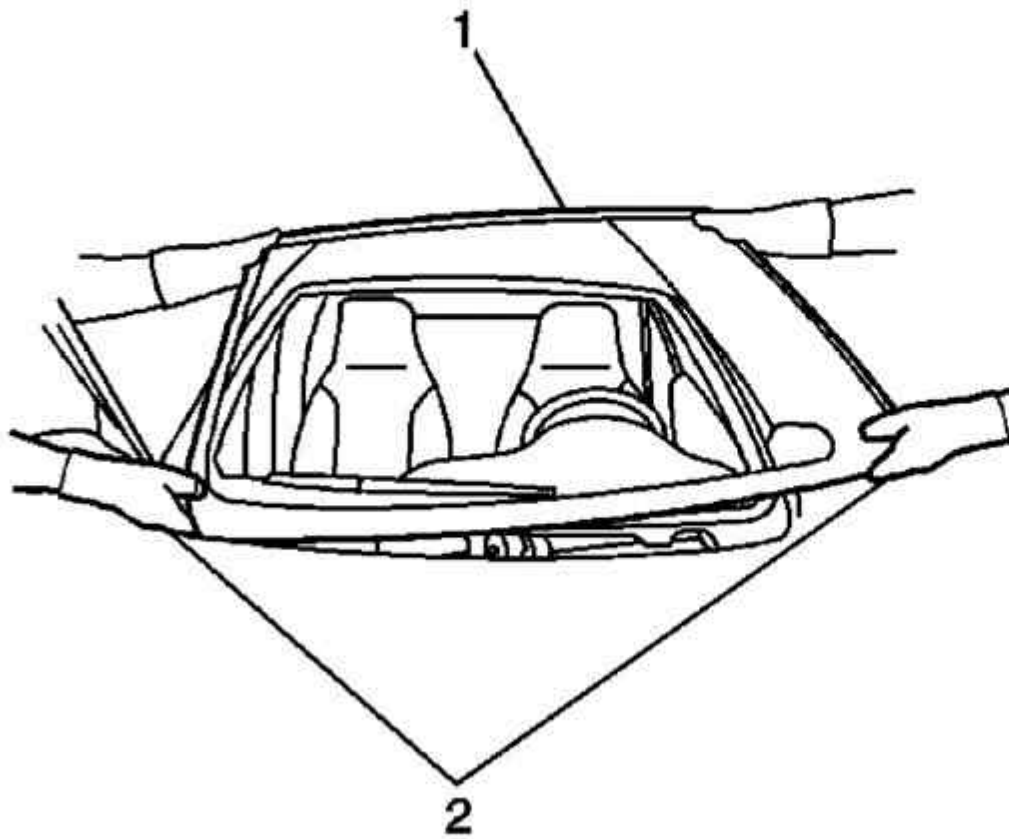


Fig. 72: View of Windshield Placement
Courtesy of GENERAL MOTORS CORP.

24. With the aid of an assistant, place the window in the opening.

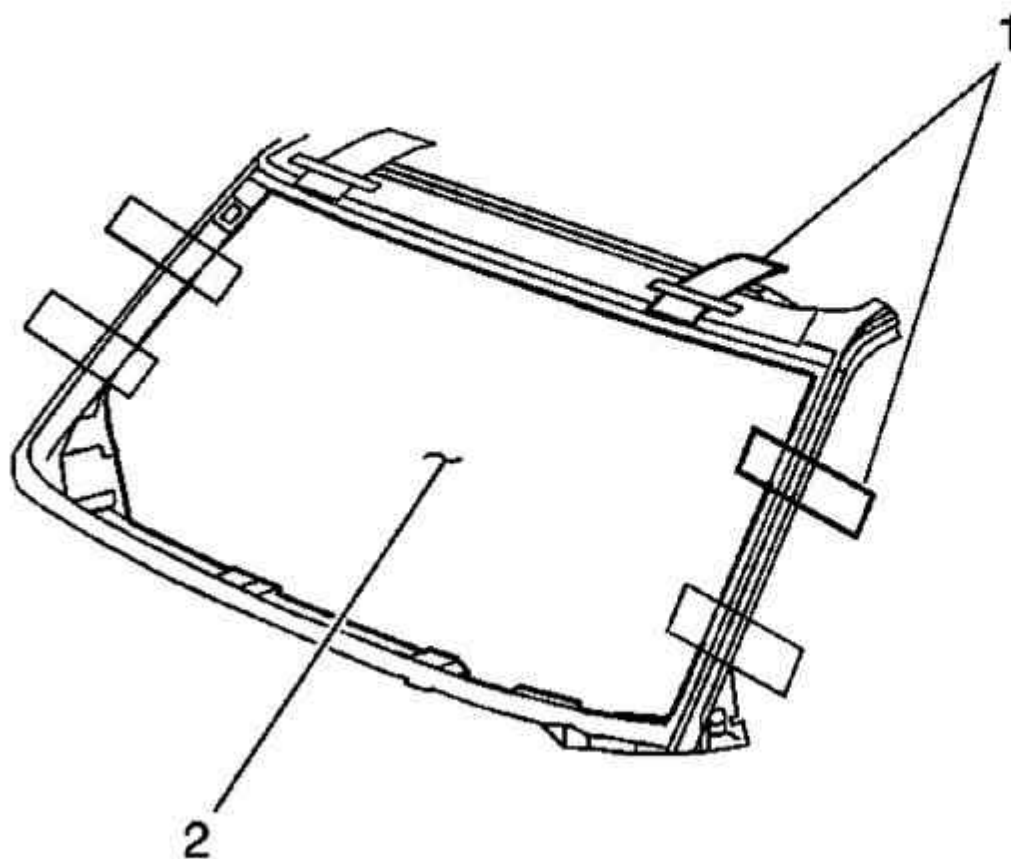


Fig. 73: Aligning Tape Lines On Window To Body
Courtesy of GENERAL MOTORS CORP.

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

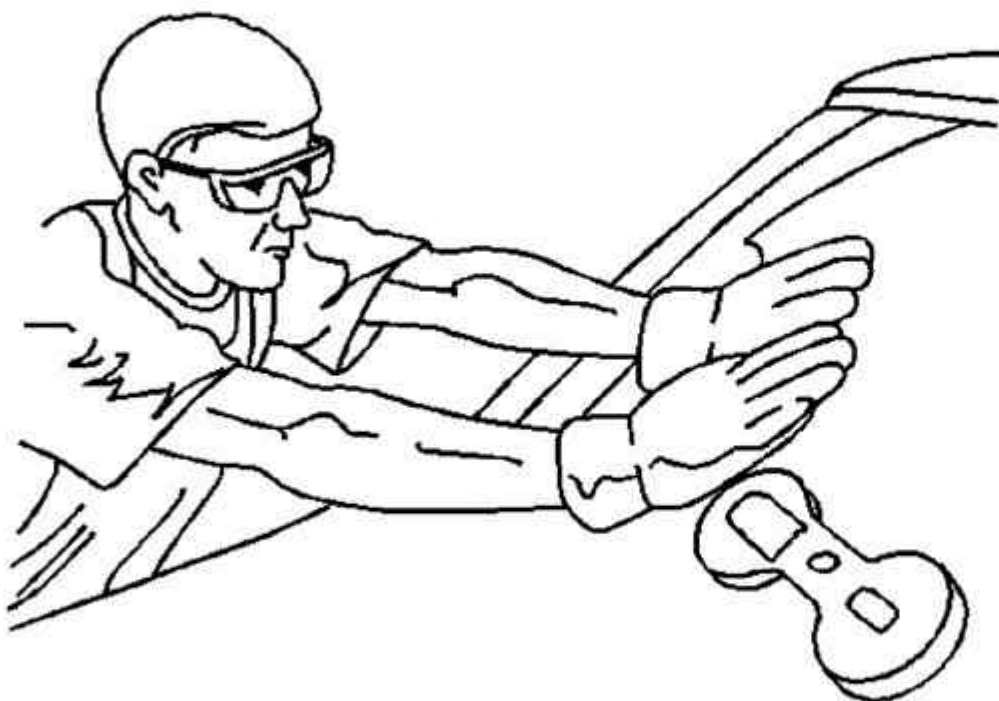


Fig. 74: Pressing Window Into Place
Courtesy of GENERAL MOTORS CORP.

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 windshield in order to wet-out the urethane bead.
27. Tape the window to the body in order to minimize movement until the urethane adhesive cures.

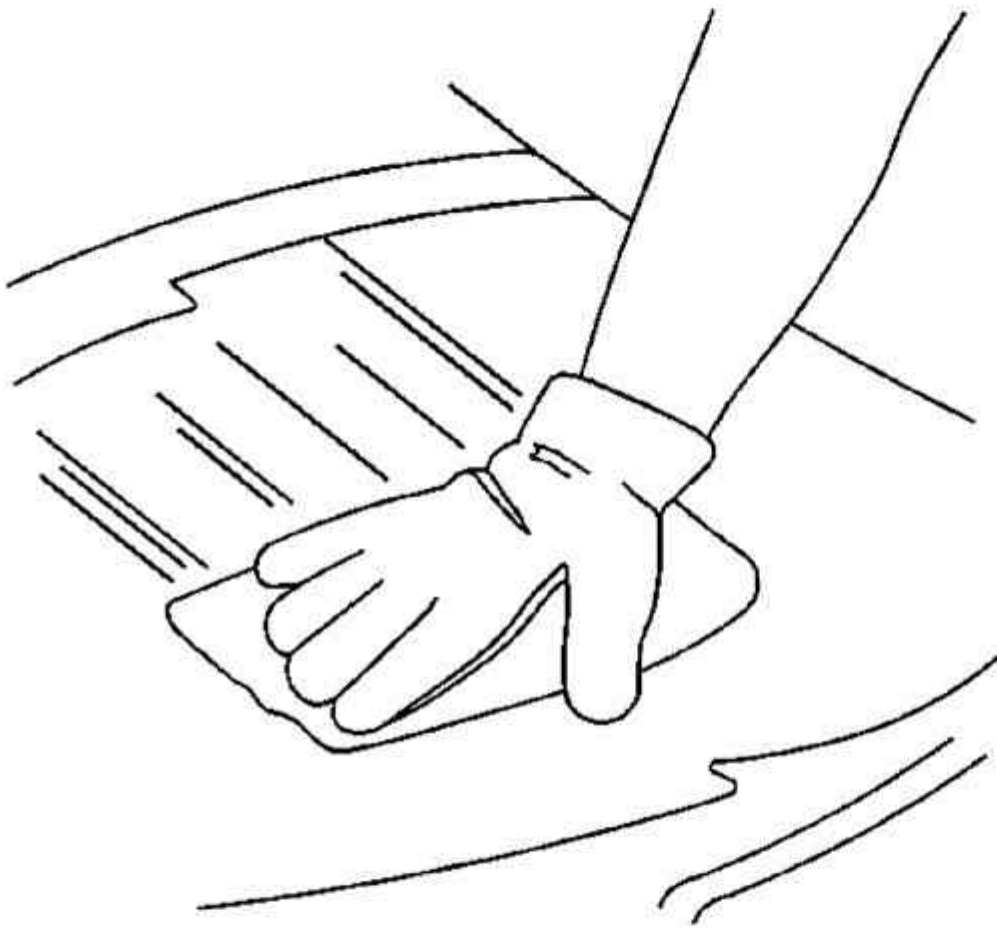


Fig. 75: Cleaning Window
Courtesy of GENERAL MOTORS CORP.

28. Clean any excess urethane adhesive from the body.

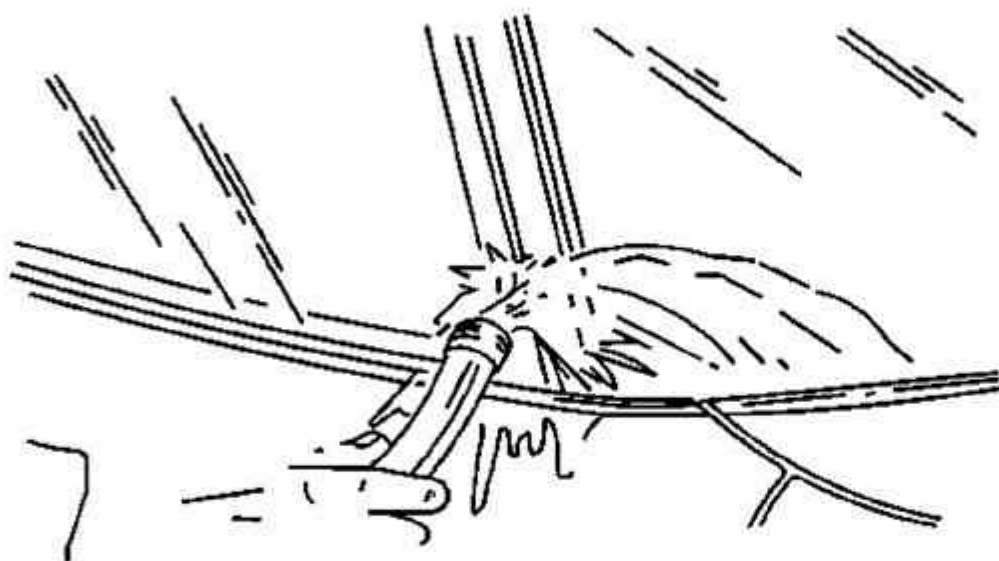


Fig. 76: Performing Water Hose Test
Courtesy of GENERAL MOTORS CORP.

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

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

33. 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.
34. Complete the window installation.

DESCRIPTION AND OPERATION

FULL-CUT METHOD DESCRIPTION

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.

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.

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.

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.

POWER WINDOWS DESCRIPTION AND OPERATION

Power Windows

The power window system consists of the following components:

- Driver window switch
- Front passenger window switch
- Left rear window switch
- PWR/WNDW Circuit Breaker 25-amp
- Right rear window switch
- Window regulator motors in each of the doors

Driver Window Switch

When the ignition switch is in the RUN or ACCY position, or retained accessory power (RAP) is enabled, battery positive voltage is supplied from the PWR/WNDW circuit breaker to the driver window switch. Ground for the switch is provided by G301. When the window switch is pressed in the DOWN position, battery positive voltage is applied to the driver window motor down circuit and ground is applied to the driver window motor up circuit causing the window to open. When the driver window switch is pressed in the UP position, the polarity is reversed, battery positive voltage and ground are applied to the opposite circuits and the window closes. In order to control the passenger windows from the driver door, the driver window switch assembly contains a separate window switch for each passenger door window. These window switches operate in the same way as the driver window switch, except that the applied battery positive voltage and ground must also pass through the passenger window switch to get to the passenger window motor.

Express Down Feature

The driver window will travel to the fully down position when the driver window switch is pressed past the first DOWN detent. Pressing the switch to the full DOWN position or to the UP position or will cancel the express down feature.

Lockout Switch Feature

The driver window switch contains a rear window lockout switch which disconnects the battery positive voltage supply to the rear passenger door window switches, disabling them. The front passenger door window switch cannot be locked out.

Front Passenger Window Switch

When the ignition switch is in the RUN or ACCY position, or retained accessory power (RAP) is enabled, battery positive voltage is supplied from the PWR/WNDW circuit breaker to the front passenger window switch. Ground is applied from G301 through the driver window switch to the front passenger power window switch. When the

front passenger power window switch is pressed to the DOWN position, battery positive voltage is applied to the window motor down circuit and ground is applied to the window motor up circuit, causing the window to open. When the window switch is pressed in the UP position, the polarity is reversed, battery positive voltage and ground are applied to the opposite circuits and the window closes.

Rear Passenger Window Switches

When the ignition switch is in the RUN or ACCY position, or retained accessory power (RAP) is enabled, battery positive voltage is supplied from the PWR/WNDW circuit breaker through the driver window switch to the power window master switch lockout signal circuit, to each rear window switch. Ground is applied from G301 through the driver window switch to each of the rear power window switches. When a rear power window switch is pressed to the DOWN position, battery positive voltage is applied to the window motor down circuit and ground is applied to the window motor up circuit, causing the window to open. When the window switch is pressed in the UP position, the polarity is reversed, battery positive voltage and ground are applied to the opposite circuits and the window closes.

REAR WINDOW DEFOGGER DESCRIPTION AND OPERATION

Rear Window Defogger

The rear window defogger system consists of the following components:

- Body control module (BCM)
- Electronic compass
- HVAC control module
- Instrument panel cluster (IPC)
- Rear window defogger grid
- R/DEFOG relay

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

The rear window defogger will turn off automatically after it has been activated. This time is determined by a dynamic timer which varies the amount of time the rear window defogger is allowed to be on based on ambient temperature and vehicle speed. The rear window defogger will be extended when the ambient temperature is cooler or while the vehicle is in motion.

If the battery is low, the BCM will disable the rear window defogger by removing the ground supplied to the R/DEFOG relay.

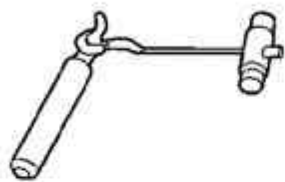
SPECIAL TOOLS AND EQUIPMENT

SPECIAL TOOLS

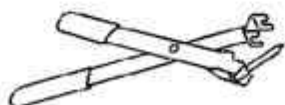
Illustration	Tool Number/Description
	J 24402-A Glass Sealant Cold Knife Remover

2008 Buick LaCrosse CXL

2008 ACCESSORIES & EQUIPMENT Fixed and Moveable Windows - LaCrosse



J-33431-C
Signal Generator and Instrument Panel Tester



J-34946
Window Pin Remover



J 39032
Stationary Glass Removal Tool



J-39040
Quarter Window Remover

2008 Buick LaCrosse CXL
2008 ACCESSORIES & EQUIPMENT Fixed and Moveable Windows - LaCrosse

2008 Buick LaCrosse CXL
2008 ACCESSORIES & EQUIPMENT Fixed and Moveable Windows - LaCrosse

2008 Buick LaCrosse CXL
2008 ACCESSORIES & EQUIPMENT Fixed and Moveable Windows - LaCrosse

2008 Buick LaCrosse CXL
2008 ACCESSORIES & EQUIPMENT Fixed and Moveable Windows - LaCrosse

2008 Buick LaCrosse CXL
2008 ACCESSORIES & EQUIPMENT Fixed and Moveable Windows - LaCrosse

2008 Buick LaCrosse CXL
2008 ACCESSORIES & EQUIPMENT Fixed and Moveable Windows - LaCrosse

2008 Buick LaCrosse CXL
2008 ACCESSORIES & EQUIPMENT Fixed and Moveable Windows - LaCrosse

2008 Buick LaCrosse CXL
2008 ACCESSORIES & EQUIPMENT Fixed and Moveable Windows - LaCrosse

2008 Buick LaCrosse CXL
2008 ACCESSORIES & EQUIPMENT Fixed and Moveable Windows - LaCrosse

2008 Buick LaCrosse CXL
2008 ACCESSORIES & EQUIPMENT Fixed and Moveable Windows - LaCrosse

2008 Buick LaCrosse CXL
2008 ACCESSORIES & EQUIPMENT Fixed and Moveable Windows - LaCrosse

2008 Buick LaCrosse CXL
2008 ACCESSORIES & EQUIPMENT Fixed and Moveable Windows - LaCrosse

2008 Buick LaCrosse CXL
2008 ACCESSORIES & EQUIPMENT Fixed and Moveable Windows - LaCrosse

2008 Buick LaCrosse CXL
2008 ACCESSORIES & EQUIPMENT Fixed and Moveable Windows - LaCrosse

2008 Buick LaCrosse CXL
2008 ACCESSORIES & EQUIPMENT Fixed and Moveable Windows - LaCrosse

2008 Buick LaCrosse CXL
2008 ACCESSORIES & EQUIPMENT Fixed and Moveable Windows - LaCrosse

2008 Buick LaCrosse CXL
2008 ACCESSORIES & EQUIPMENT Fixed and Moveable Windows - LaCrosse

2008 Buick LaCrosse CXL
2008 ACCESSORIES & EQUIPMENT Fixed and Moveable Windows - LaCrosse

2008 Buick LaCrosse CXL
2008 ACCESSORIES & EQUIPMENT Fixed and Moveable Windows - LaCrosse

2008 Buick LaCrosse CXL
2008 ACCESSORIES & EQUIPMENT Fixed and Moveable Windows - LaCrosse

2008 Buick LaCrosse CXL
2008 ACCESSORIES & EQUIPMENT Fixed and Moveable Windows - LaCrosse

2008 Buick LaCrosse CXL
2008 ACCESSORIES & EQUIPMENT Fixed and Moveable Windows - LaCrosse

2008 Buick LaCrosse CXL
2008 ACCESSORIES & EQUIPMENT Fixed and Moveable Windows - LaCrosse

2008 Buick LaCrosse CXL
2008 ACCESSORIES & EQUIPMENT Fixed and Moveable Windows - LaCrosse

2008 Buick LaCrosse CXL
2008 ACCESSORIES & EQUIPMENT Fixed and Moveable Windows - LaCrosse

2008 Buick LaCrosse CXL
2008 ACCESSORIES & EQUIPMENT Fixed and Moveable Windows - LaCrosse

2008 Buick LaCrosse CXL
2008 ACCESSORIES & EQUIPMENT Fixed and Moveable Windows - LaCrosse

2008 Buick LaCrosse CXL
2008 ACCESSORIES & EQUIPMENT Fixed and Moveable Windows - LaCrosse

2008 Buick LaCrosse CXL
2008 ACCESSORIES & EQUIPMENT Fixed and Moveable Windows - LaCrosse

2008 Buick LaCrosse CXL
2008 ACCESSORIES & EQUIPMENT Fixed and Moveable Windows - LaCrosse

2008 Buick LaCrosse CXL
2008 ACCESSORIES & EQUIPMENT Fixed and Moveable Windows - LaCrosse

2008 Buick LaCrosse CXL
2008 ACCESSORIES & EQUIPMENT Fixed and Moveable Windows - LaCrosse