2008 ACCESSORIES & EQUIPMENT

Fixed and Moveable Windows - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

SPECIFICATIONS

FASTENER TIGHTENING SPECIFICATIONS

Application	Specification	
	Metric	English
Front Side Door Window Bolts	9 N.m	80 lb in
Front Side Door Window Channel Nuts	9 N.m	80 lb in
Front Side Door Window Channel Upper Screw	1.3 N.m	12 lb in
Front Side Door Window Regulator Bolts	4.6 N.m	41 lb in
Front Side Door Window Regulator Clamp Bolts	9 N.m	80 lb in
Front Side Door Window Regulator Motor Bolts	9 N.m	80 lb in
Front Side Door Window Run Channel Bolt	9 N.m	80 lb in
Front Side Door Window Run Channel Front Lower Bolt	11 N.m	97 lb in
Front Side Door Window Run Channel Rear Bolt	10 N.m	89 lb in
Front Side Door Window Run Channel Rear Lower Bolt	11 N.m	97 lb in
Liftgate Window Latch Bolts - Front Side	9 N.m	80 lb in
Liftgate Window Latch Screws	9 N.m	80 lb in
Rear Side Door Window Bolts	7 N.m	61 lb in
Rear Side Door Window Channel Lower Nuts	9 N.m	80 lb in
Rear Side Door Window Regulator Bolts	9 N.m	80 lb in
Rear Side Door Window Regulator Motor Bolts	9 N.m	80 lb in
Rear Side Door Window Regulator Nuts	9 N.m	80 lb in
Rear Side Door Window Regulator Nuts	9 N.m	80 lb in
Rear Side Door Window Regulator Nuts	9 N.m	80 lb in
Rear Sliding Window Catch Screws	3 N.m	27 lb in
Rear Sliding Window Regulator Screw	5 N.m	44 lb in
Windshield Side Reveal Molding	2 N.m	18 lb in

SCHEMATIC AND ROUTING DIAGRAMS

MOVEABLE WINDOW SCHEMATICS

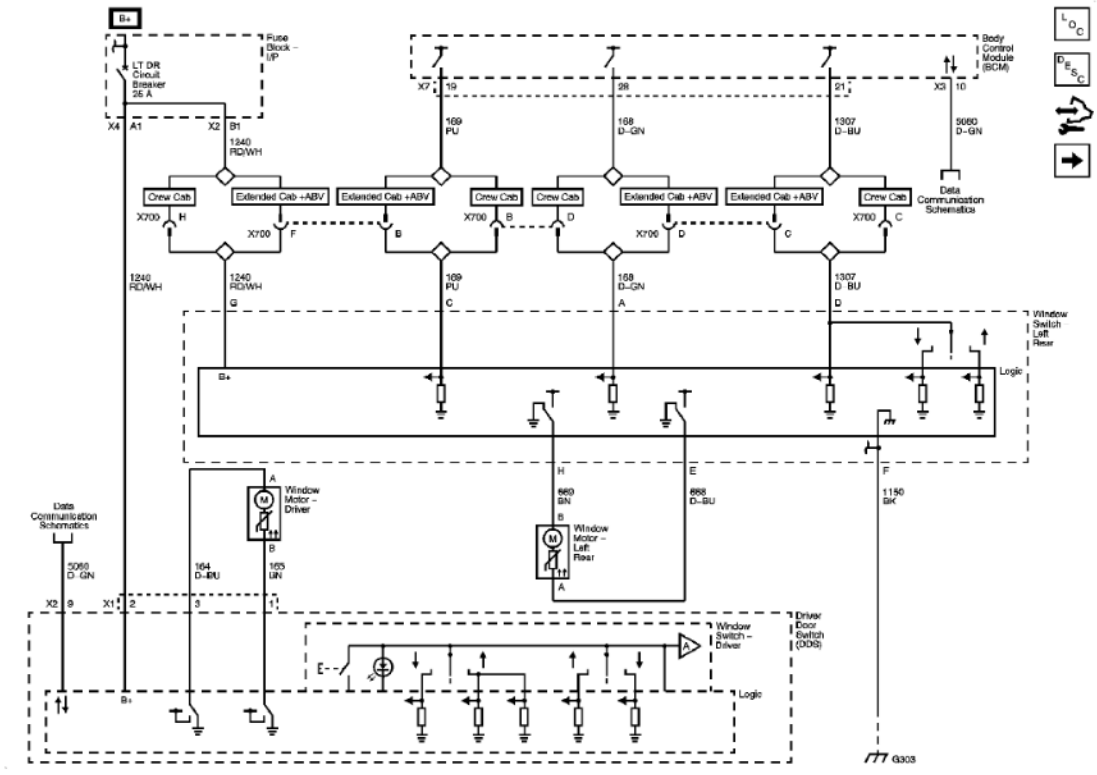


Fig. 1: Left Doors (AN3/DL3)
Courtesy of GENERAL MOTORS CORP.

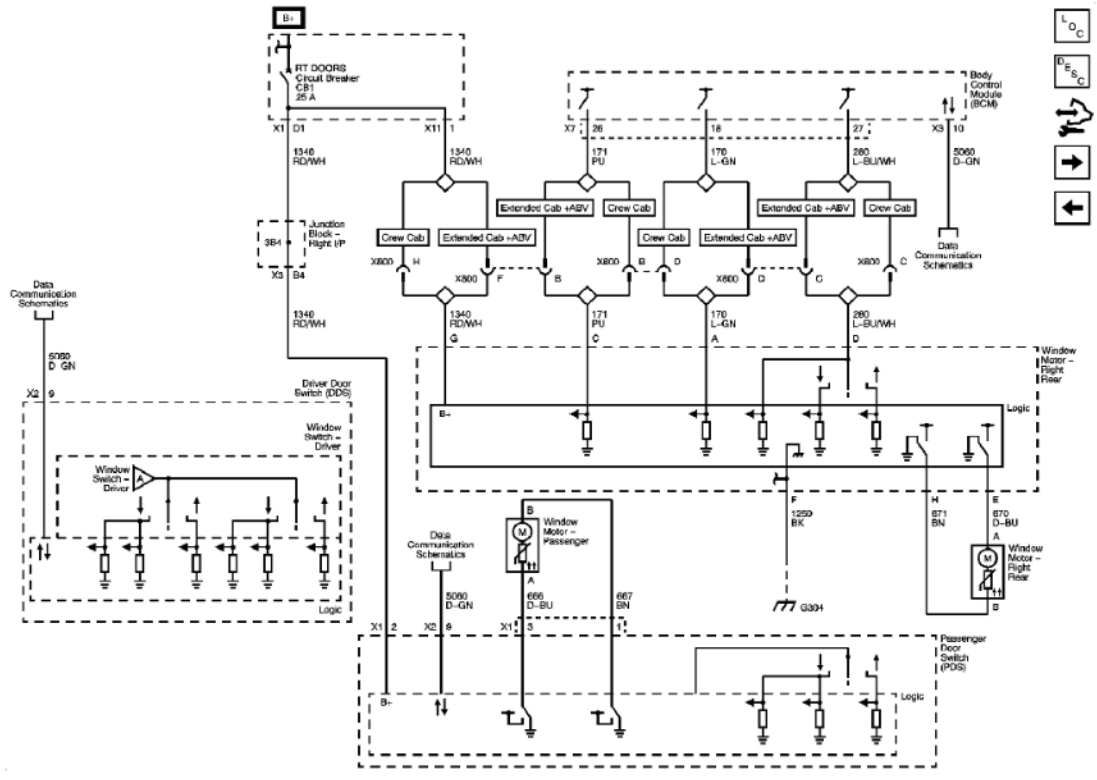


Fig. 2: Right Doors (AN3/DL3)
Courtesy of GENERAL MOTORS CORP.

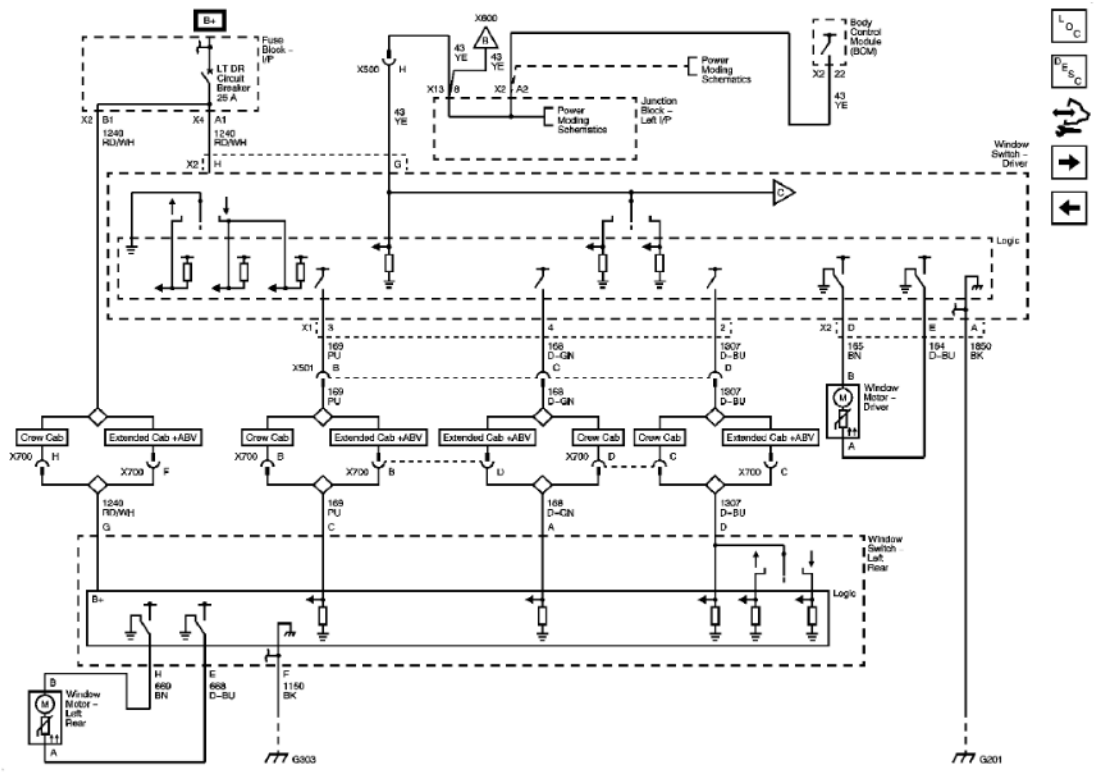


Fig. 3: Left Doors (-AN3/DL3)
Courtesy of GENERAL MOTORS CORP.

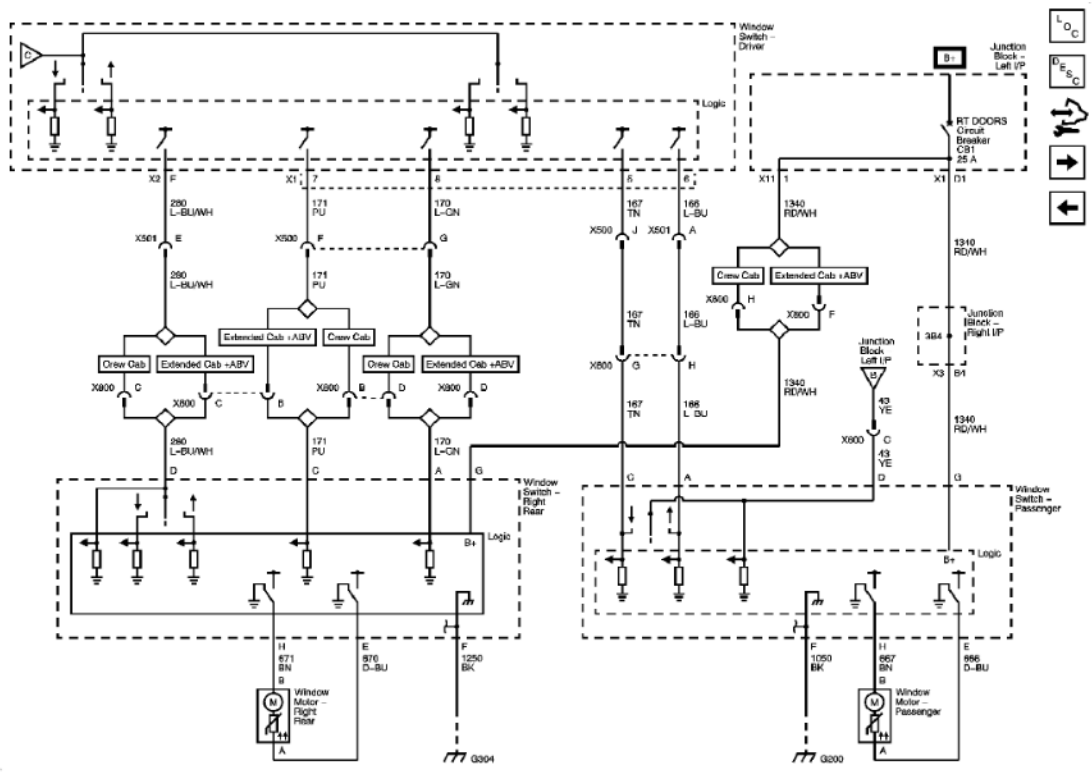


Fig. 4: Right Doors (-AN3/DL3)
Courtesy of GENERAL MOTORS CORP.

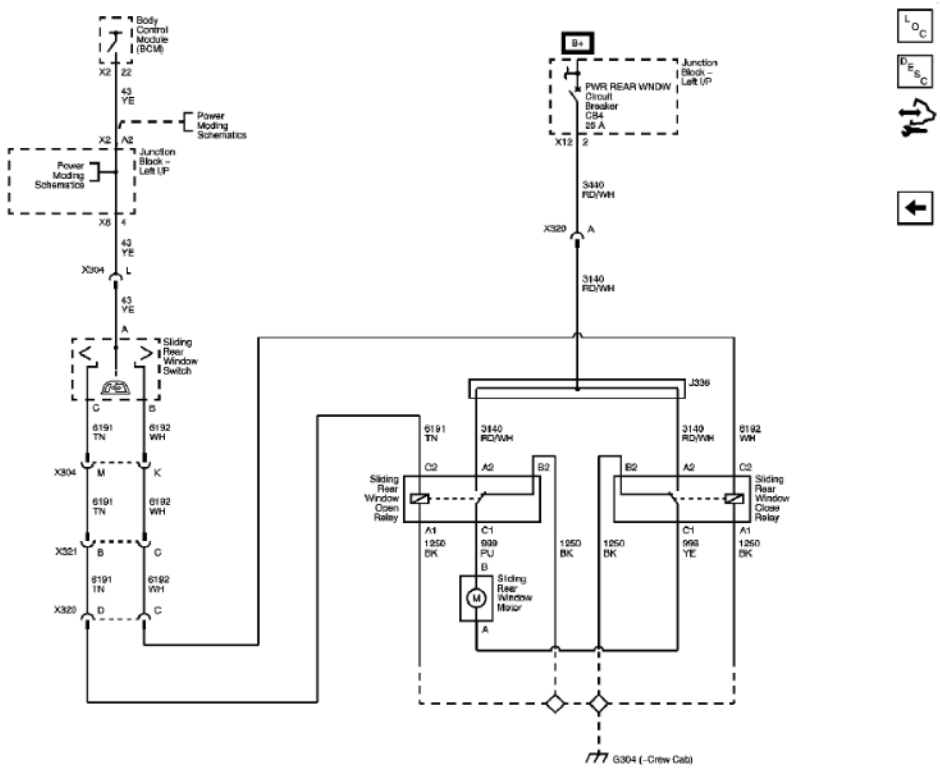


Fig. 5: Sliding Rear Window (A48)
Courtesy of GENERAL MOTORS CORP.

DEFOGGER SCHEMATICS

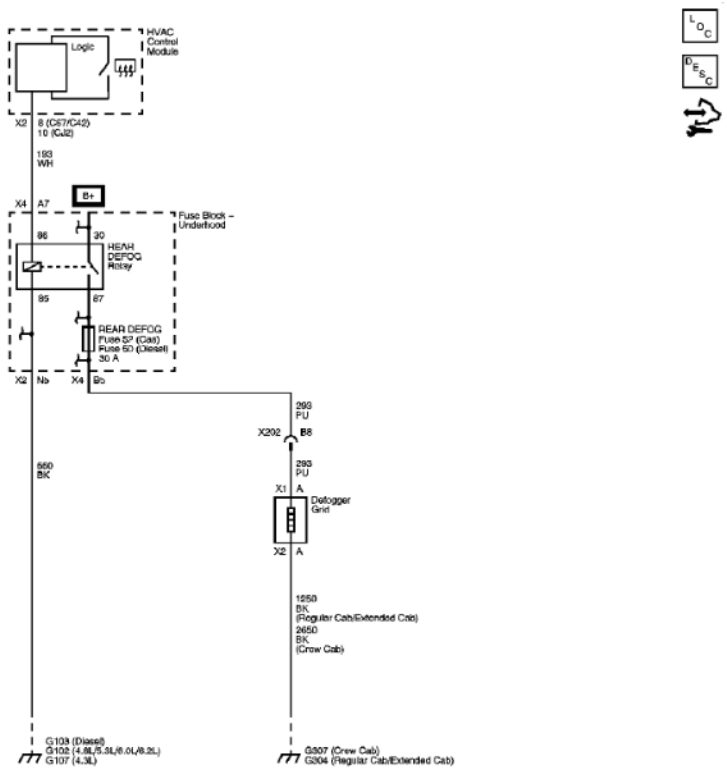


Fig. 6: Defogger Schematic
Courtesy of GENERAL MOTORS CORP.

DIAGNOSTIC INFORMATION AND PROCEDURES

DIAGNOSTIC CODE INDEX

DIAGNOSTIC CODE INDEX

DTC	Description
DTC B0283	B0283 06: Electric Rear Defrost Circuit Short To Ground or Open
DTC B3205	B3205 00: Window Inactive Over Current Fault B3205 0B: Window Motor Fast Over Current Fault
DTC B3819, B3820, B3822, or B3823	B3819 00: Left Rear Window Up Control Circuit B3820 00: Left Rear Window Down Control Circuit B3822 00: Right Rear Window Up Control Circuit B3823 00: Right Rear Window Down Control Circuit
DTC B3821 or B3824	B3821 00: Left Rear Window Relay Power Circuit B3824 00: Right Rear Window Relay Power 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 (DTCs) and their status.

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

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 Descriptors

DTC B0283 06

Electric Rear Defrost Circuit Short To Ground or Open

Diagnostic Fault Information

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
Relay Switch B+	2	2	-	-
Rear Defog Relay Control	B0283 06	B0283 06	2	-
Rear Defog Relay Ground	-	B0283 06	2	-
Rear Defogger Control	2	2	1	-
Rear Window Defogger Grid Ground	-	2	2	-
1. Rear Defogger Always On 2. Rear Defogger Inoperative				

Circuit/System Description

The HVAC control module monitors the voltage level on the supply voltage circuit of the rear defog relay. The voltage level should be low while the rear defog relay is de-energized. The voltage will be near system voltage when the HVAC control module energizes the rear defog relay.

Conditions for Running the DTC

Battery voltage must be between 9-16 volts.

Conditions for Setting the DTC

The HVAC control module detects a short to ground or open/high resistance in the rear defog relay control circuit for 1 second or greater.

Action Taken When the DTC Sets

- The HVAC control module stores the DTC to memory.
- The rear window defogger will not operate.

Conditions for Clearing the DTC

- The DTC will be current for as long as the fault is present.
- When the fault is no longer present, the DTC will be a history DTC.
- A history DTC will clear after 50 ignition cycles.

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, observe the operation of the defogger grid while pressing and depressing the rear defogger switch. The defogger grid should ACTIVATE and DEACTIVATE when changing between commanded states.

Circuit/System Testing

1. Ignition OFF, disconnect the REAR DEFOG relay.
2. Test for less than 1.0 ohm between the ground circuit terminal 85 and ground.
    - If greater than the specified range, test the relay coil ground circuit for an open/high resistance.
3. Connect a test lamp between the control circuit terminal 86 and ground.
4. Ignition ON, command the defogger grid ON and OFF by pressing and depressing the rear defogger switch. 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 HVAC control module.
    - 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 HVAC control module.
5. If all circuits test normal, test or replace the REAR DEFOG relay.

Component Testing

1. Ignition OFF, disconnect the REAR DEFOG relay.
2. Test for 60-180 ohms between terminals 85 and 86.
    - If 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 25-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 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.

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

DTC B3205

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 Descriptors

DTC B3205 00

Window Inactive Over Current Fault

DTC B3205 0B

Window Motor Fast Over Current Fault

Diagnostic Fault Information

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
Driver Door Switch B+	1, 3	1	-	-

LR Window Switch B+	1, 3	3	-	-
Passenger Door Switch B+	2, 4	2	-	-
RR Window Switch B+	2, 4	4	-	-
Power Window Switch Right Rear Down Signal	B3823 00	B3823 00	B3823 00	-
Power Window Switch Right Rear Up Signal	B3822 00	B3822 00	B3822 00	-
Power Window Switch Left Rear Down Signal	B3820 00	B3820 00	B3820 00	-
Power Window Switch Left Rear Up Signal	B3819 00	B3819 00	B3819 00	-
Power Window Lockout Left Rear Control	B3821 00	B3821 00	B3821 00	-
Power Window Lockout Right Rear Control	B3824 00	B3824 00	B3824 00	-
LR Window Motor Control	3	3	3	-
Passenger Window Motor Control	B3205 00	B3205 0B	B3205 00	-
RR Window Motor Control	4	4	4	-
Driver Window Motor Control	B3205 00	B3205 0B	B3205 00	-
LR Window Switch Ground	-	3	3	-
RR Window Switch Ground	-	4	4	-
1. Driver Window Malfunction 2. Passenger Window Malfunction 3. Left Rear Window Malfunction 4. Right Rear Window Malfunction				

Circuit/System Description

The driver door switch (DDS) and passenger door switch (PDS) control the power window functions through the power window motor up and down control circuits. The door switches monitor the control circuits for fault conditions when up or down operation is requested prior to activating the function and during operation.

Conditions for Running the DTC

- Battery voltage must be between 9-16 volts.

- The ignition switch is in the ON position.

Conditions for Setting the DTC

B3205 00

The DDS or PDS detects a short to ground or short to voltage on their respective window motor control circuit.

B3205 0B

The DDS or PDS has detected excessive current flow on their respective window motor control circuit.

Action Taken When the DTC Sets

The affected power window will be inoperative.

Conditions for Clearing the DTC

- The DTC will be current for as long as the fault is present.
- When the fault is no longer present, the DTC will be a history DTC.
- A history DTC will clear after 50 ignition cycles.

Diagnostic Aids

The DTC can be set due to excessive physical resistance in the window regulator assembly. Ensure proper mechanical operation of the regulator assembly prior to replacing electrical components.

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

Igntition ON, bserve the operation of the power windows while commanding each window UP and DOWN by using their respective window switches, each window should perform the UP and DOWN function.

Circuit/System Testing

1. Ignition OFF, disconnect the harness connector at the appropriate window motor.
2. Connect a test lamp between control circuit terminal A and control circuit terminal B.
3. Ignition ON, command the appropriate window UP and DOWN by using the respective window switch. The test lamp should turn ON when commanding the UP and DOWN states.
    - If the test lamp is always OFF during either of the commands, test for a short to ground or open/high resistance on either control circuit. If the circuits test normal, replace the appropriate door switch.
    - If the test lamp is always ON, test for a short to voltage on either control circuit. If the circuits test normal, replace the appropriate door switch.
4. If all circuits test normal, test or replace the appropriate window motor.

Component Testing

1. Ignition OFF, disconnect the harness connector at the appropriate window motor.
2. Ignition ON, 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 function.
    - If the function does not perform as specified, replace the appropriate window motor.
3. Reverse the jumper wires; the appropriate window motor should perform the DOWN 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.

Control Module References for DDS and PDS replacement, setup and programming.

Front Side Door Window Regulator Motor Replacement

DTC B3819, B3820, B3822, OR B3823

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 Descriptors

DTC B3819 00

Left Rear Window Up Control Circuit

DTC B3820 00

Left Rear Window Down Control Circuit

DTC B3822 00

Right Rear Window Up Control Circuit

DTC B3823 00

Right Rear Window Down Control Circuit

Diagnostic Fault Information

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
Driver Door Switch B+	U0199 00	U0199 00	-	-
LR Window Switch B+	1, 3	3	-	-

Passenger Door Switch B+	U0200 00	U0200 00	-	-
RR Window Switch B+	2, 4	4	-	-
Power Window Switch Right Rear Down Signal	B3823 00	B3823 00	B3823 00	-
Power Window Switch Right Rear Up Signal	B3822 00	B3822 00	B3822 00	-
Power Window Switch Left Rear Down Signal	B3820 00	B3820 00	B3820 00	-
Power Window Switch Left Rear Up Signal	B3819 00	B3819 00	B3819 00	-
Power Window Lockout Left Rear Control	B3821 00	B3821 00	B3821 00	-
Power Window Lockout Right Rear Control	B3824 00	B3824 00	B3824 00	-
LR Window Motor Control	3	3	3	-
Passenger Window Motor Control	B3205 00	B3205 0B	B3205 00	-
RR Window Motor Control	4	4	4	-
Driver Window Motor Control	B3205 00	B3205 0B	B3205 00	-
LR Window Switch Ground	-	3	3	-
RR Window Switch Ground	-	4	4	-
Driver Door Switch Ground	-	U0199 00	1	-
Passenger Door Switch Ground	-	U0200 00	2	-
1. Driver Window Malfunction 2. Passenger Window Malfunction 3. Left Rear Window Malfunction 4. Right Rear Window Malfunction				

Circuit/System Description

The body control module (BCM) monitors the window UP/DOWN command from the driver door switch (DDS). When the rear window UP or DOWN command is received, the BCM sends a signal to the appropriate rear window switch. The rear window switches continuously monitor the up and down signal circuits, if no function is being commanded, the signal voltage is at approximately B+ voltage. If the UP or DOWN function is commanded, the BCM signal voltage drops approximately 5 volts and the appropriate rear window switch will then command the

window in the UP or DOWN direction.

Conditions for Running the DTC

Battery voltage is between 9-16 volts.

Conditions for Setting the DTC

B3819 00

The BCM detects a fault in the left rear window up circuit.

B3820 00

The BCM detects a fault in the left rear window down circuit.

B3822 00

The BCM detects a fault in the right rear window up circuit.

B3823 00

The BCM detects a fault in the right rear window down circuit.

Action Taken When the DTC Sets

The left or right rear power window will be inoperative from the driver master control.

Conditions for Clearing the DTC

- The DTC will be current for as long as the fault is present.
- When the fault is no longer present, the DTC will be a history DTC.
- A history DTC will clear after 50 ignition cycles.

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

Command the appropriate rear door window UP and DOWN with a scan tool. The rear door window should perform the UP and DOWN function.

- If the LR or RR window sets B3819 00 or B3822 00 during the UP command, refer to B3819 00 or B3822 00
- If the LR or RR window sets B3820 00 or B3823 00 during the DOWN command, refer to B3820 00 or B3823 00

Circuit/System Testing

B3819 00 or B3822 00

1. Ignition OFF, disconnect the harness connector at the appropriate rear window switch.
2. Test for more than 10 volts between the power window switch rear up signal circuit terminal B and ground while commanding the rear window UP with a scan tool.
    - If less than the specified range, test the signal circuit for a short to ground or open/high resistance. If the circuit tests normal, replace the BCM.
3. If the circuit tests normal, replace the rear window switch.

B3820 00 or B3823 00

1. Ignition OFF, disconnect the harness connector at the appropriate rear window switch.
2. Test for more than 10 volts between the power window switch rear down signal circuit

terminal C and ground while commanding the rear window DOWN with a scan tool.
   - If less than the specified range, test the signal circuit for a short to ground or open/high resistance. If the circuit tests normal, replace the BCM.
3. If the circuit tests normal, replace the rear window switch.

Repair Procedures

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

- **Rear Side Door Window Switch Replacement (Crew Cab)** or **Rear Side Door Window Switch Replacement (Extended Cab)**
- **Control Module References** for BCM replacement, setup and programming

DTC B3821 OR B3824

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 Descriptors

DTC B3821 00

Left Rear Window Relay Power Circuit

DTC B3824 00

Right Rear Window Relay Power Circuit

Diagnostic Fault Information

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
Driver Door Switch B+	U0199 00	U0199 00	-	-
LR Window Switch B+	1, 3	3	-	-
Passenger Door Switch B+	U0200 00	U0200 00	-	-
RR Window Switch B+	2, 4	4	-	-
Power Window Switch Right	B3823 00	B3823 00	B3823 00	-

Rear Down Signal				
Power Window Switch Right Rear Up Signal	B3822 00	B3822 00	B3822 00	-
Power Window Switch Left Rear Down Signal	B3820 00	B3820 00	B3820 00	-
Power Window Switch Left Rear Up Signal	B3819 00	B3819 00	B3819 00	-
Power Window Lockout Left Rear Control	B3821 00	B3821 00	B3821 00	-
Power Window Lockout Right Rear Control	B3824 00	B3824 00	B3824 00	-
LR Window Motor Control	3	3	3	-
Passenger Window Motor Control	B3205 00	B3205 0B	B3205 00	-
RR Window Motor Control	4	4	4	-
Driver Window Motor Control	B3205 00	B3205 0B	B3205 00	-
LR Window Switch Ground	-	3	3	-
RR Window Switch Ground	-	4	4	-
Driver Door Switch Ground	-	U0199 00	1	-
Passenger Door Switch Ground	-	U0200 00	2	-
1. Driver Window Malfunction 2. Passenger Window Malfunction 3. Left Rear Window Malfunction 4. Right Rear Window Malfunction				

Circuit/System Description

The body control module (BCM) monitors the window lockout command from the driver door switch (DDS). When the rear window switch operation is authorized, the the BCM signal voltage drops approximately 5 volts to the rear window switches allowing for normal window operation from the rear switches. If the rear window lockout function is commanded, the BCM signal voltage is at B+ voltage which disables the rear window switches and the rear windows will only operate when the BCM receives a command from the driver master control.

Conditions for Running the DTC

- Battery voltage is between 9-16 volts.

- The ignition is ON.

Conditions for Setting the DTC

B3821 00

The BCM detects a fault in the left rear window lockout circuit.

B3824 00

The BCM detects a fault in the right rear window lockout circuit.

Action Taken When the DTC Sets

The left or right rear power window will be inoperative.

Conditions for Clearing the DTC

- The DTC will be current for as long as the fault is present.
- When the fault is no longer present, the DTC will be a history DTC.
- A history DTC will clear after 50 ignition cycles

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

Ignition ON, command the rear windows UP and DOWN by using the window switches on the driver master control and their respective rear window switches. The rear windows should perform the UP and DOWN function from each switch.

Circuit/System Testing

1. Ignition OFF, disconnect the harness connector at the appropriate rear window switch.
2. Ignition ON, with the rear window switches enabled, test for more than 10 volts between the control circuit terminal D and ground.
    - If less than the specified range, test the control circuit for a short to ground or open/high resistance. If the circuit tests normal, replace the BCM
3. If all circuits test normal, replace the rear window switch.

Repair Procedures

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

- **Rear Side Door Window Switch Replacement (Crew Cab)** or **Rear Side Door Window Switch Replacement (Extended Cab)**
- **Control Module References** for BCM replacement, setup and programming

SYMPTOMS - FIXED AND MOVEABLE WINDOWS

IMPORTANT: The following steps must be completed 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 system operation in order to familiarize yourself with the system functions. Refer to the following system descriptions:
    - **Power Windows Description and Operation**

- **Rear Window Defogger Description and Operation**

Visual/Physical Inspection

- Inspect for aftermarket devices which could affect the operation of the system. 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 (A31/AN3/DL3)** or **Power Windows Malfunction (A31 w/o AN3, DL3)**
- **Power Rear Sliding Window 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 Switch B+	2	2	-	-
Rear Defog Relay Control	B0283 06	B0283 06	2	-
Rear Defog Relay Ground	-	B0283 06	2	-
Rear Defogger Control	2	2	1	-

Rear Window Defogger Grid Ground	-	2	2	-
1. Rear Defogger Always On 2. Rear Defogger Inoperative				

Circuit/System Description

When the rear defogger button is pressed, voltage is supplied to the relay coil by the HVAC control module which also illuminates the rear window defogger indicator. B+ voltage is supplied at all times to the relay switched input and the relay coil is always grounded. This allows battery positive voltage from the relay switched input through the switch contacts and out the relay switched output to the rear window defogger. Ground for the rear defogger grid is provided by G304 or G307.

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 Rear Defrost State parameter while pressing the rear window defogger switch. The parameter should change between On and Off.
    - If the parameter does not change between the commanded states, replace the HVAC 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 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 REAR DEFOG relay.
2. Test for less than 1.0 ohm between the ground circuit terminal 85 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 does not illuminate between the control circuit terminal 87 and ground.
    - If the test lamp illuminates, test the control circuit for a short to voltage.
4. Verify that a test lamp illuminates between the B+ circuit terminal 30 and ground.
    - If the test lamp does not illuminate, test the B+ circuit for a short to ground or an open/high resistance.
5. Ignition OFF, disconnect the X2 harness connector at the defogger grid.
6. Test for less than 5 ohms between the defogger grid 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 defogger grid.
8. Ignition ON, connect a 30A fused jumper wire between the B+ circuit terminal 30 and the control circuit terminal 87. Verify the defogger grid is activated.
    - If the defogger grid does not activate, test the control circuit for a short to ground or an open/high resistance. If the circuit tests normal, test or replace the defogger grid.
9. Connect a test lamp between the control circuit terminal 86 and ground.
10. Command the defogger grid ON and OFF by pressing and depressing the rear defogger switch. 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 HVAC control module.
- 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 HVAC control module.

11. If all circuits test normal, test or replace the REAR DEFOG relay.

Component Testing

Relay Test

1. Ignition OFF, disconnect the rear defog relay.
2. Test for 60-180 ohms between terminals 85 and 86.
   - If 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 30-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 between terminals 30 and 87.
   - If greater than the specified range, replace the relay.

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.

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 HVAC control module replacement, setup, and programming

POWER REAR SLIDING WINDOW 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
Sliding Rear Window Relay B+	2	2	-	-
Sliding Rear Window Switch Accessory Voltage	1	1	-	-
Sliding Rear Window Relay Control	2	2	2	-
Sliding Rear Window Motor Control	2	2	2	-
Sliding Rear Window Relay Ground	-	2	2	-
1. Sliding Rear Window Switch Malfunction 2. Sliding Rear Window Motor Malfunction				

Circuit/System Description

The power sliding rear window motor is controlled from the sliding rear window switch through OPEN and CLOSE relays. The sliding rear window switch is supplied voltage from the body control module (BCM) accessory voltage output circuit. When the switch is pressed in the OPEN or CLOSE position, the sliding rear window open relay or the sliding rear window close relay coil will be supplied accessory voltage and energized through the appropriate relay control circuit. While the sliding rear window open relay or the sliding rear window close relay are in a

de-energized state both motor control circuits will be closed to ground. When one of the relays is energized its motor control circuit will be closed to the battery voltage supply circuit and the other motor control circuit will remain grounded through the de-energized relay.

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

Ignition ON, command the sliding rear window to OPEN/CLOSE by pressing the front and rear side of the sliding rear window switch. The sliding rear window should OPEN/CLOSE as commanded.

Circuit/System Testing

1. Ignition OFF, disconnect the harness connector at the sliding rear window switch.
2. Ignition ON, verify the test lamp illuminates between the accessory voltage circuit terminal A and ground.
    - If the test lamp does not illuminate, test the accessory voltage circuit for a short to

ground or an open/high resistance. If the circuit tests normal replace the BCM.

3. Ignition OFF, reconnect the sliding rear window switch and disconnect the appropriate sliding rear window relay.
4. Test for less than 1.0 ohm between the ground circuit terminal B2 and ground.
    - If greater than the specified range, test the ground circuit for an open/high resistance.
5. Test for less than 1.0 ohm between the ground circuit terminal A1 and ground.
    - If greater than the specified range, test the ground circuit for an open/high resistance.
6. Ignition ON, verify that a test lamp does not illuminate between the control circuit terminal C1 and ground.
    - If the test lamp illuminates, test the control circuit for a short to voltage.
7. Verify that a test lamp illuminates between the B+ circuit terminal A2 and ground.
    - If the test lamp does not illuminate, test the B+ circuit for a short to ground or an open/high resistance.
8. Connect a test lamp between the control circuit terminal C2 and the ground circuit terminal A1.
9. Command the power sliding window to OPEN and CLOSE by using the sliding rear window switch. The test lamp should turn ON and OFF when changing between the commanded states.
    - 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, test or replace the sliding rear window switch.
    - If the test lamp is always ON, test the control circuit for a short to voltage. If the circuit tests normal, test or replace the sliding rear window switch.
10. Install the appropriate sliding rear window relay.
11. Ignition OFF, disconnect the harness connector at the sliding rear window motor.
12. Ignition OFF, test for less than 5.0 ohms 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 circuits test normal, replace the sliding rear window close relay.
13. Ignition OFF, test for less than 5.0 ohms 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 circuits test normal, replace the sliding rear window open relay
14. Connect a test lamp between control circuit terminal A and control circuit terminal B.
15. Ignition ON, command the sliding rear window to OPEN and CLOSE by using the sliding

rear window switch. The test lamp should turn ON when commanding the OPEN and CLOSE states.

- If the test lamp is always OFF, test the control circuit for a short to ground. If the circuit tests normal, test or replace the appropriate sliding rear window relay.

16. If all circuits test normal, test or replace the sliding rear window motor.

Component Testing

Sliding Rear Window Switch Test

1. Ignition OFF, disconnect the harness connector at the sliding rear window switch.
2. Test for infinite resistance between the control terminals C and B and the voltage terminal A with the switch in the INACTIVE position.
   - If less than the specified value, replace the sliding rear window switch.
3. Test for less than 2 ohms between the control terminal C and the voltage terminal A with the switch in the CLOSE position.
   - If greater than the specified range, replace the sliding rear window switch.
4. Test for less than 2 ohms between the control terminal B and the voltage terminal A with the switch in the OPEN position.
   - If greater than the specified range, replace the sliding rear window switch.

Relay Test

1. Ignition OFF, disconnect the applicable relay.
2. Test for 60-200 ohms between terminals 85 and 86.
   - If 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. Test for less than 2 ohms between terminals 30 and 87A.
   - If greater than the specified range, replace the relay.
5. Install a 3-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.

Sliding Rear 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 sliding rear window motor should perform the OPEN or CLOSE function.
   - If the function does not perform as specified, replace the sliding rear window motor.
2. Reverse the jumper wires; the sliding rear window motor should perform the CLOSE or OPEN function.
   - If the function does not perform as specified, replace the sliding rear window motor.

Repair Procedures

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

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

POWER WINDOWS MALFUNCTION (A31/AN3/DL3)

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 Door Switch B+	U0199 00	U0199 00	-	-
LR Window Switch B+	1, 3	3	-	-
Passenger Door Switch B+	U0200 00	U0200 00	-	-
RR Window Switch B+	2, 4	4	-	-

Power Window Switch Right Rear Down Signal	B3823 00	B3823 00	B3823 00	-
Power Window Switch Right Rear Up Signal	B3822 00	B3822 00	B3822 00	-
Power Window Switch Left Rear Down Signal	B3820 00	B3820 00	B3820 00	-
Power Window Switch Left Rear Up Signal	B3819 00	B3819 00	B3819 00	-
Power Window Lockout Left Rear Control	B3821 00	B3821 00	B3821 00	-
Power Window Lockout Right Rear Control	B3824 00	B3824 00	B3824 00	-
LR Window Motor Control	3	3	3	-
Passenger Window Motor Control	B3205 00	B3205 0B	B3205 00	-
RR Window Motor Control	4	4	4	-
Driver Window Motor Control	B3205 00	B3205 0B	B3205 00	-
LR Window Switch Ground	-	3	3	-
RR Window Switch Ground	-	4	4	-
Driver Door Switch Ground	-	U0199 00	1	-
Passenger Door Switch Ground	-	U0200 00	2	-
1. Driver Window Malfunction 2. Passenger Window Malfunction 3. Left Rear Window Malfunction 4. Right Rear Window Malfunction				

Circuit/System Description

The driver and passenger door lock and side window switches are integrated control module switch assemblies. When a power window switch is activated in the up or down positions the driver door switch (DDS) supplies power and ground to the window motor control circuits to drive the window motor in the required direction. Prior to activating a power window motor the DDS will supply the control circuit with a low current bias voltage in order to determine that a short to ground condition does not exist and during window motor operation the DDS continues to monitor the motor current to verify proper window motor operation.

Reference Information

Schematic Reference

- **Moveable Window Schematics**
- **Door Control Module 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, observe the operation of the power windows while commanding each window UP and DOWN by using their respective window switches, each window should perform the UP and DOWN function.
    - If the driver window is inoperative, refer to Driver Window Malfunction.
    - If the front passenger window is inoperative, refer to Passenger Window Malfunction.
    - If either rear passenger power window is inoperative, refer to Rear Passenger Window Malfunction.
2. Observe the scan tool Driver RF Window Switch, Driver LR Window Switch and Driver RR Window Switch parameters while using the driver master control switches. The parameter should change between Off/Up/Down/Express Down.
    - If the parameter does not change, replace the DDS.
3. Observe the scan tool Window Lockout Switch parameter while pressing and depressing the window lockout switch on the driver master control. The parameter should change between

On and Off.

- If the parameter does not change, replace the DDS.

Circuit/System Testing

Driver Power Window Inoperative

1. Ignition OFF, disconnect the X1 harness connector at the DDS.
2. Test for less than 15 ohms between the ground circuit terminal 6 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 2 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 DDS.
5. Ignition ON, observe the scan tool Driver LF Window Switch parameters while using the driver power window switch. The reading should change between Off/Up/Down/Express Down.
   - If the parameter does not change, replace the DDS.
6. Ignition OFF, disconnect the harness connector at the driver window motor.
7. Connect a test lamp between control circuit terminal A and control circuit terminal B.
8. Ignition ON, command the driver window UP and DOWN by using the driver window switch. The test lamp should illuminate when commanding the UP and DOWN states.
   - If the test lamp is always OFF during either of the commands, test either control circuit for a short to ground or open/high resistance. If the circuits test normal, replace the DDS.
   - If the test lamp is always ON, test either control circuit for a short to voltage. If the circuits test normal, replace the DDS
9. If all circuits test normal, test or replace the driver window motor.

Passenger Power Window Inoperative

1. Ignition OFF, disconnect the X1 harness connector at the PDS.
2. Test for less than 1 ohm between the ground circuit terminal 6 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 2 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, reconnect the harness connector at the PDS.
5. Ignition ON, observe the scan tool Passenger Window Switch parameters while using the passenger power window switch. The reading should change between Off/Up/Down/Express Down.
   - If the parameter does not change, replace the PDS.
6. Ignition OFF, disconnect the harness connector at the passenger window motor.
7. 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, replace the PDS.
8. 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, replace the PDS.
9. Connect a test lamp between control circuit termina A and control circuit terminal B.
10. Ignition ON, command the passenger window UP and DOWN by using the passenger window switch. The test lamp should illuminate when commanding the UP and DOWN states.
    - If the test lamp is always OFF during either of the commands, test either control circuit for a short to ground. If the circuits test normal, replace the PDS.
11. If all circuits test normal, test or replace the passenger window motor.

Rear Power Window Inoperative

1. Ignition OFF, disconnect the harness connector at the appropriate rear window switch.
2. Test for less than 1 ohm between the ground circuit terminal F 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 G and ground.
   - If the test lamp does not illuminate, test the B+ circuit for a short to ground or an open/high resistance.
4. Enable the rear windows by using the window lockout switch.
5. Test for more than 10 volts on the control circuit terminal D.
   - If less than the specified range, test the control circuit for a short to ground or open/high resistance. If the circuit tests normal, replace the BCM.

6. Test for more than 10 volts on the signal circuit terminal C while commanding the rear window DOWN with a scan tool.
    - If less than the specified range, test the signal circuit for a short to ground or open/high resistance. If the circuit tests normal, replace the BCM.
7. Test for more than 10 volts on the signal circuit terminal A while commanding the rear window UP with a scan tool.
    - If less than the specified range, test the signal circuit for a short to ground or open/high resistance. If the circuit tests normal, replace the BCM.
8. Ignition OFF, connect harness connector at the rear window switch and disconnect the harness connector at the rear window motor
9. 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, replace the rear window switch.
10. 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, replace the rear window switch.
11. Connect a test lamp between control circuit terminal A and control circuit terminal B.
12. Ignition ON, command the rear window UP and DOWN by using the rear window switch. The test lamp should illuminate when commanding the UP and DOWN states.
    - If the test lamp is always OFF during either of the commands, test either control circuit for a short to ground. If the circuits test normal, replace the rear window switch.
13. If all circuits test normal, test or replace the rear window motor.

Component Testing

1. Ignition OFF, disconnect the harness connector at the appropriate window motor.
2. 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 window motor should perform the UP or DOWN function.
    - If the function does not perform as specified, replace the window motor.
3. Reverse the jumper wires; the appropriate window motor should perform the DOWN or UP function.
    - If the function does not perform as specified, replace the window motor

Repair Procedures

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

- **Rear Side Door Window Regulator Motor Replacement (Extended Cab)** or **Rear Side Door Window Regulator Motor Replacement (Crew Cab)**
- **Front Side Door Window Regulator Motor Replacement**
- **Rear Side Door Window Switch Replacement (Crew Cab)** or **Rear Side Door Window Switch Replacement (Extended Cab)**
- **Control Module References** for DDS, PDS and BCM replacement, setup and programming

POWER WINDOWS MALFUNCTION (A31 W/O AN3, DL3)

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	-	-
Left Rear Window Switch B+	3	3	-	-
Right Rear Window Switch B+	4	4	-	-
Left Rear Window Down Signal	3	3	3	-
Left Rear Window Up Signal	3	3	3	-
Passenger Window Down Signal	2	2	2	-
Passenger Window Up Signal	2	2	2	-
Right Rear Window Down Signal	4	4	4	-
Right Rear Window Up Signal	4	4	4	-
Window Master Switch Lockout Control	3, 4	3, 4	3, 4	-
Driver Window Motor Control	1	1	1	-

Passenger Window Motor Control	2	2	2	-
Left Rear Window Motor Control	3	3	3	-
Right Rear Window Motor Control	4	4	4	-
Driver Window Switch Ground	-	1	1	-
Passenger Window Switch Ground	-	2	2	-
Left Rear Window Switch Ground	-	3	3	-
Right Rear Window Switch Ground	-	4	4	-
1. Driver Power Window Malfunction 2. Front Passenger Window Malfunction 3. Left Rear Power Window Malfunction 4. Right Rear Power Window Malfunction				

Circuit/System Description

The power window system will operate any time the ignition is in the ACC or RUN position. The power window system will also operate whenever the body control module (BCM) is in the retained accessory power (RAP) mode. The driver power window switch contains individual window switches for each of the power windows. All windows may be controlled up and down from the driver master control. The individual passenger power window switches will only control the up and down operation of their respective power window.

Each power window contains a reversible power window motor. The direction the window travels is dependent upon the polarity of the supply voltage. By reversing polarity of the supply voltage the window motor will move up or down. Each power window motor is internally circuit breaker protected.

Battery voltage is supplied to each power window switch through the accessory voltage supply circuit. The power window switch also receives a constant ground source. The power window motor control circuits are connected to ground through the normally closed up and down contacts of the power window switch. When the power switch is placed in the down position, the power window motor down control circuit is switched to 12 volts and is applied to the down side of the power window motor. Since the other side of the power motor is connected to ground through

the normally closed contacts of the up switch, the window travels down. By placing the power window switch in the up position, the polarity of the power window motor is reversed and the window travels up.

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**

Circuit/System Verification

1. Ignition ON, command the each window UP and DOWN using the appropriate window switch on the driver master control and the appropriate passenger door window switch. Each window should perform the UP and DOWN functions from each switch.
    - If the front driver door window is inoperative, refer to Driver Power Window Inoperative below.
    - If the front passenger door window is inoperative, refer to Passenger Power Window Inoperative below.
    - If the left rear or right rear door window is inoperative, refer to Rear Power Window Inoperative below.
2. Disable the rear door window switches by activating the window lockout switch on the driver master control. The rear door window switches should be inoperative.
    - If the rear door window switches are still active, refer to Window Lockout Switch Malfunction below.

3. Command the express down function of the driver door window by pressing down on the driver's window switch past the first detent and releasing. The driver's window should roll completely down.
    - If the function does not perform as specified, replace the driver window switch.

Circuit/System Testing

Driver Power Window Inoperative

1. Ignition OFF, disconnect the X2 harness connector at the driver window switch.
2. Test for less than 1 ohm between the ground circuit terminal A 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 H and ground.
    - If the test lamp does not illuminate, test the B+ circuit for a short to ground or an open/high resistance.
4. Connect the X2 harness connector at the driver window switch, disconnect the harness connector at the driver window motor.
5. Connect a test lamp between control circuit terminal A and control circuit terminal B.
6. Command the driver window UP and DOWN by using the driver window switch. The test lamp should illuminate when commanding the UP and DOWN states.
    - If the test lamp is always OFF during either of the commands, test either control circuit for a short to ground or open/high resistance. If the circuits test normal, replace the driver window switch.
    - If the test lamp is always ON, test either control circuit for a short to voltage. If the circuits test normal, replace the driver window switch.
7. If all circuits test normal, test or replace the driver window motor.

Passenger Power Window Inoperative

1. Ignition OFF, disconnect the harness connector at the passenger window switch.
2. Test for less than 1 ohm between the ground circuit terminal F 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 G and ground.
    - If the test lamp does not illuminate, test the B+ circuit for a short to ground or an open/high resistance.

4. Test for more than 10 volts on the signal circuit terminal C while commanding the passenger window DOWN using the RF window switch on the driver master control.
    - If less than the specified range, test the signal circuit for a short to ground or open/high resistance. If the circuit tests normal, replace the driver window switch.
5. Test for more than 10 volts on the signal circuit terminal A while commanding the passenger window UP using the RF window switch on the driver master control.
    - If less than the specified range, test the signal circuit for a short to ground or open/high resistance. If the circuit tests normal, replace the driver window switch.
6. Ignition OFF, connect the harness connector passenger window switch and disconnect the harness connector at the passenger window motor.
7. Connect a test lamp between control circuit terminal A and control circuit terminal B.
8. Ignition ON, command the passenger window UP and DOWN by using the passenger window switch. The test lamp should illuminate when commanding the UP and DOWN states.
    - If the test lamp is always OFF during either of the commands, test either control circuit for a short to ground or open/high resistance. If the circuits test normal, replace the passenger window switch.
    - If the test lamp is always ON, test either control circuit for a short to voltage. If the circuits test normal, replace the passenger window switch.
9. If all circuits test normal, test or replace the passenger window motor.

Rear Power Window Inoperative

1. Ignition OFF, disconnect the harness connector at the appropriate rear window switch.
2. Test for less than 1.0 ohm between the ground circuit terminal F 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 G and ground.
    - If the test lamp does not illuminate, test the B+ circuit for a short to ground or an open/high resistance.
4. Enable the rear window switches by using the window lockout switch.
5. Test for more than 10 volts on the control circuit terminal D.
    - If less than the specified range, test the control circuit for a short to ground or open/high resistance. If the circuit tests normal, replace the driver window switch.
6. Test for more than 10 volts on the signal circuit terminal C while commanding the rear window DOWN using the window switch on the driver master control.

- If less than the specified range, test the signal circuit for a short to ground or open/high resistance. If the circuit tests normal, replace the driver window switch.

7. Test for more than 10 volts on the signal circuit terminal A while commanding the rear window UP using the window switch on the driver master control.
   - If less than the specified range, test the signal circuit for a short to ground or open/high resistance. If the circuit tests normal, replace the driver window switch.
8. Ignition OFF, connect the harness connector at rear window switch and disconnect the harness connector at the rear window motor.
9. Connect a test lamp between control circuit terminal A and control circuit terminal B.
10. Ignition ON, command the rear window UP and DOWN by using the rear window switch. The test lamp should illuminate when commanding the UP and DOWN states.
    - If the test lamp is always OFF during either of the commands, test either control circuit for a short to ground or open/high resistance. If the circuits test normal, replace the rear window switch.
    - If the test lamp is always ON, test either control circuit for a short to voltage. If the circuits test normal, replace the rear window switch.
11. If all circuits test normal, test or replace the rear window motor.

Window Lockout Switch Malfunction

1. Ignition OFF, disconnect the harness connector at the appropriate rear window switch.
2. Disable the rear window switches by using the window lockout switch on the driver master control.
3. Test for 0 volts on the control circuit terminal D.
   - If greater than the specified value, test the control circuit for a short to voltage. If the circuit tests normal, replace the driver window switch.

Component Testing

Window Motor

1. Ignition OFF, disconnect the harness connector at the appropriate window motor.
2. 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 window motor should perform the UP or DOWN function.
   - If the function does not perform as specified, replace the window motor.
3. Reverse the jumper wires; the window motor should perform the DOWN or UP function.

- If the function does not perform as specified, replace the window motor.

Repair Procedures

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

- **Rear Side Door Window Switch Replacement (Crew Cab)** or **Rear Side Door Window Switch Replacement (Extended Cab)**
- **Front Side Door Window Regulator Motor Replacement**
- **Front Side Door Window and Rear Side Door Window Switch Replacement (with DL8 and without SLT)**
- **Rear Side Door Window Regulator Motor Replacement (Extended Cab)** or **Rear Side Door Window Regulator Motor Replacement (Crew Cab)**
- **Door Lock and Side Window Switch Replacement - Driver Side**
- **Door Lock and Side Window Switch Replacement - Passenger Side**

REPAIR INSTRUCTIONS

WINDSHIELD REPLACEMENT

Tools Required

- **J 24402-A** Glass Sealant Cold Knife Remover. See **Special Tools**.
- **J 39032** Stationary Window 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: Refer to Glass and Sheet Metal Handling Caution .

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

1. Remove the fixed antenna mast if equipped. Refer to **Radio Antenna Replacement** .
2. Open the hood.
3. Remove the window wiper arms. Refer to **Windshield Wiper Arm Replacement (LD)** .
4. Remove the air inlet grille panel. Refer to **Air Inlet Grille Panel Replacement** .
5. Remove the outside moisture sensor. Refer to **Windshield Outside Moisture Sensor Replacement** .
6. Remove the inside rearview mirror. Refer to **Inside Rearview Mirror Replacement** .

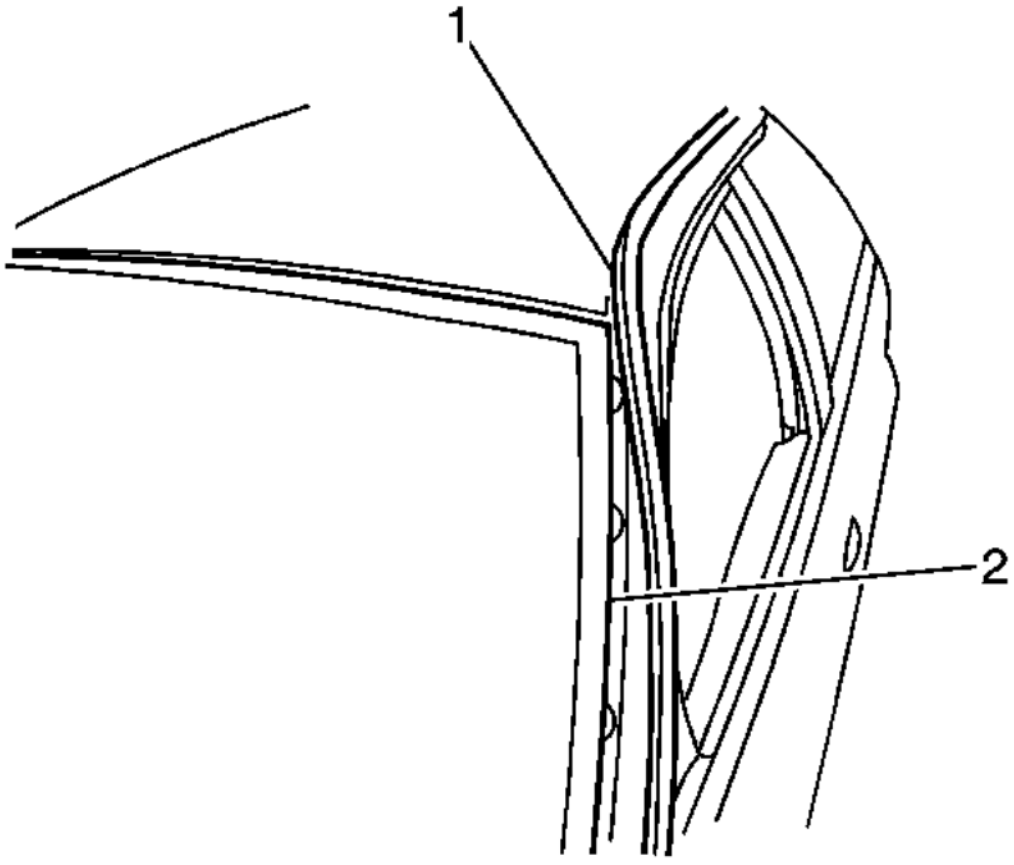


Fig. 7: View Of Front Door Sealing Weatherstrips & Side Reveal Molding Screws
Courtesy of GENERAL MOTORS CORP.

7. Reposition the front door sealing weatherstrips (1) in order to access the side reveal molding screws. You do not have to remove the front door sealing weatherstrip completely from the vehicle.

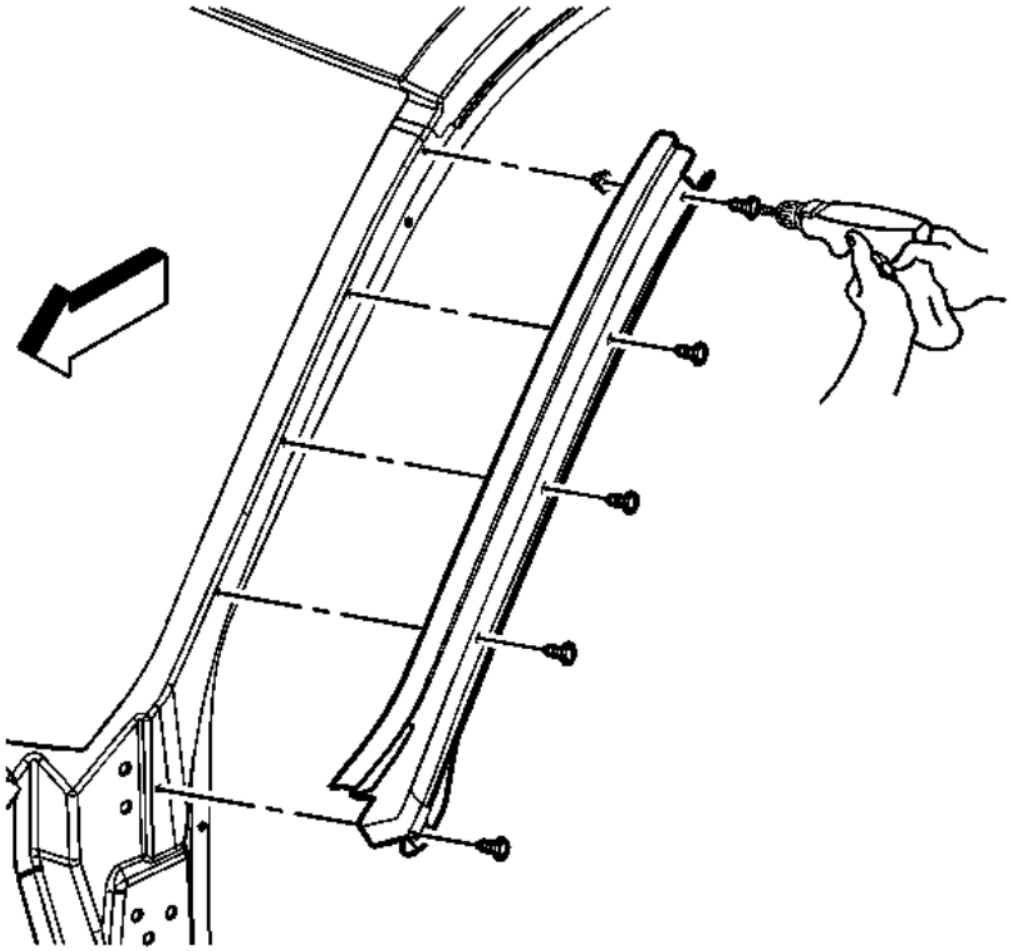


Fig. 8: Removing/Installing Screws From Window Side Reveal Moldings
Courtesy of GENERAL MOTORS CORP.

CAUTION: Refer to Cracked Window Caution .

8. Remove the screws from the left and the right sides of window side reveal moldings.

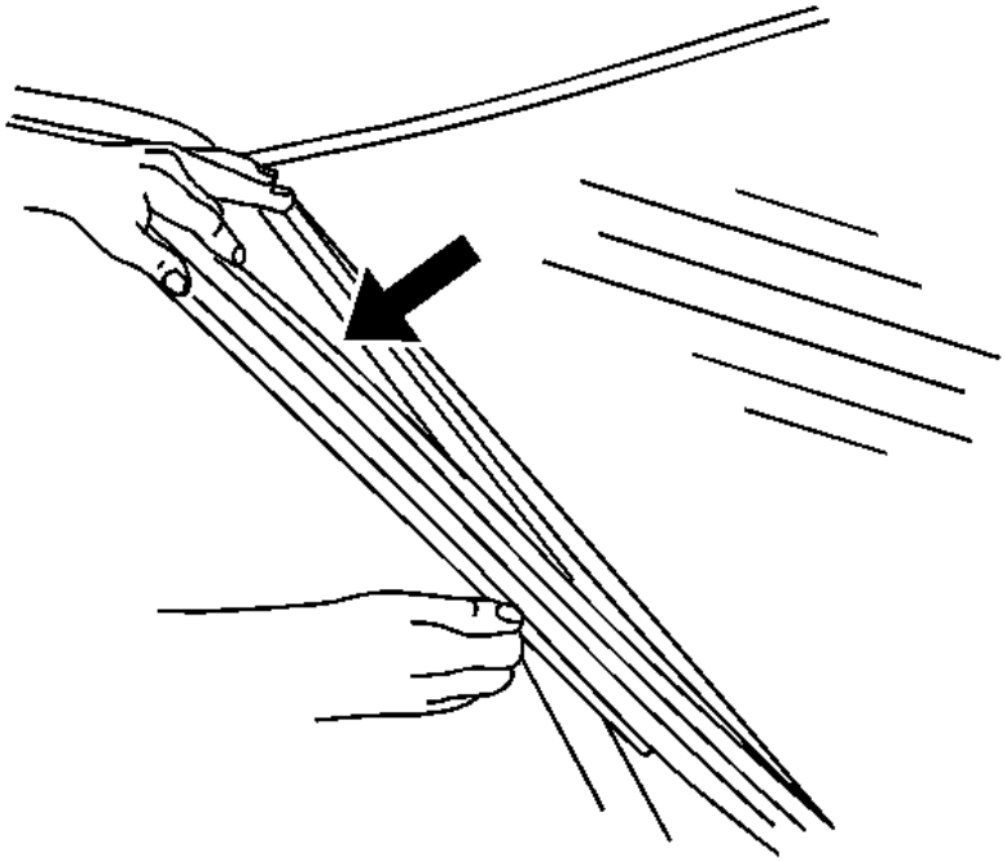


Fig. 9: View Of Reveal Molding
Courtesy of GENERAL MOTORS CORP.

9. Remove the reveal moldings from the vehicle.

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

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

1. The upper dash pad
2. The defroster outlets and A/C outlets
3. The seats and the carpeting

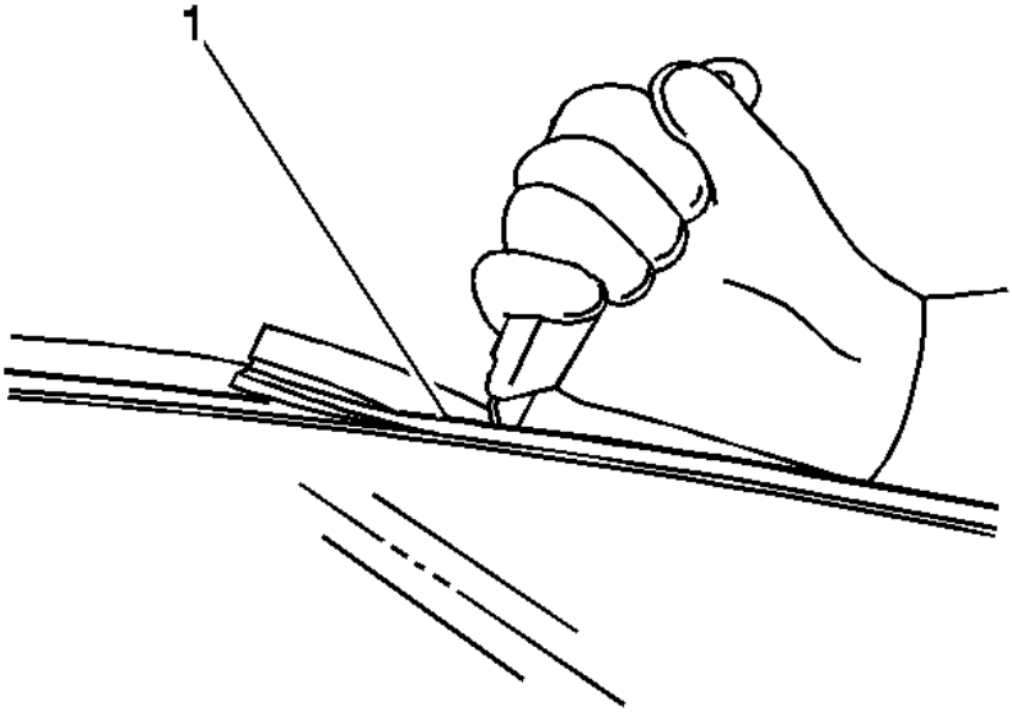


Fig. 10: Using Utility Knife To Remove Reveal Molding
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: The upper window reveal molding fills the cavities between the body and window. If the reveal molding is stretched or damaged, replace the molding.

11. Remove the upper window reveal molding (1).

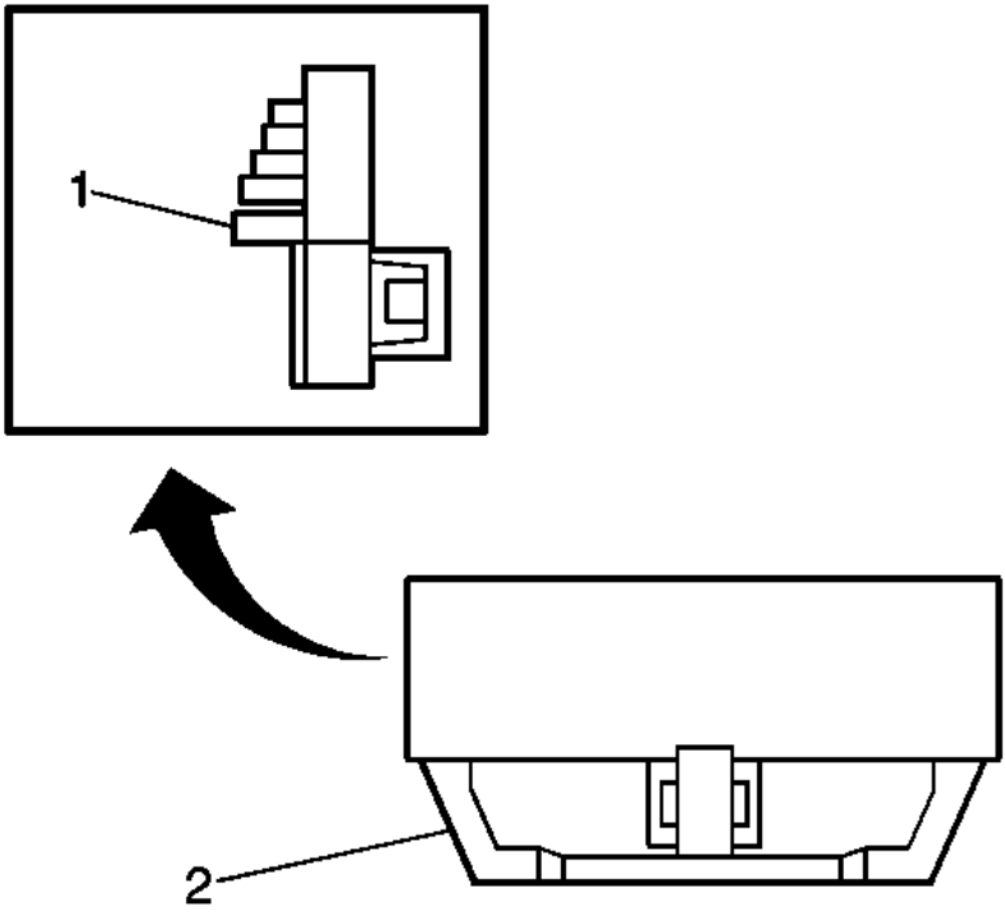


Fig. 11: Window Lower Supports
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: The window lower supports have molded locks with an urethane adhesive strip on the back side. Once the window lower stops have been removed, the stops must be replaced.

12. Remove the window lower supports (1) by using a flat-bladed tool, lightly prying upward in the middle until the support releases.

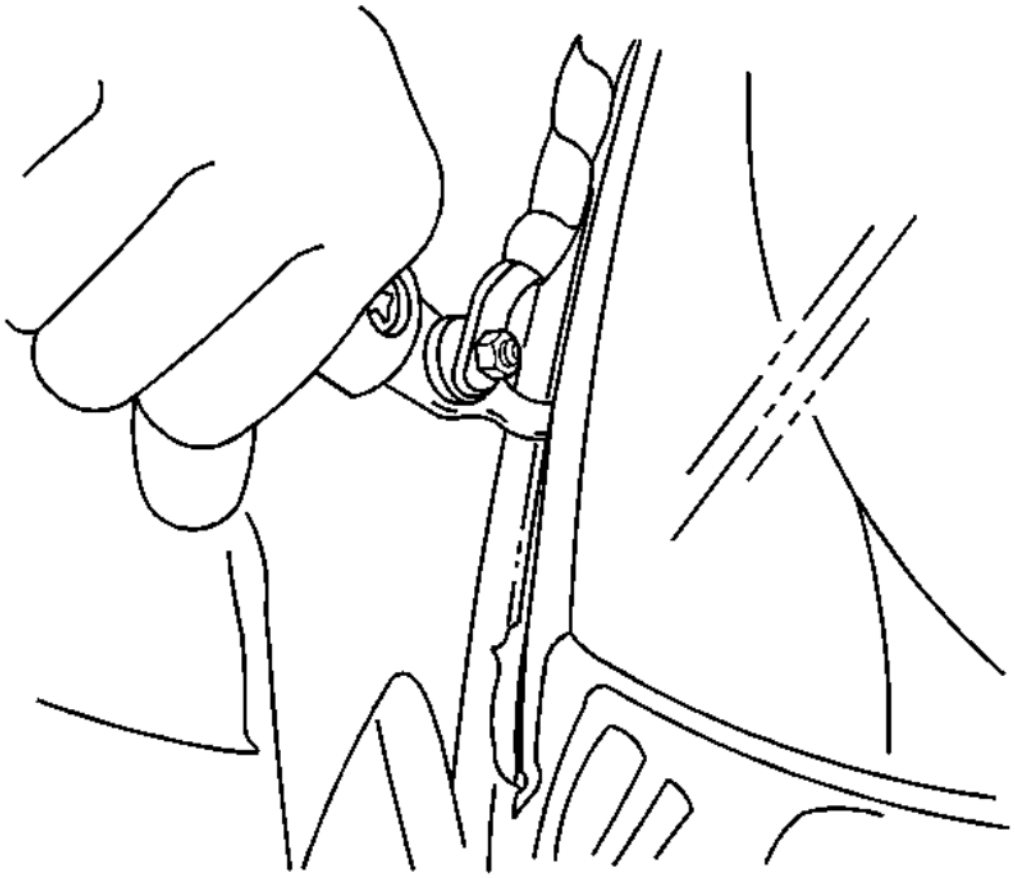


Fig. 12: Separating Urethane Adhesive From Window
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Keep the cutting edge of the tool against the window in order to properly separate the urethane adhesive from the window.

13. Use **J 24402-A** , **J 39032** , or equivalent in order to remove the window. See **Special Tools**.
    - Leave a base of urethane on the pinchweld flange.
    - The only suitable lubrication is clear water.

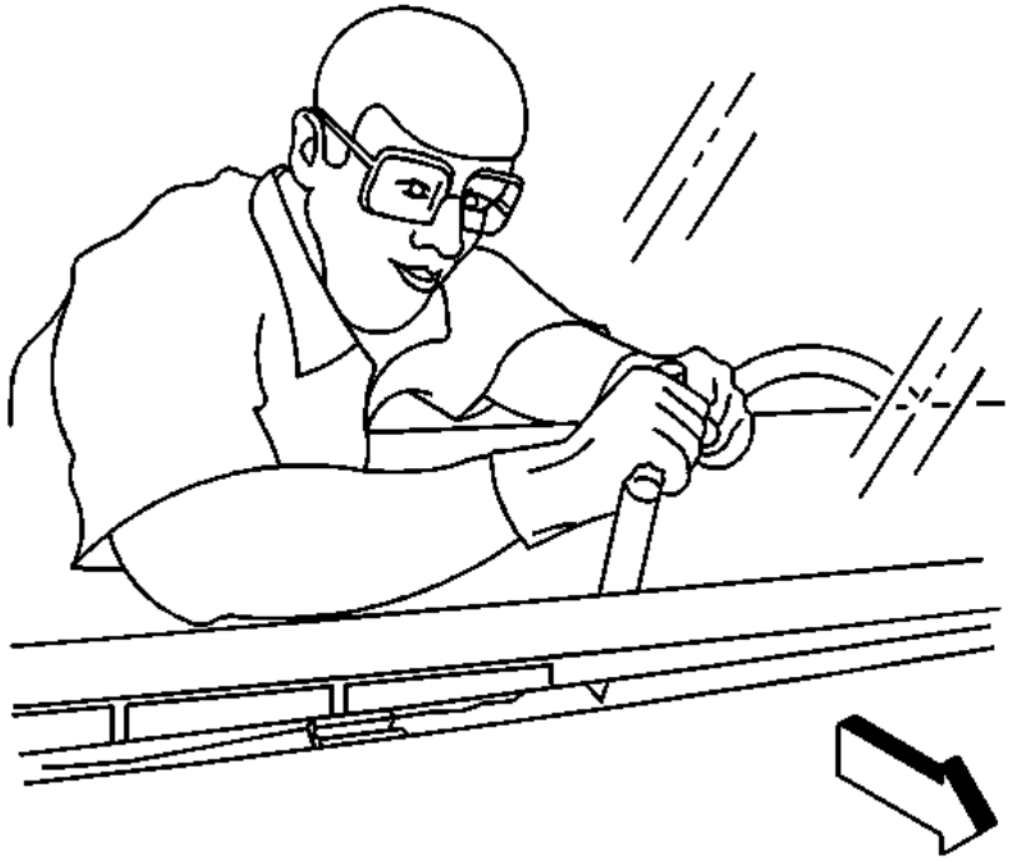


Fig. 13: Separating Bottom Of Window
Courtesy of GENERAL MOTORS CORP.

14. Remove the bottom of the window from the urethane adhesive using a long utility knife or similar tool.

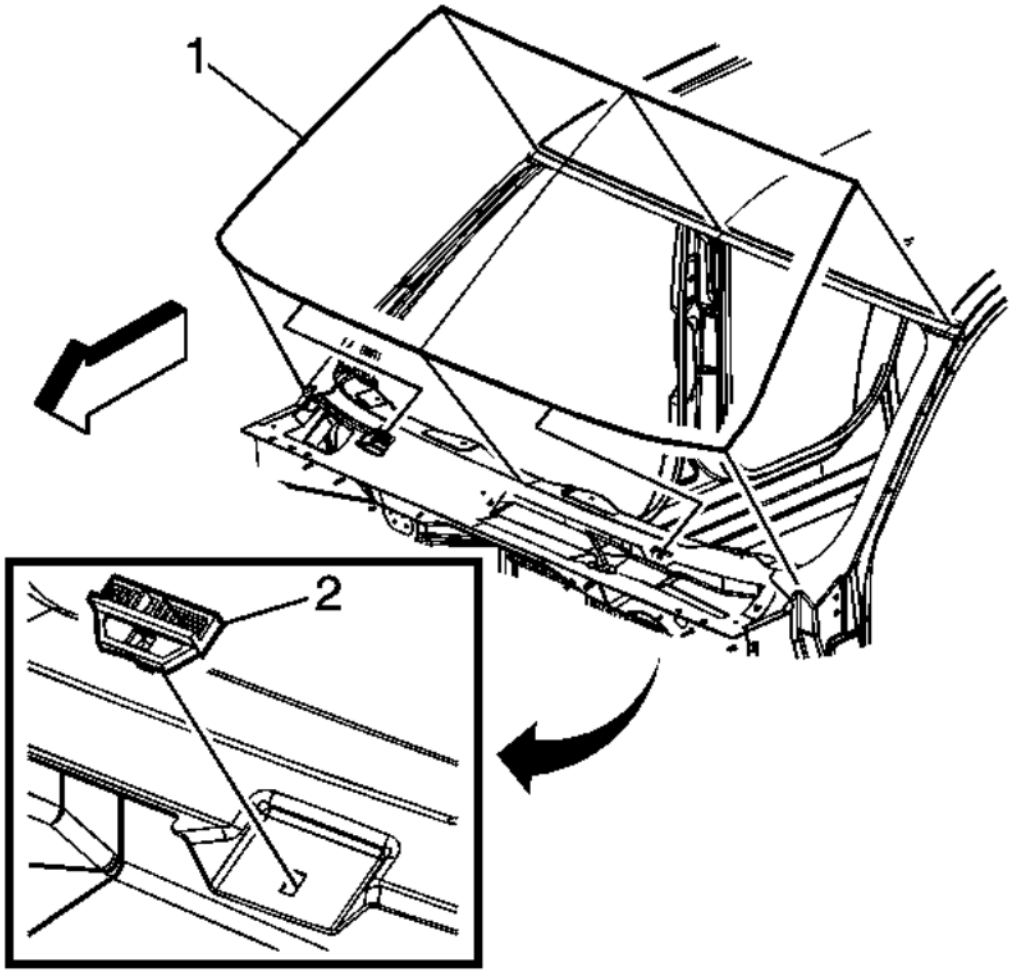


Fig. 14: View Of Removed Window
Courtesy of GENERAL MOTORS CORP.

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

Installation Procedure

1. Install a stationary window into the opening. Refer to **Adhesive Installation of Stationary Windows (Windshield)** or **Adhesive Installation of Stationary Windows (Rear Window)**.

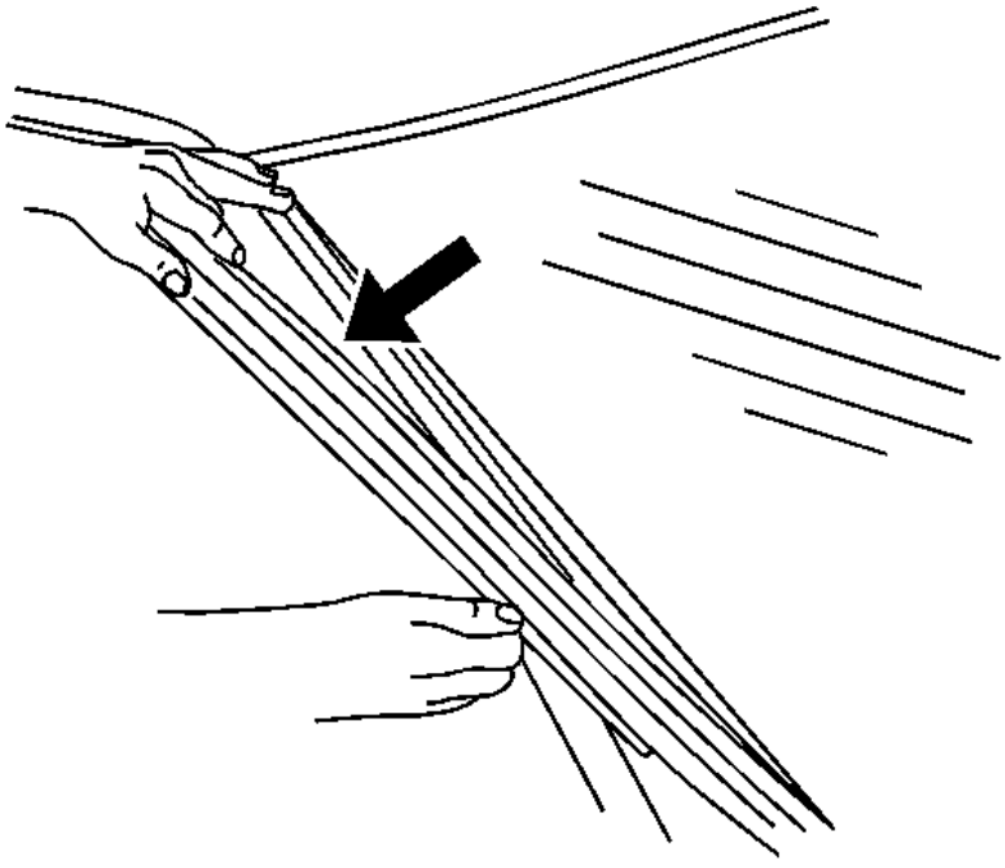


Fig. 15: View Of Reveal Molding
Courtesy of GENERAL MOTORS CORP.

2. Install the window side reveal moldings to the vehicle.

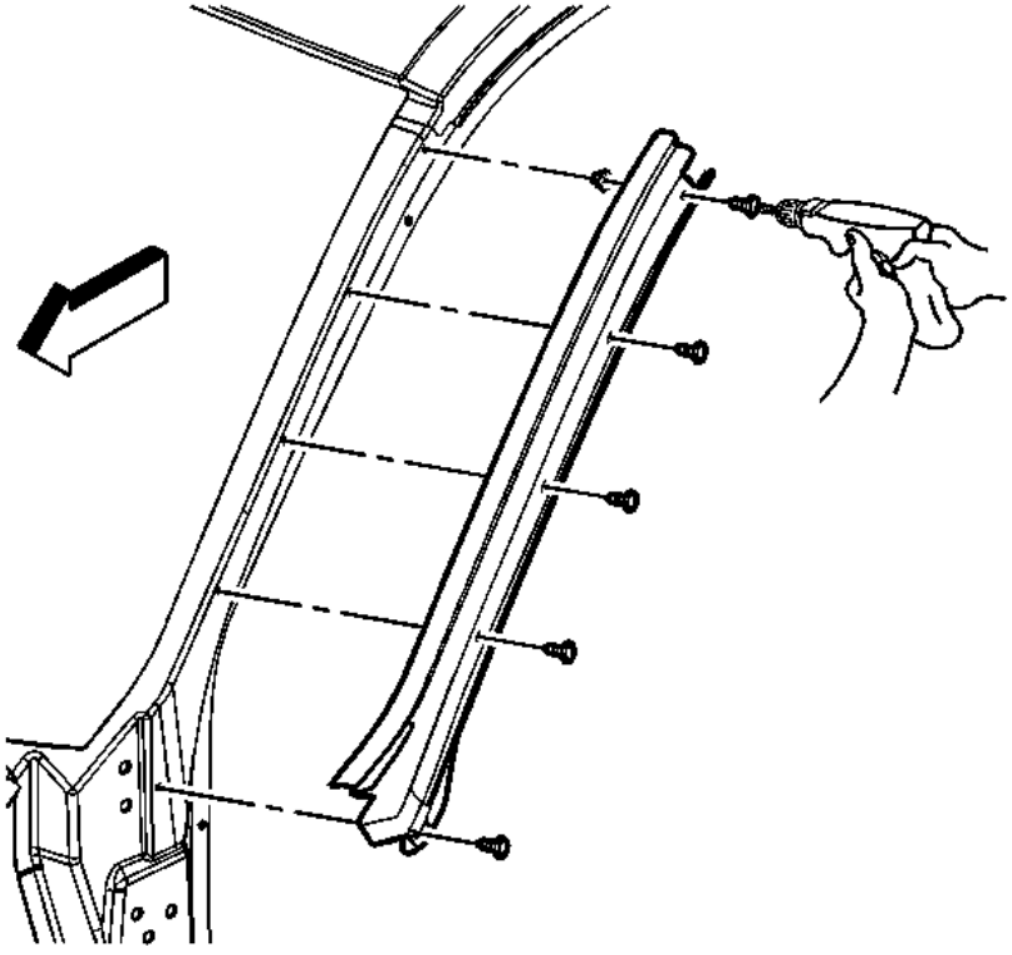


Fig. 16: Removing/Installing Screws From Window Side Reveal Moldings
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice .

3. Install the screws to the left and the right sides of the window side reveal moldings.

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

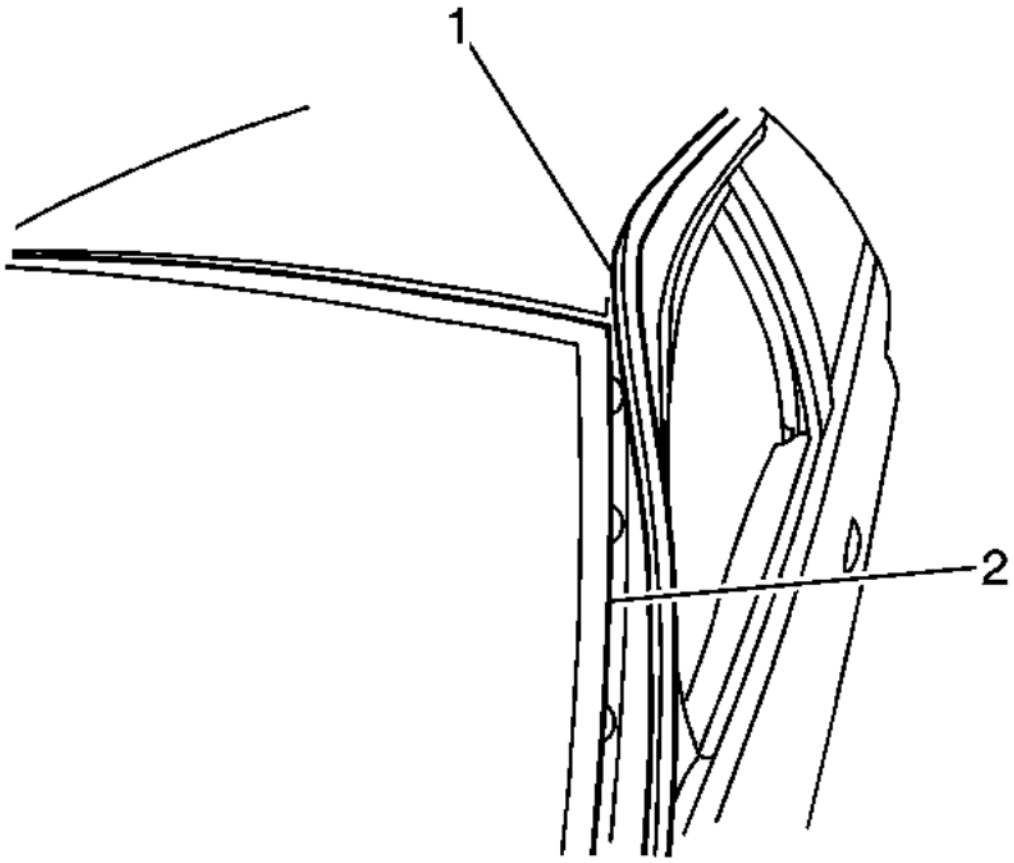


Fig. 17: View Of Front Door Sealing Weatherstrips & Side Reveal Molding Screws
Courtesy of GENERAL MOTORS CORP.

4. Install the front door sealing weatherstrips (1) to the retainer (2).
5. Install the cowl air inlet grille panel. Refer to **Air Inlet Grille Panel Replacement** .
6. Install the window wiper arms. Refer to **Windshield Wiper Arm Replacement (LD)** .
7. Install the antenna mast, if equipped. Refer to **Radio Antenna Replacement** .
8. Install the outside moisture sensor. Refer to **Windshield Outside Moisture Sensor Replacement** .
9. Install the inside rearview mirror. Refer to **Inside Rearview Mirror Replacement** .
10. Close the hood.
11. Remove the double layer of masking tape around the perimeter of the painted surfaces and

the interior trim.

WINDSHIELD UPPER REVEAL MOLDING REPLACEMENT

Removal Procedure

IMPORTANT: The windshield upper reveal molding requires removal of the windshield for proper installation.

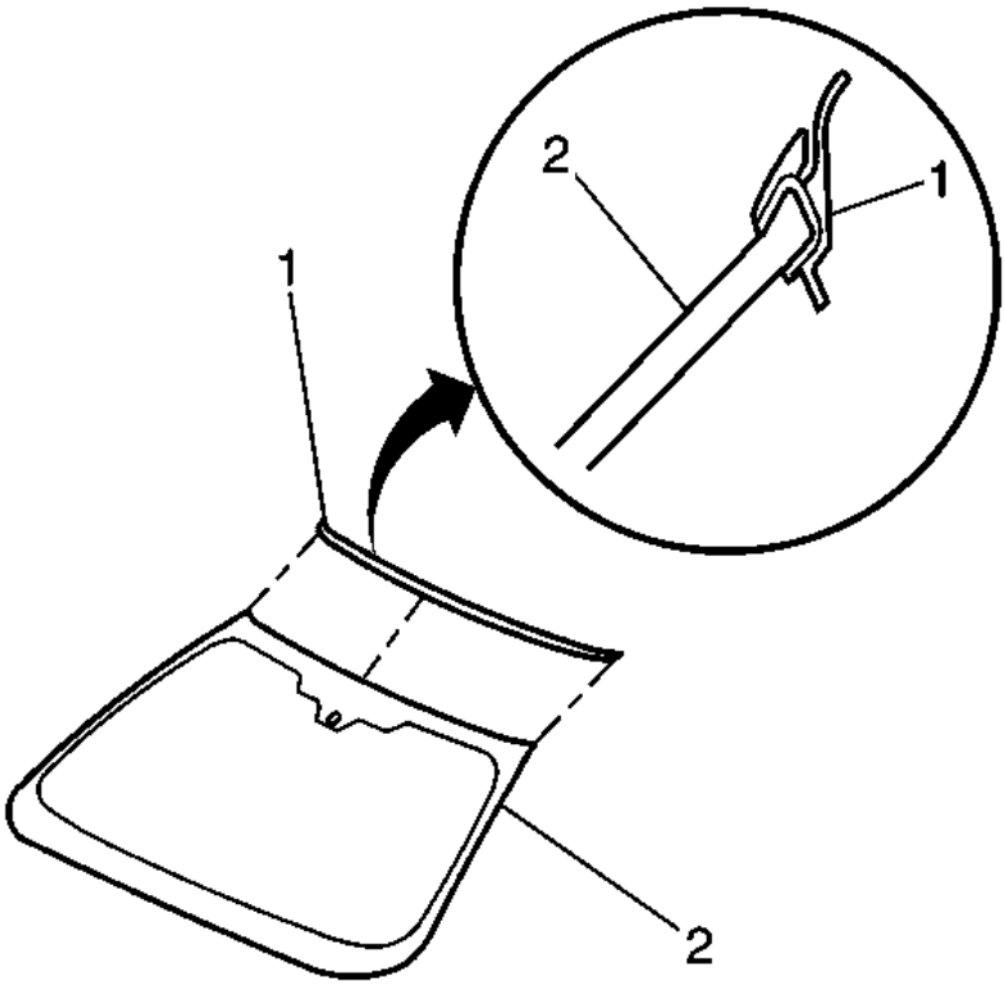


Fig. 18: Identifying Upper Reveal Molding from Windshield
Courtesy of GENERAL MOTORS CORP.

1. Remove the windshield. Refer to **Windshield Replacement**.
2. Remove the upper reveal molding (1) from the windshield (2) starting at the center and working outboard to both ends.

Installation Procedure

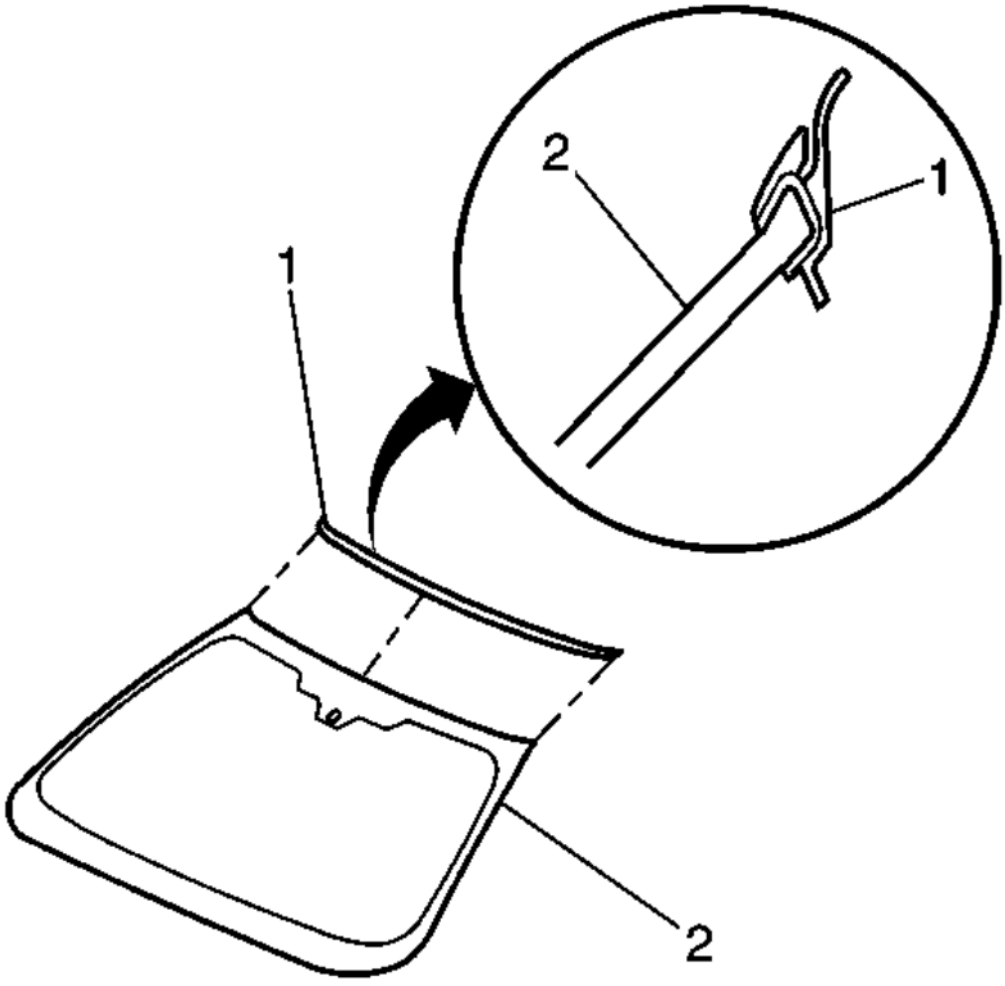


Fig. 19: Identifying Upper Reveal Molding from Windshield
Courtesy of GENERAL MOTORS CORP.

1. Install the upper reveal molding (1) to the windshield (2).

2. Align the notch in the molding to the center mark on the upper paint band on the windshield.
3. Press the upper reveal molding on to the windshield starting at the center and working outboard to both sides.
4. Install the windshield. Refer to **Windshield Replacement**.

WINDSHIELD SIDE REVEAL MOLDING REPLACEMENT

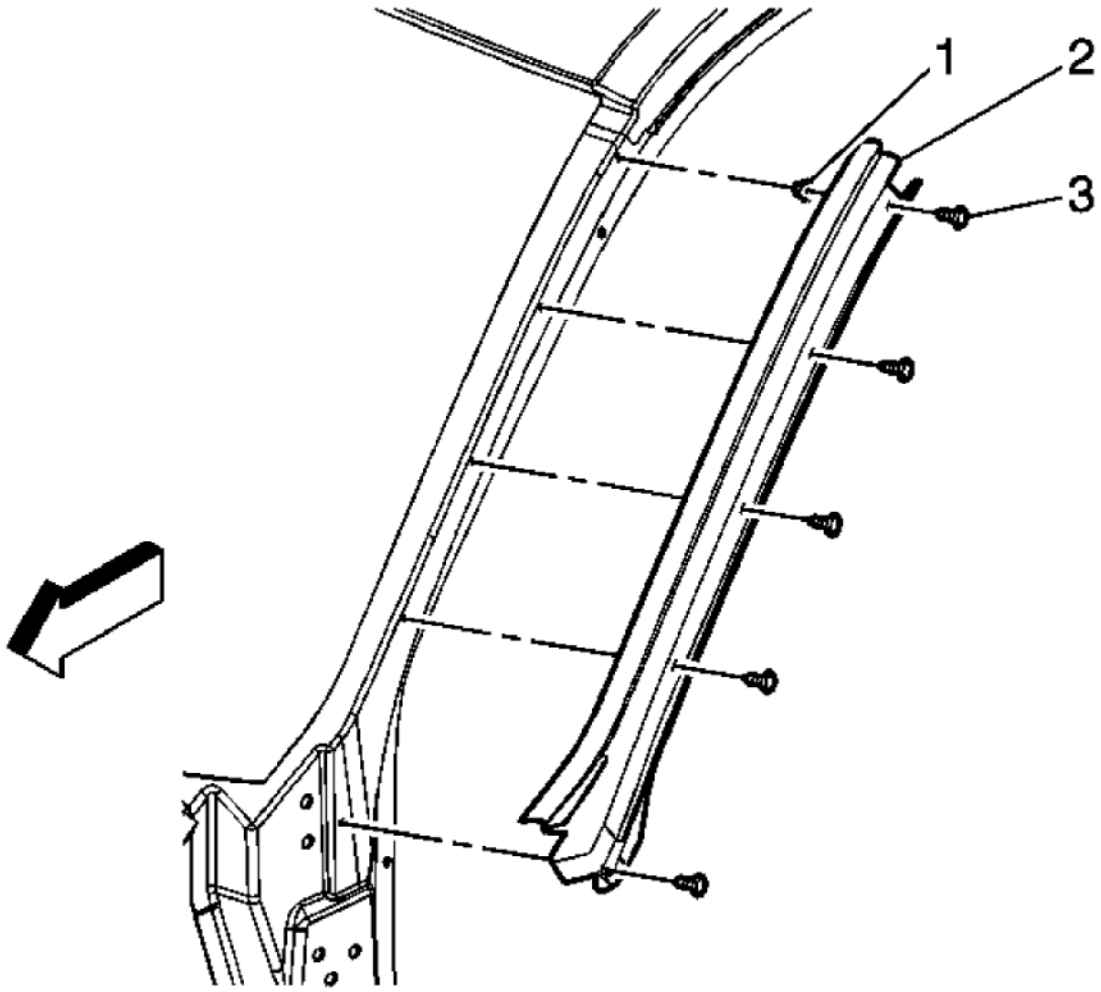


Fig. 20: View Of Window Side Reveal Molding, Screws & Nuts
Courtesy of GENERAL MOTORS CORP.

Callout	Component Name
Preliminary Procedures	

1. Open the front door on the side the reveal molding is being serviced.
2. Pull the door auxiliary weatherstrip up to the roof header.
3. Remove the air inlet grille panel end cap.

1	Reveal Molding Nuts
2	Windshield Side Reveal Molding **Tip:** Upon installation, tuck the bottom edge of the reveal molding under the end cap of the air inlet grille panel prior to the screw installation.
3	Windshield Side Reveal Molding Screws (Qty: 5) **NOTE:** **Refer to Fastener Notice .** **Tighten:** 2 N.m (18 lb in)

FRONT SIDE DOOR WINDOW REPLACEMENT

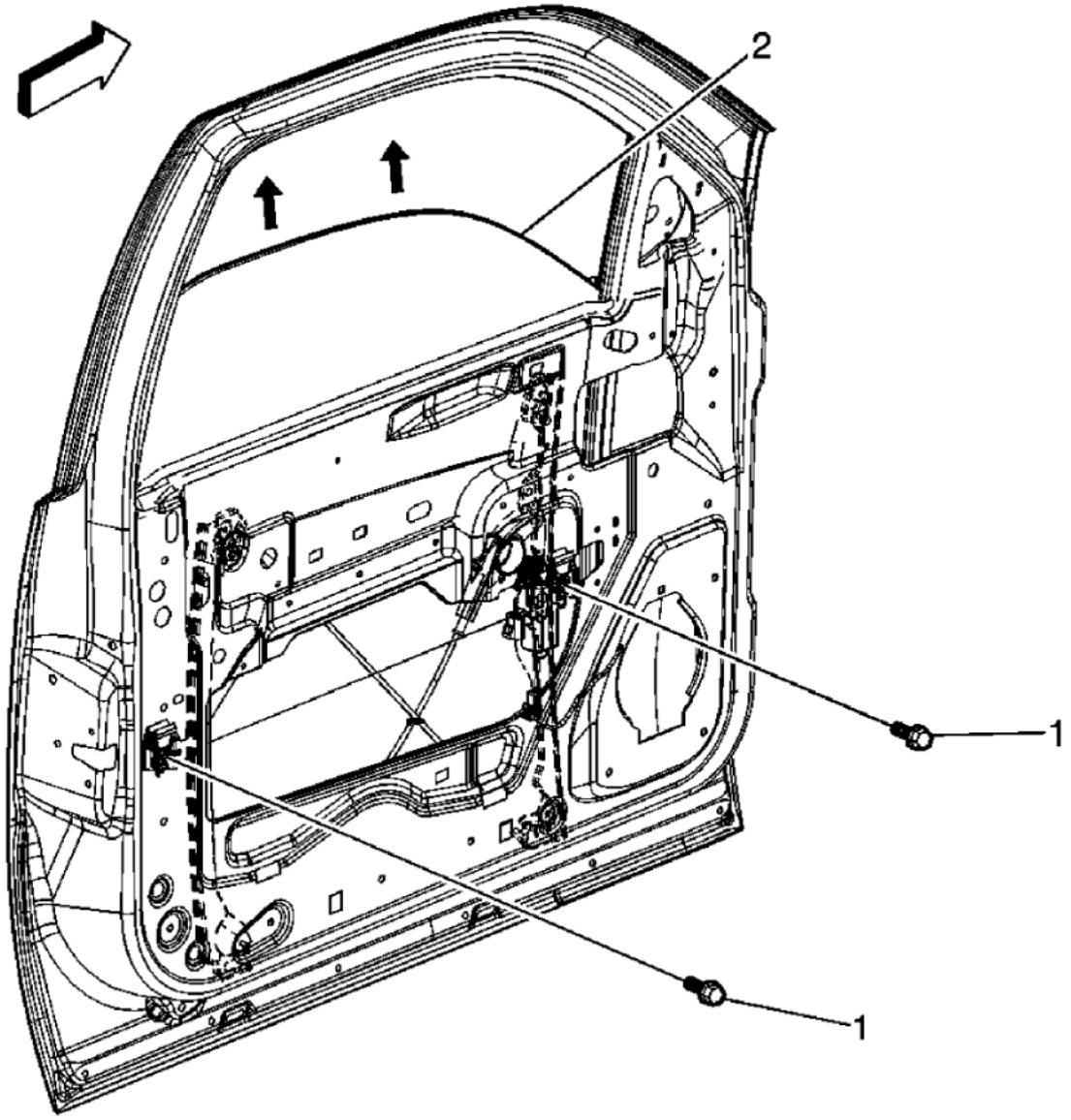


Fig. 21: View Of Front Door Window & Bolts
Courtesy of GENERAL MOTORS CORP.

Callout	Component Name

Preliminary Procedures

1. Position the door window as needed for service.
2. Remove the front door trim panel. Refer to **Front Side Door Trim Panel Replacement (YE9)** or **Front Side Door Trim Panel Replacement (SLT)** .
3. Remove the front door water deflector. Refer to **Front Side Door Water Deflector**

	Replacement . 4. Remove the front side door inner belt sealing strip. Refer to **Front Side Door Window Belt Inner Sealing Strip Replacement**. 5. Remove the front weatherstrip. Refer to **Front Side Door Window Weatherstrip Replacement**.
1	Front Door Window Bolt (Qty: 2) **NOTE:** **Refer to Fastener Notice .** **Procedure:** Loosen the 2 bolts that attach the window to the window regulator. **Tighten:** 10 N.m (89 lb in)
2	Front Door Window **Tip:** The window must be tilted downward into the door to remove it.

REAR SIDE DOOR WINDOW REPLACEMENT (EXTENDER CAB)

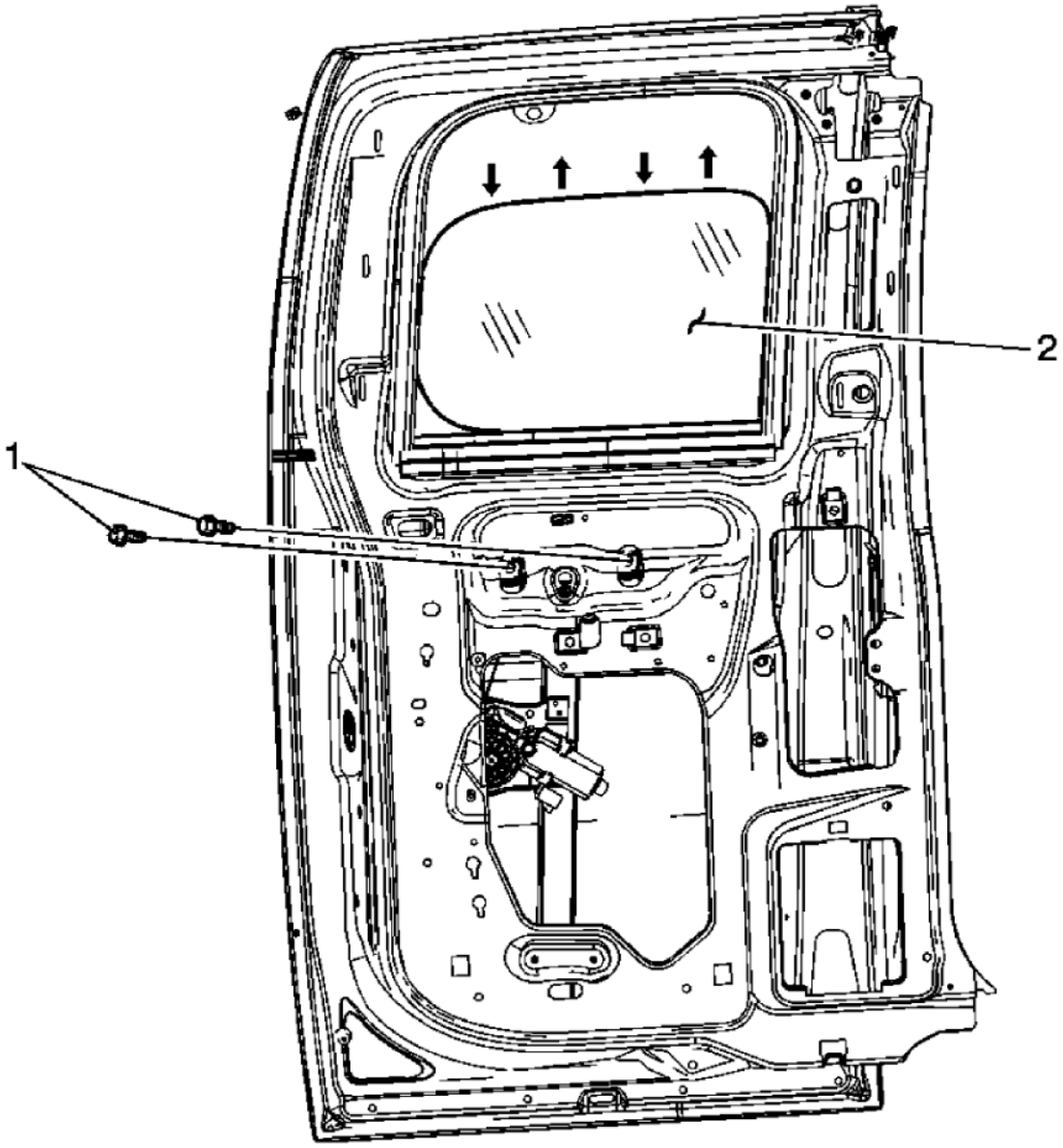


Fig. 22: View Of Rear Door Window & Bolt
Courtesy of GENERAL MOTORS CORP.

Callout	Component Name

Preliminary Procedures

1. Position the door window as needed for service.
2. Remove the rear door trim panel. Refer to **Rear Side Door Trim Panel Replacement (YE9)** or **Rear Side Door Trim Panel Replacement (SLT)** .

3. Remove the rear door water deflector. Refer to **Rear Side Door Water Deflector Replacement** .
4. Remove the rear door inner sealing strip. Refer to **Rear Door Window Belt Inner Sealing Strip Replacement (Crew Cab)** or **Rear Door Window Belt Inner Sealing Strip Replacement (Extended Cab)**.
5. Remove the rear door window weatherstrip. Refer to **Rear Side Door Window Weatherstrip Replacement (Crew Cab)** or **Rear Side Door Window Weatherstrip Replacement (Extended Cab)**.

1	Rear Door Window Bolt (Qty: 2) **NOTE:** **Refer to Fastener Notice .** **Procedure:** Loosen the 2 bolts that attach the window to the window regulator. **Tighten:** 7 N.m (61 lb in)
2	Rear Door Window **Tip:** The window must be tilted downward into the door to remove it.

REAR SIDE DOOR WINDOW REPLACEMENT (CREW CAB)

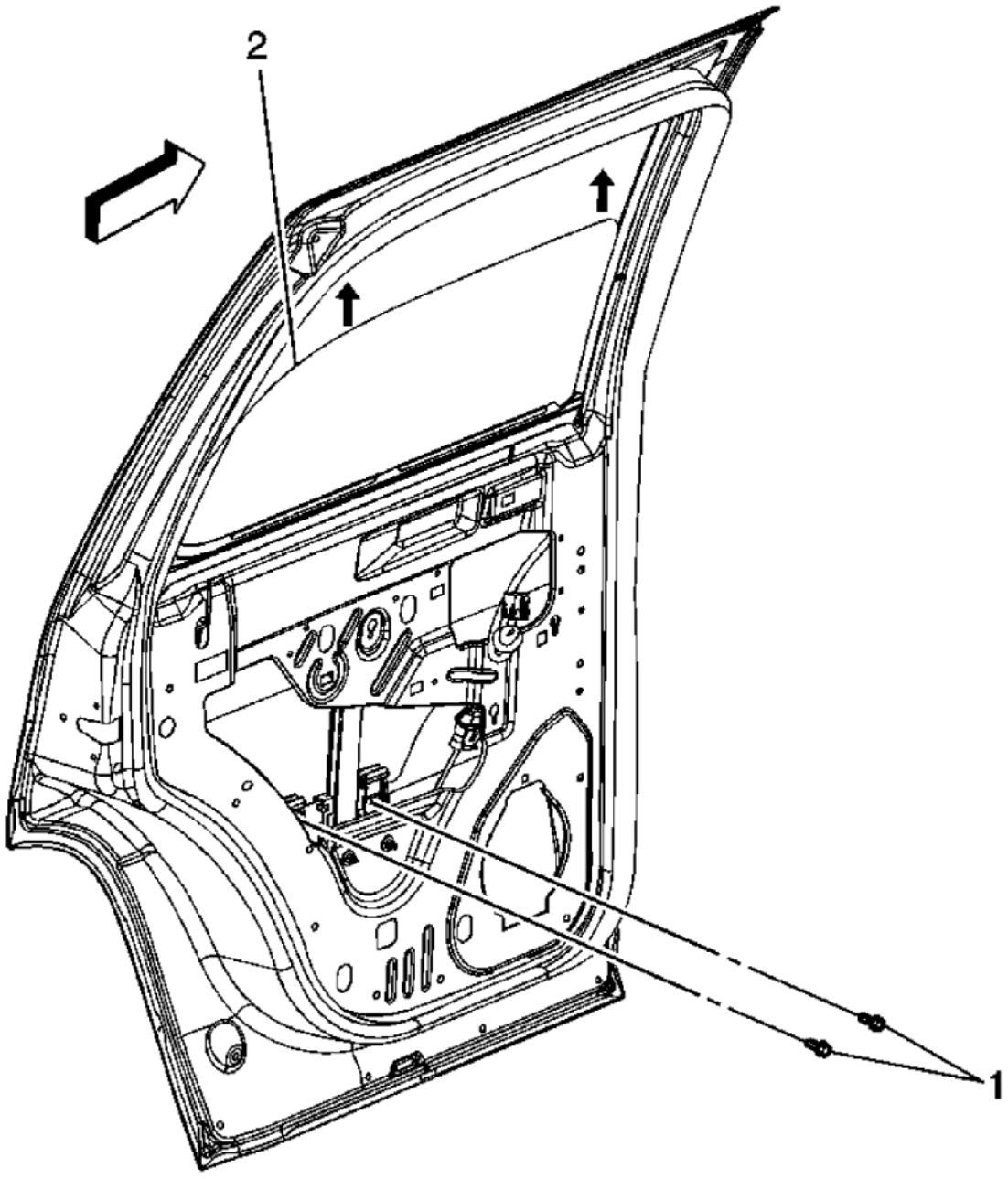


Fig. 23: View Of Rear Door Window & Bolts
Courtesy of GENERAL MOTORS CORP.

Callout	Component Name
Preliminary Procedures	
1. Position the door window as needed for service.	

2. Remove the rear door trim panel. Refer to **Rear Side Door Trim Panel Replacement (YE9)** or **Rear Side Door Trim Panel Replacement (SLT)** .
3. Remove the rear door water deflector. Refer to **Rear Side Door Water Deflector Replacement** .
4. Remove the rear door window weatherstrip. Refer to **Rear Side Door Window Weatherstrip Replacement (Crew Cab)** or **Rear Side Door Window Weatherstrip Replacement (Extended Cab)**.

1	Rear Door Window Bolt (Qty: 2) **NOTE:** **Refer to Fastener Notice .** **Procedure:** Loosen the 2 bolts that attach the window to the window regulator. **Tighten:** 7 N.m (61 lb in)
2	Rear Door Window **Tip:** The window must be tilted downward into the door to remove it.

BODY SIDE WINDOW REPLACEMENT

Removal Procedure

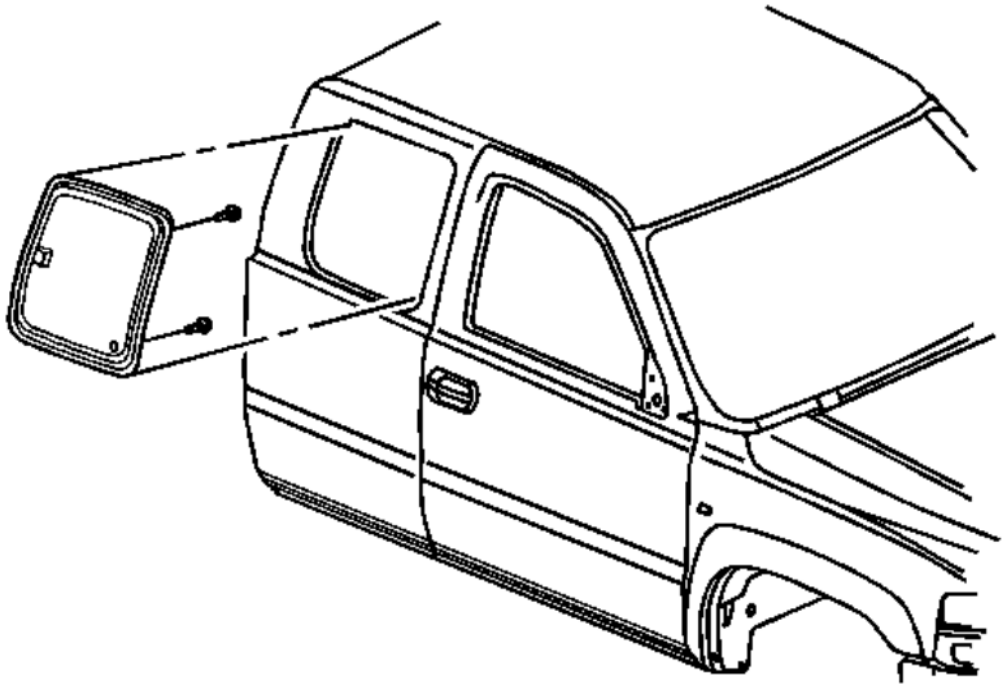


Fig. 24: Hinged Body Side Window
Courtesy of GENERAL MOTORS CORP.

1. Place tape from body side to window to hold in place.
2. Remove the side access door trim panel. Refer to **Rear Side Access Door Trim Panel Replacement** .
3. Disconnect the window latch.
4. Remove the bolts from the hinges.
5. Remove the tape and window from the vehicle.

Installation Procedure

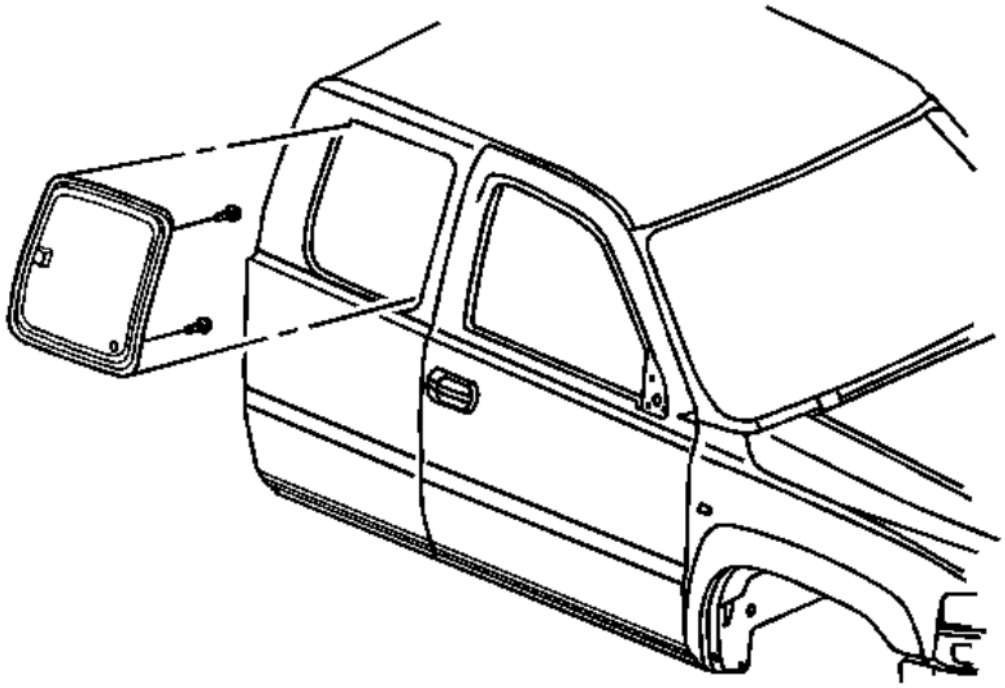


Fig. 25: Hinged Body Side Window
Courtesy of GENERAL MOTORS CORP.

1. Position the window and tape into position.

NOTE: **Refer to Fastener Notice .**

2. Install the bolts to the hinges.

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

3. Install the window latch.
4. Remove the tape and inspect the window.
5. Install the side access door trim panel. Refer to **Rear Side Access Door Trim Panel Replacement** .

REAR WINDOW REPLACEMENT

Tools Required

- **J 24402-A** Cold Knife Glass Sealant Remover. See **Special Tools**.
- **J 39040** Quarter Window Remover. 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 window, apply a double layer of masking tape around the perimeter of the painted surfaces and interior trim.

1. Remove the window lower garnish molding. Refer to **Rear Window Lower Garnish Molding Replacement (Regular Cab)** or **Rear Window Lower Garnish Molding Replacement (Ext Cab/Crew Cab w/A48)** or **Rear Window Lower Garnish Molding Replacement (Ext Cab/Crew Cab w/o A48)** .
2. Remove both rear seat headrests (extended cab). Refer to **Head Restraint Replacement** .
3. Lower rear seat back.
4. Remove the rear sliding window regulator, if equipped. Refer to **Rear Sliding Window Regulator Replacement**.

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

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

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

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

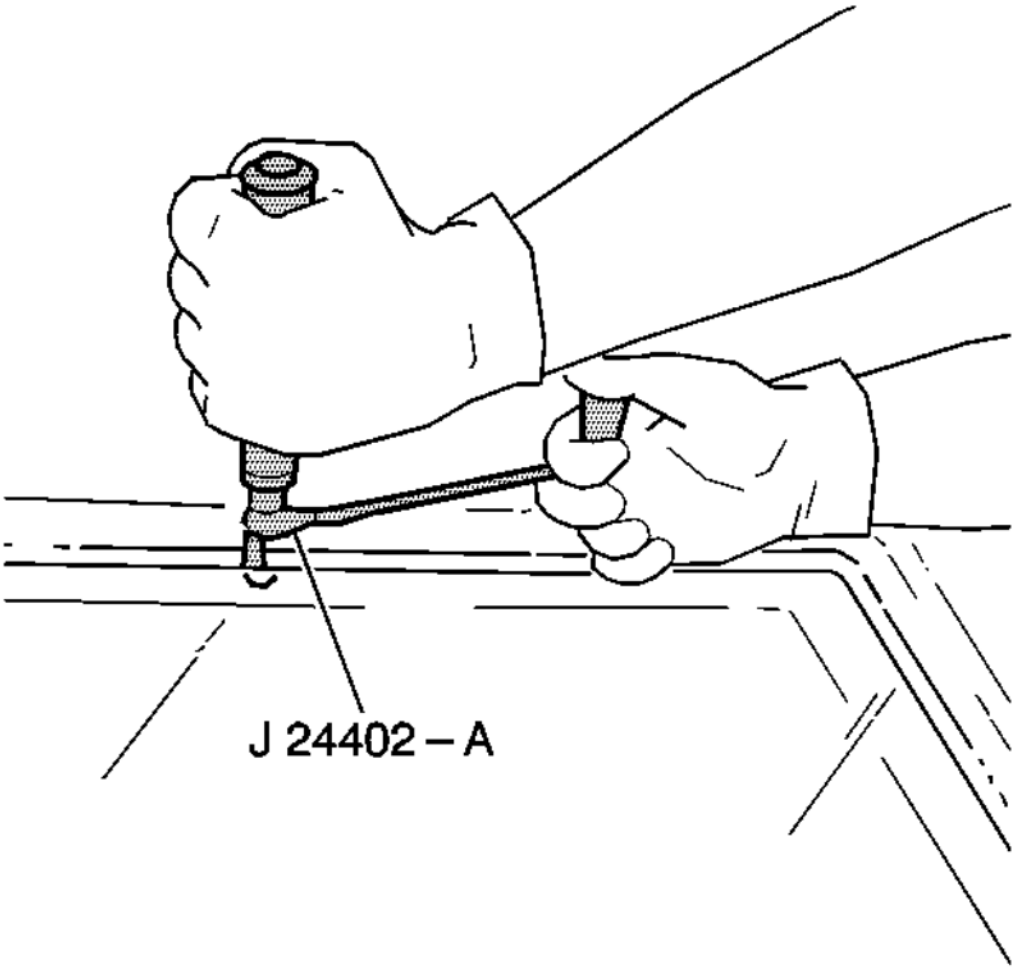


Fig. 26: Separating Urethane Adhesive From Window
Courtesy of GENERAL MOTORS CORP.

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

6. 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 39040** or equivalent in order to remove the window. See **Special Tools**.
7. Open the window, if equipped.

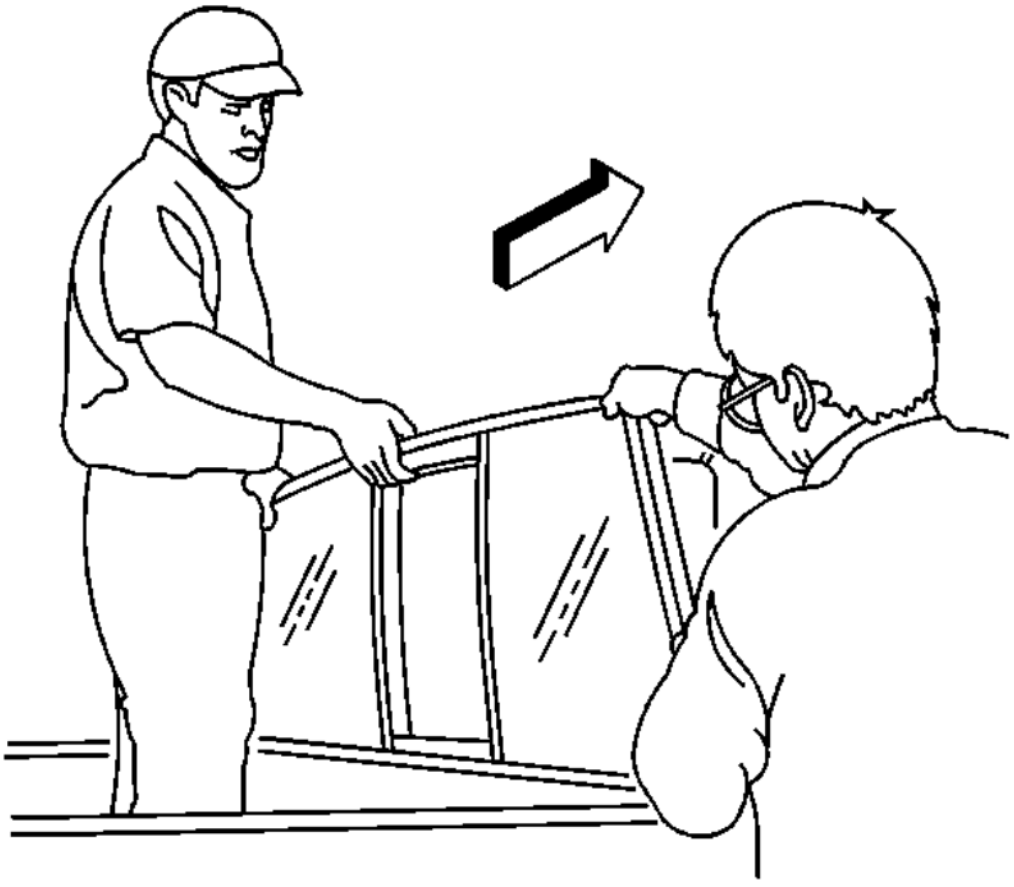


Fig. 27: View Of Rear Window (Pickup)
Courtesy of GENERAL MOTORS CORP.

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

Installation Procedure

1. Install a stationary window into the opening. Refer to **Adhesive Installation of Stationary Windows (Windshield)** or **Adhesive Installation of Stationary Windows (Rear Window)**.
2. Install the rear sliding window regulator, if equipped. Refer to **Rear Sliding Window Regulator Replacement**.
3. Install the window lower garnish molding. Refer to **Rear Window Lower Garnish Molding Replacement (Regular Cab)** or **Rear Window Lower Garnish Molding Replacement (Ext Cab/Crew Cab w/A48)** or **Rear Window Lower Garnish Molding Replacement (Ext Cab/Crew Cab w/o A48)** .
4. Install both rear seat headrests (extended cab). Refer to **Head Restraint Replacement** .
5. Raise the rear seat back.
6. Remove the double layer of masking tape around the perimeter of the painted surfaces and interior trim.

REAR SLIDING WINDOW REPLACEMENT

Removal Procedure

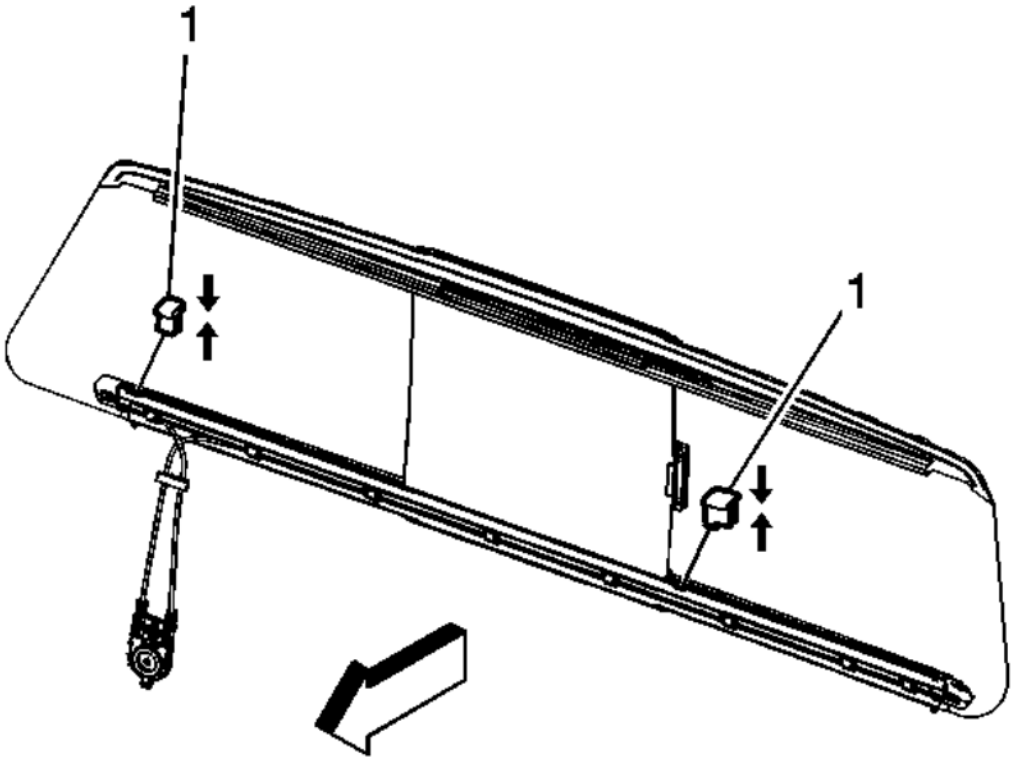


Fig. 28: View Of Rear Sliding Window Stops
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: The new rear sliding window regulator and cables are serviced as an assembly.

1. Cycle the rear sliding window to the halfway position.
2. Remove the rear lower garnish molding. Refer to **Rear Window Lower Garnish Molding Replacement (Regular Cab)** or **Rear Window Lower Garnish Molding Replacement (Ext Cab/Crew Cab w/A48)** or **Rear Window Lower Garnish Molding Replacement (Ext Cab/Crew Cab w/o A48)** .

IMPORTANT: Use a suitable tool to lift upward on the rear sliding window stops (1) to remove.

3. Remove the rear sliding window stops (1).

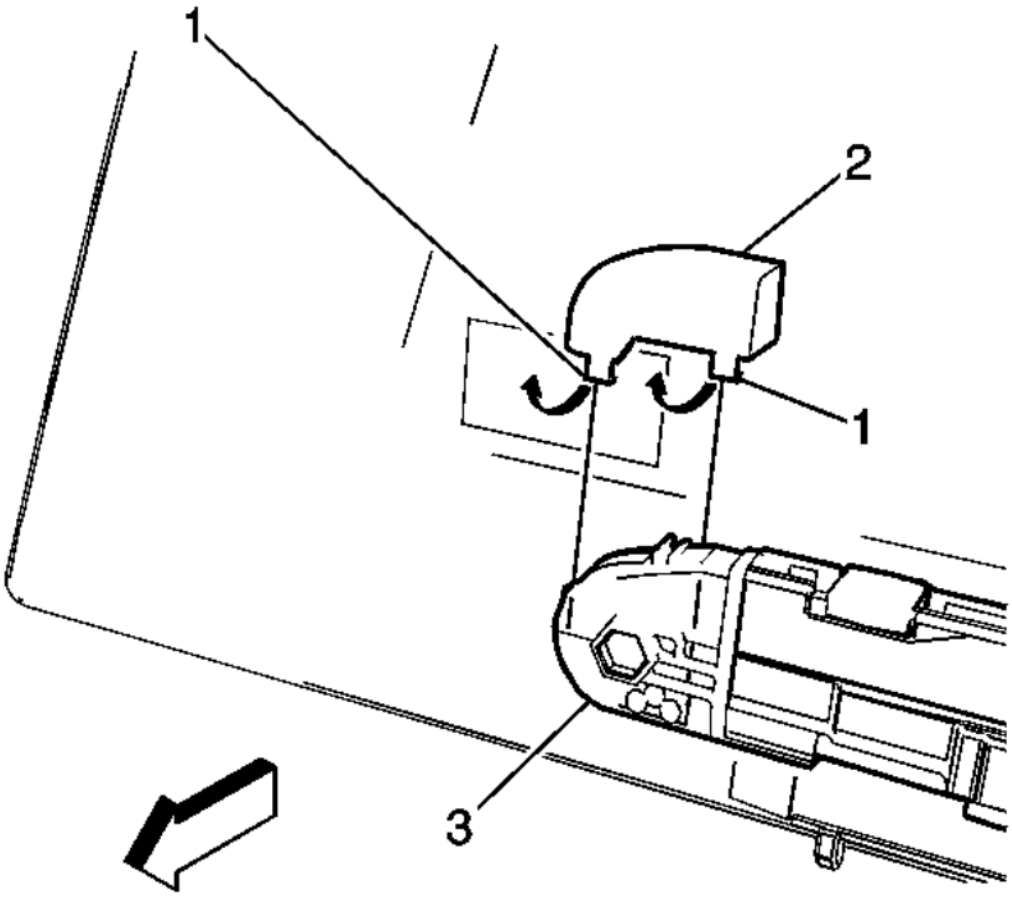


Fig. 29: View Of Rear Sliding Window Pulley Covers
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Use a suitable tool to release the tabs (1) from the rear sliding window pulley (3).

4. Remove the rear sliding window pulley covers (2).

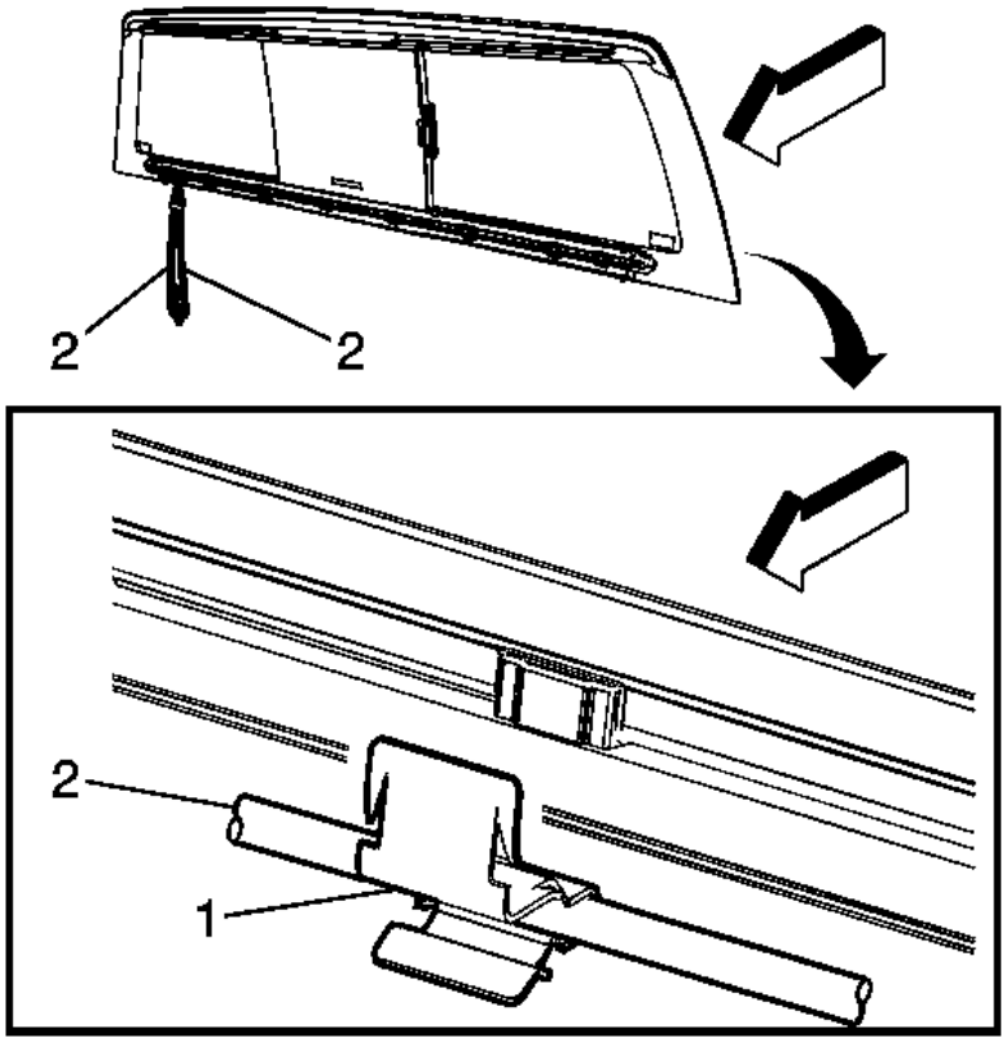


Fig. 30: View Of Regulator Cables & Retainers
Courtesy of GENERAL MOTORS CORP.

5. Remove the regulator cables (2) from the retainers (1) located across the bottom edge of the window frame.

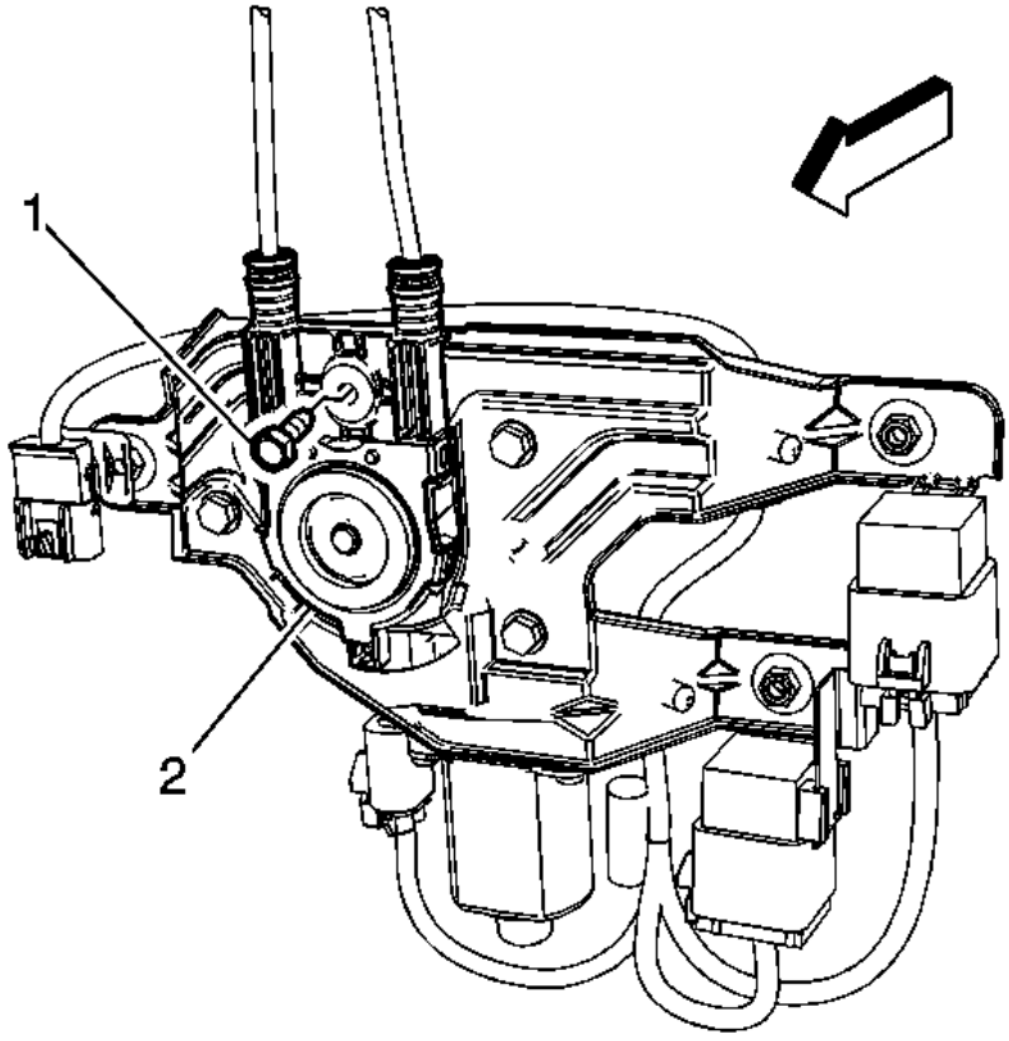


Fig. 31: View Of Regulator & Screw
Courtesy of GENERAL MOTORS CORP.

6. Remove the screw (1) from regulator (2).
7. Remove the regulator (2) from the motor/module.

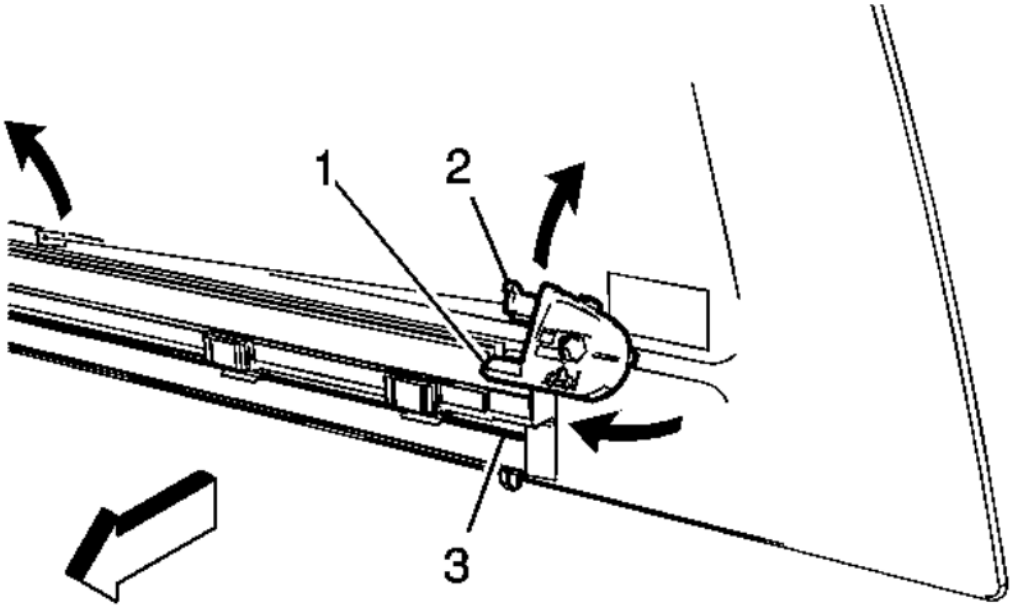


Fig. 32: View Of Pulley, Tabs & Frame
Courtesy of GENERAL MOTORS CORP.

8. Remove the pulley (1) from the frame.
    1. Lift the end of the tabs (2) out of the window frame (3).
    2. Turn upward to release the pulley (1) from the frame (3).

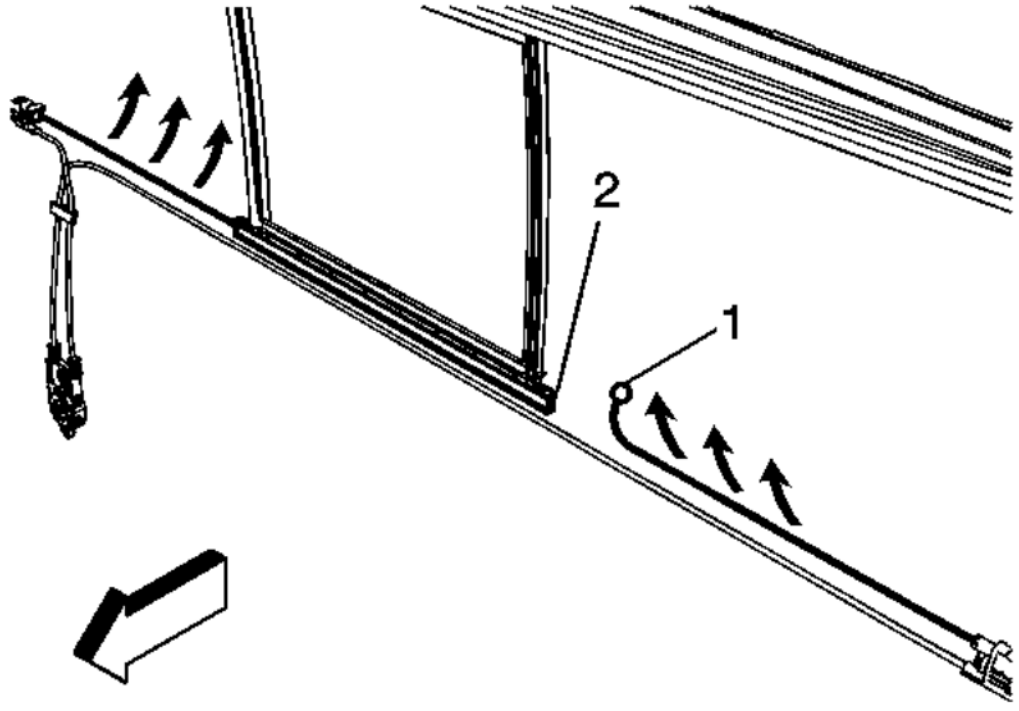


Fig. 33: View Of Cable Ends At Window Guide
Courtesy of GENERAL MOTORS CORP.

9. Remove the cable ends (1) from the window guide (2) at each end of the window.

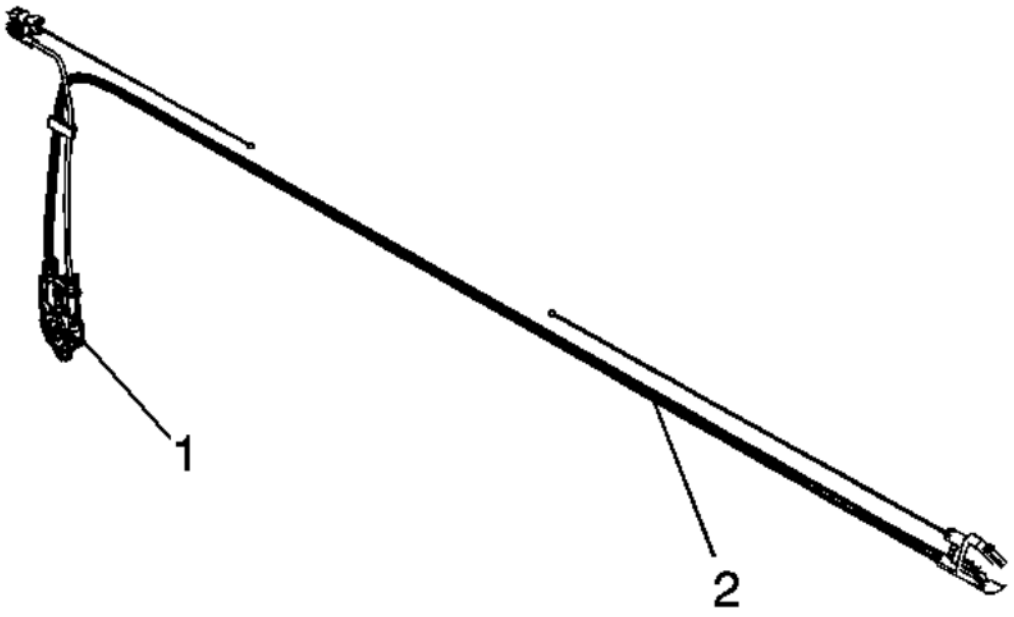


Fig. 34: View Of Regulator & Cables
Courtesy of GENERAL MOTORS CORP.

10. Remove the regulator (1) and cables (2) from the vehicle.

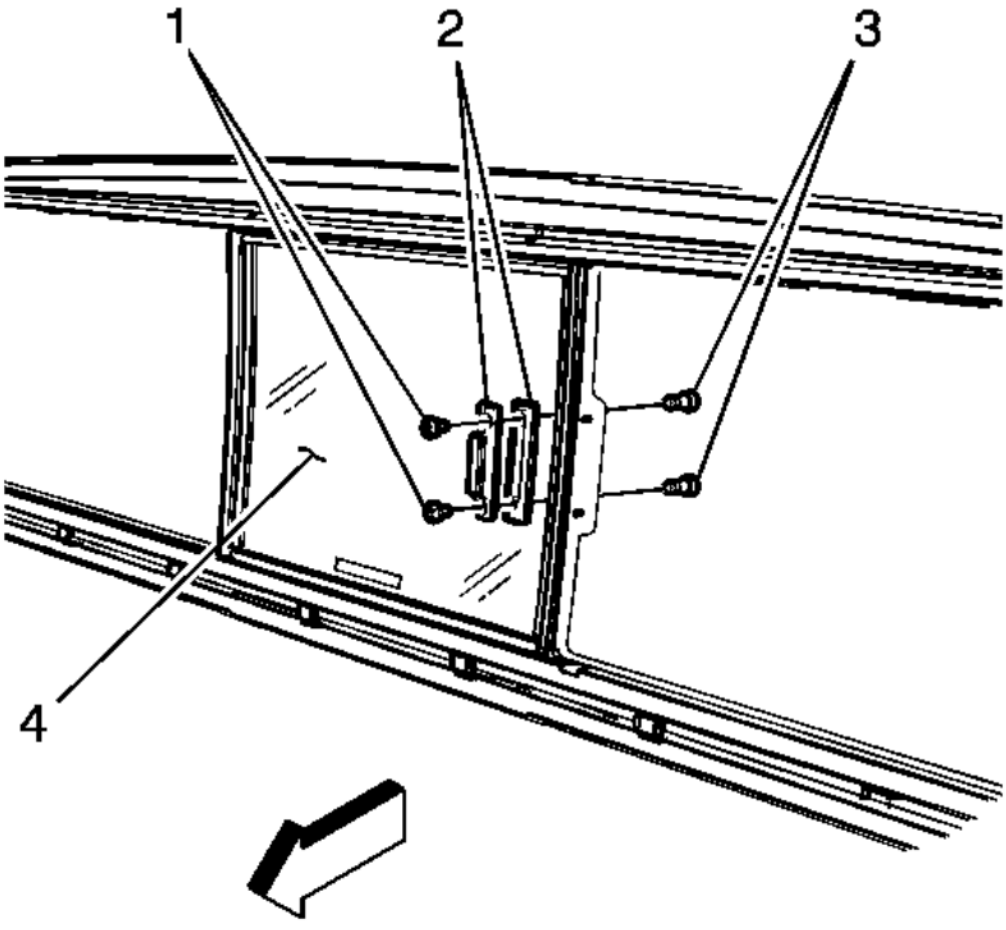


Fig. 35: View Of Rear Side Window Catch Screws, Gasket, Nuts & Frame
Courtesy of GENERAL MOTORS CORP.

11. Remove the rear sliding window catch screws (1), catch, gasket (2) and nuts (3).
12. Slide the window all the way to the left (driver side).
13. Release the window from the upper frame, by push downward on the window.
14. Remove the rear sliding window (4) from the frame.

Installation Procedure

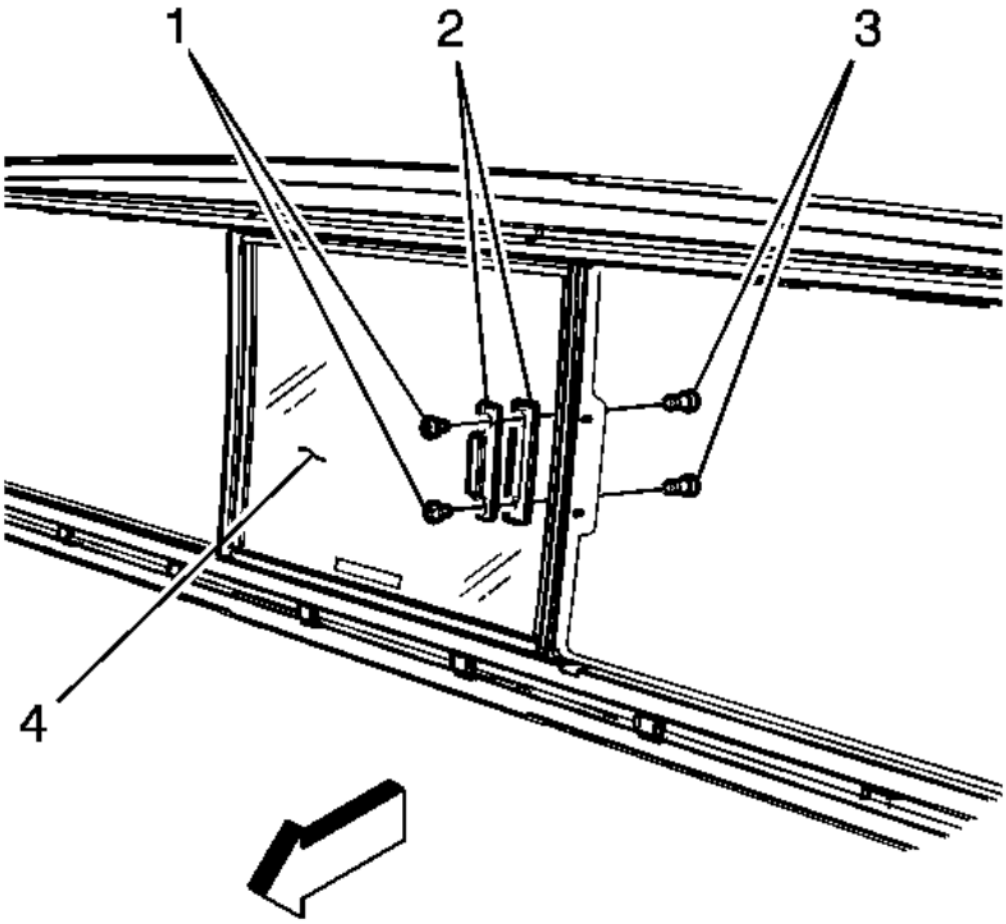


Fig. 36: View Of Rear Side Window Catch Screws, Gasket, Nuts & Frame
Courtesy of GENERAL MOTORS CORP.

1. Install the rear sliding window (4) to the frame.
2. Align the window to the upper and lower frame, push down the window and then pull upward locking the window in the frame.
3. Slide the window all the way to the right (passenger side).

NOTE: Refer to Fastener Notice .

4. Install the rear sliding window catch screws (1), catch, gasket (2) and nuts (3).

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

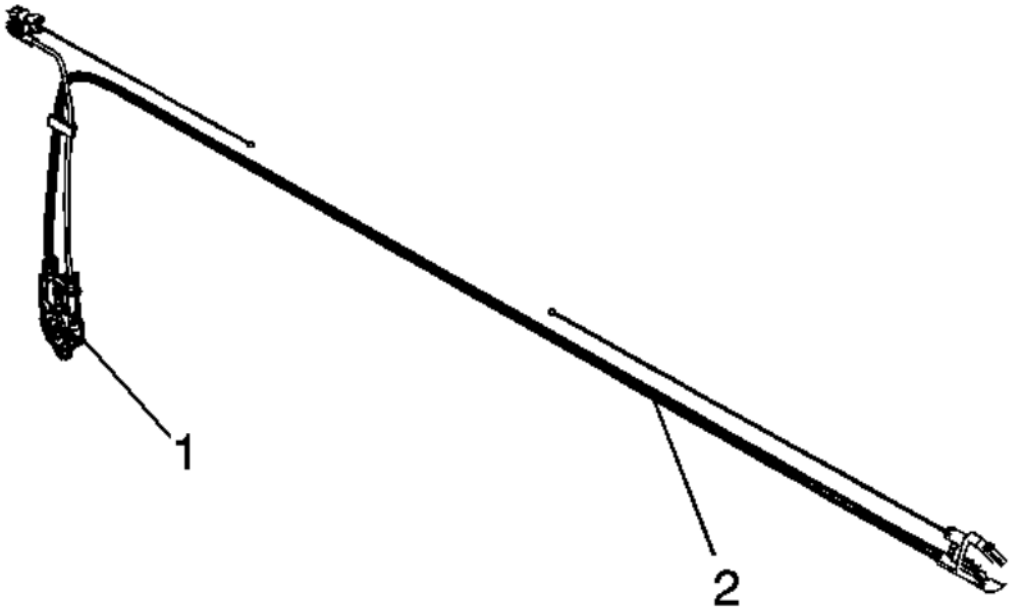


Fig. 37: View Of Regulator & Cables
Courtesy of GENERAL MOTORS CORP.

5. Slide window by hand, back and forth in the window frame to ensure proper operation before installing the regulator to the motor.
6. Install the window to the halfway position.
7. Install the regulator (1) and cables (2) to vehicle.

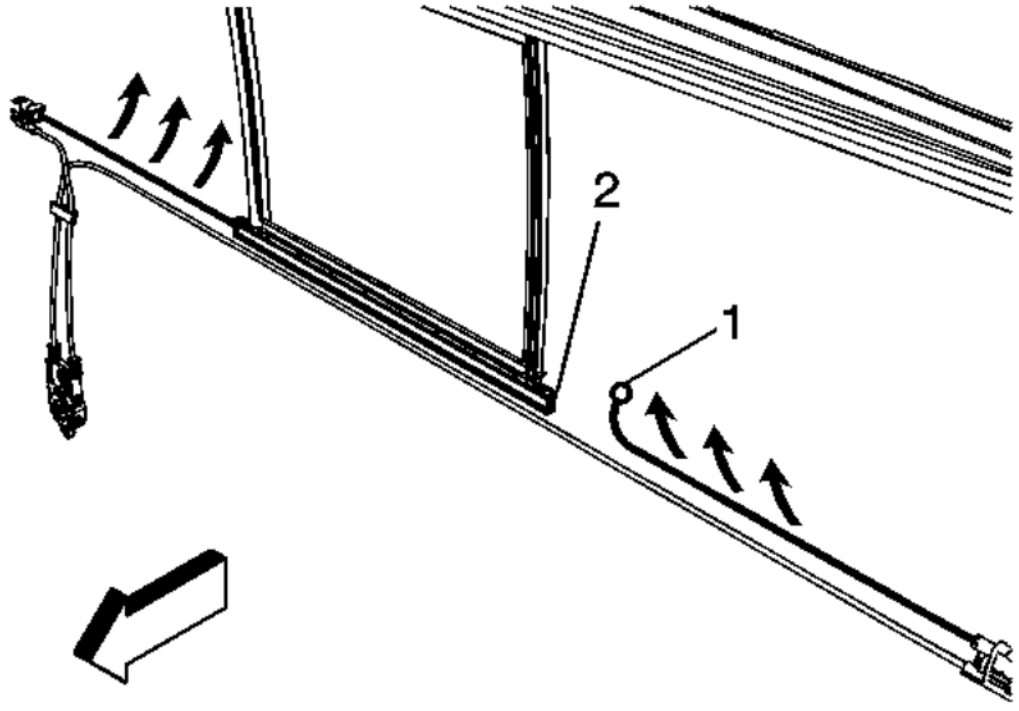


Fig. 38: View Of Cable Ends At Window Guide
Courtesy of GENERAL MOTORS CORP.

8. Install the cable ends (1) to the window guide (2) at each end of the window.

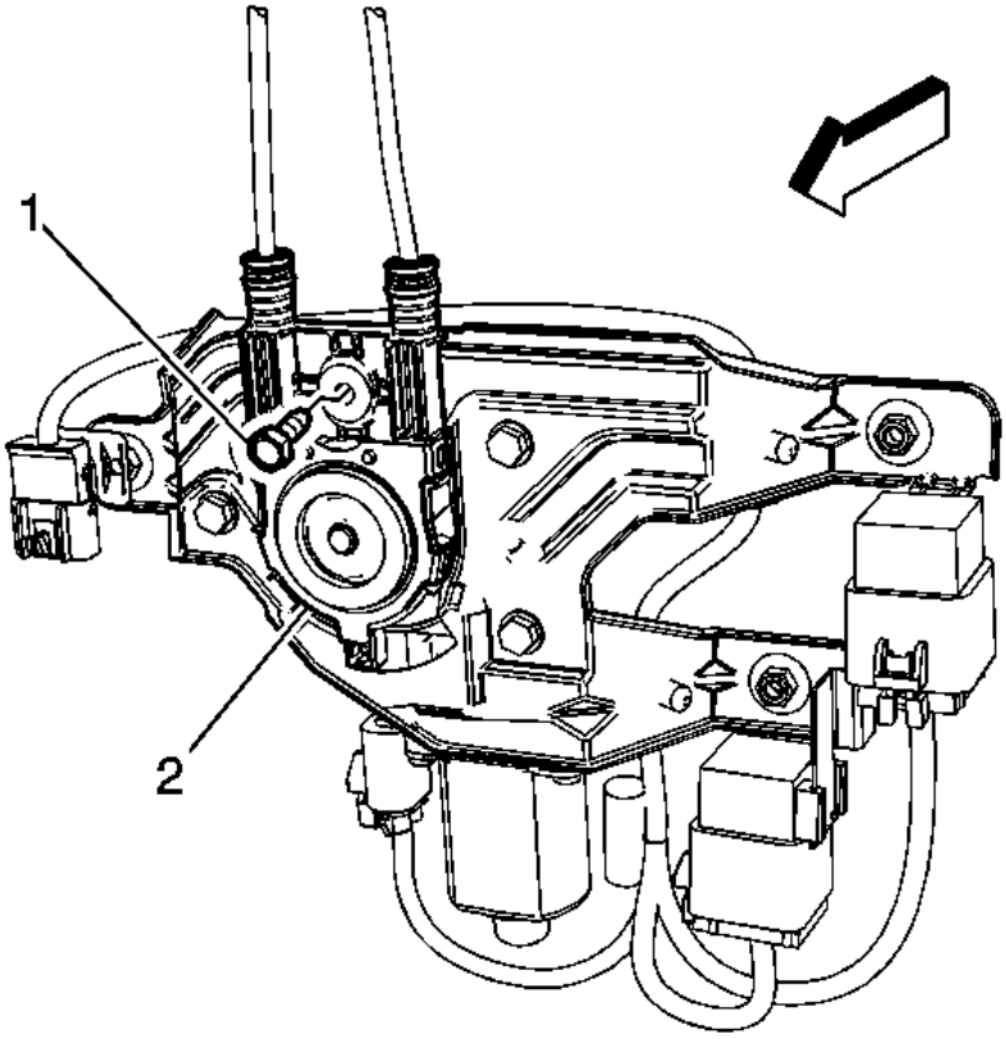


Fig. 39: View Of Regulator & Screw
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: When installing the regulator (2) align the gear to the motor drivegear before installing the screw.

9. Install the regulator (2) to the motor/module.
10. Install the screw (1) to the motor/module.

Tighten: Tighten nuts to 5 N.m (44 lb in).

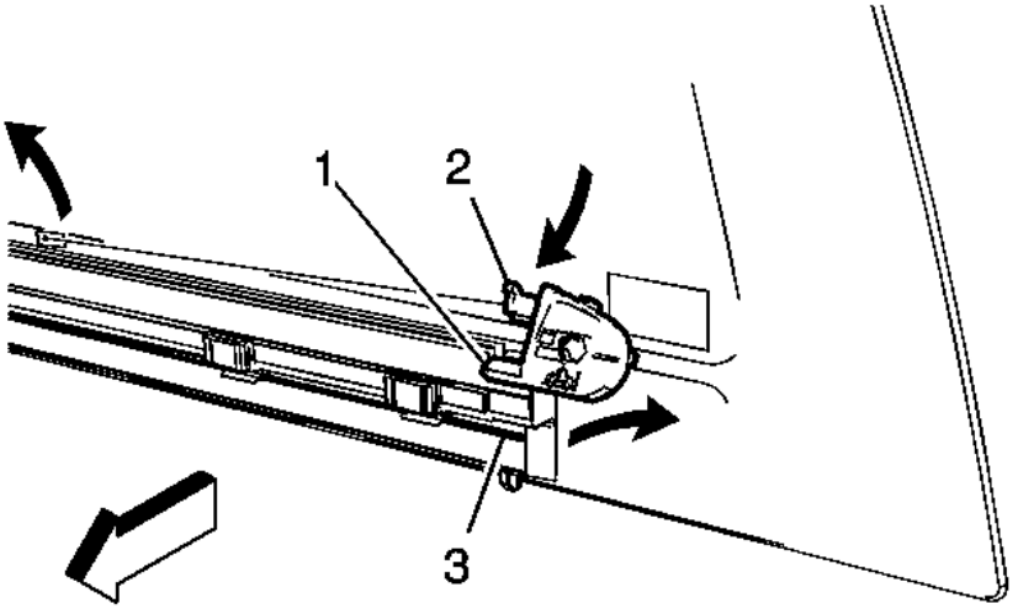


Fig. 40: View Of Pulley, Tabs & Frame
Courtesy of GENERAL MOTORS CORP.

11. Install the rear sliding window pulley (1).
    1. Align the tabs (2) on the pulley (1) with the notch in the frame (3).
    2. Turn the pulley downward, locking the pulley into the frame (3).

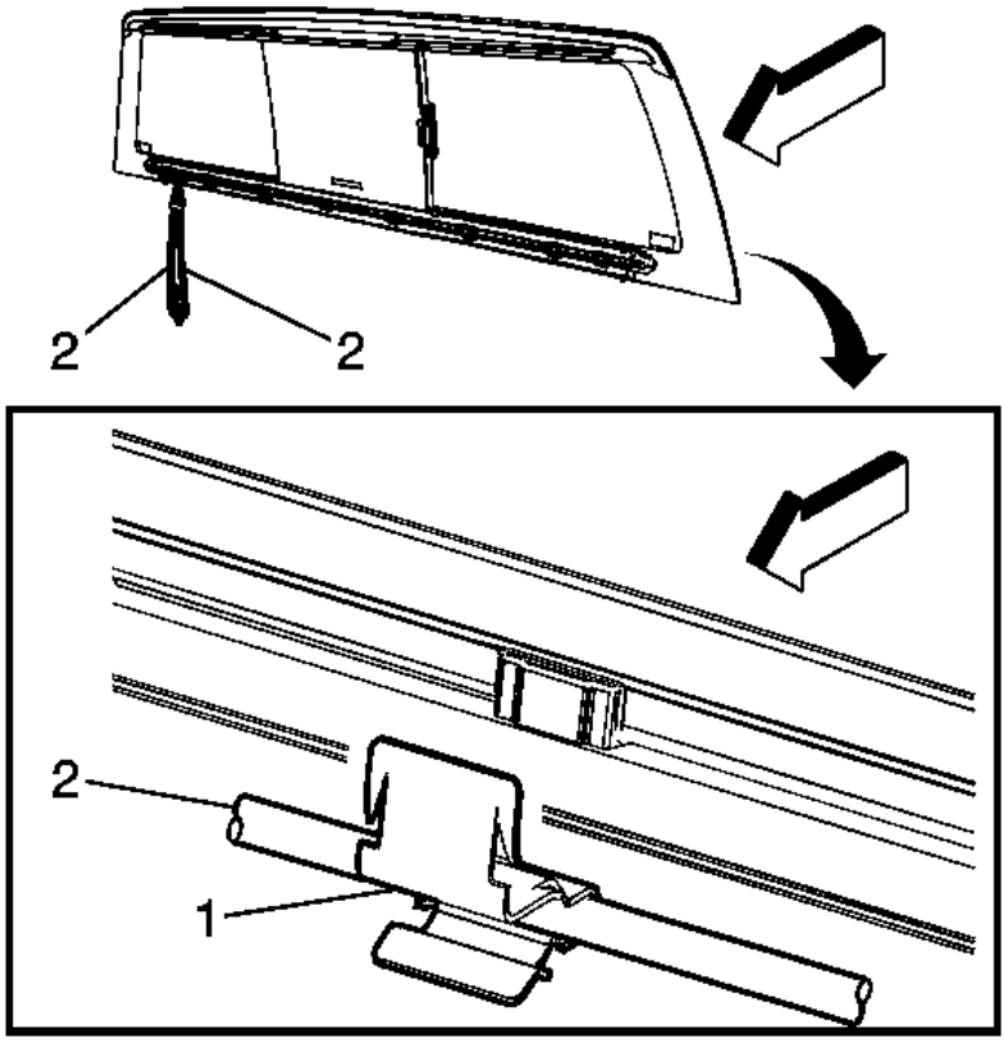


Fig. 41: View Of Regulator Cables & Retainers
Courtesy of GENERAL MOTORS CORP.

12. Install the regulator cables (2) to the retainers (1) across the bottom edge of the window frame.

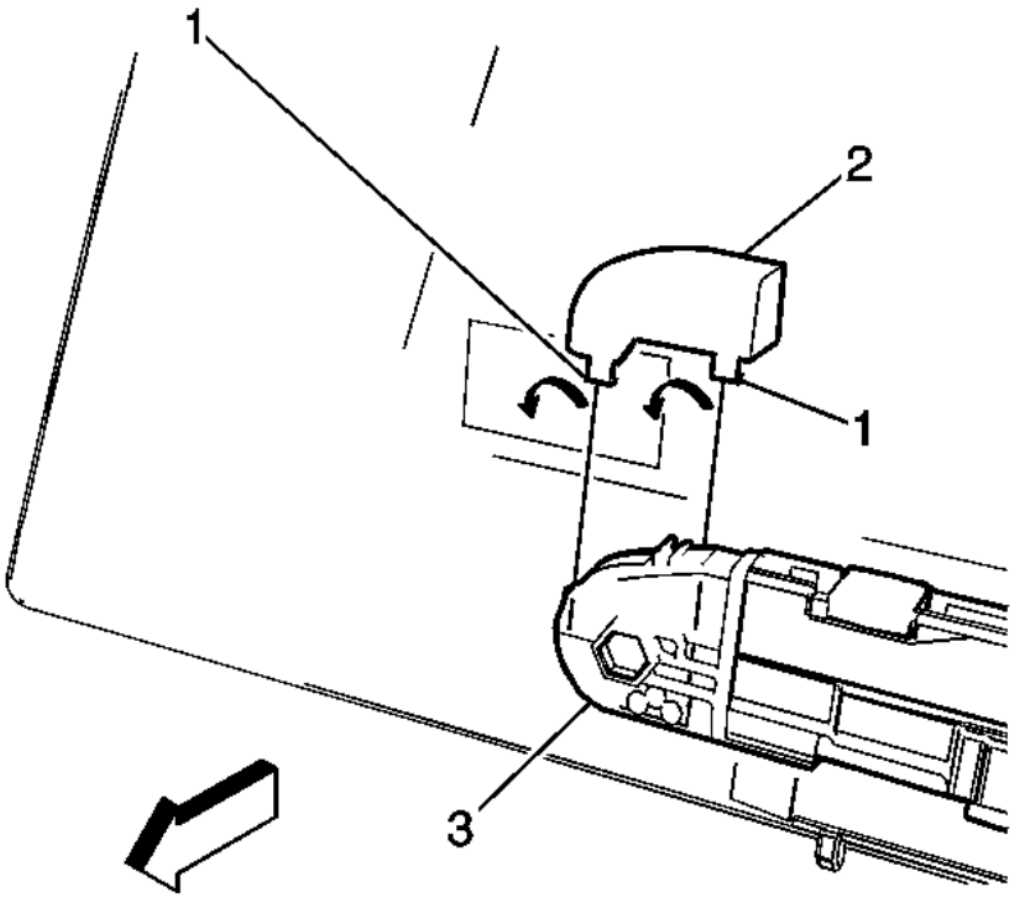


Fig. 42: View Of Rear Window Pulley, Tabs & Cover
Courtesy of GENERAL MOTORS CORP.

13. Install the rear sliding window pulley covers (2) to the pulley (3), clip the tabs (1) in place.

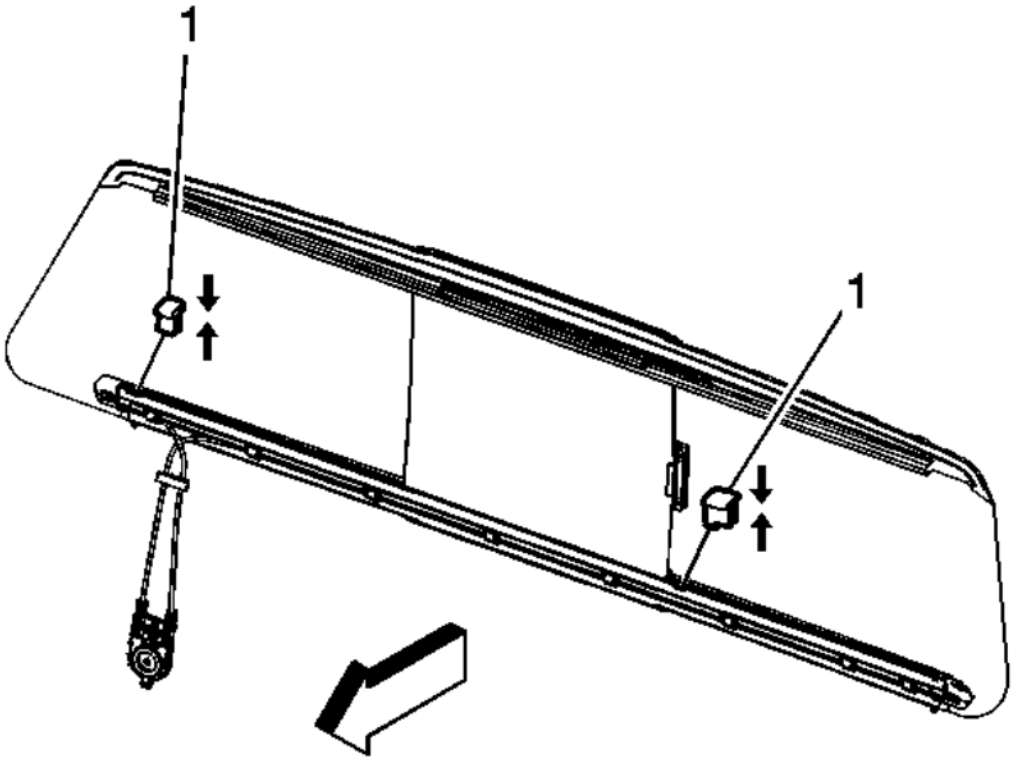


Fig. 43: View Of Rear Sliding Window Stops
Courtesy of GENERAL MOTORS CORP.

14. Install the rear sliding window stops (1) until fully seated.
15. Cycle the rear sliding window to the fully closed position.
16. Install the lower garnish molding. Refer to **Rear Window Lower Garnish Molding Replacement (Regular Cab)** or **Rear Window Lower Garnish Molding Replacement (Ext Cab/Crew Cab w/A48)** or **Rear Window Lower Garnish Molding Replacement (Ext Cab/Crew Cab w/o A48)** .
17. Inspect the rear sliding window for proper operation.
18. Clean the window.

REAR SLIDING WINDOW REGULATOR REPLACEMENT

Removal Procedure

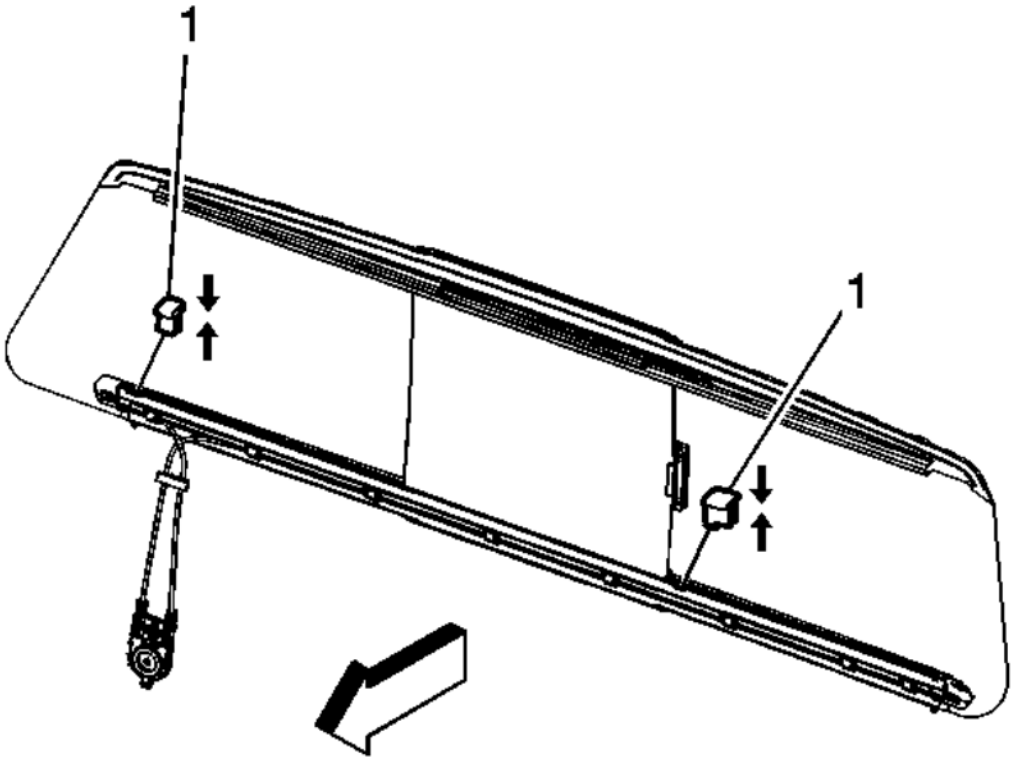


Fig. 44: View Of Rear Sliding Window Stops
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: The new rear sliding window regulator and cables are serviced as an assembly.

1. Cycle the rear sliding window to the halfway position.
2. Remove the rear lower garnish molding. Refer to **Rear Window Lower Garnish Molding Replacement (Regular Cab)** or **Rear Window Lower Garnish Molding Replacement (Ext Cab/Crew Cab w/A48)** or **Rear Window Lower Garnish Molding Replacement (Ext Cab/Crew Cab w/o A48)** .

IMPORTANT: Use a suitable tool to lift upward on the rear sliding window stops (1) to remove.

3. Remove the rear sliding window stops (1).

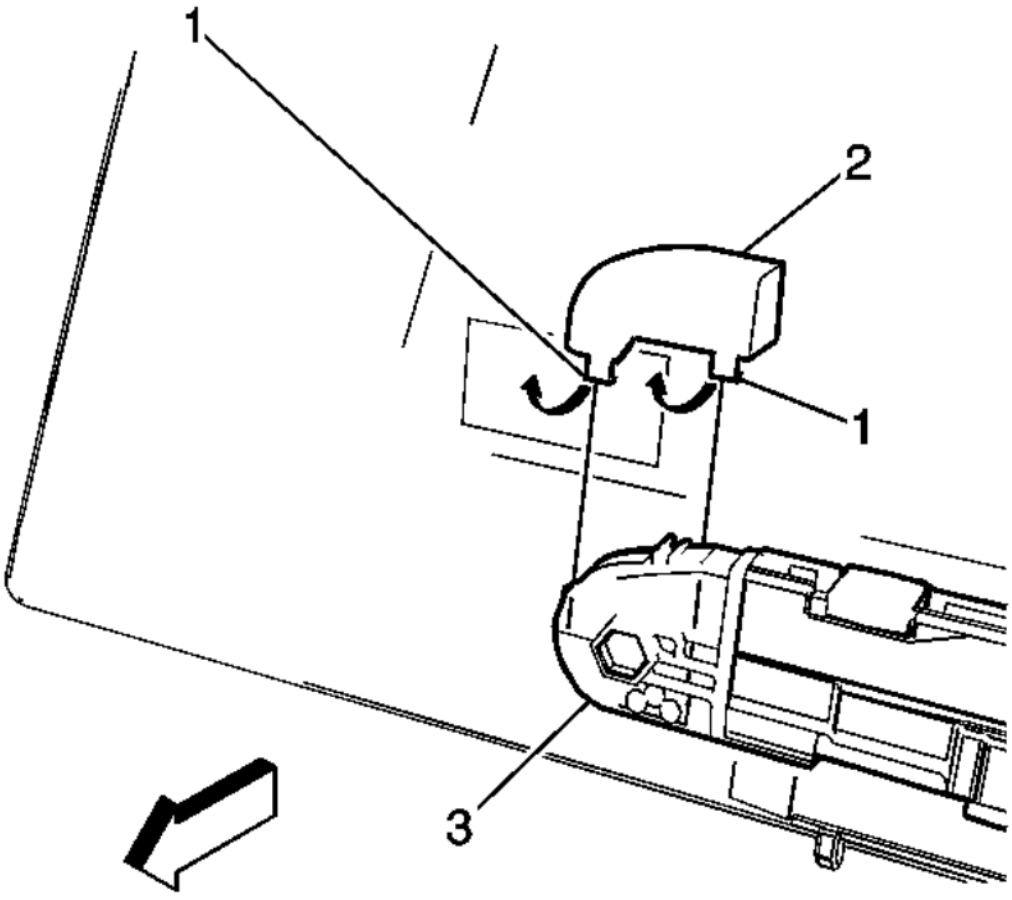


Fig. 45: View Of Rear Sliding Window Pulley Covers
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Use a suitable tool to release the tabs (1) from the rear sliding window pulley (3).

4. Remove the rear sliding window pulley covers (2).

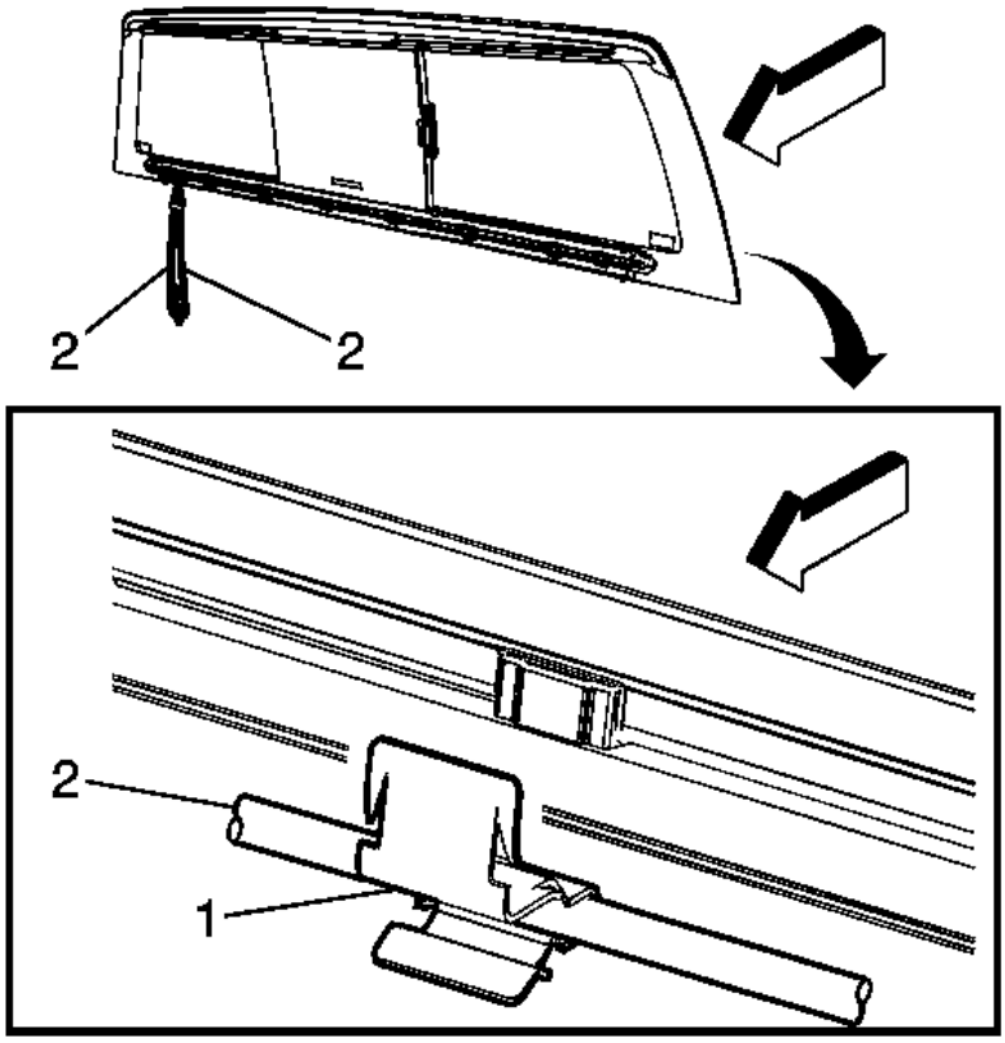


Fig. 46: View Of Regulator Cables & Retainers
Courtesy of GENERAL MOTORS CORP.

5. Remove the regulator cables (2) from the retainers (1) located across the bottom edge of the window frame.

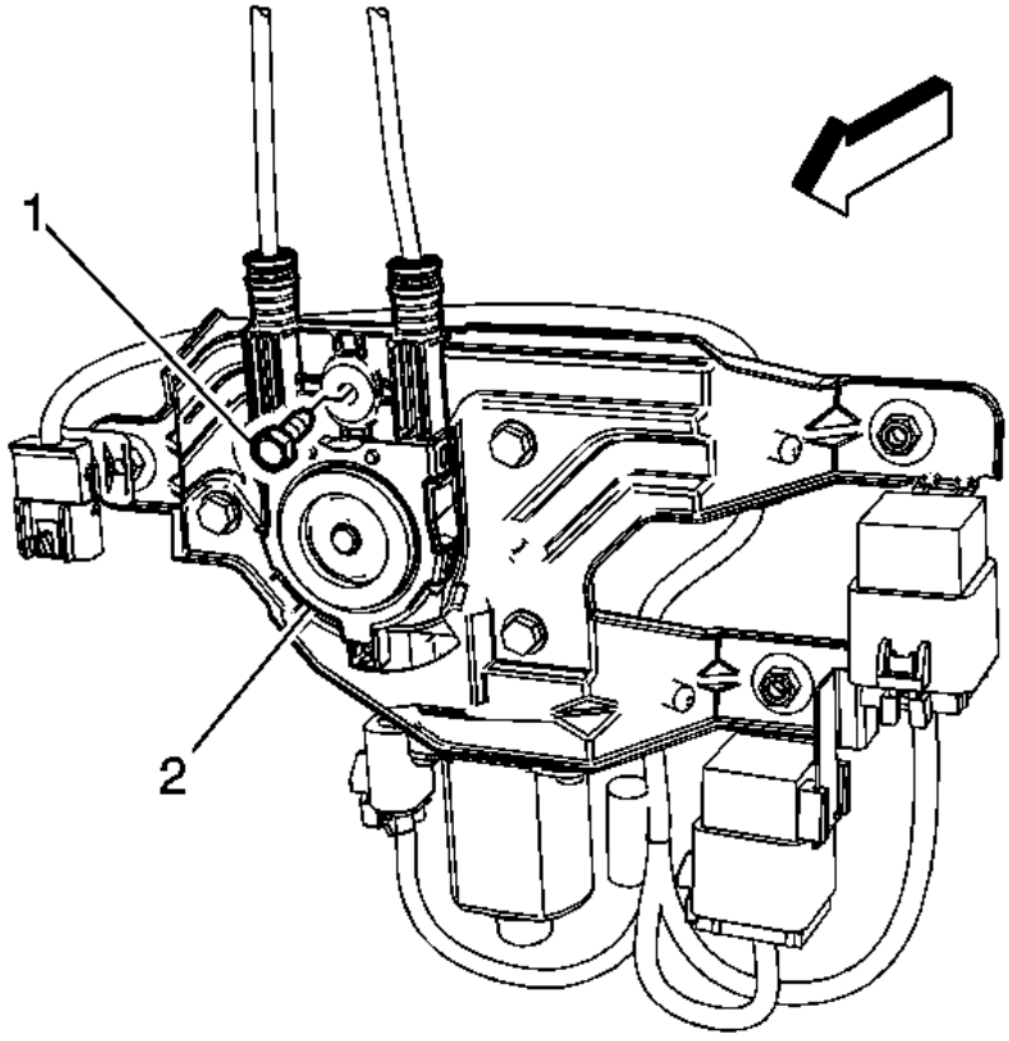


Fig. 47: View Of Regulator & Screw
Courtesy of GENERAL MOTORS CORP.

6. Remove the screw (1) from regulator (2).
7. Remove the regulator (2) from the motor/module.

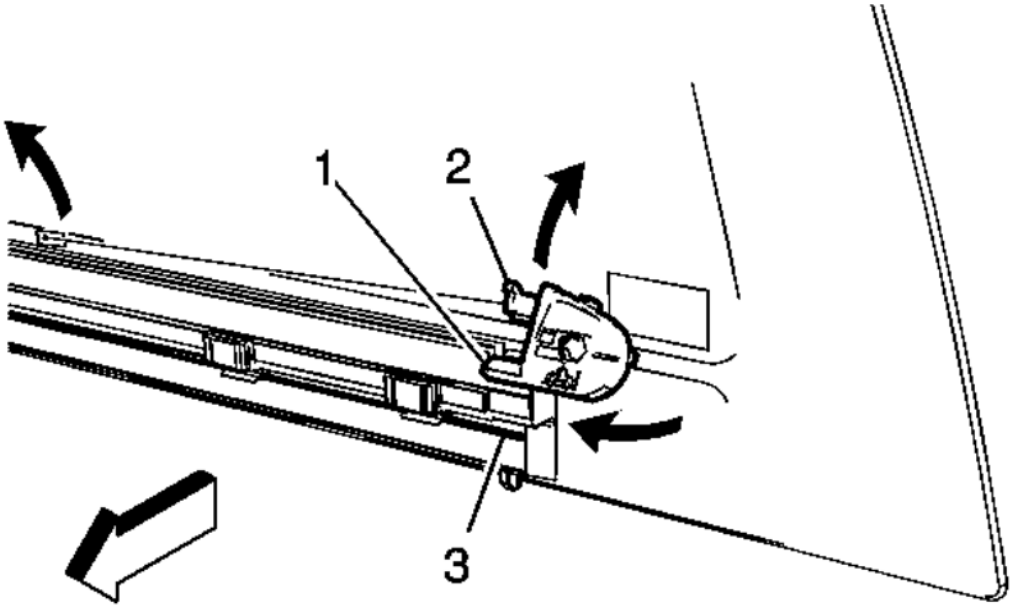


Fig. 48: View Of Pulley, Tabs & Frame
Courtesy of GENERAL MOTORS CORP.

8. Remove the pulley (1) from the frame.
    1. Lift the end of the tabs (2) out of the window frame (3).
    2. Turn upward to release the pulley (1) from the frame (3).

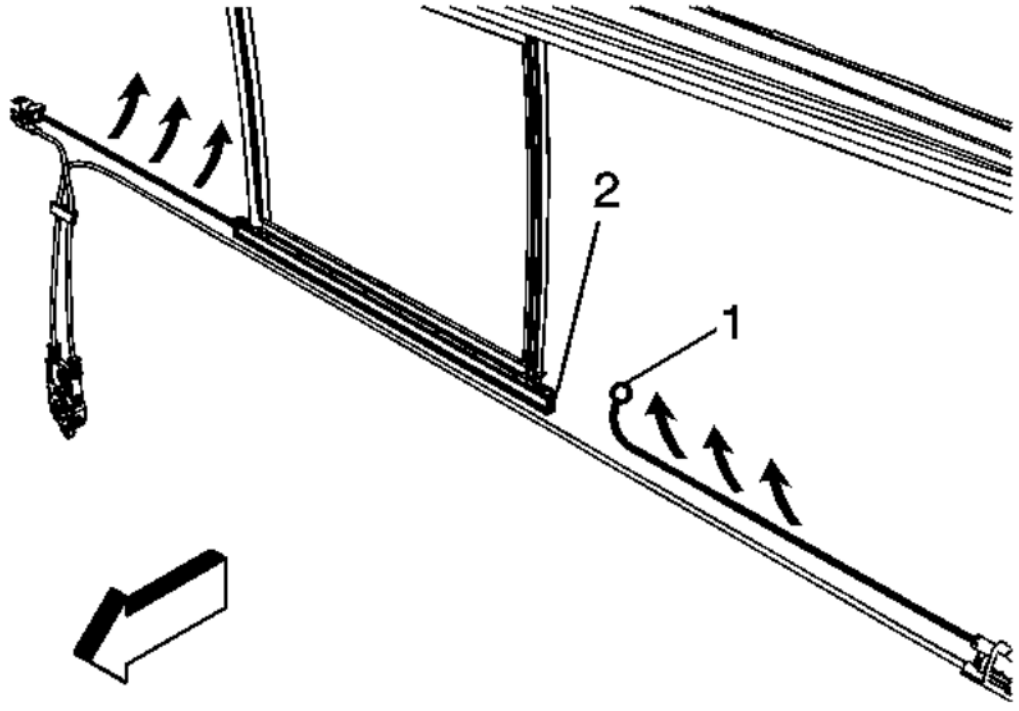


Fig. 49: View Of Cable Ends At Window Guide
Courtesy of GENERAL MOTORS CORP.

9. Remove the cable ends (1) from the window guide (2) at each end of the window.

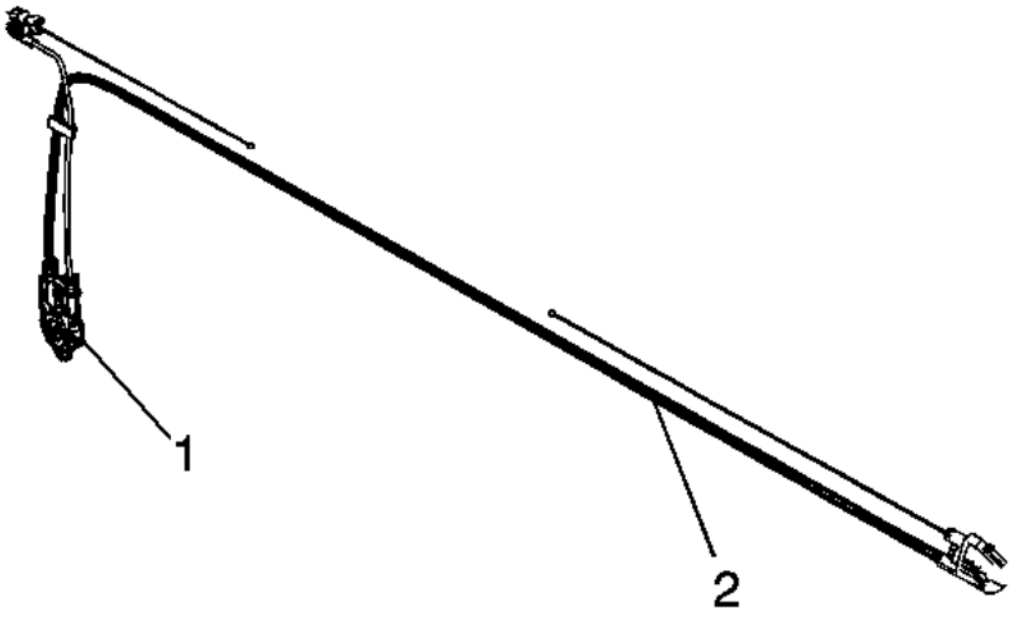


Fig. 50: View Of Regulator & Cables
Courtesy of GENERAL MOTORS CORP.

10. Remove the regulator (1) and cables (2) from the vehicle.

Installation Procedure

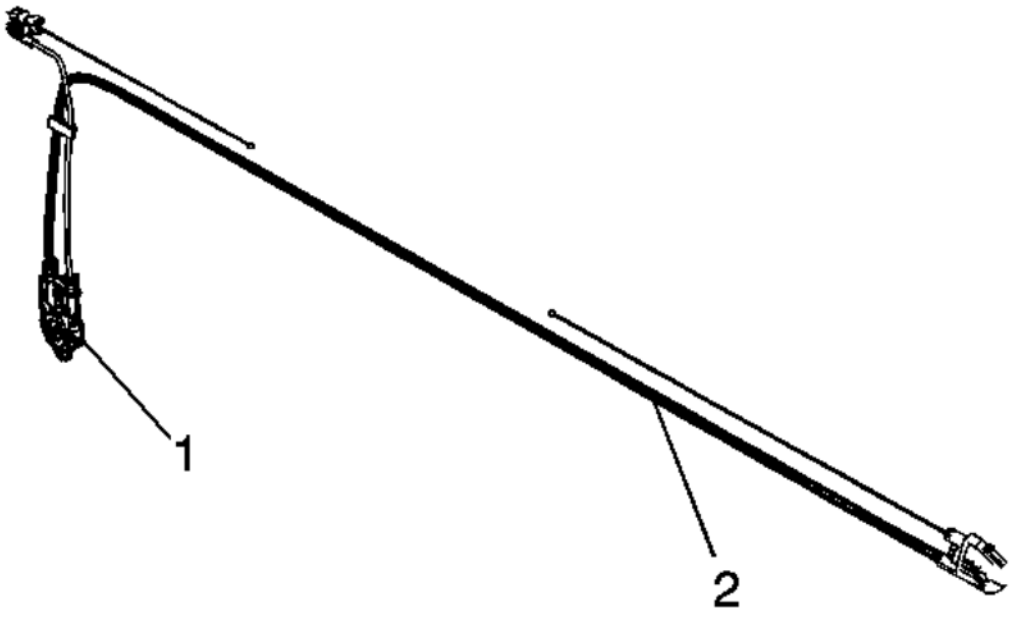


Fig. 51: View Of Regulator & Cables
Courtesy of GENERAL MOTORS CORP.

1. Install the regulator (1) and cables (2) to vehicle.

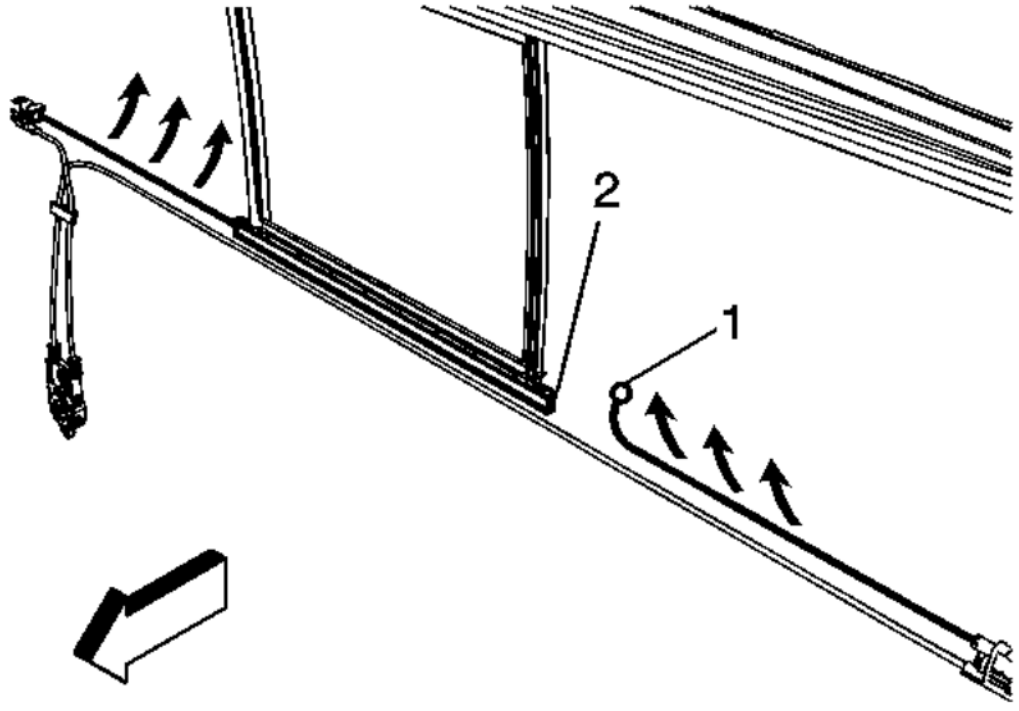


Fig. 52: View Of Cable Ends At Window Guide
Courtesy of GENERAL MOTORS CORP.

2. Install the cable ends (1) to the window guide (2) at each end of the window.

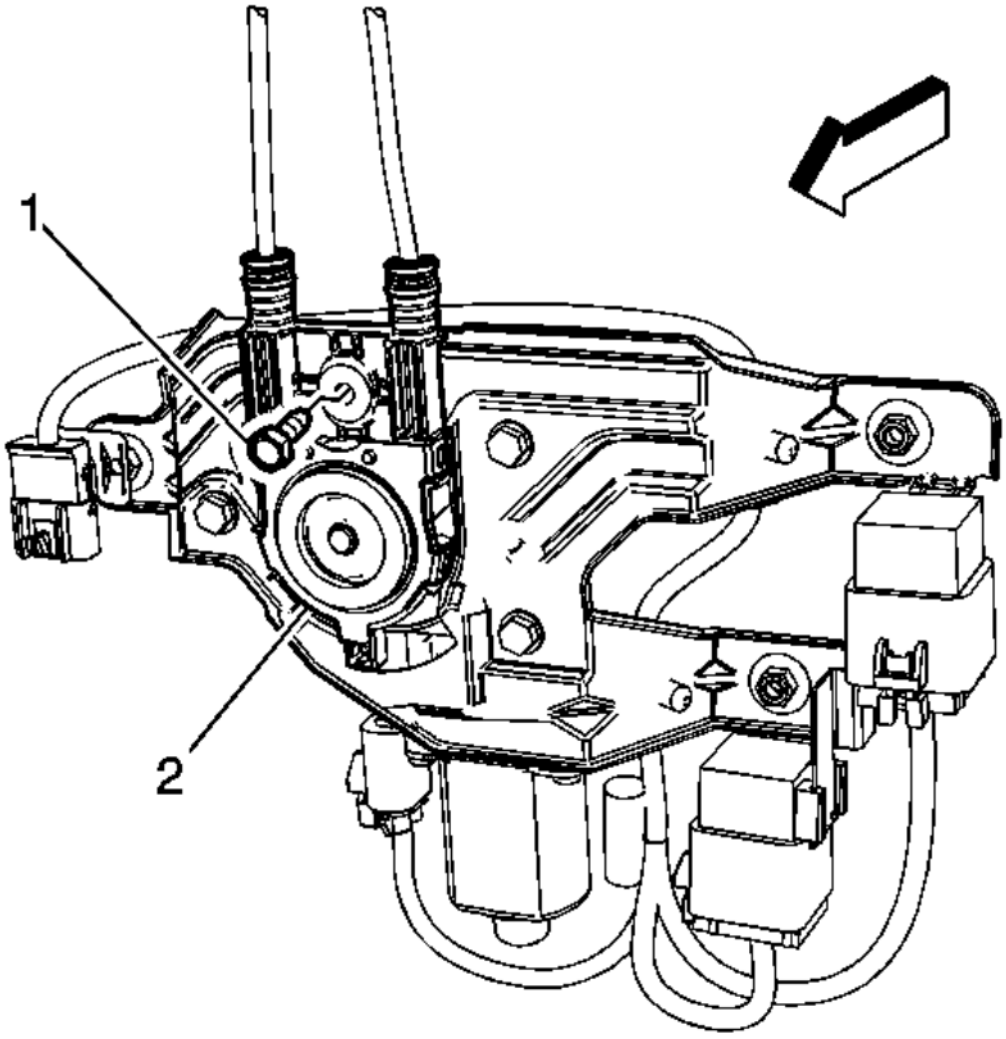


Fig. 53: View Of Regulator & Screw
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: When installing the regulator (2) align the gear to the motor drivegear before installing the screw.

3. Install the regulator (2) to the motor/module.
4. Install the screw (1) to the motor/module.

Tighten: Tighten nuts to 5 N.m (44 lb in).

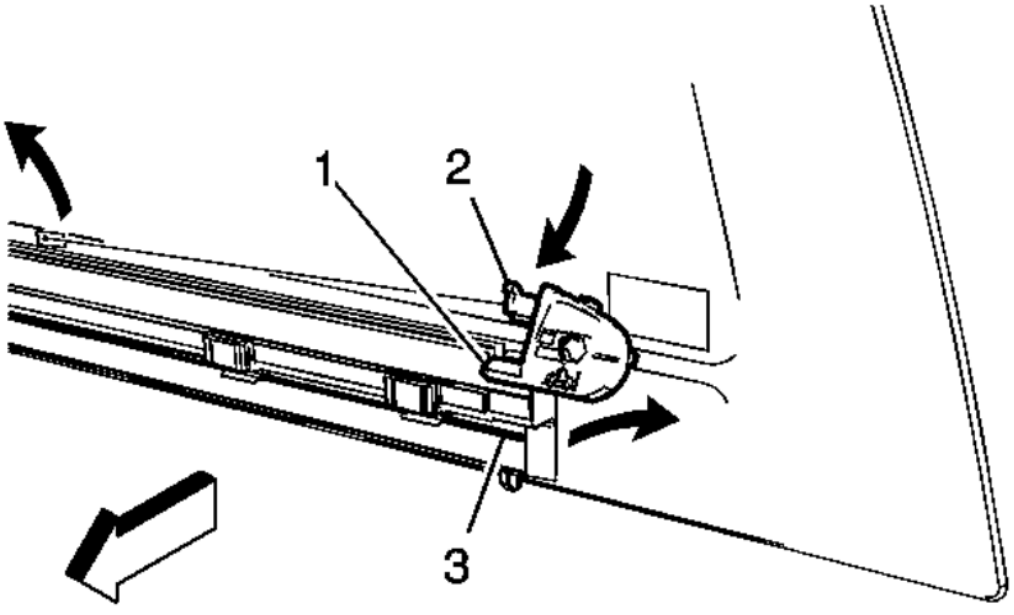


Fig. 54: View Of Pulley, Tabs & Frame
Courtesy of GENERAL MOTORS CORP.

5. Install the rear sliding window pulley (1).
    1. Align the tabs (2) on the pulley (1) with the notch in the frame (3).
    2. Turn the pulley downward, locking the pulley into the frame (3).

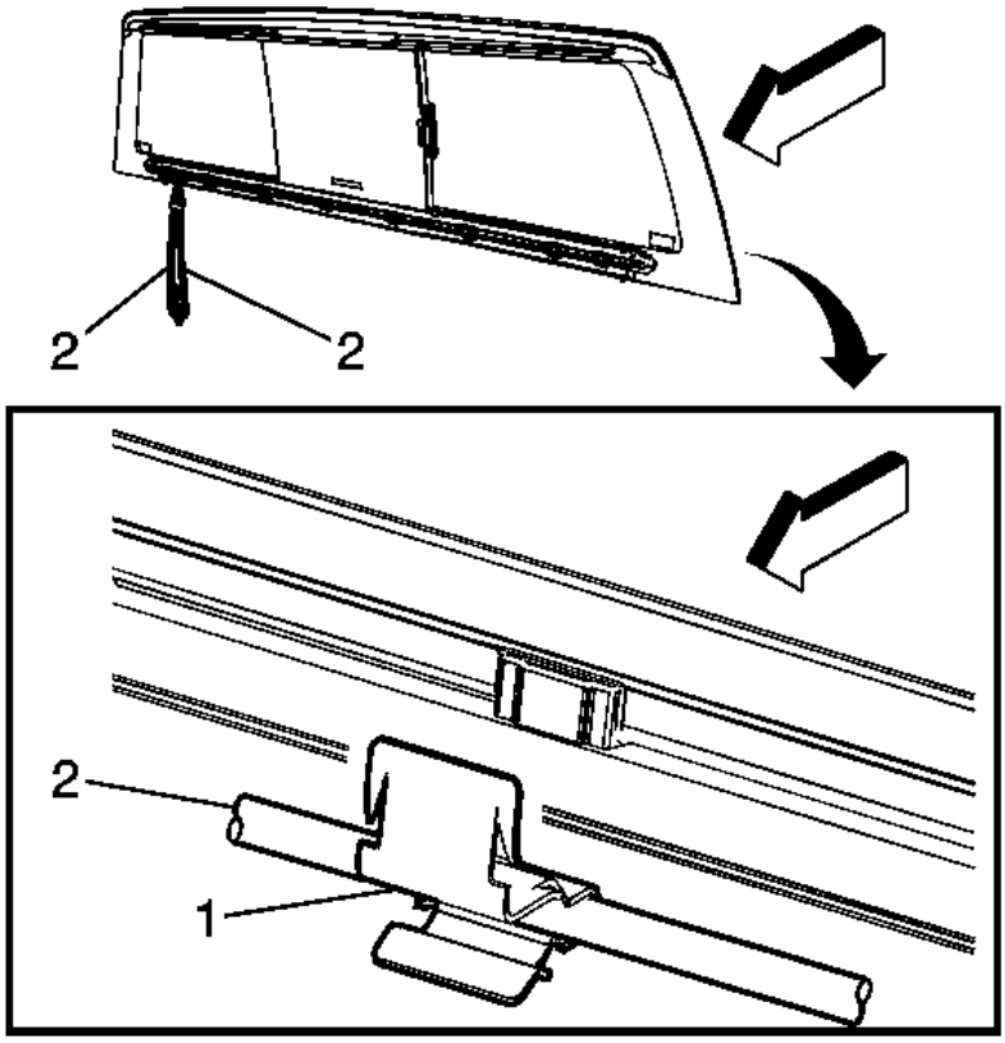


Fig. 55: View Of Regulator Cables & Retainers
Courtesy of GENERAL MOTORS CORP.

6. Install the regulator cables (2) to the retainers (1) across the bottom edge of the window frame.

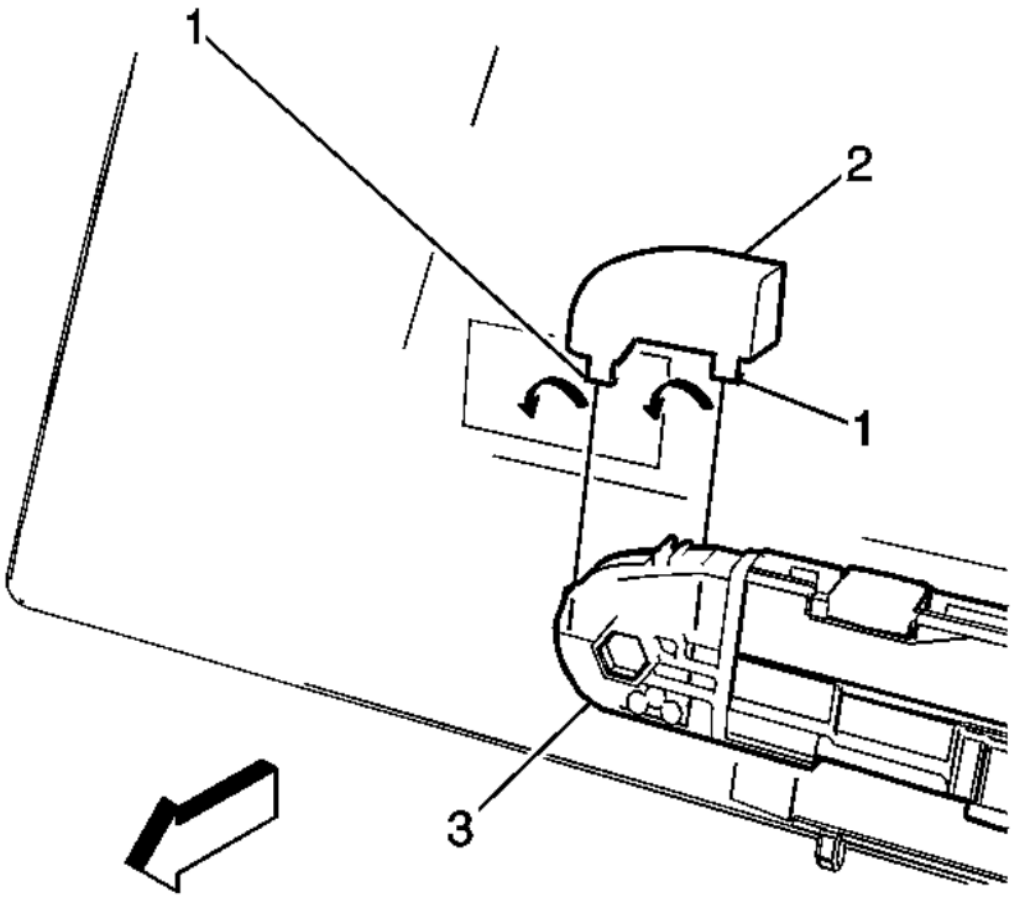


Fig. 56: View Of Rear Window Pulley, Tabs & Cover
Courtesy of GENERAL MOTORS CORP.

7. Install the rear sliding window pulley covers (2) to the pulley (3), clip the tabs (1) in place.

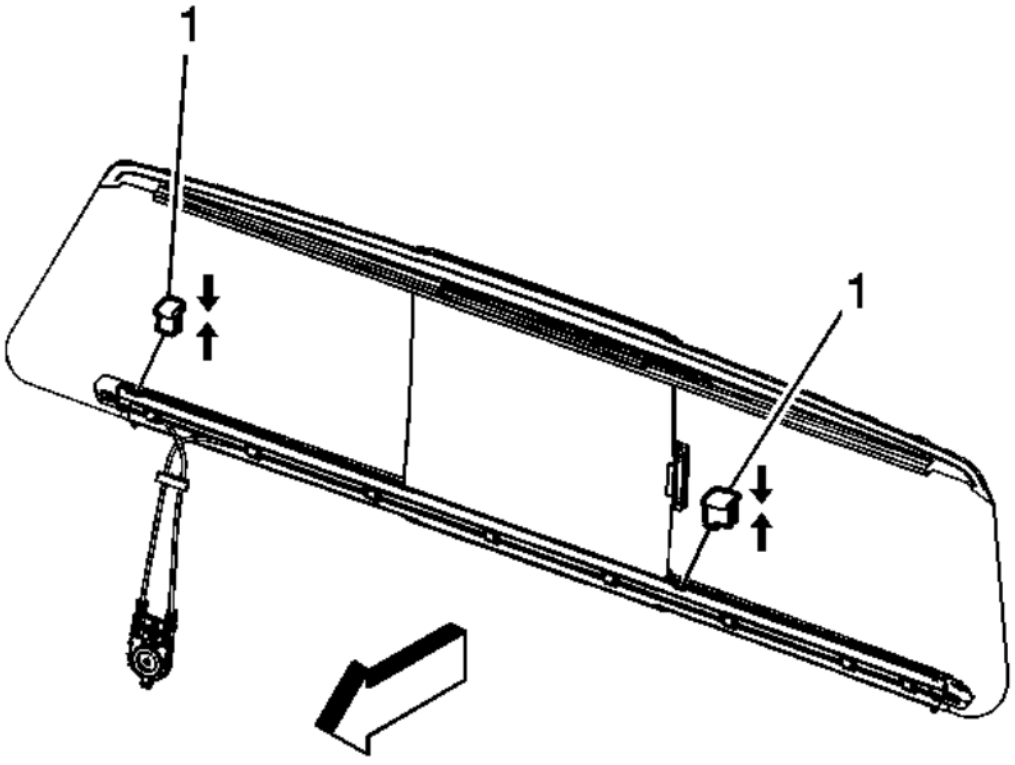


Fig. 57: View Of Rear Sliding Window Stops
Courtesy of GENERAL MOTORS CORP.

8. Install the rear sliding window stops (1) in place and fully seated.
9. Cycle the rear sliding window to the fully closed position.
10. Install the lower garnish molding. Refer to **Rear Window Lower Garnish Molding Replacement (Regular Cab)** or **Rear Window Lower Garnish Molding Replacement (Ext Cab/Crew Cab w/A48)** or **Rear Window Lower Garnish Molding Replacement (Ext Cab/Crew Cab w/o A48)** .
11. Inspect the rear sliding window for proper operation.
12. Clean the window.

REAR WINDOW WEATHERSTRIP REPLACEMENT

Removal Procedure

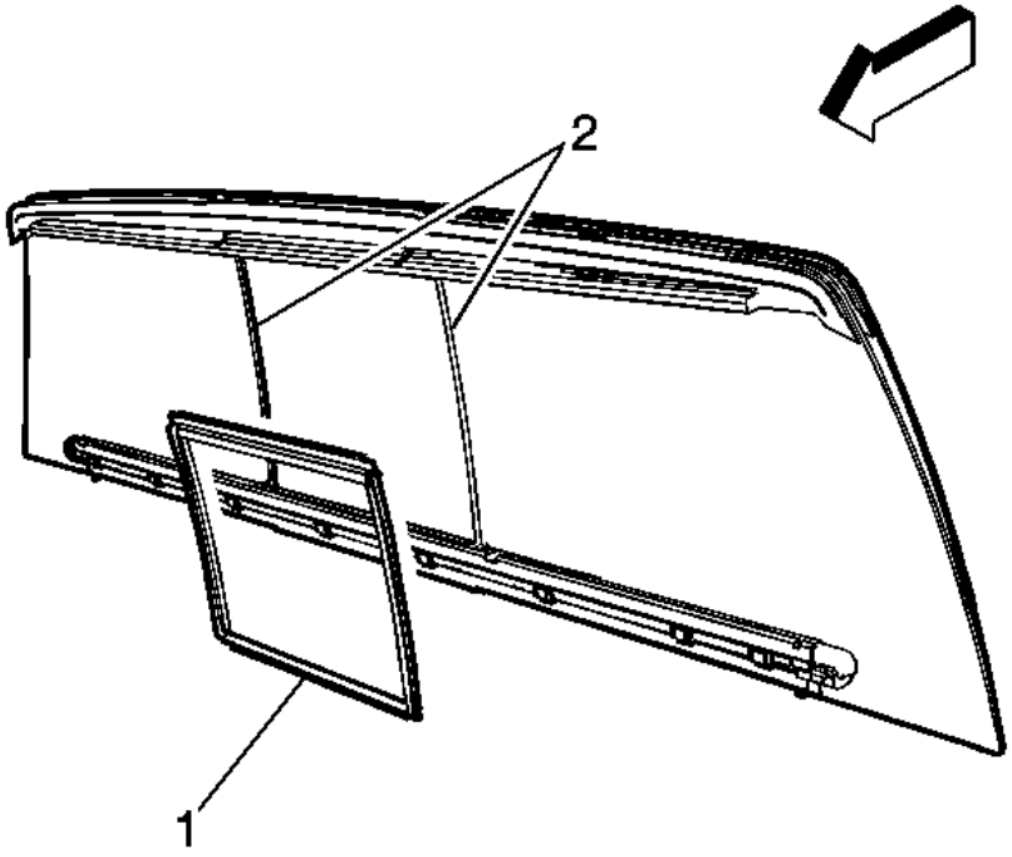


Fig. 58: View Of Rear Sliding Window Weatherstrip & Frame
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: If the window was broken remove all traces of broken glass from the seats, floor and ducts.

1. Remove the rear sliding center window. Refer to **Rear Sliding Window Replacement**.
2. Remove the rear sliding window weatherstrip (1) from the frame (2).
3. Clean around the edges the frame with a 50/50 mixture of isopropyl alcohol and water by volume on a dampened lint free cloth. Remove all traces of the old weatherstrip.

Installation Procedure

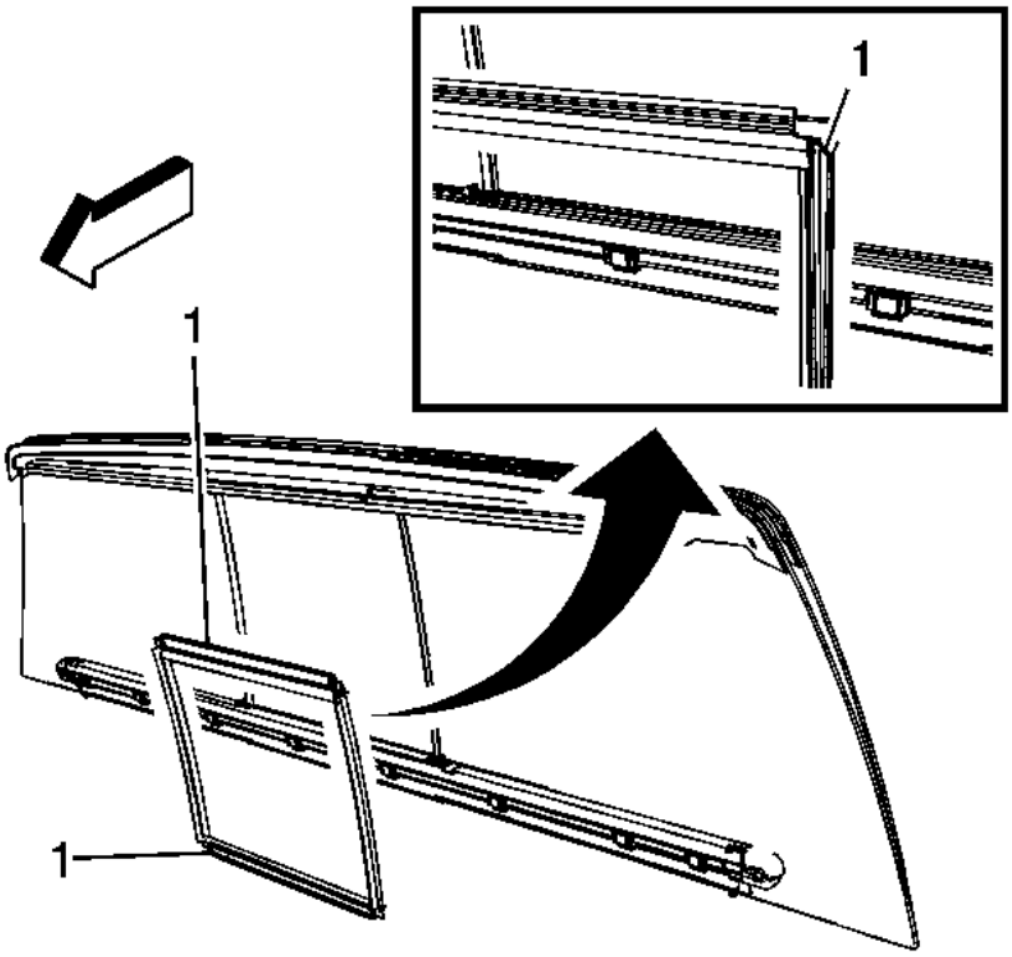


Fig. 59: Closeup View Of Weatherstrip
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Install the bottom corners of the weatherstrip first to get the best seal for water intrusion, then the top corners and sides.

IMPORTANT: Do Not remove the tape backing in this step.

1. Install the bottom and top of the weatherstrip (1). Perform the following:
    1. Installing the weatherstrip (1), ensure that the single edge of the strip is located on the top and bottom.

2. Install both bottom corners and top corners must be fitted tightly into the frame before pressing in place.

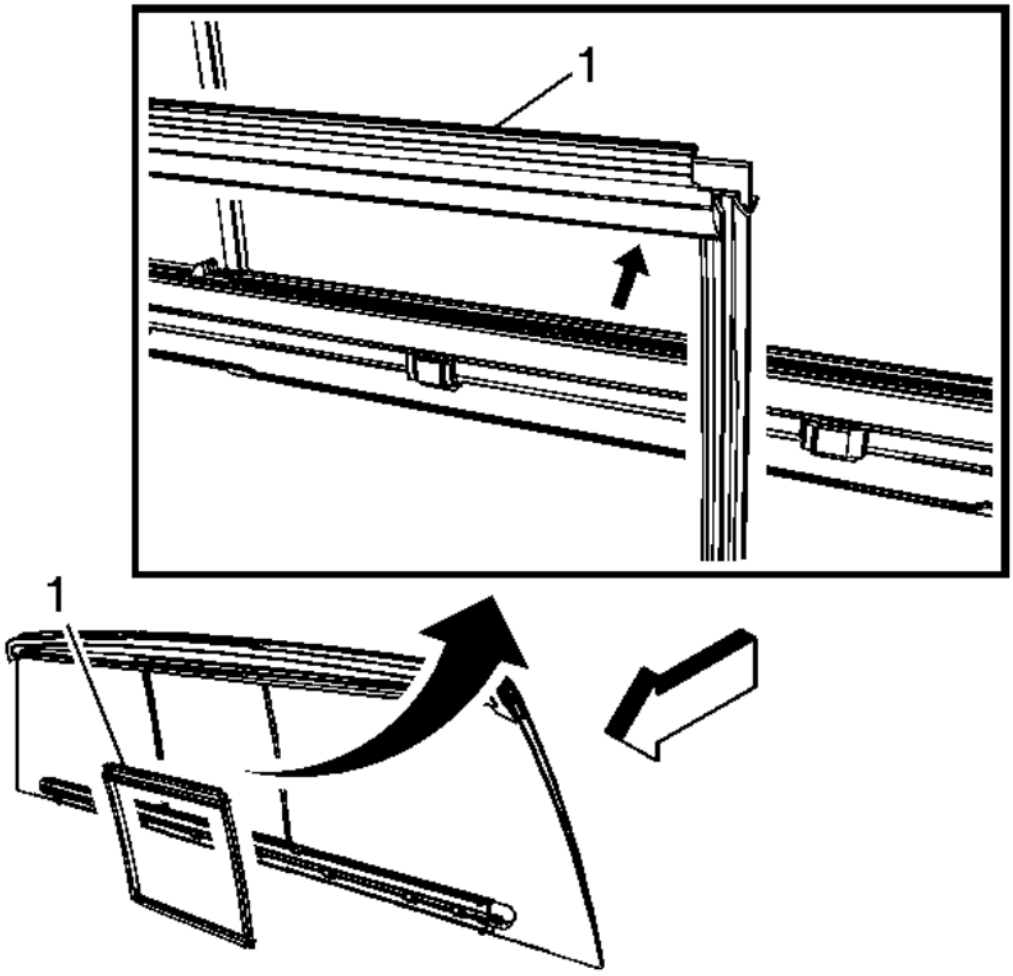


Fig. 60: View Of Rear Sliding Window Weatherstrip & Frame
Courtesy of GENERAL MOTORS CORP.

2. Install the weatherstrip (1) to the frame. Perform the following:
    1. Installing the weatherstrip (1), ensure that the double edge of the weatherstrip is located on each side.
    2. Do one side at a time, remove the tape backing from the weatherstrip.

3. Start in the center of the window frame, work the weatherstrip up and down the sides pressing in place.

3. Install the rear sliding center window. Refer to **Rear Sliding Window Replacement**.
4. Inspect the rear sliding window for proper operation.
5. Water test to ensure no leaks.

REAR SLIDING WINDOW MODULE REPLACEMENT

Removal Procedure

IMPORTANT: The new rear sliding window motor/module is equipped with the bracket and relays.

1. Remove the rear sliding window lower garnish molding. Refer to **Rear Window Lower Garnish Molding Replacement (Regular Cab)** or **Rear Window Lower Garnish Molding Replacement (Ext Cab/Crew Cab w/A48)** or **Rear Window Lower Garnish Molding Replacement (Ext Cab/Crew Cab w/o A48)** .

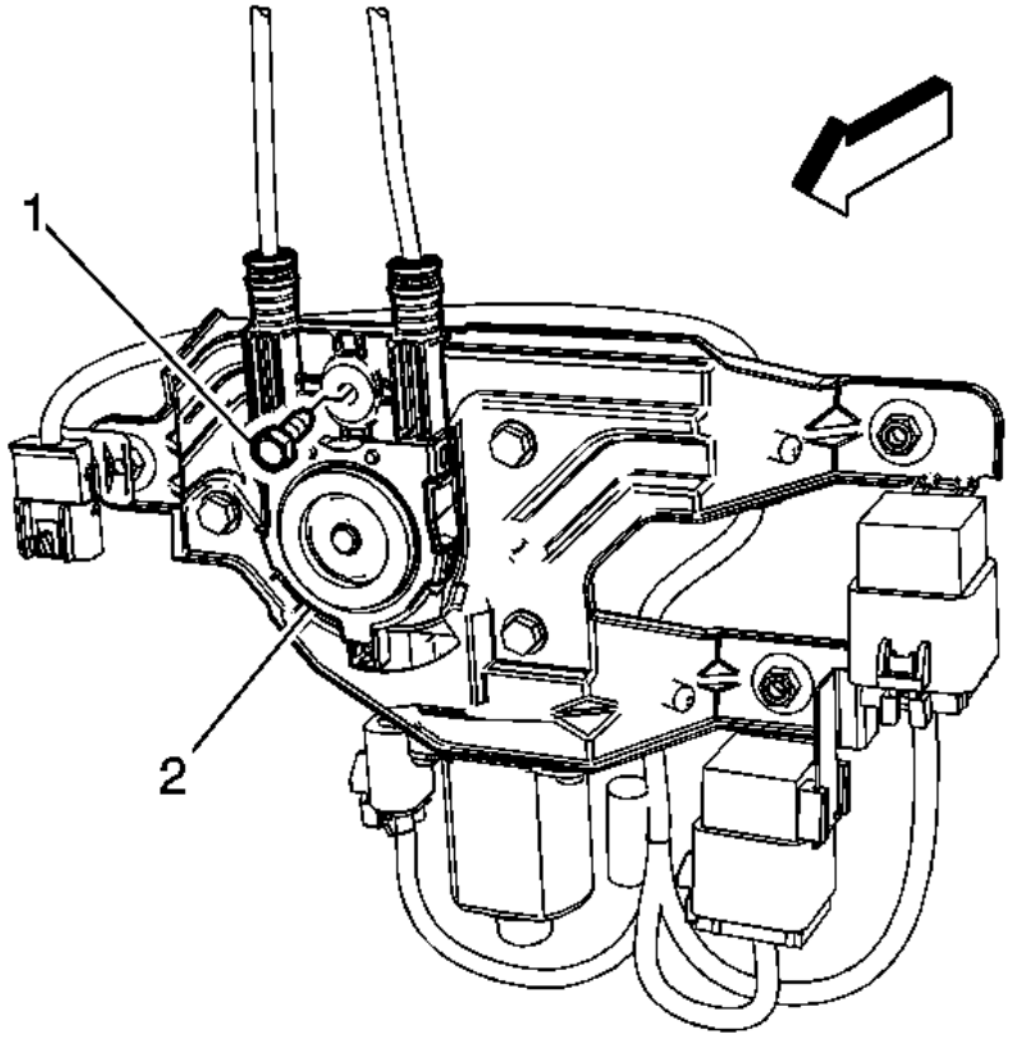


Fig. 61: View Of Regulator & Screw
Courtesy of GENERAL MOTORS CORP.

2. Cycle the rear sliding window to the fully closed position.
3. Remove the screw (1) from the rear sliding window regulator and cables (2).
4. Pull forward on the regulator and cables (2) to release it from the motor/module.

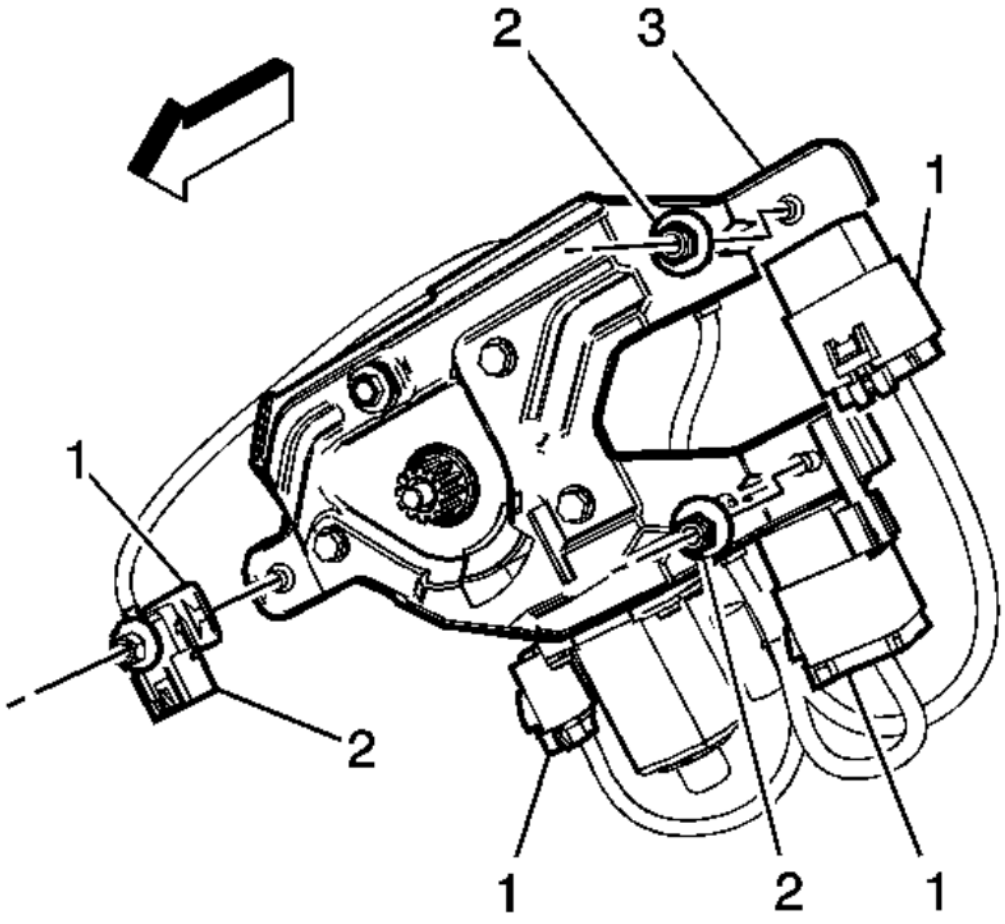


Fig. 62: View Of Sliding Window Motor Module & Components
Courtesy of GENERAL MOTORS CORP.

5. Remove the rear sliding window motor/module nuts (2).
6. Disconnect the rear sliding window electrical connectors from the motor/module and relays (1).
7. Remove the rear sliding window motor/module assembly from the vehicle.

Installation Procedure

1. Install the rear sliding window motor/module assembly to the vehicle.

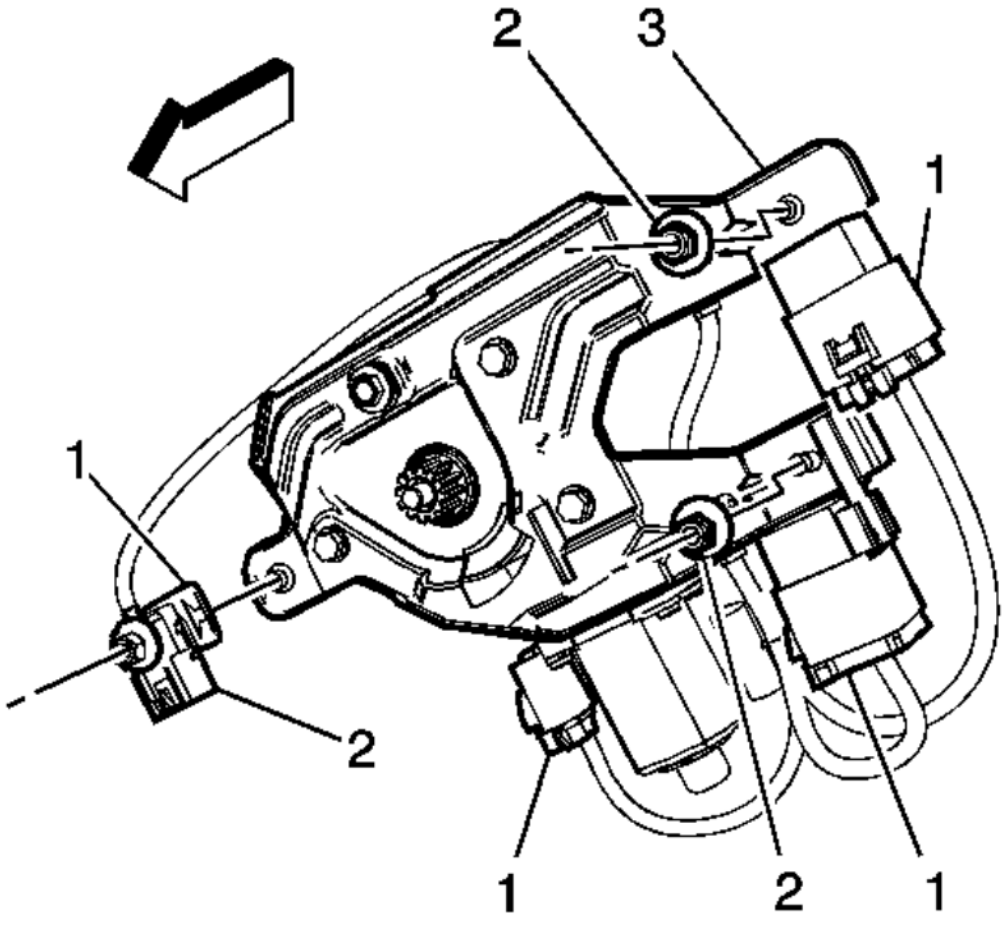


Fig. 63: View Of Sliding Window Motor Module & Components
Courtesy of GENERAL MOTORS CORP.

2. Connect the rear sliding window electrical connectors to the motor/module and relays (1).

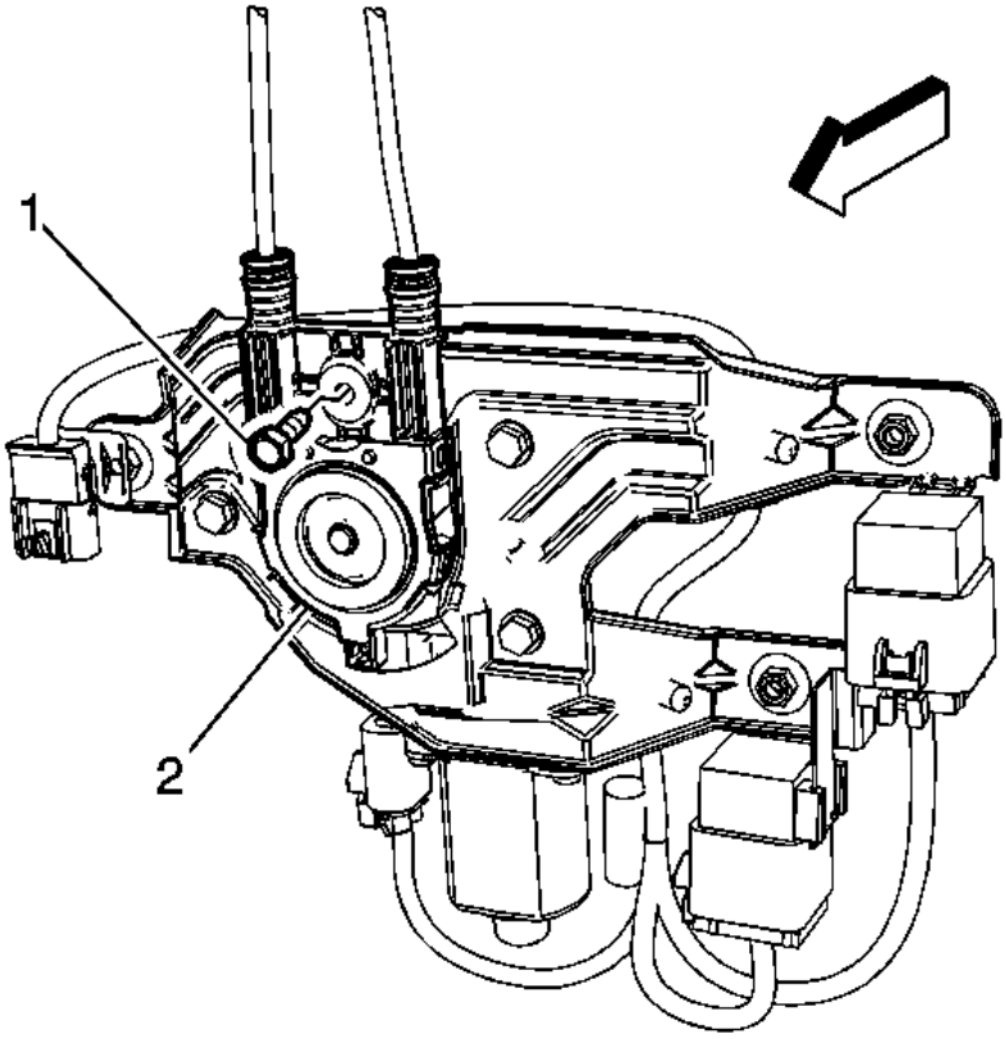


Fig. 64: View Of Regulator & Screw
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice .

3. Install the rear sliding window motor/module nuts (2).

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

4. Install the rear sliding window regulator and cables (2) to the motor/module.
5. Install the bolt (1) to the rear sliding window regulator and cables (2).

   Tighten: Tighten bolt to 11 N.m (97 lb in).

6. Install the rear sliding window lower garnish molding. Refer to **Rear Window Lower Garnish Molding Replacement (Regular Cab)** or **Rear Window Lower Garnish Molding Replacement (Ext Cab/Crew Cab w/A48)** or **Rear Window Lower Garnish Molding Replacement (Ext Cab/Crew Cab w/o A48)** .
7. Inspect the rear sliding window for proper operation.

DOOR WINDOW REGULATOR HANDLE REPLACEMENT

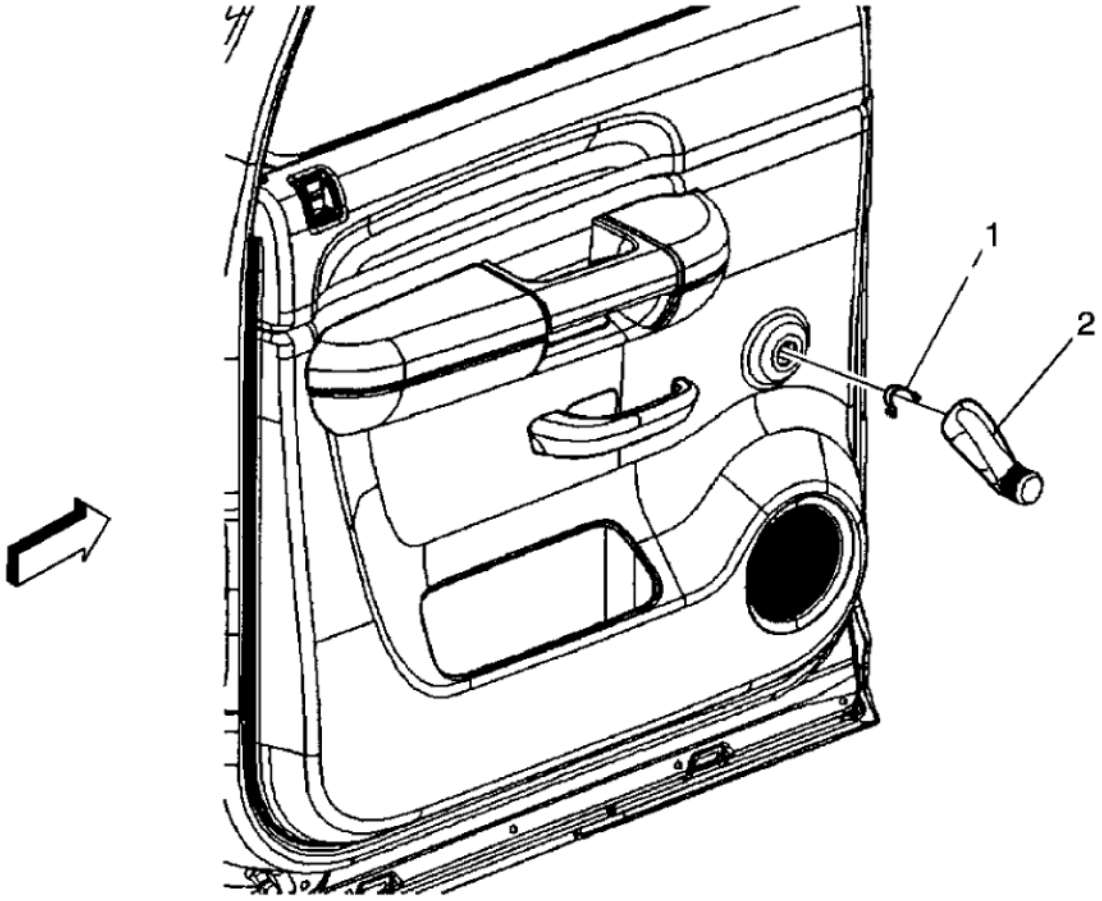


Fig. 65: View Of Side Door Window Regulator Handle Assembly & Retainer Clip
Courtesy of GENERAL MOTORS CORP.

Callout	Component Name
1	Side Door Window Regulator Handle Retainer Clip
2	Side Door Window Regulator Handle Assembly **Tip:** Use the **J 9886-01** Door Handle Clip Remover to remove the crank handle. See **Special Tools**.

STATIONARY WINDOW REVEAL MOLDING REPAIR

Removal Procedure

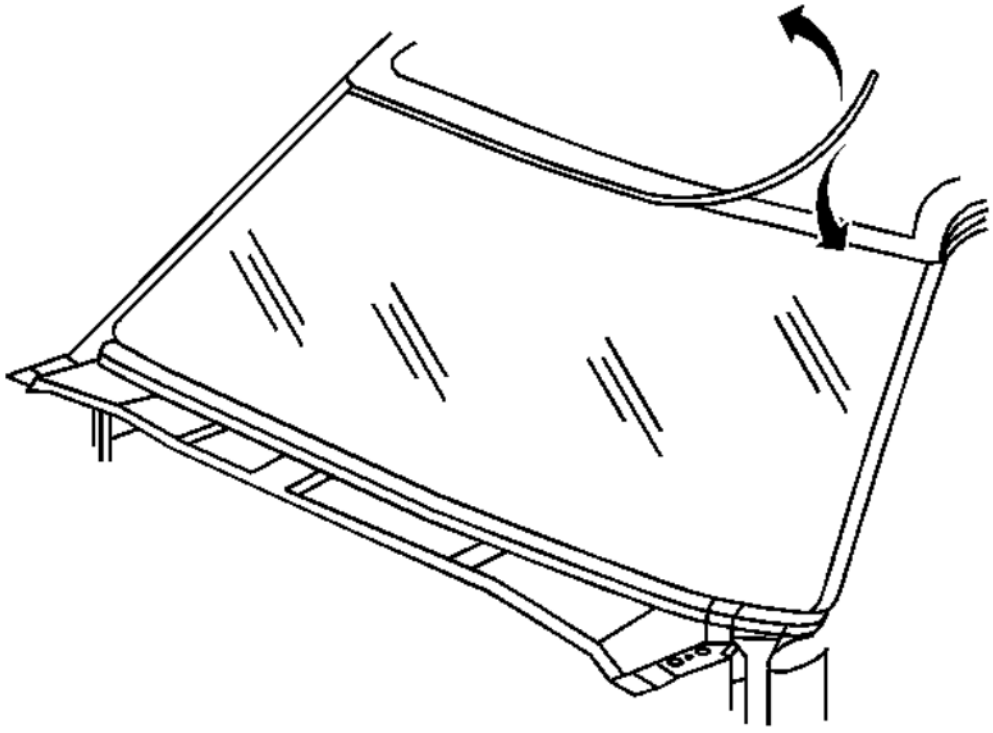


Fig. 66: Identifying Reveal Molding
Courtesy of GENERAL MOTORS CORP.

CAUTION: Refer to GLASS AND SHEET METAL HANDLING CAUTION .

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

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

Installation Procedure

CAUTION: Refer to Window Retention Caution .

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

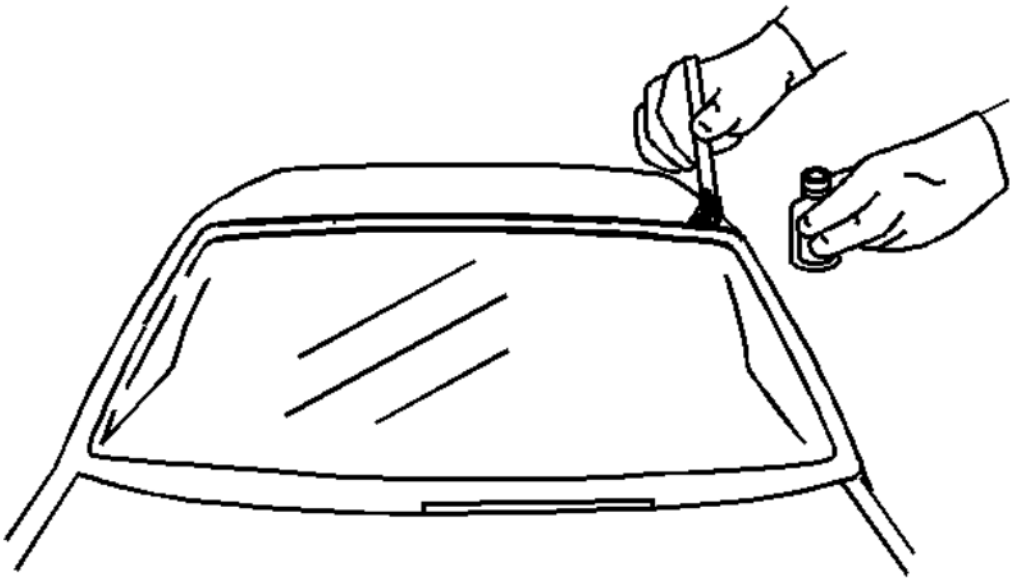


Fig. 67: Applying Glass Prep
Courtesy of GENERAL MOTORS CORP.

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

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

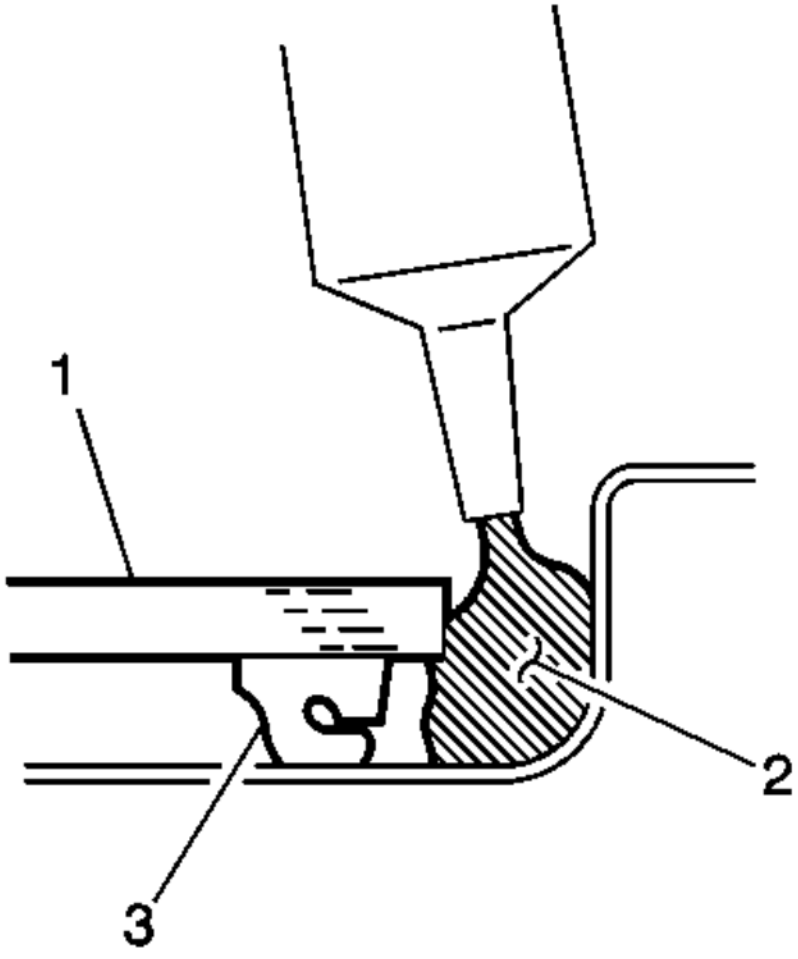


Fig. 68: Applying Urethane Adhesive Between Window & Pinch-Weld
Courtesy of GENERAL MOTORS CORP.

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

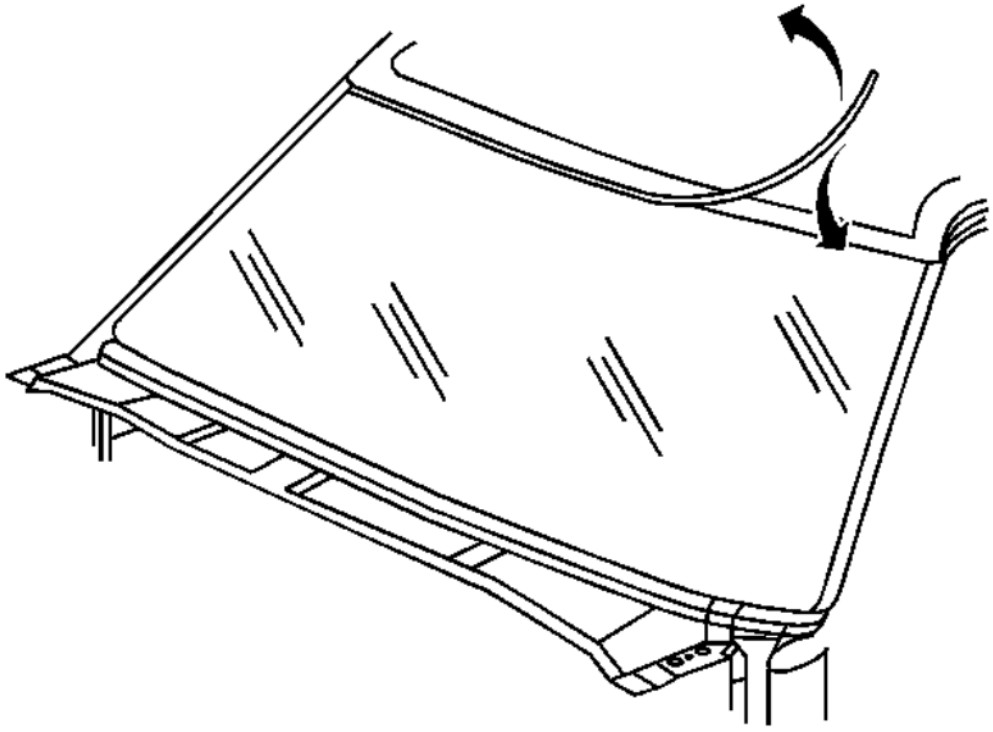


Fig. 69: Identifying Reveal Molding
Courtesy of GENERAL MOTORS CORP.

7. Reinstall the window reveal molding.
    1. Start from the loose area and hand-press the reveal molding into place over the edge of the window.
    2. Run warm water over the reveal molding in order to speed the setup time of the urethane adhesive.

3. Tape should be applied in order to retain the reveal molding to the window. This will maintain a flush fit with the body.
4. The tape is to be removed after 6 hours.

FRONT SIDE DOOR WINDOW AND REAR SIDE DOOR WINDOW SWITCH REPLACEMENT (WITH DL8 AND WITHOUT SLT)

2008 Chevrolet Silverado 1500

2008 ACCESSORIES & EQUIPMENT Fixed and Moveable Windows - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

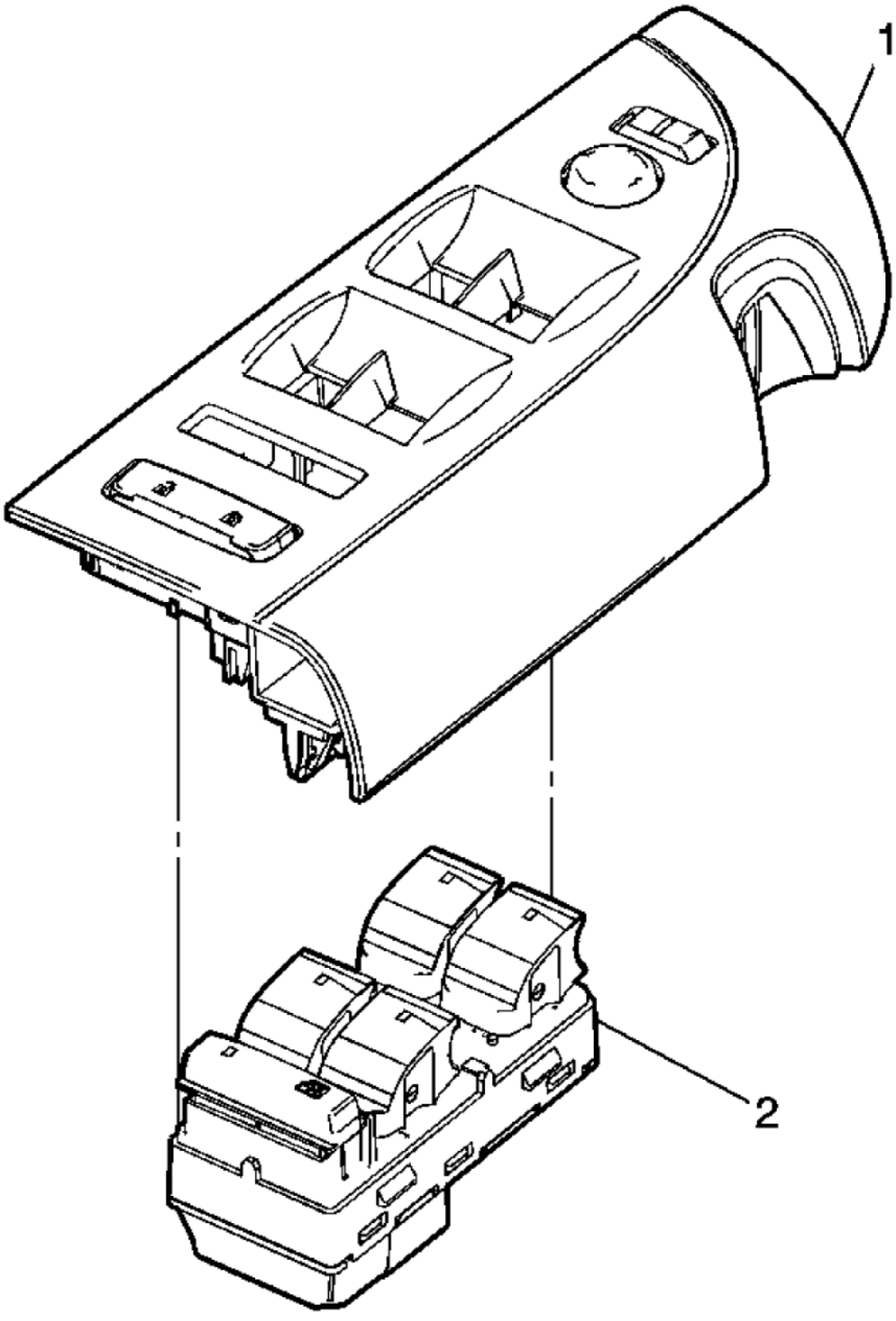


Fig. 70: View Of Front Side Door Window, Rear Side Door Window Switch & Bezel
Courtesy of GENERAL MOTORS CORP.

Callout	Component Name
1	Front Side Door Window Switch Bezel Refer to **Front Door Switch Bezel Replacement** .
2	Front Side Door Window and Rear Side Door Window Switch **Procedure:** Use a small flat bladed tool to aid in the removal of the switch from the bezel.

REAR SIDE DOOR WINDOW SWITCH REPLACEMENT (CREW CAB)

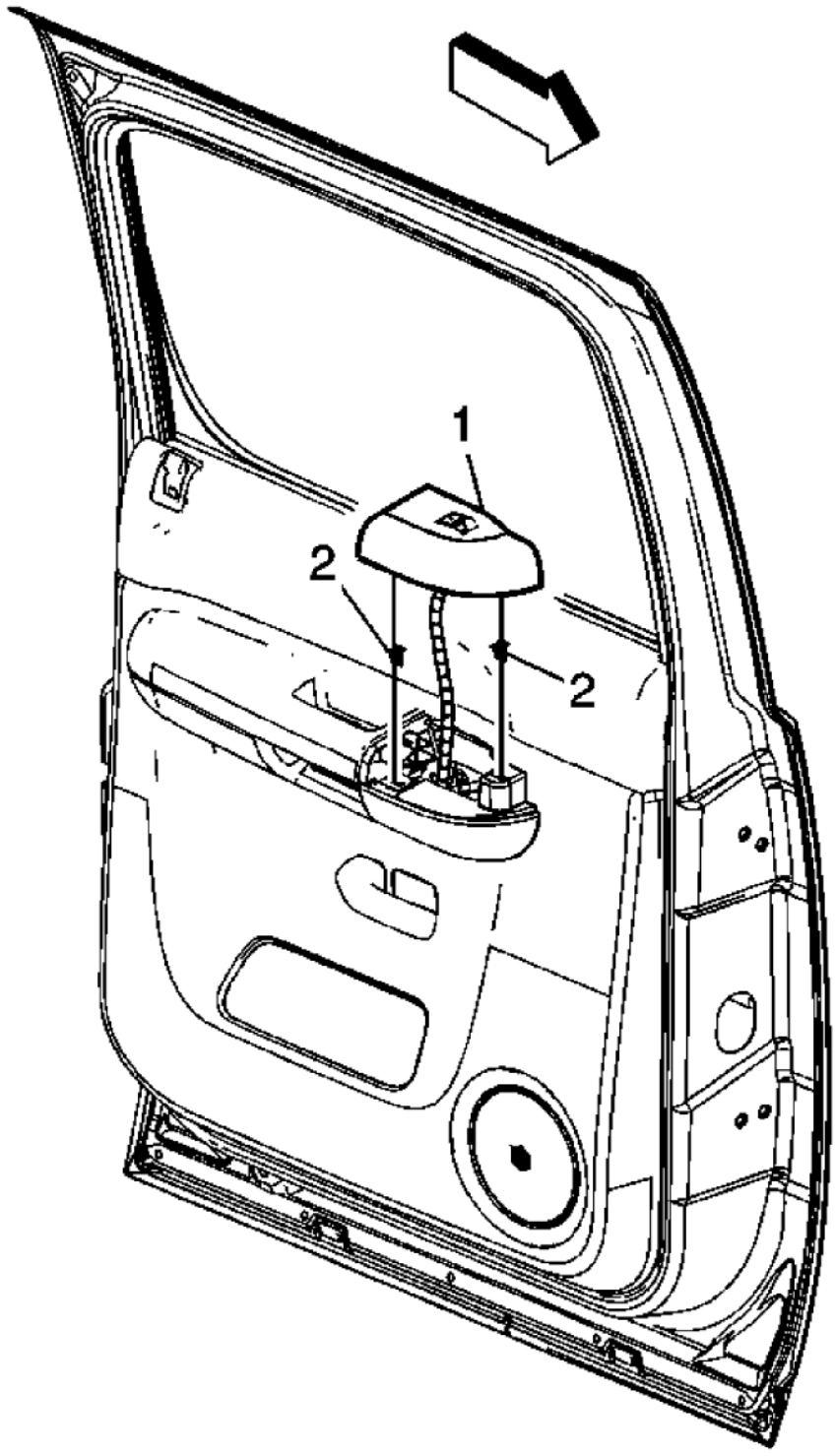


Fig. 71: View Of Rear Side Door Window Switch Assembly & Retainer
Courtesy of GENERAL MOTORS CORP.

Callout	Component Name
1	Rear Side Door Window Switch Retainer (Qty: 2)
2	Rear Side Door Window Switch Assembly **Tip:** Disconnect electrical connectors.

REAR SIDE DOOR WINDOW SWITCH REPLACEMENT (EXTENDED CAB)

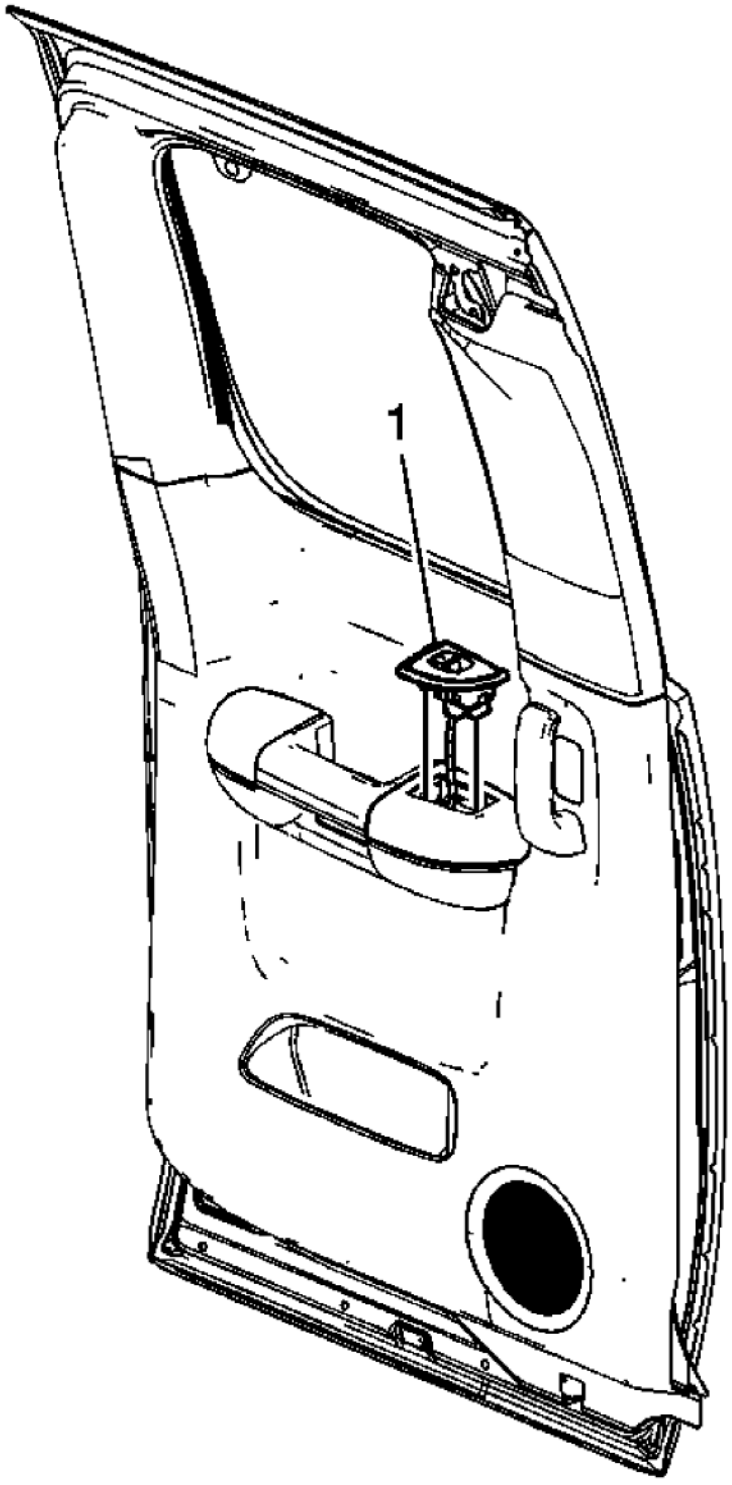


Fig. 72: View Of Rear Side Door Window Switch Assembly
Courtesy of GENERAL MOTORS CORP.

Callout	Component Name
1	Rear Side Door Window Switch Assembly **Tip:** 1. Use a flat-bladed trim tool to disengage rear of bezel first. 2. Disconnect electrical connectors.

FRONT SIDE DOOR WINDOW REGULATOR REPLACEMENT (POWER)

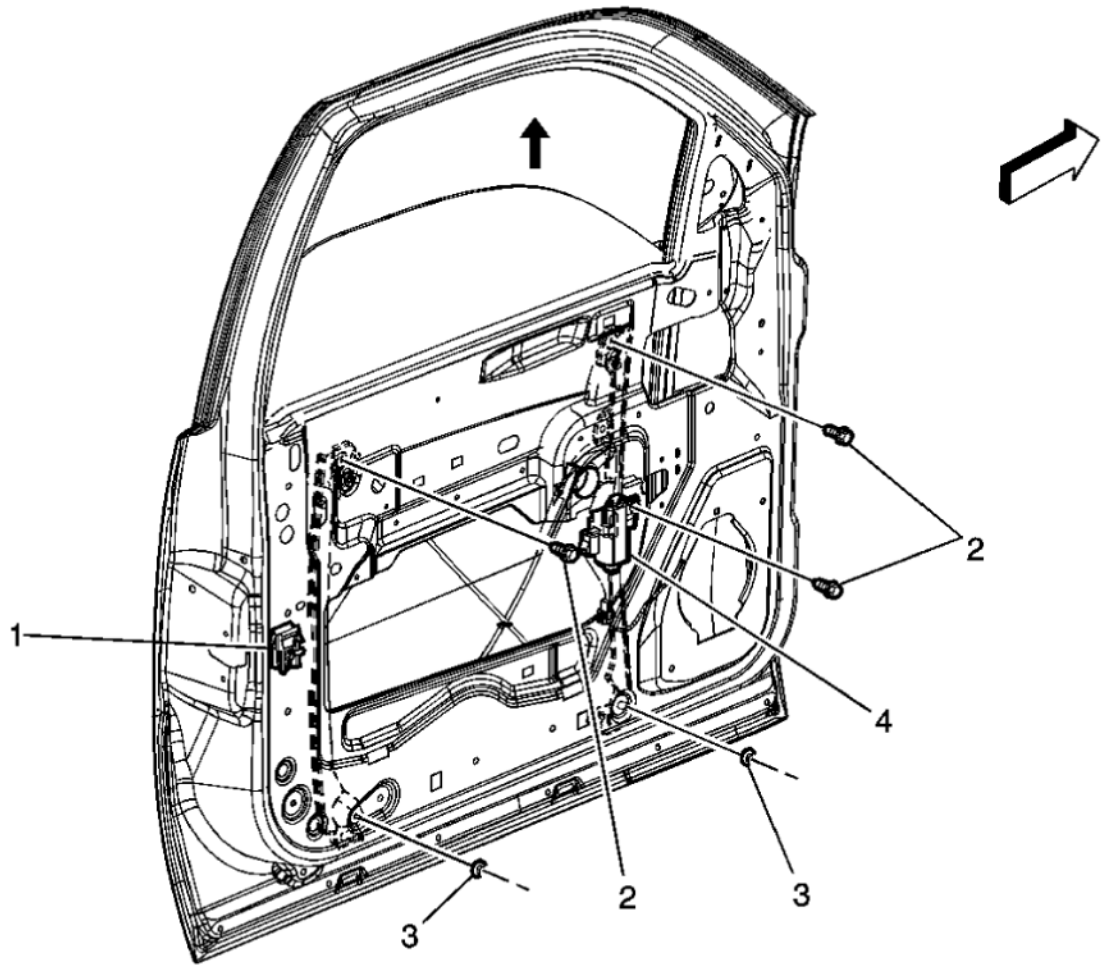


Fig. 73: View Of Front Side Door Window Regulator & Components
Courtesy of GENERAL MOTORS CORP.

Callout	Component Name
Preliminary Procedures	

1. Position the door window as needed for service.
2. Remove the front door trim panel. Refer to **Front Side Door Trim Panel Replacement (YE9)** or **Front Side Door Trim Panel Replacement (SLT)** .
3. Remove the front door water deflector. Refer to **Front Side Door Water Deflector Replacement** .

1	Front Side Door Window Bolt (Qty: 2) **NOTE:** **Refer to Fastener Notice .** **Procedure** 1. Tape the window to the door frame to prevent it from moving. 2. Loosen the 2 bolts that attach the window to the window regulator. **Tighten:** 9 N.m (80 lb in)
2	Front Side Door Window Regulator Bolt (Qty: 3) **Tighten:** 9 N.m (80 lb in)
3	Front Side Door Window Regulator Nut (Qty: 2) **Tighten:** 9 N.m (80 lb in)
4	Front Side Door Window Regulator **Procedure** 1. Disconnect the electrical connector. 2. Transfer the power window motor to the new regulator. Refer to **Front Side Door Window Regulator Motor Replacement**.

FRONT SIDE DOOR WINDOW REGULATOR MOTOR REPLACEMENT

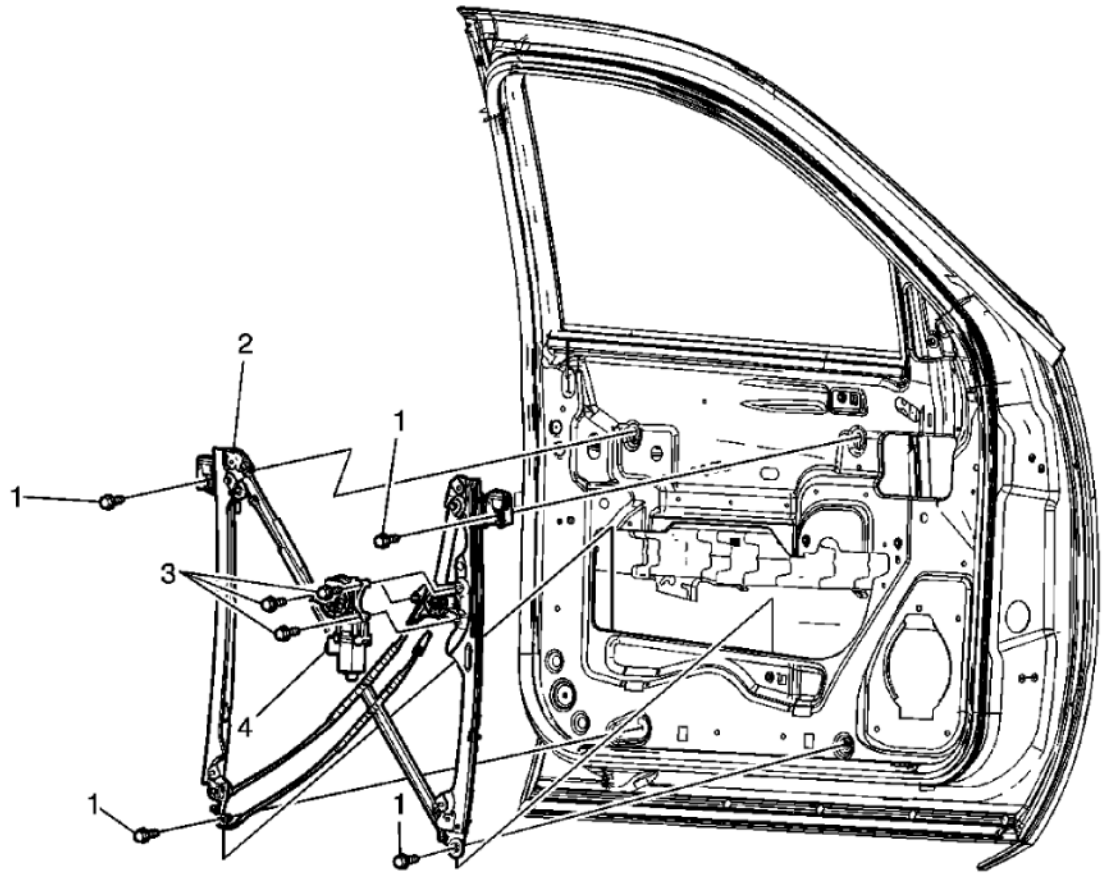


Fig. 74: View Of Front Side Door Window Regulator, Motor & Bolts
Courtesy of GENERAL MOTORS CORP.

Callout	Component Name
Preliminary Procedures 1. Position the door window as needed for service. 2. Remove the front door trim panel. Refer to **Front Side Door Trim Panel Replacement (YE9)** or **Front Side Door Trim Panel Replacement (SLT)** . 3. Remove the front door water deflector. Refer to **Front Side Door Water Deflector Replacement** .	
1	Front Side Door Window Regulator Bolt (Qty: 6) **NOTE:** **Refer to Fastener Notice .**

	Procedure: Disconnect the electrical connector. **Tighten:** 4.6 N.m (41 lb in)
2	Front Side Door Window Regulator
3	Front Side Door Window Regulator Motor Bolt (Qty: 3) **Tighten:** 9 N.m (80 lb in)
4	Front Side Door Window Regulator Motor

REAR SIDE DOOR WINDOW REGULATOR REPLACEMENT (CREW CAB, MANUAL)

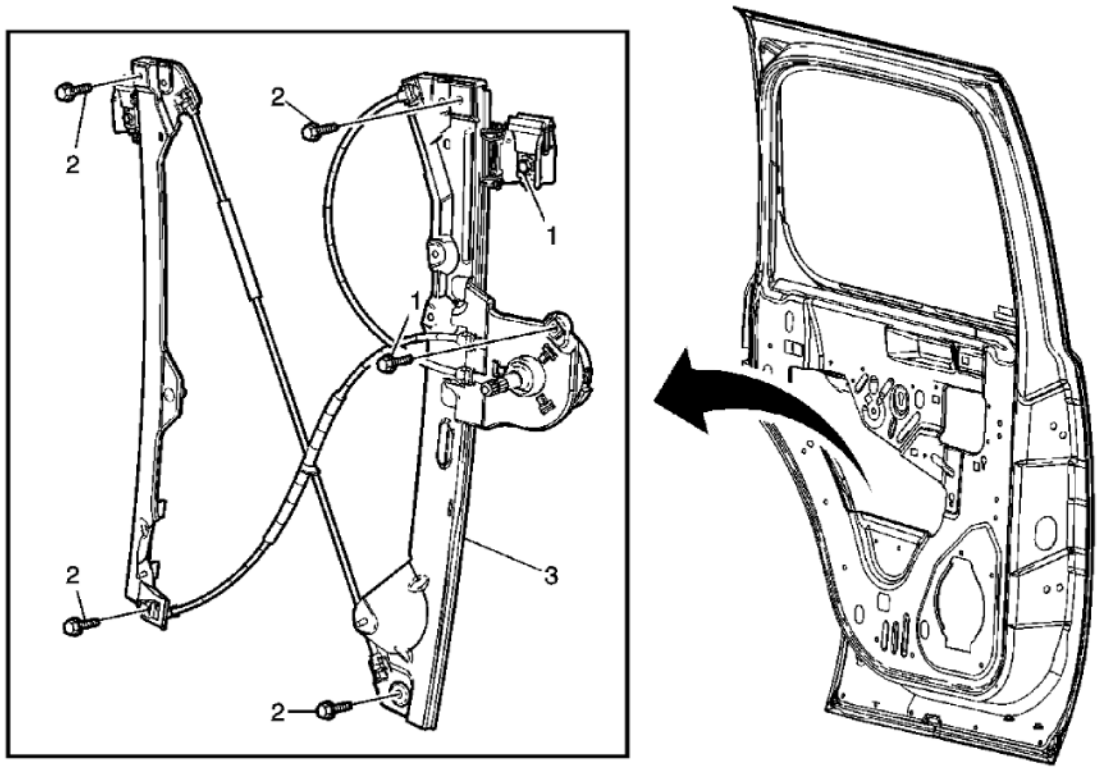


Fig. 75: View Of Rear Side Door Window Regulator & Components
Courtesy of GENERAL MOTORS CORP.

Callout	Component Name
Preliminary Procedures	
1. Position the door window as needed for service.	

2. Remove the rear door trim panel. Refer to **Rear Side Door Trim Panel Replacement (YE9)** or **Rear Side Door Trim Panel Replacement (SLT)** .
3. Remove the rear door water deflector. Refer to **Rear Side Door Water Deflector Replacement** .

1	Rear Side Door Window Bolt (Qty: 2) **NOTE:** **Refer to Fastener Notice .** **Procedure** 1. Tape the window to the door frame to prevent it from moving. 2. Loosen the 2 bolts that attach the window to the window regulator. **Tighten:** 9 N.m (80 lb in)
2	Rear Side Door Window Regulator Bolt (Qty: 5) **Tighten:** 9 N.m (80 lb in)
3	Rear Side Door Window Regulator

REAR SIDE DOOR WINDOW REGULATOR REPLACEMENT (EXTENDED CAB, POWER)

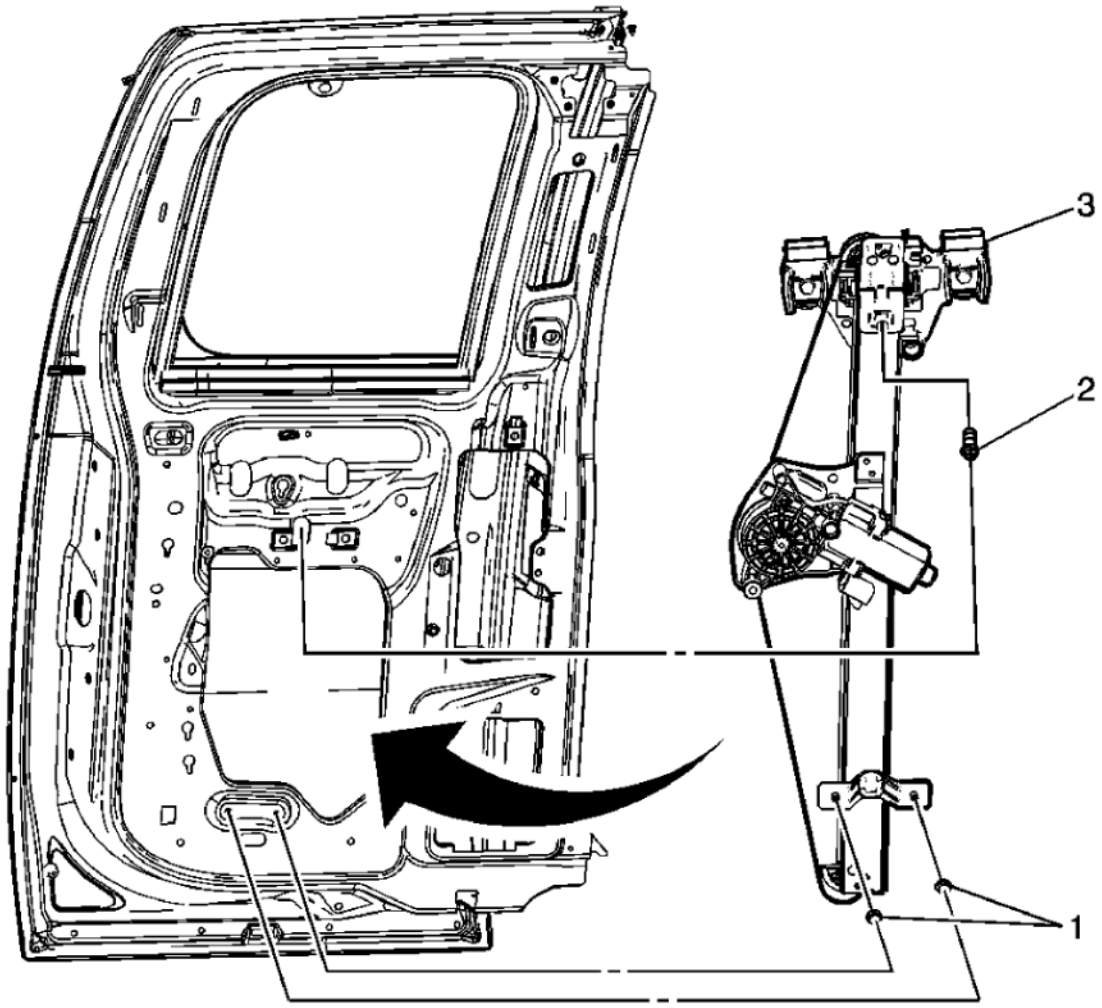


Fig. 76: View Of Rear Side Door Window Regulator, Nuts & Bolt
Courtesy of GENERAL MOTORS CORP.

Callout	Component Name
Preliminary Procedures 1. Position the door window as needed for service. 2. Remove the rear door trim panel. Refer to **Rear Side Door Trim Panel Replacement (YE9)** or **Rear Side Door Trim Panel Replacement (SLT)** . 3. Remove the rear door water deflector. Refer to **Rear Side Door Water Deflector Replacement** .	
	Rear Side Door Window Regulator Bolt

1	**NOTE:** **Refer to Fastener Notice .** **Procedure** 1. Place the door window in the up position 2. Tape the window to the door frame to prevent it from moving. 3. Loosen the upper bolts that attach the window regulator to the inner door. **Tighten:** 9 N.m (80 lb in)
2	Rear Side Door Window Regulator Nuts (Qty: 2) **Tighten:** 9 N.m (80 lb in)
3	Rear Side Door Window Regulator **Procedure** 1. Disconnect the electrical connector. 2. Transfer the power window motor to the new regulator. Refer to **Rear Side Door Window Regulator Motor Replacement (Extended Cab)** or **Rear Side Door Window Regulator Motor Replacement (Crew Cab)**.

REAR SIDE DOOR WINDOW REGULATOR REPLACEMENT (CREW CAB, POWER)

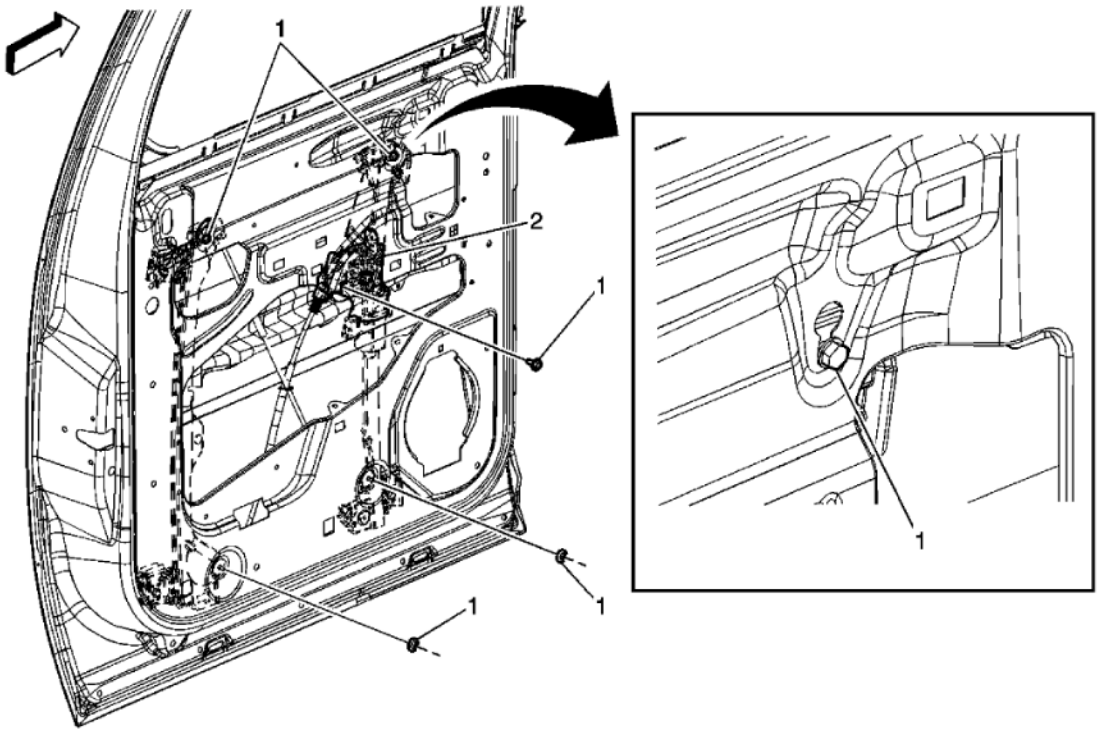


Fig. 77: View Of Rear Side Door Window Regulator & Bolts
Courtesy of GENERAL MOTORS CORP.

Callout	Component Name
Preliminary Procedures 1. Position the door window as needed for service. 2. Remove the rear door trim panel. Refer to **Rear Side Door Trim Panel Replacement (YE9)** or **Rear Side Door Trim Panel Replacement (SLT)** . 3. Remove the rear door water deflector. Refer to **Rear Side Door Water Deflector Replacement** .	
1	Rear Side Door Window Regulator Bolt (Qty: 5) **NOTE:** **Refer to Fastener Notice .** **Procedure** 1. Tape the window to the door frame to prevent it from moving. 2. Loosen the 2 bolts that attach the window to the window regulator.

	Tighten: 9 N.m (80 lb in)
2	Rear Side Door Window Regulator **Procedure** 1. Disconnect the electrical connector. 2. Transfer the power window motor to the new regulator. Refer to **Rear Side Door Window Regulator Motor Replacement (Extended Cab)** or **Rear Side Door Window Regulator Motor Replacement (Crew Cab)**.

REAR SIDE DOOR WINDOW REGULATOR MOTOR REPLACEMENT (EXTENDED CAB)

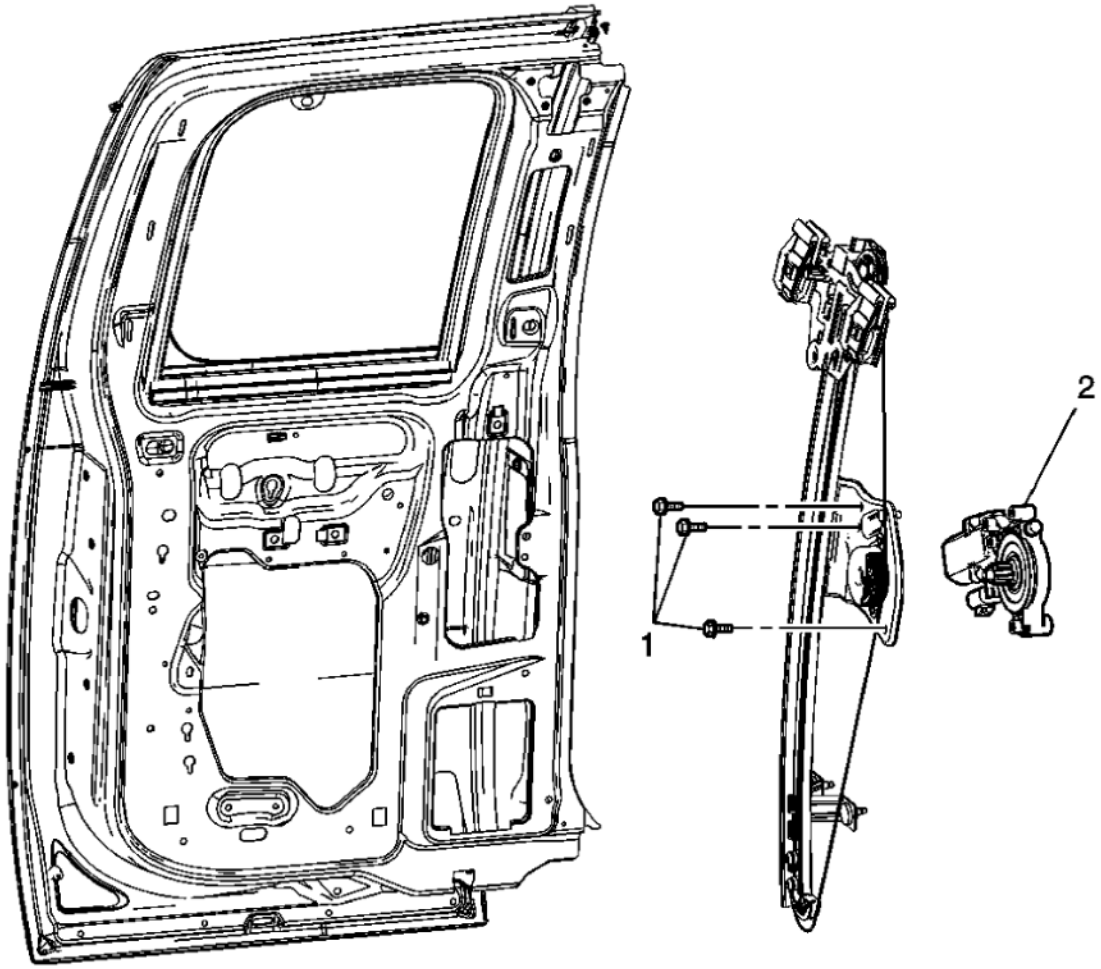


Fig. 78: View Of Rear Side Door Window Regulator Motor & Bolts

Courtesy of GENERAL MOTORS CORP.

Callout	Component Name
Preliminary Procedures 1. Position the door window as needed for service. 2. Remove the rear door window regulator. Refer to **Rear Side Door Window Regulator Replacement (Crew Cab, Manual)** or **Rear Side Door Window Regulator Replacement (Extended Cab, Power)** or **Rear Side Door Window Regulator Replacement (Crew Cab, Power)**.	
1	Rear Side Door Window Regulator Motor Bolt (Qty :3) **NOTE:** **Refer to Fastener Notice .** **Procedure:** Disconnect the electrical connector. **Tighten:** 9 N.m (80 lb in)
2	Rear Side Door Window Regulator Motor

REAR SIDE DOOR WINDOW REGULATOR MOTOR REPLACEMENT (CREW CAB)

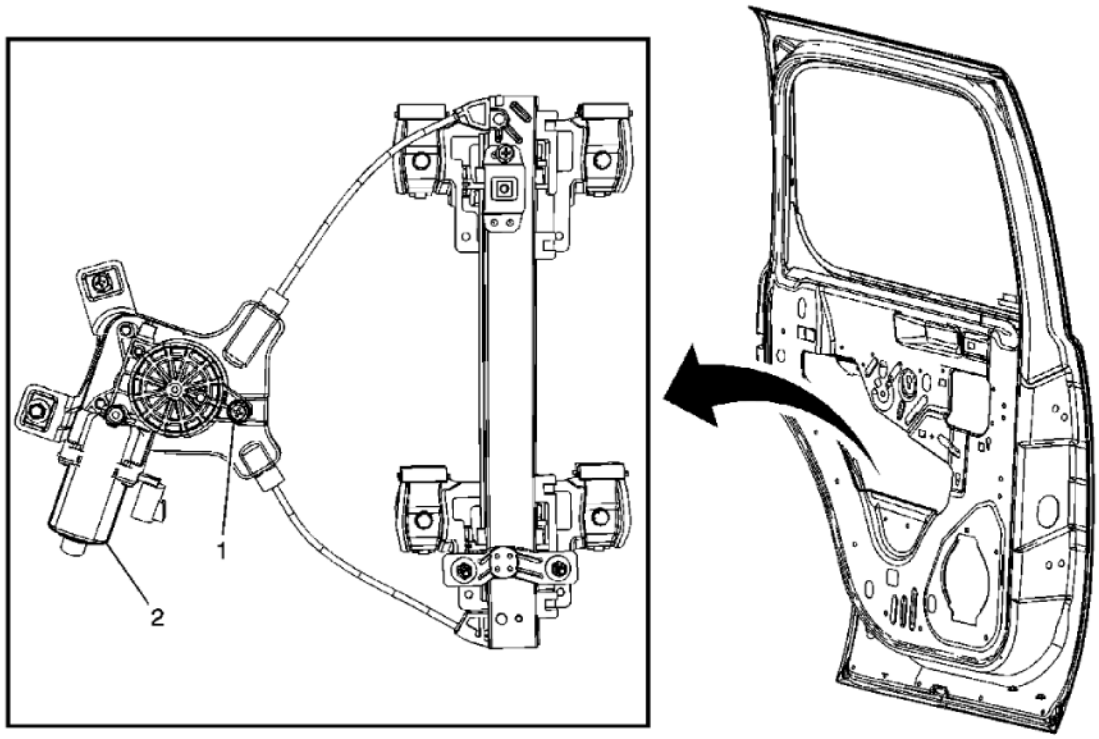


Fig. 79: View Of Rear Side Door Window Regulator Motor & Bolt
Courtesy of GENERAL MOTORS CORP.

Callout	Component Name
Preliminary Procedures 1. Position the door window as needed for service. 2. Remove the rear door window regulator. Refer to **Rear Side Door Window Regulator Replacement (Crew Cab, Manual)** or **Rear Side Door Window Regulator Replacement (Extended Cab, Power)** or **Rear Side Door Window Regulator Replacement (Crew Cab, Power)**.	
1	Rear Side Door Window Regulator Motor Bolt (Qty: 3) **NOTE:** **Refer to Fastener Notice .** **Procedure:** Disconnect the electrical connector.

	Tighten: 9 N.m (80 lb in)
2	Rear Side Door Window Regulator Motor

FRONT SIDE DOOR WINDOW OUTER SEALING STRIP REPLACEMENT

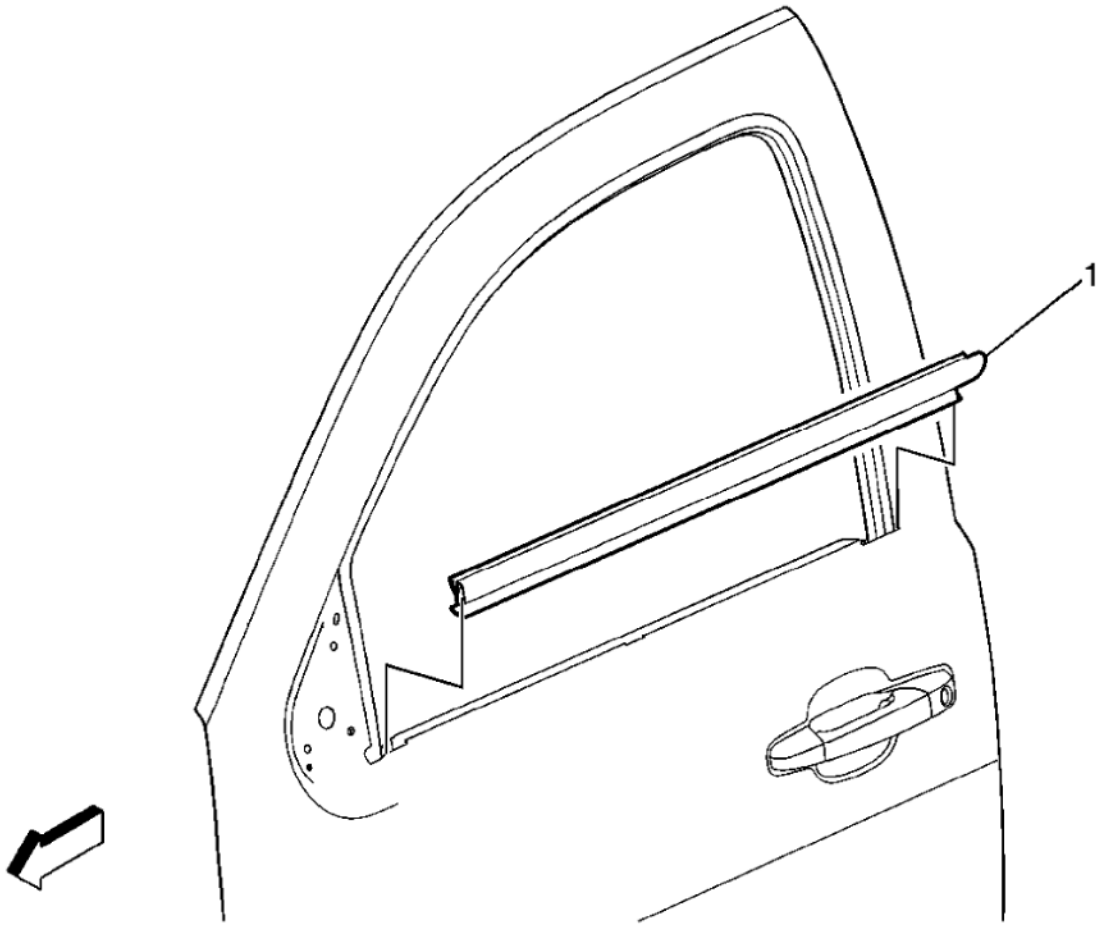


Fig. 80: View Of Front Side Door Outer Belt Sealing Strip
Courtesy of GENERAL MOTORS CORP.

Callout	Component Name
Preliminary Procedure 1. Position the door window as needed for service. 2. Tape off the lower window frame to prevent damage to the door. 3. Remove the outside mirror. Refer to **Power Mirror Replacement** .	
	Front Side Door Outer Belt Sealing Strip

1	**Procedure** 1. Lifting upward on the sealing strip end in order to unhook it from the inside door flange. 2. Install the sealing strip to the flange of the door and push downward until fully seated.

FRONT SIDE DOOR WINDOW BELT INNER SEALING STRIP REPLACEMENT

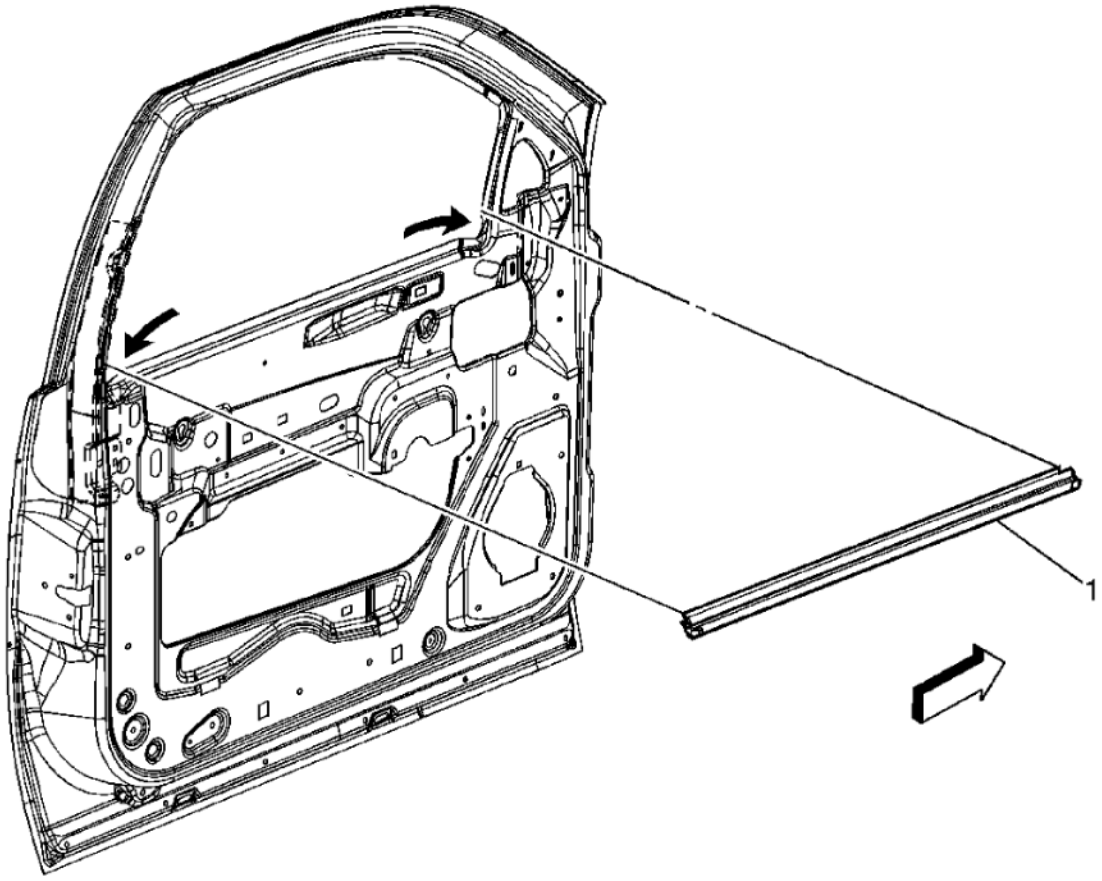


Fig. 81: Front Side Door Inner Belt Sealing Strip
Courtesy of GENERAL MOTORS CORP.

Callout	Component Name
Preliminary Procedure: Remove the interior trim panel. Refer to **Front Side Door Trim Panel Replacement (YE9)** or **Front Side Door Trim Panel Replacement (SLT)** .	
	Front Side Door Inner Belt Sealing Strip

1	**Procedure:** Pull upward on the sealing strip to release it from the inside door flange.

REAR DOOR WINDOW BELT INNER SEALING STRIP REPLACEMENT (CREW CAB)

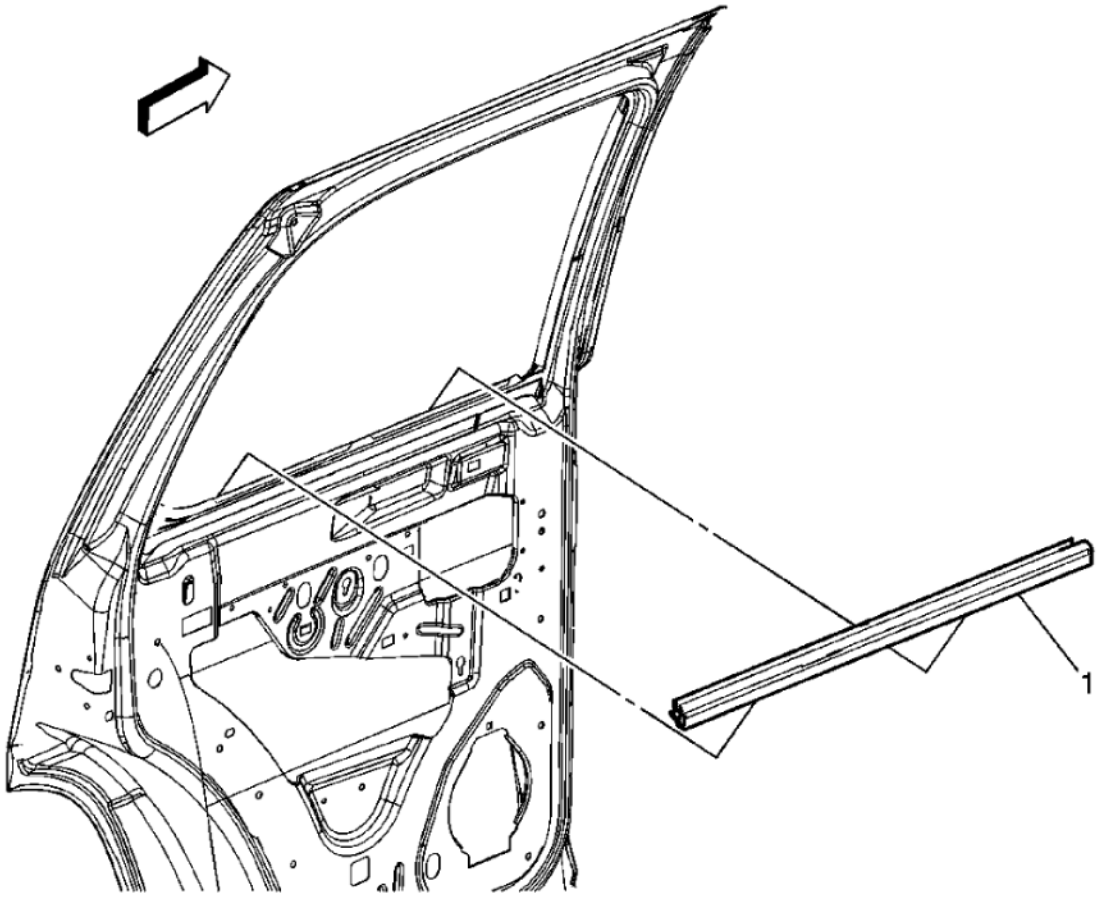


Fig. 82: Rear Side Door Inner Belt Sealing Strip
Courtesy of GENERAL MOTORS CORP.

Callout	Component Name
Preliminary Procedures: Remove the interior trim panel. Refer to **Rear Side Door Trim Panel Replacement (YE9)** or **Rear Side Door Trim Panel Replacement (SLT)** .	
1	Rear Side Door Inner Belt Sealing Strip **Procedure:** Pull upward on the sealing strip to release it from the inside door flange.

REAR DOOR WINDOW BELT INNER SEALING STRIP REPLACEMENT (EXTENDED CAB)

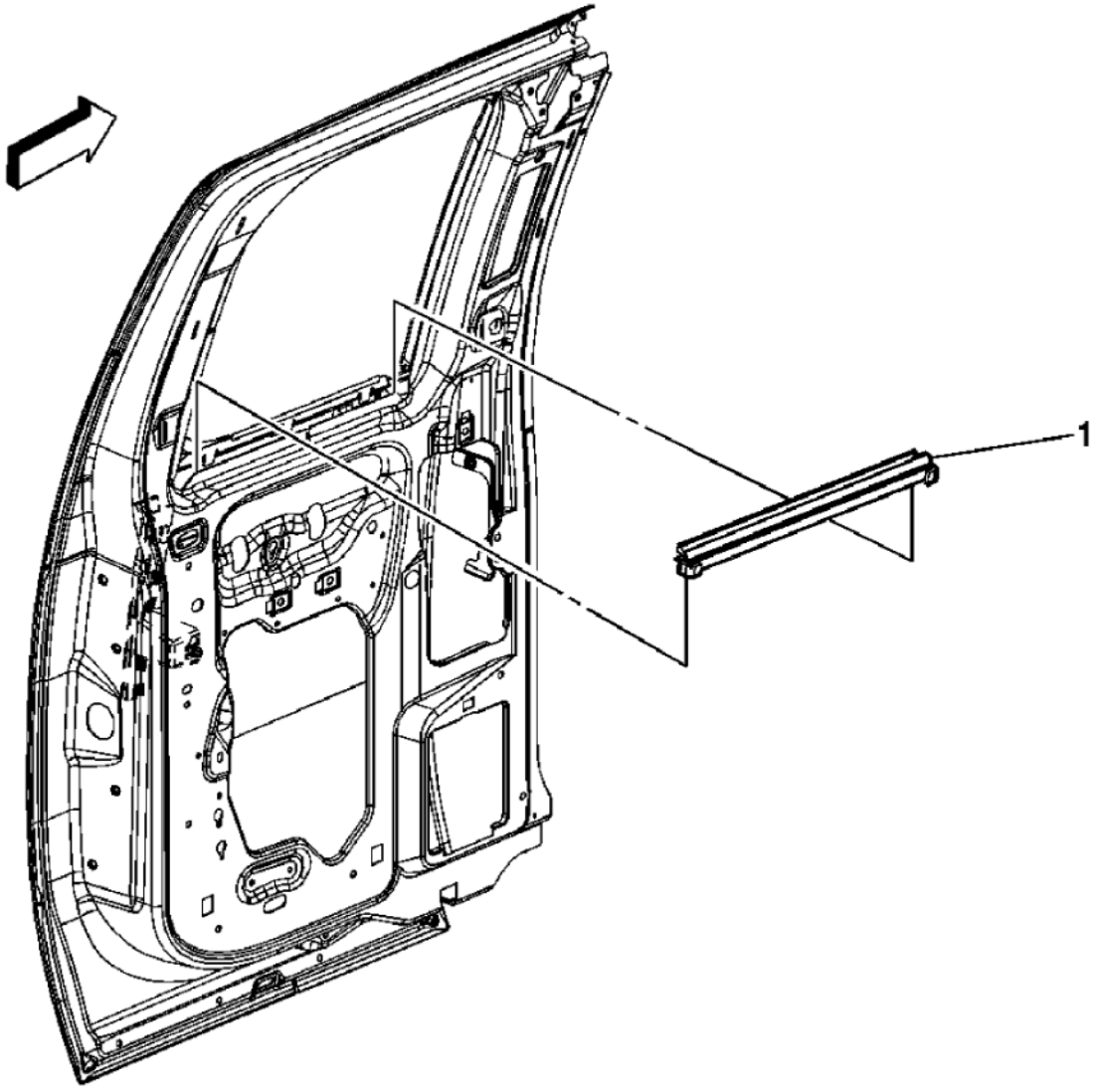


Fig. 83: View Of Rear Door Window Belt Inner Sealing Strip
Courtesy of GENERAL MOTORS CORP.

Callout	Component Name
Preliminary Procedures: Remove the interior trim panel. Refer to **Rear Side Door Trim Panel Replacement (YE9)** or **Rear Side Door Trim Panel Replacement (SLT)** .	
1	Rear Side Door Inner Belt Sealing Strip **Procedure:** Pull upward on the sealing strip to release it from the inside door flange.

REAR DOOR WINDOW BELT OUTER SEALING STRIP REPLACEMENT (CREW CAB EXCEP

EXCEPT CADILLAC)

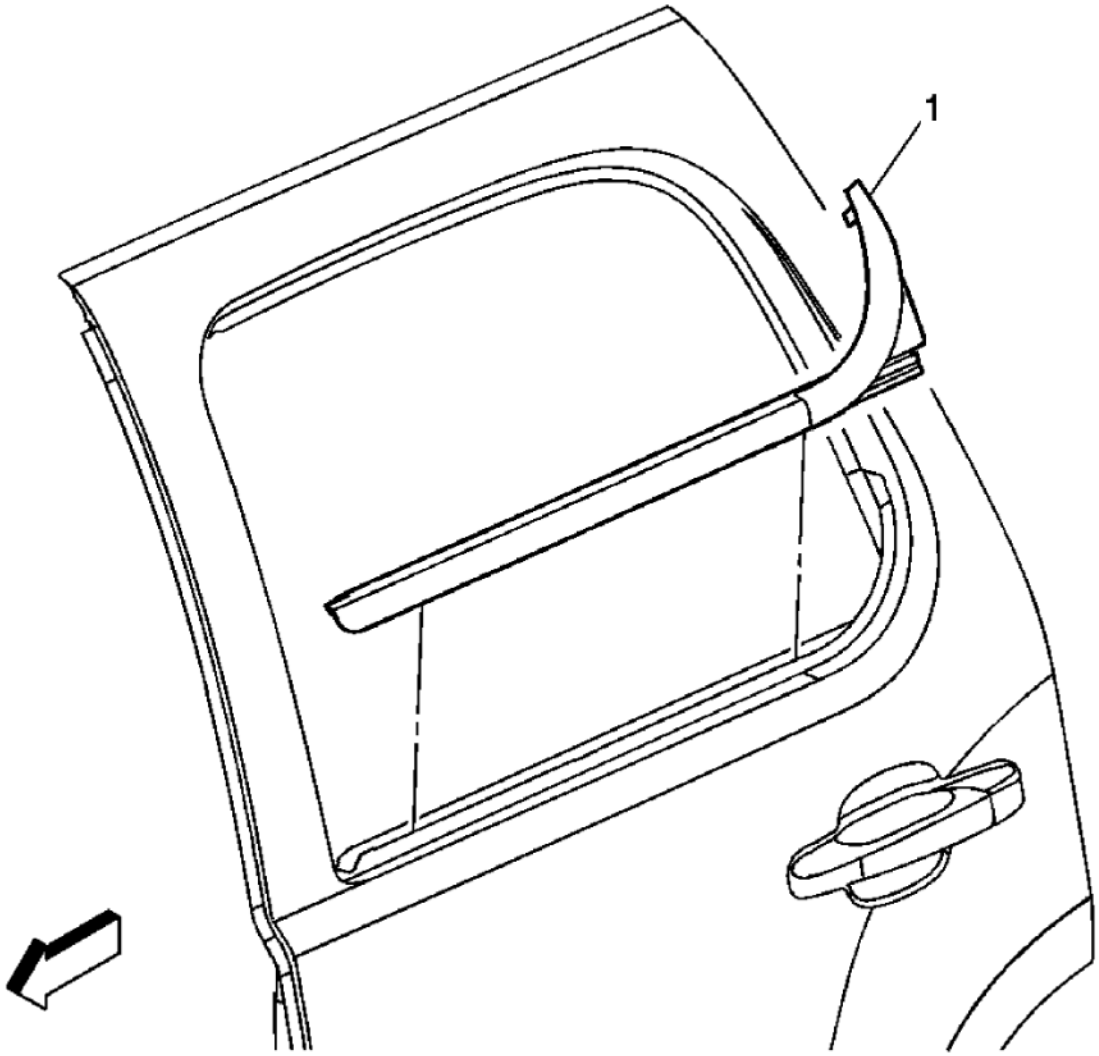


Fig. 84: View Of Rear Door Outer Belt Sealing Strip
Courtesy of GENERAL MOTORS CORP.

Callout	Component Name
Preliminary Procedure 1. **Position the door window as needed for service.** 2. **Tape off the lower window frame to prevent damage to the door.** 3. **Remove the outside mirror. Refer to Power Mirror Replacement .**	
	Rear Door Outer Belt Sealing Strip

	Procedure
1	1. Lifting upward on the sealing strip end in order to unhook it from the door flange. 2. Install the sealing strip to the flange of the door and push downward until fully seated.

REAR DOOR WINDOW BELT OUTER SEALING STRIP REPLACEMENT (EXTENDED CAB)

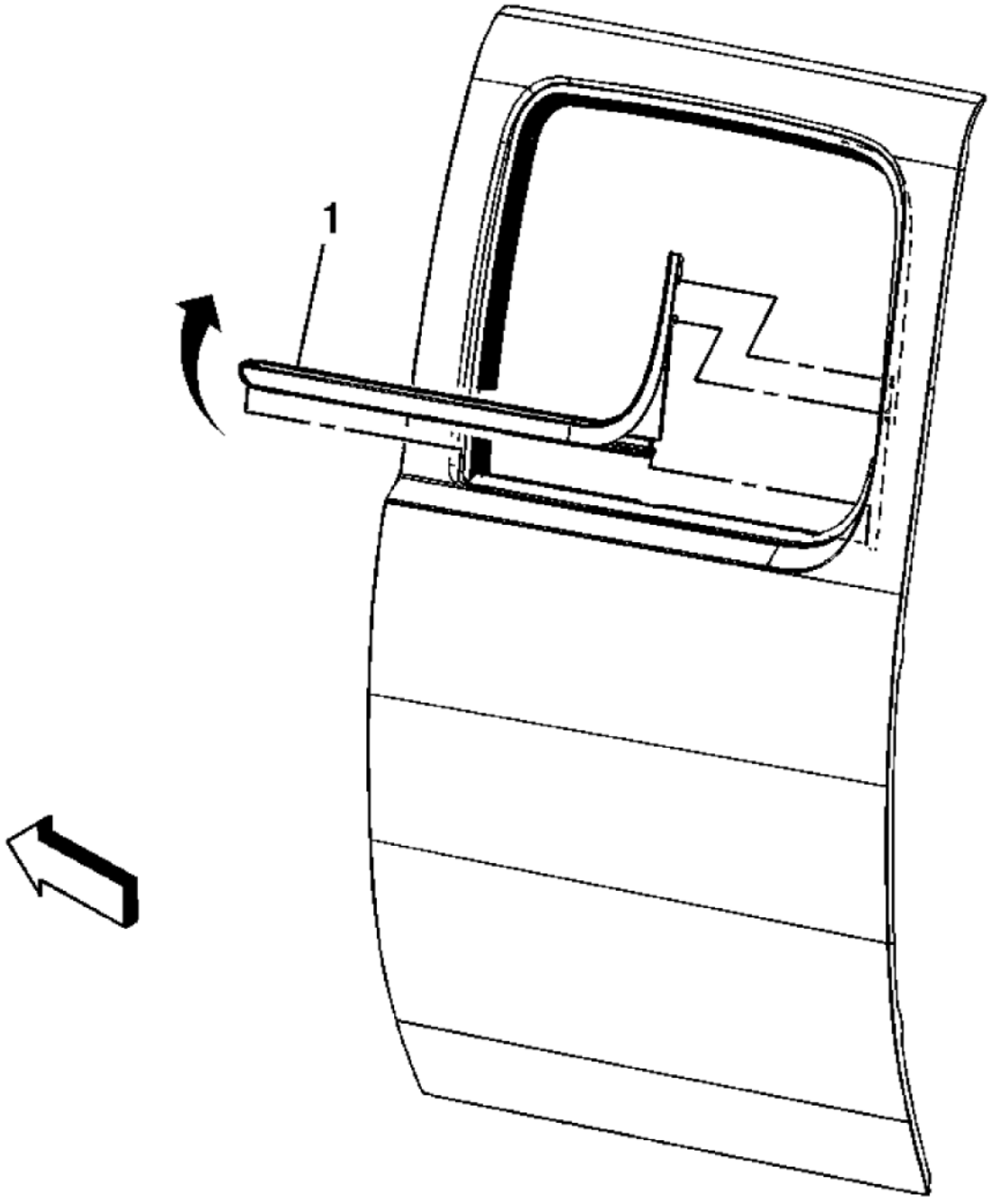


Fig. 85: View Of Rear Door Window Belt Outer Sealing Strip
Courtesy of GENERAL MOTORS CORP.

Callout	Component Name
Preliminary Procedure	

1. **Position the door window as needed for service.**
2. **Tape off the lower window frame to prevent damage to the door.**
3. **Remove the outside mirror. Refer to Power Mirror Replacement .**

1	Rear Door Outer Belt Sealing Strip **Procedure** 1. Lifting upward on the sealing strip end in order to unhook it from the door flange. 2. Install the sealing strip to the flange of the door and push downward until fully seated.

FRONT SIDE DOOR WINDOW WEATHERSTRIP REPLACEMENT

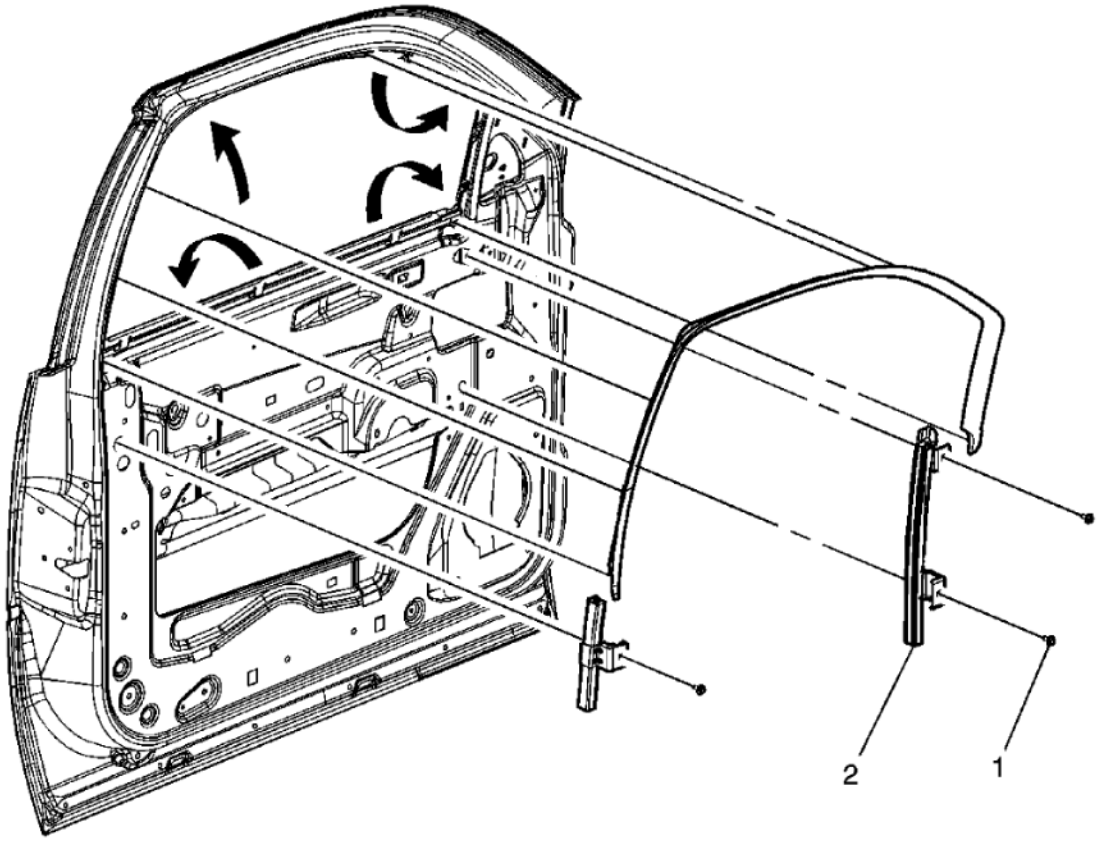


Fig. 86: View Of Front Door Window Run Channel & Bolts
Courtesy of GENERAL MOTORS CORP.

Callout	Component Name
Preliminary Procedures: Remove the front door window regulator. Refer to **Front Side Door Window Regulator Replacement (Power)**.	
1	Front Door Window Weatherstrip Bolt **NOTE:** **Refer to Fastener Notice .** **Tighten:** 9 N.m (80 lb in)
2	Front Door Window Weatherstrip **Procedure:** Apply tape to the molding to prevent scratches.

REAR SIDE DOOR WINDOW WEATHERSTRIP REPLACEMENT (CREW CAB)

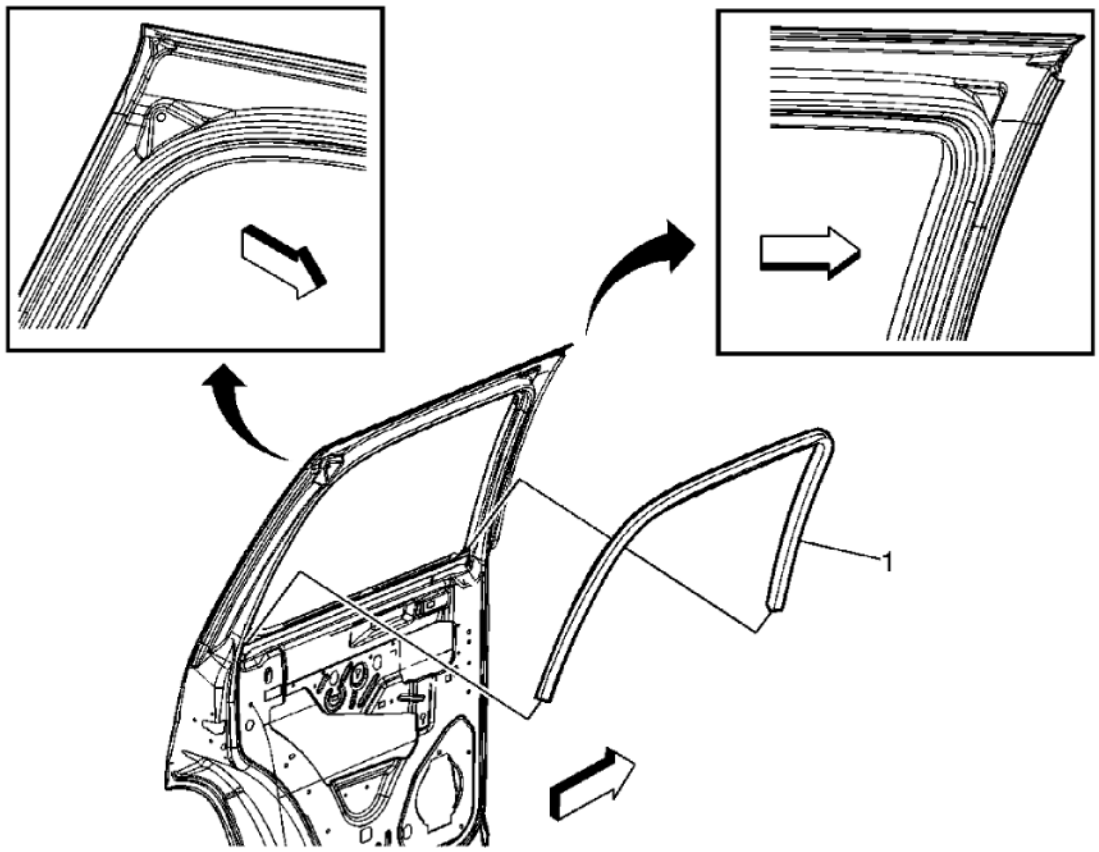


Fig. 87: View Of Rear Door Window Run Channel
Courtesy of GENERAL MOTORS CORP.

Callout	Component Name
Preliminary Procedures 1. Position the door window as needed for service. 2. Remove the rear door trim panel. Refer to **Rear Side Door Trim Panel Replacement (YE9)** or **Rear Side Door Trim Panel Replacement (SLT)** . 3. Remove the rear door inner sealing strip. Refer to **Rear Door Window Belt Inner Sealing Strip Replacement (Crew Cab)** or **Rear Door Window Belt Inner Sealing Strip Replacement (Extended Cab)**.	
1	Rear Door Window Weatherstrip **Procedure** 1. Use a plastic flat-bladed tool to assist in releasing the window weatherstrip from the door frame. 2. Carefully pull the window weatherstrip from the door flange.

REAR SIDE DOOR WINDOW WEATHERSTRIP REPLACEMENT (EXTENDED CAB)

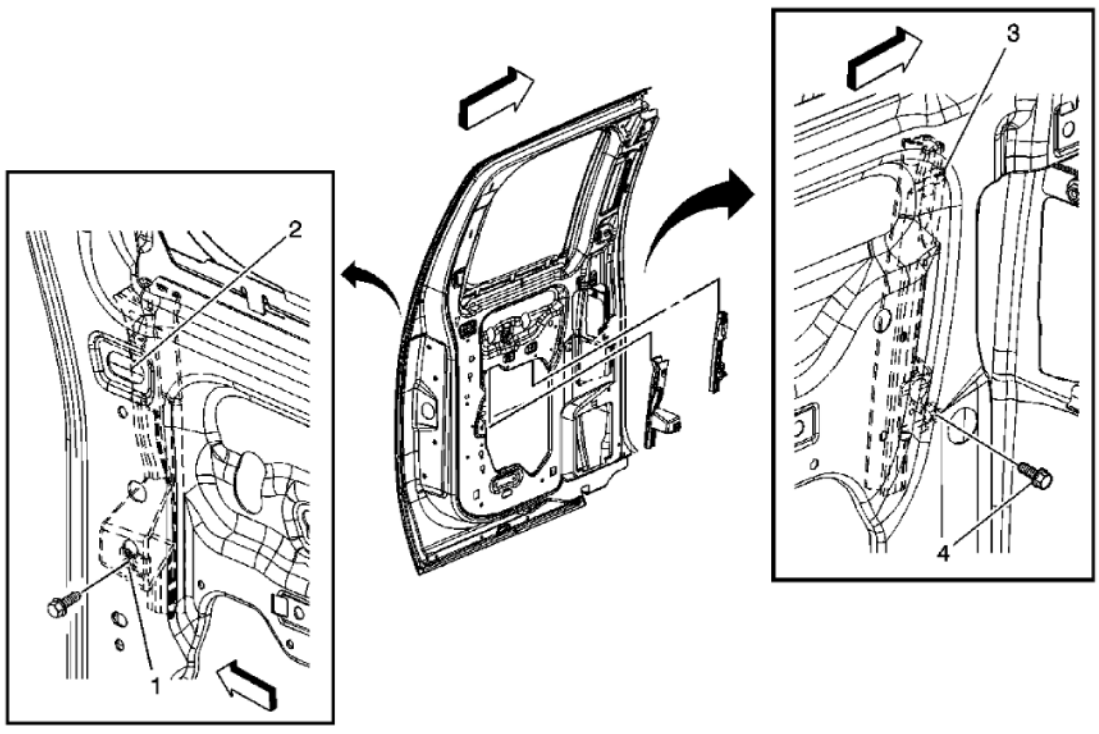


Fig. 88: View Of Rear Door Rear Window Weatherstrip, Rear Door Front Window

Weatherstrip & Bolts
Courtesy of GENERAL MOTORS CORP.

Callout	Component Name
Preliminary Procedures 1. Position the door window as needed for service. 2. Remove the rear door trim panel. Refer to **Rear Side Door Trim Panel Replacement (YE9)** or **Rear Side Door Trim Panel Replacement (SLT)** . 3. Remove the rear door inner sealing strip. Refer to **Rear Door Window Belt Inner Sealing Strip Replacement (Crew Cab)** or **Rear Door Window Belt Inner Sealing Strip Replacement (Extended Cab)**.	
1	Rear Door Rear Window Weatherstrip Bolt **NOTE:** **Refer to Fastener Notice .** **Tighten:** 10 N.m (89 lb in)
2	Rear Door Rear Window Weatherstrip **Procedure:** After the bolt has been removed from the weatherstrip, pull downward to release it from the door.
3	Rear Door Front Window Weatherstrip Bolt **Tighten:** 10 N.m (89 lb in)
4	Rear Door Front Window Weatherstrip **Procedure:** After the bolt has been removed from the weatherstrip, pull downward to release it from the door.

ADHESIVE INSTALLATION OF STATIONARY WINDOWS (WINDSHIELD)

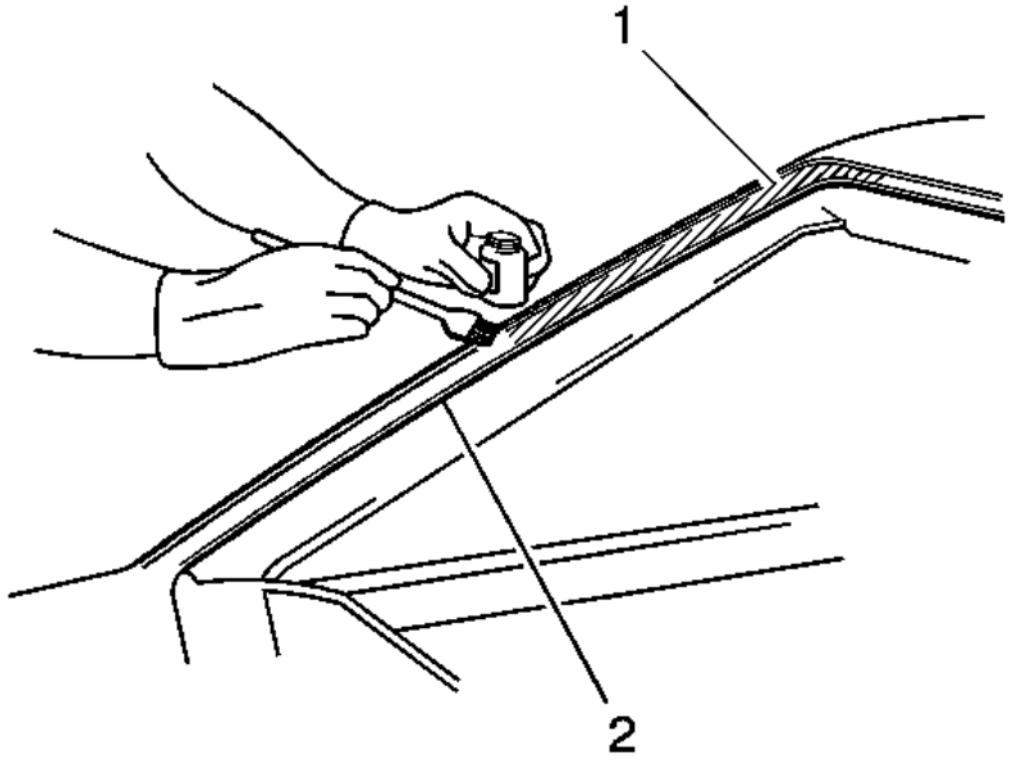


Fig. 89: Applying Pinch-Weld Primer
Courtesy of GENERAL MOTORS CORP.

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

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

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

CAUTION: Refer to WINDOW RETENTION CAUTION .

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

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

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

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

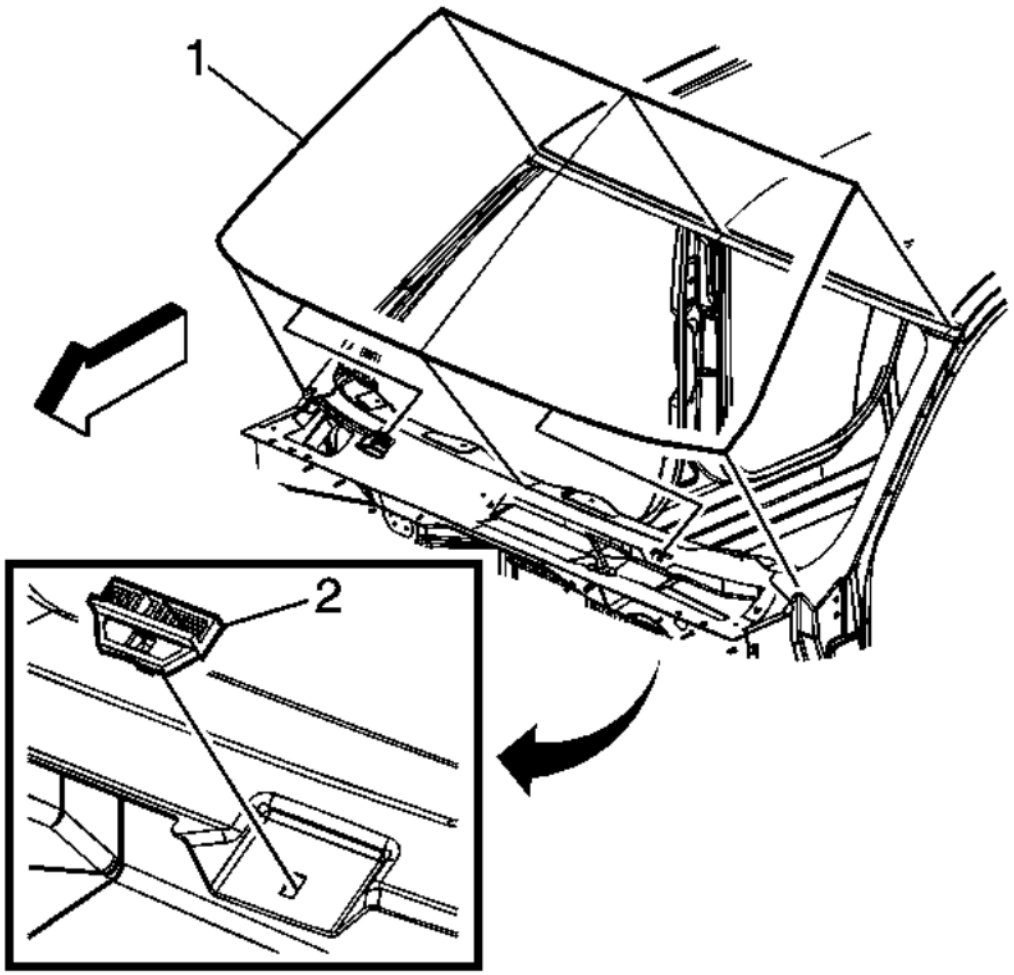


Fig. 90: View Of Removed Window
Courtesy of GENERAL MOTORS CORP.

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

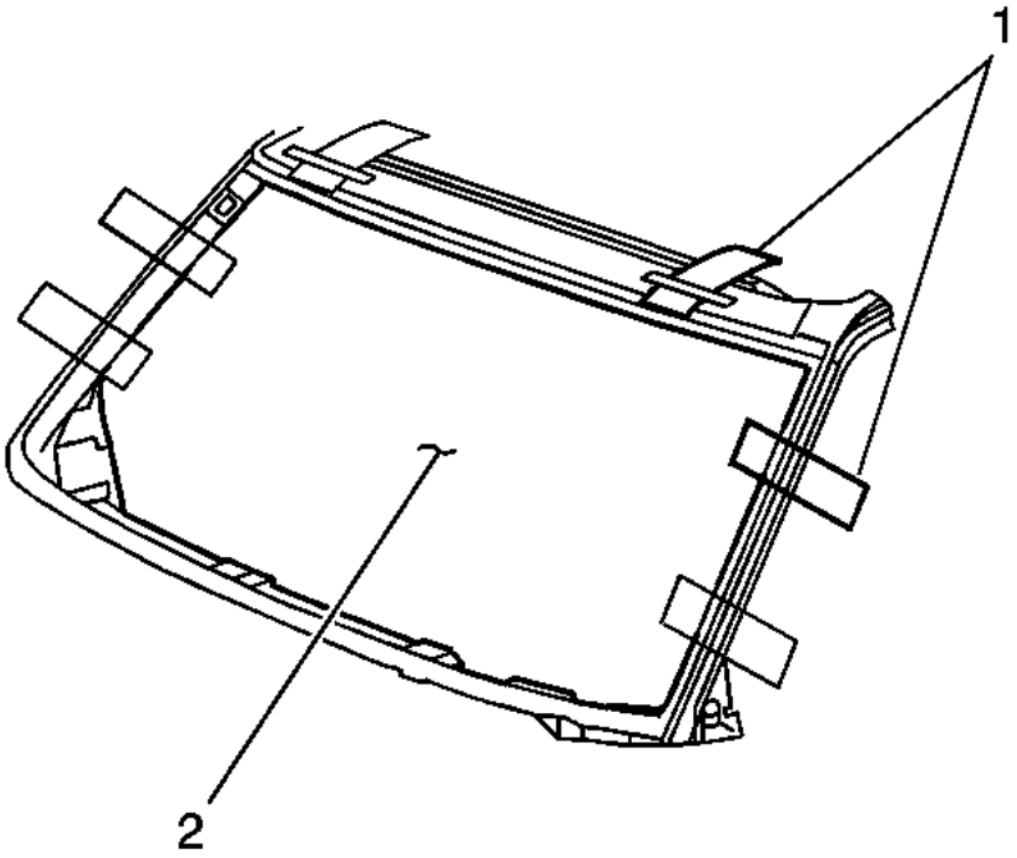


Fig. 91: Aligning Tape Lines On Window To Body
Courtesy of GENERAL MOTORS CORP.

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

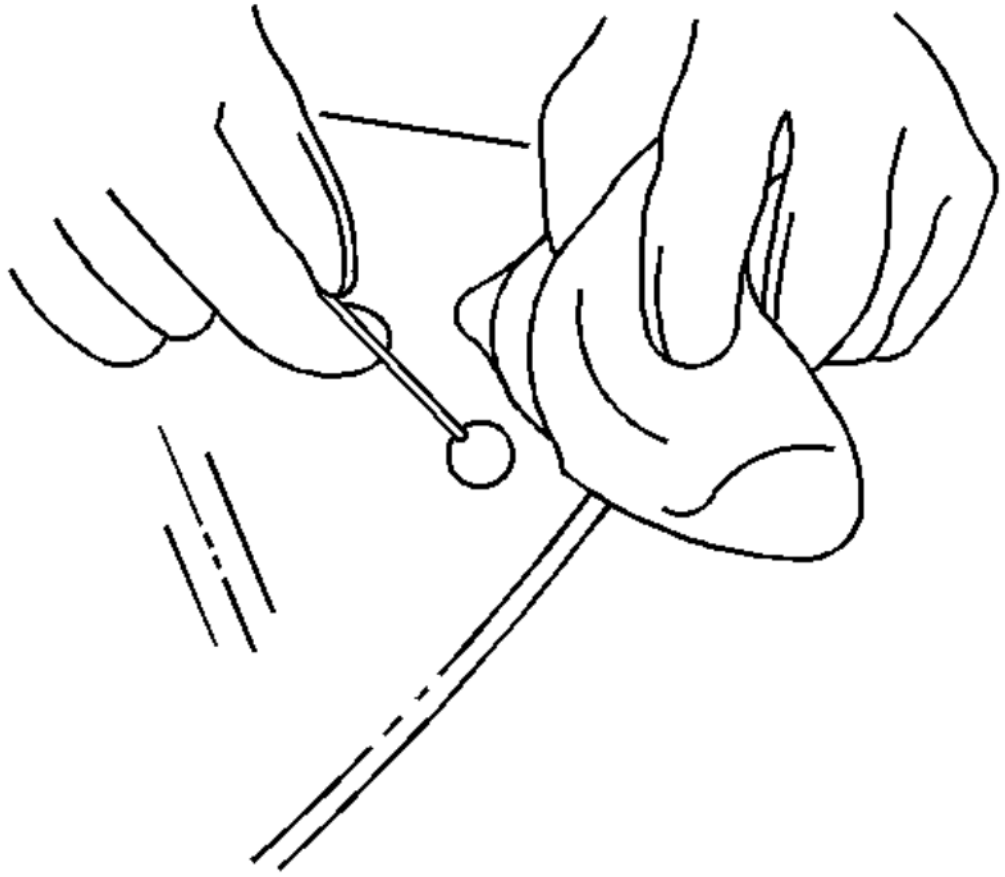


Fig. 92: Applying Glass Prep
Courtesy of GENERAL MOTORS CORP.

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.

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

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

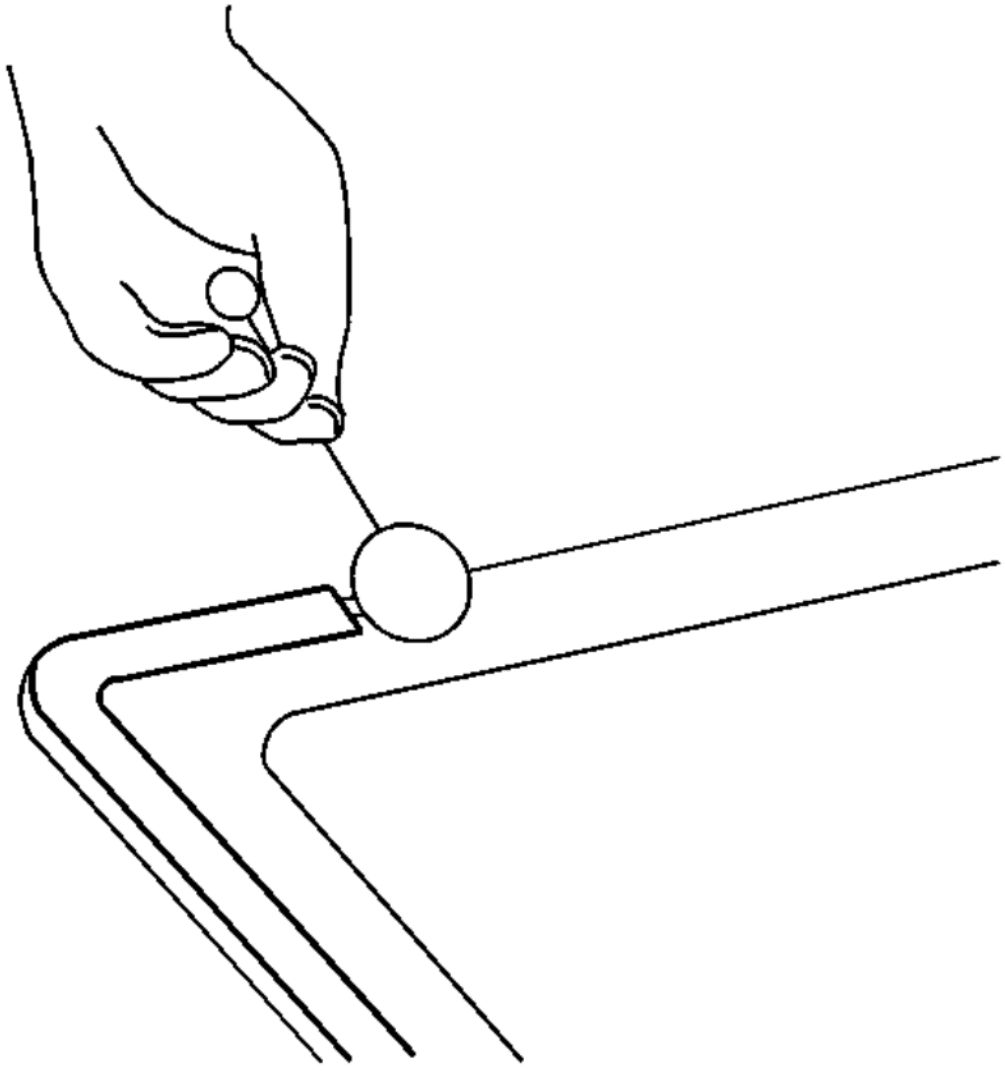


Fig. 93: Applying Glass Prep
Courtesy of GENERAL MOTORS CORP.

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

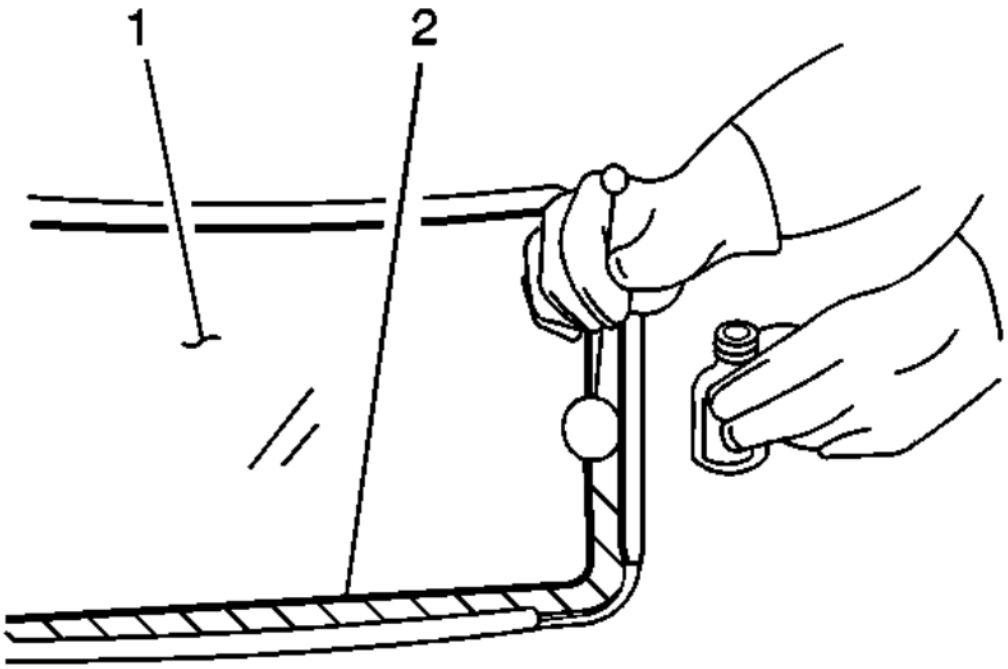


Fig. 94: Applying Glass Primer
Courtesy of GENERAL MOTORS CORP.

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.

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

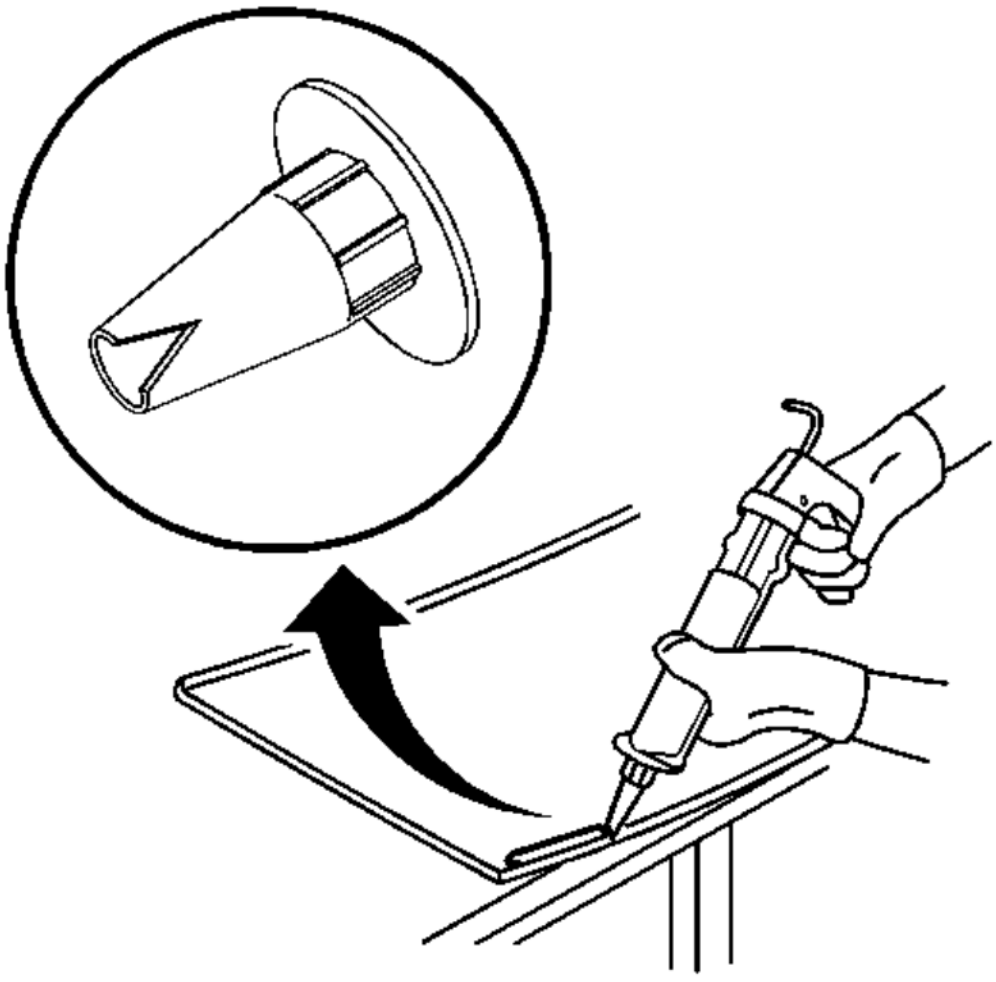


Fig. 95: View Of Modified Applicator Nozzle
Courtesy of GENERAL MOTORS CORP.

18. Cut the applicator nozzle in order to provide a bead of 8 mm (0.316 in) wide and 12.7 mm (1/2 in) high.

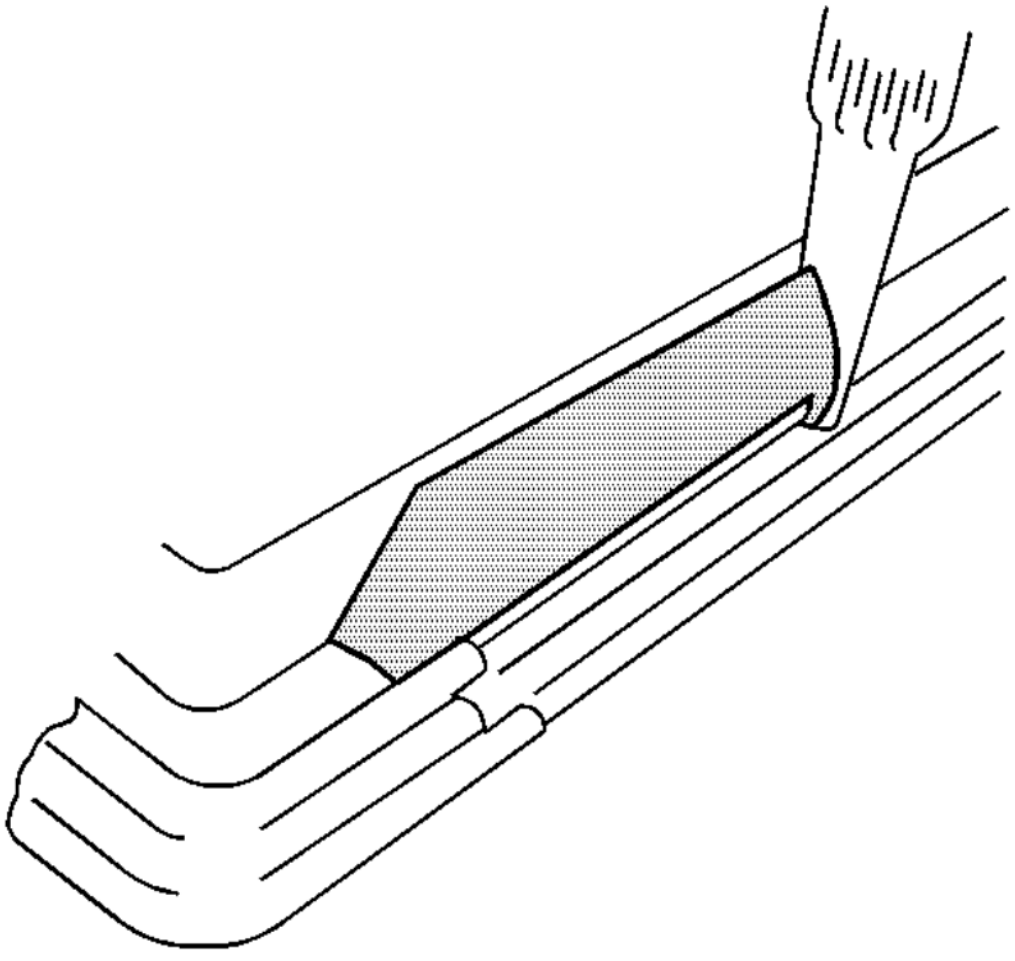


Fig. 96: Applying Bead Of Urethane Adhesive
Courtesy of GENERAL MOTORS CORP.

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

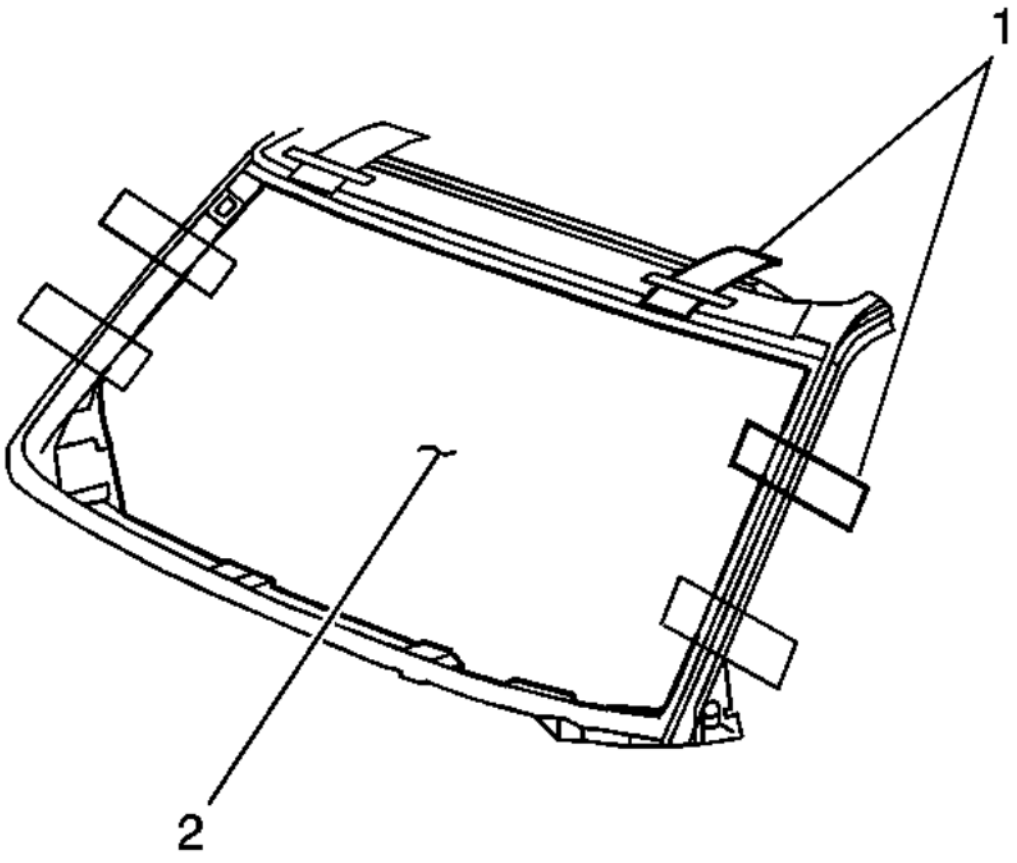


Fig. 97: Aligning Tape Lines On Window To Body
Courtesy of GENERAL MOTORS CORP.

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

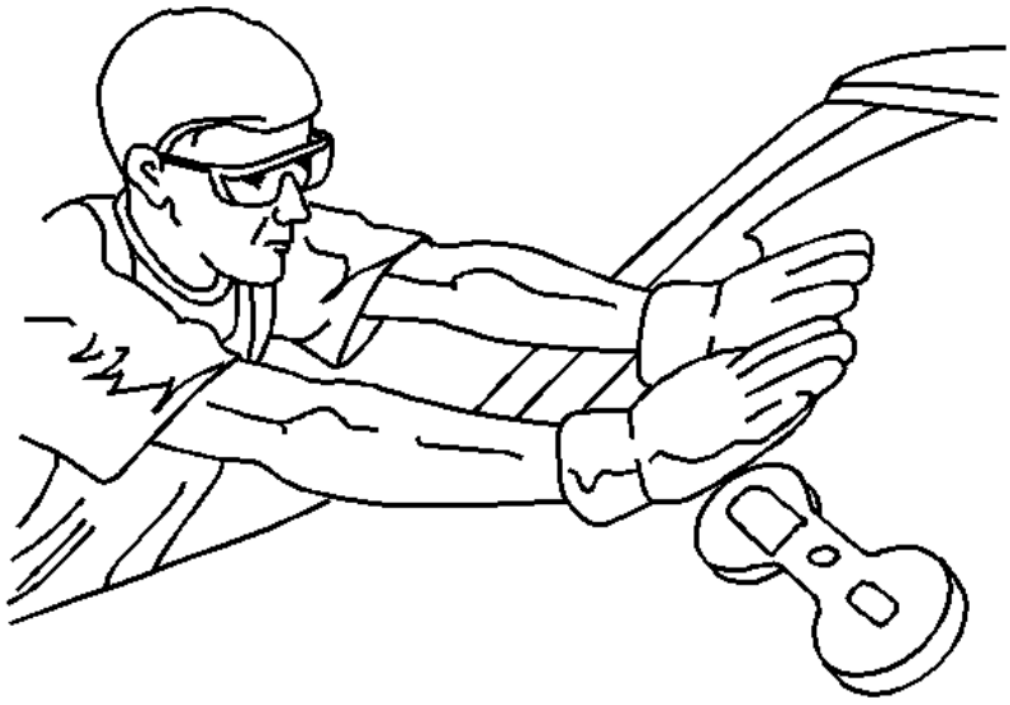


Fig. 98: Pressing Window Into Place
Courtesy of GENERAL MOTORS CORP.

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

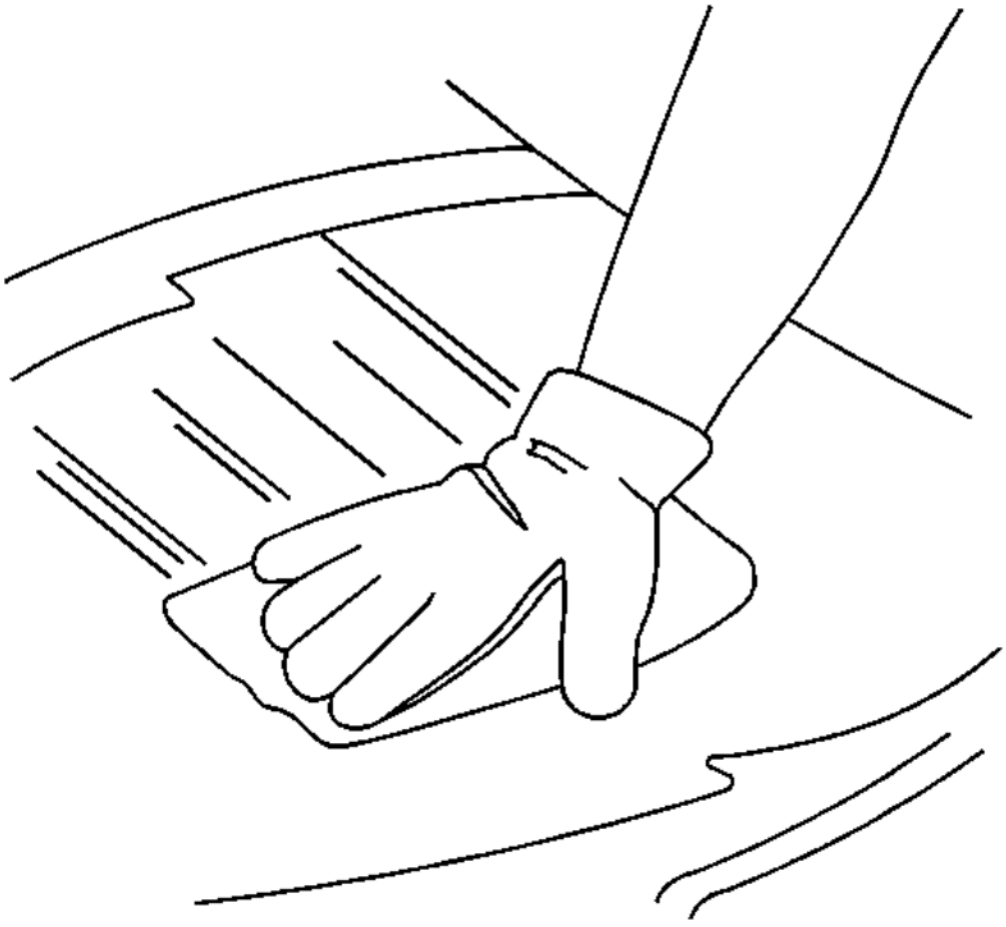


Fig. 99: Cleaning Window
Courtesy of GENERAL MOTORS CORP.

23. Clean any excess urethane adhesive from the body.

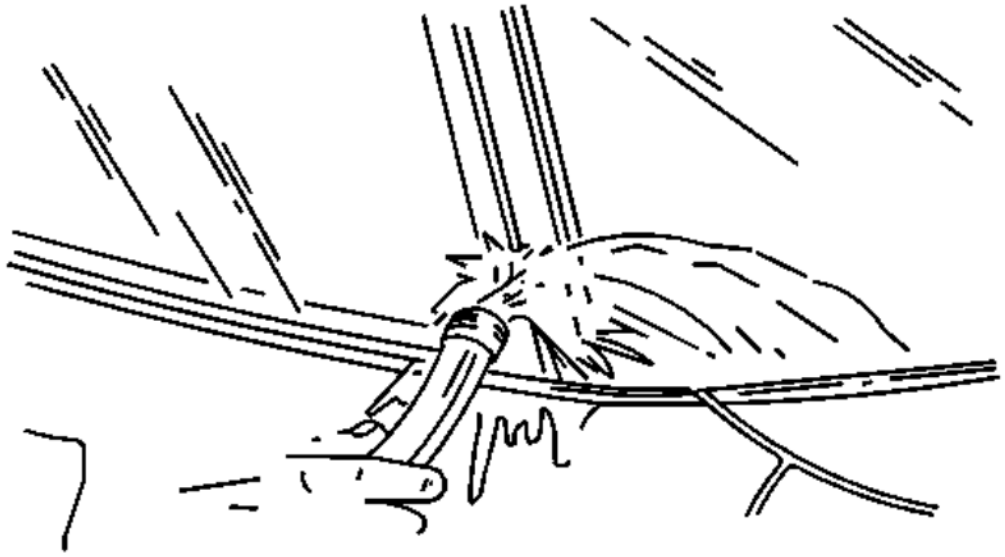


Fig. 100: Performing Water Hose Test
Courtesy of GENERAL MOTORS CORP.

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

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

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

- **For the moisture-curing type of urethane adhesive, allow a minimum of 6 hours at 21°C (70°F) or greate r and with at least 30 percent relative humidity. Allow**

at least 24 hours for the complete curing of the urethane adhesive.

- **For the chemical-curing type of urethane adhesive, allow a minimum of 1 hour.**

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

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

ADHESIVE INSTALLATION OF STATIONARY WINDOWS (REAR WINDOW)

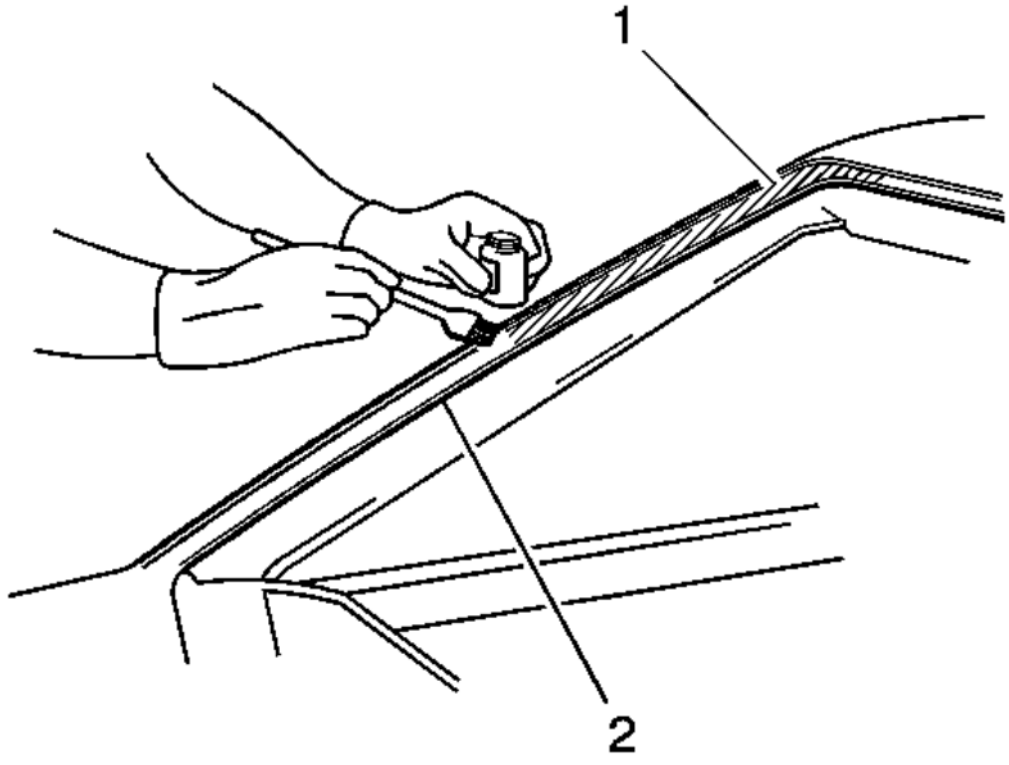


Fig. 101: Applying Pinch-Weld Primer
Courtesy of GENERAL MOTORS CORP.

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

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

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

CAUTION: Refer to WINDOW RETENTION CAUTION .

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

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

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

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

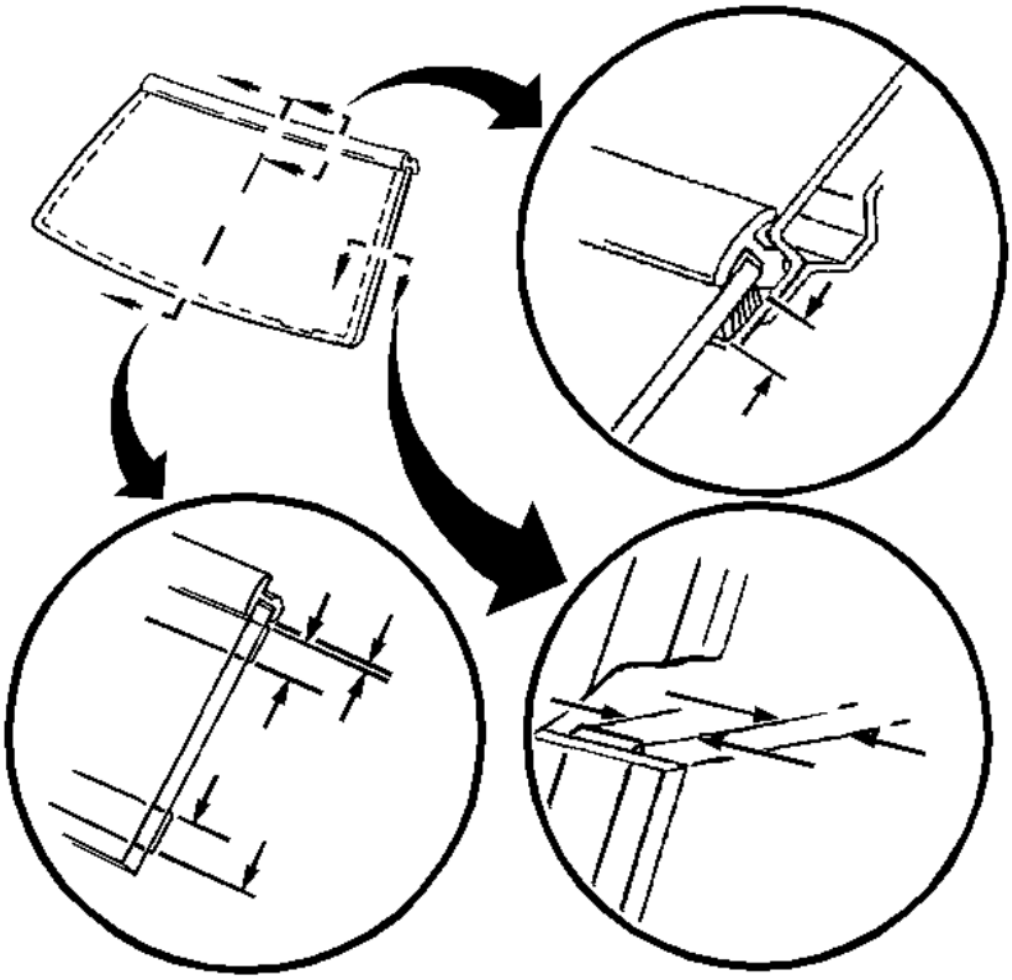


Fig. 102: Identifying Window Reveal Molding Installation Specifics
Courtesy of GENERAL MOTORS CORP.

10. If installing a new window reveal molding, start in the center and work toward each end pressing firmly into place.
11. With the aid of an assistant, dry fit the window to the opening in order to determine the correct position.
12. Use masking tape in order to mark the locations of the window in the opening.
13. Cut the masking tape in the center and remove the window from the opening.

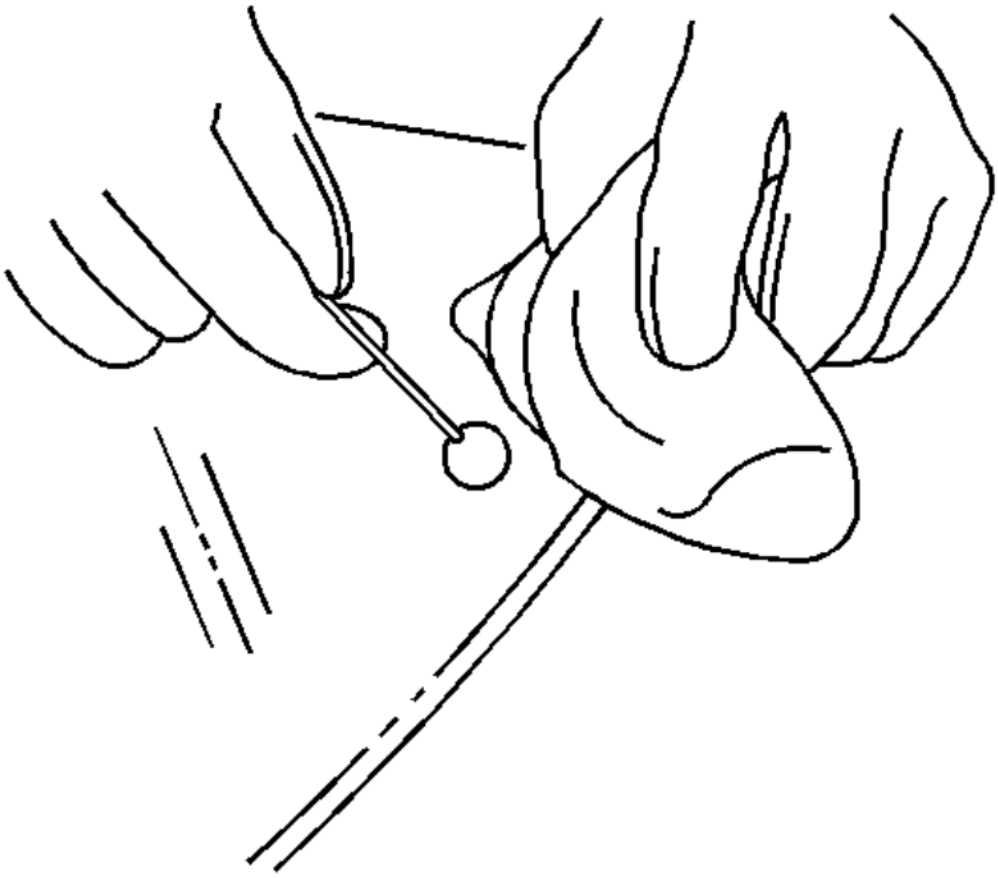


Fig. 103: Applying Glass Prep
Courtesy of GENERAL MOTORS CORP.

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

area of the window if not applied evenly.

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

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

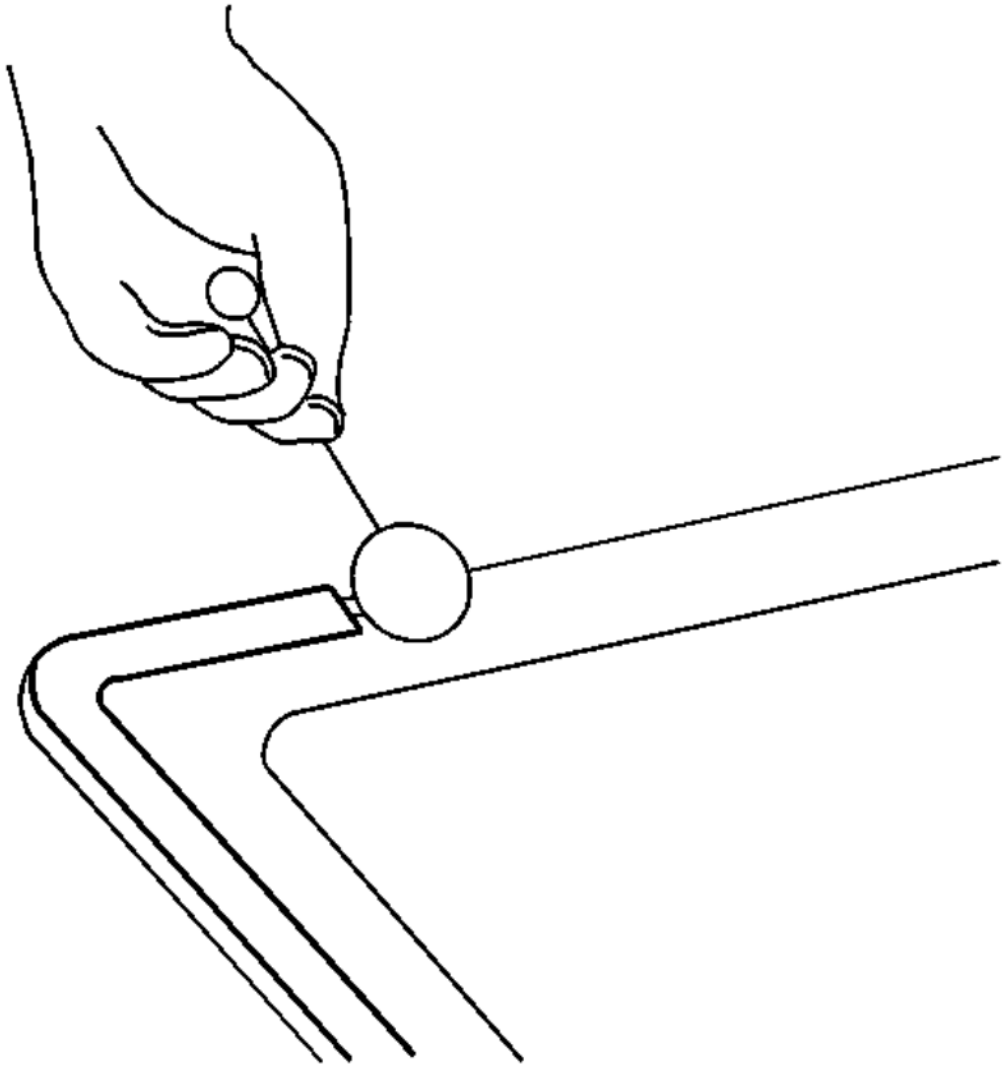


Fig. 104: Applying Glass Prep

Courtesy of GENERAL MOTORS CORP.

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

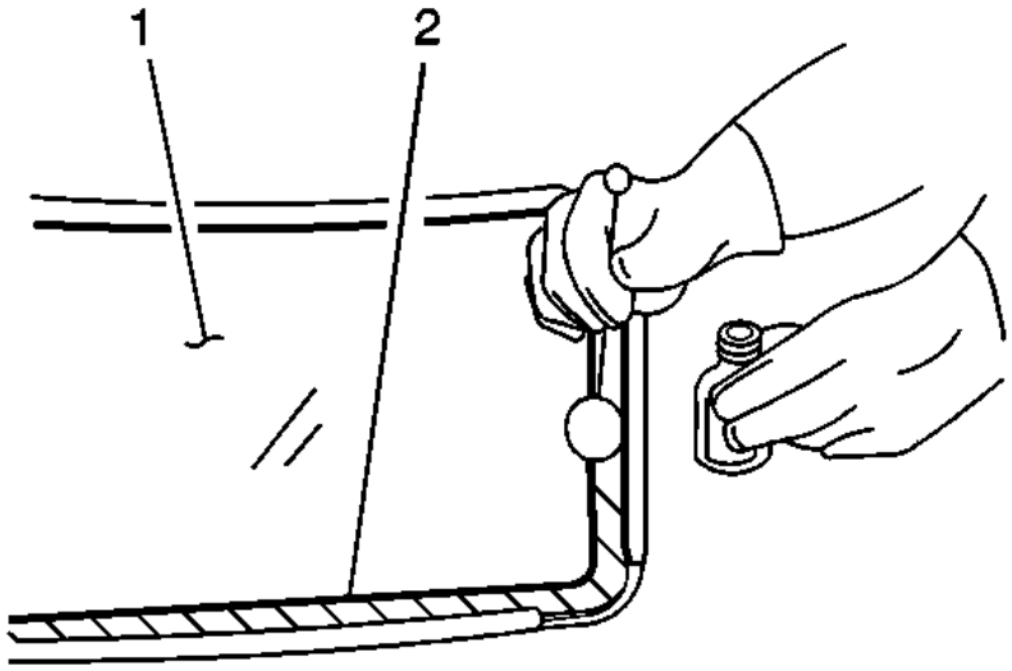


Fig. 105: Applying Glass Primer
Courtesy of GENERAL MOTORS CORP.

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

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

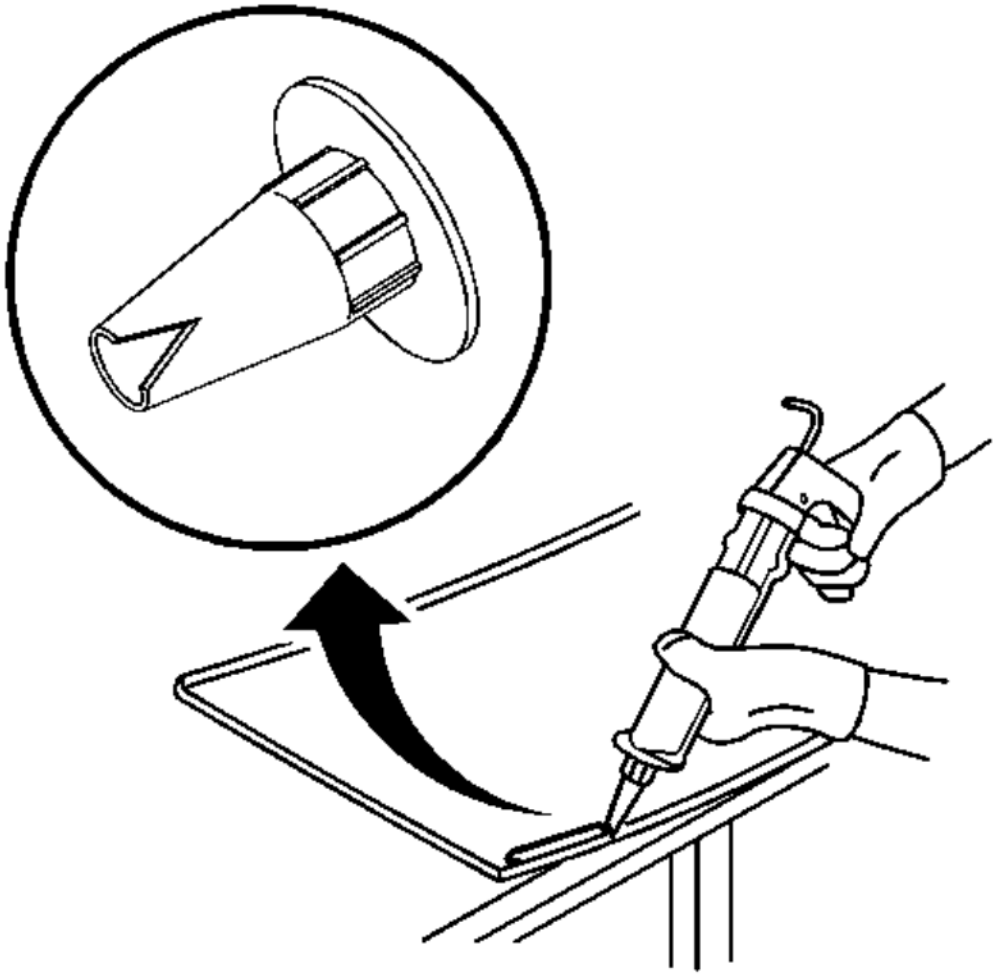


Fig. 106: View Of Modified Applicator Nozzle
Courtesy of GENERAL MOTORS CORP.

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

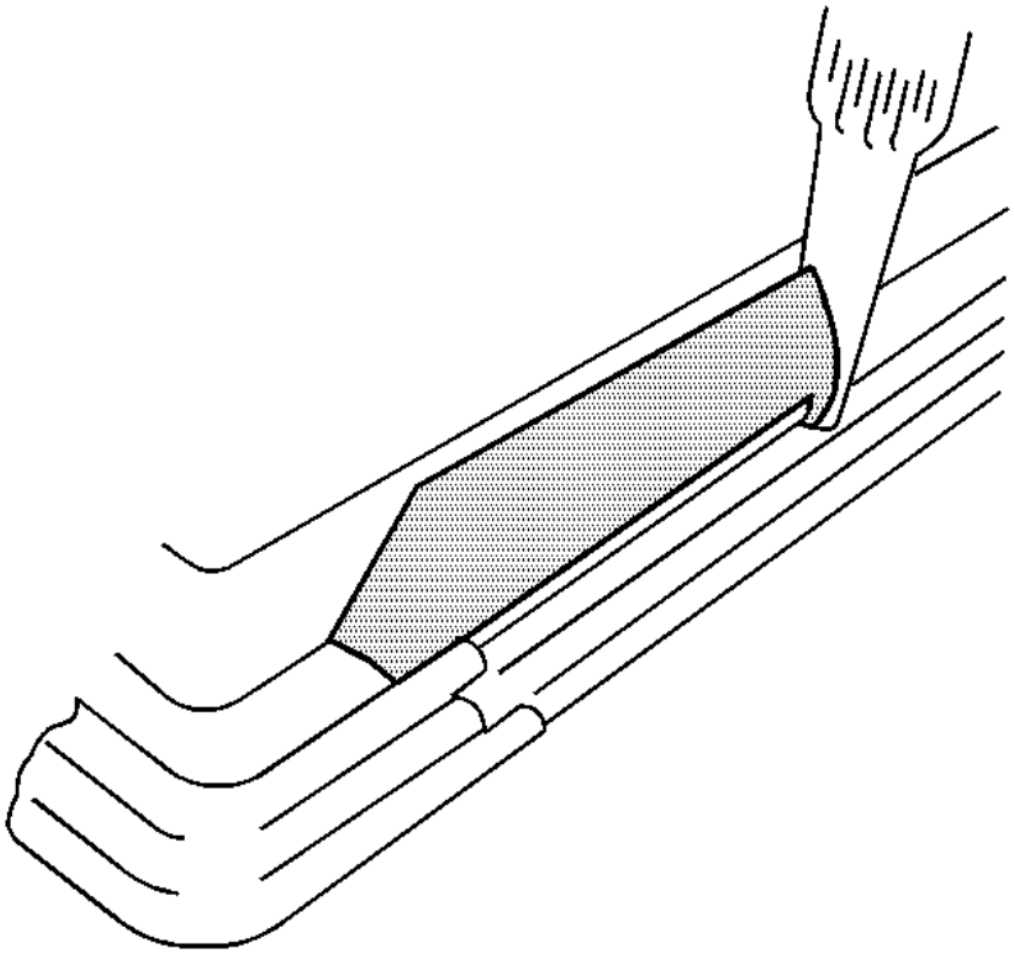


Fig. 107: Applying Bead Of Urethane Adhesive
Courtesy of GENERAL MOTORS CORP.

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

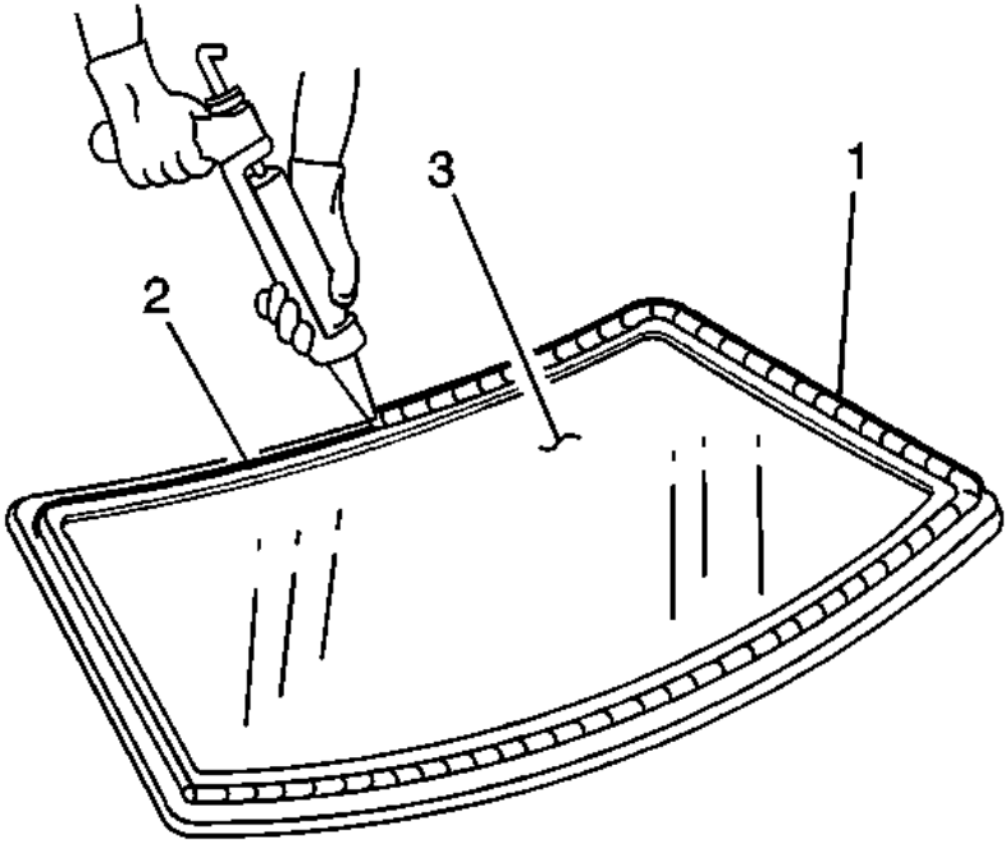


Fig. 108: Applying Urethane Adhesive To Inner Surface Of Window
Courtesy of GENERAL MOTORS CORP.

21. 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).
22. With the aid of an assistant, place the window in the opening. If installing a rear window, place the rear window on the lower supports, if equipped.
23. Align the masking tape lines on the window and the body.

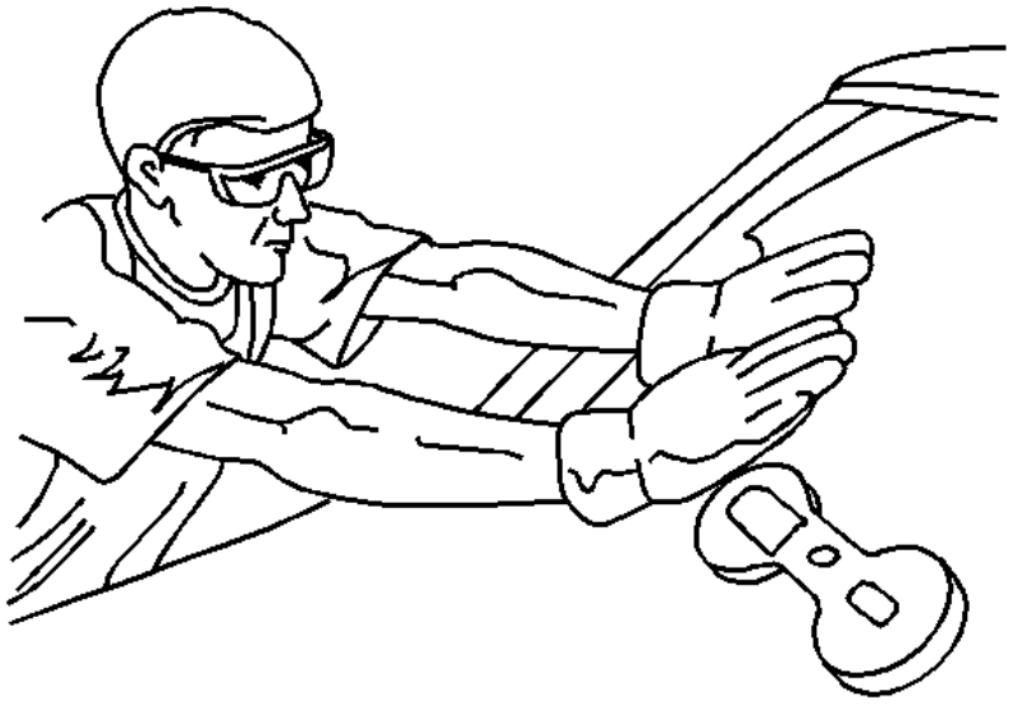


Fig. 109: Pressing Window Into Place
Courtesy of GENERAL MOTORS CORP.

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

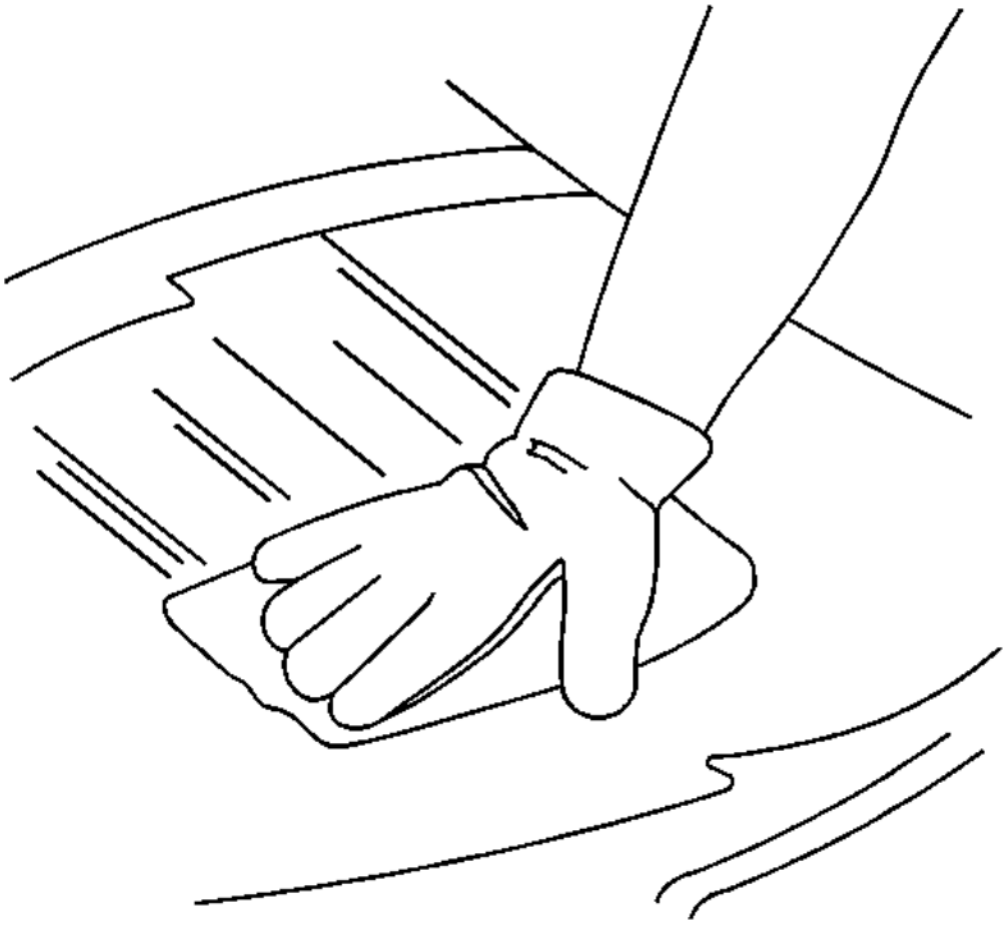


Fig. 110: Cleaning Window
Courtesy of GENERAL MOTORS CORP.

26. Clean any excess urethane adhesive from the body.

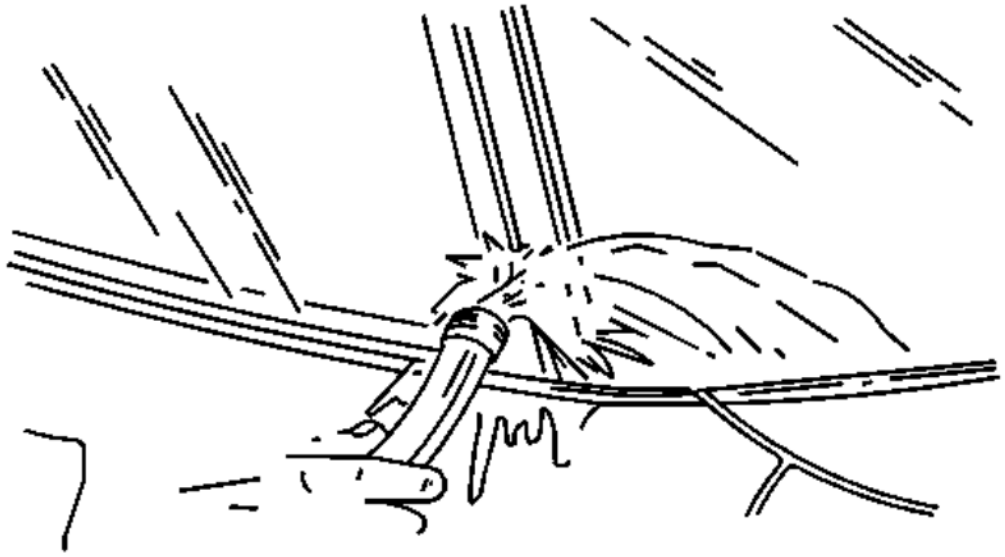


Fig. 111: Performing Water Hose Test
Courtesy of GENERAL MOTORS CORP.

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

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

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

- **For the moisture-curing type of urethane adhesive, allow a minimum of 6 hours at 21°C (70°F) or greate r and with at least 30 percent relative humidity. Allow**

at least 24 hours for the complete curing of the urethane adhesive.

- **For the chemical-curing type of urethane adhesive, allow a minimum of 1 hour.**

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

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

FRONT SIDE DOOR WINDOW FRONT CHANNEL AND REAR CHANNEL REPLACEMENT

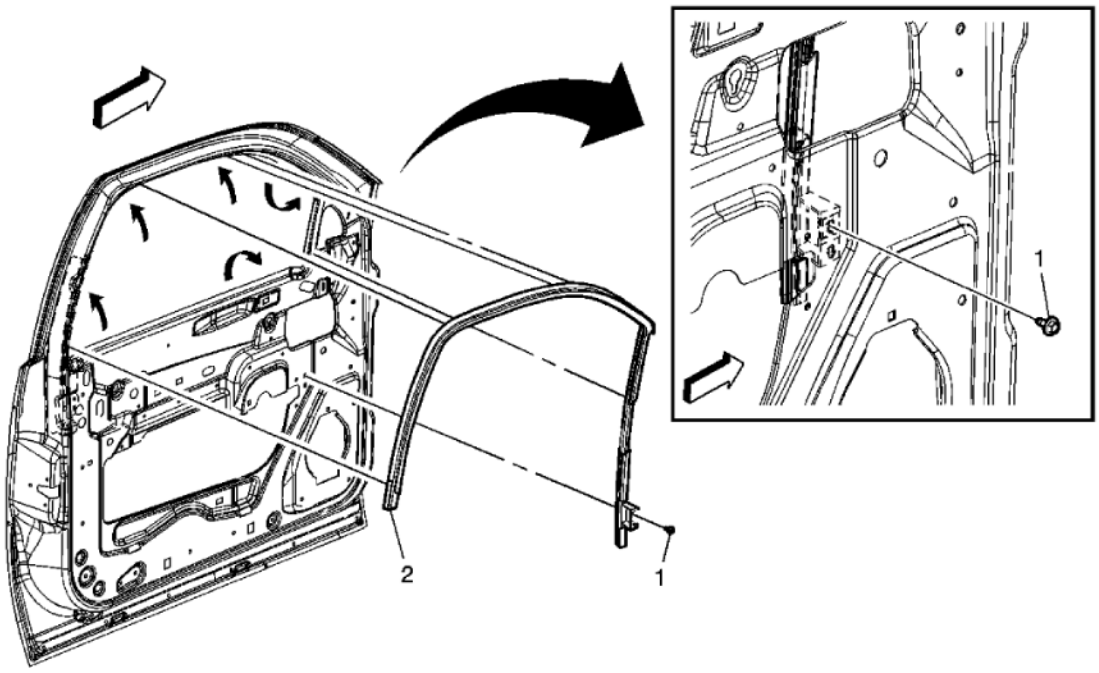


Fig. 112: View Of Front Door Window Channel & Bolt
Courtesy of GENERAL MOTORS CORP.

Callout	Component Name
Preliminary Procedures 1. Position the door window as needed for service. 2. Remove the front door trim panel. Refer to **Front Side Door Trim Panel Replacement (YE9)** or **Front Side Door Trim Panel Replacement (SLT)** . 3. Remove the water deflector. Refer to **Front Side Door Water Deflector Replacement** . 4. Remove the front door inner sealing strip. Refer to **Front Side Door Window Belt Inner Sealing Strip Replacement**.	
1	Front Door Window Run Channel Lower Bolt **NOTE:** **Refer to Fastener Notice .** **Tighten:** 11 N.m (97 lb in)
2	Front Door Window Run Channel

FRONT SIDE DOOR WINDOW REAR CHANNEL REPLACEMENT

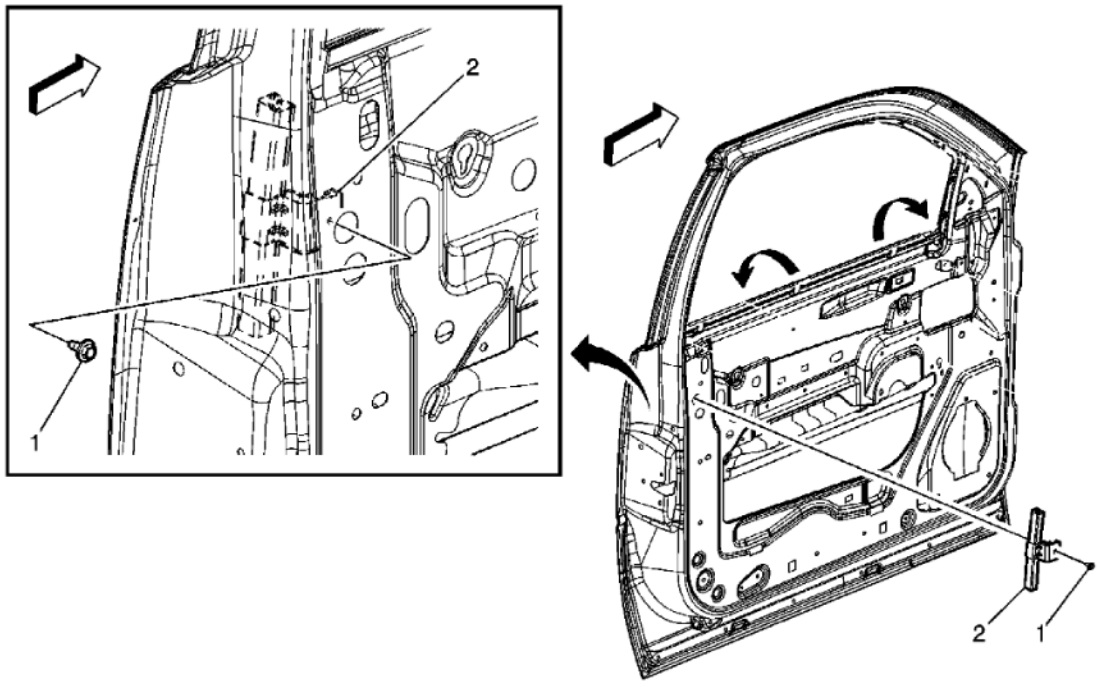


Fig. 113: View Of Front Side Door Window Channels & Components

Courtesy of GENERAL MOTORS CORP.

Callout	Component Name
Preliminary Procedures 1. Position the door window as needed for service. 2. Remove the front door trim panel. Refer to **Front Side Door Trim Panel Replacement (YE9)** or **Front Side Door Trim Panel Replacement (SLT)** . 3. Remove the water deflector. Refer to **Front Side Door Water Deflector Replacement** .	
1	Front Door Window Run Channel Rear Bolt **NOTE:** Refer to **Fastener Notice** . **Tighten:** 10 N.m (89 lb in)
2	Front Door Window Rear Run Channel **Tip:** Raise the door window to the fully close position to gain access the run channel.

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 Window System Components

The power window system consists of the following components:

- Driver Door Switch (DDS) (RPO A31/AN3/DL3)
- Driver window switch (RPO A31 W/O AN3, DL3)
- Passenger Door Switch (PDS) (RPO A31/AN3/DL3)
- Passenger window switch (RPO A31 W/O AN3, DL3)
- Body Control Module (BCM) (RPO A31/AN3/DL3)
- Rear door power window switches
- Power window motors in each of the doors (circuit breaker protected)
- LT DRS Circuit Breaker
- RT DOORS Circuit Breaker
- Sliding Rear Window Switch
- PWR REAR WNDW Circuit Breaker
- Sliding Rear Window Relays
- Sliding Rear Window Motor

Power Window System Controls (RPO A31/AN3/DL3)

The power window system will operate anytime the Retained Accessory Power (RAP) system is active or when the ignition switch is in the ACCY or ON position.

The driver master control switches are integrated into the DDS. When a power window switch is activated in the up or down positions the DDS supplies power and ground to the window motor control circuits to drive the window motor in the required direction. Prior to activating a power window motor the DDS will supply the control circuit with a low current bias voltage in order to determine that a short to ground condition does not exist and during window motor operation the DDS continues to monitor the motor current to verify proper window motor operation.

The DDS controls the passenger window through a GMLAN message to the PDS. When a power window switch is activated in the up or down positions the PDS supplies power and ground to the window motor control circuits to drive the window motor in the required direction. Prior to activating a power window motor the PDS will supply the control circuit with a low current bias voltage in order to determine that a short to ground condition does not exist, and during window motor operation the PDS continues to monitor the motor current to verify proper window motor operation. (Scan tool support is available for this system)

Driver Power Window Operation (RPO A31/AN3/DL3)

The switch for the driver power window has 3 positions Up, Down and Express Down and it's position is a direct input into the DDS. Upon receiving a request for power window operation (switch activation), the DDS supplies voltage to the power window motor up or down circuit and grounds the down or up circuit and the power window motor moves the window UP or DOWN direction.

Front Passenger Power Window Operation (RPO A31/AN3/DL3)

The switch for the front passenger power window has 2 positions UP and DOWN, and it's position is a direct input into the PDS. Upon receiving a request for power window operation (switch activation), the PDS supplies voltage to the power window motor right front up or down circuit and grounds the opposite and the power window motor runs to drive the window UP or DOWN.

The front passenger power window can also be operated from the driver master control. The front passenger window switch on the driver master control has 2 positions UP and DOWN and it's position is a direct input into the DDS. Upon receiving a request for front passenger power window operation, the DDS transmits a GMLAN message indicating the changed switch position. When the PDS receives this message, the PDS supplies voltage to the power window motor right front up or down circuit and grounds the opposite and the power window motor runs to move the window UP or DOWN.

Rear Passenger Power Window Operation (RPO A31/AN3/DL3)

The body control module (BCM) monitors the window UP/DOWN command from the DDS.

When the rear window UP or DOWN command is received, the BCM sends a signal to the appropriate rear window switch. The rear window switches continuously monitor the up and down signal circuits, if no function is being commanded, the signal voltage is at approximately B+ voltage. If the UP or DOWN function is commanded, the BCM signal voltage drops approximately 5 volts and the appropriate rear window switch will then command the window in the UP or DOWN direction.

Rear Power Window Lockout Operation (RPO A31/AN3/DL3)

The BCM monitors the window lockout command from the DDS. When the rear window switch operation is authorized, the BCM sends a signal to the rear window switches allowing for normal window operation from the rear switches. If the rear window lockout function is commanded, the BCM signal voltage drops approximately 5 volts which disables the rear window switches and the rear windows will only operate when the BCM receives a command from the driver master control. The lockout feature will remain in effect until the ignition switch is cycled or the driver enables the rear windows by pressing the rear window lockout switch again.

Power Window System Controls (RPO A31 W/O AN3, DL3)

The power window system will operate anytime the RAP system is active or when the ignition switch is in the ACCY or ON position.

The driver and passenger door lock and side window switches are integrated control assemblies. The driver and front passenger window switches are normally open, 3 position rocker type switches, with detents for Up, Down, and Express Down. The driver window master control rear passenger window switches are normally open, 2 position rocker type switches, with detents for Up and Down. The driver window master control rear window lockout switch is a push button type switch that provides an active signal to the driver window switch whenever pressed. Whenever the rear window lockout switch is pressed the driver window switch will enable or disable the function of the rear window switches depending on the current state, and illuminate the switch indicator whenever the function is active. (No scan tool support for this system)

Driver Power Window Operation (RPO A31 W/O AN3, DL3)

The switch for the driver power window has 3 positions UP, Down and Express Down and it's position is a direct input into the driver window switch. Upon receiving a request for power window operation (switch activation), the driver window switch supplies voltage to the power window motor left front up or down circuit and grounds the opposite and the power window motor runs to move the window up or down.

Front Passenger Power Window Operation (RPO A31 W/O AN3, DL3)

The switch for the front passenger power window has 3 positions UP, Down and Express Down and it's position is a direct input into the passenger window switch. Upon receiving a request for power window operation (switch activation), the passenger window switch supplies voltage to the power window motor right front up or down circuit and grounds the opposite and the power window motor runs to drive the window up or down.

The front passenger power window can also be operated from the driver window switch. The right front window switch on the driver master control has 3 positions Up, Down and Express Down and its position is a direct input into the driver window switch. Upon receiving a request for front passenger power window operation, the driver window switch transmits a command signal indicating the changed switch position. When the passenger window switch receives this message, the passenger window switch supplies voltage to the power window motor right front up or down circuit and grounds the opposite and the power window motor runs to move the window up or down.

Rear Passenger Power Window Operation (RPO A31 W/O AN3, DL3)

The rear passenger power windows can also be operated from the driver window switch. The left rear and right rear window switches on the driver master control has 2 positions, Up and Down, and its position is a direct input into the driver window switch. Upon receiving a request for rear passenger power window operation, the driver window switch transmits a command signal to the appropriate rear window switch which receives this message, the rear window switch then supplies voltage to the power window motor up or down circuit and grounds the down or up circuit and the power window motor runs to move the window up or down.

Rear Power Window Lockout Operation (RPO A31 W/O AN3, DL3)

The rear window lockout function is operated from the driver master control through a command signal to the rear door power window switches. When the rear door power window switches receives an active lockout command, the rear door power window switches are disabled and the indicator lamp on the lockout switch will illuminate. Once disabled, the lockout feature will remain in effect until the ignition switch is cycled or the driver enables the rear windows by pressing the rear window lockout switch again.

Power Sliding Rear Window

NOTE: Power window lockout switch disables left rear and right rear passenger window switches only and has no effect on the operation of the power sliding window switch.

The power sliding rear window motor is controlled from the rear window OPEN/CLOSE switch through OPEN and CLOSE relays. The OPEN/CLOSE switch is supplied voltage from the body control module (BCM) accessory voltage output circuit. When the switch is pressed in the OPEN

or CLOSED position the OPEN or CLOSED relay coil will be supplied accessory voltage and energized through the appropriate relay control circuit. While the OPEN and CLOSE relays are in a de-energized state both motor control circuits will be closed to ground. When one of the relays is energized its motor control circuit will be closed to the battery voltage supply circuit and the other motor control circuit will remain grounded through the de-energized relay.

REAR WINDOW DEFOGGER DESCRIPTION AND OPERATION

Rear Window Defogger System Components

The rear window defogger system consist of the following components:

- HVAC control module
- REAR DEFOG relay
- Rear window defogger grid

Rear Window Defogger Operation

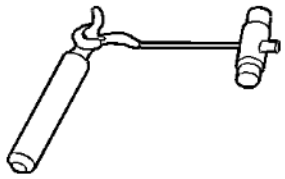
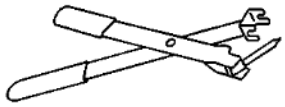
When the rear defogger switch is pressed, the HVAC control module will illuminate the rear window defogger indicator and will supply voltage to the defog relay coil. Battery positive voltage is supplied at all times to the defog relay switched input and the defog relay coil is always grounded. This allows battery positive voltage from the relay switch contacts to the rear window defogger grid. The HVAC module also sends a request to the driver door module and passenger door module to activate the heated mirrors, if equipped.

When the rear window defogger is initially activated, the defogger cycle will last 10 minutes, further requests will result in 5 minute defogger cycles.

SPECIAL TOOLS AND EQUIPMENT

SPECIAL TOOLS

Illustration	Tool Number/ Description
	J-9886-01 Door Handle Clip Remover

	J-24402-A Glass Sealant Cold Knife Remover
	J-33431-C Signal Generator and Instrument Panel Tester
	J-34946 Window Pin Remover
	J-39032 Stationary Glass Removal Tool
	J-39040 Quarter Window Remover