

2008 Isuzu Ascender LS

2008 Accessories & Equipment Fixed and Moveable Windows - Ascender, Envoy & Trailblazer

2008 Accessories & Equipment

Fixed and Moveable Windows - Ascender, Envoy & Trailblazer

SPECIFICATIONS

FASTENER TIGHTENING SPECIFICATIONS

| Application | Specifications | |
|--|----------------|----------|
| | Metric | English |
| Door Window Regulator Bolts | 10 N.m | 89 lb in |
| Door Window Regulator to Door Bolts | 10 N.m | 89 lb in |
| Door Window Regulator Motor Bolts to Door | 9 N.m | 88 lb in |
| Door Window Regulator Motor to regulator Bolts | 5 N.m | 9 lb in |
| Endgate Molding Retaining Screws | 3 N.m | 27 lb in |
| Front Door Window Regulator Clamp Nuts | 10 N.m | 89 lb in |
| Front Door Window Weatherstrip/Run Channel Retaining Bolts | 10 N.m | 89 lb in |
| Liftgate Window Striker Nuts | 6 N.m | 53 lb in |
| Side Reveal Molding Screws | 2 N.m | 18 lb in |

SCHEMATIC & ROUTING DIAGRAMS

MOVEABLE WINDOW SCHEMATICS

2008 Isuzu Ascender LS

2008 Accessories & Equipment Fixed and Moveable Windows - Ascender, Envoy & Trailblazer

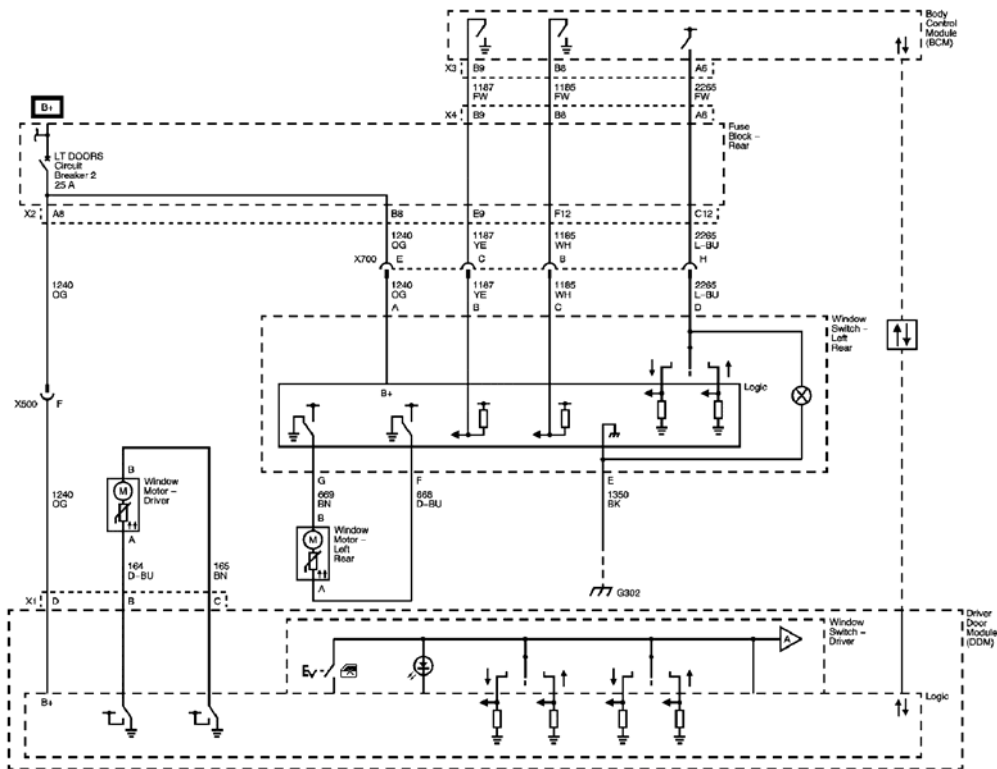


Fig. 1: Power Windows Schematic - Left
Courtesy of GENERAL MOTORS CORP.

2008 Isuzu Ascender LS

2008 Accessories & Equipment Fixed and Moveable Windows - Ascender, Envoy & Trailblazer

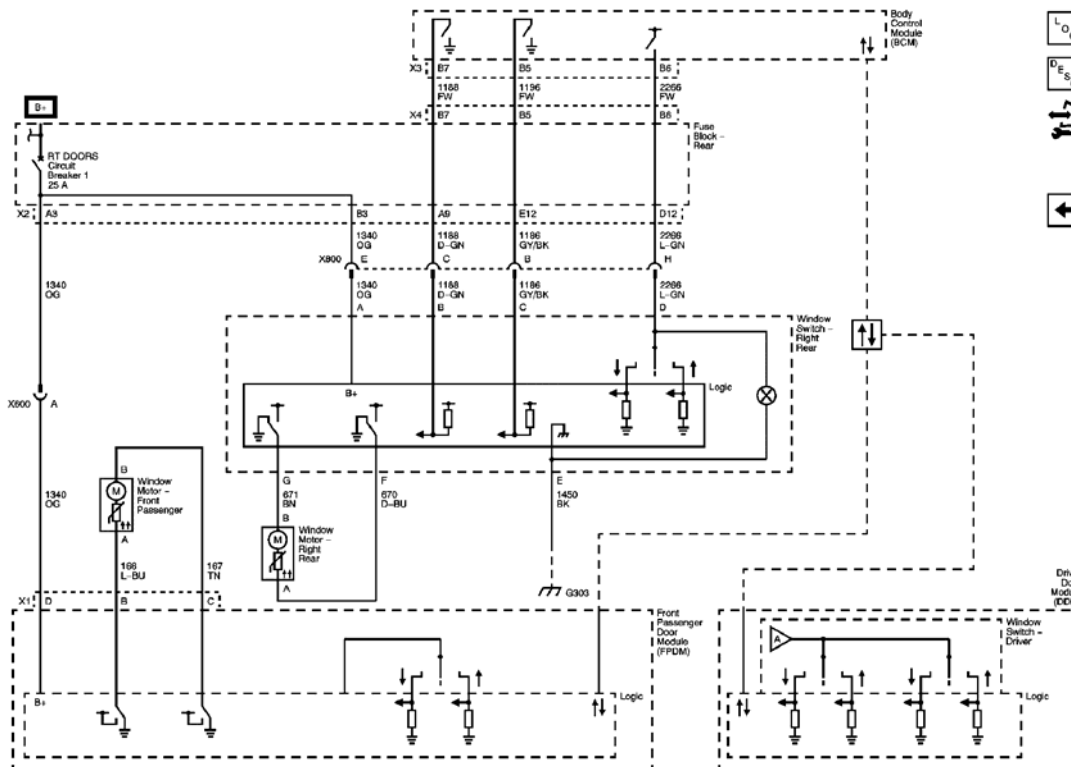


Fig. 2: Power Windows Schematic - Right
Courtesy of GENERAL MOTORS CORP.

DEFOGGER SCHEMATICS

2008 Isuzu Ascender LS

2008 Accessories & Equipment Fixed and Moveable Windows - Ascender, Envoy & Trailblazer

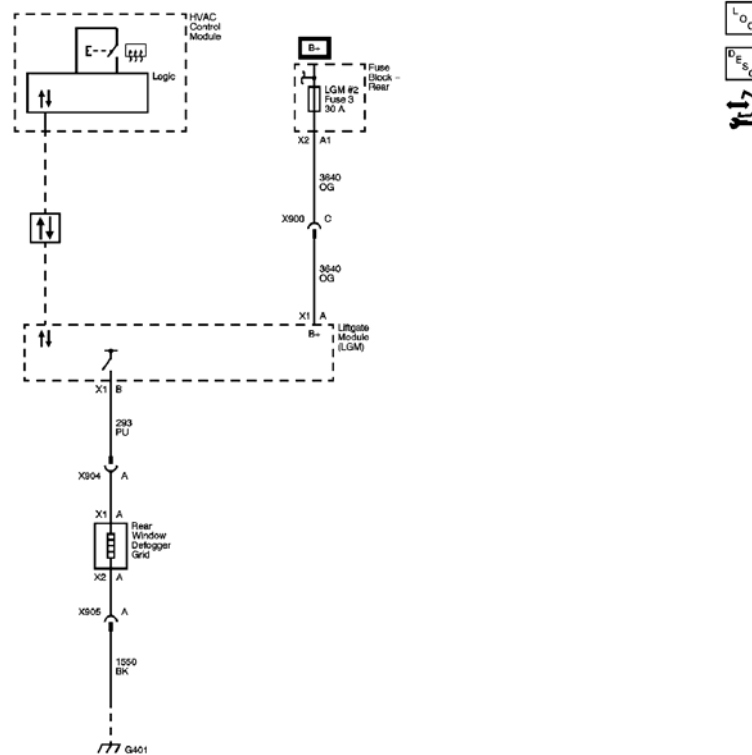


Fig. 3: Defogger Schematic

Courtesy of GENERAL MOTORS CORP.

DIAGNOSTIC INFORMATION & PROCEDURES

DIAGNOSTIC CODE INDEX

DIAGNOSTIC CODE INDEX

| DTC | Description |
|---|--|
| <u>DTC B0283</u> | B0283: Electric Rear Defrost Circuit |
| <u>DTC B3819, B3820, B3822, or B3823</u> | 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 |
| <u>DTC B3821 or B3824</u> | B3821: Left Rear Window Relay Power Circuit B3824: Right Rear Window Relay Power Circuit |

DIAGNOSTIC STARTING POINT - FIXED & MOVEABLE WINDOWS

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

2008 Isuzu Ascender LS

2008 Accessories & Equipment Fixed and Moveable Windows - Ascender, Envoy & Trailblazer

- 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 Descriptor

DTC B0283

Electric Rear Defrost Circuit

Diagnostic Fault Information

| Circuit | Short to Ground | Open/High Resistance | Short to Voltage | Signal Performance |
|--|-----------------|----------------------|------------------|--------------------|
| Liftgate Module B+ | 2 | 2 | - | - |
| Rear Defog Grid Control | B0283 | B0283 | 1 | - |
| Rear Window Defogger Grid Ground | - | 2 | 2 | - |
| 1. Rear defogger always ON 2. Rear defogger Inoperative | | | | |

Circuit/System Description

The liftgate module (LGM) monitors the voltage level on the supply voltage circuit of the rear window defogger. The LGM will test the supply voltage circuit of the rear window defogger every 160 milliseconds. With the rear window defogger inactive, the supply voltage circuit of the rear window defogger will have no voltage present. With the rear window defogger active, the supply voltage circuit of the rear window defogger will be near system voltage.

Conditions for Running the DTC

Battery voltage must be between 9-16 volts.

Conditions for Setting the DTC

2008 Isuzu Ascender LS

2008 Accessories & Equipment Fixed and Moveable Windows - Ascender, Envoy & Trailblazer

One of the following conditions can cause this DTC to set:

- Battery positive voltage is detected on the supply voltage circuit of the rear window defogger, while the rear window defogger is inactive.
- Low voltage is detected on the supply voltage circuit of the rear window defogger, while the rear window defogger is active.

Action Taken When the DTC Sets

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

Conditions for Clearing the DTC

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

Reference Information

Schematic Reference

Defogger Schematics

Connector End View Reference

Component Connector End Views

Description and Operation

Rear Window Defogger Description and Operation

Electrical Information Reference

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

Scan Tool Reference

Control Module References for scan tool information

Circuit/System Verification

Command the rear window defogger ON and OFF with the scan tool. The rear window defogger should turn

2008 Isuzu Ascender LS

2008 Accessories & Equipment Fixed and Moveable Windows - Ascender, Envoy & Trailblazer

ON and OFF when changing between the commanded states.

Circuit/System Testing

1. Ignition OFF, disconnect the harness connector the rear window defogger.
2. Test for less than 1.0 ohm between the ground circuit terminal A and ground.
 - If greater than the specified range, test ground circuit for an open/high resistance.
3. Connect a test lamp between the control circuit terminal A and ground.
4. Ignition ON, command the rear defogger ON and OFF with a scan tool. The test lamp should turn ON and OFF when changing between the commanded states.
 - If the test lamp is always OFF, test the control circuit for a short to ground or an open/high resistance. If the circuit tests normal, replace the LGM.
 - If the test lamp is always ON, test the control circuit for a short to voltage. If the circuit tests normal, replace the LGM.
5. If all circuits test normal, replace the rear window defogger grid.

Repair Procedures

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

- **Liftgate Window Replacement**
- **Control Module References** for LGM replacement, setup, and programming

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

2008 Isuzu Ascender LS

2008 Accessories & Equipment Fixed and Moveable Windows - Ascender, Envoy & Trailblazer

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+ | 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 | - |
| RR Window Switch Ground | - | 4 | 4 | - |
| Driver Door Switch Ground | - | 1 | 1 | - |
| Passenger Door Switch Ground | - | 2 | 2 | - |
| 1. Driver Window Malfunction 2. Passenger Window Malfunction 3. Left Rear Window Malfunction 4. Right Rear Window Malfunction | | | | |

Circuit/System Description

When the body control module (BCM) receives a command to operate the appropriate rear window UP or DOWN from the driver door switch (DDS), it will send a signal to the appropriate rear window switch to command the window UP or DOWN.

2008 Isuzu Ascender LS

2008 Accessories & Equipment Fixed and Moveable Windows - Ascender, Envoy & Trailblazer

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

2008 Isuzu Ascender LS

2008 Accessories & Equipment Fixed and Moveable Windows - Ascender, Envoy & Trailblazer

- 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 go UP and DOWN as commanded.

- 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. Ignition ON, test for 0 volts between the power window switch rear up signal circuit terminal B and ground
 - If greater than the specified value, test the signal circuit for a short to voltage. If the circuit tests normal, replace the BCM.
3. 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.
4. 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. Ignition ON, test for 0 volts between the power window switch rear down signal circuit terminal C and ground.
 - If greater than the specified value, test the signal circuit for a short to voltage. If the circuit tests normal, replace the BCM.
3. 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.

2008 Isuzu Ascender LS

2008 Accessories & Equipment Fixed and Moveable Windows - Ascender, Envoy & Trailblazer

- 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.

4. 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**
- **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

Left Rear Window Relay Power Circuit

DTC B3824

Right Rear Window Relay Power Circuit

Diagnostic Fault Information

| Circuit | Short to Ground | Open/High Resistance | Short to Voltage | Signal Performance |
|--|-----------------|----------------------|------------------|--------------------|
| Driver Door Module B+ | 1, 3 | 1 | - | - |
| LR Window Switch B+ | 1, 3 | 3 | - | - |
| Front Passenger Door Module B+ | 2, 4 | 2 | - | - |
| RR Window Switch B+ | 2, 4 | 4 | - | - |
| Power Window Switch Right Rear Down Signal | B3823 | B3823 | B3823 | - |
| Power Window Switch Right Rear Up Signal | B3822 | B3822 | B3822 | - |
| Power Window Switch Left Rear Down Signal | B3820 | B3820 | B3820 | - |
| Power Window Switch Left Rear Up | B3819 | B3819 | B3819 | - |

2008 Isuzu Ascender LS

2008 Accessories & Equipment Fixed and Moveable Windows - Ascender, Envoy & Trailblazer

| Signal | | | | |
|--|-------|-------|-------|---|
| Power Window Lockout Left Rear Control | B3821 | B3821 | B3821 | - |
| Power Window Lockout Right Rear Control | B3824 | B3824 | B3824 | - |
| LR Window Motor Control | 3 | 3 | 3 | - |
| Passenger Window Motor Control | 2 | 2 | 2 | - |
| RR Window Motor Control | 4 | 4 | 4 | - |
| Driver Window Motor Control | 1 | 1 | 1 | - |
| 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 body control module (BCM) supplies voltage to the rear window switches allowing for normal window operation from the rear switches and the driver master control. If the rear window lockout function is enabled, the BCM will not supply voltage to the rear window switches and the rear windows will only operate when the BCM receives a command to operate the appropriate rear window UP or DOWN from the driver door module (DDM).

Conditions for Running the DTC

Battery voltage is between 9-16 volts.

Conditions for Setting the DTC

B3821

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

B3824

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.

2008 Isuzu Ascender LS

2008 Accessories & Equipment Fixed and Moveable Windows - Ascender, Envoy & Trailblazer

- 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

1. Ignition ON, command the rear passenger power windows UP and DOWN with a scan tool, the rear passenger power windows should perform the UP and DOWN command.
2. Observe the scan tool Window Lockout parameter while pressing and depressing the window lockout switch on the driver master control. The reading should change between ON and OFF.

Circuit/System Testing

1. Ignition OFF, disconnect the harness connector at the appropriate rear window switch.
2. Ignition ON, test for more than 10 volts between the power window lockout rear control circuit terminal D and ground with the rear windows enabled from the driver master control.
 - 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. Test for 0 volts between the power window lockout rear control circuit terminal D and ground with the rear windows disabled from the driver master control.
 - If greater than the specified value, test the control circuit for a short to voltage. If the circuit tests normal, replace the BCM.

2008 Isuzu Ascender LS

2008 Accessories & Equipment Fixed and Moveable Windows - Ascender, Envoy & Trailblazer

4. If all circuits test normal, replace the appropriate rear window switch.

Repair Procedures

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

- **Rear Side Door Window Switch Replacement**
- **Control Module References** for BCM replacement, setup, and programming

SYMPTOMS - FIXED & 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:

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

REAR WINDOW DEFOGGER MALFUNCTION

Diagnostic Instructions

2008 Isuzu Ascender LS

2008 Accessories & Equipment Fixed and Moveable Windows - Ascender, Envoy & Trailblazer

- 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 |
|--|-----------------|----------------------|------------------|--------------------|
| Liftgate Module B+ | 2 | 2 | - | - |
| Rear Defog Grid Control | B0283 | B0283 | 1 | - |
| Rear Window Defogger Grid Ground | - | 2 | 2 | - |
| 1. Rear defogger always ON 2. Rear defogger Inoperative | | | | |

Circuit/System Description

The rear window defogger switch and indicator is an integral component of the HVAC control module. When the rear window defogger switch is pressed, the HVAC control module responds by illuminating the defogger indicator and sending a GMLAN serial data message indicating a defog request. This serial data message is received by the liftgate module (LGM). The LGM responds to the defog request by providing voltage to the rear window defogger grid. Pressing the rear window defogger switch again will extinguish the indicator and send a GMLAN serial data message indicating the defog deactivation command. The LGM responds by deactivating the defogger grid.

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 Switch parameters while pressing and depressing the R DEF switch. The reading should change between ON and OFF.
 - If the reading does not change between commanded states, replace the HVAC control module.
2. Ignition ON, command the rear window defogger ON and OFF with the 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 X1 harness connector at the LGM
2. Ignition ON, verify a test lamp illuminates between the B+ circuit terminal A and ground.
 - If the test lamp does not illuminate, test the B+ circuit for a short to ground or an open/high resistance. If the circuit tests normal and the LGM #2 fuse is open, replace the LGM.
3. Ignition OFF, reconnect the harness connector at the LGM and disconnect the harness connector at the rear window defogger grid.
4. Test for less than 1.0 ohm between the ground circuit terminal A and ground.
 - If greater than the specified range, test the ground circuit for an open/high resistance.
5. Connect a test lamp between the rear defog element supply voltage circuit terminal A and ground.
6. Ignition ON, command the rear defog ON and OFF with a scan tool. The test lamp should turn ON and OFF when changing between the commanded states.
 - If the test lamp is always ON, test the rear defog element supply voltage circuit for a short to voltage. If the circuit tests normal, replace the LGM.
 - If the test lamp is always OFF, test the rear defog element supply voltage circuit for a short to ground or an open/high resistance. If the circuit tests normal, replace the LGM.
7. If all circuits test normal, test or replace the rear window defogger.

Component Testing

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

2008 Isuzu Ascender LS

2008 Accessories & Equipment Fixed and Moveable Windows - Ascender, Envoy & Trailblazer

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

- **Liftgate Window Replacement**
- **Control Module References** for HVAC control module and LGM replacement, setup, and programming

POWER WINDOWS MALFUNCTION

Diagnostic Instructions

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

Diagnostic Fault Information

| Circuit | Short to Ground | Open/High Resistance | Short to Voltage | Signal Performance |
|--|-----------------|----------------------|------------------|--------------------|
| Driver Door Module B+ | 1, 3 | 1 | - | - |
| LR Window Switch B+ | 1, 3 | 3 | - | - |
| Front Passenger Door Module B+ | 2, 4 | 2 | - | - |
| RR Window Switch B+ | 2, 4 | 4 | - | - |
| Power Window Switch Right Rear Down Signal | B3823 | B3823 | B3823 | - |
| Power Window Switch Right Rear Up Signal | B3822 | B3822 | B3822 | - |
| Power Window Switch Left Rear Down Signal | B3820 | B3820 | B3820 | - |
| Power Window Switch Left Rear Up Signal | B3819 | B3819 | B3819 | - |
| Power Window Lockout Left Rear Control | B3821 | B3821 | B3821 | - |
| Power Window Lockout Right Rear Control | B3824 | B3824 | B3824 | - |
| LR Window Motor Control | 3 | 3 | 3 | - |
| Passenger Window Motor Control | 2 | 2 | 2 | - |
| RR Window Motor Control | 4 | 4 | 4 | - |
| Driver Window Motor Control | 1 | 1 | 1 | - |
| 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 | | | | |

2008 Isuzu Ascender LS

2008 Accessories & Equipment Fixed and Moveable Windows - Ascender, Envoy & Trailblazer

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 module (DDM) 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 DDM 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 DDM continues to monitor the motor current to verify proper window motor operation.

Reference Information

Schematic Reference

Moveable Window Schematics

Connector End View Reference

Component Connector End Views

Description and Operation

Power Windows Description and Operation

Electrical Information Reference

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

Scan Tool Reference

Control Module References for scan tool information

Circuit/System Verification

1. Ignition ON, command driver power window UP and DOWN using the driver door switch, observe the operation of the driver window.
 - If the driver window is inoperative, refer to Driver Window Malfunction.
2. Command the front passenger power window UP and DOWN using the passenger door switch, observe the operation of the passenger window.
 - If the front passenger window is inoperative, refer to Passenger Window Malfunction.
3. Command the rear passenger power windows UP and DOWN with a scan tool, observe the operation of rear passenger power windows.
 - If either rear passenger power window is inoperative, refer to Rear Passenger Window

2008 Isuzu Ascender LS

2008 Accessories & Equipment Fixed and Moveable Windows - Ascender, Envoy & Trailblazer

Malfunction.

4. Observe the scan tool Driver Window RF Switch, Driver Window LR Switch and Driver Window RR Switch parameters while using the driver master control switches. The reading should change between OFF/UP/DOWN/EXPRESS DOWN.
 - If the parameter does not change, replace the DDM.
5. Observe the scan tool Window Lockout parameter while pressing and depressing the window lockout switch on the driver master control. The reading should change between ON and OFF.
 - If the parameter does not change, replace the DDM.

Circuit/System Testing

Driver Window Malfunction

1. Ignition OFF, disconnect the X1 harness connector at the DDM.
2. Test for less than 1.0 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 D and ground.
 - If the test lamp does not illuminate, test the B+ circuit for a short to ground or open/high resistance.
4. Ignition OFF, reconnect the harness connector at the DDM.
5. Ignition ON, observe the scan tool Driver 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 DDM.
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 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 DDM.
 - If the test lamp is always ON, test for a short to voltage on either control circuit. If the circuits test normal, replace the DDM.
9. If all circuits test normal, test or replace the driver window motor.

Passenger Window Malfunction

1. Ignition OFF, disconnect the X1 harness connector at the FPDM.
2. Test for less than 1.0 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 D and ground.
 - If the test lamp does not illuminate, test the B+ circuit for a short to ground or open/high resistance.
4. Ignition OFF, reconnect the harness connector at the FPDM.
5. Ignition ON, observe the scan tool Psgr RF 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 FPDM.
- 6. Ignition OFF, 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 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 FPDM.
 - If the test lamp is always ON, test for a short to voltage on either control circuit. If the circuits test normal, replace the FPDM.
- 9. If all circuits test normal, test or replace the passenger window motor.

Rear Passenger Window Malfunction

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 E 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 A 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 between the power window lockout rear control circuit terminal D and ground with the rear windows enabled on the driver master control.
 - 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
5. Connect a test lamp between the power window switch rear down signal circuit terminal B and B+.
6. Command the appropriate rear window DOWN with a scan tool. The test lamp should turn ON when commanding the DOWN state.
 - If the test lamp is always OFF, test the signal circuit for a short to voltage or open/high resistance. If the circuits test normal, replace the BCM.
7. Connect a test lamp between the power window switch rear up signal circuit terminal C and B+.
8. Command the appropriate rear window UP with a scan tool, the test lamp should turn ON when commanding the UP state.
 - If the test lamp is always OFF, test the signal circuit for a short to voltage or open/high resistance. If the circuits test normal, replace the BCM.
9. Ignition OFF, reconnect the appropriate rear window switch and disconnect the harness connector at the appropriate rear window motor.
10. Connect a test lamp between control circuit terminal A and control circuit terminal B.
11. Ignition ON, command the appropriate rear window UP and DOWN by using the appropriate rear 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 either control circuit for a short to ground or open/high resistance. If the circuits test normal, replace the appropriate rear window

2008 Isuzu Ascender LS

2008 Accessories & Equipment Fixed and Moveable Windows - Ascender, Envoy & Trailblazer

switch.

- If the test lamp is always ON, test either control circuit for a short to voltage. If the circuits test normal, replace the appropriate rear window switch.

12. If all circuits test normal, test or replace the appropriate rear window motor.

Component Testing

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

Repair Procedures

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

- **Control Module References** for BCM, DDM and FPDM replacement, setup and programming
- **Rear Side Door Window Switch Replacement**
- **Door Window Regulator Motor Replacement**

REPAIR INSTRUCTIONS

WINDSHIELD REPLACEMENT

Tools Required

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

IMPORTANT: When ordering a windshield or door windows, verify if the vehicles is equipped with or without CE1 (RAINSense™) or Y91 (RAINSense™ and luxury edition) and order accordingly. The windshield and door windows have Quiet Tuning acoustic lamination. Due to the difference in processing, along with the difference in the curvature of the window, the optics of the window may appear

2008 Isuzu Ascender LS

2008 Accessories & Equipment Fixed and Moveable Windows - Ascender, Envoy & Trailblazer

wavy on a cross-car view from the outside of the vehicle. This is a normal condition and the windshield should not be replaced for this condition. The view through the window from the driver's position is clear and not affected.

Removal Procedure

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

1. Open the hood.

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

2. Cover and protect the following parts from broken glass:
 - Upper dash pad
 - Defroster outlets and A/C outlets
 - Seats and carpeting
3. Remove the fixed antenna mast, if equipped. Refer to **Fixed Antenna Mast Replacement** .
4. Remove the windshield wiper arms. Refer to **Windshield Wiper Arm Replacement (GMC Envoy)** or **Windshield Wiper Arm Replacement (SS)** .
5. Remove the cowl air inlet grille panel. Refer to **Air Inlet Grille Panel Replacement (Envoy, TrailBlazer)** .

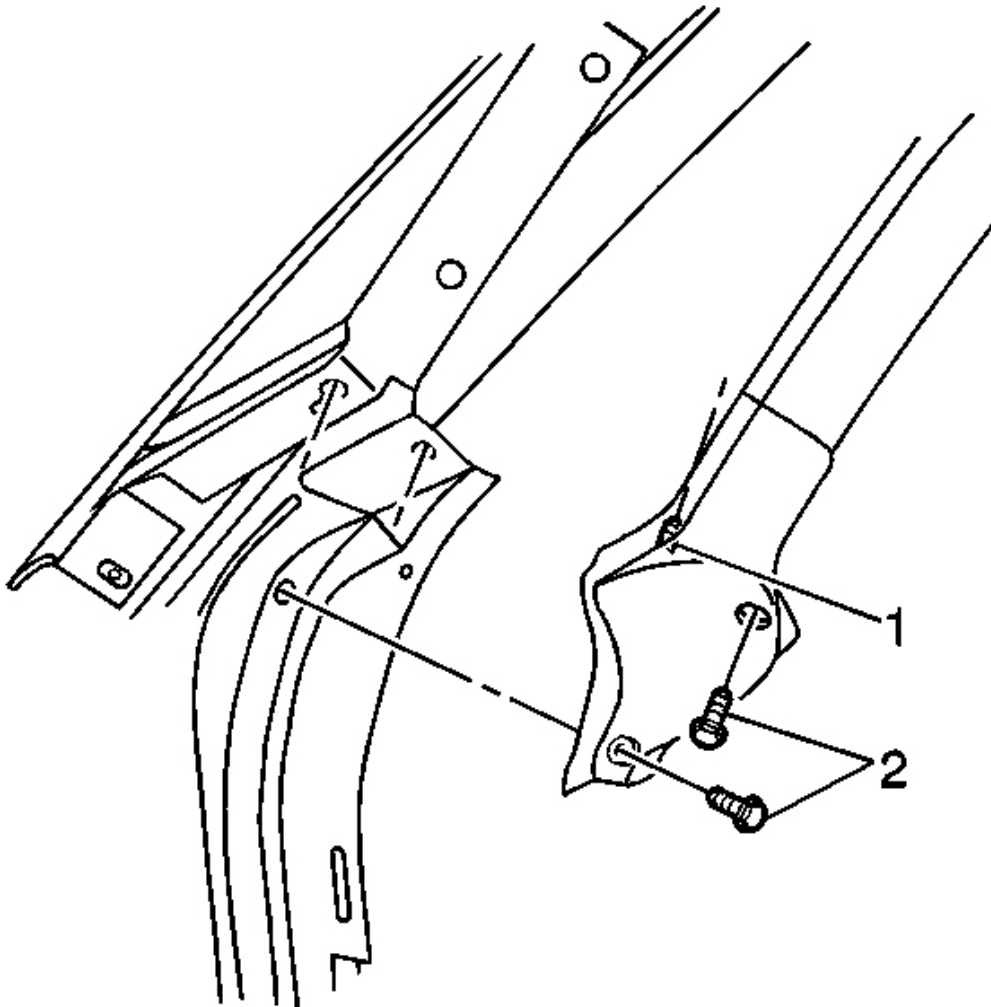


Fig. 4: View Of Weather-Strip Retainers
Courtesy of GENERAL MOTORS CORP.

6. Remove the push-pins (2) from the front door sealing weatherstrips (1) located at the base of the pillar.

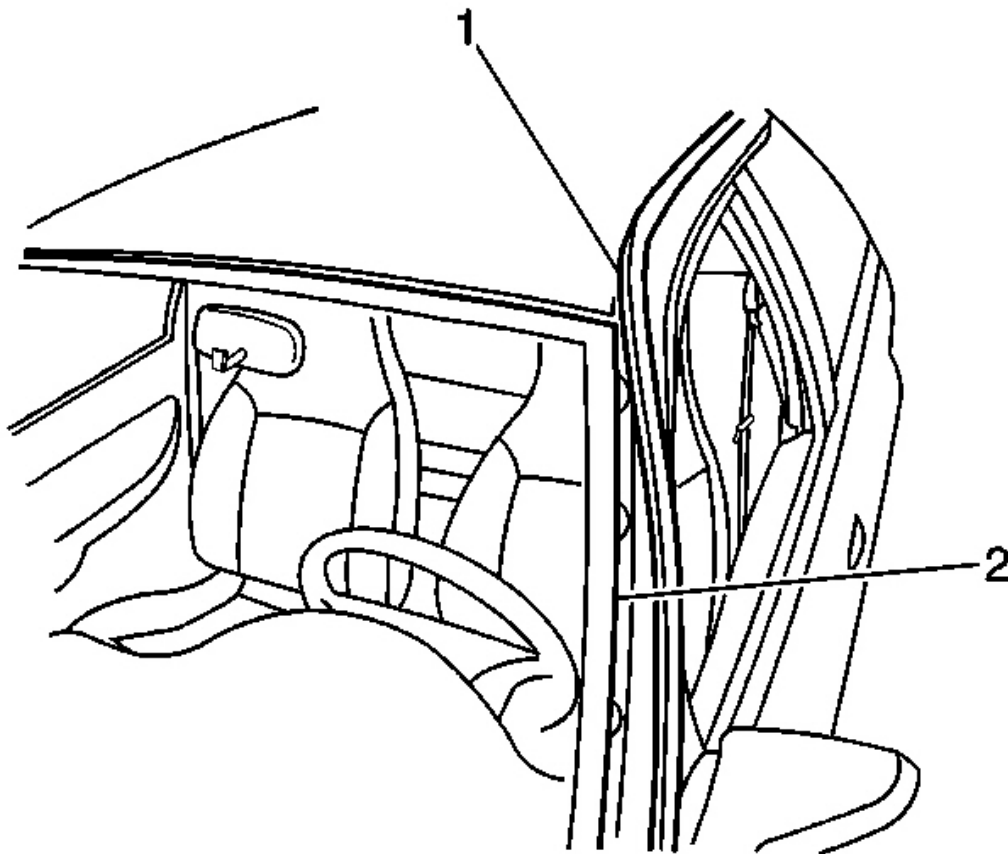


Fig. 5: View Of Front Door Sealing Weatherstrip
Courtesy of GENERAL MOTORS CORP.

7. Reposition the front door sealing weatherstrips (1) in order to access the side reveal molding screws.

It is not necessary to remove the front door sealing weatherstrip completely from the vehicle.

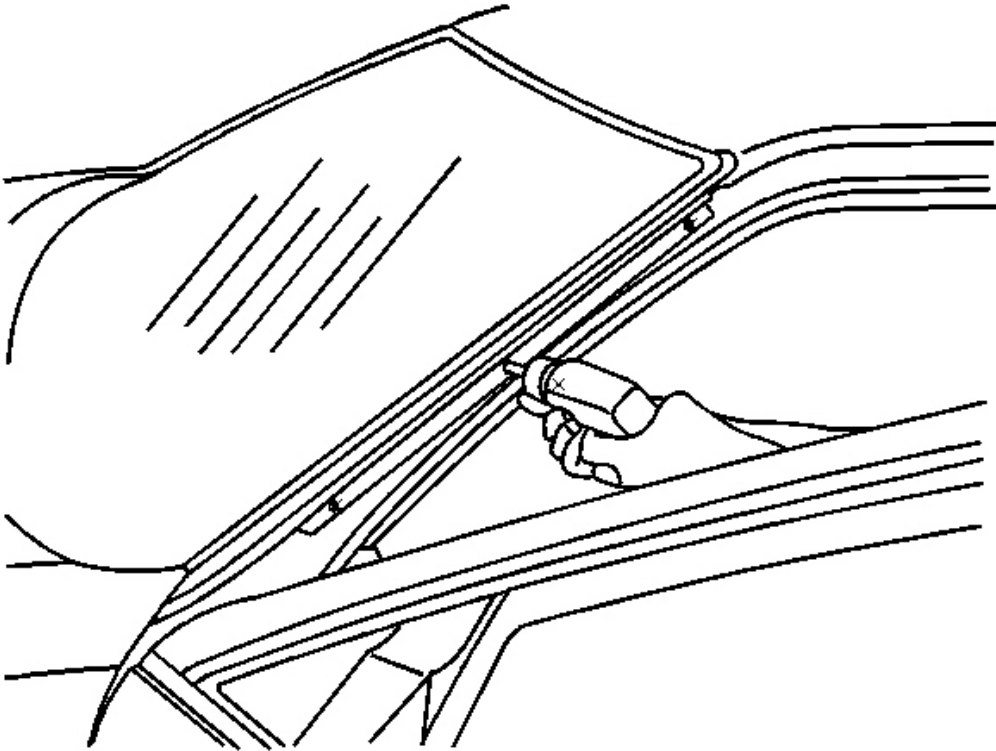


Fig. 6: Removing/Installing Window Side Reveal Molding Screws
Courtesy of GENERAL MOTORS CORP.

8. Remove the side reveal moldings screws.

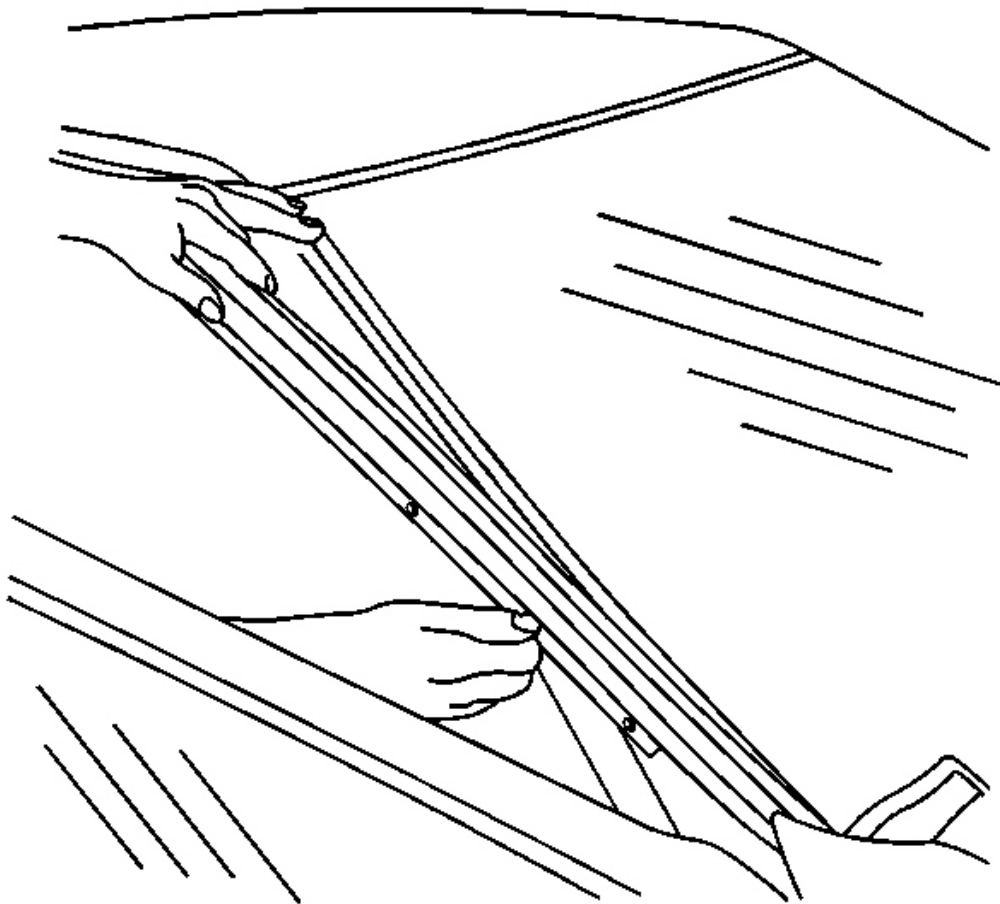


Fig. 7: View Of Window Side Reveal Molding
Courtesy of GENERAL MOTORS CORP.

9. Remove the side of the reveal moldings.
10. Remove the rearview mirror. Refer to **Inside Rearview Mirror Replacement** .

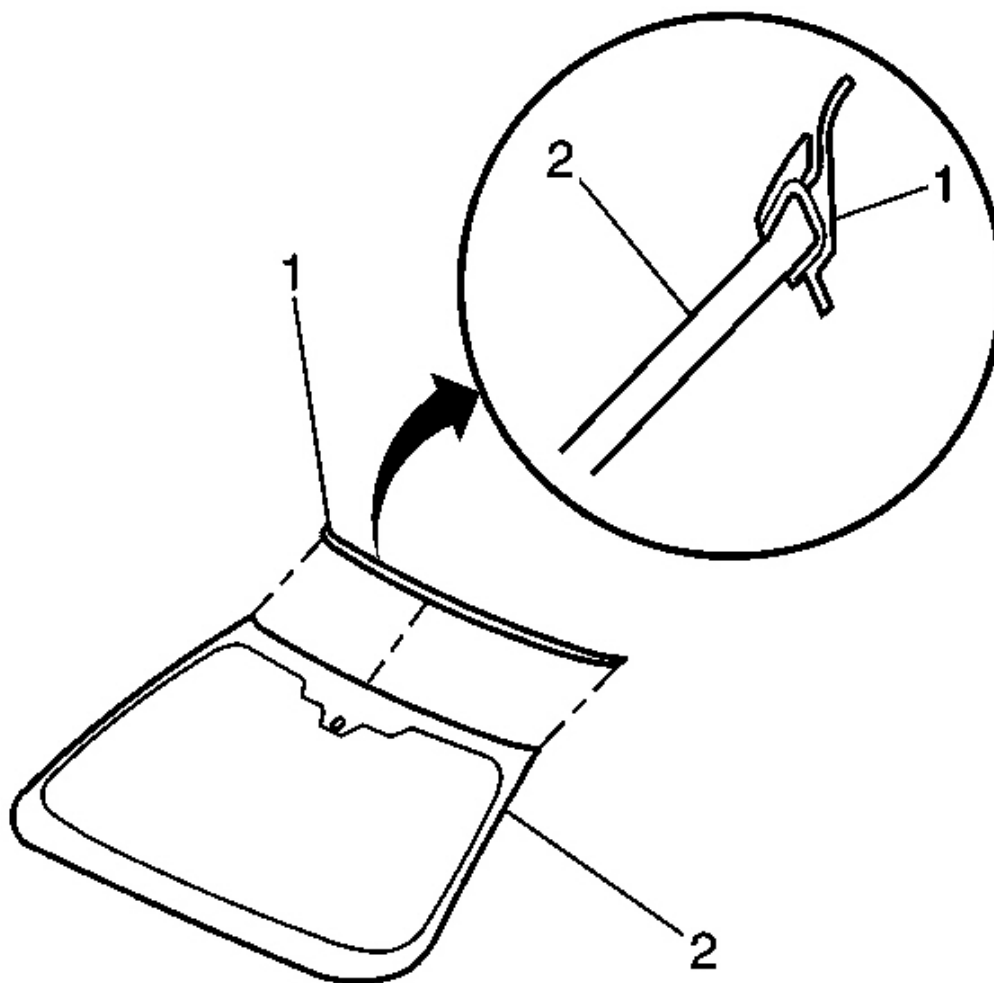


Fig. 8: Identifying Upper Reveal Molding from Windshield
Courtesy of GENERAL MOTORS CORP.

CAUTION: Refer to Glass and Sheet Metal Handling Caution .

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

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

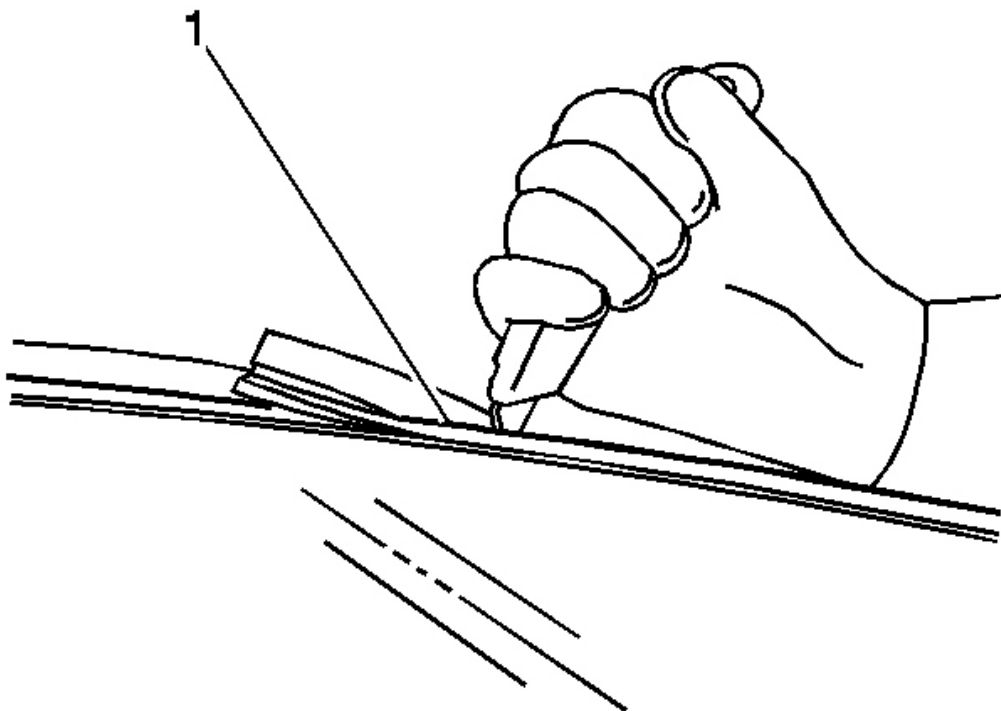


Fig. 9: Using Utility Knife To Remove Reveal Molding
Courtesy of GENERAL MOTORS CORP.

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

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

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

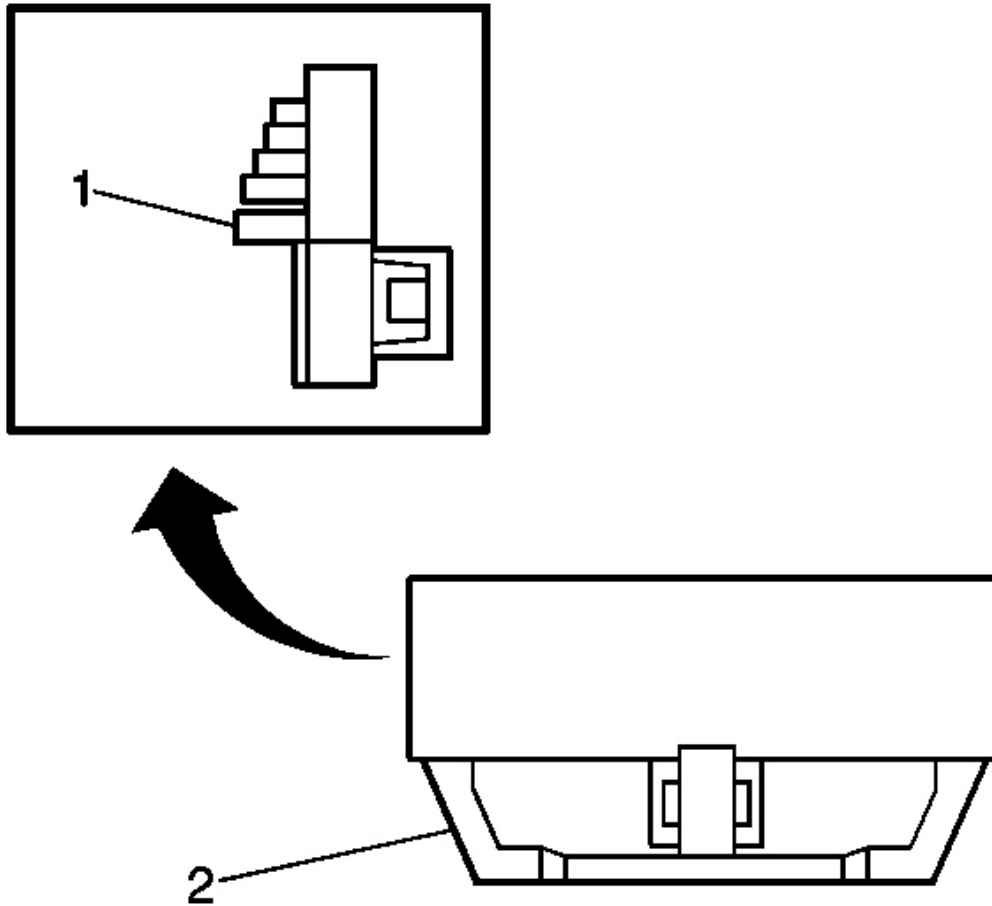


Fig. 10: Window Lower Supports
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: The windshield lower supports (1) have molded in locks with an adhesive strip (2) on the back side. If the windshield lower stops have been removed, they must be replaced.

14. Remove the windshield lower supports (1) by using a flat-bladed tool, lightly prying upward in the middle until it releases, if damaged.

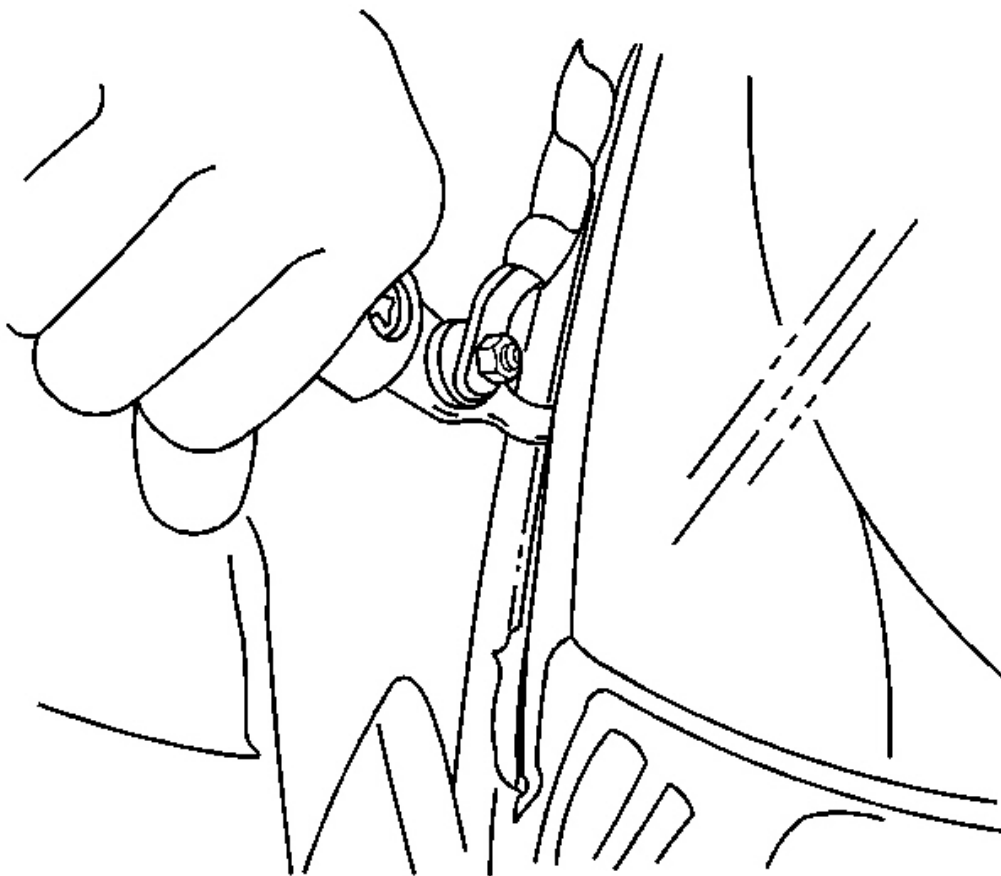


Fig. 11: Separating Urethane Adhesive From Window
Courtesy of GENERAL MOTORS CORP.

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

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

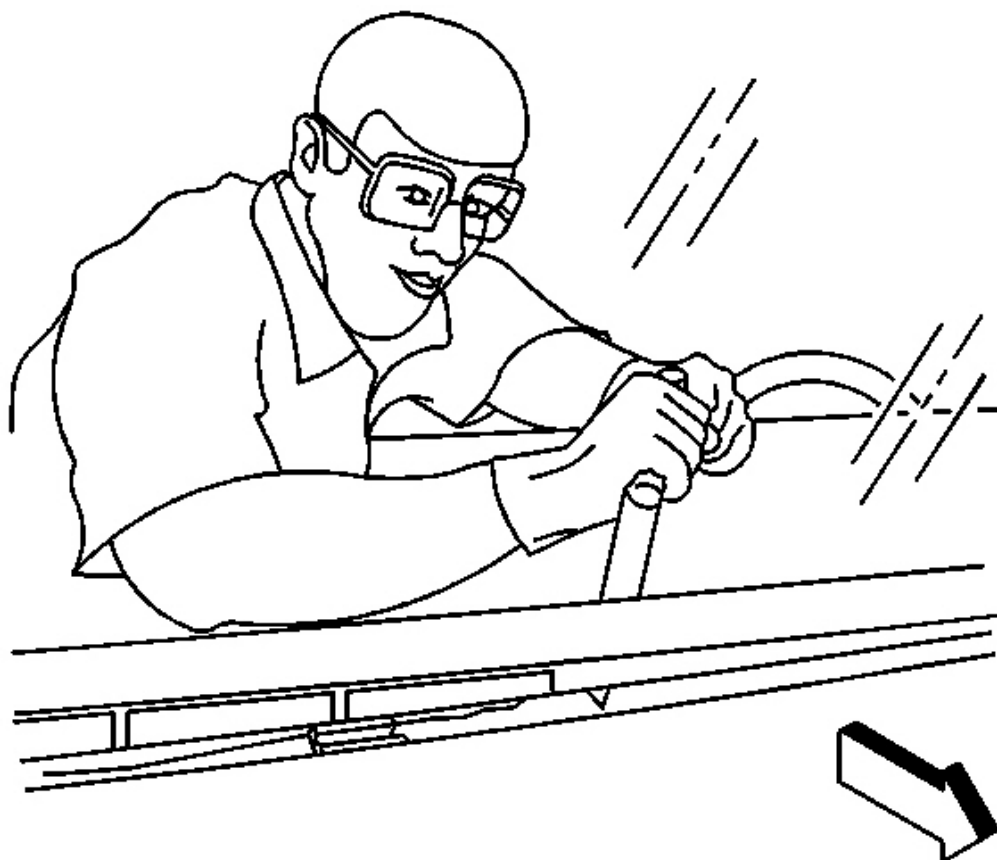


Fig. 12: Separating Bottom Of Window
Courtesy of GENERAL MOTORS CORP.

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

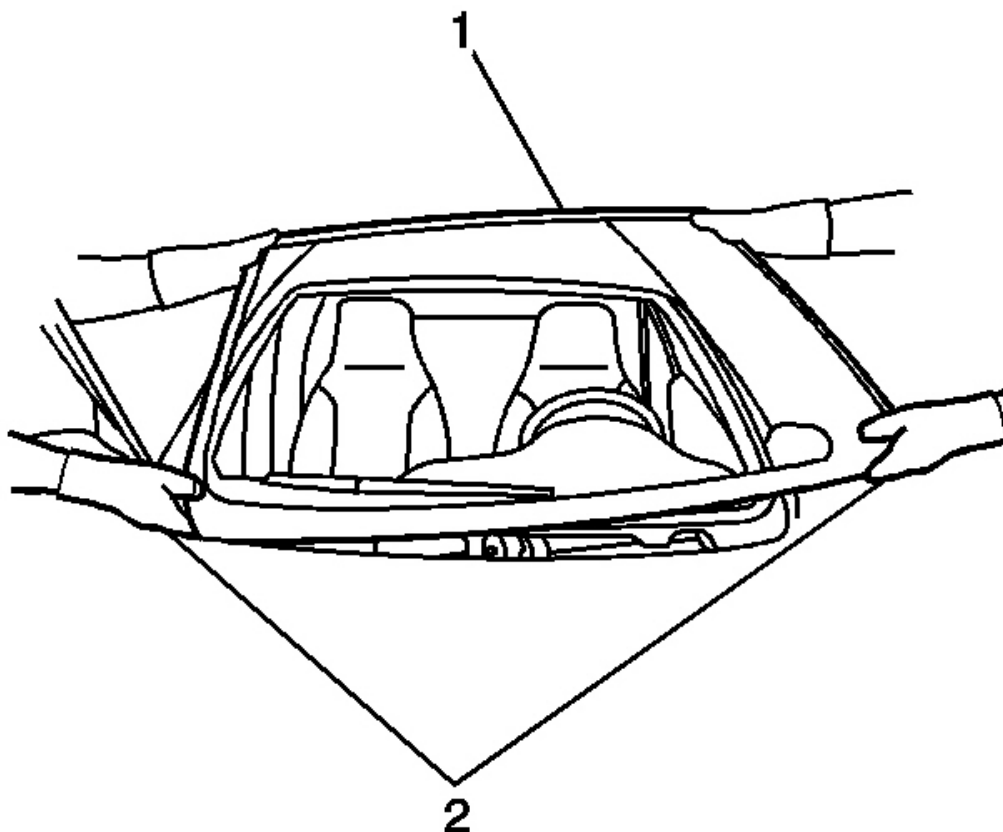


Fig. 13: Removing/Installing Windshield
Courtesy of GENERAL MOTORS CORP.

17. With the aid of an assistant, remove the windshield (1) from the vehicle.

Installation Procedure

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

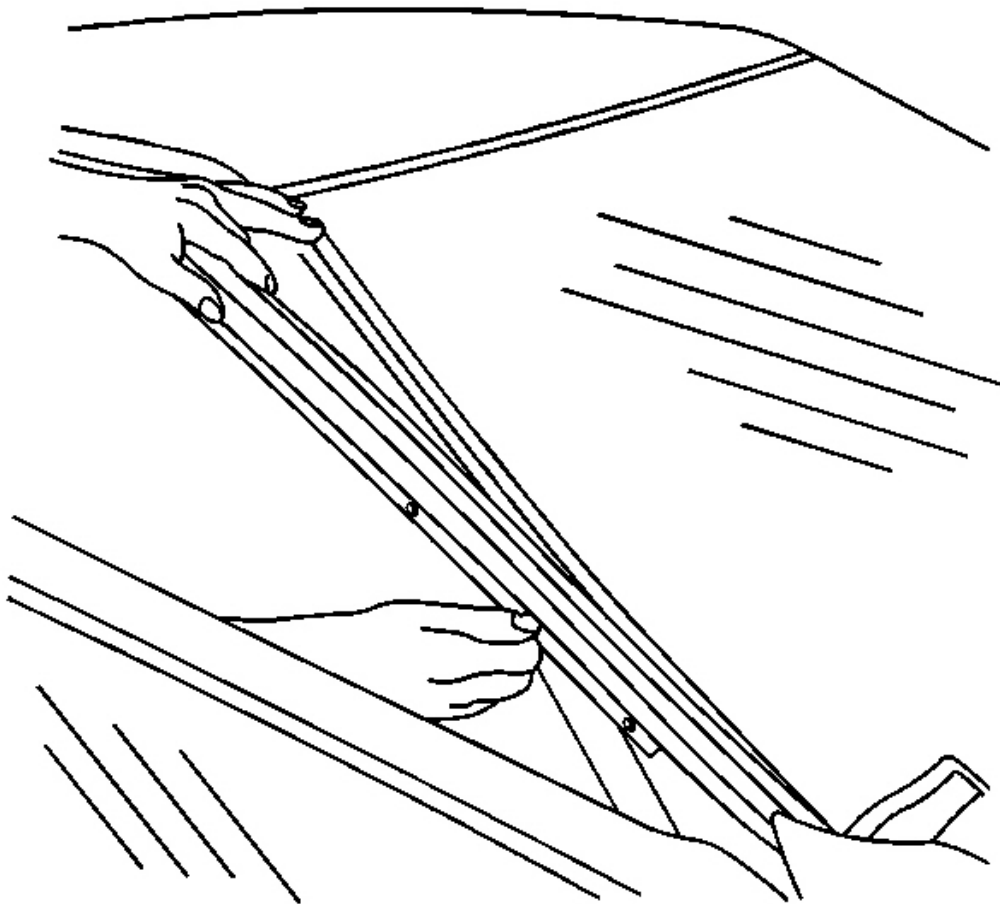


Fig. 14: View Of Window Side Reveal Molding
Courtesy of GENERAL MOTORS CORP.

2. Install the windshield side reveal moldings.

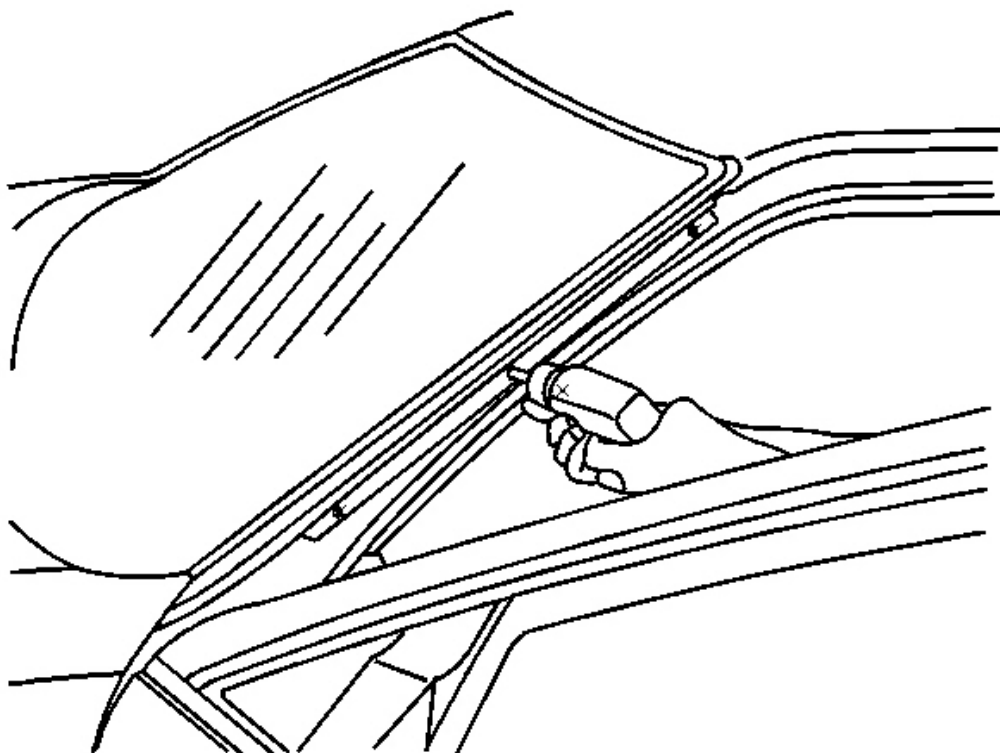


Fig. 15: Removing/Installing Window Side Reveal Molding Screws
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice .

3. Install the windshield side reveal moldings screws.

Tighten: Tighten the windshield side reveal moldings screws to 2 N.m (18 lb in).

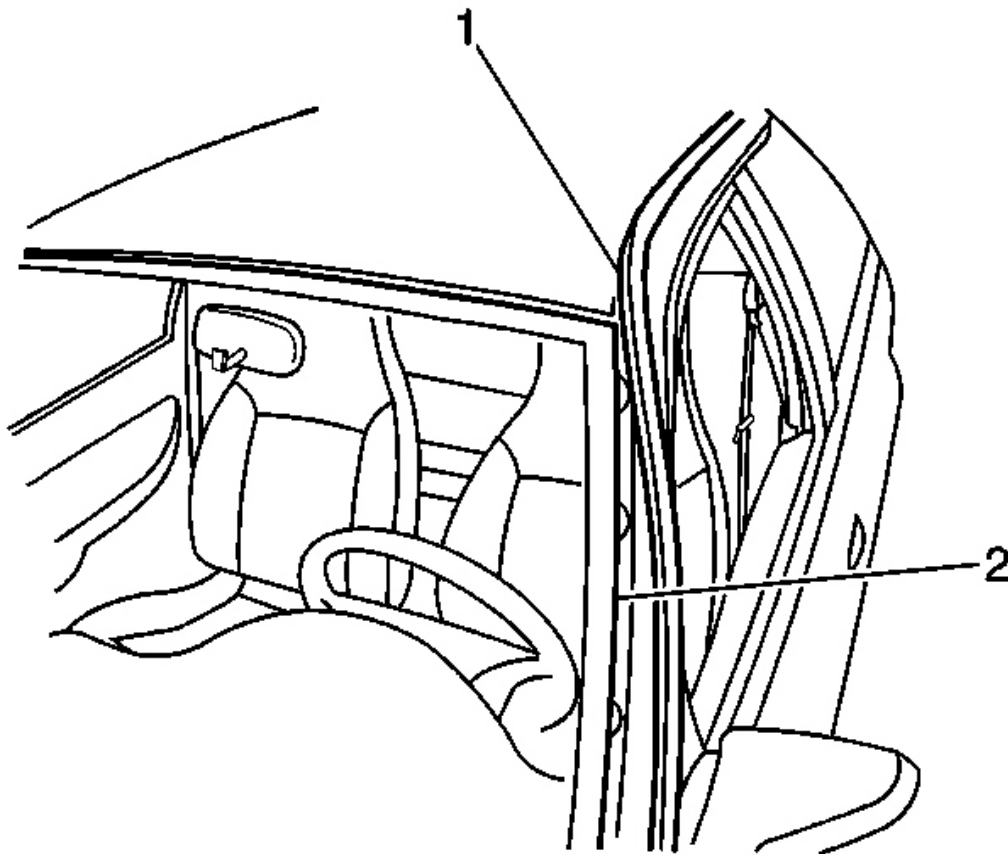


Fig. 16: View Of Front Door Sealing Weatherstrip
Courtesy of GENERAL MOTORS CORP.

4. Reposition the front door sealing weatherstrips (1) to the pinch-weld flange.

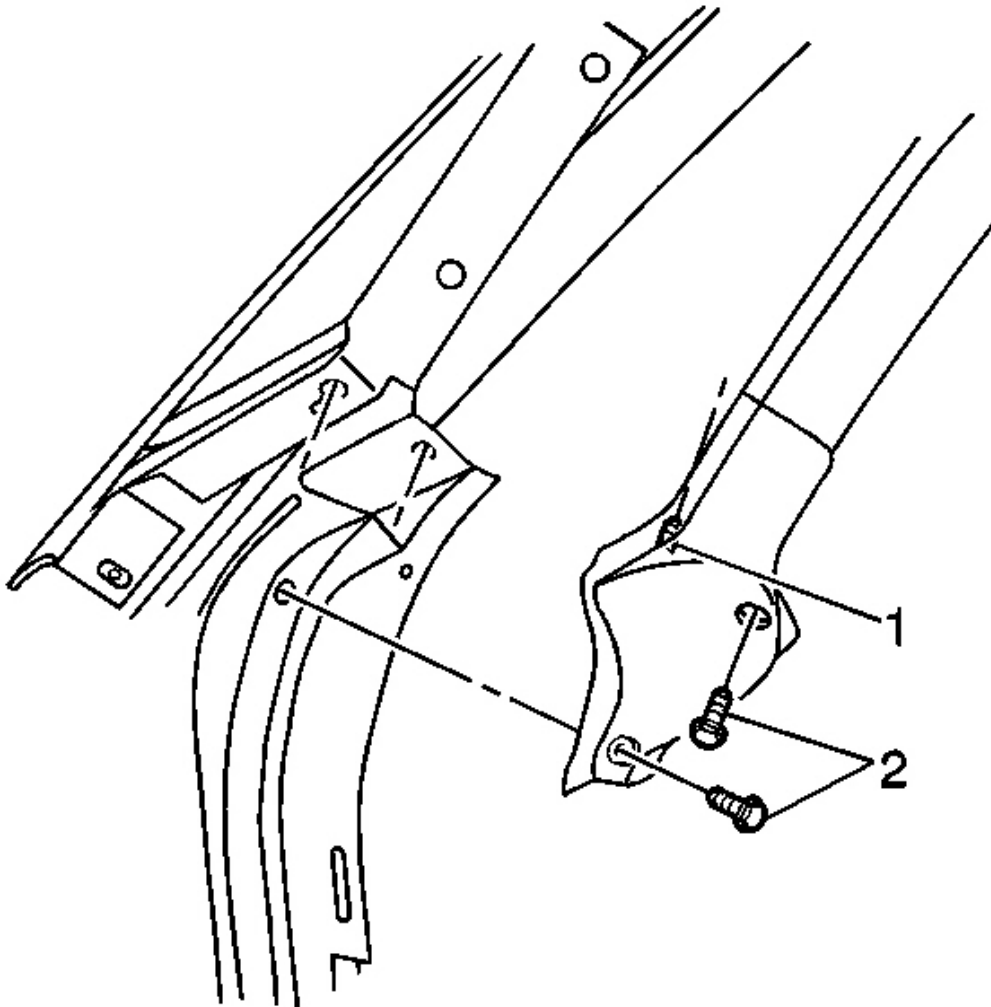


Fig. 17: View Of Weather-Strip Retainers
Courtesy of GENERAL MOTORS CORP.

5. Install the push-pin retainers (2) to the front door sealing weatherstrips located at the base of the windshield pillar.
6. Install the cowl air inlet grille panel. Refer to **Air Inlet Grille Panel Replacement (Envoy, TrailBlazer)**.
7. Install the windshield wiper arms. Refer to **Windshield Wiper Arm Replacement (GMC Envoy)** or **Windshield Wiper Arm Replacement (SS)**.
8. Install the antenna mast if equipped. Refer to **Fixed Antenna Mast Replacement**.

2008 Isuzu Ascender LS

2008 Accessories & Equipment Fixed and Moveable Windows - Ascender, Envoy & Trailblazer

9. Install the 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 REVEAL MOLDING REPLACEMENT

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

WINDSHIELD UPPER REVEAL MOLDING REPLACEMENT

Tools Required

- Urethane Adhesive Kit GM P/N 12346392 or Equivalent
- Isopropyl Alcohol or Equivalent
- Cartridge-type Caulking Gun
- Plastic Paddle

Removal Procedure

1. Remove both right and left sides of the reveal molding. Refer to **Windshield Side Reveal Molding Replacement**.

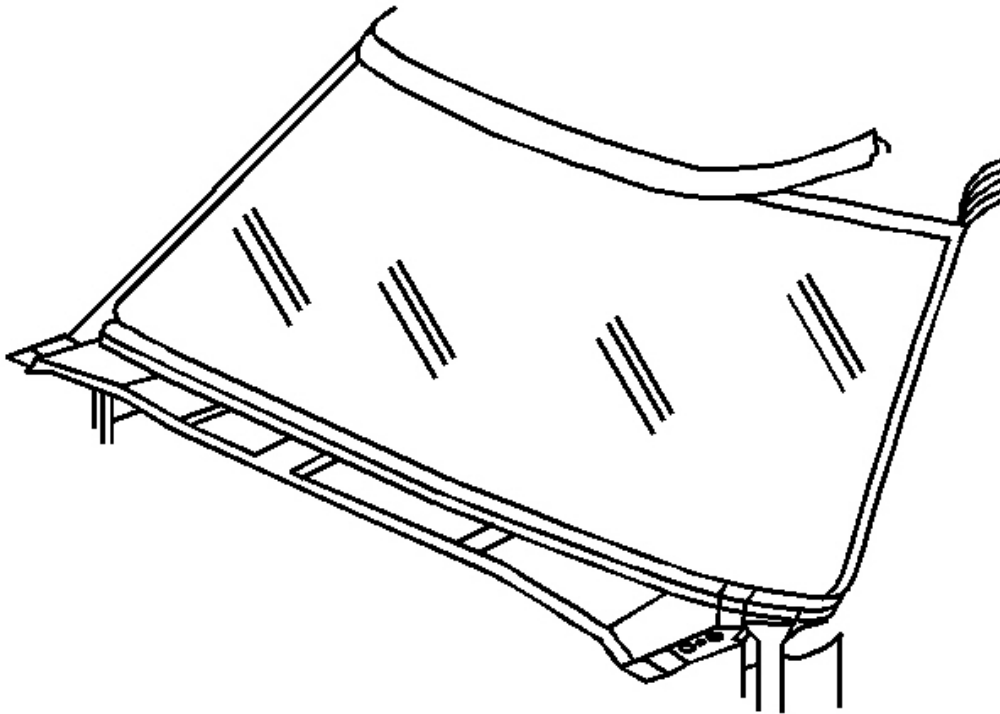


Fig. 18: View Of Window Reveal Molding
Courtesy of GENERAL MOTORS CORP.

CAUTION: Refer to Glass and Sheet Metal Handling Caution .

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

2. Remove the upper windshield reveal molding.
 1. Use a flat-bladed tool in order to carefully pry the end of the upper reveal molding out about 76 mm (3 in).
 2. Grasp the corner of the windshield reveal molding by hand or use a suitable tool to slowly pull the reveal molding away from the windshield.
 3. If the windshield reveal molding will not release, use a utility knife to aid in the releasing of the molding.

Installation Procedure

1. Clean the top edge of the windshield surface with a 50/50 mixture of isopropyl alcohol and water by volume on a dampened lint - free cloth.
2. The new reveal molding should be fitted to the windshield prior to installation.

CAUTION: Refer to Window Retention Caution .

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

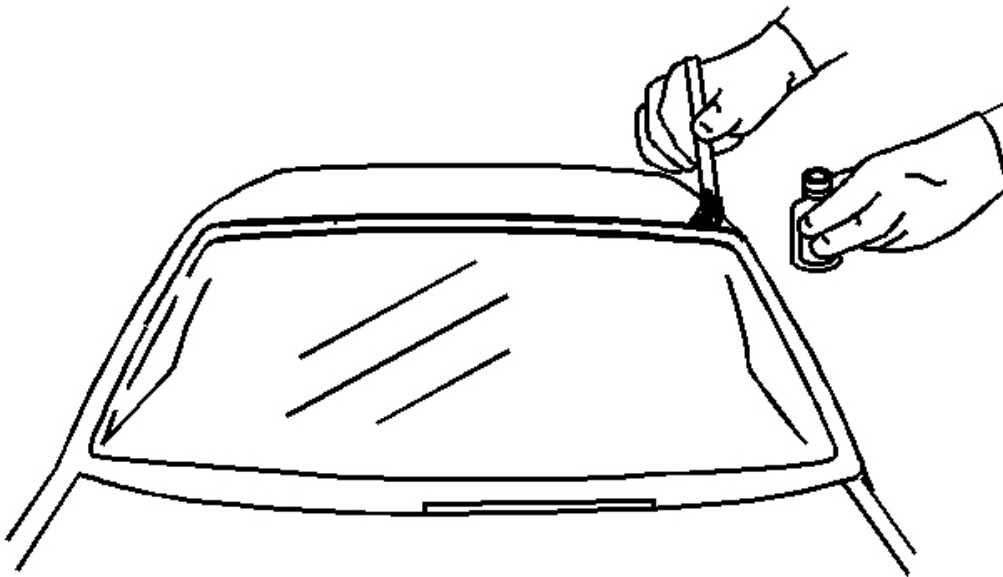


Fig. 19: Applying Glass Prep
Courtesy of GENERAL MOTORS CORP.

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

4. 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 windshield.
5. Wipe the glass primed area immediately with a clean lint-free cloth.
6. Shake the glass primer (black #2) for at least one minute.

Using a new dauber in order to apply glass primer (black #2) to the top edge of the windshield.

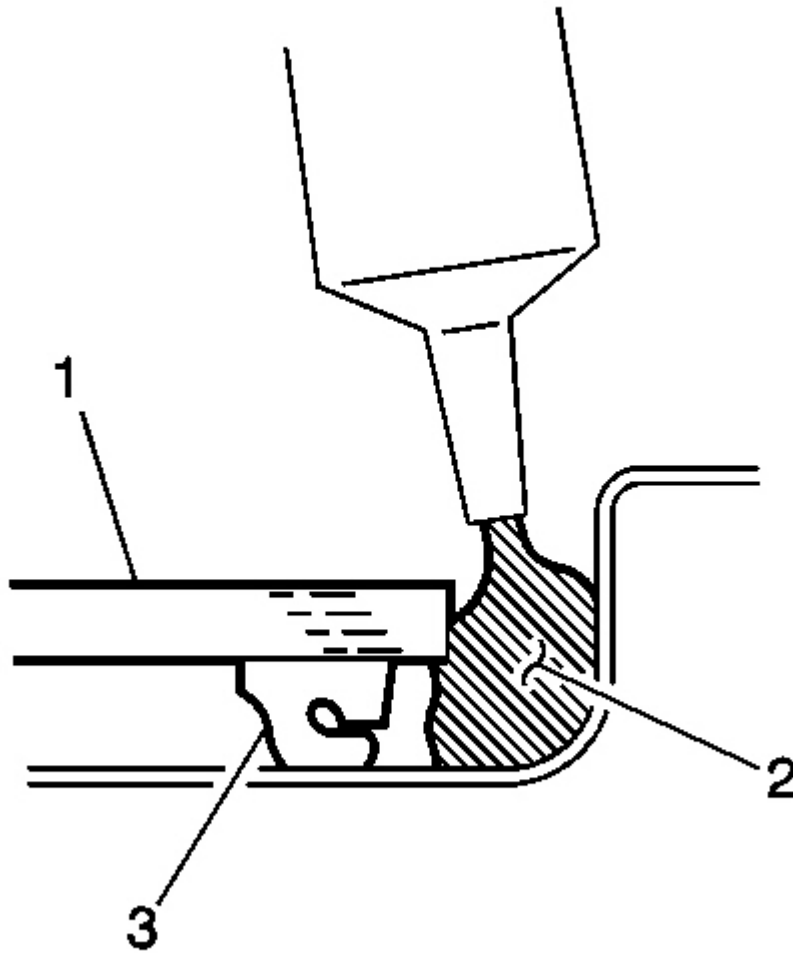


Fig. 20: Applying Urethane Adhesive Between Window & Pinch-Weld
Courtesy of GENERAL MOTORS CORP.

7. Apply a small bead of urethane adhesive (2) between the windshield (1) and the pinchweld.

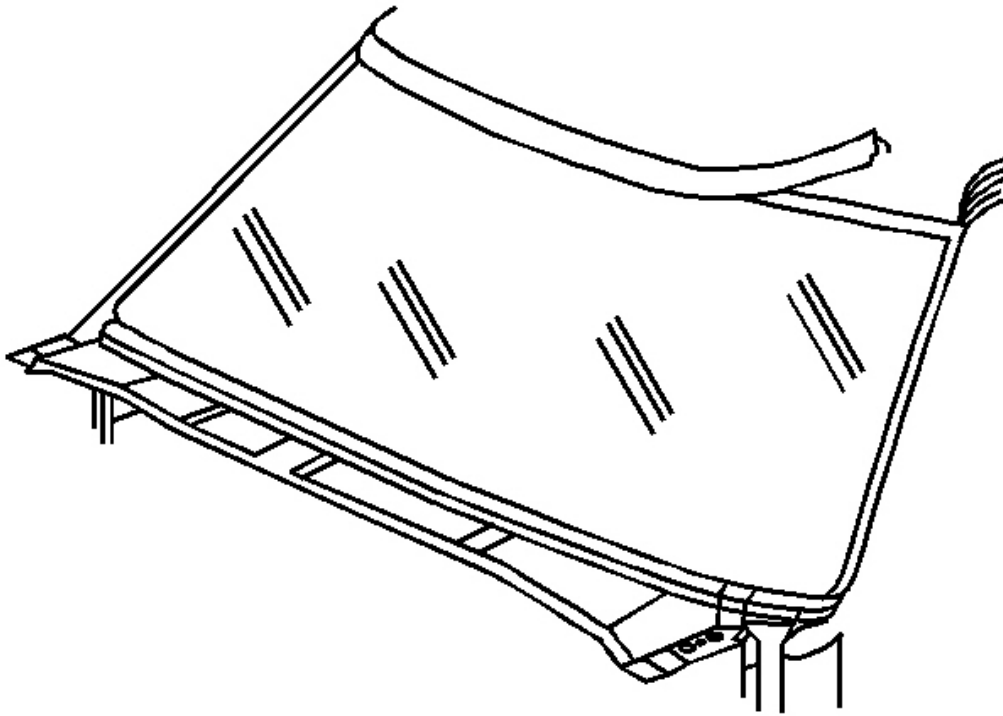


Fig. 21: View Of Window Reveal Molding
Courtesy of GENERAL MOTORS CORP.

8. Install the upper reveal molding.
 1. Start from the center and hand-press the reveal molding into place over the edge of the windshield.
 2. Install both right and left sides of the reveal molding. Refer to **Windshield Side Reveal Molding Replacement**.
 3. Run warm water over the reveal molding in order to speed the setup time of the urethane adhesive.

Tape should be applied in order to retain the reveal molding to the windshield, this will maintain a flush fit with the body.

The tape is to be removed after 6 hours.

WINDSHIELD SIDE REVEAL MOLDING REPLACEMENT

Removal Procedure

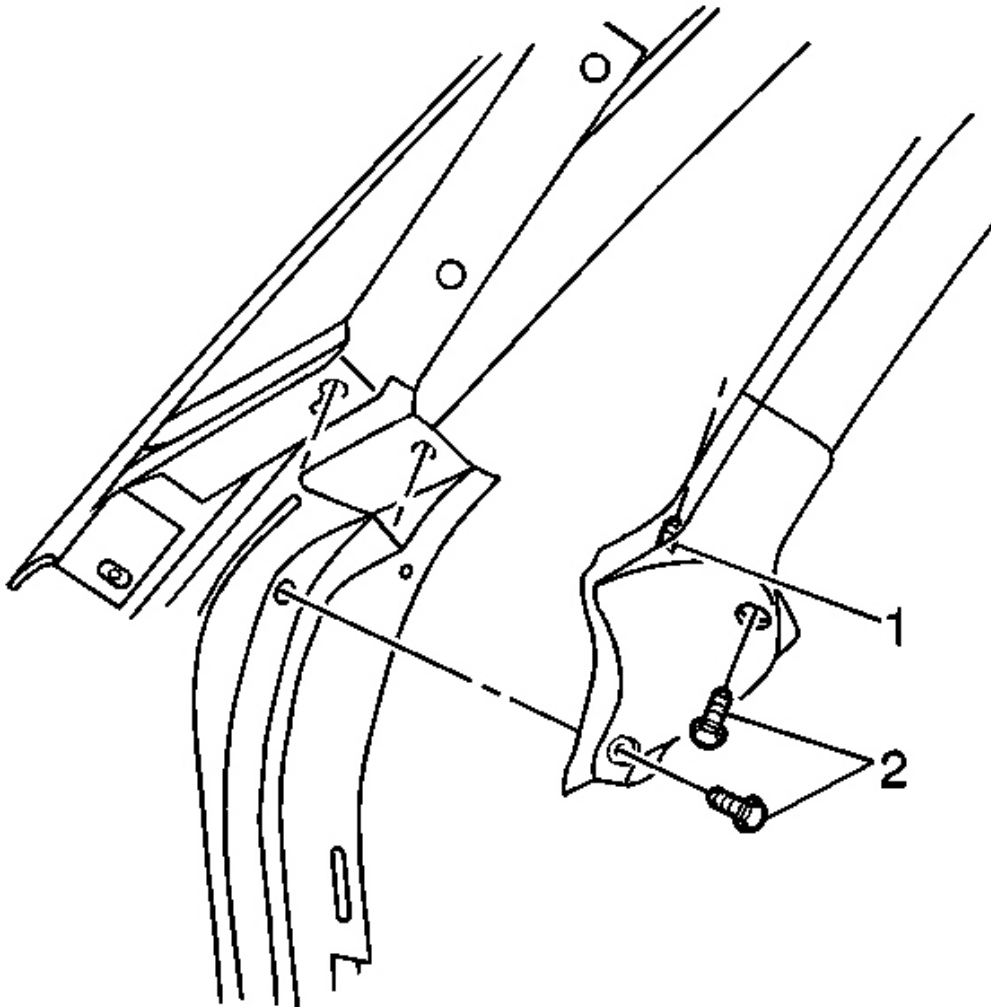


Fig. 22: View Of Weather-Strip Retainers
Courtesy of GENERAL MOTORS CORP.

1. Open the front door.
2. Remove the push-pin retainers (2) from the front door sealing auxiliary weatherstrip located at the base of the pillar.

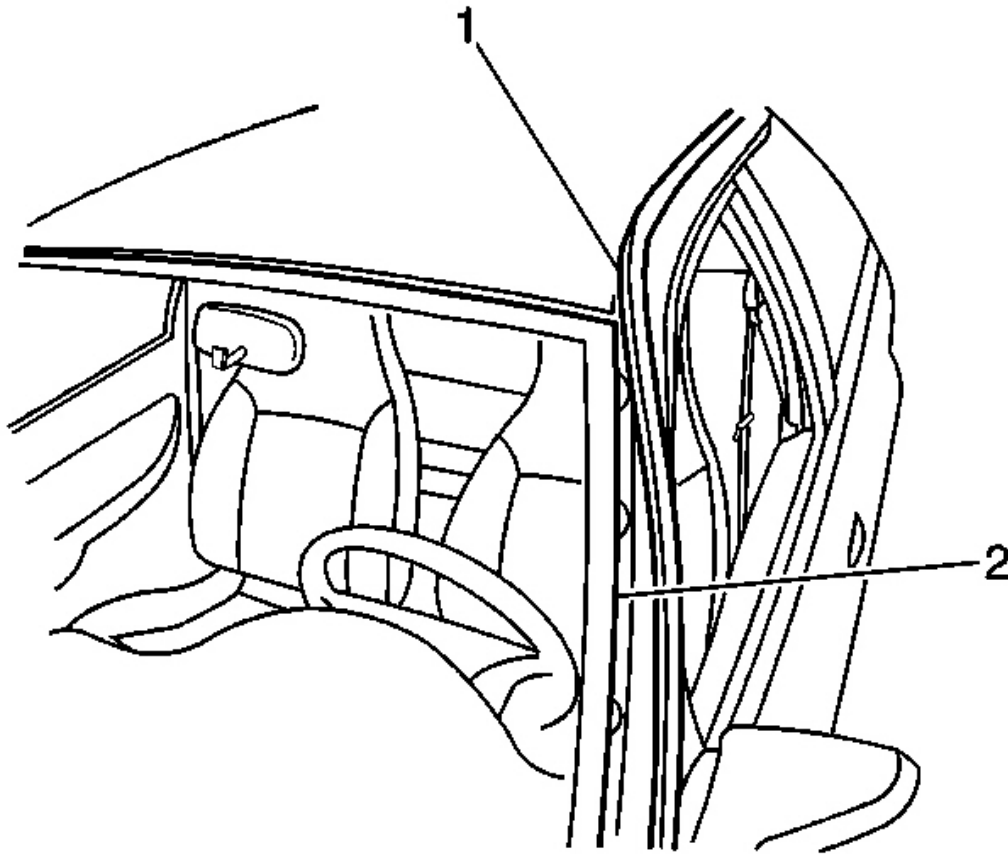


Fig. 23: View Of Front Door Sealing Weatherstrip
Courtesy of GENERAL MOTORS CORP.

3. Pull back the front door sealing weatherstrip (1) in order to expose the side reveal molding retainer screws (2).

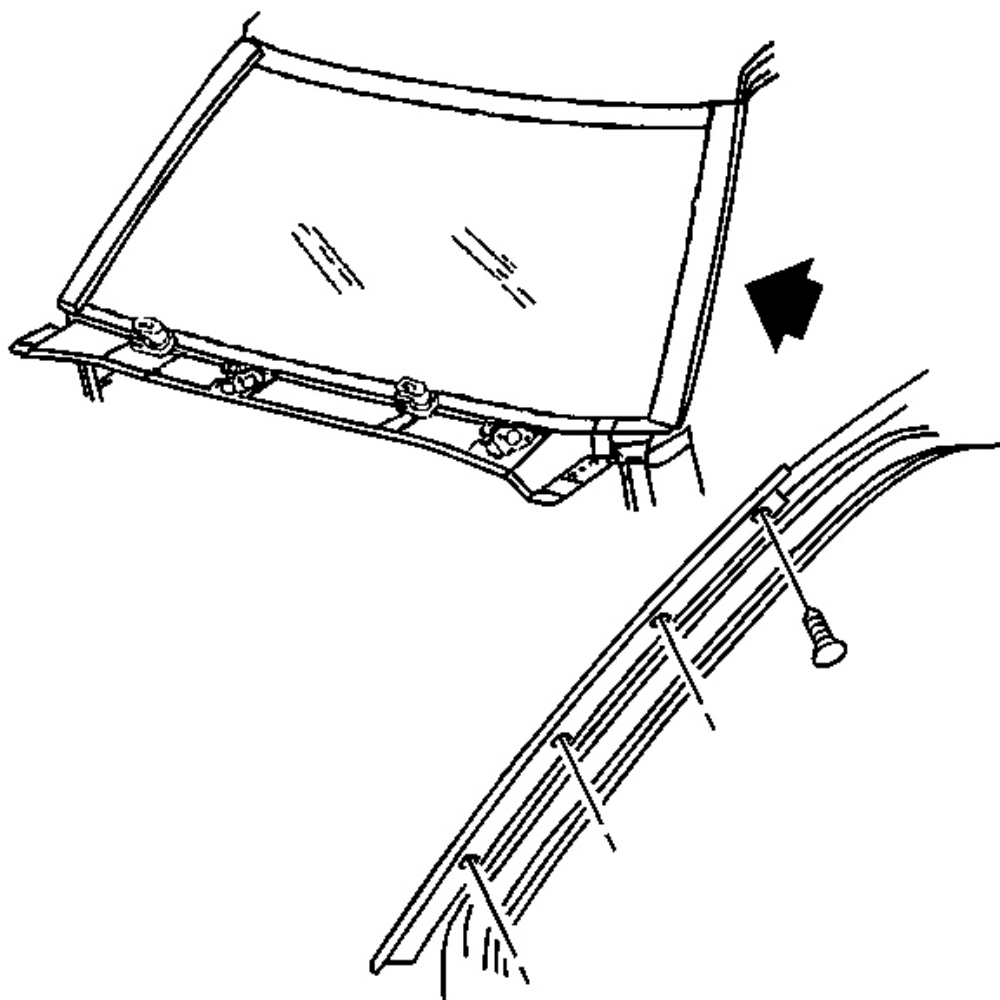


Fig. 24: Identifying Windshield Reveal Molding Screws
Courtesy of GENERAL MOTORS CORP.

4. Remove the screws from the side reveal molding.
5. Remove the windshield side reveal molding.

Installation Procedure

1. Install the windshield side reveal molding under the outer edges of the air inlet grille panel.

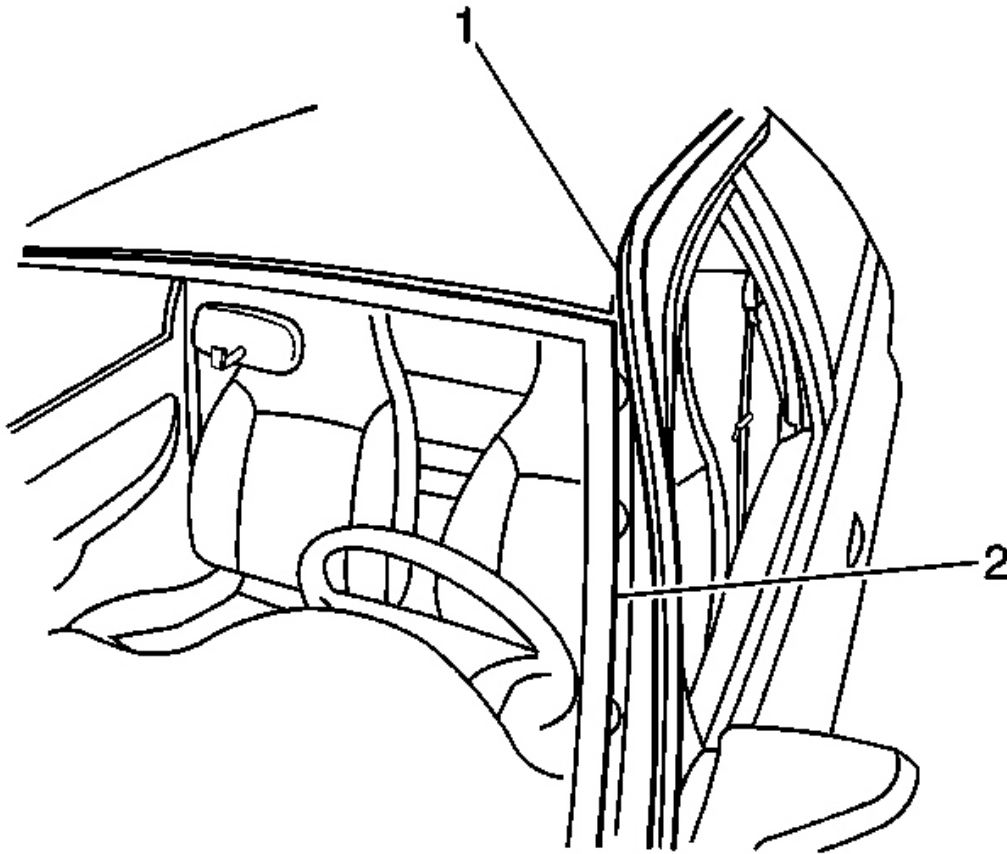


Fig. 25: View Of Front Door Sealing Weatherstrip
Courtesy of GENERAL MOTORS CORP.

2. Position the windshield side reveal molding (2) to the windshield pillar.

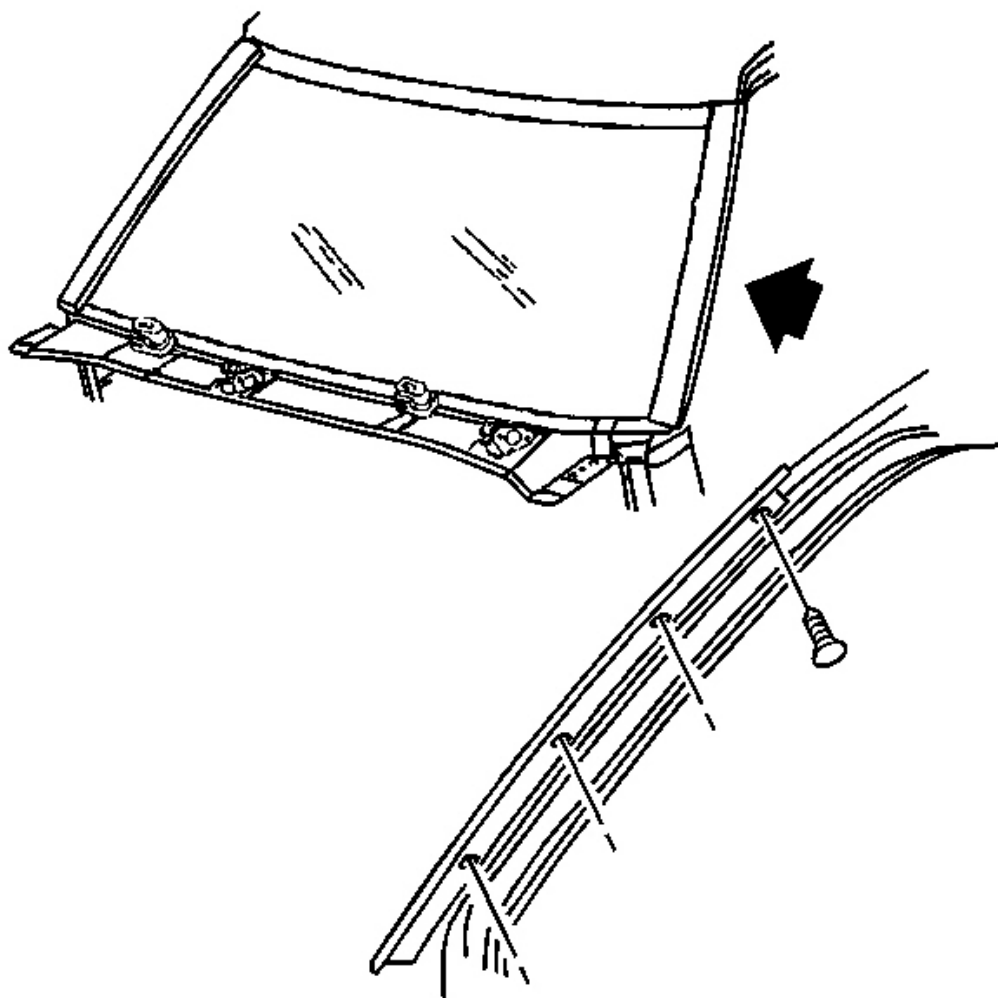


Fig. 26: Identifying Windshield Reveal Molding Screws
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice .

3. Install the screws to the side reveal molding.

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

4. Reposition the front door weatherstrip to the pinch-weld flange.

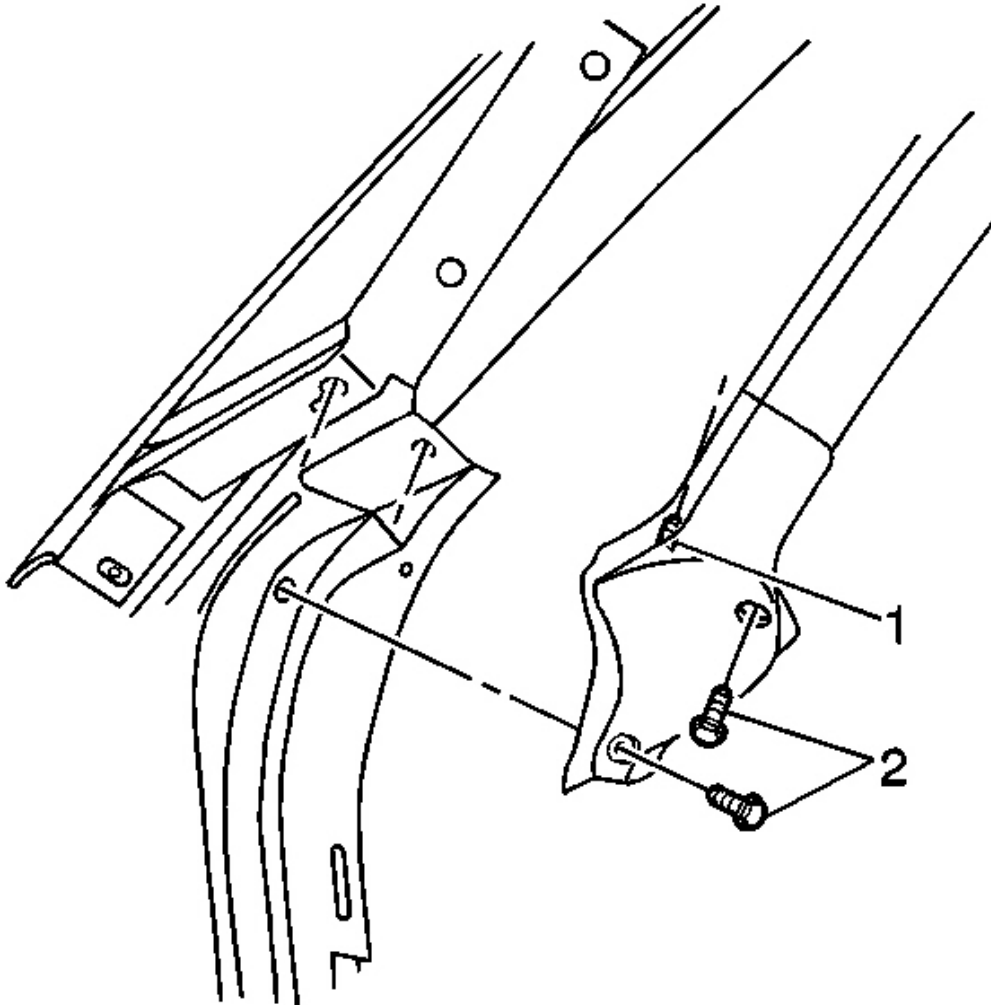


Fig. 27: View Of Weather-Strip Retainers
Courtesy of GENERAL MOTORS CORP.

5. Install the push-pin retainers (2) to the front door sealing weatherstrip located at the base of the pillar.
6. Close the door.

FRONT SIDE DOOR WINDOW REPLACEMENT

IMPORTANT: When ordering a windshield or door windows, verify if the vehicles is equipped with or without CE1 (RAINSense™) or Y91 (RAINSense™ and luxury edition) and order accordingly. The windshield and door windows have Quiet Tuning

2008 Isuzu Ascender LS

2008 Accessories & Equipment Fixed and Moveable Windows - Ascender, Envoy & Trailblazer

acoustic lamination. Due to the difference in processing, along with the difference in the curvature of the window, the optics of the window may appear wavy on a cross-car view from the outside of the vehicle. This is a normal condition and the windshield should not be replaced for this condition. The view through the window from the driver's position is clear and not affected.

Removal Procedure

1. Remove the door trim panel. Refer to **Front Side Door Trim Panel Replacement** .
2. Remove the door speaker. Refer to **Radio Front Side Door Speaker Replacement** .
3. Remove the water deflector. Refer to **Front Side Door Water Deflector Replacement** .
4. Remove the outer belt sealing strip. Refer to **Front Side Door Window Belt Outer Sealing Strip Replacement**.

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

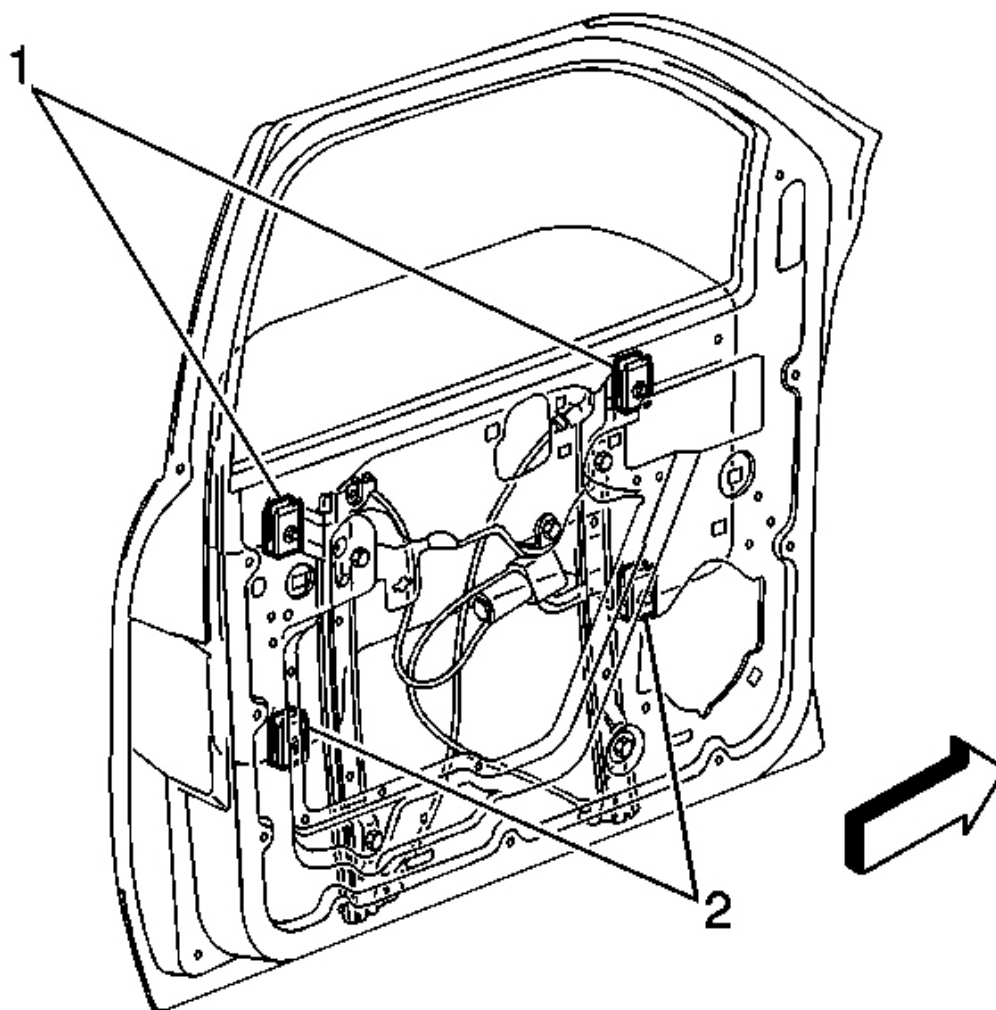


Fig. 28: View Of Regulator In Remove/Load Position & Window Fully Secure Position (Front Door)

Courtesy of GENERAL MOTORS CORP.

5. Adjust the window to the remove/load position (2).
6. Mark the location of the window at the regulator clamps.
7. Loosen the 2 regulator clamp bolts.

CAUTION: Refer to Glass and Sheet Metal Handling Caution .

8. In order to remove the window out of the frame, carefully grasp and tilt the window as you guide the window up and forward.
9. Remove the window from the door.

Installation Procedure

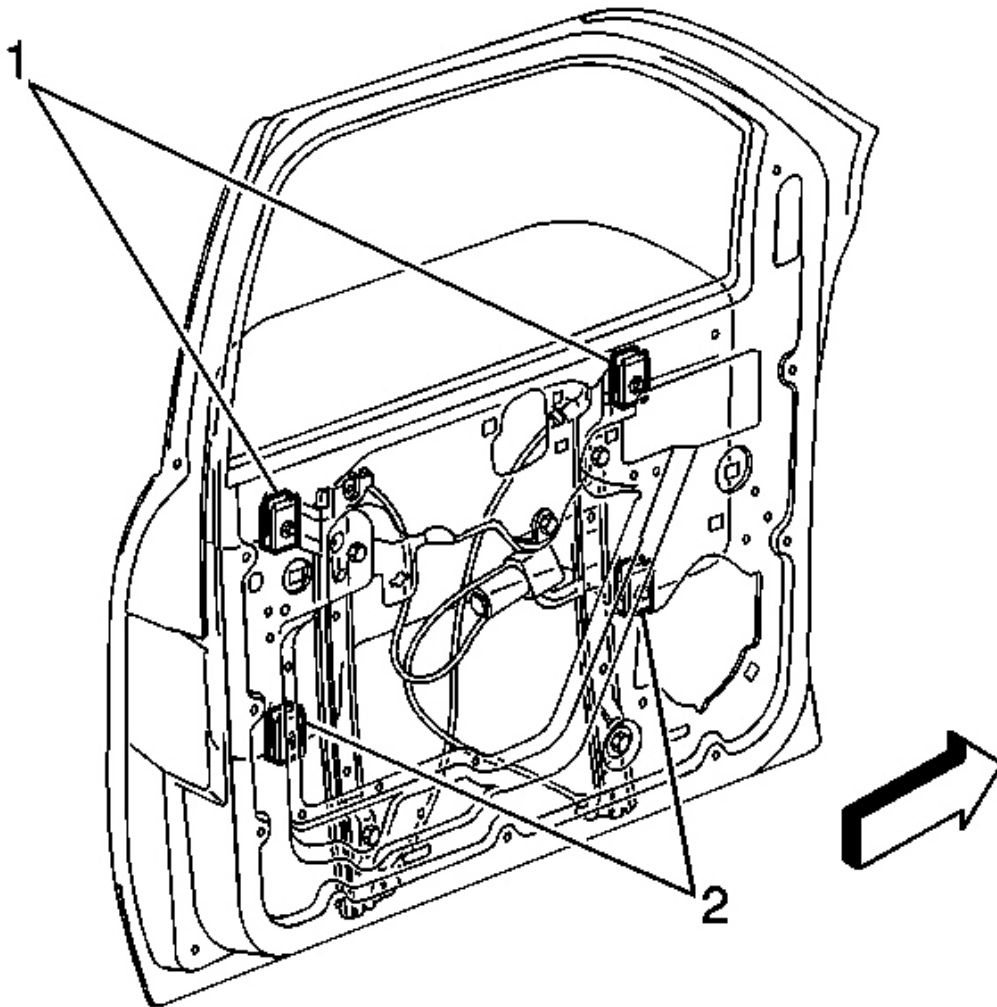


Fig. 29: View Of Regulator In Remove/Load Position & Window Fully Secure Position (Front Door)

Courtesy of GENERAL MOTORS CORP.

1. Install the window to the door with the regulator adjusted to the remove/load position (2).

2008 Isuzu Ascender LS

2008 Accessories & Equipment Fixed and Moveable Windows - Ascender, Envoy & Trailblazer

2. Tilt the window forward and carefully guide the window into the rear run channel.
3. Position the window to an upright position. Ensure that the window is seated into the run channels.
4. Lower and position the window into the regulator clamps at the alignment marks previously made.
5. Loosely tighten the regulator clamp bolts.

IMPORTANT: Do not operate the regulator motor without supporting the window. Ensure that the window remains in the run channels when operating the regulator motor.

6. Carefully move the regulator upward for short slow intervals, while ensuring that the window remains in the run channels.
7. Position the window to a fully secure position (1) into the upper door weatherstrip.

NOTE: Refer to Fastener Notice .

8. Tighten the 2 regulator clamp nuts.

Tighten: Tighten the nuts to 10 N.m (88 lb in).

9. Install the outer belt sealing strip. Refer to Front Side Door Window Belt Outer Sealing Strip Replacement.
10. Install the water deflector. Refer to Front Side Door Water Deflector Replacement .
11. Install the door speaker. Refer to Radio Front Side Door Speaker Replacement .
12. Install the door trim panel. Refer to Front Side Door Trim Panel Replacement .

REAR SIDE DOOR WINDOW REPLACEMENT

IMPORTANT: When ordering a windshield or door windows, verify if the vehicles is equipped with or without CE1 (RAINSENSE™) or Y91 (RAINSENSE™ and luxury edition) and order accordingly. The windshield and door windows have Quiet Tuning acoustic lamination. Due to the difference in processing, along with the difference in the curvature of the window, the optics of the window may appear wavy on a cross-car view from the outside of the vehicle. This is a normal condition and the windshield should not be replaced for this condition. The view through the window from the driver's position is clear and not affected.

Removal Procedure

1. Remove the door trim panel. Refer to Rear Side Door Trim Panel Replacement .
2. Remove the water deflector. Refer to Rear Side Door Water Deflector Replacement .
3. Remove the outer belt sealing strip. Refer to Rear Door Window Belt Outer Sealing Strip Replacement.

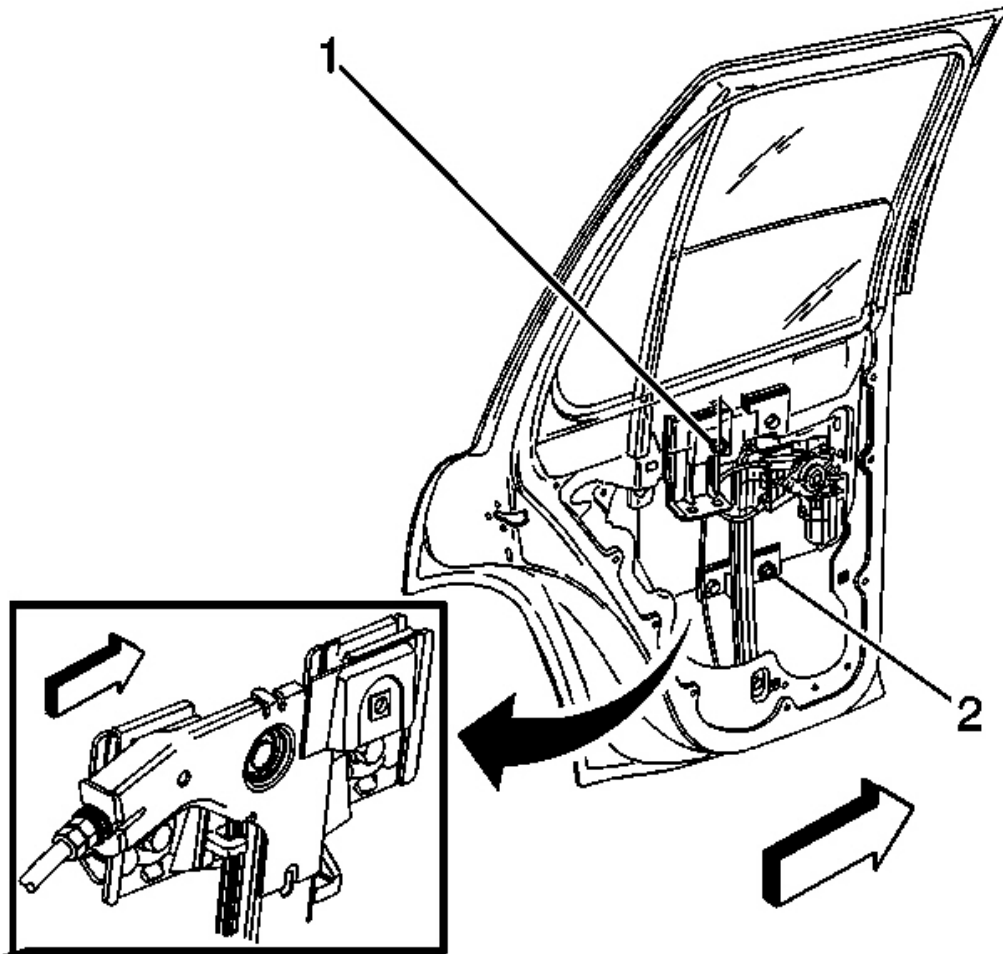


Fig. 30: View Of Regulator In Remove/Load Position & Window Fully Secure Position (Rear Door)
Courtesy of GENERAL MOTORS CORP.

4. Adjust the window to the remove/load position (2).
5. Mark the location of the window at the regulator clamps.
6. Loosen the 2 regulator clamp bolts.

CAUTION: Refer to Glass and Sheet Metal Handling Caution .

7. In order to remove the window out of the frame, carefully grasp and tilt the window as you guide the window up and forward.

8. Remove the window from the door.

Installation Procedure

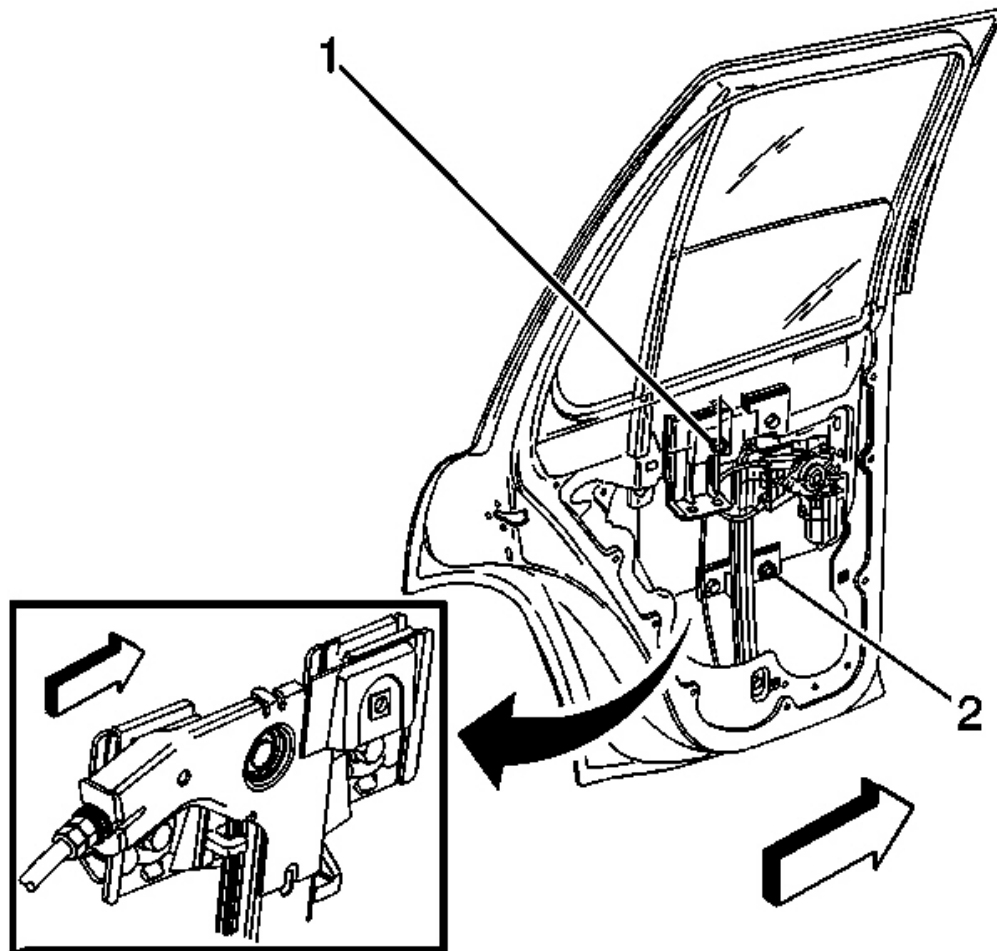


Fig. 31: View Of Regulator In Remove/Load Position & Window Fully Secure Position (Rear Door)
Courtesy of GENERAL MOTORS CORP.

1. With the regulator in the remove/load position (2), install the window to the door.
2. Tilt the window forward and carefully guide the window into the rear run channel.
3. Position the window to an upright position. Ensure that the window is seated into the run channels.
4. Lower and position the window into the regulator clamps at the alignment marks previously made.
5. Loosely tighten the regulator clamp bolts.

2008 Isuzu Ascender LS

2008 Accessories & Equipment Fixed and Moveable Windows - Ascender, Envoy & Trailblazer

IMPORTANT: Do not operate the regulator motor without supporting the window. Ensure that the window remains in the run channels when operating the regulator motor.

6. Carefully move the regulator upward for short slow intervals, while ensuring that the window remains in the run channels.
7. Position the window to a fully secure position (1) into the upper door weatherstrip.

NOTE: Refer to **Fastener Notice** .

8. Tighten the 2 regulator clamp nuts.

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

9. Lower the window to the full down position.
10. Install the outer belt sealing strip. Refer to **Front Side Door Window Belt Outer Sealing Strip Replacement**.
11. Install the water deflector. Refer to **Front Side Door Water Deflector Replacement** .
12. Install the door trim panel. Refer to **Front Side Door Trim Panel Replacement** .

BODY SIDE WINDOW REPLACEMENT

Tools Required

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

Removal Procedure

IMPORTANT: The interior trim panels do not have to be removed to remove the body side window frame.

1. Ensure the body side window is in the full closed position. If not, the window actuator will need to be adjusted.
2. If the actuator is not being replaced, perform the following 2 steps.

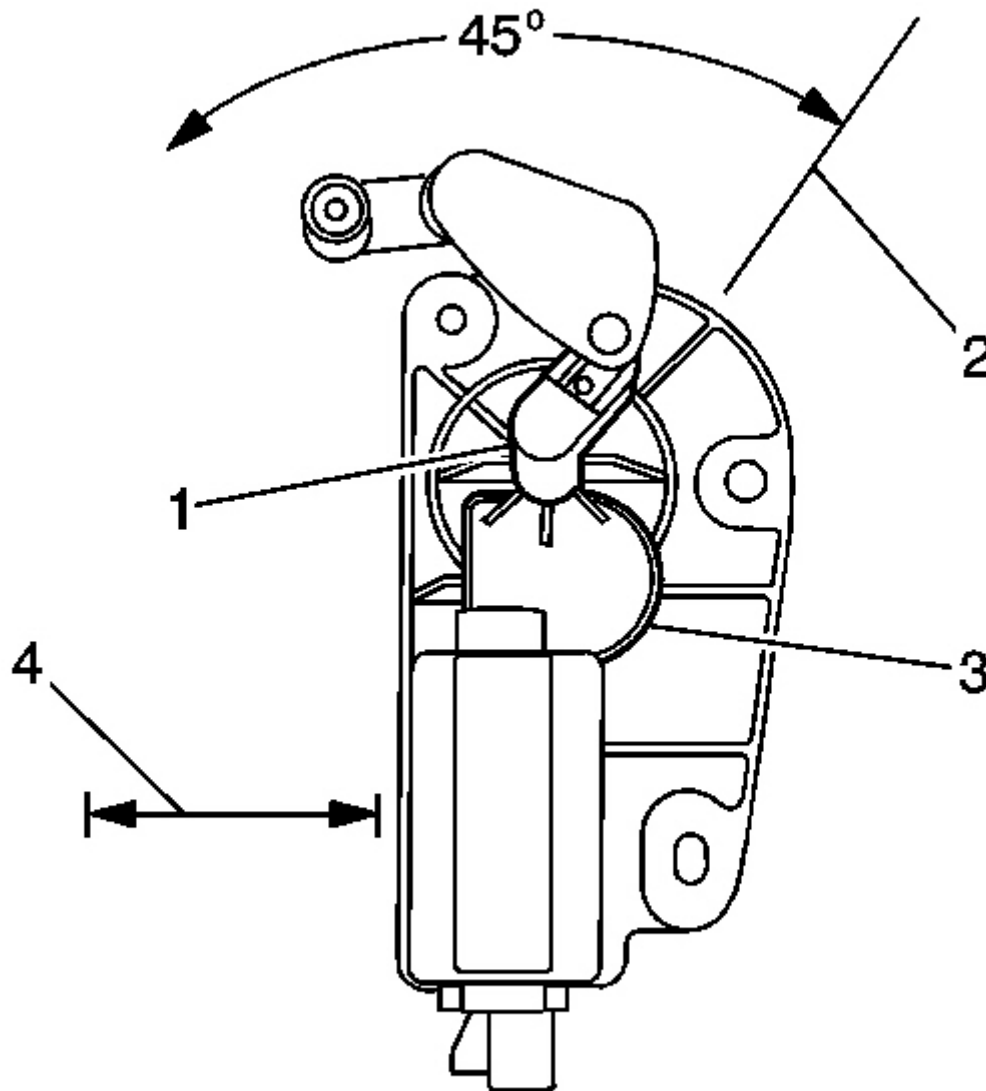


Fig. 32: View Of Window Side Sheet Metal & Bellcrank At 45 Degree Angle
Courtesy of GENERAL MOTORS CORP.

3. Position the bellcrank (1) at a 45 degree angle (2) compared to the vertical edge of the window side sheet metal (4).

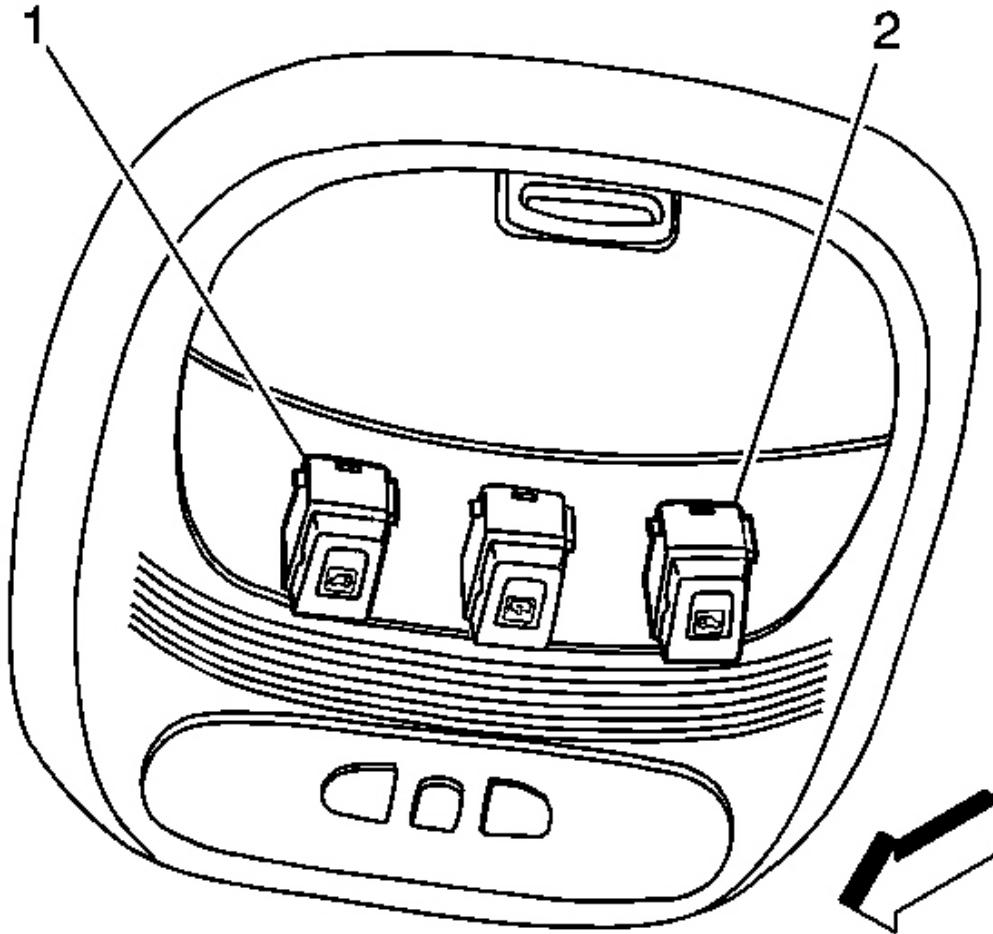


Fig. 33: Identifying Body Side Power Window Switches
Courtesy of GENERAL MOTORS CORP.

4. Using the body side power window switches (1 or 2) at the overhead console, push the switch in order to position the bellcrank at a 45 degree angle to the sheet metal flange.

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 body side window, apply a double layer of masking tape around the perimeter of the painted surfaces and inner trim of the window.

5. Open the rear doors.
6. Cover to protect the following parts from broken glass if necessary:
 - Defroster outlets and A/C outlets
 - Seats and carpeting

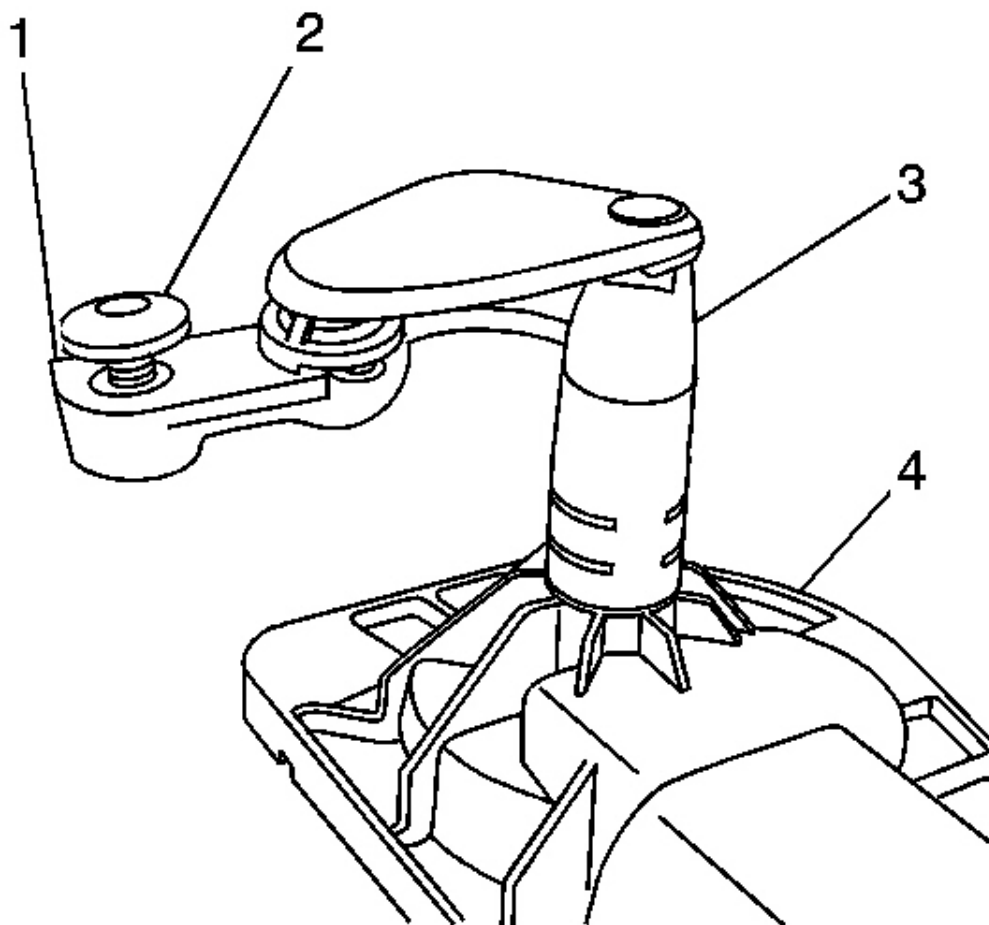


Fig. 34: View Of Actuator Arm, Window Hinge Screw & Actuator Retaining Nuts
Courtesy of GENERAL MOTORS CORP.

7. Disconnect the window bracket to actuator arm (1) by loosening screw (2).

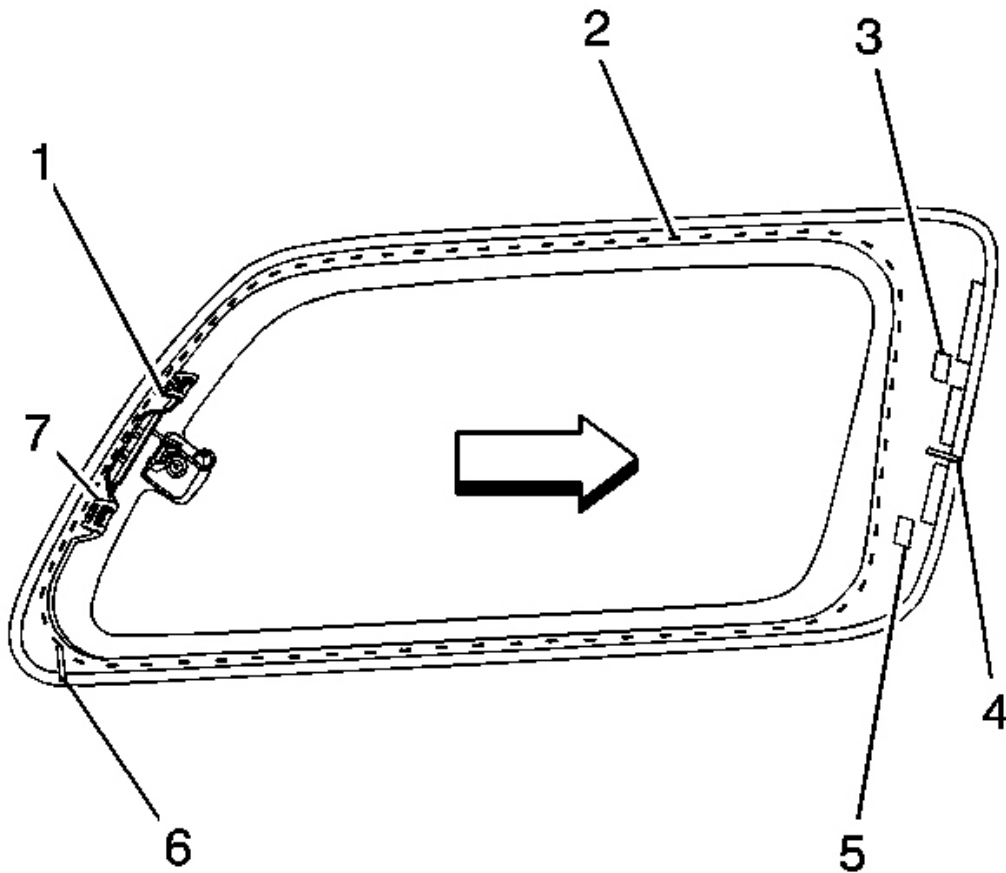


Fig. 35: Identifying Front Body Side Window Hinge & Window Frame
Courtesy of GENERAL MOTORS CORP.

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

8. From the exterior of the vehicle, wearing safety gloves and goggles, pull the body side window outward and forward until the front body side window hinge releases from the window frame (2). Discard the body side window.



Fig. 36: Separating Urethane Adhesive From Window
Courtesy of GENERAL MOTORS CORP.

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

IMPORTANT: Keep the cutting edge of the tool against the body side window frame. Do this from outside side the vehicle.

9. Separate the urethane adhesive from the body side hinged window frame.
 - Leave a base of urethane on the pinch-weld flange.
 - The only suitable lubrication is clear water.
 - Use the **J 39032** or equivalent in order to remove the body side hinged window frame. See **Special**

Tools.

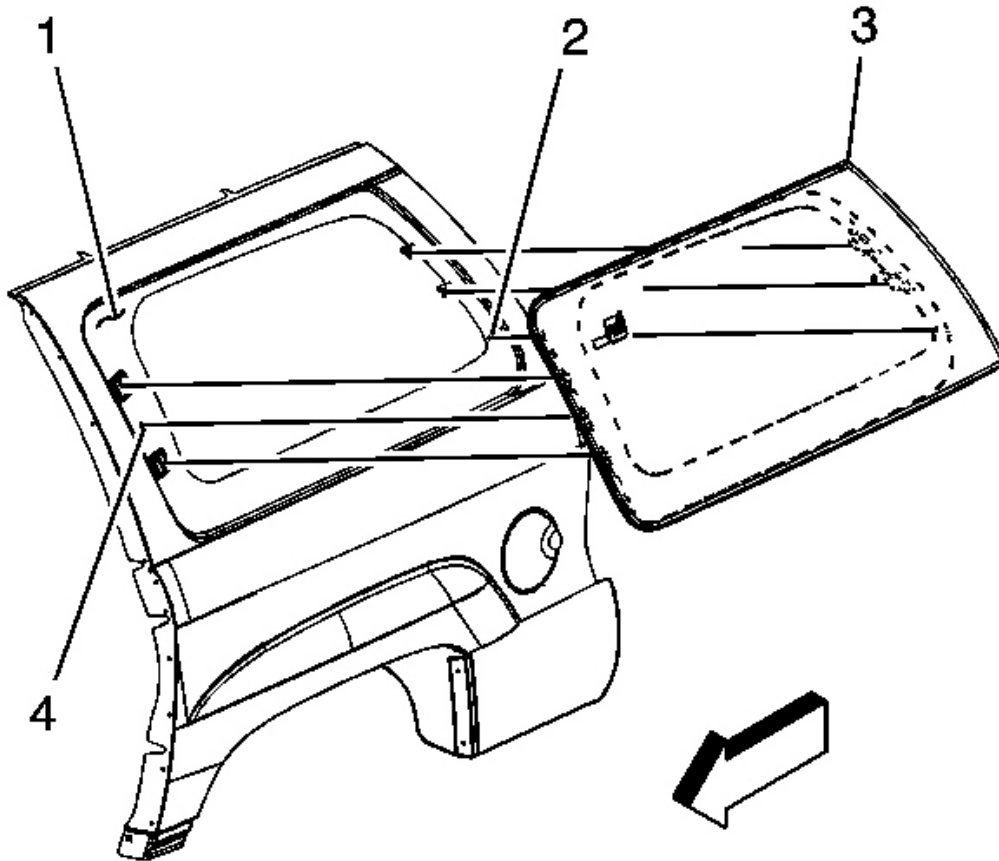


Fig. 37: View Of Quarter Window
Courtesy of GENERAL MOTORS CORP.

10. Remove the window frame (1) from the body side opening.

Installation Procedure

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

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

2008 Isuzu Ascender LS

2008 Accessories & Equipment Fixed and Moveable Windows - Ascender, Envoy & Trailblazer

- 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.

IMPORTANT: The actuator screw must be tightened and the window frame pin must be removed for the window to function properly.

1. Install the body side window into the opening. Refer to **Adhesive Installation of Bodyside Stationary Windows (w/Frame)** or **Adhesive Installation of Bodyside Stationary Windows (w/o Frame)**.
2. Remove the double layer of masking tape around the perimeter of the painted surfaces and inner trim of the window.

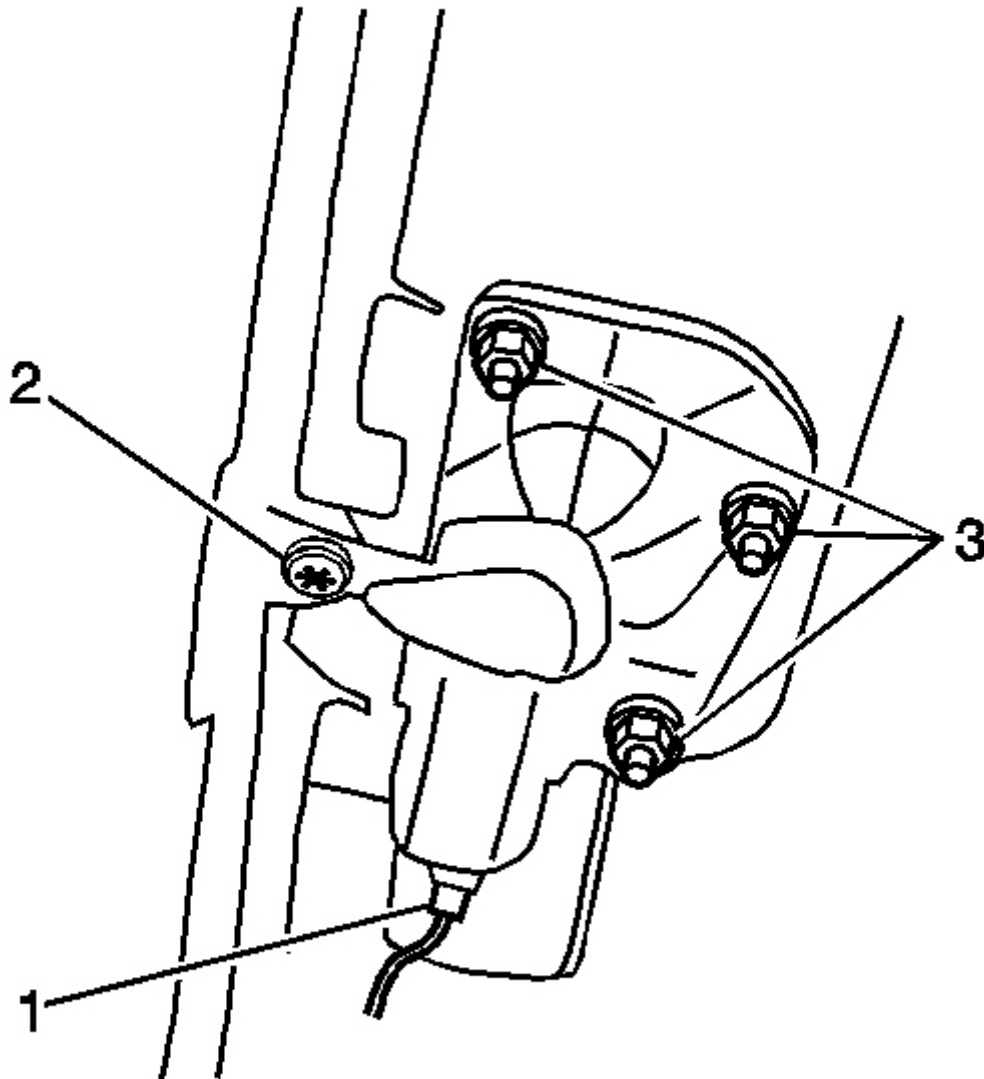


Fig. 38: View Of Retaining Nuts, Mounting Studs & Electrical Connector
Courtesy of GENERAL MOTORS CORP.

3. Insert the actuator screw into the slot on the window bracket.

NOTE: Refer to Fastener Notice .

4. Tighten the actuator screw.

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

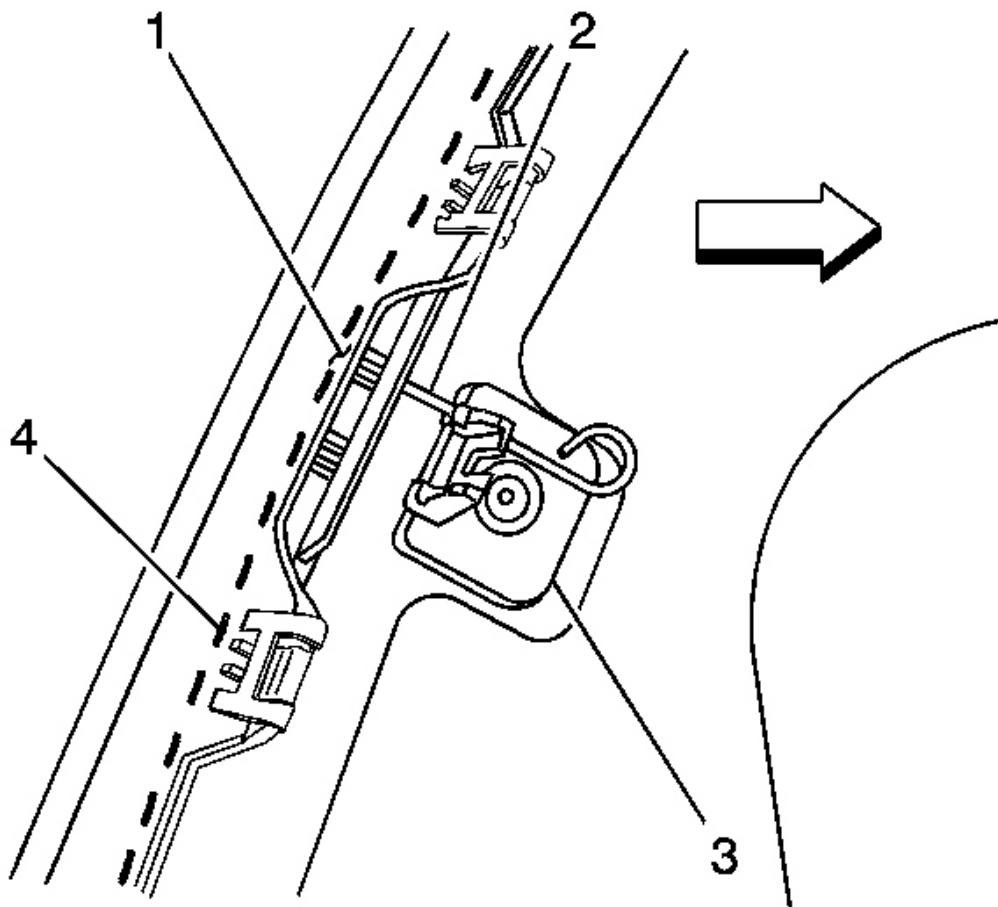


Fig. 39: Locating Window Bracket & Window Frame
Courtesy of GENERAL MOTORS CORP.

5. Remove the window bracket (3) to the window frame pin (1) prior to operating the body side window.

QUARTER WINDOW REPLACEMENT

Tools Required

- **J 39032** Stationary Glass Removal Tool. See **Special Tools**.
- Urethane Adhesive Kit GM P/N 12346392 or Equivalent
- Isopropyl Alcohol or Equivalent

2008 Isuzu Ascender LS

2008 Accessories & Equipment Fixed and Moveable Windows - Ascender, Envoy & Trailblazer

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

Removal Procedure

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

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

1. Open the endgate window.

2008 Isuzu Ascender LS

2008 Accessories & Equipment Fixed and Moveable Windows - Ascender, Envoy & Trailblazer

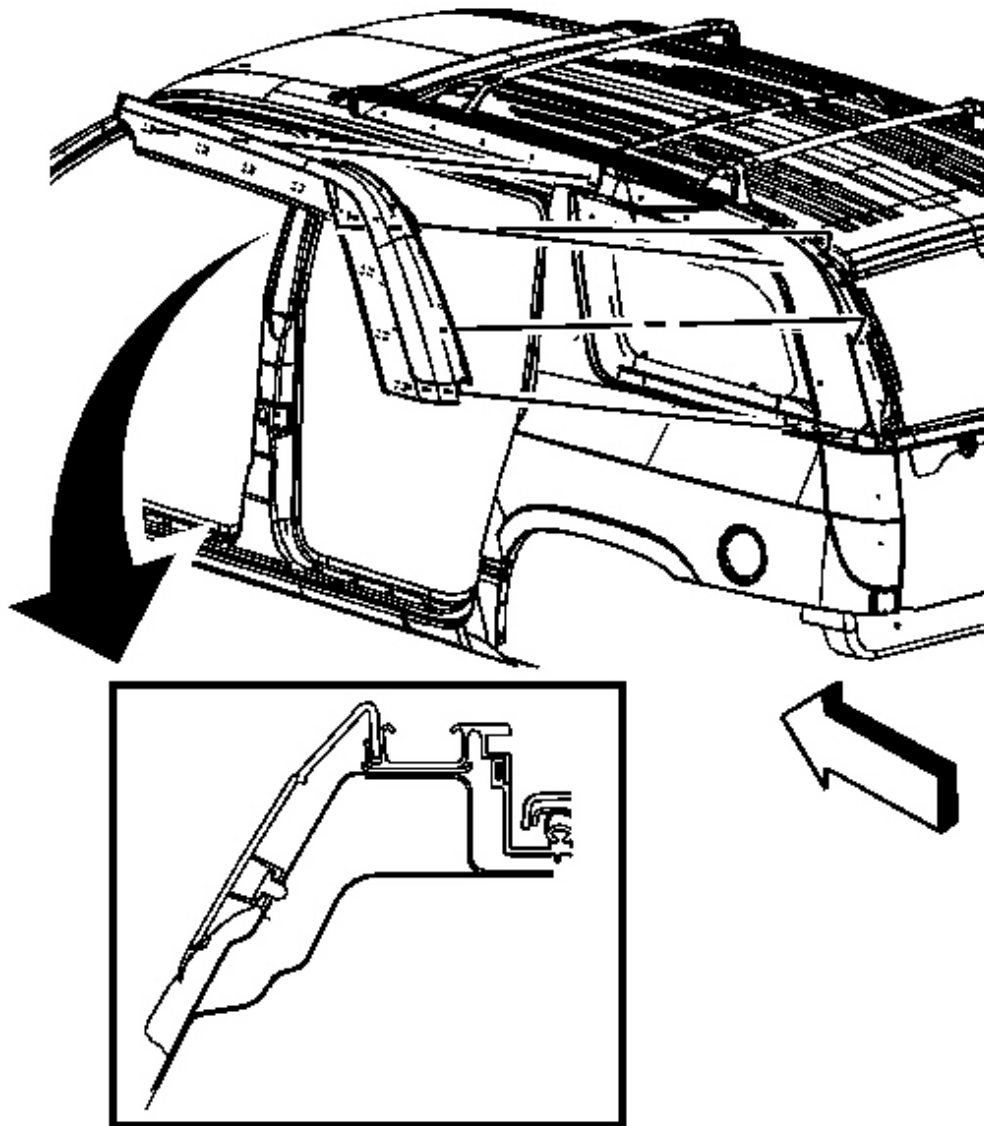


Fig. 40: View Of Roof Applique - Rear
Courtesy of GENERAL MOTORS CORP.

2. Remove the upper rear roof applique. Refer to **Roof Rear Applique Replacement** .



Fig. 41: Separating Urethane Adhesive From Window
Courtesy of GENERAL MOTORS CORP.

CAUTION: Refer to Glass and Sheet Metal Handling Caution .

IMPORTANT: Keep the cutting edge of the tool against the window. Do this from inside the vehicle.

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

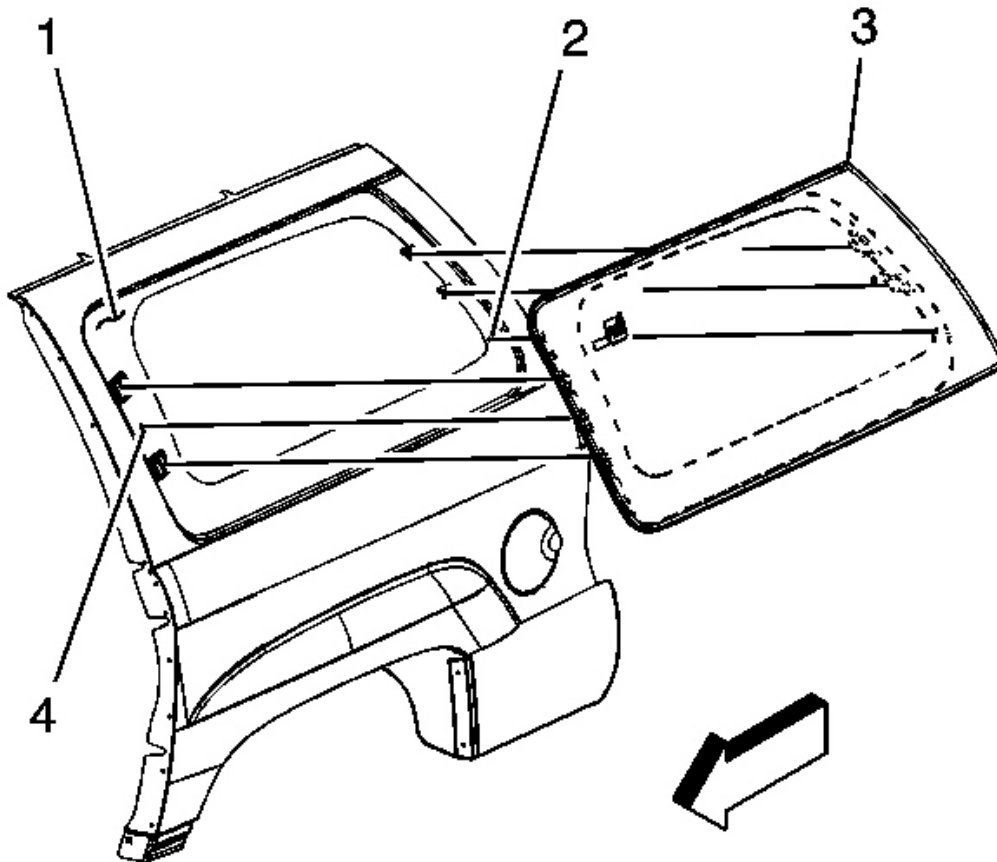


Fig. 42: View Of Quarter Window
Courtesy of GENERAL MOTORS CORP.

4. With the aid of an assistant, remove the quarter window (3) from the opening.

Installation Procedure

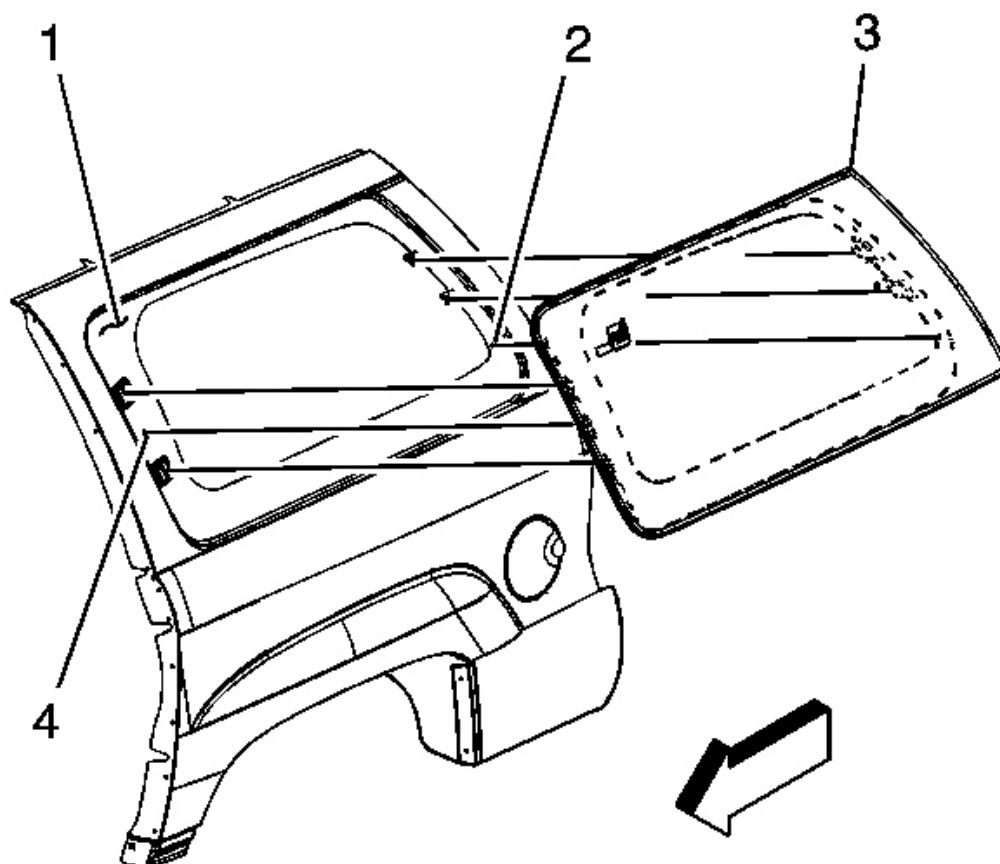


Fig. 43: View Of Quarter Window
Courtesy of GENERAL MOTORS CORP.

1. Install the body side stationary window (3) into the opening. Refer to **Adhesive Installation of Bodyside Stationary Windows (w/Frame)** or **Adhesive Installation of Bodyside Stationary Windows (w/o Frame)**.
2. Remove the double layer of masking tape around the perimeter of the painted surfaces and the interior trim.

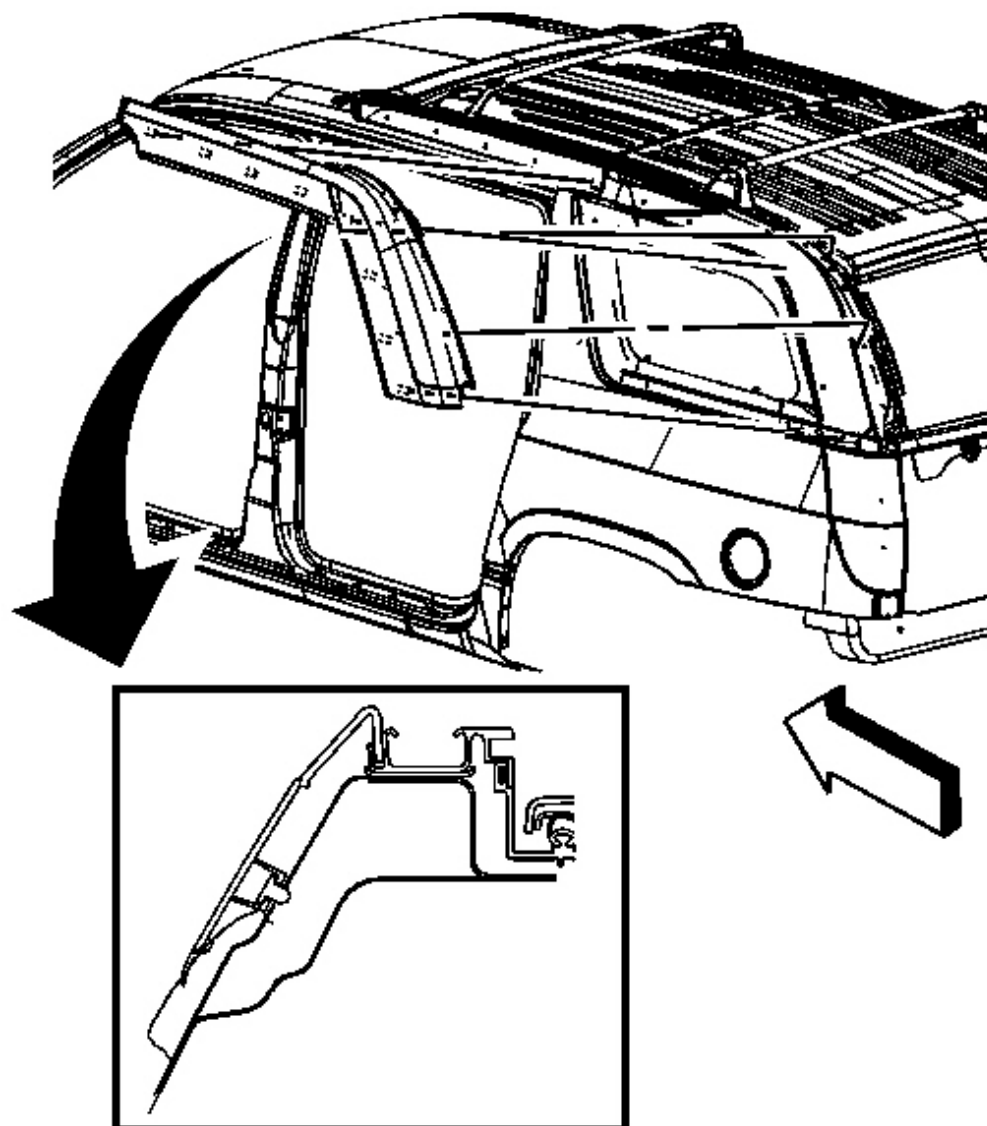


Fig. 44: View Of Roof Applique - Rear
Courtesy of GENERAL MOTORS CORP.

3. Install the upper rear roof applique. Refer to **Roof Rear Applique Replacement** .
4. Inspect the radio or the OnStar® system, if equipped, to verify reception.
5. Close the endgate window.

LIFTGATE WINDOW REPLACEMENT

Removal Procedure

IMPORTANT: Ensure that the liftgate is closed before starting the removal procedure on the liftgate window.

1. Remove the liftgate upper molding. Refer to Liftgate Upper Molding Replacement .

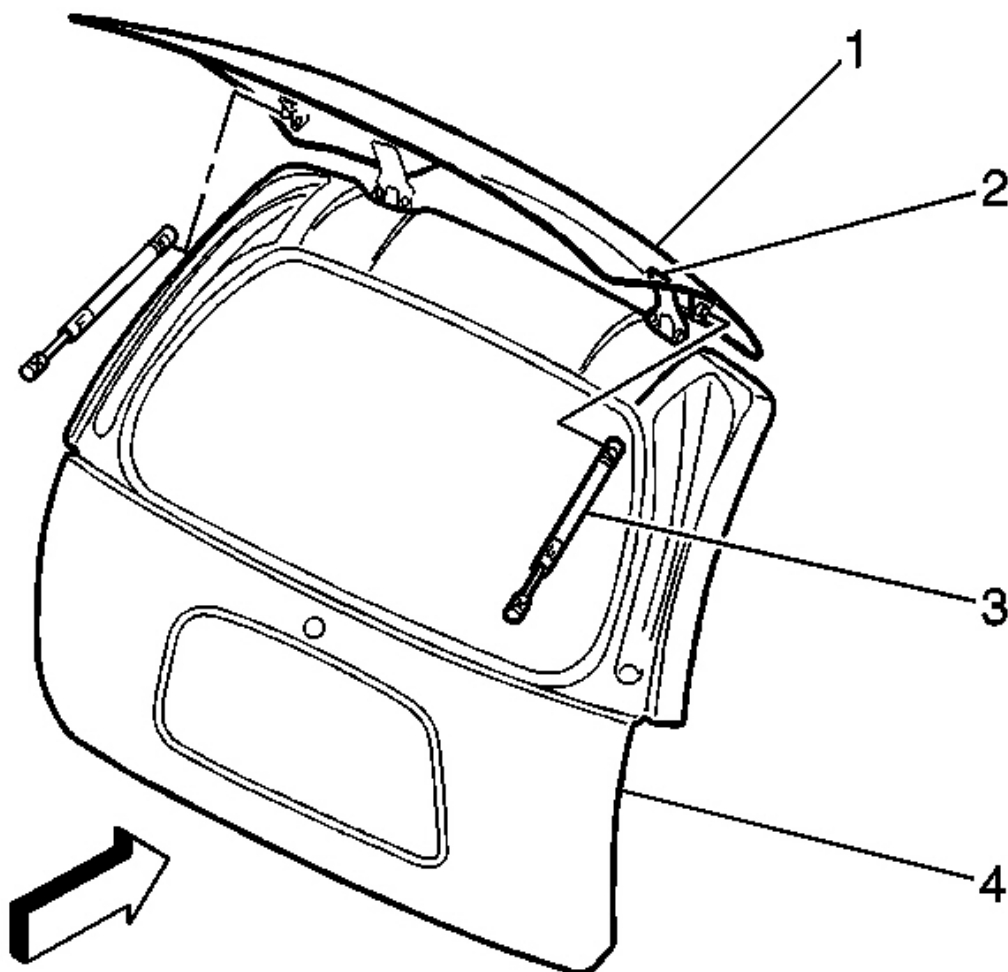


Fig. 45: Identifying Liftgate Window & Related Components
Courtesy of GENERAL MOTORS CORP.

2. Open the liftgate window (1).

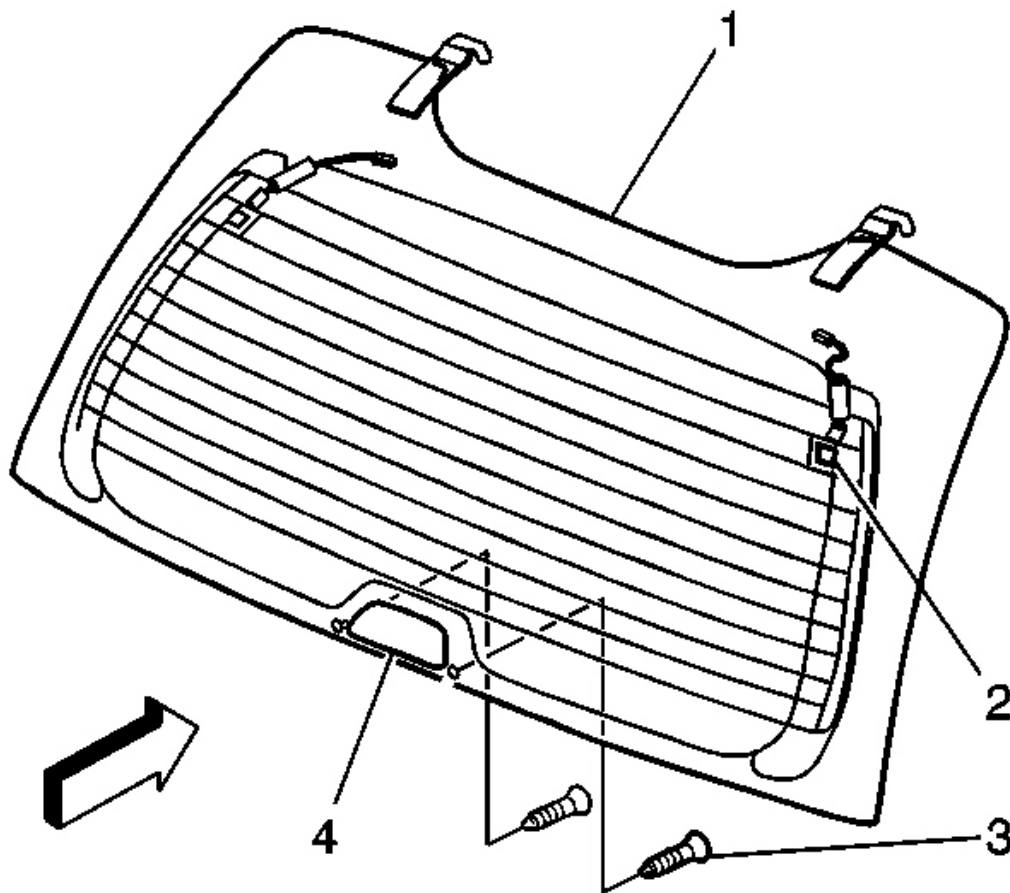


Fig. 46: View Of Liftgate Window Handle Bolts & Defogger Grid Electrical Connectors
Courtesy of GENERAL MOTORS CORP.

CAUTION: Refer to Glass and Sheet Metal Handling Caution .

3. Remove the liftgate window handle bolts (3).
4. Remove the outside handle (4) and striker from the liftgate window.
5. Remove the liftgate window defogger electrical connectors (2) from the right and left sides.

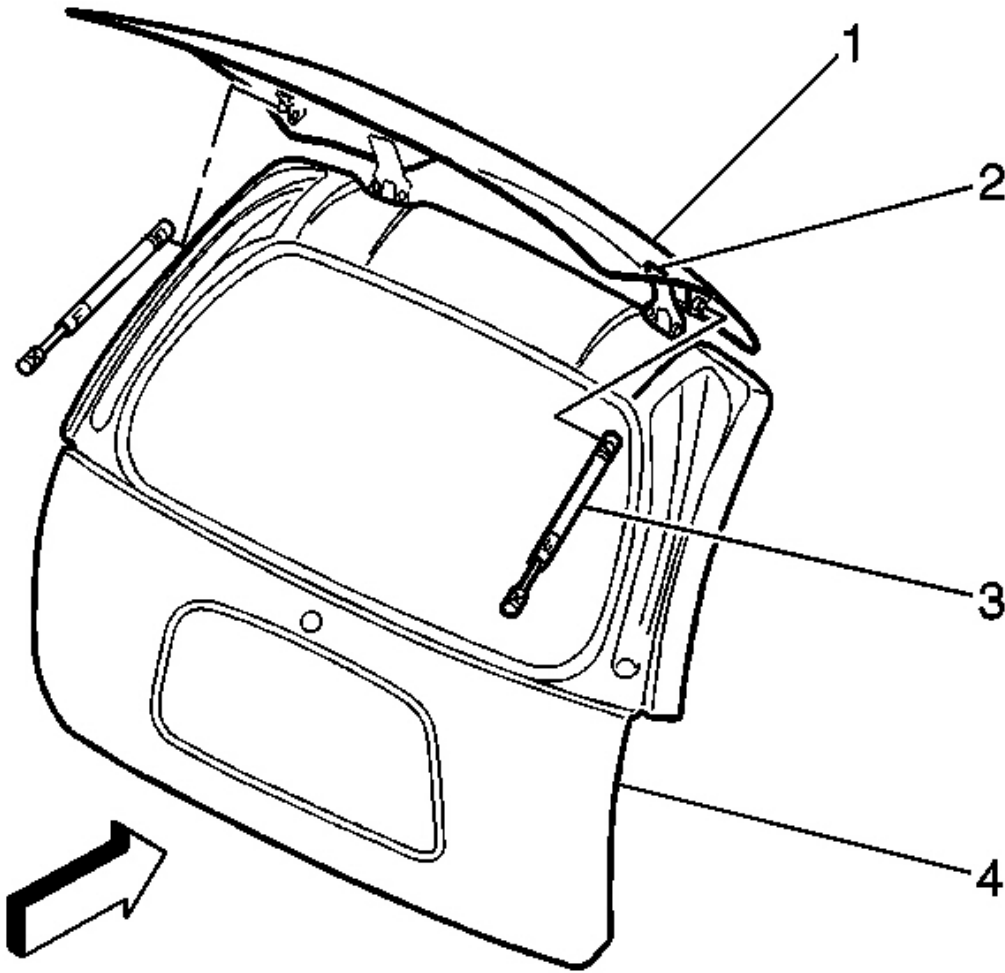


Fig. 47: Identifying Liftgate Window & Related Components
Courtesy of GENERAL MOTORS CORP.

CAUTION: When a lift gate hold open device is being removed or installed, provide alternate support to avoid the possibility of damage to the vehicle or personal injury.

6. With the aid of an assistant remove the struts (3) from the liftgate window. Refer to **Liftgate Strut Replacement**.
7. Lower the liftgate window (1).

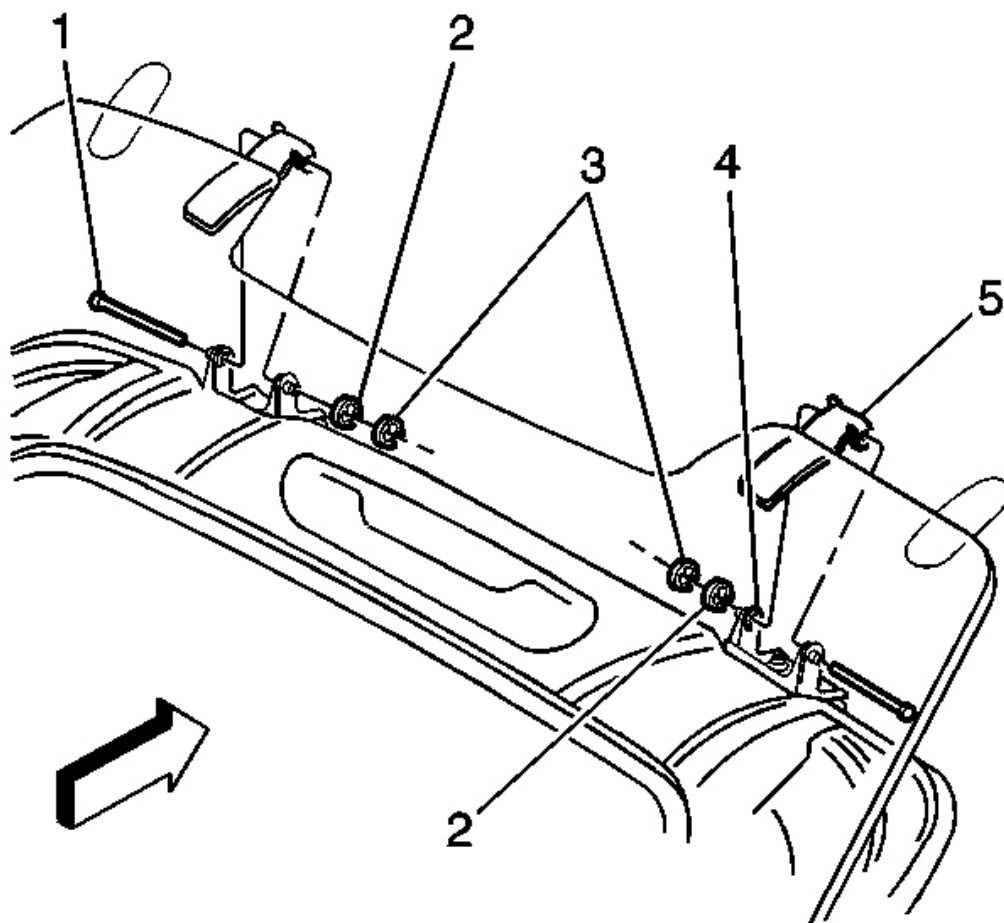


Fig. 48: View Of Hinge Pin C-Clips, Pins & Liftgate Window Hinges
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Do not open liftgate once the hinge pins have been removed from the liftgate window.

8. With the liftgate closed, remove the hinge pin C-clips (2) and (3) from the liftgate window hinges.
9. Remove the hinge pins (1).

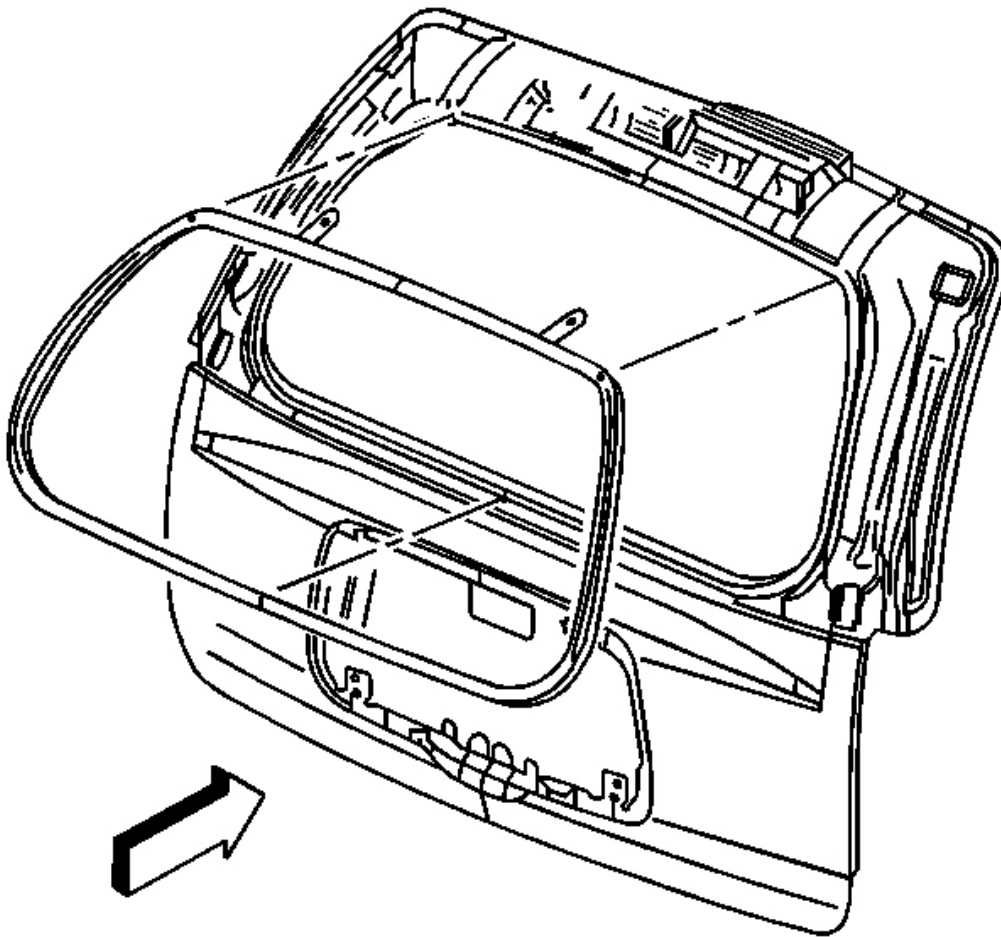


Fig. 49: Liftgate Window
Courtesy of GENERAL MOTORS CORP.

10. Remove the liftgate window from the vehicle with the aid of an assistant.

Installation Procedure

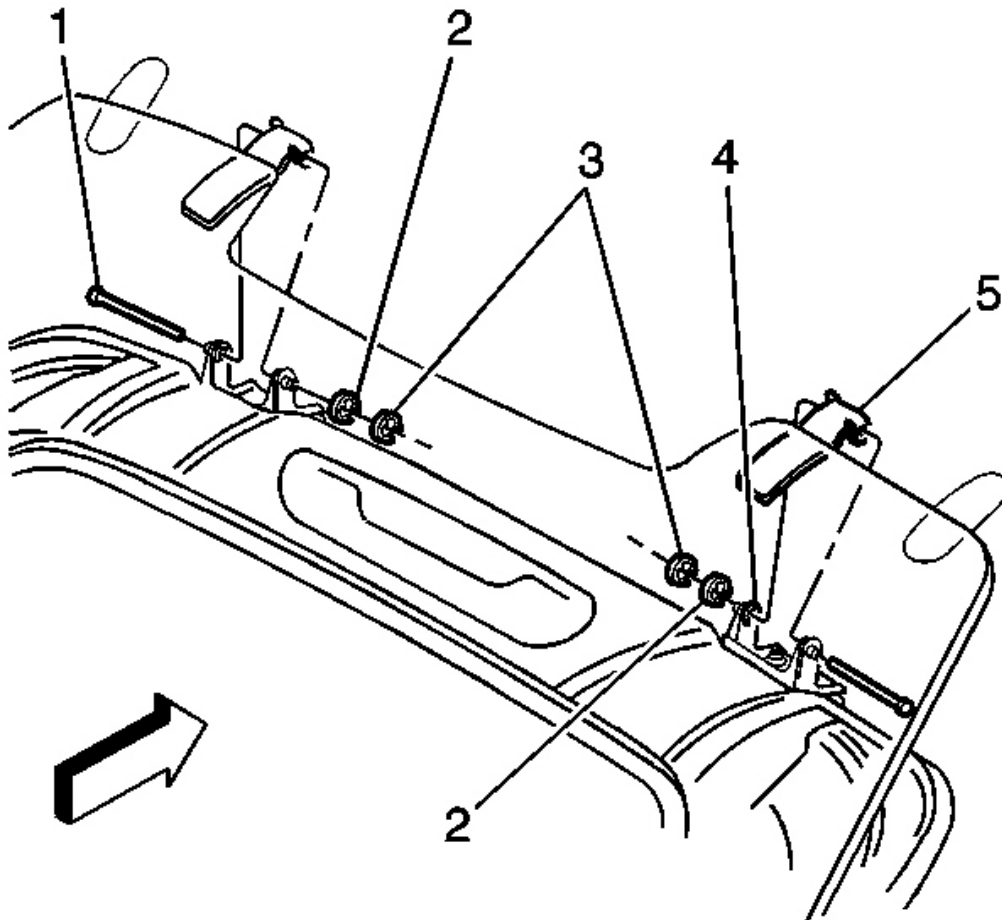


Fig. 50: View Of Hinge Pin C-Clips, Pins & Liftgate Window Hinges
Courtesy of GENERAL MOTORS CORP.

1. Install the liftgate window to the vehicle with the aid of an assistant.

IMPORTANT: Do not open the liftgate once the hinge pins have been removed from the liftgate window.

2. With the liftgate closed align the liftgate windows hinge pin holes, install the hinge pins (1).
3. Install the hinge pin C-clips (2) and (3) to the liftgate window hinge pins.

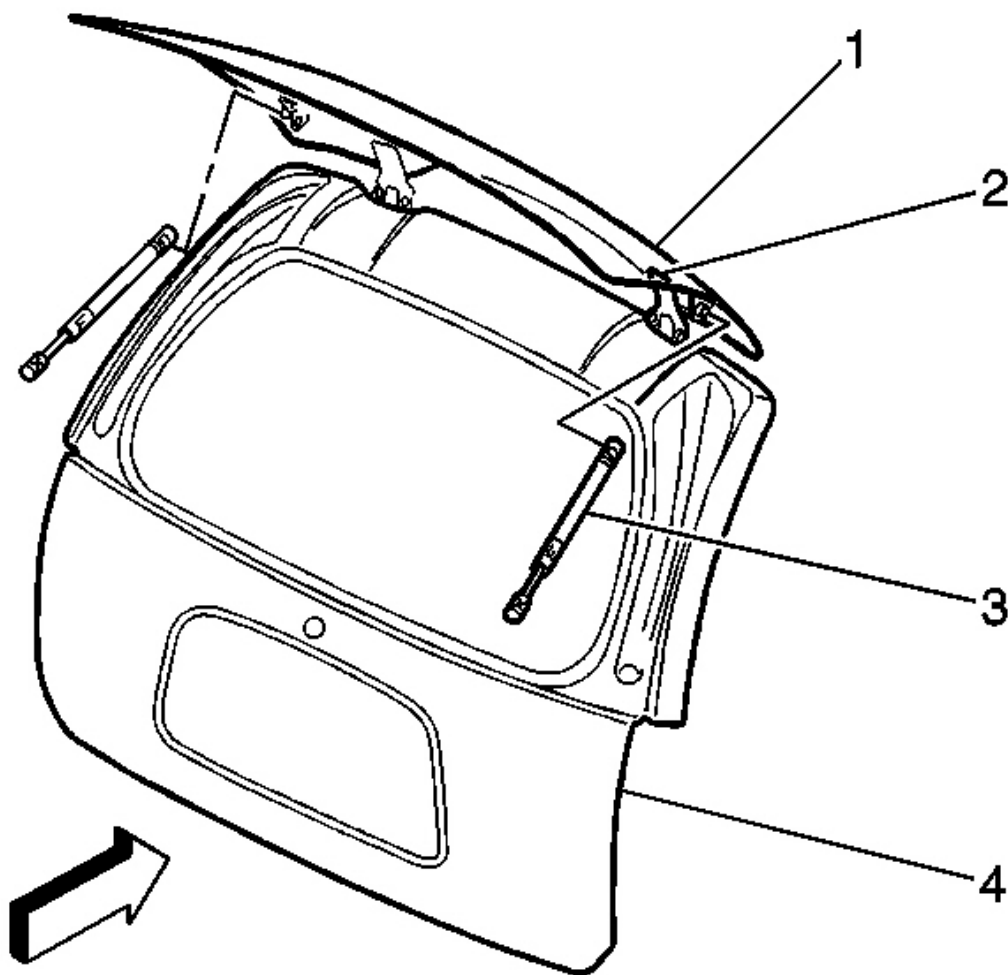


Fig. 51: Identifying Liftgate Window & Related Components
Courtesy of GENERAL MOTORS CORP.

4. Open the liftgate window.

With the aid of an assistant install the struts (3) to the liftgate window. Refer to **Liftgate Strut Replacement** .

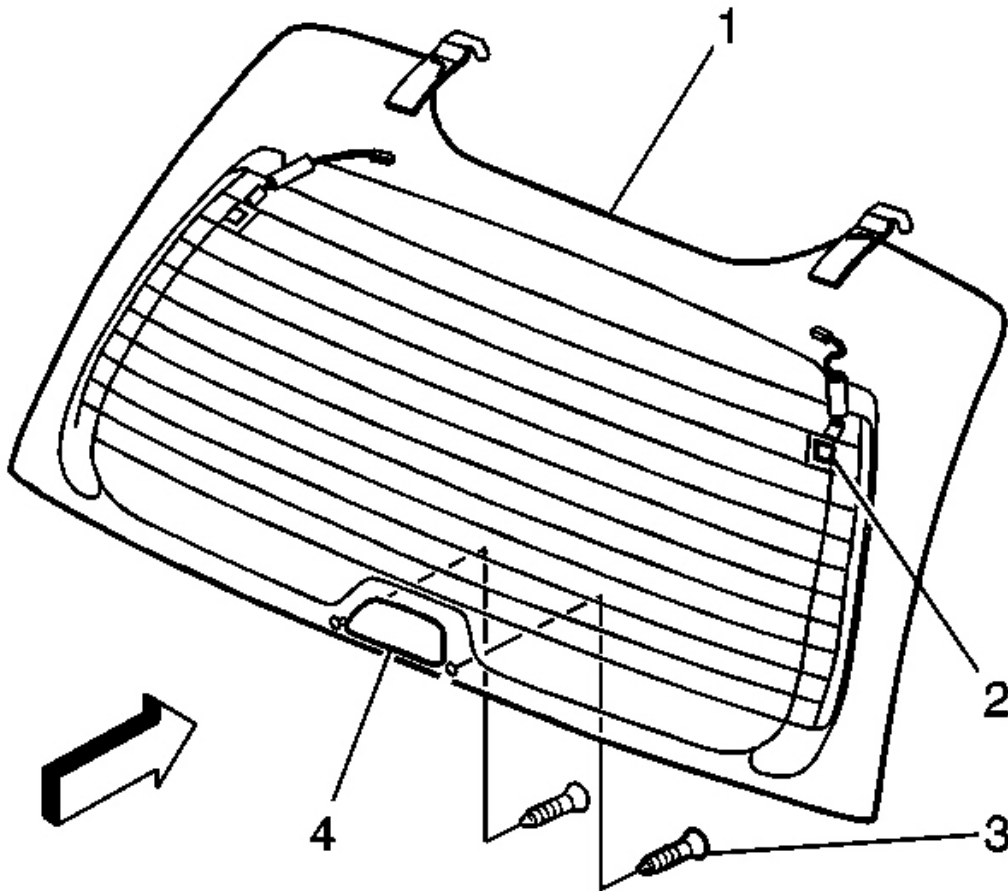


Fig. 52: View Of Liftgate Window Handle Bolts & Defogger Grid Electrical Connectors
Courtesy of GENERAL MOTORS CORP.

5. Install the outside handle (4) and striker to the liftgate window.

NOTE: Refer to Fastener Notice .

6. Install the liftgate window handle bolts (3).

Tighten: Tighten the liftgate window handle bolts (3) to the striker plate to 5 N.m (44 lb in).

7. Install the liftgate window defogger electrical connectors (2) to the right and left sides.
8. Install the liftgate upper molding. Refer to Liftgate Upper Molding Replacement .

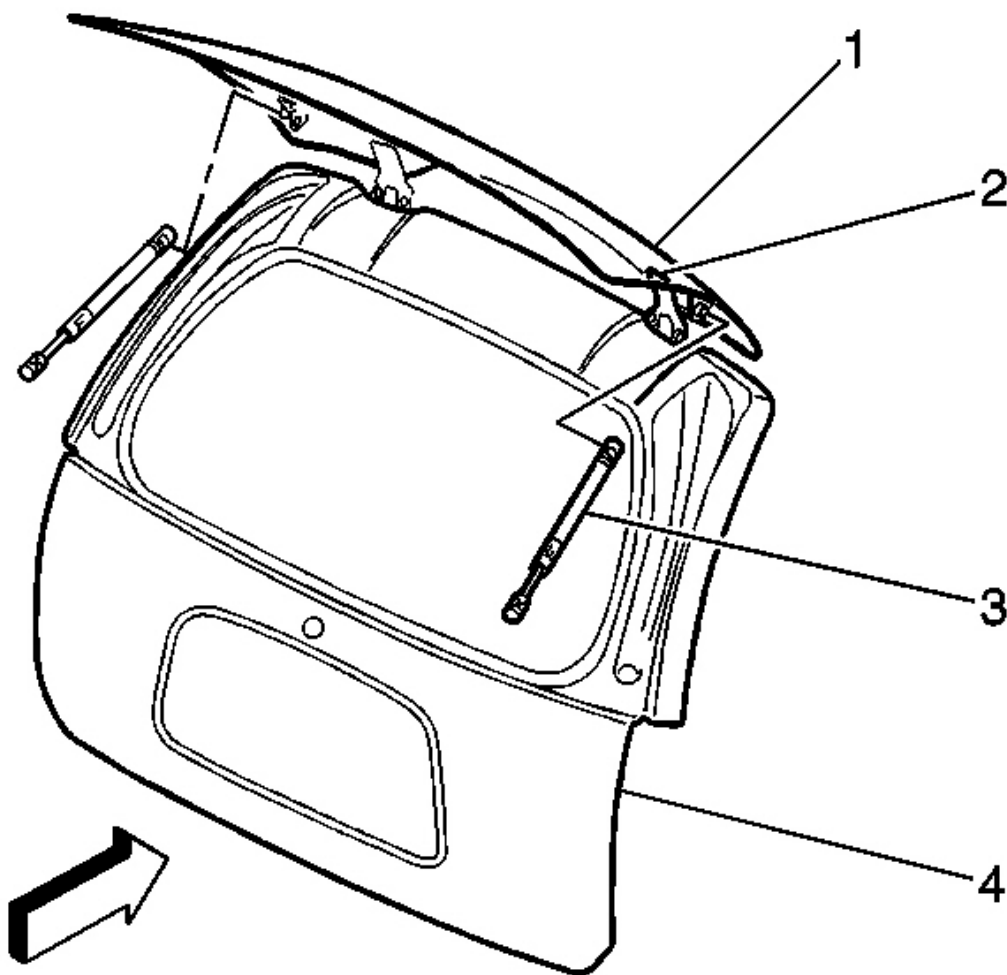


Fig. 53: Identifying Liftgate Window & Related Components
Courtesy of GENERAL MOTORS CORP.

9. Inspect the operations of the liftgate window (1) and center high mounted stop lamp (CHMSL).
10. Close the liftgate window (1).

LIFTGATE WINDOW STRUT REPLACEMENT

Removal Procedure

CAUTION: When a hood hold open device is being removed or installed, provide alternate support to avoid the possibility of damage to the vehicle or

personal injury.

1. Open and support the liftgate window.

NOTE: Refer to Liftgate/Hood Assist Rod Notice .

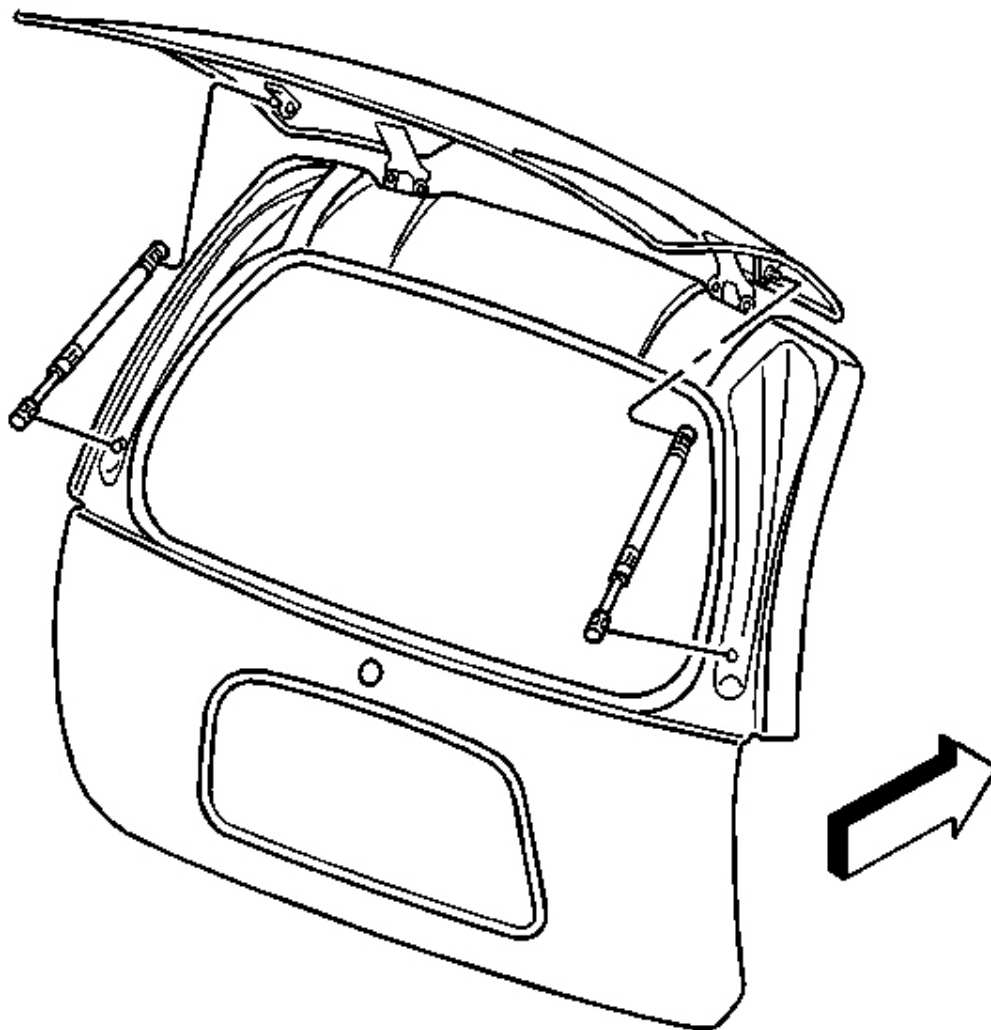


Fig. 54: Liftgate Window Struts
Courtesy of GENERAL MOTORS CORP.

2. Lift up the retainer clips on the liftgate window struts using a small flat-bladed tool.

3. Remove the upper end of the liftgate window struts from the ball joint.
4. Remove the lower end of the liftgate window struts from the ball joint.
5. Remove the liftgate window struts from the liftgate window.

Installation Procedure

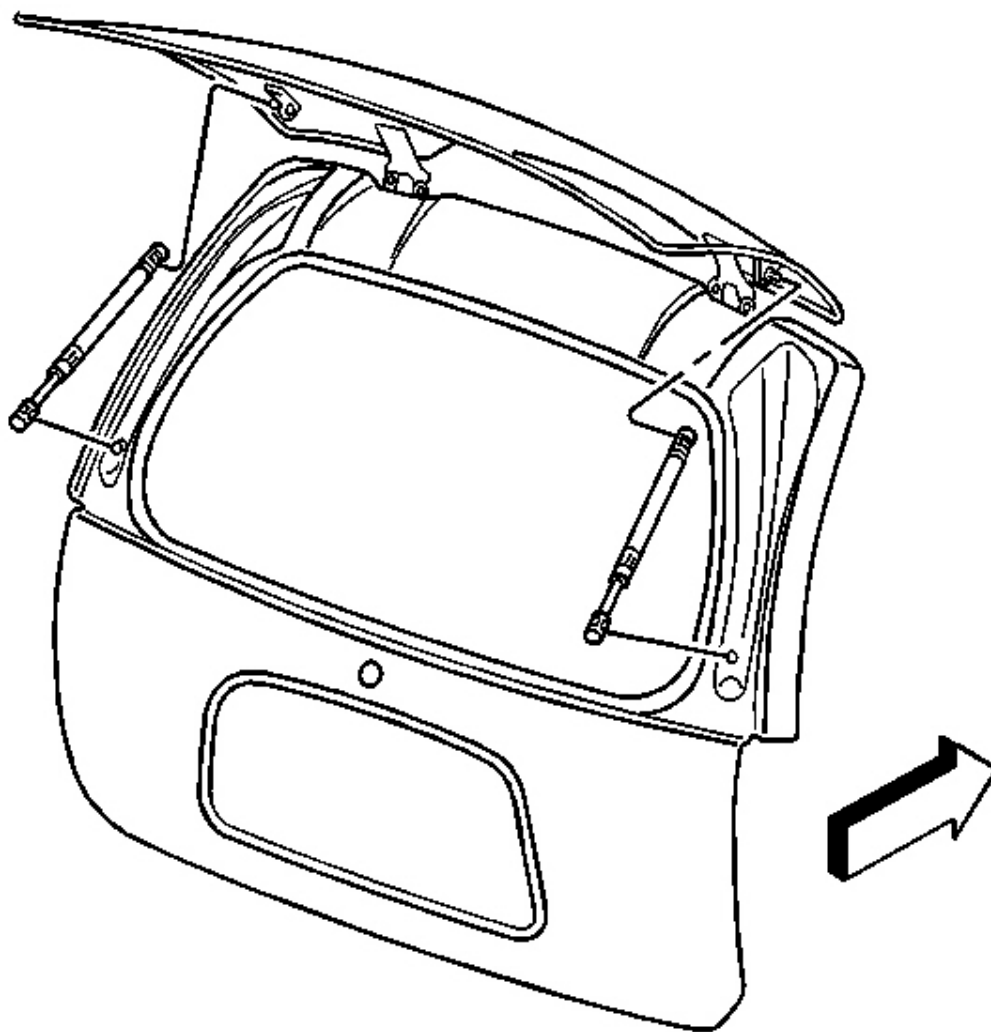


Fig. 55: Liftgate Window Struts
Courtesy of GENERAL MOTORS CORP.

1. Position the liftgate window struts to the liftgate window.

2008 Isuzu Ascender LS

2008 Accessories & Equipment Fixed and Moveable Windows - Ascender, Envoy & Trailblazer

2. Install the upper end of the liftgate window struts to the ball joint. Press in to place until fully seated.
3. Install the lower end of the liftgate window struts to the ball joint. Press in to place until fully seated.
4. Remove the support device from the liftgate window.
5. Close the liftgate window.

LIFTGATE WINDOW LATCH REPLACEMENT

Removal Procedure

1. Remove the liftgate window garnish molding. Refer to **Rear Window Garnish Molding Replacement** .
2. Remove the liftgate trim panel. Refer to **Liftgate Trim Panel Replacement** .

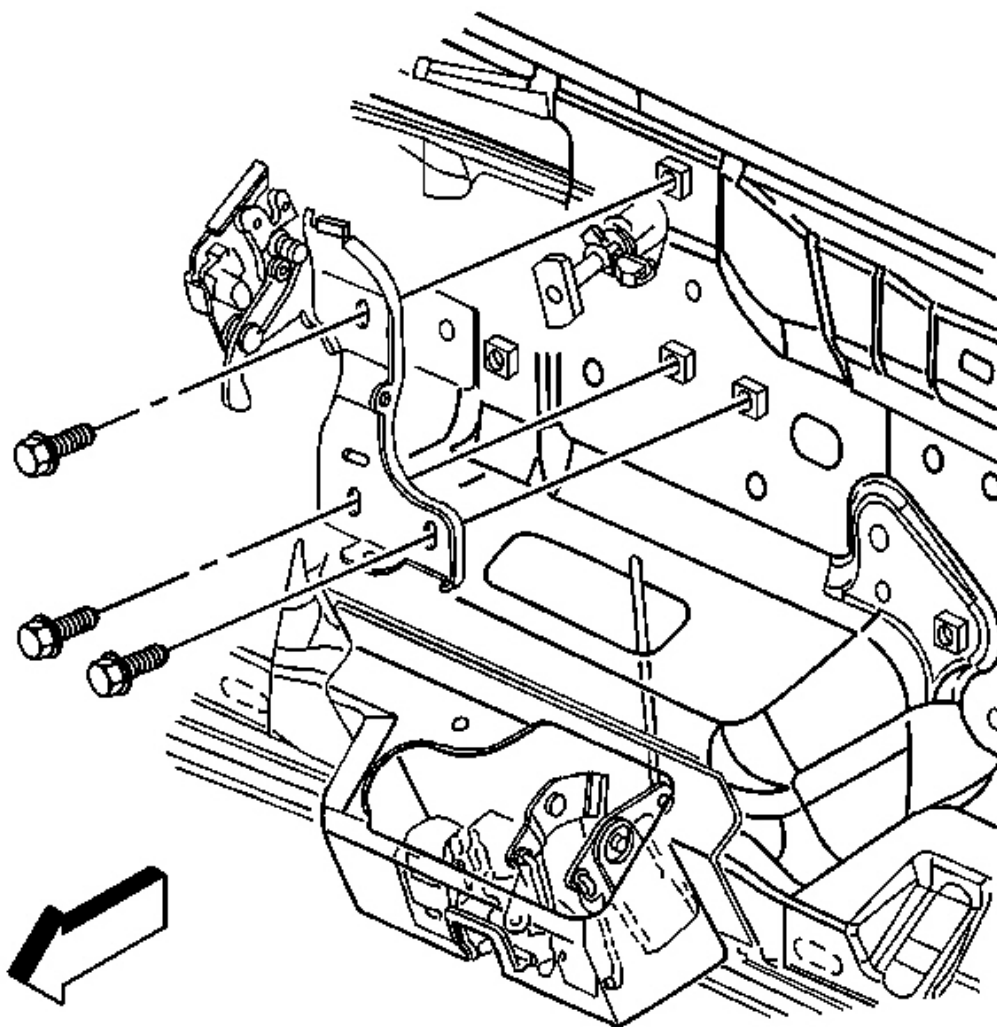


Fig. 56: Liftgate Latch Retaining Bolts
Courtesy of GENERAL MOTORS CORP.

3. Remove the bolts that retain the latch to the liftgate.
4. Disconnect the electrical connector.
5. Remove the latch from the liftgate.

Installation Procedure

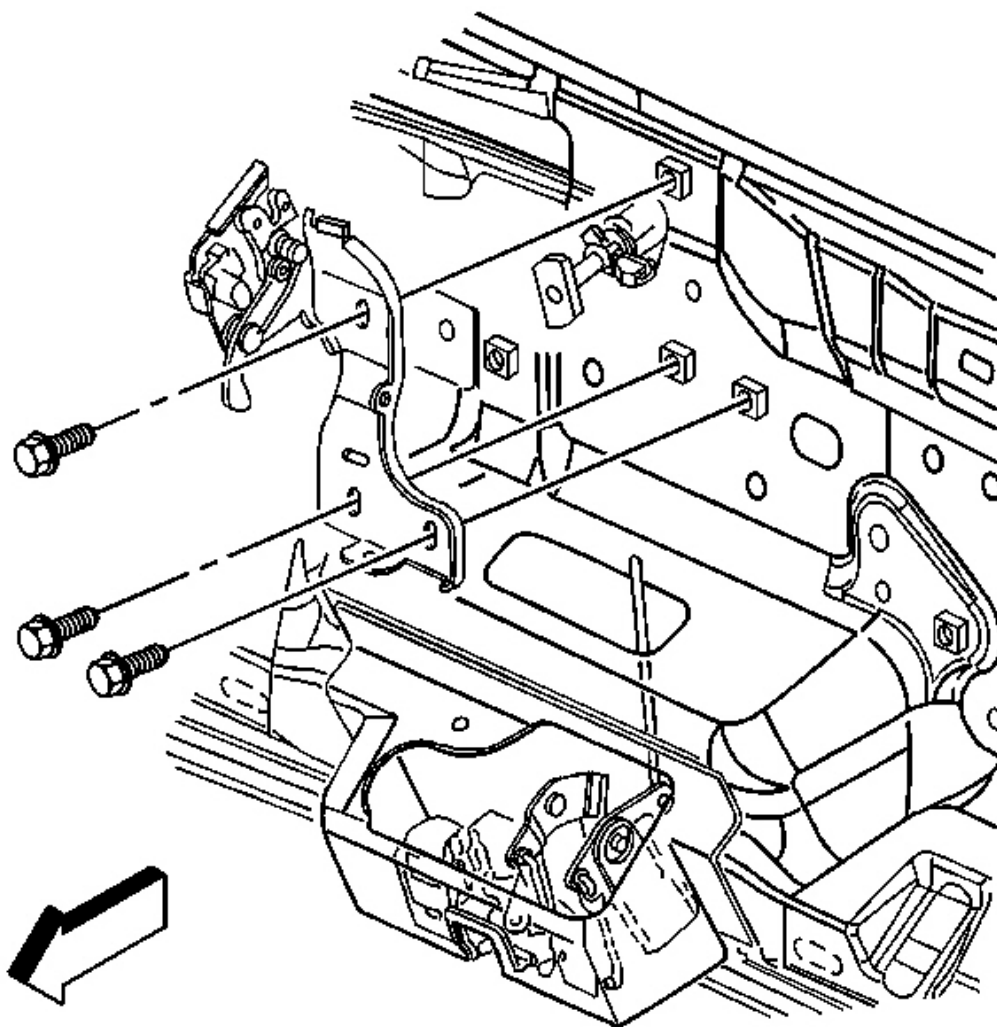


Fig. 57: Liftgate Latch Retaining Bolts
Courtesy of GENERAL MOTORS CORP.

1. Position the latch to the liftgate.
2. Connect the electrical connector.
3. Install the bolts that retain the latch to the lift gate.

NOTE: Refer to **Fastener Notice** .

4. Adjust the portion of the latch to allow the lift gate window striker enter the center of the latch.

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

5. Install the liftgate trim panel. Refer to **Liftgate Trim Panel Replacement** .
6. Install the liftgate window garnish molding. Refer to **Rear Window Garnish Molding Replacement** .

LIFTGATE WINDOW LATCH STRIKER ADJUSTMENT

Adjustment Procedure

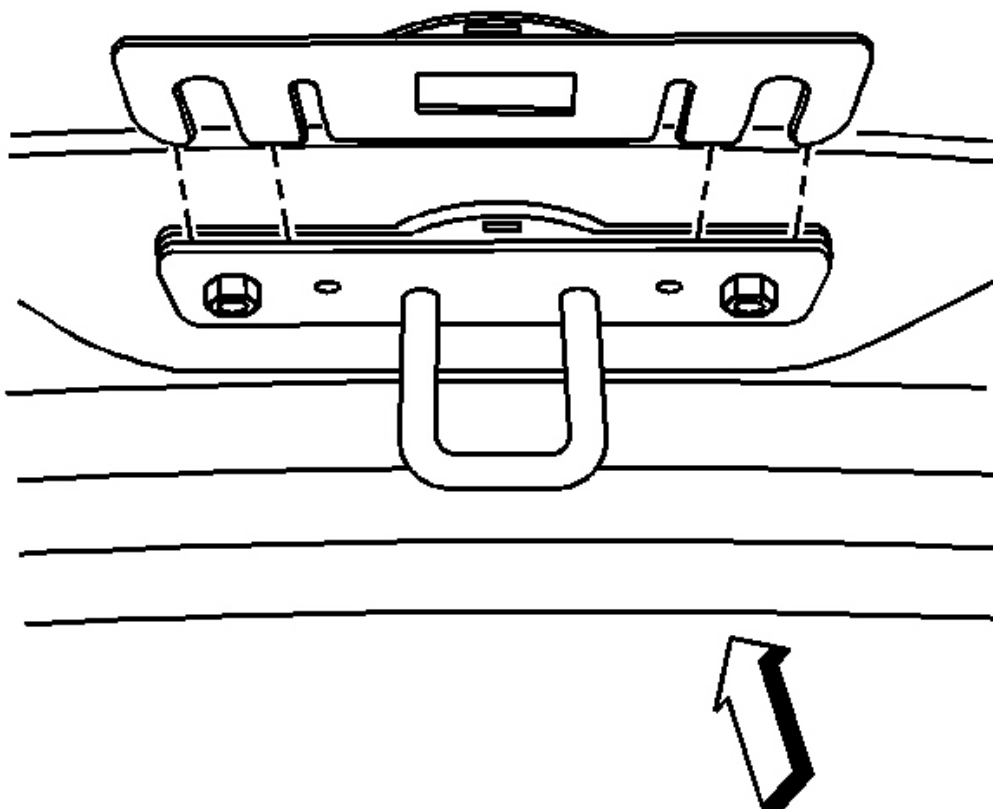


Fig. 58: Additional Striker Shims
Courtesy of GENERAL MOTORS CORP.

1. Inspect the liftgate window for proper fit to the liftgate window weatherstrip.
 - Open and close the liftgate window.
 - If the liftgate window is hard to close, additional striker shims will need to be added.
 - If the liftgate window does not seal tightly against the weatherstrip, striker shims will need to be

2008 Isuzu Ascender LS

2008 Accessories & Equipment Fixed and Moveable Windows - Ascender, Envoy & Trailblazer

removed.

2. Open the liftgate window.
3. Loosen the nuts retaining the liftgate striker to the liftgate window.

NOTE: Refer to Fastener Notice .

4. Remove or add shims as determined above.

Tighten: Tighten the liftgate window striker nuts to 6 N.m (53 lb in).

5. Inspect the liftgate window for proper fit, readjust if necessary.
6. Close the liftgate window.

LIFTGATE WINDOW OUTSIDE HANDLE & LATCH STRIKER REPLACEMENT

Removal Procedure

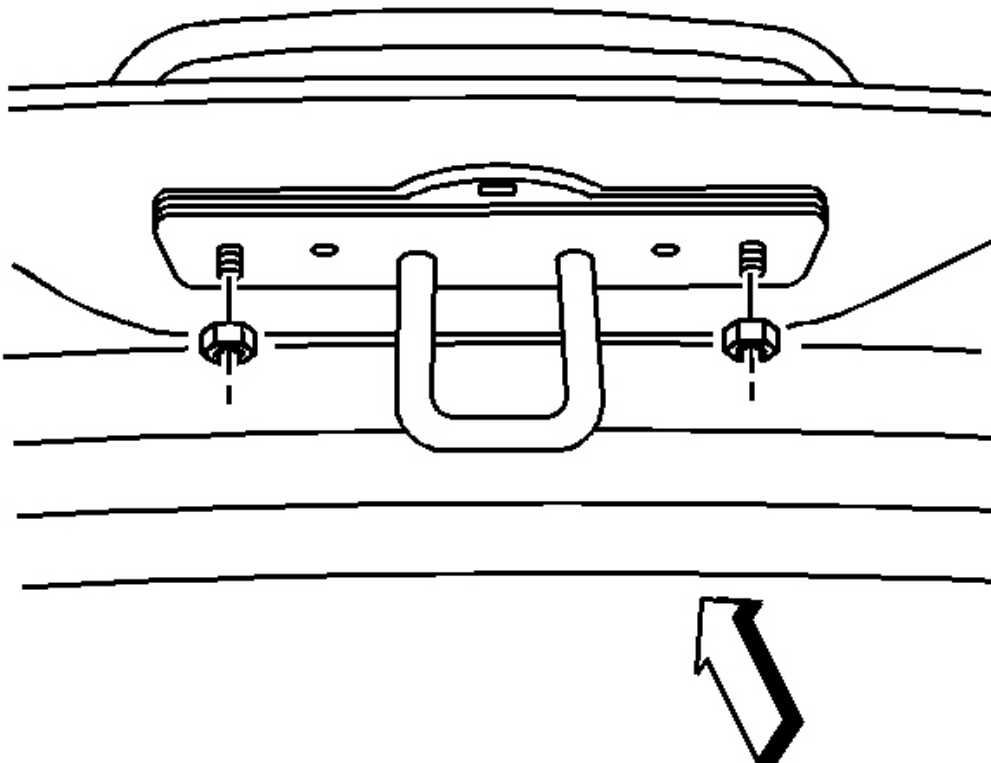


Fig. 59: Identifying Striker Assembly & Retaining Nuts
Courtesy of GENERAL MOTORS CORP.

1. Open the liftgate window.
2. Remove the nuts retaining the striker assembly to the liftgate window.
3. Remove the handle and striker assembly from the liftgate window.

Installation Procedure

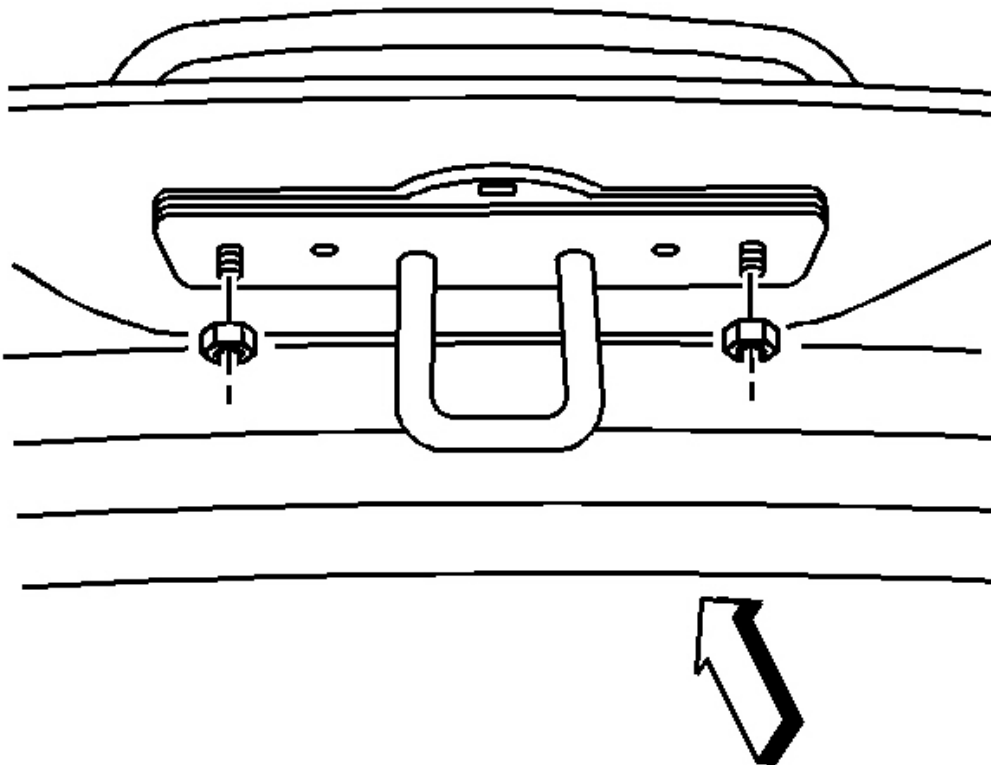


Fig. 60: Identifying Striker Assembly & Retaining Nuts
Courtesy of GENERAL MOTORS CORP.

1. Install the handle and striker assembly to the liftgate window.

NOTE: Refer to Fastener Notice .

2. Install the nuts retaining the striker assembly to the liftgate window.

2008 Isuzu Ascender LS

2008 Accessories & Equipment Fixed and Moveable Windows - Ascender, Envoy & Trailblazer

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

3. Check the liftgate window for proper operation, adjust if necessary. Refer to **Liftgate Window Latch Striker Adjustment**.

FRONT SIDE DOOR WINDOW CHANNEL REPLACEMENT

Removal Procedure

1. Remove the door trim panel. Refer to **Front Side Door Trim Panel Replacement** .
2. Remove the speaker. Refer to **Radio Front Side Door Speaker Replacement** .
3. Remove the water deflector. Refer to **Front Side Door Water Deflector Replacement** .
4. Remove the window. Refer to **Front Side Door Window Replacement**.
5. Remove the outside rearview mirror. Refer to **Outside Rearview Mirror Replacement (Door Mounted)** or **Outside Rearview Mirror Replacement (Fender Mounted)** .

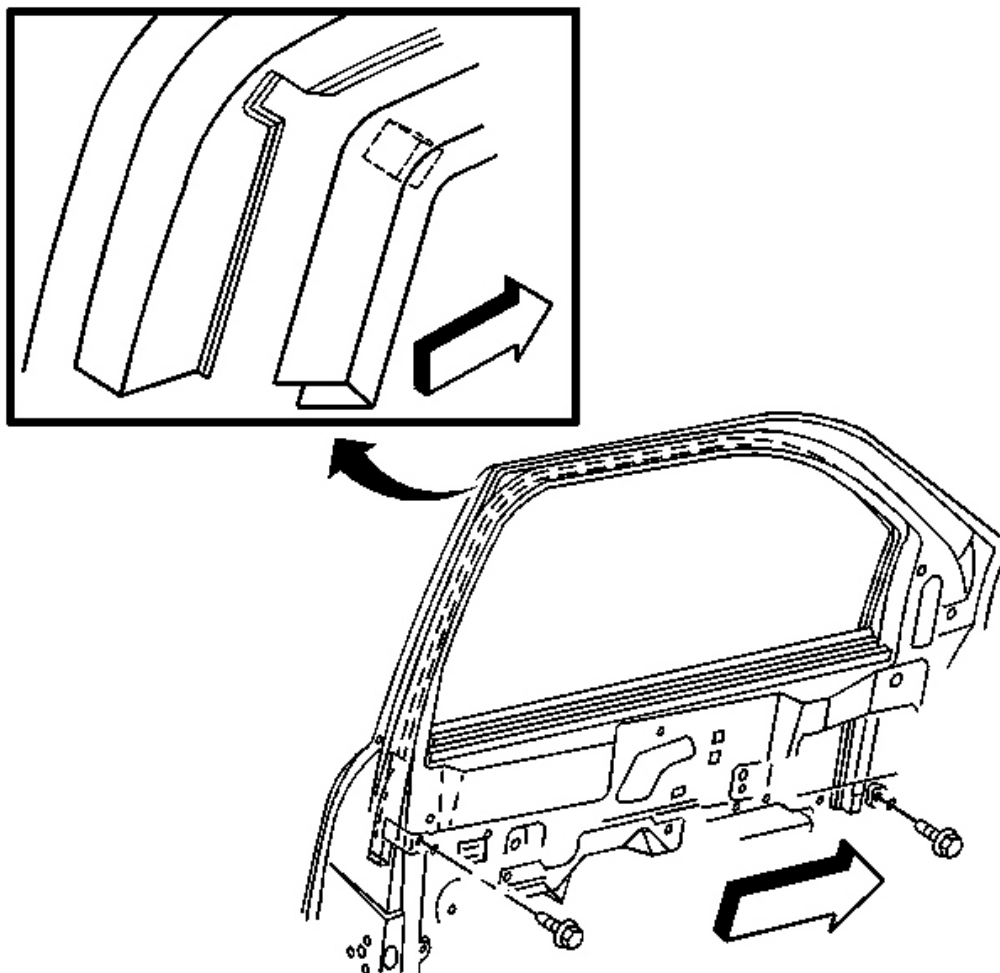


Fig. 61: Identifying Weatherstrip/Run Channel
Courtesy of GENERAL MOTORS CORP.

6. Remove the 2 bolts that retain the weatherstrip/run channel to the door.
7. Pull the weatherstrip/run channel away from the window frame opening.
8. Carefully twist and pull up on the weatherstrip/run channel, in order remove the weatherstrip/run channel from the top of the door frame.
9. Remove the weatherstrip/run channel from the door.

Installation Procedure

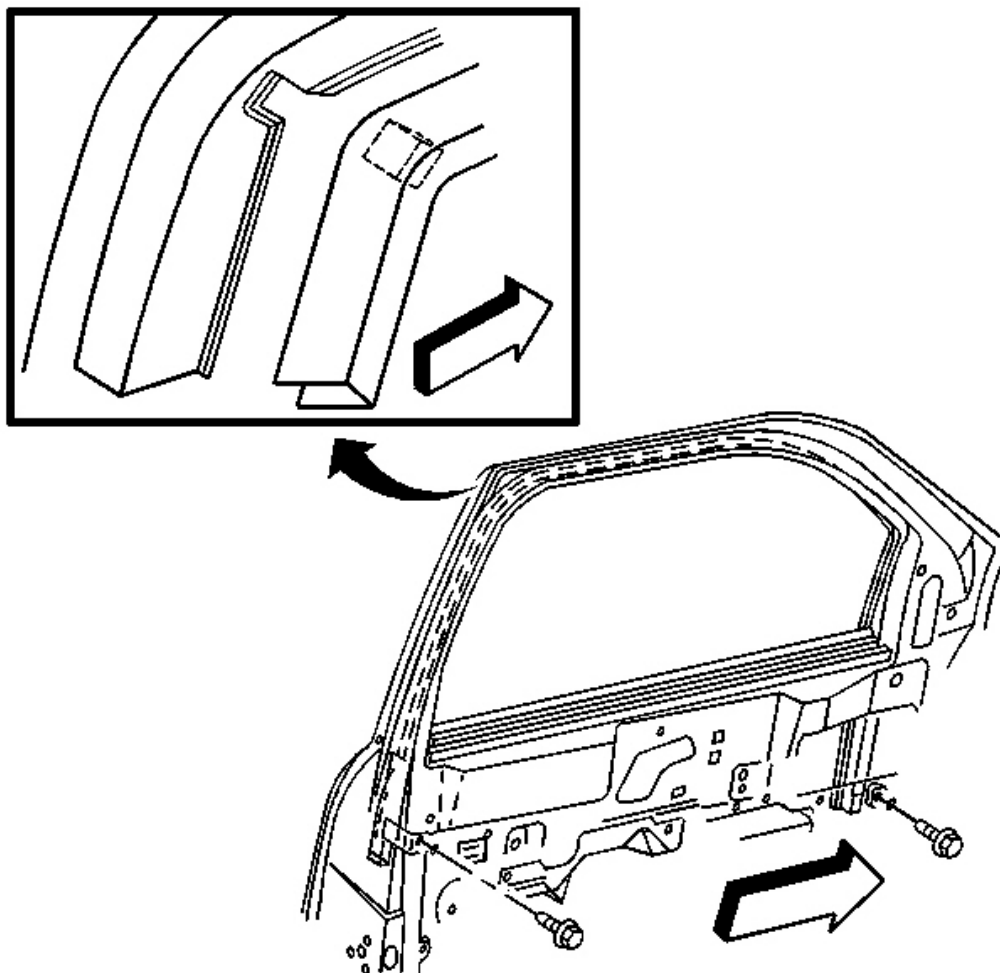


Fig. 62: Identifying Weatherstrip/Run Channel
Courtesy of GENERAL MOTORS CORP.

1. Install the weatherstrip/run channel to the door.
2. Position the tabs on the weatherstrip/run channel into the slots in the door.
3. Press the weatherstrip/run channel into the window frame opening.

NOTE: Refer to Fastener Notice .

4. Install the 2 retaining bolts.

Tighten: Tighten the retaining bolts to 10 N.m (88 lb in).

2008 Isuzu Ascender LS

2008 Accessories & Equipment Fixed and Moveable Windows - Ascender, Envoy & Trailblazer

5. Install the outside rearview mirror. Refer to **Outside Rearview Mirror Replacement (Door Mounted)** or **Outside Rearview Mirror Replacement (Fender Mounted)** .
6. Install the window. Refer to **Front Side Door Window Replacement**.
7. Install the water deflector. Refer to **Front Side Door Water Deflector Replacement** .
8. Install the speaker. Refer to **Radio Front Side Door Speaker Replacement** .
9. Install the door trim panel. Refer to **Front Side Door Trim Panel Replacement** .

REAR SIDE DOOR WINDOW CHANNEL REPLACEMENT

Removal Procedure

1. Remove the trim panel. Refer to **Rear Side Door Trim Panel Replacement** .
2. Remove the inner window belt sealing strip. Refer to **Rear Door Window Belt Inner Sealing Strip Replacement**.
3. Remove the outer window belt sealing strip. Refer to **Rear Door Window Belt Outer Sealing Strip Replacement**.
4. Remove the water deflector. Refer to **Rear Side Door Water Deflector Replacement** .
5. Remove the window. Refer to **Rear Side Door Window Replacement**.

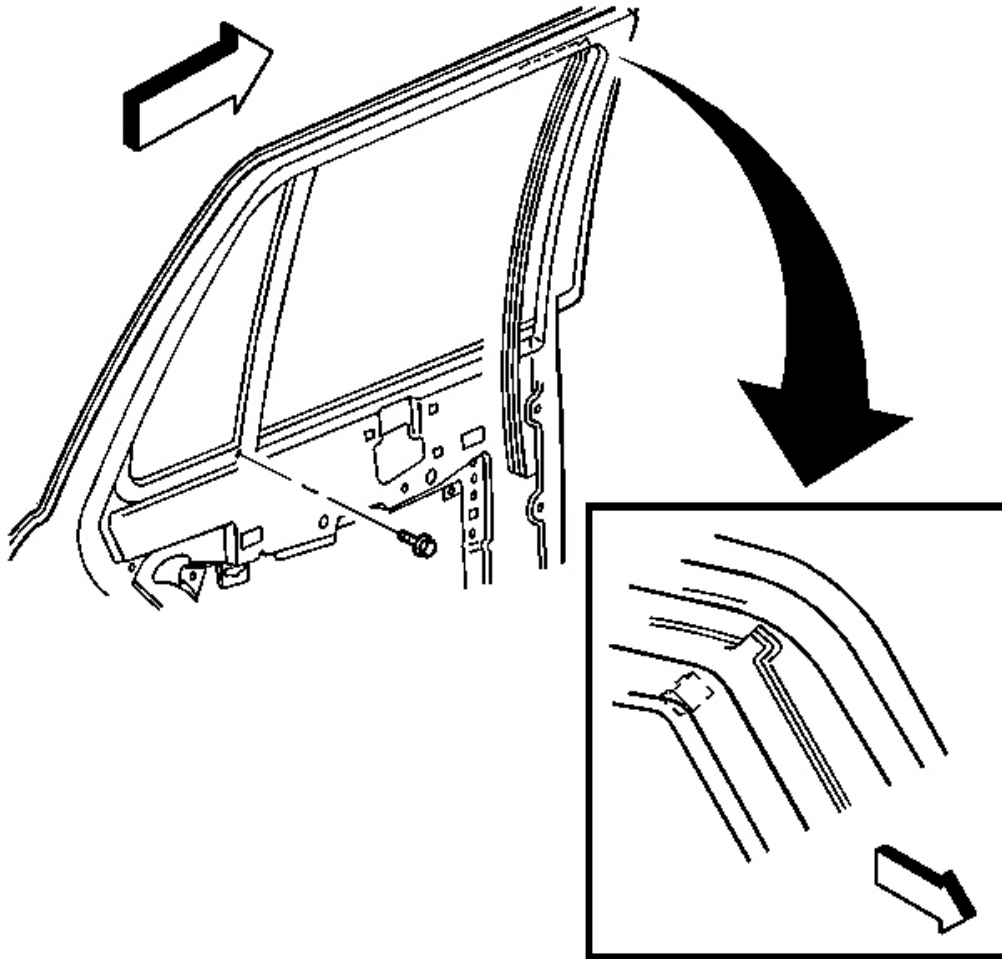


Fig. 63: Identifying Weatherstrip/Run Channel
Courtesy of GENERAL MOTORS CORP.

6. Remove the bolt that retains the weatherstrip run channel to the door.
7. Pull the weatherstrip/run channel from the window frame opening.
8. carefully release the double sided tape attaching the molding to the outside of the door.
9. Carefully twist the weatherstrip run channel and pull up at the top of the door frame.

IMPORTANT: The quarter glass and weatherstrip/run channel is not serviceable and should be replaced only as an assembly.

10. Remove the weatherstrip/run channel from the door.

Installation Procedure

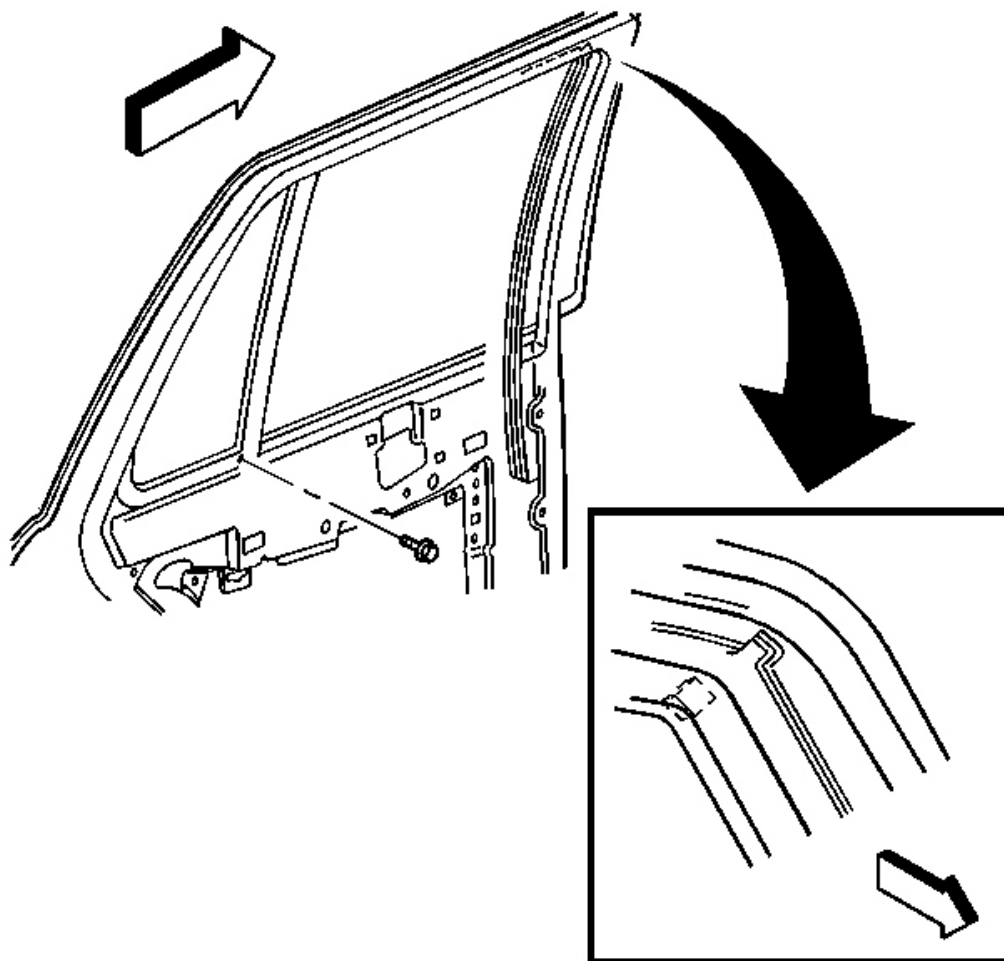


Fig. 64: Identifying Weatherstrip/Run Channel
Courtesy of GENERAL MOTORS CORP.

1. Install the weatherstrip/run channel to the door.
2. Press the weatherstrip/run channel into the window frame opening.
3. Position the tabs on the weatherstrip/run channel into the slots on the door.
4. Attach the molding to the outside of the door with double sided tape.

NOTE: Refer to Fastener Notice .

2008 Isuzu Ascender LS

2008 Accessories & Equipment Fixed and Moveable Windows - Ascender, Envoy & Trailblazer

5. Install the weatherstrip/run channel retaining bolt.

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

6. Install the window. Refer to **Rear Side Door Window Replacement**.
7. Install the water deflector. Refer to **Rear Side Door Water Deflector Replacement** .
8. Install the outer window belt sealing strip. Refer to **Rear Door Window Belt Outer Sealing Strip Replacement**.
9. Install the inner window belt sealing strip. Refer to **Rear Door Window Belt Inner Sealing Strip Replacement**.
10. Install the trim panel. Refer to **Rear Side Door Trim Panel Replacement** .

STATIONARY WINDOW REVEAL MOLDING REPAIR

Removal Procedure

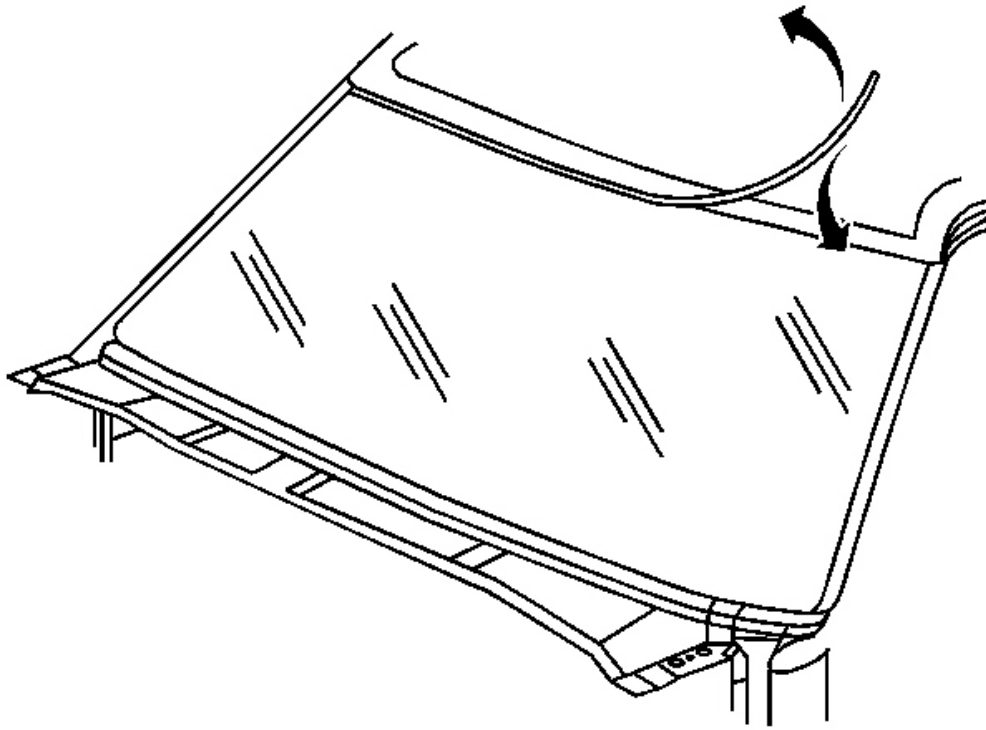


Fig. 65: Identifying Reveal Molding
Courtesy of GENERAL MOTORS CORP.

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.

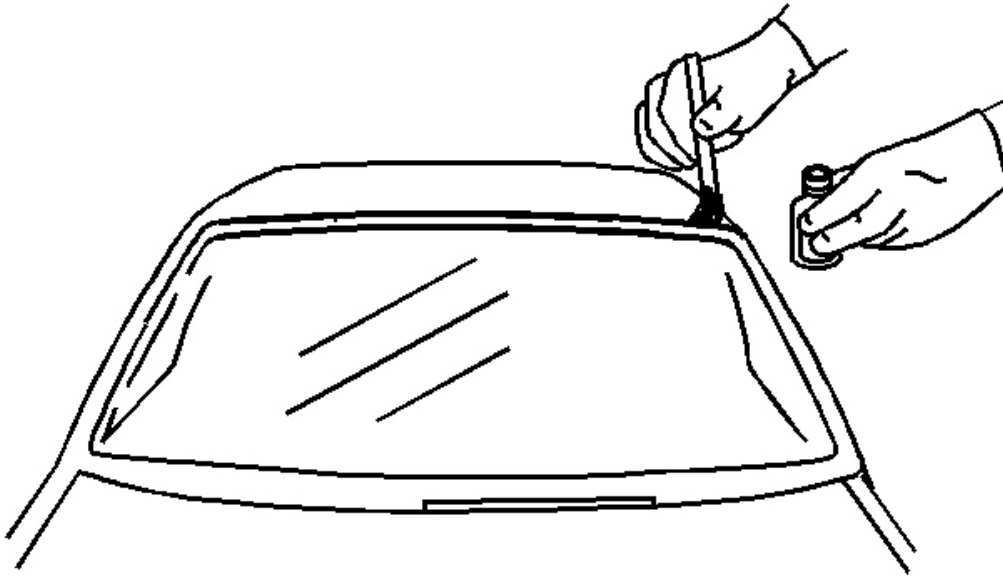


Fig. 66: Applying Glass Prep
Courtesy of GENERAL MOTORS CORP.

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.

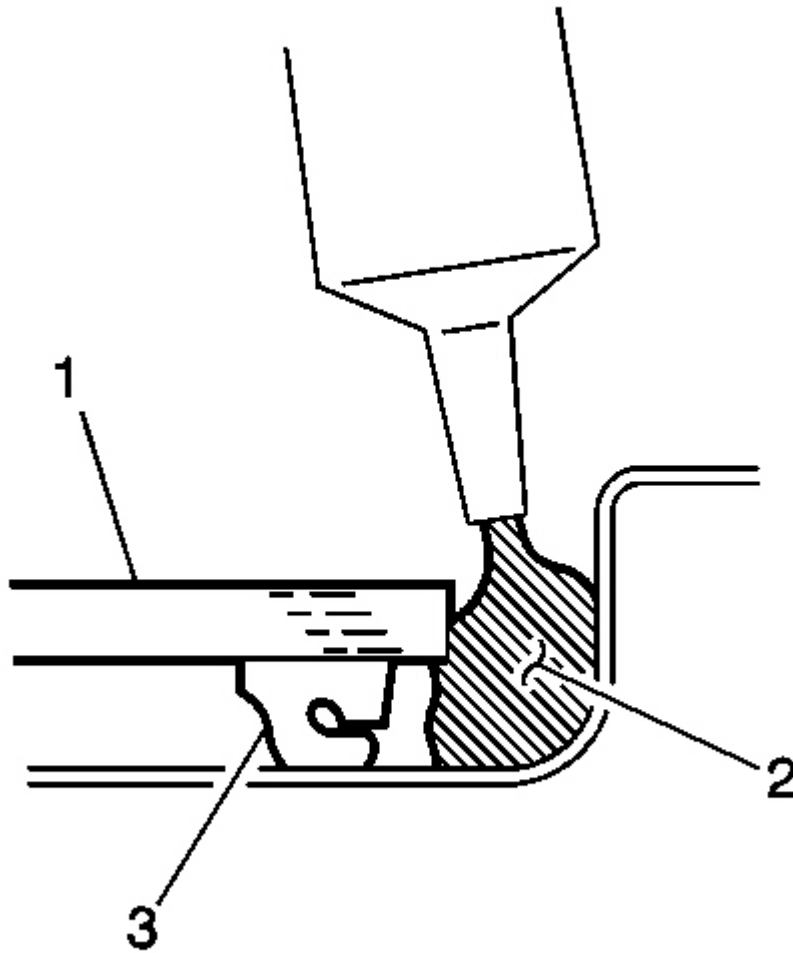


Fig. 67: Applying Urethane Adhesive Between Window & Pinch-Weld
Courtesy of GENERAL MOTORS CORP.

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

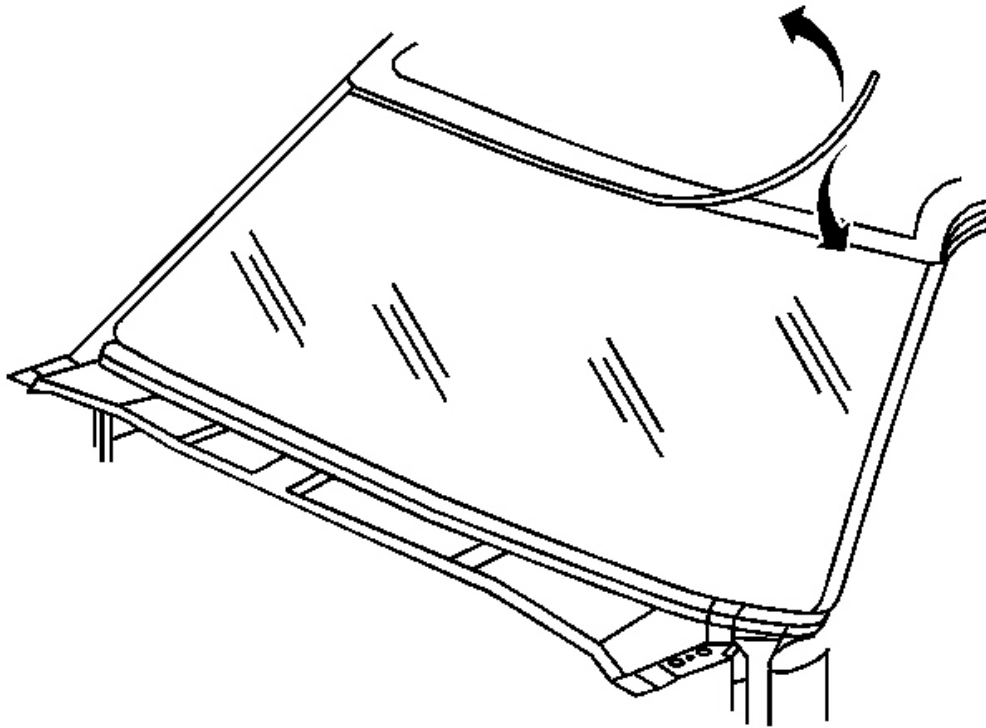


Fig. 68: Identifying Reveal Molding
Courtesy of GENERAL MOTORS CORP.

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.

ENDGATE WINDOW REVEAL MOLDING REPLACEMENT

Removal Procedure

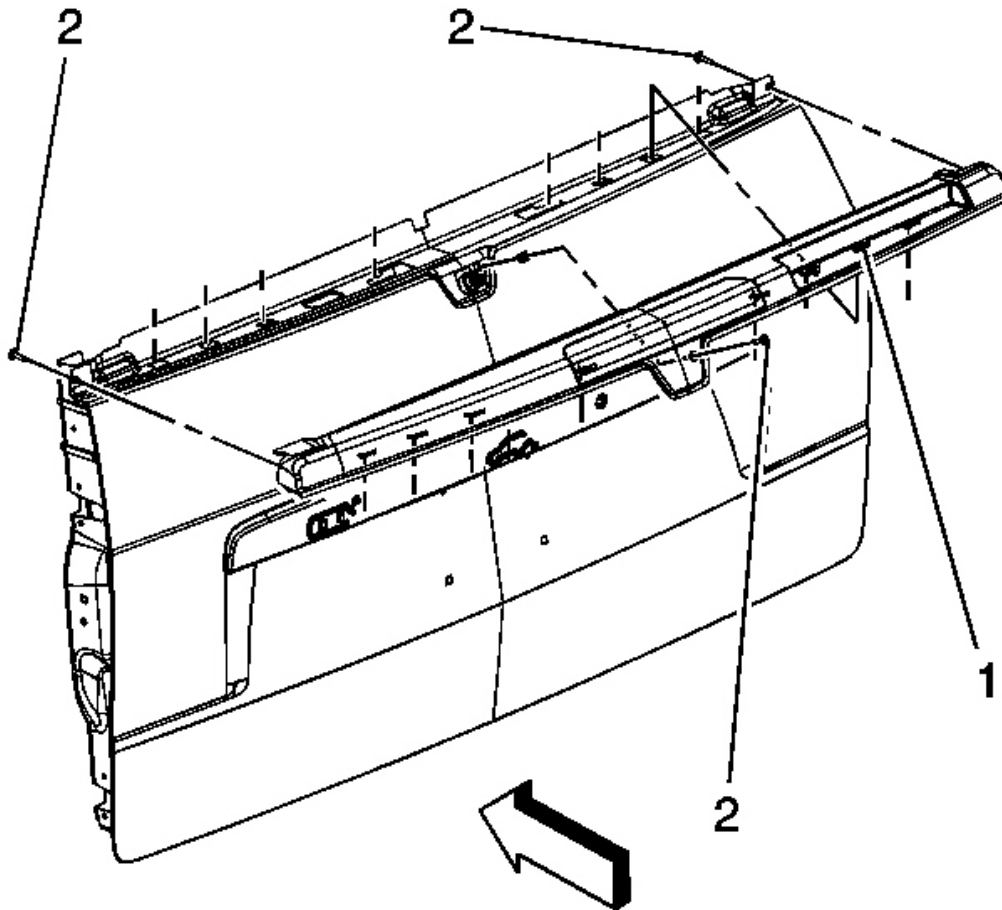


Fig. 69: Identifying Window Reveal Molding - Endgate
 Courtesy of GENERAL MOTORS CORP.

1. Remove the rear wiper arm. Refer to **Rear Window Wiper Arm Replacement (TrailBlazer, Envoy)** or **Rear Window Wiper Arm Replacement (TrailBlazer SS)** .
2. Remove the screws (2) retaining the endgate window reveal molding assembly (1) to the endgate.
3. Slide the molding assembly rearward, then upward to release the molding retainers from the endgate.
4. Disconnect the electrical connector for the high mounted stop lamp.
5. Remove the high mounted stop lamp from the molding. Refer to **High Mount Stop Lamp Replacement (Envoy, TrailBlazer, Rainier)** .

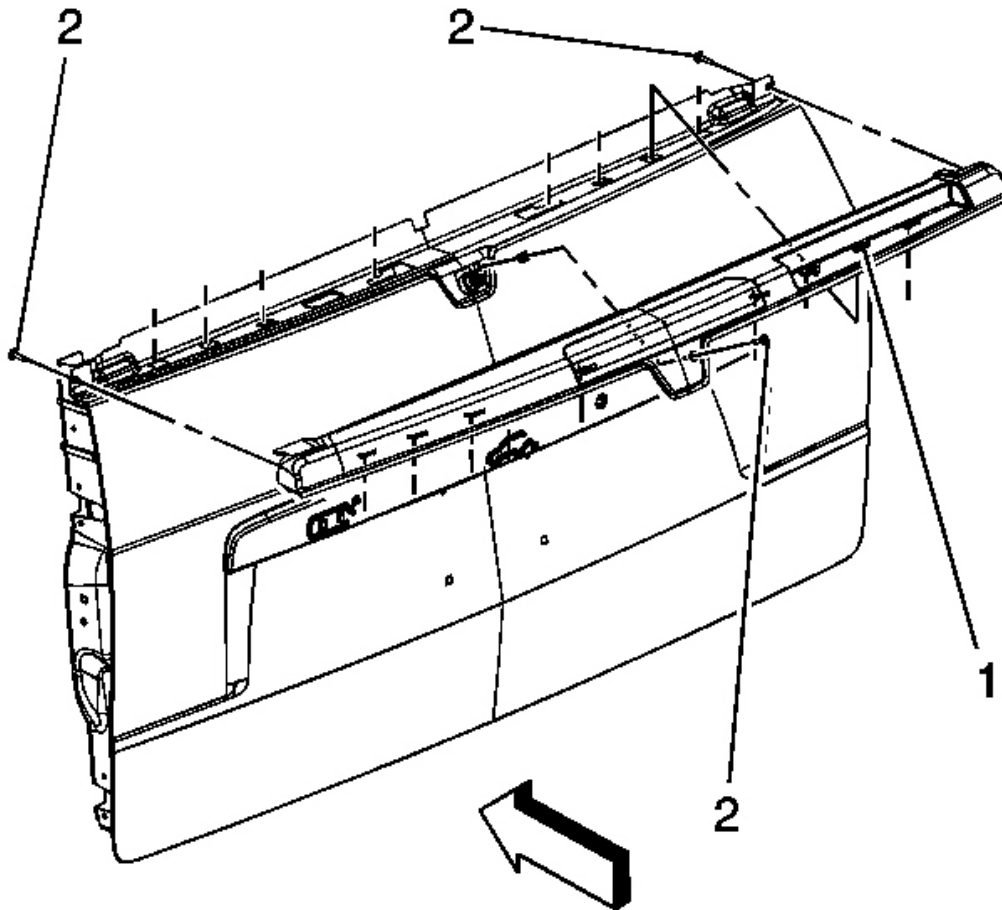


Fig. 70: Identifying Window Reveal Molding - Endgate
Courtesy of GENERAL MOTORS CORP.

1. Install the high mounted stop lamp to the endgate window reveal molding (1). Refer to **High Mount Stop Lamp Replacement (Envoy, TrailBlazer, Rainier)** .
2. Connect the electrical connector for the high mounted stop lamp.
3. Install the molding assembly to the endgate by inserting the retainers to the slots in the endgate panel and sliding the molding forward.

NOTE: Refer to **Fastener Notice** .

4. Install the screws (2) retaining the molding to the endgate.

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

5. Install the rear wiper arm. Refer to **Rear Window Wiper Arm Replacement (TrailBlazer, Envoy)** or **Rear Window Wiper Arm Replacement (TrailBlazer SS)** .

REAR SIDE DOOR WINDOW SWITCH REPLACEMENT

Removal Procedure

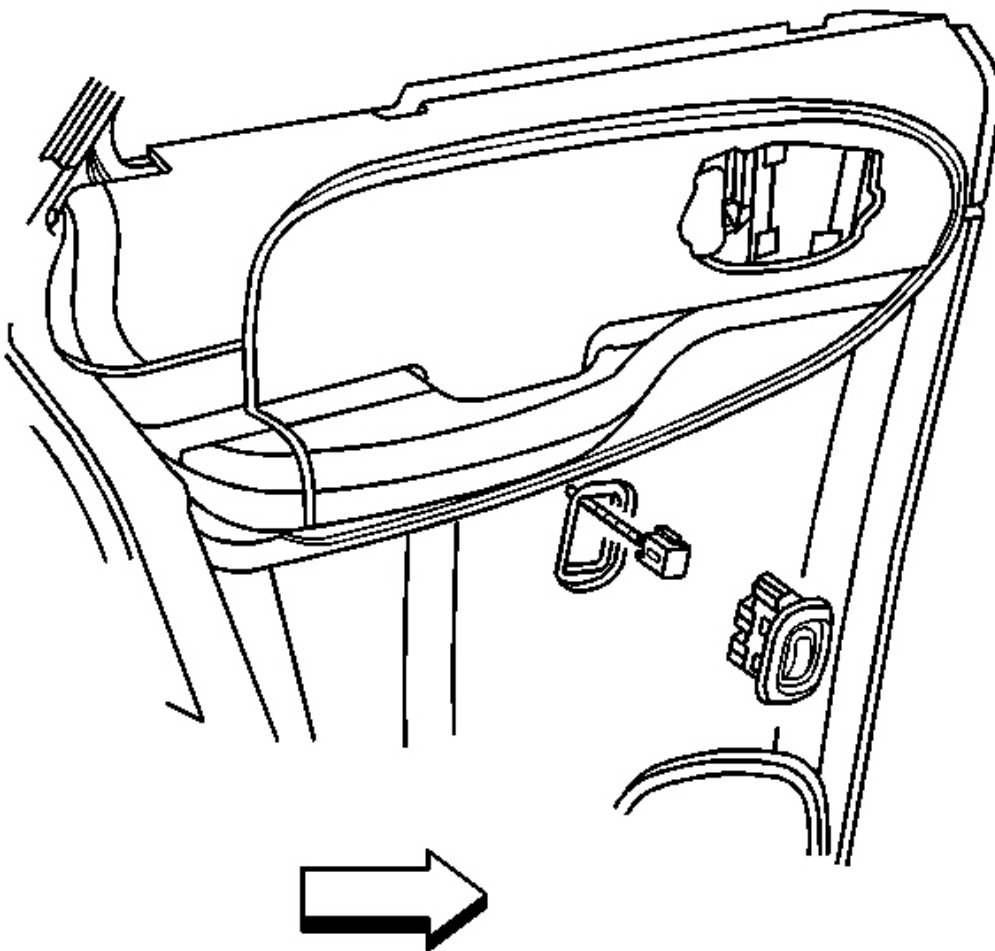


Fig. 71: View Of Window Switch Bezel From Door Trim Panel
Courtesy of GENERAL MOTORS CORP.

1. Using a flat-bladed tool, remove the window switch bezel from the door trim panel.
2. Disconnect the electrical connector from the window switch.
3. Release the retaining clips that attach the power window switch to the bezel

4. Remove the switch from the bezel.

Installation Procedure

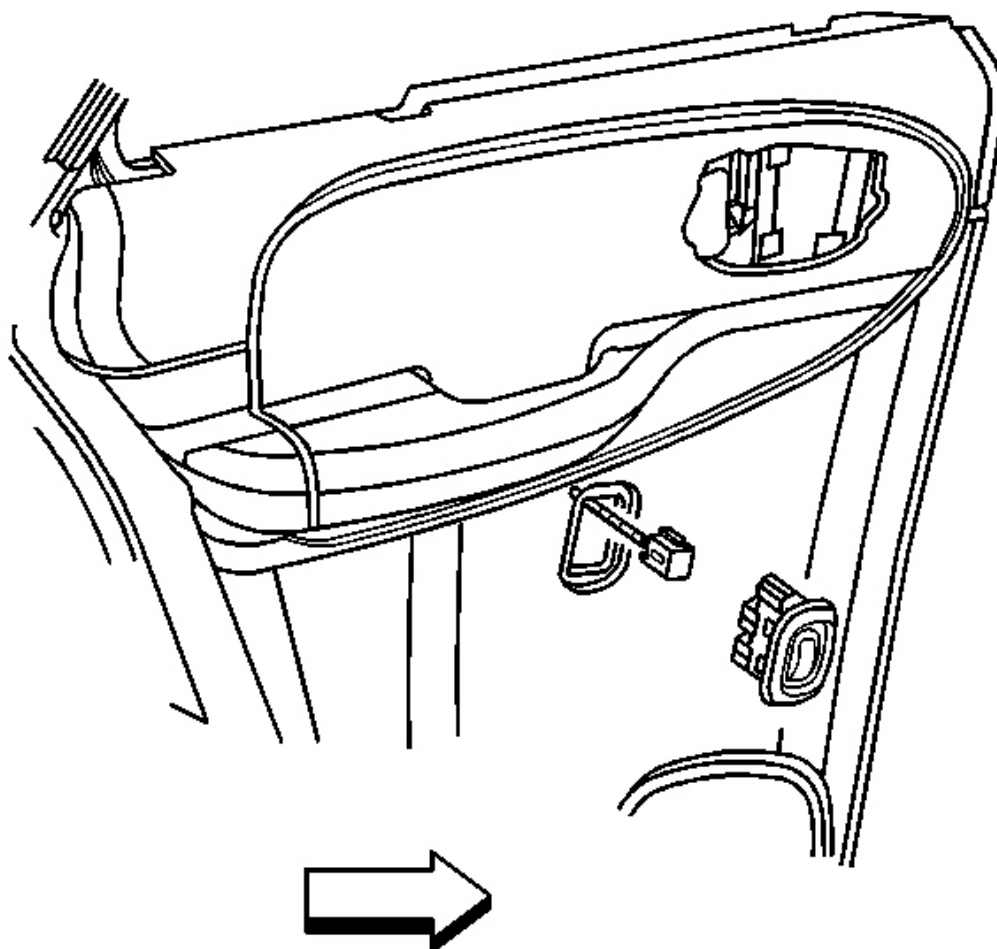


Fig. 72: View Of Window Switch Bezel From Door Trim Panel
Courtesy of GENERAL MOTORS CORP.

1. Install the switch to the bezel. Ensure that the retainers are fully seated.
2. Connect the electrical connector to the window switch.
3. Install the window switch bezel to the door trim panel.
4. Ensure that the window switch bezel retaining clips are fully seated.

QUARTER WINDOW SWITCH REPLACEMENT

Removal Procedure

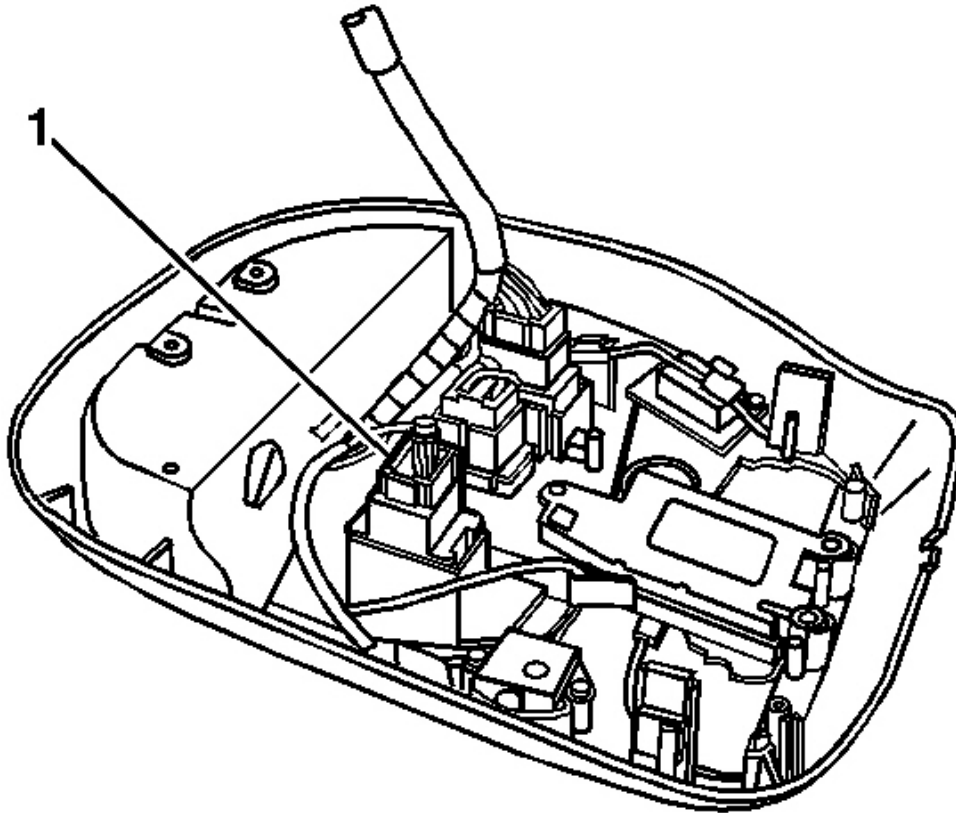


Fig. 73: Locating Quarter Window Switch Electrical Connector
Courtesy of GENERAL MOTORS CORP.

1. Remove the overhead console. Refer to **Roof Console Replacement** .
2. Disconnect the electrical connector (1) from the quarter window switch.
3. Release the tabs retaining the quarter window switch to the overhead console.
4. Remove the quarter window switch from the overhead console.

Installation Procedure

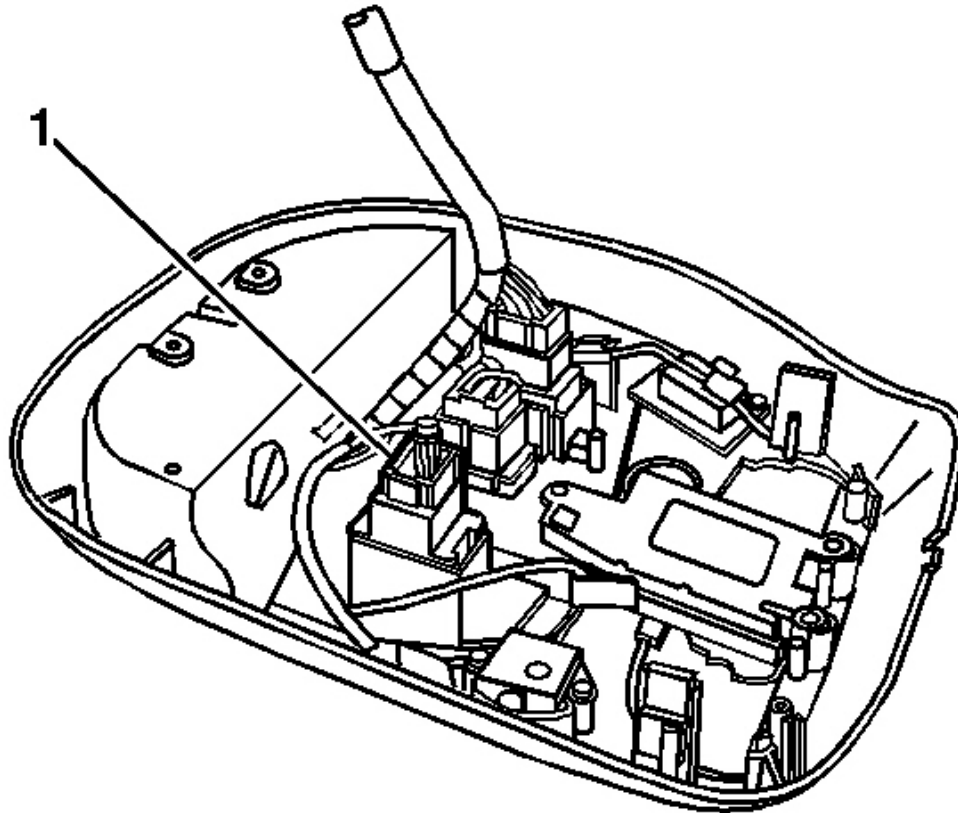


Fig. 74: Locating Quarter Window Switch Electrical Connector
Courtesy of GENERAL MOTORS CORP.

1. Install the quarter window switch to the overhead console, ensuring the retaining tabs are fully seated.
2. Connect the electrical connector (1) to the quarter window switch.
3. Install the overhead console. Refer to **Roof Console Replacement** .

FRONT SIDE DOOR WINDOW REGULATOR REPLACEMENT

Removal Procedure

1. Remove the door trim panel. Refer to **Front Side Door Trim Panel Replacement** .
2. Remove the speaker. Refer to **Radio Front Side Door Speaker Replacement** .
3. Remove the water deflector. Refer to **Front Side Door Water Deflector Replacement** .

4. Loosen the regulator window carrier bolts (1).
5. Raise and support the window.

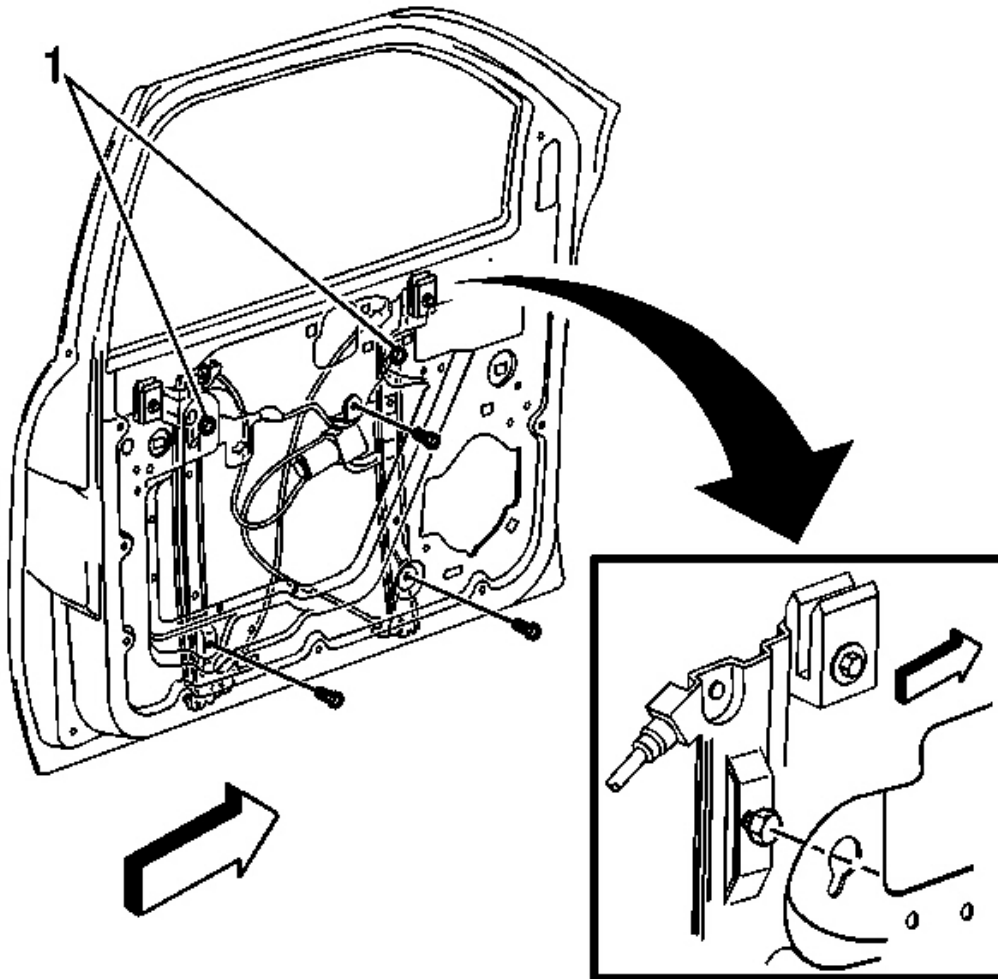


Fig. 75: Identifying Regulator Assembly Bolts
Courtesy of GENERAL MOTORS CORP.

6. Disconnect the electrical connector from the regulator motor.
7. Loosen the upper 2 bolts that retain the regulator assembly to the door.
8. Remove the remaining 3 bolts that retain the window regulator assembly and the motor to the door.
9. Lift the regulator assembly upward in order to release the upper 2 bolts.
10. Rotate the upper portion of the regulator assembly forward.

11. Beginning with the lower portion, remove the regulator assembly through the door opening.
12. Place the regulator assembly on a prepared surface.
13. Remove the upper 2 bolts from the regulator assembly.

Installation Procedure

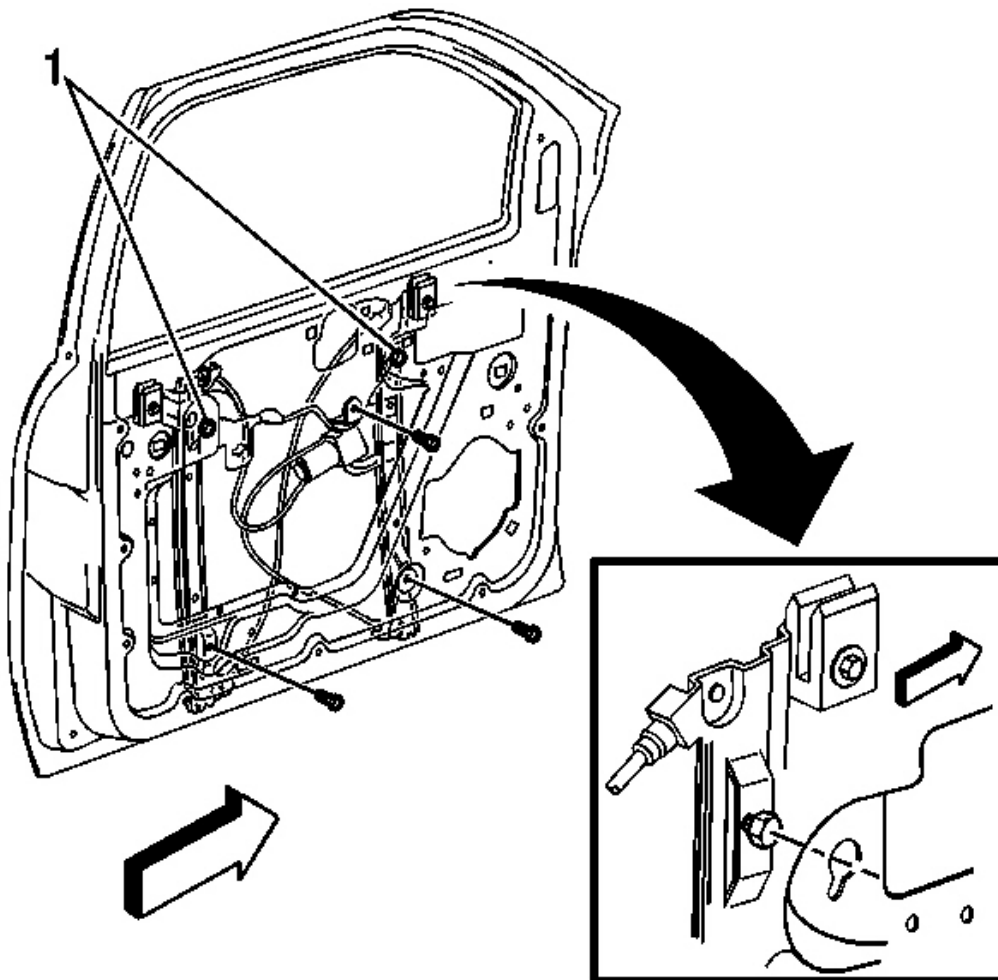


Fig. 76: Identifying Regulator Assembly Bolts
Courtesy of GENERAL MOTORS CORP.

1. Partially install the upper 2 bolts to the regulator assembly.
2. Beginning with the upper portion, install the regulator assembly through the door opening in a semi-horizontal position.

2008 Isuzu Ascender LS

2008 Accessories & Equipment Fixed and Moveable Windows - Ascender, Envoy & Trailblazer

3. Position the regulator assembly fully forward into the door cavity.
4. Rotate the regulator assembly to a vertical position.
5. Lower and hang the regulator assembly onto the door sheet metal using the upper 2 bolts that were previously installed.

NOTE: Refer to **Fastener Notice** .

6. Install the bolt that retains the motor to the door.

Tighten: Tighten bolts to 9 N.m (80 lb in).

7. Install the remaining bolts that retain the regulator assembly to the door.

Tighten: Tighten bolts to 10 N.m (88 lb in).

8. Connect the electrical connector to the regulator motor.
9. Remove the window support and lower the window onto the regulator window carrier.
10. Loosely tighten the regulator window carrier bolts.
11. Operate the window upward to the full up position, ensuring the window remains in the run channels.

Tighten: Tighten the regulator window carrier bolts (1) to 10 N.m (88 lb in).

12. Install the water deflector. Refer to **Front Side Door Water Deflector Replacement** .
13. Install the speaker. Refer to **Radio Front Side Door Speaker Replacement** .
14. Install the door trim panel. Refer to **Front Side Door Trim Panel Replacement** .

DOOR WINDOW REGULATOR MOTOR REPLACEMENT

Removal Procedure

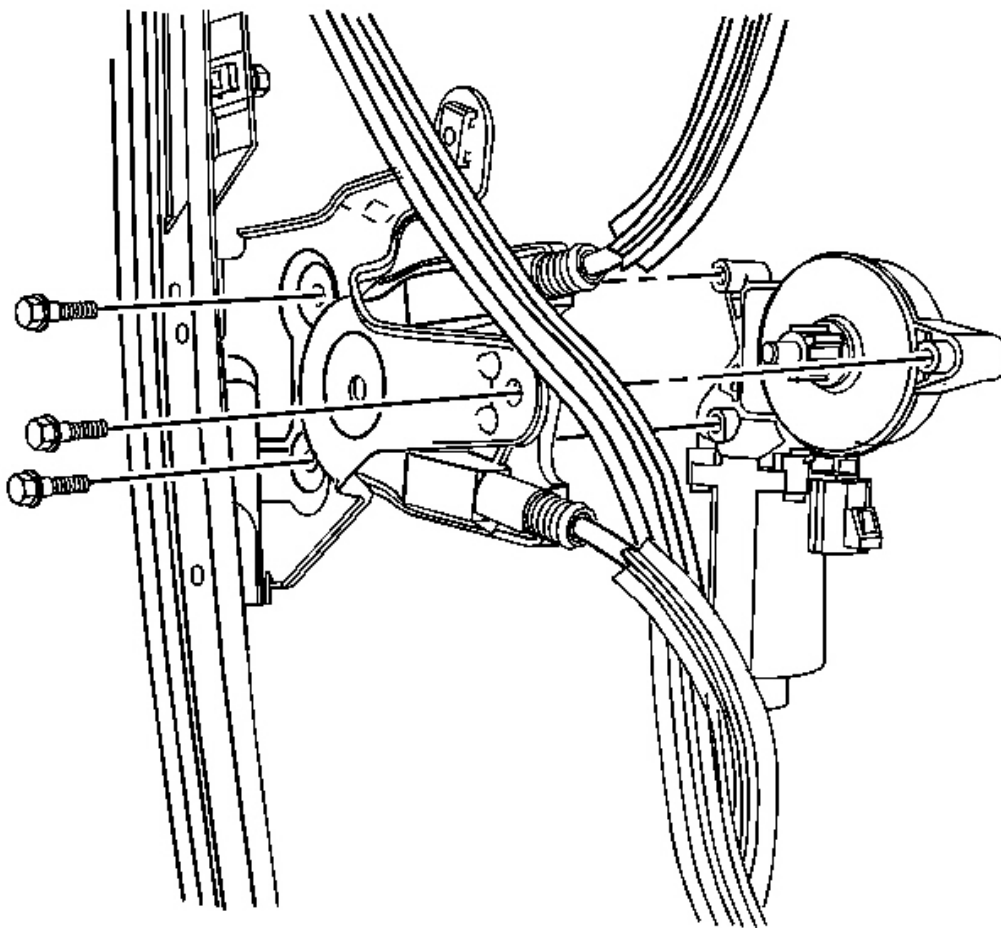


Fig. 77: Locating Window Regulator Motor Bolts
Courtesy of GENERAL MOTORS CORP.

1. Remove the window regulator. Refer to **Front Side Door Window Regulator Replacement** or **Rear Side Door Window Regulator Replacement**.
2. Remove the bolts retaining the window regulator motor to the window regulator.
3. Remove the window regulator motor from the window regulator.

Installation Procedure

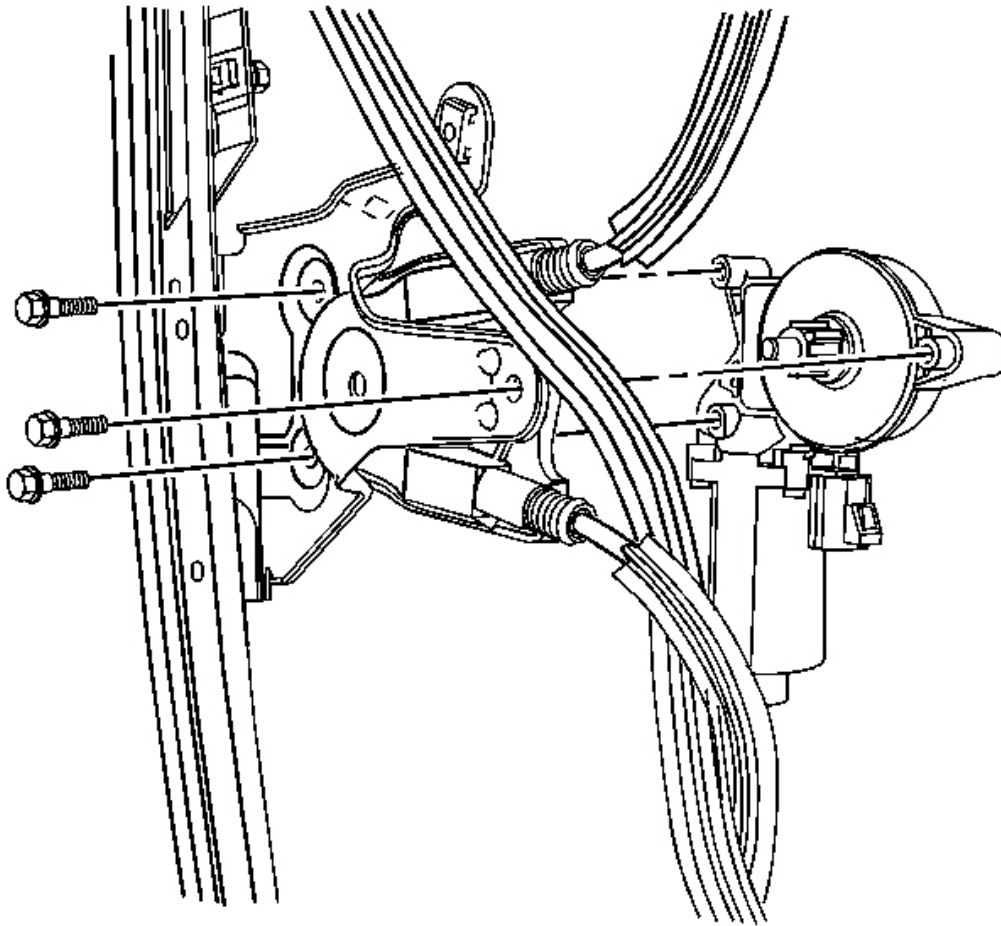


Fig. 78: Locating Window Regulator Motor Bolts
Courtesy of GENERAL MOTORS CORP.

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

NOTE: Refer to Fastener Notice .

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

Tighten: Tighten the window regulator motor retaining bolts to 5 N.m (9 lb in).

3. Install the window regulator. Refer to Front Side Door Window Regulator Replacement or Rear Side Door Window Regulator Replacement.

REAR SIDE DOOR WINDOW REGULATOR REPLACEMENT

Removal Procedure

1. Remove the door trim panel. Refer to [Rear Side Door Trim Panel Replacement](#) .
2. Remove the water deflector. Refer to [Rear Side Door Water Deflector Replacement](#) .
3. Remove the speaker. Refer to [Radio Rear Side Door Speaker Replacement](#) .
4. Loosen the regulator window carrier bolts.
5. Raise and support the window.

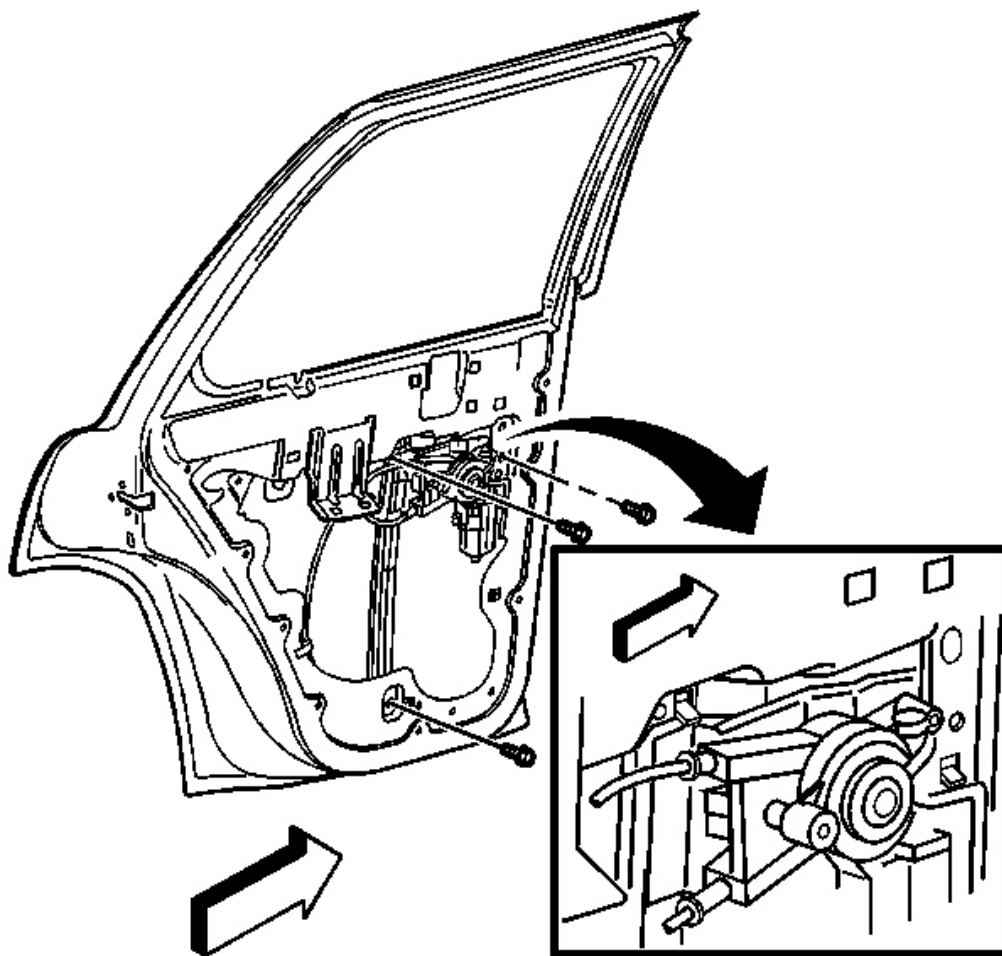


Fig. 79: View Of Window Regulator Assembly
Courtesy of GENERAL MOTORS CORP.

6. Disconnect the electrical connector from the regulator motor.
7. Remove the 3 bolts that retain the window regulator assembly to the door.
8. Remove the window regulator assembly from the door.

Installation Procedure

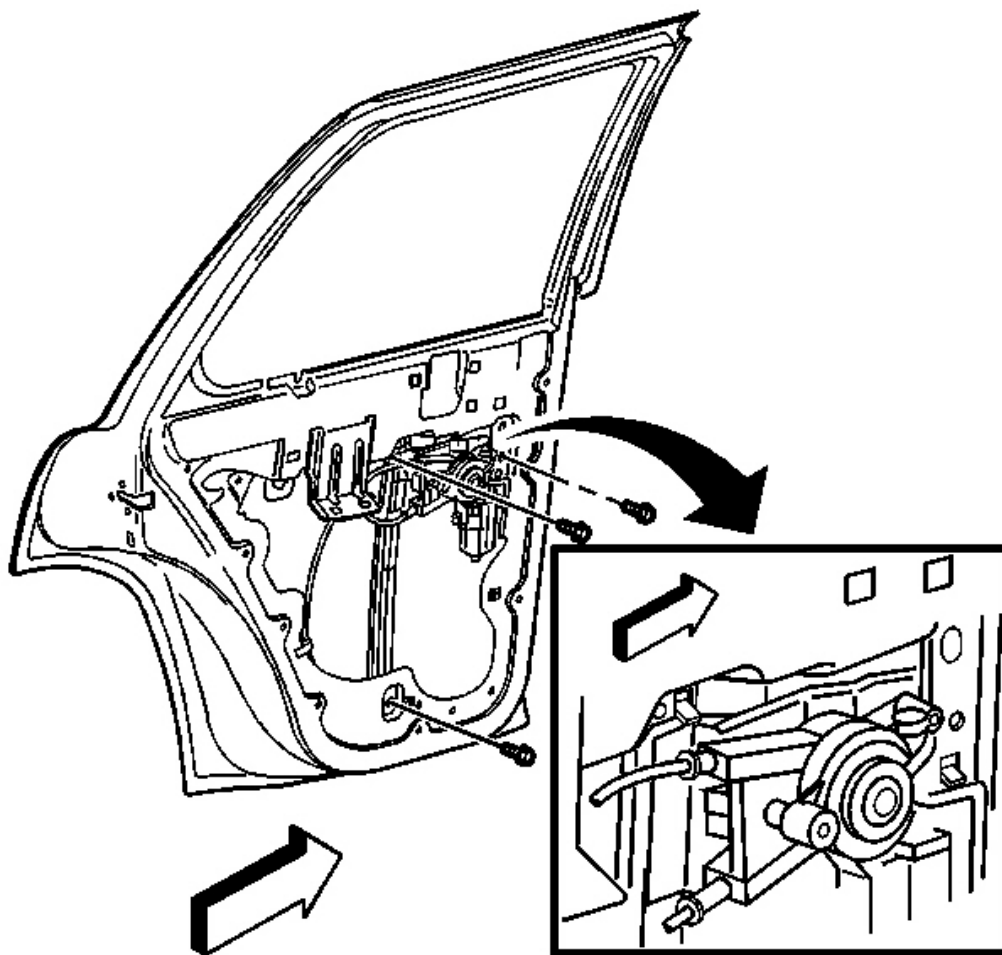


Fig. 80: View Of Window Regulator Assembly
Courtesy of GENERAL MOTORS CORP.

1. Install the window regulator assembly to the door.

NOTE: Refer to Fastener Notice .

2008 Isuzu Ascender LS

2008 Accessories & Equipment Fixed and Moveable Windows - Ascender, Envoy & Trailblazer

2. Install the 3 bolts that retain the window regulator assembly to the door.

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

3. Connect the electrical connector to the regulator motor.
4. Remove the window support and lower the window onto the regulator window carrier.
5. Loosely tighten the regulator window carrier bolts.
6. Operate the window upward to the full up position, ensuring the window remains in the run channels.

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

7. Install the speaker. Refer to **Radio Rear Side Door Speaker Replacement** .
8. Install the water deflector. Refer to **Rear Side Door Water Deflector Replacement** .
9. Install the door trim panel. Refer to **Rear Side Door Trim Panel Replacement** .

FRONT SIDE DOOR WINDOW BELT OUTER SEALING STRIP REPLACEMENT

Removal Procedure

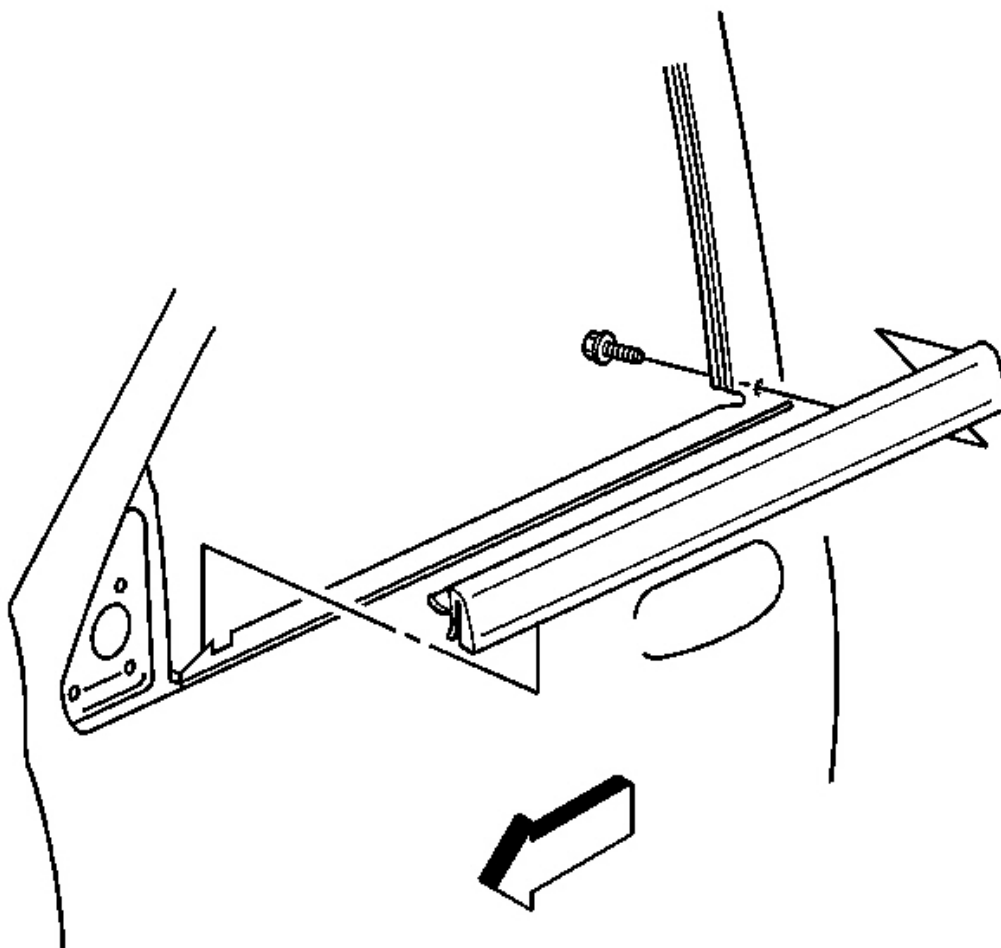


Fig. 81: Identifying Sealing Strip (Front Door Window Belt Outer)
Courtesy of GENERAL MOTORS CORP.

1. Remove the screw that retains the sealing strip to the door.
2. Lift upward on the rear edge of the sealing strip.
3. Remove the sealing strip from the pinch-weld flange.

Installation Procedure

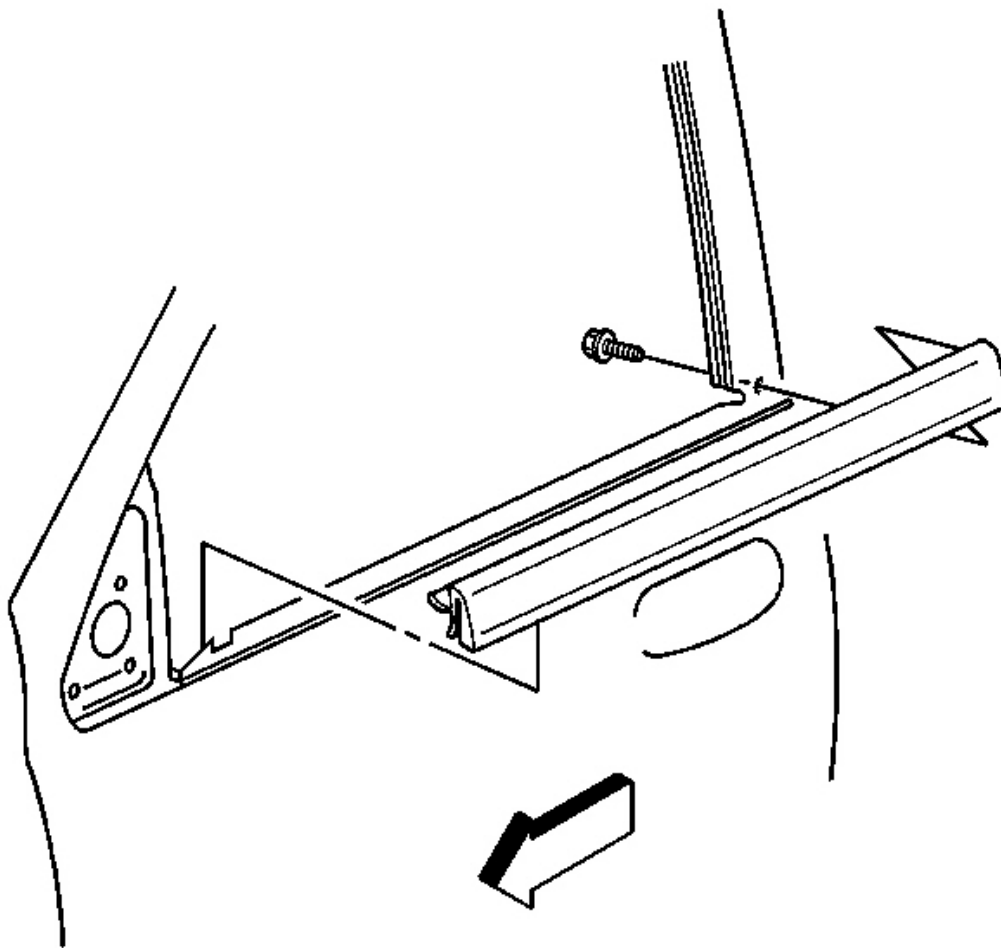


Fig. 82: Identifying Sealing Strip (Front Door Window Belt Outer)
Courtesy of GENERAL MOTORS CORP.

1. Install the sealing strip to the pinch-weld flange, starting at the forward edge of the door.
2. Ensure that the sealing strip is fully seated to the pinch-weld flange.

NOTE: Refer to Fastener Notice .

3. Install the screw that retains the sealing strip to the door.

Tighten: Tighten the screw to 1.2 N.m (10 lb in).

Removal Procedure

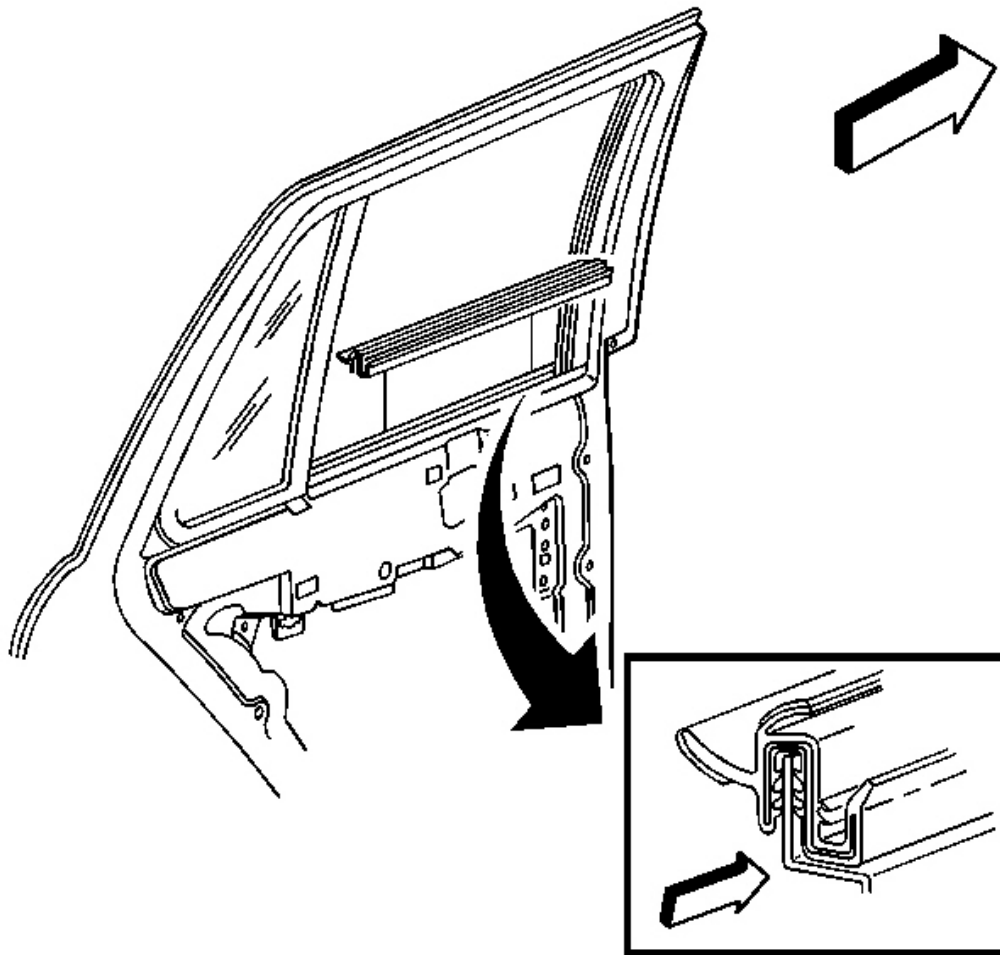


Fig. 83: Identifying Sealing Strip (Rear Door Window Belt Inner)
Courtesy of GENERAL MOTORS CORP.

1. Open the door.
2. Remove the door trim panel. Refer to **Rear Side Door Trim Panel Replacement** .
3. Starting at the back of the strip, carefully lift the strip off the pinch-weld flange until the strip is completely released.

Installation Procedure

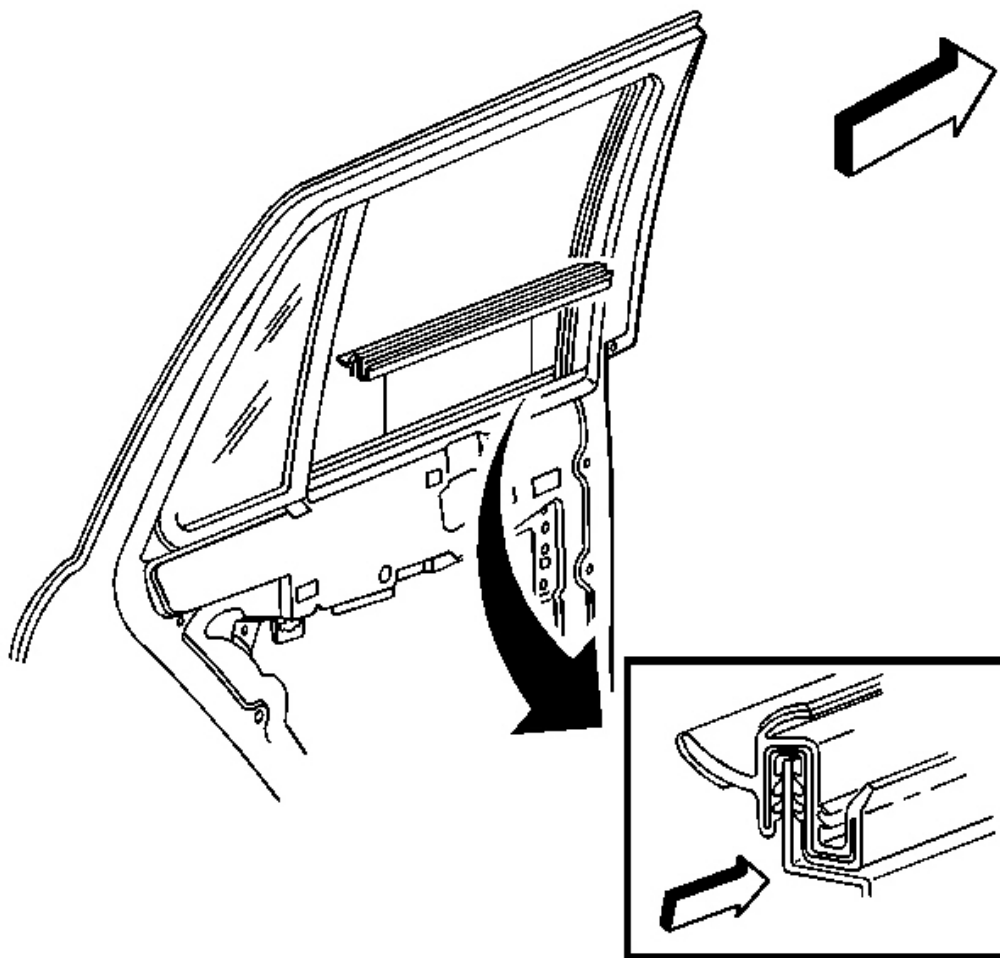


Fig. 84: Identifying Sealing Strip (Rear Door Window Belt Inner)
Courtesy of GENERAL MOTORS CORP.

1. Install the sealing strip to the pinch-weld flange. Ensure that the strip is fully seated.
2. Install the door trim panel. Refer to **Rear Side Door Trim Panel Replacement** .
3. Close the door.

REAR DOOR WINDOW BELT OUTER SEALING STRIP REPLACEMENT

Removal Procedure

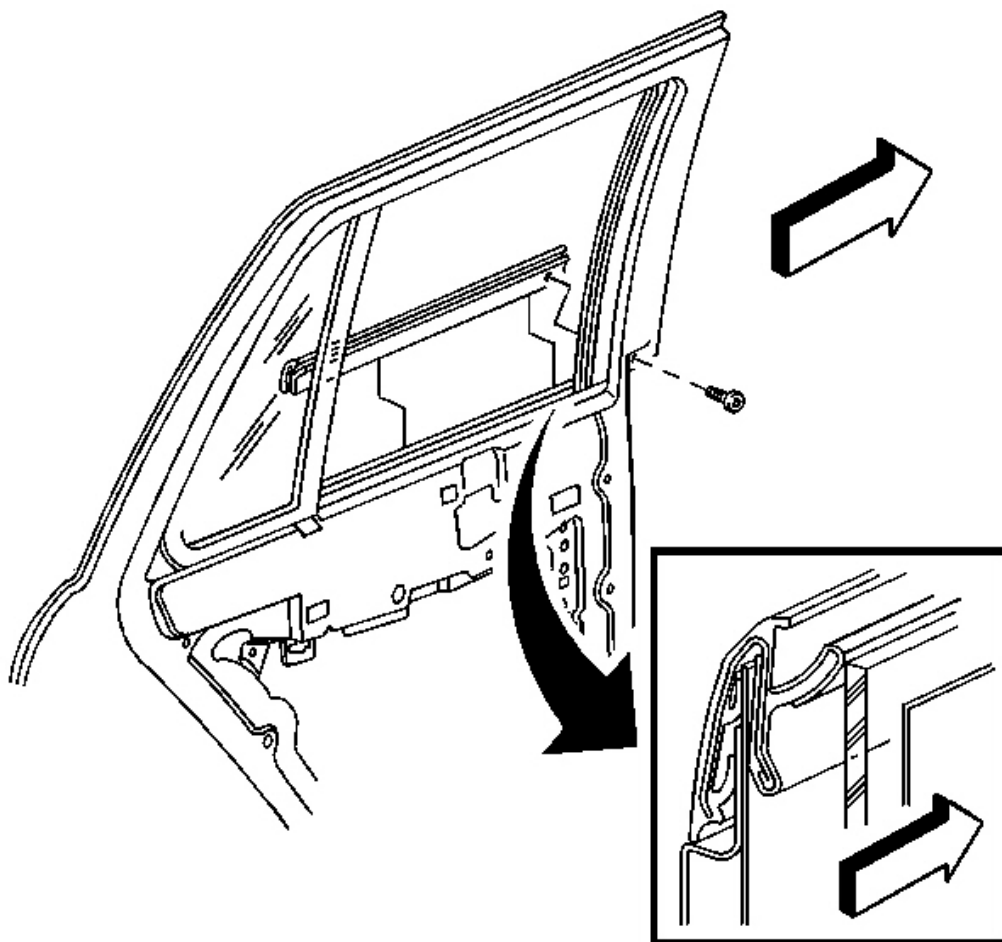


Fig. 85: Identifying Sealing Strip (Rear Door Window Belt Outer)
Courtesy of GENERAL MOTORS CORP.

1. Remove the screw that retains the sealing strip to the door.
2. Lift upward on the forward edge of the sealing strip.
3. Remove the sealing strip from the pinch-weld flange.

Installation Procedure

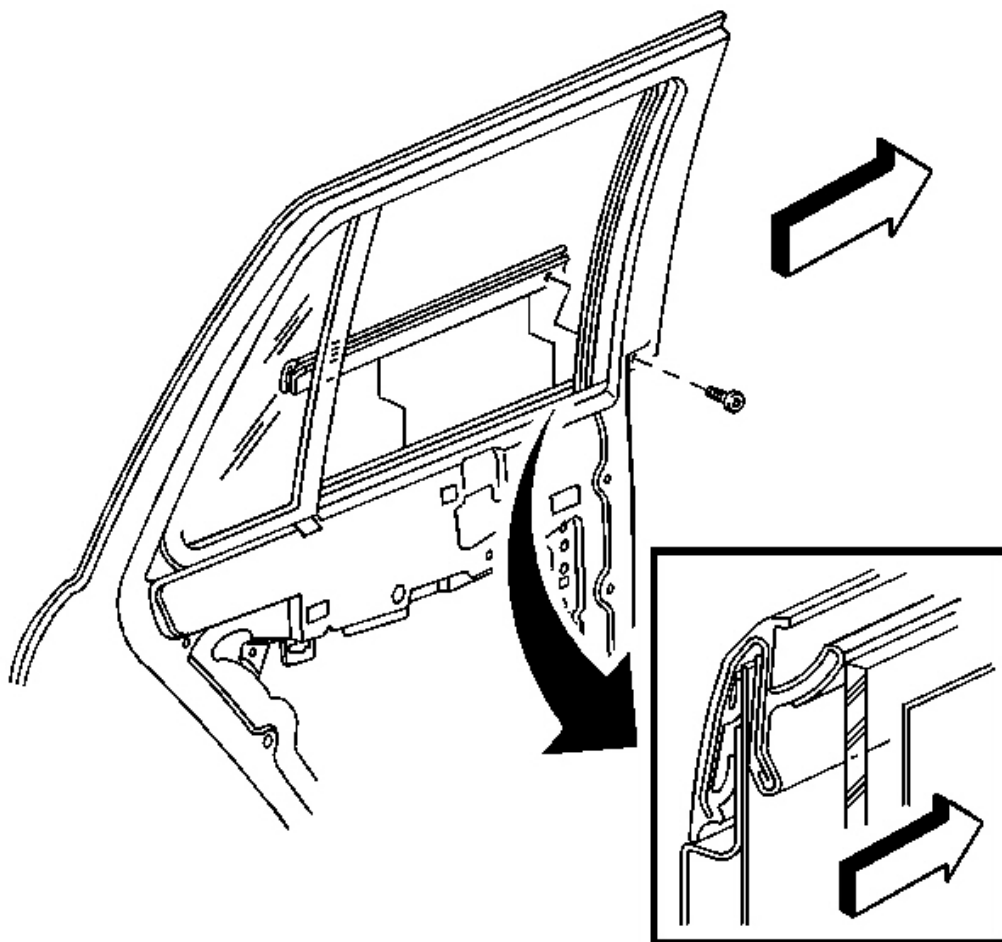


Fig. 86: Identifying Sealing Strip (Rear Door Window Belt Outer)
Courtesy of GENERAL MOTORS CORP.

1. Install the sealing strip to the pinch-weld flange, starting at the rear edge of the door.
2. Ensure that the sealing strip is fully seated to the pinch-weld flange.

NOTE: Refer to Fastener Notice .

3. Install the screw that retains the sealing strip to the door.

Tighten: Tighten the screw to 1.2 N.m (10 lb in).

Removal Procedure

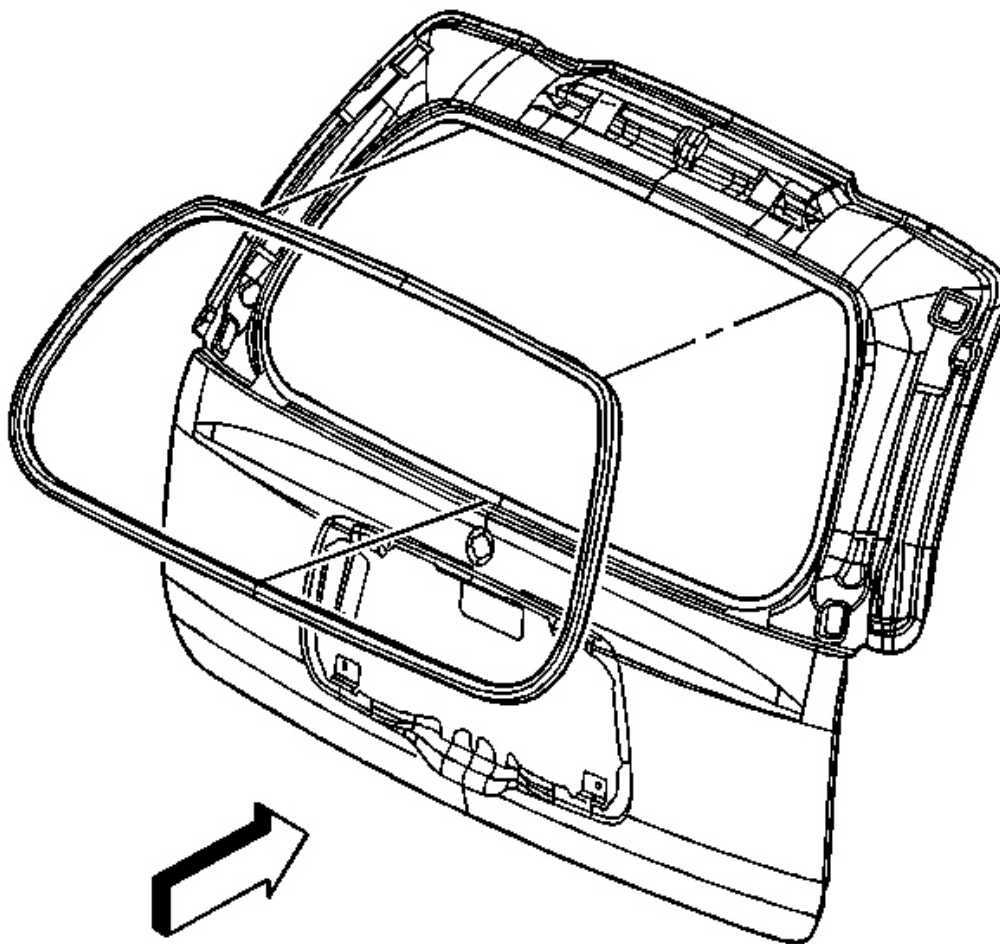


Fig. 87: Identifying Liftgate Window Weatherstrip
Courtesy of GENERAL MOTORS CORP.

1. Open the liftgate window.
2. Pull the liftgate window weatherstrip from the liftgate window opening pinch-weld flange.

Installation Procedure

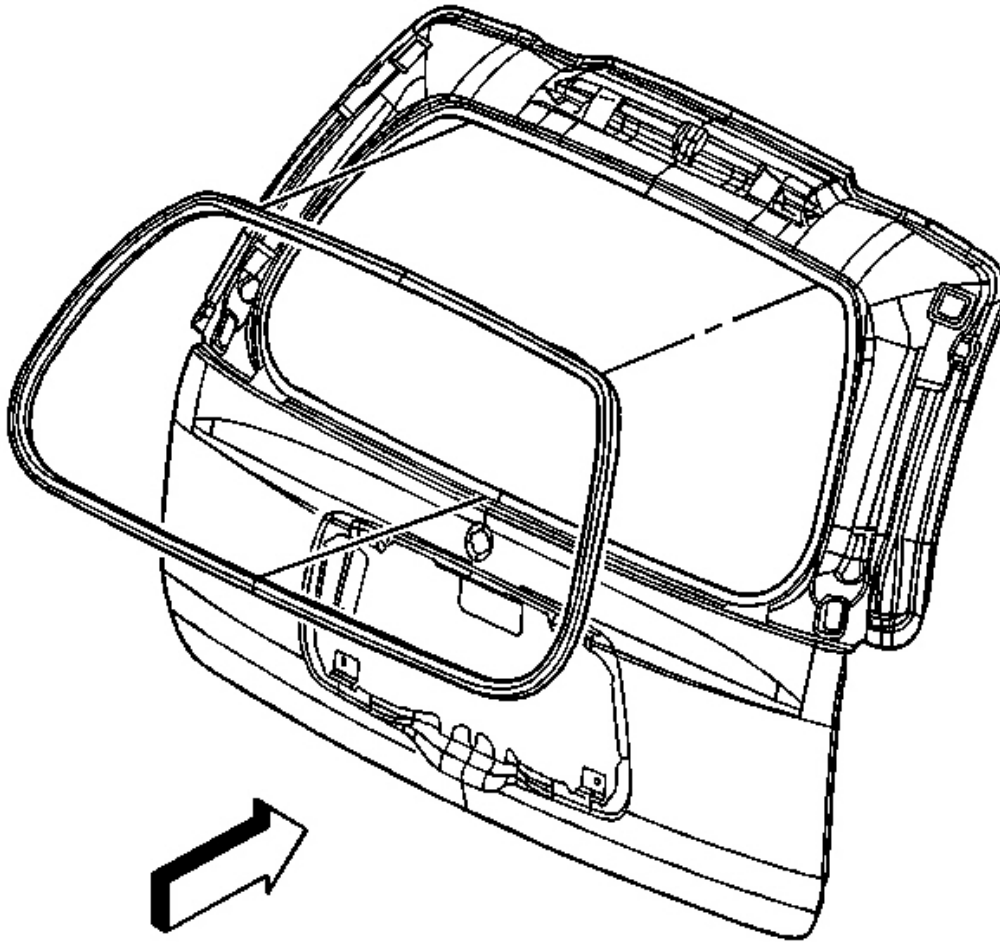


Fig. 88: Identifying Liftgate Window Weatherstrip
Courtesy of GENERAL MOTORS CORP.

1. Install the liftgate window weatherstrip, starting at the top center of the liftgate window opening position the liftgate window weatherstrip to the pinch-weld flange and working down the right and left sides towards the bottom center, being careful not to stretch the liftgate window weatherstrip while installing it.
2. Install the butt joint seam at the center of the bottom pinch-weld flange.
3. Use a rubber mallet to ensure full engagement of the liftgate window weatherstrip to the pinch-weld flange.
4. Spooning of the liftgate window weatherstrip may be required to complete the installation of the liftgate window weatherstrip.
5. Close the liftgate window.

ADHESIVE INSTALLATION OF STATIONARY WINDOWS

CAUTION: Refer to Glass and Sheet Metal Handling Caution .

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

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

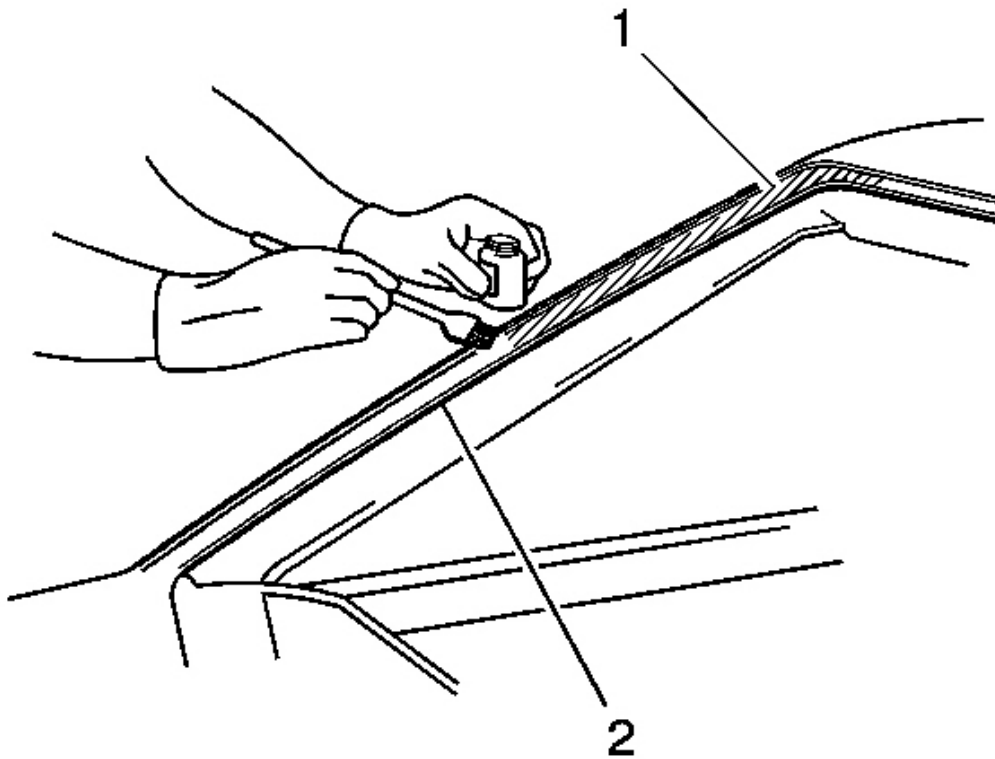


Fig. 89: Applying Pinch-Weld Primer
Courtesy of GENERAL MOTORS CORP.

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 (2).
9. Allow the pinch-weld primer to dry for approximately 10 minutes.

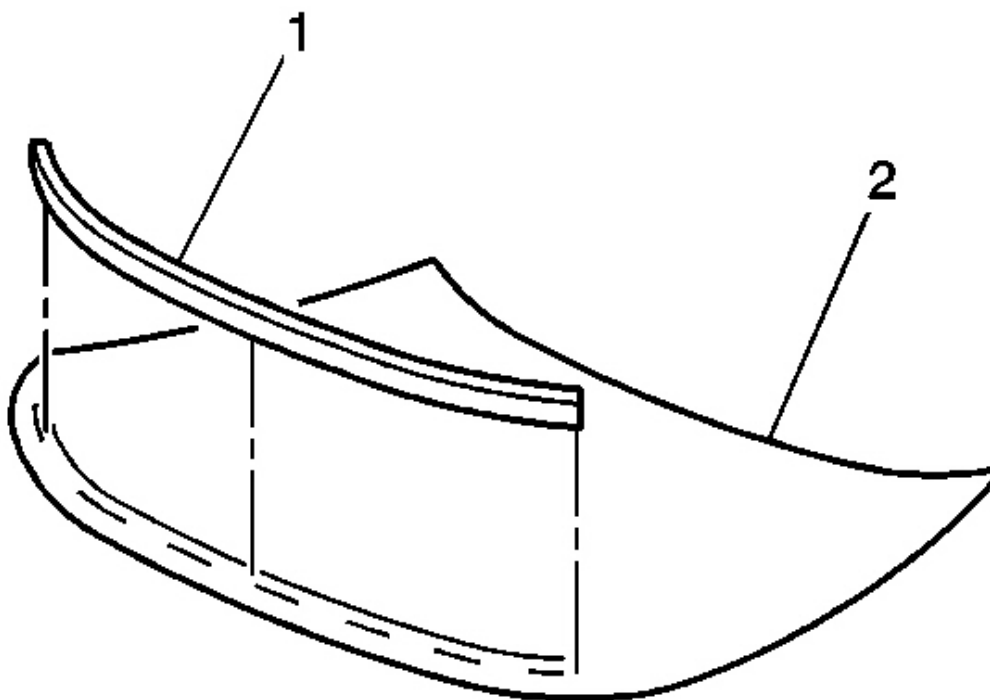


Fig. 90: Identifying Windshield Acoustic Strip
Courtesy of GENERAL MOTORS CORP.

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

The acoustic strip aids in reducing noise.

11. If installing a new window reveal molding/lace if needed, start in the center and work toward each end pressing firmly into place.

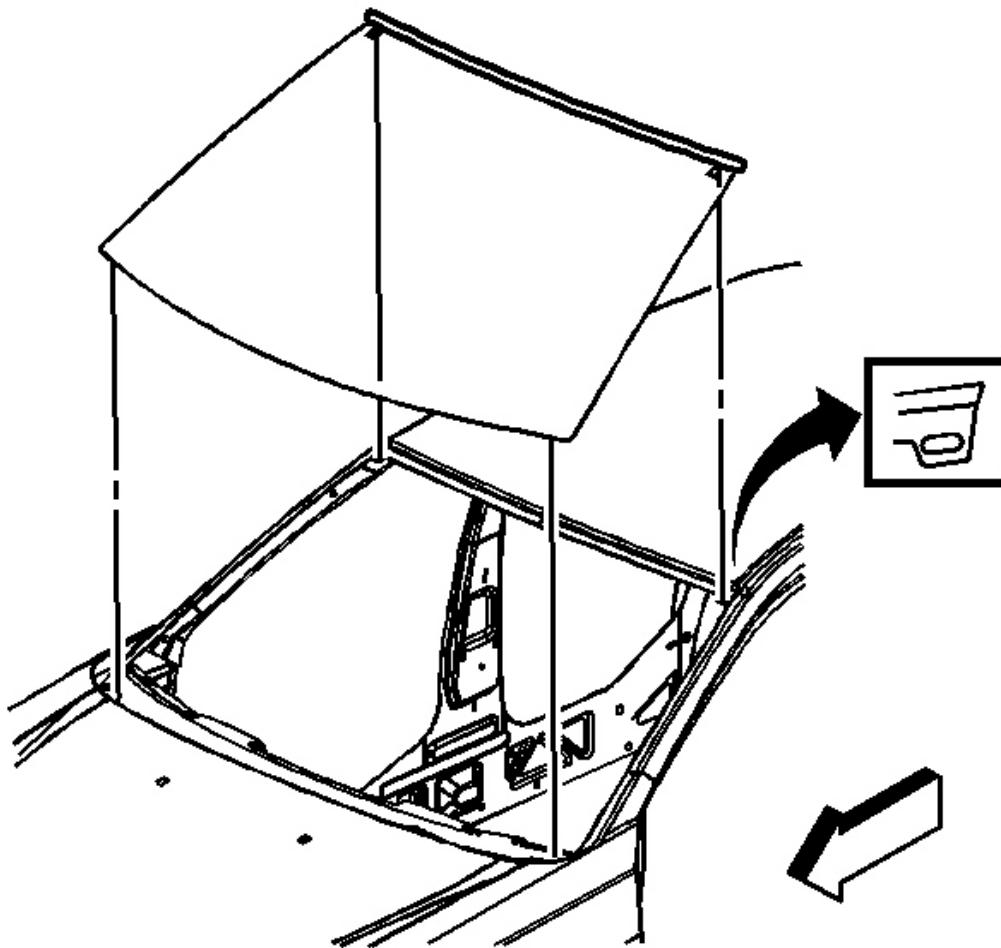


Fig. 91: Identifying Upper Sheet Metal Window Slots
Courtesy of GENERAL MOTORS CORP.

12. Position the locator pins on the window into the upper sheet metal slots in order to hold the window in place.

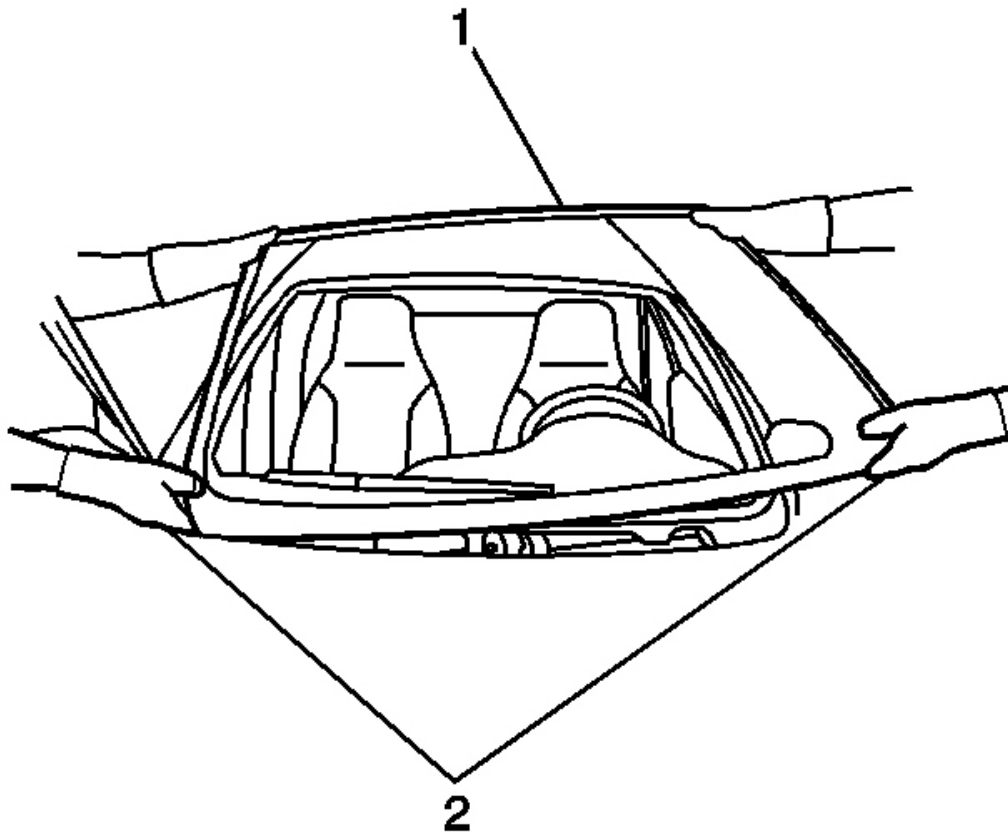


Fig. 92: Removing/Installing Windshield
Courtesy of GENERAL MOTORS CORP.

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

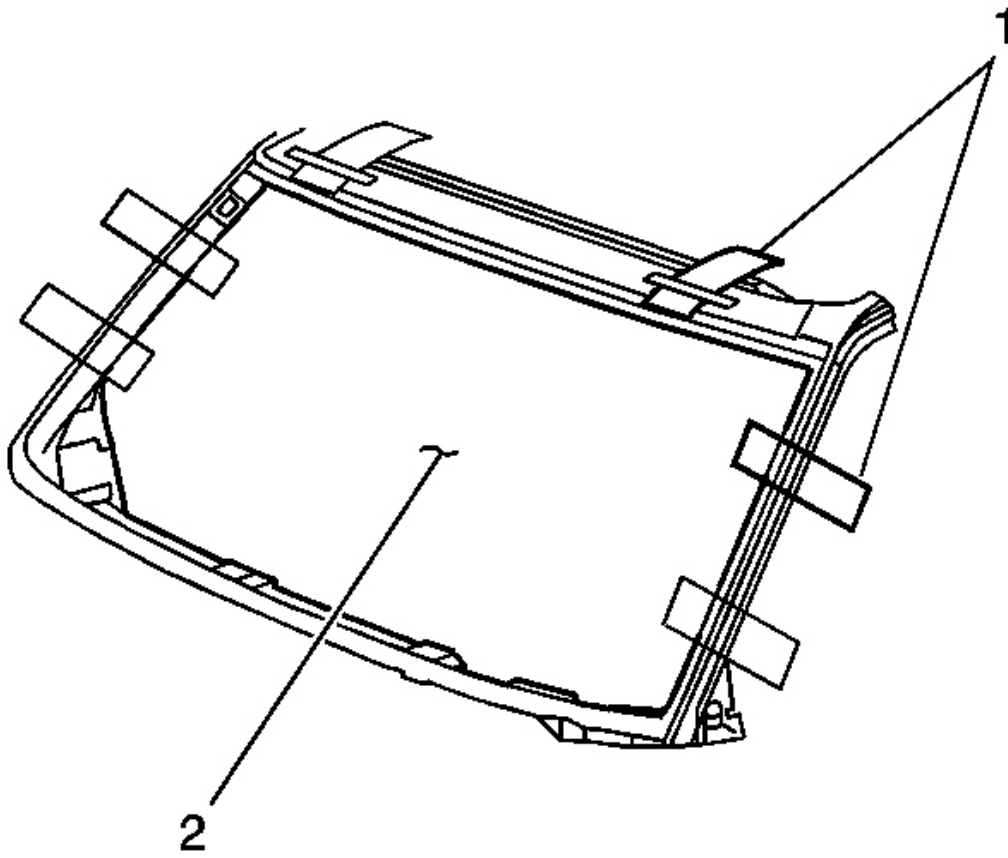


Fig. 93: Aligning Tape Lines On Window To Body
Courtesy of GENERAL MOTORS CORP.

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

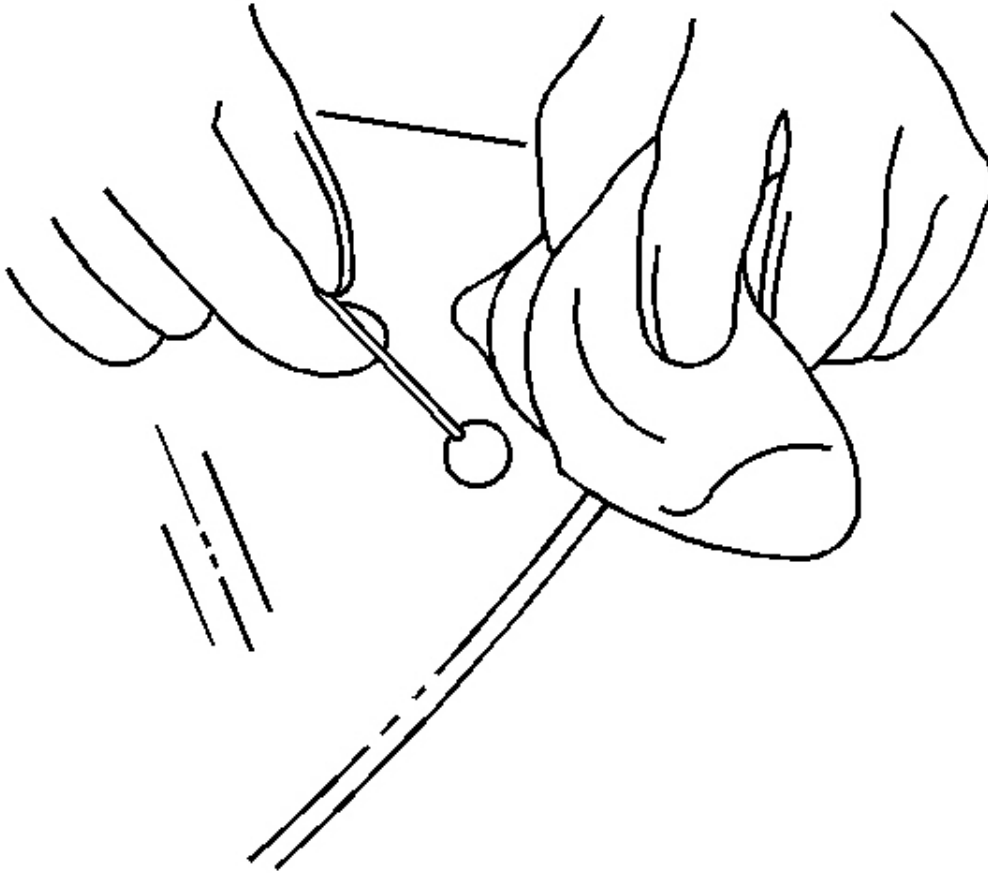


Fig. 94: Applying Glass Prep

Courtesy of GENERAL MOTORS CORP.

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

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

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

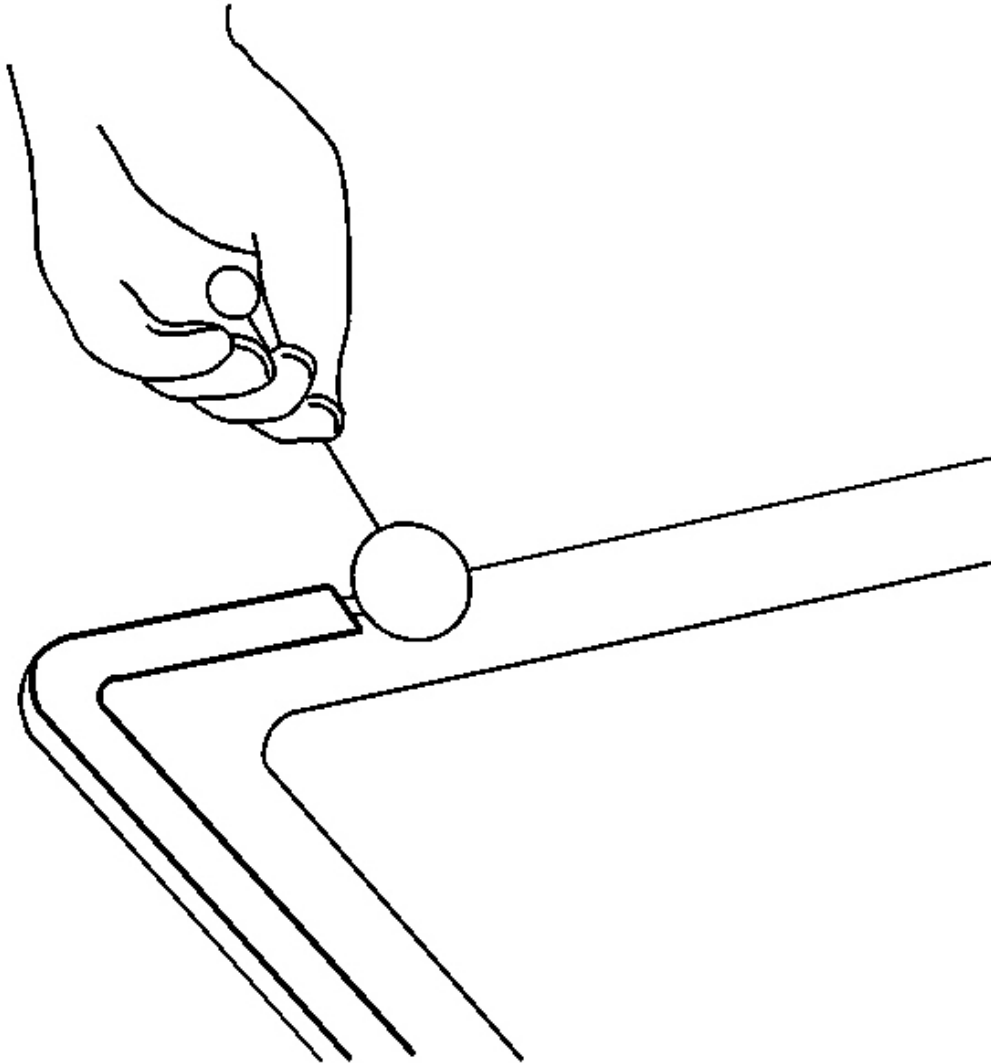


Fig. 95: Applying Glass Prep

Courtesy of GENERAL MOTORS CORP.

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

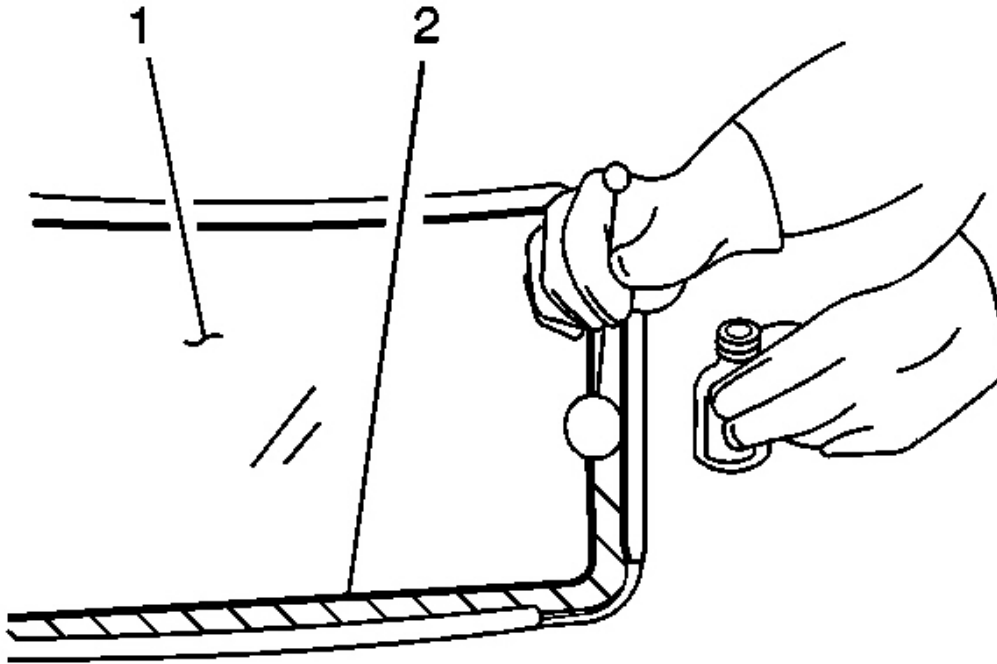


Fig. 96: Applying Glass Primer
Courtesy of GENERAL MOTORS CORP.

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

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

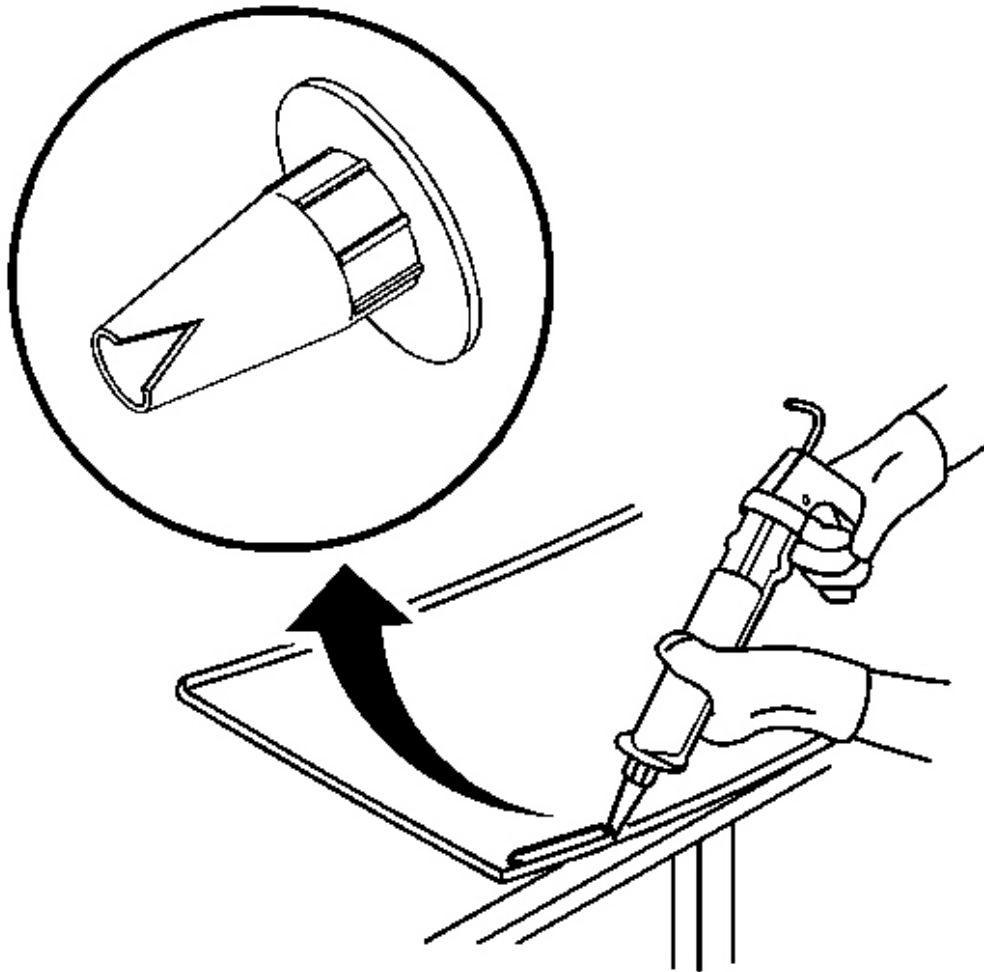


Fig. 97: View Of Modified Applicator Nozzle
Courtesy of GENERAL MOTORS CORP.

21. Cut the applicator nozzle in order to provide a bead of 13 mm (1/2 in) wide and 13 mm (1/2 in) high.

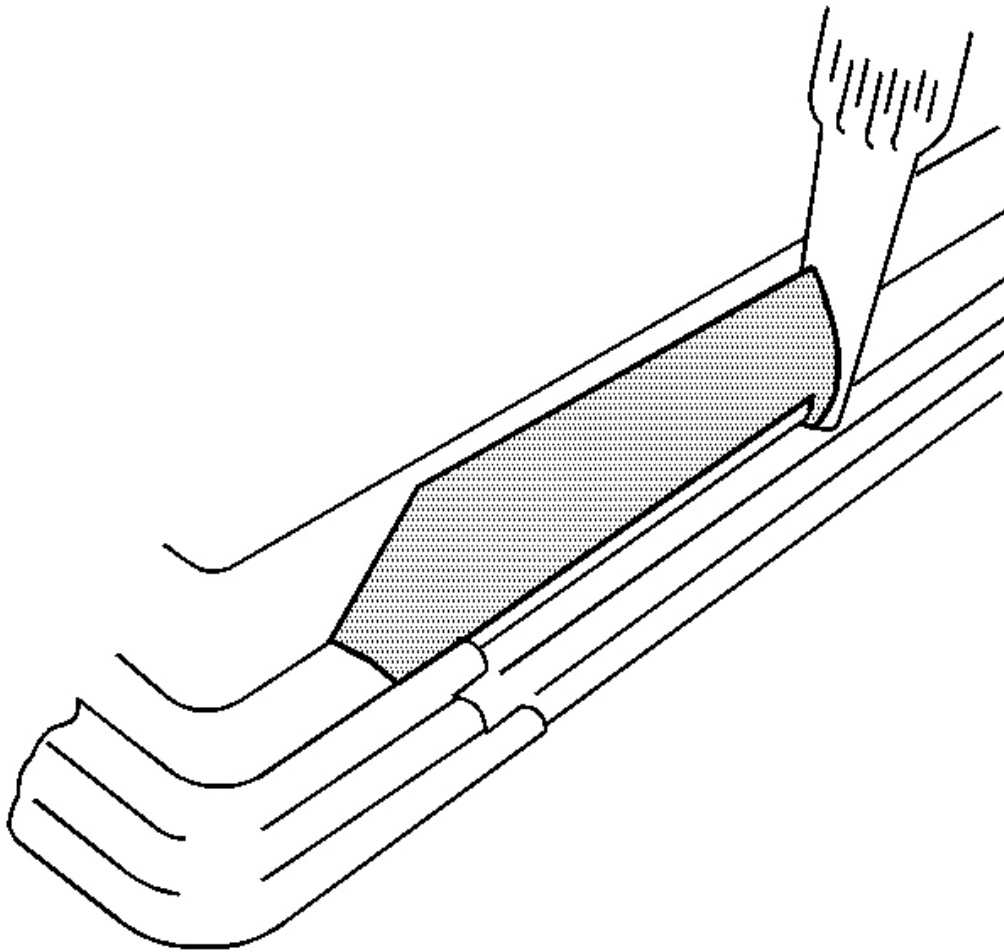


Fig. 98: Applying Bead Of Urethane Adhesive
Courtesy of GENERAL MOTORS CORP.

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

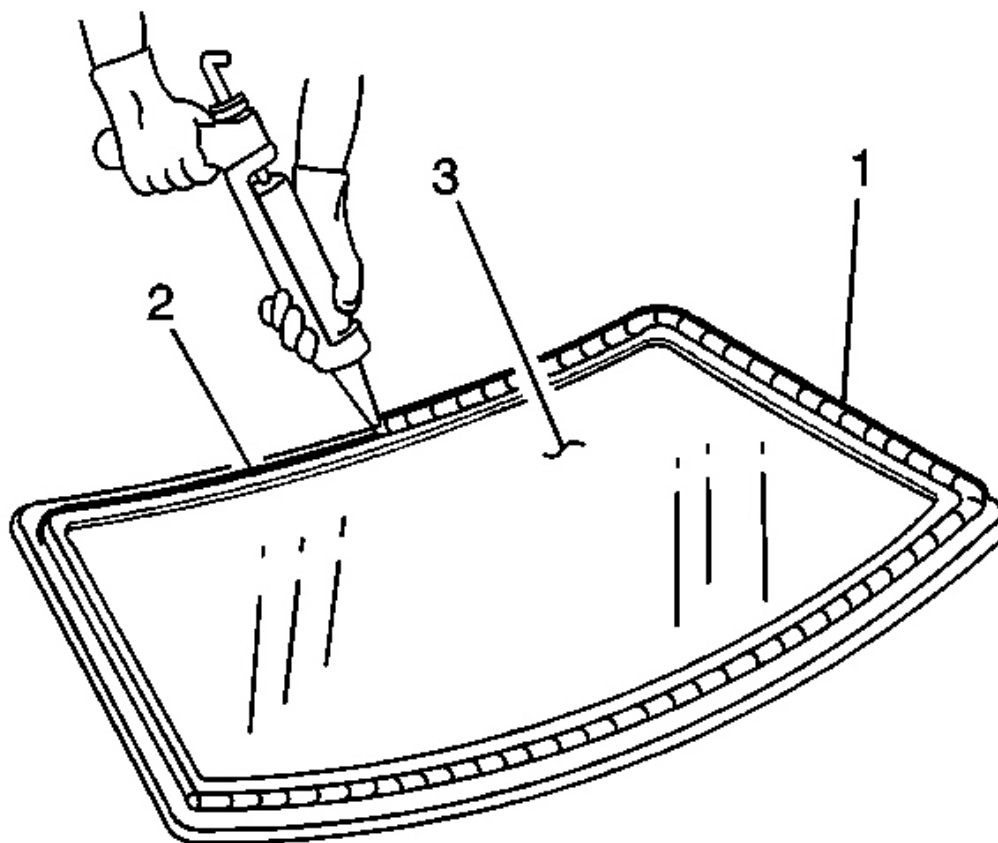


Fig. 99: Applying Urethane Adhesive To Inner Surface Of Window
Courtesy of GENERAL MOTORS CORP.

23. Use the edge of the window or the inside edge of the reveal molding/lace (1) as a guide for the nozzle in order to apply the urethane adhesive (2) to the inner surface of the window (3).

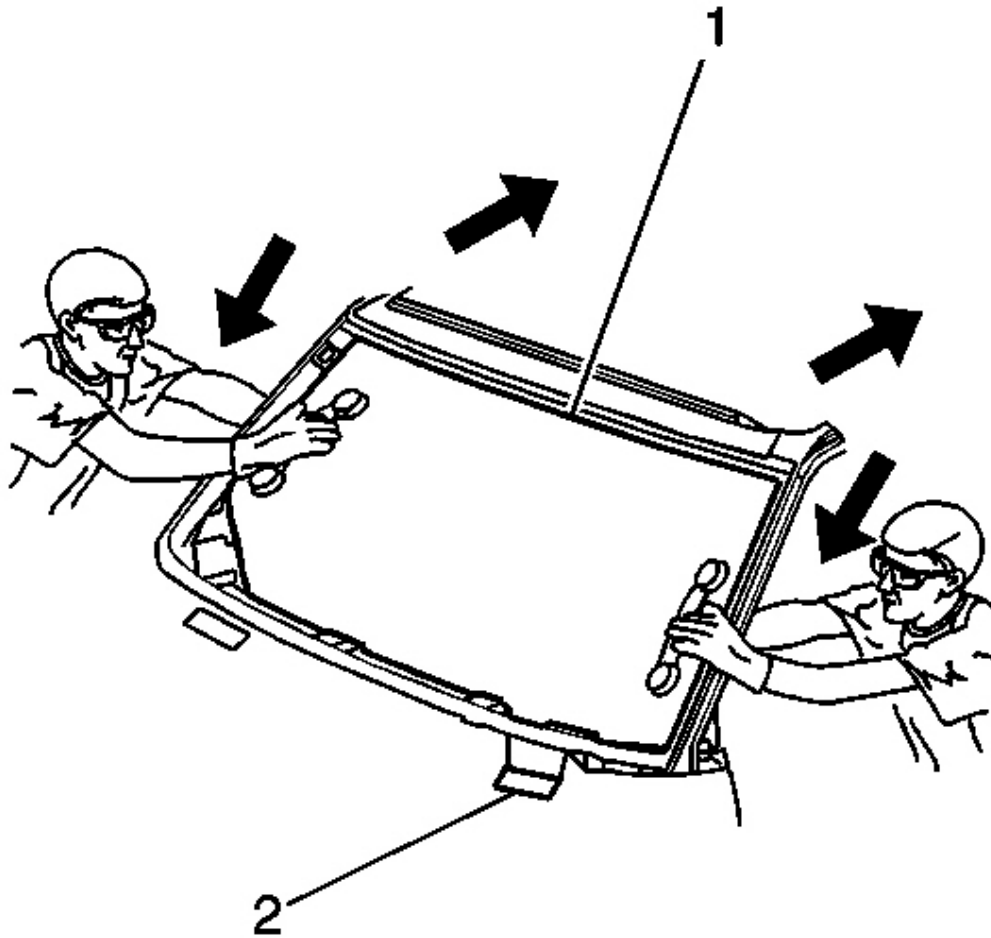


Fig. 100: Installing Windshield

Courtesy of GENERAL MOTORS CORP.

IMPORTANT: If the locator pins were damage when removing it will be necessary to tape the window in place until chemical-curing for the type of urethane adhesive used. See step 33 and cautions.

24. Place the window on the lower supports (2), if equipped with the aid of an assistant, place the window in the opening ensuring that the locator pins on the window align with the upper sheet metal slots in order to hold the window in place.

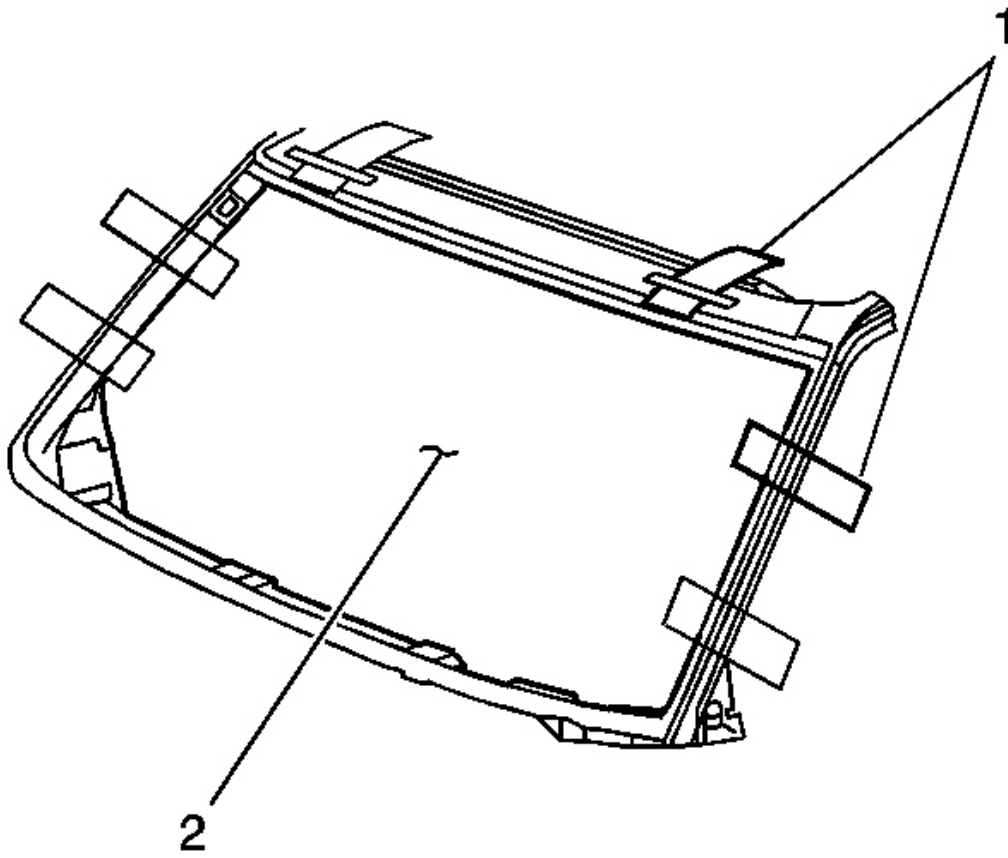


Fig. 101: Aligning Tape Lines On Window To Body
Courtesy of GENERAL MOTORS CORP.

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

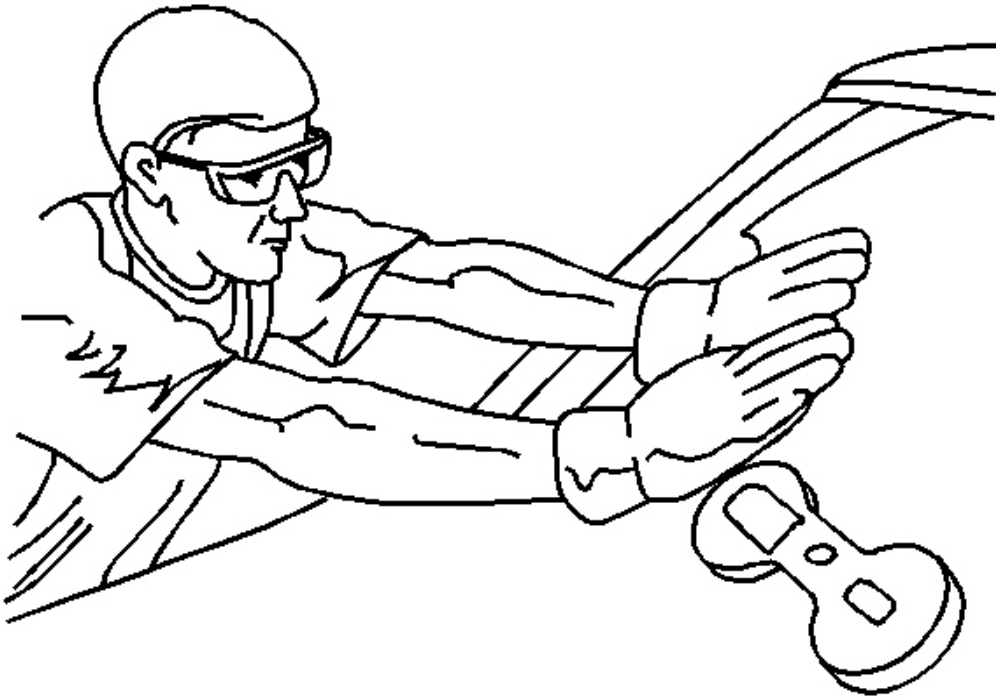


Fig. 102: Pressing Window Into Place
Courtesy of GENERAL MOTORS CORP.

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

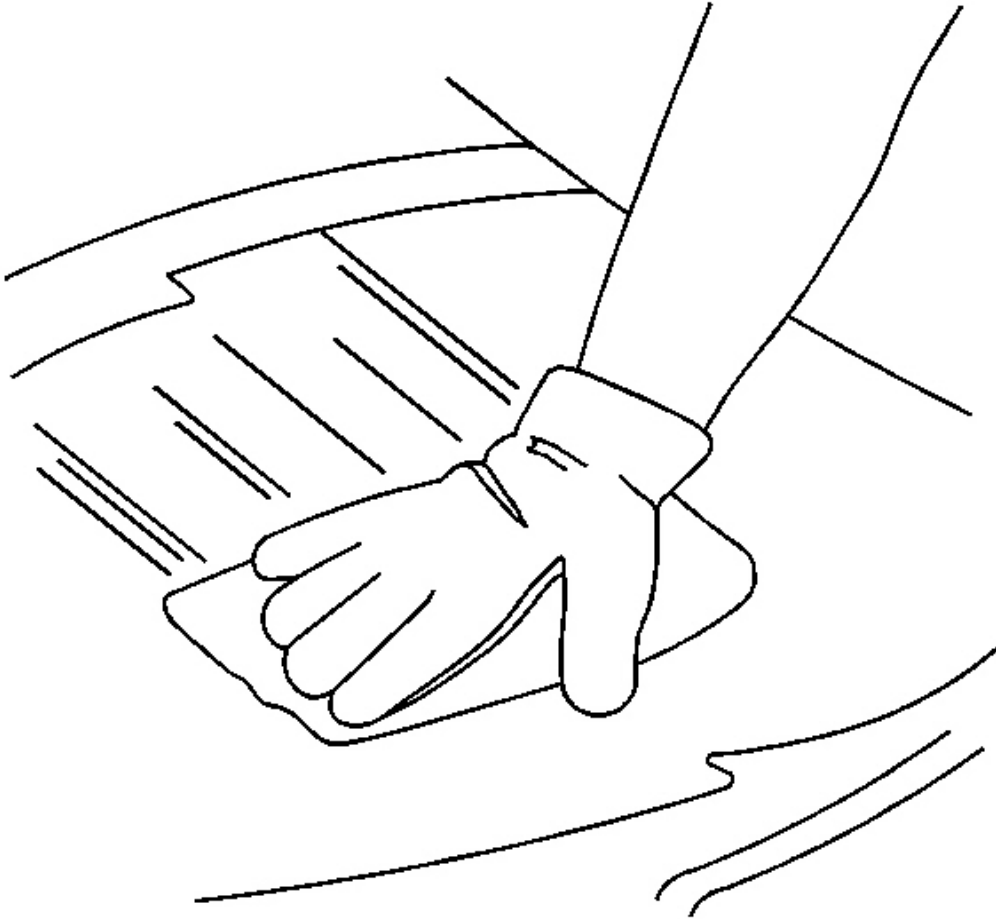


Fig. 103: Cleaning Window
Courtesy of GENERAL MOTORS CORP.

28. Clean any excess urethane adhesive from the body.

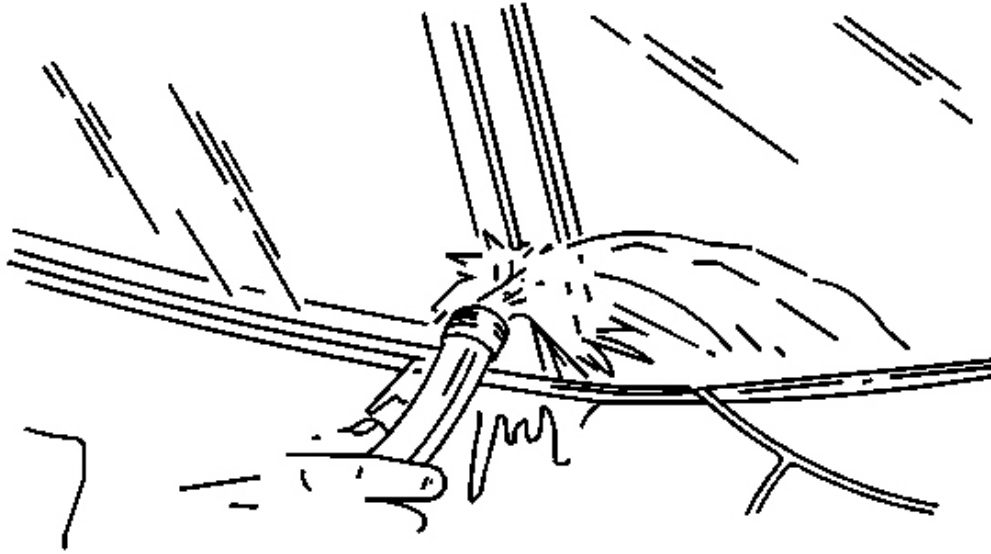


Fig. 104: Performing Water Hose Test
Courtesy of GENERAL MOTORS CORP.

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

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

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

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

2008 Isuzu Ascender LS

2008 Accessories & Equipment Fixed and Moveable Windows - Ascender, Envoy & Trailblazer

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

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

ADHESIVE INSTALLATION OF ENCAPSULATED STATIONARY WINDOWS

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

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

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

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

CAUTION: Refer to Window Retention Caution .

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

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

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

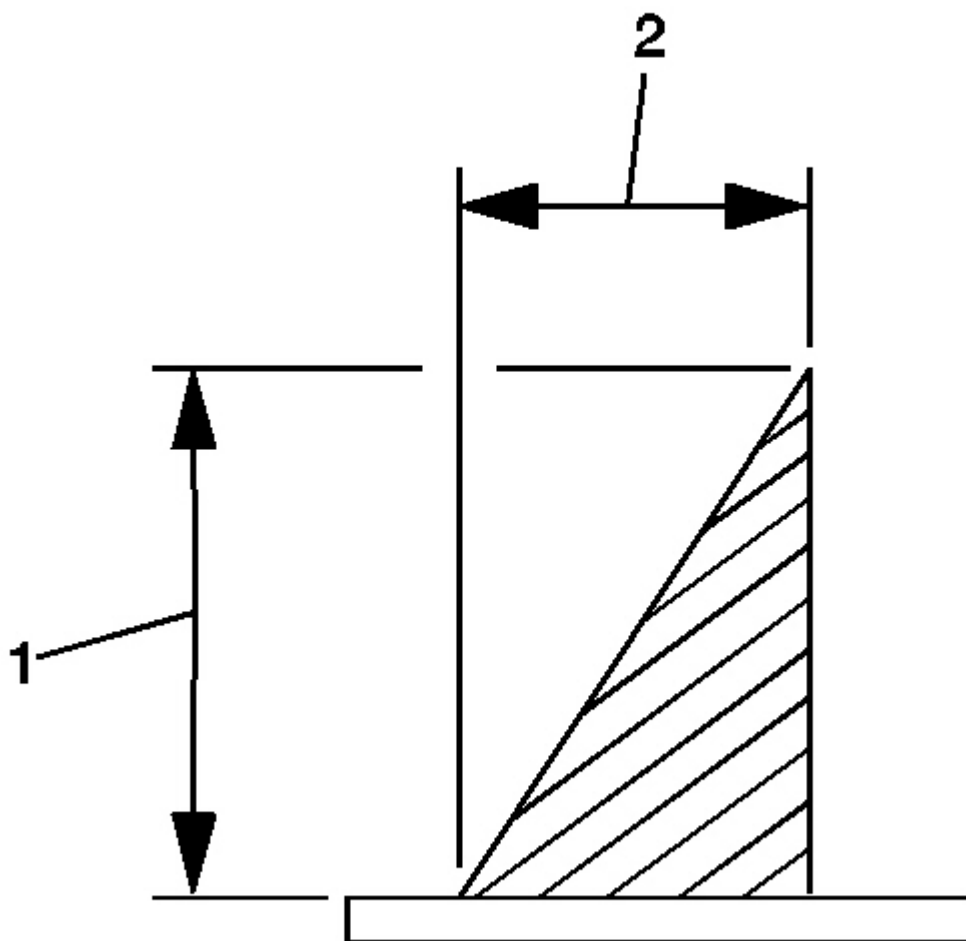


Fig. 105: Applicator Nozzle Hole Measurements
Courtesy of GENERAL MOTORS CORP.

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

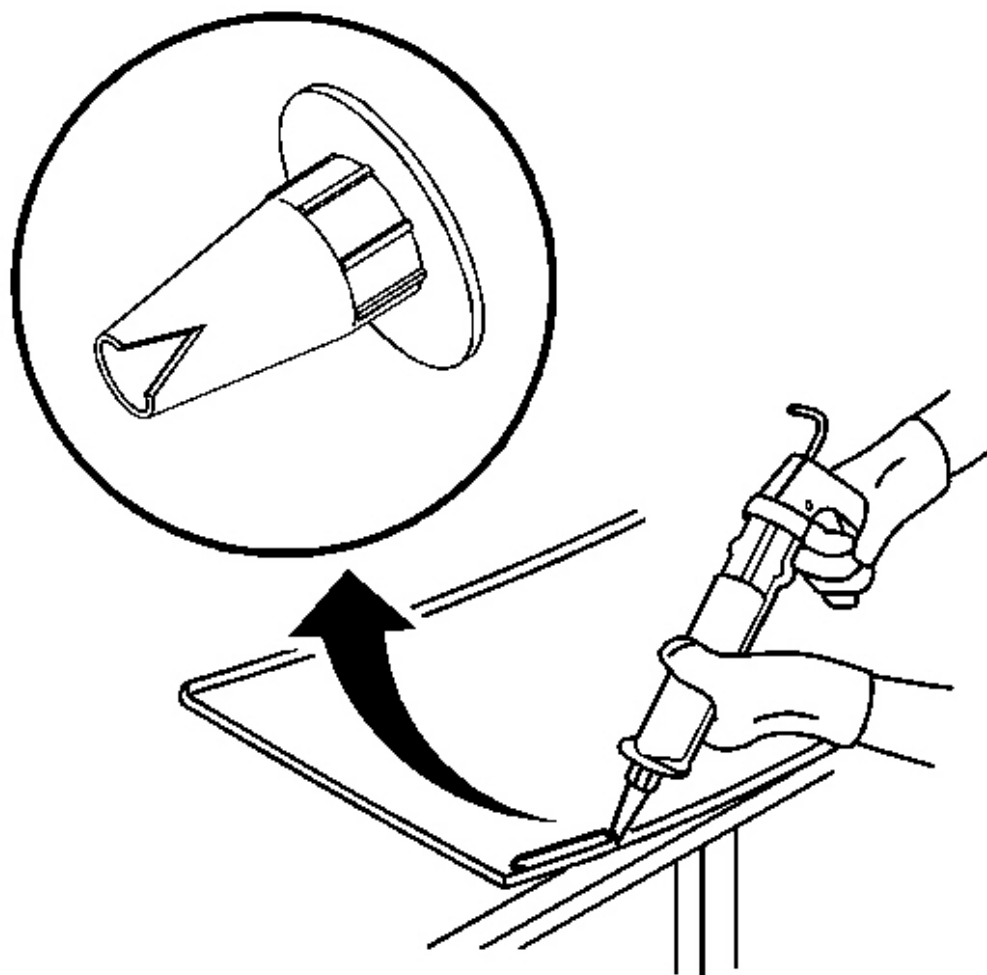


Fig. 106: View Of Modified Applicator Nozzle
Courtesy of GENERAL MOTORS CORP.

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

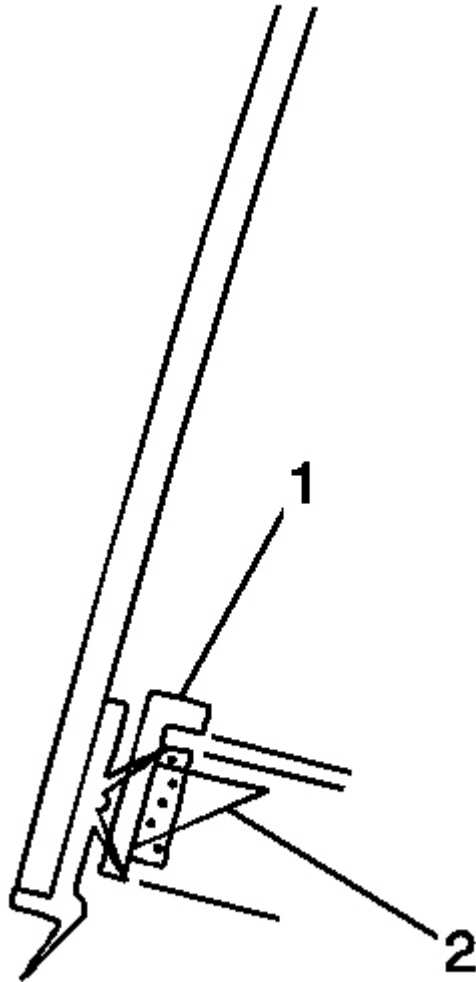


Fig. 107: Identifying Window Frame & Urethane Adhesive Bead
Courtesy of GENERAL MOTORS CORP.

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

2008 Isuzu Ascender LS

2008 Accessories & Equipment Fixed and Moveable Windows - Ascender, Envoy & Trailblazer

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

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

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

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

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

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

ADHESIVE INSTALLATION OF BODYSIDE STATIONARY WINDOWS (W/FRAME)

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

1. Remove all mounds or loose pieces of urethane adhesive from pinch-weld flange areas.

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

2008 Isuzu Ascender LS

2008 Accessories & Equipment Fixed and Moveable Windows - Ascender, Envoy & Trailblazer

2. Clean around the inside surface of the bodyside opening and window frame with a 50/50 mixture of isopropyl alcohol and water by volume on a dampened lint free cloth.

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

3. Verify all primers and urethane adhesives 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 of urethane adhesive on the pinch-weld flange. Apply the primer only to nicks, scratches or the primed surfaces.

4. Shake the black #3 primer for at least 1 minute.
5. Use a dauber in order to apply the primer to the surface of the pinch-weld flange.
6. Allow the pinch-weld primer to dry for approximately 10 minutes.
7. Apply glass prep #1 followed by glass primer #2 on the plastic frame. Allow to dry for 6-10 minutes.

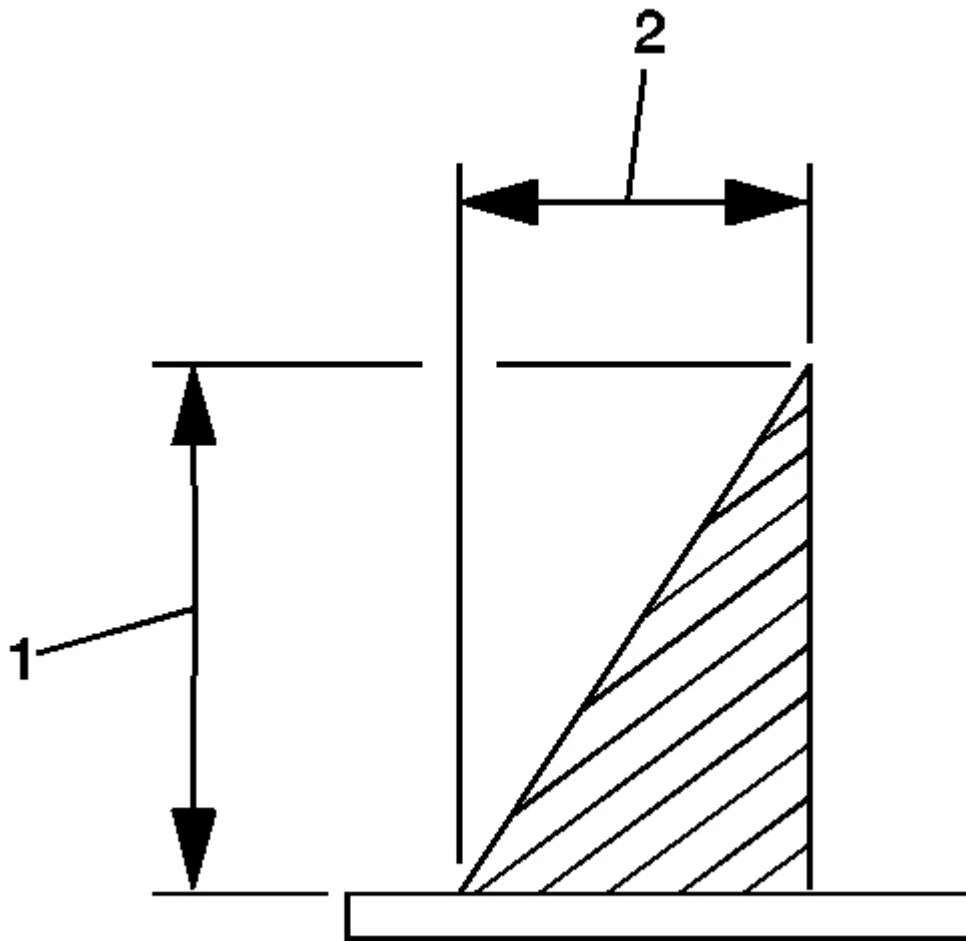


Fig. 108: Applicator Nozzle Hole Measurements
Courtesy of GENERAL MOTORS CORP.

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

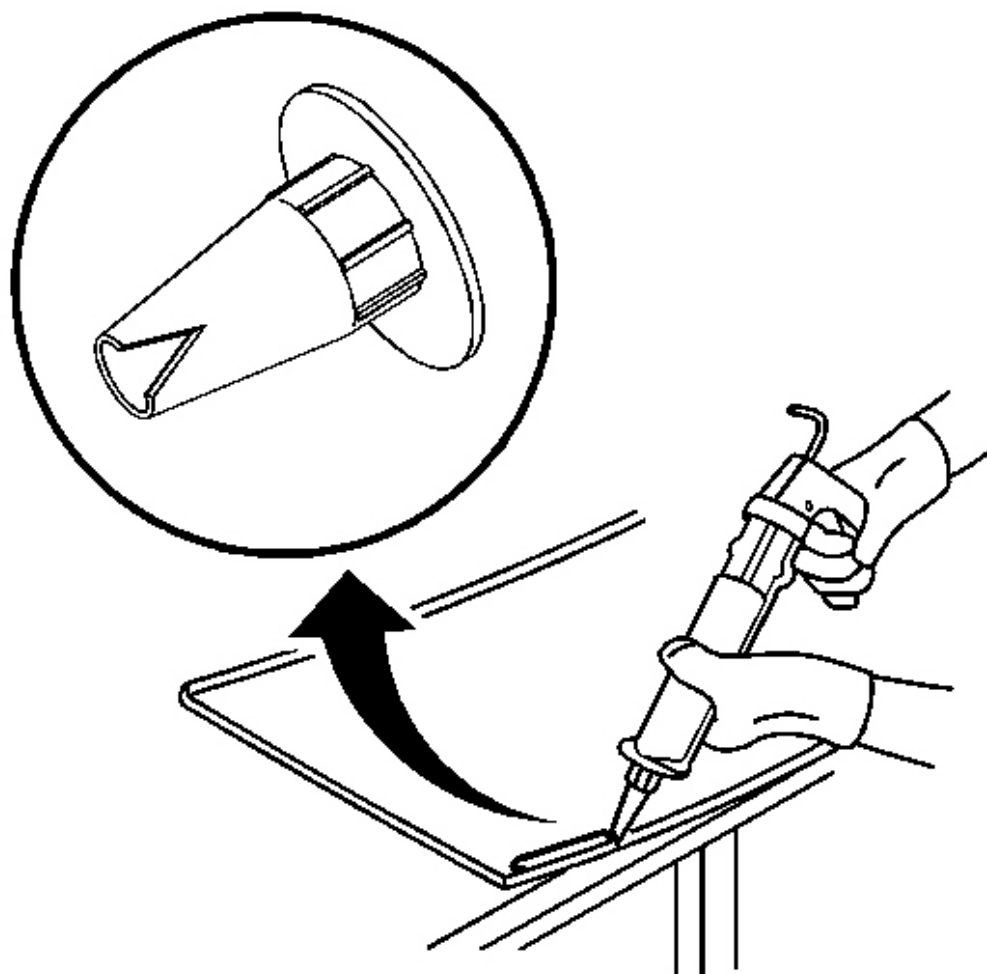


Fig. 109: View Of Modified Applicator Nozzle
Courtesy of GENERAL MOTORS CORP.

9. Use the inside edge of the window frame (1) as a guide for the nozzle in order to apply the urethane adhesive bead (2) to the window frame bonding surface.

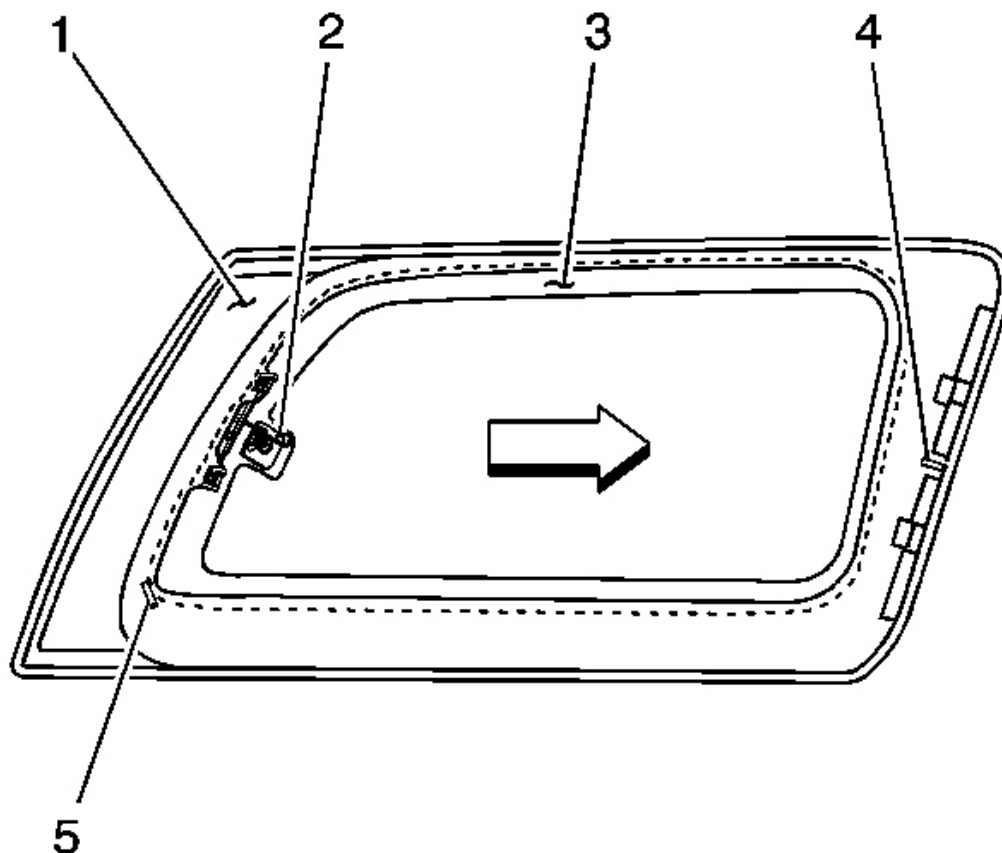


Fig. 110: View Of Urethane Application Points (Chevrolet)
Courtesy of GENERAL MOTORS CORP.

10. If installing a Chevrolet rear bodyside window, apply the urethane as indicated by the dotted line on the window frame.
11. Ensure the adhesive is applied on the outer side of the rear locator pin (5) only.

2008 Isuzu Ascender LS

2008 Accessories & Equipment Fixed and Moveable Windows - Ascender, Envoy & Trailblazer

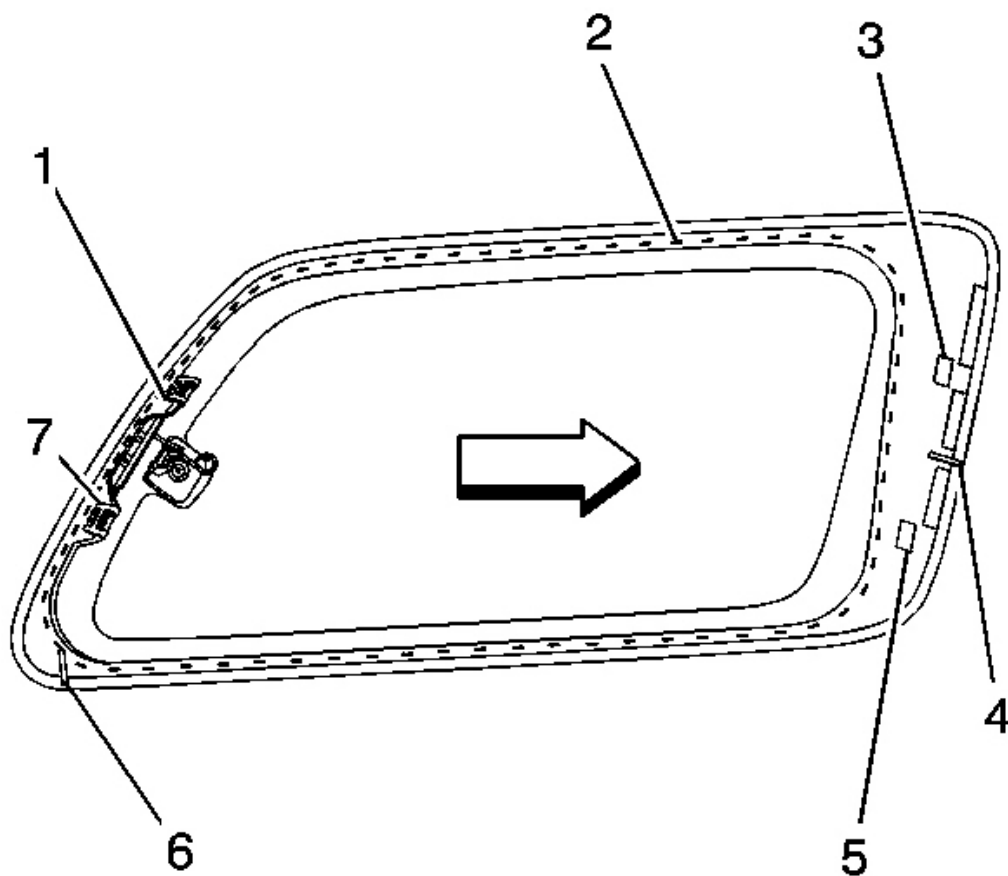


Fig. 111: Identifying Front Body Side Window Hinge & Window Frame
Courtesy of GENERAL MOTORS CORP.

12. If installing a GMC rear bodyside window, apply the urethane as indicated by the dotted line (2) on the window frame.
13. Ensure the adhesive is applied on the outer side of the rear locator pin (6) only.

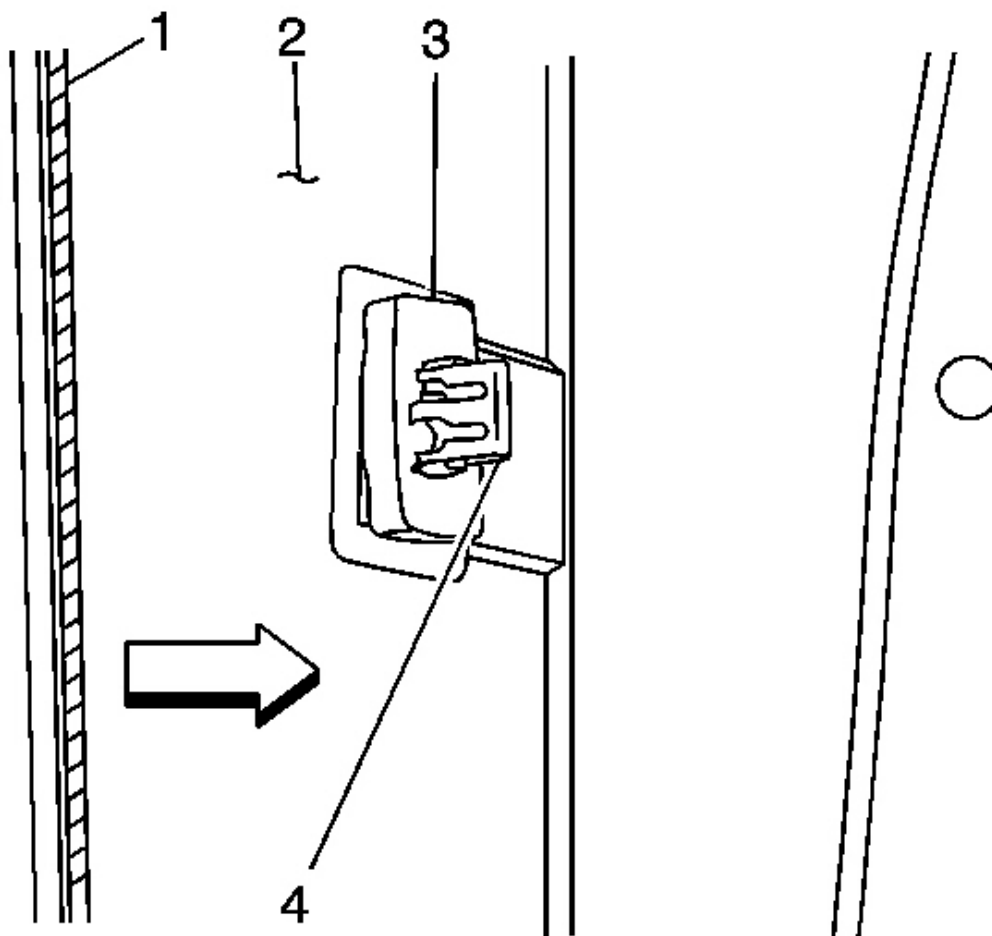


Fig. 112: Identifying Foam Block & Window Frame Retention Clip
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Ensure the foam blocks (3) are located on the window frame retention clip (4).

14. If missing, replace in order to prevent water intrusion into the vehicle.
15. Place the window assembly into the bodyside opening. Ensure that the window frame alignment pins and retainer clips are properly aligned to the bodyside.

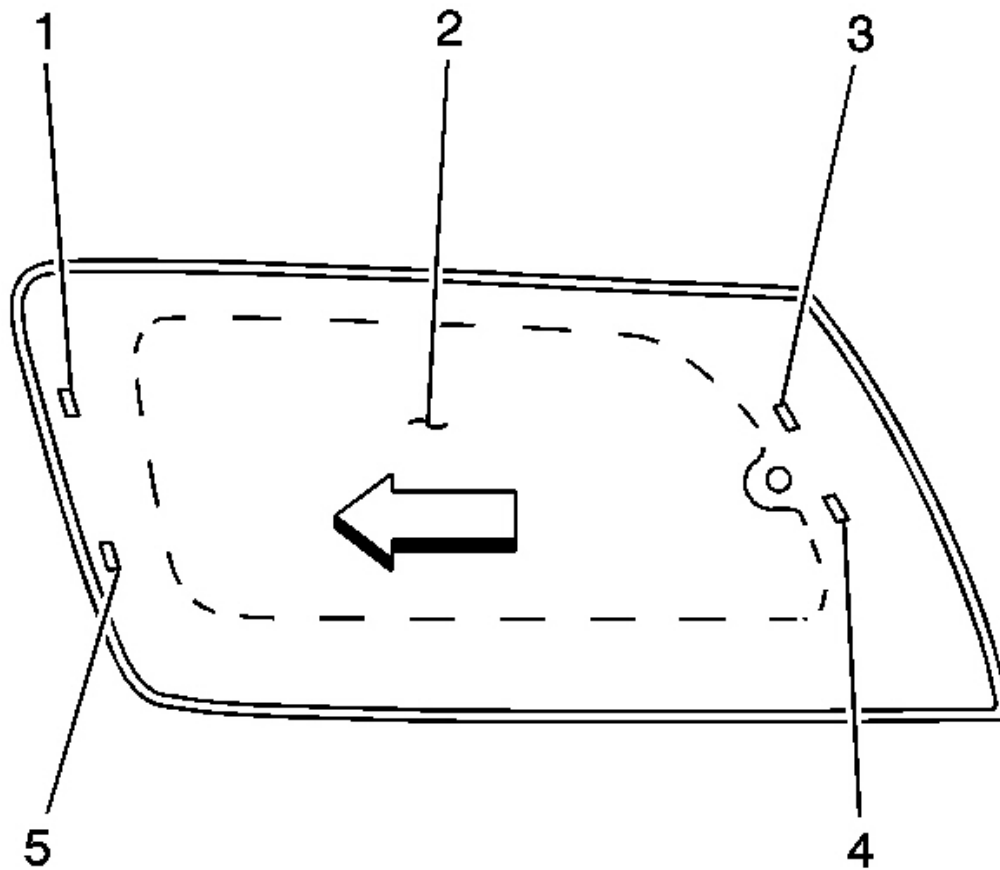


Fig. 113: Identifying Points To Apply Pressure During Bodyside Window Installation (Chevrolet)
Courtesy of GENERAL MOTORS CORP.

16. If installing a Chevrolet bodyside window (2), firmly press only at the 4 exterior points (1, 3, 4, 5) as indicated.

2008 Isuzu Ascender LS

2008 Accessories & Equipment Fixed and Moveable Windows - Ascender, Envoy & Trailblazer

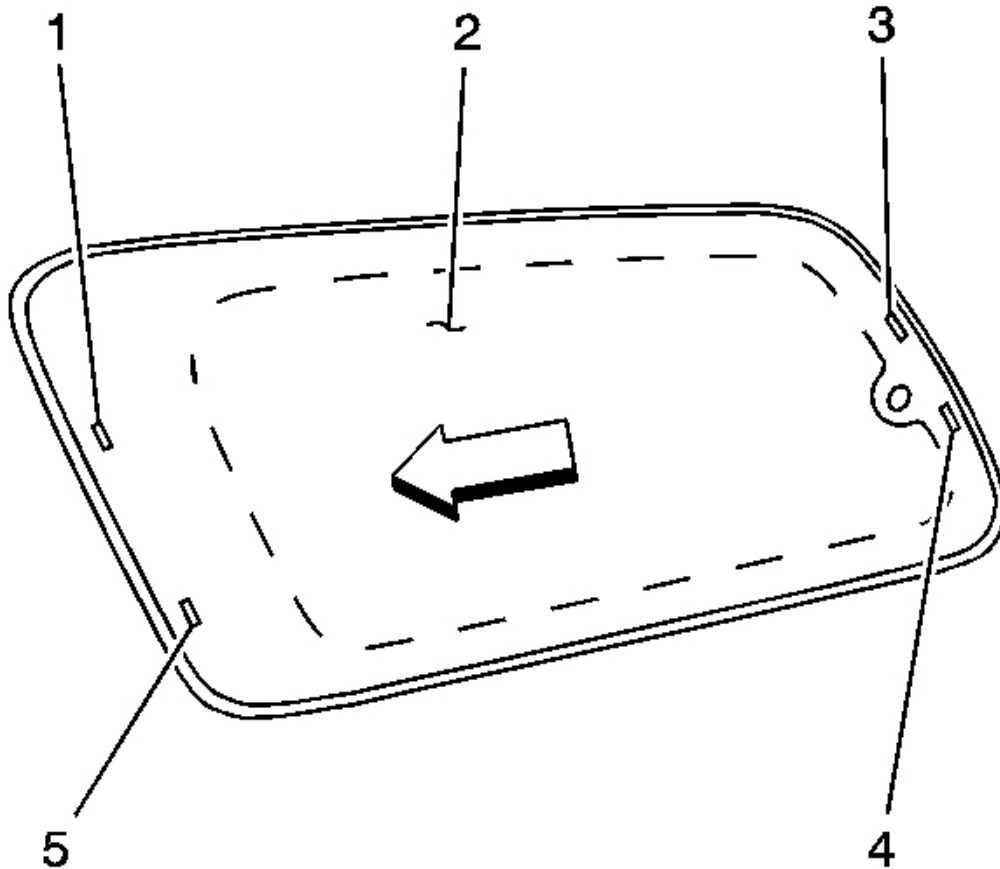


Fig. 114: Identifying Points To Apply Pressure During Bodyside Window Installation (GMC)
Courtesy of GENERAL MOTORS CORP.

17. If installing a GMC bodyside window (2) firmly press only at the 4 exterior points (1, 3, 4, 5) as indicated.
18. Clean any excess urethane adhesive from the body and interior trim panels. Connect any electrical connectors, if equipped.
19. Install the antenna mast, if removed.

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

20. Use a soft spray of warm water in order to immediately water test the bodyside window.
21. Inspect the window for leaks.

2008 Isuzu Ascender LS

2008 Accessories & Equipment Fixed and Moveable Windows - Ascender, Envoy & Trailblazer

22. If any leaks are found, use a plastic paddle in order to apply extra urethane adhesive at the leak point.
23. Retest the window for leaks.

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

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

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

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

ADHESIVE INSTALLATION OF BODYSIDE STATIONARY WINDOWS (W/O FRAME)

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

1. Remove all mounds or loose pieces of urethane adhesive from pinch-weld flange areas.

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

2. Clean around the inside surface of the bodyside opening and window with a 50/50 mixture of isopropyl alcohol and water by volume on a dampened lint free cloth.

2008 Isuzu Ascender LS

2008 Accessories & Equipment Fixed and Moveable Windows - Ascender, Envoy & Trailblazer

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

3. Verify all primers and urethane adhesives 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 of urethane adhesive on the pinch-weld flange. Apply the primer only to nicks, scratches or the primed surfaces.

4. Shake the black #3 primer for at least 1 minute.
5. Use a dauber in order to apply the primer to the surface of the pinch-weld flange.
6. Allow the pinch-weld primer to dry for approximately 10 minutes.
7. Apply glass prep #1 followed by glass primer #2. Allow to dry for 6-10 minutes.

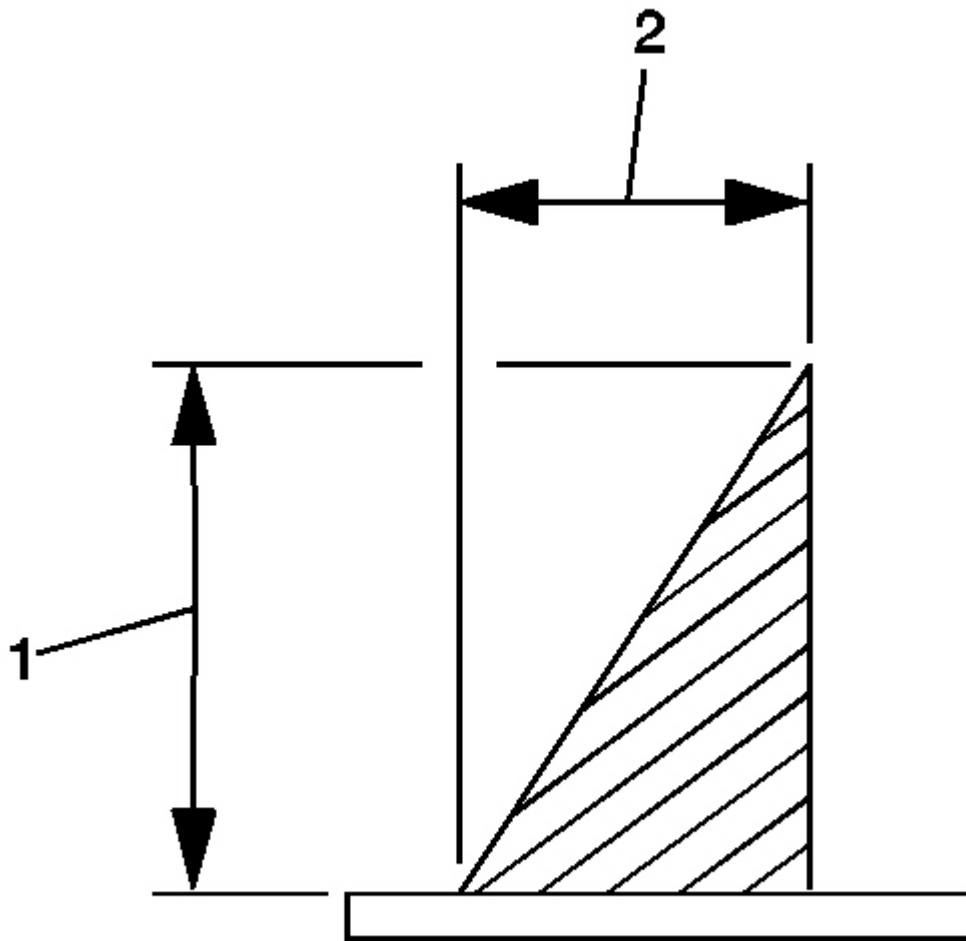


Fig. 115: Applicator Nozzle Hole Measurements
Courtesy of GENERAL MOTORS CORP.

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

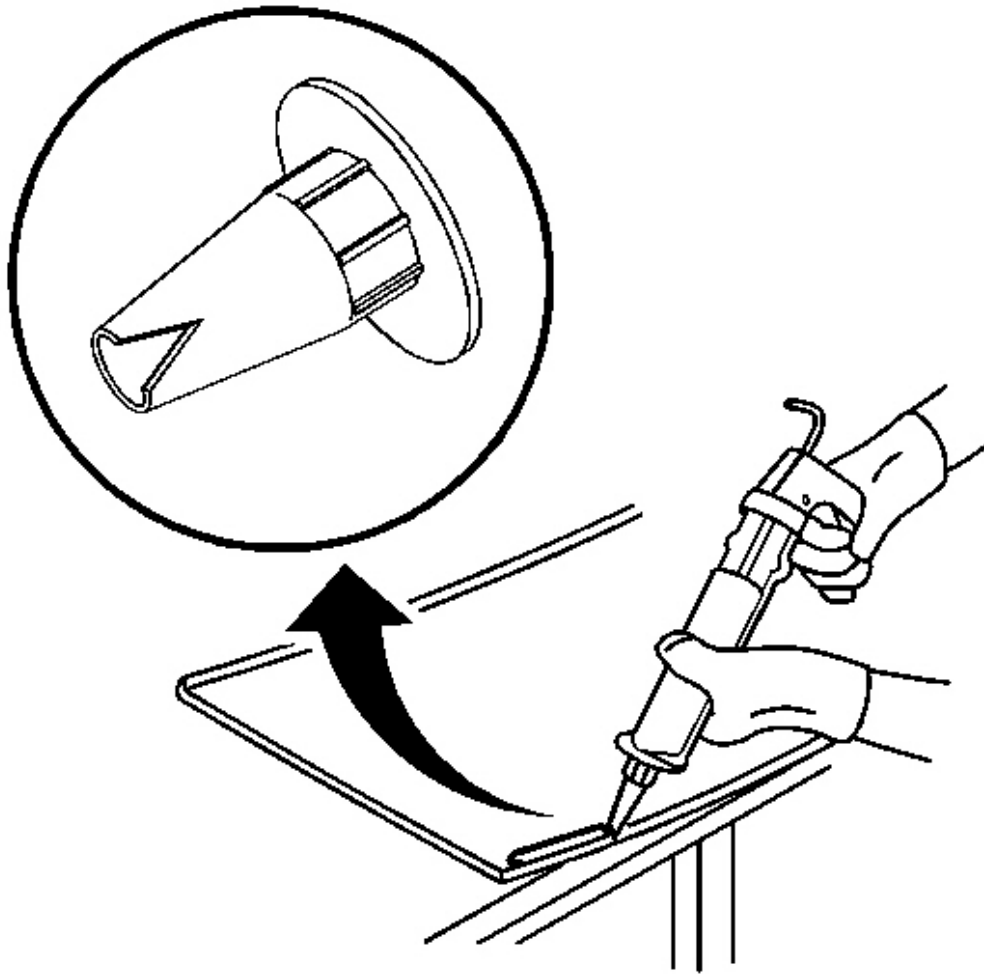


Fig. 116: View Of Modified Applicator Nozzle
Courtesy of GENERAL MOTORS CORP.

9. Use 5 mm (0.20 in) from the inside edge of the window as a guide for the nozzle in order to apply the urethane adhesive bead to the window bonding surface.
10. Place the window assembly into the bodyside opening. Ensure that the window alignment pins are properly aligned to the bodyside.
11. Firmly press around the entire periphery of the exterior window in order to ensure proper adhesion to the body.
12. Clean any excess urethane adhesive from the body and interior trim panels.
13. Connect any electrical connectors, if equipped.

2008 Isuzu Ascender LS

2008 Accessories & Equipment Fixed and Moveable Windows - Ascender, Envoy & Trailblazer

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

14. Use a soft spray of warm water in order to immediately water test the bodyside window.
15. Inspect the window for leaks.
16. If any leaks are found, use a plastic paddle in order to apply extra urethane adhesive at the leak point.
17. Retest the window for leaks.

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

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

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

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

BODY SIDE WINDOW ACTUATOR REPLACEMENT

Removal Procedure

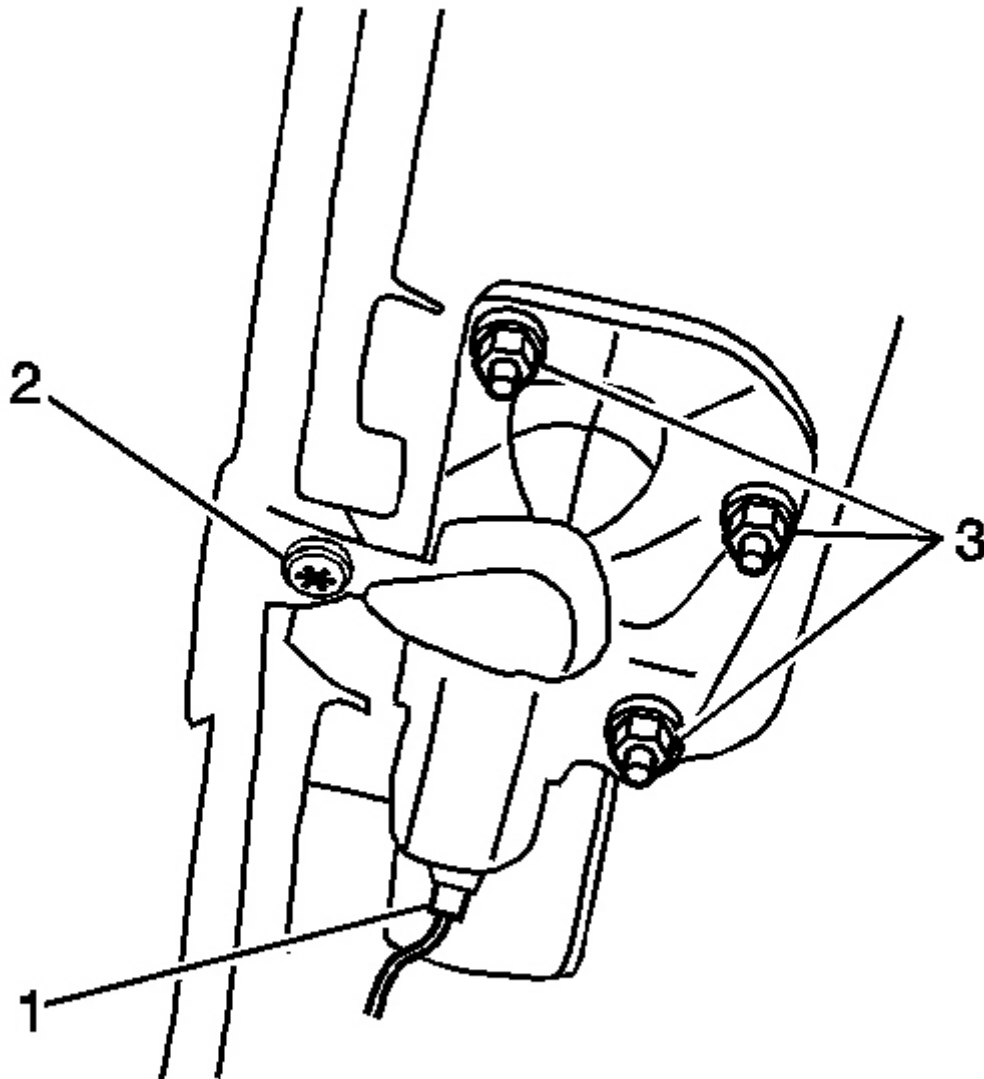


Fig. 117: View Of Retaining Nuts, Mounting Studs & Electrical Connector
Courtesy of GENERAL MOTORS CORP.

1. Remove the rear interior trim panel covering the actuator. Refer to **Body Side Window Rear Garnish Molding Replacement (TrailBlazer, Envoy)** .
2. Disconnect the electrical connection (1).

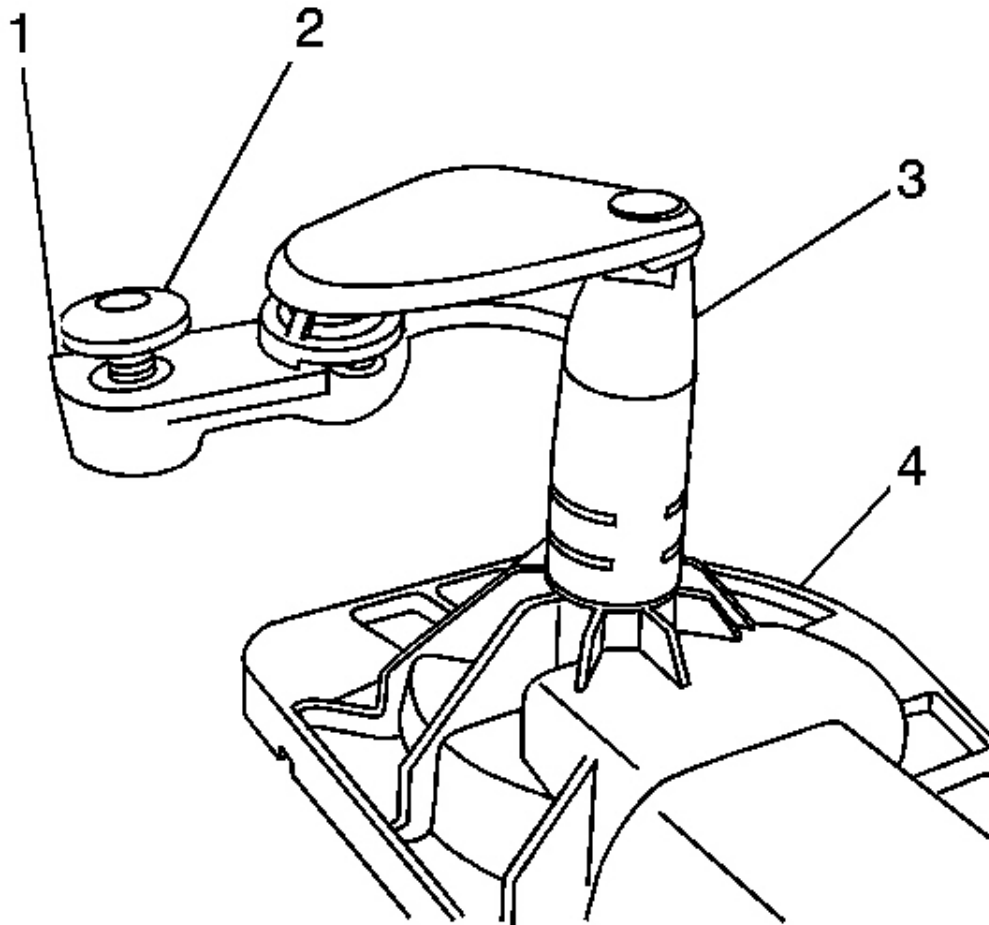


Fig. 118: View Of Actuator Arm, Window Hinge Screw & Actuator Retaining Nuts
Courtesy of GENERAL MOTORS CORP.

3. Remove the actuator arm (1) to the window hinge screw (2)
4. Remove the actuator retaining nuts.
5. Remove the actuator from the vehicle.

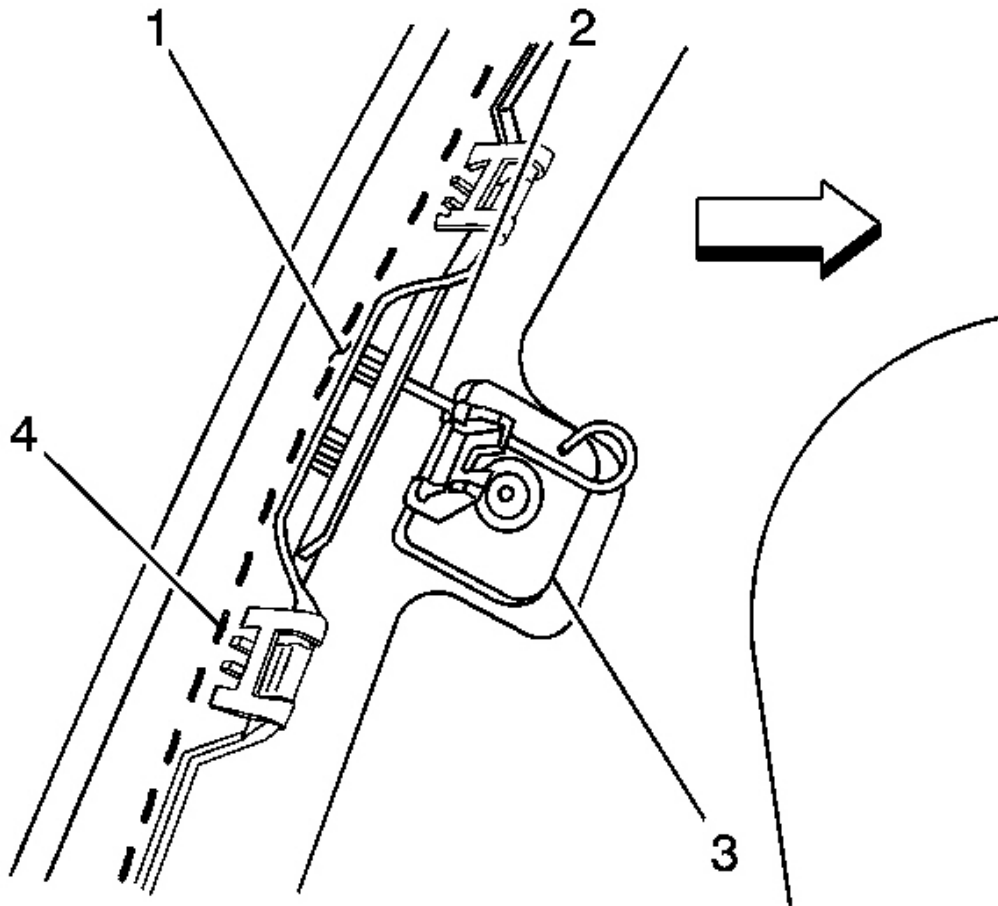


Fig. 119: Locating Window Bracket & Window Frame
Courtesy of GENERAL MOTORS CORP.

6. Using a 2.0 mm (0.08 in) pin (1), secure the window bracket (3) to the window frame (4).

Installation Procedure

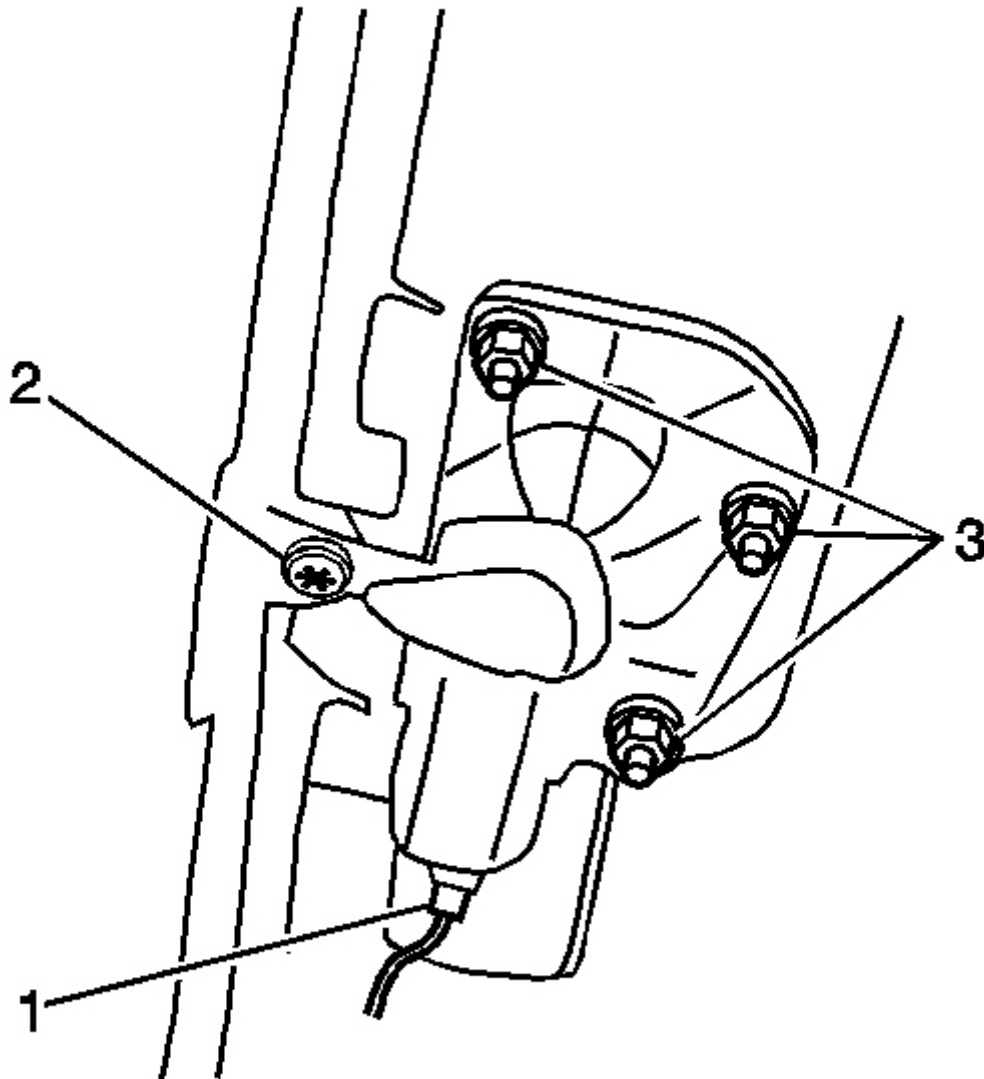


Fig. 120: View Of Retaining Nuts, Mounting Studs & Electrical Connector
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice .

1. Position the actuator over the mounting studs and install the retaining nuts (3).

Tighten: Tighten the nuts (3) to 7 N.m (2 lb in).

2. Connect the electrical connector (1).

IMPORTANT: If installing a new actuator, the actuator is timed correctly at the factory.

3. If installing or adjusting the old actuator proceed as follows:

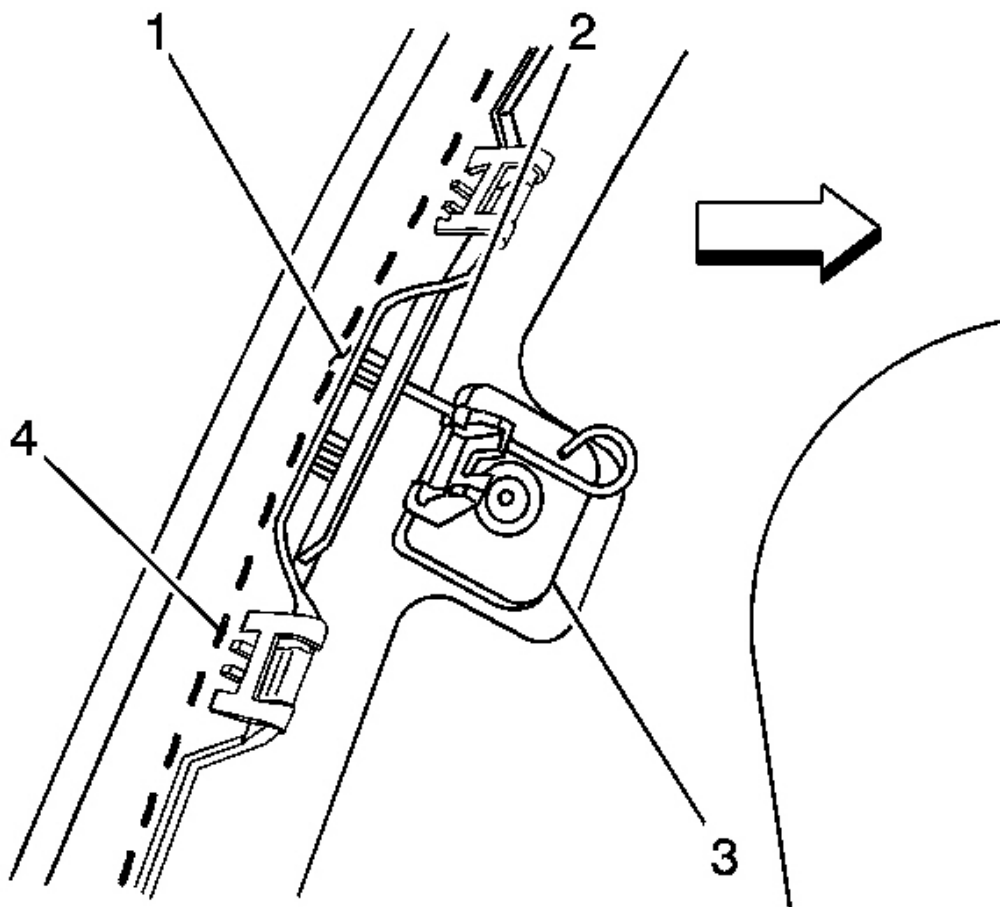


Fig. 121: Locating Window Bracket & Window Frame
Courtesy of GENERAL MOTORS CORP.

4. Ensure the window latch bracket (3) is pinned (1) the window frame (4).

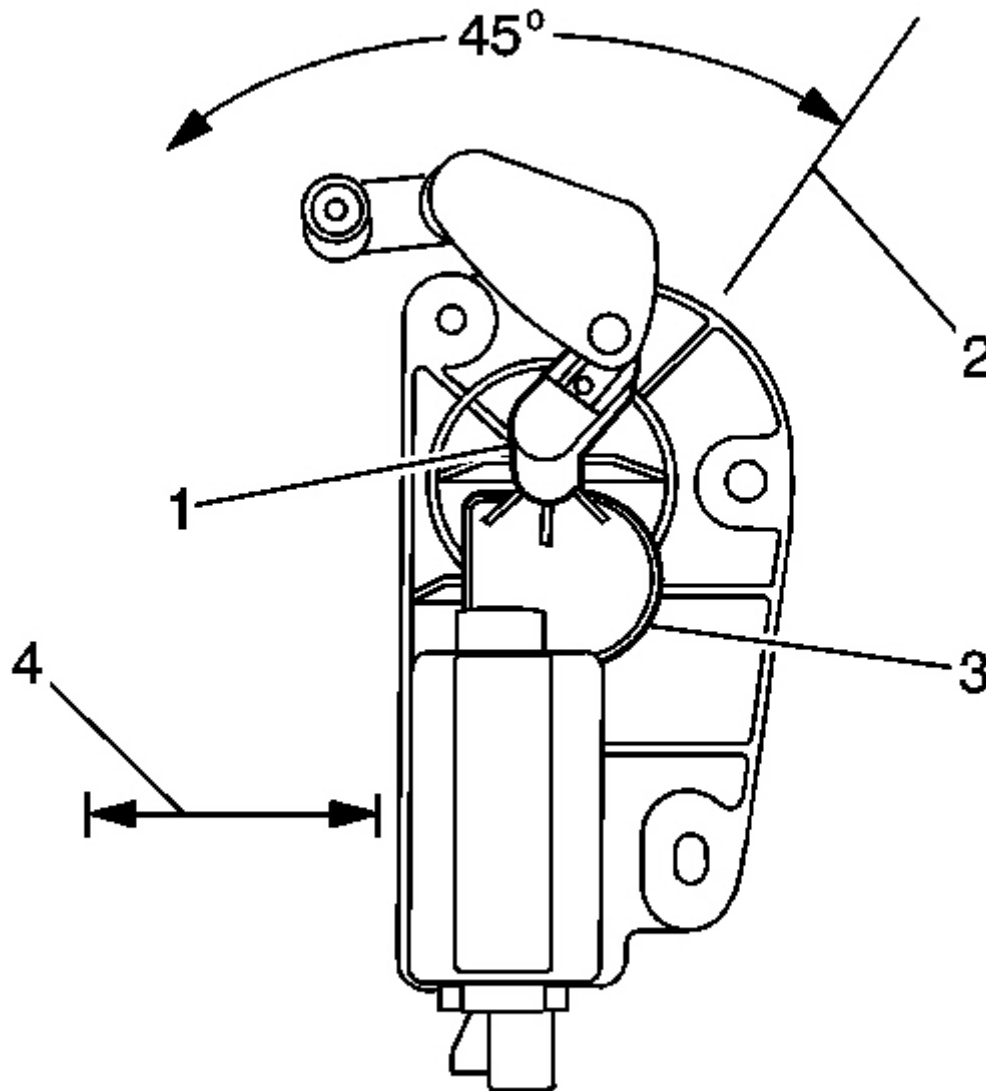


Fig. 122: View Of Window Side Sheet Metal & Bellcrank At 45 Degree Angle
Courtesy of GENERAL MOTORS CORP.

5. Position the bellcrank (1) at a 45 degree angle (2) compared to the vertical edge of the window side sheet metal (4).

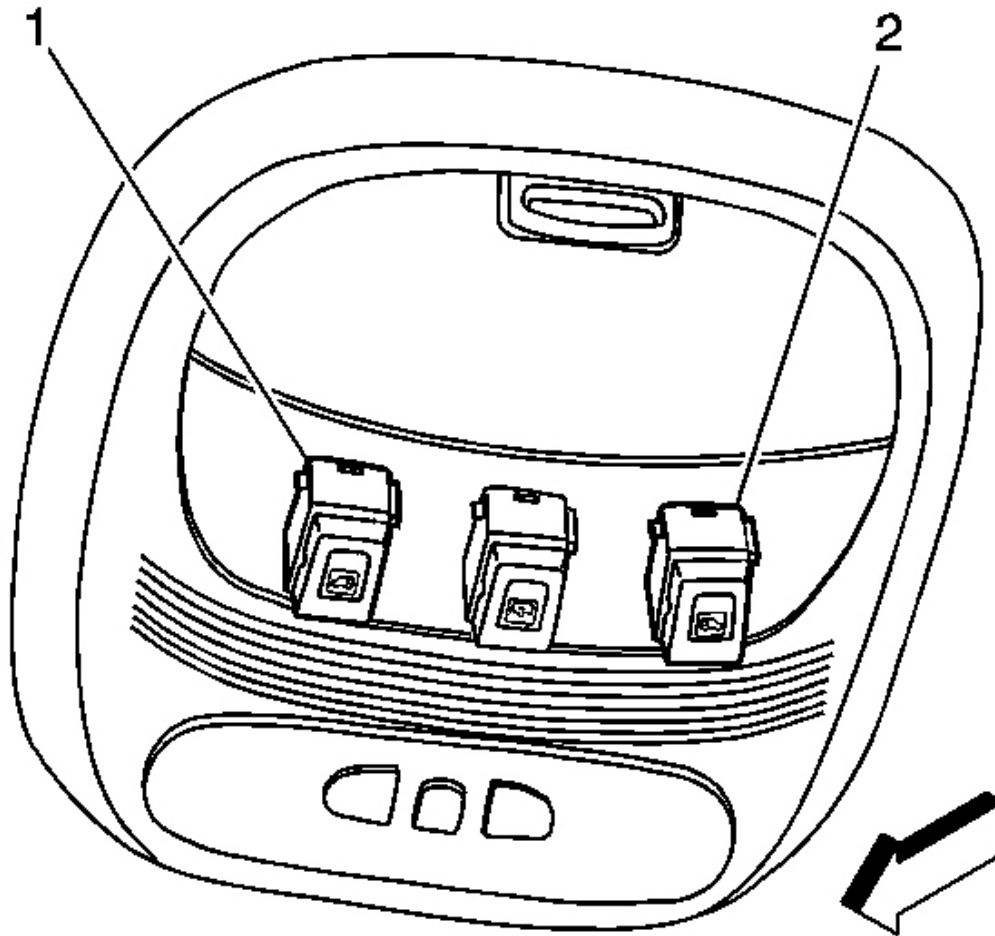


Fig. 123: Identifying Body Side Power Window Switches
Courtesy of GENERAL MOTORS CORP.

6. Using the body side power window switches (1 or 2) at the overhead console, push the switch in order to position the bellcrank at a 45 degree angle to the sheet metal flange.

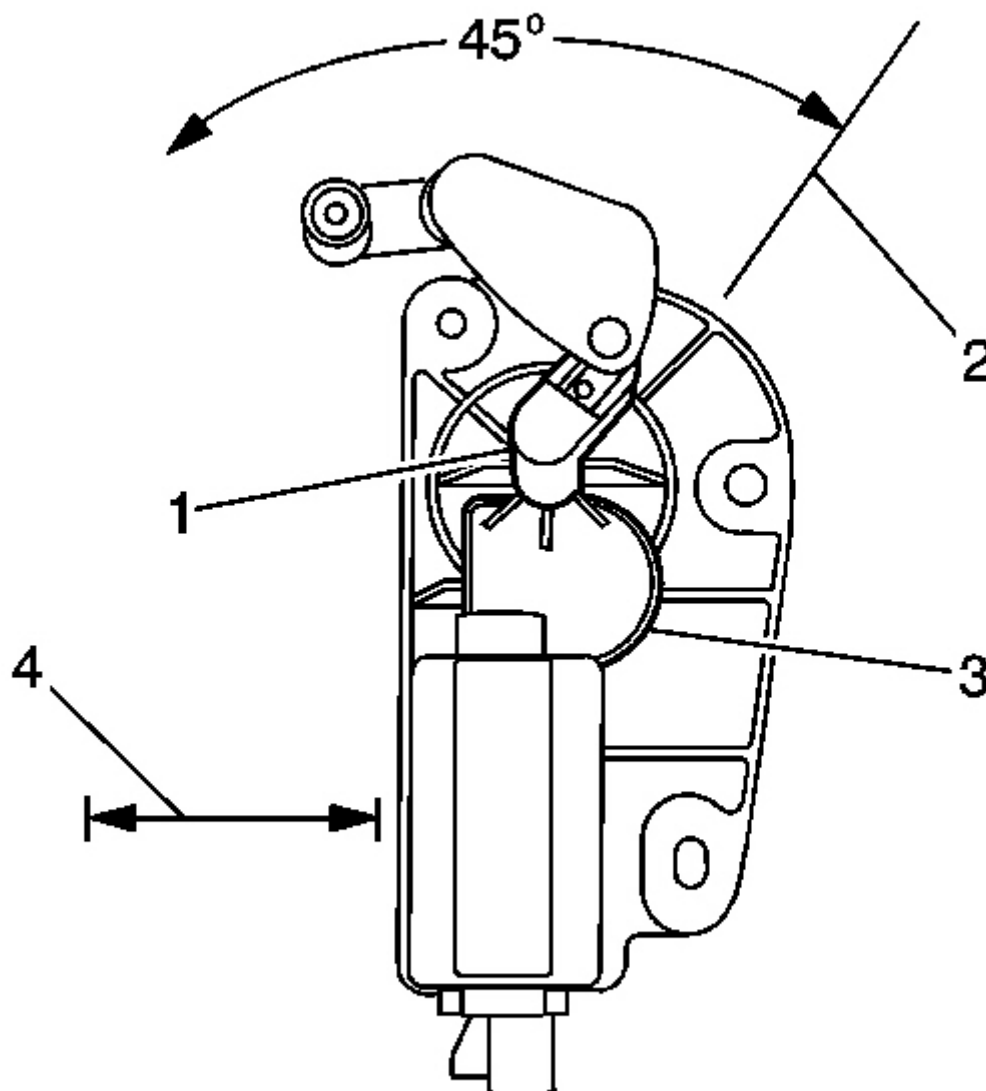


Fig. 124: View Of Window Side Sheet Metal & Bellcrank At 45 Degree Angle
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: The bellcrank arm (1) needs to be at a 45 degree angle (2) parallel to the sheet metal flange (4) prior to securing the actuator arm screw.

7. Install the screw connecting the window bracket to the actuator arm.

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

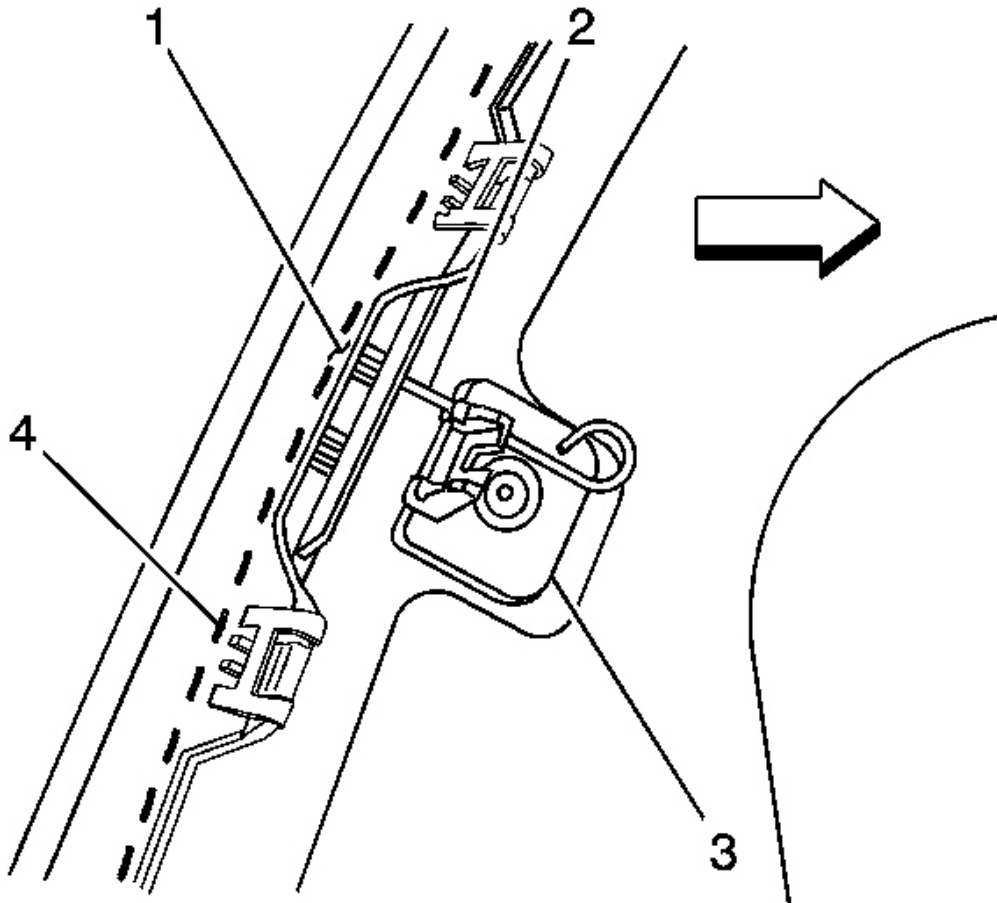


Fig. 125: Locating Window Bracket & Window Frame
Courtesy of GENERAL MOTORS CORP.

8. Remove the window bracket to the window frame pin (1).
9. Verify the operation of the body side window.
10. Install the rear interior trim panel. Refer to **Body Side Window Rear Garnish Molding Replacement (TrailBlazer, Envoy)** .

DESCRIPTION & OPERATION

FULL-CUT METHOD DESCRIPTION

2008 Isuzu Ascender LS

2008 Accessories & Equipment Fixed and Moveable Windows - Ascender, Envoy & Trailblazer

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.

2008 Isuzu Ascender LS

2008 Accessories & Equipment Fixed and Moveable Windows - Ascender, Envoy & Trailblazer

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 & OPERATION

Power Window System Components

The power window system consists of the following components:

- Driver door module (DDM)
- Passenger door module (PDM)
- Body control module (BCM)
- LR power window switch
- RR power window switch
- Window up and window down relays in each of the rear passenger window switches
- Window lockout switch
- Reversible power window motors in each of the doors (circuit breaker protected)
- LT DOOR CB 25A (System power for left rear window)
- RT DOOR CB 25A (System power for right rear window)

Power Window System Controls

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 DDM contains 4 power window switches which are integral components. Closing any of the normally open, rocker type switches provides the DDM with a request for power window operation. The switches for the 2 front windows have 3 positions Up, Down and Express Down, while the switches for the rear windows have only 2 positions, Up and Down. Each of these switches and their positions is a direct input into the DDM. Upon receiving a request for power window operation, the DDM, transmits a class 2 message indicating the switch and it's changed position.

2008 Isuzu Ascender LS

2008 Accessories & Equipment Fixed and Moveable Windows - Ascender, Envoy & Trailblazer

The PDM contains a single power window switch that is an integral component. Closing of this normally open, rocker switch provides the PDM with a request for the front passenger power window operation. The switch for the front passenger window has 2 positions Up and Down. Each of these switch positions is a direct input to the PDM.

The 2 rear passenger doors have their own switches. Each of the switches contains a power window up and down relay. A switch activation alone can control the up and down functions of the rear windows. However the BCM, upon receiving a class 2 message from the DDM, can control the set of relays which will activate the rear window motors.

Power Window Motor Operation

A permanent magnet motor operates each of the power side windows. Each motor raises or lowers the glass when the motor receives voltage. The direction the motor turns depends on the polarity of the supply voltage. The power window switches control the polarity of the supply voltage. A built-in circuit breaker protects each motor. The circuit breaker opens when the switch is depressed for an extended period of time under the following conditions:

- The window has an obstruction.
- The window is fully open or fully closed.

The circuit breaker will reset automatically as the circuit breaker cools, however 5-15 seconds may elapse before the circuit breaker resets.

Driver Power Window Operation

The switch for the driver power window has 3 positions Up, Down and Express Down and its position is a direct input into the DDM. Upon receiving a request for power window operation (switch activation), the DDM 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

The switch for the front passenger power window has 2 positions Up and Down, and its position is a direct input into the PDM. Upon receiving a request for power window operation (switch activation), the PDM 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 controlled from the power window master switch. The power window master switch for the front passenger power window has 3 positions Up, Down and Express Down and its position is a direct input into the DDM. Upon receiving a request for front passenger power window operation (switch activation), the DDM transmits a class 2 message indicating the changed switch position. When the PDM receives this message, the PDM 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

2008 Isuzu Ascender LS

2008 Accessories & Equipment Fixed and Moveable Windows - Ascender, Envoy & Trailblazer

The passenger power window switches incorporate window up and down relays. The supply side of all the window up and down relays receive voltage through the battery voltage supply circuit and the LT DOOR or RT DOOR circuit breakers respectively. The normally closed contacts of each relay is connected to ground. The load side of each of the relays are connected to either side of the power window motor through the power window up and down circuits. The relay coil feed circuits are connected to the BCM through the power window lockout control circuit and the relay control circuits are connected to the power window switches and to the BCM.

If a rear power window switch is placed in the down position, the down relay would energize and allow battery voltage to the power window motor through the power window motor down circuit. Since the opposite side of the motor is connected to the normally closed contacts of the up relay to ground through the power window motor up circuit, the window moves down. If a rear power window switch is placed in the up position, the up relay would energize and allow battery voltage to the power window motor through the power window motor up circuit. Since the opposite side of the motor is connected to the normally closed contacts of the down relay to ground through the power window motor down circuit, the window moves up.

The rear passenger power windows can also be controlled from the power window master switch. The power window master switches for the rear passenger power windows have 2 positions Up and Down and its position is a direct input into the DDM. Upon receiving a request for rear passenger power window operation (switch activation), the DDM transmits a class 2 message indicating the changed switch position. When the BCM receives this message, the BCM can control the rear window up and down relays.

Express Down Operation

The express down function controls both the driver and front passenger power windows but only from the driver door power window master switch. When either the driver or front passenger window switch is momentarily depressed to the express down position, it is a direct input into the DDM. If the request was for the driver power window, the DDM supplies voltage to the power window down circuit continuously until the power window reaches the bottom of its travel. At this point, the DDM senses an over current situation on the power window down circuit and interrupts the voltage supply. If the request was for the front passenger power window, the DDM transmits a class 2 message indicating an express down function was requested. When the PDM receives this message, the PDM supplies voltage to the power window down circuit continuously until the power window reaches the bottom of its travel. At this point, the PDM senses an over current situation on the power window down circuit and interrupts the voltage supply.

Power Window Lockout Operation

The DDM contains a window lockout switch that is responsible for the disabling of all the passenger windows from the individual passenger window switches. When the window lockout switch is activated, the DDM transmits a class 2 message indicating that a window lockout request has been received. When the PDM receives this message, it will disable the power window motor up and down circuits. When the BCM receives this message, it will interrupt the up and down relay coil feed voltage for both rear doors. Once activated, the lockout feature will remain in effect until the ignition switch is cycled or the DDM receives another power window lockout switch activation.

REAR WINDOW DEFOGGER DESCRIPTION & OPERATION

Rear Window Defogger System Components

2008 Isuzu Ascender LS

2008 Accessories & Equipment Fixed and Moveable Windows - Ascender, Envoy & Trailblazer

The rear window defogger system consist of the following components:

- HVAC control module
- Liftgate module (LGM)
- Rear window defogger grid

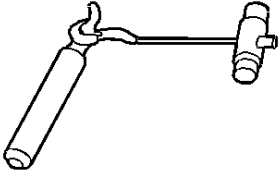

Rear Window Defogger Operation

Battery positive voltage is supplied through the LGM 2 fuse to the LGM for the rear window defogger system. When the rear window defogger switch is depressed, the HVAC control module illuminates the rear window defogger indicator, and sends a class 2 message to the LGM to enable the rear window defogger. The LGM enables the rear window defogger by allowing battery positive voltage to the rear window defogger.

When the rear window defogger switch is pressed for the first time, the defogger cycle lasts 10 minutes. Further operation results in 10 minute defogger cycles.

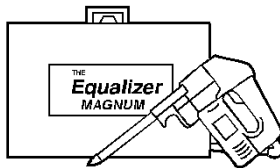
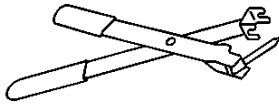
SPECIAL TOOLS & EQUIPMENT

SPECIAL TOOLS

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

2008 Isuzu Ascender LS

2008 Accessories & Equipment Fixed and Moveable Windows - Ascender, Envoy & Trailblazer



J 39032
Stationary Glass Removal Tool



J-39040
Quarter Window Remover