



- Fixed and Movable Windows
- Mirrors
- Vehicle Access
- Wipers and Washers





Fixed and Movable Windows

- Windshield Replacement
- Front Side Door Window Replacement
- Rear Side Door Window Replacement
- Quarter Window Replacement (Long Body C/100)
- Quarter Window Replacement (Short Body C/105)
- Liftgate Window Replacement
- Liftgate Window Strut Replacement
- Liftgate Window Latch Replacement
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- Door Window Regulator Replacement
- Door Window Guide Replacement (Rear C 105/Short Body)
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Windshield Replacement

Tools Required

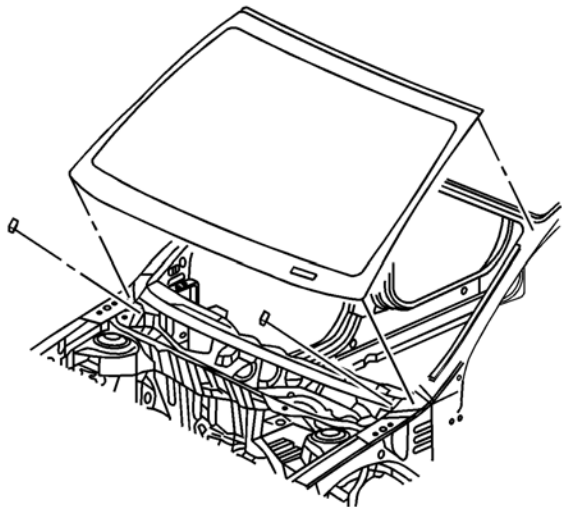
- [J 24402-A](#) Glass Sealant Cold Knife Remover
- [J 39032](#) Stationary Glass Removal Tool
- Urethane Adhesive Kit GM P/N 12346392 or Equivalent
- Isopropyl Alcohol or Equivalent
- Cartridge-type Caulking Gun
- Commercial-type Utility Knife
- Razor Blade Scraper
- Suction Cups
- Plastic Paddle

Removal Procedure

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

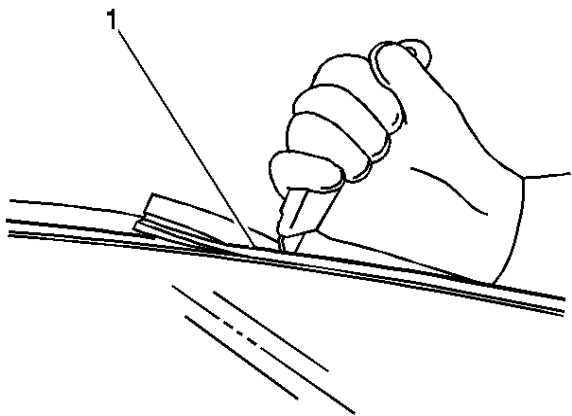
1. Open the hood.
2. Remove the windshield wiper arms and blades. Refer to [Wiper Arm Replacement](#) .
3. Remove the air inlet grille. Refer to [Air Inlet Grille Panel Replacement](#) .
4. Remove the interior windshield pillar garnish moldings. Refer to [Windshield Garnish Molding Replacement](#) .
5. Remove the rearview mirror. Refer to [Rearview Mirror Replacement](#) .

Caution: Refer to [Defroster Outlet Caution](#) in Cautions and Notices.

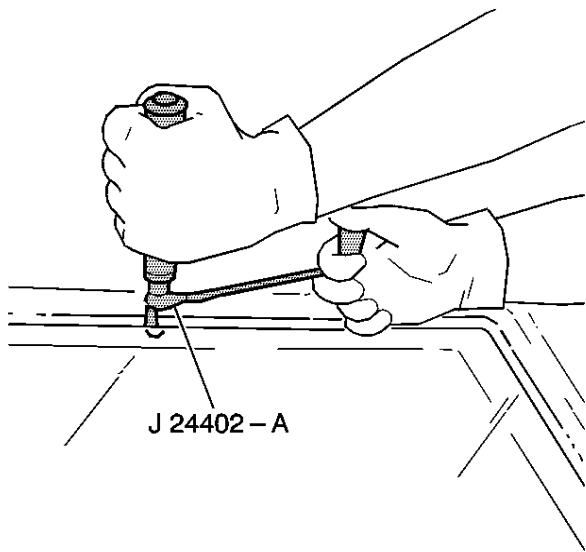


6. Cover the following parts to protect from broken glass:
 - Upper dash pad
 - Defroster outlets and A/C outlets
 - Seats and carpeting

Caution: Refer to [Glass and Sheet Metal Handling Caution](#) in Cautions and Notices.

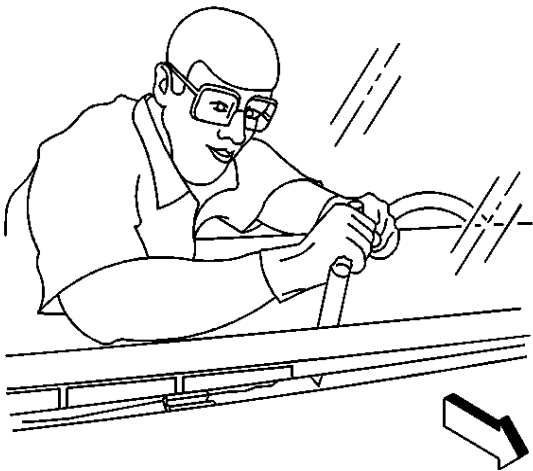


7. Using a utility knife, carefully cut the exposed reveal molding (1) from the sides and the top edge of the windshield to access the urethane adhesive bead.



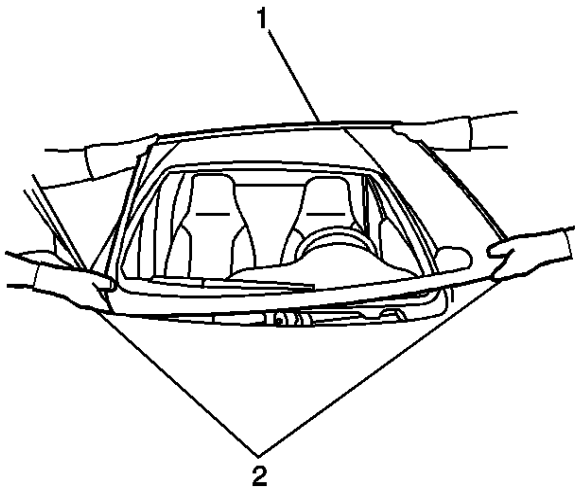
Important: Keep the cutting edge of the tool against the window.

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



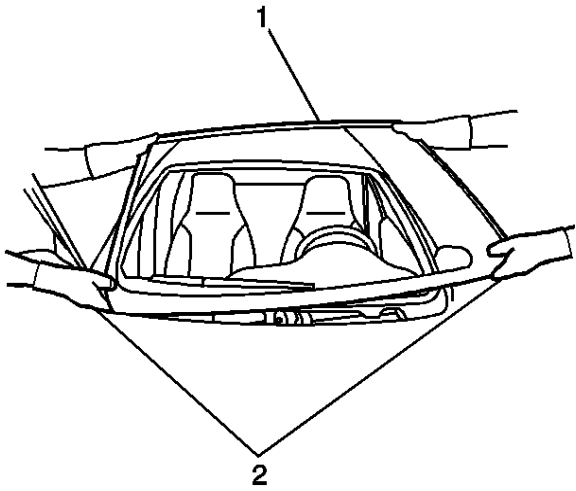
Important: Keep the cutting edge of the knife/tool against the window. Do this from inside the vehicle.

9. If necessary, use a long utility knife or similar tool to remove the bottom corners of the windshield from the urethane adhesive.



10. With the aid of an assistant (2), remove the windshield (1) from the vehicle.

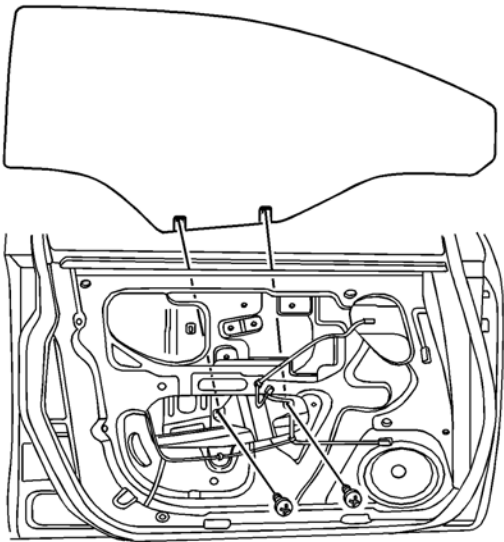
Installation Procedure



1. With the aid of an assistant (2) install the windshield (1) into the opening. Refer to [Adhesive Installation of Stationary Windows](#) .
2. Install the rearview mirror. Refer to [Rearview Mirror Replacement](#) .
3. Install the interior windshield pillar garnish moldings. Refer to [Windshield Garnish Molding Replacement](#) .
4. Install the air inlet grille. Refer to [Air Inlet Grille Panel Replacement](#) .
5. Install the windshield wipers arms and blades. Refer to [Wiper Arm Replacement](#) .
6. Remove the double layer of masking tape around the perimeter of the painted surfaces and the interior trim.
7. Close the hood.

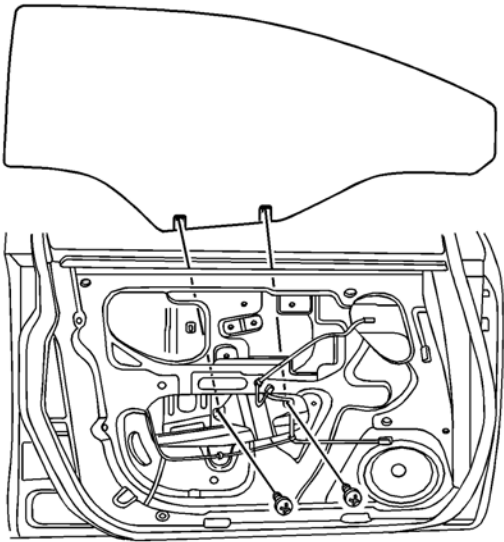
Front Side Door Window Replacement

Removal Procedure



1. Remove the front door trim. Refer to [Front Side Door Trim Panel Replacement](#) .
2. Remove the front side door window frame rear applique. Refer to [Front Door Frame Applique Replacement](#) .
3. Remove the screws that secure the glass to the window regulator.
4. Remove the glass from the door.

Installation Procedure



1. Install the glass in the door and position the glass within the window regulator.

Notice: Refer to [Fastener Notice](#) in Cautions and Notices.

2. Install the glass to the window regulator with the screws.

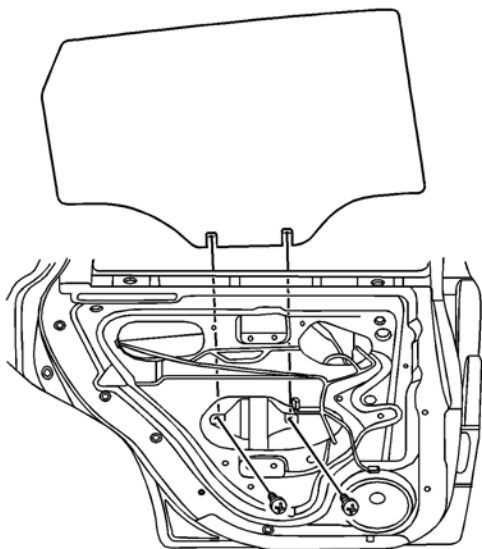
Tighten

Tighten the glass screws to 3 N·m (27 lb in).

3. Install the front side door window frame rear applique. Refer to [Front Door Frame Applique Replacement](#) .
4. Install the front door trim. Refer to [Front Side Door Trim Panel Replacement](#) .

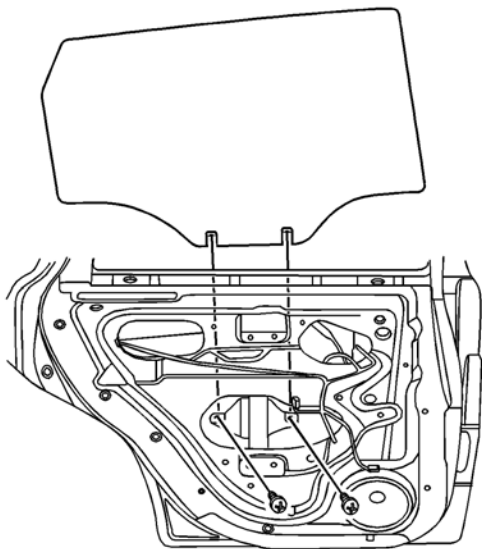
Rear Side Door Window Replacement

Removal Procedure



1. Remove the rear door trim. Refer to [Rear Door Trim Panel Replacement](#) .
2. Remove the rear side door window frame rear applique. Refer to [Rear Door Frame Applique Replacement](#) .
3. Remove the screws that secure the glass to the window regulator.
4. Remove the glass from the door.

Installation Procedure



1. Install the glass in the door and position the glass within the window regulator.

Notice: Refer to [Fastener Notice](#) in Cautions and Notices.

2. Install the glass screws.

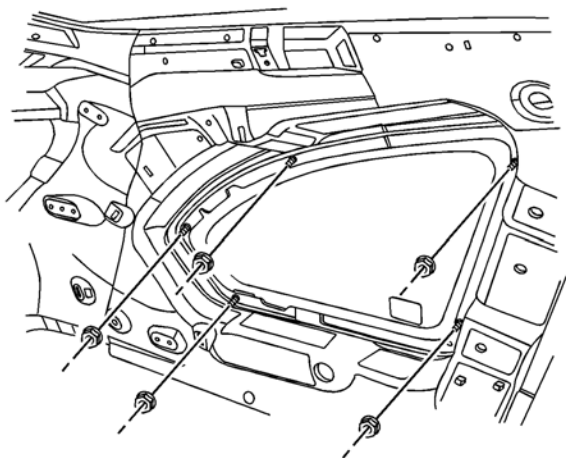
Tighten

Tighten the glass screws to 1.3 N·m (12 lb in).

3. Install the rear side door window frame rear applique. Refer to [Rear Door Frame Applique Replacement](#) .
4. Install the rear door trim. Refer to [Rear Door Trim Panel Replacement](#) .

Quarter Window Replacement (Long Body C/100)

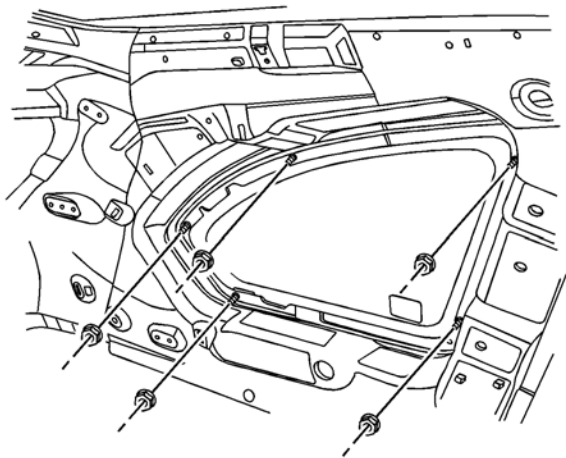
Removal Procedure



1. Remove the quarter window garnish molding. Refer to [Body Side Window Rear Garnish Molding Replacement](#) .
2. Remove the nuts and the outer window.

Installation Procedure

Notice: Refer to [Fastener Notice](#) in the Preface section.



1. Install the outer window with the nuts.

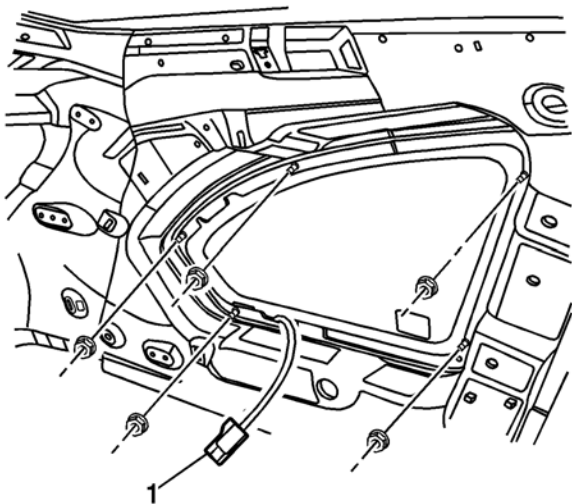
Tighten
Tighten the outer window nuts to 6 N·m (53 lb in).

2. Install the quarter window garnish molding. Refer to [Body Side Window Rear Garnish Molding Replacement](#) .

Quarter Window Replacement (Short Body C/105)

Removal Procedure

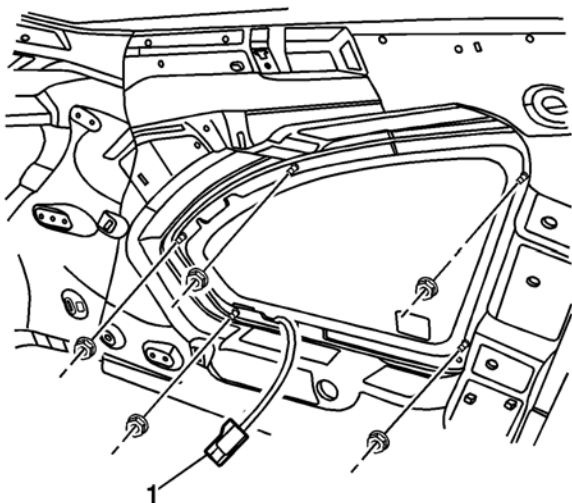
1. Disconnect the negative battery cable, if equipped with glass breakage detector. Refer to [Battery Negative Cable Disconnection and Connection](#) .



2. Remove the quarter window garnish molding. Refer to [Body Side Window Rear Garnish Molding Replacement](#) .
3. Disconnect the glass breakage detector connector (1), if equipped.
4. Remove the nuts and the outer window.

Installation Procedure

Notice: Refer to [Fastener Notice](#) in the Preface section.



1. Install the outer window with the nuts.

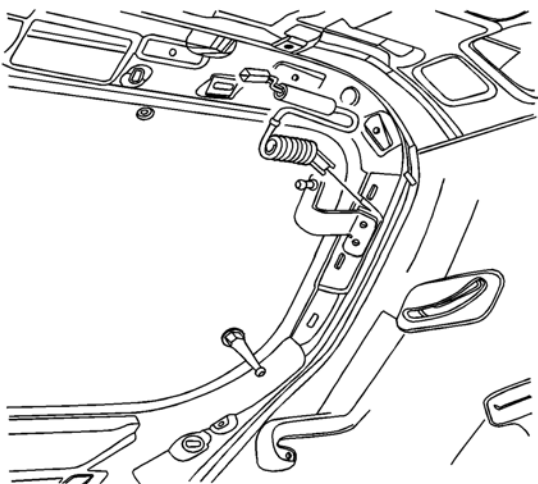
Tighten

Tighten the outer window nuts to 6 N·m (53 lb in).

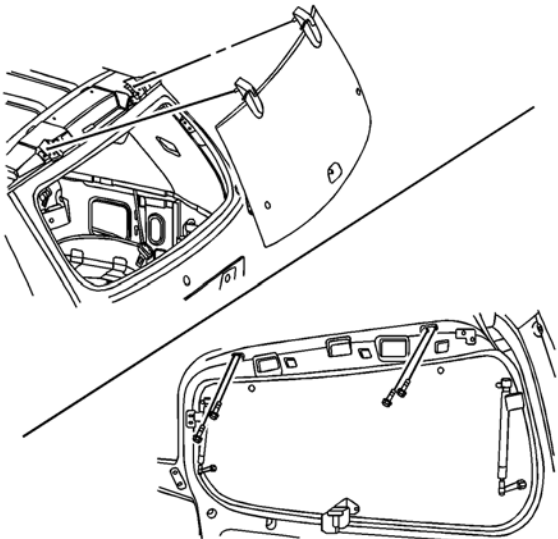
2. Connect the glass breakage detector connector (1), if equipped.
3. Install the quarter window garnish molding. Refer to [Body Side Window Rear Garnish Molding Replacement](#) .
4. Connect the negative battery cable. Refer to [Battery Negative Cable Disconnection and Connection](#) .

Liftgate Window Replacement

Removal Procedure



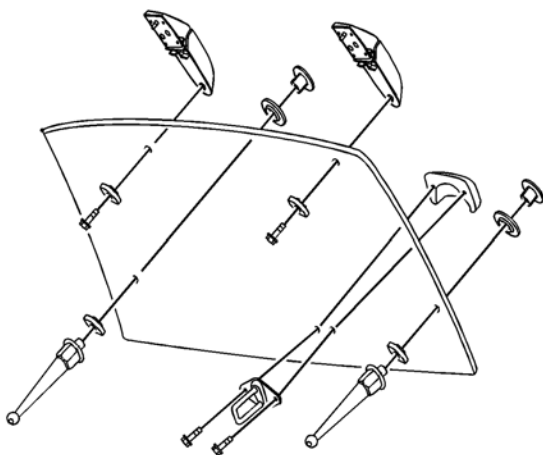
1. Disconnect the negative battery cable. Refer to [Battery Negative Cable Disconnection and Connection](#) .
2. Open the liftgate.
3. Disconnect the rear window defogger electrical connector.



4. Remove the liftgate upper garnish molding. Refer to [Liftgate Garnish Molding Replacement](#) .
5. Remove the liftgate window strut. Refer to [Liftgate Window Replacement](#) .
6. With the aid of an assistant, remove the bolts and liftgate glass from the vehicle.

Installation Procedure

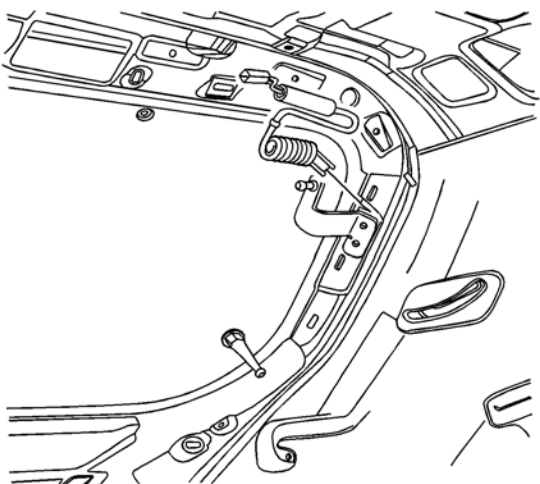
Notice: Refer to [Fastener Notice](#) in Cautions and Notices.



1. Install the liftgate glass with the bolts.

Tighten
Tighten the liftgate glass bolts to 6 N·m (53 lb in).

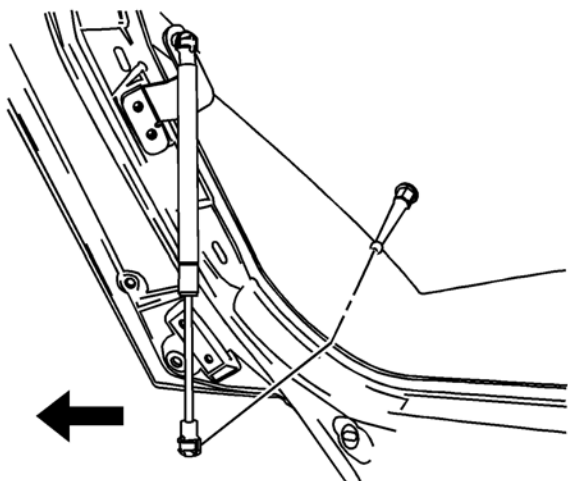
- 2. Install the liftgate window strut. Refer to [Liftgate Window Replacement](#) .
- 3. Install the liftgate window upper garnish molding. Refer to [Liftgate Garnish Molding Replacement](#) .



- 4. Connect the rear window defogger electrical connector.
- 5. Close the liftgate.
- 6. Connect the negative battery cable. Refer to [Battery Negative Cable Disconnection and Connection](#) .

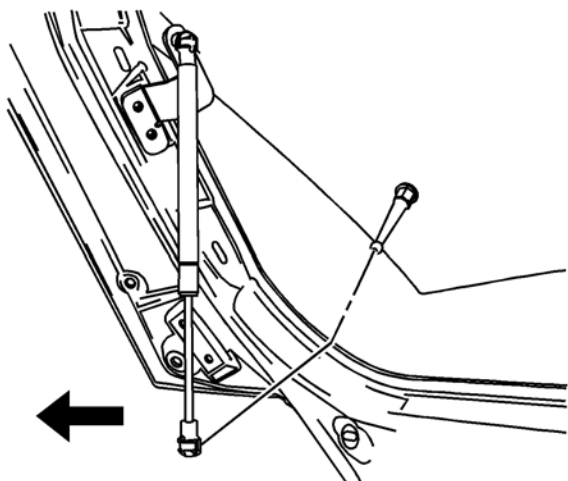
Liftgate Window Strut Replacement

Removal Procedure



1. Raise and support the liftgate window in the open position.
2. Lift up and partially remove the spring clips on the strut using a small flat-bladed tool.
3. Remove the upper end of the strut from the ball joint.
4. Remove the lower end of the strut from the ball joint.
5. Remove the strut from the liftgate window.

Installation Procedure



1. Position the strut to the liftgate window.
2. Install the upper end of the strut to the ball joint.

Press in to place until fully seated.

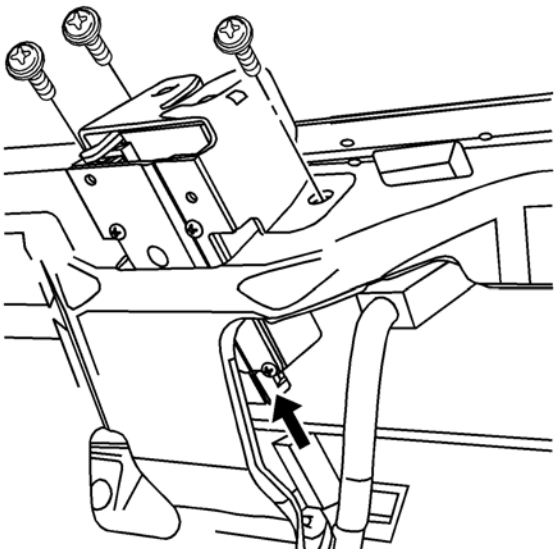
3. Install the lower end of the strut to the ball joint.

Press in to place until fully seated.

4. Install the support from the liftgate window.
5. Close the liftgate window.

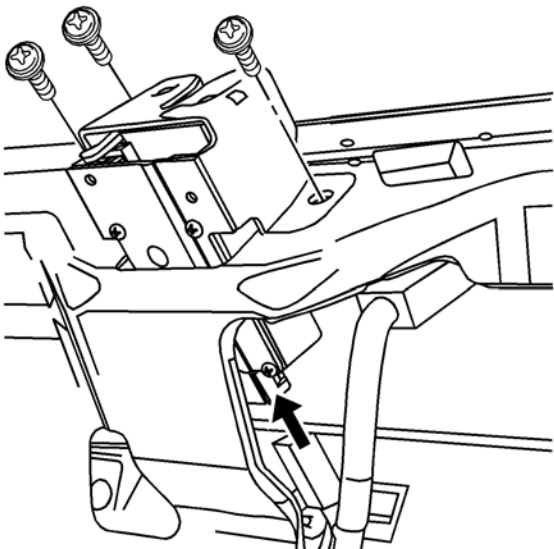
Liftgate Window Latch Replacement

Removal Procedure



1. Remove the liftgate lower trim. Refer to [Liftgate Trim Panel Replacement](#) .
2. Remove the bolts and the liftgate window latch.
3. Disconnect the electrical connector.

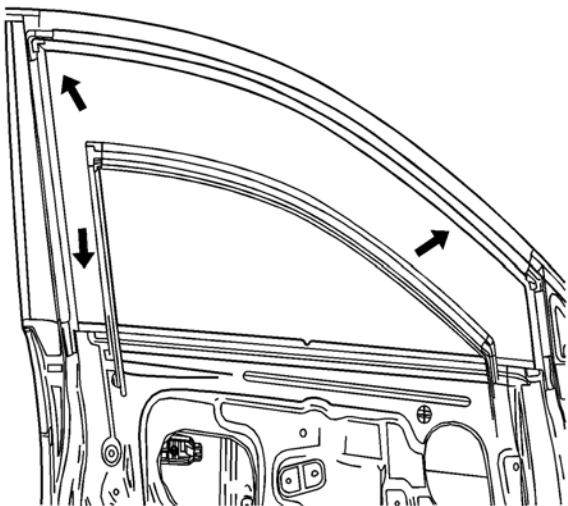
Installation Procedure



1. Connect the electrical connector.
2. Install the liftgate window latch with the bolts.
3. Install the liftgate lower trim. Refer to [Liftgate Trim Panel Replacement](#) .

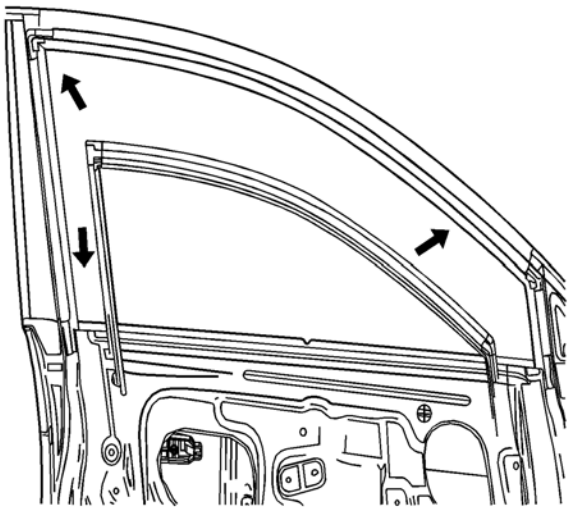
Front Side Door Window Channel Replacement

Removal Procedure



1. Remove the outside rearview mirror. Refer to [Mirror Replacement](#) .
2. Remove the front door glass. Refer to [Front Side Door Window Replacement](#) .
3. Remove the front window applique. Refer to [Front Door Frame Applique Replacement](#) .
4. Remove the channel.

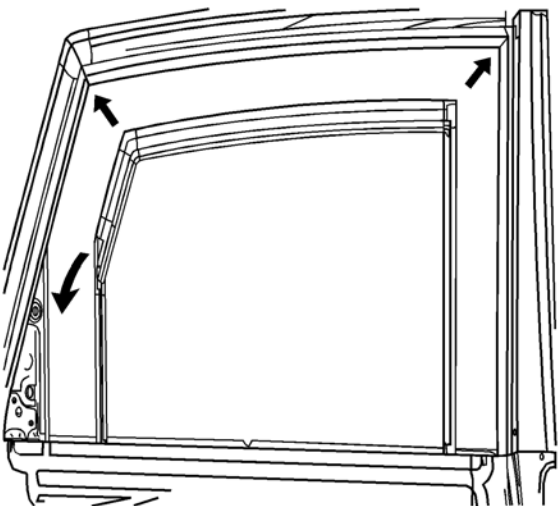
Installation Procedure



1. Install the channel.
2. Install the front door glass. Refer to [Front Side Door Window Replacement](#) .
3. Install the front window applique. Refer to [Front Door Frame Applique Replacement](#) .
4. Install the outside rearview mirror. Refer to [Mirror Replacement](#) .

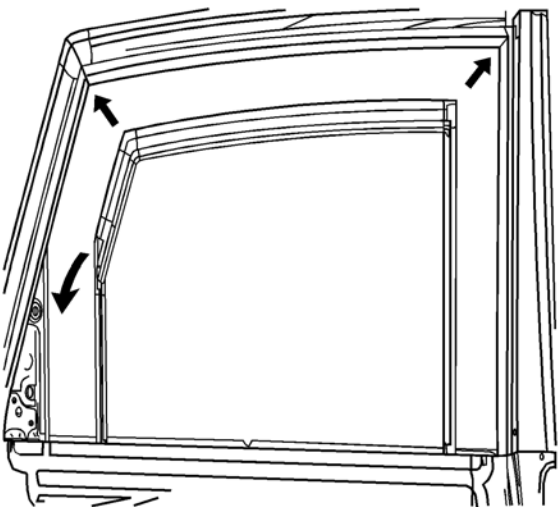
Rear Side Door Window Channel Replacement

Removal Procedure



1. Remove the rear door glass. Refer to [Rear Side Door Window Replacement](#) .
2. Remove the rear window applique. Refer to [Rear Door Frame Applique Replacement](#) .
3. Remove the rear door channel.

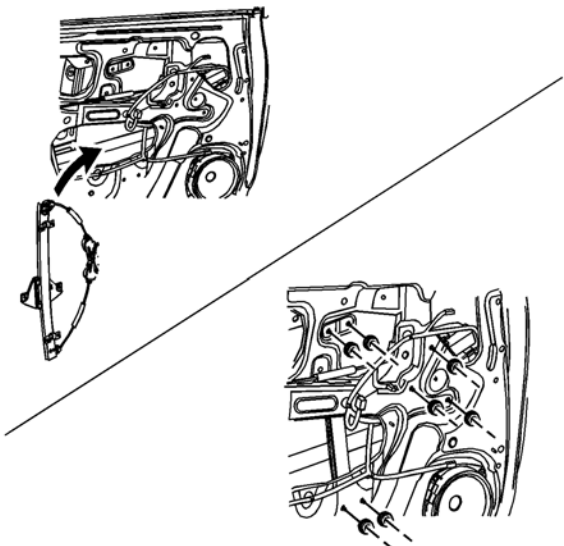
Installation Procedure



1. Install the rear door channel.
2. Install the rear Window applique. Refer to [Rear Door Frame Applique Replacement](#) .
3. Install the rear door glass. Refer to [Rear Side Door Window Replacement](#) .

Door Window Regulator Replacement

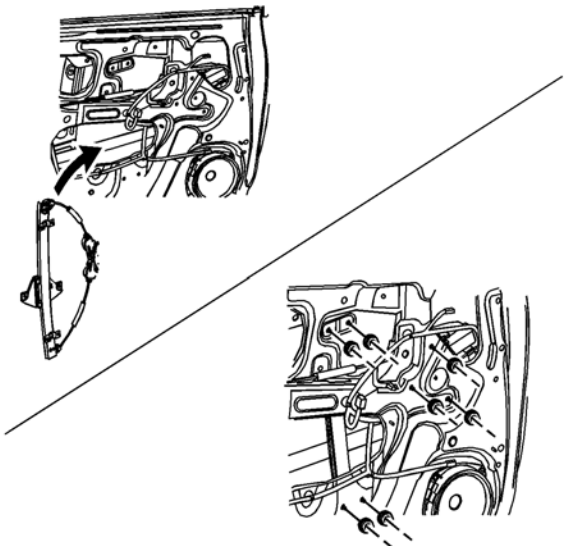
Removal Procedure



1. Disconnect the negative battery cable. Refer to [Battery Negative Cable Disconnection and Connection](#) .
2. Remove the door glass. Refer to [Front Side Door Window Replacement](#) or [Rear Side Door Window Replacement](#) .
3. Disconnect the electrical connector.
4. Remove the nuts and the window regulator.

Installation Procedure

Notice: Refer to [Fastener Notice](#) in Cautions and Notices.



1. Install the window regulator with the nuts.

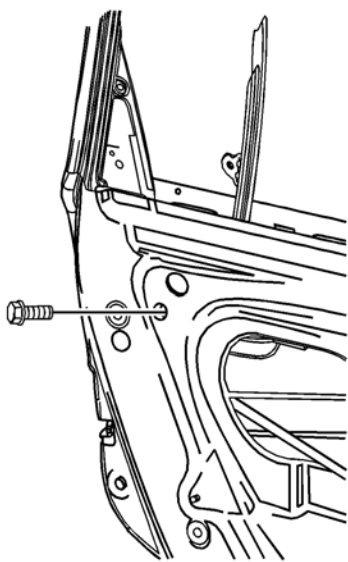
Tighten

Tighten the window regulator nuts to 10 N·m (89 lb in).

2. Connect the electrical connector.
3. Install the door glass. Refer to [Front Side Door Window Replacement](#) or [Rear Side Door Window Replacement](#) .
4. Connect the negative battery cable. Refer to [Battery Negative Cable Disconnection and Connection](#) .

Door Window Guide Replacement (Rear C 105/Short Body)

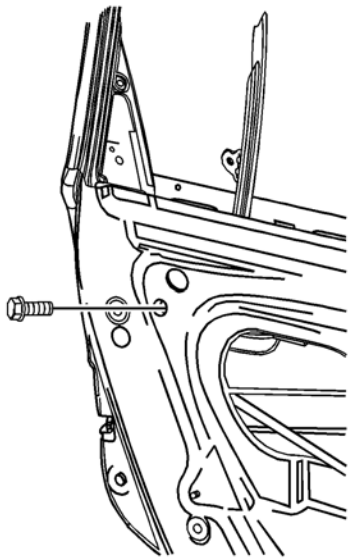
Removal Procedure



1. Disconnect the negative battery cable. Refer to [Battery Negative Cable Disconnection and Connection](#) .
2. Remove the rear door glass. Refer to [Rear Side Door Window Replacement](#) .
3. Remove the power window regulator. Refer to [Door Window Regulator Replacement](#) .
4. Remove the rear door upper trim.
5. Remove the bolt and the rear window guide.

Installation Procedure

Notice: Refer to [Fastener Notice](#) in the Preface section.



1. Install the rear window guide with the bolt.

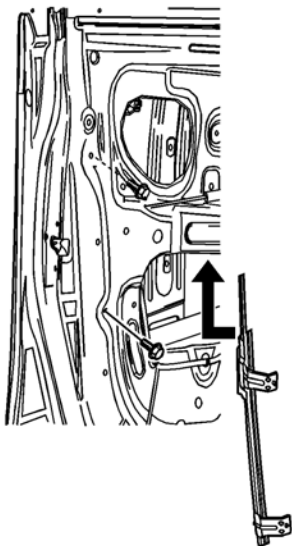
Tighten

Tighten the rear window guide bolt to 10 N·m (89 lb in)

2. Install the rear door upper trim.
3. Install the power window regulator. Refer to [Door Window Regulator Replacement](#) .
4. Install the rear door glass. Refer to [Rear Side Door Window Replacement](#) .
5. Connect the negative battery cable. Refer to [Battery Negative Cable Disconnection and Connection](#) .

Door Window Guide Replacement (Front)

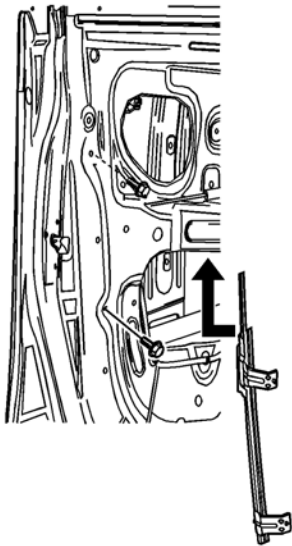
Removal Procedure



1. Disconnect the negative battery cable. Refer to [Battery Negative Cable Disconnection and Connection](#) .
2. Remove the front door glass. Refer to [Front Side Door Window Replacement](#) .
3. Remove the power window regulator. Refer to [Door Window Regulator Replacement](#) .
4. Remove the bolts and the front window guide.

Installation Procedure

Notice: Refer to [Fastener Notice](#) in the Preface section.



1. Install the front window guide with the bolts.

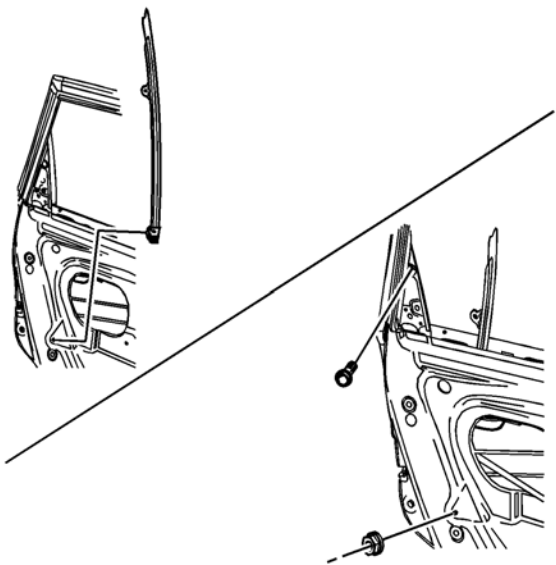
Tighten

Tighten the front window guide bolts to 10 N·m (89 lb in).

2. Install the power window regulator. Refer to [Door Window Regulator Replacement](#) .
3. Install the front door glass. Refer to [Front Side Door Window Replacement](#) .
4. Connect the negative battery cable. Refer to [Battery Negative Cable Disconnection and Connection](#) .

Door Window Guide Replacement (Rear C 100/Long Body)

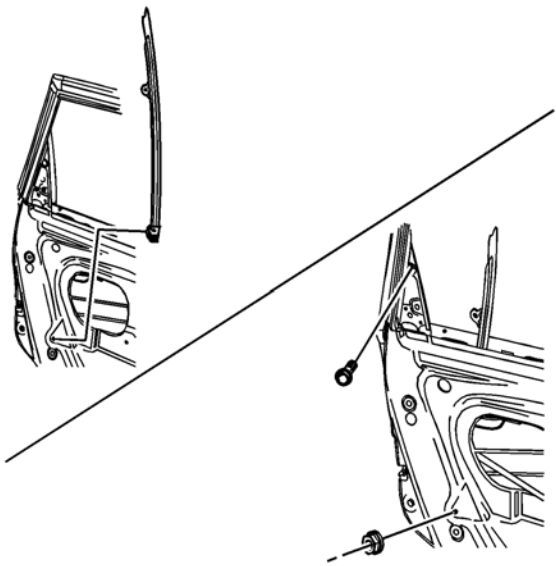
Removal Procedure



1. Disconnect the negative battery cable. Refer to [Battery Negative Cable Disconnection and Connection](#) .
2. Remove the rear door glass. Refer to [Rear Side Door Window Replacement](#) .
3. Remove the power window regulator. Refer to [Door Window Regulator Replacement](#) .
4. Remove the rear door upper trim.
5. Remove the bolt and the nut, rear window guide.

Installation Procedure

Notice: Refer to [Fastener Notice](#) in the Preface section.



1. Install the rear window guide with the bolt and the nut.

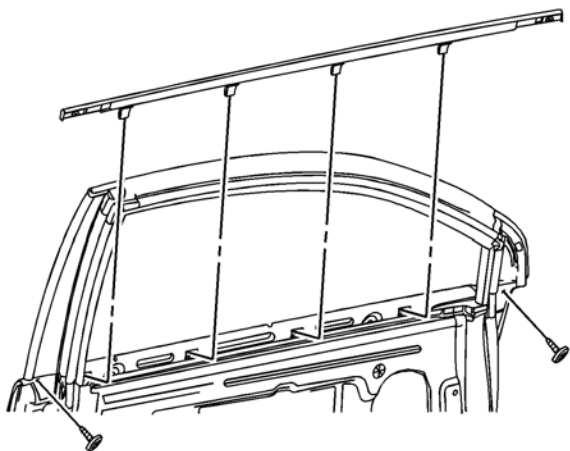
Tighten

Tighten the rear windowguide bolt and nut to 10 N·m (89 lb in)

2. Install the rear door upper trim.
3. Install the power window regulator. Refer to [Door Window Regulator Replacement](#) .
4. Install the rear door glass. Refer to [Rear Side Door Window Replacement](#) .
5. Connect the negative battery cable. Refer to [Battery Negative Cable Disconnection and Connection](#) .

Outer Belt Sealing Strip Replacement (C 105/Short Body)

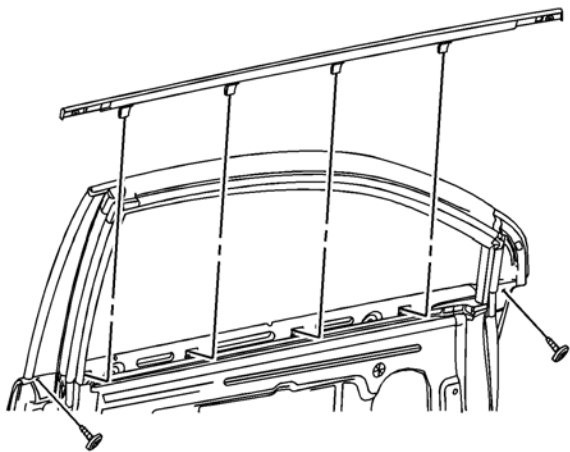
Removal Procedure



1. Lower the window completely.
2. Remove the window outer sealing strip screws.
3. Remove the outside rearview mirror. Refer to [Mirror Replacement](#) .
4. Lift the window outer sealing strip off the door.

Installation Procedure

Notice: Refer to [Fastener Notice](#) in the Preface section.



1. Press the outside channel molding onto the door.
2. Install the window outer sealing strip screws.

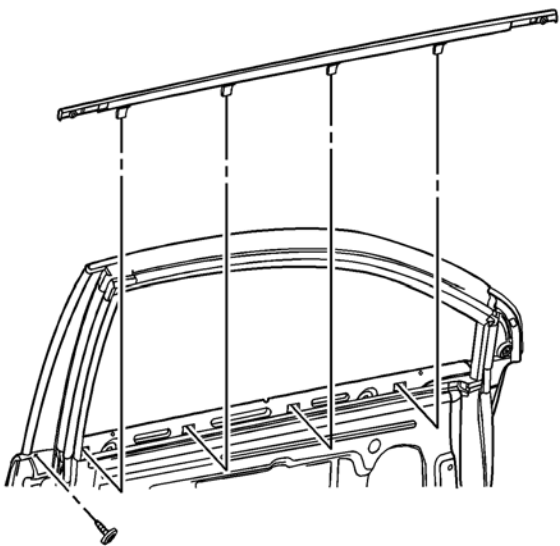
Tighten

Tighten the window outer sealing strip screws to 1.3 N·m (12 lb in).

3. Install the outside rearview mirror. Refer to [Mirror Replacement](#) .
4. Raise the window.

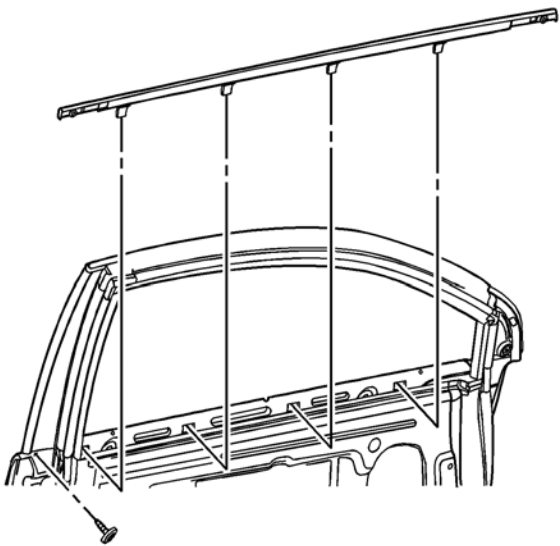
Outer Belt Sealing Strip Replacement (C 100/Long Body)

Removal Procedure



1. Lower the window completely.
2. Remove the window outer sealing strip screw.
3. Remove the outside rearview mirror. Refer to [Mirror Replacement](#) .
4. Lift the window outer sealing strip off the door.

Installation Procedure



1. Press the outside channel molding onto the door.

Notice: Refer to [Fastener Notice](#) in the Preface section.

2. Install the window outer sealing strip screw.

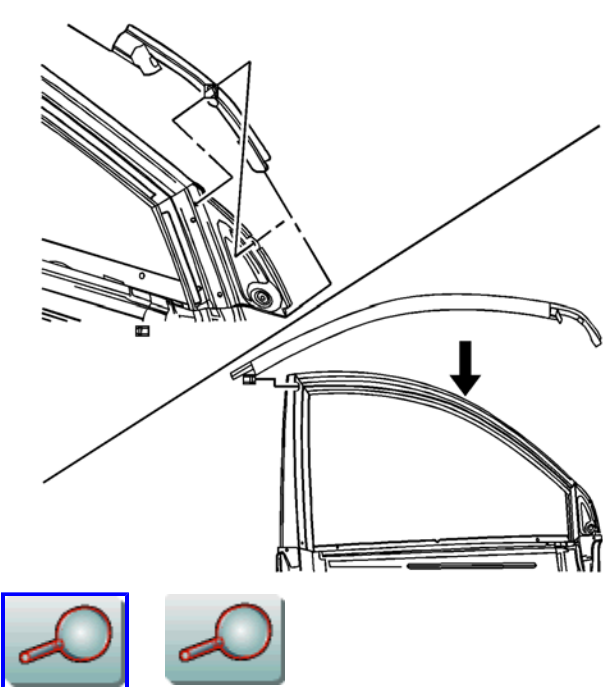
Tighten

Tighten the window outer sealing strip screw to 1.3 N·m (12 lb in).

3. Install the outside rearview mirror. Refer to [Mirror Replacement](#) .
4. Raise the window.

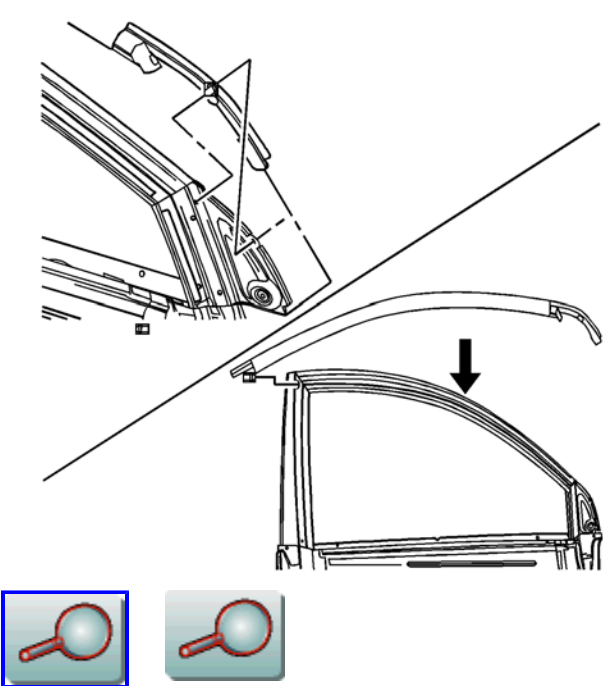
Front Side Door Window Weatherstrip Replacement

Removal Procedure



- 1. Remove the outside rearview mirror. Refer to [Mirror Replacement](#) .
- 2. Remove the front door window weatherstrip.

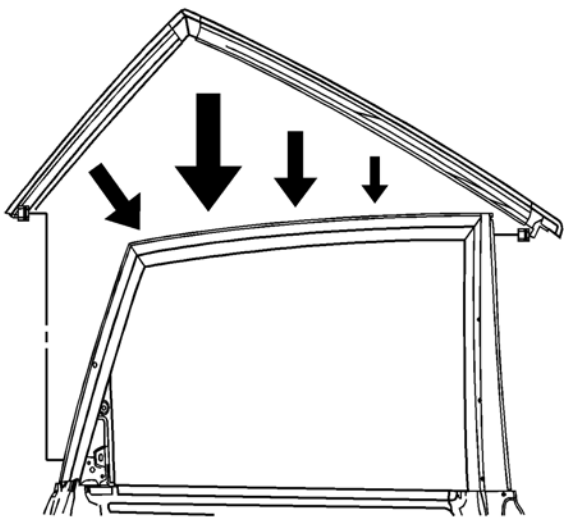
Installation Procedure



- 1. Install the front door window weatherstrip.
- 2. Install the outside rearview mirror. Refer to [Mirror Replacement](#) .

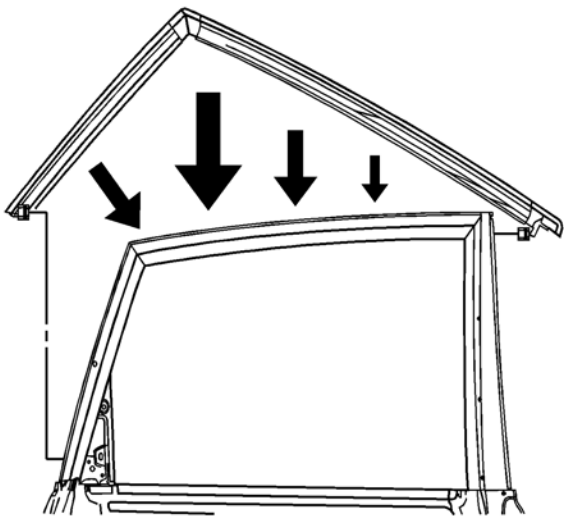
Rear Side Door Window Weatherstrip Replacement

Removal Procedure



1. Open Door.
2. Remove the rear door window weatherstrip.

Installation Procedure



1. Install the rear door window weatherstrip.
2. Close Door.

Adhesive Installation of Stationary Windows (Windshield)

Caution: Refer to [Glass and Sheet Metal Handling Caution](#) in the Preface section.

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

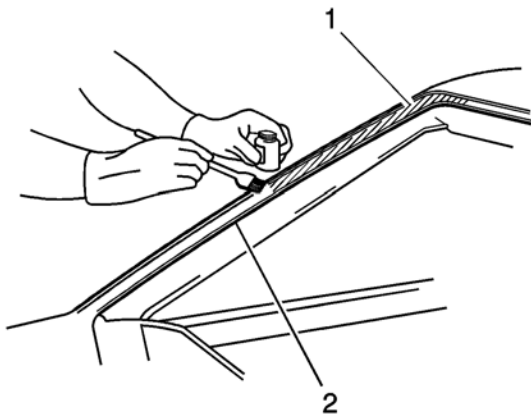
1. Remove all mounds or loose pieces of urethane adhesive from the pinch-weld area.
2. If the original window is being reused, remove all but a thin film of the existing urethane adhesive from the window surface by using a clean utility knife or razor blade scraper.
3. Inspect the following components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

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

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

Caution: Refer to [Window Retention Caution](#) in the Preface section.

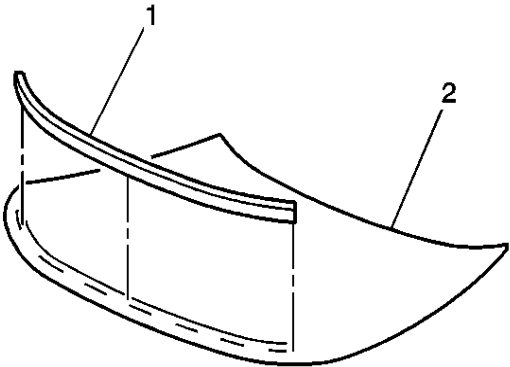
6. Verify all primers and urethane adhesive are within expiration dates.



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

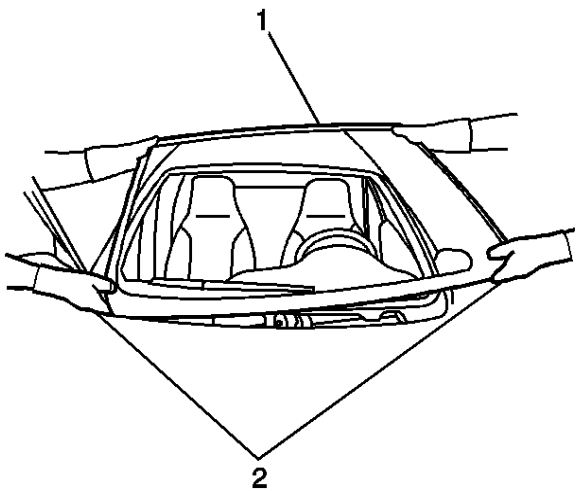
Important: Do not apply the black #3 primer to the existing bead (1) of the urethane adhesive on the pinch-weld flange. Apply the primer only to nicks, scratches or the primed surfaces.

7. Shake the pinch-weld primer black #3 for at least 1 minute.
8. Use a new dauber in order to apply the primer to the surface of the pinch-weld flange (2).
9. Allow the pinch-weld primer to dry for approximately 10 minutes.

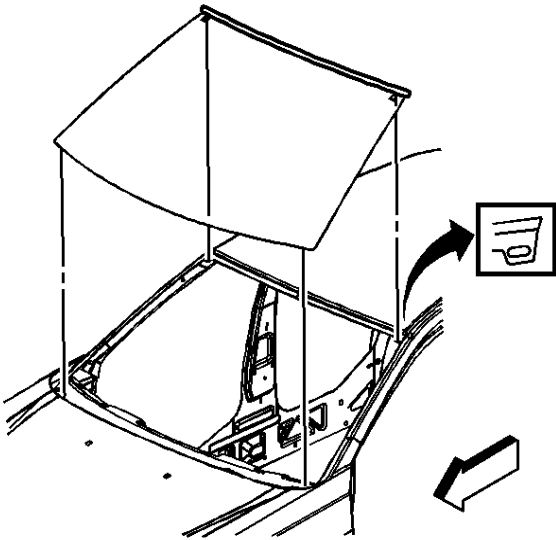


10. Install the new windshield acoustic strip (1) to the windshield (2), if equipped or damaged.

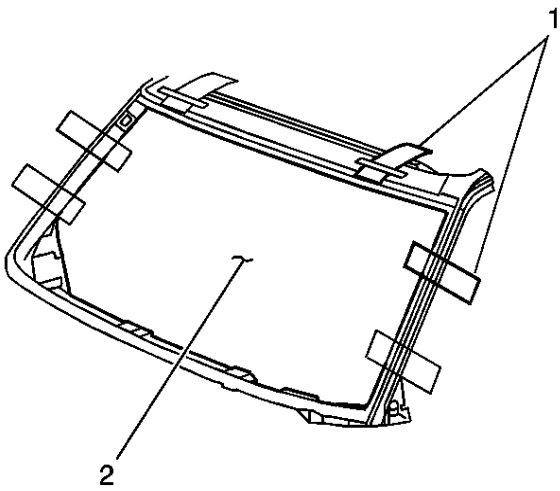
The acoustic strip aids in reducing noise.



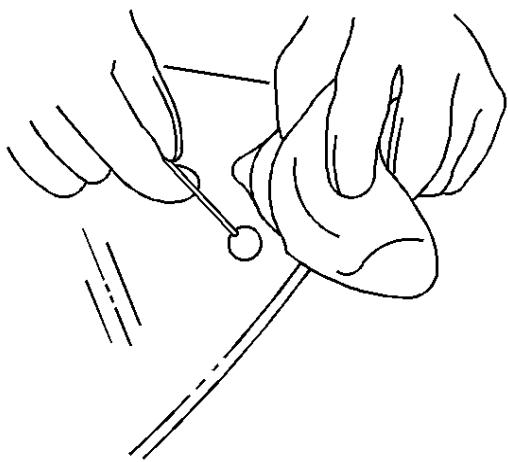
11. With the aid of an assistant (2), dry fit the window (1) to the opening in order to determine the correct position.



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



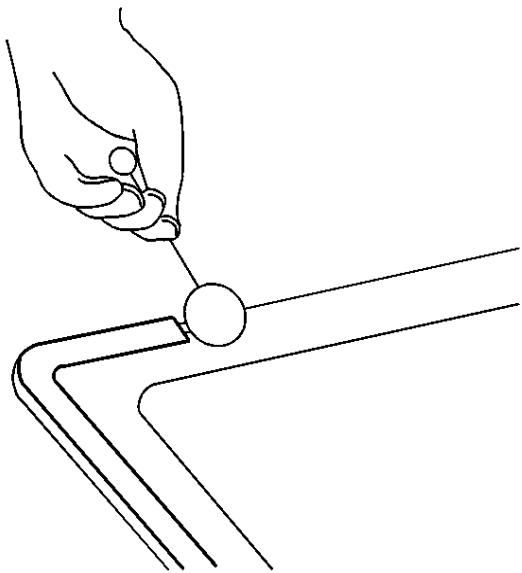
13. Using masking tape in order to mark the locations (1) of the window (2) in the opening.
14. Cut the masking tape in the center and remove the window from the opening.



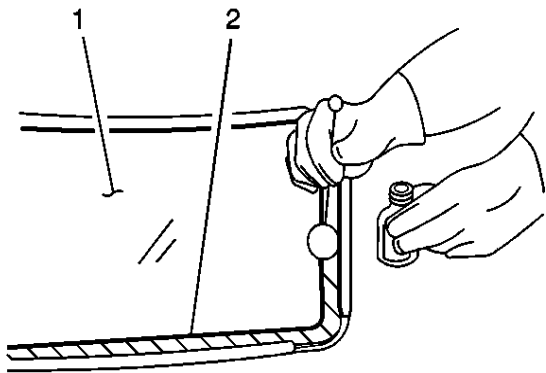
Important: Use care when applying glass prep clear #1 on the window. This primer dries almost instantly, and may stain the viewing area of the window if not applied evenly.

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

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

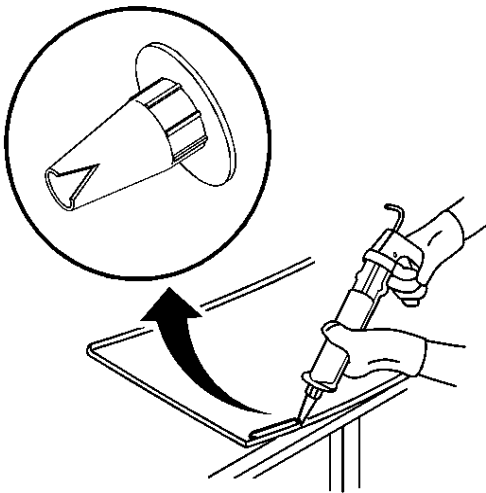


16. Apply a second coat of the glass prep clear #1 to the same area of the glass.

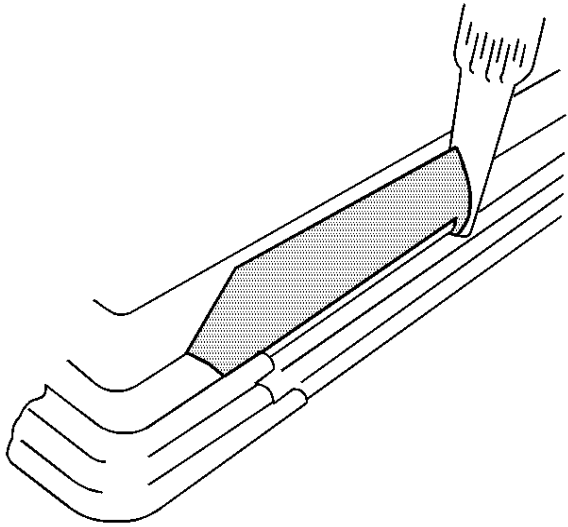


Important: The glass primer black #2 is effective up to 8 hours after applying it to the glass. The primed surface of the glass must be kept clean.

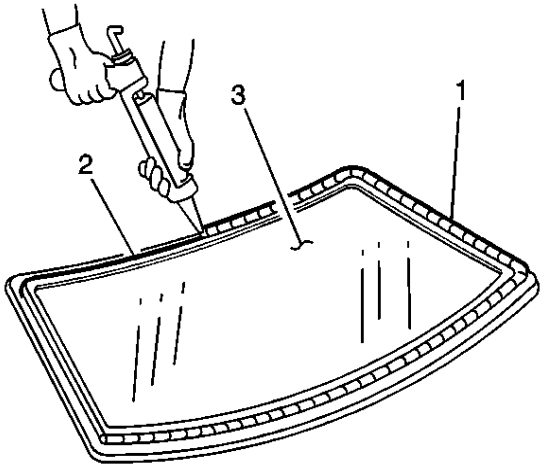
17. Shake the glass primer black #2 for at least 1 minute.
18. Use a new dauber in order to apply the glass primer black #2 to the same areas (2) that glass prep clear #1 was applied.
19. Allow the glass primer to dry for approximately 10 minutes.



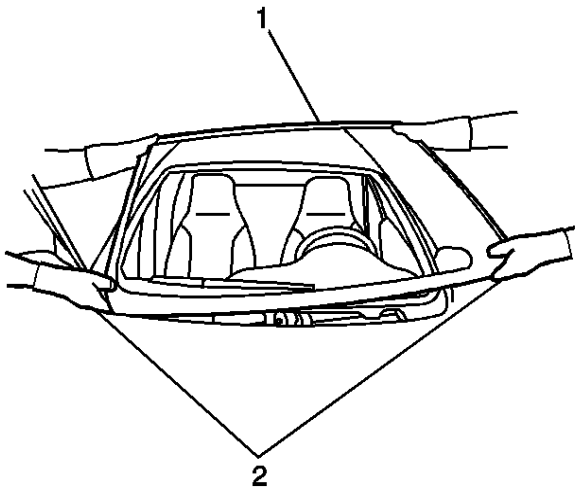
20. Cut the applicator nozzle in order to provide a minimum urethane bead of 8 mm (0.31 in) wide and 14 mm (0.55 in) high.



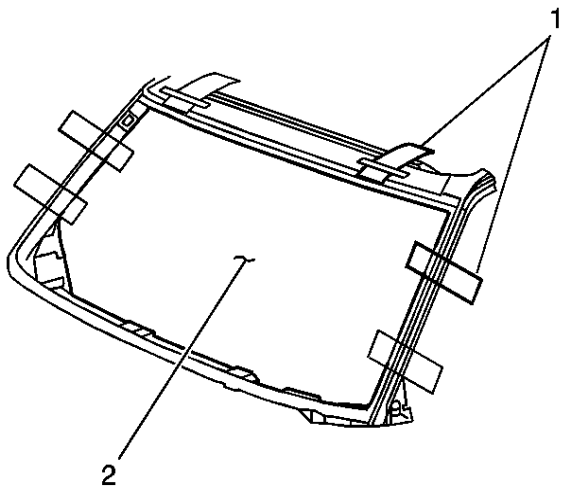
21. Use a cartridge-type caulking gun in order to apply a smooth, continuous bead of urethane adhesive.



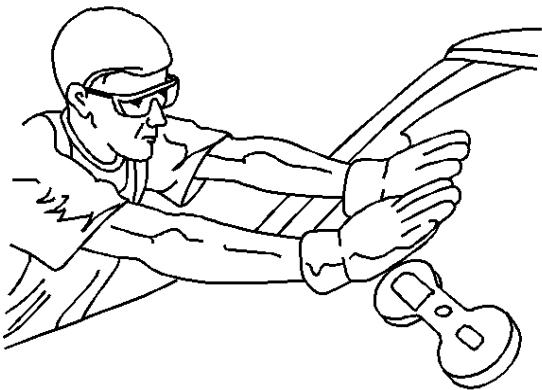
22. Use the edge of the window or the inside edge of the reveal molding as a guide for the nozzle in order to apply the urethane adhesive (1) to the inner surface of the window (3).



23. With the aid of an assistant (2), place the window (1) in the opening.

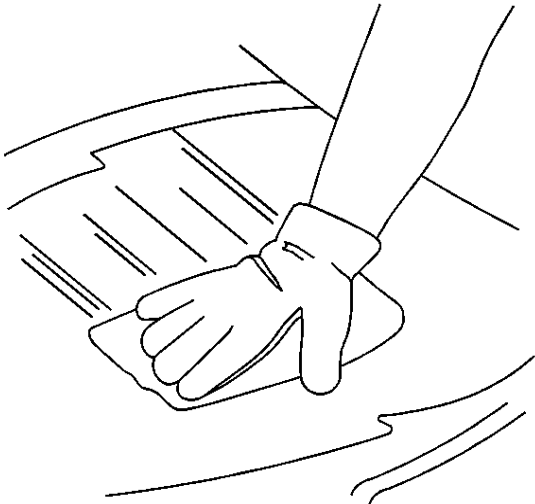


24. Align the masking tape (1) lines on the window (2) and the body.

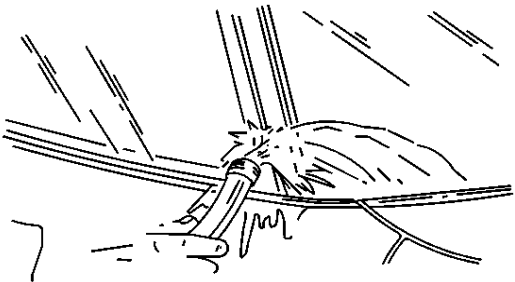


Important: To prevent damage to the window due to objects impacting an exposed edge, upon installation, the window must rest 1 mm (0.040 in) below the surface of the sheet metal.

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



27. Clean any excess urethane adhesive from the body.



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



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

- 32. 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.
- 33. Complete the window installation.



Full-Cut Method Description

Important:

- If corrosion of the pinch-weld flange is present, or if sheet metal repairs or replacements are required, refinish the pinch-weld flange in order to present a clean, primer-only surface.
- If paint repairs are required, mask the flange bonding area, prior to applying the color coat, in order to provide a clean, primer-only surface.
- Appropriate materials for these primer applications are typically 2 component catalyzed products. Use materials such as BASF DE15®, DuPont 2610®, Sherwin-Williams PSE 4600 and NP70® and Martin-Semour 5120 ,5130® , PPG DP90LF SPIES/HECKER 3688/8590 - 3688/5150 - 4070/5090 STANDOX 11158/13320 - 14653/14980 products are approved for this application. Follow the manufacturer's directions for the mix, the application, and the drying times.
- After repairing the opening as indicated, shake the pinch-weld primer black #3 well. Using a new dauber, apply the primer to the primed surface of the flange in the bonding area. Allow the primer to dry for 10 minutes.

Use only the full cut method, also known in the field as full strip method, when installing windows.

This method includes the following:

- The replacement of a majority of the urethane adhesive bead. Remove all but approximately 2 mm (3/64 in) of the existing bead of urethane adhesive from the pinch-weld flange.
- Apply pinch-weld primer to any exposed painted areas on the pinch-weld flange.

No mounds or loose pieces of urethane adhesive should remain on the pinch-weld flange. Do not remove all traces of urethane adhesive.

Adhesive Service Kit Description

The GM of Canada Adhesive Caulking Kit, P/N 10952983, contains the following items:

- Four different primers
- A tube of urethane adhesive with a nozzle
- Four daubers
- Instructions with warnings

Use the urethane adhesive caulking kit for replacement of any urethane adhesive-installed window using the full cut method.

In the United States or Canada, you may use any of the following equivalent urethane adhesive systems which meet GM Specification GM 3651G:

- Dow Automotive - Essex 400HV. One part and requires associated primers.
- Dow Automotive - Essex U216. Two part and requires associated primers.
 Call Dow Automotive at 1-800-453-3779 for more information.
- 3M™ "Fast Cure" Auto Glass Urethane. One part and requires associated primers.
 Call 3M™ at 1-877-666-2277 for more information.

Use these materials based on specific manufacturer. Do NOT intermix primers or adhesives from one manufacturer to another.

Always follow the system manufacturer's instructions for application, handling, and curing.



Stationary Window Description

Most stationary windows, specifically windshields, are retained to the body with urethane adhesive which adheres the window to the body, increasing structural integrity. The reinstallation of the windows with urethane adhesive requires complete replacement of the urethane adhesive bead, and is known as the full cut method.





Power Windows Description and Operation

The power windows are controlled by electrical switches on the door panels and are operated by a motor at each window regulator. Each door has a switch to control its window, and the driver's side door has 4 switches to control all of the door windows on the vehicle. Press the switch to lower the window and pull up on the switch to raise the window. The window will stop movement when the switch is released or when the window is completely open or closed.

The driver side window opens automatically. By pressing and releasing the switch, the window will lower and will stop only when the switch is activated again, or when the window is completely open.

The driver side door control also contains a window lock button. When depressed this button will prevent the operation of the windows on the front passenger door or the rear door.





Rear Window Defogger Description and Operation

[Rear Window Defogger System Components](#)

The rear window defogger system consist of the following components:

- HVAC control module
- Body control module (BCM)
- DEFOG relay
- Rear window defogger grid

[Rear Window Defogger Operation](#)

When you turn the ignition to the ON position, ignition voltage is supplied to the DEFOG relay coil. Battery positive voltage is supplied at all times to the DEFOG relay switched input. 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 BCM. The BCM energizes the DEFOG relay by grounding the control circuit of the relay. This allows battery positive voltage from the relay switched input through the switch contacts and out the relay switched output to the rear window defogger.

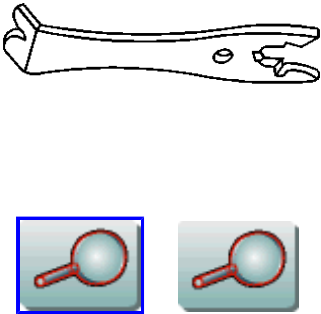
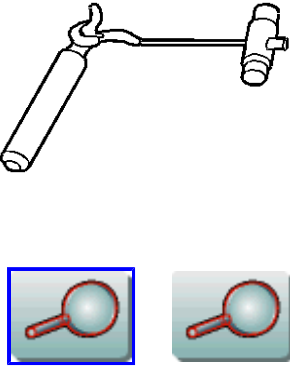
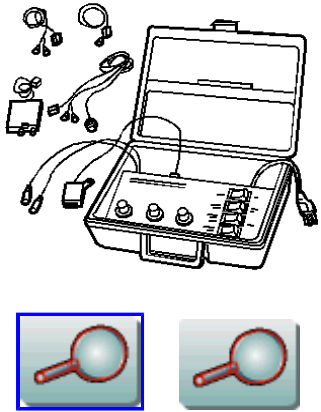
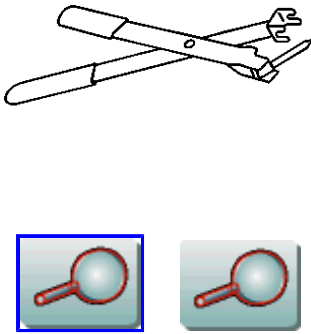
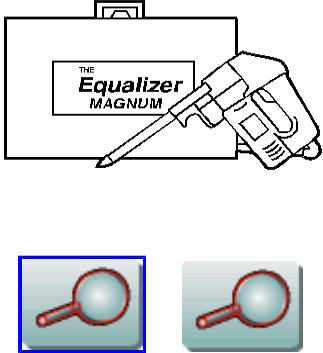
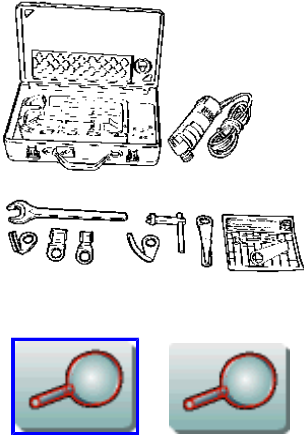
When you turn ON the ignition and press the rear window defogger switch for the first time, the defogger cycle lasts 10 minutes. Further operation results in 5 minute defogger cycles.



Fastener Tightening Specifications

Application	Specification	
	Metric	English
Front Door Glass Screws	3 N·m	27 lb in
Liftgate Glass Bolts	6 N·m	53 lb in
Outer Window Nuts	6 N·m	53 lb in
Outside Rearview Mirror Assembly Screws	10 N·m	88 lb in
Rear Door Glass Screws	1.3 N·m	12 lb in

Special Tools

Illustration	Tool Number/ Description
	J-9886-01 Door Handle Clip Remover
	J-24402-A Glass Sealant Cold Knife Remover
	J-33431-C Signal Generator and Instrument Panel Tester
	J-34946 Window Pin Remover
	J-39032 Stationary Glass Removal Tool
	J-39040 Quarter Window Remover



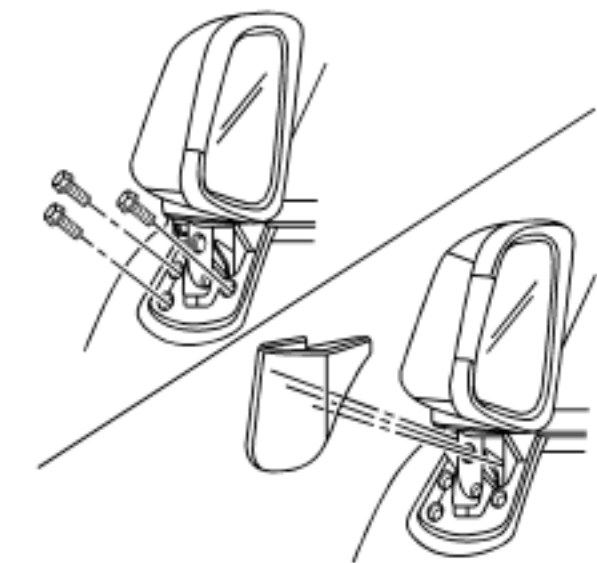
Mirrors

- Outside Rear view Mirror Replacement
- Outside Rear View Mirror Glass Replacement
- Inside Rear View Mirror Replacement
- Rear View Mirror Support Installation
- Fastener Tightening Specifications



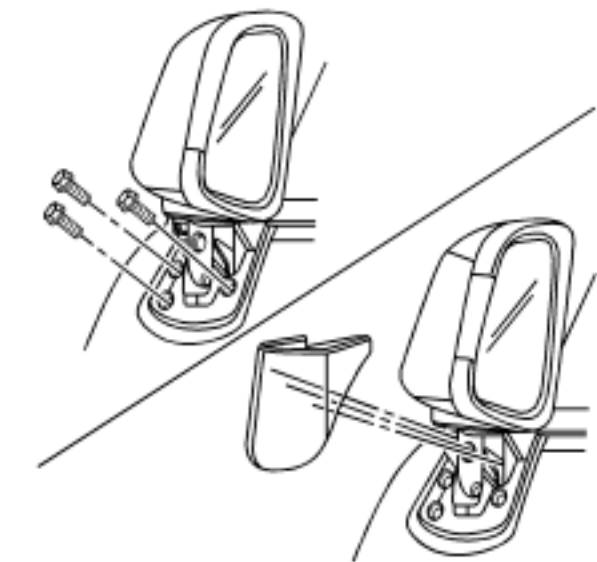
Outside Rearview Mirror Replacement

Removal Procedure



1. Disconnect the negative battery cable. Refer to [Battery Negative Cable Disconnection and Connection](#) .
2. Remove the outside rearview mirror cover.
3. Remove the bolts and the outside rearview mirror assembly from the door.
4. Disconnect the mirror electrical connector if the mirror is electronically controlled.

Installation Procedure



1. Connect the mirror electrical connector if the mirror is electrically controlled.

Notice: Refer to [Fastener Notice](#) in the Preface section.

2. Install the outside rearview mirror assembly to the door with the screws.

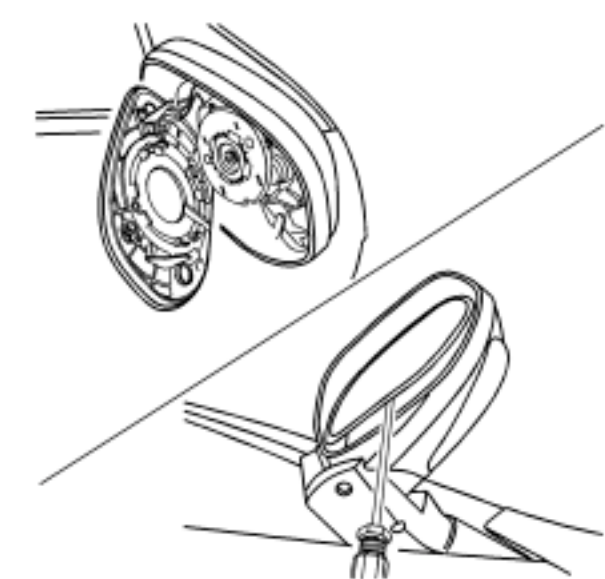
Tighten

Tighten the outside rearview mirror assembly screws to 10 N·m (85 lb in).

3. Install the outside rearview mirror cover.
4. Connect the negative battery cable. Refer to [Battery Negative Cable Disconnection and Connection](#) .

Outside Rear View Mirror Glass Replacement

Removal Procedure

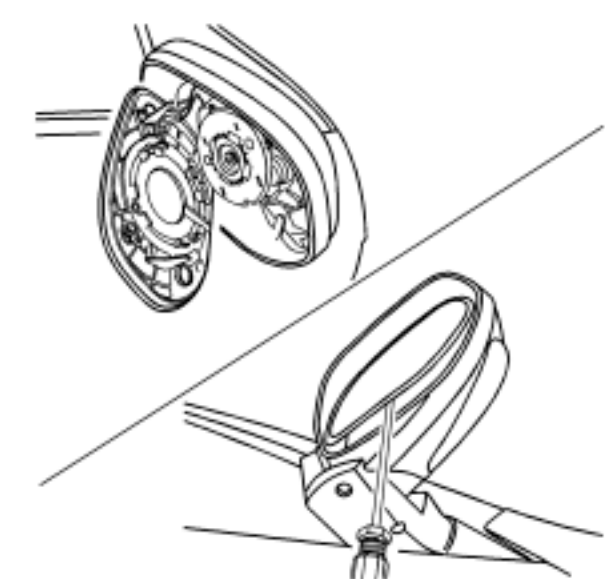


1. Disconnect the negative battery cable. Refer to [Battery Negative Cable Disconnection and Connection](#) .
2. Adjust the mirror glass so it is in the fully upward position.
3. Wrap the end of a flat-blade tool with tape or a clean shop rag.

Important: The heater element is fitted to the rear of the mirror glass and is susceptible to damage during mirror glass removal. Extreme care must be taken while removing the mirror glass.

4. Insert the flat-blade tool into the slot on the inside of the mirror glass.
5. Gently lever the mirror glass away from the motor assembly.
6. Remove the outside rearview mirror glass.
7. Disconnect the heating mirror connector.

Installation Procedure

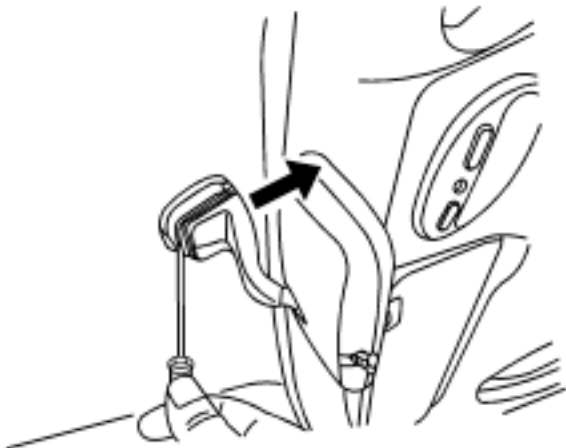


1. Connector the heating mirror connector.
2. Support the mirror housing and push the mirror glass squarely onto the motor assembly until it is.
3. Connector the negative battery cable. Refer to [Battery Negative Cable Disconnection and Connection](#) .

Inside Rearview Mirror Replacement

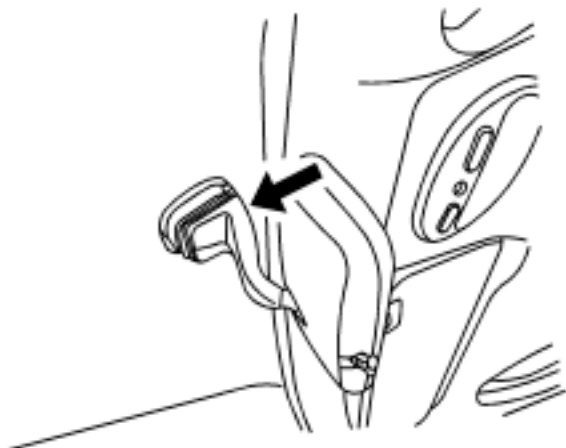
Removal Procedure

1. Open the door.



2. Using a small flat-bladed tool, remove the rearview mirror from the rearview mirror support and slide it back.

Installation Procedure

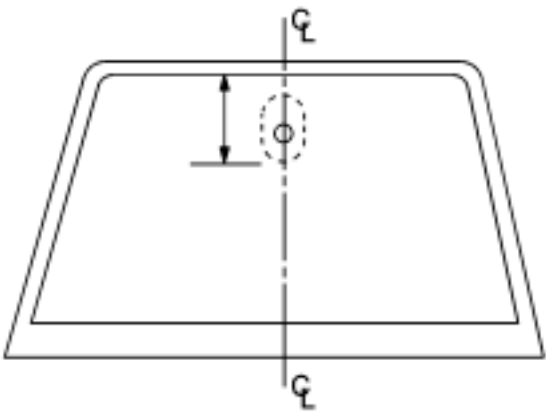


1. Install the rearview mirror into the rearview mirror support.

Ensure that the mirror is fully seated.

2. Close the door.

Rearview Mirror Support Installation

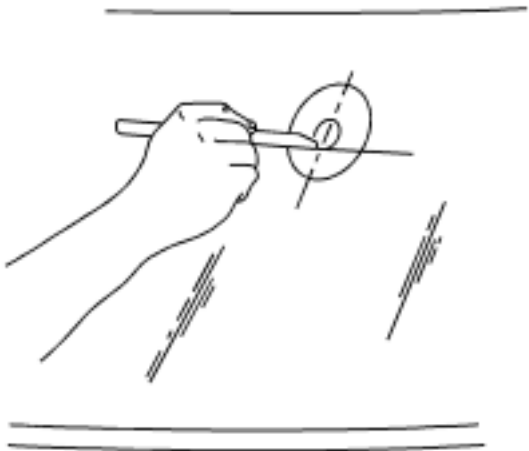


The inside rearview mirror is attached to a support which is secured to the windshield glass. The support is installed by the glass supplier using a plastic-polyvinyl butyl adhesive. Service replacement windshield glass has the mirror support bonded to the glass assembly. In order to install a detached mirror support or to install a new part, the following items will be needed:

- Loctite® Minute-Bond Adhesive
- Original or replacement mirror support
- Wax marking pencil or crayon
- Rubbing alcohol
- Clean paper towel
- Fine grit sandpaper (grit #320 or #360)
- Two mm allen wrench

Installation Procedure

1. Measure the distance from the headliner to the bottom of the location where the mirror support will be mounted on the windshield.



2. Mark this position on the outside of the glass with a wax pencil or crayon. Draw a large diameter circle around the mirror support location on the outside of the glass.
3. Clean the inside surface of the glass with a domestic scouring cleanser, a glass cleaning solution, or a polishing compound and paper towels. Rub the glass until the area is completely dry. When the area is dry, clean the area with an alcohol-saturated paper towel in order to remove any traces of the scouring powder or the glass cleaning solution.
4. If the mirror support is new, clean the bonding surface with fine grit sandpaper #320 or #360. If the original mirror support is being used, all traces of factory installed adhesive must be removed prior to reinstallation.
5. Wipe the sanded mirror support with a clean paper towel saturated with rubbing alcohol. Allow the support to dry.
6. Follow the adhesive kit manufacturer's directions for adhesive application and mirror support preparation before installing the mirror support to the glass.
7. Position the mirror support to its premarked position. Use steady pressure and press the support against the glass for 30 to 60 seconds.
8. After 5 minutes, remove the excess adhesive with an alcohol-moistened towel or a glass-cleaning solution.

Notice: Refer to [Fastener Notice](#) in Cautions and Notices.

9. Install the inside rearview mirror to the mirror support with the mounting screw.

Tighten

Tighten the rearview mirror mounting bolt to 1.2 N·m (11 lb in).



Fastener Tightening Specifications

Application	Specification	
	Metric	English
Inside Rearview Mirror Mounting Screw	10 N·m	85 lb in
Outside Rearview Mirror Assembly Screws	1.2 N·m	11 lb in





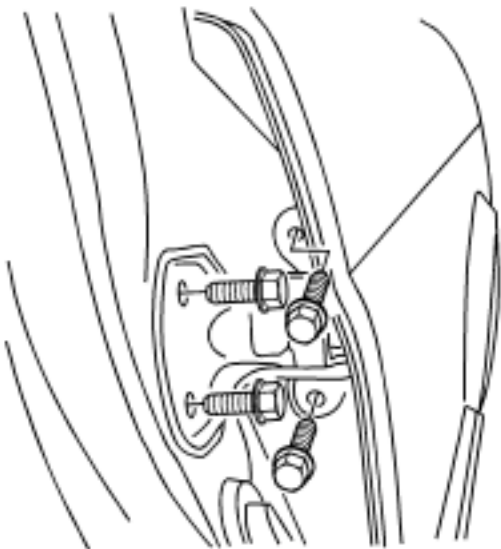
Vehicle Access

- Door Lock Cylinder Replacement
- Front Side Door Outside Handle Replacement (C100/Long Body)
- Front Side Door Outside Handle Replacement (C105/Short Body)
- Liftgate Outside Handle Replacement (C100/Long Body)
- Liftgate Outside Handle Replacement (C105/Short Body)
- Liftgate Latch Replacement
- Rear Side Door Outside Handle Replacement (C100/Long Body)
- Rear Side Door Outside Handle Replacement (C105/Short Body)
- Front Side Door Lock Replacement (C100/Long Body)
- Front Side Door Lock Replacement (C105/Short Body)
- Rear Door Lock Replacement
- Door Lock Striker Adjustment
- Door Striker Replacement
- Liftgate Lock Striker Replacement
- Fastener Tightening Specifications



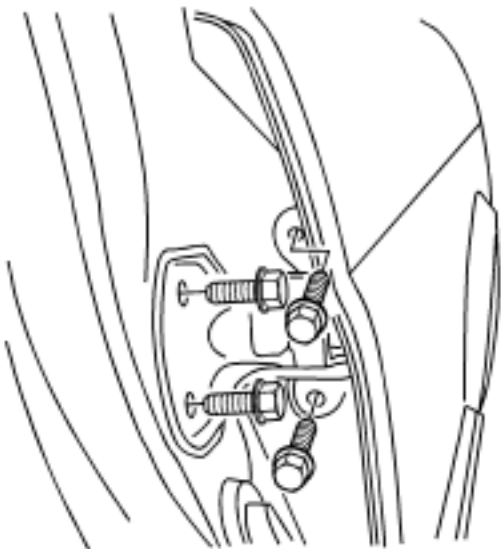
Door Lock Cylinder Replacement

Removal Procedure



1. Remove the door water deflector. Refer to [Door Water Deflector Replacement](#) .
2. Disconnect the outside door handle lock rod.
3. Remove the retaining clip and the lock cylinder.

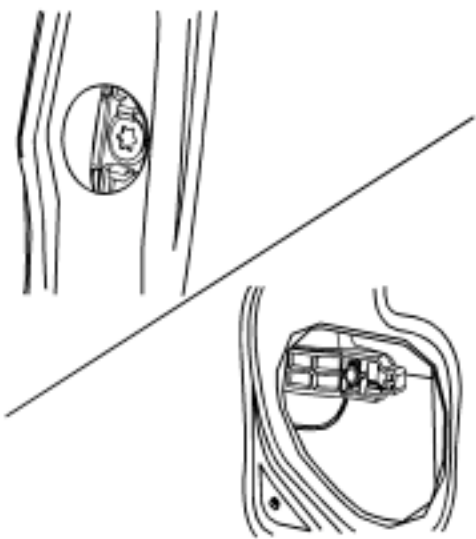
Installation Procedure



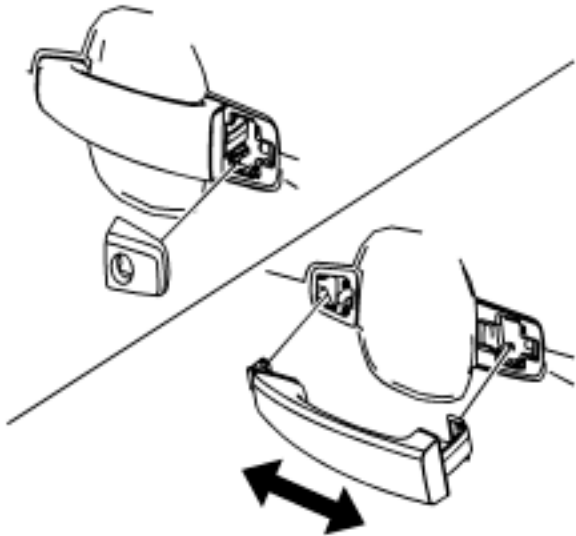
1. Install the lock cylinder with the retaining clip.
2. Connect the outside door handle lock rod.
3. Install the door water deflector. Refer to [Door Water Deflector Replacement](#) .

Front Side Door Outside Handle Replacement (C100/Long Body)

Removal Procedure

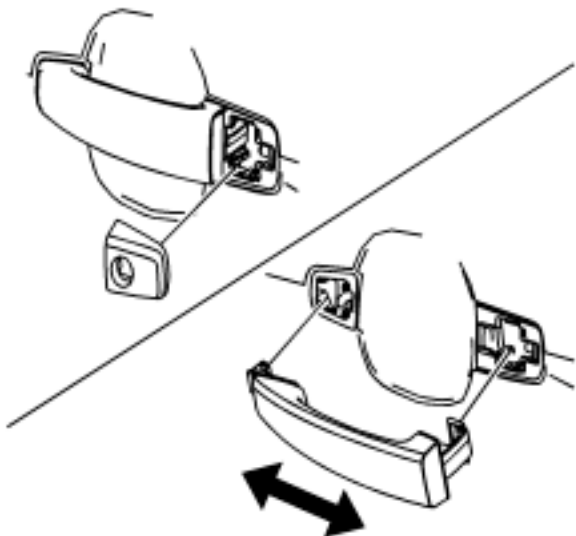


1. Remove the door water deflector. Refer to [Door Water Deflector Replacement](#) .
2. Remove the outside door handle screw cap.
3. Remove the outside door handle screw through the door shut face.
4. Remove the outside door handle by sliding rearward and pulling away from the door.

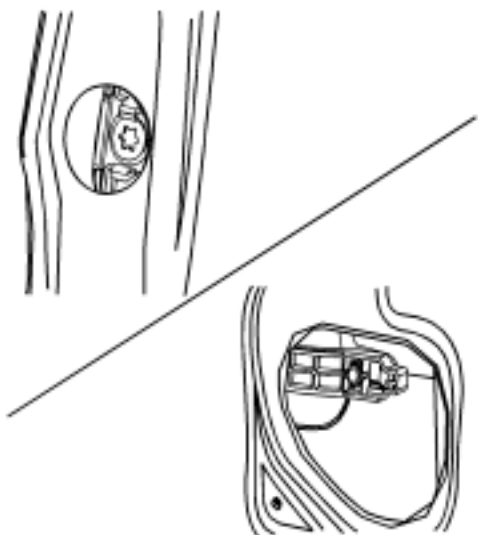


5. Remove the gasket, if necessary.

Installation Procedure



1. Install the gasket, if necessary.



2. Install the handle by placing into position and sliding rearward ensuring to engage the outside door handle cap.
3. Install the outside door handle cap.

Notice: Refer to [Fastener Notice](#) in the Preface section.

4. Install the outside door handle screw through door shut face.

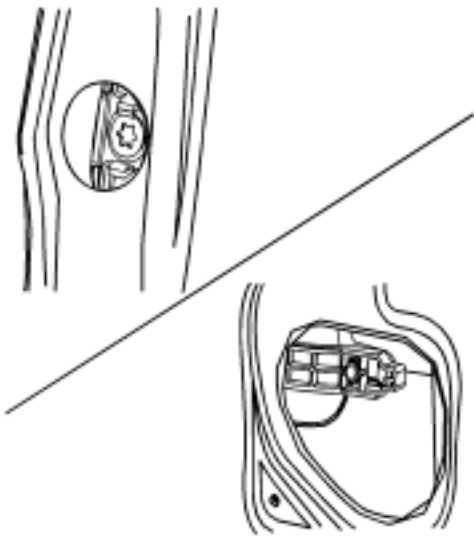
Tighten

Tighten the outside door handle screws to 4.5 N·m (40 lb in).

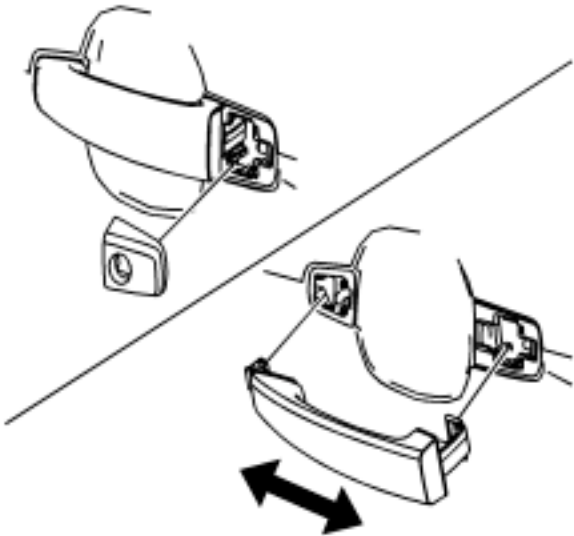
5. Install the outside door handle screw cap.
6. Install the door water deflector. Refer to [Door Water Deflector Replacement](#) .

Front Side Door Outside Handle Replacement (C105/Short Body)

Removal Procedure

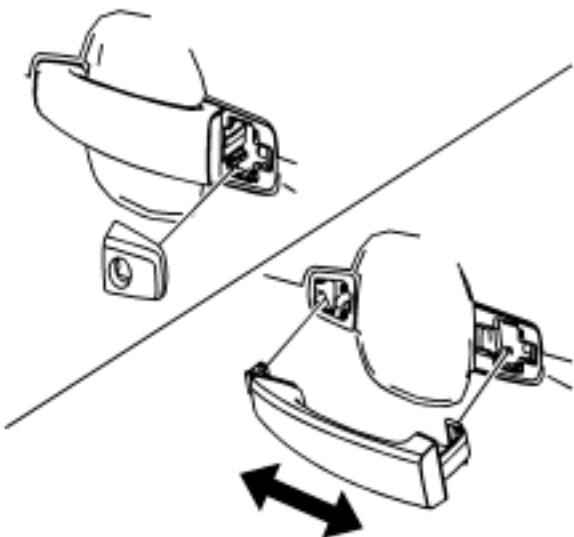


1. Remove the door water deflector. Refer to [Door Water Deflector Replacement](#) .
2. Disconnect the outside door handle and lock rods.
3. Remove the bolt that secures the outside door handle cover.
4. Remove the screw that secures the outside door handle support.



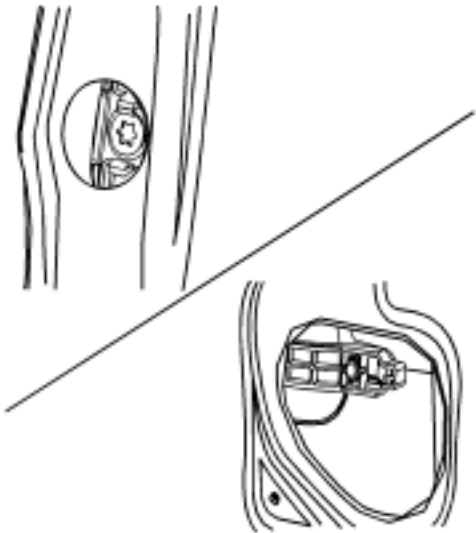
5. Remove the outside door handle cover.
6. Slide the outside door handle knob backward and pull it outward.
7. Remove the outside door handle support.

Installation Procedure



1. Install the outside door handle support.
2. Install the outside door handle knob.
3. Install the outside door handle cover.

Notice: Refer to [Fastener Notice](#) in the Preface section.



4. Install the screw that will secure the outside door handle support.

Tighten

Tighten the door handle support screw to 4.5 N·m (40 lb in).

5. Install the bolt that secures the outside door handle cover.

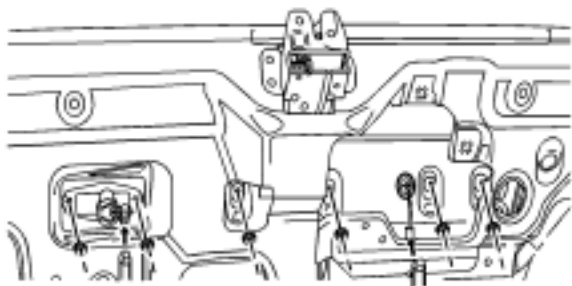
Tighten

Tighten the outside door handle cover bolt to 4.5 N·m (40 lb in).

6. Connect the outside door handle and lock rods.
7. Install the door water deflector. Refer to [Door Water Deflector Replacement](#) .

Liftgate Outside Handle Replacement (C100/Long Body)

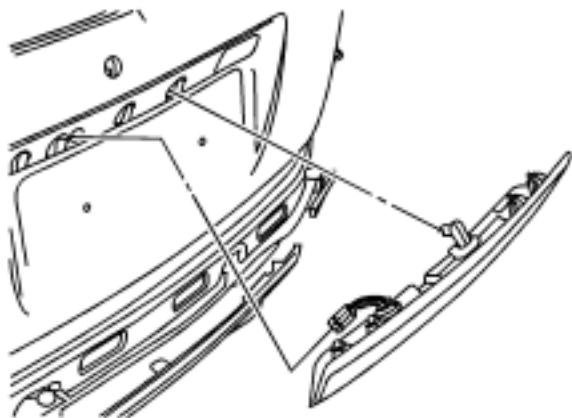
Removal Procedure



1. Disconnect the negative battery cable. Refer to [Battery Negative Cable Disconnection and Connection](#) .
2. Remove the liftgate lower trim. Refer to [Liftgate Trim Panel Replacement](#) .
3. Disconnect the electrical connector.
4. Remove the nuts and the liftgate outside handle.

Installation Procedure

Notice: Refer to [Fastener Notice](#) in the Preface section.



1. Install the liftgate outside handle with the nuts.

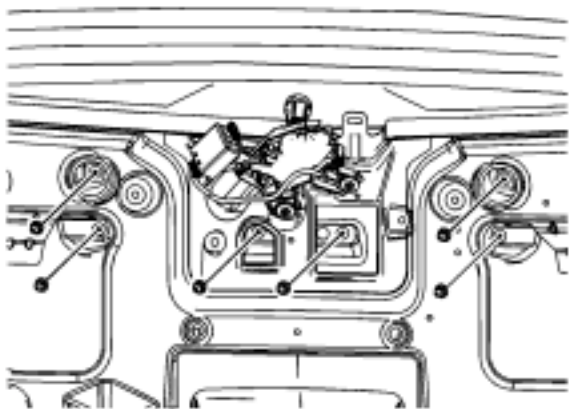
Tighten

Tighten the liftgate outside handle nut to 3 N·m (27 lb in).

2. Connect the electrical connector.
3. Remove the liftgate lower trim. Refer to [Liftgate Trim Panel Replacement](#) .
4. Connect the negative battery cable. Refer to [Battery Negative Cable Disconnection and Connection](#) .

Liftgate Outside Handle Replacement (C105/Short Body)

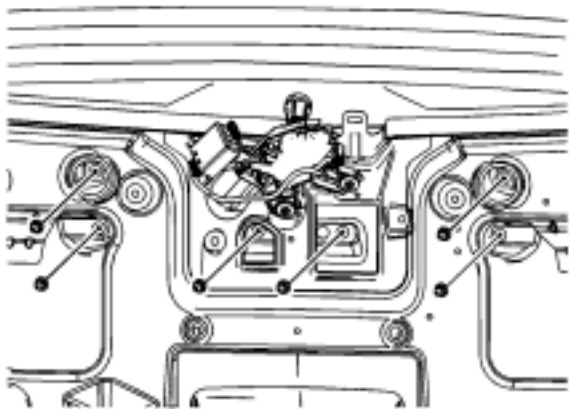
Removal Procedure



1. Disconnect the negative battery cable. Refer to [Battery Negative Cable Disconnection and Connection](#) .
2. Remove the liftgate lower trim. Refer to [Liftgate Trim Panel Replacement](#) .
3. Disconnect the electrical connector.
4. Remove the nuts and the liftgate outside handle.

Installation Procedure

Notice: Refer to [Fastener Notice](#) in the Preface section.



1. Install the liftgate outside handle with the nuts.

Tighten

Tighten the liftgate outside handle nut to 3 N·m (27 lb in).

2. Connect the electrical connector.
3. Install the liftgate lower trim. Refer to [Liftgate Trim Panel Replacement](#) .
4. Connect the negative battery cable. Refer to [Battery Negative Cable Disconnection and Connection](#) .

Liftgate Latch Replacement

Removal Procedure

1. Disconnect the negative battery cable. Refer to [Battery Negative Cable Disconnection and Connection](#) .



2. Remove the liftgate trim panel. Refer to [Liftgate Trim Panel Replacement](#) .
3. Disconnect the electrical connector.
4. Remove the bolts and the liftgate latch.

Installation Procedure



1. Connect the electrical connector.

Notice: Refer to [Fastener Notice](#) in Cautions and Notices.

2. Install the liftgate latch with the bolts.

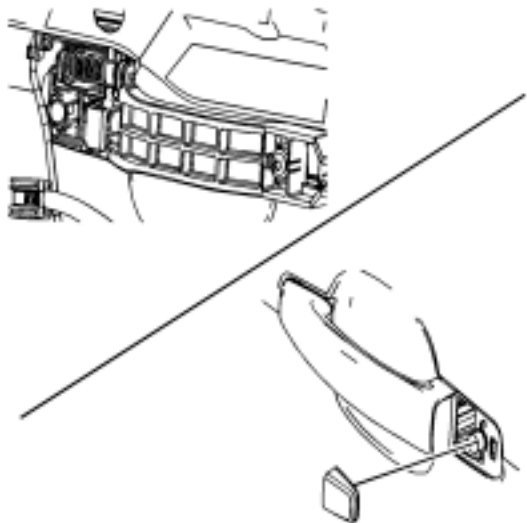
Tighten

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

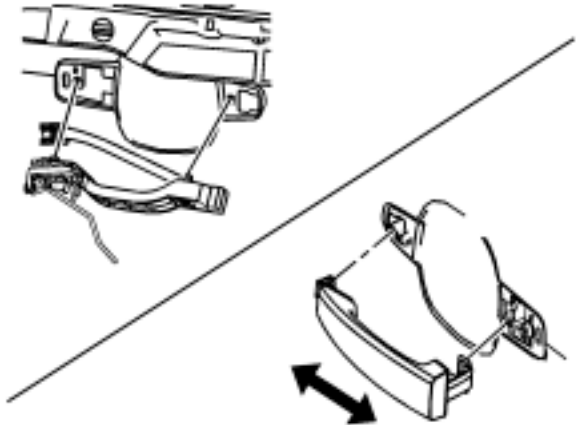
3. Install the liftgate trim panel. Refer to [Liftgate Trim Panel Replacement](#) .
4. Connect the negative battery cable. Refer to [Battery Negative Cable Disconnection and Connection](#) .

Rear Side Door Outside Handle Replacement (C100/Long Body)

Removal Procedure

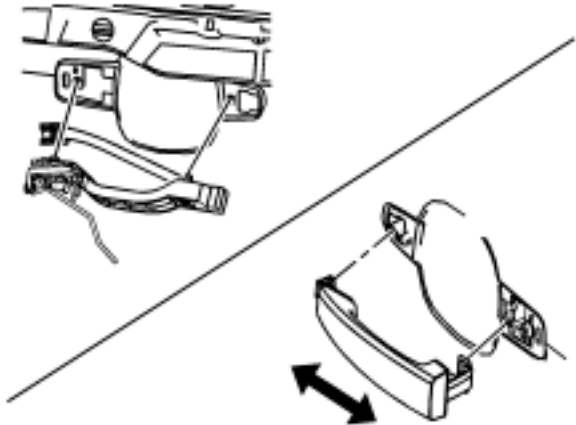


1. Remove the door water deflector. Refer to [Door Water Deflector Replacement](#) .
2. Remove the outside door handle screws.
3. Remove the outside door handle screw through the door shut face.
4. Remove the outside door handle by sliding rearward and pulling away from the door.

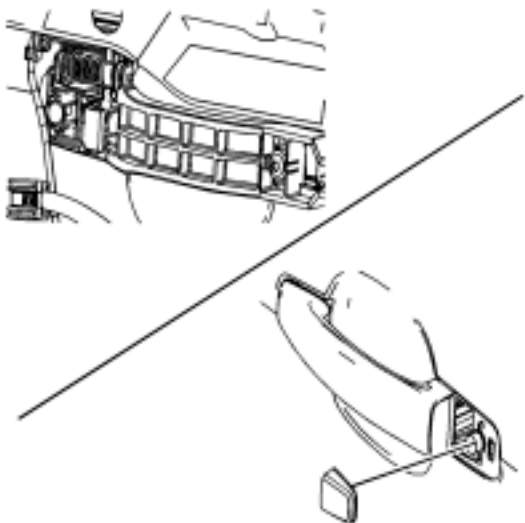


5. Remove the gasket, if necessary.

Installation Procedure



1. Install the gasket, if necessary.



2. Install the handle by placing into position and sliding rearward ensuring to engage the outside door handle.

Notice: Refer to [Fastener Notice](#) in the Preface section.

3. Install the outside door handle screws.

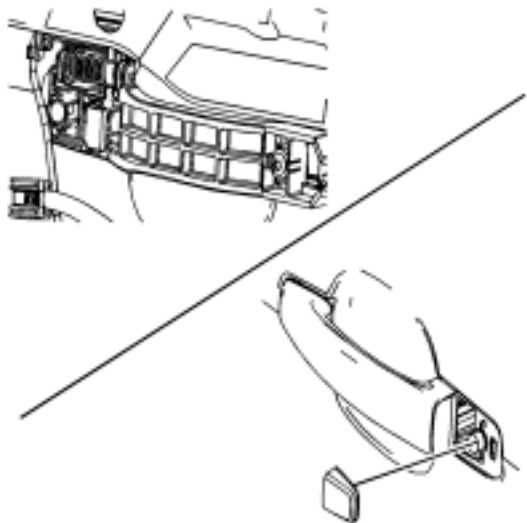
Tighten

Tighten the outside door handle screws to 4.5 N·m (40 lb in).

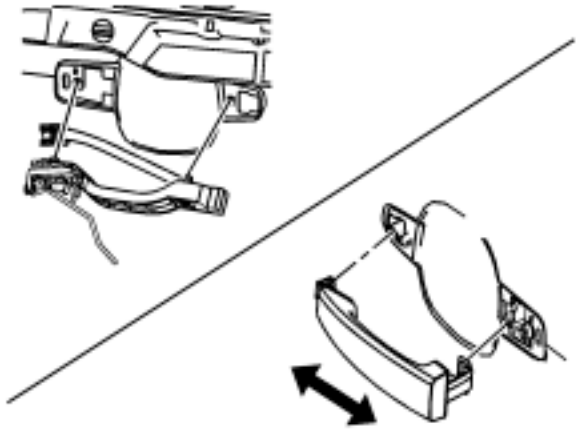
4. Install the door water deflector. Refer to [Door Water Deflector Replacement](#) .

Rear Side Door Outside Handle Replacement (C105/Short Body)

Removal Procedure

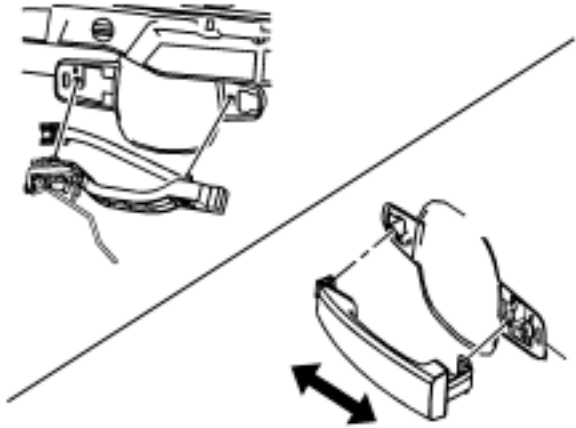


1. Remove the door water deflector. Refer to [Door Water Deflector Replacement](#) .
2. Remove the rear door lock. Refer to [Rear Door Lock Replacement](#) .
3. Remove the outside door handle cover bolt.
4. Remove the outside door handle support screw .
5. Remove the outside door handle cover.

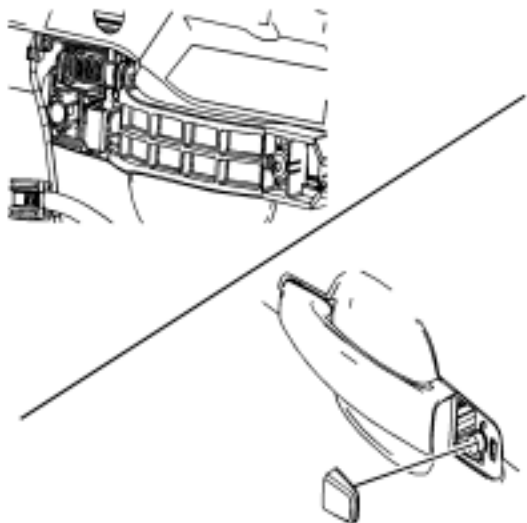


6. Slide the outside door handle knob backward and pull it outward.
7. Remove the outside door handle support.

Installation Procedure



1. Install the outside door handle support.
2. Install the outside door handle knob.



3. Install the outside door handle cover.

Notice: Refer to [Fastener Notice](#) in the Preface section.

4. Install the outside door handle screw.

Tighten
Tighten the outside door handle screw to 4.5 N·m (40 lb in).

5. Install the outside door handle cover bolt.

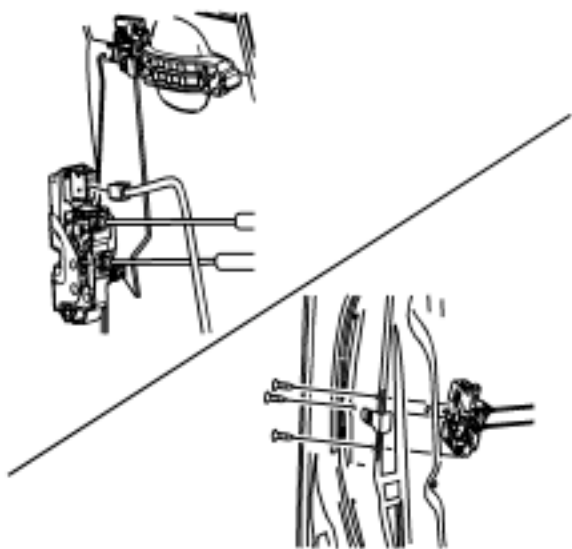
Tighten
Tighten the outside door handle cover bolt to 4.5 N·m (40 lb in)

6. Install the rear door lock. Refer to [Rear Door Lock Replacement](#) .
7. Install the door water deflector. Refer to [Door Water Deflector Replacement](#) .



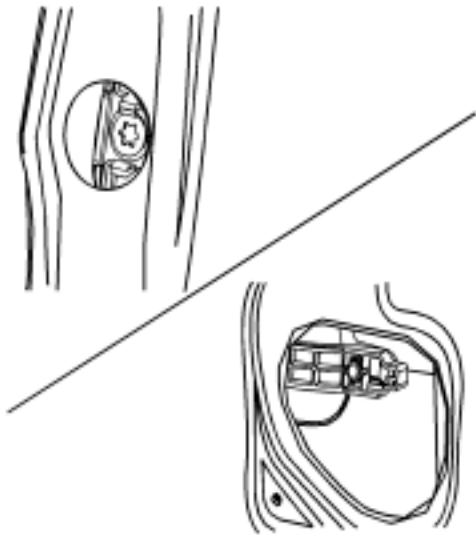
Front Side Door Lock Replacement (C100/Long Body)

Removal Procedure



1. Disconnect the negative battery cable. Refer to [Battery Negative Cable Disconnection and Connection](#) .
2. Remove the water deflector. Refer to [Door Water Deflector Replacement](#) .
3. Remove the screws and the front door lock.
4. Disconnect the lock rods.
5. Disconnect the electrical connector.

Installation Procedure



1. Connect the electrical connector.
2. Connect the lock rods.

Notice: Refer to [Fastener Notice](#) in the Preface section.

3. Install the front door lock with the screws.

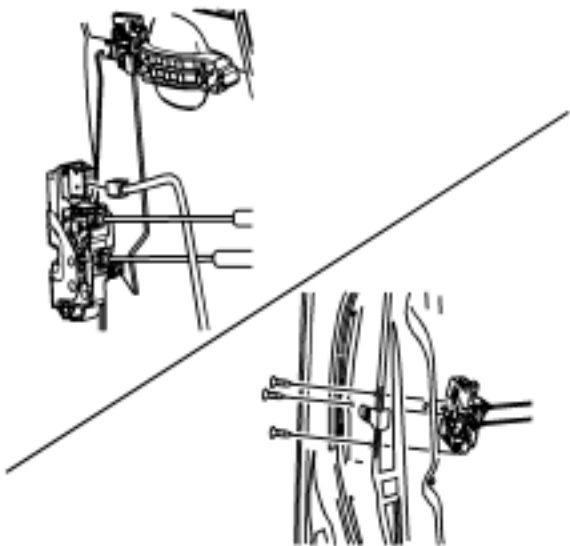
Tighten

Tighten the front door lock bolt to 8 N·m (71 lb in).

4. Install the water deflector. Refer to [Door Water Deflector Replacement](#) .
5. Connect the negative battery cable. Refer to [Battery Negative Cable Disconnection and Connection](#) .

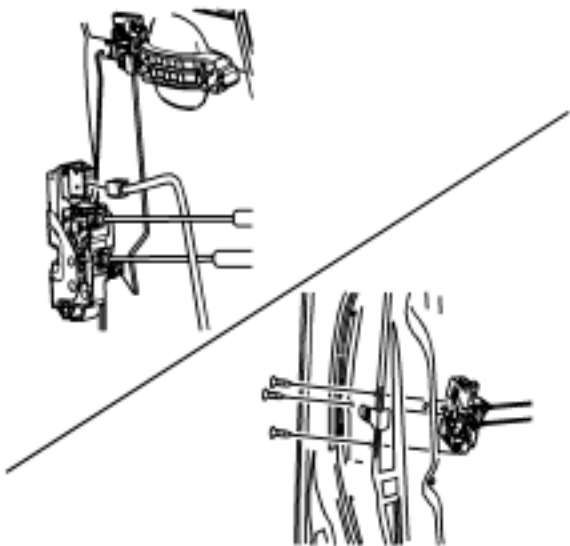
Front Side Door Lock Replacement (C105/Short Body)

Removal Procedure



1. Disconnect the negative battery cable. Refer to [Battery Negative Cable Disconnection and Connection](#) .
2. Remove the water deflector. Refer to [Door Water Deflector Replacement](#) .
3. Remove the screws and the front door lock.
4. Disconnect the lock rods.
5. Disconnect the electrical connector.

Installation Procedure



1. Connect the electrical connector.
2. Connect the lock rods.

Notice: Refer to [Fastener Notice](#) in the Preface section.

3. Install the front door lock with the screws.

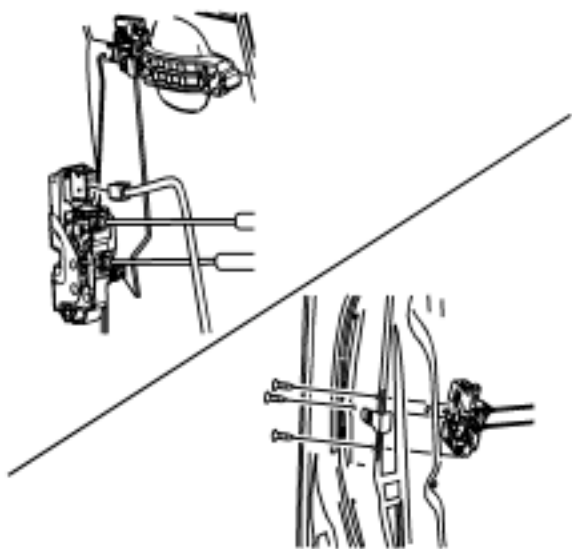
Tighten

Tighten the front door lock bolt to 8 N·m (71 lb in).

4. Install the water deflector. Refer to [Door Water Deflector Replacement](#) .
5. Connect the negative battery cable. Refer to [Battery Negative Cable Disconnection and Connection](#) .

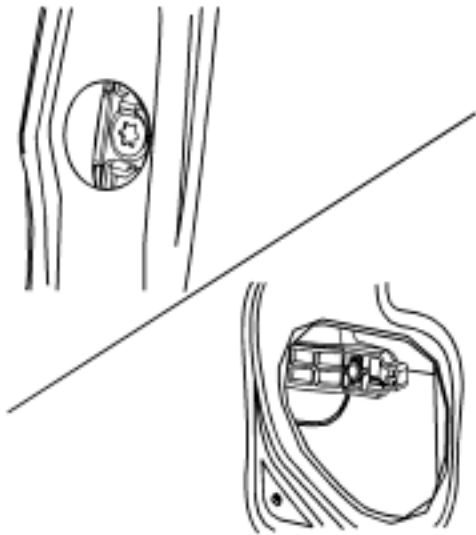
Rear Door Lock Replacement

Removal Procedure



1. Disconnect the negative battery cable. Refer to [Battery Negative Cable Disconnection and Connection](#) .
2. Remove the water deflector. Refer to [Door Water Deflector Replacement](#) .
3. Remove the screws and the front door lock.
4. Disconnect the lock rods.
5. Disconnect the electrical connector.

Installation Procedure



1. Connect the electrical connector.
2. Connect the lock rods.

Notice: Refer to [Fastener Notice](#) in Cautions and Notices.

3. Install the front door lock with the screws.

Tighten

Tighten the front door lock bolt to 10 N·m (89 lb in).

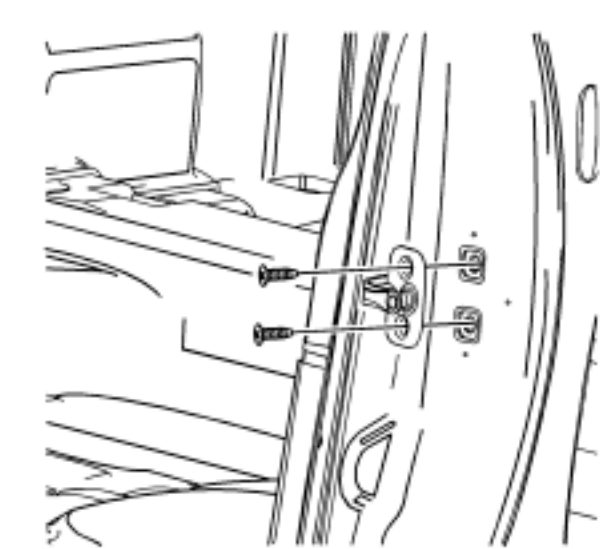
4. Install the water deflector. Refer to [Door Water Deflector Replacement](#) .
5. Connect the negative battery cable. Refer to [Battery Negative Cable Disconnection and Connection](#) .

Door Lock Striker Adjustment

The door striker consists of a striker with 2 screws that are threaded into a tapped, floating cage plate located in the appropriate body pillar. This floating cage plate allows the striker to be easily adjusted in and out or up and down. The door is secured in the closed position when the door lock fork snaps over and engages the striker.

Important: The door striker is an important attaching part that can affect the performance of vital components and systems. It can cause major repair expenses. If replacement becomes necessary, the door lock striker must be replaced by one with the same part number or with an equivalent. Do not use a replacement part of lesser quality or of a substitute design. The specified torque values must be used during reassembly to ensure the proper retention of the part.

Up/Down or In/Out Adjustment



An adjustment of the striker in the up and down or in and out directions may be necessary for a number of reasons:

- Vehicle frame damage as the result of a collision
- Installation of new door weatherstrip
- Customer complaints of excessive windnoise
- Difficulty in opening or closing the door

To adjust the door striker in an up and down or in and out direction, perform the following procedure:

1. The door must be properly aligned.
2. Loosen the striker screws.
3. The floating cage plate can be moved slightly using the ends of the striker screws. Move the floating cage plate to the desired position.
4. If proper adjustment requires that the floating cage plate be moved more than is possible, use an electric hand drill and a 3/8-inch rotary file bit with a flat head to enlarge the body opening in the direction required.

Important: It is important to use a flat-tipped drill bit to prevent damage to the tapped floating cage plate. The striker screws and the tapped floating cage plate are important attaching parts that could affect the performance of vital components and systems.

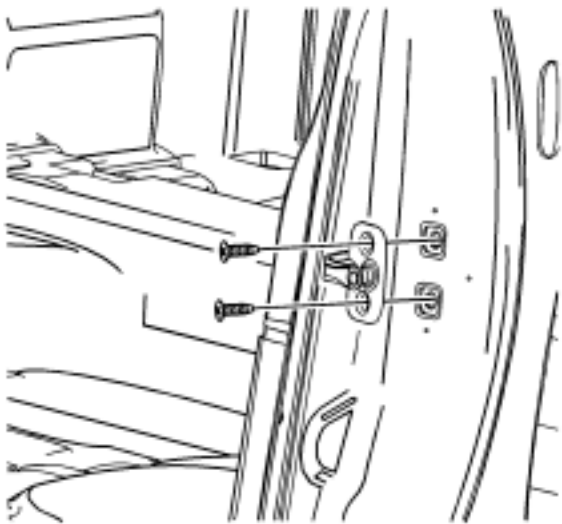
Notice: Refer to [Fastener Notice](#) in the Preface section.

5. Tighten the door striker screws to the correct position.

Tighten
Tighten the door striker screws to 24 N·m (18 lb ft).

Door Striker Replacement

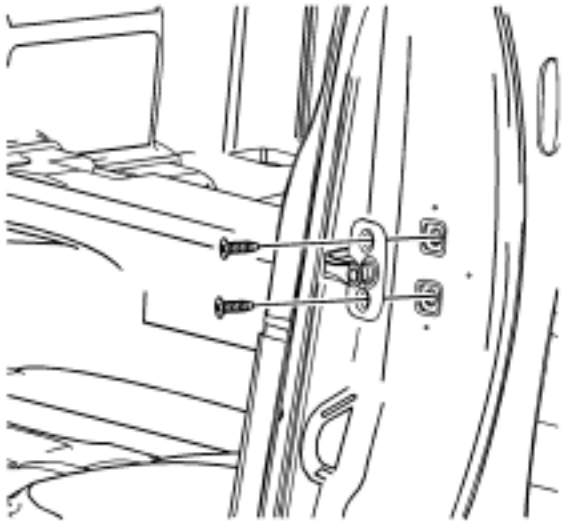
Removal Procedure



1. Open the door.
2. Remove the screws and the door striker. Front door shown, rear door similar.

Installation Procedure

Notice: Refer to [Fastener Notice](#) in Cautions and Notices.



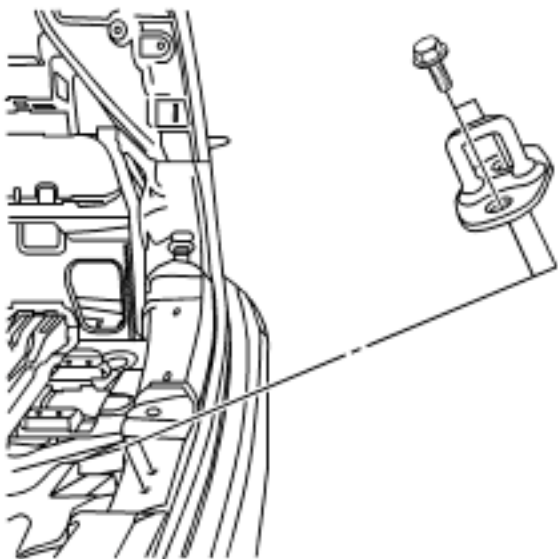
1. Install the screws and the door striker.

Tighten
Tighten the door striker screws to 24 N·m (18 lb ft).

2. Close the door.

Liftgate Lock Striker Replacement

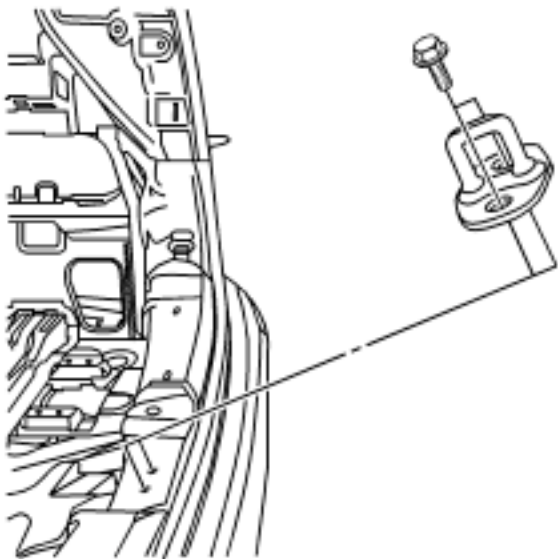
Removal Procedure



1. Open the liftgate.
2. Remove the floor panel rear extension.
3. Remove the bolts securing the latch striker.
4. Pull the lock striker out.

Installation Procedure

Notice: Refer to [Fastener Notice](#) in Cautions and Notices.



1. Install the latch striker with the bolts.

Tighten
Tighten the liftgate latch striker bolt to 10 N·m (89 lb in).

2. Install the floor panel rear extension.
3. Close the liftgate.

Fastener Tightening Specifications

Application	Specification	
	Metric	English
Door Lock Bolts	8 N·m	71 lb in
Door Striker Screws	24 N·m	18 lb in
Liftgate Handle Nut	4.5 N·m	40 lb in
Liftgate Lock Striker Bolts	3 N·m	27 lb in
Outside Door Handle Screws	10 N·m	89 lb in



Wipers and Washers

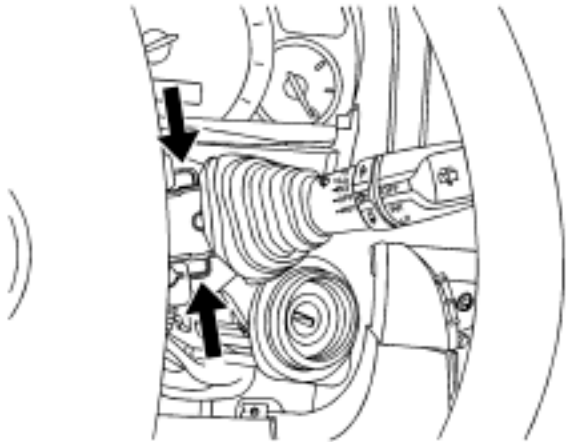
- Windshield Wiper and Washer Switch Replacement
- Windshield Washer Nozzle Replacement
- Rear Window Washer Nozzle Replacement
- Windshield Washer Hose Replacement
- Windshield Washer Solvent Container Replacement
- Washer Pump Replacement
- Air Inlet Grille Panel Replacement
- Windshield Wiper Arm Replacement
- Rear Window Wiper Arm Replacement
- Windshield Wiper Blade Replacement
- Wiper Blade Element Replacement
- Rear Window Wiper Motor Replacement
- Windshield Wiper System Module Replacement
- Rear Wiper Park Replacement
- Fastener Tightening Specifications



Windshield Wiper and Washer Switch Replacement

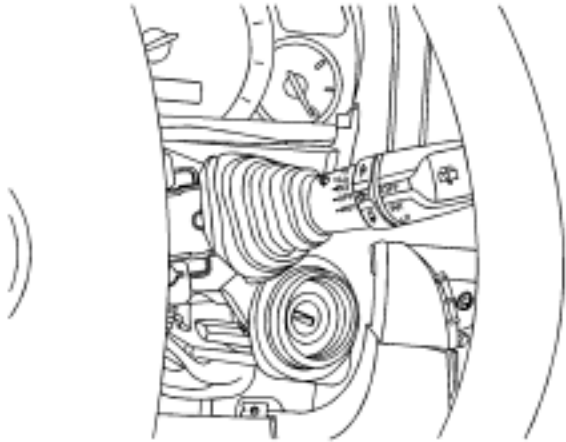
Removal Procedure

Caution: Refer to [Battery Disconnect Caution](#) in Cautions and Notices.



1. Disconnect the negative battery cable. Refer to [Battery Negative Cable Disconnection and Connection](#) .
2. Remove the steering column cover. Refer to [Steering Column Trim Covers Replacement](#) .
3. Remove the wiper switch by pushing in on the tabs on the top and the bottom of the switch housing.
4. Disconnect the electrical connectors from the wiper switch. Disconnect the cruise control connector, if equipped.

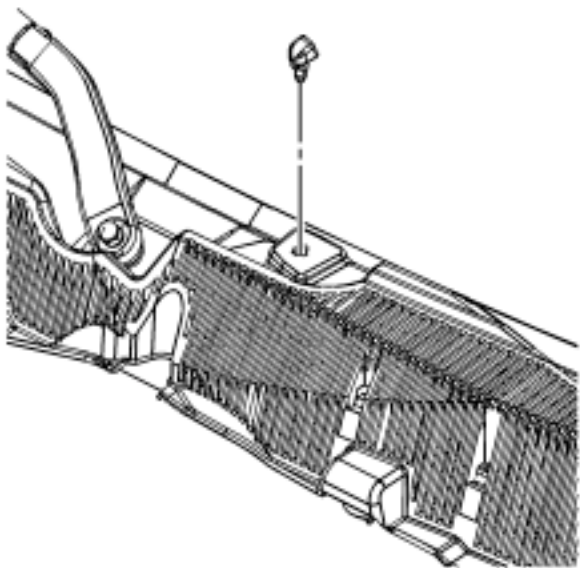
Installation Procedure



1. Connect the electrical connector to the wiper switch. Connect the cruise control connector, if equipped.
2. Install the wiper switch by snapping it into the switch housing.
3. Install the steering column cover. Refer to [Steering Column Trim Covers Replacement](#) .
4. Connect the negative battery cable. Refer to [Battery Negative Cable Disconnection and Connection](#) .

Windshield Washer Nozzle Replacement

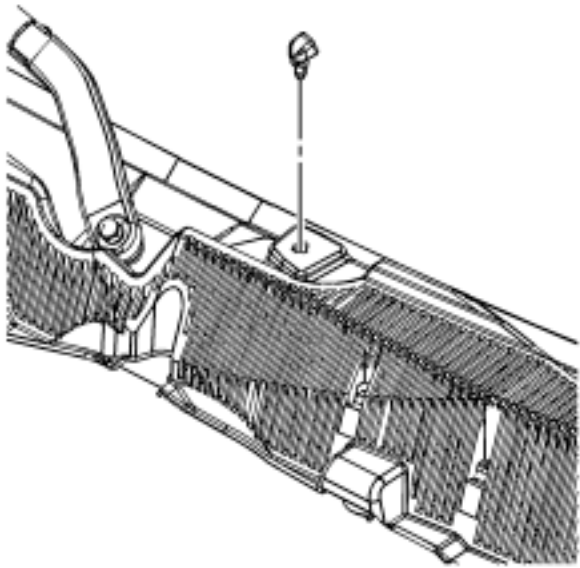
Removal Procedure



Important: The left-hand drive is shown. The right-hand drive is similar.

1. Remove the air inlet grille panel. Refer to [Air Inlet Grille Panel Replacement](#) .
2. Depress the washer nozzle tabs to disengage the nozzle from the air inlet grille.
3. Remove the nozzle.

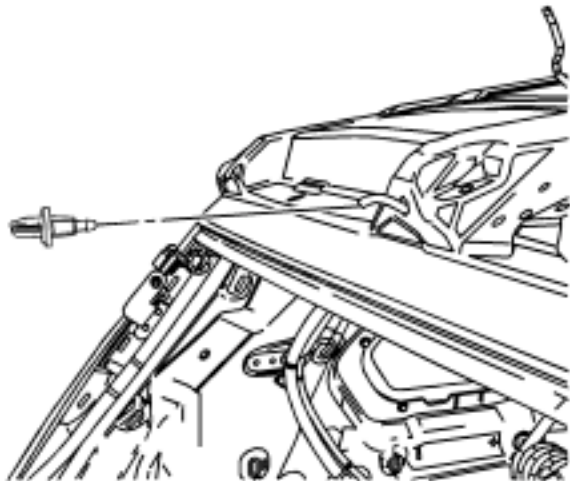
Installation Procedure



1. Push the washer nozzles into the air inlet grille panel until the tabs engage with the panel.
2. Install the air inlet grille panel. Refer to [Air Inlet Grille Panel Replacement](#) .

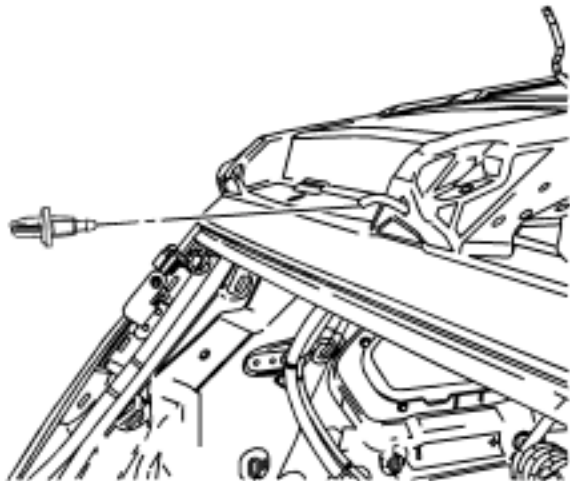
Rear Window Washer Nozzle Replacement

Removal Procedure



1. Remove the liftgate upper applique. Refer to [Liftgate Upper Applique Replacement](#) .
2. Remove the rear wiper nozzle.

Installation Procedure



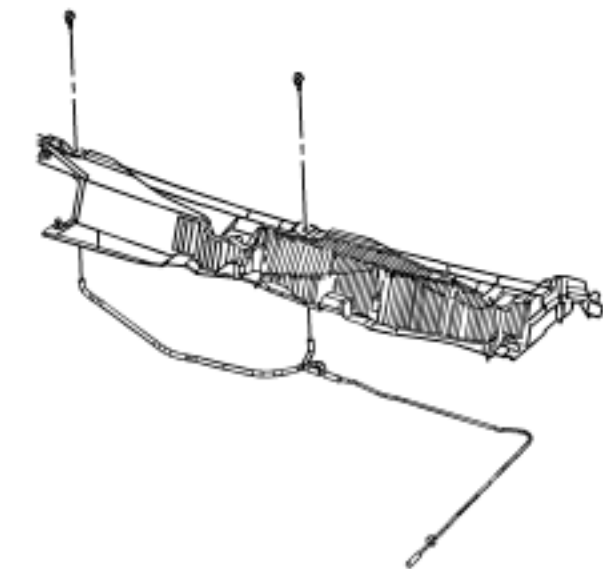
1. Install the rear wiper nozzle.
2. Install the liftgate upper applique. Refer to [Liftgate Upper Applique Replacement](#) .

Windshield Washer Hose Replacement

Removal Procedure

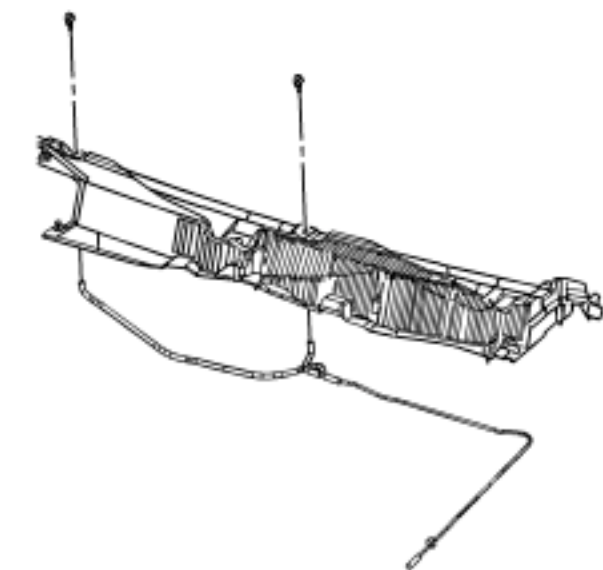
Important: The left-hand drive is shown. The right-hand drive is similar.

1. Remove the air inlet grille. Refer to [Air Inlet Grille Panel Replacement](#) .



2. Separate the front washer nozzle hose from the front washer solvent container hose that runs along the upper motor compartment rail.
3. Remove the front washer nozzle hose.

Installation Procedure

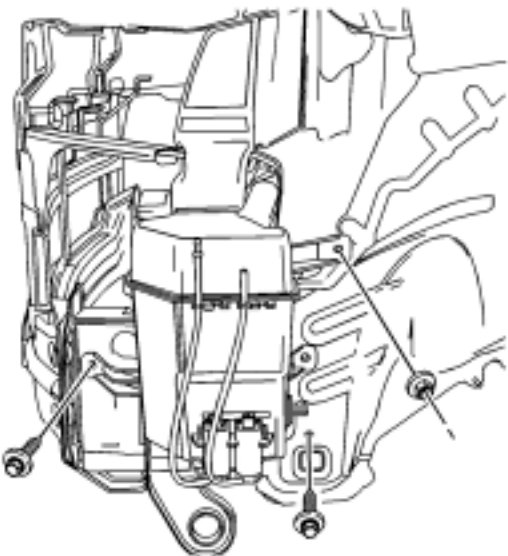


1. Connect the front nozzle hose to the front washer solvent container hose that runs along the upper motor compartment rail.
2. Position the washer hoses into the vehicle.
3. Install the air inlet grille. Refer to [Air Inlet Grille Panel Replacement](#) .

Windshield Washer Solvent Container Replacement

Removal Procedure

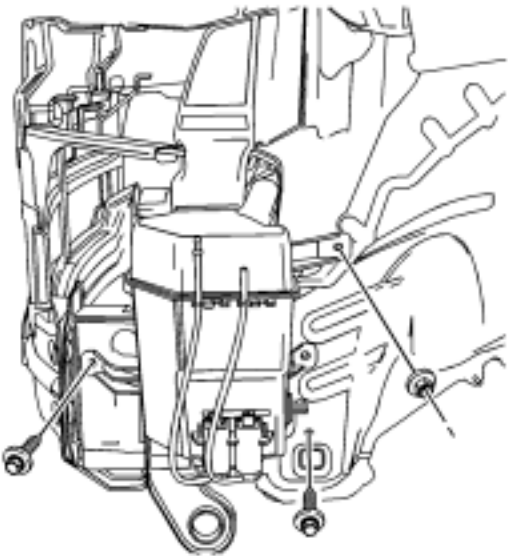
Caution: Refer to [Battery Disconnect Caution](#) in the Preface section.



1. Disconnect the negative battery cable. Refer to [Battery Negative Cable Disconnection and Connection](#) .
2. Remove the front right wheel. Refer to [Tire and Wheel Removal and Installation](#) .
3. Remove the front fender liner. Refer to [Fender Liner Replacement](#) .
4. Remove the front fascia bumper. Refer to [Front Bumper Fascia Replacement](#) .
5. Disconnect the washer hose from the washer pump.
6. Disconnect the electrical connectors.
7. Remove the bolts and the reservoir.

Installation Procedure

Notice: Refer to [Fastener Notice](#) in the Preface section.



1. Install the reservoir with the bolts.

Tighten

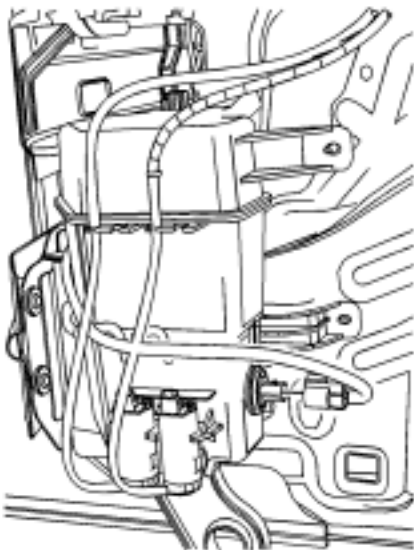
Tighten the washer fluid reservoir bolts to 10 N·m (89 lb in).

2. Connect the electrical connector.
3. Connect the washer hose to the washer pump.
4. Install the front fascia bumper. Refer to [Front Bumper Fascia Replacement](#) .
5. Install the front fender liner. Refer to [Fender Liner Replacement](#) .
6. Install the front right wheel. Refer to [Tire and Wheel Removal and Installation](#) .
7. Connect the negative battery cable. Refer to [Battery Negative Cable Disconnection and Connection](#) .

Washer Pump Replacement

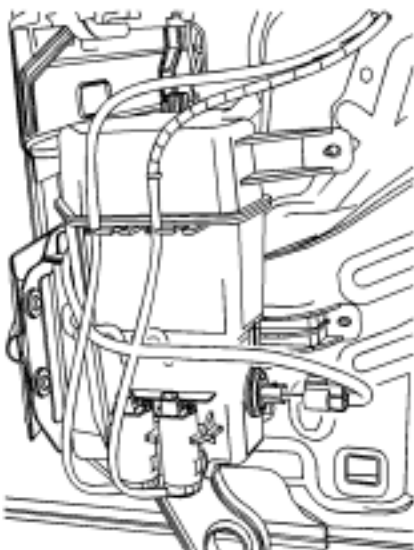
Removal Procedure

Caution: Refer to [Battery Disconnect Caution](#) in Cautions and Notices.



1. Disconnect the negative battery cable. Refer to [Battery Negative Cable Disconnection and Connection](#) .
2. Remove the right front wheel. Refer to [Tire and Wheel Removal and Installation](#) .
3. Remove the front fender liner. Refer to [Fender Liner Replacement](#) .
4. Remove the front bumper. Refer to [Front Bumper Fascia Replacement](#) .
5. Disconnect the electrical connector.
6. Disconnect the washer hose from the washer pump.
7. Remove the washer pump.

Installation Procedure

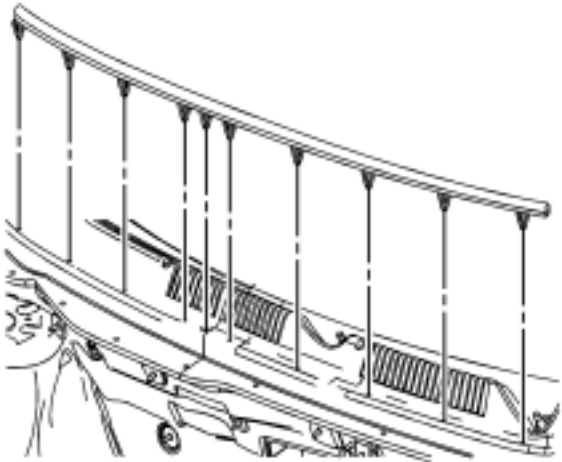


1. Install the washer pump.
2. Connect the washer hose to the washer pump.
3. Connect the electrical connector.
4. Install the front bumper. Refer to [Front Bumper Fascia Replacement](#) .
5. Install the front fender liner. Refer to [Fender Liner Replacement](#) .
6. Install the right front wheel. Refer to [Tire and Wheel Removal and Installation](#) .
7. Connect the negative battery cable. Refer to [Battery Negative Cable Disconnection and Connection](#) .

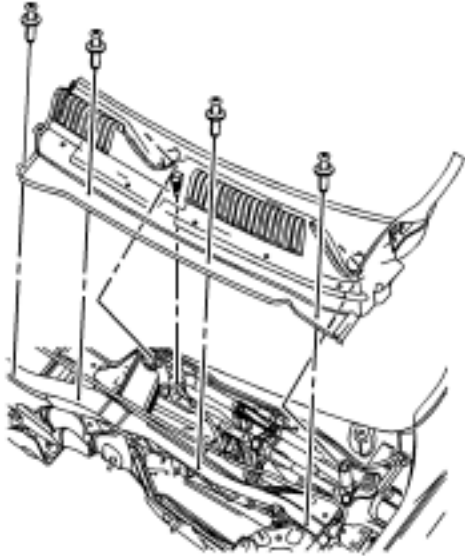
Air Inlet Grille Panel Replacement

Removal Procedure

- 1. Raise the hood.
- 2. Remove the wiper arms. Refer to [Wiper Arm Replacement](#) .

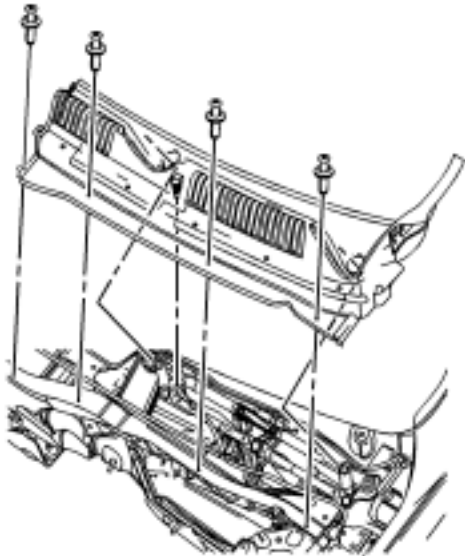


- 3. Remove the air inlet grille panel sealing strip.

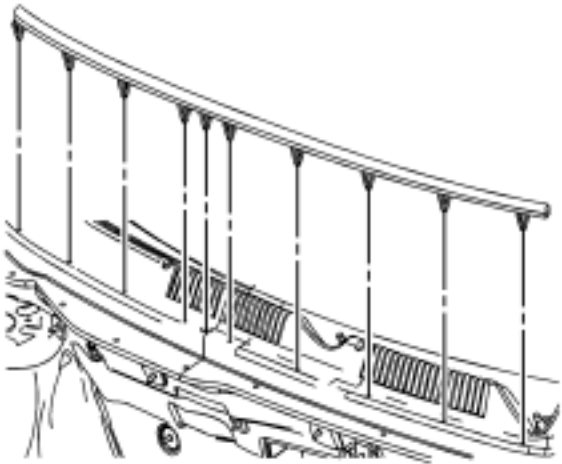


- 4. Remove the air inlet grille panel retaining clips, and the two-piece grille.

Installation Procedure



- 1. Install the two-piece grille with the air inlet grille panel retaining clips.



2. Install the air inlet grille panel sealing strip.
3. Install the wiper arms. Refer to [Wiper Arm Replacement](#) .
4. Lower the hood.

Windshield Wiper Arm Replacement

Removal Procedure



Important: The left-hand drive is shown. The right-hand drive is similar.

1. Open the hood.
2. Remove the nuts to access wiper arm nut from the wiper arm.
3. Lift wiper arm assembly away from windshield and remove wiper arm from pivot shaft.

Installation Procedure



1. Install the wiper arm.

Notice: Refer to [Fastener Notice](#) in Cautions and Notices.

2. Secure the wiper arm with the nut.

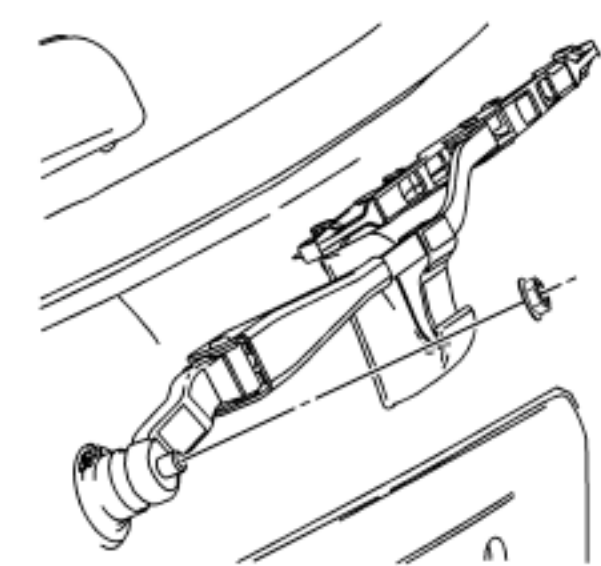
Tighten

Tighten the wiper arm nut to 22 N·m (16 lb ft).

3. Operate the windshield wipers and inspect for proper operation.
4. Close the hood.

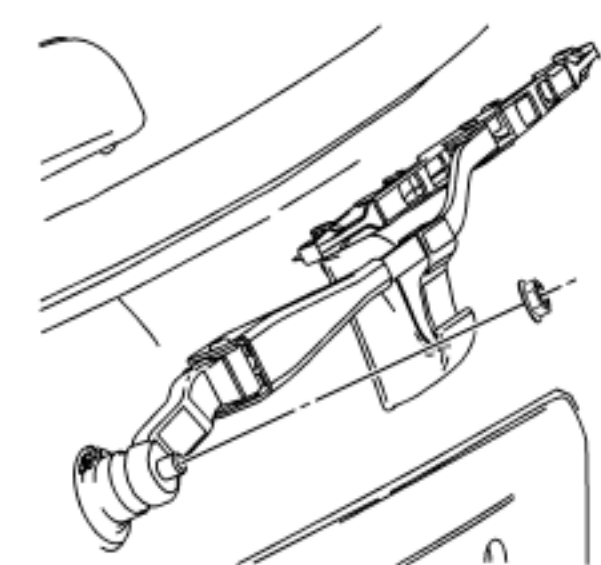
Rear Window Wiper Arm Replacement

Removal Procedure



1. Remove the rear wiper arm finish cap to expose the wiper arm nut.
2. Remove the rear wiper arm nut.
3. Lift the rear wiper arm assembly away from the rear window and remove the wiper from pivot shaft.

Installation Procedure



1. Position wiper blade assembly on the blackout strip as shown.

Notice: Refer to [Fastener Notice](#) in Cautions and Notices.

2. Install the rear wiper arm nut.

Tighten

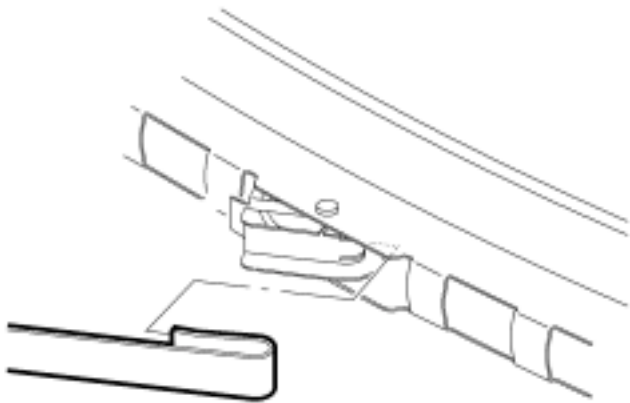
Tighten the nut to 22 N·m (16 lb ft).

3. Install the rear wiper arm finish cap.
4. Operate the windshield wipers and inspect for proper operation.

Windshield Wiper Blade Replacement

Removal Procedure

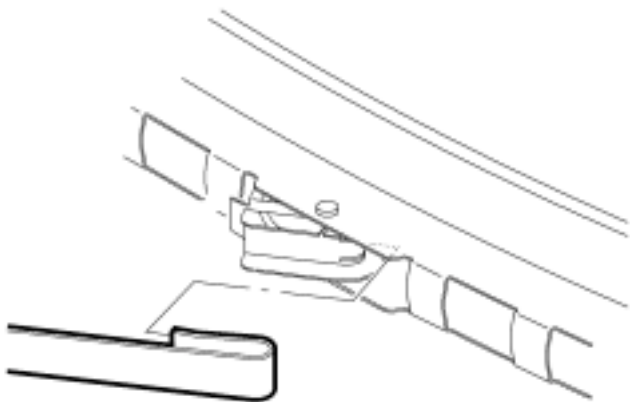
1. Move the wiper arm to the service up position



2. Depress the wiper blade attachment clip and slide blade out of wiper arm hook.

Installation Procedure

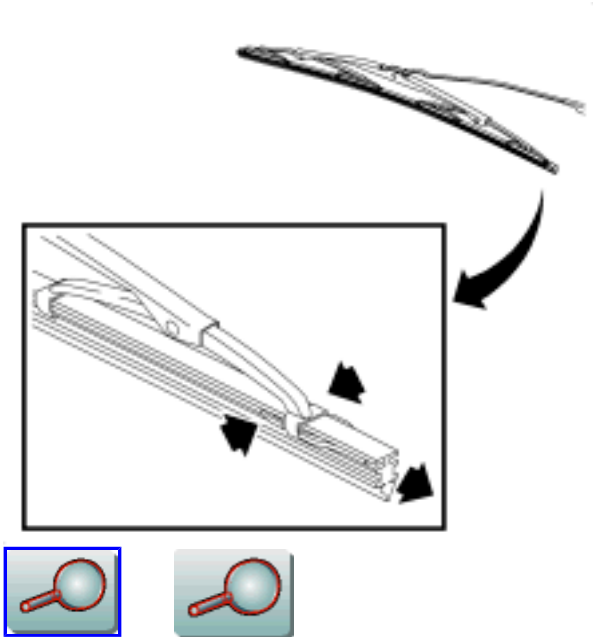
Important: Passenger and driver side wiper blades are different lengths. Ensure that the longer blade is installed on the driver side.



1. Install the hook of the wiper arm through the opening in the wiper blade.
2. Press the wiper blade pivot into the wiper arm hook until the pivot locks into the hook.
3. Operate the windshield wipers and inspect for proper operation.

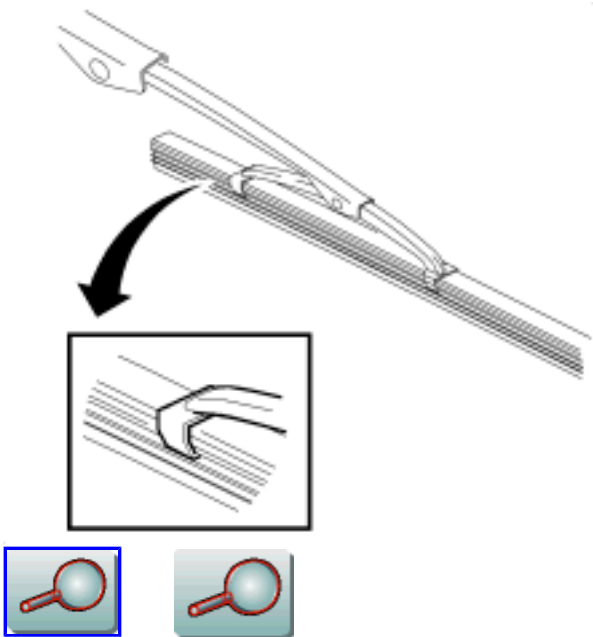
Wiper Blade Element Replacement

Removal Procedure



1. Lift the wiper arm up to the service position.
2. Remove the wiper blade element by squeezing the metal tabs and pulling on the end of the insert at the heel claw.

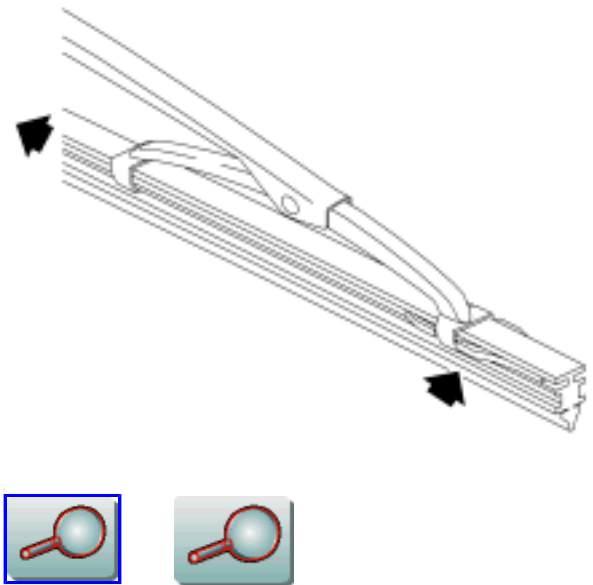
Installation Procedure



Important: Passenger and driver side wiper blades are different lengths. Ensure that the longer blade is installed on the driver side.

Important: Do not remove the retainer clips from the new wiper blade element until installed.

1. Slide the wiper blade element into the wiper blade, starting with the heel claw, so that the claw engages in the groove of the wiper blade element.
2. Guide the wiper blade element through the wiper blade claw sets.

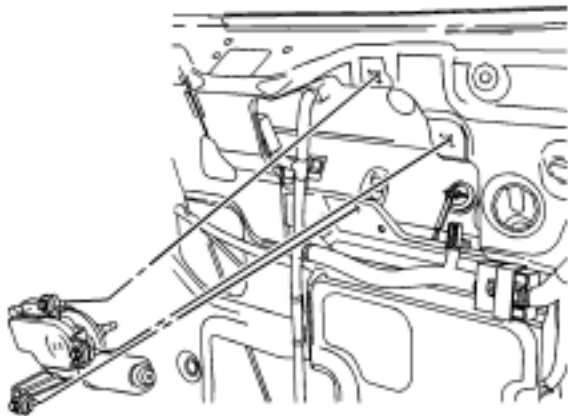


Notice: If the metal clip on the wiper blade insert is not completely engaged to the heel claw, the wiper blade insert will not be sufficiently retained and may result in windshield damage.

3. Push the wiper blade insert so that the metal tabs fully engage into the heel claw.

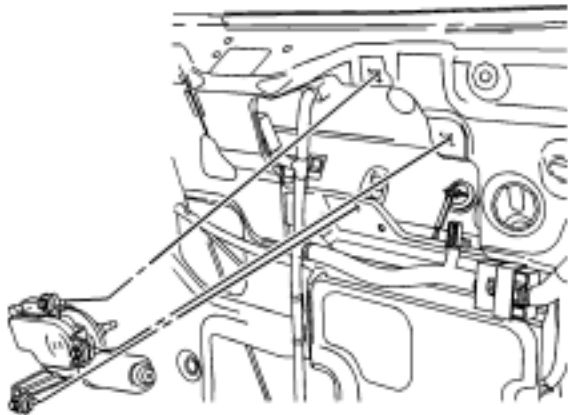
Rear Window Wiper Motor Replacement

Removal Procedure



1. Remove the rear wiper arm. Refer to [Rear Window Wiper Arm Replacement](#) .
2. Remove the liftgate lower trim. Refer to [Liftgate Trim Panel Replacement](#) .
3. Remove the rear wiper motor bolts.
4. Remove the motor By sliding the pivot shaft out of the rear window grommet.
5. Disconnect the electrical connector.

Installation Procedure



1. Connect the electrical connector.
2. Install the rear wiper motor through the rear window grommet.

Notice: Refer to [Fastener Notice](#) in Cautions and Notices.

3. Install the wiper motor bolts.

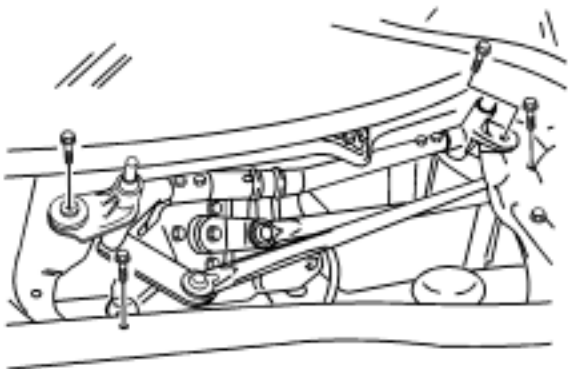
Tighten
Tighten the bolts to 8 N·m (11 lb ft).

4. Install the liftgate trim panel. Refer to [Liftgate Trim Panel Replacement](#) .
5. Install the rear wiper arm. Refer to [Rear Window Wiper Arm Replacement](#) .

Windshield Wiper System Module Replacement

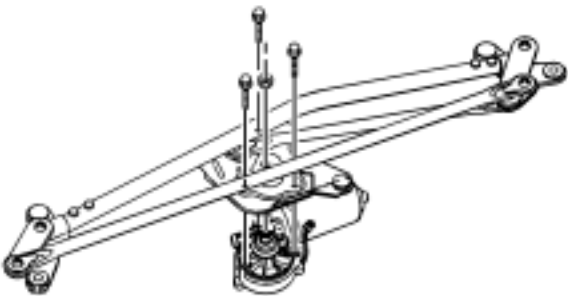
Removal Procedure

Caution: Refer to [Battery Disconnect Caution](#) in the Preface section.



Important: The left-hand drive model is shown. The right-hand drive is similar.

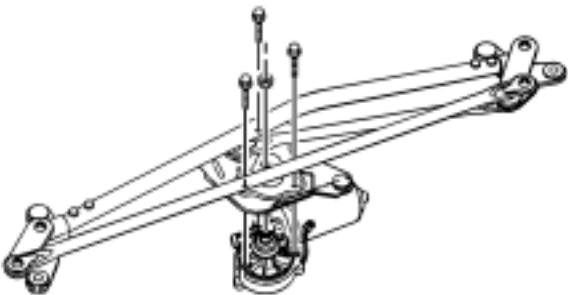
1. Disconnect the negative battery cable. Refer to [Battery Negative Cable Disconnection and Connection](#) .
2. Remove the air inlet grille. Refer to [Air Inlet Grille Panel Replacement](#) .
3. Remove the wiper motor bolts.
4. Pry the wiper arm linkage off the motor driveshaft.
5. Disconnect the wiper module electrical connector at the motor.



6. Remove the bolts and the wiper motor.

Installation Procedure

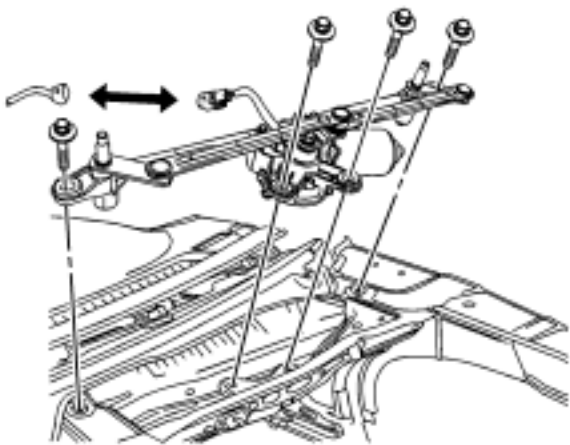
Notice: Refer to [Fastener Notice](#) in the Preface section.



1. Install the wiper motor with the bolts.

Tighten
Tighten the wiper motor bolts to 4 N·m (35 lb in).

2. Connect the electrical connector.



- 3. Press the wiper arm linkage onto the motor driveshaft.
- 4. Install the wiper arm linkage to the motor driveshaft with the bolts.

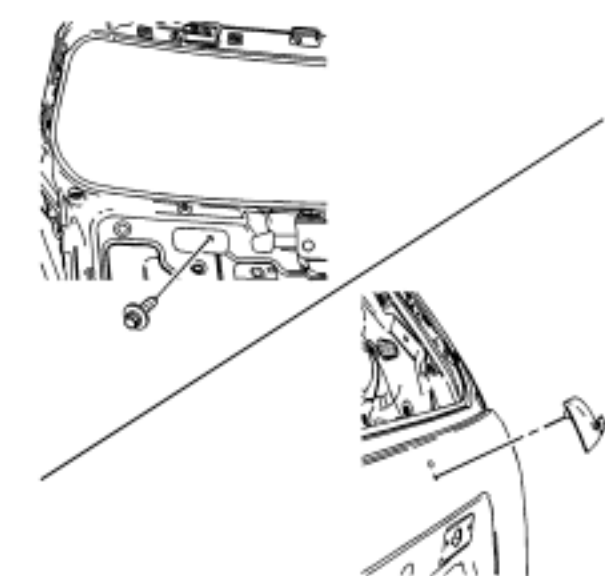
Tighten

Tighten the wiper arm linkage nut to 10 N·m (89 lb ft).

- 5. Install the air inlet grille. Refer to [Air Inlet Grille Panel Replacement](#) .
- 6. Connect the negative battery cable. Refer to [Battery Negative Cable Disconnection and Connection](#) .

Rear Wiper Park Replacement

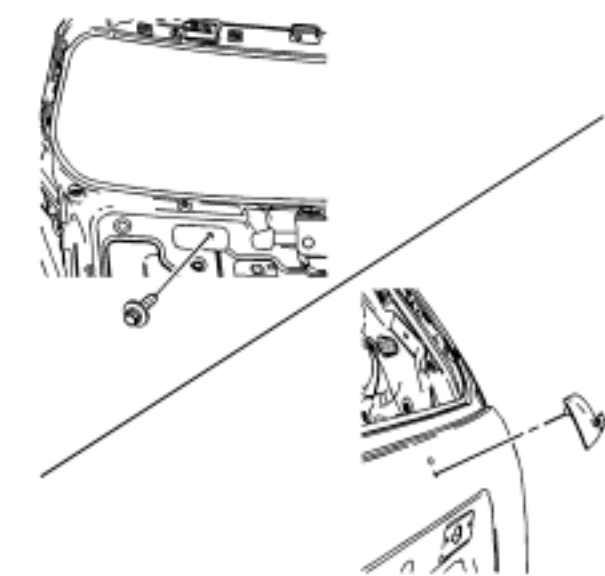
Removal Procedure



1. Remove the liftgate lower applique. Refer to [Liftgate Applique Replacement](#) .
2. Remove the bolt and rear wiper arm park.

Installation Procedure

Notice: Refer to [Fastener Notice](#) in Cautions and Notices.



1. Install the rear wiper arm park with the bolt.

Tighten
Tighten the rear wiper arm park bolt to 3 N·m (27 lb in).

2. Install the liftgate lower applique. Refer to [Liftgate Applique Replacement](#) .

Fastener Tightening Specifications

Application	Specification	
	Metric	English
Washer Fluid Reservoir Bolts	10 N·m	89 lb in
Wiper Arm Linkage Nut	15 N·m	11 lb ft
Wiper Arm Nut	22 N·m	16 lb ft
Wiper Motor Bolts	10 N·m	89 lb in



Wiper/Washer System Description and Operation

Windshield Wiper System

The windshield wiper system consists of a wiper motor, a linkage, a wiper arm, a blade and a wiper/washer switch. The windshield wiper circuit incorporates a selfparking device which consists of a worm gear and a cam plate in order to keep the circuit engaged temporarily when the switch is turned off. The wiper system is driven by a permanent magnet-type motor. The windshield wiper motor is mounted on the dash panel and is directly connected to the windshield wiper linkage. The windshield wiper motor has two speeds, LO and HI, and also has intermittent wiper capability. The wiper switch is an integral part of the wiper/washer switch. Windshield wiper operation is actuated through the lever on the right side of the steering column.

Windshield Washer System

The windshield washer system is equipped with a washer fluid reservoir, a washer fluid pump, hoses, nozzles, and a wiper/washer switch. The windshield washer reservoir is mounted behind the front right wheel well splash shield. Attached to the reservoir is a washer pump, which pumps fluid through the hoses to the two nozzles mounted on the hood. The washer switch is an integral part of the wiper/ washer switch. Windshield washer operation is actuated through the lever on the right side of the steering column.

