

Stationary Windows

Specifications

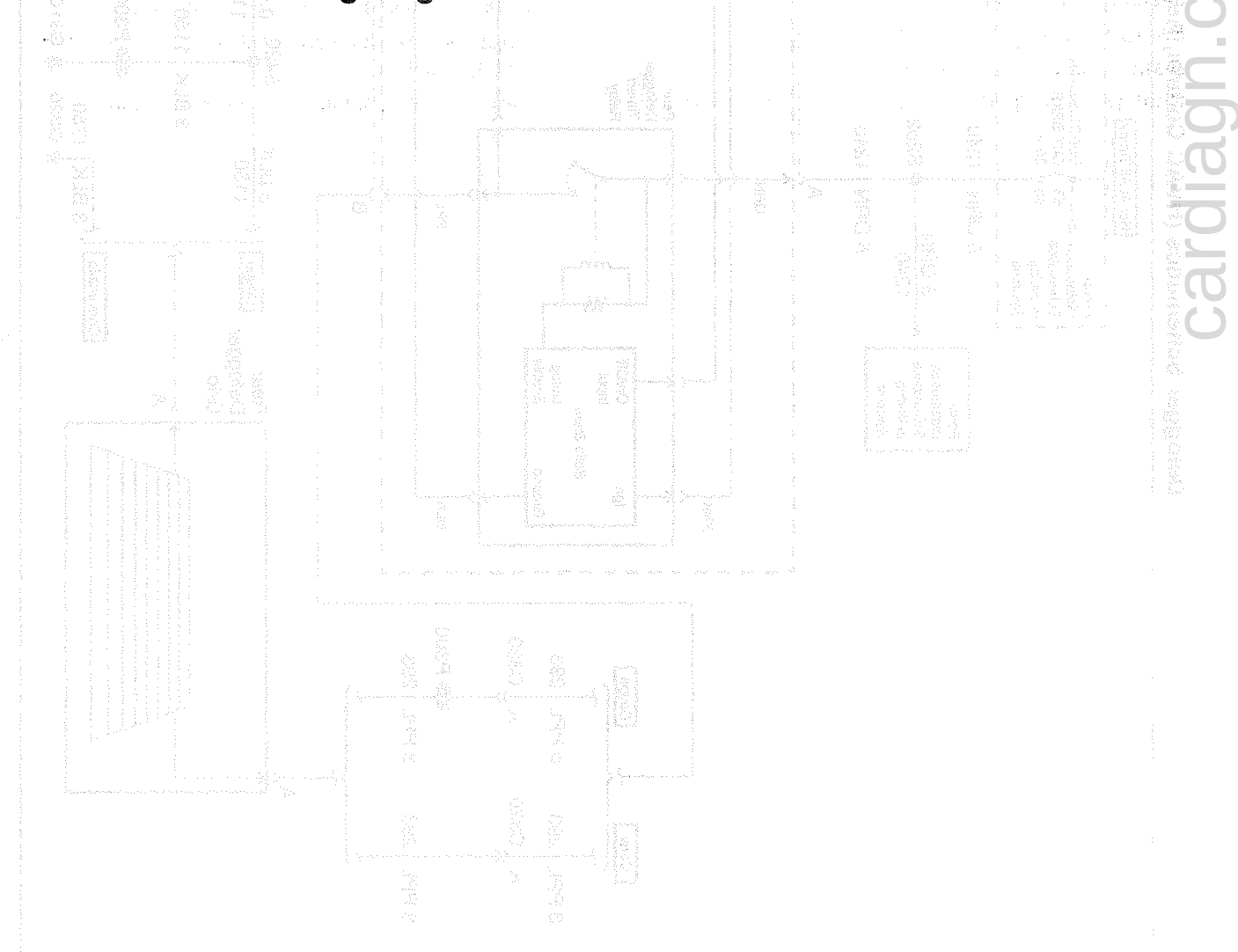
Fastener Tightening Specifications

Application	Specification	
	Metric	English
Garnish Molding Screw	1.7 N·m	15 lb in

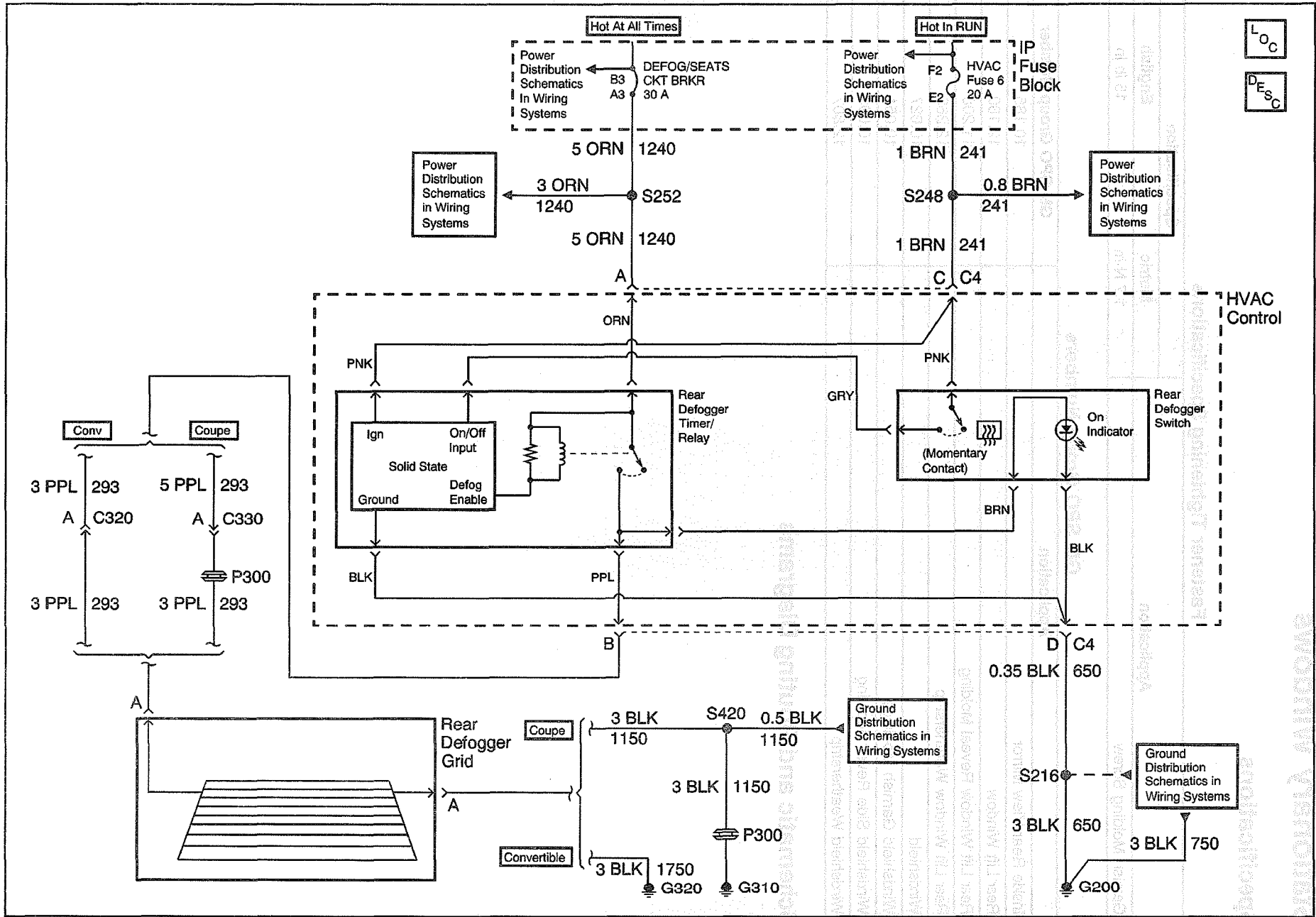
GM SPO Group Numbers

Application	GM SPO Group Number
Inside Rear View Mirror	10.185
Rear Lift Window	12.180
Rear Lift Window Reveal Molding	11.208
Rear Lift Window Weatherstrip	12.269
Windshield	10.027
Windshield Garnish Moldings	10.051
Windshield Side Reveal Molding	10.093
Windshield Weatherstrip	12.807

Schematic and Routing Diagrams



Defogger Schematics (HVAC Control, Rear Defogger Grid)



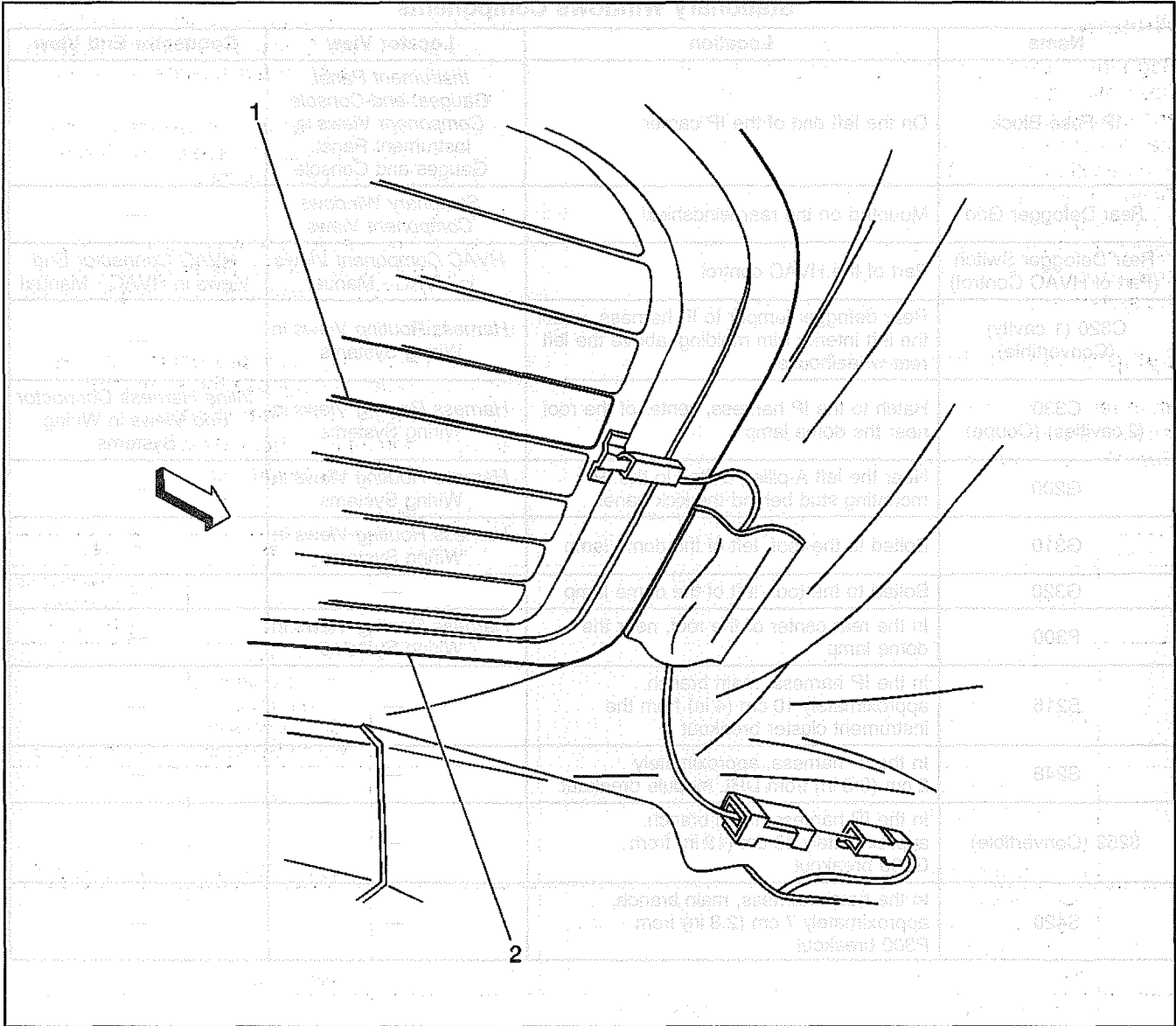
Component Locator

Stationary Windows Components

Name	Location	Locator View	Connector End View
IP Fuse Block	On the left end of the IP carrier	<i>Instrument Panel, Gauges, and Console Component Views in Instrument Panel, Gauges and Console</i>	—
Rear Defogger Grid	Mounted on the rear windshield	<i>Stationary Windows Component Views</i>	—
Rear Defogger Switch (Part of HVAC Control)	Part of the HVAC control	<i>HVAC Component Views in HVAC - Manual</i>	<i>HVAC Connector End Views in HVAC - Manual</i>
C320 (1 cavity) (Convertible)	Rear defogger jumper to IP harness, under the left interior trim molding, above the left rear wheelhouse	<i>Harness Routing Views in Wiring Systems</i>	—
C330 (2 cavities) (Coupe)	Hatch to the IP harness, center of the roof near the dome lamp	<i>Harness Routing Views in Wiring Systems</i>	<i>Inline Harness Connector End Views in Wiring Systems</i>
G200	Near the left A-pillar, bolted to the IP mounting stud behind the kick panel	<i>Harness Routing Views in Wiring Systems</i>	—
G310	Bolted to the roof, left of the dome lamp	<i>Harness Routing Views in Wiring Systems</i>	—
G320	Bolted to the roof, left of the dome lamp	—	—
P300	In the rear center of the roof, near the dome lamp	<i>Harness Routing Views in Wiring Systems</i>	—
S216	In the IP harness, main branch, approximately 10 cm (4 in) from the instrument cluster breakout	—	—
S248	In the IP harness, approximately 2 cm (0.8 in) from DRL module breakout	—	—
S252 (Convertible)	In the IP harness, main branch, approximately 48 cm (19 in) from G200 breakout	—	—
S420	In the hatch harness, main branch, approximately 7 cm (2.8 in) from P300 breakout	—	—

Stationary Windows Component Views

Inside Rear Convertible Top



Legend

(1) Rear Defogger Grid

(2) Folding Top Glass

374419

Diagnostic Information and Procedures

A Diagnostic Starting Point - Stationary Windows

Begin the system diagnosis by reviewing the system Description and Operation. Reviewing the Description and Operation information will help you determine the correct symptom diagnostic procedure when a malfunction exists. Reviewing the Description and Operation information will also help you determine if the condition described by the customer is normal operation. Refer to *Symptoms - Stationary Windows* in order to identify the correct procedure for diagnosing the system and where the procedure is located.

Symptoms - Stationary Windows

Important: Review the system operation in order to familiarize yourself with the system functions. Refer to *Rear Window Defogger Operation*.

Visual/Physical Inspection

- Inspect for aftermarket devices which could affect the operation of the Stationary Windows System. Refer to *Checking Aftermarket Accessories* in Wiring Systems.
- Inspect the easily accessible or visible system components for obvious damage or conditions which could cause the symptom.

Intermittent

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

Symptom List

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

- Defogger Always On - Rear Window
- Defogger Inoperative - Rear Window
- Defogger Grid Lines Diagnosis

Defogger Always On - Rear Window

Step	Action	Value(s)	Yes	No
1	Did you review the system operation and perform the necessary inspections?	—	Go to Step 2	Go to Symptoms - Stationary Windows
2	1. Turn the ignition to the OFF position. 2. Turn the rear defogger off. Does the rear defogger turn off?	—	Go to Testing for Intermittent and Poor Connections in Wiring Systems	Go to Step 3
3	1. Turn the ignition switch to the OFF position. 2. Disconnect the HVAC control connector C4. 3. Turn the ignition switch to the RUN position. Is the rear defogger still on?	—	Go to Step 4	Go to Step 5
4	Repair the short to battery voltage in the supply voltage circuit of the rear defogger grid. Refer to <i>Wiring Repairs</i> in Wiring Systems. Did you complete the repair?	—	Go to Step 6	—
5	Replace the HVAC control. Refer to <i>Control Assembly Replacement</i> in HVAC Systems - Manual. Did you complete the replacement?	—	Go to Step 6	—
6	Operate the system in order to verify the repair. Did you correct the condition?	—	System OK	Go to Step 3

Defogger Inoperative - Rear Window

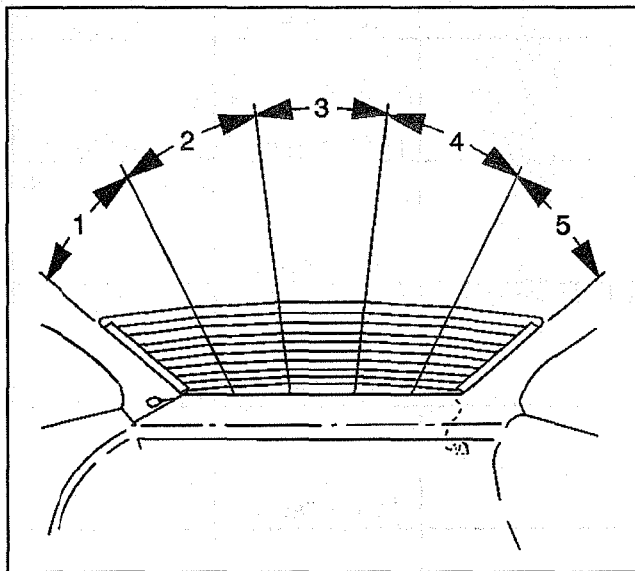
Step	Action	Value(s)	Yes	No
1	Did you review the system operation and perform the necessary inspections?	—	Go to Step 2	Go to Symptoms - Stationary Windows
2	1. Turn the ignition to the RUN position. 2. Turn the rear defogger switch on. 3. Observe the status of the defogger on indicator. Does the rear defogger turn on?	—	Go to Testing for Intermittent and Poor Connections in Wiring Systems	Go to Step 3
3	Are both the defogger indicator and the defogger grid inoperative?	—	Go to Step 4	Go to Step 5
4	1. Turn the ignition switch to the OFF position. 2. Connect a test lamp between the HVAC control connector C4 terminals A and D. Refer to <i>Circuit Testing</i> in Wiring Systems. Does the test lamp illuminate?	—	Go to Step 7	Go to Step 8
5	Is the defogger grid operative while the defogger indicator is inoperative?	—	Go to Step 18	Go to Step 6
6	1. Connect a test lamp between the HVAC control connector C4 terminal B and ground. Refer to <i>Circuit Testing</i> in Wiring Systems. 2. Press the rear defogger switch. Does the test lamp illuminate?	—	Go to Step 12	Go to Step 18
7	1. Connect a test lamp between the HVAC control connector C4 terminals C and D. Refer to <i>Circuit Testing</i> in Wiring Systems. 2. Turn the ignition switch to the RUN position. Does the test lamp illuminate?	—	Go to Step 17	Go to Step 11
8	Connect a test lamp between the HVAC control connector C4 terminal A and ground. Refer to <i>Circuit Testing</i> in Wiring Systems. Does the test lamp illuminate?	—	Go to Step 9	Go to Step 10
9	Repair a poor connection or an open in the ground circuit of the HVAC control. Refer to <i>Wiring Repairs</i> or <i>Connector Repairs</i> in Wiring Systems. Did you complete the repair?	—	Go to Step 19	—
10	Repair a poor connection or an open in the battery voltage circuit of the HVAC control. Refer to <i>Wiring Repairs</i> or <i>Connector Repairs</i> in Wiring Systems. Did you complete the repair?	—	Go to Step 19	—
11	Repair a poor connection or an open in the ignition 3 voltage circuit of the HVAC control. Refer to <i>Wiring Repairs</i> or <i>Connector Repairs</i> in Wiring Systems. Did you complete the repair?	—	Go to Step 19	—
12	Connect a test lamp between the supply voltage circuit of the rear defogger grid and the ground circuit of the rear defogger grid at the rear defogger grid connector. Refer to <i>Circuit Testing</i> in Wiring Systems. Does the test lamp illuminate?	—	Go to Step 13	Go to Step 14
13	Replace the rear defogger grid. Refer to <i>Rear Lift Window Replacement</i> . Did you complete the replacement?	—	Go to Step 19	—

Defogger Inoperative - Rear Window (cont'd)

Step	Action	Value(s)	Yes	No
14	Connect a test lamp between the supply voltage circuit of the rear defogger grid and ground. Refer to <i>Circuit Testing</i> in Wiring Systems. Does the test lamp illuminate?	—	Go to Step 16	Go to Step 15
15	Repair a poor connection or an open in the supply voltage circuit of the rear defogger grid. Refer to <i>Wiring Repairs</i> or <i>Connector Repairs</i> in Wiring Systems. Did you complete the repair?	—	Go to Step 19	—
16	Repair a poor connection or an open in the ground circuit of the rear defogger grid. Refer to <i>Wiring Repairs</i> or <i>Connector Repairs</i> in Wiring Systems. Did you complete the repair?	—	Go to Step 19	—
17	Inspect for and repair a short to ground or an open in the supply voltage circuit of the rear defogger grid. Refer to <i>Circuit Testing</i> and <i>Wiring Repairs</i> in Wiring Systems. Did you find and repair a short or an open?	—	Go to Step 19	Go to Step 18
18	Replace the HVAC control. Refer to <i>Control Assembly Replacement</i> in HVAC Systems - Manual. Did you complete the replacement?	—	Go to Step 19	—
19	Operate the system in order to verify the repair. Did you correct the condition?	—	System OK	Go to Step 3

Defogger Grid Lines Diagnosis

Test Procedure



71185

1. Start the engine.
2. Activate the rear window defogger system.
3. Ground one test lamp lead.

4. Contact the other test lamp lead to each of the grid lines at points 1 through 5 as shown in the figure.

Specification Normal Test Lamp Brilliance

- 4.1. No Bulb Brilliance (1)
- 4.2. 1/4 Bulb Brilliance (2)
- 4.3. 1/2 Bulb Brilliance (3)
- 4.4. 3/4 Bulb Brilliance (4)
- 4.5. Full Bulb Brilliance (5)

Important: The lamp brilliance will decrease proportionately to the increased resistance in the grid line as the probe is moved from the feed bus wire to the ground bus wire. Test all of the grid lines in at least two places in order to eliminate the possibility of bridging a break. The range of test lamp brilliance may vary from one window to another.

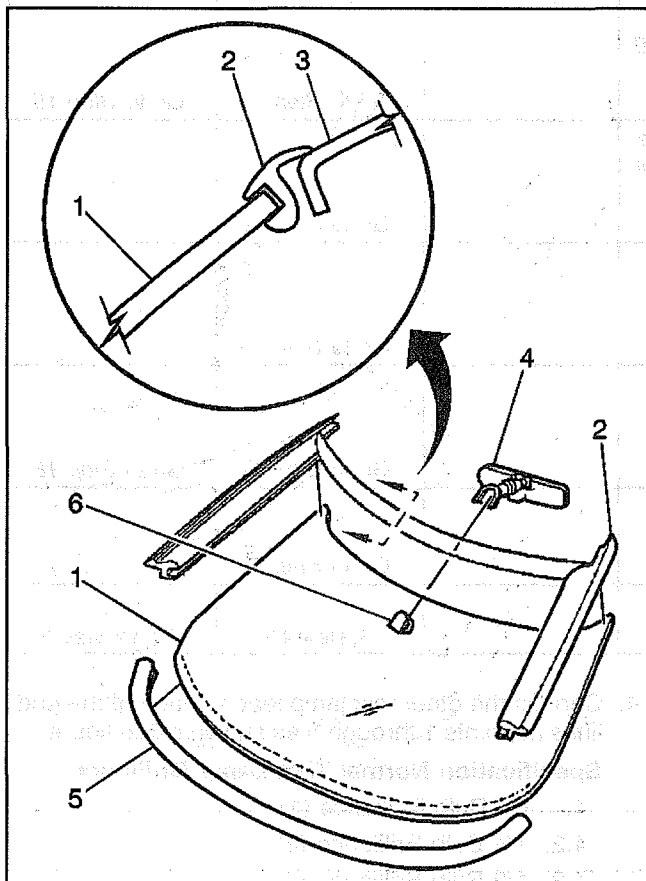
5. Compare the test lamp brilliance pattern with the normal test lamp brilliance in order to check for proper grid operation:
 - If the test lamp shows full brilliance at both ends of the grid lines, inspect for a loose ground wire contact to body ground.
 - If an abnormal lamp reading is apparent on a specific grid line, place the test lamp lead on that grid at the feed bus bar and move the lead toward the ground bus bar until the lamp goes out. This will indicate the location of the break.

Repair Instructions

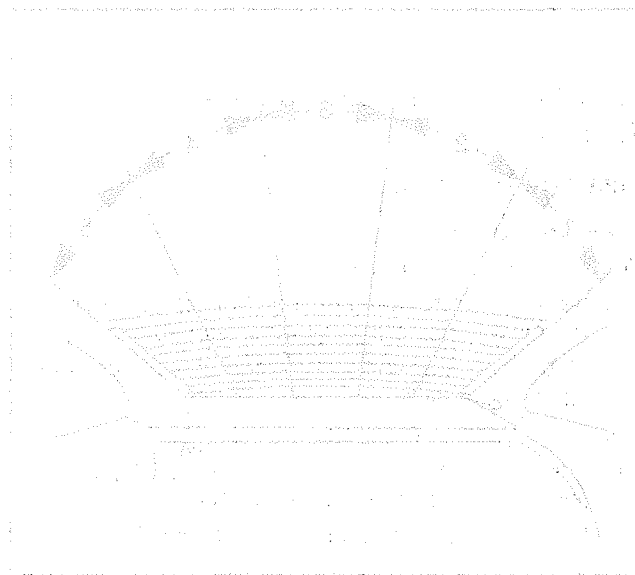
Windshield Reveal Molding Replacement

Removal Procedure

1. Use a screwdriver in order to carefully pry the end of the reveal molding (2) out approximately 76 mm (3 in) away from the body (3).
2. Use pliers in order to grasp the reveal molding (2). Slowly pull the reveal molding (2) away from the body (3).
3. Inspect the reveal molding (2).
4. If the original reveal molding (2) cannot be reused, discard the old reveal molding. Replace with a new reveal molding.
5. Pre-fit the new reveal molding. Determine and verify the location and correct size of the new reveal molding (2) on the body (3) before installation.
6. Use an alcohol-dampened cloth in order to clean the windshield (1) of all traces of urethane.

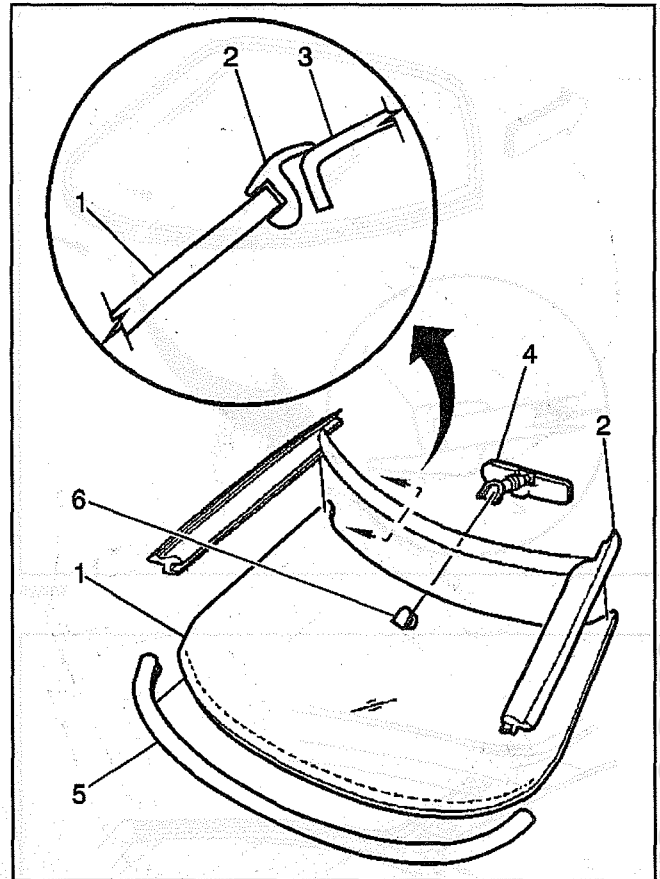


296235



Installation Procedure

1. Apply the glass preparation primer #1 (clear) from the urethane adhesive kit to the glass edge channel of the reveal molding (2).
2. Apply the glass primer #2 (black) from the urethane adhesive kit over the clear primer.
3. Evenly apply the urethane adhesive from the kit in the glass edge channel of the reveal molding (2) over the black primer.
4. Install the reveal molding (2).
5. Start from the center and hand press the reveal molding (2) in place over the edge of the windshield (1).
6. Apply tape in order to keep the reveal molding (2) flush with the body (3).
7. Flood the reveal molding (2) with warm water in order to accelerate the setup of the adhesive.

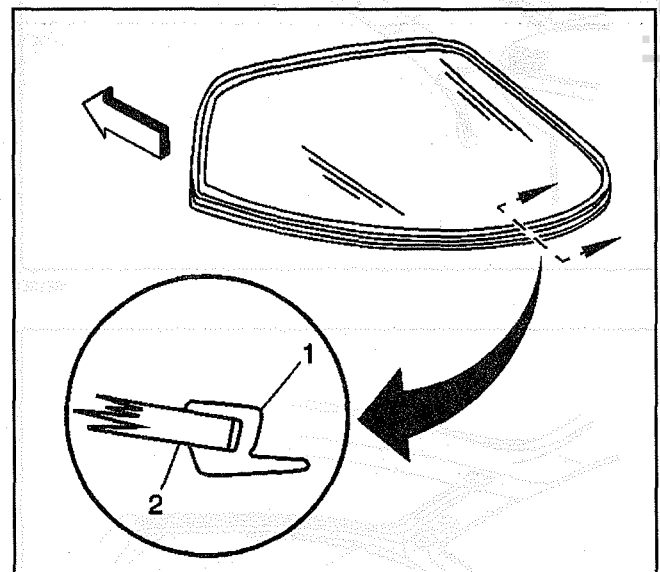


296235

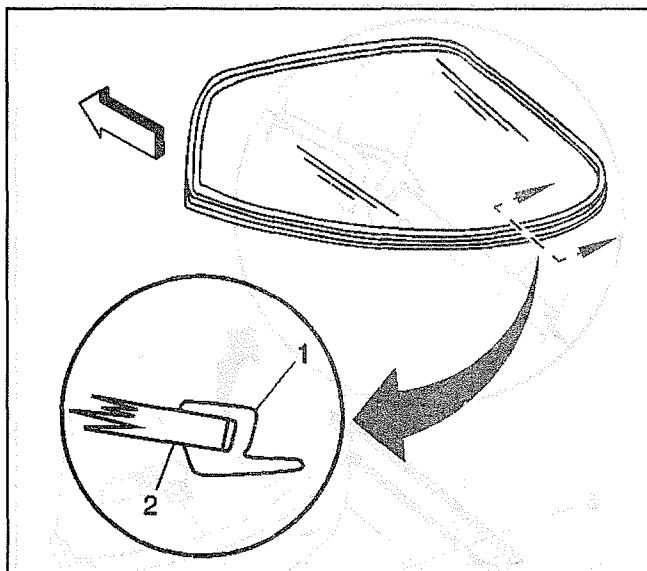
Rear Window Reveal Molding Replacement**Removal Procedure****Tools Required**

A utility knife or razor knife

1. Remove the reveal molding (1) from the rear window (2) using the following procedure:
2. Place the razor knife flat on the glass under the edge of the lace.
3. Cut the top of the molding.
4. Place the razor knife along the glass edge, pointing toward the bonding flange.
5. Cut the vertical portion of the molding.



379395



379395

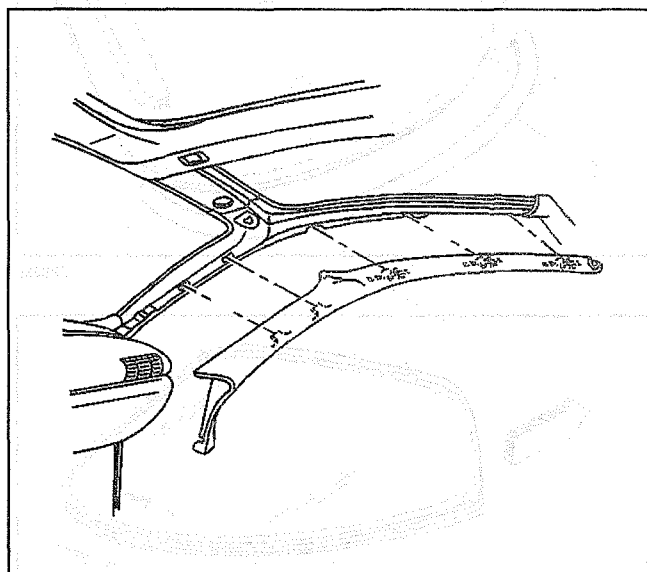
Installation Procedure

Tools Required

J 25070 Heat Gun

1. Install the reveal molding (1) to the rear window (2) using the following procedure:
2. Install the long portion of the molding (1) goes to the rear.
3. Install the wider portion of the molding (1) goes to the inside.

Once the molding is on the glass, apply heat to the molding to achieve a better fit.

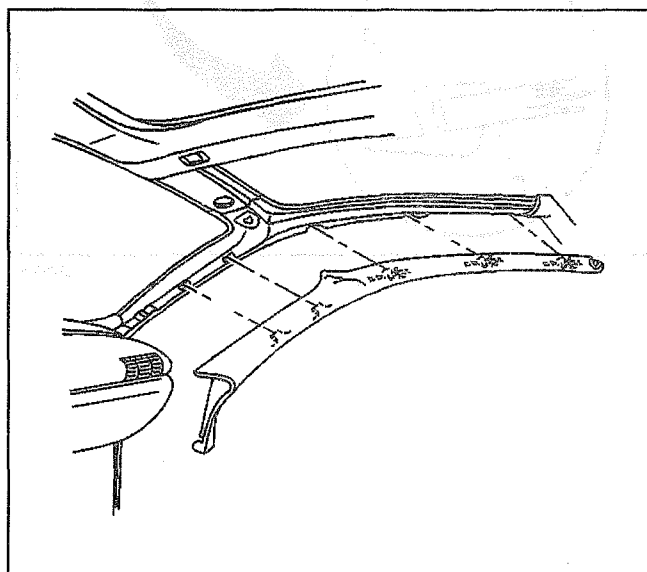


368138

Windshield Side Garnish Molding Replacement (W/O Lift Off Window Panels)

Removal Procedure

1. Open the vehicle door.
2. Remove the windshield upper garnish molding by pulling away from the inner side frame.



368138

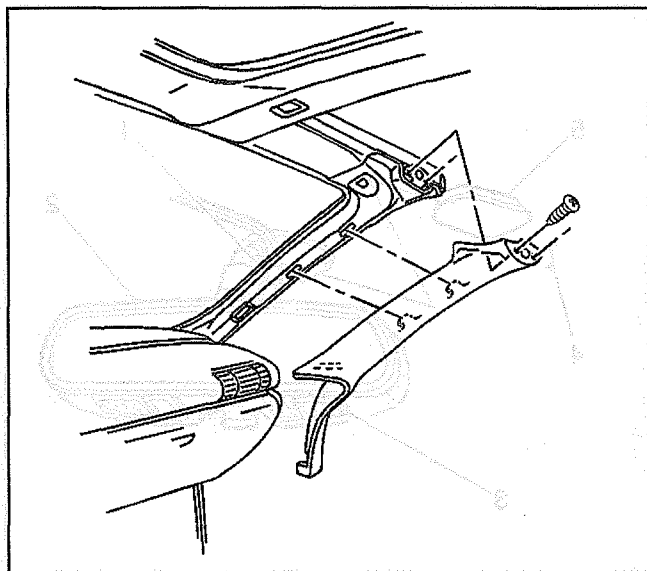
Installation Procedure

1. Install the windshield upper garnish molding.
 - Align tabs on garnish molding to holes in inner side frame and apply pressure to secure.
 - Align S-clips on garnish molding to door opening flange and apply pressure to secure.
2. Close the vehicle door.

Windshield Side Garnish Molding Replacement (W/ Lift Off Window Panels)

Removal Procedure

1. Open the vehicle door.
2. Remove the lift-off window panel.
3. Remove the garnish molding screws.
4. Remove the windshield upper garnish molding by pulling away from the inner side frame.



368139

Installation Procedure

1. Install the upper garnish molding.
 - Align the clips to the holes on the inner side frame and apply pressure to secure.
 - Align S-clips on upper garnish molding to door opening flange and apply pressure to secure.

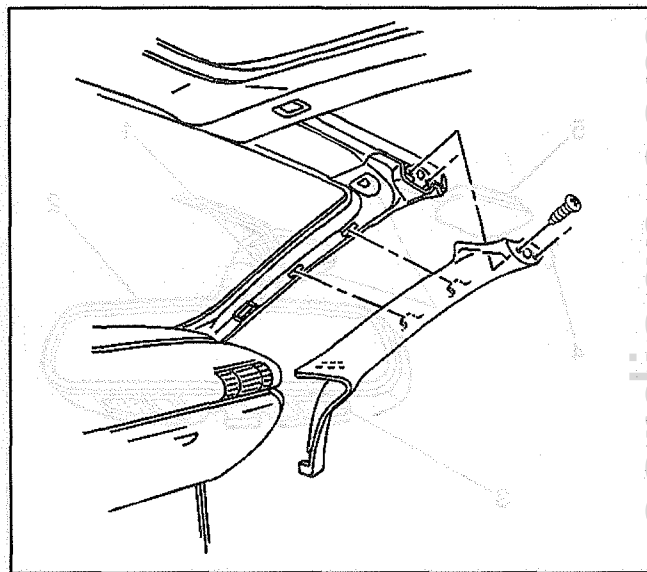
Notice: Refer to *Fastener Notice* in Cautions and Notices.

2. Install the garnish molding screws.

Tighten

Tighten the garnish molding screws to 1.7 N·m (15 lb in).

3. Install the lift-off window panel.
4. Close the vehicle door.



368139

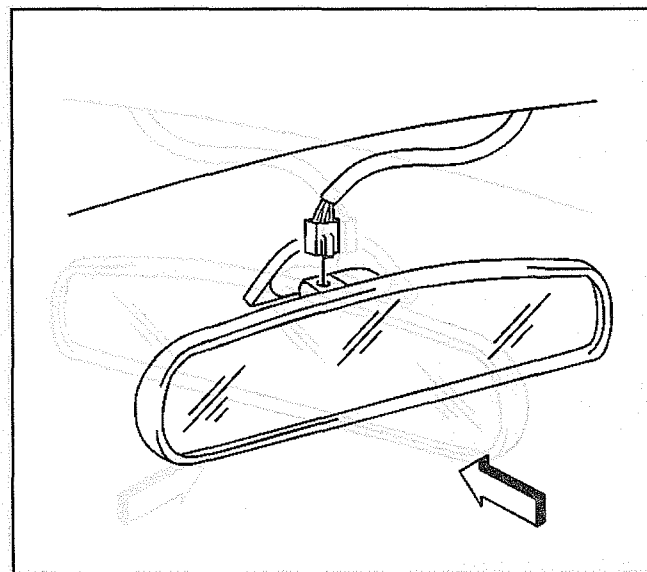
Rearview Mirror Replacement

Removal Procedure

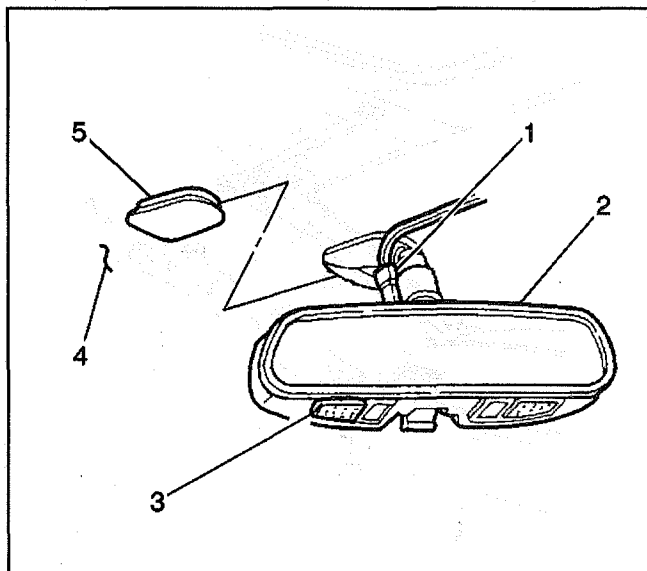
The inside rearview mirror is fastened to an inside rearview mirror support. The inside rearview mirror support is secured to the windshield.

The rearview mirror is a breakaway type mirror. Breakaway rearview mirrors are designed to detach from the windshield in the event of an inflatable restraint deployment. The mirror attaches to the support on the windshield, but break away in a different manner. Follow the appropriate procedure when servicing the rearview mirror.

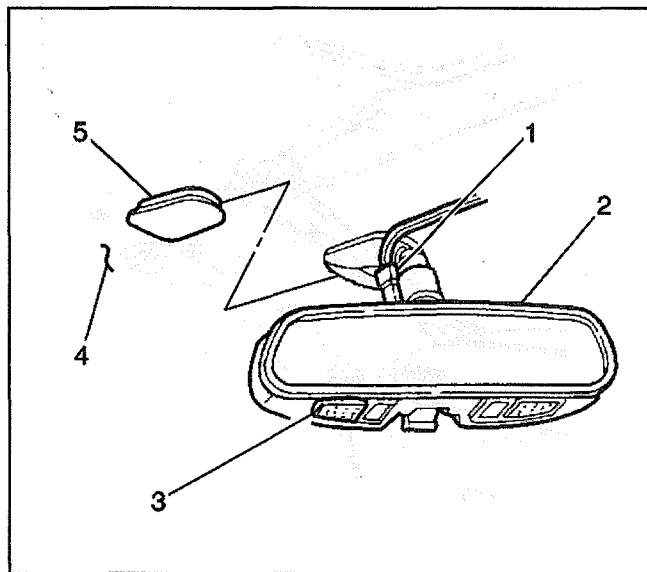
1. Disconnect the rearview mirror electrical connector.



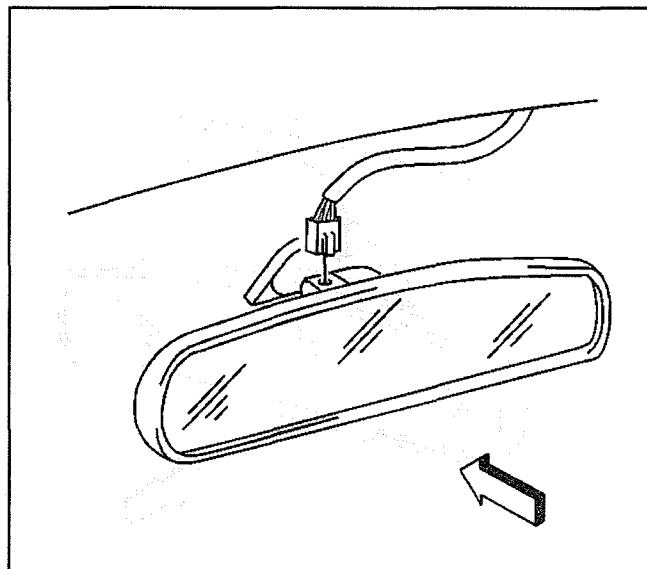
379402



296240



296240



379402

2. Remove the rearview mirror (2) from the rearview mirror support (5).

2.1. Use one hand in order to support one end of the rearview mirror (2) against the windshield (4).

2.2. Use the other hand in order to pull the rearview mirror (2) away from the mirror support (5).

Installation Procedure

1. Center the bottom of the rearview mirror (2) to the top of the mirror support (5).

2. Slide the rearview mirror (2) onto the mirror support (5). Keep the rearview mirror (2) parallel to the windshield (4).

3. Apply 90 N·m (20 lbs) of force in order to fully seat the rearview mirror (2) onto the mirror support (5).

An audible click will be heard when the rearview mirror (2) is fully seated.

4. Connect the rearview mirror electrical connector.

Rearview Mirror Support Replacement

Tools Required

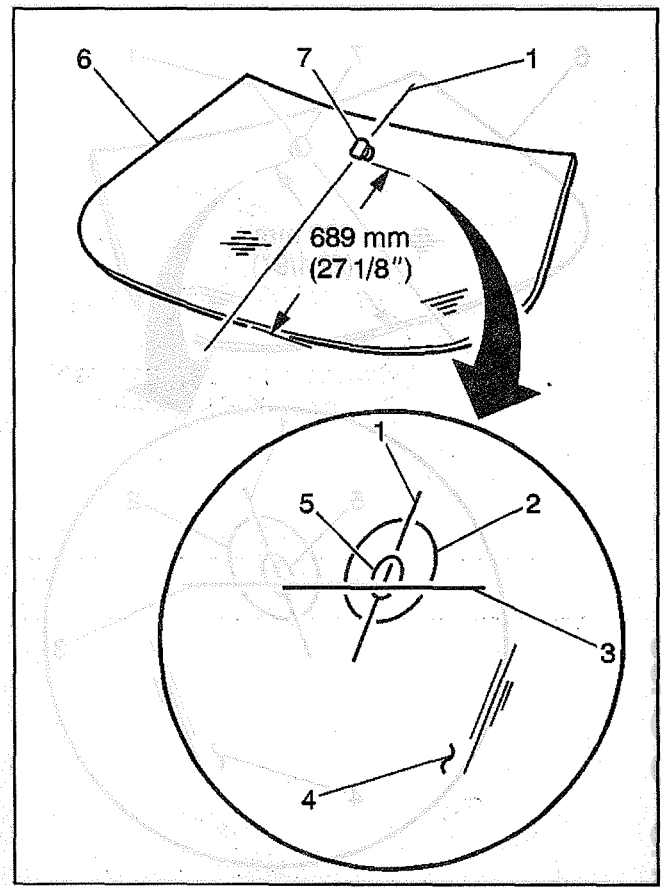
- GM P/N 1052369, Loctite 312 Adhesive kit, 2-component pack or the equivalent
- A mirror support (4)
- A wax marking pencil or crayon
- A window cleaning solution or window polishing compound
- Rubbing alcohol
- Clean paper towels
- Fine grit emery cloth or sandpaper, number 320 or number 360
- A clean toothpick

The rearview mirror support is installed by the window supplier, using a plastic-polyvinyl butyl adhesive.

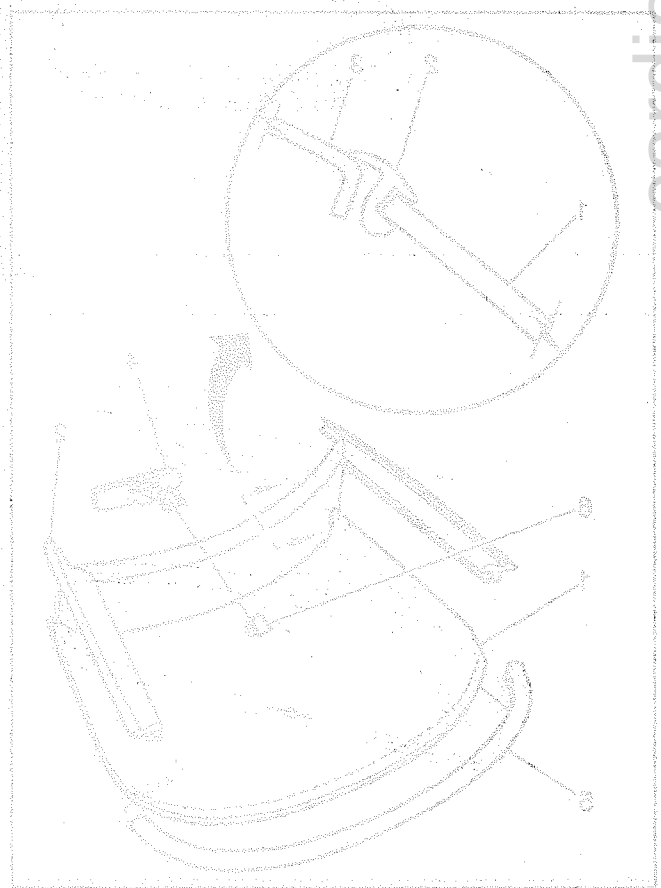
Service replacement windshields have the rearview mirror support bonded to the windshield.

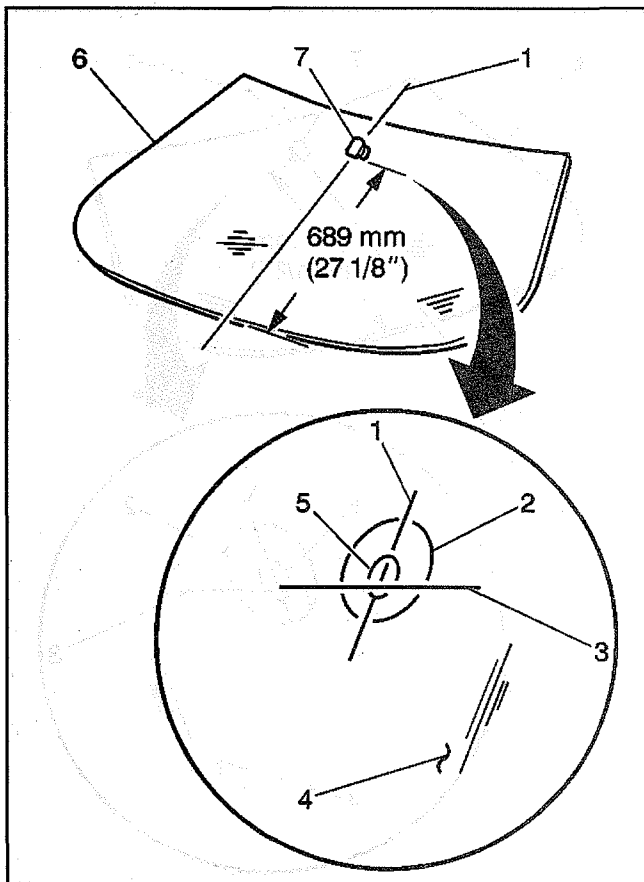
Notice: Do not use tools or other objects to pry the mirror mount or the mirror away from the windshield. Using tools may damage the mirror mount, the mirror or the windshield.

1. Measure the distance from the bottom of the windshield (6) in order to determine the location of the rearview mirror support (7).
2. Locate the rearview mirror support (7) at the center (5) of the windshield (6) 689 mm (27 1/8 in) from the base of the windshield (6) to the base of the rearview mirror support (7).
3. Use a wax pencil or crayon in order to mark the location on the outside of the windshield (6).
4. Make a larger diameter circle (2) around the marked location on the outside windshield (6) surface.
5. Clean the area of the large circle on the inside windshield (6) surface using a paper towel and one of the following items:
 - Window cleaning solution
 - Window polishing compound
6. Rub the area until the area is completely clean and dry.
7. When the area is dry, clean the area using an alcohol-saturated paper towel in order to remove any traces of cleaning solution or polishing compound.
8. Sand the bonding surface of the new or detached original rearview mirror support (7) using a piece of fine grit every cloth or sandpaper, number 320 or number 360.
9. If you are reusing the original mirror support (7), remove all traces of the old adhesive.
10. Wipe the sanded rearview mirror support (7) with a clean paper towel saturated with alcohol.
11. Allow the mirror support (7) to dry.

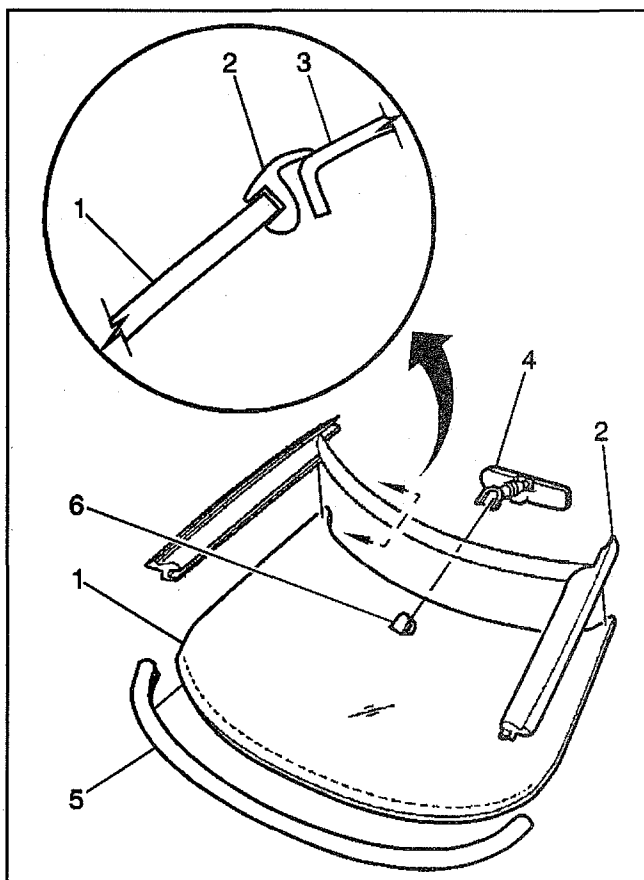


296241





296241



296235

Installation Procedure

1. Follow the directions on the adhesive kit GM P/N 1052369 or the equivalent in order to prepare the rearview mirror support (7) prior to installation on the windshield (6).
2. Lightly apply the adhesive accelerator to the bonding surfaces of the following components:
 - The rearview mirror support (7)
 - The windshield (6)
3. Allow the adhesive accelerator to dry completely.

Important: Due to the rapid bonding action of the adhesive, immediately perform the following steps:

4. Rub the area until the area is completely clean and dry.
5. When the area is dry, clean the area using an alcohol-saturated paper towel in order to remove any traces of cleaning solution or polishing compound.
6. Sand the bonding surface of the new or detached original rearview mirror support (7) using a piece of fine grit every cloth or sandpaper, number 320 or number 360.
7. If you are reusing the original mirror support (7), remove all traces of the old adhesive.
8. Wipe the sanded rearview mirror support (7) using a clean paper towel saturated with alcohol.
9. Allow the mirror support (7) to dry.

Windshield Replacement

Removal Procedure

Tools Required

- J 24402-A Glass Sealant Remover (Cold Knife)
- J 24709-01 Urethane Glass Sealant Remover (Hot Knife)
- J 39032 Stationary Glass Removal Tool
- Household cartridge-type caulking gun
- Glass Cleaner GM P/N 1050427, or equivalent
- Commercial type utility knife
- Rubber suction grips
- Scraper
- Plastic Paddle

Caution: Refer to *Window Removal Caution in Cautions and Notices*.

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

1. Remove the T-tops, if equipped.
2. Remove the wiper arms. Refer to *Wiper Arm Replacement* in Windshield Wiper/Washer Systems.
3. Remove the air inlet grille. Refer to *Air Inlet Grille Panel Replacement* in Body Front End.

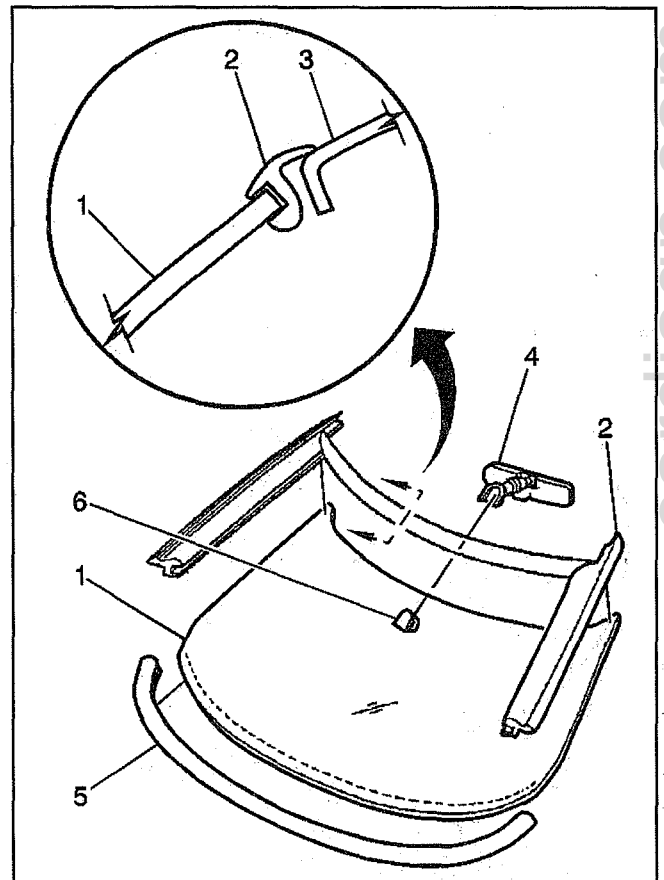
4. Remove the windshield reveal molding. Refer to *Windshield Reveal Molding Replacement*.
5. Place masking tape around the windshield opening in order to protect the painted surfaces and in order to aid in cleanup after the installation.
6. Use the J 24402-A or the equivalent to make a preliminary cut into the urethane adhesive around the perimeter of the windshield (1) except for the lower corners. Stay as close to the edge of the windshield as possible.
7. Remove the I/P upper trim pad. Refer to *Lock Cylinder Replacement - IP Compartment Door*.
8. Cover the defroster outlets.
9. Remove the inside rearview mirror. Refer to *Rearview Mirror Replacement*.
10. Use the *Installing the Case Bushing* or the equivalent cut around the perimeter of the windshield from inside the vehicle.
11. Remove the windshield (1).

Installation Procedure

Tools Required

- A solvent for cleaning the edge of the window. Use GM Glass Cleaner P/N 1050427 or isopropyl alcohol
- A household cartridge type caulking gun
- A commercial type razor knife in order to cut around the edge of the window
- Rubber suction grips

1. Install the I/P upper trim pad. Refer to *Lock Cylinder Replacement - IP Compartment Door*.
2. With the aid of an assistant, dry fit the windshield (1) in the opening to determine the correct position. Use the following procedure:
 - 2.1. Position the windshield (1) in the opening.
 - 2.2. Use masking tape in order to mark the location of the windshield (1) in the opening.
 - 2.3. Slit the masking tape at the window edge.
 - 2.4. Remove the windshield (1) from the opening.
 - 2.5. Place the windshield (1) inside up on a clean protected surface.

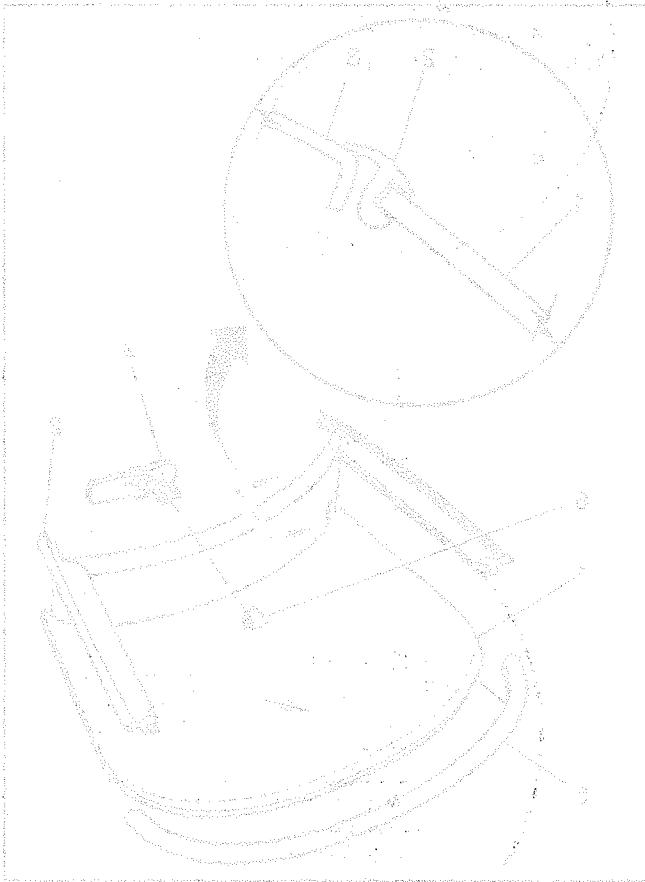


3. Clean the surface around the inside edge of the windshield (1) where the urethane adhesive will be applied. Use a dampened cloth with either isopropyl alcohol or GM Window Cleaner P/N 1050427 or the equivalent.

Caution: When replacing stationary windows, Urethane Adhesive Kit GM P/N 12346392, or a urethane adhesive system meeting GM Specification GM3651M, must be used 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.

Caution: Failure to prep 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.

4. If you are using the extended method of installation, perform the following:
 - Shake the pinchweld primer #3 (black) well.
 - Apply the primer to any exposed painted surfaces (or scratches to bare metal) on the pinchweld flange.
 - Allow the primer to dry 10 minutes.
5. If you are using the short method, DO NOT prime the existing bead of urethane adhesive on the body.
6. Refinish the pinchweld flange in order to present a Primer Only surface if the following conditions exist:
 - Corrosion of the pinchweld flange is present
 - Sheet metal repairs or replacements are required
 - If paint repairs are required, mask the flange bonding area first
 - Appropriate materials for these primer applications are typically two component, catalyzed products such as BASF DE17, DUPONT2610, PPG DP90 or equivalent applied by following the manufacturers directions for mix, application and dry times.
 - After repairing the opening as indicated, perform the following:
 - Shake the pinchweld primer #3 (black) well.
 - Apply the pinchweld primer to the primed surface of the flange in the bonding area.
 - Allow to dry 10 minutes.
7. If reusing the original windshield (1), remove any existing urethane adhesive from the windshield (1) edge and surface. Use a razor knife or the equivalent.
8. If you are using the original reveal molding (2) or production type reveal molding, install the molding (2) along the edge of the window.



9. Install a new sealing strip weatherstrip (5) on the windshield (1), as needed.
10. If you are using the extended method, use the following procedure:
 - Apply a dam material approximately 12 to 18 mm (0.47 to 0.71 in) from the outer edge of the window and around the perimeter of the window to control urethane squeeze out.
 - For dam material, use Norton Windshield Dam Replacement.

Important: Do not allow the window preparation #1 (clear) to drip or spill onto the vision area of the windshield (1). The primer dries instantly and may stain the viewing area if not applied evenly.

11. Use a new dauber to apply the glass preparation #1 (clear) approximately 10 to 16 mm (0.39 to 0.63 in) around the entire perimeter of the inner surface. Also apply the glass preparation to any exposed edge of the window (2).

Wipe dry the area using a clean cloth.

12. Shake the window primer #2 (black) well. Use a new dauber to apply the primer over the glass preparation #1 (clear) that was applied in the previous step.

13. Allow the primer to dry for 6 to 10 minutes.

Important: Do not apply the clear primer over the black primer. Do not touch the primer coated surface.

14. If you are using the short method, cut the tip of the applicator nozzle to provide a bead of urethane adhesive 4.5 mm (0.18 in) in diameter.

15. If you are using the extended method, cut the applicator nozzle to provide a bead of urethane adhesive 7–8.5 mm (0.28 to 0.33 in) wide by 14–15.5 mm (0.55 to 0.61 in) high.

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

Use either of the 2 following procedures:

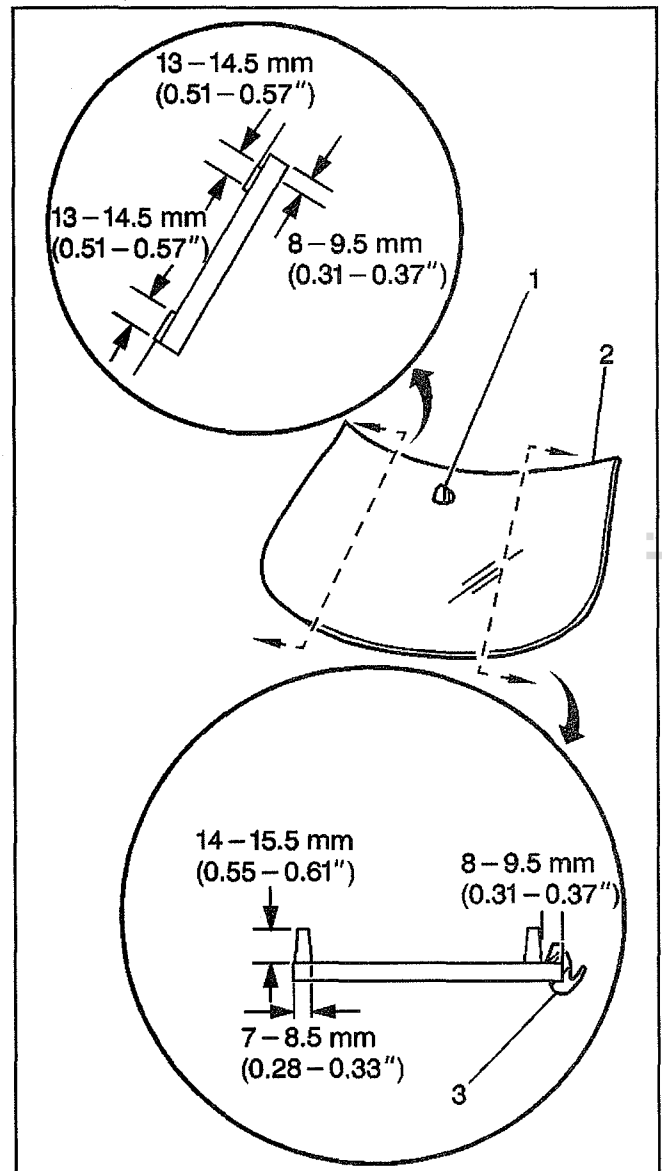
- For the short method, apply urethane adhesive to the existing bead of urethane adhesive on the body.
- For the extended method, use the edge of the windshield (2) or the inside edge of the reveal molding (3) as a guide for the nozzle.

Apply the urethane adhesive to the inner surface of the windshield (2).

- Use rubber suction cups to install the windshield (2).

Use as assistant to help with the installation.

17. Align the windshield (2) with the previously installed masking tape.
18. Firmly press the windshield (2) into place.



19. Tape the windshield (2) to the body in order to minimize movement and in order to clean up any urethane squeeze out.

Important: Do not direct a hard stream of high pressure water at the fresh adhesive.

20. Immediately watertest the window.
21. Use a soft spray of warm or hot water in order to accelerate the cure of the adhesive.

Refer to *Water Hose Test* for the water test procedures.

22. If leaks are found, use a plastic paddle in order to apply extra urethane adhesive at the leak point.
23. Remove the protective tape and coverings.

Caution: At least 24 hours are required for complete curing of repair material. The repair area should not be physically disturbed until after that time. Insufficient curing of urethane adhesive may allow unrestrained occupants to be ejected from the vehicle resulting in personal injury.

24. Allow the vehicle to remain at room temperature, 22°C (72°F) and 30 percent relative humidity for a minimum of 6 hours.

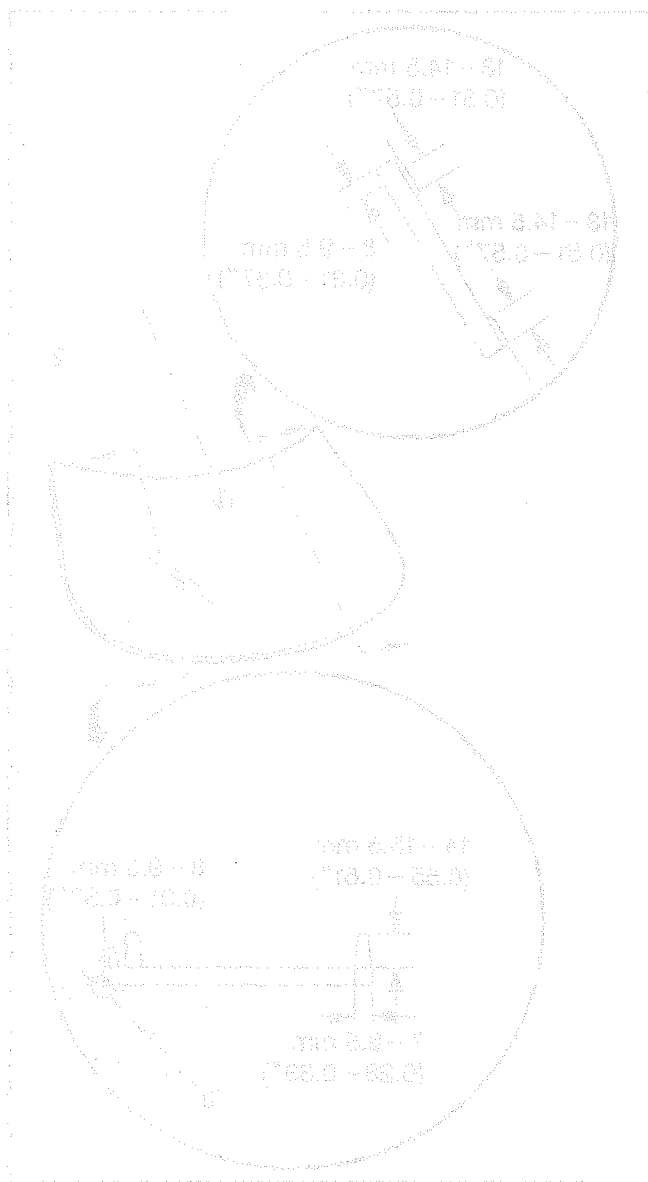
25. Partially lower a door window in order to prevent pressure build up when closing the doors before the urethane adhesive cures.

Do not drive the vehicle until the urethane adhesive is cured.

Do not drive the vehicle for a minimum of 6 hours.

Do not use compressed air in order to dry the urethane adhesive.

26. Install the T-tops, if equipped.
27. Install the air inlet grille. Refer to *Air Inlet Grille Panel Replacement* in Body Front End.
28. Install the wiper arms. Refer to Windshield Wiper/Washer Systems.
29. Remove the windshield reveal molding. Refer to *Windshield Reveal Molding Replacement*.
30. Install the inside rearview mirror. Refer to *Rearview Mirror Replacement*.



Rear Lift Window Replacement

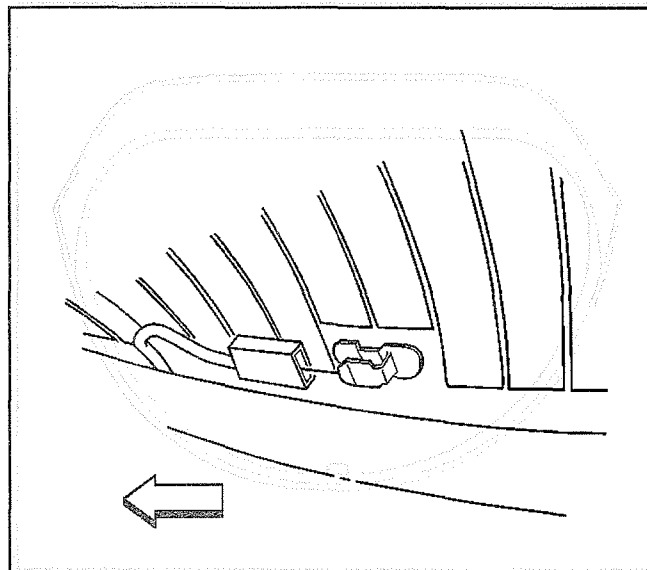
Removal Procedure

Tools Required

- J 24402-A Glass Sealant Remover (Cold Knife)
- J 39032 Stationary Glass Removal Tool

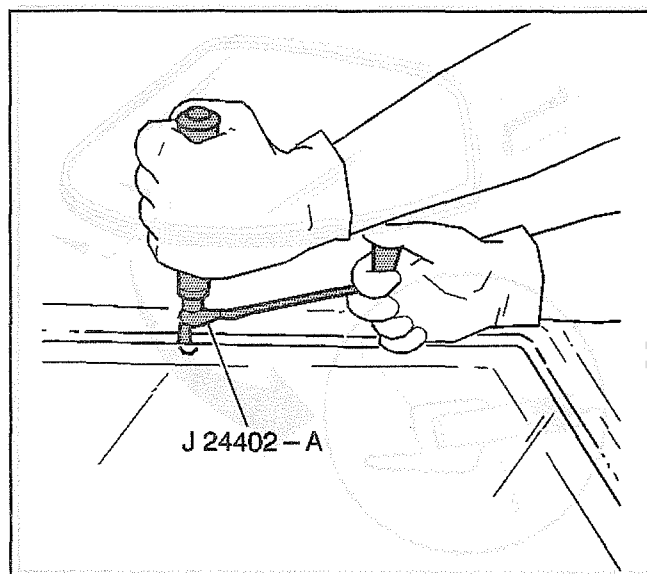
Caution: Refer to **Window Removal Caution in Cautions and Notices.**

1. Remove the rear window reveal molding. Refer to *Rear Window Reveal Molding Replacement.*
2. Remove the rear compartment lift window inner panel.
3. Disconnect the rear window defogger connectors on both sides of the window, if equipped.
4. Mask area around window to protect the painted surfaces and to aid in clean up.
Tape must not touch window sealant surface.



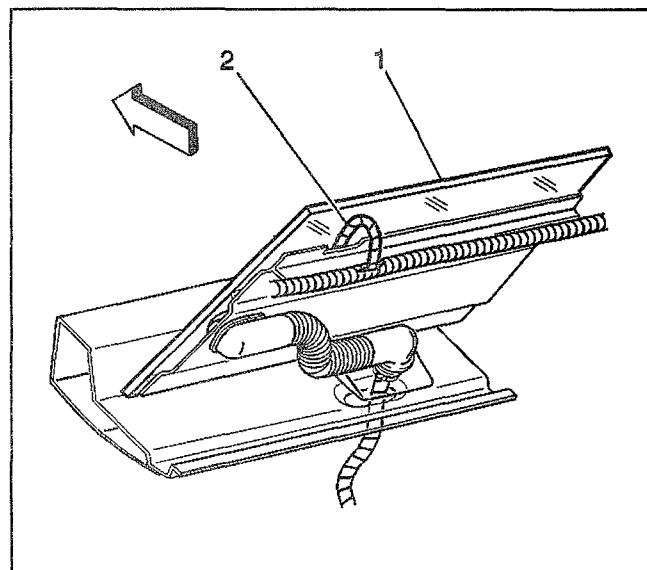
379401

5. Using the J 24402-A or equivalent, cut the primary inner urethane bead from the rear window.
6. Using the J 39032 or equivalent, cut the secondary rear inner urethane bead from the rear window.

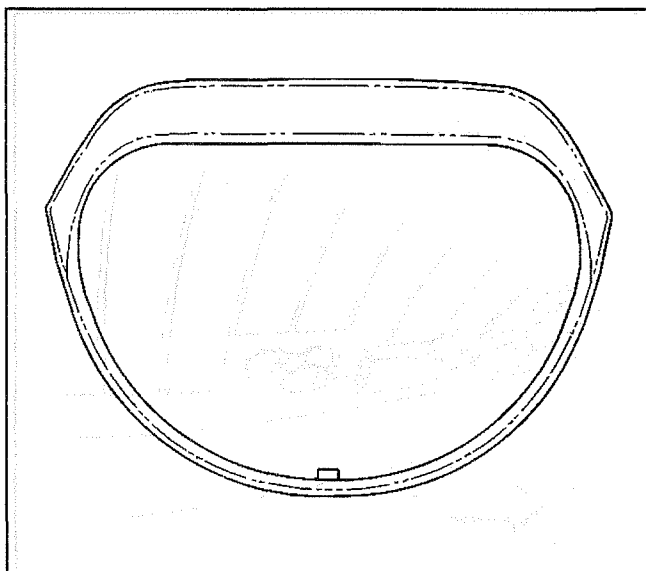


71179

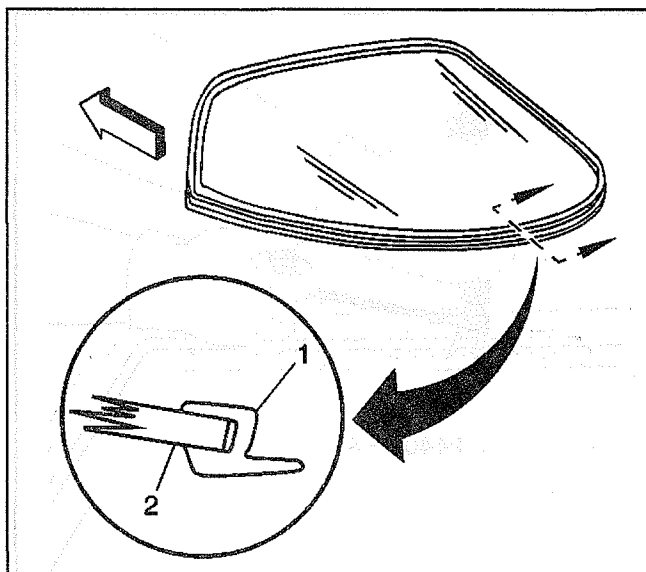
7. When cutting the secondary rear inner urethane bead DO NOT cut through the wiring harness (2) in the urethane.



379404



71184



379395

Caution: Refer to Window Removal Caution in Cautions and Notices.

Caution: If a window is cracked but still intact, it should be crisscrossed with masking tape in order to reduce the risk of damage or personal injury.

8. Remove the window.
9. Clean any loose material from the window.
10. Remove any old urethane from a reusable rear window.
11. Vacuum the vehicle interior to remove any traces of shattered glass or pieces of urethane.

Installation Procedure

Tools Required

- GM P/N 123456284 Urethane Adhesive Kit, or equivalent
- GM Glass Cleaner P/N 1050427 or isopropyl alcohol
- Household cartridge type caulking gun
- Commercial type razor knife
- Rubber suction cups

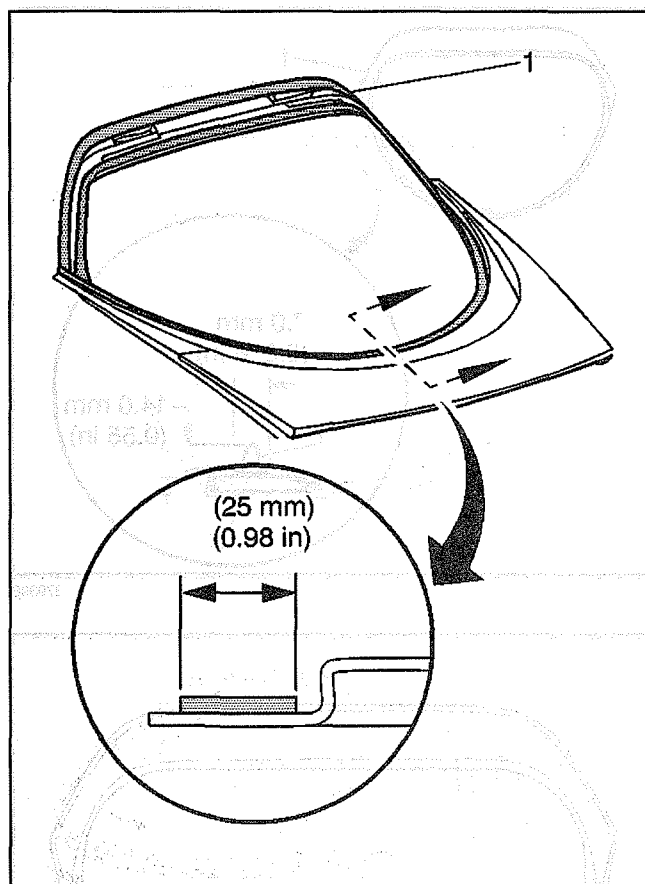
1. Install the window reveal molding (1) to the window (2).
2. With suction cups and the aid of a helper, dry fit the window to the window panel.
3. Clean the window surface to which the urethane is to be applied with an alcohol dampened cloth. Allow the alcohol surface to air dry.

Caution: Failure to prep 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.

4. Apply the pinchweld primer #3 (1) to any exposed painted surfaces on the lift window panel.

Primer Bead Specification

Primer bead 25 mm (0.98 in).



386519

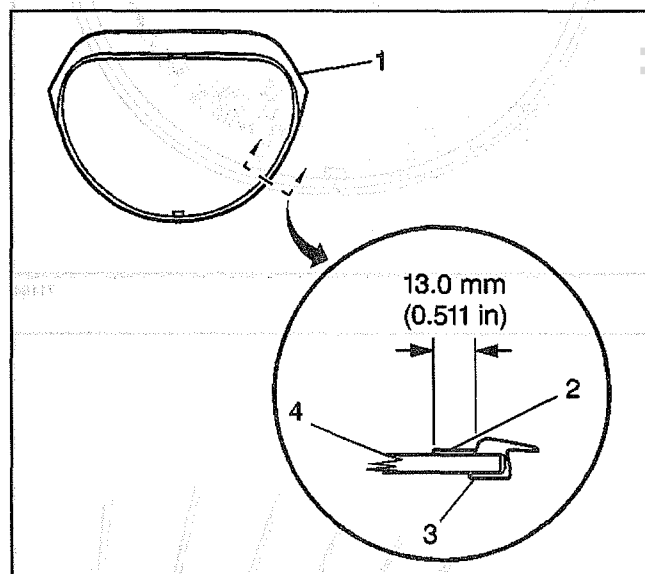
Caution: When replacing stationary windows, Urethane Adhesive Kit GM P/N 12346392, or a urethane adhesive system meeting GM Specification GM3651M, must be used to maintain original installation integrity. Failure to use the urethane adhesive kit will result in poor retention of the window which may allow unrestrained occupants to be ejected from the vehicle resulting in personal injury.

5. Apply Clear Glass Prep #1 (2) with a clean dauber to the surface of the window (4) that will contact the urethane area of the panel. Wipe the window dry with a clean lint free cloth.
6. Apply Black Glass Primer #2 with a clean dauber to the surface of the window that will contact the urethane and allow the primer to air dry for 6 to 10 minutes.

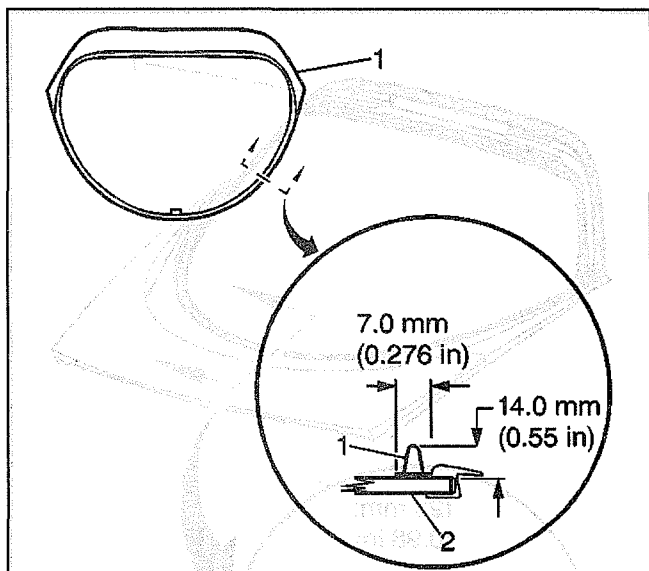
Primer Bead Specification

Primer bead 13 mm (0.512 in).

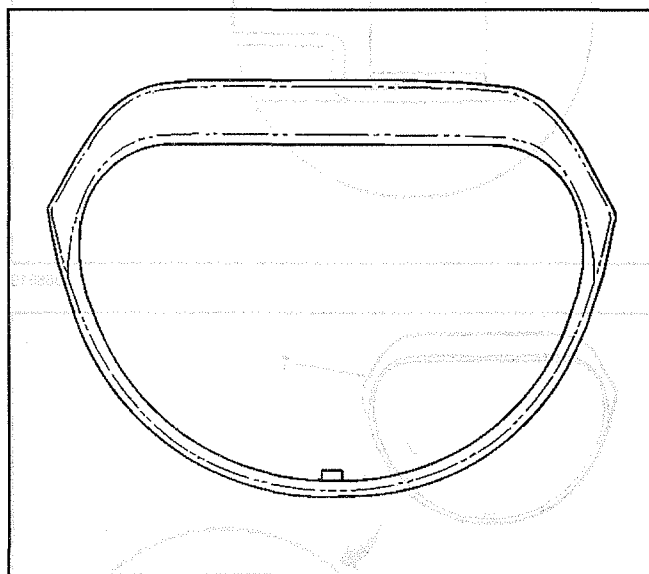
Urethane will not bond to the window unless Black Primer #2 has been applied to the window.



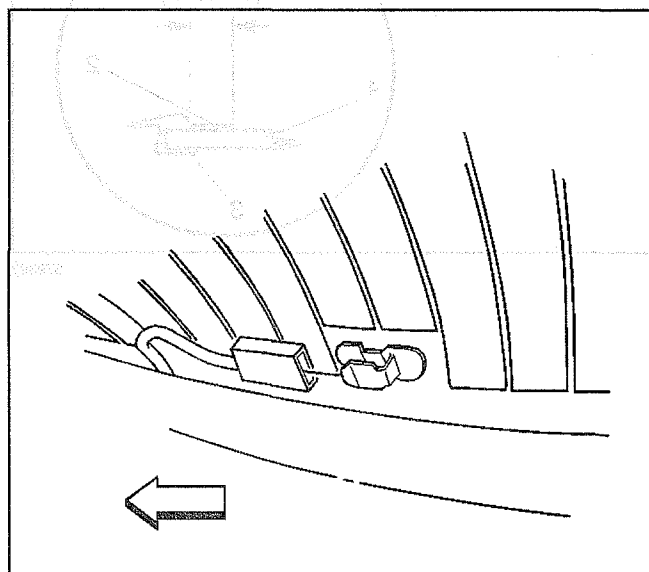
379397



379398



71184



379401

Important: Do not apply Black Primer to the existing urethane on the lift window panel.

7. With a cartridge-type caulking gun and nozzles provided, apply smooth continuous bead of urethane adhesive around the lift window panel.

Adhesive Specification

- Urethane adhesive bead 7 mm (0.276 in) wide.
- Urethane adhesive bead 14 mm (0.55 in) high.

8. Install the window to the lift window panel with the aid of a helper.

Use suction cups to position the window.

9. Press the window down firmly to wet-out and set the adhesive.

Important: Allow the vehicle to remain at room temperature for 4 to 6 hours prior to installing the remaining components.

10. Avoid squeezing out excess adhesive that would cause an appearance problem.

11. Connect the rear window defogger connectors on both sides of the window, if equipped.
12. Install the rear compartment lift window inner panel.

Window Polishing

Minor Scratch and Abrasion Removal

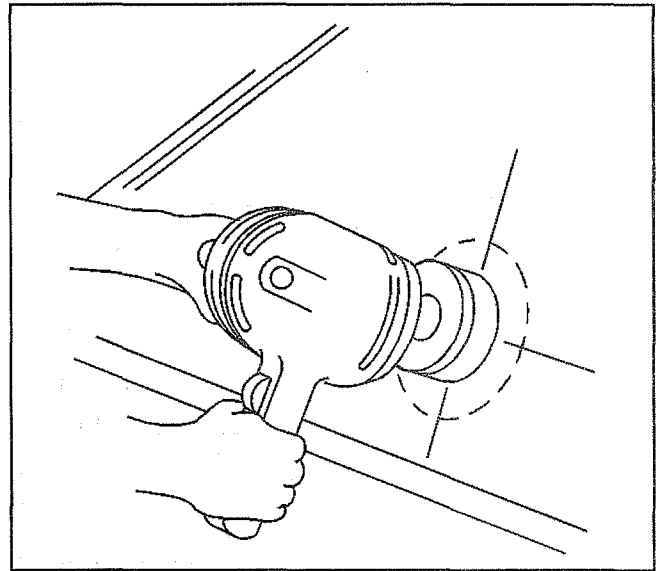
1. Remove or reduce minor scratches and abrasions by following the polishing procedure.
2. Take precautions in order to prevent distortions of vision.
3. Double vision may result if an attempt is made to remove deep scratches. Do not remove deep scratches from an area in the driver's line of vision. Replace the glass.
4. The following procedure was developed using a cerium oxide compound. Following the manufacturer's directions when any other materials are used.

Recommended Equipment

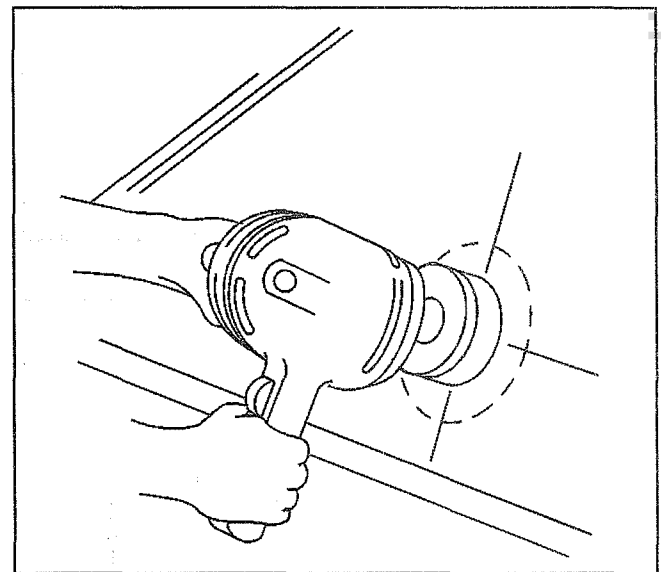
- A low speed (600-130 RPM) rotary polisher.
- A wool felt, rotary polishing pad 76 mm (3 in) in diameter and 51 mm (2 in) thick.
- Powered cerium oxide mixed with water. This is the abrasive compound.

Polishing Procedure

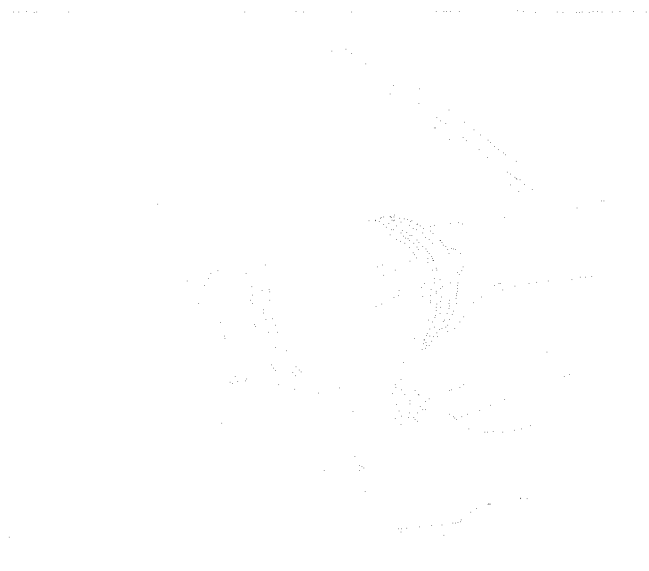
1. Mix at least 44 ml (1.5 oz) of the cerium oxide compound with enough water to obtain a creamy consistency.
 - If the mixture is too thick it will cake on the felt pad more quickly.
 - If the mixture is too runny, more polishing time will be required.
2. Draw a circle around the scratches on the opposite side of the glass with marking crayon or equivalent.
3. Draw a line directly behind the scratches in order to serve as a guide for locating the scratch while polishing.
4. Cover the surrounding area with masking paper in order to catch the drippings or splattered polish.



264840



264840



5. Dip the felt pad attached to the polisher into the mixture.

- Do not submerge the pad.
- Do not allow the pad to stay in the mixture as it may loosen the bond between the pad and the metal plate.

Notice: Never hold the tool in one spot or operate the tool on the window any longer than 30 to 45 seconds. If the window becomes hot to touch, let it air cool before proceeding further. Cooling with cold water may crack heated window. Avoid excessive pressure. It may cause overheating of the window.

6. Polish the scratched area. When polishing the scratched area, note the following items:

- Agitate the mixture as often as needed in order to maintain the creamy consistency of the cerium oxide compound.
- Use moderate but steady pressure when applying the polish.
- Hold the pad flat against the glass.
- Use a feathering-out motion.
- Dip the felt pad into the cerium oxide mixture every 15 seconds in order to ensure that the wheel and the glass are always wet during the polishing operation. A dry pad causes excessive heat to develop.
- Keep the pad free of dirt and other foreign substances.

Window Cleaning

Clean the windows on a regular basis. Use GM Glass Cleaner P/N 1050427 or equivalent to remove normal tobacco smoke and dust films. A non-abrasive cleaner may be used on the outside of the windshield. Use the following procedure in order to clean the wiper blades:

1. Clean the wiper blades with a cloth soaked in a solution of water and GM Optikleen or equivalent. A solution of water and methanol may also be used.
2. Rinse the wiper blade with water.

Rear Window Defogger Braided Lead Wire

Installation Procedure

1. Obtain a solder containing 3 percent silver and a rosin flux paste.
2. Remove the rear window defogger fuse.
3. Protect the interior of the vehicle from the repair material.
4. Buff the repair area with a fine steel wool in order to remove any oxide coating formed during window manufacturing.
5. Apply a paste-type rosin flux in small quantities to the wire lead and bus bar repair area using a brush.

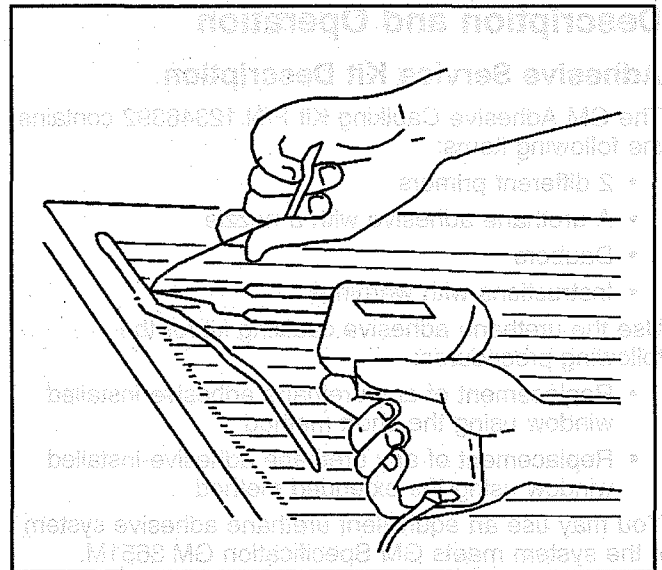
Important: Use only enough heat to melt the solder. Use only enough solder to ensure a complete repair. Hold the iron tip in contact with the bus bar as short a time as possible.

6. Tin the bus bar and the braided wire:
 - 6.1. Coat the soldering iron with the solder.
 - 6.2. Draw the soldering iron tip across the fluxed area.
 - 6.3. Thinly coat the bus bar and the braided wire with solder.
7. Solder the braided wire to the bus bar:
 - Do not overheat the wire.
 - Apply heat to the top of the lead wire braid.
 - Hold the wire lead and the bus bar until the solder has solidified.
 - Wipe away excess flux with a solvent.
8. Replace the rear window defogger fuse.

Bus Bar Lead Terminal Repair

You may reattach a rear defogger bus bar lead wire or a terminal by soldering. Use a solder containing the following items:

- 3 percent silver
 - A rosin flux paste
1. Before soldering the bus bar, buff the repair area using a fine steel wool. This removes the oxide coating formed during the window manufacture.
 2. Coat the soldering iron tip with solder before you begin soldering. Use only enough heat in order to complete the following operations:
 - Melt the solder
 - Ensure a complete repair
 3. Use a brush in order to apply the paste-type flux in small quantities to the wire lead and bus bar repair area.
 4. Do not overheat the wire when soldering the wire to the bus bar.



71189

Description and Operation

Adhesive Service Kit Description

The GM Adhesive Caulking Kit P/N 12346392 contains the following items:

- 2 different primers
- A urethane adhesive with a nozzle
- Daubers
- Instructions with warnings

Use the urethane adhesive caulking kit for the following procedures:

- Replacement of any urethane adhesive-installed window using the short method
- Replacement of any urethane adhesive-installed window using the extended method

You may use an equivalent urethane adhesive system if the system meets GM Specification GM 3651M. Always follow the system manufacturer's instructions for application, handling, and curing.

Short Method Description

Use the short method where the original urethane adhesive bead left on the window opening pinchweld flange (after window removal) can serve as a base for the new window. This method uses a small bead of urethane adhesive in order to adhere the window in the opening to the original urethane adhesive bead.

Use the short method when the original bead of urethane adhesive meets one of the following conditions:

- Intact, without portions of the bead missing
- Solidly adhered to the pinchweld flange with no corrosion present on the flange
- Uniform in shape. Smooth, without multiple cuts or loose material present

Also use the short method under the following conditions:

- When repainting of the opening or collision repair/sheet metal replacement is not required.
- When urethane adhesive deterioration is not evident (no powdery residue).

Extended Method Description

Use the extended method when the original urethane adhesive bead left on the window opening pinchweld flange (after window removal) cannot serve as a base for the new window, or in any case where the use of the short method is in doubt.

This method includes the following cases:

- The replacement of a majority of the urethane adhesive bead, where a thin film of the original bead remains
- Applying pinchweld primer to any exposed painted areas on the pinchweld flange

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

Important:

- If corrosion of the pinchweld flange is present, or if sheet metal repairs or replacements are required, refinish the pinchweld 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 two component catalyzed products. Use materials such as BASF DE17[®], DuPont 2610[®], Sherwin-Williams PSE 4600 and NP70[®] and Martin-Semour 5120 and 5130[®] 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 pinchweld primer #3 (black) 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 the extended method of replacement and the appropriate urethane bead size when installing the window.

Stationary Window Description

Most stationary windows, specifically windshields, are retained to the body with urethane adhesive which adheres the window to the body. This increases structural integrity. The reinstallation of the windows with urethane adhesive requires either partial or complete replacement of the urethane adhesive bead:

- The short method (also known as short cut or close cut) is the partial replacement.
- The extended method (also known as long method, full strip, or full cut) is the complete replacement.

Reveal Molding Description

The reveal molding for the windshield and rear window are a vinyl trim that fits between the edge of the window and the body. The reveal moldings are hand pressed into place. The reveal moldings are retained with urethane adhesive. Trim the reveal molding if needed for certain applications. Trim the reveal moldings as needed to allow room for both the molding and urethane adhesive to fit in the cavity between the window and the body.

Rear Window Defogger Description

The rear window defogger system consists of the following components:

- A tinted glass
The tinted glass has a number of horizontal ceramic silver compound lines.
- Two vertical bus bars
The bus bars are baked into the inside surface during the glass forming operation.

The feed wire terminal is soldered to the bus bar on the left side. The ground wire terminal is soldered to the bus bar on the right side. This system operates on battery voltage. Heat from the window may not be detected by finger touch. The length of time required in order to remove interior fog from the rear window will vary with the following conditions:

- Vehicle speed
- Outside window temperature
- Atmospheric pressure
- Number of passengers inside the vehicle

This system uses a switch with an integral indicator lamp. After 5 to 10 minutes of system operation, an automatic timer will automatically turn the system off. Turn one of the following switches to OFF in order to turn off the system during the operating period.

- Defogger switch
- Ignition switch

Rear Window Defogger Operation

The rear window defogger system consists of the following components:

- A rear window defogger switch
- A rear window that has a number of grid lines
- 2 bus bars on the inside surface of the rear window

The feed terminal (+) and the ground terminal (–) are soldered to the bus bar.

Rear Window Defogger Circuit Description

Voltage is applied at all times from the DEFOG/SEATS CKT BRKR 30A to the rear defogger timer/relay. When the ignition switch is turned to the RUN position, voltage is applied by the HVAC Fuse 6 to the rear defogger switch and the rear defogger timer/relay.

Rear Defogger Operation

When the rear defogger switch is pressed, battery voltage, ignition voltage, and ground are momentarily applied to the solid state device within the rear defogger timer/relay. When all three of these inputs occur, the solid state device provides a ground to the solenoid within the rear defogger timer/relay. Voltage is supplied at all times to the solenoid through the DEFOG/SEATS CKT BRKR 30A. When the ground is applied to the solenoid, the switch contact within the rear defogger timer/relay closes providing voltage to the rear defogger grid. The rear defogger grid receives ground at all times. When the rear defogger grid receives voltage, the rear defogger operates.

The rear defogger timer/relay contains an internal timer in order to control the time the internal contacts are closed. The defog cycle lasts 10 minutes when the ignition switch is turned to the RUN position and the rear defogger switch is pressed for the first time.

When the rear defogger switch is pressed again after the 10 minute time out, the rear defogger will run in a 5 minute defog cycle. This rear defogger will run at 5 minute cycles each time the rear defogger switch is pressed until the ignition switch is turned to the OFF position and then back to the RUN position. The defog cycle will then reset to the original 10 minutes.

Rear Defogger On Indicator

When the switch contact within the rear defogger timer/relay closes, voltage is not only provided to the rear defogger grid but also to the on indicator in the rear defogger switch. When this voltage is applied, the indicator turns on and stays on until the rear defogger is shut off or turns off after the 10 minute cycle. The indicator will turn on and remain on as long as the rear defogger is running. The on indicator turns off when the rear defogger turns off.

Special Tools and Equipment

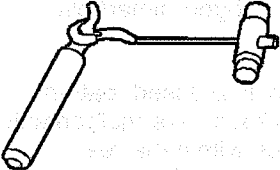
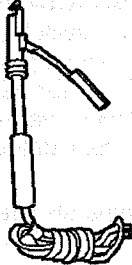
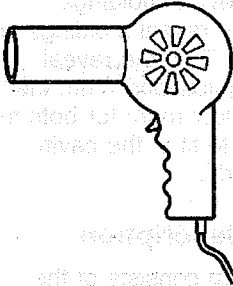
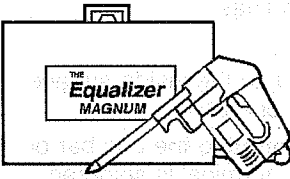
Illustration	Tool Number/ Description
	J 24402-A Glass Sealant Remover (Cold Knife)
3898	
	J 24709-01 Urethane Glass Sealant Remover (Hot Knife)
3899	

Illustration	Tool Number/ Description
	J 25070 Heat Gun
78337	
	J 39032 Stationary Glass Removal Tool
3905	