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## SECTION 9L

# GLASS AND MIRRORS

**CAUTION:** *Disconnect the negative battery cable before removing or installing any electrical unit or when a tool or equipment could easily come in contact with exposed electrical terminals. Disconnecting this cable will help prevent personal injury and damage to the vehicle. The ignition must also be in B unless otherwise noted.*

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## DESCRIPTION AND OPERATION

### STATIONARY GLASS

Stationary glass consists of all the glass on the vehicle which is immovable within its frame, such as the windshield glass, the back glass, and the inside rearview mirror.

### INSIDE REARVIEW MIRROR

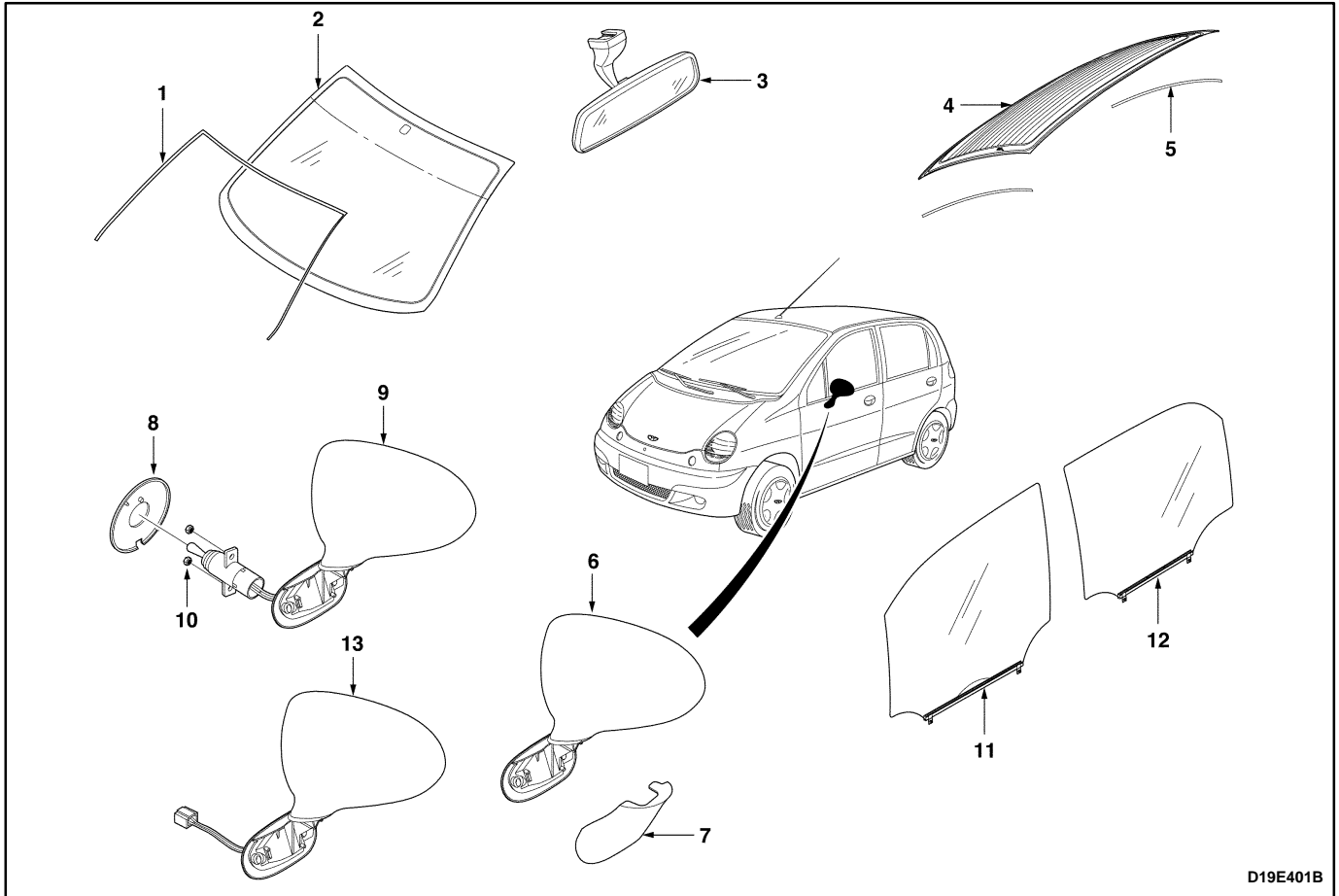
The inside rearview mirror can be manually adjusted up/down, fore/aft, and left/right. The rearview mirror pivots in two places: the ball-and-socket mirror pivot and the up/down hinge lever at the mirror support.

### OUTSIDE REARVIEW MIRRORS

Three types of outside rearview mirrors are available. The outside rearview mirrors are adjusted by hand which is standard. The remote control and the electric outside rearview mirrors are optional. The outside rearview mirrors are installed on the front doors.

# COMPONENTS LOCATOR

## GLASS AND MIRROR

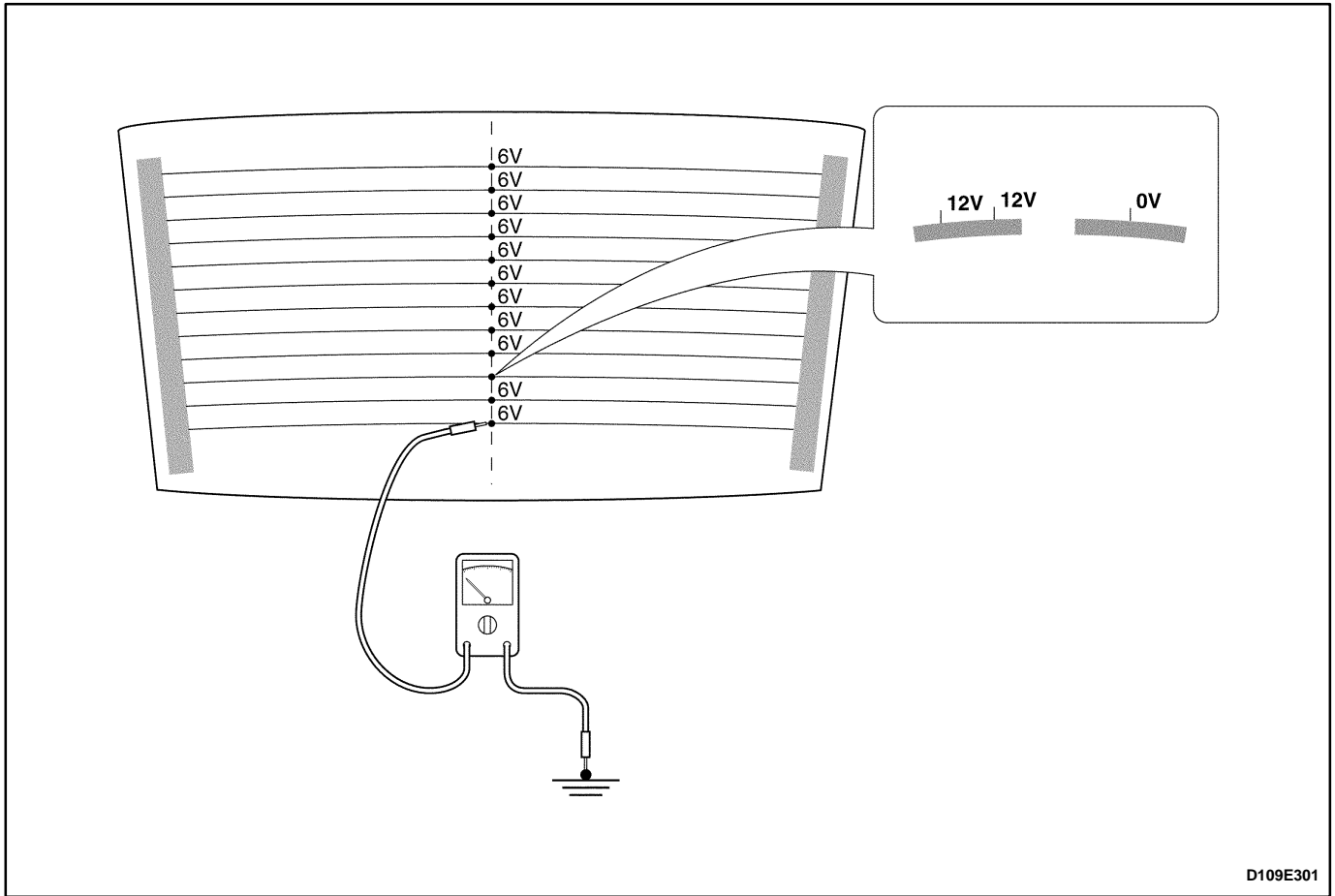


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- |                                     |  |
|-------------------------------------|--|
| 1. Windshield Molding               | 7. Outside Rearview Mirror Cover       |
| 2. Windshield                       | 8. Outside Rearview Mirror Trim Cover  |
| 3. Inside Rearview Mirror           | 9. Outside Rearview Mirror (Cable)     |
| 4. Rear Window Glass                | 10. Nuts                               |
| 5. Rear Window Glass Damping        | 11. Front Door Glass                   |
| 6. Outside Rearview Mirror (Manual) | 12. Rear Door Glass                    |
|                                     | 13. Outside Rearview Mirror (Electric) |

## DIAGNOSTIC INFORMATION AND PROCEDURES

### TESTING REAR WINDOW DEFOGGER GRID LINE



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If it has been observed during use that a grid line is inoperative, the following procedure can be used to find the break. If none of the grid lines is operating, a full system diagnosis should be completed before attempting to repair the grid lines.

1. Turn the ignition ON.

2. Turn on the rear window defogger.

**Notice:** Use care when touching the voltmeter terminals to a grid line. If the terminals are roughly applied, the grid line may be scratched, resulting in an open circuit.

3. From the inside of the vehicle, connect a voltmeter to each end of a grid line. The voltmeter will indicate battery voltage if the grid line is open.

4. If a grid line is found to be open, move a voltmeter terminal from one side of the grid line and retest at a

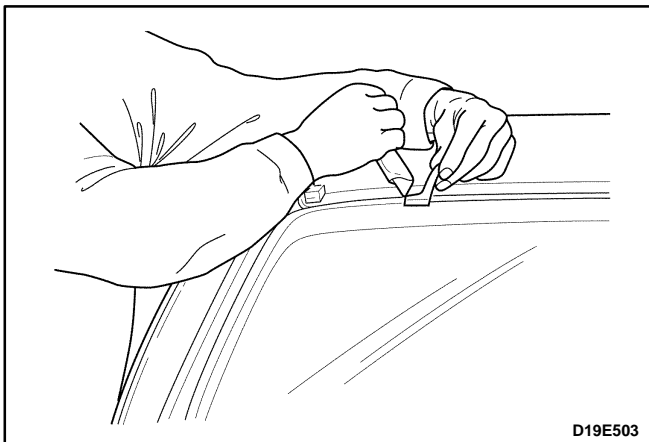
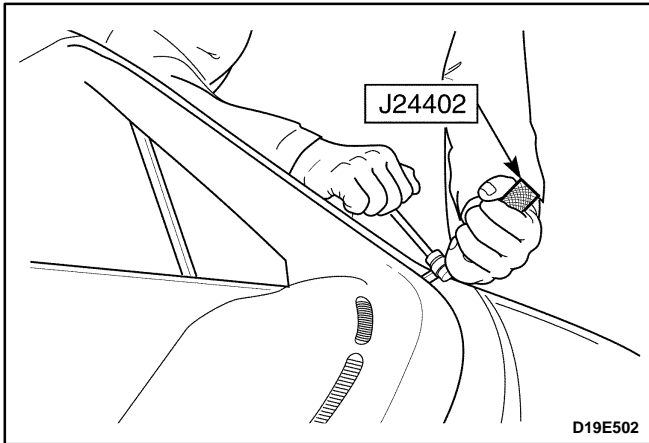
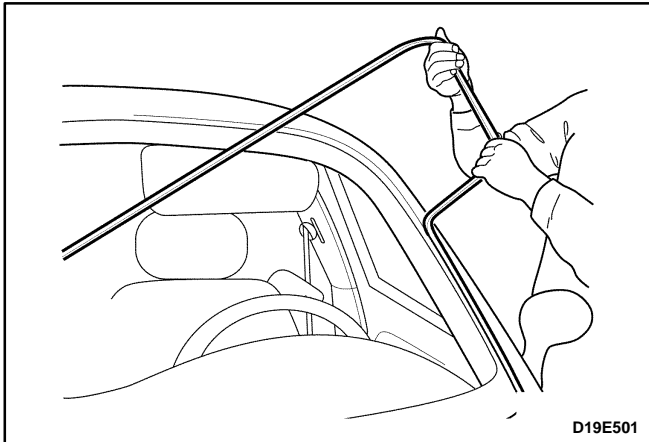
point nearer to the other side of the window. Continue to retest, each time bringing one of the voltmeter terminals closer to the opposite side of the window from where it was originally connected. The break in the grid line is at the point where the voltmeter begins reading 0 volts instead of battery voltage.

5. Use a marking crayon to lightly mark the break point on the rear window. Mark the glass instead of marking directly on the grid line, and make the mark far enough from the grid line so that the mark can easily be removed without disturbing the repair.

6. Use a grid line repair kit to fix the break in the grid line. Refer to "Rear Window Defogger Grid Line Repair" in this section.

# REPAIR INSTRUCTIONS

## ON-VEHICLE SERVICE



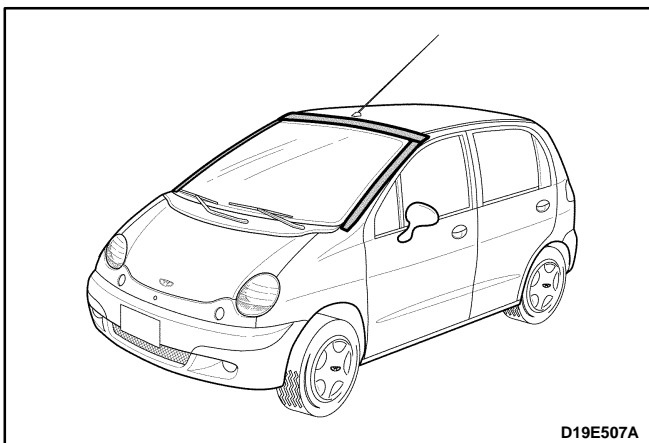
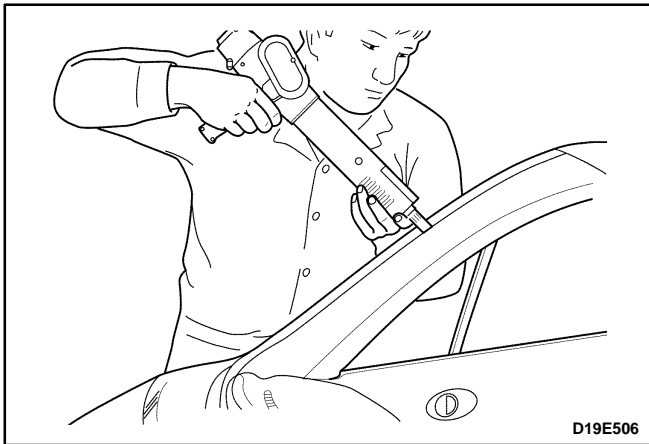
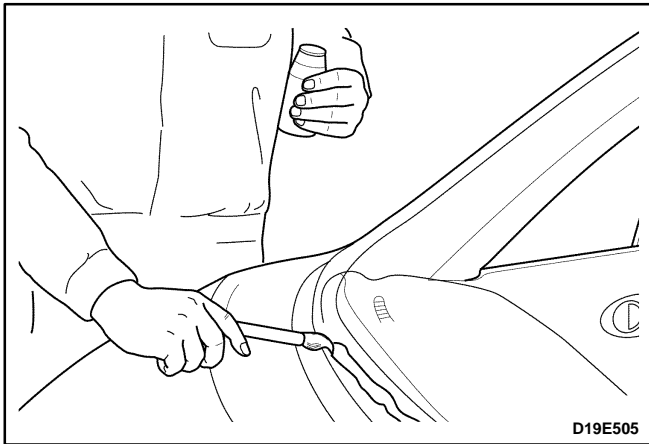
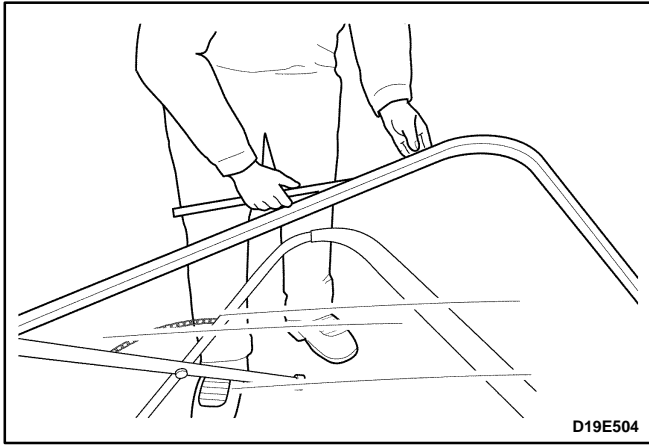
### WINDSHIELD

#### Tool Required

J-24402 Glass Sealant Remover

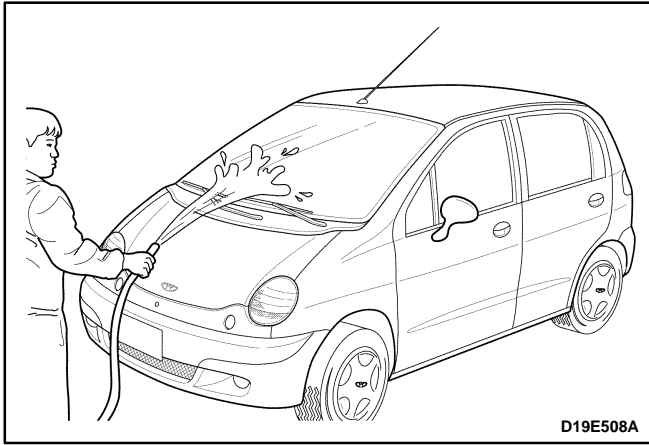
#### Removal Procedure

1. Remove the cowl vent grille. Refer to *Section 9R, Body Front End*.
2. Remove the inside rearview mirror. Refer to "Inside Rearview Mirror" in this section.
3. Remove the weatherstrip around the windshield.
4. Using the glass sealant remover J-24402, cut the adhesive around the windshield.
5. Remove the windshield from the vehicle.
6. Using a knife, remove the adhesive from the windshield.

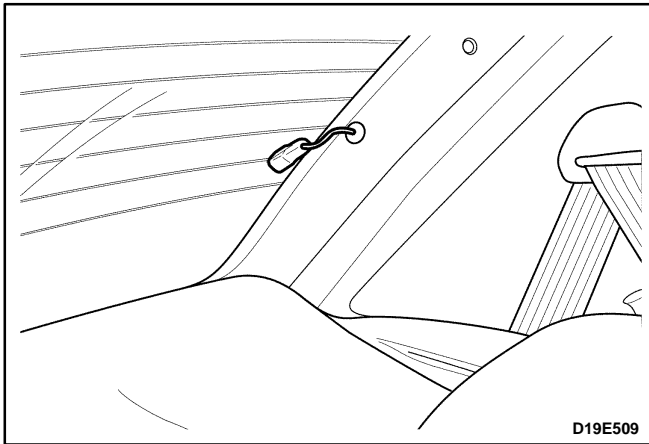


### Installation Procedure

1. Install the new weatherstrip to the windshield.
2. Apply tape to the new weatherstrip and the windshield to hold the weatherstrip in place.
3. Apply adhesive primer to the windshield frame and the perimeter of the windshield.
4. Apply glass adhesive to the windshield frame.
5. Install the windshield into the windshield frame.
6. Reposition the tape over the weatherstrip, the windshield and the windshield frame to hold the windshield in place.
7. Let the adhesive dry for 24 hours.
8. Remove the tape.



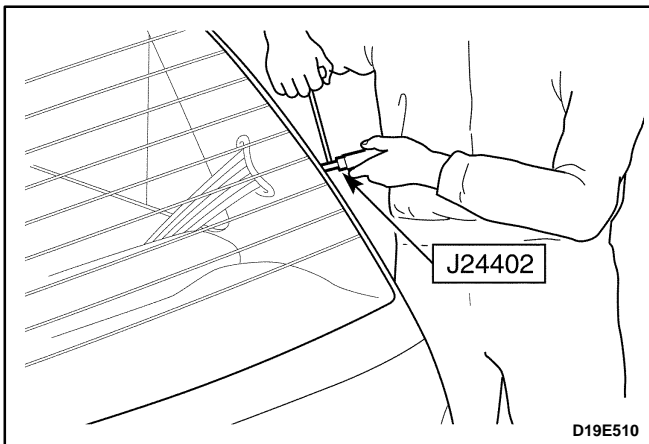
9. Check for waterleaks by pouring water on the windshield. If a leak is found, dry the windshield and fill the area that leaks with adhesive. If the leak persists, remove the windshield and repeat the entire procedure.
10. Install the inside rearview mirror. Refer to "Inside Rearview Mirror" in this section.
11. Install the cowl vent grille. Refer to *Section 9R, Body Front End*.



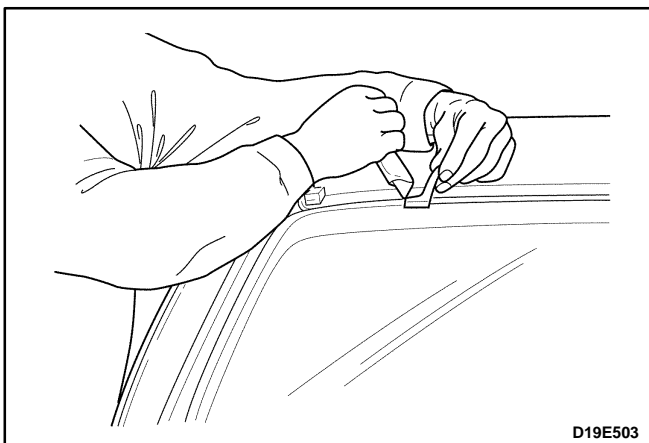
## REAR WINDOW GLASS

### Removal Procedure

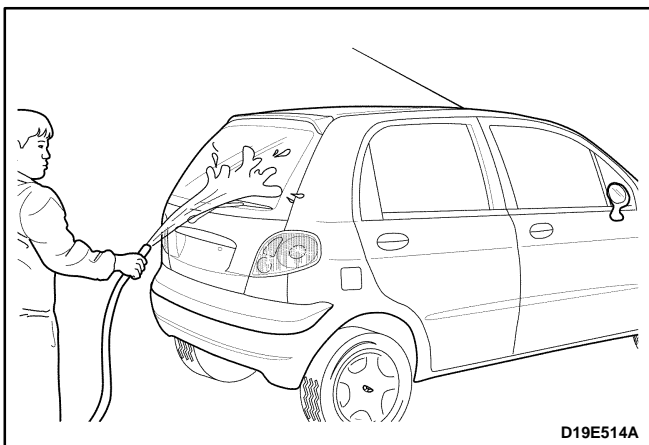
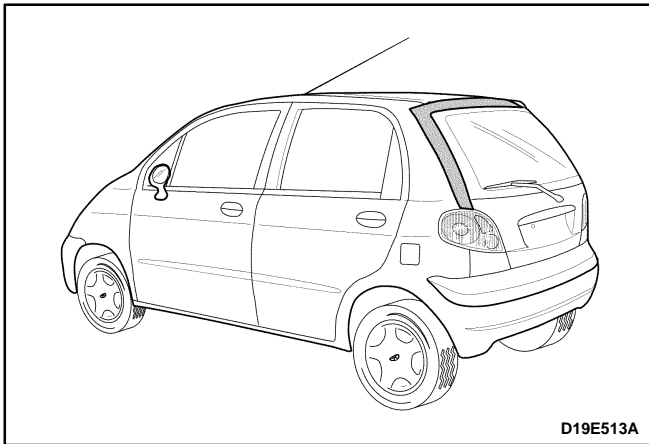
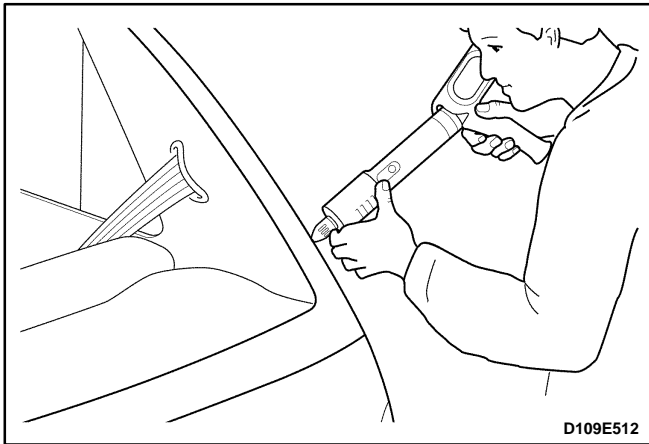
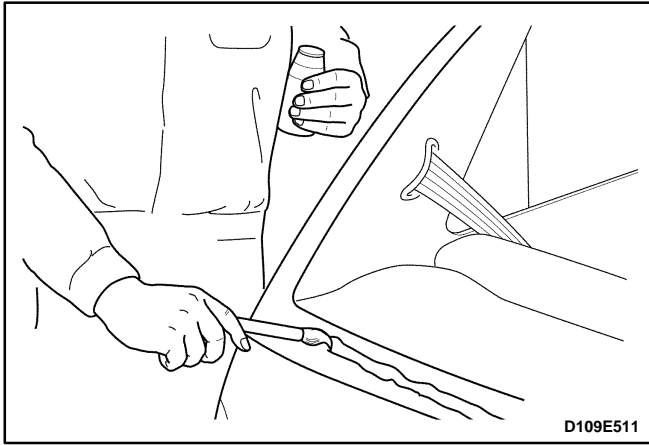
1. Disconnect the negative battery cable.
2. Disconnect the rear window defogger electrical connectors.



3. Using the glass sealant remover J-24402, cut the adhesive around the rear window glass.



4. Remove the rear window glass from the vehicle.
5. Using a knife, remove the adhesive from the rear window glass.
6. Using a knife, remove the adhesive from the rear window frame.



### Installation Procedure

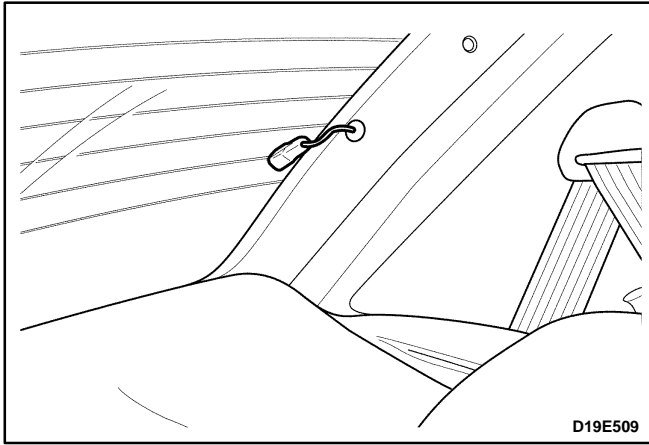
1. Apply tape to the new weatherstrip and the rear window to hold the weatherstrip in place.
2. Apply adhesive primer to the rear window frame and the perimeter of the rear window.

3. Apply glass adhesive to the rear window frame.

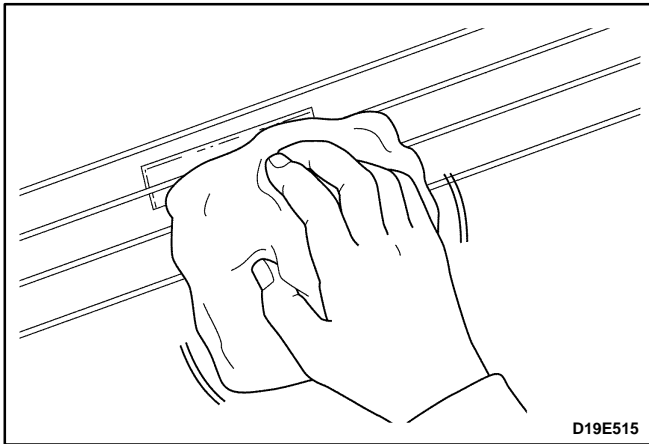
4. Install the rear window into the rear window frame.
5. Reposition the tape over the weatherstrip, the rear window and the rear window frame to hold the rear window in place.
6. Let the adhesive dry for 24 hours.
7. Remove the tape.

8. Check for waterleaks by pouring water on the rear window. If a leak is found, dry the window and fill the area that leaks with adhesive. If the leak persists, remove the rear window and repeat the entire procedure.
9. Connect the rear window defogger electrical connector.
10. Connect the negative battery cable.

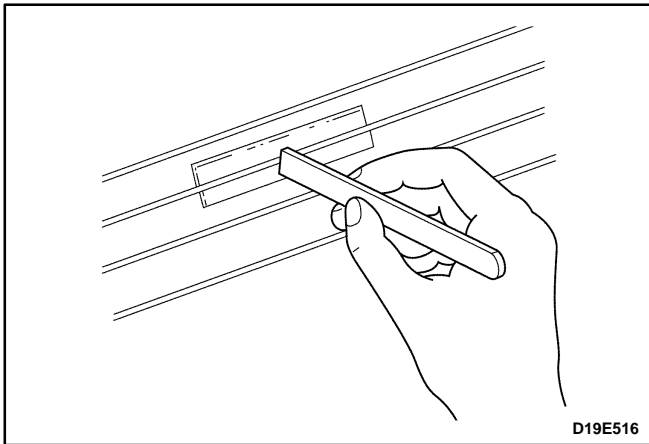




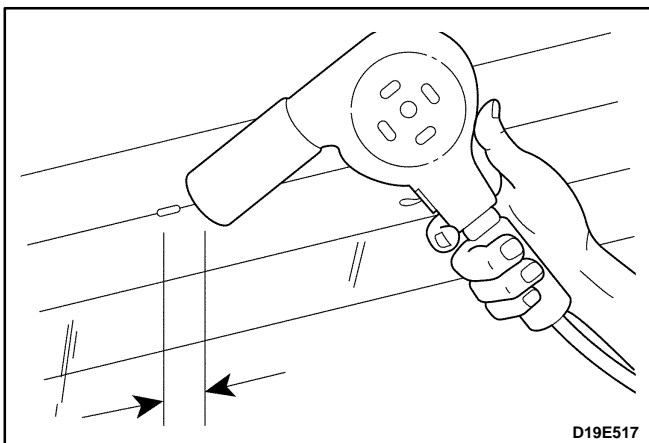
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## REAR WINDOW DEFOGGER GRID LINE REPAIR

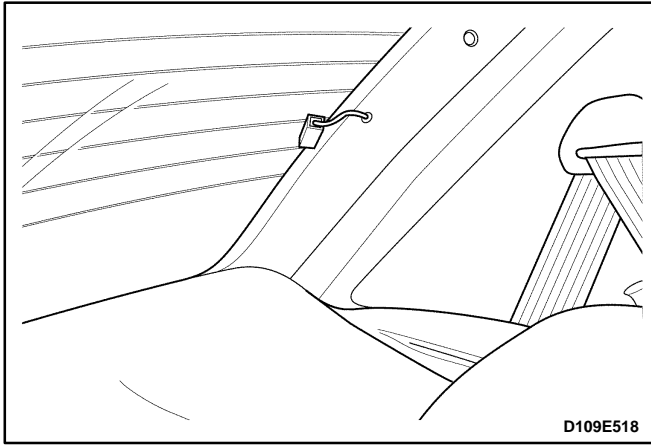
1. Disconnect the negative battery cable.
2. Disconnect the rear window defogger electrical connector.

3. Inspect the rear window defogger grid lines.
4. Use steel wool to buff the grid lines that are to be repaired. Wipe the lines clean using a cloth dampened with alcohol. Buff and clean about 6 mm (0.25 inch) beyond each side of the break in the grid line.

5. Attach a grid line repair decal or two strips of tape above and below the repair areas.
  - A repair decal or tape must be used in order to control the width of the repair areas.
  - If a decal is used, the die-cut metered slot must be the same width as the grid line.
6. Apply the grid repair material to the repair area using a small wooden stick or a spatula. The grid repair material should be at room temperature.
7. Carefully remove the decal or the tape.

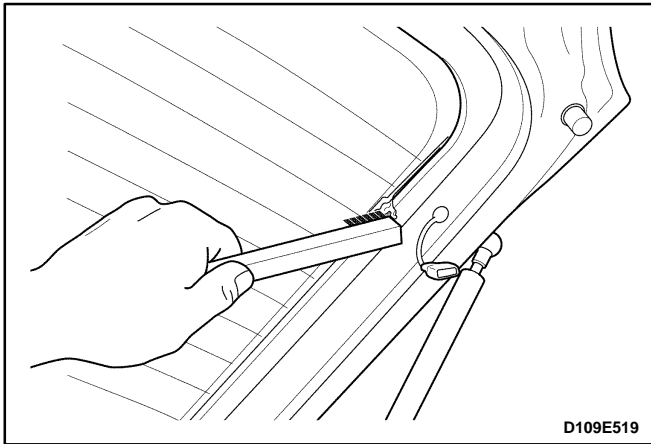
**Notice:** The grid line repair material must be cured with heat. In order to avoid heat damage to the interior trim, protect the trim near the repair area where heat will be applied.

8. Heat the repair area for 1 to 2 minutes.
9. Hold the heat gun nozzle 25 mm (1 inch) from the surface. A minimum temperature of 149°C (300°F) is required.



10. Inspect the grid line repair area. If the repair appears discolored, apply a coating of tincture of iodine to the area using a pipe cleaner or a line brush. Allow the iodine to dry for about 30 seconds. Carefully wipe off the excess iodine with a lint-free cloth.
11. Test the operation of the rear window defogger in order to verify that the repair was successful.

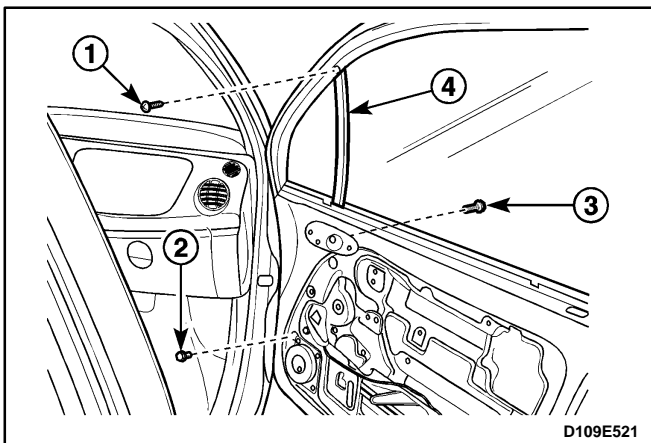
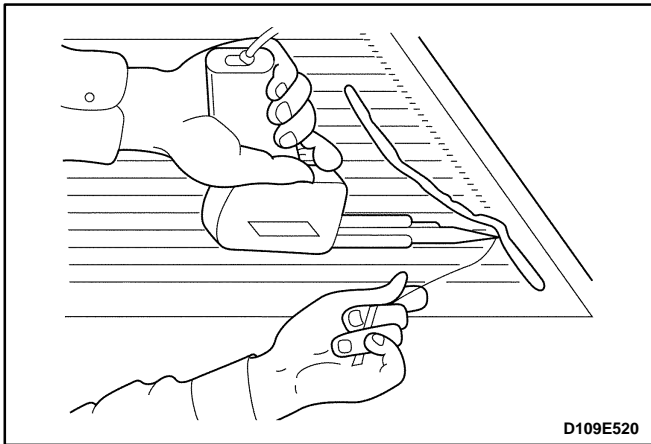
**Important:** At least 24 hours is required for complete curing of the repair materials. The repair area should not be physically disturbed until after that time.



## REAR WINDOW DEFOGGER BRAIDED LEAD WIRE REPAIR

The rear window defogger bus lead wire or the terminal can be reattached by resoldering. Use a solder containing 3 percent silver and a rosin flux paste.

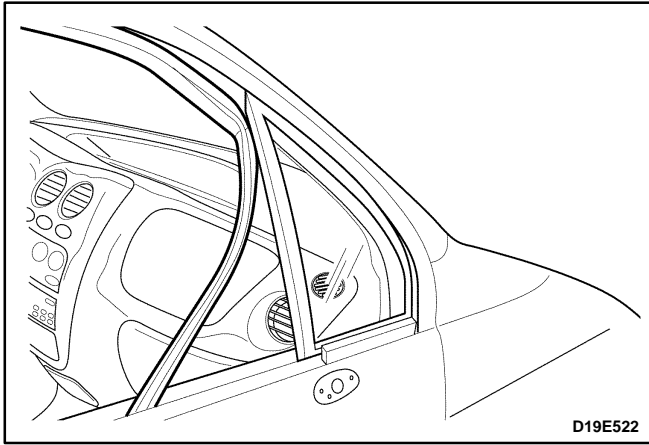
1. Disconnect the negative battery cable.
2. The repair area should be buffed with fine steel wool before soldering the bus lead wire.
3. Apply the paste-type rosin flux in small quantities to the wire lead and the bus lead wire repair area using a brush.
4. Coat the soldering iron tip with solder use only enough solder to ensure a complete repair.
5. Use only enough heat to melt the solder. Do not over-heat the wire when resoldering to the bus lead wire.



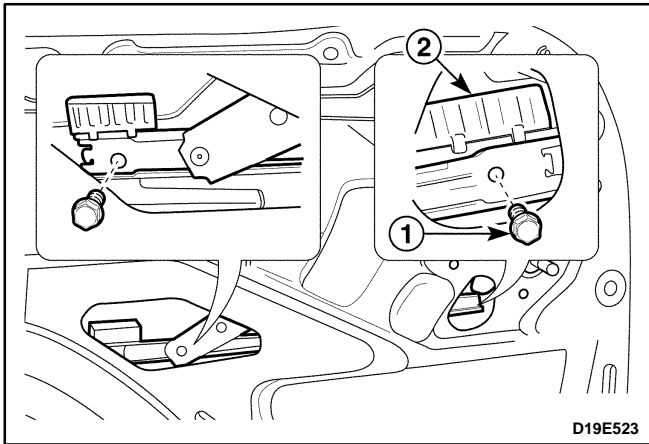
## FRONT DOOR GLASS

### Removal Procedure

1. Remove the front door seal trim. Refer to *Section 9P, Doors*.
2. Remove the outside rearview mirror from the front door. Refer to "Glass and Mirrors" in this section.
3. Remove the division bar.
  - Remove the screw (1).
  - Remove the inside bolt (2).
  - Remove the outside bolt (3).
  - Remove the division bar (4).



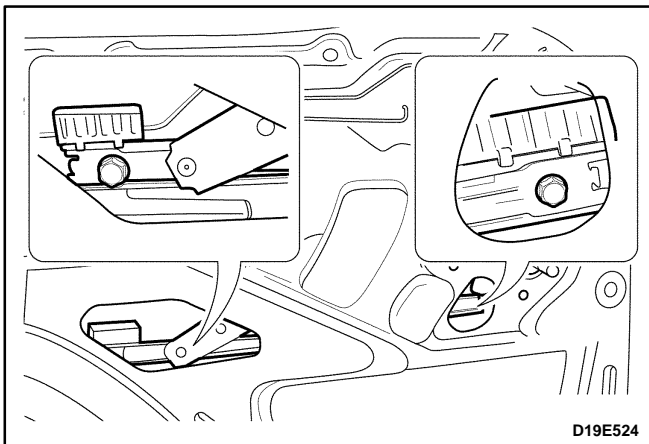
4. Remove the glass run from the front door.



5. Remove the glass from the front door.

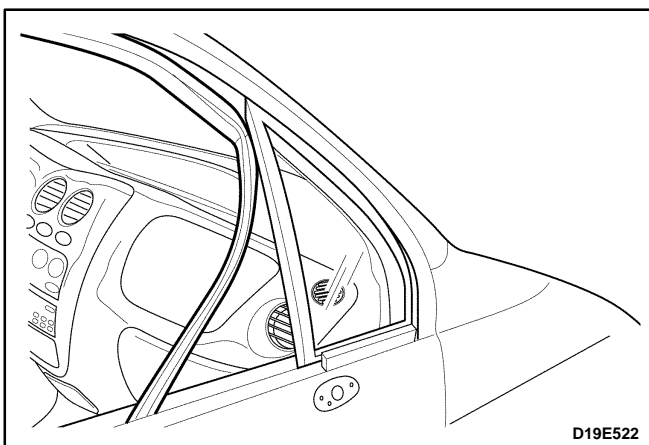
- Remove the glass retaining bolts (1).
- Remove the glass (2).

**Notice:** Make sure not to contact the glass with the body to prevent the paint damage.

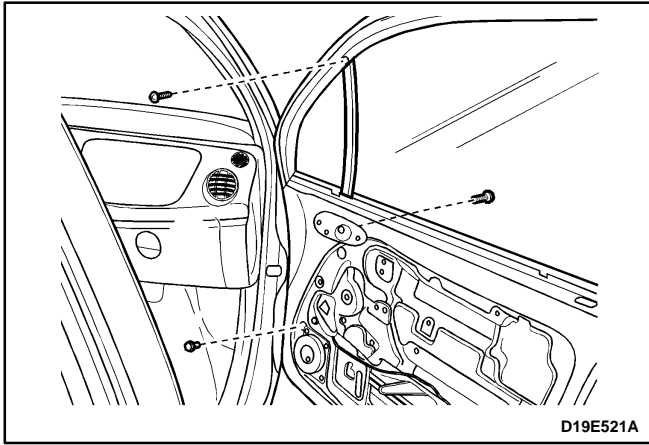


### Installation Procedure

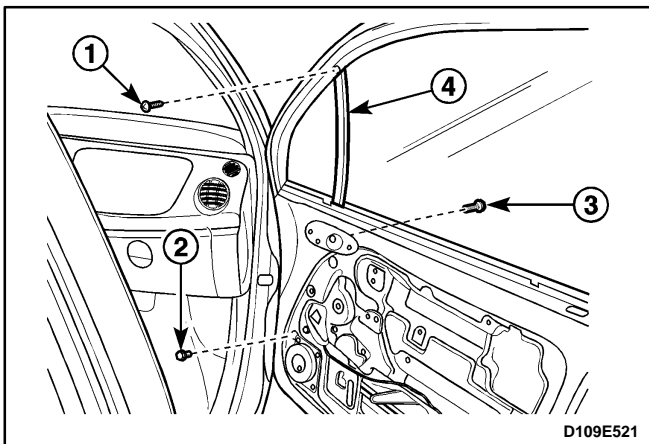
1. Install the front door glass with the bolts.



2. Install the front door glass run.



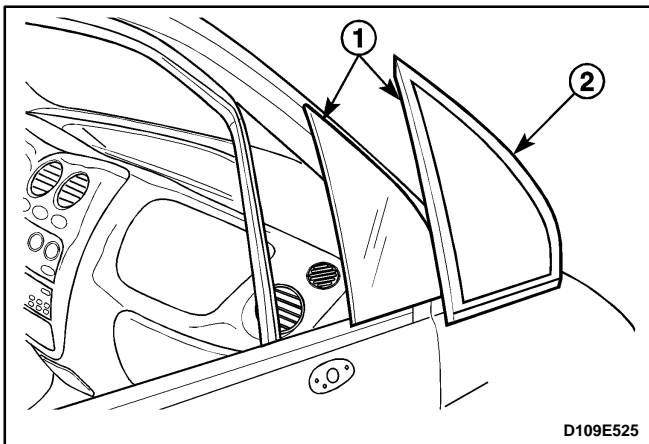
3. Install the division bar with the guide rail inside bolt, the guide rail outside bolt and the guide rail screw.
4. Install the outside rearview mirror. Refer to "Glass and Mirrors" in this section.
5. Install the front door seal trim. Refer to *Section 9P, Doors*.



## FRONT DOOR QUARTER GLASS

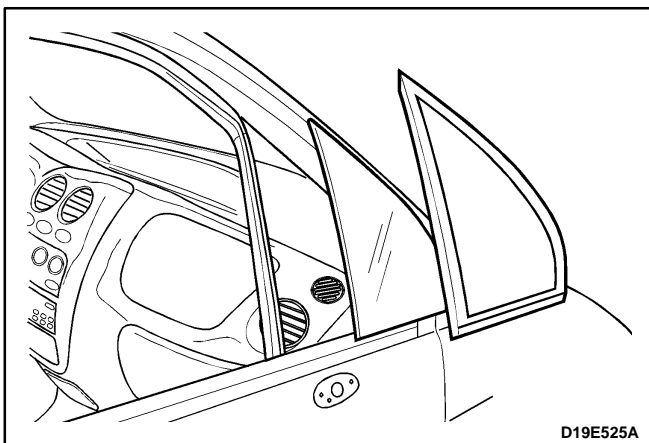
### Removal Procedure

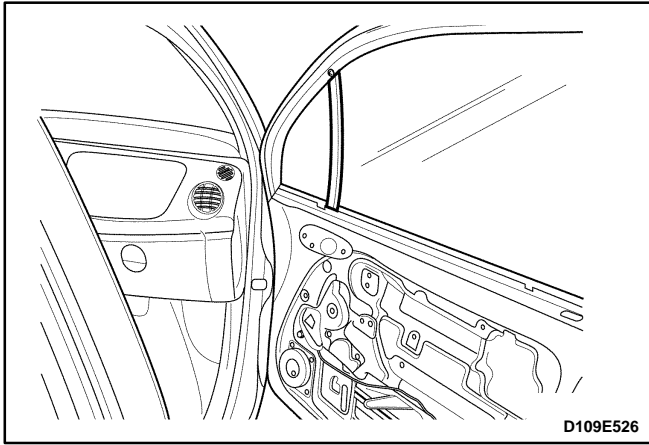
1. Remove the front door seal trim. Refer to *Section 9P, Doors*.
2. Remove the outside rearview mirror. Refer to "Outside Rearview Mirror" in this section.
3. Remove the guide rail.
  - Remove the screw (1).
  - Remove the inside bolt (2).
  - Remove the outside bolt (3).
  - Remove the division bar (4).
4. Remove the quarter glass from the front door.
  - Remove the quarter glass assembly (1).
  - Remove the quarter glass run (2).



### Installation Procedure

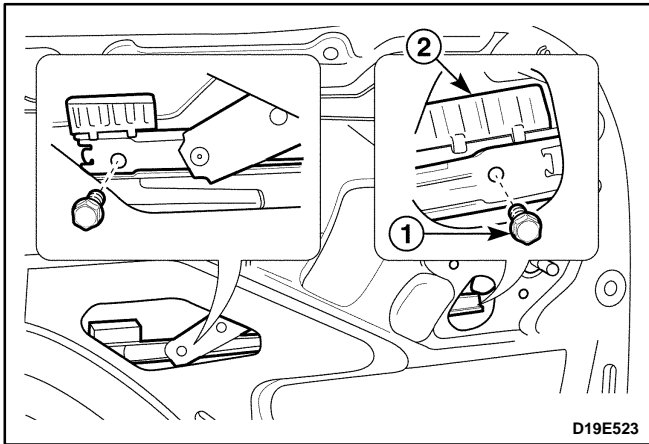
1. Install the quarter glass with the quarter glass run.





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2. Install the division bar with the guide rail inside bolt, the guide rail outside bolt and the guide rail screw.
3. Inside the outside rearview mirror. Refer to "Outside Rearview Mirror" in this section.
4. Install the front door seal trim. Refer to *Section 9P, Doors*.



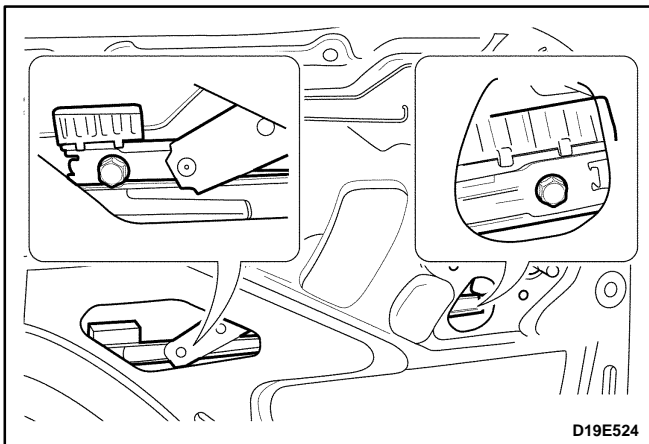
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## REAR DOOR GLASS

### Removal Procedure

1. Remove the glass run. Refer to *Section 9P, Doors*.
2. Remove the glass.
  - Remove the bolts (1).
  - Remove the glass (2).

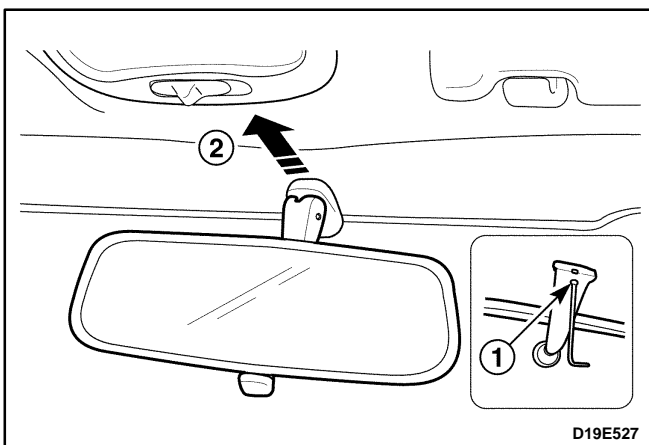
**Notice:** Make sure not to contact the glass with the body to prevent the paint damage.



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### Installation Procedure

1. Install the glass with the bolts.
2. Install the glass run. Refer to *Section 9P, Doors*.

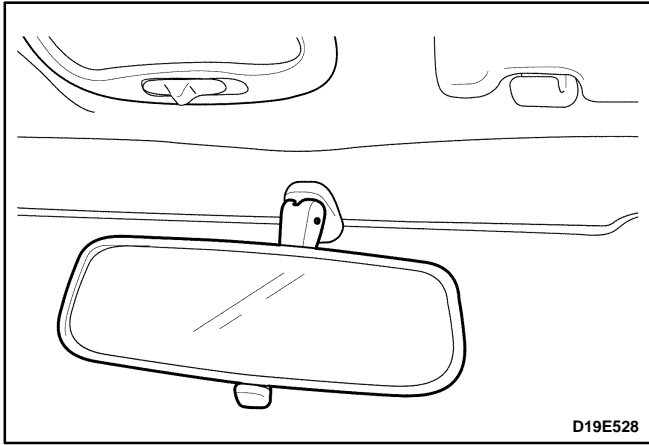


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## INSIDE REARVIEW MIRROR

### Removal Procedure

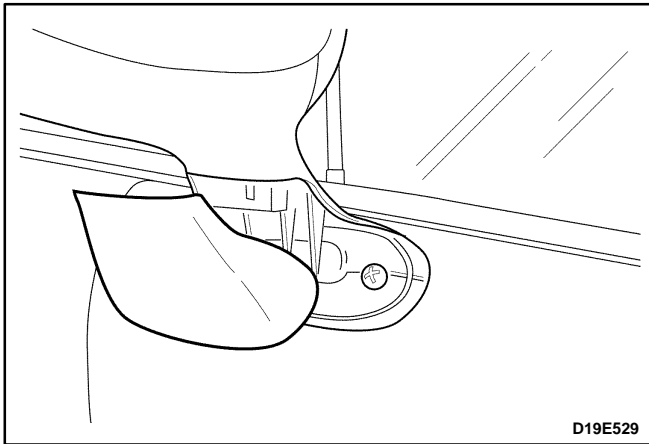
1. Remove the inside rearview mirror.
  - Remove the screw (1).
  - Remove the inside rearview mirror (2).



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### Installation Procedure

1. Install the inside rearview mirror with the screw.

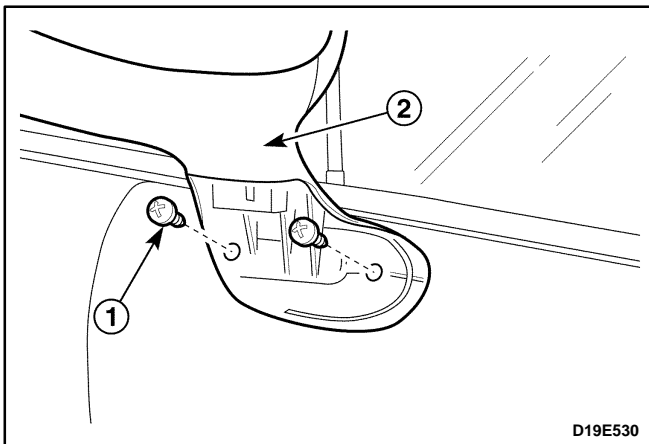


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### OUTSIDE REARVIEW MIRROR (MANUAL)

#### Removal Procedure

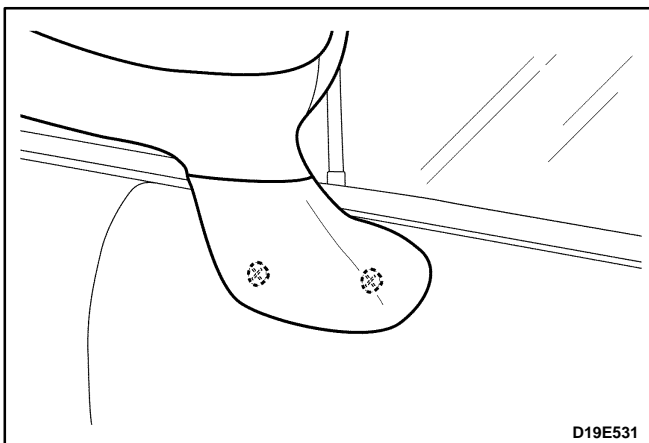
1. Remove the outside rearview mirror cover from the outside rearview mirror.



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2. Remove the outside rearview mirror.

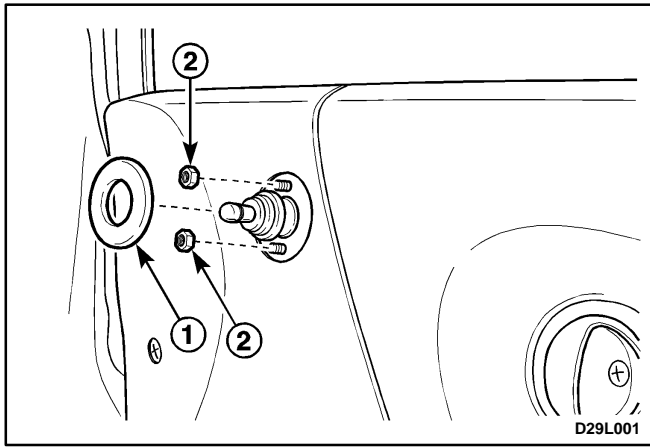
- Remove the screws (1).
- Remove the outside rearview mirror (2).



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#### Installation Procedure

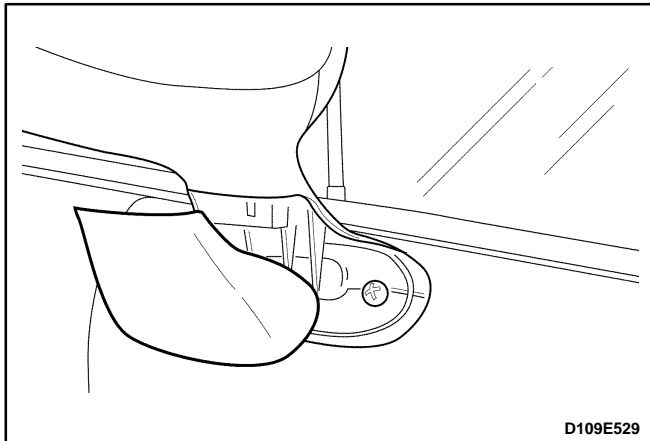
1. Install the outside rearview mirror with the screws.
2. Install the outside rearview mirror cover.



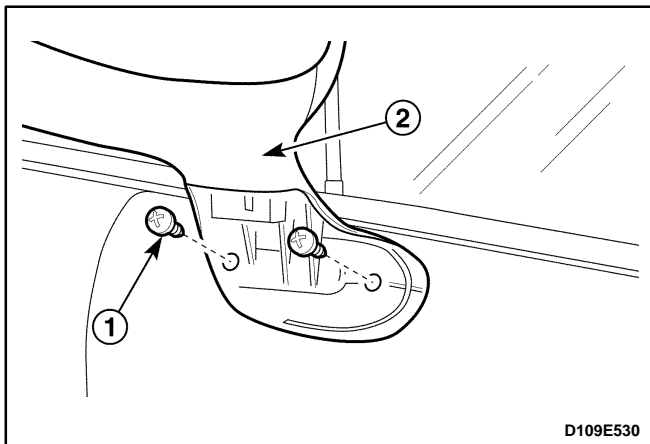
## OUTSIDE REARVIEW MIRROR (CABLE)

### Removal Procedure

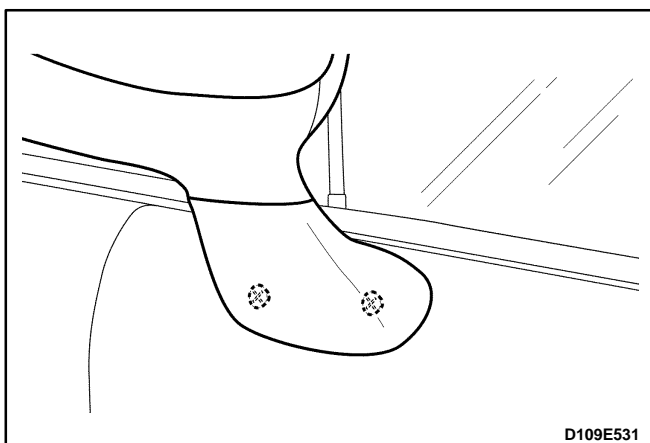
1. Pry off the outside rearview mirror inside trim cover (1).
2. Remove the mirror adjusting lever mounting nuts (2).



3. Remove the outside rearview mirror cover from the outside rearview mirror.

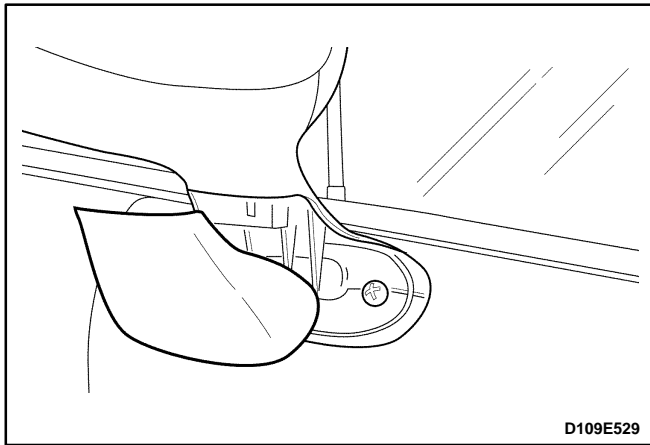


4. Remove the outside rearview mirror.
  - Remove the screws (1).
  - Remove the outside rearview mirror (2).



### Installation Procedure

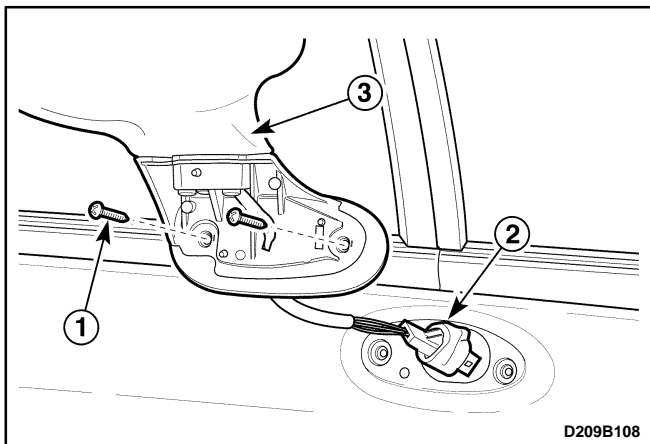
1. Install the outside rearview mirror with the screws.
2. Install the outside rearview mirror cover.
3. Install the mirror adjusting lever with the nuts.
4. Install the outside rearview inside trim cover.



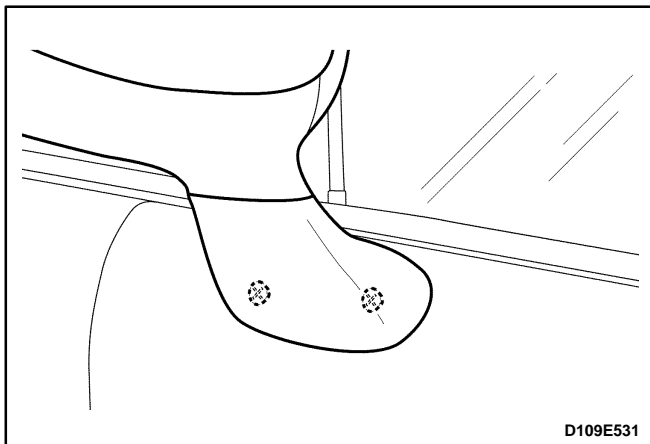
## OUTSIDE REARVIEW MIRROR (ELECTRIC)

### Removal Procedure

1. Disconnect the negative battery cable.
2. Remove the outside rearview mirror cover from the outside rearview mirror.



3. Remove the outside rearview mirror.
  - Remove the screws (1).
  - Disconnect the electrical connector (2).
  - Remove the outside rearview mirror (3).



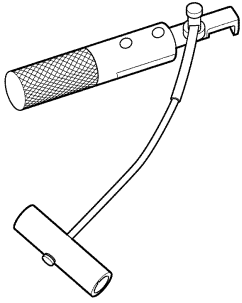
### Installation Procedure

1. Connect the outside rearview mirror.
2. Install the outside rearview mirror with the screws.
3. Install the outside rearview mirror cover.
4. Connect the negative battery cable.



# SPECIAL TOOLS AND EQUIPMENT

## SPECIAL TOOLS TABLE

 <p>D109E102</p>	<p><b>J-24402</b> <b>Glass Sealant Remover</b></p>
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# SCHEMATIC AND ROUTING DIAGRAMS

## REAR WINDOW DEFOGGER

